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ABSTRACT

Documents announced with VT numbers only in the Spring 1970 issue (VT 011 173) of "Abstracts of Research and Related Materials in Vocational and Technical Education" (ARM) are included in this microfiche set. Microfiche availability for these documents is shown on the ARM resume as MF Available in VT-ERIC Set. The microfiche set is arranged in the following sequence: (1) a Vocational Technical (VT) number index to documents in the microfiche collection, (2) the author index, the vocational and supporting services index, and the subject index from ARM, and (3) the full text of documents listed in the VT number index. The texts are filmed continuously in VT number sequence. (CD)

ED039370

Microfiche Collection of Clearinghouse Documents

Reported in Abstracts of Research and Related Materials in Vocational and Technical Education

(ARM)

Compiled and Indexed by The ERIC Clearinghouse
on Vocational and Technical Education

Spring 1970

VT011200

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ERIC Clearinghouse on Vocational and Technical Education
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INTRODUCTION

This collection of microfiche consists of the documents which are announced with VT number only in the Spring 1970 issue of Abstracts of Research and Related Materials in Vocational and Technical Education (ARM). Microfiche availability is shown in the resume as MF AVAILABLE IN VT-ERIC SET. The documents are grouped in VT number sequence and filmed continuously as a microfiche set. These documents are not available on microfiche as individual items, but are obtainable only through purchase of this set, or from agencies who have this set and have the capability of reproducing microfiche. The microfiche set includes the following sections:

1. Vocational Technical (VT) Number Index to Microfiche Collection of Clearinghouse Documents Reported in ARM, Spring 1970.

2. Selected indexes from ARM, Spring 1970.

   a. Personal and Institutional Author Index.
   b. Vocational and Supporting Services Index .
   c. Subject and Identifier Index.

   The documents identified in the indexes with an ERIC Document (ED) number are usually available as separate documents from the ERIC Document Reproduction Service (EDRS). Information about EDRS Service can be found in ARM or Research in Education (RIE).[1] Items not available through EDRS will include a source of availability. The page numbers shown in these indexes refer to the location of the abstracts in ARM, Spring 1970.

3. The full text of documents listed in the Vocational Technical (VT) Number Index to Microfiche Collection of Clearinghouse Documents Reported in ARM, Spring 1970.

[1] Research in Education is published 12 times a year. The first issue was no. 11, November 1966. Subscription: Domestic $21.00 a year; foreign $5.25 additional. Single copy: Domestic, $1.75. Send a check or money order (no stamps) to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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COLORADO

Sixty-one persons from business, education, and government contributed to the second Forum, of which this publication is a statistical summary. The Forum is designed to focus attention annually upon the changing structure of the Colorado business-economic system, with emphasis on changes in employment patterns. Looking at various economic indicators and their rates of change and interrelationships, projections for 1967 were made for population, labor force, personal income, and employment in each of nine industrial classifications. The total projected increment in new jobs for 1967 was 21,400, ranking 1967 the second best year of the decade and 1966 the best year. The economic sector with the greatest projected increase was the government sector, which was expected to increase by 6,900 new jobs. Graphs and tables are included. (ET)

VT 000 055

Second Annual

Colorado Business/Economic Outlook Forum

1967

Co-sponsored by:

The University of Colorado, Graduate School of Business Administration

and

Colorado Division of Commerce and Development

December 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Preface

The University of Colorado Graduate School of Business Administration and the Colorado Division of Commerce and Development co-sponsors the Colorado Business/Economic Outlook Forum, to focus attention annually upon the changing structure of the Colorado business-economic system.

The object of the Forum is to project state economic indicators for the forthcoming yea.. For the second Forum we have presented as detailed and as knowledgeable a forecast of the Colorado economy for 1967 as possible.

On pages 33 and 34 are listed 61 persons from business, education and government who have been working closely over the past six months estimating and projecting the figures presented in this statistical summary of the oral and visual presentation held December 1, 1966.

We hope these projections will assist you in your planning for the coming year.

CO-SPONSORED BY: Graduate School of Business Administration
University of Colorado
Boulder, Colorado

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Colorado Division of Commerce and Development
600 State Services Building
Denver, Colorado

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Introduction

This is our second annual analysis of the performance of the Colorado economy. As was expected, the projections that were presented in December, 1965, at the first annual Forum did not prove to be completely accurate. An area whose economy is as broad and diversified as is Colorado's, is always affected by many kinds of determining forces - some positive and some negative. Our crystal ball had a few small cracks in it.

In total, the Colorado economy performed exceedingly well during 1966. It looks as if the state has enjoyed the highest rate of growth of any year in the 1960 decade. In spite of this, not all sectors of the state's economic system have fared equally well. Some have been under pressure.

Colorado's well-being is influenced by its own peculiar resource advantages, its mix of industries and other economic activity, all of which will cause a somewhat different pattern of economic performance from the nation as a whole. You may recall from the first Forum presentation, that Colorado's performance cycle within the last five years has been substantially different from the national pattern. In spite of these differences, Colorado is influenced by the strength and movement of the national economy. During the December 1965 Forum, we indicated that our Colorado estimates were based upon a 1966 Gross National Product estimate within the range of $705 to $714 billion, the ranges being used at that time by many national groups. The 1966 GNP totaled about $740 billion, up 9 percent over 1965. In current dollar terms, the growth increment was about twice what we had anticipated.

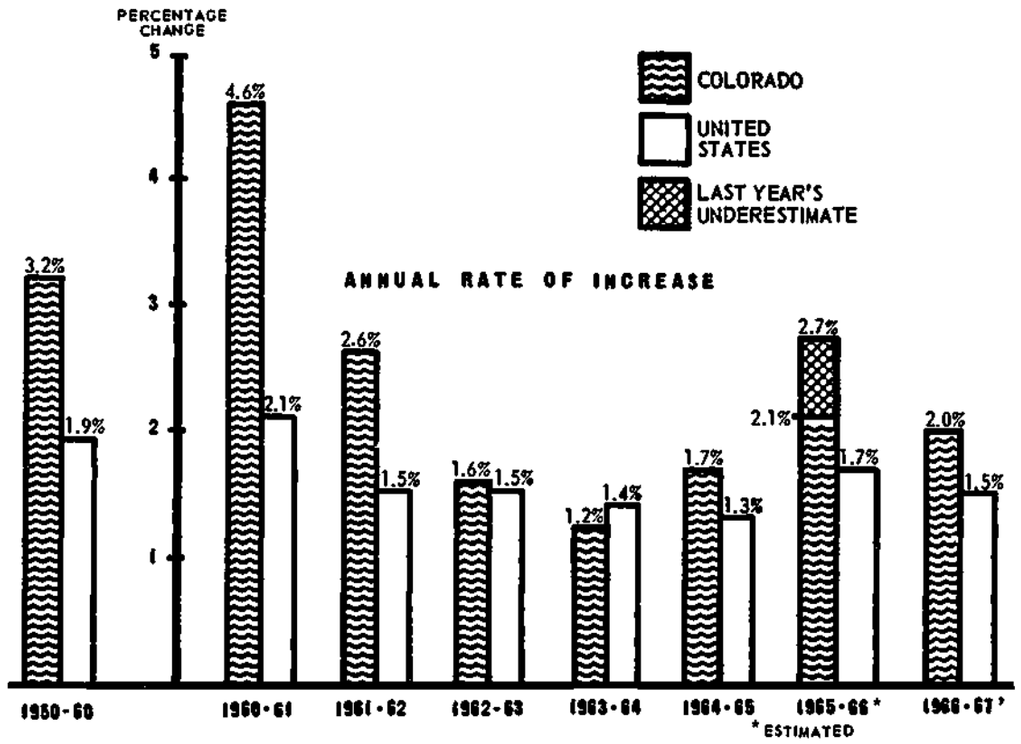
Again, we are not setting ourselves up as experts on the national economy, but we do have to make some assumption as to its performance in 1967 before we can project the situation here in Colorado. Therefore, for 1967 we are assuming a continued high level of defense expenditures, continued, but perhaps somewhat curtailed, fiscal expansion, continuing price rises, but with some slow-down in plant and equipment expenditures. Based upon all of these items, our projections for Colorado are being made compatible with a Gross National Product for 1967 of between $780 and $790 billion. These figures approximate estimates from several national sources. That 1967 level would represent a slow-down in current dollar GNP growth from what took place in 1966.

With these background remarks, let us turn our attention to the Colorado information. Basic to all economic change are people, jobs, and levels of personal income. In a sense, these variables act as both a cause and are the result of the pattern of economic activity. What is the outlook for population change and the number of jobs in Colorado?

Population, Labor Force and Personal Income

The first chart reviews the recent changes in total population in the state. The average annual rate of increase in population of 3.2 percent, shown in the left column, for the 1950-60 decade, has been equalled in only one year of the current decade. The 4.6 percent rate of increase between 1960 and 1961 dropped sharply during the next two years to a low of 1.2 percent between 1963-64. That rate has moved upward again with the U.S. Census estimates giving us an increase of 2.7 percent between 1965 and 1966. This is above the 2.1 percent which we had anticipated in our projection. However, we do expect this rate of increase to drop back to an annual rate of about 2 percent during 1967. In only one year during this decade (1963-64) has Colorado's rate of population growth dropped below the national average.

CHART 1
Annual Rates of Population Increase
Colorado and United States 1950-1967



Our miss in the population guesstimate for 1966 was attributable to our underestimate of the net in-migration into the state. On Chart 2, the natural rate of increase is shown as the dotted bottom part of each bar. We overestimated the

TOTAL RESIDENT POPULATION, COLORADO AND UNITED STATES

1940 - 1967

Population	Colorado	United States
1940	1,123,296	132,165,000
1950	1,325,089	151,325,798
1960	1,753,947	179,323,000
1961	1,835,000	183,057,000
1962	1,883,000	185,890,000
1963	1,913,000	188,658,000
1964	1,936,000	191,371,000
1965	1,969,000	193,818,000
1966*	2,022,000	197,038,000
1967*	2,063,000	**

* - Estimated
** - No estimate made for United States

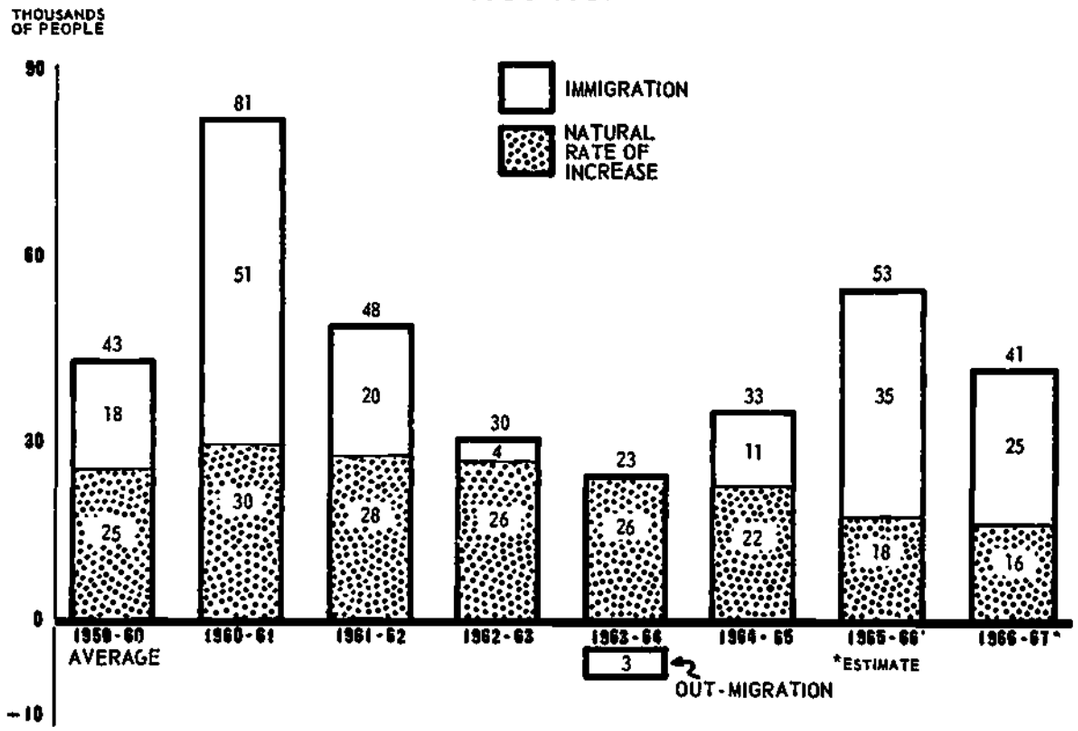
SOURCE: U.S. Department of Commerce, Bureau of the Census, and Colorado Business/Economic Outlook Committee

natural rate of increase, that is, the excess of births over deaths, by about 3,000 persons, but underestimated the in-migration. Therefore, the net increase in population of 53,000 was 12,000 above the figure we had projected.

On Chart 2, you can also review the relationship between migration and the natural rate of increase for each year during the decade. This shows that our slow year, 1963-64, had a net out-migration. Following the current trend in birth rates, our committee estimates a net natural growth in Colorado in 1967 of 16,000 persons. The expected net in-migration of 25,000 gives an estimated 41,000 gain in total population.

Population, Labor Force and Personal Income (continued)

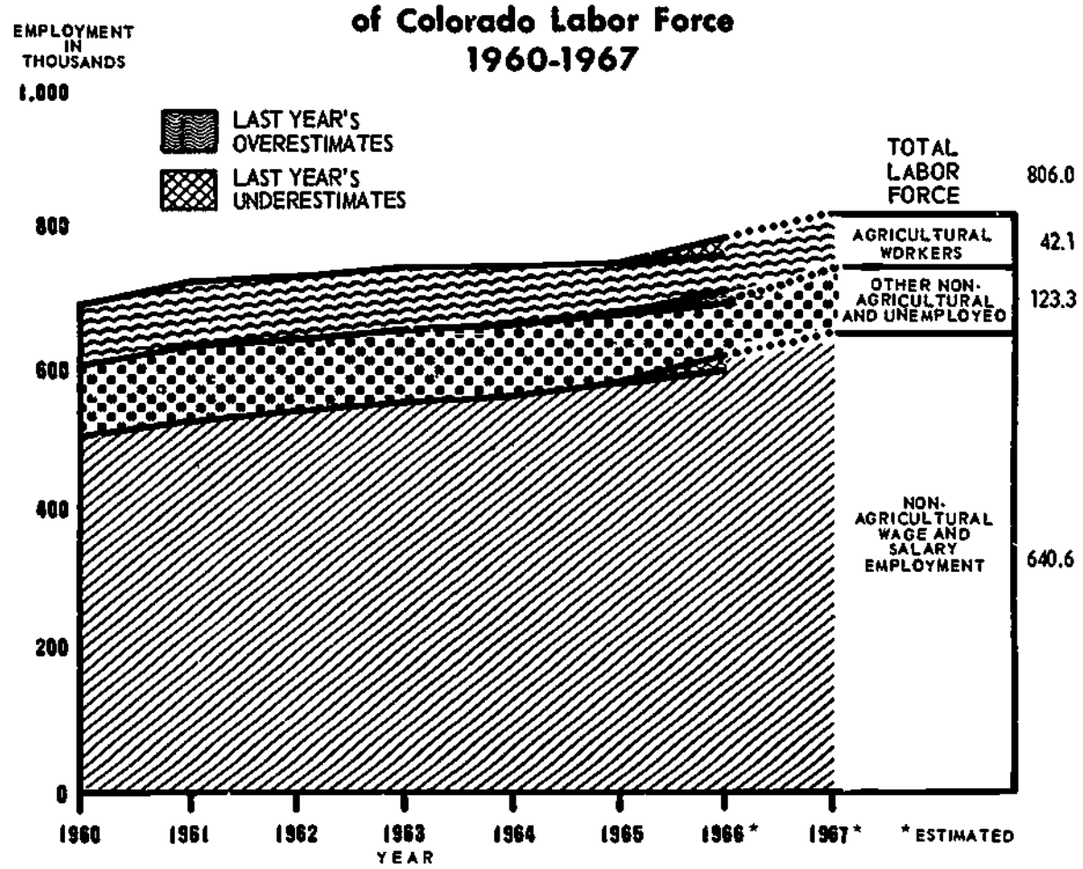
CHART 2
Components of Colorado Population Change
1950-1967



Although changes in the size and composition of the labor force are the result of economic activities in the individual parts of the economy, it will be helpful for us to take a broad-side look at what has happened to the total labor force and employment in Colorado in the last few years, and see what we expect for 1967. Total labor force data must, of necessity, be estimated. It is very difficult to define specifically at any one time those parts of the population which are active in the labor force. Our figures are those used by federal and state agencies that deal with these matters on a continuous basis.

Chart 3 reflects the relative importance of the three major sectors of the labor force and how these have been changing over this decade. The smooth upward trend is indicative of the total performance of Colorado's economy. Note the increasing importance of the non-agricultural wage and salary component of the total labor force. That group is expected to go above 640,000 in 1967.

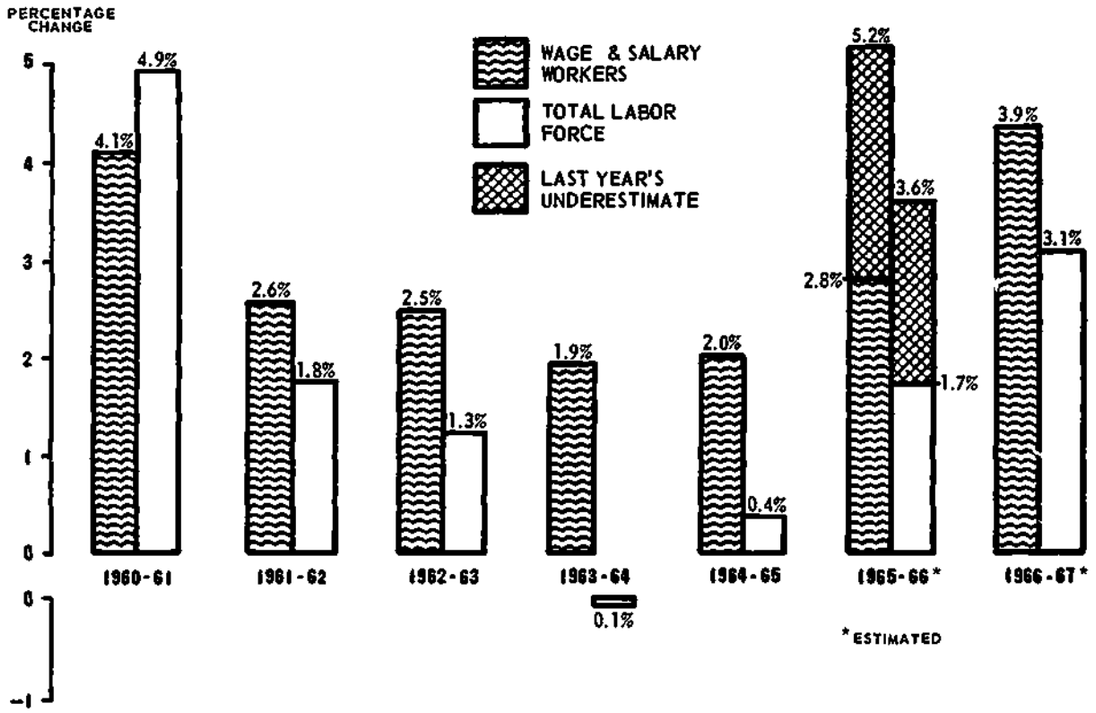
CHART 3
Major Components
of Colorado Labor Force
1960-1967



You can see from Chart 4 that we really underestimated the 1966 rate of growth in the number of wage and salary workers in the State, as well as in the total labor force. In looking through our somewhat fuzzy pair of glasses this time last year, we anticipated that 1966 would be a better year than 1965, and projected an increase in wage and salary workers of 2.8 percent. You see here that the actual rate of growth was almost double that. This healthy 5.2 percent increase in wage and salary workers for 1966 gives Colorado the highest annual rate of gain for any year during the decade - even better than the excellent gain between 1960 and 1961. You will note that this growth came from an increase in the labor force amounting to only 3.6 percent, and a population growth of 2.7 percent, as shown on an earlier chart. This means that a larger part of the population entered the labor force - perhaps more women, more older people and young workers taking jobs.

Population, Labor Force and Personal Income (continued)

CHART 4
Changes in Labor Force 1960-1967



In 1967, we are projecting another good year in the growing number of wage and salary workers. We don't expect to repeat the rate of change that occurred between 1965 and 1966. This 3.9 percent increase in the number of wage and salary workers projected for 1967 would give the state a gain of about 24,000 workers, as compared with a growth of 30,000 for 1966.

We do not need to say much about Chart 5, covering unemployment rates. It emphasizes the fact that, during this decade, Colorado's rate of unemployment, shown by the wavy bars, has been consistently below the national average, even during those years when the state's economy was not booming. During 1966, that rate dropped to the very favorable level of 3.3 percent. Even with a further expansion in job opportunities, we do not anticipate that this unemployment rate for 1967 can stay much below the 3.4 percent level.

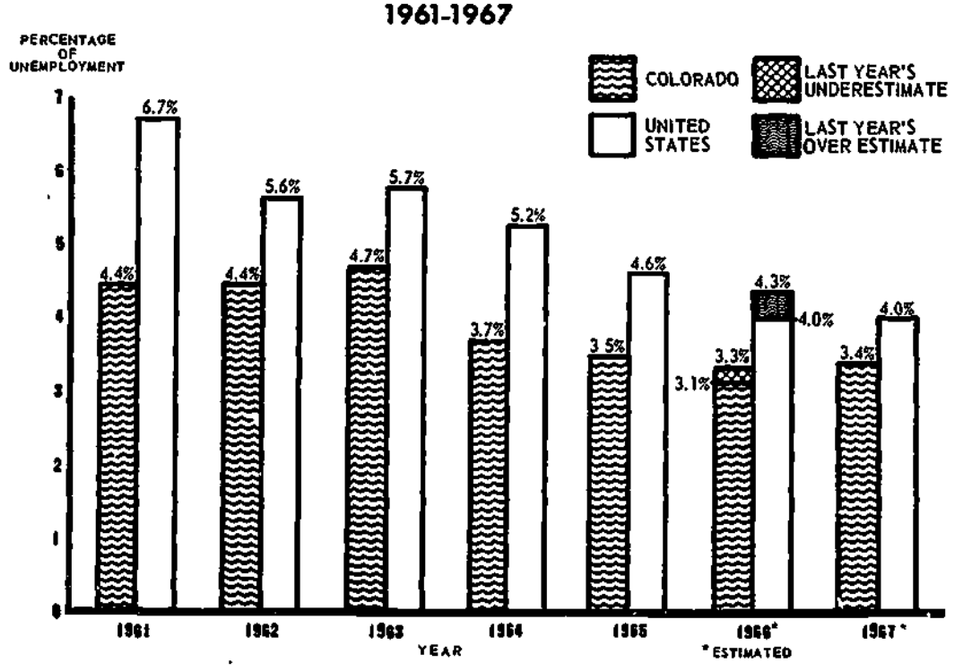
MAJOR COMPONENTS OF COLORADO LABOR FORCE
1960 - 1967
(in thousands)

Year	Non-Agri. Wage & Salary Workers	Other Non-Agri. Workers	Total Non-Agri. Workers	Agri. Workers	Unemployed	Total Labor Force
1960	515.4	96.1	611.5	58.6	25.7	695.8
1961	536.7	102.4	639.4	58.9	31.9	730.2
1962	550.5	100.9	651.9	59.2	32.5	743.6
1963	564.0	99.3	663.2	54.8	35.1	753.4
1964	574.8	100.0	674.8	49.9	27.8	752.5
1965	586.1	97.1	683.2	45.5	26.6	755.3
1966*	616.6	95.5	712.1	44.4	25.6	782.1
1967*	640.6	96.0	736.6	42.1	27.3	806.0

* - Estimated

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Colorado Department of Employment and Colorado Business/Economic Outlook Committee.

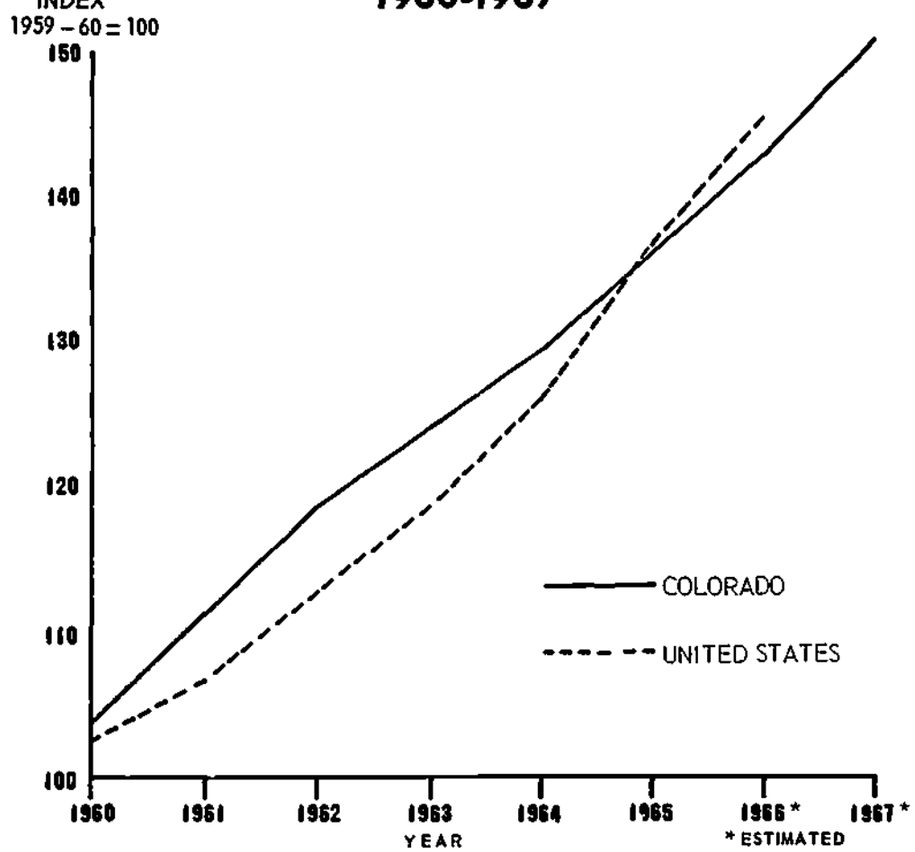
CHART 5
Unemployment Rate Colorado and United States
1961-1967



Population, Labor Force and Personal Income (continued)

The total spending power of our citizens is always an important criterion for economic well-being. Using the years 1959 and 1960 as base years, Chart 6 reflects what has happened to personal income in Colorado, as compared with the national picture. During the first several years of this decade, Colorado's rate of growth in personal income was above the national average. However, our lean growth years, while the remainder of the nation was expanding at a substantial rate, caused these lines to cross in 1965. The average per capita income in the state in 1964 fell below the national average for the first time in the decade. Our estimates indicate that, for 1967, Colorado's per capita personal income will be about equal, or slightly below, the national figure.

CHART 6
Index of Personal Income
Colorado and United States
1960-1967



TOTAL PERSONAL AND PER CAPITA INCOME

COLORADO AND UNITED STATES 1960-1967

Year	COLORADO		UNITED STATES	
	Total Personal (000, 000)	Per Capita	Total Personal (000, 000)	Per Capita
1960	$4, 022	$2, 275	$398, 725	$2, 215
1961	4, 299	2, 343	414, 411	2, 264
1962	4, 566	2, 425	440, 192	2, 368
1963	4, 750	2, 483	463, 053	2, 455
1964	4, 967	2, 559	493, 408	2, 579
1965	5, 283	2, 710	535, 000	2, 760
1966*	5, 686	2, 812	580, 000	2, 944
1967*	6, 076	2, 945	**	**

* - Estimated
** - No estimates made for United States

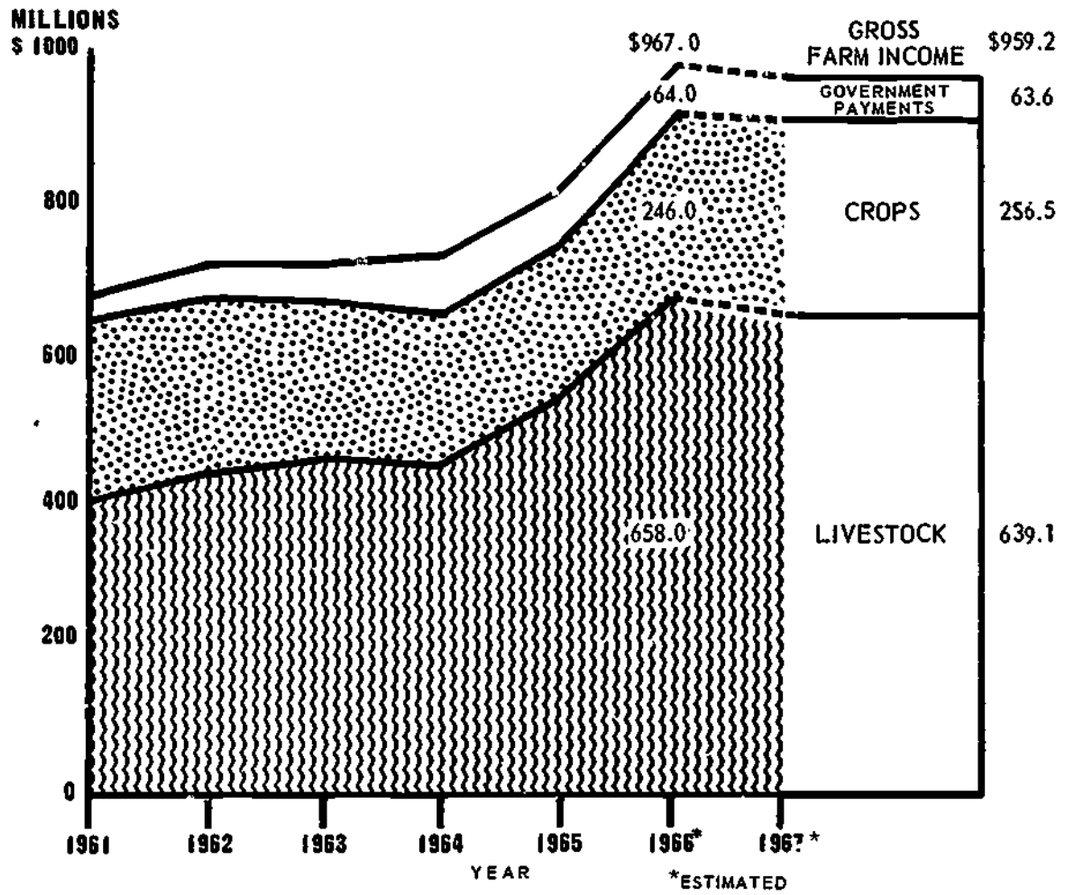
SOURCE: U.S. Department of Commerce, Office of Business Economics, and Colorado Business/Economic Outlook Committee

Agriculture

Now we would like to review the changes that are occurring in Colorado's agricultural sector. Although the number of persons employed in agriculture has declined steadily in recent years, what happens to the state's agriculture is still very influential in the State's economic welfare.

Chart 7 shows Colorado changes in total agricultural cash receipts since 1961. After moving laterally for a period of three years, cash receipts from agricultural production enjoyed a sharp upturn between 1964 and 1966.

CHART 7
Agricultural Cash Receipts in Colorado
1961-1967



Our estimate for income from livestock for 1966 proved to be pessimistic. We had estimated receipts from livestock for the year to be $553 million. As of now, we are revising this figure for 1966 up to a level of $658 million, an impressively large increase. Conversely, our estimate for receipts from crops proved too optimistic. Our original 1966 estimate of $293 million has been reduced to $246 million. The late spring freeze reduced the income from fruit production. Similarly, the original estimate of government payments for 1966 of $75 million has dropped to $64 million. When you put all this together, we get a total cash receipt from agriculture for 1966 of $967 million, which was $46 million above our projection of $921 million.

AGRICULTURAL CASH RECEIPTS IN COLORADO - 1961 to 1967

(millions of dollars)

Year	Livestock	Crops	Government Payments	Gross Farm Income
1961	$402.6	$239.4	$30.3	$672.3
1962	441.2	234.9	40.2	716.3
1963	465.0	206.0	43.3	714.3
1964	462.9	190.7	57.8	711.4
1965	534.5	193.7	61.3	789.5
1966*	658.0	245.6	63.6	967.2
1967*	639.1	256.5	63.6	959.2

* - Estimated

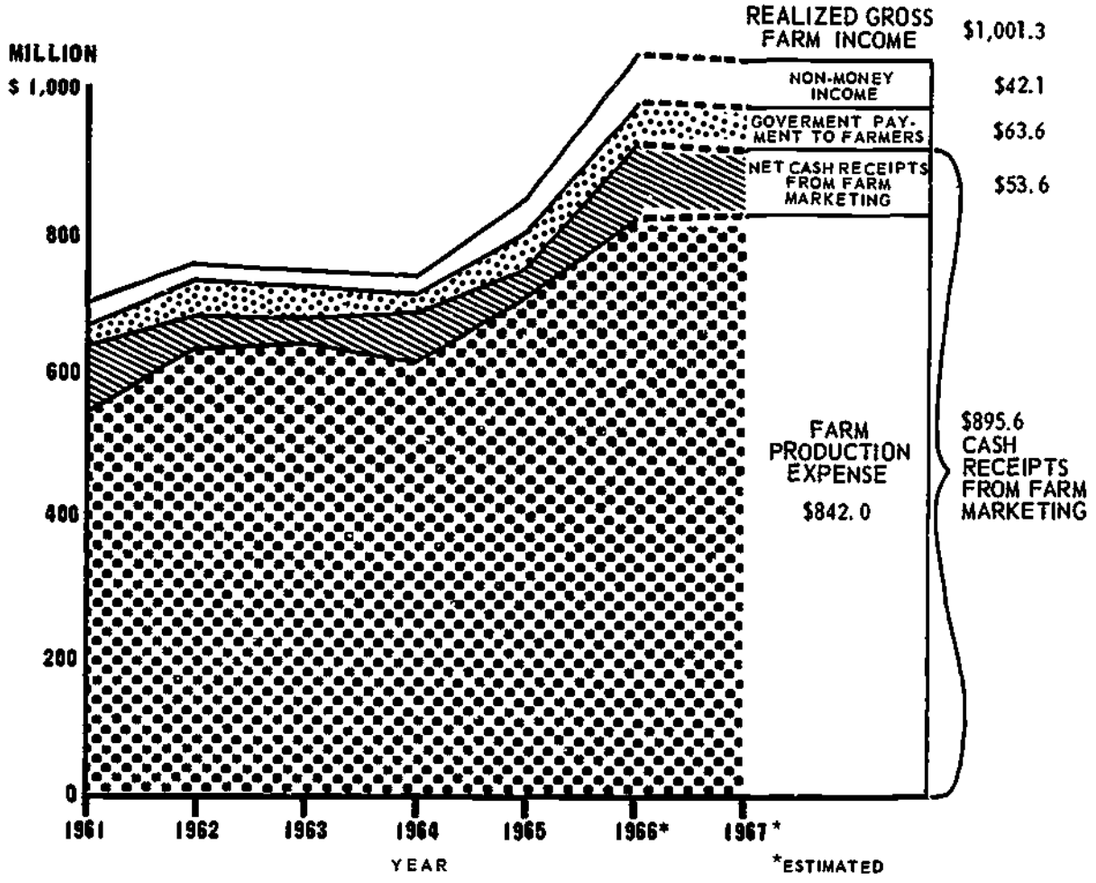
SOURCE: Colorado Crop & Livestock Reporting Service and Colorado Business/Economic Outlook Committee.

Looking to 1967, our committee does not think that things can continue to be quite this good. They feel that the number of farms will decline, but that the average size of farms will increase. Total cash farm income will probably drop below 1966 levels to an estimated $959 million.

Agriculture (continued)

Chart 8 gives the relationship between receipts and expenses for farmers. While production expenses have expanded, gross farm income has climbed even faster. Thus, the total of the top three portions of this chart reflect the well-being of the farmers. Non-money income, plus government payments, plus the excess of cash receipts from sale of farm products over expenses are included in that total. Here we see that for 1967, we expect gross income to exceed the $1 billion level. Of that total, $842 million will go for farm production expense, leaving a sort of net income for farmers of $159 million.

CHART 8
Colorado Farm Income and Farm Expenses
1961-1967



COLORADO FARM INCOME AND EXPENSES - 1961 to 1967

(Millions of Dollars)

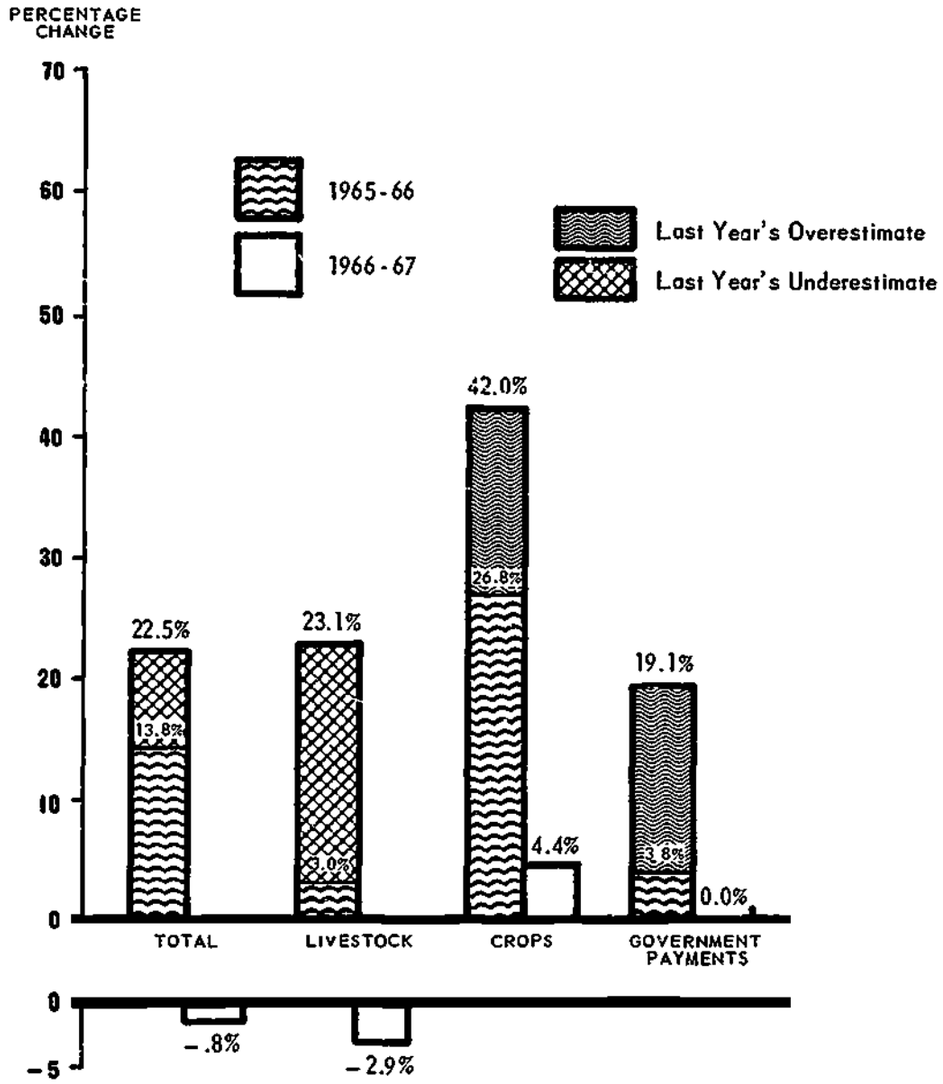
Year	Cash Receipts from Farm Marketing	Government Payment to Farmers	Non-Money Income	Realized Gross Farm Income	Farm Production Expense	Realized Net Income
1961	$642.0	$30.3	$34.1	$706.4	$566.0	$140.5
1962	676.1	40.2	34.8	751.2	621.7	129.5
1963	671.0	43.3	35.4	749.7	630.9	118.8
1964	653.6	57.8	35.6	747.1	601.1	145.9
1965	728.2	61.3	40.8	830.2	706.3	123.8
1966*	903.7	63.6	41.4	1,008.7	840.0	168.7
1967*	895.6	63.6	42.1	1,001.3	842.0	159.3

* - Estimated
Note: Details may not add up to totals due to rounding.

SOURCE: Colorado Crop and Livestock Reporting Service and Colorado Business/Economic Outlook Committee.

Expected changes in agricultural cash receipts for the coming year, as compared with those for the current year are summarized in Chart 9. The wavy bars show 1965 to 1966 changes. Note that we underestimated total cash receipts for 1966. Our projection was for an increase of 13.8 percent while the actual was 22.5 percent. Note the projected small decline for 1967 in that total. It was in the livestock sector that our estimate was so far off for 1966. That projected 3 percent increase looks now to be above 23 percent. But for 1967, we estimate an absolute decline in livestock receipts of 2.9 percent. In the case of crops, we overestimated 1966 changes. Our projection of 42 percent has been cut back to 26.8 percent. We do expect an increase from crop sales in 1967, but only by 4.4 percent. Similarly, our estimated increase in government payments proved too large. The actual 3.8 percent increase in 1966 was much below the guesstimate of 19.1 percent. The committee expects government payments in 1967 to hold at the 1966 level.

CHART 9
Expected Changes in Agricultural Cash Receipts 1965-66 and 1966-67



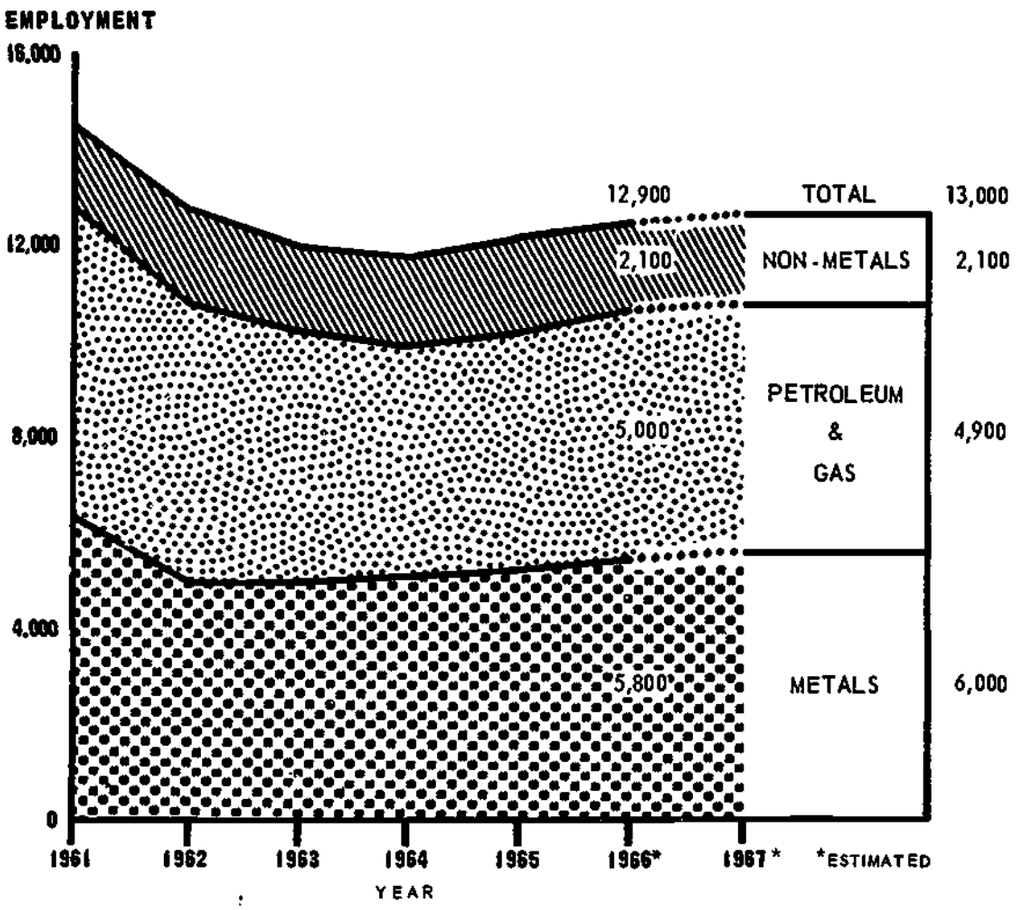
Although this picture might not indicate a high degree of optimism, the committee does think that it reflects a very favorable situation. The continued increase in demand for all agricultural products in Colorado and the probable increase in income from wheat resulting from substantial increases in acreage allotments, are both on the plus side. There is also a prospective increase in sugar beet acreage for 1967 which would add to crop income. With normal weather, the income from fruits should reflect a substantial gain from the poor harvest caused by the freeze in 1966. On the negative side, reduced numbers of cattle, even with high market prices, will reduce livestock income. Probability of lower egg prices and less than record yields in certain grain products may also act as limiting factors.

Mining

Another of Colorado's traditional industries is mining. Let's examine the results to see how close we were in our projections for this industry.

The mining industry had an average annual employment in 1966 of 12,900, as compared with our projection of 12,500 (see Chart 10). The total for 1967 is expected to expand only slightly to 13,000 persons. It is expected that employment in metals will increase about 200 persons; there will be a decrease of 100 in oil and gas while the remaining segment of the industry will hold its 1966 level.

CHART 10
Mining Employment in Colorado
1961-1967



MINING EMPLOYMENT IN COLORADO

1961-1967

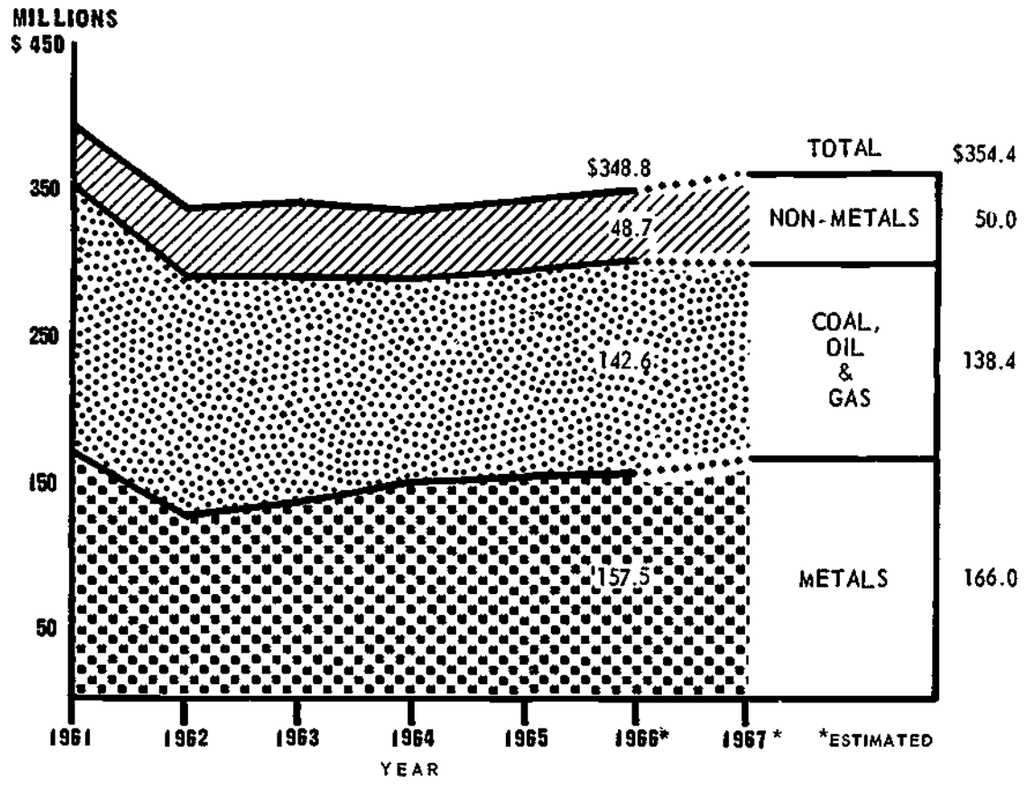
Year	Metals	Non-Metals	Petroleum and Natural Gas	Total Mining Employment
1961	6,400	2,000	6,100	14,500
1962	5,000	1,900	5,800	12,700
1963	5,000	1,800	5,200	12,000
1964	5,200	1,900	4,800	11,900
1965	5,500	2,000	4,900	12,400
1966*	5,800	2,100	5,000	12,900
1967*	6,000	2,100	4,900	13,000

* - Estimated

SOURCE U.S. Department of Labor, Bureau of Labor Statistics; Colorado Department of Employment and Colorado Business/Economic Outlook Committee.

Chart 11 shows value of mineral production. We see no reason to change our original 1966 figures. In fact, our current total for 1966 is within $300,000 of the original estimate, or less than one-tenth of 1 percent off. For 1967, we expect a net gain in value of minerals produced of $5.6 million. The gain of $8.5 million in metals will offset an expected decline of $4.2 million in the petroleum and coal sector.

CHART 11
Value of Mineral Production in Colorado
1961-1967



The Bar Chart on the next page (Chart 12) summarizes expected changes between 1966 and 1967. With very little increase in total employment, the total value of mineral production is expected to rise only 1.6 percent. However, there will be a different mix in the total. The value of metals produced should increase by 5.4 percent, while it is expected that the total output of oil and gas will decline 4.3 percent.

Hourly earnings in the industry should increase at about the same pace with other industrial groups, and the average work week is expected to remain above 40 hours per week due to a shortage of experienced miners. In general, it is expected that mineral production will show a slight increase each year as new properties enter production. Offsetting this will be a steady and gradual decease in petroleum production due to field depletion, and fewer new discoveries to counterbalance abandonment.

The bottom part of Chart 12 shows the estimates of changes in physical output of the various products. Expected declines are reflected in crude oil, a slight increase in natural gas, some notable increases in coal, copper and other metals Silver production is expected to increase 25 percent.

VALUE OF MINERAL PRODUCTION IN COLORADO

1961-1966

(in millions of dollars)

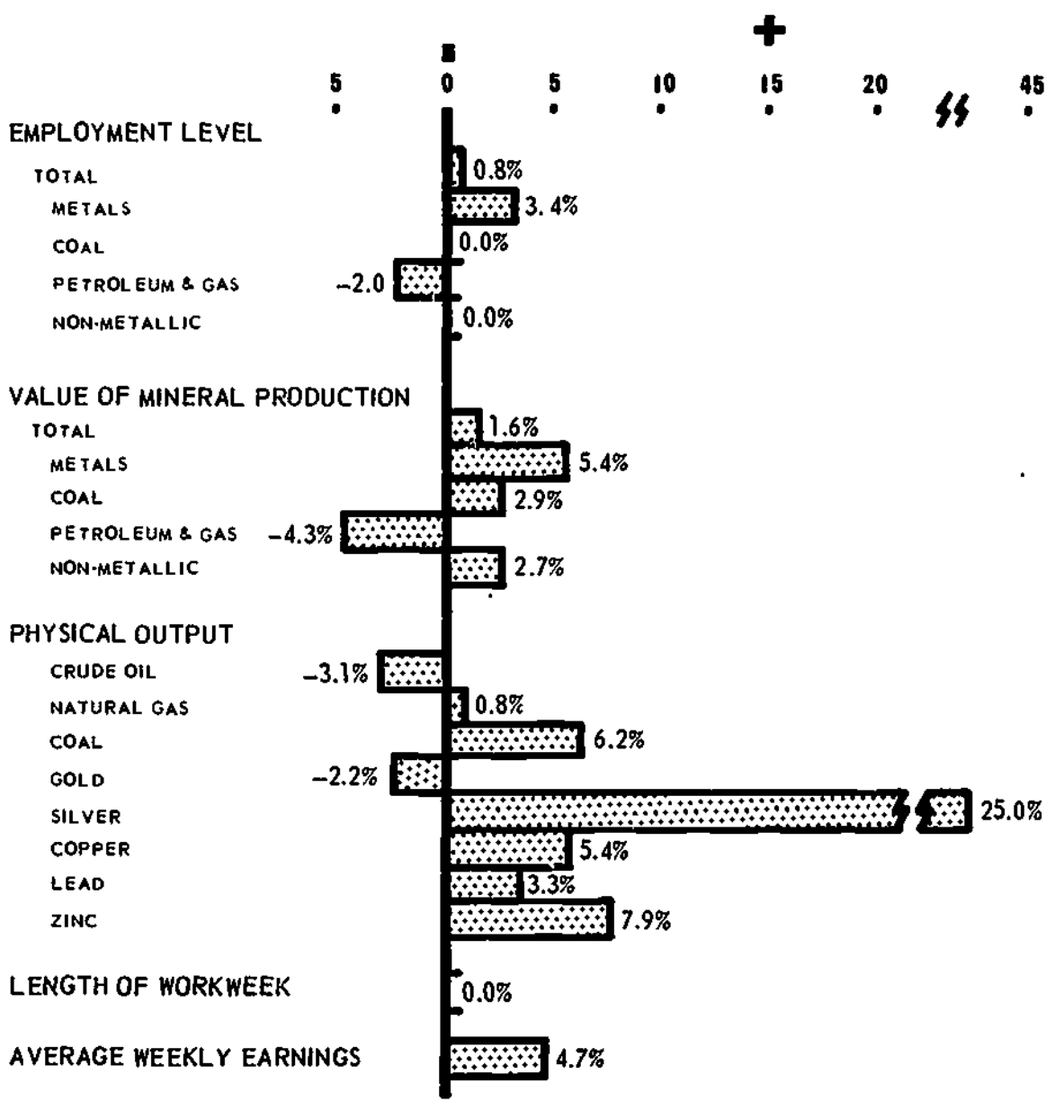
Year	Metals	Non-Metals	Coal, Oil and Gas	Total
1961	$170.2	$43.5	$183.0	$396.7
1962	126.8	46.7	164.0	337.5
1963	139.5	47.9	153.5	340.9
1964	150.1	47.6	140.3	338.0
1965	154.3	47.8	143.2	345.4
1966*	157.5	48.7	142.6	348.8
1967*	166.0	50.0	138.4	354.4

* - Estimated

SOURCE: Colorado Bureau of Mines and Colorado Business/Economic Outlook Committee.

Mining (continued)

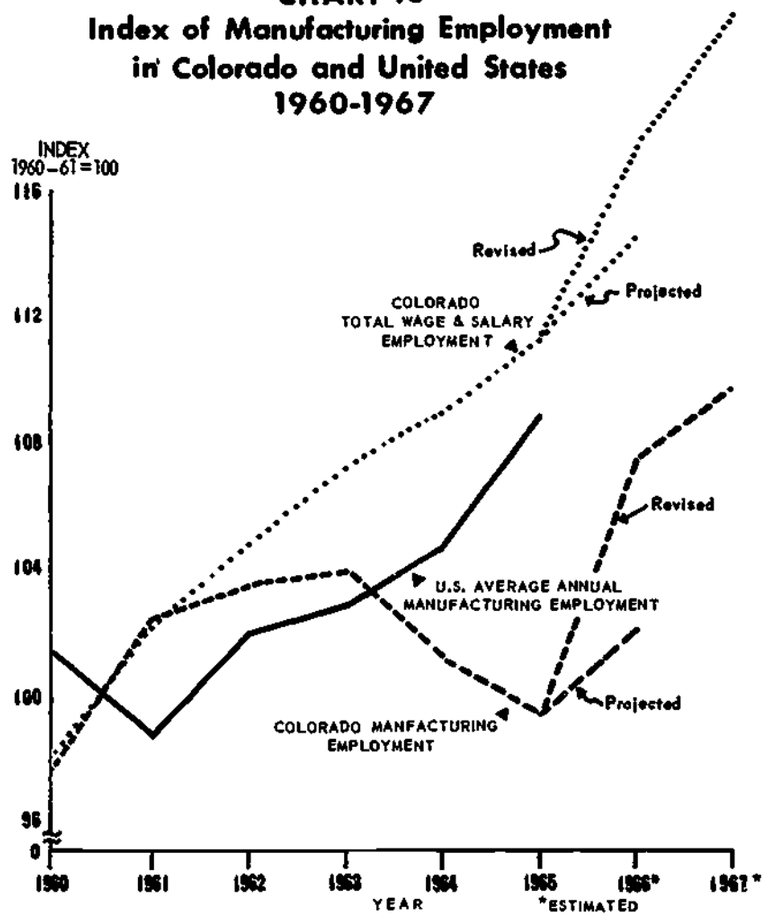
CHART 12
Expected Changes in Colorado Mining Industry 1966-67



Manufacturing

In recent years, it has been the changes in manufacturing employment that have caused the swings in the total Colorado economy. The state depends upon an expanding manufacturing base to absorb an increasing population.

CHART 13
Index of Manufacturing Employment in Colorado and United States 1960-1967



Here is a quick summary of how the total picture in manufacturing employment has varied in the recent past. The top line of Chart 13, total non-agricultural wage and salary workers in Colorado, has followed a very firm upward trend. The bottom broken line represents Colorado wage and salary workers in manufacturing. The solid line represents changes in manufacturing employees for the nation. In the early part of the decade, when the national picture in manufacturing employment was weak, Colorado's total was moving firmly upward.

Manufacturing (continued)

But between 1963 and 1965, on an index basis, average annual employment in manufacturing for the nation climbed, while Colorado showed an absolute decline. Fortunately, the last year has reversed that trend in a very dramatic way. We are happy to report that our committee underestimated, to a significant extent, the rate at which manufacturing employees were added in Colorado during 1966.

INDEX OF MANUFACTURING EMPLOYMENT IN

COLORADO AND UNITED STATES 1960-1967

(1960-61 = 100)

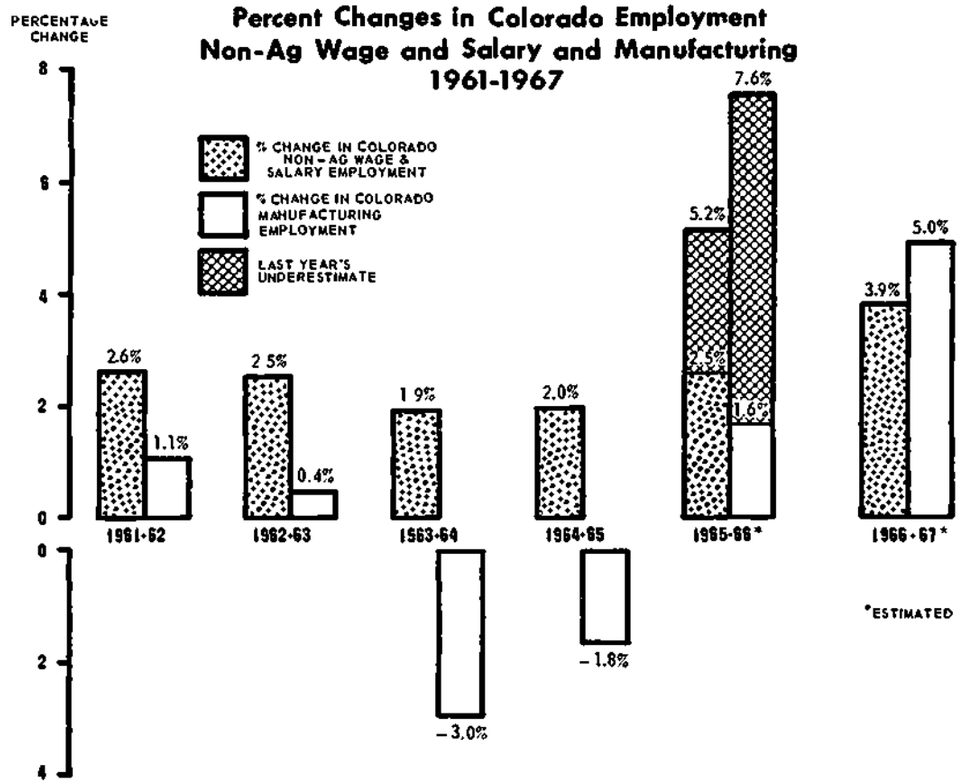
Year	Index of U.S. Average Annual Employment in Manufacturing	Index of Colorado Manufacturing Employment	Index of Colorado Wage and Salary Employees
1960	101.42	97.55	97.97
1961	98.58	102.34	102.01
1962	101.76	103.45	104.64
1963	102.62	103.89	107.20
1964	104.21	100.78	109.26
1965	108.59	99.00	111.40
1966*	**	106.56	117.20
1967*	**	109.68	121.76

* - Estimated
** - No estimates made for United States

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics; Colorado Department of Labor and Colorado Business/Economic Outlook Committee.

As you can note from Chart 14, it has been primarily industrial groups other than manufacturing which have accounted for the growth in Colorado's wage and salary workers. The dotted bars show changes in total wage and salary workers while the unshaded bars represent manufacturing changes. The negative figures in manufacturing employment between 1963 and 1964 - and between 1964 and 1965 - are reflected here again. Our committee did expect a turn-around in this trend and thought we were fairly brave in predicting a 1.6 percent overall increase in annual employment in manufacturing for 1966. But look what happened! The average number of workers in manufacturing in 1966 jumped by 7.6 percent, helping to push the total number of non-agricultural wage and salary workers up 5.2 percent. When measured by these employment variables, Colorado had its best year for the entire decade.

CHART 14
Percent Changes in Colorado Employment
Non-Ag Wage and Salary and Manufacturing
1961-1967



We would like to be equally optimistic for 1967, but we do not expect that this rate of acceleration will continue. We are suggesting a 5 percent increase in manufacturing employment and an overall increase of 3.9 percent in non-agricultural wage and salary workers. That 5 percent rate of gain, if it materializes, would be the second best of this decade, and would carry average employment in manufacturing over the 100,000 mark.

Manufacturing (continued)

The tabulation in Chart 15 summarizes the projected and revised changes for 1966 - and gives projections for 1967. In terms of total number of employees, the machinery group, including electrical and non-electrical machinery, recorded the highest increment in employment for 1966 - a total of 4,800 employees. The textiles, apparel, and leather group had an increase of 1,000 persons, the food and kindred products 300 employees, the printing and publishing industries 300 employees, the lumber and wood products 300 employees, the fabricated metal products 200 employees, the chemical and allied products 100 employees, and transportation equipment 400 employees. This information by industry group indicates the extent to which we misguessed on behavior of individual segments of the manufacturing industry. Two industry groups that we expected to register a small increase in employment, actually ended up with a decrease. These were ordnance and accessories - and the stone, clay and glass products group.

CHART 15
Projected Increments in Employment by Industry Groups
1965 TO 1967

INDUSTRY GROUP	CHANGE 1965 TO 1966 Projected	Revised	PROJECTED CHANGE 1966 to 1967
Machinery	1,100	4,800	3,300
Food & Kindred Products	-0-	300	– 100
Textiles, Apparel, & Leather	-0-	1,000	200
Printing, Publishing, & Allied Industries	-0-	300	200
Chemicals & Allied Products	– 100	100	-0-
Rubber & Misc. Plastic Products	-0-	-0-	100
Ordnance & Accessories	100	– 400	– 100
Lumber & Wood Products	100	300	300
Stone, Clay, & Glass Products	100	– 300	300
Primary Metal Industries	100	-0-	100
Fabricated Metal Products	-0-	200	100
Transportation Equipment	100	400	200

MANUFACTURING EMPLOYMENT BY INDUSTRY GROUPS

1961-1967

(In Thousands)

Industry Group	1961	1962	1963	1964	1965	1966*	1967*
Machinery, including Electrical	8.6	9.2	9.2	9.9	11.9	16.7	20.0
Food & Kindred Products	19.0	19.2	19.1	18.7	18.3	18.6	18.5
Textiles, Apparel & Leather	3.7	4.0	4.5	4.5	5.0	6.0	6.2
Printing, Publishing & Allied Industries	7.8	8.0	8.2	8.0	8.2	8.5	8.7
Chemicals & Allied Products	2.2	2.1	2.1	2.2	2.1	2.2	2.2
Rubber & Misc. Plastic Products	5.3	5.3	4.9	5.1	5.1	5.1	5.2
Ordnance & Accessories	17.4	16.4	16.4	13.7	9.5	9.1	9.0
Lumber & Wood Products	3.3	3.5	3.7	3.4	3.4	3.7	4.0
Stone, Clay & Glass Products	4.8	5.1	5.4	5.5	5.3	5.0	5.3
Primary Metal Industries	8.8	8.2	8.2	8.2	8.7	8.7	8.8
Fabricated Metal Products	3.2	3.4	3.5	3.7	3.5	3.7	3.8
Transportation Equipment	3.6	4.1	3.7	3.3	3.6	4.0	4.2
Other Durable & Nondurable Goods	4.3	4.5	4.5	4.4	4.4	4.5	4.7
TOTAL	92.0	93.0	93.4	90.6	89.0	95.8	100.6

* - Estimated

SOURCE U.S. Department of Labor, Bureau of Labor Statistics; Colorado Department of Employment and Colorado Business/Economic Outlook Committee.

Manufacturing (continued)

Conversations between committee members and key officials in a number of manufacturing firms reveal varying degrees of optimism for 1967 among industry groups. We expect the machinery products group, including electrical machinery, to have the largest net gain in employment again in 1967. Almost all of the principal firms in the electrical group expect to expand output and increase employment in 1967. The total increment should be 3,300 employees. A majority of the firms felt that the employment gains would be gradual and would, in part, depend upon their success in recruiting and training the needed workers. Within the textile group, product development work is going on, but mechanization is expected to expand output faster than employment, giving an estimated growth of 200 employees. The apparel industries are under pressure from competition from larger firms, and expect to just about hold their present levels of employment. The lumber and wood products group depends upon geographical factors and freight rates to compete with outside industry. Thus expanded local demand resulting from general growth should provide some expansion in sales, and a 300 person increase in employment. Based upon factors known at this time, the major firms in the ordnance industry expect very little change in employment levels - either up or down - for 1967.

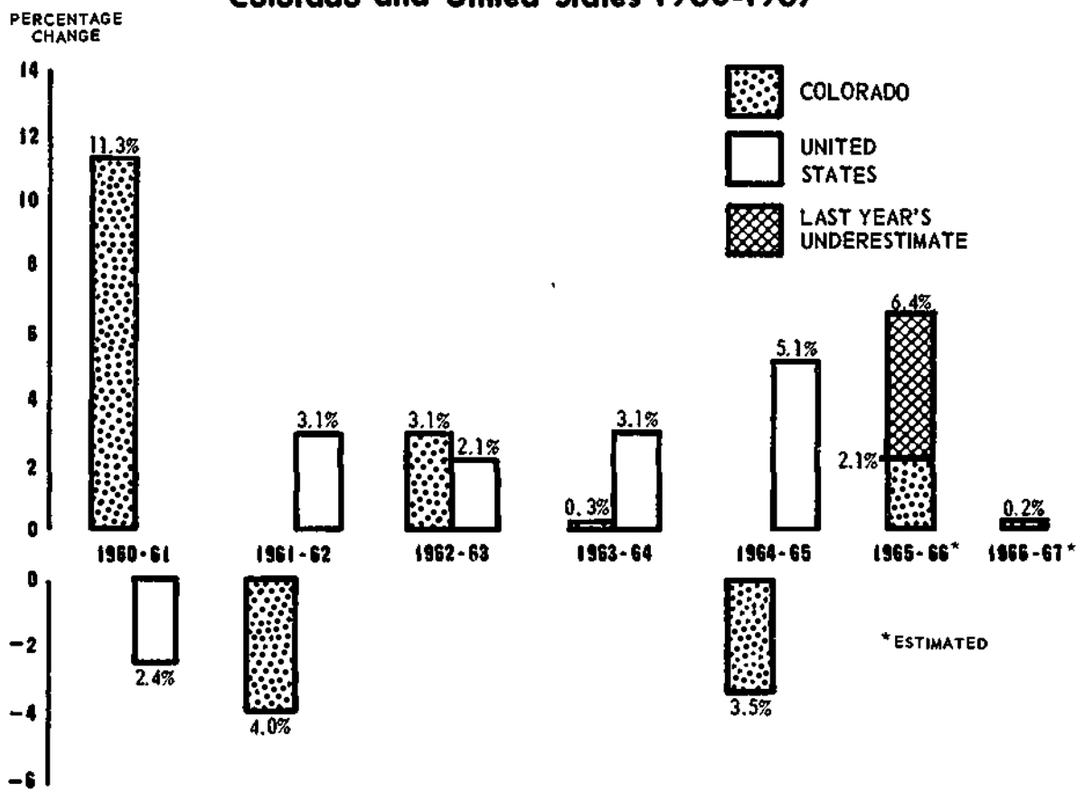
Average hourly earnings in manufacturing increased approximately 2.8 percent in 1966. We expect that to move up well above the 3 percent mark for 1967. Naturally, there are wide variations between industry groups in the rate of change in hourly earnings. The same is true for average weekly earnings.

Construction

This next broad sector of Colorado's economy is perhaps the most difficult of all to project. Certainly within the last decade, the construction industry has been a major employer in Colorado's labor market, and what happens in this industry has a very immediate effect upon the state's over-all prosperity.

As a result of some obvious out-of-phase timing of residential construction in the metropolitan area with sudden declines in manufacturing employment, the residential sector of the industry has been under pressure for several years. When this factor is combined with the effect of shortages in the availability of mortgage money, the total impact is obvious. However, when we talk of the construction industry, we are combining building, both residential and non-residential, with non-building construction.

CHART 16
Percent Change
Average Annual Employment in Construction
Colorado and United States 1960-1967



Construction (continued)

Year-to-year changes in construction employment in Colorado compared with the nation are emphasized in Chart 16, the dotted bars representing Colorado. In two years of the decade there have been absolute declines in the average annual employment in the industry. In both of these instances, we were running contrary to the national pattern. Thus, we must be careful not to over-emphasize the 6.4 percent increase for 1966 over 1965. What we are doing here is comparing the very poor 1965 with a somewhat better 1966, and the percentage change looks large. You will note, that for the first Forum presentation, our committee had forecast only a 2.1 percent gain for 1966 - but 1965 ended up lower than we had anticipated, and so the year to year percentage change became larger.

INDEX OF AVERAGE ANNUAL EMPLOYMENT IN CONSTRUCTION

COLORADO AND UNITED STATES 1960-1967

(1959-60 = 100)

Year	Colorado	United States
1960	99.7	98.7
1961	111.0	96.3
1962	106.5	99.3
1963	109.8	101.4
1964	110.1	104.6
1965	106.3	109.9
1966*	113.1	**
1967*	113.3	**

* - Estimated
** - No Estimates made for United States

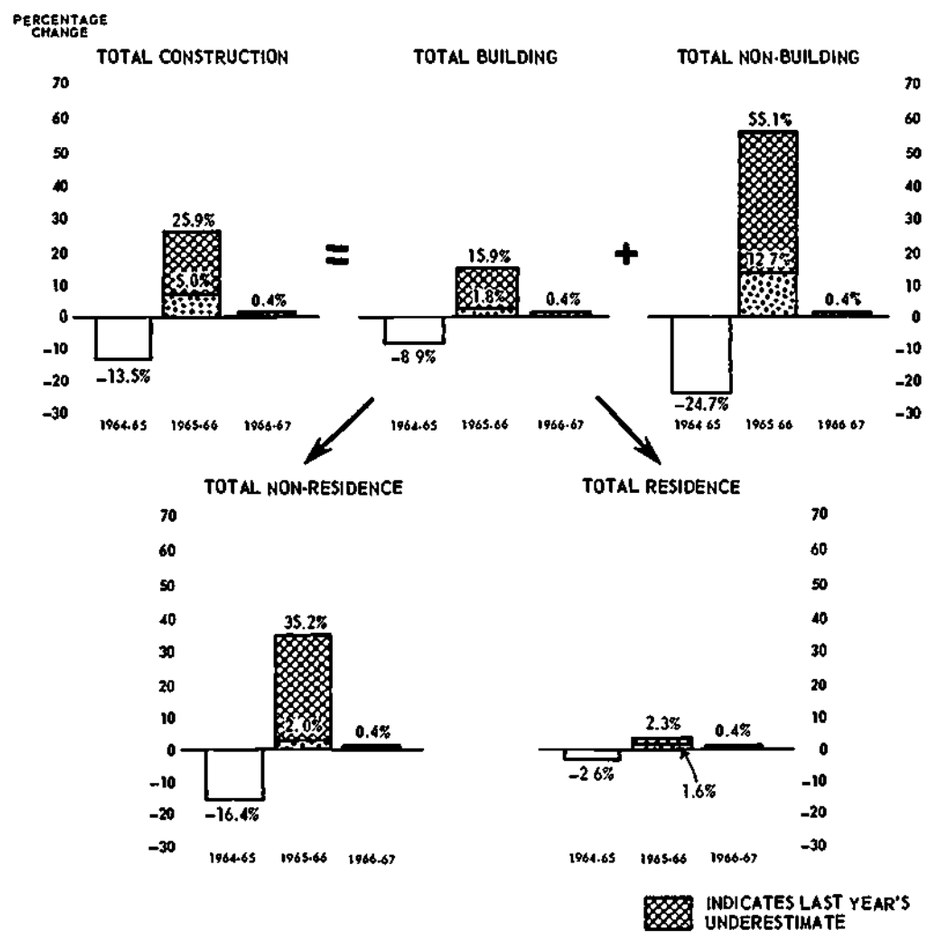
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics; Colorado Department of Labor and Colorado Business/Economic Outlook Committee.

Our construction committee expects 1967 to be better than 1966, but not by any substantial margin. Although not shown on the chart, the dollar value of the several classes of construction did increase in 1966 over 1965, and the committee expects the 1966 level of value to be maintained for 1967.

Chart 17 shows year-to-year changes in the value of construction among the several sectors of the industry. Across the top we have total construction, and its two major components, building and non-building. The bottom part breaks the building total into residence and non-residence. In each instance we have percentage changes shown for the past two years, and the right hand bar in each group shows our projected changes for 1967. You see that we underestimated 1966 changes for total construction, especially for non-building construction and non-residence building.

CHART 17

Percent Change in Types of Construction in Colorado 1964-1967



Construction (continued)

VALUATION OF TOTAL CONSTRUCTION IN COLORADO, BY TYPE

1960 to 1967

(Thousands of Dollars)

Year	Total	Building		Non-Building
		Residence	Non-Residence	
1960	$460,733	$241,937	$123,262	$95,534
1961	549,789	305,062	149,412	95,315
1962	667,108	317,600	200,299	149,209
1963	684,086	266,636	208,102	209,348
1964	675,905	262,073	216,013	197,819
1965	584,624	255,173	180,498	148,953
1966*	736,122	261,122	244,000	231,000
1967*	739,180	262,180	245,000	232,000

* - Estimated

SOURCE: F. W. Dodge Company, Division of McGraw-Hill, Inc., and Colorado Business/Economic Outlook Committee.

The committee sees only limited prospects for relief during 1967 for the construction industry. On the positive side, the demand for housing will expand as manufacturing and other employment grows. However, with a modest projection in population growth and prospects for continuing tight money that will be felt well into 1967, building is not likely to pick up. Even if the money situation does ease toward the second quarter of 1967, the construction industry would not benefit immediately, because of the time lag between commitment and actual construction.

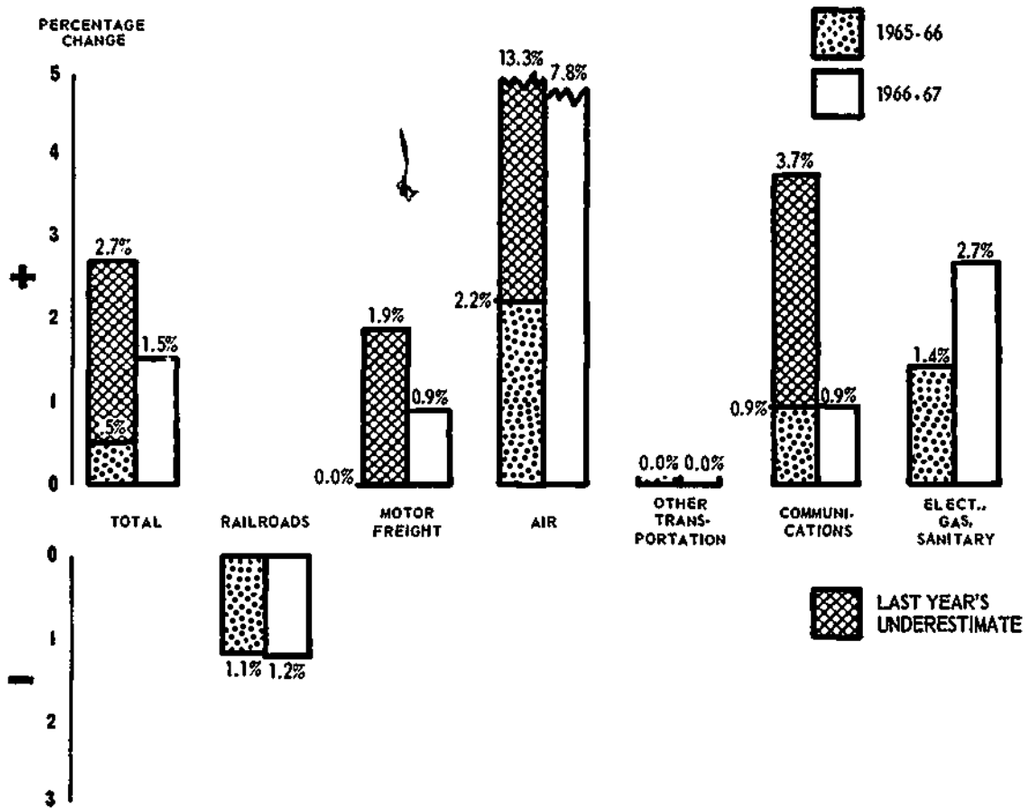
In the non-building segments and in non-residential construction, there does not appear to be any strong grounds for optimism. Labor agreements extending through March 1, 1969 should provide good labor-management relationships. In addition, activity caused by air and water pollution control projects might begin to have some effect in 1967. On the negative side, the large Homestake Project is nearing completion. Little, if any, work will be under way on the Chatfield Dam since engineering and right-of-way work must be complete before actual construction is undertaken. Flood damage repairs have been completed to the highways. Although it is difficult to measure, the elimination of the investment credit, changes in depreciation allowance rules under the new federal law, plus the continuing tight money will have some negative effect on the non-residential construction within the state.

Transportation, Communications and Public Utilities

Another large employer in Colorado is the transportation and public utilities industries. In total, this is a stable industry, showing modest year-to-year changes in employment. Individual segments of the industry do show wider variations from year-to-year.

We had projected an increased employment in the industry for 1966 of less than 1/2 percent. The 1966 data, note Chart 18, reveal that we were too pessimistic. The total employment in the industry increased by 2.7 percent, from 44,500 employees to 45,700. Employment by the railroads does continue to decline slightly each year. Our projection of a decline of 1.1 percent proved to be approximately correct. The rail transportation industry is losing about 100 employees per year in the state and will continue to do so in 1967.

CHART 18
Expected Changes in Employment in Transportation, Communications and Public Utilities in Colorado 1965-66 and 1966-67



The motor freight transportation and warehousing group added a net of 200 workers, a 1.9 percent growth. Actually, the committee had projected a level pattern of employment for 1966. We feel that for 1967 the industry will add an average of about 100 workers.

EMPLOYMENT IN TRANSPORTATION, COMMUNICATIONS AND PUBLIC UTILITIES
1961-1967
(In Thousands)

Industry Group	1961	1962	1963	1964	1965	1966*	1967*
Railroad Transportation	9.4	9.3	9.1	9.0	8.8	8.7	8.6
Trucking & Warehousing	10.6	10.9	10.9	10.8	10.6	10.8	10.9
Air Transportation	4.5	4.4	4.1	4.3	4.5	5.1	5.5
Other Transportation	2.2	2.3	2.3	2.3	2.3	2.3	2.3
Communication	10.2	10.2	10.6	10.9	10.9	11.3	11.4
Electric, Gas & Sanitary Services	6.8	6.9	7.1	7.3	7.4	7.5	7.7
TOTAL	43.7	44.0	44.1	44.6	44.5	45.7	46.4

* - Estimated

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics; Colorado Department of Employment and Colorado Business/Economic Outlook Committee.

Transportation, Communications and Public Utilities (continued)

Although in terms of employment, it is only about half the size of the rail and motor freight segments of the industry, the air transportation industry is growing at a more rapid pace. Employment in 1966 jumped 13.3 percent, a rate considerably above what the committee had projected. Expanded employment in connection with the completion of Stapleton Airport accounts for a part of that large gain. For 1967, a further increase of 7.8 percent in employment in air transportation is expected. There will be increased flight training at Stapleton.

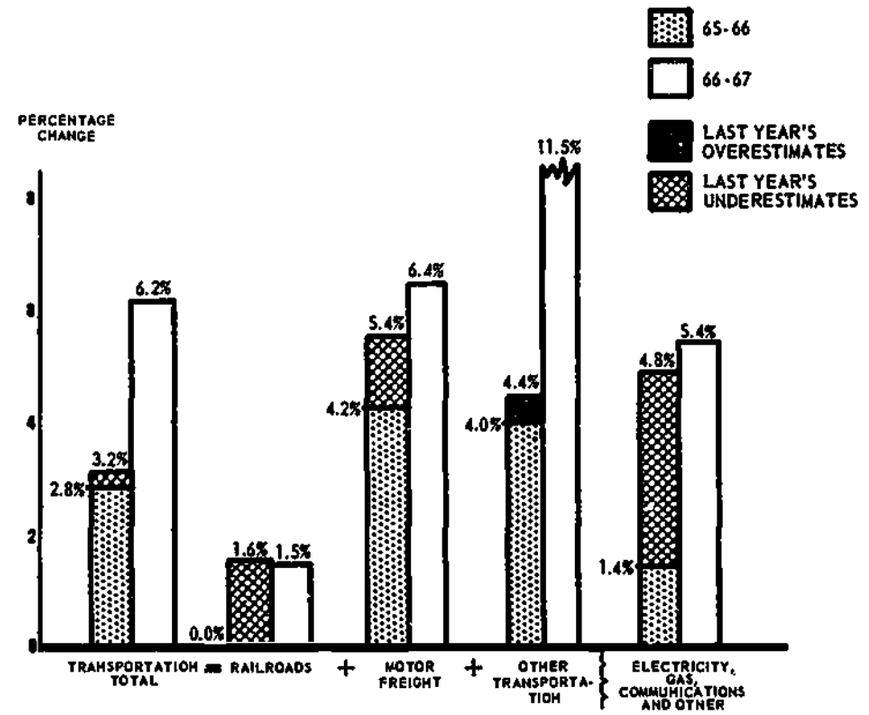
The through Northwest-Southwest route being authorized should expand activity. Also, jet aircraft additions to all fleets will require an expansion of service personnel. Heavy cargo movements associated with the high level industrial activity as well as the Viet Nam situation will act as a plus factor for all the sectors of the transportation industry.

In the utility area, we underestimated the growth rate in employment in communications but were accurate for the electricity and gas sector. Our committee had anticipated an increase of 0.9 percent in employment in the communications industry for 1966, but employment actually jumped 3.7 percent. The committee believes that this 3.7 percent annual rate of growth is abnormally high and has reduced the increment for 1967 back to 0.9 percent.

The reverse is true in the electric and gas segment. While the projection of a 1.4 percent increase for 1966 proved to be accurate, that rate of increase is being expanded to 2.7 percent for 1967.

Wage and salary disbursements will rise considerably faster than employment for most new contract settlements in 1967 and will probably break whatever remains of the "so-called" White House guidelines. As indicated in Chart 19, total wage and salary disbursements for 1967 in the transportation industry are expected to rise 6.2 percent compared with 3.2 percent for 1966. Note the variations in expected growth from 1.5 percent in rails to 6.4 percent in motor freight, to 11.5 percent in air and other transportation. In the utility sector of the industry, the growth is projected at 5.4 percent as compared with the 4.8 percent rate for 1966.

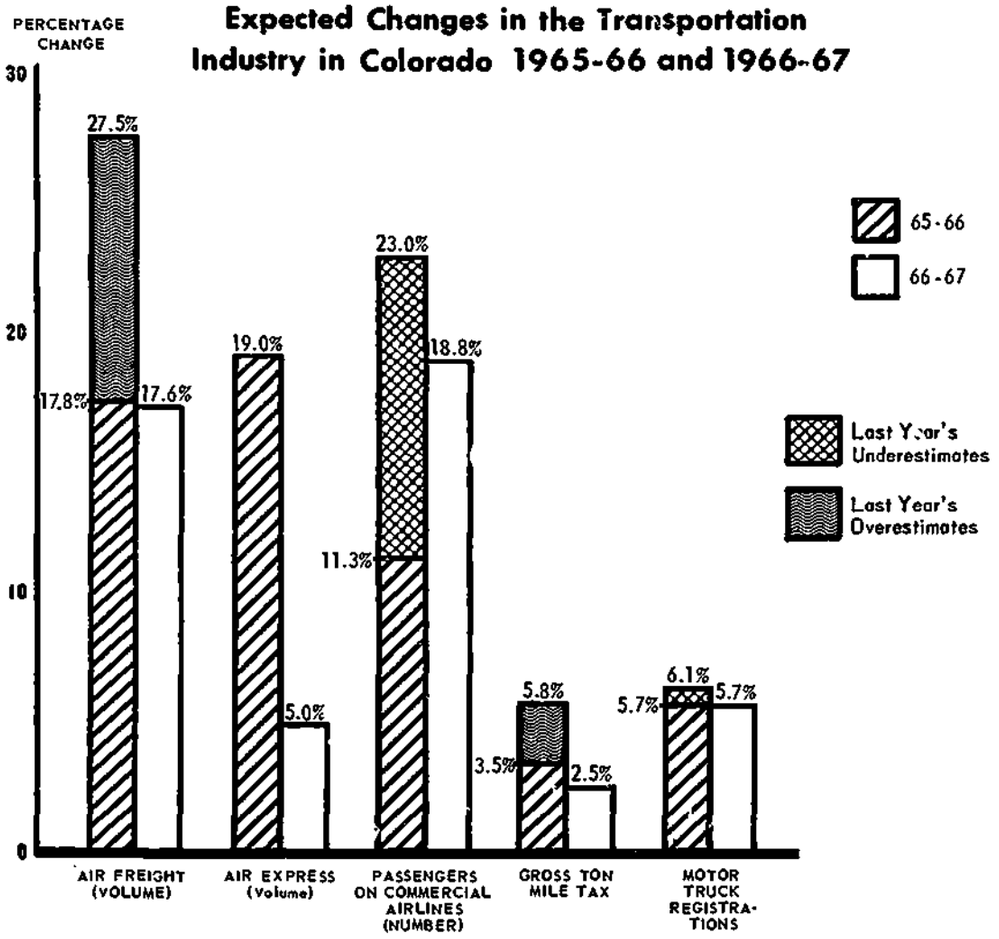
CHART 19
Expected Changes in Wage and Salary Disbursements in Transportation, Communications and Public Utilities in Colorado 1965-66 and 1966-67



With relatively modest increases in employment, all segments of the transportation and utilities industries will handle a substantially larger amount of physical activity. Mechanization and other efficiency-producing changes make this possible. As indicated in Chart 20, the volume of air freight expanded 17.8 percent during 1966, a rate below the projection of 27.5 percent. However, it is expected to grow by 17.6 percent during 1967. The number of commercial airline passengers jumped by an estimated 23 percent in 1966. The committee feels that the 1967 increment will be lower, estimated at 18.8 percent. In trucking, receipts from the gross ton-mile tax increased only 3.5 percent for 1966, although the committee had estimated this to be close to 6 percent. That growth rate is being reduced still further to a level of 2.5 percent for 1967. Motor truck registrations in the state expanded slightly above the rate expected by the committee, but the 1967 growth in registrations has been reduced somewhat.

Transportation, Communications and Public Utilities (continued)

CHART 20
Expected Changes in the Transportation Industry in Colorado 1965-66 and 1966-67

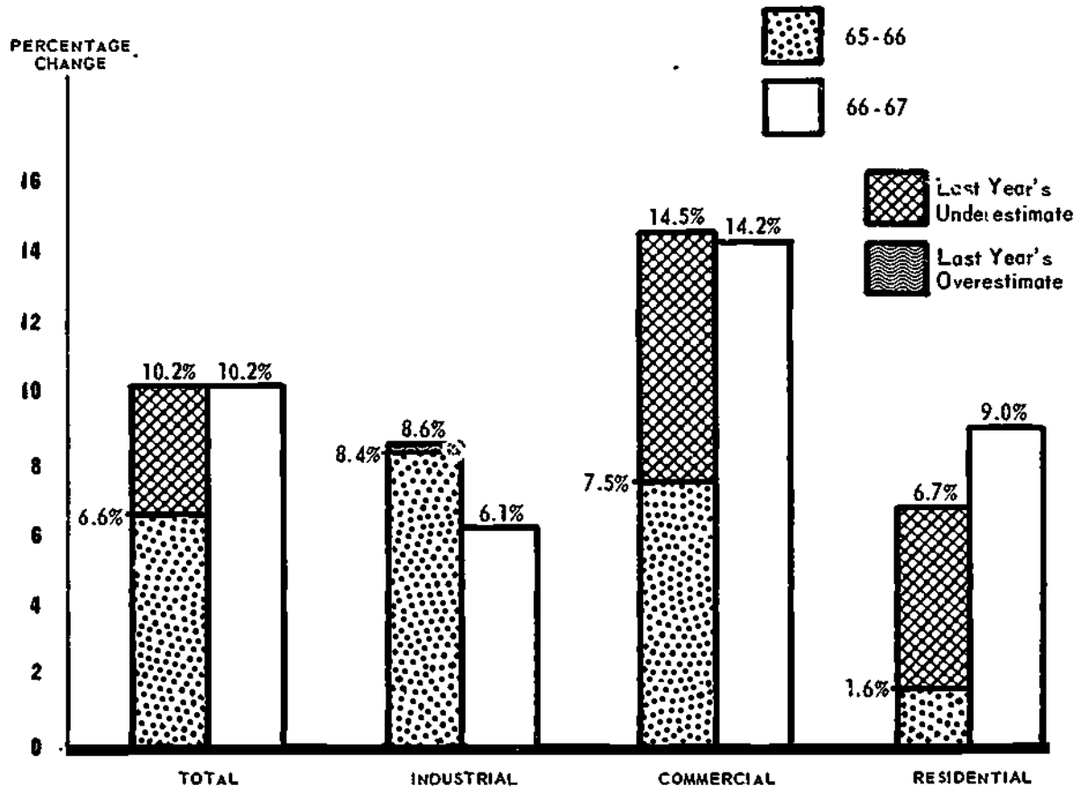


An accurate measure of several aspects of the Colorado economy is the total electric power consumed in the state. Chart 21, in a sense, reflects to some degree the extent that we underestimated the over-all growth in the state's economy for 1966. You will note we had indicated a net increase of 6.6 percent in electric power consumption for 1966. Actually, the rate was 10.2 percent. That same rate of growth is being projected for 1967.

The committee was more accurate in its forecast of industrial power consumption. It looks as if the 1966 growth will be slightly under the 8.6 percent that was anticipated. For 1967, the growth rate is projected at 6.1 percent.

In the commercial and residential sectors, our power consumption estimates were too pessimistic. Power consumption growth by commercial buildings was estimated at 7.5 percent for 1966. The actual rate of increase was 14.5 percent, or almost double the projected rate. We are carrying that rate of increase forward into 1967. Likewise, the expected rate of increase in residential consumption of only 1.6 percent turned out to be 6.7 percent. Following this trend, residential consumption would increase approximately 9 percent in 1967.

CHART 21
Expected Changes in Electrical Power Consumed in Colorado 1965-66 and 1966-67



Transportation, Communications and Public Utilities (continued)

ELECTRIC POWER CONSUMPTION IN COLORADO

1961-1967

(Millions of KWH)

Year	Total	Industrial	Commercial	Residential
1961	3,400.0	1,089.6	1,220.7	1,089.7
1962	3,959.1	1,253.0	1,395.7	1,310.4
1963	4,422.5	1,313.0	1,694.3	1,415.2
1964	4,840.9	1,431.1	1,858.5	1,551.3
1965	5,124.3	1,562.4	1,938.4	1,623.5
1966*	5,645.1	1,693.9	2,219.0	1,732.2
1967*	6,219.0	1,796.3	2,534.5	1,888.2

* - Estimated

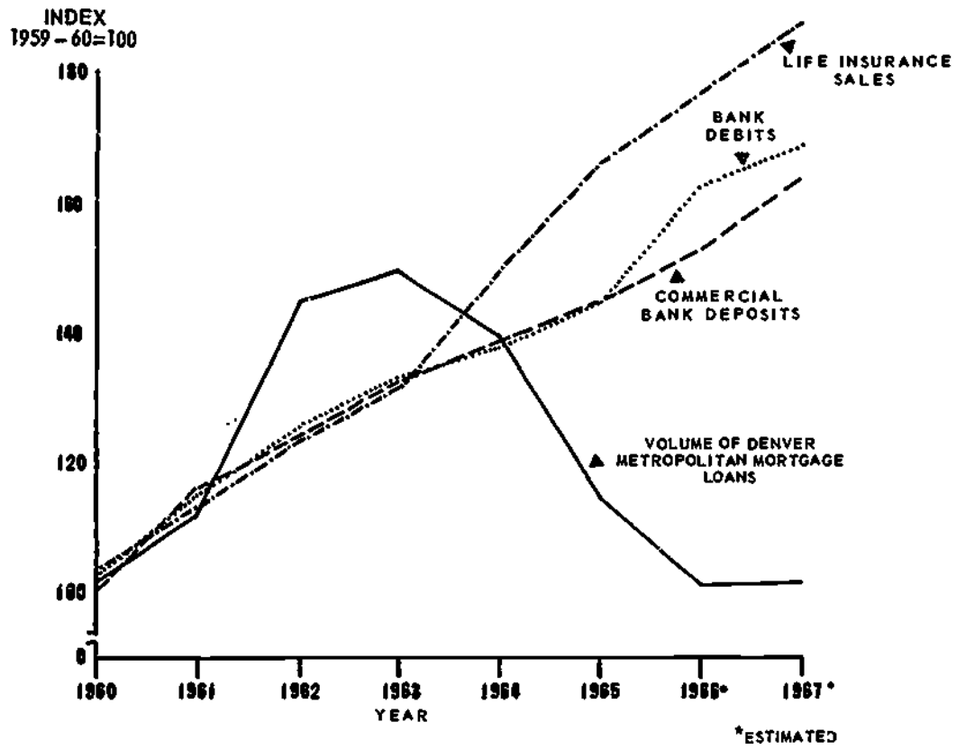
SOURCE: Colorado Business/Economic Data Bank, Business Research Division, University of Colorado, Graduate School of Business Administration and Colorado Business/Economic Outlook Committee.

Finance, Insurance and Real Estate

During the past year, the overall finance and real estate industries have been subject to considerable discussion on a number of different fronts. But employment in the industry, in total, has shown a steady upward trend throughout the decade.

On an index basis, Chart 22 reflects the varying rates of change in the several sectors of the finance industry. Mortgage loan activity in the Denver area moved up sharply in the early years of the decade, but has shown a constant decline since 1963. In fact, the slight improvement in 1966 that our committee had expected did not materialize. 1966 thus had the lowest level of mortgage loan activity for the entire decade.

CHART 22
Index of Financial Activity in Colorado
1960-1967



Finance, Insurance and Real Estate (continued)

INDEX OF FINANCIAL ACTIVITY IN COLORADO 1960-1967

(1959-60 = 100)

Year	Commercial Bank Deposits[1]	Bank Debits[2]	Volume of Denver Metropolitan Mortgage Loans[3]	Life Insurance Sales[4]
1960	102.6	104.0	101.9	104.6
1961	117.6	116.6	112.9	114.9
1962	123.0	125.0	145.4	121.3
1963	130.4	130.7	149.7	130.5
1964	137.8	138.0	139.0	151.2
1965	146.8	147.1	115.1	166.7
1966*	155.3	164.1	101.8	178.9
1967*	166.2	169.9	102.2	192.3

* - Estimated

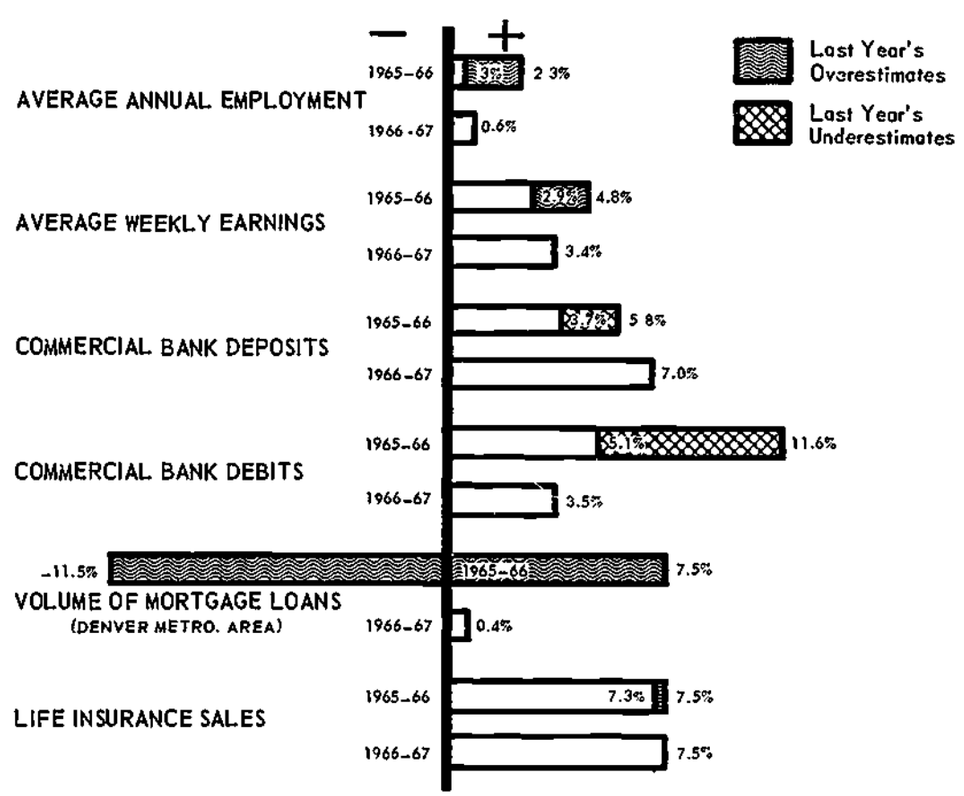
SOURCE: 1 - Division of Accounts and Controls, Colorado State Budget Office and Business Research Division, Graduate School of Business Administration, University of Colorado.
2 - Business Research Division, Graduate School of Business Administration, University of Colorado and Federal Reserve Bank of Kansas City
3 - Title Guaranty Company, Record Statistics.
4 - Life Insurance Management Association, Monthly Survey of Life Insurance Sales in United States and Canada.
Estimates by Colorado Business/Economic Outlook Committee.

Life insurance sales continue on a very strong and firm upward trend. The rate of change during the last several years has been approximately constant, and 1967 is expected to witness the same degree of growth.

Bank deposits and bank debits reflect total area economic activity, and have shown a very favorable trend. This has been true in spite of the fact that the limitations placed upon the banking system by the Federal Reserve System has tended to have curtailed deposit creation.

While it is difficult to be optimistic about the mortgage lending sector of the finance industry for 1967, there are prospects that the money situation may be relieved somewhat from fiscal measures, including some remaining prospects of a federal tax increase. The latter part of 1967 could become a turning point in this industry that has been under such substantial pressure.

CHART 23
Expected Changes in Finance, Insurance and Real Estate in Colorado 1965-66 and 1966-67



Finance, Insurance and Real Estate (continued)

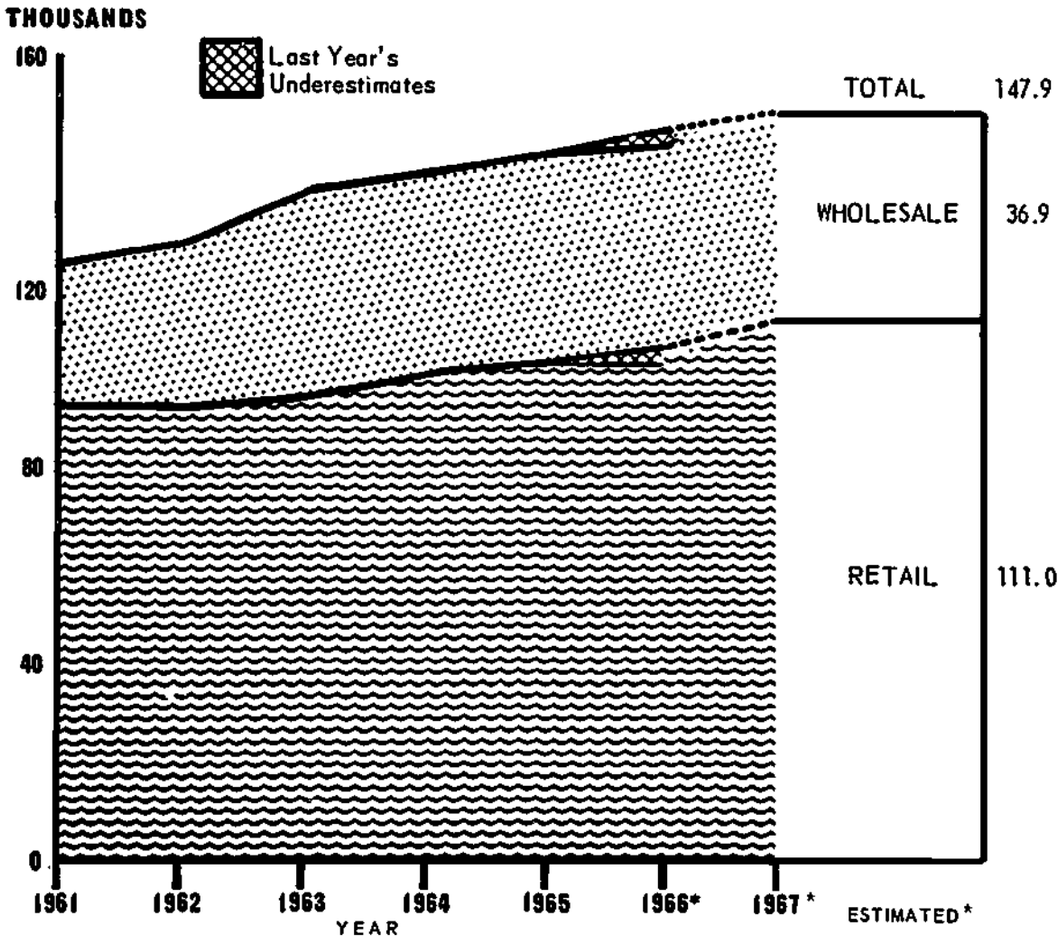
For the other areas of the financial industry, the committee feels that Colorado in 1967 will grow faster than the nation as a whole, and that the finance industry will benefit in proportion to that over-all growth.

Chart 23 compares changes in several aspects of the finance industry between 1965 and 1966 - and between 1966 and 1967. In 1967, we estimate employment will rise less than 1 percent, average weekly earnings 3.4 percent, bank deposits 7 percent, bank debits 3.5 percent, life insurance sales 7.5 percent and mortgage loan activity by only 0.4 percent.

Retail Trade, Wholesale Trade and Services

One of the largest employers in the state is the retail and wholesale trade groups. Chart 24 pictures the steady rate of expansion in this industry. Total employment in the trade groups will approach 150,000 persons in 1967. Note that we underestimated growth in employment for 1966.

CHART 24
Employment in Retail and Wholesale Trade in Colorado 1961-1967



Retail Trade, Wholesale Trade and Services (continued)

EMPLOYMENT IN RETAIL AND WHOLESALE TRADE

IN COLORADO 1961-1967

Year	Retail Trade	Wholesale Trade	Total
1961	92,500	32,700	125,200
1962	95,500	33,400	128,900
1963	98,300	33,500	131,800
1964	101,700	34,300	136,000
1965	103,000	36,200	139,200
1966*	107,000	36,600	143,600
1967*	111,000	36,900	147,900

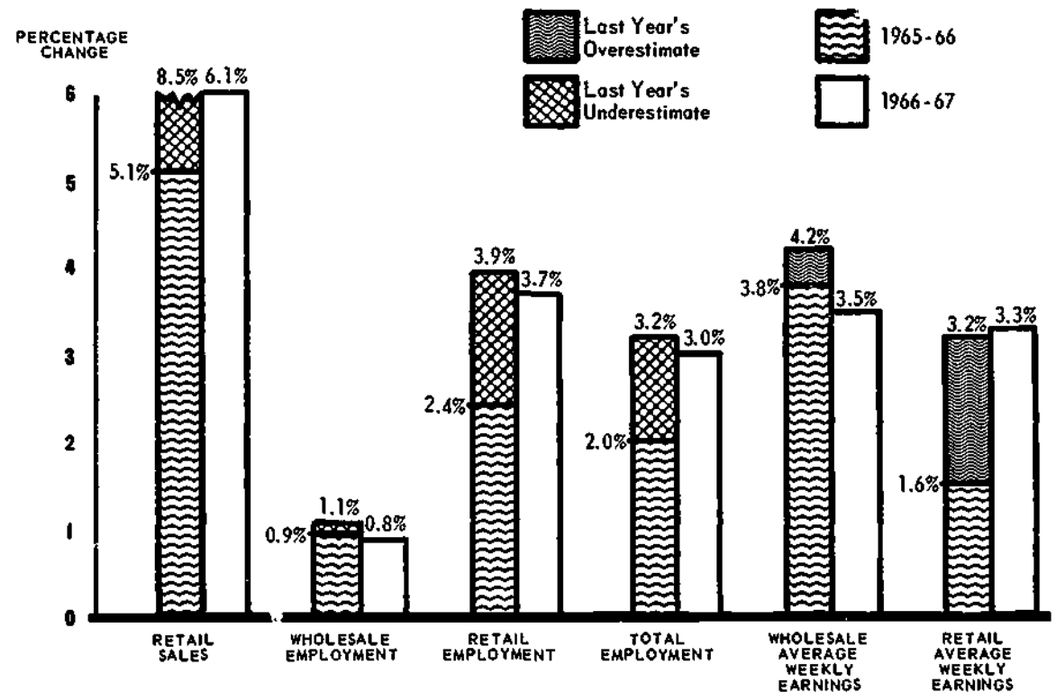
* - Estimated

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics; Colorado Department of Labor and Colorado Business/Economic Outlook Committee.

The previous chart makes year-to-year comparisons difficult. Chart 25 summarizes the rates of change in these activities. We had expected a total gain in wage and salary workers in the trade groups for 1966 of only 2 percent. That rate of growth proved too conservative and the increment will be about 3.2 percent. A continued growth in employment in these industries in 1967 of 3 percent is projected. Most of this increase will come in the retail sector. The 1966 growth in retail employment turned out to be 3.9 percent, rather than our projected 2.4 percent. The wholesale portion of the industry had employment gains slightly larger than expected.

Retail sales in the state jumped 8.5 percent, as contrasted to a projected rate of 5.1 percent. We will excuse ourselves partially for this error, in that price increases resulting from well-known inflationary pressures in 1966 were at a higher rate than in prior years. These price changes are reflected directly in the sales figures. Thus, the 8.5 percent increase does not represent an equal change in the physical volume.

CHART 25
Expected Changes in Wholesale and Retail Trade in Colorado 1965-66 and 1966-67



Reflecting some hope for a reduced rate of inflation and perhaps some leveling off in the rate of increase in spending power, we are projecting an increase of 6.1 percent in retail sales for 1967. However, if some of the positive factors that could materialize in 1967 actually occur, the 1967 gain could again approach the 1966 rate of increase. Increased social security benefits, a possible resurgence in residential construction, probable continued inflation, and other factors could carry the rate of growth in retail sales up faster than we are projecting. On the negative side, again the possibility of a federal tax increase that would take money out of the spending stream, plus possible continuing high interest rates and lack of credit for consumption and construction, and changing marketing channels which have an adverse effect on the wholesaling sector, all operate in the deficit column of the ledger.

Retail Trade, Wholesale Trade and Services (continued)

RETAIL AND WHOLESALE SALES IN COLORADO

1961-1967

(in billions of dollars)

Year	Retail Sales	Wholesale Sales[1]	Total
1961	$3.91	$1.39	$5.30
1962	4.22	1.50	5.72
1963	4.40	1.67	6.07
1964	4.84	1.42	6.26
1965	5.14	1.47	6.60
1966*	5.57	1.51	7.08
1967*	5.91	1.55	7.46

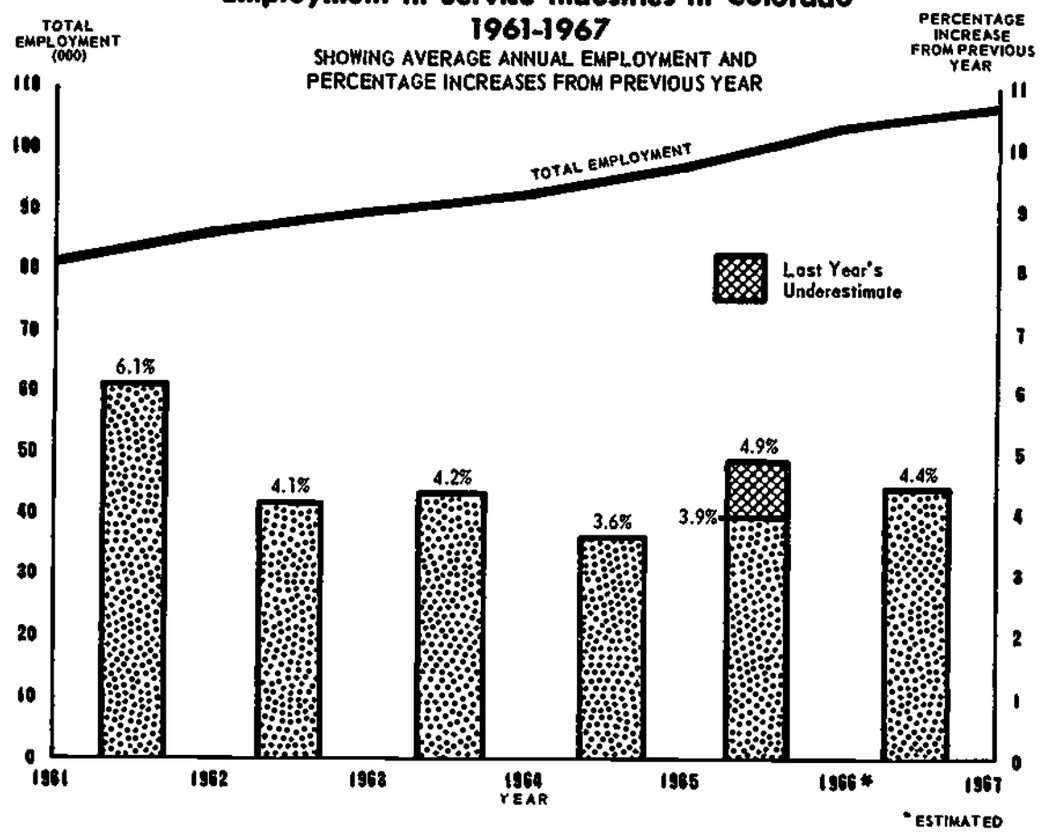
* - Estimated
[1] Includes only those sales reported for sales tax purposes.

SOURCE: Colorado Department of Revenue and Colorado Business/Economic Outlook Committee.

The service industries are made up of a variety of different kinds of activities. The industry has averaged adding almost 4,000 employees each year during the decade, which makes it one of the state's largest employers, with one of the smoothest upward growth rates in the entire economy.

Chart 26 tells the story of the service industries. Note the unbroken upward trend in total employment. That total employment now exceeds 100,000 persons, and is expected to climb another 5,000 by the end of 1967. Of course, the year-to-year percentage increases do vary with the fortunes of Colorado. Our estimated increase for 1966 of 3.9 percent proved to be below what actually happened. The 4.9 percent actual increase in 1966 is the best of any year since 1962. Here again, perhaps being a little conservative, our committee does not feel that this rate can be maintained, and we are reducing the expected gain for 1967 back to 4.4 percent.

CHART 26
Employment in Service Industries in Colorado
1961-1967
SHOWING AVERAGE ANNUAL EMPLOYMENT AND PERCENTAGE INCREASES FROM PREVIOUS YEAR



Since activity in this industry does not generally lend itself to automation and mechanization, there is every reason to believe that net gains in employment in this industry will continue to expand at an annual rate of between 4 percent and 5 percent for the foreseeable future.

Tourism, Outdoor Recreation and Conventions

This next phase of the Colorado economy is very important, but we have to admit our measures of its actual impact on the several aspects of business and industry are crude. Tourism and outdoor recreation industries are major parts of the Colorado picture and offer increasing promise for the future.

The industry is made up of a number of different segments scattered widely over the state. Variations in activity in these industries show immediately in retailing and service industries, and, in a sense, figures we talk about when we refer to this industry terd to overlap the retail and service sectors. In addition, we find it difficult to get accurate measures of volume of activity in many parts of the industry, for accurate data collecting does become extremely expensive.

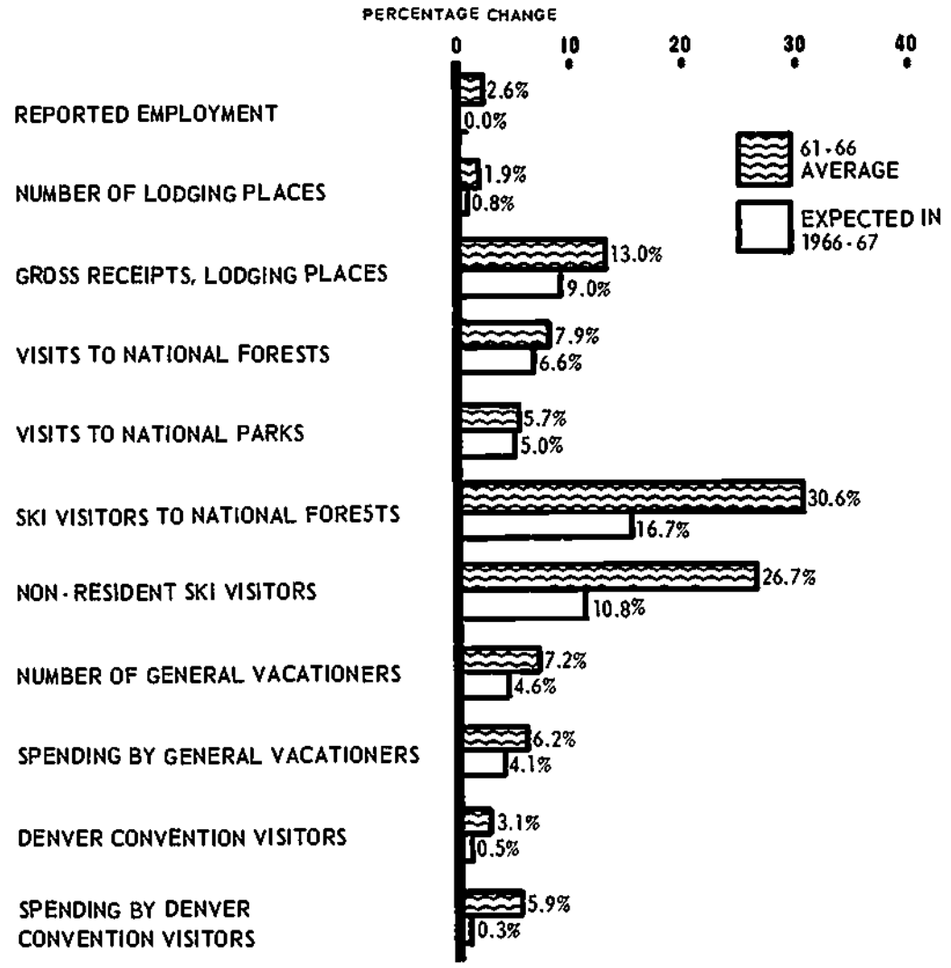
Bar chart 27 casts expected 1967 changes against the average annual changes for a five year period. Since the flood year of 1965 was a poor tourist year, 1965 to 1966 changes are not very meaningful. Reported employment in this industry does not begin to reflect its importance as an industry. Much of the activity in this industry is carried on by owner-proprietors with the use of seasonal help. In fact, we do not even have a total estimate of persons employed in the industry. We only have reported employment by hotels, tourist courts and motels. That employment for 1967 is not expected to increase. Similarly, the committee does not expect the number of lodging places to increase by more than 0.8 percent in 1967. Gross receipts by lodging places are expected to grow 9 percent.

In 1967, ski visitors to national forests are expected to increase 16.7 percent and non-resident ski visitors 10.8 percent.

Figures for the number of and spending by general vacationers are fairly crude estimates. Our best information indicates that the 1966 figures did prove to be about what was expected. Gains for 1967 are projected at 4.1 percent, somewhat below the 5 year norm.

In spite of what might appear to be a relative amount of pessimism in the outlook just expressed for recreation and tourism, the committee feels that the near-term and long-term factors are favorable. With good snow and the increasing popularity of skiing, the industry should show rapid growth. Increasing leisure time, the availability of attractive recreational areas around the reservoirs on the Western Slope, and the fact that the national parks received increased money for campground development, all point to favorable rates of change. On the other hand, the committee does not feel that there will be any major changes in the number of accomodations since the lack of new construction may curtail total activity.

CHART 27
Estimated Changes in Tourism and Outdoor Recreation in Colorado 1966-1967



Tourism, Outdoor Recreation and Conventions (continued)

NUMBER AND GROSS RECEIPTS OF LODGING PLACES

IN COLORADO 1961-1967

Year	Number of Lodging Places	Gross Receipts Of Lodging Places
1961	1,360	$ 61,788,000
1962	1,466	69,548,000
1963	1,458	73,188,000
1964	1,460	80,632,000
1965	1,447	90,802,000
1966*	1,488	101,903,000
1967*	1,500	111,121,000

* - Estimated

SOURCE: Colorado Department of Revenue and Colorado Business/Economic Outlook Committee.

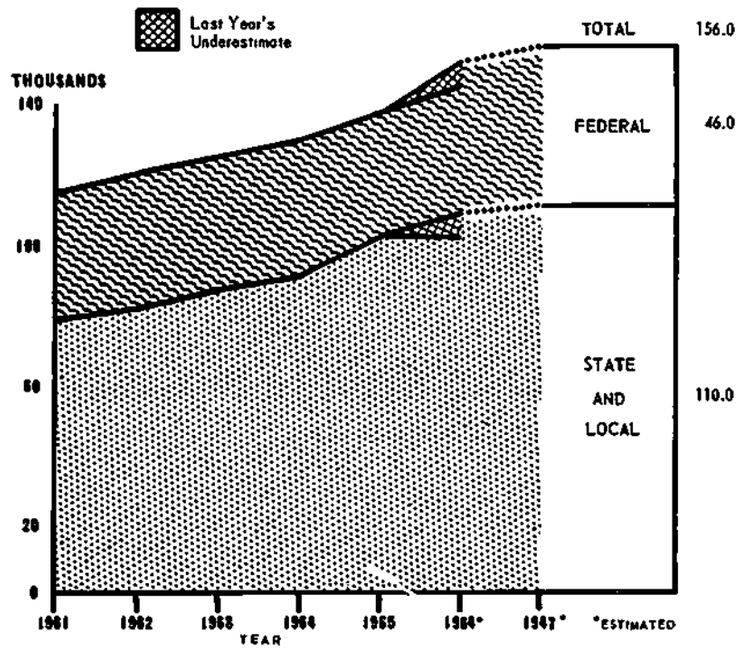
Government

The last major sector of Colorado employment for discussion is the government sector. As we know, increased urbanization, the expanded demand for services of all sorts, and increased activity in many federal programs have contributed to rapid growth in government employment.

At the present time, employment by federal, state, and local governments has reached the 150,000 mark and makes this group one of the major employers in the state. During the last few years, total government employment has increased approximately 7,000 to 10,000 per year.

Flow Chart 28 shows these accelerated rates of growth in employment by levels of government. During the recent years, the state and local sectors have accounted for the largest increases in employment and account for over two-thirds of that total employment. Again, in total, we understated the gain in government employment by 5,000 persons.

CHART 28
Government Employment in Colorado
Federal, State and Local 1961-1967
(NOT INCLUDING MILITARY)



Government (continued)

GOVERNMENT EMPLOYMENT IN COLORADO

FEDERAL, STATE AND LOCAL 1961-1967

(excluding military)

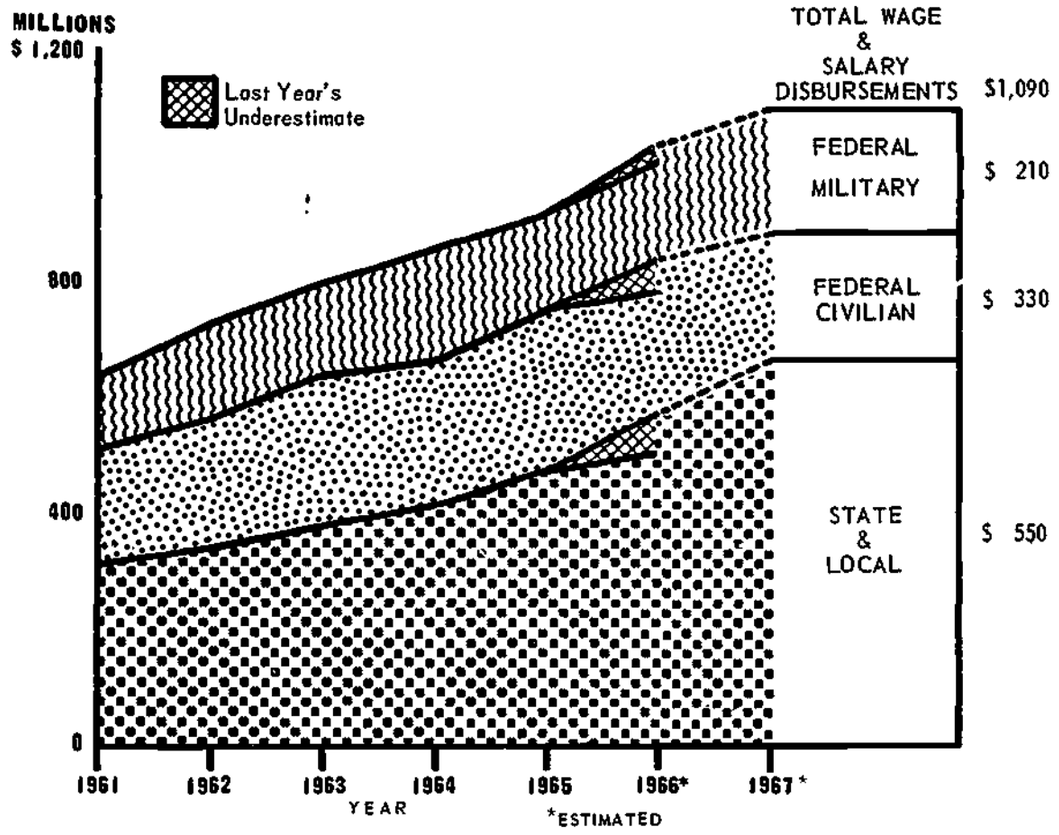
Year	Federal	State and Local	Total
1961	37,700	79,200	116,900
1962	39,100	83,300	122,400
1963	39,200	88,300	127,500
1964	39,600	91,900	131,500
1965	40,100	98,100	138,200
1966*	44,000	105,100	149,100
1967*	46,000	110,000	156,000

* - Estimated

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics; Colorado Department of Labor and Colorado Business/Economic Outlook Committee.

This companion chart (Chart 29) indicates total wage and salary disbursements for federal, state and local civilian employment, as well as for military personnel in the state. Military personnel was not included in the previous chart which covered only civilian employment. Total payrolls by governmental agencies crossed over the $1 billion mark in Colorado in 1966. This increase was greater than the committee had projected.

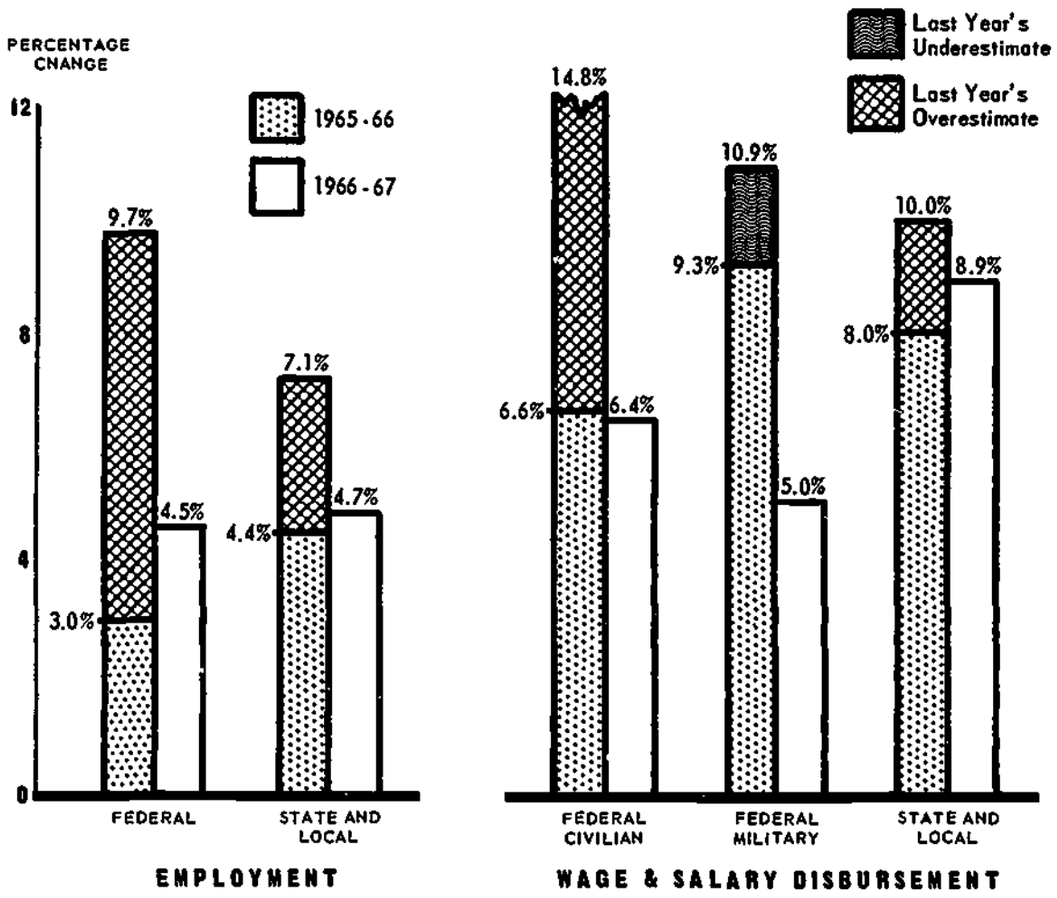
CHART 29
Government Wages and Salaries in Colorado 1961-1967



Bar Chart 30 brings these changes into focus. The left part of the chart shows changes in employment. We had projected for 1966, an increase in federal employment of 3 percent. This forecast turned out to be too low since the actual growth was 9.7 percent. A substantial build-up of civilian employees has taken place at the Pueblo Ordnance Depot, Fort Carson, and Fitzsimmons Hospital. That rate of acceleration is not expected to carry forward in 1967. A projected increase of 4.5 percent in federal employment in Colorado is our best estimate.

Government (continued)

CHART 30
Expected Changes in the Government Sector
1965-66 and 1966-67



Likewise, our projection for changes in state and local government employment proved to be much too timid. The expected gain of about 4,000 employees turned out to be 7,000. That change raised the rate of growth from our projected 4.4 percent up to 7.1 percent. We expect a growth in employment in state and local government to continue at a firm pace, with a probable push from expanded activities in the elementary and secondary education areas supported by new and expanding federal assistance programs.

The wage and salary disbursement part of the chart shows that our estimates for federal civilian payrolls were too low. Wage and salary increases passed by Congress were reflected in 1966 payments. That 14.8 percent increase for last year will drop back to about 6.4 percent for 1967. The 1966 estimated increases in total salaries of military personnel proved to be approximately correct, the 10.9 percent projected gain had to be cut back to 9.3 percent because of variations in the number of military personnel stationed in the state.

GOVERNMENT WAGES AND SALARIES IN COLORADO

1961-1967

(millions of dollars)

Year	State & Local	Federal Civilian	Federal Military	Total
1961	$304	$206	$123	$633
1962	342	222	163	726
1963	384	250	161	794
1964	416	265	187	869
1965	459	270	183	911
1966*	505	310	200	1,015
1967*	550	330	210	1,090

* - Estimated

SOURCE: Survey of Current Business, U.S. Department of Commerce, Office of Business Economics and Colorado Business/Economic Outlook Committee.

Government (continued)

For 1967, there is considerable uncertainty regarding federal military wage and salary disbursements in Colorado - dependent upon developments in southeast Asia and elsewhere. The average number of military personnel that will be stationed in Colorado in 1967 is very difficult to forecast. The committee feels that this wage and salary figure could vary from a plus 5 percent to as low as a minus 5 percent, if the number of personnel were sharply curtailed.

Wage and salary payments by state and local governments increased by 10 percent in 1966, a rate above our projected 8 percent rate of gain. We believe the increase will be 8.9 percent for 1967. This figure could go higher if general adjustments are made in salary levels.

Summary

There are many other aspects of the Colorado economy on which we would like to have precise information. Plans for business plant equipment expenditures would provide ideal information for this type of forecasting. Unfortunately, we do not have available, on any systematic basis, access to that type of data. Thus, our analysis has emphasized changes in employment patterns.

In summary, we feel that the 1966 record reflects what was our basic conclusion during our 1965 Forum, that the Colorado economy, which has been under pressure for a number of years, had reached its turning point and that the lines were pointing upward. We erred in the steepness of that upward trend. At the time we had no evidence that the "turn-around" would be as sharp as it was. We are happy to admit this error.

COLORADO EMPLOYMENT SUMMARY

(expressed in thousands)

	Average Annual Change 1960 thru 1965	Estimated Change 1965 to 1966 Number	Estimated Change 1965 to 1966 Percent	Projected Change 1966 to 1967 Number	Projected Change 1966 to 1967 Percent
Total Resident Population	43.0	53.0	2.7	41.0	2.0
Total Labor Force	11.9	26.8	3.6	23.9	3.1
Total Employment	11.7	27.8	3.8	22.2	2.9
Non-agricultural Wage and Salary Workers	14.1	30.5	5.2	24.0	3.9
Total Non-agricultural Employment	14.3	28.9	4.2	24.5	3.4
Agricultural Employment	-2.6	-1.1	-2.4	-2.3	-5.2

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Colorado Department of Employment and Colorado Business/Economic Outlook Committee.

Summary (continued)

Perhaps the best way to summarize our expectations for 1967, is to examine for the recent past, the number of new jobs that have been created, and to recap our estimates for the major non-agricultural sectors for 1967. Jobs mean payrolls and payrolls are reflected in sales and profits.

Again, here we need a frame of reference. The tabular material in Chart 31 gives us a point of departure. Note that, in total, in the Colorado economy during the five-year period of 1960 to 1965, there was an average annual increment in new jobs created of 14,140. But that number varied considerably from year-to-year. In that period, the best year was 1960-61 when 21,300 new jobs were created. The poorest year was between 1963 and 1964 and was about half that number. Now look at what happened in 1966. Our estimate is that 30,900 were created in Colorado. That would make 1966 the best year of the decade. We are still optimistic, hopefully not overly so, and are projecting an increment in new jobs for 1967 at 21,400, which would make 1967 the second best year of the decade.

CHART 31
New Jobs Created in Nonagricultural Wage and Salary Employment Sectors of Colorado

	AVERAGE ANNUAL CHANGE 1960-65	BEST YEAR		POOREST YEAR		REVISED 1966 CHANGE	1967 CHANGE
TOTAL ALL SECTORS.....	14,140	21,300	1960-61	10,800	1963-64	30,900	21,400
Mining.....	- 600	500	1964-65	- 1,800	1961-62	500	100
Manufacturing.....	260	4,300	1960-61	- 2,500	1963-64	6,800	4,800
Construction	440	3,800	1960-61	- 1,500	1961-62	2,300	- 0-
Transportation and Public Utilities.....	160	500	1963-64	- 100	1964-65	1,200	700
Finance, Insurance, and Real Estate.....	1,180	1,700	1960-61	600	1964-65	100	200
Retail & Wholesale Trade.	3,120	4,200	1963-64	1,600	1960-61	4,400	4,300
Service Industries.....	3,960	4,900	1961-62	3,300	1964-65	4,700	4,400
Government	5,620	6,800	1960-61	4,000	1963-64	10,900	6,900

Looking further, we can see how the various sectors have fared from year-to-year. In mining, for the five-year period, there was a net average decline of 600 jobs per year. But this varied from 500 jobs between 1964 and 1965 to a net loss of 1,800 jobs between 1961 and 1962, which meant that mining was reacting exactly opposite to the total Colorado economy. We note the favorable change of pace for 1966 and for 1967.

Manufacturing is a key force. For the five-year period, there was a net annual increase in manufacturing jobs of less than 300. But the variation between years was drastic - from a plus 4,300 jobs between 1960-61 to a net loss of 2,800 jobs between 1963-64. Again, look at 1966. This 6,800 increment is by far the best of the decade. However, we feel that the 1967 increment will not be quite as large.

Construction has also been very cyclical. With an average annual addition of only 440 jobs for the five-year period, the annual rate varied from the big year between 1960-61 of 3,800 to the poor year with a loss of 1,500 jobs between 1961-62. Bouncing back from a very bad 1965, the 2,300 new jobs added in 1966 makes this a good year. No net increase over 1966 is projected for 1967 in construction.

Transportation and public utilities are more stable. With an average increase of 160 employees for the five-year period, the variation for that time was from a plus 500 between 1963-64 to a loss of 100 in 1964-65. The 1,200 increase for 1966 makes 1966 look good compared to the recent past. The increase of 700 for 1967 also promises growth for this sector.

The finance, insurance, and real estate industry averaged adding over 1,100 employees for the five-year period 1960-65, varying from 1,700 in the best year to 600 in the poorest year. However, the rate of employment growth in this industry has dropped drastically and the increments for both 1966 and 1967 are minor

Although generally stable, growth in employment in the retail and wholesale trade areas has varied between the years. With an average of 3,100 additions for the five-year period, year-to-year changes fluctuated from 1,600 to a maximum of 4,200. We see that 1966, with a gain of 4,400 is the largest net increment in employment in this industry of any year during the decade, with 1967 being close behind.

Summary (continued)

Service industry employment, with an average annual increment of almost 4,000 persons for the five-year period, does not vary much from year-to-year. The best year, a 4,900 increase between 1961 and 1962, did drop off to an increment of 3,300 for the year 1964-65. The gain of 4,700 for 1966 makes this the second best year since 1960 while the projected increase of 4,400 for 1967 represents continued rapid growth.

In the government sector, the average increment in employment for the five-year period of 5,620 did not fluctuate much from year to year. The best year, 1960-61, added 6,800 persons. This can be compared with the smallest gain of 4,000 between 1963 and 1964. Also, in the government sector, the 10,900 increase in 1966 employment far exceeds anything that has happened in any one year in the decade thus far. The 6,900 projected for 1967 would be the second best year.

These data then, tell us where the jobs have come from. Whether we will get the 21,000 new jobs in 1967 will depend upon the combined forces that we expect to occur in Colorado in 1967.

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WEST VIRGINIA

This working notebook on vocational and technical education has been prepared in two parts. Part I briefly summarizes the need and current status of vocational and technical education in West Virginia. Emphasis is placed on an identification of issues and trends which should influence the future directions of program development. Part II, or the appendix, includes most of the working data. This includes a discussion of federal legislation, vocational education at the secondary level, vocational and technical education at the post-secondary level, plus a statistical summary of public expenditures for vocational and technical education. (CH)

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Notes On
Vocational and Technical Education
in
West Virginia

H. Peter Marshall

October 6, 1967

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PREFACE

The role of vocational and technical education in West Virginia will be the primary topic of discussion at the fall meeting of the State Visiting Committee to the Appalachian Center. This working notebook on vocational and technical education has been prepared for the members of this Committee.

The first part of this notebook briefly summarizes the need and current status of vocational and technical education in West Virginia. Emphasis is placed on an identification of both issues and trends which should influence the future direction of program development.

The second part of this notebook, or the appendix, includes most of the working data. This includes a discussion of Federal legislation, vocational education at the secondary level, vocational and technical education at the post-secondary level, plus a statistical summary of public expenditures for vocational and technical education.

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INTRODUCTION

Leo Smith in the book, The Technical Institute, stated that:

> There has been a tendency to conceive of the American Educational System as a single ladder leading from elementary school through the University. In this conception the position of the elementary school, secondary school, college and universities have been clearly crystalized.[1]

Unfortunately, vocational and technical education does not fit clearly into the single ladder scheme. Consequently, there are a number of misconceptions concerning its objectives and utilization. The primary purpose of vocational and technical education is to qualify persons for gainful employment in occupations which do not require a baccalaureate or higher degree. Some of these occupations require only simple skills while others require complex abilities. Vocational education should have a focus on both extremes to meet a wide spectrum of clientele need according to level of intelligence, capability, and aptitude.[2]

Preparation for the so-called "technical occupations" (electronic

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[1]Leo Smith, The Technical Institute, (New York, 1956) p. 3.

[2]Joseph Nerden, "Vocational Education for a Dynamic Economy", Vocational Education - Time for Decision, The Bulletin of the National Association Association of Secondary School Principals, (Washington, D.C., 1964) p. 14.

technician, data processor, medical technologist, etc...) is commonly referred to as technical education. All of these occupations require a basic applied knowledge in one or more of the following areas: engineering, mathematics, or science. After a one or two year program of extensive technical education or equivalent on-the-job training these "technicians" will work closely with or under the direction of a highly skilled or professional person.[3]

Historically, vocational education has been confined primarily to the secondary level of education. Recently, however, there has been a trend for community colleges or other post-secondary institutions to offer programs of vocational training. The nature of technical education, on the other hand, requires primarily a post-secondary approach. Both vocational and technical education have a basic responsibility in continuing adult education for the worker who wants to upgrade himself on his present job, or prepare for an advanced job.

The Need for Vocational and Technical Education in West Virginia

Approximately 80 percent of all West Virginia youth leave the formal education system without a college degree.[4] About 35 percent never make

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[3] J. Chester Swanson and Ernest Kramer, "Vocational Education Beyond the High School", Vocational Education, the Sixty-fourth yearbook of the National Society for the Study of Education; ed. Melvin Barlow; (Chicago University Press, Chicago, 1965) p. 176.

[4] Fred Eberle, State Director of Vocational Education, presented this figure in the educational-news program, "Point in Question", WSA2-T.V. A transcript of his remarks appeared in a news release from the Publication and Public Information Section, State Dept. of Education, November 20,1966.

it through high school[5] and approximately 64 percent of all high school graduates do not go to college.[6] This means that a sizable number of West Virginia youth each year are entering the labor force without a salable skill. One or two decades ago this situation would not have been so alarming. However, technological advancement in this country is in the process of restructuring the qualitative characteristics of the labor force. It is estimated that by 1970 over 50 percent of all job opportunities will involve semi-professional, technical, or highly skilled jobs.[7] Unskilled and semi-skilled jobs, on the other hand, will continue only 26 percent of the labor force in 1970 compared to 56 percent in the 1930's.[8] The educational implications of these trends were considered by Labor Secretary Willard Wirtz:

> What this means in terms of educational need is obvious. We simply cannot any longer afford to let boys and girls leave the educational system unprepared to use their minds as well as their muscles. We must, in one way or another, see to it that they have what today's and tomorrow's labor force requires. The margin

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[5]It is impossible to determine the exact high school drop-out rate due to outmigration. The above estimates, however, have taken population trends into consideration.

[6]West Virginia Committee on Higher Education, Higher Education in West Virginia - A Self Assessment, Volume II; (Prepared for the Governor and Legislature of the State of West Virginia, 1966) p. 31.

[7]Grant Venn, Man, Education and Work, American Council of Education, (Washington, D.C., 1964) p. 135.

[8]Norman C. Harris, "The Community Junior College - A Solution to the Skilled Manpower Problem", Higher Education in an Age of Revolution; ed. G. Kerry Smith, (Washington Assoc. for Higher Education, 1962) p. 111.

> for educational error or failure, which is what the unskilled job in the old labor force constituted, has been replaced by the machine.[9]

There can be little doubt that technological advancement represents one of the major challenges of our educational system. At a time when West Virginia is making a concerted effort toward furthering economic development, we find a critical shortage of skilled manpower. Based on national trends, for example, the West Virginia Committee on Higher Education estimated a need for approximately 750 new scientific-and engineering-related technician graduates per year in West Virginia. During the 1964 -65 school year, however, West Virginia colleges graduated only 48 engineering-related technicians. (See Appendix C). A critical shortage of workers in the para-medical occupations,[10] and a need for mining technicians[11] has also been identified. Given the education and training opportunities to acquire the needed skills many of our youth upon leaving the formal educational system could help fill these plus other manpower gaps.

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[9]Statement of W. Willard Wirtz before the Subcommittee on Education, Senate Committee on Labor and Public Welfare, S.580, "National Education Improvement Act of 1963," (April 30, 1963) p. 1.

[10]Governor's Task Force on Health, Final Report. (February, 1967) p. 29.

[11]United States Department of Labor, Technical Trends in Major American Industries; (United States Printing Office, Washington, D.C., 1966) p. 8.

CURRENT STATUS OF

VOCATIONAL AND TECHNICAL EDUCATION IN

WEST VIRGINIA

INTRODUCTION

During the fiscal year 1965-1966, programs of vocational education were offered in 187 of the 224 secondary schools in West Virginia and in 54 of the 55 counties.* Student enrollment in the preparatory program was 34,051 while the adult and extension programs had an enrollment of 15,152. (See Table 1)[12]

Table 1 [13]

Enrollment and Number of Participating Counties
1965-66

Program Area	Youth	Adult	Counties
Agriculture	5,101	658	43
Home Economics	11,505	5,646	49
Industry	3,867	6,100	24
Business	12,976	606	22
Distributive	248	1,231	6
Practical Nursing	17	162	4
Technical Education	368	348	7

*See Appendix A for a description of vocational Education Programs at the secondary level in West Virginia.

[12]The statistical information presented in this section on Vocational Education at the secondary level was taken from the 1966 Annual Report of the West Virginia Division of Vocational Education.

[13]Ibid.

In the fall of 1965, on the other hand, 11 West Virginia Institutions of higher education offered post-secondary curricula of Vocational and Technical Education with a total enrollment of between 1,300 and 1,500 students.**[14]

Federal Policy and the Development of Vocational and Technical Education in West Virginia

Federal legislation, dating back to 1917, has been the primary force shaping the development of vocational and technical education in West Virginia. (See Appendix C). The availability of grant-in-aid funds has stimulated the growth of vocational and technical education at both the secondary and post-secondary level in West Virginia. Prior to 1963, however, the various federal programs indirectly created a certain rigidity in state and local program development due to a policy of earmarking funds according to specific occupational categories. This explains why West Virginia, as well as most other states, has limited its involvement primarily to agriculture, home economics, trade and industrial, practical nursing, and distributive education.

Passage of the Vocational Education Act of 1963, however, has meant far greater autonomy on the part of the individual state and local school systems in program development plus substantial increases in the amount of

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**See Appendix B for a discussion of Vocational and Technical Education in West Virginia Institutions of Higher Education.

[14]The statistical information presented in this section on Vocational and Technical Education in West Virginia Institutions of Higher Education is taken from the report of the West Virginia Committee on Higher Education (See Appendix B).

federal aid. The following provisions of the 1963 Act could have a significant impact on the future direction of vocational and technical education in West Virginia.

:for the first time funds are available for the construction of area vocational schools.

:federal funds are now available for the development of new programs in any occupational area where job opportunities are known to exist except those requiring a baccalaureate or higher degree. (The most immediate impact has been the development of programs of business and office occupations.)

:substantially increased federal funds are now available for the ancillary services such as teachers' training, demonstration projects, research, etc.....

Passage of the Higher Education Facilities Act of 1963 could also have a significant impact on the future direction of vocational and technical education. This Act makes it possible for the federal government to provide up to 40 percent of the costs of academic facilities at public colleges and public technical institutes and up to 30 percent of the cost of facilities in other public institutions of higher education.

Institutional Structure of Vocational and Technical Education

There are alternative institutional arrangements for integrating vocational and technical education into the formal educational system. The Comprehensive High School attempts to provide all students with both the traditionally academic courses and more or less specific skilled training - the precise mixture depending upon the needs and abilities of the individual students. It takes a relatively large

school, however, to justify the comprehensive label. Unfortunately, West Virginia is characterized by a large number of small secondary schools.

Table 2 [15]

Distribution of High Schools by Number Enrolled

Enrollment	Number of Schools	Percentage
0-150	8	3.6
150-300	47	20.9
300-500	68	30.3
500-1000	74	33.3
1000-Up	27	12.0
Total	224	

As the above table indicates, almost 25 percent of the 224 secondary schools in West Virginia have a total enrollment under 300 students, while 55 percent have an enrollment less than 500. This situation represents one of the major constraints on the development of vocational education in West Virginia. Many of the smaller schools are unable to participate in even the traditional programs of vocational agriculture and home economics. Programs of distributive education,

[15]Committee on Research. Statistical and Other Information about Vocational-Technical Education in West Virginia. Division of Vocational Education (Charleston, West Virginia, 1966) p. 16.

on the other hand, are limited primarily to the very large schools. It was estimated that during the fiscal year 1965-66, only 18 percent of all high school students had an opportunity to participate in a vocational education activity. The percentage of students enrolled in a full time pre-employment curriculum, however, was actually much smaller considering the number of students enrolled in just one or two vocational courses such as typing, home economics, auto mechanics, etc. . . .

The area vocational school has been developed in response to a need for diversified programs of vocational education. Kentucky, for example, has already developed a system of fourteen area schools, while Pennsylvania is planning on an ultimate development of 79 such schools.[16] In both of these cases the state is divided into areas according to population distribution and transportation facilities. At the principal population center of each area, a vocational education center is located. The students remain in their home high school for their academic courses and are transportated by school bus to the vocational center on certain days of the week or certain hours of the day for selected vocational courses.

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[16]Harold T. Smith. Education and Training for the World of Work - A Vocational Education Program for the State of Michigan, W. E. Upjohn Institute for Employment Research (Kalamozoo, Michigan, 1963) pp. 59 and 81.

Traditionally, the term area vocational school in West Virginia has designated a vocational school within a specific county that served the various secondary schools of that county. Recently, however, West Virginia has started the development of multi-county area vocational schools. The first school of this nature to be developed is located at Keyser and it serves the adjoining counties of Mineral, Grant and Hampshire. At various stages of development are the area schools at Buckhannon serving Barbour, Lewis and Upshur Counties, and a school at Martinsburg serving Berkely, Jefferson and Morgan Counties. The West Virginia Division of Vocational Education stated in a recent report that an "effort shall be made to construct one multi-county vocational-technical center each fiscal year (to 1972) through state and federal funds."[17]

The area school is also one of the major institutional alternatives for post-secondary vocational and technical education. In a number of states the area school is used effectively as a secondary educational institution during the day and post-secondary institution at night.

The West Virginia Commission on Higher Education stated that:

> Occupationally oriented curriculums at the college level, especially at the technical level, are coming to be imperative. Although West Virginia has little emphasized such curriculums in the past, it shows signs of an 'explosion' in this area at present.[18]

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[17]See Appendix A.

[18]West Virginia Committee on Higher Education, op. cit. pp. 62-63.

In response to this need, many states have developed a system of community or junior colleges. These institutions of higher education, as originally developed, involved primarily a two-year liberal arts college program. Recently, however, it has taken on a much broader context as described by the Michigan Council of Community College Administrators:

> A community college is a locally controlled, public two-year institution of higher learning which offers broad, comprehensive programs of instruction for education beyond the high school by: (1) offering programs in occupational, technical and semi-professional training for persons planning to enter a vocation, as well as the first and second college academic courses for students planning to transfer to four year colleges or universities, (2) adhering to an "open" door general admission policy but being selective in those whom it retains, graduates, and recommends for placement, (3) responding to the particular educational needs of the community it serves (4) drawing upon its community's total resources in organizing its instructional program, (5) enrolling students on a full or part-time basis and (6) offering day and evening classes and programs of instruction, and, if economically feasible, on a year round basis.[19]

West Virginia's two-year institutions of higher education include one publicly supported junior college (Potomac State), three private junior colleges (Ohio Valley, Beckley, and Greenbrier College), and three branch colleges (West Virginia University's Parkersburg branch, and Marshall University's proposed branches at Logan and Mingo Counties), plus one technical institute (West Virginia Institute of Technology). West Virginia, on the other hand, has a relatively large number of four-year colleges throughout the state which offer or plan to offer organized

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[19]Smith, op. cit. p. 4.

occupational curriculums. This situation has led the West Virginia Committee on Higher Education to conclude that:

> It appears at this time that in West Virginia, there is no need to establish additional two year institutions, so long as the existing institutions of the state are provided with the desire and funds to perform continuing education functions of the comprehensive college, there appears to be no compelling need to open additional community colleges in the state.[20]

Financing Vocational and Technical Education in West Virginia

In 1965-66 the federal government contributed 36 percent of the total expenditures for vocational and technical education in West Virginia, the state 10 percent, and the local school system 54 percent (See Appendix D).

The sources of federal expenditures are the various grant-in-aid programs described in the appendix. These funds are used for the reimbursement of teachers' salaries, construction and equipment costs of vocational schools, plus the maintenance of teachers' education programs. Unfortunately, West Virginia has not maximized the utilization of these funds due to a lack of state and local matching funds.

While the state provides a large percentage of the matching funds for the adult, post-secondary, and special need programs, the local counties are responsible for providing the matching funds needed to maintain their individual programs. In fact, during the fiscal year

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[20]West Virginia Committee on Higher Education, op. cit. p. 44.

1965-1966, direct state appropriation for vocational education represented less than one percent of total state educational expenditures. Through the foundation program, however, state aid represents approximately 55 percent of the total operating expenditures in the county school systems. The individual counties can spend part of these funds for vocational education; however, they do not have to do so. These counties are free to apply the unearmarked funds received to their operating expenditures as they see fit. When describing a similar situation in Michigan, William Roe stated that:

> The effect is to discriminate against schools offering certain vocational courses or even certain academic courses that may be more costly than the conventional classroom courses....The formula guarantees the district a certain amount of money per student, but it does not guarantee and even discourages the offering of some vocational courses that many students should have.[21]

Roe recommended that under the circumstances the formula should be restructured to provide specifically for vocational education.

In the future we can expect state expenditures for vocational and technical education to increase significantly to meet an increased demand for both secondary and post-secondary programs. Since the West Virginia Constitution prevents two or more counties from jointly financing the construction of an area vocational school, the state will have to provide the matching funds for their proposed system of multi-county vocational schools. Even supporting the development of only one area school per year, as proposed, will constitute a substantial increase in the level of state expenditure for vocational education.

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[21] Ibid p. 20.

The need for additional funds at the post-secondary level was emphasized by the Commission on Higher Education:

> If the numerous programs contemplated by the state's public institutions of higher education are in fact to be initiated, it is to be hoped that the recommendations will urge the fullest possible use of federal funding. As of now the current proposal of the state department of vocational education recommends a post-secondary budget of $197,500 for fiscal 1966-67. Of this amount $90,000 is estimated for federal funding. For comparisons note that the state of Arkansas with a roughly equivilant population and a lower per-capita income is recommending $1,255,415 of which $622,925 is to be federally funded. Apparently West Virginia has a long way to go in this area.[22]

Other Major Considerations

Teachers' Training - Typical of West Virginia's educational system as a whole, a shortage of qualified teachers and low teachers' salaries represent major constraints on the development of vocational and technical programs. Except where college preparatory programs are available in the fields of vocational agriculture and home economics, it is difficult to find persons who have both subject matter competence and teaching ability. This problem is aggravated by the traditions and standards that have developed in the teaching profession.

> Rank, prestige, status, salary scales are geared to the years of schooling, degree obtained, and seniority. Furthermore, the salary scale for teaching may not compare favorably with journeymen's pay, and teachers' pay raises may be maller

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[22]West Virginia Commission on Higher Education, op. cit. p. 61.

and more infrequent. Why should any skilled journeymen shift to full time teaching under these circumstances?[23]

The West Virginia Division of Vocational Education has identified teacher education services as an item of "high priority." They recommend more effective utilization of stipends, scholarships and internships for preparing and upgrading vocational and technical personnel.

Research and Planning - There are a number of research and planning programs currently in process that relate to vocational and technical education in West Virginia. The West Virginia Research Coordinating Unit for Vocational Education has recently been established as the research arm of the Bureau of Vocational, Technical and Adult Education. This research unit is located at Marshall University and it is under the direction of Glen Smith. Services available through this unit are identified primarily as A) Consultive, B) Information, C) Research, D) Plans and Training. Their First Quarterly Technical Report is included in appendix E.

An interum-committee of the West Virginia Legislature recently authorized funds for the development of a state plan for Vocational and Technical Education in West Virginia. Dr. Joseph Nerden, from North Carolina, was retained as a consultant for the development of this plan.

There are three related research activities currently under way. The West Virginia Commission on Manpower, Technology, and Training

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[23] Smith, op. cit. p. 44.

is in the process of assessing the manpower requirements of the state.[23] Their findings should help guide the future direction of vocational and technical education in West Virginia, specifically in the context of curriculum development. West Virginia Institute, on the other hand, has developed a research program to determine West Virginia's manpower needs in the technical occupations. The third related research activity is the Appalachian Educational Laboratory's program related to the transition of youth from school to work. Their immediate concern is a lack of adequate guidance and counseling services in West Virginia and other states.

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[23]West Virginia Commission on Manpower, Technology and Training Annual Report No. 1 (Charleston, West Virginia, 1966) p. 5.

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APPENDIX A

VOCATIONAL EDUCATION PROGRAMS AT THE SECONDARY LEVEL

Editors Note

The information presented in this Appendix was reprinted by special permission from an unpublished report of the West Virginia Division of Vocational Education.

VOCATIONAL EDUCATION IN WEST VIRGINIA

Vocational education is neither young nor old as programs of education are studied. The early programs were introduced into the public education system soon after the passage of the Smith-Hughes Act and the enactment of the state's enabling act making it possible to participate in the federal program. Each subsequent federal vocational education act has been utilized to extend the program. The most recent federal legislation has been the Vocational Education Act of 1963. The availability of federal monies has served as an incentive to many county boards of education to establish and maintain programs of vocational education.

Adult basic education became a part of the state's public educational program through Section IIB, Economic Opportunity Act. This federal legislation provides for a program of basic education for persons 18 years of age or older who have not completed the eighth grade. The promotion, administration, and supervision of Adult Basic Education has been assigned to the Bureau of Vocational, Technical and Adult Education by the State Superintendent of Schools.

Programs of vocational, technical and adult education provided in West Virginia during the fiscal year 1966 shall be shown on the charts and described on the pages that follow.

STATUS OF PROGRAMS

Vocational Agriculture				Vocational Homemaking				Vocational Industrial				Voc. Bus. & Office				Distributive Education				Prac. Nse.			Tech. Ed.			Adult Education					County
Secondary School	Young Farmers	Adult Farmers	Spec. Agr. Classes	Secondary (U)	Secondary (Wage)	Ad. Voc. Home (U)	Ad. Voc. Homo (G)	Preparatory (Day)	Adult Extension	Part-Time Appr.	Part-Time Prep.	Secondary In-School	Secondary-Co-op.	Adult	Post-Secondary	Secondary In-School	Secondary-Co-op.	Adult	Post-Secondary	Preparatory	Extension	Secondary	Post-Secondary	Extension	Adult Basic	Adult High	AVP - State Retr.	MDTA	RAR	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
x		x		x	x	x			x																x			x		Barbour
x				x				x							x								x		x		x		Berkeley
x				x			x		x			x													x	x	x			Boone
x				x																					x				x	Braxton
				x					x																x					Brooke
x	x	x		x	x	x		x	x	x	x	x					x	x		x	x	x		x	x		x	x		Cabell
x				x																					x					Calhoun
x		x		x					x			x													x					Clay
				x																					x					Doddridge
						x		x	x												x				x	x	x	x		Fayette
x	x		x	x					x																x					Gilmer
x		x		x		x																			x					Grant
x	x			x	x			x	x																x	x	x			Greenbrier
x				x	x				x																x					Hampshire
								x	x			x																		Hancock
x	x		x	x					x																x					Hardy
x		x	x	x	x	x		x	x			x					x				x				x			x		Harrison
x	x	x		x			x		x			x		x				x							x					Jackson
x				x		x			x																x		x			Jefferson
				x	x	x		x	x	x		x	x	x			x	x		x	x	x		x	x	x	x	x	x	Kanawha
x				x		x		x	x																x		x			Lewis
				x																					x					Lincoln
				x		x		x	x			x		x				x				x		x	x	x		x		Logan
x						x		x	x	x		x						x				x		x	x					Marion
x	x			x				x	x																x					Marshall

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	County
x	x	x		x				x	x			x													x			x	x	Mason
								x	x												x				x		x	x		McDowell
x				x		x		x	x			x						x			x				x	x		x		Mercer
x	x			x	x																				x		x			Mineral
				x				x	x								x	x							x			x		Mingo
x	x	x		x				x	x	x		x								x	x				x					Monongalia
x	x			x		x								x				x							x					Monroe
x				x		x						x													x					Morgan
x				x		x		x	x																x			x		Nicholas
								x	x	x		x												x	x			x		Ohio
x	x			x					x																x		x			Pendleton
x	x			x				x	x			x													x					Pleasants
x	x		x	x		x			x																x			x		Pocahontas
x	x	x	x	x	x		x		x																x		x			Preston
x				x					x			x													x			x		Putnam
x	x	x		x		x	x	x	x			x		x			x			x	x	x		x	x	x	x	x		Raleigh
x	x	x	x	x		x		x	x			x						x							x		x	x		Randolph
x				x					x																x		x			Ritchie
x				x					x																x					Roane
x				x					x												x				x	x		x		Summers
x	x			x				x	x																x				x	Taylor
x		x	x	x								x													x		x			Tucker
x				x																					x					Tyler
x				x	x	x	x		x					x				x							x					Upshur
x	x			x	x	x			x			x		x				x							x					Wayne
									x																x					Webster
x	x		x	x					x			x										x	x	x	x		x			Wetzel
x	x	x		x																					x					Wirt
x				x			x	x	x	x			x	x			x	x			x	x	x	x	x		x	x		Wood
				x		x		x	x			x													x			x		Wyoming
43	20	13	8	49	10	20	6	24	43	6	1	22	2	8	1	0	6	12	0	4	10	7	3	8	54	8	18	20	4	

VOCATIONAL AGRICULTURE

Vocational education in agriculture is designed to meet the needs of those persons who have entered upon, or who are preparing to enter, the work of the farm or any occupation involving knowledge and skills in agricultural subjects.

An agricultural occupation is defined as one involving knowledge and skills acquired in agricultural subjects. The occupations include the functions of producing, processing, and distributing agricultural products and those services related to these functions. The occupations require competencies in one or more of the primary areas of plant science, soil science, animal science, agricultural business management, agricultural mechanization, and agricultural leadership.

The broad areas of agricultural occupations are divided as follows: 1. Agricultural Production (farming, farm management, forestry and ornamental horticulture), 2. Agricultural Mechanics, 3. Agricultural Processing, 4. Agricultural Sales, 5. Agricultural Services.

Vocational agriculture provides courses at the secondary level for students preparing for farming, other scientific agricultural occupations, or any occupation involving knowledge and skills in agricultural subjects (off-farm agricultural occupations). It provides the basic skills and knowledge needed by those students planning advanced study in agricultural college. Specialized courses are offered for those students planning for specific occupations such as forestry aide, landscape aide, or farm machinery serviceman. Students enrolled in vocational agriculture participate in a supervised occupational experience program. An integral part of the vocational agriculture program is the Future Farmers of America Organization. It supplements the regular instructional program by providing opportunities to engage in organized activities for leadership development, cooperation and community service.

Young Farmer Programs are designed to meet the needs of young people who are becoming established in production agriculture on a full-time or part-time basis. Students conduct supervised occupational experience programs of at least six months duration. Young Farmer Programs are conducted on a year-round basis, and include both group and individual instruction.

Adult Farmer and special agriculture classes may be offered where need is determined. Such courses are of sufficient length and content as to contribute to the compentency of the individual enrolled.

SUMMARY - VOCATIONAL AGRICULTURE - 1965-66

A total of 5759 students were enrolled in vocational agriculture classes in 94 schools in 43 counties. (Secondary schools - 5101; Young Farmer classes - 205; Adult Farmer classes - 205; special agricultural classes - 248). The classes were taught by the 105 regular vocational agriculture teachers and 12 special instructors that were employed to conduct the special adult agriculture classes.

A review of the results of students completing supervised occupational experience programs (1964-65) shows 87% of those starting (4887) earned a labor income of $1,227,670.36 or an average of $287.91.

SUMMARY - VOCATIONAL AGRICULTURE - 1965-66

	Number of Schools	No. Reg. Teachers	Enrollment: Secondary Schools	Young Farmers	Adult Farmers	Spec. Ag. Classes	Future Farmers of America
Barbour	1	2	88		10		83
Berkeley	2	2	58				60
Boone	1	1	37				42
Braxton	3	3	165				154
Brooke							
Cabell	2	2	139	10	18		91
Calhoun	1	2	125				126
Clay	1	1	69		10		72
Doddridge							
Fayette							
Gilmer	3	3	92	8		21	95
Grant	1	2	92		48		93
Greenbrier	5	4	240	10			225
Hampshire	3	3	119				120
Hancock							
Hardy	3	4	144	7		20	166
Harrison	4	4	155		11	17	152
Jackson	2	3	141	7	10		149
Jefferson	2	3	189				122
Kanawha							
Lewis	2	2	93				95
Lincoln							
Logan							
Marion	1	1	25				26
Marshall	3	3	132	7			136
Mason	3	4	197	18	11		202
McDowell							
Mercer	1	1	94				101
Mineral	2	3	124	12			97

	Number of Schools	No. Reg. Teachers	Enrollment: Secondary Schools	Young Farmers	Adult Farmers	Spec. Ag. Classes	Future Farmers of America
Mingo							
Monongalia	3	3	194	10	15		141
Monroe	4	4	204	19			206
Morgan	1	1	22				21
Nicholas	1	1	25				26
Ohio							
Pendleton	2	2	115	6			123
Pleasants	1	1	54	9			56
Pocahontas	3	4	138	7		26	141
Preston	5	5	295	8	46	55	274
Putnam	1	1	70				40
Raleigh	4	4	168	7	5		163
Randolph	2	2	126	10	11	68	97
Ritchie	3	3	141				135
Roane	2	3	131				134
Summers	2	2	91				94
Taylor	1	1	53	10			53
Tucker	2	2	118		4	8	102
Tyler	1	1	41				42
Upshur	2	2	117				103
Wayne	3	5	247	25			236
Webster							
Wetzel	3	3	127	9		14	130
Wirt	1	1	55	6	6		58
Wood	1	1	51				51
Wyoming							
Glenville College						19	
W.Va. Univ.							16
Total:	94	105	5101	205	205	248	4849

VOCATIONAL HOME ECONOMICS

Vocational home economics has two distinctly different types of programs to offer youth and adults, the one - homemaking as a vocation, and the other home economics that is directed toward employment in occupations using home economics knowledge and skills. Both types of programs may be offered in high schools or area vocational schools depending on the community needs.

The homemaking program is an integral part of the secondary school program. The introduction of a home economics program directed toward wage earning at the secondary level does not eliminate or minimize on-going homemaking programs.

In 1965-66 some 11,477 secondary pupils were enrolled in 138 schools that employed 151 qualified vocational home economics teachers. Sixty-five of these teachers were full-time in vocational home economics while twenty-two were only employed 1/2 day for home economics instruction. Twenty-seven thousand three-hundred home projects were completed by vocational home economics students.

Adult classes were taught by 29 secondary school teachers and 444 special teachers with an enrollment of 5,646 individuals.

Future Homemakers of America has as its goal "to help individuals improve personal, family and community living now and in the future". The West Virginia Association has a membership of 6,132 youth in 154 chapters. This program is a vital part of the secondary program in homemaking.

Programs preparing for employment have been organized in several areas of homemaking this year such as: Child Care, Clothing, Institutional Food, Housing and Home Furnishing and Specialized Services. Work experience is a necessary part of this new program.

The shortage of qualified vocational home economics teachers is a constant problem. This year 85 teachers were prepared in six institutions of higher learning. Only 22 were placed in homemaking programs in West Virginia. During this year, two universities offered three graduate courses leading to a Master's Degree in Home Economics.

The present vocational homemaking program is a pre-requisite for the wage earning courses. Students for wage earning courses were selected depending on aptitudes, abilities and interest in the area or areas of training.

Two hundred thirty-six high school seniors were enrolled in wage earning courses. The program included classes in Waitress Training, Home Care of the Sick, Child Day Care, Upholstering, Slip Covers, Catering, Short Order Cook, Dressmaking and Seamstress with fourteen counties participating.

County	No. of Programs	Secondary Enrollment		Adult Enrollment	
		Home-making	Wage Earning	Home-making	Wage Earning
Barbour	3	184	12	34	-
Berkeley	3	257	-	-	-
Boone	1	95	-	-	32
Braxton	3	299	-	-	-
Brooke	1	101	-	-	-
Cabell	5	361	15* 18	372	-
Calhoun	1	103	-	-	-
Clay	1	189	-	-	-
Doddridge	1	97	-	-	-
Fayette	3	-	-	146	-
Gilmer	2	70	-	-	-
Grant	2	165	-	8	-
Greenbrier	5	257	16	-	-
Hampshire	3	160	31	-	-
Hancock	-	-	-	-	-
Hardy	3	118	-	-	-
Harrison	3	172	26	13	-
Jackson	2	362	-	-	10
Jefferson	2	278	-	81	-
Kanawha	4	458	44	2958	-
Lewis	3	190	-	30	-
Lincoln	1	82	-	-	-
Logan	5	733	-	175	-
Marion	-	-	-	14	-
Marshall	4	344	-	-	-
Mason	3	342	-	-	-
McDowell	-	-	-	-	-
Mercer	8	536	-	248	-

County	No. of Programs	Secondary Enrollment		Adult Enrollment	
		Home-making	Wage Earning	Home-making	Wage Earning
Mineral	5	316	11	-	-
Mingo	6	660	-	-	-
Monongalia	2	201	-	-	-
Monroe	2	112	-	10	-
Morgan	2	85	-	32	-
Nicholas	2	315	-	53	-
Ohio	-	-	-	-	-
Pendleton	2	112	-	-	-
Pleasants	1	54	-	-	-
Pocahontas	3	182	-	10	-
Preston	8	571	46	-	12
Putnam	4	350	-	-	-
Raleigh	3	172	-	27	15
Randolph	4	272	-	129	-
Ritchie	3	197	-	-	-
Roane	2	219	-	-	-
Summers	2	171	-	-	-
Taylor	1	112	-	-	-
Tucker	2	120	-	-	-
Tyler	1	50	-	-	-
Upshur	2	216	22	231	22
Wayne	4	465	43	240	-
Webster	-	-	-	-	-
Wetzel	2	162	-	-	-
Wirt	1	60	-	-	-
Wood	1	79	-	-	21
Wyoming	4	384	-	32	-
TOTAL	141	11590	284	4843	112

*Special Needs

VOCATIONAL INDUSTRIAL EDUCATION

The primary objective of Vocational Industrial Education is:

1. To provide extension or preparatory courses and services for employed and unemployed adults that will lead to the development of skills or technical knowledge, or both, in order to supply worker replacements and to meet the changing work requirements.

2. To assist youth, while in school, in selecting an occupation in the manufacturing or service fields of work, and to provide instruction for those youth to enable them to make an advantageous entrance into a trade, industrial, or service occupation.

Twenty-four of the fifty-five counties offered Vocational Industrial day preparatory programs covering nineteen occupations. Forty-six counties offered extension courses for employed adults.

West Virginia became a charter member of the National Vocational Industrial Clubs of America when the state organized its state association February 19, 1966. There are now twenty local clubs with a total membership of 842.

The placement of graduates from the Vocational Industrial programs have been increasing each year according to graduate studies conducted by the state staff. Of the 898 graduates available for employment, the record of placement for this group was 84%. The average hourly wage received by the graduate was $1.75 male and $1.40 female. The total earnings of these graduates employed in the occupations for which they were trained was estimated to be $2,007,824.

The enrollment in the day and adult classes and the teachers for each county are shown on the following chart.

VOCATIONAL INDUSTRIAL EDUCATION

County	Occupation	No. Enrolled in Day Preparatory	No. Teachers	No. Enrolled in Adult Classes	No. Teachers	VICA Club
Barbour	Mining WVU Ext.			12	1	
Berkeley	Machine Shop	30	1			1
Boone	Custodial			18	3	
	Mining WVU Ext.			17	1	
Braxton	None					
Brooke	Blueprint Reading			12	1	
Cabell	Auto Mechanics	34	1			
	Custodial			111	4	
	Drafting	24	1	37	1	
	Ind. Electricity	19	1	28	1	
	Machine Shop	27	1			
	Mill & Cabinet	25	1			
	Mining WVU Ext.			55	2	
	Plumbing			17	1	
	Peace Officer Trng.			25	1	
	Printing	21	1			
	Radio & TV Repair	24	1			
	Sheet Metal	23	1	15	1	
	Welding	33	1	69	2	
Calhoun	None					
Clay	Custodial			23	3	
Doddridge	None					
Fayette	Auto Mechanics	45	1			2
	Building Maintenance	36	1			
	Machine Shop	56	1			
	Mining WVU Ext.			108	5	
	Welding	17	1			
Gilmer	Mining WVU Ext.			19	1	
Grant	None					
Greenbrier	Mill & Cabinet	22	1			
	Mining WVU Ext.			39	2	
	Peace Officer Trng.			45	1	
Hampshire	Custodial			6	3	
	Mining WVU Ext.			16	1	

County	Occupation	No. Enrolled in Day Preparatory	No. Teachers	No. Enrolled in Adult Classes	No. Teachers	VICA Club
Hancock	Auto Mechanics	73	1			
	Drafting			39	1	
	Foremen			35	1	
	Ind. Electricity	10	1	102	2	
	Machine Shop	27	1	19	1	
	Maintenance Mech.			11	1	
	Metallurgist			35	1	
	Mining WVU Ext.			38	1	
	Radio & TV Repair			11	1	
	Welding	32	1	71	2	
Hardy	Drafting			22	1	
Harrison	Auto Mechanics	29	1			3
	Ind. Electricity	30	2			
	Machine Shop	51	2	13	1	
	Mining WVU Ext.			172	5	
	Plumber			14	1	
	Welding	27	1	47	2	
Jackson	Mining WVU Ext.			11	1	
	Peace Officer Trng.			25	1	
	Plumbing			10	1	
Jefferson	Mining WVU Ext.			25	1	
Kanawha	Air Cond. & Refrig.	94	1	64	1	4
	Auto Mechanics	92	3	56	1	
	Auto Body Repair	26	1	17	1	
	Custodial			56	3	
	Drafting			80	2	
	Foremen			392	11	
	Ind. Electricity	55	3	49	2	
	Machine Shop	76	2	41	1	
	Maintenance Mech.	43	1	102	4	
	Mill & Cabinet			100	2	
	Millwright			14	2	
	Mining WVU Ext.			169	6	
	Peace Officer Trng.			29	1	
	Police Communication (English)			47	1	
	Printing	24	1			
	Radio & TV Repair	92	1			
	Sheet Metal	31	1			
	Welding (Blueprint Reading)			134	4	
Lewis	Custodial			14	3	
	Machine Shop	16	1			
	Mining WVU Ext.			20	1	
Lincoln	None					

County	Occupation	No. Enrolled in Day Preparatory	No. Teachers	No. Enrolled in Adult Classes	No. Teachers	VICA Club
Logan	Air Cond. & Refrig.	22	1			
	Machine Shop	87	2			
	Mining WVU Ext.			158	4	
	Welding	43	1	40	1	
Marion	Machine Shop	40	1			1
	Mining WVU Ext.			166	3	
	Peace Officer Trng.			51	1	
Marshall	Auto Mechanics	25	1	11	1	
	Machine Shop	49	2	12	1	
	Mining WVU Ext.			60	3	
Mason	Custodial			28	3	1
	Machine Shop	22	1			
	Mining WVU Ext.			18	1	
McDowell	Auto Body Repair	42	1			1
	Auto Mechanics	44	1			
	Custodial			46	3	
	Drafting	35	1			
	Ind. Electricity	44	1			
	Masonry	38	1			
	Mill & Cabinet	75	2			
	Mining WVU Ext.			236	4	
	Plumbing	43	1			
	Radio & TV Repair	43	1			
	Sheet Metal	45	1			
	Welding	79	2			
Mercer	Carpentry	32	1			1
	Drafting	30	1			
	Ind. Electricity	22	1			
	Machine Shop	35	1			
	Mining WVU Ext.			129	3	
	Radio & TV Repair	21	1			
	Welding	30	1			
Mineral	None					
Mingo	Auto Mechanics	23	1			1
	Ind. Electricity	28	1			
	Machine Shop	27	1			
	Mill & Cabinet	15	1			
	Mining WVU Ext.			77	2	
Monongalia	Machine Shop	32	1			
	Mining WVU Ext.			175	3	
Monroe	Mining WVU Ext.			34	1	
Morgan	None					

County	Occupation	No. Enrolled in Day Preparatory	No. Teachers	No. Enrolled in Adult Classes	No. Teachers	VICA Club
Nicholas	Ind. Electricity	43	1			1
	Machine Shop	43	1			
	Mining WVU Ext.			71	1	
	Welding	43	1			
Ohio	Air Cond. & Refrig.			10	1	
	Auto Body Repair			18	1	
	Auto Mechanics	36	1			
	Custodial			48	3	
	Drafting	28	1			
	Ind. Electricity	35	1			
	Machine Shop	34	1			
	Mill & Cabinet	28	1			
	Mining WVU Ext.			97	1	
	Plumber			10	1	
	Printing	38	1			
	Sheet Metal	32	1			
	Welding			54	1	
Pendleton	Custodial			15	3	
	Mining WVU Ext.			46	1	
Pleasants	Machine Shop	23	1			
	Mining WVU Ext.			25	1	
Pocahontas	Mining WVU Ext.			22	1	
Preston	Custodial			22	3	
	Mining WVU Ext.			93	3	
Putnam	Mining WVU Ext.			26	1	
Raleigh	Auto Body Repair	25	1			1
	Auto Mechanics	81	2			
	Commercial Foods	16	1			
	Drafting	30	1			
	Ind. Electricity	30	1			
	Machine Shop	45	1			
	Masonry	35	1			
	Mill & Cabinet	54	2			
	Mining WVU Ext.			82	2	
	Radio & TV Repair	25	1			
	Sheet Metal	21	1			
	Welding	42	1			
Randolph	Carpentry			45	2	1
	Drafting			12	1	
	Machine Shop	28	1	15	1	
	Mill & Cabinet	29	1	34	1	
Ritchie	Custodial			13	3	

County	Occupation	No. Enrolled in Day Preparatory	No. Teachers	No. Enrolled in Adult Classes	No. Teachers	VICA Club
Roane	Peace Officer Trng.			12	1	
Summers	Custodial			10	3	
Taylor	Machine Shop	38	1			
	Mining			15	1	
	Welding	39	1	21	1	
Tucker	None					
Tyler	None					
Upshur	Mining WVU Ext.			34	1	
Wayne	Blueprint Reading			10	1	
Webster	Mining WVU Ext.			28	1	
Wetzel	Mining WVU Ext.			20	2	
Wirt	None					
Wood	Aircraft Mechanic	17	1			1
	Auto Mechanics	18	1			
	Custodial			69	3	
	Ind. Electricity	17	1			
	Machine Shop	17	1			
	Mill & Cabinet	15	1			
	Mining WVU Ext.			84	2	
	Office Mach. Repair	24	1			
	Peace Officer Trng.			27	1	
	Sheet Metal	13	1			
Wyoming	Auto Mechanics	37	1			1
	Carpentry	29	1			
	Drafting	41	1			
	Ind. Electricity	49	1			
	Machine Shop	50	1			
	Mining WVU Ext.			64	3	
	Welding	50	1			

BUSINESS AND OFFICE EDUCATION

Business and Office Education is a comparatively new area in vocational education. It is developing, changing and adjusting to the needs of students that are preparing to enter business and industry in office occupations.

The purpose of Business and Office Education programs is to provide persons with marketable skills, knowledge and attitudes to enter a business occupation. The instruction is of such quality that persons completing the program are employable and capable of succeeding in the occupation for which they have prepared. The program is also designed to provide for refresher courses and for upgrading skills which may lead to promotion or advance positions.

Business and Office Education programs are developed to prepare individuals for occupations which are related to the facilitating functions of the office in either public or private enterprises. Many office occupations may be classified under one of the following types:

1. Stenographic, typing, filing and related occupations
2. Computing and accounting occupations
3. Material and production recording occupations
4. Information and message distribution occupations
5. Accounting, auditing, budget and management analysis
6. Data processing occupations

Table A indicates the number of students enrolled in the various Business and Office Education classes for both general use (education <u>about</u> business) and occupational preparation (education <u>for</u> business).

TABLE A

Statistical Analysis of

Business and Office Education Courses

Total Number of Schools Offering Business Education - 221

Total Number of Business and Office Education Teachers - 589

Courses	No. of Sections	No. of Boys	No. of Girls	No. of Students
Personal Typing	41	669	610	1,279
Typing I	763	8,818	13,801	22,619
Typing II	309	1,405	6,275	7,680
Bookkeeping I	313	2,812	5,615	8,427
Bookkeeping II	55	306	668	974
Accounting	7	39	82	121
Business Machines	47	249	726	975
Business Arithmetic	123	1,423	2,155	3,578
Commercial Law	57	792	756	1,548
General Business	202	2,497	3,689	6,186
Salesmanship	11	146	155	301
Shorthand I	316	275	7,366	7,641
Shorthand II	144	45	2,816	2,861
Stenography	17	2	430	432
Notehand	24	302	380	682
Office Practice	92	183	1,841	2,024
Business Courses Not Listed	45	241	805	1,046
TOTALS	2,566	20,204	48,170	68,374

Under the Vocational Education Act of 1963, 21 counties have approved programs which make them eligible for federal funds in the field of Business Education. Within these 21 counties, 73 high schools have offered clerical, stenographic, bookkeeping and data processing programs. Two hundred and twenty teachers were involved in operating these programs and teaching many of the subjects which are listed in Table A. The enrollment was 12,974 in approved Vocational Business and Office Education classes.

Nineteen counties expanded their programs to include office procedures and business machines courses. Two business machines laboratories were updated and 25 new laboratories were added. Fifteen shorthand laboratories were also added.

Adult Business and Office Education classes for persons preparing for employment or wishing to upgrade themselves in office occupations were offered in 8 counties in 15 different schools. There were 44 different classes including such courses as office machines operation, transcribing techniques and keypunch operations, taught by 25 teachers. Six hundred and six adults completed these training programs in office occupations.

There are 50 Future Business Leaders of America Chapters with membership of 1,698 in the State of West Virginia. These chapters were organized for students taking business subjects with emphasis on continuing Business Education for their occupational preparation.

VOCATIONAL BUSINESS AND OFFICE EDUCATION
1965-66

County	No. of Programs	Enrollment In-Sch	Co-op	Adult
Barbour				
Berkeley				
Boone	3	596		
Braxton				
Brooke				
Cabell	2	538		
Calhoun				
Clay	1	148		
Doddridge				
Fayette				
Gilmer				
Grant				
Greenbrier				
Hampshire				
Hancock				
Hardy				
Harrison	1	172		
Jackson	4	435		109
Jefferson				
Kanawha	17	4,234	25	348
Lewis				
Lincoln				
Logan	1			33
Marion	9	908		
Marshall				
Mason	1	188		
McDowell				
Mercer	5	1,287		
Mineral				
Mingo				
Monongalia				
Monroe	1			9
Morgan	2	89		
Nicholas				
Ohio				
Pendleton				
Pleasants	1	176		
Pocahontas				
Preston				
Putnam	4	539		
Raleigh	2	261		18
Randolph	2	512		
Ritchie				
Roane				
Summers				
Taylor				
Tucker	2	269		
Tyler				
Upshur	1			21
Wayne	9	806		28
Webster				
Wetzel	1	143		
Wirt				
Wood	2	727	26	40
Wyoming	6	946		
T O T A L S	77	12,974	51	606

DISTRIBUTIVE EDUCATION

Vocational education in the distributive occupations is designed to meet the needs of those persons who have entered, or are preparing to enter, a distributive occupation.

A distributive occupation is defined as being one that is followed by proprietors, managers or employees engaged primarily in marketing or merchandising of goods and services. The content of the program of instruction in distributive education is derived from an analysis of the functions of marketing and a knowledge of products and services in reference to the occupational objective of the student.

Distributive Education is growing and must continue to grow if it is to meet the needs of the people in West Virginia preparing for employment and already employed in distributive occupations.

Distributive Education cooperative programs were provided in six counties by nine schools with 9 teacher-coordinators. Two hundred and forty-eight students participated in school-store training within these distributive education programs during the 1965-66 fiscal year. Students were enrolled and worked in 18 different major job classifications, such as general merchandising and food services, in the field of distribution.

Adult classes in distributive occupations were provided by 12 counties in 26 schools offering 76 classes taught by 41 teachers with a total enrollment of 1,231.

Education in distribution has received considerable recognition in recent years as an essential instrument contributing to the efficiency of our marketing system. The characteristics of the current marketing situation in West Virginia indicates the special need for increasing and strengthening Distributive Education.

DISTRIBUTIVE EDUCATION - 1965-66

County	No. of Programs	Enrollment In-Sch	Co-op	Adult
Barbour				
Berkeley				
Boone				
Braxton				
Brooke				
Cabell	4		50	197
Calhoun				
Clay				
Doddridge				
Fayette				
Gilmer				
Grant				
Greenbrier				
Hampshire				
Hancock				
Hardy				
Harrison	2		46	
Jackson	2			85
Jefferson				
Kanawha	4		50	181
Lewis				
Lincoln				
Logan	2			172
Marion	3			123
Marshall				
Mason				
McDowell				
Mercer	2			96
Mineral				
Mingo	3		37	84
Monongalia				
Monroe	3			45
Morgan				
Nicholas				
Ohio				
Pendleton				
Pleasants				
Pocahontas				
Preston				
Putnam				
Raleigh	1		34	
Randolph	1			16
Ritchie				
Roane				
Summers				
Taylor				
Tucker				
Tyler				
Upshur	1			32
Wayne	5			111
Webster				
Wetzel				
Wirt				
Wood	2		31	89
Wyoming				
T O T A L S	35		248	1,231

PRACTICAL NURSE EDUCATION

Vocational instruction in Health Occupations is designed to prepare persons to enter one of the health occupations or to upgrade the skills and knowledges of persons who are, or have been employed, in a health occupation under the direction of a doctor or a registered professional nurse.

Present vocational instruction in health occupations is primarily that of Practical Nurse Education. This instruction is offered as a preparatory program on the adult or post-secondary level and as an extension course for the licensed practical nurse.

The preparatory program is of one year's duration for those persons who have completed or have left high school. Preparatory programs in Practical Nurse Education are now being conducted by four county boards of education with fourteen classes, nineteen teachers and two hundred and forty-three students.

Ten counties conducted extension courses for licensed practical nurses. Eleven classes were offered and 156 persons were enrolled. These courses were in related subjects for those practical nurses licensed by waiver or courses in pharmacology.

All preparatory program graduates who have met the requirements for licensure have been employed.

Those taking the extension courses in pharmacology are prepared to administer medication under the care of a registered nurse or a physician.

Those taking the related courses of 324 hours are eligible to take the State Board examination to remove the waiver from their license.

Cabell County Board of Education operated a program in Medical Technology in cooperation with a local hospital. Six students were enrolled and completed the program.

Morgan County conducted a nursing aide program for high school seniors. Thirteen students were enrolled and completed the course.

The following chart is a breakdown of the counties offering programs and the number of students enrolled.

HEALTH OCCUPATIONS

County	Occupation	Enrollment Post-Secondary Preparatory	No. Tchrs.	Adult Extension Enrollment	No. Tchrs.
CABELL	Practical Nurse	97	6	17	1
	Laboratory Technician	9	1		
FAYETTE	Practical Nurse			12	1
HARRISON	Practical Nurse			19	1
KANAWHA	Practical Nurse	53	5	11	1
McDOWELL	Practical Nurse			16	1
MONONGALIA	Practical Nurse	26	3	36	3
MORGAN	Nurse Aide	10	1		
RALEIGH	Practical Nurse	67	5	10	1
RANDOLPH	Practical Nurse			12	1
SUMMERS	Practical Nurse			11	1
WOOD	Practical Nurse			22	2

TECHNICAL EDUCATION

The primary purpose of the programs in technical education is to provide instruction:

1. To fit individuals for useful employment as technicians or skilled workers in recognized occupations requiring scientific or technical knowledge.

2. To provide training or retraining for youth and adults, including related technical instruction for workers in scientific and technical fields.

3. To make available to the able student education in technical occupational fields necessary to State and National needs.

Technical Education programs are now being offered by seven county boards of education and two colleges qualified to receive reimbursement from Vocational funds.

The technology most widely offered is electronics in seven programs. There are two electronic Data Processing and one Chemical Technologies being offered. These are on the secondary level.

On the secondary level, Electronic Technology with seven programs has the largest number followed by Electronic Data Processing with two programs and Chemical Technology with one program. The graduates of these technical programs were placed on the job, entered military service, or continued in full-time study. Five of the seven county boards of education provided extension courses in a technology for employed persons.

On the post-secondary level West Virginia Institute of Technology is offering Civil Engineering Technology, Drafting and Design Technology, Electrical Engineering Technology, and Mechanical Engineering Technology; and Bluefield State College is offering Architectural Technology, Civil Technology, Electrical-Electronics Technology, and Mechanical Technology.

Students in the secondary technical program are eligible for membership in the Vocational Industrial Clubs of America.

The following chart gives a breakdown of the offerings, number of students enrolled and the number of instructors.

TECHNICAL

COUNTY or INSTITUTION	TECHNOLOGY	No. Enrolled in Day Preparatory	No. Teachers	No. Enrolled in Adult Classes	No. Teachers	No. Enrolled in Post-secondary Preparatory	Teachers	VICA Clubs
Cabell	Electronic	43	1	11	1			0
Kanawha	Chemical	14	1	26	1			4
	Electronics	43	1					
	Laboratory Testing			53	2			
Hancock	Metallurgy			35	1			0
Logan	Electronics	49	2					0
Marion	Electronics	20	1	13	1			1
Raleigh	Electronics	33	2	15	1			1
Wetzel	Electronic Data Processing	93	2	53	1			0
Wood	Electronic Data Processing	30	2			2	1	1
	Electronics	43	2					
West Virginia Institute of Technology	Civil Technology					29	3	
	Electrical Technology					77	3	
	Mechanical Engineering Technology					48	3	
	Drafting and Design Technology					41	3	
Bluefield State College	Drafting and Design Technology					25	2	
	Civil Technology					27	3	
	Mechanical Engineering Technology					26	2	

ADULT BASIC EDUCATION

Adult Basic Education has become recognized as the educational life blood of many hundreds of individuals in West Virginia. They now have hope for a better life. They have been receiving the educational skills that can unlock the door to saleable job skills. From this new experience evolves new people with new hopes and aspirations who have changed philosophies from "I can't" to "I can and will."

The program of Adult Basic Education is designed for those individuals who have attained the age of eighteen and whose inability to read and write the English language constitutes a substantial impairment of their ability to get or retain employment commensurate with their real ability. To help eliminate such inability and raise the level of their education with a view to making them less likely to become dependent on others, to improve their ability to benefit from occupational training and otherwise increase their opportunities for more productive and profitable employment, and making them better able to meet their adult responsibilities is the role of Adult Basic Education.

During the fiscal year 1965-1966 a total of 9,056 students were enrolled in Adult Basic Education classes in West Virginia. A majority of these students were on the State Department of Welfare's Aid to Dependent Children Program. Approximately 500 of these students have found employment and are no longer on welfare. There is every reason to believe that the Adult Basic Education Program was instrumental in helping these individuals find jobs. One hundred twenty eight students have completed basic education and are enrolled in high school classes. Approximately 200 students have successfully passed their General Educational Development test and have received their high school equivalency diploma.

ADULT BASIC EDUCATION

ENROLLMENT

1965-1966

County	Enrollment	County	Enrollment
Barbour	77	Mingo	1,183
Berkeley	21	Monongalia	48
Boone	236	Monroe	64
Braxton	200	Morgan	9
Brooke	32	Nicholas	130
Cabell	160	Ohio	45
Calhoun	79	Pendleton	49
Clay	160	Pleasants	21
Doddridge	78	Pocahontas	53
Fayette	509	Preston	48
Gilmer	60	Putnam	80
Grant	18	Raleigh	380
Greenbrier	108	Randolph	149
Hampshire	11	Ritchie	54
Hardy	26	Roane	160
Harrison	76	Summers	239
Jackson	124	Taylor	69
Kanawha	817	Tucker	17
Lewis	51	Tyler	39
Lincoln	343	Upshur	86
Logan	700	Wayne	414
Marion	170	Webster	133
Marshall	89	Wetzel	252
Mason	110	Wirt	14
McDowell	464	Wood	54
Mercer	253	Wyoming	245
Mineral	49		
		Total	9,056

VOCATIONAL RETRAINING

Since 1960, retraining the unemployed and the underemployed has been a major role for vocational and adult educators. Federal legislation and appropriations since 1962 has been of considerable financial assistance in supporting retraining programs.

Under provisions of the Manpower Development and Training Act, twenty county boards of education have provided retraining programs for 1681 trainees from which 934 have completed their training while 489 are continuing with their instruction. The estimated cost for these training projects amounted to $717,310.00. The last report from the West Virginia Department of Employment Security showed that 63% of the trainees completing a course were employed. Experience with this program would lead one to anticipate a higher percentage of placement.

Two major retraining projects undertaken during the year were the training of 471 heavy construction equipment operators and the training of 300 youth provided through the Charleston and Huntington Youth Centers.

The instructional costs for the heavy equipment operator training amounted to $415,729.00. Major pieces of equipment used in this training project was loaned to the State by the United States Army.

Under Section 241, Manpower Development and Training Act (RAR), five classes with an enrollment of 135 persons were approved, forty-nine persons have completed training while eighty-six continued their courses at time of this report. Forty-six of those completing the training have been employed in the occupation for which trained.

West Virginia has a recognized training program that has served as an aid in industrial development. This recognition has been utilized by the West Virginia Department of Commerce in its industrial promotions. Eighteen county boards of education conducted a state-supported (AVP) retraining program that provide 103 courses in which 2,137 persons were enrolled while 1656 completed

their training.

The occupational areas of training included power sewing machine operator, welding, nursing aid, electronic parts assembler, and wood working machine operator.

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APPENDIX B

VOCATIONAL AND TECHNICAL PROGRAMS AT THE POST-SECONDARY LEVEL

Editor's Note

The following article was reprinted from the West Virginia Committee on Higher Education Report to the Honorable Hulett C. Smith, Governor of West Virginia, and the Legislature of the State of West Virginia. Volume II; Higher Education in West Virginia - A Self Assessment. Charles C. Wise, Jr., Chairman. 1966. pp. 49-63.

Chapter I

BRANCH, JUNIOR, AND COMMUNITY COLLEGES

TASK FORCE MEMBERSHIP:

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Members:
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Mr. J. M. Powell, President, Ohio Valley College

Dr. Wendell G. Hardway, President, Bluefield State College

Mr. H. K. Baer, Former Secretary, West Virginia Board of Education, Resigned 7-31-66

Mr. Lewis Case, Former President, Ohio Valley College, Resigned 7-6-66

Dr. E. J. Scrafford, Former Acting President, Bluefield State College, Resigned 6-30-66

1. THE NEED

In addressing oneself to the problem of determining the kinds of post-high-school education needed in the future, it appears that certain trends have become clearly delineated. The past three decades have been characterized by technological changes of a magnitude apparently unforeseen prior to World War II. Norman C. Harris, professor of technical education at the University of Michigan, among others, has pointed out that these changes ". . . have issued a significant, world-wide challenge to man's political, economic, social and educational institutions . . . The basic educational problem posed by the new technology is that of educating and training *all* young *people* for a changing world of work."[1] A completely new relationship be-

[1]Norman C. Harris, "The Community College and Middle Manpower," *Technical-Vocational Education and the Community College*, Proceedings of the Thirteenth Annual Legislative Work Conference of the Southern Regional Education Board, (Williamsburg, Va., August, 1964), p. 15.

tween man, his education, and his work, has resulted from this new technology; a relationship which, in the words of Grant Venn, places "education squarely between man and his job."[2] Preparation for employment is then generally recognized as an important function of the two-year college.

There is another trend in evidence which, if it develops, will have a significant impact upon junior colleges. In September 1965, a new and radically different university, Florida Atlantic, opened its doors for the first time. Curricular offerings at F.A.U. will be restricted to upper division, professional, and graduate work. The establishment at Pensacola of a second university of this type has been authorized by the 1963 Florida Legislature.

". . . Alvin C. Eurich foresees that by the year 2000 strong liberal arts colleges and universities will have discontinued their first two years since these will come 'almost wholly within the province of the junior colleges.'"[3] This trend, if it develops, would indicate a need for strengthening of junior college transfer programs.

There is a universal acceptance of the concept that one of the chief functions of the junior college is adult and general education. It has become imperative that retraining be provided for unemployed adults in order that they may re-enter the labor market with some reasonable expectation of employment. Some of this retraining is appropriate in junior colleges.

In West Virginia the percentage of high school graduates going to college varies significantly from county to county. Records in the State Department of Education for the year 1965 indicate that Cabell and Lincoln Counties had the highest and lowest percentages, 51.23 and 16.01 percent respectively, planning to attend college. The average for the 55 counties was 36 percent. The national average is about 56 percent.

The literature indicates that, "The aspiration of students in the two-year college are largely limited to college transfer. [Yet] Two-thirds of the students who enter two-year colleges do not go beyond the sophomore year."[4] This factor alone would lead one to draw a number of conclusions, not the least of which, is that appropriate programs must be provided for the two-thirds who do not transfer to a degree-granting institution.

These programs, of course, would provide preparation in areas that are directly related to the requirements of employment, i.e., technical-vocational education. It could be further concluded that the statistic cited above is ample justification for the establishment of remedial programs designed to assist the student to improve certain basic skills such as reading, writing, speaking, and mathematics.

"In late 1947 the Commission on Higher Education appointed by President Truman [estimated] that at least 49 percent of the population had the mental ability to complete 14 years of schooling with a curriculum that should lead either to gainful employment or to further study . . ."[5] The determination of just what proportion of that 49 percent could attain a college degree, and thus should be enrolled in a transfer program, is quite difficult since the answer would depend upon a number of factors, including the standards of the institution attended, the curriculum enrolled for, and the motivational level of the student. For West Virginia high school graduates, a reasonable estimate as to the number who should pursue a transfer program may be between 25 and 30 percent, assuming that all of the more able students are enrolled.

It should be stressed that the most desirable type of two-year institution, particularly one located in West Virginia, is multi-purpose, i.e., an institution which includes the functions of transfer, vocational-technical, and adult education. This clearly is the predominant thinking of educators across the country.

NEED—Sections Without Higher Educational Opportunity

Virtually all persons working in the field of junior college education agree that there is a minimum size below which these institutions cannot operate economically or provide a diversity of programs. There is also rather general agreement as to defining that minimum. "While a number of states earlier had used a minimum as low as 100 students . . . [a] majority of the states which have incorporated minimum criteria either in law or in regulations require a minimum potential enrollment of from 400 to 500 students."[6]

Accessibility has been found to be one of the major factors determining whether or not students attend college. Research also indicates that the community college can effectively serve an area of no more than twenty five to thirty miles in radius, or about 45 minutes to one hour of travel time away from college. The student enrollment potential decreases sharply beyond these limits.

The application of two of the most basic criteria used in determining the establishment of junior colleges reveals only about four small, rural, sparsely populated areas in the state of West Virginia

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[2] Grant Venn, *Man, Education and Work*, The American Council on Education, (Washington, D. C., 1964).

[3] B. Lamar Johnson, "Alternative Patterns for Post-Secondary Technical-Vocational Education," *Technical-Vocational Education and the Community College* Proceedings of the Thirteenth Annual Legislative Work Conference of the Southern Regional Education Board, (Williamsburg, Va., August, 1964), p. 10.

[4] Clyde E. Blocker, *et al.*, *The Two-Year College: A Social Synthesis*, (Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1965), p. 121.

[5] Leland L. Medsker, *The Junior College: Progress and Prospect*, (McGraw-Hill Book Company, Inc., New York, 1960), p. 9.

[6] Lee G. Henderson, "Location of New Community Colleges," *Technical-Vocational Education, and the Community College*, Proceedings of the Thirteenth Annual Legislative Work Conference of the Southern Regional Education Board, (Williamsburg, Va., August, 1964), p. 49.

that are more distant than thirty miles from an institution of higher education. Hence there appears to be no major area of the state, with any significant concentration of population, that is without a readily accessible higher educational institution.

2. CRITERIA AND LOCATION

In recent years the prospect of opening the doors of a community college within commuting distance of every student throughout the state or nation has become an ideal of many educators as well as legislators and others. The success or failure, however, of any system of institutions of higher education will be dependent upon intelligent and careful planning. A college is desirable only if it is located and developed in such a manner as to assure that it meets a real educational need. "Community Colleges will be little more than expensive 'white elephants' if . . . they are scattered promiscuously over the land in response to political whims or social pressure."[7]

As pointed out elsewhere in this report, there is a minimum size below which a college cannot operate economically or offer the diversity or kinds of programs that are needed. With an ever-increasing number of governmentally supported agencies, bureaus, and institutions incessantly clamoring for progressively larger proportions of budgetary funds, it appears that additional income must be derived from more efficient operation of such agencies and institutions. Educational institutions, simply by virtue of their universal necessity and desirability, cannot be excluded from this responsibility.

As a means of providing for institutions of greater stability with broader curriculums, as well as a means of effecting a more efficient operation, there is very much in evidence in recent years a trend to increase the minimum student base. It is also generally agreed that, as a result of the small number of students interested in many occupational programs, it becomes prohibitively expensive to operate those programs with smaller enrollments. For example, in 1963 the per student cost at one of the smaller Florida colleges was about $1,100 as compared to the state average of $570 per student.

"The best single criterion is the number of high school graduates living within a one-hour commuting distance,"[8] according to William M. Hanley, Director, Freshmen and Sophomore Centers, University of Wisconsin. While this is one of the methods of establishing the potential enrollment, two others are in general use throughout the states. Several states use the total enrollment in grades 9 through 12 in the community college district. A number of other states consider the total population in the college district as a criterion for establishment. Thus, potential enrollment may be estimated in several ways, but usually it is related to total high school enrollments or to

[7] *Ibid.*, p. 52.

[8] William M. Hanley, "Operating Guidelines for Public Community Colleges," *Selected Papers*. From the 44th Annual Convention, American Association of Junior Colleges, (Washington, D. C., 1964), p. 66.

the number of high school graduates in the area to be served by the new facility as well as to the total population base. It is assumed that approximately one-fourth of the total high school enrollment or about 50 percent of the high school seniors will enroll in a local junior college when technical and occupational programs are offered. Institutions having more restrictive programs can anticipate attracting a somewhat smaller proportion from the supporting high schools. At least two additional factors, however, which must be considered are the need for adult education and the proximity of other institutions of higher education.

While authorities on the subject generally agree on the potential enrollment figures of 400 to 500 students to justify establishing a junior college, they are not quite so explicit in their use of the terms "comprehensive," "community," and "junior" college. For example, one report states, "we believe that a new comprehensive community college should have a potential full-time equivalent enrollment in college parallel courses alone of 400 students."[9] The authors continue by stating that technical and vocational students would add to this base. Lee G. Henderson, Assistant Director, Division of Community Junior Colleges of the Florida State Department of Education, observes, "We have found that it is possible to provide quality basic liberal arts and college transfer programs in institutions of less than 300 persons, but it is exceedingly difficult, if not impossible, to develop occupational programs in these institutions."[10] Thus it might be concluded that the 400 to 500 figure is the recommendation when a comprehensive junior college, offering one or more vocational programs in addition to the transfer program, is being considered. In view of these facts, establishment of a junior college in West Virginia might properly be predicated upon a population base of 40,000 to 50,000 persons.

3. COMMUTING DISTANCE

Various state-wide studies of the need for community colleges have clearly demonstrated that accessibility is one of the major factors determining whether or not many students go to college. This research has led to a universal acceptance of a definition of service areas. While there are some variations among the states, the range being from twenty-five to thirty-five miles, it has been adequately demonstrated that when commuting time, one way to or from school, exceeds 45 minutes to one hour, the student potential drops quite rapidly. One study conducted in West Virginia has recommended a thirty-mile commuting distance which appears reasonable, particularly in view of the hazardous winter driving conditions characteristic of the state. It is pertinent now, however, to take into consideration the reduced driving time which will be provided by the interstate system.

[9] The Report of the Governors Commission on *Education Beyond the High School*, (Raleigh, North Carolina, 1962), p. 73.

[10] Henderson, *op. cit.*, p. 49.

4. ADMISSIONS POLICY

The question "Should junior colleges operate with an 'open door' admissions policy?" can be resolved only in terms of the philosophy, the objectives, and the curricular offerings of the institution posing the question. The admissions policy should be geared directly to the institutional objectives, and should be somewhat consistent with the level of the curricular demands placed upon the students. If the college is concentrating on the preparation of students in the pre-professional curricula, ultimately leading to transfer to a degree-granting institution, then it would appear that some degree of selectivity should prevail to assure the student a reasonable opportunity for success. An "open door" admission policy at this type of institution is simply an "open door" to frustration and failure for many students. Obviously, "Students who are candidates for degrees and who are pursuing their studies at off-campus locations should be held to the same academic requirements as those under which students enrolled in campus courses must pursue their work."[11]

On the other hand, if one is to remain responsive to the social and economic forces which have been responsible for what might be termed the community college explosion in recent years, and which will continue to exert significant effects on the future of the community college movement, and if one is led to accept the concept of the comprehensive community college, then the admissions policy should reflect this philosophy.

"The admission requirements of the typical community college are nonselective in philosophy as well as in practice. Acceptance of a much wider range of students, from the standpoint of academic ability, is a conscious, planned admissions policy rather than a happenstance."[12] This is an expression of the philosophy that the community college should design programs to meet the needs of both youth and adults of the community.

There seems to be fairly universal agreement among the writers who deal with the philosophy of the purpose of junior colleges. It is expressed by Higgins and Thurston who state that, ". . . the role of the junior colleges [is] clearly that of sorting, identifying, and developing potential; of helping students clarify their goals; and of assisting them in developing the comprehensive skills which will enable them to move successfully to a senior institution or into the mainstream of community participation."[13]

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[11] *Guide for the Evaluation of Institutions of Higher Education*, Commission on Colleges and Universities, North Central Association of Colleges and Secondary Schools, 1963, p. 72.

[12] Ralph R. Fields, *The Community College Movement*, (McGraw-Hill Book Company, Inc., New York, 1962), p. 69.

[13] Sadie G. Higgins and Alice J. Thurston, "Challenges in Student-Personnel Work," *Junior College Journal*, Vol. XXXIV, (No. 3, November, 1963), 25.

There are strong arguments in support of an "open door" admissions policy for the junior college, whether it be a branch or an independent institution. Frederic T. Giles points out, "While the general effect of popular sentiment and federal legislation has been to increase the universal availability of higher education, the vastly increased number of students has stimulated a counter-movement in many four-year institutions. This reaction is evidenced by higher admissions standards, increased tuition charges, open acceptance of the necessity to eliminate large percentages of entering classes, and a resistance to broadening the curriculum of such institutions to include work not traditionally collegiate."[14] The opportunity for enrolling in a degree-granting institution is thus being increasingly reduced for greater numbers of students. If more selective admissions policies become the trend in junior colleges, we would surely lose a vast potential in terms of human resources.

Increased or continued selective admissions would seem to be further contraindicated as a result of the nation's changing manpower needs. As pointed out by Norman C. Harris and others, the occupational structure and educational requirements are, primarily as a result of automation and increasing job complexity, undergoing significant changes.

Semiprofessional, technical, clerical, sales, and highly skilled jobs will involve approximately one-half of the total labor force by 1970. Most of these jobs will require post-high-school training; but less than the baccalaureate degree. Many who could be trained for these positions will not be able to gain admission to a degree-granting institution. It would seem that junior colleges should fill this gap.

It appears almost certain that the junior college will, of necessity, assume the obligation of expanding and modifying existing programs and establishing new ones to meet ever-increasing demands. Selective admissions policies would hardly seem consistent with the future, if not the present role of the junior college. Being admitted to the college, of course, does not imply that the student is eligible to take all courses or curricular offerings at the college. The more rigorous and demanding programs will accept only those students who demonstrate potential for success.

5. FACULTY RECRUITMENT

An effective teacher-recruitment program will necessitate deliberate efforts to improve the prestige of junior college teaching and to gain popular acceptance of the respectability and importance of vocational and technical programs. Increasing effort to improve salary scales would appear to facilitate recruitment, and while the literature does not wholeheartedly endorse "moonlighters," any area with a significant concentration of population possesses professional and business people who can be utilized on a part-time basis.

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[14] Blocker, *et al.*, *op. cit.*, pp. 5-6.

6. FACULTY QUALIFICATIONS

"Teachers and administrators in any type of college inevitably influence, by their attitudes, the nature and quality of program. They are the primary agents of curriculum development, instruction, services to students and community relationships. They, and the students, make the institution what it is."[15] No one in educational circles would take great exception to this statement. Thus, if quality in education is an objective, one must be concerned with the qualifications of those who have been given the responsibility of molding and shaping programs, charting the courses which educational institutions will follow and determining the quality of classroom instruction.

The academic degree attained is the usual measure of preparation for teaching, particularly for college teaching. The undergraduate curriculum is generally designed to lend some breadth to the students background. Graduate study provides the intensive training in a specialized area necessary for functioning at the professional level. The minimum entry requirement for many positions is the master's degree and this requirement appears reasonable for junior college teaching. Research reveals that nearly 75 percent of the junior college teachers in the nation have attained graduate degrees.

In view of the highly specialized nature of the technical and vocational programs usually offered by junior colleges, the normal degree requirements may be relaxed somewhat or even waived, particularly for instructors in the vocational programs. This does not mean that the quality of these programs will be lowered; it does mean that the requirements will vary somewhat according to the level of the program as determined by its objectives.

The vocational programs are lower-level courses placing greater emphasis on the development of practical skills such as practical nursing, welding, and automotive mechanics. The usual degree requirement for teaching may be waived for some of these positions. Employment should be based on two considerations: (1) The candidate must possess the qualifications of an expert in the teaching area, and (2) He must have some degree of preparation for teaching, such as work experience in a supervisory capacity. The supply of qualified teachers at all levels is limited, but the scarcity is particularly acute for teachers for vocationally oriented curriculums. Many community colleges must rely upon part-time teachers from industry and the professions. As a result, the literature emphasizes the need for providing in-service training for those who may or may not possess degrees.

7. FACULTY LOAD

When one attempts to establish guidelines for determining maximum teaching loads for faculty members, it would appear that there are a number of factors which should be considered: (1) size of classes, (2) the number of hours devoted to on-campus teaching and preparation, (3) the demands upon certain departments or fields, and

[15] Medsker, *op. cit.*, p. 169.

(4) other factors such as administrative responsibilities, counseling, research, and other time-demanding extracurricular requirements.

8. ADMINISTRATIVE STRUCTURE

The administrative structure of a college should be conditioned by the educational objectives of the institution. The college must be so organized that each of the major areas, in terms of curricula and personnel services, receives equal authority and responsibility. Norman C. Harris asserts, "Any organization plan which places a tradition-directed 'academic dean' between the president and the person who leads and directs the occupational program should be avoided. Such a scheme will automatically relegate the occupational program to second-class status . . . and may make access to the president difficult for the person in charge of the occupational program."[16] Another rather common problem related to administrative structure is pointed up by Blocker, Plummer, and Richardson, who state, "It is axiomatic that control of college finances means control of the educational program . . . [in far too many instances] Requests for funds are channeled through the business office, and the decision regarding such requests too often is made by the business manager or . . . his staff."[17]

Figure 1

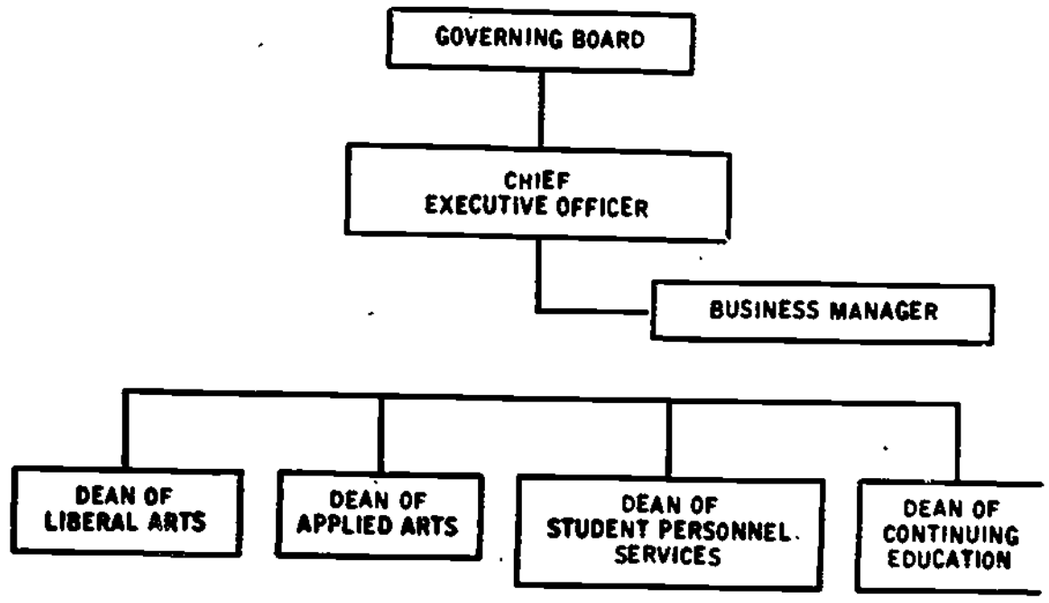

Figure 1 represents a type of basic administrative structure frequently recommended. This organizational chart, of course, is designed

[16] Norman C. Harris, *Technical Education in the Junior College/New Programs for New Jobs*, (American Association of Junior Colleges, Washington, D. C., 1964), p. 53.

[17] Blocker, et al., *op. cit.*, p. 177.

[8]Medsker, op. cit., p. 169.

[8]Blocker, et al., op. cit., p. 177.

for the comprehensive junior college offering a variety of academic and technical-vocational programs. The administrative structure as outlined in Figure 1 might well be modified to allow for different emphases in administrative theory.

The liberal arts division would encompass all of those courses in the transfer program. While the institutional admissions policy would be non-selective, the standards for admission to this division would be essentially the same as the standards for admission to similar programs in a degree-granting institution.

The applied arts division will include the various technical and vocational offerings, and in the case of small institutions, the remedial program may fall within this division. The requirements for admission to this division would be directly related to the demands of the different programs. Any high school graduate, and perhaps non-high school graduates, could be admitted to the remedial courses and perhaps to certain occupational programs.

The dean of student personnel services will have the responsibility for administering the counseling program, financial aid to students, student employment, and other student services, and one author suggests that the remedial program be placed in this division. If the college were large enough to justify this, there are good reasons for it.

Included in the division of continuing education would be the evening and adult programs. Again the size of the institution would be the basic factor determining the need for continuing education as a separate division. In smaller colleges these functions would be carried out by one of the other divisions. If established, however, the dean of this division would be responsible for planning and organizing various kinds of courses and programs designed to meet the needs of the community.

In summary, the various authors are not in total agreement as to the exact nature of the administrative structure. They are in complete accord, however, on the principal that every major division within the total structure, such as technical-vocational and student personnel programs, must be assigned equal responsibility and authority within the organizational framework.

9. PROVISION OF ACADEMIC AND OCCUPATIONAL COUNSELING

The importance of an effective guidance program at all educational levels has been generally recognized. That this function is of far greater importance, however, in the junior college than in any other institution of higher education can be fully documented. The "open door" admissions policies, or at least relatively unselective admissions, in conjunction with the wide range of curricular offerings at these institutions, attract a student population of far greater diversity than that found at other higher educational institutions. This population includes academically gifted students as well as many who are far

less able. Many of them come from lower socio-economic backgrounds. The secondary education backgrounds of many are of mediocre quality or worse. Often there is a total lack of understanding of professions and occupations and the accompanying requirements for entry into them. While about two-thirds of the students gaining admission to junior colleges indicate an interest in baccalaureate degree programs, only about one-third acutally transfer to a degree-granting institution.

In spite of this, junior college attendance imposes the same kinds of demands upon students as does enrollment at a four-year institution. Many of these demands are neither well understood nor perceived by students as being in their best interest. Thus, the task of the student-personnel division becomes that of mediating between the needs of students and the requirements of the institution.

Certainly the junior college is obligated to assist students to arrive at some degree of self-understanding as well as an understanding of the world of work, if they are to establish realistic educational and vocational goals. In terms of counselor preparation this means that the master's degree is the minimum acceptable level.

Plans should include the establishment of a post-admission, preregistration counseling program for students and, if possible, their parents. Since such large proportions of junior college applicants are either "undecided," "vaguely decided," or their choices are obviously eminently inappropriate as a result of pressures from parents and others or inappropriate from sheer lack of knowledge, this kind of program is essential if the college is to provide the kinds of services that are most needed. That such a program results in reducing frustration, failure, and dropouts has been amply demonstrated. There is a trend in increasing numbers of junior colleges to require entering freshmen to report to the college during the summer for an interview with a counselor regarding program selection.

10. ORGANIZATION AND STRUCTURE

The 1966 Junior College Directory lists 43 states with a total of 503 publicly supported junior colleges. The predominant patterns of organization place responsibility for these institutions in the hands of three state agencies. The largest group, consisting of 21 states, places the junior college under the same agency as the public elementary and secondary schools, usually the State Board of Education. Another sizable group assigns this responsibility to that agency which is responsible for the supervision of the colleges and universities. The remainder of the states have created a separate state-level agency or board which has jurisdiction over the publicly supported junior colleges or over both two-year and degree-granting institutions.

One survey, designed to elicit from administrators the relative merits of public school control and autonomous control of junior colleges, revealed that 78.5 percent of the 130 administrators questioned preferred autonomy. The five most important reasons for an autonomous board were: (1) It provides a superior administrative structure

(2) A separate board can devote its full time and energy to college problems, (3) It permits greater experimentation and freedom to plan and develop new programs consistent with community needs, (4) The institution becomes a college rather than an extension of the public school, and (5) A larger tax base is available because the college is not in competition with the public school for funds.

The separate board appears to have the support of a considerable majority of the writers in the fields. The trend away from control by local boards of education is clearly established. S. V. Martorano, Assistant Commissioner for Planning in Higher Education at the University of the State of New York concludes, "There is strong concensus among both educators and legislators, as evidenced by their writings, public pronouncements, and official actions, that there needs to be a specific locus of state responsibility for community colleges. This is needed for the effective advancement of education generally or for the promotion of strong community colleges specifically."[18]

In reality, this discussion of organization and structure has little applicability to West Virginia at this time simply because there is only one publicly supported junior college in the state, and because other public two-year institutions have been organized as branches of existing four-year colleges and universities.

11. GOVERNING BOARD REPRESENTATION

The board of control is that body which has been designated legally responsible for the affairs of the institution. The determination of the area or region from which the members of this board should be selected would seem to entail arriving first at some level of understanding of the exact nature of the responsibilities of the board.

The board is the link between the institution and the community. Translation of the community needs into policies designed to meet those needs appears to be its primary function. One of the major tasks of the board is to select the chief executive officer who understands the role of the institution. The board must approve policies and programs, thus should be able to recognize whether such policies and programs are consistent with local need. The board assists in interpreting the institutional programs and policies to the public.

Complete autonomy at the local level presents a wide range of problems. "When members of the board . . . have close personal relationships with the citizens of the community, they often become involved in matters which are in fact the responsibility of the president."[19] Too much time is devoted in board meetings to such matters as the admission of certain students, faculty selection, and course content.

[18] S. V. Martorano, "Values and Variables in Organizing and Financing Public Community Colleges," *Technical-Vocational Education and the Community College* (Proceedings of the Thirteenth Annual Legislative Work Conference of the Southern Regional Education Board, Williamsburg, Va., August, 1964), p. 60.

[19] Bowker, et al., op. cit., p. 182.

In view of the marked trend for junior colleges to become disassociated structurally from public school systems, new organizational plans should make provision for coordinating the junior college program with those offered by other school systems.

Perhaps the resolution of many junior college problems may lie in the realization of an ideal given expression by Lamar Johnson, "State-controlled but rooted in the local community."[20]

12. FINANCE

Three factors are recognized as being the major determinants of the cost of operating educational institutions. In junior colleges, operating cost seems to be related almost directly to the size of the student population, class size, and the breadth of curricular offerings. Thus one would expect to discover wide variations. Yet, but for a few notable exceptions, the variation is not too great from one institution to another. The available data indicate the typical cost per student for the operation of junior colleges in 1962-63 ranged from about $500 to almost $800.

The approach to financing junior colleges varies not only among the states, but among colleges within certain states as well. Operating funds are derived principally from three sources: state appropriations, local taxes, and student fees.

An increasingly prevalent pattern in 1959-60 was one in which the state, the locality, and the student contributed equally toward the cost of operations. A more recent trend is toward the state's bearing an increasingly larger proportion of the burden of support. Many localities are unable to make significant contributions toward financing junior colleges because property taxes have already reached extreme limits, and the federal and state governments have pre-empted nearly all other sources of tax revenue.

As a final note, it might be added that while no mention has been made of federal aid, this is a factor that may radically alter the patterns of junior college financing. It is too early at this time, however, to assess the impact that such support may ultimately have.

13. GUIDELINES FOR ESTABLISHMENT

Until recent years there was little, if any, systematic planning for the location and development of colleges and universities. They just happened. For example, factors determining the location of many of these institutions included pleasing a donor or yielding to the wishes of constituents. In recent years many states, and particularly the Office of Education of the United States Department of Health, Education and Welfare, have been concerned with attempting to formulate some general principles to serve as guidelines for the establish-

[20] B. Lamar Johnson, *State Junior Colleges, How Can They Function Efficiently?*, Southern Regional Education Board, (Atlanta, Georgia, 1965), p. 32.

Blocker, et al., op. cit., p 182.

ment of community or junior colleges. As a result, a great deal of research has been stimulated which has led to the development of a set of criteria for establishment that are generally agreed upon by those persons associated with the junior college movement. A number of these criteria have been, of necessity, injected throughout this paper, but a somewhat more orderly presentation of them will be made at this point.

In summary, the four basic factors which should be considered before locating a junior college are: (1) potential enrollment, (2) availability of adequate financing, (3) an expression of community interest, through financial as well as other kinds of support, (4) the accessibility of the college to the population to be served, and (5) the proximity of other higher educational facilities. The establishment of a new facility must be preceded by a feasibility study making an exhaustive analysis of the factors outlined above. In addition, the state or area may have some unique characteristics which would have a bearing on the size or type of college to be established. Once identified, these would be included for careful study. Finally, it should be kept in mind that two-year educational institutions are not a "cut rate" form of education. Good programs at such institutions are expensive and require a highly competent staff.

14. CONCLUSION

It appears that in West Virginia there is no need at this time to establish additional two-year institutions. So long as the existing institutions of the state are provided with the desire and funds to perform continuing education functions of the comprehensive college, there appears to be no compelling need to open additional junior colleges in the state. However, reference should be made to the Task Force Report on Vocational, Technical, and Specialized Education concerning the need of adequate planning for additional vocational and technical programs.

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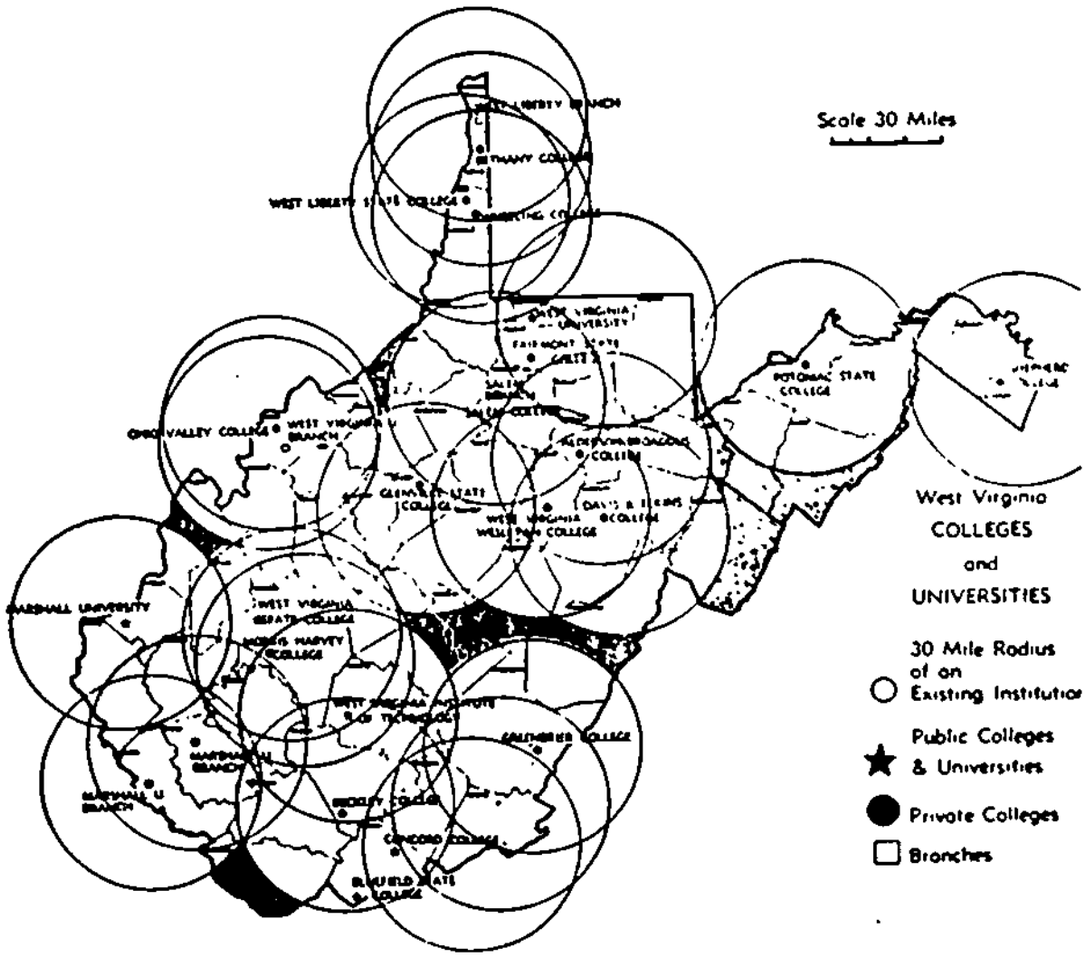

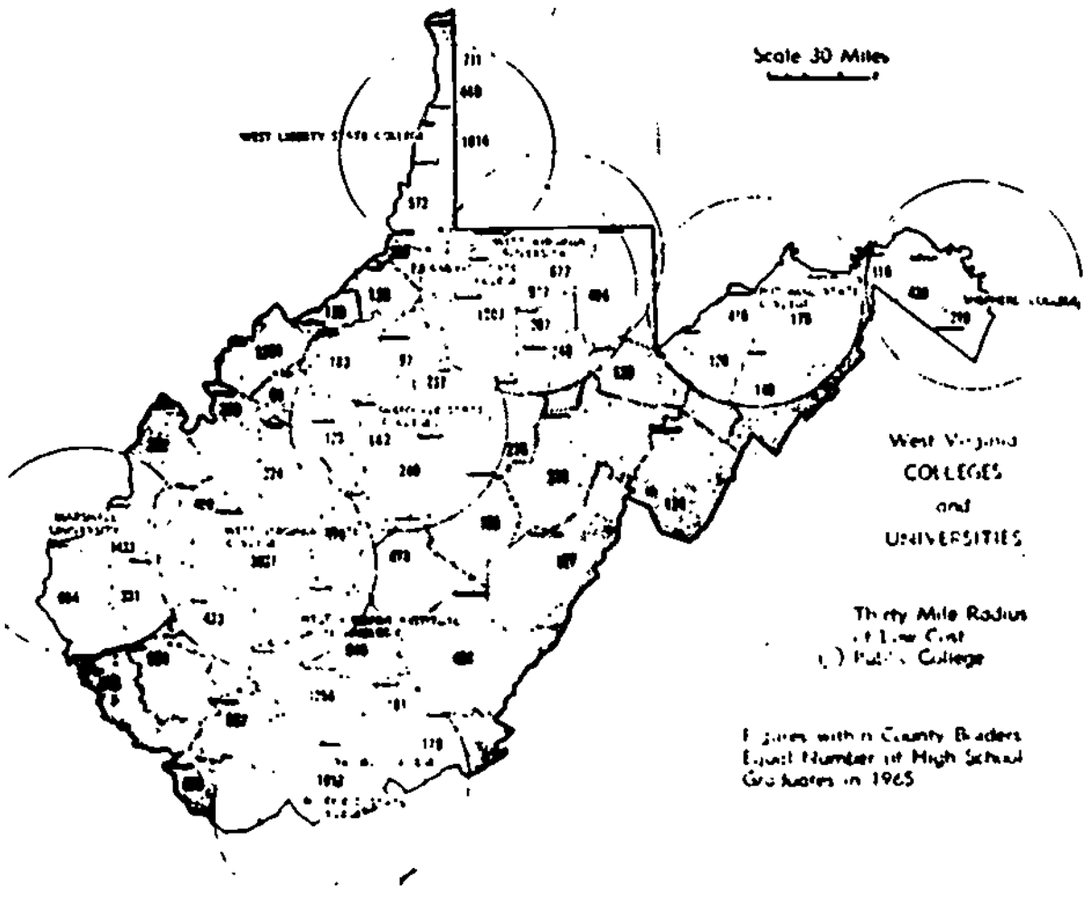

Chapter II

VOCATIONAL, TECHNICAL, AND SPECIALIZED EDUCATION

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INTRODUCTION

In *Man, Education, and Work*, Grant Venn dramatizes the changing nature of the world of work with the statement that,

> . . . technology has created a new relationship between man, his education, and his work, in which education is placed squarely between man and his work. Although this relationship has traditionally held for *some* men and some work . . . modern technology has advanced to the point where the relationship may now be said to exist for *all* men and *all* work.[1]

Specific illustrations of Venn's sweeping generalization are indicated in the following statement by Ewan Clague, Commissioner of Labor Statistics since 1946;

> As our economy and technology have become more and more complex, the skill levels required for many occupations have increased. For example, many business *machine servicemen* need a broader technical knowledge than ever before—especially of electricity and electronics—to service the complex office machines coming into use. Many experienced *maintenance electricians* must now learn basic ele[illegible]ics to maintain and repair the

[1]Grant Venn, *Man Education and Work*, American Council on Education, (Washington, D. C., 1964), p. 1.

> complex new equipment being installed. More complex modern metal working equipment is raising the technical skills required of *tool-and-die makers*, and a knowledge of mathematics, the basic sciences, electronics, and hydraulics is becoming more and more necessary to perform this work. The work *appliance servicemen* perform requires greater skill than ever before, and a good working knowledge of electricity and electronics, because of the growing use of electric control devices in household appliances.[2]

Clague adds, "In addition to those already cited, there are a number of other trends which point to the need for more education and training for our work force. Occupations which require the greatest amount of education and training are increasing most rapidly and the least growth is expected in the occupations generally requiring less than a high school education."[3]

The case is put even more strongly by Louis Levine of the U. S. Employment Service and formerly Deputy Director of the Bureau of Employment Security. According to Mr. Levine,

> The enormous changes taking place in the job structure of the American economy require a reorientation to our approach in preparing people for work. All experience amassed by the (United States Employment Service) underscores one fact: Of all the resources needed for the Nation's economic well-being and advancement, its human resources require the longest lead time to become effective. It takes years—20 or so—for a child to grow into a mature and useful adult and a competent member of the labor force. However, his vocational preparation does not end here. Because occupations are changing at an increasing rate, workers must be prepared to change with them. People will be changing careers—not jobs—three to four times in a lifetime. In this setting, job preparation cannot be limited to the acquisition of individual job skills. It must prepare the individual for greater flexibility with respect to the range of jobs for which he is potentially suitable. A worker must plan his career in terms of a progression of occupations with periodic retraining to keep abreast of changing methods and techniques, application of new materials; and related knowledges required.[4]

Just how significant for higher education this upward trend in the demand for education for work has become and is becoming is indicated in Venn's statement that, ". . . Manifestations of this upward push are to be found, for example, in engineering, where the two-year engineering technology curricula of today compares in rigor and breadth with the four-year engineering curricula of twenty-five years ago. As engineering continues to become more complex and specialization is delayed, graduate study will become a must for the engineer, and by the same token, it is probable that within the present decade

[2]U. S. Department of Labor, *Manpower Implications of Automation*, (Washington, D. C., 1965), p. 36.

[3]*Ibid.*, p. 38.

[4]*Ibid.*, p. 50.

the bachelor's degree will become a must for many technical occupations. Similarly the skilled crafts are now making their appearance on the junior college level."[5]

If, as Venn suggests, technology has created a hiatus between man and his work that only education can bridge; if, as Ewan Clague indicates, the tool-and-die maker must have a knowledge of mathematics, basic sciences, electronics, and hydraulics; if, as Louis Levine states, man must be prepared to change *careers—not just jobs*—three or four times in the course of his lifetime; and if, to quote Venn again, the educational needs of engineering technology compare in rigor and breadth with the four-year engineering curricula of twenty-five years ago, and within the present decade may demand a four-year program, there is little room to doubt that higher education must accept a greater responsibility for education for *this* world of work. Nor is there little room for doubt that the specialists who have been quoted above have been in an excellent position through their work and their research to make those judgments.

ORGANIZED OCCUPATIONAL CURRICULUMS AT THE COLLEGE LEVEL

It should be obvious that the term *technical, vocational, and specialized education* is designed to draw attention to educational programs aimed primarily at preparing the student for employment. But most educational programs do that, from the Ph.D. in chemistry, which prepares the recipient for a position in chemical research or college teaching, to the high school office curriculum which prepares the student for a clerk-typist position—perhaps in the office of a chemical researcher or a chemistry professor. Both types of employment are, in a very real sense, technical, both are specialized, and both are vocational in the dictionary sense of the word.

To try to arrive at a fine definition that would distinguish vocational education from technical education and each from specialized or even professional education would require an elaborate exercise in semantics at the least, and perhaps futility at the worst. Therefore, it would seem advisable to adopt the term "organized occupational education" now coming into usage[6] and simply indicate the type of programs that may reasonably be considered college level work.

Therefore, for the purpose of this study, vocational, technical, and specialized education will be taken to mean those programs which the United States Office of Education refers to as "Organized Occupational Curriculums at Institutions of Higher Education."[7] According to the Office of Education,

> Such curriculums require 1, 2, or 3 academic years of study; and successful completion is recognized by the granting of asso-

[5]Venn, op. cit., p. 17.

[6]Ken August Brunner, *Organized Occupational Education in Missouri Institutions of Higher Education*, Missouri Commission on Higher Education, (Jefferson City, 1965), pp. 2-3.

[7]*Ibid.*

ciate degrees, certificates, diplomas, or similar awards. Graduates are prepared for immediate employment as technicians for other kinds of jobs found on the employment spectrum between those at the professional level which usually demand a bachelor's or higher degree for entry and those craftsmen, clerks, and others who perform routine tasks which do not require specialized training beyond high school.[8]

The Office of Education divides such programs into two categories: (1) Curriculums at the technician level engineering-related and (2) curriculums at the technician or semi-professional level—non engineering-related. Of the first category, engineering-related, the office quotes a definition of technician adopted by the President's committee on scientists and engineers as follows,

> ". . . the engineering or scientific technician is usually employed in (1) research, design or development; (2) production, operation, or control; (3) installation, maintenance or sales. When serving in the first of these functional categories, he usually acts as direct supporting personnel to an engineer or scientist. When employed in the second category, he usually follows a course prescribed by a scientist or engineer but may not work closely under his direction. When active in the third category, he is frequently performing a task that would otherwise have to be done by an engineer.
>
> "In executing his function the scientific or engineering technician is required to use a high degree of rational thinking, and to employ post-secondary schoo' mathematics and the principles of physical and natural science. He thereby assumes the more routine engineering functions necessary in the growing technologically based economy. He must effectively communicate scientific or engineering ideas mathematically, graphically and linguistically."[9]

Technician or semi-professional—non engineering-related curriculums, according to the Office of Education, "are at an analogous level of academic complexity and are designed to develop technicians and semi-professional personnel . . . as distinct from clerical and routine workers."[10]

In order to further identify the type of programs under discussion a list of engineering-related and non-engineering related curriculums is provided in Appendix A of this report. The list is taken from the Office of Education's *Guide To Organized Occupational Curriculums*.[11]

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[8]Ken August Brunner, *Guide to Organized Occupational Curriculums in Higher Education*. U. S. Department of Health, Education and Welfare, Office of Education, U. S. Government Printing Office, (Washington, D. C., 1966), p. iii.

[9]*Ibid.*, p. 108.

[10]*Ibid.*

[11]*Ibid.* pp. 106-107.

For the purpose of higher education, the key terms of the Office of Education definition would appear to be, *use of rational thinking, employment of post-secondary mathematics, the use of principles of physical and natural science, the communication of scientific or engineering ideas mathematically, graphically, and linguistically*, and in the non-engineering related curriculums, an analogous level of academic complexity.

Clearly, *what is not intended* is the type of vocational education that concentrates upon the development of skills in the use of particular tools and machines implied by a West Virginia Bureau of Vocational, Technical and Adult Education statement that,

> The environment in which the learner is trained must be a replica of the environment in which he must subsequently work. Vocational training must only be given where the training jobs are carried on in the same way, with the same operations, tools, machines as in the occupation itself.[12]

THE DEMAND FOR TECHNICIANS

Ken A. Brunner, in his study of organized occupational education in Missouri, gives the following review of the literature dealing with the proper proportion of semi-professional or technical workers to professionals:

> In 1947, the President's Commission on Higher Education estimated that "in many fields of work there are five jobs requiring two years of college preparation for every one that requires four years." A 3:1 ratio of technicians to scientists and engineers was suggested by a number of experts who were consulted by the President's Committee on Scientists and Engineers. In a nationwide survey of technical institute education sponsored by the American Society for Engineering Education, the survey committee found that employers would like to have two engineering technicians for every engineer in their employ between the years 1957 and 1967. For the purpose of that national survey, it was assumed that an engineer would be a person with a bachelor's or first professional degree and an engineering technician would be one who has had two years of college-level technical education and would probably have been awarded an associate degree. In a report prepared for the President's panel of consultants on vocational education, Emerson concluded that a 2:1 ratio of technicians to engineers is realistic and projected annual needs for 200,000 technicians over the next several years.
>
> Probably the most conservative estimate is that of the Bureau of Labor Statistics, U.S. Department of Labor. It expects the demand for technicians to grow at the same rate as the

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[12]Committee on Research, Statistical and Other Information About Vocational-Technical Education in West Virginia, Bureau of Vocational, Technical and Adult Education, (Charleston, West Virginia, 1966), p. 26.

demand for engineers and scientists over the 1960 decade, averaging 70,000 each year.[13]

Although not commented upon by Brunner, an examination of his review of the literature and the citations given reveals an interesting relationship between the suggested ratios and the years in which they were given as shown below:

Year Given	Ratio
1947	5 to 1
1957	3 to 1
1959	2 to 1
1963	2 to 1
1964	1 to 1

One is almost afraid to speculate that the rapidity of technological change of the decade or so involved has influenced the decline in the recommended ratios. Perhaps the decrease only reflects a waning enthusiasm following the "post-sputnik" hysteria regarding the state of United States technical education. Whatever the case, if the decline in the recommended ratios is anything more than mere accident, it deserves a serious explanation.

Grant Venn, in his examination of the demand for technicians, finds it difficult to come to grips with the ratio problem and avoids it with the following lucid summary.

> Over the past few years, about 50,000 people annually have been entering the science—and engineering-related technical occupations. A reasonable estimate is that about half of these were graduates of organized technical curricula within the educational system, and half came from other sources. It is suggested at this point that the technician output from 'other sources' can not be expected to increase and that, in order to meet the minimum goal of 100,000 technicians a year, the educational system must triple its present effort.[14]

Accepting Venn's recommendation that the nation's colleges should produce 75,000 science- and engineering-related technicians, annually, and prorating West Virginia's share on the basis of its share of the nation's population, gives a demand for approximately 750 new technician graduates per year. To produce 750 such graduates per year would probably demand a minimum annual freshman enrollment of 1,200 in the two-year technical engineering-related programs.

In contrast, West Virginia colleges graduated 18 engineering-related technicians in the 1961-62 school year and reported a total enrollment (first and second year) of only 104.[15] During the 1964-65 school year, West Virginia colleges graduated 48 two-year engineering-related technicians and in the fall of 1965 enrolled a total of 467 in these programs.[16]

[13]Brunner, *Organized Occupational Education in Missouri*, pp. 4-5.
[14]Venn, op. cit., pp. 133-134.
[15]Brunner, *Guide*, p. 15.

THE DEMAND FOR ENGINEERING-RELATED TECHNICIANS IN WEST VIRGINIA

Although there have been occasional newspaper references to a shortage of engineering-related technicians in West Virginia, there is little in the way of concrete evidence to support or deny the charges. A current study being undertaken by West Virginia Institute of Technology promises to alleviate this lack of information.

The introduction to Tech's proposal for its "Technical Manpower Survey" gave the following rationale for the study:

> Education faces the necessity of assessing the technological changes in employment practices as carried on within the State. These changes result in the emergence of new occupations and revision of job responsibilities. In order to provide a quality program for the education of well-trained technical workers and to assure that this program meets the need of the State of West Virginia, it is necessary to observe and measure these occupational changes. In a state such as West Virginia, regional studies fail to take into consideration the size of the state, the mobility of technical workers, the willingness of employers to accept new technical trends, and so on.[17]

The principal objectives of the study as given in the proposal are:

1. Determine the general technician categories which exist in the various firms and government organizations in West Virginia.
2. Determine the total number of technicians currently employed within the state.
3. Determine the present needs for technicians in the general categories as established in Section II, No. 1, of the Technical Manpower Survey Proposal.
4. Determine if there are sufficient technical applicants available to meet the present demand for technicians.
5. Determine, by general categories, the additional technical workers that will have to be trained in the next five years.
6. Determine, in general, the training felt necessary for each of these various technician categories.
7. Determine the number of technician positions available annually to qualified women.
8. Determine if there are possibilies of upgrading skilled personnel through training to the technician category. (Adult Education).

[16]Task Force on Baccalaureate and Pre-Professional Education, Questionnaire.
[17]West Virginia Institute of Technology, *Technical Manpower Survey: Proposal*, (Unpublished, 1966), p. 1.

9. Determine as accurately as possible how many technicians are in training now and how many will be graduated into the work force within the next five years by the schools, apprenticeship programs, and industrial training programs.
10. Ascertain, as far as practical, future planning in the area by the various training agencies.

The study which is expected to be completed by the fall of 1966 will cover the entire state of West Virginia with large firms being questioned by personal interview and a cross section of smaller firms by mailed questionnaire. The procedures adopted anticipate coverage of 90 percent of all employers, industrial, governmental, and commercial who make use of technicians.

The results of the study will be broken down by size of industry and by geographical sections and industrial centers, "so that the study will be of considerable help to the local community in evaluating manpower needs and training resources."[18] When the study is completed, it should provide a valuable resource for the planning of future organized occupational curriculums by the state's institutions of higher education.

In this connection it would be desirable to have similar studies made for industrial and urban complexes just beyond the borders of the state such as the Cumberland area just beyond the border at Keyser, the Ashland, Kentucky area and areas near the northern panhandle.

ORGANIZED OCCUPATIONAL CURRICULUMS IN THE STATE'S COLLEGES AND UNIVERSITIES

A number of the state's institutions of higher education provide organized occupational curriculums of the two-year associate degree type. As reported above, there were 467 students enrolled in engineering-related programs in the fall of 1965, primarily at West Virginia Institute of Technology (118) and Bluefield State (297). In addition, Fairmont State College reported forty students in a two-year industrial arts program, and Potomac State Junior College reported twelve in engineering.

In terms of enrollment, business administration, including accounting, general business, and secretarial studies, accounted for the greatest numbers of any single program with a total enrollment of 559. Secretarial-studies enrollment by colleges was: Bluefield 75, Tech 46, Potomac 68, Beckley 120, Greenbrier 25, and Davis and Elkins 2. General business enrollment by schools was: Beckley 43, Salem 2, West Liberty 31, and State 19. Potomac enrolled 15 in accounting and Beckley enrolled 113.

Health occupations accounted for 158 in nursing, with Marshall University reporting 63, Morris Harvey 48, and Fairmont 47. In dental hygiene, West Liberty reported 87. Beckley reported 28 in medical technology, and Fairmont reported 39 in a two-year degree biology program.

Altogether these two-year occupational curriculums enrolled 1,335 students in the fall of 1965. The total is undoubtedly incomplete because it does not include enrollment in the West Virginia University Parkersburg Center and the Ohio Valley Junior College enrollment in what is apparently a secretarial studies program.[19]

In addition to the college level occupational curriculums, several of the state's area vocational schools have some type of post-secondary (grades 13-14) educational programs. Data for 1965 were not on hand at this writing, but the projected programs for 1966-67 are available and give an indication of what may be found in those schools. The schools and the projected 1966-67 post-secondary (grades 13-14) programs are:

Huntington East Vocational Technical School
- Health Occupations—one program

Mercer County Vocational School
- Health Occupations—one program

Raleigh County Vocational Technical Center
- Health Occupations—two programs

Berkeley County Vocational Technical Center
- Health Occupations—one program
- Office Education—three programs
- Technical Education—one program
- Trades and Industry—one program

Ohio County Vocational School
- Technical Education—one program[20]

OTHER OCCUPATIONAL EDUCATION SERVING HIGH SCHOOL GRADUATES

It is worthwhile to point out that in addition to the college level and post-secondary (grades 13-14) programs referred to above, there are a number of educational opportunities available to West Virginia high school graduates that too often go unnoticed because they are not necessarily a part of the state's formal educational structure. Chief among these are business occupational training provided by the privately operated business or commercial schools, beautician and barber training, and nursing education.

Mr. T. J. Bowling, president of the West Virginia Association of Private Business Schools, graciously consented to survey the member

[18] Ibid., p. 2.

[19] Task Force, loc. cit.

[20] West Virginia Bureau of Vocational, Technical, and Adult Education. *West Virginia Vocational Education: Projected Program Activities, 1966-67*, (Unpublished, Charleston, West Virginia, 1966), p. 17.

schools and report on their enrollment. The results of Mr. Bowling's survey indicate a 1965 full-time fall enrollment in secretarial studies of 544, accounting 393, and other programs 265. Total enrollment in the member schools increased from 954 in 1963, to 1,020 in 1964, and 1,202 in 1965. Mr. Bowling points out that all of these are full-time students who enroll for a period of six months to a year and that about 95 per cent of them are high-school graduates. He adds that counting part-time and night students would approximately double the numbers given above.

In his report Mr. Bowling emphasizes that all of the association's members "belong to the National Association—The United States Business Schools Association—whose national headquarters are in Washington, D. C. We subscribe to a national code of ethics and have adopted their minimum standards in operating our schools."[21] A list of the member schools as of June, 1965, is given in Appendix B to show the geographical distribution of the schools.

Mr. E. B. Roush, Director of the State of West Virginia Committee of Barbers and Beauticians, Capitol Building, Charleston, reports that there are ten approved beauty schools and four approved barber schools in West Virginia (listed in Appendix C). Enrollment at the 1965 reporting date was 839 for the beauty schools and 153 for the barber schools. Significantly these enrollments were up from 385 and 84 respectively in 1959. Mr. Roush states that from 85 per cent to 90 per cent of the current enrollees are high school graduates.[22]

The West Virginia Board of Examiners for Practical Nurses reports that there are "eight state accredited schools of practical nursing in West Virginia. Six of these are under the control of county boards of education, vocational division, and two are supported by hospitals. Each provides one year of classes and hospital experience. A high school education is required for applicants under 25 years of age, ninth grade or more for those over 25." A list of the eight schools and seven in the process of being established as reported by the board of examiners is provided in Appendix D. Enrollments were, unfortunately, not available but it would seem safe to guess that each of the eight schools now in existence enrolls about thirty students.

Apparently there are also hospital programs leading to registered-nursing licensing that are not college-affiliated, but insufficient information is available to indicate their extent.

All told, it seems safe to estimate that there were, in 1965, between 1,500 and 2,000 West Virginia high-school graduates enrolled in one or the other of the programs of non-college education referred to above. All are programs that produce valuable services for society and should not be overlooked in assessing the total educational opportunities for West Virginia high-school graduates.

[21] T. J. Bowling, Letter of August 3, 1966.
[22] Telephone and Personal Interview.

FUTURE DEVELOPMENTS PROPOSED IN COLLEGE-LEVEL ORGANIZED OCCUPATIONAL CURRICULUMS

In its report *Projected Program Activities: 1966-67*, the West Virginia Bureau of Vocational, Technical, and Adult Education gives a listing of occupational-centered curriculums in West Virginia institutions of higher education and junior colleges (public and private).[23] The listing, presumably effective in 1966-67, is given in Appendix E. It apparently overlooks some two-year terminal programs at Beckley Junior College and secretarial-studies programs at Greenbrier, Ohio Valley Junior College, Beckley, Lewisburg, and Parkersburg respectively. The report also omits reference to several occupational programs in secretarial education, accounting, and engineering offered at Potomac State College.

In addition to these programs a number of the state institutions of higher education have, in response to a questionnaire of the Task Force on Baccalaureate and Pre-Professional Education, indicated plans to initiate or expand their two-year occupational offerings between 1966 and 1970. The questionnaire asked the state's institutions to, "List any new programs that you contemplate adding between 1966 and 1970." Responses relating to organized occupational curriculums are quoted below:

1. West Virginia State College
   "Two-year Associate of Science in Industrial Technology
   Two-year program in Chemical Technology
   Two-year program in Nursing"
2. West Liberty State College
   "Technical Programs (2 year)"
3. Shepherd State College
   "Associate of Arts degree programs in Business and in Science and Technology"
4. Alderson-Broaddus College
   "We may enhance further programs in para-medical sciences, [and] in the church vocations"
5. Beckley Junior College
   "Engineers Assistant"
6. Potomac State College
   "We expect to add the following occupational (two year) programs (Design and Drafting technology and Civil technology Agriculture, two programs [in] Ornamental Horticulture and Agricultural Technology)
   Commerce, Six programs (Executive Secretarial, Technical Secretarial, Bi-Lingual Secretarial, Medical Secretarial, Accounting, and Data Processing and Programming.)
   Laboratory Specialists
   Two Programs (Biological and Chemical.)"

[23] West Virginia Bureau of Vocational Education, *Projected Program*, p. 9.

APPENDIX D

W. Va. State Board of Examiners for Practical Nurses
201 Davidson Building
Charleston, W. Va. 25301

There are eight state accredited schools of practical nursing in West Virginia. Six of these are under the control of county boards of education, vocational division, and two are supported by hospitals. Each provides one year of classes and hospital experience. A high school education is required for applicants under 25 years of age; 9th grade or more for those over 25.

Berkeley County Vocational School of Practical Nursing
401 S. Queen Street
Martinsburg, West Virginia

B. M. Spurr School of Practical Nursing
Glen Dale
West Virginia

Huntington East High Trade School of Practical Nursing
2800 Fifth Avenue
Huntington, West Virginia

Kanawha County Vocational School of Practical Nursing
1301 Second Avenue
Charleston, West Virginia

Mercer County Vocational School of Practical Nursing
300 Ramsey Street
Bluefield, West Virginia

Monongalia County Vocational School of Practical Nursing
263 Prairie Avenue
Morgantown, West Virginia

Raleigh County Vocational School of Practical Nursing
229 Second Street
Beckley, West Virginia

The Davis Memorial Hospital School of Practical Nursing
905 Harrison Avenue
Elkins, West Virginia

New schools in process of being established

Cabell County MDTA Program in Practical Nursing
Huntington East High Vocational-Technical School
2800 Fifth Avenue
Huntington, West Virginia

MDTA Program in Practical Nursing
Central School
"C" Street
So. Charleston, West Virginia

Harrison County MDTA Program in Practical Nursing
Harrison County Schools
Clarksburg, West Virginia 26301
Practical Nursing Program

Job Corps Center for Women
Virginia and Summers Streets
Charleston, West Virginia

Practical Nursing Program
Job Corps Center for Women
P. O. Box 2094
Huntington, West Virginia

Fayette County MDTA Program in Practical Nursing
Fayette County Board of Education
Fayetteville, West Virginia

Wood County Vocational School of Practical Nursing
2101 Dudley Avenue
Parkersburg, West Virginia

clerical, and related occupations within the scope of this survey was accounted for by establishments located in metropolitan areas. Nine-tenths of the employees in the selected occupations studied also were employed in metropolitan areas, although the proportion varied considerably among the professional and administrative occupations."[27]

It takes little in the way of observation to note that metropolitan living and its stresses have become equally as complex as the world of work described by Venn, Clague, Levine and others (see above). Moreover, anyone who must face a world that requires *three or four* changes in careers in a lifetime needs to know a great deal about the social forces affecting him. But, according to Venn, the technical institutes which have traditionally provided the leadership for technical education in this country give little attention to general education. Venn continues, "A study of 48 institutes made in 1954 revealed that in ECPD (Engineers Council for Professional Development)—accredited curricula an average of 9.6 per cent of the total time (contact hours) was given over to general education; in non-ECPD- accredited curricula the percentage was 5.51." The same ratios would probably apply today to the ECPD-accredited curricula. Among the non-accredited curricula, however, the same ratio would probably not maintain since many of the newer programs of the two-and four-year colleges display an increase of general-education content.[28]

It is to be hoped that as higher education in West Virginia moves into more programs of technical education it will not overlook its traditional academic responsibility for providing a liberal education for all of its students. After all, the student who is capable of learning the theories of college algebra, calculus, the principles of physics, electronics, chemistry, not to say hydraulics and other such demanding subjects, is surely capable of mastering a core of courses in the humanities and the natural and social sciences.

In an increasingly affluent society, and especially one that supplies more and more student financial aids, the former economic dictates that compelled many youth to seek stripped-down occupational education in the shortest possible time no longer apply—at least to the same extent. If the increasing complexity of work demands sixty credit hours of occupational discipline, it would be well—and probably financially feasible—to extend the technical curriculum to seventy-five hours ($2\frac{1}{2}$ years). Such an extension would permit the institutions of higher education to fulfill, at least partially, their first obligation to man *as man* and not just to man as worker or economic being, an overly materialistic view that they would hopefully eschew.

SUMMARY AND CONCLUSIONS

The changing technology is producing a revolution in the world of work. The new work world demands increasingly sophisticated levels of education. Occupationally oriented curriculums at the college level, especially at the technical level, are coming to be imperative. Although West Virginia has little emphasized such curriculums in the past, it shows signs of an "explosion" in this area at present. Fiscal demands dictate that this "explosion" should be carefully planned and adequately coordinated. Special studies are in process which should provide the grounds for sensible solutions to these vexing problems.

Therefore it is recommended that West Virginia institutions of higher education:

1. Make the maximum use of forthcoming reports of West Virginia Institute of Technology's *Technical Manpower Survey* and the State Advisory Committee for Vocational Education's recommendation relative to a state master plan for vocational education before embarking on an elaborate expansion of technical programs.
2. The planning of vocational-technical education in West Virginia should not be limited to the immediate needs of the state. It should also consider regional and even national requirements. In so doing it will serve the needs of our students much more adequately and still provide a pool of skilled manpower which should be most helpful in our efforts at economic development in the state.
3. Seek the maximum financing available from federal funds through active cooperation with the state department of vocational education.
4. Eschew those "first-job" skill courses that may find immediate favor but only demand a type of education which can be achieved at the secondary or vocational school level. Presumably the post-secondary offerings of the area vocational schools will be limited in most cases to the less theoretically oriented and less sophisticated of the vocational technical fields of study at least to the extent such schools are located near a college having vocational-technical offerings.
5. Seek a reasonable "allocation of function" in the occupationally oriented curriculums as well as in the traditional curriculums.
6. Reconsider the general or liberal educational content of their occupationally oriented curriculums in the light of the increasing complexity of metropolitan social existence and the developing affluence that permits more time for education and less immediate demand for remunerative employment.

[27] Bureau of Labor Statistics, United States Department of Labor, *National Survey of Professional, Administrative, Technical, and Clerical Pay*, (Washington, D. C.: United States Government Printing Office, 1955), p. 2.

[28] Venn, *op. cit.*, pp. 93-94.

APPENDIX A

ORGANIZED OCCUPATIONAL CURRICULUMS

I. Curriculums at the technician level—engineering-related.

AERONAUTICAL TECHNOLOGY CURRICULUMS
- Aircraft design or drafting
- Aircraft maintenance
- Airport operation and management

ARCHITECTURAL TECHNOLOGY
BUILDING & CONSTRUCTION TECHNOLOGY
CHEMICAL TECHNOLOGY CURRICULUMS
- Chemical, general
- Chemical, other

CIVIL TECHNOLOGY CURRICULUMS
- Civil
- Civil drafting and design
- Road Construction
- Structural
- Surveying

ELECTRICAL TECHNOLOGY CURRICULUMS
- Electrical, general
- Electrical construction and wiring
- Electronics, general
- Computer laboratory
- Instrumentation
- Radio and TV

GENERAL ENGINEERING TECHNOLOGY
INDUSTRIAL TECHNOLOGY CURRICULUMS
- Industrial, general
- Technical sales
- Industrial, other

MECHANICAL TECHNOLOGY CURRICULUMS
- Mechanical, general
- Air conditioning, heating and refrigeration
- Automotive
- Diesel
- Mechanical drafting and machine design
- Horology
- Tool and die design
- Mechanical, other

METALLURGICAL TECHNOLOGY
NAVAL AND MARINE TECHNOLOGY
NUCLEAR REACTOR OR ATOMIC MATERIALS TECHNOLOGY
PETROLEUM TECHNOLOGY
ENVIRONMENTAL HEALTH OR SANITARY TECHNOLOGY
WELDING TECHNOLOGY
BROAD GENERAL CURRICULUMS & MISCELLANEOUS FIELDS
- Food processing technology
- Optical technology
- Photographic technology
- Wood technology

OTHER, SPECIFIC FIELDS

II. Curriculums at the technician or semi-professional level— non-engineering-related

AGRICULTURE CURRICULUMS
- Animal Science
- Dairy technology
- Horticulture and Floriculture
- Industrial agriculture
- Agriculture, general

BUSINESS AND COMMERCE CURRICULUMS
- Accounting and financial management
- Executive assistant
- Hotel or restaurant management
- Publishing and printing management
- Secretarial, general
- Secretarial, legal
- Secretarial, medical or dental
- Medical or dental office assistant
- Secretarial, technical or engineering
- Technical office assistant
- Real estate and insurance
- Retail estate and insurance
- Retail sales, purchasing or merchandising
- Transportation and traffic management
- Beauty shop management
- Business, general

EDUCATION CURRICULUMS
- Physical education, health or recreation
- Education

JOURNALISM CURRICULUMS
APPLIED, FINE, AND GRAPHIC ART CURRICULUMS
- Music
- Commercial art and advertising
- Fashion design

Interior decorating
Photography
Radio and TV program production
Publishing and printing technology
Other applied, fine and graphic arts

FORESTRY CURRICULUMS
HEALTH SERVICE CURRICULUMS
Dental assistant
Dental hygiene
Dental laboratory technicians
Medical or biological laboratory technician
Nursing, practical or vocational
Nursing, — 2 year program
Nursing, — 4 year program
X-ray technology

HOME ECONOMICS CURRICULUMS
Home economics or homemaking
Clothing and textile
Food administration

PROGRAMMER
BIBLE STUDY OR RELIGIOUS WORK
INDUSTRIAL OR LABOR RELATIONS
FIRE PROTECTION TECHNOLOGY
POLICE TECHNOLOGY
OTHER SPECIFIC FIELDS

APPENDIX B

MEMBERSHIP OF THE WEST VIRGINIA ASSOCIATION OF PRIVATE BUSINESS SCHOOLS JUNE, 1965

College of Commerce, Inc.
16 Sixteenth Street
Wheeling, West Virginia

Wiseman Business School
1348 Sixth Avenue
P. O. Box 1472
Huntington, West Virginia 25716

Morgantown Business College
354 High Street
Morgantown, West Virginia

West Virginia Business College
217 West Pike Street
P.O. Box 1050
Clarksburg, West Virginia

Century College of Commerce
416 Eighth Street
Huntington, West Virginia

West Virginia Business College
Bluefield, West Virginia

Huntington College of Business
1007 Fifth Avenue
Huntington, West Virginia 25701

Mountain State College
Parkersburg, West Virginia

Fairmont Business College
323 Monroe Street
Fairmont, West Virginia

Capital City Commercial College
Capitol and Lee Streets
P.O. Box 444
Charleston, West Virginia

APPENDIX C

APPROVED WEST VIRGINIA SCHOOLS OF BEAUTY CULTURE AND BARBERING

1965

BEAUTY SCHOOLS

Capital City Beauty College
901 Quarrier Street
Charleston, West Virginia

Charleston Beauty Academy
711½ Fife Street
Charleston, West Virginia

Morgantown Beauty School
445 Spruce Street
Morgantown, West Virginia

West Virginia College of Beauty Culture
329 South Queen Street
Martinsburg, West Virginia

Huntington School of Beauty Culture
1040 Third Avenue
Huntington, West Virginia

Little French Beauty Academy
3230 Cumberland Road
Bluefield, West Virginia

Parkersburg Beauty College
Corner Sixth and Avery St.
Parkersburg, West Virginia

Southerton-Martz Beauty School
942 Third Avenue
Huntington, West Virginia

Wheeling Beauty College
1015 Main Street
Wheeling, West Virginia

Weirton Beauty Academy
3395 Main Street
Weirton, West Virginia

BARBER SCHOOLS

Charleston Barber College
114 West Washington Street
Charleston, West Virginia

Huntington Barber College
750 Third Avenue
Huntington, West Virginia

Wheeling Barber College
1107 Main Street
Wheeling, West Virginia

West Virginia Barber College
Institute, West Virginia

APPENDIX D

W. Va. State Board of Examiners for Practical Nurses
201 Davidson Building
Charleston, W. Va. 25301

There are eight state accredited schools of practical nursing in West Virginia. Six of these are under the control of county boards of education, vocational division, and two are supported by hospitals. Each provides one year of classes and hospital experience. A high school education is required for applicants under 25 years of age; 9th grade or more for those over 25.

Berkeley County Vocational School of Practical Nursing
401 S. Queen Street
Martinsburg, West Virginia

B. M. Spurr School of Practical Nursing
Glen Dale
West Virginia

Huntington East High Trade School of Practical Nursing
2800 Fifth Avenue
Huntington, West Virginia

Kanawha County Vocational School of Practical Nursing
1301 Second Avenue
Charleston, West Virginia

Mercer County Vocational School of Practical Nursing
300 Ramsey Street
Bluefield, West Virginia

Monongalia County Vocational School of Practical Nursing
263 Prairie Avenue
Morgantown, West Virginia

Raleigh County Vocational School of Practical Nursing
229 Second Street
Beckley, West Virginia

The Davis Memorial Hospital School of Practical Nursing
905 Harrison Avenue
Elkins, West Virginia

New schools in process of being established

Cabell County MDTA Program in Practical Nursing
Huntington East High Vocational-Technical School
2800 Fifth Avenue
Huntington, West Virginia

MDTA Program in Practical Nursing
Central School
"C" Street
So. Charleston, West Virginia

Harrison County MDTA Program in Practical Nursing
Harrison County Schools
Clarksburg, West Virginia 26301
Practical Nursing Program

Job Corps Center for Women
Virginia and Summers Streets
Charleston, West Virginia

Practical Nursing Program
Job Corps Center for Women
P. O. Box 2094
Huntington, West Virginia

Fayette County MDTA Program in Practical Nursing
Fayette County Board of Education
Fayetteville, West Virginia

Wood County Vocational School of Practical Nursing
2101 Dudley Avenue
Parkersburg, West Virginia

APPENDIX E

LISTING OF OCCUPATIONAL-CENTERED CURRICULUMS IN WEST VIRGINIA INSTITUTIONS OF HIGHER EDUCATION AND JUNIOR COLLEGES (PUBLIC AND PRIVATE)

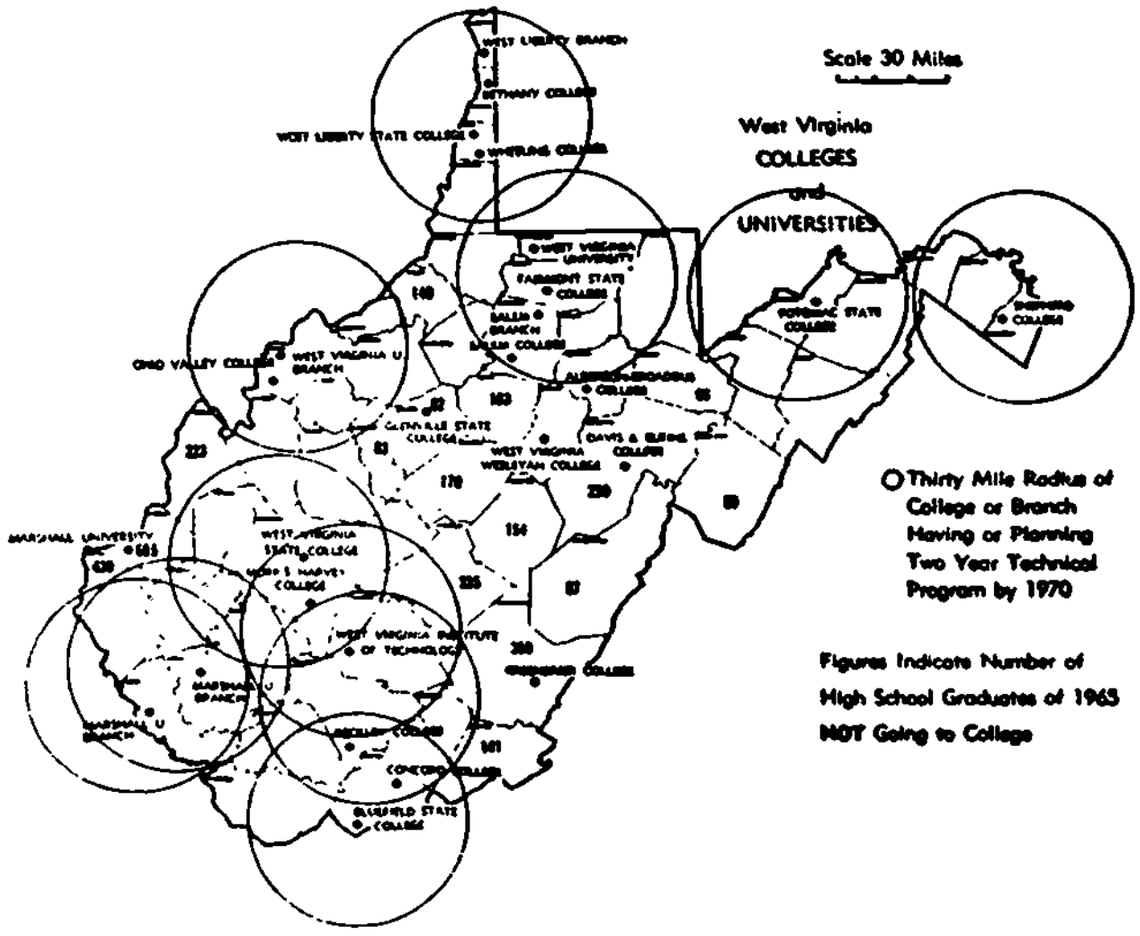
Institution Name and Course Offering	When Offered: Day	When Offered: Evening	Open To Men	Women	Awards: A. A. Degree	Awards: Certificate	Time Required
Parkersburg Branch of WVU							
Technological Programs	Combined		x	x	x		2 years
Chemical Technology	Combined		x	x	x		2 years
Industrial Supervision	Combined		x	x	x		2 years
Instrumentation	Combined		x	x	x		2 years
Mechanical Engineering	Combined		x	x	x		2 years
Business Data Programming	Combined		x	x	x		2 years
Drafting and Design Technology	Combined		x	x	x		2 years
Business Management	Combined		x	x	x		2 years
West Virginia Institute of Technology							
Accounting	x		x	x	x		2 years
General Business	x		x	x	x		2 years
Secretarial Science	x		x	x	x		2 years
Drafting and Design Technology	x		x	x	x		2 years
Electrical Technology	x		x	x	x		2 years
Mechanical Technology	x		x	x	x		2 years
Civil Technology	x		x	x	x		2 years
Bluefield State College							
Secretarial Science	x		x	x	x		2 years
Architectural Engineering Technology	x		x	x	x		2 years
Civil Engineering Technology	x		x	x	x		2 years
Electrical Engineering Technology	x		x	x	x		2 years
Mechanical Engineering Technology	x		x	x	x		2 years
Shepherd College							
Medical Technology	x		x	x	x		years
Secretarial Science	x		x	x	x		years

APPENDIX E (Continued)

Institution Name and Course Offering	When Offered: Day	When Offered: Evening	Open To Men	Women	Awards: A. A. Degree	Awards: Certificate	Time Required
West Liberty College							
Secretarial Science		x	x	x	x		2 years
Dental Hygiene		x	x	x	x		2 years
West Virginia State College							
Secretarial Science (Office)		x	x	x	x		2 years
Secretarial Science (Accounting)		x	x	x	x		2 years
Law Enforcement		x	x	x	x		2 years
Industrial Technology		x	x	x	x		2 years
Potomac State College							
Agriculture		x	x			x	2 years
Fairmont State College							
Accounting		x	x	x	x		2 years
Secretarial		x	x	x	x		2 years
Clerical		x	x	x	x		2 years
Nursing		x	x	x	x		2 years
Technical Education		x	x	x	x		2 years
Glenville State College							
Secretarial Studies		x	x	x	x		2 years
General Business		x	x	x	x		2 years
Marshall University							
Business		x	x	x	x		2 years
Accounting		x	x	x	x		2 years
General		x	x	x	x		2 years
Retailing		x	x	x	x		2 years
Secretarial		x	x	x	x		2 years
Nursing		x	x	x	x	x	4 Sems.
Morris Harvey College							
Nursing		x	x	x	x		2 years

Source: West Virginia Bureau of Vocational, Technical and Adult Education. Projected Program Activities, 1966. 67 pp. 9-10.

APPENDIX F



Chapter III

PRE-PROFESSIONAL AND UNDERGRADUATE PROGRAMS, INCLUDING TEACHER EDUCATION

TASK FORCE MEMBERSHIP:

Chairman:
Dr. Eston K. Feaster, President, Fairmont State College

Members:
Dr. S. J. Baskerville, West Virginia Board of Education

Mr. James H. Swadley, Jr., West Virginia University Board of Governors

Dr. Thomas Harris, West Virginia University Board of Governors
With the special assistance of Dr. Billy Gene Dunn—Fairmont State College

UNDERGRADUATE AND PRE-PROFESSIONAL HIGHER EDUCATION IN WEST VIRGINIA

INTRODUCTION:

The West Virginia higher education needs are served by eleven state tax-supported institutions and ten private institutions. The twenty-one institutions include two universities, four junior colleges, and fifteen senior colleges without graduate programs.

The present study is designed to present a general description of the total undergraduate program in West Virginia and to offer suggested principles for more efficient utilization of available resources as well as guide lines for determining additional needs. The study is deliberately limited to an investigation of undergraduate instructional programs.

The materials presented in the present report do not reveal the varied purposes of the institutions. They do not measure the quality of education in the colleges studied. Rather, the purpose of the study is to offer suggestions of total undergraduate needs in West Virginia so that individual institutions may contribute their purposes, talents, and strengths to a cooperative assault on those needs.

The descriptive material concerning undergraduate and pre-professional programs was obtained from a questionnaire returned by all twenty-one institutions involved in the study. These data are presented in the following sections in a quantitative form without institutional evaluation. However, many of the ultimate recommendations have been based on conditions revealed by tabulation of the returned questionnaires.

APPENDIX C

FEDERAL LEGISLATION RELATED

TO VOCATIONAL AND TECHNICAL EDUCATION

Vocational Education Act of 1963

This was the first major vocational education legislation since the passage of the original Smith-Hughes Act. It liberalized the Smith-Huges and George-Barden Acts to permit funds earmarked for a specific occupational category to be transferred to another category. This act includes funds for construction of area vocational education facilities and initiated work-study and residential vocational school programs. Another major change was made in the allocation of funds to the states with weight given to per capita income.

Funds under this act are available for purposes of:

1) Vocational education for persons attending high school.
2) Vocational education for persons who have completed or left high school.
3) Vocational education for persons needing training or retraining to achieve stability or advancement in employment.
4) Vocational education for persons who have academic, socio-economic or other handicaps that prevent them from succeeding in the regular vocational education program.
5) Construction of area vocational education school facilities.
6) Ancillary services such as teacher training and supervision, program evaluation, demonstration and experimental programs, materials development and state administration and leadership, including periodic evaluation of vocational education programs and services in light of current and projected manpower needs and job opportunities.

economics. The allotment of teacher training grants is made on the basis of the ratio of the state's population to the U.S. population.

No funds were provided under this Act for plant and equipment which had to be provided by state and local governments.

Each state had to submit a plan of supervision of the eligible vocational areas and a program designed to prepare students for useful employment, to meet the needs of persons ove 14 years of age and assist those preparing to enter work on the farm or in the farm home.

George-Barden Act

This bill extended expenditures for vocational education to include administrative costs and vocational guidance and counseling. Also, distributive education was added to the subjects covered by federal grants. Allocations to the states under this act differ from the Smith-Hughes allocation and are as follows:

1) The appropriation for agricultural education is allocated on the basis of the ratio that the farm population of the state bears to total U.S. farm population.
2) The appropriation for vocational home economics is allocated on the basis of the ratio that the rural population of the state bears to total U.S. population.
3) The appropriation for voactional education in trades and industry is allocated on the basis of the ratio of the state's nonfarm population to total U.S. population.

4) The appropriation for distributive education is allocated on the basis of the ratio that the state's total population bears to total U.S. population.

All population figures are those of the preceding census.

All grants to the states require dollar-for-dollar matching funds on the part of the state and/or localities.

Health Amendments Act

This 1956 Act amended the George-Barden Act to include instruction in practical nursing which was defined as training of less than college grade given in schools or classes under public supervision. During fiscal years 1957 and 1958, the states were required to put up $1 for every $3 in Federal grants. From 1959, matching has been on a dollar-for-dollar basis.

Allocations for practical nursing are made to the states in the same ratio that the funds received under the George-Barden Act bear to the total funds allocated under that act.

National Defense Education Act

Title VIII of this Act of 1958 amends the George-Barden Act and extends its provisions in several directions. The major purposes of the act are to establish area vocational programs in areas inadequately served and t meet national defense requirements by training technicians and skilled workers.

Funds can be used for:

1) Maintenance of adequate programs of administration, supervision and teacher training.
2) Salaries and travel expenses of state or local school personnel.
3) travel expenses of members of advisory committees of state boards.
4) Purchase, rental, maintenance and repair of instructional equipment.
5) Purchase of instructional supplies and equipment.
6) Transportation costs of students.
7) Securing educational information and data as a basis for proper development of area vocational education programs and vocational guidance.
8) Training and work-experience training programs for youths.
9) Related instruction for apprentices.
10) Determining the need for and planning and developing area vocational education programs.

The area vocational education program is to be designed to fit individuals for useful employment as technicians or skilled workers in recognized occupations requiring scientific or technical knowledge.

Allotments are made to the states in the same ratio as allocations under the basic George-Barden Act, exclusive of practical nursing.

Vocational Education Act of 1963

This was the first major vocational education legislation since the passage of the original Smith-Hughes Act. It liberalized the Smith-Huges and George-Barden Acts to permit funds earmarked for a specific occupational category to be transferred to another category. This act includes funds for construction of area vocational education facilities and initiated work-study and residential vocational school programs. Another major change was made in the allocation of funds to the states with weight given to per capita income.

Funds under this act are available for purposes of:

1) Vocational education for persons attending high school.
2) Vocational education for persons who have completed or left high school.
3) Vocational education for persons needing training or retraining to achieve stability or advancement in employment.
4) Vocational education for persons who have academic, socio-economic or other handicaps that prevent them from succeeding in the regular vocational education program.
5) Construction of area vocational education school facilities.
6) Ancillary services such as teacher training and supervision, program evaluation, demonstration and experimental programs, materials development and state administration and leadership, including periodic evaluation of vocational education programs and services in light of current and projected manpower needs and job opportunities.

Allotments to the states are made in a complicated fashion as follows for 90 percent of the appropriation. The states "allotment ratio" referred to is computed by dividing the states per capita income by the U.S. per capita income and multiplying the quotient by .50. The product is subtracted from 1.00, but can't be less than .40 nor more than .60. In a simple equation it reads:

$$\text{State allotment ratio} = 1.00 - .50\left(\frac{\text{State per capita income}}{\text{U.S. per capita income}}\right)$$

1. 50 percent of the appropriation is made on the basis of the ratio of the product of the states population aged 15 to 19 and the states allotment ratio to the sum of the corresponding products for all states.

2. 20 percent of the appropriation is made on the basis of the ratio of the product of the state's population aged 20 to 24 and the states allotment ratio to the sum of the corresponding products for all states.

3. 15 percent of the appropriation is made on the basis of the ratio of the product of the state's population aged 25 to 65 and the state's allotment ratio to the sum of the corresponding products for all states.

4. 5 percent of the appropriation is made on the basis of the ratio of the total alloted under 1, 2 and 3 above to total allotments for all states.

Funds are to be matched on a 50-50 basis.

II. Federal Legislation - Supplementary

In addition to the legislation outlined in the previous section, several acts have been passed which are pertinent to the area of vocational education

Fitzgerald Act

This Act, commonly known as the Apprenticeship Act, was passed in 1937 and calls for the cooperation of the administrator of vocational education to provide facilities for the related training of apprenticeship programs. The 1958 NDEA added the cost of instruction.

Area Redevelopment Act

This act of 1961 authorized vocational training for unemployed and underemployed persons in depressed areas. Subsistence payments were payable up to 16 weeks in an amount equal to the average unemployment insurance benefit.

No matching funds from the states was required. The Sect. of Labor was empowered to undertake studies of the labor force and occupational needs in the redevelopment area. Training was to cover occupations where job openings existed.

Manpower development and Training Act

This Act passed in 1962 broadened the concept of the ARA including youths, not requiring a depressed area designation, extending subsistence payments to 52 weeks, and not requiring that training take place for identifiable job openings in the area. Youths 19-21 were eligible for a maximum of $20 a week in training allowances. This act also authorized surveys and studies of manpower trends and needs and provided for literacy training.

For the fiscal years 1963 and 1964, all of the training costs for unemployed workers and half the costs for employed workers was assumed by the Federal government, with the states assuming the remainder.

The Secretary of Labor was given responsibility for choosing trainees, vocational guidance, and subsistence benefits. The Secretary of HEW was given responsibility for entering agreements with state vocational education agencies to provide training.

Apportionment of funds to the states was to be made under standards established by the Secretary of Labor and Secretary of HEW. The following factors were to be taken into consideration.

1) The proportion which the labor force of a state bears to the U.S. Labor force.
2) The proportion which the unemployed in a state bear to all unemployed in the U.S.
3) The lack of appropriate full-time employment in the state.
4) The ratio of insured unemployed to insured employed within the state.
5) The average weekly unemployment compensation benefits.

Trade Expansion Act - 1962

This Act simply made workers who became unemployed because of tariff reductions in their industry eligible for retraining under MDTA, living expenses and relocation allowances. This Act would theoretically be of assistance to the glass workers in this state. However, it has become almost impossible to prove that a worker is unemployed because of tariff reductions on particular products.

Welfare Amendments Act of 1962

This Act provided for work on public projects by unemployed fathers in families receiving Aid to Dependent Children benefits and training through the vocational education agency.

Appalachian Regional Development Act, 1965

This Act provided $16 million for construction of vocational education facilities over a two-year period, supplementing funds available under the Vocational Education Act of 1963.

APPENDIX D

PUBLIC EXPENDITURES RELATED TO VOCATIONAL EDUCATION

Vocational Education Expenditures

The following tables of expenditures for vocational education indicate absolute expenditures as well as the percentage distribution between the spending units; absolute expenditures and the percentage distribution among programs; and expenditures by source of funds for each of the programs.

A few observations on spending patterns indicate:

1) Total expenditures for vocational education have increased substantially since passage of the Vocational Education Act of 1963.
2) Although State expenditures have increased somewhat, the state percentage of the total has decreased over the years.
3) It is the counties which are expending the greatest portion of the state-local share and the local share has been increasing while the state share has lagged.
4) The most marked increase in expenditures has occurred in the trades and industry and technical education programs.
5) The availability of Federal construction grants should aid in promoting new vocational education facilities, but we have no time series to determine changes.

TABLE 1

WEST VIRGINIA EXPENDITURES FOR VOCATIONAL EDUCATION

By Source of Funds
1954-55 through 1965-66

Years	State	% of Total	Local	% of Total	Total State & Local	% of Total	Federal	% of Total	Total Federal State & Local
1954-1955	328,028.02	18.11	977,948.47	54.01	1,305,976.49	72.13	504,397.76	27.86	1,810,374.25
1955-1956	346,207.80	19.11	918,562.90	50.70	1,264,770.20	69.81	546,817.76	30.18	1,811,588.46
1956-1957	352,898.56	16.96	1,115,372.81	53.60	1,468,271.37	70.56	612,385.01	29.43	2,080,656.38
1957-1958	360,280.14	16.90	1,146,769.48	53.79	1,507,049.62	70.69	624,635.19	29.31	2,131,684.81
1958-1959	357,260.71	16.26	1,214,467.31	55.28	1,571,728.02	71.55	624,842.35	28.44	2,196,570.37
1959-1960	419,065.92	17.63	1,290,124.68	54.27	1,709,190.60	71.90	677,805.04	28.51	2,376,995.64
1960-1961	437,419.99	18.20	1,287,279.60	53.58	1,724,699.59	71.79	677,498,30	28.20	2,402,197.89
1961-1962	433,392.06	17.54	1,398,577.25	56.62	1,831,969.31	74.17	637,796,55	25.82	2,469,765.86
1962-1963	451,353.99	17.38	1,575,404.64	60.67	2.026,758.63	78.05	569,711.63	21.94	2,596,470.26
1963-1964	452,759.74	16.55	1,702,589.55	62.26	2,155,349.29	78.82	578,925.92	21.17	2,734,274,21
1964-1965	463,027.00	8.96	2,921,189.00	56.58	3,384,216.00	65.55	1,778,441.00	34.44	5.162,657.00
1965-1966	797,457.00	9.91	4,361,140.00	54.23	5,158,597.00	64.15	2,902,204.00	36.09	8,040,801.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Department of Health, Education, and Welfare.

TABLE 2

WEST VIRGINIA EXPENDITURES FOR VOCATIONAL EDUCATION BY PROGRAM

1954-66 through 1965-66

Years	Total Fed., State & Local Funds	Agri-culture	% of Total Pro-gram Exp.	Trade & Industry	% of Total Pro-gram Exp.	Home Econ-omics	% of Total Pro-gram Exp.	Distri-butive Educa-tion	% of Total Pro-gram Exp.	Health	% of Total Pro-gram Exp.	Tech-nical Educa-tion	% of Total Pro-gram Exp.	Office	% of Total Pro-gram Exp.	T.Exp. for Cons-truc-tion
1954-55	1,810,374	550,299	30.39	648,666	35.83	564,870	31.20	45,540	2.51							
1955-56	1,811,588	535,155	29.54	667,972	36.87	562,551	31.05	45,911	2.53							
1956-57	2,080,656	592,654	28.48	768,429	36.93	634,401	30.49	56,766	2.72	28,407	1.36					
1957-58	2,131,685	600,445	28.16	774,132	36.31	655,618	30.75	55,927	2.62	45,563	2.13					
1958-59	2,196,570	592,043	26.95	828,208	37.56	663,702	30.21	63,203	2.87	52,415	2.38					
1959-60	2,376,996	600,975	25.28	837,991	35.25	724,544	30.48	69,559	2.92	71,147	2.99	72,779	3.06			
1960-61	2,402,198	616,110	25.64	834,689	34.74	721,673	30.04	71,286	2.96	85,111	3.54	73,330	3.05			
1961-62	2,469,766	639,255	25.88	841,689	34.07	745,358	30.17	72,495	2.93	81,475	3.29	89,495	3.62			
1962-63	2,596,470	633,703	24.40	880,505	33.91	772,149	29.73	71,371	2.74	91,174	3.51	147,569	5.68			
1963-64	2,734,274	675,837	24.71	889,069	32.88	830,829	30.38	74,735	2.73	90,445	3.30	163,360	5.97			
1964-65	5,162,657	716,624	20.67	1,090,008	31.44	862,342	24.94	64,893	1.87	115,582	3.34	423,658	12.25	192,750	5.57	1,696,800 (3)
1965-66	8,040,801	701,983	15.30	1,225,009	26.71	945,892	20.62	65,135	1.42	125,842	2.74	411,152	8.96	1,081,874	23.59	3,455,321 (2)

[1] "Annual Report 1965," published by the Division of Vocational Education, Bureau of Vocational, Technical and Adult Education, Charleston, W. Va., p. 23.

[2] "Annual Report, 1966," published by the Division of Vocational Education, Bureau of Vocational, Technical and Adult Education Charleston, W. Va., p. 24.

TABLE 2-A

WEST VIRGINIA

EXPENDITURES FOR CONSTRUCTION OF VOCATIONAL FACILITIES

By Source of Funds
1964-65 through 1965-66

Years	Total Exp. for Construction	Federal Exp. for Construction	% of Total	State Exp. for Construction	% of Total	Local Exp. for Construction	% of Total
1964-1965	1,696,800.00	848,400.00	50.00	7,500.00	.44	840,900.00	49.57
1965-1966	3,455,320.89	1,432,285.53	41.45	171,065.00	4.95	1,851,970.30	53.59

SOURCE: "Annual Report 1965," published by the Division of Vocational Education Bureau of Vocational,Technical and Adult Education, Charleston, W. Va., p. 23.

"Annual Report 1966," published by the Division of Vocational Education, Bureau of Vocational, Technical and Adult Education, Charleston, W. Va., p. 24.

TABLE 3

ALLOTMENTS OF FEDERAL FUNDS TO WEST VIRGINIA UNDER THE SMITH-HUGHES ACT AND SUPPLEMENTAL ACTS AND ADJUSTED ALLOTMENTS OF FUNDS UNDER THE GEORGE-BARDEN ACT

1954-55 through 1965-66

Years	Grand Total	Smith-Hughes Act				
		Total	Agriculture	Trades & Industry & Home Economics	Teacher Training	Total
1954-1955	504,397.76	107,686.76	72,528.46	21,778.60	13,379.70	396,711.00
1955-1956	546,817.76	107,686.76	72,528.46	21,778.60	13,379.70	439,131.00
1956-1957	617,950.76	107,686.76	72,528.46	21,778.60	13,379.70	510,264.00
1957-1958	641,027.18	107,686.76	72,528.46	21,778.60	13,379.70	533,340.42
1958-1959	662,817.63	107,686.76	72,528.46	21,778.60	13,379.70	555,130.87
1959-1960	710,556.79	107,542.00	72,403.00	21,771.00	13,368.00	603,014.79
1960-1961	718,801.75	107,214.00	72,197.00	21,693.00	13,324.00	611,587.75
1961-1962	642,483.86	91,340.00	63,787.00	17,134.00	10,419.00	551,143.86
1962-1963	596,211.34	91,340.00	63,787.00	17,134.00	10,419.00	504,871.34
1963-1964	598,728.00	91,340.00	63,787.00	17,134.00	10,419.00	507,388.00
1964-1965	694,223.00	91,340.00	63,787.00	17,134.00	10,419.00	602,883.00
1965-1966	694,223.00	91,340.00	63,787.00	17,134.00	10,419.00	602,883.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Dept. of Health, Education, and Welfare, Washington, D.C., for pertinent years.

TABLE 3

ALLOTMENTS OF FEDERAL FUNDS TO WEST VIRGINIA UNDER THE SMITH-HUGHES ACT AND SUPPLEMENTAL ACTS AND ADJUSTED ALLOTMENTS OF FUNDS UNDER THE GEORGE-BARDEN ACT

1954-55 through 1965-66

	George-Barden Act						
	Title I					Title II:	Title III:
Years	Total	Agriculture	Distributive Occupations	Home Economics	Trades & Industry	Practical Nursing	Technical Programs
1954-1955	396,711.00	141,212.00	15,000.00	157,667.00	82,832.00		
1955-1956	439,131.00	156,094.00	17,193.00	174,283.00	91,561.00		
1956-1957	487,764.00	168,365.00	32.656.00	187,984.00	98,756.00	22,500.00	
1957-1958	483,340.42	168,365.00	27,656.00	188,164.78	99,154.64	50,000.00	
1958-1959	492,009.87	172,610.87	32,656.00	187,984.00	98,759.00	32,000.00	31,121.00
1959-1960	491,963.79	171,839.75	33,381.04	187,984.00	98,759.00	35,573.00	75,478.00
1960-1961	492,542.75	171,679.55	34,120.20	187,984.00	98,759.00	44,573.00	74,472.00
1961-1962	461,044.86	170,232.30	25,980.56	166,073.00	98,759.00	45.099.00	45,000.00
1962-1963	361,826.34	86,706.48	25,944.86	166,073.00	83,102.00	50,761.00	92,284.00
1963-1964	361,627.00	86,851.00	25,601.00	166,073.00	83.102.00	45,761.00	100,000.00
1964-1965	359,838.00	85,062.00	25,601.00	166,073.00	83,102.00	60,761.00	182,284.00
1965-1966	359,838.00	85,062.00	25,601.00	166,073.00	83,102.00	60,761.00	182,284.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Dept. of Health, Education, and Welfare, Washington, D.C., for pertinent years.

TABLE 3

ALLOTMENTS OF FEDERAL FUNDS TO WEST VIRGINIA UNDER THE SMITH-HUGHES ACT AND SUPPLEMENTAL ACTS AND ADJUSTED ALLOTMENTS OF FUNDS UNDER THE GEORGE-BARDEN ACT

1954-55 through 1965-66

	George-Barden Act						
	Title I					Title II:	Title III:
Years	Total	Agriculture	Distributive Occupations	Home Economics	Trades & Industry	Practical Nursing	Technical Programs
1954-1955	396,711.00	141,212.00	15,000.00	157,667.00	82,832.00		
1955-1956	439,131.00	156,094.00	17,193.00	174,283.00	91,561.00		
1956-1957	487,764.00	168,365.00	32.656.00	187,984.00	98,756.00	22,500.00	
1957-1958	483,340.42	168,365.00	27,656.00	188,164.78	99,154.64	50,000.00	
1958-1959	492,009.87	172,610.87	32,656.00	187,984.00	98,759.00	32,000.00	31,121.00
1959-1960	491,963.79	171,839.75	33,381.04	187,984.00	98,759.00	35,573.00	75,478.00
1960-1961	492,542.75	171,679.55	34,120.20	187,984.00	98,759.00	44,573.00	74,472.00
1961-1962	461,044.86	170,232.30	25,980.56	166,073.00	98,759.00	45.099.00	45,000.00
1962-1963	361,826.34	86,706.48	25,944.86	166,073.00	83,102.00	50,761.00	92,284.00
1963-1964	361,627.00	86,851.00	25,601.00	166,073.00	83.102.00	45,761.00	100,000.00
1964-1965	359,838.00	85,062.00	25,601.00	166,073.00	83,102.00	60,761.00	182,284.00
1965-1966	359,838.00	85,062.00	25,601.00	166,073.00	83,102.00	60,761.00	182,284.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Dept. of Health, Education, and Welfare, Washington, D.C., for pertinent years.

of Education of the U.S. Dept. of Health, Education, and Welfare, Washington, D.C., for pertinent years.

TABLE 4

WEST VIRGINIA EXPENDITURES FOR VOCATIONAL AGRICULTURE EDUCATION

By Source of Funds
1954-55 through 1965-66

Years	State	% of Total	Local	% of Total	State & Local	% of Total	Federal	% of Total	State & Local
1954-1955	57,514.84	10.45	276,278.83	50.20	333,793.67	60.65	216,505.46	39.34	550,299.13
1955-1956	61,258.68	11.44	242,508.67	47.55	303,767.35	56.76	231,387.46	43.23	535,154.81
1956-1957	70,138.03	11.83	278,857.31	47.05	348,995.34	58.88	243,658.46	41.11	592,653.80
1957-1958	64,953.97	10.81	291,832.19	48.60	356,786.16	59.42	243,658.46	40.57	600,444.62
1958-1959	55,369.53	9.35	288,769.42	48.77	344,138.95	58.12	247,904.33	41.87	592,043.28
1959-1960	75,735.16	12.60	278,232.01	46.29	353,967.17	58.89	247,007.75	41.10	600,974.92
1960-1961	76,457.29	12.40	293,010.75	47.55	369,468.04	59.96	246,641.55	40.03	616,109.59
1961-1962	71,670.31	11.21	330,800.14	51.74	402,470.45	62.95	236,784.30	37.04	639,254.75
1962-1963	126,651.84	19.98	353,792.71	55.82	480,444.55	75.81	153,258.48	24.18	633,703.03
1963-1964	124,103.54	18.36	398,330.19	58.93	522,433.73	77.30	153,403.00	22.69	675,836.73
1964-1965	126,193.00	17.60	410,610.00	57.29	536,806.00	74.90	179,818.00	25.09	716,624.00
1965-1966	110,271.00	15.70	427,181.00	60.85	537,452.00	76.56	164,531.00	23.43	701,983.00

SOURCE: "A review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Department of Health, Education, and Welfare

TABLE 5

WEST VIRGINIA
EXPENDITURES FOR VOCATIONAL HOME ECONOMIC EDUCATION

By Source of Funds
1954-55 through 1965-66

Years	State	% of Total	Local	% of Total	State & Local	% of Total	Federal	% of Total	Total Federal State & Local
1954-1955	87,433.92	15.47	314,239.92	55.63	401,673.84	71.10	163,195.00	28.89	564,869.84
1955-1956	95,209.88	16.92	287,529.12	51.11	382,739.00	68.03	179,812.00	31.96	562,551.00
1956-1957	92,933.47	14.64	347,954.30	54.84	440,887.77	69.49	193,513.00	30.50	634,400.77
1957-1958	102,850.98	15.68	359,073.54	54.76	461,924.52	70.45	193,693.78	29.54	655,618.30
1958-1959	91,188.67	13.73	378,999.94	57.10	470,188.61	70.84	193,513.00	29.15	663,701.61
1959-1960	104,867.98	14.47	426,175.12	58.81	531,043.10	73.29	193,501.30	26.70	724,544.40
1960-1961	103,785.26	14.38	424,429.92	58.81	528,215.18	73.19	193,458.00	26.80	721,673.18
1961-1962	111,088.66	14.90	464,369.28	62.30	575,457.44	77.20	169,900.00	22.79	745,357.94
1962-1963	81,543.31	10.56	520,705.26	67.43	602,248.57	77.99	169,900.00	22.00	772,148.57
1963-1964	84,546.13	10.17	576,383.13	69.37	660,929.26	79.55	169,900.00	20.40	830,829.26
1964-1965[1]	98,886.51	11.46	584,680.68	67.80	683,567.19	79.26	178,775.00	20.73	862,342.00
1965-1966[2]	110,440,81	11.67	645,338.26	68.22	775,779.00	67.80	190,113.41	20.09	945,892.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Department of Health, Education, and Welfare.

[1] From: Annual Report 1964-1965, Division of Vocational Education, Charleston, W. Va., P-.23.

[2] From: Annual Report 1965-1966, Division of Vocational Education, Charleston, W. Va., p. 24.

TABLE 6

WEST VIRGINIA

EXPENDITURES FOR VOCATIONAL TRADES AND INDUSTRY EDUCATION

By Source of Funds
1954-55 through 1965-66

Years	State	% of Total	Local	% of Total	State & Local	% of Total	Federal	% of Total	Total Federal State & Local
1954-1955	177,152.37	27.31	361,817.22	55.77	538,969.59	83.08	109,696.30	16.91	648,665.89
1955-1956	180,433.52	27.01	369,113.01	55.25	549,546.53	82.26	118,425.30	17.72	667,971.83
1956-1957	180,922.92	23.54	461,882.36	60.10	642,805.28	83.65	125,623.30	16.34	768,428.58
1957-1958	178,859.11	23.10	469,254.02	60.61	648,113.13	83.72	126,018.94	16.27	774,132.07
1958-1959	179,134.62	21.70	520,450.35	63.06	699,584.97	84.77	125,623.30	15.22	825,208.27
1959-1960	189,476.41	22.61	522,898.99	62.39	712,375.40	85.00	125,615.70	14.99	837,991.10
1960-1961	200,180.53	23.98	508,971.36	60.97	709,151.89	84.96	125,537.00	15.03	834,688.89
1961-1962	192,825.89	22.90	529,142.77	62.86	721,968.66	85.77	119,720.00	14.22	841,688.66
1962-1963	178,736.55	20.29	597,705.58	67.88	776,442.13	88.18	104,063.00	11.81	880,505.13
1963-1964	179,836.46	20.00	615,169.02	68.42	795,005.48	88.42	104,063.00	11.57	899,068.48
1964-1965[1]	171,854.31	15.76	738,176.47	67.72	910,031.00	83.48	179,977.30	16.51	1,090,008.00
1965-1966[2]	256,176.00	20.49	715,477.06	58.05	967,312.00	78.96	257,697.00	21.03	1,229,349.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of the Department of Health, Education, and Welfare

[1]From: Annual Report 1964-65, Division of Vocational Education, Charleston, W. Va., p. 23.

[2]From: Annual Report 1965-66, Division of Vocational Education, Charleston, W. Va., p. 24.

"From: Annual Report 1965-66, Division of Vocational Education, Charleston, W. Va., p. 24.

TABLE 7

WEST VIRGINIA EXPENDITURES FOR VOCATIONAL DISTRIBUTIVE OCCUPATIONS EDUCATION

By Source of Funds
By State - West Virginia
1954-55 through 1965-66

Years	State	% of Total	Local	% of Total	State & Local	% of Total	Federal	% of Total	State & Loca
1954-1955	5,926.89	13.01	25,612.50	56.24	31,539.39	69.25	15,000.00	32.93	45,539.39
1955-1956	9,305.72	20.26	19,412.10	42.28	28,717.82	62.55	17,193.00	37.44	45,910.82
1956-1957	1,706.39	3.00	26,678.84	46.99	28,385.23	50.00	28,380.84	49.99	56,766.07
1957-1958	1,661.21	2.96	26,609.73	47.57	28.270.94	50.54	27,656.00	49.45	55,926.94
1958-1959	5,360.54	8.48	26,247.60	41.52	31,608.14	50.01	31,594.42	49.98	63,202.56
1959-1960	5,959.66	8.56	30,218.64	43.41	36,178.30	51.98	33,381.04	47.96	69,559.34
1960-1961	8,637.21	12.11	28,528.39	40.01	37,165.60	52.13	34,120.20	47.86	71,285.80
1961-1962	13,251.86	18.27	33,262.12	45.88	46,513.98	64.16	25,980.56	35.83	72,494.54
1962-1963	12,387.66	17.35	33,038.31	46.29	45,425.97	63.64	25,944.86	36.35	71,370.83
1963-1964	13,002.59	17.39	36,131,80	48.34	49,134.39	65.74	25,601.00	34.25	74,735.39
1964-1965	7,699.94	11.86	13,593.00	48.68	38,282.00	58.99	25,601.00	39.45	64,893.00
1965-1966	9,709.03	14.90	29,825.00	45.78	39,534.00	60.69	25,601.00	39.30	65,135.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Department of Health, Education, and Welfare

TABLE 8

WEST VIRGINIA EXPENOITURES FOR VOCATIONAL EDUCATION FOR HEALTH OCCUPATIONS, UNOER TITLE II OF THE GEORGE-BARDEN ACT

By Source of Funds
1956-57 through 1965-66

Years	State	% of Total	Local	% of Total	State & Local	% of Total	Federal	% of Total	State & Loca
956-1957	7,197.75	25.33	0	0	7,197.75	25.33	12,209.41	74.66	28,407.16
957-1958	11,954.87	26.23	0	0	11,954.87	26.23	33,608.01	73.76	45,562.88
958-1959	26,207.35	50.00	0	0	26,207.35	50.00	26,207.30	50.00	52,414.65
959-1960	33,033.08	46.42	2,540.74	3.57	35,573.53	50.00	35,573.00	50.00	71,146.82
960-1961	35,783.52	42.04	8,191.35	9.62	43,974.87	51.66	41,136.08	48.33	85,110.95
961-1962	36,492.42	44.78	4,275.00	5.24	40,707.72	49.96	40,707.72	49.96	81,475.14
962-1963	42,160.54	46.24	6,252.50	6.85	48,413.04	53.09	42,761.00	46.90	91,174.04
963-1964	41,716.28	46.12	4,450.00	4.91	46,166.28	51.04	44,278.78	48.95	90,445.06
964-1965	42,864.60	37.08	15,372.48	13.30	58,237.00	50.38	57,345.33	49.61	115,582.41
1965-1966	40,848.60	32.46	22,067.81	17.53	62,915.00	49.99	62,925.00	50.00	125,842.00

SOURCE: " A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Department of Health, Education, and Welfare.

TABLE 9

WEST VIRGINIA EXPENDITURES FOR TECHNICAL EDUCATION PROGRAMS, UNDER TITLE III OF THE GEORGE-BARDEN ACT

By Source of Funds
1959-60 through 1965-66

Years	State	% of Total	Local	% of Total	State & Local	% of Total	Federal	% of Total	State & Loca
1959-1960	9,993.63	13.73	30,059.18	41.30	40,052.81	55.03	32,726.25	44.96	72,779.06
1960-1961	12,576.18	17.15	24,147.83	32.92	36,724.01	50.08	36,605.47	49.91	73,329.48
1961-1962	8,062.92	9.00	36,727.94	41.03	44,790.86	50.04	44,703.97	49.95	89,494.83
1962-1963	9,874.09	6.69	63,910.28	43.30	73,784.37	50.00	73,784.29	50.00	147,568.66
1963-1964	9,554.79	5.84	72,125.41	44.15	81,680.15	50.00	81,680.14	50.00	163,360.29
1964-1965	*		*		*		182,284.00		*
1965-1966	*		*		*		182,284.00		*

* Not Yet Available

SOURCE: " A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the U.S. Department of Health, Education, and Welfare.

PROJECTS APPROVED AND FEDERAL OBLIGATIONS

UNDER THE AREA REDEVELOPMENT ACT - WEST VIRGINIA

Years	Approved Projects	Federal Funds Obligated
1961 - 1962	15	351,522.00
1962 - 1963	15	281,882.00
1963 - 1964	18	153,995.37
1964 - 1965		30,944.00
1965 - 1966		141,214.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational & Technical Education," published by the Office of Education of the Department of Health, Education, and Welfare, Washington, D.C.

PROJECTS APPROVED AND FEDERAL OBLIGATIONS

UNDER THE MANPOWER DEVELOPMENT AND TRAINING ACT

Years	Approved Projects	Federal Funds Obligated	
		State Direction & Supervision	Training
1962 - 1963	20	15,000.00	264,560.86
1963 - 1964	14	29,784.24	2,278,128.00
1964 - 1965		82,500.00	780,363.00
1965 - 1966		73,875.00	718,157.00

SOURCE: "A Review of Activities in Federally Aided Programs: Vocational and Technical Education," published by the Office of Education of the Department of Health, Education, and Welfare, Washington, D.C.

APPENDIX E

VOCATIONAL EDUCATION RESEARCH ACTIVITIES IN WEST VIRGINIA

WEST VIRGINIA RESEARCH COORDINATING UNIT FOR VOCATIONAL EOUCATION

QUARTERLY

TECHNICAL PROGRESS REPORT

MAY 1, 1967 -- JUNE 30, 1967

Project No. 6-2722 Grant No. OEG 2-6-062722-2077

WEST VIRGINIA STATE BOARO OF EDUCATION
Oivision of Vocational Education
Fred W. Eberle, Oirector
Capitol Building
Charleston, West Virginia 25305

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INTRODUCTION

The primal purpose for establishing the Research Coordinating Unit was to provide the leadership, motivation, and coordination needed to structure a statewide program of research and development which will contribute to planning, promoting, developing and maintaining quality vocational education programs to serve the total citizenry of West Virginia. The unit will develop and maintain a program of continuing research and training which will assume quality in all programs of vocational education.

Specific objectives of the Research Coordinating Unit are as follows:

1. Stimulate and encourage occupational education research and development activities in state agencies and departments, local and state educational agencies and non-profit organizations.

2. Identify issues and problems related to the nature and place of vocational education in the state school system, and determine the contributions which occupational education research and development can make in resolving them.

3. Design and implement a continuing plan of research and development in vocational education.

4. Coordinate occupational research activities conducted within the state by the agencies noted above with those being conducted outside the state.

5. Establish and maintain a resource library for persons

interested in occupational research and development in vocational education.

6. Identify and maintain an inventory of available occupational research and development resources for anticipated vocational education needs and programs.

7. Disseminate information on the progress and applications of the results of occupational education research.

8. Stimulate activities which will result in increased interest and improved competence in research.

II. ESTABLISHING, STAFFING, AND ORGANIZING THE RCU

The West Virginia Research Coordinating Unit was offically established on May 1, 1967 at which time Mr. Glenn E. Smith was employed as the Unit Coordinator. As in other states, the first two months of the RCU's existence have been ones primarily concerned with (1) establishing, (2) staffing, and (3) organizing the unit. For this reason the First Quarterly Progress Report will deal mainly with these three tasks.

ESTABLISHING THE RCU

Headquarters for the Unit were established at Marshall University in Huntington, West Virginia. At Marshall the Unit Coordinator and the RCU staff are responsible to the State Director of Vocational Education through the Dean of the Teacher's College, Dr. Robert B.

Hayes. While the office space provided at Marshall is presently adequate, it is not yet known whether the demands of conference and library space will require establishment of new headquarters at another location.

STAFFING THE RCU

The staff of the RCU as set forth in the proposal calls for a Unit Coordinator, a Research Specialist, five Special Research Consultants, a Research Council, two Research Assistants, and two Secretaries. During the first quarter numerous interviews were held and as of June 30, 1967 the following positions have been filled.

Person	Position	Date of Employment
Mr. Glenn E. Smith	Coordinator	May 1, 1967
Mrs. Joyce Lucas	Secretary	May 15, 1967

ORGANIZING THE RCU

The following is a list of some of the organizational activities which were conducted during the first quarter.

1. Interviewed persons to fill various staff positions.
2. Employed a Coordinator and a Secretary.
3. Establishment of headquarters at Marshall University.
4. Ordered equipment and basic supplies.
5. Developed letterhead, newsletter format, and introductory brochure.
6. Arranged for a visit to study ERIC at the National Center

for Leadership and Development in Vocational and Technical Education located at Ohio State University.

7. Arranged for a visit to study organization and set-up of Kentucky RCU.

8. Contacted prospective members of the RCU Research Council.

9. Attended Southwide RCU Director's Conference at Knoxville, Tennessee.

III. UNANTICIPATED PROBLEMS

The RCU has experienced some difficulty in becoming established. Chief among these difficulties was the lack of available qualified research personnel. Staffing of the RCU will soon be completed and it is anticipated that research qualifications of the staff will be gained by on-the-job experience plus course work available at Marshall University.

During the initial two months of operation there have been no unanticipated problems which have affected the establishment of the RCU. The staff at Marshall University have been most cooperative in lending assistance in areas of need during this period.

IV. PROJECTED ACTIVITIES

Projected activities for the next quarter are:

A. Complete the selection and approval of the Research Council and Consulting Committee.

B. Selection and approval of graduate assistants.

C. Establish procedures for employment of the Consulting Committee.

D. Develop a system for follow up of students.

E. Develop a guide to be used in applying for research funds.

F. Develop a proposal for the study of Vocational, Technical, and Adult Education in West Virginia.

G. Provide consultive services to counties and assist in making county surveys to determine vocational education needs.

H. Study methods of financing Vocational, Technical, and Adult Education in West Virginia.

I. Initiate plans for a series of three day institutes on an area basis within the state.

J. Publish an RCU newsletter and descriptive brochure.

K. Meet with Research Council and Consultative Committee.

L. Visit Kentucky RCU and the Center for Leadership and Development at The Ohio State University.

M. Preparation of script to accompany slides depicting Vocational, Technical, and Adult Education in West Virginia.

N. Establish liaison with various governmental agencies within the state and secure their cooperation on projects and studies of mutual concern.

V. CONCLUSION

In the brief period of two months during which the RCU has been in existence much progress has been made even though administration, staffing and equipping problems have existed. The RCU staff looks to the next quarter with a great deal of anticipation in that a number of areas requiring research have already been identified. Meetings with the Research Council and Consulting Committee will further serve to assist in the area of problem identification and delineation.

Brochures, newsletters, and other public relations information are in the stage of preparation and will be released during the following quarter. Orientation and direction of the RCU staff will continue as will certain organizations and administrative problems. However, the staff will become more functional and less administrative during the next quarter.

VT 000 771
Home Care...What It Is. PHS Publication No. 1655,

Public Health Service (DHEW), Arlington, Va. Div. of Medical Care Administration
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Jun67 8p.

*COMMUNITY HEALTH SERVICES; PROGRAM DEVELOPMENT; NURSING; *FEDERAL PROGRAMS; *HISTORICAL REVIEWS; *PROGRAM DESCRIPTIONS
*HOME HEALTH SERVICES

The booklet: (1) defines basic terms, (2) outlines the levels of care to the sick at home, (3) reviews important factors in the development of home care in the United States, and (4) presents basic information related to planning a home care program. A related document is "Coordinated Home Care Training Manual," available as VT 008 461 (in this issue). (JK)

VT 000 771

ED039370

(C1)

HOME CARE . . . *what it is*

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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VT000771

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

Public Health Service Publication No. 1655

What is Home Care?

The meaning of the term "home care" seems to depend upon who is speaking. The term may convey a spectrum of services, organized or disorganized, ranging from family care of an ill member to a complex array of skilled professionals providing services in the home. The Social Security Amendments of 1965, under title XVIII (Medicare), use the term "home health services."

Home health services include a variety of services provided in the home, but the term does not refer to the organization of such services. Only selected home health services are eligible for reimbursement under Medicare.

Organized home care was defined in 1955 as "those organized programs having centralized responsibility for the administration and coordination of services to patients and for providing at least the minimum of medical, nursing, and social services, essential drugs, and supplies." [1]

Coordinated home care evolved as a more definitive description of organized home care programs. The accepted definition is: A coordinated home care program is one that is centrally administered, and that, through coordinated planning, evaluation, and followup procedures provides for physician-directed medical, nursing, social, and related services to selected patients at home. Home care is often used in this context.

Home care is one aspect in the continuum of patient care appropriate for selected patients at certain points in their disease process. Home care is *not* a substitute for hospital, extended care facility, or nursing home care, but complements these. Alternatives for care must be evaluated in relation to the needs of the patient and the availability of services. When the needs of the institution are the sole motivation for planning alternatives for care, home care may become a "dumping ground" with referrals inappropriate to the program's ability to meet the patient's needs.

Levels of care of the sick at home are:

1. *Patient, family, and physician.* The physician works directly with the patient and family in providing the necessary care.

---

[1] *A Study of Selected Home Care Programs: A Joint Project of the Public Health Service and the Commission on Chronic Illness* (Public Health Monograph No. 35), Washington, D.C.: U.S. Government Printing Office, 1955, p. 3.

2. *Patient, family, physician, and an additional service.* Most commonly the additional service is nursing, but it may be social service, physical therapy, or homemaker service. This type of program is often referred to as a "single service program."
3. *Multiple service program.* Care is provided by a variety of professionals to assist the patient, family, and physician. These services may be available through one agency or several agencies.
4. *Coordinated home care.* Care is provided by a program that is centrally administered and that, through coordinated planning, evaluation, and followup procedures, provides for physician-directed medical, nursing, social, and related services to selected patients at home.

The Development of Home Care in the United States

The first home care program was established in 1796 in Boston to provide care for the indigent and medically indigent.

The growth of programs was spotty and very slow until 1947 when the hospital administered program was established at Montefiore Hospital in New York City. This marked a renewed interest in the concept of home care. Since 1955 more emphasis has been placed on administrative settings outside the hospital, and programs have developed in health departments and visiting nurse services.

Factors that gave impetus to the development of programs are:

1. The shift from acute to chronic illnesses as major health problems as a result of:
   a. Scientific and medical advancements;
   b. Increase in lifespan; and
   c. Population increase with an increase in the older age groups.
2. The sharply rising costs of hospital care due to:
   a. More complex services and facilities resulting from expanding knowledge;
   b. Evolving role of the hospital as a community health center requiring that more services be available;
   c. Increase in salaries and operating costs; and
   d. Increased costs of equipment and construction.
3. Collective methods of financing health services through insurance and prepayment plans creating more demand for health services resulting in:
   a. Greater utilization of hospital beds, and
   b. Demand for comprehensive, high quality services.
4. The limited financial resources of the aged, their limited eligibility for health insurance, and their greater need for health services.

Programs thus emerged from:

1. A hospital's need to improve the utilization of existing beds and reduce the need for more beds.
2. Medical education's need to train physicians in the extramural setting.
3. A desire to reduce public welfare costs for individuals in institutions.
4. An identified community need to provide continuity of patient care and to furnish comprehensive care to patients in their own homes.

Factors that are currently influencing program development and will continue to do so are:

1. Continued rise in hospital costs.
2. Population expansion with the older population increasing in number and age.
3. Medical and scientific advancements in the prevention, treatment, and alteration of disease.
4. Social Security Amendments of 1965 and other Federal legislation.
5. Expansion of third party coverage against the costs of medical care.

Home care is important for:

1. Prevention of hospitalization or more appropriate planning for rehospitalization or institutionalization.
2. Psychological benefits connected with the home:
   a. Familiar environment;
   b. Maintenance of dignity;
   c. Supportive family relationships; and
   d. Rehabilitation carried out in the setting appropriate to the goals.
3. Enabiing earlier hospital discharge for the patient who no longer requires the intensive, highly complex services of the hospital but requires continued coordinated professional services.

A coordinated home care program is based on the assumption that:

1. The home is an appropriate place to provide selected patient care services.
2. The family itself, not the physician or agency, may be the most important resource for care in the home.
3. The patient is an active and important figure in the situation, not just a passive recipient of care.
4. Home care is a phase of patient care in its own right, and is not a substitute for hospitalization.

The program incorporates the principles of:

1. A centrally administered program.
2. Physician-directed services.

3. Services available to all age groups and to all persons regardless of economic status.
4. Evaluation of the patient's status before admission and periodically thereafter.
5. Evaluation of the suitability of the home and the ability of household members to participate in the care of the patient.
6. Rapid transfer of the patient from the home to another kind of care facility if his condition should require it.
7. A referral system for transmitting pertinent information to and from the home care program when services are needed.
8. Involvement of other agencies, if needed, to furnish services in accordance with contracts or agreements.
9. The administering agency acting to coordinate those facilities or services furnished in the program by other agencies.
10. Sound fiscal support, including ability and freedom to pay for contracted services, collect fees, and receive funds from other agencies.
11. A qualified staff working under professional supervision.
12. Adequate and appropriate clinical records and data.

Planning a Home Care Program

The decision to develop a program should be based on:

1. Community needs.
2. Community resources.
3. Available leadership.

It is important to differentiate between a coordinated home care program and a home health service program. Coordinated home care identifies a program that offers a range of services within an administrative structure providing centralized coordination and planning. A home health service program, which may or may not have this centralized mechanism for coordination, refers to the kinds of services rather than the organizational structure. As a home health agency becomes eligible for Medicare certification, development of a coordinated home care program would be a logical next step.

The basic coordinated home care services are:

1. Physician services.
2. Nursing.
3. Social service.

Other services which may be provided are:

1. Physical therapy.
2. Occupational therapy.
3. Nutrition services.
4. Speech therapy.
5. Dental services.
6. Home health aide services.
7. Vocational rehabilitation.
8. Drugs, supplies, and equipment.
9. Transportation.
10. Oxygen and blood.
11. Home-delivered meals.
12. Laboratory and X-ray services.

Responsibilities of the administering agency include:

1. Coordination of services under qualified professional direction.
2. Provision and supervision of qualified staff.
3. Sound administration-management practices.
4. Responsible fiscal management.
5. Maintenance of clinical and statistical records.
6. Evaluation of the program.
7. Staff education.

Approaches to program development are:

1. Initiation of a comprehensive program where resources are readily available.
2. Addition of other services, such as social work, physical therapy, and the coordinating mechanism for these services, once the bedside nursing service is established.

From:
COORDINATED HOME CARE TRAINING MANUAL
Home Care Training Center
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School of Public Health, The University of Michigan
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*OCCUPATIONAL GUIDANCE; GRADE 9; *OCCUPATIONAL INFORMATION; *PROGRAM DESCRIPTIONS; *PROGRAM DEVELOPMENT
COMPUTER ORIENTED PROGRAMS; INFORMATION SYSTEMS; AUTOINSTRUCTIONAL METHODS

The purpose of this study was to develop and evaluate a system of presenting occupational information to ninth grade pupils, utilizing the computer-assisted instruction facility currently in operation at the Pennsylvania State University. The purpose of the system is to provide a model with more extensive, extremely flexible, and easily updated information-giving functions. Unique features of the system include the selective presentation of occupational information and the matter of presentation of materials. Materials will be typed out at the console where the student is to be seated and also on sound recordings and slide projections, all of which are integrated under the computer control. The selection of the materials to be presented to the individual student will be based on that student's General Aptitude Test Battery profile which is to be stored in the computer memory. The computer based occupational information system is designed to be a powerful tool of the school counselor in the vocational guidance process. (CH)

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COMPUTER ASSISTED OCCUPATIONAL GUIDANCE*

by

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The Pennsylvania State University

July, 1966

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*Currently being developed with financial support from Vocational Education funds through the Pennsylvania Department of Public Instruction

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1. BACKGROUND

Because of the increasing complexity of the work world in which we live it becomes essential to take a hard look at the guidance program found in our schools. The school counselor is the person whom we rely upon to help our young people understand the world of work and to help them explore their places in it. The great importance of occupational information as a means of aiding the counselor in this task has been acknowledged (Hoyt, 1964; Baer and Roeber, 1964; Hoppock, 1963).

In relying upon the counselor as the primary resource to gather, sort, validate and transmit the tons of literature covering thousands of occupations we are not being realistic. We are asking counselors to accomplish an impossible task, one that is ill suited to his nature and capabilities. But what other, more effective ways are available to do the job?

Many efforts have been made to provide pupils with occupational information utilizing more effective, more attractive, and novel methods. Kenyon (1952) has reported the results of a community effort in this area using tape recordings of occupational descriptions, requirements for entry into the occupation, and local employment opportunities. Another example of the use of tape recorders in transmitting occupational information is reported by Rundquist (1958). In this latter instance recordings were made of actual workers in occupations answering questions about their jobs.

Closed circuit television has been utilized in Washington County, Maryland in an attempt to convey occupational information to a large number (8000) junior and senior high school pupils (Beachley, 1959). A combination of two methods of presentation, colored slides of fifty local occupations, synchronized with a taped commentary describing the duties, training, and working description of these occupations has been reported by Meagher (1955).

All of the methods described above have at least one major limitation. That is, the same occupational or career information is presented to all of the pupils involved. Thus, the pupil with low academic ability and potential, and possessing little interest in mathematics and the sciences must submit to a period of boredom when the occupations of surgeon, engineer or research chemist are being described.

The computer-based occupational information system has been designed to overcome the limitations of these various methods through selective presentation of the material to individual pupils. It is the result of the refinement and integration of two prior approaches to improve vocational guidance.

The first approach is exemplified by the novel methods of presentation described above. The value of the novel presentation of occupational information to pupils has been thoroughly acknowledged and has consequently been fully utilized in the current system. The refinement of this approach has been attained by capitalizing on the flexibility of the computer system. First, the system is designed to allow a goodly amount of pupil participation in the interactive process. Secondly, not only are colored slides and tape recordings utilized, but also a typed record of the content of the session is obtained to which the pupil may

refer at any future time. The third refinement is to permit an unlimited increase in the number of occupational descriptions in computer storage.

The second approach which has contributed to the development of the system was that devised by Hull (1925). At that time Hull reported a "comprehensive system of vocational prognosis" (Hull, 1925). His system involved: (1) the categorization of all occupations into 40 vocational groups or "type aptitudes"; (2) the administration of 30-40 distinct tests which would comprise a "universal battery" to great numbers of workers; (3) the development of 40 regression equations utilizing the test measures as predictors, and success in the 40 occupations as the criteria; (4) the use of machine to solve the 40 regression equations for each individual based on his aptitude test scores--"

. . . the machine will solve in immediate succession a large number of different equations each yielding a forecast for a different vocational aptitude, <u>all equations being based upon one and the same battery of tests</u>" (Hull, 1925); (5) the individual finally examines his predicted scores on each of the 40 occupations to determine which occupations provide both his least chance of success, and greatest chance of success; (6) "The three or four most promising vocations thus emerging may be given further investigation" (Hull, 1928); and (7) from this information the individual may choose his life's work.

Hull foresaw the difficulties involved in promoting his system in stating, "It scarcely needs to be pointed out that the program of vocational guidance thus briefly sketched is a revolutionary departure from the current development of aptitude testing. This being the case, there will no doubt be considerable inertia and resistance from conservative quarters." (Hull, 1928).

Prophetically, though, he added the following, "But the logic of the situation is certain to triumph in the end. We may look forward with confidence to a day not far distant when some such system as that sketched above will be operating in every large school system. Then, and not until then, will there be possible a genuine vocational guidance for the masses of the people" (Hull, 1928).

Hull's approach was refined in the current system by utilizing current computer advancements, and by dependence upon a less empirical approach to occupational exploration. The use of equations based on test scores to predict success in specific occupations is a desirable goal, but at present is not feasible. The data needed for developing such equations are not available--reliable criterion measures of job success, the actual relationship between scores on a variety of interest and personality dimensions and degree of job success, and the relationship between measured aptitudes and job success, for each of the occupations and their groupings.

The data that are available, and consequently have been planned for use in the present system, are minimum scores required on each of the subtests of the General Aptitude Test Battery and other minimum worker trait requirements essential to minimal success within the occupational grouping listed in the 1965 revision of the Dictionary of Occupational Titles. Generally, the computer is programmed to compare minimal aptitude requirements for the occupational grouping (intelligence, verbal, numerical, spatial, form, clerical, motor coordination, finger dexterity and manual dexterity) with an individual's scores on these subtests. The "G" aptitude or intelligence as measured

on the GATB is compared first, and descriptions of occupational groupings which require the greatest degree of that specific aptitude for which the individual qualifies are presented.

Over thirty years ago Bingham proposed the importance of the information function of the counselor.

> It is not a function of counseling to decide for what calling a youth shall prepare. That is his own responsibility and his right. It is the counselor's responsibility to place at the young man's disposal the best information available, including the most reliable estimates of future opportunities it is possible to assemble (Bingham, 1934).

Three decades later Hoyt has reiterated the same theme.

> It seems to me that the time is here for a rededication to the information function in guidance. Because information has been shown as not <u>sufficient</u> for meeting the counseling and guidance needs of students does not mean that it is not <u>necessary</u>. Because students in high school today are apt to change occupations more than once in their adult life does not mean that there is no need for them to make some specific occupational plans now. Because it takes a great deal of counselor time to keep up to date on occupational and educational information does not mean this function should be abandoned nor greatly neglected. . . . Because providing information to students is not exciting does not mean it is not a worthy counselor function. If service to students is to take precedence over satisfaction of status as a counselor need, then this re-emphasis must take place. (Hoyt, 1964).

In accepting the necessity and importance of occupational information, and looking ahead a bit to a time when such information can be effectively stored and utilized, Baer and Roeber have commented:

> Computer technology may have a significant impact on counseling and placement. With the aid of computers, counselors and personnel workers will be able to interpret great quantities of data concerning an individual's aptitudes and interests and other aspects of his background in relation to a wide range of occupational possibilities. Such computers will not take the place of the counselor's judgment in guidance and placement. They will digest, analyze, and array information upon which a proper judgment can be based. (Baer and Roeber, 1964).

A DESCRIPTION OF THE SYSTEM

The purpose of this study is to develop and evaluate a system of presenting occupational information to ninth grade pupils, utilizing the computer-assisted instruction facility currently in operation at The Pennsylvania State University. The purpose of the system is to provide a model for a more extensive, extremely flexible, easily updated information-giving function.

One of the most unique features of this system is that of selective presentation of occupational information. The selection of the materials to be presented to the individual student will be based on that student's General Aptitude Test Battery (GATB) profile which is to be stored in the computer memory. Another of its unique features is the manner of presentation of the materials. Not only will materials be typed out at the console where the student is to be seated, but also will be presented on sound recordings and slide projections, all integrated under computer control.

This system is visualized not as a substitute for the counselor, but as an effective complement to the counselor. It can provide the function of information-giving, that portion of the vocational guidance process which counselors are admittedly less adept to handle, and more willing to delegate. The role of the counselor in vocational guidance as presented here in conjunction with this occupational information system is thus revised. His responsibilities no longer include knowledge of specific facts about particular jobs, but instead involve the understanding of the world of work, its relation to individual goals and aspirations, and the ability to communicate effectively with the

student in these terms. "Matching persons and jobs successfully requires not only information but also a high degree of interviewing skill and a respect for the individual's ability to guide himself." (Strang, 1950).

The computer-based occupational information system may be thought of as a powerful tool of the school counselor in the vocational guidance process. The school counselor must become actively involved if this "tool" is to be effective. Outside of the vocational guidance process the system has little utility. The system thus will function effectively only in a school where the guidance counselor acknowledges the value of vocational guidance for ninth grade pupils and recognizes the need for them to acquire knowledge about occupations.

The Interactive Situation

From Figure 1 it is apparent that the only pupil interaction occurs at the typewriter. Thus, any request the pupil makes is by typing

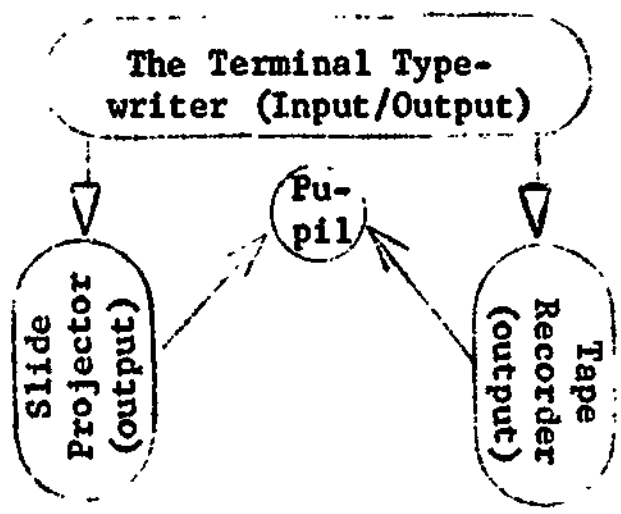


Figure 1. The Interactive Situation

such a request. The computer responds to a valid request in any one of the combinations of the three output devices: by typing the requested information, by projecting selected slides, or by activating the tape recorder.

The Specific Functions of the Computer Components

A. The Typewriter

To provide a record of pertinent information which the subject may take with him--the particular job/s described, a list of apparent discrepancies between specific job requirements and the individual's qualifications, books which may be read, and other references.

To provide an input to the system.

B. The Tape Recorder

To introduce a more personal kind of communication by narration.

To provide a 5-minute narrative orientation to the system and its purpose, and to establish the need for occupational information.

To more nearly simulate the counseling situation.

To provide information about jobs in a more attractive manner than typing such information.

To provide actual sounds typically indigeneous to the environment for certain jobs (in phase with slides).

To present actual workers' comments on the advantages and disadvantages of specific occupations.

C. The Slide Projector

To present the worker performing typical tasks in the job situation.

To present graphically, employment outlook projections.

To present blueprints, electronic circuitry, and other diagrams which are pertinent to particular occupations.

ADVANTAGES OVER CURRENT SYSTEMS

The unique advantages of the Computer Assisted Occupational Guidance system are its flexibility and its storage capacity. Its flexibility allows for innumerable changes in the existing system--changes in certain aspects of existing job descriptions such as educational requirements, employment outlooks, or work hours per week; the addition of new job descriptions; or the deletion of certain jobs which are being phased out of existence.

The practically limitless storage capacity of the system allows for many job descriptions to be stored in addition to innumerable characteristic student profiles. Any changes that occur in jobs and employment opportunities can be immediately entered into computer storage.

In what ways will the computer-based occupational information system more adequately meet the needs of ninth and tenth grade pupils? First, since the interaction is with the student, independent of counselor involvement, all students will be offered the opportunity to obtain occupational information, not only those selected students for whom the counselor has time available. Second, the occupational information that is presented to the students will be accurate and up to-date, resulting in the more realistic transmission of opportunities in the world of work. Third, the manner of presentation of the occupational materials via typewriter, tape recordings and slide projections will instill greater pupil interest, and consequently greater pupil growth in knowledge of the world of work. Finally, the selective nature of presentation of the occupational information will result in pupil acquisition of a more adequate picture of himself in relation to the world of work.

SUMMARY

Through the development of the system including only a limited number of occupational groupings and specific vocational trade and industrial job descriptions to be presented to ninth grade pupils, it is expected to establish a prototype for a more comprehensive system in the future. Each pupil using the system is allowed to cover as many occupational groups, and as many specific jobs within the groups as he has the time and the inclination. Each grouping and specific job he does review, however, will be presented in relation to his own aptitudes and interests. The material presented is thus not mere occupational information, but pertinent, meaningful occupational information.

The result that is expected is the more realistic, intelligent choice of a vocational goal to give some meaning and direction to the rigorous training and/or rigorous educational pursuits involved in attaining such a goal.

PROGRESS ON THE DEVELOPMENT

OF THE SYSTEM AS OF

July 1, 1966

1. Seventy-five per cent of the interviews of workers in specific occupations have been collected, as well as the same percentage of photographs taken of these workers at their jobs.
2. Prepared occupational descriptions of the 100 selected occupations have been collected, from various sources. Approximately 25 abstracted occupational descriptions for inclusion in the computer program have been completed.
3. The computer program itself (less the specific descriptions to be included) has been completed.
4. Work has begun on the construction of various measuring instruments:

   A. A pupil reaction inventory--to gauge the psychological reaction of pupils to the computerized system.

   B. A test of career decision making ability--to be utilized as a criterion device

   C. A test of recall, recognition and retention of specific occupational information to be utilized as a criterion device.

   D. An inventory of pupil values--to be utilized in determining the relationship between personal values and factors considered important in making career plans.

FUTURE TIME SCHEDULE

1. Completion of the development of the system by November 1, 1966
2. Field trial of a group of 200 ninth grade students from November 1, 1966 to March 30, 1967.
3. Revision of the system to be completed by September 1, 1967.
4. Final field trial and evaluation to be completed between September 1, 1967 and June 30, 1968.

SOME EXPLANATORY COMMENTS ON THE OPERATION OF THE COMPUTER ASSISTED OCCUPATIONAL GUIDANCE SYSTEM

1. What is the purpose of the current pilot development proposal?

   To develop and evaluate CoBOIS utilizing a limited sample of occupational groupings and specific jobs within those groupings involving a restricted sample of subjects.

2. What possible implications might arise from this project?

   There are two possible alternative implications, both dependent upon the outcome of the evaluation of the project. Either it will be suggested that the system should be further expanded and field-tested, or it will be suggested that further expansion of the system not be considered. The probability of the former clearly is greater than the latter.

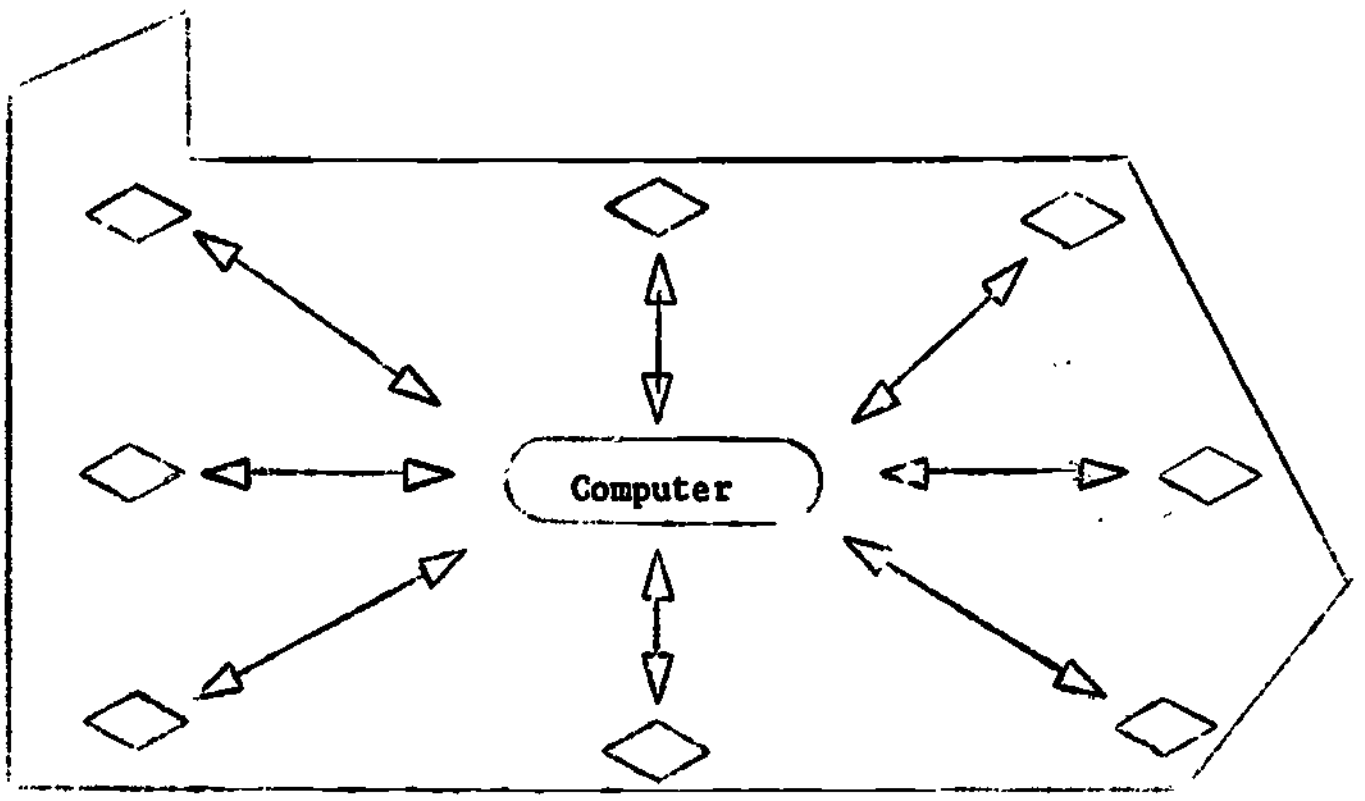
3. If the limited system proves to be a valuable asset in the vocational guidance process, what expansion of the system could be made consequent to June 1968?

   a. Expansion in terms of occupational groupings and specific jobs--occupations in fields other than that of trade and technical occupations in all fields requiring baccalaureate and higher levels of education may be included.

   b. Expansion in terms of numbers and types of pupils for whom the system is designed--the system could be expanded to be used with youngsters in an academic program, or a general program, in school or out of school, in junior high school or senior high school, with adults at all levels of education and training.

c. Expansion in terms of the setting where the system is used--with slight modifications, the system could be utilized not only in schools but in employment service offices, and personnel offices in large industries.

4. In terms of school use, how might the expanded system be operated most efficiently?



symbol designating a computer terminal

designates a telephone line

The diagram presented above describes a possible organization of a statewide school use of the system. Each school or group of schools who wish to tie into the system, and thereby provide their pupils with the service it provides must rent an IBM 1050 terminal (or more than one), lease telephone lines to the central computer, and pay a designated per hour sum for the use of the computer. Each school will not need its own computer, nor will it be possible to adapt the system, as it

is perfected to less complex models of computers than that for which the system was designed.

The efficiency of such a setup is based on the fact that it is much less costly to maintain one up-to-date source of information than it is to maintain several. Efforts of local school guidance persons may then be expended in other directions more conducive to their interests and abilities, resulting in an improved guidance program.

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Change, Collaboration, Community Involvement. A Synthesis of Views on Nursing.

National League for Nursing, New York, N.Y. Committee on Perspectives
MF AVAILABLE IN VT-ERIC SET.
Pub Date - May67 16p.

*NURSING; NURSES; *PERCEPTION; *HEALTH OCCUPATIONS EDUCATION; COMMUNITY COOPERATION; *COMMUNITY INVOLVEMENT; *HEALTH SERVICES; CHANGING ATTITUDES; LEADERSHIP

This informal synthesis of the discussions of the National League for Nursing Committee on Perspectives covers the viewpoints expressed by the group during its eight meetings from mid-1965 thr·ugh the Spring of 1967. The Committee, representative of nursing, medicine, health service administration, education, and the general public, was originally formed in 1960 and given free reign to study any aspect of nursing and health services and to formulate views and express opinions which would help nursing move forward as a service to society. Deliberations were directed toward the following: (1) collaboration with stress upon the interdependence of all health professionals and viewed as including patients and community leaders, (2) health maintenance as the over-all goal of health services, (3) environment encouraging experimentation and growth toward quality patient care and community health, (4) community individuality recognizing the need to design services to conform to the need of the community, (5) leadership in nursing with emphasis upon skill in innovation and collaboration with other health professionals and with educational and community agencies, (6) the constancy of change with cognizance of the need for nursing to view itself continuously in relation to changes in other facets of society, and (7) the need for action to create new programs to solve existing problems and to translate research findings into applicable knowledge and skills. (JK)

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CHANGE

COLLABORATION,

COMMUNITY INVOLVEMENT

A synthesis of views on

nursing as seen by the

Committee on Perspectives,

National League for Nursing

May 1967

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Lyle Saunders
Program Associate
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Marion W. Sheahan
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Ex officio:
Lois M. Austin, Ph.D.
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Mrs. Sara W. Kelley, Director of Public Relations, NLN, served as recorder for the committee.

INTRODUCTION

In 1960 the National League for Nursing Board of Directors asked a group of citizens representing nursing, medicine, health service administration, education, and consumers of nursing services to form a Committee on Perspectives. It gave them free rein to study and discuss any aspect of nursing and health services and to formulate views and express opinions which, in their estimation, would help nursing move forward as a service to society.

Specifically, the board charged the Committee on Perspectives with taking "continuing cognizance of the future of nursing in the perspective of the past and anticipation of future events, and to call to the attention of the board issues or questions of import in planning for the future."

The committee made its first report to the League membership in Perspectives for Nursing, published in 1965. In this report the committee forecast the following as areas of change to which nursing should turn its attention: the growing sophistication and knowledge of patients, the composition of and interrelationships among the corps of personnel involved in health care, the patient care system of the country, and the education of personnel who man health services.

Since this report was issued, the committee itself has changed. Its composition differs now in several individuals from those who issued the first report. Some of its views have expanded on those of the original committee. Others have led to new

or newly formulated perceptions. The current committee's concerns have revolved primarily around the knowledge, skills, and attitudes that need to pervade nursing in order to improve patient care and to identify nursing more positively with social trends toward better health and living conditions.

This informal synthesis of the committee's discussions covers the viewpoints the group has expressed during its eight meetings from mid-1965 through the Spring of 1967. It is by no means a "finished" report. The committee expects to work through the material and to expand upon and condense it as this seems desirable. It believes, however, that at this point it has been able to crystalize some of the concerns many people are talking about and thinking about for nursing. It presents this report with the hope that others will be encouraged to engage in similar dialogue so that nursing will continue to be enriched by the thoughtful examination and observations of its practitioners, its colleagues, and its consumers.

The committee is grateful to the NLN Board of Directors and to the membership for the opportunity it has had to discuss nursing broadly and freely and for the reception accorded many of its ideas and recommendations.

Lucy D. Germain, Chairman
Committee on Perspectives

VIEWPOINTS ON CHANGE

The NLN Committee on Perspectives has continued to be absorbed by change -- its nature, its magnitude, and oftentimes its unfathomable end results. Everyone is aware that society is being propelled into rapidly occurring changes in science and technology, in social structures, intellectual concepts, and economic and political establishments. Not so easy to recognize, however, are the changes taking place in the climate of public opinion and public awareness.

The tenor of the times is to direct change and work with it rather than resist it. This is clear in the striving for recognition and the demand for participation among the people directly affected by the war on poverty, economic opportunity, and civil rights programs. Consumers of health services are no exception. Although perhaps not yet as vocal as the low income and minority groups, consumers of health services are beginning to raise their voices, and they are not happy. In fact, they are often dissatisfied with the quantity, quality, lack of ready availability, and the cost of services they are receiving.

Their dissatisfaction, and indeed their growing knowledge and sophistication about health matters, are combining with the changing attitudes of health personnel about the scope and purpose of their work. The result suggests that a major change is in the offing for health services. There is evidence that both consumers and producers of health services are beginning to look toward health services as a means of maintaining health rather than dealing narrowly with illness or disability after it occurs.

Increasingly, the emphasis in health service is shifting from the single purpose of treatment and cure to the broader aspects of prevention and health maintenance. Illness, in fact, is being thought of as an episode to deal with, within the broader concern for keeping well.

The committee does not presume that illness and its treatment will ever fade out of the health services scene. It has no Utopian notion that health services will not continue to be planned, organized, and staffed to reflect the dominant illnesses of the people, as attention is being focussed now on chronic illness in the middle-aged and older-aged population and on the killing spectres of heart disease, cancer, and stroke. It proposes, rather, that the services related to these will be far more inclusive than even now envisioned, and that the concepts of the mental health efforts which emphasize prevention as preferable to cure will predominate.

Shift from the care of illness as a primary focus to disease prevention and health maintenance undoubtedly will bring about a number of radical shifts in the systems for delivery of health care and in the responsibilities of health personnel. Some of these are apparent now. Old health institutions are being revamped to take care of new situations and newly identified health needs, and new institutions are being forged rapidly to meet these. For instance, many communities have found that their medical care institutions, by being geared primarily to caring for the economic elite and the very poor, actually deprive health services to large segments of the population, such as marginal income groups. Community groups are growing all too conscious of the pattern of health facilities to operate in isolation, duplicating services and failing to coordinate with other facilities of the community so that it becomes necessary for patients to travel long distances from one to the other, to repeat physical examinations and diagnostic tests, and to be treated for one symptom here and another there. Community

planning is beginning to merge hospitals and public health services, to bring neighborhood health centers into being so that people receive health services where they live, to create extended care facilities to bridge the period between hospitalization for acute illness and home, and to build housing developments with their own prenatal and child care services.

It is evident that developments such as these will have far-reaching effects upon the selection, utilization, and education of personnel to man the new services. Health service personnel in the future will be expected to assume new and increasingly independent and interdependent responsibilities not only in the care of patients but in planning and developing the new facilities through which care will be made available.

Each locality will always have its particular problems, and these will require solutions tailored to the needs, resources, and desires of community. For example, in a locality where many people are on public assistance and maternal and child care is inadequate, a program using well-trained nurse midwives may be highly appropriate while such a program would be unacceptable where custom and affluence prescribe private obstetrical care.

As there is growing acceptance of health services as a right of the people rather than a privilege, dissatisfaction with the quality and quantity of services is likely to grow. This will happen among both health service personnel and among the recipients of service. The present state of nursing within the total health care picture is an example. Nursing is not producing the level of nursing care or adequately participating in quality patient care nurses themselves know can and should be available. There also is a growing public attitude critical of nursing, partly because nursing is an element of a great medical complex the public finds unsatisfactory and partly because of the changes taking place in nursing which the public does not fully understand.

The committee views such dissatisfactions as a sign of healthy discontent. It believes their effect can be to speed nursing action to bring about changes in itself and in the institutions through which its services are made available to the public.

THE EXPANDING ROLE OF NURSING

Much more attention needs to be given to the expanding role of nursing, and the benefits this can bring to patient care.

The committee views as sufficient the evidence that the nursing role is expanding and that it will continue to do so because of the needs of patients. It wonders, for instance, whether many care functions short of medical diagnosis can be so strictly defined that they may not at one time or another be appropriately nursing. It wonders, also, whether the demand for medical attention is not likely to be so acute that this will place the nurse in the role of the primary health referent who will be expected to make the decision about whether or not the patient should see the doctor.

The committee predicts that it will be increasingly difficult to list patient care functions that are exclusively the prerogative of the doctor or the registered nurse or the licensed practical nurse. Needs of the patients and of the community more and more will dictate who will do what. For example, it is not now unusual for a public health nurse to see a patient when he first comes into a mental health center and to decide whether he must see a doctor immediately, or can wait, or should receive some interim therapeutic measure. Again the committee emphasizes that the needs of the patient should dictate the nurse's responsibility and assumes that specially prepared nurses

progressively will carry out such functions as giving external cardiac massage or performing ventricular defibrillation when these are needed to save a patient's life.

Obviously the growing demands for service dictate a large area of medical responsibility for someone other than the doctor. Will the nurse be this "someone?" Or will the nurse step aside for a medical assistant who will function between her and the doctor? There are differing opinions about the medical assistant, both in medicine and in nursing. The committee would like to see nursing assume this respansibility where it is expedient for patient care. It also sugges's that the role of the medical assistant holds promise for attracting more men to patient care services. Unfortunately nursing has been so viewed as a woman's profession in the American culture, unlike that of some other countries, that it has never managed to recruit any considerable numbers of men to its ranks.

The committee views the expanding role of nursing and the proper utilization of nursing personnel as hand-in-hand matters. It would like to see the word "shortage" disassociated from nursing once and for all. Obviously there are egregious shortages of nursing personnel in some institutions and in some types of patient care services and in some communities. The committee postulates, however, that the nation could have a million nurses and still not adequately staff its health services. Only as hospitals and health agencies, and nurses themselves engage in pasitive efforts to improve nursing will the shortage be placed in its proper perspective.

The committee believes that if nurses engage in more creative projects to make nursing in unpapular institutions or on unpopular services interesting and challenging, others will be attracted to them. The committee would like to see employing agencies free nurses to undertake interesting innovations and experiments in patient care and, wherever and whenever possible, place

nurses in the services they find the most satisfying. It would like to speed the elimination of non-nursing duties from nursing so that nurses can devote themselves more to the creative aspects of good patient care than to routine repetitive tasks.

Nurses in leadership positions especially must be encouraged to practice their highly responsible and enlarging roles with understanding and conviction. Not only must nurses who direct nursing care services in hospitals and community health agencies be aware of trends in the delivery of health care; they must also be uniquely sensitive to the needs and demands of potients. Whether the patient voices his own needs or these are expressed by the doctor or other members of the health team, the nurse leader must know their implications for nursing -- for the care planned for the patient, for the inservice education of the nursing staff and the education of students on the service, for the application of research findings, and for the relationship between the nurse and patient and the nurse and other personnel. Only as the nurse in a leadership role sets the stage will there be a true partnership between nursing and other health personnel, and will the nursing staff be attuned to the environment, both in the service and in the community, in which they live and function.

COLLABORATION AND COMMUNICATION

An enlarging role for nursing presupposes communication and collaboration of a high order. Not only must nurses in leadership positions in nursing service work as colleagues with hospital administration and the medical services, but collaboration and communication must be a responsibility of all nursing personnel.

All nurses in patient care must assume more responsibility as representatives of patients' interests. For example, the roles of the head nurse and the team leader must include the concept of coordinating all of the care services available to the patient and of communicating his or her knowledge of the patient to all personnel involved in his care. Such a concept of coordination and communication goes far beyond what is practiced generally today.

Coordination and communication largely determine the success of the therapeutic team. Ideally, a therapeutic team is a group of health personnel who work together as partners and colleagues in planning and carrying out patient care functions. The size and composition of the team depends on the particular needs of the patient. In many instances it will include doctors, nurses, social workers, dietitians, physical therapists, and chaplains. In the hospital, the nurses on the team will oftentimes be not only those providing immediate care to the patient. Public health nurses will need to be involved so that the patient will receive appropriate care once he is at home.

The committee believes that the development of the therapeutic team is potentially a giant step forward in patient care. It proposes, therefore, that nurses take more initiative in helping to establish such teams and that they perfect their coordinating and communicating skills in order to improve their team relationships with other personnel.

It sounds a note of warning, however, in relation to the automated processes developing in various patient care services. Computers and data processing equipment can so mechanize some aspects of patient care that the personnel involved do not know all of the patient data needed for effective communication. The committee hopes that nursing will take leadership in seeing that automation reflects the needs of patients and that the computer frees the nurse for increasingly effective

interpersanal relatianships with the patient and with ather personnel. In short, the cammittee hapes that computers da nat black aut the pasitive values af the therapeutic team.

The callabarative rale af nursing must encampass both nursing education and nursing service so that these twa aspects became ane in autlaak, thaugh they may differ in methads. The time is lang past far nursing service ta have ane goal and nursing educatian anather. Nursing services must be geared mare positively ta the needs and abilities af the new personnel caming inta nursing, and nursing educatian must imbue students with the initiative and the means that makes it possible far them ta initiate effective changes in patient care situatians.

The callabarative effarts af nursing must also extend far and deep inta the community sa that there will be an unrelenting nursing vaice in planning far health services. Nursing, far instance, must initiate actian where it is lacking ta insure that adequate planning far health services is included, whether in undertakings ta rehabilitate slum areas ar ta build retirement communities for those who can afford to spend their alder years in tatal-service establishments. It must take an active interest nat anly in planning far new health services for the cammunity, such as neighbarhood health centers, nursing hames, ar clinics far rehabilitating the disabled. It must also serve as a spokesman far the quality af nursing care needed by these agencies as well as by the already established institutians. Ta achieve this, nursing must learn haw ta wark within the "power structure" af the cammunity.

In reference ta cammunity actian, the cammittee has said: "The need is far dynamic nurse leadership, adequate ta the task, caurageaus enaugh ta listen, and capable af callaborating in identifying prablems and in farmulating and trying aut new ideas."

Such collaboration appears to hold many untapped opportunities for improving patient care through the sharing of ideas and the creation of a better climate of understanding among all health workers and between them and representatives of community interests. For the very reason that large segments of the population are beginning to demand more and better health services, it is imperative that nursing, which is by far the largest of the health professions, make its voice heard in efforts to enlarge community health and welfare.

TOWARD UNDERSTANDING -- AND ACTION

In order to insure a continuing process of adaptation to new conditions, the committee believes that there must be some specific group within nursing that is charged with responsibility for encouraging nursing personnel to identify their problems, devise solutions, and seek the introduction of needed changes. This group would also engage in evaluating the extent to which its efforts produced a beneficial change in patient care and in community involvement.

The committee is aware that many innovations are occurring in various places in patient care and in nursing education, about which relatively little is known. It wishes the League, therefore, to take a more active role in identifying these innovations and in disseminating the information to patient care and education agencies that would be useful to them and, in turn, would stimulate more new and creative developments in nursing.

The committee registers a sense of urgency in getting on with this undertaking. Experimentation, demonstrations, inventions

-- all are needed and needed now. It has proposed action to the NLN board that it hopes will trigger the initiation of such efforts and the dissemination as rapidly as possible of the results. Its recommendations, approved by the board in January, 1967, would:

1. Involve more of the influential individuals of health care and educational institutions in League programs so that as a national agency the League effectively demonstrates the collaborative approach to solving nursing problems.

2. Establish a nation-wide body to serve as a continuing stimulus to demonstration, experimentation, and innovation in nursing. This mechanism would be responsible for defining specific situations that need attention, for helping agencies and individuals design projects and obtain funds for:

   a. Experimentation in patient care involving collaboration among medicine, nursing, social work, and other patient care disciplines.

   b. Participation by nursing in new and improved types of community health programs.

   c. Creative projects in nursing education over and beyond those being supported by government programs.

3. Set up demonstrations in nursing service and nursing education where staff are free to try out new approaches to patient care and student education through interdisciplinary cooperation.

4. Disseminate information about new experiments, the

techniques for undertaking them, the results, with the expectation that re-examination of old patterns and formulation of new and better patterns is the order of the day.

SUMMARY

In summary the committee's deliberations have been directed toward:

Collaboration, with stress on the interdependence of all professional groups in the health field and the need for these groups to pool their knowledge and skills in behalf of improved patient care and community service. Collaboration is viewed as including patients and community leaders, with attention to their perceptions of what they want and need and how it can be achieved. Collaboration presupposes that nursing will discontinue dwelling upon its uniqueness and consider in depth how it fits into total health services and comprehensive patient care.

Health maintenance as the over-all goal of health services in contrast to the present major emphasis on care of the ill and injured. Shifting the emphasis from treatment and cure to this broader concept reduces even comprehensive services to hospitalized patients to being only a limited part of total health services required.

Environment, with stress on the importance of creating both physical and psychosocial settings that encourage experimentation and permit progressive growth toward quality patient care and community health.

Community individuality, in recognition of the impossibility of creating general health maintenance plans into which every community can be fitted. Services must be designed to conform to the attitudes and needs of the particular community.

Leadership in nursing, with emphasis upon nurses who have demonstrated skill in innovation and communication and in enlarging collaboration with representatives of other health professions and with educational and community agencies.

The constancy of change, with cognizance of the change in public attitudes and the need for nursing to view itself continuously in relation to changes in other facets of society. Nursing must be prepared for lasting instability because of the rate of change and learn to work with change as an inevitable occurrence rather than against it.

The need for action, to create new programs to solve existing problems, to translate research findings into applicable knowledge and skills, and to discover new ways and mechanisms for dealing with the health needs of the people.

NATIONAL LEAGUE FOR NURSING

10 Columbus Circle

New York, N.Y. 10019

VT 000 967
Burt, Samuel M.
If I Were a Member of a Vocational-Educational Advisory Committee.

MF AVAILABLE IN VT-ERIC SET.
Pub Date - Aug67 5p.; Speech presented to the University of Michigan Leadership Development Program for Vocational and Technical Education (Ann Arbor, Michigan, August 15, 1967).

*ADVISORY COMMITTEES; *VOCATIONAL EDUCATION; *SCHOOL INDUSTRY RELATIONSHIP; *SPEECHES; SCHOOL COMMUNITY RELATIONSHIP; *ROLE PERCEPTION; PARTICIPANT INVOLVEMENT; PARTICIPANT SATISFACTION

An interesting exercise for any vocational or technical education program administrator would be to place himself in the role of a member of one of his advisory committee members and then to ask himself such questions as: What information would I like to have from the school people? In what ways could this committee be of real assistance to the school? What would I like to have happen at the committee meetings? Activities supporting individual advisory committee members relative to the importance of the service they are rendering are exact knowledge of what is expected of him as a committee member in the way of advice, assistance, and cooperation; provision of information concerning vocational education developments within the school system as well as state and national levels; to be kept informed of special studies affecting the educational program of the school system; and to be invited to attend meetings of other organizations involved in manpower development in utilization programs which may have some influence on the school program or on the particular industry's interests. Such supporting services would complement an advisory committee member's specific task assignment by acquainting him with the educational and occupational environment in which a particular school system is functioning. (CH)

VT 000 967

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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ED039370

IF I WERE A MEMBER OF A VOCATIONAL-EDUCATIONAL ADVISORY COMMITTEE

BY: Samuel M. Burt
Special Assistant to the Director
U.S. Employment Service

Presented to the University of Michigan Leadership Development Program for Vocational and Technical Education, August 15, 1967. Ann Arbor, Michigan

In administering vocational education programs, local school administrators are required to develop and conduct the programs of instruction

> "in consultation with potential employers and other individuals or groups of individuals having skills in and substantive knowledge of the occupation or occupational field representing the occupational knowledge."*

While many educators have and do consult with individual industry, business and labor representatives**, the primary instrumentality for developing industry-education relations over the years has been the so-called "advisory committee." It is estimated that some 20, 000 such advisory committees are organized each year by vocational and technical educators and schools in an effort to involve industry people in helping develop public school occupational education programs. Some of these committees are effective. Some are not. I suspect that one of the major reasons for failure in making full utilization of industry-advisory committees is that most school people look at their advisory committees from the educator's point of view.

An interesting exercise for any vocational or technical education program administrator would be to place himself in the role of a member of one of his advisory committee members and to then ask himself such questions as:

1. What information would I like from the school people?

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* Administration of Vocational Education, Rules and Regulations, Vocational Education Bulletin No. 1, revised, 1966 (Section 104, 13, (h) (2), page 17), Office of Education, U. S. Department of Health, Education and Welfare, Washington, D. C.

** Note: For ease of reference, the term "industry" is herein used to encompass business, labor, manufacturing, agricultural and professional occupational areas and representatives.

VT000967

2. In what ways could this committee be of real assistance to the school?

3. What would I like to happen at the committee meetings?

I suspect that this role-play would result in a traumatic experience. It may come as a shock to learn what the committee member would like from the educator and his service on school advisory committee.

If I were a member of a vocational school advisory committee, I would like, first of all, to feel that I was involved in an activity which was going to make some worthwhile and important contribution in the field of education. I would like to tell my family, friends and associates that I had been selected to help develop an important educational activity which was going to benefit my community and my industry. I would like to brag just a little that I had been recognized not only as an expert in the field in which I am earning a living, but also because I had some knowledge and understanding of the field of education.

To support my feelings about this (hopefully) important service, I would like to:

1. have a letter signed by the school superintendent asking me to serve on the committee.

2. know exactly what is expected of me as a committee member in the way of advice, assistance, cooperation, money, time, etc.

3. be provided, initially and on a continuing basis, with information concerning vocational education developments within the school system, as well as at the state and national levels.

4. be invited occasionally, to attend local, state and national conventions of vocational educators (you will be surprised how many I will attend at my own or my company's expense.)

5. receive, occasionally, a special invitation to attend a school function, a board of education meeting, or a state vocational board meeting.

6. be kept informed of special studies affecting the educational program of my school system.

7. be invited to attend meetings of other organizations involved in manpower development and utilization programs which may have some impact on the school program or on my particular industry interests.

In effect, what I am saying is that if you want me to advise you, I will feel a lot more comfortable if I know something about you and the environment in which you are operating! And while I am learning, I am not only becoming involved, but hopefully, am becoming identified with you, the school and the problems of the educational system. If you can get me to this point, you can be assured I will

be an active participant in the school program and the advisory committee. As a matter of fact, I will be doing my best to go beyond offering advice, and actually cooperate with you in achieving your goals for your program.

In what ways would I want to cooperate with you? To the fullest possible extent! I will be glad to help raise money for a scholarship fund; to help obtain needed school equipment on loan, as a gift or at a special discount; to contribute expendable supplies, instructional and guidance materials, to provide work-study experiences, to employ graduates; to help recruit students for the program; to assist in obtaining qualified instructors and help them in their instructional activities; and other services.* You name it, and I will try to provide it! What I am really asking is that you, as the professional educator, provide me the interested layman, with counsel and leadership. Sometimes I might want to do too much and try to become involved in administering the program. When I do, just point out that I can best help by providing advice and cooperation rather than becoming involved in the details of day-by-day administration.

I would like to feel that I will be welcomed in the school as a friend and supporter, and not as an interloper or meddler. Of course, there are certain school regulations which I should observe when visiting, and you should make these regulations clear to me. But if I occasionally drop in to visit with you or the instructor without first calling, spend a few minutes with me. After all, I wouldn't come in if I weren't interested!

I would like to know what other schools and school systems are doing about the problems being presented to my committee. I want to feel there is some linkage between the school I am serving and other vocational and technical schools in the area. I would like to know what the private schools are doing, and what MDTA educational and training programs are available in the community. I want to understand the relationships which exist between these programs, the State Employment Service, "war-on-poverty" programs, correctional institution training programs and any others that will be providing my industry with manpower of varying skill levels. I want to know the "whole picture," and even get a chance to visit these other educational programs, and perhaps meet with their advisory committees once or twice a year. I want to know about these other programs so that I will not have the nagging feeling I am being "used" to support one program in opposition to any of the others. Rather, I want to help improve "my school's" contribution to the total community educational effort - as a taxpayer, as an employer, and as an interested citizen concerned with and involved in improving educational and manpower development programs in my community and for my industry.

I would like some expression of appreciation for my volunteered services and contributions. If the advisory committee is as important to your program as you tell me it is, give it and its members some concrete form of recognition.

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* See Industry and Vocational-Technical Education, by Samuel M. Burt, McGraw-Hill Book Co., 1967, pp. 48-50 for a detailed list of such services.

For example, if I donate a piece of equipment, put my name plate on the equipment. Send me a framed certificate of appreciation for my services. Hold a special annual event to recognize the services of advisory committee members. Include our names in the school catalog. All of us like to see our names in print! Not only will this make me feel good, but when prospective students, their parents and others see that your programs, as described in the catalog, are receiving advice and assistance from industry people, your programs will gain in stature and prestige.

When you ask me to attend a committee meeting, I would like to know what will be discussed at the meeting and know that the meeting will be run smoothly and be kept within reasonable time limits. I will want something to happen as a result of the meeting. I will want to know, as soon after the meeting is over, what did happen as the result of the advice and services we provided. I don't want to be asked to attend a meeting to approve something after it happened. If I find out I am being used for this purpose, I will surely become your critic instead of advisor!

I know I am asking a great deal of you as an educator. But, after all, you did ask me to serve on your advisory committee. The more you provide "tender, loving care" for the committee, the more you will receive from us. And the more you get from us, the better will be your school program! Of course, I and the other committee members, as well as the industry we represent, will also be benefitted by having a continuing source of qualified manpower available and by getting a good return from our educational tax dollars. We will also benefit through personal satisfaction in being involved in our school system and in education. There are all kinds of mutual benefits to be derived if the committee is effectively utilized.

In the final analysis, this is exactly what I want - effective utilization of my expertise, my knowledge and my interest in serving one of the most important components of my community - my schools and its students. If you are prepared to tell me how, when and where, I will do my best to help you - and appreciate the opportunity to serve.

If you think I speak for myself alone you are very much mistaken. I assure you that most industry representatives who agree to serve on school advisory committees feel the same as I do. However, too often and in too many situations, their expectations have not materialized.

Why? Let's now look at ourselves as school administrators for the answer. It's really very simple. We have either not understood what motivates industry people to accept service on a school advisory committee - or understanding, have not been able to provide the leadership time and effort to effectively utilize the committees. I urge you to give this matter careful thought before you organize an advisory committee. If you can't provide the staff time needed to allow for the full range of interests and desires of your committee to serve the school program, you will be better advised not to establish the committee in the first place. A poorly used committee is worse than no committee at all!

Of course, without an industry advisory committee, your occupational education program will probably not be of much value in properly preparing your students for the world of work. So you might, at the same time you decide not to have an advisory committee, eleminate your vocational and technical education program.

Like almost everything else in life, "you pays your money and you takes your choice!"

VT 000 970
Jakubauskas, Edward B.
The Implications of Manpower Supply and Demand Upon Vocational-Technical Education in the West North Central States Region.

MF AVAILABLE IN VT-ERIC SET.
Pub Date - 14Nov67 14p.; Paper presented at the Conference on the Policy Issues and Developmental Problems of Post-High School Vocational-Technical Education in Region VI (Ames, Nov. 14, 1967).

*VOCATIONAL EDUCATION; *EDUCATIONAL PLANNING; *SPEECHES; SCHOOL INDUSTRY RELATIONSHIP; REGIONAL PLANNING; *EMPLOYMENT TRENDS; *POPULATION TRENDS; LABOR FORCE; EMPLOYMENT PROJECTIONS; MIGRATION PATTERNS; TECHNICAL EDUCATION; MANPOWER DEVELOPMENT
WEST NORTH CENTRAL STATES; *CONFERENCE ON THE POLICY ISSUES AND DEVELOPMENTAL PROBLEMS OF POST HIGH SCHOOL VOCATIONAL TECHNICAL EDUCATION IN REGION VI, AMES, IOWA, NOVEMBER 14, 1967

To maximize the social and individual benefits of vocational-technical education programs, they must be planned in relation to population and labor force trends in an area and the country as a whole. Some of the relevant population and labor force trends in Region VI (Minnesota, Iowa, Missouri, Kansas, Nebraska, South Dakota, North Dakota) are: (1) less than average population growth with continued outmigration--especially of youth, (2) continued migration of population from rural to urban areas within the region, (3) rapid increase in the number of youth and women entering the labor force, and (4) employment opportunities expanding in nonagriculture--particularly in the service industries. These and other trends have a number of implications for vocational education: (1) Although vocational education in agriculture should continue to be emphasized, some resources ought to be allocated to newer areas of employment which will be found in manufacturing and in the service sector and will also be located in urban centers, (2) Increased emphasis should be given to vocational education for women, (3) Occupational employment shifts will entail a demand for retraining, and (4) Because of the heavy outmigration of population--especially youth--continued financial support from the federal government appears to be justified and necessary. (ET)

VT 000 970

ED039370

THE IMPLICATIONS OF MANPOWER SUPPLY AND DEMAND UPON VOCATIONAL-TECHNICAL EDUCATION IN THE WEST NORTH CENTRAL STATES REGION

by

Edward B. Jakubauskas
Professor of Economics & Director
Industrial Relations Center

Presented at the Conference on the Policy Issues and Developmental Problems of Post-High School Vocational-Technical Education in Region VI

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VT000970

November 14, 1967
Iowa State University, Ames

I.

Introduction

Any appraisal of the effectiveness of area and community programs and plans must, in the final analysis, be related to the needs of employers as well as to specific population and labor force groups. The needs of the community can be met only if employers have access to highly trained and adaptable workers, and if workers, in turn, have the opportunity to develop their latent capacities to their highest "resource-values."

To meet the needs of employers and workers, there obviously must be a continuous monitoring of our vocational-technical education programs to maximize social and individual benefits (productivity to employers; earnings to workers) in relation to our relatively scarce educational input of vocational-technical resources. There must be a close "feedback" between the labor market and the classroom.

II.

Population Changes in the West North Central States[1]

To provide a framework for discussion of the implications of manpower supply and demand changes for vocational-technical education, let us consider the seven states in Region VI as an entity and ignore--for purposes of analysis--political boundaries within the region.

A. What is the population/labor force profile of Region VI?

Region VI's total population was about 14 million in 1950, 15 million in 1960, and almost 16 million in 1966. In population Region VI is slightly smaller than either California or New York but larger than Pennsylvania. In area Region VI covers about 15% of the land mass of the United States--only slightly smaller than Alaska but twice as large as Texas. In population Region VI represents about 7% of U.S. population.

The wide dispersion of population in relation to geographical size and the heavy rural farm and nonfarm composition present us with the first and most obvious implication for vocational education--the problem of access to vocational education facilities by those who wish to obtain or upgrade skills and the provision of educational services to a widely dispersed population by vocational-education planners and decision makers.

---

1. Region VI - Minnesota, Iowa, Missouri, Kansas, Nebraska, South Dakota, North Dakota.

B. What are the major population/labor force movements in Region VI?

In addition to the problem of population dispersion and the difficulty of providing an "outreach" system for vocational-technical education, there is considerable geographical mobility taking place in this region.

There are two main streams to this geographical mobility:

(1) Movement within the region--essentially from rural to urban areas,

(2) Movement out of the region to our large metropolitan urban centers.

First let us consider movements within the region. In 1950 about 50% of the region's population was classified as "urban" (urban being defined as a population center of 2,500 or greater), roughly 7.3 million out of 14 million. In 1960 the urban ratio climbed to 60% of total population. Rural population declined from 6.7 to 6.3 million over the decade. While rural-farm to rural changes need not be accompanied by actual migrations of people, it is interesting to note that rural-farm population declined over the decade by close to 900,000--about a 25% decline in this category! Net loss for rural population was 400,000; net gain for urban was 1.7 million.

Another aspect to the rural-to-urban shift can be seen in the growth of the 27 SMSA's in the region. These counties and clusters of counties include our largest metropolitan centers. In 1950 the population of these counties totaled 5.3 million, while in 1960 the

comparable figure was 6.6 million--a net gain of 1.3 million or 24%.

Next, let us consider the problem of population migrations out of the region. In general, it has been observed that Americans are highly mobile--"ever on the move." They move for many reasons and are affected by the "pushes and pulls" of the labor market. About 20% of the population moves every year. This percentage has remained fairly stable--ranging from a low of 18.7% in 1947 to a high of 21% in 1961. But about 70% of the population shifts take place within the same county, and roughly 15% move across county lines but within the same state; and 15% across state lines.

Mobility patterns are not random. Aside from the Pacific Coast, which appears to act as a magnet for all other regions of the country, most of the migration takes place within the same county, within the same state, or--when movement out of the state does take place--it is to neighboring states.

The one common magnet which attracts people appears to be the "urban and suburban" center. The one common and persistent source of population decline appears to be the rural sector--particularly rural-farm. Even when people move into the seven states of Region VI, they move to urban centers. In 1960, 70% of inmigrants who had lived in a different state in 1955 moved into urban centers.

The population loss through migration for states in Region VI was heavy from 1950 to 1960, ranging from 3.2% for Minnesota to 17% for North Dakota. For other states population losses incurred were: Iowa (8.9%); Missouri (3.3%); Kansas (2.3%); Nebraska (8.8%); and

South Dakota (17%). Population migration, however, was not sufficient to bring about absolute declines in total population. All seven states experienced slight to moderate gains in population.

The main outline of the rural-to-urban shift appears to be:

(1) There are fewer people classifed today as "rural-farm," and there will be even fewer in the future as technology and farm consolidations further erode the "rural-farm" population. Other studies have shown that displacement will continue at a rapid pace right into the late 1970's and early 1980's.

(2) For those who remain in rural areas, most of the job opportunities will be in nonfarm work.

(3) Pressures in urban centers of growth will demand newer skills and different skills from those found in rural areas.

(4) For the future, most of our population will face urban problems, and they will have to be equipped with vocational skills suitable for an urban labor market.

III.

Outmigration of Youth

One very significant component of the outmigration of population has been its selectivity in regard to age. The most highly mobile have been our younger people. Over the decade 1950 to 1960 there was a net loss of about 105,000 people in the 1950 age 18 to 24 cohort. The Dakotas had the greatest percentage decrease (20%), followed by Iowa (14%) and Nebraska (12%). Only moderate losses were experienced by Minnesota, Missouri, and Kansas (.24%, 5%, 2%, respectively), reflecting the greater urbanization of these states.

Looking only at the urban sector of the region we find a decline of only about 7,000--down from 820,000 to 813,000. Urban areas in Minnesota, Missouri, and Kansas remained fairly stable. Urban areas in Iowa and the Dakotas experienced significant declines.

Again the evidence seems to show that rural areas are heavy losers of young people--just a little under 100,000 net loss for rural areas from 1950 to 1960. Gross movements would probably show an even greater dislocation of rural youth.

If one considered only those who were age 18 in 1950 (and 28 in 1960) the exodus would be even more dramatic--a decline from 202,000 in 1950 to 161,000 in 1960 (40,000 decrease or 20%).

It would be interesting to know whether there are significant differences between young people who move out of the region vs. those who stay. Some studies seem to suggest that young people who leave rural areas are more intelligent, more active in organizations, and show greater leadership ability. If this should be true then we would be "exporting" a highly

valuable resource. This would certainly affect the ability of industry in the region to stimulate economic growth and development.

One other implication seems to emerge: To the extent that young people leave rural areas (and Region VI) and add to the "human capital" of urban areas and other regions, states in Region VI and local communities have a rightful claim to financial support from federal sources. A corollary of this is that rural areas and Region VI should give some attention to preparation for the world of work outside Region VI.

IV.

Labor Force Changes 1960-1980

A. 1960-1970

The U.S. Bureau of Labor Statistics has made projections of labor force size and composition by state for 1970 and 1980. A number of dramatic patterns are evident for Region VI.

From 1960 to 1970 the labor force of women 14 years and older will increase by 30%--about four times as great as that for men.

The rate of increase for younger women age 14-24 will increase by 68%--or in absolute numbers by 270,000.

Less dramatic but nevertheless significant will be the increase in the labor force of young men--50% increase for those age 14-24, or about 335,000. This age group of young men and women totaling 600,000 will constitute the major "target" for vocational educators in the region.

B. 1970-1980

From 1970 to 1980 the rate of increase in the labor force of young people will decline. Women age 14-24 will increase by 16%--men by 14%. In terms of numbers, there will be 245,000 more workers in the labor force in this age category in 1980 compared to 1970.

A comparison of the two decades seems to indicate that the greater part of the work for vocational educators is with us right now. The pressure should diminish during the 1970's in relation to new and young entrants into the labor force. Pressures due to the transfer of labor from agriculture to other industries may bring about a demand for retraining services.

V.

The Demand for Labor

Occupational Employment Changes 1950, 1960, 1965

Although population and labor force have been declining for Region VI, the composition of employment is still heavily concentrated in agriculture. In 1962, 23% of total employment was in agriculture--a far higher ratio than any other region of the country. In New England and the Mid-Atlantic states agricultural employment has virtually disappeared--only 3% in 1962.

The rate of decline in agricultural employment for Region VI has not been as great as that found in other regions. From 1950 to 1962 agricultural employment declined by 27.2%. In New England and the Mid-Atlantic states and the South, the rate of decline ranged from 36% to 43%. Reflecting the growth of the Pacific and Mountain states the rate of decline in this region was only 17% and 25% respectively.

Nonagricultural Employment

Looking at the converse of the problem--the growth of nonagricultural employment, we find that the Mountain and Pacific states have experienced an explosive rate of growth--71% and 64% from 1947 to 1962. Next in rate of growth have been the Southern states--35% to 45% over this period. New England, the Mid-Atlantic, and the East North Central States (already highly industrialized) experienced a growth of 14% to 16% in nonagricultural employment. Region VI, in this period, experienced a growth of 25%.

Manufacturing

Although the rate of increase in manufacturing employment for Region VI (16.3%) exceeded the national average from 1947-62 (7.8%), most of the other

regions of the country (particularly the South, Pacific, and Mountain states) experienced far greater growth.

Already highly industrialized, New England, Mid-Atlantic, and East North Central actually experienced a decline in manufacturing employment--a reflection of the effects of technological change which begin to affect manufacturing at later stages of development.

Service Employment

For Region VI the most significant areas of employment growth from 1950 to 1965 have taken place in the service area. Finance, insurance, real estate, education, and government have been industries of substantial employment growth. Wholesale and retail trade employment has increased only moderately, while transportation and public utilities have actually declined from 1950 to 1965. Construction employment increased moderately over this period.

VI.

Summary - A Profile of Region VI (West North Central States)

Vocational-technical education for states in Region VI must consider the basic population, labor force, and employment profile. The main outline of this profile appears to be:

A. Population Changes

(1) Moderate population growth, with continued outmigration from the region.

(2) Less than average population growth in comparison with other regions.

(3) Large numbers of youth to educate--primarily for "export" to other states.

(4) Continued migration of population from rural to urban areas within the region.

(5) Increased urbanization of certain growth centers.

B. Labor Force

(1) Entry of large numbers of women into the labor force.

(2) Rapid increase in number of youth entering the labor force, particularly in the 1960's.

(3) Continued reduction of farm employment at a rapid rate, at least until 1980.

(4) Employment opportunities expanding in nonagriculture--particularly in the service industries.

(5) Expansion of manufacturing employment at a rate greater than the national average.

C. Summary

In general we can characterize Region VI as an area of slow change--slow growth in some areas--slow decline in others. No rapid breakthroughs appear on the horizon which would alter the patterns outlined above.

VII.

Implications of Region VI Profile for Vocational Education

A number of implications appear to flow from the above analysis:

(1) Although we should continue to emphasize vocational education in agriculture (since the region will continue to have a heavy emphasis of activity in this sector), some resources ought to be allocated to newer areas of employment.

(2) These newer areas of employment will be found in manufacturing and in the service sector and will also be located in urban centers.

(3) Increased emphasis should be given to vocational education for women.

(4) Occupational employment shifts will entail a demand for retraining. Vocational education should be aware of the need for retraining those who will face employment changes.

(5) The relative stability of population and labor force in Region VI will make it possible for policy makers to avoid the pitfalls of crash programs and to give attention to the development of quality programs.

(6) Because of the heavy outmigration of population--especially youth--continued financial support from the federal government appears to be justified and necessary.

VT 000 971
Bristol, Benton K.
Creative Approaches to Teaching Ornamental Horticulture; Discussion Guide.

Illinois State Univ., Normal. Dept. of Agriculture
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 67 7p.

*ORNAMENTAL HORTICULTURE; *VOCATIONAL AGRICULTURE; *INSERVICE TEACHER EDUCATION; *TEACHING GUIDES; *AGRICULTURAL OCCUPATIONS; VOCATIONAL AGRICULTURE TEACHERS; REFERENCE MATERIALS; INSTRUCTIONAL MATERIALS

Developed by an individual author and tested in an agricultural occupations short course for vocational agriculture teachers, this outline is for use by teacher educators in an in-service teacher training program. Students should be teachers of agricultural occupations or others with an interest in ornamental horticulture. The content for this 4-hour short course includes: (1) Background of Short Course, Creative Approaches to Teaching Ornamental Horticulture, (2) Motivate with Color, (3) Recognize Useful Instructional Aids, and (4) Fill Informational Gaps. References, sources, and addresses listed in the booklet are for use as supplemental media in teaching ornamental horticulture. (DM)

VT 000 971

ED039370

CREATIVE APPROACHES TO TEACHING ORNAMENTAL HORTICULTURE

Discussion Guide

Dr. Benton K. Bristol

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DEPARTMENT OF AGRICULTURE

ILLINOIS STATE UNIVERSITY

NORMAL, ILLINOIS

1967

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VT 000 971

M E M O R A N D U M

TO: The ERIC Clearinghouse on Vocational and Technical Education
The Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

FROM: (Person) Benton K. Bristol (Agency) Dept. of Agriculture
(Address) Illinois State University, Normal, Illinois 61761

DATE: 1967

RE: (Author, Title, Publisher, Date) Creative Approaches to Teaching Ornamental Horticulture
Horticulture; Discussion Guide.

Supplementary Information on Instructional Material

Provide information below which is not included in the publication. Mark N/A in each blank for which information is not available or not applicable. Mark P when information is included in the publication. See reverse side for further instructions.

(1) Source of Available Copies:
Agency ERIC Only
Address
Limitation on Available Copies Price/Unit
(quantity prices)

(2) Means Used to Develop Material:
Development Group Individual authorship
Level of Group Associate Professor, Department of Agriculture
Method of Design, Testing, and Trial Twenty-two agriculture occupations instructors in a short course - four hours in length

(3) Utilization of Material:
Appropriate School Setting Short course for ag. occupations instructors
Type of Program In-service teacher education
Occupational Focus Specific job - instructor of ag. occupations
Geographic Adaptability Any state in the United States
Uses of Material Teacher educators - agriculture occupations
Users of Material

(4) Requirements for Using Material:
Teacher Competency Training and/or experience as teacher educator
Student Selection Criteria Teachers of agriculture occupations or others with similar interests in ornamental horticulture
Time Allotment One to four hours depending upon circumstances

Supplemental Media --
Necessary ( )
Desirable (x) (Check Which)

Describe References, sources, and addresses listed in the booklet, Creative Approaches to Teaching Ornamental Horticulture - Discussion Guide
Source (agency)
(address)

I. Background of Short Course, Creative Approaches to Teaching Ornamental Horticulture

A. Questions from teachers of agriculture and others indicated a need for the course

B. In May 1966 pre-registrations for ornamental horticulture courses were:

1. Pruning, Shaping, and Care of Evergreens - 25

a. Period of instruction - 8:30 to 10:00 a.m.

2. Creative Approaches to Teaching Ornamental Horticulture - 18

a. Period of instruction - 8:30 to 10:00 a.m.

C. In May 1967 pre-registrations for ornamental horticulture courses were:

1. Planning, Care and Maintenance of Lawns - 29

a. Period of instruction - 9:00 to 10:15 a.m.

2. Flowering Perennials for Home Use (Roses, Lilies, etc.) - 34

a. Period of instruction - 10:30 to 11:45 a.m.

3. Pruning, Shaping, and Care of Evergreens - 26

a. Period of instruction - 10:30 to 11:45 a.m.

4. Creative Approaches to Teaching Ornamental Horticulture - 19

a. Period of instruction - 9:00 to 11:45 a.m.

D. Ornamental Horticulture - Ideas - Information - Suggestions publication

1. Areas included - Floriculture, Landscaping, Turf Management and Nursery Management

2. Five issues in first volume - August 1966, September 1966, October 1966, April 1967 and May 1967

a. Seven pages in each issue

3. Sent to teachers of agriculture and others who are interested in the broad field of Ornamental Horticulture

4. Contributions solicited from readers

a. Send to Dr. Benton K. Bristol, Department of Agriculture, Illinois State University, Normal, Illinois 61761

II. Motivate with Color

A. Color slide set - Horticultural Slide Series I - Floricultural Crops

1. Objectives: To introduce vocational horticulture students to the major floricultural crops produced in the United States

a. Individual crops are discussed briefly as to types or varieties available, some of the specific cultural requirements, and the uses of the plants by the ultimate consumer

2. Produced for the Ohio Vocational Agriculture Instructional Materials Service, Department of Agricultural Education, The Ohio State University and Agricultural Education Service, Department of Education, Columbus, Ohio 43210 1966

3. Set of 60 slides. Cost of slides - $9.50. Postage 35 cents

4. Photography and technical information by Richard Henley

B. Color slide sets

1. Types of Turf - 17 color slides

2. Commonly Used Trees, Shrubs, and Groundcovers - 40 color slides

3. Weed Identification - 37 color slides

4. The slides prepared as a result of a teachers' institute in landscape horticulture, July 5-22, 1966, The Pennsylvania State University, University Park, Pennsylvania 16802

a. The slides and other aids to instruction were prepared by the Department of Agricultural Education through a contractual agreement between The Pennsylvania State University and the United States Office of Education, Division of Adult and Vocational Research

b. 54 teachers from the northeastern states participated

C. Slide films

1. Landscaping Homestead I

2. Landscaping Homestead II

3. Landscaping Homestead III

4. The slide films furnished courtesy Mr. Robert L. Milligan, Vocational Agriculture Instructor, Litchfield Community Unit High School, Litchfield, Illinois 62056

a. Mr. Milligan plans to prepare visual aids on grafting this summer

III. Recognize Useful Instructional Aids

A. Nurseries and stores selling plants have information sheets which customers often overlook or lose

1. Examples:

a. How To Care for Blooming Pot Plants

b. Planting Balled and Burlapped Stock

c. Planting Bare Root Trees and Shrubs

d. Planting Directions - Forsythia

2. Sometimes it is necessary to ask for such information

B. Directions given on bags or other containers of horticultural materials

1. Example:

a. Directions for Use of Peat Moss

C. Newspaper and magazine articles

1. Examples:

a. "Here's How to Plant a Tree" Better Homes and Gardens, April 1967

b. "How to Buy Lawn Seed" Better Homes and Gardens, April 1967

D. Television and radio programs

1. Examples:

a. Interview programs sometimes feature a person with special skills related to ornamental horticulture

(1) A time-lapse photographer on a recent television show had learned a great deal about the effect of various kinds of light on plants

b. Some radio stations have regular programs for the home gardener

E. Idea Book

1. Mr. Donald Sargeant, Vocational Agriculture Instructor, Tri-Valley Community Unit High School, Downs, Illinois, 61737, has an "Idea Book" in which he makes notes of good ideas he obtains from various sources -- including conversations with students, farmers, teacher educators, extension personnel, and others

IV. Fill Informational Gaps

A. Determine instructional aids already available

1. University of Illinois

a. Vocational Agriculture Service

(1) Ornamental Horticulture packets

(2) Ornamental Horticulture booklets

(3) Other

b. Ornamental Horticulture Summer Institute for Vocational Agriculture Teachers in the Middlewestern States, Urbana, Illinois, June 20 to July 15, 1966

(1) Ornamental Horticulture Source Units prepared by institute participants

(2) Experimental Materials USOE Project 6-1538-1-32

(3) Other

c. Extension Service in Agriculture and Home Economics

(1) Landscaping Your Home by William R. Nelson Jr.

(2) Foundation Plantings by H. R. Kemmerer

(3) Other

2. Illinois State University

a. Five items listed in Creative Approaches to Teaching Ornamental Horticulture discussion guide 1966

b. Handouts utilized for half-day session, Creative Approaches to Teaching Ornamental Horticulture, 1967

c. Ornamental Horticulture - Ideas - Information - Suggestions publication

d. Other

3. The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University, 980 Kinnear Road, Columbus, Ohio, 43212

a. Horticulture - Service Occupations (Course outline and 12 modules)

4. There are many other sources of instructional aids

IV. Fill Informational Gaps (continued)

B. Identify instructional aids which are needed most

1. Annotated bibliography of instructional aids available

a. Designation of source, including complete address and zip code

b. Alphabetical list by author under each source; title of instructional aid; date developed, made available, or copyrighted, as appropriate; number of pages if it is a publication; cost; and brief description

2. Color slide sets with scripts

a. Plant propagation

b. Landscape design

c. Garden enemies and how to fight them

d. Other

3. Source units for teachers and students

a. Your career in ornamental horticulture

(1) Occupational opportunities

(2) Job application

(3) Job interview

(4) Growth on the job

b. Other

4. Glossary of ornamental horticulture terms

a. Either one comprehensive glossary, or several glossaries - each covering a particular area of ornamental horticulture

C. Decide how the instructional aids will be produced

1. Personnel available

2. Money available

3. Schedule to be met

4. Other items

VT 001 029
Steps in Curriculum Construction.

Bucks County Technical School, Bristol, Pa.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 65 17p.

*GUIDELINES; *PROGRAM DEVELOPMENT; *COURSE ORGANIZATION; *CURRICULUM GUIDES; COURSE CONTENT; TECHNICAL EDUCATION

This bulletin presents procedures and format styles for preparing a course of study. The necessary parts of the course of study are given with explanations for preparing each. These parts are (1) title page, (2) foreward or introduction, (3) table of contents, (4) statement of educational philosophy, (5) objectives, (6) conditions under which instructional materials will be used, (7) analysis to determine training content, (8) content to meet the specified objectives, (9) course outline, (10) overall pattern of instructional materials, and (11) resource material for content. Representative forms are given for the assignment sheet, information sheet, job sheet, lesson plan, and operation sheet. (HC)

VT 001 029

EDO 39370

C1

BUCKS COUNTY TECHNICAL SCHOOL

STEPS IN CURRICULUM

CONSTRUCTION

1965

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VT 01029

BUCKS COUNTY TECHNICAL SCHOOL

Steps in Course of Study Organization

I Title Page

II Foreword or Introduction

III Table of Contents

IV Statement of Education Philosophy

V Objectives (determine aims and scope)

- A. General
- B. Specific

VI Conditions under which instructional materials will be used.

- A. Methods of Teaching
- B. Instructional Aids
- C. Providing for Individual Differences
- D. Books (text and reference)
- E. Time Available
- F. Class and Shop Organization
- G. Shop Regulations
- H. Shop Safety Instructions
- I. Equipment
- J. Standards of Attainment
- K. Projects and Procedures
- L. Required Records and Forms
- M. Evaluation
- N. Grading
- O. Fields of Employment.

VII Make Analysis to Determine Training Content.

VIII Select the Analysis Content to Meet the Specified Objectives of the Course.

IX Prepare the Course Outline.

X Develop Overall Pattern for Instructional Material.

XI Compile Resource Material for Content.

BUCKS COUNTY TECHNICAL SCHOOL

I. TITLE PAGE

Should contain course title, grade levels covered and name of school.

II. INTRODUCTION OR FOREWORD

Prepare a statement that clearly defines or introduces the nature of your course. This should set the stage for events which are to follow. It gives an overall view of what is to be accomplished. This preface may tell why the manual was prepared, what it deals with, and for whom it is written. You could state the scope of the work to be covered and specify the broad character of the material content.

It should include acknowledgements to advisory committee members or any others who were helpful in the course of study construction.

You will be asked to sign the foreword in your course of study before we reproduce your work on stencils.

III. TABLE OF CONTENTS

Should be prepared after all other section of outline have been completed. List all topic headings in order of appearance similar to sample on preceeding page.

BUCKS COUNTY TECHNICAL SCHOOL

IV STATEMENT OF EDUCATIONAL PHILOSOPHY

Any school curriculum must have as its supporting base, a sound educational philosophy; this furnishes the direction for a particular kind of educational program.

Each departmental instructor should have a philosophy consisting of expressed opinions for his particular course of instruction.

A philosophy is an expression of feelings, beliefs, attitudes, or impressions relative to a shcool or to a specific curriculum.

Modern educational philosophy should be based on present day needs of the individuals in his subject and should be written in the form of a statement.

WRITING YOUR PHILOSOPHY

In writing the philosophy as it applies to your curriculum, remember the aims in education are less tangible and are greatly concerned with flexible human values involving development of character, citizenship, social attitudes, memtal and physical health, interest, and appreciations, as well as mastery of facts and practical skills.

When you elaborate upon the beliefs in your philosophy, note the experiences significant to industry, society, and the individual.

Below are listed some of the common elements of a philosophy:

1. Nature of your program to fit nature of society.
2. What role your subject plays in the society.
3. How you meet educational needs for youth.
4. The plan of curriculum organization best suited to provide proper learning experiences in your field.
5. The instructional methods most appropriate to your curriculum.
6. An over-view of the nature of the learning process.
7. Your role as teacher in the educational process.
8. Your responsibility in meeting the needs of the special group; i.e., the talented student, the terminal pupil, the college-bound person, and the slow learner.

BUCKS COUNTY TECHNICAL SCHOOL

V OBJECTIVES, GENERAL & SPECIFIC

The philosophy of the teacher must be supported by specific and general objectives which translate a stated philosophy into some purposeful action. Objectives are concrete statements explaining what a particular course will attempt to achieve. The objective states the purpose of the course; indicating the goal which the pupil should accomplish when the course has been completed. The pupil should know the aims of the course so that he will know what is expected; thus, enabling him to do a better job.

Objectives are simple statements of intent or descriptive phrases representing andsupporting the educationalphilosophy until they have been analyzed and specific activities for their attainment have been indentified. Objectives then become operational actions and might more appropriately be labeled outcomes.

Objectives should be written in terms of learner experience since they represent the outcomes which the learner is expected to master through the activities selected for him. An objective is written with the idea of developing certain factors such as skills, knowledge, understandings, appreciations, and ideals.

These can be listed in the following manner:

1. To develop the ability to (list skills to be developed)---

2. To develop knowledge and understanding of (list the general knowledge and understanding to be developed)---

3. To develop an appreciation of (list appreciation & ideals to be developed)---

4. To broaden---

5. To provide---

6. Etc.---

BUCKS COUNTY TECHNICAL SCHOOL

VI CONDITIONS UNDER WHICH INSTRUCTIONAL MATERIALS WILL BE USED

In the following various phases of your course of study forms, there are some suggestions under each category. These are to facilitate your efforts. Use whatever you wish, reword it, add to any part of it, or use your own thoughts and methods. However, please make the write-up in the form that you wish for it to be in when placed in your course of study.

A. Methods of Teaching

Prepare a statement concerning methods of teaching. Below are listed some methods you may be using. You can use any of these items as well as add to this list. Elaborate upon these and make a write-up so it is applicable to your curriculum.

1. Demonstration - teacher, manipulative operations.
2. Lecture - teacher.
3. Discussion - class
4. Assignments - individual.
5. Conferences - group.
6. Etc.

B. Instructional Aids

Prepare a list of all instructional aids that may be used in your curriculum. Use any of the following items that might be helpful, in developing you list.

1. Free literature.
2. Field trips.
3. Problem solving.
4. Visual aids.
   - a. Books
     - (1) Text
     - (2) Reference
   - b. Charts
   - c. Illustrations
   - d. Films
     - (1) Motion
     - (2) Slide
   - e. Models
   - f. Etc.

(Do not list names at this point. These materials should be organized with appropriate date as an appendix to your course of study)

Instructional aids are extremely important since they:

1. Add realism.
2. Clarify verbal explanations
3. Save time.
4. Etc.

C. Providing for Individual Differences.

Prepare a statement of your methods of providing for endividual differences, such as:

1. Own rate of progress.
2. Special attention to slow and rapid learner.
3. Variety of projects.
4. Individual ability.
5. Projects to challenge ability.
6. Etc.

Use any of the above you may want to use by writing out into sentence form, use any of your own, or treat as you wish. Put into a finished form for your course of study.

D. Books (Text and Reference)

List textbooks for your curriculum - include title and author, publisher and date of publication. List reference books for your curriculum - include title and author, publisher and date of publication.

E. Time Available

Describe, in final form, how student spends time:

1. Number of years in this school.
2. Number os school days per year.
3. Number of hours per day.
4. Explain rotation method.
5. Time for practical work and time for theory, etc.

F. Class and Shop Organization

List controls retained by teacher and those which are delegated to pupils.

1. Management under teacher:
   a. Control - order, respect, etc.
   b. Assign duties.
   c. Discipline for disobedients.
   d. Grants permission.
   e. Inspects.
   f. Approves.
   g. Etc.

2. Pupil personnel organization:

   a. Assist teacher.
   b. Render service.
   c. Tool checker.
   d. Foreman - assistance, safety, clean-up, etc.
   e. Responsibility of duties - i.e., clean-up, etc.
   f. Librarian.
   g. Etc.

If you wish, you may use above to act as a guide.

G. Shop Regulations

List the shop regulations that you wish to enclose in your course of study.

H. Shop Safety Instruction & Regulations

List your shop safety regulations and make a statement concerning your shop safety program.

I. Equipment

The equipment found in the shop was purchased new by the school districts and is of the type found in present day industry. A brief description of machinery in the shop is: (example below)

Number	Description	Size (where applicable)
2	Vertical milling machines (universal)	2 H

J. Standards of Attainment

Indicate the standard of accomplishment that you wish your pupils to attain. This objective should be directional as well as designate the amount. Your standards should be in keeping with the trainees abilities, and the length of time that you have them in your course.

K. Projects or Procedures

List the procedures or projects that a pupil may work on during the three years in which he may be in your shop. Even though many pupils will not work on all of these projects, you should still specify.

1. Construct miter box.
2. Drill index plate.
3. Wash and set hair.
4. Etc.

L. Required Records and Forms.

List all the forms you use and reproduce in size on 8½ x 11 paper so that we can prepare them for placement in your course of study.

1. Personal information forms.
2. Rating sheets.
3. Clean-up duty charts.
4. Time sheets.
5. Progress reports.

M. Evaluation

Describe your method of evaluating the work of your pupils. Elaborate upon this:

Evaluation by:

1. Teacher
2. Student
3. Etc.

Method Used:

1. Rating scale
2. Appraisal of work
3. Tests
4. Etc.

N. Grading:

Please explain how you obtain the grade score for each individual in your class.

EXAMPLE

A number of factors are taken into consideration in arriving at an equitable grade for the student; his rating depends upon the following: As per instructions by committee.

Final grade - explain how the year's marks and final exam are weighted in order to arrive at a final grade.

O. Field of Employment

List the various occupations in which your pupils may receive some training and could then seek employment in this or an allied field.

BUCKS COUNTY TECHNICAL SCHOOL

VII MAKE ANALYSIS TO DETERMINE TRAINING CONTENT

1. All trades, jobs or activities divide themselves into different types of work divisions or classifications. It has been found that it is better to concentrate the analysis on one classification or majoy division of work at a time. Since the bases for these classifications varies from one occupation to another; the following bases are some that should be considered..-

1. Equipment or machines used
2. Materials used
3. Type of construction
4. Type of service
5. Products involved
6. Basis processes of the trade

To begin your analysis prepare a list the major divisions along with the related operations for each division. For example, two major Divisions and some of their related operations for Building Trades and for Machine Shop follow-

Building Trades

Major Division
I. Joinery operations
- a. planing and squaring to dimensions
- b. grooved joints
- c. dowel joints
- d. lay and half joints
- e. gluing and clamping
- f. etc.

Major Division
II. Bench & Cabinet work operations
- a. design and development
- b. rough mill
- c. finishing mill
- d. sanding and finishing

Machine Shop

Major Division
I. Lathe Work operations
- a. turning on centers
- b. chuck work
- c. face plate turning
- d. collet work
- e. etc.

Major Division
II. Milling Machines
Sub Division: Horizontal Milling Machine operations
- a. plain slab milling
- b. face milling
- c. plain and simple indexing
- d. etc.

2. Prepare a listing of the related instruction to accompany each division (theory, math, drawing). The following should be considered in the development of this material ---

- a. What should your students know about tools, machines, etc.?
- b. What calculations or mathematics should the student be able to do?
- c. What should the student know about various materials used in your trade?
- d. What knowledge of drawing and plan reading or design are essential?

try to include all essential aspects of the trade in developing the course content irrespective of equipment available, time allotment, materials, etc.
Each year of work should contain a breakdown of practical work that could be covered, and theoretical work that is essential to the complete understanding of the practical work outlined.

VIII. SELECT COURSE CONTENT TO MEET SPECIFIED OBJECTIVES OF COURSE

Review your analysis of course content to determine its feasibility in a three year program. Organize the analysis from simple to complex for each grade level over the three year period of your course. The contents should satisfy the general and specific objectives which have been determined for your course.

IX. PREPARE THE COURSE OUTLINE

The outline will probably need revisions from year to year and the outline, as it stands is merely a guide to a more organized method of presenting the substance of your trade. Include an hourly breakdown of the various instructional divisions in the outline. The outline should be submitted as you wish it to appear in printed form.

X. INSTRUCTIONAL SHEETS

1. Instruction sheets are an important aid used to supplement the teacher's instruction, not to replace his instruction.

The instruction sheets should be developed directly from the course outline which is being followed. Every job, lesson, assignment becomes potential material for a corresponding instruction sheet.

JOB SHEET - What

Specifies what the trainee is to do. May state in considerable detail the tasks to be performed or may take the form a mere blueprint. A job sheet is one type of an assignment sheet.

OPERATION SHEET - How

Specified how the operation is to be performed and is used largely in the shop process. They have the objective of developing knowledge and skill with respect to those fundamental processes or operations which occur again and again in different combinations in a given field of work. i.e., "Drilling and Tapping".

ASSIGNMENT SHEET

Serves the same function in technical learning as that of job sheets in shop work.

i.e., they are used in laboratory classes, in drafting courses, and other technical processes.

INFORMATION SHEET - Why

They provide background information of various kinds, Information sheets present data in properties of materials, standard sizes, why shop operations are performed in a certain manner, basic and applied scientific principles, mathematics related to operations, etc.

Their objective is the development in the trainee of knowledge and understanding with respect to the specific field for which they are used.

In the back of this booklet are samples for the development of various instruction sheets described below.

BUCKS COUNTY TECHNICAL SCHOOL

XI COMPILE RESOURCE MATERIAL

Your course outline has been completed and Instructional Sheets prepared, With each job or lesson the instructor invariable compiles certain resource materials to aid him with instruction ---

These materials will usually take the form of:

1. models
2. samples
3. films and slides
4. charts and graphs
5. demonstrations
6. recordings
7. text referneces
8. field trips
9. trade literature
10. periodicals

Review each of your instructional sheets and where it is pertinent include a reference to the resource materials used ---

Prepare a listing with appropriate references and/or illustrations related to the instructional situation. This listing should become an appendix to your course of study.

BUCKS COUNTY TECHNICAL SCHOOL

Curriculum _____ Assignment Sheet No. _____

Division _____ Page _____ of _____

Subject Assignment:

Objective:

References:

Information and Examples:

Assignment:

BUCKS COUNTY TECHNICAL SCHOOL

Curriculum _____ Information Sheet No. _____

Division _____ Page ____ of _____

Subject:

Information:

BUCKS COUNTY TECHNICAL SCHOOL

Curriculum _____ Job Sheet No. _____

Division _____ Page _____ of _____

Job Title:

Reference (s):

Tools and Equipment:

Supplies:

Procedures:

BUCKS COUNTY TECHNICAL SCHOOL

Curriculum _____ Lesson Plan No. _____

Division _____ Page _____ of _____

Lesson Title:

Lesson Objective:

Time Allotted:

References:

Equipment Aids:

Lesson Introduction:

Lesson Presentation:

Summary:

Evaluation:

BUCKS COUNTY TECHNICAL SCHOOL

Curriculum _____ Operation Sheet No. _____

Division _____ Page ____ of _____

Operation:

References:

Tools and Equipment:

Procedure:

VT 001 036
Garrett, Pauline G.
Student Evaluation of Home Economics Programs at the Secondary Level When Courses are General and Specialized.

Missouri Univ., Columbia. Dept. of Home Economics Education
MF AVAILABLE IN VT-ERIC SET.
Pub Date - nd 91p.

*HOME ECONOMICS EDUCATION; *CURRICULUM RESEARCH; HIGH SCHOOL STUDENTS; VALUES; *STUDENT ATTITUDES; COURSE CONTENT; *PROGRAM EVALUATION; QUESTIONNAIRES
MISSOURI

The Missouri portion of a five-state study of the differences in the values attributed to general and specialized courses of instruction by 403 high school home economics students in four schools with matched facilities, community size and type, and socio-economic levels is reported. Topics investigated were (1) the extent of election, (2) academic competency, (3) socio-economic status, (4) attitudes of senior girls toward home economics learnings, and (5) differences attributed to program type, and the amount of home economics taken. Findings were: (1) general programs attracted more students than specialized, (2) after the second level, enrollment increased in general, and decreased in the special programs, (3) girls from high socio-economic groups selected less home economics than those from low, (4) attitudes toward help received were almost identical at the first and third level of homemaking for both the students with mothers working and not working, (5) more low than high ability students elect some home economics, (6) special program seniors sought more help than those in the general program, and (7) as the amount of homemaking increases, student plans for college sharply decrease. The study implies that if students are to be encouraged to take more home economics, then learning must be more clearly differentiated and changes made to accommodate unmet needs. Charts and graphs illustrate the data. (FP)

VT 001 036

STUDENT EVALUATION OF HOME ECONOMICS PROGRAMS AT THE SECONDARY LEVEL WHEN COURSES ARE GENERAL AND SPECIALIZED.

A Research Report by

PAULINE G. GARRETT

College of Education
Home Economics Education
THE UNIVERSITY OF MISSOURI
Columbia, Miss. ri

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT 001 036

HOME ECONOMICS EDUCATION
UNIVERSITY OF MISSOURI

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MISSOURI STATE REPORT
A Cooperative Curriculum Study
in
Home Economics Education

Student Evaluation of Home Economics Programs
At The Secondary Level When Courses are General or Specialized

Foreword

Cooperative research makes it possible to attack significant problems, to have one's judgment about problems and procedures criticized by others, and to secure more data than an individual institution would be able to secure. Among home economics educators there has long been interest in research—interest in doing research, in knowing about research done by others, and in cooperating with others with similar interests. The present cooperative research project had its inception at a meeting in Chicago called by the Home Economics Education Branch of the U. S. Office of Education in April, 1959, when representatives from Illinois, Indiana, Kentucky, Michigan, Missouri, Nebraska, New York, Pennsylvania, Tennessee found a common interest in doing a study concerned with the organization of home economics programs for girls in secondary schools.

In selecting the problem for study the following criteria were used as a guide:

1. Will provide evidence which will offer leads to solutions of problems basic to the future of home economics
2. Is a researchable problem
3. May produce findings which can be applied immediately
4. Will provide findings which may be generally applicable to other fields of education
5. Of major interest to members of cooperating institutions
6. Is feasible, in relation to facilities and time required, for cooperating institutions.
7. Is of interest to one or more administrators - representing state supervisors, college administrators, or other groups
8. Will involve, where feasible, others beyond the immediate group in carrying out the study.

The study selected focused on an evaluation of senior high school home economics programs which are organized to include several aspects of home economics in each course as compared with those which emphasize one aspect only. Home economics educators from the seven states listed above organized themselves as a Cooperative Research Group to study this problem. Five meetings of the group were held in planning and carrying out the study. Persons participating in collecting and analyzing the data from schools in their own particular states were:

Sara Blackwell, New York State College of Home Economics at Cornell University
Pauline Garrett, University of Missouri
Rhea Keeler, University of Nebraska
Phyllis Lowe, Purdue University
Elizabeth Ray, Pennsylvania State University
Druzilla Kent, University of Tennessee (at the time the data were collected)

Others who participated in planning the study and preparing the report were Anna Gorman, University of Kentucky, and Elizabeth Simpson, University of Illinois.

Beulah I. Coon and Mary Lee Hurt of the Home Economics Education Branch of the Office of Education, provided leadership for the project—Miss Coon at the time of its initiation and Miss Hurt as the study progressed. Assistance in three meetings of the group was provided by Johnie Christian and Berenice Mallory, also of the Home Economics Education Branch.

Assistance with statistical analyses was given by J. Stanley Ahmann, W. T. Federer, and Patricia Primer of Cornell University, and James Norton of Purdue University.

The data were analyzed at Cornell University under a contract with the Cooperative Research Branch of the Office of Education. Sara Blackwell served as leader for this. Ruth Pestle, a graduate assistant, supervised the coding and the analysis in the initial stages of the study.

Space and facilities for three of the meetings of the group were provided by Purdue University.

Marie Huff, Missouri State Director of home economics education assisted with the Missouri portion of the study by helping select the schools. Mrs. Huff secured the cooperation of the schools selected. Dean L. G. Townsend of the College of Education of the University of Missouri approved use of staff time and along with Dr. H. Pat Wardlaw gave approval for travel to Purdue University for work on the study.

Dr. Cecil Gregory of the Bureau of Statistics, School of Business and Public Administration, gave very valuable suggestions throughout the entire study. Mrs. Beverly Crabtree and Mrs. Ella Geisler, graduate assistants in home economics education, assisted with analyzing data and in writing the Missouri report.

Background

Historical Development of Specialized and General Courses

Home Economics in the early years of its development was defined in the "Syllabus of Home Economics," published by the American Home Economics Association in 1913 as

> a distinctive subject of instruction . . . the study of the economics, sanitary, and aesthetic aspects of food, clothing, and shelter as connected with their selection, preparation, and use by the family in the home or by other groups of people.[1]

The syllabus outlines the subject matter under four main divisions as: I. Food, II. Clothing, III. Shelter, and IV. Household and Institution Administration.

Following the recommendations for the content of home economics, made by the American Home Economics Association, the high schools organized programs to include these same subject areas. Andrews, in reporting a national study of high schools offering courses in home economics in 1913, states: "Of 288 high schools 257 (89 percent) give courses in foods, 232 (80.5 percent) give courses in clothing, and 72 (25 percent) have courses in shelter and management."[2]

The Smith-Hughes Act in 1917 gave special attention to education for vocations. Home economics education is defined as that form of vocational education which has for its controlling purpose the preparation of girls and women for useful employment as house daughters and home-makers engaged in the occupations and the management of the home . . . The first step then in determining the content of a course of study which will fit the student for the occupation of home-making is an analysis of the occupation of homemaking.[3]

At that time an analysis of the "occupation of homemaking" showed that the homemaker needed to be skilled in general housekeeping, in preparing and serving food, as a seamstress particularly for remaking and care and repair of clothing, in the care and rearing of children, and in caring for the health of the family. She was also expected to be responsible for the business management of the home, in fact, she was thought to be "the educational manager, the health and welfare manager, and the social manager of the family group."[4]

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[1]American Home Economics Association, Syllabus of Home Economics. Baltimore, Maryland, 1913.

[2]Andrews, Benjamin R., Education for the Home, Bulletin 1914, No. 37, Washington, D. C., U. S. Government Printing Office. p. 106.

[3]Federal Board for Vocational Education. Home Economics Education, Organization and Administration, Bulletin No. 28, Home Economics Series No. 2, Washington, D. C., U. S. Government Printing Office. 1922. pp. 7, 15.

[4]Ibid, p. 16.

As a result of this legislation, and the philosophy accompanying it, encouragement was given to schools offering vocational courses in home economics to offer a general program of home economics including instruction in the various aspects of the homemakers' job, as well as related art and science.

A further incentive to the development of courses which included several aspects of home economics came from the Commission on the Reorganization of Secondary Education, appointed by the National Education Association. Included as part of its report, in 1922, were recommendations concerning the "Reorganization of Home Economics in Secondary Schools." This group found that in

> many schools the entire time in home economics in the seventh grade (was) given to sewing, in the eighth grade to food preparation, and in the ninth to either foods or clothing . . . In other schools lessons in foods and clothing (were) alternated.[5]

Also, foods and clothing lessons were offered on alternate weeks in some schools. The commission recommended the type of course which they thought to be the ideal—

> that there should be short units of intensive work,—that those units should be so varied within each year that training may be given in hand and machine sewing, knowledge of textiles, appreciation of beauty of design and color, simple food preparation, the relation of food to health, habits of dextrous work, housewifery practices, ideas of personal hygiene and cleanliness, careful use of money, and in cooperation of effort for the common good.[6]

By 1927, in the schools with vocational home economics programs, such subjects as child care and training, family and community relationships, and home management had been given a definite place in the curriculum, either as separate units, or as parts of other units of instruction. In 43 states child care and training was offered as either a separate unit or as a part of other units; in 37, family relationships was offered; and in 38 states home management was offered as a separate unit.[7]

There continued to be variations in the patterns of organization of home economics courses, however. In a study[8] of 78 junior high schools throughout the country, the largest number of courses in the 7th, 8th and 9th grades were entitled "Home Economics." The content of these courses was mainly foods and clothing, but some attempt was being made to include other aspects

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[5]Department of the Interior, Bureau of Education. Reorganization of Home Economics in Secondary Schools, Bulletin 1922, No. 5, Washington, D. C., U. S. Government Printing Office. p. 6.

[6]Ibid, p. 7.

[7]U. S. Department of the Interior, Office of Education. Vocational Education in Home Economics, Twelve Years of Home Economics Education under the National Vocational Education Acts, Vocational Education Bulletin No. 151, Home Economics Series, No. 12, Washington, D. C., U. S. Government Printing Office, 1936. p. 38-40.

[8]Tryon, R. M., H. L. Smith, and Allan F. Rood, "The Program of Studies in Seventy-Eight Junior High School Centers", School Review, Vol. 35, February 1927, p. 96-107.

of home economics. Over 70 percent of these courses in the 7th and 8th grades were required of girls. A national study of Good,[9] in the same year, of aims and courses offered in the junior and senior high schools, included a study of home economics. In an analysis of 50 home economics courses offered in the 10th grade, 31 had titles indicating a specialized offering, such as clothing, foods, cooking, sewing, millinery, home management, interior decoration. A study of courses offered in the 11th and 12th grades also showed a similar picture.

Dyer[10] in a study of city schools made in 1928, found that, while unit arrangement of home economics content in courses was just beginning to be used, supervisors of home economics were in favor of this organization. The old plan of organizing the home economics program so that different subjects, such as foods and clothing, were offered for a full year or a semester, was being replaced by one in which shorter units of instruction were included.

During the next few years educators increasingly focused interest on the study of the learner, as one basis for determining the objectives for a curriculum. As a result, home economics educators moved somewhat from the "analysis of the homemaker's job" to the study of the students enrolled in home economics classes, and of their home activities, interests, and needs. Over one-half of the 30 studies relating to junior high school girls, which were reported in the Bibliography of Studies of the Home Economics Curriculum, 1926-1934,[11] and one-third of the 121 relating to the senior high school girls, dealt with home activities, responsibilities, and interests.

A study by Browder[12] was planned to secure information about students as one basis for developing a suggested course of study in home economics for the high schools in one state. Jobs performed at home by these high school girls were studied, and their mothers gave their opinions of what they thought their daughters should learn to do at home.

In Missouri over the last several decades the curriculum materials have been developed through the cooperative effort of Missouri teachers, the State Department of Education, teacher educators and special curriculum committees. In reviewing the materials developed, it is noted that the home economics program includes at least 7 basic areas and each area is organized around practical problems and lifelike situations.

Some deviation from this general practice was followed when in 1953 a state-wide secondary curriculum committee was appointed by the Commissioner of Education to make a study of the total secondary curriculum in view of developing guides in various subject matter areas. The last guide

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[9]Good, Carter, V., "The High School Curriculum in Home Economics", Journal of Home Economics, Vol. 19, December 1927. p. 686-690.

[10]Dyer, Annie Robertson, Administration of Home Economics in City Schools, New York, Bureau of Publication, Teachers' College, Columbia University, 1928. p. 62-64.

[11]Bibliography of Studies of the Home Economics Curriculum, 1926-1934, Vocational Education, Bulletin No. 179, Washington, D. C., U. S. Government Printing Office, 1935.

[12]Browder, Margaret with Jessie W. Harris, "A Course of Study in Home Economics for the High Schools of Tennessee." Unpublished master's thesis, University of Tennessee, Knoxville, 1931.

to be developed in home economics was the result of a study and plan initiated under the direction of Mr. Raymond A. Roberts, Director of Curriculum. Homemaking teachers assisted in developing units as outlined in the scope and sequence established by the Homemaking Study Production Committee. The Production Committee then compiled the units developed. Teacher educators in home economics education were invited to review materials and make suggestions. The Production Committee completed the guide in the spring of 1959.

Review of the State curriculum guides for junior and senior high school programs in home economics education over the last 15 to 25 years has shown a general agreement countrywide in relation to the suggested content for courses on the different grade levels in home economics. There have been some variations, but in most instances, study of from 4 to 6 aspects of home economics has been suggested on each level. Some state guides have included suggestions for specialized courses for senior high students, entitled, "Family Living," which give emphasis to the study of family relationships, preparation for marriage, and child care and guidance. Guides developed very recently in several states have suggested semester course offerings in such specialized areas as child development, management, clothing, foods, and housing, which may be elected by students, after having completed one or two years of general home economics in high school. Curriculum guides, principally from a number of large city schools, have suggested courses in home economics for the junior high, which are general in nature, but for the senior high school level, semester offerings in various specialized aspects of home economics are included.

The extent of the course offerings, with general and specialized emphasis was identified by a national study of home economics in the secondary schools, made by Coon[13] in 1959. This study showed that 73 percent of all home economics courses were entitled "Homemaking" or "Home Economics," while the remaining 27 percent were given a specialized title, such as "Clothing," "Foods," "Family Living," "Child Development," "Housing and Home Furnishings." Analysis of the content of the courses called "Homemaking" or "Home Economics" showed that a range of from 3 to 31 percent of the periods spent in home economics was given to each of the various aspects of the subject field. In the courses with specialized titles from 70 to 90 percent of the time was devoted to the particular aspect of home economics indicated in the title. Of the total number of schools in the country, the proportion of schools with vocational programs in home economics offering courses with titles, "Homemaking" and "Home Economics," ranged from 95 percent in schools of less than 300 enrollment, to 73 percent in schools over 2,500. In schools with non-vocational programs the proportion of courses with these titles ranged from 82 percent in schools of less than 300 to 27 percent in those of over 2,500 enrollment. The remainder of the courses, in each instance, had titles indicating major emphasis on specialized aspects of home economics.

From studies such as these, questions have been raised about the relative merits of courses which are general and include several aspects of home economics, and of those which give special emphasis to one aspect of the field. Do students gain more help from courses which are general or from those which are specialized?

Home economics educators have been concerned about the extent of election of courses in home economics, as well as characteristics of the pupils and factors which have influenced them to enroll. Are all students who might profit from home economics having the opportunity to enroll? How many times do students enroll in home economics? There have been numerous studies which

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[13]Coon, Beulah I., Home Economics in the Public Secondary Schools, Home Economics Education Circular No. 661, Washington D. C., U. S. Government Printing Office. 1962.

have shown the status of enrollment in home economics, but few on the extent of election. Coon's study[14] in 1959, showed that of all of the girls enrolled in school, 63 percent of those in the 7th grade, 73 percent of the 8th grade, 60 percent of the 9th, 40 percent of the 10th, 28 percent of the 11th, and 34 percent of the 12th grade girls were enrolled in home economics. A study by Hall[15] of students enrolled in home economics in California showed that of all of those enrolled, 31 percent were in the 9th grade, 19 percent were in the 11th grade, and 25 percent in each of the other grades, the 10th and the 12th.

Neither of these studies showed the amount of home economics taken by each pupil. A countrywide study in Ohio by Krinke[16] did give this information, however. She found that of those electing home economics, 31 percent took one year, 35 percent took 2 years, 25 percent took 3 years, and 9 percent took 4 years. A state-wide study in Kentucky[17] showed a similar picture. Of all of the senior girls in 52 schools, who had taken home economics in grades 9 through 12, the following amounts were reported: 30 percent had taken 1/2 to one year; 36 percent had taken 1 1/2 to 2 years; 22 percent had taken 2 1/2 to 3 years; and 12 percent had taken more than 3 years.

Various studies have been made of the characteristics of students who elect home economics. In relation to academic competence, Rowner found in a study of enrollees in home economics in Illinois schools that, "As the amount of home economics taken increased, the percentage of low IQ's increased and the percentage of high IQ's decreased."[18] Also, she found that "the distribution of the four-year grade point averages of enrollees, who had taken one or two years of home economics, were generally higher than that for girls studying home economics three or four years."[19] Hall did not investigate the academic competence of the pupils in her study, but did find that "a college preparatory curriculum was being taken by 53 percent of the nonhomemaking students as compared with 23 percent of the homemaking students."[20]

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[14]Coon, op. cit. p. 34.

[15]Hall, Olive A. What's the Next Move in Homemaking Education? Bulletin No. 2, Vol. XXIV, Sacramento, California, California State Department of Education, 1955. p. 7.

[16]Krinke, Rachel Katherine, "Some Factors Associated with Enrollment in Home Economics of Students in Jefferson County, Ohio Schools." Unpublished master's thesis, Ohio State University, Columbus, 1958.

[17]Report of Curriculum Subcommittee, Home Economics Education State Department of Education, Frankfort, Kentucky. (Unpublished report), 1962.

[18]Rowner, Evelyn Irene, "A Contemporary Image of the Home Economics Enrollees of Forty-six Downstate Illinois Public High Schools." Unpublished doctor's dissertation, University of Illinois, Urbana, 1959. p. 104.

[19]Ibid.

[20]Hall, op. cit. p. 10.

What are the future plans of home economics enrollees? A follow-up of the graduates after one year in Rowner's study showed,[21] that of the girls who had elected home economics,

> 29 percent attended college; 5 percent entered nurses training; and 3 percent attended other kinds of educational institutions. Also 18 percent entered full-time homemaking and 4 percent combined homemaking with employment.

While Hall's study[22] did not include a follow-up after graduation the enrollees were asked to report their vocational plans, and 34 percent indicated they wanted to become homemakers; 27 percent planned to be secretaries; 18 percent desired to enter a professional field; and 8 percent planned to enter some type of personal service; 13 percent did not respond to this question.

In relation to socioeconomic status of home economics enrollees, Rowner found that, "The enrollees' fathers were most often engaged in skilled and agricultural occupations."[23] Holmblade,[24] in a study of pupils enrolled in home economics in one community in Michigan found that three-fourths of them were daughters of factory workers and farmers.

Holmblade,[25] in relation to whether mothers of students enrolled in home economics worked outside the home, found that about one third of the mothers worked full-time or part-time. Of the mothers of the pupils in Hall's[26] study, 30 percent were working for pay. In a study of ninth grade girls enrolled in home economics in Mississippi, "the mothers of 37 percent of the students worked 30 hours or more per week, and the mothers of 8 percent of the students worked less than 30 hours per week."[27]

Some study has been made of other characteristics of students who enroll in home economics in the secondary school, but the studies cited above were selected to give some information about characteristics pertinent to this study.

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[21]Rowner, op. cit. p. 107.

[22]Hall, op. cit. p. 9.

[23]Rowner, op. cit. p. 105.

[24]Holmblade, Amy Jean, "A Comparative Study of the Clothing Area of the Secondary Homemaking Curriculum in a Selected Community and Related Beliefs and Practices of Families in That Community." Unpublished doctor's dissertation, Michigan State University, East Lansing, 1954. (Taken from notes prepared for a meeting of the Home Economics Division, AVA Convention, December 7, 1955).

[25]Ibid.

[26]Hall, op. cit. p. 8.

[27]State Board for Vocational Education. Responsibilities in Home and Family Living of First Year Homemaking Students, Jackson, Mississippi, 1960, p. 13.

Statement of Problem and Purposes of the Study

The title selected for this cooperative research project was, "The Student Evaluation of Home Economics Programs at the Secondary Level When Courses are General or Specialized."

The major purpose of the study was to test the generalized null hypothesis that there is no difference in the value placed on high school home economics programs by girls in schools where the courses are general in nature and in similar schools where the courses are specialized. The indicators of "value" were: Scores derived from an opinionnaire in which senior girls indicated degree of help received in school on topics which make up the various subject-matter areas of home economics; extent to which girls had elected home economics courses in the senior high school.

Other purposes were to study the following factors associated with values gained from various amounts of home economics by senior high school girls: socio-economic status, academic competence, future plans of the girls, and whether or not the mother worked full-time outside the home.

In addition, some study was made of the extent to which girls desired more help with the various aspects of home economics and the extent of election of home economics by senior high school girls as related to the pattern of courses offered and the employment status of the mothers.

Basic Assumptions

Opinion of high school senior girls about help received and desired and their achievement in home economics are important to consider in determining the organization for the home economics program in secondary schools.

High school senior girls are able to recall and evaluate help gained from their school programs in relation to personal-family living and homemaking.

Help received on topics in the questionnaire used in this study is most likely to have been gained from home economics courses.

Hypotheses

The hypotheses tested in this study were:

1. The value attributed to general and specialized high school home economics programs by senior girls do not differ significantly, when "values" are based on the amount of help recognized and when the amount of home economics taken, as well as one of the following is held constant: students' socio-economic status and academic competence.

2. The values attributed to high school home economics programs by senior girls is unrelated to the employment status of their mothers, when amount of home economics, as well as students' socio-economic status is held constant.

3. The values attributed to general and specialized high school home economics programs by senior girls do not differ significantly when "values" are based on the extent to which the students say they desire more help, and when amount of home economics taken, as well as one of the following is held constant: students' socio-economic status and academic competence.

4. The extent of election of home economics courses by senior girls is unrelated to the pattern of courses offered (general or special).

5. Within each type of program, the extent of election of courses by senior high girls is unrelated to the girls' socio-economic status, or academic competence.

6. The extent of election of home economics courses by senior girls, while in school, is unrelated to the employment status of their mothers.

Types of Home Economics Programs

The 1959 U. S. Office of Education conducted the "Study of Home Economics in Secondary Schools of the United States" in 50 states and the District of Columbia. This study was made of a random sample of secondary schools with an enrollment of 100 or more pupils. Data were not secured on home economics in the smaller secondary schools, nor on home economics in the 7th and 8th grades when they were a part of the elementary schools. Ninety-four schools were drawn and used in the Missouri portion of the 1959 study.

The cooperative researchers for the current study believed that it would be feasible and helpful to collect data from schools that were included in the 1959 study. Therefore, a list of the schools included in the 1959 study was sent to Missouri's State Department of Education by the U. S. Office of Education. These schools were classified by the U. S. Office according to the pattern of organization of their home economics program.

A general type of organization was defined as programs made of general courses each including three or more areas of Home Economics. Each school in this pattern should offer at least two full years of Home Economics on the senior high level and within these two years at least four different areas of Home Economics would be included.

A specialized type of organization was defined as programs made up of courses each of which focuses on one specific area, such as management, family living, foods and nutrition, clothing, etc. Courses should be at least a semester in length. Each school should offer courses in at least four different specialized areas, over a span of two years time.

Size and Type of Sample

The State Director of Home Economics verified the type of pattern for each of the schools used in Missouri's study and contacted the schools participating in the study. Schools were selected that were as different as possible in relation to their focus, i.e., distinctly general or distinctly specialized. Inasmuch as possible when a school was selected with a general program, a comparable school with a specialized program was selected in terms of:

1. type and size of community
2. socio-economic level
3. facilities for the school as a whole and in Home Economics
4. Home Economics teacher preparation and professional competence.

Ideally, the sample was to include all girls in the senior class in each school included in the study and a total for the State of 300 girls for general programs and 300 girls for specialized programs. No more girls in the general program were to be included than secured in the specialized programs.

The number of senior girls in the two schools from Missouri general programs was four hundred and eleven. Two hundred and fifty-four instruments were checked. Two hundred and twenty three instruments were useable for the study. The number of senior girls in the two schools from Missouri specialized programs was four hundred and twenty-three. Two hundred and one instruments were checked. One hundred and eighty instruments were useable for the study.

Analysis of Data

Hypotheses	Data	Type of Analysis
1. The value attributed to general and specialized high school home economics programs by senior girls do not differ significantly, when "values" are based on amount of help recognized, and when amount of homemaking taken, as well as one of the following, is held constant: students' socio-economic status, academic competence.	Help recognized: total score and eight sub-scores on questionnaire. Amount of homemaking: students' report of amount taken (three levels) Socio-economic status: index derived from students' report of education, occupation and source of income of parents (three levels) Academic competence: students' report of own academic record (three levels)	Triple classification analysis of variance
2. Same as hypothesis 1, except that indicator of value is extent to which students say they desire more help.	Help wanted, total number times checked on questionnaire	Triple classification analysis of variance
3. The extent of election of home economics courses by senior high school girls is unrelated to the pattern of courses offered (general or special)	Number of senior girls in each group of schools who have elected none, one, two, or more courses in home economics in grades ten, eleven, and twelve	Chi square
4. Within each type of program, the extent of election of courses by senior high girls is unrelated to the girls' socio-economic status, academic competence.	For each group of schools, cross tabulation of number of elected courses with each of other variables	Chi square

Hypotheses cont.	Data	Type of analysis
5. The values attributed to high school home economics programs by senior girls is unrelated to the employment status of their mothers, when amount of homemaking taken, as well as one of the following, is held constant: students' socio-economic status, academic competence.	Same as in 1 and 2 with additional information from questionnaires regarding whether or not mother is gainfully employed.	Triple classification analysis of variance
6. The extent of election of home economics courses by senior high school girls is unrelated to the employment status of their mothers.	Same as in 3	Chi square

The Instrument

The investigation involved the use of a questionnaire with a sample about 4000 senior girls in schools in the six cooperating states where data were collected. An instrument was developed to secure the opinions of high school senior girls concerning help received and desired, while in school, in relation to a selected list of homemaking and personal-family living topics. Additional items were included to secure the socio-economic status, the academic competence, plans for the future, the amount of home economics taken, and the patterns of the home economics courses taken by these senior girls.

In developing the questionnaire it was assumed that opinions of high school senior girls who have enrolled in home economics courses are important to consider in evaluating the effectiveness of those courses. It was further assumed that help received in school on topics related to homemaking and personal-family living would most likely be gained from home economics courses.

The initial draft of the questionnaire was developed at the first meeting of the Cooperative Research Group in Home Economics Education in 1959. A list of 53 home economics topics, reworded in student language, was compiled from one included in a study of "Home Economics in the Secondary Schools,' being conducted at that time by the Home Economics Branch of the U. S. Office of Education. The 53 topics represented eight areas of home economics—child development and guidance, clothing and textiles, food and nutrition, family health, home management, housing and home furnishing, family relationships, and consumer buying. "The Remmers' House and Home Scale"[28] was included to assess socio-economic status.

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[28]Remmers, H. H., and Adler, D. H. The American Teenager, the Bobbs-Merrill Company, Inc., New York, 1957, p. 105.

The first draft of the questionnaire was tried out, spring 1959, with senior high school girls in from one to three schools, with general and specialized courses in home economics, in five States—Illinois, Indiana, Michigan, New York, and Tennessee. A total of 200 senior girls participated. Based on an analysis of the pretest, and suggestions from members of the Research Group, Office of Education staff members prepared a revised draft. The list of home economics topics was expanded from 53 to 74, in order to be more representative of the various areas of home economics. Definitions were included to guide the students in checking "Amount of help I had" and "Wish I had had more" columns in the instrument. In the second draft two scales for measuring socio-economic status, in addition to the Remmers' Scale, were included. These were: the "Danley Scale"[29] and the "McGuire and White Scale for Measurement of Social Status."[30] An additional item was included to assess the average grade of the student for all subjects throughout high school. In an attempt to add greater depth to the evaluation of home economics programs, a trial form of an achievement test was developed at this stage to supplement the questionnaire.

The second draft of the instrument was administered to 73 senior high school girls in three high schools, with different patterns of home economics offerings, near Washington, D. C., Fall, 1959. The achievement test was taken by 23 girls in these three schools. Interviews were held with a ten percent sample of the girls in each school to test the validity of the items in the instrument, and to gain suggestions for improvements. The all-school grade averages for a ten percent sample of the students were secured from the official school records.

Analysis of the second testing of the instrument indicated differences in scores between students with varying amounts of home economics and between the scores of students with different patterns of courses. In 90 percent of the cases the grades given by the students on the questionnaire were in agreement with the official school records. The scores from the achievement test, however, failed to discriminate between groups, so this part of the instrument was again omitted. Following the analysis of the second testing, slight revisions were again made in the questionnaire.

After additional revision of the instrument to provide reliability data, the test re-test method was used with 50 high school senior girls in a fourth school, with a lapse of four days between testings. The following coefficients of correlation for the eight homemaking areas were found:

		Reliability coefficient	
Area	Number of items	Amount of help	Wish for more
Child Care	9	.78	.70
Clothing	10	.81	.51
Foods	10	.84	.38
Home Nursing	9	.83	.71
Management	10	.85	.51
Housing	10	.96	.67
Family Relations	10	.74	.57
Consumer Problems	5	.78	.68
Total		.87	.92

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[29]Danley, Robert A. The Standardization of a Level of Living Scale, Ph. D. Thesis, Cornell University, Ithaca, New York, 1958.

[30]McGuire, Carson, and White, George D., "The Measurement of Social Status." Research Paper in Human Development No. 3 (revised). Department of Education Psychology, The University of Texas, March, 1955.

Reliability was similarly calculated on two social class items and found to be:

Father's Occupation	.68
Total Social Class Position	.75

On items where correlations were not appropriate, the percentage of students who gave the same replies each time were:

Amount of homemaking taken	77%
Grades in high school	83%

Accepting the above levels of reliability, slight revisions were again made in the questionnaire. Because it was found that some student's fathers were not living and they did not know what his occupation had been, the occupation of the mother, if she worked outside the home full time, was also included, as a basis for assessing socioeconomic status. Having this information also made it possible to relate "mother working" to student scores on "help recognized" regarding home economics topics. The "McGuire and White Scale for Measurement of Social Status" was selected for assessment of socioeconomic status, since the items were better adapted to students with all types of home situations than the Danley or Remmers' Scale. In the final analysis the occupation of the father or mother was the key item used, since this correlated highly with socio-economic index.

Method of Analysis and Treatment of Variables

For one set of hypotheses, chi square was the statistic used, and the five percent significance level was considered necessary to claim support for the following hypotheses. The extent of election of home economics by senior high school girls:

1.1 is unrelated to pattern of home economics courses offered in the schools.
1.2 is independent of the student's socioeconomic status .
1.3 is independent of the student's academic competence.
1.4 is independent of the employment status of their mothers.
1.5 is independent of the student's plans for post high school education and future employment.

Two of the variables were dichotomized:

Pattern of home economics courses - general or specialized
Employment status of mothers - works outside the home full time or does not (item 76 of questionnaire.)

The variable, extent of election of home economics, was dealt with usually at four levels - number of years of enrollment reported in grades 10 to 12 (item 81) classified as none, 1/2 to 1 year, 1 1/2 to 2 years, and 2 1/2 or more years; in some cases the last two categories were combined.

For each of the remaining variables three levels were considered:

a. Academic competence - level of marks in all subjects in school (item 82) classified as high if mostly B's or A's (responses 5, 6, 7), medium if about equal B's and C's (response 4), low if mostly C's or D's (responses 1, 2, 3).
b. Socioeconomic level - responses to item 75 initially coded on 7-point scale as indicated in Appendix , and then classified as high (codes 1, 2, 3), middle (code 4) or low (codes 5, 6, 7).
c. Plans for post-high school education and future employment - combining data from two items (79, 80) student aspirations were classified as consistently high if student said she expected to attend a 2-year or 4-year college and hoped for a job which would be classified as high by the method indicated above; consistently low if she did not expect to attend college and did not hope for a high level job;

if she did not expect to attend college and did not hope for a high level job; inconsistent if she fit neither of these descriptions, but expected to combine a high level of education with a middle or low level job, or vice versa.

All the variables involved in hypothesis 1 except "plans for post-high school education and future employment", also were contained in hypothesis 2; two additional variables enter into hypothesis 2:

a. Attitudes of senior girls regarding what they had learned - The major portion of the questionnaire (items 1-74) asked students to indicate how much help they had received or how much they had learned, in school, on each of 74 topics, by checking much, some, little or none. Scores were arrived at by giving a value of 3 for each much response, 2 for some, 1 for little and 0 for none. High scores were considered to indicate that a student had a positive attitude toward the amount learned, low scores that her attitude was negative. The areas included in the questionnaire, along with the range of scores provided were as follows:

Area	No. items	Possible Scores
1. child development	9	0-27
2. clothing and textiles	10	0-30
3. food and nutrition	10	0-30
4. family health	9	0-27
5. home management	10	0-30
6. housing and home furnishings	10	0-30
7. personal and family relationships	10	0-30
8. consumer economics	5	0-15
Total	73	0-219

One item regarding jobs related to home economics was included in the questionnaire but was not used in the analysis. On the basis of the test-re-test reliability data reported on page 11 (reliability of total test .87, subtests .74 to .94) it was decided that the set of hypotheses related to attitudes toward amount learned should be tested for the eight subscores as well as the total.

b. Desire for additional help - The students were given an opportunity to check any topics on the questionnaire about which they wished the schools had given more help than had been provided. The number of topics checked by each student was determined. Only the total score was used in the analysis because of the low reliabilities of the subscore (reliability of total .92, subtests .38 to .71, with 6 of the 8 below .70).

Triple-classification analysis of variance was used to test the second set of hypotheses; three analyses were required for each score in order to compare the influence of the several variables as desired. Because a preliminary test using double-classification analysis of variance had revealed strong relationships between attitude scores and amount of home economics taken, the latter variable was incorporated in every test made. The following specific hypotheses were tested:

2.1 The attitudes of senior girls regarding what they have learned in school about home economics topics (total score and 8 subscores) are related to the pattern of home economics courses offered in the senior high school, when extent of election of home economics is held constant, as well as one of the following: girls' academic competence or socioeconomic level of their families.

2.2 The attitudes of senior girls regarding what they have learned in school about home economics topics (total score and 8 subscores) are unrelated to the employment status of the girls' mothers, when extent of election of home economics and socio-economic level are held constant.

2.3 The degree of desire expressed by senior girls for additional help in school with home economics topics (total score only) is unrelated to the pattern of home economics courses offered in the senior high school, when extent of election of home economics is held constant, as well as one of the following: girls' academic competence or socio-economic level of their families.

2.4 The degree of desire expressed by senior girls for additional help in school with home economics topics (total score only) is unrelated to the employment status of the girls' mothers, when extent of election of home economics and socio-economic level are held constant.

The analyses were performed on a Burroughs 200 computer using a program designed for this study. The program titled analysis of variance for a randomized complete block design with unequal observations in the subclasses and dated October 1960, is on file at the Cornell University Computing Center. In this program adjustments due to disproportionality are made in the interaction sum of squares by the "method of fitting constants", assuming interaction absent (Federer's Case I variance analysis[31] based on Snedecor[32] pp. 296-299). Treatment means and sums of squares are obtained by the "method of weighted squares" of means analysis, assuming interaction present and effects fixed (Federer's Case II based on Snedecor pp. 299-301). Adequate tests of interaction significance were not obtained.

Quality of the Data

The reader's acceptance of the results of these analyses must depend to a large extent on his acceptance of the operational definitions of the variables considered and his judgment of the adequacy of the sample from whom the data were collected. Operational definitions of the varibles are outlined in some detail on page 12 . Additional information as brought together by Dr. Lowe of Purdue University may shed light on the quality of the data.

"Reliability of the Measures Used

Test-retest reliability of the various parts of the questionnaire were obtained on a pretest group, as reported on pages 11, 12 , 13, and judgments about the desirability of proceeding with hypotheses testing were made on the basis of these results. As indicated on page 13, for example, total attitude score and all eight subscores were considered reliable enough to warrant separate treatment in testing hypotheses 2.1 and 2.2, whereas only the total desire-for-help score entered into the testing of hypotheses 2.3 and 2.4 because of the low reliability of most of the subscores.

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[31] Federer, Walter T. Variance and covariance analysis for unbalanced classifications. Biometrics. 13:333-362, September, 1957.

[32] Snedecor, George W. Statistical Methods. Fourth edition. Iowa State College Press. 1946.

The reliability of students as reporters of information available in school records was of concern to the researchers. In the pretesting, nine out of ten students whose academic records were checked had given accurate responses. In one State study, data from school records were obtained in two schools. In one school with 68 girls participating in the study the correlation between marks reported by the girls and recorded marks was .85, and in a second school in which 18 girls participated, a correlation of .82 was obtained.

No measure is available of the amount of error that crept into the data during processing. However, controls were used as follows to minimize error: (1) All responses to the questionnaire were coded by one person and checked by another; when coders disagreed, their supervisor made the decision, usually in consultation with them. The occupation-level code proved to be the most frequent source of coder disagreement. In this case a record was kept of all decisions made (see appendix). (2) As data were transferred from questionnaire to cards, all punched cards were verified, usually by a second machine operator. (3) The computer program was checked with test problems whose results had been established independently.

Validity of the Measures Used

As with many questionnaires, the reader has little guide to the validity of the instrument; he is asked to accept it at face value.

Content validity may perhaps be claimed for the attitude inventory on grounds that the topics listed were adapted from a list developed for a larger study which has nationwide acceptance. Two efforts were made to establish relationship between scores on this inventory and scores on tests of understanding, assuming that these two types of scores might both be acceptable as indicators of program value. In neither case was any relationship found. The first effort was made as a part of the pretesting process, using tests of understanding available from previous research. The second effort was more elaborate. Graduate students in one of the cooperating institutions selected four subtests from the attitude inventory (child development, clothing, food and nutrition, and personal-family relations). For each subtest an attempt was made to develop test items which related to the specific topics in the questionnaire, and only in the case of the personal-family relations test did this pose seemingly insurmountable problems. Four instruments were prepared, each dealing with one subject matter area, and each including the appropriate section of the original attitude inventory; the parallel test of understanding; and the questionnaire items dealing with fathers' occupation, home economics courses taken, and level of school marks. Four schools, three of which had participated in the main research, cooperated with this supplementary study. Test materials assembled for each school were stacked so that those dealing with each of the four subject matter areas were distributed evenly throughout the group. As a result, the samples of girls taking each test were drawn proportionately from the four schools; they were also very much alike in terms of the common variables measured by the questionnaire. In this small study partial correlations between attitude scores and scores on the test of understanding, with effect of amount of home economics taken and academic competence partialled out, were not significantly different from zero. Whatever the attitude inventory measures is independent of understanding as measured by the particular tests used. The experience of the graduate students in using the questionnaire as a guide to developing the test, however, may serve to reinforce the feeling for content validity of some of the attitude subscores, but raises serious questions about content validity of the personal-family relations subscore.

When the decision was made to include socioeconomic status as one of the independent variables in the study, there was considerable discussion of available socioeconomic status scales which might appropriately be incorporated in a questionnaire to be administered to high school students. The pretesting of several scales and the choice of relevant items to be included in the final questionnaire is discussed on pages 11, 12, and 13. The fact that only the item related to fathers' occupation was actually used has also been indicated. The decision to use fathers' occupation was made after marginals were available from two states for each of the components of the socioeconomic status scale (occupation of parent, source of income, fathers' education) and the weighted total. That the decision was effective in preserving a large proportion of the sample is evident from the following information regarding the percentage of girls providing complete data:

	State A	State E
Composite SES score	76%	77%
Father's occupation	93%	95%

That the decision did not do violence to the data is evident from correlations of .92 and .88 obtained between composite SES scores and father's occupation rating in the two states respectively. Prior support for such a decision was available, since Kahl has shown father's occupation to be the best single indicator of socioeconomic status.

It was the intention of the researchers to establish cutting points on both socioeconomic status data and academic competence data such that the various samples might be divided into upper, middle and lower thirds on these variables, to maximize the efficiency of the analysis of variance. It will be recalled that for each variable seven levels were established; in the case of each the most reasonable cutting points proved to be on either side of the fourth level (again basing the decision on data from States A and E). The resultant distributions for each state are shown in Table I. Obviously the goal of three subsamples of somewhat comparable size for each variable in each state was not achieved.

Table I. Percentage of students in each state sample falling in high, middle, and low socioeconomic status and academic competence groups.

State	Socioeconomic Status			Academic Competence		
	High	Middle	Low	High	Middle	Low
A	48	28	24	47	28	25
B	28	24	48	52	25	23
C	26	36	38	54	26	20
D	20	37	42	44	29	26
E	35	31	34	27	29	44
Total	31	32	37	46	27	27

These data may have relevance to a discussion of the validity of th. measures used for the two variables. That the socioeconomic status variable has been measured with a reasonable degree of reliability and validity has already been pointed out (the indicator used,

fathers' occupation, had a test-retest reliability of .95 in the pre-test, and in two states of the main study correlated .92 and .88 with an acceptable measure which combines fathers' occupation with two other variables). One might reason, then, that variations in socio-economic level from state to state can be accepted as real differences.

Analysis of the quality of the academic competence data is not so simple. Marks in school were used as the indicator of this variable, and there is little reason to question the reliability of students' reports of their marks. No evidence is available of the consistency with which marks are given in these particular schools, but evidence from other sources suggest that marks are usually not ve.y reliable. It seems easier to explain variations from state to state as reflecting either unreliability or lack of a common reference point from school to school than to accept these variations are indicative of real differences in students' academic ability. Further light on this question may be provided in the discussion of the sample."[33]

Findings

Type of Homemaking Program

The mean scores on the total questionnaire for 223 girls in two schools with general programs was 116.085 while that of 180 girls in two schools with special programs was 98.114. The F-value of 18.55 which is associated with these differences is significant at the one per cent level. We reject the null hypothesis that there is no significant difference in the general and special programs regarding the amourt of help in home economics recognized by senior girls enrolled in these said programs.

Basic data regarding extent of election are in Table I.

Table I. Percentage of Senior Girls in Missouri Who Reported Having Taken Varying Amounts Of Home Economics In Senior High School

State	Number of Girls	Units of Home Economics in Senior High School			
		0	1/2-1	1 1/2-2	2 1/2 or more
Missouri	403	38	38	18	6

There was a significant relationship between the type of program offered and the extent of election (chi-square values were sign ficant at the one per cent level). Data of Table 2 indicate that in Missouri the General programs represented by the sample attracted more students than the Specialized programs represented in the sample.

[33]Lowe, Phyllis K., "Student Evaluation of Home Economics Programs at the Secondary Level When Courses are General and Specialized." Purdue University. 1962. pp. 17-20.

Table 2. Percentage of Senior Girls in General and Specialized Samples in Missouri Who Reported Having Taken Varying Amounts of Home Economics in Senior High School

Sample	Number of Girls	Units of Home Economics in Senior High School 0	1/2-1	1 1/2-2	2 1/2 or more
General	223	30	39	22	10
Special	180	48	37	13	2

Amount of Homemaking

The range in mean scores on the total questionnaire for the 223 girls in the two schools with general programs was 107.026 to 129.512 while the range in mean scores on the total questionnaire for the 180 girls in the two schools with special programs was 83.014 to 101.298. (Figure 1) The corresponding F-value of 18.83 is significant at the one percent level. We reject the null hypothesis that there is no difference in the amount of help in home economics recognized by senior high school girls taking different amounts of homemaking in the general and special programs.

Looking at Figure 1, one can observe the direction of the mean scores for the general and special programs for the girls electing different amounts of homemaking, noting the decided change in direction in both programs after the second level of homemaking, that is, an increase in general programs and a decrease in special programs.

Socio-Economic Status

There is a relationship between the socio-economic level of the student's family and the extent to which she elects home economics courses in the sample senior high schools. This is true (chi-square values exceed the five percent significance level) in the specialized programs and the general.

As indicated in Table 3, girls from high socio-economic groups selected less home economics than did those from low socio-economic groups.

Table 3. Percentage of Senior Girls in High and Low Socio-economic Status Groups Who Reported Having Taken Home Economics in Senior High School

Sample	Number of Girls High*	Low#	%Electing Some Home Economics High	Low	%Electing 1 1/2 or More Units High	Low
General	93	59	63	78	24	36
Special	101	37	37	84	7	38

*Girls reporting fathers' occupations coded in the upper 3 out of 7 possible categories
#Girls reporting fathers' occupations coded in the lower 3 out of 7 possible categories

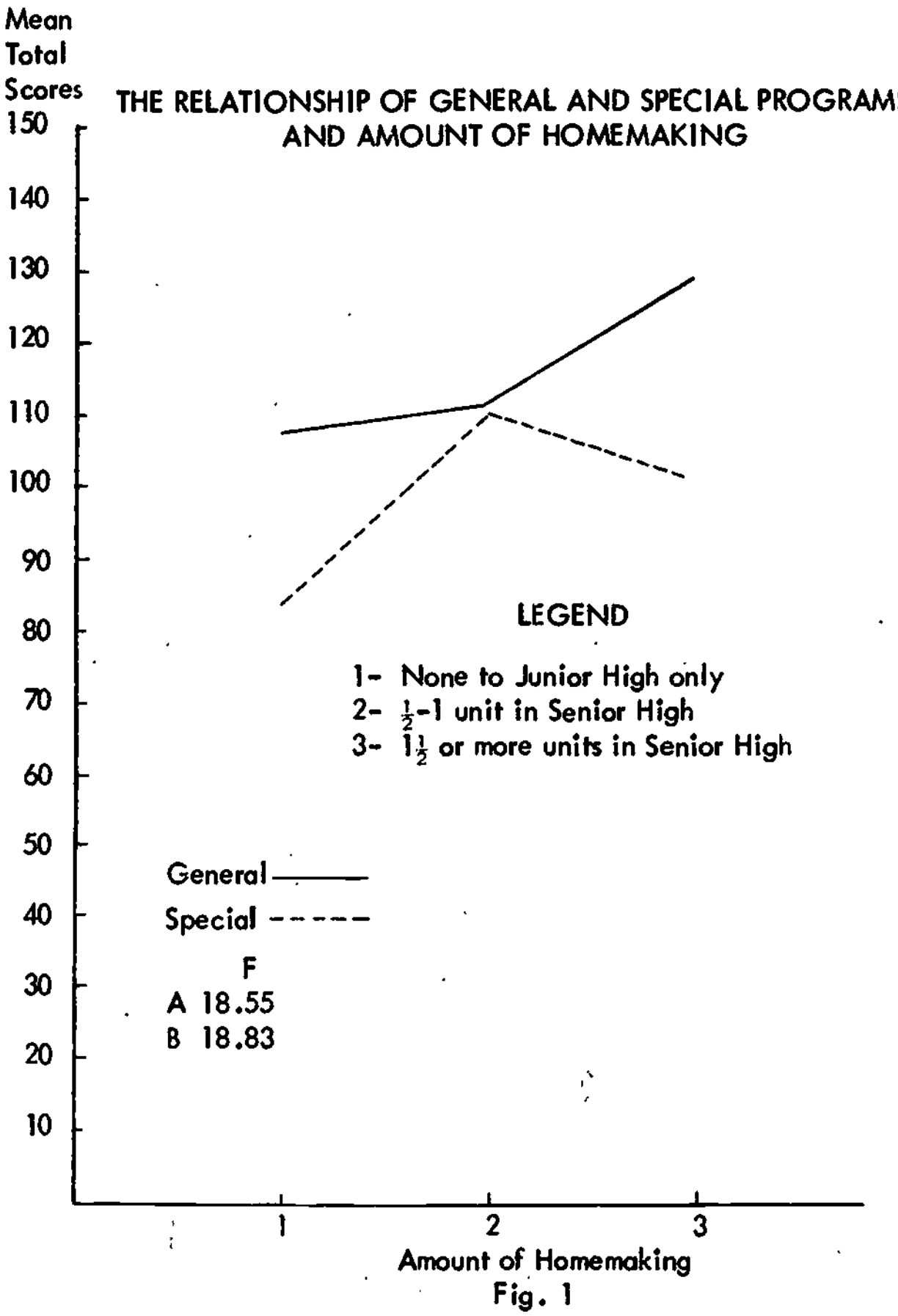

THE RELATIONSHIP OF GENERAL AND SPECIAL PROGRAMS AND AMOUNT OF HOMEMAKING
Mean Total Scores
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
LEGEND
1- None to Junior High only
2- ½-1 unit in Senior High
3- 1½ or more units in Senior High
General
Special
F
A 18.55
B 18.83
1
2
3
Amount of Homemaking

Fig. 1

The 194 girls of high socio-economic status indicated a mean score of 91.659 while the 96 girls of low socio-economic status indicated a mean score of 121.640. The 113 girls of the middle socio-economic status group indicated a mean score of 107.989. The F-value of 6.83 is significant at the one percent level. We reject the null hypothesis that there is no difference in the amount of help in home economics recognized by senior high school girls of different socio-economic levels in the general and special programs.

Looking at the graph in Figure 2, the girls of high socio-economic level indicate lower mean scores in both the general and special programs than do the girls of low socio-economic levels in both the general and special programs. The girls of high socio-economic level indicate a considerably lower mean score in the special program than do the girls of high socio-economic level in the general program.

Possible effects on the mean scores of the interaction between socio-economic level and the amount of homemaking for the general programs is indicated in Figure 3 and for the special program in Figure 4.

Figure 5 suggests that the relationship between the amount of help recognized by senior high school girls and amount of home economics taken for the medium socio-economic level is different from the high and low socio-economic levels. The significance of the interaction has not been tested.

The mean scores for the girls in the general programs indicate a fairly strong relationship to the mean scores of the girls in the special programs at the first and third levels of home economics for both the medium and low socio-economic levels.

The relationship between the mean scores of the girls in the general and special programs of high socio-economic levels is not at all apparent as indicated in Figures 6 and 7.

The relationship between the mean scores of the various socio-economic levels appears stronger at the second level of the general program.

Looking at Figure 8 the mean scores for students in the general program are similar in pattern in the several areas of home economics for the three levels of homemaking with the exception of the scores for the areas of home management and family relationships. The mean scores for students in the special program are similar in the several areas of home economics for the three levels of home economics with the exception of the scores for the area of family health.

The range in mean scores for the three levels of home economics in the general program is greatest for the specific areas of foods and nutrition and clothing and textiles. The smallest range in mean scores for the three levels of home economics in the general program is in the area of family relationships.

The smallest range in mean scores in the special program is in the area of family health.

The range in mean scores in the special program is greatest for the three levels of home economics in the areas of housing and home furnishings and management.

In Figure 9 we note that in each respective area of homemaking the mean score is lower for the girls in the special programs than for the girls in the general programs for the three levels of homemaking and the three socio-economic levels, with the exception of home management, housing and home furnishings and consumer buying.

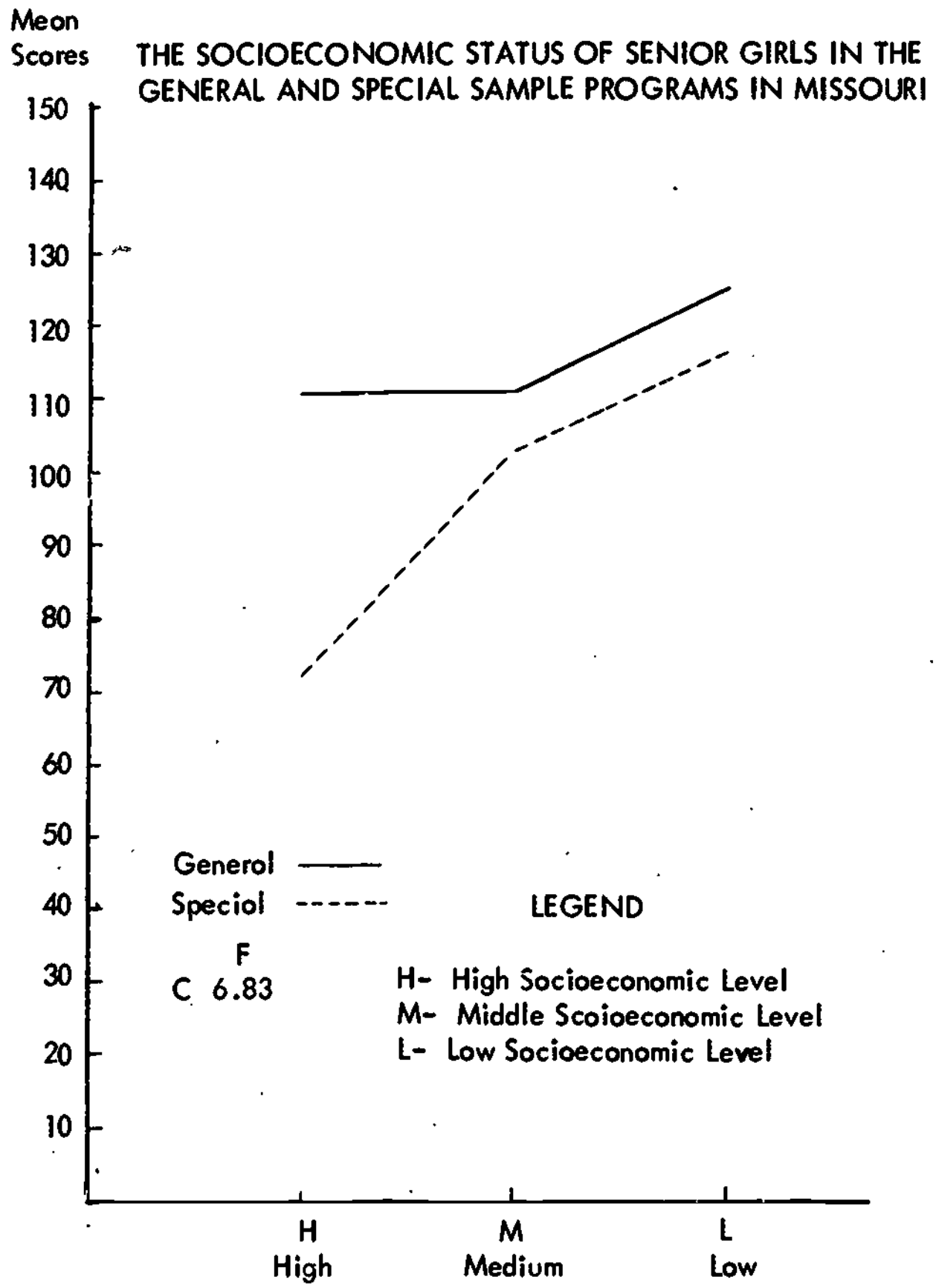

Meon Scores
THE SOCIOECONOMIC STATUS OF SENIOR GIRLS IN THE GENERAL AND SPECIAL SAMPLE PROGRAMS IN MISSOURI
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
Generol
Speciol
F
C 6.83
LEGEND
H- High Socioeconomic Level
M- Middle Scoioeconomic Level
L- Low Socioeconomic Level
H
High
M
Medium
L
Low

Fig. 2

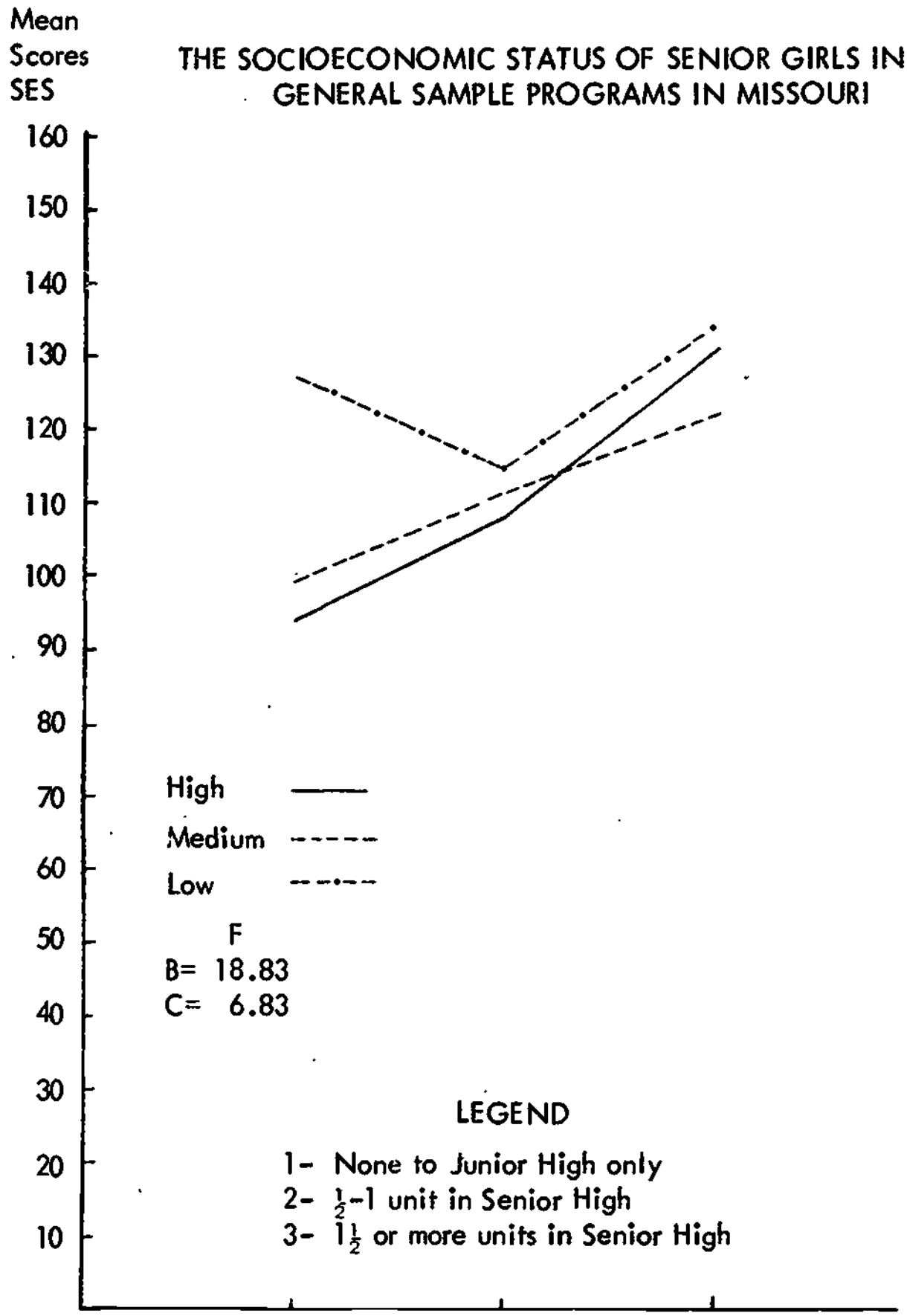

Mean
Scores
SES
THE SOCIOECONOMIC STATUS OF SENIOR GIRLS IN THE GENERAL SAMPLE PROGRAMS IN MISSOURI
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
High
Medium
Low
F
B= 18.83
C= 6.83
LEGEND
1- None to Junior High only
2- ½-1 unit in Senior High
3- 1½ or more units in Senior High
1
2
3
Amount of Homemaking

Fig. 3

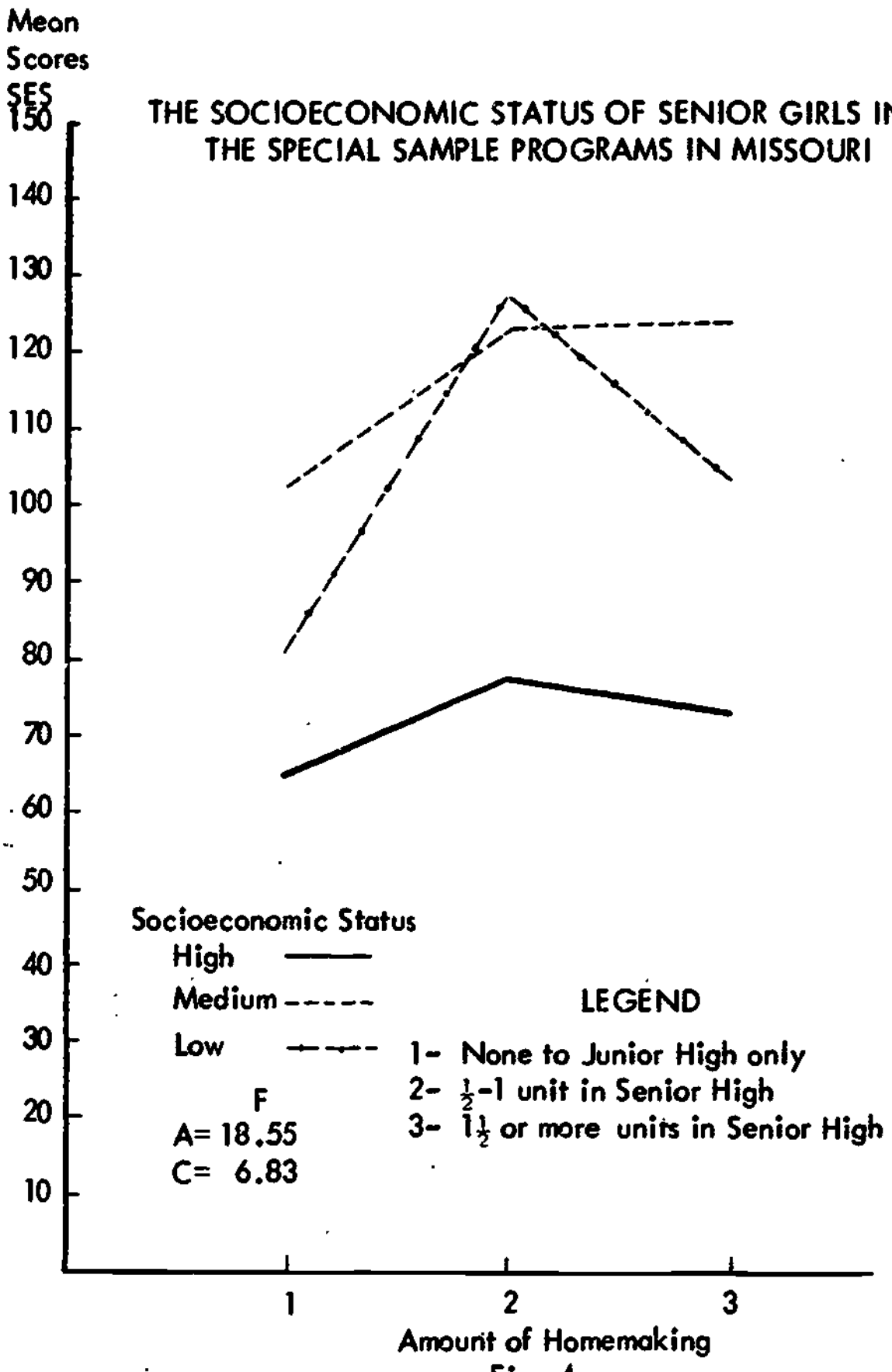
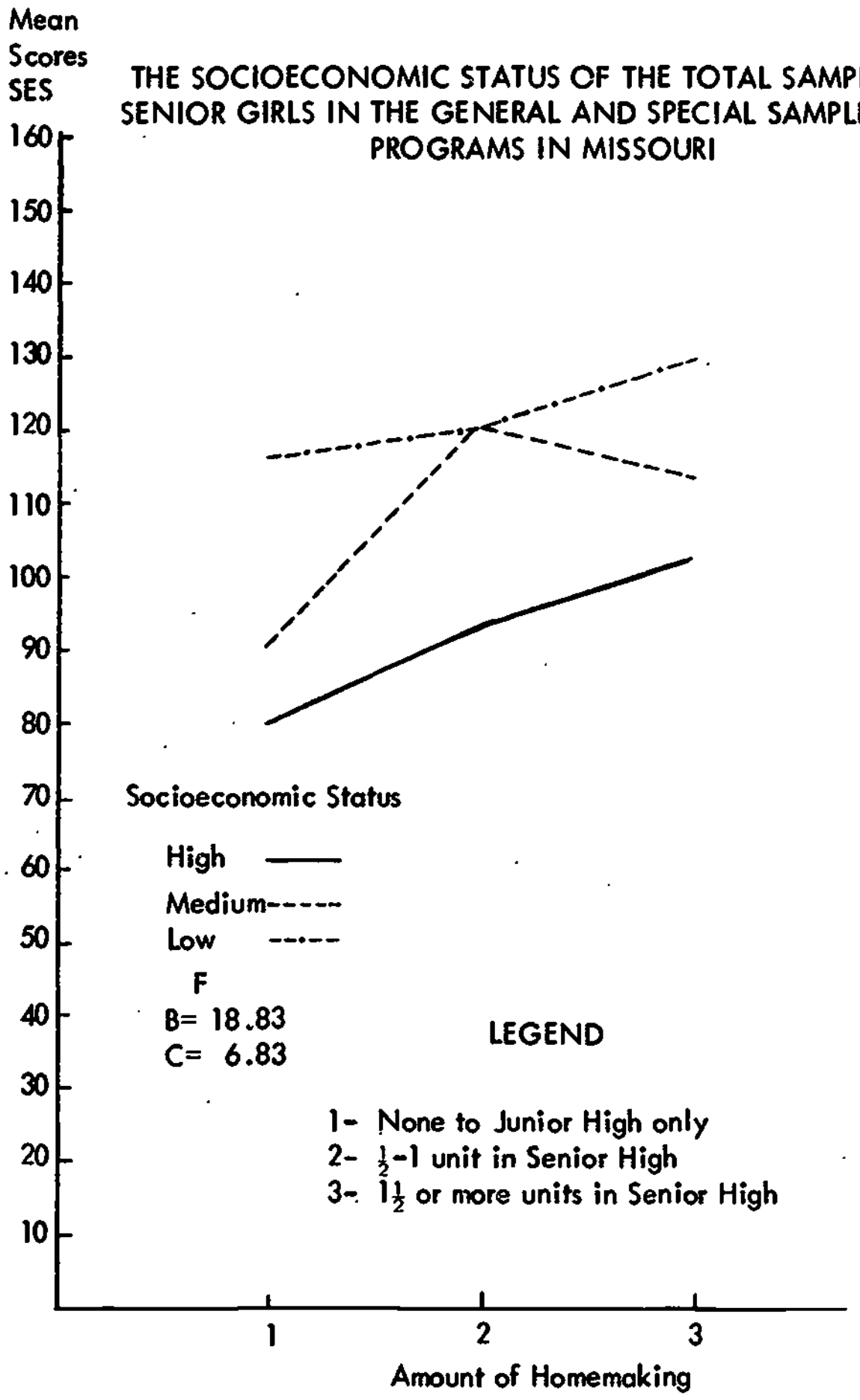

Mean Scores SES
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
THE SOCIOECONOMIC STATUS OF SENIOR GIRLS IN THE SPECIAL SAMPLE PROGRAMS IN MISSOURI
Socioeconomic Status
High
Medium
Low
F
A= 18.55
C= 6.83
LEGEND
1- None to Junior High only
2- ½-1 unit in Senior High
3- 1½ or more units in Senior High
1
2
3
Amount of Homemaking

Fig. 4



THE SOCIOECONOMIC STATUS OF THE TOTAL SAMPLE OF SENIOR GIRLS IN THE GENERAL AND SPECIAL SAMPLE PROGRAMS IN MISSOURI

Fig. 5

THE RELATIONSHIP OF SOCIOECONOMIC STATUS AND AMCUNT OF HOMEMAKING FOR SENIOR GIRLS IN THE GENERAL SAMPLE PROGRAMS IN MISSOURI

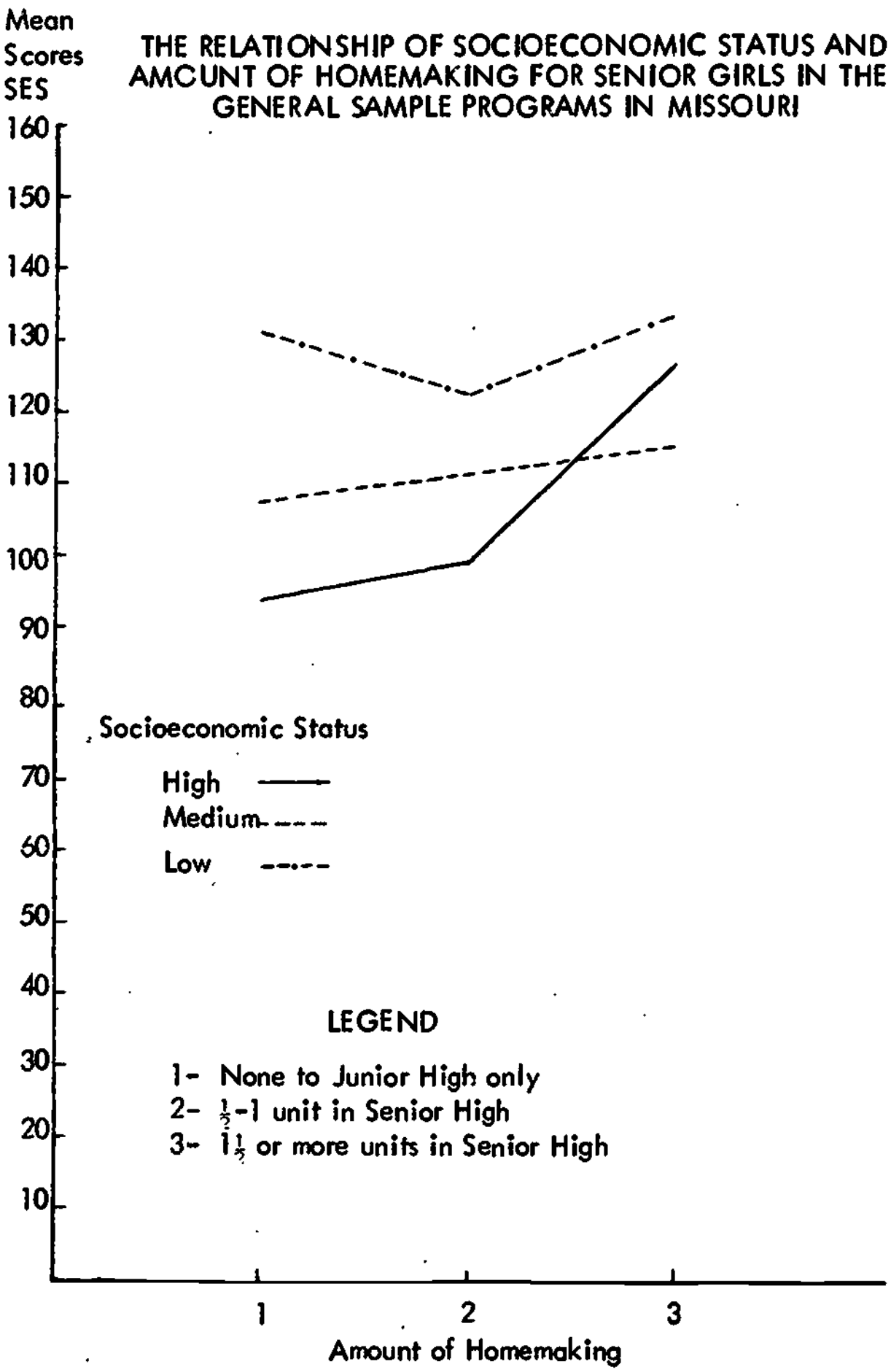
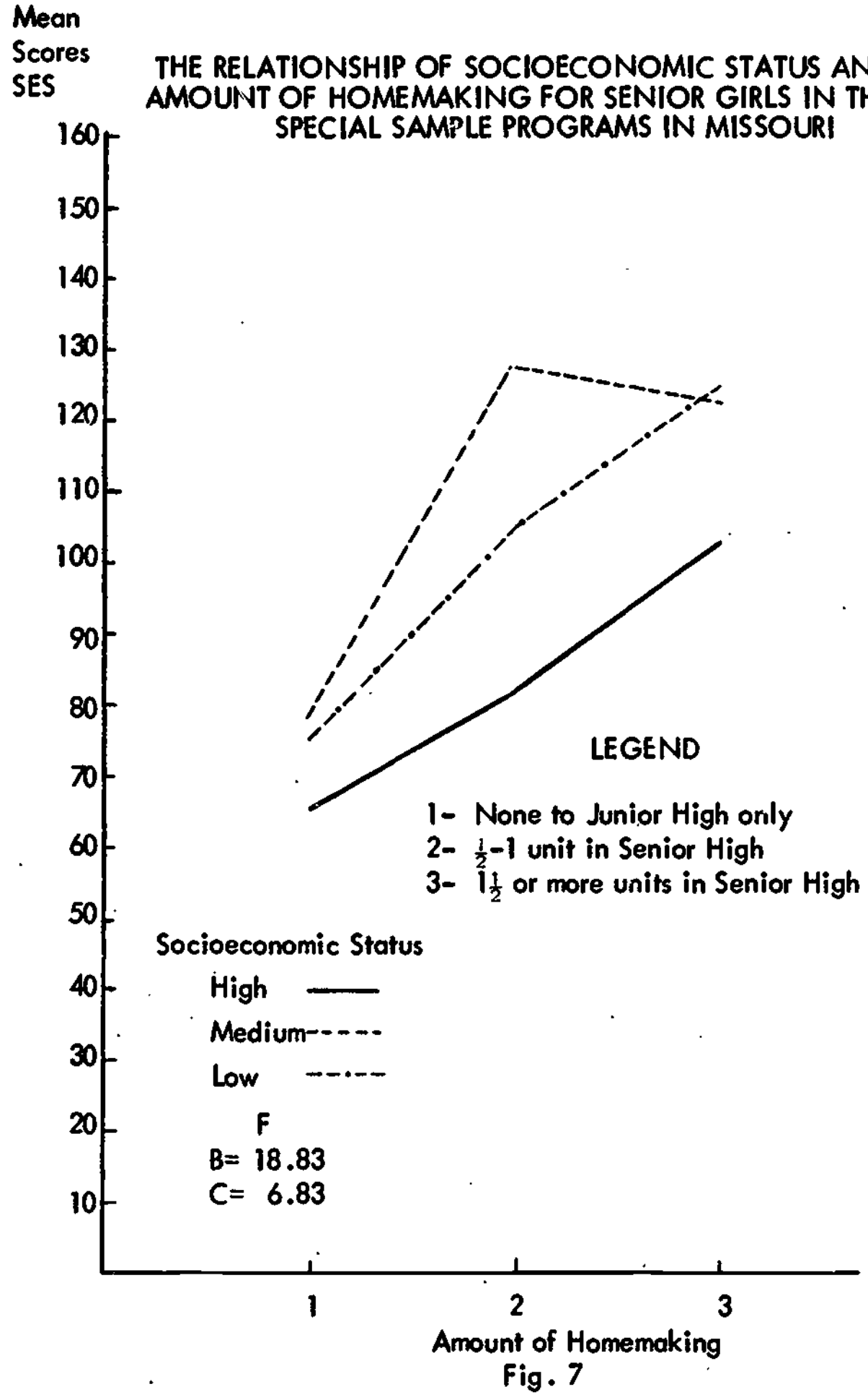
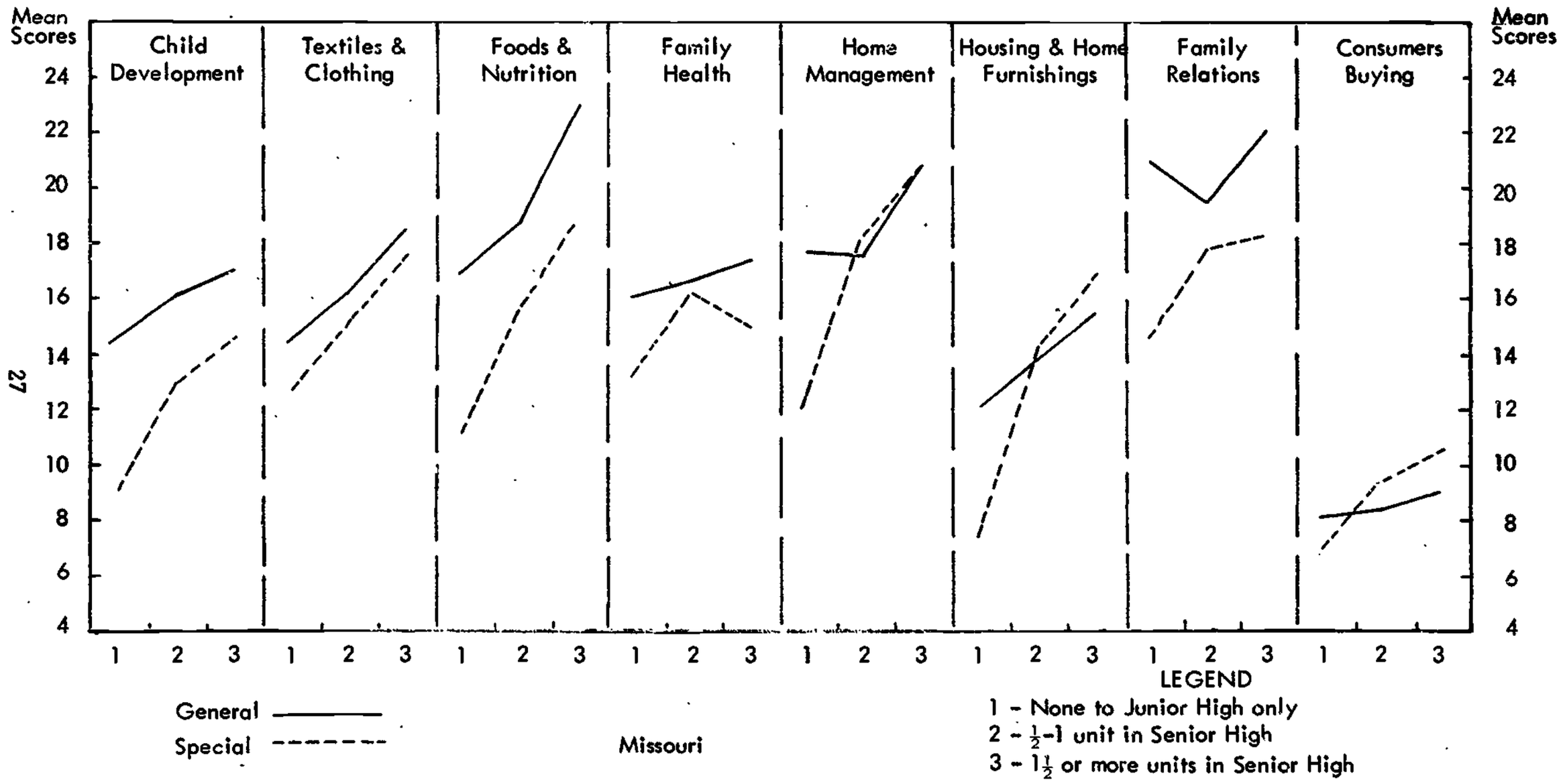


Fig. 6



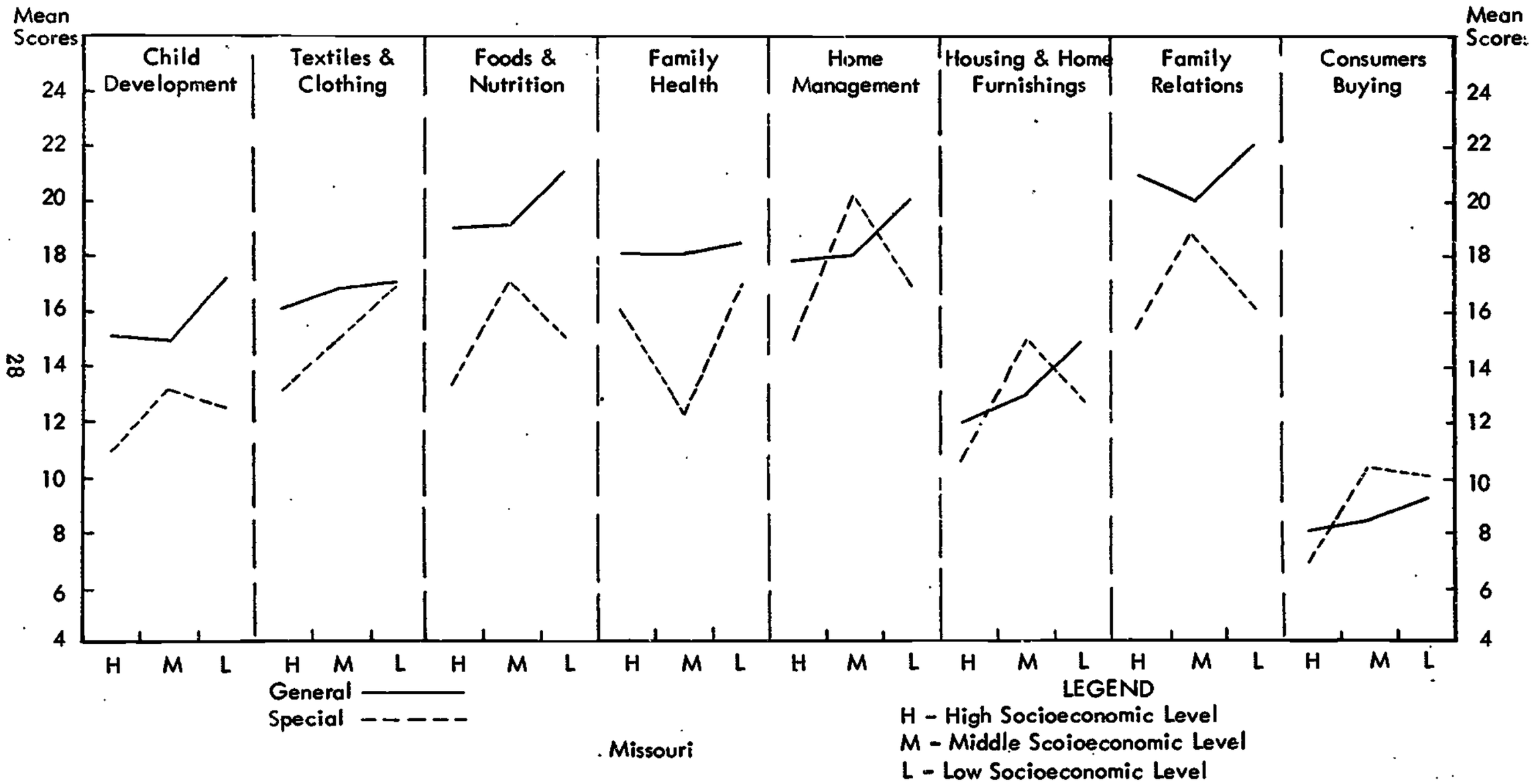
THE RELATIONSHIP OF SOCIOECONOMIC STATUS AND AMOUNT OF HOMEMAKING FOR SENIOR GIRLS IN THE SPECIAL SAMPLE PROGRAMS IN MISSOURI

Fig. 7



MEAN SCORES FOR STUDENTS IN GENERAL AND SPECIAL PROGRAMS FOR THREE LEVELS OF HOMEMAKING--SES HELD CONSTANT

Fig. 8



MEAN SCORES FOR STUDENTS IN GENERAL AND SPECIAL PROGRAMS AT THREE SOCIO-ECONOMIC LEVELS--AMOUNT OF HOMEMAKING HELD

Fig. 9

In the special programs the medium socio-economic level indicates a marked drop in mean scores in the family health area. The low socio-economic level in the special program indicates a marked drop in mean score in the areas of food and nutrition, management, housing and home furnishings and family relationships. There is also a drop but not so marked for the low socio-economic level of the senior girls in the special programs in the areas of child development and consumer buying.

In the general programs the medium socio-economic level indicates a very slight drop in mean scores in child development and family health with a larger drop in mean scores in family relations. However, in all areas of home economics an increase in mean scores is noted from the first to third socio-economic level in both the general and special programs.

In the general programs there is a marked drop in mean scores for the senior girls at the second homemaking level in family relationships. In the special program there is a marked drop in the mean score for the senior girls at the third homemaking level in the area of family health. With these exceptions the patterns for both special and general programs seem to indicate higher mean scores for each area of home economics for each succeeding grade level.

Academic Competence

Data support the hypothesis that there is a relationship between the girls' academic ability and the extent to which they elect home economics in the sample senior high schools (chi-square values exceed the five percent significance level). These data are summarized in Table 4.

Table 4. Percentage of Senior Girls in High and Low Academic-Competence Groups from Missouri Who Reported Having Taken Home Economics in the Sample Senior High Schools

Sample	Number of Girls		%Electing Some Home Economics		%Electing 1 1/2 or More Units	
	High*	Low#	High	Low	High	Low
General	90	63	62	78	21	48
Special	99	38	39	87	9	29

*Girls reporting high school marks in the upper 3 out of 7 possible categories
#Girls reporting high school marks in the lower 3 out of 7 possible categories

More of the low ability than of the high ability group of students elect some home economics. There is a marked difference between the two ability groups when the percentages of girls electing more than one unit are compared.

The mean score on the total questionnaire holding academic competence constant for the 223 girls in the general programs was 115.645 while that of the 180 girls in the special program was 95.385. The F-value of 2.49 was not significant at the one percent level. We accept the null hypothesis that there is no difference regarding the amount of help in home economics recognized by senior high school girls of different levels of academic competence in both general and special programs.

The 94 girls of high academic competence indicated a mean score of 100.146 and the 41 girls of low academic competence indicate a not too different mean score of 105.608. In Figure 10 we note that the range in mean scores regarding academic competence is less for the senior girls in the general programs than the range in mean scores regarding academic competence for the senior girls in the special programs.

In Figure 11 we see that the lowest mean scores were with the high academic competence group in the general program. Although the scores indicate recognized help by the low academic competence group, as a group, the scores are lower than the medium academic competence group at the first and third level of homemaking. In the special programs, as shown in Figure 12, the pattern for the low academic competence group and the high academic competence group is quite similar and the pattern indicates a steady increase in mean scores, recognizing help gained, from the special program at each successive grade level. Even the medium academic competence group shows a pattern of recognized help except that the mean scores are slightly lower at the third level than at the second level of homemaking. For the total sample in the general and special programs the patterns in Figure 13 for the three levels of academic competence groups are quite similar, showing a steady increase in help recognized at each successive level of homemaking.

Looking at Figure 14 the mean scores of academic competence for senior high school girls in the general program with one exception show a similarity in pattern for the three levels of homemaking in the several areas of home economics. The exception in the pattern of mean scores is found in the family relations area.

The mean scores of academic competence for senior high school girls for the three levels of homemaking in the special program show a similarity of pattern in the several areas of home economics with the exception of family health. Figure 14 also indicates in the special programs an especially marked increase in the mean scores at the second level of homemaking for the areas of home management, housing and home furnishings.

Looking at Figure 15 the mean scores in the general program for senior high school girls at the three levels of academic competence indicate a similarity in pattern in four home economics areas, namely textiles and clothing, foods and nutrition, family health and family relations. That is, the pattern of mean scores indicates an increase in mean scores at the second level and decreased scores at the third level of academic competence. In four areas, child development, home management, housing and home furnishings and consumer buying, the mean scores decrease at the second level of academic competence. In all the areas of home economics in the general program the lowest mean score is at the thrid level of academic competence.

The mean scores in the special program for the senior high girls at the three levels of academic competence are similar in pattern in four areas of home economics, textiles and clothing, home management, housing and home furnishings and consumer buying. The pattern shows an increase in mean scores at the second level of academic competence and a decrease in mean scores at the third level of academic competence. However, the mean scores at the third level are not less than the mean scores at the first level of academic competence. In the two home economics areas, foods and nutrition and family relations, the pattern of mean scores in the special program indicates an increase at both the second and third levels of academic competence.

Mothers Working—Mothers Not Working and Election of Girls to Take Home Economics

One hundred and twenty-five girls whose mothers were working elected to take home economics. Two hundred and seventy-eight girls whose mothers were not working elected to take home economics.

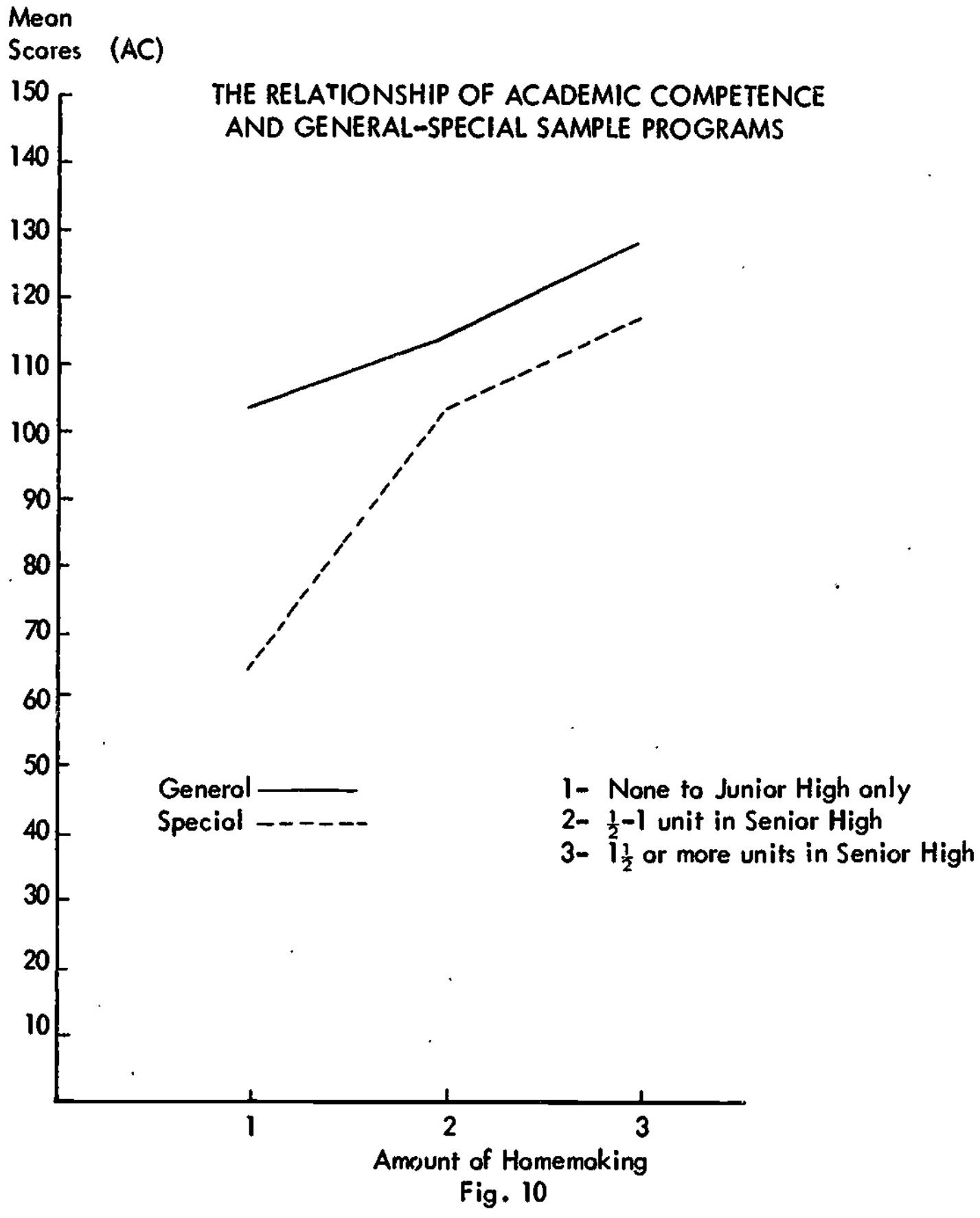

Meon Scores (AC)
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
THE RELATIONSHIP OF ACADEMIC COMPETENCE AND GENERAL-SPECIAL SAMPLE PROGRAMS
General
Special
1- None to Junior High only
2- ½-1 unit in Senior High
3- 1½ or more units in Senior High
1
2
3
Amount of Homemaking

Fig. 10

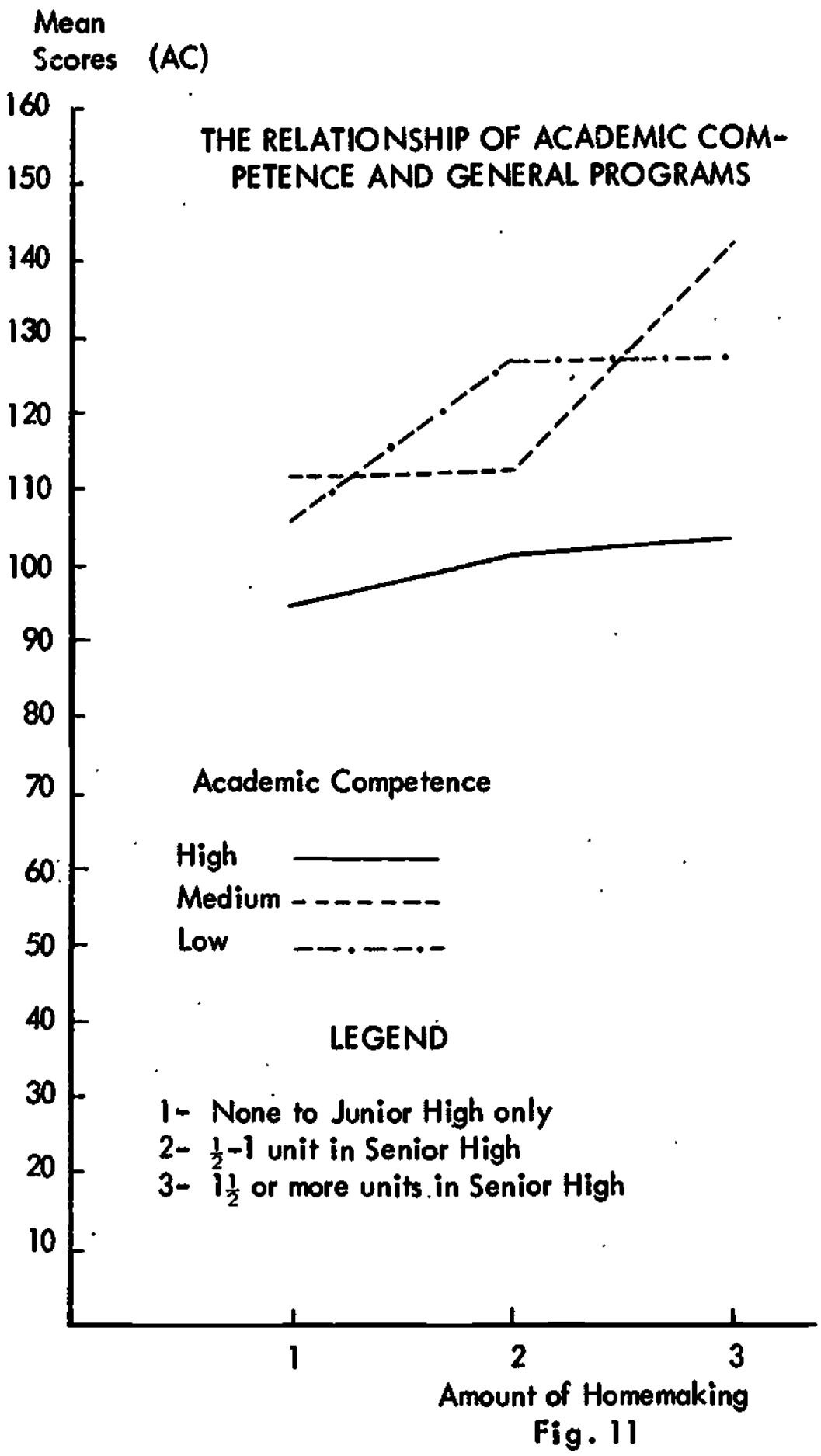

Mean Scores (AC)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
THE RELATIONSHIP OF ACADEMIC COMPETENCE AND GENERAL PROGRAMS
Academic Competence
High
Medium
Low
LEGEND
1- None to Junior High only
2- ½-1 unit in Senior High
3- 1½ or more units in Senior High
1
2
3
Amount of Homemaking

Fig. 11

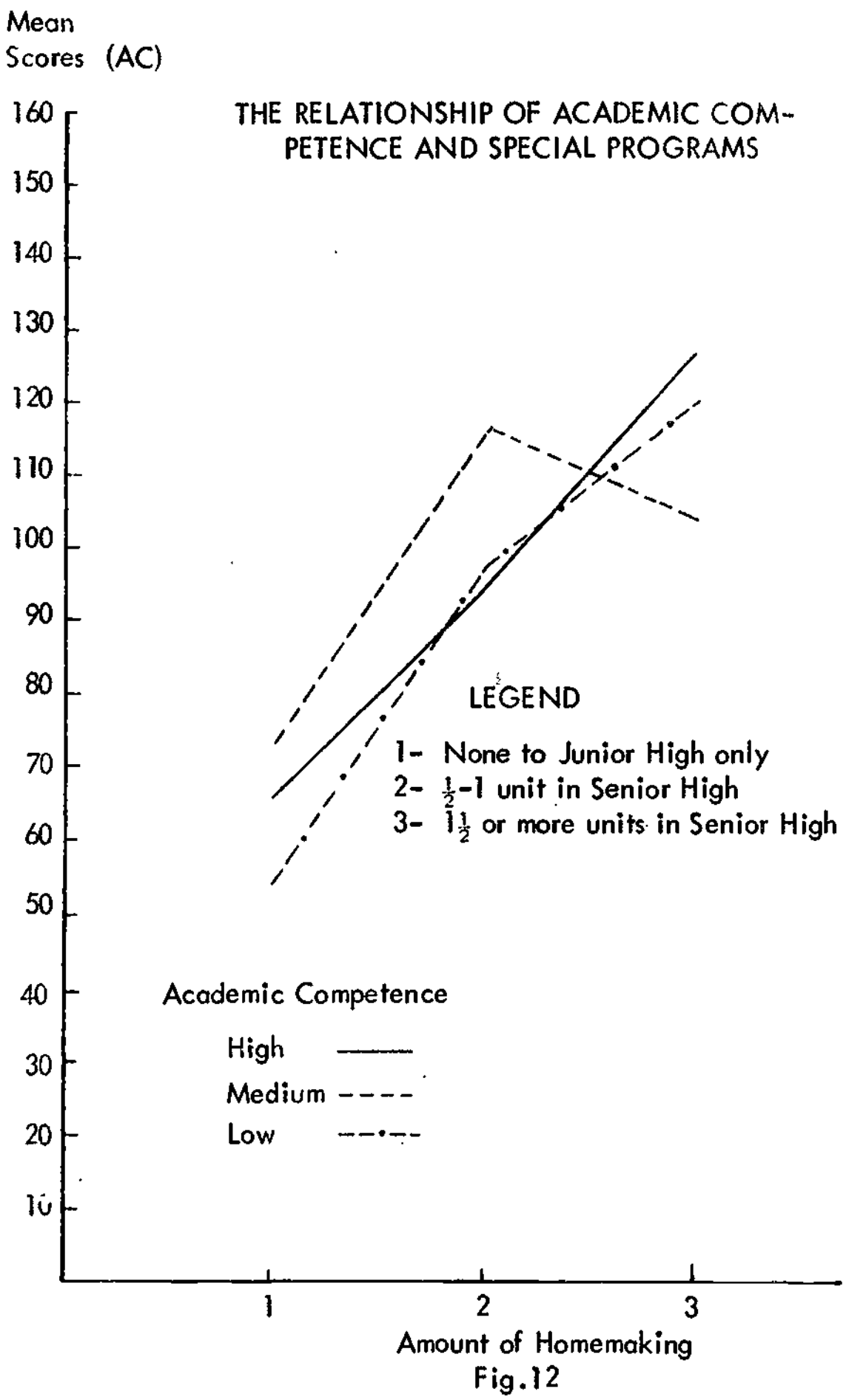

THE RELATIONSHIP OF ACADEMIC COMPETENCE AND SPECIAL PROGRAMS
Mean Scores (AC)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
LEGEND
1- None to Junior High only
2- ½-1 unit in Senior High
3- 1½ or more units in Senior High
Academic Competence
High
Medium
Low
1
2
3
Amount of Homemaking

Fig.12

THE RELATIONSHIP OF ACADEMIC COMPETENCE AND AMOUNT OF HOMEMAKING FOR THE TOTAL SAMPLE OF GENERAL AND SPECIAL PROGRAMS

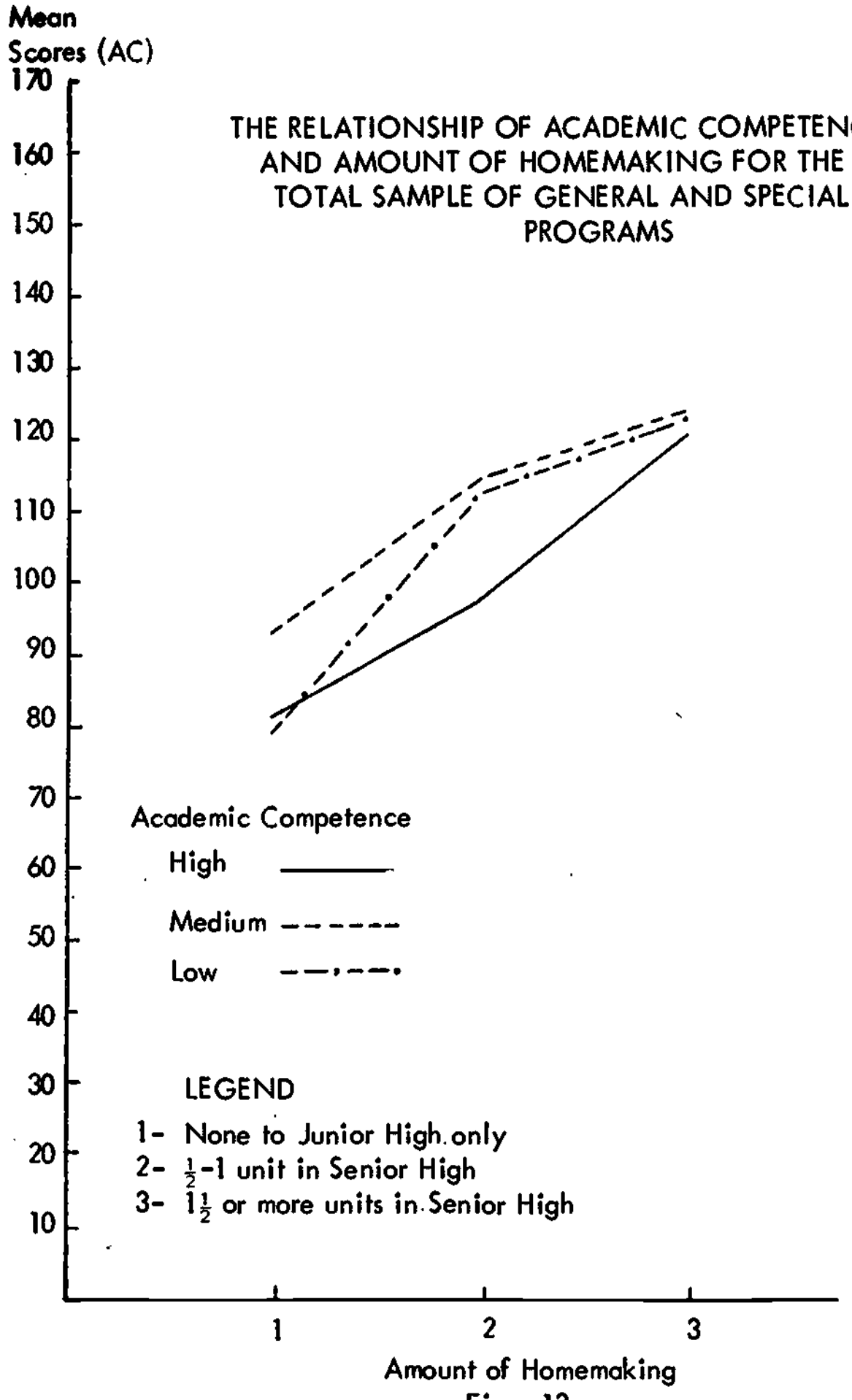
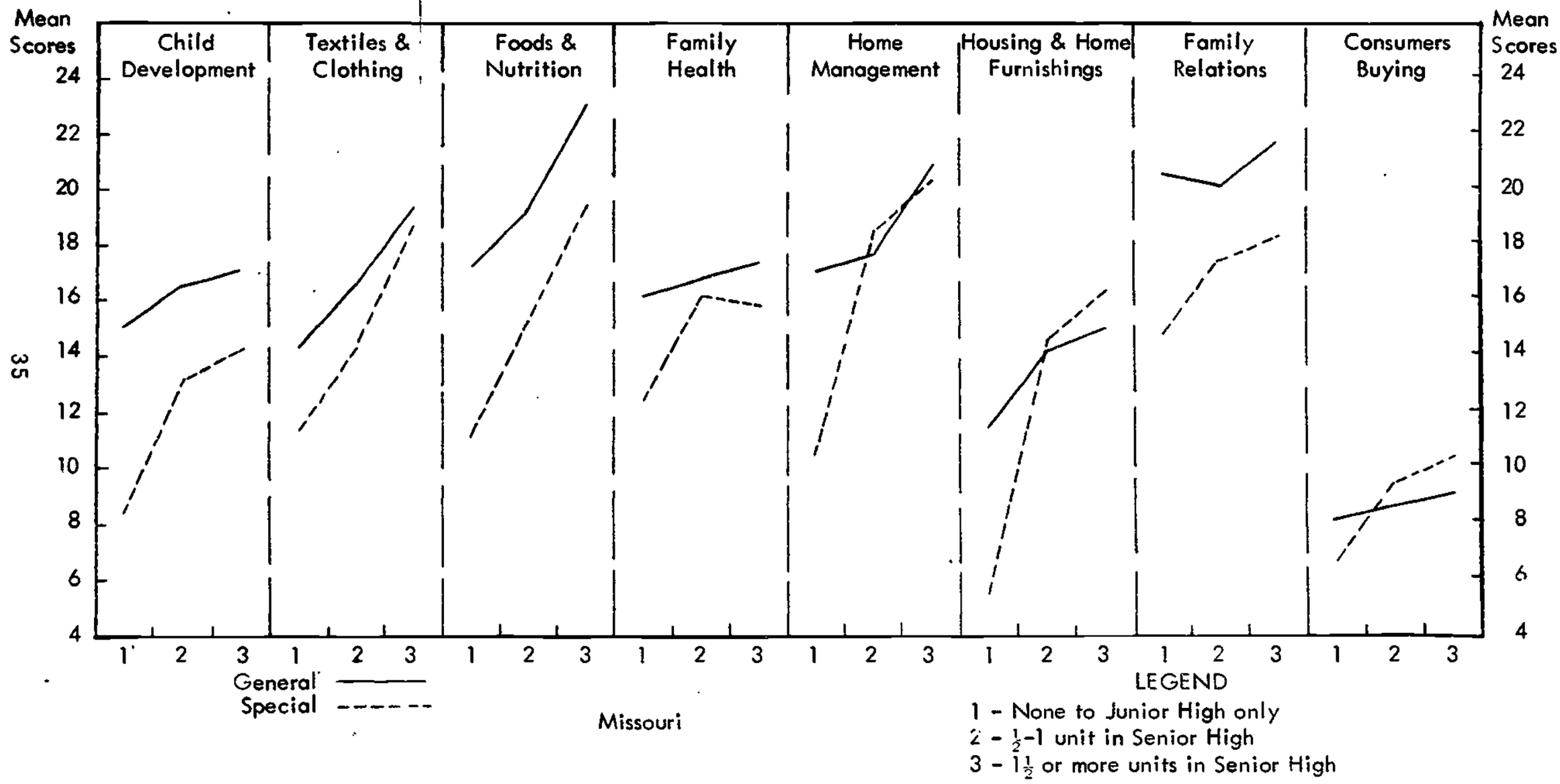
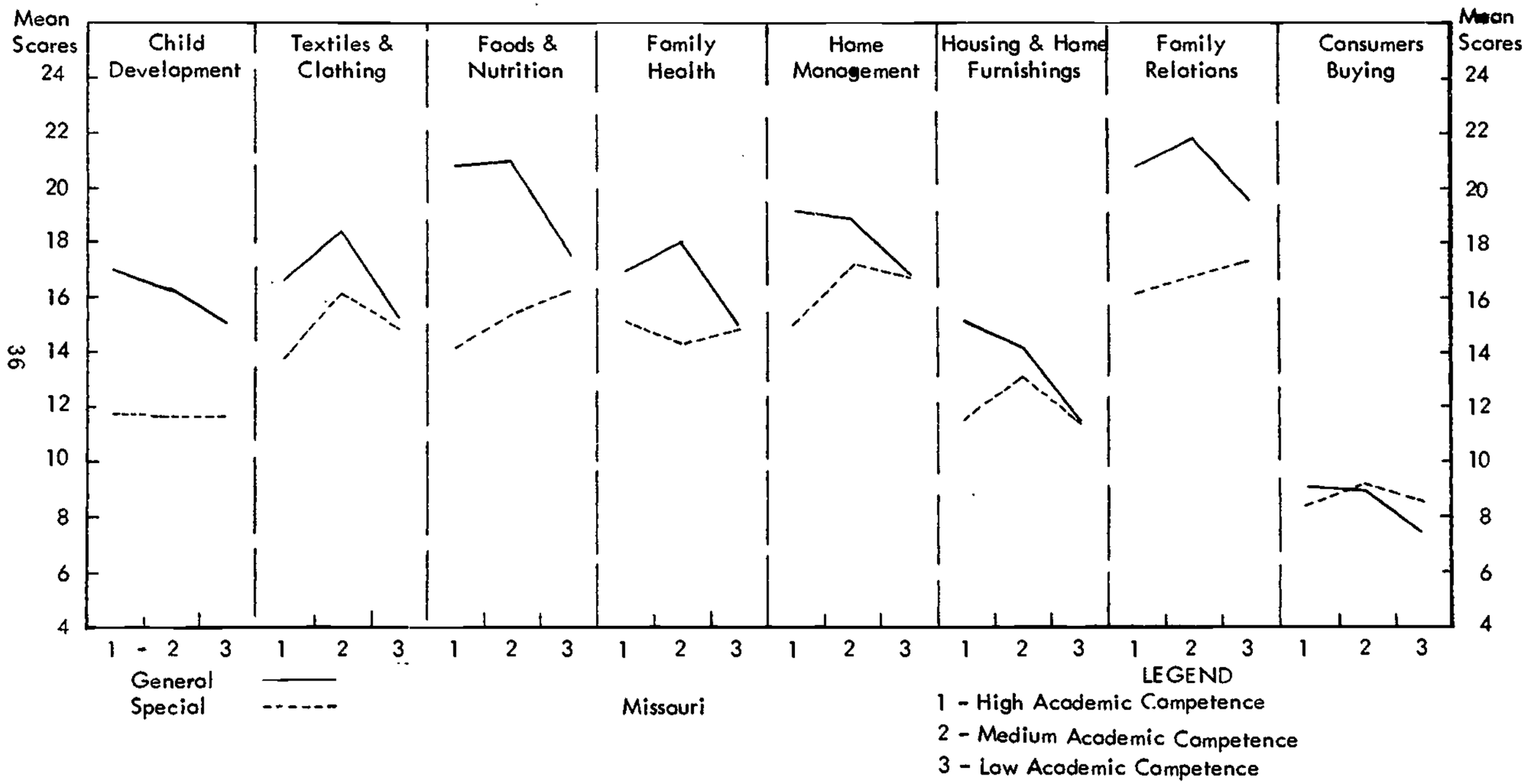


Fig. 13



MEAN SCORES FOR STUDENTS IN GENERAL AND SPECIAL PROGRAMS AT THREE LEVELS OF HOMEMAKING--ACADEMIC COMPTENCE HELD

Fig. 14



MEAN SCORES FOR STUDENTS IN GENERAL AND SPECIAL PROGRAMS AT THREE ACADEMIC COMPETENCE LEVELS--AMT. HOMEMAKING HELD CONSTANT

Fig. 15

In terms of attitudes toward help received in the various areas of home economics, Figure 16 indicates that the range of mean scores is almost identical for the first and third level of homemaking for both the students of mothers working and the students of mothers not working.

In Figure 17 the range pattern of mean scores at the three socio-economic levels for girls with mothers working is similar in four areas of home economics, family health, home management, family relations, and housing and home furnishings. There is a sharp increase in the mean scores in the area of clothing and textiles, a decrease in mean scores in the consumer buying area and a very small increase in mean scores in the area of child development. All of the mean scores for girls with mothers not working indicate a similar pattern, that is, an increase in mean scores (from high to low socio-economic status) with the exception of scores in the area of consumer buying.

In this area there is not an increase in mean scores. In fact, they show a drop at the third socio-economic level after showing an increase at the second level of socio-economic status.

As noted in Figure 18 with students of working and non-working mothers, the pattern range of mean scores at the three levels of homemaking indicates a similarity between these two groups in three areas of home economics, foods and nutrition, housing and home furnishings and family relations.

In the group of students with working mothers there is a noted increase in the mean scores in the child development area at the third level of homemaking. A sharp increase in mean scores at the third level of homemaking is also found in food and nutrition and the clothing and textiles area. In home management and the housing and home furnishings areas the range of mean scores is quite similar at the three levels of homemaking.

With the exception of family health and consumer buying there is an increase in mean scores at all levels of homemaking within the group of students with mothers not working. A slight decrease in mean scores is found at the second level of homemaking in the area of family health while in the area of consumer buying there is a slight decrease in mean scores at the third level of homemaking.

Figures 19 and 20 show a comparison made between the senior high school girls with mothers working and those with mothers not working considering their socio-economic status and the amount of homemaking the girls have had.

Looking at Figure 19 we see the comparison of the three socio-economic status levels of students with working mothers. The pattern of mean scores is not too different for the three levels of homemaking of the three socio-economic status groups. Each socio-economic status group indicates an increase in scores for each level of homemaking. The mean scores for the medium socio-economic status group are higher at the second level of homemaking than the low socio-economic status group, but lower at the third level of homemaking.

As found in Figure 20 with mothers not working the high and medium socio-economic status groups indicate an increase in mean scores at the second level of homemaking. All scores from the three socio-economic levels show an increase from the second to the third level of homemaking. The low socio-economic status group has the highest score at the first level of homemaking but shows some decided decrease at the second level of homemaking.

THE RELATIONSHIP OF MOTHERS WORKING AND NOT WORKING AND AMOUNT OF HOMEMAKING

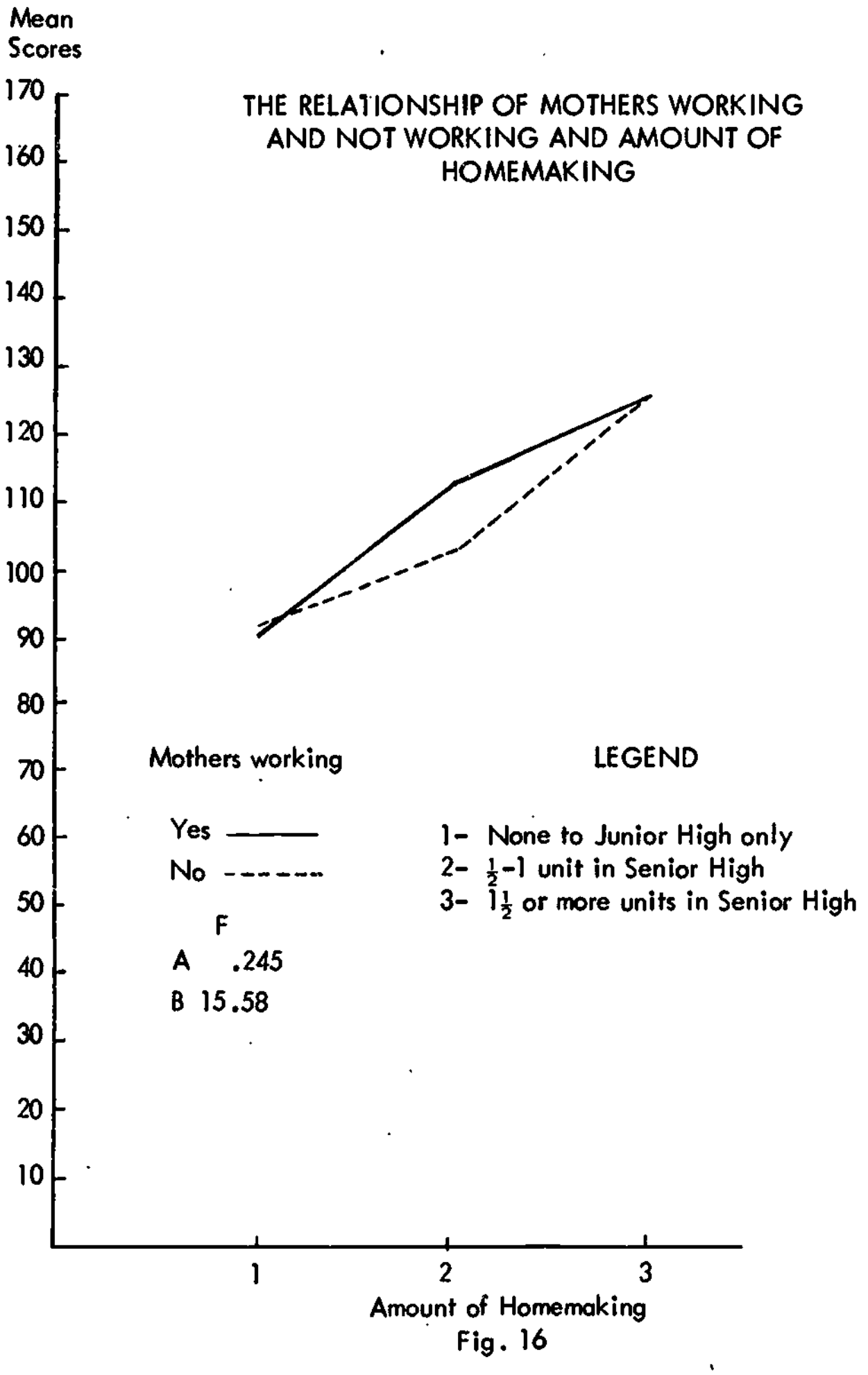
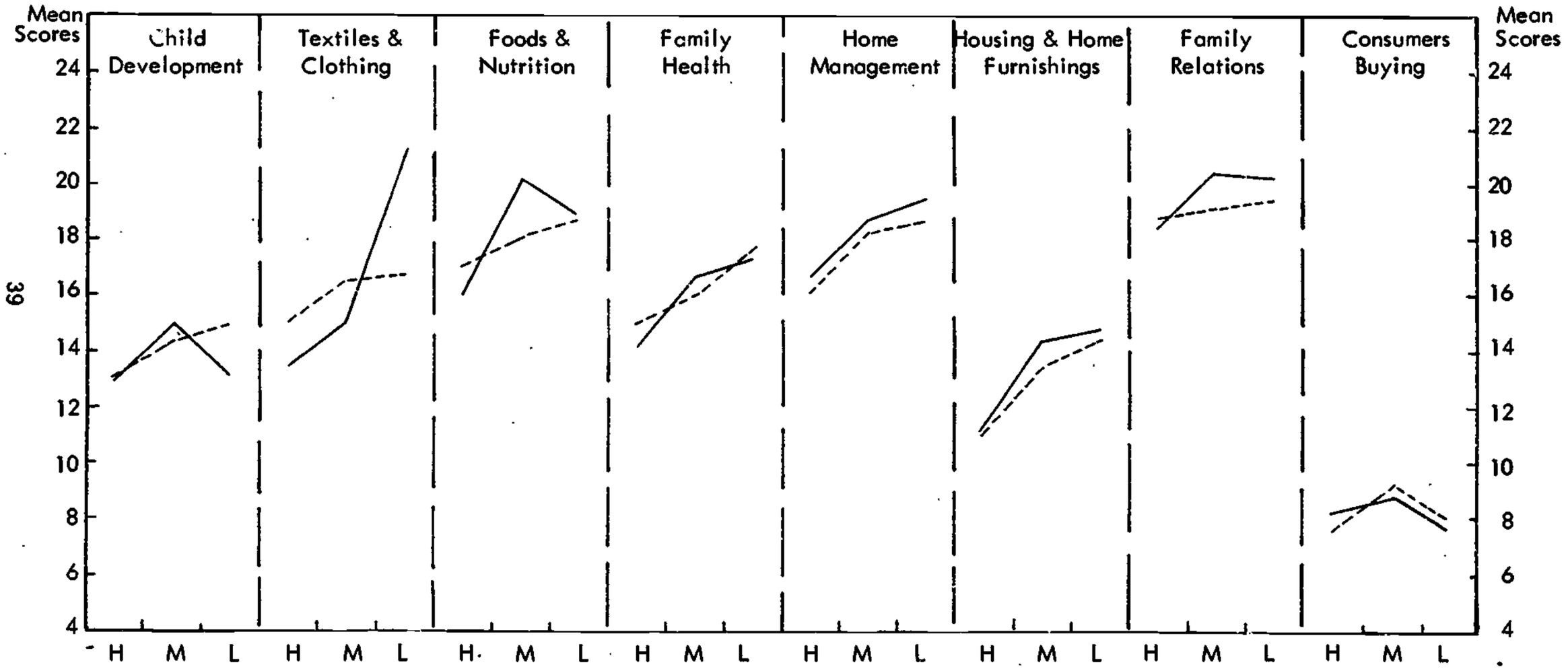
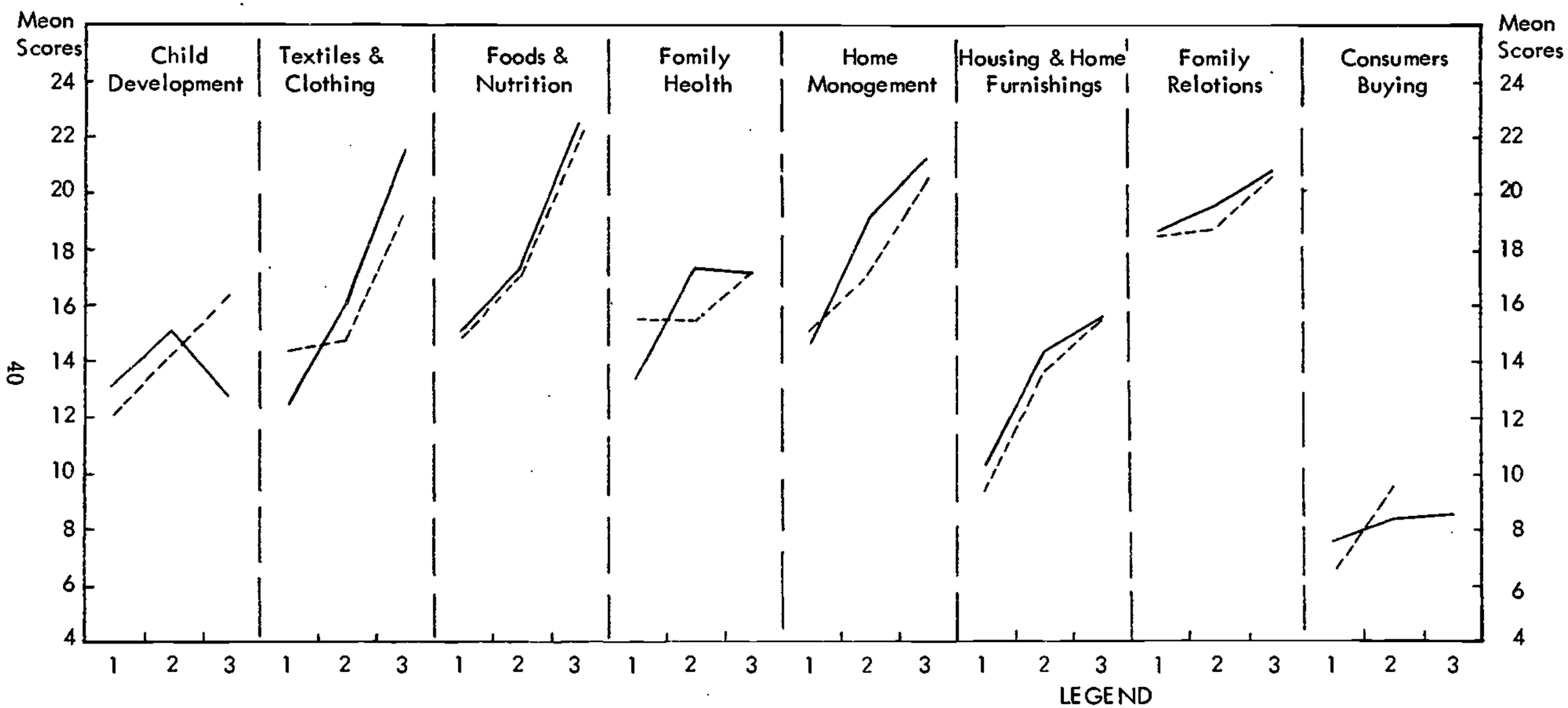


Fig. 16



MEAN SCORES FOR STUDENTS WITH MOTHERS WORKING OR NOT WORKING AT THREE SOCIOECONOMIC LEVELS--AMOUNT OF HOMEMAKING HELD

Fig. 17



Missouri

MEAN SCORES FOR STUDENTS WITH MOTHERS WORKING OR NOT WORKING AT THREE LEVELS OF HOMEMAKING--SES HELD CONSTANT

Fig. 18

THE RELATIONSHIP OF MOTHERS WORKING AND SOCIOECONOMIC STATUS

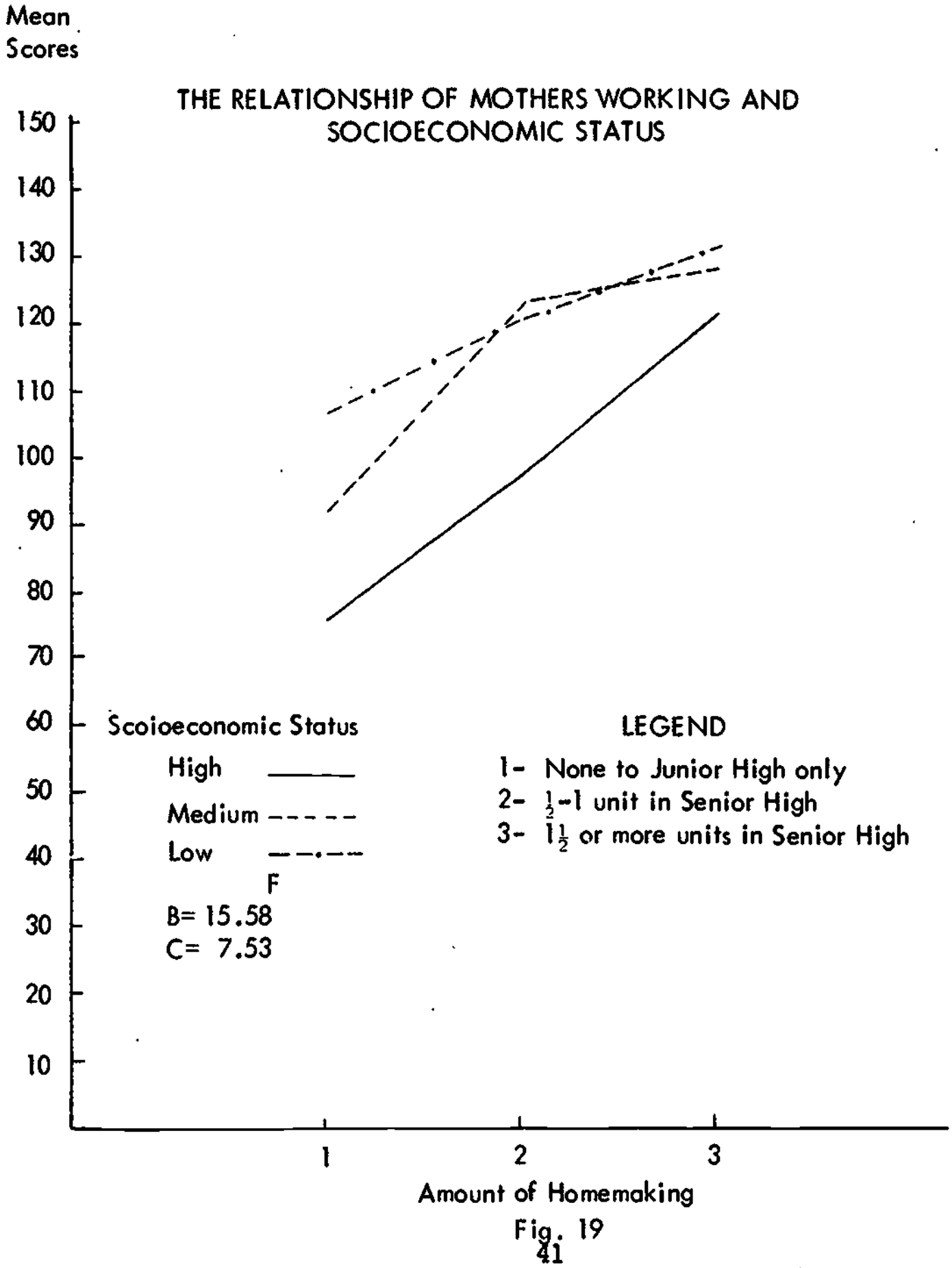


Fig. 19

THE RELATIONSHIP OF MOTHERS NOT WORKING AND NOT WORKING AND SOCIOECONOMIC STATUS

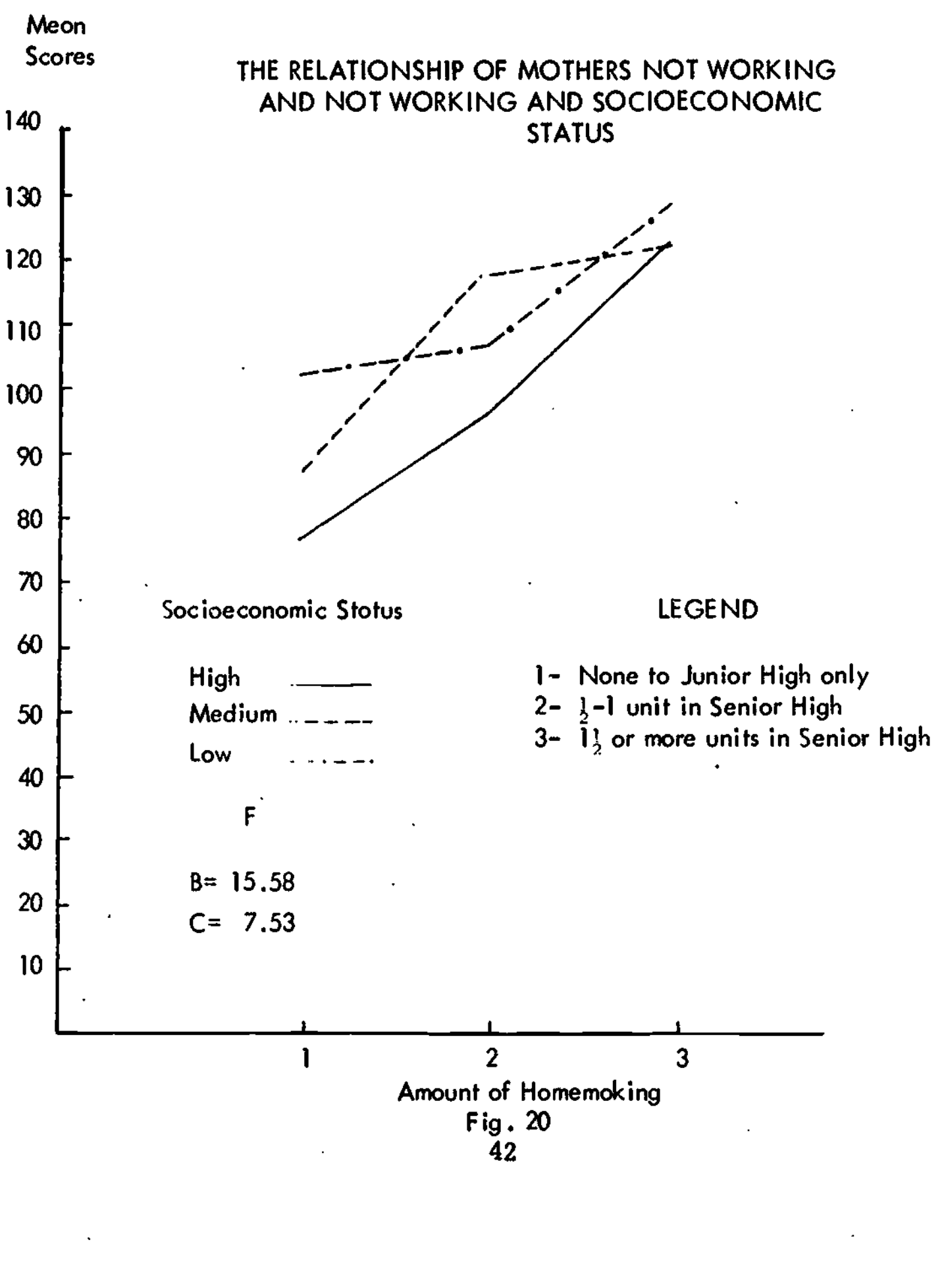


Fig. 20

Help Desired

According to Figure 21 the mean scores for all three levels of homemaking for the students in the special program are higher than those of the students in the general program.

At the third level of homemaking in the special program the scores indicating desire for help are lower than at the other two levels, whereas the students in the general program indicate a desire for only slightly less help at the third level than at the second level.

In the comparison of the two types of programs (Figure 22) with the socio-economic status held constant, a different pattern is observed. A steady decrease in mean scores is noted in the general program as the socio-economic levels decrease, while mean scores for all levels are lower than the mean scores at each of the three levels in the special program. A slight increase in mean scores is noted at the lower level in the special program.

In the comparison of the three socio-economic status groups, (Figure 23) in the general program, a wide variation of mean scores is found at the first two levels of homemaking with a very close similarity in mean scores at the third level. There is an increase in mean scores at each of the three levels of homemaking for the low socio-economic group. The high socio-economic status group has higher mean scores at the second level than the other two socio-economic groups, however, the scores for the high socio-economic status students are about the same at both the first and third levels of homemaking.

In the special program (Figure 24) the mean scores of the high socio-economic status group indicate an increasing desire for help at the three levels of homemaking while the middle socio-economic group indicate a decreasing desire for help. The low socio-economic status group indicate a marked increase in mean scores at the second level followed by a marked decrease in mean scores at the third level. The mean scores are higher for the high socio-economic group than the other two status groups at the third level of homemaking.

Figure 25 shows the comparison of the three levels of academic competence in the general program. The high level of academic competence indicates a steady increase in mean scores at the three levels of homemaking. The medium level of academic competence indicates a greater desire for help at the second level of homemaking than at either of the other two levels of homemaking. However, at the third level of homemaking the medium academic competence group indicate a desire for more help than at the first level of homemaking. The low academic competence group has lower mean scores at the second level than at the first level of homemaking, and at the third level the mean scores for the low academic competence group is not as high as at the first level of homemaking.

As indicated in Figure 26 the pattern of mean scores in the special program is markedly different than the pattern in the general program. The medium academic competence group has an inverse pattern of mean scores as compared to the same group in the general program. Both of the other two academic competence groups show a marked increase in mean scores at the second level but a drop at the third level of homemaking. However, for the low academic competence group the score for this group is still greater at the third level of homemaking than it is at the first level of homemaking.

In Figure 27 the high socio-economic status group of students with mothers working shows an increase in mean scores at each level of homemaking. The medium socio-economic group takes a sharp drop in mean scores at the second level of homemaking. The low socio-economic status group shows a marked increase in mean scores at the second level with only a slight drop at the third level of homemaking.

THE RELATIONSHIP OF WISHING FOR MORE HELP AND GENERAL AND SPECIAL PROGRAMS

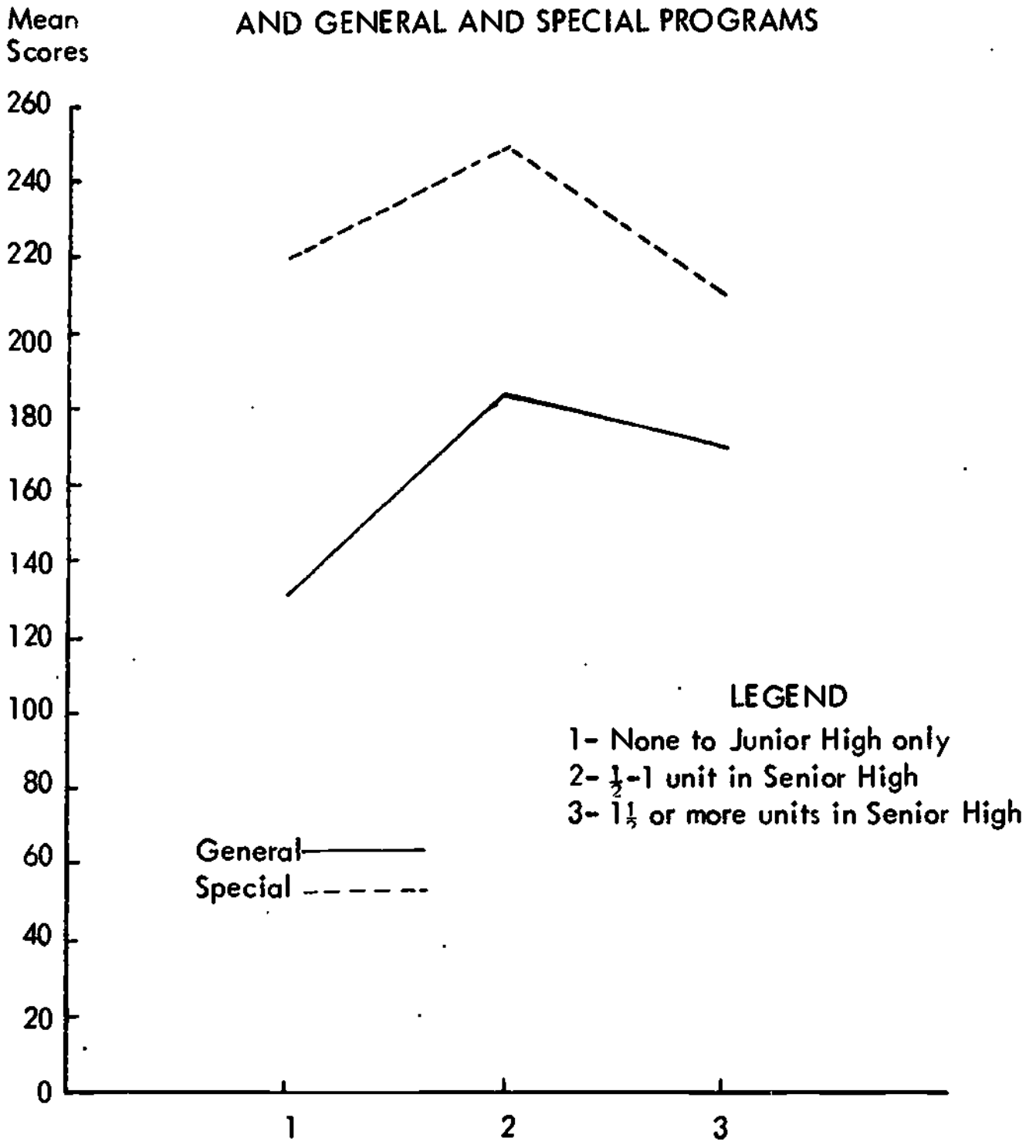


Fig. 21

THE RELATIONSHIP OF WISHING FOR MORE HELP
AND SOCIOECONOMIC STATUS IN GENERAL
AND SPECIAL PROGRAMS

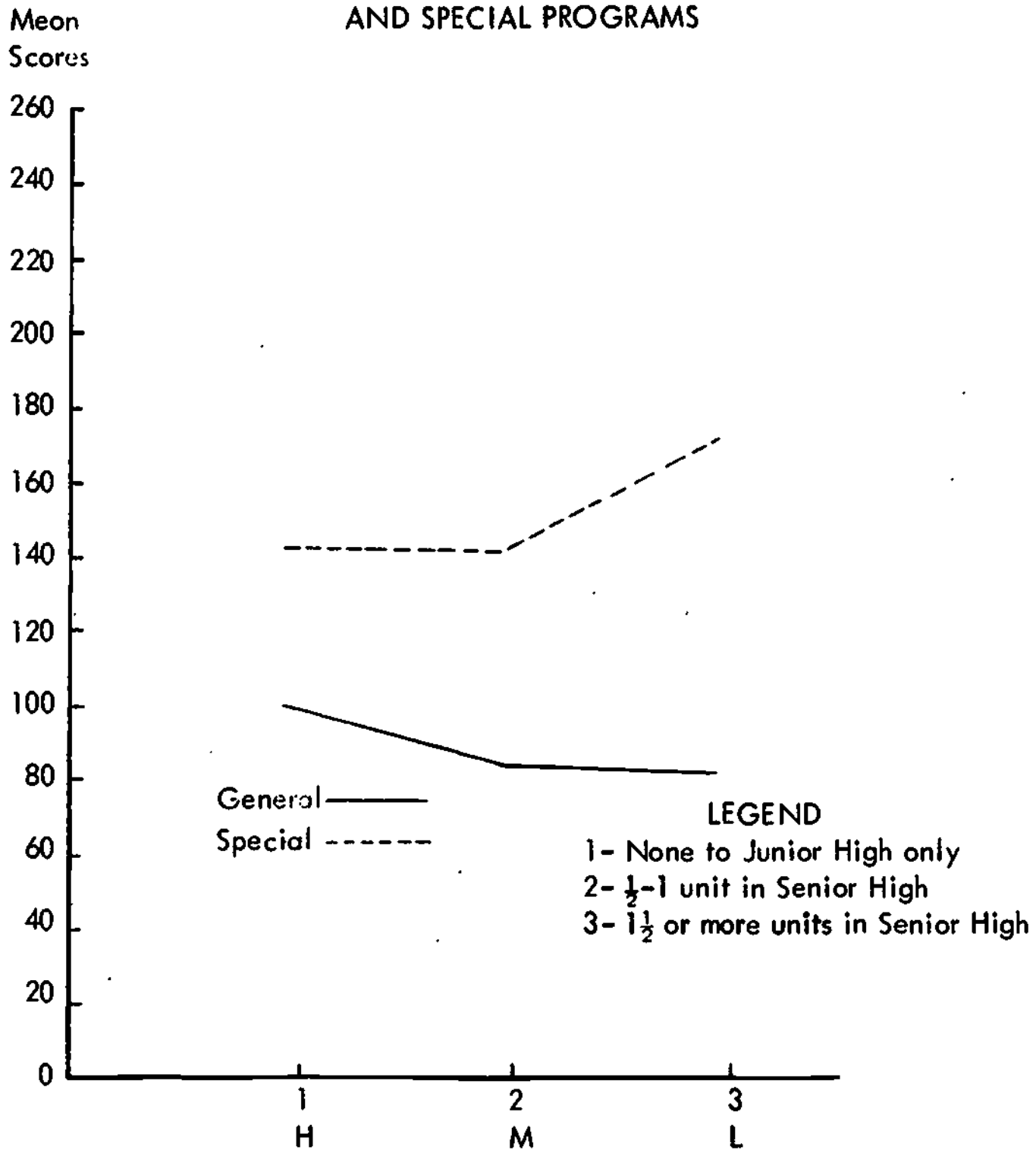


Fig. 22

THE RELATIONSHIP OF WISHING FOR MORE HELP AND SOCIOECONOMIC STATUS IN GENERAL PROGRAMS

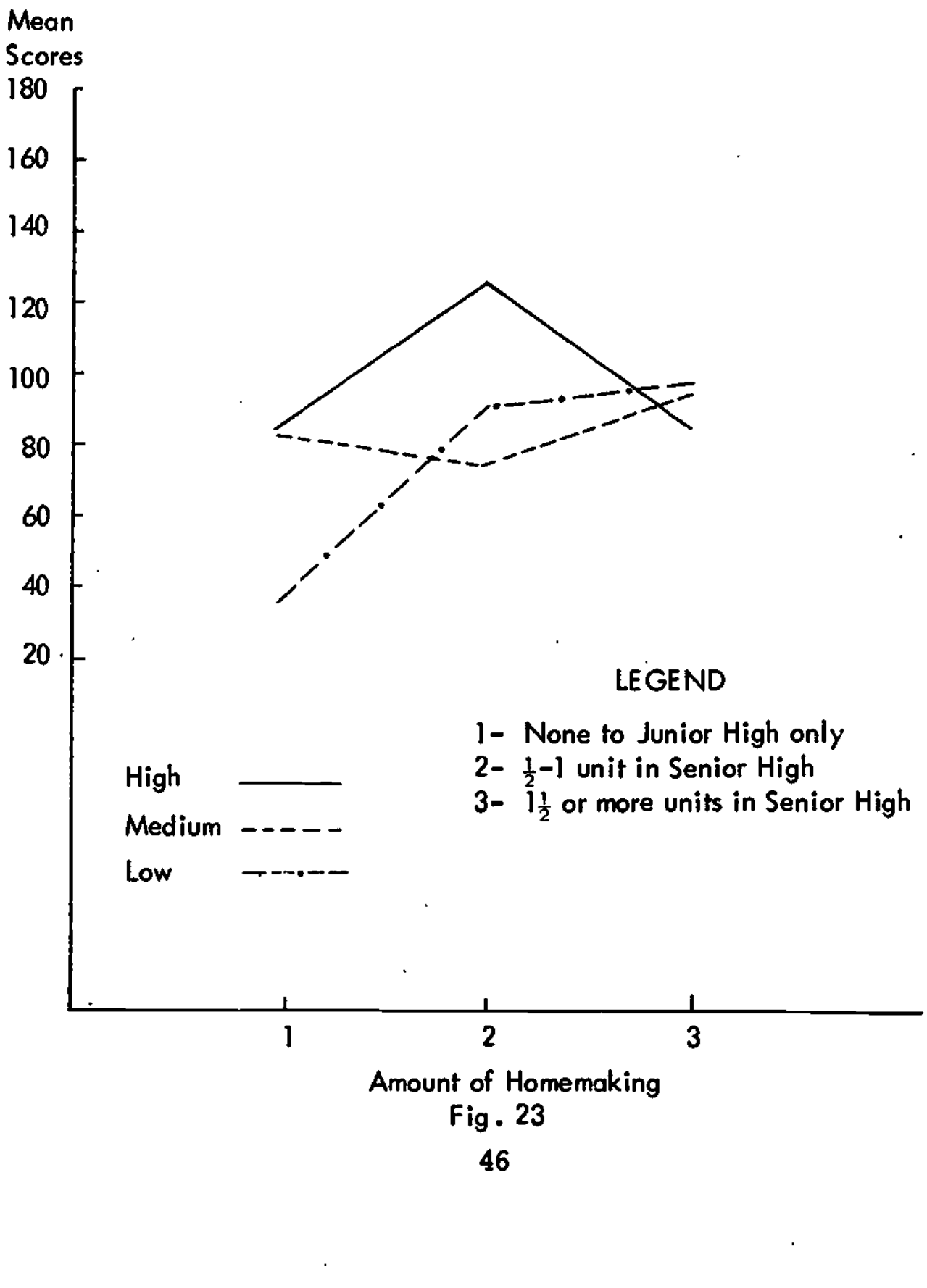


Fig. 23

THE RELATIONSHIP OF WISHING FOR MORE HELP AND SOCIOECONOMIC STATUS IN SPECIAL PROGRAMS

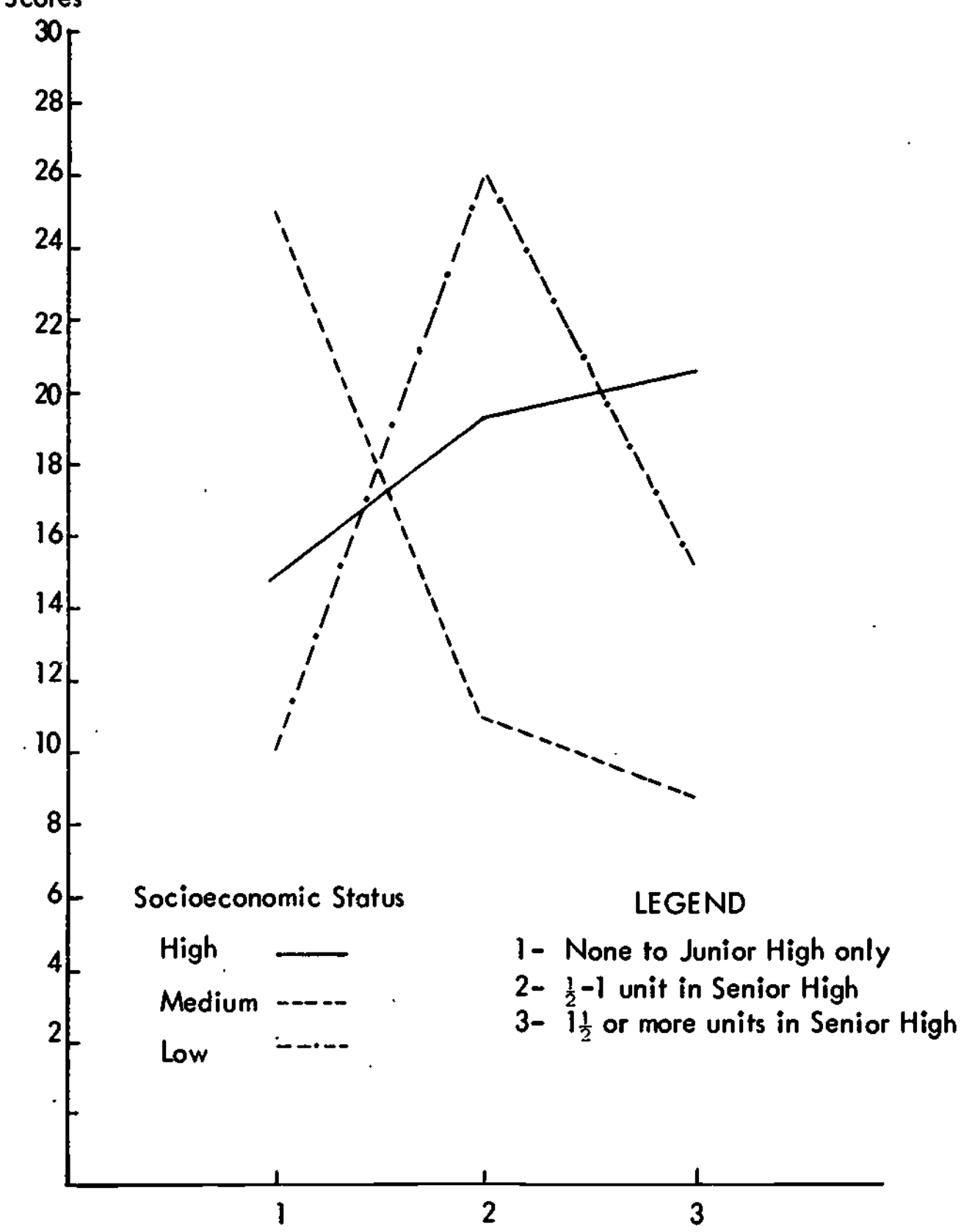


Fig. 24

THE RELATIONSHIP OF WISHING FOR MORE HELP AND ACADEMIC COMPETENCE IN GENERAL PROGRAMS

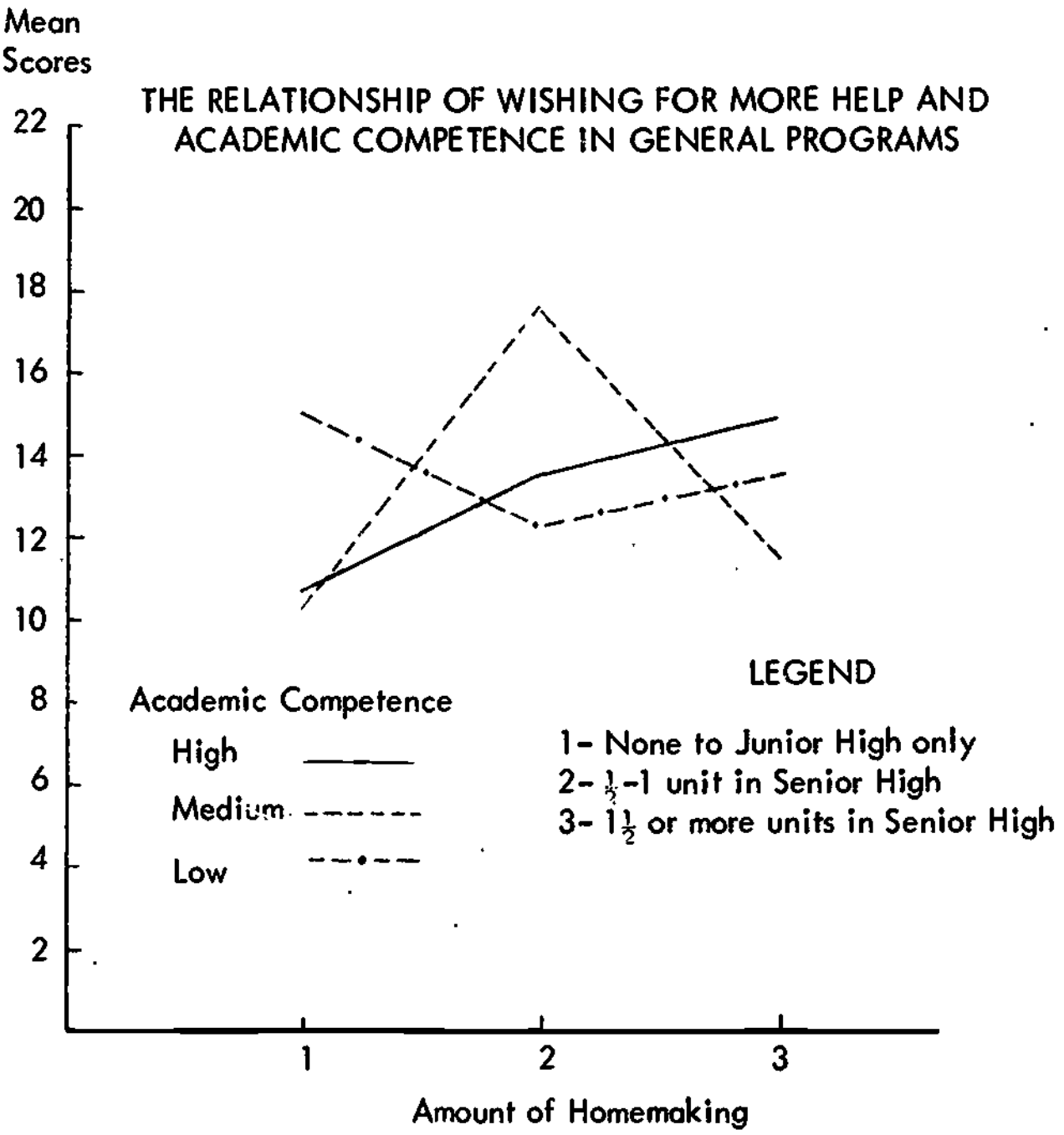


Fig. 25

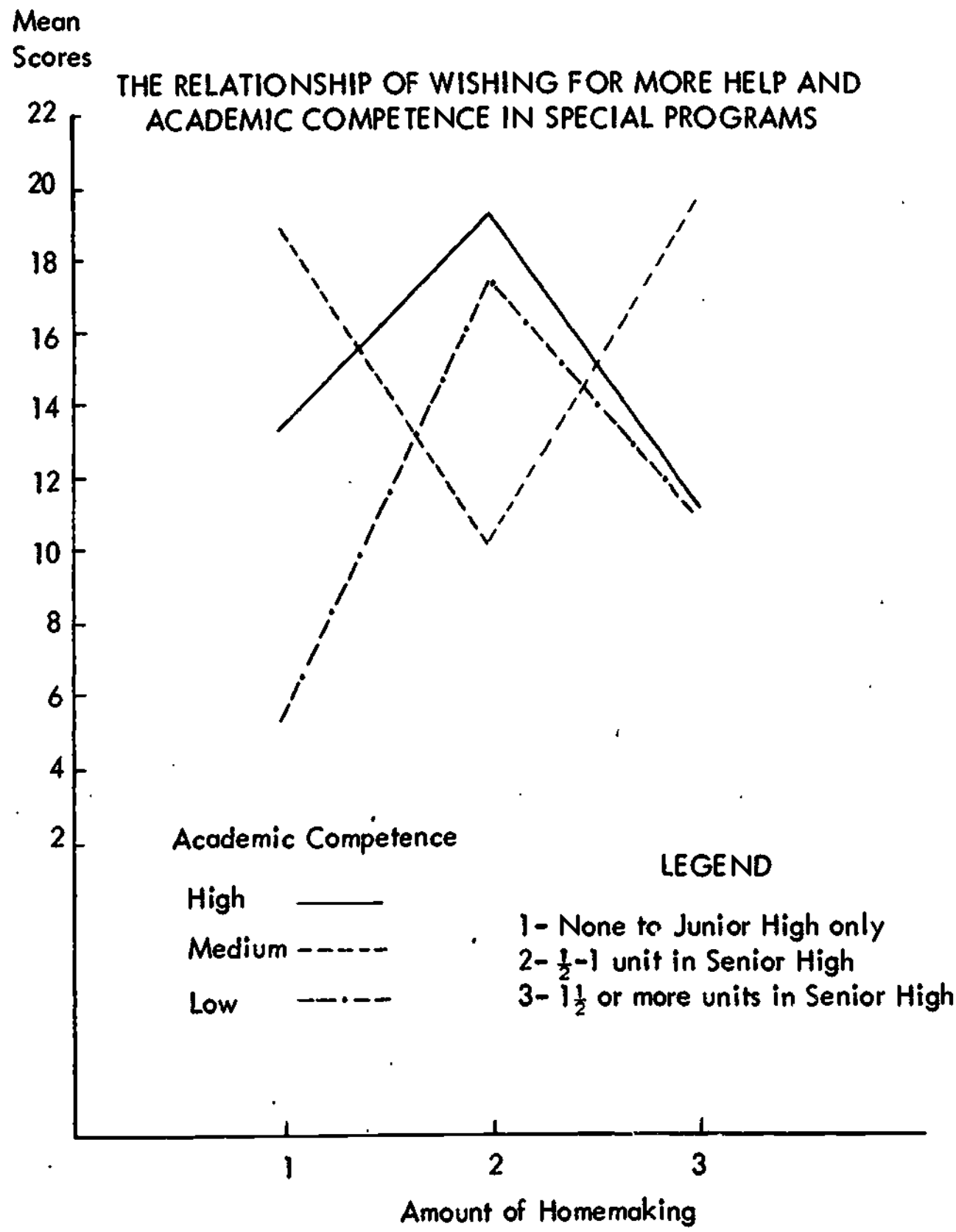
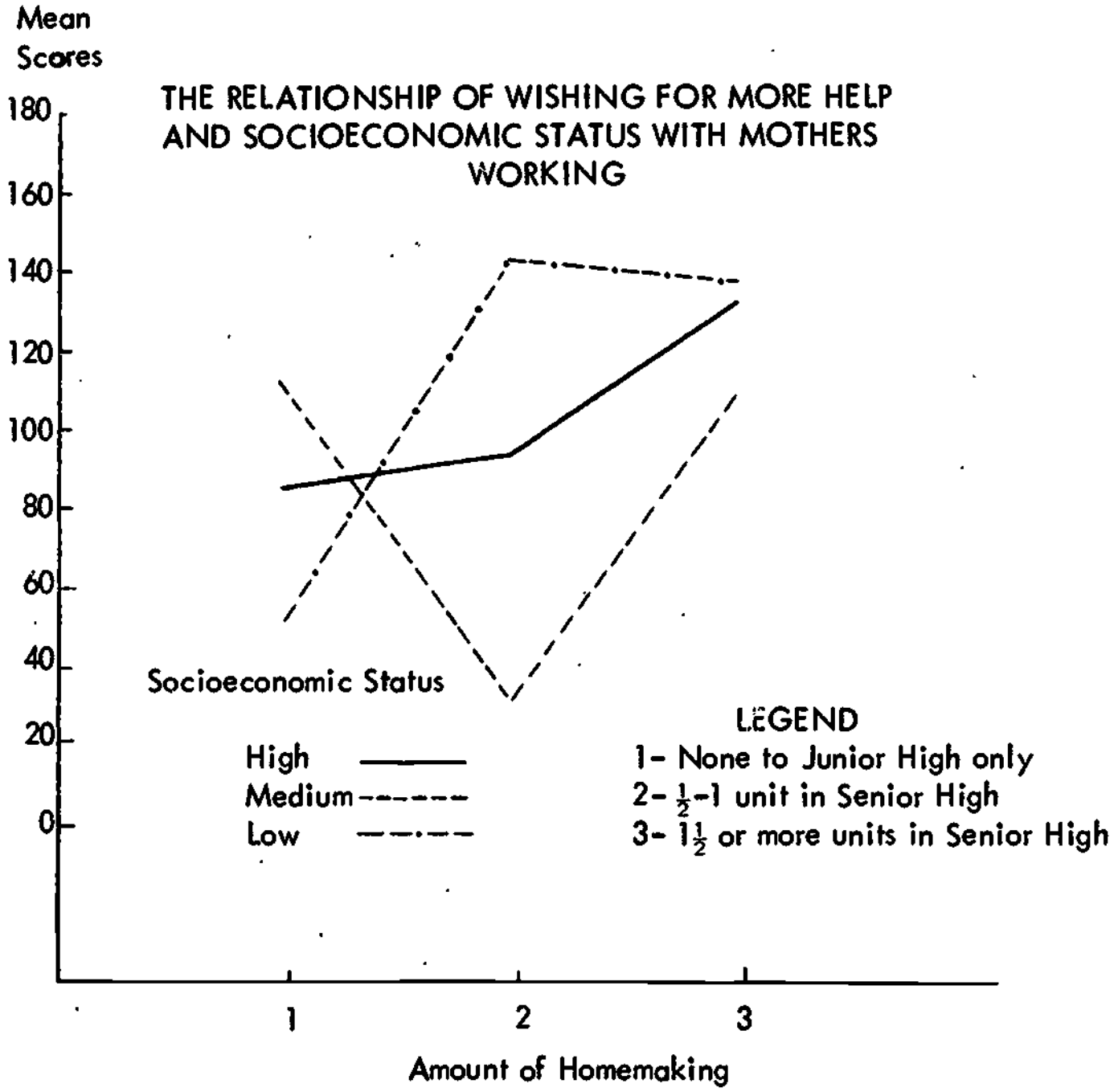

Mean Scores
THE RELATIONSHIP OF WISHING FOR MORE HELP AND ACADEMIC COMPETENCE IN SPECIAL PROGRAMS
22
20
18
16
14
12
10
8
6
4
2
Academic Competence
High
Medium
Low
LEGEND
1- None to Junior High only
2- ½-1 unit in Senior High
3- 1½ or more units in Senior High
1
2
3
Amount of Homemaking

Fig. 26



THE RELATIONSHIP OF WISHING FOR MORE HELP AND SOCIOECONOMIC STATUS WITH MOTHERS WORKING

Fig. 27

In Figure 28 the high socio-economic status group of students with mothers not working shows an increase in mean scores at the second level of homemaking but a sharp drop at the third level of homemaking. The medium socio-economic status group of students indicates a steady decrease in mean scores from the first through the third level of homemaking. The low socio-economic group of students with mothers not working indicates an increase in desire for help at the second level and a marked decrease at the third level. All socio-economic groups with mothers not working indicate less desire for help at the third level of homemaking.

Future Plans

Figures 29 and 30 show a relationship between future plans and amount of homemaking. The reader will recall that the three future plan categories were as follows: plans to enter two or four year college and expects employment in a high level occupation; plans not to enter college and expects employment in a low level occupation; inconsistent—plans for college plus low level occupation or plans for no college plus high level occupation.

In the general program, as shown in Table 5 the number of students indicating a desire for college and a high level occupation decreases at the second and third levels.

Table 5. Future Plans of Senior Girls in Missouri Who Reported Having Taken Varying Amounts of Home Economics In Senior High School

Program	Level Homemaking	College and Employment High Level		No College Employment Low Level		Inconsistent	
		No.	Percent	No.	Percent	No.	Percent
General	1	27	41%	26	31%	8	19%
	2	22	33%	30	36%	21	50%
	3	17	26%	28	33%	13	31%
Special	1	57	63%	11	24%	9	33%
	2	30	33%	21	46%	12	45%
	3	4	4%	14	30%	6	22%

The number of students in the general program indicating "no college and a low level occupation" increases at the second level with only a slight decrease in number at the third level of homemaking. The number of students in the general program indicating "no college" in their future plans increases at the second and third levels of homemaking. Those students who are inconsistent in their future plans show a marked increase in number at the second level of homemaking.

In the special program there is a decided decrease at both the second and third levels of homemaking in the number of students including "college and high level occupation" in their future plans. There are fewer students at the third level of homemaking than at the second level

THE RELATIONSHIP OF WISHING FOR MORE HELP AND SOCIOECONOMIC STATUS WITH MOTHERS NOT WORKING

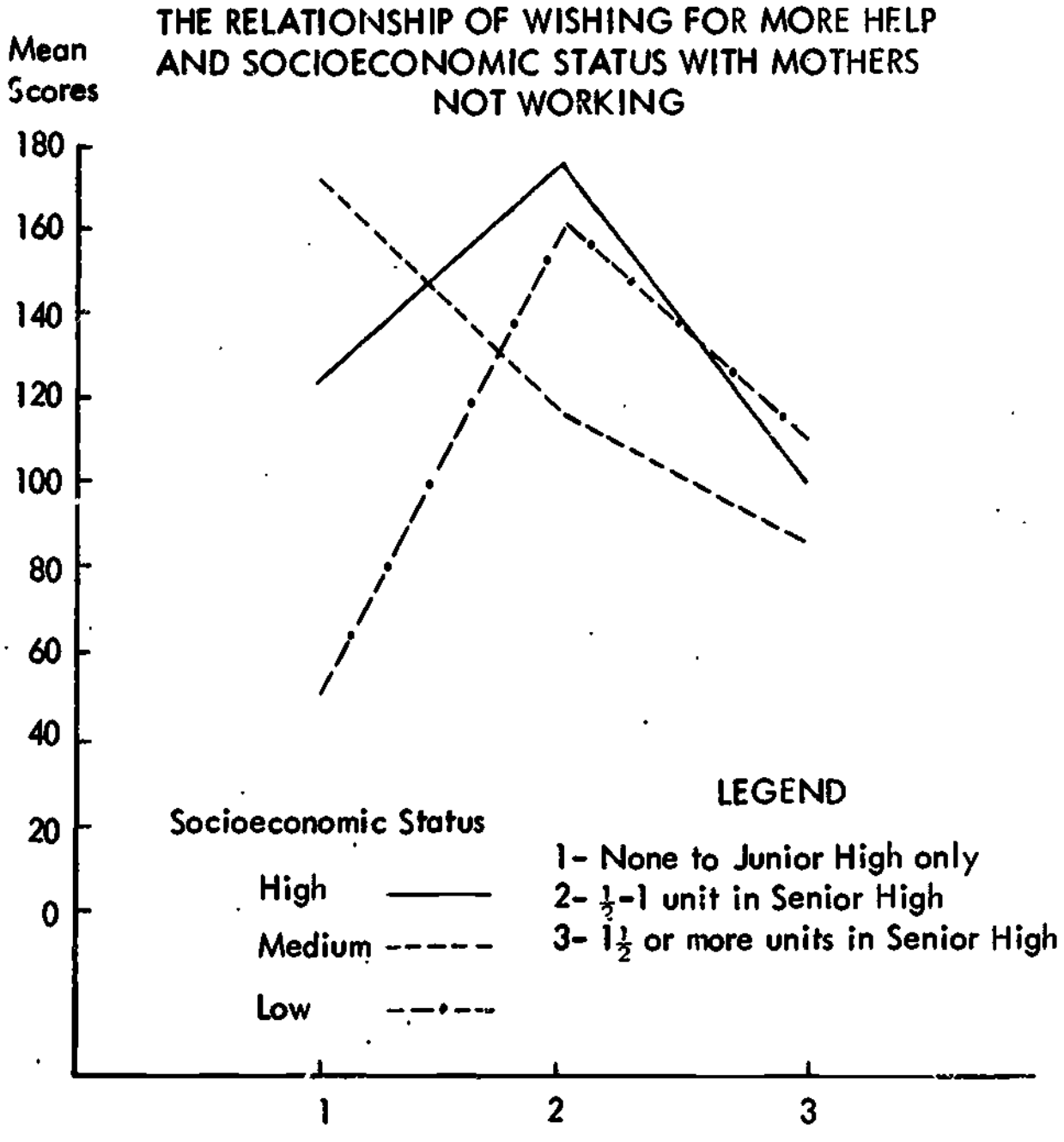


Fig. 28

THE RELATIONSHIP OF DESIRE FOR HELP BY SENIOR GIRLS AND THEIR FUTURE PLANS AS THEY ELECT DIFFERENT AMOUNTS OF HOME-MAKING IN THE GENERAL PROGRAMS

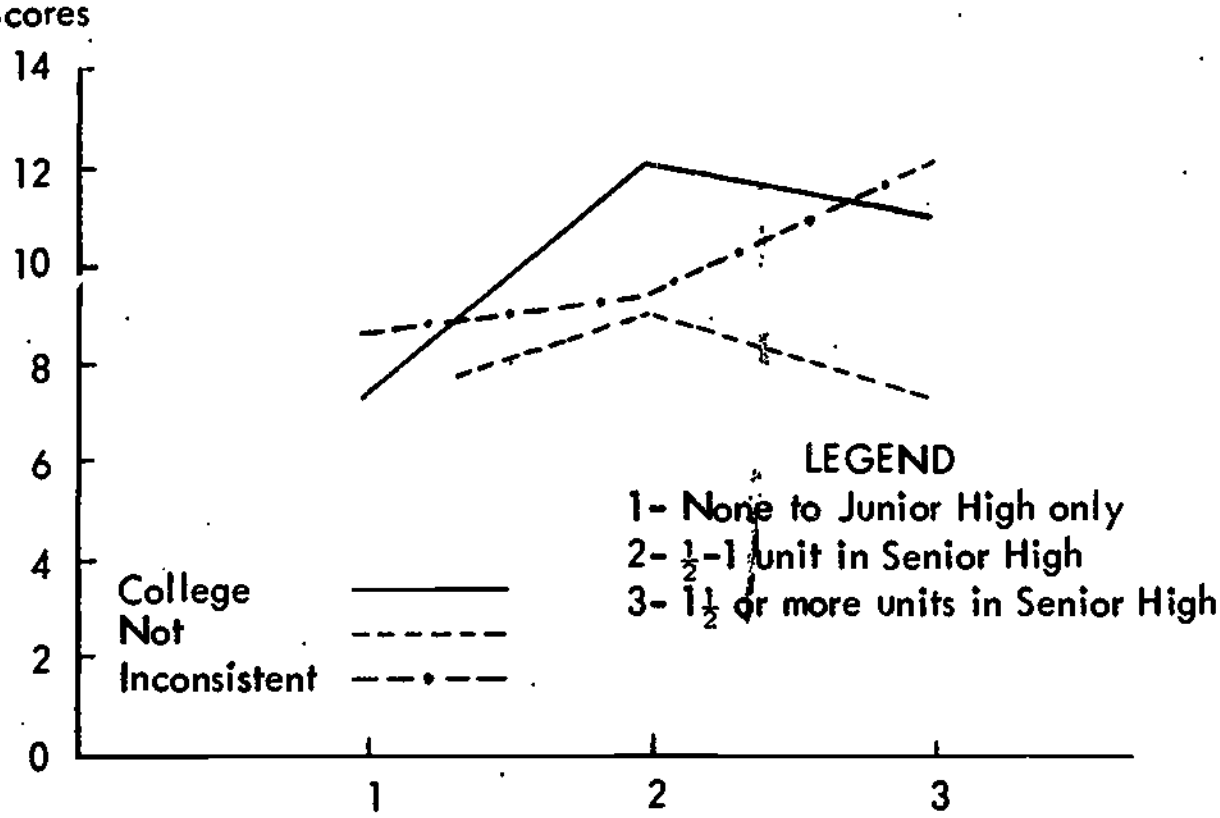


Fig. 29

THE RELATIONSHIP OF DESIRE FOR HELP BY SENIOR GIRLS AND THEIR FUTURE PLANS AS THEY ELECT DIFFERENT AMOUNTS OF HOMEMAKING IN THE SPECIAL PROGRAMS

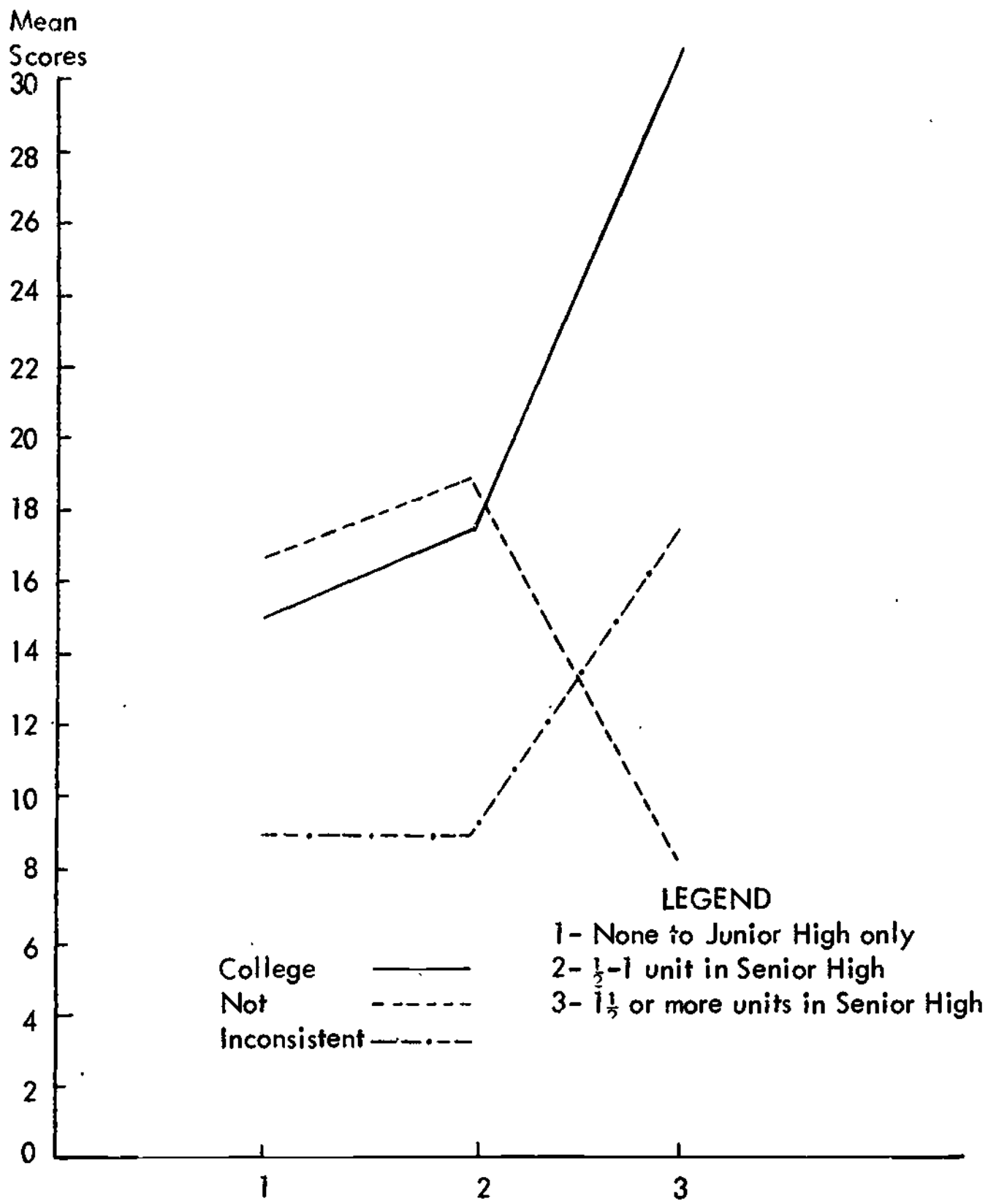


Fig. 30

of homemaking who have indicated "no college and a low level occupation" in their future plans. At the third level there are more students indicating "no college" in their future plans than there are at the first level of homemaking in the special program.

There is a decrease in number of students indicating "college and a high level occupation" at both the second and third levels of homemaking in the general and in the special programs. In both programs there is an increase in number of students at the second level of homemaking indicating "no college and a low level occupation" in their future plans.

Figures 29 and 30 show the relationship of desire for help by the senior girls and their future plans as they elect different amounts of homemaking in the general and special programs, respectively. The number of girls at the third level of homemaking in the special program doesn't appear to be realistic in terms of influencing the apparent high mean scores for this group "going to college and seeking a high level occupation." The inconsistent group desires more help in the special program at the third level of homemaking than does the same type group in the general program. This inconsistent group shows an increase in mean scores, that is needing more help, in both programs and at each succeeding level of homemaking.

Patterns of Courses in Homemaking in the Sample Special Programs

Looking at Table 6 we note that the twenty-eight girls in this school taking one half to one unit of homemaking report taking course work in three areas, personal and family relationships, food and nutrition, and clothing and textiles. The eleven girls taking 1 1/2 to two units of homemaking have as a group taken courses in four areas of homemaking. Of these eleven, five girls have had clothing and textiles, five girls have had some food and nutrition, four girls have had some course work in family health and nine girls have had some course work in personal and family relationships. The three girls taking two or more units of homemaking have had course work in four areas of homemaking. All have had course work in clothing and textiles and food and nutrition. Two have had course work in personal and family relationships and one has had course work in family health. None of the girls in this situation have had course work in child development, home furnishings and equipment, management or consumer economics.

Looking at Table 7 we find that the forty-five girls taking one half to one unit of homemaking reporting have taken course work in four areas. Of these forty-five, nineteen girls have had course work in textiles and clothing. Eight girls have had course work in food and nutrition. Four girls have had course work in family health and twenty-two girls have had course work in management. There are eleven girls in this situation who have taken one and a half to two units of homemaking. All of these girls have had course work in textiles and clothing. Five of these girls have had work in food and nutrition. Ten of these girls have had course work in management. All three of the girls taking two or more units of homemaking have taken course work in clothing and textiles, food and nutrition and management. None of the girls enrolled in this particular school situation have had course work in child development, home furnishings and equipment, personal and family relationships or consumer economics.

Analysis on Individual Items for Senior Girls Who had Varying Amounts of Homemaking in General and Special Sample Programs

It might be advisable to look at Tables 8 and 9, the scores on individual items of the instrument to check those which seem to have received the most or least emphasis as indicated by mean scores within each subject matter area. For the girls in both the general program and in the special program the items receiving most emphasis in the child care area are those concerned with "understanding what children are like at different age levels" and "learning the meaning of discipline for children."

Table 6 . PATTERNS OF COURSES IN HOMEMAKING THAT SENIOR GIRLS REPORTED THEY HAD TAKEN IN HIGH SCHOOL

MISSOURI SPECIAL - KIRKWOOD

Units of Hmg	No. of Areas	No. of Girls	AREAS REPORTED (See Code) 1	2	3	4	5	6	7	8	9	10
1/2-1	1	22					x					
	1	4				x						
	1	11		x								
	2	8		x	x							
1 1/2-2	2	6		x			x					
	2	1		x	x							
	3	4		x	x		x					
2+	3	1		x	x		x					

CODE IDENTIFICATION

Identification number	Area
1	Child Development
2	Clothing and Textiles
3	Food and Nutrition
4	Family Health
5	Management
6	Home Furnishing - Equipment
7	P/F Relationships
8	Consumer Economics

Table 7 . PATTERNS OF COURSES IN HOMEMAKING THAT SENIOR GIRLS REPORTED THEY HAD TAKEN IN HIGH SCHOOL
MISSOURI SPECIAL - BEAUMONT

Units of Hmg	No. of Areas	No. of Girls	AREAS REPORTED (See Code) 1	2	3	4	5	6	7	8	9	10
1/2-1	3	24		x	x		x					
	2	18		x	x							
	2	3		x			x					
1 1/2-2	3	3		x			x	x				
	2	3		x				x				
	2	2		x				x				
	2	1		x			x					
	2	1		x	x							
	3	1		x	x			x				
2+	3	1		x	x	x						
	3	1		x	x	x						
	3	1		x	x	x						

CODE IDENTIFICATION

Identification number	Area
1	Child Development
2	Clothing and Textiles
3	Food and Nutrition
4	Family Health
5	Management
6	Home Furnishing - Equipment
7	P/F Relationships
8	Consumer Economics

In both programs the items in clothing and textiles, "Caring for clothing, keeping clean and neat, laundering, mending," "Making clothing" and "Keeping myself well groomed and attractive" have received the major emphasis. The items, "Selecting and buying clothes for myself" and "Planning a wardrobe for myself" show emphasis according to the mean scores for the General Program but not the Special Program.

Items receiving the most emphasis according to mean scores in both programs in the area of food and nutrition include "Cooking food," "Serving food," and "Learning about the food I need each day" and "Being well-mannered at the table and as hostess and guest." Both programs show the least emphasis in "Preserving food by canning, freezing, etc." and "Preparing and serving foods from different countries."

The least emphasis according to mean scores in both the general and special programs for the area of Family Health, include "Planning for and caring for the home medicine chest," "Planning, preparing, and serving food for the sick in the home" and the item "How to care for a child when he is ill."

In the Management area, the mean scores do not show much similarity in emphasis on certain items for both the general and special programs. In the general programs, those items receiving most emphasis according to mean scores are, "Planning together in a family for such things as: use of money, getting work done, sharing in responsibilities," "What it means to be a good home manager for successful family living" and "Planning wise use of my money."

In the special programs, those items receiving most emphasis according to mean scores are, "Learning disadvantages and advantages of buying with cash and on credit (on time)," "Planning wise use of my money" and "Planning convenient kitchens."

In the area of Home Furnishings the mean scores do show some similarity in emphasis on certain items for both the general and special programs. However, the mean scores show greater differences in emphasis than likenesses. Those items indicating by mean scores the most emphasis in the general programs included, "Selecting colors and furnishings for the home," "Planning a home for a family" and "Choosing a home for a family." In the special program, those items whose mean scores indicate greatest emphasis include, "Arranging furniture in different rooms," "Choosing a home for a family" and "Planning a home for a family." In the general program the least emphasis according to mean scores is the item, "Painting, refinishing, or making over furniture." In the special program the least emphasis according to mean scores is, "Improving home yards."

According to mean scores in the Personal and Family Relationship area there is similarity in emphasis on the items, "Getting along well with family members" and "Getting along well with friends." There is also similarity in mean scores on several other items in the area of Personal and Family Relationships.

In the area of Consumer Education the mean scores do show some similarity in emphasis for the two programs but the mean scores on most of the items indicate greater differences in emphasis than likenesses. In the general program the mean score on the item "Getting my money's worth when buying" indicates more emphasis than in the special program. In the special program the mean scores on the item, "How to judge advertising" indicate much emphasis.

According to the mean scores indicating emphasis on specific topics within each of the subject matter areas, there appears to be greater differences within the areas of Management, Home Furnishing, Child Care and Consumer Education in the general and special programs.

Table 8. MEAN SCORES ON INDIVIDUAL ITEMS FOR SENIOR GIRLS WHO HAVE HAD VARYING AMOUNTS OF HOMEMAKING MISSOURI (General)

Item No.	Amount of Homemaking: None or Junior High Only No.*	Total Score	Mean Score	1/2-1 year Senior High No.*	Total Score	Mean Score	More than 1 year Senior High No.*	Total Score	Mean Score
Child Care									
1.1		132	1.71		175	1.86		155	1.96
1.2		92	1.19		120	1.28		111	1.39
1.3		104	1.35		152	1.62		125	1.58
1.4		109	1.43		148	1.57		144	1.82
1.5		94	1.24		119	1.28		103	1.29
1.6		96	1.26		127	1.35		119	1.51
1.7		98	1.31		131	1.44		123	1.58
1.8		127	1.67		179	1.92		159	2.01
1.9		134	1.81		191	2.05		152	1.95
Clothing									
2.10		141	1.86		198	2.13		174	2.23
2.11		135	1.78		179	1.95		192	2.43
2.12		156	2.05		207	2.25		191	2.42
2.13		61	.80		85	.91		118	1.51
2.14		116	1.51		159	1.69		153	1.94
2.15		104	1.39		153	1.65		140	1.79
2.16		82	1.08		133	1.43		154	1.97
2.17		16	.21		30	.33		54	.68
2.18		45	.59		76	.81		103	1.29
2.19		69	.92		107	1.14		122	1.54
Food and Nutrition									
3.20		136	1.77		195	2.10		199	2.49
3.21		130	1.73		197	2.12		187	2.37
3.22		84	1.11		94	1.00		146	1.83
3.23		99	1.29		132	1.40		165	2.06
3.24		111	1.50		155	1.68		173	2.16
3.25		174	2.26		214	2.28		197	2.49
3.26		136	1.77		172	1.87		182	2.28
3.27		95	1.25		142	1.54		149	1.91
3.28		36	.47		52	.57		93	1.21
3.29		149	2.01		193	2.08		188	2.38

*Total No. Cards Used: None or Junior High Only 77
1/2-1 year Senior High 94
More than 1 year Senior High 80

Actual No. per items varies slightly because some students omitted items.

Table 8. (continued) MISSOURI (General)

Item No.	None or Junior High Only No.*	Total Score	Mean Score	1/2-1 year Senior High No.*	Total Score	Mean Score	More than 1 year Senior High No.*	Total Score	Mean Score
Family Health									
4.30		147	1.93		190	2.04		147	1.84
4.31		111	1.44		162	1.72		138	1.75
4.32		124	1.61		172	1.83		136	1.72
4.33		118	1.55		153	1.63		153	1.91
4.34		148	1.92		167	1.78		164	2.08
4.35		141	1.86		168	1.83		150	1.92
4.36		99	1.32		132	1.45		135	1.75
4.37		85	1.10		97	1.07		122	1.53
4.38		82	1.06		106	1.15		110	1.39
Management									
5.39		83	1.09		124	1.38		143	1.83
5.40		122	1.63		124	1.36		147	1.91
5.41		133	1.73		144	1.62		163	2.06
5.42		130	1.69		149	1.64		157	2.01
5.43		123	1.62		150	1.63		140	1.79
5.44		100	1.32		130	1.40		140	1.77
5.45		124	1.63		143	1.54		158	1.98
5.46		134	1.79		171	1.84		169	2.14
5.47		67	.88		129	1.39		123	1.56
5.48		118	1.53		162	1.76		152	1.95
Home Furnishing									
6.49		90	1.17		120	1.29		123	1.54
6.50		100	1.30		125	1.36		134	1.68
6.51		58	.75		91	1.00		111	1.41
6.52		83	1.09		120	1.29		125	1.58
6.53		42	.56		68	.73		65	.84
6.54		97	1.26		135	1.44		126	1.58
6.55		71	.92		116	1.25		120	1.50
6.56		64	.83		120	1.30		118	1.49
6.57		79	1.03		117	1.29		115	1.44
6.58		50	.67		73	.79		63	.80
Per./Family Relationship									
7.59		112	1.47		103	1.11		107	1.37
7.60		158	2.05		202	2.17		185	2.31
7.61		168	2.18		196	2.11		190	2.38
7.62		129	1.70		161	1.75		161	2.01
7.63		154	2.03		192	2.06		175	2.24
7.64		150	2.00		192	2.06		178	2.23
7.65		136	1.77		161	1.73		149	1.89
7.66		142	1.87		152	1.67		149	1.89
7.67		135	1.82		138	1.50		139	1.78
7.68		136	1.81		164	1.78		157	1.96

Table 8. (continued) MISSOURI (General)

Item No.	None or Junior High Only			1/2-1 year Senior High			More than 1 year Senior High		
	No.*	Total Score	Mean Score	No.*	Total Score	Mean Score	No.*	Total Score	Mean Score
Consumer Education									
8.69		120	1.56		146	1.62		141	1.78
8.70		81	1.05		91	.98		96	1.22
8.71		96	1.26		128	1.38		136	1.70
8.72		72	.94		104	1.12		114	1.44
8.73		99	1.29		119	1.28		111	1.41
Business Home Economics									
9.74		67	.87		103	1.12		115	1.44

Table 9 . MEAN SCORES ON INDIVIDUAL ITEMS FOR SENIOR GIRLS WHO HAVE HAD VARYING AMOUNTS OF HOMEMAKING MISSOURI (Special)

Item No.	Amount of Homemaking: None or Junior High Only No.*	Total Score	Mean Score	1/2-1 year Senior High No.*	Total Score	Mean Score	More than 1 year Senior High No.*	Total Score	Mean Score
Child Care									
1.1		115	1.24		130	1.69		59	2.03
1.2		59	.64		103	1.37		53	1.83
1.3		42	.46		105	1.36		44	1.52
1.4		51	.55		116	1.55		47	1.68
1.5		50	.54		55	.73		17	.61
1.6		24	.26		53	.69		31	1.07
1.7		36	.39		68	.89		34	1.17
1.8		74	.83		100	1.33		43	1.54
1.9		114	1.25		132	1.76		52	1.86
Clothing									
2.10		161	1.75		140	1.87		68	2.34
2.11		162	1.78		132	1.74		69	2.46
2.12		148	1.61		144	1.87		61	2.18
2.13		40	.43		81	1.08		41	1.46
2.14		83	.90		113	1.47		51	1.76
2.15		79	.86		108	1.40		50	1.72
2.16		72	.78		92	1.28		52	1.79
2.17		5	.05		13	.18		11	.39
2.18		28	.30		57	.75		37	1.32
2.19		119	1.28		80	1.07		44	1.57
Food and Nutrition									
3.20		152	1.67		125	1.64		60	2.07
3.21		131	1.46		120	1.58		56	1.93
3.22		32	.34		67	.88		30	1.03
3.23		63	.69		83	1.08		44	1.52
3.24		78	.84		117	1.52		58	2.00
3.25		154	1.67		154	2.00		70	2.41
3.26		95	1.02		120	1.60		69	2.38
3.27		61	.67		108	1.42		57	1.97
3.28		16	.18		32	.42		15	.52
3.29		133	1.46		136	1.77		55	1.90

*Total No. Cards Used: None or Junior High Only 93
1/2-1 year Senior High 77
More than 1 year Senior High 29

Actual No. per items varies slightly because some students omitted items.

Table 9. (continued) MISSOURI (Special)

Item No.	None or Junior High Only No.*	Total Score	Mean Score	1/2-1 year Senior High No.*	Total Score	Mean Score	More than 1 year Senior High No.*	Total Score	Mean Score
Family Health									
4.30		205	2.20		148	1.92		59	2.03
4.31		123	1.34		120	1.58		56	1.93
4.32		161	1.73		136	1.77		57	1.97
4.33		114	1.23		121	1.57		52	1.79
4.34		151	1.62		140	1.82		58	2.00
4.35		116	1.25		106	1.38		47	1.62
4.36		70	.76		106	1.38		40	1.43
4.37		41	.45		87	1.14		34	1.21
4.38		60	.66		87	1.14		26	.96
Management									
5.39		67	.73		103	1.34		42	1.50
5.40		109	1.18		114	1.48		47	1.68
5.41		101	1.09		132	1.74		57	2.04
5.42		69	.78		126	1.66		63	2.17
5.43		121	1.32		113	1.47		45	1.55
5.44		52	.56		117	1.54		50	1.72
5.45		112	1.22		153	2.04		66	2.28
5.46		80	.87		137	1.78		59	2.03
5.47		40	.44		133	1.73		54	1.86
5.48		64	.70		129	1.68		60	2.07
Home Furnishing									
6.49		53	.57		115	1.51		55	1.90
6.50		42	.45		119	1.55		55	1.90
6.51		57	.61		99	1.29		39	1.34
6.52		46	.49		119	1.55		53	1.83
6.53		15	.16		65	.84		20	.71
6.54		56	.60		98	1.27		52	1.79
6.55		33	.35		90	1.17		39	1.34
6.56		36	.39		91	1.18		45	1.55
6.57		45	.48		93	1.22		44	1.52
6.58		13	.14		46	.60		14	.48
Per./Family Relationship									
7.59		62	.67		66	.87		25	.86
7.60		144	1.55		138	1.79		55	1.90
7.61		170	1.83		133	1.75		56	1.93
7.62		75	.81		97	1.26		49	1.69
7.63		126	1.37		151	1.96		61	2.10
7.64		168	1.85		136	1.79		55	1.90
7.65		112	1.23		116	1.53		41	1.41
7.66		162	1.78		120	1.58		44	1.57
7.67		109	1.20		104	1.39		37	1.28
7.68		124	1.35		127	1.65		53	1.83

Table 9. (continued) MISSOURI (Special)

Item No.	None or Junior High Only			1/2-1 year Senior High			More than 1 year Senior High		
	No.*	Total Score	Mean Score	No.*	Total Score	Mean Score	No.*	Total Score	Mean Score
Consumer Education									
8.69		66	.72		115	1.49		55	1.90
8.70		93	1.00		105	1.38		44	1.52
8.71		84	.92		125	1.62		56	1.93
8.72		52	.57		105	1.36		44	1.57
8.73		135	1.48		121	1.59		40	1.66
Business Home Economics									
9.74		43	.47		76	1.01		36	1.33

Tables 8 and 9 show the mean scores on individual items for senior girls who have had varying amounts of homemaking in the general and special sample programs and in the appendix is Table A showing mean scores for the eight areas of home economics in the sample general and special programs.

Conclusions

There is a significant relationship between the type of program offered and the extent of election by the senior girls in the sample programs. The general programs attract more students than the specialized programs as represented by the sample.

The data would indicate that more help is recognized in the general programs than the special programs at each additional level of homemaking.

Girls from high socio-economic status groups select less home economics than do those from low socio-economic groups in both programs. They also indicate less recognition of help than do the other socio-economic groups in both programs. The amount of help recognized from both programs is about the same for the medium and low socio-economic status groups at the first and third levels of homemaking.

The data indicate that there is a difference in the eight areas of homemaking in the amount of help recognized by the senior girls in both the general and special programs. Except for the areas of management, housing and home furnishings and consumer buying there is more help recognized in the several areas of homemaking in the general program than in the special program. And, in these areas management, housing and home furnishings and consumer buying, it is at the second and third level of homemaking that the help recognized by the girls enrolled in the two programs favored the special program.

From the sample, more of the low ability than the high ability group elect some home economics. There is a relationship between the girls' academic ability and the extent to which they elect home economics. However, there is no difference regarding the amount of help recognized by the senior girls of different levels of academic competence enrolled in the general and in special programs.

Girls from the different levels of academic competence indicate more help recognized in the areas of textiles and clothing, foods and nutrition, family health and family relations at the second level of academic competence than at the third level in the general program. In the special program, girls from different levels of academic competence indicate more help recognized in the areas of textiles and clothing, home management, housing and home furnishings and consumer buying at the second level than at the third level of homemaking. Of the three academic competence levels the girls of high academic competence indicate the least help recognized at the third level of homemaking in the general program. Of the three academic competence levels the most help recognized at the third level of homemaking in the special program is from the high academic competence group. The general program, however, has held more of the girls at the third level of homemaking than the special. There are more than three times as many students of high socio-economic status in the third level of homemaking in the general program as in the special program.

The data collected indicate very little difference between scores of girls with mothers working and girls with mothers not working. Whether the girls mothers are working or not working seems to have little influence on the amount of help recognized in both the general and special programs.

The amount of help recognized by the girls of all three levels of socio-economic status is quite similar for the girls with working mothers. And, when mothers are not working the pattern of help recognized is quite similar for all three levels of socio-economic status in the several areas of home economics.

It would appear from the data that the senior girls in the special program wish for more help than the senior girls in the general program. This pattern of help desired is true from the three levels of homemaking in each respective program. That is, the girls in the special program wish for more help at the first, second and third levels of homemaking than do the girls in the general program at the first, second and third levels of homemaking.

For both the general and the special programs the high socio-economic status group indicate desire for more help, especially at the third level. The special program seems to meet the needs of the medium socio-economic status group or at least they indicate less desire for help at each successive level of homemaking. The senior girls of all three socio-economic status levels indicate more desire for help in the special program than in the general program.

As the amount of homemaking increases plans for college sharply decrease.

Implications and Recommendations

On the basis of the findings of this study of general and special sample programs, it might be suggested that:

1. Teachers of both general and special programs need to look more critically at the relationships between what is supposedly being presented through homemaking experiences in both general and special programs and what help is being recognized by students participating in these respective programs for different lengths of time.

2. Teachers and supervisors of pre-service and in-service education programs need to relate these respective programs for the classroom teachers to recognized needs for help as expressed by students enrolled in the general and special programs.

3. Although there may be some inadequacy or bias in student responses, that those persons primarily concerned with curriculum related to general and special programs look to students expressed needs and desire for help in regard to appropriate placement, sequence and types of experiences in both general and special programs.

4. That current and on-going studies be made of the socio-economic status of groups being served and curriculum be planned and/or revised in light of these findings.

5. That higher levels of competency (observable behavior in meeting needs) might be attained if programs were planned to more nearly meet the needs of different academic ability groups.

6. That experiences within the general and the special programs be made more realistic in terms of future plans of students.

7. That adequate cooperative planning of classroom experiences and total curriculum will supplement out of class homemaking experiences ir relation to both the work experience of students and mothers.

It might be suggested or recommended that certain studies be made regarding such questions as:

1. What curriculum structure might be identified which would adequately relate to socio-economic status and academic competence of groups being served by general and/or special programs?

2. What groups might be more adequately served through redesigning general and/or special programs?

3. What are some of the "situational determiners" of curriculum as related to geographic areas within the state?

4. What is the relationship of background, preservice and in-service experience of teachers to type of classroom experiences offered in both general and special programs?

5. In such areas as management, and/or housing and home furnishings, and/or family relations what concepts might serve as the conceptual framework for curriculum in general and/or special programs?

APPENDIX

Table A
Opinionnaire
Occupational Code

Table A . MEAN SCORES FOR EIGHT AREAS OF HOMEMAKING AND FOR TOTAL OF ALL AREAS FOR SENIOR GIRLS WHO HAVE HAD VARYING AMOUNTS OF HOMEMAKING
MISSOURI - PARKVIEW (General)

Amount of Homemaking	Code	Students	Mean Scores Indicating Amount of Help Received							
			Child Care	Clothing & Textiles	Food & Nutr.	Family Health	Manage-ment	Home Furn.	Per./Fam. Relation.	Con. Eco.	Total
None	0										
Jr. high - one level	1	6	8.83	12.83	14.33	10.67	11.50	6.67	16.33	4.17	85.33
two levels	2	6	4.50	15.50	19.33	13.00	14.50	10.00	13.00	5.33	95.17
three levels	3	2	13.00	20.50	17.00	15.00	10.50	9.50	15.50	5.50	106.50
Sr. high - 1/2-1 unit											
with jr. high	4	50	12.44	13.84	16.30	14.40	16.10	13.84	16.58	6.26	109.56
without jr. high	7	10	9.70	14.90	14.90	10.90	8.90	5.80	11.20	4.30	80.60
Sr. high - 1 1/2-2 units											
with jr. high	5	20	13.30	17.45	21.75	16.90	19.75	15.10	17.85	7.55	129.65
without jr. high	8	2	17.50	17.00	14.00	9.00	14.00	19.50	19.00	6.50	116.50
Sr. high - 2 or more units											
with jr. high	6	8	18.88	19.50	22.63	15.63	25.13	22.00	22.63	10.38	156.75
without jr. high	9										

Table A . MEAN SCORES FOR EIGHT AREAS OF HOMEMAKING AND FOR TOTAL OF ALL AREAS FOR SENIOR GIRLS WHO HAVE HAD VARYING AMOUNTS OF HOMEMAKING MISSOURI - SOUTHEAST KANSAS CITY (General)

Amount of Homemaking	Code	Students	Mean Scores Indicating Amount of Help Received							
			Child Care	Clothing & Textiles	Food & Nutr.	Family Health	Manage-ment	Home Furn.	Per./Fam. Relation.	Con. Eco.	Total
None	0	3	17.00	11.33	14.33	13.33	8.67	9.33	14.00	5.00	93.00
Jr. high - one level	1	5	17.20	10.00	11.80	13.60	14.20	6.40	20.20	3.80	97.20
two levels	2	28	13.07	9.79	12.64	13.43	14.04	9.11	19.07	5.96	97.11
three levels	3	24	14.25	12.79	16.92	14.92	17.21	10.50	20.83	7.21	114.63
Sr. high - 1/2-1 unit											
with jr. high	4	31	17.90	14.29	17.10	15.65	16.29	10.55	22.10	7.23	121.16
without jr. high	7										
Sr. high - 1 1/2-2 units											
with jr. high	5	31	14.39	16.35	20.55	16.06	17.45	11.87	19.94	7.55	124.16
without jr. high	8	1	19.00	18.00	27.00	11.00	19.00	0.00	28.00	2.00	124.00
Sr. high - 2 or more units											
with jr. high	6	15	15.47	18.87	20.87	14.20	17.40	11.00	20.93	6.13	124.87
without jr. high	9										

Table A . MEAN SCORES FOR EIGHT AREAS OF HOMEMAKING AND FOR TOTAL OF ALL AREAS FOR SENIOR GIRLS WHO HAVE HAD VARYING AMOUNTS OF HOMEMAKING
MISSOURI - BEAUMONT, ST. LOUIS (Special)

Amount of Homemaking	Code	Students	Mean Scores Indicating Amount of Help Received								
			Child Care	Clothing & Textiles	Food & Nutr.	Family Health	Manage-ment	Home Furn.	Per./Fam. Relation.	Con. Eco.	Total
None	0										
Jr. high - one level	1	2	13.50	23.00	8.50	15.50	13.50	7.50	22.00	8.00	111.50
two levels	2										
three levels	3	1	6.00	19.00	20.00	23.00	4.00	4.00	15.00	4.00	95.00
Sr. high - 1/2-1 unit											
with jr. high	4	22	12.36	14.50	15.27	17.05	19.86	13.45	18.86	9.64	121.00
without jr. high	7	5	11.00	8.80	12.60	22.20	20.20	14.80	20.60	10.60	120.80
Sr. high - 1 1/2-2 units											
with jr. high	5	7	10.86	14.43	16.86	16.00	20.00	12.00	16.43	7.71	114.29
without jr. high	8	5	10.20	16.60	18.20	13.20	16.60	12.20	14.40	8.80	110.20
Sr. high - 2 or more units											
with jr. high	6	2	7.50	23.00	22.50	16.50	23.50	12.00	15.50	12.50	133.00
without jr. high	9	1	8.00	23.00	26.00	20.00	16.00	9.00	18.00	9.00	129.00

Table A . MEAN SCORES FOR EIGHT AREAS OF HOMEMAKING AND FOR TOTAL OF ALL AREAS FOR SENIOR GIRLS WHO HAVE HAD VARYING AMOUNTS OF HOMEMAKING
MISSOURI - KIRKWOOD (Special)

Amount of Homemaking	Code	Students	Mean Scores Indicating Amount of Help Received								
			Child Care	Clothing & Textiles	Food & Nutr.	Family Health	Manage-ment	Home Furn.	Per./Fam. Relation.	Con. Eco.	Total
None	0	4	9.25	4.00	3.50	9.25	8.25	2.25	12.00	5.25	53.75
Jr. high - one level	1	10	4.70	8.40	10.10	11.40	11.20	4.70	12.00	4.90	67.40
two levels	2	67	5.54	9.24	9.93	10.79	8.25	4.03	13.57	4.34	65.69
three levels	3	4	8.25	17.00	13.75	14.00	11.50	4.75	15.50	5.25	90.00
Sr. high - 1/2-1 unit											
with jr. high	4	45	9.87	11.80	12.71	10.67	13.69	10.96	13.07	5.82	88.58
without jr. high	7	3	19.67	10.33	17.67	18.33	19.67	14.00	21.00	9.00	129.67
Sr. high - 1 1/2-2 units											
with jr. high	5	12	16.00	16.42	15.83	13.08	17.75	16.50	16.83	7.75	120.17
without jr. high	8	1	13.00	10.00	18.00	15.00	16.00	16.00	12.00	10.00	110.00
Sr. high - 2 or more units											
with jr. high	6	1	25.00	24.00	26.00	26.00	28.00	24.00	26.00	12.00	191.00
without jr. high	9										

Name_____

School_____

City and State_____

OPINIONS OF HIGH SCHOOL GIRLS RELATIVE TO
THEIR HIGH SCHOOL PROGRAM

Now that you are finishing high school, you are probably thinking about what you have studied in relation to what you want to do.

The schools are interested in providing the very best possible program for helping young people deal successfully with the problems they are meeting now or may meet in the future. We need your help in getting information which may strengthen the school program. Will you please fill in the following questionnaire? Give your honest opinions--there are no right or wrong answers. This survey is for the purpose of studying the school program and all results will be combined. Your name will not be revealed in any way.

1. Mark with an (x) the amount of help you have had IN SCHOOL in grades seven through twelve on each of the following topics.
   Much means you learned all you think you could have learned about the topic while IN SCHOOL.
   Some means you have learned a part of what could be learned but probably could have learned more IN SCHOOL.
   Little means that what you learned IN SCHOOL was limited.
   None means you did not learn anything about the topic IN SCHOOL.

2. Mark with an (x) in the last column if you wish you had had some or more help on any topic. If you check the last column, be sure you have also checked one of the other columns.

Topics	Amount of help I had				Wish for some or more
	Much	Some	Little	None	
1.1. Understanding what children are like at different age levels	___	___	___	___	___
1.2. Helping young children learn	___	___	___	___	___
1.3. Caring for an infant	___	___	___	___	___
1.4. Caring for young children.	___	___	___	___	___
1.5. Finding out about groups in the community that work for children	___	___	___	___	___
1.6. Caring for mother before baby is born.	___	___	___	___	___
1.7. Caring for mother and baby	___	___	___	___	___
1.8. The responsibilities of a baby sitter.	___	___	___	___	___
1.9. Learning the meaning of discipline for children. . .	___	___	___	___	___
2.10. Caring for clothing--keeping clean and neat; laundering, mending.	___	___	___	___	___
2.11. Making clothing.	___	___	___	___	___
2.12. Keeping myself well-groomed and attractive	___	___	___	___	___
2.13. Making over clothing	___	___	___	___	___
2.14. Selecting and buying clothes for myself.	___	___	___	___	___
2.15. Planning a clothing wardrobe for myself.	___	___	___	___	___
2.16. Selecting and buying different materials (textiles).	___	___	___	___	___
2.17. Making draperies, slipcovers, etc. for the home. . .	___	___	___	___	___

Topics	Amount of help I had: Much	Some	Little	None	Wish for some or more
2.18. Deciding when to make, when to make over, when to buy clothes ready-made	___	___	___	___	___
2.19. Selecting and caring for sewing equipment.	___	___	___	___	___
3.20. Cooking food	___	___	___	___	___
3.21. Serving food	___	___	___	___	___
3.22. Preserving food by canning, freezing, etc.	___	___	___	___	___
3.23. Preparing foods for special occasions and for entertaining	___	___	___	___	___
3.24. Managing time, energy and money in planning, preparing and serving family meals.	___	___	___	___	___
3.25. Learning about the food I need each day.	___	___	___	___	___
3.26. Planning meals to meet my family's needs	___	___	___	___	___
3.27. Buying foods to get one's money's worth.	___	___	___	___	___
3.28. Preparing and serving foods from different countries	___	___	___	___	___
3.29. Being well-mannered at the table and as hostess and guest.	___	___	___	___	___
4.30. Using simple first aid	___	___	___	___	___
4.31. Caring for the sick at home.	___	___	___	___	___
4.32. Preventing accidents in the home	___	___	___	___	___
4.33. Keeping my family well	___	___	___	___	___
4.34. Keeping myself well.	___	___	___	___	___
4.35. Understanding facts about common diseases.	___	___	___	___	___
4.36. How to care for a child when he is ill	___	___	___	___	___
4.37. Planning, preparing, and serving food for the sick in the home.	___	___	___	___	___
4.38. Planning for and caring for the home medicine chest.	___	___	___	___	___
5.39. How to simplify work to save time and energy	___	___	___	___	___
5.40. How to make wise choices and decisions in managing time, energy and money, to reach my goals.	___	___	___	___	___
5.41. Planning wise use of my money.	___	___	___	___	___
5.42. What it means to be a good home manager for successful family living	___	___	___	___	___
5.43. Learning the value of making and carrying out a plan	___	___	___	___	___
5.44. Arranging house and equipment to save time and energy	___	___	___	___	___
5.45. Learning disadvantages and advantages of buying with cash and on credit (on time)	___	___	___	___	___
5.46. Planning together in a family for such things as: use of money, getting work done, sharing in responsibilities	___	___	___	___	___
5.47. Planning convenient kitchens	___	___	___	___	___
5.48. How to keep the house neat and clean	___	___	___	___	___
6.49. Choosing a home for a family	___	___	___	___	___
6.50. Planning a home for a family	___	___	___	___	___
6.51. Learning about housing in the community.	___	___	___	___	___
6.52. Arranging furnishings in different rooms	___	___	___	___	___
6.53. Painting, refinishing, or making over furniture.	___	___	___	___	___
6.54. Selecting colors and furnishings for the home.	___	___	___	___	___

Topics	Amount of help I had: Much	Some	Little	None	Wish for some or more
6.55. Caring for home furnishings.	___	___	___	___	___
6.56. Selecting household equipment.	___	___	___	___	___
6.57. Using and caring for household equipment	___	___	___	___	___
6.58. Improving home yards	___	___	___	___	___
7.59. Finding out about community agencies that help families	___	___	___	___	___
7.60. Getting along well with family members	___	___	___	___	___
7.61. Getting along well with friends.	___	___	___	___	___
7.62. Planning for family recreation and entertaining. . .	___	___	___	___	___
7.63. Preparing for marriage	___	___	___	___	___
7.64. Understanding myself and others.	___	___	___	___	___
7.65. Planning for wise use of leisure time.	___	___	___	___	___
7.66. Understanding basic needs of all people.	___	___	___	___	___
7.67. Understanding special problems of older people and/or the handicapped	___	___	___	___	___
7.68. Understanding what causes friction in families and how to have as little as possible.	___	___	___	___	___
8.69. Getting my money's worth when buying	___	___	___	___	___
8.70. Understanding programs for protecting consumers. . .	___	___	___	___	___
8.71. Understanding how to read labels	___	___	___	___	___
8.72. Practicing acceptable shopping ethics.	___	___	___	___	___
8.73. How to judge advertising	___	___	___	___	___
9.74. Learning about kinds of jobs for those who study home economics	___	___	___	___	___

75. What is your father's (or main provider's) job? Describe in detail what he does. (If your father is dead or not living with you, give what he did for a job when he was with you.)

_____

_____

76. If your mother works outside the home full time, what is her job? _____

_____

77. Check (x) one of the following which best describes the main source of money for your family.

____1. hourly wages, or piece work
____2. salary or commissions
____3. public relief and/or charity
____4. profits and fees from a business or profession
____5. family savings and investments
____6. odd jobs, seasonal work
____7. inherited savings and investments
____8. I don't know

78. Check (x) one of the following which best describes your father's education:

____1. less than eighth grade
____2. completed eighth grade
____3. completed ninth grade
____4. graduated from high school, or from a business or trade school
____5. attended college, but less than four years
____6. a bachelor's or master's degree (4 or 5 years in college)
____7. a doctor's or highest degree (6 to 8 years in college)
____8. I don't know

79. Check (x) your plans for next year. Check as many as you expect to do.

____1. go to work
____2. be a homemaker
____3. take special training for being a secretary, beauty operator, nurse, or anything requiring training other than college
____4. attend a two-year college
____5. attend a four-year college
____6. have not decided
____7. other (describe)_____

80. Check (x) the job you hope to have after you finish your education—if you plan to have a job.

____1. beauty operator
____2. clerk or buyer in store
____3. designer or artist
____4. factory worker
____5. model
____6. nurse
____7. secretary or office worker
____8. teacher or librarian or social worker
____9. telephone operator
____10. join Service
____11. other (list)_____

81. If you took any home economics in grades 7-12, fill in the NAME of each course as listed in the school schedule in the column that tells when you took it. If you were enrolled in a course both semesters be sure to fill in each blank.

Grade	First semester	Second semester
Seventh	1. _____	2. _____
Eighth	3. _____	4. _____
Ninth	5. _____	6. _____
Tenth	7. _____	8. _____
Eleventh	9. _____	10. _____
Twelfth	11. _____	12. _____

82. Check (x) one of the following which best describes your marks in all subjects throughout high school. (If your school has another system, write in as accurate a description of your marks as you can.)

____1. mostly D's
____2. about equal C's and D's
____3. mostly C's
____4. about equal B's and C's
____5. mostly B's
____6. about equal A's and B's
____7. mostly A's

83. Have you attended schools in other towns or school districts than this one since you finished the ninth grade?

____yes ____no

If yes, for what grades were you in another school?

Questionnaire developed for
COOPERATIVE CURRICULUM PATTERN STUDY IN HOME ECONOMICS - 1960

Participants were home economic ducation personnel from University of Missouri, University of Nebraska, New York State College of Home Economics at Cornell University, Pennsylvania State University, Purdue University, and University of Tennessee, with the cooperation of supervisors of home economics in the several states.

COOPERATIVE CURRICULUM PATTERN STUDY IN HOME ECONOMICS - 1960

Occupation Code Used*

Code 1

Professionals	Proprietors	Businessmen	White Collar	Farm People	Service Men			
					Army	Navy	Air Force	Marines
Lawyer Judge Physician Engineer Professor School superintendent Dentist Veterinarian Minister (graduated from divinity school) Chemist etc. with post-graduate training Architects Treasurer Pharmacist (with Dr. degree) Lab Technologist	Large businesses valued at $100,000 or more depending on community - - - - Owners of real estate Insurance companies	Reg. & Div. managers President et al of corporation bank Public utilities	CPS: editor or newspaper, magazine Executive secretary of status organ	Gentlemen farmer or landowner who do not supervise directly their property	General of the Army General Lt. General Major General Brig. General Colonel Lt. Colonel Major	Fleet Admiral Admiral Vice-Admiral Rear-Admiral Commodor Captain Commander Lt. Commander	General of the Air Force General Lt. General Major General Brig. General Colonel Lt. Colonel Major	General Lt. General Major General Brig. General Colonel Lt. Colonel Major

*Basic classification from Warner, Meeker, Ellis - Social Class in America, with additions from Dictionary of Occupational Titles and from consultation with Cornell economics and military science staff. (Additions below dotted line or in separate columns)

Code 2

Rate Professionals	Proprietors	Businessmen	White Collar	Farm People	Service Men: Army	Navy	Air Force	Marines
High school teacher Librarian Trained Nurse Chiropodists Undertakers X-ray Technician Radio and TV technician Pharmacist Speech Therapist Medical technologist others with 4-year degree	Business value at $50,000 to $100,000 - - - - - Owners of small factories	Asst. Office & dept. mgrs. or supervisors some mfg. agents Investor in business	Accountant Insurance Real Estate Stock salesmen Edit-writer - - - - - Public Relations Man Recreation Director in hospital	Land operators who supervise properties and have an active urban life	Captain 1st Lt. 2nd Lt.	Lt. Lt. Jr. Grade Ensign	Captain 1st Lt. 2nd Lt.	Captain 1st Lt. 2nd Lt.

Code 3

Professionals	Proprietors	Businessmen	White Collar	Blue Collar	Farm People	Service Men: Army	Navy	Air Force	Marines
Grade school teacher Registered nurse Social worker Optometrists Librarian (not graduate) Medical technician Undertaker's assistant Minister (without 4-year degree - - - - - - - Dress Designer Airline hostess Draftsman Airline Pilot Dietician Process methods engineer Dental hygenist "plain writer"	Business or equity value from $10,000 to $50,000 - - - - - - Owner of retail stores: clothing food department motel furniture bars	Manager of small branches or buyers & salesmen of known merchandise All minor business officials - - - - - - Livestock buyer Purchasing agent Director of Credit Fashion coordinator	Auto Salesman Bank clerks & cashiers Postal clerks Secretaries & executives Supervisers of railroad, telephone Justice of the Peace - - - - - - Auditor Payroll clerk "Right of way" Agent	Small contr. who works or supervises his jobs - - - - - - Tug boat captain Cargo captain Caterer	Farm owners with "hired" help Operators leased property who supervised	Chief Warrant Officer W4 Chief Warrant Officer W3 Chief Warrant Officer W2 Chief Warrant Officer W1	Same	Same	Same

Code 4

Proprietors	White Collar	Blue Collar	Service	Dictionary of Occupational Titles 4	Farm People	Service Men			
						Army	Navy	A. Force	Marines
Business or equity value from $5,000 to $10,000 Owner of services etc. laundries beauty shops barber shops plumber	Stenographer Bookkeeper Ticket Agent Receptionist Sales people in Dept. stores Government workers (not requiring college edu.) - - - - - Employment Serv. Examiner Managers of small depts. Wholesaler Dealer & Mfg. of diamonds Bondsman Florist Interior decorator Music teacher Dancing teacher	Foreman: master carpenter Plumber (master) Mason (master) Railroad Eng. Butcher Sheriff Dry cleaners	Police Captain Tailor RR Conductor Watchmaker Deputy U.S. Marshall Bus Driver Operator of a protective service organization	Machine shop planner Production planner Tree Surgeon Tool Designer Stone mason Turret lathe operator Tool & Die maker Sheet metal wkr. Machinist Inspector at car plant Photoengraver Stockroom man Maint. supv. Gyroscope technician Welder Mold-maker for Glass mfg. Nuclear Eng. Foreman Dental Tech. Stationary eng. IBM operator Screw machine opr. Qual. eng. Train dispatcher Machine Setter	Small land-owner Operator or rented property hiring "hands"	Sgt. Major Spec. 9 First Sgt. Master Sgt. Special-ist 8 Platoon Sgt. Spec. 7 Sgt. 1st class	Master Chief Petty Officer Senior Chief Petty Officer Chief Petty Officer	Chief Master Sgt. Senior Master Sgt. Master Sgt.	Sgt. Major Master Gunnery Sgt. 1st Sgt. Master Sgt. Gunnery Sgt. Gunnery Sgt.
					Cheesemaker Thread Grinder Retail furrier Type setter Airline Flight instructor Route super. Oven man Master Mech. Yardmaster Grain Miller Hotel Musician Baker Stone Carver Meat cutter	Compositor Corsetiere Tin smith Knotter Pressure measurer Engraver Tool grinder Coremaker-Foundry Boilermaker Electotype caster Auto painter Group leader Blacksmith First helper		

Code 5

Proprietors	White Collar	Blue Collar	Service	Dictionary of Occupational Titles	Farm People	Service Men			
						Army	Navy	A. Force	Marines
Business or equity value from $2,000 to $5,000	Dime store clerk Grocery clerk Telephone & beauty oprs. Model	Apprentice to skilled trades Repairmen Mechanics Med. skilled workers Timekeepers Linemen Radio-TV repairmen Seamstress Cooks in rest. Bartenders	Policemen Barber Brakemen Elevator operator Dental ass't. Firemen	"Plain" carpenter Wallpaper hangers Bricklayer Steamfitter Furniture finisher Maintenance man (mech.) Linotype opr. Tile setter Paint mixer Proof reader Floor layer Switchman Bronco buster Nurses aide Clothes alteration Projectionist of mot. pic. Gas Station attendant Processor Installs air cond. Painter Wood lather Model maker for cars Chemical opr. Railroad hustler Cabinet maker Brick layer Director of bldgs. & grounds	Tenants on good farms Foreman Owners of farms who "hire out"	Staff Sgt. Spec. 6 Sgt. Spec. 5 Corporal Spec. 4	Petty Off. 1st. Class Petty Off. 2nd Class Petty Off. 3rd Class	Tech. Sgt. Staff Sgt. Airman 1st class	Sgt. Staff Sgt. Corporal
					Plasterer Miner-driller Tool finisher Pipefitter App. meat cutter Stencil operator Millwright Dispatcher at gravel yard Service engineer mechanic				

Code 6

Businessmen	Blue Collar	Service	Dictionary of Occupational Titles 6 & 7	Farm People	Army	Navy	Air Force	Marines
Business or equity value at less than $2,000	Semi-skilled factory and production workers Assistants to skilled trade Warehousemen Watchmen Baggagemen Gas station attendants	Fire Truck Taxi & truck drivers Waiters Waitress Gas station attendant Salad maker	Construction engineer Bulldozer opr. Cable winder Linoleum layer Mold maker French folder in shoe fact. Meat smoker Core maker (paper pulp) Punch press opr. Steel inspector Operating eng. Calendar opr. Metal finisher Clayworker Rough grinder Mold pourer Mail sorter Pressman Expeditorer Distributer Egg Candler Second helper steel Screen opr. steel Bar-tacking machine opr. Roller opr. steel Chairman (steel) Plastic inspector Radiator tester	Sharecropper Established farm laborers Sub. farmer Roofer Glazier (furn.) Shipping Clerk Sewing machine operator RR car inspector Lumberman - faller crane operator Delivery man - clothes, mail, caskets, milk Blaster Fitter Upholstry tuffer Stitcher in shoe factory Hammerman I Machine operator Electrical lineman Firetruck driver	Pri. 1st class Pri. E2 Pri. E1	Seaman Seaman Appr. Seaman Recruit	Airman 2nd class Airman 3rd class Airman	Lance Corp. Private 1st class Private

Code 7

	Blue Collar	Service	Dictionary of Occupational Titles 8 & 9	Farm People
"Reputed Lawbreakers"	Heavy labor Odd job men Mine or mill hands Unskilled workers	Domestic help Bus boy Scrub woman Janitor helper City helper	Assembler - laborer Drill press operator Film sorter Trackman Shoe pacer Construction worker Tinner Shears steel Heel gummer or sticker Label stamper or marker Weigh boy Coal miner Rigger Plats & Polishes Steel	Migrant workers "Squaters - nesters"

VT 001 078
Criteria for Quality, Part II, Proceedings of the National Conference for Associate Degree Programs in Nursing (4th, San Francisco, March 3-4, 1967).

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*FOURTH NATIONAL CONFERENCE FOR ASSOCIATE DEGREE PROGRAMS IN NURSING, SAN FRANCISCO, CALIFORNIA, MARCH 3-4, 1967

The conference was the last of a series of meetings supported by Sealantic Funds, Inc. to assist in establishing and improving associate degree nursing programs. Speeches included in the document are: (1) "Nurse Training Act of 1964" by Jessie M. Scott, (2) "The Nursing Student Loan Program" by Mary L. Sievier (3) "Vocational Education Act of 1963" by Celeste Mercer, (4) "Criteria for Change" by Shirley Sears Chater, (5) "Innovations in Nursing Education" by Eleanor A. Tourtillott, (6) "Closed Circuit Television" by Beatrice Perlmutter, (7) "Developing Single-Loop Films and Teaching Aids Within the College Structure" by Shirley Conklin (supplemented by a demonstration by Robin W. Schechter), (8) "The University of Washington Program for Preparation of ADN Instructors" by Doris A. Geitgey, and (9) "Faculty Preparation for Associate Degree Nursing in a Masters Program" by Mary W. Searight. Also included are the presentations of a panel on accreditation: (1) "An Overview of Accreditation" by Frank G. Dickey, (2) "The American Association of Junior Colleges' View of the Associate Degree Nursing Program" by Bill J. Priest, (3) "The ANA Views Associate Degree Nursing" by Jo Eleanor Elliott, (4) "The Viewpoint of the NLN and the Department of Baccalaureate and Higher Degree Programs" by Lulu Wolf Hassenplug, and (5) "Values of Accreditation to a Community College" by James McCann. "Proceedings of the Annual General Meeting of the Council of Member Agencies of the Department of Associate Degree Programs" (VT 003 501, in this issue) is a related document. (JK)

VT 001 078

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PROCEEDINGS--

FOURTH NATIONAL CONFERENCE
ASSOCIATE DEGREE PROGRAMS IN NURSING

CRITERIA FOR QUALITY

PART II

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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MARCH 3-4, 1967
SAN FRANCISCO
CALIFORNIA

VT001 07

NATIONAL LEAGUE FOR NURSING
1967

CRITERIA FOR QUALITY

PROCEEDINGS

Papers Presented
at the

FOURTH NATIONAL CONFERENCE
FOR
ASSOCIATE DEGREE PROGRAMS IN NURSING

March 3-4, 1967
San Francisco, California

NATIONAL LEAGUE FOR NURSING
Department of Associate Degree Programs
10 Columbus Circle, New York, N.Y. 10019

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FOREWORD

These proceedings of the Fourth National Conference bring to conclusion the series of meetings supported by funds from Sealantic Funds, Inc.

We feel that the full purpose of these funds has been realized now that we have an active Council within the National League for Nursing representing associate degree programs from across the country, and that the contents of these conferences have been most helpful in establishing programs and improving existing programs at the associate degree level.

The Department is most grateful to the Sealantic Fund for its support in our efforts to improve the quality of this relatively young branch of nursing education.

We would like to take this opportunity to thank the hundreds of people who have participated willingly in these conferences to help upgrade programs and keep us abreast of the many activities related to the growth of associate degree nursing programs, i.e., Federal Funding, accreditation, innovations in the field of nursing, etc. Without the support of these many contributors, we would not have been able to achieve some of the realities now in existence.

GERALD J. GRIFFIN, Director
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September 1967

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*Did not attend.

NURSE TRAINING ACT OF 1964

Jessie M. Scott

In the time we have with you this morning, we thought we would like to make the discussion of the Nurse Training Act as simple and as direct as possible. I will give you a brief overview of the Nurse Training Act, our progress to date, and some indication on how to apply for funds. Then specific questions you may have about various sections of the Act will be answered by the people who work in the program all the time. I have with me Mrs. Dorothy Reese, Chief of the Construction Grants Section of the Division of Nursing; Miss Mary Jo Mirlenbrink, who works with Mrs. Reese and with people who are interested in building facilities for the teaching of the nursing students; and Miss Constance Holleran, who works with the schools that are interested in developing projects to strengthen their teaching programs.

The Nurse Training Act, as you all know, was signed by President Johnson in September of 1964; a short eight months after it was introduced into the 88th Congress. The first funds were awarded under the Nurse Training Act early in 1965, just about two years ago. These funds were awarded for student loan programs.

The legislation encompassed in the Nurse Training Act is an outcome of the comprehensive survey of the national nursing needs carried out by the Surgeon General's Group on Nursing. In their report of 1963, "Towards Quality in Nursing: Needs and Goals," they described the national scene as they saw it in relation to nursing needs and set some goals for us in nursing, described or indicated what the Federal role ought to be relative to nursing, and made a number of recommendations to the Federal government and one recommendation to the profession itself. Their recommendations are reflected in a number of ways:

1. Stimulation of recruitment to schools of nursing through financial assistance for regional planning, low cost loans to nursing students, and scholarships to worthy collegiate students.

2. Assistance to schools of nursing to expand and improve the quality of educational programs through construction, through project grants, and reimbursements to schools for partial costs of educating students.

3. Assistance to professional nurses for advanced training in one of the functional areas of administration, supervision, or teaching and in the practice area of clinical nursing specialization.

4. Assistance to hospitals and health agencies to improve the utilization of nursing personnel as well as to improve the setting in which nurses work and in which students receive their training.

5. Increased support for research in nursing.

The Surgeon General's Consultant Group on Nursing described a fairly comprehensive approach to nursing needs in this country and ways in which the Federal government might assist in meeting these needs. I think it is fair to say that underscoring their recommendations were their concerns about the nursing shortage: quantitatively and qualitatively.

Quantitatively they established for us a goal of 850,000 nurses to be in active practice by 1970. The Division of Nursing has since up-dated this figure and estimates that we will need 1 million in active practice by 1975. This means then that we need schools, we need our jobs filled, and we need to recruit people into nursing. Quantitative concerns of the Group were with the number of nurses needed in active practice.

Qualitatively they talked at great length about the critical misuse of nursing skills which had been occurring in the 50's and continues on into the 60's, the wastage of people in nursing through attrition from schools of nursing and through attrition from the profession itself, and the needs to study nursing practice. They also described somewhat the slippage between education and practice and the need for connection between how people learn and how people work.

Some, but not all, of the recommendations of the Surgeon General's Group on Nursing are encompassed in the Nurse Training Act of 1964. And I would like to say that again. Some, but not all, of the recommendations of the Surgeon General's Group are in the Nurse Training Act as presented to the Congress. The reason I repeat this is that when people read the Report of the Group and see the recommendations they think they are all in the Nurse Training Act. They are not, unfortunately, although a good many of them are.

When the Nurse Training Act was signed by President Johnson in 1964 it initiated a 5-year program encompassing the support of $283 million to educational institutions, nursing schools, and to individuals undertaking nurse training. There are Federal matching grants for construction of school facilities; that is to build, renovate, and equip teaching facilities; grants to schools of nursing for projects to strengthen, improve, or expand their programs to teach and train nurses; and formula grants to diploma schools of nursing to partially reimburse them for costs of training students whose enrollments can be reasonably attributed to the Nurse Training Act.

There are funds then for institutions through construction grants, through project grants to strengthen teaching programs, and formula grants limited to diploma schools of nursing. There is also support to individuals through traineeships or training grants to graduate nurses for advanced preparation in administration, supervision, teaching, or in a clinical nursing specialty. The traineeship awarded to the individual nurse includes the cost of tuition and fees, a monthly stipend support, and in some cases, dependency allowances. The second means of support to the individual is through low-interest partially cancelable loans to students enrolled full-time in nursing school programs. You should keep in mind, then, that the Nurse Training Act divides itself in two ways insofar as support is concerned; support to institutions and support to individuals.

The Law describes who is eligible for funds under the Nurse Training Act. First, institutions, that is schools of nursing, must be public or non-profit. In the Law a school of nursing is defined as a program in nursing leading to a diploma, an associate degree, a baccalaureate or graduate degree, or equivalent. Thus the school of nursing in the Law means program in nursing. Since some schools have more than one program, we have more programs eligible than we have schools. We must always keep in mind, therefore, that we are talking about programs rather than about schools of nursing; and we are talking about public or non-profit schools of nursing which include the diploma programs, the associate degree programs, the baccalaureate programs, the masters programs.

Secondly, to be eligible the program in nursing must be accredited or have reasonable assurance of meeting accreditation standards as determined by a body or bodies to be named by the Commissioner of Education. He has named the National League for Nursing as the body to give him information regarding the accreditation status of nursing programs across the country.

How are you eligible under the Act? Under the Construction Grants Section a new school, that is a school not yet having graduated its first class, is eligible for a construction grant under the reasonable assurance of accreditation clause. All other schools, that is existing schools having graduated a class, must be fully accredited. Thus for the construction grant a new school, one that has not yet graduated a class, is eligible under the reasonable assurance clause. All other schools must be fully accredited by the National League for Nursing.

For project grants, the grants to assist a school to improve its teaching program, the school or the program must either have full accreditation or reasonable assurance of reaching accreditation standards. Therefore, new schools or existing schools are eligible under full accreditation or reasonable assurance of accreditation.

The Formula Grant Section, which pertains only to diploma schools, requires that the schools must be fully accredited.

Under the Traineeship Program funds are awarded to academic institutions offering long-term training to graduate nurses in one of the specialties I have mentioned: administration, supervision, teaching, or clinical practice. The criteria for participation in the traineeship program was laid down in 1956 and renewed again in 1959 and 1963 by the Expert Advisory Committee which was the committee attached to the Traineeship Program. I don't have to tell you that the Traineeship Program was established under a separate piece of legislation in 956 and is continued under the Nurse Training Act.

Who is eligible to receive traineeship funds in the terms of an individual? Nurses who are enrolled full-time in a course of study leading to the kind of study described. The nurse must also be a citizen of the United States or must have indicated her intention to become a citizen.

Before I take up each section of the Act, let me say again that it is easier to think of the Nurse Training Act in terms of awards to institutions and awards to individuals. The awards to institutions come through construction grants and curriculum improvement grants. Awards to individuals come through traineeships, support for the graduate nurse for specialty training, and to all nursing students enrolled full-time in courses of study through the loan program.

I shall mention construction grants but not in any great detail. We have both Mrs. Reese and Miss Mirlenbrink here to give you the details of the Construction Grants Section. The Act authorized for construction grants a total of $90 million for a 4-year period: $35 million for baccalaureate and higher degree programs and $55 million for associate degree and diploma programs in nursing. The funds can be used to build a new building or part of a new building for a new school or to expand an existing school. Funds can be used to replace an existing building of an existing school, to rehabilitate or renovate a building, to equip the building. Thus, construction monies can be used for new buildings, for new schools, or new buildings for existing schools. It isn't necessary that the school of nursing occupy the entire building. We can have Federal participation in part of a building; that part of the building which is set aside for the nursing program. If you are sharing a building with another program in the college, that part of the program which is for the teaching of nurses would be eligible for funds under the Nurse Training Act.

The purpose of the construction grants is to enable schools to expand their enrollment, to prevent curtailment in enrollment, to prevent deterioration of instruction due to obsolete facilities. We are talking, therefore, about construction to expand enrollments, to maintain enrollments, and to maintain quality of instruction in good facilities.

The grants are matching grants. In other words, there is Federal participation in the Construction Grant Program and participation on the part of the institution. The matching funds are described in this way: for a new school, or major expansion of an existing school, the matching

funds are up to 66 2/3 percent of the total eligible costs for construction, and please keep in mind eligible costs. Mrs. Reese will describe more fully what is meant by eligible costs. For replacement, for renovation, or minor expansion the matching funds are up to 50 percent of total eligible costs. Depending, therefore, on the kind of program you are planning in terms of major expansion, a new building, a new school; or whether you are having renovation, replacement, or minor expansion of your program, you have Federal participation either up to 66 2/3 percent or up to 50 percent of the total eligible costs for the nursing programs.

I don't really think I need to describe to this group some of the needs for construction of schools of nursing. The major needs seem to be replacement of inadequate facilities which are crowded, obsolete, noisy, and in many instances scattered. The most frequently mentioned needs on the parts of the schools we have been working with are space for faculty, the need for privacy in student-faculty conferences, and the need for conference rooms and seminar rooms. This seems to give some indication that counseling is being widely used now in schools of nursing as a teaching method as well as the seminar type of instruction. We are hearing a lot, and seeing a lot too, on the use of new instructional media and the need for electronic kinds of equipment.

Since we were awarded our first funds, through December 31, 1966, 46 nursing programs have received funds under the Nurse Training Act. Eighteen of these are baccalaureate and masters programs, 3 associate degree programs, and 25 diploma school programs; for a total Federal share of $23 million. The number of first-year places created in these schools is 1,848. Thus we have, through the construction funds, awarded to 46 nursing programs almost 1,900 new places for people to study in our schools of nursing. These spaces represent a national enrollment increment of almost 3 percent based on our 1964-1965 data.

From what we can judge in relation to the Construction Grant Program, the impact of these funds will come through the enhancement of quality, in the improvement of facilities in which people teach and in which people study. We hope that the construction of good facilities will recruit and retain faculty and will recruit and retain students.

The next section of the Law, which relates to funds for schools of nursing, is the project grant. These are grants of funds awarded to a school of nursing to assist in meeting the additional costs of carrying out a project of limited duration. This means a project of from one to five years which will strengthen, improve, or expand the program to teach and train nurses. In other words, a group of faculty will sit down and decide in terms of their own teaching program what kind of a project they can carry out which will, in fact, either improve or expand their teaching program. They describe this project and submit it to the Division; the project is then reviewed; and, if the project is approved, funds are awarded.

The Act authorized $17 million over a 5-year period for project grants to strengthen teaching programs. These funds are being used for faculty development, for demonstration of new or more effective teaching methods, for curriculum revision, to establish new courses, to investigate ways to increase enrollment, or to decrease attrition or wastage from the school. So far, through December 1966, 88 grants have been awarded; 32 to diploma programs, 4 to associate degree programs, and 52 to baccalaureate and master programs. A number of schools particpate but are not the applicant institutions. Thereby, a total of 138 nursing programs are involved in the 88 grants which have been awarded. This means that a number of the institutions applied for funds to carry out projects which affect other schools besides their own. This means that we have 138 schools, really, benefiting and participating in the project although only 88 grants were awarded. We think that this is a good step in terms of nursing that schools are beginning to pool their capabilities. They are beginning to pool the thoughts and competencies of their faculties and some of their training materials with the result that we will have a wider impact in the use of these funds for project grants than is apparent in terms of grants awarded.

Next is the Loan Program which awards funds to individuals. The loans are designed to increase the number of nursing students by enabling those with financial needs to finance their education through long-term, low-interest loans. Suffice to say that the school applies for the loan fund, establishes it in the school, makes the loans to the nursing students, and recaptures the loan funds. I will let Miss Siever describe to you the complexities of the Loan Program.

The Traineeship Program is that part of the Nurse Training Act which carries forward a program established in 1956. Legislation as originally introduced was to increase the number of professional nurses prepared for teaching, administration and supervision. Under the Nurse Training Act preparation in a clinical nursing specialty is added.

The Nurse Training Act authorizes 50 million more dollars for the Traineeship Program for both long-term and short-term training.

Since the beginning of the program in 1956, about 18,000 graduate nurses have received funds for long-term training. One would think that we would begin to close the gap between the numbers of nurses needed in these fields and the numbers of nurses with such preparation, but we still have over 100,000 nurses holding positions of leadership in this country for which they are not qualified. The reason we think that we have not closed the gap is because of the expansion of nursing school program, the attrition from the profession of those who are qualified, and entrance into these positions of nurses who have not yet had any preparation. In 1959, at an evaluation conference of the Traineeship Program, it was recommended that we add the dimension of the short-term training to the Program, which we did. Funds are now awarded to an agency, an institution, or an organization describing a short-term training program for nurses in leadership positions which will update the skills of the nurse for that position. Since 1960 almost 900

courses have been offered under the Short-Term Training Program for about 33,000 graduate nurses who either cannot get away from their positions to go to school or need to update their skills.

It is one thing to have legislation passed by the Congress and another thing to translate the legislation into a program. The Division of Nursing, when given the responsibility for the Nurse Training Act, established in the Division a Branch called the Nurse Education and Training Branch. It is in this Branch that the responsibility for the Nurse Training Act is lodged. Within the Branch we have the Construction Grants Section, the Project Grants Section, and the Traineeship Grants Section. The nurse consultants in these Sections are responsible for the development of the program established by the Nurse Training Act.

We think it is essential to develop guidelines for people to follow in applying for grant funds. We think it is equally essential to have good materials that people can use. But perhaps more important is the worthwhileness of the consultation we try to provide in connection with the program. We have in the Division nurse consultants who are available to you on request for consultation in relation to the kinds of things you think you would like to do in the interest of your nursing school program and to learn if what you propose is eligible for Federal support. Very often it is helpful to talk with someone in the Division to explore, even briefly, some of your ideas to find out whether or not the way in which you are now describing your ideas makes you eligible for funds under the Nurse Training Act, or if you need to recast your idea. I think one of the things we need to do, and that we often don't do, is to make Federal funds responsive to us and not us responsive to them.

Relative to administration of the Act there are factors described which are to be considered as applications are reviewed. There is also prescribed a National Advisory Council on Nurse Training to be composed of 16 members. Twelve of these members are from the nursing profession, from medicine, from public health, from higher education and secondary education; and four from the general public. Because we know that the Council in its capacity of advising the Surgeon General on the conduct of the Nurse Training Act, is also responsible for the review of the applications for construction grants and project grants, we thought it advisable to provide some assistance to the Council. Thus we have what we call a dual-review system for applications under the Nurse Training Act. We have a Project Review Committee to review applications coming in from all of you for grants to strengthen teaching programs. We have another Review Committee for the Construction Grant Program. We also have a Review Committee for Short-Term Training Grant applications. Some of you and your colleagues are on these Committees. Thus we are sharing the responsibility for the administration of the Nurse Training Act with all of you across the country.

I won't go into any more detail on the several sections of the Act, but we do have information on how to apply for a grant. Some of you seem to have some difficulty with this on occasion, and we thought we would try to make it as simple for you as possible. The first thing that you need to do obviously is to contact us for information and for grant applications. Except for the first year we have not been sending application forms routinely to schools of nursing. Any school of nursing faculty member or group of people can request nursing consultation from the Division either before an application is submitted or after. We would suggest that you ask for consultation so that you have some straight-forward information on the use of funds. This consultation is available on request as I have said and, as you know, there is no charge for it.

When your application is received in the Division we review it as a staff for completeness, for accuracy, and for eligibility. Your application then goes to the appropriate Review Committee. This Committee reviews your application relative to its technical merits and whether or not the project as described by you can be accomplished. Your application with Committee comments then goes to the National Advisory Council on Nurse Training. The Council then recommends action on the application to the Surgeon General. The recommendation can be for approval, deferral for more information, or disapproval. The Surgeon General takes into consideration the Council's recommendations as funds are awarded.

I think there is just one point about this process I would like to emphasize. The Committee and the Council in reviewing your applications can only react to your proposal as you have described it. So often we carry more information in our heads than we write down, but the review is done on the written word. I would urge you to share with the Committee and Council your thoughts and ideas in a comprehensive organized way as reflected in your applications.

I know this is a rather brief overview, but I do want you to have a chance to ask questions of the staff who are here. Thank you.

THE NURSING STUDENT LOAN PROGRAM

Mary L. Siever

The Nursing Student Loan Program is authorized by Part B of the Nurse Training Act of 1964. This program is designed to increase the number of nurses in the nation by providing federal assistance in the establishment of loan funds at schools of professional nursing. From these funds, the schools may grant long-term, low-interest bearing loans to students who are in need of financial aid to attend school. Also, the program attempts to encourage graduate nurses who have borrowed from a loan fund to continue the practice of their profession by canceling up to fifty percent of their loans for working in a public or non-profit private institution.

Annually, the Public Health Service sends each eligible school of nursing an invitation to participate in the Nursing Student Loan Program during the ensuing fiscal year. For the purpose of this program, an eligible school is defined as a public or nonprofit private institution which has National League for Nursing accreditation or Reasonable Assurance of accreditation of its program of nursing education. Those schools desiring to establish a loan fund are required to sign a terms of agreement to administer the fund in accordance with the Act and the regulations and to complete an application for federal funds.

In the past, the program was limited to furnishing one type of federal aid -- capital contributions to an institution's loan fund. An applicant could request a federal capital contribution equal to 90 percent of the fund's working capital needed for the year. The institution was required to deposit in the fund a matching capital contribution of $1 for each $9 contributed by the government.

Public Law 89-751, enacted November 3, 1966, amends the program to include another type of federal aid -- loans from a revolving fund for all or part of the working capital required by the institution's loan fund. No matching contribution is required for capital received as a loan.

The policies and procedures for the establishment and operation of a revolving fund are being developed currently. Within the next four weeks, we plan to send detailed information on the types of federal funds available and the procedures for obtaining such funds to all

schools that have applied for participation in the program in fiscal year 1968. At that time, the institutions will be given the opportunity to request:

(1) A federal capital contribution for 90 percent of the loan fund's working capital, or

(2) A loan from the revolving fund for all working capital required by the loan fund, or

(3) A combination of the two -- a federal capital contribution for a portion of the total working capital and a loan for the remainder, excluding the one-ninth matching contribution required for the federal capital contribution.

Each school participating in the loan program agrees to assume the responsibility for administering its loan fund. This includes determining the eligibility of applicants, selecting the student borrowers and determining the amount of money to be loaned to each borrower. To be eligible for a loan, a student must be:

(1) Enrolled or accepted for enrollment in a school which has established a loan fund,

(2) A full-time student pursuing a course of study leading to a graduate, a baccalaureate or an associate degree in nursing or a diploma in nursing,

(3) In good standing with the school,

(4) A citizen, or national of the United States, or have been lawfully admitted to the United States for permanent residence, and

(5) In need of the loan to be able to pursue her course of study.

The Act permits an institution to lend a maximum amount of $1,000 to a student for a nine-month academic year. If the student should be required to attend school longer than the traditional nine-month period, the loan may exceed $1,000 by $111 for each additional month of required attendance. For example, a student who is required to attend school for 12 months during a year may be granted a nursing student loan in the amount of $1,333. In determining the amount a student may borrow, the school should give careful thought to several factors:

(1) The total necessary expenses related to attending school during the year and the financial resources available to the student for meeting these expenses,

(2) The degree of the student's need,

(3) The number of loan applicants, and

(4) The availability of money in the loan fund.

Other administrative duties of the school include the maintenance of records to reflect the transactions of the program, the submission of an annual operations report and a semi-annual financial report to the Public Health Service, and the collection and cancellation of loan payments.

The nursing studenc loans bear interest on the unpaid balance at the rate of three percent per annum or the going federal rate at the time the initial loan is made, whichever is greater. All subsequent loans to a student from the same loan fund bear interest at the rate established for the initial loan. The federal rate for student loans for fiscal year 1967 is 4-5/8 percent. The loans are repayable to the school over a ten-year period which begins one year after the student completes or otherwise ceases to pursue the prescribed full-time course of study. Interest begins to accrue at the time the loan becomes repayable. However, after the repayment period has begun, interest does not accrue - nor is repayment required - while a borrower is enrolled in a collegiate school of nursing pursuing a full-time course of study leading to a baccalaureate or graduate degree in nursing. In addition, up to fifty percent of a student loan (plus interest) may be canceled for full-time employment as a professional nurse in any public or non-profit private institution or agency. This includes teaching in any of the fields of nursing and service as an administrator, supervisor, or consultant in any of the fields of nursing. For each complete year of such employment, a borrower's loan is canceled at the rate of ten percent of the amount that is unpaid on the first day of her employment. All interest that accrues during the year of employment is also canceled. In the event of death or permanent disability of a borrower, the obligation to repay the loan is canceled.

The Nursing Student Loan Program was established in the Fall of 1964. A total of 402 schools having 426 programs of nursing education, established student loan funds during that fiscal year. From these funds, 3,645 students borrowed a total of $1,592,000. In the second year of operation, fiscal year 1966, the number of participating schools rose to 557 and the number of programs represented climbed to 592. During this period, the number of borrowers and the total amount borrowed increased substantially. Some 11,740 students borrowed a total of $6,957,000 to help finance their nursing education. In fiscal year 1967, the current academic year, 614 schools are participating in the loan program. This is an increase of about 10 percent over the total number of participants in the previous year. We expect about 17,000 students in the 655 participating programs of nursing education to borrow approximately $14,086,000 from the loan funds this year.

Applications for fiscal year 1968 have been received and, currently, are being reviewed. We expect a moderate increase in the number of program participants, the number of borrowers, and the amount of funds loaned to students this year.

The authorizing legislation for the Nursing Student Loan Program provides for making first loans to students during fiscal years 1965 through 1969. During the next three fiscal years, it provides for making loans to students who received a loan for any academic year ending before July 1, 1969 to continue or complete their education. In other words, only those schools which have participated in the program prior to July 1, 1969 will be eligible to participate in fiscal years 1970 through 1972. If you are interested in participating in the program in fiscal year 1969, please write to the Student Loan and Scholarship Branch, Division of Health Manpower Educational Services, Public Health Service, 800 North Quincy Street, Arlington, Virginia 22203. If you have any questions about the program, I will be glad to answer them at this time.

VOCATIONAL EDUCATION ACT OF 1963

Celeste Mercer

Since all of you are now in a state where our Governor is encouraging all of us to tithe in order to balance the budget, it's a bit difficult to stand before you and develop the concept of how to spend. But nevertheless this is my assignment and my conscience doesn't bother me too much, because at least the United States Government is saying, "here it is -- now spend it."

Before identifying the opportunities for expansion of associate degree nursing programs under the Vocational Education Act of 1963, I think it might be helpful to define vocational education. One big problem is that some of us think of vocational education as if it were all in one piece, and in a sense what we are used to calling vocational education has been in one piece. As a result, it has left out too much. Sticking closely within the prescriptions of a few federal programs, it is generally concerned with only a very narrow range of jobs, and more important, it has suited only a very narrow range of people. Distributive education, secretarial training, trades and industries programs, these have all been adapted to a middle and lower-middle track or stripe, whatever words you would like to use, of the student body.

To think intelligently about modern vocational education preparation we must consider an added track that is on either side of that center. And above this center, is the one that concerns us -- the ever growing occupational area we encompass in the term "technical." It is within the framework of the concept of technical education that the associate degree nursing program developed. And I can say that very safely, because I wasn't here for the discussion yesterday when I understand you spent a great deal of time on what is "technical." I'm starting with an assumption that we all know what this means. As a result, since it is technical, the associate degree nursing program is eligible for monies allocated to individual states for the broad spectrum of vocational education.

As I listened to the other presentations this morning, I think the essential difference between the Nurse Training Act and the Vocational Education Act of 1963 lies in the administration of the funds. The Nurse Training Act is administered through the U. S. Office of Education and the Vocational Education Act is administered through the individual state.

Because it is administered through the individual states, there will be differences in practices and so what I am going to say is really in terms of a broad generalization. If you have questions, I will try to answer them and the man with the pipe at my right is Mr. Vocational Education in the State of California. He's agreed to help me provide some answers if they're not within my scope of understanding.

I think there is a brief historical background to this legislation which explains the expansion of the concept of vocational education and I think it is good to review it. Prior to the enactment of the Vocational Education Act of 1963, otherwise known as Public Law 88-210, leaders in industry and government noticed that increased automation and technology, while eliminating more jobs, were also creating a need for different kinds of employment in which greater skills were required. Simultaneously, unemployment then followed in the socially, economically and educationally handicapped areas. Another crisis began to show its face, and that is poverty. While millions were underemployed and unemployed, there was a shortage of technicians and a need for them was hampering production in many industries, including the health industry. The situation was beginning to touch the entire economic structure. A panel was appointed by the President of the United States to make an extensive study of the situation and to make corrective recommendations. This panel found that the technological revolution taking place in the United States required an extension, expansion and improvement of vocational education programs, and the recommendations of this panel alternately became the heart of the Vocational Education Act of 1963.

You have a summary on the table outside of the Act. I also brought along a number of booklets concerning the Act. I certainly don't have one for everyone in this room, but you may obtain a booklet about the Act by writing to Miss Helen Powers, U. S. Office of Education, in Washington, D. C. -- she is the one who sent the limited supply that I do have.

The stated purpose of the Act is to provide financial assistance in the field of vocational education, remembering the definition of this term as we have just defined it, to schools under public supervision and control. Funds are to be used to improve, to strengthen and expand an educational program designed primarily to fit individuals for gainful employment in recognized occupations. I could go into this step by step as it applies to all the other vocations, but I am going to try to just make it pertinent to nursing.

One of the purposes, then, that does make nursing in the associate degree nursing program eligible is the fact that technical education for those who have completed or left high school and are available for full-time study in preparation for entering a recognized occupation is obtainable. The associate degree nursing program, on this basis, becomes eligible. The act provides for construction of area educational school facilities and the public junior colleges are defined as area vocational schools.

Now what do they mean by construction? It includes the erection of new buildings, expansion, remodeling and alteration of existing buildings, site acquisition, grading and improvement and even architects' fees. But the construction must be for an area education school facility and it fits right into the junior college set-up. What do they mean by facilities? They mean classrooms in related facilities including initial equipment of an area of vocational education unit, an interest in land on which such facilities are constructed. The term does not include any facility intended primarily for events for which admission is to be charged to the general public. In my former position with the State Department of Education I had an opportunity to review projects that were submitted by public junior colleges for associate degree programs, and you would be amazed at what is available in the beginning to help toward an associate degree program, in terms of equipment, and so on.

The Act also provides for educational and ancillary services, and activities and this is one that really helps. In California, for example, the associate degree program had great assistance from the Kellogg Foundation. But this was terminated after a certain period of time. However, this didn't mean that a planning year still wasn't very important. The Vocational Education Act is helping to make a planning year possible, where local school districts feel they cannot finance this alone, because it's an ancillary service. Other ancillary services include teacher education, demonstration, experimental programs, development of instructional materials, program evaluation, research and guidance activities, coordination and supervision. These services are supportive rather than operational, since the activities center on the development and continuing assurance of quality in the programs of vocational education, in terms of present and future needs for trained manpower.

The Act also provides for work-study programs, which really hits at giving financial assistance to the students who come into the program but cannot complete it even though it's tuition-free, without some kind of financial help. Sid just tells me, though, that the appropriation for work-study is not in this year. Does this apply to California, Sid, or the nation? To the nation. I know that in my particular college we do have students on work-study who are very helpful. I guess this means that they won't be on it next year.

The agencies that are eligible to apply, then, include secondary schools, junior colleges, or schools for adults, that are under public supervision and control. Specific activities that qualify for financial assistance include the following: Paying salaries and necessary expenses, including travel of teachers, coordinators, supervisors, vocational guidance counselors, teacher trained nurse directors and certain other personnel. I recall that one year in California allocation had to be a 50-50 matching basis. 50 per cent of the salary was paid by the district and 50 per cent through the state , using federal funds. Last year, the percentage paid through federal funds was 25%. Since I am familiar only with the

California picture, I suggest you contact your state director of vocational education or the dean of vocational education in your particular college for information which applies to your state.

The Act also provides for acquiring and producing, disseminating, and evaluating instructional materials and teaching aids, for securing educational data necessary to properly develop vocational educational programs, and to insure adequate vocational guidance in counseling.

Other activities possible under the Vocational Education Act of 1963 include: making organizational studies and surveys needed for planning and developing; acquiring, maintaining and repairing instructional equipment; and paying necessary costs of transportation of students; (I remember one project in which students were bussed to a national convention with the help of Vocational Education Act funds); coordinating Vocational Educational work experience programs; paying approved expenses of consultants or members of advisory committees; maintaining adequate programs of supervision and coordination; conducting special demonstration and experimental programs; and evaluating programs. I don't know if this comes under evaluation or not, but I do recall one project that was submitted which included the fees for National League for Nursing accreditation and this was accepted. I don't know if all states would do this. I don't even know if our state could allocate enough money for the 32 programs - soon to be 36, I guess - but it is something that has been done: nothing ventured, nothing gained.

The Act also provides pre-service and in-service teacher education. It sounds like it does an awful lot of things, but one point that must be emphasized is that it is designed primarily to fit individuals for employment and occupations which are determined to be generally professional or require a baccalaureate or a higher degree. It must stay within the limits of the technical field and this is assured in the junior college. So one of the major sources of support for training programs in the health service worker arena is the Vocational Education Act of 1963. The operating programs falling under the supervision of the Department of Health, Education and Welfare include programs for associate degree nursing; for practical nursing; for other health occupations; for teacher training; for work-study programs for vocational students; and for research experimental demonstration in private projects - and there is a blue sheet available from the U. S. office that relates to this area. They are called the 4-C projects. I know research funds were cut too, though, weren't they, Sid?

Perhaps the tithing started in Washington, and California is not responsible for initiating it. But it is worth being aware of and investigating and inquiring about. If you want more information on funds that are available for research, write to the Director, Division of Adult and Vocational Research, Bureau of Research, U. S. Office of Education, Washington, D. C., Zip Code 20202. This is the only one I have.

Now I will open the floor to questions.

Q. Mrs. Mercer, could you tell us what kind of accreditation is required to qualify for loans and help under the Vocat'onal Education Act?

A. There is no identification of a specific accreditation. Speaking for our State, we do have regional accreditation of our junior colleges under the Western Association of Schools and Colleges and, of course, all programs are approved by the Department of Education, but no voluntary accreditation is identified as required. If you're interested in obtaining voluntary accreditation, you might be able to get funds for it through the Vocational Education Act of 1963.

Q. Distributed through the State office?

A. Distributed through the State offices, yes.

Q. Is it usual that state criteria that are established for the administration of the Vocational Education funds include standards for teachers of the program? In cases where a credential is required in the junior college, that would be the kind of standard that I am speaking of. In cases where there are no credentials required, then are there other standards regarding the preparation and background of the teachers? And if it is usual that the criteria on the State level includes some standards for the teachers, do these standards in any way conflict with the standards for nurse educators supported by the National League for Nursing?

A. Well, that's a big question. Each state has a state plan for Vocational Education which does include standards. Nationally, I can't answer that question--i.e., if there are conflicts. I could only answer it in terms of California. Could I ask how many in the audience represent the State of California -- how many would be interested in this? I can speak regarding this. There are certain credential requirements in order to be eligible for reimbursement under the state plan for Vocational Education, and this does require at the present time a standard designated subjects credential in the State of California. This has presented a problem for nurses with Masters degrees in terms of their curriculum being equated with the curriculum required for this credential.

The Bureau of Industrial Education has been having a running dialogue for many months with people who are concerned about this problem and it was my understanding when I left the Department of Education, February 1st, that there was going to be a reconsideration and a re-evaluation of the requirements for the masters degree meeting the conditions for the standard designated subjects credential. Mary Searight, could you tell me if there has been any more progress in this area? (Mary is on the faculty of the University of California and involved in teacher preparation for associate degree programs.)

Searight: The last I heard -- and as you say, it's a running dialogue-- because I am always calling, was that the requirements for the Vocational Credential were somewhat eased in that the recency clause had been deleted from the requirements. You might remember that it used to be that we had to have so many years of practice in the last few years, and that has been deleted. The requirements are more general now, but in order to get a credential, one does have to submit a long history as to who you are and where you/ve been, and all of your course work, to the Department of Vocational Education for evaluation and review. Does this help? To the best of my knowledge, they have not completely deleted the courses in Vocational Education offered at the University of California. A teacher who may want to start to teach may perhaps get a beginning credential in Vocational Education and then, according to the Vocational Department, may have to make up requirements as they specify, and this is so indefinite that I have not been able to get a clear-cut answer.

Man's Voice: Stand right there. I was going to suggest that I think you'll find that the problems generally are two-fold: One is the educational courses required by the public school teaching activities; the other will be the vocational experience involved and by the Vocational Education Department. These two will vary somewhat from state to state. You will either find one or the other, and sometimes both.

Mercer: Sid! The question is, the Act states this is for public institutions. I asked Dr. McGaw if private institutions would be eligible for funds and he said they would not - that it is for public institutions only. Any other questions?

Man's Voice: Mrs. Mercer - This is not really a question, and I have no desire to make a speech. However, in view of the fact that this does vary from state to state, I'm very much interested in seeing that the different states review their different vocational certification requirements so that AGN nursing instructors can qualify for vocational credentials and therefore permit their institutions to qualify for help under the Vocational Education Act of 1963. If the State of Washington is a good illustration -- and I hope it isn't -- I think we're pretty far to the far right. If that's what I should use in being very restrictive in this, we're going to keep on fighting until the ten or twelve of my highly qualified professional nursing instructors at Park College get a vocational credential without having to go back and take some very elementary kinds of teaching which might have been good when you pulled a person off a job as a welder and tried to help them learn how to teach for the first time, but is in my estimation very stupid for people who have been teaching for years. So let's go back home and work at it.

Mercer: I think you have some support there. Any other questions?

Q. If a building is to be jointly used by a science program and an associate degree nursing program, would any part of funds be available for building?

McGaw: That's a real sticky one.

Mercer: That's why I gave it to you.

McGaw: I'm not so sure, you see -- the act specifically excludes from vocational education, support programs which are academic in nature. Therefore, we get into a new question, then, whether sharing the same facilities with an associate in arts program and a science program would qualify the programs for funds. I think that if I were making a judgment in this regard -- and I did work with the State Department of Education for some 18 years -- I think the judgment would be based on which program has the majority use of the facility. Now, if you can identify that the associate degree program has the major use of the facility, then I think it would qualify. This is just a personal opinion. On the other hand, if the science program were a longer program and therefore made the greater use of the facility, then I would say that it would not qualify under VEA.

Mercer: Thank you, Sid. Any other questions? I stand adjourned.

AN OVERVIEW OF ACCREDITATION

Frank G. Dickey, Ed.D.

Among the many purposes which have been ascribed to accrediting, three seem to stand out:

(1) to measure as objectively as possible the adequacy and efficiency of institutional and specialized programs;

(2) to afford protection to institutions, faculty, students, and the general public from unworthy programs or institutions; and

(3) to show schools ways and means for improving their deficiencies.

All of these add up to a very large package, so large and full of unsolved problems, in fact, that the temptation is strong to walk away from the task or to settle for something closer to the immediately possible. But there is good reason not to walk away or to settle for less. The comprehensive program of accrediting, with all its complexities, is fundamentally necessary if there is ever to be any assurance that the concatenation of activities will remain within the voluntary sector of governance.

The current and evolving nature of American higher edcuation requires that our institutions give protection to those ideals which have been established during the history of higher education in this nation. It is important that we continue to recognize that our colleges and universities will survive only as they serve the ideals of truth and learning, of freedom without license, of conscience without compromise. Although such conditions as those just mentioned are distinctive to the institutions, they also look beyong the campus to the broad community of mankind. Therefore, it is imperative that we view accrediting not just as a function protecting the quality, freedom, and integrity of the institution and its programs, but also as a vehicle to serve the welfare of the nation where such service is needed. It seems quite clear that an organization such as the National Commission on Accrediting cannot afford to serve only the institutuions themselves; nor can it serve effectively if it recognizes only a segment of post-secondary education.

One of the more significant changes in our view of the purposes and functions of the National Commission on Accrediting has come to the surface through our re-examination of the Commission's total role in the field of post-secondary education. It can be illuminated by pointing out the distinction between "mission oriented" and "discipline oriented" approaches to education, which Alvin Weinburg, Director of the Oak Ridge National Laboratory, did very well when addressing himself to what he sees as the widening gap between the concerns of the university and the concerns of society, he said:

> "Our society is 'mission oriented.' Its mission is resolution of problems arising from social, technical, and psychological conflicts and pressures. Since these problems are not generated within any single intellectual discipline, their resolution is not to be found within a single discipline."

In contrast to the "mission oriented" approach, most of our specialized accrediting programs are quite obviously "discipline oriented." Acknowledging that the distinction is perhaps clearer conceptually than practically, and that over an infinite time span the two categories probably converge, we nonetheless think that the distinction is valid enough that the National Commission on Accrediting should move in the direction of developing a "mission oriented" approach to accrediting rather than one which focuses all attention upon the "discipline oriented" approach. It becomes necessary, therefore, for us to give attention to the totality of education at the post-secondary level.

The several types of voluntary accrediting, both instutional (through the regional associations) and specialized or professional accrediting, must be given recognition and protection. With this explanation as a backdrop, it seems appropriate to suggest that institutional accrediting, if properly performed, can be of tremendous value, not only in establishing a foundation for quality education, but also for maintaining an atmosphere of freedom and integrity for the institutions. Beyond this type of accrediting, many of the real needs can best be met through a combination of professional approval of programs and professional certification or licensure of the individuals coming from these professional programs of preparation.

Suggested Change in Emphasis in Specialized (Professional) Accrediting

As one views the future work of the National Commission on Accrediting, there are many changes in emphasis which should be considered. If the public is to be protected in those areas in which harm could be done by poorly prepared or incompetent practitioners, accrediting alone cannot furnish such protection. In fact, accrediting indicates the quality of the program and does not say very much about the quality of the individual who completes the program. Therefore, it is proposed that our present specialized and professional accrediting organizations be encouraged to transfer some of their efforts from accreditation per se to more creative, stimulative endeavors which would actually "push" the institutional programs into new and more effective directions.

Certainly, it would be unwise to risk a lowering of standards of individual practitioners in professional or technical fields; therefore, it is further proposed that more attention be devoted to the development of sound and valid licensure or certification procedures, based upon professional sponsorship rather than legal approaches through either state or federal channels. We should replace state licensure approaches with trustworthy nationwide examinations and procedures in all fields in which society would suffer if we did not have some protective devices to guarantee individual competence.

In the process of encouraging a change in emphasis for the professional accrediting agencies to include more flexibility and also to stimulate more attention to professional licensure activities, it seems appropriate to suggest that encouragement should be given to the development of guidelines or criteria which could be implemented by regional organizations in the institutional accrediting procedures. Perhaps this may arouse the cry that we are returning to the 1952 position of the National Commission when it was proposed that all professional accrediting be "outlawed." Such is not the situation. We are merely suggesting that specialized accrediting organizations take a new and progressive look at their responsibilities and that, where possible, their focus be upon cooperative endeavors with the institutional accrediting organizations, rather than upon the single-purpose, more narrowly defined areas of professionalization.

The National Commission on Accrediting recognizes the valid interest and concern of all groups which share a relationship to the matter of proper, progressive development of quality education at the junior college level. This includes an awareness of the interests of the Congress, the Department of Health, Education, and Welfare and the Office of Education, the public, the American Association of Junior Colleges, the National League for Nursing, and the various other accrediting associations, etc. Nevertheless, the Commission does assert its confidence in the integrity and capability of the junior college educators and in the junior colleges themselves. The Commission is convinced that the nation's needs in the area of junior college education can best, and most adequately, be met through a framework which provides a maximum scope (consistent with desirable assurances for quality) for institutional self-direction. The existing provisions for funding under the Nurse Training Act do not provide the junior colleges with that degree of flexibility for program development which the Commission regards as being harmonious with the American tradition of higher education.

1. The National Commission on Accrediting considers that the most desirable and proper means for insuring quality education at the junior college level for the purpose of eligibility for Federal funds is through the medium of institutional accreditation conducted by regional accrediting associations, under an arrangement where specialized accrediting associations (such as NLN) would furnish the regional associations with guidelines for the assessment of associate degree programs in the junior college setting,

would provide lists of qualified specialists in the profession to serve as members of regional accrediting teams of junior colleges, and would--in turn--receive relevant team reports from the regional associations, along with notification of the regional association's decision regarding its award of reasonable assurance or accreditation to the institution. The definite procedures involved here will be negotiated between the regional and the specialized accrediting associations.

2. List of Recognized Consulting Associations: The National Commission on Accrediting will work with AAJC in developing, endorsing, and publishing a list of recognized professional associations which can serve as consultants to junior college administrators and faculty on problems relative to specialized education.

3. List of Auxiliary Accrediting Associations: The National Commission on Accrediting will formulate and endorse a list of recognized auxiliary accrediting associations for the junior college level. The purpose of the list will be twofold:

   a. The regional associations will join in the above-outlined "cooperative approach" only with associations on this list.

   b. For those junior colleges which do not find that the "cooperative approach" fulfills their needs, and which therefore desire to receive (formal) specialized accreditation, only those associations on the Auxiliary List would be approved by NCA to offer such specialized accreditation. It is anticipated by the NCA that some junior colleges, for their own individual purposes, may choose to seek specialized accreditation of associate degree level programs. This will be the recognized prerogative of each college.

4. The NCA takes a strong position opposing the use of specialized accreditation as a singular criterion for eligibility for Federal funds.

5. The NCA, in consultation and cooperation with other interested organizations, intends to seek actively revision of Federal legislation and administrative ruling wherever eligibility for funds is totally dependent upon specialized, or program, accreditation.

6. The procedures outlined above, if adopted by the Department of Health, Education, and Welfare, will be subject to joint review after a two-year period of implementation, or at any other time that such a review is requested by one or more of the organizations involved.

The envisioned "cooperative approach," wherein the junior colleges may choose between either a reinforced regional accreditation or specialized accreditation for purposes of eligibility for Federal funding, does provide that desirable flexibility which American junior colleges require

and deserve in their efforts toward quality program development--while also safeguarding the interests of the public and of the federal government. The National Commission on Accrediting pledges itself to the development of the "cooperative approach" in accreditation at the junior college level.

Possible Changes in Accrediting Terminology

It is proposed that even a different semantic approach to the total area of accrediting would be useful and helpful. Initially, it is suggested that we work toward the day when we would speak of the work which the regional associations perform through institutional appraisal as "accreditation." The term "accreditation" would be reserved for this type of appraisal. Specialized or professional evaluations and the resulting lists would be spoken of as "approval," with the term "eligibility" being employed for purposes of federal appraisal for funding purposes, and the state activity in the evaluations of institutions termed "endorsement" or "recognition." Such a scheme may not hit at the heart of the problem, but, if these terms are properly defined and extended in their use, some far reaching changes might result. In any event, the present confusion relative to the use of the term "accreditation" would be lessened. Perhaps, it will be far simpler, however, to change the structure and even the activities of organizations than it will be to change the terminology which is used.

Federal-National Commission Relationships

As we have heretofore stated, the new realities of federal governmental participation in the development of the nation's system of higher education demand new and realistic philosophical and psychological positions on the part of the National Commission on Accrediting. Emerging from these stances will come new patterns of activity on the part of the NCA relative to the federal government.

The essential philosophical framework within which the NCA will shape its relationship with the federal government will be characterized by the term "cooperative interaction." This term implies a recognition on the part of the NCA that the federal government is now an indisputably dynamic participant in the process of shaping American higher education. It is recognized that since World War II the federal government--primarily through the Department of Health, Education, and Welfare--has expanded its support activities for education in an extraordinary fashion. Federal funding of education has become an integral part of our national social policy and, while this effort at the present time is largely on a programmatic basis insofar as the higher education segment is concerned, it may be reasonably expected that a federal "general support" funding program for higher education will materialize subsequent to the termination of the Vietnamese conflict.

The NCA does not view the federal government, in its expanding role of aiding higher education, as an antagonist, nor as an inherent or necessary threat to the autonomy of higher education. The history

of the federal government's relationships to the various policy-formulating institutions of our society presents a pattern of enhanced federal power wherever these other societal institutions (state governments, etc.) fail to react in a responsible manner to contemporary social pressures. If the policy organs of American higher education fail to master the challenge confronting them, they must inevitably accept the federal government as the dominant formulator of educational policy.

By shaping its policies and procedures in such a way as to meet the reflected demands of our society, the NCA anticipates a process of "cooperative interaction" between it and the federal government. In pursuit of this stated philosophy, the NCA proposes to exercise active, vigorous leadership within its corporate sphere of responsibilities--and especially wherever its responsibilities and those of the federal government impinge. To that extent, compatible with the valid interests and claims of American higher education, the NCA will function so as to inform, persuade, and enlighten the various agencies of the federal government regarding its perception of the best interests of the higher education community, and of society as a whole; it will acquaint itself with the federal policy-making process relative to higher education, seek to direct its course along suitable lines and restrain its impact within desirable bounds. Positively, the NCA will respond to the valid requests for action and leadership made upon it by the federal government. In so doing, the NCA hopes to serve notice that it accepts the federal government as a proper, creative partner in the effort toward elevating the quality of America's system of higher education--and a partner whose interests it will respect.

The Continuing Need for Accrediting

In conclusion, it should be pointed out that the idea of voluntary accreditation is of extreme importance at this moment in our nation's history. There is no single society, to our knowledge, having any pretensions to sophistication that does not have some form of accreditation for higher education. But ours is the only society where accrediting is voluntary and non-governmental. This point is important because voluntary responsibility is a fundamental characteristic of the society of which we are a part and to the preservation of which we should be dedicated. Voluntarily assumed self-discipline is basic to our way of life. A free society stays free only as far and as long as the individual citizens or its individual institutions are willing to assume the responsibility for self-discipline.

Our belief is that there is no agency or group better able to assist in upgrading the quality of our educational institutions and protecting the integrity of these colleges and universities than the accrediting associations. These are not agencies operated by one man, or by a small clique, or by one party or one denomination. They are large, broadly based operations depending upon the principles of self-regulation and self-control reflected through cooperatively devised standards arrived at by the consent of all the constituent organizations. These, we believe, can be depended upon to preserve education as an essential

force in a society of free men. Again, we remind you that these criteria are not the reflection of one institution which may occasionally go astray but rather the combined thinking of all of our best institutions.

With both public and independent school forces of every level joining hands, we believe that we can keep accrediting positive, constructive, and socially useful--that is, as long as we have the courage, the faith, and the foresight to impose upon ourselves, upon our institutions, a real zeal for self-discipline and as long as we demonstrate a high devotion to quality in our educational programs.

THE AMERICAN ASSOCIATION OF JUNIOR COLLEGES' VIEW OF THE ASSOCIATE DEGREE NURSING PROGRAM

Bill J. Priest, Ed.D.

I am pleased to come here and talk to you a little bit about some of the views that the junior college people of the United States, I believe, hold. I have had an opportunity in the last two or three days to check bases with a number of them and I hope what I have here is reasonably representative. I think I can start by saying without fear of being successfully contradicted that the junior colleges of our nation are deeply committed to quality programs in the health related technology field. This is not a new field but it is certainly a burgeoning field and as you will note by some of the information I will give shortly, it is increasing in prominence, at least in our workaday world.

The total junior college movement, of course, is moving ahead at breakneck speed in terms of numbers of schools; numbers of students and all of the trends would indicate that this is not a flash in the pan. If anything, it may further accelerate in the next few years. There are currently some 800 junior colleges in the nation and these are growing at a rate of about 50 per year. One of the very significant dimensions of this with respect to the nurse training program is that the major urban areas have been rather slow to develop junior colleges and, since 1960, we've seen some of these very large cities in the United States take a sudden and intense interest in the junior college as an instrument to solve some of their higher education problems. Cases in point would be Dallas, with which I am associated; Seattle, St. Louis, Cleveland, Philadelphia, Miami, Denver, and six or seven others in the 300,000 to 900,000 population bracket; obviously, here you have a somewhat different picture educationally than you would find in a 500 student junior college in a rural area.

One of the basic elements, of course, is the proximity of these urban area community colleges to major medical facilities. The need for trained personnel is there and the training opportunity in terms of resources and of hospitals with all of the various components necessary for comprehensive training are there. The American Association of Junior Colleges, recognizing this, has on its staff a full time man, Ken Skaggs, who is with us here today, in this area of health related programs. Ken tells me he is out of the office about 60% of

the time so intense is the interest and great the demand for guidance in establishing these programs and getting them moving to fill some of this big vacuum that I am sure you've heard about in the last day or so.

As we look at the picture, and here again, I suspect you share this with us, the supply/demand projections in the United States on nurse training are really quite pressing. I have heard some of the figures that were reported earlier and I didn't know it was as bad as it is when I made this generalization, so I am even more depressed now that I've come into contact with the experts. Obviously, quality is suffering. People still get sick, and if you don't have that which you'd like to have, you can't tell them "that's tough, you can't help them." You help them with what you have which, of course, is part of our problem. I spoke about this with a hospital administrator recently in a large city, and he told me sagely, "If you feel a belly-ache coming on in this town, grab a plane. Wherever it's going, it will take you to a place where there's better medical treatment than you're likely to get here." So, I guess things are tough all over.

In this situation, you can readily understand why the Associate Degree in Nursing Programs which have a production capability somewhat greater than the programs taking longer periods of time are looked upon as a possible way out of the woods. I think there is evidence that they may do much to alleviate this, in fact may make it better than it might have been had they not come into being a number of years ago. During the last ten to twelve years, and my figures may be off slightly since I'm speaking from recollection rather than research, I think this ADN pattern has moved from an experimental level to a level in which it has established itself as a sound way to produce nurses. I want to qualify this later, because there are some flies in the ointment, but my point is that this basic approach to training line nurses is good, has demonstrated its worth, and used within its confines can do the job and can serve sick people, hospital administrators, the nursing profession, or what have you.

The American Association of Junior Colleges does not perceive the ADN programs, the Diploma programs, and the Bachelor Degree programs as being competitors vying for prominence in the field. We feel there is a very stronger inter-dependence here. I think the evidence supports this. We are sure from our tunnel vision that the ADN programs are very dependent on quality Bachelor of Science in Nursing programs. Without skilled supervisors and without an adequate supply of trained nursing educators, we're dead pigeons, to put it bluntly. You just can't run the program if you don't have this, and this is one of the very sore points. These are not being produced, or if they are, the people who are seeking them in education are not finding them and so even the seed corn is tough to buy. This is very critical.

AAJC and NLN have been working very closely with one another for quite a number of years. Most of you know that we have a joint committee and that we have a running dialogue concerning our common problems.

However, the colleges, for reasons mentioned by Dr. Dickey, are quite allergic to this matter of specialized accreditation and there are some very legitimate reasons for this. This becomes acute and aggravated when Federal regulations tie subventions into specialized accreditation and disburse their funds in accordance with these. This, I think, was brought into very sharp focus and has been the subject of some analysis and perhaps a bit of controversy for oh, perhaps, the last 12 or 18 months. In fact, there's evidence that things became a little spirited along the way here, because we seem to have different points of view. The irony of it, as we see it, and I suspect you likewise have tried to see it, is that we're both trying to fight for quality programs, and we're both trying to minimize chaos in our operational worlds where we're presumably creating this supply of talent. I think we're moving towards steps, and again Dr. Dickey pointed out some things that are under way and most helpful, whereby you will get guarantees of retention of quality (with which we are in complete accord) and we will get guarantees that we won't bump into this multi-headed monster of specialized accreditation in many forms when we're trying to run a stable educational program.

I have listed some key issues here. They are not earth-shaking. I suspect that all of you are better acquainted with them than I am, but I still want to mention them for the record. These things need to be looked at continuously and I hope better solutions will be forthcoming. One area of concern involves a clear definition of the role and function of the nurse and a clear understanding of what her practice involves. This thing is not static. It's quite evolutionary. I had a very small part to play in organizing a nurse training program some 15 years ago and issues that were really hot potatoes in those meetings are just routine matters now, but they were new at that time and people dislike new things. They run scared when they are confronted with them, and until we have some evidence that you can guarantee quality, naturally people are going to look upon them with suspicion and reluctance. Which leads to the second point--an end to loyalty to past procedures and programs just because they are in the past experience of many who are practicing today and a whole-hearted acceptance of new and developing programs wherever these programs are effectively meeting needs. In other words, an open mind in this to try a better way knowing that the contemporary answers are just not solving the problem. Third, there must be a complete realization that if the job is to be done properly, it will be an expensive undertaking for all concerned. New sources must be found for financing and willingness must be developed on the part of all to spend necessary monies for the continued development, implementation, and expansion of nursing programs. And these are real costly, as you know, and educational administrators wince at the thought because they compare them with other kinds of programs and often this doesn't fit. And finally, a more dynamic public relations program is needed to acquaint the total public with the needs and expectations of nursing and the attractiveness of the profession as a career. In some areas, an excellent job has been done. It's been possible to do a fine screening job and to start with that basic material which permits you to turn out a quality end product.

Now I'd like to conclude with a rather impartial indictment of all of the people involved in this, not all of them, but certainly three major segments. First I would say the hospitals, wards, sick rooms, clinics of the nation are grossly understaffed and the historic training programs are sufficiently ineffective to cause a worsening rather than an improvement of the situation. Therefore, the "stand-patters" who insist on only the type of training program which produced them are not in a defensible position. I am shooting at the nurses here. Two--the hospital administrator beset with nerve-wracking personnel problems must be mature and farsighted enough not to panic in the support of inferior training programs which are not able to solve his problem despite the fact that they produce warm bodies with certificates of some kind in their hands. And finally, the operators of the ADN programs, and I am thinking here chiefly of community colleges, must not succumb to their desire to serve or to local pressures from personnel head hunters and wind up establishing sub-standard programs, improperly staffed, and denied adequate facility and logistic support. This is a tragic solution and regrettably is being used at this moment in some places. It will discredit the whole ADN program and push us back 15 years. Thank you.

THE ANA VIEWS ASSOCIATE DEGREE NURSING

Jo Eleanor Elliott

The American Nurses' Association views associate degree education in nursing as without which there is nothing insofar as our projected plans for the future are concerned. Our position is quite clear. It is concrete in that it is on paper. (I hope it is not cast in granite, however, if we need to change it as time goes on.) But certainly the American Nurses' Association, in projecting nursing education as needing to be and stating that as of now it should be in educational institutions, has said that the plan and the way we will get better quality care in our institutions, our other health agencies, and at the patient's side is to prepare professional practitioners in baccalaureate programs, and prepare for technical nursing practice in associate degree programs.

We see this as the pattern of education which must occur as rapidly as feasible -- as rapidly as there can be an orderly transition of nursing education programs into educational institutions without acutely disrupting the flow of new nurse practitioners. We project that the larger proportion of nurses will be prepared in associate degree programs and a smaller proportion, but far more people than at the present, will be prepared in baccalaureate programs.

These two kinds of nurses will provide the type of patient care that some of us visualize, which some of us believe is occurring even now in a few places, but which we must demonstrate far more effectively in order to promote the use of nurses appropriately according to their educational preparation. These are kinds of nurses we are preparing -- not an educational pecking order we are promulgating -- and we must have these two kinds of nurses to provide the quality and quantity of care the people of the United States deserve and are coming to expect.

Relative to accreditation, the American Nurses' Association has for some long period of time supported the National League for Nursing as the accrediting body for nursing education programs. In January, 1965, the American Nurses' Association reaffirmed its full support of the National League for Nursing as the national accrediting agency for all basic nursing education programs. The ANA took specific action to give full support to the NLN for accreditation of associate degree programs.

It is the ANA's position, and this position pertains through today, that the National League for Nursing should be the accrediting body for all programs leading to licensure as registered nurses, regardless of the nature of the institution in which the educational program is given. The January, 1965, action taken by the American Nurses' Association was communicated at the time to appropriate agencies concerned with the NLN and accreditation of associate degree programs.

Our concern, of course, when we talk about accreditation through specialized accrediting agencies is quality. Our need is for quality educational programs; our concern is that associate degree programs in nursing develop out of quality, continue with quality, and extend in quality as time goes on. We know that diploma and baccalaureate schools have improved because of the school improvement program stimulated by the accrediting process. We know that the only quality criteria which nursing education programs meet are the accreditation criteria -- the state standards set are the minimum for operation. We know that the graduates of accredited nursing education programs fare far better than graduates of non-accredited programs on the only common examination method available to date -- the state licensing examination.

The ANA is concerned about the quality of the product of the educational process. All of us here are concerned about the quality of associate degree programs -- if we do not have quality programs, we will not have quality products; if we do not have quality products, we will have even more criticism than to date about what associate degree graduates can and cannot do! The American Nurses' Association believes that specialized program accreditation does assist in improving the quality of the product which will, in turn, improve the quality of patient care.

I know we tend to generalize from too few examples. I would like to have faith that all junior colleges want only high quality programs; that they would open programs only if quality criteria can be met. I agree with Dr. Priest in his commenting that junior colleges should not start programs if they cannot be of good quality. But it does get a little discouraging when one is asked to give consultation, as I am in my usual work, and one does the best possible in providing materials, criteria, publications, suggestions for more specific consultation, to then have someone in the institution say "Oh yes, we know, they gave us consultation, but we did not pay any attention to it." What we need is to look at ways in which we can work together to ensure that junior colleges begin with quality programs. We have had to do much patchwork with baccalaureate and diploma programs; there has been much research and continuing study supporting the associate degree program -- cannot we initiate new associate degree programs avoiding some of the mistakes we have made in the past?

The American Nurses' Association has a responsibility through its Council of State Boards of Nursing to assist in helping develop quality educational programs in the associate degree setting. I personally believe that state boards have a great responsibility to set appropriate minimum requirements for the initiation of new programs. Because the state boards are the only legal agencies that can affect the establishment

of programs, the members of state boards must take the responsibility which is theirs to resist the pressures which may occur. The junior colleges have pressures to start new programs. The state boards comment that pressures on them are indeed great to approve any and all new nursing education programs in the state. We as educators in the associate degree nursing programs and as educators in junior colleges must help state boards of nursing: the state boards should not permit the development of new programs if qualified faculty and appropriate facilities are not present, or if the college itself does not yet offer supporting courses of substance.

This involves and revolves around the need for statewide planning. The ANA and the NLN are on record re: the need for planning -- community planning, statewide planning, looking at the needs and resources for education to provide some order rather than chaos in the orderly transition of nursing education into educational institutions.

The state boards of nursing have a responsibility also in not impeding the development of associate degree programs as appropriate. When faculty, facilities, and financing are present, the state board should not be saying "It won't work." The ANA, then, has a responsibility to assist the Council of State Boards so they can do a better job on our behalf in working to get higher quality registered nurse personnel through the associate degree programs.

Lastly, the American Nurses' Association is on record regarding economic security and the graduate of the associate degree program. While this may not relate directly to accreditation, it is included because it may not be known to many here. The ANA has issued a statement as follows: "It is the clear intent of the American Nurses' Association that the beginning practitioner from the associate degree program and the diploma programs shall begin at the same salary level." (The ANA does not yet have a statement relative to a differential for the baccalaureate graduate.) The ANA did establish a national salary goal in June of 1966 for that year which has had a great impact on the economic interests of nurses throughout the country. The improved economic situation in nursing needs to be communicated to many people, and especially to our colleagues in the junior college association, for this improvement can well assist in attracting more people to the associate degree nursing program.

There are moments and periods in these times when I think nursing is in the midst of an internecine war over the future of nursing education. This in the face of what is, to me, an inexorable movement of nursing education into educational institutions throughout the country. The movement would have occurred if the American Nurses' Association had never issued a position statement on education for nurse practitioners. It has been underway in some parts of the country for at least ten years. Whatever may be the case with us oldsters with our infighting, an advance copy of a resolution to come before the National Student Nurses' Association at their forthcoming convention leads me to this conclusion: if we fail in moving nursing education into educational institutions, the students are going to pick up the pieces. The next generation wants honest approaches, honest answers -- the next generation will straighten things out!

THE VIEWPOINT OF THE NLN AND THE DEPARTMENT OF BACCALAUREATE AND HIGHER DEGREE PROGRAMS

Lulu Wolf Hassenplug, Sc.D.

I am delighted to have this opportunity to say a word about National Accreditation but as I look at the audience, I am certain most of you know as much about this topic as I can tell you. I stopped at the desk to pick up the NLN blue booklet of 1967 titled, "Nursing Education Accreditation" and I would like to remind all of us that this booklet contains very valuable information and explains the rationale for accreditation by the NLN.

As I think about our current situation, I wonder if those of us who are preparing teachers for baccalaureate and higher degree programs and for associate degree programs have really done as much as we might do in interpreting to our students just what NLN accreditation means in terms of quality programs. I have been concerned and was quite concerned a year ago when I went to Washington to testify before a Senate Committee in regard to NLN accreditation for baccalaureate and higher degree programs that we had not told our story as well as we might to our potential teachers while they were enrolled in our graduate programs. I felt guilty when I became aware of the fact that some of our UCLA graduates now teaching in associate degree programs were not really in favor of NLN accreditation or at least not when the Presidents of their colleges were around. I wondered then and I still do, if we are giving enough attention to interpreting the rationale for voluntary accreditation and NLN consultation services to Schools or Departments of Nursing.

The National League for Nursing is recognized, as Dr. Dickey told us, by the National Commission on Accrediting for the accreditation of baccalaureate and higher degree programs in professional nursing but it has not yet been recognized by the Commission for the accreditation of associate degree programs. In fact, the Commission is suggesting an alternate procedure for the sole purpose of eligibility for federal funding of junior college programs. While the National League for Nursing is eager to cooperate with the National Commission on Accrediting and with the regional associations in determining eligibility for federal funds for associate degree programs in nursing, I must point out that the procedure suggested has not yet been presented to the National League for Nursing Board of Directors.

Since I cannot predict the Board's action, it might be helpful to say a few words about what we think the accrediting program of the National League for Nursing has done for baccalaureate programs.

When we founded the National League for Nursing in 1952 through the consolidation of seven national nursing organizations and committees, the League had then and has now as its primary objective, the improvement and development of nursing education and nursing service through the coordinated action of nurses, citizens, agencies and schools to the end that the nursing needs of people will be met. In 1952, nurses themselves made the decision that accrediting of nursing education programs would be the function of the League and set about to design this service to stimulate schools to improve their nursing programs. At present, the League accredits programs of study in nursing offered by senior colleges and universities, junior colleges, hospitals and vocational schools.

Effective in 1970, all evaluation of programs in senior colleges and universities will be in terms of graduate and undergraduate education.

In developing and administering the accrediting services for our baccalaureate and higher degree programs, we involve four different groups of people, all of whom contribute and work to improve the education of faculty and the programs and thereby the improvement of the education of the graduates of these programs.

In our Council of Member Agencies we have a continuing forum in which we discuss baccalaureate and higher degree programs. Since representatives from all of our accredited and non-accredited programs participate in these forums, it is a source of continuing education for all of us as well as a means for evaluating and improving our programs. This Council recommends action to the Board of Directors of the League through its Steering Committee so every faculty member has an opportunity to comment upon the criteria that are going to be used to evaluate our baccalaureate and higher degree programs. We also have appointed standing sub-committees on graduate and undergraduate education in nursing and these two committees work constantly to give us statements of revision of criteria and other materials which we consider and act upon in the Council and recommend to the Steering Committee for action.

We also have the Board of Review for Baccalaureate and Higher Degree Programs and for all the other programs. This Board is composed of nurse educators from programs accredited by the League. When baccalaureate and higher degree programs are under review, nurse educators from those programs make the review. While we include faculty members in our Council of Baccalaureate and Higher Degree Programs, whether they come from accredited or nonaccredited programs, the Board of Review is made up of only the membership from our accredited programs. Thus, faculty from all nursing education programs play a vital part in the program of voluntary accreditation and every

effort is made to involve as large a number as possible of the administrative and teaching staff of each nursing program in their own self-development and self-evaluation.

Society has delegated a large measure of autonomy to the professions in controlling themselves, and through that, the control of their services, the quantity of their services, and the cost of their services. Quality of service, as we all know, is dependent upon the quality of education. Thus, the accrediting of professional education is viewed as a responsibility of the profession.

On the other hand, I must point out that licensure is really no guarantee of excellence of a program. Licensure ensures only that the one who receives it has minimum preparation for safe practice. To move toward joint accreditation with regional accreditation associations is a good thing. The League has supported it and recommended it for a long time, but this is not really what is being recommended here today. We are being offered a totally different set of procedures for junior college programs than we have for senior college programs and though these procedures are said to be for purposes of eligibility for federal funding only, the term <u>accreditation</u> keeps creeping into the discussions.

In nursing education, the League has always held the viewpoint that the quality of nursing service is dependent upon the quality of education of all those who are licensed to practice nursing. Thus all types of nursing education programs are accredited by the National League for Nursing: Graduate programs for professional nurses at the masters degree level; bachelors and associate degree nursing programs in universities, senior and junior colleges; diploma programs offered by hospitals; and practical nursing programs. Each of these accreditations is based on the principle that evaluation is made by a peer group and is voluntary.

We see the accreditation process as a stimulus for growth and improvement. No faculty group ever asks for accreditation unless the school is ready and each faculty member has had an opportunity to utilize the self-evaluation report which requires every faculty member to answer questions, clarify positions and check their course work objectives against the philosophy of the program. The good thing about this kind of accreditation is that the faculty must plan at least a year in advance of the visit. Thus they learn as much from this on-going educational process as they did from their formal educational activities.

Then, too, those faculty members who serve on the Board of Review and who visit the schools are given a period of training before they embark on these activities. These trained visitors then have their first visits with more seasoned visitors so there is no chance of a visitor creating a problem out of ignorance.

Finally, the reports of these accreditation visits are not secret. Before the visitors leave a school, they share their reports with the faculty and everyone learns from the process. This League accreditation is seen as not only benefiting the school and faculty but also benefiting the practice of its members.

We are convinced of the value of peer assessment in the maintenance of high quality programs. We could not envision similar growth and improvement in programs without it. Thus we advocate these same accrediting activities for all nursing education programs. Quality education makes sense only when it affects all of our programs and through them our nursing services.

To help non-accredited schools and programs get federal funds for their students, the League developed the plan for Reasonable Assurance. And I reiterate, the League welcomes opportunities for joint visits with regional accreditation groups, and keeps all regional groups informed as to when schools in the region are to be visited by the League. Schedules for League visits are not rigid and can be changed -- but as we all know, time plans can become a problem.

Some regional groups have no time plan for visits, so it is very difficult for the League to know when a joint accreditation visit could be made.

To summarize, let me say the League has built a structure for voluntary specialized accreditation by peer groups and a structure for Reasonable Assurance. The League has a group of faculty, representing each kind of nursing program and each section of the country, prepared to .make visits for purposes of accreditation. The League is quite willing to furnish the regional associations with lists of specialists who are qualified to serve our regional association accrediting teams to do anything they can do to improve the quality of our present non-accredited associate degree programs. But I must repeat, the National League for Nursing will continue to be the Accrediting Agency for all nursing education programs. The procedure recommended here by the National Commission on Accrediting is for purposes of federal funding only. It must not be confused with accreditation.

VALUES OF ACCREDITATION TO A COMMUNITY COLLEGE

James McCann

Mr. Chairman, Colleagues, Ladies and Gentlemen. It is indeed a pleasure to be with you this afternoon in San Francisco and have this opportunity to visit with so many of my colleagues from around the nation.

I have been listening to these position papers today with great interest; and after just experiencing an intensive review of our institution by the North Central Association and subsequently an evaluation by Dr. Beckes and his staff, I am more convinced than ever that accreditation is truly one of the essential needs to insure quality education in all institutions of higher education. As all of you know, much has been written of the many kinds and descriptions of various accreditation processes. It is and has always been a concern to all of us. My comments today will not be directed toward the accrediting agencies but toward the value of accreditation for the community colleges, an area with which I am somewhat familiar.

Accreditation, so defined, is a process of recognizing those institutions whose performance and integrity entitle them to the confidence of the educational community and the public. The recognition is extended largely by voluntary agencies which have assumed responsibility for establishing criteria for visiting, and for evaluation. This evaluation is usually requested by the institution itself; and if the institution lives up to its promise, it is granted accreditation.

Now what is accreditation supposed to do?

First, it is to help the institution to intensify its efforts toward maximum educational effectiveness.

Second, it forces each institution to examine its own concepts, goals and operations which are further supported by this careful analysis and investigation by the examining team.

Third, accreditation compels the institution to do periodic self-evaluation.

Fourth, accreditation helps to facilitate the evaluation of student credits earned in the institution.

Fifth, it enables the student to transfer to other institutions with a great deal of ease.

Now I would like to comment on accreditation as it relates to the Henry Ford Community College. We are presently accredited by the Michigan Commission on Colleges and Universities, the North Central Association, and the National League for Nursing. As I researched the topic of accreditation, I found that most of the experiences we have had at Henry Ford Community College are quite common with other institutions that have been accredited by various agencies. In the recent review of our college, the above mentioned purposes of accreditation became the obvious criteria for the evaluation.

First, for the institution itself. The staff had to examine the written purposes, the objectives and operations of our institution to determine whether or not we still were realizing these purposes. This was a critical need since, as other institutions, we have grown rapidly in the last few years from an institution of about 700 to 800 students to one of 12,000 students today. This rapid growth tended to distort and change the original purposes and concepts for which the institution was established. We found many shortcomings in the realization of the original established objectives for the college.

Second, the value to the staff was immeasurable. Investigation into the individual programs, the courses, the content and the objectives resulted in cooperation between areas and divisions within the institution and a reorientation to much broader purposes and objectives of the institution. Also innovations in instruction were investigated and an attempt is presently being made to apply some of these innovations to areas within our own institution.

Third, the accreditation review reinforced the value of an accredited institution to the young people and adults of our community. It also enabled the institution to acquire well qualified staff, a good salary schedule, and many other benefits that tended to enhance the value of the institution.

Fourth, the accreditation established for the student the privilege of transferring to any other accredited institution without debate or controversy concerning credits. A student knows he can transfer to any college or university with assurance that the credits earned in this institution are acceptable and are transferrable.

Fifth, the value to the community was reinforced in the minds of many by the successful accreditation review. As we all know, it has been an established fact that an institution of higher education is of economic and cultural value to any community. Just last week in the February 20 issue of Newsweek there was an article on the value of higher education in the community in which the institution is located. In the city of Dearborn, this has been no exception. Trained students from our college are desired and employed by industry. Such an educational resource is a decided asset to an industry or business as it expands and needs additional trained personnel, and we already know that it has enabled our students to remain in the community and attend a fully accredited college and enjoy all the privileges of such an institution. Also an accredited institution such as ours has enabled adults to pursue a long-desired program toward a degree with a minimum of interruption from their job or their home. In Dearborn several thousand adults are involved in such programs. I would add without reservation that if this college were not fully accredited, many of the students would have had to look elsewhere for training and advanced education.

Sixth, accreditation review assures the taxpayer a full return on his tax dollar that he has invested in education for the students and the citizens of this community. This is an important assurance since today we hear so many comments about the costly programs, the extravagances and wasted tax funds in so many services of our country. It is reassuring to the taxpayer-parent when we say to his children, "Your credits are transferrable to all institutions. All the credits earned here in the various technologies are accepted without reservation by industry and business. Graduate students of our nursing program are accepted by all hospitals and nursing service agencies." Certainly this is reassuring. When we work with business and industrial people of our community and accept their students by the hundreds, and say, "We have quality programs," they have only to look at our accreditation for further reassurance that they are receiving value for their investment in training and education. These are but a few of the many values to any institution extended by accreditation.

Now I would like to comment briefly, since this is a nursing group, on our experiences at Henry Ford Community College relating to value of one kind of accreditation. Henry Ford Community College first became interestated in an NLN accreditation just before 1958 when the program of nursing which we were engaged in developing was having many problems, as you well know, principally the problem of survival and problems with the Michigan State Board of Nursing. One has only to reflect on that period of time and the skepticism that was expressed in connection with the community college two-year nursing program. After all, this was a considerable departure from the established traditional nursing program. To offset the criticism and the concern, the college administration and the staff offered to have as many members of the State Board of Nursing, or anyone they should designate, evaluate our nursing program at the college. The State Board indicated they had no one; so in an attempt to find out if our program was sound or had any merit, we contacted the National League for Nursing. As a result of this contact, the League

informed us we could have visitors to evaluate and review our program. We asked for these visitors, they arrived, they reviewed our program, evaluated it in all aspects and found that, by their criteria, we met accreditation except for the full state board approval. Because of the visit and the evaluation, the State Board approved our nursing program in 1959 and concurrently with that approval, we received NLN accreditation approval.

The college in general and its program offerings were looked on with a great deal of pride by the community, but the nursing program in particular was one of great satisfaction to the college staff and to the community in general, since Henry Ford Community College was one of the colleges selected to conduct the so-called two year experimental associate degree nursing program. The accreditation that was determined to a great extent by the National Leaguefor Nursing brought pride and satisfaction to this community as well as a needed service to the hospitals and other agencies in this area.

There is one other point I would like to make today that should be of great concern to us in Michigan, as I am sure it is of concern to the rest of the nation, since Senator Wayne Morse made certain remarks about this problem last evening at the national conference of the American Association of Junior Colleges in San Francisco. In the past months here in Michigan, the Bureau of Higher Education, Bureau of Budget and the other agencies, through rather complex procedures, have assumed a major role in the direction, the growth, the size, the facilities and the curriculum in the community college. For instance, all new programs and facilities must be reviewed and approved by the Bureau of Higher Education, which approval is conditioned by the dictates of the Bureau of the Budget in terms of the amount of money available for construction and for new programs. So by controlling construction of facilities, the growth of the institution can be directed or modified in conflict with the wishes and needs of the institution. By definition the Bureau can establish credit or non-credit courses on any campus by depriving needed facilities to expand total programs. The Bureau can determine which courses receive state aid or capital outlay assistance as well as how these funds will be expended. All these controls mean, in the not too distant future, that a state bureau and not the institution will determine educational policy for entire state. This should be of great concern to all of us since it deprives the institution of the autonomy and flexibility to grow and react to the educational and training needs in the various communities. This I hope will come under study of the accrediting agencies that already recognize the need for diversity and flexibility in evaluation and accrediting techniques. By indirection so-called accreditation can be determined by some state official or state agency. This is contrary to all the best interests for higher education, for community college education and, for that matter, any education since we believe, in this country of ours, in the freedom of education. We should do all in our power to stop this trend and not sell the birthright of American higher education for a paltry state of federal subsidy.

If we are to provide for the young and the old, the gifted and the handicapped, the academically oriented, the mechanically talented, and all the diversification that we are asked to provide for in training and education, we must retain control of our institutions, continue to provide quality education through critical self-evaluation and voluntary accreditation. Thank you for your attention.

CRITERIA FOR CHANGE

Shirley Sears Chater, Ph.D.

To be in favor of change for change sake alone, is to build a curriculum without reference to the multiple bases upon which sound associate degree programs in nursing should be designed. As the title of this paper suggests, criteria for change are important; they ensure innovations which are consistent with existing philosophy, purpose and aims.

Criteria are rules or standards by which judgments and decisions can be made. Criteria for change in curriculum, then, are those rules which serve as the bases upon which change or innovation is planned, developed, and implemented.

Criteria are part of the unique curriculum frame of reference developed by a specific school's faculty. They are derived from and contribute to the total philosophy which governs the two-year program in nursing. Assuming a philosophy is a statement of beliefs, a faculty builds a frame of reference for the curriculum when it agrees upon statements about nursing, nursing education in general, associate degree nursing specifically, the unique characteristics of the junior community college, the learner, and the teaching-learning process. Fully developed, these beliefs contain established criteria and serve as the operational frame of reference within which curriculum decisions are made, and change and innovation are planned, implemented, and evaluated.

For example, if the total frame of reference includes a philosophy about associate degree nursing which includes care given to patients under the supervision of a professional nurse, it is apparent that no criteria (rule or reason) exists for the inclusion of supervision or team leading skills in the curriculum plan. Similarly, if a definition of patient care includes mental health needs of patients, this criterion contributes to curriculum decisions. It helps to identify content, i.e. principles of mental health; it aids in choosing learning experiences by identifying clinical laboratories wherever patients may be found.

The need for change may begin with a study of philosophy, purpose and aims, but more often, faculties are motivated toward change or innovation because of a specific problem which arises from the

implementation of the curriculum. Typical problems include: How can we plan learning experience for pediatric nursing where there are limited facilities? Should we include a unit on open heart surgery because Dr. X requested it? Now that subject A and B have been integrated, how can we teach the content which seems to be left over?

To solve problems like these, faculties must examine the total curriculum frame of reference and ask, what criteria do we have which support a change? The solution to the problem must be consistent with the overall frame of reference. With a well defined frame of reference for the program, common practices such as adding subject matter to the present courses or extending the length of the program are seldom justified. Since each school will have developed its own unique frame of reference, one school may not be able to utilize the solution to a problem found to be effective by another school. Climate and characteristics of the entire junior community college help to determine the extent to which the problem can be solved.

Assuming the existing framework of the curriculum is consistent with current beliefs about nursing education and nursing practice in associate degree programs, what changes in the curriculum will improve associate degree nursing programs? /1

1. A system must be devised for selecting from the available content to be taught those concepts and ideas which are nursing.

   Medicine, surgery, pediatrics, etc. must be taught only as they are relevent to nursing practice. We can no longer teach that which we were taught. We must keep asking ourselves, what is "nursing" about the care of patients with hysterectomies; what are the nursing concepts derived from the care of the pediatric patient?

2. The "processes" of nursing must be identified and selected as content as well as traditional content composed of facts and principles. According to Parker and Rubin, processes are the "cluster of diverse procedures which surround the acquisition and utilization of knowledge." /2 Behaviorally written objectives refer to some of these processes: identify, compare, contrast, decide, solve, modify, classify. The area of process in nursing is relatively unexplored, but their identification of processes would seem to minimize waste motion in teaching and achieving maximum use of subject matter.

/1 National League for Nursing, Criteria for the Evaluation of Associate Degree Programs in Nursing, 1967, draft.

/2 Parker, J. C. and Rubin, L., Process as Content, Rand McNalley & Company, Chicago, 1966.

3. Organization of subject matcer (both content and process) can facilitate learning and transfer of learning. Recent theories of instruction support the proposition that students should be encouraged to seek patterns of knowledge. Organizational plans which provide for integration, identification and utilization of core concepts and strands or threads of continuous content propose to do just that.

   Many associate degree programs reveal a movement away from the traditional body-system plan of content presentation, toward content that is organized into units called Nursing I, II, III, etc. One must look closely at the specific content, however, to see if the new organization does in fact satisfy criteria which serve as the rationale. Too often the wary faculty, distrustful of the new organizational plan, add an "all-that's-left-over" unit. This violation of the criteria established to support the curriculum in the first place is circularly defeating.

4. The teaching methods selected must be determined by the criteria identified from current learning theories. Teaching strategies should be consistent with the way students learn. Problem-solving, inquiry methods, creative use of a wide variety of laboratories are but a few of the strategies utilized for effective teaching-learning of nursing process and product.

In summary, we must stop using excuses for change and begin to use sound criteria for change, those which are inherent within the total curriculum frame of reference. "State board failures" are weak excuses for change; "Dr. Jones wanted it" implies lack of communication; "they do it when they graduate" because they've not been taught not to do it; "we don't have enough time in two years" admonishes us to create new methods of teaching different content in less time. Creative innovations in content, process, organization and teaching methods are within our reach. Criteria exist which support change; we must identify them.

INNOVATIONS IN NURSING EDUCATION

Eleanor A. Tourtillott

You perhaps will recall the fable of the Sea Horse who, after gathering up his seven pieces of eight, cantered out to find his fortune. He had assistance from the Eel,, the Sponge, and the Shark. The Shark offered him a short-cut which would save him a lot of time. However, you will recall that this short-cut led the Sea Horse immediately into the interior of the shark, there to be devoured.

The moral of the fable is that if you're not sure where you're going, you're liable to end up someplace else. Our goal is to demonstrate an increase in essential learnings through the use of multi-media, electronic teaching systems, television, programed instruction, team teaching, and other means, throughout the nursing component of an associate degree program in nursing.

Gabriel D. Ofiesch, Colonel, U.S.A.F., speaking at a conference in 1964 on New Media in Education, Business, and Industry, said, and I quote: "Teachers may inspire, motivate once in a while, illuminate an abstract or abstruse principle, but teachers rarely teach anyone anything, except in the tutorial relationship. Since it is obviously impossible to establish an ideal tutorial relationship for every student in every classroom in the nation, some means must be found to mass-produce and extend the elements of this relationship to every student, so that each can have the benefit of quality instruction. We must do for education what Henry Ford did for the automobile assembly line and what Bessemer did for the steel process. We must "Bessemerize" quality education. If we could, we should take our master teachers and, after a careful analysis of their techniques, we should package their skills for millions of students."

Our innovations, the two electronic teaching systems: the MTA and the Edex, were selected for their capabilities to provide tutorial relationships. The MTA teaching system is used to achieve a tutorial relationship with the individual student, while the Edex teaching system achieves a tutorial teacher-student relation in large group instruction. These systems can be used alone, jointly, and/or in conjunction with television, films, single-loop films, as well as other teaching aids, depending on the results desired.

For a comprehensive view of the potential of the MTA Teaching System, I have selected an excerpt from the programed unit "Preparation and Administration of Parenteral Medication," prepared by our faculty. We use the Gestalt approach to facilitate the students' comprehension of the total and to help the student see each part in relation to the whole. I have used this same approach in preparing this presentation. All students viewed a video tape entitled "Preparation and Administration of a Subcutaneous Injection." Following this, students used the audio-tutorial laboratory for instruction and practice on the individual parts.

In this excerpt, three different media are being used: the audio through the Cousino, the program paper on the 400 Scholar, and the visual via the Carousel. Since it would be difficult for you to read the written materials if they had been put on the screen, I will read them to you, actually two in number, when indicated. The excerpt starts with the Cousino tape at point 45, slide number 29.

Identify by name the parts of the syringe and needle that are to be kept free from contamination. Press button A for answers. When the student is ready to advance, she will read the correct answers on the programed paper. "Tip, barrel-inside only, plunger, needle shaft, and point hub inside only."

This is called a multiple vial. It contains many doses of the same medication. The frame on the programed paper instructs the student to do the following:
1) Obtain the medicine card for Mr. Smith in pocket J. 2) Select the medication ordered for Mr. Smith from the medicine tray. 3) Pick up an alcohol sponge, holding it over the waste container, squeeze out the excess alcohol. 4) Do not squeeze out the excess alcohol over the container of clean cotton sponges. Having done this, the student pushes button A and the Cousino starts, and the Carousel advances to the next slide.

Wipe the top of the vial with the alcohol sponge. Use friction since you are getting the top as clean as possible. Discard the sponge in the appropriate discard container.

Now, assume that the assembled syringe is not contaminated. Pick up the syringe and remove the needle protector, keeping the needle free from contamination. Mr. Smith is to receive 1 cc. of medication A.

Pick up the vial and, holding the syringe and vial as shown on the slide, insert the needle all the way into the center of the rubber portion of the vial. Notice that the tip of one finger is on the flange to control the plunger. Push the plunger in, inserting the air. This air increases the pressure in the vial and will help force the medication to flow into the syringe. Without changing the position of the hand that is holding the syringe, rest the vial on the table and press button A.

Maintaining the same hand position on the syringe, invert the vial, holding it as shown on the slide. Look closely at the position of the fingers on each hand. There are several correct ways to hold a syringe. Try this way first. Later, you may find a way that is more comfortable for you.

Pull the needle out from the vial until the tip of the needle is below the level of the medication, being careful not to touch the shaft of the needle. Turn the syringe so that you can read the cc calibrations. Pull the plunger out slowly until the measuring line measures slightly more than 1 cc. With the vial in a perpendicular position, as shown on the slide, push the plunger back until you have 1 cc of medication in your syringe. This will remove the air bubbles that may be in the syringe. Hold the syringe securely with one hand, rest the vial on the table and press button A.

Holding the syringe as shown on the slide, check to see that you have 1 cc of medication in the syringe. Pull the vial away from the needle and replace the needle protector. Check the dosage for Mr. Smith. At this point, you would be ready to give this injection to Mr. Smith. However, this is not our immediate goal. Continue by pressing button A.

This was the end of the excerpt. And now, to enhance your conceptualization of what you have seen, I will present the individual components of the MTA Teaching System and discuss this system's advantages to students and faculty. As shown in the excerpt, the MTA Teaching System hardware we use most frequently in combination to attain audio and visual synchronization are: The MTA 400 Scholar, the Cousino, the Kodak Carousel, and a Mira-screen. Each can be used individually or in a variety of combinations.

The MTA 400 Scholar is a portable, automated multi-purpose stimulus programer. It is 10 inches high, 18 inches wide, 20 inches long, weighing 33 pounds, with a display window area 5 inches by 7½ inches. Much of the Scholar's versatility is attributed to its basic control media; its four-button response system with multiple choice capability; four-channel indexing system with linear and branching capabilities; fanfolded program paper; and parallel answer paper.

It has the ability to receive a wide variety of "plug-in" auxiliaries cued directly from the program to complement the presentation of stimulus items.

The cover is lifted to thread in the fanfolded program paper and the parallel answer paper when appropriate. To date, we have used the program paper without the answer paper. If it were used, the student would record her responses on it.

A close review of the program paper reveals the slotted type indexing code which permits the program to advance only when correct answers are chosen. The round hold codes provide four-choice branching capability to advance the student directly to response-determined information, while skipping all irrelevant material. The program

paper may be used to give information, instructions, diagrams, etc., as well as ask questions.

The Cousino Audio announcer is a transistorized tape repeater and recorder designed for exclusive use of continuous tape cartridges. It has all of the capabilities of a conventional tape recorder, but with additional adaptives for specialized purposes.

The continuous tape cartridge proves playing time up to 30 minutes at 1 7/8 inches of tape per second. It has a starting identification mark and conductive foil strip for shut-off.

It can be used with or without ear phones. This flexibility permits a variety of combinations for meeting both individual and group needs.

The Kodak-Carousel 700 projector holds up to 80 - 35 mm slides, and is used with a micrascreen.

The MTA Timer may be used with the 400 Scholar to advance a program at fixed intervals. Materials such as medical abbreviations, terminology, or other rote memory items, may be prepared on continuous loop program paper. With the timer, it can be used by the student for drill or memorization. This is sometimes referred to as a memory drum relay.

The MTA 400 Scholar gives specific instructions, supplementary information, or asks questions, all via the program paper; the Cousino gives the student specific instruction and supplemental information via the continuous tape loop; while the Carousel provides visual aids via slides. All of these are synchronized through the 400 Scholar and controlled by the student herself.

A few of the advantages of the MTA Teaching System, as we have experienced it, are as follows:

1. Once a program is prepared, it is available for a variety of purposes;

2. The student proceeds at her own rate of speed; she controls the pace of the machine;

3. Standardizes instruction for students;

4. Easily available and can be repeated as many times as desired;

5. Better teaching, better prepared presentation;

6. Better utilization of faculty's time and abilities;

7. Eliminates repetition and repeat teaching for instructors;

8. Relieves faculty from routine instruction and allows time for reflection and creativity;

9. The MTA tutorial relation is more efficient in coping with individual students.

To evaluate our use of the MTA teaching system, we asked both students and faculty for their opinions. The results were most interesting. Students said they were not bored or rushed -- they could proceed at their own rate. The material was presented in small steps so that they could understand and grasp the content. They liked being able to repeat the materials as many times as they desired, and liked working without the constant presence of an instructor. They learned to look, and listen ... with a purpose.

Students repeatedly said, "If you pay attention, you really learn; it's all there!" They learned to follow explicit directions. Student evaluation of the course in Clinical Nursing revealed 52 students out of 77 identifying MTA programed units as one of the three most helpful, while only 2 identified it as one of the three least helpful. By way of comparison, 34 students identified video tapes as one of the three most helpful, while 10 listed video tapes as one of the three least helpful.

Faculty said they were able to view the materials at a time convenient to them, rather than attending class at a specified time. It proved an excellent way to orient new faculty as well as faculty who would be involved with these students in the following semester. In other words, it not only standardized student instruction, it standardized instructors' instruction as well. With the use of the MTA system, the faculty's responsibility for laboratory practice changed. Time previously spent helping students learn in this setting was markedly reduced. Much of the time, one instructor in the laboratory on campus was sufficient to meet student needs.

We have always had laboratory practice for the manipulative skills. However, with the MTA System we were able to use the laboratory in a much more flexible way, more truly as an audio-tutorial laboratory. Laboratory activities are integrated with the MTA System and are planned to reinforce programmed materials. Laboratory manuals are prepared for student utilization and learnings. The purpose of the laboratory now becomes a learning area in which students prepare for hospital experience, much like students prepare for classroom instruction through textbooks and library references.

The programmed materials were used to solve two problems for which we had no answer under the conventional system:

1. One student had abdominal surgery and missed essential learnings. She was able to obtain these essential learnings via the programmed units. Previously, a student having been absent for that period of time would have been unable to "make up" work and would have been unable to continue.

2. Eight transfer-in students, or students re-entering the nursing program after a leave of absence of one or two semesters, were admitted to a planned orientation. They reviewed the materials programmed on the MTA, giving them a background more similar to their classmates. With eight MTA systems, we were able to have eight different programs or several similar programs scheduled and operating at one time in a limited amount of space.

Our second electronic multi-media system is the Edex. The Edex Teaching System provides a tutorial teacher-student relation in large group instruction. The hardware used in this system consists of a Teacher's Console, an auxiliary projector for filmstrips, slides and/or motion pictures, and student response stations. The console itself contains a tape transport, a programmer, the classroom communicator controls, meters and light panel; ten to eighty cumulative digital counters, and electronic control circuitry. Another component which can be added for use with these units is a printer. The student responders are placed in the classroom at student positions, and are connected to the console through junction boxes.

This multi-media system uses the teacher as an integral operant within the system. The teacher makes her presentation to the class; the students respond to the questions asked; the overall group response is recorded. Individual responses are indicated on the light panel, and a cumulative record of the individual performance is maintained through the counter system and the printer. To give you a better understanding of the operation of the system, I will present each unit, its purpose, and function.

Using the programmer in combination with the tape transport, the instructor prepares the soft ware. She programs her content, then records it on tape for presentation to the class, and supplements it with appropriate visual aids interspersed with multiple-choice questions. The presentation of all this material is automatically controlled. During the program, the students must respond, and their responses are known immediately to the instructor.

The tape deck is operated as is any tape recorder. The tape can be stopped at any point, as student need indicates, to clarify, reinforce, rebuild, enhance or broaden student learning.

An individual responder is located at each desk. The student responders are fitted with the recessed keys -- marked A, B, C, D and OFF.

Questions may be approached like this ... first with instructions on how to answer, followed by the question. This is an example of a multiple-choice question that might be used. The student reads the question, decides which answer is correct, then presses the button that corresponds with the answer letter. The student may change her

answer before points are scored with no penalty. Her answer is then recorded on the percentage meters, the light panel, the counters, and the printer.

The four meters, A, B, C, and D, record the overall group responses at the console. These meters tell the instructor the percentage of students selecting each answer. They present a continuous reading of the percentage of students answering correctly, or incorrectly. The instructor gets immediate feedback, and thus knows how much learning is actually occurring.

The light panel indicates the individual responses -- that is, the instructor can see by the aid of the light panel and an overlay seating chart which answer each student selected. This is accomplished by pressing the answer button at the console, together with the activator button. This lets the instructor know how well each student is learning.

The counter system maintains a cumulative record. There is a counter on the console corresponding to each individual responder. The instructor may score points for any answer by pressing the correct answer button on the console and dialing the number of points she wishes to assign to it.

At the end of the class period, each individual's total score is indicated on the counters.

The printer maintains a permanent record on paper of each student's scoring performance. Each response made by the student is automatically recorded. Combined with the total score from the counters, the instructor has immediately available a record of the individual responses for each question asked, as well as the total cumulative score. Both of these records are available to the instructor and students at the end of the class period. We believe the Edex Teaching System approach improves conventional instruction by ...

1. Carefully ordering the materials and devices used in instruction to perform specific instructional tasks. All components of the system are highly directional, aimed at pre-determined terminal behavior. Through the presentation aid of the mechanism (machine), carefully prepared materials are presented to all students.

2. Requiring all students to report to the feedback side of the mechanism by means of a responder. By the use of frequent interrogation, controlled by the presentation side of the mechanism, all students are necessarily active. There can be no passive students on the system without their being immediately identified by the teacher.

3. Giving the instructor a constant flow of information about the group as a whole, and about each student

within the group, on which to make valid judgments about curriculum and do what instructors should do -- counsel, guide and tutor according to identified needs of the student.

As we see it, a few of the advantages of the Edex Teaching System are as follows:

1. Instruction can be standardized and maintained at a high level;

2. Students are highly motivated;

3. Constant participation is required by the student;

4. Economy of instructor time is accomplished by devoting time only to true instructional tasks; and

5. Students learn what they are expected to learn.

The Edex can be used in conjunction with MTA. We use it sometimes for the Gestalt of materials programmed for the MTA; for criterion tests of student-learnings immediately following completion of MTA programmed units, as well as for long-range testing of material learned; to identify weak points in any program; and to diagnose the need for remedial work for individual students.

It's time now to see how well I have programmed this material for your learning and to see how much you have learned. A few sample questions will be given. Questions 1 through 4 are true or false. If the question is true, press Button A; if false, press Button B. Ready?

True or false? The Edex machine permits the student to progress on programmed material at his own rate of speed.

If you pressed Button B for false, you scored twenty point.

True or false? To advance the programmed material on the MTA Teaching System, the student presses the appropriate button.

If you pressed Button A for true, you scored twenty points.

True or false? The MTA Teaching machine provides the instructor with a record of student responses.

If you pressed Button B for false, you scored twenty points.

The MTA Teaching machine is designed to present material to a large group of people.

If you pressed Button B for false, you scored another twenty points.

Now, here's the question you saw before -- Select from the answer choices marked A, B, C, and D. Which of the following is not an advantage of the Edex Teaching machine? A -- Instruction can be standardized. B -- All students respond to the questions. C -- Students control the progression of the program. Or, D -- There is an economy of teaching time.

If you pressed Button C you added twenty more points to your score.

Congratulations! You've done very well! And you've been a most attentive audience. Thank you.

CLOSED CIRCUIT TELEVISION

Beatrice Perlmutter, Ed.D.

While you are finding your seats and getting organized, I thought I might share with you a little true story that happened at Bronx Community College, lest you think that we are getting automated to the point of no return. You know, of course, that we hear this occasionally: "It is all machines, no nursing." In our program, like any other program, we spend a great deal of time throughout the four semesters, Nursing 1, 2, 3, and 4, talking about the patient as a person, the total human being, and interpersonal relationships. I am sure this is familiar to all of you. Very recently, one of our new graduates came back to visit one of the faculty members and she said gleefully: "Mrs. Kelly, you know I passed the State Boards." The faculty member, Mrs. Kelly, said: "Oh, fine, isn't that wonderful -- where are you working?" The usual conversation between the new graduate and the faculty member ensued:

Student: "I am working at X hospital."

Faculty member: "How do you like the hospital?"

Student: "Great, except for one thing; it's a little different from what I am used to."

Faculty member: "What do you mean?"

Student: "This is a voluntary hospital and the patients, you know, are a little more demanding. I know you have to understand all this, etc., but we have one patient who is terrible -- I have never had anything like this before."

Faculty member: "Really, well what did you do about it?"

Student: "Well, I tried all the things you taught us and nothing seemed to work. He's really impossible."

Faculty member: "Did you speak to the supervisor -- perhaps she could help you."

Student: "Yes, I did."

Faculty member: "What did the supervisor say?"

Student: "She told the patient to go to hell."

We call this "Nursing 5" -- you know, 1, 2, 3, 4, and this is Nursing 5: The reality into which a new graduate enters.

We have here for you today a film which was made under very interesting conditions. Mid-semester, Gerald Griffin said, "Would you like to make a film of clinical teaching via closed circuit television?" We said we would see, since we did not know if we would have the time. After intersession, school resumed and immediately thereafter, we had a snow storm, then came Lincoln's Birthday, then Washington's Birthday, and during these times we were unable to film. We had two days in which to make the film. We would like you to understand that this is an actual film; it has a small amount of editing which was done by the use of a small button. It is not a refined tape which could be made. and which should be made, and which would have been made if our other tape recorder were not being repaired. I am spending a little time on this because I am trying to determine whether they are ready over there. The machine for today's presentation is not working well.

Actually, this is a presentation of the clinical teaching in a particular unit, which was done a week ago Tuesday and Wednesday at Bronx Community College. The tape was made by a nurse/instructor, Avis Pitman, who is a Bronx Community College faculty member, but who is on loan to a U.S.P.H.S. Research Grant. Professor Pitman made the film. The instructor you will hear is Mrs. Judith Allen. Mrs. Allen helped with the making of the film. We must remember that the making of the film is not part of this particular act of clinical teaching; this is over and above the call of duty. The clinical teaching and the working of the machines are done by nurse-faculty members who learned in a very short period of time to utilize closed circuit television in teaching. As soon as we know what our next enrollment is going to be, we say to one of our instructors, "Would you like to teach by television?" If the faculty member says yes, then she is oriented one or two times and from there on, she teaches via TV.

On this particular tape, you will hear a lot of things that are a little different from the actual situation. For instance, you will hear a lot of extraneous noises, radios, the curtain being pulled back, voices of patients talking to one another, visitors, the newspaperman, etc. -- all the people who normally enter into the clinical nursing situation. However, in the actual set-up, this is minimized to the point of being normal. For purposes of making the tape, we had to open up another amplifier so that what the students and what the patients were saying would be heard by the tape recorder as well as by the faculty members. As a result, these extraneous noises are magnified. In addition, the process of taping magnifies sound.

(How are we ing over there?)

The tape recorder rented for us by the National League for Nursing worked beautifully while the other two speakers were speaking and then I noticed some problems --- anyway, the tape that we hope you will be able to see is an audio-visual tape of clinical teaching by closed circuit television.

You will notice that the title is a little different from the one that appears on your program. Remember, please, the students are freshmen; this is their second day in the clinical area. When you see some of the things they are about to do, you will know why I emphasize this. We made no attempt to show you a perfect performance; we made no attempts to show you perfect teaching -- this is merely what happened on a particular day and shows the problems of the faculty member who was running the closed circuit television, as well as our students' problems. After you see this tape, I would like you to consider some further possibilities for its use.

We are using closed circuit television for two purposes: one, clinical teaching for our own students and for utilization in a research project to develop a tool to evaluate nursing care. The clinical teaching done via closed circuit television happens to be incidental; we hope eventually it will not be so. Just as we can photograph what the students are doing in the clinical area, we can photograph and tape any aspect of nursing care as it occurs. This is somewhat different from what we saw this morning. We can actually turn a camera on in a patient's room, film and tape all day long, then edit those parts which are not needed for teaching.

In addition to what you will see here today, there are many other facets for which closed circuit television can be used. We can, instead of a 1,2,3 procedure kind of thing, show actual changes in patients; we can actually show care being given. As we become more facile in using the television, we will be able to show the effect of care. We are able to see things that we never saw before. The nice thing about it is that if we desire, we can put it on tape and then play it back when needed. Television, in addition to actual use in clinical teaching, can be used to develop tapes which will enrich learning in the classroom with those types of experiences which are not so easily accessible. I know that the previous speaker said we do not need all of them, but once we decide which we do need, we can record it on tape and play it back to our students.

The tapes can be edited, and we can put little signs in. You will notice at the beginning of the tape we have added, "Bronx Community College presents ....."; this was done by having a patient in his room holding up a sign. You will notice a picture of a camera; this was done by Professor Pitman taking her bedroom mirror and using it to photograph the reflection. You will also notice a picture of Professor Ehrhart which was taken two years ago while she sat at the monitor; we have put this into the tape.

This is a patient's room at Montefiore Hospital; one of the many that we use for clinical teaching. This room is different because it contains

television equipment. We would like to acquaint you with this equipment before we show you how we use it for clinical teaching.

The closed circuit television system has fifteen cameras; two in each of the rooms like this one, and one camera in a single room. The cameras are positioned high on the wall of each room. The camera on the right of this picture is actually being used to make this video tape. The position of this camera and one other like it may be remotely controlled from a monitor room, and each camera has a zoom lens. The other thirteen cameras are stationary, but may be manually adjusted. The pictures are transmitted to the monitor room. Here, you can see the two monitors with which we work. The instructor wears a head set for audio contact with the student. The monitor on the right is manually controlled and is connected to the audio system. The left monitor has an automatic cycle with the picture changing every twelve seconds. It is without audio.

The lights on the panel in front of the instructor tells her which camera is in use and if the student is calling for assistance. The voices of the students are picked up by the mocrophones and carried to the instructor's head set. Here is the mike cord running up the wall and across the ceiling to the microphone. Each camera works in conjunction with one microphone. There are two ways for the instructor to talk with the student. The first way is directly into her ear through an audipage. The patient cannot hear what is being said. The earpiece is clipped over the ear of the student as if it were a transistor radio. The audipage consists of the earpiece connected by a wire to the battery case. The whole mechanism is powered by a small battery in the base of the case. The instructor is also able to talk directly into the room via a speaker in this wall box. This box also contains a tally light to let the patient and the student know when the camera is on. If the student needs the instructor, a light touch on this call button turns on a light at the monitor. The light that you have just seen go on indicates that the automatic monitor has reached its position. Now that you have an idea about the components of the system, we will show you how closed circuit television is used for clinical teaching.

As you look at the video tape, please remember that the students are new in the program. Also, remember that the video tape was made as the teaching occurred. Since the weather was very dreary, the available light level was much lower than we would have liked it to be. The action itself is completely spontaneous. Each picture change that you see is controlled by the instructor from the monitor. The voice is the voice of the instructor speaking to the student.

FILM SHOWING STUDENT GIVING PATIENT A BATH
FILM SHOWING VARIOUS STUDENT LEARNING ACTIVITIES

Can you see the normal way in which the students are speaking? The patient does not hear the instructor (although it may seem as though he does). You will notice the way the student is able to contact

the instructor whenever she has the need, just by speaking in a normal voice in the room. You have just seen one instructor teach in the clinical area using closed circuit television. You saw how quickly she was able to move from place to place .... you saw how freely she could communicate with the students by speaking directly into their ears .... how she could give assistance upon request, or as the situation required it .... how she was able to elicit information to help develop students' ability to observe and communicate .... how she permitted the student to use her initiative, or to work through everyday problems with only verbal guidance. We do hope that the video tape you have just seen has demonstrated how closed circuit television is being used for clinical teaching.

I hope that the extraneous business and our problems with the tape did not inhibit too much. I want to remind you again that this was the students' second day in the clinical area. We laugh and say, "Isn't that horrible!" The difference between our observation of the students with closed circuit television is <u>that we see it</u> happen, and you do not. The only ratio that will show you the kind of thing that you saw on this tape is a one-to-one ratio, and I do not think there are many schools that could have that kind of ratio. We can see our students .... we can see some of the unusual things which they do <u>when they do it</u> .... it sometimes makes your hair curl, but it is better if your hair curls, and you see it and correct it than if you do not see it at all.

I do not care what your ratio is: one-to-four; one-to-six; one-to-nine; or one-to-ten .... when you are working with one student, the other x number are doing an assortment of things. While the instructor is talking to one student, the other monitor constantly flips and each student is seen for a twelve second period. Every three minutes our instructor sees each of her students .... she can hear the interaction between patient and student .... she can see many things which we, in our wildest imagination, could never see when using the traditional methods of teaching.

Also, the instructor, of course, has the advantage of having seen the patients before and knowing the changes and relationships between the students and the patients in the clinical area. The tape could have been stopped at any point; we could have photographed and gotten the audio of any portion.

For example, the situation in which the patient did not want to cooperate would be a meaningful experience for the students to see and to be aware that not all patients want to be bothered, and so on.

We could just take all aspects of nursing and put them on another tape. We could tape all day long and just pick out all the extraneous situations and use only those areas which are pertinent. We could see a patient before going up for a pacemaker operation, for example, and we could demonstrate the way in which the nurse

speaks to him and explains what is going on. We could see him immediately post-op, because we can edit the tape .... we see his wound .... we have an opportunity to record a conversation with him .... we could demonstrate (once we get the machines working the way they should) what nursing really is. We hope to utilize some of these pictures in our teaching. We hope to be able to demonstrate the concepts and the principles that we talk about --- not in an acted out situation, not in a false situation, but with actual patients and nurses, or student-nurses at the time the action occurs. In this way, we can see interpersonal relationships and we can hear what is actually occurring. We hope that as television develops, and as we develop in our use of television, that we will be able to utilize this medium for our benefit.

If you have any questions about the machine or about using it, Professor Ehrhart and I will try to answer them.

FROM THE FLOOR: What is the reaction of the patient?

ANSWER: The patient does not mind. Any time he is on television, a light goes on. He knows when he is on television and any picture such as this requires a release from every person you saw on tape. While in the normal clinical teaching procedure, the patient is aware that teaching is going on. The camera is never on when the light is off.

FROM THE FLOOR: Is permission received on all patients?

ANSWER: Yes, we do receive permission. We get permission from the family, just as we would in any other situation .... if the patient is unconscious, the same principle holds. Anything we do in a hospital situation we do with the consent of either the person (if he is capable) or a responsible relative. Only if we tape do we need a signed release. Whether I come in with my camera or you come in with your instructor, the same explanation must be made. We do not need special releases if it is in the normal course of clinical teaching. The minute I record it for posterity, I need a release.

FROM THE FLOOR: What is the cost of closed circuit television?

ANSWER: You know, I was afraid you were going to ask that. Perhaps I can answer it in a devious manner. This set is old; it is almost obsolete --- not the tape recorder we did this on, but the one the operator here is using and the one we used to have. The advances in television have been such that right now, we are in the process of trying to develop a system for making tapes; the kinds of tapes we talked about. A fairly decent unit, including the camera and a portable monitor --- a complete portable set-up with which we can photograph in a nursery school or a delivery room, etc. would cost about $20,000 to $30,000 or $40,000. Now, that is a big range, but it depends upon the units you have, and it depends upon each day. As time ticks by, television equipment becomes cheaper.

FROM THE FLOOR: Has there been any difference in the student-patient ratio and if so, how?

ANSWER: My answer to that is "yes." We have fifteen cameras, so we have a fifteen-to-one ratio. The point is, you can see, that if we had twenty cameras, we could see twenty students. Our problem might be in pre-conferences and post-conferences. However, the actual observation could be done. It would not take many more, but it is a matter of how many cameras you have. In other words, the number of cameras determines the number of students you can observe. If we had multiple assignments, you could observe many more students. We are on a magic number system too, and our magic number is controlled by the number of cameras. Whereas we, at Bronx Community College, normally have ten students to one instructor in the clinical area, in the closed circuit television area, we have fifteen students to one instructor. There is nothing that says it couldn't be sixteen, seventeen or even twenty.

DEVELOPING SINGLE-LOOP FILMS AND TEACHING AIDS WITHIN THE COLLEGE STRUCTURE

Shirley Conklin
(Demonstration by Robin W. Schechter)

The Registered Nursing Program at College of Marin has prepared a teaching device that is relatively inexpensive considering the values derived. Even though federal funds are now available to us because of Reasonable Assurance of accreditation, to date we have been using funds made available through our local junior college district. We believe that federal funds should not be used just because they are available; we further believe that the benefits derived from accreditation should not be valued on a financial basis.

Our project is not entirely new to most of you. At the last associate degree conference in St. Louis, we heard reports of projects with 8 mm film projection. After reading and studying the limited material on 8 mm projection in nursing education, the master teacher in our fundamentals of nursing course asked if she could experiment with the filming of nursing techniques. Together we studied the feasibility of initiating a film library. Our assumptions were these: A main objective of an AD program in nursing is to prepare a technical practitioner. This does not mean preparation by observation alone, but instead imposes upon us a certain obligation to prepare a practitioner who is proficient in technical adequacy upon graduation. In teaching in an AD program, numerous techniques are taught in a college laboratory. These techniques are usually demonstrated only once, and then a student is allowed to perform these techniques in the hospital setting.

Oftentimes, as all of us well know, a long time may lapse before the actual learning experience is available in a hospital or clinical agency. The teacher must then reteach the technique or the student returns to the college laboratory and practices it on her own, sometimes of necessity, without teacher assistance. Often faulty learning occurs. Necessity for independent study in these programs implies a faculty obligation to provide tools for independent study. Our plan of action was as follows: To film nursing techniques for independent study for students in the AD program; and eventually to research a control group, those taught by the conventional method alone, and another group taught with accompanying films along with the usual method of teaching. The

latter plan has not been initiated as yet, but will include a select group eliminating as many variables as possible such as age, educational background, etc. We believe that students can learn more rapidly by being subjected to a film followed by an actual demonstration. Although we have no research data at this point, it appears from early experience that students do learn better and more rapidly when they can sit quietly and view a narrated film prior to the teacher's actual presentation. Our last plan of action was to develop a film library for student utilization. We felt that there were at least fifty (50) techniques that could be filmed, placed in a library, and be made available to students on a library type basis. As the project snowballed, however, we find now that our original list of fifty (50) techniques or so was just a beginning. Other teachers in our program plan to utilize the technique in teaching mental health concepts by filming role-playing situations. The MCN faculty will be able to film a child growth and development series.

In explaining our project to interested groups in the community, we find also that hospital administrators and in-service educators wish to use this device as a possible adjunct to their in-service education program.

Within the last two years, College of Marin formed a new Committee: The Instructional Research Committee. $25,000 was budgeted for beginning endeavors and teachers were invited to submit projects for consideration. Project plans did not necessitate pure research. Instead, instructors were encouraged to present any possible projects which could be done inexpensively and at the same time would introduce newer methods in teaching. We presented our plans to this committee and were granted $2500.00 to begin our project.

Now I would like to introduce our master teacher in Fundamentals in Nursing, who will demonstrate our project to you.

Following her presentation, I will discuss with you the specific costs of our project.

Mrs. Schechter .....

Demonstration (Robin W. Schechter)

It is growing late and I will try to be as brief as possible.

As Miss Conklin mentioned, the single-loop films we have developed to date have been produced within the locale of the college laboratory. We do anticipate using the hospital setting for some of the film series, however. Growth and development sequences of the ill child in pediatrics and psychiatric group conferences are examples that would seem to lend themselves to the single-loop film approach.

In the preparation of the single-loop films, two scripts are developed. The first script is more informal in nature. It entails a plan of action for the technique we have decided to demonstrate. Within this plan of action, a time approximation of wording must be considered, as there are occasions when several seconds of wording is needed on the film when, in fact, little action is actually occurring.

At this time we determine also what aspects of the technique we want to magnify or enlarge upon. We have found that it is advantageous to have an additional member of the faculty present while shooting the film. This person can function as a resource person, as well as reinforcing, for the benefit of the film technician, the principles and technique of the procedure being filmed. After the filming has been completed, the film is sent out for developing.

The next step in production is to edit the original film. Extraneous movements are cut out and the enlargements we have made at the original filming (for the purpose of better visualization of specific equipment and elements of technique,) are intercut in appropriate sequence. After the editing is completed, the film is sent out to be copied in its edited form. Both films are stripped for sound at the same time.

When the films are returned to the college after sound-stripping, they are narrated for sound, which is the third and final step in the production of a single-loop film. We have recently found it advisable to narrate the copy of the original film, and then to transfer this narration onto the original film. This is because the original film has splice marks on it from the editing and the sound-stripping may be uneven where it passes over the splices. Where the stripping is uneven the sound produced will be distorted in quality and as the film copy has no splices in it, this problem is eliminated. We have decided that a minimum of two films of any given demonstration is necessary. Should your copy become damaged, you can always go back to your original film

and have another copy made. The instructor time involved in single-loop film production varies with the length of the film. A five-minute film such as the blood pressure film which we will demonstrate requires approximately eleven to fifteen hours of instructor time.

We see the single-loop film as being advantageous in several areas of nursing, particularly in basic nursing skills and in some of the more complex nursing skills. As I mentioned earlier, it would also seem to lend itself to growth and development observation of the well and ill child, and in such areas as role-playing and group interaction observation. As Miss Conklin mentioned, we have projected a library of over fifty of these films.

The College laboratory initially will be set up with the two carols incorporating the Fairchild Mark IV projector, an example of which you see here. The blood pressure film I will demonstrate to you is set up on the Fairchild projector which can be used for showing the single-loop film to larger number of students when it is advisable. The operation of this audio visual aid is very simple for the student. An 8 mm film, after having been edited, copied, and narrated, is put into a cartridge. The student takes the cartridge of the film she wishes to view to the Fairchild projector, slips it into the cartridge slot, throws the "ON" switch, and the film begins. At the end of the film, the projector automatically shuts off and the film is ready to be viewed again from the beginning. As you might anticipate, there are two disadvantages to this system, as it now functions. One, the student cannot scan to any particular point in the film.

For example, let's say she knows the first part of applying the blood pressure cuff, but she doesn't know how to palpate the brachial artery. She still must view the first portion of the film while waiting for those sequences she wishes to review to appear. The second disadvantage is that she cannot stop the film at any given point to observe a set-up or the handling of specific equipment.

Both of these technical aspects are being studied by the Fairchild Company, and they tell us that these modifications will be in order soon. This system could then be adapted for such teaching methodology as programed instruction. The student could stop the film at a given time, for instance, and get her hands in position for withdrawing from a medicine vial - then restart the film.

Before we solicit questions from you, I would like to mention some of the advantages of this audio-visual teaching aid.

First, it allows for individual differences in student learning in a nursing program such as ours, where we have a heterogeneous group of students and where we place a great deal of responsibility for learning upon the student. Secondly, the student can proceed at her individual pace to develop the competencies desired and her practice is reinforced positively and correctly. Third, the student can review quickly, reinforce, and recall previous learning. I am sure that many of you

have had an experience in which a technique has been taught in the college laboratory setting and several weeks, or even months, may elapse before the student has the opportunity to again practice the technique in the hospital situation.

Fourth, a student who seems to be deficient in a given technique can be referred by her instructor to the college laboratory for review of the technique by means of the single-loop film. And fifth, the instructor, we feel, is better able to meet the needs of the entire group of students. She can supervise the practice of all the students in the college laboratory, while students with selective problems can review their own problem areas. The instructor can then give as much time to the average and above-average student as she gives to the below-average student. The instructor can teach greater numbers of students, if necessary, without the loss of instructional quality.

You may think that eleven to fifteen hours of time to develop a five-minute film places excessive demands upon an instructor, but we feel that in the long run it is well worth the time involved.

Miss Conklin will continue:

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Summary (Shirley Conklin)

Your interest probably will lie now in how much this actually costs. First of all, we have a good audio-visual department within the college which has handles all of the filming. The costs are as follows: An 8 mm camera with a zoom lens for taking the film is used and thus far we've used a $300.00 Yashica camera for this purpose. I must add, however, that in the future we intend to use a 16 mm camera and transpose the 16 mm film to 8 mm film for sharper features. The film itself costs $4.50 for buying and processing 50 feet of Kodachrome film. We have used cheaper film in experimentation and find it not worthy of our efforts, and so from now on we will be using only Kodachrome film. Films last from three minutes to fifteen minutes, depending on the film content. The cost of one empty cartridge is $9.95. The sound-stripping costs 2½¢ per foot. Our college can now put on the sound track, which will eliminate this cost. The copy costs 10¢ per foot, and a protective film for the copy is $2.50. The cost of the Fairchild Mark IV viewer is $585.00. The cost of one carol, the carol that you see on my far left, is $130.00. These carols are made in the maintenance department of the college and, as you can see, will allow space for earphones, for tape recorders, and other audio-tutorial equipment that we'll probably use in the future.

So, what would one fifteen-minute film cost?

When all of the large equipment is available, the cost is approximately $22.50 for one film. This, of course, does not include the time and cost of the instructor and the photographer. However, the administration of our college is considering giving released time or extra compensation for filming. We feel that this is very inexpensive when we are considering eventual valuable time saved by the instructor and the value derived by the student.

This concludes our presentation.

THE UNIVERSITY OF WASHINGTON
PROGRAM FOR PREPARATION OF ADN INSTRUCTORS

Doris A. Geitgey, Ed.D.

It is a real pleasure for me to have the opportunity to present to you one of the new programs for preparation of teachers for ADN programs. I am sure that it is no news to you that the shortage of qualified teachers for all nursing education programs is the major problem confronting nursing education today -- this situation is especially serious for ADN programs in light of the predicted 445% growth of such programs in the United States by 1970.

I feel especially privileged to be here with you today for three reasons. First, as a new member of the University of Washington School of Nursing faculty, I believe that I am fortunate to be working with a group which is vital, dynamic, and forward-looking. I have been stimulated and encouraged, during these past five months, by the enthusiasm, soundness, and creativity of the Dean and faculty of the School of Nursing. I am delighted that these faculty members are in general agreement with the concept of Associate Degree in nursing programs for the State of Washington.

Secondly, I am greatly impressed with the leadership given by President Charles Odegaard in support of the community colleges in Washington, As he stated in his Report from the President to the Faculty, October, 1966, "It is incumbent upon us at the University to be cognizant of developments in the state colleges and community colleges, and to recognize these institutions as important partners in post-high school education." (p. 4). President Odegaard further stated that:

> "The newer types of subprofessional or technician assistants often need specialized technical instruction requiring at least a year or two of education beyond high school. All too often we who are engaged in university education have paid little attention to such technician or vocational education. We have assumed that the subprofessionals needed as assistants by the professionals whom we educate will somehow be produced. Hence we have neglected communication with teachers and administrators in technical institutes and in vocational programs of community colleges. This

> indifference does little harm in the case of traditional crafts or of long established technical courses; but clearly we contribute to waste and confusion at a time of rapid change if we do not actively follow the consequences of new technologies or procedures upon the world in which the professionals we educate will work, and if we fail to communicate to those actively responsible for technician and vocational education the possible impact of our discoveries upon the working situations for which they too are preparing students." (pp. 8-9)

I was personally pleased that the President cited Dr. Fred Giles as having been "....the prime mover in encouraging some explorations of the relationships between professional and subprofessional groups and of the changing patterns of technician support." (p. 10) In addition, Dr. Odegaard says, "....It is also realized that more progress could be achieved if within certain faculties, particularly engineering, the health professions, and business administration, specific faculty members could be found who would aid their own colleagues in detecting what might be called the potential fallout for technician education of changes in their own profession." (p. 11) I believe that these quotes are indicative of the interest in and support for community colleges that President Odegaard demonstrates.

The third reason I feel fortunate to be with you today is that this conference provides a rare opportunity to present to such a large group of interested people the development of and plans for the associate degree in nursing project, a truly cooperative effort between the University and community colleges.

The development of associate degree nursing programs since their beginning in 1951 has been nothing less than phenomenal. In this relatively short span of time since Montag's research was reported, these programs have increased in number from 7 to approximately 175. I say "approximately" because as I am speaking, there is a good chance that 2 or 3 more such programs are being approved! In the State of Washington the first program was opened in 1960 at Clark College in Vancouver. Now there are 6 functioning ADN programs: Clark, Yakima Valley, Columbia Basin, Highline, Everett and Shoreline. Other colleges are moving in the direction of developing such courses of study.

As those of you who are involved in such programs know, there are some major problems associated with developing and conducting programs of nursing education. Among these are cost, adequate clinical facilities, and availability of adequately-prepared faculty.

It is the third problem -- availability of adequately-prepared faculty-- with which I am most directly concerned, and of which I wish to speak today.

Early in 1966 the School of Nursing submitted to the W. K. Kellogg Foundation a grant proposal for a three-year project focused on the recruitment of qualified students to prepare for teaching and leadership positions in ADN programs and on finding ways to strengthen and improve the preparation of these persons. The proposal was prepared by Dr. Edith Metz of the School of Nursing, with the assistance of Dr. Frederic T. Giles, College of Education, and was approved for funding in the amount of $71,932 by the Kellogg Foundation. A project director was employed, and the project was under way by September 1, 1966. Five major aims of the project were identified in the grant proposal. I should like to discuss each of these aims, and the plans that are being developed and pursued to meet them.

The first aim is, "To offer a program leading to the master's degree that will prepare students for a successful career in teaching in ADN programs." To meet this aim, a 45-credit program was designed which currently includes 18 credits in advanced nursing theory and field work, 15 credits in nursing research and thesis, and 12 credits in higher education. Although about one-half of the 18 credits of advanced nursing theory are devoted to the clinical nursing specialty, we are including 3 credits in teaching in schools of nursing, 5 credits in curriculum development, and 3 credits in practice teaching. While these courses are not specifically designed for teaching in ADN programs, each provides opportunities to develop a project on this level. It is anticipated that arrangements will be made so that some of the individuals enrolled in the practice teaching course may gain this experience in local community college programs. There are also some possibilities that the project director may be involved in presenting seminars related to teaching in ADN programs in each of the three courses.

In relation to courses in nursing research and thesis writing, we are encouraging those students who are interested in teaching in ADN programs to select problems in that area for their research. I believe that you will be interested to know that at least six theses are being written this year related to ADN programs, including expectations of graduates of ADN programs, team teaching, evaluation of ADN students, and needs for orientation of new ADN faculty. Hopefully, these theses will provide some of the "fallout" of which Dr. Odegaard spoke.

As for courses in higher education, we are requiring the students enrolled in our program to include the course on The Junior College, and recommending college teaching plus one additional course. We are also recommending one course in human relations-group process, in preparation for effective functioning in team teaching relationships. So much for our plans to attain the first major aim of the project.

The second specific aim is, "To encourage increased numbers of graduates to choose the field of teaching in ADN programs as their major area of concentration." This fall, it was my pleasure to discuss with the 104 newly-enrolled pre-master's students the advantages of teaching in ADN

programs, and the purposes of the project. It was encouraging to learn that of the 104 students, approximately 40 were interested in teaching in community college nursing programs. In view of the fact that in 1964 and 1965, only 5 master's graduates entered ADN programs, it appears that we are making progress toward achieving this project goal.

The third objective is, "To stimulate greater awareness of the career opportunities in ADN programs among undergraduate and graduate students." Efforts are being made to meet this objective through posting of employment opportunities and through discussion with individual students about the possibilities of teaching in ADN programs. On December 7th a coffee klatch was held to discuss the project plans and employment opportunities with interested students. In planning this get-together, Dr. Metz and I estimated that approximately 30 students would attend. Unfortunately, the date selected for the affair was December 7th and this was the day that our usual precipitation turned white! Only 9 students braved the snow to attend. We hope to have a similar meeting later this spring when there may be less likelihood of Mother Nature interfering -- at least in the form of snow. Let me assure you, too, that when you send us information regarding teaching vacancies we do make efforts to inform students of them. I hope that we can be of real assistance in meeting your needs for qualified faculty through making students aware of career opportunities in teaching in ADN programs.

The fourth aim of the project is, "To provide an opportunity for the continuing education of directors and instructors of ADN programs in the Northwest to increase their leadership and teaching effectiveness." When the grant proposal was developed it included plans for a summer workshop for currently employed faculties of ADN programs in the Northwest states. This workshop is scheduled for August 6-18, with Dr. Fred Giles as coordinator and Dr. Dorothy T. White, Chairman of the ADN Program, Rockland Community College in New York, as resource person. The content of the workshop was selected as a result of a survey, in which all community colleges were asked to make known the needs of faculties of ADN programs for continuing education. The responses indicated needs were in: understanding the philosophy of community colleges, utilizing teaching resources, and improving curriculum and instruction. These needs served as guidelines for developing our workshop. We hope that ADN faculty members will find it helpful and stimulating.

In addition to the summer workshop provided by the Kellogg grant, there are opportunities available to faculties of ADN programs to be participants in institutes and workshops offered by the Continuing Education Committee of the School of Nursing. For example, a one-week workshop on clinical teaching is being presented February 20-24. Because of the interest expressed in this workshop, there is a strong possibility that it will be repeated the week of April 10-14. Institutes related to clinical nursing practice are also available through the Continuing Education Committee, chaired by Margaret Regan, with the assistance of Louise Shores.

The fifth, and final, aim of the Kellogg Project is, "To develop a model for the induction of the young master's graduate into community college teaching." It is this phase of the project that promises challenges and exciting developments, insofar as the project director is concerned. Plans call for a one-year post-master's program for four students, at least the first year, during which the students will be employed part-time by one of the cooperating community colleges, and will enroll in seminars on teaching in ADN programs in the student aspect of the program. The teaching role will be a guided experience under the supervision of the project director, with the assistance of faculty members in the colleges. The seminars will be devoted to application of theories of teaching-learning processes, curriculum development and instruction, and institutional research to the teacher in ADN programs. For the first year, tentatively Everett and Shoreline Community Colleges will provide the facilities for the guided experience. It is foreseen that additional colleges will be requested to participate in this program in the future, as enrollment for succeeding years holds promise of exceeding the limit of four -- in fact, five students have already applied for the program to start in September, 1967. We hope to do sound evaluation of this venture, on a research basis, to determine whether or not such an offering could provide an effective model for the induction of new master's graduates into community college teaching. I personally feel that this approach may provide one method for improving the quality of teaching in ADN programs, and for providing community college administrators with more adequately prepared faculty for such programs. If such an induction model proves effective in nursing education, it may well provide a pattern for similar approaches in other educational fields and disciplines, such as engineering and business administration.

As I have attempted to describe, it is obvious that the ADN Project at the University of Washington is a cooperative venture. The University is attempting to meet the needs of administrators and faculties of ADN programs; we, in turn, need the cooperation of local community colleges in providing practice teaching facilities for the pre-master's student interested in teaching in an ADN program, and in willingness to participate in the post-master's part-time guided teaching experience. All of us who are involved in this project are committed to the goal of improved teaching in ADN programs through the preparation of more and better-qualified faculty members for this important, rapidly-growing, and urgently-needed program of nursing education.

Finally, I am reminded of a story. A chicken and a pig were walking into the world to seek their fortunes. As time passed by, both became quite hungry. Finally, they came upon a restaurant, and the chicken said, "Friend pig, let us go in there to eat." The pig looked at the restaurant and said, "OH, NO!" "Why not?" queried the chicken. Said the pig, "See you not that sign which reads, 'Ham and eggs, 80¢'?"; to which the chicken replied, "Yes, but what does that portend?" Friend chicken," said the porker, "for you, only a donation; for me, total commitment!"

Thank you.

FACULTY PREPARATION FOR ASSOCIATE DEGREE NURSING IN A MASTERS PROGRAM

Mary W. Searight

We're both talking about the virtues of the Kellogg Foundation and we really shouldn't make light of it, but it reminds me of several years ago when many of the associate degree programs were getting started. So many had financial assistance from the Kellogg Foundation, that the students were often referred to as the Corn Flake Kids. I was just thinking that as Doris and I were getting up here and talking about our Kellogg projects, we must also be Corn Flake Kids.

This past July at the University of California in San Francisco, the School of Nursing also received a grant from the Kellogg Foundation. The purpose was to extend their teaching preparation program in associate Degree nursing education. The intent at that time was not to develop a separate program, necessarily, for the preparation of teachers for the associate degree in nursing, but to extend and possibly enrich the existing program.

The UC School of Nursing has, for several years, been preparing a considerable number of teachers for the junior college. The student interested in the associate degree program while enrolled at UC was encouraged to prepare a project in the curriculum course related to the junior college. She could select any area that she might be interested in. She was encouraged to take the course on philosophy and objectives of the junior college as an elective and then take practice teaching in an associate degree program.

The philosophy of the University of California states that graduate work leading to a masters degree shall be completed within one year. The School of Nursing adheres to this philosophy and the curriculum is planned in such a way that a student with no deficiencies can complete the requirements for the Master of Science Degree with a major in nursing in three quarters. This involves 36 units of graduate level credits.

Let me briefly describe these three quarters to you. Each quarter consists of twelve units, beginning in the fall and continuing through all three quarters, the students taking four units of their chosen

clinical major; medical/surgical nursing, psychiatric nursing, maternal child nursing, or community health nursing. The University put strong emphasis upon clinical experience at the graduate level. In the fall, the students may also take a four unit course in "Perspectives in Nursing." This is sometimes referred to as "Issues in Nursing, Past and Present" or "Ecology of the professions." The student also takes a course in beginning research methodology for four units. All of these courses are required for graduation.

In the winter quarter, the student again continues the clinical major for four units. There are a possible eight units for elective for the winter quarter as well as for the spring quarter, depending upon her clinical major. Maternal child nursing and psychiatric nursing majors have four to eight units of highly recommended electives which the student usually takes. These courses are advanced growth and development or psychology courses. There are no other specific requirements for the master's degree and the student is free to choose from graduate electives given in the School of Nursing as well as in the Berkeley Campus. Most students who plan to teach take curriculum as an elective during the winter and take practice teaching as an elective during the spring. There are a number of independent study courses through which the student can pursue special interests, either as a master student or through post master work.

The master's program is extensive; we gasp a little and so do the students before the year is over. The length of the program and its content is something which comes up for discussion quite frequently, and often the faculty do not agree. But let me share with you some of our feelings about what we are doing at the present time.

With the shortage of nurses with advanced preparation in nursing, and considering the high cost of educating this nurse, both in time and money, it is felt to be better to share the stipend money among more, prepare them more intensively, give them beginning skills and abilities, and have faith that the majority will continue to grow and go under their own steam after graduation. We have believed in what is best for the most. This program gives the graduate a starting point, and for a mature, experienced nurse -- especially one who has some experience in teaching prior to admission -- she is ready to go, and is not held back by requirements which might keep her from the teaching market for another year.

What about the student who is not so mature and has little or no experience? We do not pretend that this person is a finished product when she completes the program. She has a master's degree, but she knows as well as many of us know that what she needs most is experience, both in nursing and in teaching before she will become a capable teacher. If this new teacher plans to go right into teaching, she is encouraged to accept a position on an established faculty where she will receive supervision until she can develop more of her potential. She is not prepared -- nor is a person who has never had any teaching experience prepared, to go from UC's Master's Program into a situation

where she might be required to take responsibility for setting up a new program or to work in a situation where no supervision could be provided.

So much for the program in teacher preparation as it is at the moment. What am I doing? Or what have I been doing? For one thing I have visited some of you in the Eastern and Southern part of the country. Yes, Chicago is East to me. I kept saying I'm going East - to Chicago - and people in Chicago thought I was out of my mind. It was most helpful to observe other teacher preparation programs and other junior college nursing programs in Illinois, New York and Florida. I have visited junior college nursing programs in Northern California, and talked with faculties about their programs and about teacher preparation. I have attended dozens of conferences and committee meetings. I have filled sheets of paper with dream associate degree nursing teacher programs.

Presently, I am teaching a seminar in associate degree nursing education. It is a two unit course which is a survey study of associate degree nursing, as it relates to the philosophy of the junior college, to the nursing profession, to faculty preparation, to the student, and to the graduate. This course is open to all graduate students, whether they plan to teach in the junior college or not. Those who will be teaching baccalaureate level or who will be in supervision find it helpful to understand the objectives and purpose of the program as well as gain some understanding of what the expectations for the associate degree graduate might be. Students in this seminar group are preparing projects related to special interests in the junior college and I find the projects most interesting. There are ten students attending the seminar now, but in the spring it will no longer be a seminar, because at least thirty students have indicated an intention to attend. It is very encouraging to me (as it is to Doris, I am sure), to know that whether students intend to teach in the program or not, they are interested in knowing more about associate degree nursing.

This spring quarter, I will have fourteen to fifteen student teachers. Most of them will be in the junior college for practice teaching. This spring quarter, there will be more than 60 students, in all, doing practice teaching, and 23 of these students have indicated an intention of teaching in the junior college. The practice teaching course at this moment carries six units of credit; two hours of lecture discussion; two hours of seminar; and six hours for teaching field work. The seminar related to this course involves teaching/learning content and problems encountered by the student while doing practice teaching.

One of the first things which occurred after my appointment was the formation of an Ad Hoc Curriculum Committee to assist me in an advisory and functional way. I have been very fortunate to have the assistance of Verle Waters, Maura Carol, Shirley Chater, and Alice Ingmire. We try to meet at least every month. They have been

most helpful in orienting me to policy, philosophy and procedure as well as offering constructive criticism and support. With the help of the committee, a regular summer course has been planned as well as one for continuing education.

This summer, the first six weeks, we will offer a six unit course in associate degree curriculum. This course is planned for our own master's students who would like to teach in the junior college, and who can attend -- as well as other teachers in associate degree nursing programs who feel they might benefit from this study. Verle Waters and I will be presenting this course. It will encompass the factors influencing curriculum development in the associate degree nursing program; the development of objectives; selection of content and learning experiences; as well as evaluation. This is for six weeks, six units, starting about June 19th.

Following this course will be another offered through continuing education for one week. This course will approach issues in curriculum change, and is planned to assist established faculties with such problems as integrating content, shortening the program by deleting a summar session, or for those planning to change from semester to the quarter system. Those of you who are in California know that since the University of California changed from semester to quarter just this year, there's a beginning push for the junior college program to change from semester to quarter, and this is playing havoc with some nursing programs. This course will carry two units of credit and will be taught by Verle and myself.

Now, I have discussed briefly the philosophy and purpose of the University of California, San Francisco, School of Nursing, in regard to teaching preparation as it exists. I have described some of the additions and activities which the Kellogg Grant has provided and now I would like to take a few minutes to talk about future plans. Or perhaps I should say tentative plans, for these ideas are still being studied by the Committee and have not been presented and approved by the total faculty - so this is still in the talking and planning stage.

Many of the graduate faculty and others feel that completion of the requirements for the Master of Science in Nursing in three quarters does, as was mentioned earlier, give the student a very elementary start in teaching. While the program is open ended, so to speak, there is strong feeling that a more structured approach to teacher preparation, especially the teacher with no experience beyond the masters, should be considered. This concern is not only for the teacher in the associate degree program, but for those planning to teach at the baccalaureate and masters level. At this moment, a committee is working on a residency program, and here again I think you've heard the general theme several times during this convention. Not only would this residency program include all kinds of teacher preparation, but may include residency practice in administration, consultation and clinical practice. The student would be enrolled in

the School of Nursing as a post-masters student and given an opportunity to utilize in practice what she has been learning. At the same time, she would be taking supporting courses to enrich and reinforce the practice. As you may have heard from Mr. Hill's presentation, intern or residency method for preparing teachers has been successfully used for some time. I received my preparation to teach in a junior college through an internship program. Whether the student is hired full time or part time by the agency, or whether she is participating solely as a student with no financial obligation on the part of the agency, could present some minor differences in the program, but the main purpose, as I see it, and the great advantage for teacher preparation for associate degree nursing teachers, would be to become involved actively in the real teaching-learning situation over a long period of time -- time to become oriented to the institution, to the faculty, to the philosophy of the program. Not only is time a factor but curriculum and learning theories really come alive when one has to develop content appropriate to teach in the classroom and in the clinical area. We are fortunate to have a number of excellent associate degree nursing programs in the Bay Area and within reasonable commuting distance. The faculties of these agencies have been most helpful as cooperative teachers in the past and have done much to contribute to the development of our practice teachers. We do appreciate your efforts! Threequarters of post-masters residency would also give the beginning teacher time to evaluate herself and determine whether she needed to increase her skill and knowledge in other areas, such as the development of a clinical minor. As you know, it is often essential that one be able to teach in more than one clinical area. She might feel the need for more study in group dynamics or counseling, or perhaps her skill in the development and use of evaluation tools could use some reinforcing. She could pick up this course work according to her felt need as she was participating and practicing in teaching.

One precaution should be taken in the balance of course work and field work. The student teacher should not become so burdened with class work and study that she cannot devote the needed time to preparation for her students. On the other hand, she must not be deprived of well-planned study for her individual development through conferences with resource people in her clinical areas, as well as with her supervising teacher. On Thursday morning, we had trouble with the term "Technical Nurse." What was she? This same question has reappeared many times throughout the conference. Problems have been mentioned about what she is prepared to do, about interpreting her role to the lay public, school administrators, doctors. hospital administrators and hospital staff as well as nurses in general. This question is extremely important to those of us engaged in teacher preparation and the U.C. School of Nursing was aware that some study was needed in this area. Consequently, a grant was applied for and received, again from the Kellogg Foundation, for a study of content differences between technical and professional nurses. This project is under the direction of Shirley Chater and Verle Waters. It should provide some important guidelines to the selection of content appropriate to teach at both levels.

To say that those of us engaged in teacher preparation, along with those of you teaching in junior college have a tremendous responsibility and challenge is repeating many others. But I would like to reinforce the point. We are all helping to shape a whole new era of nursing education. The product, the associate degree graduate, can be very good. We know that. But she can be only as good as her teachers help her to become. We need excellent teachers to teach this demanding dynamic program.

P R O G R A M

"C R I T E R I A F O R Q U A L I T Y"

Fourth National Conference for Associate Degree Programs in Nursing

* * * * * * * * * * *

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San Francisco, California

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SATURDAY, MARCH 4th.....EMPIRE ROOM
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GREETINGS!

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"Nurse Training Act of 1964" . . . Division of Nursing, USPHS
JESSIE M. SCOTT
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. . . Division of Health Manpower Education Services
MARY L. SIEVER

"Vocational Education Act of 1963" . . . . . West Coast Representative
CELESTE MERCER

REPORT AND COMMENTS . . . . . .
Council of Member Agencies — DOROTHY T. WHITE, Chairman
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RESEARCH PROJECT ANNOUNCEMENT . . . . . .

"Survey of Associate Degree Programs in Nursing" . . . SYLVIA LANDE

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A F T E R N O O N S E S S I O N

PANEL ON ACCREDITATION ..... ISAAC K. BECKES, Moderator

"An Overview of Accreditation" ..... FRANK G. DICKEY
Executive Director
National Commission on Accrediting

"The American Association of Junior Colleges' View of the Associate Degree Nursing Program" ..... BILL J. PRIEST
President
American Association of Junior Colleges

"The ANA Views Associate Degree Nursing" ..... JO ELEANOR ELLIOTT
President
American Nurses' Association

"Accreditation: Viewpoint of Baccalaureate and Higher Degree Programs ..... LULU WOLF HASSENPLUG
Chairman
DBHDP, Council of Member Agencies

"Values of Accreditation to a Community College" ..... JAMES MCCANN
President
Henry Ford Community College

DISCUSSION

Saturday, March 4th
9:00 a.m.-4:00 p.m.

EMPIRE ROOM
THE SIR FRANCIS DRAKE HOTEL

Presiding: ISAAC K. BECKES

* *

MORNING SESSION

"Criteria for Change" ..... SHIRLEY S. CHATER
University of California

"Innovations in Nursing Education" ..... ELEANOR A. TOURTILLOTT
Henry Ford Community College

"Clinical Teaching by Video Tape" ..... BEATRICE PERLMUTTER
ALICE EHRHART
Bronx Community College

"Developing Single-Loop Films and Teaching Aids within the College Structure" ..... SHIRLEY CONKLIN
ROBIN SCHECHTER
College of Marin

AFTERNOON SESSION

"Kellogg Project Program: Post Masters Education for Associate Degree Nursing" ..... DORIS A. GEITGEY
University of Washington

"A Graduate Program for ADN" ..... MARY SEARIGHT
University of California

"Nursing for the Space Age: Aerospace Activities" ..... LT. COL. META MILLS
Edwards Air Force Base

"Summary & Discussion"

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Carlson, William O.; Lepak, Joseph W.
A Study of the Needs for Radiological Technicians and Recommended Curricula for Training Radiological Technicians. Final Report.

Nevada Univ., Southern Regional Div., Las Vegas
Public Health Service (DHEW), Washington, D.C. Div. of Radiological Health
MF AVAILABLE IN VT-ERIC SET. SAph 78542
Pub Date - 14Jun63 86p.

CURRICULUM; QUESTIONNAIRES; POST SECONDARY EDUCATION; *EDUCATIONAL NEEDS; *EMPLOYMENT PROJECTONS; EMPLOYMENT QUALIFICATIONS; *CURRICULUM DEVELOPMENT; *HEALTH OCCUPATIONS EDUCATION; CURRICULUM RESEARCH; *RADIOLOGIC TECHNOLOGISTS

The objectives of the report were: (1) to determine the feasibility of training for radiological personnel, and (2) to develop a curriculum for that program at the university level. Following a pilot study, questionnaires were mailed by 153 persons engaged in the field of radiation in industry, universities, and government. On the basis of 88 completed and returned questionnaires, it was concluded that a need for training technicians existed, and a tentative curricular proposal was presented to selected respondents in five western states in open-ended interviews. Acting as knowledgeable experts, they evaluated the proposed curriculum and recommended that general training programs for technicians should include: (1) instruction in basic areas of physics, chemistry, mathematics, and biology, (2) instruction in instrumentation, and (3) on-the-job training experience, with different levels of training to meet needs of different levels of technicians. In view of the lack of agreement as to what constitutes a radiological technician, and of the divergence of opinion as to the levels of performance and responsibilities expected, it was recommended that further study be made to develop suitable definitions and job descriptions, perhaps at three levels of performance and responsibility. (JK)

VT 001 254

UNIVERSITY OF NEVADA
Southern Regional Division
Las Vegas, Nevada

FINAL REPORT:

A STUDY OF THE NEEDS FOR RADIOLOGICAL TECHNICIANS

AND

RECOMMENDED CURRICULA FOR TRAINING RADIOLOGICAL TECHNICIANS

by

William D. Carlson, Ph.D., Project Director
Joseph W. Lepak, Ph.D., Principal Investigator

June 14, 1963

For

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
PUBLIC HEALTH SERVICE
Bureau of State Services
Division of Radiological Health

Contract No. SAph 78542

Oliver R. Placak
Project Officer

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Las Vegas, Nevada
June 14, 1963

William D. Carlson, Ph.D.
Joseph W. Lepak, Ph.D.

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CHAPTER I

STATEMENT OF THE PROBLEMS AND THE PROCEDURES USED

A. Introduction

There have been persistent reports which would seem to indicate a present and growing need for technical personnel in the general area of radiation. However, it is extremely difficult to obtain specific information about such needs and minimal training for such personnel. This paper is the final report of a project to determine the feasibility of such training for radiological personnel and the development of a curriculum for that program at the university level.

Three primary objectives were set forth, defining the work to be performed under contract number SAph 78542. The first was the examination of the need for and feasibility of developing a training program for radiological technicians at the college or university level. The second, contingent on an affirmative answer to the question posed in the first step, was the development of a model curriculum for the training of radiological technicians. The third was the incorporation of the curriculum into the University's program, if it should be considered feasible.

Due to the wide geographical area concerned, and the number of individuals, firms and agencies which could be involved, the decision was made to conduct the study by means of the questionnaire and open-end interviews.

Although the investigators had no preconceived conclusions as to what should be the length of a program for training radiological technicians, the emphasis of the contract for the study was on a "two-year training program." Thus a two-year program base was utilized in the study as a frame of reference or point of departure for the gathering of information and opinions in an area where there is no definitive statement as to what is a "radiological technician" or the type of

training he should receive. The investigators deliberately avoided a "crash program" approach in conducting the study.

A survey was conducted as a part of determining the first objective of the study. The results of the survey, which were obtained by the use of a formal questionnaire and open-end interviews, indicated that a training program was considered desirable and feasible. These findings led to the development of a curriculum, the second objective. The third objective cannot be concluded within the scope of this study, since of necessity it would entail the formal adoption of a curriculum program, the provision for budget, and other considerations which reside with the governing board of the University.

B. Procedure

There were two distinct steps in the examination of the feasibility of a college curriculum for the training of radiological technicians. The first was a pilot study involving open-end interviews with professionals in the field of radiation, and a letter questionnaire directed to selected key personnel in the same or other organizations. These procedures were utilized to secure information as to their needs for technicians. In the second step a formal questionnaire was developed and a mail survey was performed, with open-end interviews also being utilized.

1. The Pilot Study

Initially interviews were conducted with a number of professionals in the field of radiation who were either located at, or visiting the Nevada Test Site area. These interviews were informal and varied greatly in length. Their main purpose was to obtain a general opinion concerning the needs of organizations

for technicians and interest in training programs for such personnel. A letter questionnaire (Appendix I) was sent subsequently to 25 professionals known to be experts in the field of radiological work. The letter requested information concerning the needs of his organization for radiological technicians, information concerning the training of such personnel, and the names of staff members in the organization who might be interested in this problem and who would contribute additional information.

Of the 25 experts to whom letter questionnaires were sent, 23 responded. Of these, 20 indicated that a need for such technicians existed and that a program developed at a less than baccalaureate level at the University would be valuable and desirable. These opinions substantiated those expressed in the interviews.

2. The Questionnaire Study

The results of the Pilot Study were extremely encouraging but were based on a relatively small number of respondents. The results certainly indicated that a training program was considered both feasible and desirable, but did not provide the detailed information necessary for the development of such a program. For that purpose more specific information was required, and a larger and more adequate sample of experts was necessary. It was decided that the use of a formal questionnaire in a mail survey would meet this requirement.

Development of the Questionnaire

Based largely on the information obtained from the Pilot Study, a preliminary questionnaire was developed. It requested specific information concerning the need for technicians and the training they should possess. It also contained miscellaneous but potentially important items such as salary levels, the availability of financial support for students, and whether or not female technicians

would be hired. In addition, the respondent was requested to supply information concerning his experience, training, and the nature of his organization or agency.

Several drafts of the questionnaire were prepared and circulated in order to refine the instrument. These were directed to various persons known to be familiar with the survey technique, and included research experts at the University of Chicago, the University of California at Los Angeles, and the University of Nevada. On the basis of the critiques of the preliminary form, the questionnaire was revised several times prior to its final form. (Appendix IV)

Procedure

In its final form the questionnaire was mailed to persons who were known to be engaged in the field of radiation in industry, universities and governmental agencies, both federal and state. A stamped, self-addressed envelope was included to facilitate response. One item in the form requested names of other experts who might be contacted. With the additional names thus secured, a total sample of 153 persons was contacted. The first questionnaire was mailed May 3, 1962, and the last was sent June 25, 1962. Follow-up letters were sent to those who did not respond to the initial request for information. (Appendix II)

Replies were received from 123 of the 153 persons to whom questionnaires were sent. Of the 123 replies, twenty-six were letters of explanation with reasons for not completing the questionnaire. Of the ninety-seven questionnaires returned, nine had incomplete information and thus were rejected. A total of eighty-eight questionnaires, therefore, constituted the group included in this study. (See Appendix V for the list of organizations represented in the study.)

The individual items of the questionnaire were tabulated or summarized in accordance with the nature of the item concerned.

3. Curriculum Study

On the basis of the results and the recommendations of the questionnaire survey it was concluded that there exists a need for radiological technicians, and that it was feasible to develop a training program at the college or university level to meet such needs.

The recommendations made in the questionnaire survey regarding areas of training were collated and a tentative curricular proposal was prepared. This was presented to persons in five western states who had participated in the original questionnaire survey. An open-end interview was held with each, in order to verify and evaluate the preliminary curriculum. This resulted in further refinements which were incorporated into the final proposal.

C. Summary

The project was established to determine the need for and feasibility of developing a training program for radiological technicians at the college or university level, the development of a model curriculum for training radiological technicians, and to incorporate the curriculum into the University's program if it should be considered feasible.

Due to the wide geographical area concerned, and the number of individuals, firms and agencies which could be involved, the decision was made to conduct the study by means of the questionnaire and open-end interviews. The emphasis of this contract and project, for the study, was on a "two-year program," thus a two-year program base was utilized as a point of departure for gathering information in an area where no definitive statement existed as to what is a radiological technician and what kind of training he should receive.

Open-end interviews and a letter questionnaire were procedures utilized in this study to secure information as to the needs for and training of radiological technicians. Twenty-five persons, closely associated with problems involving radiation, were contacted and were requested to give information concerning the need for and training of such technicians within their organizations. They were also asked to furnish names of other responsible persons within their organization who may help determine the above information concerning radiation technicians. Of the twenty-five experts to whom letter questionnaires were sent, twenty-three responded. Of these, twenty indicated a need for technicians existed and that a training program was desirable.

The results of the pilot study were extremely encouraging and led to the development of a general questionnaire. It requested specific information concerning the need for technicians and the training they should possess. It also contained other important items such as salary levels, availability of financial support for students. The first questionnaire was mailed May 3, 1962; the last June 25, 1962. Replies were received from 123 of the 153 persons contacted. Of the 123 replies, twenty-six were letters of explanation with reasons for not completing the questionnaire. Of the ninety-seven questionnaires returned, nine were incomplete and thus rejected. A total of eighty-eight questionnaires thereby constituted the group included in the study.

On the basis of the results and recommendations of the questionnaire survey it was concluded that there exists a need for training radiological technicians and that it was feasible to develop a training program to meet such needs. The recommendations made in the questionnaire survey regarding areas of training were collated and a tentative curricular proposal was prepared. This was presented

to persons in five western states who had participated in the original survey. Open-end interviews were held with each group to verify and evaluate the preliminary curriculum.

CHAPTER II

RESULTS

A. Introduction

Of particular concern in any study of this type is the background and experience of the respondents who are acting as the knowledgeable experts in the areas being studied, as well as the data they supply. The material contained in this chapter of the report is designed to describe the groups surveyed, the needs indicated for radiation technicians and the training recommended for such technicians, and other recommendations and qualifications.

B. The Groups Surveyed

Under the terms of the contract, special emphasis of the study was to be placed on the area west of the Mississippi River. The authors did not feel that the survey should completely ignore the organizations and personnel in the eastern portion of the country. As indicated in Table 1, almost three-fourths of the group was located in the area west of the Mississippi and the remaining twenty-six percent of the respondents were employed in the east. Table 1 also indicates the type of organization employing the participants. It should be noted that the respondents were employed almost equally among university, government and industry. It may be well to mention here that the university plays somewhat of a unique role in the employment of people engaged in the work involving radiation. For example, the Los Alamos Scientific Laboratory is directly connected with the University of California, as is the Lawrence Radiation Laboratory, and their technicians and personnel are considered to be university personnel.

TABLE 1

WHERE RESPONDENTS ARE CURRENTLY EMPLOYED

Location	Respondents Reporting Number	Percent (N=88)
By geographical area:		
East of Mississippi River	23	26.1
West of Mississippi River	65	73.9
By type of organization:		
University or Foundation	33	37.5
Governmental Agency	31	35.2
Industry	24	27.3

The respondents as a group may be characterized as having a substantial experiential background in the field of radiation and a knowledge of the organization in which they were employed. It is recognized that titles may not be indicative of the type of work performed, and as is shown in Table 2, a wide variation in titles exists.

Almost two-thirds of the group had ten or more years of experience in the field of radiation, as indicated in Table 3. Approximately forty percent have been in their present position five or more years. (See Table 4.)

TABLE 2

PROFESSIONAL FIELD OF RESPONDENTS

AS INDICATED BY TITLE

Title	Number
Physicist	14
Radiation Safety Officer	14
Health Physicist	13
Chemist	9
Biophysicist	7
Industrial Hygienist	7
Radiologist	7
Engineer (Industrial, Chemical)	6
Biologist	4
Radiochemist	3
Professor (Chemistry, Engineering)	2
Pharmacologist	1
Reactor Facility Officer	1
	88

TABLE 3

YEARS OF EXPERIENCE IN FIELD OF RADIATION

Number of Years Experience	Respondents Reporting Number	Percent (N=88)
15 and more	19	21.6
10 - 14	37	42.0
5 - 9	23	26.1
1 - 4	9	10.3

TABLE 4

YEARS OF EXPERIENCE IN PRESENT POSITION

Number of Years Experience	Respondents Reporting Number	Percent (N=88)
More than 10	10	11.4
9 - 10	8	9.0
7 - 8	6	6.8
5 - 6	13	14.8
3 - 4	13	14.8
1 - 2	36	40.9
Less than 1	2	2.3

Two-thirds, however, had been with their present employer five or more years as shown in Table 5. One may, therefore, conclude that the respondents have tended to stay with their present employer, and have moved to higher positions within the same organization. It was also noted that the respondents had experience in fields of radiation other than their present position. As indicated in Table 6, more than one-third have had experience in the field of physics. Chemistry and medicine also were mentioned frequently.

TABLE 5

LENGTH OF TIME WITH PRESENT EMPLOYER

Number of Years Experience	Respondents Reporting Number	Percent (N=88)
More than 10	27	30.7
9 - 10	10	11.4
7 - 8	8	9.1
5 - 6	12	13.6
3 - 4	11	12.5
1 - 2	20	22.7

An examination of experience in fields other than radiation revealed a large number of respondents reporting chemistry, with engineering, public health, electronics and physics being mentioned most frequently in that order. (See Table 7.)

TABLE 6

EXPERIENCE IN FIELD OF RADIATION OTHER THAN PRESENT POSITION

Field	Respondents Reporting Number	Percent (N=88)
Physics (includes Health Physics)	30	34.1
Chemistry	13	14.8
Medicine	9	10.2
Engineering	7	7.9
Biology	5	5.7
Industrial Hygiene	4	4.5
Administration	2	2.3
No response	10	11.4

TABLE 7

EXPERIENCE IN FIELDS OTHER THAN RADIATION

Field	Number of Respondents Reporting
Chemistry	20
Engineering	8
Public Health	8
Electronics	7
Physics	7
Biology	6
Medicine	6
Education	5
Management and Administration	2
Military	2
Mathematics	1

The educational background of the respondents was generally, but not exclusively in the field of science. More than one-half of the group hold a master's or higher degree. Thirty-eight percent have the bachelor's degree as the highest degree, while only five individuals reported having no degree. (See Table 8.)

TABLE 8

HIGHEST DEGREE HELD BY RESPONDENTS

Degree	Respondents Reporting Number	Percent (N=88)
Ph.D.*	25	28.4
M.D.	6	6.8
Master	17	19.3
Bachelor	34	38.7
None	5	5.7
No response	1	1.1

*Two also held M.D. degree in addition to Ph.D. degree.

The institutions awarding the highest degrees held by the respondents were evenly divided as to geographical location in terms of eastern, central and western areas of the country. When the Mississippi River is utilized as a dividing point, slightly more than one-half of the degrees were awarded by eastern institutions (See Table 9), and yet almost three-fourths of the respondents are now employed west of the Mississippi River. (See Table 1.) For a list of institutions see Appendices VI, VII, VIII.

TABLE 9

LOCATION OF INSTITUTION FROM WHICH RESPONDENT'S HIGHEST DEGREE WAS OBTAINED OR ADVANCED STUDY PERFORMED

Location	Number of Institutions	Number of Persons	Percent of Persons (N=88)
Eastern	20	27	32.9
Central	17	28	34.2
Western	23	27	32.9
East of Mississippi River	28	46	56.1
West of Mississippi River	22	36	43.9

The field of radiation, or certainly its great expansion and complex ramifications in very recent years, may be considered in one sense as a relatively new field. Of the eighty-two participants holding degrees, more than one-half received their highest degree since 1950. Only two received degrees prior to 1930, and only ten prior to 1940. (Table 10) This would emphasize that the group contacted in the survey has relatively recent training.

TABLE 10

PERIOD DURING WHICH HIGHEST DEGREE WAS RECEIVED

Period	Respondents Reporting Number	Percent (N=88)
1960 - 62	5	6.1
1950 - 59	44	53.6
1940 - 49	23	28.1
1930 - 39	8	9.8
Prior to 1930	2	2.4

TABLE 11

SOURCE OF SPECIAL TRAINING OF RESPONDENTS IN THE FIELD OF RADIATION

Source	Respondents Reporting Number	Percent (N=88)
On-the-job	60	68.2
College or University	22	25.0
No response	6	6.8

In addition to the formalized university training referred to above, all but six of the group received special training in the field of radiation. It should be noted in Table 11 that more than two-thirds received such specialized training on the job. This perhaps underscores the importance of on-the-job training at any level, and is not unexpected when the recency of developments in the field is considered.

TABLE 12

TEACHING EXPERIENCE OF RESPONDENTS

Kind of Experience	Respondents Reporting Number	Percent (N=60)
University or college	38	63.3
On-the-job	21	35.0
No response	1	1.7

In view of th: importance of having instructors available, the respondents were categorized as to teaching experience. As Table 12 indicates, sixty professionals, or better than two-thirds, had teaching experience. Of these, almost two-thirds had university or college teaching experience, while better than one-third had such experience on the job. It is interesting to note that eighty-three percent of the group indicated willingness to give lectures. (The authors take this as another indication of the high degree of interest in the program among the group surveyed.) A note should be made that the availability of such persons would be dependent in some cases on permission and approval of their organizational heads.

C. The Need for Technicians

It was considered important, in determining the need for technicians, to have a knowledge of the various technical categories of work within the organizations being surveyed. As might be expected, some organizations had more than one technical category. Table 13 lists these categories with chemistry and physics predominating, followed by biology, mathematics and electronics as other important areas of technical work. Engineering, industrial hygiene, medical and agricultural areas are reported to a lesser extent, but contribute to the diversity of areas in the field.

Specific questions were asked regarding the respondent's estimate of the technician need situation as it applied to his work area in his own organization. Almost two-thirds of the respondents indicated that a present need exists for technicians, in addition to any unfilled positions. Seventy-seven percent reported anticipated future needs. Better than two-fifths indicated that they were unable to fill technical positions at the present time. (Table 14.)

TABLE 13

TECHNICAL CATEGORIES FOUND IN ORGANIZATIONS SURVEYED

Category	Number
Chemistry	40
Physics	38
Biology	18
Mathematics	16
Electronics	11
Engineering	8
Industrial Hygiene	4
Medical	2
Agriculture	1

TABLE 14

RADIATION TECHNICIAN NEEDS

	Respondents Reporting	
	Number	Percent (N=88)
Present need exists	56	63.6
Anticipated future needs	68	77.3
Unable to fill technical positions	36	41.0

The respondents indicated that some 2000 technicians were currently employed. This should not be interpreted as meaning the total number of radiation

technicians in the United States at the present, but as the number reported in the areas surveyed only. The members of the survey reported an immediate, or current need for 325 technicians, and reported 164 technician positions currently "unable to fill."

TABLE 15

REASONS FOR DIFFICULTY IN FILLING RADIATION TECHNICIAN POSITIONS

Reason	Rank Order
Lack of trained personnel	1
Salary level	2
Insufficient budget	3
Hazardous occupation	4
Lack of cleared personnel	5
Limited labor pool	6
Lack of interest	7

Members of the survey group indicated some difficulty in filling technical positions. Reasons for the difficulty are presented in Table 15 in rank order of importance. The main emphasis is placed upon the lack of trained personnel, the low salary level to attract and retain such personnel, and in some instances, lack of budgetary items to provide for technicians. The aspect of possible hazard in the occupation may have an effect of reducing the number of persons who might go into the field but it is not believed that this is a serious factor.

The lack of interest reported, the limited labor pool, and lack of cleared personnel are considered to be a result of the first three reasons listed rather than reasons per se.

TABLE 16

OTHER AREAS IN WHICH PROFESSIONAL, SUB-PROFESSIONAL AND TECHNICAL PERSONNEL ARE NEEDED NOW OR IN THE NEAR FUTURE

Area	Frequency
Physics	30
Chemistry	26
Engineering	17
Biology, including Physiology	10
Electronics	10
Instrumentation	8
Industrial Hygiene	5
Mathematics	5
Statistics	5
Technical Administration	4
Technical Writing	3
Library	2
Training Supervision	1
Legal	1

In addition to the reported need for radiation technicians, the members of the survey also reported needs for professional, sub-professional and technical

personnel in other areas. The areas listed in Table 16 are quite diverse and represent needs of present organizations. Physics and chemistry were mentioned most frequently, followed by engineering, biology and electronics. (These indications are also reflected in the categories of technical work performed by the organizations as shown in Table 13.) The professional needs are found primarily in the first five categories, while the sub-professional and technical needs are to be found in all areas. Of interest are the recommendations for such technical specialists as training supervisors, librarians, technical writers and technical administrators.

D. Training Recommended

Preceding sections have indicated the diversity among the respondents as to the level of their training, fields of training, technical categories of work performed by their organizations, and the organizations themselves. It is not unexpected that these would have some influence on the specific recommendations of training areas to be emphasized. It was not surprising that some had a tendency to recommend a heavier emphasis on the fields of their own particular specialty or interest. In spite of the diversity mentioned above, a basic pattern of areas of study became apparent.

The areas of science considered most important in the training of radiation technicians are shown in Table 17. Physics was mentioned most frequently, followed by mathematics, chemistry and biology in that order. Other areas recommended included electronics, engineering, instrumentation, health physics and biochemistry.

When an analysis was made of the frequency with which a science area was to be combined with other areas, physics again was considered of prime importance,

and in fact, was mentioned almost twice as frequently as was biology. (Table 18.) A comparison with Table 17 indicates that while chemistry and mathematics changed positions in rank, physics continued as the most frequently recommended area, and biology remained as the least recommended area.

TABLE 17

AREAS OF SCIENCE RECOMMENDED FOR EMPHASIS IN TRAINING OF RADIATION TECHNICIANS IN ORDER OF IMPORTANCE

Area	Number, in Order of Importance 1st	2nd	3rd	4th	5th
Physics	40	20	6	2	-
Mathematics	4	25	26	6	-
Chemistry	15	12	20	14	2
Biology	11	7	12	22	1
Other	2	3	2	1	4

TABLE 18

FREQUENCY OF RECOMMENDATIONS FOR SCIENCE AREA TO BE EMPHASIZED IN COMBINATION WITH OTHER AREAS

Area	Frequency
Physics	78
Chemistry	68
Mathematics	57
Biology	43

TABLE 19

COMBINATIONS OF SCIENCE AREAS RECOMMENDED FOR EMPHASIS IN TRAINING OF TECHNICIANS

Science area combination	Frequency
Biology-Physics-Mathematics-Chemistry	25
- Physics-Mathematics-Chemistry	19
- Physics - Chemistry	11
- Physics-Mathematics -	9
Biology-Physics - Chemistry	7
Biology-Physics - -	6
Biology - - Chemistry	3
- - Mathematics-Chemistry	2
Biology-Physics-Mathematics -	1
Biology - Mathematics-Chemistry	1

Certain combinations of science areas were recommended. These combinations are presented in Table 19. Although individual opinions appeared to vary, the kinds of combinations were consistent with the recommendations indicated in Tables 17 and 18.

The area of physics was most frequently recommended of the sciences. Specific physics courses considered to be essential to the performance of radiation technician work are shown in Table 20. More than three-fourths recommended a general or introductory course in physics. More than two-thirds also

recommended courses in health and nuclear physics. It must be assumed that a general or introductory course would be prerequisite to any such courses as health and nuclear physics. From comments included, some respondents were of the opinion that the latter two courses should be introductory in nature and could be part of the general physics course.

TABLE 20

PHYSICS COURSES CONSIDERED TO BE ESSENTIAL

TO THE PERFORMANCE OF RADIATION TECHNICIAN WORK

Course	Respondents Reporting Number	Percent (N=88)
General	69	78.4
Health	61	69.3
Nuclear	59	67.0
No response	5	5.7

A greater spread of courses in the chemistry area was noted, as well as a larger number of advanced courses. (Table 21.) General or introductory chemistry was most frequently mentioned by more than four-fifths of the respondents. Fifty-six percent recommended radiochemistry and forty-two percent included quantitative chemistry. A scattering of recommendations was made for organic, physical, biological and qualitative chemistry. Although not reflected in the tabulations, the recommendation for certain advanced courses presupposes certain prerequisite courses. Comments made by respondents seemed to indicate that technicians should have some introduction to these various courses, and the extent of recommended

training in chemistry would vary with the emphasis upon chemistry with the organization.

TABLE 21

CHEMISTRY COURSES CONSIDERED TO BE ESSENTIAL
TO THE PERFORMANCE OF RADIATION TECHNICIAN WORK

Course	Respondents Reporting Number	Percent (N=88)
General	72	81.8
Radio	50	56.8
Quantitative	37	42.0
Organic	14	15.9
Physical	2	2.3
Biological	1	1.1
Qualitative	1	1.1
No response	8	9.0

TABLE 22

MATHEMATICS COURSES CONSIDERED TO BE ESSENTIAL
TO THE PERFORMANCE OF RADIATION TECHNICIAN WORK

Course	Respondents Reporting Number	Percent (N=88)
College Algebra	75	85.2
Statistics	47	53.4
Trigonometry	38	43.2
Calculus	27	30.7
Analytic Geometry	25	28.4
No response	3	3.4

In the area of mathematics, college algebra was recommended by eighty-five percent of the participants. Also considered important were statistics, trigonometry, calculus and analytic geometry. (Table 22.) Comments were made that an introduction to, or knowledge of, the principles of the latter mathematics courses was considered more desirable than the complete courses. Statistics, recommended by fifty-three percent of the group, was suggested as a non-mathematical course, and only on the elementary level.

TABLE 23

BIOLOGICAL COURSES CONSIDERED TO BE ESSENTIAL

TO THE PERFORMANCE OF RADIATION TECHNICIAN WORK

Course	Respondents Reporting Number	Percent (N=88)
Radiobiology	54	61.4
General	48	54.5
Physiology	28	31.8
Zoology	8	9.1
Botany	5	5.7
Anatomy	1	1.1
Bacteriology	1	1.1
Embryology	1	1.1
Hematology	1	1.1
No response	13	14.8

Although biology was not considered a main area of science in the training of technicians (see Tables 17, 18, 19) more than sixty percent of the participants recommended radiobiology and fifty-four percent recommended general biology. Almost one-third included physiology while a scattering of recommendations were made for zoology, botany, anatomy, bacteriology, embryology and hematology. (See Table 23.)

TABLE 24

SPECIAL COURSES CONSIDERED TO BE ESSENTIAL

TO THE PERFORMANCE OF RADIATION TECHNICIAN WORK

Course	Respondents Reporting Number	Percent (N=88)
Radiation instrumentation	56	63.6
Electronics	45	51.1
Technical or report writing	27	30.7
Public or human relations, industrial psychology	5	5.7
Monitoring techniques	4	4.5
Slide rule	3	3.4
First aid	1	1.1
Isotope training	1	1.1
Office calculator	1	1.1
X-Ray theory	1	1.1
Reactor theory	1	1.1
Ventilation	1	1.1

Other types of courses were recommended (Table 24) as being desirable in the training of technicians. Radiation instrumentation was emphasized by almost two-thirds, electronics by more than one-half, and technical or report writing by almost one-third of the group. Other special courses mentioned were public or human relations or knowledge of industrial psychology, monitoring techniques, use of the slide rule, first aid, isotope training, use of office calculator, X-ray theory, reactor theory and ventilation. Undoubtedly the latter courses reflect the limited but special needs encountered in some organizations.

TABLE 25

RADIATION TECHNICIAN TRAINING PROGRAM SHOULD REQUIRE

MORE THAN TWO YEARS

Highest Degree Held by Respondent		Yes		No		No response	
		N	%	N	%	N	%
No degree	(N=6)	1	16.7	5	83.3	0	-
Baccalaureate	(N=34)	6	17.7	23	67.6	5	14.7
Master	(N=17)	5	29.4	12	70.6	0	-
Ph.D.	(N=25)	6	24.0	16	64.0	3	12.0
M.D.	(N=6)	0	-	4	66.7	2	33.3
All respondents	(N=88)	18	20.4	60	68.2	10	11.4

In view of the wide variety of courses recommended, and in many cases, the depth of such recommendations, a question may be raised as to the length of a proposed training program. Slightly more than two-thirds of the group believed that the radiation technician training program should not require

more than two years. (Table 25.) In order to determine if there would be any differences among the respondents with varying educational levels, the group was divided into sub-groups on the basis of highest degree held. A similar pattern of consistency was found within the sub-groups as was found for the group as a whole. It might be worthy of note that three-tenths of those holding the master's degree, and one-fourth of those holding the Ph.D. degree believed that more than a two-year period should be required.

TABLE 26

BACCALAUREATE LEVEL RADIATION TECHNICIAN PROGRAM

CONSIDERED NECESSARY

Highest Degree Held by Respondent		Yes		No		No response	
		N	%	N	%	N	%
No degree	(N=6)	4	66.7	2	33.3	0	-
Baccalaureate	(N=34)	20	58.8	9	26.5	5	14.7
Master	(N=17)	10	58.8	7	41.2	0	-
Ph.D.	(N=25)	13	52.0	12	48.0	0	-
M.D.	(N=6)	2	33.3	1	16.7	3	50.0
All respondents	(N=88)	49	55.7	31	35.2	8	9.1

When a review is made of the specific courses recommended, it is apparent that such recommendations may not be consistent with the view of holding the program within a two-year period. In response to the question of the necessity for a baccalaureate level training program, more than one-half of the group replied in the affirmative (Table 26). This would tend to be consistent with the specific

course recommendations found in Tables 20-24. When the respondents were grouped according to the highest degree held, those without degrees, for example, more strongly favored a baccalaureate level program than those holding the Ph.D. degree. To a lesser extent the same is true when the baccalaureate and master groups are compared with the Ph.D. group.

E. Other Recommendations and Qualifications

In addition to the specific training recommended, the participants also indicated other qualifications they believed to be important for radiation technicians. (Table 27.) Of greatest importance were listed good mental and physical health. Although a physical handicap per se would not eliminate a person as a possible technician, the kind of handicap would be the determining factor. Ability to get along with others, scientific interest, and personal characteristics of responsibility and initiative were also considered important.

Recognizing the importance of having stable persons employed in this field, more than one-half of the group recommended that there is a need to establish physical or psychological limitations for applicants. (Table 28.) Almost three-fourths of the participants believed that a screening examination should be given all applicants prior to entering training as a radiation technician. Sixty-two percent indicated a willingness to assist in developing a screening examination.

Three-fifths stated that their organizations presently employ women as radiation technicians and more than two-thirds said that women would be employable if trained. The only restrictions imposed on women appeared to be related to pregnancy, field work and strenuous physical exertion.

TABLE 27

QUALIFICATIONS CONSIDERED IMPORTANT

FOR RADIATION TECHNICIANS

Qualification	Frequency
Good mental stability	33
Good general health	26
No physical defects	14
Personality, ability to get along with others	13
Scientific interest	11
Responsibility and initiative	10
Respect for radiation hazards	7
Follow instructions, accurate and neat, good observation	6
Interest in personal development and advancement	6
Good security risks	4
Writing ability	2
Intelligence, intellectual integrity	2
Previous technical training in any field	2
No prejudice for or against any discipline	1
Males only	1

TABLE 28

ADVANCEMENT, LIMITATIONS AND TRAINING ASSISTANCE

FOR RADIATION TECHNICIANS

Highest Degree Held by Respondent	Yes		No		No response	
	N	%	N	%	N	%
Need for physical or psychological limitations	49	55.7	32	36.3	7	8.0
Screening examination should be given	63	71.6	23	26.1	2	2.3
Would assist in developing screening examination	55	62.5	16	18.2	17	19.3
Presently employ women as radiation technicians	52	59.1	32	36.4	4	4.5
Would employ women trained as technicians	59	67.0	16	18.2	13	14.8
Opportunity for technician advancement	74	84.0	7	8.0	7	8.0
On-the-job training considered important part of training program	84	95.4	3	3.4	1	1.2
Organization would hire students during summer as part of on-job training	50	56.8	16	18.2	22	25.0
Organization would give financial support to students	22	25.0	29	33.0	37	42.0
Organization would give financial support for training of current employees	37	42.1	22	25.0	29	32.9

More than four-fifths indicated that there were opportunities for technicians to advance. Advancements would include promotion to higher levels of technical work, some supervisory duties, but advancement may come primarily through salary increases. This may present a problem, considering the difficulty with respect to salaries. (See Table 15.) There also exists a wide range of salaries paid to technicians. Lowest beginning salaries were paid by governmental and educational agencies. Industry has what appears to be the most substantial salary scales. (See Appendix XII.)

There was almost unanimous agreement that on-the-job training was an important part of an organized training program. In addition, it was indicated that organizations would conduct on-the-job training to meet their special needs. In recognition of the importance of training of technicians, more than one-half of the participants stated that their organization would hire students during the summer months as part of on-the-job training. In addition, one-fourth stated that their organization would give financial support to students and two-fifths indicated that their organization would give financial support for training of current employees. (It should be noted that many indicated they could not commit their agency regarding financial assistance matters.) Financial support would be in the nature of tuition, books, fees and subsistence. In general it was indicated that support would be partial rather than complete.

F. Summary

The respondents as a group may be characterized as having a substantial experiential background in the field of radiation, and a knowledge of the organization in which they were employed. The majority held degrees at the master's

level or higher and had received special on-the-job training in the field of radiation. Over three-fourths of the respondents were located in areas west of the Mississippi.

Strong indications were made that there is a definite need for technicians in this field at the present time, in addition to any unfilled positions, and that there would be increased needs for such personnel in the future. It was further indicated that there exists a need for other sub-professional and professional personnel in this field. Members of the group indicated some difficulty in filling certain technical positions; the most important reasons were the lack of trained personnel and low salary levels. At present, personnel needs are met primarily through on-the-job training. There was general agreement that a training program would be desirable.

Physics was designated as the most important area of study followed by chemistry, mathematics and biology in that order. Other types of courses were recommended as being desirable in the training of technicians in which radiation instrumentation was emphasized as was also electronics and technical report writing.

Other recommendations made included the desirability of good mental and physical health, and that some form of screening examination should be given. It was also indicated that women would be acceptable as radiation technicians. On-the-job training was highly recommended by the majority of respondents and that some financial assistance might be given to potential radiation technician trainees.

CHAPTER III

RECOMMENDED CURRICULA

A. Introduction

There is no agreement as to what constitutes a training program for radiological technicians. For all practical purposes current training programs are of the on-the-job type. General training programs for technicians as recommended by the participants in the study should include instruction in basic areas of physics, chemistry, mathematics and biology; instruction in instrumentation; and on-the-job training experience. Recommendations varied from short-term on-the-job programs to extensive and highly specialized programs. There was greater agreement among those who recommended a more extensive program than among those who recommended short-term programs. It must be concluded that there should be different levels of training to meet the needs for different levels of technicians.

B. Two-Year Training Program

It is recognized that a two-year period of training may be considered as too lengthy and the content too advanced for the radiological technicians needed by some organizations. On the other hand, such a program may not be sufficiently advanced to meet the needs of other organizations which have more complex functions. In either case, it is apparent that the employing organizations will continue their own programs of on-the-job training in order to properly indoctrinate the employee to the functions and procedures specific to their organization.

1. Rationale

A basic consideration was that a program conducted in a college or university should not be developed by adopting the first two years of an existing

engineering or scientific baccalaureate program. Such an approach would fail to meet the needs in training technicians. Further, if a university were to offer a technician training program consisting of the first two years of a baccalaureate program, capable students would not enroll or remain in a program designated for technicians. On the other hand, those who may not be qualified for or interested in the usual university academic curriculum would in all probability fail to complete such a program.

A college or university could expedite the institution of a radiation technician program by utilizing existing courses (physics, mathematics, chemistry, etc.). An inherent danger of this procedure has been outlined above, and in addition, would not have the content of material of greatest value to a technician. Such a program would call for a modification of existing courses as well as the development of courses not currently being taught. It is recognized, however, that some colleges and universities do not have, nor desire to have, programs which do not consist of regular, standard, academic offerings. Other institutions have developed such programs as part of their total educational endeavor.

After all considerations, the two-year curriculum outlined below, in the opinion of the authors, will best meet the present need for, and training of radiation technicians. In the presentation, no attempt is made to force the curriculum into the usual collegiate credit framework.

2. Organization

The training recommendations made by the participants were classified into three broad or general categories of 1) science and related area, 2) general area, and 3) on-the-job training. The science and related area included elements

of physics, mathematics, chemistry, biology, and related special radiological health courses. The general area included training in interpersonal psychology and report writing. On-the-job experience was recommended to include summer employment and/or familiarity with operating organizations during the period of training.

The curriculum is organized into four semesters, covering a period of two years. Each semester is considered to be sixteen weeks in length, following the usual university or college calendar. Sixty hours of work is prescribed, divided into fifteen hours per semester. The number of "hours" for each course indicates the number of class hours the course meets each week. Although summer on-the-job experience is recommended after the second semester, this may remain as elective only, depending on the ability of the institution to place students in such employment.

The recommended two-year Radiological Technician training curriculum is presented below, followed by course descriptions.

3. RADIOLOGICAL TECHNOLOGY CURRICULUM

FIRST YEAR

Semester 1	Hours	Semester 2	Hours
History and Role of Radiation	2	Sources of Radiation	3
Introduction to Physics	5	Measurement of Radiation I	3
Mathematics for Technicians	5	Instrumentation Laboratory I	6
Fundamentals of Radiation	3	Radiation Protection I	3
	15		15

*SUMMER: On-the-job work experience.

SECOND YEAR

Semester 3	Hours	Semester 4	Hours
Measurement of Radiation II	3	Radiation Biology	4
Instrumentation Laboratory II	6	Basic Electronics	3
Radiation Protection II	3	Technical Report Writing	3
General Inorganic Chemistry	3	Personal Psychology	3
	15	Special Problems	2
			15

*Elective, unless the training institution can place all students in such employment.

4. Course Descriptions

HISTORY AND ROLE OF RADIATION (2 hours per week.)

Historical discoveries and developments; fields of application and the users of radioactive materials; agencies concerned with the problems of radioactivity; standards and recommendations regarding radioactivity. First semester.

INTRODUCTION TO PHYSICS (3 hours lecture, 2 hours laboratory per week.)

A non-mathematical course designed to develop an understanding of the basic principles of mechanics, heat, sound, light, electricity and magnetism. First semester.

MATHEMATICS FOR TECHNICIANS (5 hours per week.)

Emphasis upon application; powers and roots, ratios and proportions; elements of algebra through equations, factoring and exponents; use of logarithms; elements of trigonometry to include functions, solution of triangles; use of graphs and introduction to elementary statistics. First semester.

FUNDAMENTALS OF RADIATION (3 hours per week.)

Principles of atomic theory and structure, radioactivity, chart of the nuclides; interaction of radiation with matter; radioactive decay; charged particles, photons, neutrons, fission, fusion. First semester.

SOURCES OF RADIATION (3 hours per week.)

Natural; x-ray, medical, industrial; nuclear reactors, particle accelerators; nuclear detonation and fallout; disposition of radioactive waste. Second semester.

MEASUREMENT OF RADIATION I-II (3 hours per week.)

Two semester sequence to be accompanied by Instrumentation Laboratory. Units of radiation dose; correlation of units of activity and exposure; personnel instruments; survey instruments; laboratory instruments. Second and third semesters.

INSTRUMENTATION LABORATORY I-II (6 hours laboratory per week.)

Laboratory experiences to accompany Measurement of Radiation to include personnel dosimetry, ionization chambers, Geiger-Muller instruments, scintillators, Alpha and Beta counters; instrument calibration, counting techniques, determination of half-life, sampling procedures; field trips. Second and third semesters.

RADIATION PROTECTION I-II (3 hours per week.)

External and internal types of exposure; contamination; prevention and control procedures and equipment; countermeasures for excessive radiation exposure; shielding materials and design; nuclear reactor hazards; radiation protection guides and standards. Second and third semesters.

GENERAL INORGANIC CHEMISTRY (3 hours per week.)

A non-laboratory course designed to develop an understanding of the basic principles of the elements and their components, classification of matter, fundamental laws, valence, formulas, periodic grouping of elements. Third semester.

RADIATION BIOLOGY (4 hours per week.)

A non-laboratory course designed to develop an understanding of the biological effects of ionizing radiation with particular emphasis on man. Fourth semester.

BASIC ELECTRONICS (3 hours per week.)

Fundamentals of D-C, A-C, meters, vacuum tubes and transistors, and pulse techniques as related to instrumentation. Fourth semester.

TECHNICAL REPORT WRITING (3 hours per week.)

Elements of written communication and the techniques of collecting and presenting scientific data; informal and formal reports. Fourth semester.

PERSONAL PSYCHOLOGY (3 hours per week.)

Introduction to the principles of human behavior; problems of everyday living; personal and interpersonal adjustment. Fourth semester.

SPECIAL PROBLEMS (2 hours per week.)

Assignment of problems and field trips such as surveying of various radiation sources; critiques of laboratory location, design and equipment. Fourth semester.

SUMMER ON-THE-JOB EXPERIENCES. It is highly recommended that students be placed for summer employment following the second semester so that they may secure on-the-job experiences in the field of radiation. This should be a required part of the total training program, but must be elective unless the institution can place all students in such employment.

C. Less Than Two-Year Training Program

It has been previously reported that some organizations considered a two-year period of training as being too lengthy and the content as being too advanced and excessive for the level of performance of their technicians. Training programs

for technicians at a more elementary level of performance and responsibility should be conducted by the employing organization. These programs would utilize on-the-job training and would be of shorter duration, sufficient to develop the level of technical performance needed.

To develop a program which would be less than two years in length, organizations may wish to adapt the Radiological Technology curriculum proposed in Section B. This may be done by selecting courses of greatest importance from the first two semesters. A further reduction of technical training may be effected by eliminating those units within the individual courses which are not of primary importance to the organization.

Utilization should be made of any assistance which may be provided by governmental and educational agencies.

D. Baccalaureate Level Training Program

A number of recommendations were made for courses which would fall beyond a two-year level program. More than fifty percent of the respondents indicated that training at the baccalaureate level was considered necessary. In view of these facts pertinent to present needs, and the undoubted future expansion of the entire field related to radiation technology, the development of a formal baccalaureate program may be anticipated.

E. Summary

A training program for radiological technicians should not be the first segment of an existing engineering or scientific baccalaureate program. Although instruction should include the basic areas of physics, chemistry, mathematics and biology, special courses should be devised to provide the specialized training

required. In addition, instruction in instrumentation should be included, and on-the-job training experience.

A two-year training program consisting of four semesters, of sixteen weeks in length each, was developed. Sixty hours of course work was prescribed, divided into fifteen hours per semester. Summer on-the-job experience to follow the second semester was recommended.

Some organizations have need for a program of less than the recommended two-year period. Such a reduced program may be effected by selecting courses from the first two semesters, and eliminating those units within the individual courses which are not of primary importance to the organization.

Recognition must be made of the expressed interest in a baccalaureate-level training program. This appears to be indicative of a possible future development.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Based on the questionnaire survey and interviews held, the investigators believe that the following conclusions and recommendations are warranted.

A. Conclusions

1. There is no definitive statement or description of a "radiological technician" and there is a wide divergence of the use of the term. "Radiological technician" may be applied to those who perform extremely simple tasks in the field of radiation, as well as to those who have more complex duties and responsibilities bordering on the professional level. There appeared to be three broad categories of technicians: (a) those who performed relatively simple tasks in organizations which had less complex functions in the radiological field; (b) those who performed higher level tasks in organizations which had complex functions and research in the field; and (c) those who fell somewhere between the other two categories.

2. There were indications that professional personnel were performing functions which might be more properly performed by a technician.

3. There is no agreement as to what constitutes a "training program" for radiological technicians. For all practical purposes current training programs are of the on-the-job type. Recommendations varied from short-term on-the-job programs to extensive and highly specialized programs. There was greater agreement among those who recommended a more extensive program than among those who recommended short-term programs.

4. There appeared to be a definite need for technicians with anticipated larger demands in the future.

5. It must be concluded that there should be different levels of training to meet the needs for different levels of technicians.

6. A more formalized program for training of radiological technicians should include (a) instruction in the elements of physics, chemistry, mathematics and biology; (b) instruction in radiation instrumentation; and (c) on-the-job experience.

7. Certain personal characteristics were considered desirable such as good general health, mental stability, ability to get along with others, ability to communicate with others, interest in science, initiative and responsibility.

8. Women would be acceptable as technicians. The only restrictions imposed appeared to be related to pregnancy, field work and strenuous physical exertion.

9. Although physical handicaps per se would not eliminate persons as possible technicians, the kinds of handicaps would be taken into consideration.

10. There exists a wide range of salaries paid to technicians. Lowest beginning salaries were paid by governmental and educational agencies. Industry had what appeared to be the most substantial salary scales.

B. Recommendations

1. In view of the lack of agreement as to what constitutes a "radiological technician," and the divergence of opinion as to the levels of performance and responsibilities expected, it is recommended that further study be made with the view of developing a definition and job description of a radiological technician, perhaps at three levels of performance and responsibility.

2. It is recommended that consideration be given to instituting two-year level training programs in colleges and universities to meet the growing demand for more highly trained radiological technicians.

3. The two-year training program should consist of (a) a science and related area to include elements of physics, mathematics, chemistry, biology, and related special radiological health courses; (b) a general area to include training in interpersonal psychology and report writing; and (c) on-the-job experience to include summer employment and/or familiarity with operating organizations during the period of training.

4. The courses to be included in the program of training referred to in Recommendation 3 should be developed with a level of difficulty and content material appropriate to the level of responsibility and performance expected of the technician.

5. Training programs for technicians at a more elementary level of performance and responsibility should be conducted by the employing organization, on-the-job, with whatever assistance may be provided by available governmental and educational agencies.

6. Such shorter training programs as referred to in Recommendation 5 should be developed by adapting the recommended two-year Radiological Technology curriculum. This may be done by selecting the technical courses and the course units from the first two semesters which are considered to be of the greatest importance to the organization.

7. In view of the recommendations made for training which would fall beyond a two-year level, consideration may be given to study the need and feasibility of developing programs of training at the baccalaureate level for entry into the radiological field.

8. It is obvious that any organization or educational institution undertaking a formal training program would need to study the specific requirements for instructors, equipment and facilities to implement the program.

9. It is recommended that after a training program has been in operation, the organization or institution involved in the training program should conduct follow-up studies, with the technicians so trained, to determine the effectiveness of the program.

APPENDIX I

LETTER OF INQUIRY USED IN

PILOT STUDY

10

UNIVERSITY OF NEVADA
SOUTHERN REGIONAL DIVISION
LAS VEGAS, NEVADA

During the past few years the climate of world conditions has created a tremendous need for personnel trained in the many aspects of work involving radiation. It is now quite evident that such personnel will be in greater demand in the near future as indicated by the enclosure.

Because our geographical location is in close proximity with various governmental and industrial agencies involved in radiological research, thus affording an excellent training potential, we are attempting to formulate basic curricula which would best answer the needs for a radiological training program at the baccalaureate or less-than-degree level. We are sure that such curricula, offered under these circumstances, will do much to alleviate the shortage of trained personnel in this field.

Therefore, we are instituting a survey in order to assess the needs and the training necessary for such personnel, at the pre-degree level, who will be needed in government, industry, and the universities. Preliminary survey work has already indicated a tremendous enthusiasm for such a program.

If you feel that such trained personnel would be of advantage to your industry or agency, we would appreciate receiving the names and addresses of persons in your organization who are in positions of knowing the needs and technical training required for such personnel within the framework of their particular operations.

All information received from you or members of your staff will be a professional contribution and individual information will not be released without permission.

Thank you for any assistance you may give us.

Sincerely yours,

Joseph W. Lepak, Ph.D.
Assistant to the Dean

JWL/rt

encl.

UNIVERSITY OF NEVADA
Southern Regional Division
Las Vegas, Nevada

FOR IMMEDIATE PRESS RELEASE September 5, 1961

An $18,569 project for the purpose of evaluating the need for laboratory technicians in radiation protection and control is currently underway on the Nevada Southern campus. The award was made to the University of Nevada by the Division of Radiological Health, Public Health Service, U. S. Department of Health, Education and Welfare.

A Radiological Laboratory is in the process of occupying special facilities on the Nevada Southern Campus. Through cooperative efforts of the two organizations, model technical curricula will be developed which may include programs of baccalaureate and less-than-degree length. Through these programs, young people will be trained to supply services supporting radiation specialists.

Expanding national, state, and local programs in radiation protection and control are hampered by a serious shortage of radiation technicians. According to estimates published in 1959 by the U. S. Surgeon General's National Advisory Committee on Radiation, 4000 technicians will be required by 1970 to meet the needs in industry, research, and Federal, State and local health agencies.

This Radiological Laboratory which serves the area west of the Mississippi is the only one to be found on a University or college campus. The Training Branch of the U. S. Public Health Service in Washington has expressed an interest in the Las Vegas Project and has indicated that the study results should be a valuable contribution to the improvement of future training programs.

APPENDIX II

FOLLOW UP LETTER

UNIVERSITY OF NEVADA

SOUTHERN REGIONAL DIVISION

LAS VEGAS, NEVADA

June 22, 1962

A short time ago a questionnaire was sent to you concerning the need for and training of radiation technicians. This part of our survey, it is hoped, will give us valuable information as to the planning of a curriculum in radiation technology here at Nevada Southern.

We would greatly appreciate it if you would be so kind as to fill out the questionnaire at your earliest convenience and return this information to us. In the event that the first questionnaire has been misplaced, I am enclosing a second form for your convenience.

Over seventy percent of the key evaluators answering the questionnaire have indicated approval of such a curriculum and we would like to have your comments included in the final tabulation.

If you find no need for such a training program in your organization, we would also appreciate knowing this.

Thank you for your assistance.

Sincerely,

APPENDIX III

COVERING LETTER ACCOMPANYING THE QUESTIONNAIRE

UNIVERSITY OF NEVADA
SOUTHERN REGIONAL DIVISION
LAS VEGAS, NEVADA

The University of Nevada, Southern Regional Division, is now conducting a survey to determine the need for and training of less-than-degree level personnel who will be engaged in work involving radiation.

Your name has come to our attention either by recommendation of known leaders in the field of radiation or through various scientific and professional publications. We would appreciate your filling out the enclosed form and returning it to us at your earliest convenience. The form we are asking you to complete has been carefully studied by various professional groups. We realize that no survey will answer all questions nor will a particular curriculum satisfy the demands of all technical categories. However, we do believe that such a program is feasible if all professional information is consolidated to form the core of a technical curriculum.

We wish to emphasize the fact that all information you give on this form will be held in strictest confidence, and individual information will not be released without your consent.

Thank you for any assistance you may give us.

Sincerely,

Joseph W. Lepak, Ph.D.
Assistant to the Dean

JWL/rt

encl.

APPENDIX IV

QUESTIONNAIRE

Return to:
Director of Curriculum Study
Rm. ST 116
University of Nevada
Southern Regional Division
Las Vegas, Nevada

SURVEY TO DETERMINE NEED FOR AND TRAINING OF PRE-DEGREE LEVEL PERSONNEL ENGAGED IN WORK INVOLVING RADIATION

Name_____ Organization_____

Address_____ Official title_____

General Instructions: It is important that each item on this form be complete. All information will be a professional contribution and individual information will not be released without permission.

Individual comments concerning any item on this list will be welcomed. Please return this completed form in the envelope provided at your earliest possible convenience. Thank you for your cooperation.

I Personal Information:

A. Experience
   1. Total number of years of experience in field of radiation_____.
   2. Number of years in present position_____.
   3. Number of years with your present employer_____.
   4. List experience in field of radiation other than present position, indicating type of work, number of years.

      (a)_____

      (b)_____

      (c)_____

   5. List experience in fields other than radiation indicating type of work, number of years.

      (a)_____

      (b)_____

      (c)_____

B. Training
   1. Degrees you now hold: None_____ Bachelor_____ Master_____
      M.D._____ Ph.D._____ Other_____.

2. What were your fields of study?

	Degree	Major	Minor
(a)	None		
(b)	Bachelor		
(c)	Master		
(d)	Ph.D.		
(e)	Other		

3. If the baccalaureate degree was not completed, what was your major field of study?_____ Where?_____ When?_____.

4. Name of school where you obtained highest degree or advanced study _____ Year_____.

5. What special training have you had in the field of radiation? (Use additional space if necessary).

	Type of training	Where	When
(a)			
(b)			
(c)			

6. Have you had teaching experience? Yes____ No_____ Where?_____ When?_____ How long?_____

7. Would you give special lectures to radiation technicians if requested? Yes_____ No_____.
Comment:_____

II Need and Training Information:

Note: Keep in mind that college course work you recommend for technicians applies only to your specific area of work and its personnel requirements. Also keep in mind that the proposed curriculum is one to be developed at the less-than-degree level.

A. Need for radiation technologists

1. How many radiation technicians are currently employed in your work area?_____.

2. Is there a definite need now for additional technicians in your immediate work area? Yes_____ No_____ How many?_____.

3. Do you anticipate increased needs for such personnel in the future? Yes_____ No_____.

4. Have you been unable to fill any technical positions? Yes_____ No_____ How many?_____.

5. Indicate reasons for difficulty in filling technician positions.
   (a) salary level _____ (d) lack of interest _____
   (b) insufficient budget _____ (e) hazardous occupation _____
   (c) lack of trained personnel _____ (f) other (please explain) _____

B. Training of radiation technologists

1. If your organization only employs one technical category (example: Biological) indicate by number, in order of importance, those areas of science which should be emphasized in training technicians for your particular needs.
   (a) Biology _____ (c) Mathematics _____ (e) Other (explain)
   (b) Physics _____ (d) Chemistry _____

2. What combination of above science courses should be emphasized to fill the needs of your organization?

3. If more than one technical category exists in your organization indicate what they are (see 1 above) (example: Chemical, Mathematical).

   (a) _____

   (b) _____

   (c) _____

4. What combination of science courses should be emphasized in each of these categories? _____

5. Check or indicate only those courses known to be essential to the technician's work in your organization.
   (a) Mathematics
   1. College Algebra _____ 4. Calculus _____
   2. Analytical Geometry _____ 5. Statistics _____
   3. Trigonometry _____ 6. Other _____
   Comment: _____

(b) Biological

1. General Biology	_____	4. Physiology	_____
2. Zoology	_____	5. Botany	_____
3. Radiobiology	_____	6. Others	_____ _____

Comment: _____

_____

_____

(c) Physics

1. General	_____	3. Nuclear	_____
2. Health	_____	4. Others	_____

_____

Comment: _____

_____

(d) Chemistry

1. General	_____	4. Radiochemistry	_____
2. Quantitative	_____	5. Others	_____
3. Organic	_____		

Comment: _____

_____

(e) Any special course work indicated?
(Example: technical writing, radiation instrumentation, electronics)

_____

_____

_____

_____

III General Information

A. Technical personnel

1. What is the present annual wage range for radiation technologists in your organization? _____

2. Is there opportunity for technician advancement in your organization? Yes_____ No_____ If so, what kinds of advancement? _____

_____

3. If you were to employ personnel from a college training program as suggested, should there be any physical or psychological limitations and restrictions placed on the applicant? Yes_____ No_____

Comment: _____

_____

_____

4. Should a screening examination be given to prospective students? Yes_____ No_____. Would you be willing to assist in developing such an examination if requested? Yes_____ No_____.

5. Do you consider on-the-job training as an important part of the total training program? Yes_____ No_____.

6. Would your organization hire students as part of on-the-job training during the summer months? Yes_____ No_____.

7. If such a curriculum was established, would your organization give financial support to promising students during their training period? Yes_____ No_____ To what extent?_____

8. Support to persons now employed by your organization? Yes____ No_____ To what extent?_____

_____

9. Does your organization employ women as radiation technicians? Yes_____ No_____. If trained, would you employ them? Yes____ No_____. Indicate areas open to them_____

_____

10. What other factors do you consider important in developing technical personnel for this type of work?_____

_____

_____

_____

_____

_____

B. Other personnel

1. Do you believe that the technical aspects of a program of this nature are such as to require more than 2 years of training? Yes_____ No_____ Comment:_____

_____

_____

_____

2. Do you believe that there is need for the development of a program at the baccalaureate level? Yes_____ No_____ Comment:_____

_____

_____

_____

3. What other types of professional, sub-professional and technical personnel does your organization need now or will need in the near future?_____

_____

_____

_____

_____

_____

4. We will send this form to persons you recommend as key evaluators.

	Name	Address
(a)	_____	_____
(b)	_____	_____
(c)	_____	_____

APPENDIX V

LIST OF ORGANIZATIONS REPRESENTED

IN SURVEY

APPENDIX V

LIST OF ORGANIZATIONS REPRESENTED IN SURVEY

Atomic Energy Commission

- Hanford Operations
- Idaho Falls Operations
- Oak Ridge Operations
- Sacramento River Operations

Brookhaven National Laboratory

Boeing Aircraft

Department of Agriculture

Department of Labor

Department of Defense

Dow Chemical Company

Eberline Instrument Company

Edgerton, Germeshausen and Grier, Inc.

E. I. DuPont de Nemours and Company

Food and Drug Administration

General Atomics

General Electric

Honeywell Research Center

Interstate Commerce Commission

Lawrence Radiation Laboratories

Louisiana State University

Los Alamos Scientific Laboratory

Lovelace Foundation

Oak Ridge Institute of Nuclear Studies

Philadelphia Health Department

Phillips Petroleum

Rand Corporation

Reynolds Electrical and Engineering Company

Sandia Corporation

Schwarz Bioresearch, Inc.

Stanford University

Tracerlab

Tulane University

University of California at Los Angeles

University of Cincinnati

University of Kansas Medical Center

University of Missouri

University of Oregon

University of Rochester

University of St. Louis

University of Washington

United States Air Force, Aerospace Medical Division

United States Army, Office of Surgeon General

United States Navy, Research Laboratory

Bureau of Medicine and Surgery

Radiological Defense Laboratory

United States Public Health Service

Vanderbilt University

Veteran's Administration

Wentworth Institute

Westinghouse Electric

APPENDIX VI

INSTITUTIONS IN EASTERN U.S. FROM WHICH RESPONDENT'S HIGHEST DEGREE WAS OBTAINED OR ADVANCED STUDY PERFORMED

APPENDIX VI

INSTITUTIONS IN EASTERN U.S. FROM WHICH RESPONDENT'S HIGHEST DEGREE WAS OBTAINED OR ADVANCED STUDY PERFORMED

Institution	Number
University of Alabama	1
Boston University	3
Colgate University	1
University of Florida	1
Grove City College	1
Harvard University	4
Jacksonville College	1
Louisiana State University	1
Marshall College	1
New York University	1
North Carolina State University	1
University of Pennsylvania	1
Pennsylvania State University	1
Polytechnic Institute of Brooklyn	1
Rochester University	3
Rutgers University	1
Southwest Memphis State	1
Union College	1
Medical College of Virginia	1
Washington and Jefferson	1

APPENDIX VII

INSTITUTIONS IN CENTRAL U.S. FROM WHICH RESPONDENT'S HIGHEST DEGREE WAS OBTAINED OR ADVANCED STUDY PERFORMED

APPENDIX VII

INSTITUTIONS IN CENTRAL U.S. FROM WHICH RESPONDENT'S HIGHEST DEGREE WAS OBTAINED OR ADVANCED STUDY PERFORMED

Institution	Number
Case Institute	1
University of Chicago	3
University of Illinois	1
Iowa State University	2
University of Kansas	3
University of Michigan	2
University of North Dakota	1
Northern State Teachers	1
Northwestern University	1
Ohio State University	1
Oklahoma State University.	1
St. Louis University	2
Southern Mississippi	1
Tulane University	1
Vanderbilt	5
Washington University (St. Louis)	1
Western Kentucky	1

APPENDIX VIII

WESTERN INSTITUTIONS FROM WHICH RESPONDENT'S HIGHEST DEGREE WAS OBTAINED OR ADVANCED STUDY PERFORMED

APPENDIX VIII

WESTERN INSTITUTIONS FROM WHICH RESPONDENT'S HIGHEST DEGREE WAS OBTAINED OR ADVANCED STUDY PERFORMED

Institution	Number
University of California	4
University of California at Los Angeles	3
California Institute of Technology	2
University of Colorado	1
University of Nevada	2
University of New Mexico	2
University of Oregon	2
St. Michaels College	1
Stanford University	2
University of Utah	1
Utah State University	1
University of Washington	5
Washington State University	1

APPENDIX IX

FIELDS OF STUDY REPORTED BY HOLDERS

OF BACCALAUREATE DEGREE

APPENDIX IX

FIELDS OF STUDY REPORTED BY HOLDERS

OF BACCALAUREATE DEGREE

Field	Major	Minor
Chemistry	23	13
Physics	22	13
Engineering (1)	12	4
Premedical and related (2)	10	2
Biology	9	5
Mathematics	5	22
Education	1	2
Philosophy	1	1
History	1	-
Psychology	-	1

(1) There was no one field of engineering predominating, but the group included: chemical, electrical, civil, industrial, metallurgical, sanitary engineering.

(2) Included public health, food technology, pharmacy, premedical, science.

APPENDIX X

FIELDS OF STUDY REPORTED BY HOLDERS

OF MASTER'S DEGREE

APPENDIX X

FIELDS OF STUDY REPORTED BY HOLDERS OF MASTER'S DEGREE

Field	Major	Minor
Physics	14	2
Chemistry	5	2
Biology	5	3
Engineering		
Sanitary	1	-
Electronics	-	3
Not specified	3	2
Mathematics	1	6
Industrial Hygiene	2	-
Pharmacology	1	1
Management	1	-
Psychology	1	-
Biophysics	1	-
Industrial Medicine	1	-
Public Health	-	1
Physiology	-	1
Sociology	-	1

APPENDIX XI

FIELDS OF STUDY REPORTED BY HOLDERS

OF PH. D. DEGREE

APPENDIX XI

FIELDS OF STUDY REPORTED BY HOLDERS OF PH.D. DEGREE

Field	Major*	Minor
Chemistry	6	6
Physics	4	6
Biochemistry	3	1
Biology	1	-
Biophysics	1	-
Cytogenetics	1	-
Engineering	1	1
Horticulture	1	-
Industrial Hygiene	1	-
Medical Physics	1	-
Nuclear Science	1	-
Pharmacology	1	-
Radiation Biology	1	-
Radiochemistry	1	-
Sanitary Engineering	1	-
Soil Chemistry	1	-
Mathematics	-	4
Ecology	-	1
Physiology	-	1
Plant Physiology	-	1

*One person reported two majors.

APPENDIX XII

REPORTED ANNUAL WAGE RANGE FOR

RADIATION TECHNOLOGISTS

APPENDIX XII

REPORTED ANNUAL WAGE RANGE FOR RADIATION TECHNOLOGISTS

a. Government	b. Industry	c. University and Foundations
$2,400-6,000	-	$2,400-4,200
$3,000-6,000	-	$3,000-5,400
3,000-6,000	-	3,000-7,000
3,500-7,560	-	3,300-3,720
3,760-4,345	-	3,600-5,400
3,760-6,345	-	3,800-6,800
3,800-6,300	-	-
$4,000	$4,000-6,000	$4,000
4,000-6,000	4,000-7,000	4,000-7,000
4,000-6,300	4,200-5,000	4,200
4,000-8,000	4,680-7,800	4,500-7,500
4,300-5,300	-	4,800-6,600
4,345-7,560	-	4,800-10,000
4,400-8,000	-	4,860-8,700
4,500-5,000	-	-
4,800-14,400	-	-
4,980-8,400	-	-
$5,000-10,000	$5,000-9,000	$5,000
5,355	5,244-9,180	5,000-5,400
5,400-7,200	5,500-8,000	5,000-7,500
5,600-9,000	5,520-9,000	5,400
5,720-7,228	5,600-7,300	5,428-7,514
-	5,678-7,736	5,428-7,550
-	-	5,428-8,070
-	-	5,500
$6,000-9,600	$6,000	$6,500-8,500
6,300-8,000	6,000-9,000	6,600-10,000
6,300-8,400	6,000-9,000	
6,500	6,000-10,000	
-	6,200-6,600	
-	6,500-9,500	
-	6,500-10,000	
-	6,500-10,000	
$7,560-10,255		
7,560-10,635		
7,850		
$8,250		
8,500-9,000		

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MISSISSIPPI

Prepared as a guide for school administrators and industrial arts (I.A.) teachers in the secondary schools, this guide is a second revision of Bulletin 131. Chapter titles are: (1) Introduction, which includes objectives, definitions, and types of programs, (2) Suggestions to the School Administrator for Planning an Industrial Arts Program, (3) Organization and Administration of an Industrial Arts Program, (4) Suggested Shop Procedures, (5) Introduction to Industrial Procedures, and (6) Outlines of Courses of Study. Industrial arts is closely related to trade and industrial (T. and I.) education and has both prevocational and vocational values. Its objectives are more general than those of vocational trade training and afford valuable information to any student regardless of his vocational choice. Its purpose is to give an understanding and appreciation of the methods, materials, and products of industry and its place in our culture. It is recommended that schools offering T. and I. programs offer I.A. courses in grades 7, 8, 9, and 10. A minimum of 275 minutes of class time per week is required for I.A. courses. (EM)

VT 001 319

MISSISSIPPI SCHOOL BULLETIN

NUMBER 147
REVISED 1966

Industrial Arts

For

Mississippi Schools

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Division of Vocational and Technical Education
STATE DEPARTMENT OF EDUCATION
Jackson

J. M. TUBB, Superintendent

VT 001 319

FOREWORD

This bulletin has been prepared as a guide for school administrators and teachers of industrial arts in the secondary schools of Mississippi. It is the second revision of Mississippi School Bulletin 131, the first revision, 147, having been made in 1959.

Industrial arts is being more universally recognized by leaders in education as a subject that is beneficial to all students. In addition to the general education value resulting from a good program of industrial arts, it also has prevocational and to some extent vocational values. With the great emphasis that is being put on vocational and technical education, industrial arts has an increasing value in the preparation of vocational students.

The Legislature in its regular session in 1964, through House Bill No. 112, gave the Director of the Division of Vocational and Technical Education the responsibility for the administration and supervision of industrial arts in the public schools of Mississippi.

This bulletin is being released through the Division of Instruction and the Division of Vocational and Technical Education of the State Department of Education. We trust that it will be helpful in the improvement of present programs of industrial arts and as a guide for the initiation of new programs in our public school system of the State.

J. M. Tubb

State Superintendent of Education

INTRODUCTORY STATEMENT

Because of the increased need for industrial arts in our public school system, the Instruction and Vocational Divisions of the State Department of Education have revised Mississippi School Bulletin Number 131 and are distributing it to the public schools of the State.

Funds from Title V of the Elementary and Secondary Education Act were used to defray the cost of revising, printing, and distributing this bulletin.

Industrial arts is considered as a general education subject; however, the Legislature in its regular session of 1964 enacted a law assigning the responsibility of the supervision to the Division of Vocational Education of the State Department of Education. The Vocational and Instruction Divisions are working together in the further promotion of this program to meet the needs of all our children.

It is recognized that industrial arts is of great value in developing attitudes and abilities of students. When properly organized and taught it serves as a means of assisting students in the development of manipulative skills and in exploring their interests and aptitudes. In many cases industrial arts serves to guide students toward vocational occupational training.

This bulletin is one step in the further development of industrial arts in our public schools. The Division of Vocational and Technical Education has employed a State Supervisor of Industrial Arts Education to assist in the further development of this program.

It is hoped that school officials will use this publication in planning and developing a program of industrial arts to meet their needs.

A. P. Bennett, State Director
Division of Instruction
A. P. Fatherree, State Director
Division of Vocational and Technical Education

ACKNOWLEDGMENTS

A work conference was held in Jackson, Mississippi for the purpose of revising Mississippi School Bulletin No. 147 which is a revision of Bulletin No. 131 published in 1950. The committee included the following members:

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Grateful acknowledgment is expressed to the persons who gave so freely of their time and efforts in the revision of this bulletin.

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CHAPTER I

INTRODUCTION

The great value of Industrial Arts in the present day scheme of education is universally recognized. Through the years, it has grown to be a phase of general education designed to develop certain habits, attitudes, and abilities desirable for all citizens. The old Russian plan of tool instruction, the German idea of Manual Training, the Swedish Sloyd System and the old Manual Training period in America were all marks of progress in developing the industrial arts of today.

Manual Training died because of its narrowness of scope and objective and because it concerned itself too generously with tool skills and manipulative habits forgetting such important objectives as consumer values, individual differences, related technical information and guidance information. The next phase was called Manual Arts. This movement migrated to America from England and was an outgrowth of the revolt against factory-produced items which were poorly designed with little or no aesthetic value.

Industrial Arts as we know it today came into existence about 1905 when it was recognized that there was a need for the inclusion

FIGURE 1. *The building includes a composite general shop, general shop in a major area, and a combination drawing and classroom.*

of technical and related information to supplement the skills being taught in the school shops and drafting rooms. Industrial Arts, then, is the study of the materials, tools, processes, and products of industry for their general educational value and should be included in the school program of every boy and girl. Industrial Arts provides an area of instruction which is an integral part of a well-rounded, comprehensive educational program. Through the use of manipulative skills, it provides lifelike activities which are consistent with the environment of the student. This does not imply, however, that Industrial Arts has as its objective the teaching of any vocation, but rather that it is a broad, basic, exploratory program, general in nature, which may have pre-vocational values.

Industrial Arts has general values which are progressively more intensive and are cumulative in their effect as the student advances in experience and maturity. Through such a program the student—

Has the opportunity to explore several fields or phases in industry, such as: Electricity-Electronics, Drawing and Planning, Woodworking, Metalworking, Power Mechanics, Introduction to Industrial Procedures, Problem Solving, Personnel Management and the like. He is able to formulate some idea of his aptitudes and his shortcomings as well as his likes and dislikes as a result of such exploratory experiences. He should develop a better understanding of and appreciation of the world of work as well as gain some insight as to where he may succeed in a highly industrialized society.

Gains a vast amount of consumer knowledge to help him make wise decisions in the selection, use, and care of manufactured items.

Enlarges his insight into some of the requirements of various occupations—the physical requirements, educational requirements, remunerative values — and is afforded the opportunity to be of service to his fellow man. All of this adds to a knowledge in making wise decisions concerning educational and vocational choices.

Grows in his attitude toward the importance of safety as it relates to industrial life, the school shop, home life and all aspects of daily living.

Enhances his creative ability and learns the value of careful planning and the advantages to be gained by well-formulated steps of procedure.

Formulates good work habits. Learns to proceed in an orderly manner and to follow through to the successful completion of the task.

Develops some worthwhile leisure time activity. Youth engaged in constructive enterprise are less likely to become involved in destructive activity.

INDUSTRIAL ARTS OBJECTIVES

The objectives of Industrial Arts must be formulated upon sound educational philosophy. When based upon this premise, the objectives serve a three-fold purpose in establishing goals to be attained, guides for the selection of subject matter, and standards for evaluation of the program. As one examines these objectives they fall into two main categories: those objectives which are unique to the field of Industrial Arts and those objectives which are shared with other phases of the educational program. The following objectives are considered to be comprehensive for Industrial Arts and not the specific objectives for a particular course.

The unique objectives of Industrial Arts are as follows:

To develop skill in the making and reading of working drawings.

To develop an understanding and an appreciation of the industrial world.

To develop basic skills in the use and care of tools and machines common to industry.

To provide exploratory experiences in a wide variety of industrial areas.

Those objectives shared with other phases of education include the following:

To provide safety education

To impart consumer knowledge

To develop desirable personal-social traits

To discover and develop student talents

To develop an appreciation of good craftsmanship and design

To stimulate creativity and problem solving

To develop worthwhile leisure time activities

To impart occupational information

Mississippi is enjoying a period of unprecedented industrial development and is rapidly changing from an agrarian to an industrial economy. One of the very important contributions public education can make to the industrial growth of the state is to develop an "industrial consciousness" within the young people. This understanding and appreciation of industry is basic to the attitudes necessary for the establishment and growth of industry in any community. Industrial Arts is that segment of the overall public education program which is designed to accomplish this purpose.

It should be realized that the junior high school presents the ideal place in which to begin laying the foundation for the student's life work by providing broad exploratory experiences, factual information, basic tool techniques, and occupational information. The early acquisition of this knowledge is a powerful tool in molding character traits and social habits and provides a realistic approach to effective guidance. Satisfying the early manipulative needs and creative desires of the youth leads him into a more complete development of his ideals and ambitions and a realization of his responsibility to others. Give the boys and girls this opportunity to secure a broad educational foundation of practical, factual, and aesthetic values and they will stand a far better chance of becoming useful citizens. Desires, aptitudes and mental qualities vary so greatly that, unless we provide a wide range of practical as well as academic subjects for our youth, many of them will become failures in life before they have begnn.

WHAT IS INDUSTRIAL ARTS EDUCATION?

At this point it might be well to consider or summarize just what Industrial Arts education is and what it proposes to do.

Industrial Arts is closely related to trade and industrial education and has much to be desired as a pre-vocational activity. However, it must not be confused with Vocational Trade Training. Its objectives are more general in nature and afford information valuable to any person, regardless of his vocational choice. It offers opportunities for exploration, understanding, appreciation, and guidance. On the other hand, vocational trade education is specialization, the development of job skills for the purpose of entering into useful employment.

In order to set forth clearly the differences between and the similarities of Industrial Arts and Vocational Education programs, the following chart is included:

COMPARISON OF INDUSTRIAL ARTS AND VOCATIONAL EDUCATION

INDUSTRIAL ARTS	VOCATIONAL-INDUSTRIAL EDUCATION
Aims and Objectives	
General education involving exploratory and developmental experiences; consumer knowledge and appreciation; skill in care and use of common tools; understanding of and interest in industrial life; development of desirable habits and character traits.	Specialized training for useful employment involving job skills and procedures; technical and related information; employer-employee relationships; occupational health and safety.
Groups Served	
All comers: elementary, junior and senior high school pupils; usually offered as part of activity program in lower grades, required in junior high school, and elective in senior high school, classes somewhat homogeneous.	Select groups; must be at least 14 years of age in day classes, 16 in evening classes; students must be either employed in trade or industrial pursuits or have made definite selection of same before they can be legally enrolled; need for an ability to profit by instruction; further selective criteria; older groups.
Time of Enrollment, Time Allotment and Length of Course	
Enrollment conforms to regular school program; classes meet from one hour per week up to 10, usually 5 single periods or 3 double period classes per week; courses run for a semester or year, for shorter periods when scheduled for exploratory purposes; school is bound only by state regulations which specify 5 periods per week; two semesters for 1 unit of credit.	Part-time and day classes conform closely to regular school schedule; evening classes start when need arises; day classes must offer at least 15 hours of instruction per week for school year of 9 months; evening classes meet for any number of hours per week and may run for any length of time, usually meet two 2-hour periods per week and run in short time units; all strictly specified in State Plan.

When and Where Classes Meet

Classes ordinarily meet during day time only, in regular school or in special shop building on school grounds; increasing number of schools offering Industrial Arts along with recreational activities in summer program.	Trade preparatory classes meet during day or evening in public school; part-time classes meet during day or evening at any place under public supervision and control; evening trade extension classes meet any time after working hours at any place under public supervision and control.

Content and Nature of Work

Activities represented in program and course content much the same from school to school; general shop, drawing, metalworking, woodworking, electricity are most commonly offered.	Subjects taught and content thereof vary with the industries of the community and the needs of the workers; instruction based on an analysis of what the individual workers need to know and to be able to do.

Methods of Teaching

Shop work centered around projects of individual type; much group instruction given; individual instruction used to some extent; readings, visual aids and excursion trips used; achievement tests similar to those in other fields used.	Shop work organized around group projects; production procedures followed as closely as possible; instruction largely individual; supplemented by group methods; readings reduced to minimum; skills emphasized; few tests other than practical performance used.

Type of Teacher

College graduate with broad technical and professional training; practical experience highly desirable but not required; a lover of boys and boy activities; must meet minimum requirements set up by State Department.	Competent tradesmen; acceptable to group; 2 years or more of journeyman experience; leadership qualities and ability to teach; minimum of professional training; must be approved by State Supervisor.

Placement and Follow-Up

No effort is made to place and follow up students; work not intended to prepare for employment.

Placement and success of trainees the measure of effectiveness of the program; increasing effort being made to place all trainees and to follow them through to insure occupational adjustment; placements range from about 30% to 100%.

Type of Equipment Required

Predominance of hand tools; machines of good quality but smaller and less expensive than the heavy production type; shop laid out for individual projects work and for large classes.

Modern production equipment essential; should conform in size and type to that used in industry; shop laid out for production work and for small classes.

Relations with Outside Agencies

No obligation to cooperate with outside agencies; controlled and operated by local school administration much the same as other regular subjects, but it is urged that the teacher avail himself of the services of an industrial advisory committee.

Distinctly a cooperative undertaking; must work in harmony with both labor and employer groups, as well as public employment agencies; advisory committee essential in effective administration of program; cooperative plan with the State Department of Vocational Education.

Federal and State Aid

Local communities must supply building, equipment, supplies and teacher the same as in other subjects; however, limited Federal funds are available for this program under Titles I, II, and III of P.L. 89-10, Elementary and Secondary Education Act.

Program operates under State Plan for Vocational Education and must have approval of State Director; 50% or more of teacher's salary is paid through federal and state funds; no such funds are available for housing and equipment; community pays entire cost of program and is then reimbursed in accordance with agreement made with the State Department of Vocational Education.

TYPES OF PROGRAMS

For the purpose of assuring a full understanding of the information included in this bulletin, this section is devoted to the definition and explanation of terms that might be confusing.

The General Handicrafts Shop

The Handicrafts are defined as that area of Industrial Arts which provides for creative activity as well as a study of industrial materials and products. For the purpose of this bulletin, the Handicrafts are confined to activities such as leatherworking, ceramics, plastics, woodworking, art metal, etc., and are recommended as being applicable and appropriate for beginning Industrial Arts activity at the lower junior high school level. The General Handicrafts Shop seeks to create interest, inform, inspire, and guide by bringing materials and fundamental processes of industry into the school life of the pupil. Projects and problems are employed which provide experiences and opportunity for the development of certain techniques, knowledge, appreciation, and fundamental skills. Such projects may be in the fields of leathercraft, hand carving, toy making, ceramics, etc. This constitutes the chief difference between Industrial Arts and Vocational Trade Training. The exploratory value of Handicrafts is stressed and little emphasis is placed on acquiring skill. In this program there are opportunities for creative thinking and doing through individual and group projects.

Industrial Arts Handicraft programs in Mississippi are confined to the lower junior high school level, preferably to the seventh grade. Such programs should be conducted according to the Composite General Shop plan, which will be described later. Every Handicraft program in Mississippi should be composed of a minimum of four units, one of which should be freehand drawing.

Consistent with the recommendation for the Composite General Shop, here again it is strongly urged that woodworking be included as one of the four units.

Additional units may be selected from the following list as more than four units may be taught where practical and desirable. The Handicraft areas to be taught in the seventh grade include the following:

1. Leathercrafts
2. Plastics
3. Mosaics
4. Ceramics
5. Graphic Arts
6. Art Metal
7. Woodcrafts
8. Drawing (freehand)

The Handicrafts Shop provides highly desirable activities which serve to enrich greatly the elementary program as well as to provide a more suitable beginning for Industrial Arts in the public school. Such a program can be initiated and conducted in a minimum amount of space and at a minimum cost. It is recommended that, when taught below the seventh grade level, Handicrafts be integrated with regular school courses and taught by the classroom teacher. A further discussion of this will be found in Chapter III.

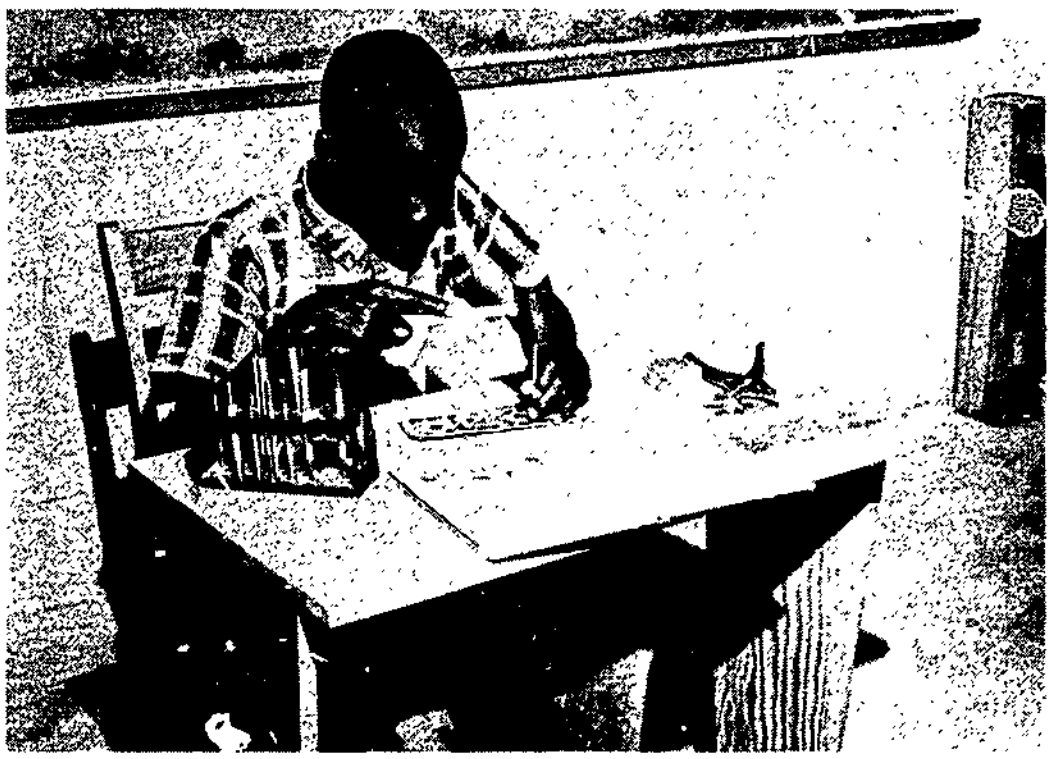


FIGURE 2. *Typical scene in the handicrafts area*

The Composite General Shop

The Composite General Shop provides pupil experience in a number of different industrial activities carried on simultaneously in one room under the direction of one teacher. This type of shop is recommended as the soundest approach to the basic Industrial Arts courses in the junior high school.

It is possible to include eight or more units of work representing as many different areas of industrial activity. It is recommended, however, that the shop be started with fewer types of activities and then expanded if this is deemed desirable. It is also recommended that

the Composite General Shop in the public schools of Mississippi be composed of a minimum of four units that represent four distinct areas of industrial work, such as drawing and planning, metalworking, electrical work, and woodworking. Every Composite General Shop should include drawing and planning. Since woodworking is a basic industry in Mississippi, it is strongly recommended that every Composite General Shop include a unit in woodworking. Additional units which may be taught in the eighth and ninth grades may be selected from the following list. One high school credit may be given if taught in the ninth grade or above.

1. Basic Electricity-Electronics
2. Woodworking
3. General Metalworking
4. Drawing and Planning
5. Power Mechanics
6. Plastics
7. Leatherwork
8. Ceramics
9. Graphic Arts
10. Household Mechanics

In addition to the basic Industrial Arts program described above, it is possible, if equipment is available, to provide advanced courses to small groups of students in the same shop. In this way the needs of beginning and advanced students can be met, a plan which is especially appropriate for the school that can have only one shop. A broad range of experience can be provided at a comparatively low cost.

FIGURE 3. *Typical scene in the composite general shop*

The General Shop In A Major Area

The General Shop in a Major Area is one in which the subject experiences are confined to one field of industry, such as metalworking, woodworking, applied electricity-electronics, or power mechanics. The operation of this type of shop is similar to that of the Composite General Shop which is defined and described above. The shop differs from the Composite General Shop in that all units of work are definitely a part of a given field of industrial work. For example, a general woodworking shop program should be composed of units of various phases of woodworking, ranging from basic hand tool operations to woodworking machine tools. In a general metal shop, all units would be in the metalworking field, while the general electrical shop would be composed of units of an electrical nature.

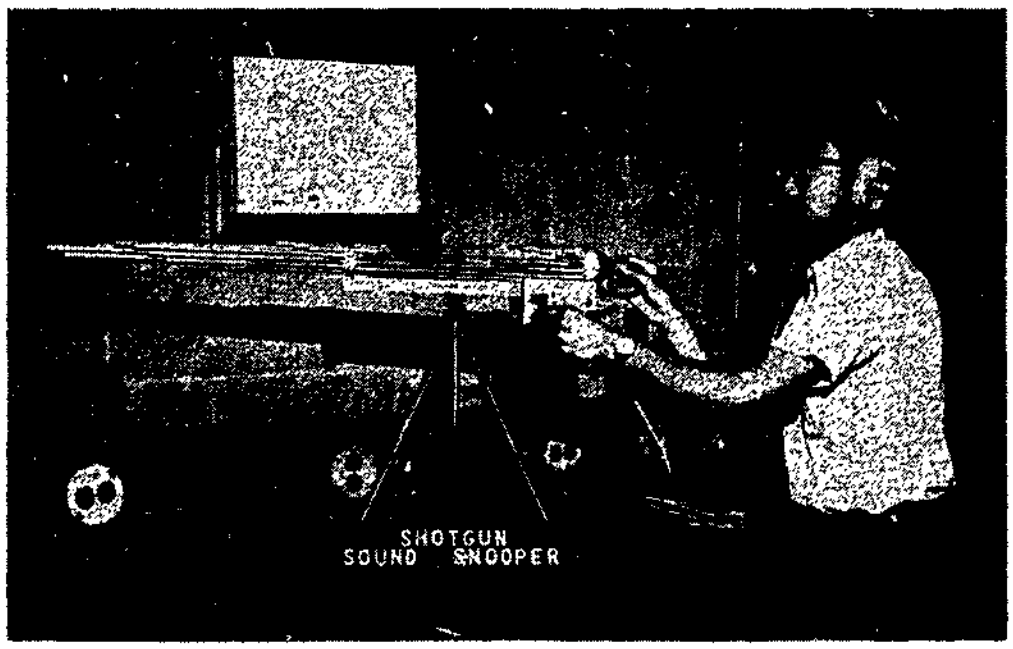


FIGURE 4. *Applied Electricity-Electronics project constructed in the Major Area Shop*

CHAPTER II

SUGGESTIONS TO THE SCHOOL ADMINISTRATOR FOR PLANNING AN INDUSTRIAL ARTS PROGRAM*

(Standards and Codes)

SIZE OF SHOPS

The total area in a Composite General Shop should be determined on a basis of 100 square feet of floor space for each pupil. Excluding auxiliary areas such as the office, finish room, storage room and project storage rooms, a minimum area of 2400 square feet for pupil activity should be allowed for each shop. This figure is based on the assumption that shops will be planned to accommodate a maximum of 24 pupils. For suggested floor plans of the shop, see Appendix Aa.

It is obvious that a general woodworking shop would require more floor space than a radio shop. The size of special type shops should be based on an analysis of the courses to be taught in order to determine the kind, size and amount of equipment needed. Further, a tentative floor plan should be made to arrive at the space relationship of the various equipment items and work centers.

Additional space should be provided for storage of projects and materials either in or adjacent to certain shops, such as woodworking,

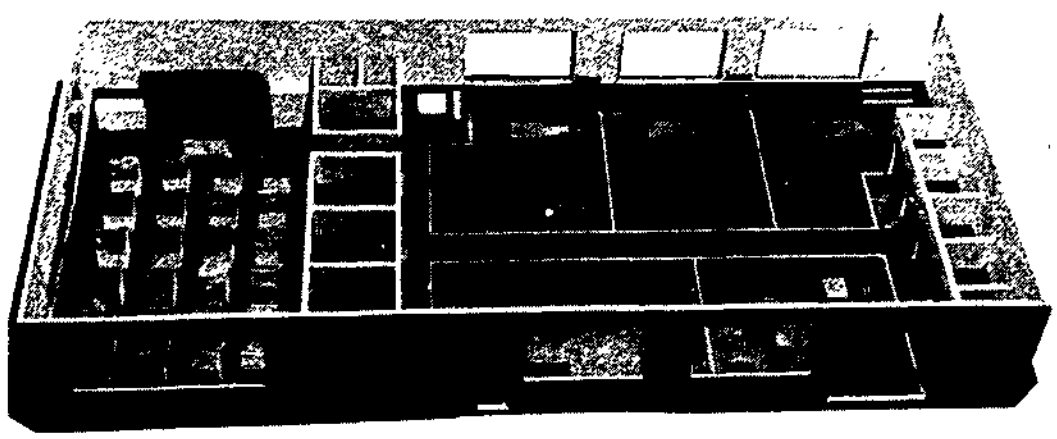


FIGURE 5. *A preliminary shop floor plan helps in establishing arrangements of equipment and furniture*

***You will find an outline of step-by-step procedures for planning an Industrial Arts program at the end of this chapter.**

metalworking, or electrical shops. Extra storage space should be provided if the shop facilities are to be used for evening adult education.

SHAPE OF SHOPS

The shape of a shop is important. The ratio of length to width should range from one and one-half to one to not more than two to one. Long narrow shops should be avoided as they do not lend themselves to effective orientation of machine tool equipment or to efficient space utilization. In schools housing only one shop, this situation can be avoided by placing the shop at the end of a wing where it is possible to take advantage of the width of the entire wing. Any shape that does not allow an instructor full visibility of the entire area at all times should be avoided.

LOCATION OF SHOPS

Industrial Arts shops should be located on the ground level whenever possible. This makes it convenient to have an outside entrance through which to move large items of equipment. It is desirable, too, since vibrations and noise in rooms on the ground level will not penetrate to other classrooms which might otherwise be located below. In large schools it is recommended that a separate wing or the end of a wing of the main building be used for shops and related subjects. Experience has shown that shop facilities are constantly being enlarged to accommodate unforeseen increases in enrollment. Shops should, therefore, be located so that future expansion may be made with a minimum of alterations and without destroying the harmony with building design and fenestration. Consideration should also be given to the position of the shops in relation to the mechanical drawing and art rooms. This is particularly important in a large school having several shops.

Another important consideration in the location of a shop or shops is whether or not they are conveniently accessible for adult education classes in the evening.

ARCHITECTURAL DETAILS

Floors

Floor materials are recommended as follows: trowel-finished concrete floor with hardener and color added. Ceramic tile is recommended for rest rooms.

Walls

The lower portion of shop walls, up to a height of five feet, should be made of a durable hard-surfaced material which can be easily cleaned. It should have a pleasing color and texture. Glazed brick, glazed tile, liquid plastic, or Epoxy enamel are satisfactory materials for this purpose.

In situations where a separate wing of the building is devoted to shopwork, good quality, carefully laid cinder blocks are satisfactory providing they are properly sealed and painted. The walls above a wainscot or wainscot height should be treated with a non-glare material. The lower portion of the walls should be free from obstructions and projections to allow efficient placement of benches, machines and cabinets. At least one, or preferably two, full height walls should be reserved for the mounting of chalkboard, tool panels, bulletin boards and display shelves.

Ceiling

The ceiling height of shops and similar areas measured from the floor to the principal plane of the ceiling should not be less than 16 feet. Materials with high sound absorption characteristics and light reflection qualities should be used for ceilings. Classroom ceilings should be ten feet from the floor level.

Windows

The area of glass windows should equal 25 per cent of the floor area. Clear glass should extend from a height of not less than 66 inches above the floor. In the case of air-conditioning it is suggested that the architect be consulted. Glass areas should be placed and arranged to minimize brightness differences. Direct view of the sky and bright exterior surfaces produce glare and should be avoided. Light-directing glass brick extended from vision-strip windows to the ceiling is sometimes used for decreasing the glare produced by the traditional window treatment. In rooms having windows on three sides the glass area should be reduced. This can be accomplished by the use of high windows or light-directing glass brick.

Acoustical Treatment

Materials which provide maximum sound absorption should be used on the ceiling. It is good to have the upper portion of the side

walls treated with materials selected to satisfy the requirements of the room. Acoustical material should be capable of being stained and restained without losing its acoustical properties.

Heat

Unit blower heaters are recommended. Heat, thermostatically controlled, sufficient to maintain a temperature of 68 degrees five feet above the floor with a variation not to exceed five degrees between this level and the floor should be provided. Since the Industrial Arts department is likely to be used for night school programs, it is desirable to have the control of the heat designed and located so as to permit heating it independently of the rest of the building.

Illumination

Sufficient artificial illumination is necessary so that at least 50 foot candles of light reach both vertical and horizontal surfaces at bench height throughout the room. Additional light, up to 100 foot candles and even more in special cases, is needed for such shop activities as handicrafts, graphic arts, machine operation and mechanical drawing. Individual supplementary lighting is economical for those areas. In all cases, the light provided should be adequate to take care of the illumination at night as well as during the day. It should approach the effect of daylight and be as free from shadows as possible.

Switches that control all general lighting in the shop should be conveniently located. All lights for any given shop area should be controlled within the shop. Areas of control should be small and should parallel windows so that lights in the dark side of the room are separately controlled from those nearest the windows. Light switches and convenience outlets in finishing rooms should be vapor-proof for safety.

Ventilation

It is recommended that the shop be air-conditioned and that adequate facilities be provided for dust elimination. If a shop is not air-conditioned, fans will become mandatory. One or more exhaust fans of sufficient size should be placed at one end of the shop where there is not an air-conditioner, and they should have the capacity

to exchange the air every three to five minutes. An exhaust fan must be installed in the finish room.

Flexibility of Equipment in the Shop

Careful planning when estimating the needs for a program will eliminate, to a great extent, the necessity of making changes or additions. However, as in all educational institutions, changes are not only necessary but desirable in order to meet pupils' needs and interests in a changing environment. These are some factors providing flexibility:

Supplying sufficient 110 and 220 volt electrical outlets in walls and floors for present and future semi-portable and portable machine tool equipment.

Using comparatively short benches rather than unusually long ones. For example, two six-foot benches instead of one twelve feet long. Installing gas and water outlets through or along the wall rather than through the floor in central portions of the shop.

Electrical Outlets

Floor plans and equipment layouts should be made far enough in advance to determine the location for electrical outlets in the final building plans. Service for 110 and 220 volts is desirable as some equipment items require 110 volts and others operate more efficiently on 220 volts. There should be a 110 volt outlet every eight feet in the shop walls and one every ten feet in the mechanical drawing room. The 220 volt outlets should be single phase and located every 16 feet for machines and for whatever expansion may be done in the future. Three phase should be provided where needed.

Types of Outlets

Overhead cables should be run to machine areas not served by wall receptacles. Vapor-proof outlets should be installed in the finish room. Special heavy duty outlets should be provided for kilns and electric arc and spot welders. Wire of sufficient amperage capacity should be specified.

Electrical Service Control Panel

The switch panel should be mounted flush with the wall in a convenient place inside the shop. It should contain a master switch

located in or near the instructor's office through which all the power circuits can be controlled. Each circuit should have an individual switch within the panel together with a circuit breaker or fuse.

Gas Supply

At least two gas outlets should be provided in the shop by a gas line brought through the floor or through the wall near the place where the furnace units and other equipment requiring gas are to be installed. The main supply pipe must be adequate for maximum consumption. A gas connection installed on the wall provides more flexibility than one located in open shop areas.

Sinks and Drains

Where the shop is large, the sink should be a minimum of five feet long and should have three faucets. It is advisable to install the sink on the wall to preserve floor space. Additional sinks should be provided for areas of work requiring the use of water. An extra large trap should be installed under each sink in order to prevent wax, grease, paint, plaster of paris, cement and other injurious materials from being washed into the drain pipe.

Drinking Fountains

A drinking fountain is standard equipment in every shop. The most suitable place for installation is near the sink.

Display Cases

It is suggested that shops be provided with a recessed display case, equipped with doors and indirect lighting fixtures. A satisfactory location for this case is in the wall near the outside classroom entrance. It is also good practice to provide a display case for the Industrial Arts department in a prominent place in the main school building.

Doors

Generally, one inside entrance is sufficient if an outside entrance is provided. If there is no outside entrance, two inside doors are necessary in large shops. At least one should be sufficiently wide to admit large equipment and supplies. An outside entrance should be provided for shops. The outside doorway should be at least ten feet wide and located not less than seven feet from the corner of the

shop, preferably on the long side. An overhead type door is usually desirable for such an opening. In addition to this there should be one regular size outside door.

Tool Storage

Panels mounted on the wall are recommended for hand tool storage. These panels should be readily accessible to the areas they are to serve. Tools mounted in these panels may be protected by enclosing them with hinged covers in the form of wings deep enough to clear the ordinary shop tools.

FIGURES 6 AND 7. *High quality tools and well arranged panels affect the attitude of students*

Color

The color of walls and equipment has a measurable effect on the occupants of a room. The wall color and equipment should be in accordance with modern industrial practices. The upper portion of the walls should have a reflectivity of approximately 65 per cent. In any treatment of walls and ceilings, care should be exercised to avoid harmful glare.

Partitions

There should definitely be a floor to ceiling partition between the shop and the drawing room. Solid wall partitions which restrict visibility within a shop are not generally recommended because they decrease flexibility of equipment use, make supervision of pupils difficult and add to the problem of maintaining a neat, orderly room. If partitions are necessary, they should be non-bearing and constructed so that they may be readily removed or rearranged if

necessary. Electrical wiring and other services should not be permanently installed in these partitions.

Storage of Equipment and Supplies Within the Shop

Provision should be made in each shop for storing supplies and equipment. Recessed wooden cabinets with adjustable shelves are desirable, but moveable steel cabinets may be used for the same purpose if flexibility is a major consideration. Cabinets for the storage of paints and other inflammable materials such as gasoline or benzene should be made of steel or other fireproof material. A project storage room should be built for each class as shown on the floor plan in Appendix Aa. The importance of providing separate project storage space for each class cannot be overemphasized.

Storage Racks

Storage racks for wood and metal are necessary in shops where these materials are used. The plan suggested in the appendices provides that materials of this kind be stored over the storage room, office, project storage room, finish room, and rest room so as to conserve floor space. Access to overhead storage should be afforded by a permanently constructed ladder or stairway.

Bulletin Boards

A general bulletin board with an area of approximately 24 square feet should be placed near the entrance of the shop, the tool center, drinking fountain or wash sink. Additional smaller bulletin boards convenient to various work centers are desirable.

Chalkboards

Portable chalkboards should be provided in the teaching center of all shops and classrooms. It is recommended that a minimum of 20 square feet of chalkboard which is more reflective than slate blackboard be installed. When 20 square feet of surface is inadequate, vertical sliding panels or book-type boards should be considered.

Library and Planning Center

The library and planning center should be centrally located and in the teacher's view at all times.

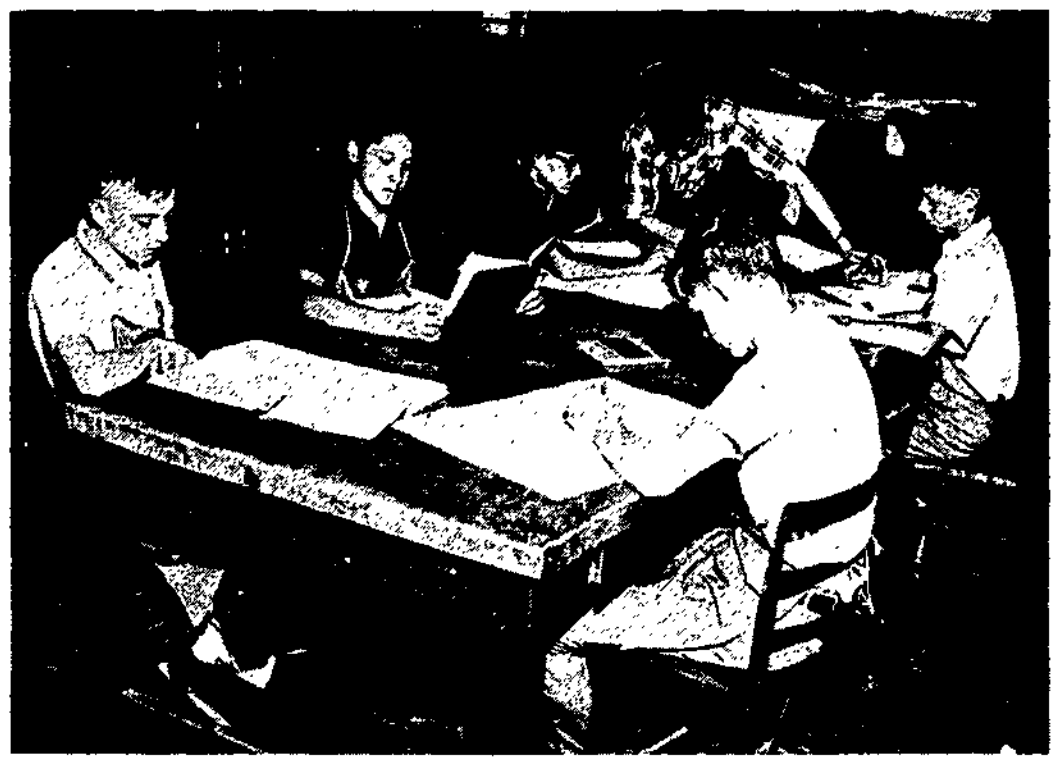


FIGURE 8. *Students doing reference work and planning projects at planning center*

Fire Protection

Appropriate fire extinguishers of sufficient capacity should be hung on the wall adjacent to fire hazard areas. These extinguishers should be placed away from the direct source of danger but convenient to the area.

SAFETY

Safety should be given first consideration in shop planning. As it is desirable that all portions of the shop be clearly visible to the instructor, interior rooms or partitions should be half glass. Power machines should be so placed that students are not in the line of danger. Added protection is given by surrounding these machines with a safety zone outlined with paint on the floor. Aisles of travel should be provided between benches, machines, and in areas in front of tool panels and storage lockers. Special safety zones should be allotted to areas where melted metal, welding, heat treating, etc., are handled.

Tools and supplies should be located as near to work areas as would be practical to reduce travel and interference. Placement of machines with regard to sequence or association of operations is necessary.

In addition to fire extinguishers, a fire blanket and a first aid kit should be included in the equipment of every shop.

MECHANICAL DRAWING FACILITIES

Introduction

Mechanical drawing is the universal language of industry. The ability to describe the shape and size of objects through drawings and to interpret drawings made by others is helpful to anyone regardless of his vocation. Without a knowledge of drafting and blueprint reading many of the better jobs in industry are closed to workers. In this age of industry mechanical drawing is important in the education of both producers and consumers.

Mechanical drawing may be taught as one of the units in the Composite General Shop. Another acceptable method is to introduce it during the orientation period and then to continue the teaching on an integrated basis with all activity in the shop. In addition to this, it is recommended that mechanical drawing be taught as a unit course in the upper high school grades.

FIGURE 9. *Mechanical drawing being taught as a unit course in high school*

Where it is practical the drawing room can be used as an Industrial Arts classroom.

Floor Plan

For a suggested floor plan and furniture arrangement see Appendix A-a.

Lighting

One hundred foot candle power of light at table top level is recommended as a minimum for a drawing room.

Equipment

Equipment will cost in 1966 approximately $3,108.48 for the combination Industrial Arts and mechanical drawing classroom. For a listing of this equipment see Appendix B.

Location

It is highly desirable to have the combination Industrial Arts and drawing classroom located on the north side of the building. This avoids the direct rays of the sun and the glare produced on the drawing boards under such conditions.

SELECTION OF SHOP EQUIPMENT

The selection and purchase of equipment for Industrial Arts shops requires careful thought and study. Even under the best conditions equipment purchases are likely to be the result of compromise among the shop teacher, the school administrator, the equipment dealer, and possibly certain state officials. An intelligent determination of what to purchase will be less difficult after thorough consideration is given to the following five factors affecting equipment selection: exact character of work; activities to be taught; plan of instruction; size of classes and age of students; available funds. In no case should quality be sacrificed for quantity.

Character of Work

The exact character of the work refers to the educational philosophy of the course under consideration. In recognition of Industrial Arts as an integral part of general education, it follows that the

equipment chosen should make possible the meeting of general education objectives. These objectives can be met quite well if the equipment chosen contributes to the development of the basic understanding and appreciation of industrial materials, processes, and products.

Activities to be Experienced

Before an intelligent selection of equipment can be made, the activities to be taught in the shop must be determined. They may include general metals, mechanical drawing, woodworking, electricity-electronics or any other combination of activities which are included in the broad field of the Industrial Arts.

Plan of Instruction

The third factor to be considered before making a list of equipment is to determine the plan of instruction to be followed. This includes determination of the type of shop, such as Composite General Shop for many activities or General Shop in a Major Area for more specific activities.

Size of Class

Another factor to be considered is the size of classes and ages of students. Important factors affecting the size of the class will be the floor space available and the activity to be taught. If the floor space is limited, the activity to be conducted must be carefully chosen because some types of work require more floor space per student than others.

Availability of Funds

As the fifth factor in equipment selection one must consider available funds. It is always pleasant and easy to think in terms of ideals, but the very practical problem of funds causes many compromises, concessions, postponements of purchases, or even abandonment of plans. Here again it is emphasized that quality should not be sacrificed for quantity.

In recent years manufacturers of equipment have given attention to the production of lighter machines for school shop use. (These are not to be confused with economy home shop models.) Many of these machines now possess the quality features of production-type ma-

chines. These lighter machines are proving satisfactory for Industrial Arts use because they are adequate for light work, well guarded, and the cost is less than that of standard production types of power equipment.

COSTS

The administrator is concerned primarily with four costs in beginning an Industrial Arts program: tools and equipment, initial supplies, replacement of supplies and tools, and equipment maintenance. Where there is a limited amount of funds for machine and hand tools, first attention should be given to the purchase of a sufficient quanitity and good quality name brand hand tools. A suggested list of tools and machines is included in the Appendices as a guide for the administrator and Industrial Arts teacher. (See Appendix B). The minimum cost for equipping a Composite General Shop and mechanical drawing room is approximately $8,500.

Another aspect of the Industrial Arts program is the initial stock of supplies. The administrator should allocate a minimum of $10 per student for the first year. After the first year this cost may be reduced. The amount of reduction will depend upon local conditions. The handling of this cost is done in many ways and is treated thoroughly in Chapter III of this bulletin under "Budgeting and Purchasing."

The tools and machines listed in the Appendices should be name brand and of high quality. The totals quoted were taken from the 1966 catalogs and represent the 1966 list price, F.O.B. destination.

The administrator or purchasing agent must be alert when submitting items for competitive bids. Carefully written specifications must be included to insure a good quality of tools and equipment. It is desirable to specify the name brand after each item listed for bids, stating that each item substituted must be as good as or equal to the brand name specified. A qualified person should be consulted before final bid acceptance. To assist the administrator and teacher in locating supplies and equipment, a list of distributors can be supplied by the Industrial Arts Supervisor in the State Department of Education, Vocational Division. A list of films and their sources for teaching aids is available in the Industrial Arts Supervisor's office.

SOURCES OF ADDITIONAL INFORMATION

Those interested in initiating new Industrial Arts programs will find certain individuals and departmental agencies of tremendous

value in the necessary planning. Any individual with knowledge or experiences relative to Industrial Arts education might well make contributions as a consultant. Architects, builders, engineers, State Department of Education personnel, heads of departments of Industrial Education in colleges and universities, local industrial advisory committee, or others with special knowledge and talent often aid in this capacity. The services of the following personnel of the State Department of Education are available: State Supervisor of Industrial Arts, Director of Instruction, Director of Vocational Education, State Architect in the Department of Buildings and Transportation, and the State Supervisor of Secondary Education.

OUTLINE OF PLANNING PROCEDURE FOR INITIATING AN INDUSTRIAL ARTS PROGRAM

The purposes and objectives of Industrial Arts should be clearly defined and thoroughly understood before attempting to plan the school shop. It is most important that decisions be made relative to the following before attempting to plan physical facilities:

1. Areas of experience to be offered
2. Instructional units that will be involved
3. Ages and grade levels of students
4. Predicted enrcllment
5. Availability of instruction to boys and/or girls
6. Size and number of classes

After decisions are reached concerning the above, the following step-by-step procedure is recommended:

1. Secure services of a qualified consultant from the State Department of Education and/or colleges and universities which have Industrial Arts Departments.

2. Determine the type of shop program to be developed such as Handicraft, Composite General Shop, or General Shop in a Major Area.

3. Reach definite decision relative to the number of boys and girls to be served, the time available for instruction, the ages and grade levels of students and the size and number of classes.

4. Become acquainted with current codes and standards for school shops. (See Page 20.)

5. Prepare preliminary specifications in the form of a check list.

6. Visit established well-planned shops in other schools for the purpose of seeing shop programs in action, making a study of shop layout and physical features, and obtaining advice from administrators and Industrial Arts teachers as to advantages and disadvantages of physical features of shops being visited.

Note: The consultants will be able to recommend appropriate shops for visitation. It is strongly recommended that the State Industrial Arts Supervisor and the architect be included in the visiting party.

7. Hold preliminary conference with the State Supervisor of Industrial Arts, the State Department architect and the designated building architect to discuss such things as educational activities, standards, building design, space considerations, and cost limitations.

8. Compile a list of equipment, tools and supplies. See Appendix B.

9. Decide upon principal shop areas, facilities and auxiliary rooms which will be needed. Be sure to include such things as special electrical layouts for electrical areas, machine tool electrical outlets, portable tool electrical outlets, circulating fans, heat, light, and ventilation, project storage, finish room, toilet facility, supply storage.

10. Prepare a preliminary shop floor plan in consultation with the building architect. Show location of principal areas, facilities, auxiliary rooms, machines and equipment.

11. Prepare a detailed description of the shop (specifications) which will explain and supplement the floor plan. Present this to the architect.

12. Prepare and present to the architect detailed sketches of built-in equipment such as supply cabinets, wall panels and student project storage rooms.

13. Assist the architect by providing information during the final planning and construction.

CHAPTER III

ORGANIZATION AND ADMINISTRATION OF AN INDUSTRIAL ARTS PROGRAM

The preceding chapter gives information and step-by-step procedures for planning the Industrial Arts program. In this chapter the purpose is to give specific information incident to organizing and administering the program. As a starting point, it is important that the school administrator review the fact that the Industrial Arts program offers unique opportunities to enrich the offerings in general education by providing for the development of understandings, skills, and attitudes needed by all pupils in our highly mechanized and industrialized world of today. The program is not designed to be a substitute for specialized vocational training or terminal vocational education; neither is the program reimbursable as are the courses administered by the vocational education division. On the other hand, the objectives of the Industrial Arts program are in complete harmony with the basic understandings, skills, and attitudes needed to accelerate the industrial development of our state.

FIGURE 10. *The Industrial Arts teacher — a unique combination of skill and enthusiasm*

THE TEACHER

Great stress must be placed on the qualifications of the Industrial Arts teacher. There are many problems of administration, instruction, and supervision that are unique to this field. In addition to having an educational background and professional stature comparable to that of other teachers in the school, the Industrial Arts teacher should have the following special qualifications:

A genuine interest in things mechanical

Good muscular coordination and a wholesome attitude toward work

A high degree of skill in at least one major Industrial Arts area and proficiency in several others

A wide range of up-to-date information concerning tools, materials, processes, products, and problems of occupational life in industry

Ability to distinguish between poor design and good design in industrial projects and to design shop projects that are structurally sound and aesthetically pleasing

A sense of neatness and orderliness with respect to shop housekeeping

CERTIFICATE REQUIREMENTS

Industrial Arts teachers are required to hold a standard Mississippi Secondary Teacher's Certificate with an endorsement to teach Industrial Arts. In addition to the courses required in general education and professional training for all secondary school teachers, the Industrial Arts teacher must have the following courses to meet endorsement requirements:

	Semester Hours	Quarter Hours
Woodworking	6	9
Metalworking	6	9
Graphic Science	6	9
Electricity-Electronics	6	9
Industrial Arts General Shop	3	4½
Electives such as graphic arts, power mechanics, crafts, and other courses based upon the needs of the student	3	4½
TOTAL	30	45

IMPLEMENTATION DATE—September 1, 1968

TEACHER SUPPLY

Although the supply of Industrial Arts teachers is increasing each year, the potential supply is not yet adequate to meet the anticipated demand brought about by the state-wide program for reorganization of public schools. During this period of transition from small schools to larger schools, some teachers qualified in other fields may he interested in changing to Industrial Arts. Teachers who hold a Class A Certificate can qualify to teach Industrial Arts by satisfying endorsement requirements as listed in MISSISSIPPI SCHOOL BULLETIN 130. A permit to teach Industrial Arts may be issued prior to completion of endorsement requirements. It is strongly recommended, however, that permit teachers be required to have a minimum of 15 semester hours credit in Industrial Arts with 6 semester hours being in Principles and Methods courses before employed to teach Industrial Arts. It would not be possible for the teacher who is not well versed in the Principles and Methods of Industrial Arts to successfully operate a program which would satisfy the purposes of the school.

In schools with small enrollments, consideration of economy will suggest that the school use the Industrial Arts teacher in another field for part of his assignment. One plan that has worked successfully is the combination of Industrial Arts and mechanical drawing instruction.

CONTINUOUS SCHOOL IMPROVEMENT

Continuous school improvement is mandated by the pace of change in our highly technical industrial society. At least 50 per cent of the occupations in our economy have come into existence within this century. The school administrator is the key person in motivating school improvement. It is his responsibility to interpret pupil needs and to continuously adjust and improve the ability of the school to meet these needs. The quality of instruction depends on the competency of the teaching staff and the provisions which are made for it to keep abreast of developments in the field.

In-service training is the accepted basic approach to staff improvement. But the school program must also have a continuous flow of fresh ideas and knowledge of new materials that teachers get through participation in the larger professional groups and from visitation in other schools. The Industrial Arts teacher needs all these things and

more. He needs to keep informed about the materials, processes and methods of industry by keeping in close contact with industry. The alert school administrator will recognize the value of these activities and encourage the participation of his staff in them. He should also provide leadership to the staff in the development of evaluation techniques which may be used as a basis for instructional improvement in all areas.

INTERPRETING THE PROGRAM

Interpreting the Industrial Arts program to the school and the community is an important area of administration as the kind of environment in which the program will function depends upon the degree to which the purposes and needs of Industrial Arts are understood and accepted. The Industrial Arts shop can be made one of the "show" places of the school. Displays at school and at appropriate places in the community serve useful purposes. No opportunity should be lost to utilize this medium in interpreting the Industrial Arts program.

The administrator should keep in mind that the principal mission of Industrial Arts at this time in the state of Mississippi is to vest in our young people an understanding and appreciation of the methods, materials and products of industry and its place in our culture. The continued and stable economic development of the state will depend upon the ability of its citizens to provide an environment favorable to industrial growth and development.

These concepts should be used as prime factors in the interpretation and evaluation of the Industrial Arts program. Without administrative insistence that this and other objectives listed in this bulletin be followed, the program may take many different directions, none of which may serve the best interests of the school and its educational program.

COURSE SEQUENCE AND CREDIT TO BE GIVEN

The course sequence and attending credit listed below takes into consideration the growth characteristics of the pupils to be served, is in harmony with research findings and parallels successful experience in many schools over a long period of time.

The State Accrediting Commission will allow three high school Industrial Arts credits to count toward high school graduation.

It is recommended that those schools offering vocational (Day Trade) shop programs confine Industrial Arts shop courses to the 7th, 8th, 9th and 10th grades. In this respect Industrial Arts will serve as a pre-vocational experience for those who later enter vocational courses.

A minimum time in class of 275 minutes per week is required by the Mississippi Accrediting Commission and the Southern Association of Colleges and Secondary Schools. However, this does not prevent a school from devoting more time to the program. In some schools the basic course and advanced courses might be scheduled for three double periods weekly.

Elementary Industrial Arts
Grades 1-6

In most cases Industrial Arts in grades 1-6 consists of handicrafts and the use of basic hand tools taught by the regular teacher in connection with other instructional activities.

General Handicrafts
Grades 7-8 (Recommended for Grade 7)

This type course provides a wide range of exploratory activities in a number of areas such as those listed in Chapter I. (It may be scheduled as a regular composite general shop course.)

Composite General Shop
Grades 8-9 (Recommended for Grade 8)

This is the basic course, the core of the Industrial Arts program and a prerequisite to advanced courses except mechanical drawing. If this course is taught at the high school level, it carries one unit of credit and a minimum of 275 minutes per week in class is required. This may be accomplished in five 55-minute periods per week or three double periods.

Advanced Industrial Arts
Grades 9-12

Composite General Shop should be a prerequisite for this type of course work which carries a maximum of three high school credits

and requires at least the minimum 275 minutes per week in class for each course.

General Woodworking	½ or 1 unit
General Metalworking	½ or 1 unit
General Electricity-Electronics	½ or 1 unit
Power Mechanics	½ or 1 unit
Mechanical Drawing	½ or 1 unit

Some flexibility in grade placement is provided in these recommendations to help the individual school or school system adapt the program to the local situation. A school that can offer only Industrial Arts may approach the problem of grade placement somewhat differently from the school offering both Industrial Arts and vocational courses. In all cases it is recommended that the Industrial Arts program be considered as the first step.

The ratio of men and women employed by industry continues to change as industry employs more women to do jobs that require a background of industrial training. Furthermore, both the machines of the business world and the appliances of the home are operated chiefly by women. It is imperative, therefore, that the school administrator consider Industrial Arts as being of equal importance to boys and girls.

The Industrial Arts curriculum is designed to provide unique specialized understandings, skills and attitudes which are essential to effective living in an industrial economy. Industrial Arts, therefore, assumes a position of importance in the general education program which equals that of the traditionally accepted subject matter areas.

In the light of these concepts it becomes apparent that Industrial Arts is designed for all students and should not be designated as being for any particular group or class of students. It is important that the school administrator premise the establishment of the industrial program on these principles.

BUDGETING AND PURCHASING

The Industrial Arts program must have adequate and continuing financial support if the program is to achieve the expectations of the school and community. The initial budget for consumable supplies and materials should be large enough to provide supplies in sufficient quantities to avoid frequent and more expensive small lot purchases.

The amount of the budget might be determined by allowing $8 to $10 for each student to be enrolled in the program. This budget should support a revolving fund from which supplies can be purchased and into which money collected from students can be deposited. Each annual budget should restore the revolving fund to its original amount. The amount required to do this would represent the net annual cost to the school.

Generally speaking, the handling of money by the shop teacher should be avoided as much as possible. The extra bookkeeping and responsibility involved constitutes a difficult problem for him. A better plan would be to have administrative office personnel collect and handle all money from shop accounts.

One procedure which has been used successfully is to issue needed materials to the student and then to have the student make out a bill of materials in duplicate, one copy for his own use and one for the instructor. When the project is finished, the student has the totals checked by the instructor and then takes his copy of the bill to the office and pays for the material. When he presents his receipt to the instructor, he is permitted to take his project home.

Whenever it is necessary for the instructor to handle school or student funds, great care should be exercised in the keeping of adequate and complete records. It should be possible to account for the funds at any time.

Other references to quality and name brands of tools, materials and supplies are made in this bulletin. Simply for the sake of emphasis, we recommend that all tools, materials and supplies be checked carefully against the specifications recommended. When help is needed by the administrator and/or purchasing agent in this matter, the aid and cooperation of only those people who are qualified to give such information should be sought. Experience has shown that quality products like those with name brands always turn out to be the most satisfactory and economical in the long run.

CHAPTER IV

SUGGESTED SHOP PROCEDURES

When classes in Industrial Arts are small, the teacher can take care of all necessary details. As classes are increased in size and the activities are increased in keeping with the objectives, the operation of the shop becomes more complex. It is, therefore, very important for pupils to share in the management of the class.

CLASS ORGANIZATION

An organization chart hung in a prominent place in the shop shows the rotation of students from area to area during the program. (See Appendix C.) At the first class meeting, each member of the class should be assigned a number to be retained throughout the year. This divides the class into as many groups as there are areas in the course. Each group is assigned to the respective areas as represented on the chart and by referring to this chart each student can locate the area in which he is to work. Student rotation from area to area within the shop should be made in accordance with the time allotted. A plan of this type may be used in both the Composite General Shop and the General Shop in a Major Area.

STUDENT FORMS AND RECORDS

Efficient shop organization and administration are impossible without the use of records and at least a few basic forms. Each school shop should have a filing cabinet and an assortment of well-planned forms, chief among which are the following:

Student Shop Card

This is usually an individual card form catalogued alphabetically in a file provided for that purpose. The student should be required to figure most of the data to be entered on the card. In this way the card serves not only as a record of the quantity and quality of the work done, but as a cost accounting system through which the student learns the values of the materials used and how to calculate the costs of production. (Example — Appendix D.)

Student Job Plan Form

Job planning is one of the most educationally worthwhile activities that can be carried on in the school shop. A standard form will

facilitate the preparation, checking and use of the job plans. The gathering of information, sketching, estimating, and planning of the procedure should be as much a part of every project as the actual construction work. However, the use of the job plan will require definite class instruction during orientation and close supervision by the instructor during the course. (Example — Appendix E.)

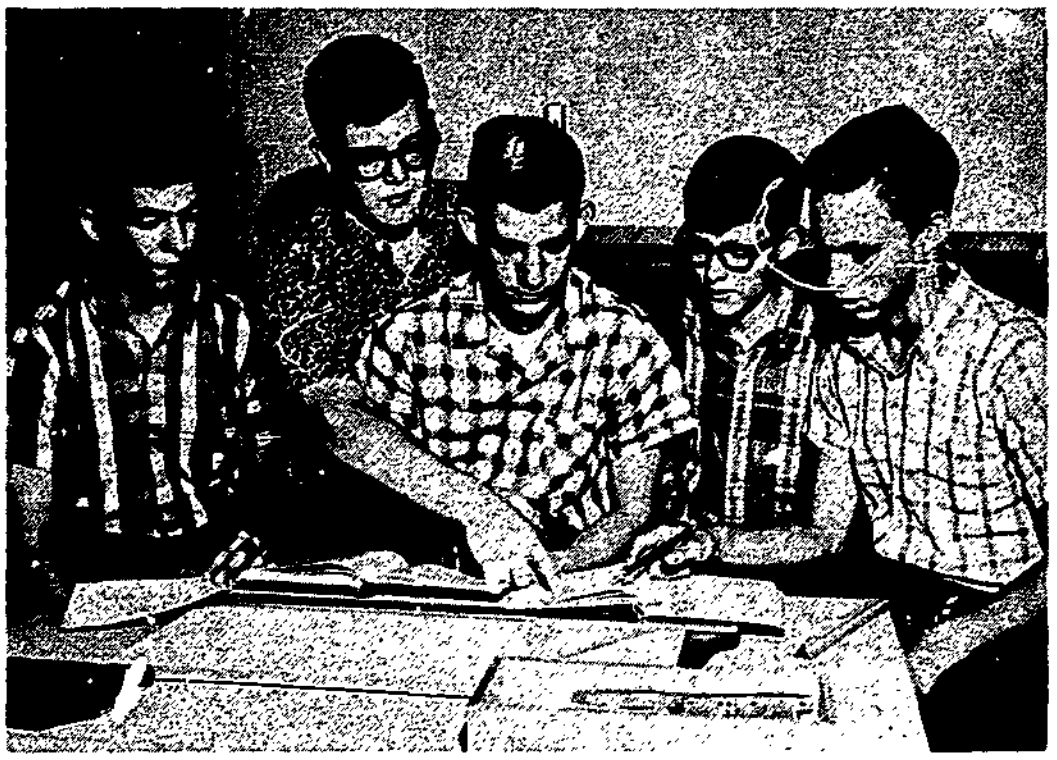


FIGURE 11. *Students preparing a job plan for a group project*

Progress Chart

For every class the instructor should keep a progress chart which will show an analysis of the instructional elements to be learned by that class in a given course on a certain grade level over a stated period of time. The progress chart should be posted in full view of the entire class. This makes a convenient method of recording the progress of each student in a class so that the individual class member has the opportunity of checking his own work with that of other members of his class. (Example — Appendix F.)

INVENTORY RECORDS

Under this heading falls the cumulative list of tools and equipment separated into subject area groups. These cumulative inventories should be kept in every school shop. (See example — Appendix G.) Likewise it is advisable to keep a running inventory of supplies. Once

such inventories are in operation it is not difficult to keep them up to date. When accurately prepared, they will facilitate the teacher's work during the school year, assist in justifying needed supplies and essential replacement of equipment, and provide the school authorities with factual information as to the amount and condition of the shop equipment.

METHODS OF INSTRUCTION

Class and Individual Instruction

Due to the very nature of Industrial Arts work and because of the great differences in individual abilities, the rates of progress among pupils may be so varied that effective class or even group instruction is impossible except in cases where instruction or demonstration of a general nature might be practical. In order that fundamental instruction will not be omitted and that it be given to every pupil at a time when he can definitely associate it with the project, individual instruction must be practiced. This can be accomplished through a systematic use of instruction sheets which will have the added value of giving the pupil experience in searching out information. The teacher should not, however, permit the course to become stereotyped or

FIGURE 12. *Individual instruction being given in the midst of group activity*

overburden himself with clerical work. He should be free during the class period for class management and demonstration or to give individual help.

The Demonstration

A well-timed and skillfully executed demonstration has a good psychological effect because it eliminates the element of doubt on the part of the student as to whether or not the job can be done. It also increases his desire to imitate the procedure and helps to clear up what might otherwise be a vague or meaningless description.

There are three types of demonstrations used in Industrial Arts: the class demonstration which is used to give instruction that is needed by all members of the class at the same time; the group demonstration which is used to give instruction to a small group of students all of whom are in need of the instruction at or near the same time; and the individual demonstration which is used to give instruction to a single student concerning some operation or problem with which he needs help.

The teacher should possess sufficient skill so that students will feel a respect for him as a craftsman. He should use the same tools and materials that the students will use. The demonstration should be prepared carefully in advance and presented at a time when the students are ready for it. The student should immediately have an opportunity to apply the principles involved in the demonstration. Not too much related information should accompany a demonstration or its value will be lost. The teacher should follow up his demonstration by close observation and supervision to see that the correct practices are developed.

Instruction Sheets

The nature of the Industrial Arts Composite General Shop requires that a wide variety of assignments in a number of industrial areas be in progress at the same time. This condition defeats the possibility of the teacher's giving the necessary individual attention and instruction to each pupil. Instruction sheets aid the teacher in overcoming this difficulty and make it possible for him to keep all pupils constructively occupied at all times. The student is enabled to proceed with his assignment with minimum teacher supervision. This serves to increase the pupil's sense of responsibility and self-reliance and provides the opportunity for him to apply his own

ingenuity in the solution of problems involved in his assignment. The individual instruction sheet also compensates to a great degree for individual differences in that the pupil may proceed at his own pace. (See example — Appendix H.)

Related Information

It is difficult to determine the amount of related information which should be taught in any given course. The amount will depend upon several things: the subject being taught, the amount of related material available, the time available, the age and interest of the group, and the capability and resourcefulness of the teacher.

In any event, related information in appropriate amounts is an essential phase of Industrial Arts and should not be overlooked by the teacher. It should be pointed out, however, that good judgment must be exercised in determining the amount and kind of related instruction given. Too much will serve to dull the student's enthusiasm, for he may be primarily interested in the shop activities. On the other hand a lack of appropriate emphasis will weaken the program.

FIGURE 13. *Related material being taught in the crafts area*

Introduction to Industrial Procedures

This type of instruction is an important educational experience whereby the student becomes involved in industry's problems through the production of a saleable article by setting up a mass production assembly line. The mass-produced product is the vehicle for the learning experience. This experience gives the student an overall picture of industry and an insight into the place of the industrial worker in modern industry. Chapter V is devoted to a description of industrial procedures.

SAFETY AND FIRST AID

The major causes of shop accidents may be classified under the following headings:

Conditions of the Room and Equipment

Overcrowded shop conditions, class size
Poor housekeeping
Dull tools and machines
Unguarded belts, pulleys, gears, leadscrews, cutters, etc.
Pushers, jogs or guards not used
Improper location of machines
Poor lighting
Unguarded switches
Lack of storage space
Inadequate eye protection

Inefficient Instruction

No thought to safety, too much chance-taking
Small boys allowed to operate machines
Boys allowed to play
Overtime work without supervision
No thought to proper attitudes
Failure to check faulty machines and hand tools

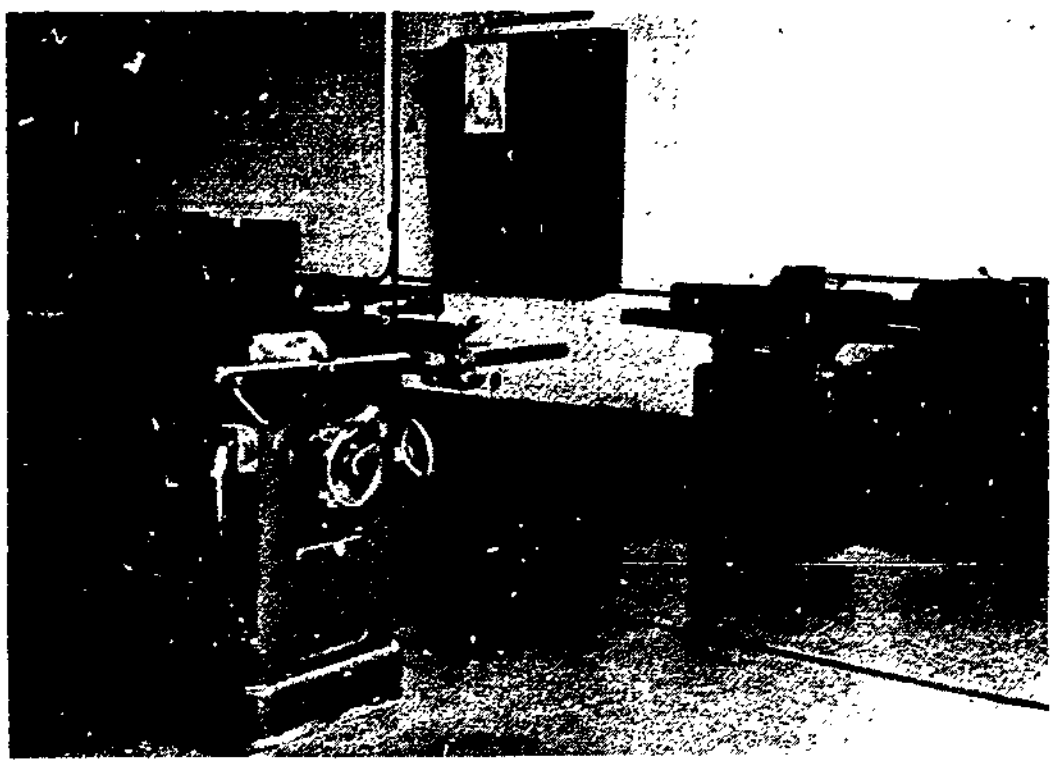


FIGURE 14. *Machine area showing safety zones*

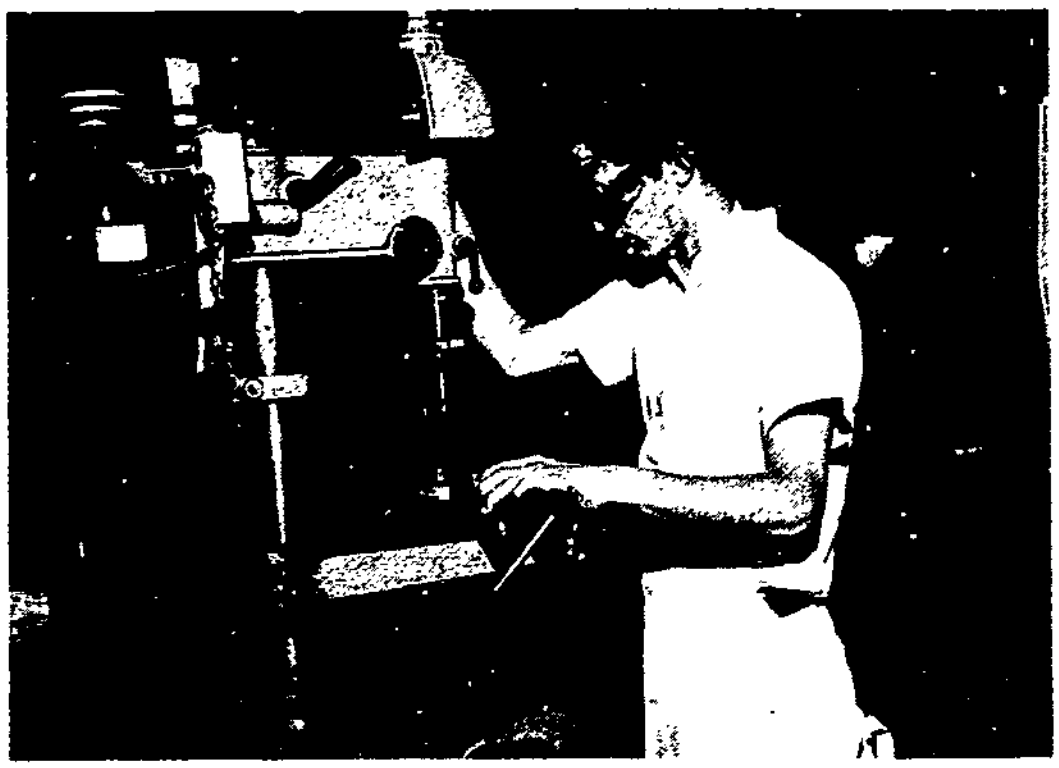


FIGURE 15. *Safety procedures being practiced by a student*

To prevent accidents, it is imperative that adequate supervision be maintained at all times. It is necessary that the teacher give adequate machine operating instructions to all students permitted to use machines; provide safety guards for all machines; schedule periodic safety discussions; make available safety charts, signs, and facts; require learners to secure operating permits from the teacher; ban conversation by or to the operator of a machine; forbid horseplay in all areas of the shop; encourage the wearing of suitable clothing for safe operation of machinery and provide a first aid kit well equipped for immediate use in the event of an accident. A first aid kit containing the following items should be provided at all times: band aids, cotton balls, merthiolate, adhesive tape, disinfectant, burn ointment, gauze, and eye wash.

First aid supplies should be under the direct control of the teacher and should have a special place in the supply room or perhaps in the teacher's office. A perpetual inventory should be maintained to assure having appropriate supplies when needed.

It is advisable to make written reports of all shop accidents at the time they occur. This provides more reliable and accurate means of ascertaining accident causes. Furthermore, this practice will help to keep the matter of safety foremost in the minds of both teacher and students.

The instructor should not leave the classroom except in an emergency. If he should have to be out, power to all machines should be turned off so that they cannot be operated while he is out.

TESTS AND TESTING

The most satisfactory form of test for measuring informational achievement in Industrial Arts is the objective test. This type of test enables the teacher to cover a wide range of material in a minimum amount of time and can be easily administered and scored without involving the personal judgment of the teacher. However, the alert teacher will at all times make an effort to allow the student to express himself in writing by giving a small percentage of discussion questions.

DAILY CLASS PROCEDURE

The teacher should establish some definite procedure for the students to follow each day in the shop. A sheet containing this

information might be given out the first or second meeting of the class thereby removing all doubt as to just what is to be expected of the student during the year.

SHOP MAINTENANCE

It is the responsibility of the Industrial Arts teacher to keep a check on his tools and equipment and to keep them in the proper working order at all times. The sharpening or repair of tools and equipment should be attended to as the need arises and not put off until it piles up. Tools and equipment that are not in good working order are potential sources of danger and contribute to inefficiency.

CHAPTER V

INTRODUCTION TO INDUSTRIAL PROCEDURES

Man has turned increasingly from making individual products to mass production by assembly processes, the teaching of which has become one of the most important objectives of Industrial Arts. More effective than lectures, movies, field trips, or other indirect media for conveying production techniques is the unit on industrial plant organization concerning mass production. In such a program the class is organized into an industrial plant situation and is taught techniques through actual experience. The manufactured product becomes a teaching vehicle as the students are exposed to the atmosphere of a modern production plant and the project serves as an introduction to industrial organization, to the development of modern industry and to the actual processes of industry. On a personal level the student learns to cooperate as a member of a structured team, to cope with individual responsibility and to function as a leader when it is required of him. In summary, the students, on a reduced but accurate scale, deal

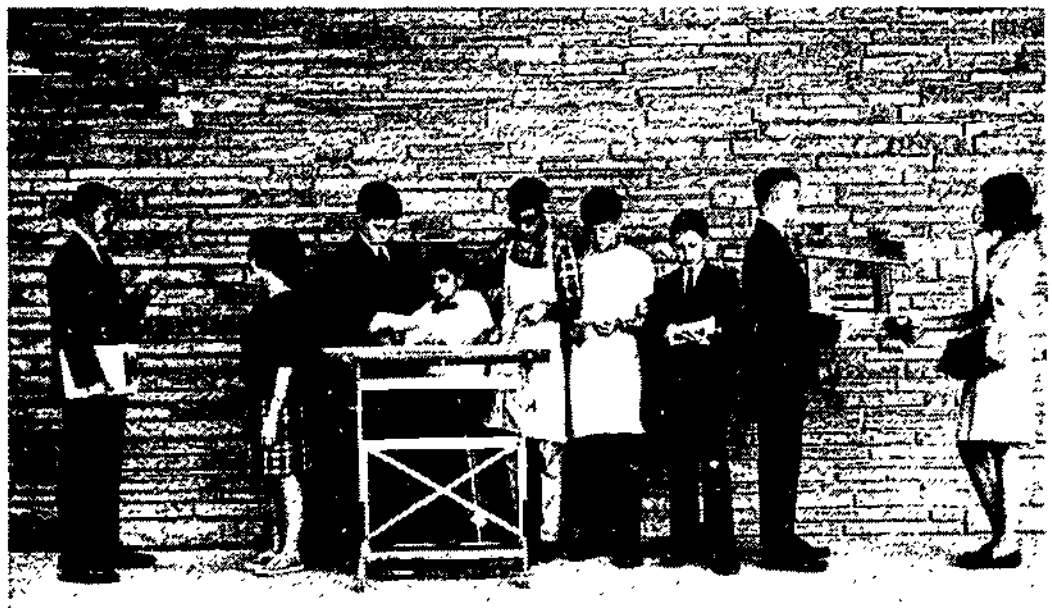


FIGURE 16. *These students represent the line-production method of teaching Industrial Arts. From left to right, corporation activities include administration, marketing, engineering, design and drafting, production line, quality control, sales, and consumer. (Adapted from "A Career in Teaching Industrial Arts" published by the American Industrial Arts Association)*

with the very real problems of industry and should ultimately relate the processes learned on the individual project to their total picture of industry. An increased industrial awareness and appreciation will result.

Ordinarily such a unit will be taught in the latter part of a basic course in Industrial Arts except in the case of those students who have already completed the basic course and are prepared to spend more time on the mass production study. At any rate, the understanding of industry and the manipulative skills in the use of all tools and equipment taught by a basic course must stand as a prerequisite to the production unit.

Creating Class Interest

In beginning the mass production unit, an interest on the part of the students can be created in advance of the starting manufacturing date with lectures, movies, and field trips as motivating devices. If the experience is to be profitable, it must be commensurate with the age level of the class. A lack of questions may indicate incomprehension.

Personnel Organization

After a background study of American industries and their organization, the class is ready to begin its own program. The students elect a plant superintendent, a personnel director, and a board of directors who in turn assign committee members for the three divisions: engineering, production, and business. Each class member is appointed to one of these groups.

The plant superintendent supervises all production and assists the personnel director in establishing the pay scale for all employees, while the student elected personnel director mediates all grievances, helps make job assignments and takes charge of publicity for the project.

An engineering committee consisting of a head engineer, a production engineer, a safety engineer, and a designer will first develop and design a suitable project chosen by the class. The designer makes detailed drawings of the product to be made and of the necessary templates and jigs. Moreover, it is this student who will draw the flow chart (including work stations, machines, etc.) and a plant layout.

The duty of the head engineer is to help plan jigs and templates and assist the production engineer in finding ways to improve pro-

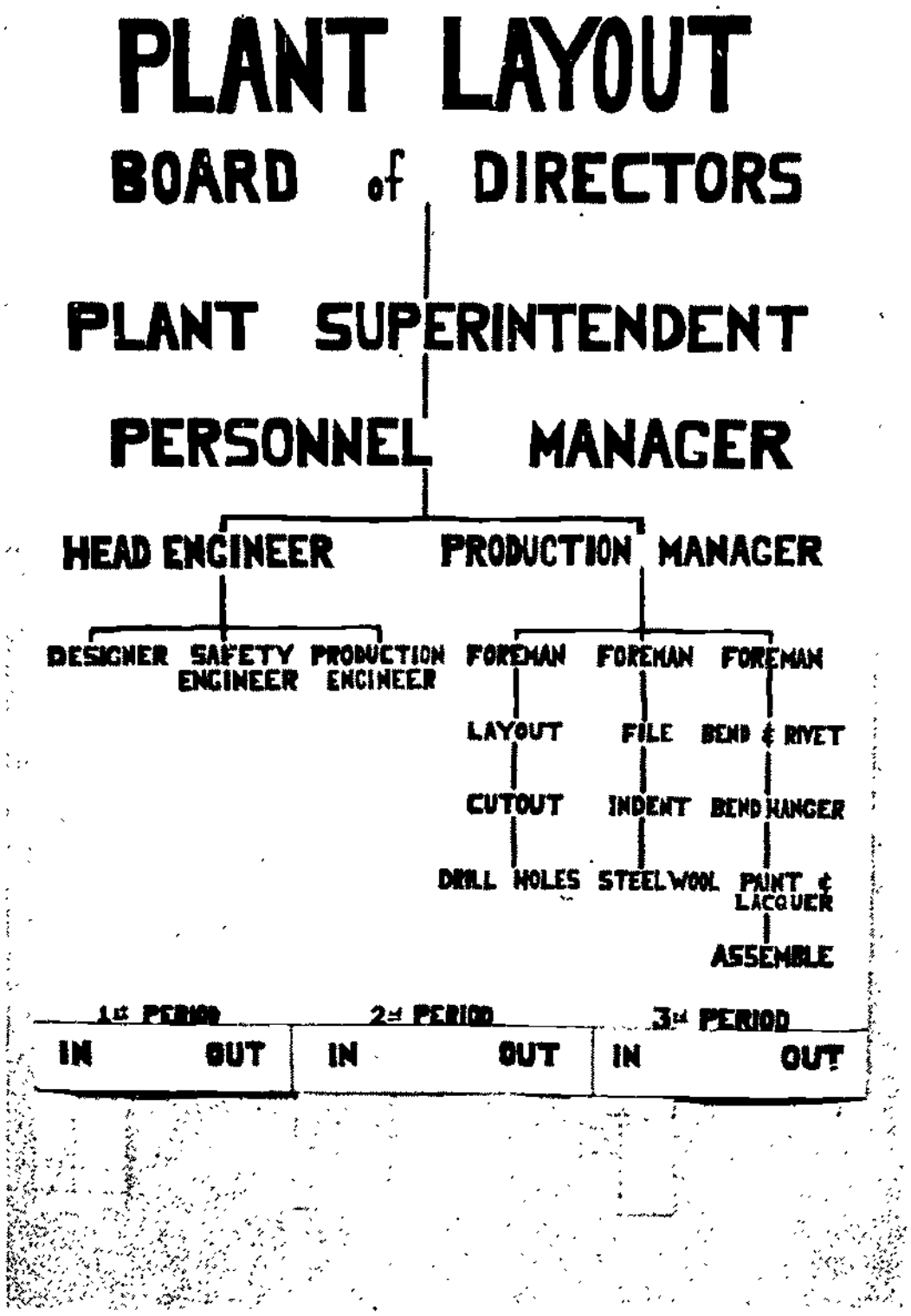


FIGURE 17. *Personnel Organization Chart showing student assignments*

FIGURE 18. *Plant Superintendent working with Engineering Committee on development and design of a suitable product.*

duction. He helps analyze the cost and sale of the product. In reality, it is the head engineer who is in charge of all planning, designing, and evaluation of the product.

The production engineer, on the other hand, concentrates on the particulars of the mass production assembly process. He studies the time and motion involved in each job, times the operation, and helps guard quality in production with checking stations.

The final member of the engineering committee is the safety engineer whose job it is to seek out and eliminate safety hazards in the operations and make checks on damage to materials and tools. In addition, he records the time lost by each employee as a result of accidents and the cost of these accidents.

The production manager, foreman and operators, or workers, comprise the production committee. The production manager takes charge of general supervision of production, studying production and seeking cost-cutting methods. Production records, such as figures of different units made of the product and a line graph showing changes in production, will also be his concern. The foremen supervise and train the workers whose job it is to carry out the various assignments and

assume responsibility for the care of the tools and materials used. In brief, the production committee is concerned with the actual manufacture of the item and is responsihle for pre-production planning. With the aid of the engineering committee the production committee sets up work stations, trains workers and constructs the jigs and templates.

FIGURE 19. *Foreman supervising layout of product*

Our last major committee is the business committee which includes the advertising agent, the salesmen, the purchasing agent and the accountant. A business manager takes charge of selecting and buying materials and establishing the selling price of each product. He also supervises financial matters such as investments, selling of stock and figuring dividends. The sales manager makes contacts for sales, delivers products to buyers and collects for sales.

In order to operate in a smooth manner, plants must maintain some flexibility in job scheduling to compensate for such problems as absenteeism and variances in working rates of students. Before production starts, the best sequences of operation must be established, jigs planned and made, and unassembled parts prepared by the production group and placed along assembly lines.

As work progresses students from the earlier assigned production groups are reassigned to work stations, according to their abilities to perform a particular job, by the instructor, the plant superintendent and the personnel manager. Next they are trained for these jobs, the first step in actual production. Each operator will practice with scrap metal and reassignments can be made where difficulties arise. The foremen are trained for supervision of their assigned operation to such a degree that they can in turn train others or substitute for absentees.

Selecting the Product

From a number of possibilities suggested by the class at large the plant superintendent and the board of directors choose three products on the basis of merit of design, class ability and facilities available for the project. The class then will select one from these three, preferably one of commercial value, for in selling the product the students are motivated to greater efficiency and quality in production.

The product may ultimately be marketed by the class, donated to the school or a charity, or offered to the students themselves in return for original purchased stock. Regardless of the use of the product, pride in it makes the experience exciting—industry becomes real for the class.

Financing the Product

If each student is to receive one of the finished items, the product may be financed by using school-supplied material with each student reimbursing the school by buying stock in the corporation. However, more valuable experience is gained by allowing the students to order and purchase material, to mass-produce and to sell the products, practices which are vital parts of industry. In the event that the class decides to sell the product, selling stock in the company will provide funds needed to purchase materials. Profit-sharing stock may be sold to the students and to individuals in the community as most businessmen and industrial-minded individuals are interested in such endeavors and are most cooperative. After the company is dissolved, dividends are distributed to those individuals who are shareholders in the company. The business department is responsible for the selling of stock, the figuring of cost and the division of profit among the shareholders. Still another way of receiving funds for production is taking orders on the products before they are made in which case a sample product is constructed to show the prospective buyers.

Producing the Product

The actual production is now ready to begin. Under the constant supervision of the personnel in charge, efficiency in work and good quality will be maintained in an orderly assembly line. A safety engineer will insure good housekeeping by insisting that each individual operator keep his work station clean and free of unnecessary tools.

A production chart kept by the production manager records the work of each operator, thus serving as a motivating device and as a guide in the termination of work station operations as the required number of parts are completed. A line graph is kept to show fluctuation in production.

FIGURE 20. *Production Manager checking with foremen on workers' progress to be recorded on his chart.*

Each student involved should take a free period in his assignment to tour the plant as a whole, and visitation should be encouraged from other students, teachers and parents. In his publicity work, the personnel director may even send invitations to industrial and business-minded people of the community, for such an activity as the mass production plant can create interest beyond the limits of the class or even the school itself. This outside interest gives additional encouragement to the students involved.

The length of time for actual operation varies with the type and number of products and the individual class; however, in junior high school three to four weeks is the average time required. As various work stations are closed to end production, students will be free to fill in where help is needed. During this period the quality of production must be closely guarded as new assignees may be unfamiliar with the job and unskilled. After individual work stations are closed, production should be terminated as soon as possible. The product will be completed and packaged, work stations cleaned, tools replaced, shop furniture and large tools rearranged if necessary and jigs and templates disassembled. The plant is officially closed by a statement from the plant superintendent.

FIGURE 21. *Students assembling product in final stages of production line.*

Evaluation

A follow-up study and discussion of the planning, producing and selling can be one of the most important phases of the project, as most of the educational information lies in what students have to report about their experiences during activities. Prior to this time students' knowledge and understanding of industry have been confined to what they have heard or seen; but, after such a mass production experience,

students are more able to act and think intelligently on the importance of industry and about their places in an industrialized society.

In this discussion period, each student gives an account of his experiences in his particular job. He discusses his difficulties, his likes and dislikes, the relationship of his job to the total operation, the education needed on his particular job and other related topics.

The plant superintendent calls for reports from the engineering, production, and business committees.

The engineering committee report is based on figures taken from the production chart which shows the number of products produced and a breakdown of the time required for individual operations. The committee encourages discussion on improvements in design, better methods of production and more economical use of materials. The production committee reports on personnel and production problems associated with the actual manufacturing of the product, and the business committee gives a full account of all financial matters, which includes an explanation of costs, selling price and methods of distribution of profits and dividends.

After this discussion in which all the information gained throughout the weeks of work crystallizes, the mass production units is completed.

CHAPTER VI

OUTLINES OF COURSES OF STUDY

The following course outline and lists of suggested projects are designed to cover three areas of teaching: Handicrafts, Composite General Shop and Advanced Industrial Arts (General Shop in a Major Area). As indicated in Chapter III, the Handicrafts area is developed for use in the lower level of the junior high school, the Composite General Shop for the upper junior high school or lower high school grades, and the Advanced Industrial Arts for the lower high school grades. Since the time allowed for each unit is flexible, particularly in the Handicrafts area and the Composite General Shop, no attempt has been made to present a detailed outline of content or projects for the various units to be covered. The teacher is expected to add to or delete from the contents outline and list of projects according to the needs and interests of his pupils, his class organization and the available facilities.

HANDICRAFTS

Although no effort has been made to outline the area of drawing and planning in the Handicrafts, it is to be expected that all students will be introduced to and receive basic instruction in this area.

LEATHERWORK

A. **Course content**

1. History and manufacture of leather
2. Occupational opportunities and information
3. Tools and supplies
4. Craft leathers
5. Storing and caring for leathers
6. Designing and template making
7. Laying out and cutting leathers
8. Preparing leather for tooling and carving
9. Transferring designs to leather
10. Tooling and modeling designs on leather
11. Stamping and carving
12. Punching holes in leather
13. Assembling projects
14. Cleaning leathers
15. Finishing and care of projects

B. Typical activities

1. Billfold
2. Coin purse
3. Belt
4. Arrow quiver

C. State adopted textbooks

1. *General Crafts,* Chas. A. Bennett Co., Inc., Peoria, Illinois

D. Additional publications in the field

1. *General Leathercraft,* McKnight & McKnight Publishing Company, Bloomington, Illinois
2. *Handcrafts Simplified,* McKnight & McKnight Publishing Company, Bloomington, Illinois

PLASTICS

A. Course content

1. History and manufacture of plastics
2. Occupational opportunities and information
3. Types and classification of plastics
4. Layout and transferring designs
5. Cutting and shaping
6. Drilling, tapping and threading holes
7. Buffing and polishing
8. Surface decorations
9. Methods of forming
10. Carving and engraving
11. Assembling parts
12. Coloring
13. Casting plastics in molds
14. Fiber glass

B. Typical activities

1. Laminated box
2. Pin-up lamp
3. Serving tray
4. Clock

C. State adopted textbooks

1. *Industrial Arts Plastics,* Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *General Crafts,* Chas. A. Bennett Co., Inc., Peoria, Illinois

D. Additional publications in the field

1. *General Plastics,* McKnight & McKnight Publishing Co., Bloomington, Illinois

2. *Plastics, Projects and Techniques*, McKnight & McKnight Publishing Company, Bloomington, Illinois
3. *Plastics Technology*, McKnight & McKnight Publishing Company, Bloomington, Illinois
4. *Fiber Glass*, McKnight & McKnight Publishing Company, Bloomington, Illinois

GRAPHIC ARTS

A. Course content

1. History of the graphic arts industries
2. Occupational opportunities and information
3. Tools and supplies
4. Blueprinting
5. Designing with cutouts
6. Making items with stencils
7. Printing with a hectograph
8. Printing with a mimeograph
9. Linoleum — block carving and printing
10. Silk screen printing
11. Printing with stamps and types

B. Typical activities

1. Make blueprint from tracing
2. Cut a film for screen printing
3. Picture prints
4. Place cards

C. State adopted textbooks

1. *Graphic Arts*, Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *General Crafts*, Chas. A Bennett Co., Inc., Peoria, Illinois
3. *General Printing*, McKnight & McKnight Publishing Co., Bloomington, Illinois

D. Additional publications in the field

1. *Silk Screen Printing*, McKnight & McKnight Publishing Company, Bloomington, Illinois
2. *Art and Craft Silk Screen*, Kosloff, The House of Crafts, Milwaukee, Wisconsin
3. *Block and Silk Screen Printing*, Ahlberg and Jarveryd, The House of Crafts, Milwaukee, Wisconsin
4. *Linoleum Block Printing*, McKnight & McKnight Publishing Co., Bloomington, Illinois
5. *Junior Letterpress and Lithography*, Chas. A. Bennett Co., Inc., Peoria, Illinois
6. *The Practice of Printing*, Chas. A. Bennett Co., Inc., Peoria, Illinois

7. *Elementary Platen Presswork*, Chas. A. Bennett Co., Inc., Peoria, Illinois

CERAMICS

A. Course content

1. History and development of ceramics
2. Occupational opportunities and information
3. Sources of clay
4. Preparation of clay
5. Forming
6. Drying and firing
7. Glazing
8. Finishing

B. Typical activities

1. Jars
2. Ash trays
3. Figurines
4. Table lamps

C. State adopted textbooks

1. *General Crafts*, Chas. A. Bennett Co., Inc., Peoria, Illinois

D. Additional publications in the field

1. *General Crafts*, Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *Ceramics for the Potter*, Chas. A. Bennett Co., Inc., Peoria, Illinois
3. *Pottery Craft*, Chas. A. Bennett Co., Inc., Peoria, Illinois
4. *Activities in Ceramics*, McKnight & McKnight Publishing Company, Bloomington, Illinois

MOSAICS

A. Course content

1. History and development of mosaic arts
2. Occupational opportunities and information
3. Supplies and materials
4. Tools
5. Operations

B. Typical activities

1. Wall plaques
2. Figure coating
3. Three-dimensional pictures
4. Trays

C. State adopted textbooks

1. *General Crafts*, Chas A. Bennett Co., Inc., Peoria, Illinois

D. **Additional publications in the field**

1. *Mosaics*, Hill and Wang, New York
2. *Mosaics, Hobby and Art*, Edwin Headrickson, The House of Crafts, Milwaukee, Wisconsin

KEENE CEMENT CASTING

A. **Course content**

1. History and development of cement casting
2. Occupational opportunities and information
3. Related areas of study
4. Types of materials
5. Storage and care of materials
6. Equipment and supplies
7. Casting operations
8. Applying finishes and sealers

B. **Typical activities**

1. Figurines
2. Ash trays
3. Mugs
4. Wall plaques

C. **State adopted textbook**

1. *General Crafts*, Chas A. Bennett Co., Inc., Peoria, Illinois

ART METAL

A. **Course content**

1. Historical background of the art metal craft
2. Occupational opportunities and information
3. Supplies and materials
4. Planning and layout
5. Cutting materials
6. Shaping and forming
7. Assembling and polishing

B. **State adopted textbook**

1. *General Crafts*, Chas A. Bennett Co., Inc., Peoria, Illinois

C. **Additional publications in the field**

1. *Etching, Spinning, Raising and Tooling Metal*, McKnight & McKnight Publishing Company, Bloomington, Illinois
2. *Modern Metalcrafts*, Chas. A. Bennett Co., Inc., Peoria, Illinois

LAPIDARY ART

A. Course content

1. Historical background and development of lapidary arts
2. Occupational opportunities and information
3. Materials of the lapidary arts
4. Tools
5. Metals — selection and identification
6. Design and plan activity
7. Casting
8. Stone cutting
9. Shaping and finishing
10. Stone tumbling
11. Related information

B. Typical activities

1. Rings
2. Bracelets
3. Pins
4. Pendants

C. State adopted textbook

1. *General Crafts*, Chas A. Bennett Co., Inc., Peoria, Illinois

D. Additional publications in the field

1. *Handwrought Jewelry*, McKnight & McKnight Publishing Company, Bloomington, Illinois
2. *Jewelry Making for Fun and Profit*, The House of Crafts, Milwaukee, Wisconsin
3. *The Art of the Lapidary*, The House of Crafts, Milwaukee, Wisconsin
4. *Indian Silversmithing*, The House of Crafts, Milwaukee, Wisconsin

WOODCRAFTS

A. Course content

1. History and development of woodcrafts
2. Areas of instruction in woodcrafts
3. Related areas of study
4. Materials for woodcrafts
5. Tools and supplies
6. Cutting and shaping operations
7. Staining, sealing and finishing

B. Typical activities

1. Animal figures
2. Model cars

3. Furniture decorations
4. Character figures

C. State adopted textbook

I. *General Crafts*, Chas A. Bennett Co., Inc., Peoria, Illinois

D. Additional publications in the field

1. *Let's Whittle*, Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *Whittling Book*, The Bruce Publishing Co., Milwaukee, Wisconsin

COMPOSITE GENERAL SHOP

The Composite General Shop provides pupil experiences in at least four different industrial activities carried on simultaneously in one room under the direction of one teacher. This type of shop is recommended as the soundest approach to the basic Industrial Arts courses in the lower junior high school areas.

A suggested plan for the rotation of the units of the Composite General Shop, not necessarily the ones given in the example, is given in Appendix C. The selection of units to be included in the Composite General Shop should be considered carefully as an initial step in planning the program.

The orientation period should include some sketching, planning and drawing, shop safety practices, explanation of rotation charts, tool checking processes and clean-up duties, student evaluation and grade assignments as well as an example to each student as to their purpose for taking Industrial Arts.

Sketches or drawings should be made of all projects to be worked on by the students, and these sketches should be checked and approved by the instructor before the student begins the actual work.

BASIC ELECTRICITY-ELECTRONICS

A. Course content

1. History of electrical developments and occupational opportunities
2. Safety practices
3. The electron theory
4. Electricity and magnetism
5. History of magnetism
6. Kinds of magnets
7. Nature of magnetized materials
8. Inducing magnetism

9. Types of electricity
10. Sources of electricity
11. Electrical circuits
12. The flow of electricity and conducting materials
13. Introduction to electronics
14. Communications
15. Control devices
16. Measuring instruments
17. Safety devices

B. Typical activities

1. Electric motor
2. Transformer
3. Hot plate
4. Crystal set

C. State adopted textbooks

1. *Principles of Electricity and Basic Electronics,* McKnight & McKnight Publishing Co., Bloomington, Illinois
2. *Understanding Electricity and Electronics,* McGraw-Hill Book Co., Dallas, Texas
3. *Basic Electricity,* Prentice-Hall, Inc., Englewood Cliffs, N. J.
4. *Industrial Arts for the General Shop,* Prentice-Hall, Inc., Englewood Cliffs, N. J.
5. *General Shop,* McGraw-Hill Book Co., Inc., Dallas, Texas

D. Additional publications in the field

1. *An Introduction to Applied Electricity-Electronics,* Prentice-Hall, Inc., Englewood Cliffs, N. J.
2. *Elements of Radio,* Prentice-Hall, Inc., Englewood Cliffs, N. J.
3. *Basic Electronics,* Prentice-Hall, Inc., Englewood Cliffs, N. J.
4. *Electronics in Action,* Chas. A. Bennett Co., Inc., Peoria, Illinois
5. *Energy, Electricity and Electronics,* McKnight & McKnight Publishing Co., Bloomington, Illinois
6. *Practical Electrical Wiring,* McGraw-Hill Book Co., Inc., Dallas, Texas
7. *Exploratory Electricity,* McKnight & McKnight Publishing Co., Bloomington, Illinois
8. *Basic Electricity,* McKnight & McKnight Publishing Co., Bloomington, Illinois
9. *Industrial Arts Electricity,* Chas. A. Bennett Co., Inc., Peoria, Illinois

WOODWORKING

A. Course content

1. Survey of the wood industry
2. Related information in the wood industry

3. Occupational opportunities and information
4. Safety instruction
5. Laying out
6. Cutting
7. Shaping
8. Joint construction
9. Smoothing
10. Assembling with bonding agents and fasteners
11. Staining, sealing and finishing
12. Polishing wood surfaces
13. Introduction to power tools and machinery

B. Typical activities

1. Laminated tray
2. Gun rack
3. Boat paddle
4. Water skis

C. State adopted textbooks

1. *General Shop*, McGraw-Hill Book Co., Inc., Dallas, Texas
2. *Industrial Arts for the General Shop*, Prentice-Hall, Inc., Englewood Cliffs, N. J.
3. *General Woodworking*, McGraw-Hill Book Co., Inc., Dallas, Texas
4. *Woodworking for Industry*, Chas. A. Bennett Co., Inc., Peoria, Illinois
5. *Woods and Woodworking for Industrial Arts*, Prentice-Hall Inc., Englewood Cliffs, N. J.

D. Additional publications in the field

1. *Industrial Arts Bench Woodwork*, Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *Industrial Arts Woodworking*, Chas. A. Bennett Co., Inc., Peoria, Illinois
3. *General Shop Woodworking*, McKnight & McKnight Publishing Co., Bloomington, Illinois
4. *Units on Woodworking*, McCormick-Mathers Publishing Co., Inc., Wichita, Kansas
5. *Technical Woodworking*, McGraw-Hill Book Co., Dallas, Texas
6. *Wood Turning*, Chas. A. Bennett Co., Inc., Peoria, Illinois
7. *Wood Finishing*, Chas. A. Bennett Co., Inc., Peoria, Illinois

MECHANICAL DRAWING

A. Course content

1. History and development of mechanical drawing
2. Occupational opportunities and information
3. Supplies and equipment

4. Manipulative skills
5. Lettering
6. Orthographical projection principle
7. Sketching
8. Reproducing drawings

B. Typical activities

1. Lettering plates
2. Sketching plate
3. Projection practice

C. State adopted textbooks

1. *Industrial Arts for the General Shop,* Prentice-Hall Inc., Englewood Cliffs, N. J.
2. *General Shop,* McGraw-Hill Book Co., Inc., Dallas, Texas
3. *Drawing and Planning for Industrial Arts,* Chas. A. Bennett Co., Inc., Peoria, Illinois

D. Additional publications in the field

1. *Mechanical Drawing for Beginners,* Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *Beginning Mechanical Drawing,* Chas. A. Bennett Co., Inc., Peoria, Illinois
3. *Beginning Problems in Mechanical Drawing,* Chas. A. Bennett Co., Inc., Peoria, Illinois
4. *Learning to Read Mechanical Drawings,* Chas. A. Bennett Co., Inc., Peoria, Illinois
5. *General Drafting,* McKnight & McKnight Publishing Co., Bloomington, Illinois

HOUSEHOLD MECHANICS

A. Course content

1. Reading a working drawing
2. Care and use of common household tools
3. Application of paint and other finishes
4. Removing paint and other finishes
5. Preparing materials for refinishing
6. Repair of screen and windows
7. Door maintenance and repair
8. Simple electrical maintenance
9. Elementary appliance repair
10. Basic plumbing maintenance and repair
11. Care of yard and garden equipment
12. Bicycle maintenance
13. First aid

14. Fire prevention and control
15. Safety at home
16. Related information
17. Tools and equipment for the home shop

B. **Typical activities**

1. Faucet repairs
2. Replacement of plugs and cords on electrical gadgets
3. Replacement of windowpane
4. Refinishing furniture

C. **State adopted textbook**

1. *General Shop,* McGraw-Hill Book Co., Inc., Dallas, Texas

D. **Additional publications in the field**

1. *Coloring, Finishing and Painting Wood,* Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *Practical Electrical Wiring,* McGraw-Hill Book Co., Inc., Dallas, Texas
3. *Safe Living,* Chas. A. Bennett Co., Inc., Peoria, Illinois
4. *Exploring Power Mechanics,* Chas. A. Bennett Co., Inc., Peoria, Illinois
5. *Automechanics,* Chas. A. Bennett Co., Inc., Peoria, Illinois

GENERAL METALWORKING

A. **Course content**

1. History and development of metals and the metals industry
2. Occupational opportunities and information
3. Selecting and planning metalworking activities
4. Selection and care of materials
5. Tools and equipment
6. Cutting and filing
7. Bending and forming
8. Taps and dies
9. Metal spinning
10. Making castings
11. Heat treating
12. Decorating, polishing and finishing metal surfaces
13. Ornamental iron work
14. Sheet metal work
15. Introduction to machine tools
16. Introduction to welding
17. Safety

B. **Typical activities**

1. Wall lamp
2. Mailbox post and hanger

3. Cold chisel
4. Tackle box

C. State adopted textbooks

1. *General Shop*, McGraw-Hill Book Co., Inc., Dallas, Texas
2. *Industrial Arts for the General Shop*, Prentice-Hall Inc., Englewood Cliffs, N. J.
3. *General Metals: Principles, Procedures, Projects*, Prentice-Hall, Inc., Englewood Cliffs, N. J.
4. *Basic Metalwork*, Text Ed., Steck-Vaughn, Austin, Texas

D. Additional publications in the field

1. *Metalwork, Technology and Practice*, McKnight &McKnight Publishing Co., Bloomington, Illinois
2. *General Shop Metal Work*, McKnight & McKnight Publishing Co., Bloomington, Illinois
3. *Basic Bench Metal Practice*, Chas. A. Bennett Co., Inc., Peoria, Illinois
4. *Industrial Arts Metal Work*, Chas. A. Bennett Co., Inc., Peoria, Illinois
5. *Sheet Metal Pattern Drafting and Shop Problems*, Chas. A. Bennett Co., Inc., Peoria, Illinois

POWER MECHANICS

A. Course content

1. History and development of power mechanics
2. Occupational opportunities and information
3. Safety practices
4. Tools and equipment
5. Power measures
6. Power transmissions
7. Fuels and lubricants
8. Steam engines
9. Internal combustion engines
10. Atomic and solar energy

B. Typical activities

1. Check and adjust small gas engine
2. Disassemble and reassemble small gas engine

C. State adopted textbooks

1. *General Shop*, McGraw-Hill Book Co., Dallas, Texas
2. *Automotive Mechanics*, McGraw-Hill Book Co., Dallas, Texas
3. *Automechanics*, Chas. A. Bennett Co., Inc., Peoria, Illinois

D. Additional publications in the field

1. *Exploring Power Mechanics*, Chas. A. Bennett Co., Inc., Peoria, Illinois
2. *Automotive Diagnosis and Tune-Up*, McKnight & McKnight Publishing Co., Bloomington, Illinois

ADVANCED INDUSTRIAL ARTS

The Advanced Industrial Arts course content should be expanded so as to provide functional skills and information for a two-semester experience. The Composite General Shop should be a prerequisite to study on the advanced level.

The sample course outline represents only one of the five major general shop courses which are as follows: Applied Electricity-Electronics, Woodworking, Metalworking, Mechanical Drawing, and Power Mechanics. However, any phase of Industrial Arts may be developed and used on the advanced level to suit the industrial complexion of the particular community.

APPLIED ELECTRICITY-ELECTRONICS

A. Course content

1. Historical developments
2. Occupational information
3. Safety practices
4. Terminology
5. Tools and equipment
6. Electron theory
7. Insulator and conductors
8. Electrical circuits
9. Types of electricity
10. Magnetism
11. Sources of electromotive force
12. Measuring and computing electrical units
13. Uses of electromotive force
14. Practical applications of electricity
15. House wiring and appliance repair
16. Electron tube
17. Application of electron tube
18. Semiconductors
19. Communications

B. Typical activities

1. Loudspeaker
2. Hi-Fi amplifier
3. Loudspeaker radio
4. Power supply unit

C. State adopted textbooks

1. *Principles of Electricity and Basic Electronics*, McKnight & McKnight Publishing Co., Bloomington, Illinois

2. *Understanding Electricity-Electronics,* McGraw-Hill Book Co., Inc., Dallas, Texas
3. *Basic Electricity,* Prentice-Hall Co., Inc., Englewood Cliffs, N. J.

D. Additional publications in the field

1. *Elements of Radio,* Prentice-Hall, Inc., Englewood Cliffs, N. J.
2. *Practical Electrical Wiring,* McGraw-Hill Book Co., Inc., Dallas, Texas
3. *Electronics in Action,* Chas. A. Bennett Co., Inc., Peoria, Illinois
4. *Basic Electronics,* Prentice-Hall, Inc., Englewood Cliffs, N. J.
5. *Energy, Electricity and Electronics,* McKnight & McKnight Publishing Co., Bloomington, Illinois

Woodworking (course content)*

Metalworking (course content)*

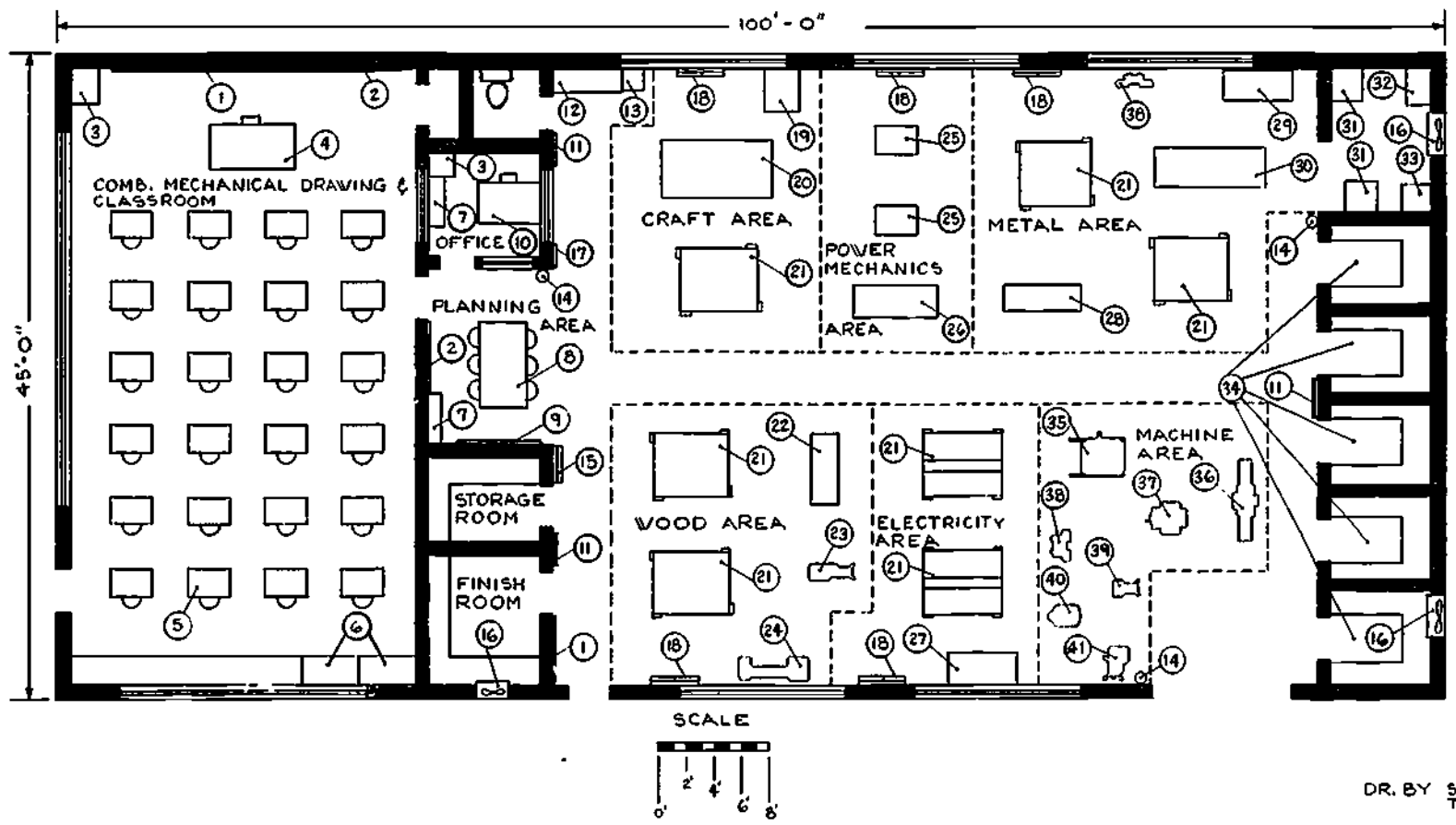
Power Mechanics (course content)*

Mechanical Drawing (course content)*

*Note: Any of the above or other areas of industry could be similarly developed in outline form as was done with the Electricity-Electronics division.

APPENDIX A

INDUSTRIAL ARTS COMPOSITE SHOP

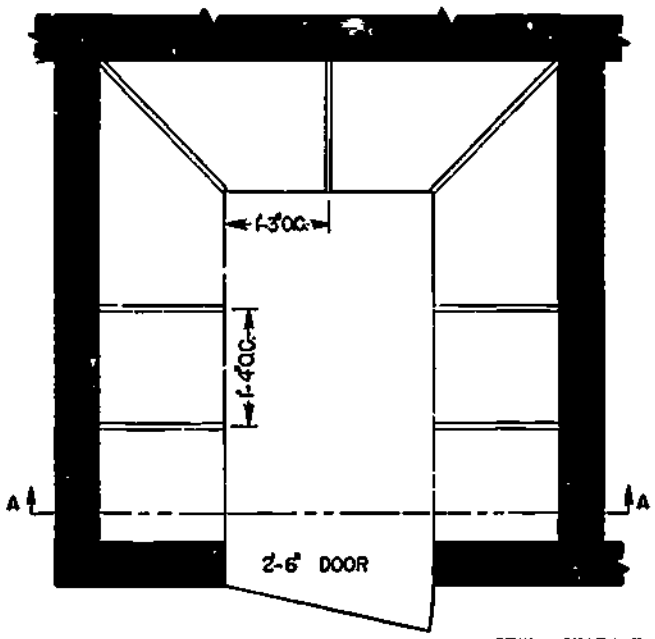


DR. BY SHERRY THOMPSON

1 CHALKBOARD
2 BULLETIN BOARD
3 FILE CABINET
4 INSTRUCTOR'S DRAWING TABLE AND CHAIR
5 STUDENTS DRAWING TABLE AND STOOL
6 STORAGE CABINETS
7 BOOK CASE
8 PLANNING TABLE
9 MAGAZINE RACK
10 OFFICE DESK
11 LADDER
12 WASH SINK
13 DRINKING FOUNTAIN
14 FIRE EXTINGUISHER
15 FIRST AID
16 VENTILATION FAN
17 POWER CONTROL PANEL
18 TOOL PANEL
19 KILN
20 CRAFT BENCH
21 WORK BENCH
22 GLUE BENCH
23 SCROLL SAW 24"
24 WOOD LATHE 12"
25 WORK BENCH
26 POWER MECHANICS BENCH
27 ELECTRICAL TEST BENCH
28 METAL LATHE 10"
29 SOLDERING BENCH
30 STAKE BENCH
31 WELDING BENCH
32 WELDING MACHINE 225AMP
33 OXYGEN ACETYLENE WELDING OUTFIT
34 PROJECT STORAGE
35 TABLE SAW 10"
36 JOINTER 8"
37 PLANER 18"
38 GRINDER 7"
39 COMB. BELT AND DISC SANDER
40 DRILL PRESS 15"
41 BAND SAW 14"

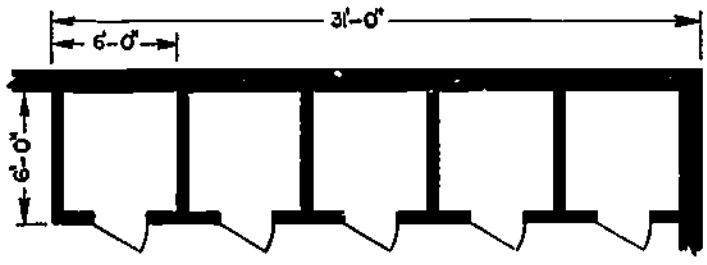
APPENDIX A-1

CLASS PROJECT STORAGE ROOMS

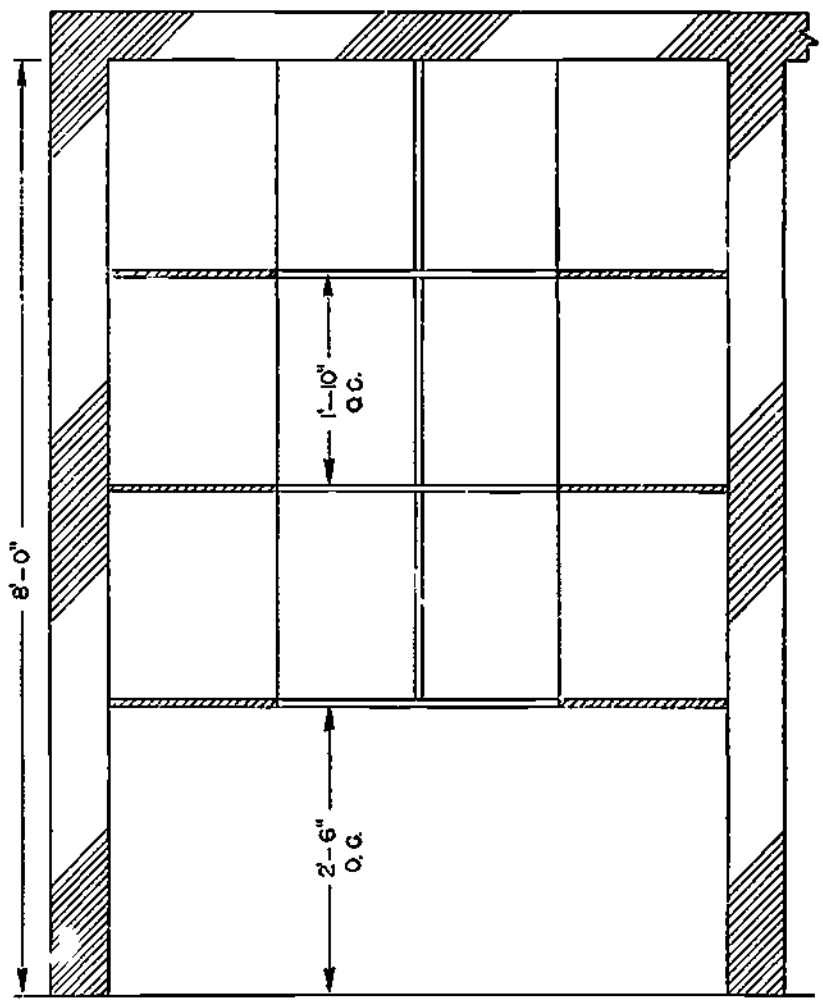


TOP VIEW DETAIL
SCALE: $\frac{3}{4}$" = 1'-0"

NOTE: STORAGE BINS TO BE MADE OF $\frac{3}{4}$" PLYWOOD



FLOOR PLAN
SCALE: $\frac{1}{8}$" = 1'-0"



DR BY. M H HARDIN

SECTION A-A
SCALE: $\frac{3}{4}$" = 1'-0"

APPENDIX B

Tools and Equipment

The following suggested lists of tools, machines and other equipment is presented as a guide based on approximate needs for the different units which may be included in the Composite General Shop and those for the General Shop in a Major Area.

It is suggested that school authorities preparing lists of tools and equipment be alert when submitting the items for competitive bids. Carefully written specifications must be included to insure good quality tools and equipment.

MECHANICAL DRAWING

Equipment for Combination and Unit Course

Description	Quantity
Chalkboard Set, complete with compass, T-square, straight edge, protractor and triangle	1 set
Drawing Board, 18" x 24"	24
Erasing Shield	24
Irregular Curve, 8½"	24
Paper Cutter, 24"	1
Pencil Sharpener, self feeder, draftsman	1
Protractor, 6", ½ degrees, semi-circular solid square edge	24
Scale, architect's, 12", engine divided	24
Triangle, 30° x 60°, 10"	24
Triangle, 45° x 45°, 10"	24
T-Square, 24"	24
Drafting Storage Cabinet	1
Drawing Table, student's	24
Drawing and Demonstration Table, instructor's	1
Filing Cabinet, 4 drawer, legal size with lock	1
General Storage Cabinet	1
Stools for Drawing Tables, adjustable heights from 18" to 27"	24
Teacher's adjustable upholstered chair with ring footrest, adjustment from 20" to 28"	1
TOTAL APPROXIMATE COST OF MECHANICAL DRAWING EQUIPMENT	$3,108.48
(Optional equipment for unit course)	
Drawing Set	24
Lettering Set	4

Whiteprinter and Developer Combination, 42" capacity	1
TOTAL APPROXIMATE COST OF OPTIONAL EQUIPMENT FOR UNIT COURSE	$ 845.00

ELECTRICITY-ELECTRONICS

Hand Tools and Testing Equipment

Description	Quantity Composite Shop	Quantity Major Area Shop
Bit, auger, ¼"-1" x 16ths	0	1 set
Blades, hack saw, 12", HS: 18T 24T	0	1 doz.
Brace, 10", open ratchet	0	2
Buzzers	6	18
Capacitance Tester, wired	0	1
C-Clamp: 4", 6"	0	4 each
Chisel, wood: ¼", ½", ¾", 1"	0	1 each
Cold Chisels: ¼", ⅜", ½"	0	1 each
Combination Box and Open End Wrenches, set of 11, 3/8"-1"	0	1 set
Combination India Oil Stone, 6" x 2" x 1"	0	1
Compass, huntsman	1	4
Conduit Bender: ½", ¾"	1 each	1 each
Countersink, rose, ¾", brace	0	1
Crimper Cutter	2	4
Dividers, wing, 8"	0	2
Drill, S.S. Jobbers type, 1/16"-1/4" x 64ths	1 set	2 sets
End Nipper, 6"	0	1
Extension Cord, heavy, 25'	1	2
File, auger bit, 7"	0	2
File Card	0	4
File Handles, assorted sizes	0	1 doz.
File, mill, bastard cut, 10"	0	2
File, round, metal, 10"	0	2
File, round, wood, bastard cut, 10"	0	2
File, wood, cabinet, 10", half round	0	2
Galvanometer, 50-0-50 scale, 2½"	1	2
Hammer, ball pein, 8 oz., 12 oz.	0	1 each
Hammer, nail, 13 oz.	2	4
Hammer, soft face, 8 oz., resilient celluloid	0	1
Hand Drill, 3/18" cap.	1	2
Headphone, double	1	2
Hexnut Driver	1 set	2 sets

Knife, Sloyd	4	8
Magnets, bar, 2", permanent	1 set	2 sets
Magnets, lab set	1 set	2 sets
Mallet, rubber, 20 oz.	0	1
Mats, rubber, for test bench	1	2
Nail Set: 1/32", 3/32"	0	2
Needle Files, 12-6¼" long	1	1
20,000 Ohms Volt Multimeter, wired	0	2
Oscilloscope, 5", wired	0	1
Plane, block, 6"	0	2
Pliers, 6½", electrician's sidecutting	2	4
Pliers, 8½", lineman	2	4
Pliers, 6", needlenose with cutter	2	4
Pliers, 6", oblique	2	4
Punch, center, 1/8" x 4"	0	1
Punch, drive-pen, 1/8"	0	1
Rivet Set, 12 oz.	0	1
Rule, bench, 24"	2	4
Rule, 6', folding with brass slide	2	4
Saw, back, 14"	0	2
Saw, compass, 12"	0	1
Saw, coping, 6½"	0	1
Saw, crosscut, hand, 22", 10 pt.	0	1
Saw, hack, adjustable, 10", 12"	0	2
Saw, rip, hand, 26", 5½ pt.	0	1
Screwdriver, electrician's, 8"	6	10
Screwdriver, offset, 4", 9/32" tip	1	1
Screwdriver, Phillips:		
No. 4, No. 5-9, No. 10-16	1 each	2 each
Signal Generator, wired	0	1
Signal Tracer, wired	0	1
Snips, aviation, left and right, 10"	0	2
Snips, tinner's, 3" cut	0	2
Soldering Cooper, electric, 6½",		
3/16" tip, 25 watts	3	3
Soldering Gun	1	4
Square, aluminum, body 24" x 2",		
tongue 16" x 1½"	0	1
Square, combination try, 12"	0	3
Square, try, 10"	0	2
Tap and Die Set, includes NC and NF	0	1 set
Tester, electric circuit	2	6
Test Leads	1	4
Transformer, doorbell, 110/120 volt		
primary, 10V secondary	6	12
Tube Tester, wired	0	1
Vacuum Tube Voltmeter, wired	0	1
Voltmeter-Ammeter Combination		
0-25 amps AC 0-125/250 VAC		
0-50 amps AC 0-150/600 VAC	1 each	0

Wire Gauge	1	2
Wrench, adjustable: 4", 8"	1 each	2 each
Wrench, Allen type	1 set	2 sets
TOTAL APPROXIMATE COST OF ELECTRICITY-ELECTRONICS HAND TOOLS	$238.80	$1,110.70
ELECTRICITY BENCHES		
Angle Steel Stool, 14" top, 24" high	6	10
Test Bench, complete with panel and bench, 6'	1	2
Workbench, 64" x 54" x 2¼", each complete with 2 woodworking vises	1	2
Workbench, 64" x 54" x 2¼", each complete with 2 metalworking utility-type vises	1	2
TOTAL APPROXIMATE COST OF ELECTRICITY BENCHES	$606.80	$1,204.00

WOODWORKING

Hand Tools

Description	Quantity	
	Composite Shop	Major Area Shop
Awl, scratch, 6"	3	3
Bench Stops, T-shape	4	8
Bit Auger, ¼"-1" x 16ths	1 set	2 sets
Brace, 10", open ratchet	2	4
Burnisher, 4½" blade	1	2
Caliper, 6", I.S. solid nut	1	3
Caliper, 6", O.S. solid nut	1	3
Chisel, pocket type:		
¼"		
⅜"		
½"		
¾"	2 each	4 each
1"		
1 ¼"		
1 ½"	1 each	2 each
Chisel, wood turning:		
1" skew		
½" skew		
¾" gouge		
½" gouge		
½" rd. nose		
½" spear point		
½" parting	1 set each	3 sets each
C-Clamp:		
4"		
6"	4 each	8 each

Clamp, I-bar:		
30"		
36"		
48"	4 each	10 each
Clamp, hand: Length / Jaw Opening		
12" / 8½"		
14" / 10"		
16" / 12"	4 each	10 each
Clamp, miter frame, 24" capacity	1	3
Countersink, rose, ¾", brace	1	2
Divider, wing:		
6"		
8"	1 each	2 each
Doweling Jig, 3/16"-1/2" guides	1	1
Drill, S.S. Jobber's type,		
1/16"-1/4" x 64ths	1 set	3 sets
Drill, fluted, 1/16"-11/16" (set of 8)	1 set	2 sets
Drill, hand, 3/8" capacity	2	4
Expansion Bit, 7/8"-3"	1	2
File Card, steel back frame	3	6
File Auger Bit, 7"	1	3
File, cabinet, half round: 10", 12"	2 each	6 each
File, saw, slim taper, 7"	2	3
File, saw, extra slim taper, 7"	2	3
File, Mill, bastard cut, 10"	2	3
File, flat wood, 10"	2	4
File, round wood, bastard cut, 10"	2	4
File, half round wood, 10", bastard cut	2	4
Handles, file, assorted sizes	2 doz.	4 doz.
Gouge, auger bit	1	2
Gouge, marking	2	6
Bits, gimlet, assorted sizes	5	5
Glass Cutter	2	2
Gouge, outside ground with handle:		
¼"	1	2
½"	1	2
¾"	0	2
1"	1	2
1½"	0	2
Gouge, inside ground, with handle:		
⅛"		
⅜"		
⅝"		
⅞"		
1¼"		
1½"	1 each	2 each
Hammer, nail: 13 oz., 16 oz.	2 each	4 each
Hammer, tack, 5 oz.	1	2
Hammer, upholsterer's, 7 oz.	1	2
Hatchet, half, 3⅝"	1	1

Knife, Sloyd, 3⅛" Blade	3	6
Knife, putty, elastic blade, 3¾"	2	3
Level, carpenter's, hardwood,		
1 level and 1 plumb, 24"	1	2
Mallet, carpenter's 2½" x 3" x 5"	4	8
Nail Set, sizes: 1/32" 3/32"	1 each	3 each
Oiler, ⅓ pt., straight spout	1	2
Plane, block, 6"	3	8
Plane, smooth, 8"	2	8
Plane, jack, 14"	2	6
Pliers, combination, 8"	2	4
Rasps, half round, 10", bastard	2	4
Rule, bench, 24" x 1¼" maple	6	12
Rule, folding, 6', brass slide	2	6
Saw Clamp, 9½"	1	1
Saw, coping, 6½"	4	4
Saw, compass, 12"	1	2
Saw, back, 14"	4	8
Saw, crosscut, hand, 22", 10 pt.	2	4
Saw, rip, hand, 26", 5 pt.	2	4
Saw, set (for hand saws)	1	1
Saw, miter box, 28" x 5"	1	1
Scraper, cabinet, 2¾" x 11½"	1	4
Scraper, hand, 3" x 5"	4	8
Screwdriver, standard:		
3"	1	2
4"	1	2
6"	2	4
12"	1	3
Screwdriver, Phillips:		
No. 4		
No. 5-9		
No. 10-16	1 each	2 each
Screwdriver Bits, ¼"	1	2
Spoke Shave, 10" x 2⅛"	1	4
Square, carpenter's, aluminum,		
body 24" x 2", tongue 16" x 1½"	2	4
Square, combination try, 12"	3	6
Square, try:		
10"	4	10
8"	0	2
6"	0	2
Stone, India Combination Oil, 6" x 2" x 1"	1	4
Stone, slip, medium, 4½" x 1¾" x ¼" x 1/16"	1	2
Surform, plane type	0	4
Surform, file type	0	4
T-Bevel, sliding, 10"	1	4
Wrecking Bar	1	2
Wrench, adjustable: 6", 10"	1 each	2 each
Wrench, Allen type	1 set	2 sets

Woodcarving Set	2 sets	1 set
TOTAL APPROXIMATE COST OF WOODWORKING HAND TOOLS	$799.21	$1,770.40

WOODWORKING

Power Tools

Description	Quantity	
	Composite Shop	Major Area Shop
Drill Press, 15" floor model	1	1
Grinder, 7", complete with pedestal	0	1
Jointer, 8"	1	1
Lathe, wood, 12" swing, complete with accessories	1	3
Planer, 18"	1	1
Sander, Belt, 4" x 24"	0	1
Sander, belt and disc combination	1	1
Sander, finishing, ⅛" orbital action	0	2
Saw, Band, 14"	1	1
Saw, blades and dado heads for 10"	1 set	1 set
Saw, scroll, 24"	1	2
Saw, table, 10"	1	1
Shaper, wood, complete with accessories	0	1
Shield, safety eye, 6" visor type	1	3
TOTAL APPROXIMATE COST OF WOODWORKING POWER TOOLS	$3,980.65	$6,780.55

WOODWORKING

Benches

Description	Quantity	
	Composite Shop	Major Area Shop
Glue and Stain Bench	1	1
Workbench, 64" x 54" x 2¼", each complete with 4 woodworking vises	2	9
TOTAL APPROXIMATE COST OF WOODWORKING BENCHES	$347.00	$1,181.00

METALWORKING

Hand Tools

Description	Quantity	
	Composite Shop	Major Area Shop
Bending Jig, metal, capacity ½" x 1"	1	2
Blades, jeweler's saw, 5"	2 doz.	4 doz.
Chisel, cape, ¼"	1	2

Chisel, cold:		
¼"		
⅜"		
½"		
¾"		
1"	1 each	2 each
Chisel, diamond point, ¼"	1	2
Chisel, round nose, ¼"	1	2
Countersink, ½", HS steel	2	4
Dividers, wing type, 8"	2	6
End Nipper, 6"	1	3
File Cards	6	12
File, half round, bastard, 10"	2	6
File, handles, assorted sizes	1 doz.	3 doz.
File, round bastard:		
8"	2	4
10"	1	4
File, mill bastard:		
8"	2	4
10"	3	6
12"	1	4
Gage, center	0	1
Gage, sheet metal	1	2
Goggles, clear	4	6
Grinding Wheel Dresser	1	2
Groover, hand:		
3/8"		
5/16"		
7/32"	1 each	4 each
Hack Saw, adjustable	3	6
Hack Saw Blades, 12" HS:		
18-T		
24-T	3 doz. each	6 doz. each
Handy Seamer:		
⅞" x 3½"		
6⅞" x 10 ¼"	1 each	2 each
Hammer, ball pein:		
4 oz.	1	3
8 oz.	4	6
16 oz.	2	8
32 oz.	0	2
Hammer, blacksmith's, 40 oz.	0	1
Hammer, metalcraft forming with handle	4	4
Hammer, rawhide, 7½ oz.	1	3
Hammer, riveting, 12 oz.	1	3
Hammer, setting, 12 oz.	2	3
Mallet, rubber, 20 oz.	1	3
Mallet, tinner's, 2½" x 6"	3	6
Melting Ladle, 6"	1	1

Metal Punch Kit	1	3
Micrometer, 0-1"	1	3
Oiler, beach, 5" spout	1	2
Pliers, combination, 8"	2	4
Pliers, needle nose, 6", no cutter	1	3
Pliers, side cutting, 6"	1	3
Punch, center, 1½" x 5"	1	4
Punch, hollow, 1", 1¼", 1½"	1 set	2 sets
Punch, pin, 1/8" x 3/8"	1 set	2 sets
Punch, prick, 3/8" x 5"	1	3
Punch, taper, 1/8", 3/16", 1/4"	1 set	2 sets
Rivet Set, sizes 8, 6, 4, 2	1 set	2 sets
Saw Frame, jeweler's, 5" deep, 5" saw	2	2
Scratch Awl, 6"	6	10
Screwdriver, Phillips:		
No. 4		
No. 5-9		
No. 10-16		
No. 18-up	0	1 each
Screwdriver: 4", 6", 8", 12"	0	1 each
Shield, visor type, 6"	3	6
Snips, aviation, left and right, 10"	3 each	6 each
Snips, tinner's, 3" cut	3	6
Soldering Copper, 1 lb. with handle	2	4
Square, aluminum, body 24" x 2", tongue 16" x 1½"	2	4
Square, aluminum, body 12" x 1½" tongue 8" x 1"	2	6
Square, combination, 12", with square and center head	2	4
Tap and Die, NC and NF	1 set each	1 set each
Tongs, curved lip, 20", ½" lip	0	1
Tongs, gad, 24"	0	1
Tongs, straight lip, 20", ½" lip	0	1
Vise, drill press	1	1
Wrench, adjustable: 4", 8"	1 each	1 each
Wrench, combination box and open end, 3/8"-1", set of 11	1 set	1 set
TOTAL APPROXIMATE COST OF METALWORKING HAND TOOLS	$369.00	$819.55

METALWORKING

Machines and Equipment

Description	Quantity	
	Composite Shop	Major Area Shop
Adjustable Bar Folder, 20"	1	1
Anvil	0	1
Bender, 12" cap., complete with accessories	0	1

Box and Pan Brake, 24"	1	1
Combination Rotary Machine, complete with accessories	0	1
Drill, electric hand, 3/8" capacity	0	1
Drill Press, 15"	0	1
Electric Arc Welder	1	2
Furnace, heat treating	0	1
Furnace, soldering	1	1
Grinder-Buffer Combination	1	0
Grinder, electric, 7", pedestal type	1	1
Hacksaw, metal cutting	1	1
Helmets, welding	2	4
Metal Lathe, 10" complete with accessories	1	2
Milling Machine, horizonal, complete with accessories	0	1
Shears, cut-off, 16 ga. cap.	0	1
Slip Roll, 24"	1	1
Spot Welder	0	1
Squaring Shears, foot type	0	1
Stake, beakhorn, 38"	1	2
Stake, bevel edge square, 2½" x 4½"	1	1
Stake, blowhorn, 27"	1	1
Stake, conductor, 28"	1	1
Stake, hollow mandrel, 40"	1	1
Stake, needle case, 18½"	1	1
Welding and Cutting Outfit	1	1
TOTAL APPROXIMATE COST OF METALWORKING MACHINES AND EQUIPMENT	$3,209.70	$8,429.45

METALWORKING

Benches

Description	Quantity	
	Composite Shop	Major Area Shop
Machine Bench, 60" x 40" x 32"	0	2
Soldering Bench, 60" x 24" x ¼"	1	1
Stake Bench, 96" x 40" x 2¼"	1	1
Workbench, 64" x 54" x 2¼", Complete with 4 woodworking vises each	1	4
Workbench, 64" x 54" x 2¼", complete with 4 machinist's vises each	1	4
TOTAL APPROXIMATE COST OF METALWORKING BENCHES	$552.00	$1,299.00

POWER MECHANICS

Hand Tools

Description	Quantity	
	Composite Shop	Major Area Shop
Bar, pry	1	1
Bits, twist drill, H.S., 1/16"-1/2" x 32nds	0	1 set
C-Clamps: 6", 8"	0	4 each
Chisel, cold: ¼", ½", ¾"	1 each	2 each
Drill, electric hand, ⅜" capacity	0	1
Extractors, screw, set of 5	1 set	1 set
Feeler Gauges	1 set	2 sets
File, flat, double cut, 6", 10"	1 each	2 each
File, mill, bastard cut, 6", 10"	1 each	2 each
File, round, metal, bastard cut, 10"	1	2
File, saw: 5", 6"	1 each	2 each
Flywheel Holder	1	2
Flywheel Puller	1	2
Hacksaw, adjustable	0	2
Hammer, ball pein, 12 oz., 16 oz.	1 each	2 each
Hammer, brass, 8"	1	2
Impact Nuts	2	4
Mallet, rawhide, 6 oz.	1	2
Mallet, rubber, 20 oz.	1	2
Piston Ring Compressor	1	2
Pliers, combination, 8"	2	4
Pliers, diagonal, 6"	1	2
Pliers, needle nose, without cutter, 6"	2	4
Pliers, snap ring	1 set	2 sets
Pliers, Tru Arc	1	2
Pliers, vise grip, 7", 1⅝" opening	1	2
Pliers, waterpump	1	2
Punch, center, 4", 3/32" point	1	2
Punch, pin, 8", sizes: ⅛", ¼"	1 each	2 each
Screwdriver, offset: 3", 4", 5", 6"	1 each	2 each
Screwdriver, Phillips:		
No. 4		
No. 5-9		
No. 10-16		
No. 18-larger	1 each	2 each
Screwdriver, standard:		
4", 6", 8", 12"	1 each	2 each
Tin Snips, aviation, left and right	0	1 each
Valve Guide Reamers	1	2
Valve Seat Cutter	1	2
Valve Spring Compressor	1	2
Wrench, adjustable: 4", 8"	1 each	2 each
Wrench, Allen	1 set	2 sets
Wrench, combination, ⅜"-1", set of 11	1 set	3 sets

Wrench, pipe, 12"	1	2
Wrench, socket set, ¼" square drive	1 set	2 sets
Wrench, socket set, ½" drive	1 set	2 sets
Wrench, spark plug, socket	1 set	2 sets
Wrench, Torque, 0-100 ft. lb. capacity	1	2
TOTAL APPROXIMATE COST OF POWER MECHANICS HAND TOOLS	$172.05	$422.65

POWER MECHANICS

Equipment

Description	Quantity	
	Composite Shop	Major Area Shop
Coil Condensor Magnets	1	1
Compression Tester	1	1
Small Engine Tachometer	1	1
Swivel Base Vise	2	6
Test Stand	1	3
TOTAL APPROXIMATE COST OF POWER MECHANICS EQUIPMENT	$102.70	$212.70

POWER MECHANICS

Benches

Description	Quantity	
	Composite Shop	Major Area Shop
Power Mechanics bench, 1¾" x 24" x 36"	2	8
Power Mechanics Test Bench, 6" x 28" x 1¾" with storage	1	2
TOTAL APPROXIMATE COST OF POWER MECHANICS BENCHES	$400.00	$2,000.00

CRAFTS

Leatherworking Equipment

Description	Quantity for Composite Shop
Awl, automatic	1
Awl, scratch, 2"	2
Bone Folder, 6"	2
Carving Tools, 100 stamps, assorted	1 set
Compass, leather	1
Creaser, edge: No. 1, 3, 5	1 each

Drive Punch, round: 13/32", 9/16"	1 each
Edger: 1/8", 5/32", 7/32"	1 each
Edger, quick cut: 1/32", 1/16"	1 each
Embossing Wheel Carriage, complete with 8 wheels	1
Eyelet Setter	1
Fid, 2¼" blade	1
Head Knife, 4½" x 2⅜"	1
Knife, skiving	3
Lacing Pliers, 5¾"	2
Leather Shears: 8", 10"	1 each
Modeler, assortment of 4	4
Mallets, rawhide	6
Punch, revolving, 8"	3
Riveter: 5/16", 3/8", 7/16"	3 each
Skife	2
Snap Fastener Set	1
Space Marker, 7"	1
Square, 12" x 1" x 7" x 1"	2
Stippler	1
Swivel Cutter: ¼", ½" blades	3 each
Thonging Chisel:	
3/32" single prong	
3/32" double prong	
3/32" three prong	
3/32" four prong	
1/8" single prong	
1/8" double prong	
1/8" three prong	
1/8" four prong	1 each
TOTAL APPROXIMATE COST OF LEATHERWORKING EQUIPMENT	$216.10

CRAFTS

Plastic Equipment

Description	Quantity for Composite Shop
Asbestos Gloves	1 pair
Coping Saws	3
File Cards	2
Files, flat mill, 6"	3
Files, rat tail, 6"	2
Files, rat tail, 10"	2
Files, triangle, 6"	3
Flexible Shaft Carving Tool, electric, complete with accessories	1
Heating Oven, portable	1
Rule, bench, 1'	2
TOTAL APPROXIMATE COST OF PLASTIC EQUIPMENT	$76.10

CRAFTS
Ceramics Equipment

Description	Quantity for Composite Shop
Kiln, electric, complete with steel base	1
Modeling Tool, 8", assorted set of 12	1 set
Molds	10
Spray Outfit	1
Wedging Board	2
TOTAL APPROXIMATE COST OF CERAMICS EQUIPMENT	$687.00

CRAFTS
Benches

Description	Quantity for Composite Shop
Angle Steel Stool, 14" top, 24" high	6
Craft Unit, 96" x 48" x 2¼", with 12" x 12" center riser, 32" high	1
Workbench, 64" x 54" x 2¼", complete with 2 utility type vises	1
TOTAL APPROXIMATE COST OF BENCHES	$444.80

PLANNING AREA

Description	Quantity Composite Shop	Major Area Shop
Planning Table, 72" x 42" x 1¾", 32" high	1	1
Chairs for Planning Table	6	6
TOTAL APPROXIMATE COST OF PLANNING AREA	$233.70	$233.70

ADDITIONAL EQUIPMENT

Description	Quantity Composite Shop	Major Area Shop
Aprons, students'	24	24
Bench Duster, 8"	8	8
Blackboard, portable	1	1
Book Case	1	1
Brooms	6	6
Dust Collector-Vacuum Combination	1	1
Filing Cabinet	1	1
First Aid Kit	1	1
Office Desk	1	1
Trash Can	2	2
TOTAL APPROXIMATE COST OF ADDITIONAL EQUIPMENT	$493.35	$493.35

APPENDIX C
Unit Rotation Chart

NAME	12 days	30 days	30 days	30 days	30 days	30 days	18 days
Area I	ORIENTATION AND DRAWING	Crafts	Electricity	Metal	Wood	Power Mechanics	INTRODUCTION TO INDUSTRIAL PROCEDURES
Area II		Electricity	Metal	Wood	Power Mechanics	Crafts	
Area III		Metal	Wood	Power Mechanics	Crafts	Electricity	
Area IV		Wood	Power Mechanics	Crafts	Electricity	Metal	
Area V		Power Mechanics	Crafts	Electricity	Metal	Wood	

APPENDIX D
Material Requisitions

Date	Projects	Materials	Size	Unit Cost	Total Cost

APPENDIX E

Name _____ Date _____

Project _____ Date Completed _____

Materials Needed:

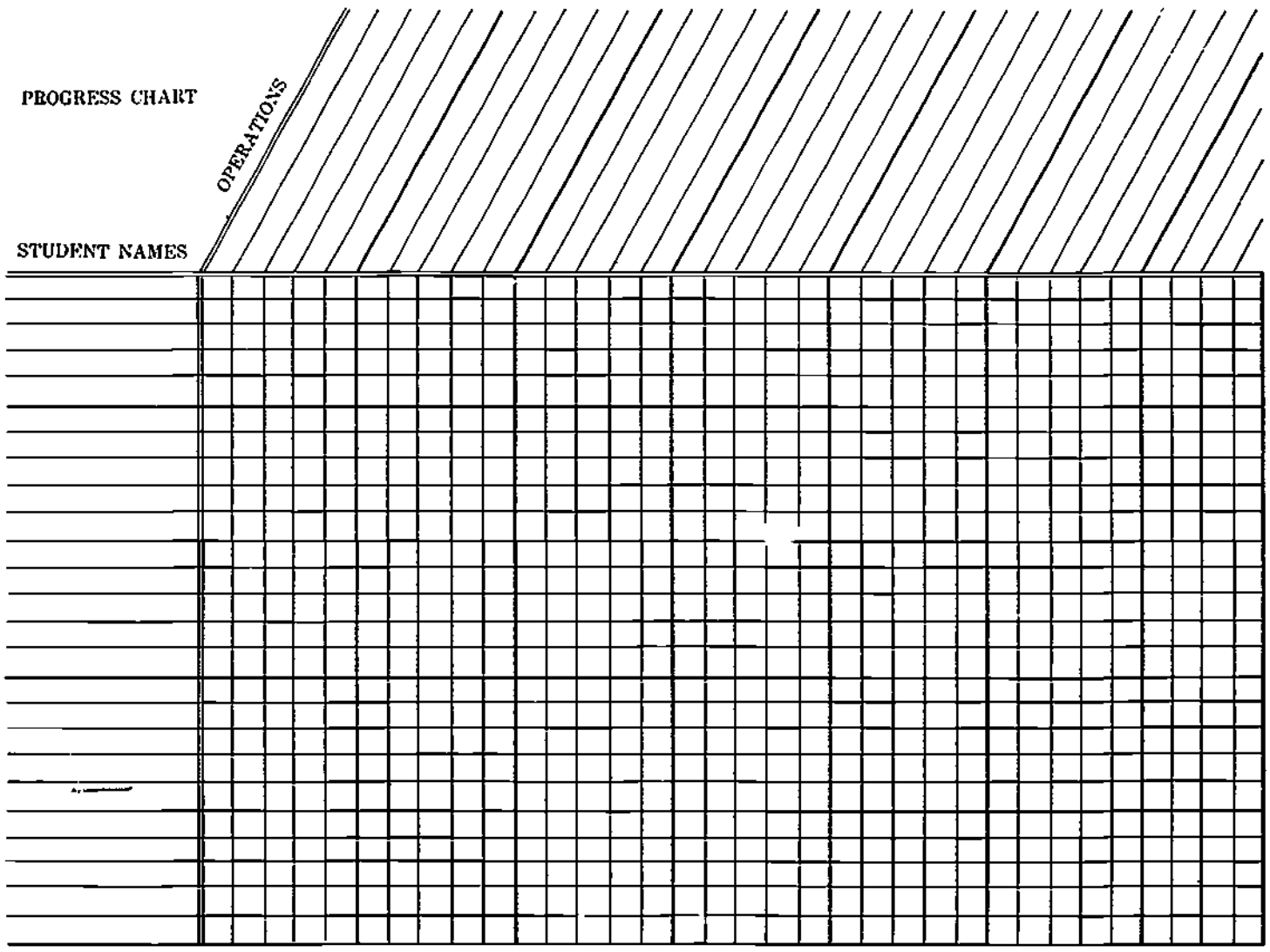
No. Pcs.	Kind of Mat.	Size	Description	Approx. Cost

Steps of Procedure:

1.
2.
3.
4.
5.
etc.

References:

APPENDIX F



APPENDIX G

SUPPLIES INVENTORY

Sheet No._____ of _____ sheets

School_____ Course or Unit_____ Date_____ Instructor_____

Item	Description	Purchased from: (Name and Address)	Date Purchased	Quantity or Amt.	Cost		On Hand June 19____	Needed for Next Year
					Unit	Total		

APPENDIX H
SHEET METAL

Joh Assignment: Make Box for Fernery.

LEARNING UNITS INVOLVED IN THIS JOB:

From this assignment you will learn some new skills and how to use them; also you will practice those skills with which you are familiar.

The number of the instruction sheet, or the page and title of the book which will explain how to perform these operations, is indicated after each item. Most students should be able to do these tasks without additional help; but, if you cannot, consult your teacher.

What you should know:

1. How to make a complete layout, scribing all lines and properly marking all fold or break lines. (48)
2. Check all measurements carefully and call instructor for his inspection before you go further.
3. How to cut outside line with straight snip. (45)
4. How to make hems. (47)
5. How to make right angle bends on side. (46)
6. How to bend the sides to shape. (46)

TEST OF WORKMANSHIP:

After finishing the job, test your work on the following points:

1. Are corners soldered and riveted firmly?
2. Are there sharp edges?
3. Does box sit squarely on ground?
4. Is the box square?

QUESTIONS ON RELATED INFORMATION:

Answer the following questions and hand them in before starting the next job:

1. Explain how to bend sheet metal by hand process.
2. Name some of the metals commonly used in sheet metal work.
3. Name methods used for applying tin coating to sheet metal and explain each briefly.
4. Write a brief summary of what was done and learned on this job.

REFERENCE:

A. Dragoo, *General Shop Metal Work*, Book 62.

NAME OF SCHOOL

Industrial Arts Project No.....

SHEET METAL

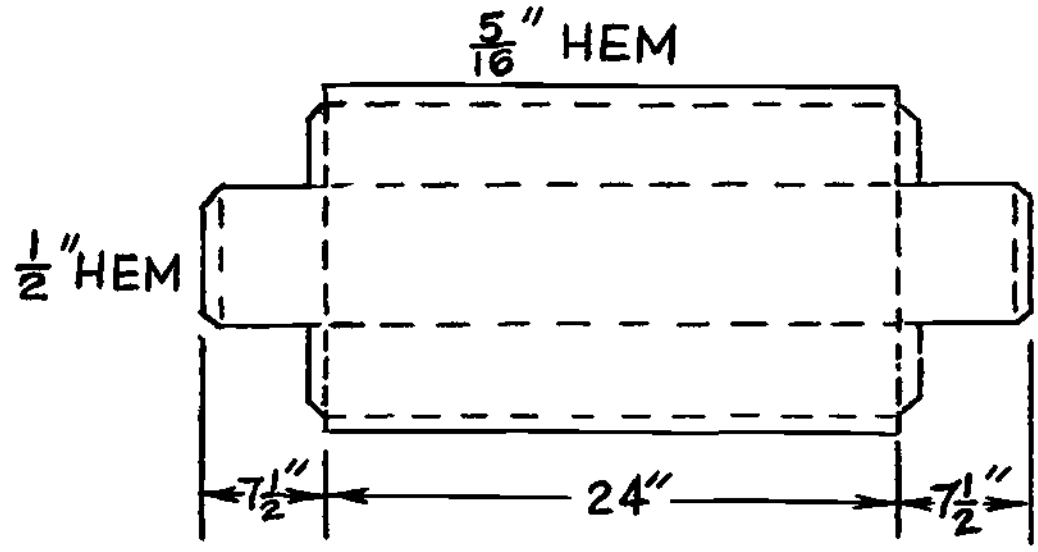
Department Date.....

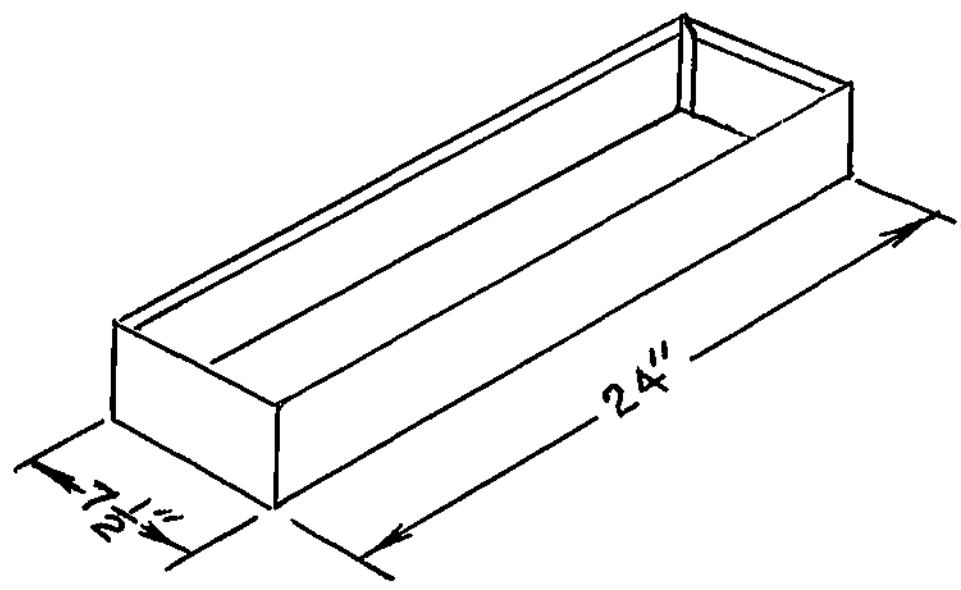
Job Assignment: *Make Box for Fernery*

Student's Name: .....

Specifications: The main body of this box is to be made of a single piece of metal according to dimensions specified in the drawing. Solder all corners.

Drawing:





VT 001 345
Women Workers in California, 1949-1967.

California State Dept. of Industrial Relations, San Francisco. Div. of Labor Statistics and Research
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Jan68 25p.

*WORKING WOMEN; *TABLES (DATA); *EMPLOYMENT STATISTICS; *LABOR FORCE
CALIFORNIA

Twenty charts represent the estimated number of women wage and salary workers in non-agricultural establishments, by industry, in California annually. Estimates, in thousands, are listed by month. A two-page summary lists the annual averages 1949-1966 according to industry and year. The least number of women were employed in shipbuilding and the most in trade. The average annual number of women wage and salary workers in non-agricultural establishments has grown from 1,640.0 to 2,295.2 (in thousands) between 1960-1967. (FP)

VT 001 345

212-4
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VT001345

STATE OF CALIFORNIA
Ronald Reagan, Governor

DEPARTMENT OF INDUSTRIAL RELATIONS
Albert C. Beeson, Director

WOMEN WORKERS IN CALIFORNIA

1949...1967

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January 1968

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Revised 6/1/69

Rev. 8/67

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____1. Methods of data collection and handling given.
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____2. Sample or population given.
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____4. Data treated pertinent to 1 and 2.
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Multiple Article Documents
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____2. Supporting data or references for statements given.

Proceedings
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____3. Speakers and discussants identified.

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____2. User group defined or implied.

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ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA
ANNUAL AVERAGES, 1949-66[a]

(In thousands)

Industry	1958	1959	1960	1961	1962	1963	1964	1965	1966
Total			1640.0	1690.7	1782.4	1860.7	1942.0	2028.1	2180.9
Mineral extraction							2.1	2.2	2.1
Construction[b]							17.8	17.6	17.1
Manufacturing	284.2	310.5	316.9	319.2	340.4	337.9	333.2	340.9	377.7
Nondurable goods	132.1	139.1	141.0	140.5	145.2	145.9	149.5	150.4	158.1
Durable goods	152.1	171.4	175.9	178.7	195.2	192.0	183.7	190.5	219.6
Food and kindred products	45.1	45.4	45.5	44.5	44.6	44.1	45.2	44.7	47.2
Fish canning and preserving	4.2	3.9	4.0	4.1	4.2	3.6	3.6	3.4	3.4
Fruit and vegetable canning and preserving	19.6	19.9	19.9	19.2	19.1	19.4	20.3	19.4	21.2
Other food and kindred products	21.3	21.6	21.6	21.2	21.3	21.1	21.3	21.9	22.6
Textile mill products	2.0	2.1	2.2	2.3	2.5	2.7	2.8	2.7	2.7
Apparel and other fabricated textile products	42.7	46.2	46.8	46.5	48.6	49.5	51.6	51.9	53.7
Paper and allied products	6.2	6.5	6.7	6.8	7.0	7.0	6.9	6.9	7.1
Printing, publishing, and allied industries	16.2	17.2	18.2	18.2	18.9	19.2	20.0	20.9	21.8
Chemicals and allied products	6.9	7.4	7.8	8.2	9.0	9.5	9.6	9.6	10.2
Petroleum refining and related industries	3.9	4.2	4.1	3.9	4.0	3.8	3.6	3.6	3.7
Rubber and miscellaneous plastics products	6.4	7.5	7.3	7.7	8.2	7.8	7.5	7.7	9.0
Leather and leather products	2.7	2.6	2.4	2.4	2.4	2.3	2.3	2.4	2.7
Ordnance and accessories	8.4	11.6	13.9	16.0	19.3	19.4	18.5	17.0	17.9
Lumber and wood products, except furniture	2.7	3.1	3.3	3.1	3.0	2.7	2.8	2.8	2.9
Furniture and fixtures	4.8	5.3	5.1	5.2	5.6	5.9	6.1	6.0	6.1
Stone, clay, and glass products	6.9	7.1	7.5	7.3	7.6	8.0	8.3	8.5	8.8
Primary metal industries	4.3	4.7	4.6	4.4	4.5	4.4	4.1	4.1	4.4
Fabricated metal products, except ordnance, machinery, and transportation equipment	13.9	15.3	14.9	14.4	15.5	15.6	15.8	15.8	17.6
Machinery, except electrical	13.1	15.1	15.3	16.4	18.6	17.6	18.0	20.2	24.5
Electrical machinery, equipment, and supplies	39.5	49.1	56.5	60.6	69.3	66.3	59.7	63.0	76.3
Transportation equipment	44.4	44.1	38.3	34.2	32.4	31.2	29.4	29.9	35.4
Motor vehicles and equipment	2.0	2.0	2.1	2.0	2.2	2.1	2.3	2.5	2.5
Aircraft and parts	41.7	41.2	35.4	31.5	29.4	28.2	26.0	26.3	31.7
Ship and boat building and repairing	.4	.4	.4	.4	.3	.3	.3	.3	.4
Other transportation equipment	.3	.5	.4	.3	.5	.6	.8	.8	.8
Instruments and related products	6.7	7.9	8.2	8.3	9.3	10.1	9.6	10.3	11.5
Miscellaneous manufacturing industries	7.4	8.1	8.3	8.8	10.1	10.8	11.4	12.9	14.2
Transportation; communication; electric, gas, and sanitary services			76.7	76.2	77.4	79.0	83.1	87.9	94.9
Trade			417.5	425.1	444.1	461.7	483.6	497.5	525.4
Finance, insurance, and real estate[c]							157.6	162.8	166.3
Services			350.2	366.9	390.7	422.4	451.4	477.1	512.4
Government[d]			330.3	350.9	370.9	392.0	413.2	442.1	485.0
Other industry[e]			148.4	152.4	158.9	167.7			

Other industry[e]			148.4	152.4	158.9	167.7			

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA
ANNUAL AVERAGES, 1949-66[a]—Continued
(In thousands)

Industry	1949	1950	1951	1952	1953	1954	1955	1956	1957
Manufacturing	159.3	172.4	206.9	242.1	258.5	252.0	265.4	289.9	300.6
Nondurable goods	106.6	110.8	115.4	121.8	125.8	122.3	127.3	135.2	135.3
Durable goods	52.7	61.6	91.5	120.3	132.7	129.7	138.1	154.7	165.3
Food and kindred products									
Fish canning and preserving	4.8	5.2	4.1	4.1	4.5	4.1	3.8	4.2	3.8
Fruit and vegetable canning and preserving	17.9	17.8	21.1	19.9	20.7	19.0	20.2	21.7	19.6
Other food and kindred products									
Textile mill products									
Apparel and other fabricated textile products	37.2	40.1	39.3	42.8	43.8	42.6	45.4	46.2	44.9
Paper and allied products	3.5	4.0	4.7	4.7	5.1	5.3	5.6	6.1	6.4
Printing, publishing, and allied industries	10.5	10.7	11.4	11.8	12.8	13.1	13.9	15.8	16.3
Chemicals and allied products									
Petroleum refining and related industries									
Rubber and miscellaneous plastics products									
Leather and leather products	2.2	2.2	2.2	2.6	2.8	2.7	2.8	2.9	2.8
Ordnance and accessories	.1	.1	.9	2.0	3.8	3.7	5.0	6.5	7.7
Lumber and wood products, except furniture	2.6	3.0	3.5	3.5	3.2	3.1	3.3	3.2	2.8
Furniture and fixtures	3.5	3.8	3.9	4.2	4.5	4.2	4.5	4.9	5.1
Stone, clay, and glass products	5.4	6.4	7.1	7.1	7.0	7.3	7.5	7.8	7.6
Primary metal industries	2.0	2.3	3.0	3.4	3.8	3.6	4.0	4.4	4.5
Fabricated metal products, except ordnance, machinery, and transportation equipment	7.4	8.8	11.0	12.2	13.0	12.4	13.0	14.0	14.4
Machinery, except electrical									
Electrical machinery, equipment, and supplies	5.7	8.7	14.5	19.7	24.4	22.5	26.4	33.2	40.0
Transportation equipment									
Motor vehicles and equipment	1.6	1.7	1.9	2.1	2.5	2.2	2.6	2.4	2.2
Aircraft and parts	11.2	12.2	26.9	43.2	45.1	45.4	45.0	49.9	52.0
Ship and boat building and repairing	.3	.2	.3	.4	.4	.3	.3	.3	.3
Other transportation equipment									
Instruments and related products									
Miscellaneous manufacturing industries									

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1967[a]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	2214.9	2220.0	2246.0	2262.6	2272.1	2295.3	2282.5	2300.6	2339.2				
Mineral extraction	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3				
Construction[b]	16.2	16.1	16.2	16.2	16.4	16.6	17.0	17.1	17.1				
Manufacturing	377.9	379.9	389.1	393.7	392.7	394.9	399.6	413.8	432.9				
Nondurable goods	148.6	149.2	155.2	158.3	156.2	156.0	159.2	170.3	187.7				
Durable goods	229.3	230.7	233.9	235.4	236.5	238.9	240.4	243.5	245.2				
Food and kindred products	36.8	35.3	39.0	42.1	40.9	40.9	44.3	54.4	72.4				
Fish canning and preserving	2.9	2.9	3.3	3.3	3.6	3.9	4.0	3.7	3.5				
Fruit and vegetable canning and preserving	13.0	11.8	14.1	17.2	15.0	15.0	17.9	28.0	45.8				
Other food and kindred products	20.9	20.6	21.6	21.6	22.3	22.0	22.4	22.7	23.1				
Textile mill products	2.8	2.9	3.0	3.0	2.9	2.9	2.9	3.1	3.1				
Apparel and other fabricated textile products	53.3	54.8	56.3	55.9	55.1	54.7	54.0	54.8	54.6				
Paper and allied products	7.3	7.3	7.4	7.5	7.6	7.8	7.9	8.0	7.8				
Printing, publishing, and allied industries	22.2	22.5	22.8	22.8	22.8	22.8	22.9	22.8	22.8				
Chemicals and allied products	10.7	10.8	10.9	11.0	11.0	11.0	11.3	11.3	11.1				
Petroleum refining and related industries	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6				
Rubber and miscellaneous plastics products	9.3	9.4	9.6	9.7	9.6	9.6	9.6	9.6	9.6				
Leather and leather products	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7				
Ordnance and accessories	18.4	18.6	18.8	18.8	18.8	19.1	19.2	19.3	19.4				
Lumber and wood products, except furniture	2.4	2.6	2.9	2.9	3.0	3.0	3.0	3.1	3.0				
Furniture and fixtures	5.9	5.8	5.9	5.9	5.7	5.7	5.7	5.7	5.7				
Stone, clay, and glass products	8.3	8.3	8.6	8.7	8.8	8.8	8.8	9.0	9.0				
Primary metal industries	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.6				
Fabricated metal products, except ordnance, machinery, and transportation equipment	18.3	18.5	18.8	18.8	18.8	19.4	19.4	19.4	19.4				
Machinery, except electrical	26.4	26.8	27.0	26.8	27.3	27.6	27.8	28.0	28.0				
Electrical machinery, equipment, and supplies	82.1	82.5	83.1	83.4	83.3	83.6	84.0	85.4	86.1				
Transportation equipment	38.8	38.8	39.7	40.3	40.6	40.7	41.2	41.6	42.1				
Motor vehicles and equipment	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.2				
Aircraft and parts	35.2	35.2	36.1	36.6	37.0	37.0	37.6	38.1	38.7				
Ship and boat building and repairing	.4	.4	.4	.4	.4	.4	.4	.4	.4				
Other transportation equipment	.7	.8	.8	.9	.8	.9	.9	.9	.8				
Instruments and related products	11.8	11.8	11.8	11.8	11.8	11.9	11.9	12.1	12.2				
Miscellaneous manufacturing industries	12.2	12.3	12.6	13.3	13.7	14.4	14.7	15.2	15.7				
Transportation; communication; electric, gas, and sanitary services	99.3	100.4	101.5	101.8	102.4	102.9	104.2	104.5	104.1				
Trade	520.9	510.4	514.2	518.5	523.0	531.2	535.8	537.3	541.6				
Finance, insurance, and real estate[c]	166.8	167.8	169.4	170.3	170.9	171.9	173.0	173.3	172.7				
Services	522.6	526.5	532.3	535.3	538.7	545.1	551.2	553.8	551.2				
Government[d]	509.0	516.6	521.0	524.5	525.7	530.4	499.4	498.5	517.3				

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1956[a]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	2070.2	2085.3	2112.1	2144.9	2157.1	2191.5	2182.8	2206.5	2227.7	2239.2	2250.5	2303.5	2180.9
Mineral extraction	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.1
Construction[b]	16.5	16.6	17.2	17.5	17.5	17.7	17.6	17.6	17.3	17.1	16.7	16.4	17.1
Manufacturing	341.1	346.1	355.2	365.6	367.0	374.0	383.8	409.4	406.4	400.3	392.7	390.2	377.7
Nondurable goods	140.5	141.9	147.0	153.0	150.7	153.2	160.4	183.4	178.1	170.5	160.5	157.8	158.1
Durable goods	200.6	204.2	208.2	212.6	216.3	220.8	223.4	226.0	228.3	229.8	232.2	232.4	219.6
Food and kindred products	34.8	33.9	36.8	42.3	39.7	41.7	50.0	72.3	66.8	57.7	46.5	43.7	47.2
Fish canning and preserving	2.4	2.7	3.4	3.5	3.6	4.0	3.9	3.8	3.6	3.2	3.0	3.8	3.4
Fruit and vegetable canning and preserving	12.0	11.1	12.3	17.2	14.4	15.4	23.4	45.1	39.1	30.2	18.9	15.3	21.2
Other food and kindred products	20.4	20.1	21.1	21.6	21.7	22.3	22.7	23.4	24.1	24.3	24.6	24.6	22.6
Textile mill products	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.9	2.9	2.9	2.8	2.7
Apparel and other fabricated textile products	51.4	52.9	54.3	54.6	54.0	53.8	52.5	53.0	52.8	54.4	55.2	55.2	53.7
Paper and allied products	6.8	6.8	6.8	6.9	7.0	7.1	7.1	7.2	7.2	7.2	7.3	7.3	7.1
Printing, publishing, and allied industries	21.1	21.3	21.5	21.5	21.8	21.9	21.9	21.9	22.1	22.1	22.3	22.4	21.8
Chemicals and allied products	9.6	9.8	10.0	10.0	10.1	10.3	10.4	10.4	10.4	10.4	10.4	10.7	10.2
Petroleum refining and related industries	3.6	3.6	3.7	3.7	3.7	3.7	3.8	3.8	3.6	3.6	3.6	3.5	3.7
Rubber and miscellaneous plastics products	8.0	8.2	8.5	8.7	9.0	9.2	9.3	9.4	9.6	9.5	9.6	9.5	9.0
Leather and leather products	2.6	2.7	2.7	2.6	2.7	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Ordnance and accessories	17.4	17.6	17.8	17.8	17.7	17.8	18.0	18.0	17.9	18.1	18.1	18.6	17.9
Lumber and wood products, except furniture	2.7	2.7	2.7	2.9	3.1	3.2	3.1	3.1	3.0	2.9	2.8	2.6	2.9
Furniture and fixture	5.9	5.9	6.0	6.2	6.2	6.2	6.1	6.1	6.2	6.1	6.0	5.9	6.1
Stone, clay, and glass products	8.2	8.5	8.8	9.0	9.0	9.1	9.2	9.2	9.1	8.8	8.7	8.5	8.8
Primary metal industries	4.1	4.1	4.1	4.2	4.3	4.5	4.5	4.5	4.6	4.6	4.7	4.7	4.4
Fabricated metal products, except ordnance, machinery, and transportation equipment	15.9	16.3	16.8	17.3	17.6	18.0	18.1	18.3	18.3	18.3	18.3	18.3	17.6
Machinery, except electrical	22.3	22.7	23.2	23.6	24.0	24.5	25.0	25.4	25.2	25.6	26.0	26.3	24.5
Electrical machinery, equipment, and supplies	69.8	71.2	72.7	73.8	75.0	76.2	76.9	78.0	78.8	79.8	81.4	82.1	76.3
Transportation equipment	31.8	32.4	32.9	33.7	34.2	35.0	35.9	36.4	37.1	37.7	38.3	38.8	35.4
Motor vehicles and equipment	2.5	2.4	2.4	2.4	2.5	2.5	2.5	2.3	2.5	2.5	2.5	2.5	2.5
Aircraft and parts	28.2	28.8	29.3	30.0	30.4	31.2	32.2	32.9	33.4	34.1	34.7	35.2	31.7
Ship and boat building and repairing	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
Other transportation equipment	.7	.8	.8	.9	.9	.9	.8	.8	.8	.7	.7	.7	.8
Instruments and related products	11.0	11.0	11.0	11.1	11.3	11.6	11.8	11.8	11.8	11.6	11.8	11.8	11.5
Miscellaneous manufacturing industries	11.5	11.8	12.2	13.0	13.9	14.7	14.8	15.2	16.3	16.3	16.1	14.8	14.2
Transportation; communication; electric, gas, and sanitary services	88.5	89.6	91.5	92.1	93.2	95.6	96.3	96.6	98.7	97.6	98.3	100.4	94.9
Trade	504.2	498.4	501.7	511.0	515.4	526.9	526.2	525.7	532.1	532.1	542.2	589.1	525.4
Finance, insurance, and real estate[c]	164.1	164.7	166.1	166.4	165.8	166.1	168.4	168.1	166.2	166.2	166.6	167.5	166.3
Services	488.6	< 3.5	498.3	505.9	508.0	515.9	520.4	522.3	522.0	521.8	522.8	529.1	512.4
Government[d]	465.1	474.3	480.0	484.3	488.1	493.1	467.9	464.6	482.9	502.0	509.0	508.6	485.0

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1965[a]

(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	1957.2	1959.3	1977.7	1990.3	2001.5	2024.1	2018.0	2036.7	2063.5	2080.3	2088.9	2139.8	2028.1
Mineral extraction	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2
Construction[b]	16.2	16.6	17.3	16.9	17.8	18.2	19.8	18.4	18.3	17.7	17.2	17.0	17.6
Manufacturing	319.4	321.2	326.8	328.7	329.7	332.9	342.3	364.3	366.3	360.3	351.2	348.0	340.9
Nondurable goods	139.3	139.7	143.4	144.2	143.9	144.4	150.3	169.7	169.1	161.7	151.6	147.8	150.4
Durable goods	180.1	181.5	183.4	184.5	185.8	188.5	192.0	194.6	197.2	198.6	199.6	200.2	190.5
Food and kindred products	35.4	34.1	36.0	37.9	38.7	38.8	45.4	64.7	64.3	55.8	44.8	40.9	44.7
Fish canning and preserving	3.7	2.9	2.9	2.9	3.7	3.4	3.6	3.9	3.6	3.4	3.1	3.3	3.4
Fruit and vegetable canning and preserving	11.3	11.1	12.1	13.9	13.7	13.9	20.1	38.5	38.0	28.9	17.5	13.5	19.4
Other food and kindred products	20.4	20.1	21.0	21.1	21.3	21.5	21.7	22.3	22.7	23.5	24.2	24.1	21.9
Textile mill products	2.7	2.7	2.8	2.7	2.7	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.7
Apparel and other fabricated textile products	51.5	52.7	54.1	53.2	52.0	51.7	50.6	50.9	50.5	51.7	52.2	52.1	51.9
Paper and allied products	6.8	6.7	6.8	6.9	6.9	7.0	7.0	6.9	6.8	6.7	6.8	6.8	6.9
Printing, publishing, and allied industries	20.5	20.7	20.7	20.8	20.9	21.0	21.0	20.9	21.0	21.0	21.1	21.3	20.9
Chemicals and allied products	9.2	9.3	9.5	9.4	9.5	9.8	10.0	9.9	9.8	9.7	9.7	9.7	9.6
Petroleum refining and related industries	3.5	3.5	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.7	3.6	3.6
Rubber and miscellaneous plastics products	7.3	7.6	7.6	7.5	7.5	7.6	7.7	7.7	8.0	7.9	8.0	8.0	7.7
Leather and leather products	2.4	2.4	2.4	2.3	2.2	2.3	2.4	2.4	2.4	2.5	2.5	2.6	2.4
Ordnance and accessories	16.7	16.6	16.5	16.6	16.6	16.8	17.1	17.4	17.2	17.3	17.5	17.3	17.0
Lumber and wood products, except furniture	2.3	2.5	2.7	2.7	2.9	3.1	3.1	3.0	3.1	3.0	3.0	2.8	2.8
Furniture and fixtures	5.9	6.0	6.0	5.9	5.9	6.1	5.9	6.0	6.1	6.0	6.2	6.1	6.0
Stone, clay, and glass products	8.0	8.2	8.3	8.3	8.3	8.6	8.7	8.9	9.0	8.8	8.6	8.5	8.5
Primary metal industries	4.1	4.1	4.1	3.9	4.1	4.1	4.1	4.1	4.2	4.1	4.1	4.1	4.1
Fabricated metal products, except ordnance, machinery, and transportation equipment	15.3	15.4	15.3	15.6	15.8	16.0	16.2	16.1	16.1	16.1	16.0	16.0	15.8
Machinery, except electrical	18.2	18.5	18.9	19.4	19.8	20.1	20.4	20.6	21.1	21.5	21.8	22.2	20.2
Electrical machinery, equipment, and supplies	59.8	59.9	60.6	60.2	60.3	61.5	62.6	63.8	65.2	66.3	67.6	68.4	63.0
Transportation equipment	29.2	29.1	29.1	29.1	29.3	29.0	30.3	30.6	30.4	30.4	30.7	31.3	29.9
Motor vehicles and equipment	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Aircraft and parts	25.7	25.6	25.5	25.5	25.7	25.4	26.7	26.9	26.8	26.9	27.2	27.8	26.3
Ship and boat building and repairing	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
Other transportation equipment	.8	.7	.8	.8	.8	.8	.8	.9	.8	.7	.7	.7	.8
Instruments and related products	9.9	9.9	9.9	10.0	10.0	10.2	10.2	10.3	10.5	10.7	10.8	11.0	10.3
Miscellaneous manufacturing industries	10.7	11.3	12.0	12.8	12.8	13.0	13.4	13.8	14.3	14.4	13.3	12.5	12.9
Transportation; communication; electric, gas, and sanitary services	84.2	85.0	86.3	86.5	86.6	88.4	90.2	90.1	90.2	88.6	88.7	90.4	87.9
Trade	486.5	475.2	476.8	481.5	488.4	496.3	494.9	494.1	498.7	502.0	515.1	560.1	497.5
Finance, insurance, and real estate[c]	159.7	161.0	161.7	162.6	162.3	162.8	164.6	164.5	163.4	163.4	163.5	164.1	162.8
Services	459.3	463.3	467.2	470.7	472.7	477.8	482.2	484.1	485.3	485.7	486.1	490.6	477.1
Government[d]	429.8	434.9	439.5	441.2	441.8	445.5	421.8	419.0	439.1	460.4	465.0	467.5	442.1

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1964[a]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	1877.1	1881.9	1898.5	1916.7	1921.3	1946.0	1932.8	1958.3	1976.1	1984.0	1983.1	2027.7	1942.0
Mineral extraction	2.0	2.0	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Construction[b]	16.9	17.2	17.3	17.8	17.9	18.6	18.5	18.8	18.5	18.3	16.9	17.2	17.8
Manufacturing	321.8	321.4	325.0	329.9	325.4	328.2	332.9	355.8	354.1	346.3	331.5	326.2	333.2
Nondurable goods	136.2	136.8	140.8	145.9	143.0	143.4	147.8	171.3	170.2	162.6	149.4	146.1	149.5
Durable goods	185.6	184.6	184.2	184.0	182.4	184.8	185.1	184.5	183.9	183.7	182.1	180.1	183.7
Food and kindred products	35.0	33.3	36.1	40.8	38.7	39.3	44.4	67.2	66.3	57.4	43.3	40.5	45.2
Fish canning and preserving	3.3	2.8	3.6	3.7	3.6	3.8	3.8	4.1	3.9	3.8	3.3	3.8	3.6
Fruit and vegetable canning and preserving	11.2	10.2	11.3	17.0	14.3	14.6	19.5	41.8	40.7	31.7	17.3	13.5	20.3
Other food and kindred products	20.5	20.3	21.2	20.1	20.3	20.9	21.1	21.3	21.7	21.9	22.7	23.2	21.3
Textile mill products	2.6	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.9	2.9	2.8	2.8
Apparel and other fabricated textile products	49.7	51.6	52.6	52.6	51.8	50.9	50.4	51.2	50.8	52.3	53.0	52.5	51.6
Paper and allied products	6.7	6.7	6.8	6.9	6.9	7.0	7.0	7.0	7.1	7.0	7.0	7.0	6.9
Printing, publishing, and allied industries	19.5	19.5	19.6	19.8	19.9	20.2	20.0	19.9	20.2	20.3	20.5	20.7	20.0
Chemicals and allied products	9.3	9.4	9.4	9.6	9.7	9.9	9.9	9.8	9.7	9.6	9.5	9.6	9.6
Petroleum refining and related industries	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.6
Rubber and miscellaneous plastics products	7.3	7.6	7.6	7.6	7.5	7.4	7.4	7.5	7.5	7.4	7.4	7.3	7.5
Leather and leather products	2.4	2.4	2.4	2.3	2.2	2.4	2.3	2.3	2.3	2.2	2.3	2.3	2.3
Ordnance and accessories	20.2	19.9	19.7	19.5	19.3	19.1	18.3	18.1	17.4	17.2	17.0	16.7	18.5
Lumber and wood products, except furniture	2.6	2.5	2.7	2.9	3.0	3.0	3.0	3.0	2.9	2.8	2.8	2.5	2.8
Furniture and fixtures	6.1	6.1	6.2	6.1	6.1	6.2	6.1	6.1	6.1	6.0	5.9	6.0	6.1
Stone, clay, and glass products	7.8	7.8	8.0	8.0	8.2	8.3	8.6	8.9	8.9	8.7	8.6	8.2	8.3
Primary metal industries	4.1	4.1	4.1	4.2	4.2	4.3	4.2	4.2	4.1	4.2	4.0	4.1	4.1
Fabricated metal products, except ordnance, machinery, and transportation equipment	15.3	15.4	15.4	16.0	16.2	16.2	16.2	16.3	16.2	15.8	15.4	15.4	15.8
Machinery, except electrical	17.4	17.6	17.8	17.9	17.9	18.2	18.3	18.1	18.2	18.2	18.1	18.1	18.0
Electrical machinery, equipment, and supplies	62.5	61.7	61.1	60.4	59.2	58.6	58.5	58.4	58.3	58.9	59.2	59.2	59.7
Transportation equipment	30.9	30.3	29.8	29.2	29.1	29.1	29.5	28.9	28.9	29.0	28.8	29.1	29.4
Motor vehicles and equipment	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.3	2.5	2.3	2.4	2.4	2.3
Aircraft and parts	27.7	27.1	26.6	25.9	25.7	25.6	25.7	25.4	25.3	25.6	25.4	25.6	26.0
Ship and boat building and repairing	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3
Other transportation equipment	.7	.7	.7	.7	.8	.8	.9	.9	.8	.8	.7	.8	.8
Instruments and related products	9.4	9.5	9.6	9.7	9.5	9.8	9.6	9.5	9.5	9.5	9.6	9.7	9.6
Miscellaneous manufacturing industries	9.3	9.7	9.8	10.1	9.7	12.0	12.8	13.0	13.4	13.4	12.7	11.1	11.4
Transportation; communication; electric, gas, and sanitary services	79.1	80.4	81.4	82.3	82.4	84.1	84.7	85.1	85.0	83.9	83.9	84.5	83.1
Trade	464.2	458.6	462.7	468.6	474.3	484.9	485.7	486.9	490.4	486.3	498.4	542.6	483.6
Finance, insurance, and real estate[c]	153.7	154.8	156.2	156.9	156.7	157.2	159.1	159.2	158.6	159.6	159.5	160.2	157.6
Services	433.2	437.1	442.0	445.1	447.8	454.6	455.5	457.9	457.3	461.0	460.3	463.6	451.4
Government[d]	406.2	410.4	411.8	414.0	414.7	416.2	394.3	392.5	410.1	426.5	430.5	431.3	413.2

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1963[a]

(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	1798.4	1799.0	1815.9	1833.5	1838.3	1865.7	1855.2	1881.0	1897.7	1900.0	1900.8	1943.0	1860.7
Mineral extraction[f]													
Construction[f]													
Manufacturing	327.7	329.4	333.3	335.6	331.8	332.1	335.8	357.3	357.5	349.2	336.3	328.7	337.9
Nondurable goods	133.8	135.3	140.5	143.0	139.8	139.5	144.0	165.0	165.9	157.3	145.7	141.2	145.9
Durable goods	193.9	194.1	192.8	192.6	192.0	192.6	191.8	192.3	191.6	191.9	190.6	187.5	192.0
Food and kindred products	34.9	33.7	36.8	40.1	38.0	38.2	43.0	62.8	64.7	55.5	43.0	39.1	44.1
Fish canning and preserving	4.0	3.7	3.4	3.5	3.5	2.8	3.4	4.4	4.0	3.6	3.6	3.0	3.6
Fruit and vegetable canning and preserving	10.4	10.1	12.9	16.1	14.3	14.2	18.8	37.2	39.2	29.6	16.8	13.2	19.4
Other food and kindred products	20.5	19.9	20.5	20.5	20.2	21.2	20.8	21.2	21.5	22.3	22.6	22.9	21.1
Textile mill products	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.7	2.6	2.8	2.9	2.7	2.7
Apparel and other fabricated textile products	47.2	49.6	51.1	50.7	49.5	49.0	48.7	49.5	48.9	49.4	50.4	50.3	49.5
Paper and allied products	6.9	6.8	6.8	6.9	6.9	6.9	6.9	7.1	7.2	7.2	7.0	6.9	7.0
Printing, publishing, and allied industries	19.2	19.2	19.4	19.2	19.2	19.1	19.1	19.1	19.1	19.1	19.2	19.2	19.2
Chemicals and allied products	9.2	9.3	9.3	9.2	9.5	9.7	9.7	9.7	9.5	9.5	9.5	9.4	9.5
Petroleum refining and related industries	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.9	3.8	3.8	3.7	3.7	3.8
Rubber and miscellaneous plastics products	7.6	7.7	8.0	8.1	8.0	7.9	8.0	7.9	7.9	7.8	7.7	7.5	7.8
Leather and leather products	2.3	2.5	2.6	2.4	2.3	2.3	2.2	2.3	2.2	2.2	2.3	2.4	2.3
Ordnance and accessories	19.6	19.4	19.2	19.0	18.7	18.7	18.8	19.3	19.8	19.9	20.3	20.2	19.4
Lumber and wood products, except furniture	2.4	2.5	2.5	2.5	2.7	2.8	2.9	3.0	2.9	2.8	2.8	2.7	2.7
Furniture and fixtures	5.8	5.9	6.0	5.9	5.8	5.9	5.9	5.8	5.9	5.9	6.0	6.0	5.9
Stone, clay, and glass products	7.5	7.5	7.8	8.0	8.0	8.1	8.4	8.4	8.3	8.2	8.1	7.8	8.0
Primary metal industries	4.4	4.3	4.4	4.5	4.5	4.5	4.4	4.4	4.3	4.2	4.2	4.1	4.4
Fabricated metal products, except ordnance, machinery, and transportation equipment	15.2	15.3	15.3	15.5	15.6	16.0	16.1	16.0	15.9	15.9	15.5	15.2	15.6
Machinery, except electrical	18.4	18.6	17.9	17.7	17.6	17.4	17.2	17.4	17.4	17.4	17.4	17.4	17.6
Electrical machinery, equipment, and supplies	70.8	69.7	68.5	67.5	66.7	66.2	65.5	65.2	64.4	64.7	63.6	63.1	66.3
Transportation equipment	31.9	31.7	31.3	31.3	31.1	31.3	31.1	30.8	30.7	30.9	31.0	30.9	31.2
Motor vehicles and equipment	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.0	2.1	2.2	2.2	2.1	2.1
Aircraft and parts	29.1	28.8	28.4	28.3	28.1	28.2	28.0	27.9	27.7	27.8	27.9	27.8	28.2
Ship and boat building and repairing	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3
Other transportation equipment	.5	.5	.5	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6
Instruments and related products	9.9	10.1	10.2	10.2	10.3	10.3	10.0	10.1	10.0	9.8	9.9	9.8	10.1
Miscellaneous manufacturing industries	8.0	9.1	9.7	10.5	11.0	11.4	11.5	11.9	12.0	12.2	11.8	10.3	10.8
Transportation; communication, electric, gas, and sanitary services	76.4	76.7	77.6	77.3	78.1	79.9	81.2	81.7	81.5	80.4	78.0	79.7	79.0
Trade	444.3	436.4	440.7	448.5	450.8	463.5	463.0	464.5	467.7	465.2	476.8	518.7	461.7
Finance, insurance, and real estate[f]													
Services	401.9	404.5	409.9	414.5	418.7	426.2	427.4	429.9	430.7	432.7	434.3	437.4	422.4
Government[d]	387.0	390.2	390.5	392.2	392.2	395.5	377.3	376.6	390.6	401.4	404.2	406.7	392.0
Other industry[e]	161.1	161.8	163.9	165.4	166.7	168.5	170.5	171.0	169.7	171.1	171.2	171.8	167.7

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1962[a]

(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	1718.7	1715.6	1734.8	1761.4	1765.2	1783.2	1777.6	1805.1	1820.4	1821.2	1822.1	1864.0	1782.4
Mineral extraction[f]													
Construction[f]													
Manufacturing	318.3	320.4	324.6	336.8	332.8	336.8	342.6	364.6	365.9	359.2	344.3	338.0	340.4
Nondurable goods	133.9	133.4	135.2	144.5	138.4	139.9	144.9	164.1	165.2	157.8	143.8	141.0	145.2
Durable goods	184.4	187.0	189.4	192.3	194.4	196.9	197.7	200.5	200.7	201.4	200.5	197.0	195.2
Food and kindred products	36.7	34.0	33.8	42.5	37.7	38.4	44.7	62.5	64.2	57.1	43.0	40.7	44.6
Fish canning and preserving	4.6	4.6	4.4	4.0	4.0	3.8	4.5	4.5	4.5	4.1	3.6	3.6	4.2
Fruit and vegetable canning and preserving	11.2	9.8	9.5	17.4	13.2	13.6	19.2	36.8	38.5	30.7	16.2	13.7	19.1
Other food and kindred products	20.9	19.6	19.9	21.1	20.5	21.0	21.0	21.2	21.2	22.3	23.2	23.4	21.3
Textile mill products	2.4	2.4	2.4	2.5	2.5	2.6	2.4	2.4	2.5	2.5	2.5	2.5	2.5
Apparel and other fabricated textile products	47.0	48.9	50.3	50.3	48.8	49.0	47.8	49.0	48.4	47.8	47.9	48.1	48.6
Paper and allied products	6.8	6.8	6.9	7.0	6.9	7.0	7.1	7.2	7.3	7.2	7.2	7.0	7.0
Printing, publishing, and allied industries	18.2	18.3	18.6	18.6	18.8	18.8	18.7	18.9	19.0	19.3	19.4	19.4	18.9
Chemicals and allied products	8.3	8.4	8.6	8.9	8.9	9.0	9.3	9.3	9.3	9.3	9.4	9.2	9.0
Petroleum refining and related industries	4.1	4.1	4.0	4.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.9	4.0
Rubber and miscellaneous plastics products	7.9	8.0	8.1	8.1	8.4	8.6	8.5	8.4	8.2	8.3	8.0	7.7	8.2
Leather and leather products	2.5	2.5	2.5	2.5	2.4	2.5	2.4	2.4	2.3	2.3	2.4	2.5	2.4
Ordnance and accessories	16.9	17.7	18.3	18.9	19.4	19.5	19.8	20.2	20.2	20.1	20.3	20.0	19.3
Lumber and wood products, except furniture	2.8	2.7	2.9	3.1	3.2	3.2	3.1	3.2	3.0	3.0	2.8	2.6	3.0
Furniture and fixtures	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.6	5.8	5.8	5.6
Stone, clay, and glass products	6.9	7.1	7.5	7.6	7.8	8.0	7.9	8.1	7.9	7.9	7.7	7.3	7.6
Primary metal industries	4.6	4.4	4.5	4.6	4.7	4.6	4.4	4.5	4.5	4.5	4.3	4.5	4.5
Fabricated metal products, except ordnance, machinery, and transportation equipment	14.5	14.7	14.9	15.2	15.5	15.8	16.0	15.9	15.9	15.8	15.7	15.5	15.5
Machinery, except electrical	18.0	18.4	18.4	18.6	18.7	18.9	18.8	18.9	18.8	18.5	18.6	18.7	18.6
Electrical machinery, equipment, and supplies	64.9	66.2	67.0	67.8	68.8	70.0	69.9	70.8	70.7	71.3	71.7	72.3	69.3
Transportation equipment	32.9	32.8	32.4	32.3	31.8	31.6	32.3	32.9	32.8	32.7	32.5	32.2	32.4
Motor vehicles and equipment	2.2	2.1	2.1	2.3	2.2	2.2	2.2	2.1	2.2	2.3	2.2	2.1	2.2
Aircraft and parts	30.1	30.0	29.5	29.1	28.7	28.5	29.3	30.0	29.8	29.6	29.5	29.3	29.4
Ship and boat building and repairing	.3	.3	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3
Other transportation equipment	.3	.4	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5
Instruments and related products	8.3	8.8	8.9	9.1	9.0	9.1	9.1	9.3	9.6	9.7	9.7	9.9	9.3
Miscellaneous manufacturing industries	8.6	8.7	9.0	9.5	9.9	10.6	10.8	11.0	11.6	12.3	11.4	8.2	10.1
Transportation; communication; electric, gas, and sanitary services	74.7	75.1	75.6	76.8	77.2	78.1	79.2	79.7	78.5	77.9	78.0	77.6	77.4
Trade	431.5	420.8	427.2	434.0	436.7	445.1	443.3	444.8	448.2	444.6	455.3	498.0	444.1
Finance, insurance, and real estate[f]													
Services	375.4	376.7	381.3	386.2	389.2	393.2	393.9	396.1	396.8	397.9	399.4	402.7	390.7
Government[d]	365.4	369.4	370.4	370.2	371.8	372.4	357.5	357.5	370.1	379.1	382.4	384.8	370.9
Other industry[e]	153.4	153.2	155.7	157.4	157.5	157.6	161.1	162.4	160.9	162.5	162.7	162.9	158.9

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1961[a]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	1631.2	1631.0	1645.3	1639.4	1661.5	1681.5	1684.0	1711.6	1725.4	1733.9	1743.3	1780.1	1690.7
Mineral extraction[f]													
Construction[f]													
Manufacturing	299.2	301.3	306.9	310.7	307.3	312.0	319.2	342.4	341.1	336.2	330.0	323.8	319.2
Nondurable goods	126.7	128.6	133.0	137.1	131.8	134.4	140.8	160.7	158.1	151.6	143.8	139.0	140.5
Durable goods	172.5	172.7	173.9	173.6	175.5	177.6	178.4	181.7	183.0	184.6	186.2	184.8	178.7
Food and kindred products	35.1	34.3	36.8	41.7	37.6	39.5	45.7	63.4	61.5	54.6	44.2	40.0	44.5
Fish canning and preserving	4.1	3.7	3.5	3.5	3.5	4.2	4.1	4.5	5.2	4.3	4.5	4.7	4.1
Fruit and vegetable canning and preserving	10.5	10.3	12.9	17.9	13.7	14.2	20.6	37.8	34.8	28.4	17.2	12.3	19.2
Other food and kindred products	20.5	20.3	20.4	20.3	20.4	21.1	21.0	21.1	21.5	21.9	22.5	23.0	21.2
Textile mill products	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.4	2.4	2.4	2.4	2.3
Apparel and other fabricated textile products	44.4	46.1	48.0	47.2	45.5	45.5	45.5	47.0	46.1	46.8	48.3	48.1	46.5
Paper and allied products	6.6	6.6	6.5	6.6	6.7	6.7	6.8	6.8	6.9	6.9	7.0	7.1	6.8
Printing, publishing, and allied industries	18.1	18.1	18.1	17.9	18.0	18.1	18.0	18.1	18.2	18.4	18.5	18.4	18.2
Chemicals and allied products	7.6	7.7	7.8	8.0	8.2	8.3	8.3	8.5	8.5	8.5	8.6	8.7	8.2
Petroleum refining and related industries	3.9	3.9	3.9	3.9	3.9	3.9	4.0	4.0	4.0	4.0	4.0	4.0	3.9
Rubber and miscellaneous plastics products	6.5	7.3	7.4	7.4	7.4	7.6	7.8	8.1	8.2	7.8	8.5	7.9	7.7
Leather and leather products	2.3	2.4	2.3	2.2	2.3	2.5	2.5	2.6	2.3	2.2	2.3	2.4	2.4
Ordnance and accessories	15.2	15.3	15.3	15.5	15.8	16.0	16.1	16.2	16.1	16.4	16.8	16.9	16.0
Lumber and wood products, except furniture	2.8	2.7	2.9	3.0	3.2	3.4	3.3	3.3	3.2	3.1	3.0	2.7	3.1
Furniture and fixtures	4.7	4.9	5.0	5.1	5.1	5.2	5.2	5.4	5.5	5.5	5.5	5.5	5.2
Stone, clay, and glass products	6.6	6.8	6.9	7.1	7.3	7.6	7.7	7.9	7.8	7.5	7.3	7.0	7.3
Primary metal industries	4.2	4.2	4.4	4.4	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.4
Fabricated metal products, except ordnance, machinery, and transportation equipment	13.6	13.7	13.7	13.7	14.4	14.8	14.8	15.1	14.9	14.8	14.6	14.8	14.4
Machinery, except electrical	15.4	15.5	15.7	15.9	16.0	16.0	16.1	16.3	16.7	17.1	17.6	17.9	16.4
Electrical machinery, equipment, and supplies	59.0	59.0	59.2	59.0	58.9	59.5	59.7	60.8	62.0	62.6	63.5	64.0	60.6
Transportation equipment	36.1	35.2	35.1	33.7	33.7	33.6	33.8	33.9	33.6	34.2	34.3	33.7	34.2
Motor vehicles and equipment	2.2	2.0	1.9	1.6	1.9	1.9	2.0	1.9	1.7	2.3	2.0	2.1	2.0
Aircraft and parts	33.2	32.5	32.5	31.4	31.0	30.9	31.0	31.2	31.1	31.2	31.6	30.9	31.5
Ship and boat building and repairing	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
Other transportation equipment	.3	.3	.3	.3	.4	.4	.4	.4	.4	.3	.3	.3	.3
Instruments and related products	8.1	8.2	8.2	8.1	8.1	8.1	8.2	8.3	8.5	8.5	8.7	8.9	8.3
Miscellaneous manufacturing industries	6.8	7.2	7.5	8.1	8.6	8.9	9.0	10.0	10.2	10.4	10.4	8.9	8.8
Transportation; communication; electric, gas, and sanitary services	76.6	76.0	75.9	76.7	76.6	76.5	77.4	77.1	76.1	75.5	74.9	75.0	76.2
Trade	407.7	399.7	402.5	406.2	411.5	419.5	425.5	427.1	432.6	434.8	446.8	487.2	425.1
Finance, insurance, and real estate[f]													
Services	354.0	355.5	358.8	362.9	363.5	368.1	369.5	372.4	372.6	374.4	374.4	377.5	366.9
Government[d]	344.7	348.9	350.6	351.7	351.3	352.7	338.7	338.2	349.4	359.3	362.8	362.2	350.9
Other industry[e]	149.0	149.6	150.6	151.2	151.3	152.7	153.7	154.4	153.6	153.7	154.4	154.4	152.4

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, BY INDUSTRY, CALIFORNIA, 1960[a]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total	1597.0	1601.3	1608.9	1628.0	1623.0	1633.0	1632.1	1653.6	1665.4	1668.5	1665.5	1704.2	1640.0
Mineral extraction[f]													
Construction[f]													
Manufacturing	304.9	309.1	311.6	315.7	308.9	309.6	318.9	337.2	333.9	327.1	315.4	310.3	316.9
Nondurable goods	128.5	131.7	134.4	139.2	133.8	134.3	143.8	161.1	157.5	151.2	139.9	136.0	141.0
Durable goods	176.4	177.4	177.2	176.5	175.1	175.3	175.1	176.1	176.4	175.9	175.5	174.3	175.9
Food and kindred products	34.7	34.7	35.9	42.6	38.2	38.7	49.4	66.0	63.2	56.0	44.3	41.6	45.5
Fish canning and preserving	3.8	3.6	3.9	3.9	3.6	3.2	4.3	4.4	4.7	4.1	3.8	4.3	4.0
Fruit and vegetable canning and preserving	9.7	10.3	11.3	17.6	13.6	14.2	23.6	40.8	36.6	29.0	17.9	14.0	19.9
Other food and kindred products	21.2	20.8	20.7	21.1	21.0	21.3	21.5	20.8	21.9	22.9	22.6	23.3	21.6
Textile mill products	2.1	2.3	2.2	2.2	2.1	2.2	2.1	2.3	2.3	2.3	2.3	2.4	2.2
Apparel and other fabricated textile products	46.2	48.7	49.6	48.0	46.7	46.5	45.5	45.9	45.3	46.1	46.8	45.8	46.8
Paper and allied products	6.5	6.5	6.5	6.6	6.8	6.9	6.8	6.9	6.7	6.7	6.7	6.7	6.7
Printing, publishing, and allied industries	17.7	18.0	18.3	18.1	18.4	18.3	18.2	18.2	18.2	18.4	18.4	18.6	18.2
Chemicals and allied products	7.3	7.3	7.7	7.9	7.9	8.0	8.1	8.1	7.9	7.9	7.9	7.8	7.8
Petroleum refining and related industries	4.2	4.2	4.2	4.2	4.2	4.1	4.2	4.1	4.1	4.0	4.0	3.9	4.1
Rubber and miscellaneous plastics products	7.3	7.4	7.4	7.2	7.2	7.1	7.2	7.2	7.5	7.6	7.3	6.9	7.3
Leather and leather products	2.5	2.6	2.6	2.4	2.3	2.5	2.3	2.4	2.3	2.2	2.2	2.3	2.4
Ordnance and accessories	13.0	13.3	13.5	13.4	13.6	13.5	13.5	14.4	14.4	14.4	14.[illegible]	14.8	13.9
Lumber and wood products, except furniture	3.0	3.0	3.2	3.3	3.4	3.6	3.6	3.5	3.3	3.3	3.1	2.8	3.3
Furniture and fixtures	5.4	5.5	5.6	5.5	5.2	5.1	4.8	4.9	5.0	5.0	4.8	5.0	5.1
Stone, clay, and glass products	7.2	7.4	7.6	7.8	7.9	8.0	8.0	7.8	7.8	7.2	6.8	6.7	7.5
Primary metal industries	4.6	4.7	4.6	4.5	4.6	4.6	4.6	4.7	4.7	4.3	4.5	4.4	4.6
Fabricated metal products, except ordnance, machinery, and transportation equipment	15.1	15.3	15.3	15.5	15.8	15.7	15.2	14.8	14.6	14.1	13.9	13.8	14.9
Machinery, except electrical	15.9	15.8	15.5	15.5	15.1	15.2	15.3	15.1	14.8	15.0	15.1	15.1	15.3
Electrical machinery, equipment, and supplies	55.2	55.6	55.7	55.6	54.8	55.2	55.5	56.2	57.5	58.4	58.8	59.3	56.5
Transportation equipment	41.5	41.2	40.3	38.9	38.1	37.7	37.5	37.4	37.2	37.0	37.0	36.3	38.3
Motor vehicles and equipment	2.3	2.3	2.3	2.1	2.1	2.0	2.2	2.1	2.0	2.1	2.1	1.9	2.1
Aircraft and parts	38.3	38.0	37.1	35.9	35.1	34.9	34.5	34.5	34.4	34.1	34.1	33.7	35.4
Ship and boat building and repairing	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
Other transportation equipment	.5	.5	.5	.5	.5	.4	.4	.4	.4	.4	.4	.3	.4
Instruments and related products	8.6	8.5	8.3	8.5	8.3	8.1	8.1	8.1	7.9	8.0	8.1	8.0	8.2
Miscellaneous manufacturing industries	6.9	7.1	7.6	8.0	8.3	8.6	9.0	9.2	9.2	9.2	8.8	8.1	8.3
Transportation; communication; electric, gas, and sanitary services	74.2	74.8	74.9	75.5	75.8	76.9	78.5	78.7	78.8	78.0	77.4	76.9	76.7
Trade	407.7	402.1	403.8	409.9	410.4	415.7	415.0	415.7	417.4	418.5	425.6	468.5	417.5
Finance, insurance, and real estate[f]													
Services	341.8	343.4	344.9	347.9	349.8	352.6	351.3	352.5	352.4	356.0	354.4	355.5	350.2
Government[d]	324.6	327.8	327.8	331.7	330.5	329.6	317.5	318.3	332.5	338.6	342.3	342.9	330.3
Other industry[e]	143.8	144.1	145.9	147.3	147.6	148.6	150.9	151.2	150.4	150.3	150.4	150.1	148.4

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1959[g]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	283.6	[illegible].8	293.9	302.5	298.3	304.4	316.4	341.7	339.6	326.7	317.4	314.2	310.5
Nondurable goods	123.3	125.5	128.8	134.9	129.3	133.3	142.5	164.7	161.4	148.5	139.9	137.1	139.1
Durable goods	160.3	162.3	165.1	167.6	169.0	171.1	173.9	177.0	178.2	178.2	177.5	177.1	171.4
Food and kindred products	34.1	33.8	35.8	41.9	37.1	39.8	49.3	70.4	66.0	52.8	43.1	40.7	45.4
Fish canning and preserving	2.9	3.7	3.8	4.2	3.4	4.3	4.0	4.0	3.2	4.4	4.4	4.0	3.9
Fruit and vegetable canning and preserving	10.5	9.8	11.4	17.4	13.3	14.3	24.1	44.7	40.3	25.4	15.1	12.5	19.9
Other food and kindred products	20.7	20.3	20.6	20.3	20.4	21.2	21.2	21.7	22.5	23.0	23.6	24.2	21.6
Textile mill products	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.2	2.3	2.3	2.2	2.1
Apparel and other fabricated textile products	43.7	45.4	46.6	45.9	45.3	45.6	45.4	45.9	46.6	47.3	48.1	48.2	46.2
Paper and allied products	6.3	6.3	6.3	6.4	6.5	6.5	6.5	6.6	6.8	6.8	6.9	6.7	6.5
Printing, publishing, and allied industries	16.5	16.7	16.8	17.1	17.1	17.2	17.3	17.4	17.6	17.7	17.9	17.8	17.2
Chemicals and allied products	7.1	7.1	7.2	7.5	7.5	7.4	7.6	7.6	7.6	7.3	7.3	7.4	7.4
Petroleum refining and related industries	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.3	4.2	4.1	4.2	4.2	4.2
Rubber and miscellaneous plastics products	6.9	7.3	7.2	7.3	6.9	7.8	7.7	7.8	7.8	7.8	7.6	7.4	7.5
Leather and leather products	2.5	2.7	2.7	2.6	2.7	2.7	2.5	2.6	2.6	2.4	2.5	2.5	2.6
Ordnance and accessories	10.2	10.4	10.6	11.1	11.6	11.6	11.9	12.2	12.4	12.5	12.6	12.7	11.6
Lumber and wood products, except furniture	2.7	2.7	2.9	3.0	3.1	3.2	3.2	3.3	3.3	3.3	3.2	3.2	3.1
Furniture and fixtures	4.9	5.1	5.4	5.5	5.5	5.5	5.4	5.3	5.2	5.2	5.4	5.4	5.3
Stone, clay, and glass products	6.5	6.7	7.0	7.0	6.9	7.3	7.4	7.7	7.5	6.9	7.4	7.3	7.1
Primary metal industries	4.5	4.6	4.7	4.7	4.8	4.8	4.9	4.9	4.8	4.5	4.8	4.6	4.7
Fabricated metal products, except ordnance, machinery, and transportation equipment	14.8	15.1	15.2	15.4	15.4	15.6	15.5	15.5	15.5	15.2	15.3	15.0	15.3
Machinery, except electrical	14.1	14.2	14.3	14.6	14.8	14.8	14.9	15.6	15.8	16.0	16.1	16.0	15.1
Electrical machinery, equipment, and supplies	44.0	44.5	45.1	45.7	46.5	47.9	49.2	51.3	52.3	53.7	54.0	54.9	49.1
Transportation equipment	44.3	44.3	44.9	45.0	44.5	44.1	44.8	44.7	44.2	43.9	42.1	42.2	44.1
Motor vehicles and equipment	2.1	2.1	2.1	2.1	2.1	1.9	2.0	1.8	2.0	2.1	1.7	1.9	2.0
Aircraft and parts	41.4	41.4	41.9	42.0	41.5	41.3	41.9	42.0	41.3	41.0	39.6	39.4	41.2
Ship and boat building and repairing	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4
Other transportation equipment	.4	.4	.5	.5	.5	.5	.5	.5	.5	.5	.4	.5	.5
Instruments and related products	7.4	7.4	7.5	7.6	7.7	7.8	8.0	8.0	8.2	8.3	8.4	8.6	7.9
Miscellaneous manufacturing industries	6.9	7.3	7.5	8.0	8.2	8.5	8.7	8.5	9.0	8.7	8.2	7.2	8.1

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1958[g]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	271.3	271.3	271.5	270.8	270.1	271.3	278.5	312.4	306.8	302.2	292.8	291.0	284.2
Nondurable goods	121.0	121.9	123.3	123.1	121.6	122.8	129.4	159.9	152.8	145.3	133.2	131.2	132.1
Durable goods	150.3	149.4	148.2	147.7	148.5	148.5	149.1	152.5	154.0	156.9	159.6	159.8	152.1
Food and kindred products	35.0	34.1	34.9	37.3	37.2	37.7	43.6	72.9	65.9	57.4	43.6	40.9	45.1
Fish canning and preserving	3.4	3.6	3.1	3.5	3.6	3.5	3.9	4.9	6.0	6.1	4.7	4.0	4.2
Fruit and vegetable canning and preserving	10.4	10.3	11.4	14.2	13.2	13.6	18.8	47.3	38.5	28.7	15.5	13.5	19.6
Other food and kindred products	21.2	20.2	20.4	19.6	20.4	20.6	20.9	20.7	21.4	22.6	23.4	23.4	21.3
Textile mill products	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0
Apparel and other fabricated textile products	41.9	44.0	44.7	42.3	41.1	41.2	41.6	42.7	42.2	42.8	13.8	44.4	42.7
Paper and allied products	6.0	6.0	6.0	6.1	6.1	6.1	6.2	6.3	6.4	6.3	6.4	6.3	6.2
Printing, publishing, and allied industries	16.1	16.1	16.2	16.3	16.1	16.2	16.1	16.2	16.2	16.3	16.4	16.6	16.2
Chemicals and allied products	6.8	6.8	6.8	6.8	6.9	6.9	6.9	6.7	6.9	7.1	7.3	7.3	6.9
Petroleum refining and related industries	3.8	3.7	3.7	3.6	3.8	3.9	4.0	4.1	4.1	4.0	4.1	4.1	3.9
Rubber and miscellaneous plastics products	6.5	6.3	6.1	6.0	6.0	6.2	6.1	6.4	6.5	6.9	7.1	7.0	6.4
Leather and leather products	2.8	2.9	2.9	2.7	2.4	2.7	3.0	2.7	2.6	2.5	2.5	2.6	2.7
Ordnance and accessories	7.1	7.3	7.5	7.6	8.0	8.2	8.2	8.7	8.9	9.3	9.7	9.9	8.4
Lumber and wood products, except furniture	2.3	2.4	2.5	2.6	2.8	2.8	2.9	2.9	3.0	3.0	2.8	2.7	2.7
Furniture and fixtures	4.6	4.8	4.8	4.7	4.8	4.9	4.8	4.7	4.7	4.7	4.8	4.9	4.8
Stone, clay, and glass products	6.4	6.5	6.6	6.6	6.6	6.8	7.2	7.4	7.4	7.2	7.1	6.6	6.9
Primary metal industries	4.4	4.4	4.4	4.3	4.2	4.2	4.2	4.2	4.3	4.4	4.5	4.4	4.3
Fabricated metal products, except ordnance, machinery, and transportation equipment	13.9	13.8	13.4	13.4	13.6	13.6	13.7	14.1	14.2	14.2	14.2	14.2	13.9
Machinery, except electrical	12.7	12.7	12.7	12.9	13.1	13.0	13.0	13.2	13.1	13.3	13.5	13.8	13.1
Electrical machinery, equipment, and supplies	39.2	38.4	37.9	37.8	37.9	37.6	37.7	39.1	40.3	41.6	42.9	43.6	39.5
Transportation equipment	46.6	45.8	45.1	44.3	43.7	43.3	43.0	43.6	43.5	44.3	45.1	45.0	44.4
Motor vehicles and equipment	2.4	2.2	2.1	2.1	2.0	1.8	1.8	1.7	1.7	1.7	2.1	2.2	2.0
Aircraft and parts	43.6	43.0	42.4	41.5	40.9	40.8	40.4	41.1	41.0	41.8	42.2	42.0	41.7
Ship and boat building and repairing	.3	.3	.3	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4
Other transportation equipment	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.3
Instruments and related products	6.2	6.3	6.4	6.5	6.4	6.6	6.8	6.8	6.7	6.9	7.1	7.4	6.7
Miscellaneous manufacturing industries	6.9	7.0	6.9	7.0	7.4	7.5	7.6	7.8	7.9	8.0	7.9	7.3	7.4

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1957[g]

(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	290.8	290.2	295.1	300.8	295.7	295.0	303.4	332.3	323.8	311.8	288.3	280.3	300.6
Nondurable goods	125.4	124.9	127.4	131.4	126.2	125.8	134.5	162.8	157.4	148.0	131.2	128.6	135.3
Durable goods	165.4	165.3	167.7	169.4	169.5	169.2	168.9	169.5	166.4	163.8	157.1	151.7	165.3
Food and kindred products[f]													
Fish canning and preserving	4.2	3.6	3.5	3.4	3.3	3.8	4.1	4.1	3.9	4.3	3.6	3.8	3.8
Fruit and vegetable canning and preserving	10.4	9.3	11.3	16.0	13.5	12.2	20.4	44.9	40.5	30.3	14.1	12.6	19.6
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile products	45.1	46.8	47.2	45.9	43.8	43.3	43.5	45.2	45.1	44.7	44.9	43.4	44.9
Paper and allied products	6.1	6.2	6.3	6.3	6.4	6.5	6.4	6.6	6.6	6.6	6.5	6.3	6.4
Printing, publishing, and allied industries	15.7	15.8	16.1	16.1	15.9	16.3	16.4	16.7	16.6	16.7	16.5	16.6	16.3
Chemicals and allied products[f]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	2.7	2.8	3.0	3.1	2.9	2.9	2.9	2.9	2.7	2.6	2.6	2.7	2.8
Ordnance and accessories	7.4	7.5	7.7	7.8	8.1	8.0	8.1	7.9	7.8	7.6	7.3	7.3	7.7
Lumber and wood products, except furniture	2.8	2.7	2.7	2.9	2.9	2.8	2.9	3.0	2.7	2.7	2.6	2.4	2.8
Furniture and fixtures	5.2	5.1	5.2	5.2	5.2	5.2	5.1	5.2	4.9	4.9	4.8	4.8	5.1
Stone, clay, and glass products	7.5	7.3	7.4	7.4	7.5	7.6	7.6	8.0	8.1	7.9	7.7	6.9	7.6
Primary metal industries	4.3	4.4	4.5	4.5	4.5	4.5	4.6	4.8	4.6	4.5	4.5	4.5	4.5
Fabricated metal products, except ordnance, machinery, and transportation equipment	13.9	14.0	14.5	14.8	14.5	14.7	14.6	14.1	14.8	14.5	14.2	13.8	14.4
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	39.1	39.1	39.5	40.3	40.6	40.6	41.3	40.9	40.7	42.5	38.0	37.2	40.0
Transportation equipment[f]													
Motor vehicles and equipment	2.1	2.3	2.3	2.0	2.2	2.0	2.0	2.1	2.3	2.3	2.4	2.5	2.2
Aircraft and parts	53.7	54.3	54.5	54.2	53.8	53.2	53.2	52.0	50.6	49.9	48.1	46.4	52.0
Ship and boat building and repairing	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1956[g]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	263.3	267.9	271.9	274.8	277.4	278.9	287.7	320.7	319.6	319.0	301.5	295.7	289.9
Nondurable goods	119.4	121.6	124.2	125.5	125.5	126.3	133.7	163.7	161.3	154.6	135.9	130.6	135.2
Durable goods	143.9	146.3	147.7	149.3	151.9	152.6	154.0	157.0	158.3	164.4	165.6	165.1	154.7
Food and kindred produots[f]													
Fish canning and preserving	4.4	4.0	3.9	3.9	3.8	3.8	4.3	4.2	4.6	5.1	4.6	4.3	4.2
Fruit and vegetable canning and preserving	9.7	9.5	11.7	14.1	15.3	14.6	24.3	49.0	46.3	36.1	16.5	12.8	21.7
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile produots	47.0	48.4	48.0	46.1	44.0	44.3	43.6	45.7	46.0	46.8	47.3	46.7	46.2
Paper and allied products	5.6	5.7	5.8	6.0	6.0	6.1	6.3	6.3	6.3	6.2	6.2	6.3	6.1
Printing, publishing, and allied industries	14.9	15.2	15.3	15.5	16.1	15.7	15.3	16.1	16.4	16.5	16.6	16.1	15.8
Chemicals and allied produots[f]													
Petroleum refining and related industries[f]													
Rubber and misoellaneous plastics products[f]													
Leather and leather produots	2.8	2.9	2.8	2.9	2.9	3.0	2.9	3.0	2.9	2.8	2.8	2.8	2.9
Ordnance and accessories	5.8	5.9	6.1	6.2	6.3	6.4	6.7	6.7	6.8	7.0	7.3	7.2	6.5
Lumber and wood products, except furniture	3.0	3.1	3.1	3.3	3.6	3.7	3.5	3.5	3.1	3.0	2.9	2.7	3.2
Furniture and fixtures	4.5	4.8	4.8	4.8	4.8	4.9	4.9	4.8	5.0	5.1	5.0	5.0	4.9
Stone, clay, and glass products	7.3	7.5	7.7	7.8	7.7	7.7	7.9	8.1	8.3	8.3	8.1	7.4	7.8
Primary metal industries	4.4	4.4	4.3	4.2	4.3	4.3	4.1	4.3	4.4	4.5	4.5	4.5	4.4
Fabricated metal products, exoept ordnanoe, machinery, and transportation equipment	13.5	14.0	14.1	14.0	13.8	13.9	14.1	13.9	14.0	14.4	14.2	14.0	14.0
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	29.2	29.7	30.1	30.4	31.4	32.3	32.7	34.0	35.5	37.1	37.6	38.2	33.2
Transportation equipment[f]													
Motor vehioles and equipment	2.8	2.7	2.7	2.7	2.4	2.4	2.5	2.4	2.0	2.1	2.2	2.1	2.4
Aircraft and parts	46.3	47.4	47.8	48.2	48.6	8.6	49.6	50.3	50.8	52.6	54.1	54.5	49.9
Ship and boat building and repairing	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1955[g]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	240.6	246.9	250.5	258.1	254.4	258.4	260.5	290.6	289.4	284.2	279.3	271.3	265.4
Nondurable goods	111.3	113.6	115.8	122.2	117.6	120.1	123.4	152.3	148.6	142.1	134.1	126.6	127.3
Durable goods	129.3	133.3	134.7	135.9	136.8	138.3	137.1	138.3	140.8	142.1	145.2	144.7	138.1
Food and kindred products[f]													
Fish canning and preserving	3.2	3.2	2.9	3.8	3.8	3.8	4.1	4.3	1.7	2.0	7.0	6.1	3.8
Fruit and vegetable canning and preserving	8.8	8.6	10.1	16.7	14.3	14.6	18.5	44.4	44.3	32.2	17.7	12.6	20.2
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile products	43.2	46.1	46.6	45.1	43.1	44.2	43.3	45.2	45.6	46.6	48.0	47.7	45.4
Paper and allied products	5.3	5.1	5.3	5.4	5.5	5.6	5.6	5.9	5.9	6.0	5.9	5.9	5.6
Printing, publishing, and allied industries	13.3	13.3	13.3	13.5	13.5	13.6	13.7	14.0	14.4	14.5	14.6	15.1	13.9
Chemicals and allied products[f]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	2.8	2.9	3.0	2.9	2.6	2.7	2.7	3.0	2.9	2.8	2.9	2.9	2.8
Ordnance and accessories	4.8	4.6	4.7	4.7	4.8	4.9	4.9	5.2	5.0	5.3	5.3	5.6	5.0
Lumber and wood products, except furniture	2.9	2.9	3.2	3.3	3.3	3.3	3.4	3.3	3.4	3.6	3.4	3.0	3.3
Furniture and fixtures	4.1	4.3	4.4	4.5	4.5	4.4	4.5	4.5	4.5	4.6	4.8	4.9	4.5
Stone, clay, and glass products	6.6	7.2	7.4	7.4	7.5	7.9	7.3	7.4	7.7	8.0	8.0	7.3	7.5
Primary metal industries	3.7	3.7	3.8	3.9	4.0	4.1	3.9	4.1	4.3	4.3	4.3	4.4	4.0
Fabricated metal products, except ordnance, machinery, and transportation equipment	12.0	12.0	12.4	12.9	13.1	13.1	13.4	13.3	13.4	13.4	13.8	13.7	13.0
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	23.8	24.5	24.6	24.9	25.3	25.9	26.1	26.4	28.1	28.2	29.2	29.5	26.4
Transportation equipment[f]													
Motor vehicles and equipment	2.2	2.3	2.6	2.5	2.5	2.6	2.7	2.8	2.7	2.8	2.8	2.8	2.6
Aircraft and parts	44.9	45.6	45.4	44.9	45.0	44.7	44.3	44.6	44.6	44.4	45.8	46.3	45.0
Ship and boat building and repairing	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1954[g]

(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	241.2	241.9	243.9	246.2	242.2	241.7	252.1	277.3	272.4	263.0	253.8	247.8	252.0
Nondurable goods	109.5	111.2	113.7	116.1	112.4	112.7	125.0	148.1	143.1	133.2	123.6	119.1	122.3
Durable goods	131.7	130.7	130.2	130.1	129.8	129.0	127.1	129.2	129.3	129.8	130.2	128.7	129.7
Food and kindred products[f]													
Fish canning and preserving	4.4	3.2	3.0	3.6	4.1	3.9	5.1	4.8	4.6	3.7	4.4	4.1	4.1
Fruit and vegetable canning and preserving	10.5	9.3	10.7	14.2	12.7	12.1	23.7	42.6	38.1	27.0	15.1	11.6	19.0
Other food and kindred products[1]													
Textile mill products[1]													
Apparel and other fabricated textile products	40.1	43.0	44.5	42.6	40.2	40.9	41.3	42.5	43.2	43.7	44.7	44.6	42.6
Paper and allied products	5.2	5.2	5.2	5.3	5.4	5.3	5.2	5.4	5.3	5.6	5.6	5.4	5.3
Printing, publishing, and allied industries	13.0	13.0	13.1	13.0	13.2	13.2	12.9	13.0	13.8	13.1	13.4	13.4	13.1
Chemicals and allied products[1]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	2.6	2.8	2.9	2.7	2.4	2.5	2.6	2.7	2.7	2.6	2.7	2.8	2.7
Ordnance and accessories	4.1	3.7	3.7	3.5	3.4	3.4	3.4	3.6	3.6	3.8	3.9	4.1	3.7
Lumber and wood products, except furniture	2.9	2.7	2.9	3.0	3.0	3.1	3.3	3.4	3.3	3.3	3.1	2.9	3.1
Furniture and fixtures	3.9	4.2	4.3	4.1	4.0	4.1	4.1	4.2	4.2	4.3	4.5	4.3	4.2
Stone, clay, and glass products	6.4	7.2	7.5	7.8	7.7	7.4	6.8	7.4	7.5	7.3	7.2	6.9	7.
Primary metal industries	3.8	3.8	3.7	3.6	3.6	3.6	3.4	3.3	3.4	3.4	3.5	3.5	3.6
Fabricated metal products, except ordnance, machinery, and transportation equipment	12.9	12.5	12.1	12.5	12.5	12.4	12.3	12.6	12.4	12.1	12.2	12.0	12.4
Machinery, except electrical[1]													
Electrical machinery, equipment, and supplies	22.9	22.9	22.2	22.0	21.9	21.9	21.9	22.2	22.4	22.9	23.6	23.6	22.5
Transportation equipment[1]													
Motor vehicles and equipment	2.4	2.3	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.0	2.2
Aircraft and parts	47.0	46.6	46.7	46.0	45.8	45.4	44.7	45.0	44.4	44.6	44.4	44.4	45.4
Ship and boat building and repairing	.4	.3	.3	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3
Other transportation equipment[1]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1953[g]

(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	246.6	250.5	248.5	252.4	248.0	247.3	262.1	289.1	282.4	272.3	254.9	247.7	258.5
Nondurable goods	116.2	118.1	116.3	119.6	115.7	114.9	129.7	154.5	146.7	136.7	123.5	117.5	125.8
Durable goods	130.4	132.4	132.2	132.8	132.3	132.4	132.4	134.6	135.7	135.6	131.4	130.2	132.7
Food and kindred products[f]													
Fish canning and preserving	3.9	4.3	3.6	5.0	5.3	4.7	5.1	5.4	4.6	4.5	3.9	3.8	4.5
Fruit and vegetable canning and preserving	12.8	11.7	9.8	13.1	13.0	12.9	26.8	49.0	41.6	29.2	16.2	12.8	20.7
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile products	45.0	46.9	46.9	45.2	41.6	41.9	42.0	43.6	42.8	43.5	43.9	42.5	43.8
Paper and allied products	4.8	4.9	4.8	5.0	5.0	5.1	5.2	5.3	5.4	5.4	5.4	5.1	5.1
Printing, publishing, and allied industries	12.2	12.5	12.6	12.7	12.9	12.9	12.7	13.0	12.9	13.0	13.1	13.0	12.8
Chemicals and allied products[f]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	2.8	2.9	3.1	2.9	2.7	2.7	2.9	2.9	2.8	2.9	2.7	2.7	2.8
Ordnance and accessories	2.9	3.2	3.6	3.7	3.8	4.0	4.1	4.3	4.1	4.1	3.9	4.0	3.8
Lumber and wood products, except furniture	3.0	3.0	3.2	3.3	3.3	3.4	3.2	3.5	3.4	3.3	3.0	3.0	3.2
Furniture and fixtures	4.6	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.4	4.5	4.4	4.3	4.5
Stone, clay, and glass products	6.5	6.8	7.0	7.3	7.3	7.2	6.8	7.2	7.4	7.3	7.1	6.5	7.0
Primary metal industries	3.7	3.7	3.9	3.9	3.8	3.9	3.8	3.8	4.0	3.9	3.9	3.8	3.8
Fabricated metal products, except ordnance, machinery, and transportation equipment	12.3	13.0	13.2	13.5	13.2	13.2	13.1	13.1	13.1	13.1	12.9	12.3	13.0
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	24.0	24.9	23.9	23.6	23.5	23.6	24.4	25.0	25.1	25.2	25.1	24.4	24.4
Transportation equipment[f]													
Motor vehicles and equipment	2.5	2.5	2.6	2.6	2.6	2.6	2.5	2.5	2.3	2.3	2.1	2.3	2.5
Aircraft and parts	46.2	46.4	45.7	45.2	44.9	44.5	44.6	45.0	45.5	46.0	43.3	44.7	45.1
Ship and boat building and repairing	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1952[g]

(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	211.4	220.2	221.3	226.4	225.9	226.8	243.4	277.2	268.5	270.7	258.2	254.8	242.1
Nondurable goods	103.0	107.8	109.2	112.4	109.7	109.0	122.9	151.2	147.0	140.0	126.4	123.2	121.8
Durable goods	108.4	112.4	112.1	114.0	116.2	117.8	120.5	126.0	121.5	130.7	131.8	131.6	120.3
Food and kindred products[f]													
Fish canning and preserving	2.1	2.1	2.7	3.6	3.2	4.2	4.3	5.1	5.2	5.6	5.8	4.9	4.1
Fruit and vegetable canning and preserving	10.0	10.1	9.6	14.3	13.4	12.6	25.1	48.6	41.9	23.0	16.8	13.8	19.9
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile products	40.2	43.1	44.1	42.0	39.7	39.9	41.0	43.2	44.1	44.5	45.8	46.3	42.8
Paper and allied products	4.3	4.4	4.5	4.5	4.6	4.6	4.7	4.9	5.0	5.1	5.2	5.0	4.7
Printing, publishing, and allied industries	11.2	11.5	11.4	11.5	11.8	11.6	11.5	11.8	12.0	12.1	12.3	12.3	11.8
Chemicals and allied products[f]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	2.3	2.5	2.6	2.5	2.4	2.5	2.6	2.6	2.7	2.8	2.8	2.8	2.6
Ordnance and accessories	1.3	1.5	1.5	1.6	1.8	1.9	1.9	2.0	2.0	2.3	2.8	2.9	2.0
Lumber and wood products, except furniture	3.2	3.2	3.3	3.7	3.7	3.8	3.6	3.8	3.8	3.6	3.3	3.1	3.5
Furniture and fixtures	4.3	4.1	3.7	3.8	3.9	4.0	4.1	4.1	4.4	4.4	4.7	4.7	4.2
Stone, clay, and glass products	6.6	6.8	7.0	7.4	7.4	7.1	7.1	7.3	7.6	7.4	7.1	6.5	7.1
Primary metal industries	2.9	3.0	3.1	3.2	3.3	3.3	3.5	3.6	3.7	3.7	3.6	3.7	3.4
Fabricated metal products, except ordnance, machinery, and transportation equipment	11.6	11.9	11.7	11.9	11.7	11.4	11.4	12.4	12.8	13.5	13.3	13.1	12.2
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	18.7	19.3	18.2	18.2	17.5	17.1	18.2	19.6	20.3	21.7	22.8	24.2	19.7
Transportation equipment[f]													
Motor vehicles and equipment	1.9	1.9	1.9	1.9	2.0	2.0	1.9	2.1	2.2	2.4	2.4	2.3	2.1
Aircraft and parts	37.1	39.4	40.1	41.1	42.8	44.5	45.7	46.9	41.3	46.7	45.9	46.3	43.2
Ship and boat building and repairing	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1951[g]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	180.5	185.1	192.3	191.8	190.7	192.4	209.1	238.4	233.3	234.4	219.6	215.2	206.9
Nondurable goods	105.7	106.1	108.1	106.3	103.7	102.4	117.2	143.2	136.7	133.7	113.8	108.3	115.4
Durable goods	74.8	79.0	84.2	85.5	87.0	90.0	91.9	95.2	96.6	100.7	105.8	106.9	91.5
Food and kind products[f]													
Fish canning and preserving	5.4	3.8	4.0	2.5	3.9	3.9	4.2	4.1	4.8	7.2	3.7	2.1	4.1
Fruit and vegetable canning and preserving	9.7	9.0	9.8	14.0	15.0	12.3	25.1	49.3	44.3	36.1	15.9	12.4	21.1
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile products	40.6	43.7	43.2	39.4	34.1	35.3	37.1	39.2	38.9	38.8	40.4	41.4	39.3
Paper and allied products	4.6	4.8	4.9	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.6	4.7
Printing, publishing, and allied industries	11.2	11.2	11.2	11.2	11.5	11.5	11.3	11.5	11.4	11.5	11.6	11.6	11.4
Chemicals and allied products[f]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	2.2	2.6	2.6	2.3	1.9	2.0	2.1	2.2	2.1	2.1	2.1	2.2	2.2
Ordnance and accessories	.5	.6	.7	.7	.7	.8	.8	.9	1.0	1.1	1.2	1.3	.9
Lumber and wood products, except furniture	2.9	3.1	3.6	3.7	3.8	3.6	3.5	3.8	3.8	3.5	3.4	3.1	3.5
Furniture and fixtures	4.0	4.0	4.1	3.8	3.8	3.6	3.7	3.8	3.8	4.1	4.2	4.3	3.9
Stone, clay, and glass products	6.7	6.7	7.5	7.7	7.6	7.3	6.8	7.1	7.3	7.1	7.0	6.6	7.1
Primary metal industries	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.1	3.0	3.2	3.0
Fabricated metal products, except ordnance, machinery, and transportation equipment	10.3	10.4	11.2	10.6	10.9	10.7	10.8	10.7	10.9	11.5	11.8	11.8	11.0
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	12.1	12.6	13.1	12.9	13.3	13.6	13.7	14.1	15.7	16.6	17.7	18.1	14.5
Transportation equipment[f]													
Motor vehicles and equipment	1.9	1.9	1.9	1.9	2.0	2.1	2.0	2.0	1.9	1.8	1.9	1.8	1.9
Aircraft and parts	17.1	19.9	21.4	23.2	24.6	26.9	28.9	30.0	29.3	31.1	34.5	35.9	26.9
Ship and boat building and repairing	.2	.2	.2	.3	.3	.3	.3	.3	.3	.4	.4	.4	.3
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1950[g]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	149.2	150.8	155.7	158.8	153.8	155.1	171.4	205.5	199.8	197.6	188.4	182.2	172.4
Nondurable goods	96.4	97.1	101.3	104.0	98.0	97.5	112.7	141.8	131.7	125.1	115.3	108.5	110.8
Durable goods	52.8	53.7	54.4	54.8	55.8	57.6	58.7	63.7	68.1	72.5	73.1	73.7	61.6
Food and kindred products[f]													
Fish canning and preserving	4.9	2.9	3.7	3.1	3.7	4.4	4.7	5.8	6.9	8.7	7.6	6.4	5.2
Fruit and vegetable canning and preserving	7.4	7.0	8.5	14.9	11.8	12.0	23.3	45.6	33.1	23.7	15.2	11.1	17.8
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile products	38.2	41.7	42.9	39.6	36.4	36.1	38.3	42.0	42.3	42.4	41.4	40.3	40.1
Paper and allied products	3.4	3.4	3.5	3.6	3.7	3.8	3.9	4.4	4.6	4.7	4.8	4.5	4.0
Printing, publishing, and allied industries	10.4	10.7	10.5	10.6	10.6	10.7	10.6	10.8	11.0	10.9	11.0	11.0	10.7
Chemicals and allied products[f]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	1.9	2.1	2.4	2.4	1.9	2.0	2.1	2.5	2.4	2.3	1.9	2.3	2.2
Ordnance and accessories	.1	.1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.3	.1
Lumber and wood products, except furniture	2.5	2.5	2.6	2.8	3.1	3.3	2.9	3.4	3.3	3.3	3.1	2.9	3.0
Furniture and fixtures	3.6	3.5	3.6	3.5	3.6	3.7	3.7	4.0	4.1	4.1	4.0	3.9	3.8
Stone, clay, and glass products	5.0	5.5	5.9	6.1	6.2	6.4	6.5	7.0	7.2	7.4	7.4	6.7	6.4
Primary metal industries	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.3	2.5	2.5	2.6	2.7	2.3
Fabricated metal products, except ordnance, machinery, and transportation equipment	7.6	7.6	7.7	7.9	8.1	8.3	8.6	9.1	9.6	10.2	10.2	10.3	8.8
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	6.7	6.8	7.0	7.2	7.2	7.6	8.0	8.1	10.0	11.5	11.7	12.3	8.7
Transportation equipment[f]													
Motor vehicles and equipment	1.5	1.7	1.7	1.6	1.6	1.7	1.6	1.7	1.7	1.8	1.7	1.8	1.7
Aircraft and parts	10.8	10.8	10.7	10.9	10.8	11.0	11.2	12.3	12.8	13.9	15.4	16.2	12.2
Ship and boat building and repairing	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

ESTIMATED NUMBER OF WOMEN WAGE AND SALARY WORKERS IN MANUFACTURING, BY INDUSTRY, CALIFORNIA, 1949[g]
(In thousands)

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
Total manufacturing	147.9	148.2	149.6	153.2	150.4	145.6	155.8	184.4	181.4	176.2	161.6	157.8	159.3
Nondurable goods	94.0	95.1	97.1	100.7	98.2	94.2	104.5	132.4	128.7	122.2	107.2	104.8	106.6
Durable goods	53.9	53.1	52.5	52.5	52.2	51.4	51.3	52.0	52.7	54.0	54.4	53.0	52.7
Food and kindred products[f]													
Fish canning and preserving	3.2	2.1	3.6	3.8	4.1	4.0	4.7	5.4	7.2	8.1	4.9	6.8	4.8
Fruit and vegetable canning and preserving	8.6	7.8	7.8	14.4	13.0	11.9	20.3	43.7	35.2	25.7	14.4	11.8	17.9
Other food and kindred products[f]													
Textile mill products[f]													
Apparel and other fabricated textile products	35.7	38.6	38.9	36.1	34.4	32.5	34.1	37.6	39.8	40.4	39.9	38.6	37.2
Paper and allied products	3.3	3.2	3.2	3.2	3.3	3.4	3.4	3.5	3.7	3.9	4.0	3.9	3.5
Printing, publishing, and allied industries	10.5	10.6	10.6	10.7	10.8	10.5	10.4	10.5	10.5	10.4	10.5	10.4	10.5
Chemicals and allied products[f]													
Petroleum refining and related industries[f]													
Rubber and miscellaneous plastics products[f]													
Leather and leather products	2.0	2.2	2.3	2.2	2.3	2.3	2.3	2.5	2.4	2.4	2.0	1.9	2.2
Ordnance and accessories	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
Lumber and wood products, except furniture	2.7	2.3	2.3	2.3	2.5	2.6	2.5	2.7	2.7	2.7	2.7	2.6	2.6
Furniture and fixtures	3.6	3.5	3.5	3.5	3.5	3.4	3.3	3.4	3.4	3.6	3.7	3.6	3.5
Stone, clay, and glass products	5.3	5.6	5.5	5.7	5.7	5.2	5.3	5.3	5.2	5.2	5.4	5.0	5.4
Primary metal industries	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	1.2	2.0	2.0	2.0
Fabricated metal products, except ordnance, machinery, and transportation equipment	7.7	7.5	7.4	7.2	7.0	6.8	6.9	7.3	7.6	7.7	7.6	7.6	7.4
Machinery, except electrical[f]													
Electrical machinery, equipment, and supplies	5.5	5.5	5.3	5.5	5.5	5.6	5.5	5.1	5.4	6.1	6.9	6.5	5.7
Transportation equipment[f]													
Motor vehicles and equipment	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.6
Aircraft and parts	11.5	11.2	11.1	11.2	11.3	11.5	11.3	11.3	11.1	11.0	10.7	10.8	11.2
Ship and boat building and repairing	.4	.4	.4	.4	.4	.3	.3	.3	.3	.3	.2	.2	.3
Other transportation equipment[f]													
Instruments and related products[f]													
Miscellaneous manufacturing industries[f]													

F O O T N O T E S

[a]Does not include employers, own-account workers, unpaid family workers, domestic servants, and agricultural workers.

[b]Includes employees of construction contractors and operative builders; does not include force-account and government construction workers.

[c]Excludes employees of operative builders.

[d]Includes all civilian employees of Federal, State, and local governments regardless of the activity in which the employee is engaged.

[e]Includes employees in mineral extraction, construction, and finance-insurance-real estate.

[f]Not available.

[g]Includes administrative, supervisory, sales, technical, and office personnel, and force-account construction workers as well as production and related workers. Does not include employers, own-account workers, and unpaid family workers.

Department of Industrial Relations
Division of Labor Statistics and Research

Supersedes January 1967 issue and prior series.

VT 001 367

Report on a Study to Determine the Trades in Which Apprentices are Employed and the Number of Employed Apprentices Enrolled in Related Instruction Classes.

New Jersey State Dept. of Education, Trenton
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Mar66 24p.

*APPRENTICESHIPS; *ADULT VOCATIONAL EDUCATION; OCCUPATIONS; *STATE PROGRAMS; *ANNUAL REPORTS; *SCHOOL INDUSTRY RELATIONSHIP; EMPLOYMENT; EDUCATIONAL PROGRAMS; MANPOWER DEVELOPMENT; ENROLLMENT TRENDS
NEW JERSEY

Information from apprentice coordinators, state supervisors and county vocational directors was analyzed to determine the extent to which apprentices participate in related instruction. In 1966 a total of 5,204 apprentices were employed in 59 trades or occupations in the 21 counties of the state. The 1966 employment total represents an increase of 635 apprentices over 1965 and is the sixth consecutive year reflecting an increase in apprentice employment. Related instruction was received by 4,933 (94.8 percent) apprentices. The public schools provided 85.8 percent of the related instruction while industry furnished related instruction for 9.5 percent of the apprentices. Approved home-study courses are used in various areas of the state where no other method of instruction is feasible. The building trades employed 55.6 percent of the apprentices and 93.8 percent of these apprentices received related instruction. Apprentice employment in the machine trades represented 22.08 percent of the total apprentice employment and 99.1 percent of these apprentices received related instruction. (HC)

VT 001 367

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(C1)

State of New Jersey
Department of Education
Trenton 25

REPORT ON A STUDY TO DETERMINE THE TRADES IN WHICH APPRENTICES ARE EMPLOYED AND THE NUMBER OF EMPLOYED APPRENTICES ENROLLED IN RELATED INSTRUCTION CLASSES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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March, 1966

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FOREWORD

The Vocational Division of the New Jersey Department of Education conducts an annual survey to determine the number of apprentices employed in approved training programs, and the extent to which these apprentices are receiving related instruction.

The report for 1966 is presented with the hope that the information will be of value to the Apprentice Coordinators in that it will assist them in locating the areas needing attention or corrective action. It should also be of value to those seeking general information in regard to the New Jersey State Apprenticeship Training Program.

The total number of apprentices employed has increased since the 1965 report. The record of the public schools in providing the required related instruction continues at a highly satisfactory level. Ninety-three and eight-tenths per cent of the employed apprentices are enrolled in related instruction programs in accordance with provisions of the New Jersey State Plan for Vocational Education.

The original data for this study covering all areas of the State have been furnished by the Apprentice Coordinators, State Supervisors and in some instances County Vocational Directors with the cooperation of the Bureau of Apprenticeship and Training Field Representatives.

Apprenticeship continues as an important factor in the development of craftsmen and skilled mechanics needed in our dynamic industrial economy.

Frederick M. Raubinger
Commissioner of Education

MEMBERS OF THE STUDY COMMITTEE

The following individuals provided the original data on which this report is based:

Robert C. Becotte	Apprentice Coordinator	Cape May County
Harold S. Boughton	Apprentice Coordinator	Ocean County
Kenneth Charlesworth	Supervisor of Trades & Industry	Morris County
Frank Cioffi	Apprentice Coordinator	Jersey City
Fred Data	Apprentice Coordinator	Cumberland, Gloucester, & Salem Counties
Michael Fichera	Apprentice Coordinator	Middlesex County
John R. Green	Apprentice Coordinator	Union County
William Henry	Apprentice Coordinator	Monmouth County
Albert J. Heuer	Apprentice Coordinator	Essex County
Richard Kirby	Apprentice Coordinator	Somerset County
Paul Lacity	Apprentice Coordinator	Atlantic County
Earl S. Mahaffey	Evening School Supervisor	Camden County
James J. Marion	Apprentice Coordinator	Passaic County
Earl Moran	Head of Boy's Department	Morris County
Anthony Nittoli	Apprentice Coordinator	Thomas A. Edison
John K. Ossi	Director	Burlington County
Frederick Porges	Director of Adult Education	Middlesex County
John Stewart	Vice Principal-Morristown High School	Morris County
James A. Wilson	Apprentice Coordinator	Bergen County

All sections of New Jersey are covered by county directors of Vocational Education, local apprentice coordinators, or state supervisors in order to develop and maintain effective programs.

Special acknowledgement is given to Mr. Alex Naruta, Jr., State Supervisor, New Jersey Bureau of Apprenticeship and Training, United States Department of Labor and his field representatives for their cooperation in furnishing verifying information regarding the number of employed apprentices in New Jersey.

The following were responsible for the preparation of this report:
Jack Kleinman, Supervisor of Apprentice Training and the following Apprentice Coordinators: Richard Kirby, Earl Mahaffey, and James Wilson.

REPORT ON
A SURVEY TO DETERMINE THE TRADES IN WHICH
APPRENTICES ARE EMPLOYED AND THE NUMBER
OF EMPLOYED APPRENTICES ENROLLED IN
RELATED INSTRUCTION CLASSES
January 1, 1966

Purpose and Background for the Study

The primary purpose of this study has been to determine the extent to which apprentices employed in approved apprentice training programs in New Jersey are participating in the related instruction phase of the approved program. In addition to this, however, there is another basic purpose for this report -- that of reviewing the New Jersey State Apprenticeship Training Program operating under provisions of the New Jersey State Plan for Vocational Education in order to recognize and define problem areas.

Data for this study are based on conditions as of January 1, 1966. Similar studies, made since 1948, have aided the individuals responsible for apprenticeship training in New Jersey to locate areas needing corrective action and attention. This has resulted in a continuing improvement of the apprentice training program in New Jersey, including the related instruction phase of this program.

Fifty-nine Recognized Trades are Included in the New Jersey State Apprenticeship Program

TABLE I

Table I contains a summary of information gathered in the 1966 study, and provides a basis for reviewing the current status of apprenticeship training in New Jersey. These trades have been reclassified and grouped according to their coded occupational titles; therefore, one code title may encompass several trades reported separately in previous studies.

TABLE I

Trades in Which Apprentices are Employed, Number of Apprentices Employed, and Number of Apprentices Enrolled in Related Instruction Classes
January 1, 1966

Trade or Occupation	Number of Apprentices Employed	Number of Apprentices Receiving Related Inst.	Percent of Apprentices Receiving Related Inst.	Related Instruction Provided		
				By Public Schools	By Industry	By Other Sources
TOTALS	5204	4933	94.8%	4235	467	231
5-83 Automatic Screw Mach.	2	2	100%	2	0	0
4-01 Bakers	2	2	100%	0	2	0
4-83 Boilermaker	2	2	100%	2	0	0
4-49 Bookbinder	6	6	100%	5	1	0
5-24 Brickmason-Stonemason, Tilesetter	220	188	85.45%	145	36	7
4-32 Cabinet Maker	11	11	100%	11	0	0
5-25 Carpenters	518	512	99.04%	50	0	12
5-26 Cement Mason	5	5	100%	0	5	0
4-82 Core Makers	2	2	50%	2	0	0
0-50 Dental Technician	4	4	100%	0	4	0
0-48 Draftsmen	53	53	100%	46	0	7
4-97 Electricians	733	712	97.00%	623	41	48
0-50 Electronic Device Maker	2	2	100%	0	2	0
5-32 Floor Layers	90	70	77.77%	70	0	0
5-77 Glaziers	31	25	80.64%	18	7	0
4-86 Hammersmith	1	1	100%	1	0	0
4-75 Instrument Maker	29	29	100%	0	29	0
5-33 Insulators	3	3	100%	2	1	0
4-71 Jewelers	9	9	100%	0	9	0
5-32 Lathers	25	7	28.00%	1	6	0
4-95 Lead Burners	3	3	100%	3	0	0
Machine Builder	3	3	100%	3	0	0
4-75 Machinist	515	509	98.83%	451	22	36
5-58 Meat Cutter	1	1	100%	0	1	0
5-83 N. E. C.	4	4	100%	0	2	2
Mechanics and Repairmen						
5-83 Air Conditioning	17	17	100%	17	0	0
5-81 Auto Mechanic	141	134	95.03%	130	0	4
5-81 Car Repair	1	1	100%	0	0	1
5-83 Electric Repairmen	61	61	100%	61	0	0
5-83 Instrument Repairman	27	27	100%	22	0	5
5-33 Insulation Mechanic	3	3	100%	3	0	0

Trade or Occupation	Number of Apprentices Employed	Number of Apprentices Receiving Related Inst.	Percent of Apprentices Receiving Related Inst.	Related Instruction Provided		
				By Public Schools	By Industry	By Other Sources
5-88 Maintenance Mechanics	87	87	100%	59	28	0
5-53 Powerhouse Mechanic	1	1	100%	1	0	0
Production Mechanic	39	39	100%	0	39	0
5-83 Pump Mechanic	1	1	100%	1	0	0
5-83 Scale Mechanic	3	3	100%	2	0	1
0-56 Micro Photographers	4	4	100%	0	4	0
5-78 Millwright	26	26	100%	19	2	5
4-81 Molders, Foundry Workers	19	19	100%	17	2	0
5-08 Opticians & Lens Grinders	3	3	100%	0	3	0
5-27 Painters, Const.	76	50	6578%	46	4	0
5-17 Pattern & Model Maker	12	12	100%	7	5	0
5-29 Plasterer	10	7	7000%	6	1	0
5-10 Plastics Product Mech.	2	2	100%	1	0	1
5-30 Plumber, Gas Fitter, Steamfitter	814	759	9324%	705	16	38
Printers						
4-44 Compositors & Typesetters	187	150	8021%	79	71	0
4-46 Lithographers	3	3	100%	0	0	3
4-47 Photo Engravers	15	15	100%	1	13	1
4-48 Pressmen & Plate Printers	82	63	7682%	17	36	10
5-88 Riggers	4	4	100%	4	0	0
4-78 Roller Grinders	1	1	100%	0	1	0
5-83 Sewing Machine Technician	24	24	100%	24	0	0
4-80 Sheet Metal Worker	355	344	9690%	342	0	2
0-46 Stainedglass Artist	2	2	100%	0	0	2
5-72 Stationary Eng.	226	226	100%	226	0	0
5-24 Stone Setter	2	2	100%	0	2	0
4-84 Structural & Ornamental Iron Worker	51	51	100%	22	0	29
4-76 Toolmaker, Die Sinker, Setter	623	619	8925%	530	72	17
4-84 Welder	8	8	100%	8	0	0

5204 Apprentices are Currently Employed in Approved Establishments.

The following tabulation represents comparative data on the number of apprentices employed as of January 1 of each of the last ten years.

January 1, 1957 - 4056
January 1, 1958 - 4171
January 1, 1959 - 3641
January 1, 1960 - 3523
January 1, 1961 - 3482
January 1, 1962 - 3646
January 1, 1963 - 3876
January 1, 1964 - 4068
January 1, 1965 - 4569
January 1, 1966 - 5204

The 1966 employment total represents an increase of 635 apprentices over January 1, 1965. This report is the fourth consecutive year where an increase has been reflected since a reversal of the downward trend which has been noted in each report since 1959. Actually, the total number of apprentices employed as of January 1, 1966 is the highest recorded.

All of the 1966 data refers to apprentices employed in approved establishments. Approved programs for the purpose of this report fall within the following categories:

1. Programs registered with the Vocational Division, New Jersey State Department of Education under provisions of the New Jersey State Plan for Vocational Education.
2. Programs registered with the Bureau of Apprenticeship and Training, United States Department of Labor.
3. Programs registered jointly by the Vocational Division, New Jersey State Department of Education and the Bureau of Apprenticeship and Training, United States Department of Labor under provision of the Joint Approval Plan, which has been in operation in New Jersey since November 1959.

4. Apprenticeship programs approved by the Veterans Administration for disabled veterans.

5. Apprenticeship programs in establishments where the terms of apprenticeship are defined in collective bargaining agreements; and whose programs are not registered with an approval agency, but whose standards are at least equal to State and Federal apprenticeship requirements.

6. Other non-registered programs whose apprentices are under an acceptable apprenticeship agreement containing conditions comparable to the New Jersey State Apprenticeship Program in connection with trade title, length of apprenticeship, job breakdown, wage schedule, ratio, related instruction, and other pertinent factors.

Almost all persons designated as apprentices by employers in New Jersey are included in this report; programs under categories 5 and 6 above are not all known to the study committee. In a limited number of cases it was determined that apprenticeship programs did not conform to the basic apprenticeship requirements of the New Jersey State Apprenticeship Training Program. The individuals involved in these programs were not considered as bona fide apprentices and are, therefore, not listed in the study tabulation.

However, it is expected that positive action by the local coordinators and supervisors will result in the upgrading of these marginal programs, as well as more complete information in categories 5 and 6 and the results will be available to be included in future tabulations.

Ninety-four and eight-tenths Per Cent of the Employed Apprentices are Enrolled in Approved Related Instruction Programs.

Table II provides a comparative analysis of apprentices enrolled in related instruction classes during the last ten years.

TABLE II

Comparative Enrollment of Apprentices
in Approved Related Instruction
Classes

1957 - 1966

January 1	Number of Apprentices in Related Instruction	Per Cent in Related Instruction Classes
1957	3974	98.0%
1958	4072	97.6%
1959	3615	99.3%
1960	3457	98.1%
1961	3314	95.1%
1962	3545	96.2%
1963	3876	96.2%
1964	3987	98.0%
1965	4201	91.9%
1966	4933	94.8%

The increase in percentage of apprentices in related instruction is in part due to the efforts of the local coordinators and the Field Representatives of the Bureau of Apprenticeship and Training. Apprentices receiving related instruction show an increase of 732 over the 1965 report. This is the result of increased public vocational facilities being made available in areas of New Jersey which previously did not have vocational facilities.

<u>The Public Schools Continue to Provide Most of the Related Instruction for Apprentices.</u>

The distribution of the 4933 apprentices at present receiving related instruction is as follows:

1.	Schools under public supervision and control	4235 -	85.8%
2.	Approved classes conducted and financed by industry	467 -	9.5%
3.	Private schools, correspondence courses and others	231 -	4.7%
	Total in related instruction	4933	100.0%

Slightly less than eighty-six per cent of the related instruction is provided under public supervision and control by the public schools of the State. More than nine per cent of the related instruction is provided directly by industry for 1966 as compared with almost five per cent in 1965.

Attention is also directed to the 231 apprentices receiving related instruction through private schools, correspondence schools, and home-study programs. All programs of this type are approved by the apprentice coordinators as meeting the standards established for the related instruction program. Four and seven-tenths per cent of the total apprentices in related instruction are receiving their related training through this media. Some National Joint Apprenticeship Committees are now developing and providing their own correspondence type courses for local apprentices.

State and Local Responsibility for Providing Related Instruction

The goals of the Vocational Division and cooperating schools in preparing for the related instruction phase of the apprentice training program is to provide a minimum of 144 hours of appropriate related instruction during each year of apprenticeship for every bona fide apprentice employed within the State. The responsibility for providing organized related instruction for apprentices is recognized and generally accepted as belonging to the public schools. Local and county vocational schools, in areas where such schools exist, provide the related isntruction. Currently nineteen of New Jersey's twenty-one counties are providing public vocational facilities, including related instruction programs.

The apprentice training program in New Jersey recognizes various methods for offering related instruction, including classes segregated by trade, classes involving mixed trades, correspondence courses, and a bibliography method of

related instruction supervised by the employer where no other method is feasible. The method involving classes segregated by trade is undoubtedly best for providing related instruction, and is recommended and used whenever possible.

Public Vocational Schools or Programs Now Operate in nineteen of the Twenty-One Counties

Data showing the distribution of apprentice enrollments, by counties, are shown in TABLE III.

TABLE III

Number of Apprentices Employed in Each County and Number of Apprentices Receiving Related Instruction in Public Schools, in Approved Industry Sponsored Classes, and Through Other Approved Sources

January 1, 1966

County	Number of Apprentices Employed	Total Apprentices Receiving Related Instruction	Per Cent of Apprentices Receiving Related Instruction	Related Instruction Provided		
				By Public Schools	By Industry	By Other Sources
Totals	5204	4933	94.8%	4235	467	231
Atlantic	123	93	75.6%	93	0	0
Bergen	393	393	100.0%	388	3	2
Burlington	31	31	100.0%	31	0	0
Camden	596	596	100.0%	412	70	114
Cape May	0	0	0.0%	0	0	0
Cumberland	6	6	100.0%	6	0	0
Essex	1165	1098	91.7%	963	67	68
* Gloucester	5	5	100.0%	5	0	0
Hudson	518	464	89.6%	425	39	0
* Hunterdon	12	12	100.0%	12	0	0
Mercer	306	306	100.0%	306	0	0
Middlesex	468	409	87.4%	363	46	0
Monmouth	141	80	56.7%	28	51	1
Morris	149	149	100.0%	86	63	0
Ocean	79	79	100.0%	79	0	0
Passaic	243	243	100.0%	184	50	9
Salem	110	110	100.0%	73	0	37
Somerset	192	192	100.0%	170	22	0
Sussex	24	24	100.0%	24	0	0
Union	609	609	100.0%	572	37	0
Warren	34	34	100.0%	15	19	0

*Public Vocational Schools or programs do not operate in these counties.

The Number of Employed Apprentices Fluctuates in All Counties from Year to Year.

The data contained in Table IV provide a comparative picture of growth or decline in the number of bona fide apprentices, by counties, during the past ten years. The primary purpose of TABLE IV is to provide a basis for analysis and comparison of trends in each county.

TABLE IV

Comparison of
Number of Apprentices Employed
In Each County During the Ten-Year Period
1957 - 1966

County	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
TOTAL	4056	4171	3641	3523	3482	3646	3876	4068	4569	5204
Atlantic	158	165	175	167	174	169	168	155	163	123
Bergen	327	287	277	266	251	266	250	293	327	393
Burlington	46	50	38	47	86	80	86	31	90	31
Camden	237	231	281	273	188	388	306	356	374	596
Cape May	9	12	12	13	12	9	0	0	0	0
Cumberland	31	44	19	35	61	90	91	22	80	6
Essex	1126	1131	781	885	715	763	840	1056	816	1165
Gloucester	7	13	4	8	10	31	30	14	12	5
Hudson	382	503	433	377	291	275	381	351	564	518
Hunterdon	15	7	5	3	1	11	15	17	20	12
Mercer	261	270	341	264	311	314	322	359	455	306
Middlesex	411	392	344	322	389	370	367	422	376	468
Monmouth	26	30	19	17	112	27	65	37	89	141
Morris	207	184	168	163	156	193	206	35	179	149
Ocean	7	7	3	3	30	23	25	19	20	79
Passaic	208	182	144	134	104	89	141	201	195	243
Salem	66	67	49	48	75	40	55	82	93	110
Somerset	32	28	26	26	23	27	47	58	141	192
Sussex	8	8	19	19	19	27	15	9	69	24
Union	484	554	500	450	443	427	437	530	486	609
Warren	8	6	3	3	31	27	29	21	20	34

The Number of Apprentices in the Building Trades Comprises More Than Fifty-Five Per Cent of All the Apprentices in the State

Apprentices in the building trades account for 55.7% of all the apprentices employed. Throughout the years, building trades apprentices have numbered over half of the apprentices in New Jersey.

TABLE V shows the distribution of building trades apprentices by trade titles. Ninety-three and eight tenths per cent are receiving related instruction. In some instances supplementary trade training is being offered through vocational schools to apprentices in order to meet the training needs in a local area. The cooperation of joint apprenticeship committees and other advisory groups is an important factor in maintaining the large number of employed apprentices in the building trades area and the high proportion of these apprentices in related instruction classes.

TABLE V

Building Construction Trade Titles Listed in Order of
Number of Apprentices Employed
January 1, 1966

Rank	Trade	Number of Apprentices Employed	Number of Apprentices in Related Classes	Percent of Apprentices in Related Classes
	TOTALS	2898	2718	93.8%
1	Plumbers	814	759	93.2%
2	Carpenters	518	512	98.8%
3	Electricians	733	712	97.1%
4	Sheet Metal Workers	355	344	96.9%
5	Brick Masons	220	188	85.5%
6	Floor Layers	90	70	77.8%
7	Structural Iron Workers	51	51	100.0%
8	Painters	76	50	65.8%
9	Glaziers	31	25	80.6%
10	Plasterers	10	7	70.0%

The Number of Apprentices Employed in the Machine Shop Trades is More Than Twenty-Two Per Cent of the Apprentices in the State

Apprentices in machine shop trades account for 22.08% of all apprentices employed in New Jersey. This pattern is similar to the situation indicated by previous studies.

TABLE VI shows the distribution of machine shop trades by trade classifications. As in the building trades group, this area of apprentice activity also has a high proportion of apprentices in organized related instruction classes. The percentage of the apprentices receiving related instruction is 99.1%.

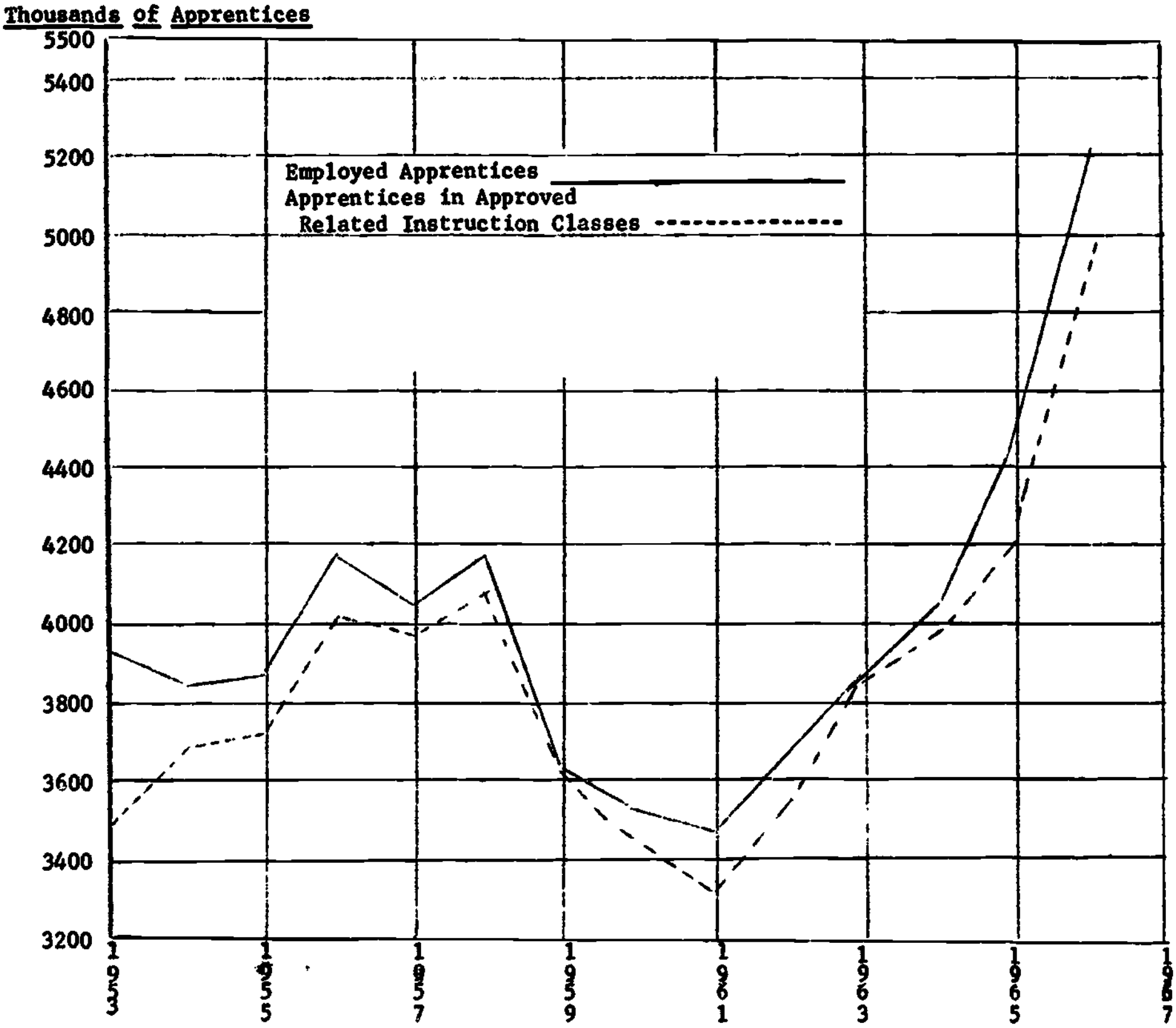
It is generally recognized that related theory for these trades is definitely essential to the making of a competent journeyman and satisfactory performance on the job. Each of the classifications in the machine shop trades category requires that the apprentices receive related instruction in the areas of drawing, blueprint reading, trade mathematics, and trade science.

TABLE VI

Machine Trades Listed in Order of
Number of Apprentices Employed
January 1, 1966

Rank		Number of Apprentices Employed	Number of Apprentices in Related Classes	Per Cent of Apprentices in Related Classes
	TOTALS	1160	1150	99.1%
1.	Tool and Die Maker	623	619	99.4%
2.	Machinist	515	509	98.8%
3.	Mold Maker	19	19	100.0%
4.	Coremaker	2	2	100.0%
5.	Roller Grinder	1	1	100.0%

Comparison of Employed Apprentices and Those Apprentices
Enrolled in Approved Related Instruction Classes
1953-1966



The Joint Approval Program

During 1965, approval of programs and registration of apprentices under the joint approval plan continued. This plan permits the acceptance and registration by either the Vocational Division, New Jersey State Department of Education, or the Bureau of Apprenticeship and Training, United States Department of Labor, of programs and agreements initiated by the other agency. The procedure is mutually advantageous to both agencies. This plan became effective during November, 1959 and is operated under a Statement of Working Relationships adopted by both agencies. Representatives of both agencies meet periodically to review the program and to discuss matters of procedure incident to the operation of the joint program.

Both agencies have been cooperating in the procedures necessary to assure full participation of the apprentice training facilities and sponsors in regard to non-discrimination in the employment and training of apprentices.

SUMMARY AND CONCLUSIONS

The following represents a brief summary of the information and facts applicable to the New Jersey Apprenticeship Program as derived from the study:

1. 5204 apprentices are currently employed in approved establishments. There are 59 different trades represented. The number of employed apprentices has shown an increase during the past year.
2. Related instruction was received by 4933 apprentices. Percentage wise, this is equal to 94.8% of those employed.
3. Public schools provide 85.8% of the related instruction for all the apprentices employed.
4. Industry continues to furnish related instruction for some programs in the State. Nine and five-tenths of all apprentices in related instruction are accommodated in this manner; the actual number being 467.
5. The use of approved home-study courses and a bibliography method of study continues in various areas of the State, although it is recognized that these methods of related instruction are used when no other method is feasible.
6. 55.6% of the employed apprentices are in the building trades and 93.8% of these apprentices are receiving related instruction.
7. 22.08% of the apprentices employed are in the Machine Shop Trades and 99.1% of these apprentices are in related instruction classes.
8. The Joint Approval Plan as implemented during 1959 continues to function. The use of the joint approval procedure has resulted in the joint registration of 1263 apprentices, and the joint approval of 345 establishments for apprentice training during 1965.
9. Steps and procedures have been undertaken and employed by both the Bureau of Apprenticeship and Training of the U.S. Department of Labor and the Vocational Division of the New Jersey State Department of Education to assure non-discrimination in the selection of apprentices.

State of New Jersey
Department of Education
Vocational Division
Trenton, New Jersey 08625

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VT 001 368
Follow-Up Study of Graduates, Vocational-Technical Education Programs, Class of 1964. Vocational-Technical Vocational Agriculture, and Distributive Education Programs.

New Jersey State Dept. of Education, Trenton. Vocational Div.
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*VOCATIONAL EDUCATION; COOPERATIVE EDUCATION; TECHNICAL EDUCATION; *VOCATIONAL FOLLOWUP; *HIGH SCHOOL GRADUATES; SECONDARY SCHOOLS; VOCATIONAL AGRICULTURE; DISTRIBUTIVE EDUCATION; PROGRAM EVALUATION; *JOB PLACEMENT; OCCUPATIONS; TRADE AND INDUSTRIAL EDUCATION
NEW JERSEY

Placement information is given for graduates of three programs in New Jersey public schools. Of the 2,238 graduates from all day trade and technical programs: (1) 1,360 were male and 878 were female, (2) 108 were continuing their education full time, (3) 1,867 were available for employment, (4) 1,622 were employed in the occupation for which they were trained or a related occupation, (5) 205 were employed in unrelated occupations, and (6) Their median hourly wage was $1.69 per hour. Of the 212 graduates from vocational agriculture programs: (1) 211 were male and 1 was female, (2) 36 were continuing their education, (3) 141 graduates were available for employment, (4) 100 were employed in agriculture or in occupations or services related to farming, (5) 34 were employed in work not related to agriculture, and (6) There were no graduates reported as unemployed. Of the 621 graduates from distributive education programs: (1) 307 were male and 314 were female, (2) 81 were continuing their education, (3) 456 were available for employment, (4) 326 were employed in a distributive occupation, (5) 96 were employed in jobs not related to distributive occupations, (6) Their median hourly wage was $1.47 per hour, and (7) 21 were unemployed. (SL)

VT 001 368

ED039370

FOLLOW-UP STUDY OF GRADUATES

VOCATIONAL-TECHNICAL EDUCATION PROGRAMS

CLASS OF 1964

VOCATIONAL-TECHNICAL PROGRAMS
VOCATIONAL AGRICULTURE PROGRAMS
DISTRIBUTIVE EDUCATION PROGRAMS

STATE OF NEW JERSEY
DEPARTMENT OF EDUCATION
VOCATIONAL DIVISION
TRENTON 08625

VT001368

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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F O R E W O R D

This is a follow-up study of graduates of vocational-technical, vocational agriculture, and distributive education programs for the school year ending June, 1964.

The purpose of the study is to determine the number of such graduates who have been placed in a job in the field for which they were educated and trained. A high percentage of placements indicates that the objectives of the various programs are being achieved.

The report shows the number of job placements is unusually high. As an example, 86% of all graduates of vocational-technical courses available for employment were placed in the fields for which they were trained. The percentage of graduates of vocational agriculture courses placed in agricultural occupations was 75% while 72% of the distributive education graduates were placed in merchandising and selling jobs.

Administrators, distributive education coordinators, guidance counselors and vocational agriculture teachers deserve commendation for the work they are doing.

Frederick M. Raubinger
Commissioner of Education

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State of New Jersey
Department of Education
Vocational Division
Trenton, 08625

INTRODUCTION

This is a report of a follow-up study of graduates of vocational education programs in the public schools of New Jersey who were graduated in June 1964. The information was gathered during the summer and fall of 1964. The study is in three parts:

Part I provides placement information for graduates of trade and technical preparatory courses, including general high schools offering part-time cooperative trade and industrial courses.

Part II provides placement information for graduates of vocational agriculture programs which are offered in 20 general high schools, six county vocational schools, and the New Jersey School for the Deaf.

Part III provides placement information for graduates of distributive education programs which are offered in 36 general high schools and two programs in the Somerset County Technical Institute.

The total number of graduates were as follows:

All Day Trade and Technical.	2,238
Part-time Cooperative Trade and Industrial . . .	85
Vocational Agriculture	212
Distributive Education	621
Grand Total	3,156

SUGGESTED USES OF THE GRADUATE PLACEMENT STUDY

1. Used in working with planning committees when new schools are under construction, or being considered, to indicate the variety of trade training opportunities available in the area.

2. Used with consulting or advisory committees to show evidence of placement and need or lack of need for training.

3. Used with craft committees when it is desirable to bring about an improvement in the placement of graduates in those craft fields.

4. Used with guidance personnel to determine guidance policies for local schools.

5. Used by guidance personnel to indicate wage trends at state and local levels and indication of placement opportunities.

6. Used to emphasize the primary objective of vocational education, "training for useful employment."

7. Used as a means of identifying marginal programs and other strengths and weaknesses in local programs.

8. Used by state supervisors for consultation with local directors or supervisors to aid in recognizing need for establishment, consolidation, reorganization and/or elimination of training opportunities in certain trade areas.

9. Used at state-wide meeting of local directors and supervisors to focus attention on:

    (a) Employment and placement trends
    (b) Reasons for good or poor placement
    (c) Courses with marginal values
    (d) Causes for lack of completion of training

10. Used with members of legislature and legislative committees to show effectiveness of programs of vocational education.

11. Used with State Board of Education and State Board for Vocational Education to show evidence as to quality of vocational education programs.

12. Used for publicity purposes on state and/or local level.

PART I

PLACEMENT REPORT FOR GRADUATES OF ALL-DAY TRADE AND TECHNICAL EDUCATION PROGRAMS CLASS OF 1964

The information reported in this part of the study is for graduates who completed their work in all-day trade or technical preparatory courses. Course titles used in this section are those suggested by the North Atlantic Regional Conference of State Supervisors of Trade and Industrial Education. The use of these titles results in more uniform regional reports. Thus, graduates in Air-Conditioning and Refrigeration, Automobile Mechanics, etc., will be found alphabetically under MECHANICS AND REPAIRMEN. Similarly graduates of technical courses are listed alphabetically under TECHNICIANS.

The following schools reported graduates from all-day trade and/or technical courses during the school year 1963-1964:

Atlantic City Vocational and Technical High School
Bayonne High School - Vocational Division
Bergen County Vocational and Technical High School
Burlington County Vocational-Technical Schools
Camden County Vocational and Technical High School
Cape May County Vocational-Technical Institute
Elizabeth - Thomas A. Edison Vocational and Technical High School
Essex County Vocational and Technical High Schools
- Bloomfield
- Irvington
- Newark Adult - Morris Avenue
- Newark Boys
- Newark Girls

Jersey City (School 25)
Middlesex County Vocational and Technical High Schools
- New Brunswick
- Perth Amboy
- Woodbridge

Monmouth County Vocational and Technical High Schools
Morris Hills Regional High School - Rockaway
New Jersey School for the Deaf - Trenton
Ocean County Vocational- Technical School
Passaic County Technical and Vocational High School
Salem County Technical Institute
Somerset County Vocational-Technical Schools
Sussex County Vocational-Technical Schools
Trenton Vocational-Technical High School
Union County Regional High School - Clark
Warren County Vocational School and Technical Institute
West Morris Regional High School - Chester

ALL DAY TRADE AND TECHNICAL PREPARATORY PROGRAMS

1. The number of graduates from all-day trade and technical preparatory programs in the class of 1964 numbered 2238. This was an increase of 98 graduates over the 2140 reported for the class of 1963. The following table shows the total number of graduates of trade and technical courses for the past ten years and the increase over the previous year.

Year	Graduates	Increase or Decrease Over Previous Year
1955	1251	+213
1956	1260	+ 9
1957	1335	+ 75
1958	1384	+ 49
1959	1642	+258
1960	1708	+ 66
1961	1876	+168
1962	1892	+ 16
1963	2140	+248
1964	2238	+ 98

Most of the increase in the number of graduates was accounted for by larger graduating classes in Practical Nursing, Beauty Operator, Automotive Mechanics, Carpenter-Cabinet Maker, Metal and Machine Shop, Electronics Technicians, and Drafting and Design Technicians. There were moderate increases in some of the other course offerings.

2. Of the 2238 graduates 1360 or 61% were boys and 878 or 39% were girls or women. Although the number of male graduates increased by 183, the number of female graduates decreased by 85 over the previous year. Consequently the proportion of male graduates over female graduates was increased by 21 percentage points over the previous year. This was predicted in last year's report and results from reports of the newer County Vocational Schools.

3. Of the 1867 graduates reported available for employment (those continuing their education in a full-time school, entering the armed services, below age for job placement, etc., are not available for employment) 1622 or 86 per cent were reported employed in the trade or technical occupation for which they were trained, or in an occupation closely related. This is a slightly lower percentage than reported last year.

4. Graduates reported placed in the trade or technical occupation for which they were trained received a median hourly wage of $1.69 per hour. This was slightly higher than the hourly wage reported in previous years. Thus the total annual income of these 1622 graduates, based on the hourly rate reported for a forty hour week amounted to $5,701,816.60. This amount represents a substantial return to the communities of the state on the money invested in the training of these students.

5. One hundred eight graduates, 87 boys and 21 girls, were reported continuing their education in a full-time school. Approximately 6% of the male graduates are in this category. Many of these were graduates of Electronics, Drafting and Design, Practical Nursing, Automotive Mechanics, and Carpenter-Cabinet Maker courses.

6. Two hundred thirteen boys were reported as entering the armed forces immediately following graduation. This represents sixteen percent of these graduates and is slightly higher than last year.

7. Forty-nine graduates, mostly girls, were reported unavailable for employment because of such reasons as marriage immediately following graduation, illness, hospitalization and the like.

8. Two hundred five graduates, one hundred sixty-six of whom were boys, were reported employed in an occupation not related to the one for which they were trained. Some of these graduates could not be placed in the jobs for which they prepared because they had not reached their eighteenth birthday. Some of them will probably return to the type of work for which they were trained when an opportunity presents itself.

9. Only 23 of the 2238 graduates were reported as unemployed and 17 others were reported as unaccounted for. When we consider the rate of unemployment among teenagers, generally this is an excellent record.

Summary tables and reports for individual schools will be found on the pages following.

The following table shows the total number of graduates in each category for the past ten years.

SUMMARY OF GRADUATES

1955 to 1964 Inclusive

Class	Number of Graduates	Continuing Training Full-Time	Entered Armed Services	Other Reasons	Available For Employment	Employed in Trade or Related Trade	Percent of Graduates	Median Hourly Wage	Employed in Occupation Not Related	Unemployed	Unaccounted for
1955	1251	47	135	-	1069	873	82%	1.22	163	21	12
1956	1260	61	181	-	1018	859	84%	1.36	129	25	5
1957	1335	58	151	-	1124	917	82%	1.44	142	46	19
1958	1384	70	167	-	1147	925	80%	1.37	171	32	19
1959	1642	69	166	-	1407	1182	84%	1.37	162	38	25
1960	1708	77	178	-	1453	1189	82%	1.55	176	42	46
1961	1876	99	224	-	1553	1302	84%	1.52	174	56	20
1962	1892	75	168	-	1649	1409	85%	1.54	161	60	19
1963	2140	92	178	48	1822	1614	88%	1.61	164	36	8
1964	2238	108	214	49	1867	1622	86%	1.69	205	23	17

REPORT OF TRADE SCHOOL GRADUATE PLACEMENTS - CLASS OF 1964

Summary of Courses Ranked in Order of Number of Graduates

Trade or Occupational Objective		Total Number of Graduates Class of 1964	Not Available For Employment			Available for Employment (Column 2 minus Cols. 3, 4 & 5 and Col. 7 plus 10, 11, & 12)	Employed in Trade for which Trained or in Related Occupation		Median Hourly Wage	Employed in Occupation Not Related to Trade	Unemployed	Unaccounted for
			Continued Training in Full-Time School	Entered Armed Services	Other Reasons *		Number	Per Cent (Column 7 ÷ 6)				
1		2	3	4	5	6	7	8	9	10	11	12
ALL COURSES	M	1360	87	213	13	1047	855	82	1.81	166	14	12
	F	878	21	1	36	820	767	94	1.57	39	9	5
	T	2238	108	214	49	1867	1622	86	1.69	205	23	17
Practical Nursing	*1 F	366	9	-	8	349	345	98	1.72	3	1	-
Beauty Operator	*2 F	214	2	3	20	189	165	87	1.39	17	3	4
Mechanics - Automotive	M	199	7	35	2	155	132	85	1.73	19	2	2
Carpenter & Cabinet Maker	M	139	8	26	1	104	79	76	1.69	24	1	-
Metal & Machine Shop	M	141	5	18	1	117	100	77	1.73	15	-	2
Technician Electronics	M	121	15	20	1	85	59	68	1.81	21	3	2
Draftsman	M	119	15	16	1	87	66	76	1.29	17	3	1

* Includes marriage, hospitalization, below working age, etc.
1* = 6 males
2* = 7 males

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Electricians	M	108	6	21	4	77	64	83	1.64	11	2	-
Printing	M	96	3	10	1	82	72	88	1.61	6	-	4
Cosmetology	*3 F	66	1	-	2	63	58	92	1.27	4	1	-
Technicians, Design	M	53	5	6	-	42	36	87	1.87	6	-	-
Power Sewing	F	45	5	-	-	40	40	100	1.32	-	-	-
Business Machine Operators	F	41	1	-	-	40	40	100	1.50	-	-	-
Technicians, Dental	F	22	-	-	1	22	21	97	1.76	-	1	-
Needle Trades (Dressmaking)	F	42	1	-	3	38	22	58	1.41	12	2	2
Auto-Body Shop	M	39	1	6	-	32	30	86	1.69	2	-	-
Tool & Die Maker	M	28	1	6	-	21	18	86	1.68	3	-	-
Technical Secretaries	F	28	-	-	-	28	28	100	1.62	-	-	-
Plumber	M	24	-	4	-	20	9	45	1.91	11	-	-
Technicians, Medical	F	24	1	-	1	22	21	95	1.75	1	-	-
Sheet Metal Worker	M	22	1	1	-	20	18	90	1.63	2	-	-
Radio & Television Repair	M	22	4	3	-	15	12	80	1.72	3	-	-
Painter-Paperhanger	M	21	-	5	-	16	14	87	1.66	1	-	1
Food Trades Worker	*4 F	18	1	1	-	16	10	70	1.54	6	-	-
Heating and Refrigeration	M	18	3	2	-	13	11	79	2.00	2	-	-
Technicians, Aircraft	M	17	8	5	-	4	2	50	2.40	2	-	-
Technicians, Communications	M	15	2	6	-	7	6	86	1.80	1	-	-
Brickmasons	M	14	-	4	-	10	9	90	2.25	-	-	1

3* = 3 males
4* = 10 males

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Baking	M	13	-	4	-	9	9	100	2.40	-	-	-
Electronics Instrumentation	M	13	-	-	-	13	12	92	2.50	-	1	-
Glassblowing	*5 M	12	-	-	-	12	12	100	2.20	-	-	-
Artists, Commercial	*6 M	12	2	-	1	9	5	56	1.25	4	-	-
Technicians, Metallurgical	M	11	-	1	-	10	10	100	1.68	-	-	-
Ornamental Horticulture	M	9	-	2	-	7	6	86	1.55	1	-	-
Data Processing	M	9	-	-	-	9	9	100	2.50	-	-	-
Business Training	F	8	-	-	1	7	7	100	1.75	-	-	-
Technicians, Laboratory	F	7	-	-	-	7	7	100	1.75	-	-	-
Boiler Room Operator	M	7	-	3	-	4	4	10[illegible]	2.10	-	-	-
Chemistry, Industrial	M	6	-	2	-	4	4	25	1.93	-	-	-
Welding	M	6	-	1	-	5	4	100	1.50	1	-	-
Building Trades	M	6	-	1	-	5	3	60	1.75	2	-	-
Upholsterer	M	5	-	-	-	5	4	80	1.60	-	1	-
Photographers, Commercial	M	4	-	-	-	4	3	75	2.12	1	-	-
Airplane Mechanic	M	4	1	-	-	3	-	-	-	3	-	-
Fishery Occupations	M	3	-	-	-	3	1	33	-	1	1	-
Floriculture	M	3	-	-	1	2	2	100	-	-	-	-
Photo-offset Shop	M	3	-	-	-	3	3	100	-	-	-	-
Chemistry & Nuclear Technology	M	2	-	1	-	1	1	100	1.75	-	-	-
Linotyping	M	2	-	-	-	2	2	100	-	-	-	-
Photo-engraving	M	2	-	-	-	2	1	50	-	-	-	-
Technicians, Air Conditioning	M	2	-	-	-	2	2	100	2.00	-	-	-
Library, Technical Aide	F	2	-	-	-	2	2	100	2.00	-	-	-
Hospital Aide	F	2	-	-	-	2	1	50	1.25	-	1	-

5* = 1 female
6* = 5 females

REPORT OF VOCATIONAL-TECHNICAL SCHOOL GRADUATE PLACEMENTS - CLASS OF 1964

Summary by Courses and Centers — All-Day Trade Schools

1 TRADE OR COURSE		2 Total Number of Graduates Class of 1964	Not Available for Employment: 3 Continued Training in Full-Time School	4 Entered Armed Services	5 Other Reasons*	6 Available for Employment (column 2 minus columns 3, 4, and 5 and (column 7 plus 10, 11, and 12)	Employed in Trade for which Trained or in Related Occupation: 7 Number	8 Percent (Col. 7 ÷ 6)	9 Median Hourly Wage	10 Employed in Occupation Not Related to Trade	11 Unemployed	12 Unaccounted for
ALL COURSES	M	1360	87	213	13	1047	855	82	1.81	166	14	12
	F	878	21	1	36	820	767	94	1.57	39	9	5
	T	2238	108	214	49	1867	1622	86	1.69	205	23	17
AIRPLANE MECHANIC	M	4	1	-	-	3	-	-	-	3	-	-
Passaic Co.	M	4	1	-	-	3	-	-	-	3	-	-
ARTISTS, COMMERCIAL	M	7	2	-	1	4	2	-	-	2	-	-
	F	5	-	-	-	5	3	-	1.25	2	-	-
	T	12	2	-	1	9	5	-	-	4	-	-
Essex Co. Voc. Newark - Boys Sussex Avenue	M	7	2	-	1	4	2	50	1.25	2	-	-
Essex Co. Voc. Newark - Girls 13th Street	F	5	-	-	-	5	3	60	1.25	2	-	-
AUTO BODY & FENDER (AUTO SHOP)	M	39	1	6	-	32	30	-	-	2	-	-
Bergen County	M	5	-	1	-	4	3	75	2.20	1	-	-
Camden County	M	4	1	1	-	2	2	100	1.45	-	-	-
Essex County, Irvington	M	7	-	1	-	6	6	100	1.90	-	-	-
Morris Ave. Adult, Newark	M	12	-	1	-	11	10	91	1.50	1	-	-

* Includes Marriage, Pregnancy, Hospitalization, Death, etc.

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
N. J. School for the Deaf, Trenton	M	2	-	-	-	2	2	100	-	-	-	-
Trenton Vocational	M	9	-	2	-	7	7	100	1.40	-	-	-
AUTOMOTIVE MECHANICS	M	199	7	35	2	155	132	-	-	19	2	2
Atlantic City H.S. Tech. Center	M	12	2	5	-	5	5	100	1.50	-	-	-
Bayonne H.S.	M	11	1	2	-	8	6	75	1.75	2	-	-
Bergen Co.	M	16	-	2	-	14	13	92	1.74	-	-	1
Camden Co.	M	3	-	-	-	3	3	100	1.65	-	-	-
T.A.Edison HS Elizabeth	M	19	-	2	-	17	14	82	1.50	1	1	1
Essex County, Bloomfield	M	18	1	6	1	10	7	70	1.62	3	-	-
Essex County, Irvington	M	15	1	1	-	13	13	100	1.50	-	-	-
Essex County, Newark	M	23	-	6	-	17	16	94	1.50	1	-	-
Middlesex Co. New Brunswick	M	18	-	3	-	15	15	100	1.75	-	-	-
Middlesex Co. Perth Amboy	M	9	1	-	1	7	7	100	1.72	-	-	-
Morris Ave. Adult, Newark	M	7	1	-	-	6	4	67	2.00	2	-	-
Morris Hills H.S. Rehway	M	10	-	2	-	8	5	63	1.75	2	1	-
Passaic Co.	M	18	-	3	-	15	12	80	2.50	3	-	-
Trenton Voc.	M	9	-	3	-	6	4	66	-	2	-	-
W.Morris Reg. Chester	M	11	-	-	-	11	8	73	1.80	3	-	-
BAKING	M	13	-	4	-	9	9	100	2.40	-	-	-
Bergen Co.	M	6	-	3	-	3	3	100	2.41	-	-	-
Middlesex Co. Woodbridge	M	7	-	1	-	6	6	100	2.38	-	-	-
BEAUTY CULTURE (COSMETOLOGY)	M	3	-	-	-	3	1	-	-	2	-	-
	F	63	1	-	2	60	57	-	1.27	2	1	-
	T	66	1	-	2	63	58	-	-	4	1	-
Elizabeth, T.A.Edison High School	M	3	-	-	-	3	1	33	1.25	2	-	-
	F	25	-	-	-	25	22	88	1.25	2	1	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Morris Hills High School	F	17	1	-	2	14	14	100	1.30	-	-	-
Trenton Voc.	F	21	-	-	-	21	21	100	-	-	-	-
BEAUTY OPERATOR	M	7	-	2	-	5	3	-	-	1	-	1
	F	207	2	1	20	184	162	-	-	16	3	3
	T	214	2	3	20	189	165	-	-	17	3	4
Atlantic City	F	21	-	1	-	20	13	60	1.25	3	2	2
Bayonne H.S.	F	12	1	-	1	10	9	90	1.65	1	-	-
Bergen County	M	2	-	1	-	1	-	-	-	-	-	1
	F	22	-	-	-	22	22	100	-	-	-	-
Cape May	M	2	-	-	-	2	1	50	-	1	-	-
	F	20	-	-	1	19	15	79	-	4	-	-
Essex Co. Newark Girls	F	86	1	-	9	76	69	91	1.50	6	-	1
Middlesex Co. Woodbridge	M	3	-	1	-	2	2	100	1.40	-	-	-
	F	46	-	-	9	37	34	92	1.40	2	1	-
BOILER ROOM OPERATOR	M	7	-	3	-	4	4	100	2.10	-	-	-
Bergen Co.	M	7	-	3	-	4	4	100	2.10	-	-	-
BRICK MASONS	M	11	-	4	-	7	6	-	-	-	-	1
Bergen Co.	M	5	-	2	-	3	2	66	2.50	-	-	1
Essex Co. Newark	M	6	-	2	-	4	4	100	2.75	-	-	-
BUILDING TRADES	M	6	-	1	-	5	3	60	1.75	2	-	-
Morris Hills HS Rockaway	M	6	-	1	-	5	3	60	1.75	2	-	-
BUSINESS MACHINES OPERATOR	F	41	1	-	-	40	40	100	1.50	-	-	-
Essex Co. Newark,girls	F	41	1	-	-	40	40	100	1.50	-	-	-
BUSINESS TRAINING	F	8	-	-	1	7	7	100	1.75	-	-	-
N.J. School for the Deaf, Trenton	F	8	-	-	1	7	7	100	1.75	-	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CARPENTER, CABINET MAKER	M	139	8	26	1	104	79	-	-	24	1	-
Bayonne H.S.	M	11	-	2	1	8	5	62	1.80	3	-	-
Bergen Co.	M	14	1	4	-	9	9	100	1.82	-	-	-
Elizabeth, T.A.Edison High School	M	19	-	2	-	17	14	82	1.60	3	-	-
Essex Co., Bloomfield	M	16	-	2	-	14	11	79	1.70	3	-	-
Essex Co., Irvington	M	8	-	2	-	6	3	50	1.70	3	-	-
Essex Co., Newark	M	18	-	6	-	12	8	67	1.70	3	1	-
Middlesex Co. New Brunswick	M	11	-	2	-	9	8	89	1.62	1	-	-
Middlesex Co. Perth Amboy	M	14	2	5	-	7	6	86	1.53	1	-	-
Passaic Co.	M	19	3	-	-	16	12	75	2.00	4	-	-
Trenton Voc.	M	9	2	1	-	6	3	50	1.35	3	-	-
CHEMIST - INDUSTRIAL	M	6	-	2	-	4	4	-	1.92	-	-	-
Bergen Co.	M	2	-	1	-	1	1	100	1.85	-	-	-
Middlesex Co. Perth Amboy	M	4	-	1	-	3	3	100	2.00	-	-	-
CHEMISTRY - NUCLEAR TECH.	M	2	-	1	-	1	1	100	1.75	-	-	-
Camden Co.	M	2	-	1	-	1	1	100	1.75	-	-	-
COMMERCIAL FOODS (FOOD HANDLER)	M	9	-	1	-	8	5	-	-	3	-	-
	F	8	1	-	-	7	4	-	-	3	-	-
	T	17	1	1	-	15	9	-	-	6	-	-
Bergen Co.	M	2	-	1	-	1	1	100	1.70	-	-	-
	F	1	-	-	-	1	-	-	-	1	-	-
Elizabeth, T.A.Edison High School	M	5	-	-	-	5	2	40	1.40	3	-	-
Essex Co. Newark Boys	M	1	-	-	-	1	1	100	-	-	-	-
Essex Co. Newark Girls	F	5	1	-	-	4	2	50	1.35	2	-	-
Middlesex Co. Woodbridge	M	1	-	-	-	1	1	100	1.69	-	-	-
	F	2	-	-	-	2	2	100	1.65	-	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CULINARY ARTS	M	1	-	-	-	1	1	100	1.55	-	-	-
Camden Co.	M	1	-	-	-	1	1	100	1.55	-	-	-
DATA PROCESSING TECHNOLOGY	M	9	-	-	-	9	9	100	2.50	-	-	-
Union Co.	M	9	-	-	-	9	9	100	2.50	-	-	-
DENTAL ASSISTANTS	F	18	-	-	1	17	17	100	1.90	-	-	-
Union Co.	F	18	-	-	1	17	17	100	1.90	-	-	-
DRAFTSMAN (DRAFTING)	M	119	15	16	1	87	66	-	-	17	3	1
Bayonne HS	M	18	4	1	-	13	11	63	1.80	2	-	-
Bergen Co.	M	6	2	2	-	2	1	50	1.65	1	-	-
Camden Co.	M	2	-	-	-	2	2	100	1.50	-	-	-
Cape May	M	9	-	2	-	7	5	72	-	2	-	-
Elizabeth T.A.Edison High School	M	18	1	3	-	14	9	64	1.60	3	2	-
Middlesex Co. New Brunswick	M	11	1	3	-	7	7	100	1.65	-	-	-
Middlesex Co. Perth Amboy	M	9	1	2	-	6	6	100	1.72	-	-	-
Monmouth Co.	M	10	2	2	-	6	1	17	1.76	4	-	1
Passaic Co.	M	17	4	1	-	12	9	75	1.50	3	-	-
Salem Co.	M	7	-	-	-	7	6	86	2.50	1	-	-
Trenton Voc.	M	5	-	-	-	5	3	60	1.50	1	1	-
Union Co.	M	7	-	-	1	6	6	100	2.50	-	-	-
DRESSMAKING & DESIGN (TEEP DLE TRADES)	F	42	1	-	3	38	22	-	-	12	2	2
Elizabeth, T.A.Edison High School	F	5	-	-	-	5	3	60	1.25	1	1	-
Essex Co. Newark Girls	F	23	1	-	3	19	11	58	1.25	8	-	-
Middlesex Co. Woodbridge	F	10	-	-	-	10	4	40	1.65	3	1	2
N.J. School For The Deaf Trenton	F	4	-	-	-	4	4	100	1.32	-	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ELECTRICITY-ELECTRICIAN MAINTENANCE	M	99	6	18	3	72	59	-	-	11	2	-
Bayonne H.S.	M	9	2	1	-	6	5	83	1.75	1	-	-
Bergen Co.	M	5	1	1	-	3	2	66	1.60	-	1	-
Camden Co.	M	8	-	1	-	7	6	86	1.65	1	-	-
Elizabeth, T.A.Edison High School	M	13	-	1	-	12	11	93	1.50	-	1	-
Essex Co. Bloomfield	M	12	1	3	1	7	4	57	1.80	3	-	-
Essex Co. Irvington	M	3	-	2	-	1	1	100	1.75	-	-	-
Essex Co. Newark	M	5	1	1	-	3	2	67	1.50	1	-	-
Middlesex Co. New Brunswick	M	18	1	3	2	12	12	100	1.58	-	-	-
Middlesex Co. Perth Amboy	M	8	-	2	-	6	6	100	1.55	-	-	-
Passaic Co.	M	18	-	3	-	15	10	66	1.65	5	-	-
ELECTRICIANS TECHNICAL	M	9	-	3	1	5	5	-	-	-	-	-
Essex Co. Bloomfield	M	4	-	2	1	1	1	100	-	-	-	-
Essex Co. Irvington	M	4	-	-	-	-	4	100	2.00	-	-	-
Essex Co. Newark	M	1	-	1	-	-	-	-	-	-	-	-
ELECTRONICS	M	121	15	20	1	85	59	-	-	21	3	2
Atlantic City	M	16	-	3	-	13	10	77	1.35	1	2	-
Camden Co.	M	4	2	-	-	2	1	50	-	1	-	-
Cape May	M	6	-	-	-	6	5	84	-	1	-	-
Essex County Irvington	M	9	2	2	-	5	4	80	1.95	1	-	-
Middlesex Co. New Brunswick	M	17	3	3	-	11	8	73	1.82	3	-	-
Middlesex Co. Perth Amboy	M	8	2	1	-	5	5	100	1.76	-	-	-
Monmouth Co.	M	7	1	3	-	3	-	-	1.30	2	1	-
Passaic Co.	M	24	5	4	-	15	5	33	2.00	10	-	-
Somerset Co.	M	6	-	2	-	4	3	75	1.98	1	-	-
Trenton Voc.	M	9	-	2	-	7	4	57	1.40	1	-	2
Union Co.	M	10	-	-	1	9	9	100	2.25	-	-	-
Warren Co.	M	5	-	-	-	5	5	100	1.85	-	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ELECTRONICS-INSTRUMENTATION	M	13	-	-	-	13	12	-	2.50	-	1	-
Salem Co.	M	13	-	-	-	13	12	92	2.50	-	1	-
FISHERY OCCUPATIONS	M	3	-	-	-	3	1	33	-	1	1	-
Cape May Co.	M	3	-	-	-	3	1	33	-	1	1	-
FLORICULTURE	M	3	-	-	1	2	2	100	-	-	-	-
N.J. School For The Deaf	M	3	-	-	1	2	2	100	-	-	-	-
HORTICULTURE, ORNAMENTAL	M	9	-	2	-	7	6	-	-	1	-	-
Bergen Co.	M	4	-	1	-	3	3	100	1.25	-	-	-
Camden Co.	M	5	-	1	-	4	3	75	1.40	1	-	-
HOSPITAL AIDE	F	2	-	-	-	2	1	50	1.25	-	1	-
N.J. School For The Deaf	F	2	-	-	-	2	1	50	1.25	-	1	-
LIBRARY TECH. AIDE	F	2	-	-	-	2	2	100	2.00	-	-	-
Salem Co.	F	2	-	-	-	2	2	100	2.00	-	-	-
LINOTYPING	M	2	-	-	-	2	2	100	-	-	-	-
N.J. School For The Deaf	M	2	-	-	-	2	2	100	-	-	-	-
MACHINIST (MACHINE & METAL SHOP)	M	141	5	18	1	117	100	-	-	15	1	1
Bayonne H.S.	M	14	1	1	-	12	10	83	1.75	2	-	-
Bergen Co.	M	11	-	3	-	8	6	75	1.85	1	-	1
Elizabeth T.A.Edison High School	M	21	-	-	-	21	19	90	1.55	2	-	-
Essex Co. Bloomfield	M	17	2	1	-	14	13	93	1.80	1	-	-
Essex Co. Irvington	M	8	-	2	-	6	5	83	1.92	1	-	-
Essex Co. Newark	M	15	-	3	-	12	10	83	1.70	2	-	-
Middlesex Co. New Brunswick	M	15	-	3	1	11	11	100	1.85	-	-	-
Middlesex Co. Perth Amboy	M	15	-	[illegible]	-	14	12	86	1.63	2	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
N.J. School For The Deaf	M	1	-	-	-	1	1	100	-	-	-	-
Passaic Co.	M	15	2	4	-	9	7	77	-	2	-	-
Trenton Voc.	M	9	-	-	-	9	6	67	1.35	2	-	1
MASONRY	M	3	-	-	-	3	3	-	1.50	-	-	-
Trenton Voc.	M	3	-	-	-	3	3	100	1.50	-	-	-
MECHANICS-HEATING & REFRIGERATION	M	18	3	2	-	13	11	-	2.00	2	-	-
Essex Co. Irvington	M	2	-	-	-	2	2	100	-	-	-	-
Passaic Co.	M	16	3	2	-	11	9	81	2.00	2	-	-
MECHANICS, RADIO & TELEVISION	M	22	4	3	-	15	12	-	-	3	-	-
Bayonne H.S.	M	9	2	2	-	5	4	80	1.75	1	-	-
Bergen Co.	M	7	2	-	-	5	5	100	1.82	-	-	-
Elizabeth T.A.Edison High School	M	6	-	1	-	5	3	60	1.60	2	-	-
PAINTER AND/OR PAPERHANGER	M	21	-	5	-	16	14	-	-	1	-	1
Elizabeth	M	11	-	1	-	10	9	90	1.55	-	-	1
Middlesex Co. New Brunswick	M	4	-	1	-	3	2	67	1.70	1	-	-
Middlesex Co. Perth Amboy	M	6	-	3	-	3	3	100	1.75	-	-	-
PHOTO-ENGRAVING	M	2	-	-	-	2	1	50	-	1	-	-
N.J.School For The Deaf	M	2	-	-	-	2	1	50	-	1	-	-
PHOTOGRAPHERS COMMERCIAL	M	4	-	-	-	4	3	75	2.12	1	-	-
Essex Co. Newark	M	4	-	-	-	4	3	75	2.12	1	-	-
PHOTO-OFFSET	M	3	-	-	-	3	3	100	-	-	-	-
N.J.School For The Deaf	M	3	-	-	-	3	3	100	-	-	-	-
PLUMBING AND/OR PIPEFITTER	M	24	-	4	-	20	9	-	-	11	-	-
Middlesex Co. New Brunswick	M	5	-	4	-	1	1	100	1.50	-	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Passaic Co.	M	15	-	-	-	15	5	33	2.40	10	-	-
Trenton Voc.	M	4	-	-	-	4	3	75	1.35	1	-	-
POWER SEWING* includes Type "C" programs	F	45	5	-	-	40	40	-	-	-	-	-
Camden Co.	F	8	5	-	-	3	3	100	1.25	-	-	-
Trenton Voc.*	F	37	-	-	-	37	37	100	1.35	-	-	-
PRACTICAL NURSING	M	6	-	-	-	6	6	-	-	-	-	-
	F	360	9	-	8	343	339	-	-	3	1	-
	T	366	9	-	8	349	345	-	-	3	1	-
Atlantic City	F	31	-	-	-	31	30	96	1.50	1	-	-
Burlington Co.	F	13	-	-	-	13	13	100	1.40	-	-	-
Camden Co.	F	32	-	-	-	32	32	100	1.40	-	-	-
Cape May	M	2	-	-	-	2	2	100	-	-	-	-
	F	14	-	-	1	13	13	100	-	-	-	-
Essex Co.	F	63	-	-	3	60	60	100	1.75	-	-	-
Jersey City	F	44	-	-	-	44	44	100	1.60	-	-	-
Middlesex Co. Woodbridge	F	23	9	-	-	14	12	86	1.54	2	-	-
Monmouth Co.	F	14	-	-	-	14	13	93	1.77	-	1	-
Morris Hills	F	10	-	-	-	10	10	100	1.60	-	-	-
Passaic Co.	M	3	-	-	-	3	3	100	1.80	-	-	-
	F	31	-	-	-	31	31	100	1.80	-	-	-
Salem Co.	F	14	-	-	-	14	14	100	1.15	-	-	-
Somerset Co.	M	1	-	-	-	1	1	100	2.00	-	-	-
	F	24	-	-	4	20	20	100	1.75	-	-	-
Sussex Co.	F	9	-	-	-	9	9	100	1.35	-	-	-
Trenton Voc.	F	26	-	-	-	26	26	100	1.35	-	-	-
Warren Co.	F	12	-	-	-	12	12	100	1.55	-	-	-
PRINTING OCCUPATIONS	M	96	3	10	1	82	72	-	-	6	-	4
Bayonne H.S.	M	16	1	4	-	11	7	63	1.75	4	-	-
Bergen Co.	M	18	-	-	-	18	14	77	1.85	-	-	4
Camden Co.	M	7	-	1	-	6	6	100	1.60	-	-	-
Elizabeth T.A.Edison High School	M	18	-	1	-	17	17	100	1.55	-	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Essex Co. Newark	M	15	-	1	1	13	13	100	1.65	-	-	-
Middlesex Co. New Brunswick	M	12	2	2	-	8	8	100	1.50	-	-	-
N.J.School For The Deaf	M	4	-	-	-	4	4	100	-	-	-	-
Trenton Voc.	M	6	-	1	-	5	3	60	1.40	2	-	-
SCIENTIFIC GLASSBLOWING	M	11	-	-	-	11	11	100	2.20	-	-	-
	F	1	-	-	-	1	1	100	2.20	-	-	-
	T	12	-	-	-	12	12	100	2.20	-	-	-
Salem Co.	M	11	-	-	-	11	11	100	2.20	-	-	-
	F	1	-	-	-	1	1	100	2.20	-	-	-
SHEET METAL	M	22	1	1	-	20	18	-	-	2	-	-
Bergen Co.	M	3	-	-	-	3	3	100	1.80	-	-	-
Camden Co.	M	3	-	-	-	3	3	100	1.25	-	-	-
Essex Co. Irvington	M	7	-	-	-	7	6	86	1.85	1	-	-
Middlesex Co. Perth Amboy	M	5	-	-	-	5	4	80	1.74	1	-	-
Trenton Voc.	M	4	1	1	-	2	2	100	1.50	-	-	-
TECHNICIANS, AIR CONDITIONING	M	2	-	-	-	2	2	100	2.00	-	-	-
Essex Co. Irvington	M	2	-	-	-	2	2	100	2.00	-	-	-
TECHNICIANS, AIRCRAFT	M	17	8	5	-	4	2	50	2.40	2	-	-
Essex Co. Bloomfield	M	17	8	5	-	4	2	50	2.40	2	-	-
TECHNICIAN, COMMUNICATION	M	15	2	6	-	7	6	86	1.80	1	-	-
Essex Co. Bloomfield	M	15	2	6	-	7	6	86	1.80	1	-	-
TECHNICIAN, DENTAL	F	22	-	-	-	22	21	95	1.63	-	1	-
Essex Co. Newark	F	22	-	-	-	22	21	95	1.63	-	1	-
TECHNICIAN, DESIGN	M	53	5	6	-	42	36	-	-	6	-	-
Essex Co, Bloomfield	M	11	-	3	-	8	7	88	1.75	1	-	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Essex Co. Irvington	M	16	1	1	-	14	11	79	1.60	3	-	-
Essex Co. Newark	M	10	2	1	-	7	7	100	1.50	-	-	-
Somerset Co.	M	13	2	1	-	10	8	80	2.28	2	-	-
Warren Co.	M	3	-	-	-	3	3	100	2.00	-	-	-
TECHNICIAN, LABORATORY	M	7	-	-	-	7	7	100	1.55	-	-	-
Essex Co, Newark	M	7	-	-	-	7	7	100	1.55	-	-	-
TECHNICIAN, MEDICAL	F	24	1	-	1	22	21	95	1.75	1	-	-
Essex Co. Newark girls	F	24	1	-	1	22	21	95	1.75	1	-	-
TECHNICIAN, METALLURGICAL	M	11	-	1	-	10	10	100	-	-	-	-
Essex Co. Bloomfield	M	4	-	-	-	4	4	100	2.00	-	-	-
Essex Co. Irvington	M	5	-	1	-	4	4	100	1.90	-	-	-
Essex Co. Newark	M	2	-	-	-	2	2	100	1.55	-	-	-
TECHNICAL SECRETARIES	F	28	-	-	-	28	28	100	1.62	-	-	-
Essex Co. Newark, Girls	F	28	-	-	-	28	28	100	1.62	-	-	-
TOOL AND DIEMAKERS	M	28	1	6	-	21	18	-	-	3	-	-
Essex Co. Bloomfield	M	16	-	4	-	12	10	83	1.60	2	-	-
Essex Co. Irvington	M	12	1	2	-	9	8	89	1.75	1	-	-
UPHOLSTERY	M	5	-	-	-	5	4	-	-	-	1	-
Middlesex Co. New Brunswick	M	4	-	-	-	4	4	100	1.60	-	-	-
N.J. School For The Deaf	M	1	-	-	-	1	-	-	-	-	1	-

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
WELDING	M	6	-	1	-	5	4	80	1.50	1	-	-
Camden Co.	M	6	-	1	-	5	4	80	1.50	1	-	-
WOODWORKING	M	3	1	-	-	2	2	100	1.50	-	-	-
Camden Co.	M	3	1	-	-	2	2	100	1.50	-	-	-

REPORT OF VOCATIONAL TECHNICAL GRADUATE PLACEMENTS - CLASS OF 1964

Summary by Courses and Centers — Part-Time Cooperative Courses

Trade or Course		Total Number Graduates	Not Available For Employment			Available for Employment (Col. 2 minus Col. 3,4,&5 and Col. 7 Plus 10,11,12	Employed in Trade for which Trained or in Related Occupation		Median Hourly Wage	Employed in Occupation Not Related to Trade	Unemployed	Unaccounted for
			Continued Training in Full-Time School	Entered Armed Services	Other Reasons *		Number	Per Cent Col. 7 ÷ 6				
1		2	3	4	5	6	7	8	9	10	11	12
ALL TRADES	M	85	3	1	3	78	72	96	-	3	1	2
AIR CONDITIONING	M	2	-	-	-	2	2	100	-	-	-	-
Ridgefield H. S.	M	2	-	-	-	2	2	100	-	-	-	-
AUTO-MECHANICS	M	10	-	-	-	10	10	100	-	-	-	-
Rahway H. S.	M	1	-	-	-	1	1	100	-	-	-	-
Ridgefield	M	2	-	-	-	2	2	100	-	-	-	-
Union Twp. H. S.	M	3	-	-	-	3	3	100	-	-	-	-
Union County	M	4	-	-	-	4	4	100	-	-	-	-
AUTO-SHOP AND BODY	M	17	-	-	1	16	13	93	-	-	-	2
Clark Regional H. S.	M	16	-	-	1	15	13	86	-	-	-	2
Ridgefield	M	1	-	-	-	1	1	100	-	-	-	-
CABINET MAKER	M	3	-	-	-	3	3	100	-	-	-	-
Ridgefield	M	1	-	-	-	1	1	100	-	-	-	-
Union County	M	2	-	-	-	2	2	100	-	-	-	-

* Includes Marriage, Pregnancy, Hospitalization, Death, etc.

1		2	3	4	5	6	7	8	9	10	11	12
CHEFS	M	2	-	-	-	2	2	100	-	-	-	-
Union County H. S.	M	2	-	-	-	2	2	100	-	-	-	-
ELECTRIC MOTOR REPAIR	M	2	-	-	-	2	2	100	-	-	-	-
Union Township H. S.	M	2	-	-	-	2	2	100	-	-	-	-
ELECTRONIC TECHNICIANS	M	7	3	-	-	4	4	100	-	-	-	-
Clark Regional	M	4	3	-	-	1	1	100	-	-	-	-
Ridgefield H. S.	M	2	-	-	-	2	2	100	-	-	-	-
Union County	M	1	-	-	-	1	1	100	-	-	-	-
ENGINEER AIDE	M	1	-	-	-	1	1	100	-	-	-	-
Union County	M	1	-	-	-	1	1	100	-	-	-	-
HAND CHROME PLATER	M	1	-	-	-	1	1	100	-	-	-	-
Union Township	M	1	-	-	-	1	1	100	-	-	-	-
INDUSTRIAL ELECTRICIANS	M	3	-	-	-	3	3	100	-	-	-	-
Rahway High School	M	1	-	-	-	1	1	100	-	-	-	-
Ridgefield H. S.	M	1	-	-	-	1	1	100	-	-	-	-
Union County	M	1	-	-	-	1	1	100	-	-	-	-
KITCHEN MANAGER ASSISTANT	M	2	-	-	-	2	2	100	-	-	-	-
Union Township H. S.	M	2	-	-	-	2	2	100	-	-	-	-
MACHINIST	M	18	-	1	2	15	12	80	-	3	-	-
Clark Regional H. S.	M	11	-	-	2	9	9	100	-	-	-	-
Rahway H. S.	M	6	-	1	-	5	2	40	-	3	-	-
Union County	M	1	-	-	-	1	1	100	-	-	-	-

*Includes Marriage, Pregnancy, Hospitalization, Death, etc.

1		2	3	4	5	6	7	8	9	10	11	12
DRAFTING, MECHANICAL	M	6	-	-	-	6	6	100	-	-	-	-
Rahway H. S.	M	1	-	-	-	1	1	100	-	-	-	-
Ridgefield H. S.	M	2	-	-	-	2	2	100	-	-	-	-
Union Township H. S.	M	1	-	-	-	1	1	100	-	-	-	-
Union County	M	2	-	-	-	2	2	100	-	-	-	-
TOOL MAKER	M	2	-	-	-	2	2	100	-	-	-	-
Union Township	M	2	-	-	-	2	2	100	-	-	-	-
WOODSHOP	M	2	-	-	-	2	1	50	-	-	1	-
Clark Regional H. S.	M	2	-	-	-	2	1	50	-	-	1	-
INSTRUMENT TECHNICIAN	M	1	-	-	-	1	1	100	-	-	-	-
Ridgefield H. S.	M	1	-	-	-	1	1	100	-	-	-	-
PLANT MAINTENANCE	M	1	-	-	-	1	1	100	-	-	-	-
Ridgefield H. S.	M	1	-	-	-	1	1	100	-	-	-	-
PLUMBING	M	1	-	-	-	1	1	100	-	-	-	-
Ridgefield H. S.	M	1	-	-	-	1	1	100	-	-	-	-
SHEET METAL LAYOUT	M	2	-	-	-	2	2	100	-	-	-	-
Ridgefield	M	2	-	-	-	2	2	100	-	-	-	-
SHEET METAL MECHANIC	M	2	-	-	-	2	2	100	-	-	-	-
Ridgefield H. S.	M	2	-	-	-	2	2	100	-	-	-	-

*Includes Marriage, Pregnancy, Hospitalization, Death, etc.

PART II

Placement Report of Vocational Agriculture Graduates June 1963 - 1964

Vocational Agriculture programs were offered in the following public secondary schools and county vocational schools during the school year 1963-64.

Allentown (Upper Freehold Township High School)
Annandale (North Hunterdon Regional High School)
Belvidere High School
Blairstown High School
Bridgeton High School
Columbus (Northern Burlington County Regional High School)
Flemington (Hunterdon Central High School)
Freehold Regional High School
Hackettstown High School
Hammonton High School
Kingsway Regional High School
Lambertville (Southern Hunterdon County Regional High School)
Manasquan High School
Mays Landing (Oakcrest Regional High School)
Medford (Lenape Regional High School)
New Brunswick Senior High School
Newton High School
Passaic County Vocational-Technical School)
Salem High School
Springfield (Jonathan Dayton Regional High School)
Sussex High School
Washington High School
Woodstown (Pilesgrove Township High School)

Hackensack (Bergen County Vocational-Technical High School)
Merchantville (Camden County Vocational-Technical High School)
Cape May Court House (Cape May County Vocational School)
Cape May (Cape May County Vocational School)
New Jersey School For The Deaf (State School)
Egg Harbor (Atlantic County Adult Evening Programs)
Hammonton (Atlantic County Adult Evening Programs)
Minotola (Atlantic County Adult Evening Programs)

1. Vocational Agriculture courses were offered in twenty-three different public secondary schools, four county vocational schools, and the New Jersey School for the Deaf during the school year 1963-64. In addition to these secondary school programs, adult evening programs and Young Farmer programs were offered in twenty four centers with 491 adults and 83 youths attending these classes. This report concerns only those vocational agriculture students who graduated from secondary schools.

2. A total of 1,275 students was enrolled in Vocational Agriculture day programs. This is an average of 45 students per school. Of the 212 students graduated this year, only one was a girl. The number of graduates was above 200. Since the study was begun in 1958, only in 1962-63 was the number of graduates below 200. (See table I)

3. The 1,275 day school pupils enrolled in the regular high school and vocational school programs reported a total labor income of $366,983.76 from their supervised work experience programs.

4. Of the 212 graduates, 16 were reported as entering a full-time college and 20 others were reported as continuing their training in other types of institutions. Thus, approximately 17 per cent of all vocational agriculture graduates are continuing their schooling instead of going directly into some kind of agricultural work. Some of 36 graduates in this category may pursue an agricultural career after graduating from college or completing some other course of study.

5. Thirty-five of the graduates were reported as "entered armed services."

6. The remaining 141 graduates were available for employment. Of this number 100 were reported as employed in agriculture (farm status) or in occupations or services related to farming. Therefore, 71 per cent of the graduates available for employment were reported working in agricultural occupations.

7. Only 34 graduates were reported in work not related to agriculture. This is about the same number reported in this category in previous years. Some of this group enter non-agricultural employment because they do not have sufficient funds to start a farm business. Industrial wages in general are usually higher than agricultural wages. It may be that at a future date these graduates will return to agriculture when they have accumulated sufficient capital.

8. No graduates were reported as unemployed and only one was unaccounted for. This is an unusual record in view of unemployment figures for this age group. Apparently Vo-Ag graduates have something to offer employers. Furthermore, the contacts of Vo-Ag teachers with employers and community leaders affords them an opportunity to locate job openings for their graduates. This fine record also reflects the excellent student accounting procedure being used by Vo-Ag teachers and pupil accounting personnel in schools offering Vo-Ag curriculum.

The following schools reported ten or more graduates of vocational agriculture in June 1964:

1. Belvidere High School
2. Bridgeton High School
3. Columbus High School
4. Flemington, Hunterdon Central High School
5. Medford, Lenape Regional High School
6. Newton High School
7. Springfield, Jonathan Dayton Regional High School
8. Pilesgrove Township High School

On the following pages are tables showing a comparison of Vocational Agriculture graduates from 1958 to 1963; a summary report of Vo-Ag graduates -- class of 1964; and a table of graduades by schools.

COMPARISON OF VOCATIONAL AGRICULTURE GRADUATES

BY CLASSES - 1958 - 1964

TABLE I

Class	1 Number of Graduates	2 Entered College (Full-Time)	3 Cont:nued Training-Other Institutions	4 Entered Armed Services	5 Available for Employment	6 Total Employed in Agriculture	Employed in Agriculture: a Farm Operator	b Partner Farm Business	c Stockholder in Farm Business	d At Home with Wages	e Employed as Farm Manager	f Employed as Farm Hand	g Part-time Farmer	7 Employed in Occupations Related	8 Per Cent Employed in Ag. or Related	9 Employed in Occupation Not Related	10 Deceased	11 Unemployed	12 Unaccounted For
1958	253	29	12	47	165	96	17	23	-	29	1	15	11	26	74	37	-	5	1
1959	208	21	8	35	143	86	7	18	-	27	3	20	11	18	73	39	1	-	-
1960	220	24	8	38	150	90	8	19	-	29	2	21	11	25	77	29	-	6	-
1961	205	13	11	30	150	92	6	20	4	30	1	26	5	26	79	26	1	6	-
1962	229	20	11	41	157	91	4	17	1	34	1	20	14	28	76	32	-	5	1
1963	194	19	14	22	139	81	2	13	1	38	-	17	10	27	77	31	-	-	1
1964	212	16	20	35	141	100	2	22	-	20	-	14	7	35	71	34	-	-	1

TABLE II

SUMMARY REPORT OF VOCATIONAL AGRICULTURE GRADUATES - CLASS OF 1964

		Male	Female	Total
1.	Total Number of Graduates	211	1	212
2.	Entered College (Full-Time)			16
3.	Continued Training in Other Institutions			20
4.	Entered the Armed Services			35
5.	Available for Employment (Line 1 minus lines 2, 3, and 4)			141
6.	Employed in Agriculture			100
	a. Far Operator (renters & owners)	2		
	b. Partner in farm business	22		
	c. Stockholder in farm business	0		
	d. At home with wages	20		
	e. Employed as farm manager	0		
	f. Employed as farm hand	14		
	g. Part-time farmer	7		
7.	Employed in Occupations or Services Related to Agriculture			35
8.	Percentage employed in field for which trained (total of line 6 and 7 divided by line 5)			71%
9.	Employed in Occupations Not Related to Agriculture			34
10.	Unemployed			0
11.	Unaccounted for			1

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TABLE III

REPORT OF VOCATIONAL AGRICULTURE GRADUATES BY SCHOOLS - CLASS OF 1964

School	1 Number of Graduates	2 Entered College (full time)	3 Continued Training-Other Institutions	4 Entered Armed Services	5 Available for Employment	6 Farm Operator	7 Partner in Farm Business	8 Stockholder in Farm Business	9 At Home with Wages	10 Employed as Farm Manager	11 Employed as Farm Hand	12 Part time Farmer	13 Employed in Occupations Related	14 Per Cent Employed in Ag. or Related	15 Employed in Occupations Not Related	16 Unemployed	17 Unaccounted For
Allentown	4	-	-	-	4	-	1	-	-	-	1	-	-	50	1	-	1
Annandale	10	2	2	-	6	-	-	-	4	-	-	-	2	100	-	-	-
Belvidere	12	1	-	3	8	-	1	-	1	-	2	1	-	63	3	-	-
Blairstown	4	-	1	-	3	1	-	-	-	-	-	-	-	67	1	-	-
Bridgeton	13	-	-	2	11	1	2	-	-	-	1	1	3	100	-	-	-
Columbus	12	2	-	2	8	-	-	-	3	-	1	-	3	88	1	-	-
Flemington	13	-	-	3	10	-	-	-	3	-	-	-	-	30	7	-	-
Freehold	7	-	2	3	2	-	-	-	-	-	-	1	-	50	1	-	-
Hackettstown	9	-	1	1	7	-	-	-	1	-	-	-	2	43	4	-	-
Hammonton	6	-	-	2	4	-	2	-	-	-	-	-	1	75	1	-	-
Lambertville	4	-	1	-	3	-	-	-	-	-	-	-	1	67	1	-	-
Manasquan	4	-	-	3	1	-	-	-	-	-	-	-	1	100	-	-	-
Mays Landing	5	-	-	2	3	-	-	-	-	-	-	-	2	100	-	-	-
Medford	11	-	-	-	11	-	1	-	2	-	1	-	5	82	2	-	-
New Brunswick	5	1	2	1	1	-	1	-	-	-	-	-	-	100	-	-	-
Newton	14	4	-	1	9	-	1	-	2	-	2	-	2	77	2	-	-

School	1 Number of Graduates	2 Entered College (full time)	3 Continued Training-Other Institutions	4 Entered Armed Services	5 Available for Employment	6 Farm Operator	7 Partner Farm Business	8 Stockholder in Farm Business	9 At Home with Wages	10 Employed as Farm Manager	11 Employed as Farm Hand	12 Part Time Farmer	13 Employed in Occupations Related	14 Per Cent Employed in Ag. or Related	15 Employed in Occupations Not Related	16 Unemployed	17 Unaccounted For
Paterson	8	1	4	-	3	-	-	-	-	-	2	-	-	67	1	-	-
Salem	4	-	-	-	4	-	1	-	-	-	-	1	2	100	-	-	-
Springfield	14	3	1	6	4	-	1	-	1	-	-	-	1	75	1	-	-
Sussex	4	-	-	1	3	-	-	-	-	-	1	-	1	67	1	-	-
Swedesboro	9	1	-	1	7	-	4	-	2	-	-	-	1	100	-	-	-
Washington	9	1	2	-	6	-	3	-	-	-	-	-	-	50	3	-	-
Woodstown	10	-	2	-	8	-	4	-	1	-	-	2	1	100	-	-	-
Egg Harbor	ADULT EVENING PROGRAMS																
Hammonton	ADULT EVENING PROGRAMS																
Minotola	ADULT EVENING PROGRAMS																
Hackensack	4	-	-	1	3	-	-	-	-	-	-	-	2	67	1	-	-
Merchantville	5	-	-	1	4	-	-	-	-	-	-	-	3	75	1	-	-
Cape May Court House	6	-	1	-	5	-	-	-	-	-	3	1	-	80	1	-	-
Cape May	3	-	-	2	1	-	-	-	-	-	-	-	-	-	1	-	-
New Jersey Sch. for Deaf	3	-	1	-	2	-	-	-	-	-	-	-	2	100	-	-	-
TOTALS	212	16	20	35	141	2	22	-	20	-	14	7	35	71	34	-	1

Part III

Placement Report of Distributive Education Graduates From New Jersey Public Secondary Schools - Class of 1964.

This is a follow-up study of graduates of Distributive Education curricula in New Jersey Public Secondary Schools who were graduated in June, 1964. Preparation for an entry job in distribution is one of the major objectives of the Distributive Education program. We are also concerned with how well those who have selected this field advance on the job, thus an effort was made to determine the number of graduates who have been upgraded since the beginning of their employment. This is a reflection of the success of the program in a particular school. An examination of the table showing the number of graduates for the past six years indicates a consistent pattern of growth in the number of graduates and the number employed in distributive occupations.

Distributive Education Graduates were reported for the following public secondary schools in June, 1964:

Arthur L. Johnson Regional High School (Clark)
Bayonne Senior High School
Bloomfield High School
Bridgeton High School
Camden High School
Cherry Hill High School
Clifton High School
Deptford Township High School (Almonesson)
East Brunswick High School
Englewood High School
Fairlawn Senior High School
Freehold Regional High School
Jonathan Dayton Regional High School (Springfield)
Lenape Regional High School (Medford)
Memorial High School (East Paterson)
Moorestown High School
Morris Hills Regional High School (Rockaway)
Morristown High School
New Brunswick Senior High School
North Arlington High School
North Plainfield High School
Northern Valley Regional High School (Old Tappan)
Orange High School
Overbrook Regional High School (Clementon)
Paramus High School
Pascack Valley High School
Red Bank High School
Ridgewood High School
River Dell Regional Senior High School
Sayreville Memorial High School
Somerset County Vocational and Technical School
Teaneck High School
Trenton Central Vocational - Technical High School
Triton Regional High School (Runnemede)
Verona High School
Westwood High School
Woodrow Wilson High School (Camden)

1. The number of public secondary schools offering the Distributive Education Curriculum during the school year 1963-1964 totaled thirty-nine. Of this total, thirty-six schools reported graduates in June, 1964. This was an increase of two schools over the number reporting graduates one year earlier. The three schools that did not report any graduates are in either their first, second, or third year of the program and have not as yet had any graduates.

2. A total of 621 boys and girls were reported as graduating from the D.E. curricula in June, 1964. This was an increase of 34 over the 587 that graduated the previous year. It represents a substantial increase and reflects the expansion that has taken place in the program. The credit for this growth belongs to the State Supervisor of Distributive Education who has done an outstanding job of promoting and developing this type of vocational education.

The following table shows the total number of Distributive Education graduates in each classification for the last six graduating classes:

Class	Number of Graduates	Continuing Education	Entered Armed Services	Other reasons for not being available for employment *	Available for Employment	Employed in Distributive Occupations	Percent of Graduates	Median Hourly Wage	Employed in Occupations not related	Unemployed	Unaccounted For	Upgraded on Position
1959	354	32	48	-	274	151	55%	1.27	96	8	8	51
1960	424	32	42	-	350	188	54%	1.30	85	21	34	69
1961	466	54	55	-	357	241	67%	1.27	67	16	21	87
1962	488	45	55	18	370	262	71%	1.36	82	13	13	121
1963	587	67	56	24	440	304	69%	1.44	98	23	15	136
1964	621	81	66	18	456	326	72%	1.49	96	21	13	NA

*New Classification Includes Marriage, Illness, Death, Etc.

3. Of the 621 graduates, 307 were boys and 314 were girls.

4. Of the 621 graduates, a total of 81 (40 boys and 41 girls) or approximately 13 % were reported continuing their education in a college or other type of advanced school. This is approximately the same percentage reported for previous classes and indicates that the great majority of Distributive Education graduates enrolled prepare themselves further for employment, which is the major objective of Distributive Education.

5. Sixty-six boys were reported as entering the armed services.

6. A total of 18 graduates were reported "not available for employment" for reasons other than continuing their education in college or other advanced school or entering the armed services. Most of these were girls who married shortly after graduation or graduates who were prevented from entering employment because of illness or accident.

7. A total of 456 graduates (200 boys and 256 girls) were reported available for employment. Of this number, 326 were reported employed in some Distributive occupation. Several of the 39 schools reporting exceeded this percentage with nine schools reporting 100% placement of graduates employed in distributive occupations. These schools were: Bloomfield Senior High School, Camden High School, Lenape Regional High School, Morris Hills High School, Morristown High School, Paramus High School, Pascack Valley High School, Ridgewood High School, and Sayreville High School.

8. The median hourly wage paid these employed graduates was reported as $1.47 per hour or $59.60 for a forty hour week. This was an average of $.07 per hour more than was reported for the graduates of the previous class. The total yearly earnings for the 326 graduates employed in distributive occupations, based on the hourly wage for fifty-two weeks, amounted to $1,960,370. This is a substantial figure and represents a sizeable return to the school districts offering the Distributive Education curriculum.

9. A total of 96 graduates (46 boys and 50 girls) were reported employed in occupations not related to Distributive Education. Since 326 graduates were reported employed in distributive jobs, it indicates that better than three out of every four graduates reported employed were working at merchandising and selling jobs.

10. Only 21 of the 621 graduates were reported as unemployed. This is a very low figure and credit should go to the Distributive Education Coordinators for the excellent job they are doing.

11. Only 13 graduates were reported as unaccounted for. Thirty-two of the 39 schools reporting accounted for every graduate. This again indicates that these public secondary schools are doing an excellent job of pupil accounting. Distributive Education coordinators and School Counselors deserve commendation for this fine record.

12. In the introduction to this study it was mentioned that we are concerned with how well Distributive Education graduates progress on the job. Consequently, the coordinators were asked to report on the number of graduates upgraded on positions between the start of employment and the time when the follow-up study was made. (A period of approximately six months.) A total of 181 graduates - more than half of those reported employed in the field of distribution - were upgraded on the job. It seems fair to assume that the training they received in distributive education classes contributed to their promotion. It is doubtful if beginning workers without this specific training would have been promoted in so short a time.

In conclusion, it should be pointed out that this follow-up report would not have been possible without the excellent cooperation of Distributive Education Coordinators in the various schools. The success of the program reflects the excellent public relations activities of the coordinators in the different districts. Finally, much of the credit is due to the State Supervisor of Distributive Education who is devoting much of his time to the promotion and development of the program throughout the State. The success of the program as evidenced by this report is a tribute to his leadership.

Following are tables showing a Summary of Distributive Education Graduates _ Class of 1964 (Table I) and the Number of Graduates by Schools (Table II.)

TABLE I

SUMMARY REPORT OF DISTRIBUTIVE EDUCATION GRADUATES - CLASS OF 1964

	BOYS	GIRLS	TOTAL
1. Number of Graduates	336	349	685
2. Continuing Higher Education	49	49	98
3. Entered Armed Service	71	1	72
4. Other Reasons for Not Being Available	1	19	20
5. Available for Employment (Line 1 minus Lines 2, 3, & 4)	217	283	500
6. Employed in Distributive Occupations	149	204	353
7. Per Cent Employed in D.E. (Line 6 ÷ Line 5)	69%	72%	71%
8. Average Hourly Wage	$1.51	$1.33	$1.33
9. Total Yearly Earnings*	$500,847.76	$743,073.00	$1,243,920.76
10. Employed in Occupation Not Related to Distributive Education	51	62	113
11. Unemployed	10	13	23
12. Unaccounted For	6	8	14
13. Upgraded on Positions	82	107	189

*Figure based on 52 work weeks of 40 hours each.

TABLE II

REPORT OF DISTRIBUTIVE EDUCATION GRADUATES BY SCHOOLS - CLASS OF 1964

High School	Total Number of Graduates COLUMN 1			Continuing Higher Education COLUMN 2			Entered Armed Service COLUMN 3		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Deptford Twp. Almonesson	8	10	18	1	-	1	1	-	1
Bayonne Senior H.S.	14	7	21	-	-	-	1	-	1
Bloomfield Senior H.S.	6	9	15	2	2	4	-	-	-
Bridgeton H.S.	9	2	11	-	-	-	1	-	1
Camden H.S.	8	8	16	-	1	1	4	-	4
Woodrow Wilson, Camden	11	8	19	-	-	-	6	-	6
Cherry Hill H.S.	21	25	46	7	5	12	4	-	4
A.L. Johnson Reg., Clark	6	15	21	-	-	-	-	-	-
Overbrook Reg., Clementon	13	5	18	1	-	1	5	-	5
Clifton H.S.	11	9	20	2	-	2	2	-	2
No. Valley Reg., Old Tappan	7	2	9	-	-	-	2	-	2
East Brunswick H.S.	8	14	22	2	3	5	2	-	2
East Paterson (Memorial)	6	13	19	1	-	1	2	-	2
Dwight Morrow, Englewood	2	4	6	-	-	-	1	-	1
Fairlawn Sr. H.S.	15	13	28	3	1	4	2	-	2
Freehold Reg. H.S.	10	8	18	1	-	1	1	-	1
Haddon Twp. H.S.	2	4	6	-	-	-	1	-	1
Medford (Lenape H.S.)	5	5	10	2	-	2	1	-	1
Moorestown H.S.	12	6	18	1	3	4	1	-	1
Morristown H.S.	8	10	18	1	2	3	3	-	3
New Brunswick Sr. H.S.	13	12	25	1	2	3	3	-	3
No. Arlington H.S.	7	8	15	1	-	1	2	-	2
No. Plainfield H.S.	5	5	10	2	-	2	-	-	-
Oradell H.S.	4	17	21	2	3	5	1	1	2
Orange H.S.	19	6	25	2	-	2	2	-	2
Paramus Sr. H.S	9	5	14	3	-	3	-	-	-
Pasack Valley H.S.	1	7	8	1	1	2	-	-	-
Red Bank H.S.	8	2	10	-	-	-	2	-	2
Ridgewood H.S.	8	9	17	4	5	9	3	-	3
Morris Hills Reg. H.S.	4	8	12	-	3	3	1	-	1
Teaneck H.S.	5	11	16	1	3	4	3	-	3
Triton Reg. (Runnemede)	20	13	33	1	2	3	2	-	2
Jonathan Dayton Reg. Springfield	8	10	18	1	1	2	1	-	1
Sayreville (Memorial)	5	4	9	-	3	3	4	-	4
Somerset Co. No. 1	9	15	24	3	3	6	2	-	2
Somerset Co. No. 2	7	2	9	1	-	1	1	-	1
Trenton Voc. Tech. Sch.	6	20	26	1	2	3	2	-	2
Verona H.S.	5	6	11	-	-	-	-	-	-
Westwood H.S.	11	12	23	1	4	5	2	-	2
TOTALS	336	349	685	49	49	98	71	1	72

TABLE II

(continued)

REPORT OF DISTRIBUTIVE EDUCATION GRADUATES BY SCHOOLS - CLASS OF 1964

High School	Other Reasons For Not Being Available COLUMN 4			Avail. for Empl.(line 1 minus 2,3 & 4) COLUMN 5			Employed in Distributive Occupations COLUMN 6		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Deptford Twp. Almonesson	-	2	2	7	8	15	4	3	7
Bayonne Senior H.S.	-	-	-	13	7	20	5	3	8
Bloomfield Senior H.S.	-	-	-	4	7	11	4	7	11
Bridgeton H.S.	-	-	-	8	2	10	4	2	6
Camden H.S.	-	1	1	4	6	10	4	6	10
Woodrow Wilson, Camden	-	2	2	5	6	11	4	5	9
Cherry Hill H.S.	-	-	-	10	20	30	6	14	20
A.L.Johnson Reg., Clark	-	1	1	6	14	20	1	4	5
Overbrook Reg., Clementon	-	-	-	7	5	12	4	3	7
Clifton H.S.	-	-	-	7	9	16	6	9	15
No. Valley Reg., Old Tappan	-	1	1	5	1	6	3	1	4
East Brunswick H.S.	-	-	-	4	11	15	2	9	11
East Paterson (Memorial)	-	-	-	3	13	16	3	11	14
Dwight Morrow, Englewood	-	-	-	1	4	5	1	3	4
Fairlawn Sr. H.S.	-	-	-	10	12	22	7	10	17
Freehold Reg. H.S.	-	1	1	8	7	15	5	6	11
Haddon Twp. H.S.	-	-	-	1	4	5	1	3	4
Medford (Lenape H.S.)	-	-	-	2	5	7	2	5	7
Moorestown H.S.	1	-	1	10	6	16	9	5	14
Morristown	-	-	-	4	8	12	4	8	12
New Brunswick Sr. H.S.	-	-	-	9	10	19	3	6	9
No. Arlington H.S.	-	-	-	4	8	12	2	1	3
No. Plainfield H.S.	-	-	-	3	5	8	3	5	8
Oradell H.S.	-	-	-	1	13	14	-	13	13
Orange H.S.	-	-	-	15	6	21	10	3	13
Paramus Senior H.S.	-	-	-	6	5	11	6	5	11
Pasack Valley H.S.	-	-	-	-	6	6	-	1	1
Red Bank H.S.	-	-	-	6	2	8	5	1	6
Ridgewood H.S.	-	2	2	1	2	3	1	2	3
Morris Hills Reg. H.S.	-	-	-	3	5	8	3	5	8
Teaneck H.S.	-	1	1	1	7	8	1	6	7
Triton Reg. (Runnemede)	-	1	1	17	10	27	13	5	18
Jonathan Dayton Reg. Springfield	-	-	-	6	9	15	6	8	14
Sayreville (Memorial)	-	-	-	1	1	2	1	1	2
Somerset County No. 1	-	4	4	4	8	12	4	7	11
Somerset County No. 2	-	-	-	5	2	7	4	2	6
Trenton Voc. Tech. Sch.	-	3	3	3	15	18	1	9	10
Verona H.S.	-	-	-	5	6	11	2	5	7
Westwood H.S.	-	-	-	8	8	16	5	2	7
TOTALS	1	19	20	217	283	500	149	204	353

TABLE II

(Continued)

REPORT OF DISTRIBUTIVE EDUCATION GRADUATES BY SCHOOLS - CLASS OF 1964

High School	Per Cent Employed in Distributive Education (Line 6 ÷ Line 5) COLUMN 7			Average Hourly Wage COLUMN 8		
	Boys	Girls	Total	Boys	Girls	Total
Deptford Twp., Almonesson	57	37	47	1.75	1.33	1.54
Bayonne Senior H.S.	38	43	40	1.69	1.46	1.57
Bloomfield Senior H.S.	100	100	100	1.72	1.60	1.66
Bridgeton H.S.	50	100	66	1.60	1.25	-
Camden H.S.	100	100	100	1.45	1.20	1.32
Woodrow Wilson, Camden	80	83	82	1.70	1.50	1.60
Cherry Hill H.S.	60	70	66	1.98	1.50	-
A.L. Johnson Reg. Clark	17	28	25	1.95	1.40	1.68
Overbrook Reg., Clementon	57	60	58	1.24	1.06	1.15
Clifton H.S.	86	100	94	1.79	1.46	1.63
No. Valley Reg. Old Tappan	60	100	66	1.71	1.16	1.43
East Brunswick H.S.	50	81	73	-	-	-
East Paterson (Memorial)	100	84	88	1.65	1.53	1.59
Dwight Morrow, Englewood	100	75	80	2.00	1.75	1.87
Fairlawn Sr. H.S.	70	83	77	1.65	1.40	-
Freehold Reg. H.S.	63	86	73	1.75	1.60	1.67
Haddon Twp.	100	75	80	2.00	1.50	1.75
Medford (Lenape H.S.)	100	100	100	1.40	1.35	1.37
Moorestown H.S.	90	100	87	1.44	1.23	1.37
Morristown H.S.	100	100	100	1.35	1.25	1.30
New Brunswick Sr. H.S.	33	60	47	1.67	1.45	1.55
No. Arlington H.S.	50	12	25	1.56	1.54	1.55
No. Plainfield H.S.	60	100	100	1.19	1.16	1.18
Oradell H.S.	-	100	92	1.50	1.47	1.49
Orange H.S.	66	50	62	1.60	1.35	1.47
Paramus Senior H.S.	100	100	100	1.22	1.10	1.18
Pasack Valley H.S.	-	100	100	-	1.30	1.30
Red Bank H.S.	83	50	75	1.38	1.15	1.37
Ridgewood H.S.	100	100	100	1.85	1.60	1.72
Morris Hills Reg. H.S.	100	100	100	1.65	1.40	1.53
Teaneck H.S.	100	86	87	1.50	1.39	1.45
Triton Reg. (Runnemede)	76	50	67	1.65	1.34	1.57
Jonathan Dayton Reg. Springfield	100	90	93.	1.33	1.35	1.34
Sayreville (Memorial)	100	100	100	2.00	1.50	1.75
Somerset County No. 1.	100	88	92	1.90	1.60	1.71
Somerset County No. 2.	80	100	90	1.95	1.75	1.88
Trenton Voc.-Tech. Sch.	33	60	55	-	-	-
Verona H.S.	40	83	63	1.35	1.25	1.28
Westwood H.S.	63	25	43	2.00	1.75	1.87
TOTALS	69	72	71	1.51	1.33	1.33

TABLE II

(Continued)

REPORT OF DISTRIBUTIVE EDUCATION GRADUATES BY SCHOOLS - CLASS OF 1964

High School	Total Yearly Earnings (Based on 40 hour week for 52 weeks.) COLUMN 9			Employed in Occupation Not Related to D.E. COLUMN 10		
	Boys	Girls	Total	Boys	Girls	Total
Deptford Twp. Almonesson	26,312.00	22,048.00	48,360.00	2	5	7
Bayonne Senior H.S.	42,290.40	23,049.60	65,340.00	7	4	11
Bloomfield Senior H.S.	14,310.40	23,296.00	37,606.40	-	-	-
Bridgeton Senior H.S.	3,328.00	2,600.00	5,928.00	4	-	4
Camden H.S.	9,984.00	14,976.00	24,960.00	-	-	-
Woodrow Wilson, Camden	17,680.00	18,720.00	36,400.00	1	1	2
Cherry Hill H.S.	4,218.40	3,120.00	7,338.40	3	6	9
A.L. Johnson Reg., Clark	20,244.00	25,964.00	46,208.00	4	5	9
Overbrook Reg.,Clementon	10,316.80	6,615.40	16,932.20	1	1	2
Clifton H.S.	21,776.04	28,005.60	49,781.64	1	-	1
No. Valley Reg. Old Tappan	3,557.00	2,413.00	5,970.00	2	-	2
East Brunswick H.S.	-	-	-	2	-	2
East Paterson (Memorial)	57,512.00	245,044.80	302,556.80	-	2	2
Dwight Morrow, Englewood	4,160.00	3,640.00	7,800.00	-	1	1
Fairlawn Sr. H.S.	3,400.00	2,900.00	6,300.00	2	-	2
Freehold Reg. H.S.	25,480.00	23,192.00	48,672.00	2	1	3
Haddon Twp. H.S.	4,160.00	3,000.00	7,160.00	-	1	1
Medford (Lenape H.S.)	6,441.06	5,861.88	12,302.94	-	-	-
Moorestown H.S.	29,836.00	12,792.00	42,628.00	-	1	1
Morristown H.S.	22,464.00	26,000.00	48,464.00	-	-	-
New Brunswick Sr. H.S.	31,262.00	30,160.00	61,422.00	6	4	10
No. Arlington H.S.	16,172.00	22,285.60	38,457.60	2	6	8
No. Plainfield H.S.	6,441.06	5,861.88	12,302.94	-	-	-
Oradell H.S.	3,000.00	42,360.00	45,360.00	1	-	1
Orange H.S.	3,330.00	2,800.00	6,130.00	-	2	2
Paramus Senior H.S.	7,799.48	14,165.90	21,965.38	-	-	-
Pasack Valley H.S.	-	15,000.00	15,000.00	-	4	4
Red Bank H.S.	16,282.40	1,201.72	17,484.12	-	-	-
Ridgewood H.S.	3,848.00	6,656.00	10,504.00	-	-	-
Morris Hills Reg. H.S.	3,300.00	2,800.00	6,100.00	-	-	-
Teaneck H.S.	3,120.00	19,238.40	22,358.40	-	1	1
Triton Reg. (Runnemede)	21,840.00	11,232.00	33,072.00	2	2	4
Jonathan Dayton Reg. Springfield	11,174.72	12,877.22	24,051.94	-	1	1
Sayreville (Memorial)	4,160.00	3,120.00	7,280.00	-	-	-
Somerset County No. 1	15,808.00	23,296.00	39,104.00	-	1	1
Somerset County No. 2	16,224.00	7,280.00	23,504.00	1	-	1
Trenton Voc. Tech. Sch.	-	-	-	2	6	8
Verona H.S.	5,616.00	26,000.00	31,616.00	3	1	4
Westwood H.S.	4,000.00	3,500.00	7,500.00	3	6	9
TOTALS	500,847.76	743,073.00	1,243,920.76	51	62	113

TABLE II

(continued)

REPORT OF DISTRIBUTIVE EDUCATION GRADUATES BY SCHOOLS - CLASS OF 1964

High School	Unemployed COLUMN 11			Unaccounted for COLUMN 12			Upgraded on Position COLUMN 13		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Deptford Twp., Almonesson	-	1	1	-	1	1	2	2	4
Bayonne Senior H.S.	1	-	1	-	-	-	2	-	2
Bloomfield Senior H.S.	-	-	-	-	-	-	2	4	6
Bridgeton H.S.	-	-	-	-	-	-	2	2	4
Camden H.S.	-	-	-	-	-	-	-	-	-
Woodrow Wilson, Camden	-	-	-	-	-	-	4	5	9
Cherry Hill H.S.	1	-	1	-	-	-	2	3	5
A.L. Johnson Reg., Clark	1	5	6	-	-	-	4	7	11
Overbrook Reg., Clementon	-	-	-	2	1	3	1	1	2
Clifton H.S.	-	-	-	-	-	-	5	2	7
No. Valley Reg., Old Tappan	-	-	-	-	-	-	1	-	1
East Brunswick H.S.	-	2	2	-	-	-	1	3	4
East Paterson (Memorial)	-	-	-	-	-	-	2	5	7
Dwight Morrow, Englewood	-	-	-	-	-	-	1	2	3
Fairlawn Sr. H.S.	-	1	1	1	1	2	2	2	4
Freehold Reg. H.S.	1	-	1	-	-	-	2	1	3
Haddon Twp.	-	-	-	-	-	-	1	3	4
Medford (Lenape H.S.)	-	-	-	-	-	-	1	2	3
Moorestown H.S.	-	-	-	1	-	1	1	3	4
Morristown H.S.	-	-	-	-	-	-	8	10	18
New Brunswick Sr. H.S.	-	-	-	-	-	-	2	6	8
No. Arlington H.S.	-	-	-	-	1	1	2	1	3
No. Plainfield H.S.	-	-	-	-	-	-	1	2	3
Oradell H.S.	-	-	-	-	-	-	1	5	6
Orange H.S.	5	1	6	-	-	-	4	2	6
Paramus Sr. H.S.	-	-	-	-	-	-	6	5	11
Pascack Valley H.S.	-	1	1	-	-	-	-	3	3
Red Bank H.S.	-	-	-	1	1	2	2	-	2
Ridgewood H.S.	-	-	-	-	-	-	1	1	2
Morris Hills Reg. H.S.	-	-	-	-	-	-	1	2	3
Teaneck	-	-	-	-	-	-	-	1	1
Triton Reg. (Runnemede)	1	2	3	1	1	2	4	4	8
Jonathan Dayton Reg. Springfield	-	-	-	-	-	-	2	1	3
Sayreville (Memorial)	-	-	-	-	-	-	1	-	1
Somerset County No. 1	-	-	-	-	-	-	2	2	4
Somerset County No. 2	-	-	-	-	-	-	3	-	3
Trenton Voc. Tech. Sch.	-	-	-	-	2	2	3	12	15
Veronal H.S.	-	-	-	-	-	-	-	1	1
Westwood H.S.	-	-	-	-	-	-	3	2	5
TOTALS	10	13	23	6	8	14	82	107	189

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This report summarizes a series of exploratory studies relating to worker-oriented job variables. These variables include worker behaviors in jobs and certain job context variables (situational and environmental) that have relevance to human work, as contrasted with job-oriented variables which deal more with the technical aspects of jobs. It was found that the concept of worker-oriented job variables is one which is generally meaningful to people, and that such variables can be differentiated with reasonable adequacy. Data were obtained by use of a 162-item worker activity profile. In general, the results indicated the feasibility of identifying and quantifying job dimensions of a worker-oriented nature and also indicated the potential utility of such dimensions for purposes such as the establishment of job requirements. (CH)

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The Development, Analysis, and Experimental Application of Worker-Oriented Job Variables

ERNEST J. McCORMICK

Prepared for

OFFICE OF NAVAL RESEARCH
DEPARTMENT OF THE NAVY
WASHINGTON 25, D.C.

Under Contract No. Nonr–1100(19)

FINAL REPORT

OCCUPATIONAL RESEARCH CENTER
PURDUE UNIVERSITY
LAFAYETTE, INDIANA

July 1964

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THE DEVELOPMENT, ANALYSIS, AND EXPERIMENTAL APPLICATION OF WORKER-ORIENTED JOB VARIABLES

FINAL REPORT

ERNEST J. McCORMICK

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Purdue University
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Contractor:

Purdue Research Foundation
Ernest J. McCormick,
Principal Investigator

Contract Nonr-1100(19)

Report No. 8
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ABSTRACT

This report summarizes a series of exploratory studies relating to worker-oriented job variables. These variables include worker behaviors in jobs and certain job context variables (situational and environmental) that have relevance to human work, as contrasted with job-oriented variables that deal more with the technological aspects of jobs. It is postulated that human work can be characterized in terms of either type of variable. However, for purposes of establishing common denominators across jobs of varied technological types, one must describe jobs more in terms of human behaviors and related variables (what are referred to here as worker-oriented variables).

On the basis of the early studies, it was found that the concept of worker-oriented job variables is one which is generally meaningful to people, and that such variables can be differentiated with reasonable adequacy. Following these studies, the Worker Activity Profile was developed. This consists of 162 "items" of a worker-oriented nature, that provide a reasonably objective job analysis procedure. Some of the items are dichotomies (providing for an indication of the "presence" or "absence" of an attribute in a job). Others are established as continua (providing for an indication of the "degree" of an individual variable in a job). The reliability of the use of the Worker Activity Profile varied by item, but those continuous items consisting of benchmarks of systematically-scaled job tasks were, in general, used more reliably than the items that had not been developed in this way. Two series of factor analyses revealed a number of meaningful and stable job dimensions.

The Worker Activity Profile was used experimentally in various ways, and with various samples of jobs, as the possible basis for establishing synthetic (or indirect) validity of predictors of job success. In these phases, the job samples consisted of fairly large numbers of jobs for which data were either published or obtainable from relevant sources. In general, the results of these various phases show considerable promise for the possibility of establishing job requirements on the basis of reasonably objective job analysis procedures, like those used in these studies.

One study that related to the possible use of the Worker Activity Profile in the job evaluation context resulted in only limited prediction of wage or salary rates of pay. Certain factors may have served to attenuate the relationship.

Several follow-up phases need to be carried out before the Worker Activity Profile can be considered as the basis for an operational job analysis procedure for such practical purposes as establishing job requirements. The experience gained through these studies suggests the desirability of making certain modifications in the Worker Activity Profile. Also, further industrial experimentation with it is necessary, and a practical operational procedure needs to be developed.

INTRODUCTION

This report summarizes a series of studies relating to what are termed "worker-oriented" job variables. These studies have dealt, in one way or another, with efforts to describe or otherwise characterize human work activities in reasonable objective terms. The studies have been based on the hypothesis that there is "structure" or order within the domain of human work; that the dimensions of that structure can be identified; and that individual jobs can be characterized in terms of such dimensions. Further, it is hypothesized that, for each such dimension, there are underlying "requirements" of human attributes that would be required for successful performance on the job dimensions.

In considering the characteristics of jobs, however, it seems manifest that jobs can be characterized in terms of different "kinds" of variables. Actual work activities, for example, can be described in terms of technological processes or operations that are carried out or, on the other hand, in terms of the human behaviors involved. Keeping in mind the basic premise, these studies have been carried out with the intent of characterizing jobs in terms of the human behaviors involved, rather than in terms of their technological aspects. These human behaviors, in turn, generally fall within the framework of the conventional stimulus-organism-response model, or, in more operational terms, information receiving; information processing and decision making; and action (physical or communicative). In addition to the human behaviors of jobs, however, it would also seem useful to characterize their environmental and situational aspects. The environmental and situational aspects of jobs might be thought of as the job "context".

The potential value of characterizing jobs in terms of worker-oriented variables would be that of identifying similarities and differences among jobs in terms of human behaviors and related variables. These offer some possibility of serving as "common denominators" across jobs of very different technological types. If basic job dimensions of these types can be identified, it would seem that, through job analysis procedures it would then be possible to characterize each job in terms of its "level" on each dimension; each job might then have something of a "profile" that would characterize it in terms of such dimensions. Beyond this, for any given dimension there might be some set of job requirements that could be identified; personnel appraisal might be based on such dimensions, and job evaluations might be based (in part) on such dimensions. Thus, worker-oriented dimensions might have potential utility in such contexts as personnel selection and placement, job evaluation, performance appraisal, criterion development, job design, vocational counseling, training, manpower planning and control, etc.

This particular series of studies was directed toward some probing efforts in the direction of identification and measurement of worker-oriented job variables; toward identifying job dimensions based on such variables; and toward some preliminary explorations of the use of such dimensions in the context of synthetic (or indirect) validity and job evaluation. In this connection, the Worker Activity Profile (Gordon and McCormick, 1962) was developed as the basic job analysis format for use in this series of studies.

CONNOTATIONS OF JOB-RELATED VERBS

While there are logical bases for postulating the distinction between job-oriented and worker-oriented variables, it is reasonable to question whether, operationally, descriptions of job activities and related variables lend themselves to being differentiated in this manner. In other words, is the distinction one which people can make in a meaningful way. This then becomes, in part, a semantics problem.

To investigate the feasibility of making such a distinction, and early phase of the program was devoted to a study of the meanings of verbs that are (or could be) used to describe human work. In particular, this phase was directed toward determining the extent to which such verbs have connotations for people that make it possible to differentiate them in terms of a job-oriented versus a worker-oriented distinction. This distinction should not actually be considered as a true dichotomy, but rather as more of a continuum (and the results of this phase of the study generally bore this out).

With respect to the semantic aspects of this distinction, certain verbs might very clearly and uniquely characterize human behaviors (and related variables) in terms that are clearly worker-oriented. Verbs such as "sees," "hears," "feels," "judges," etc. are of this type. At the job-oriented end of the continuum are those verbs which (especially in the context of a job description) clearly characterize what is "accomplished" in the job activity, with little or no indication of the human behaviors that might be involved. Some examples are "coagulates," "dehydrogenates," and "carbonizes."

Between these two extremes, however, are many verbs used in describing work that have implications of both types--job-oriented and worker-oriented--in varying degrees. There are, for example, some verbs that actually describe a job activity but have become so well known that the human behaviors can be inferred with high reliability; for example, "chisels," "hammers," and "sweeps." While these verbs operationally describe what is "accomplished," the natures of the operations are so commonly recognized that we can generally <u>infer</u> the human actions from the verb. But it must be added that where the function can be accomplished by various (technological) methods the inference of human behaviors is less reliable. Thus, the verb "paints" does not invariably infer the kind of human behavior involved; where the paint is applied by spraying or dipping, the human behaviors would be different from those involved with the more common brush application.

The study by Gordon and McCormick (1962) was concerned with the semantics of verb meaning in this context. That study involved various phases which need not be repeated in detail here. In general, however, people were asked to characterize verbs in terms of their

worker-oriented or job-oriented connotations. In the several phases, different methods of obtaining responses were used, with varying collections of relevant verbs. The results led to the conclusion that the distinction is one that can be made by both sophisticated and naive people, with significant reliability on the basis of verbs which have relevance to the description of work. As indicated above, the study also confirmed the idea that verbs range over a continuum as far as their connotations of worker-oriented versus job-oriented meaning are concerned. Of the approximately 1,000 verbs that were used, about 15 per cent (about 150) were judged by raters to be descriptive of worker-oriented activities or to infer such activities; over four hundred were judged as distinctly job-oriented; and the remainder fell at varying intermediate scaled positions between the two ends of the continuum.

METHODS OF RATING JOBS

Another early phase of the program related to the method of characterizing job activities in terms of worker-oriented variables (Peters and McCormick). Some variables might be thought of as being either present or absent in a job; in such cases a check-list format of a job analysis form would seem to be appropriate. In the case of other variables, however, it was fairly evident that the variable might be characteristic of jobs in varying degrees; in such cases, some form of rating scale would seem to be appropriate.

As far as rating scales are concerned, however, there were various types which could be used. On the basis of practical considerations it was decided, tentatively, to use scales with a limited number of numerical points--such as 3, 5, or 7 (the number varying with judgments regarding the "range" of the variables as applicable to jobs). Such points however, could be characterized in different ways: by using adjectives (as "very high," "average," "nominal," etc.); by the use of benchmarks; or simply by numbers without any characterization of values along the scale. It was felt that the use of benchmarks to represent various positions along the scale might have some advantage over the use of simple numerical values, especially if the benchmarks would provide more of an opportunity for making "relative" estimates of the "degree" of a variable, as opposed to absolute estimates.

Comparison of Job Titles and Job Tasks as Benchmarks

One study (Peters and McCormick) then was concerned with the experimental use of two types of benchmarks in order to compare the reliability with which scales based on them could be used in analyzing jobs. One type of benchmark consisted of job titles and the other of statements of job tasks. For this purpose, scales of both types were developed for the following five worker-oriented variables: finger manipulation; near visual discrimination; far visual discrimination; auditory discrimination; and general physical coordination. For any one of these five variables, the job titles and job tasks were selected in order to represent a wide range on the variable. Forty-five or fifty job titles and job tasks were selected for each variable. In the selection of job titles and job tasks for use in scaling any one of the five variables, however, "matched" titles and tasks were used, the matching task in each case being a representative task of the job whose title was being used in the job title scale. For example, in the case of the finger manipulation dimension, the list of job titles included "florist," whereas the list of job tasks included "arranges flowers in floral design." It should be noted that the job titles and job tasks both have strong job-oriented implications; the variable being scaled, however, (as finger manipulation) is essentially worker-oriented in its nature.

The items were scaled by the Thurstone scaling procedure, the items being categorized into seven scale categories. The reliabilities are given in the first two columns of Table 1, both for individual raters and for all raters combined. (Mention will be made later of the other columns.) None of the differences was statistically significant, and the patterns of the coefficients do not show any systematic advantage of one type of scale over the others. Since neither type of scale showed any systematic advantage, a decision regarding the use of job titles versus job tasks as possible benchmarks presumably would have to be made on judgmental grounds. In this connection, job tasks seem to afford more flexibility and precision in describing "levels" of an activity than do job titles. Scales with job task benchmarks were then used in the subsequent phase of the study.

Use of Job-Task Benchmarks and Numerical Scales

The next phase consisted of a comparison of the reliability of using two types of scales in the actual "rating" of a sample of job task statements. One type of scale consisted of job task benchmarks and the other of simple numerical benchmarks. This comparison was made for all five of the dimensions previously mentioned.

In the case of the job-task benchmark scales, seven of the scaled job tasks were selected for each of the five dimensions. These seven were selected in terms of their reliabilities and in order to represent approximately equally-spaced positions along the scale. These seven-item scales were then used as the basis for the rating of all of the remaining job tasks that had been originally included in the scaling process. (In the case of those variables for which 50 job tasks had been scaled, 43 were left; where 45 had been scaled, 38 were left.) This rating was done largely by 23 graduate students, although the number of raters used for the individual variables ranged from 9 to 14. The same job tasks were also rated by raters from the same group in terms of a 7-point numerical scale.

The average inter-rater reliabilities are given in the last two columns of Table 1; column three lists the coefficients for the ratings with the job-task benchmark scales and column four for those with the numerical scales. The reults show generally higher reliabilities for the ratings done with the job-task benchmarks, the one exception (which, incidentally, was statistically significant) being the near visual discrimination variable. In the case of that exception, there was a particular feature of the job-task benchmark scale which may have contributed to the reversal. The otherwise consistent pattern, however, argues for the use of job-task benchmarks in the scales to be used in rating jobs on the worker-oriented job variables.

Table 1

Reliability of Scalings and of Ratings of Job Tasks on Various Worker-Oriented Job Variables with Different Types of Scales

Variable	Reliability in Original Scale Development		Reliability of Use of Scale	
	Job Titles	Job Tasks	Job Tasks	Numerical Scales
Average for Single Rater				
Finger Manipulation	.67	.56	.68	.54
Near Visual Discrimination	.71	.79	.72	.83
Far Visual Discrimination	.64	.51	.48	.45
Auditory Discrimination	.72	.72	.77	.70
General Physical Coordination	.63	.65	.68	.46
Reliability for n Raters				
Finger Manipulation (n=14)	.96	.95	.97	.94
Near Visual Discrimination (n=12)	.97	.98	.97	.98
Far Visual Discrimination (n=9)	.94	.90	.89	.88
Auditory Discrimination (n=9)	.96	.96	.97	.95
General Physical Coordination (n=9)	.94	.94	.95	.88

DEVELOPMENT OF WORKER ACTIVITY PROFILE

Following the study of scaling methods, attention was directed toward the development of a job analysis format for later use in analyzing jobs in terms of their worker-oriented characteristics. Toward this end, efforts were made to crystallize various possiblities for specific worker-oriented job variables. This was done through a review of relevant literature and a series of "brain-storming" sessions. Among the literature sources used were:

> USES Training and Reference Manual for Job Analysis (1944), The Occupational Research Center Job Activity Checklist (undated), The USES Work Performed Manual (1954), The USES Worker Trait Requirements for 4,000 Jobs (undated), Primoff (1953; 1955), Palmer (1958), Norris (1957), Jaspen (1949), and Mosel, Fine and Boiling (1960).

As a result of this gleaning process many possible worker-activity variables were tentatively identified. These were then discussed with a view toward further crystallization of possible items for what was to become the Worker Activity Profile.

Development of Items

Each such variable was then converted into an item. This was done in one of the following ways:

1. The adaptation of data on items from existing studies
2. The use of some method of psychological scaling
3. A combination of these two
4. The direct writing of items with the use of benchmark examples either drawn from the literature or on the basis of the judgment of the person developing the item.

Some variables were considered to be essentially dichotomies as they might exist in jobs. These were converted into check-list items. Other variables were considered to be more on a continuum as they occur in jobs. The items for these variables were set up as scales of one sort or another. In most such cases, job task statements were used as benchmarks to represent positions along the scale.

In the case of a number of variables, the scales were developed by the systematic scaling of many job activity statements, in order to select the most reliable benchmarks. Such scales were developed by one of the following methods: equal appearing intervals, successive categories. rank order, or paired comparisons. Such scales were developed primarily for the variables that were considered to extend over a wide range. Because of the time involved in such scaling and the number of judges required, it was not feasible to follow this procedure with large numbers of variables. Many items were then written, and benchmarks established, without the benefit of such scaling.

The result of this process was the development of the Worker Activity Profile (WAP), which consists of 162 items subdivided into the following nine categories:

I Discrimination Activities
II Mental Activities
III Body and Limb Activities
IV Supervisory Activities
V Communications and Interpersonal Relations
VI Rhythm of Work Activities
VII General Characteristics of the Job Activities
VIII Physical Environment
IX Psychological and Sociological Aspects of the Job

A list of the 162 items is given in Appendix A; the complete Worker Activity Profile is given in Appendix B.

Reliability of Worker Activity Profile in Use

To determine the reliablity with which the WAP could be used in analyzing jobs, six trained graduate-student analysts analyzed 20 jobs using job descriptions as the information input. For each item, correlations were computed for all (15) pairs of the six analysts, across all 20 jobs. A mean reliability was then computed for each item from the 15 inter-analyst coefficients. Some items were so infrequently used in the sample of 20 jobs that they were not included in the reliability analysis. The mean reliability of those that were included in the analysis was .56. It should be added, however, that the mean coefficient for all items that had been scaled (as discussed above) was .74, as compared with a coefficient of .52 for all others. This argues strongly for the development of scales of job activities by systematic scaling methods. Following the experience obtained during this reliability analysis, some modifications were made in the items and their format, leading to the final form of the WAP.

THE FACTOR STRUCTURE OF WORKER-ORIENTED JOB VARIABLES

It is hypothesized that there is "structure" or order within the domain of human work, that the dimensions of that structure can be identified, and that individual jobs can be characterized in terms of such dimensions. While dimesnions of different types probably could be identified, our present interest is in dimensions of a worker-oriented nature, those which characterize worker behaviors and related variables. It is suggested that, if jobs can be characterized in terms of such dimensions (i.e., if each job could have a profile based on job dimensions), these dimensions might have potential utility in such contexts as personnel selection, job evaluation, performance appraisal, criterion development, job design, vocational counseling, training, manpower planning and control, etc.

With the intent of identifying the job dimensions of a worker-oriented nature, two series of factor analyses using the Worker Activity Profile were planned. In order to make possible the identification of dimensions on something of an across-the-board basis, it was decided to use "representative" samples of jobs in these factor analyses. In considering the basis for selecting representative samples, however, two different sampling bases immediately suggested themselves. It would be possible, first, to select a sample of jobs based on the proportion of separately distinguishable jobs in each of various occupational groups; secondly, it would be possible to select a sample based on the proportion of people in jobs that are within various occupational groups. One could put forth both positive and negative arguments for each of these sampling bases. While the investigators were generally more inclined toward the selection of a sample based on a proportion of jobs in various occupational groups, it was decided to carry out two series of factor analyses, one based on each sampling procedure. It was felt that if factor analyses based on both of these plans produce reasonably similar dimensions, one would have increased confidence in the stability and meaningfulness of the dimensions, since they would presumably not then be the consequence of the fortuities of sampling.

Selection of Samples of Jobs

Toward this end, two samples of jobs were selected. One of the these (Gordon and McCormick, 1969) was reasonably representative of the number of jobs in the major occupational groups listed in the Dictionary of Occupational Titles; the other (Cunningham and McCormick, June, 1964) was based on the proportions of people in various occupational groups, as reported by the Bureau of the Census for 1960, Arrangements were made with the U. S. Employment Services for preparing microfilm copies of job descriptions of the jobs that were selected for these two samples.* The two samples consisted of 400 and 371 jobs, respectively, with 25 jobs in common between

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*We wish to express our appreciation to Mr. Carl Heinz for his cooperation in making job description material available in the project.

the two samples. Since the jobs included in the two samples were those for which job descriptions were available in the U. S. Employment Service files, some jobs (those for which descriptions had not been prepared by the U. S. Employment Service) did not have equal opportunity to be "selected." But while the samples cannot be considered as being strictly representative, it is felt that both samples are reasonably representative of their respective sampling bases.

Factor Analysis Procedures

The two series of factor analyses were based on 119 of the 162 items of the Worker Activity Profile. The items that were not used in the factor analysis were rejected for one of two reasons. Some were not used with sufficient frequency in the job samples to justify their inclusion, and some were eliminated because of low reliability in their use. The factor analysis computations were done on an IBM 7090 using a program developed by John B. Carroll, Harvard University. The Carroll biquartimin method (Harmon, 1960, pp. 324-334) was used in the factor rotations.

In both series of factor analyses, 6 analyses were carried out. One of these included all 119 items, and the others were based on the following subgroups of items: Mediation Activities, Physical Output Activites, Communications Activities, Situational Aspects, and Environmental Aspects. The items were categorized into these groupings, and seven items which represented some general characteristics of jobs(amount of structure, occupational prestige, "thinking" vs. "doing," etc.) were included in each of the five sub-analyses. Aside from the above categories, there was another category of items that might be thought of as "input" activities. Since there were only seven items in this group, however, it was felt that these would not lend themselves to a meaningful analysis and this category was not analyzed independently.

In order to make it possible to compare the two analyses in fairly equal terms, the second series of factor analyses (Cunningham and McCormick, June, 1964) followed the same procedures as did the first (Gordon and McCormick, 1963), including carrying out corresponding numbers of rotations in the six factor analyses. Also, in the second factor analysis other rotations were carried out in certain of the analyses, as suggested by an examination of the plot of the latent roots obtained. It might be added, however, that in the case of most of the analyses, the same numbers of rotations seemed to provide the bases for the most meaningful factor structures in both series of analyses.

Comparison of Results of Two Series of Factor Analyses

Following completion of the two factor analyses, the factors identified in the six corresponding factor analyses of the two series were compared using the coefficient of congruence (Tucker, 1951). This index was designed for comparing pairs of factors across factor analyses having common variables but different samples. For any pair of factors this coefficient of congruence might be defined as a measure of the relationship between the loadings of the variables that are common to the two factors being compared. Within each of the six corresponding factor analyses (i.e., Overall, Mediation Activities, Physical Output Activities, etc.) a coefficient of congruence was computed between each pair of factors. Thus, for example, for the two corresponding factor analyses

of Mediation Activities, each factor from one of the two factor analyses was compared (by means of their coefficient of congruence) with each factor in the corresponding analysis of the other series.

While there is no test of statistical significance of the coefficient of congruence, the general requirements for the assumption of congruence between two factors as proposed by Thompson (1963) were adopted in this study. These requirements specified a coefficient of .60 or greater, and a requirement that the two factors in question have three or more loadings of .15 or greqter in common (a requirment that had previously been proposed by Tucker).

Job Dimensions Based on Worker-Oriented Variables

The results of the two series of factor analyses are presented in separate reports (Gordon and McCormick, 1963) and (Cunningham and McCormick, June, 1964). In this report the current best estimate of the dimensions of worker-oriented variables resulting from the studies is presented. This listing is presented in Table 2. That table includes all of the factors that were found to be congruent (in terms of the criteria specified above), and, in addition, includes certain other dimensions as well. There were certain pairs of factors for which coefficients of congruence were not prepared. For instance, there was one factor (Man-Machine Control Activities) that in one study emerged in one of the sub-analyses; no coefficient of congruence was computed for this factor, but its structure is rather clearly comparable in the two analyses. In other cases, while the specific requirements for congruence were not met, the factors appeared to be so similar as to suggest strongly the existence for practical purposes, of a dimension. There were also certain factors that were relatively unique to one factor analysis or the other, but that seemed to be reasonably clear-cut and meaningful; it was felt that these undoubtedly represent meaningful dimensions, even though they did not have congruent counterparts in the other analysis. In addition, the "input" items were not included in any special analysis, although certain of the sensory input variable of the Worker Activity Profile are of such a nature that they should be considered as representing separate job dimensions. Recognizing, then, that some of the dimensions on this list are included more on the basis of subjective evaluations than on the basis of rigid statistical considerations, this list reflects, in the judgment of the experimenters, the best estimates of the dimensions of worker-oriented variables as based on data from these studies.

Two further points should be added about Table 2. First, where dimensions represent factors from one or both series of factor analyses, the original identifications are given. If such identifications are given for both analyses, the factos were eonsidered to be congruent, or in any event quite similar; the coefficients of congruence are given in such cases, if they were derived. If the identification is for only one of the factor analyses, the dimension was relatively unique to that analysis. Secondly, the titles of the dimensions are those which are considered to be most descriptive, in most cases these being the titles from one or the other of the factor analyses; in isolated instances some modifications of those titles were made. The listing follows the pattern used in the factor analysis--that is, the overall analysis and the five sub-analyses.

Table 2

LIST OF WHAT IS CONSIDERED THE BEST REPRESENTATION OF WORKER-ORIENTED JOB DIMENSIONS AS BASED ON FACTOR ANALYSES AND JUDGMENTS

	Category and Dimension	Factor Identification C-M*	Factor Identification G-M**	ø#
	Overall Dimensions			
1.	Decision Making and Communications Activities	I	II	.66
2.	Hierarchical Person-to-Person Interaction	I	IV	.78
3.	Skilled Physical Activities	III	III	.70
4.	Mental vs. Physical Activities	V	I	.64
5.	Responsible Personal Contact	IV		
6.	General Physical Activities	II		
7.	Pleasant vs. Unpleasant Working Conditions		VIII	
	Mediation Dimensions			
8.	Decisions Affecting People	M1	M3	.73
9.	Varied Intellectual vs. Structured Activities	M2	M1	.83
10.	Supervisory Activities	M3	M2	.72
11.	Man-Machine Control Activities	M4	V	
12.	Planning and Decision-Making	M5		
	Physical Output Dimensions			
13.	Skilled Manual Activities	P1	P2	.91
14.	Intellectual vs. Physical Activities	P2	P1	.92
15.	Body Balancing Activities	P3	P4	.91
16.	Physical vs. Sedentary Activities	P4	P3	.78
17.	Clerical Activities	P5		
18.	Knee-Bending Activities		P5	
	Communications Dimensions			
19.	Informative Communications	C1	C1	.78
20.	Communication of Data	C2	C4	.83
21.	Persuasive Communications	C3	C2	.52
22.	Public Contact Activities	C4	C2	.55

(Table continued on next page)

Table 2 (continued)

LIST OF WHAT IS CONSIDERED THE BEST REPRESENTATION OF WORKER-ORIENTED JOB DIMENSIONS AS BASED ON FACTOR ANALYSES AND JUDGMENTS

Category and Dimension	Factor Identification		ø#
	C-M*	G-M**	
Situational Dimensions			
23. White Collar vs. Blue Collar Situations	S1	S1	.80
24. Job Security vs. Performance-Dependent Income	S1	S2	.61
25. Apparel: Specific Uniform	S2	S4	.78
26. Apparel: Optional vs. Work Clothes	S5	S5	.97
27. Apparel: Optional vs. Formal	S7	S1	.63
28. Hourly Pay vs. Salary	S6	S3	.84
Environmental Dimensions			
29. Annoying Environment	E1	E1	.75
30. Unpleasant Environment	E2	E3	.72
31. Outdoor Work		E2	
Sensory Input Dimensions* **			
32. Near Visual Discrimination			
33. Far Visual Discrimination			
34. Depth Discrimination			
35. Night Vision			
36. Sound Discrimination			
37. Taste Discrimination			
38. Odor Discrimination			
39. Tactual Discrimination			

#ø Coefficient of Congruence

*C-M (Cunningham and McCormick, June 1964)

**G-M (Gordon and McCormick, 1963)

***Note: The sensory input variables were not included in any sub-analysis. These are listed as separate dimensions on the basis of subjective judgments of the investigators and data from other sources, which suggest they are relatively separate human attributes.

SYNTHETIC VALIDITY

One of the possible principal applications of information about the worker-oriented variables of jobs is in connection with the synthetic (or indirect) validity context (McCormick, 1959). If worker-oriented job variables can be identified or measured in reasonably objective terms, it would seem reasonable to expect that such variables can be characterized in terms of the human attributes that would be required for successful performance on them. If this can be done, it would then appear to be feasible to develop total job requirements, first, by analyzing jobs in terms of the worker-oriented variables and, secondly, by "building up" the total job requirements on the basis of the requirements of the several worker-oriented variables that are involved in the job in question.

In order to explore the possibility of this approach to the establishment of job requirements, the worker-oriented job variables of the Worker Activity Profile were used experimentally as the basis for deriving estimates of job requirements. Operationally, these job requirements were characterized as attribute indices, there being an attribute index for each of several attributes for each job that was included in the study. Two different procedures were used in deriving these attribute indices from the job analyses that were made with the Worker Activity Profile. In one procedure the items of the Worker Activity Profile were used individually, as separate items (Cunningham and McCormick, July, 1964). In the other procedure, the items were combined to form the dimensions that had resulted from the factor analyses (Thornton and McCormick).

The attribute scores derived by both procedures for the jobs used in the studies were then used in two different ways in exploring their possible use as the basis for establishing job requirements. In the one case the attribute indices for 401 jobs were correlated with worker trait requirements for corresponding jobs as published by the U. S. Employment Service. In the other case the attribute indices were compared with the results of various test validation studies, in particular with the coefficients of correlation of tests that "matched" the respective attributes.

Before discussing these two phases of the study, it would be well to describe the derivation of factor scores. As indicated above, these were derived on two different bases, namely on the basis of the individual items and on the basis of their combination in dimensions. Both of these were predicated on a rating procedure.

Attribute Weights of Worker Activity Profile Items

The derivation of attribute scores for jobs was based on ratings of attribute requirements of the items of the Worker Activity Profile. This procedure involved the following steps:

1. The identification of 42 human "attributes." (The attributes included were primarily those which were used by the U. S. Employment Service in a research project of theirs; a number of these--especially the aptitudes--are also represented in the general aptitude test battery.)
2. The ratings of the attribute requirements of the items. Each item of the Worker Activity Profile was rated in terms of the extent to which each of the 42 attributes contributed to the performance of the

activity defined by the item. (In making these ratings, the raters considered the highest level of the activity.) The ratings were made on a 7-point scale by anywhere from 3 to 5 graduate student raters.

3. Derivation of attribute weights for items. For any given item, the median rating of an attribute was selected as the "weight" of that attribute for the items of the Worker Activity Profile. (The weights for the 42 attributes could be viewed as characterizing an "attribute profile" for the item in question.)

Job Attribute Scores Based on Individual Items

As indicated above, in one study (Cunningham and McCormick, July, 1964) the job attribute scores were based on the Worker Activity Profile Items used individually. In deriving attribute scores for any given job, the job was first analyzed with the Worker Activity Profile; for each job there was then a numerical value for each item.[1]

To derive an attribute index for a job on a particular attribute, the weight for the attribute on each of the 162 items of the Worker Activity Profile was multiplied by the numerical value of the item, thus giving a "cross-product" of these two for each of the 162 items. These cross-products were then summed for all items to give a total attribute index for the job. This was done for 37 of the attributes. These attribute indices can then be thought of as something of a profile of (estimated) job requirements for the job.

Job Attribute Indices Based on Job Dimensions

In deriving job attribute scores based on job dimensions, the dimensions that were used were those which had resulted from the factor analyses (Gordon and McCormick, 1963; Cunningham and McCormick, June, 1964). In particular, 32 factors were used--those factors which, in general, were reasonably congruent across the two factor analyses. These are listed in Table 3.

Three different schemes were used for deriving attribute indices based on job dimensions, these resulting in separate sets of attribute indices for the jobs that were included in the various phases of the studies. All of these procedures, however, were based on the weights of the various attributes for the various items. Since one of the preceding studies (Cunningham and McCormick, July, 1964) had indicated limited promise in the case of the interest and temperament attributes, these were dropped from this phase of the study; attribute weights were then derived for the aptitudes, motor abilities, and physical capacities (a total of 21 attributes).

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[1]Since the range of possible numerical values differed among items, and since the distributions differed considerably among the items, the original values were converted to a common eight-point scale. This resulted in greater comparability across the items, although highly skewed distributions of some items limited, to an extent, the degree of comparability.

Table 3

FACTORS USED IN STUDY

Factor	Factor Analysis C - M*	Factor Analysis G - M**
Overall Factors		
1. Mental vs. Physical Activities	x	x
2. Decision Making and Communications Activities		x
3. Hierarchical Person to Person Interaction		x
4. Skilled Physical Activities	x	x
5. General Physical Activities	x	
6. Pleasant vs. Unpleasant Working Conditions		x
Mediation Activities		
7. Varied Intellectual vs. Structured Activities	x	x
8. Planning and Decision Making	x	
9. Management Decision Activities		x
10. Supervisory Activities	x	x
11. Decisions Affecting People	x	x
12. Man-Machine Control Activities	x	x
Output		
13. Intellectual vs. Physical Activities	x	x
14. Clerical Activities	x	
15. Physical vs. Sedentary Activities	x	x
16. Skilled Manual Activities	x	x
17. Body Balancing Activities	x	x
18. Knee Bending Activities		x
Communications Activities		
19. Informative Communications	x	x
20. Communication of Data	x	x
21. Persuasive Communications		x
22. Varied Communications		x

(Table continued on next page)

Table 3 (Continued)

FACTORS USED IN STUDY

Factor	Factor Analysis C - M*	Factor Analysis G - M**
Situational Aspects		
23. Hourly Pay vs. Salary	x	x
24. Public Contact	x	x
25. Personal Service Situations	x	
26. Traveling	x	
27. Apparel: Specific Uniform	x	x
28. Apparel: Optional vs. Work-Clothes	x	x
29. Dress: Optional vs. Formal	x	
Environmental Aspects		
30. Annoying Environment	x	x
31. Unpleasant Environment	x	x
32. Outdoor Work	x	

* C - M (Cunningham and McCormick, June 1964)
** G - M (Gordon and McCormick, 1963)

Attribute Weights of Factors

The attribute weights of the factors were based on the previously-derived attribute ratings of the individual items of the Worker Activity Profile. For each factor, those items with highest loadings were identified as representing the factor. (In general, these were items with loadings of .30 or greater on corresponding factors of the two factor analyses.) Considering only these attribute items, there was for each a "distribution" of attribute ratings. In some cases, within a given attribute the attribute ratings of the various items in the factor were reasonably homogeneous; for these a representative value (usually the median) was accepted as the factor attribute weight. In other cases the distributions reflected considerable heterogeneity among the items in terms of the attribute ratings. For these, the assignment of factor attribute weights was made on the basis of certain reasoned rules that need not be given here(see Thorton and McCormick). If there was an appreciable number of items with zero weight, the factor attribute weight assigned was zero; otherwise the attribute weight was derived by the rules that were adapted. The end result of this was an attribute weight for each of the 21 attributes for each factor. (Of the 32 factors, such profiles were developed for 24 since the item distributions of attribute ratings for the other factors were generally not homogeneous.)

Factor Scores for Jobs

As indicated above, three procedures were used in deriving factor scores for jobs. For each method each job had a "score" on each factor. Since the procedures used are described elsewhere (Thornton and McCormick), the three methods will only be described here briefly:

1. Differential weights. The factor scores derived on this basis were based on a weighting of items of the Worker Activity Profile in terms of their relative loadings as averaged across the two corresponding congruent factors.

2. Unit weights. The items that were considered to represent a factor were given equal weights in deriving factor scores for jobs.

3. Highest factor-attribute weight. In this case the highest factor attribute weight (of the weights for a given attribute for the several factors) was chosen.

Correlation with Worker Trait Requirements

The U. S. Employment Service has published worker trait requirements for 4,000 jobs, these requirements being given for each of 44 characteristics (aptitudes, physical capacities, interests, temperaments, working conditions, etc.). The sample of jobs used in this analysis consisted of 401 jobs that had counterparts in this larger sample of 4,000. The 401 jobs came from the two samples used in the previously-reported factor analyses (Gordon and McCormick, 1963; Cunningham and McCormick, June, 1964), although they are not technically a representative sample. Job descriptions of the U. S. Employment Service were available for these jobs in microfilm form; these descriptions have been used in analyzing the jobs with the Worker Activity Profile. Attribute scores were derived for these 401 jobs by the procedures described above. To recapitulate, such scores were derived as follows:

Basis of Attribute Indices	Attributes for Which Derived
Individual Items	37 Attributes
Job Dimensions	
Weighted factor scores	14 Aptitudes, Motor Abilities, and Physical Capacities
Unit weight-factor scores	
Highest factor-attribute weight	

For each set of attribute indices, the attribute indices of each attribute were correlated with the corresponding worker trait requirements as published by the U. S. Employment Service. These correlations are given in Table 4.

Almost all of the correlations were significant. While those for interests and temperaments were generally low, those for the aptitudes, motor abilities, and physical capacities generally were of at least moderate magnitude. In comparing the correlations for the indices based on the various methods of derivation, there was no particular advantage of any one basis over any other; all produced correlation coefficients of the same relative order of magnitude.

Relationship Between Attribute Indices and Validity Coefficients

In this phase of the project, attribute indices were correlated with coefficients of validity of tests that "matched" the respective attributes. This approach was carried out with two samples of jobs. One of these consisted of jobs for which validity information was published (Cunningham and McCormick, July, 1964) and the other for a number of Naval "ratings" (types of Naval jobs).

Jobs for Which Published Validity Information Was Available

This phase of the study (Cunningham and McCormick, July, 1964) involved the comparison of attribute indices with data from test validation studies that have been published in such sources as the Validity Information Exchange (VIE) of Personnel Psychology and Dorcus and Jones' Handbook of Employee Selection. One hundred forty jobs were included in this phase. In carrying out this phase of the study, many of the tests for which validity data were reported were "matched" with the attributes used in the study. Thus, for example, the Thurstone Test of Mental Alertness (Quantitative) was "matched" with the attribute of Numerical Ability. Those predictors for which there were no

Table 4

CORRELATIONS BETWEEN VARIOUS SETS OF ATTRIBUTE SCORES AND CORRESPONDING WORK ATTRIBUTE REQUIREMENTS FOR 401 JOBS PUBLISHED BY THE U. S. EMPLOYMENT SERVICE[1]

Attribute Number	WAP Attribute	Method of Deriving Attribute Indices for Jobs: Differential Weights of Factor Scores[a]	Unit Weights of Factor Scores[b]	Highest Factor-Attribute Weight[c]	Results of Cunningham's Analyses
	Aptitudes				
1.	Verbal	.66	.65	.46	.66
2.	Numerical	.53	.53	.30	.62
3.	Spatial	.40	.39	.43	.43
4.	Form Perception	.49	.46	.41	.43
5.	Clerical Perception	.43	.39	.39	.57
6.	Intelligence	.59	.58	.63	.64
	Motor Abilities				
7.	Motor Coordination	.16	.13	.25	.37
8.	Finger Dexterity	.27	.22	.42	.48
9.	Manual Dexterity	.45	.42	.48	.46
10.	Eye-hand-foot Coordination	.38	.38	.46	.39
	Temperaments				
11.	VARCH: Variety and Change				.18
12.	REPSC: Repetitive, Short Cycle				.18
13.	USI: Under Specific Instructions				.16
14.	DCP: Direction, Control, Planning				.61
15.	DEPL: Dealing with People				.48
16.	ISOL: Isolation				.00**
17.	INFLU: Influencing People				.18
18.	PUS: Performing under Stress				.16
19.	SJC: Sensory or Judgmental Criteria				.14
20.	MVC: Measurable or Verifiable Criteria				.26
21.	FIF: Feelings, Ideas, Facts				.06**
22.	STS: Set Limits, Tolerances, Standards				-.14
	Interests				
23.	Things and Objects				.01**
24.	People and Things				.10*
25.	Business Contact				.35
26.	Scientific, Technical				.27
27.	Routine, Concrete				.02**

(Table continued on next page)

Table 4 (Continued)

CORRELATIONS BETWEEN VARIOUS SETS OF ATTRIBUTE SCORES AND CORRESPONDING WORK ATTRIBUTE REQUIREMENTS FOR 401 JOBS PUBLISHED BY THE U. S. EMPLOYMENT SERVICE[1]

Attribute Number	WAP Attribute	Method of Deriving Attribute Indices for Jobs: Differential Weights of Factor Scores[a]	Unit Weights of Factor Scores[b]	Highest Factor-Attribute Weight[c]	Results of Cunningham's Analyses
	Interests (cont.)				
28.	Abstract, Creative				.29
29.	Social Welfare				.18
30.	Nonsocial				.24
31.	Prestige				.60
32.	Tangible, Productive Satisfaction				.15
	Physical Capacities				
33.	Strength	.32	.34	.22	.55
34.	Capacities of Back and Lower Extremities	.43	.44	.38	.33
35.	Arm and Hand Capacities	.37	.36	.25	.48
36.	Equilibrium	.38	.33	.38	.36
42.	Color Discrimination				24

Note: Certain correlations actually were negative because of scoring procedures. In this table such correlations are shown as positive.

[1]All correlations are significant at the .01 level except those marked as follows:
*Significant at the .05 level.
**Not significant.

[a]Attribute indices for this part of the analysis were derived by using differential weights to compute the factor scores, then weighting the factor scores by the appropriate attribute weights.

[b]Attribute indices for the second set of correlations used unit weights in computing the factor scores. The factor scores were then combined in the appropriate manner.

[c]The third set of attribute indices consisted of the highest factor-attribute weight for each job.

corresponding attributes were dropped from the study, along with their validity information. The validity information used included all of the published validity coefficients for those tests which had been matched with a given attribute (such as form perception, intelligence, or finger dexterity). There were 23 attributes for the number of reported validity studies for which adequate data were available, most of these being aptitudes and motor abilities attributes.

Each of the 140 jobs for which validity information was available was analyzed with the Worker Activity Profile, using as a basis the definitions of jobs given in the Dictionary of Occupational Titles. Attribute indices were derived for each such job, these being based on the items of the Worker Activity Profile as treated individually (not combined into dimensions). For each of the 23 attributes, the attribute indices of the jobs in question were then correlated with the reported validity coefficients. However, it was recognized that there was something of an incompatibility in correlating these two sets of data. An attribute index is an estimate of the "amount" of the attribute that presumably would be required for successful performance on the job, whereas a validity coefficient is indicative of the amount of variance that is associated with a particular predictor (and implies something of a linear relationship between the predictor and the performance). Since most of the published validity information is in the form of coefficients, however, the analysis was carried out with the hope that some relationships might be found despite this possible incompatibility.

The results of this particular phase were generally negative. Of the 23 attributes, the correlations were significant for only two. Various possible explanations for this were suggested, in addition to that mentioned above.

Naval Ratings

Similar analyses were made for 43 Naval ratings, for which data on a total of 125 test validation studies were made available by the Naval Personnel Research Activity, San Diego, California. These validity studies were carried out with criteria of grades in Naval schools. In the case of some ratings, validity data were available from two or more different schools for the same rating, or for two or more specializations within the rating. In the subsequent analyses, the data were treated both as separate validity studies (n=125), and as studies of each rating as a whole (n=43); in the latter case, data were averaged where two or more sets of validity information were available.

In the case of all the validity studies, data were available for the following tests; these were "matched" with the attributes indicated.

Test	Attribute with which test was "matched"
General Classification Test	Intelligence
Clerical Test	Clerical Perception
Arithmetic Test	Numerical

Test	Attribute with which test was "matched"
Arithmetic Reasoning	
Arithmetic Computation	
Mechanical Test	Mechanical Ability
Mechanical: Tool	
Mechanical: Electrical	
Mechanical: Comprehension	

Each Naval rating was analyzed with Worker Activity Profile, and attribute indices were derived (for the four attributes) by two methods. In one case the indices were based on the use of the items individually; in the other case factor scores were derived (using the weighting procedure mentioned earlier).

The attribute indices for the individual attributes were then correlated with the validity coefficients for the corresponding test (or sub-test). Table 5 gives the results. All of the correlations are significant at the .05 level or better, and in several they are of reasonable magnitude. It should be noted that the correlations based on averaged validity data for the 43 Naval ratings are in all cases higher than those based on the 125 individual validity studies. While there is not a great deal of difference in the coefficients based on factor scores versus those derived from individual items, there is a tendancy for those based on factor scores to be somewhat higher.

Discussion

There is a marked difference in the results between the 140 jobs for which published validity data were used and the 43 Naval ratings. In part, this difference may be attributed to the greater consistency in the studies of the Naval ratings in terms of tests used, criteria, validation procedures, and other factors. Certainly the 140 jobs represented very marked differences on these and other grounds.

In any event, the results obtained with the Naval ratings lend support to the hypothesis that job requirements can be derived on the basis of data from reasonably objective job analysis procedures. Incidentally, it is especially encouraging that these results occurred despite the previously-mentioned possible "incompatibility" of the two sets of data.

Table 5

CORRELATIONS BETWEEN ATTRIBUTE INDICES (DERIVED BY TWO METHODS) AND VALIDITY COEFFICIENTS[a]

OF FOUR PREDICTORS FOR FORTY-THREE NAVAL RATINGS

Predictor	Indices Based on Factor Scores		Indices Based on Weighted Sum of Individual Items	
	125 Individual Validation Studies	Validity Coefficients Averaged for 43 Naval Ratings	125 Individual Validation Studies	Validity Coefficients Averaged for 43 Naval Ratings
General Classification Test	.24**	.39**	.14	.28
Clerical Test	.21*	.34*	.21*	.27
Arithmetic Test	.27**	.30*	.22*	.28
Arithmetic Reasoning	.45**	.53**	.44**	.53**
Arithmetic Computation	.60**	.63**	.57**	.61**
Mechanical Test	.39**	.49**	.39**	.52**
Mechanical: Tool	.33*	.44*	.31*	.42*
Mechanical: Electrical	.45**	.57**	.46**	.62**
Mechanical: Comprehension	.41**	.52**	.39**	.51**

Note: The sample size of the individual studies reported in this table differs because of the nature of the data.

[a]The validity coefficients were converted to Fisher's z values for purposes of correlation.

*Significant at the .05 level.

**Significant at the .01 level.

JOB EVALUATION

As another aspect of the research project, the Worker Activity Profile was used experimentally in a job evaluation context, to determine the extent to which job values might be predicted on the basis of information about the worker-oriented activities of jobs (Champagne and McCormick). For this purpose, a sample of 253 jobs was used. These were jobs for which the Bureau of Labor Statistics had published the results of national wage or salary surveys. The national averages reported by the Bureau of Labor Statistics were used where they were given; in other cases averages were computed on a weighted basis, taking into account the numbers of people in various geographical areas for an individual job as well as the sex distribution. Brief job definitions were given for some of the jobs. When they were not included, definitions from the Dictionary of Occupational Titles were used. In both cases, the definitions were used as the bases for analyzing each of the jobs with the Worker Activity Profile.

The sample of 253 jobs was divided into an experimental sample (154 jobs) and a hold-out sample for cross-validation purposes (99 jobs). An analysis with the experimental group was carried out to identify items of the Worker Activity Profile that were related to rates of pay. Three combinations and weightings of such items were then tried out in the hold-out sample. While the three cross-validation procedures resulted in significant correlations, they were of only moderate size. For example, 7 items with their statistical weights gave a correlation with pay rates of .36. Various factors that might have served to attenuate the magnitude of this relationship were discussed. While it is still reasonable to believe that a fairly substantial proportion of the variance in rates of pay might be associated with worker-oriented variables, this particular phase of the study did not account for a substantial proportion of such variance.

**Significant at the .01 level.

SUMMARY AND CONCLUSIONS

This report summarizes a series of exploratory studies relating to worker-oriented job variables. On the basis of the several studies the following conclusions seem warranted:

1. People generally seem to be able to differentiate between worker-oriented job variables (human behaviors and related variables) as contrasted with job-oriented job variables (dealing with the technological aspects of jobs.)

2. Such variables, as they occur in human work, can be identified or related with at least moderate reliability.

3. The rating of jobs in terms of worker-oriented job variables is considerably aided by the use of rating scales that have previously-scaled job tasks serving as benchmarks rather than simple numerical scales.

4. Human work can be characterized in terms of reasonably meaningful and stable dimensions of a worker-oriented nature. It seems reasonable to expect that individual jobs can be "described" in terms of such dimensions on the basis of a relatively objective job analysis procedure.

5. There is reason to believe that job requirements can be established on the basis of a relatively objective job analysis procedure that involves the identification or rating of worker-oriented job variables. The characterization of jobs in terms of job dimensions probably would be the most economical approach to such a process (as opposed to the direct use of individual "items,") and may also offer some increase in predictive effectiveness.

6. The experimental use of worker-oriented variables as the basis for predicting wage or salary rates produced significant results, but the amount of variance thus accounted for was rather limited. While it is reasonable to expect that a fairly substantial portion of such variance might still be accounted for by worker-oriented job variables, further research would be required in this area.

In general, the several studies have indicated the feasibility of identifying and quantifying job dimensions of a worker-oriented nature, and have indicated the potential utility of such dimensions for such purposes as the establishment of job requirements. While these studies are thus rather encouraging, it should be pointed out that the studies have not resulted in an operational "system." Such an objective was not planned within the framework of these studies. Toward this end, a series of additional steps are in order. Certain of these may be mentioned:

1. There is a need for further refinement of the Worker Activity Profile. Experience with the present version has indicated certain areas of human behaviors and related variables that are not adequately covered. In addition, certain items probably should be re-structured; this might be done by the extension of the use of scaling of work tasks to serve as benchmarks, since the items that were so developed had generally higher reliabilities than others.

2. Following such a modification of the Worker Activity Profile, it would be in order to use it in analyzing jobs "on the spot," as opposed to using it in analyzing jobs indirectly through job definitions and descriptions. This should be done with a large, reasonably broad spectrum of jobs.

3. A factor analysis of data from such jobs probably would be in order, with the view toward the further deliniation of job dimensions.

4. At this juncture—and assuming adequate results from the above processes—it would be appropriate to develop an operational "system" for readily characterizing jobs in quantitative terms on the various relevant dimensions. Such a procedure should be a very practical one, in order to have a very straight foward process for analyzing jobs and for directly converting the results of such analyses into job dimension scores. Such "scores" would thus form the basis for job profiles expressed in terms of job dimensions.

5. Beyond this, such dimensions might then be used in appropriate research efforts relative to such applied objectives as the establishment of job requirements.

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APPENDIX A: TITLES OF ITEMS IN WORKER ACTIVITY PROFILE

Note: For illustrative purposes, items 1 and 4 are shown in their entirety. Item 1 illustrates an item with job-task benchmarks; item 4 illustrates a check-list type of item.

Activities Section

I. Discrimination Activities

1. Near visual discrimination - (visual discrimination of objects within arm's reach). Check the activity below which is about as difficult as the incumbent's.
   - 7 __ inspects precision watch parts for defects
   - 6 __ proofreads newspaper articles before publication
   - 5 __ reads electric house meters
   - 4 __ makes entries on sales tickets
   - 3 __ observes position of knife when carving beef
   - 2 __ paints house walls
   - 1 __ sweeps streets with push broom
   - 0 __ makes no near visual discriminations
2. Far visual discrimination
3. Depth discrimination
4. Night vision
   - 1 __ normally makes visual discriminations in the darkness
   - 0 __ seldom or never makes visual discrimination in the darkness
5. Estimation of speed
6. Estimation of quality or value
7. Inspection tasks
8. Estimation of quantity
9. Estimation of size
10. Sound discrimination
11. Difficulty of hearing
12. Identification of patterns and sequences of sounds
13. Taste discrimination
14. Odor discrimination
15. Tactual discrimination
16. Blind positioning
17. Adjustments to the vertical

II. Mental Activities

18. Develops policies and objectives
19. Develops procedures to carry out policies
20. Develops methods for effective utilization of resources under his control
21. Forecasts needs in terms of personnel, material and/or money

APPENDIX A: TITLES OF ITEMS IN WORKER ACTIVITY PROFILE (Continued)

22. Schedules work of others
23. Develops budgets
24. Initiating action
25. Uniqueness of decisions
26. Time span of decisions
27. Intelligence
28. Curiosity
29. Skepticism
30. Interpretation of information
31. Usage of mathematics

III. Body and Limb Activities

32. Finger manipulation
33. Gross arm-hand manipulation
34. Arm-hand steadiness
35. General physical coordination
36. Manual force
37. General force
38. Leg force
39. Operation of foot control devices
40. Control operations (motor aspects)
41. Control operations (mental aspects)
42. Clerical tasks-files
43+. Clerical tasks-typing; shorthand; calculating, adding or bookkeeping machine operation
47. Monitors a work process
48. Assembling
49. Arranging or positioning
50. Skill of hand tool usage
51. Number of hand tools used
52. Reclining
53. Sitting
54. Standing
55. Kneeling
56. Stooping
57. Crawling
58. Walking
59. Running
60. Jumping
61. Reaching
62. Balancing
63. Climbing
64. Moving objects by hand

IV. Supervisory Activities

65. Supervision given
66. Supervises assistants

APPENDIX A: TITLES OF ITEMS IN WORKER ACTIVITY PROFILE (Continued)

67. Supervises fellow workers
68+. Supervises upper-level management, middle management, first line management, professional personnel
71+. Supervises non-supervisory employees, students, trainees, or patients
75. Number of people supervised
76. Delegating authority
77. Responsibility for physical assets
78. Responsibility for the health and welfare of others
79. Issuing directives
80+. Personnel decisions-promotions, demotions, transfers, raises, salary cuts
83+. Personnel decisions-dismissals, hiring
87. Personnel decisions-other punitive actions

V. Communications and Interpersonal Relations

88. Information giving and receiving
89. Interchange information with members of management
90. Interchange information with foremen and other first line supervisors
91. Interchange information with non-supervisory personnel
92. Interchange information with clerical workers
93. Interchange information with salesmen
94. Interchange information with semi-professional and professional personnel
95. Interchange information with customers, including clients, patients, etc.
96. Interchange information with "the public"
97+. Interchange information with "important persons," investors, suppliers
98+. Interchange information with prospective employees, students, or trainees
102. Coordination of activities
103. Written communications
104. Verbal communications
105. Verbal presentations
106. Instructing
107. Advising
108. Counseling
109. Persuading
110. Negotiating
111. Reporting
112. Publicizing
113. Isolation
114. Attending or catering
115. Performs to amuse others
116. Conflicting directions
117. Social obligations
118. Dress-left to incumbent's discretion
119. Dress-tie and jacket or other publicly presentable clothing
120. Dress-specific uniform

APPENDIX A: TITLES OF ITEMS IN WORKER ACTIVITY PROFILE (Continued)

121. Dress-special working clothes

VI. Rhythm of Work Activities

122. Day-night work
123. Pattern of working hours
124. Seasonal regularity of the job
125. Regularity of work flow
126. "Rush jobs"
127. Continuous attention
128. Repetitiveness

VII. General Characteristics of the Job Activities

129. Activity domain-people
130. Activity domain-data
131. Activity domain-things
132. "Thinking" vs. "Doing"

Situation Variables

VIII. Physical Environment

133. Temperature
134. Temperature fluctuation
135. Humidity
136. Indoor-outdoor work
137. Uncomfortable atmosphere
138. Cleanliness of environment
139. Illumination
140. Noise
141. Vibration
142. Distractions-telephone calls
143. Distractions-people seeking or giving information
144. Work space
145. Physical hazards

IX. Psychological and Sociological Aspects of the Job

146. Occupational prestige
147. Job security
148. Pay-hourly basis
149. Pay-regular salary basis
150. Pay-commission or tips
152. Self-employed
153. Overtime pay
154. Personal sacrifices
155. Traveling

APPENDIX A: TITLES OF ITEMS IN WORKER ACTIVITY PROFILE (Continued)

156. Separation from family
157. Family housing conditions
158. Unpleasant or frustrating experiences
159. Social conflict values
160. Supervision received
161. Amount of job structure
162. Color discrimination

APPENDIX B: THE WORKER ACTIVITY PROFILE

ACTIVITIES SECTION

I. DISCRIMINATION ACTIVITIES— The following items involve various types of sensory discriminations made by the incumbent on the job. When making your ratings, always consider the most difficult discrimination made by the incumbent in each of the categories, and use this discrimination in making your rating.

1. Near Visual Discrimination - (visual discrimination of objects within arm's reach). Check the activity below which is about as difficult as the incumbent's.
   - 7 _ inspects precision watch parts for defects
   - 6 _ proofreads newspaper articles before publication
   - 5 _ reads electric house meters
   - 4 _ makes entries on sales tickets
   - 3 _ observes position of knife when carving beef
   - 2 _ paints house walls
   - 1 _ sweeps streets with push broom
   - 0 _ makes no near visual discriminations
2. Far Visual Discrimination - (visual discrimination of objects beyond arm's reach). Check the activity below which is about as difficult as the incumbent's.
   - 7 _ looks for rare species of birds
   - 6 _ observes football plays for coaching purposes
   - 5 _ watches highway signs and road in driving truck
   - 4 _ observes street names in delivery of telegrams
   - 3 _ observes normal classroom activities
   - 2 _ patrols parking lot to prevent theft from cars
   - 1 _ loads cardboard boxes on truck
   - 0 _ makes no far visual discriminations
3. Depth Discrimination - (Judgment of the distance of an object, or the distance relationship between objects.)
   - 2 _ makes difficult, precise judgments of distance or depth (e.g. hunter, photographer)
   - 1 _ makes fairly easy, gross judgments of distance or depth (e.g. taxi driver, nursery man planting trees)
   - 0 _ seldom or never judges distances
4. Night Vision -
   - 1 _ normally makes visual discriminations in the darkness
   - 0 _ seldom or never makes visual discriminations in the darkness
5. Estimation of Speed - Estimates speed of objects including relation to other moving objects or a fixed point
   - 2 _ makes exact and difficult estimates (e.g. drill operator estimating speed at which hole is being bored, antiaircraft gunner)
   - 1 _ makes fairly easy, gross estimates (e.g. estimating speed of a conveyor so as to adjust rhythm of work)
   - 0 _ makes no estimates of this type

6. Estimation of Quality or Value - estimates quality or value of objects, including fineness of workmanship. The incumbent:
   - 2 _ makes difficult estimates involving abstract standards (e.g. art critic, jewelry appraiser)
   - 1 _ makes less difficult estimates involving the judging of products on the basis of fairly definitive quality standards (e.g. furniture buyer, automobile appraiser)
   - 0 _ makes no estimates of this type

7. Inspection Tasks - The judging of objects as to whether they are acceptable or not. This item should only be checked if the inspection involved is a regular part of the incumbent's job, not merely a casual action on his part. The object involved may be a product of the incumbent's own labor, or someone else's. The incumbent:
   - 1 _ performs some inspection task as a regular part of his job
   - 0 _ does not perform any inspection task

8. Estimation of Quantity - Estimates quantity of objects including weight, number and/or volume.
   - 2 _ makes exact and difficult estimates (e.g. weight guesser in a carnival game, observer estimating number of birds in a flock)
   - 1 _ makes fairly easy, gross estimates (e.g. crane operator estimating amount of dirt to scoop up)
   - 0 _ makes no, or very simple, estimates of this type.

9. Estimation of Size - Estimates size of objects including length, breadth, depth, height and/or thickness
   - 3 _ makes exact and difficult estimates (e.g. freehand engraver, patternmaker in a machine shop)
   - 2 _ makes moderately difficult estimates (e.g. bandsaw operator estimating size of log in order to set speed of saw)
   - 1 _ makes easy gross estimates (e.g. loading a truck with different sized boxes)
   - 0 _ makes no estimates of this type

10. Sound Discrimination - Identifying or discriminating sounds in terms of their intensity, frequency and/or other spectral characteristics, or changes therein. Check the activity below which is about as difficult as the incumbent's.
   - 6 _ adjusts strings of a piano to conform with standard pitch
   - 5 _ listens for abnormality of heartbeat in diagnosing heart disease
   - 4 _ tunes racing car engines
   - 3 _ listens to pitch of saw in cutting operations
   - 2 _ obtains names of clients or customers entering office
   - 1 _ continually listens for elevator buzzer signal
   - 0 _ returns library books to shelves

11. Difficulty of Hearing - The difficulty of hearing meaningful sounds is a function of the intensity of the sounds and the background noise if any. A very soft sound in quiet surroundings may be as hard to hear as a louder sound in noisy surroundings. Check the category below which best describes the greatest difficulty that the incumbent would have in hearing meaningful sounds.
   - 2 _ difficult (e.g. listening to verbal instructions in the immediate vicinity of a jack hammer)
   - 1 _ moderately difficult (e.g. an auditory stimulus which is just a little above the threshold level such as a

phone ringing in a noisy part of a factory)
0 _ normal or "easy"

12. Identification of Patterns and Sequences of Sounds - Making discriminations of patterns of sound such as those involved in Morse code, heart beats, or engine malfunctions.
    2 _ makes difficult, precise identifications of patterns and/or sequences of sounds
    1 _ makes fairly easy, gross identification of patterns and/or sequences of sounds
    0 _ seldom or never identifies patterns or sequences of sounds
13. Taste Discrimination - Identifying or separating various tastes.
    1 _ employs taste discrimination in performing one or more tasks required by the job
    0 _ never employs taste discrimination as a part of the job
14. Odor Discrimination -
    2 _ identifies or discriminates between odors as a regular part of the job
    1 _ must occasionally detect a certain odor or a small number of odors
    0 _ has no occasion to detect or discriminate between odors as a part of the job
15. Tactual Discrimination - Identifying objects or judging the surface characteristics of objects with the sense of touch. The tactual discrimination should be a regular, defined portion of the job rather than a casual action such as reaching for a pencil without looking at it.
    1 _ makes some tactual judgments or identifications of objects
    0 _ has no occasion to make tactual judgments or identifications of objects
16. Blind Positioning - Moving a body member from one specific position to another solely from "the feel of it" and without the use of vision.
    2 _ makes difficult, precise blind-positioning movements (e.g. playing a piano or flying an airplane at night)
    1 _ makes fairly easy, gross blind-positioning movements (e.g. stepping on a brake pedal or reaching for a control lever on a drill press)
    0 _ has no occasion to perform blind-positioning movements in connection with the job
17. Adjustments to the Vertical - Perceiving the relation of the body to the vertical and adjusting the position of the body accordingly. Although there is some adjustment to the vertical involved in all movements (e.g. sitting down) this item should be used only when there is a situation in which a conscious adjustment must be made, at least for the novice.
    2 _ makes difficult, precise adjustments to the vertical (e.g. working on a high scaffolding or on a steel girder)
    1 _ makes fairly easy, gross adjustments to the vertical (e.g. walking on a ship deck, or standing in the back of a moving truck
    0 _ makes no unusual adjustments to the vertical

II. MENTAL ACTIVITIES -- The following items deal with various mental processes in which the job incumbents engage while performing their jobs. In each item, always consider the most difficult, or highest order of activity that the incumbent performs, and make your judgment on the basis of this activity.

18 - 23. Planning Activities - As part of his assigned duties the incumbent

18 _ develops policies and objectives
19 _ develops procedures for carrying out policies
20 _ develops methods for effective utilization of resources under his control
21 _ forecasts needs in terms of personnel, material and/or money
22 _ schedules work of others
23 _ develops budgets

24. Initiating Action

1 _ The incumbent frequently initiates action and procedures on his own volition without receiving specific directives to do so. (e.g. store owner, teacher)
0 _ The incumbent normally follows fairly well established procedures and directives in performing his job (e.g. telephone lineman, librarian)

25. Uniqueness of Decisions

3 _ The incumbent continually faces unique situations where he must make decisions for which there is no precedent. (e.g. business executive)
2 _ The incumbent often makes decisions for which there is no precedent in terms of established policies and procedures. (e.g. restaurant manager, department store buyer)
1 _ The incumbent sometimes makes decisions for which there is no precedent in terms of established policies and procedures. (e.g. secretary)
0 _ The decisions made by the incumbent are based almost exclusively upon established policies and procedures.

26. Time Span of Decisions

3 _ The incumbent regularly makes decisions which have a fairly permanent effect upon the work situation (measured in years). (e.g. a decision to build a new factory)
2 _ The decisions made by the incumbent usually affect the work situation for a considerable amount of time (measured in months or seasons). (e.g. a decision to include a certain dress in the "fall line")
1 _ The decisions made by the incumbent usually affect the work situation for a relatively short period of time (measured in hours, days or weeks). (e.g. a decision to let the office staff off early because of a snowstorm)
0 _ The incumbent is rarely, if ever, called upon to make decisions of any lasting effect.

27. Intelligence - Different occupations are associated with different intelligence levels. The scale below consists of a number of occupations arranged in order of intelligence scores of people in those occupations. Check the occupation below in which the incumbent would apply about the same degree of intelligence as the incumbent in this job.

    6 _ Scientist, Theoretical Mathematician
    5 _ Lawyer, Accountant
    4 _ Sales Manager, Bookkeeper
    3 _ Electrician, Toolmaker
    2 _ Auto Mechanic, Welder
    1 _ Miner, Teamster
    0 _ Floor Sweeper, Dishwasher

28. Curiosity - The tendency to investigate or seek the novel in the world about one. Check the job below which is most like this one in terms of the amount of curiosity that the incumbent exerts.

    4 _ Newspaper Reporter
    3 _ Dress Designer
    2 _ Hotel Manager
    1 _ Bookkeeper
    0 _ Sewing Machine Operator

29. Skepticism - The extent to which the incumbent maintains doubt and question on a subject until adequate evidence is produced.

    2 _ Exerts a great deal of skepticism in his work (e.g. research scientist, judge)
    1 _ Exerts a moderate amount of skepticism in his work (e.g. nurse, newspaper editor, employment interviewer)
    0 _ Exerts little or no skepticism in his work (e.g. telegraph operator, railroad switchman, welder)

30. Interpretation of Information - In various jobs, the worker receives information from charts, graphs, meters, tables, etc., and his task is to "read" and interpret this information, in order to decide upon an appropriate course of action. The difficulty of the task in such cases would vary depending upon such factors as the amount, complexity and completeness of the information presented. Check the activity below which is most nearly like those of the incumbent in terms of the difficulty of interpreting data.

    5 _ reads corporate financial reports as a step in analyzing their financial soundness
    4 _ reads and interprest weather charts in order to make weather forecasts
    3 _ checks farm production records in order to compile summary statistics
    2 _ reads temperature gauges to insure that temperature is within safe limits
    1 _ reads gas meters and records readings on a standard form
    0 _ does no interpretation of data

31. Usage of Mathematics

    5 _ makes decisions with, or makes applications of advanced mathematics, such as differential calculus, topology, probability theory or vector analysis
    4 _ performs algebraic, geometric or statistical procedures in standard practical applications
    3 _ may apply any of the principles of arithmetic, including powers, roots, and the manipulation of fractions and decimals

2 _ may use the basic arithmetical operations of addition, subtraction, multiplication, and division
1 _ performs simple adding or subtracting of whole numbers, or performs simple counting
0 _ makes no numerical computations

III. BODY AND LIMB ACTIVITIES - The following activities deal generally with activities that the incumbent performs with the body or limbs.

32. Finger Manipulation - Check the activity below which involves about as much finger manipulation as the incumbent employs in this job.
7 _ performs surgical operations on human beings
6 _ cuts ornamental designs in jewelry
5 _ tunes auto engines
4 _ adjusts camera settings for taking commercial pictures
3 _ packs cakes of soap in cardboard boxes
2 _ pulls weeds by hand
1 _ carries pieces of furniture
0 _ Incumbent's activities involve no finger manipulation.

33. Gross Arm-Hand Manipulation - The control or manipulation of relatively large objects through skillful hand and arm movements, not to be confused with the manipulation of smaller objects with the fingers. Check the activity below which is most like the incumbent's in terms of the degree of arm-hand manipulation involved.
6 _ plays professional basketball
5 _ operates a bulldozer
4 _ manipulates farm tractor controls
3 _ packs cans of beans in cardboard boxes
2 _ vacuums rugs with a vacuum cleaner
1 _ pushes buttons in operating a commercial elevator
0 _ Incumbent's activities involve no gross arm-hand manipulations.

34. Arm-Hand Steadiness - Maintaining a steady arm position with a minimum amount of tremor.
2 _ must exert a great deal of arm-hand steadiness (e.g. surgeon, artist)
1 _ must exert a moderate amount of arm-hand steadiness (e.g. bartender, taxi driver)
0 _ need not exert even a normal amount of arm-hand steadiness.

35. General Physical Coordination - Overall coordination of body and limb movements. Check the activity below which involves about as much general physical coordination as the incumbent employs in this job.
6 _ performs trapeze feats in circus shows
5 _ manipulates numerous hand and foot controls simultaneously in landing an airplane
4 _ demonstrates correct swimming strokes for students
3 _ rides bicycle to deliver messages and telegrams
2 _ digs ditches with pick and shovel
1 _ hands number tags to customers using coat check room
0 _ interviews job seekers

36. Manual Force - The exertion of force (in pounds) through grasping, squeezing, or holding objects stationary with the hands. Check the activity below which is most like the incumbent's in terms of the amount of manual force exerted.

    6 _ operates pneumatic hammer in breaking up concrete
    5 _ drives nails in floor joist when framing house
    4 _ manipulates steering wheel of a taxi cab
    3 _ cuts hair in a barber shop
    2 _ repairs watches
    1 _ handles money when receiving deposits and cashing checks
    0 _ incumbent does not exert any manual force

37. General Force - The force (in pounds) exerted through pushing, pulling, and/or carrying. Check the activity below which is most like the incumbent's in terms of the amount of general force exerted.

    7 _ works as a professional wrestler
    6 _ manually unloads freight from boxcars
    5 _ installs fence posts
    4 _ carries groceries to customers' cars
    3 _ picks grapefruit from trees
    2 _ manually packs cigars in cardboard cartons
    1 _ arranges flowers in floral design
    0 _ exerts no general force

38. Leg Force - The amount of pressure exerted by pushing with one or both legs. Check the appropriate box.

    2 _ exerts a good deal of leg force (e. g. climbing a telephone pole, operating the foot controls in a large truck or a heavy piece of road equipment)
    1 _ exerts some, but not much, leg force (e. g. driving a taxi cab, operating pedal on a punch press)
    0 _ does not exert leg force in performing the job

39. Operation of Foot Control Devices - Check the appropriate box.

    2 _ performs tasks involving some preceision in the operation of foot control devices (e. g. operating the rudder controls on an airplane or the simultaneous operation of a clutch and gas pedal in driving manual shift car)
    1 _ performs tasks involving simple operation of foot control devices (e. g. stepping on a brake pedal or a release mechanism)
    0 _ does not operate foot control devices

40. Control Operations (Motor Aspects) - Most man-machine systems require the incumbent to operate one or more "hand control" devices, such as knobs, cranks, levers, wheels, handles, etc. The operation of hand control devices can be differentiated according to the physical difficulty of the control activities. The physical difficulty referred to here involves the difficulty in manipulating the control devices accurately by hand once the decision has been made as to how these devices should be adjusted. The main factors that should be considered are the degree of motor skill required to operate the control devices and the precision with which the adjustments must be made. You should not consider the amount of intellectual ability involved in determining what control activities are necessary. The incumbent:

2 _ engages in difficult hand control operations (e.g. adjusting a carburetor in an auto engine, operating a crane on a construction project)
1 _ engages in fairly easy hand control operations (e.g. adjusting volume on a TV set, operating a control lever on a grease rack in a service station)
0 _ engages in no hand control operations

41. Control Operations (Mental Aspects) - Control operations in man-machine systems vary widely in complexity depending upon the amount of information which the incumbent must take into account and the competence required in integrating this information in order to arrive at accurate decisions about what controls to manipulate and how to manipulate them. Thus complexity refers not to the motor task but to the mental activities involved in the operation of the controls. Check that activity below which is most like that of the incumbent in terms of the complexity of control operations.

6 _ pilots a commercial airliner
5 _ operates a radar set in a tracking station
4 _ operates a TV camera during live broadcasts
3 _ drives a commercial truck cross country
2 _ uses a power saw to cut timber
1 _ operates a push button elevator in a commercial building
0 _ engages in no control activities

42 - 46. Clerical Tasks - Indicate which, if any of the following clerical activities are performed by the incumbent as a regular part of his/her job. (Check as many as are applicable.)

42._ Files (correspondence, index cards, blueprints, etc.)
43._ Types (any type of written material)
44._ Takes dictation in shorthand
45._ Operates calculating or adding machines
46._ Operates bookkeeping machines

47. Monitors a Work Process - Frequently or continuously checks a process in operation to see that it is functioning satisfactorily or to identify certain stages in the process. Makes corrections, changes or stops the process when necessary. Examples of monitoring a work process would be a boilerman making constant checks of the pressure gauges and changing the temperature when the pressure becomes too high or too low, or an electrical power station operator keeping check of the voltage carried by each line in order to switch from one line to another when a line is in danger of becoming overloaded. The incumbent:

1 _ monitors a work process
0 _ does not monitor a work process

48. Assembling - The putting together of different parts into a complete object. The incumbent:

2 _ performs fairly precise assembling tasks requiring some skill and/or practice (e.g. wiring the circuits of a TV set, assembling wrist watches)
1 _ performs fairly simple assembling tasks (e.g. assembles kitchen chairs, baby carriages, etc.)
0 _ does not perform any assembly tasks

49. Arranging or Positioning - The placing of objects in some orderly fashion or specific position. The incumbent:

2 _ performs some specific arranging or positioning task requiring a good deal of skill or precision (e.g. a flower arranger, a drill press operator positioning a piece of metal so as to drill the hole in exactly the right place)
1 _ performs some specific arranging or positioning task which does not require much skill or precision on his part (delivery truok driver arranging packages in the truck)
0 _ does not perform any specific arranging or positioning task

50. Skill of Hand Tool Usage - The term hand tool refers to any tool (such as hammers, wrenches, shovels, drills and knives) which the worker holds and manipulates with one or both hands while performing his job duties. Check the activity below which is most like that of the incumbent in terms of the skill with which hand tools are used.

7 _ carves delicate ivory figures for decorative purposes
6 _ makes repairs on precision instruments such as watches, gyros or the like
5 _ overhauls automobile engines
4 _ repairs radio and TV sets
3 _ repairs shoes
2 _ installs fence posts
1 _ uses a hook to unload freight from box cars
0 _ uses no hand tools

51. Number of Hand Tools Used - Indicate the appropriate number of hand tools used by the incumbent. (Include those used infrequently, but available when needed.)

4 _ more than 50
3 _ 25 to 50
2 _ 15 to 24
1 _ 5 to 14
0 _ 0 to 5

52 - 63. General Bodily Activity - For each of the following items, place a check in the column which most accurately describes the amount of working time that the incumbent spends in the activity. (Note: an incumbent may be performing more than one activity at any given time.) (e.g. standing and reaching)

	(0) 0%	(1) 1-10%	(2) 11-40%	(3) 41-100%
52._ Reclining	___	___	___	___
53._ Sitting	___	___	___	___
54._ Standing	___	___	___	___
55._ Kneeling	___	___	___	___
56._ Stooping	___	___	___	___
57._ Crawling	___	___	___	___
58._ Walking	___	___	___	___
59._ Running	___	___	___	___
60._ Jumping	___	___	___	___
61._ Reaching	___	___	___	___
62._ Balancing	___	___	___	___
63._ Climbing	___	___	___	___

64. Moving Objects by Hand - Carries, lifts, pushes, pulls, moves to position or otherwise moves objects or materials by hand. (e.g. transferring stock from cartons to shelves, placing materials on conveyor belt). Indicate below the proportion of time the incumbent spends in these activities.
    3 _ a major proportion of his time (more than 50%)
    2 _ a substantial amount of time (21 - 50%)
    1 _ a moderate amount of time (6 - 20%)
    0 _ little or no time (0 - 5%)

IV. SUPERVISORY ACTIVITIES - This section deals with various activities that people perform in the process of supervising others. If the incumbent performs no supervisory duties, check __ and proceed to item 76. If the incumbent does perform some supervisory duties, proceed with the next item, number 65.

65. Supervision Given - (Supervision as a primary duty) The following items constitute a scale of supervision given by the incumbent from (1) the most direct to (4) the most general. The extremes (0 and 4) and the midpoint (2) of this scale are described. Check the category which most accurately describes the type of supervision given by the incumbent. If he supervises different people in different ways, check the highest order type which is applicable. Note: do not include in this section that supervision which is not a primary part of the job, such as the supervision of a secretary or fellow workers which in the following items.
    4 _ General direction - The incumbent gives no direct instruction, and reviews his subordinates' work quite infrequently.
    3 _
    2 _ General supervision - The incumbent gives general instructions and inspects his subordinates' work only at important intervals.
    1 _ Immediate supervision - The incumbent gives daily detailed instructions and checks his subordinates' work almost daily.
    0 _ Supervises no one.

66. Supervises Assistants - supervises as incidental part of other primary duties, one or a small number of individuals engaged in supplementary types of activities, as secretaries, assistants, or those understudying his job.
    1 _ The incumbent does supervise assistants.
    0 _ The incumbent does not supervise assistants.

67. Supervises Fellow Workers - operates as a working supervisor to other personnel in the working group; performs work relatively comparable to that of the individuals supervised.
    1 _ The incumbent does supervise fellow workers.
    0 _ The incumbent does not supervise fellow workers.

68 - 74. Types of People Supervised - If the incumbent is in a supervisory position, check those occupational group(s) who are directly responsible to him. Check as many as apply, but remember to include only those that report directly to him.
    68. _ upper level management
    69. _ middle management
    70. _ first line management (people who supervise non-supervisory employees as a primary part of their job)

71. _ non-supervisory employees
72. _ professional personnel
73. _ students or trainees (people in formal training programs)
74. _ patients

75. Number of People Supervised - Check the category which describes how many people the incumbent directly supervises.
    4 _ 20 or more people
    3 _ between 10 and 19 people
    2 _ between 5 and 9 people
    1 _ less than 5 people
    0 _ The incumbent does not supervise anyone

76. Delegating Authority - giving authority to lower echelons so that they may accomplish objectives.
    1 - The incumbent delegates authority.
    0 _ The incumbent does not delegate authority.

77. Responsibility for Physical Assets - In many jobs, the incumbent is placed in charge of or uses certain physical assets of the employer, such as tools, machinery, supplies, or money. It is the incumbent's responsibility to utilize these assets or supervise their utilization in such a way that their value is not reduced through damage or loss. Please check the category below which best approximates the total amount of physical assets which the incumbent is responsible for.
    5 _ more than $1,000,000
    4 _ between $100,000 and $1,000,000
    3 _ between $10,000 and $100,000
    2 _ between $1,000 and $10,000
    1 _ between $100 and $1,000
    0 _ less than $100

78. Responsibility for Health and Welfare of Others - In many job positions, the incumbent is entrusted with some responsibility for the health and welfare of others. Check the position below which is most nearly like that of the incumbent in terms of his responsibility for the health and welfare of others.
    5 _ army general in charge of a large combat unit
    4 _ city fire inspector
    3 _ playground director
    2 _ foreman of a small group of workers
    1 _ dog catcher
    0 _ filing clerk

79. Issuing Directives - The giving of orders either verbally or in writing which are binding upon the recipients. The order giver may be in a direct supervisor-subordinate relationship with the receiver, or he may be in some other type of power position such as a policeman ordering a traffic violator to "pull over" to the curb. The incumbent:
    1 _ does issue directives
    0 _ does not issue directives

80-87. Personnel Decisions - Indicate below those actions over which the incumbent has final responsibility. (Check as many as apply.)
    80. _ promotions
    81. _ demotions
    82. _ transfers
    83. _ dismissals

84. _ hiring
85. _ raises
86. _ salary cuts
87. _ other punitive action

V. COMMUNICATIONS AND INTERPERSONAL RELATIONS-- The following items deal generally with the processes of communications between individuals and groups, and the relationships of the incumbent to other individuals and groups with whom he comes in contact.

88. Information Giving and Receiving - In jobs as well as other aspects of daily living, we are constantly getting and giving information. When a foreman explains the procedures of a job to a new worker, he is giving information, and conversely, the worker is receiving information. If you stop to consider your daily activities, you will find that you have received information from many different sources: your boss, your fellow workers, your subordinates, written reports, files, notices, meters, and a myriad of other sources. There may be just as many ways in which you have given information, both orally and in writing, to other individuals. But although there are elements of both giving and receiving information in most jobs, some involve a predominance of one or the other of these elements. In the job in question, does the incumbent's activity involve the giving or receiving of information to a greater extent? Check that category which you feel would most nearly describe the information giving and receiving activities of the incumbent. The incumbent:

4 _ gives much more information than he receives
3 _ gives somewhat more information than he receives
2 _ gives about as much information as he receives
1 _ receives somewhat more information than he gives
0 _ receives much more information than he gives

89 - 101. Now determine the people with whom the incumbent interchanges information. Look at the first group; if the incumbent does not directly give information to or receive information from members of that group, place a check in the column marked "does not". If the incumbent does directly interchange information with members of that group, place a check in the column marked "does". The information we are concerned with here is job-rated information; therefore, casual conversations related to the job should not be considered. Mark a response for each group below.

	Does Not	Does
89. Members of Management (those people who supervise individuals who in turn supervise others) (e. g. executives)	—	—
90. Foremen and Other First Line Supervisors (those people who supervise non-supervisory personnel) (e. g. foreman, office managers)	—	—
91. Non-Supervisory Personnel normally considered to be skilled,		

		Does Not	Does
	semi-skilled or unskilled occupations not including clerical or sales (e. g. electrician, machine operator, ditch digger)	—	—
92.	Clerical Workers (e. g. typists, file clerk)	—	—
93.	Salesmen, not including sales managers (e. g. sales clerks, door-to-door salesmen)	—	—
94.	Semi-Professional and Professional Personnel (e.g. draftsman, chemist)	—	—
95.	Customers, including clients, patients, etc.	—	—
96.	"The Public", not included as customers or any of the other classifications (e. g. people who might communicate with "The Public" would be publicity managers, policemen, newscasters)	—	—
97.	"Important Persons" (e. g. visiting dignitaries)	—	—
98.	Prospective Employees	—	—
99.	Students or Trainees (includes only people in formal training situations)	—	—
100.	Investors	—	—
101.	Suppliers	—	—

102. Coordination of Activities - This function involves the process of monitoring the work of separate individuals or groups in order to keep each informed of the other's actions so that their combined activities might make a maximum contribution toward the attainment of an overall goal. The coordinating individual keeps track of what functions the separate elements of the system are performing in order to keep each informed of the other's progress and contributions. It should be noted that this individual is not the "boss" of the system. He does not have direct line authority over the other people in the system, nor does he have sole responsibility for achieving the group goal.

2 _ The incumbent coordinates activities of groups.
1 _ The incumbent coordinates activities of individuals.
0 _ The incumbent does not engage in any coordination activities.

103. Written Communications - Vary in difficulty according to such factors as the degree of complexity and abstractness of the communication, the possible consequences if it is misunderstood, as well as the required degree of adherence to the rules of grammar, punctuation, spelling, and style. Check the communications activity below which is about as difficult as those of the incumbent.

5 _ writes a technical report for publication in a scientific journal
4 _ prepares job descriptions
3 _ writes advertisements of houses for sale
2 _ orders office supplies by letter
1 _ transcribes notes into files or ledgers

0 _ The incumbent makes no written communications.

104. Verbal Communications - In most jobs the incumbent communicates orally with others. The difficulty of these communications varies according to such factors as the degree of complexity and abstractness of the communication, the amount of exactness required, the possible consequences if the communication is misunderstood, as well as the required degree of adherence to the rules of diction and grammar. Check that activity below which is most nearly like those of the incumbent in terms of its difficulty.

5 _ is interviewed by a news reporter on his firm's policies
4 _ advises salesmen on good selling techniques
3 _ instructs employees in proper safety procedures around dangerous machinery
2 _ explains rules and regulations to fellow assembly line workers
1 _ gives information on time of train departures over the telephone
0 _ makes a minimum of simple verbal communications

105. Verbal Presentations - In many jobs, the incumbent not only communicates verbally with others, but on occasion he gives talks before groups of people. In this sense, the communication is primarily a one-way type, from the incumbent to the group. The difficulty of these verbal presentations varies according to such factors as the content and importance of the subject matter, the length of the presentation, and the size and composition of the audience. Check the presentation activity below which is about as difficult as the incumbent's.

7 _ gives a talk on a technical subject before a professional society
6 _ gives lectures to a class in college English
5 _ presents a progress report at a meeting of county agricultural agents
4 _ gives a speech on his travels at a women's club luncheon
3 _ makes a public presentation of an athletic award
2 _ supervises a group of longshoremen
1 _ briefs night watchmen before their tour of duty
0 _ the incumbent makes no verbal presentation

106. Instructing - The activity of instructing varies in difficulty according to such factors as the complexity and abstractness of the material presented, the number and composition of the audience receiving the instruction, and the level of competence required to perform the instructing task. Check the instructing activity below which is most nearly like those of the incumbent in terms of its difficulty.

5 _ teaches a college course in advanced calculus
4 _ participates as an instructor in a management training program
3 _ trains new employees in performance of semi-skilled work
2 _ instructs workers in simple assembly-line tasks

1 _ advises motorists of shortest routes to take
0 _ The incumbent does no instructing.

107. Advising - The advising activities below vary in difficulty in terms of the specificity and complexity required to give the advice. Check the activity below which is most nearly like those of the incumbent in terms of its difficulty.

6 _ counsels the military on the development of atomic weapons
5 _ advises general practitioners on difficult respiratory problems
4 _ advises the president of a manufacturing company on possible public reactions to proposed products and policies
3 _ advises foremen on the handling of grievances
2 _ conducts a beginning course in first aid
1 _ answers customers' questions on products sold by an appliance store
0 _ drives a truck on a cross-country route

108. Counseling - Some jobs involve the activity of counseling; that is, the incumbent helps others to understand and solve their personal problems. This activity is not merely one of advising, but more of a mutual search for knowledge and direction. The counseling done by the incumbent would vary in difficulty according to such factors as the seriousness, complexity, and uniqueness of the problems, and the competence required to perform the counseling. Check the counseling task below which is most nearly like those of the incumbent in terms of its difficulty.

4 _ counsels patients with severe psychiatric problems
3 _ counsels amputees on the job adjustment problems
2 _ counsels parents on the behavior problems of their children
1 _ counsels workers on insurance programs
0 _ does not perform any counseling activities

109. Persuading - Persuading activities vary in difficulty according to such factors as the ingenuity and insight required of the persuader, the expected resistance of those persons being persuaded, the cost to these people, and the number of people to be persuaded. Compare the persuading activities of the incumbent with those below, and check that one which is most nearly like the incumbent's in terms of its difficulty.

6 _ campaigns for the position of state senator
5 _ works as a lobbyist in Washington
4 _ sells major appliances such as refrigerators and washing machines
3 _ sells suits and coats in a men's clothing store
2 _ sells small items in a hardware store.
1 _ gives away free samples for a product promotion
0 _ assembles tubes on an assembly line

110. Negotiating - conferring, bargaining, or discussing with a view toward reaching an agreement. The object of the negotiation may be a price, a product, a procedure, or any of a number of other objects. Indicate below whether or not this job involves the activity of negotiating.

1 _ This job <u>does</u> involve the activity of negotiating. (e.g. theatrical agent, department store buyer, union representative)

0 _ This job <u>does not</u> involve the activity of negotiating.

111. <u>Reporting</u> - Reporting activities are those involving compiling information and organizing it in writing for use by a superior or other interested parties. The activities vary in their difficulty according to the complexity and abstractness of the report, the position of the person(s) receiving it and the overall importance of the report. Choose that reporting activity below which is most nearly like those of the incumbent in terms of its difficulty.

6 _ Prepares a military report on a nuclear test blast
5 _ writes a techincal article in the field of electrical engineering
4 _ prepares proposals for the design of apartment houses
3 _ prepares payroll reports for a small factory
2 _ prepares reports on church activities for a church official
1 _ prepares attendance reports for a high school principal
0 _ this job involves <u>no</u> reporting

112. <u>Publicizing</u> - the formal dissemination of information through some type of communications channel. These channels may range from perhaps bulletin boards to television, the important point being that they are contacts with some type of population. The actual communications may be oral or in writing, and may concern such diversified information as announcements of an office picnic, a major change of corporate policy, or the introduction of a new product. Determine whether this job includes the activity of publicizing as a regular part of the incumbent's duties and check one of the appropriate boxes.

1 _ The incumbent <u>does</u> engage in the activity of publicizing.
0 _ The incumbent <u>does not</u> engage in the activity of publicizing.

113. <u>Isolation</u> - In some jobs, such as that of a forest ranger, the incumbent may have practically no face-to-face contact with other individuals for long periods of time. If this job is of that nature, check number 1; otherwise, check number 0.

1 _ has little contact with other persons
0 _ has a normal amount of contact with other persons

114. <u>Attending or Catering</u> - providing persons with goods or services.

1 _ The incumbent waits on or caters to people. (e.g. waiter, salesman, nurse)
0 _ The incumbent does not wait on or cater to people.

115. <u>Performs to Amuse Others</u> -

1 _ The incumbent performs to amuse others. (e. g. concert pianist, movie actor, night club singer)
0 _ The incumbent does not perform to amuse others.

116. <u>Conflicting Directions</u> - In some cases, a job incumbent is in a position where he may receive instructions or directions from different sources. In such cases these communications may be in conflict with each other. Indicate below whether the incumbent in this job finds himself in this position.

1 _ Yes, at times the incumbent may have to resolve conflicting instructions or directions from different sources.
0 _ No, the incumbent receives instructions and directions from only one source.

117. Social Obligations - In some jobs, the very nature of the job is such that the incumbent and/or his family is encouraged or even "expected" to exhibit certain behaviors during other than working hours. These behaviors may take varied forms, such as entertaining customers or perhaps being active in local civic functions. Indicate below whether the incumbent in this job might be expected to fulfill certain social obligations such as those mentioned above.

1 _ Yes, to some extent.
0 _ No, not at all.

118-121. Dress - Check the one which is most applicable.

118. _ The incumbent's dress is left entirely to his own discretion. (e.g. stock clerk, radio repairman)
119. _ The incumbent is expected to wear a tie and jacket or other publicly presentable clothing during working hours. (e.g. bank teller, hotel manager)
120. _ The incumbent is required to wear a specific uniform during working hours. (e.g. nurse, bus driver, doorman)
121. _ Because of the nature of the work environment, the incumbent usually wears special working clothes such as denim overalls (e.g. garage mechanic, house painter, baker)

VI. RHYTHM OF WORK ACTIVITIES-- These items deal generally with the times during which the incumbent works and the pace at which he performs his activities.

122. Day-Night Work - Check the appropriate category. The incumbent:

4 _ works almost exclusively at night
3 _ works more at night than during the day
2 _ works about as much at night as during the day
1 _ works more during the day than at night
0 _ works almost exclusively during the day

123. Pattern of Working Hours - Check the appropriate category.

2 _ The incumbent typically works during different hours each day according to no fixed plan.(e.g. insurance salesman making evening calls when necessary)
1 _ The incumbent typically works during different hours each day or week according to some systematic plan. (e.g. alternates weekly between day or night shift, or works three days and two nights a week.)
0 _ The incumbent typically works during the same hours every day. (e.g. 8AM to 5PM daily)

124. Seasonal Regularity of the Job - Check the appropriate category.

2 _ This job is performed only during certain seasons of the year.
1 _ This job changes somewhat, depending on the season of the year.
0 _ This job remains substantially the same from season to

season.

125. Regularity of Work Flow - The pressure from work schedules varies from job to job. In some jobs the work flow is fairly continuous and therefore the work demands on the incumbent are constant throughout the work day. In other jobs, the work flow is erratic, with the work demands increasing and decreasing at different periods of the day. Check the statement below which best characterizes this job.

2 _ The work demands fluctuate widely throughout the day. (e.g. short-order cook)

1 _ The work demands fluctuate somewhat, but not radically throughout the day. (e.g. bank teller)

0 _ The work demands are fairly constant throughout the day. (e.g. assembly line job)

126. "Rush Jobs" - In some jobs, the incumbent follows a fairly constant work schedule. That is, each new job is completed in turn with a minimum of importance placed on getting any particular job completed hastily. In other jobs, the incumbent must frequently put aside one task in order to work on a "rush job". Check the appropriate statement below.

2 _ The incumbent frequently receives "rush jobs".

1 _ The incumbent occasionally receives "rush jobs".

0 _ The incumbent rarely or never receives "rush jobs".

127. Continuous Attention - Check the one which is most characteristic of the incumbent's work activities.

1 _ The incumbent must focus his attention on a single task for long periods (measured in hours). This task may be one in which the worker concentrates on a single object (such as an intricate engraving task) or one in which the worker performs the same operations on a number of objects (such as an assembly line worker or a file clerk).

0 _ The incumbent frequently changes his attention from one task to another.

128. Repetitiveness - Indicate below the degree of repetitiveness of the worker's activities by checking the appropriate statement.

3 _ Highly repetitive - The incumbent performs essentially the same tasks many times over during a working day. (e.g. elevator operator, assembly line worker)

2 _ Fairly repetitive - The incumbent performs the same basic taks from day to day, but the order is more varied and somewhat larger. (e.g. dental assistant, gardener, bus driver)

1 _ Fairly varied - The incumbent has a fairly wide variety of duties involving a number of different tasks. The job is not highly routinized (e.g. automobile mechanic)

0 _ Very varied - The incumbent's activities vary greatly from day to day with little repetition of specific tasks. No one work day is exactly like another. (e.g. lawyer, interior decorator, management consultant)

VII. GENERAL CHARACTERISTICS OF THE JOB ACTIVITIES

129 - 131. Activity Domain - The domain of work activities might be thought of as centering around three sub-categories: people, data, and things. That is, some deal mainly with people (e. g. a clergyman), others deal mainly with data (e. g. an accountant), and still others deal mainly with things (e. g. a house painter). Check the categories below with which the incumbent spends a significant portion of his time (more than 40% of the working time).

Category	Examples of Operations with the Category
129. _ People	Speaks to, persuades, negotiates, asks, etc.
130. _ Data	Copies, computes, analyzes, compiles, etc.
131. _ Things	Grasps, hammers, pushes, moulds, handles, etc.

132. "Thinking" vs. "Doing" - Some jobs can be characterized as "thinking" jobs, in which the incumbent devotes a major portion of his time to reasoning, planning, decision making, etc. (e. g. a military strategist). At the other extreme are "doing" jobs, which are characterized more by physical activity than thinking (e. g. a truck driver or a carpenter).

Please check the most appropriate space below.

2 _ The job in question is most accurately described as a "thinking" job. (e. g. a corporation lawyer or a business executive)

1 _ The job in question involves about equal amounts of "thinking" and "doing". (e. g. a line supervisor or a school teacher)

0 _ The job in question is most accurately described as a "doing" job. (e. g. an electrician, a house painter, or a machine operator)

SITUATION VARIABLES

VIII. PHYSICAL ENVIRONMENT - These items all deal with the various aspects of the physical environment within which the incumbent works.

133. Temperature - Check the most appropriate category. The incumbent:

2 _ works under unusually low temperature conditions (e. g. refrigerated room of a meat packing plant; in an ice house)

1 _ works under fairly normal temperature conditions

0 _ works under unusually high temperatureconditions (e. g. boiler room of a freighter, around a steel furnace)

134. Temperature Fluctuation - Check the most appropriate category.

1 _ Within a working day, temperature conditions fluctuate severely. (e. g. walks in and out of refrigerated rooms)

0 _ There are usually no severe temperature fluctuations on this job.

135. Humidity - Check the most appropriate category. The incumbent:
2 _ works in a very humid atmosphere
1 _ works under fairly normal humidity conditions
0 _ works in a very dry atmosphere

136. Indoor-Outdoor Work - Check the most appropriate category. The incumbent:
4 _ works almost exclusively outdoors
3 _ works more outdoors than indoors
2 _ works about as much outdoors as indoors
1 _ works more indoors than outdoors
0 _ works almost exclusively indoors

137. Uncomfortable Atmosphere - Check the most appropriate category. The incumbent:
1 _ works in the presence of dust, fumes or toxic conditions in the atmosphere which might cause discomfort or health hazards. (e.g. in a saw-mill or in a coal mine)
0 _ works in a fairly normal atmosphere

138. Cleanliness of Environment - Check the most appropriate category.
2 _ Due to the nature of the work, the work environment is necessarily dirty. (e.g. working in a garage, shoveling coal into a furnace)
1 _ The work environment is about as clean as the average home.
0 _ Due to the nature of the work, the work environment is usually free of dirt and dust. (e.g. manufacturing drugs, working in an operating room)

139. Illumination - Check the most appropriate category.
1 _ Works under poor conditions of illumination. (e.g. works in a mine, works in a photographic dark room)
0 _ Works under normal to good conditions of illumination.

140. Noise - Check the statement below which best represents the incumbent's working environment in terms of the amount of noise present.
6 _ in a boiler shop; ten feet from a pneumatic drill in operation
5 _ extremely noisy factory area; twenty feet from a moving trailer truck
4 _ office with tabulating machine; in a very noisy restaurant
3 _ near a household ventilation fan; in a large department store
2 _ inside a quiet automobile; three feet from a normal conversation
1 _ room in average residence; in a quiet office
0 _ complete absence of any noise

141. Vibration - Check the most appropriate category. The incumbent:
2 _ is exposed to heavy or frequent vibration from floor, seat, or other vibrating objects, (e.g. truck driver, pneumatic drill operator)
1 _ is exposed to light, infrequent vibration (e.g. barber, carpenter)
0 _ is rarely if ever subjected to any type of vibration

142-143. Distractions - The incumbent is frequently distracted by: (Check as many as apply)

142. _ telephone calls
143. _ people seeking or giving information (not including phone calls)

144. Work Space - Check the most appropriate category.

1 _ The work space is so limited or hard to get at that assuming comfortable positions is sometimes difficult. (e.g. garage mechanic, plumber)
0 _ The incumbent is not ordinarily forced to assume an uncomfortable position because of space restrictions.

145. Physical Hazards - Check the activity below which involves about as much physical hazard (danger) to the worker as is involved in this job.

6 _ repairs high voltage power lines
5 _ works around vats containing acids harmful to the skin
4 _ works in the immediate vicinity of a steel furnace
3 _ works in the vicinity of an operating crane
2 _ works as a carpenter
1 _ works as a grocery clerk
0 _ the work involves a minimal amount of physical hazards.

IX. PSYCHOLOGICAL AND SOCIOLOGICAL ASPECTS OF THE JOB - The following items deal with factors such as status, personal conflicts and personal freedom on the job.

146. Occupation Prestige - Check the occupation below which has about as much prestige as the one in which the incumbent is engaged.

8 _ State Governor
7 _ College Professor
6 _ Lawyer
5 _ Public School Teacher
4 _ Bookkeeper
3 _ Railroad Conductor
2 _ Machine operator in a factory
1 _ Dock worker
0 _ Street Sweeper

147. Job Security - Different occupational areas usually have varying degrees of job security associated with them. Compare this job with the areas below and choose that area in which the average job is most like this one in terms of its security.

5 _ Health and Medicine
4 _ Banking
3 _ Clerical Occupations
2 _ Truck Driving
1 _ Construction Work
0 _ Migrant Farm Work

148-152. Type of Pay - Check as many as are applicable. The incumbent:

148. _ is paid on an hourly basis
149. _ is paid on a regular salary basis
150. _ is paid on a commission basis
151. _ receives "tips" for his services
152. _ is self employed

153. Overtime Pay - Check the most applicable statement. The incumbent normally:

1 _ receives "extra" wages for time worked beyond the normal work period.

0 _ does not receive "extra" wages for time worked beyond the normal work period.

154. Personal Sacrifices - In some jobs, success may in part be dependent upon personal sacrifices on the part of the incumbent. An example of this may be the fireman who often risks his personal safety in the performance of his duties. Less spectacular examples might a person who, because of his job, must spend much more than a normal amount of time away from his family, or a physician who must be on call at all hours of the day and night. In your judgment, is this job one in which success depends in part upon personal sacrifices on the part of the incumbent?

1 _ yes, to some extent

0 _ no, not at all

155. Traveling - "Traveling" will be considered here as those job-connected duties which take the incumbent away from the place of his residence so that he must stay overnight in a place other than his home. Check the most applicable statement.

3 _ The incumbent normally travels more than three months out of a year.

2 _ The incumbent normally travels more than two weeks but less than three months out of a year.

1 _ The incumbent normally travels a total of no more than two weeks out of a year.

0 _ The incumbent normally does no travelling as a result of his job.

156. Separation from Family - In some jobs, the nature of the environment would prohibit or curtail his being able to live with his family. In this item, ignore the actual marital status of the incumbent and assume he or she is married and has two children of school age. Considering the location of the job, the incumbent:

1 _ may be separated from his family during the duration of the job (more than one day),

0 _ would not have to separate from his family for the duration of the job.

157. Family Housing Conditions - Considering the same assumptions as in the previous item, the incumbent:

1 _ would be forced to accomodate his family in sub-standard housing for an extended period of time.

0 _ would not be forced to accomodate his family in sub-standard housing for an extended period of time.

158. Unpleasant or Frustrating Experiences - In some jobs, the incumbent is likely to be faced with frequent unpleasant or frustrating personal experiences. One example of this might be a door-to-door salesman who may be on the receiving end of a discourteous remark or have the door slammed in his face. (It should be noted that the unpleasantness being considered is psychological as opposed to physical hazards.) Check the category which is most typical of the incumbent's activities.

2 _ The incumbent is often faced with unpleasant or frustrating personal experiences. (e.g. door-to-door salesman, night club entertainer)

1 _ The incumbent is occasionally faced with unpleasant or frustrating personal experiences. (e.g. telephone operator, teacher)

0 _ The incumbent is rarely, if ever, faced with unpleasant or frustrating personal experiences. (e.g. motion picture projectionist, house painter)

159. Social-Value Conflicts - Some occupations involve products or services whose effects upon society might be considered harmful by some persons. Examples of such occupations might be those concerned with the production of tobacco, alcoholic beverages or arms and ammunition. A person working in this type of job may find a conflict between his need to earn a living and his social values. Indicate below whether this job might present a conflict of this nature to the incumbent. Note: This category is not to be used to describe those jobs which might be merely personally distasteful to a person (such as "garbage collector"), but which involve no conflict of social values.

1 _ It is likely that some people would find a conflict between performance of this job and their social values.

0 _ It is highly unlikely that anyone would find a conflict between the performance of this job and his social values.

160. Supervision Received - The following items constitute a scale of supervision received from (0) the least to (4) the most. The extremes, 0 and 4, and the midpoint 2 on this scale are described. Check the category which most accurately describes the amount of supervision received by the incumbent.

4 _ Immediate supervision - The incumbent receives daily detailed instructions and has his work checked almost daily.

3 _

2 _ General supervision - The incumbent receives general directions and his work is typically inspected only at important intervals.

1 _

0 _ General direction - The incumbent receives no direct instructions, and his work is reviewed quite infrequently.

161. Amount of Job Structure - Some jobs are highly structured in terms of the incumbent being instructed in exactly what is to be done and how to do it. Other jobs are quite unstructured so that the incumbent may set his own goals and procedures. Below is a list of jobs which vary in terms of their amount of "structure" with an assembly line worker having the most structured job and an author the most unstructured. Compare this job with those below in terms of the amount of structure and check the one which most nearly matches this one.

7 _ Assembly line worker
6 _ Telegraph operator
5 _ Bank teller
4 _ Plumber
3 _ First line foreman
2 _ Hotel manager
1 _ College professor
0 _ Author

162. Color Discrimination - In some jobs the incumbent is required to make discriminations of the color of certain objects. Check the appropriate category:

1 _ The incumbent makes color discriminations.

0 _ The incumbent does not make color discriminations.

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*VOCATIONAL EDUCATION; TECHNICAL EDUCATION; *ADMINISTRATOR RESPONSIBILITY; TEACHER SUPERVISION; PERSONNEL POLICY; LEADERSHIP; TEACHER ORIENTATION; TEACHER EVALUATION; ADMINISTRATIVE PRINCIPLES; *PROGRAM ADMINISTRATION; STAFF ORIENTATION; *ADMINISTRATOR GUIDES; *ADMINISTRATOR ROLE; PUBLIC RELATIONS
CONNECTICUT

The importance of sensitivity to trends in education and industry and leadership ability in achieving vocational-technical program transitions and modifications are stressed in this expression of administrator concern. Major sections are; (1) Leadership; with subtopics of Leadership Defined, The Administrator as a Leader of a Staff, and The Administrator as a Leader in the Community, (2) Personnel Matters; including such topics as Orientation of the New Instructor, Cooperative Planning, Communication, Status and Recognition, Instructor Evaluation, and Professional Improvement, (3) Supervision of Instruction; including such topics as The Director or Assistant Director as a Supervisor, The Department Head's Supervisory Function, and Teacher and Supervisor Cooperation, and a sample form for instructor evaluation, (4) Managerial and Operating Responsibilities; including such topics as Regulations, Finances, Records and Reports, Production Work, The Adult Education Program, Evaluation, and Consulting Committees, and (5) Public Relations; including Implementation of the Program and The "Publics" and Their Roles. A sample public relations chronological schedule is also included. (JK)

VT 001 463

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DIVISION OF VOCATIONAL EDUCATION

SEP 15 1969

Bulletin 40

A GUIDE IN THE

Administration of Vocational Education in Connecticut

IN THE

REGIONAL VOCATIONAL-TECHNICAL SCHOOLS

STATE TECHNICAL INSTITUTES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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CONNECTICUT STATE
DEPARTMENT OF EDUCATION

VT001463

FOREWORD

The administration and supervision of a modern program of vocational education, in its several levels and with its multitude of responsibilities, requires many kinds of skills and specific competencies. The necessity to understand and to adopt a program of instruction to the needs of engineering aides in industry, at the same time that close contact is maintained with the trades and industries in the state for the purpose of preparing skilled artisans and apprentices for a highly industrialized economy, makes it essential that the modern vocational educator be versatile. The administrator of either a state technical institute for the preparation of engineering aides, or of a regional vocational-technical school for the training of young people for trades and industries, must be particularly sensitive to trends in education as well as in industry. Further, he must be able to lead his faculty and staff in achieving smooth transitions and modifications in the program.

In a world which in the past decade has become so intensely concerned with its technical development, the need has never been more critical for competent individuals to administer and supervise the education of young people and adults preparing for technical occupations.

The committee responsible for the preparation of this bulletin was aware of the need for a document to outline the broad areas which are the concern of the supervisor and the administrator in vocational enterprises. When it began its task early in 1961, it had available to it the committee reports originally submitted in 1954[1]. These were examined in detail, modified and/or completely rewritten by sub-committees of assistant directors and instructors. In its present form, the committee reports represent an effective manual or handbook guide for new or prospective supervisors and administrators.

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1. Original document produced from Committee reports submitted at the "Workshop in Education", University of Connecticut, July 5, 1954 to August 6, 1954, and conducted by J. T. Nerden.

The committee responsible for the revision of the earlier document is to be commended not only for its professional approach to the task, but also for its skill in examining modern methods in education, and adapting and blending these methods with imagination, ingenuity, and vision to produce this final document.

Joseph T. Nerden, Chief
Bureau of Technical Institutes
Connecticut State Department of Education

THE ADMINISTRATION OF VOCATIONAL EDUCATION IN CONNECTICUT

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PERSONNEL MATTERS . . . . . John J. Higgiston, Chairman

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SECTION I

LEADERSHIP

SECTION I

L E A D E R S H I P

I. What is Leadership?

A. Leadership Defined

"The essence of leadership is getting people to mobilize on behalf of some aim because they come to desire its realization and want to join in bringing it to pass"[1]. Leadership implies problem-solving through group activity. No one can become a leader without a group. The group and the leader become interdependent until the problem is solved.

No one is a leader all of the time for all purposes. At times leadership in a group may result in the official leader taking a more subtle role while a member of the group who is making an important contribution to the problem acts in the leadership capacity. Leadership involves reaching into areas completely unfamiliar to the members of the group which means mistakes may be made before adequate solutions are found. Persons who are directly concerned with a problem develop the best solutions if they are given information and authority at a point where the problem arises. No one will actually become involved in group problem-solving unless they know that what they think and say actually counts.

B. Types of Leadership

Leadership behavior may be classed as two different types: autocratic and democratic. A dictatorial type of leadership has a place in some organizations, but it is not expected in an educational system. An autocratic type of leadership does not lead toward progress

1. Kramer, Ernest. Creative Leadership. Amer. Voc. Jr., December, 1960

because the group is limited to the capabilities of the leader. Studies show that domination by an autocratic leader weakens individuals within the group and members of the group eventually show aggression toward each other.

Since schools are founded on the democratic principle and school instruction is centered around the teaching of young people the democratic way of life, it is imperative that leadership in a school be democratic.

C. Types of Leaders

There are two main types of leaders: (1) the appointed leader or the status leader who holds a title and (2) the functional leader or the leader accepted by a group. When a person acquires leadership status, he does not necessarily gain functional leadership. An administrator in a school is a status leader who must prove his functional leadership before the staff accepts him as a leader.

D. Personal Characteristics of a Leader

There are no definite traits of character which determine that a person will or will not become a leader. The following qualities may help to point up potential leaders:

1. He likes to work with people and is empathetic
2. He sets a good example in conduct, dress, behavior and integrity
3. He is open-minded
4. He believes in the democratic processes
5. He shows enthusiasm for the work he is doing
6. He has broad interests and imagination
7. He is humble
8. He has a personal and professional philosophy
9. He has ability to write and speak effectively
10. He is aware of his own capabilities and limitations
11. He continues self-improvement

E. Place of the Leader in the Group

When working with the group the leader must work toward the following:

1. Keep the efforts of the group on the goal of the group
2. Encourage creativity
3. Enrich group thinking

4. Build the confidence and respect of the group
5. Increase interaction and sharing of experiences among group members
6. Be able to put people at ease
7. Be fair, consistent and impartial
8. Recognize the importance of the individual
9. Be able to persuade others into action
10. Have faith in the ability of the group to find an adequate solution
11. Be skillful in listening to what is said as well as that which is difficult to say, or that which is left unsaid
12. Be able to change viewpoints when presented with new ideas and information
13. Give credit where credit is due
14. Help the group see the boundaries of its authority
15. Be willing to accept conclusions of group action even if contrary to his own beliefs

II. The Administrator as a Leader of a Staff

It should be the administrator's prime concern to create conditions beneficial to the development of good staff morale. Recognizing that a high morale facilitates teacher growth, the administrator should strive toward the knowledge and practice of the psychological bases of morale. Administrators should contribute to building a high morale through the following:

1. Showing faith and confidence in all their co-workers
2. Providing clear objectives
3. Competence in professional leadership displayed (teachers will have confidence in and work freely with competent administrators)
4. A willing and unselfish expenditure of time and energy in meeting problems and in rendering service
5. Maintaining a cooperative effort of the entire staff in policy making
6. Maintaining a policy of cooperative attack and solution in all problems
7. An effort to give full public credit for all contributions
8. Leadership and administration which is kind, sympathetic, and cooperative, and at the sametime objective and impartial
9. Providing every opportunity and facility for the exercise of freedom, initiative, and experimental attack upon problems
10. Informing all members of the staff about advancement openings
11. Planning paths of advancement with individual members of the staff

The administrator and supervisor must be aware of evidences of the presence or absence of good morale and deal with each accordingly. A thorough understanding of conditions which depress morale is obviously important. Some of the most prominent conditions are:

1. Lack of recognition
2. Lack of proper and uniform evaluation

3. Handicaps to development of initiative
4. Absence of a common social life among the group
5. Lack of two-way communication
6. Inequality and inaccuracy in results of efficiency ratings
7. Maladjustment of salaries, individual and group
8. Prevalence of political influence in determining appointments, promotions, regrading of positions, assignments, and other phases of personnel management

If morale seems to be disintegrating, (some indicators of this are faculty and student absenteeism, tardiness, high turnover, freeness of expression in faculty meetings, and bickering), the administrators concerned should immediately (1) locate and define the fault, (2) make a diagnostic analysis of conditions creating the weakness, (3) formulate cooperatively with the staff definite measures for correction of the condition, and (4) apply these measures; that is, do something about it. Action is an excellent morale builder.

III. <u>The Administrator as a Leader in the Community</u>

A. The administrator should by his own example and encouragement of staff members, maintain a continuing communication with the community.

1. He should participate in and appoint staff members to engage in curriculum revision and program building with other schools having similar objectives.

2. The service organizations of a community are composed predominantly of the leaders from various groups of the community. The administrator can himself profit from association with those leaders and should encourage staff members to avail themselves of the same opportunity.

3. Parents' organizations provide an excellent means to facilitate communication between the staff and the students' homes, and if skillfully organized, will result in high student and staff morale.

4. The school program should be coordinated with the needs of industry. The administrator can best achieve this coordination by effectively organizing craft committees. These committees when kept on a continuing basis, provide a direct contact with industry through which an "up-to-date" program can be maintained.

5. The community needs should be an important consideration in the planning and implementation of any school program. The administrator is kept most aware of the community needs by inviting leaders representing industry, political, religious, labor, medicine, etc., to participate as members of an advisory committee. Consequently, he can expect support from all these areas for his program.

B. The administrator can profit from these community enterprises only with favorable treatment from the news media in his community. He should maintain a friendly working relationship with these services by selecting representatives from his staff who know the requisites of these various organizations and who have the time and energy to maintain a constant relationship with these media.

SELF-EVALUATION CHECK LIST FOR LEADERS ONLY

	Yes	No
1. Do I let the staff know I need help?		
2. Do I respect the judgment and opinions of all my staff?		
3. Do I give praise and emphasize the good work done by my staff?		
4. Am I familiar with the projects being worked on by the individual members of the staff?		
5. Do I have an open door policy?		
6. Is the "I" stressed, (or "We")?		
7. Do I schedule my time?		
8. Do I bring the staff into the setting of goals and policies?		
9. Does the staff feel they can come to me with personal problems?		
10. Do I consult all involved parties before taking action?		
11. Do I show preference to any "Certain" members of the staff?		
12. Do I assemble all the facts before forming an opinion?		
13. Do I provide an orientation period for new members of the staff?		
14. Do I work unceasingly to improve working conditions for the staff?		
15. Do I encourage and aid in the improvement of curriculum?		
16. Do I help teachers to recognize problems of relationships in the home, school, community, state, nation and world?		
17. Am I familiar with (and using) local resource agency groups?		
18. Do I provide opportunities for teachers to develop potential leadership?		

		Yes	No
19.	Am I proud of my school and profession?		
20.	Am I able to encourage and inspire?		
21.	Do I keep confidences inviolate?		
22.	Do I keep efficient records?		
23.	Do I constantly search for better ways of administration?		
24.	Do I delegate authority instead of trying to do everything myself?		
25.	Do I listen?		
26.	Am I able to work "with" a group rather than "on" or "for" the group?		
27.	Do I encourage creativity?		
28.	Am I fair, consistent and impartial?		
29.	Am I willing to accept the opinion of the group?		
30.	Do I participate and encourage staff participation in community activities?		
31.	Do I provide for effective parent-school communication?		
32.	Do I encourage interest in public relations?		
33.	Do I procrastinate?		
		____	____
	Total	____	____

SECTION II

P E R S O N N E L M A T T E R S

SECTION II

P E R S O N N E L M A T T E R S

I. General Statement

By his own conduct on the job, the administrator exercises a deep influence on his people, molding their work habits and attitudes.

Employees are very much aware of the way in which the administrator performs his job. They respect the administrator whose work habits reveal competence, efficiency and good results.

The way in which he deals with employees is a prime factor in motivating them. It determines whether they will do what is necessary (and no more), or whether they will have the "volunteer spirit", participating freely and wholeheartedly of their own free will to give a full measure of their energy and ideas. This attitude can only be earned and created in an atmosphere where the employee believes his ideas are welcome, where he feels a genuine personal loyalty to his administrator.

II. Orientation of the New Instructor

The administrator has a vital function to perform in the process of introducing the employee to the job and in the continuous process of helping employees to understand and accept their role. It is impossible to place too much stress on the proper introduction of school and job to the new employee. The administrator has the central role in helping the employee adjust to the job. However, he cannot fulfill his responsibility unless there is a clearly established program of information that allows the employee to understand the philosophy, goals, school regulations, and his (or her) place in the operation of the school. Specific procedures whereby the employee receives the information he needs about policies, regulations, schedules, and incoming statewide information will assist the administrator in developing a well-informed employee. A few basic principles may include:

1. Where he fits in the educational organization
2. The context of the organization in relation to the total field of education
3. Relationship to other functions in the school (i.e. administration, adult education, etc.)
4. His role in achieving school objectives
5. Recognition of individual performance
6. His status as an employee of the State of Connecticut
7. His possibilities for advancement to better positions
8. Orientation to community (housing, social, interests, etc.)

These and many other specific points may well be brought out by direct "face to face" communication as well as through the issuance of a prepared packet file that the new employee may refer to once the first wave of information has passed. The packet system has received many favorable comments and is nothing more than a collection of schedules, forms, and policies that the new employee will need in the near future. Normally it might take him many months to collect this data - not to mention the various misinterpretations he may acquire in the process.

First impressions are lasting, and it is important that the new employee's introduction to the organization be warm, friendly and understanding. He needs to see evidence of administration's interest in him and his success on his new job, and to get the story of administration's aims and efforts in order that he may derive the professional satisfactions he expects from his employment.

The plan of orientation need not involve a formal program (although this may be expedient for large groups of new employees) but should provide some timetable in order to avoid too much or too little during the first few days. The present system of statewide group orientation in addition to the local administrator's personal approach, the utilization of the packet system, combined with regular checking by the administrator is suggested as a successful method for the orientation of the new employee.

III. Cooperative Planning

Personnel relations that develop in cooperative planning produce the best results. While the autocratic method may get the job done quickly,

the results tend to negate the damage it does to staff initiative, growth, creativeness, ingenuity and morale.

Proven techniques used by administrators in cooperative planning include:

1. Faculty cabinet committee
2. Problem study committees
3. Creation of committees whose members have like interests
4. Utilization of the personnel's outside contacts
5. Utilization of the best thinking of the entire personnel in arriving at plans of action
6. Staff evaluation of the program of the school

Sound personnel policies, enlightened leadership and effective day to day communication between administrator and staff are the ingredients of good human relations in and out of the school. Within such an atmosphere the administrator becomes the major determining influence in building good relationships with his staff.

IV. Human Relations

Every administrator, regardless of his position, gets things done through people. Thus, the manner in which he deals with his people and the relationships he establishes with them are directly related to his success.

Certain fundamental rules of good human relations, based upon the understanding of human behavior, are basic to all administrator-subordinate relationships. The expansion and application of the "Golden Rule" in human relations are not unproven theories; they actually work. The administrator who follows these principles will not only improve and strengthen his relations with those he supervises, but may also prevent many vexing problems from arising.

Employees generally have certain basic needs for which they seek fulfillment in their work situation. They can be summarized as:

Recognition as an individual
Feeling of belonging
Feeling of accomplishment
Feeling of security

All categories of salaried personnel (clerical, custodial, supervisory and instructional) have these same needs which vary only in degree.

Ways and means for best recognizing each employee and his contribution call for administration's belief in the dignity and self respect of the individual.

Praise and censure are opposites and should be administered as opposites. Open and public praise, when and where it is due, is a compliment long remembered, whereas censure should be done privately. Nothing destroys an employee's morale or builds resentment faster than to be reprimanded in the presence of other people.

V. Staff Problems

Salaried employees at all levels have problems and develop dissatisfactions and resentments which, unless they are given proper attention, tend to become magnified. If left unattended, such problems may frustrate the employee and deny him the important outlet of redress.

A little preventive attention goes a long way. Many resentments can be eliminated merely through the exchange of information and the administrator's indication of a bona fide desire to deal openly and fairly with his people.

In any event, administration must be aware of the need to take account of differences of opinion, and to provide a procedure which will get them out into the open so that they may be settled amicably. The procedure need not be complicated but proper administration is needed to insure that it meets the needs of employees and is thoroughly understood by them. In the past, a number of very successful techniques for the discussion of problems have been used. These include (1) the department head council in which the department heads for the major trade, related and general education functions of the school act as the cabinet for the director and his problems, (2) the informal conference between the administrator and the instructor in which

all of the facets of a problem are discussed and a solution sought, and (3) the use of the total faculty in the "We Study Our Program of Education" activity to explore the implications of a problem solution. It is perhaps the better part of wisdom on the part of the administrator that, in solving a staff problem, he seek out as many points of view as possible in arriving at a solution.

VI. Communication

"News" always represents a potent force in the hands of the man who gets it first. The man who has the "news" also has the audience. The administrator who has the news also has a powerful link with the employees. By virtue of this key position, the administrator has a unique opportunity to encourage cooperation among those he supervises, through a two-way flow of facts and information.

This two way street may prompt the administrator to consider the following:

1. How well do I know my employees?
2. Do I keep him informed on the "little things" that affect him and his job?
3. Does he accept and believe what I have to say?
4. What information am I failing to get to him?
5. Are my communications on a man-to-man basis?
6. Are his questions answered fully and promptly?

Day to day personal contacts are the very essence of communication and every step should be taken to equip the employee to effectively play his part on the team. A few techniques of proven merit are:

1. The entire faculty meeting
2. Department or division meetings
3. Committees established to solve specific problems
4. The bulletin board
5. Early morning daily announcement forms
6. Weekly or monthly "newsletter" to the faculty
7. An informal "gabfest"

VII. Status and Recognition

The employee identified with a profession - by reason of his specialized technical education, training and experience - requires particular attention.

This is particularly true of instructional personnel. The following are a few points that may be worthy of consideration.

1. Realize that the professional employee wants to be recognized as a member of a profession
2. Insure credit and recognition from top administration for outstanding work and unusual accomplishments
3. Provide work that will challenge the professional employee's technical competence
4. Promote professional interests parallel to school's objectives

No matter what his income status, or position in the school, the individual has a desire for personal prestige. He looks for evidence of his own importance and value. Being closely associated with administration has traditionally been a source of prestige. This feeling of being "in" on things is still important.

VIII. Instructor Evaluation

A. General Statement

An important responsibility of the director is consistent evaluation of the staff in order to assure maximum services and to give recognition to high standards of performance. Bulletin 48, Policies and Procedures for Unclassified Personnel (Connecticut State Department of Education), requires the director to submit a complete report of the general efficiency and effectiveness of probational and permanent instructors.

To implement this evaluation requirement the professional staff committee of the Division of Vocational Education developed Form VT-98, Service Rating Report. Also, an excellent worksheet was developed, and this should be used regularly in conferences between the administrator and the instructor.

B. Probationary Evaluation

At six month intervals during the first three years of the probationary period, the director must file with the Commissioner, a detailed service rating on the performance of each probationary employee, with the final rating to be filed one month before the close of the

third year. Such an evaluation procedure tends to insure that thoroughly qualified and professionally competent persons will be duly issued standard certificates.

It is advisable for the director of the state technical institute, or of the vocational-technical school in the orientation of a new instructor, to inform him of this mandatory evaluation requirement and to furnish him with a copy of Form VT-98, Service Rating Report, in order that the instructor may acquaint himself first-hand with the criteria which form the basis for his evaluation.

In order that the basis of the rating report be objective, the director or assistant director of the institution should spend considerable time in the direct observation of the probationary instructor in the shop or classroom teaching situation.

Some of the more common techniques employed in the supervision of an instructor ("probationary" or "permanent") may be listed as:

1. Pre-arranged Visit

   The pre-arranged visit by the director or assistant director is an occasion wherein the time and date are set beforehand. This method is less apt to create an air of apprehension, particularly with a "new" instructor. It also tends to build the confidence of the latter, for he is given the opportunity to be seen, at least initially, with his "best foot forward".

2. "Casual" Visit

   This type visitation is perhaps best employed after the instructor has been observed under the "pre-arranged" method. These visits are varied and unannounced, and should be utilized at different times of the day and week. Further, they should be made at times when the instructor is teaching to different levels of students. These visits are mutually advantageous. They serve

to assist in keeping the administrator's "finger on the pulse", and they serve to remind the instructor that helpful supervision is a watchword in the school.

3. Visits by Central Office Consultants, Bureau Chiefs

The instructor should be informed as to when such visitations are to be made. The director should make use of these evaluations when formulating the Service Rating Report. Probationary teachers are given special attention by Central Office consultants and bureau chiefs, and therefore, it is always desirable to consult with them in all matters concerning Service Rating Reports.

4. Visits by Department Head

In schools where such direct supervision takes place, the department head should work closely with the assistant director in order to correlate findings and observations.

Where the respective evaluators or supervisors find that weaknesses are apparent, the instructor should be so notified in a follow-up conference and through a written memorandum. When subsequent observation takes place, a simple referral to the memorandum describing the previous visit should indicate whether the instructor has acted in consonance with earlier recommendations. Where he has, he should be so informed in writing. Similarly, where he has neglected to so act, he should be so informed in writing. These memos whether affirmative or negative should be filed as a means of facilitating completion of the Service Rating Report, when such a report becomes due.

The value of proper rapport between the instructor and the administrative-supervisory echelons cannot be over-emphasized. Its importance, however, is immeasurably more vital with the new or

probationary instructor whose very inexperience of itself is demanding of positive assistance and understanding. Over-supervision may unnerve him and disturb an otherwise promising potential. On the other hand, under-supervision may encourage a laxity that will soon render good instruction impossible. The guiding norms with respect to "how much supervision" would seem to be discretion and moderation.

C. Permanent Employees

Bulletin 48 also requires an annual evaluation of all permanent employees one month before the employment anniversary date of each employee. Information pertinent to anniversary dates is also included in the same bulletin. Personnel policies require that an annual salary increment be granted to each employee whose service rating during the preceding year indicates a performance of not less than "good". (Two successive "unsatisfactory" service ratings are grounds for dismissal.)

Simple compliance with Bulletin 48 would permit a director to complete the Service Rating Form and furnish the instructor with the yellow copy. It is recommended, however, that the director confer with the instructor so that the latter will know positively how the director arrived at the evaluation result. It goes without saying, of course, that the director's evaluations of his faculty must be based on frequent observations of the faculty in their respective shops and classrooms.

The director should also work with the comments and assistance of the assistant director and the department head when he is developing his evaluation of an instructor, since both these individuals tend to be in more frequent contact with the instructors. The technique of having one of the two sign the Service Rating Report as the rating official with the director countersigning may be the best procedure in those cases where the director has not been in close contact with the instructors. While the evaluation is only required annually, the director should make use of the

written memo technique to compliment the instructor when he is doing an excellent job. This method should also be used to inform the instructor when he is less successful so that his shortcomings also will be a matter of record.

Inasmuch as an annual increment is denied where the individual's record is "less than good", the director's tendency in borderline cases may be to grant a "good", - but to condition it on the subsequent year's improved performance. When the latter expectation does not eventuate, the increment should be withheld. It is important that such a condition be recorded (in writing) so that no controversy will arise at the time when such a condition may have to be enforced.

IX. Professional Improvement

A. General Statement

If our modern technical institutes and vocational-technical schools are to operate at the greatest possible level of efficiency, the professional improvement of its instructors is a "must" activity.

Too often a school administrator is apt to rely for this improvement on our present system of "formal" improvement; i.e., by having his staff enroll for courses in a summer professional improvement program or by enrolling for courses in colleges and universities (for credit) at other times of the year. There is another avenue of improvement, however, which can augment the foregoing and be carried on in the school itself, and in which the director himself can cooperate. Such a program concerns itself with educational problems, of course, but with problems which affect that particular school and from which the director as well as the faculty can benefit. The needs being met in such a case would certainly be specific; the interest would probably be at a high level, because the subject being considered would be more familiar and consequently have more meaning. Such a plan might be carried out by a regularly scheduled

series of meetings, conferences, discussions, etc., and so arranged that they would not be overly time-consuming or held too frequently.

Whatever sort of professional improvement program is established, a good rule would be to have it coincide with the following criteria as suggested in Bulletin 56, 1952, Connecticut State Department of Education on page 23. These include:

1. An ideal program of in-service education is one in which motivation for participation comes from within the individuals.
2. An ideal program of in-service education is cooperatively planned
3. An ideal program of in-service education is adapted to the needs of the participants.
4. An ideal program of in-service education provides for an interpretation to the public of its purposes and outcomes.
5. An ideal program of in-service education provides a plan for continuous evaluation and improvement of the effectiveness of the program by all concerned.

B. Improvement of Instruction

The only possible justification for a professional improvement program is that it improves the quality of service rendered by the teaching staff through the improvement of the staff itself. While the director has the responsibility of initiating an in-service program for improving instruction, the staff should have an active part in the planning and administration of the p ogram. Cooperative planning is tremendously effective in securing wholehearted participation by the teaching staff.

The "We Study Our Program of Education" program has proved an excellent vehicle for the promulgation of an effective method of improving instruction through in-service means. Such a committee presently studies and evaluates real school problems such as: curriculum, marking and grading procedures, teacher loads, student activities, etc.

Effective in-service growth is also brought about by the development of a comprehensive professional library within the school.

The salient factor to be borne in mind, perhaps, by the director is that he may improve instruction through in-service methods by a continuous contact with his faculty in the "realm of ideas". If we are to truly progress, we shall accomplish such progress through a spirit of cooperation.

X. Conditions of Employment that Make it Possible for Teachers to Do Their Best Work

Many of the policies and procedures affecting the staff with respect to tenure, salary, reassignment, promotion, leave, etc., are already established in Bulletin 48, Policies and Procedures for Unclassified Personnel. A director should be cognizant of the fact that the manner in which these policies and procedures are implemented will improve or hurt the personnel relations between administration and faculty. If decisions in these areas are always made with a view to the effect which they will have on the feelings of others, good human relations are more likely to result. A director should never handle these matters as mere administrative details because anything that affects people is important. For example, a transfer or reassignment of teaching responsibility should never come as a surprise to an instructor, and should never be based entirely upon convenience. If it becomes necessary to reassign a man to another school, he should be made fully aware of all the factors involved. Should a member of a school staff request a reassignment, it should also be given prompt consideration on the basis of all the facts in the request.

With respect to promotions, if an instructor is eligible and qualified for promotion (such as instructor to senior instructor), prompt action should be taken to process the necessary papers to effect the promotion. When it is approved, the director should make it his responsibility to personally notify (and even congratulate) the men, rather than simply forwarding a copy of such approval through the school mail.

Also, a director should constantly encourage members of the staff to qualify for and to apply for promotional vacancies in the school and in the vocational division as a whole. Instructors who have indicated such interest and appear to have most of the necessary qualities should be provided opportunities to function in special supervisory or administrative capacities.

A director must also have the professional fortitude to face up to the situation in which he must inform an instructor that he does not consider him professionally qualified at this time for promotion, even though eligible on all other characteristics. Furthermore, if the director has been doing a consistent job of evaluation and using the written memo technique to keep the instructor informed of his specific strengths and weaknesses, the task of reviewing professional and personal strengths and weaknesses with an instructor is simplified.

In the matter of promotions, a director should always consider that a change which is recommended, such as "instructor" to "senior instructor", is in reality a promotion and not merely the device by which additional steps in the salary schedule are provided. Promotions of this type should not be automatic or matter of form. Full consideration to all factors should be given before the approval is granted.

SECTION III

SUPERVISION OF INSTRUCTION

SECTION III

S U P E R V I S I O N O F I N S T R U C T I O N

I. General Statement

To the individual in our school system faced with the question, "What is good supervision of instruction?", many and varied resources are available. To begin with, there is his own immediate supervisor, whose philosophy and methods of supervision he may subscribe to and adopt. There are textbooks and yearbooks myriad in number to which he may resort for guidance. Finally, there are his own experiences and temperamental bent and those of the instructors he must supervise that will lend a marked flavor to his own approach to supervision.

If in good faith he explores all of the above avenues of information, he will not be exploring long before he realizes that, not only are the views of supervision many, but they are also sometimes contrary, and other times even contradictory.

It is not our purpose, in this section, however, to offer a cross-section of supervision theories; rather, we wish to base this section on the two basic tenets we consider most vital to good supervision of instruction.

1. "The first and most important responsibility of the (supervisor) is the program of education in the school system."
2. "The major instrument in the program of any school is the teacher."[1]

With these two tenets in mind, we have developed this section of the revised Administrative Bulletin, drawing freely from the suggestions and findings expressed in the earlier version by Mr. DeMino and Mr. Zande, as well as from the sources listed in the bibliography.

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1. The Administration of Public Education, Wahlquist, Arnold, Campbell, Reller, and Sands, The Ronald Press Co., New York, 1952.

II. Who Is a Supervisor?

According to one of our own administrator's rather apt definition, a supervisor is "one who, by his leadership and counsel, enables the group to attain its objectives".

Even though, in the broadest sense, every school official from the Commissioner on down is a supervisor, herein the term will refer to the director, assistant director, or department head.

III. What Does Supervision Connote?

Perhaps a good indicator of what supervision of instruction at one time connoted is the following list of rules posted by a New York City principal in 1872:

"1. Teachers each day will fill lamps, clean chimneys, and trim wicks.
2. Each teacher will bring a bucket of water and a scuttle of coal for the day's session.
3. Make your pens carefully. You may whittle nibs to the individual taste of the pupil.
4. Men teachers may take one evening each week for courting purposes, or two evenings a week if they go to church regularly.
5. After ten hours in school, the teachers spend the remaining time reading the Bible or other good books.
6. Women teachers who marry or engage in unseemly conduct will be dismissed.
7. Every teacher should lay aside for each pay a goodly sum of his earnings for his benefit during his declining years so that he will not become a burden on society.
8. Any teacher who smokes, uses liquor in any form, frequents pool or public halls, or gets shaved in a barber shop will give good reason to suspect his worth, intentions, integrity and honesty.
9. The teacher who performs his labor faithfully and without fault for five years will be given an increase of twenty-five cents per week in his pay providing the Board of Education approves."

Possibly the insertion of this extract, recently reproduced in an educational bulletin, is not apropos. It is apropos, however, if we note that these rules are scarcely concerned with the teacher's prime work: instruction. Not that such things as the reading and personal habits of school people have become inconsequential. Yet, the pitfall remains and needs to be avoided; viz., that the modern supervisor of instruction might,

by wrong emphasis, give staff and student the impression that he is less interested in educational progress than he is in duty lists and general housekeeping--even though these must have due place in the administration of a school.

A. Modern Concept of Supervision

"Formerly, supervision was largely 'directing', but today we realize it must depend upon 'leading'...Educational leadership is largely the art of working with people, and the success of a school is dependent upon the work of many people."[2] Here we have the modern concept of supervision that stems from cooperative leadership on the part of those in charge of the school program. This must not be understood to mean, however, that a supervisor must never exercise authority or must abdicate his responsibility of leadership.

We come then to the question of the really important duties of the educatior l leader in a school.

IV. The Director or Assistant Director as a Supervisor. (In this section, the term "director" refers also to "assistant director", who in some schools will be made directly responsible for supervision of instruction.)

The director is responsible for establishing and maintaining educational standards which are in keeping with current educational developments and trends in vocational education, within the framework of objectives set forth by the State Board of Education. The formulation of standards covering instruction is a matter being worked upon perpetually by all staff members in the state system. However, changes and modifications in instructional matters should be undertaken cooperatively by the staff and the director.

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2. Ibid.

A. Instructional Materials

The director or his designate should see that repeated orientation is given with regard to:

1. Course outlines
2. Shop progress records, grade and attendance records
3. Instructional materials, including:

   Lesson Plan Forms
   Textbooks
   Audio-visual Equipment and Materials
   Educational supplies and equipment

Rules of procedure affecting the procurement and use of the above should be made clear from the very start, to be restated at the outset of each school year, preferably in written form.

The director must remain alert to changes and suggested improvements in outlines, progress records, and program balance emanating from curriculum committee meetings or from findings of the "We Study Our Program of Education" groups. He must "follow through" these suggested new approaches by observing whether the studies and recommendations are having any impact in his own school. This means he must directly observe and consult with his teachers.

B. Teaching Plans

Inherent in good instruction is the teaching plan, an aid which should serve to insure logical progression along systematic lines. As an administrator, the director should attempt to work out cooperatively with each staff member the procedures which would go into effect in case of the teacher's absence. A carefully made teaching plan in the hands of a substitute teacher would tend to provide for an uninterrupted program. Instructors should be helped to understand, however, that flexibility in the teaching plan is desirable. Latest developments in science and in industry, for example, or current events of local, state

and national importance may provide many kinds of motivating experiences and should be capitalized on from time to time. This alone might mean occasional modifications of the carefully prepared teaching plan.

C. Evaluation of Instruction

Perhaps the most delicate, yet the most direct, method of supervision is that which deals with evaluation. Sources of evaluation are several:

1. Direct observation in the classroom and shop
2. Indirect observation of a teacher at work as seen by the supervisor from time to time in the latter's visits about the school
3. Effect of the teacher on his students' morale, interest, and progress
4. The "image" which other teachers have of him

D. Direct Observation in the Classroom and Shop

The crucial time when direct observation is most needed on the part of both the new instructor and the supervisor is the initial stage of the teacher's career.

In setting up a schedule for direct observation, the supervisor should make the staff aware of his plan to visit and sit in for a period of instruction. In some instances, consulting the instructor on a suitable period for observation might be advisable; on the other hand, a visit at an expected time might encourage an artificial teaching situation. The supervisor's individual judgement must come into play here

What precisely are the factors to be observed? Appended to this section is a suggested plan of supervision of instruction. It is not recommended that the form itself be used on the spot while observing. As a matter of fact, care needs to be exercised about appearing "armed" with pencil and note-pad for criticism. Mainly, this would not be good for the students to behold; again, it might convey overtones of an investigation, not an observation, to the instructor.

It is generally wise to follow any observation with a teacher-supervisor consultation, in which an appraisal of the teacher's work takes place. Here the ability of the supervisor is put to its greatest test. He must gain the teacher's confidence. He must show insight and fairness. He must be forthright in his appraisal, yet tactful. And he must encourage change, if change is called for. Throughout the process of supervision, too, the teacher must never be given the impression that the supervisor is being petty. On the contrary, the good supervisor will note in his observation the commendable traits and methods of the teacher and make mention of them in his written comments and in their subsequent consultation.

The success of a supervisor's visit depends largely upon mutual acceptance of the motives of the visit. In some cases, however, no matter how capable and tactful the supervisor may be, an instructor may be resentful of even constructive criticism. Such a response should never lead the supervisor to avoid his duty of suggesting improvements and rating the instructor on his merits. In the long run, he will gain the respect of the staff for performing his supervisory duties despite such difficulties.

E. Informal or Indirect Observation

Some administrators have developed the knack or insight for sizing up a teacher's ability solely by the informal approach - a stroll through the corridors, a brief visit on business or to make an inquiry, a question about testing methods employed, a look at students' work whenever the occasion affords.

"Informal" here does not imply that the observation is without purpose or without standards for appraising the teacher's progress; rather, the format of supervision is indirect, having its own value if employed adroitly and judiciously.

V. The Department Head's Supervisory Function

Wherever any of the duties of the director or assistant director have been delegated to the department head, the foregoing section applies equally to him.

Nevertheless, the area in which the department head can do most is in supervision of the curriculum. This should be his main forte, partly because he is in very close contact daily with the shop and classroom teachers and students. He must become a good judge of what promotes instruction and what impedes it.

By periodic discussions with faculty members, whether these discussions be of formal or informal nature; by working on or with the school's "We Study Our Program of Education" group; by remaining well read in several fields, keeping abreast of the latest trends in industry, latest literature, and science, for example; finally, by observing the instructor and his students at work in the shop or classroom - from these various viewpoints the good department head draws his effectiveness in leading and advising.

VI. Teacher and Supervisor Cooperation

Quoting from Goetting in his Teaching in the Secondary Schools, we get the reciprocal view of school supervision:

> "The modern supervisor assumes as his professional obligation the rendering of the highest type of instructional assistance to the teacher. The teacher is in turn obligated to cooperate to the fullest in accepting graciously such assistance and in acting intelligently upon it. The key to the success of any supervisory program in a school is the willingness of the teachers to be supervised. Supervision is inspired by the idea that the teacher is the most apt learner in the school. (Underscore added.)
>
> "The supervisory program offers an opportunity for the cooperative nature of teaching to function at its best. Supervision is more than an aid to weak teachers and to teachers in need of assistance. It is an aid to all teachers. In creative supervision, which is the best conception of supervision, the supervisor leads and inspires teachers, acknowledges their attainments and contributions, and serves as general coordinator for all activities relative to improvement of the instructional activities. This type of program places a premium upon the cooperative effort and upon the spirit of creativeness and mutual helpfulness on the part of all teachers.

> "The excellent teacher cultivates a receptive attitude toward suggestions for improvement...He should be willing to appropriate to his own work ideas for improvement from whatever source they come, and willingly to share successes of his own efforts for the benefit of other teachers. In short, the teacher may rightfully be expected to participate in all creative, cooperative, and democratic efforts at improving instruction; this is the program of the modern supervisor."

While it may be said that the hard facts of school life in the vocational-technical schools and in the technical institutes do not always square with the above ideal of modern supervision, it represents, nevertheless the direction in which the good supervisor should point his efforts.

VII. Supervision and the Co-Curricular Load

Laying aside all fine distinctions as to whether the so-called "extra" duties usually assigned instructors be extra-curricular or co-curricular, there is one major pitfall the alert supervisor can anticipate and avoid: the pitfall of unduly burdening the teacher with committee assignments or advisorships, to the point where his shop or classroom instruction becomes secondary.

VIII. Checklist

To conclude the section on supervision of instruction, a checklist which summarizes the foregoing sections on "Supervision of Instruction" is presented in the appendix.

IX. Appendix

Checklist for Supervision of Instruction

A. Foster an esprit de corps in the staff.

1. Recognize that there are individual differences in the abilities and temperaments of staff members and organize the staff in the light of these differences.
2. Provide for the participation of all members in the study and modification of the educational program.
3. Encourage and facilitate professional growth of staff.
4. Evaluate the work of the staff and promote its improvement.
5. Provide for a program of staff "good and welfare".
6. Cooperate with the administrative and supervisory staff of the Central Office; help build good relations between the latter and your own staff.

B. Plan and develop an educational program adequate to meet the needs of the pupils in the school.

1. Determine these needs as they relate to the broad aims of vocational education on two levels; secondary vocational-technical school level and post-secondary technical institute level.
2. Organize and direct your educational program to meet these needs.

C. Plan and supervise a program for the smooth operation of all those activities which grow out of the inter-relationships of pupils and their school.

1. Plan and supervise enrollment and attendance procedures.
2. Plan and administer a program for pupil guidance, adjustment and progress. Let this program be more than "lip service".
3. Plan and supervise procedures connected with pupil promotion, transfer and drop-out.
4. Plan, stimulate and supervise operation of student service organizations and other activities such as: field trips, plays, sport competition - intramural and interscholastic. Keep these always in proper perspective and balance with the fundamental instructional program.
5. Foster and supervise alumni relationships and parent relationships with the school.

D. Supervise the physical plant and plan for equipping and supplying it to a degree adequate to insure a good educational program.

1. Plan, in cooperation with the central administration, a long-range program for the development of the physical plant.
2. Provide, within budget limitations, the best facilities possible for educational progress.
3. Allocate room and floor space to meet educational needs in an efficient manner.
4. Inspect the plant frequently and recommend changes that will promote safety and health.

5. Plan and administer efficiently and economically a program of school maintenance and operation.
6. Establish a school calendar that will utilize the facilities of the plant to their fullest extent.

E. Appreciate and foster desirable community relationships.

1. Know the community - its character, its industry, its needs.
2. Foster good lines of communication between industry representatives and staff members.
3. Determine the extent to which the school may contribute to wholesome community life through work with civic agencies and government representatives.
4. Cooperate in the extension in the community of facilities of cultural value.
5. Enlist the support of interested groups in the community in the elimination of various hazards to your students, whether the hazards be of a physical, moral or spiritual nature.
6. Provide opportunities for the community to become acquainted with the school and its program.

SUGGESTED FORM

FOR

INSTRUCTOR EVALUATION

Instructor_____

Subject_____ Grade_____

Evaluator_____

Lesson Title_____ Date_____

Comment on each point.
Observe class (duration to vary according to practical judgment).
Discuss this evaluation with the instructor.

CLASSROOM ENVIRONMENT

I. Atmosphere

	Needs Improvement	Average	Very Good
Management and Control			
Ventilation			
Lighting			

II. Orientation

	Yes	No
Seating Plan		
Lesson Plan		

III. Type of Lesson

_____

_____

_____

_____

IV. Presentation

Content _____

Clarity _____

Sequence of Presentation _____

_____

Language Level _____

_____

Stimulation _____

_____

V. Characteristics that are or could be distracting to class and should be improved or eliminated _____

_____

VI. Follow-through:

Student questions_____

_____

Student demonstration_____

_____

Test or Quiz_____

_____

Assignment_____

_____

VII. Constructive suggestions offered:

Area I - If improvement is needed, state suggestions offered.
Area II - If lacking, recheck within week.

B I B L I O G R A P H Y

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SECTION IV

MANAGERIAL AND OPERATING RESPONSIBILITIES

SECTION IV

MANAGERIAL AND OPERATING RESPONSIBILITIES

General Statement

Vocational-Technical and Technical Institute education play a large role in the economy of our state in meeting the Vocational-Technical needs of our youths and adults. It is important that those in responsible positions at local levels put into action sound principles of operation for both these programs. Only through sound administrative procedures can these programs attain maximum results in providing a functional program of Vocational-Technical and Technical Institute education. In Connecticut, there are many technological changes taking place each year, which are affecting Vocational-Technical and Technical Institute education. These technical advances have made highly-trained personnel a necessity in our way of life. This trend is everywhere, and in all occupations.

For example:

1. In industry the demand for skilled workers is increasing while the positions for the unskilled workers are decreasing.
2. In skilled trades the demand is changing too. The trend is for more skills, more expansion, and new trades with more skills being developed.
3. In service industries, the trend is for more technical skill on the part of the serviceman in such fields as television, air conditioning, home appliances, etc.
4. In industry, one of the major trends is the rapidly increasing demand for all types of professional and semi-professional technicians. The growing complexity of industrial processes requires teams of workers with technological knowledge and manual skills to help scientists and engineers. Demand will grow rapidly for acronautical, electronic, civil, construction, chemical, and safety technicians; also for tool designers, draftsmen, engineering aides and medical technicians.

The long view ahead appears to be an economical and educational one. Those who are more technically trained can achieve much greater success than those who get a limited education.

The extent to which the local director of a vocational-technical school or of a technical institute is responsible for administration, supervision and

student personnel services varies with the size of the school. In the small schools the director's duties and responsibilities cover a very wide range of activities which include administration, supervision, and promotion of the total program. In situations like those much of the detailed work may be delegated to competent staff members. It is a sound policy to select and train subordinates in order that they may fill vacancies in administrative posts and in cases of necessity, the subordinates can help with the details of operation. In the larger schools the director's duties are mainly administrative and matters dealing with supervision and student personnel matters are delegated to the assistant director. In the larger schools much of the detailed work can be delegated to subordinate staff members, department heads, guidance personnel, etc. To do an effective job the local director must be delegated considerable authority and must be free to act within the scope of his responsibilities. The trend found in modern school systems is toward those characteristics of democratic leadership rather than that of the dominant dictatorial leadership. The trend is toward forms which permit closer coordination of the entire school staff at all levels. Some of these examples:

1. Policies are likely to be carried out more effectively and enthusiastically if the persons concerned participate in the formulation of those policies.
2. In the developing of a technical curriculum all persons in the community should participate; administrators, teachers, industrial, labor, and management organizations.
3. In solving educational and local school problems the use of group discussion is imperative. Councils, advisory committees, craft committees, conference groups and workshops are suggested.

In every case, it should be the local director's responsibility to take the initiative to improve the program of the school for the benefit of the students in those ways that he deems necessary.

The purpose of this section is to assist the director to fulfill his responsibilities as administrator and manager. This section will attempt to describe the administrative patterns and operational responsibilities for managing an effective vocational-technical school or technical institute program.

Finally, this document will have served its purpose if the information and suggestions it presents stimulates those in responsible positions to take action to improve present programs.

I. Regulations

A. Federal Regulations

1. The director should be familiar with the history and philosophy of Federal Vocational Acts as well as the National Defense Education Act and other current Federal legislative policies and recommendations covering administration and supervision of a program of education.
2. The director should maintain a ready file of such Federal bulletins and other national information which are related to his program.

B. State Regulations

1. The local director should be familiar with and have an understanding of all state regulations pertaining to vocational-technical and/or technical institute education.
2. The director should be fully acquainted with and understand the State Plan for Vocational Education produced by the staff in Connecticut and approved by the U. S. Office of Education.
3. The director should have knowledge of the public laws relating to education and the supplementary acts enacted by the Connecticut General Assembly pertaining to general and vocational education.
4. The director must always be alert to directives and administrative letters pertaining to policy, issued by the State Board of Education through the Commissioner and the Division of Vocational Services.
5. The director should maintain on file all the bulletins issued by the coordinating departments of Purchases and Accounts, Division of Administrative Services and the like.

C. Local Regulations

1. The director should be familiar with information concerning local regulations as related to the areas under his supervision. Two areas such as the following are examples:

   a. Transportation problems of students, to the extent they are affected by the daily schedule of public school buses.
   b. Regulations governing the reimbursable transportation to out-of-town students attending the vocational-technical schools.

2. The director should be acutely aware of the personal and public relations values which may accrue from friendly and intelligent attention to the areas of possible cooperation with local school authorities.

II. Finances

A. The State Board of Education

The Connecticut State Board of Education, through the Connecticut State Legislative Body, is responsible for securing the necessary funds for the operation of all vocational-technical schools and technical institutes.

B. Action by the Director

1. The director is responsible for transmitting the biennial budget for his unit for approval to the Director of the Division of Vocational Education.
2. The unit director is also responsible for seeing that:
   a. The budget is complied with in accordance with official rules and regulations.
   b. The budget is submitted on time to allow for further discussions, review, revisions and approval.

C. Budget Preparation

1. The director should make preliminary studies of needs from previous budgets as well as the budget under which the school is currently operating. This information has a bearing on the nced for deleting, continuing, or augmenting of services in the requests of the new budgets.
2. In preparing for the budget the typical procedure calls for each staff member to submit requests for services, supplies, and equipment based on his or her needs. The requests are then submitted by the several department heads to the director.
3. The director is responsible for recommending, modifying, and approving requests in submitting the school's budgct.
4. The director should notify the various department heads of his recommendations of the school's budget as it will be submitted to the Director of Vocational Education.
5. The director is responsible for establishing positive statements of justification of all of the items in the school's budget.
6. These justifying statements cite the needs predicated by expansion of services, enrollment, improvement of instruction, replacement of equipment, etc., and are inserted in support of their respective sections of the budget.

D. Plant Facilities

It is the responsibility of the director to make studies and recommend additions or alterations to existing facilities. Such planning, however, should be done in coopcration of the entirc staff.

The director should work with the superintendent of building and with department heads in determining needs for facilities and in keeping present facilities up to date.

The director often must take the initiative ir making studies of future facilities, prepare plans, specifications and make recommendations to higher authorities for action.

E. Annual Allotment Requests

1. The director is responsible for submitting on appropriate forms his proposed allotment program for each fiscal year, showing expenditure classifications, the total allotment needed, and the estimated quarterly expenditures of the allotments. The allotment request is prepared annually - the deadline usually mid-May.
2. The director should be cognizant of the fact that no money can be spent until he has received the Advice of Allotment from the Department of Finance and Control. Once this is received, the director can proceed in accordance with his requested program of allotments.
3. The director then delegates the chief clerk to set up the necessary controls, bookkeeping procedures, and records which will allow proper expenditures of these funds. IBM reports will be received monthly from the Department of Purchases and Accounts. The chief clerk keeps the director posted as to the status of expenditures.

F. Operations Within the Budget

1. The director is responsible for recommending, modifying, and approving requests for expenditures in terms of the approved budget.
2. The director should (if need be) establish priorities for expenditures in terms of the approved budget.
3. The director should make provisions for unforeseen emergencies in terms of the approved budget.
4. The director must keep a running account of expenditures so as to know how he is progressing in terms of the approved budget.
5. The director must operate his school program within the approved budget.

III. Office Controls of the School Program

A. Action by the Director

1. In order to have a continuous running account on all functions pertaining to the school program, the director should work with the chief clerk and set up an effective system for such an operation. One such method is to set up a series of looseleaf notebooks, each of which could be classified under such general headings as:

Notebook No. 1 - Budgets and Allotments
2 - Financial Statement
3 - Inventory and Property Control
4 - Personnel
5 - Production Work and Accounting
6 - Purchasing and Receiving
7 - Student Recording
8 - Student Activity Funds

2. In addition, each notebook should contain the following information:

a. Office personnel who can handle this phase of the operation in case of necessity. (This involves training of office personnel to do various jobs.)
b. All the forms utilized in conjunction with the operation and office procedures.
c. Sample forms (examples executed in detail) supported by a statement of instruction and use.

B. Purpose of Controls

1. The director must keep a running account of expenditures so as to know the "status quo" of the budget at any given time - also to have foresight to anticipate expenditures.
2. The advisability of setting up such a system becomes evident when members of the office staff are on leave, ill or on vacation, necessitating other office individuals to handle the details of operation.
3. Also, under such a procedure or system, the revision of forms and changes in procedures could be readily noted and clarified. Abstracts from administrative letters and specific instructions could also be included as reference, reminder of details, and proper execution.

C. The Tickler File

A further suggestion is that a "tickler file" be established to serve as a reminder of the chronological sequence in which reports and records are required to be submitted to the various administrative, supervisory, and coordinating units of the State Department of Education and other state agencies.

IV. Records, Record Keeping, and Reports

A. Action by the Director

1. The director has the responsibility of maintaining a comprehensive system of records and reports of the entire school program.
2. The director should delegate to the chief clerk the task of setting up an effective system for routine clerical work so the work may be fairly and equally distributed - work for which individuals are to be held responsible.

B. The Chief Clerk

1. The chief clerk acts as the local school agent for the Division of Administrative Services, and as such, should present pertinent data concerning purchases, personnel matters, finances, and other reports to the director. The chief clerk should be regarded as a specialist in the identification, preparation and disposition of all administrative, financial forms, and records.
2. The chief clerk snould delegate certain office tasks to the clerical staff and should supervise the clerical staff.

C. Personnel

1. The local director must play an important part in selecting persons for teaching and other positions in the school under his directior
2. The director must see that persons who are hired to teach must have the minimum requirements as defined by the "Policies and Procedure for Unclassified Personnel", Bulletin No. 48, issued by the Connecticut State Department of Education.
3. The director must be thoroughly familiar with the procedures and forms required for the selection, (certification forms), recruitment, promotion, and release of staff members.
4. After a person has accepted a position, the director must see that the proper forms are correctly and promptly completed and sent to the bureau chief in the central office.

V. Production Work

A. Action by the Director

1. The director of the vocational-technical school has the responsibili of encouraging and providing for a production work program that will enable students to acquire real work experience.
2. The production work program must be well planned, valid, and provide for training in trade skills and trade judgment. It should also provide a broad understanding of technical processes and operations currently practiced in the trades and industries, for which training is being offered.
3. The director should keep in mind the following, concerning outside school production work:

   a. That the work program be developed so it may be adopted to fit local needs.
   b. That it is very important to work with advisory groups, craf committees, and other interested community groups in the interest of coordinating school instruction with occupational needs.
   c. That it is important to develop close and friendly relations with labor, employers, and other groups, individuals outside the school organization.

4. Even though the director of the vocational-technical school is responsible for all production work carried on by the school, he may delegate some of this authority to the assistant director and/or the department heads. The director must ap. ove all

production work and see that all financial phases of the production work are completed correctly. Finally, the director may hold the assistant director and/or department heads responsible for instructional objectives and effective teaching methods.

5. The director must evaluate the time, the cost, and educational factors for production work, and if necessary, deny certain kinds of production work, should it interfere with the instructional objectives set up for students.
6. The director should follow-up the process of production work by frequent inspections and instructor contact.

B. Policies and Procedure

"Standard Practices Instructions", Bulletin No. 11 issued by the Connecticut State Department of Education, covers fully the policies and practices to be followed in the production work activities of the technical schools. This bulletin deals with the General Policies of production work and a unified system of recording and accounting procedures which must be followed in preparing estimates, quoting prices, processing, and completing production work of any and all kinds in the vocational-technical schools. The duties of the director, shop instructor, and the chief clerk are fully delineated.

VI. Student Services

A. Action by the Director

1. The director should be fully aware of his responsibility to understand the provisions of the State Plan for the administration of the Federal Vocational Acts in the State of Connecticut. In order for the State to qualify for reimbursement from Federal funds, the director must see that the requirements of the State Plan are carried out in the school.
2. The extent to which the director of a vocational-technical school or of a state technical institute is responsible for the instructional program and associated student services varies with the size of the school. In the case of the larger schools, the matters dealing with the organization and supervision of instruction and student services are delegated to the assistant director, with the director holding the ultimate responsibility for the entire program.

B. Purposes

1. One of the chief purposes of the guidance services is to assist students in making their maximum growth in terms of personal, social and vocational adjustment.

2. Another purpose of the guidance program is to promote better public understanding of vocational education, to inform teachers in public schools, parents, and pupils of the offerings and opportunities available.

C. Legal Responsibilities

1. The director has certain legal responsibilities that he must enforce in his school according to the State Board of Education. Some of these are:

   a. Curriculum
   b. Safety
   c. Enforcement of Discipline
   d. Enforcement of Attendance Laws
   e. Issuing of Transcript of Records
   f. Issuing of Diplomas
   g. State Records (Registers)

D. Recruitment, Selection of Students

1. The director and student counselor have the responsibility for adhering to accepted standards and procedures for selecting students for the vocational-technical schools and for the state technical institutes. Consideration of all applicants must be in keeping with the policies established by the State Department of Education, concerning the minimum standards of admission.

2. Some of the most effective devices that the director and guidance counselor can use as a preliminary action to the selection of students are:

   a. The use of pamphlets, brochures, catalogs, posters, news releases with prospective employers, labor organizations, and the guidance personnel of area schools.
   b. School and guidance personnel visits to various schools in the area in order to relate to the prospective students the educational opportunities afforded by the particular institution.
   c. Another device is to invite various groups of students to visit the school so they may see for themselves the opportunities that are offered to them.
   d. The director and/or assistant director and student counselor can aid, too, by speaking to different organized community groups.
   e. The participants in the adult and extension programs, as well as the students of the day program are always helpful in informing the public about the program of the school.

3. Special attention for recruiting, interviewing, counseling, and testing of applicants must be carefully coordinated with persons concerned in the schools of the area.

VII. Extra-Curricular Affairs

A. Action by the Director

1. The director is responsible for establishing policies, making decisions whenever necessary, and supervising the operations of the student's extra-curricular affairs.
2. Usually, the director has the assistance of other governing bodies in controlling and operating this type of program. In some schools such governing bodies are:

a. The Faculty Advisory Group - This group is composed of faculty members whose main function is used in offering advice, suggestions, and to approve or disapprove all functions pertaining to extra-curricular affairs.
b. The Student Council - This group is composed of elected students whose actions are supervised by some faculty member, approved or appointed by the director. These students can discuss, approve, disapprove, and submit plans on all functions pertaining to their extra-curricular activities.

3. The director with the chief clerk should establish an effective system of "Budget Controls" of all extra-curricular affairs.

B. Athletic Program

1. The director should supervise the athletic program in a general way and make decisions with respect to its policy whenever necessary.
2. The details of control and operation of the athletic program are usually delegated to the physical education director or some other member of the staff.

C. Clubs

In the operations of various school clubs, the school newspaper, the yearbook, and other such activities, the director usually approves and/or appoints some faculty member to act as sponsor and advisor.

D. Social Events

In all social events, regardless what kind or where they take place, the director should check with the faculty sponsor in charge of the affair and see that all necessary details are taken care of, and if necessary, provide for appropriate faculty control.

VIII. Curriculum

A. Action by the Director

1. One of the primary responsibilities of the director is to have an organized curriculum plan to follow.

2. The director should be familiar with industrial conditions within the surrounding area and be prepared to offer new courses to meet the demand of industry, and to terminate those courses which are considered to be unnecessary or obsolete.
3. The director and/or assistant director should supervise classroom and shop instruction and see that every effort is made to keep the curriculum and the instruction at a high level.

IX. The Adult Education Program

A. Evening Technical Institutes, Apprentice Training, Trade Extension Training and Others

1. The details of organizing, supervising, and administrating a program of adult and extension training are usually assigned to a supervisor, who is under the direct supervision of the school director.
2. The director and/or the supervisor of adult and extension education should contact employers, industry and labor organizations, and acquaint them with the objectives, services, and facilities available in the evening school.
3. The complete details of administration and supervision of the evening school program may be found in "Program Policies for Adult and Extension Classes", Bulletin No. 33.
4. The director should recognize that consulting committees should not be permitted to wield administrative authority.
5. The director should give recognition to the work of the committees, accept and act on the consulting committee's recommendation, if he considers that the recommendations will improve the instructional program, and when these recommendations are inside of State and Federal regulations.

B. Purpose and Functions of Consulting Committees

1. The consulting committees are a practical device by which the school keeps in contact with various groups in the community that it is trying to serve.
2. Local consulting committees are usually formed in the same manner as state committees. It has been suggested that they be comprised of employers and employees of essential industries, representatives of labor, and others who demonstrate sound judgment and a broad social outlook, and who are outstanding and successful in their representative fields, and who are interested in helping vocational-technical schools and technical institutes render service of a high grade to the public.
3. A few other areas in which the consulting committees may be of value are:

    a. They may help keep the school alert to the needs of the community and prevent obsolescence in programs, equipment and instructions.
    b. They may bring to the school a full and accurate picture of occupational life in the area, and help to correlate the training in the schools with actual working conditions in industry.

c. They may offer advice in the preparation of courses of study and in the length of courses.
d. They may assist in selecting and securing adequate equipment and supplies for the school.
e. They may assist in securing adequate financial support for the school program.
f. They may act as effective public relations agents for the technical program and help win support from the community.

X. Evaluation

A. Action by the Director

The director has the responsibility for evaluating all aspects of the program. Some of the areas of evaluation include:

1. Instruction
2. Plant and Facilities
3. Financing
4. Public Relations
5. Student Personnel Services
6. Curriculum Content
7. Health and Safety

B. Purpose

The purpose of evaluation is to determine the extent to which the total school program is meeting its objectives in line with the educational needs of the students and with the needs of industry and surrounding communities.

C. Methods

The director has many courses open to him in evaluating his program. Some of these include the following:

1. Individual instructors may check their own programs using prepared checklists.
2. The director may evaluate his own operating and managerial program, using prepared checklists.
3. The director may invite an advisory committee or educational consultants to evaluate all or part of the program for his school.

XI. Consulting Committees

A. Action by the Director

1. The director is responsible for maintaining contacts with the general public through consulting committees in order to see that the educational program meets the training needs of the youth and adults in the community.

2. The director usually is the school's representative on most consulting committees.
3. The director's responsibilities in working with consulting committees are to make certain that all members of the committee understand the objectives and philosophy of the education program conducted by his institution.

S E C T I O N V

P U B L I C R E L A T I O N S

"THE PUBLIC SCHOOLS BELONG TO THE PUPLIC AND THE PUBLIC IS ENTITLED TO KNOW ALL ABOUT THEM"

Franklin J. Keller

Principles of Vocational Education

S E C T I O N V

P U B L I C R E L A T I O N S

General Statement

The art of public relations has evolved gradually into a modern social science encompassing every aspect of community life. Into each channel of living experience flows the current of human relations reaching into the multiple avenues of human endeavor: social, economical, industrial, political, educational and religious. Individual or collective action for support or non-support of an enterprise or an activity is sparked when a high level of understanding and active public involvement are attained. Mutual participation toward a common goal insures implementation of community needs which, in turn, resolve themselves into the overall community welfare structure.

In order to exert a positive influence in public relations, a plan for constant improvement should operate in a new dimension: creative public relations. It will help to establish more effective communication in the community; direct all the members of the community into an atmosphere of wholesome stimulation and encouragement. It will share new ideas and new ways of doing things through mutual understanding, wholesome interaction, mutual respect and full-fledged cooperation. It will provide a better climate for pupil growth through effective means of meeting their needs, and thus help to meet the needs of society in general.

As part of this plan, the administrator or supervisor needs to have:

1. A carefully organized program
2. Knowledge and an instinctive grasp of current events
3. An extra sensory perception of trends as well as a keen sensitiveness to possible dangers involved
4. A thorough-going familiarity of and a keen insight into the community in which he operates, cognizant of its characteristics, needs and facilities
5. Constant contacts with the various sections or "publics" of his community

6. An educational unit of high quality serving the young and adult members of his community
7. A continual evaluation process allowing flexibility and providing for adjustments to changes in the social structure

Increased public concern with the work of the schools has brought added importance to the public relations duties and responsibilities of school administrators. More than ever public confidence in the school program has top priority for the administrator. Conversely, confidence in the school administration has top priority for the public. Our foremost interest is in the type of student the schools are developing; in the quality of education he is receiving. Administration must ever be alert and keep the public informed as to the degree of efficiency with which it is transmitting the numerous skills, abilities, and knowledges to the students under its tutelage. It is incumbent upon administration to urge and seek the support of the community for its program, not alone of what it is offering, but also of what it is planning to offer in its forward drive to improvement. Active community participation is not only desirable but a necessity for implementation of the school program. The more widespread community participation becomes, the more intense can community acceptance develop.

The suggestions that follow are presented in the spirit of creative public relations for our educational system, as basic and valuable as the underlying tenets of our democratic way of life:

1. Through a planned program of investigation, survey and research identify the "publics" involved; learn <u>who</u> they are, their composition and characteristics; <u>what</u> their needs are, their problems and means of solving them; <u>how</u> they feel about the many issues in community affairs; <u>when</u> they incline toward action in community planning; and, <u>where</u> to start cultivating their allegiance and loyalty to the school program.

2. Together with the assistance of his associates and staff, the principal must maintain a steady measuring of the pulse of the community and of public opinion therein by keeping informed of the "community climate" so that it can provide the proper timing for proposing new policies or suggesting new changes; help in determining the kinds and the quantity of information to disseminate; and to assure the community that with their aid and support they can together continue to build an educational unit deserving of respect, understanding, confidence and enthusiasm.

3. Present the "school story" as accurately, simply and appealingly as possible using all the skills and understanding within the command of the principal, and enlist all communication media available. Endless patience and judicious persistence are required, and the presentation of a good, balanced story, evenly and fully, with no thought of personal aggrandizement or advertising compulsion.

4. For an organization to function effectively and gain the confidence of the public, it needs to eliminate internel discord and maintain, at every turn, a wholesome and inspiring personal posture. An atmosphere of mutual understanding and cooperative effort must prevail throughou Everyone in the school and in the educational system must make his contribution.

5. In a functional organization the thinking is done together and spread to all of its parts so that there is no public confusion as to which one of the school representatives is telling the "real" story. There must be foreknowledge of the school story by all concerned prior to public announcement.

Among the many "publics" administration and other school personnel must reach out for understanding, confidence, enthusiasm and respect, the "student" is at the top of the list. The moment a student enters school, public relations start. His reaction to administrative personnel, teachers and classmates, combined with his daily experiences both inside and outside of school, add considerably to the formation of parent and community appraisal of the educational system in particular, and of education in general. The impressions he gathers of school policies and practices form the basis of his ambassadorial role for good or ill will. The classroom is the crucible of learning, of pleasant or unpleasant experiences which produce interest or boredom, achievement or defeat, enthusiasm or frustration, like or dislike of school, subject, or teacher. Extreme care must be exercised to see that his personal, social, and educational needs are met adequately.

Other meaningful experiences, outside the classroom, such as student or school activities and services, provide still another means of developing good or poor public relations. Wholesome and satisfactory relationships are often the result of wholehearted cooperation and participation in the school program.

In his association with administrative personnel, whether individual or through group activity, the student should have the opportunity to understand the relationship of administration to the school and the community, and the position and responsibilities of this personnel. In this respect, the student council should be the point of contact which would focus attention on the faculty-student-administrative functions and responsibilities, ensure communication and understanding, and generate mutual respect. This can be done by encouraging student thinking in school matters, services, and policy making; stimulating student planning and participation in school functions; urging student cooperation with school authorities; helping to recognize proper conformance with the rules and regulations governing school policies and procedures, and particularly the prerogatives of administration; maintaining good communication lines with faculty and administration; keeping faculty and administration informed on student affairs, student attitudes, and effective student government.

Another important cog in the public relations wheel is the parent. The parent is a virtual partner in our educational system. As such he is vitally interested in the kind of education and the type of preparation the student is receiving; he should become involved in making new facilities, additional equipment, and continual financial aid available for constant improvement of the school program. Parent participation in organizations seeking constructive community influences to bring this about is strong evidence of parent awareness and willingness to help. The school staff can show its leadership in this respect by offering excellent opportunities for an informed public body. It can aid in providing helpful suggestions for carrying out their organizational plans. This can be done by maintaining a continual flow of information on what they want to know about the school, its goals, its program, the practices and procedures it pursues, its overall policies, and its plans for the future. By encouraging their attendance at school functions, school visitations and extending the use of the school and its facilities for organization meetings and other events, close coordination and communication follow.

A third, and very important, "public" is the teacher. Because of the fact that he exerts the second strongest impact upon the child, after its parents, the teacher gradually becomes the leading influence in the overall picture of the growing child. He needs assistance in quickening his insight into teacher-community relations. What the pupil brings home affecting his relationship with the teacher often imprints pre-judgments in the minds of parents, and sometimes precludes further investigation. For this reason alone, a teacher should cease to adopt academic attitudes toward the community - it is unrealistic. As a com unity employee, his responsiveness to public opinion is desirable. There is need for strengthening teacher-community relations.

Plans should be made for the teacher to be introduced to the members of the community at social affairs, as guests of organizations, participants in parent groups, and the parent-teacher organization. In these contacts, the teacher should be fully conversant with the school program so that there can be intelligent handling of its many facets and given proper emphasis in keeping with its aims, purposes and objectives. We must never lose sight of the fact that the teacher occupies the most strategic post in the educational system - his effectiveness in teaching depends largely on how well he knows his community both outside and inside his classroom. A great deal more will depend on the outcome of his relationship with the student, parent, colleague and the community. Above all he must use good judgment, a good measure of warmth and friendliness, and a wholesome desire to be of service as a constructive agent of the school system as part of his professional obligations.

Among the other equally important "publics" are the press, radio, TV, educators, public officials, civic leaders, labor leaders, political leaders, and the clergy. A sould public relations program consists of gaining and maintaining good relations with the numerous "publics" so that the community and the school can understand and know each other better.

I. Implementation of the Public Relations Program

A. A good public relations program helps the community and the school understand and know each other better. It is a means of:

1. Informing and educating the public thus ensuring the maximum in continuous improvement of the school program
2. Securing community assistance in the matter of raising funds for continued service
3. Receiving aid from industry for course development
4. Establishing better community relations that will affect school enrollment and future placement of graduates
5. Obtaining competent teaching and other staff personnel

B. Following is a list of the many public groups that help in maintaining good, sound public relations. Contact must be made with:

1. Students
2. Parents
3. School staff
4. Central Office staff
5. Press, radio and TV
6. Educators
7. Public officials
8. Labor leaders
9. Civic leaders
10. Political leaders
11. The Clergy

In addition, other necessary contacts are among industry, tradespeople, boards of education of other states, and alumni. Collaboration with these groups can be effected through:

1. Student councils and other student bodies
2. Parent organizations
3. Cooperative school staff relationships and good administrative leadership
4. Educators' conventions, associations, professional and social
5. School intervisitations and exchange of ideas
6. Press, radio and TV: by means of personal contacts, invitations to the school, good news releases (with occasional scoops), "high school" pages, and high school reporters
7. Public officials serving in advisory capacities, or as "speaking" guests
8. Central Office: by continuous contact, submission of school reports when due, extension of invitations to participate on school functions, and special assistance on consultative matters involving the school program.

II. The "Publics" and Their Roles

A. The Student Council

Through its activities the student council can:

1. Teach the elements of student government and its responsibilities
2. Encourage student thinking in school matters, services and policy making
3. Stimulate student planning and participation in school functions scuh as: open house, school parties, graduation exercises, outings, field trips, class proms, etc.
4. Fill the need for student recommendations which foster improvements in school-wide services and activities
5. Urge student cooperation with school authorities
6. Help recognize conformance with laws and regulations governing school policies and procedures, and the prerogatives of administration
7. Maintain good communication lines with faculty-student-administrative personnel, keeping them informed on student affairs, student attitudes and effective student government
8. Assist in developing good inter-relationships which will be a credit to the school and a plus factor for their future

B. The Parent

An alert school staff, through its leadership will help provide helpful suggestions for carrying out organizational-parent programs of a constructive nature. It will offer parents:

1. A continual flow of information on what they want to know about the school, its goals, its program, the practices and procedures it pursues, its overall policies, and its plans for the future.
2. A two-way avenue of communication by encouraging their attendance at school functions as well as school visitations during the day to acquaint them with the school program and its operational manifestations.
3. An "open door" policy for the purpose of acquiring additional information or interpretation of school matters from the administration or staff; presenting inquiries as to student progress; being reassured of the health and guidance services the students receive, and other helpful assistance extended to students to further their education and training.
4. An invitation to serve on school advisory or craft committees, and in preliminary discussions of the program planning committee.
5. The use of the school and its facilities in accordance with State Board policy for:
   a. Adult education activities
   b. Meetings of various parent organizations including civic and service clubs and other social groups in which parents belong
   c. Athletic events, to which parents are accustomed to go
6. Close coordination and communication with the school staff.

C. School Staff

The director of the school is the leading and guiding spirit in the public relations program. In this capacity, he must possess an awareness of circumstances and conditions surrounding his school through an analysis of his local situation: understanding its uniqueness, its people, and its needs. He then proceeds to carefully plan a program of community-school cooperation. His approach and perspective will, of necessity, be modified in consonance with the individual differences he will encounter in the numerous "publics" he wants to reach. The nature and demands of his program cover a vast area requiring intelligent cooperation and participation of every available agent.

In an atmosphere in which the director engenders confidence, assurance, and inspiration in his staff, he will definitely reap his reward through respect and the best creative efforts that his staff can muster freely and eagerly by virtue of persuasion rather than coercion. This can be accomplished in a number of ways:

1. Creative supervision and leadership on a high level
    a. Maintaining high staff morale.
    b. Cooperative participation in the formation of school policy and staff work, rather than the less productive method of handing out instructions on how things should be done.
    c. Meeting problems and rendering service willingly and energetically through individual teacher and staff conferences.
    d. Maintain social relationships between the director and staff through his leadership.
    e. Act as liaison officer between the public and the school together with his staff.
    f. Encourage study and research by himself participating.
    g. Aim to build effective personnel relations through recruitment and selection of superior teachers; a sound orientation program to get personnel off on the right foot; evaluation of the instructional program which stimulates growth; establishment of a good professional improvement program; setting up of conditions of employment that make it possible for teachers to do their best work.

h. Supervision of class and shop instruction to be kept at the same high level as the quality of instruction.
i. Be completely familiar with and be prepared to demonstrate on appropriate occasions the teaching techniques which he suggests to the staff.
j. Keep abreast of other methods and techniques of instruction, and bring in modifications or improvements where warranted and advisable.
k. Seek to achieve an integration of shop and related departments through frequent meetings and interested personnel, and hold discussions on the major objectives in the training program with a view toward studying and modifying present practices.
l. Keep continually aware of the changing emphasis needed to gear vocational education to the vital problems of the present and the emerging demands of the future.

2. Creative Teacher-Community Relations

The teacher, because of the fact that he exerts the strongest second impact upon the child, after its parents, gradually becomes the leading influence in the overall development of the growing child. He needs assistance in quickening his insight into teacher-community relations. What the pupil brings home affecting his relationship with the teacher often imprints a pre-judgment on the minds of some parents, and sometimes precludes a further desire to investigate the circumstances which led to the unfortunate conclusion It is unrealistic for a teacher to adopt academic attitudes toward the community. As a community employee, his responsiveness to public opinion is desirable. Public understanding, cooperation, and support for the school program often depend upon strengthening teacher-community relations.

The director, or supervisor, should help to develop in the teacher a professional attitude in his dealings with the public:

a. In interviews with parents, at home or in school, resolving a pupil problem or explaining school policy. It is important that he profit from previous experiences of his superiors and colleagues in similar situations.

b. In organizational work with parents assist in the planning of programs and activities, and at the same time learn to handle parent discussion of school matters in a diplomatic, yet straightforward manner.
c. In contact with community groups or the press, be fully conversant with the school program so that there can be intelligent handling of its many facets and given proper emphasis in keeping with its aims, purposes and objectives.

We must never lose sight of the fact that the teacher occupies the most strategic post in the educational system: his effectiveness in teaching depends largely on how well he knows his community both outside and inside his classroom. A great deal more will depend on the outcome of his relationship with the student, parent, colleague, and the community. Above all, he must use good judgment, a good measure of warmth and friendliness, and a wholesome desire to be of service as a constructive agent of the state and the local school area as part of his professional obligations.

D. Central Office Staff

The Central Office staff of the Division of Vocational Education is involved in the general function of the State education authority which entails the responsibility for furnishing educational leadership to the entire state. It must appraise the operation of the State Plan, interpr. the purpose, value, conditions, shortcomings, and needs of the public schools. In its long-range and short-term planning it must include specific recommendations to the legislature. Still another function is the exercise of some regulatory activities.

The Central Office staff is also involved in maintaining close, cooperative relationships with top-level representatives of labor unions industry, farm and business groups as spokesmen for the State vocational authorities. These relationships relate themselves to the local regional schools through close contacts maintained by Central Office. School public relations in the local schools thus become more effective through supplementing and supporting the State Plan.

Often the local regional schools require assistance in the solving of school problems. The following type of services are generally available to the local school administrators:

1. Discussion of administrative and supervisory problems in planning, organizing, operating, and evaluating local programs in all fields.
2. Help in the selection of teachers, in-service training, teacher certification and other teacher problems.
3. Assistance in the improvement of instruction and in the evaluation of instruction.
4. Informational materials such as publications, manuals, research and survey reports and vocational bulletins.
5. Assistance in conducting community surveys, follow-up studies, and other research activities.
6. Promotion and organization of statewide and sectional conferences workshops and conventions.

These services are made available through the supervisory consultant service of the Division of Vocational Education. In order to retain these services, the local schools should:

1. Keep in contact with them through:
   a. Written or personal communication.
   b. Periodic invitations to the school plant, especially when a pilot instructional or vocational project is being tried out.
   c. Extending invitations to particular school functions: open house, graduation exercises, exhibits, displays, etc.
2. Perform required duties competently and efficiently
3. Follow recommended procedures in completing office forms, carrying out policy, and offering suggestions for improvement of services.
4. Acknowledge the valuable work and assistance that consultants and administrators perform:
   a. In news releases to press and radio.
   b. In providing opportunities for speaking engagements.

A continuous analysis of the general problems and needs of the vocational education program as carried out in the regional schools is necessary and vital for their expansion and improvement, as well as good public relations.

E. The Press, Radio and Television

To fully realize the benefits that may be derived through these several media of communication, the school and particularly the director should be cognizant of the need to be constantly in contact with the members of these three activities. The following procedures are suggested as means which should be considered in achieving results with the press, radio, and television.

1. Getting to know the managers and editors personally through:

   a. Meeting with them personally.
   b. Inviting them to visit the school.
   c. Working with them on civic problems.
   d. Complimenting them on the good work they have performed.
   e. Actively participating in the various civic and social organizations in which press, radio and television people are considerably interested.
   f. Arranging together with instructors for field trips to press, radio and TV facilities.
   g. Encourage their participation in advisory committees. (They are exceedingly valuable in activities of this nature.)

2. Informing them of important school events by:

   a. Preparing news releases for their approval.
   b. Supplying pictures to them at school expense.
   c. Supplying literature and other information pertinent to the interests of the public.
   d. Providing them with human interest stories of successful graduates and their achievements, etc.

F. Educators

An understanding of the educational program offered by the respective vocational-technical school or technical institute is essential to the members of other educational systems, if they are to wisely counsel and guide their own students. Specifically, if a sending school is familiar with a school program, there is a greater likelihood that proper guidance and information will be given to students wishing to pursue their education in the trade and technical fields. To acquaint the educators with our program the director may find it desirable to:

1. Encourage frequent inter-school visitations of both teachers and administrators.

2. Work cooperatively with other school counselors in designing a program aimed at providing a ready source of information for students.
3. Actively participate in a wide variety of professional organizations.
4. Produce articles and contributions to the professional literature.
5. Attend assembly programs of other schools and accept appropriate invitations to speak at such programs.
6. Work cooperatively with other educators on research involving educational and community problems. Members of the vocational-technical school staff should familiarize themselves with the philosophy, program and problems facing those who are in other educational systems. The vocational teachers' understanding of the problems of the academic teacher will help create good relations between them. Such knowledge is obtainable through:

   a. Reading their professional journals.
   b. Enrolling in advanced educational courses together with public school personnel.
   c. Attending functions involving general education activities, problems and plans.
   d. Offering assistance in the solution of local school problems.

G. Public Officials

Every director recognizes the importance of public officials for their responsibility in supplying material as well as moral aid and assistance to the school through the prestige and publicity value associated with their names. It is, therefore, expedient to work cooperatively and harmoniously with such influential citizens. It is wise to be working constructively with such groups steadily so that they can be called upon for specific needs or requests. The director can develop favorable relationships with public officials by:

1. Getting to know them personally through:

   a. Inviting them to the school and preparing favorable publicity concerning them.
   b. Meeting with public officials socially wherever possible.
   c. Offering the assistance of the school and the staff on civic problems.
   d. Working jointly in civic and social organizations.

2. Giving recognition to their activities and achievements through:

a. Telephoned or written congratulations.
b. Publicly complimenting them on their achievements.
c. Special recognition at school assembly programs.

H. Public Opinion Molders

This group includes the clergy, labor, business leaders, industrial, and civic leaders. The techniques for acquiring good public relations with this group are the same as those listed under "Educators" and "Public Officials".

I. Alumni

Good relations are best established with this group during their undergraduate days. The director, school faculty and alumni should cooperate in attempting to solve school problems and promote school welfare. Continued approval and support from this group can be obtained through:

1. Active alumni associations.
2. Graduate surveys.
3. Assistance in securing a change in employment.
4. Aid in obtaining promotion through adult education programs.

J. The General Public

This group comprises those who are not included in the above categories. The director can gain the support and assistance of this group by:

1. Keeping them regularly informed of the school's program through press releases.
2. Invitations to school functions.

III. Chronological Schedule of Public Relations Program

The following chart is a two-month suggested public relations schedule that may be used by a director for September and October. The suggested chronological schedule is not inflexible and may be revised in any way to meet the local situation. However, in the setting up of a public relations

schedule the director should try to affect as many of the "publics" as possible in each method. Although the director is usually held directly responsible for the overall public relations program of the school, he should plan to cooperatively develop the resources of the staff and students in this important phase of school operation.

The "Key" to the schedule follows:

S - Students
P - Parents
F - Faculty
D - Director
OM - Opinion Molders
GP - General Public
PO - Public Officials
AG - Alumni Groups
SB - State Board of Education
CO - Central Office Members
E - Educators
I - Industry

SUGGESTED SCHEDULE OF PUBLIC RELATIONS PROGRAM

Suggested Date	Activity	Method	Persons to Whom Activity is Directed
Sept. 1	Announce school opening	News release	GP-S-P-F
5	Announce new staff members and the year's program	News release	GP-S-P-F
8	Study school problems	Faculty meeting	F
9	Introduction of staff	Assembly program	S-F
9	Outline general program for the year (students suggested rules and regulations)	Bulletin, mimeo sheet	S-F-P
10	Acquaint new staff with old. Invite members of Central Office	Faculty social News release, pictures	F-CO
12	Announce summer activities of staff	News release, bulletin	GP-S-P
15	Election of committee chairmen	Faculty meeting, news release	F-GP-S
16	Student council meeting	Assembly program, news release	GP-F-S-D
22	Study school problems	Faculty meeting	F
23	Speaker public official	Assembly program, news release, pictures	PO-GP-F-S-D-I

Suggested Date	Activity	Method	Persons to Whom Activity is Directed
Sept. 24	Promote relations between school and industry	Director visit industry	I
29	Acquaint member of labor and industry of school production work	Visit outside or inside production jobs with members - pictures, news release	GP-OM-I-D-
29	Study school problems	Faculty meeting	F
30	Speaker-industry leader	Assembly program, news release, pictures	OM-GP-S-P-F-I
Oct. 5	Announce school enrollment	News release, bulletin	S-P-GP-OM
6	Study school program	Faculty meeting	F
7	Student council meeting	Assembly program, news release	S-F
11	Social visit with superintendent of schools	Personal meeting, dinner	E
13	Study school problems	Faculty meeting	F
14	Speaker-labor leader	Assembly program, news release	I-GP-OM
18	Announce adult program	News release, bulletin	GP-P
20	Study school problems	Faculty meeting	F
21	Entertainment - student variety show	Assembly program, pictures, news release	S-F
26	Announce CVA Convention	News release, bulletin	F-GP-E
27	Staff social - card tournament	Faculty meeting	F
28	Announce open house program during American Education Week	News release, posters, bulletin	GP-P-I-E-D-S-OM
28	Speaker - Superintendent of Schools	Assembly program, news release	E-GP-OM-P-S

IV. Summary

A sound public relations program consists of gaining and maintaining good relations with the various "publics". The director, to assure this effective working relationship, must keep in close contact with all of these groups. Perhaps one of the best and simplest means of gaining good public relations is to have an effective educational program to "sell" to the public.

Although the responsibility for the public relations program rests with the director, it may be advisable to consider having the assistant director or a responsible staff member act as the public relations coordinator for the school. The coordinator accepting the responsibility for this program should have a wide latitude of freedom and the trust of his superior. However, on matters involving school policies and controversial issues, the coordinator should work cooperatively with the director and the staff in order that public announcements carry a high degree of authenticity, as well as official sanction. There are various reasons for having someone, other than the director, to supervise the public relations program; the staff may be more free with suggestions, the director may be too involved in administrative and supervisory duties. Also, it is more judicious for the coordinator to publicize educational matters having public relations' value with which the director is involved.

The coordinator should strive to merit the assistance of the entire school by working cooperatively with the entire staff and student body. Out of such an arrangement it might be possible that individual staff members could be responsible for such divisions of the school program as follows: the writing of news releases, assembly programs, student council reporting, athletic program, news and releases, school and industry visitations, staff social functions, guidance activities, etc.

Finally, the public relations program appears to be of such importance that sufficient time should be devoted by the coordinator to fully realize the benefits of a well-coordinated program. This implies that the daily schedule of the coordinator be such that allowance is made for him to fulfill this task.

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A P P E N D I X

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Recommended Facilities and Space Requirements. An Addendum to the Report "Recommended Occupational Curriculum Offerings."

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NORTHERN VIRGINIA COMMUNITY COLLEGE

This addendum to the report, "Recommended Occupational Curriculum Offerings" is to help plan for facilities and classrooms at Northern Virginia Community College. Data are given in tables for: (1) Projected Number of High School Seniors Desiring Post-High School Education in Certain Technical Fields, (2) Interest of Parents of High School Seniors in Part-Time Education in Technical College Fields, 1965, (3) Recommended Enrollment for Initial Offerings, (4) Classrooms and Laboratory Usage, (5) Hourly Distribution of Classrooms and Laboratories Usages, (6) Percentages of Classroom Usage, (7) Hourly Distribution of Classrooms and Laboratories for Scheduling Purposes, and (8) Percentage of Usage of Classrooms and Laboratories for Scheduling Purposes. Suggested floor space and necessary utilities are given for: (1) Air Comfort, (2) Dental Hygiene, (3) Dental Technology, (4) Horticulture, (5) Medical Technology, and (6) Radio and Television Studios. (EM)

VT 001 476

RECOMMENDED FACILITIES

AND

SPACE REQUIREMENTS

An Addendum to the Report

"RECOMMENDED OCCUPATIONAL
CURRICULUM OFFERINGS"

Prepared for:
Northern Virginia Community College
Bailey's Crossroads
Virginia

and

Department of Community Colleges
Commonwealth of Virginia
Richmond, Virginia

U.S. DEPARTMENT OF HEALTH, EDUCATION
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PURPOSE OF REPORT

The purpose of this report is to develop a plan for facilities and classrooms for the Northern Virginia Community College. The plan will be developed on the basis of previously recorded data relative to post-high school education needs in Northern Virginia, and suggested occupational curriculum offerings in the college.

THE PROBLEM AND DELIMITATIONS

The problem of determining facilities for a new building program for a community college is quite complex. In order to make a reasonably sound projection, it is necessary to provide boundaries and to delimit the problem. This requires certain basic assumptions and certain judgments. The major items are:

1. Anticipated enrollment of 4,000.
2. Data in Table 8 of "Post-High School Needs in Northern Virginia," a report previously prepared, are essentially correct.
3. Data in Table 10 of the same report are essentially correct.
4. Curriculums in a report "Recommended Occupational Curriculum Offerings" will be included in the college program of studies.
5. Other assumptions are indicated in specific sections of the report.

DATA

The curriculums in the study "Recommended Occupational Curriculum Offerings," are listed in Table I. The statistical information in this table was extrapolated from Table 8 of the study "Post-High School Education Needs in Northern Virginia." These statistics indicate projected enrollment data for full-time day students. The data in Table II were derived from Table 10 of the same study in the same manner as described above, but should serve only as an illustration of relative degrees of interest in various curriculums for part-time or evening students.

In the process of compiling the list of curriculum offerings in Tables I and II, certain judgments were made which resulted in reducing the number of curriculum offerings, compared with the original recommendations in the previous study mentioned above. Some of these judgments concerned the deletion of suggested third-year offerings in Civil Engineering and Architectural Technology and the Dental Hygienist in Schools. Other modifications include combining certain related offerings, i.e., Landscape Design and Maintenance is combined with Ornamental Horticulture; Clinical Laboratory Technician, Medical Aide in Clinical Laboratory and Medical Aide and Secretary are all combined into Medical Technology; Radio Station Management and Television Studio Production are combined as Radio and TV; and all Real Estate offerings are combined.

The main purpose for combining these offerings was to make the listings compatible with previously published data.

However, the number of sections recommended in each curriculum area is the sum total of the sections to be offered in the separate curriculum in each combination. Another reason for developing the combination arises from the fact that the separate curriculums within each combination use the same basic facilities, and this tends to simplify the problem of determining usage.

Data in Table III, Recommended Enrollment for Initial Offering, have been developed from the data found in Table I, and the Table includes suggested initial enrollment as compared to maximum projected enrollment. In order to reduce the number and complexity of administrative problems and to avoid making unnecessary presumptions, it was decided to recommend 1 or 2 sections of students in each initial offering. This also obviates the need for determining, at this time, whether certain expensive laboratories are required. If this decision should be made, adjustment in the usage indicated in the following tables can be made easily.

However, a decision in this regard should be made by the college when the administrative staff is more completely familiar with the nature, character, and objectives of the student body, and supporting industry. This decision should be made on the basis of present knowledge and analysis of trends in employment and industrial growth as indicated in a companion report on Current and Future Employment Needs in Northern Virginia, presently in preparation by the Educational Service Bureau, Inc.

TABLE I

PROJECTED NUMBER OF HIGH SCHOOL SENIORS
DESIRING POST-HIGH SCHOOL EDUCATION
IN CERTAIN TECHNICAL FIELDS

Curriculum	Number of Seniors Choosing 1965	1970
Air Comfort Technology	54	71
Architectural Technology	97	127
Automotive Technology	173	227
Civil Engineering Technology	76	100
Dental Health	97	127
Foods Technology	76	100
Horticulture	43	56
Hotel Management		
Insurance	22	29
Medical Technology	65	85
Fashion Merchandising	162	212
Housewares Merchandising	130	170
Merchandising Management	76	100
Nursing	141	185
Radio-TV Production & Management		
Real Estate and Management	22	29
Mechanical Technology	54	71

TABLE II

INTEREST OF PARENTS OF HIGH SCHOOL SENIORS IN PART-TIME EDUCATION IN TECHNICAL COLLEGE FIELDS, 1965

Curriculum	Interest of Parents
Air Comfort Technology	63
Architectural Technology	38
Automotive Technology	63
Civil Engineering Technology	88
Dental Health	63
Foods Technology	50
Horticulture	50
Hotel Management	139
Insurance	139
Medical Technology	126
Fashion Merchandising	126
Housewares Merchandising	303
Merchandising Management	88
Nursing	152
Radio-TV Production and Management	63
Real Estate and Management	139
Mechanical Technology	38

TABLE III

RECOMMENDED ENROLLMENT FOR
INITIAL OFFERING

Curriculum	*Recommended Sections	*Maximum Number of Sections
Air Comfort Technology	2	3
Architectural Technology	2	4
Automotive Diagnostician	2	7
Civil Engineering	2	3
Dental Hygiene	1	4
Dental Laboratory Technology	1	1**
Foods Technology	1	1**
Horticulture	4	4**
Hotel Management	2	2
Insurance	2	2**
Medical Technology	6	6**
Fashion Merchandising	2	7
Housewares Merchandising	2	6
Merchandising Management	2	4
Nursing	2	6
Radio and TV	4	4**
Real Estate and Management	4	4**
Mechanical Technology	2	3

*24 students per section
**Adjusted figure based on addition of sections for related occupations

FACILITIES AND USAGE

The facilities required to institute the program in the Northern Virginia Community College are listed in Table IV, Classroom and Laboratory Summary. More detailed information and usage of facilities is presented in Table V, Hourly Distribution of Classrooms and Laboratories and Table VI, Percentage of Usage.

The data for these tables were derived on the basis of the following assumptions:

1. Each curriculum offering would have two sections, except as noted.
2. Classroom usage should be as close to 100% as possible.
3. Laboratory usage should average 90%.
4. Usage of classrooms should be 30 hours per week.
5. Laboratory hours should be at least 30 per week, and greater if needed.
6. Courses designated as meeting three hours per week should be scheduled to provide maximum usage of rooms, i.e., M-W-F, T-TH-F, M-T-TH, etc.
7. Classroom usage was developed against a single two-year offering.
8. Classroom usage indicated in the tables should not be used for scheduling purposes, except as indicated.
9. Usage indicated in Tables IV and V should be coordinated with present usage of similar facilities in the college.

The number of classrooms or laboratories required was determined by reviewing each curriculum offering and selecting the course offering and course hours in each quarter for any given facility. This item was then multiplied by the number of sections required. A total was then developed for each quarter and the total divided by the number of hours available for use of the facility. The result is the number of classrooms required.

The percentages shown in Table VI are simple numerical percentages of the maximum hours available in each facility, and were developed from data in Table V by dividing the figure in the "Hours Usage" column by the figure in the "Hours Available" column and then multiplying by 100. The data in the "Hours Usage" column represent the total number of hours each facility is used in each quarter; the data in the "Hours Available" column are equal to the number of rooms (or laboratories) multiplied by 30 hours.

Although 100 percent is the allowable maximum, in certain instances, the derived percentage exceeding 100. Suitable comments are included to explain this deviation.

TABLE IV

CLASSROOMS AND LABORATORY SUMMARY

Classroom or Laboratory (24 Student Stations)	No. of Rooms	% of Utilization	Year
Communications Skills	5	84%	1st
Air Comfort Laboratory	1	33 - 100%	1st & 2nd
Drafting and Art	2	60 - 83%	1st & 2nd
Mathematics Classrooms	3	0 - 100%	1st & 2nd
Physics Laboratory	2	0 - 73%	1st & 2nd
Physics & Chemistry Lecture Room	2	7 - 97%	1st & 2nd
Chemistry Laboratory	1	0 - 100%	1st
Economics, Business Management Real Estate, Insurance	6	47 - 99%	1st & 2nd
Electronics Laboratory	1	20 - 67%	1st & 2nd
Accounting & Office Management	2	30 - 100%	1st & 2nd
Psychology, Sociology, Government, Technical Writing, Ethics, Marketing, Architecture, Civil Engineering, and Mechanical Technology	9	44 - 95%	1st & 2nd
Automotive Shop	1	53 - 100%	1st & 2nd
Biology Laboratory (& Survey)	2	0 - 100%	1st & 2nd

TABLE IV (Continued)

CLASSROOMS AND LABORATORY SUMMARY

Classroom or Laboratory (24 Student Stations)	No. of Rooms	% of Utilization	Year
Biology Lecture	2	40 - 93%	1st & 2nd
*Dental Hygiene Laboratory	1	23 - 73%	1st & 2nd
*Dental Technician Laboratory (44 Student Stations)	1	53 - 90%	1st & 2nd
*Kitchen	1	27 - 60%	1st & 2nd
*Cafeteria	1	0 - 60%	1st & 2nd
Green House and Landscape Area	1	53 - 100%	1st & 2nd
Merchandising	2	17 - 100%	1st & 2nd
Radio Station	1	Not estimated	1st & 2nd
TV Studio	1	Not estimated	1st & 2nd
Medical Laboratory	1	0 - 100%	1st & 2nd
Medical and Nursing Lecture	1	40 - 87%	1st & 2nd
Machine Laboratory	1	0 - 47%	1st & 2nd
Engineering Laboratory	1	0 - 80%	1st & 2nd

*1 Section only

TABLE V

HOURLY DISTRIBUTION OF CLASSROOMS AND LABORATORIES

Classroom or Laboratory (24 Student Stations)	No. of Rooms	Hours Available	Hours Usage 1st Year 1st Qt.	1st Year 2nd Qt.	1st Year 3rd Qt.	2nd Year 1st Qt.	2nd Year 2nd Qt.	2nd Year 3rd Qt.	Comments
Communication Skills	5	150	126	126	126	28	34	24	
Air Comfort Laboratory	1	30	10	10	20	28	34	24	
Drafting and Art	2	60	50	40	44	36	42	48	
Mathematics Classrooms	3	90	90	48	60	6	0	0	
Physics Laboratory	2	60	44	28	18	0	0	10	
Physics - Chemistry Lecture Room Electronics Lecture	2	60	58	46	28	4	4	10	
Chemistry Laboratory	1	30	36	12	0	0	0	0	
Economics, Business Management, Real Estate, Insurance	6	180	132	108	96	105	84	174	
Electronics Laboratory	1	30	14	20	12	6	6	6	
Accounting & Office Management	2	60	18	22	42	48	66	60	
Psychology, Sociology, Government, Technical Writing, Ethics, Marketing, Architecture, Civil Engineering, Mechanical Technology, Building Codes, Contracts, Cost Estimate, Foods	9	270	118	158	146	248	268	208	
Auto Shop	1	30	16	32	16	32	32	26	Lecture classes scheduled in shop area

TABLE V (Continued)

HOURLY DISTRIBUTION OF CLASSROOMS AND LABORATORIES

Classroom or Laboratory (24 Student Stations)	No. of Rooms	Hours Available	Hours Usage 1st Year 1st Qt.	1st Year 2nd Qt.	1st Year 3rd Qt.	2nd Year 1st Qt.	2nd Year 2nd Qt.	2nd Year 3rd Qt.	Comments
Biology Laboratory	2	60	66	48	24	12	0	0	
Biology Lecture	2	60	56	56	44	32	38	24	Includes Horticulture
*Dental Hygiene Laboratory	1	30	7	7	22	13	18	18	Can handle two sections by increasing hours of use.
*Dental Technician Laboratory (44 Student Stations)	1	30	18	17	16	25	23	27	1 section only; can handle two sections by increasing hours
*Kitchen	1	30	12	12	12	8	18	12	1 section
*Cafeteria	1	30	0	18	14	11	6	6	1 section includes lecture
Greenhouse	1	30	20	36	42	42	16	18	Need to increase hours beyond 30/wk
Engineering Laboratory - Civil Engineering, Architecture	1	30	0	0	24	12	18	12	
Radio Station	1	30	Not estimated						Expect usage full-time as radio station

TABLE V (Continued)

HOURLY DISTRIBUTION OF CLASSROOMS AND LABORATORIES

Classroom or Laboratory (24 Student Stations)	No. of Rooms	Hours Available	Hours Usage 1st Year 1st Qt.	1st Year 2nd Qt.	1st Year 3rd Qt.	2nd Year 1st Qt.	2nd Year 2nd Qt.	2nd Year 3rd Qt.	Comments
TV Studio	1	30	Not estimated						Develop full-time usage through Special Program
Medical Laboratory	1	30	6	12	12	36	36	0	
Medical and Nursing Classes	1	30	20	12	12	18	28	20	
Machine Laboratory	1	30	0	14	14	10	0	0	
Merchandising	2	60	30	32	34	66	10	14	

*1 Section only

TABLE VI

PERCENTAGES OF USAGE

Classroom or Laboratory (24 Student Stations)	No. of Rooms	% Usage 1st Year 1st Qt.	1st Year 2nd Qt.	1st Year 3rd Qt.	2nd Year 1st Qt.	2nd Year 2nd Qt.	2nd Year 3rd Qt.	Comments
Communication Skills	5	84	84	84	-	-	-	
Air Comfort Laboratories	1	33	33	66	93	100	80	
Drafting and Art	2	83	67	73	60	70	75	
Mathematics	3	100	53	67	7	0	0	
Physics Laboratory	2	73	47	30	0	0	17	
Physics - Chemistry Lecture Room Electronics Lecture	2	97	77	47	7	7	17	
Chemistry Laboratory	1	100	40	0	0	0	0	
Economics, Business Management, Real Estate, Insurance	5	73	60	70	58	47	99	
Electronics Laboratory	1	47	67	40	20	20	20	
Accounting, Office Practice	2	30	36	70	80	100	100	
Psychology, Sociology, Government, Technical Writing, Ethics, Marketing, Architecture, Civil Engineering, Building Codes, Contracts, Cost Estimate, Mechanical Technology, Foods	9	44	58	54	92	100	77	
Auto Shop	1	53	100	53	100	100	87	Lecture classes scheduled in shop area.
Biology Laboratory	2	100	80	40	20	0	0	Includes Horticulture & landscaping lectures

TABLE VI (Continued)

PERCENTAGE OF USAGE

Classroom or Laboratory (24 Student Stations)	No. of Rooms	% Usage 1st Year 1st Qt.	1st Year 2nd Qt.	1st Year 3rd Qt.	2nd Year 1st Qt.	2nd Year 2nd Qt.	2nd Year 3rd Qt.	Comments
Biology Lecture	2	93	93	73	53	63	40	Includes Dental Technician Lectures
*Dental Hygiene Laboratory	1	23	23	73	43	60	60	1 Section only; Can handle two sections by increasing hours of usage.
*Dental Technician Laboratory (44 Student Stations)	1	60	57	53	83	77	90	1 section only;can handle two sections by increasing hours
*Kitchen	1	40	40	40	27	60	40	1 section
*Cafeteria	1	0	60	47	36	20	20	1 section
Greenhouse	1	67	100	100	100	53	60	Need to increase hours beyond 30/wk
Engineering Laboratory (Civil Engineering, etc.)	1	0	0	80	40	60	40	
Radio Station	1	Not estimated						Expect usage full-time as Radio Station
TV Studio	1	Not estimated						Develop full-time usage through Special Program
Medical Laboratory	1	20	40	40	100	100	0	

TABLE VI (Continued)

PERCENTAGE OF USAGE

Classroom or Laboratory (24 Student Stations)	No. of Rooms	% Usage 1st Year 1st Qt.	2nd Qt.	3rd Qt.	2nd Year 1st Qt.	2nd Qt.	3rd Qt.	Comments
Medical and Nursing Classes	1	67	40	40	60	87	67	
Machine Laboratory	1	0	47	47	33	0	0	
Merchandising	2	50	53	57	100	17	23	

*1 Section Only

SCHEDULING

In order to evaluate the complete use of all facilities recommended, it was decided to compile all the previous data into two additional tables. Table VII, Hourly Distribution of Classrooms and Laboratories for Scheduling Purposes, reflects this information. The data for this table are the same as used in Table V, except the hours indicated in each quarter of each year are added together and appear only as 1st Quarter, etc. In compiling these data, it is assumed that a curriculum would be offered each year on a continuing basis. Thus, a class entering for the 1966-67 academic year would use the facilities as indicated in Tables V and VI. With the enrollment of a new class for the 1967-68 year, usage of the same facilities would be increased, as indicated in Tables VII and VIII. Analysis of the data in Table VII indicates that additional classrooms are required, these are listed in the "Comments" column and the new number of rooms is shown in the "Corrected No. of Rooms" column.

Table VIII, Percentage of Usage of Classrooms and Laboratories for Scheduling Purposes, reflects the percentage of usage of the number of classrooms derived in Table VII, and also indicates the range and average percentages.

The use of Tables VII and VIII are important for the determination of schedules and class sections for the initiation of the programs suggested in the report "Recommended Occupational Curriculum Offerings", for integration of these programs with present offerings, and for ease in determining the space requirements for additional sections or programs.

TABLE VII

HOURLY DISTRIBUTION OF CLASSROOMS AND LABORATORIES FOR SCHEDULING PURPOSES

Classroom or Laboratory (24 Student Stations)	No. of Rooms in Table V	Corrected No. of Rooms	1st Qt.	2nd Qt.	3rd Qt.	Hours	Comments
Communication Skills	5	5	154	160	150	150	
Air Comfort Laboratory	1	1	38	44	44	30	Increase hours of usage
Drafting and Art	2	3	86	82	92	90	Add 1 classroom
Mathematics Classrooms	3	3	96	48	60	90	
Physics Laboratory	2	2	44	28	28	60	
Physics - Chemistry Lecture Room Electronics Lecture	2	2	62	50	38	60	
Chemistry Laboratory	1	1	36	12	0	30	
Economics, Business Management Real Estate, Insurance	6	8	237	192	270	240	
Electronics Laboratory	1	1	20	26	18	30	
Accounting & Office Management	2	3	66	88	102	90	
Psychology, Sociology, Government, Technical Writing, Ethics, Marketing, Architecture, Civil Engineering, Mechanical Technology, Building Codes, Contracts, Cost Estimate, Foods	9	14	366	426	354	420	
Auto Shop	1		36	48	24		Lecture classes should be scheduled in electronics Lab and other classrooms as needed.

TABLE VII

HOURLY DISTRIBUTION OF CLASSROOMS AND LABORATORIES FOR SCHEDULING PURPOSES

Classroom or Laboratory (24 Student Stations)	No. of Rooms in Table V	Corrected No. of Rooms	1st Qt.	2nd Qt.	3rd Qt.	Hours	Comments
Auto Classroom	0	1	12	16	18	30	
Biology Lab	2	2	78	48	24	60	
Biology Lecture	2	3	88	94	68	90	Add 1 room
Dental Hygiene Laboratory (44 Student Stations)	1	1	20	25	40	30	Can handle two sections by increasing hours of usage
*Dental Technician Laboratory and Classroom	1	1	43	40	43	30	1 section only; 1st year and 2nd year students use same facility
Kitchen	1	1	20	30	24	30	1 section
Cafeteria	1	1	11	24	20	30	1 section includes lecture
Greenhouse	1	1	62	52	60	30	Need to increase hours beyond 30/week.
Engineering Laboratory - Civil Engineering, Architecture	1	1	12	18	36	30	
Radio Station	1		Not estimated				Expect usage full-time as radio station
TV Studio	1	1	Not estimated				Develop full-time usage through Special Program

*Designed for 44 Student Stations

TABLE VII (Continued)

HOURLY DISTRIBUTION OF CLASSROOMS AND LABORATORIES FOR SCHEDULING PURPOSES

Classroom or Laboratory (24 Student Stations)	No. of Rooms in Table V	Corrected No. of Rooms	1st Qt.	2nd Qt.	3rd Qt.	Hours	Comments
Medical Laboratory	1	1	42	48	12	30	
Medical and Nursing Classes	1	1	38	40	32	30	Overflow can be handled in other classroom
Machine Laboratory	1	1	10	14	14	30	
Merchandising	2	3	96	42	48	90	Add 1 classroom

TABLE VIII

PERCENTAGE OF USAGE OF CLASSROOMS AND LABORATORIES FOR SCHEDULING PURPOSES

Classroom or Laboratory (24 Student Stations)	No. of Rooms in Table V	Corrected No. of Rooms	1st Qt.	2nd Qt.	3rd Qt.	Hours	Range	Average
Communications Skills	5	5	100	100	100	150	100	100
Air Comfort Laboratory	1	1	100	100	100	30	100	100
Drafting and Art	2	3	95	91	100	90	91-100	95
Mathematics Classrooms	3	3	100	53	67	90	53-100	73
Physics Laboratory	2	2	73	47	47	60	47-73	56
Physics - Chemistry Lecture Room Electronics Lecture	2	2	100	83	63	60	63-100	82
Chemistry Laboratory	1	1	100	40	0	30	0-100	46
Economics, Business Management Real Estate, Insurance	6	8	99	80	100	240	80-100	93
Electronics Laboratory	1	1	67	87	60	30	60-87	71
Accounting & Office Management	2	3	73	98	100	90	73-100	90
Psychology, Sociology, Government, Technical Writing, Ethics, Marketing, Architecture, Civil Engineering, Mechanical Technology, Building Codes, Contracts, Cost Estimate, Foods	9	14	87	100	84	420	84-100	90
Auto Shop	1	1	100	100	67	30	67-100	89

TABLE VIII (Continued)

PERCENTAGE OF USAGE OF CLASSROOMS AND LABORATORIES FOR SCHEDULING PURPOSES

Classroom or Laboratory (24 Student Stations)	No. of Rooms in Table V	Corrected No. of Rooms	1st Qt.	2nd Qt.	3rd Qt.	Hours	Range	Average
Auto Classroom	0	1	40	53	60	30	40-60	51
Biology Laboratory	2	2	100	100	40	60	40-100	80
Biology Lecture	2	3	98	100	76	90	76-100	91
Dental Hygiene Laboratory	1	1	67	85	100	30	67-100	84
Dental Technician Laboratory (44 Student Stations)	1	1	100	100	100	30	100	100
Kitchen	1	1	67	100	80	30	67-100	82
Cafeteria	1	1	36	80	67	30	36-80	61
Greenhouse	1	1	100	100	100	30	100	100
Engineering Laboratory - Civil Engineering, Architecture	1	1	40	60	100	30	40-100	67
Radio Station	1	1	Not estimated					
TV Studio	1	1	Not estimated					
Medical Laboratory	1	1	100	100	40	30	40-100	80
Medical and Nursing Classes	1	1	100	100	100	30	100	100
Machine Laboratory	1	1	33	47	47	30	33-47	42
Merchandising	2	3	100	47	53	90	47-100	67

ADDITIONAL COMMENTS CONCERNING USAGE

Certain additional information should be offered to provide a more meaningful interpretation of the data presented. It is necessary to explain the "Not Estimated" data for the Radio and Television Studio.

In the case of the Radio Studio, it is suggested that this facility be used on a full-time basis, except when needed for classroom instruction. The facilities recommended would be adequate for operation of a full-time licensed broadcast station, as an additional facility for the college.

The Television Studio should be used as a full-time facility, except when required for classroom instruction. It is therefore suggested that the college consider an in-school closed TV circuit system to be used for mass instruction and other programs. The additional facilities, such as wiring and outlets should be planned in the new construction. The cost of these would be moderate. TV receivers could be installed later at a relatively modest cost.

Estimates of size and utilities for the kitchen and cafeteria have been eliminated because these areas are included in the college's planning. It is recommended that the kitchen area and equipment be designed as a production and teaching unit, and that an education consultant in foods technology be employed to help in the design of this facility.

The Dental Hygiene Clinic should be operated on an 8 hour day, six day schedule throughout the year. This facility should be

designed as an out-patient clinic and the public invited in at a small fee, to use the services. It is also suggested that use of this facility be coordinated with Dental Health programs in local school districts.

The Dental Technology Laboratory should be operated in part as a production facility in a manner similar to the Dental Hygiene Clinic.

No provision has been made in this report for facilities presently in use or in the planning stages with the architects, except as noted.

The facilities required in the Dental Hygiene Clinic, the Dental Technology Laboratory and the Radio and Television Studios are large and rather expensive. It is therefore suggested that programs be developed and enrollment encouraged to permit maximum usage of these facilities.

In order to encourage enrollment, it might become necessary to offer the related curriculums to young people living beyond the area served by the college. This same pattern should exist for other community colleges in Virginia. In this manner, certain curriculum offerings would be limited for each college. The decision as to which colleges would be affected, should be made on the basis of total population, density and occupational opportunities, and should be coordinated through the Department of Community Colleges of the Commonwealth of Virginia.

SPACE REQUIREMENTS

The space requirements for certain facilities are contained in the following paragraphs. In each case, the report also includes recommendations for the utilities required. In certain cases, special notes and comments are appended to the description of the facilities to provide further information needed, as well as a basis for judgments as to size and use of the facility.

AIR COMFORT LABORATORY

Refrigeration Laboratory	3500 sq. ft.
Storage	500 sq. ft.
Air Comfort Laboratory	3500 sq. ft.

Utilities

Electricity - 110V, 220V

Water - Hot and Cold

Compressed Air

Natural Gas

Fuel Oil Tanks - installed underground

DENTAL HYGIENE

Clinic	Space
24 Pupil Stations	1600 Sq. Ft. (32 x 50)
Faculty Facilities	100 Sq. Ft.
Conference Room - Teacher-Student	100 Sq. Ft.
Conference Room - Student-Patient	100 Sq. Ft.
Sterilization Area	100 Sq. Ft.
X-Ray Room	100 Sq. Ft.
Storage	400 Sq. Ft.

Utilities

Water - Hot & Cold

Drainage

Electricity - 110V, 220V

Compressed Air

DENTAL TECHNOLOGY

Dental Laboratory

Laboratory (includes) 4000 Sq. Ft.

- Research Area
- Basic Laboratory (1st Year) (24 student stations)
- Advanced Laboratory (2nd Year) (20 student stations)
- Casting, Investing, & Duplicating
- Plaster & Polish
- Processing
- Instruction
- Storage Room, Stockroom
- General Office

Utilities

- Water - Hot & Cold
- Electricity - 110V, 220V
- Compressed Air
- Oxygen
- Vacuum Lines

HORTICULTURE

Greenhouse	6000 Sq. Ft.
Soils - outdoor	6000 Sq. Ft. minimum

Utilities

Electricity - 110V, 220V

Water - Hot and Cold

Heat - Steam preferred

Compressed Air

Steam Lines

It is recommended that a smaller size greenhouse and soils area be included in each campus - size about 3200 sq. ft. This could be used as a teaching and demonstration area in biology and botany courses.

MEDICAL TECHNOLOGY

Medical Laboratory

1250 Sq. Ft.

Utilities

Same as Chemistry Laboratory

RADIO & TV STUDIOS

TV Studio	2500 Sq. Ft.
Storage, Studio Equipment	500 Sq. Ft.
Control Room	1500 Sq. Ft.
Audio Control Room	1000 Sq. Ft.
Film Room, Editing	750 Sq. Ft.
Storage, Films	250 Sq. Ft.
Video Tape Area	750 Sq. Ft.
Video Tape Storage	250 Sq. Ft.
Radio Control Room	600 Sq. Ft.
2 Studios @ 300 Sq. Ft.	600 Sq. Ft.

Utilities

Electricity - 110V, 220V

Air Conditioning is an absolute necessity

It is anticipated that the college will act as a signal producing agent for both television and radio broadcasting. These facilities would be located on the college grounds and would not be included in present building plans. No recommendation as to size of facilities is made in this report. These facilities should be designed by the supplier of the transmitting equipment.

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The purpose of this study was to determine the factors which enter into major occupational decisions in an economically declining area. It is part of a larger study of physical and human resource adjustments in St. Lawrence County, New York. The total sample consisted of 320 persons who comprised a representative cross-section of farm operators farming in St. Lawrence County in 1950 and who were under 55 years of age at that time. This report is based on the responses of 299 individuals who completed questionnaires in 1963. Observation of the data revealed that decisions to make occupational change were influenced to a varying degree by the following factors: (1) goals, (2) force, (3) support, (4) opportunity, (5) value standards, (6) ability, and (7) expectations. (CH)

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FACTORS INFLUENCING OCCUPATIONAL DECISIONS IN A LOW-INCOME AREA

by

William W. Reeder
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and
Wesley W. Craig, Jr.

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FACTORS INFLUENCING OCCUPATIONAL DECISIONS IN A LOW-INCOME AREA

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FACTORS INFLUENCING OCCUPATIONAL DECISIONS
IN A LOW-INCOME AREA

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Summary and Highlights

This is the first report in a series of special studies of human and physical resource use adjustments in a low-income area of Northern New York State. This special report discusses the factors which influence occupational decisions in the study area. The report is based on the responses of 299 individuals who were operating farms in the area in 1949. The data for this study were collected in 1963.

1. Eighty-one percent of the respondents had considered a major occupational change in the twelve year period receding the survey.
2. The most recent major change considered by most of the respondents was a shift to less dependence on farming for a livelihood. Fifty-five percent of the respondents considered this type of change.
3. Three types of changes to less dependence on farming were considered:
   a. Fifty-four respondents considered a shift from full-time farming to part-time farming. Of these, 95 percent made the proposed change.
   b. Fifty-seven farm operators considered a shift from part-time farming to full-time nonfarm activities. Of this grouping, 91 percent took the proposed step.
   c. Fifty-one farm operators considered the big jump from full-time farming to full-time nonfarm activities. Of this grouping, 53 percent made the proposed change.
4. Fifteen percent of the farm operators in the study considered a move in the direction of increased dependence on farming for a livelihood. Once again, three types of changes were involved:
   a. The largest number, 26, considered a shift from part-time farming to full-time farming. Of these, 100 percent made the proposed change.
   b. Eleven respondents had considered the jump from full-time nonfarm activity to full-time farm activity. Of those who considered this type of move, 82 percent made the change.
   c. Seven households, which had at some time during the period become full-time nonfarm households had considered a shift back into farming on a part-time basis. Of these, all seven made the proposed change.

5. For those farm operators who considered a change to a decreased dependence on farming, the general factors favoring and opposing the change were the following:

   a. Favoring the change
      1. Goals
      2. Force
      3. Support
      4. Opportunity
      5. Value Standards
      6. Ability
      7. Expectations

   b. Opposing the change
      1. Goals
      2. Opportunity
      3. Ability
      4. Expectations

6. For those farm operators who considered a change to an increased dependence on farming, the general factors favoring and opposing the change were the following:

   a. Favoring the change
      1. Goals
      2. Force
      3. Ability
      4. Expectations
      5. Support

   b. Opposing the change
      1. Goals
      2. Opportunity
      3. Ability

7. Most dominant factors favoring and opposing changes when they are present in rank order are:

   a. Favoring the change
      1. Force
      2. Commitment
      3. Expectations
      4. Support
      5. Goals
      6. Opportunity

   b. Opposing the change
      1. Ability
      2. Opportunity
      3. Expectations
      4. Support

8. Major reasons favoring and opposing the shift from full-time farming to part-time farming.

Reasons favoring the shift in rank order:

1. Financial gain
2. Had to make more money somehow, somewhere
3. Other family members able and willing to help with the farm work
4. Had a job opportunity
5. Wife and family expected the change
6. Had the skills and abilities for the second job.

Reasons opposing the shift:

1. I would have to neglect the farm
2. Like farming and the associated way of life
3. Could have remained in full-time farming
4. Would be working longer, harder hours

9. Major reasons favoring and opposing shift from full-time farming to full-time nonfarm activities.

Reasons favoring the shift:

1. Financial gain
2. Poor health forced the change
3. Economic security from nonfarm job
4. Farm income was too small
5. Not enough family help to keep the farm going
6. Easier hours and more free time in nonfarm work
7. Lacked the size and resources to stay in farming
8. Family members expected the change.

Reasons opposing the shift:

1. Like farming and the associated way of life
2. Farming is a more independent way of life
3. Could have remained in farming
4. Family and friends expected me to stay with farming
5. Would lose the security of farming.

10. Major reasons favoring and opposing the shift from part-time farming to full-time nonfarm activity.

Reasons favoring the change:

1. Financial gain
2. Farm only providing a small income
3. Unable to do two jobs
4. Farm too small and lacked resources
5. Poor health
6. Loss of family help
7. Force of circumstances
8. Unable to get help
9. More free time and easier hours
10. Opportunity of a job
11. Family and friends expected and encouraged change.

Reasons opposed to the change:

1. Like farming
2. Would have to take a loss in my investments
3. Would lose produce for the family
4. Would mean a decrease of income
5. Loved cows and liked to work with them.

11. Major reasons favoring and opposing the change to decreased dependence on farming for persons who considered but did not make the change.

Reasons favoring the change:

1. Financial gain
2. More free time, easier hours
3. Full-time farming is too hard for my health
4. Lack resources for full-time farming
5. Family and friends encouraged the change
6. Unable to obtain help for the farm
7. Health was poor.

Reasons opposed to the change:

1. Farming is the only thing I know
2. Unable to get other work
3. Like farming and the associated way of life
4. Would be taking a loss on my life's investment
5. Family and friends expected me to stay with farming
6. The change would be financially risky
7. Opportunity to remain in farming.

12. Major reasons favoring and opposing a major increase in dependence on farming for individuals who made the change.

Reasons favoring the change:

1. Could make as much or more farming
2. Like farming
3. Would provide greater security
4. Nonfarm job terminated
5. Had the opportunity to obtain a farm
6. Already had the farm
7. Would gain free time and fewer hours
8. Family encouraged and wanted me to change
9. Was working too many hours on two jobs
10. Health, age, circumstances forced the change
11. Family expected me to make the change.

Reasons opposed to the change:

1. Liked my nonfarm job
2. Loss of income
3. Could have kept my nonfarm job.

13. The illustrative cases reveal the following:
    1. Occupational decisions are usually based on a small cluster of relevant reasons or components.
    2. Each component has direction and loading.
    3. After an occupational decision has been made, the decision maker will readjust his relevant cluster of cognitions to bring it more in line with whatever action is taken. These data lend support to the theory of consistency. They also point out a built-in error in data which is obtained about any action after the action has occurred.

PART I

INTRODUCTION

A Framework for Understanding

Occupational Change

Purpose

This study was designed to determine the factors which enter into major occupational decisions in an economically declining area. It is one part of a larger study of physical and human resource adjustments in St. Lawrence County, New York. The total sample consists of 320 persons who comprise a representative cross section of farm operators who were farming in St. Lawrence County in 1950 and who were under 55 years of age at that time. (See Appendix A for characteristics of the sample.)

Methodology

The larger study documents various adjustments made by the sample of 1950 farm operators for the years 1950-1962. This special study on factors which influence occupational decisions focuses on a single major occupational decision and attempts to delve deeply into the factors which entered into that particular decision. To use a decision as recent as possible to facilitate recall, the most recent major occupational decision was designated as the one to be studied. From the occupational history covering the 12 year period, the interviewer selected what he considered to be the last major occupational decision. Once the decision to be considered was identified and recorded, two methods were used to determine what factors entered into the decision.[1] The first was an open-end

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[1] The emphasis was on the factors which entered into the final decision at the time the decision was being made.

question designed to draw out all the factors which the respondent could recall both favoring and opposing the action. The second consisted of a series of probing questions designed to determine if certain factors were present and when present to determine what specific components were involved. (See Appendix B.) The reasons derived from the open-end questions were designated by a capital letter, whereas additional reasons derived from the probing questions were designated by small letters so the factors derived from each source could be determined for future analysis.

The factors used in the probing questions were drawn from a theory of social action derived from other studies.[2] It was hypothesized that an occupational decision is a type of social action and that the factors which direct occupational decisions should come from the same array of factors which direct social action in general. Ten factors which have been identified as directive factors in social action were utilized, namely: goals, belief orientations, value standards, expectations, commitments, force, habits, opportunities, ability and support.

After the specific reasons which were reported were recorded for both the open-end questions and also from the probing questions, each respondent was asked to select the factor having the greatest influence and give it a weight of 10, then to rate the other reasons in comparison to it with scores from 10 to 0. For the factors which were designated as having some influence in the decision in the probing questions, the respondent was asked to rate the amount of influence as little, some, or much. The latter were weighted one, two and three.

Of the 320 respondents in the sample, 299 or 94 percent answered the open-end part of the question asking for reasons favoring and opposing a proposed occupational change. A slightly larger proportion, 97 percent answered some or all of the probing questions which followed the open-end responses. Of the 299 who answered the question asking for reasons, 57 or 19 percent indicated they had not been confronted with a major

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[2] See pages 4 - 12 for further explanation.

decision involving change of occupation during the 12 years being studied. These 57 were given a hypothetical situation to respond to but these hypothetical answers are not included in this report. Only actual occupational decisions are reported. For those who had considered a major change in the past 12 years, the most frequently mentioned change was a move to decrease the families' dependence on farming. There were 163 or 54 percent who considered a move in this direction. Forty-four or 15 percent considered a move in the direction of an increased dependence on farming for a livelihood. Twelve persons or 4 percent considered the shift from farming to retirement. Another 4 percent considered a move from one type of full-time farming to another. An additional 4 percent could not be classified into any of these categories. Since the other categories are too small for separate analysis, the remainder of the report will focus primarily on categories containing farm operators who considered decreasing or increasing their dependence on farming. The total number for the remainder of the report is 207 of which 163 considered a change to less dependence on farming, whereas 44 considered an increased dependence on farming.

Types of Changes Considered

Of the 163 who considered a decreased dependence in farming, 34 percent considered taking the step from full-time farming to part-time farming, another 35 percent considered taking the step from part-time farming to full-time nonfarm employment. The remaining 31 percent considered the big jump from full-time farming to full-time nonfarming. Of the 44 who considered an increased dependence on farming, 26 or 59 percent considered the step from part-time farming to full-time farming, 7 or 16 percent considered the step from full-time nonfarm employment to part-time farming and 11 or 25 percent considered the jump from full-time nonfarm employment to full-time farming. It should be noted that the full-time nonfarmers who considered going into farming on a part-time or full-time basis were not entering farming for the first time, rather, they were returning to farming as they were all farm operators in 1950 but some had subsequently left farming to engage in nonfarming occupations.

Type of Action Taken

The data suggest that it is much easier to change one's occupation stepwise, then to take a big jump. Of the 55 who considered the step from full-time farming to part-time farming, 95 percent report having made the change. Of the 57 who considered the step from part-time farming to full-time nonfarm employment, 91 percent report having made the change. In contrast of the 51 who considered the jump from full-time farming to full-time nonfarm employment, only 53 percent indicate having made the proposed change. The contrast is not so great, but in the same direction for those returning to farming. Of the 26 who considered the step from full-time nonfarm work to part-time farming, 100 percent indicate they made the proposed change. Of the 11 who considered the return from full-time nonfarm work to full-time farming, nine or 82 percent report having made the proposed change.

Directive Factors in Occupational Decisions

The theory of social action behind this inquiry into factors which direct social action, was first derived from a series of research studies on directive factors in social participation. In developing a theoretical formulation which would meaningfully explain several different types of social participation, it became apparent that what had emerged was not just a theory of social participation, but could be applied to any social action. The theory has been presented in four papers at different stages of its development. (Reeder, 1962, 1963A, 1963B, 1964.)

The 1963B paper presents the theory approximately as it was formulated at the time this study was designed. A few excerpts from that paper will present the main propositions which were the basis of this special study.

The 1963B statement of the theory included three main propositions and several second order propositions. The three main propositions were as follows:

A Framework for Understanding Social Action

Proposition A

From the data which an actor has about a referent[1] or a situation and its subparts, he strives to understand the meanings which are important to him. The meanings which he derives and the evidence which he sees as supporting them become his cognitions[1] about the referent or about the situation and its subparts. Thus, what each actor possesses regarding any referent or any situation is a number of cognitions about it and about himself in relation to it. (Krech, Crutchfield and Ballachey 1962.)

Proposition B

Every social action (belief, sentiment, hypothetical action, or gross behavioral response) is founded on a small cluster of relevant cognitions. (Brower 1961, Festinger 1957, Heider 1958, Reeder 1962.)

Proposition C

A social actor[1] will select patterns of action which are consistent with his cluster of relevant cognitions. (Brower 1961, Campbell 1963, Heckert 1964, Heider 1958, Festinger 1957, Reeder 1964, Osgood and Tannenbaum 1955.)

Graphically these three propositions can be presented as follows:

A		B		C
Data regarding a referent or the situation and its subparts	–	The relevant cluster of cognitions	–	Social Action

From the array of possible responses which are available to him in his society, the actor will tend to select those responses which will be most consistent with his relevant cluster of data, his relevant cluster of cognitions, and his relevant cluster of social actions.

Every actor has a basic need to feel that his response to any given referent is right, that is, logically consistent. As a result of this basic need, a feeling that his response is inconsistent, "wrong," gives rise to a normatively prescribed psychological discomfort. To minimize

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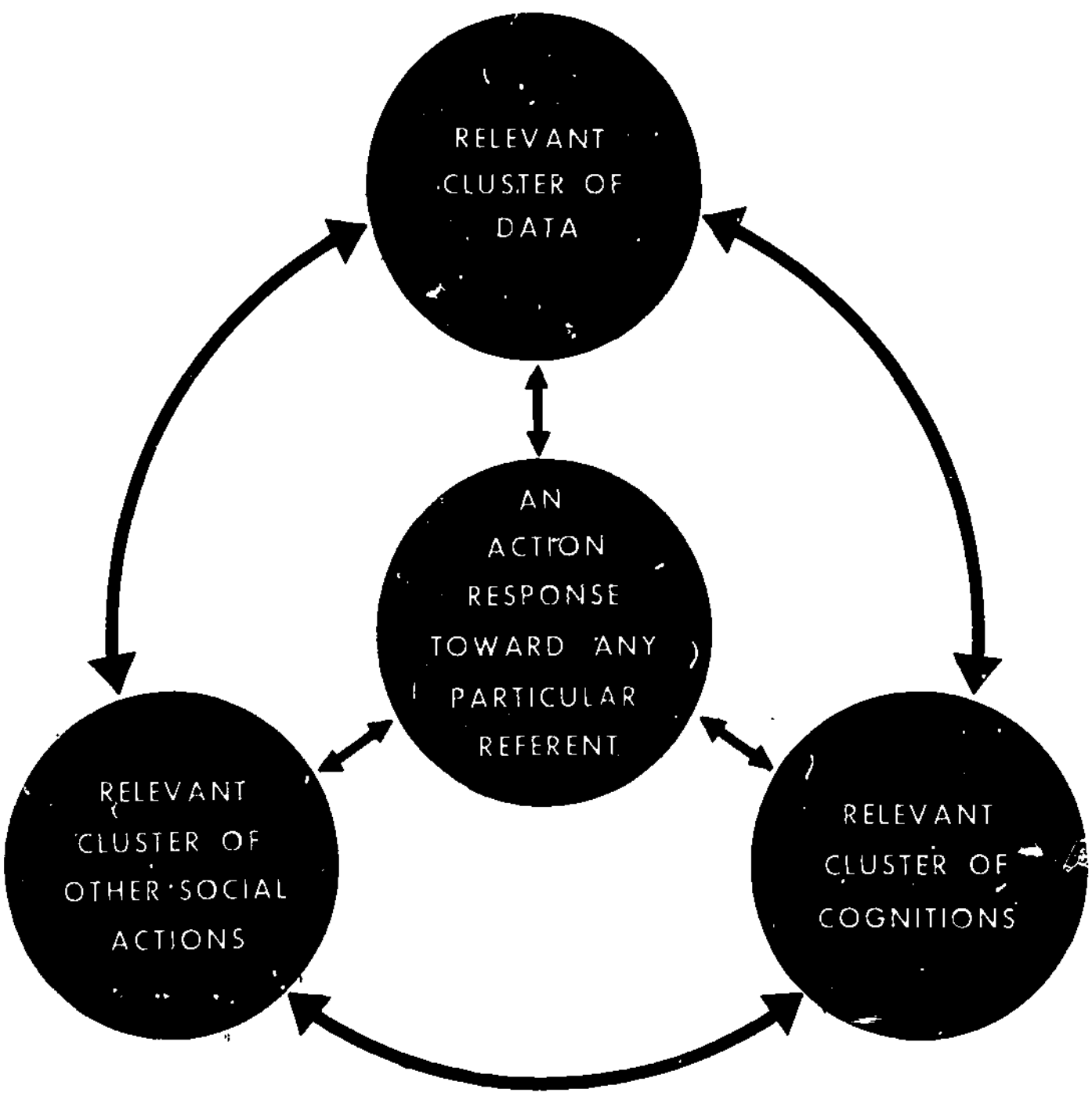
[1] See Appendix C for selected definitions.

the discomfort and maximize his psychological comfort the actor will act in the direction of increasing the consistency among his three relevant clusters, and of increasing the consistency between each of the relevant clusters and the pattern of action which he selects. Figure 1 (Reeder 1964)

Figure 1. **AN ACTOR'S CHOICE OF SOCIAL ACTIONS**



The Relevant Cluster of Cognitions

The relevant cluster of cognitions is central in understanding social action. We have already noted in the propositions that this cluster is the foundation of social action and that the actor chooses forms of social expression consistent with it.

Proposition B-I

The components which comprise a cluster can be drawn from one or several of ten general factors.[1] These ten different categories of cognitions of social actors which are designated as factors are: "B" belief orientations, "G" goals, "V" value standards, "E" expectations, "SC" self-commitments, "F" force, "H" habit, "O" opportunity, "A" ability, and "S" support. The components in the cluster are cumulative in their effect, thus the formula can be written as follows: (Brower 1961, Fahs 1960, Lippitt, Watson and Westley 1958, Loomis 1960, Parsons 1961, Reeder 1962)

Social Action (S.A.) = B + G + V + E + SC + F + H + O + A + S

Second Order Propositions

From Proposition C and Proposition B-I, the following ten propositions can be stated regarding the ten factors or categories of cognitions.

B-I - I Basic Belief Orientations[1]

Individuals and groups tend to select modes of action which are compatible and consistent with their basic belief orientations. (Bradfield 1957, Heckert 1964, Festinger 1957, Guttman 1959, Heider 1958, Loomis 1960, Osgood, Suci and Tannenbaum 1957, Rokeach 1960.)

B-I - II Goals[1]

Individuals and groups tend to promote, protect and maintain their goals. (Fahs 1960, Heider 1958, Krech, Crutchfield and Ballachey 1962, Loomis 1960, Maslow 1954.)

B-I - III Value Standards[1]

Individuals and groups tend to act in a manner which is consistent with their value standards. (Bradfield 1957, Brower 1961, Heider 1958, Reeder 1963, Williams 1960.)

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[1] See Appendix C for definitions.

B-I - IV Expectations[1]

Individuals and groups tend to behave the way they feel they are expected to behave in a situation. They tend also to act toward others in terms of their expectations of them. (Heider 1958, Lippitt, Watson and Westley 1958, Loomis 1960, Parsons 1961, Reeder 1962, Williams 1960.)

B-I - V Self-Commitment[1]

Individuals and groups tend to do those things which they feel they have committed themselves to do. (Lippitt, Watson and Westley 1958, Reeder 1962, 1963A and B.)

B-I - VI Force[1]

Individuals and groups do those things which they feel they are forced to do. (Reeder 1963A and B.)

B-I - VII Habit and Custom[1]

Individuals and groups do those things which they are in the habit of doing in situations which are not currently a matter of conscious scrutiny and rational choice. (Reeder 1963A and B.)

B-I - VIII Opportunity[1]

Individuals and groups tend to participate in a particular form of social action in relation to the number and kind of opportunities which the social structure provides to participate in that activity as they perceiv it. (Heider 1958, Parsons 1961, Reeder 1962, 1963A & B.)

B-I - IX Ability[1]

Individuals and groups will tend to participate in a particular activity when they perceive themselves as able to do what the situation requires. (Heider 1958, Langbacka 1961, Likert 1961, Lippitt, Watson and Westley 1958, Loomis 1960.)

B-I - X Support[1]

Individuals and groups tend to act when they feel they have sufficient support to do so. (Fahs 1960, Festinger 1957, Heider 1958, Likert 1961, Lippitt, Watson and Westley 1958, Parsons 1961, Reeder 1962, 1963A and B.)

For simplicity of presentation, the above statements are presented in the positive. It should be noted, however, that they all can be negative as well as positive.

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[1]See Appendix C for definitions.

The following propositions present further information on the nature of the relevant cluster of components. Figure 2.

Proposition B - II

The cognitions (components) of any given cluster are selected by the actor on the basis of their perceived relevance to the referent which is under consideration. (Brower 1961, Festinger 1957, Heider 1958, Krech, Crutchfield and Ballachey 1962, Monahan 1960.)

Proposition B - III

Each component in the cluster has direction and loading. (Brower 1961, Festinger 1957, Guttman 1959, Osgood, Suci and Tannenbaum 1957, Reeder 1963A and B.)

Proposition B - IV

The direction and intensity of a social action is determined by the independent and cumulative influence of the components in the cluster. (Brower 1961, Fahs 1960, Festinger 1957, Guttman 1959, Heider 1958, Osgood, Suci and Tannenbaum 1957.)

Proposition B - V

At any given time, a component will have the same direction and loading in any cluster in which it is a relevant part. (Brower 1961, Reeder 1963A and B.)

Proposition B - VI

The dominance of a component in a cluster will depend on its relative loading as compared with the other relevant components in the cluster. A cluster is likely to be identified by the component which is most dominant. (Reeder 1963A and B.)

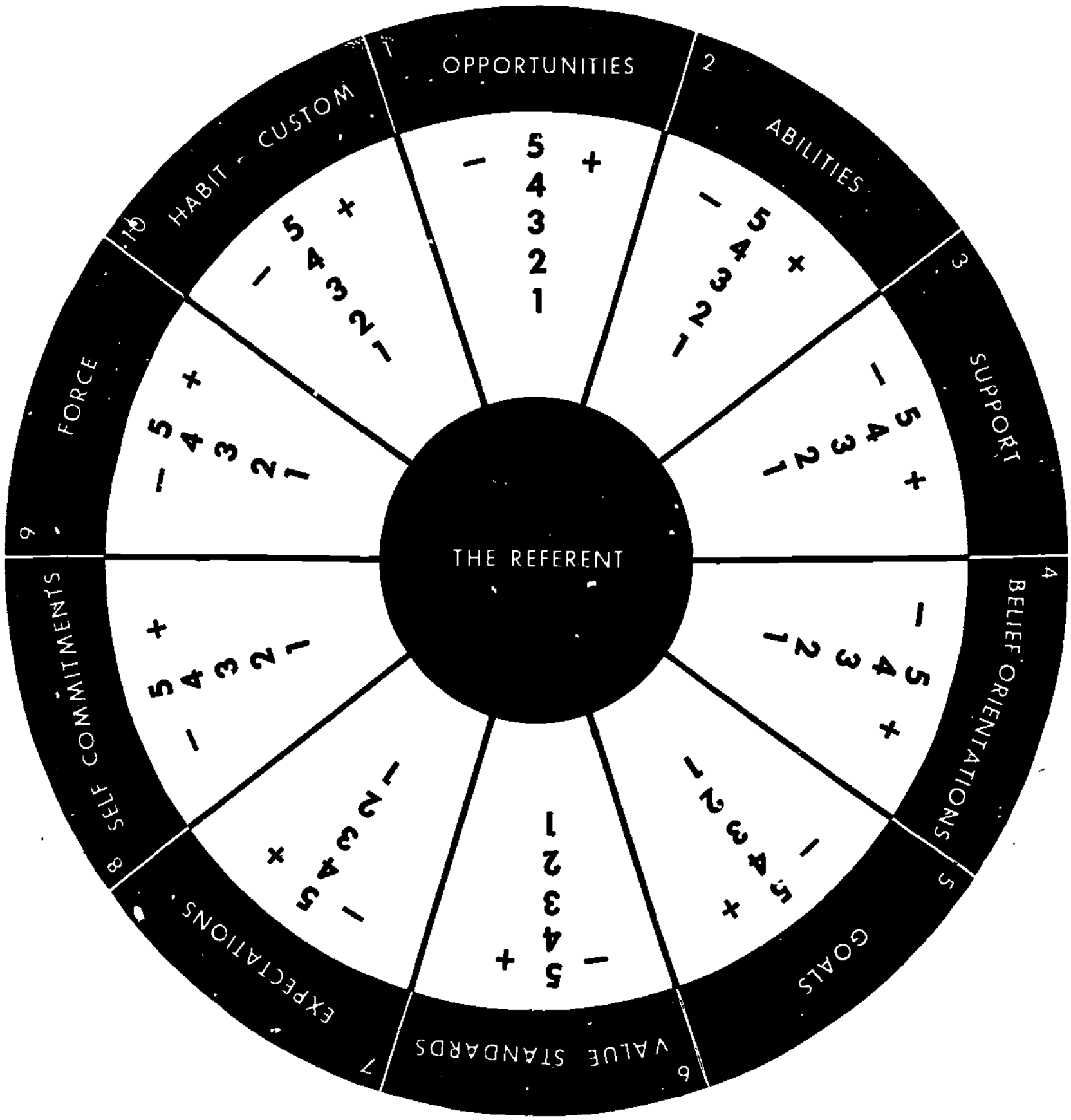
Proposition B - VII

A cluster of relevant components may include one or several components of some factors and none from other factors. (Brower 1961, Guttman 1959, Krech, Crutchfield and Ballachey 1962.)

Proposition B - VIII

There are no components or factors which are necessary and therefore indispensable with the one exception of belief orientations. Goals for example, do not have a relevant component in every cluster. (Reeder 1963A and B, 1964.)

CHART FOR DETERMINING RELEVANT CLUSTERS OF COMPONENTS



Proposition B - IX

Components of the different factors are interchangeable as directive influences in social action. (Fahs 1960, Reeder 1963A and B, 1964.)

Proposition B - X

In a situation where many components are potentially relevant, only a few of the most relevant will be selected by the actor for the relevant cluster of components.

Proposition B - XI

Many components which are relevant will not be consciously considered by the actor because he has them and takes them for granted. Were they absent, they would not thus be taken for granted. Hence, they operate as relevant components implicitly but not explicitly. They are latent rather than manifest.

Proposition B - XII

Every cluster of components may be viewed at two levels. First as an organized gestalt which can be responded to as a single referent and second as a cluster of components, each of which can be responded to as a separate referent. (Krech, Crutchfield and Ballachey 1962, Reeder 1963A and B, 1964.)

Proposition B - XIII

Each component making up any given cluster can also be viewed as an organized gestalt with a relevant cluster of components of its own. (Krech, Crutchfield and Ballachey 1962, Reeder 1963A, 1963B.)

Proposition B - XIV

A particular component may be relevant to, and part of, many different clusters and therefore may be described as general. On the other hand, a component tends not to show up in clusters in which it would not logically be relevant. On this basis, components can be described as highly specific. (Monahan 1960.)

Proposition B - XV

The meanings of key words and phrases of verbal and written communiques become components in social action resulting from the communique. There are additional meanings to which the total communique will give rise which are not a part of key words or phrases considered separately. Most of these latter meanings could be determined by judges from within the society. (Brower 1961, Campbell 1963, Guttman 1959, Triandis and Fishbein 1963.)

In designing this special study, it was hypothesized that the components which operate as directive factors in an occupational decision would come from the ten factors indicated in proposition B-I page 7, that they would have direction and weight or loading as indicated in proposition B-V, that there might be some factors for which there would be no relevant components as indicated in proposition B-VII, that the number of relevant components would be relatively small as indicated in proposition B-X and that the influence of the components would be cumulative as indicated in proposition B-I.

The Climate for Occupational Change in St. Lawrence County

To change one's occupation is no small matter. Through time, the holders of any occupation tend to build around their chosen field a set of beliefs, rationalizations and explanations which present it as important, desirable, as making a significant contribution to the welfare of the general society, and as providing many direct and desired benefits for those who engage in it. This set of belief orientations is generally accepted by those within the occupation. It helps each of them to enhance his own feelings of personal worth and satisfaction. While this occurs for all occupations, we are probably more aware of it in relation to farming than for most others. Farming as an occupation has been a symbol of the good life. The family farm is perceived by many as a basic cornerstone of American society. (Iowa State University Center for Agricultural and Economic Development, 1963.)

In addition to his beliefs, goals and values which wed a man to his occupation, he also develops a great mass of knowledge and skills related to his occupation. Within his occupation, he is a man of much knowledge, ability and accumulated wisdom who can perform with confidence and security. Placed outside of the arena of his experience, he feels like an incompetent novice. These are all strong forces which bind a man to his occupation.

Running counter to these forces which bind the farmer to his occupation are all the forces which have been set loose by the agricultural revolution. Within a brief span in American history, the percentage of the population engaged in farming has decreased from more than 85 percent to less than 10 percent. This shift out of farming has been going on for many years. Part of this shift has been an intergenerational shift; sons simply chose other occupations. A large portion of it, however, has come about because men, who were already established in farming, have given up farming as an occupation and have gone into some other occupation. What we are observing in St. Lawrence County is part of this revolutionary shift. In the years since 1949, the St. Lawrence County farmer has increased the size of his operation and worked harder to receive just about the same number of dollars which he received in 1949. But those dollars wouldn't buy nearly as much as they did in 1949, so he has been faced with a steadily decreasing real income.

Like many other counties in the country, St. Lawrence has been heavily dependent on its agricultural industry. The St. Lawrence Seaway Project opened new opportunities for a brief time in 1956 and 1957, and the expanded aluminum industry in the area provided new opportunities in the late 1950's until automation in the industry cut the employees needed by two-thirds. Thus, St. Lawrence County has experienced two brief periods of expansion and contraction of employment opportunities. It is against this backdrop that we observe occupational adjustments in St. Lawrence County.

With the theoretical framework and this outline of the situation in mind, let us now take a look at the data on the factors influencing the last major occupational change, which was considered by the farm households in our sample.

PART II

General Factors Considered in Decisions to Decrease and to Increase Dependence on Farming

In this section of the report, both the decisions and the factors influencing those decisions are presented at a high level of abstraction and generality. While such a general presentation loses much in detail, it also gains much in presenting an overview of the big picture. The two sections which follow are designed to provide the detail which this presentation omits.

Two types of decisions will be considered: first, the decision to decrease or not to decrease the degree of the family's dependence on farming as a source of income, and second, the decision to increase or not to increase the degree of the family's dependence on farming as a source of income. There are two sets of answers for each question which supplement and reinforce each other. The specific reasons for and against the proposed decision which were given by the respondent were analyzed and placed under those headings where they best fit in the judgment of the research analyst. Thus, in this case, the judgment of the analysts entered into the categorization. For the second set of answers, the respondent considered and evaluated each factor separately. The respondent decided whether that factor was influential in the decision or not, and he also decided how much weight each factor had carried in the final decision. In this case, all of the choices were made by the respondent. The judgment of the analyst did not enter into any of the choices which were made in the second set of data.

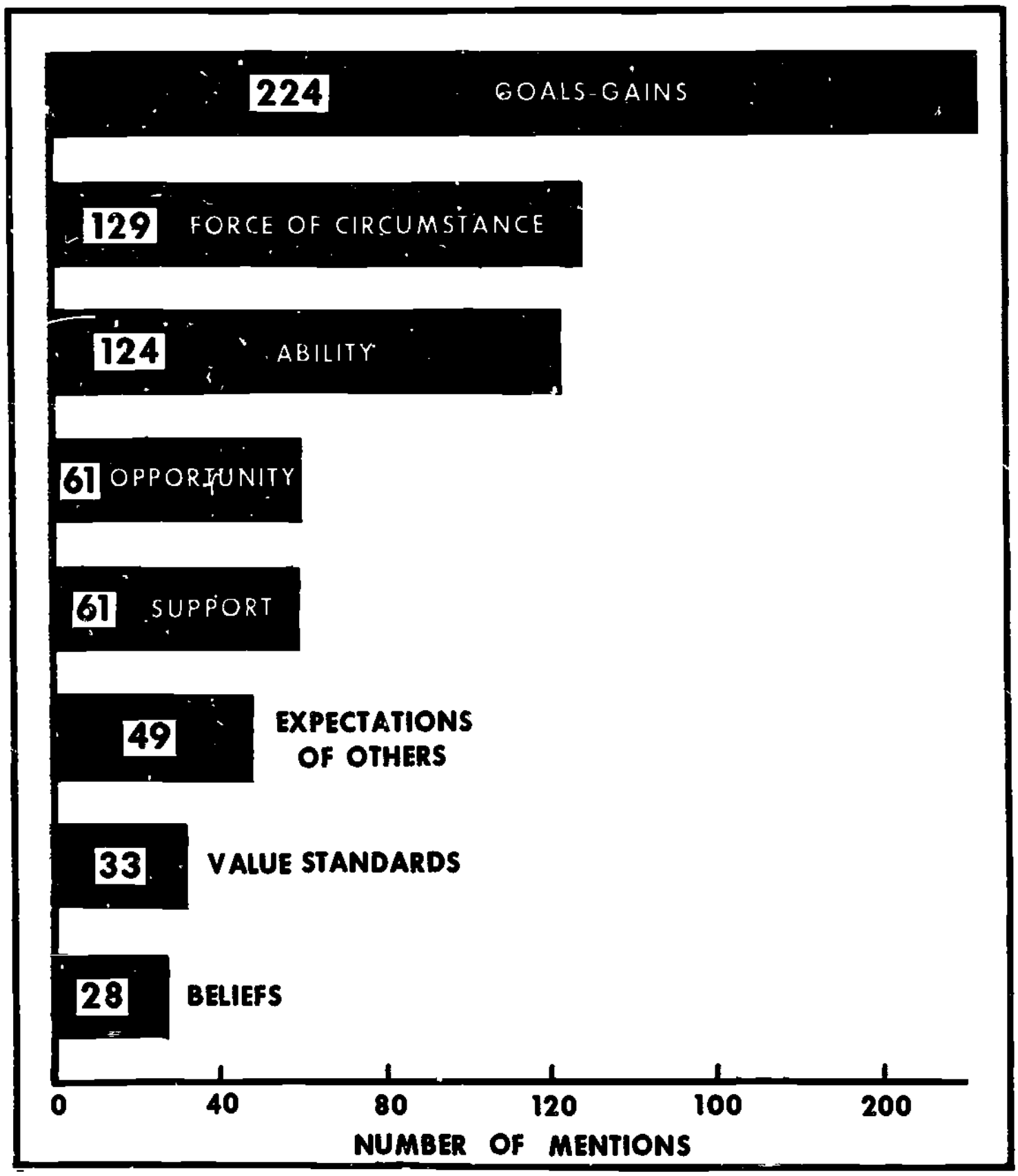
The Decision to Decrease or Not to Decrease the Family's Dependence on Farming as a Source of Income

From the analysis and categorization of all the reasons respondents gave which they reported they took into account in the decision to decrease or not to decrease their dependence on farming; the data indicate that goals, force of circumstances, ability, opportunity, support and expectation of others are the factors which are mentioned most often as influencing the decision. Figure 3.

When asked to consider and evaluate each factor separately, the factors which were identified most frequently as influencing the decision

Figure 3.

Factors considered in the final decision which favored a decreased dependence of the family on farming. (Based on the open-end answers of 163 respondents.)



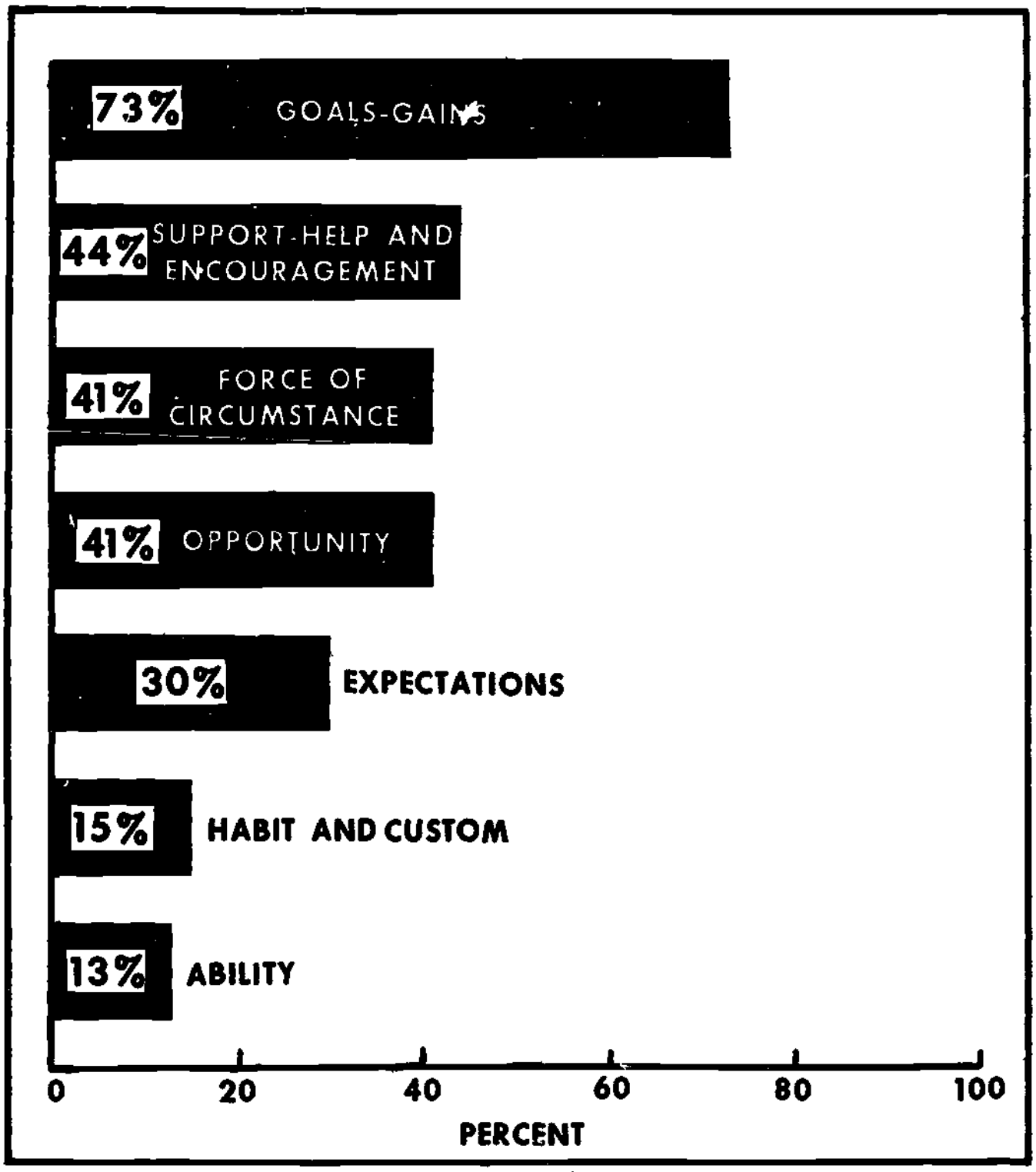
in favor of decreased dependence on farming were: goals, support, force, opportunity and expectations. Figure 4. From a comparison of the two lists, it is evident that the two lists reinforce each other in identifying goals, force, opportunity, support and expectations. The analysts identify ability factors among the reasons given to a much greater extent than they are selected by the respondent. Similarly, value standards were identified by the analysts from the list of reasons, while the respondents selected values so seldom, when asked if value standards were an influence, that the interviewers quit asking the question after two weeks in the field in the interest of time. Conversely, support factors were frequently omitted when listing reasons, but were in second place when the response was obtained by the direct question about support.

It would appear that both support and value standards are taken for granted. They differ, however, in that support and encouragement is recognized as an influence once it is mentioned. On the other hand, respondents are largely unaware of the value standards which operate in their lives in relation to occupational decisions even when value standards are mentioned as a specific factor.

It should be noted that the frequency of mention tends to identify some factors which are important in occupational decisions, and which should be taken into account. The fact that a factor is mentioned often does not indicate the amount of weight which it will carry in the decision. The fact that a factor is not mentioned, indicates that the respondent is not consciously aware of it. However, a factor can be operating on a very extensive basis without the respondent being consciously aware of it at all. There is considerable evidence in the study to indicate that the strong American value standard, that a family head should fulfill his provider role obligations and support himself and his family, is implicit in many of the statements and reasons given for most of the households, but it is seldom singled out as a factor for separate mention.

Figure 4.

Factors favoring a decreased dependence of the family on farming which carried some weight in the final decision. (Based on the answers of the 163 respondents to probing questions regarding each factor.)



Factors Which Oppose Decreasing the Family's Dependence on Farming as a Source of Income

It automatically follows that if a family decreases its dependence on farming as a source of income, that it must increase its dependence on some other source of income. Under the pressure of the long decline in farm income, it is not surprising that many farmers have seriously considered other alternatives. In view of the general conditions in the area, it is likewise not surprising that opportunity rivals goals for the most mentions on one list, and heads the list in which the factors are weighted separately in comparison with each other. Figures 5 and 6. The losses which might be incurred, place next. Ability would probably place third as a factor opposing a shift of dependence on farming to something else. The frequency with which habit and custom are mentioned, indicates the awareness that the proposed shift will involve a change in one's style of life, but the fact that it rates low when questions were asked about it specifically indicates that farm families are aware of it, but that it probably doesn't carry much weight in the final decision. In the main, the two lists supplement each other and identify opportunity, goals - loss, ability, and habit and custom as factors which should be viewed as barriers to a decreased dependence on farming as a source of family income.

The Decision to Increase or Not to Increase Dependence on Farming

As would be expected in an agricultural county facing declining farm incomes and feeling the impact of the agricultural revolution, the number of families that seriously considered an increased dependence on farming is far fewer than the number that considered a decreased dependence on farming. The data in this section are based on the answers of 44 respondents.

Factors Favoring an Increased Dependence on Farming

What are the factors in the situation in St. Lawrence County, which would incline a family to seriously consider increasing their dependence on farming? The data from the analyses of the reasons given indicate that two factors are mentioned much more frequently than any others. These two are goals and force. Figure 7. Ability, expectations, support, beliefs, values and opportunity follow and are fairly close together. Though the number of mentions is small for each, they are

Figure 5.

Factors opposing a decrease in the dependence of the family on farming or a source income. (Based on an analysis of the specific reasons which were given by 163 respondents.)

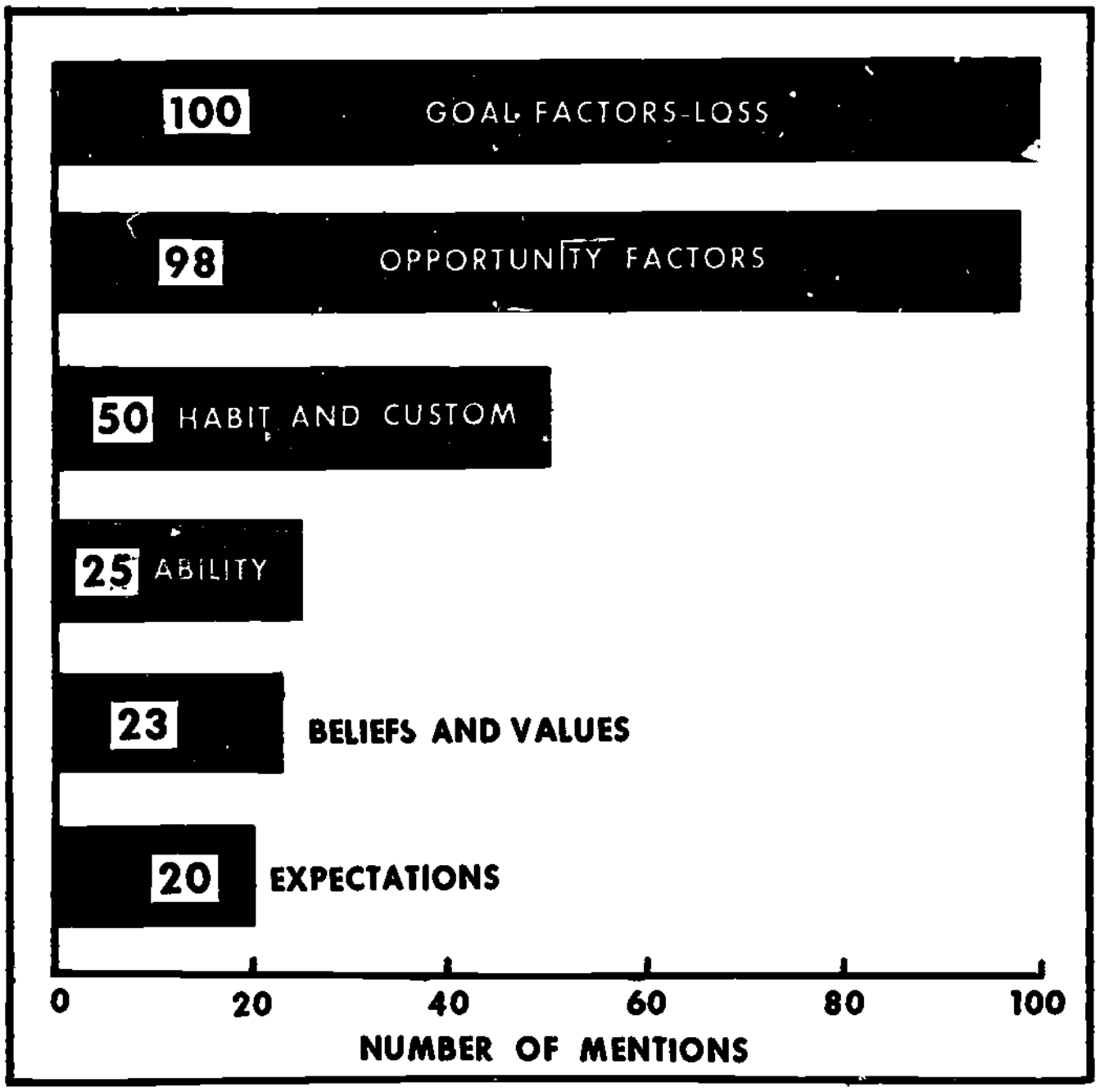


Figure 6.

Factors opposing a decrease in the dependence of the family on farming as a source of income. (Based on the answers of 163 respondents to questions which asked about each specific factor.)

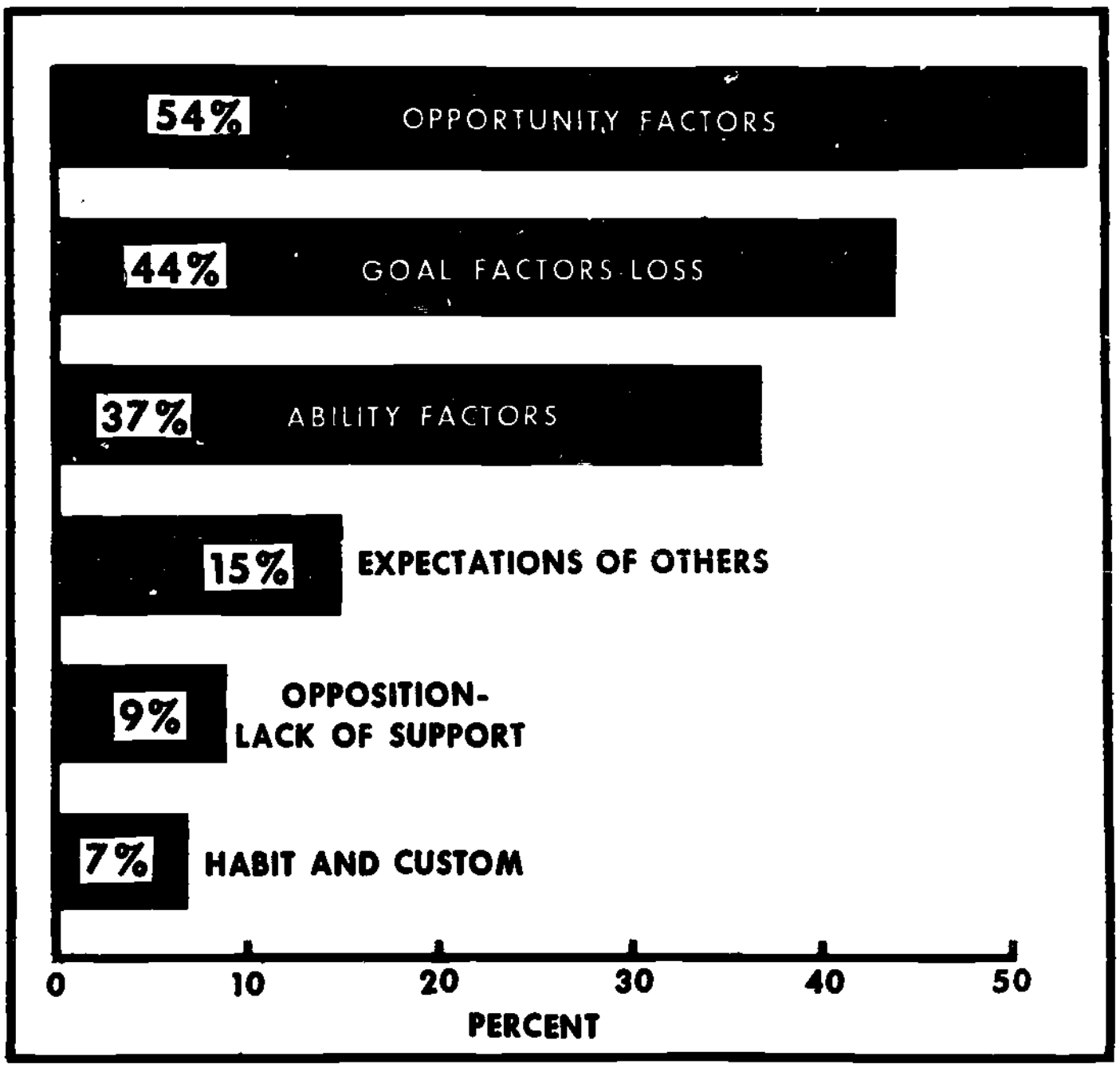
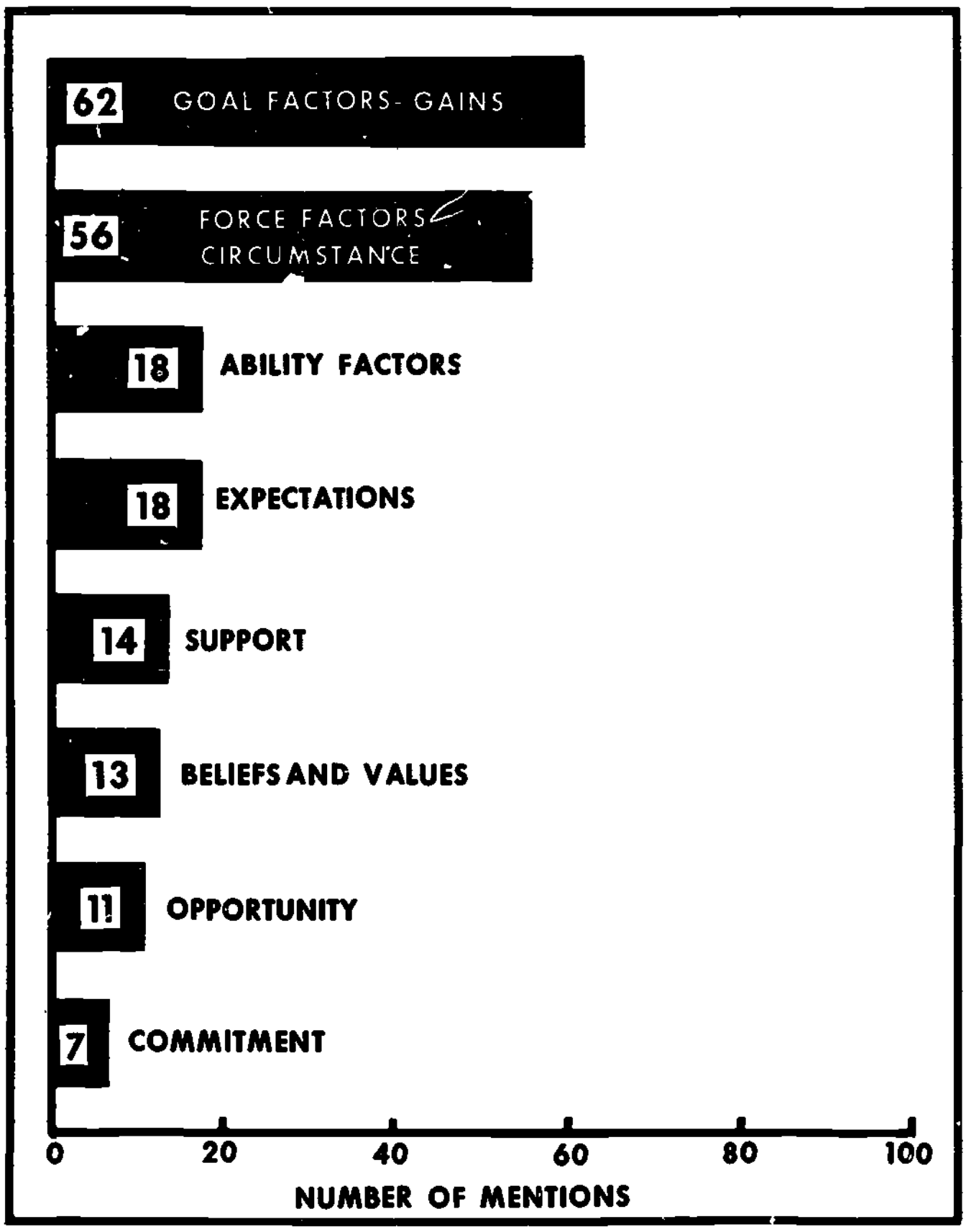


Figure 7.

Factors favoring an increased dependence on farming as a source of family income. (Based on an analysis of reasons given by 44 respondents.)



substantial when the fact that there are only 44 respondents is taken into account.

The second listing, which compares the factors with each other on a proportional basis, supplements the data already presented. In this listing, goals leads the list while support and expectations move up to about the same proportion as force. Figure 8. Opportunity follows not too far behind and ability and habit trail at the bottom of the list.

Taken together, we may conclude that the main factors which farm families are aware of as favoring an increased dependence on farming are: goals, force, support, expectations, opportunity and ability.

Factors Opposing an Increased Dependence on Farming

Only 16 of the 44 respondents considering this decision listed reasons opposing an increased dependence on farming. All 44 responded to the structured questions evaluating the influence of each factor separately. Nevertheless, the two listings tend to substantiate each other. Goals in the form of losses and opportunity rank in the top two positions for both lists. Figures 9 and 10.

Force, expectations and ability factors are present in enough instances to warrant consideration as barriers on the route to increased dependence in farming.

In summary, some of the main factors which promote change of occupation in an economically depressed area are: goals, support, force, expectation, opportunity, ability and the value that they should support themselves and their families and thus meet their provider role obligations. Some of the main factors which appear to stand in the way of increased dependence on farming are: opportunity, goals, fear of loss, ability, expectations of others and support.

Factor Dominance

One of the most important considerations in analyzing the components which enter into a decision is the dominance of the various factors when they are present. Dominant factors exert greater influence and win over less dominant factors. For this reason dominance and frequency of occurrence need to be viewed together. The respondent indicates the dominance of each factor by stating whether it had none, little, some or much influence in the decision. See Appendix B.

Figure 8.

Factors favoring an increased dependence on farming as a family income. (Based on the answers of 44 respondents to structured questions about each factor.)

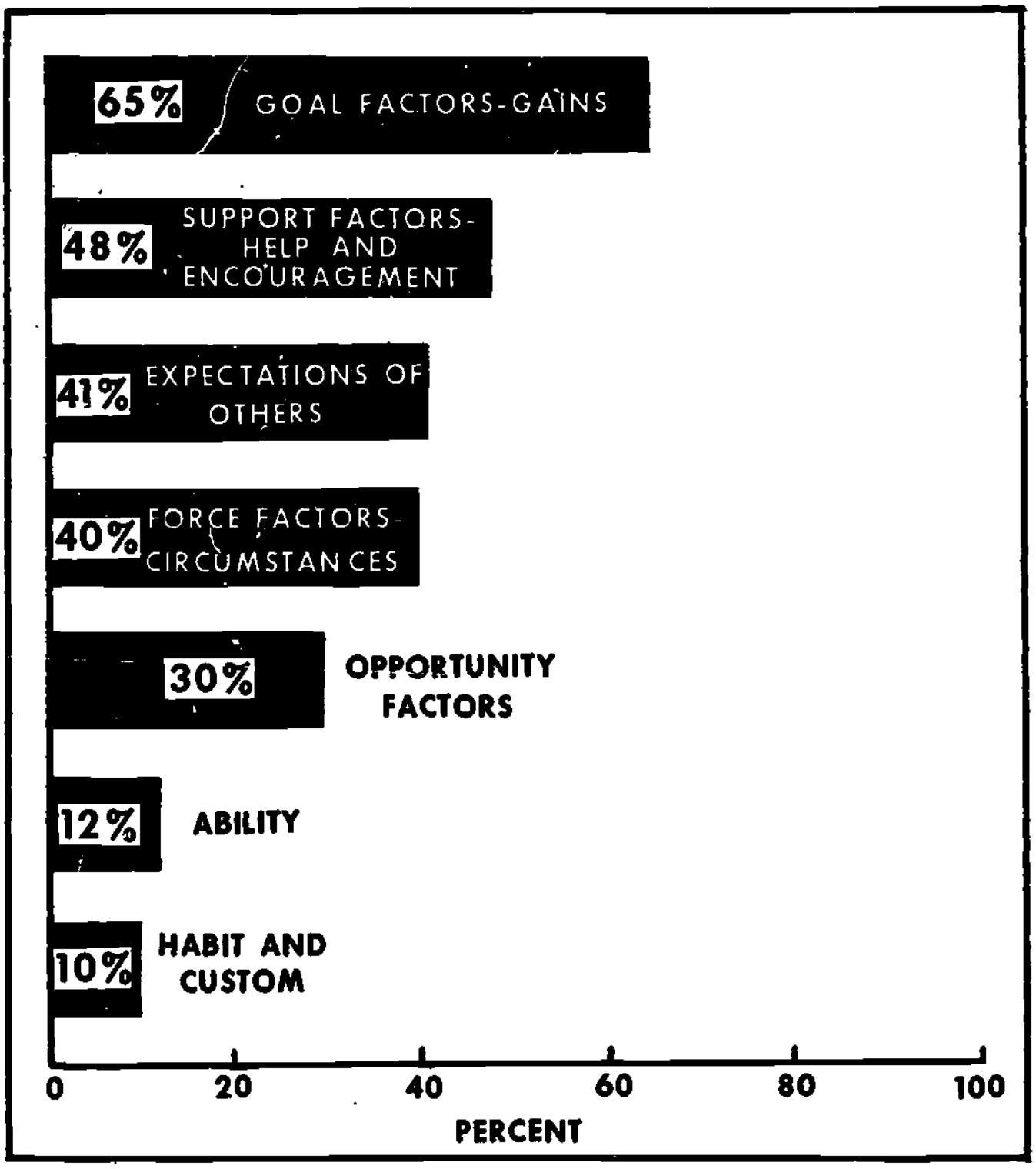


Figure 9.

Factors which oppose an increased dependence on farming as a family income. (Based on the answers of 16 respondents.)

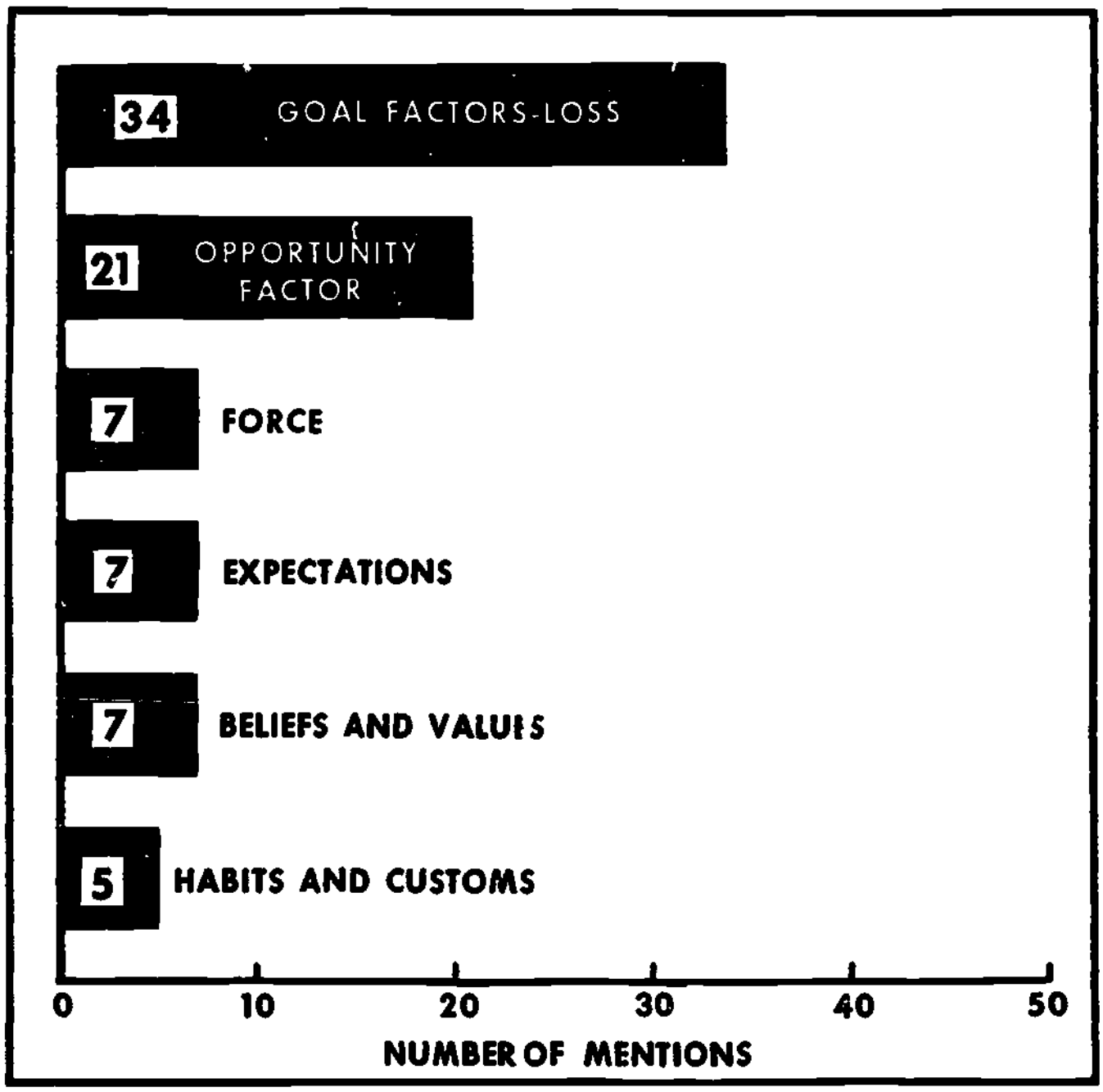
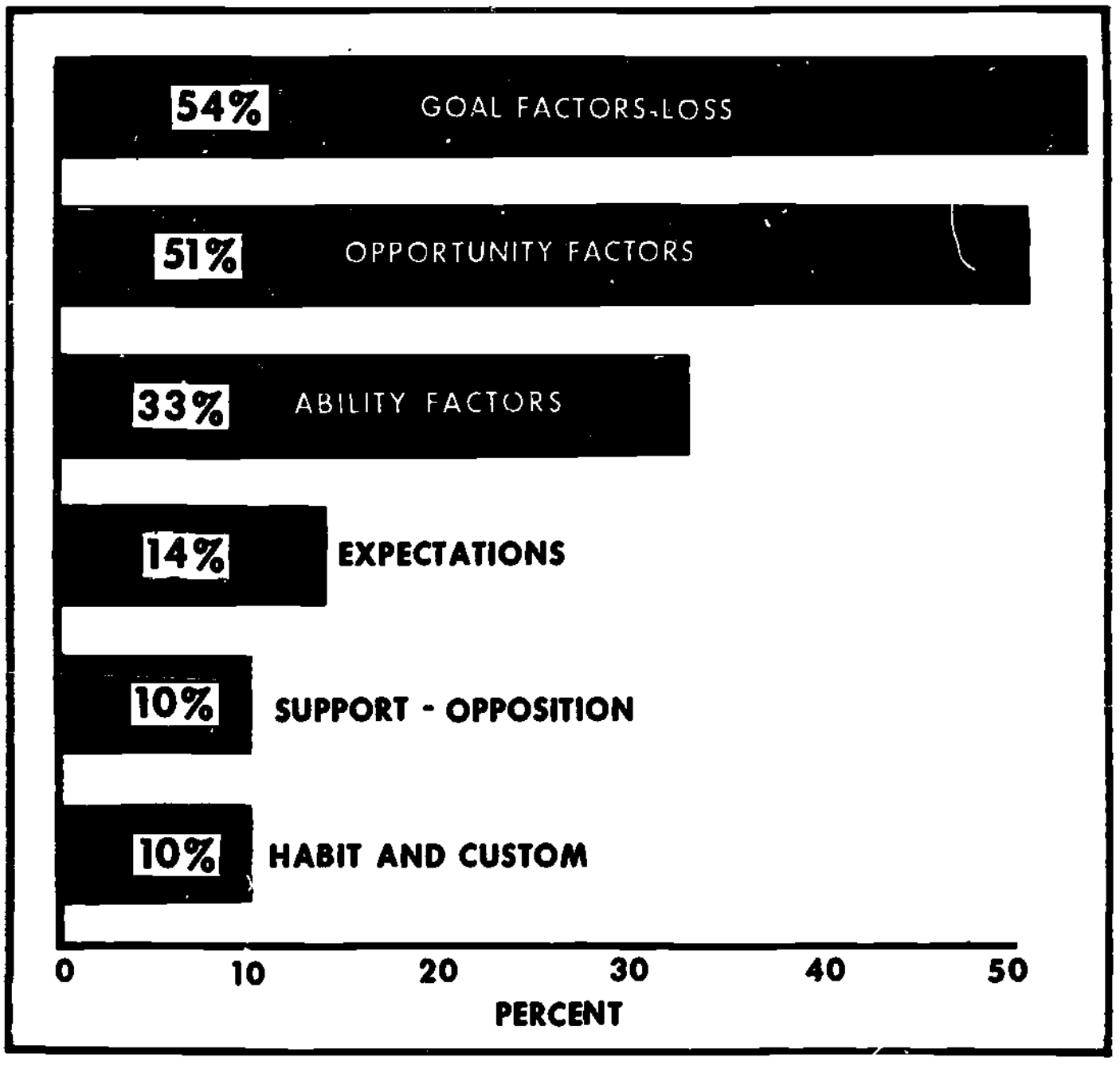


Figure 10.

Factors which oppose an increased dependence on farming as a family income. (Based on the responses of 44 respondents to structured questions which evaluate each of the factors separately.)



The two most dominant factors which promote the shift out of farming when they are present are force and commitment, followed by two other powerful influences, the expectations and support or nonsupport of others. Table 1.

Commitment, though powerful when present, is a factor only occasionally, but the other three dominant factors are frequently present. The picture is quite different for the factors which oppose the shift to less dependence on farming. Ability, opportunity, expectations and support or nonsupport are the most dominant factors when present. Force and commitment, which were dominant in promoting the shift out of farming, are on the bottom of the list when it comes to opposing the shift out of farming.

The list of factors, which are dominant in promoting increased dependence on farming, is the same as those promoting the shift out of farming except for goals which have moved from a lower middle position of dominance to a top position of dominance, both in favoring and opposing an increased involvement in farming. Habit has moved up as a dominant factor opposing an increased dependence on farming, but rarely ever enters into the situation as a factor opposing this change.

Table 1

Average Degree of Influence Which Designated Factors Are Estimated to Have Had in the Decision When They Were Present and the Estimated Frequency of Their Presence in Decisions Considering a Decrease of Involvement in Farming

Factors Favoring the Change				Factors Opposing the Change			
	Factors in Rank Order	Average Weight	Frequency Number		Factors in Rank Order	Average Weight	Frequency Number
(1)	Force	2.4	64	(1)	Ability	2.4	59
(2)	Commitment	2.3	9	(2)	Opportunity	2.2	85
(3)	Expectations	2.2	48	(3)	Expectations	2.2	24
(4)	Support	2.1	68	(4)	Support	2.1	13
(5)	Goals	2.0	116	(5)	Habit	2.0	11
(6)	Opportunity	2.0	60	(6)	Goals	1.0	69
(7)	Habit	2.0	25	(7)	Commitment	1.8	4
(8)	Ability	2.0	21	(8)	Force	1.2	4

PART III

A Consideration of Specific Factors Related to Five Occupational Decisions

The previous section presented the decisions and the factors at a very general level. This section of the report treats both the decisions and the factors influencing the decisions with a greater degree of specificity. Instead of discussing those who considered a decrease in dependence on farming, there are four more specific categories. The larger grouping is first divided into those who made the proposed change and those who did not make the proposed change. Those who made the proposed change were subdivided into three subcategories: (1) those who changed from full-time farming to part-time farming, consisting of 52 households; (2) those who changed from full-time farming to full-time nonfarm activity, consisting of 27 households; and (3) those who changed from part-time farming to full-time nonfarm activity, consisting also of 52 households. There were only 30 households which considered a change to less dependence on farming and who did not make the change. Since the number was small, this grouping was not subdivided.

There were 44 households that considered a change to an increased dependence on farming. Of these 44, all but two made the proposed change. Because of the difficulty of drawing conclusions from only two cases, this category is not presented. Because of the small number involved, the 42 households which considered increasing their dependence on farming and who did so, are treated as a single category without further subdivision.

As we view the factors which relate to these five types of occupational decisions, the reader should keep in mind the general picture in which these decisions have been taking place.

In this study, we are viewing for a brief span of years, what is happening to one small segment of farm households that are part of the larger picture of the American farm economy. These farm households are caught in the powerful tides and currents of the American Agricultural Revolution and the technological changes which are a part of it. Farm efficiency is increasing, farms and herds have been growing larger, but the real farm income of most farm families has been declining in spite of increased effort to keep up with the times. The pressure on the farm family budget has been gradually increasing. This pressure and its consequences is taking large numbers of farm households out of farming. In

the five decisions presented in this section, some of the forces and some of the stages of this shift out of farming may be clearly seen.

Decision One. The Change from Full-time Farming to Part-time Farming.

The title "The Shift from Full-time to Part-time Farming" may be misleading. In most instances, it might be more accurately described as family economic adjustment through the addition of a second occupation. In effect what most families attempt to do is to carry two full-time occupations, with the male head of the household carrying the nonfarm occupation by himself and maintaining the farm by supplementing the time he can put in on the farm with help from other household members, or from hired help. The question might well be asked: Why would a man who works hard on one full-time job, load himself down with a second job which would take all of his free time, and leave him little time to spend with his family? The answer which many farmers gave as a reason for this second job was: I had to make extra money, somehow, somewhere, to support the family and to meet obligations.

Behind the above statement and implicit in it lies one of the most powerful value standards in American society. The strength of this value standard was evidenced in data from another study which the senior author conducted in a New York Community and which included a large number of value standards.[1] A cross section of adults in the community was asked: How right or wrong would you consider his action to be if you had a married son who spends his earnings on himself and lets his wife and three children worry about their own food, clothing and shelter? The wife has taken a job to support the children.

Answers:

Very Very Right	Very Right	All Right	Neither Right Nor Wrong	Wrong	Very Wrong	Very Very Wrong
1%	1%	1%	2%	8%	11%	76%

The percentage of respondents who considered this behavior very wrong and very, very wrong was the largest of any of the fifty behaviors considered in the study. From these data, we may conclude that one of the strongest value standards in American society is that the male head of the family has the obligation to support himself and his wife and to

[1] Unpublished data on file in Department of Rural Sociology, Cornell University.

support his children until they are able to be self-sustaining. This value standard is so completely accepted and assumed by the households in this study, that it is never identified explicitly. A few statements, such as the 33 listed under value standards, clearly assume it. Many others seem also to assume it, but can be grouped more obviously under other headings.

The factors most frequently mentioned as reasons for the shift to part-time farming reflect the economic pressures, and suggest that it is a particular type of family that tries to work out its adjustment by adding a second occupation. Table 2. The reasons most frequently mentioned as favoring this type of change in the order of their frequency are: (1) Financial gain.

(2) Had to make extra money somehow, somewhere, to support the family and meet obligations.

(3) Other family members were willing to help with the farm work.

(4) Had a job opportunity.

(5) Family and friends encouraged the change.

(6) Had the abilities needed in the nonfarm job.

(7) Would gain increased security through the job benefits.

(8) Lacked the size and resources to stay in farming without another job.

(9) Family members and friends encouraged the change.

(10) The opportunity might not come again.

The reasons which stand out most clearly as opposing the addition of a second occupation are:

(1) I would have to neglect the farm.

(2) I like farming and the associated way of life.

(3) I could have remained in full-time farming.

(4) I would be working harder and would be putting in longer hours.

(5) Family and friends expected me to remain in full-time farming.

Table 3.

The fact that there was a job opportunity involving activities which the male head was able to do, and that the family members were able and willing to help with the farm work, helped to channel the adjustment response in the direction of adding a second occupation.

Table 2. Reasons for Making the Shift from Full-time Farming to Part-time Farming (N = 52)

	Number of Mentions
Goals	
1. Financial gain	53
2. Increased security through job benefits	11
3. Easier work	5
4. Like the nonfarm job	5
5. Don't have to get up so early in the morning	3
6. More free time - easier work hours	2
7. Other goals	3
Total	82
Value Standards	
1. Had to make extra money somehow, somewhere to support the family and meet obligations	33
Support	
1. Other family members willing to help with the farm work	17
2. Family members and friends encouraged the change	9
3. Able to employ some help	3
4. Inability to get help made it essential that I give up full-time farming	3
5. Other	1
Total	33
Opportunity	
1. Had a job opportunity	14
2. Opportunity might not come again	8
3. Limited opportunity in farming	3
4. Good opportunity to sell herd	1
5. Other	3
Total	29

Table 2. cont'd.

	Number of Mentions
Ability	
1. Had the skills and ability for the other job	11
2. Lacked size and resources to stay in farming without another job	9
3. Unable to continue in full-time farming because of my health	2
4. Others with one mention each	6
Total	29
Expectations	
1. Family, wife and friends expected me to make this change	12
Force	
1. Illness and poor health forced the change	4
2. Indebtedness forced the change	4
3. Lost my hired help	2
4. Circumstances forced the change	1
Total	11
Belief Orientation	
1. I was confident it was the right thing to do	7
2. The change was in line with my beliefs	3
Total	10
Self-Commitment	
1. I had committed myself to neighbors	2
Grand Total	240

Table 3. Factors Opposing the Shift from Full-time Farming to Part-time Farming (N = 52)

	Number of Mentions
Goals	
1. I would have to neglect the farm	13
2. I like farming and the associated way of life	8
3. Would be working harder and longer hours	6
4. Would like to have stayed with full-time farming	4
5. There was plenty of farm work to keep me busy	3
6. Don't like not being my own boss	3
7. Don't like being away from home every day	2
8. Others, with only one mention each	10
Total	49
Opportunity	
1. I could have remained in full-time farming	8
Abilities	
1. I had the ability and resources for full-time farming	3
2. Too much heavy work	1
3. Nonfarm job not good for my health	1
4. I lack some of the skills needed for my off-farm work	1
5. I might have been able to "hang on" in full-time farming	1
6. No longer able to work on the farm	1
Total	8
Expectations	
1. Family and friends expected me to remain in full-time farming	5
Support	
1. Family was opposed to the change	2
2. The farm would require more family help	1
Total	3
Belief	
1. Farming is a more independent way of life	1
Habit	
1. Part-time would conflict with my habit of farming	1
Value Standards	
1. In my nonfarm job, I had to work on Sunday	1
Grand Total	76

Decision Two. The Change from Full-time Farming to Full-time Nonfarming

The reasons most frequently mentioned for the change from full-time farming to full-time nonfarm activities reflect the economic pressure and clearly indicate why these families would not have elected to add a second occupation. Table 4.

Financial gain, economic security and the fact that the farm income was too small were high on the list reflecting the economic pressure. Almost equally frequent were those who indicated that circumstances had forced the change, particularly, poor health. There was not enough family help to keep the farm going, and the family was not able to obtain other help. The shift to nonfarm work was viewed as a shift to easier work with more free time. The change was encouraged and expected by family members and friends.

The pressures to leave farming were obviously sufficient to take precedence over the fact that most of the family heads in this grouping express a strong liking for farming and the way of life associated with it. Table 5.

Decision Three. The Change from Part-time Farming to Full-time Non-Farm Activity

The adding of a second occupation to farming tends to be a temporary rather than a permanent adjustment for most farm families. The factors which end this type of adjustment are evident in the reasons given for the shift from part-time farming to full-time nonfarm activity. Table 6. Financial pressure was not as evident as when the second occupation was added. The financial loss was not a major problem for many, as they report the farm was not providing very much for the family income. While financial reasons were important, another cluster of reasons presents a stronger influence in directing the shift out of part-time farming. Poor health, unable to do two jobs, loss of family help, inability to obtain help and force of circumstances such as indebtedness, loss of facilities, hired help quit, and called into the Armed Forces presented situational circumstances which practically forced these families to give up the maintenance of two occupations as a type of adjustment. Under these conditions, family members and friends encouraged and expected the change to a single occupation.

Table 4. Reasons for Making the Shift from Full-time Farming to Full-time Nonfarming (N = 27)

Goals	Number of Mentions
1. Financial gain	11
2. Economic security from nonfarm job and accompanying benefits	9
3. Farm income was too small	8
4. Easier hours and more free time in nonfarm work	6
5. Gain satisfaction	4
6. Didn't want to incur a heavy debt to stay in farming	3
7. Easier work	2
8. Other	2
Total	45
Support	
1. Family and friends encouraged the change	8
2. Not enough family help to keep the farm going	7
3. Unable to get help	4
4. Received help from family members in making change	3
5. Too much government interferences	1
Total	23
Ability	
1. Lacked size and resources to stay in farming	8
2. Unable to do all of the work that needed to be done	4
3. Unable to make enough to hire needed help	3
4. Lacked knowledge of dairy farming	2
5. Had the skills for the nonfarm job	2
6. Farming was bad for my health	2
Total	21

Table 4. cont'd.

	Number of Mentions
Opportunity	
1. Opportunity to obtain job	4
2. Opportunity might not come later	3
3. Little or no opportunity in farming	2
4. Opportunity to sell	2
5. Had an alternate use for the land	1
6. Thought I would get a job any time	1
Total	13
Force	
1. Poor health forced change	10
2. Circumstances forced change	1
3. Amount of work forced change	1
4. Unable to meet mortgage payments	1
Total	13
Belief Orientations	
1. Was confident the change was right	8
2. The change was in line with my beliefs	1
Total	9
Expectations	
1. Family members and friends expected me to make the change	7
Value Standard	
1. Had to make more money somehow	3
Grand Total	134

Table 5. Factors Opposing the Shift from Full-time Farming to Full-time Nonfarming (N = 27)

Goals	Number of Mentions
1. Like farming and the associated way of life	15
2. Would lose the security of the farm	4
3. Would lose the farm produce	3
4. Would lose on a lot of time and effort I had invested in the place	3
5. Would mean a decrease in income	2
6. Would have to neglect the farm	2
7. Others, which are mentioned only once each	6
Total	35
Belief Orientations	
1. Farming is a more independent way of life	5
2. Farming is healthy work	3
3. The farm is a good place to rear children	1
Total	9
Opportunity	
1. I could have remained in farming	4
2. It's hard to get a buyer who is able to pay	1
3. I could have made the change at some later time	1
Total	6
Ability	
1. I knew only farming	2
2. I had the abilities and resources for full-time farming	1
3. I was uncertain of my ability physically to do a different type of nonfarm job	1
4. I lacked the education to get a good job	1
Total	5

Table 5 cont'd.

	Number of Mentions
Expectations	
1. My family and friends expected me to stay with farming	5
Support	
1. My family was opposed to the change	2
2. My neighbors and friends said they thought I would be foolish to leave farming	1
Total	3
Habit	
1. My whole way of life was changed	1
Value Standard	
1. In my nonfarm job I had to work on Sunday	1
Grand Total	65

Table 6. Reasons for Making the Shift from Part-time Farming to Full-time Nonfarming (N = 52)

Goals	Number of Mentions
1. Financial gain	25
2. Farm only providing a small income	18
3. More free time - easier hours	9
4. Milk and livestock prices too low	8
5. Didn't like farm work	7
6. Gain increase & satisfaction for self and family	6
7. Wanted to keep the security of the nonfarm job	4
8. Wife was tired of farm work	2
9. Easier work	2
10. Didn't want to go into debt again	2
11. Others with one mention only	4
Total	87
Ability	
1. Unable to do two jobs	14
2. Farm too small and lacked adequate resources	14
3. Unable to do farm work because of health	7
4. Had skills for the nonfarm job	3
5. Lacked knowledge about farming	2
6. Other ability factors mentioned once each	7
Total	47
Support	
1. Loss of family help	13
2. Unable to get help	8
3. Family and friends encouraged change	7
4. There were other relatives who wanted to take over the farm	3
5. Wife was unable to do the farm work	3
6. Other	1
Total	35

Table 6. cont'd.

		Number of Mentions
Force		
1. Poor health		16
2. Force of circumstances		7
3. Indebtedness forced change		5
4. Loss of facilities		2
5. Hired help quit		2
6. Had to go into the Armed Forces		2
7. Forced out by the price squeeze		1
	Total	35
Opportunity		
1. Opportunity of a job		6
2. Little opportunity in farming		5
3. Opportunity to sell farm		4
4. Opportunity might not come again		4
5. Others with only one mention each		3
	Total	22
Belief Orientations		
1. Was confident that the change was right		10
2. Change was in line with my beliefs		3
	Total	13
Expectations		
1. Family and friends expected me to make the change		10
Value Standards		
1. I had to have extra money		5
Self-Commitment		
1. I had committed myself to the neighbors		2
	Grand Total	256

The shift was made with considerable reluctance, however. Most respondents expressed a strong liking for farming and its associated way of life. They were reluctant to take a loss on their investment, to lose the farm produce for the family and to accept a reduced total income. Table 7.

These data suggest that the two-occupation adjustment to the economic pressure of the time is a temporary and unstable solution. The factors which make it possible -- good health and additional family help from the wife, children and other family members -- change in time. Changes in these factors render the family unable to maintain the two-occupation adjustment. Faced with this situation, the family gives up farming. The shift from full-time farming to full-time nonfarming has thus been made in two stages rather than one.

Decision Four. Decision Not to Decrease the Family's Dependence on Farming

There were thirty families which decided not to change to a decreased dependence on farming. Some of these thirty were full-time farmers and some were part-time farmers carrying two occupations. Because the number was small, the category was not subdivided. As a result, some of the reasons apply more to full-time farming than to part-time farming while for others the reverse is true.

Most respondents felt they would have gained financially, would have had more free time and easier work if they had made the change. Table 8. Many had poor health and were encouraged to change by their families and their friends. In the face of this combination of factors, why did they then not make the change as most others with a similar cluster of influences did? The forces opposing this change are revealed in Table 9.

The proportion who like farming, is no greater than for those who made the change. The data indicate that a sizeable proportion did not perceive of themselves as able to make the change. They said, "The only thing I know is farming." Another sizeable proportion reported that they were unable to obtain any other work and a few indicated that they had poor health, or that they couldn't handle two jobs. Thus, it appears that inability to do other work and lack of

Table 7. Factors Opposing the Shift from Part-time Farming to Full-time Nonfarming (N = 52)

	Number of Mentions
Goals	
1. Like farming and the associated way of life	28
2. Would have to take a loss on my investment	8
3. Would lose produce for family consumption	7
4. Would mean a decrease in income	7
5. Loved cows and liked to work with them	7
6. Had built up a good dairy herd	5
7. Meant loss of steady secure income	3
8. I like to be my own boss	2
9. Others with one mention only	5
Total	72
Ability	
1. I lost the dairy I had built	2
2. I lacked resources for the nonfarm work	2
3. I had all the resources to run a dairy	1
4. I don't like to deal with the public	1
5. Other income made the change possible	1
Total	7
Opportunity	
1. I could have stayed in farming	5
2. I might have had a better price if I had waited to sell	1
Total	6
Belief	
1. Farm is a better place to rear children	2
2. Farming is a more independent way of life	2
3. The farm is a healthier place to live	1
4. I was not confident that the change was the right thing to do	1
Total	6

Table 7 cont'd.

Expectations	Number of Mentions
1. My family and friends expected me to stay with the farm	4
Support	
1. My family was opposed to the change	2
Value Standards	
1. Selling the farm was in conflict with my belief in the value of work	1
Grand Total	98

Table 8. Factors Favoring a Decreased Dependence on Farming in a Decision for Which the Final Outcome Was Not to Decrease the Family's Dependence on Farming (N = 30)

Goals	Number of Mentions
1. Financial gain	25
2. More free time - easier work hours	11
3. Easier work	5
4. Wanted to take a vacation	4
5. Farm producing very small income	2
6. Economic security from nonfarm job	2
7. Interested in the nonfarm job	2
8. Wanted son to have a chance on the farm	2
9. Others with one mention only	3
Total	56

Ability	
1. Full-time farming was too hard on health	6
2. Lack of resources	5
3. Unable to do two jobs	3
4. Too old to work now	3
5. Had skills for the other job	3
6. Needed more rest	1
Total	21

Support	
1. Family and friends would support change	12
2. Unable to obtain help	6
3. Not enough family labor	2
4. Family unable to help as much as before	2
Total	21

Table 8. cont'd

	Number of Mentions
Opportunity	
1. Had an opportunity to sell at a good price	3
2. Opportunity might not come again	2
3. Declining opportunities in farming	2
4. Had the opportunity to stay on in farming	2
5. Had a better alternate income	2
6. Had the opportunity for a nonfarm job	1
Total	12
Force	
1. Health was poor	11
2. Amount of work forced the change	1
Total	12
Expectations	
1. Family members expected me to make the change	6
Belief Orientations	
1. Was confident it was the right thing to do	2
2. The change was in line with my beliefs	1
Total	3
Grand Total	131

Table 9. Factors Opposing a Decreased Dependence on Farming for Farm Households Which Considered the Change But Who Had Not Changed at the Time the Survey Was Being Conducted (N = 30)

	Number of Mentions
Goals	
1. Like farming and the associated way of life	10
2. Would be taking a loss on my life's work and investment	8
3. The change would be financially risky	6
4. Would be giving up the security which the farm provides	5
5. Wouldn't be my own boss	3
6. Would lose financially	3
7. Others with one mention only	5
Total	40
Ability	
1. The only thing I know is farming	12
2. Unable to get other work	10
3. Couldn't do two jobs	2
4. Poor health	2
5. Don't have time to work out	1
Total	27
Opportunity	
1. Opportunity to remain in farming	5
2. Difficult to sell farm at a fair price	3
3. Too much competition for my nonfarm job	1
4. Difficult to get someone to take care of the farm	1
Total	10
Expectations	
1. Family and friends expected me to stay on with farming	7
Habits	
1. The change would be in conflict with my habits and the way of life I have developed	5

Table 9 cont'd.

	Number of Mentions
Force	
1. I lost the nonfarm job I was planning on	2
Support	
1. The family were opposed to the change	1
2. My boss wanted me to stay on in my job	1
Total	2
Belief Orientation	
1. Farming is a nice independent way of life	1
Grand Total	94

opportunity to obtain nonfarm jobs are major forces in the no change pattern. On the other hand, their liking for farming, the desire not to take a loss on the farm, the desire not to risk a financial loss and the loss of the security of the farm and the additional fact that they had the choice and opportunity to stay on with things as they were, all encouraged and rationalized the no change solution.

Decision Five. The Shift to an Increased Dependence on Farming

When the major direction of changes in the area is toward a decreased dependence on farming, what are the factors which explain the counter movement to an increased dependence on farming? Almost half of the 42 respondents indicated that under the circumstances which they faced, an increased dependence on farming represented their best economic alternative. Table 10. They felt they could make as much or more money farming than by the other alternatives available to them. Approximately one-fourth felt they would gain in economic security by the shift. A similar number were influenced by their liking for farming and its associated way of life.

The opportunity factor had a two-way influence for this grouping. One-fourth said their nonfarm work terminated and four reported that there were no nonfarm jobs available. In contrast to the lack of opportunity in nonfarm employment, five indicated that they already had a farm and the essential resources, and six others indicated that the opportunity to obtain a farm was an important factor in increasing their dependence on farming. Almost half indicated that circumstances of various types had forced the change. A large proportion indicated that the encouragement and expectations of the family were important factors in bringing about the shift.

The change toward increased dependence on farming was not welcomed by all the respondents. Approximately one-third indicated that they had liked their nonfarm jobs. To a similar number the change represented a loss of income. Table 11. To others it meant added costs for farm resources. Approximately a third were faced with the choice that they could have kept their nonfarm job had they chosen to do so.

Table 10. Factors Favoring an Increased Dependence on Farming (N = 42)

Goals	Number of Mentions
1. Could make as much or more money farming	20
2. I like farming and the associated way of life	11
3. Would provide greater security	10
4. Bought it to provide a retirement income	4
5. Would gain free time and work fewer hours	5
6. Would be able to spend more time at home	4
7. Wasn't getting enough money from the nonfarm job	3
8. I would be able to do a better job on the farm	3
9. I have too much invested in the farm to quit	3
10. Family would have farm produce	2
11. Family would gain satisfaction	2
12. I would be my own boss	2
13. This way I could stay in town and work locally	2
14. Others with one mention only	8
Total	79
Opportunity	
1. Nonfarm job terminated	10
2. Had the opportunity to obtain a farm	6
3. Already had a farm and resources	5
4. There were no nonfarm jobs available	4
5. Had the opportunity to sell the nonfarm business	4
6. Opportunity to sell might not come again	3
7. Others mentioned once only	2
Total	34
Support	
1. Family encouraged and wanted me to change	23
2. Father and son worked together on a bigger farm	3
3. There was a loss of family help on the farm	3
4. There was an increase of family help	2
5. Others with one mention only	2
Total	35

Table 10. cont'd.

	Number of Mentions
Force	
1. Health or age forced me out of my nonfarm work	5
2. Circumstances forced the change	5
3. Lost my nonfarm employment	4
4. Need for more money forced me back into farming	3
5. Couldn't carry two jobs	2
6. My farm enterprise was too small to support the family	2
Total	21
Ability	
1. Was working too many hours on two jobs	7
2. Couldn't earn enough to hire help	3
3. I knew how to farm	3
4. I could make money farming	2
5. Others with only one mention	4
Total	19
Belief Orientations	
1. I was confident the change was the right thing to do	10
2. The farm is the best place to rear a family	3
3. Farming is good, honest work	2
4. Family members would be better off with the father at home	1
5. The change was in line with my beliefs	1
Total	17
Expectations	
1. The family expected me to make the change	15
Commitment	
1. I was committed to make the change	4
Grand Total	222

Table 11. Factors Opposing an Increased Dependence on Farming (N = 42)

	Number of Mentions
Goals	
1. Liked my nonfarm job	13
2. Loss of extra income	12
3. Farming would cost extra money for resources	4
4. Nonfarm work was easier and had better hours	3
5. Loss of security benefits as part of the job	2
6. Others, with one mention	6
Total	40
Opportunity	
1. Could have kept the nonfarm job	10
2. Could have kept both jobs	2
3. Could have made more money in the nonfarm job	2
Total	14
Force	
1. Financial reverses forced me back into farming	4
Support	
1. Some family members and friends opposed the change	3
2. Some friends had opposed my working off the farm	1
Total	4
Expectations	
1. Family and friends did not expect me to change	3
Ability	
1. Farming would require too much of a debt load	1
2. Lacked capital and livestock for farming	1
3. Had the abilities for otherwork	1
Total	3

Table 11 cont'd

Belief Orientations	Number of Mentions
1. Don't believe farmers should work off the farm	1
2. The change would be contrary to my belief, as I would be making less money	1
Total	2
Habit	
1. I had always worked	1
Grand Total	71

PART IV

The Relevant Clusters of Cognitions Which Enter into an Occupational Decision

In the last section, the main reasons which influence different types of decisions were presented. In this section, the way in which these factors are combined into a small cluster of relevant components for each decision maker is illustrated.

Examples are given for the different kinds of decisions, to illustrate the variety of ways in which factors are combined into a relevant cluster of components each with a relative weight assigned by the respondent. The illustrations tell very much the same story, so the general observations which relate to all or several cases will be called to the attention of the reader.

The reasons given by respondents who considered an occupational change, clearly indicate that Proposition B on page 5 is valid for occupational decisions. This proposition states that "every social action is founded on a small cluster of relevant cognitions." For all those who considered a decreased dependence on farming, there was an average of 4.9 reasons given favoring the action, and an average of 2.2 reasons opposing the action. For household heads who considered an increased dependence on farming, there was an average of 5.1 reasons favoring the change, and 2.2 reasons opposing the change. In each case the total is a small cluster of relevant components. The weights given and the direction favoring and opposing the action support proposition B - III, page 9 which indicates that "each component in the cluster has direction and loading." For household heads who considered a change and who made the change, the average number of reasons favoring the change was 4.9, and the average number of reasons opposing it, 2.0. In contrast for those who considered a change but who did not make the change, the average number of reasons favoring the change was 4.1, whereas, the average number of reasons opposing the change was 3.6. There were a few cases considering a change at the time the survey was made. The number of reasons favoring and opposing the change for these cases was approximately equal.

These data give support for the Theory of Balance (Heider 1958) Cognitive Dissonance, (Festinger 1957) and Consistency (Osgood and Tannanbaum 1955). It indicates that after a decision has been made, the decision maker rearranges his data or facts. The data suggest that he

drops off or de-emphasizes the inconsistent reasons and strengthens the weighting of the consistent reasons. This automatically introduces an error which is built into all studies of decisions in which the data are obtained after the decisions are made. The amount of data and cognitive shift following a decision deserves detailed study.

A general theory of consistency indicates that there are at least three general types of consistency actions which a respondent can take. He can reorganize his cognitions to fit his actions and the data about his situation. He can screen and select data or facts about his situation such that the cluster of data which he considers relevant is consistent with his relevant cluster of cognitions and his relevant cluster of actions. Lastly, he can bring about a change in his actions which make his present actions consistent with his relevant cluster of data, his relevant cluster of cognitions and with his relevant cluster of other actions (Reeder 1964).

In the data presented in this study, there is considerable indication of taking courses of action consistent with the relevant cluster of data and with the meanings or cognitions which these facts hold for the respondent. There is considerable evidence which indicates a selection of data consistent with a proposed action or with a decision which has been made. The third type of behavior, a reorganization of cognitions, is easily inferred from the listing of reasons and from the weight assigned to these reasons. These data lend support to a general theory of consistency.

Full-time Farmers Who Shifted to Part-time Farming by Adding a Second Occupation.

Case #1	Weight
A. Things favoring the change in work	
1. Needed increased income	10
2. Lacked the size of herd and machinery to stay in farming without a nonfarm job.	5
3. The wife thought I should get another job	4
4. Boys were old enough to help do farm work	2
5. Gain security through nonfarm job and other fringe benefits	0
B. Things against the change in work	
1. Would like to stay at farming full time, would lose satisfaction	10
Case #2	
A. Things favoring the change in work	
1. Losing money at farming forced change	10
2. Would gain income	10
3. Would gain security from good steady job	10
4. Son could do farm work	9
5. Farm was too small	8
6. Had previous experience working at _____	5
B. Things against the change in work	
1. Hated to give up the family farm, which could happen if I went to work at _____	8
2. Might be able to "hang on" in farming without changing	5
Case #3	
A. Things favoring the change in work	
1. Financial gain	10
2. Farm was too small	10
3. Money needs forced change	10
4. Felt he had abilities to make change	9
5. Wife would encourage change	8
6. Was in line with beliefs	8
7. Felt he could be a good _____	5
8. Didn't feel opportunity would be around later	5
9. Was confident in making change	5
10. It was good, honest work	4
11. There was the opportunity to change	3
B. Things against the change in work	
1. Father and mother did not expect change	6
2. Parents opposed to change	6
3. Had abilities for full-time farming	6
4. Would be more work	4
5. Less time to spend on the farm	4
6. There was some opportunity in farming	3

Full-time Farm Operators Who Made the Big Jump to Full-time Nonfarm Activity.

Case #1	Weight
A. Things favoring the change in work	
1. Needed income - not making anything at farming	10
2. To stay in, we needed to invest a great deal	8
3. Didn't have resources needed to invest in the farm	6
4. Shorter hours in nonfarm work	4
5. Would have to hire help to stay in farming - not feasible	3
6. Wife working - security if I lost job at Alcoa	3
7. Wife didn't like farming	2
B. Things against the change in work	
1. Liked farming and associated way of life	5
2. Shift work at plant for rest of working days - not a normal, regular life	5

Case #2	
A. Things favoring the change in work	
1. Couldn't afford to hire help	10
2. Two of us couldn't do it	10
3. Prices we have to pay are too great compared to prices we get	10
4. No kids to help on farm	9
5. Government enters in too much	9
6. Income on farm too poor for household	8
7. Working too many hours on farm	8
B. Things against the change in work	
1. Hard to get a person who would pay for farm	10
2. Like farming - clean living	10
3. Healthy living	9
4. I like to be my own boss	9

Case #3	
A. Things favoring the change in work	
1. Bad heart	10
2. Couldn't hire good help (couldn't afford it)	10
3. Couldn't farm it alone	5
4. Shorter hours	1
B. Things against the change in work	
1. Accumulated capital	5
2. Knew only farming experience	3
3. Like farming; conflict	3
4. Could lose income	1

Full-time Farm Operators Who Made the Big Jump to Full-time Nonfarm Activity. cont'd.

Case #4	Weight
A. Things favoring the change in work	
1. Wife wanted to quit for quite a while	10
2. Wife had a disabling illness	8
3. Had a chance to sell	5
4. Wife and I were alone	5
5. Quit and take it easy for a while	5
B. Things against the change in work	
1. He likes farming	No weights here
2. He likes cows	

Part-time Farm Operators Who Gave Up Farming and Became Fully Dependent on Nonfarm Employment for a Livelihood.

Case #1	Weight
A. Things favoring the change in work	
1. Farming part time didn't pay because the hired labor costs too much	10
2. Hired help had quit at the time	10
3. All factors combined to force the change	10
4. It was difficult to hold two jobs	9
5. Farming takes too much time	8
B. Things against the change in work	
1. Dairy could have brought more income	10
2. Would lose some income	[illegible]
3. Had invested a lot of time and energy in improving the place	8
4. Loved farming itself	8
5. Had a very high producing dairy	7
6. Farm could teach son responsibility	7
7. It was in conflict with my belief in the value of work	7

Case #2	
A. Things favoring the change in work	
1. Didn't have help from the family	10
2. Wanted to slow down	10
3. Got discouraged in general	10
4. Family would gain satisfaction from change	9
5. Both wife and I were in poor health	8
6. Family lacked resources for farming	8
7. Didn't have enough money for help	7
B. Things against the change in work	
1. Liked farming	0
2. Father and mother did not expect change	0
3. Parents opposed to change	0

Part-time Farm Operators Who Gave Up Farming and Became Fully Dependent on Nonfarm Employment for a Livelihood, cont'd.

Case #3		Weight
A.	Things favoring the change in work	
1.	Not making any money	10
2.	Unable to do two jobs, it was too much	10
3.	Not enough family labor	10
4.	Family encouraged the change	10
5.	Felt we would stop wasting money if we left the farm	10
6.	Lacked a knowledge of farming	10
7.	Lacked health for large-scale farming	10
8.	Circumstances of losing money forced the change	10
9.	Farm land was poor	5
10.	Family and friends expected change	5
11.	Was confident change was right	5
B.	Things against the change in work	
1.	Like farm animals	0

Part-time Farm Operators Who Changed to Full-time Farm Operators.

	Weight
Case #1	
A. Things favoring the change in work	
1. Wife's sickness	10
2. Circumstances forced the change	10
3. Committed to make change	9
4. Age was a factor (Couldn't do it all)	8
5. Wife encouraged change at the time so we could be together	8
6. Wife would gain satisfaction and would be better off if I spent more time at home	8
7. Bought other farm	5
8. Am confident that change was right	5
B. Things against the change	
1. Enjoyed nonfarm work, got to know people	8
2. Reduced income	4
Case #2	
A. Things favoring the change in work	
1. Seaway left no further work	10
2. Tried to get work in my nonfarm job in mines and other places, but all refused me	10
3. Forced back into farming - didn't know how to do anything else but farming and my particular non-farm job	10
B. Things against the change in work	
1. Liked the union	9
2. Good money	8
3. Liked my nonfarm job	8
4. Shorter hours	5
Case #3	
A. Things favoring the change in work	
1. Moved over to bigger farm	10
2. Son got out of school - so wanted to get bigger farm	10
3. Got hurt on my nonfarm job	10
4. Son wanted to farm it	9
5. Make it possible for son to stay at home	9
6. Made agreement with owner of farm, couldn't work out	8
7. Whole family wanted me to give up the nonfarm job	7
8. Children all helped on new farm	6
9. Gain in income and satisfaction	5
B. Things against the change in work	
1. It meant the loss of some extra money	9

Part-time Farm Operators Who Changed to Full-time Farm Operators, Cont'd.

Case #4	Weight
A. Things favoring the change in work	
1. Couldn't keep up farm and job both	10
2. Farming looked like the best of the two	10
3. Had a lot invested in farm	10
4. Committed to change because of the investment in the farm	10
5. Family would gain satisfaction	5
6. Was confident that change was right	5
7. Lacked education to advance at Alcoa	4
8. Family expected change	3
9. Family would support and help if I changed	3

Case #5	
A. Things favoring the change in work	
1. Working 20 hours per day with both milking cows and doing job too	10
2. Farm was paying better than plant at that time	10
3. Too much invested in farm to quit	7
B. Things against the change in work	
1. Making pretty good money at Alcoa	DK
2. Good retirement plan at plant	3
3. Wife wished I would have quit farming	0
4. Much opportunity to remain on at the plant	0

Case #6	
A. Things favoring the change in work	
1. Too old to run farm and do nonfarm job also	10
2. Wife was ill	10
3. Couldn't afford to hire help to take my place while I was away	9
4. Wife expected me to drop job	5
B. Things against the change in work	
1. Making a little extra money	5
2. Much opportunity to remain in part-time farm work	0

Part-time Farm Operators Who Changed to Full-time Farm Operators cont'd.

Case #7	Weight
A. Things favoring the change in work	
1. Satisfaction - your own place	10
2. Hired help would have taken nonfarm wages	10
3. Had been building dairy up right along	10
4. Had all the work I could handle on farm	7
5. Slack at the plant and if left it would give other men a chance	6
6. Could exchange work with neighbors on machinery	0
B. Things against the change in work	
1. Employer wanted me to stay another year	10
2. Liked the nonfarm work	10
3. Would lose extra income	5
4. Opportunity to remain on job	5

Case #8	
A. Things favoring the change in work	
1. Hired man was going to leave	10
2. Nonfarm work was hard labor	10
3. Too much work in both jobs	10
4. Age forced change	10
5. Family would gain satisfaction, less hectic life	8
6. Could make as much in full-time farming	5
7. Family expected change	3
8. Family would help and support if there was change	2
B. Things against the change in work	
1. Some income might be lost by changing	8
2. Had the opportunity to stay in 2 jobs	5

Respondent Who Changed from Full-time Nonfarm Activity to Full-time Farming.

Case #1	Weight
A. Things favoring the change in work	
1. Always liked farm work	10
2. Reassigned to unpleasant kind of work in my nonfarm job	10
3. Opportunity to buy farm	10
4. Could handle the farm work	10
5. Could make money at farming	8
6. Could be more independent	6
B. Things against the change in work	
1. Had the opportunity to stay in the nonfarm work	5

Farm Operators Who Considered Decreasing Their Dependence on Farming but Who Did Not Do It.

	Weight
Case #1	
A. Things favoring the change in work	
1. Lacked help for farm work	10
2. Loss of off-farm work	5
3. Could have sold the farm	5
4. Family would encourage change	5
B. Things against the change in work	
1. Had a home and had it paid for	10
2. Making a good living	10
3. Lack education for good job	10
4. Change was in conflict with our way of life - always farmed it	10
5. There was a chance to stay here	8
Case #2	
A. Things favoring the change in work	
1. Too long hours to make a living in farming	10
2. Income higher at nonfarm job	10
3. More leisure at nonfarm job	10
4. Farm help not steady	10
5. Milk prices very low	10
6. Poor return on money invested in farming	10
B. Things against the change in work	
1. Not much available in the way of nonfarm work	10
Case #3	
A. Things favoring the change in work	
1. Extra income	10
2. Easier if I had the nonfarm job	8
B. Things against the change in work	
1. Wouldn't be able to keep farm up	10
2. Whole family would be against me taking this job	10
3. Don't have time to work out	9
4. Change in habits	8
5. Would not like to work for someone else	5
6. Plenty of opportunity to remain as a full-time dairy farmer	0

Part-time Farm Operators Who Considered Giving Up Their Nonfarm Employment But Who Did Not Do It.

	Weight
Case #1	
A. Things favoring the change in work	
1. Like farming	9
B. Things against the change in work	
1. Need clear money for family expenses	10
2. Like my nonfarm work	8
3. Investment in a 40 cow operation would have been necessary	5
Case #2	
A. Things favoring the change in work	
1. Would let me work fewer hours	9
2. Farming would be more profitable if set up this way	6
3. Would just as soon do farm work as my nonfarm work	2
B. Things against the change in work	
1. Can't get good help to work on farm	10
2. Don't know whether can get profit from milk in the future	8

Farm Operators Who Were in the Process of Considering a Reduction in Their Dependence on Farming at the Time They Were Interviewed.

Case #1	Weight
A. Things favoring the change in work	
1. Can't do the work - poor health	10
2. Kids don't want to stay on the farm	10
3. Can't hire help - costs too much	10
4. Price of milk very low	10
B. Things against the change in work	
1. Like the farm	10
2. Can't do other work - would lose our only source of income	7

Case #2	
A. Things favoring the change in work	
1. Health is poor	10
2. Want to give son a chance	10
3. Lack health for farming	10
4. Family would encourage change	8
5. There is an opportunity to stay here	3
B. Things against the change in work	
1. Lack education and experience for off-farm work	10
2. Might not make as much on another job	8
3. Leaving farming will mean a complete change in my way of life	8
4. Family members do not expect this change	3

Case #3	
A. Things favoring the change in work	
1. Wouldn't be tied down to the farm	5
2. Physical labor wouldn't be so much	3
3. Health is only fair	3
B. Things against the change in work	
1. Hate to lose my lifetime's work	10
2. Have a lot invested in the place that would be lost if the place was sold	10
3. Would lose independence	9
4. Can't hold down two jobs	8
5. Life would be completely changed if I left farming	7
6. Family and friends do not expect the change	3

Farm Operators Who Were in the Process of Considering a Reduction in Their Dependence on Farming at the Time They Were Interviewed, cont'd.

Case #4	Weight
A. Things favoring the change in work	
1. Haven't been feeling well	10
2. Can't keep up the long hours	10
3. Lack health for farming	10
4. Price of milk is forcing change	10
5. Family members have expected change	5
6. Family will support and encourage me if I change	5
B. Things against the change in work	
1. Lack education for other work	10
2. Have been in farming all my life - only life I know	5
3. May miss farming somewhat	3
4. Family members would be surprised	3
Case #5	
A. Things favoring the change in work	
1. Too much work in farming and not enough pay	10
2. Wife could get along if I died while in another job, but not while I am in farming	9
3. Would have more spare time	9
4. Help situation is bad	7
5. Family would support change	3
B. Things against the change in work	
1. Like the outdoor life	9
2. Lack knowledge of modern methods in nonfarm job	9
3. Will have to get rid of farm	8
4. Would lose freedom of farming	8
5. Way of life would be changed	7
6. Family would not expect change	3

Farm Operators Who Were in the Process of Considering a Reduction in Their Dependence on Farming at the Time They Were Interviewed, cont'd.

Case #6	Weight
A. Things favoring the change in work	
1. Can't afford to hire good help - can't get cooperation	10
2. Wife has a health problem and would like to leave farm	8
3. Had a buyer who would give a good price	8
4. Would get a good price for farm if I sell	8
5. Too much responsibility at present	5
B. Things against the change in work	
1. Always farmed so might not have skills to take on another job	10
2. Not old enough to retire	8
3. Don't know what else to go into	8
4. Brother and father would expect me to stay on farm	2
5. Would worry about getting money from buyer	2

PART V

Some Interpretations and Implications

Having presented the data at three levels of generality and specificity, the time has arrived to interpret the major findings and indicate some of the implications which they may hold for policy makers and others who are concerned with occupational adjustments in low-income areas.

As one looks at the data, in the lines and between the lines, he sees a small segment of the conflict between the farmers of the country and the impersonal relentless forces of the technological revolution which is taking place in American agriculture. One sees many family farmers and farm households holding on with everything that they have as long as they can, and finally capitulating to forces too big for many farmers and households to manage. When the family has the combinations of ability and personnel to do so, the farm family adds a second nonfarm occupation at great sacrifice to the family in time and effort. They keep the two jobs going as long as they can. But when a change of circumstances makes it no longer possible to maintain two occupations, the farm usually goes. It is usually contributing less than the nonfarm employment to the family income. For some who do not find opportunity in nonfarm employment or who lost the nonfarm job, the shift is back into full-time farming.

A small cluster of relevant components combine to bring about the changes which occur - not a single factor. In many cases, some of the factors are of such a nature that they are perceived as force by the farm operator. He changes - leaves farming - not out of choice, but out of necessity as he perceives the situation.

Seven factors are identified in the data as being most important in occupational decisions. These factors are: goals, value standards, force, support, opportunity, ability and expectations. Beliefs, habit and commitment which were also studied were not presented as frequently entering into occupational changes.

These general factors enter into all kinds of occupational decisions. However, at this level of generality, the factors lack the explanatory power to distinguish between different types of decisions.

As the next lower level of generality, however, the more specific factors have much of this desired explanatory power. They reveal the

combinations of factors which account for the different courses of action. They reveal the consistency and close tie between the perceived relevant facts, the relevant meanings or cognitions, and the courses of action chosen. They clearly indicate that it is often the occurrence of some event such as: a job opportunity, an opportunity to sell the farm, a hired man who quits, a mortgage payment which can't be met, an illness or disability of the husband or the wife, the children leaving home to go on their own or the closing of a milk plant which brings the whole matter to head and calls for a re-evaluation of the situation and a new course of action. Were it not for these events, one might hazard the guess that the family would have continued for some time in their usual pattern.

The more specific treatment of individual cases gives less explanatory power, but reveals more of the nature of the relevant cluster of components and reveals to some extent, the shift in both data and cognitions which occur after the occupational decision has been made. They reveal also, that for the individuals considering an occupational change some factors carry much more weight than other factors in the final decision. How accurate these perceptions are, is not demonstrable in terms of the data in this study.

The supportive evidence is fairly strong that farm operators in a low-income area hold tightly to their occupation and their place of residence; that when they do change, it is usually as a result of a cluster of powerful factors, not of a single weak factor. The supportive evidence is also strong that the explanatory reasons which explain the change, frequently come from the following factors or category types, namely: goals, value standards, force, support, opportunity, ability and expectations. If we can justly claim supportive evidence for these conclusions, then a few modest recommendations for policy makers based on these reasons may be appropriate.

Some Implications for Policy Makers and Action Programs

Any proposed program to help any population has a st. ng competitor; the heavily rationalized occupation, location and position in which each respondent finds himself. Any weak program will have little chance of

success. On the other hand, a few, half, most or all of the residents of an area could be involved in a program depending on the strength of its perceived relevant cluster of components or factors. Such a program would need to combine several factors in its relevant cluster. It would have to avoid conflict with basic values and would have to be something which the respondent perceives himself as able to do. It should be designed to maximize the positive forces and to reduce to a minimum the possible negative forces.

The policy maker might ask himself the following questions, based on the factors found to enter most frequently into occupational decisions in a low-income area.

1. What would the respondent gain or lose from the proposed program?

2. Would the program incur the support or opposition of any strong value standards?

3. Would it incur the support or opposition of wives, close relations and/or neighbors?

4. What help or support does the program provide?

5. Is the respondent able to do what the program requires at this time and is provision made so he will be able to continue. Is he eligible and can he meet the requirements of the program?

6. Are there force factors with which he must comply if he is to gain his desired benefits from the program?

7. Are the opportunities provided, plentiful and easy to obtain and comply with, or few and difficult to obtain and comply with?

8. Are there any important persons in the situation who would exert strong expectations to participate or not to participate in the program?

These questions will alert the policy maker as to the probable relevant cluster of components engendered by his proposed program, and some of their probable influences. They will also enable him to see more clearly, what is missing in an existing program which is not functioning as desired.

Some Implications for Human Resource Adjustment Research

The data from this study supports the hypothesis that the multiple factor theory of social action provides a meaningful frame of reference for analyzing occupational change. The present study was largely exploratory in nature designed to determine the factors which enter into occupational decisions in a low-income area. Since it was an exploratory study, the open-end questions were appropriate to draw all factors which the respondent considered relevant. The findings present some implications for future research methodology and for further research problems.

The structured closed-end questions and the open-end responses asking for reasons present, with one or two exceptions, the same picture at the general level regarding the factors which enter into an occupational decision. However, the reasons given in the open-end responses, provide the explanatory power which makes it possible to differentiate among the different decisions. With the general array of possible reasons known, it would now be possible to construct closed-end questions at this level of specificity also. Knowing the main factors and reasons which enter into occupational decisions in a low-income area, it would be possible to formulate demographic questions which would provide more predictive power than those contained in the present study.

Whether the same factors and set of reasons, which help explain farm-nonfarm occupational decisions in a low-income area, would also explain other types of occupational decisions in high-income areas is not known. These data can only be generalized safely for the area in which the study was made, but it is highly probable that they would have fairly good explanatory power for occupational changes for farm operators in other low-income farming areas.

Based on the assumption of consistency between cognitive variables and data or demographic characteristics of the household, it would be useful to know the predictive and explanatory power which could be achieved by each of these sets of variables. The cognitive analysis made in this report provides information which helps in the selection of relevant demographic variables. While we have the date of the last major occupational decision which is being considered in this report, we

do not have demographic data for the household for that same date and thus are not able to match the demographic variables of the household for that same time. This could be done in some future study.

The questions stimulated by the findings of this study, pose several possible further research studies on factors influencing occupational decisions. Among them are the following: What are the relevant cluster of factors which influence occupational decisions in other types of low-income areas such as in the coal region, in a boom and bust defense industry community, or in the low-income households of a high-income community? What are the clusters of factors which influence occupational decisions for middle-and high-income households, as compared with low-income households? Since occupational decisions are based on a cluster of factors, not single factors, households could be typed on the basis of their cluster of cognitive factors and on the basis of their demographic factors. The different types of households could be compared on the types of their occupational adjustments, also the cognitive and demographic typologies could be compared on the basis of their power to predict and explain various types of occupational adjustments.

In this study, the tenacity with which farm households hang on to their original occupation and remain in the same area in spite of economic adversity is observed and recorded in the data. We would hypothesize that the principle of consistency of cognitions with behavior provides a strong supporting rationalized defense of the occupation and place of residence which resist change. Part-time farming provides a way of adding a second occupation without giving up the first. After a dual attachment has been established, the first attachment can then be sacrificed if necessary. A thorongh study of this attachment and detachment process, in relation to occupations and residence, should yield some useful results for policy makers.

This type of study based on reasons and weight of influence as perceived by the respondent provides many clues, leads, suggestions and supportive evidence. However, it cannot be claimed to have proved anything in definitive terms. Other types of studies would be necessary for this type of proof. On the other hand, the supportive evidence which it does provide in profusion is far better than hunches or guesses.

Appendix A

APPENDIX A

Objectives of the Overall Study

The objectives of the overall project were to determine for a given population of rural farm families in an area of northern New York State with different resource characteristics and levels of family income the following:

a. The nature and processes of socio-economic adjustment over the past decade in human and physical resource use and their basic causes;

b. The community, area, and economy-wide characteristics and developments which comprise the general socio-economic environment within which adjustments have evolved.

Stated more specifically, the objectives of the overall study were:

1. To develop the nature, processes, and causes of change in the various sizes and types of farm organization and land use.

2. To relate incidence of part-time and full-time commercial farming to patterns of occupational mobility between farm and nonfarm activities and level of agricultural and nonfarm economic activity of the economy.

3. To explore the relationship of different patterns of farm organization and land use to patterns of communication, rate of adoption of selected farm practices, and goals and values.

4. To develop a typology of part-time farmers based upon relative commitment to farm and nonfarm activity.

5. To develop a typology of part-time farm households based upon source of household income.

6. To compare present and base period social and economic characteristics of persons in the basic sample who have: (a) migrated from the area, (b) remained in the area as farmers, and (c) became nonfarm residents within the area.

The Sample

The sample for the study was drawn from the 20 percent sample for the 1950 U.S. Census of Agriculture for St. Lawrence County, New York. The 20 percent sample yielded the names of 1,017 individuals who were operating farms in St. Lawrence County in 1950. Limitations of funds, time, and personnel were such that the number of interviews could not exceed 350 in 1963. Consultations with demographers and human resource adjustment specialists indicated the advisability of limiting the respondents to those who were under age 55 in 1950.

Of the total 417 farm operators who were in the sample based on the 1950 Census of Agriculture, 32 had died and 8 could not be located (Table 1). Of the 377 remaining, only 27 or 6.9 percent had left the county. In other words, more than 9 out of 10 of the 1950 farm operators are trying to work out their adjustments within the area. Even though this is a county which is classified as an area of substantial and persistent unemployment by the Department of Labor, these farm operators are not moving to areas of greater opportunity. Of 320 farm operators who were engaged in farming in 1950 and who have remained in the area and for whom we have information, 234 or 73 percent were still engaged in farming on a full-time or part-time basis in 1962. In other words, of those who remain in the area, more than 7 out of 10 are still engaged in farming on a full-time or part-time basis.

Data for this special report were obtained from the responses of the male respondents who were living in the St. Lawrence County area during the summer of 1963 and who had either made or seriously considered a major change in occupation since 1950.

The Study Area

St. Lawrence County borders on the International Line between the United States and Canada. It is the largest county in New York State with over 41 percent of the land area being used for agricultural purposes. The northeast sector of the county has developed industrially with the building of two aluminum plants, an automobile manufacturing plant (components) and the St. Lawrence Seaway and Power Development area. However, except for this particular area, the bulk of the

Table 1. Distribution of 417 1950 Farm Operators Who Were under 55 Years of Age in 1950 by Availability for Interview and Farm-Nonfarm Classification, St. Lawrence County, New York, 1963.

Item	Number	Percent
No Interviews:		
Deceased	32	7.7
Moved out of St. Lawrence County area	26	6.2
Unable to locate	8	1.9
Not available for interview during the time that survey team was in the field	7	1.7
Refused to be interviewed	16	3.8
Total	89	21.3
Interviews:		
Not farming in 1950	4	1.0
Incomplete interview	4	1.0
Complete interviews	(320)	
Farming in 1962[1]	234	56.1
Not farming in 1962[2]	86	20.6
Total	328	78.7
Total Sample	417	100.0

[1]Includes 3 female farm operators.

[2]Includes 1 female who operated a farm in 1950.

remaining county remains primarily agricultural. One observer has noted that the St. Lawrence area is:

> Perhaps the most thoroughly underdeveloped area in New York State . . . for it is indeed an area in which the full potential in its natural and human resources has never been approached. In this sense, the area is one of the great frontiers of the state and the region. But it is particularly a frontier for American industrialization.[1]

The number of farms has declined (1950-59) from 5,091 to 3,426, while the average size of the farms has increased from 174 acres to 210 acres in the same period. At the same time, some 169,000 acres of farm lands have been taken out of farming. Nine out of ten of the 1950 farmers studied have remained in St. Lawrence County as of 1962. However, of those still living in the area, one-fourth are no longer farming. This indicates that these men are working out their adjustments to these changing conditions within the county itself. As a result, this county provides a good test area in which to measure attitudes of these former farmers toward the adaptations and decisions which they have had to make during the past twelve years (1950-62). Most importantly, for the purposes of this study, has been the attempt to determine what cognitions enter into a farmer's decision to make a change, or a decision not to make a change, and the decisions made after leaving farming as a full-time occupation.

Economic reasons are generally considered to be "the" reasons for many changes -- stated simply in terms of monetary loss or gain. This study provides additional insight into the rather complex factors involved in decision making in the change of occupations.

Notes on Procedure

The research instrument was administered to the respondents during the months of June, July, and August, 1963, by undergraduate and graduate students in the College of Agriculture, Cornell University.

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[1] Sidney C. Sufrin and Edward E. Palmer, The New St. Lawrence Frontier, A Survey of Economic Potential in the St. Lawrence Area of New York State, Syracuse University Press, 1957, p. 5.

The research instrument contained a series of questions designed to determine the factors taken into consideration when a decision was being made about their last major job change or if no change had been considered, a hypothetical job change was presented to the respondent. These questions are presented in Appendix A. As was indicated previously, this report is based on the responses of those individuals who had considered a major occupational change since 1950.

Appendix B

APPENDIX B

Section of Questionnaire Containing Items Designed to Determine Factors Influencing Occupational Decisions

D-II OCCUPATIONAL DECISION OR CHOICE

Let's see, you told me that:

1. In 19__ you changed the type of work you were doing from _____ to _____.

2. You have thought of changing your type of work.
   a. When was the last time you thought about doing this? _____
   b. What kind of a change in work were (are) you thinking of making?

      _____

3. Since you have not seriously considered changing your occupation, we would like to get your reaction to the following question(s):

   a. Suppose some new nonfarm employment opportunities were to come into the area and you had a chance to take a steady, 40 hour a week job which you were able to do. This employment would pay you $1,000 more than you make now.

      _____ Would take the new job
      _____ Would stay with what I am now

   b. Suppose there were no good opportunities within the area but you had a chance to take a steady, 40 hour a week nonfarm job outside of this area. This would be a job you could do which would pay you $1,000 more than you make now if your moving costs were paid. Would you take the job and move to the new area or would you stay with what you are now doing.

      _____ Would accept the job and move
      _____ Would stay with what I am now

WRITE THE DECISION OR CHOICE FROM EITHER 1, 2, or 3A IN THE BLANK SPACE AT THE TOP OF THE NEXT TWO PAGES. THEN ANSWER THE QUESTIONS ON PAGES 8d, 8e and 8f.

* * * * * * *

ESTIMATING WEIGHTS ON REASONS

Now that I have your important reasons for and against changing type of work, I need to know how much weight you put on each reason <u>when you were making the final decision</u>.

Which would you say was (is) the <u>most important</u> reason, either for or against, that you took into account in making the change? CIRCLE THE REASON WHICH IS SELECTED.

Let's say this reason, your most important reason, had a weight of 10 points. Now, if your most important reason had a weight of 10 points, what weight between 1 and 10 did you give to each of the other reasons for and against changing? If any reason carried no weight in the decision, give it zero.

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FOR EACH ITEM BELOW TO WHICH THE RESPONDENT GIVES A WEIGHT OF 3 OR 4, ASK HIM WHAT SPECIFIC REASONS OR THINGS ARE INVOLVED. WRITE ADDITIONAL SPECIFIC REASONS IN THE APPROPRIATE LIST ON THE WORKING PAGE. NOTE THE NUMBER OF THE QUESTION WHICH ELICITS THE ADDITIONAL SPECIFIC REASON(S).

Now, we would like you to answer several more questions concerning your reasons for deciding to change or not to change your type of work. Some of these questions may refer to reasons you have already given me, but these questions may also help you recall any specific reasons for or against changing which you have not yet recalled. Since these questions were designed to fit several hundred persons in different situations, some of them may not apply to you.

After each question which applies to you SOME or MUCH, please tell me any specific reason for or against changing which the question helps you to recall.

1) Action taken
2) Action considered but not taken
3) Hypothetical action chosen on 3a

I would like you to recall the important things you took (are taking, into account in deciding whether or not to make this change in work. Please give me your reasons both for and against changing at the time when you made the decision.

	Reasons for and Against Changing Work At the Time When the Decision Was Made	Estimated Weight on Each of These Reasons in the Final Decision
A.	Things favoring the change in work	
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
B.	Things against the change in work	
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____

1) Action taken
2) Action considered but not taken
3) Hypothetical action chosen on 3b

	CIRCLE NUMBER WHICH APPLIES "Yes"			
	No	Little	Some	Much
1. a) Did you feel any of your family members, friends, or others who matter <u>expected</u> you to make this change in work? How much did you feel they expected you to? Just who expected you to?	1	2	3	4
b) Did you feel any of your family members, friends, or others who matter <u>expected</u> you <u>not</u> to make this change in work? How much? Just who expected you not to?	1	2	3	4
2. a) Did you feel you had <u>committed</u> yourself to make this change in work by stating your intentions or making agreements with others? How much did you feel you had committed yourself? What specifically were these commitments and to whom?	1	2	3	4
b) Did you feel you had <u>committed</u> yourself not to make this change by stating your intentions or making agreements with others? How much? What commitments and to whom?	1	2	3	4
3. a) Did you feel you would receive <u>support</u>, encouragement, or help from family members, friends, or others if you decided to make this change? How much? What kinds of support and from whom?	1	2	3	4
b) Did you feel you would receive <u>opposition</u> or discouragement from family members, friends, or others if you decided to make this change? How much? What kinds and from whom?	1	2	3	4
c) Did you feel you would receive <u>support</u> from others if you decided not to change? How much? From whom?	1	2	3	4
d) Did you feel you would receive <u>opposition</u> from others if you decided not to change? How much? From whom?	1	2	3	4
4. a) Did you feel you or members of your family would <u>gain</u> in such things as income, security, or satisfaction by making this change? How much gain? What kinds of gains?	1	2	3	4
b) Did you feel you or members of your family would <u>lose</u> by making this change? How much? What kinds of losses?	1	2	3	4
HYPOTHETICAL QUESTIONS STOP HERE				
5. a) Did you feel you had the <u>abilities</u>, skills, health, and resources needed to change to this new work? How much did you feel you had these abilities? What main kinds of abilities and resources?	1	2	3	4
b) Did you feel you had the abilities, skills, health, and resources needed to remain in the work you were in? How much did you feel you had the needed abilities or resources? Waht main kinds of abilities or resources?	1	2	3	4

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	"Yes"			
	No	Little	Some	Much
5. c) Did you feel you personally lacked in any important abilities, skills, health, or resources needed to change to this new work? How much did you feel you lacked? What specifically did you feel you lacked?	1	2	3	4
d) Did you feel that you lacked any important abilities, skills, health, or resources needed to remain in the kind of work you were doing? How much did you feel you lacked? What specifically did you feel you lacked?	1	2	3	4
6. a) Did you feel you had an opportunity to make this change in work? How much of an opportunity did you feel you had?	1	2	3	4
b) Did you feel there would be opportunities to make this change at a later time if you so desired? How much opportunity to change did you feel there would be at a later time?	1	2	3	4
c) To what extent did you feel you might not get another opportunity such as this one?	1	2	3	4
d) Did you feel there was opportunity to remain in the work you were in? How much opportunity?	1	2	3	4
7. Did you feel the proposed change in work would be in conflict with any of your important habits or customs at that time? How much in conflict? Which habits or customs?	1	2	3	4
8. a) Did you feel the proposed change in work was in line with your beliefs and standards of what is right and good for a man to do? How much in line? What beliefs or standards?	1	2	3	4
b) Did you feel the proposed change in work was in conflict with your standards or what is right and good for a man to do? How much? What standards?	1	2	3	4
9. a) Did you feel you were being forced to change by others or by circumstances so that you had no choice but to change work? How much force? Who or what was forcing you to change?	1	2	3	4
b) Did you feel you were being forced by others or by circumstances to remain at the work you were in? How much force? Who or what was forcing you to stay at the work you were in?	1	2	3	4
10. a) How much confidence and certainty did you feel at the time that you would be doing the wisest thing by making this change?	1	2	3	4
b) How much confidence and certainty did you feel at the time that you would be doing the wisest thing by not making this change?	1	2	3	4

WAS WIFE PRESENT DURING THIS PART OF THE INTERVIEW? Yes ☐ No ☐

Appendix C

APPENDIX C

Selected Definitions

Referent

The term referent is used to designate any item which might be selected or on which attention might be focused. The item indicated as the referent may be a person, a group, an organization, an object, an idea, an activity, an act or a mode of behavior, an attitude, a symbol, a situation, or a state of affairs.

Actor

The term actor in this presentation is used to designate any individual or any collectivity capable of corporate action. This latter would include informal groups, communities, and small and large organizations.

Social Action

Social action refers to any learned form of social expression. As herein used, it refers primarily to the expression of opinions, sentiments, hypothetical action, and gross behavioral response. It includes social interaction, and role performance but is somewhat more inclusive than either of these. It includes actions related to non-human objects and symbolic referents. It does not include non-human behavior, nor does it include the natural non-learned behavior of human beings.

Opinions

Opinions are verbalized statements expressing an actor's purported cognitions and data regarding a referent.

Sentiments

Sentiments are an actor's expression of his feelings regarding a referent.

Hypothetical Action

Hypothetical action refers to an actor's verbalized statement of what he would or would not do *if* presented with a particular situation or state of affairs.

Gross Behavioral Response

Gross behavioral response refers to the learned overt actions in which the actor participates in relation to a referent other than expressions of opinions, sentiments, and hypothetical action.

Cognition

A cognition is a person's belief or knowledge about a referent. It encompasses any belief or knowledge about the referent which the actor may possess.

Relevant Cluster of Cognitions

A relevant cluster of cognitions consists of those beliefs and knowledges about a referent which the actor thinks are important, that is, which make enough difference to be considered.

Component

The term component is used to designate a specific unit within any of the three relevant clusters. Generally it refers to a specific cognition. It may, however, refer to specific data variables such as age, sex or occupation.

Factor

The term factor is herein used to designate a general category of cognitions which share certain common characteristics which make it possible to consider them together.

Actor Consistency (Self-Consistency)

Consistency means that the overall weight and direction of influence for the three relevant clusters (data, cognitions and social actions), in relation to a particular referent will be generally the same for any particular actor. In the more specific context of participation (a particular type of social action) it means that the participation will be in the same general direction as the three relevant clusters. It does not mean that the relevant elements in the clusters will all have the same direction in their influence. Since this congruence of the three clusters is always as perceived by the actor, consistency could be described as self-consistency.

Societal Consistency

Societal consistency is the array of internally consistent patterns of expression provided by the society in relation to any particular referent from which an actor may choose his personal response patterns. The Guttman-type scale assumes such an array and demonstrates its existence in the society. Each choice possesses actor consistency and the array of choices has a definite scalable order in relation to each other.

The Cluster of Relevant Actions

The cluster of relevant social actions refers to any expressions of opinion, sentiments, hypothetical action, or gross behavioral response of the actor which he, the actor, considers as having an important relationship to the referent under consideration.

Data

Facts or purported facts about some referent. This does not include the interpretation or meaning of these facts. The latter would be cognitions based on the data.

A Reference Category

A reference category is a characteristic of a class of actors to which meanings may be attached. The meanings are ascribed to actors having the specified characteristic.

Information

Information as herein used is limited to observed or reputed facts about the past actions of the referent and to the hypothesized facts and possible future acts of the referent.

The Relevant Cluster of Data

Factors or purported facts which are considered to be important about a particular referent in a particular situation.

The definitions which follow are for the ten factors which were presented in the frame of reference. Three types of definitions are used. First, a descriptive statement; second, a designation of the dominant component or components in the relevant cluster of cognitions for that factor; third, a definition by formula to indicate the elements (components) of which the factor is usually composed. While this third type is admittedly rough, it provides a basis for an understanding of the relationship of the factors to each other. For this contribution to further understanding it has been included.

DEFINITIONS OF COGNITIVE FACTORS (TYPE OF COGNITIONS)

A. Pull-Factor Definitions

Descriptive Definition	Dominant Factor Definition	Minimal Cluster of Components
Belief Orientation A person's or a group's shared cognitions (ideas, knowledge) regarding the characteristics of a referent, its present or potential relationship to referents other than the actor and the actual and potential consequences of these relationships.	The relevant cluster of components of a belief orientation consists solely of B cognitions though there may be three, four, or even more of these.	B = Belief Orientation b_1 b_2 b_3
Goal A goal is any activity, object, characteristic, belief, feeling, state of affairs, or condition of living which is desired and wanted or not desired and to be avoided by the actor either for itself or as an instrumental means by which another goal may be pursued or avoided.	The dominant cognitions in the relevant cluster of components of a goal is a belief that the referent has an actual or potential, positive or negative relationship to the actor, to his way of life, or to his system of beliefs and that the referent has the potential power to produce satisfaction or dissatisfaction for the actor as a consequence.	G = Goal b_1 e_1 b_2 g_1 b_3 g_2
Value Standard Any belief, system of beliefs, attitude, behavior, characteristic, state of affairs, or condition of living which is perceived by the actor to be of such central importance that to do it, have it, or not to do it or not to have it is a basis upon which persons, organizations, objects, activities, or ideas are judged by the actor to be good or bad.	The dominant components in a value standard cluster are the actor's belief that the referent is of central importance to himself, his system of beliefs, or his way of life and that some very undesirable consequences would result from nonadherence to it. An actor's value standard may be general and shared by the society as a whole, it msy be general for a subsociety or group, or it may be limited to the individual. It is the fact that it is used as a criteria of goodness or badness by the actor which makes it a value standard.	V = Value Standard b_1 e_1 b_2 e_2 b_3 e_3 g_1 v_1 g_2 v_2

DEFINITIONS OF COGNITIVE FACTORS (TYPE OF COGNITIONS)

B. Push-Factor Definitions

Descriptive Definition	Dominant Factor Definition	Minimal Cluster of Components
Expectation Expectation is an actor's cognition that significant others--individuals, groups, or society in general think that he or others should believe, feel, or act in a particular manner in a given situation. It also includes what the actor himself thinks he should believe, feel, and do in the situation.	The dominant component in the expectation cluster is the actor's belief that others think he should act in a particular manner.	E = Expectation b_1 e_1 b_2 e_2 b_3 e_3
Self-Commitment Self-commitment is the belief of an actor that either in the past or the present, he has taken a particular stand on the issue involved and that directly or indirectly he has given his word or implied it such that he now is bound to act in accordance with his indicated intention, even though his present preference might be to do something else were he now free to choose.	The dominant component in the self-commitment cluster is the actor's belief that his decision has already been indicated and that he is not really free to act otherwise. Another prominent component in the s.c. cluster is a value component that the actor will do what he has said he will do.	S.C. = Self-Commitment b_1 e_1 b_2 e_2 b_3 v_1 g_1 sc_1 g_2 sc_2
Force Force is the cognition on the part of the actor that he has no alternative but to act in a particular way even though his personal goals and wishes may be very much to the contrary. Alternatives may be present, but to the actor they may be so intolerable that he doesn't consider them as alternatives. He feels he must act, and that the only possible way to act is in the manner prescribed.	The dominant component in a force cluster is the actor's belief that he has no choice.	F = Force b_1 g_1 b_2 g_2 b_3 f_1 e_1 f_2

Descriptive Definition	Dominant Factor Definition	Minimal Cluster of Components
Habit and Custom Habit and custom is the cognition of the actor that a given set of stimuli call for a particular accepted established pattern of response. The response is so patterned and so completely accepted and rationalized that no other possible alternatives are even considered by the actor.	The dominant component in a habit cluster is the actor's cognition that the particular stimuli has a single appropriate response.	H = Habit and Custom b_1 h

DEFINITIONS OF COGNITIVE FACTORS (TYPE OF COGNITIONS)

C. Able-Factor Definitions

Descriptive Definition	Dominant Factor Definition	Minimal Cluster of Components
Opportunity Opportunity is the actor's beliefs regarding a situation, its requirements, and the alternatives which are available.	The dominant component in the opportunity cluster is the actor's conception that the alternate situations among which he may choose are each characterized by some essential requirements of greater or lesser magnitude.	O = Opportunity b_1 g_2 b_2 o_1 g_1 o_2
Ability Ability is the actor's perception of his own capacity to successfully cope with the alternative opportunities which he perceives.	The dominant component of the ability factor is that the actor perceives that some essential elements are necessary to cope with the situation under consideration and that he conceives of himself as possessing some of these essential elements and in possessing them being able to exert a large degree of control over them.	A = Ability b_1 o_1 b_2 o_2 g_1 a_1 g_2 a_2
Support Support is the kind and amount of help or opposition an actor believes he is receiving or which he believes he can expect from others for any alternative pattern of behavior which he might choose.	The dominant components in the support factor is that the actor perceives of himself as lacking some of the essential elements needed to cope with the alternative situations with which he is confronted. He furthermore conceives of others as helping by providing some of the essential elements or as hindering by changing the situation to make the situation more difficult. The latter is perceived as opposition.	S = Support b_1 o_1 b_2 o_2 g_1 a_1 g_2 a_2 e_1 s_1 sc_1 s_2

Appendix D

APPENDIX D

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*Studies based on the project - Directive Factors in Social Participation.

**Studies based on the project - Leadership Development in a Mormon Community.

***Studies based on data from both the projects listed above.

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Establishing and Operating Area Vocational-Technical Education Programs in Michigan. Bulletin 2153.

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MICHIGAN

The state vocational-technical education curriculum committee prepared this bulletin to assist in developing area vocational programs. The content areas received brief treatment since more extensive treatment was anticipated for other publications. The premise for an area vocational center was that the small secondary school cannot provide the diversified program and special facilities necessary for the equalization of opportunities in vocational education. However, programs operated on an area basis can serve a wide geographical region which has sufficient numbers of students, the necessary financial resources needed to provide the facilities, the special personnel, and the broad curriculums essential for quality vocational education. The main sections are: (1) the concept of area vocational-technical education programs, (2) suggested steps for conducting an area vocational-technical education study, (3) legal provisions regarding area vocational-technical education programs, (4) organizational patterns for area vocational-technical education programs, (5) planning facilities for area vocational-technical education programs, (6) developing curriculums, and (7) establishing desirable relationships with business, industry, and labor. (SL)

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ESTABLISHING AND OPERATING AREA VOCATIONAL-TECHNICAL EDUCATION PROGRAMS IN MICHIGAN

Bulletin No. 2153

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A. Paul Elliott, Consultant, Leonard Refineries, Inc.
Clyde E. Evenson, Training Department, Shell Oil Company
Richard Fell, Assistant Superintendent, Business, Pontiac Public Schools
Barbara Gaylor, Consultant, Home and Family Life Education, Michigan Department of Education
Arthur S. Greiner, Assistant Vice President and Director of Training, National Bank of Detroit
Peter G. Haines, Professor and Chairman, Business and Distributive Teacher Education, Michigan State University
Paul A. Herbert, Chief, Research Division, Michigan Department Economic Expansion
Wallace Hettle, Teacher-Coordinator, Distributive Education, Muskegon County Community College
John D. Hromi, Manager, Engineering Methods Department, Ford Motor Company
Barbara Hunziker, Coordinator, Brandywine Public Schools, Niles
Carol Irish, Helping Teacher for Home Economics, Pontiac Northern High School
Donald F. Johnson, Principal, Lansing Eastern High School
Gordon O. Johnson, Administrative Assistant, School of Applied Arts and Sciences, Western Michigan University
Kenneth S. King, Superintendent, Algonac Community Schools
Ronald Koski, Teacher-Coordinator, Distributive and Office Education, Waterford-Kettering High School
Charles L. Langdon, Research Coordinator, Michigan Department of Education
Edna Mae McIntosh, Nutritionist, Gerber Products Company
Frank Merriman, Farmer, Deckerville
Francis J. Mitchell, Consultant, Technical Education, Michigan Department of Education
Lloyd Morningstar, Vocational Agriculture Teacher, Hillsdale High School
Shirley Mull, Business Department Chairman, Lansing Waverly High School
Norman L. Peterson, Director, Membership Relations, Michigan Milk Producers' Association
Norma Popek, Orchard Lake
Clarence E. Prentice, Secretary-Manager, Michigan Farm Bureau
Maurice C. Prottengeier, Director, Vocational and Adult Education, Pontiac Public Schools
Charles Roche, Director, Vocational Education, Flint Public Schools
Bill G. Rowden, Tri-County Regional Planning Commission, Lansing
Richard Shupe, Consultant, Business Education, Michigan Department of Education
Benjamin Standen, Director, Vocational Education, Lake Michigan College
John Thompson, Director, Vocational Education, Garden City Public Schools
Joseph V. Tuma, Manpower Training Representative, UAW
Carl H. Turnquist, Director, Vocational Education, Detroit Public Schools
Leslie J. Whale, Director of Business Education, Detroit Public Schools
Dorothy Wilkinson, Coordinator, Practical Nurse Program, Flint Community College

F O R E W O R D

The entire nation's attention has been drawn to the plight of our jobless youth and adults. Preparing our people for gainful employment is a function of public education equally as important as providing them with a general education designed to prepare for life in the broad sense of completeness as a human being.

Many Michigan school districts do not have sufficient numbers of students nor the financial resources to provide adequate vocational education programs alone. They must cooperatively join efforts with their neighbors and provide such programs on an area basis. Sixty-three of Michigan's 83 counties have completed or are in the process of conducting area vocational-technical education studies. These studies are designed to develop long-range plans for the provision of vocational-technical education on an area basis.

The State Vocational-Technical Education Curriculum Committee is to be congratulated on the preparation of this timely bulletin dealing with the development of area vocational education programs. It should prove extremely useful to local school and community college administrators, boards of education, community college boards of trustees, and citizen groups planning such programs.

ESTABLISHING AND OPERATING AREA VOCATIONAL-TECHNICAL EDUCATION PROGRAMS IN MICHIGAN

INTRODUCTION

Accelerated technological change has had a profound effect on our society. As recently as a decade ago, a youth could quit school at the age of sixteen or older and could find a job. True, the jobs were mainly those which could be held by the unskilled, but they were jobs nevertheless. Today, this situation has virtually ceased to exist. Now our youth must be educated for jobs requiring higher skill levels as well as vastly different skills.

Society cannot afford to allow a youth to become detached from his school unless he is prepared for an advanced education program or for full-time employment. All too many of our youth who enter advanced education programs leave before their training is completed. Since no one can accurately predict the length of time youth will remain in school, all must be trained with a marketable skill while they are in school. This vocational education need only take 1/8 to 1/2 of the school program, depending on the youth's interest, achievement level, and the job for which he is preparing. It complements general education.

The schools must maintain active contact with each boy and girl until they are launched on their next educational program or on a job. Each educational level must prepare youth for their next step in life!

Every youth must have accessible to him equitable means to plan for a vocation and the opportunity to acquire entrance competency in this vocation. The area vocational center can supply the answer to this challenge. The small secondary school cannot provide the diversified program and the special facilities necessary for the equalization of opportunities in vocational education. Programs operated on an area basis can serve a wide geographical region which has sufficient numbers of students and the necessary financial resources needed to provide the facilities, the special personnel, and the broad curricula essential for quality vocational education.

The Committee has prepared this bulletin on the hope of providing assistance in developing area vocational programs. The information is brief and covers content areas which deserve more extensive treatment than the publication provides. It is anticipated that a more complete treatment, with separate publications covering such topics as curricula and facilities, may be developed in the future. In the meantime, this publication provides information related to establishing and operating area vocational-technical education programs in Michigan.

SECTION I
THE CONCEPT OF AREA VOCATIONAL-TECHNICAL EDUCATION PROGRAMS

Vocational education programs are operated in a variety of situations. Throughout the country, many programs are operated in high schools with small enrollments; thus, limiting the number of occupations for which training may be offered. Other programs are to be found in large city high schools, in separate vocational and technical schools, and in community colleges. These schools are operated in a number of ways. They are operated by the state, by the county, by local school districts, and by combinations of these. Even though many of our present vocational education programs are of high quality, they cannot meet all of our modern day needs for occupational preparation.

Only a minority of new and established workers requiring additional education can be trained in existing vocational education facilities. It must also be recognized that only a comparatively small proportion of the youths and adults who are interested in, qualified for, and able to profit from vocational education have an opportunity to take advantage of such instruction because of the remoteness of training centers from their places of residence, inadequacy of the range of vocational offerings in certain schools, and other limiting factors.

The concept of area vocational-technical education programs emphasizes cooperative arrangements between several school districts in which they jointly provide vocational-technical education for their students. Such programs can be operated so that students retain their identity with their own high school and acquire their general education and graduate from their home high school. This concept also embodies the provision of vocational programs on an area basis by community colleges, primarily for post-secondary students.

The area concept in vocational education is based upon the philosophy that all persons who can profit by the instruction should have an equal opportunity to enroll in vocational education programs of their choice regardless of where they live. This concept requir s that the attendance area be of sufficient size to insure adequate enrollments. Administrative patterns and financial structures must be developed on as wide a base as possible.

Area programs permit the offering of a wide range of courses, thereby providing students with many different curricula. Such programs can provide for the occupational training needs of both in-school and out-of-school youth and adults. An area vocational program offers the following advantages:

1. It provides for a broad tax base distributed over large segments of the population.

2. It offers training opportunities to a greater number of persons than is possible in small schools serving individual communities.

3. It makes possible a broader administrative base and more comprehensive auxiliary services.

4. It makes available a greater range of curriculum offerings and, therefore, a greater range of occupational training choices.

5. It avoids duplication of equipment services and costs such as might prevail if a number of neighboring communities chose to offer similar training programs.

6. It provides for a degree of flexibility in operation that makes it possible to achieve rapid program adjustments and to meet emergency training needs quickly.

Ideally, area programs should be developed through a centralized facility serving a number of school districts. As an interim step toward this ideal, school districts may provide programs on an area basis through other arrangements. One such arrangement would be the provision of area programs on a decentralized basis wherein several districts each offer different programs and exchange students. Another method would be by a school district providing vocational-technical education for surrounding districts on a tuition basis. The operational disadvantages of these two types of area programs require that they be considered only as temporary solutions to providing area programs through a centralized facility in which cooperating districts agree to participate equally in the administration and financial support.

SECTION II
CONDUCTING AN AREA VOCATIONAL-TECHNICAL EDUCATION STUDY

In order to determine the most desirable administrative and financing structure for area vocational-technical programs, it is recommended that area vocational-technical education studies be conducted on a county or multi-county basis throughout the State. The material in this section has been prepared to assist school districts and community colleges in conducting such studies cooperatively.

Suggested Steps For Initiating and Conducting an Area Study

1. Enlist the support of educators in the area. Obtain support from administrator groups and give consideration to the feasibility of conducting a study and explore methods of financing it.

2. Consult with the Vocational Education Division of the State Department of Education to determine advisability of the proposed development in terms of its relationship to indicated plans and proposals of surrounding areas. This step is also important in order to develop an understanding of the legal implications for developing Vocational-Technical Education programs on an area basis.

3. Determine sponsorship of the study. An area study should be sponsored by a legal body or legal bodies clearly representative of the citizens to be affected by the results of the study. An intermediate school district, community college, or K-12 school district could be the sponsoring unit. The sponsoring agency should secure written statements of cooperation from participating school districts and community colleges. Sponsorship and purposes of the study should be thoroughly understood by everyone.

4. Determine a source of dependable revenue for adequately financing the study.

5. Develop a study proposal designed to determine:

   a. What vocational-technical education programs are needed at both the high school and post-high school levels

   b. Where these programs should be located

   c. How these programs will be financed

6. Submit the proposal to the Division of Vocational Education, Department of Education, for approval and funding. Partial reimbursement of the costs of such a study is available.

7. Citizen members of the study should be officially appointed, even though they are self-nominated or nominated by others, by the sponsoring authority or authorities. Citizen membership of the study should be sufficient in number:

   a. To guarantee representation of all viewpoints of the organizations, groups, and individuals to be affected by the conclusions of the study, and

b. To guarantee communication of the conclusions of the study as well as all factors related to those conclusions

8. Secure consultant assistance. All citizens cannot be expected to be technical experts in determining the kinds of data that are pertinent to the conclusions of the study or the most efficient methods of gathering or organizing such data. Thus, for the study to be efficient and objectively defensible, trained and experienced technical consultants should be employed. Even though certain data are gathered and interpreted by technicians and professional experts, the conclusions drawn from such data should be developed or at least completely sanctioned by the participating citizens. Vocational teacher educators in the various teacher education institutions would be helpful as study consultants.

9. Employ a study director. A full-time or part-time director of the study should be employed to serve at the local level. It is important that this person be someone skilled in group process. It is not necessary that this be a person who will continue in an official capacity in any programs that may develop.

10. The results of the study should be published, preferably in a complete as well as in a condensed form. These published results should be widely available to all persons concerned. To be totally effective, an area study should receive the greatest possible degree of publicity through such mass media as newspapers, radio, and television. Such publicity should be directed toward:

    a. The purposes of the study

    b. The membership and organization of the study, and

    c. The day by day efforts of the committees of the study, and

    d. The conclusions and recommendations of the study at such time as these are finally formalized.

Suggested Organization for an Area Study

1. Involvement of Groups and Individuals. In order to insure maximum organization and efficiency, it is suggested that the study organization include K-12 Boards of Education, Community College Boards of Trustees, a policy committee composed of chief school administrators, an Executive Committee, a study staff, special work committees, and an advisory committee made up of representative leaders from industry, business, agriculture, labor, government, boards of education, community college boards of trustees, and others.

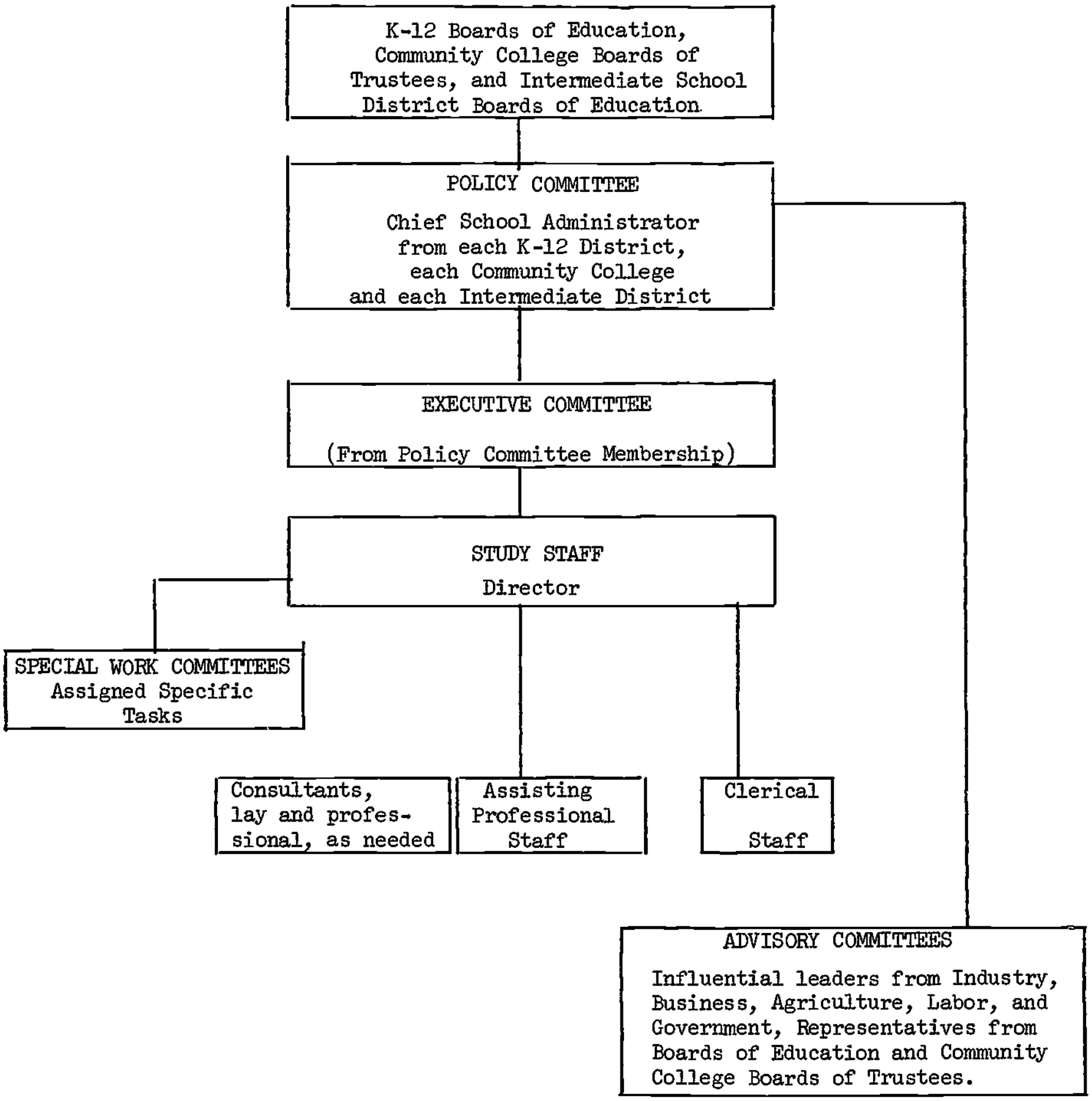
2. The Policy Committee should determine the scope of the study, plan the study, arrange for finances, employ the staff, appoint special work committees and advisory committee, decide on the nature of the final report, provide general supervision, plan for the implementation of study recommendations, and assist in the preparation of the final report.

3. The Executive Committee should be formed to facilitate action on behalf of the Policy Committee. Membership of the Executive Committee should be relatively small.

4. Special Work Committees should be appointed for specific tasks, such as preparation of questionnaires for parents, students, business and industry, and other tasks as may be assigned by the Policy Committee.

5. The Advisory Committee should review the outline for the study, consider the techniques to be used in connection with questionnaires proposed for employers and employees, assist in planning contacts with business and industry, help to make arrangements with those to be interviewed, and advise and assist in the development of public understanding and in the final implementation of the survey.

SUGGESTED ORGANIZATION CHART FOR
AN AREA VOCATIONAL-TECHNICAL EDUCATION STUDY



SECTION III
LEGAL PROVISIONS REGARDING AREA VOCATIONAL-TECHNICAL EDUCATION PROGRAMS

Several Federal and State laws deal directly with the establishment and operation of area vocational-technical education programs. The applicable provisions of these laws are briefly described in the following sections:

Federal Legislation

Vocational Education Act of 1963, P. L. 88-210

The Vocational Education Act of 1963 attacks basic problems affecting Vocational Education. The Act is comprehensive in scope and includes all persons and all occupations except those generally considered professional or as requiring a Baccalaureate or higher degree. It is concerned with occupational preparation for workers of all ages and at all levels for all fields. It makes provision for meeting the needs of persons in sparsely settled as well as urban areas. Among its provisions, the 1963 Act provides funds for the construction of area schools. The Act defines four types of area schools. The four types are:

A. A specialized high school

B. A department of the high school providing education in no less than five different occupational fields

C. A technical or vocational school

D. A department or division of a junior college or community college or university which provides vocational education in no less than five occupational fields, under the supervision of the State Board leading to immediate employment but not leading to a Baccalaureate Degree

If the school is Type A, B, or C, the Act says, it must, to be supported with Federal funds, be "used exclusively or principally to give vocational education to persons available for full-time study in preparing to enter the labor market." If it is Type C or D, it must admit, as regular students, both persons who have completed high school and persons who have dropped out of school. All area schools, no matter what their type, must be available to all residents of the state or of an area of the state designated by the State Board of Education.

Funds can be used to construct new buildings; to expand, remodel or alter old buildings; to grade and improve sites; and to pay architects fees. Initial equipment is considered part of construction costs.

The Act provides that at least 33-1/3% of the funds approproated must be spent for vocational education at the post-high school level or for construction of area schools up through fiscal 1968 and at least 25% of such funds thereafter.

State Legislation

The Intermediate School District Act, Act 190, P.A. 1962, as amended

Act No. 246, P. A. 1964, amended Act 190 to provide for financing area vocational-technical education programs on a similar basis to special education programs. These amendments permit the electorate to authorize the collection of millage to finance area vocational programs. If a millage for this purpose is passed by an intermediate district, the Intermediate Board of Education would enter into long-term contract with one or more K-12 school districts or community colleges to provide vocational programs on an area basis. The entire cost, including both capital outlay and operation, could be financed with this millage. Intermediate districts are specifically prohibited from operating such districts themselves. The operating units would agree to serve students from an area designated and approved by the State Board of Education on a non-tuition basis.

The Community College District Act, Act 188, P. A. 1955, as amended

Act 237, P. A. 1964, amends Act 188 to provide for the formation of a community college district by one or more counties or by two or more K-12 districts for the sole purpose of establishing and operating an area vocational-technical education program for both high school and post-high school students if the Board of Trustees so desires.

The Act also gives authority to the State Board of Education to designate attendance areas outside a particular community college district for those to be enrolled in area vocational-technical education programs.

Inter-governmental Contracts Between Municipal Corporations, Act 35, P.A. 1951

This Act defines a school district as one type of municipal corporation. Section 2 of this Act reads as follows:

> Any municipal corporation shall have power to join with any other municipal corporation, or with any number or combination thereof by contract, or otherwise as may be permitted by law, for the ownership, operation, or performance, jointly or by any 1 or more on behalf of all, of any property, facility or service which each would have the power to own, operate or perform separately.

An Attorney General's Opinion issued April 7, 1959, in a letter to the State Superintendent of Public Instruction, ruled that this Act would permit two or more school districts to establish a joint "technical high school." An area vocational-technical education facility would be covered by the definition in this opinion.

SECTION IV
ORGANIZATIONAL PATTERNS FOR AREA VOCATIONAL-TECHNICAL EDUCATION PROGRAMS

This section briefly describes organizational patterns for area vocational-technical education programs currently possible under Michigan law. Administrative problems inherent in the first two types described below negate utilizing these as permanent solutions for area program development. It may be necessary, however, to utilize one of these patterns as an interim step toward the development of a cooperatively operated central facility.

Decentralized Programs

A decentralized area vocational education program is one in which several neighboring school districts agree to offer certain programs and to exchange students. This organizational pattern permits increasing the availability of a variety of occupational preparation programs. It has some administrative disadvantages regarding efficiency of operation, increased transportation problems, tuition problems, and increased coordination difficulty between programs.

Tuition Programs

In some cases, it may be possible for one school district to operate a large number of vocational programs making these available to students on a tuition basis from neighboring schools. This type of organizational pattern seldom provides a desirable solution to meeting vocational education needs. In the case of overcrowded conditions, students from the operating district will naturally be served first. Seldom will one district be able to provide sufficient buildings and equipment to meet the needs of students from the surrounding area even though tuition is charged.

Programs Financed by Intermediate Districts

Area programs may be established and operated on an intermediate school district basis. Such programs would be financed with an intermediate district millage and operated by K-12 districts and/or community colleges. Intermediate District Board of Education would enter into long-term contract (minimum of 15 years) with one or more K-12 districts or with a community college district. Such contracts would specify the attendance area to be served by each operating unit. These attendance areas must be approved and designated by the State Board of Education. The cost of both capital outlay and operation of the area centers would be determined, the anticipated State-Federal reimbursement would be deducted from this amount, and the entire remaining cost would be paid from the intermediate district millage. The operating district would participate in financing the area center to the same extent as any other district.

Community College

All community college districts may offer vocational programs on an area basis at the post-high school level. In addition, upon the request of K-12 district superintendents, they may offer vocational programs on an area basis for high school youth.

Joint Operation by Two or More Districts

Two or more K-12 districts may jointly establish, own and operate area vocational programs. Existing legislation, however, does not give two or more districts joint taxing powers for this purpose.

SECTION V
PLANNING FACILITIES FOR AREA VOCATIONAL-TECHNICAL EDUCATION PROGRAMS

The success of area vocational-technical education programs will, to a great extent, be dependent on the planning that has been done prior to the construction of facilities. Today's schools require great flexibility in all phases of planning, site selection, facilities, architecture, staffing schedules, and instructional organization. Following are some suggestions which may serve as a guide for the establishment of an area vocational-technical center:

1. A survey of employment needs should be made to determine the number and kinds of occupations for which training should be offered. State and national needs must be considered as well as those of the local area.

2. The need for the project should be determined based on the size and nature of the geographical area to be served and the projected number of high school and post-high school students in the area. Consideration must also be given to the number and types of training facilities already available.

3. If the construction project being considered requires federal and state funds for support, clear determination should be made that the area concerned is qualified to initiate such a project. (Consult the Division of Vocational Education, Michigan Department of Education.)

4. Determination should be made of the amount of support that may be expected from local sources. This will involve a study of the amount of taxable wealth in a given geographical area, the probable extent of voter approval, industrial and business support, labor support, and student interest that may be expected.

5. Preliminary consideration should also be given to the organizational and administrative structure for the center.

In addition to the above factors, the cost of operation when the facilities are completed must be considered. It should be recognized that vocational-technical programs are generally more expensive to operate than most academic programs and preliminary planning must take this into account.

The size and offerings of an area vocational-technical center will, of course, be dependent on the several factors listed above; however, experience in other states indicates that there is a minimum sized facility that should be taken into account to assure economic operation.

Centers serving the needs of secondary school students should generally offer a minimum of 15 to 20 different occupational programs. The cost of constructing and equipping such centers will, of course, vary with construction costs in the area. In other states such construction costs range upwards from $1,000,000.

Experts in the construction of post-secondary technical education facilities indicate that the national average cost to construct and equip such centers is

between $4,000 to $5,000 per student. Again this will vary from community to community; however, the figures may be used by planners as a point of departure.

In addition to several commercial publications concerned with school construction the Michigan Department of Education has several bulletins available for distribution. These may be procured by writing to: Michigan Department of Education, Division of Publications, 1008 South Washington Avenue, Lansing, Michigan.

Publications available:

Planning Together For Better School Buildings, Bulletin No. 412.

Guidelines for Establishing Trade and Technical Education Programs, Bulletin No. 2147.

Industrial Education Facilities, Bulletin No. 2135.

Suggestions For the Development of Rooms and Facilities For Vocational Agriculture, Bulletin No. 296.

Planning Space and Equipment For Home Economics Departments, Publication No. 539.

SECTION VI
DEVELOPING CURRICULA

The development of curricula for area vocational-technical centers is a complex and challenging task. An area center must serve the needs of a student group more diverse and heterogenious than any other educational agency. Area centers can be established at the secondary and post-secondary school levels. Both levels share common problems, and there are problems indigenous to each level.

Secondary programs must be designed to serve a three-fold purpose: First, there is a significant number of students who do not complete high school. In order for these students to achieve any measure of occupational satisfaction in society, they must be equipped with salable skills that will allow them to enter the labor market. Secondly, it must be realized that now, and in the foreseeable future, a large percentage of our youth will not continue their education beyond high school. High school youth require extensive and intensive training in occupational areas, with some assurance that their training will enable them to enter and make progress in the labor market. Preparing students to enter post-secondary technical education programs is the third responsibility of secondary area centers. Post-secondary technician programs in the State of Michigan have not realized their potential enrollment-wise. Several factors contribute to this situation not the least of which is the ever present notion that vocational-technical programs do not provide the "status" which is sought by many capable high school youth and their parents. Consideration must be given to the development of technician programs that begin in high school and are completed in a post-high school institution.

The development of vocational-technical curricula in the community college is as complex if not more so than the secondary vocational-technical curricula. Community colleges in Michigan embrace an "open door" philosophy. They accept as students high school dropouts, students with special academic needs, students preparing for occupations, students for college transfer, and youth and adults engaged in avocational and vocational programs. It is also quite probable that in some areas of the State, community colleges will offer vocational-technical programs for secondary school students. This situation is likely to exist in sparsely populated areas of the State or in areas where there are not sufficient resources to operate separate facilities serving secondary and post-secondary students.

Curriculum development for occupational preparation has taken on a greater degree of sophistication in recent years. The first step in identifying curricula is determining the specific goals and objectives of the area center. This is generally accomplished by an area survey or study. Such studies should determine what the local community sees as the role of the institution, as well as ascertaining the curriculum offerings of neighboring institutions. Consideration must be given to local, state, and national needs, with the major emphasis being placed on the needs of the local community. A successful technique in determing needs is the appointment of a general citizens' advisory committee. This committee may initiate or have access to the results of a community survey. Such a survey should be designed to determine the immediate and long-range employment needs of business and industry in the community, how these needs are presently being met and finally what role the area vocational-technical center should play in satisfying unmet needs.

Detailed curriculum development for specific courses can be greatly aided through the use of advisory committees whose members are knowledgeable in the various occupational areas concerned. Such specific occupational advisory committees can be exceedingly helpful in supplementing the efforts of a general advisory committee for the total vocational-technical program of the center.

The following procedure is suggested for those involved in developing curricula for area vocational-technical centers:

1. The needs of the community must be determined.

2. Citizen advisory committees should be appointed and used.

3. The purpose (goals and objectives) of the institution must be defined.

4. Curricula must be developed that reflect the purposes of the institution.

5. A continuous program of curriculum evaluation must be established.

6. Procedures must be established for the purpose of keeping the curriculum up to date.

SECTION VII
ESTABLISHING DESIRABLE RELATIONSHIPS WITH BUSINESS, INDUSTRY, AND LABOR

The attainment of high quality vocational-technical education programs which are realistic in light of actual or anticipated opportunities for gainful employment is not possible without the close involvement of knowledgeable persons from business, industry, and labor. In fact, the Michigan State Plan for Vocational Education requires that in order to be eligible for State-Federal vocational funds, programs must be developed and conducted in consultation with potential employers and other individuals having skills and substantive knowledge of the occupations for which training is provided.

The use of advisory committees is usually the more satisfactory way to secure needed assistance from business, industry, and labor. Advisory committees may be used:

1. To advise school administrators regarding occupational training needs.

2. To recommend ways through which vocational-technical education needs can best be met.

3. To apprise school administrators of the changing needs of the community and the nation.

4. To advise on curriculum content and acquisition of needed facilities and equipment.

5. To recommend standards of competency and achievement which are necessary for employment.

6. To suggest and support needed local, state, and national action to assure adequate vocational-technical education.

In addition to assistance gained thrcugh the use of formal advisory committees, other techniques which may prove helpful in involving business, industry, and labor are:

1. Ask business, industry, and labor to provide resource persons for various vocational courses.

2. Conduct tours of vocational-technical education facilities and programs and invite business, industry, and labor personnel to participate.

3. Establish a student follow-up program to evaluate the student's progress on-the-job, to determine the effectiveness of training, and to provide information for program improvement.

4. Consider an annual banquet to honor both vocational education students, businessmen and industrialists for achievements during the year.

For additional assistance in using business and industry advisory committees, request Publication No. 546, Vocational-Technical Advisory Committees, from the Michigan Department of Education.

SECTION VIII
SUMMARY

No attempt has been made in this bulletin to give a complete analysis of the topics listed in the table of content. Separate bulletins are needed for complete coverage. With the time and space available, several ideas have been presented which it is hoped will be helpful.

The area vocational-technical education program concept has been set forth as a means of giving all persons an equal opportunity to prepare for an occupation. This concept recognizes the limitations of insufficient numbers of students and insufficient financial resources facing many school districts. The area concept proposes that area centers be provided to serve the vocational-technical education needs of several cooperating districts.

This bulletin recommends that an area vocational-technical education study be made prior to the establishment of area programs. The study should be designed to determine what vocational-technical education programs are needed at both the high school and post-high school levels, where these programs should be located on a centralized basis, and how these programs will be financed. Guidelines for conducting such studies are included in the document.

Certain legal provisions must be taken into account when establishing area programs of vocational-technical education. These are found in federal, state, and local laws and regulations. Those included in this bulletin are the Federal Vocational Education Act of 1963, P. L. 88-210; the State Intermediate School District Act, Act 190, P. A. 1962, as amended; The Community College District Act 188, P. A. 1955, as amended; and Inter-governmental Contracts Between Municipal Corporations, Act 35, P. A. 1951.

Although several organizational patterns are possible, centralizing under one jurisdictional unit is considered to be the most desirable. Each area center must be designated and approved by the State Board of Education in order to be eligible for State-Federal construction and operational funds. In addition, they must receive State Board approval under several of the Acts mentioned above.

Facilities should be flexible and geared closely to curricular demands taking into account whether the program is secondary or post-secondary and if training is for skilled workers or technicians. Definite steps are set forth as guidelines for establishing an area vocational-technical center. Centers should offer a minimum of 15-20 different occupational preparation programs. Costs range between $4,000 and $5,000 per student and $1,000,000 to $2,000,000 per facility.

Secondary programs should serve three groups of students: Those who do not complete high school, youth who do not continue their education beyond high school, and high school students preparing to enter post-secondary vocational-technical education programs. Procedures suggested for developing curricula for area vocational-technical centers include determination of needs of the community, appointing advisory committees, defining goals, developing curricula and providing continuous evaluation and revision of curricula.

Recruitment, selection, placement and follow-up of students are vital concerns in the process of assisting individuals to choose, prepare for, enter upon, and

become adjusted to their vocation. A competent faculty working in close relationship with leaders of business and industry is needed to perform these functions as well as the day to day training and education indicated throughout the bulletin. Federal and State support is available for these programs. Detailed information regarding reimbursement from State and Federal appropriations can be secured from the Division of Vocational Education, Michigan Department of Education.

VT 001 514
Occupational-Vocational-Technical (OVT) Curriculum and Guidance, Employment Supervisors, Social Development. Evaluation Reports, 1966.

Pittsburgh Public Schools, Pa.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 66 38p.

*VOCATIONAL EDUCATION; *EXPERIMENTAL PROGRAMS; CAREER PLANNING; ADJUSTMENT COUNSELORS; *STUDENT ADJUSTMENT; JOB PLACEMENT; *VOCATIONAL COUNSELING; *EMPLOYMENT SERVICES; SECONDARY GRADES; INTERMEDIATE GRADES
PITTSBURGH

Progress reports of three experimental programs in the Pittsburgh Public Schools are presented. In the spring of 1965, it was decided that all high schools in the city of Pittsburgh would offer comprehensive occupational-vocational-technical programs including traditional subjects as home economics and business education. As a result of this decision, experimental programs have been initiated at the middle school level (grades 6, 7 and 8). Plans call for exposure of students to all job areas in grades 6, 7 and 8, a narrowing of focus in grades 9 and 10, and a choice of a specific job area in grades 11 and 12. Pilot studies are proposed. A Vocational Placement Office in the Division of Pupil Services was established in 1962 to provide adjustive counseling and job placement for young people of limited abilities. Personnel and services have been expanded. A social development program is proposed which will be an experiment in improving self-image, attitude toward learning, and social behavior for children who display disruptive behavior and poor academic performance. (PS)

VT 001 514

ED039370

(C1)

Evaluation Reports, 1966

OVT Curriculum and Guidance

Employment Supervisors

Social Development

Pittsburgh Public Schools

Sidney P. Marland, Jr., Superintendent of Schools

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VT 01514

Evaluation Report, 1966

OVT Curriculum and Guidance
Ann Martin

Pittsburgh Public Schools

Sidney P. Marland, Jr., Superintendent of Schools

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17. OVT Curriculum and Guidance

History of the OVT Program

The objectives of the occupational-vocational-technical (OVT) education program currently adopted by the Pittsburgh Board of Public Education were first outlined in the Dauwalder report on vocational education in the Pittsburgh Public Schools.[1] This report resulted from a detailed investigation into all phases of the industrial economy in the local region. Its coverage included information on employment and unemployment trends, the industries and their needs and programs, educational facilities from elementary school through college, present and proposed vocational education, and points of contact between the student and the community. One of the major recommendations of the report was that current and future high school students be given some specified occupational, vocational, technical, and professional training at the public high school level to provide them with salable skills. A core curriculum was proposed as the basis for the new vocational program. This curriculum was to include the following core areas: Academic, Business, Occupational, Vocational, and Technical. Definitions of these areas were provided.

In the spring of 1965, it was decided that all high schools in the city of Pittsburgh would offer comprehensive occupational-vocational-

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[1] See pages 56-68 of "Vocational Education in the Pittsburgh Public Schools," by D. D. Dauwalder, Pittsburgh Board of Public Education, 1963.

technical programs including traditional skill subjects such as home economics and business education.[1] High schools would attempt to provide all levels of the occupational, vocational, technical, and academic programs. However, since not all specific offerings could be provided by any one high school, geographical distribution would be worked out to insure that all offerings would be available to students within reasonable travelling distance.

As a result of these decisions, changes were instituted in many academic and vocational schools. The vocational schools' programs were redirected to make them more comprehensive. The traditional academic schools planned for alteration of facilities in order to provide for the more comprehensive program, while plans for design of new high schools were made with the comprehensive program in mind.

Early in 1966, a Middle School curriculum development proposal was submitted as part of a larger more comprehensive proposal. The primary concern of this project is the design and implementation of a program to provide all students with some experiences in designated occupational, vocational, and technical areas. It was proposed that this program consist of a broad set of exploratory experiences at the Middle School level (grades 6, 7, and 8). One of its objectives would

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[1]See "Summary of Mountain View Seminar," OVT Education, Pittsburgh Board of Public Education, 1965.

be to provide the student with a method of exploring the world of work for increased occupational awareness. The planned experiences would become narrower in focus and greater in depth as the student advanced from the ninth to the tenth grade. Another objective would be to provide more appropriate experience and guidance toward the selection of a job-centered curriculum in grade 11. The experiences themselves would be designed to provide increased knowledge and skill in the concepts and processes involved in a wide variety of occupational fields. An exploratory industrial arts program in grades 6, 7, and 8 would be required of all students in lieu of the traditional industrial arts program that currently exists at the junior high school level.

In the 1965-66 school year, a program was initiated at one of the recently combined academic and vocational high schools. The program can be considered a pretest of the proposed plan. This pretest was an attempt, at the ninth grade level, to rotate students through an exploratory industrial arts program to provide them with awareness of at least nine occupational areas. Information on the feasibility of the operation, students' attitudes toward the experience, and teacher's evaluation of the gains achieved was then obtained.

Rationale for Exploratory Industrial Arts Program. In developing a job-centered curriculum at the high school level, it is recognized that the student may not be ready in grades 9 or 10 to choose a job area for study in grade 11 without the experiences necessary to know what the

"world of work" is all about. Therefore, appropriate experiences must be provided at the Middle School level to bridge the gap between the beginning of occupational awareness in sixth grade and actual job curriculum choice in eleventh grade. The specific occupations chosen for the exploratory curriculum would be those occupations that: (1) provide job entry opportunities, advancement possibilities and/or apprenticeship possibilities, and (2) lend themselves to instruction that can be provided at the secondary school level. To contribute to development of the attitudes and understandings necessary for vocational competence, the experiences provided by the job-centered curriculum should include the psychosocial and economic aspects of the job situation as well as technical skill requirements. It is expected that the data obtained as the student progresses in the program will provide information about him which will be useful in guidance.

The Proposed Plan

The Job-Centered Curriculum. After considerable investigation, experimentation, and discussion, four vocational areas, each of which includes a cluster of specific occupations, were proposed around which the core curriculum for the proposed OVT education program would be developed. These four broad vocational areas are: (1) Visual Communication, (2) Construction, (3) Manufacturing, and (4) Power Transportation. (See Appendix A.)

Criteria used in the selection of these areas are as follows: (1) these broad areas are in the field of industrial education; (2) they have a present and future demand; (3) they provide a broad base of skills; and (4) they require no more than a high school education or, at the most, two years of additional training. A similar set of core areas is being planned in home economics. This area will include the specifics of home and family living, food, clothing, child care, and community living. Business, as a vocational area, will be added to the exploratory program at a later date.

Operation of the Exploratory Program. Appendix B presents, in diagrammatic form, the vocational curriculum plan for broad exposure to all job areas in grades 6, 7, and 8, a narrowing of focus in grades 9 and 10, and choice of specific job area in grades 11 and 12. This appendix represents an overview of student progress through the developmental curriculum.

The Curriculum Content. The fundamental elements of the proposed curriculum are: (1) the basic concepts specific to the technology for each job area for each target population, (2) basic concepts specific to the attitudes and knowledges of relationships required for the psychosocial and economic aspects of work for each target population, (3) the materials and equipment best suited for teaching these concepts, and

(4) the experiences or exercises required for student performance on the materials and equipment. Laboratory exercises or experiences will be developed to demonstrate mechanical, electrical, electronic, and biological principles basic to the job technologies. In brief, the concepts that the student should know will be developed, the equipment to teach these concepts will be determined, and the experiences required to develop the knowledge and skill will be identified.

Objectives of the Program.[1]

1. To provide a broad set of experiences which can be used along with other objective evidence in vocationally guiding the student;

2. To raise the aspiration level of deprived children by increasing their overall awareness and understanding;

3. To provide experiences involving observation, action (cooperative and individual), and guidance to help students to learn to think, or to do and find things for themselves;

4. To provide opportunity for children to develop their inherent manual and creative skills during the exploratory years (grades 6, 7, and 8); and

5. To help young people understand technology.

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[1]These are the objectives as set forth in the original proposal.

Pilot Study for 1966-67

The primary objectives of the first phase of the pilot study are: (1) to develop the content of specific courses, i.e., the sequence of concepts, experiences and activities of the exploratory curriculum; (2) to design the curriculum content to teach vocational planning to students in the program; and (3) to implement the curriculum in five pilot schools.

The exploratory industrial arts program will be initiated in the following five Pittsburgh secondary schools:

1. Westinghouse High School
2. Herron Hill Junior High School
3. Knoxville Junior High School
4. Prospect Junior High School
5. Latimer Junior High School

These schools represent socioeconomic settings where there is most need for occupational information. In addition, the organization of the school program lends itself readily to the adjustments required for the exploratory courses.

The existing shops in these schools have been reequipped and converted to comprehensive laboratories. The changes are as follows:

1. Wood Shop - converted to Construction Laboratory
2. Printing Shop - converted to Communications Laboratory
3. Metal Shop - converted o Manufacturing Laboratory
4. Power Mechanics Shop - converted to Transportation Laboratory

The Home Economics facilities have been reorganized in the following ways:

1. Kitchen Facility to be used for Food and Nutrition
2. Sewing Room to be used for Clothing and Textiles
3. Living Areas to be used for Home and Family

At present, a six-week in-service training program is being conducted for teachers in the OVT program in the schools. The objectives of this program for the teachers who will be involved in the exploratory industrial arts program are: (1) to reorient thinking and define new educational objectives for the coming years, (2) to determine the concepts that are important for exploratory courses and proceed to formulate them at the student's level of understanding, (3) to determine the activities and equipment necessary to teach these concepts, (4) to develop techniques for matching activities and opportunities to student capabilities, (5) to develop a guidance viewpoint, and (6) to develop additional skills in the core areas.

A one-week workshop for approximately 70 secondary guidance counselors, including those from pilot schools, is being conducted. The objectives of this workshop are as follows:

1. To orient counselors to the new dimensions added to their role by the expanding occupational-vocational-technical programs and the commitment to the comprehensive high school.

2. To develop an awareness among counselors of the occupational-vocational-technical programs now in operation and those planned for the immediate future in Pittsburgh.

3. To develop in counselors an appreciation for the reasons that the OVT program has been initiated.

4. To clarify counselors's thinking regarding programs, policy, and procedures in OVT and offer them an opportunity to communicate regarding their feelings in areas of concern.

5. To develop among counselors an understanding of the comprehensive high school concept and an appreciation of its values in the education of secondary school pupils.

6. To acquaint counselors with recent developments in the field of vocational guidance and counseling and in vocational choice.

7. To develop among counselors an awareness of employment opportunities available and to improve their knowledge of industry.

8. To create awareness among counselors of the influence of change upon the stability and permanence of occupational choices.

9. To develop among counselors an appreciation of the worthiness of all employment.

10. To interest counselors in further reading and study.

The pilot study will include all students in the seventh and eighth grades at the five schools listed earlier with the exception of those admitted to the Scholars Program in the eighth grade. (Approximately 5 per cent to 6 per cent of the students will be in the Scholars Program in these schools.) The sixth grade will be included in succeeding years, as the 5-3-4 grade structure emerges for the Pittsburgh schools.

The students in the seventh and eighth grades in the pilot schools will be guided by industrial arts teachers through a series of units and class projects which will give them a range of experiences in the occupational areas described earlier. These units and class projects will have been developed during the in-service training program, which is now being conducted.

A planning center with current texts and periodicals will become an integral part of each industrial arts laboratory, supplying resource material as needed to stimulate and motivate students.

Boys and girls will cross lines in the program. For example, boys will share in appropriate home economics experiences such as foods and clothing and girls will partake of appropriate industrial arts experiences such as sketching, drafting, minor assembly, etc. The details of the selection of activities for boys and girls will be worked out by the individual schools.

Children enrolled in parochial schools will be treated initially as a special group, but will experience the same range of activities

as those currently enrolled in project schools. In succeeding years, appropriate steps will be taken to see that parochial school students are distributed among ongoing classes and treated as regular members of these classes.

Special education students will be assigned to the exploratory industrial arts program and experiences will be provided at a level commensurate with their ability. During the first year of the program each school will determine whether to schedule Special Education students in small numbers along with regular students or treat them as a special group. When treated as a group, a Special Education teacher will be involved.

Collection and Analysis of Objective Data. The new exploratory program and materials will be tried out in five schools in grades 7 and 8. The total population of students in the pilot program will number approximately 6,000. An appropriate control sample will be selected.

Instrumentation. Evaluation of the pilot program will be carried out by obtaining various measures of change in participant's behavior both in the experimental schools and the control schools. Tests will be selected or developed that measure the concepts, knowledges, and skills to be taught in the curriculum. The instruments will include tests and measures such as the following:

The Vocational Development Inventory-VDI
by John Crites, University of Iowa

This measure was designed for use with students in grades 5 through 12, but has been used with college freshmen. It consists of two parts: (1) Attitude Scale, and (2) Vocational Competence Test. The attitude scale is designed as a measure of dispositional response and attempts to identify attitudes that facilitate or interfere with vocational choice. The Vocational Competence Test measures educational and vocational planning ability, knowledge of what people on different jobs do, vocational goal selection ability, and vocational problem solution ability. It is recommended that this measure (or a similar instrument such as Gribbons Readiness for Vocational Planning (RVP) be used). (Gribbons, 1964, pp. 908-913)

Dailey Vocational Tests (Dailey, 1965)

These tests were designed to cover the areas of nonverbal abstract reasoning, spatial visualization, mechanics, and electricity. They are suitable for use with grades 6 through 9.

Project TALENT Information Tests

Sections on Aeronautics and Space, Mechanics, and Electricity and Electronics may be used.

Dailey Technological Information Test

This test was designed for use with grades 6 to 10. It consists of items on mechanics, electricity, transportation, communication, aero-space, and construction.

Administration of Tests. The total test battery will be administered early in the school year, and at the end of the 1966-67 year.

Analysis. Learning curves will be prepared using results from the Dailey Vocational Tests, Vocational Planning Index, and other instruments for each student, class, and school and for the total group by grade levels for the pilot and control schools. Comparison of data for the pilot and control groups will show results of the exploratory program.

A factor analysis will be performed on the scores of the tests to determine how the structure of vocational skills and knowledge changes as a result of exploratory experience.

Differences in learning by sex and type of student (regular, special education, etc.) will be observed.

Subjective Data. During a meeting to be conducted shortly after the termination of the project, teachers and guidance counselors will be asked to evaluate, by means of a questionnaire, the short-term impact of the program.

Students' attitudes toward the program will be determined by means of a questionnaire, and by their decisions concerning selection of courses in the industrial arts program for the coming year.

Recommendations for Program Modification

Curriculum Development. Although a great deal of attention has been paid to the mechanics of making the exploratory program operational, relatively little attention has been paid to developing a theoretical model upon which the curriculum may be based. Hard scientific thinking must be given to the problem of defining the range of job functions in the occupational areas chosen for the job-centered curriculum and systematically translating these into concepts, required equipment, and educational tasks. In addition, empirical evidence needs to be obtained on how technical knowledges, skills and concepts of work are distributed by grade, sex, and socioeconomic status. The curriculum developed would then reflect the result of this research activity.

It is recommended that a committee composed of national consultants be formed to develop the theoretical formulations on which the curriculum will be based, to formulate the curricular goals, and to design the learning structures to meet these goals. The experience of subject matter scholars working with the schools on nationally oriented projects in mathematics, biology, foreign languages, and English has already demonstrated the value of this approach.

Rapid technological changes are creating new tasks and these must be taken into account in the design of vocational education programs. A major problem to be faced is the need for continual updating of the model

curriculum in light of new knowledge and technology. Another problem to be considered is how to apply knowledge from the behavioral sciences to the formulation of curricular goals and the designing of learning structures. The desired result is a model curriculum based on current psychological, social, economic, and educational theory and practice, and an effective mechanism for its updating.

Recent developments (such as those at the Communication in Guidance Project at the University of Pittsburgh) in the design of materials for vocational instructions and guidance should be investigated. Materials for individualized study as well as group discussion need to be found or developed. A plan for the preparation of teachers and guidance counselors to use these materials should also be developed.

The overall program of concepts, equipment, activities, and guidance materials may, in itself, furnish a demonstration model which may be studied to learn more about effective means of increasing the range of functioning of all students.

References

Dailey, John. The Dailey Vocational Tests. Boston: Houghton Mifflin Company, 1965.

Gribbons, W. D. Changes in readiness for vocational planning from the eighth to the tenth grade. Personnel and Guidance J. 1964, 42, 908-913.

Appendix A

PITTSBURGH PUBLIC SCHOOLS
DIVISION OF OCCUPATIONAL, VOCATIONAL, AND TECHNICAL EDUCATION

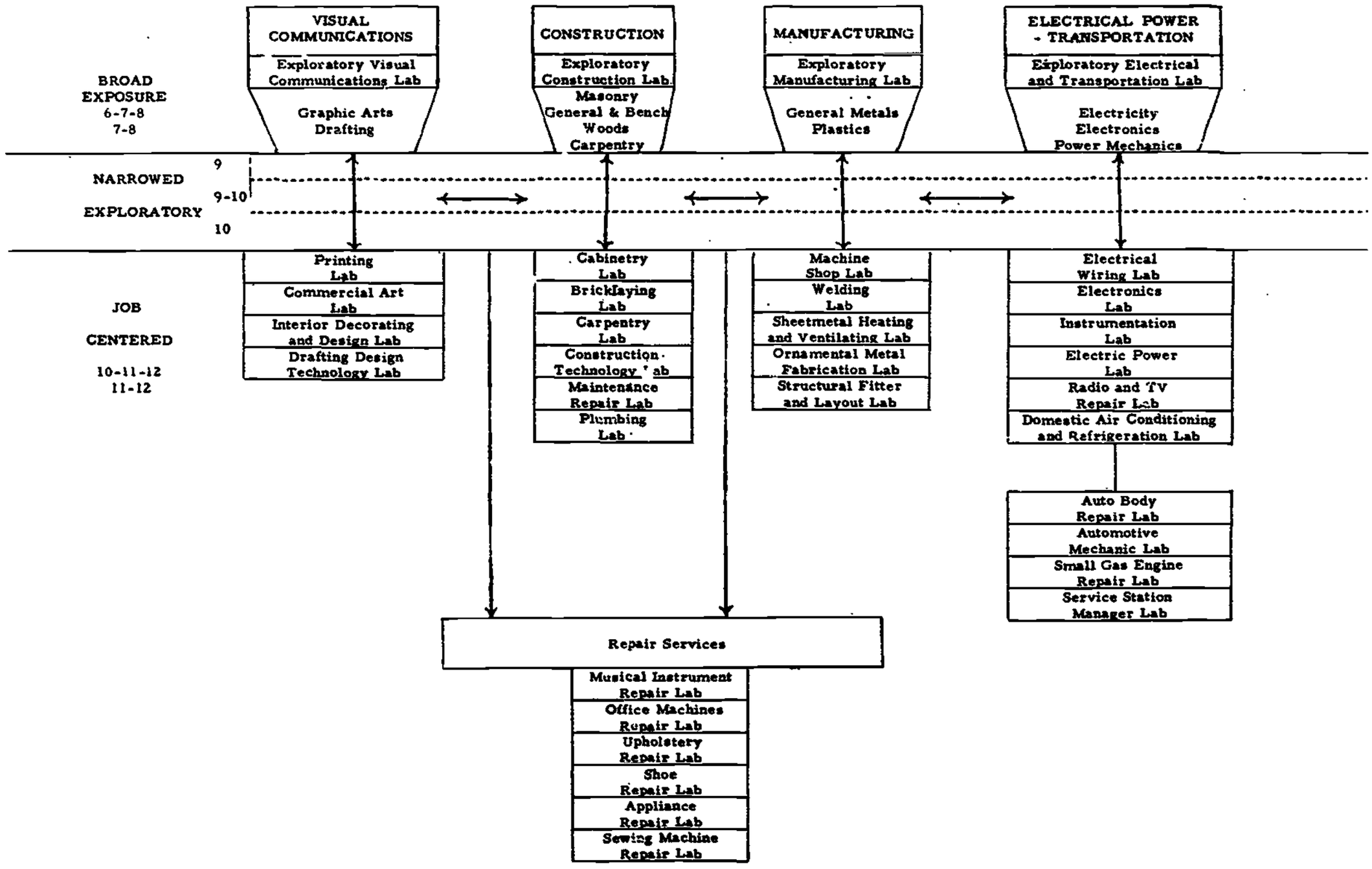
EXPLORATORY INDUSTRIAL ARTS

VISUAL COMMUNICATION	CONSTRUCTION	MANUFACTURING	POWER TRANSPORTATION
Printing Letter Press Offset	General and Bench Wood	General Metals Machine Work Sheet Metal	Electricity
Silk Screen	Carpentry Full Size Scale Model	Foundry	Electronic
Photography		Welding	Hydraulic Power
Mechanical Drawing	Masonry Concrete Brick	Plastics Vacuform Injection	Pneumatic Power
Rubber Stamp			Small Gas Engine
Engravograph			Steam
Bookbinding			Turbo Jet
			Rockets Solid Fuel Liquid Fuel

December 15, 1965

Appendix B

EXPLORATORY - INDUSTRIAL



Evaluation Report, 1966

Employment Supervisors
Donald F. Semans

Pittsburgh Public Schools

Sidney P. Marland, Jr., Superintendent of Schools

8. Employment Supervisors

History

In August 1962 the Pittsburgh Board of Education established a Vocational Placement Office in the Division of Pupil Services. This office was housed in the Fifth Avenue High School until September 1965, when it was moved to the Administration Building. Its function was to provide adjustive counseling and job placement for young people of limited abilities. The staff at that time consisted of one secondary guidance counselor. A new phase of the program began in Jaunary 1966 under the provisions of ESEA. Plans were made for the addition of two employment supervisors who would focus their efforts on schools located in economically deprived areas of the city. The search for trained personnel began immediately; plans for working with the schools were formulated. The first supervisor, who was hired on June 20, 1966, concentrated on the placement of the June graduates. As of August 15, 1966, the office had been able to place 764 of these graduates. (See Appendix A.) The other supervisor will start in September 1966.

Objectives of the Program

1. To assist those who are not successful on their own in finding suitable full-time employment;

2. To help young people develop positive attitudes toward gainful employment;

3. To assist young people who, for financial reasons, need part-time work;

4. To encourage dropouts to stay in school;

5. To help develop ways to train slow learners in routine jobs; and

6. To supply printed information on job opportunities.

Target Population

The young people served by the Vocational Placement Office are high school graduates, dropouts, or students in grades eight through twelve who are seeking part-time or full-time employment. They are at least 16 years of age (to comply with state employment laws) and of both sexes. They come from qualifying public schools and neighborhood parochial schools in the city of Pittsburgh.

Parochial school students are channeled into the program through efforts made by the two employment supervisors who will (1) visit the parochial schools and explain to students the services that are available, (2) work with the counselors and administrators to insure a working knowledge of the program; and (3) supply printed information on job offerings and opportunities.

Program Description

The office interviews young people who come voluntarily seeking job placement or who are referred by school counselors, administrators, school social workers, Juvenile Court, the Central Administrative Office, or community agencies. (See Appendix B.) Sometimes interviews are

also held with parents. This initial interview may last from one-half hour to one hour and a half, because procedures vary with the age of the applicant. Young people under the age of 18 must have a physical examination and obtain work papers issued by the Child Accounting Department. Graduates or dropouts 18 and over need not undergo the examination or file the work papers.

All dropouts must have a job before they leave school. When drop-out appears inevitable, the school principal or counselor makes direct contact with the Vocational Placement Office. Besides aiding them in finding a job, the office also encourages dropouts to return to school or to enroll in the Schenley Standard Evening High School to earn a diploma. The VPO also contacts social agencies when home problems are involved.

The employment supervisors plan to spend more of their time working with students seeking part-time employment, since this approach can prevent dropout and because opportunity for part-time employment for young people in school is increasing at a rapid rate in Pittsburgh. The part-time job provides a two-pronged opportunity for young people from economically deprived neighborhoods: (1) the opportunity for work experience, and (2) the opportunity to supplement the family income while continuing their education.

Through the efforts of school counselors and the Vocational Placement Office, part-time jobs were found for 1, 823 (1, 360 boys and 463 girls) during the 11 months ending July 8, 1966. This number

should increase substantially with the additional efforts of two employment supervisors. The greatest number of young people were placed in jobs as sales people, theatre and bowling alley employees, caddies, recreational workers, restaurant and cafeteria workers, and hospital workers. (See Appendix C.)

In order to assess the opportunities available to these young people, the director of the office visits businesses and industries, especially those involving routine skills and on-the-job training for beginners. Over 100 such employers in the Pittsburgh area have been identified.

A close working relationship is also maintained with government and civic agencies such as the Pennsylvania State Employment Service, the Urban League and its Job Skills Bank, and the Federal and State Civil Service agencies. By these contacts young people may be kept fully informed of job availabilities, job requirements, and the dates of qualifying tests.

The Vocational Placement Office also works closely with the high schools in placing graduates in jobs. The schools send lists of their graduates with addresses and telephone numbers. These lists are marked by the school to indicate whether the young person is going to college, in the armed services, employed (type of work and employer are specified), or unemployed. The VPO staff then contacts all those

listed as unemployed and begins to look for jobs for them. This service continues until the young person is employed.

The Vocational Placement Office keeps accurate records of all applications, interviews, and job placements. It also maintains lists of employers in the area. As the office becomes better known in the community, this list should include more employers seeking technical and secretarial workers.

Tentative Recommendations Based onShort-term Program

1. Job placements should be analyzed to determine:

a. Areas which provide the greatest number of opportunities for young workers;

b. Areas in which more work should be done to increase the number of placements;

c. Monthly and seasonal peaks in number of placements; and

d. Changes in curriculum offerings to meet job market demands.

2. The number of applicants in relation to the number of placements should be studied to determine the effectiveness of the program. This analysis could indicate the need for more personnel or the need for locating more potential employers.

3. The change in attitude of young people toward employment or completing high school resulting from contact with the office should be measured. This information could be obtained through a questionnaire or a survey of teachers and employers. An instrument should be developed for use in September 1966.

4. Since schools, distributive education programs, OVT programs, and other programs are all aiding in the placement of workers, a central agency should be placed in charge to avoid duplication of effort and provide the best possible services to the young people of Pittsburgh.

5. The office can be a source of information about dropouts:

a. Is there a particular time in the school year when a majority of dropouts apply for jobs? Why?

b. What schools and city areas have the most dropouts?

c. How long does the dropout keep his job?

6. An evaluation of the long-term program should be done in July or August when one year's results will be available. Beginning in September 1966, monthly reports of job placements which include parochial school figures will be available. These reports will aid in the long-term evaluation.

Appendix A

Pittsburgh Public Schools

PLACEMENT REPORT OF 1966 HIGH SCHOOL GRADUATES
(as of August 15, 1966)

Office of Vocational Placement

1	2	3	4	5	6	7	8	9	10
SCHOOL	NO. ON COUNSELORS' LISTS	*DELETIONS	CURRENT NUMBER	PERMANENT NUMBER PLACED	**TEMPORARY PLACEMENTS	NO. ON NYC COUNSELORS' LISTS	*DELETIONS	CURRENT NUMBER	PERMANENT NUMBER PLACED
Allderdice	85	24	61	26	15	7	4	3	1
Allegheny	202	33	169	109	7	36	11	25	16
Arsenal Voc.	77	7	70	50	none	26	3	23	15
Carrick	173	44	129	75	4	9	4	5	5
Connelley	178	31	147	102	none	7	none	7	7
Fifth Ave.	40	24	16	8	9	15	8	7	5
Gladstone	67	26	41	17	4	22	8	14	4
Langley	88	1	87	16	15	22	6	16	11
Oliver	80	none	80	12	12	15	none	15	4
Peabody	250	35	215	49	18	39	11	28	7
Perry	212	13	199	17	6	37	3	34	6
Schenley	271	54	217	39	2	53	11	42	8
South	208	8	200	25	3	32	1	31	4
South Hills	285	66	219	72	23	23	none	23	3
Washington Voc.	35	13	22	14	11	7	1	6	3
Westinghouse	252	8	244	18	14	52	10	42	16
Totals	2,503	387	2112	649	143	402	81	321	115

* COLUMN 3 REPRESENTS THE NUMBER REDUCED BY CHANGE OF PLANS BY GRADUATES--(ENTERING SERVICE, CONTINUING EDUCATION, ETC.)

**COLUMN 6 REFERS TO SUMMER PLACEMENTS OF GRADUATES WHO WERE NOT ON COUNSELORS' LISTS IN COLUMN 1. THESE PEOPLE HAVE POST-HIGH SCHOOL EDUCATIONAL PLANS FOR THE FALL, 1966.

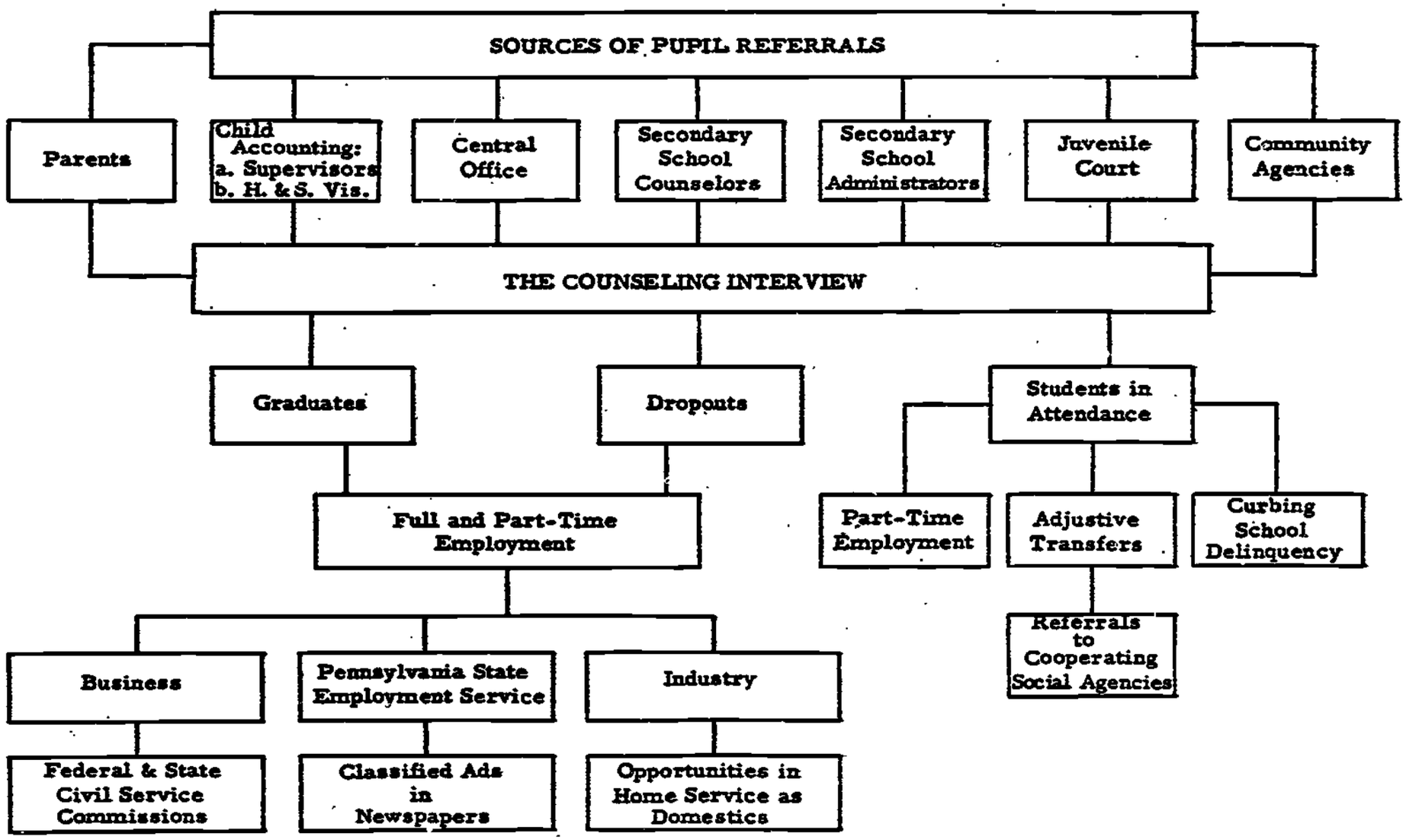
Appendix B

Pittsburgh Public Schools

OFFICE OF VOCATIONAL PLACEMENT
Referral Process for Job Placement and Adjustive Counseling

Division of Pupil Services

May 6, 1963



Appendix C

Pittsburgh Public Schools

PART-TIME PLACEMENTS
SEPTEMBER 2, 1965 THROUGH JULY 8, 1966

Office of Vocational Placement

CODE NUMBER	DESCRIPTION	TOTAL
1.	Apparel Industries	16
2.	Banking Services	1
3.	Building Trade Helpers	54
4.	Bookkeepers and Business Machine Operators	10
5.	Cashiers	5
6.	Salespeople	333
7.	Stenographers, Receptionists, and Typists	75
8.	Shipping and Receiving Clerks	58
9.	Forbes Field, Civic Arena, and Stadium Sales	175
10.	Domestic and Janitorial Services, Grass Cutters, Stable Boys	138
11.	Helpers on Trucks, Drivers	11
12.	Delivery and Stock Boys	123
13.	Factory Occupations not requiring Specialized Training-	103
14.	Gas Pumpers, Station Attendants	39
15.	Trainees in Auto Repairs	11
16.	Dental and Medical Laboratory Aides	none
17.	Medical Photography Trainees	1
18.	Eyeglass Assemblers	none
19.	Hotel Occupations-	none
20.	Laundry and Dry Cleaning Services	13
21.	Printing, Publishing, and Advertising	28
22.	Public Utility Occupations and City Services (NYC)	56
23.	Restaurant and Cafeteria Occupations, Hospital Workers	220
24.	Theater & Bowling Service, Caddies, Recreational Workers	306
25.	Car Washing and Maintenance	56
26.	Cosmetology	none
	TOTAL	1823

Appendix C
(Continued)

Pittsburgh Public Schools

PART-TIME PLACEMENTS
SEPTEMBER 2, 1965 THROUGH JULY 8, 1966

Office of Vocational Placement

SCHOOL	MALE	FEMALE	TOTAL
ALLDERDICE	176	57	233
ALLEGHENY	67	33	100
ARSENAL	none	22	22
CARRICK	44	34	78
CONNELLEY	77	none	77
CONROY	18	none	18
FIFTH AVENUE	55	16	71
GLADSTONE	28	7	35
GREENFIELD	3	1	4
HERRON HILL	25	1	26
KNOXVILLE	15	3	18
LANGLEY	77	19	96
LATIMER	10	none	10
MIFFLIN	2	none	2
OLIVER	86	20	106
PEABODY	115	99	214
PERRY	82	16	98
PROSPECT	14	none	14
SCHENLEY	92	32	124
SOUTH	90	34	124
SOUTH HILLS	135	47	182
WASHINGTON	74	none	74
WESTINGHOUSE	75	22	97
TOTALS	1,360	463	1,823

Pittsburgh Public Schools

PLACEMENT REPORT - SEPTEMBER 1, 1965 THROUGH OCTOBER 31, 1966

Office of Vocational Placement

CATEGORY	DESCRIPTION	GRADUATES	DROPOUTS	PART-TIME
1	Apparel Industries	24	8	21
2	Banking Services	15	2	1
3	Building Trade Helpers	63	28	101
4	Bookkeepers, Business Machine Operators	65	2	15
5	Cashiers	15	0	25
6	Salespeople	222	40	579
7	Stenographers, Receptionists, Typists	452	23	131
8	Shipping & Receiving Clerks, Mail Clerks	73	14	88
9	Forbes Field and Stadium Sales	2	0	226
10	Janitorial Services, Grass Cutters	32	52	185
11	Helpers on Trucks, Drivers	9	5	11
12	Delivery and Stock Boys	99	52	237
13	Factory Occupations	274	40	144
14	Service Station Attendants	23	17	71
15	Trainees in Auto Repairs	10	5	19
16	Laboratory Aides	13	0	5
17	X-Ray Trainees	5	0	1
18	Eyeglass Assemblers	4	0	0
19	Hotel Occupations	2	3	0
20	Laundry & Dry Cleaning Services	7	11	32
21	Printing, Publishing, and Advertising	20	10	46
22	City Employees	30	248	75
23	Restaurant, Cafeteria, & Hospital Workers	137	130	461
24	Recreational Employees	61	20	413
25	Car Washing & Maintenance	20	42	86
26	Cosmetology	25	0	0
	TOTALS:	1,712	752	2,978

Pittsburgh Public Schools

PLACEMENT REPORT - SEPTEMBER 1, 1965 THROUGH OCTOBER 31, 1966

Office of Vocational Placement

SCHOOL	GRADUATES	DROPOUTS	PART-TIME
ALLDERDICE	78	14	300
ALLEGHENY	144	27	170
ARSENAL ELEM.	0	7	1
ARSENAL VOC.	69	4	39
CARRICK	129	21	124
CONNELLEY	132	26	110
CONROY	0	14	23
DILWORTH	0	1	0
FIFTH AVENUE	29	53	99
FRICK	0	0	1
FULTON	0	0	1
GLADSTONE	28	16	62
GRLENFIELD	0	3	5
HERRON HILL	0	22	42
KNOXVILLE JR.	0	18	20
LANGLEY	95	38	193
LATIMER	0	52	24
MT. OLIVER	0	2	1
OLIVER	74	45	180
PEABODY	156	57	353
PERRY	115	40	163
PROSPECT	0	14	21
SCHENLEY	137	77	237
SOUTH	123	54	219
SOUTH HILLS	242	38	314
WASHINGTON	35	19	105
WESTINGHOUSE	126	88	170
TOTALS:	1,712	752	2,978

Evaluation Report, 1966

Social Development

Donald F. Semans

Pittsburgh Public Schools

Sidney P. Marland, Jr., Superintendent of Schools

24. Social Development Program

Program Description and Objectives

Both white and Negro children in poverty neighbrohoods typically lack a respectable self-image. Not approving of themselves and lacking, in many cases, strong adult models for identification, they beccme hostile to school and rebellious toward society. Many programs, for example, Headstart, already have tried to counteract these feelings of hostility and rebelliousness. The Social Development program will also be an experiment in improving self-image, attitude toward learning, and social behavior in school-age students. Laboratory groups of six to ten members will meet weekly for one and one-half hours throughout the 1966-67 schooi year. About 400 sixth-grade students in 25 schools will be selected to participate.

Selection of candidates for participation in the Social Development program will be done by principals, counselors, and teachers. They will look for children who display disruptive behavior and poor academic performance. The final choice, however, will rest with the group leader, who will interview every nominee. No one will be admitted who does not desire to participate. Once chosen, the youngster must agree to stay in the group for the entire year.

The 10 group leaders will be skilled in social work and group dynamics, with backgrounds in education. The six staff members

already hired are now in training at the University of Pittsburgh. During the summer they have been acting as group leaders in sessions similar to the ones that will begin in the fall.

The youngsters will be grouped by sex. Group leaders for girls will be women; leaders for boys will be men. These leaders will work in five teams of two, visiting five schools a week. Sessions will be held during school hours in the school buildings so that the youngsters will begin to make more positive associations with the school.

The group sessions will try to help these youngsters take a better look at themselves. Their comments will be recorded and played back; photographs and movies of their activities will also be shown to them. Thus, these children will become aware of how they sound and look to other people. In addition, role playing will enable them to articulate puzzled, worried, or angry feelings and attempt to work them through. Identification with the group leader and group-identification will also aid in building ego-strength.

Principals, faculty, school social and guidance services, and parents will also have opportunity to work with the group leaders during the year. One important function of group leaders will be to provide teachers with a better understanding of the reasons for disruptive classroom behavior.

Recommendations

1. A profile should be kept for each student. Both at the outset of the program and at the end, students should be asked to characterize themselves. The group leaders, teachers, and counselors should also characterize the student and describe his progress under the program. A model profile form is now being considered for adoption.

2. Pre-program psychological testing and evaluation should be provided to establish baselines for comparison with results obtained later.

3. Pre-program medical examinations should also be provided to uncover health factors that might influence attitude and performance.

4. The need for parochial school participation in the program should be explored.

5. Comments and suggestions from principals should be solicited and periodic meetings of the group leaders scheduled for the purpose of evaluating and developing the program.

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KALAMAZOO COUNTY; MICHIGAN

What students believe they need beyond a high school education was determined through a survey of all eleventh grade students in Kalamazoo County, Michigan in 1965. Data revealed that 46.8 percent of the students were enrolled in college preparatory courses, 14.9 percent in business education, 6.8 percent in industrial education, 28.4 percent in general education, from a total of 2,470 students. Of these students, 40 percent expected to graduate from college, and 40 percent expected to acquire 2 years of college or some occupational training. The remaining 20 percent did not expect to acquire any further training beyond high school. A survey of industry in the county reveals that industry should continue its on-the-job training; with a greater variety of academic and technical job-related courses. Planning should be long range, realistic, with more emphasis upon apprenticeship training and cooperation between industry and institutions. Many students need work experience, remedial programs or other helps. A reorganization of the work study program is suggested with an intermediary agency acting as liaison for employers and students, and the Vocational Education Center and the Area Vocational School offering occupational preparation. For post-secondary education, a comprehensive community college would provide many of the vocational and technical needs for the county. (MS)

VT 001 561

OCCUPATIONAL EDUCATION NEEDS
IN
KALAMAZOO COUNTY, MICHIGAN.

By

Harold T. Smith
and
Henry C. Thole

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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July 1966

The W. E. Upjohn Institute for Employment Research
300 South Westnedge Avenue
Kalamazoo, Michigan 49007

VT 001 561

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PREFACE

This report, together with a companion report (now in press) by Harold T. Smith, entitled Role of the Elementary Grades in Developing the Potentials of Disadvantaged Children: Kalamazoo County, Michigan, was written for the people of Kalamazoo County, Michigan. It is believed that the findings of this report may be useful to many other American communities. For the nonlocal reader, the following brief statement about the county is provided.

Kalamazoo County lies at the heart of a well-balanced industrial and trade area of approximately 300,000 people. In addition to its publicly and privately supported elementary and secondary schools, it has three institutions of higher education: Kalamazoo College, a liberal arts coeducational institution, which was founded in 1833 and has grown up with the community; Western Michigan University, which has developed since its founding as a normal school in 1903 into the fourth largest state-supported university in Michigan, and which is now introducing graduate programs leading to the doctor's degree; and Nazareth College, a Catholic four-year liberal arts college for girls, founded in 1924. There are other outstanding cultural facilities, among which are the Kalamazoo Institute of Arts, the Civic Theater, and the Nature Center.

The authors wish to express their deep appreciation to the many school administrators and teachers and industry executives for the many hours given in consultation and conference. The authors are particularly grateful to those who reviewed preliminary drafts of the report: their counsel, criticisms, and suggestions were most helpful.

The conclusions embodied in the report are, of course, those of the authors; the views expressed do not necessarily reflect the thinking of the W.E. Upjohn Institute for Employment Research.

Harold T. Smith
Henry C. Thole

Kalamazoo, Michigan
June 1966

THE W. E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

The Institute, a privately sponsored nonprofit research organization, was established on July 1, 1945. It is an activity of the W. E. Upjohn Unemployment Trustee Corporation, which was formed in 1932 to administer a fund set aside by the late Dr. W. E. Upjohn for the purpose of carrying on "research into the causes and effects of unemployment and measures for the alleviation of unemployment."

Copies of this report may be obtained without charge from the Institute in Kalamazoo or from the Washington office, 1101 Seventeenth Street, N.W., Washington, D.C., 20036.

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OCCUPATIONAL EDUCATION NEEDS IN KALAMAZOO COUNTY, MICHIGAN

Summary of Conclusions and Recommendations

Kalamazoo County should give immediate attention to its great unmet needs for occupational education and training. At the secondary school level, college preparatory programs may be considered adequate. Business education for girls is fairly adequate in a few schools. Business courses of interest to boys are just now being introduced. All of the public schools offer industrial arts courses, and some schools offer them in sufficient sequence so that students who take them throughout their school career may acquire considerable knowledge of the use of tools and materials that is of occupational value. A few isolated trade skill courses are offered by some of the larger schools.

No school offers an organized preparatory curriculum for those who should enter vocational-technical training, full time or part time, after graduation. Just a beginning is being made to provide remedial communications programs and work experience programs designed for those who upon leaving school must enter directly into the unskilled or semiskilled labor market. Something of the magnitude of the unmet needs of high school youth is suggested in two findings of a survey of the eleventh grade students: 40 percent felt a need for some kind of further training, other that in a four-year college, after high school graduation; and 20 percent expected to secure no further training.

The unmet needs for postsecondary nonbaccalaureate education and training may be the largest of all. High school counselors and teachers are at a loss to advise students how to secure such training after high school graduation while living at home and, when necessary, while holding a job. To the needs of students must be added the needs of adults, including college dropouts, for new skills or for the upgrading of present skills as the demands of our changing economy require.

Cutting across the foregoing needs of people for occupational education

and training are the needs of local industries for people with definite abilities and skills and the needs of the total society for those abilities essential to overall economic health and growth.

Kalamazoo employers do an extensive amount of essential on-the-job training, but it does not meet the needs of local industries in all respects. Recommendations in this report are in no way designed to replace it.

Apprenticeship is still one of the most effective means of training skilled workers. Industries, with the aid of local educational institutions, should sponsor more apprenticeships. To meet the long-run needs of the local economy, a wider variety of vocationally oriented adult education courses is necessary so that working adults may improve their skills or adjust to changing job requirements. The greatest need is for more in-school vocational training so that individuals, on their own, may work intensively toward the development of skills.

At both the secondary and postsecondary levels the additional occupational education and training programs and facilities needed in Kalamazoo County should be designed to benefit youth, adults, and industry.

First of all, the high schools should reconstruct their curricula around the principle of preparing each student for what he must undertake immediately upon leaving school. As a part of the reconstruction, the schools should organize preparatory courses for entry into postsecondary occupational education and for direct entry into employment--courses parallel to the college preparatory course.

As a part of the preparatory course for direct job entry, actual work experience needs to be provided for those who have not acquired it. To meet this need, it is recommended that work-study programs be reorganized and greatly expanded and that the schools, employers, and the community in general organize to provide more realistic work experience for students than is now possible.

A way needs to be found for the high schools to offer cooperatively some essential courses that are too costly for them to offer individually. Also, a way needs to be provided whereby high school graduates and other

adults are assured access to the occupational subjects they need and industry wants them to have. To these needs must be added the need of many high school graduates for a second chance to demonstrate their ability to do college academic work.

The comprehensive community college is the one institution that can provide all of these services. It can offer vocational-technical courses and programs of any length or breadth, as well as the first two years of regular college work. In addition, it can serve as a center where the high schools may offer cooperatively the more costly occupational courses that their employment-bound students need.

Introduction

Kalamazoo County has no publicly supported institution, other than the high schools, offering the occupational education programs that an industrial economy normally needs; and the possibility that there is a shortage of occupational education opportunities in the county has become a matter of deep concern to the people.[1] In this report we have undertaken to examine the existing occupational education facilities in view of determining what shortages do occur and what facilities might be needed to fill them.

Opportunities for Occupational Education

Western Michigan University offers cooperative programs in secretarial training and distributive education and retailing as a part of its regular program. Citizens of Kalamazoo County may enroll in these programs on the same basis as do all other students; they must meet regular university entrance requirements. Since competition for admissions is increasing, entrance requirements are being raised; the result is that more and more people, some of whom should have secretarial training and

---

[1] The term "occupational education" instead of "vocational education" is generally used in this report for two reasons. The first is for breadth of coverage. Much of occupational education is preparation for direct job entry. It includes training or retraining designed to prepare individuals for gainful employment in occupations generally requiring less than four years of college and the baccalaureate degree. It includes, therefore, preparation for entering all kinds of postsecondary programs such as industrial technology, medical and dental technology, nurses training, cosmetology, barber colleges, beauty culture schools, business colleges, and a host of others. The second reason for the use of the term is that, in the high schools, vocational education is too often identified solely with those industrial arts, home economics, and other courses partially financed by the federal government under the various federal vocational education acts. These courses are frequently more industrial arts-oriented than job-oriented. They are valuable in acquainting the student with materials and the use of tools, but they may not contribute materially to preparation for job entry.

distributive education, cannot be admitted. Furthermore, we are informed that the university is giving preference in admission to junior and community college transfer students as a part of its effort to balance its upper and lower divisions.

The university also offers a few noncredit courses of a terminal nature as a public service. The particular courses offered are intended to be those needed in the area, but they are limited to those for which there are available space and qualified faculty who are able and willing to undertake the extra teaching load. These terminal noncredit courses are not an inherent part of the university's total program, and it is probable that as the university grows and moves further and further into advanced study, they will receive lower and lower priority.

The two larger hospitals offer professional nursing education, one in cooperation with Western Michigan University and the other with Nazareth College. Together, they can accommodate a few more than 300 students. These programs are open to high school graduates who meet the standards and admission requirements of the respective hospitals and educational institutions. Class quotas are filled from the best qualified applicants without regard to residency; no preferential consideration is given to residents of Kalamazoo County.

There is a well-established private business school, and there is the usual array of proprietary schools and studios such as colleges of beauty culture, charm and dance studios, flight schools, and schools based on automation and data processing. These proprietary schools have their place. They pioneer in new fields and are able to adjust their training programs quickly to new and changing needs. But they must confine their operations to those fields in which there is enough demand for training by those who are able and willing to pay the tuition required to cover costs and provide adequate profits.

A handicapped person may be admitted to the Michigan Rehabilitation Institute, a state-supported institution for veterans and disabled adults located in a neighboring county but still within commuting distance of much of Kalamazoo County, where some very excellent occupational training

is carried on. But the Institute designs its programs for the handicapped and is not open to the general public.

Several of the public schools conduct community schools for the cultural and social benefit of the citizenry and the cultivation of community consciousness and pride. Insofar as available facilities and teachers permit, the courses offered are those asked for. In general, they are courses contributing to personal betterment, interests, and hobbies; courses for high school credit; courses in secretarial and business subjects, parallel to those offered in the high schools; and a few selected occupational courses contributing to individual skills. A typical program for one school for the fall of 1965 was listed as follows: cake decorating, ceramics, contract bridge (beginning and intermediate), furniture refinishing, furniture upholstering (beginning and intermediate), great books of the world, home landscaping, jewelry making, knitting (beginning and intermediate), men's and women's judo, men's weight-lifting and physical fitness, modern algebra, oil painting, photography, practical bookkeeping, sculpture, shorthand (beginning), social dance, square dance, sewing techniques (advanced), beginning Spanish, tailoring, the outdoors around us, typewriting, understanding teen-agers, water color painting, women's physical fitness, beginning woodworking, boys' physical fitness, girls' charm and self-improvement, swimming, and social dancing (junior high and senior high).

The Kalamazoo and Portage city districts conduct adult education programs in addition to these community schools, in which organized courses--some acceptable for high school credit--are offered for adults. These courses are now available free of tuition under state aid. In the fall term of 1965-66, more than 1,000 individuals were enrolled in the Kalamazoo district courses alone. The program is quite new, and larger enrollments are anticipated for the years ahead.

The courses offered in the adult education programs are geared to the needs and demands of those enrolling. The number of courses taken for credit toward high school graduation is quite substantial. Foreign languages are in heavy demand, as are courses in history, the social sciences, and mathematics. To a lesser extent, industrial arts, business, and home

economics courses, commonly offered in high school, are also in demand. These courses may be wanted for high school credit, for what they contribute to a hobby, and even for what they contribute to a skill or training for a skill. Such courses as typewriting and shorthand, office practice and machines, and distributive programs can be quite as occupational as they are in high school.

The motive of the enrollee may be the important factor in determining whether a course is occupational or not. In many cases the work may be highly individualized so that a student may work at what he wants to at his own level of skill and competence and at his own pace. Reconditioning furniture, tailoring, and homemaking may be occupational for those who make them so but limited, of course, by the facilities available and the competence of the teacher. Homemaking, for example, may be taken by adult homemakers who do not expect to enter the labor market, but it may be taken also by waitresses, cooks, and others for direct occupational purposes. Millinery, we are told, is taken for personal rather than vocational purposes. Courses such as machineshop, machine woodworking, metalworking, and welding are taken for a variety of purposes. They carry high school credit for those who want credit. They lend themselves very well to individual projects, skill levels, and speed of operation. They therefore are taken by hobbyists, home mechanics and tinkerers, farmers, and those in industry. It is reported that quite a few take such courses, particularly welding, primarily to improve their skill on their regular jobs.

There is considerable demand for training in auto mechanics and auto repairing, much of which is going unfulfilled. Auto mechanics requires component parts, which must be secured from the company factories, for laboratory purposes. Auto repairing uses cars needing repair for laboratory purposes. Both require working tools and equipment. Auto repairing requires not only space in which to work, but also space for storing the cars whose parts are being studied and repaired, and such space is not generally available at the schools.

The districts of Kalamazoo and Portage provide the facilities and teachers for four or five Manpower Development and Training Act programs

at a time. There has been need for more MDTA programs, but the schools have not been able to provide space and staff for them. No other institution is equipped or staffed to supply the training needed.

A practical nursing center for adults, carried on in an elementary school building, is conducted by the Kalamazoo city school district in cooperation with the hospitals. Two classes, limited to 36 students each, are offered each year. Many more would like to take the course.

The high schools also carry the academic load for apprenticeship training programs in cooperation with industry and labor.

All of the adult education programs are carried on in high school buildings and in junior high and elementary school buildings wherever the required space and equipment are available. The programs are therefore limited by the kinds and amounts of space available outside of regular school hours. The teachers are recruited from the regular school staffs and, when appropriate, from the professions and industry.

These limitations together with the wishes of a broad citizenry determine what courses can be offered. The result is that each course offered stands by itself. Outside of such programs as secretarial and business training, apprenticeship training, and practical nursing training, there is little sequence of courses whereby one course logically follows another. This makes it difficult for one seriously interested in becoming proficient in all phases of his vocational interest to do so by means of the courses offered.

It seems highly significant that, as reported, the administrators and teachers in adult programs generally find their work unusually rewarding and stimulating. The dropout rate is always high, but that causes little concern. Probably most of those dropping out have jobs and are not dropping out into unemployment. The high motivation and the maturity of those who stay in a program, many of whom obviously were early leavers from school, make teaching a real delight. It is said that teachers coming in weary from a day's work are likely to experience exhilaration from an evening of teaching.

In Kalamazoo County there is no publicly supported postsecondary institution of any kind designed specifically to offer adults and out-of-school youth the broad array of nonbaccalaureate vocational-technical education programs that are needed. The three higher education institutions provide the community with many cultural and educational opportunities, but they do not supply in a substantial way the services expected of the postsecondary and adult vocational school, the technical institute, or the modern community college. When guidance counselors and vocational education and industrial arts teachers are asked to advise employment-bound youth and adults--who must live at home and perhaps hold a job--on what postsecondary occupational education and training institutions they should attend, the counselors can suggest the local and neighboring private business colleges, the specialized local schools listed above, and one neighboring community college located within commuting distance of a part of Kalamazoo County, and that is about all. Indeed, one is almost persuaded that there may be fewer occupational training opportunities in the community for employment-bound youth and adults than there would have been if the three institutions of higher education were not so thoroughly a part of it. The feeling may have prevailed that there are enough educational institutions in the county and that another one, particularly another "college," is not needed.

For What Do the High Schools Prepare Youth?

It was against the foregoing background that we decided to take a look at the high schools of Kalamazoo County, both public and private, to see how well they are preparing each youth for his first step out of school, whether that be to enter college, to enter postsecondary vocational or technical training of some kind, or to enter employment directly.

A great deal of thinking and planning is already being done by the schools concerning the preparation of youth for the world of work; and in order to attain an understanding of the schools' best hopes and plans as well as their present practices, it was decided to hold conferences with administrators, counselors, and teachers. Approximately 40 such conferences

were held, involving more than 200 people representing all the public and private schools, the Intermediate School District, and related agencies. The observations made in this report are based heavily upon these conferences.

The plan of the study was first presented to all the superintendents of schools in the county at one of their regular association meetings, where it was unanimously approved. The schools set up the interviews and cooperated freely and wholeheartedly in the conduct of the study.

In the conferences with the high school personnel, it was made clear at the outset that our concern is the extent to which all students, of every grade or age level, are being prepared for what they will, or must, undertake next. We are not concerned with how well students are being prepared to become nuclear physicists, space mathematicians, or brain surgeons, or to enter other high-level undertakings, for such goals are too far in the future to serve as incentives for most high school students. We are concerned with how well students are being prepared for: the next course or grade, college or professional school, business, technical training, training or further training for a specific job, or direct entry into a job, at whatever level of schooling they achieve. General education for personal culture and citizenship should be retained for all, but it should be accompanied by preparation for college or occupation. Graduation should be considered of secondary importance and seldom, if ever, an end in itself.

Data indicating what the students believe they need beyond a high school education were made available through a May 1965 survey of all the eleventh grade students in both public and private schools in the county. A citizens committee prepared the survey, and the schools administered it.[2]

Two pieces of data disclosed by that survey are of interest here: (1) the high school courses of study offered and the number of students enrolled in each, and (2) the educational expectations or goals of the

---

[2]Report of subcommittee on Youth Educational Needs (Mrs. John Shoemaker, chairman) of Citizens Committee to Study Educational and Job Needs in Kalamazoo County (Marvin E. DeBoer, chairman), March 9, 1966; unpublished.

students. These are shown in Table 1 and Table 2, respectively.

The data in Table 1 show that 46.8 percent of the students were enrolled in the college preparatory course; 14.9 percent in business educati n; 6.8 percent in industrial education, which is heavily industrial arts-oriented rather than vocation-oriented; 28.4 percent in general education; and the remainder, 3.1 percent, in special or unidentified programs.

Table 1

Enrollment of Kalamazoo County Eleventh Grade Students in Courses of Study Generally Offered

May 1965

Courses of study	Number	Percent
Total	2,470	100.0
College preparatory	1,157	46.8
General education and other	702	28.4
Business education	369	14.9
Industrial education	167	6.8
Special education	28	1.1
Not answered	47	2.0

The data in Table 2 show that just under 40 percent of the students expected to graduate from college, and a third of these expected to do graduate or prcfessional study beyond college; and just over 40 percent expected to acquire two years of college or some occupational training such as technical training, business education, apprenticeship training, nurses training, and special training of various kinds--programs normally offered by public postsecondary institutions, adult education programs, and proprietary schools. The remaining 20 percent did not expect to acquire training beyond high school.

Table 2

Educational Expectations or Goals of Eleventh Grade Students Enrolled in Kalamazoo County High Schools

May 1965

Educational goal	Number	Percent
Total	2,470	100.0
Baccalaureate	973	39.4
College graduation only	653	26.4
Beyond graduation	320	13.0
Nonbaccalaureate	1,005	40.7
Two-year college or vocational-technical training	337	13.6
Special training, apprenticeship training, business, other	559	22.7
Nurses training	109	4.4
High School	480	19.4
Graduation only	453	18.3
Less than graduation	27	1.1
Not answered	12	0.5

The First Undertaking Out of School

How well are the high schools preparing the students for their post-secondary educational aspirations or for direct job entry?

Entering college. All of the Kalamazoo County high schools offer a college preparatory course; the larger high schools are able to offer a wider variety of subject matter and frequently courses of greater depth. The private high schools quite generally concentrate on the college preparatory program; and they offer no vocational program other than secretarial. The role of the high school in preparing students for college is so generally understood and accepted that no discussion of it is needed here. The familiar facts are: the undue prestige attached to taking a college preparatory course and the parental pressure to take it; the predominant academic background and orientation of many guidance counselors,

which influences students to take the college preparatory course; and the college preparatory course may be the only well-organized curriculum in a school program. The net result is that many students not of college caliber take the college preparatory course. It should be added, however, that there are a few high schools in Kalamazoo County where counseling appears to be quite well balanced and where occupational preparatory programs receive considerably better attention.

An examination of the results of the May 1965 survey of the eleventh grade students discloses that quite a number of those who were taking the college preparatory course, as shown in Table 1, and even a few who aspire to obtain a college degree, as shown in Table 2, reported having grade averages so low as to raise grave doubts about their ability to do college work. The high college dropout rate that prevails throughout the country must be attributed substantially to the inability of students to do satisfactory and rewarding college work. Many college dropouts need some kind of occupational education.

Entering business. Business education is the most occupational of all the programs offered in the high schools of the county in that it is preparing the students, primarily girls, for direct job entry. All but one of the public high schools offer sufficient shorthand and typing to enable a graduate to take an elementary office job. In several of the schools shorthand, typing, and a little bookkeeping make up the entire program. Some offer secretarial and office programs in considerable depth, and those in the cities are in a position to conduct cooperative programs involving actual experience in the offices of industry, stores, and service companies, as well as in the schools themselves.

Distributive education and retailing are just coming in. A few schools are offering such courses this year, and there is promise that other schools will introduce them in the near future. Elementary business management is being introduced also in the larger schools. These expansions should accommodate more students, and they should make it possible to extend business training to more boys than has been possible up to the present time. The programs, of course, are of help to the students who enter business

colleges or university schools of business.

Entering postsecondary vocational-technical institutions. By technical education is meant a wide variety of programs, such as all kinds of mechanical technology, engineering technology, electrical technology, medical technology, mining technology, and a host of others, varying up to three years in length. These programs may lead to an associate degree but not to a baccalaureate degree.

There are no state-supported technical institutes in Michigan to serve the general public, but some of the community colleges are undertaking to offer technical programs in a substantial way.[3] There are two such community colleges adjacent to Kalamazoo: Kellogg Community College at Battle Creek, which is within commuting distance of much of Kalamazoo County; and Lake Michigan College, serving the St. Joseph-Benton Harbor area, some 45 miles away.

No high school offers its students specially designed preparatory courses for entrance into technical institutes or technical programs in the postsecondary institutions. Because of the variety of postsecondary technical programs, a student really needs to know what kind of technician he expects to be in order to know what preparatory courses he should take. Most technical programs, however, require a broad base of mathematics and science. Since the kind of technical program to be taken determines the field of science needed, postsecondary institutions quite generally offer the necessary preparatory science courses for the students after their arrival. It would save time, however, and otherwise be advantageous for a student if he were able to take the preparatory science courses in high school.

From discussion of this matter with guidance counselors and teachers, it appears that most of the high schools could provide an acceptable preparatory course for postsecondary technical programs by selecting

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[3] In order to enable community colleges to offer the three-year technical programs, the Michigan community college law now provides that these colleges may offer programs of more than two years in length provided they do not lead to a baccalaureate degree.

appropriate subjects out of the college preparatory course and the general education course and including such mathematics and science as are relevant. For some programs, it would be well to add such courses as mechanical drawing and drafting, machineshop, and electricity, when available. There are, of course, a number of postsecondary programs of less highly technical character that do not require special preparatory courses.

Guidance counselors, however, seem quite unaware of the need to offer preparatory programs for entry into technical education. They are not counseling students to enter such preparatory programs, and they are silenced by the question: Where do you counsel students to go for post-secondary technical education? They mention Kellogg Community College in Battle Creek for those living in the east part of Kalamazoo County, and they mention Ferris State College for those who can consider going away to school. Counselors and teachers in several of the schools seem to feel that the needed preparatory programs could be devised, but the difficulty of counseling students to prepare for postsecondary technical programs that are not readily available would still remain.

Entering training for nontechnical but highly skilled jobs. Just as is the case in regard to preparation for entry into technical training, the high schools of the county do not offer programs designed particularly to help the student enter postsecondary training for nontechnical but highly skilled jobs. Almost any good high school student is eligible for admission to such courses. Even though shopwork offered by the schools is oriented toward industrial education or industrial arts rather than toward job entry, it does acquaint the student with materials and tools, which is good; and if the student takes the full sequence of these courses, he may acquire considerable preparation for entering training for most skilled jobs.

Entering skilled jobs directly. Some of the high schools offer a few isolated courses such as automobile mechanics, automobile body repair, drafting, printing, carpentry, and an occasional other course, designed to prepare students for direct job entry. Indeed, one group of boys is now having the unique experience of building a house, to be sold on the market.

This program, however, is exceptional. Furthermore, it is not at all clear that the high schools should provide an array of special preparatory programs for direct entry into skilled jobs. It is probably better for most students to prepare to enter training for nontechnical skilled jobs upon high school graduation than to attempt to qualify for direct entrance to such jobs. This assumes again that training for nontechnical skilled jobs will be available after high school.

Entering home economics jobs directly. All of the high schools of the county have offered work in home economics for a long time. But until this year, 1965-66, all home economics was designed for the homemaker rather than for job entry. Two schools reported that some courses in occupational home economics were introduced this year, and two or three other schools reported that they will introduce such courses next year. This change has been stimulated by enhanced federal aid. It remains to be determined to what extent these new courses will actually lead to direct job entry.

Entering unskilled and semiskilled jobs directly. Unskilled jobs are generally considered to be those for which no special training is needed, while many semiskilled jobs, such as assemblyline jobs, are those for which training of varying duration must be done by industry on the job itself. The processes involved in both kinds of work are routine, so that any physically and emotionally normal youth should be able to perform them.

Industry commonly reports that the best preparation for both kinds of jobs is a good general education. But this clearly presupposes the existence of other very elementary and fundamental qualifications, many of which should be acquired in home and community. Except as a youth has learned how to work, to get along with other people, and otherwise accept the requirements of a job, he is not likely to remain employed long, even if he is admitted to a job. The more fundamental qualifications appear to fall into place in the following order: (1) knowledge of how to work and ability to experience satisfaction, (2) ability to cooperate with other people, (3) ability to read functionally, and (4) knowledge of simple arithmetic. The possession of a good general education is more a test of

employment competency than a qualification in itself.

Conferences with school personnel in Kalamazoo County confirmed the idea that for unskilled jobs and many semiskilled jobs knowledge of how to work is even more important than reading and arithmetic. It developed in the conferences with school personnel in the more rural school districts that their high school graduates, except because of emotional or personality problems, have not gone unemployed to any significant extent. Farm boys learn how to work at home where they experience the satisfaction of achievement and success. They may have done a man's job in many ways from the time they were 14 years of age. Their sense of dignity and self-respect and even their status with their peers are bound up with work. The result is that they have experienced no sense of failure from doing poor academic work and even, as is reported of some, from never having learned to read functionally. These boys, possessing confidence in their ability to work, having considerable knowledge of and feeling for machinery, and holding a high school diploma, which gives them entree, have been able to secure factory jobs in neighboring towns and to hold those jobs even when others were being discharged, except, as noted, when unfortunate personal factors have intervened.

Knowing how to work and getting satisfaction from work seem highly important as qualifications for unskilled or semiskilled jobs. The individual may find in the long run that he has allowed himself to be short-changed; that he has become chained to the assembly line for life; or that automation may eliminate his job at a time when it is difficult to secure another. But, for the present, he is not unemployed.

We need to remember that our educational programs were formulated at a time when every youth learned how to do manual work at home. Today that is not the case, and many youths have had no such experience. Almost every teen-age youth needs job experience. He needs it simply as an exercise in learning how to work at a time when he is physically and emotionally ready to work; he needs it for the development of his own sense of achievement and self-respect; and in some cases, he needs it to provide the necessities that are incidental to being in school. The opportunity

to learn how to work and to experience satisfaction from work--real work successfully done--is an opportunity that every youth should have, and it may prove to be the key to the education of the youth who is headed for direct job entry.

The loss of the opportunity to have such work experience is due in part to the city environment that has surrounded us. It is due also to the miscarriage of many of our regulations in regard to child labor and to the reluctance of employers and their employees to teach an inexperienced youth how to work. In an effort to protect the child from exploitation, it has been made difficult for him to find jobs that provide him with either the proper training or self-respect. If he secures a job, he may be prohibited from climbing a ladder--even to change a light bulb in the ceiling--or from lifting more than 35 or 50 pounds, according to his age. He may not be allowed to ride along in his employer's truck delivering products to a customer. But he can take the family car out on the highway any hour, day or night. A youth may meet a host of restrictions that destroy his respect for the job and damage his own self-image.

Both employer and labor should recognize the necessity for youths to learn to work, and should cooperate with the schools in providing real work experience for them. But to do so is likely to cost the employer something. Many new employees do not pay their way at first. Students are part-time, temporary employees. For the boys, the problem is aggravated by their subjection to military draft. Insurance companies may remind employers that, insofar as the employment of young beginners increases industry accident rates, employee liability insurance premiums will go up. The considerable amount of paper work required by the schools and the state may be troublesome to the employer. Experienced laborers may prefer not to work along with student beginners, and they may resent the employment of students on jobs otherwise available for men with families. The employment of students may even become a matter for consideration in drawing up union contracts. Without such work experience, however, a youth may find himself entirely unprepared upon leaving school to enter directly into the labor force with any appreciation of the work responsibilities expected of him.

This whole matter needs to be taken into account in the formulation and administration of the child labor laws, workmen's compensation insurance, and employer-union regulations. Society never intended that regulations to protect the child from exploitation should deny youth the opportunity to learn to work as a part of his education and personal development. It should be far more feasible than it is now for schools and employers to provide a youth with realistic work experience as a part of his education. Youth must have the opportunity to learn to work, and it is time that society turned its attention to ways of providing that opportunity.

For a long time the schools have recognized that students seeking to acquire a skill profit greatly from work experience along with study in school. This recognition is exemplified dramatically by the cooperative work-study program in business subjects. Now the schools are appreciating that students expecting to enter directly into unskilled or semiskilled jobs also need work experience as an essential part of their preparation for entry into the labor market. One city district, for example, has introduced an "Employment-Bound Youth" program, designed specifically to provide work experience for students most likely headed for unskilled or semiskilled employment. Partly because of the restrictions referred to above, and partly because the program is in the experimental stage, the jobs have been provided primarily by the schools themselves. They include work in cafeterias, in offices, and in janitorial services. Credit is given for some of the work just as it is for a class, and everything possible is done to provide the students with a sense of personal achievement.

At the present time, there are two staff men and 80 to 120 tenth and eleventh grade students variously involved in the program. This is a very small number of students, but it is a start. It is expected, hopefully, to extend the program to both the ninth and the twelfth grades. It will then be somewhat as follows:

Ninth grade

Work experience while in school--perhaps a series of experiences--with emphasis on staying in school and training to be employable

Tenth grade

Casual temporary work--raking, shoveling, etc.
Possibility of one hour's credit toward graduation for work experience

Eleventh grade

Two to three hours daily on a job in school or in a social agency
Possibility of two hours' credit

Twelfth grade

Half-day work in community--prejob training on trial basis for employment after graduation
Possibility of two hours' credit

The limitations placed upon the program by legal and other restrictions are again evident. The limited nature of some of the work indicated in the outline suggests that it will be very difficult to provide many jobs that will challenge students and command their respect. There is need for public understanding and cooperation to the extent that restrictions to realistic employment of youth may more readily be overcome.

Remedial programs for the potential dropout. A word must be said about the youth who is so conditioned against school that he becomes a potential dropout or, in some cases, an actual dropout. The term "dropout" is not intended to apply to the youth who quits school simply because he thinks for the moment that he can get more out of something else and so drops out to take a job. Such a person is in a position to resume his education at some later time. It is the youth who drops out with nothing into nothing who is properly labeled a dropout.

In Kalamazoo County, as elsewhere, the potential dropout is no longer generally dropping out of school before high school graduation. The Michigan law requires that he stay in school until he is 16 years of age; and the child labor laws, employers' liability risks, and employer-union attitudes make attainment of satisfying employment before the age of 18 quite difficult. Home and society have combined to exert strong pressure on him to graduate from high school, and the schools are doing everything they can to encourage him to stay in school until the age of 18 and

eventual graduation.

This attitude differs from that of just a few short years ago when a 16-year-old youth could check out of school without challenge or counsel. But even recently, school counsel and other pressures have pointed primarily to graduation rather than to actual preparation for entry into the world of work.

The high schools have come to graduate such an individual because that seems best for him. But up to the present time, the schools have not made much headway in preparing him for job entry although, as already noted, they are beginning to try. The hope is to prepare him for entry into unskilled or semiskilled employment, and the best preparation for that appears to be work experience that will afford him an opportunity to learn how to work and thereby to experience success and attain self-confidence. If this can be accomplished, he, like the farm boy who learns to work at home, may become employed; and perhaps out of that employment, he may discover that learning as a life activity is not so bad after all.

Some of the high schools are introducing remedial reading and arithmetic for these students by means of federal aid under the Elementary and Secondary Education Act of 1965 and, they believe, with some success. But if these students can be taught to read in high school, they surely could have been so taught far down in the elementary grades. In fact, many of the elementary teachers interviewed seemed quite emphatic in the belief that if they had the time, the necessary professional help, and the support of the public they could teach very many not now learning to read to do so.

Surely, this must be done. It must be done for the benefit of the students themselves and to check the flow of conditioned failures through the elementary grades into high school--a flow that is becoming so great in some areas as to threaten the effectiveness of the school programs in which these youths become enrolled.[4]

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[4]Another report by Harold T. Smith, entitled Role of the Elementary Grades in Developing the Potentials of Disadvantaged Children: Kalamazoo County, Michigan, treats measures to prevent or alleviate this problem. We believe that the preventive measures are even more important than the remedial programs. This report is now in press.

In an effort to find a way to reach the embittered dropout and the conditioned potential dropout, an experimental program, known as Youth Opportunities Unlimited, Inc. (YOU), has been set up in the city of Kalamazoo for youths 16 to 21 years of age. The program is a creation of the community; except for certain special services provided by the Kalamazoo Valley Intermediate School District, it is financed by private funds.

A number of changes have taken place in the program since its beginning in 1961, but it is now operating generally as follows. YOU has its own shop in which some youths work on products being made under contract for industry. The type of work is limited to that which the labor laws and other restrictions permit. The youths are paid by the piece so that they experience the direct relationship between work done and pay received. Except for some of the overhead, each contract is expected to pay its own way. For other youths, jobs are found in the community. At first, YOU subsidized the employers for hiring these youths on certain jobs, but such payments are becoming unnecessary. More and more employers have had satisfactory experience with the program, and thus are more inclined to absorb the extra costs of the learning period.

Some of the youths, the potential dropouts, remain half time in their regular schools. YOU assumes the responsibility for teaching these to become employable, and either YOU or the outside employer, as the case may be, provides them training on the job. Other youths are actual dropouts, and some of these will not participate in any program that requires even entering a regular school building. In lieu of the half day in school, YOU undertakes to teach these to read and to do simple arithmetic, and apparently is having considerable success in doing so.

YOU is operating in an area of great need. The time has come, however, to determine what its future role should be and how it should be managed and financed.

Special education for the less able. There are those in all schools and at all age and grade levels whose capacity for achievement is so limited that it is impossible for them to experience success in the regular classroom. Those thoroughly diagnosed as such may be provided a special program

made available through the special education division of the Kalamazoo Valley Intermediate School District. The students are taught in separate classrooms by specially trained teachers. The effort is made to provide each with a program in which he can succeed. If he stays in the program through the normal school years, he may be awarded a high school diploma.

Some industrial arts work may be prescribed as a part of the program for some of these students, but seldom, if ever, could a truly occupational course be included. Occupational courses require ability, even though perhaps a specialized ability, just as do other major courses. These students very much need to learn to work with their hands and experience the satisfaction of success in doing so. They should have credit for such work experience. Credit for work well done is more justifiable than credit for regular classroom courses not well done. Work experience for these students is ordinarily provided by the schools themselves.

Occupational Education and Practical Arts Facilities in the Public High Schools

The following observations and comments relating to occupational education and practical arts facilities in the public schools of Kalamazoo County are based on a survey of these facilities made by the Kalamazoo County Superintendents Association and published in a January 1965 bulletin. This survey does not include the new facilities at Northern High School in the Portage district because that school was not then open. Even at this early stage, however, the Northern High facilities are being used close to capacity, and it is reported that the other facilities of the county are being used to a greater extent than they were when the survey was made.

The report of the survey concludes that "utilization of facilities in the Vocational Education and Practical Arts programs in the public schools of the county are about at their maximum for the regular school day." It adds that "shared facilities, during the regular school day, may be possible on a limited basis with neighboring schools, but not on a county-wide basis."

Sharing poses such problems as transportation, scheduling, distributing

costs, recording credits, control of students, and length of time that the program will be available to the sending school or schools. Tuition charges are required by state law. And since the facilities are quite generally being used up to capacity in each school, there is little chance for sharing to develop in any substantial way without expanding the facilities. Sharing on a countywide basis would preferably require each school to specialize in some occupational area in which it might have a special advantage, and to open its courses in that area to all of the other schools. In this way, all of the schools should be able to provide the more advanced occupational education programs needed by their students. Obviously, if sharing were to be undertaken on an adequate scale, most, if not all, of the schools would find it necessary to add space and specialized facilities that they do not now have.

We learned of no such sharing of occupational courses during regular school hours. The survey report concludes, however, that "apparently there is some possibility of limited shared programs on a county-wide basis during other than the regular school hours." There is now one auto repair course being conducted by two schools in a garage building in town in the evenings. The students attend this course two hours each evening in addition to their regular time in school. Although the use of outside facilities does point up the shortage for such programs, there should be no objection to their use if the facilities are adequate. It is conceivable that they might be more adequate in this instance than the equipment the schools themselves could have provided.

The survey report made the overall observation that "very few high schools in the county are adequately equipped to offer a truly comprehensive schedule of advanced classes in many of the Vocational Education and Practical Arts areas." We believe this to be an understatement. If the occupational programs that the students should have and that the economy wants them to have were to be offered, it would not be feasible for any high school in the county to offer all of such programs. Some very essential ones would be too expensive for the school to bear, and the student demand for them would be too small to make possible an efficient teaching operation.

We have observed that the public schools of Kalamazoo County offer occupational programs, outside of business education, in a very limited way. Most of their courses relating to industry are industrial arts-oriented rather than vocational in character. In connection with this, the survey report adds that "the smaller school systems' programs seem to be more teacher-oriented than curriculum-oriented," that is, they offer the industrial arts courses that their teachers are qualified to teach rather than the courses that might be best for the students to take.

All of this means that, whether the individual high schools were to offer a full line of needed occupational education programs, or whether all of the high schools collectively were to offer such on a cooperative basis, either by sharing programs or by operating programs jointly, a large expansion of space, equipment, and teaching staff would be required. Furthermore, any expansion should be designed to meet the growing needs for adult training and retraining in vocational and technical education as well as to meet the needs of high school students. In all probability, it was this total situation that caused the survey committee to say: "it was felt that serious consideration should be given to the possibility of some type of a countywide post-high school program."

Skill Requirements and Training Practices in Kalamazoo Industries

Knowledge of local and national skill requirements is essential to adequate planning for the education and training of workers. Such knowledge should provide a valuable basis for assessing the strengths and weaknesses of industrial training practices. It should also provide guidelines for educators in establishing curricula and for counselors in guiding students. With such information, the community can seek to meet the needs of industry more adequately, and citizens can better prepare themselves to fill available jobs.

The well-diversified industries in Kalamazoo County require a wide variety of unskilled, semiskilled, skilled, and technical manpower. Since this study focuses on manpower and training requirements below the

baccalaureate level, professional and managerial personnel needs are omitted from discussion here. The following observations concerning Kalamazoo County industries are based on data already available and on information obtained through personal interviews with executives of manufacturing firms employing more than 65 percent of the manufacturing workers in the county and with executives of nearly all nonmanufacturing firms employing more than 100 workers.

Manufacturing Industries

Employment in major industries. Manufacturing industries in Kalamazoo County employ approximately 27,000 workers. When expansions currently underway are completed, manufacturing employment will approach 29,000 workers. The following table shows the distribution of employment among the major industries.

Table 3

Employment in Kalamazoo Manufacturing Industries

April 1966

Industry	Employment	Percentage distribution
Total manufacturing	27,000	100.0
Durable goods	11,200	41.3
Metal	1,700	6.2
Machinery, electrical and nonelectrical	3,800	14.0
Transportation equipment . . .	3,300	12.1
All other durable goods	2,500	9.2
Nondurable goods	15,900	58.7
Food and kindred	1,400	5.2
Paper and allied	8,000	29.5
All other nondurables	6,500	24.0

About 60 percent of employment in manufacturing is in nondurable goods industries, with paper and allied industries accounting for 8,000

of the nearly 16,000 workers. Other nondurable goods industries include pharmaceuticals, paper chemicals, food, printing, and plastics.

Durable goods industries in Kalamazoo County employ approximately 11,000 workers, or just over 40 percent of all manufacturing workers in the county. Durable goods industries are predominantly metalworking with the exception of one large woodworking firm.

Employment in Kalamazoo manufacturing industries is concentrated in a relatively few large companies which are heavily capitalized. Four companies in paper and chemicals industries, alone, employ 9,500 workers. Nine large durables companies, mostly metalworking, employ 6,600 workers. These 13 companies employ about 60 percent of all manufacturing workers in the county.

Education and skill requirements. Education and skill requirements of industry are directly related to the types of manufacturing processes used. Most companies in the Kalamazoo area, as elsewhere, may be classified into two major types of manufacturing: intermittent and continuous. Most plants in the Kalamazoo area are not wholly in one or the other category; however all, or nearly all, may be classified as primarily one type or the other. The major difference between the two types is in the length of time that equipment is operable without interruption for change or modification. Intermittent production is characterized by relatively short runs of many different products--runs lasting only a few hours, or even less than an hour, and requiring frequent changes of tools and fixtures. Continuous production is characterized by long runs of highly standardized products; plants may operate without a shutdown of machinery for extended periods, possibly months.

Factories employing intermittent manufacturing processes require many skilled and semiskilled workers but relatively few unskilled workers. Three general categories of firms producing by intermittent manufacturing methods are identifiable in Kalamazoo County. First, there are the jobshops in industries such as printing, machinery, and fabricated metals, which produce in small lots or batches for customer orders. Generally, firms in this category require highly skilled workers who know how to set

up and operate several different machines. Such workers often need to know how to use blueprints, measuring instruments, and shop mathematics. These companies prefer to hire trade-school graduates whose training and experience enable them to acquire skills within two years by on-the-job training. Some of these companies recruit these trade-school graduates from other states.

The second category of firms using intermittent-type production includes larger companies, mostly metalworking, which produce precision parts and equipment in large enough quantities so that jobs may be broken down into one or two operations. Inexperienced trainees in these companies may become proficient in their jobs after a year or two of on-the-job training. These firms, of course, also employ some highly skilled generalists and maintenance people.

In the third category, the firms utilizing intermittent-type operations are able to standardize production to a considerable extent. Because of longer runs, more uniform products, or less critical tolerances, these companies require fewer skilled workers than the other two groups. They may use intermittent methods because minor variations in product are ordered by customers. Production workers in these factories generally become proficient in their jobs in a year or less. However, these firms, like others characterized by intermittent processes, require engineers, technicians, and skilled workers for product design, production control, tool design, toolmaking, diemaking, and other functions. These firms must either employ highly skilled maintenance workers or purchase such services from specialists. Capitalization is generally not so high in these companies as in firms using continuous production techniques.

Most of the larger manufacturing companies in Kalamazoo County are characterized by continuous processes and huge capital investments in machinery and equipment. These firms require many professional, technical, and skilled persons, such as engineers, machine designers, toolmakers, diemakers, plumbers, electricians, and machinery repairmen. Because interruptions in production are extremely costly, preventive maintenance is essential. When repairs are needed, they must be made rapidly to minimize

costly shutdown time.

In industries using continuous manufacturing techniques, most of the production workers are unskilled or semiskilled. The learning period on many jobs is short; often the workers may be trained in a matter of weeks, days, or hours.

Kalamazoo County's paper and chemical companies and certain metalworking companies produce most of their products by continuous production methods. Paper and chemical companies are sometimes called "process industries" because they produce by a set process that often approximates automatic manufacturing. Bulk materials--liquids, powders, or chunks--are processed in mixing tanks and pressure cooking vessels. They are usually moved by pipe, chute, duct, or stream, as in paper manufacturing; or they are mixed in batches, as in chemical manufacturing.

Of course, not all companies classified as process industries use continuous manufacturing methods for all items they manufacture. The paper companies fabricate paper into many different end products, often using intermittent-type methods. The production of ice cream cartons or cups and plates for customer orders is an example. The larger companies often have large service departments, such as printing, machinery repair, or machinery building, which produce items by intermittent-type methods. For example, one large metalworking company employing continuous manufacturing methods produces many of its own tools and dies for use in special-purpose stamping machines. This company will eventually employ more persons in this activity than all but one or two of the larger metalworking companies specializing in intermittent-type manufacturing.

On-the-job training. A survey of training practices in local firms indicates that most of the manufacturing companies offer an extensive amount of on-the-job training. Generally, supervisors or key workers instruct the new employees and remain with them until they are ready to work alone or with a minimum of guidance. After this initial period, the instructor may leave the new employee on his own and give help only on machine setups or when otherwise especially needed.

Most unskilled jobs require very little on-the-job training. In fact,

the training may consist of an orientation that includes a tour of the plant or department, introductions to fellow employees, a briefing on safety practices, and such simple instructions and follow-up as are necessary for satisfactory job performance.

The training period for semiskilled jobs varies from a few weeks to a year or more. It depends on many different factors, such as the nature of the industry, method of production, the nature of materials being processed, effectiveness of supervision, and the aptitudes and abilities of the trainees. In companies employing continuous manufacturing techniques, simple assembly or subassembly jobs can be learned very quickly. Some companies report that rudiments of such jobs may be mastered by a capable employee within a few days, and that top proficiency may be acquired in a few weeks. More intricate assembly jobs--for example, in continuous-type manufacturing firms or in intermittent-type firms working on aircraft, space vehicles, or transportation equipment--require a longer training period.

Metalworking shops utilizing intermittent techniques in which machine operators do repetitive work on one machine find it unnecessary to instruct and to supervise workers closely for more than a short period, although up to a year may be needed before an individual is fully proficient on the job. Firms in both metal-cutting and metal-forming industries fall into this category. Some companies have a skilled setup man to install the cutting or forming tool in the machine, so that only the running of the machine is left to the operator. In other companies workers must learn how to install tools in their own machines. The latter procedure requires more skill on the part of the operator, but many shops with repetitive-type operations indicate that workers still are able to become fairly proficient in a year or so.

Machine-operator training for both semiskilled and skilled jobs generally requires more time in the metal-cutting industry than in the metal-forming industry because it more frequently demands training in blueprint reading, measuring instruments, and shop mathematics. An exception is the tool and die function in the metal-forming industry in plants such as the

General Motors Fisher Body plant. This function is, of course, a metal-cutting operation, and employees must be highly skilled journeymen or the equivalent to perform capably.

In manufacturing industries most training of skilled workers is conducted on the job in a manner similar to the training of semiskilled workers. Skilled workers, however, may need three or four years, or longer, to become proficient. One company has a 10-year on-the-job training program leading to journeyman status for its employees.

Most companies having collective bargaining agreements develop skilled workers either through a carefully planned apprenticeship program or through such informal systems as job-bidding procedures. There are about a dozen manufacturing companies offering apprenticeship programs for the machine trades. Most of these programs are approved by the U.S. Bureau of Apprenticeship and Training. They consist of on-the-job training in all major aspects of the trade, plus related training in one of the local high schools. Some firms located outside the county send workers to Kalamazoo for this related training. One local company has established an apprenticeship course providing for related training through a contract with the International Correspondence Schools. Within the working day, employees are given two hours of study time, during which an engineer is available to help them.

On-the-job training does not provide skilled workers in advance of need. During periods of slow growth, little on-the-job training occurs because companies are not hiring new employees and therefore not advancing personnel. In boom times, on-the-job training does not provide skilled workers fast enough. The lack of adequately trained workers during prosperous times necessitates the hiring of skilled workers on the open market at a time when they are scarce; too often companies are hiring large numbers of workers when only poor quality workers are available.

Job-bidding systems. Job-bidding systems help account for the extensive amount of on-the-job training. Interviews revealed that in every local manufacturing company having a labor union, except one, job-bidding systems are written into the contracts. Of the two major manufacturing

companies that do not have unions, one employs a job-bidding system to advance workers, and the other advances workers through a merit system. A worker in the latter company has the opportunity to try a new job for two weeks before deciding whether he wishes to keep it. If he chooses not to accept it, he may return to his previous job.

Job-bidding systems in local union contracts require companies to "post" any job vacancy for a period ranging from 24 to 48 hours. Employees may then bid for the job, and the bidder with the greatest seniority is transferred to the new job. Thus, employees work progressively from the less difficult to the more difficult jobs.

In a job-bidding system, filling one vacancy may precipitate many additional moves in the factory. For example, a machinist might successfully bid on an opening for a toolmaker's job; in turn, a drill press operator might successfully bid on the machinist's job; and, in turn, someone in a lower classification might bid on the drill press operator's job. One job opening might require up to seven or eight job changes in a company.

The following is a description of the job-bidding procedure from one of the local union contracts.

> Section 1: In the event of an increase in the working force or promotion, classifications will be posted for at least twenty-four (24) hours and straight seniority shall prevail, as between employees having the ability and skill necessary to do the work.
>
> Any employee bidding on a job and receiving it shall be given a fifteen (15) working day trial to show his aptitude for the job. During the fifteen (15) day period, supervision shall instruct and assist the employee to a reasonable degree to qualify him for the vacancy. If at the end of the trial period it is shown that the employee does not show sufficient aptitude for the job, such employee will be returned to his previous job and rate of pay, and in such event the employee's successor and all other successors shall return to his or their previous jobs unless otherwise agreed between the Company and the Union. Employees who receive a job through the bid procedure shall not be permitted more than four (4) successful bids in any one year from the date of their first bid.

> Provided, however, that in the event that the Company and the Union Committee determine that no employee within the plant is capable of doing the work, the Company may go outside of the plant in increasing the working force or making any such promotion.

Because of the lack of qualified workers within their plants, many companies find it necessary to go outside for help; for various reasons other companies find it difficult to do this except when they are hiring a large number of additional employees.

An important side effect of the job-bidding system is that employers find it advantageous to employ--even for unskilled jobs--only those with a good basic education. An employee hired under such a system may apply for a better job as he accumulates seniority. A slow learner or a worker with low-level skills in reading, communicating, and arithmetic could easily prove inadequate later if he should bid for a better job. Such an employee might need longer training on a series of jobs, or he might have to be refused advancement. Many companies, therefore, prefer to employ only high school graduates even for unskilled and semiskilled jobs which can be handled easily by persons with less than a high school education.

Nonmanufacturing Industries

Employment in major industries. Kalamazoo County's nonmanufacturing industries employ about 34,000 workers. The following table shows the distribution of employment among the various nonmanufacturing industries. Census industry breakdowns are referred to in this instance because they are more detailed than those released by the Michigan Employment Security Commission.

Service industries employ 40 percent of all nonmanufacturing workers in the county. A striking fact is that over two-thirds of the service workers are employed in professional industries. Educational services, including professors, teachers, and other personnel, employ nearly half of all workers in the professional service industries. Another important segment of the professional and related services group is that of medical and other services, including hospitals. Employment in this group amounts to

3,400 workers, or about one-third of all professional and technical workers. The business and repair services and engineering and technical services included in professional services are relatively small but important subgroups insofar as training requirements are concerned.

Table 4

Employment in Kalamazoo Nonmanufacturing Industries

1960

Industry	Employment	Percentage distribution
Total	34,300	100.0
Construction	3,400	9.9
Transportation, communication, and public utilities	2,700	7.9
Wholesale and retail trade	10,900	31.7
Finance, insurance, and real estate	2,000	5.8
Services	13,800	40.2
Business and repair services	1,200	3.5
Personal services	2,900	8.5
Professional services	9,600	28.0
Medical, hospitals, etc.	3,400	9.9
Education: government	3,900	11.4
private	1,000	2.9
Welfare and religious	500	1.5
All other services	800	2.3
Public administration	1,500	4.4

Note: Because of rounding, the sums of parts may not equal totals.

Wholesale and retail trade industries employ nearly 11,000 workers, or over 30 percent of all nonmanufacturing employees. Employment in wholesale and retail trade is well distributed in many industries such as food stores, eating and drinking places, apparel and shoe stores, automobile stores, drug stores, and service stations.

The remaining nonmanufacturing industries employ about 9,500 skilled

workers, sales people, and other personnel. Construction accounts for about 10 percent; transportation, communication, and utilities, about 8 percent; finance, insurance, and real estate, about 6 percent; and public administration, about 4 percent.

Training. Training in nonmanufacturing organizations is similar to that in manufacturing firms. It is primarily informal on-the-job training usually consisting of orientation by the personnel department or supervisor, plus job instruction by the supervisor or a key worker. In those jobs involving operation of machines or equipment, the person conducting the training frequently will remain with the trainee until it is evident that the trainee is ready to be on his own.

Skilled maintenance workmen need a three- or four-year stint of varied experience and training on the job or apprenticeship training. Most nonmanufacturing firms either hire skilled maintenance and service personnel on the open market or engage service companies to do the work for them. A few of the larger companies, however, hire helpers to work with journeymen, and after three or four years of on-the-job training these helpers are considered journeymen. Unless these workers have the initiative to pursue academic studies on their own, they are likely to be deficient in some areas.

A few retail concerns and a few nonmanufacturing industries follow the practice of sending employees to central training centers for orientation and training. In general, these training courses are in the more technical occupations such as service work on automobiles, appliances, and office machines. One grocery firm sends its employees to school to learn proper packing procedures.

There are a few organizations in which classroom instruction is provided for all workers entering certain jobs. Such formal training is evident in health organizations, in the communications industry, and in construction.

The hospitals provide formal training in a number of instances. These range from basic courses in cleaning to courses for technicians lasting up to two years in length. Kalamazoo's two general hospitals offer training

for nurses' aides which involves up to two weeks' classroom instruction plus one or two weeks on the job as an observer and helper. Both hospitals also offer a three-week training course for orderlies which includes classroom instruction and clinical training. In addition, the two general hospitals train some technicians such as X-ray and surgical technicians. In cooperation with the two general hospitals, the Kalamazoo Public Schools operate a practical nursing school which includes a year of on-the-job training in nursing care. Six hours per week are spent in the classroom.

For its psychiatric attendants, Kalamazoo State Hospital conducts a formalized course requiring 260 hours of orientation and classroom instruction plus 80 hours of supervised clinical experience. It also provides a course for food-handling personnel consisting of 1.5 hours of classroom work each week for 13 weeks. This instruction is coupled with supervised on-the-job training.

Nonmanufacturing industries sponsor a far larger number of apprentices than do the manufacturing industries of Kalamazoo County. Of the 173 indentured apprentices in February 1966, only 32 of them were sponsored by manufacturing organizations. The number of apprentices in the various trades are shown below:

Total Number of Apprentices
in Kalamazoo County, by Trade
February 1966

Program	Apprentices (number)
Total	173
Plumbers and steamfitters	35
Tool and die makers or machinists	30
Sheet metal workers	27
Electricians	22
Bricklayers	20
Carpenters	18
Painters and decorators	14
Lithographers	6
Dental technician	1

As is evident from the foregoing tabulation, apprenticeships are concentrated in the construction trades. There are only 37 apprenticeships outside the construction industry: 30 in the machine trades, 6 in lithography, and 1 dental technician.

Construction industry officials are favorably impressed with the quality of the apprenticeship program which the Kalamazoo Public Schools conduct in cooperation with the U.S. Bureau of Apprenticeship and Training and local industries. One union official indicated that three-year apprentices who have not yet completed their training are often leadmen on the job when they work with experienced journeymen who have not had the advantage of an apprenticeship course.

Vocationally Trained Workers Needed by Industry

Many employers have pointed out the difficulty of attracting, training, and holding enough workers for good skilled and semiskilled jobs. This problem is not just a phenomenon of the present tight labor market: it is a problem of long standing, dating back 15 years--possibly longer. There are many reasons for this, a few of which should be mentioned. Since skilled workers are usually at a premium in Michigan, many Kalamazoo employers experience difficulty in finding adequately trained workers during every period of prosperity. Manufacturing and nonmanufacturing industries (with the occasional exception of construction) have not supported enough apprenticeships. Many individuals--students and adults wishing better opportunities--have not been aware of the existence of good potential jobs. Persons who have wanted to learn skills have not been able to do so because of lack of vocational education courses in the county.

Kalamazoo employers do an extensive amount of on-the-job training, but since most manufacturing and nonmanufacturing companies in Kalamazoo are not set up to teach academic and technical subjects related to on-the-job training, not enough all-round tradesmen are being trained. Except for periods of poor business conditions, critical shortages of competent workers have prevailed.

The medium-sized and small companies in Kalamazoo County have special problems in training highly skilled workers. Many of them have had little success in repeated attempts to train skilled workers. Several company managers indicate that workers get discouraged because of the long training periods required for reaching high skill levels. Workers can reach pay levels of at least $3.00 per hour in a very few months in some of the larger production shops. Consequently, many workers in smaller companies leave jobs that may have a good long-term future for jobs with larger companies that pay more money immediately.

Many medium-sized and small manufacturing and nonmanufacturing companies lack the facilities and resources to do the recruiting, selecting, testing, and training necessary to carry on successful training of skilled workers. Small organizations cannot afford to pay high rates to employees during their learning period. Neither can they afford to train many workers during periods of good business conditions since the output of experienced workers is reduced during the time they spend in coaching novices. Recruiting efforts are undoubtedly hampered by the great stress on college education in the high schools and by the lack of knowledge concerning job opportunities. It is evident that more information on vocational opportunities needs to be made available in Kalamazoo County, and that such information needs to be used extensively in counseling and guidance work so that students and adults will know what the opportunities are.

Employers have pointed out that facilities and equipment for vocational education in most local high schools are inadequate. In some schools, budgets are so small that adequate materials and equipment cannot be purchased. Shop equipment common to Kalamazoo industry is not available in most school districts. For example, there are few turret lathe machines, common to factories using both intermittent and continuous processes. Furthermore, there are few grinders (cylindrical or internal) or radial drill presses. In some schools no equipment is available to train workers for Kalamazoo County's important fabricated metals industry. Press brakes, punch presses, welding machines, and welding equipment are scarce.

Several employers have pointed out that equipment such as milling

machines and lathes in school shops often is not heavy enough for realistic training. Furthermore, equipment in some shops is outmoded, as well as inadequate in amount, variety, and accessories. One of the better equipped high school shops in Kalamazoo has some machines 30 to 60 years old. Some machines are so obsolete that manufacturers no longer issue repair or operation manuals. Schools need machines and equipment to train students in production-type work and in skilled maintenance and service functions.

Since training facilities are inadequate in the Kalamazoo area educational institutions, and since very few sequential courses are available in educational institutions, only a small number of trainees have the necessary academic and technical background to reach top skill levels. As a result, local companies are often obliged to attract skilled workers from outside the county, or to employ workers with less education and skill than desired.

The bright long-run outlook of Kalamazoo industry is a significant aspect of the need for additional vocational education facilities. It is anticipated that Kalamazoo factory employment will increase by 39 percent from 1960 to 1975, compared with a growth of 19 percent for the nation as a whole.[5] The best growth prospects are in many of those industries--both continuous- and intermittent-type manufacturing--that require highly skilled maintenance and production workers. Companies in industries such as chemicals, fabricated metals, transportation equipment, machinery, and printing are expected to grow rapidly. The recent establishment of the Fisher Body Division plant is expected to attract satellite facilities for producing highly specialized tools, dies, and other equipment since General Motors plans to produce only 40 percent of its total tool and die requirements.

Locally, growth in nonmanufacturing industries will be faster than in manufacturing, and this growth likely will surge much above the

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[5]Samuel V. Bennett, Manpower Requirements in Kalamazoo in 1975 (Kalamazoo, Michigan: The W.E. Upjohn Institute, in process).

national growth rate for nonmanufacturing industries. Overall nonmanufacturing employment is expected to increase about 60 percent by 1975 compared with 42 percent for the United States. There will be considerable variation in the growth rates of specific industries. Finance, insurance, and real estate employment is projected to increase 81 percent; government (including professors, teachers, and other public employees), 103 percent; service industries, 75 percent; and construction, 62 percent. Trade employment, on the other hand, is projected to increase only 37 percent, but this is 11 percentage points above the projected increase for trade in the nation.

Advantages of Additional Vocational Training

Management officials in both manufacturing and nonmanufacturing industries are overwhelmingly in favor of additional vocational training in Kalamazoo County. A few officials feel that additional vocational education in the county will not necessarily help their companies, but some of them recognize the general need in the area and therefore endorse it. It is the consensus of management officials that a good background in vocational education will enable workers to attain skills much more quickly after they are employed. In addition, vocationally trained workers will be more safety conscious, therefore less apt to injure themselves or damage expensive machinery and equipment. Finally, there is no doubt that additional vocational training in the community would provide greater opportunities for local citizens to obtain more of the higher paying industrial jobs.

Many officials in industry--in manufacturing particularly--made the point that vocational education programs need to be more practical, that is, better tuned to the requirements of industry. Several officials stated that vocational teaching in some courses is too theoretical. There is a general feeling that there is too much emphasis on make-work projects such as ball peen hammers, and not enough emphasis on production-type work done in industry. For example, speeds and feeds taught in machineshop courses

are not geared closely enough to industrial practices. Several industry representatives think that teachers should have industrial experience or that industry people should be employed as teachers or at least consultants. Some educators share these beliefs and have suggested that industry provide more summertime work for instructors. A few persons pointed out that Western Michigan University vocational education graduates who have had experience in industry make excellent instructors.

Additional occupational training facilities in the local area with sequential course offerings would fill a critical need. An occupationally oriented school would enable any individual with the necessary ambition and aptitude to obtain a skill. It would also enable companies--medium-sized and smaller ones particularly--in any industry to hire workers with skills who then could be trained on the job in a much shorter period of time. Such a school could be used for accelerated short-term training courses in times of booming business conditions. During periods of rapid business expansion, a critical shortage of semiskilled and skilled workmen is ordinarily experienced, and companies find it necessary to employ workers without sufficient background or training. If adequate facilities were available to train workers on equipment common to Kalamazoo industry, short courses could be given when required. Such courses could be offered, furthermore, during hours when facilities were not being used for regular courses. Thus, without detracting from the overall program, an important contribution could be made to alleviate shortages of semiskilled workers in critical times.

Since Kalamazoo is a manufacturing center, its economy is affected by spurts and slowdowns in economic activity. In the past, Kalamazoo industries have diminished their training efforts in periods of business decline. Such action only contributes to shortages during periods of boom. Training needs to be continuous. Expanded occupational training facilities would help to make this possible.

Conclusions and Recommendations

Avenues of Approach

Several different approaches to occupational education and training are necessary to meet the requirements of local industries and citizens. First, industry should continue its present practice of on-the-job training. This training needs to be supplemented by academic and technical job-related courses. A greater variety of adult occupationally oriented courses is needed.

Second, there needs to be increased emphasis on apprenticeship training. The present number of apprentices (173, most of whom are in the construction industry) is woefully insufficient to meet present needs.

Third, much more in-school occupational training should be provided. At the present time it is not possible for a high school student or an adult to obtain a skill except in a few areas such as nursing, without first finding an employer who is willing to train him. In-school occupational training would enable individuals to develop skills of their choice without sponsorship by any industry or union. It would also enable industries to hire workers with skills who could then be trained on the job in a short period of time.

Planning for occupational education and training must be long range in character. A sound program would take into consideration expansion and contraction of business activity. It would also take into consideration growth in the economy as well as shifts in technology which require training for entirely new skills. It would include selection, testing, referral, and placement services. It would include industry participation in an advisory capacity in a more involved way than has occurred in the past. Industry could provide information on job opportunities and on technological change affecting future jobs; could make suggestions regarding machinery, tools, dies, and other accessories; could give sound advice regarding curriculum; and perhaps could open its doors for training on highly specialized machinery when it is not in use. The success of an occupational education program for Kalamazoo County will depend largely upon the extent

of cooperation between industry and educational institutions.

In determining what additional overall occupational education and training programs and facilities would serve Kalamazoo County best, two major considerations emerge. First, what should reasonably be expected of the high schools, assuming that supporting postsecondary facilities become available? Second, what kind of postsecondary facilities would be best for Kalamazoo County?

Comprehensive High School Programs

We should expect the high schools to be as comprehensive in their offerings as our community and its economy require. This means that each student would be provided such basic education in communications, the social and political sciences, the physical sciences, and mathematics as he is able to acquire; and, in addition, he would be prepared for what he will undertake upon leaving school.

Each school should offer within its own plant all of the needed occupational courses that do not require costly specialized equipment and for which student demand is sufficiently large to permit efficient teaching. These courses should include the usual business subjects, home economics, and industrial arts. Some very essential courses, however--courses preparatory for postsecondary occupational education, preparatory for skilled jobs essential to the local economy, or needed by students not in a position to take them after high school graduation--are too costly in relation to demand to be offered by any single school in the county. Such programs can be made available only by offering them cooperatively. How to do this in the best way and how best to provide the needed postsecondary occupational education and training programs will be considered together since the two are related.

The high schools must prepare all who, upon leaving school, will enter directly into the unskilled and semiskilled labor market. All members of this group should have such general education as they are able to undertake. Many need work experience under conditions that will help them learn how to work and to attain satisfaction from work. Some young people who

are ill equipped and even anti-school will need remedial programs in reading and elementary arithmetic. Some will need help in becoming personally employable.

In addition to providing the in-school programs necessary to prepare students for their first undertaking upon leaving school, the high schools should continue their community schools and adult education programs to the extent that their regular secondary facilities will permit.

Reorganization and Expansion of Work-Study Programs

Some of the high schools have had a brief experience with work-study programs for those preparing to enter the common labor market through the Employment-Bound Youth program and Youth Opportunities Unlimited, which have already been described. The EBY program is intended for the typical youth, and the YOU program is designed for the potential and actual dropout. It seems clear to us that the EBY and YOU programs should be reorganized and enlarged as necessary to accommodate all students who could benefit from work experience. It is not possible to know at this time how much expansion is essential for optimum results; time and experience, of course, will be important factors in determining this.

Each high school must conduct its own EBY program insofar as the work done is in offices, cafeterias, maintenance, and other services supplied by the school itself. We do not believe, however, that it is administratively feasible for each school, individually, to seek out part-time jobs in the community for all students who need work experience, or to give close enough attention to the students on jobs. Employers could not deal with so many school representatives and they would resent being held responsible by so many for the students employed. Individual schools could not have shops, comparable to the YOU shop, where students not employed by industry could be assigned to work on products under contract with industry. Nor could the schools serve the embittered dropout any more than they can now.

We believe that an intermediary agency is needed--an agency to which the schools may send their students for work assignments and supervision, and which will act as liaison with employers concerning jobs and student

performance. Obviously, the needed agency should be something like an expanded YOU. Its governing board should be representative of employers, schools, and the community at large. It should be industry-oriented and provide an industrial atmosphere. It should endeavor to become self-supporting in its contract work. It should continue to serve the actual dropout, which would mean continuation of the present remedial reading and arithmetic programs. Some dropouts, moreover, should be introduced to adult occupational courses, particularly those offered by a postsecondary institution, yet to be established. The entire program should be underwritten by the community; private benefactors have carried it long enough.

In April of 1966, the North Central Association, the principal accrediting agency, voted to recognize high school credit granted for the work part of the program on an experimental basis. Now, the pressure of the entire community should be directed toward improvement of provisions and administration of child labor laws and other restrictions to assure the availability of work experience that will help youth become employable.

Sharing High School Facilities

One way in which high schools might offer cooperatively the more costly occupational courses that some of their students should have is for each school to specialize in some occupational area in which it may have a special interest and to contract with other schools to take students for training in these classes. This sharing of facilities has been tried in some of the larger cities, particularly where the schools are under the jurisdiction of one common board and where financing rests on a common tax base. Such circumstances simplify the contractual problems and make possible a variety of arrangements. For example, the students could be taken by bus from their home schools to the school offering their specialization, or they could be required to enroll in the latter for all of their work.

It is difficult to point with certainty to places where this system has worked satisfactorily, and it seems especially ill adapted to Kalamazoo County with its nine separate districts and boards of control.

Each school would have to contract with each other school for each course. Tuition payments would be required among districts. Bussing students to so many places would be quite inefficient. Problems would arise in opening the facilities to adults from all over the county. Furthermore, the total cost to the county of building and operating so many specialized facilities would surely be more than the cost of bringing them all together in one place.

The Vocational Education Center

A second way of providing programs cooperatively, one widely in practice in the Carolinas, Kentucky, West Virginia, Georgia, and neighboring states, is for the community to build a vocational education building or center for joint use by all of the high schools. It is a place where the more advanced and more costly courses in vocational education can be conducted. The center is not a school; it is an equipped shop or collection of shops where certain classes can be held. The students remain enrolled in their home schools and receive credit in their home schools for the courses taken at the center. They are transported by bus to the center for the courses offered there.

The facilities of the center, as well as those of the high schools, are made available for adult programs when not in use for school programs. Adults may receive high school credit for such programs, if credit is wanted, at their own high schools. No credit for postsecondary technical or other organized programs is available, however, because the center is not a postsecondary institution.

The Area Vocational School

A third kind of facility, one designed to serve the high schools and also to provide a broader program of vocational education and training for adults, is the area vocational school. It is owned and governed by a separate board. It operates as a school in every respect: it enrolls its own students, grants credits, and awards diplomas.

The area vocational school may operate on the secondary level, the postsecondary level, or both. Where such schools have been in operation

over a period of time, however, as in Minnesota and Wisconsin, they have become more and more postsecondary in character. Their own secondary school graduates and the graduates of regular high schools want the more advanced vocational courses. Adults want to continue their pursuit of knowledge and skills beyond the secondary level; furthermore, where such postsecondary programs are available in a community, there is a tendency for high school students to postpone vocational education and training until after graduation. There are several reasons for this: high school curricula are crowded with courses the students want and need; employers favor those who have had vocational training after high school graduation and thereby have acquired broader education and greater maturity; and parents and society generally favor a longer period of education and a later employment age.

The area vocational school provides several community services. One of its very important duties is to serve as the vocational education center for the high schools. It does this by conducting classes for the high schools or by making specialized facilities available for courses offered jointly by the schools themselves. Both are done on a contractual basis. The area school, in a sense, may also serve as an industrial high school so long as it offers a secondary program. In doing so, it establishes its own admission standards and is, therefore, not likely to become a dumping ground for the ill-prepared or the embittered potential dropout. It can provide a whole array of adult occupational training programs and grant secondary or postsecondary credit for them. The postsecondary credits may be accepted for transfer into the appropriate programs of colleges and universities offering such programs at the discretion of the admitting institutions.

Although the area vocational school is certain to offer courses in English, social sciences, physical sciences, mathematics, and other cultural areas, it cannot award the associate degree, nor can its students transfer into the junior year of colleges and universities on the same basis as can graduates of community colleges.

The Comprehensive Community College

A fourth way, and it seems to us the best way, by which Kalamazoo County might make it possible for the high schools to offer their students the more costly occupational courses, and at the same time meet the needs of adults, out-of-school youth, and others for postsecondary programs, is through the establishment of a comprehensive community college. The comprehensive community college should not be confused with its predecessor, the two-year liberal arts junior college. It is a community service institution offering the programs that the community demands. It cannot operate as a secondary vocational high school, but it can serve as a vocational education center for the high schools and also do everything else that the area vocational school can do. In addition, it can offer the first two years of college and such advanced vocational-technical programs as are ordinarily offered by a resident technical institute. For these it also awards the associate degree.

It is a basic part of the philosophy of the community college that all high school graduates, adults, and out-of-school youths are eligible for admission and may be enrolled in programs that the counselors believe they are prepared to undertake. The college may provide any program that the community wants and is willing and able to support--all the way from the skill programs offered under the provisions of the Manpower Development and Training Act and comparable laws to the more sophisticated technical programs.

In order to remove any doubt about the community college's right to serve the high schools as a vocational education center, the Michigan legislature, in May 1964, amended the community college law so as to provide that the community college, if requested by a school district, may offer for the benefit of its neighboring high schools programs needed by students for immediate entrance into the labor market.

In the same action of May 1964, the Michigan legislature made it possible for the community college to offer the longer vocational-technical courses ordinarily offered by resident technical institutes. Some of these programs require as much as three years. The law stipulates only

that the community college shall not offer programs that lead to a baccalaureate degree. The college program, however, stops with the first two years of academic work.

Both the area vocational schools and the community colleges are eligible for state and federal assistance. At present, the state is providing approximately half of the operating costs of community colleges and a portion of the costs of new buildings and equipment, limited by an annually budgeted total for the state. The community colleges are eligible for federal assistance for the construction of buildings under the Higher Education Facilities Act of 1964, but not many community colleges can receive such assistance in any one year.

It seems clear that the comprehensive community college is the appropriate institution for Kalamazoo County to use in providing the vocational-technical education and training programs needed by all of its people. It is in keeping with the system of postsecondary education developing in Michigan as well as in much of the United States. And the comprehensive community college is the one instrument capable of meeting all of the local needs.

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Bullock, Burke
A Survey to Identify and Describe the Characteristics of Twenty-Five Selected Young Farmer Chapters in Texas.

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*AGRICULTURAL EDUCATION; *SURVEYS; *PROGRAM DESCRIPTIONS; *YOUNG FARMER EDUCATION; *STUDENT CHARACTERISTICS
TEXAS

In order to familiarize inexperienced vocational agriculture teachers with characteristics of the Young Farmer Program, a questionnaire survey was conducted of 25 young farmer programs. Findings were: (1) Young farmers are typically between 25 and 35 years old, with 2 to 3 children and a high school education, (2) 40 percent own part or all of their land, (3) 48 percent have between $35,000 to $75,000 invested in farming operation, (4) Chapters average less than 30 members, with meeting attendance under 20, (5) Newspapers and letters were used for publicity, (6) Programs leading to better farm profits were most popular, (7) Family-type recreation was preferred, and (8) Providing good programs was a major chapter operation. Problems listed by advisors were planning varied meeting programs, creating interest, attendance, and competing with other activities. (JM)

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A SURVEY TO IDENTIFY AND DESCRIBE THE CHARACTERISTICS OF TWENTY-FIVE SELECTED YOUNG FARMER CHAPTERS IN TEXAS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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For

The Course

Agriculture Education 510

Special Problems in Education

by

Burke Bullock

May, 1963

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CHAPTER I

INTRODUCTION

As an inexperienced, prospective Vocational Agriculture teacher finishes college and finds his first job teaching in his field, he will face many flustrations and challanges. Among a multitude of other things he must carry on a program of instruction for high school boys, supervise farm projects, and attempt to carry on some type of Adult and Young Farmer education program.

Most prospective teachers are familiar with Adult and Young Farmer programs but have had little or no practical experience with this phase of their job. In this study I have attempted to gather information that might be substituted to some degree for experience. It is my belief that when a teacher has a knowledge of the problem that he is challanged with he is better equipped to handle the problem. If he is familiar with the problems that young farmer and adult programs are now faced with he might avoid them by planning ahead. If he is familiar with the ideals and principles that help young and adult farmer programs now in operation to function he might adapt these ideals to make his program more efficient when it is organized.

CHAPTER II

STATEMENT OF PROBLEM

The problem considered in this study is "A Survey to Identify and Describe the Characteristics of Twenty-five Selected Young Farmer Chapters in Texas."

CHAPTER III

PURPOSE OF STJDY

The purpose of this study is to provide a knowledge of the characteristics of Young Farmer chapters in Texas for inexperienced vocational agriculture teachers; to familiarize inexperienced vocational agriculture teachers with the chapters in Texas.

CHAPTER IV

PROCEDURE OF STUDY

The procedure followed in making this study was as follows:

1. Conferences were held with the instructor in order to secure information concerning the study.

2. A decision was made on what information was needed from each chapter of Young Farmers.

3. A questionnaire was drawn up and mailed to young farmer chapters that received honors at either the 1962 or the 1963 state young farmer convention. The chapters were picked at random.

4. The data gained from the twenty-five questionnaris returned, a 71.4 per cent, was compiled into charts and summaries showing what characteristics were most prevalent in the chapters.

CHAPTER V

PRESENTATION AND INTERPRETATION OF DATA

The data presented in the following fourteen tables was taken from twenty-five questionnaires returned from selected Young Farmer Chapters. After the information was collected it was compiled into tables showing what characteristics were most common in Young Farmer Chapters in Texas.

TABLE I

THE AGE OF THE YOUNG FARMERS AND THE NUMBER AND * PERCENTAGE OF YOUNG FARMERS WITHIN THE CHAPTERS

AGE OF MEMBERS	NUMBER	PER CENT
Under 25	2	8.0
25 to 30	18	72.
30 to 35	12	48
over 35	1	4

Table I indicated that most of the members were between 25 and 35 years old. Those under 25 and those over 35 amounted only to 12%.

* Those questioned circled more than one answer on the questionnaire

TABLE II

THE NUMBER OF CHILDREN SUPPORTED BY YOUNG FARMERS AND THE PERCENTAGE AND NUMBER OF YOUNG FARMERS WITHIN THE CHAPTERS

NUMBER CHILDREN	NUMBER	PER CENT
No children	1	4
1 child	4	16
2 to 3	20	80
over 3	0	0

Table II shows that the average young farmer has his family started. The average number of children is two to three. All chapters reported that members with over 3 children were not common in their cahpter.

TABLE III

THE EDUCATIONAL STATUS OF YOUNG FARMERS WITH THE NUMBER * AND PERCENT OF YOUNG FARMERS IN THE VARIOUS CHAPTERS

EDUCATIONAL STATUS	NUMBER	PER CENT
No education	1	4
Grade school	2	8
High school	22	88
College	5	20

Table III indicates that the average member has at least a high school education. Only 12% had less than a high school education. Twenty per cent of the members had at least 2 years or more of college.

* Those questioned circled more than one answer on the questionnaire.

TABLE IV

THE TENURE STATUS OF YOUNG FARMERS WITH THE NUMBER AND PERCENT OF YOUNG FARMERS IN THE VARIOUS CHAPTERS *

TENURE STATUS	NUMBER	PER CENT
Rent	13	52
Tenant Farmer	2	8
Part Owner	16	64
Full Owner	10	40

Table IV shows that 60% of the young farmers do not own their land while about that many do own their own land or own part of their land.

* Those questioned circled more than one answer on the questionnair.

TABLE V

THE AVERAGE INVESTMENT OF YOUNG FARMERS IN THEIR FARMING OPERATION WITH THE NUMBER AND PER CENT OF YOUNG FARMERS IN THE VARIOUS CHAPTERS

INVESTMENT	NUMBER	PER CENT
Under 10,000	1	4
10 to 20,000	4	16
20 to 30,000	5	24
30 to 50,000	8	32
50 to 75,000	3	12
75 to 100,000	2	8
over 100,000	1	4

Table V is the estimated investment of the average young farmer in farming operation. This table points out the importance of keeping the young farmer up to date on the latest farming principles and methods. Only 4% of the farmers questioned had invested less than $10,000.

TABLE VI

THE SIZE OF YOUNG FARMER CHAPTERS QUESTIONED

SIZE OF CHAPTER	NUMBER	PER CENT
10 to 20	9	36
20 to 30	7	28
30 to 40	5	20
Over 40	4	16

This Table indicates that there are more small chapters than there are large chapters. In this study there was 9 chapters or 36% that had from 10 to 20 dues paying members; 7 chapters or 28% that had 20 to 30 members; 5 chapters or 20% that had 30 to 40; and only 4 chapters or 16% that had over 40 members.

TABLE VII

THE NUMBER AND PER CENT OF YOUNG FARMERS ATTENDING MEETINGS

ATTENDANCE	NUMBER	PER CENT
Under 10	3	12
10 to 20	13	52
20 to 50	8	32
Over 50	1	4

Table VII shows that most of the chapters questioned had from 10 to 20 at the meetings. Twelve per cent had 10 or less members at each meeting; 32% had 20 to 50 members present and only 4% had more than 50 members present at meetings.

TABLE VIII

THE FREQUENCY OF YOUNG FARMER MEETINGS

NUMBER OF MEETINGS	NUMBER	PER CENT
Twice a month	14	56
Twice a month, call meetings	4	16
Once a month, call meetings	3	12
Once a month	2	8
Call meetings	2	8

Most of the chapters questioned met every two weeks or twice a month. Some chapters met one time a month. There are chapters that meet only when a meeting is called. Most chapters have call meetings at one time or another for short courses or special problems.

TABLE IX

PLANS THAT YOUNG FARMER CHAPTERS HAVE FOR THE FUTURE

PLANS	NUMBER	PER CENT
Better Programs	13	52
Increase Membership	10	40
More community service	3	12
Enter state contest	2	8
No Plans	2	8

Most chapters want to increase their membership, and plan to do this by having better programs. Several chapters want to enter the state contest; be of more service to the community, and 8% had no plans for the future.

TABLE X

METHODS USED BY YOUNG FARMER
CHAPTERS TO ADVERTISE MEETINGS

PUBLICIZING	NUMBER	PER CENT
Newspaper	21	84
Letter from member or committee	18	72
Phone Calls	13	52
Radio	12	48
Letter from advisor	12	48
Personal Contact	9	36

According to this study most of the members were contacted through the press. Letters from member, a committee or from the advisor was the second most commonly used method to publicize meetings. Phone calls and radio were used by many to advertise meetings. Personal contact, which is considered to be the best method of getting members to attend meetings was used least of all.

TABLE XI

THE TYPE OF PROGRAMS USED BY YOUNG FARMER CHAPTERS

PROGRAMS	NUMBER	PER CENT
Seasonal or current agriculture problems	9	36
Service Personnel	8	32
Short Courses	6	24
Field Trips	6	24
Other	3	12

The most popular types of programs seem to be concerned with seasonal or current agriculture problems. Short courses and service personnel and field trips were also popular. Programs that members seemed to be most interested in were programs that would enable them to make better profits in farming.

TABLE XII

TYPES OF RECREATION ENJOYED BY YOUNG FARMERS

RECREATION	NUMBER	PER CENT
Family Bar-b-cues, Picnics, Suppers, Ice Cream Parties	20	80
Bowling, Softball, Volley-ball	5	20
Dimino and 42 Parties	4	16
No Recreation	3	12
Dances	3	12
Boating and Water Skiing	2	8
Fellowship, Talk, and Refreshments after meetings	2	8
Fishing Trip	1	4

Advisors were asked to list several types of recreation that their members enjoyed most. Family type recreation was the most popular recreation as the table above shows. Bowling, softball, volleyball were the second most popular recreation. Dimino and 42 parties, dances, boating and water skiing, fellowship, talk, and refreshments after meetings, and fishing trips were other types of recreation listed. Twelve per cent of the chapters questioned had no type of recreation.

TABLE XIII

REASONS ADVISORS GIVE FOR CHAPTER FUNCTIONING

REASONS	NUMBER	PER CENT
Good Leadership-Hard Work	18	72
Interested Members	18	72
Good Programs	16	64
Community Interest	9	36
Members taking lead in work of the chapter	7	28
Regular Meetings	6	24
Recreation	5	20
Participation in State Conventi on	5	20
Members former agriculture students in high school	4	16
Work with young Homemakers Organization	3	12
Other	3	12
Fulfilling needs of members	2	8

In this table the advisors were asked to give five reasons why their chapters were functioning. Among the most commonly given reasons were good leadership and interested members. A good president and officers was usually the first

reason given for the chapter functioning. Good programs was a major reason why many chapters are now in operation. Other reasons given were community interest, participation in State Conventions, work with young homemakers organization, recreation, letting members take a lead in the work of the chapter, members former vocational agriculture students in high school, regular meetings, fulfilling needs of members.

TABLE XIV

COMMON PROBLEMS FACING YOUNG FARMER CHAPTERS

PROBLEMS	NUMBER	PER CENT
Getting Good Programs	8	32
Farmer's work, T.V., Church, other activities competing with young farmer programs	6	24
Getting Members to attend meetings	6	24
Creating an interest in members	5	20
No Problems	4	16
Lack of cooperation of members	3	12
Other	3	12
Publizing Program	1	4

Advisors were asked to list several problems that their chapter were facing. Getting good programs without repeating was the biggest problem that advisors were facing in this study. Creating an interest in members, getting members to attend meetings, and the meetings competing with TV, church work, and other activities were other big problems. Four per cent of the chapters had no problems listed.

SUMMARY

Most of the young farmers that attended meetings are between 25 and 35 years old. Those chapters reporting members attending that were under 25 and those over 35 amounted to only 12% of the chapters questioned. Most of the young farmers have started their family. The average number of children is two to three. Some of the members are just starting their family. All chapters reported that members with over 3 children were not common in their chapter.

Eighty-eight per cent of the chapters questioned had members with at least a high school education. Only 12 per cent of the chapters interviewed had members with a grade school education or less. Twenty per cent had a college education.

According to the advisors of the chapters questioned about 60 per cent of the members do not own their own land, and about 40 per cent own part or all of their land.

An estimate, subject to error, given by the advisor as to the amount of money the average member has invested in his operation is as follows: under $30,000 - 40%, $30,000 to %75,000 - 48%, and over %75,000 - 12%.

According to this study there are more small chapters than large chapters. In this study there were nine chapters or 36% that had from 10 to 20 dues paying members; seven chapters or 28% that had 20 to 30 paying members; five chapters or 20% that had

30 to 40; and only four chapters or 16% that had over 40.

Forty-eight per cent of the chapters questioned had from 10 to 20 people present at each meeting. Twelve per cent had 10 or less at each meeting, thirty-two had 20 to 50 people at each meeting and only 4% had more than 50 people present at each meeting.

Most of the chapters questioned met every two weeks or twice a month. Some chapters met once a month. There were chapters that met only when a meeting was called. Most chapters have call meetings one time or another for short courses or for special problems.

The future plans of most chapters was to increase their membership by having better programs. Several chapters wanted to enter the state contest and to be of more service to the community, and 8% had no plans for the future.

According to this study most of the members were contacted through the press. Letters from members, committee, or from the advisor was the second most commonly used method of publicizing meetings. Phone calls and radio were used by many chapters to advertise meetings. Personal contact, which is considered to be the best method of getting members to attend meetings was used least of all.

The most popular types of programs seemed to be concerned with seasonal or current agricultural programs. Short courses and service personnel and field trips were also popular. Programs that members seemed to be most interested in were programs that would enable them to make better profits in farming.

Advisors were asked to list several types of recreation that their members enjoyed most. Family type recreation was the most popular recreation listed in the returned questionnaris. Domina and "42" parties, dances, boating and water skiing, fellowship, talk, and refreshments after meetings, and fishing trips were other types of recreation listed. Twelve per cent of the chapters questioned had no type of recreation.

Advisors were also asked to list reasons why their chapters were functioning. Among the most commonly given reasons were good leadership and interested members. A good president and good officers was usually the first reason given for the chapter functioning. Good programs was a major reason why many chapters are now in operation according to the advisors. Other reasons given were community interest, participation in state conventions, work with young homemakers organizations, recreation, letting members take a leading part in the work of the chapter, members who were former vocational agricultural students in high school, regular meetings, and fulfilling needs of the members.

Some of the problems that advisors listed were getting good programs without repeating, creating an interest in members, getting members to attend meetings, and the meetings having to compete with TV, church, work, and other activities. Four per cent of the chapters listed no problems.

ENCLOSURE NO. 1

QUESTIONNAIRE SENT TO SELECTED
YOUNG FARMER CHAPTERS

TO: Outstanding Young Farmer Chapters

FROM: Burke Bullock

SUBJECT: Young Farmer Program Survey

I am a student at East Texas State College enrolled in a graduate Agricultural Education course. I have been assigned a problem dealing with factors that cause success in young farmer programs. One of the best ways to solve a problem of this type is to survey individual chapters that seem to be successful in their young farmer program.

While looking through several agricultural magazines I noticed that your chapter was mentioned very favorably several times for the outstanding work that it has accomplished. For this reason I would like to ask your help in this matter.

Listed below are several questions that would be helpful to me in identifying factors that make young farmer chapters "click". If you will answer as many of the questions as possible it would be very helpful.

I deeply appreciate your time and co-operation in this matter and will be more than glad to send to you a copy of the summation of the results of this survey if you desire.

Circle the number by the answer that best describes your chapter or fill in the blanks.

What is the size of your young farmer chapter?

1. Under 10
2. 10 to 20
3. 20 to 30
4. 30 to 40
5. Over 40

What type of farming enterprises are carried on in your community?

1. Livestock
2. Row Crops _____, _____, _____
3. Combination of _____, _____, _____, _____
4. Other _____

What is the average age of your membership?

1. Under 25
2. 25-30
3. 30-35
4. Over 35

What is the average size of your member's family?

1. One child
2. 2-3 children
3. 3-4 children
4. Over 5 children

What type of profession did the parents of the average young farmer in your chapter engage in?

1. Farming
2. Industry
3. Laborer
4. Other

What percent of your members are:

	Occupation	Percent
1.	Farmers	_____
2.	Laborers	_____
3.	Industrial Workers	_____
4.	Others_____	_____
	_____	_____
	_____	_____

How big is the farming operation of your average number?

acres _____ of _____
Head _____ of _____
Income _____ of _____
Other units of production _____

List in order of importance 5 reasons that made your chapter successful.

1.

2.

3.

4.

What is the ownerships status of the average young farmer in your chapter?

1. Rents
2. Tenant Farmer
3. Part owner
4. Full owner

What is the educational status of the average young farmer in your chapter

1. No formal education
2. Grade school education
3. College B.S. degree
4. Post graduate work

What is the ancestory of most of the young farmers in your chapter?

	Percent
1. English	_____
2. German	_____
3. French	_____
4. Other	_____

What is the average attendance at your meetings?

1. Under 10
2. 10-20
3. 20-50
4. Over 50

What are the main problems encountered in building and maintaining your young farmer chapter?

How do you get members to attend meetings?

What type of programs do you have at the young farmer meetings?

How do you publicize your young farmer meetings or programs?

What are your plans for future improvement?

What types of recreation do your members seem to enjoy most?

What awards have you won in the past three years?

How often do you schedule meetings?

How much does your average member have invested in his operation?

Would you like to have a summary of the results of this survey?

Yes _____ No _____

Name _____

Address _____

_____

_____

ENCLOSURE NO. 2

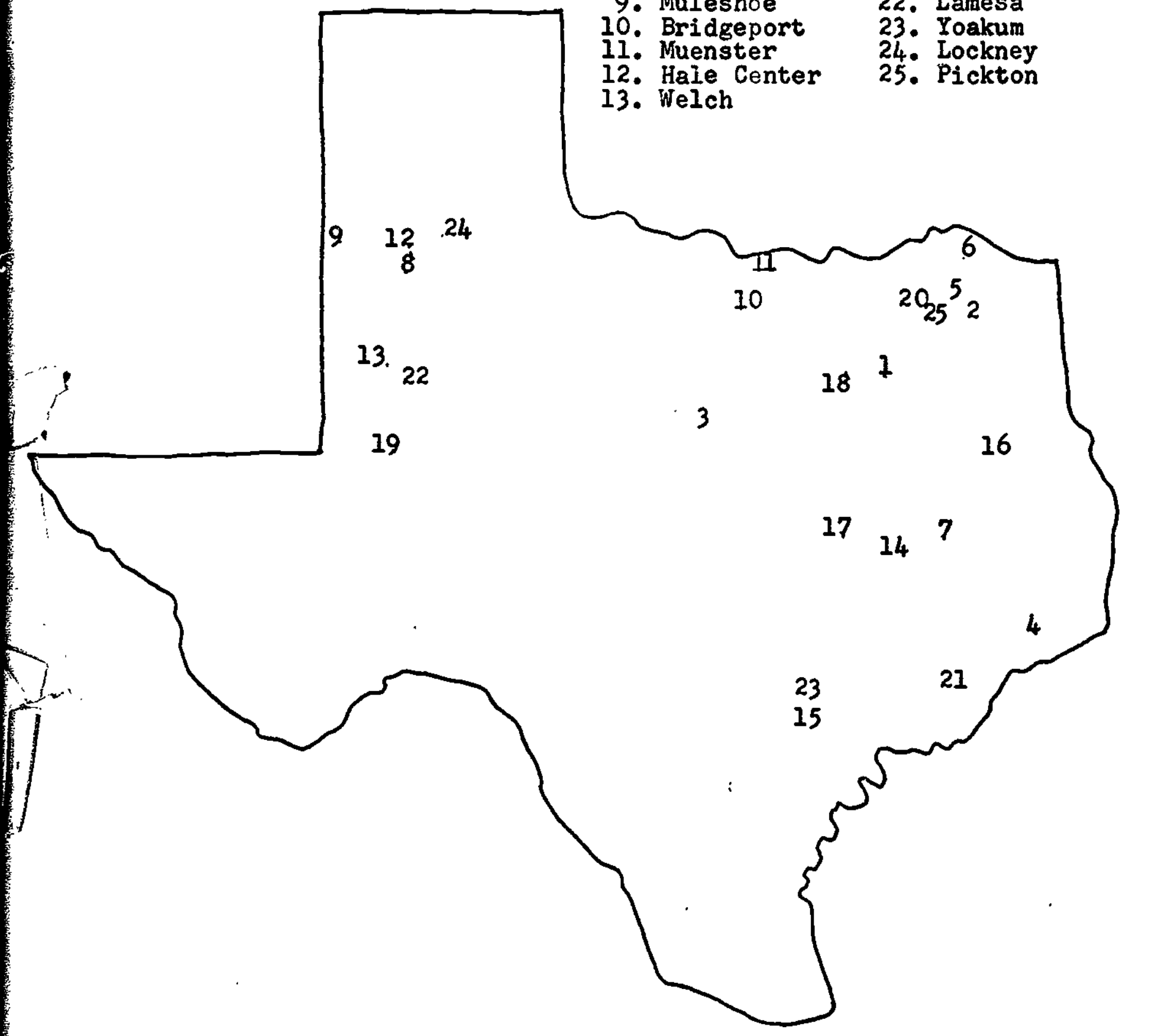
A LIST OF YOUNG FARMER CHAPTERS
SELECTED FOR THE SURVEY

1. Mabank
2. Pittsburg
3. Dublin
4. Dayton
5. Mount Vernon
6. Clarksville
7. Huntsville
8. Abernathy
9. Muleshoe
10. Bridgeport
11. Muenster
12. Hale Center
13. Welch
14. Brenham
15. Cuero
16. Nacogodoches
17. Hearne
18. Ennis
19. Midland
20. Sulpher Springs
21. El Campo
22. Lamesa
23. Yoakum
24. Lockney
25. Pickton

ENCLOSURE NO. 3

DISTRIBUTION OF SELECTED CHAPTERS OVER TEXAS

1. Mabank
2. Pittsburg
3. Dublin
4. Dayton
5. Mount Vernon
6. Clarksville
7. Huntsville
8. Abernathy
9. Muleshoe
10. Bridgeport
11. Muenster
12. Hale Center
13. Welch
14. Brenham
15. Cuero
16. Nacogodoches
17. Hearne
18. Ennis
19. Midland
20. Sulpher Springs
21. El Campo
22. Lamesa
23. Yoakum
24. Lockney
25. Pickton



VT 001 614
Industrial Arts in the Baltimore Public Schools.

Baltimore City Public Schools, Md.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Sep66 28p.

*INDUSTRIAL ARTS; *JUNIOR HIGH SCHOOLS; *HIGH SCHOOLS; *CURRICULUM; *EDUCATIONAL OBJECTIVES; INSTRUCTIONAL PROGRAM DIVISIONS; PROGRAM DESCRIPTIONS; PROGRAM IMPROVEMENT
BALTIMORE CITY PUBLIC SCHOOLS; MARYLAND

Industrial Arts is offered in each junior high school in grades 7, 8, and 9. It is required in grade 7 and elective in grades 8 and 9. In the senior high schools it is an elective subject except in the General Technical Curriculum which is designed for Basic Students. The junior high schools have unit or general shops in which traditional subjects are taught. The senior high school programs include traditional subjects and technical subjects such as: (1) Engineering Estimating, (2) Industrial Organization, (3) Materials of Construction, (4) Mechanics (statics and kinetics) and (5) Thermodynamics. The Report Committee recommended: (1) the single period plan be continued in the junior high schools, (2) industrial arts be required in grades 7 through 9 for boys, (3) industrial arts objectives relating to general education, vocational exploration, and development of student interests and skills were sufficient for the program, (4) schedule changes should be made only at semester juncture, (5) all industrial arts students receive five periods of instruction per week, and (6) the sequence of courses should be based on the maturity and muscular coordination of students. A suggested curriculum organization is given. (EM)

VT 001 614

ED039370

(C1)

INDUSTRIAL ARTS IN THE BALTIMORE PUBLIC SCHOOLS.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT 013 414

A Committee Report

September, 1966

INDUSTRIAL ARTS IN BALTIMORE

A. Introduction

In the secondary schools of Baltimore the curriculum area which has as its main purpose the firsthand study of industry is industrial arts. It is an integral part of the general education program of all youth, and offers those learning experiences which assist boys and girls to understand the industrial and technical aspects of life today. It is a curriculum area that makes a realistic contribution to life adjustment education, and it shares with other areas of the school program the responsibility for promoting the optimum development of the good citizen.

Industrial arts is instructional shopwork which provides for all youth sound educational experiences that contribute to the satisfaction of their purposes, needs and wants. The unique contributions of industrial arts are centered around significant aspects of the manufacturing and construction industries and their effects on daily living. Those who participate in industrial arts programs receive orientation in the areas of production, consumption and recreation, through actual experiences in planning, producing, servicing and repairing various types of consumer goods in common usage. Through these experiences young people learn about material goods, how they are made, and how to select, use and maintain them intelligently. They develop general skill and resourcefulness in working with things, technical and mechanical. They learn facts, principles and procedures about tools, materials, processes, mechanics and design. They learn about wood, metals, plastics, ceramics, textiles, paper and other industrial materials. They learn about electricity, motors, engines, structures, and other items of importance, interest and concern to all people at home, on the farm, at work and in recreation. They also learn to do critical thinking in solving problems relating to these matters.

B. Scope and Sequence

The industrial arts program in the Baltimore Secondary Schools embraces such areas as woodwork, mechanical drawing, electricity, printing, sheet-metal work, machine shop work, automobile mechanics, and general crafts. These areas should not be regarded as separate subjects, but as areas of experience and segments of a total program of general education. In some of the secondary schools of the city each area is taught in a separate room or shop in what is called a unit shop arrangement. In other schools, particularly the new unit type where space is limited, several areas such as, woodwork, electricity and mechanical drawing are taught simultaneously in one shop by one teacher in what is referred to as a "general shop." The crafts areas, which is the most recent one to be added to the industrial arts program, includes experiences in plastics, ceramics, leathercraft, art metal work, jewelry, and others.

Industrial arts, as a curriculum area, is offered in each of the junior high school grades, 7, 8, and 9. In the 7th grade it is required during one of the two semesters, and is scheduled for four periods during that semester. In the 8th and 9th grades it is an elective subject, and can be scheduled in both semesters of each grade. The time allotment is three periods per week in both semesters of the 8th grade, and either 2, 3, or 4 periods per week in both semesters of the 9th grade. In the senior high schools, it is an elective subject excepting in the General Technical Curriculum and that is designed for Basic Students.

C. Objectives

The general purpose of the Baltimore industrial arts program is to provide for experiences tending to develop some skills, knowledge and attitudes regarding industrial and technical matters that are needed for happy and effective living in America. Our goal is to give every pupil the chance to learn to work with tools and materials and to acquire reasonable judgment, including sound safety practices, and some degree of technical know-how in their use.

Specifically, the aims of industrial arts are as follows:

1. Interest in industry: To develop in each pupil an active interest in industrial life and in the methods and problems of production and exchange.
2. Appreciation and use: To develop in each pupil the appreciation of good design and workmanship and the ability to select, care for and use industrial products wisely.
3. Self-realization and initiative: To develop in each pupil the habits of self-reliance and resourcefulness in meeting practical situations
4. Cooperative attitudes: To develop in each pupil a readiness to assist others and to join happily in group undertakings.
5. Health and safety: To develop in each pupil desirable attitudes and practices with respect to health and safety.
6. Interest in achievement: To develop in each pupil a feeling of of pride in his ability to do useful things and to develop worthy leisure time activities.
7. Orderly performance: To develop in each pupil the habit of an orderly, complete, and efficient performance of any task.

8. Drawings and design: To develop in each pupil an understanding of drawings and the ability to express ideas by means of drawing.

9. Shop skills and knowledge: To develop in each pupil a measure of skill in the use of common tools and machines and an understanding of the problems involved in common types of construction and repair.

D. The Junior High School Program

1. Drafting (Mechanical Drawing)

a. Freehand sketching is taught during the first semester. It includes all of the basic fundamentals of drafting which can be taught without the use of drafting instruments. Line technique is not stressed. Visualization and understanding are considered important during this term. Pictorial drawings, "view" drawings, lettering, and dimensioning are among the units included.

b. Mechanical drawing, with the use of drafting instruments is taught during the second (and third, if elected) semester. Skills in handling these instruments are stressed through the teaching of orthographic projection, working drawings, sectional views, auxiliary views, pictorial drawings, lettering, dimensioning, geometric constructions, surface development, and, if the situation warrants, some architectural drafting.

2. Woodworking

a. During the first semester the students are taught only the basic hand tools of woodworking. These include, in the main,

the tools which are most often found in the home workshop, such as the hammers, saws, screwdrivers, measuring the laying-out tools, and sandpaper. Some simple wood finishing is included in the course, including staining, applying shellac, waxing, and possibly applying paints, lacquers and enamels. The projects constructed during this term are typically small and can be used in the home--tie racks, toys, book ends, shoeshine boxes, placques, and novelty items of interest to young adolescents.

b. Subsequent term offerings include a review of the fundamentals plus the teaching of advance skills in the use of hand tools and machines. The difference between this and the initial experience of the students lies not primarily in the types of tools used but in the operations which are performed with them. Projects constructed are generally those with a high degree of skill in the use of tools and machines. Woodturning is one of the most popular units taught to the advanced students.

3. <u>Metalwork</u>

a. This general area includes machine shop, benchmetal, sheet-metal and art metal experiences. What is taught, and in what school, depends upon the kind of equipment in the shop, the supplies available and the interest and ability of the teacher. Some of the older shops in the schools are operated on a <u>unit</u> shop basis: machine shop, sheetmetal shop, art metal shop. In the new schools the metal shops are equipped to handle all three of these in one <u>general</u> shop.

b. Typically, the teaching in the metal shop, whether unit or general, is handled in somewhat the same manner as woodwork. The students are introduced to the most simple tools and operations, and proceed to the more complex. Measuring, laying out, filing, sawing, drilling, bending, forming, annealing and the other skills needed in metal work are stressed. Where lathes, drill presses, shapers, grinders and milling machines are available, these are taught to and used by advanced students.

4. Electricity

a. The fundamental principles and characteristics of electricity are taught. Such terms as voltage, amperage, wattage and resistance are studied, demonstrated, and applied through discussions and the solving of mathematical problems.

b. Practical application of electrical principles is made through actual jobs in low voltage bell wiring and other similar jobs.

c. Some repair of electrical home appliances is undertaken.

d. In some shops, electrical projects such as simple motors, buzzers, and other electrically-operated articles are constructed.

5. Printing

a. The emphasis is on hand composition using various sizes and styles of type.

b. For consumer education purposes, discussions and demonstrations are used to inform the student about the various processes employed in the printing industry.

c. Practical applications are made through the setting and printing of various jobs such as calling cards, programs, tickets, menus, etc.

d. Advanced students are given opportunities to do "live jobs" for the school where these can be adapted into the course of study.

e. Some fundamental principles of bookbinding and silk-screen printing are taught where facilities permit.

6. General Crafts

(The emphasis here is definitely on the hobby objective)

a. Some projects in ceramics are either cast or hand molded and then fired and glazed.

b. Simple projects in leather are made.

c. Plastics are used to construct simple but interesting articles.

d. Woodcrafts are used to demonstrate some basic operations in wood carving, wood burning, etc.

e. Basket weaving is used where materials are available and teacher interest is present.

f. Some work in textiles is offered in the form of loom weaving of small rugs or hot dish mats.

g. Any other craft in which the teacher has an interest or skill is taught. For example -- cement and concrete, glass etching, papier-mache, etc.

E. The Senior High School Program

1. Auto Mechanics

a. Instruction covers automotive maintenance and service: engine, clutch, transmission, running gear, electrical system, and body and fender repairs which include the welding of torn metal, refinishing, and painting. The basic theory of the operation of the various parts of the automobile is studied in the related science course and supplemented by demonstrations in the shop.

2. Electricity

a. A good basic training in the theory and basic laws of electricity, A.C. and D.C. circuits and machines, time varying circuits, electrical instruments, and electrical installation planning provide a background for the more advanced studies in this course. Also provided are maintenance experiences and safety practices developed through experiments designed to substantiate the theories. Modern controls, synchronizing panels, electronic conversion units, test instruments, static A.C. motor starters, logic control, and memory circuits are included in this course. Electrical theories are proved in the laboratories and further knowledge is gained through the shop processes under actual operating conditions.

Related mathematics consists of algebra, trigonometry, plane geometry, and applied electrical mathematics.

3. Descriptive Geometry

a. Material covered includes a brief review of orthographic, dimetric, and trimetric projections, additional views, notation, and visibility. Fundamental constructions consisting of end views, true lengths, edge views, true angles, perpendicular and

parallel lines, shortest distances and true size, slope, bearing, and axes of revolution. Intersections, developments, surfaces of revolution, traces, true lengths diagrams, and dihedral angles, vector applications, graphic composition and resolution of forces, load, mement, and shear diagrams, graphic beam and truss analysis, and graphic calculus.

4. Electronics I

This is a basic course in electronics. It involves the study of electronic theory, circuits, construction of radio and television receivers, sound recording, and electronic equipment. It provides training for employment in fields of manufacturing, testing, installation, repair and general maintenance.

5. Electronics II

This course in included in the N.D.E.A. program and is conducted to develop technicians for industry. Students completing the course will have extensive background in electronic theory, in the operation of fundamental electronic circuits, and experience in the use of standard test equipment.

6. Engineering Estimating (B.P.I. only)

The estimating course is relative to materials of the construction industry. Lessons with problems are given on the following:areas; volumes, costs, lumber measure, sills, girders, joists, bridging, flooring, framing, sheathing, painting, siding, shingles, bricks, and blocks. The final project is a complete set of calculations for all the materials with costs for the project they have actually drawn.

7. Forge Shop and Welding (B.P.I. only)

The classes spend half of the semester (9 weeks) in each of the above shops. In forge and welding, limited practice is given in the experience of forging metal bars into various shapes, and to make simple hand tools such as cold chisels, tempering of tools is afforded the students. Ornamental work is given to allow students to roll, bend and then weld together into useful projects. The gas and electric welding is done under very close supervision of the instructor.

8. Foundry (B.P.I. only)

Exercises in making green sand molds of the typical patterns made in a previous semester. Tempering of sand, core making, use of foundry tools, getting and pouring of metal is required. Advanced students are afforded the opportunity to make and pour ornamental molds of objects which they then file and finish. Essentially the aim of this work is to give the students the experience in working with the materials and observing how metal objects are made by pouring the molten metal.

9. General Crafts

This is a continuation of a similar course in the junior high school program, using advanced projects.

10. General Metal

This course is a combination of machine shop, sheetmetal and band iron work, taught in one shop by one teacher.

11. Industrial Organization (B.P.I. only)

This course is given to seniors in the "B" and "T" course to:

1. Prepare students in solving the problem of first hand acquaintance with types of industries and their organization.

2. Clarifying between classroom conceptions and actual, first hand information on procedures and practices.

3. Enable a student to make either the personal acquaintance, or acquaintance through books of men of industry, and to learn through these sources how to conduct themselves to assure success and happiness.

4. To assist in the guidance of the student by presenting to him the types of occupations to be found in industry and their requirements, thus enabling him to make a selection most suitable to his liking and capabilities.

12. Lapidary and Jewelry Shop (B.C.C. only)

This course entails the cutting, grinding, sanding and polishing of precious and semi-precious stones used in the making of jewelry. Such items as rings, pins, bracelets, tie clips, tie tacks, cuff links and brooches are designed and made in the shop.

13. Machine Shop

The elementary training on bench work projects and basic operations on the drill press, lathe, milling machines, and shaper develops skills in the use of hand tools and precision instruments.

14. Machine Shop, Advanced

Advanced instruction includes operations on the turret lathe, punch press, cylindrical grinder, and tool and cutter grinder. Work to close tolerances is stressed. Students are taught to set up machines and to make necessary mathematical calculations for such setups and other intricate operations. Elementary tool design practice is provided for the advanced students.

15. Materials of Construction (B.P.I. only)

The course requires five periods per week for one complete term. During that time, depending on individual class differences, fifteen to twenty different materials are considered in the following aspects:

1. Historic facts and development of material
2. Manufacturing process
   a. Obtaining raw materials
   b. Refining, analysis synthesis
3. Uses - Old and modern
4. Consumer knowledge and units of sale

A list of typical materials for the course might include: Lumber, plywood, glue, stains, shellac, alcohol, aluminum, solder and fluxes, paper, leathern bricks, glass, plastics, asbestos, rubber, nails and screws, petroleum, cork and iron.

16. Mechanical Drawing

Instruction in essentials of freehand sketching, lettering, orthographic projection, drawing from models, sectional drawings, auxiliary drawings, and isometric drawings comrpises the elementary part of this course.

Advanced instruction covers such fields as machine drawing and design, architectural drawing, structural drawing, sheet-metal pattern development, schematic diagraming, and industrial illustration. Throughout the course the development of skills and drafting room practices are emphasized.

Since drafting is basic to all manufacturing and construction industries, many employment opportunities exist for graduates of this course.

17. Mechanical Laboratory (B.P.I. only)

The laboratory provides experience in the measurement of the fundamental quantities of physics important to engineering, the analysis and solution of engineering problems, and the writing of technical reports.

Measurements are made of force, pressure, time, temperature, and volume. The technique of using strain gauges, piezo-electric transducers, thermocouples and resistance thermometers is included. The calorific value of a solid or liquid is determined to demostrate the application of physical principles and the use of sensing techniques to solve an engineering problem. The students select one engineering problem of a number of options similar to the following: 1. An efficiency test of a steam boiler-engine (or turbine) - generator combination; 2. An analysis of the behavior or structures undergoing forced vibrations including resonance; 3. A determination of the mechanical strength of materials subjected to exceptional environments; 4. An analysis of high speed phenomena (using high speed photography);

5. A comparison of costs of gaseous, liquid, and solid fuels on a Btu basis; etc...

18. Mechanics (B.P.I. only)

Statics: The parallelogram, triangle, and polygon of forces; a composition and resolution of forces, friction, the inclined plane, parallel forces, moments of forces and of couples, conditions of equilibrium, method of sections, equilibrium under the action of three forces, center of gravity, and hydrostatic loads.

Dynamics: (a) Kinematics: Motion in a straight line with constant velocity and constant acceleration, velocity and acceleration curves, vectors, resolution and composition of displacements,

velocities, and acceleration.

(b) Kinetics: The laws of motion, inertia, mass weight, momentum, impact, work, power, potential and kinetic energy. Kinetics of rotation.

19. Printing

This course provides experiences involving the operation of various graphic arts equipment. Students develop the manipulative skills and speed required of an apprentice compositor, linotype operator, letterpress or offset pressman, camera operator, offset film stripper, or platemaker.

The beginning student is introduced to the printing trades through a course in hand composition which provides him with a knowledge of the basic elements of type faces, printer's measurements, principles of display, the use of composing room equipment, and the make up of commercial and newspaper work.

Upon completion of this work the student may specialize in one of the major printing areas determined by such factors as ability, grades, conduct, and attendance.

20. Sheet Metal

Sheet metal developments involving straight line, radial and triangulation are made. The emphasis in this work is to acquaint the student with industrial sheet metal forms, joints, transitions. Care and use of sheet metal hand tools and machines in the performance of sheet metal operations afford the students an opportunity to appreciate the skills necessary in this work. Soldering, riveting, and the various sheet metal seams and joints are included. Tin plate, galvanized iron and aluminum metals are used. In addition, students are required to develop their own patterns from drawings.

21. Surveying

This course deals with the introduction to surveying with the comprehensive knowledge of its practical use. At the same time an understanding of the fundamental principles and mathematics necessary for accurate and precise work is stressed.

Theory of measurement and error, field notes and notebook, various linear measurements, differential and profile leveling, vertical and horizontal angles, bearings, deflection angles, azimuths and volume work. Transits, compass, magnetic declination, traversing, traverse computations, area, stadia, map reading, and mapping.

Students have practical use of all instruments including transits, levels, stadia rods, theodolities, planimeters, etc. They are given instruction in other methods such as tachymetry, photogrammetry, tellurometer, plane table, etc.

22. Thermodynamics (B.P.I. only)

This is a first course in fundamentals of engineering thermodynamics, in which the classical approach is used. Thorough study is given to the zeroth, first, and second laws plus properties of a general substance, properties of a perfect gas and availability. Included is an appraisal of steady flow and non-steady flow systems, closed systems, the Carnot Cycle, absolute temperature, and the entropy. This is then applied to the Rankine Cycle, refrigeration cycle, air compressors, and the Otto Cycle. In addition; a survey is made of other cycles using a gas turbine and jet propulsion.

23. Woodworking

This course includes instruction in the use of tools, machines, and materials used by woodworkers. The millwork aspect of the course emphasizes machine operation and production techniques currently used in the trade. Students who demonstrate aptitude and interest in cabinetmaking are afforded opportunities to study and practice veneering, inlaying, carving, duplicating, and repair of antique furniture. Construction of new furniture provides training in the techniques and development of skills in production methods employed in the trade. House carpentry is included.

COMMITTEE RECOMMENDATIONS

Junior High School

1. The SINGLE-PERIOD PLAN SHOULD BE CONTINUED. The change from the double-period was made several years ago on a trial basis. The committee responsible for the Junior High School Program, at that time, agreed that if this plan did not prove satisfactory, a recommendation would be made to revert to the original plan. Some department heads and chairmen stated a preference for the double-period plan, but agreed to acquiesce to the majority.

2. It was agreed by the Committee that it would be highly desirable to REQUIRE INDUSTRIAL ARTS OF EVERY JUNIOR HIGH SCHOOL BOY, GRADES 7 THROUGH 9. The reasoning behind this is that in a mechanical and technological society, it seems reprehensible that some students have industrial arts in the 7th grade and never have the opportunity to take it again during their secondary school experience.

3. After discussing the several specific objectives of industrial arts, the Committee felt that the following three objectives will suffice:

   A. General Education
   Industrial Arts should be considered as general education for all students along with the academic subjects which are offered to them. The purpose of this phase of general education is to give students an insight into our industrial society through classroom-laboratory experiences.

   B. Exploration
   The junior high school was introduced into the schools of the United States for the purpose of providing experiences which would enable the student to explore his own interests, aptitudes, and skills so that he would have some idea of his future vocation. Industrial Arts serves a very useful purpose as far as this objective is concerned.

   C. Development of Special Interests
   It is hoped that students, after experiencing several areas of mechanical work, are able to concentrate in one of these either in their junio: high schools years or in the senior high school.

4. Generally speaking, industrial arts classes should not change areas in the middle of the semester. The committee recognizes that in our newest junior high schools, it may be necessary to change from shopwork to mechanical

drawing at the quarter juncture, but it seems that ten weeks of an area, such as woodwork, for example, is not sufficient to give the student an exploratory experience of any value. Whenever possible, a change should be made at the end of the semester to provide more exploratory experiences.

5. It is felt that five periods per week of industrial arts for Special Curriculum students is more than is necessary. The recommendation is that THESE STUDENTS ARE SCHEDULED IN THE SAME MANNER THAT ALL OTHER JUNIOR HIGH SCHOOL STUDENTS ARE SCHEDULED, and that they receive no more time for industrial arts than do the Basic, Regular, or Accelerate students.

   a. Because teaching shopwork to Special Curriculum students presents many problems of safety and control, IT IS STRONGLY RECOMMENDED THAT CLASS SIZE BE KEPT TO A MAXIMUM OF 25.

6. It is very difficult, in the industrial arts program, to establish a logical sequence to industrial arts subjects. However, CERTAIN SUBJECTS SUCH AS PRINTING AND MACHINE SHOP SHOULD NOT BE OFFERED INITIALLY UNTIL THE SECOND SEMESTER OF THE 8TH GRADE. The maturity and muscular coordination of the students are the factors to be considered when assigning them to industrial arts areas. In general, those areas which require the least precision and skill should be offered in the 7th grade. Some of the General Crafts, very simple Woodwork and Freehand Sketching are recommended.

The chart on the following page should suggest to the scheduling officers what this committee recommends as a practical sequence in most of the junior high schools.

JUNIOR HIGH SCHOOL INDUSTRIAL ARTS SEQUENCE

Plan I -Accelerate Curriculum

	1st Semester	2nd Semester
7th & 8th	Sketching and Mechanical Drawing	Electricity or Woodwork
& 9th	Printing or metalwork	Mechanical Drawing

Plan II -Regular and Enriched Curriculum

	1st Semester	2nd Semester
7th	Freehand Sketching	General Crafts or Woodwork
8th	Woodwork or Metalwork	Electricity or Crafts
9th	Printing	Mechanical Drawing

Plan III -Basic Curriculum

	1st Semester	2nd Semester
7th	Freehand Sketching and Blueprint Reading	General Crafts or Woodwork
8th	Woodwork	Metalwork
9th	Elementary Electricity	Home Mechanics

Plan IV-Special Curriculum

	1st Semester	2nd Semester
7th	Freehand Sketching and Blueprint Reading	Crafts or Woodwork
8th	Metalwork	Elementary Electricity
9th	Home Mechanics	Home Mechanics

Senior High School

1. That the attainable objectives which should be accepted for senior high school industrial arts are:

   A. Industrial Arts should have GENERAL EDUCATION values for all senior high school students. (In many respects this area of education is comparable to all oth. areas such as English, history, science, mathematics, etc.)

   B. Industrial Arts should have EXPLORATORY VALUES for senior high school students, and should provide a measure of vocational guidance.

   C. Industrial Arts should provide an opportunity for students to develop SPECIAL INTERESTS AND TALENTS along mechanical and technical lines. Those who can profit from the instruction, should be given every opportunity and all assistance possible to develop a degree of saleable skills, though not necessarily preparation for the skilled trades.

   D. For a certain number of students there should be an opportunity to develop AS HIGH A DEGREE OF SKILL as time, facilities and the ability of the student permit. (The intention here is to prepare the student to enter upon a skilled trade at a beginner's level.)

2. If the four listed objectives are valid, industrial arts teachers should vary their programs so that at least one of these four will apply to individual students. For some, there will be "vocational flavor" only; for others, there will be general education and exploration only; and for a certain few, an attempt will be made to develop a saleable skill. For every student an "exposure" to the industrial arts program will have some value--depending upon the objective emphasized in his case.

3. The Committee is unanimous in the feeling that every senior high school boy should have some shopwork and mechanical drawing experience before he is graduated.
4. It is the recommendation of the Committee that Basic Curriculum students should receive no more than five periods of industrial arts per week. Because many of these students are not interested in shopwork and drawing, and cannot really profit from the instruction, this recommendation seems justified. It is also recommended that Home Mechanics be installed as an offering in order to provide these students with an opportunity to prepare for jobs of a "handy man" nature.
5. General Technical Curriculum students currently receive ten periods per week of instruction in shopwork and mechanical drawing. The recommendation of the Committee is that this number of periods should be reduced for some, and possibly increased for others who have a genuine interest and talent for mechanical work.
6. It is strongly recommended that during the 10th grade and the first semester of the 11th grade, students "rotate" among as many shops as possible, for exploratory purposes. Then, in the second semester of the 11th grade and the entire 12th grade, those with special interests and talents be permitted to specialize in one area, such as machine shop. The remainder of the students would continue to "sample" all of the shops that are available and repeat some that are especially interesting to them.
7. It was agreed, unanimously, that the <u>double period</u> is more desirable than the <u>single period</u> in the teaching of senior high school industrial arts.

A P P E N D I C E S

A SUGGESTED SENIOR HIGH SCHOOL GENERAL TECHNICAL CURRICULUM

TENTH GRADE

FIRST SEMESTER		SECOND SEMESTER	
2 Shops 4 Periods Each			
Auto Electronics Machine Printing Sheet Metal Wood	8 periods	Auto Electronics Machine Printing Sheet Metal Wood	8 periods
Mech. Draw.	2 periods	Mech. Draw.	2 periods
Total	10 periods	Total	10 periods
EXAMPLE			
1st Semester		**2nd Semester**	
Auto	4	Machine	4
Elect.	4	Printing	4
Mech. Draw.	2	Mech. Draw.	2
Total	10 periods	Total	10 periods

ELEVENTH GRADE

FIRST SEMESTER		SECOND SEMESTER	
2 Shops 4 Periods Each		**1 Shop 6 Periods or 10 Periods**	
Auto Electronics Machine Printing Sheet Metal Wood	8 periods	Auto Electronics Machine Printing Sheet Metal Wood	6 or 10 periods 6 6 6 or 10 periods 6 6
Mech. Draw.	2 periods	Mech. Draw.	4
Total	10 periods	Total	10 periods
EXAMPLE			
1st Semester		**2nd Semester**	
Sheet Metal	4 periods	Sheet Metal	6 or Auto 10
Wood Work	4		
Mech. Draw.	2	Mech. Draw.	4
Total	10 periods	Total	10 periods

TWELFTH GRADE

REPEAT ELECTIVE CHOSEN IN THE SECOND SEMESTER OF THE ELEVENTH GRADE, or A NEW ELECTIVE MAY BE CHOSEN IF NOT SATISFIED WITH PREVIOUS ELECTIVE.

INDUSTRIAL ARTS *

	COURSES REFLECTING AMERICAN INDUSTRIES						
	TECHNOLOGIES						
INDUSTRIES	General General	Drafting Design	Elect-tronics	Graphic Arts	Metals	Power Mechanics	Woods
MANUFACTURING	X	X			X	X	X
CONSTRUCTION	X	X	X	X	X		X
TRANSPORTATION	X	X	X	X		X	X
COMMUNICATION	X	X	X	X	X		
SERVICES	X	X	X	X		X	X
POWER	X		X			X	
MANAGEMENT	X	X	X	X	X	X	X
RESEARCH	X	X	X	X	X	X	X

X = Analysis for technical, occupational, social, consumer, and recreational teaching content.

* = Taken from an article entitled, "Study of American Industry is Essential to Liberalizing General Education" in the Industrial Arts and Vocational Education magazine, April, 1964, p. 27.

ACTIVITIES OF INDUSTRIAL ARTS *

(Saleable Skills of the "New" Industrial Arts)

Manufacturing

Plan
Depict
Cut
Shape
Form
Assemble
Finish
Test

Judge
Construct
Manipulate
Compute
Study
Describe
Demonstrate

Power

Plan
Organize
Operate
Construct

Read
Compute
Demonstrate
Study

Construction

Plan
Design
Draw
Layout
Construct
Compute

Display
Describe
Define
Study
Repair
Estimate

Transportation

Dismantle
Inspect
Assemble
Test
Adjust
Operate
Describe

Construct
Demonstrate
Interpret
Study
Repair
Compute

Services

Analyze
Study
Describe
Maintain

Demonstrate
Rebuild
Install
Refinish

Communication

Sketch
Draw
Letter
Print
Design

Demonstrate
Construct
Study
Compute
Display

Research

Study
Invent
Design
Create
Test
Define

Experiment
Engineer
Develop
Compute
Analyze
Describe

Management

Plan
Organize
Schedule
Procure

Analyze
Compute
Define
Describe

* Taken from an article entitled, "Study of American Industry is Essential to Liberalizing General Education" in the Industrial Arts and Vocational Education magazine, April, 1964, p. 27.

INDUSTRIAL ARTS
STEERING COMMITTEE

Co-chairmen

(1965-68)	Oscar L. Helm, Principal #70
(1965-67)	James Goodwin, Hd. of Ind. Arts Dept., #181

Supervisor (or Specialist)

(1965-68)	Carl J. White, Supervisor

Principal (or V.P. or Spec. Asst.)

(1965-67) Junior High	Charles Wolfe, Principal #49
(1965-67)	William Jeffres, Vice-Principal #75
(1965-68)	David Davidson, Principal #96

Teacher

(1965-68)	Charles D. Parker, Teacher #403
(1965-67)	Eliot Penniman, Hd. of Ind. Arts Dept. #402
(1965-67)	Joseph Boston, Hd. of Ind. Arts Dept. #450
(1965-68)	Donald Zimmerman, Teacher #408
(1965-67)	Isadore Dalinsky, Teacher #70

Staff Member Assigned Indefinitely As Resource Person — Stanley J. Pawelek, Supervisor

SUB-COMMITTEES

Senior High School

Frank Silverman, #402
James Lewis, #133
Emanuel Haffner, #520
William Haefner, #405
Milton Lumsden, #403
Andrew Melby, #408
Joseph Boston, #450
Henry Clayman, #400

Junior High School

John Preis, #41
Isadore Shavrick, #42
J. Clayman, #43
Walter Heiderman, #46
Philbin Scott, #57
Francis Shortall, #72
W.W. Johnson, #75
Clinton White, #76
Fred Silberman, #77
Guy Bailey, #79
Philip Gleisner, #90
John Bond, #91
Theodore Gross, #106
David Grooms, #130
Robert Payne, #180
James Goodwin, #181
Joseph Reynolds #222

VT 001 621
Annual Descriptive Report to the U.S. Office of Education, 1965-1966. Section II, Distributive Education.

Iowa State Dept. of Public Instruction, Des Moines. Div. of Vocational Education
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 66 56p.

*DISTRIBUTIVE EDUCATION; *EDUCATIONAL PROGRAMS; POST SECONDARY EDUCATION; ADULT VOCATIONAL EDUCATION; SECONDARY EDUCATION; *ANNUAL REPORTS; *STATE PROGRAMS; *PROGRAM DESCRIPTIONS
IOWA

Information reported includes: (1) the program agenda for the state conference of teacher-coordinators, (2) instructional programs and activities on the high school and post-secondary levels, (3) directory of distributive education programs, (4) distributive education enrollment, (5) placement of distributive education cooperative trainees, and (6) activities of the teacher education programs. (SL)

VT 001 621

866V-288VE

SEP 19 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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VT 01621

DISTRIBUTIVE KEYNOTES

Weldon Else, Chief
Business Occupations

Ronald Jarchow, Consultant
Business Occupations

Jayne Simmerman, Consultant
Business Occupations

State of Iowa
Department of Public Instruction
Paul F. Johnston, Superintendent

Division of Vocational Education
Doyle O. Carpenter, Associate Superintendent
Windol L. Wyatt, Director

Summer, 1966

866V-288VE

State of Iowa
Department of Public Instruction
Des Moines.

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WELDON ELSE, Chief
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JAYNE SIMMERMAN, Consultant

* * * *

SUMMER 1966

To the Coordinator . . . .

As another school year begins, the following coordinators have our best wishes and congratulations on becoming a part of our distributive education team. We extend our welcome and look forward to a successful year.

The new members of our D.E. family are:

Lindley Hoyt, Ankeny High School
Francis Dale Knights, Audubon High School
Gary Astor, Charles City High School
Ward Bean, Thomas Jefferson High School, Council Bluffs
Richard Berry, North High School, Des Moines
Mike Welsh, Hampton High School
Jim Speas, Iowa Falls High School
Harold Swanson, Maquoketa High School
Darrill Abel, Nevada High School
Janice Trotter, Newton High School
Jim McGlasson, Urbandale High School
Norman Humble, Waverly-Shell Rock
Lowell Lee, West Union High School
Steve Wetlaufer, Winterset High School
Harold Fentress, Fort Dodge Community College
Steve Parson, Fort Dodge Community College
Deanna Johnson, Ellsworth Community College, Iowa Falls
Kermit Howell, Muscatine Community College

New D.E. programs scheduled for this fall:

High School:

A first-year program will start at Ankeny.
A first-year program will begin at Maquoketa.
A first-year program will start at Nevada.
A first-year program will open at Urbandale.
A first-year program will open at Waverly-Shell Rock.
A first-year program will start at West Union.

Post Secondary:

A new program will open at the Cedar Rapids Community College under Merged Area X in Floriculture.
A second section in Food Marketing Management will be added at Fort Dodge Community College.
An additional section will open at Ellsworth Community College in Department Store Marketing Management.
A first-year program in Retail Hardware Marketing will open at the Merged Area XV Vocational School in Ottumwa.
Two additional sections in Feed and Fertilizer Marketing will be added at Muscatine this year.

The 1966-67 school year should be a rewarding one in distributive education growth especially with the opening of new area vocational schools and community colleges offering additional post secondary programs. The extent of this growth rests with the coordinators and administrators at the program level. Good wishes and high hopes go with you for a challenging and rewarding year of successful achievement.

* * * * *

We submit to you for your information, in this issue of Keynotes, the Annual Descriptive Report which was prepared for the U. S. Office of Education.

W.E., R.J., J.S.

3 Iowa State Dept. of Public Instruction Des Moines.

State of Iowa
Department of Public Instruction
Division of Vocational Education.
Des Moines

Paul F. Johnston, Superintendent of Public Instruction
Doyle O. Carpenter, Associate Superintendent, Vocational Education
Windol L. Wyatt, Director, Vocational Education

ANNUAL DESCRIPTIVE REPORT

Section II. Distributive Education

to the

U. S. OFFICE OF EDUCATION

1965 - 1966

ANNUAL DESCRIPTIVE REPORT

Section II. Distributive Education

Status and Development of Vocational and Technical Programs

Current Supervisory Services at the State Level

The annual coordinators' workshop was held in Cedar Falls, Iowa on August 16, 17, 18, 19, and 20, 1965 with 55 teacher-coordinators, directors of vocational education, field instructors, and the state staff attending.

The conference topics were:

1. What the Community Expects of the D.E. Coordinator
2. Coordination Techniques
3. Purposes and Functions of IDEA
4. Adult Education and Services of the State College of Iowa
5. Responsibility of the State Consultant and the Coordinators' Responsibility to the State
6. DECA Activities and Review of Contests
7. IDEA Executive Committee Meeting
8. Individual Instruction Techniques
9. Individual Instruction Materials
10. IDEA Business Meeting
11. Research Project Organization
12. Organization of Workshops
13. DECA Contests
14. IDEA Business Meeting and Election of Officers
15. Student Follow-Up Survey
16. Conference Summery

Dr. Harland Samson, Teacher Educator, Distributive Education, University of Wisconsin, Madison, Wisconsin was the major speaker who made a presentation on Individual Instruction Techniques for the Annual Iowa Distributive Education Teacher-Coordinators' Conference, Cedar Falls, Iowa, August 16-20, 1965. Other speakers were: Mr. Weldon Else, Chief, Business Occupations; Miss Jayne Simmerman, Consultant, Business Occupations; Mr. Oliver Anderson, Teacher Educator, Distributive Education, State College of Iowa; and Mr. Glenn Hansen, Field Instructor, State College of Iowa.

An interesting phase of Dr. Samson's presentation was the development of a set of individual instruction project sheets by the coordinators during this session. Instructions were given for writing the project sheets which were put in final form on a master ditto by each of the participants. During the break between sessions, Dr. Samson collected all ditto masters for duplication. At the next session each coordinator received a complete set of the project material which had been completed by the group. Dr. Samson recommended that these sets of project sheets be taken into the classroom situation for individual instructional usage as desired by the coordinators.

State of Iowa
DEPARTMENT OF PUBLIC INSTRUCTION
Paul F. Johnston, Superintendent
Division of Vocational Education
Des Moines
50319

ANNUAL STATE CONFERENCE FOR TEACHER-COORDINATORS OF DISTRIBUTIVE EDUCATION

Holiday Inn
Cedar Falls, Iowa
August 16-20, 1965

General Recorders: H. V. Stephenson
Scott Nicol

* * * * * * * * * * *

MONDAY — New Coordinators and Prospective Coordinators

9:30 A.M. — "What the Community Expects of the D.E. Coordinator"

Chairman: Miss Jayne Simmerman, Assistant State Consultant
Business Occupations

Panel: Lyle Natvig, Cedar Rapids Washington
Larry Warford, Business Director at Fort Dodge

Recorder: Dick Furst, Humboldt

10:30 A.M. — Break

11:00 A.M. — Coordination Techniques

Chairman: Jayne Simmerman

Panel: John Schutte, Charles City
Glenn Hansen, Adult Field Instructor
State College of Iowa

Recorder: Randy Fossum, Des Moines Lincoln

12:15 P.M. — Purposes and Functions of IDEA

Chairman: Jayne Simmerman

Speaker: John Schutte

Recorder: Randy Fossum

12:30 P.M. — Lunch (On Your Own)

1:30 P.M. — Adult Education and Services of the State College of Iowa

Chairman: Jayne Simmerman

Panel: Glenn Hansen
Barry Reece, Adult Field Instructor
State College of Iowa

Recorder: Gary Leberman, Fort Dodge

2:00 P.M. — Responsibility of the State Consultant and the Coordinator's Responsibility to the State

Speaker: Jayne Simmerman

Recorder: Larry Walsh, Hampton

2:30 P.M. — Break

3:00 P.M. — DECA Activities and Review of Contests

Speaker: Glenn Hansen

Recorder: Paul Wyant, Iowa City

3:00 P.M. — IDEA Executive Committee Meeting

4:00 P.M. — End of the Day's Session

TUESDAY — All D.E. Coordinators (ALL COORDINATORS SHOULD ARRIVE MONDAY EVENING OR VERY EARLY TUESDAY MORNING)

8:00 A.M. — Registration and Dues - Jayne Simmerman

IDEA	$1.00
IVA	1.50
AVA	8.00
NADET	2.50
Meals (Tues. - Wed. - Thur. noons)	6.75
TOTAL REGISTRATION	$19.75

Pay your own motel bill

9:00 A.M. — Individual Instruction Techniques

Chairman: Weldon Else, State Consultant
Business Occupations

Speaker: Harland Samson, Teacher Educator
University of Wisconsin
Madison, Wisconsin

Recorder: Steve Parson, Newton

10:30 A.M.	Break
11:00 A.M.	Individual Instruction Techniques Continued
12:30 P.M.	Lunch
1:30 P.M.	Individual Instruction Materials
	Chairman: Weldon Else
	Speaker: Harland Samson
	Recorder: Jim Braden, Ottumwa
2:30 P.M.	Break
3:00 P.M.	Individual Instruction Materials Continued
4:00 P.M.	End of the Day's Session
WEDNESDAY	All D. E. Coordinators
9:00 A.M.	IDEA Business Meeting
	Chairman: John Schutte
	Recorder: Larry Warford
10:00 A.M.	Break
10:30 A.M.	Research Project Organization
	Chairman: Oliver Anderson, Teacher Educator State College of Iowa
	Recorder: Mike Sheehan, Perry
11:45 A.M.	Organization of Workshops
	Chairman: Weldon Else
	Recorder: Dick Furst
12:00 P.M.	Lunch
1:00 P.M.	Workshops *Chairman to give 15-minute oral report Thursday afternoon and a written report to Weldon Else
	1. Training Stations
	*Dave Jensen, Cedar Rapids Washington Earl Bowick, Burlington Bill Kortemeyer, Davenport Central

2. Coordinators' Leadership Conference Manual

*Don Wilson, Ellsworth College at Iowa Falls
(Petroleum Marketing)
Jerry Helland, Audubon
Miss Aileen Stern, Mason City
Benjamin Rockwell, Oskaloosa

3. Delegate Assembly

*Lyle Natvig
Ron Rath, Cedar Falls
John Schutte
Terry Eaton, Des Moines Technical

4. Project Plan

*Jim Overturf, Ames
Elmer Anderson, Monticello
Jim Houstman, Washington
Andrew Brinsko, Webster City

5. Individual Instruction Unit

*Mike Crawford, Cedar Rapids Jefferson
Dennis Speas, Iowa Falls
Carl Humphrey, Winterset
Charles Campbell, Sioux City

6. DECA Week

*Larry Warford
Charles Ullom, Algona
Mrs. Lorraine Murdock, Des Moines East
Paul Brust, Saydel

7. New Contests

*Victor Collins, Oelwein
Gerald Ross, Council Bluffs
Walter Schulz, Storm Lake
Rod Kent, West Des Moines

8. Review of Contests

*Glenn Hansen
All new coordinators

9. Post-Secondary DECA

*Roger Ditzenberger, Fort Dodge Community College
(Food Marketing Management)
All Post-Secondary Coordinators

2:30 P.M. Break

3:00 P.M.	Workshops Continued
4:00 P.M.	End of the Day's Session
THURSDAY	All D.E. Coordinators
8:00 A.M.	Workshops Continued
9:30 A.M.	Break
10:00 A.M.	DECA Contests (All Coordinators)
	Chairman: John Schutte
	Recorder: Miles Tyler, Waterloo
12:00 P.M.	Lunch
1:00 P.M.	Workshop Reports
	Chairman: Ron Jarchow, Assistant State Consultant Business Occupations
2:15 P.M.	Break
2:45 P.M.	Workshop Reports Continued
4:00 P.M.	End of the Day's Session
FRIDAY	All D.E. Coordinators
9:00 A.M.	IDEA Business Meeting and Election of Officers
	Chairman: John Schutte
	Recorder: Larry Warford
11:00 A.M.	Student Follow-Up Survey
	Chairman: Weldon Else
	Recorder: Merrill Butts, Southeast Polk
11:15 A.M.	Conference Summary
	Chairman: John Schutte
11:30 A.M.	Adjournment

The Chief of Business Occupations and/or State Consultants attended or participated in the following workshops:

Participated in and directed the D.E. Coordinators' Conference.

Participated in the Trade and Industrial Conference in Council Bluffs.

Participated in the Iowa State Education Association Meeting in Marshalltown.

Attended the Office Education and Distributive Education Area Meeting in Cedar Falls.

Participated in DECA Delegate Assembly in Des Moines.

Attended the National Business Education Association Meeting in Detroit.

Participated in the Data Processing Conference in Ames.

Participated in the Central District Iowa State Education Association Convention.

Participated in the State DECA Leadership Conference in Des Moines.

Participated in the State Vocational Office Education Conference in Des Moines.

Attended the Iowa Vocational Association Meeting in Newton.

Participated in the Iowa Business Education Association Workshop in Des Moines.

Participated in the Northwest Iowa State Education Association Meeting in Storm Lake.

Attended the National DECA Leadership Conference in Chicago.

Attended the Iowa Retail Hardware Association Meeting in Des Moines.

Attended the U. A. Office of Education Regional Meeting in Excelsior Springs, Missouri.

Participated in DECA Meeting, Kansas City, Missouri.

Attended the Superintendents' Workshop in Arnolds Park.

The state staff in Business Occupations attended employer-employee banquets in Altoona, Cedar Rapids, Des Moines, Iowa Falls, Keosauqua, Maquoketa, Ottumwa, and Saydel. They also made calls in 63 Iowa cities and towns to supervise, plan, and promote programs in distributive education.

The title of the State Consultant in Business Occupations has been changed to Chief, Business Occupations. Assistant Consultant titles have been changed to Consultant, Business Occupations. The Business Occupations area includes distributive education, vocational office education, and data processing within the framework of secondary schools, community colleges,

and area vocational schools.

Four regional meetings for distributive education teacher-coordinators were at Cedar Falls, Storm Lake, Washington, and Winterset. Each coordinator in the state attended one of these meetings for a day.

Two issues of Keynotes were published and distributed to distributive education coordinators, local directors, principals, and other interested educators.

A bibliography listing individual instruction materials was prepared and distributed to all teacher-coordinators to assist them with obtaining materials for classroom use.

Slides and transparencies have been developed this year regarding programs and equipment in the distributive education programs. These visual aids proved to be invaluable items for promotional purposes.

A progress report, Vocational Business Education In Iowa, edited by the members of the state staff in Business Occupations was published in the National Business Education Quarterly, Volume 34, Number 2, Winter 1965-66. In this concise, complete report on the status of vocational business education in Iowa, a backward glance in addition to a description of existing progress is presented on vocational office education, distributive education, and teacher education.

Program Status at the Local Level

The distributive education cooperative part-time program, which is conducted as a phase of the regular programs offered by public schools, public junior colleges, and area vocational schools, provides for a combination of classroom instruction and supervised work experience in accordance with the Iowa State Plan for Vocational Education.

Distributive Education at the Secondary Level

This program has been developed to serve the educational needs of employed distributive personnel as established by the needs of their career objective whether they be preparing themselves for entry into the field of distribution, advancing their present occupational abilities, or entering the area of supervision or management decision making activities. The goals for the distributive education program are: (1) to offer instruction in distribution, marketing, and management; (2) to improve the techniques of distribution; and (3) to obtain a wider range of understanding regarding social and economic responsibilities of those engaged in distribution in a free, competitive society.

In the secondary school the distributive education program is a cooperative phase of action between the school and the business community which shares the responsibility of providing practical training for one-half of the school day. The teacher-coordinator, representing the school, and the training sponsor, representing the business training activities through which the student progresses in order to obtain his career objective. The student receives a minimum wage comparable to that being paid to other beginning employees.

The complete instructional program consists of group and individual instruction and supervised instruction on the job. The activities provided through the distributive education club (DECA) provide an opportunity for the student to develop leadership, social intelligence, civic consciousness, and vocational understanding.

Instructional Programs and Related Activities - High School

For the purpose of this summary, four general items are recorded for each program: DECA affiliation, program plan, advisory committee, and extended contract. These items are judged to be pertinent in the over-all evaluation and development of the program. Selected outstanding accomplishments and public relations activities are recorded also. Implications of weaknesses are indicated only for the purpose of encouraging further development in certain areas.

ALGONA - DECA affiliation for ten years. Plan C. Prerequisite subjects: salesmanship and general business. One week extended contract. Two formal advisory meetings were held this year. The advisory committee was instrumental in promoting a refresher course in Fundamentals of Salesmanship to businessmen. Thirty-two persons met an hour and a half for six meetings. A very favorable evaluation and a request for another such course to be offered next fall was received. A significant and successful change has been the location of the distributive education classroom in a store building one block from school. A summer D.E. program is being offered for the first time to junior and senior students. Nine students enrolled for next year.

ALTOONA - DECA affiliation for one year. Plan B program. Four weeks extended contract. No formal advisory meetings this year. Each advisory member represents a different area of marketing. Club projects completed this year were a bake sale, candy sale, and a zip code book sale. Twenty students have been selected for the 1966-1967 school year.

AMES - DECA affiliation for eight years. Plan C. Prerequisite subjects: business law, business organization and management. Two weeks extended contract. Two formal advisory meetings held this year. Thirty students are enrolled for 1966-1967. With an active Ames DECA chapter, five students placed in contests at the State Leadership Conference. A joint employer-employee luncheon with T & I and Office Education was held.

ANKENY - DECA affiliation as of March 13, 1966. Plan B. Two weeks extended contract. Two formal advisory meetings during the year. The combination distributive education and off-farm occupations program was originated on January 24, 1966. The newly appointed advisory committee conducted a survey of business firms in getting community cooperation for the program. Promotion of the program was greatly advanced through the cooperation of the Ankeny newspaper. A combined employer-employee banquet was sponsored by the distributive education and off-farm occupations students. The school and community have been very pleased with this program and are looking forward to expansion next year with twenty-one distributive education students and four off-farm students enrolled.

AUDUBON - DECA affiliation for three years. Plan B. Four weeks extended contract. The advisory committee had two formal meetings this year. Fifteen students are pre-enrolled for next year. The D.E. club was active and conducted several fund-raising projects during the year. The Audubon DECA students placed in three contests at the State Leadership Conference. An employer-employee banquet was held at the end of the year.

BETTENDORF - DECA affiliation for one year. Plan B. Two weeks extended contract. One formal advisory meeting during the year. A twenty-eight minute TV program was one of the major promotional devices this year. Plans are being made to develop a service project for students. Numerous speakers were invited to the classroom for enriching the instructional program.

BURLINGTON - DECA affiliation for nine years. Plan C. Prerequisite subjects: business law and salesmanship. Three weeks extended contract. No formal advisory meetings held this year; advisory members were contacted individually. Fifteen to seventeen students are enrolled for next year.

CEDAR FALLS - DECA affiliation for four years. Plan C. Prerequisite subjects: salesmanship and business organization. Two weeks extended contract. The organized advisory committee met for one formal meeting this year. Twenty students are enrolled for next year. There was an exceptional increase in the ability range of distributive education students this year. Texas manuals were used for the first time this year for individual instruction. Next year's program will be strengthened with the addition of new textbooks, display case, wrapping counter, and cash register. Arrangements have been made with a major oil firm for a special training program for four boys. They will receive 80 hours of instruction by company personnel prior to the start of school.

CEDAR RAPIDS

Jefferson - DECA affiliate for five years. Plan B. program. Four weeks extended contract. The advisory committee had four formal planned meetings during the year. Twenty-four students are enrolled for next year. Public relations continued with downtown window displays during National DECA Week. Distributive education students participated in two radio programs during the year. An employer-employee banquet was sponsored for 170 persons. Promotional meetings with junior and senior high school principals and counselors were conducted. The annual service project was for the Cerebral Palsy Center in Cedar Rapids. Five students placed in the State Leadership Conference. The quality of DECA students is improving and the number of applicants is steadily increasing. New instructional materials will be added to the library of classroom materials for next year.

Washington - DECA affiliation for five years. Plan B. Four weeks extended contract. Five formal advisory meetings were held this year. The major public relations activity this year was the Vocational-Technical Education Week held in February. For this promotion, an eight page tabloid in the local newspaper, two five-minute radio programs, and a fifty-minute audience participation radio program moderated by the Cedar Rapids Director of Vocational-Technical Education highlighted activities. Student tours of businesses and a banquet concluded the promotion. The DECA club operated a school bookstore, sold candy and fruit cakes, and grossed $5,000 during the year Twenty-three students are enrolled for next year in one section and nineteen in the other section.

CHARLES CITY - DECA affiliation for six years. Plan C. Prerequisite subjects: business law and salesmanship. One week extended contract. One formal advisory committee meeting this year.

COUNCIL BLUFFS

Jefferson - DECA affiliation as of March 13, 1966. Plan B. Two weeks extended contract. Formal advisory committee organized. Four meetings a year planned in the future. Although the program started out in a hallway for a classroom, a new D.E. room, an office, a conference area, and a model store unit will comprise the D.E. facilities for 1966-67. The D.E. program was presented to all junior students by visiting them during their American History classes. A Vocational Education Night was held for junior high school students and their parents. Two service clubs were given presentations on the D.E. program. The distributive education program was readily accepted by the faculty at Thomas Jefferson High School. Plans are to implement a second semester course in the junior year in fundamentals of selling for a recommended preparatory course. Adult distributive education will be promoted in the Adult Evening School. Seven students attended the Tenth Annual Leadership Conference.

Lincoln - DECA affiliated for ten years. Plan C. Prerequisite subjects: salesmanship and business law. Two weeks extended contract. No formal advisory committee meetings this year. The DECA club sponsored an all-school dance and a candy sale during National DECA week. DECA members collected cardboard boxes from local stores for the homecoming bonfire and pep rally. Two students participated in contests at the Tenth Annual Leadership Conference. Lincoln will not have a distributive education program during the 1966-67 school year.

DAVENPORT

Central - DECA affiliate for nine years. Plan C. Prerequisite subject: merchandising. Four weeks extended contract. There were no formal advisory meetings this year. Twenty-five students are enrolled for next year. This was the first year for students working in the middle of the day and returning to school in the afternoon. Four civic groups were given program exploration promotion addresses. A filmed TV program was presented for one-half hour by distributive education, office education, and trade and industrial students. Five area businessmen gave separate addresses to the D.E. classes. Ninth grade students were visited regarding the D.E. program. A joint installation of officers and banquet was held with West High School. The DECA float was awarded the first place in homecoming activities. Eleven students attended the State Leadership Conference. Four students were honored at the senior awards assembly.

West - DECA affiliation for six years. Plan C. Prerequisite subjects: merchandising and bookkeeping. Four weeks extended contract. The advisory committee held no formal meeting this year; individual members were called upon for assistance. Once a month evening DECA meetings were scheduled this year. An employer-employee banquet was sponsored by the D.E. programs at Central and West. Twenty-seven DECA students and four chaperones attended the State Leadership Conference. Two service projects, a necessity donation drive for Viet Nam orphans and a Christian party for St. Vicents Home for Children were sponsored by the DECA club. The mid-day program should prove quite effective especially for coordination time. Coordination will be given next year for adult D.E. classes.

DES MOINES

The coordinators will be operating under a new three week extended contract next year. The reorganized city advisory committee had two formal meetings

this year. The annual city employer-employee banquet was held in Younkers Tea Room.

East High School - DECA affiliate for six years. Plan C. Prerequisite subjects: salesmanship and business law. Sixty students were enrolled in distributive education this year; forty-seven graduated. Additional space was acquired this year with a move to a new D.E. room on the second floor. The coordinator has one corner of the room for an office with a telephone installed. Additional space has been given to distributive education in the school newspaper. East DECA participated in the fund-raising campaign and sent $10 to National DECA for the Scholarship Fund. Ten films, three resource visitors, and three field trips supplemented classroom related instruction. Six D.E. students received honor awards at the first annual East High awards banquet this spring. Plans are in the making for participation in Junior Achievement activities, a community marketing project, a style show, and a DECA fair. Plans have been made to build up our individual study file. Thirty-eight students are enrolled for next year.

Lincoln High School - DECA affiliated six years. Plan C. Prerequisite subject: salesmanship. With excellent cooperation of the administration, counselors, faculty, and D.E. students the 1965-66 year was most successful. Twenty-one out of twenty-six students remained in their chosen distributive education occupations. Lincoln DECA was a major organizer of the successful Polk County DECA Council. Bill Carmichael of Lincoln DECA was elected State DECA President. The main fund raising projects were the selling of DECA calendars and candy which grossed about $1,000. Christmas gifts were given to a needy family this year. Two students placed in the contests during the State Conference. The DECA club organized the first Lincoln DECA Alumni Association. A big brother-big sister arrangement for organizing next year's students was handled by this year's DECA class. Two complete sets of Texas manuals are being purchased for next year. A total of thirty students are enrolled for two classes next year.

North High School - DECA affiliate for six years. Plan C. Prerequisite subject. salesmanship. North High School DECA participated in the proclamation ceremony of National DECA Week by Governor Hughes. Thirty-five DECA students sold 200 boxes of candy and grossed $300 profit. A DECA bookstore was opened for added income. Three North High DECA students placed in the State DECA Leadership Conference. Efforts are being directed to get better and more visual aids for the department. Thirty-seven students have been accepted for next year's program.

Roosevelt High School - DECA affiliated for three years. Plan C. Prerequisite subject: salesmanship. Thirty-two students completed the program this year with twenty-five scheduled for next year. New classroom equipment and model store did much to improve the program this year.

Technical High School - DECA affiliate for nine years. Plan C. Prerequisite subjects: merchandising, salesmanship, advertising, display. The D.E. store has been continued as a successful fund-raising activity as well as a source of practical merchandising training. Des Moines Tech was represented in Iowa DECA by having students elected to the offices of Secretary and Historian. Six students placed in contests at the State Leadership Conference.

FORT DODGE - DECA affiliate for five years. Plan B. Three weeks extended contract. Advisory committee is in the process of being reorganized. The DECA club this year participated in the Retail Christmas Seminar sponsored by the Chamber of Commerce and the State College of Iowa. They were also privileged to participate in the J. C. Penney's Career Building Seminar held shortly before the grand opening of the Penney's Crossroad Store. DECA Week was proclaimed in Fort Dodge by the mayor. A full-page ad sponsored by training stations was featured during DECA week. Additional advertising for this promotional week was provided through radio, TV, and a hallway bulletin board. Further stimulation of the DECA club was provided this year through the design of the Fort Dodge DECA emblem for blazers. An employer-employee banquet was sponsored during the fall of this year. Three students received honorable mention in State Leadership Conference contests.

HUMBOLDT - DECA affiliate for one year. Plan B. Extended contract four weeks. Three formal advisory committee meetings were held this year. Twenty students are enrolled for next year. A major club activity this year through next year is a follow-up study of all graduates of the last ten years. The program received much enthusiasm by the school personnel as well as business men. Forty-two students signed up for the program next year, but enrollment was held to approximately twenty.

IOWA CITY - DECA affiliate for ten years. Plan B. Two weeks extended contract. Five formal advisory meetings were conducted this year. Twenty-five to thirty students are expected as enrollees for next year's program. Two Businessmen-Student Seminars were conducted at the Civic Center. Curriculum changes were made and individual instruction materials were gathered for the change from a "C" to a "B" program. An employer-employee banquet, with 100% participation was sponsored. Plans are being completed for the operation of a Business Clinic incorporating training from basic retailing to management training.

IOWA FALLS - DECA affiliate for nine years. Plan B. Four weeks extended contract. Two advisory meetings held this year. Twenty-three students were enrolled in the program this year. Iowa Falls merchants sponsored a three-page spread promoting the program this spring. Fruit cakes and homecoming bulletins were sold to raise funds for the DECA club. A field trip was taken to the new J. C. Penney Store in Fort Dodge. An Iowa Falls student was elected State DECA Vice President at the Delegate Assembly. Twelve D.E. students attended the State Leadership Conference in Des Moines. The coordinator and his State DECA Vice President participated with the Iowa Delegation in the National Leadership Conference in Chicago. An employer-employee banquet was sponsored and paid for by the DECA class. The regulation classroom banner for distributive education was purchased by the class for the D.E. room.

MARSHALLTOWN - DECA affiliate for nine years. Plan C. Prerequisite courses: general business, consumer mathematics, business law, economics, and bookkeeping. Four formal advisory meetings were held this year. Four weeks extended contract. Twenty students enrolled for 1966-67 school year. DECA club sold Christmas cards to raise funds. Employers hosted a vocational breakfast for D.E., T & I, and O.E. students. National DECA Week was promoted locally. A supervisory development program for adults was promoted. The active advisory committee was the spotlight for the program this year. Display work has become an important segment of individual instruction.

MASON CITY - DECA affiliated for six years. Plan B. Three weeks extended contract. Three formal advisory meetings were held this year. The DECA club participated in National DECA Week. The creative marketing project was the major activity of the year which received state and national awards. Eleven awards were received at the State DECA Conference. The chairman of our advisory committee promoted donations by training stations to raise $250 for student attendance at National DECA. An annual DECA employer-employee appreciation breakfast was sponsored. The traditional DECA Senior Week Breakfast was also held this year with a club level DECA key presented to the outstanding D.E. student of the year.

MONTICELLO - DECA affiliate for two years. Plan B. Eleven weeks extended contract. Organized advisory committee. Nine students were enrolled in the DECA program this year. Five students attended the State Delegate Assembly and the State Leadership Conference. Monticello will not have a distributive education program next year.

NEWTON - DECA affiliated for six years. Plan C. Two weeks extended contract. Three formal advisory meetings were held this year. Thirty-five students are enrolled for next year. Community interest in the D.E. program. A new coordinator will be coming into the program as the present coordinator is joining the Fort Dodge Community College as coordinator of Food Marketing Management. Recommendation is made to give the coordinator adequate coordination time as opposed to the present status.

OELWEIN - DECA affiliate for two years. Plan B. Extended contract of three weeks. Five formal advisory meetings this year. Eighteen students are enrolled for next year. A new venture of team teaching by O.E. and D.E. coordinators was used for the first unit of instructional material this year. It provided more time on lesson plan preparation and students liked the combined class situation. Oelwein had its first agri-business student this year which worked out successfully. The DECA club assisted with the local Community Chest Drive. The school approved a DECA club-sponsored book store. More than $1,000 grossed in book sales. The DECA students placed in ten State Leadership contests. The coordinator and one student attended National DECA in Chicago. A local student scholarship fund has been suggested for next year.

OSKALOOSA - DECA affiliate for three years. Plan C. Prerequisite subjects: bookkeeping and business law. Two weeks extended contract. Two formal advisory meetings were conducted this year. Sixteen students are enrolled for next year. An employer-employee banquet was co-sponsored by the vocational office education and distributive education students. Certificates of completion were presented by the coordinators to students. More cooperation between D.E., O.E., and T & I is planned for next year.

OTTUMWA - DECA affiliate for two years. Plan B. Four weeks extended contract. One formal advisory meeting this year. More specific related instructional material will be included in next year's program. Increased efforts are being made in the public relations area.

PERRY - DECA affiliated for four years. Plan B. Four weeks extended contract. One formal advisory meeting this year. Sixteen students are enrolled for next year. Eight students attended the State Leadership Conference this year.

SAYDEL - DECA affiliated for six years. Plan B. Two weeks extended contract. No formal advisory meetings this year; contacted on an individual basis. Sixteen students are enrolled for next year's program. Two students placed in the State Leadership Conference. The DECA class handled ticket sales at school for the Highland Park Businessmen's Annual Pancake Day. An annual employer-employee banquet was sponsored. National DECA Week was promoted through student name plates and window posters. The coordinator participated in the state-regional D.E. meeting at Winterset, Iowa and visited the Marshalltown program on teacher visitation day. Recommendation is made for a separate room for D.E. classes with proper equipment included.

SIOUX CITY - DECA affiliated for ten years. Plan B. Two weeks extended contract. Three formal advisory meetings were conducted. The D.E., office occupations, and T & I programs cooperated in several activities this year. An employer coffee hour was held at the Sheraton-Warrior; Sioux City High School Day, an employee banquet, and a first place homecoming float were also sponsored. A three-program newsletter was developed. Program promotion presentations were made to the city PTA Council, two business service clubs, four junior high schools, and counselors of three city senior high schools. Outstanding program coverage for D.E., office occupations, and T & I was provided in the Chamber of Commerce magazine, Sioux City Sue. Another accomplishment was the establishment of a vocational committee in addition to the individual advisory committees. Five adult courses were organized; three taught by the coordinator. The Occupational Related Manual from Minnesota was used this year as a basic general related supplement. The sales album donated by Pontiac Motor Division was greatly appreciated. Thirty students have been enrolled for next year with two of these coming from East High School.

STORM LAKE - DECA affiliate four years. Plan C. Prerequisite subjects: salesmanship, general business, and bookkeeping. Two weeks extended contract. An advisory committee has been organized; no formal meetings this year. There is a potential of fourteen students for next year's program. Sixteen D.E. students completed the school year with the program this year. An employer-employee banquet was sponsored by D.E. students. A paper book counter, operated on a consignment basis, provided club funds.

WASHINGTON - DECA affiliated for seven years. Plan B. One formal advisory meeting this year. Sixteen students completed the distributive education course this year. Fifteen students are enrolled for next year. A supervisory development course was taught by Mr. Barry Reece of the State College of Iowa. A Washington DECA student was elected State DECA Treasurer this year. Four students placed in the State Leadership Conference contests. One student won first place in the Display Contest at the National Leadership Conference.

WATERLOO

East High School - Plan C. No formal advisory meetings were held. Individual contacts were made as needed.

West High School - Plan C. No formal advisory meetings were held. Individual contacts were made as needed.

One coordinator was in charge of both high school distributive education programs. Prerequisite subjects: bookkeeping, business law, typing or economics. One week extended contract. DECA chapters were organized in both high schools. A student from East High School was selected as Iowa D.E. Student of the Year during the

Tenth Annual Iowa DECA Leadership Conference in Des Moines. This student represented Iowa at the National Leadership Conference in Chicago and placed ninth in national competition. Three student-teachers from the State College of Iowa did student teaching at East and West High Schools in the distributive education program.

WEBSTER CITY - DECA affiliate for seven years. Plan C. program. Prerequisite subjects: salesmanship and bookkeeping. Four weeks extended contract. Three formal advisory committee meetings were held this year. Twenty or twenty-five students are anticipated for the 1966-67 school year. An employer-employee banquet was quite successful. Approximately twenty-five businesses sponsored gift subscriptions for classroom magazines to be used by distributive education students. Student store manuals were returned to employers for their evaluation and for permanent record. The North Central Association visiting committee gave a very favorable report on the distributive education program in Webster City.

WEST DES MOINES - DECA affiliate for six years. Plan B. program. Extended contract is four weeks. The organized advisory committee held no formal meetings. Meetings were handled on an individual contact basis. Twenty students are scheduled for the 1966-1967 school year in distributive education. Sixteen students completed the D.E. program requirements this year. Stabilization of students on jobs was much more favorable this year than the previous year which should indicate a closer link between interests and abilities. The class participated in two field trips through the Super-Valu Warehouse and Sears Roebuck & Company. The program was upgraded this year with the addition of new equipment including display case, wrapping counter, and large window display unit. Students made over 1500 signs for staff members and administrators in the school district through the operation of the new sign-making machine.

WINTERSET - The DECA program was organized this year with 100% membership. Plan C program. Prerequisite subject: bookkeeping. Four weeks extended contract. Fifteen to twenty students are anticipated for the 1966-1967 school year. One formal advisory committee meeting was held this year. The present distributive education coordinator is leaving to enter college administrative work. Community attitude has been good toward the program. Three new training stations participated in the program this year and several additional training stations are considering participation for the coming year.

HAMPTON - DECA affiliate ten years. Plan B. Extended contract of four weeks. Ten students are enrolled for the 1966-1967 school year. Fourteen students completed the program this year. Community attitudes and business cooperation have been excellent. An employer-employee banquet was sponsored. DECA calendars and distributive education decals were used for promotional purposes. No formal advisory committee meetings were held this year. Five students entered contests at the State Leadership Conference.

Distributive Education in the Community College or Area Vocational-Technical School

The distributive education programs at the post secondary level provide an opportunity for the student to further specialize within the area of marketing and distribution. The more mature student at the post secondary level is now

more capable of narrowing his choice of career objective and selecting a specialized marketing area. The programs may be organized to provide an opportunity for the student to develop abilities at any level of employment from an entry job in a distributive occupation or to prepare to enter a mid-management level of employment.

A very vital portion of the program is the field training experience the student gains in a training station. Approximately fifty per cent of the time the student is enrolled in the program is spent in a qualified training station. The employer provides learning experiences for the student in numerous aspects of business. The field training experience portion of the program is coordinated by a qualified teacher-coordinator who complements the learning obtained on the job in classroom instruction. The on-the-job training may be organized either on a block-time or half-time basis. In the block-time form of organization the student spends a certain number of weeks in the classroom during which time he is in class for six hours a day and then proceeds to work on a full-time basis in an approved training station for a predetermined number of weeks. In the half-time organization the students attend school for a half day and spend the remainder of the day in the training station.

The advisory committee is an important link in these programs between the businessman and the school. Through an advisory committee, which is composed of representatives from throughout the state from representative businesses within specialized fields, the teacher-coordinator is provided with advice from the business community. This committee serves to provide advice on the needs within the specialized marketing areas, assists in obtaining qualified training stations, and provides assistance in numerous other ways to the specialized programs.

Instructional Programs and Related Activities - Post Secondary

FORT DODGE

Community College (Food Marketing Management) - DECA affiliate for two years. Thirty-seven students were enrolled in Food Marketing Management this year. The coordinator is leaving the program to accept the position as local director of adult education. Two new coordinators have been employed and one additional section will be added.

IOWA FALLS

Ellsworth Community College (Department Store Marketing Management) - DECA affiliated for three years. No formal advisory meetings were conducted this year. Four weeks extended contract. Twenty-one sophomores and forty freshman are enrolled for next year. A new course, retail salesmanship, was implemented this year to develop experiences of returning sophomores after their second field experience training period. Other course content revisions have been made. A new program brochure was developed this year. The coordinator made numerous visits to schools throughout Iowa to promote the program. The DECA club participated in various fund raising events. The post secondary students participated in both state and national conferences. Due to expansion, a second coordinator

has been employed for the 1966-1967 school year.

Ellsworth Community College (Petroleum Marketing) - DECA affiliate for two years. One formal advisory meeting held this year. Four weeks extended contract. Eighteen sophomores and twenty freshmen are enrolled for next year. The program has received excellent support from many of the major oil companies, independent jobbers, and dealers. Curriculum is undergoing constant revision to meet demands of industry. A new course for sophomores, Petroleum Seminar, was introduced this year to develop experiences after the second field experience training period. Other course content revisions have been made. A new program brochure was developed this year. The coordinator made numerous visits to schools throughout Iowa to promote the program. The DECA club participated in various fund-raising events. The post secondary students participated in both state and national conferences. Due to expansion, a second coordinator has been employed for the 1966-67 school year.

Ellsworth Community College (Fashion Merchandising) - DECA affiliated for one year. Organized an advisory committee. Four weeks extended contract. Forty-five students have been selected for next year's program. Study tours and public relations presentation by the coordinator and sixteen students stimulated additional interest in the program. Retailers in Iowa have been cooperative and very receptive regarding the Fashion Merchandising program during its first year of operation. Optimism is high for expanding the present program with increased enrollment and training stations being available.

MUSCATINE

Community College (Feed and Fertilizer Marketing) - DECA affiliated for one year. Two formal advisory meetings held this year. Twelve month contract. Numerous resource people from Chicago, Kansas City, Des Moines, Minnesota, and the local training area made stimulating and motivating presentations to the class through new ideas and instructional materials. Training stations have been plentiful and excellent in their cooperation with the program. There will be an expansion of the program for the coming year as a result of available training stations and a demand for trained workers in the feed and fertilizer industry. The program will be assigned to additional facilities or new facilities for the coming school year.

SUMMARY OF TYPES OF PROGRAMS

City	Plan B	Plan C
Algona		x
Altoona	x	
Ames		x
Ankeny	x	
Audubon	x	
Bettendorf	x	
Burlington		x
Cedar Falls		x
Cedar Rapids Jefferson	x	
Cedar Rapids Washington	x	
Cedar Rapids Washington	x	
Charles City		x
Council Bluffs Abraham Lincoln		x
Council Bluffs Jefferson	x	
Davenport Central		x
Davenport West		x
Des Moines East		x
Des Moines Lincoln		x
Des Moines North		x
Des Moines Roosevelt		x
Des Moines Tech		x
Fort Dodge	x	
Hampton		x
Humboldt	x	
Iowa City	x	
Iowa Falls		x
Marshalltown		x
Mason City	x	
Monticello	x	
Newton		x
Oelwein	x	
Oskaloosa		x
Ottumwa	x	
Perry	x	
Saydel	x	
Sioux City	x	
Storm Lake		x
Washington	x	
Waterloo East		x
Waterloo West		x
Webster City		x
West Des Moines	x	
Winterset		x

State of Iowa
DEPARTMENT OF PUBLIC INSTRUCTION
Division of Vocational Education
Des Moines

Doyle O. Carpenter,
Associate Superintendent
Windol L. Wyatt,
Director

Weldon Else, Chief
Ron Jarchow, Consultant
Jayne Simmerman, Consultant
Business Occupations

DIRECTORY OF DISTRIBUTIVE EDUCATION IN IOWA FOR 1965 - 1966

CITY	NAME	ADDRESS
	TEACHER EDUCATOR	
Cedar Falls	Oliver Anderson	State College of Iowa
Cedar Falls	Lucille Wright	State College of Iowa
	FIELD INSTRUCTORS	
Cedar Falls	Glenn Hansen	State College of Iowa
Cedar Falls	Barry Reece	State College of Iowa

PROGRAMS IN SCHOOLS

Type of Class	City	No. of Programs	Superintendent
High School	Algona	1	Otto B. Laing
Part-Time	Altoona	1	Charles Varner
Cooperative	Ames	1	Walter B. Hetzel
	Ankeny	1	Keith D. Hopkins
	Audubon	1	Earl L. Miller
	Bettendorf	1	S. A. Ballantyne
	Burlington	1	Dr. Charles W. Hahn
	Cedar Falls	1	Dr. William A. Anderson
	Cedar Rapids	3	Dr. Arnold W. Salisbury
	Charles City	1	H. J. Eastman
	Council Bluffs	2	Russel J. Mourer
	Davenport	2	Dr. Harold Kaiser
	Des Moines	5	Dr. Dwight M. Davis
	Fort Dodge	1	Carl T. Feelhaver
	Hampton	1	James R. Alexander
	Humboldt	1	Clyde D. Mease
	Iowa City	1	Buford W. Garner
	Iowa Falls	1	Robert A. Baker
	Marshalltown	1	J. C. Hoglan
	Mason City	1	P. O. Brunsvold
	Monticello	1	S. Boyd Shannon
	Newton	1	D. D. Dunlavy
	Oelwein	1	Arthur R. Sensor
	Oskaloosa	1	Joe L. Gettys
	Ottumwa	1	Dr. Mel A. Everingham
	Perry	1	Robert E. Horsfall
	Saydel (Des Moines)	1	Horace S. Oliver
	Sioux City	1	Marvin T. Nodland
	Storm Lake	1	A. R. Block
	Washington	2	John V. Phleger
	Waterloo	2	Dr. George W. Hohl
	Webster City	1	John F. Fields
	West Des Moines	1	Charles E. Joss
	Winterset	1	D. R. Lilland
Post Secondary	Fort Dodge	1	Carl T. Feelhaver
D.E. Programs	Iowa Falls	3	Earl R. Cope
	Muscatine	1	Arthur A. Johnson

DISTRIBUTIVE EDUCATION

1965 - 1966

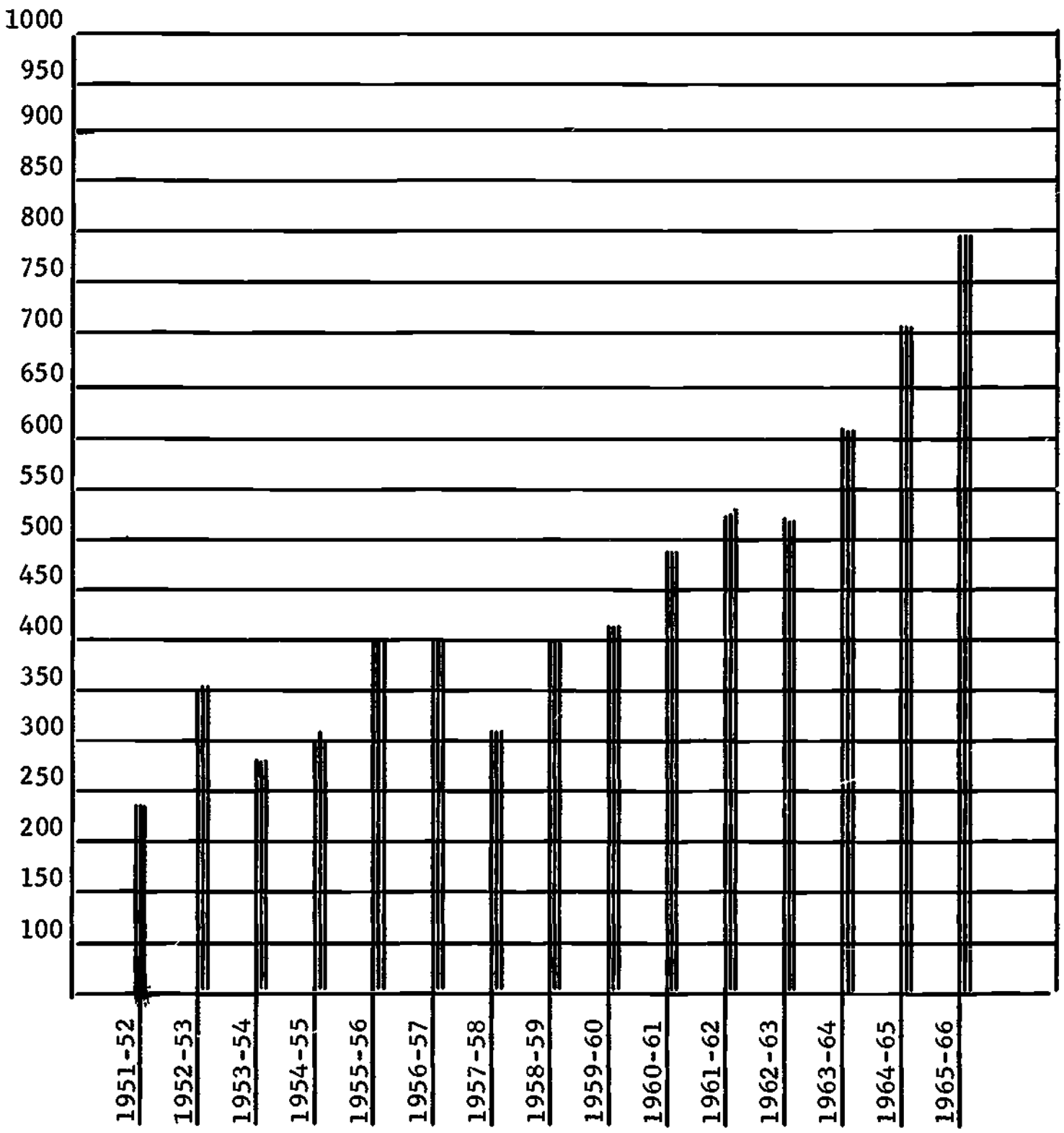
PART-TIME COOPERATIVE TRAINING CENTERS--HIGH SCHOOL

	City	Coordinator	Enrollment	
			Male	Female
1.	Algona	Charles B. Ullom	3	3
2.	Altoona	Merrill B. Butts	10	11
3.	Ames	James K. Overturf	16	14
4.	Ankeny	Lindley Hoyt	13	
5.	Audubon	Jerry Helland	13	3
6.	Bettendorf	H. V. Stephenson	4	5
7.	Burlington	H. Earl Bowick	6	19
8.	Cedar Falls	Ronald E. Rath	7	13
9.	Cedar Rapids, Jefferson	Mike Crawford	9	19
	Cedar Rapids, Washington	Lyle Natvig	6	20
	Cedar Rapids, Washington	Kenneth Freeman	14	13
10.	Charles City	John O. Schutte	9	3
11.	Council Bluffs, Jefferson	Ward Bean	9	6
	Council Bluffs, Lincoln	Gerald E. Ross	4	17
12.	Davenport, Central	Bill Kortemeyer	7	9
	Davenport, West	Scott Nicol	3	27
13.	Des Moines, East	Lorraine Murdock (Mrs.)	11	15
	Des Moines, Lincoln	Jerry Manning	15	11
	Des Moines, North	Richard C. Berry	16	12
	Des Moines, Roosevelt	Randall C. Fossum	23	11
	Des Moines, Technical	Terry J. Eaton	8	11
14.	Fort Dodge	Gerald Leberman	6	10
15.	Hampton	Larry J. Walsh	10	4
16.	Humboldt	Richard J. Furst	6	6
17.	Iowa City	Paul E. Wyant	8	9
18.	Iowa Falls	Dennis Speas	17	6
19.	Marshalltown	Donald C. Wilson	13	5
20.	Mason City	Aileen Stern	5	10
21.	Monticello	Elmer J. Anderson	3	6
22.	Newton	Steve R. Parson	17	14
23.	Oelwein	Victor Collins	5	13
24.	Oskaloosa	B. B. Rockwell	10	1
25.	Ottumwa	Jim Braden	12	9
26.	Perry	Michael L. Sheehan	6	5
27.	Saydel (Des Moines)	Paul Brust	6	7
28.	Sioux City	Charles W. Campbell	5	19
29.	Storm Lake	Walter Schulz	9	7
30.	Washington	James Houstman	10	5
31.	Waterloo, East	Miles A. Tyler	7	4
	Waterloo, West	Miles A. Tyler	12	8
32.	Webster City	Andrew Brinsko	8	11
33.	West Des Moines	Roderick Kent	8	8
34.	Winterset	Carl M. Humphrey	15	3
		TOTALS	396	412

PART-TIME TRAINING CENTERS--POST SECONDARY

	City	Coordinator	Enrollment	
			Male	Female
1.	Fort Dodge	Roger Ditzenberger	31	0
2.	Iowa Falls	Marie L. Olsen	0	16
	Iowa Falls	Donald A. Wilson	31	0
	Iowa Falls	John C. Arthaud	40	5
3.	Muscatine	Martin G. Housman E. L. Clover	27	0
		TOTALS	129 (38%	21 increase)

DISTRIBUTIVE EDUCATION ENROLLMENT IN IOWA HIGH SCHOOLS



PLACEMENT OF DISTRIBUTIVE EDUCATION COOPERATIVE PART-TIME TRAINEES
1965-1966

	CLASSIFICATIONS	Secondary M	Secondary F	Post Secondary M	Post Secondary F	Total Cumulative Enrollment
Retail Trade	52 Bldg. Materials, Hdw.	10	4			14
	53 General Mdse.	57	148	40	21	266
	54 Food Stores	94	27	31		152
	55 Automotive Dealers	20		31		51
	554 Gasoline Service Station	27				27
	56 Apparel, Access. Stores	41	51			92
	57 Furniture Stores	12	6			18
	58 Eating Places	16	35			51
	591 Drug Stores	10	19			29
	59 Other Retail Stores	21	32	7		60
	532-5 Non-Store Retailers	17	30			47
Wholesale Trade	501 Motor Vehicles & Equipment	5				5
	502 Drugs, Chemicals, Etc.	1	2			3
	503 Dry Goods, Apparel		5			5
	504 Groc. & Related Products	10	1			11
	505 Farm Prod. and Raw Materials		1	18		19
	506 Electrical Goods	1	2			3
	507 Hdw., Plbg., Heating	6	3			9
	508 Machinery, Equipment	3	1	1		5
	509 Misc. Wholesalers	6	1			7
Services	70 Hotels, Tourists Courts	1	1			2
	72 Personal Services	13	8			21
	73 Business Services	14	23			37
	75 Auto Services & Garages	3				3
	76 Misc. Repair Services	1				1
	78-79 Recreation	3	2			5
Spec. Areas	40-47 Transportation					
	48 Communication					
	49 Elec., Gas, Sanitary Service					
	60-62 Finance	2	3	1		6
	63-64 Insurance	2	2			4
	65 Real Estate		1			1
	422 Storing					
	Manufacturing					
	363 Household Appliances		1			1
	Division "D" Manufacturing		3			3
	TOTALS	396	412	129	21	958

Program Interpretation and Promotion

A tabulation of the major types of business training stations represented in the distributive education program for 1965-1966 showed that the majority of students were employed as follows: department stores, 144; specialty stores, 140; food stores, 119; ready-to-wear shops, 53; service stations, 42; drugstores, 28; restaurants, 22; hardware, 13; jewelry, 11; theaters, 3. The remainder of students represented in training stations were in miscellaneous distributive service occupations.

Organizations which employed the greatest number of students were Younkers, 63; J. C. Penney, 27; Hy-Vee Food Stores, 25; Super Valu Stores, 24; Montgomery Ward, 24; Sears Roebuck & Company, 16; F. W. Woolworth, 14; S. S. Kresge Co., 13; and Eagle Food Stores, 11. Other firms employing more than five students were Killians, W. T. Grant, Kinneys, and Hinky Dinky.

New Programs for the Coming Year

Six new high school programs in distributive education are scheduled for the 1966-1967 school year: Maquoketa, Nevada, Spencer, Urbandale, Waverly, and West Union.

On the post secondary level, Cedar Rapids will be opening a new program in Floriculture which will combine agriculture, distributive education, and trade and industrial training areas such as growth, technical aspects, and marketing. This program will function as a ten-month program encompassing cultural practices, greenhouse operation, floral design, retail operation, and business management in addition to the two periods of field experience in selected training stations.

Muscatine will be expanding the twenty-one month Feed and Fertilizer Marketing program. The program has received wide industrial acceptance and interest throughout Iowa. Contacts have also been made in Indiana, Minnesota, Missouri, Illinois, Wisconsin, Ohio, Georgia, and Florida. Cooperation of news media through newspapers and trade journals have given momentum to the program. It is expected that greater success will be realized with the expansion of the program in the coming year.

Iowa Falls is adding a new section in Department Store Marketing Management at Ellsworth Community College.

Fort Dodge Community College will be opening an additional section in Food Marketing Management as an expansion of their present program. An increased demand for high caliber personnel with more training stations available has created the expansion of this program.

The forty-five week Retail Hardware Marketing program at Ottumwa will open this year with a twenty-three week period of classroom study in three segments and twenty-two weeks of on-the-job training in two segments. This program is designed to prepare young men and women for successful careers in retail hardware merchandising and management.

State DECA

The club program grows by "leaps and bounds" spearheading the Distributive Education program. Iowa is in its tenth year affiliated with National DECA.

DECA has expanded from 200 students in five chapters to 956 students in forty-six chapters (forty-two high school chapters and four post secondary chapters). This represents an increase of 126 members over last year.

High School

On November 19-20, 1965 the Iowa Delegate Assembly convened in Des Moines at the Fort Des Moines Hotel. Prospective candidates were screened by a screening committee on Friday evening. A number of delegates arrived on Friday evening although they were not running for an office. A dance and a mixer for students provided an interesting evening along with some good public relations to carry back to the local clubs. The Iowa DECA officers for 1965-66 were: Bill Carmichael, Des Moines Lincoln, president; Dave Whitney, Iowa Falls, vice president; Sue Mazzola, Des Moines Tech, secretary; Albert Brock, Washington, treasurer; Christa Showman, Des Moines Tech, historian; Mark Tietz, Cedar Rapids Washington, parliamentarian.

The Tenth Annual Iowa DECA Leadership Conference was conducted in Des Moines on March 13-14, 1966. Five hundred fifty DECA members attended this tenth anniversary conference in addition to nine student-guests, forty-three local advisors, eighteen future coordinators from the State College of Iowa, eighty-two adult guests who served as chaperones, observers, judges, and speakers--seven hundred two people in all attended the 1966 State Leadership Conference.

Conference addresses were presented by: Mr. Edwin L. Nelson, Head, Distributive Education Unit, Occupations Branch, U. S. Office of Education, Washington, D.C.; Mr. Joe Moore, Public Relations Director, Flynn Dairy Company, Des Moines; Mr. Boyd H. Graeber, Past Associate Superintendent, Vocational Education, State Department of Public Instruction; Mr. Emmett Butler, Public and Employee Relations, The Maytag Company, Newton, Iowa; Mr. Paul F. Johnston, Superintendent, State Department of Public Instruction.

All Iowa DECA delegates entered and took part in one or more contests.

Contest or Award	Number of Participants
Ad Layout	53
Areas of Distribution Manual	5
Display Judging	165
D.E. Student of the Year-Boy	63
D.E. Student of the Year-Girl	16
Job Interview	35
Merchandise Information Manual	17
Outstanding Project Award	2
Public Speaking	36
Sales Demonstration	24
Sales Demonstration Judging	153
Creative Display	28
Management Problems	24
Marketing Terminology	46
Quantitative Management Problems	39
Radio Script Composition	33
Radio Script Presentation	24
DECA Sweetheart Award	26

Contributing organizations to Iowa DECA were Hotel Fort Des Moines, Iowa Power and Light Company, Iowa Retail Federation, Iowa Retail Food Dealers Association, Iowa Retail Hardware Association, Sears Foundation, WHO Radio, Younker Brothers Incorporated.

Post Secondary

The Annual Post Secondary State DECA Conference was held in Fort Dodge with approximately 125 students, sponsors, and judges attending. The following contests were sponsored: Chapter Activities, Public Speaking, Individual Marketing Improvement Project, Training Manual, Ad Copy and Layout. State officers elected were: Duane Wood, Ellsworth, president; Jim Murphy, Muscatine, vice president; Sandy Pawluck, Ellsworth, secretary (historian); Larry Musser, Fort Dodge, secretary (general); Doug Campbell, Muscatine, treasurer.

National DECA

Twenty-seven Iowa DECA high school members, thirteen post secondary members, and twenty-nine adult sponsors attended the Twentieth National DECA Leadership Conference in Chicago, April 27 through May 1, 1966. National honors received by the Iowa DECA delegation included:

High School Division:

Miss Linda Jaspering, Washington, Iowa, first place winner in the display contest. Mason City High School, Chapter of the Year, Central Region.

Post Secondary Division:

Richard Crovisier, second place, Management Decision Making - "Human Relations".

IDETA - Iowa Distributive Education Teachers Association

The state coordinators' organization, Iowa Distributive Education Association, was renamed Iowa Distributive Education Teachers Association during the coordinators' meeting at the State DECA Delegate Assembly, November 19-20, 1965 at the Hotel Fort Des Moines, Des Moines, Iowa.

The Iowa Distributive Education Teachers Association functions in the interest and welfare of teacher-coordinators. In existence for ten years, a major purpose has been to stimulate and develop leadership for distributive education throughout the state. One of the prime responsibilities of the organization has been to aid the state staff in planning coordinators' conference, the delegate assembly, and the State DECA Leadership Conference. The organization has worked closely with other professional organizations such as the Iowa Vocational Association (IVA), the American Vocational Association (AVA), and the National Association of Distributive Education Teachers (NADET). Mr. Lyle Natvig, Cedar Rapids, was IDETA president. Larry Warford, Fort Dodge, served as vice president, and Dennis Speas, Iowa Falls, served as secretary.

Fifty-three distributive education personnel were members of AVA and NADET this year.

ANNUAL DESCRIPTIVE REPORT

Vocational Business Occupations Teacher Training
State College of Iowa
1965-66

This report covers the activities of the teacher education program in office and distributive education at the State College of Iowa for the period July 1, 1965 to June 30, 1966.

Introduction This is a summary report of the teacher education activities in office and distributive education at the State College of Iowa under the provisions of the Iowa State Plan for Vocational Education.

These activities are organized under the Department of Business and Business Education which is headed by Dr. Lloyd V. Douglas. Teacher education for the business occupations has been in continuous operation under the leadership of Dr. Douglas since 1946 in distributive education and 1957 in office education.

The teacher education staff consists of three persons who cooperate in the many and varied activities of teacher education. Mr. Oliver M. Anderson is teacher educator in distributive education, completing his third year in this capacity. Mr. Jack C. Reed serves as teacher educator in office education, the position to which he was appointed in June 1965. Mrs. Lucille E. Wright is serving a dual capacity as teacher educator in both distributive and office vocational education. Mrs. Wright joined the staff in the fall semester of 1965.

The report on adult education activities carried out during the 1964-1965 year has been previously submitted. This report contains the teacher education phase of the distributive education program of summer 1965. Those activities and courses carried out in summer 1966 will be reported in the annual report submitted in 1967.

A. Accomplishments of the Year

1. Pre-Service Training - During the 1965-1966 school year the State College of Iowa, Department of Business and Business Education, offered the professional courses shown on Table I. Enrollments are shown after each course. Students enrolled in these courses were primarily potential teacher-coordinators but as the vocational courses are an integral part of the college offerings other students such as administrators and teachers of related fields may sometimes be included.

TABLE I

Enrollments in Professional Distributive Education Courses, 1965-1966

Course Title	Semester	D.E.	O.E.	Total
Organization and Administration of Vocational Programs	Summer	9	34	43
	Fall	9	9	18
Philosophy of Vocational Education	Summer	18	29	47
	Fall	4	9	13
	Spring	10	1	11

Table I (cont'd)

Course Title	Semester	D.E.	O.E.	Total
Adult Business Education Programs	Spring	8	5	13
Individual Instruction Techniques	Summer	15	29	44
	Spring	9	3	12
Problems in Distributive Education	Summer	8	0	8
Vocational Workshop-Post-session	Summer	12	23	35
Individual Readings in Distributive Education	Summer, Fall, Spring	5	3	8
Directed Work Experience	Fall	3	5	8
	Spring	1	5	6
Research in Vocational Education	Summer, Fall, Spring	5	2	7
Methods in Distributive Education	Fall	13	0	13
	Spring	9	0	9
	TOTAL	138	157	295

This compares with a total of 148 class enrollments the previous year. In addition to campus classes, an extension class in philosophy of vocational education at Ottumwa served 23 students. Correspondence students in this class numbered approximately 12.

Technical course offerings in the marketing area number 32 semester hours. A change in undergraduate requirements in the department will place the course principles of marketing in the business core required of all students beginning fall 1966. Distributive education students will be required to take 15 semester hours in marketing in addition to the principles course. A course in commercial art has been added as an elective applying toward the technical hour requirement.

Preparation as a vocational office coordinator requires a secretarial emphasis. This emphasis has changed beginning in fall of 1966 so as to include office practice and transcription courses in addition to those previously required. A total of 40 credit hours are available in the secretarial area to provide opportunity for graduate study in this area in addition to the complete undergraduate offerings. Machine shorthand is the latest addition to the curriculum and has been accepted with enthusiasm by many secretarial students. Elements of data processing has also proved well accepted by both graduate and undergraduate students preparing to become vocational office coordinators.

Considerable time has been spent by the teacher educators in recruitment and advisement of students preparing as vocational teachers. Stronger publicity has brought many prospective students to the campus to learn more about the vocational areas. It is estimated that one-third of Mr. Anderson's and Mr. Reed's time is spent in these functions of recruitment and advisement. The eight professional hours required of students preparing for vocational positions make it difficult to design students' programs so as to meet all requirements and not delay graduation. Advisement, therefore, becomes a very important task of a teacher educator.

At the spring commencement exercises, there were 12 students graduated in the distributive education area and 10 in the vocational office education area. In addition to this, the summer enrollment included 24 students in office education preparation and 5 in distributive education preparation. A majority of which complete their professional courses during the summer session.

Of the ten June graduates in vocational office education, two received masters degrees. Of these ten students, two accepted O.E. positions in Iowa, one remained at the college for graduate work, two accepted positions outside of the state and four accepted positions as business education teachers. Of the twelve distributive education graduates, three received advanced degrees, ten of these graduates accepted positions in Iowa and two accepted positions out of state.

2. Student Teaching Experiences Student teaching experiences were provided through the regular teaching centers established by the Teaching Department of the State College of Iowa. The Des Moines school system was added as a student teaching center of the State College of Iowa. Centers used for student teaching in business occupations, in addition to the Des Moines school, were Mason City, Charles City, Waterloo, Marshalltown, and Fort Dodge. Each of these student teaching centers is supervised by a student teacher-coordinator who is in residence at the center but employed by the State College of Iowa.

3. Regional State Meetings Four regional state meetings were held the past year for the purpose of in-service education. These were held at Storm Lake on November 10, Cedar Falls on November 17, Washington on November 22, and Winterset on November 29. As usual the "swap-shop" session was colorful and profitable.

Mr. Buck Groenendyk, mathematics consultant from the State Department of Public Instruction, made a presentation at three of the meetings. He informed coordinators of the Northwest Iowa Telewriter Project and demonstrated its use. He also made available the material he has authored on the teaching of business arithmetic by use of the case study method. Concepts of flow charting were also presented and a great deal of interest was shown on the part of the coordinators present.

A demonstration in the use of the Thermo-fax machine in conjunction with the overhead projector was given. Mr. Richard Furst, coordinator at Humboldt, made the presentation at Storm Lake and the teacher educators made much the same presentation at the other regional state meetings.

These meetings were divided for part of the afternoon into the distributive education section and the office education section. Most office education coordinators were relatively new in their positions and it was felt that the most value could be gained in these meetings by discussing common problems for a greater portion of the time period.

Following dinner, Mr. Dean Aschim from the State Department of Public Instruction, presented information on the work study program under the Vocational Education Act of 1968.

Mr. Walter Schulz, Mr. James Houstman, and Mr. Carl Humphrey were hosts at the separate meetings and did a magnificent job of providing facilities and equipment as well as making dinner arrangements for the meetings.

All but two of the Iowa coordinators attended one of the regional state meetings. Mr. Else, Miss Simmerman, and Mr. Jarchow were in attendance at most of the meetings and were very helpful. Several guests from administration and guidance were also present as were approximately 15 coordinators in training from the State College of Iowa.

4. Program Visitations With the increase in teacher education staff at the State College of Iowa, efforts have been intensified to visit the existing distributive and office programs throughout the state. Policy has now been established to visit all programs each year for the purpose of consultation with respect to teaching techniques and instructional materials. Check lists of existing equipment, facilities, and conditions were originated for both the distributive and vocational office areas. These were used to determine the status of all of the 45 distributive education and 36 office vocational education programs.

   Where it was thought advisable, a program was visited more than once during the year. A total of 61 visitations were made to distributive education programs and 41 visitations were made to vocational office education programs. A total of nearly 14,000 visitation travel miles were accumulated by the teacher educators, the major part being accomplished by Mr. Reed and Mrs. Wright. These visitations have consumed a large percentage of the time of the teacher educators. It has been extremely advantageous, however, in keeping abreast of changes and innovations in Iowa programs which has made it possible to keep teacher education instruction current.

5. Graduate Education Forty candidates for master degrees emphasizing distributive education and 26 candidates in office education are in various stages of their graduate programs. The privisions of technical and professional work each summer has proved most helpful in building a graduate student body in the business occupations area. Since the inception non-thesis option, approximately three-fourths of those candidates would choose the thesis option so as to better prepare them for research activities and provide a basis for progress in their specialties.

6. Teacher Placement As in previous years there were more vacancies in Iowa for distributive and vocational office coordinators than were available to fill these vacancies. In addition to this, the out-of-state vacancy notices that were sent to this institution indicated an extreme shortage that exists for coordinators in both fields.

7. Research Only small informal research by coordinators has been reorganized to place responsibility within the coordinator associations in Iowa. In the distributive education area, a head of research was appointed to coordinate the efforts of teacher-coordinators in the development of five group research projects. These will still be edited at the State College of Iowa by teacher education staff and submitted for inclusion in the research edition of distributive Keynotes.

   The office education teacher-coordinators are planning research efforts for the future, but this year have completed research only on an individual teacher-coordinator basis.

8. Professional Activities The teacher educators continued professional membership in various business and distributive organizations.

The teacher education staff was represented in several capacities at a great number of different meetings, conferences, etc. These activities are broken down below in three categories: professional meetings for the improvements of the person attending, educational meetings in which the staff members participated as a resource person, and leadership activities in which the staff member assumed a leadership role.

1. Professional meetings --

American Vocational Association Convention, Miami, Florida
Annual meeting - association of superintendents and curriculum development administrators
Iowa Vocational Association Convention
Conferences for vocational educators and guidance counselors at Upper Iowa University, Iowa State University, and Parsons College
Vocational Education Research Institute, Madison, Wisconsin
SCI Guidance and Counseling Conference
World Institute on Office Technology, University of North Dakota
Iowa Vocational Association, spring meeting
National Vocational Business Education Convention, Chicago
North Central Business Education Association, Detroit, Michigan
U. S. Office of Education Regional Meeting, Excelsior Springs, Missouri

2. Educational outreach --

IBEA Workshop, Des Moines
Post Secondary DECA Conference, Fort Dodge
O.E. Youth Conference planning meeting, Des Moines
Ellsworth Junior College lecture to fashion merchandising students
Better Letters Clinic, Waterloo Chamber of Commerce
IOEA Youth Conference, Des Moines
DECA State Leadership Conference, Des Moines
National DECA Convention, Chicago
Administered post-high school contests in a case study in merchandising
Attended O.E. banquet, Cedar Rapids
Employer-employee banquet, Decorah
Hostess to Miss Hilkka Leino, Fulbright scholar from Finland studying vocational education
Phi Beta Lambda speaker, Fort Dodge

3. Leadership activities --

SCI Beginning Business Teacher's Conference, Cedar Falls
SCI Supervising Teachers, Cedar Falls
IOEA Officers meetings, Cedar Falls
Girl Scout Career Night, Waterloo
Vocational Guidance Workshop, Iowa State University, Ames
Presentation to student teacher center coordinators, Laboratory School, State College of Iowa
Supervised funded vocational research project of Mr. Steve Eggland

B. Plans for 1966-1967

1. Pre-service Education The courses shown in Table II are tentatively to be offered during the next reporting period.

TABLE II

Professional Office and Distributive Education Courses to be offered during

Summer 1966	Fall 1966	Spring 1967
Philosophy of Vocational Education	Org. and Adm. Coop. Programs	Philosophy of Vocational Education (?)
Org. and Adm. Coop. Programs	Philosophy of Voc. Ed.	Adult Business Education Programs
Individual Instruction Tech. (O.E. and D.E. sections)	Methods in D.E.	Individual Inst. Tech. (two sections)
Adult Business Ed. Programs (O.E. and D.E. sections)	Methods in Office Practice	Methods in D.E.
	Directed Work Experience	Methods in Office Practice
		Directed Work Experience

2. Student Teaching Student teaching in distributive education will be at established teaching centers unless overloading makes outside contracts necessary. Any center whose distributive program does not meet the standards set by the State Department of Public Instruction, Vocational Division, will not be used. With an increased number of students it may be necessary to use towns close by an established center.

   The State College of Iowa has recently added school systems close to Des Moines as student teaching centers. This will make possible several additional student teacher placements in the Des Moines area for the ensuing school year.

3. In-service Education Regional state meetings will be continued as well as visitations to coordinators at their schools.

   Professional courses in vocational office and distributive education will be taught by the teacher educators through the extension division. The first offering will be Organization and Administration of Vocational Programs and the second will be Individual Instruction Techniques.

4. Graduate Education Advising of M. A. candidates emphasizing distributive and office education will be done by Dr. L. V. Douglas, Head of Business and Business Education and by the teacher educators of distributive education and office education.

5. Adult Education Plans and work schedules will be formulated by the field instructors and the Director subject to approval by the State Consultant, Head of the Department of Business Education, and the Director of Extension, State College of Iowa. Continued use of the monthly planning reports and periodic meetings are planned. Routine planning, managements and maintenance of proper adult records will be the responsibility of each of the field instructors for the activities they organize and carry out. Efforts will be made to establish several more on-campus management institutes.

   Field instruction will be enhanced next year by the addition of Miss Aurelia Prior as field instructor in vocational office education.

Miss Prior will attempt organization of adult education classes by local personnel. It is anticipated that most school systems will be adequately staffed to furnish instructors for adult classes in vocational office education. Where experienced staff is not available or specialized courses are required in the community, they may be taught by Miss Prior.

6. Research The distributive education staff will conceive and carry out research to the extent possible with the resources available.

   Masters candidates will be encouraged to write thesis which will provide information of value in development of superior distributive and office education programs in Iowa.

   It is tentatively planned to seek funding for a developmental project which will provide instruction film strips in distributive education. Documentation is now being prepared for a pilot project in this area.

7. Annual Planning Meeting The annual planning meeting of the State College of Iowa staff and the Division of Vocational Education is anticipated.

   For many years this planning meeting has allowed a close working relationship and clarified the responsibility of the college in performing teaching education and field instructional responsibility in correspondence with the philosophy of the State Department of Public Instruction. Further, it has provided a vehicle for long range planning which is necessary for continued successful performance of these duties.

C. Program Status

1. The support of the Department of Business Education, college administration, and other departments has been excellent during this period. The Director and staff of the Extension Division have been extremely helpful in scheduling and administering the field work of the teacher educators and the field instructors. It is anticipated that full support of the college will continue in the future.

2. Adequate preparation of vocational teacher coordinators in office and distributive education continues to be recognized throughout the nation. Several states have expressed a choice of Iowa graduates over all others. We plan and work toward enhancement of this reputation.

3. Our field services are expanding to include the office education area. With present staff we are meeting only a small part of the needs of Iowa people employed in distributive occupations. Efficiencies of time and resources are being found but expansion of the services are a real necessity.

   Field instructors from the college have gained an enviable reputation in their contacts with business persons and in their instruction ability. Their prestige is enhanced by their affiliation with the State College of Iowa. The selection of appropriate persons for field instruction positions has resulted in their maintaining prestige of the college and yet being very practical in their curricular organization and presentations. The working arrangements at the college have proved to be especially conducive toward recruitment of able persons for field instructional positions.

The facilities of the college have also contributed greatly to the success of field instruction activities. The resource materials and persons of the college are at the disposal of the field instructor who makes good use of these to improve their instruction.

4. Relationships with the personnel of the Vocational Division of the State Department of Public Instruction are exceptionally fine even during this trying period of rapid growth in vocational education. Continued close communications and frank facing of the issues will be a major objective of those engaged in this program.

5. The expanded staff of the college providing the vocational services has increased but has not increased to a greater extent than the responsibilities assigned. It is hoped that more research might be accomplished by the staff and new teaching materials might be innovated as time becomes available and as increases in staff are made possible.

ANNUAL DESCRIPTIVE REPORT

Glenn L. Hansen - Barry L. Reece
Adult Distributive Education Field Instructors
State College of Iowa
1965-1966

A. ACCOMPLISHMENTS OF THE YEAR

1. SMALL BUSINESS ADMINISTRATION

Close liaison has continued with the SBA throughout the reporting period. As in the past years, management classes have been on the co-sponsorship basis with this government agency. The continuation of close working relationships between the Field Instructors and members of the SBA Regional Office has made it possible to more effectively locate communities where a need for a program in management exists.

Through the excellent cooperation of the Regional SBA Office, the Field Instructors were able to develop a rather complete file of government publications that can be used as supplements for management programs. These materials allow the Field Instructors the opportunity to help individual business firms who may be having problems in one management area.

Mrs. Inez Finch from the Des Moines Regional Office is a most enthusiastic supporter of this close relationship which now exists between the Adult Distributive Education Services and her office. It is apparent that this close relationship will continue in future years.

2. TRADE ASSOCIATIONS

IRFDA (Iowa Retail Food Dealers Association)

A continued close relationship with this trade association was a welcomed reality during the reporting period. With the cooperation of the association secretary, one-day institute for owners and managers of food stores

was conducted on our campus.

IIOJA (Iowa Independent Oil Jobbers Association)

During the month of August the field staff made an initial contact with the IIOJA for the purpose of explaining our services. At that time the field staff proposed a one-day clinic for sales and management personnel working in the area of petroleum marketing. Representatives indicated their interest in co-sponsoring this clinic. At a later date a second meeting with IIOJA officials was held in Iowa Falls and plans for a one-day clinic were finalized. The adult field staff enjoyed a fine relationship with the IIOJA during the 1965-1966 school year and it is hoped that this close association will continue in the future.

IPC (Iowa Petroleum Committee)

During the 1965-1966 school year the adult field staff developed a working relationship with the Iowa Petroleum Committee. This association represents various groups within the petroleum industry. During the year officials of the IPC helped the field staff design a one-day clinic for sales and marketing personnel working in the petroleum industry and provided helpful assistance in other areas. It is hoped that this association will continue to support programs sponsored by the SCI adult staff.

IRHA (Iowa Retail Hardware Association)

At a visit with the association's secretary, it was determined that it would not be possible to co-sponsor training programs this year. The energies of the association at the present time are being directed toward a post-high school program in hardware marketing offered at Iowa Tech in Ottumwa. Indications are that a close working relationship with the State College of Iowa adult services will again be developed in the near future.

3. OTHER PROMOTIONAL VISITS

The adult staff met with representatives at Grundy Center, Oskaloosa, Iowa City, Des Moines, Davenport, and approximately ten other communities in an attempt to familiarize them with our services. It appears quite likely that a number of these visits will contribute to some program being offered in these communities next year.

4. CLASSES

The complete report of all adult distributive education classes taught by the field staff and resource people is attached to this report. It should be noted that there has been a substantial increase in the number of programs conducted and total enrollment.

B. MEETINGS AND CONFERENCES ATTENDED BY THE ADULT D.E. STAFF

1. SUMMER COORDINATORS CONFERENCE (August 23, 24, 25, 26, 27)

Both field instructors attended this meeting which was held in Des Moines. Mr. Hansen addressed the convention on Sunday morning; his topic was "Employee Motivation." This meeting provided both field instructors with

an opportunity to meet officials of the IRFDA and learn more about the training needs of retail food store managers.

3. IOWA CHAMBER OF COMMERCE EXECUTIVE STATE CONFERENCE (November 5,6)

Both field instructors attended the state meeting held at Davenport. It proved of definite value not only because of an excellent program, but it afforded the opportunity to meet with a large number of Chamber of Commerce secretaries. There is an indication that having attended this meeting will contribute to at least two or three co-sponsored classes being offered in the future.

4. IOWA DECA DELEGATE ASSEMBLY (November 19,20)

Both field instructors attended this meeting which was held in Des Moines. Mr. Hansen and Mr. Reece helped with officer candidate selection and the final election of state officers.

5. AMERICAN VOCATIONAL ASSOCIATION CONVENTION (December 7 - 11)

Both field instructors attended the convention which was held in Miami, Florida. The adult staff considers attendance at the AVA Convention to be of primary importance. This is the major educational convention for those educators who work in the area of vocational education.

6. STATE DECA LEADERSHIP CONFERENCE (March 13, 14)

Both field instructors attended this conference which was held in Des Moines. Mr. Reece prepared a management problem for the Management Problems Contest and worked with contest officials. Mr. Hansen prepared tests for both the Marketing Terminology Contest and Quantitative Management Problems Contest.

7. IOWA VOCATIONAL ASSOCIATION CONVENTION (March 25,.26)

Both field instructors attended this convention which was held at Newton. The IVA Convention brings together vocational educators from the fields of Business Occupations, Trade and Industrial, Vocational Agriculture and Home Economics.

8. STATE POST-HIGH DECA LEADERSHIP CONFERENCE (April 4)

Both field instructors attended this conference which was held at Fort Dodge. Mr. Reece prepared a management problem for the Management Decision-Making Contest and presented this problem to contestants. Mr. Hansen helped select state officers.

9. NATIONAL DECA LEADERSHIP CONFERENCE (April 28, 29, 30)

Both field instructors attended this national conference held in Chicago. During the conference Mr. Hansen and Mr. Reece observed contests and participated in other convention activities. During the convention both field instructors had an opportunity to visit with officials of Super Market Institute which has its office in Chicago. The meeting with SMI officials produced a number of ideas regarding future on-campus clinics for food marketing personnel.

C. SPEECHES AND SPECIAL PRESENTATIONS BY FIELD INSTRUCTORS

MR. GLENN HANSEN

1. Presented a talk on motivation, delegation, and evaluation to supervisors from Clay Equipment at their monthly meeting.

2. Spoke at the Manchester, Iowa, Annual Retail Banquet.

3. Presented a talk to the Ellsworth Marketing Club Banquet entitled, "Leadership Characteristics of the Modern Businessman."

4. Presented a 20-minute talk on supervisory techniques at the semi-annual meeting of the Amana Refrigeration Supervisors Club.

5. Presented a 40-minute speech on motivating people at the conference of the Iowa Retail Food Dealers Association.

6. Spoke to Mr. Anderson's adult education class on administering adult programs.

7. Gave a short presentation on the adult field services at the annual coordinators conference.

8. Conducted a two-hour session on careers in advertising for the Charles City High School Career Day.

MR. BARRY REECE

1. Served as guest speaker at the Charles City High School Employer-Employee Banquet.

2. Presented a talk on supervisory development to the students enrolled in the Fashion Merchandising program at Ellsworth College.

3. Attended the first Petroleum Marketing Advisory Committee meeting and presented information regarding the future growth and development of the Petroleum Marketing Program.

4. Spoke to Mr. Anderson's class on the topic of post-secondary distributive education.

5. Attended the summer coordinator conference and presented material on adult education.

D. REVIEW OF MATERIALS PERTAINING TO ADULT DISTRIBUTIVE EDUCATION

The adult staff is continuously looking for teaching aids which will make their work in adult education more effective. This year a special effort was made to contact several firms who distribute films, records, books, and other teaching aids designed for use in the field of adult education. Each firm was asked to provide the staff with examination copies of their materials.

Listed below is the name of each company contacted and a brief description of the materials provided by that company.

1. Edward M. Miller Associates - Training records for sales and supervisory personnel.

2. Nations Business Reprint Department - Reprints of special articles pertaining to the training of sales and management personnel.

3. Success Motivation Institute, Inc. - Training records for sales and supervisory personnel.

4. Businessmen's Record Library - Training records for sales and supervisory personnel.

5. Argyle Publishing Corporation - Programmed instruction units for training persons working in the areas of sales, supervision, and management.

6. Sales Training Associates, Inc. - A sales training unit which combines records and instructional manuals. Designed for commission salesman.

7. Roundtable Films, Inc. - A collection of films for management development.

8. Addison - Wesley Publishing Company - Book in supervisory techniques.

9. University of Michigan Press - Book on supervisory techniques.

10. Gregg Publishing Company - Books on business psychology.

11. Psychological Institute - Aptitude test for supervisory personnel.

E. PROJECTS

A card file of programs completed has been continuously kept up to date. It is proving to be an excellent method of keeping an accurate record of all classes completed.

A Marketing Terminology and a Quantitative Management Problems test was constructed by Mr. Hansen and used for contests at the 1966 Iowa DECA State Leadership Conference.

A Management Problems test was constructed by Mr. Reece and used for contests at the 1966 Iowa DECA State Leadership Conference.

A Management Decision-Making test was constructed and administered by Mr. Reece at the first Post-High School DECA State Leadership Conference.

The field instructors have found it necessary throughout the reporting period to be continuously active in the development of new materials and the up dating of materials on hand.

F. RESOURCE PERSONNEL

During the past year the Adult Distributive Education field staff has recruited and trained four resource instructors who conducted classes in the areas of sales, supervision, and management. Each instructor used in SCI

instructional materials, and each class taught by a resource person was organized by the adult field staff. Specific information regarding these classes is outlined in another area of this report.

In addition to the four resource instructors the adult staff has employed the services of 15 specialists from businesses and education to present programs at classes and clinics directed by the field instructors.

Next year the SCI Adult Staff will attempt to secure the services of additional resource instructors. However, certain factors appear to limit, to some degree, the use of a large number of resource personnel. These factors include the following:

1. Many D.E. and O.E. coordinators are reluctant to organize and instruct adult classes in their own community. In addition, some teachers explain that they lack the time needed to work in the field of adult education.

2. It is difficult to find persons in the business community who will teach adult classes. Some lack the necessary time needed to prepare and teach an adult class; others do not fully understand the teaching techniques that must be used to insure success in adult education.

3. A great deal of time and effort must be extended by the adult staff to recruit and train resource personnel. Additional time is usually needed to promote adult classes taught by resource personnel.

Although the adult staff will continue to secure capable resource instructors who are willing to teach adult classes, it should be recognized that rapid expansion of adult education enrollment relying on resource personnel is doubtful.

G. CLINICS

1. PETROLEUM CLINIC

On October 5, 1965, a one-day clinic for sales and management personnel working in the field of petroleum marketing was held on the SCI campus. The clinic, attended by 58 persons, was held in the Business Education Conference room. Topics discussed by clinic speakers included:

- Hiring and Retaining Employees
- Profitable Employee Training
- Understanding and Motivating People
- How to Handle Gripes, Complaints, and Grievances
- Evaluation of Employee Performance

The clinic was co-sponsored by the Iowa Petroleum Committee, the Iowa Independent Oil Jobbers Association, and the SCI Adult Field Staff.

2. FOOD CLINIC

A one-day clinic for super market managers and other personnel employed in the food industry was held on the SCI campus December 7, 1965. Sixty-

eight persons attended the clinic which was held in the Business Education Department Conference room. Staff members from the Business Department and specialists from the food industry discussed the following topics:

- Hiring and Retaining Employees
- Today's Retail Food Manager
- Profitable Produce Merchandising
- Techniques of Employee Evaluation
- Advertising and Display
- Delegation

The clinic was co-sponsored by the Iowa Retail Food Dealers Association and the SCI Adult Field Staff.

H. VISITATIONS AS CONSULTANTS

1. SHELLSBURG (Hansen)

At the request of the extension director, a visit to the Shellsburg School system as a consultant for the area of business and distributive education was conducted. After meetings with the superintendent and business teacher, a written report was prepared and sent to the business teacher.

2. DIKE (Reece)

At the request of the extension director, a visit to the Dike Community School system as a consultant for the area of business and distributive education was conducted. After two meetings with the superintendent, principal, and the business education staff, a written report was prepared and sent to the school system.

3. CHICAGO (Reece)

Served as a consultant to the Program Guide for Post-High School Distributive Education, a U. S. Office of Education project prepared by the University of Wisconsin.

4. DES MOINES (Reece and Hansen)

The field instructors have, throughout the reporting period, made visitations to the State Office Building to consult with the Chief of Business Occupations in the Department of Public Instruction.

I. STUDIES AND INVESTIGATIONS

Evaluation sheets from completed classes were studied to determine the participants' likes and dislikes in terms of instructional offering, methods of instruction, length of class, etc. A summary of each class evaluation was compiled and distributed to the co-sponsoring agency, extension service, department head, director of D.E. services, and the State Department Chief of Business Occupations.

J. PLANS FOR FUTURE DEVELOPMENT

1. Encourage all Iowa coordinators of distributive education to increase their efforts in the development of adult programs.

2. Investigate the possibility of co-sponsoring programs with individual firms.

3. Establish communications with all trade associations in Iowa, whose members are engaged in distribution.

4. Devote more attention to consultative work and recruitment of resource personnel in order to expand adult enrollment.

5. Establish retail management classes for retailers located in small communities by establishing attendance centers in larger cities throughout Iowa.

6. Develop appropriate adult programs designed to serve the training needs of those persons working in the field of office occupations.

K. S. C. I. ADULT DISTRIBUTIVE EDUCATION
1965-1966 PROGRAMS

ADULT FIELD CLASSES

	CLASS	CITY	INSTRUCTOR	ENROLLEES
1.	Retail Sales Training	Cedar Rapids	Hansen	25
2.	Retail Sales Training	Cedar Rapids	Hansen	30
3.	Retail Sales Training	Cedar Rapids	Hansen	30
4.	Sales & Supervisory Mgt.	Cedar Rapids	Hansen	32
5.	Supervisory Development	Cedar Rapids	Hansen	27
6.	Retail Management	Clarion	Reece	27
7.	Motivating People	Des Moines	Hansen	350
8.	Christmas Sales Seminar	Fort Dodge	Hansen-Reece	45
9.	Christmas Sales Seminar	Fort Dodge	Hansen-Reece	61
10.	Christmas Sales Seminar	Fort Dodge	Hansen-Reece	35
11.	Supervisory Development	Fort Dodge	Hansen	11
12.	Supervisory Development II	Fort Dodge	Hansen	20
13.	Supervisory Development	Independence	Reece	34
14.	Motivating People	Iowa Falls	Hansen	22
15.	Principles of Training	Iowa Falls	Hansen	22
16.	Supervisory Development II	Iowa Falls	Hansen	22
17.	Retail Sales Training	Manchester	Hansen	33
18.	Supervisory Development	Marshalltown	Reece	40
19.	Supervisory Development	Marshalltown	Reece	29
20.	Supervisory Development	Marshalltown	Reece	47
21.	Supervisory Development	Mason City	Hansen	25
22.	Supervisory Development	Mason City	Reece	35
23.	Supervisory Development	Oelwein	Reece	33
24.	Supervisory Development	Ottumwa	Reece	39
25.	Supervisory Development	Southeast Polk	Hanson	21
26.	Supervisory Development	Vinton	Reece	33
27.	Supervisory Development	Washington	Reece	21
28.	Supervisory Development	Webster City	Reece	25
	TOTAL ENROLLMENT			1,174

ADULT FIELD CLASSES (Taught on SCI Campus)

	CLASS	CITY	INSTRUCTOR	ENROLLEES
1.	Management Seminar	Cedar Falls	Hansen	27
2.	Retail Management	Cedar Falls	Hansen	18
3.	Retail Management	Cedar Falls	Hansen-Reece	31
4.	Review of Master Salesman	Cedar Falls	Hansen-Reece	44
	TOTAL ENROLLMENT			120

ON-CAMPUS CLINICS

1.	Petroleum Personnel Management Clinic	Cedar Falls	Hansen-Reece	58
2.	Retail Food Dealers Management Clinic	Cedar Falls	Hansen-Reece	68
	TOTAL ENROLLMENT			126

ADULT FIELD CLASSES (Taught by resource instructors)

1.	Supervisory Development	Eagle Grove	Roger Ditzenberger	21
2.	Selling Techniques	Waterloo	Don Dingman	10
3.	Selling Techniques	Waterloo	Ron Rath	26
	TOTAL ENROLLMENT			57

L. SUMMARY OF ADULT D.E. ENROLLMENTS - 1,476

1958-59	18 classes	13 cities	667 enrollment
1959-60	14 classes	10 cities	451 enrollment
1960-61	13 classes	9 cities	389 enrollment
1961-62	26 classes	13 cities	708 enrollment
1962-63	25 classes	12 cities	636 enrollment
1963-64	29 classes	11 cities	576 enrollment
1964-65	33 classes	18 cities	734 enrollment
1965-66	37 programs	18 cities	1,476 enrollment

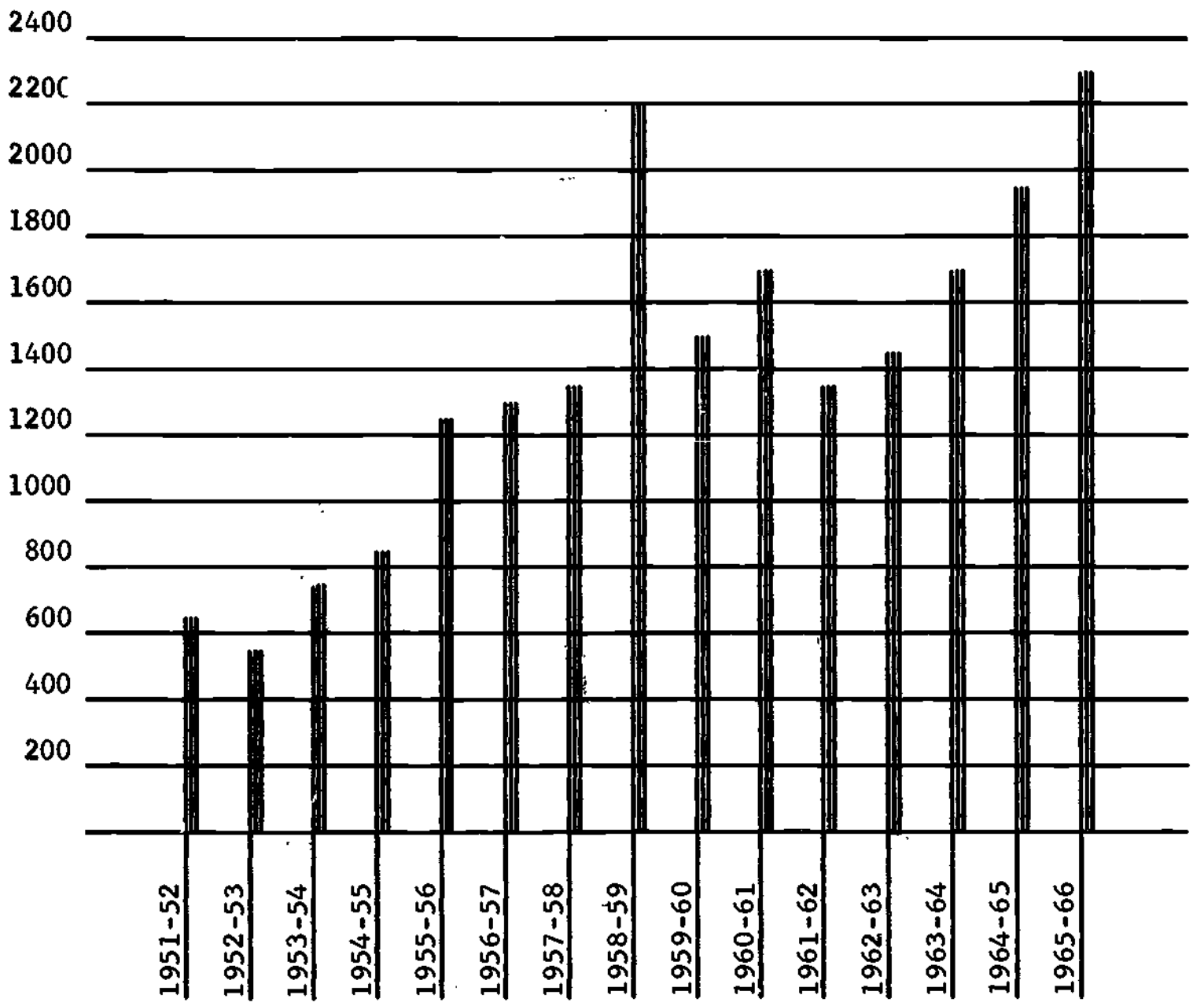
CLASSES TAUGHT LOCALLY USING SCI SERVICES (Teacher Training and Publications)

1958-59	None		
1959-60	6 classes	4 cities	280 enrollment
1960-61	17 classes	13 cities	411 enrollment
1961-62	10 classes	6 cities	282 enrollment
1962-63	12 classes	7 cities	261 enrollment
1963-64	10 classes	6 cities	265 enrollment
1964-65	9 classes	3 cities	159 enrollment
1965-66	6 classes	3 cities	109 enrollment

TOTALS

1958-59	18 classes	13 cities	667 enrollment
1959-60	20 classes	11 cities	731 enrollment
1960-61	30 classes	20 cities	800 enrollment
1961-62	36 classes	15 cities	990 enrollment
1962-63	37 classes	16 cities	897 enrollment
1963-64	39 classes	17 cities	841 enrollment
1964-65	42 classes	21 cities	893 enrollment
1965-66	43 classes	21 cities	1,585 enrollment

ADULT DISTRIBUTIVE EDUCATION ENROLLMENT IN IOWA



DISTRIBUTIVE EDUCATION

1965 - 1966

EVENING SCHOOL CENTERS ADULT PROGRAMS

City	Enrollment		
	Male	Female	Total
1. Algona	4	20	24
2. Altoona	22	2	24
3. Cedar Falls	237	8	245
4. Cedar Rapids	157	117	274
5. Clarion	24	2	26
6. Davenport	151	71	222
7. Des Moines	359	198	557
8. Dubuque	53	38	91
9. Fort Dodge	46	126	172
10. Independence	25	7	32
11. Iowa City	34	--	34
12. Iowa Falls	21	--	21
13. Keokuk	21	--	21
14. Manchester	12	21	33
15. Marshalltown	88	25	113
16. Mason City	53	7	60
17. Oelwein	32	1	33
18. Ottumwa	37	2	39
19. Sioux City	33	72	105
20. Vinton	30	3	33
21. Washington	20	1	21
22. Waterloo	50	13	63
23. Webster City	16	9	25
TOTALS	1,525	743	2,268

INSTITUTES SPONSORED BY STATE COLLEGE OF IOWA PERSONNEL

City	Institute	Enrollees
Des Moines	Iowa Retail Food Dealers	350
Iowa Falls	Ralston Purina Supervisors	44
	TOTAL	394

EMPLOYMENT OF DISTRIBUTIVE EDUCATION ADULT TRAINEES

1965-1966

	CLASSIFICATIONS	Male	Female	Total Cumulative Enrollment
Retail Trade	52 Bldg. Materials, Hdw.	22	2	24
	53 General Mdse.	193	300	493
	54 Food Stores	430	4	434
	55 Automotive Dealers	21	--	21
	56 Apparel, Access. Stores	9	3	12
	57 Furniture Stores	11	2	13
	58 Eating Places	2	1	3
	591 Drug Stores	--	--	--
	59 Other Retail Stores	32	8	40
	532-5 Non-Store Retailers	--	2	2
Wholesale Trade	501 Motor Vehicles & Equipment	11	2	13
	502 Drugs, Chemicals, Etc.	5	1	6
	503 Dry Goods, Apparel	--	--	--
	504 Groc. & Related Products	12	1	13
	505 Farm Prod. and Raw Materials	15	--	15
	506 Electrical Goods	4	1	5
	507 Hdw., Plbg., Heating	7	5	12
	508 Machinery, Equipment	27	1	28
	509 Misc. Wholesalers	144	1	145
Services	Division H-Services	40	41	81
	70 Hotels, Tourists Courts	4	3	7
	72 Personal Services	5	7	12
	73 Business Services	84	85	169
	75 Auto Services & Garage	1	1	2
	76 Misc. Repair Services	5	--	5
Spec. Areas	40-47 Transportation	146	6	152
	48 Communication	6	4	10
	49 Elec., Gas, Sanitary Service	22	2	24
	60-62 Finance	121	7	197
	63-64 Insurance	190	32	222
	65 Real Estate	14	5	19
	422 Storing	--	--	--
	Manufacturing	172	8	180
	TOTALS	1,264	653	1,917

PROGRAMS IN SCHOOLS

Type of Class	City	
Evening (Adult)	Algona	Iowa Falls
	Altoona	Manchester
	Cedar Falls	Marshalltown
	Cedar Rapids	Mason City
	Clarion	Oelwein
	Davenport	Ottumwa
	Des Moines	Sioux City
	Dubuque	Vinton
	Fort Dodge	Washington
	Independence	Waterloo
(22 cities)	Iowa City	Webster City

DISTRIBUTIVE EDUCATION CLASSES 1965-66

Instructor	No. of Classes	Course	Type of Class	Address
ALGONA				
Charles Ullom (Coordinator)		Distributive Practices	P. T. Coop	High School
Charles Ullom	1	Sales Refresher Course	Adult	
ALTOONA				
Merrill Butts (Coordinator)		Distributive Practices	P. T. Coop	High School
Glenn Hansen	1	Supervisory Development	Adult	
AMES				
Jim Overturf (Coordinator)		Distributive Practices	P. T. Coop	High School
AUDUBON				
Jerry Helland (Coordinator)		Distributive Practices	P. T. Coop	High School
BETTENDORF				
H. V. Stephenson (Coordinator)		Distributive Practices	P. T. Coop	High School

Instructor	No. of Classes	Course	Type of Class	Address
BURLINGTON				
H. Earl Bowick (Coordinator)		Distributive Practices	P. T. Coop	High School
CEDAR FALLS				
Ron Rath (Coordinator)		Distributive Practices	P. T. Coop	High School
Glenn Hansen	1	Retail Management Clinic	Adult	
Glenn Hansen & Curtis Kyhl	1	Using Wall Street Journal For Self-Development In Management	Adult	
Glenn Hansen & Barry Reece	1	Sales Training	Adult	
Glenn Hansen Barry Reece Leonard Keefe Roger Ditzenberger Ray Barkmeier Bill Voss Larry Knutson	1	Retail Food Dealers Management Clinic	Adult	
Glenn Hansen Barry Reece Don Wilson Lowell Coburn	1	Petroleum Personnel Management Clinic	Adult	
Glenn Hansen	1	Retail Management Clinic	Adult	
CEDAR RAPIDS				
Mike Crawford (Coordinator)		Distributive Practices	P. T. Coop	High School
Kenneth Freeman (Coordinator)		Distributive Practices	P. T. Coop	High School
Lyle Natvig (Coordinator)		Distributive Practices	P. T. Coop	High School
Louis Locatelli	2	Salesmanship	Adult	
Glenn Hansen	1	Sales and Supervision Management	Adult	
Glenn Hansen	1	Supervisory Development	Adult	
Glenn Hansen	1	Sales Training Seminar	Adult	

Instructor	No. of Classes	Course	Type of Class	Address
CEDAR RAPIDS (cont'd)				
Glenn Hansen	1	Retail Sales Training	Adult	
Robert Moore	2	Transportation & Traffic Management	Adult	
Richard Bonsall	1	Show Card Writing	Adult	
Glenn Hansen	1	Beginning Retail Sales Techniques	Adult	
Richard Roeder	1	Securities & Investments For Small Business	Adult	
Mrs. Florence Meaghan	1	Oral Communications	Adult	
William Kanak	1	Securities & Investments For Small Business	Adult	
Don Ross	1	Oral Communications	Adult	
CHARLES CITY				
John Schutte (Coordinator)		Distributive Practices	P. T. Coop	High School
CLARION				
Barry L. Reece	1	Retail Management Clinic	Adult	
COUNCIL BLUFFS				
Gerald E. Ross (Coordinator)		Distributive Practices	P. T. Coop	High School
DAVENPORT				
Bill Kortemeyer (Coordinator)		Distributive Practices	P. T. Coop	High School
Scott Nicol (Coordinator)		Distributive Practices	P. T. Coop	High School
David Riggs	2	Management Secretarial Development Program	Adult	

Instructor	No. of Classes	Course	Type of Class	Address
DAVENPORT (con't)				
Jerry Walsh	1	Casualty & Property Insurance	Adult	
Ronald Johnson	1	Business Law	Adult	
Robert Hibbert	2	Transportation and Traffic Management	Adult	
Jerry Whitehead	1	Sign & Showcard Lettering	Adult	
Eugene Connor	1	Casualty & Property Insurance	Adult	
DES MOINES				
Richard Berry (Coordinator)		Distributive Practices	P.T. Coop	High School
Terry J. Eaton (Coordinator)		Distributive Practices	P.T. Coop	High School
Lorraine Murdock (Coordinator)		Distributive Practices	P.T. Coop	High School
Randall C. Fossum (Coordinator)		Distributive Practices	P.T. Coop	High School
Jerry Manning (Coordinator)		Distributive Practices	P.T. Coop	High School
Gwen Menke	2	Bookkeeping for Small Business	Adult	
Mary Lichty	1	Insurance Training Part II (Fire & Allied Lines)	Adult	
Marie Runyon	1	Stock & Bond Investments	Adult	
C. D. Szymonjak	1	Transportation I	Adult	
C. D. Szymonjak	1	Transportation II	Adult	
Albert Hall	1	Real Estate Fundamentals	Adult	
William Greaves	2	Principles of Bank Operations	Adult	
William Landholt	1	Home Mortgage Lending	Adult	

Instructor	No. of Classes	Course	Type of Class	Address
DES MOINES (con't)				
Mary Buser	1	Bank Letters & Reports	Adult	
Lewis (Bing) Cobb	1	Commercial Law	Adult	
R. W. Ruff	1	Fundamentals of Bank Data Processing	Adult	
Donald Jordahl	1	Principles of Bank Operations	Adult	
Keith Eaton	1	Analyzing Financial Statements	Adult	
John Kennedy	1	C.L.U. Part III Law, Trusts and Taxation	Adult	
Charles Rohm	1	C.L.U. Part II Group Insurance, Health Insurance and Pensions	Adult	
Cletus M. Herold	1	C.L.U. Part I Fundamentals of Life & Health Insurance	Adult	
Harold Brightman	1	Salesmanship	Adult	
Glenn Hansen	1	Motivating People	Adult	
Bing Cobb	1	Financing Business Enterprise	Adult	
Joe Joyce	1	Income Tax Preparation	Adult	
Joseph Bisignano	1	Stocks & Bonds Investments	Adult	
Marie Runyon	2	Stocks & Bonds Investments	Adult	
Kenneth Hill	1	Real Estate Fundamentals	Adult	
DUBUQUE				
Frank Licciardi	4	Commercial Art & Sign Writing	Adult	
Paul F. Hellmann	1	Traffic Management	Adult	

Instructor	No. of Classes	Course	Type of Class	Address
DUBUQUE (con't)				
Clayton Everman	1	Business Law	Adult	
FORT DODGE				
Gerald Leberman (Coordinator)	1	Distributive Practices	P.T. Coop	High School
Glenn Hansen & Barry Reece	3	Christmas Sales Seminar	Adult	
Glenn Hansen	2	Supervisory Development	Adult	
INDEPENDENCE				
Barry L. Reece	1	Supervisory Development	Adult	
IOWA CITY				
Paul E. Wyant (Coordinator)		Distributive Practices	P.T. Coop	High School
Jude West Don Sheriff Charles Marberry Dave Cooper Henry Albers Norm Kallaus Tony Sinicropi Dwayne Thompson	1	Labor Market Economics & Administrative Skills	Adult	
IOWA FALLS				
Dennis Speas (Coordinator)		Distributive Practices	P.T. Coop	High School
Glenn Hansen	1	Understanding & Motivating People	Adult	
Glenn Hansen	1	Supervisory Development II	Adult	
Glenn Hansen	1	What Every Supervisor Should Know About Training	Adult	
KEOKUK	1	American Society of Traffic & Transportation		
MANCHESTER				
Glenn Hansen	1	Retail Sales Train	Adult	
MARSHALLTOWN				
Donald C. Wilson (Coordinator		Distributive Practices	P.T. Coop	High School
Barry L. Reece	3	Supervisory Development	Adult	

Instructor	No. of Classes	Course	Type of Class	Address
MASON CITY				
Aileen Stern (Coordinator)		Distributive Practices	P.T. Coop	High School
Barry L. Reece	1	Supervisory Development	Adult	
Glenn Hansen	1	Supervisory Development	Adult	
MONTICELLO				
Elmer Anderson (Coordinator)		Distributive Practices	P.T. Coop	High School
NEWTON				
Steve R. Parson (Coordinator)		Distributive Practices	P.T. Coop	High School
OELWEIN				
Victor Collins (Coordinator)		Distributive Practices	P.T. Coop	High School
Barry L. Reece	1	Supervisory Development	Adult	
OSKALOOSA				
B. B. Rockwell (Coordinator)	1	Distributive Practices	P.T. Coop	High School
OTTUMWA				
Jim Braden (Coordinator)		Distributive Practices	P.T. Coop	High School
Barry L. Reece	1	Supervisory Development	Adult	
PERRY				
Michael L. Sheehan (Coordinator)		Distributive Practices	P.T. Coop	High School
SAYDEL (Des Moines)				
Paul Brust (Coordinator)		Distributive Practices	P.T. Coop	High School
SIOUX CITY				
Charles W. Campbell		Distributive Practices	P.T. Coop	High School
Charles W. Campbell	1	Christmas Sales Training	Adult	
Charles W. Campbe'	1	Let's Analyze and Sell	Adult	

Instructor	No. of Classes	Course	Type of Class	Address
SIOUX CITY (cont'd)				
William G. Downs	1	Insurance Principles & Practices Course No. V	Adult	
Charles W. Campbell		Supervisory Relations	Adult	
Duane Schlicting William Penkert James L. Fowler Lloyd L. Graff Gordon Robinson Del Stone Frank Gunn Harry Schulte John Goetsch Charles Avery John Bush Lester Anderson	1	Advertising Short Course	Adult	
STORM LAKE Walter Schulz (Coordinator)		Distributive Practices	P. T. Coop	High School
VINTON Barry L. Reece	1	Supervisory Development	Adult	
WASHINGTON James Houstman (Coordinator)		Distributive Practices	P. T. Coop	High School
Barry L. Reece	1	Supervisory Development	Adult	
WATERLOO Miles A. Tyler (Coordinator)		Distributive Practices	P. T. Coop	High School
William Burger	1	Commercial Law Banking	Adult	
Don Dingman	1	Sales Training	Adult	
Ron Rath	1	Sales Training	Adult	
WEBSTER CITY Andrew Brinsko (Coordinator)		Distributive Practices	P. T. Coop	High School
Barry L. Reece	1	Supervisory Development	Adult	

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TEXAS

Except for the section on area vocational schools, information in this guide is confined to regular programs for high school students and special programs for persons who have academic, socio-economic or other handicaps preventing them from succeeding in the regular programs of vocational education. The guide was designed to assist public schools in planning, establishing, conducting, and evaluating programs of vocational education. Contents include: (1) policies on allocation and reallocation of vocational teacher units, (2) description and requirements for programs of vocational education in agriculture, home economics, distributive education, industrial education, health occupations, technical education, and office education, (3) special programs for handicaps, (4) area vocational school programs, and (5) description and requirements for the work-study program. Forms included in the appendix are: (1) a Cooperative Training Plan Agreement, (2) Application for Approval as an Area Vocational-Technical School, and (3) an Application for Approval of Reimbursable Construction of Area Vocational-Technical School Facilities. (PS)

VT 001 679

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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GUIDE

FOR

PUBLIC SCHOOLS

IN

PLANNING PROGRAMS OF VOCATIONAL EDUCATION

FOR IN-SCHOOL STUDENTS

VT 001 679

Texas Education Agency — Austin, Texas

May, 1965

TEXAS EDUCATION AGENCY

AUSTIN, TEXAS

78711

• STATE BOARD OF EDUCATION

• STATE COMMISSIONER OF EDUCATION

• STATE DEPARTMENT OF EDUCATION

FOREWORD

The Vocational Education Act of 1963 provides opportunity for organization of many different programs preparing persons for gainful employment. Administration of the program is the responsibility of the Texas Education Agency under approval of the State Plan for Vocational Education by the State Board of Education.

This Guide has been prepared to assist local public schools in organizing and conducting a broadened program of vocational education of significant scope. Provisions in the Guide have been established to be effective for the 1965--1966 year.

As plans are completed for the further implementation of this broadened program of vocational education, revisions and additions to the Guide may be necessary.

J. W. Edgar
Commissioner of Education

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Austin, Texas

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GUIDE FOR PUBLIC SCHOOLS
IN PLANNING PROGRAMS OF VOCATIONAL EDUCATION
FOR IN-SCHOOL STUDENTS

Introduction

This Guide is designed to assist public schools in planning, establishing, conducting and evaluating programs of vocational education of high quality, realistic in the light of actual or anticipated opportunities for gainful employment and suited to the needs, interests and ability of students to benefit from such programs by acquiring the knowledge and skills necessary for entry upon and success in employment. In addition to providing information relating to programs designed to train students for gainful employment, the Guide supplies information in the vocational homemaking education section regarding programs for preparation of students to become efficient homemakers, also an occupation of significant importance.

Except for the section on Area Vocational Schools, information in the Guide is confined to regular programs for high school students and special programs for persons who have academic, socio-economic or other handicaps preventing them from succeeding in the regular programs of vocational education. The Guide does not include information regarding programs for adults, except in descriptions of the objectives of Area Vocational Schools.

If program planning is to be realistic, it must be based upon known facts,--facts regarding:

- The many types of vocational education programs and the legal purposes of each.
- The actual employment opportunities existing and reliably anticipated to exist in the area served by the school.
- The knowledge and skills students need to acquire in order to possess the competency necessary to enter upon and succeed in employment.
- Types and number of students needing the programs being planned who have the interest, aptitudes and ability necessary to benefit from such programs in terms of becoming prepared for employment in the occupation for which the program is designed to train students for this objective.
- Policies and procedures relating to making application to the Texas Education Agency for approval of programs.
- Necessary qualifications of teachers.
- Financing of programs.
- Other information important to program planning.

Important Considerations in Program Planning

Planning of programs of vocational education involves important considerations identified with the purposes of programs designed to prepare students for gainful employment,--wage earning or income-producing employment. The first of these considerations is:

DETERMINATION OF THE EMPLOYMENT OPPORTUNITIES IN THE AREA SERVED BY THE SCHOOL IN VARIOUS TYPES OF GAINFUL EMPLOYMENT

Necessity of Determining Employment Opportunities

Job opportunities must exist in sufficient numbers in the occupation or occupations for which training programs are being contemplated to give reasonable assurance that students trained in the program will upon completion have ample opportunity to enter full-time employment in the job classification for which they will have been prepared.

Conducting Occupational Surveys

Occupational surveys are required to be made to determine employment opportunities and to provide realistic basis for deciding upon the type of program or programs needed to prepare students for occupations actually existing or reliably anticipated to exist in the area served by the school. These surveys must be designed to provide employment data and forecasts as to need for employees in an occupation, or related occupational groups, at the time the applying school requests approval of a program or programs, and such annual needs in the future projected for three years. Availability of this reliable information will provide definite and realistic basis regarding the immediate and continuing need for programs and the extent of job opportunities for students in the occupations surveyed.

Utilizing Data Revealed in Surveys

Data recorded in the survey should be analyzed as to the occupations revealing the greatest number of employment opportunities. Priority in requesting approval of new programs should be based upon those most urgently needed in terms of the greatest number of employment opportunitie. as revealed in the survey. Staff members of the Texas Education Agency are available to school officials in interpreting survey reports.

Requesting Assistance in Making Surveys

Upon requests of superintendents of schools contemplating adding or expanding programs to prepare students for gainful employment, members of the Vocational Education staff of the Texas Education Agency are available without charge to assist in organizing occupational surveys to determine need for programs. Occupational data and employment forecasts available from the Texas Employment Commission will be utilized in preparation of survey reports. F quests for

assistance in organizing surveys should be made to:

Mr. Joe B. Neely, Director
Program Development, Coordination and Evaluation
Division of Vocational Education
Texas Education Agency, Austin

The second important consideration in program planning is:

STUDENTS CONTEMPLATED TO BE ENROLLED MUST HAVE THE INTEREST, APTITUDES AND ABILITY NECESSARY TO BENEFIT FROM THE PROGRAM IN TERMS OF:

1. Having as their objective entrance into full-time employment in the occupation for which they are to be trained upon completion of the program.

2. Having the aptitudes, ability and characteristics necessary for employment in the occupation for which they are to be trained.

Importance of Providing Programs of Guidance and Counseling

Planning of programs suited to the needs, interests and ability of students to benefit from such programs requires provision of realistic guidance, counseling and testing programs by the schools. Programs of guidance need to include information to students regarding opportunities for employment in the occupation or occupations for which training programs are contemplated to be established and other information necessary for realistic vocational planning.

Importance of Considerations One and Two in Program Planning

Decision making in final determination of the type or types of vocational education programs to be initiated, therefore, must be based on both of these considerations described above. The number of students contemplated to be enrolled in the program must be dependent upon the number of existing or anticipated opportunities for gainful employment in the area served by the school in the occupation or occupations included in a particular program of vocational education as authorized in the program sections of this Guide.

A third important consideration relating specifically to decision making in determination of the program or programs to be initiated is:

THE EXCLUSION OF ANY PROGRAM DESIGNED TO PREPARE INDIVIDUALS FOR OCCUPATIONS GENERALLY CONSIDERED TO BE PROFESSIONAL OR AS REQUIRING THE BACCALAUREATE OR HIGHER DEGREE

Therefore, any program designed to be pre-college work for a program in college to prepare individuals for an occupation requiring a baccalaureate or higher degree cannot be construed as being eligible as a program of vocational education in the public schools.

A fourth important consideration in program planning must include provision of:

ADEQUATE CLASSROOM, SHOP, LABORATORY, ON-THE-JOB SUPERVISED WORK EXPERIENCE AND TRAINING IN COOPERATIVE PART-TIME PROGRAMS, EQUIPMENT, SUPPLIES, ADEQUATE TIME FOR INSTRUCTION AND PROGRAM COORDINATION WITH EMPLOYMENT, EMPLOYMENT OF EDUCATIONALLY AND OCCUPATIONALLY COMPETENT INSTRUCTORS AND OTHER FACILITIES NECESSARY FOR ORGANIZING AND CONDUCTING VOCATIONAL EDUCATION PROGRAMS OF HIGH QUALITY PREPARING STUDENTS FOR GAINFUL EMPLOYMENT

Information regarding policies relating to these requirements is contained in the program sections of the Guide.

Assistance in Planning, Conducting and Evaluating Programs

Advisory Committees

Local public educational institutions should establish advisory committees to provide advice relating to planning, conducting and evaluating the quality and effectiveness of programs. These committees should be appointed by the superintendent of schools. When a school is conducting several types of programs, an over-all advisory committee should be established to advise school officials, teachers and guidance counselors regarding the total program. And, a committee for each program being conducted -- or a sub-committee of the over-all committee -- should be appointed to advise the school in regard to the particular program the committee, or the sub-committee, is appointed to serve.

Additional information relating to the establishment and use of advisory committees is included in the program sections of this Guide.

Evaluation of Programs

Schools are required to evaluate the quality and effectiveness of each program being conducted and to make revisions and improvement as needed to result in programs being realistic in the light of actual or anticipated opportunities for gainful employment in the area served by the school and suited to the needs, interests and ability of students to benefit from the program in which they are enrolled in terms of acquiring the knowledge and skills necessary for entry upon and success in employment in the occupations for which they are trained. Advisory committees with membership consisting of employers and employees can be of valuable assistance in evaluating the quality and effectiveness of programs.

As a phase of evaluation of the quality and effectiveness of programs, schools are required to maintain follow-up records regarding the placement and employment of students after completion of programs in the occupations for which they are trained, in other occupations, numbers entering college instead of employment, and other follow-up information.

Consultative Services and Evaluation of Programs by Staff Members of the Texas Education Agency

In cooperation with school officials, staff members of the Texas Education Agency have responsibility to provide consultation regarding interpretation of policies for initial and continuing approval of programs, methods of organization and operation of programs, evaluation of the quality and effectiveness of programs and making recommendations for revision and improvement as needed.

General Policies on Vocational Education

Eligibility of Local Public Schools for Funds for Programs of Vocational Education in Relation to the Civil Rights Act of 1964

Approval of the compliance plan under the Civil Rights Act of 1964 by the United States Commissioner of Education is necessary before a local public school is eligible for funds for the vocational education program. Schools receiving this approval may have units allocated for the 1964-65 year reallocated for the 1965-66 year only on the same basis as in effect in previous years if they continue to operate separate high schools, provided such reallocation is justified under the Policy on Allocation and Reallocation of Vocational Teacher Units contained in this Guide.

The combined established average daily attendance of all legal high school students, grades nine through twelve, of the school district will constitute the basis for determining its maximum eligibility for vocational teacher units, and the maximum eligibility for any one of the vocational programs, when a school requests approval of an additional fractional unit, or one or more units, above the unit allotment previously made to the school.

Compliance with Title VI, Civil Rights Act of 1964

Reviews of the local educational agency pertaining to compliance with Title VI, Civil Rights Act of 1964, will be conducted periodically by staff representatives of the Texas Education Agency. These reviews will cover at least the following policies and practices:

1. Enrollment and assignment of students without discrimination on the ground of race, color, or national origin.

2. Assignment of teachers and other staff without discrimination on the ground of race, color, or national origin.

3. Non-discriminatory use of facilities.

4. Public notice given by the local educational agency to participants and other citizens of the non-discriminatory policies and practices in effect by the local agency.

In addition to conducting reviews, Texas Education Agency staff representatives will check complaints of non-compliance made by citizens and will report their findings to the United States Commissioner of Education.

Auditing Records of Public Educational Agencies

Licensed public accountants employed by local public schools will, as a part of the audit of school accounts, audit the fiscal records and documents of local public educational agencies pertaining to expenditures claimed for reimbursement on vocational education from the Texas Education Agency. Records and financial documents relating to this program will be subject to audit by staff members employed in the Division of School Audits and in the office of the Business Manager of the Texas Education Agency.

Evaluation of the Quality and Effectiveness of Programs

Local public schools are required to make evaluations of the quality and effectiveness of programs of vocational education, determining to what extent the program approved to prepare high school students for gainful employment continues to be

- Realistic in the light of actual or reliably anticipated opportunities for gainful employment in the area served by the school.

- Suited to the needs, interests and ability of students to benefit from the program in which they are enrolled in terms of acquiring the knowledge and skills necessary for entry upon and success in employment in the occupations for which they are trained.

- Effective regarding the placement and successful employment of students--after completion of the program in which they were enrolled--in the occupation for which they were trained or in closely related occupations. Schools are required to maintain follow-up records on all students enrolled in each program regarding the placement and employment of students, numbers entering college instead of employment, and other follow-up information.

In programs of vocational homemaking education preparing high school girls to become homemakers, periodic evaluations of the quality and effectiveness of such programs are required to be made by the local public schools.

Evaluation of the quality and effectiveness of each program conducted by a public school is required to be made at least annually, utilizing evaluation instruments approved by the Texas Education Agency.

Members of the staff for Vocational Program Development, Coordination and Evaluation and of the several vocational program divisions, Texas Education Agency, cooperating with public schools, will make periodic evaluations to determine the quality and effectiveness of programs.

General Policies on Justification of Need for Programs Preparing High School Students for Gainful Employment

Required Surveys to Justify Need for New and Expanded Programs. When a school makes application for approval of new or expanded programs, need for such program or programs shall be based upon occupational data and employment opportunity

forecasts determined in occupational surveys in the district of the applying school and upon data available from the Texas Employment Commission relating to employment opportunities and trends in the labor market area embracing the district of the applying school. Assistance in surveys by the Texas Education Agency will be provided without charge.

Determining Continuing Need for Programs. Continuing need for programs conducted by a school shall be determined upon the basis of evaluations of the quality and effectiveness of programs described heretofore in this Guide, as well as the ability of the school to justify reallocation of vocational teacher units in accordance with the provisions of the Policy on Allocation and Reallocation of Vocational Teacher Units contained in this Guide.

Consideration of Programs Other Than Those Described in this Guide. Only programs to prepare students for occupations as described in this Guide are eligible for approval, when justified. When approval of programs to prepare students for other occupations is contemplated, prior approval must be made by the Texas Education Agency. Each proposal must be submitted by the superintendent of schools for review by the Assistant Commissioner for Vocational Education working with the staff for Vocational Program Development, Coordination and Evaluation, Vocational Divisional Directors, and the Division of Program Development and School Accreditation. After completion of the review, the applying school will be notified as to acceptability of the proposal in relation to program accreditation and approval.

When an occupation other than those listed in each program section of this Guide is contemplated to be included in a program, prior approval must be made by the Texas Education Agency. Each proposal must be submitted by the superintendent of schools for review by the Assistant Commissioner for Vocational Education working with the staff for Vocational Program Development, Coordination and Evaluation, and Directors of Vocational Program Divisions.

Provision of Training Needed by Students Through Combined Efforts of Two or More Programs of Vocational Education. In order to perform adequately and efficiently in some occupations, persons need instruction in two or more of the traditional areas of vocational education. This need has implications for the interrelationship that should be developed between the various vocational education programs, including the "team approach" or cooperative efforts of instructors in two or more vocational program fields.

The important consideration is to provide high school students the specific instruction they need in order for them to learn the knowledge and skills required in an occupation. Examples of this need for interrelationship of programs are:

> Some students preparing for employment in service stations may require competencies in marketing and selling, in office operations and in automobile mechanics. Hence, three programs should contribute to providing these knowledge and skills--distributive education in providing the marketing instruction, vocational office education in providing the knowledge needed with regard to office operations, and vocational industrial education in relationship to the competencies needed to be learned regarding automobile mechanics.

Some students preparing to be employed in farm machinery establishments may need competency in marketing, agriculture, machine repair, maintenance and operation. Hence, distributive education should provide the training students need in marketing, the agriculture program should provide the training needed by these students with relationship to the functions of the farm equipment in agriculture and some of the instruction with regard to machine repair, maintenance and operation should be provided as farm mechanics in the vocational agriculture program. However, in the manufacture of farm machinery where some phases of machine shop training and other instruction of an industrial nature are involved, the vocational industrial education program should supply these types of training.

The policy of the Texas Education Agency is that programs shall work together in providing the instruction necessary to prepare adequately students for occupations involving knowledge and skills normally supplied by more than one program rather than for one program to attempt to provide training for which the teacher of that program does not have occupational experience background enabling him to provide specific instruction.

General Policies on Programs of Vocational Home Economics Education Preparing Students to Become Homemakers

This program with the objective of preparation of high school girls to become homemakers is not intended nor is it approved by the Texas Education Agency to provide training to prepare students for gainful employment in wage earning or income-producing occupations.

As provided in the program section on vocational home economics education, a separate class or classes having the specific objective of training high school students for gainful employment in occupations requiring knowledge and skills in home economics subjects may be included in this program. Such class or classes will be required to be justified and conducted in accordance with policies applying to other programs preparing students for gainful employment.

Policy on Allocation and Reallocation of Vocational Teacher Units

Minimum Foundation School Districts

General Provisions

To establish and retain its eligibility for a vocational teacher unit, or fractional part of a unit, the applying school agrees to meet and maintain the standards of the current State Plan for Vocational Education as well as policies of the State Board of Education, and to use units for conducting vocational subjects only, except as otherwise provided in program sections of these policies.

When a school does not maintain the standards of the current State Plan for Vocational Education and policies of the State Board of Education, or uses units or fractional parts of units for purposes other than for conducting vocational subjects only, except as otherwise provided in applicable program sections of these policies, cancellation or reduction of the unit allocation to a school district may be made.

Schools agree to provide scheduled time for planning, organizing, conducting, and coordinating the program. The school shall schedule sufficient time for supervision by vocational teachers of vocational students in their required supervised farming programs, home experience programs, or part-time employment and on-the-job training in cooperative part-time programs.

To be eligible for a vocational teacher unit or fractional part of a unit, a district must operate a four-year accredited high school, or be certified as a four-year accredited high school during the current school year by the Commissioner of Education.

Before a four-year accredited high school shall be eligible for consideration for an additional vocational teacher unit, or fractional part of an additional unit, it must justify reallocation of approved existing units in the same vocational field under the section of this policy on Reallocation of Vocational Teacher Units and be eligible for an additional or fractional part of an additional unit under the Formula on Maximum Eligibility for Vocational Teacher Units. In addition to eligibility requirements, the school desiring to expand its vocational program must submit an application for an additional unit or fractional unit to the Vocational Education Division of the State Department of Education by July 1 each year on application forms supplied by that division upon request of the superintendent of schools.

The policy of the State Board of Education shall be to assist schools in providing instruction in each of the several vocational programs for which there is a need, in order to provide on a minimum program basis as many vocational opportunities as is possible in meeting the varying needs and interests of high school students in preparing for existing occupational opportunities in their communities and surrounding areas. Accordingly, consideration shall be given to applying schools having no vocational teacher unit in one or more of the programs, provided there is a need for such program or programs, before consideration is given to schools applying for additional or fractional units in the same vocational fields.

A comprehensive survey of the school and community shall be submitted to the State Department of Education as a part of the application for each vocational teacher unit or fraction thereof. This survey shall include (1) number of eligible high school students to be enrolled in the program, (2) the need of these students and the community for the program, and (3) the facilities the school will provide for the program. Applications for programs to prepare students for gainful employment must be supported by occupational surveys justifying need for the programs.

Definitions of Eligible Students. In establishing its minimum membership of eligible students required to qualify for a vocational teacher unit, a school cannot count the same students in applying for a unit in another vocational field. Students eligible to be counted in allocation and reallocation of units are defined in the following General Definitions and in Definitions of Eligible Students for Each of the Several Programs of Vocational Education.

General Definitions. Students eligible to be counted in the minimum eligible membership required for allocation or reallocation of vocational teacher units, or fractional parts of units, are defined as follows:

Students must be regular high school students of the district, legally enrolled and in regular attendance.

Students who were 21 years of age or older as of September 1 are ineligible to be counted in the minimum number of eligible students required for a unit or fractional part of a unit.

Students contemplated to be enrolled in a program designed to prepare persons for gainful employment must have the interest, aptitudes and ability to benefit from the program in terms of having as their objective entrance into full-time employment in the occupation for which they are to be trained upon completion of the program, and must have the aptitudes, ability and characteristics necessary for employment in their chosen occupation.

Definitions of Eligible Students for Each of the Several Programs of Vocational Education

Vocational Agriculture

Program to Prepare Students to Enter Gainful Employment in Production Agriculture.--Boys regularly enrolled in grades nine through twelve. In addition to the eligibility requirements specified in General Definitions, each boy must have an approved supervised farming program for a minimum of six months each year of enrollment in the program.

For a high school operating a three-year program, boys eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than three years of vocational agriculture, and for a high school operating an approved four-year program, eligible boys shall be students as defined above who have completed less than four years of vocational agriculture.

Programs to Prepare Students to Enter Gainful Employment in Agricultural Occupations requiring knowledge and skills in one or more of the agricultural subjects of animal science, plant science, soil science, agricultural mechanization, farm management, and agricultural leadership:

Cooperative Part-time Program in Agricultural Occupations.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grade. In addition to the eligibility requirement specified in General Definitions, each student must be employed in an approved agricultural occupation requiring knowledge and skills in one or more of the agricultural subjects named above for a minimum of 15 hours per school week (Monday through Friday) each year of enrollment in the program.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Combination of the Cooperative Part-time Program in Agricultural Occupations and the Production Agriculture Program, with the Production Agriculture Program being conducted prior to or in preparation for entrance into the Cooperative Part-time Program.--Students regularly enrolled in grades nine through twelve, with students

regularly enrolled in grades eleven and/or twelve eligible for enrollment in the Cooperative Part-time Program. In addition to the eligibility requirement specified in General Definitions, each boy must have an approved supervised farming program for a minimum of six months each year of enrollment in the Production Agriculture portion of the combined program, and must be employed in an approved agricultural occupation requiring knowledge and skills in one or more agricultural subjects named above for a minimum of 15 hours per school week (Monday through Friday) during each year of enrollment in the Cooperative Part-time portion of the combined program.

Students eligible to be counted for allocation or reallocation of units in a combined program approved for three years shall be students as defined above who have completed less than three years in the program, and for a high school operating a combined program approved for four years, eligible students shall be those as defined above who have completed less than four years in the program.

Pre-employment Laboratory Program in Agricultural Occupations.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grade. In addition to the eligibility requirements specified in General Definitions, each student must have an approved program throughout each year of enrollment in the manipulative processes, technical instruction and practical experience in the school classroom, farm mechanics shop, laboratories and in field trip experiences directly related to the agricultural occupation or related cluster of such occupations requiring knowledge and skills in one or more of the agricultural subjects named above.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Combination of the Pre-employment Laboratory Program in Agricultural Occupations and the Production Agriculture Program, with the Production Agriculture Program being conducted prior to or in preparation for entrance into the Pre-employment Laboratory Program.--Students regularly enrolled in grades nine through twelve with students regularly enrolled in grades eleven and/or twelve eligible for enrollment in the Pre-employment Laboratory Program. In addition to the eligibility requirements specified in General Definitions, each boy must have an approved supervised farming program for a minimum of six months each year of enrollment in the Production Agriculture portion of the combined program, and must have an approved program throughout each year of enrollment in the Pre-employment Laboratory portion of the combined program consisting of manipulative processes, technical instruction and practical experience in the school classroom, farm mechanics shop, laboratories and in field trip experiences directly related to the agricultural occupation or cluster of such occupations requiring knowledge and skills in one or more of the agricultural subjects named above.

Students eligible to be counted for allocation or reallocation of units in a combined program approved for three years shall be students as defined above who have completed less than three years in the program, and for a high school operating a combined program approved for four years, eligible students shall be those as defined above who have completed less than four years in the program.

Vocational Home Economics Education

Program of Vocational Homemaking Education to Prepare Students to Become Homemakers.--Girls regularly enrolled in grades nine through twelve. In addition to the eligibility requirements specified in General Definitions--excepting provisions relating to programs to prepare students for gainful employment--each girl must have an approved home experience program supervised by her vocational homemaking education teacher for a minimum of six weeks each school semester of enrollment in the program.

For a high school operating a three-year program, girls eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than three years of vocational homemaking education, and for a high school operating an approved four-year program, eligible girls shall be students as defined above who have completed less than four years of vocational homemaking education. Included in the homemaking education program in which enrollment of eligible girls is to be counted is enrollment of such eligible students in the home and family living course and other vocational homemaking education courses approved in Bulletin 615, "Principles and Standards for Accrediting Elementary and Secondary Schools and Description of Approved Courses, Grades 7-12."

Programs to Prepare Students to Enter Gainful Employment in Home Economics Occupations requiring knowledge and skills in one or more home economics subjects including child development, food and nutrition, clothing and textiles, home and institutional management and home furnishings and equipment:

Cooperative Part-time Home Economics Program.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grade. In addition to the eligibility requirements specified in General Definitions, each student must be employed in an approved occupation requiring knowledge and skills in one or more of the home economics subjects named above for a minimum of 15 hours per school week (Monday through Friday) each year of enrollment in the program.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Combination of the Cooperative Part-time Home Economics Program and the Vocational Homemaking Education Program to Prepare Students to Become Homemakers, with the Vocational Homemaking Education Program being conducted prior to or in preparation for entrance into the Cooperative Part-time Program.--Students regularly enrolled in grades nine through twelve, with students regularly enrolled in grades eleven and/or twelve eligible for enrollment in the Cooperative Part-time Program. In addition to the eligibility requirements specified in General Definitions, each girl must have an approved home experience program supervised by her vocational homemaking education teacher for a minimum of six weeks each semester of enrollment in the vocational homemaking education portion of the combined program, and must be employed in an approved home economics occupation requiring knowledge and skills in one or more of the home economics subjects named above for a minimum of fifteen hours per school week (Monday through Friday) during each year of enrollment in the Cooperative Part-time portion of the combined program.

Students eligible to be counted for allocation or reallocation of units in a combined program approved for three years shall be students as defined above who have completed less than three years in the program, and for a high school operating a combined program approved for four years, eligible students shall be those as defined above who have completed less than four years in the program.

Pre-employment Laboratory Program in Home Economics Occupations.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grades. In addition to the eligibility requirements specified in General Definitions, each student must have an approved program throughout each year of enrollment in the manipulative processes, technical instruction and practical experience in the school classroom, home economics laboratories, and in field trip experiences directly related to the occupation or cluster of such occupations requiring knowledge and skills in one or more home economics subjects named above.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Combination of the Pre-employment Laboratory Program in Home Economics Occupations and the Vocational Homemaking Education Program to Prepare Students to Become Homemakers, with the Vocational Homemaking Education Program being conducted prior to or in preparation for entrance into the Pre-employment Laboratory Program.--Students regularly enrolled in grades nine through twelve with students regularly enrolled in grades eleven and/or twelve eligible for enrollment in the Pre-employment Laboratory portion of the program. In addition to the eligibility requirements specified in General Definitions, each girl must have an approved home experience program supervised by her vocational homemaking education teacher for a minimum of six weeks each semester of enrollment in the vocational homemaking education portion of the combined program, and must have an approved program throughout each year of enrollment in the Pre-employment Laboratory portion of the combined program consisting of manipulative processes, technical instruction and practical experience in the school classroom, home economics laboratories, and in field trip experiences directly related to the occupation or cluster of such occupations requiring knowledge and skills in one or more home economics subjects named above.

Students eligible to be counted for allocation or reallocation of units in a combined program approved for three years shall be students as defined above who have completed less than three years in the program, and for a high school operating a combined program approved for four years. eligible students shall be those as defined above who have completed less than four years in the program.

Vocational Distributive Education

Programs to Prepare Students for Gainful Employment in Distribution and Marketing Occupations:

Cooperative Part-time Program in Distributive Education.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grade. In addition to the eligibility requirements specified in General Definitions, each student

must be employed in an approved distributive occupation for a minimum of 15 hours per school week (Monday through Friday) each year of enrollment in the program.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Pre-employment Laboratory Program in Distributive Occupations.--Students fourteen years of age or older regularly enrolled in grades eleven and/or twelve. In addition to the eligibility requirements specified in General Definitions, each student must have an approved program throughout each year of enrollment in the manipulative processes, technical instruction and practical experience in the school classroom, distributive education laboratories and in field trip experiences directly related to the distributive occupation or cluster of such occupations for which training for employment is being conducted.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Combination of the Cooperative Part-time Program in Distributive Education and the Pre-employment Laboratory Program in Distributive Occupations with the Pre-employment Laboratory Program being conducted in preparation for entrance into the Cooperative Part-time Program.--Students fourteen years of age or older regularly enrolled in grades ten through twelve with students regularly enrolled in grades ten and/or eleven eligible for enrollment in the Pre-employment Laboratory portion of the program. In addition to the eligibility requirements specified in General Definitions, each student must have an approved program throughout each year of enrollment in the Pre-employment Laboratory portion of the combined program consisting of manipulative processes, technical instruction and practical experience in the school classroom, distributive education laboratories and in field trip experiences directly related to the distributive occupation or cluster of such occupations for which training for employment and for preparation for entering the Cooperative Part-time Program is being conducted. And, each student must be employed in an approved distributive occupation for a minimum of 15 hours per school week (Monday through Friday) during each year of enrollment in the Cooperative Part-time portion of the combined program.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than three years in the combined program.

Vocational Industrial Education

Programs to Prepare Students for Gainful Employment in Trade, Industrial, Health and Technical Occupations

Cooperative Part-time Program in Industrial Education.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grade. In addition to the eligibility requirements specified in General Definitions, each student

must be employed in an approved trade or occupation a minimum of 15 hours per school week (Monday through Friday) each year of enrollment in the program.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Pre-employment Shop Program in Industrial Education for Skilled Occupations.--Students regularly enrolled in grades ten through twelve. In addition to the eligibility requirements specified in General Definitions, each student must have an approved program throughout each year of enrollment in the manipulative processes, technical instruction and practical experiences in the school classroom, vocational industrial shops, laboratories and in field trip experiences directly related to the skilled trade or industrial occupation or clusters of such occupations for which training for employment is being conducted.

For a high school operating a two-year program, students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years of vocational industrial shop, and for a high school operating an approved three-year program, eligible students shall be those as defined above who have completed less than three years of vocational industrial shop.

Pre-employment Shop Program in Industrial Education for Single-skill Occupations.--Students regularly enrolled in grades ten through twelve. In addition to the eligibility requirements specified in General Definitions, each student must have an approved program throughout each year of enrollment in the manipulative processes, technical instruction and practical experience in the school classroom, vocational industrial shops, laboratories and in field trip experiences directly related to the single-skill industrial payroll job classification for which training for employment is being conducted.

Students eligible to be counted for allocation or reallocation of units in a program approved for one year shall be students as defined above who have completed less than one year in the program, and for a high school operating an approved two-year program, eligible students shall be those as defined above who have completed less than two years in the program.

Cooperative Part-time Program in Health Occupations.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grade. In addition to the eligibility requirements specified in General Definitions, each student must be employed in an approved health occupation a minimum of 15 hours per school week (Monday through Friday) each year of enrollment in the program.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Vocational Technical Education

Program to Prepare Students for Gainful Employment in Technical Occupations:

Pre-employment Laboratory Program in Technical Occupations.--Students sixteen years of age or older regularly enrolled in the eleventh or twelfth grade.

In addition to the eligibility requirements specified in General Definitions, each student must have excellent aptitudes and ability in mathematics and should have completed plane geometry and two years of algebra, have good scholastic achievement in science courses, have excellent aptitudes for technical education, and satisfactory ratings from testing and counseling programs providing justifiable evidence that the student can comprehend instruction in technical education to prepare him for efficient employment in such occupations.

Each student must have an approved program throughout each year of enrollment in mathematica. and scientific instruction, manipulative processes involved in use of instruments, machines, tools and technical equipment, technical instruction and practical experience in the school classroom, technical education laboratories, and in field trip experiences directly related to the technical occupation or cluster of such occupations for which training for employment is being conducted.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than two years in the program.

Vocational Office Education

Program to Prepare Students for Gainful Employment in Office Occupations:

Cooperative Part-time Program in Office Education.--Students sixteen years of age or older regularly enrolled in the twelfth grade. In addition to the eligibility requirements specified in General Definitions, each student must have completed one or more years of instruction in basic business subjects prior to entering the Cooperative Part-time Program and each student must be employed in an approved office occupation for a minimum of 15 hours per school week (Monday through Friday) during the year of enrollment in the program.

Students eligible to be counted for allocation or reallocation of units shall be students as defined above who have completed less than one year in the program.

Special Provisions Relating to Allocation and Reallocation of Vocational Teacher Units

Participation of Ineligible Students in Vocational Education Programs.--Establishment of student membership eligible to be counted in qualifying for a vocational unit, as defined above for each vocational program, does not preclude the use of a unit for giving vocational instruction meeting program requirements of this policy to students who are ineligible to be counted in the allocation or reallocation of a unit, provided that: (a) such students contemplated to be enrolled in a program designed to prepare persons for gainful employment must have the interest, aptitudes and ability to benefit from the program in terms of having as their objective entrance into full-time employment in the occupation for which they are to be trained upon completion of the program, and must have the aptitudes, ability and characteristics necessary for employment in the occupation for which the program is designed to prepare students, and (b) if such students are included, the teacher will have sufficient time to carry

out the full scope of the program for which the unit was allocated or reallocated, based upon eligible student membership.

Allocation of Cooperative Vocational Teacher Units.--If two schools make application for a cooperative vocational teacher unit, the application shall be eligible for consideration provided the minimum eligible student membership for the unit in each school is fifteen.

Dates for Application of New and Additional Vocational Teacher Units.--Application for new and additional vocational teacher units should be filed with the Division of Vocational Education of the State Department of Education as early as possible before July 1 of each year. Special consideration may be given to approval of new and additional units proposed to be started with the second semester of the school year in cases where special need may arise and can be justified. Such applications should be filed with the Department before January 1 of each year.

Special Consideration of Applications for Vocational Teacher Units Because of Unusual Circumstances.--Special consideration may be given to applications for vocational units, or fractions thereof, which, because of unusual circumstances, cannot conform to all the requirements herein established.

Allocation of New Vocational Teacher Units

A new vocational teacher unit is defined as a unit or fractional part of a unit allocated to a school having no unit in the vocational program for which application is being made.

Requirements for Justification of New Units in Addition to Having Sufficient Number of Eligible Students.--Need for programs designed to prepare high school students for gainful employment must be justified upon findings of occupational surveys as described in this Guide under "Important Considerations in Program Planning," and as specified in General Policies on Vocational Education under "Required Surveys to Justify Need for New and Expanded Programs."

Allocation of New Vocational Agriculture Teacher Units.--The term, "vocational agriculture teacher unit," means a unit for (1) a Program in Production Agriculture, or (2) Cooperative Part-time Training in Agricultural Occupations, or (3) Combined Program in Production Agriculture and Cooperative Part-time Training in Agricultural Occupations, or (4) Pre-employment Laboratory Training in Agricultural Occupations, or (5) Combined Program in Production Agriculture and Pre-employment Laboratory Training in Agricultural Occupations.

Allocation of New Vocational Teacher Units for the Program in Production Agriculture

To be eligible for consideration for a unit, three-fourths unit, or one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit--two classes and 30 eligible boys; three-fourths unit--two classes and 22 eligible boys; one-half unit--one or more classes and 15 eligible boys.

A unit shall be operated on a twelve-months basis. A three-fourths or one-half unit shall operate on the same basis as a full unit with the school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in vocational agriculture.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational agriculture teacher units. For each unit allocated, a minimum of two classes in this program is required.

When more than one unit is allocated to one high school, a minimum membership of 72 eligible boys is required for two units in a three-year program or 80 such eligible students for a four-year program, and for allocation of three or more units, a minimum membership of 40 eligible boys is necessary for each unit in a three-year program or 44 such eligible students in a four-year program.

A vocational agriculture teacher in either a full unit or fractional part of a unit may be assigned one study hall period each school day provided he is teaching no more than three class hours of vocational agriculture per day, if with one study hall assignment he will have sufficient time to carry out the full scope of the program. This precludes the assignment of non-vocational agriculture subjects, bus driving, coaching, physical education, principalships, part-time principalships, and extracurricular activities that exceed the amount assigned other teachers who are carrying a full teaching load.

Allocation of New Vocational Teacher Units for Cooperative Part-time Training in Agricultural Occupations

To be eligible for consideration for a unit, three-fourths unit, or a one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit--two classes and 30 eligible boys; three-fourths unit--two classes and 22 eligible boys; one-half unit--one or more classes and 15 eligible boys.

A unit shall be operated for ten consecutive calendar months beginning on August 1, or a calendar month in advance of the opening date of the school year. A three-fourths or one-half unit is allocated on a nine-months basis with the teacher assigned each school day for three-fourths time or one-half time, respectively, in conducting at least the minimum number of classes required and utilizing the remainder of the time in planning, organizing, coordinating and supervising the program, including the part-time employment of students, organization of instructional materials, and in performing other necessary duties related to this program.

Applications may be considered for allocation of a three-fourths or a one-half unit on a ten-months basis, with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I., the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational agriculture teacher units. For each unit allocated, a minimum of two classes in this program is required. When more than one unit is allocated to one high school, a minimum membership of 72 eligible students is required for two units, and when three or more units are allocated, a minimum membership of 40 eligible students is necessary for each unit.

A teacher employed in a full unit, or in a fractional part of a unit approved for ten months, with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund, may be assigned one study hall period each school day provided he is teaching no more than two classes in this program, if with one study hall assignment he will have sufficient time to carry out the full scope of the program.

Allocation of New Vocational Teacher Units for a Combined Program in Production Agriculture and Cooperative Part-time Training in Agricultural Occupations
(Classes in each type of the combined program must be conducted separately)

To be eligible for consideration for a unit, three-fourths unit, or one-half unit, the applying high school must have the following minimum eligible student membership and number of classes in the program: one unit--30 eligible boys and at least two classes, with one or more in Production Agriculture and one or more in Cooperative Part-time Training; three-fourths unit--22 eligible boys and at least two classes, with one or more in Production Agriculture and one or more in Cooperative Part-time Training; one-half unit--15 eligible boys and at least two classes with one or more in Production Agriculture and one or more in Cooperative Part-time Training.

A unit in this combined program shall be allocated on a twelve-months basis. A three-fourths or a one-half unit is allocated on the same basis as a full unit with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational agriculture units. For each unit allocated for this combined program, a minimum of three classes is required, with one or more in Production Agriculture and one or more in Cooperative Part-time Training. When more than one unit is allocated to one high school, a minimum membership of 72 eligible boys is required for two units in a three-year program or 80 such eligible students for a four-year program, and for allocation of three or more units, a minimum membership of 40 eligible boys is necessary for each unit in a three-year program or 44 such eligible students in a four-year program.

A teacher employed in either a full unit or fractional part of a unit may be assigned one study hall period each school day provided he is teaching no more than three class hours per day in this program, if with one study hall assignment he will have sufficient time to carry out the full scope of the program.

Allocation of New Vocational Teacher Units for Pre-employment Laboratory Training in Agricultural Occupations

To be eligible for consideration for a unit or one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit--two classes and 30 eligible boys; one-half unit--one class and 15 eligible boys. A unit or one-half unit is allocated on a nine-months basis.

Consideration may be made of an application for more than one unit in the same agricultural subject in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational agriculture teacher units. For each unit allocated in the same agricultural subject, a minimum of two classes in this program is required. When more than one unit in the same agricultural subject is allocated to one high school, a minimum membership of 72 eligible boys is required for two units and for allocation of three or more units, a minimum membership of 40 such eligible students is necessary for each unit.

Allocation of New Vocational Teacher Units for a Combined Program in Production Agriculture and Pre-employment Laboratory Training in Agricultural Occupations

(Classes in each type of the combined program must be conducted separately)

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum eligible student membership and number of classes in the program: one unit--30 eligible boys and at least two classes, with one or more in Production Agriculture and one in Pre-employment Laboratory Training in Agricultural Occupations; three-fourths unit--22 eligible boys and at least two classes, with one or more in Production Agriculture and one in the Pre-employment Laboratory program; one-half unit--15 eligible boys and at least two classes, with one or more in Production Agriculture and one in the Pre-employment Laboratory program.

A unit in this combined program shall be allocated on a twelve-months basis. A three-fourths or one-half unit is allocated on the same basis as a full unit with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational agriculture teacher units. For each unit allocated for this combined program, at least a minimum of two classes is required, with one or more in Production Agriculture and one in Pre-employment Laboratory Training in Agricultural Occupations. When more than one unit is allocated to one high school, a minimum membership of 72 eligible boys is required for two units in a three-year program or 80 such eligible students for a four-year program, and for allocation of three or more units, a minimum membership of 40 eligible boys is necessary for each unit in a three-year program or 44 such eligible students in a four-year program.

Allocation of New Vocational Homemaking Education Teacher Units.--The term, "vocational homemaking education teacher unit," means a unit for (1) a Program in Vocational Homemaking Education to prepare students to become homemakers, or (2) Cooperative Part-time Training in Home Economics Occupations, or (3) Combined Program in Vocational Homemaking Education and Cooperative Part-time Training in Home Economics Occupations, or (4) Pre-employment Laboratory Training in Home Economics Occupations, or (5) Combined Program in Vocational Homemaking Education and Pre-employment Laboratory Training in Home Economics Occupations.

Allocation of New Vocational Teacher Units for a Program in Vocational Homemaking Education

To be eligible for consideration of a unit, three-fourths unit, or a one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit--two or more classes and 30 eligible girls; three-fourths unit--two or more classes and 22 eligible girls; one-half unit--one or more classes and 15 eligible girls.

A unit shall be allocated for ten consecutive calendar months. A three-fourths or one-half unit is allocated on a nine-months basis with the teacher assigned three-fourths time or one-half time, respectively, in conducting at least the minimum number of classes required and utilizing the remainder of the time in planning, organizing, coordinating and supervising the required home experience programs of students, preparation of instructional materials and reports, and in performing other necessary duties related to the program.

Application may be considered for allocation of a three-fourths or a one-half unit on a ten-months basis, with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

In school systems employing more than one teacher on a ten-months basis, it may be desirable to employ one or more of the teachers for a different month or for two one-half months periods during June, July and August in order to provide a continuous program for high school girls and adults. Applications for employment of the teacher on a non-consecutive ten-months basis should be filed by the superintendent of schools with the Division of Vocational Education of the State Department of Education as early as possible before June 1 of the year for which approval of non-consecutive employment of the teacher is requested. It is necessary that a schedule showing the months or the two one-half months periods that each teacher is to be employed be submitted with the application.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational homemaking education teacher units. For each unit allocated, a minimum of two 90-minute or three 55-minute classes enrolling eligible high school girls in this program is required. When more than one unit is allocated to one high school, a minimum membership of 88 eligible girls is required for two units in a three-year program or 96 such eligible students in a four-year program, and for allocation of three or more units, a minimum membership of 56

eligible girls is necessary for each unit in a three-year program or 60 such eligible students for a four-year program.

In each full unit allocated, a minimum of two class periods per school day shall be scheduled for each teacher for organization and supervision of the required home experience programs of students, providing programs of instruction for young and adult homemakers and sponsorship for the Future Homemakers of America organization in the school, securing and preparing instructional materials, compiling reports and performing other necessary duties related to this program.

A teacher employed in a full unit, or in a fractional part of a unit approved for ten months with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund, may be assigned one study hall period each day, or one vocational homemaking class for eighth grade students, or one vocational homemaking class for high school boys, or one class period for counseling with students and school personnel on nutrition, provided she is teaching no more than two 90-minute or three 55-minute classes of vocational homemaking education composed of eligible high school girls, if with one of these assignments she will have sufficient time to carry out the full scope of the program for which the unit or fractional unit is allocated or reallocated. This precludes assignment to the teacher of non-vocational homemaking subjects, management or operation of food service in the school lunch program, coaching, physical education, and extracurricular activities that exceed the amount assigned other teachers who are carrying a full teaching load.

Allocation of New Vocational Teacher Units for Cooperative Part-time Training in Home Economics Occupations

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit--two classes and 30 eligible girls; three-fourths unit--two classes and 22 eligible girls; one-half unit--one or more classes and 15 eligible girls.

A unit shall be operated for ten consecutive calendar months beginning on August 1, or a calendar month in advance of the opening date of the school year. A three-fourths or one-half unit is allocated on a nine-months basis with the teacher assigned each school day for three-fourths time or for one-half time, respectively, in conducting at least the minimum number of classes required and utilizing the remainder of the time in planning, organizing, coordinating and supervising the program, including the part-time employment of students, organization of instructional materials, and in performing other necessary duties related to this program.

Application may be considered for allocation of a three-fourths or one-half unit on a ten-months basis with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational homemaking education teacher units. For each unit allocated a minimum of two classes in this program is required. When more than one unit is allocated to one high school, a minimum membership of 72 eligible students is required for two units and when three or more units are allocated, a minimum membership of 40 eligible students is necessary for each unit.

A teacher employed in a full unit, or in a fractional part of a unit approved for ten months, with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund, may be assigned one study hall period each school day provided she is teaching no more than two classes in this program, if with one study hall assignment she will have sufficient time to carry out the full scope of the program.

Allocation of New Vocational Teacher Units for a Combined Program in Vocational Homemaking Education and Cooperative Part-time Training in Home Economics Occupations

(Classes in each type of the combined program must be conducted separately)

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum eligible student membership and number of classes in the program: one unit--30 eligible girls and at least two classes, with one or more in Vocational Homemaking Education and one or more in Cooperative Part-time Training; three-fourths unit--22 eligible girls and at least two classes, with one or more in Vocational Homemaking Education and one or more in Cooperative Part-time Training; one-half unit--15 eligible girls and at least two classes, with one or more in Vocational Homemaking Education and one or more in Cooperative Part-time Training.

A unit in this combined program shall be allocated on a ten-months basis. A three-fourths or a one-half unit is allocated on a nine-months basis. An application may be considered for allocation of a fractional part of a unit on a ten-months basis with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational homemaking education teacher units. For each unit allocated for this combined program, a minimum of three classes is required, with one or more in Vocational Homemaking Education and one or more in Cooperative Part-time Training. When more than one unit is allocated to one high school, a minimum membership of 80 eligible girls is required for two units in a three-year program or 88 such eligible students in a four-year program, and for allocation of three or more units, a minimum membership of 48 eligible girls is necessary for each unit in a three-year program or 52 such eligible students in a four-year program.

A teacher employed in either a full unit, or fractional part of a unit approved for ten months with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund may be assigned one study hall period each school day provided she is teaching no more than three class periods per day in this program, if with one study hall assignment she will have sufficient time to carry out the full scope of this program.

Allocation of New Vocational Teacher Units for Pre-employment Laboratory Training in Home Economics Occupations

To be eligible for consideration for a unit or a one-half unit, the applying school must have the following minimum number of classes and eligible student membership in the program: one unit--two or more classes and 30 eligible girls; one-half unit--two classes and 15 eligible girls.

A unit with the teacher assigned full time in the program is allocated on a nine-months basis. A one-half unit is allocated on a nine-months basis with the teacher assigned for one-half time each school day in conducting at least the minimum number of classes required, and in planning, organizing and supervising the vocational projects of students enrolled in the program, organizing instructional materials and performing other necessary duties related to this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational homemaking education teacher units. For each unit allocated, a minimum of two classes is required. When more than one unit is allocated to one high school, a minimum membership of 88 eligible girls is required for two units and for allocation of three or more units a minimum membership of 56 such eligible students is necessary for each unit.

Allocation of New Vocational Homemaking Education Teacher Units for A Combined Program in Vocational Homemaking Education and Pre-employment Laboratory Training in Home Economics Occupations

(Classes in each type of the combined program must be conducted separately)

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum student membership and number of classes in the program: one unit--30 eligible girls and three or more classes, with one or more in Vocational Homemaking Education and one or more in Pre-employment Laboratory Training; three-fourths unit--22 eligible girls and two or more classes, with one or more in Vocational Homemaking Education and one or more in Pre-employment Laboratory Training; one-half unit--15 eligible girls and two classes, with one in Vocational Homemaking Education and one in Pre-employment Laboratory Training.

A unit in this combined program shall be allocated on a ten-months basis. A three-fourths or a one-half unit is allocated on a nine-months basis. When at least one-half of the program is in Vocational Homemaking Education, an application may be considered for allocation of a fractional part of a unit on a ten months basis with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational homemaking education teacher units. For each unit allocated for this combined program, a minimum of three classes is required, with one or more in Vocational Homemaking Education and one or more in Pre-employment Laboratory Training. When more than one unit is allocated to one high school, a minimum membership of 88 eligible girls is required for two units in a three-year program or 96 such eligible students in a four-year program, and for allocation of three or more units, a minimum membership of 56 eligible girls is necessary for each unit in a three-year program or 60 such eligible students in a four-year program.

A teacher employed in a full unit, or in a fractional part of a unit approved for ten months with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund, may be assigned one study hall period each day, or one vocational homemaking class for eighth grade students, or one vocational homemaking class for high school boys, or one class period for counseling with students and school personnel on nutrition, provided she is teaching no more than two 90-minute or three 55-minute classes of vocational homemaking education composed of eligible high school girls, if with one of these assignments she will have sufficient time to carry out the full scope of the program for which the unit or fractional unit is allocated or reallocated. This precludes assignment to the teacher of non-vocational homemaking subjects, management or operation of food service in the school lunch program, coaching, physical education, and extracurricular activities that exceed the amount assigned other teachers who are carrying a full teaching load.

Application for Extending a Ten-months Unit to a Twelve-months Basis

(This provision is not applicable to the Pre-employment Laboratory Program or the Cooperative Part-time Program when not conducted in a combined program with Vocational Homemaking Education)

A high school applying for expansion of a ten-months unit to a twelve-months unit must include with the application a satisfactory plan justifying the need for extending the duration of the program.

Allocation of New Vocational Distributive Education Teacher Units.--The term, "vocational distributive education teacher unit," means a unit for a program in (1) Cooperative Part-time Distributive Education, or (2) Pre-employment Laboratory Training in Distributive Occupations, or (3) Combined Program in Cooperative Part-time Distributive Education and Pre-employment Laboratory Training in Distributive Occupations.

Allocation of New Cooperative Part-time Distributive Education Teacher Units

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit -- two classes and 30 eligible students; three-fourths unit -- two classes and 22 eligible students; one-half unit -- one or more classes and 15 eligible students.

A unit shall be operated for ten consecutive calendar months beginning on August 1, or a calendar month in advance of the opening date of the school year. A three-fourths unit or one-half unit is allocated on a nine-months basis with the teacher assigned each school day for three-fourths time or for one-half time, respectively, in conducting at least the minimum number of classes required and utilizing the remainder of the time in planning, organizing, coordinating and supervising the program, including the part-time employment of students, organization of instructional materials, and performing other necessary duties related to the program.

Application may be considered for allocation of a three-fourths or one-half unit on a ten-months basis with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility of Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational distributive education teacher units. For each unit allocated, a minimum of two classes in this program is required. When more than one unit is allocated to one high school, a minimum membership of 72 eligible students is required for two units and when three or more units are allocated, a minimum membership of 40 eligible students is necessary for each unit.

A teacher employed in a full unit, or in a fractional part of a unit with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund, may be assigned one study hall period each school day provided he is teaching no more than two classes in this program, if with one study hall assignment he will have sufficient time to carry out the full scope of the program.

Allocation of New Vocational Teacher Units for Pre-employment Laboratory Training in Distributive Occupations

To be eligible for consideration for a unit, or a one-half unit, the applying high school must have the following number of classes and eligible student

membership in the program: one unit -- two classes and 30 eligible students; one-half unit -- two classes and 15 eligible students.

A unit with the teacher assigned full time in the program is allocated on a nine-months basis. A one-half unit is allocated on a nine-months basis with the teacher assigned for one-half time each school day in conducting at least the minimum number of classes required, and in planning, organizing and supervising the vocational projects of students enrolled in the program, organizing instructional materials and performing other necessary duties related to this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of distributive education teacher units. For each unit allocated, a minimum of two classes is required. When more than one unit is allocated to one high school, a minimum membership of 88 eligible students is required for two units and for allocation of three or more units a minimum membership of 56 eligible students is necessary for each unit.

Allocation of New Vocational Teacher Units for a
Combined Program in Cooperative Part-time Distributive Education and
Pre-employment Laboratory Training in Distributive Occupations
(Classes in each type of the combined program must be conducted separately)

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying school must have the following minimum student membership and number of classes: one unit -- 30 eligible students and two or more classes, with one or more in Cooperative Part-time Distributive Education and one or more in Pre-employment Laboratory Training; three-fourths unit -- 22 eligible students and two or more classes, with one or more in Cooperative Part-time Distributive Education and one or more in Pre-employment Laboratory Training; one-half unit -- 15 eligible students and two classes, with one in Cooperative Part-time Distributive Education and one in Pre-employment Laboratory Training.

A unit in this combined program shall be allocated on a ten-months basis. A three-fourths or a one-half unit is allocated on a nine-months basis. When at least one-half of the program is in Cooperative Part-time Distributive Education, an application may be considered for allocation of a fractional part of a unit on a ten-months basis with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of distributive education teacher units. For each unit allocated for this combined program a minimum of three classes is required, with one or more in Cooperative Part-time Distributive Education and one or more in Pre-employment Laboratory Training. When more than one unit is allocated to one high school, a minimum membership

of 80 eligible students is required for two units in a two-year program or 88 such eligible students in a three-year program and for allocation of three or more units, a minimum membership of 48 eligible students is necessary in a two-year program or 52 such eligible students in a three-year program.

Allocation of New Vocational Industrial Education Teacher Units.--The term, "vocational industrial education teacher unit," means a unit for a program in (1) Vocational Industrial Cooperative Part-time Training. or (2) Pre-employment Shop Training in Industrial Education for Skilled Occupations, or (3) Pre-employment Shop Training in Industrial Education for Single-skill Occupations, or (4) Cooperative Part-time Training in Health Occupations, or (5) Pre-employment Training in Technical Occupations.

Allocation of New Vocational Industrial Education Cooperative Part-time Training Teacher Units

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit -- two classes and 30 eligible students; three-fourths unit -- two classes and 22 eligible students; one-half unit -- one or more classes and 15 eligible students.

A unit shall be operated for ten consecutive calendar months beginning on August 1, or a calendar month in advance of the opening date of the school year. A three-fourths unit or one-half unit is allocated on a nine-months basis with the teacher assigned each school day for three-fourths time or for one-half time, respectively, in conducting at least the minimum number of classes required and utilizing the remainder of the time in planning, organizing, coordinating and supervising the program, including the part-time employment of students, organization of instructional materials, and performing other necessary duties related to the program.

Application may be considered for allocation of a three-fourths or one-half unit on a ten-months basis with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility of Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational industrial education teacher units. For each unit allocated, a minimum of two classes in this program is required. When more than one unit is allocated to one high school, a minimum membership of 72 eligible students is required for two units and when three or more units are allocated, a minimum membership of 40 eligible students is necessary for each unit.

A teacher employed in a full unit, or in a fractional part of a unit with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund, may be assigned one study hall period each school day provided he is teaching no more than two classes in this program, if with one study hall assignment he will have sufficient time to carry out the full scope of the program.

Allocation of New Vocational Teacher Units for Pre-employment Shop Training in Industrial Education for Skilled Occupations

To be eligible for consideration for a unit or one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit -- two classes and 30 eligible students; one-half unit -- one class and 15 eligible students. A unit or one-half unit is allocated on a nine-months basis.

Consideration may be made of an application for more than one unit in the same industrial subject in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational industrial education teacher units. For each unit allocated in the same industrial subject, a minimum of two classes in this program is required. When more than one unit in the same industrial subject is allocated to one high school, a minimum membership of 72 eligible students is required for two units and for allocation of three or more units, a minimum membership of 40 such eligible students is necessary for each unit.

Allocation of New Vocational Teacher Units for Pre-employment Shop Training in Industrial Education for Single-skill Occupations

To be eligible for consideration for a unit, the applying high school must have a minimum membership of 30 eligible students and three classes in the program. A unit shall be operated on a nine-months basis.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational industrial education teacher units. For each unit allocated in the same industrial subject, three classes are required in this program. When more than one unit in the same industrial subject is allocated to one high school, a minimum membership of 72 eligible students is required for two units and for allocation of three or more units, a minimum membership of 40 eligible students is necessary for each unit.

Allocation of New Vocational Teacher Units in Cooperative Part-time Training in Health Occupations

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit -- two classes and 30 eligible students; three-fourths unit -- two classes and 22 eligible students; one-half unit -- one or more classes and 15 eligible students.

A unit shall be operated for ten consecutive calendar months beginning on August 1, or a calendar month in advance of the opening date of the school year. A three-fourths unit or one-half unit is allocated on a nine-months basis with the teacher assigned each school day for three-fourths time or for one-half time, respectively, in conducting at least the minimum number of classes required and utilizing the remainder of the time in planning, organizing, coordinating and supervising the program, including the part-time employment of students, organization of instructional materials, and performing other necessary duties related to the program.

Application may be considered for allocation of a three-fourths or one-half unit on a ten-months basis with the applying school agreeing to pay the portion of salary not allowed from the Minimum Foundation School Program Fund and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility of Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational industrial education teacher units including cooperative part-time training in health occupations. For each unit allocated, a minimum of two classes in this program is required. When more than one unit is allocated to one high school, a minimum membership of 72 eligible students is required for two units and when three or more units are allocated, a minimum membership of 40 eligible students is necessary for each unit.

A teacher employed in a full unit, or in a fractional part of a unit with the school paying the portion of salary not allowed from the Minimum Foundation School Program Fund, may be assigned one study hall period each school day provided she is teaching no more than two classes in this program, if with one study hall assignment she will have sufficient time to carry out the full scope of the program.

Allocation of Vocational Teacher Units in Pre-employment Laboratory Training in Technical Occupations

To be eligible for consideration for a unit or one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit -- two classes and 30 eligible students; one-half unit -- one class and 15 eligible students. A unit or one-half unit is allocated on a nine-months basis.

Consideration may be made of an application for more than one unit in the same technical subject in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units. This formula specifies the maximum eligibility for all types of vocational industrial education teacher units including pre-employment laboratory training in technical occupations. For each unit allocated in the same technical subject, a minimum of two classes in this program is required. When more than one unit in the same technical subject is allocated to one high school, a minimum membership of 72 eligible students is required for two units and for allocation of three or more units, a minimum membership of 40 such eligible students is necessary for each unit.

Allocation of New Vocational Teacher Units in Office Occupations.--The term, "vocational teacher unit in office occupations," means a unit for a program in Cooperative Part-time Vocational Office Education.

Allocation of New Vocational Teacher Units in Cooperative Part-time Vocational Office Education

To be eligible for consideration for a unit, a three-fourths unit, or a one-half unit, the applying high school must have the following minimum number of classes and eligible student membership in the program: one unit -- two classes and 30 eligible students; three-fourths unit -- two classes and 22 eligible students; one-half unit -- one or more classes and 15 eligible students.

A unit shall be operated for ten consecutive calendar months beginning on August 1, or a calendar month in advance of the opening date of the school year. A three-fourths unit or one-half unit is allocated on a nine-months basis with the teacher assigned each school day for three-fourths time or for one-half time, respectively, in conducting at least the minimum number of classes required and utilizing the remainder of the time in planning, organizing, coordinating and supervising the program, including the part-time employment of students, organization of instructional materials, and performing other necessary duties related to the program.

Application may be considered for allocation of a three-fourths or one-half unit on a ten-months basis with the applying school agreeing to pay the remaining portion of salary and assigning the teacher full time in this program.

Consideration may be made of an application for more than one unit in accordance with Table I, the Formula on Maximum Eligibility of Vocational Teacher Units. This formula specifies the maximum eligibility for cooperative part-time vocational office education teacher units. For each unit allocated, a minimum of two classes in this program is required. When more than one unit is allocated to one high school, a minimum membership of 72 eligible students is required for two units and when three or more units are allocated, a minimum membership of 40 eligible students is necessary for each unit.

A teacher employed in a full unit, or in a fractional part of a unit with the school paying the remaining portion of salary may be assigned one study hall period each school day provided he is teaching no more than two classes in this program, if with one study hall assignment he will have sufficient time to carry out the full scope of the program.

Allocation of Additional Vocational Teacher Units

An additional vocational teacher unit is defined as a unit, or fraction thereof, allocated to a school in the same vocational field in which the school has previously been allocated and is operating a fractional unit or one or more units. To be considered for an additional unit, justification must be made of the need in the school and community for expansion of the program beyond the unit allocation previously made to the school. Consideration of applications for increasing unit allocations will be made in accordance with Table I, the Formula on Maximum Eligibility for Vocational Teacher Units.

Table I. Formula on Maximum Eligibility for Vocational Teacher Units

A. For a school district having one or two four-year accredited high schools, with the formula to be applied to the established combined average daily attendance of all legal high school students, grades nine through twelve.

Established ADA Grades 9-12	Maximum Eligibility	Maximum Eligibility for Any One of the Vocational Programs
100 or less	2-1/2	1
101-200	3	150-174: 1-1/2 175-200: 1-3/4
201-500	7	2

		Agriculture	Homemaking	Distributive	Industrial	Vocational Office
501-800	12	2	3	2	3	2
801-1200	14	2	4	2	4	2
1201-1600	16	2	5	2	5	2
1601-2000	18	2	6	2	6	2
2001-2400	20	2	7	2	7	2

B. For a school district having a multiple high school system of more than two four-year accredited high schools, with the formula to be applied to the established combined average daily attendance of all legal high school students, grades nine through twelve.

Established ADA Grades 9-12	Maximum Eligibility	Agriculture	Homemaking	Distributive	Industrial	Vocational Office
		Maximum Eligibility for Any One of the Vocational Programs				
1601-2000	22	2	8	2	8	2
2001-2400	25	2	9	3	8	3
2401-2800	27	3	10	3	8	3
2801-3200	29	4	11	3	8	3
3201-3600	31	4	12	3	9	3
3601-4000	33	4	13	3	11	3
4001-4400	35	4	14	3	11	3
4401-6000	44	4	15	6	13	6
6001-8000	51	4	16	7	17	7
8001-10,000	58	4	17	8	21	8
10,000 and above	67	6	18	9	25	9

The policy on allocation of new vocational teacher units applies also to allocation of additional units, except that the minimum number of eligible high school students required to be enrolled in each vocational program shall be in accordance with Table II of this policy.

The maximum eligibility for units is the maximum eligibility established for the total program of vocational education in the several vocational fields. This eligibility includes two basic units for each high school in a multiple high school system.

The maximum eligibility for units in each of the several vocational programs is the total number for which a high school is eligible in each program. The total number of basic units in a city school system for which the high schools as a group are eligible may be utilized in one or more programs in one or more of the high schools.

A four-year accredited high school or multiple high schools in city school systems having previously been allocated units in excess of the maximum eligibility may retain such excess units provided the school has the minimum average membership of eligible students for each unit, or fractional part of a unit, required in the policy on Reallocation of Vocational Teacher Units, and provided standards are adequate in each program.

Extension of Programs

A school desiring to extend a three-year program in vocational agriculture or a three-year program in vocational homemaking education to a four-year program, or to extend a two-year program in vocational industrial shop or in vocational distributive education to a three-year program, must include with the application on the form supplied by the State Department of Education a justification of need for extending the program, including the program of instruction for each year and the number of eligible students who have completed three years in vocational agriculture or vocational homemaking education, or the number of eligible students who have completed two years in vocational industrial shop or vocational distributive education.

Extension of a program in vocational agriculture or vocational homemaking education from a three-year to a four-year program, or extension of vocational industrial shop or vocational distributive education from a two-year to a three-year program must be approved by the Commissioner of Education before eligible students enrolled in the fourth year of vocational agriculture or vocational homemaking education or eligible students enrolled in the third year of vocational industrial shop or vocational distributive education may be counted in the minimum membership of eligible students required for allocation or reallocation of vocational teacher units.

Applications for extension of programs should be filed with the Division of Vocational Education of the State Department of Education as early as possible before July 1 of each year.

Reallocation of Vocational Teacher Units

This policy section applies to approved vocational teacher units, or fractional parts of units, in effect in high schools during the 1964-65 school year and thereafter, and shall apply to the reallocation of units, or fractions thereof, for the 1965-66 year, and thereafter.

The reallocation policy section relates to approved existing units only. If a school has justification for another unit, or fractional part of a unit in the same vocational field, application for such a unit, or fractional part of a unit, must be made to the Vocational Education Division in the same manner as when applying for a new or additional unit, or fraction thereof. Consideration of such applications will be made under the preceding policy section on Allocation of Additional Vocational Teacher Units.

Formula for Reallocation of Units

The Method Required for Determining Average Membership of Eligible Students in a Current School Year

The average membership of eligible students enrolled in approved units in each vocational program during the first six school months of a current school year shall determine the eligibility of a four-year accredited high school for reallocation of existing units in each vocational program for the following year. This average shall be determined as follows: from official records count the number of eligible students enrolled in each program on the last day of each school month during this period, including only the students eligible to be counted as defined for each program in the General Provisions of this policy. Divide the total of these six counts for each program by six to determine the average membership of eligible students enrolled in each program during this period.

Minimum Average Eligible Membership Requirements for Reallocation of Units

As specified in Table II for each of the programs of vocational education, a minimum average membership of eligible students enrolled during the first six school months of a current year shall be required for reallocation to a high school of an existing fractional unit, full unit, and for more than one unit in the same vocational field. Reallocation of vocational homemaking units by type of high school is made on a system-wide basis.

NOTE: Table II also specifies the number of eligible high school students required to be enrolled in each vocational program for allocation of an additional fractional unit, full unit, or more than one unit when a school makes application for increasing the unit allocation for the next school year. Eligible high school students are those defined for each program in the General Provisions of this policy.

Table II. Eligible Student Membership Required for (1) Reallocation of Existing Vocational Teacher Units, or Allocation of Additional Units

VOCATIONAL AGRICULTURE TEACHER UNITS

For (1) the Program in Production Agriculture, or (2) the Combined Program in Production Agriculture and Cooperative Part-time Training in Agricultural Occupations, or (3) the Combined Program in Production Agriculture and Pre-employment Laboratory Training in Agricultural Occupations:

No. Units	3-Yr. Prog.	4-Yr. Prog.	No. Units	3-Yr. Prog.	4-Yr. Prog.	No. Units	3-Yr. Prog.	4-Yr. Prog.
1/2	10	12	1-1/2	48	54	2-1/2	90	100
3/4	15	18	1-3/4	56	63	2-3/4	99	110
1	20	24	2	64	72	3	108	120

For Cooperative Part-time Training in Agricultural Occupations when not a part of a combined program with Production Agriculture:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	1-1/2	48	2-1/2	90
3/4	15	1-3/4	56	2-3/4	99
1	20	2	64	3	108

For Pre-employment Laboratory Training in Agricultural Occupations when not a part of a combined program with Production Agriculture (in same Agricultural Subject):

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	2-1/2	90	4	144
1	20	3	108	4-1/2	162
1-1/2	48	3-1/2	126	5	180
2	64				

VOCATIONAL HOMEMAKING EDUCATION TEACHER UNITS

For (1) the Program in Vocational Homemaking Education, or (2) the Combined Program in Vocational Homemaking Education and Cooperative Part-time Training in Home Economics Occupations, or (3) the Combined Program in Vocational Homemaking Education and Pre-employment Laboratory Training in Home Economics Occupations:

No. Units	3-Yr. Prog.	4-Yr. Prog.	No. Units	3-Yr. Prog.	4-Yr. Prog.	No. Units	3-Yr. Prog.	4-Yr. Prog.
1/2	10	12	5-1/2	286	308	10-1/2	546	588
3/4	15	18	5-3/4	299	322	10-3/4	559	602
1	20	24	6	312	336	11	572	616
1-1/2	60	66	6-1/2	338	364	11-1/2	598	644
1-3/4	70	77	6-3/4	351	378	11-3/4	611	658
2	80	88	7	364	392	12	624	672
2-1/2	130	140	7-1/2	390	420	12-1/2	650	700
2-3/4	143	154	7-3/4	403	434	12-3/4	663	714
3	156	168	8	416	448	13	676	728
3-1/2	182	196	8-1/2	442	476	13-1/2	702	756
3-3/4	195	210	8-3/4	455	490	13-3/4	715	770
4	208	224	9	468	504	14	728	784
4-1/2	234	252	9-1/2	494	532	14-1/2	754	812
4-3/4	247	266	9-3/4	507	546	14-3/4	767	826
5	260	280	10	520	560	15	780	840

For Cooperative Part-time Training in Home Economics Occupations when not a part of a combined program with Vocational Homemaking Education:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	1-1/2	48	2-1/2	90
3/4	15	1-3/4	56	2-3/4	99
1	20	2	64	3	108

For Pre-employment Laboratory Training in Home Economics Occupations when not a part of a combined program with Vocational Homemaking Education:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	2-1/2	130	4	208
1	20	3	156	4-1/2	234
1-1/2	60	3-1/2	182	5	260
2	80				

VOCATIONAL DISTRIBUTIVE EDUCATION TEACHER UNITS

For Cooperative Part-time Training in Distributive Education:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	1-1/2	48	2-1/2	90
3/4	15	1-3/4	56	2-3/4	99
1	20	2	64	3	108

For Pre-employment Labcratory Training in Distributive Occupations:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	1-1/2	60	2-1/2	130
1	20	2	80	3	156

For a combined Program in Cooperative Part-time Training and Pre-employment Laboratory Training in Distributive Occupations:

No. Units	2-Yr. Prog.	3-Yr. Prog.	No. Units	2-Yr. Prog.	3-Yr. Prog.
1/2	10	15	2	72	80
3/4	15	18	2-1/2	110	120
1	20	24	2-3/4	123	132
1-1/2	54	60	3	136	144
1-3/4	63	70			

VOCATIONAL INDUSTRIAL EDUCATION TEACHER UNITS

For Cooperative Part-time Training in Industrial Education:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	1-1/2	48	2-1/2	90
3/4	15	1-3/4	56	2-3/4	99
1	20	2	64	3	108

For Pre-employment Shop Program for Skilled Occupations (in same Industrial Subject):

No. Units	2-Yr. Prog.	3-Yr. Prog.	No. Units	2-Yr. Prog.	3-Yr. Prog.	No. Units	2-Yr. Prog.	3-Yr. Prog.
1/2	10	12	2-1/2	90	100	4	144	160
1	20	24	3	108	120	4-1/2	162	180
1-1/2	48	54	3-1/2	126	140	5	180	200
2	64	72						

For Pre-employment Shop Program for Single Skill Occupations (in same Industrial Subject):

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	2-1/2	90	4	144
1	20	3	108	4-1/2	162
1-1/2	48	3-1/2	126	5	180
2	64				

For Cooperative Part-time Training in Health Occupations:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	1-1/2	48	2-1/2	90
3/4	15	1-3/4	56	2-3/4	99
1	20	2	64	3	108

For Pre-employment Laboratory Training in Technical Occupations (in same Technical Subject):

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	2-1/2	90
1	20	3	108
1-1/2	48	3-1/2	126
2	64	4	144

VOCATIONAL OFFICE EDUCATION TEACHER UNITS

For Cooperative Part-time Training in Office Occupations:

No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.	No. Units	2-Yr. Prog.
1/2	10	1-1/2	48	2-1/2	90
3/4	15	1-3/4	56	2-3/4	99
1	20	2	64	3	108

In addition to the minimum average membership of eligible students required as specified above, the minimum number of classes for each unit as specified in the sections on allocation of new units and allocation of additional units is required to have been operated during the first six months of a current school year.

Procedure for Requesting Reallocation of Vocational Units. School officials desiring reallocation of existing vocational teacher units, or fractional parts of units, are required to certify in the Superintendent's Annual Report:

1. The number of eligible students regularly enrolled in approved units in each vocational program on the last day of each school month during the first six months of the current school year.

2. The average membership of eligible students regularly enrolled in approved units in each vocational program during the first six months of the current school year.

3. The length of program conducted in terms of the number of years of instruction in each vocational field by entering this data in the appropriate column provided in the superintendent's annual report. Eligible students enrolled in their fourth year

of vocational agriculture, or fourth year of vocational homemaking education, or third year of vocational industrial shop or vocational distributive education are eligible to be counted only when applications for these years of instruction shall have been made in accordance with this policy and approved by the Commissioner of Education.

Careful application of this policy will enable school officials to determine by March 1 of the current year the number of approved existing units, or fractional parts of units, which their high schools shall be eligible to have reallocated for the following year, provided standards are adequate in each program and evaluation of its quality and effectiveness justifies continued allocation of the unit.

Modification and Redirection of Present Programs of Vocational Education

Programs of vocational education preparing high school students for gainful employment are required to be

(1) of high quality,
(2) realistic in the light of actual or reliably anticipated opportunities for gainful employment in the area served by the school, and
(3) suited to the needs, interest and ability of students to benefit from the program in which they are enrolled in terms of acquiring the knowledge and skills necessary for entry upon and success in employment in the occupations for which they are trained.

Policies contained in this Guide provide opportunity for schools to broaden, modify, redirect and to improve programs as needed. Schools planning modification and redirection of present programs will need to make application for such changes, since units for these programs presently allocated have been approved only in relationship to policies in effect prior to issuance of this Guide. Forms for use in making application to modify and redirect programs will be available upon request of the superintendent of schools.

Policy on Allocation and Reallocation of Vocational Teacher Units in Budget Balance Districts

The policy for Allocation and Reallocation of Vocational Teacher Units in Minimum Foundation high schools shall apply to Budget Balance high schools. Upon application from schools, and within funds available, the Texas Education Agency shall reimburse not to exceed 50 per cent of the salary for which a vocational teacher employed in a Budget Balance school district is eligible according to the State minimum salary schedule. The present policy of reimbursing 25 per cent of the salary for which homemaking teachers are eligible according to the State minimum salary schedule will be continued.

Programs of Vocational Education for High School Students

The objective of each program of vocational education for high school students is to prepare them to enter gainful wage-earning or income-producing employment upon completion of the program in which they are enrolled, except the program of vocational homemaking education preparing high school girls to become homemakers. Each program is designed to be an integral part of the total program of education for high school students, supplementing but not supplanting any phase of the academic curriculum.

The Cooperative Part-time Training Program. This type of vocational education, consisting of a combination of occupationally related classroom instruction and on-the-job training and work experience is one of the types of effective programs preparing students for gainful employment.

This program is a cooperative relationship between employers of the community and the public school. Employers employ students during school afternoons for a minimum of 15 hours per week at wage rates equitable for beginning young employees and provide them on-the-job training. Employers also advise with the teacher of the program employed by the school regarding the instruction students need in the school classroom. The school provides students with training directly related to the jobs in which they are part-time employed for a minimum of a fifty-five minute period of classroom instruction each school day for the duration of the program.

Objectives, organization and operation of Cooperative Part-time Training Programs are essentially identical in each of the occupational fields of agriculture, home economics, distribution, industry and health and office occupations. Differences involved include: educational and occupational qualifications required of teachers in different programs, occupations for which students are prepared to be employed, instructional materials needed in each program, and membership of local advisory committees.

The following requirements apply to all Cooperative Part-time Training Programs:

1. Minimum of 15 hours per school week (Monday through Friday) of supervised employment throughout the school year of each eligible student in an occupation or job approved in this section of this Guide for the respective cooperative part-time program in (a) agricultural occupations, (b) home economics occupations, (c) distributive occupations, (d) industrial occupations, (e) health occupations, or (f) office occupations. Or, the occupation must be approvable by the Texas Education Agency as specified in General Policies on Vocational Education in this Guide.

   Students enrolled in the program must be employed as of the date of entrance into the program, or not later than two weeks after this date. Students must be employed in conformity with Federal, State and local laws and regulations in a manner not resulting in exploitation of such student-learners for private gain.

   Students not employed in accordance with these provisions are ineligible to be counted in the minimum eligible student membership required for allocation and reallocation of vocational teacher units.

It is not advisable for students to be employed for longer than 20 hours as a maximum during school afternoons each week, or four hours each school afternoon. Three hours of employment is preferable since with their school program responsibilities during morning hours and necessary preparation of school assignments, any additional job employment would constitute excessive daily time for these youth.

Employment on Saturdays is optional with students and employers, but only employment on school days will be eligible as supervised work experience and on-the-job training in the required minimum of 15 hours per school week, Monday through Friday.

2. A written Training Plan or Agreement between the employer and the school on forms supplied by the Texas Education Agency is required for each student enrolled in the program. A sample of the plan is contained in the Appendix of this Guide. A student is not considered as an eligible student until his approved training plan is received by the Texas Education Agency not later than two weeks after placement in employment.

3. A minimum of one fifty-five minute period (net time) of instruction per school day, directly related to the occupation or job in which each student is employed. This instruction for the duration of the program shall consist of group instruction and individual student assignments and projects directly related to his current job duties and responsibilities.

4. Instructional materials directly and specifically related to the knowledge and skills required in employment for each occupation and job classification in which students are employed must be available and used in training students in all Cooperative Part-time Programs. Additionally, instructional materials for use in group instruction needed in orienting and adjusting students to employment conditions, developing proper attitudes toward employment, the school, civic responsibilities, employer-employee relationships and employee responsibilities, and other necessary group instruction must be available to the program.

5. Adequate guidance and counseling of students, prior to entering the program and throughout its duration, must be provided enrollees by the teacher, and with assistance of school counselors, regarding adjustments students may need in regard to the total school program, in relation to employment problems and in achieving job placement in occupations best suited to the interests, aptitudes and ability of students.

6. Close coordination and correlation of the cooperative part-time instructional program in the school with the part-time employment and on-the-job training of students must be established and maintained. As a minimum, the training station and immediate supervisor of each student must be visited once per week to assure this close coordination and correlation to result in students receiving instruction in the school in terms of it being directly and specifically related to the knowledge and skills they need in current job responsibilities and in relation to

other instruction and counseling needed by students to achieve optimum progress in preparation for full-time employment upon graduation from high school.

Vocational Agricultural Education

Objectives of Programs--Vocational agricultural education is designed to provide the knowledge and skills needed by high school students who have entered upon or preparing to become established in farming, or to prepare them for employment in occupations requiring knowledge and skills in one or more of the agricultural subjects of animal science, plant science, soil science, agricultural mechanization, farm management and agricultural leadership.

Types of Programs--Vocational agricultural education may be conducted for high school students in three types of programs, or combinations of programs:

a. Production Agriculture for persons preparing to become established in farming.

b. Cooperative Part-time Training for persons preparing to enter employment in agricultural occupations requiring knowledge and skills in one or more of the agricultural subjects of animal science, plant science, soil science, agricultural mechanization, farm management, and agricultural leadership.

c. Pre-employment Laboratory Training for persons preparing to enter employment in agricultural occupations requiring knowledge and skills in one or more of the primary subjects of animal science, plant science, soil science, agricultural mechanization, farm management, and agricultural leadership.

Production Agriculture:

Objectives--The program in production agriculture provides instruction for high school students who have an interest in and a vocational need for training to become established in farming. Technical training and practical experience shall be provided in the school classroom and farm mechanics shop, in supervised farming programs on actual farms and/or on school farms, and on field trips to experiment stations, land laboratories and agricultural research centers.

Approvable Subjects--Course descriptions in the Texas Education Agency Bulletin 615, pages 258-264, list minimum areas of learning. Certain of these general areas are listed in Vocational Agriculture I, II, III, and IV. These areas are developed to provide for learning on a sequential basis considering the maturity and ability of students as they progress through the sequence of courses. Other areas of learning are provided in all courses to meet individual needs of students appropriate to local farming conditions.

Class Schedule--Officials of schools to which a vocational agriculture teacher unit or fractional part of a unit is allocated agree to provide sufficient time for the teacher and students for classroom, laboratory, farm shop and field instruction

adequate for effective teaching and learning. Schools may adopt one of the following plans:

Plan A. Two consecutive fifty-five minute periods of instruction five days per week, for one year of vocational agriculture, and one fifty-five minute period of instruction, five days per week for the other years with a minimum of two classes required.

Plan B. Two consecutive fifty-five minute periods of instruction two days per week, and one fifty-five minute period, three days per week, for each class with a minimum of two classes required.

Plan C. Two consecutive forty-five minute periods of instruction per day five days per week, for each class with a minimum of two classes required.

Plan D. One fifty-five minute period of instruction per day five days per week for each class with a minimum of three classes required. In addition, the school shall provide a minimum of thirty-six hours of supplemental instruction in farm shop and farm laboratory field work for each student enrolled in the program during each nine months school year. A minimum of twenty-four hours of this instruction shall be conducted during the school day schedule. Participation in shows, fairs, and contests by a student during the nine months school term can be counted for a maximum of six hours of the remaining twelve hours of supplemental instruction required. In addition, the school will provide during each twelve months period a minimum of six hours of supervision by the vocational agriculture teacher of the farming program for each student.

High School Credits--Students may earn a maximum of four credits upon satisfactorily completing three years of vocational agriculture, or five credits for completion of four years of vocational agriculture. Three credits is the maximum a student can earn upon completion of only two years of vocational agriculture. To be eligible for credit, students shall have completed required classroom and farm mechanics shop instruction and a satisfactory supervised farming program for a minimum of six months each year of enrollment in the program.

Student Selection--Students enrolled in grades nine through twelve who have an interest in and aptitudes for training to become established in farming are eligible for entrance into the program. Acceptance for membership shall be on the basis of students having the definite objective of entering farming and having the physical, mental and other qualifications required for success in farming.

Facilities--A standard classroom shall be provided which contains sufficient floor space to accommodate the largest group of students enrolled in a given class. In multiple unit departments, a classroom shall be provided for each teacher. Office space, storage room, library space, bookcases, magazine racks, bulletin cases, filing cabinets, tables, chairs, and teacher's desk shall be located in or adjacent to the classroom. A farm shop adjacent or closely located to the classroom shall be provided which will contain a minimum of 1800 square feet of floor space, or 100 square feet of floor space per student if the largest class exceeds eighteen students. The farm shop shall have lighting, heating, ventilation, and electric

facilities in accordance with standard facilities approved by the State Department of Education. Washroom, lavatories, and storage facilities should be provided adjacent to the farm mechanics shop.

Equipment, Supplies, and Instructional Materials--Type, quality, and quantity of hand and power equipment essential in teaching basic skills in all areas of farm mechanics shall be provided in accordance with standard facilities approved by the State Department of Education. Equipment should be comparable to that used in shops on actual farms in the community. It is the responsibility of the school to maintain and update equipment on an annual basis. Textbooks, reference materials and instructional aids, including audio-visual media, appropriate for the various areas of instruction in vocational agriculture shall be provided in accordance with standards approved by the State Department of Education.

Instruction--Instruction shall be based upon a study of the knowledge and skills students should acquire to become successfully established in one or more of the various types of farming in the community and State. As a minimum, areas of instruction shall include the primary subjects of animal science, plant science, soil science, agricultural mechanization, farm management, and agricultural leadership. Additional areas of instruction may be added to meet individual needs of students preparing to become established in farming. The instructional program shall be sufficient in length to prcvide knowledge and skills essential for success in farming.

Youth Leadership Organization--Students enrolled in vocational agricultural education programs are provided opportunities to develop abilities in leadership, scholarship, citizenship and cooperation; improve self-confidence; make intelligent choice of farming occupations; develop home improvements; learn farm management principles; and participate in civic, social and recreational activities through participation in local, district, area, State and National Associations of the Future Farmers of America.

Qualifications and Certification of Teachers--Teachers as a minimum shall have the baccalaureate degree from an institution approved for the preparation of vocational agriculture teachers with a minimum of 54 semester hours of technical agriculture, including such courses as agronomy, animal husbandry, agricultural economics, poultry production and agricultural engineering. In addition, they shall have completed 12 semester hours of agricultural education, including six semester hours of special methods and supervised practice teaching and a valid Texas teacher's certificate is required.

Responsibilities of Teachers in Adult and Young Farmer Educational Programs--School officials agree to utilize the vocational agriculture teacher for organizing and conducting systematic programs of group instruction for young and/or adult farmers. Objectives of these programs are to provide specific instruction relating to problems of young farmers in becoming established in farming and instruction for adult farmers to increase their efficiency and farming operations.

Cooperative Part-time Training Program:

Objectives--Programs of Cooperative Part-time Training shall be designed to provide technical instruction and on-the-job training and work experience for high school students preparing to enter employment in occupations requiring knowledge and skills

in one or more of the agricultural subjects of animal science, plant science, soil science, agricultural mechanization, farm management and agricultural leadership.

General Plan of Operation--Training is conducted through cooperation of local schools with local agricultural establishments. Students receive practical, supervised on-the-job training in their chosen occupation by working each school afternoon. Each morning the school provides individual instruction directly related to the job of each student in a regularly scheduled cooperative part-time class conducted by the teacher who also has the responsibility of selecting students for training, placing them in employment according to their interests and abilities and correlating their work experiences on the job with the cooperative part-time classroom instruction directly related to the job of each student.

The plan of operation shall conform to requirements for all Cooperative Part-time Training Programs specified in this section of the Guide.

Approvable Occupations--To be approved for Agricultural Cooperative Training, an occupation must be (1) classified as an agricultural occupation under the definition of occupations requiring knowledge and skills in one or more of the agricultural subjects named under "Objectives" above, and (2) requiring a minimum of 1/5 hours of classroom instruction and 525 hours of supervised on-the-job training and work experience per school year in an approved agricultural occupation. Approved agricultural occupations include the following:

Agricultural machinery repairman
Agricultural machinery set-up and deliveryman
Agricultural machinery mechanic's helper
Agricultural machinery partsman
Agricultural machinery service supervisor
Feed warehouse employee
Feed sales and serviceman
Seed sales and serviceman
Fertilizer sales and serviceman
Agricultural chemicals sales and serviceman
Greenhouse worker
Nursery worker
Garden center employee
Assistant groundskeeper
Parks employee
Grain elevator employee
Poultry farm employee
Poultry products employee
Poultry hatchery employee
Dairy farm worker
Dairy products employee
Meat processing plant employee
Irrigation equipment sales and serviceman
Veterinarian assistant
Forestry worker
Wildlife conservation employee
Park and landscape employee
Fruit and vegetable packing plant processor

Occupations Not Approvable--Occupations which are not approvable for Cooperative Part-time Training in Agricultural Occupations include those which come within the definition of programs for home economics, distributive, industrial, technical and vocational office education and occupations generally considered professional or requiring the baccalaureate or higher degree.

Class Schedule--Students shall receive individual and group instruction in the classroom fifty-five minutes per day, five days per week. In addition, each student

shall be employed for a minimum of fifteen hours per school week, receiving supervised job experience in his chosen agricultural occupation. Employment on Saturdays and holidays is optional with student and employer but cannot be counted in the fifteen hours per school week required.

High School Credits--The student may earn two credits upon satisfactorily completing 175 clock hours of related classroom instruction and 525 hours of supervised work experience per school year. Students may earn four credits if certain subject areas require two years of training.

Student Selection--High School students sixteen years of age or older who are of junior and senior classification are eligible to enter the program provided they have an interest in and a vocational need for such training. Acceptance for membership shall be on the basis of training objective, aptitude, interest, need, physical and mental competency, and other qualifications essential to successful employment. Applicants who are not employed at the time they are admitted to the class must be employed within two weeks. If they have secured their own job and wish to receive further training in their present work, the occupation must be an occupation approved for this program in this Guide or be approved as specified in General Policies on Vocational Education contained in the Guide.

Facilities--The school shall provide a standard classroom which contains sufficient floor space to accommodate the group of students enrolled. The classroom shall contain library space, bookcases, magazine racks, bulletin cases, filing cabinets, and a desk for the teacher-coordinator. In addition, training stations in approved agricultural occupations in the community that meet standards shall be available for placement of students to receive practical, supervised work experience.

Equipment, Supplies, and Instructional Materials--The school shall furnish equipment, supplies, and instructional aids needed by the teacher and by the students enrolled in the program. Facilities of the program in Production Agriculture may be utilized as applicable in the Cooperative Part-time class. Individual student instructional materials and daily lesson assignments directly related to the job of each student must be supplied each student. In addition, the school shall provide reference books, manuals, bulletins, charts, and visual aids appropriate for each occupation in which training is offered.

Instruction--Students will receive individual and group instruction fifty-five minutes per day five days per week. A major portion of the time will be devoted to individualized supervised study of content directly related to the occupational objective of the student. The course of study shall be geared to job requirements, determined by job analysis made in cooperation with employer and teacher-coordinator, and shall be coordinated with the practical work experience the student is to receive. Students shall receive group instruction a portion of the time to orient and adjust to employment conditions, and to develop proper attitudes toward school, employment, social and civic responsibilities. Classroom instruction and practical work experience shall include the latest technical information and skills essential in developing competencies in the occupation for which training is being conducted.

Training Stations--A training station is defined as the agricultural occupation which employs a cooperative part-time student and provides him supervised work

experience in accordance with a written training agreement or plan. It is not necessarily true that all establishments engaging in the same type of work can provide the same quality of work experience. For this reason, appropriate criteria should be followed in placing students in various places of employment. Such criteria include: (1) the respectability and reputation of the employer, (2) competence of employees, (3) standards of workmanship, (4) adequacy and appropriateness of equipment, (5) volume of business, (6) policies of the company toward occupational training, including agreement of employer to employ students part time throughout the school year, and (7) employer-employee relationships existing.

Training Plans--The training of each student, both in the classroom and on the job, is conducted in accordance with a written training plan developed cooperatively by the teacher-coordinator and the employer. The training plan includes such pertinent points of agreement as:

1. Skills to be learned through on-the-job training and work experience.
2. Technical information to be taught in the classroom.
3. Length of training.
4. Hours of employment (a minimum of fifteen per school week throughout the school year is required).
5. Wages to be paid (trainees should receive the same hourly wages as other beginners in the occupation).
6. Periodic wage increments.

A student is not considered an eligible student until his approved training plan is on file in the Texas Education Agency, not later than two weeks after job placement. Individual training plans must bear the approval of the student, his parents, his employer, the school's coordinator and chairman of the local advisory committee.

Coordination Activities--Each school day afternoon the teacher-coordinator engages in numerous activities essential to the operation of successful programs. Such activities include the following: supervisory visits to the training station of each student at least once weekly, and more often as necessary, to confer with employers on student progress and needs, counsel with prospective employers, students and their parents, confer with advisory committee members, and prepare program records and reports.

Youth Leadership Organization--Students enrolled in Cooperative Part-time Training programs are eligible for membership in the Future Farmers of America youth leadership organization, the purposes of which were described in this Guide under the program of Production Agriculture.

Qualifications and Certification of Teachers--Teachers for the program should be occupationally competent. As a minimum they shall have a baccalaureate degree from an institution approved for the preparation of vocational agriculture teachers with a minimum of 54 semester hours of technical agriculture, including such courses as agronomy, animal husbandry, agricultural economics, poultry production and agricultural engineering. They shall have completed 12 semester hours of agricultural education, including six semester hours of special methods

and supervised practice teaching, and a valid Texas teacher's certificate is required. In addition, they should have specialized training and occupational experience related to the occupations included in the program.

Local Advisory Committee--Since the success of the Cooperative Part-time Training programs depends upon a close relationship between the school and agricultural occupations of the community, there is a definite need for a local advisory committee. The committee should be composed of members of employers and employees representing the agricultural occupations for which training is being offered, and should be appointed by the superintendent of schools with the assistance of the vocational agriculture teacher. The advisory committee has no administrative function but its members can be of valuable assistance in determining training needs, advising on the instruction required, adequate instructional materials, and in promoting, publicizing, reviewing and evaluating the program. These activities are essential in assuring properly trained persons for employment in the occupations for which training is being conducted.

Pre-employment Laboratory Training:

Objectives--Programs in Pre-employment Laboratory Training shall be designed to provide technical instruction and practical experience for high school students preparing to enter employment in occupations requiring knowledge and skills in one or more of the agricultural subjects of animal science, plant science, soil science, agricultural mechanization, farm management and agricultural leadership.

Technical training and practical experience shall be provided in the knowledge and skills required in selected occupations and clusters of related agricultural occupations in the school classroom, farm mechanics shop, greenhouse, nursery and grass plots.

Approvable Occupations--Occupations approvable under this plan include occupations as defined above when there is a need for programs to prepare students for these occupations as defined in policies in this Guide. Programs conducted shall provide instruction on a sequential basis necessary for students to acquire the knowledge and skills essential to successful performance of jobs or operations according to accepted standards in the occupation for which students are being prepared.

Class Schedule--Training shall be scheduled for classroom and laboratory instruction for a minimum of three consecutive hours each day for a minimum of a one-year period and a maximum of a two-year period.

High School Credits--Students may earn two credits upon satisfactorily completing one year (525 clock hours) of classroom and laboratory training, or four credits upon satisfactorily completing two years (1,050 clock hours) of classroom and laboratory training.

Student Selection--High school students sixteen years of age or older who are of junior or senior classification are eligible for entrance into the program provided they have an interest in and a need for such training. Acceptance for membership shall be on the basis of training objective, aptitude, interest, need, physical and mental competency, and other qualifications essential to successful training and employment.

Facilities--The school shall provide a standard classroom which contains sufficient floor space to accommodate the largest group of students enrolled in a given class. The classroom shall contain library space, bookcases, magazine racks, bulletin cases, filing cabinets, and desk for teacher-coordinator. In addition, the school shall provide a farm mechanics shop as described for the Production Agriculture program or a greenhouse and land for nursery, or other facilities needed for the specific type of Pre-employment Laboratory program to be conducted either as a separate program or as a separate class combined with the program of Production Agriculture.

Equipment, Supplies, and Instructional Materials--The school shall provide the type, quality, and quantity of equipment essential in teaching the basic knowledge and skills necessary for efficient instruction and practical experience for students in the type of Pre-employment Laboratory Program to be conducted. Equipment shall be maintained and updated on an annual basis.

The school shall provide textbooks, reference and instructional materials, and audio-visual media appropriate for instruction that will provide the knowledge and skills required for successful employment in the occupations or cluster of related occupations for which training is being provided.

Instruction--Instruction shall be based upon a job analysis of the occupations taught and the knowledge and skills required for performance of productive jobs or operations in accordance with accepted procedures and standards of the occupation. Instruction will include the knowledge and skills required in selected occupations and will be conducted through classroom and laboratory experience. Included will be the latest information necessary for competencies required in the occupation for which training is being conducted.

Youth Leadership Organization--Students enrolled in Pre-employment Laboratory Training Programs are eligible for membership in the Future Farmers of America youth leadership organization, the purposes of which are described in this Guide under the program of Production Agriculture.

Qualifications and Certification of Teachers--Teachers for the programs should be occupationally competent. As a minimum, they shall have the baccalaureate degree from an institution approved for the preparation of vocational agriculture teachers with a minimum of 54 semester hours of technical agriculture, including such courses as agronomy, animal husbandry, agricultural economics, poultry production, and agricultural engineering. They shall have completed 12 semester hours of agricultural education, including six semester hours of special methods and supervised practice teaching and a valid Texas teacher's certificate is required. In addition, they should have specialized training and occupational experience related to the occupations included in the program.

Local Advisory Committee--Since the success of Pre-employment Laboratory Training programs depends upon a close relationship between the school and agricultural occupations of the community, there is a definite need for a local advisory committee. The committee should be composed of employers and employees representing the agricultural occupations for which training is being offered, and should be appointed by the superintendent of schools with the assistance of the vocational agriculture teacher. The advisory committee has no administrative function but its members can be of valuable assistance in determining training needs, advising on the instruction required, adequate equipment and facilities, and in promoting, publicizing, reviewing and evaluating the program. These activities are essential in assuring properly trained persons for employment in the occupations for which training is being conducted.

Vocational Home Economics Education

Objectives of Programs--Vocational home economics education is designed to prepare high school girls to become homemakers, or to prepare high school students for employment in occupations requiring knowledge and skills in one or more home economics subjects including child development, clothing and textiles, food and nutrition, home and institutional management, and home furnishings and equipment.

Types of Programs--Vocational home economics education may be conducted for high school students in three types of programs, or combinations of programs:

a. Vocational Homemaking Education for high school girls preparing to become homemakers.
b. Cooperative Part-time Training for persons preparing to enter employment in occupations requiring knowledge and skills in one or more home economics subjects including child development, clothing and textiles, food and nutrition, home and institutional management, and home furnishings and equipment.
c. Pre-employment Laboratory Training for persons preparing to enter employment in occupations requiring knowledge and skills in one or more home economics subjects including child development, clothing and textiles, food and nutrition, home and institutional management, and home furnishings and equipment.

Vocational Homemaking Education:

Objectives--The program in Vocational Homemaking Education provides instruction for high school girls preparing to become homemakers. The homemaking department, the home, and facilities in the community are the laboratories in which instruction is conducted. Instruction assists students in solving immediate home and family living problems as well as problems relating to establishing homes. Instruction and practical experience is provided in the school classroom and homemaking education laboratory, in supervised home experience programs, and on field trips to secure up-to-date information relating to home and family living.

Approvable Subjects--Course descriptions in the Texas Education Agency Bulletin 615, pages 271-280, list approved programs. The minimum three-year program is a sequence of Homemaking I, II, and III. In addition, Homemaking IV, Home and Family Living, and other semester courses in specific areas of homemaking may be offered for students in the eleventh and twelfth grades. Each semester the student is required to develop a six-weeks experience program in the student's own home, supervised by the homemaking teacher. In schools employing homemaking teachers for ten or twelve months, the Summer Phase consists of conducting homemaking programs for adults, group instruction and individual home experiences for high school girls and Future Homemakers of America activities. Up-to-date knowledge and skills necessary for competencies required to assume the responsibilities of a homemaker will be included.

Class Schedules--Sufficient time for instruction shall be provided, with a minimum of two conference periods for home visitation, field trips, Future Homemakers of America activities, and work with young and adult homemakers. Class periods shall

be fifty-five minutes consecutive net time for instruction, exclusive of passing time between classes.

High School Credits--A maximum of four credits may be earned when eligible students have satisfactorily completed three years of vocational homemaking and two summers' work, or five credits for a four-year program. One-half credit may be earned in 87 class periods, or one unit of credit in 175 class periods. A fifth credit can be earned by satisfactorily completing two summers of the Summer Phase of the program, with one-half credit being the maximum that can be earned in one summer.

The Summer Phase is designed for students who have completed Homemaking Education I as a minimum prerequisite. To be eligible for enrollment in a second summer of the Summer Phase, students are required to have completed at least a second year in homemaking education. Students enrolled in the Summer Phase are eligible for one-half credit provided they satisfactorily complete work in homemaking education during the summer comparable in amount and time to that required in a semester of the school year, including preparation in group instruction and student experiences in the homemaking department and a satisfactorily supervised home experience program.

Selection of Students--Vocational homemaking education provides instruction for high school girls enrolled in grades 9-12 who have an interest in and a need for training to prepare to become homemakers. Each girl shall apply for enrollment in the program and be accepted for membership on the basis of this training objective.

Facilities--The homemaking department shall include facilities and equipment for instruction in the various areas of home economics. In planning facilities, 100 square feet per student shall be allowed for the maximum number of students to be enrolled in any one class, with space for laboratories, living-dining area, grooming and fitting demonstrations, storage of equipment, teaching supplies, instructional materials, grooming and fitting materials and students' materials, hanging space for garments, and a center for the teacher.

Electric wiring shall be installed in conformity with the "Approved Underwriters Code," and the number and type of circuits needed for large and small equipment, such as adequate lighting, lamps, projectors, household appliances, sewing machines, stoves, washing machines, clothes dryers, home freezers, and refrigerators shall be provided. Gas installations for heating and for large equipment shall be in accordance with an approved building code, such as "Southern Standard Building Code, Part II."

Equipment, Supplies, and Instructional Materials--The school agrees to provide equipment, supplies, magazines, library books and references, and other instructional materials in all areas of home economics. A minimum of $5 per student annually shall be provided for the operation of the department. A budget shall be developed and a record kept of all expenditures made. It is the responsibility of the school to maintain and update equipment on an annual basis. The teacher shall keep an inventory of all equipment and should submit a list of needed equipment and supplies to the administrator at the beginning of each year.

Instruction--Instructional areas shall be based upon the knowledge and skills high school girls need in order to assume the responsibilities of homemakers. Learning experiences are provided in all areas of home economics, including housing, home management, interior decoration and home improvement, home safety, food and nutrition, clothing and textiles, personal development and grooming, money management and consumer buying, child development, home care of sick, and selection and care of equipment.

Youth Leadership Organization--The Texas Association, Future Homemakers of America, which is an integral part of the homemaking program is an organization of students enrolled in homemaking classes. The organization provides additional experiences in planning and carrying out activities related to the home. Opportunities to develop leadership, scholarship and citizenship responsibilities are provided.

Qualifications and Certification of Teachers--Teachers as a minimum shall have the baccalaureate degree from an institution approved for the preparation of vocational homemaking education teachers with a minimum of 42 semester hours in the various areas of home economics. In addition, they shall have completed twelve semester hours of home economics education, including six semester hours of special methods and supervised practice teaching and a valid Texas vocational homemaking education teacher's certificate is required.

Local Advisory Committees--A study of the home and family life needs in the community serves as basis for student-parent-teacher planning of the program. Planning of the program may be accomplished by an advisory group of representative students, parents, administrators, and others in the community. This group may assist the school in collecting and interpreting information for use in planning and evaluating the program.

Responsibilities of Teachers in Young and Adult Homemaker Educational Programs--The teacher has responsibility for organizing and conducting programs for young and adult homemakers as a component part of the vocational homemaking education program. The State Association of Young Homemakers of Texas is an organization of out-of-school young women who are interested in developing skills and knowledge which will assist them in becoming more efficient homemakers. Group instruction shall be provided in classrooms, laboratories and on field trips relating to problems in establishing homes and new information in home and family living. The program for adult homemakers is designed to increase their efficiency in performing the responsibilities of homemakers and includes instruction in new techniques, skills, and knowledge related to the home and the family.

Cooperative Part-time Training Program:

Objectives--Programs of Cooperative Part-time Training shall be designed to provide related instruction and on-the-job training and work experience for high school students preparing to enter employment in occupations requiring knowledge and skills in one or more home economics subjects including child development, clothing and textiles, food and nutrition, home and institutional management, and home furnishings and equipment.

General Plan of Operation--Training is conducted through cooperation of local schools with local establishments having occupations listed below under "Approvable Occupations." Students receive practical, supervised on-the-job training in their chosen occupation by working each school afternoon. Each

morning the school provides individual instruction directly related to the job of each student in a regularly scheduled cooperative part-time class conducted by the teacher who also has the responsibility of selecting students for training, placing them in employment according to their interests and abilities and correlating their work experiences on the job with the cooperative part-time classroom instruction directly related to the job of each student.

The plan of operation shall conform to requirements for all Cooperative Part-time Training Programs specified in this section of the Guide.

Approvable Occupations--To be approved for Home Economics Cooperative Training, an occupation must be (1) classified as a home economics occupation under the definition of occupations requiring knowledge and skills in one or more of the home economics subjects named under "Objectives" above, and (2) requiring a minimum of 175 hours of classroom instruction and 525 hours of supervised on-the-job training and work experience per school year in an approved home economics occupation. Approved occupations include the following:

Child care aide in nursery schools and child care centers (assists in the care of young children in establishments meeting minimum standards for licensing child care centers)
Clothing specialist (alters, cleans, presses, repairs, and constructs garments)
Home furnishings aide (assists in the construction of draperies and other accessories for the home)
Hotel and motel aide (cleaning, making up guest rooms and other areas in hotel or motel)
Dietitian aide (works under the direction of a dietitian in a hospital or home for elderly citizens)
Food service employee (assists in preparing and serving foods in public institutions)
Millinery aide (assists in making hats and other accessories)
Household employee (performance of household duties in home or business)
Tester of foods, equipment, or textiles (assists in testing under the direction of a professional worker)

Occupations Not Approvable--Occupations which are not approvable for Cooperative Part-time Training in Home Economics Occupations include those which come within the definition of programs for agriculture, distributive, industrial, health occupations, technical, and vocational office education and occupations generally considered professional or requiring the baccalaureate or higher degree.

Class Schedule--Students shall receive individual and group instruction in the classroom fifty-five minutes per day, five days per week. In addition, each student shall be employed for a minimum of fifteen hours per school week, receiving supervised job experience in her chosen home economics occupation. Employment on Saturdays and holidays is optional with student and employer but cannot be counted in the fifteen hours per school week required.

High School Credits--The student may earn two credits upon satisfactorily completing 175 clock hours of related classroom instruction and 525 hours of supervised work experience per school year. Students may earn four credits if certain subject areas require two years of training.

Student Selection--High school students sixteen years of age or older who are of junior and senior classification are eligible to enter the program provided they have an interest in and a vocational need for such training. Acceptance for membership shall be on the basis of training objective, aptitude, interest, need, physical and mental competency, and other qualifications essential to successful employment. Applicants who are not employed at the time they are admitted to the class must be employed within two weeks. If they have secured their own job and wish to receive further training in their present work, the occupation must be an occupation approved for this program in this Guide or be approved as specified in General Policies on Vocational Education contained in the Guide.

Facilities--The school shall provide a standard classroom which contains sufficient floor space to accommodate the group of students enrolled. The classroom shall contain library space, bookcases, magazine racks, bulletin cases, filing cabinets, and a desk for the teacher-coordinator. In addition, training stations in approved home economics occupations in the community that meet standards shall be available for placement of students to receive practical, supervised work experience.

Equipment, Supplies, and Instructional Materials--The school shall furnish equipment, supplies, and instructional aids needed by the teacher and by the students enrolled in the program. Facilities of the program in Vocational Homemaking Education may be utilized as applicable in the Cooperative Part-time class. Individual student instructional materials and daily lesson assignments directly related to the job of each student must be supplied each student. In addition, the school shall provide reference books, manuals, bulletins, charts, and visual aids appropriate for each occupation in which training is offered.

Instruction--Students will receive individual and group instruction fifty-five minutes per day five days per week. A major portion of the time will be devoted to individualized supervised study of content directly related to the occupational objective of the student. The course of study shall be geared to job requirements, determined by job analysis made in cooperation with employer and teacher-coordinator, and shall be coordinated with the practical work experience the student is to receive. Students shall receive group instruction a portion of the time to orient and adjust to employment conditions, and to develop proper attitudes toward school, employment, social and civic responsibilities. Classroom instruction and practical work experience shall include the latest information and skills essential in developing competencies in the occupation for which training is being conducted.

Training Stations--A training station is defined as the home economics occupation which employs a cooperative part-time student and provides her supervised work experience in accordance with a written training agreement or plan. It is not necessarily true that all establishments engaging in the same type of work can provide the same quality of work experience. For this reason, appropriate criteria should be followed in placing students in various places of employment. Such criteria include: (1) the respectability and reputation of the employer, (2) competence of employees, (3) standards of workmanship, (4) adequacy and appropriateness of equipment, (5) volume of business, (6) policies of the company toward occupational training, including agreement of employer to employ students part time throughout the school year and (7) employer-employee relationships existing.

Training Plans--The training of each student, both in the classroom and on the job, is conducted in accordance with a written training plan developed cooperatively by the teacher-coordinator and the employer. The training plan includes such pertinent points of agreement as:

1. Skills to be learned through on-the-job training and work experience.
2. Technical information to be taught in the classroom.
3. Length of training.
4. Hours of employment (a minimum of fifteen per school week throughout the school year is required).
5. Wages to be paid (trainees should receive the same hourly wages as other beginners in the occupation).
6. Periodic wage increments.

A student is not considered an eligible student until his approved training plan is on file in the Texas Education Agency, not later than two weeks after job placement. Individual training plans must bear the approval of the student, her parents, her employer, the school's coordinator and chairman of the local advisory committee.

Coordination Activities--Each school day afternoon the teacher-coordinator engages in numerous activities essential to the operation of successful programs. Such activities include the following: supervisory visits to the training station of each student at least once weekly, and more often as necessary, to confer with employers on student progress and needs, counsel with prospective employers, students and their parents, confer with advisory committee members, and prepare program records and reports.

Youth Leadership Organization--Students enrolled in Cooperative Part-time Training programs are eligible for membership in the Future Homemakers of America youth leadership organization, the purposes of which were described in this Guide under the program of Vocational Homemaking Education.

Qualifications and Certification of Teachers--Teachers as a minimum shall have the baccalaureate degree in home economics from an institution approved for the preparation of vocational homemaking education teachers with a minimum of 42 semester hours in the various areas of home economics, or a major in a specific home economics subject matter field specifically related to the particular occupation to be taught when the program being conducted is in a single occupation or in closely related occupations. In addition, they should have specialized training and occupational experience related to the occupation or occupations for which training is being conducted in the program.

Local Advisory Committee--Since the success of the Cooperative Part-time Training programs depends upon a close relationship between the school and home economics occupations of the community, there is a definite need for a local advisory committee. The committee should be composed of members of employers and employees representing the home economics occupations for which training is being offered, and should be appointed by the superintendent of schools with the assistance of the vocational homemaking education teacher. The advisory committee has no administrative function but its members can be of valuable assistance in determining training needs, advising on the instruction required, adequate instructional materials, and in promoting, publicizing, reviewing and evaluating the program. These activities are essential in assuring properly trained persons for employment in the occupations for which training is being conducted.

Pre-employment Laboratory Training:

Objectives--Programs in Pre-employment Laboratory Training shall be designed to provide technical instruction and practical experience for high school students preparing to enter employment in occupations requiring knowledge and skills in one or more home economics subjects including child development, clothing and textiles, food and nutrition, home and institutional management, and home furnishings and equipment. Technical training and practical experience shall be provided in the knowledge and skills required in selected occupations and clusters of related home economics occupations in the school classroom, laboratories of the vocational homemaking education department and other special home economics laboratories in the school as a part of the vocational homemaking education department as may be required for training high school students for specific employment in gainful occupations requiring knowledge and skills in one or more of the home economics subjects named above.

Approvable Occupations--Occupations approvable under this plan include occupations as defined above when there is a need for programs to prepare students for these occupations as defined in policies in this Guide. Programs conducted shall provide instruction on a sequential basis necessary for students to acquire the knowledge and skills essential to successful performance of jobs or operations according to accepted standards in the occupation for which students are being prepared. Approved occupations include the following:

Child care aide (assists in the care of young children in establishments meeting minimum standards for licensing child care centers)
Clothing specialist (alters, cleans, presses, repairs, and constructs garments)
Home furnishings aide (assists in the construction of draperies and other accessories for the home)
Dietetian aide (works under the direction of a dietitian in a hospital or home for elderly citizens)
Food service employee (assists in preparing and serving foods in public institutions)
Household employee (performance of household duties in home or business)

Class Schedule--The program shall be scheduled for classroom and laboratory instruction for two consecutive hours each school day for a minimum of one school year and a maximum of two school years.

High School Credits--Students may earn one and one-half credits upon satisfactory completion of one year (350 clock hours) of classroom and laboratory training, or three credits upon satisfactory completion of two years (700 clock hours) of classroom and laboratory training when more than one year is necessary for preparation for the occupation for which training is conducted.

Student Selection--High school students sixteen years of age or older who are of junior or senior classification are eligible for entrance into the program provided they have an interest in and a need for such training. Acceptance for membership shall be on the basis of training objective, aptitude, interest, need, physical and mental competency, and other qualifications essential to successful training and employment.

Facilities--Laboratories of the vocational homemaking education department and other special home economics laboratories, as a part of the homemaking education department in the school, shall be used as required for training high school students for gainful employment in specific occupations in the Pre-employment Laboratory Training program conducted either as a separate program or as a separate class combined with the vocational homemaking education program. Laboratories shall contain library space, bookcases, magazine racks, bulletin boards, filing cabinets and a desk for the teacher.

Equipment, Supplies, and Instructional Materials--The school shall provide the type, quality, and quantity of equipment essential in teaching the basic knowledge and skills necessary for efficient instruction and practical experience for students in the type of Pre-employment Laboratory Program to be conducted. Equipment shall be maintained and updated on an annual basis. The school shall provide textbooks, reference and instructional materials, and audio-visual media appropriate for instruction that will provide the knowledge and skills required for successful employment in the occupations or cluster of related occupations for which training is being provided.

Instruction--Instruction shall be based upon a job analysis of the occupations taught and the knowledge and skills required for performance of jobs or operations in accordance with accepted procedures and standards of the occupation. Instruction will include the knowledge and skills required in selected occupations and will be conducted through classroom and laboratory experience. Included will be the latest information necessary for competencies required in the occupation for which training is being conducted.

Extensive use will be made of field trips to establishments having occupations requiring knowledge and skills in home economics subjects for demonstrations of accepted procedures and operations by employees of those establishments skilled in the types of employment for which students are being trained. The teacher will conduct extensive demonstrations of these procedures and operations in school classrooms and laboratories and specific project assignments will be given students paralleling accepted procedures and operations in the occupation being taught.

Youth Leadership Organization--Students enrolled in Pre-employment Laboratory Training Programs are eligible for membership in the Future Homemakers of America youth leadership organization, the purposes of which are described in this Guide under the program of Vocational Homemaking Education.

Qualifications and Certification of Teachers--Teachers as a minimum shall have the baccalaureate degree in home economics from an institution approved for the preparation of vocational homemaking education teachers with a minimum of 42 semester hours in the various areas of home economics, or a major in a specific home economics subject matter field specifically related to the particular occupation to be taught when the program being conducted is in a single occupation or in closely related occupations. In addition, they should have specialized training and occupational experience related to the occupation or occupations for which training is being conducted in the program.

Local Advisory Committee--Since the success of Pre-employment Laboratory Training programs depends upon a close relationship between the school and home economics occupations of the community, there is a definite need for a local advisory committee. The committee should be composed of employers and employees representing the home economics occupations for which training is being offered, and should be appointed by the superintendent of schools with the assistance of the vocational homemaking education teacher. The advisory committee has no administrative function but its members can be of valuable assistance in determining training needs, advising on the instruction required, adequate equipment and facilities, and in promoting, publicizing, reviewing and evaluating the program. These activities are essential in assuring properly trained persons for employment in the occupations for which training is being conducted.

Vocational Distributive Education

Objectives of Programs--Vocational distributive education is designed to provide the knowledge and skills needed by high school students for entry into employment in retailing, wholesaling and service occupations.

Types of Programs--Vocational distributive education may be conducted for high school students in two types of programs, or a combination of these programs:

a. Cooperative Part-time Training.
b. Pre-employment Laboratory Training.

Cooperative Part-time Training:

Objectives--Programs of Cooperative Part-time Training shall be designed to provide technical instruction and on-the-job supervised training and work experience for high school students preparing to enter employment in occupational classifications marketing and distributing products and services in retailing and wholesaling establishments.

General Plan of Operation--Training is conducted through cooperation of local schools with local distributing and marketing establishments. Students receive practical, supervised on-the-job training in their chosen occupation by working each school afternoon. Each morning the school provides individual instruction directly related to the job of each student in a regularly scheduled cooperative part-time class conducted by the teacher who also has the responsibility of selecting students for training, placing them in employment according to their interests and abilities and correlating their work experiences on the job with the cooperative part-time classroom instruction directly related to the job of each student.

The plan of operation shall conform to requirements for all Cooperative Part-time Training Programs specified in this section of the Guide.

Approvable Occupations--To be approved for Distributive Cooperative Training, an occupation must be (1) classified as a distributive occupation found in retailing and wholesaling, or an occupation marketing or selling services, and (2) requiring a minimum of 175 hours of classroom instruction and 525 hours of supervised on-the-job training and work experience per school year in an approved distributive occupation. Approved distributive occupations include the following:

In Retailing:

Advertising copywriter
Advertising layout man
Advertising manager
Customer service manager
Customer service employee
Credit interviewer
Credit manager
Deliveryman
Department and division buyer
Department supervisor
Display department employee
Display manager
Merchandise manager
Personnel interviewer
Personnel manager
Receiving and shipping department employee
Salesperson in various merchandise departments
Stockman
Training department employee
Training director
Warehouseman

In wholesaling firms:
Salespeople, sales promotion employees, and others distributing products and services to retailers and jobbers

In service occupations:
Salespeople, sales promotion employees selling services such as insurance, banking services, transportation, and cleaning and renovation services

Occupations Not Approvable--Occupations which are not approvable for Cooperative Part-time Training in Distributive Occupations include those which come within the definition of programs for agriculture, home economics, industrial, technical and vocational office education and occupations generally considered professional or requiring the baccalaureate or higher degree.

Class Schedule--Students shall receive individual and group instruction in the classroom fifty-five minutes per day, five days per week. In addition, each student shall be employed for a minimum of fifteen hours per school week, receiving supervised job experience in his chosen distributive occupation. Employment on Saturdays and holidays is optional with student and employer but cannot be counted in the fifteen hours per school week required.

High School Credits--The student may earn two credits upon satisfactorily completing 175 clock hours of related classroom instruction and 525 hours of supervised work experience per school year. Students may earn three credits for three semesters, or four credits for two years of training.

Student Selection--High school students sixteen years of age or older who are of junior and senior classification are eligible to enter the program provided they have an interest in and a vocational need for such training. Acceptance for membership shall be on the basis of training objective, aptitude, interest, need, physical and mental competency, and other qualifications essential to successful employment. Applicants who are not employed at the time they are admitted to the class must be employed within two weeks. If they have secured their own job and wish to receive further training in the present work, the occupation must be an occupation approved for this program in this Guide or be approved as specified in General Policies on Vocational Education contained in the Guide.

Facilities--The school shall provide a standard classroom which contains sufficient floor space to accommodate the group of students enrolled. The classroom shall contain library space, bookcases, magazine racks, bulletin cases, filing cabinets, and a desk for the teacher-coordinator.

Equipment, Supplies, and Instructional Materials--The school shall furnish equipment, supplies, and instructional aids needed by the teacher and by the students enrolled in the program. Individual student instructional materials and daily lesson assignments directly related to the job of each student must be supplied each student. In addition, the school shall provide reference books, manuals, bulletins, charts, and visual aids appropriate for each occupation in which training is offered. Standard equipment includes sufficient study tables for individualized study and student projects. Additional desirable but optional equipment includes store unit fixtures for demonstration classroom training in accepted procedures and operations in retail and wholesale occupations.

Instruction--Students will receive individual and group instruction fifty-five minutes per day five days per week. Approximately one-half of the time will be devoted to individualized supervised study of content directly related to the occupational objective of the student. The course of study shall be geared to job requirements, determined by job analysis made in cooperation with employer and teacher-coordinator, and shall be coordinated with the practical work experience the student is to receive. Students shall receive group instruction for approximately one-half of the time to orient and adjust to employment conditions, to develop proper attitudes toward school, employment, social and civic responsibilities, and acquire knowledge and skills common to all of the occupations being learned by the class group. Classroom instruction and practical work experience shall include the latest technical information and skills essential in developing competencies in the occupation for which training is being conducted. A student is not considered to be an eligible student until his approved training plan is on file in the Texas Education Agency not later than two weeks after job placement.

Training Stations--A training station is defined as the distributive business which employs a cooperative part-time student and provides him supervised work experience in accordance with a written training agreement or plan. It is not necessarily true that all establishments engaging in the same type of work can provide the same quality of work experience. For this reason, appropriate criteria should be followed in placing students in various places of employment. Such criteria include: (1) the respectability and reputation of the employer, (2) competence of employees, (3) standards of workmanship, (4) adequacy and appropriateness of equipment, (5) volume of business, (6) policies of the company toward occupational training, including agreement of employer to employ students part time throughout the school year, and (7) employer-employee relationships existing.

Training Plans--The training of each student, both in the classroom and on the job, is conducted in accordance with a written training plan developed cooperatively by the teacher-coordinator and the employer. The training plan includes such pertinent points of agreement as:

1. Skills to be learned through on-the-job training and work experience.
2. Technical information to be taught in the classroom.
3. Length of training.
4. Hours of employment (a minimum of fifteen per school week throughout the school year is required).
5. Wages to be paid (trainees should receive the same hourly wages as other beginners in the occupation).
6. Periodic wage increments.

A student is not considered an eligible student until his approved training plan is on file in the Texas Education Agency, not later than two weeks after job placement. Individual training plans must bear the approval of the student, his parents, his employer, the school's coordinator and chairman of the local advisory committee.

Coordination Activities--Each school day afternoon the teacher-coordinator engages in numerous activities essential to the operation of successful programs. Such activities include the following: supervisory visits to the training station of each student at least once weekly, and more often as necessary, to confer with

employers on student progress and needs, counsel with prospective employers, students and their parents, confer with advisory committee members, and prepare program records and reports.

Youth Leadership Organization--All students enrolled in the program should have the opportunity for membership in a local chapter of the Distributive Education Clubs of America. The leadership, competition, and social activities of the chapter are correlated with the instructional program and result in additional benefits to student members.

Qualifications and Certification of Teachers--Teachers as a minimum must have a baccalaureate degree from a recognized four-year college or university and three years of approvable wage-earning experience in distributive occupations. Beginning teacher-coordinators must successfully complete the orientation workshop to become eligible for the Provisional Certificate in Distributive Education and complete other teacher training courses in annual State-wide summer conferences.

Local Advisory Committee--Since the success of the Cooperative Part-time Training programs depends upon a close relationship between the school and distributive occupations of the community, there is a definite need for a local advisory committee. The committee should be composed of members of employers and employees representing the distributive occupations for which training is being offered, and should be appointed by the superintendent of schools with the assistance of the vocational distributive education teacher. The advisory committee has no administrative function but its members can be of valuable assistance in determining training needs, advising on the instruction required, adequate instructional materials, and in promoting, publicizing, reviewing and evaluating the program. These activities are essential in assuring properly trained persons for employment in the occupations for which training is being conducted.

Pre-employment Laboratory Training:

Objectives: Programs in Pre-employment Laboratory Training shall be designed to provide technical instruction and practical experience for high school students preparing to enter employment in distributive occupations. Technical training and practical experience shall be provided in the knowledge and skills required in selected occupations and clusters of related distributive occupations in the school distributive education classroom and a specially equipped laboratory in the distributive education department.

Approvable Occupations--Occupations approvable under this plan include occupations as listed above under the Cooperative Part-time Training program in distributive education when there is a need for this program to prepare students for these occupations as defined in Policies of this Guide. Programs conducted shall provide instruction on a sequential basis necessary for students to acquire the knowledge and skills essential to successful performance of jobs or operations according to accepted standards in the occupation for which students are being prepared.

Class Schedule--The program shall be scheduled for classroom and laboratory instruction for two consecutive hours each day for a minimum of one school year and a maximum of two school years.

High School Credits--Students may earn one and one-half credits upon satisfactory completion of one year (350 clock hours) of classroom and laboratory training, or three credits upon satisfactory completion of two years (700 clock hours) of classroom and laboratory training when more than one year is necessary for preparation for the occupation for which training is conducted.

Student Selection--High school students sixteen years of age or older who are of junior or senior classification are eligible for entrance into the program provided they have an interest in and need for such training. Acceptance for membership shall be on the basis of training objective, aptitude, interest, need, physical and mental competency, and other qualifications essential to successful training and employment.

Facilities--The classroom and a special laboratory of the distributive education department in the school shall be provided for training high school students for gainful employment in specific occupations in the Pre-employment Laboratory program conducted either as a separate program or as a separate class combined with the Cooperative Part-time program in distributive education. Laboratories shall contain library space, book cases, magazine racks, bulletin boards, filing cases and a desk for the teacher.

Equipment, Supplies and Instructional Materials--The school shall provide the type, quality, and quantity of equipment essential in teaching the knowledge and skills necessary for efficient instruction and practical experience for students in the type of Pre-employment Laboratory Training program to be conducted. The laboratory shall contain fixtures, equipment, and other items typical of a modern retailing or wholesaling establishment and various merchandise and product samples for use by the teacher and students in the instructional program. Equipment shall be maintained and updated annually. The school shall provide textbooks, reference and instructional materials and audio-visual media appropriate for instruction that will provide the knowledge and skills required for successful employment in the occupation or cluster of related occupations for which training is being conducted.

Instruction--Instruction shall be based upon a job analysis of the occupations taught and the knowledge and skills required for performance of jobs or operations in accordance with accepted procedures and standards of the occupation. Instruction will include the knowledge and skills in selected occupations and will be conducted through classroom and laboratory experience. Included will be the latest information necessary for competencies required in the occupation or occupations for which training is being conducted.

Extensive use will be made of field trips to distributive business establishments for demonstrations of accepted procedures and operations by employees of these establishments skilled in the types of employment for which students are being trained. The teacher will conduct extensive demonstrations of these procedures and operations in school classrooms and laboratories and specific assignments will be given students in making these demonstrations paralleling accepted procedures and operations in the occupations being taught.

Maximum use will be made of project assignments, market and product information studies, visiting employers and employees from distributive businesses to conduct

special instruction related to their employment experience, and students will be placed for actual employment experience in distributive occupations for sufficient periods of time to give them as much practical on-the-job application as is possible of the classroom and laboratory instruction conducted in the school.

Youth Leadership Organization--Students enrolled in the Pre-employment Laboratory Training program are eligible for membership in the Distributive Education Clubs of America, and should have the opportunity for membership in a local chapter of this organization. The leadership, competition, and social activities of the chapter are correlated with the instructional program and result in additional benefits to student members.

Qualifications and Certification of Teachers--Teachers as a minimum must have a baccalaureate degree from a recognized four-year college or university and three years of approvable wage-earning experience in distributive occupations. Beginning teachers must successfully complete the orientation workshop to become eligible for the Provisional Certificate in Distributive Education and complete other teacher training courses in annual State-wide summer conferences.

Local Advisory Committee--Since the success of Pre-employment Laboratory Training programs depends upon a close relationship between the school and distributive businesses of the community, there is a definite need for a local advisory committee. The committee should be composed of employers and employees representing the distributive occupations for which training is being offered, and should be appointed by the superintendent of schools with the assistance of the teacher. The advisory committee has no administrative function but its members can be of valuable assistance in determining training needs, advising on the instruction required, adequate equipment and facilities, and in promoting, publicizing, reviewing and evaluating the program. These activities are essential in assuring properly trained persons for employment in the occupations for which training is being conducted.

Vocational Industrial Education

Objectives of Programs--Vocational industrial education for high school students includes any subject designed to develop manipulative skills, technical knowledge and related information necessary for employment in any craft, skilled trade, or single-skill occupation which directly functions in designing, producing, processing, fabricating, assembling, testing, maintaining, servicing or repairing any product or commodity. Also included is training for service and certain semi-professional occupations considered to be trade and industrial in nature.

Types of Programs--Vocational industrial education for persons enrolled in high schools may be conducted in three types of programs and in one program in health occupations:

a. Industrial Cooperative Training
b. Pre-employment Shop Programs for Skilled Occupations
c. Pre-employment Shop Programs for Single-skill Occupations
d. Cooperative Training in Health Occupations

Each program differs in standards, method of operation and qualifications of teachers. For this reason, each will be described separately.

Cooperative Part-time Industrial Training:

Objectives--In many communities it is not practical to offer pre-employment shop training in many of the trades offering employment in the community because of the comparatively small numbers of persons employed in each occupation. In such communities, use of the Industrial Cooperative Training plan makes possible real trade training for small numbers of students in several different occupations without necessitating an extensive financial outlay for equipment, tools, and materials in the school plant.

General Plan of Operation--Training is conducted through cooperation of local schools with local businesses and industrial establishments. Students receive practical, supervised on-the-job training in their chosen occupation by working each school afternoon. Each school morning the school provides individual instruction directly related to the job of each student in a regularly scheduled class conducted by a teacher-coordinator who also has the responsibility of selecting students for training, placing them in employment according to their interests and abilities, and correlating their work experiences and related studies.

The plan of operation shall conform to requirements for all Cooperative Part-time Training Programs specified in this section of the Guide.

Approvable Occupations--To be approved for Industrial Cooperative Training, an occupation must be (1) classified as "skilled" in the standard Dictionary of Occupational Titles, and (2) require at least 2,000 hours of training. Many occupations meet these requirements, but those most frequently selected by students are:

Automobile body repairman
Automobile mechanic
Automobile parts man
Automotive electrician
Baker
Cabinetmaker
Carpenter
Chef
Commercial artist
Dental technician
Diesel mechanics
Draftsman
Dry Cleaner
Electrical appliance serviceman
Electric motor repairman
Electrician
Furniture repairman
Machinist
Machinist, automobile
Medical technician
Meat cutter
Nurse aide (hospital)
Office machine serviceman
Offset-pressman
Painter
Photographer
Plumber
Printer
Radio repairman
Refrigeration and air conditioning mechanic
Sheet metal worker
Television repairman
Watchmaker
Welder

Occupations Not Approvable--Occupations which are not approvable for Industrial Cooperative Training include: (1) those which come within the definition of programs for agriculture, home economics, distributive, technical and vocational office education; (2) those for which a legally authorized State examining board prescribes the curriculum, training period and licensing procedures (barbering, cosmetology, undertaking and the like); and (3) occupations generally considered professional or requiring the baccalaureate or higher degree.

Class Schedules--A minimum of two one-hour related studies classes are scheduled each school day morning, one for first-year students and one for second-year students. In addition, students are enrolled in two to three non-vocational classes leading to high school graduation. After the noon period, students report to their respective places of employment for three to four hours of supervised job experience.

Credits--Students earn two credits for 175 hours of related instruction combined with 525 hours of supervised work experience per school year. Work during Saturdays and holidays is not considered supervised work experience.

Selection of Students--Students sixteen years of age or older who are of junior or senior classification are eligible to enter the program. Applicants who are not employed at the time they are admitted to the class must be employed within two weeks. If they have secured their own job and wish to receive further training in their present work, the occupation must be an occupation approved for this program in this Guide or be approved as specified in General Policies on Vocational Education contained in the Guide.

Many students must be placed in part-time employment by the coordinator. This calls for careful student selection, based upon the coordinator's knowledge of the occupational requirements of the various fields in which cooperative training is offered. In most communities, the testing services of the Texas Employment Commission field offices are available in determining aptitudes of students for various vocations.

Facilities--The local school is expected to furnish adequate facilities for conducting the related studies of cooperative students. The classroom should contain study tables and chairs, bookcases, chalkboard, bulletin boards, filing cabinets, and a desk for the teacher-coordinator. A library of instructional material, such as reference books, manuals, bulletins, charts, course material, and the like, for each occupation in which training is offered must be furnished by the school.

Instructional Materials--In teaching students with different occupational objectives, it is impossible to teach the technical information surrounding several different occupations in the traditional manner of group instruction. The only feasible plan of instruction for such a group is the supervised study plan in which each student works on his individual course of study independent of the group.

Supervised study necessitates individual daily study assignments. It is the sole responsibility of the teacher-coordinator to see that each student in his related subjects classes has a definite study assignment each day. Assignment sheets in several of the most prevalent occupations have been written, printed, and made available for use. However, course material of this type requires constant revision and supplementing by coordinators in order to keep it up to date. When a student is placed in an occupation for which material is not already available, assignments must be written without delay and, in order that the coordinator may produce the best material possible, he must have a thorough knowledge of techniques and standards for production of instructional material. Instructional materials needed for each occupation taught include: student study guides, vocational textbooks, technical reference library, trade journals, equipment and supplies catalogues and, when available, films and filmstrips.

Classroom Instruction--During the five hours scheduled for classroom instruction each school week, students will engage in two types of activities described as follows:

1. Occupationally Related Instruction--Each student devotes from sixty to eighty per cent of the instructional time to supervised study of content directly related to his occupational objective. His course of study is tailored to the job requirements of his employer, as determined by a job analysis made by the employer and teacher-coordinator, and is coordinated with the practical work experience he is to receive. Each student works independently and progresses in accordance with his own ability.

2. Group Instruction--Approximately twenty to forty per cent of the total instructional time is devoted to group instruction and activities designed to orient and adjust students to employment conditions and to develop proper attitudes toward the school, employment, social, and civic relationships.

Training Stations--A training station is defined as the industrial establishment or place of business which employs a cooperative part-time student and provides him supervised work experience in accordance with a written training agreement or plan. It is not necessarily true that all establishments engaging in the same type of work can provide the same quality of work experience. For this reason,

appropriate criteria should be followed in placing students in various places of employment. Such criteria include: (1) the respectability and reputation of the employer, (2) competence of employees, (3) standards of workmanship, (4) adequacy and appropriateness of equipment, (5) volume of business, (6) policies of the company toward occupational training, including agreement of employer to employ students part time throughout the school year and (7) employer-employee relationships existing.

Training Plans--The training of each student, both in the classroom and on the job, is conducted in accordance with a written training plan developed cooperatively by the teacher-coordinator and the employer. The training plan includes such pertinent points of agreement as:

1. Skills to be learned through job training.
2. Technical information to be taught in the classroom.
3. Length of training.
4. Hours of employment (a minimum of fifteen per school week throughout the school year is required).
5. Wages to be paid (trainees should receive the same hourly wages as other beginners in the occupation).
6. Periodic wage increments.

A student is not considered an eligible student until his approved training plan is on file in the Texas Education Agency, not later than two weeks after job placement. Individual training plans must bear the approval of the student, his parents, his employer, the school's coordinator and chairman of the local advisory committee.

Coordination Activities--Each school day afternoon the teacher-coordinator engages in numerous activities essential to the operation of a successful program. Such activities include the following: (1) make supervisory visits to the training station of each student at least once weekly and more often as necessary, (2) confer with employers on student progress and needs, (3) secure employer's periodic evaluations of students' performance, (4) counsel with prospective students, (5) confer with parents of students and prospective students, (6) confer with advisory committees, (7) prepare program records and reports, and (8) confer with prospective employers.

Youth Leadership Organization--Students enrolled in Industrial Cooperative Training have opportunities to develop leadership abilities through participation in the Vocational Industrial Club of Texas (VIC). Leadership activities include planning and carrying out approved social and civic projects, experience in group leadership, and State-wide competition as individuals and teams in leadership skills and craftsmanship.

NOTE: A "Handbook in Industrial Cooperative Training" which covers all aspects of the program is available from the

Engineering Extension Service
Texas A&M University
College Station, Texas

150 pages illustrated -- Price $2.00

Qualifications and Certification of Teacher-Coordinator--To qualify as teacher-coordinator of Industrial Cooperative Training, a person must meet the following requirements:

1. General education: Graduation from a standard college or university.

2. Occupational experience: Three years of experience as a wage earner in two or more industrial occupations or skilled trades.

3. Teaching experience: Two years of teaching experience in the secondary public schools, preferably in the field of industrial education.

4. Professional education: Teacher-coordinators will be required to complete six two-semester-hour teacher training courses for a Provisional Certificate in Trade and Industrial Education within the first two years of teaching. The first three courses must be completed before beginning the first year.

The coordinator, more than any other faculty member, has opportunity to disseminate a vast amount of authentic occupational information about his community, both informally and through organized effort. He must have readily available such information as job requirements, employment opportunities, wage schedules, working conditions, training facilities, occupational trends, and the like which may be used in assisting students in making wise and intelligent choices of vocations. The coordinator should have one school period scheduled for vocational counseling and guidance activities.

Local Advisory Committees--The success of any occupational training program--especially one of the cooperative type--depends upon the close relationship and cooperation between the school and industries of the community. It is obvious then that there is a definite need for a committee, composed of representative persons from business and industry, to guide the school in inaugurating and maintaining a program of instruction which will best meet the training needs of the community.

Advisory committee members are appointed by the superintendent of schools and serve for one year, subject to reappointment. The committee should be composed of equal representation from employer and employee groups and one representative of the general public.

Advisory committees have no administrative authority, but assist the school through recommendations on such matters as general training policies, approval of training stations, program promotion and development, program evaluation and other important areas of training.

Pre-employment Shop Programs for Skilled Occupations:

Objectives--Pre-employment shop programs are designed to provide high school youth with both practical and technical training in the basic skills of selected trades or "clusters" of related occupations. As a rule, the most feasible type of shop class for the average high school is that which provides instruction in two or more related trades, such as a general metals shop which includes units in machine

tool operation, sheet metal work, welding, and foundry work. Instruction is given in laboratory or shop facilities of the local schools and is specifically planned to meet employment opportunities and requirements in the service area of the school.

Approvable Occupations and Types of Programs--Approved shop programs, which must be applied for as separate vocational teacher units, include:

- Airplane and engine mechanics
- Appliance repairing
- Automobile mechanics
- Building trades
- Cabinetmaking
- Commercial art
- Cosmetology
- Drafting
- Electrical trades
- Machine shop
- Metal trades
- Photography
- Piping trades
- Printing
- Refrigeration and air conditioning
- Radio and television servicing
- Sheet metal fabrication
- Welding

Other courses may be added as the need for them is established through recognized occupational surveys and forecasts and apprcval by the Texas Education Agency as specified in General Policies on Vocational Education contained in this Guide.

Class Schedules--Students are scheduled for shop instruction three consecutive hours each school day for a two-year period and are enrolled in non-vocational courses during the remaining portion of the school day. Upon special approval, schools may operate shop programs on a three-year basis if the need can be justified.

High School Credits--Preparatory shop programs are fully accredited high school subjects which carry two units of credit for each year (525 clock hours) of instruction. Not fewer than two credits may be earned. (Texas Education Agency Bulletin 615, pages 282-283)

Selection of Students--Regular high school students enrolled in grades ten, eleven, and twelve are eligible for entrance into shop classes. The age of entrance upon a vocational training program should be regulated locally at such point as will insure that those completing training will be sufficiently mature to be accepted as workers, will complete the course at the same time they complete high school and be available for employment. Admission must be restricted to those who are physically and mentally competent to do the work required in the program and who possess qualifications necessary for employment in the occupation for which the training is offered. As a rule, mentally or physically handicapped persons do not profit from the instruction and are a serious source of danger to themselves and other students in working with machines and tools.

Facilities--The operating school has the responsibility of providing adequate shop space, auxiliary rooms, equipment and supplies for each instructional program. The shop area must be sufficiently large to permit a comfortable and safe work area around each item of machinery or equipment. For effective instruction and supervision, no more than fifteen students should be enrolled in any one shop

class. Technical information related to the occupation is taught with shop instruction and no separate classroom is required. An area within the shop where students may assemble for group instruction, demonstrations and other activities is required.

The shop building itself should be located on the high school campus, though not necessarily attached to the main building. It should be comparable to other buildings in design and construction.

Lighting must be adequate throughout the shops; areas where precision work is done must be provided with auxiliary lighting. Heating and ventilation must be adequate. (Shops in which there is normally considerable physical activity should be six to eight degrees cooler than conventional classrooms.) Hazardous machines must be equipped with guards. Safety aisles or areas should be clearly indicated and fire extinguishers, first-aid kits and other protective devices must be readily available.

An organized system is required for housing and issuing necessary tools, small parts and supplies to pupils.

Equipment, Tools and Supplies--Items of equipment, tools and supplies must be comparable in type, size and quality to those used in commercial establishments. It is the school's obligation to keep equipment up to date and in a state of good repair. The teacher should maintain an inventory of all equipment and should submit a list of needed equipment and supplies to the administrator at the end of each term.

Instruction--Instruction is based upon an analysis of the trades or occupations taught and is centered around the performance of useful or productive jobs or operations done by students in accordance with the accepted procedures and standards which prevail in the occupation taught. After the student has gained sufficient skill and knowledge of various operations through laboratory experiences, he should be assigned real or "live" jobs provided by patrons of the school. No charges other than for parts, supplies and materials can be made for such work.

Instructional Materials--The school will need to provide a technical library for the occupations taught. In addition, shop manuals, equipment catalogues, trade journals and a variety of visual aids are needed for effective instruction.

State-adopted textbooks are available for most types of shop programs. The superintendent should determine if the local textbook selection committee has adopted all books on the multiple textbook lists for Vocational Industrial Education (9-58-001 through 9-59-605 in Texas Education Agency Bulletin 650).

Youth Leadership Organization--All students enrolled in Vocational Industrial Shop courses have opportunities to develop leadership abilities through participation in the Vocational Industrial Club of Texas (VIC). Leadership activities include planning and carrying out approved social and civic projects, experience in group leadership, and State-wide competition as individuals and teams in leadership skills and craftsmanship.

Qualifications of Teachers--Teachers of these programs must be occupationally competent. They must be high school graduates with two years of post-high school

education or training, along with five years of full-time working experience in the occupation for which instruction is to be given; or, they must have three years' full-time experience in the occupation to be taught, and a degree from a recognized four-year college or university.

Certification of Teachers--After the qualifications of a teacher have been approved by the Director of Vocational Industrial Education and the teacher has been employed by a public school, an Emergency Teaching Permit for one year will be issued. A second Emergency Permit may be issued for the second year of teaching providing the teacher has completed six semester hours of specified teacher training courses. He will be eligible for a Provisional Certificate (with an endorsement in Trade and Industrial Education) after he has completed six semester hours of prescribed teacher training courses and has taught in his field successfully for two years. Before this certificate can be issued, the teacher must also complete the Federal and State Constitutions course which is a statutory requirement for all public school teachers.

Local Advisory Committee--Committees composed of equal numbers of local employers and employees representing the occupation for which training is being offered should be appointed by the superintendent to assist in determining student entrance standards, scope of the training program, equipment, program standards, and to provide other advisory assistance. Such advisory committees have no administrative authority but are helpful in assuring an efficient training program which produces graduates who are employable in the fields for which training is offered.

Pre-employment Shop Programs for Single-skill Occupations:

Objectives--Programs must be designed to prepare students for one specific payroll job or occupation instead of a "cluster" of closely related occupations for which training is offered in regular high school shop programs.

Approvable Occupations and Types of Programs--By limiting instruction to specialized skills, a schedule of two hours per day can result in sufficient training to prepare students for employment at the entry level in several occupations for which employment opportunities exist. Such occupations and programs include the following when there is a need for programs as defined in this Guide:

Aircraft welding
Automotive service
Automotive electricity
Band instrument repairing
Boat repairing
Bookbinding
Cleaning and pressing
Drafting (specialized)
Electric motor rewinding
Floor laying
Furniture repairing
Glazing
Painting
Photographic finishing
Photostating and blueprinting
Power machine operation
Radiator repairing
Sewing machine repairing
Shoe repairing
Sign repairing
Small engine repairing
Sporting goods repairing
Tire recapping and repairing
Typewriter repairing
Upholstery (furniture)
Upholstery (automobile)
Vending machine repairing
Venetian blind and awning manufacturing
Wheel (front end) aligning

Facilities--The school will need to provide adequate space and equipment for conducting shop programs. Because practically no programs of the type listed above have ever been operated by public schools, no standards regarding instructional facilities have yet been developed. Facilities for such programs will be approved on an individual basis until standards can be developed.

Other Requirements--All other standards and requirements pertaining to equipment and supplies, instruction, selection of students, qualifications of teachers, certification of teachers, youth leadership organizations, and local advisory committees, which are explained under "Pre-employment Shop Programs for Skilled Occupations" also pertain to shop programs for training in single-skill occupations. Differences between these two programs are as follows:

Class Schedule--Pre-employment programs for training in single-skill occupations may be conducted for two consecutive clock hours each school day and a program may be organized for one or two years of instruction. Students are enrolled in non-vocational courses during the remaining portion of the school day.

High School Credits--One and one-half (1½) units of high school credit for completion of one year (350 clock hours) of instruction.

Cooperative Part-time Training in Health Occupations:

Objectives--Part-time cooperative training programs may be operated in public schools to prepare high school students for employment at the entry level in any of several different occupations related to health and patient care in hospitals, clinics, laboratories, doctors' and dental offices and other health agencies. These occupations cannot be professions (requiring the baccalaureate degree) or those for which a legally authorized State examining board prescribes the curriculum, training period and licensing procedures.

General Plan of Operation--Basically, this type of cooperative training program is conducted in exactly the same manner and according to the same standards as the Industrial Cooperative Training program previously described. The essential differences are in the type of occupations approvable and the qualifications of the teacher-coordinator and students.

Approvable Occupations--Occupations approvable under this plan include the following when there is need for programs as defined in policies contained in this Guide:

- Dental assistant
- Dental laboratory assistant
- Medical laboratory assistant
- Doctors' office assistant
- X-ray technician's assistant
- Medical records assistant
- Ward clerk or ward management assistant
- Occupational therapy assistant
- Orthopedic appliance mechanic
- Inhalation therapy assistant

If sufficient employment opportunities exist, a "homogeneous" cooperative program may be operated to train students in only one of the health occupations listed above. This type of program is considered most effective but is limited to communities with extensive health service occupations. Most programs will include several different though related health occupations.

Qualifications of the Teacher-Coordinator--The teacher-coordinator must be a licensed or registered practitioner in one or more of the health occupations, preferably a registered professional nurse. She must have at least two years of recent employment experience beyond that required to become registered in two or more areas within a licensed hospital and be thoroughly familiar with the functions and interrelationship of all health services or agencies. She must meet all the professional education certification requirements of the teacher-coordinator of Industrial Cooperative Training.

Qualifications of Students--Students must be at least sixteen years of age and enrolled in the upper two grades of high school. Because of the responsibilities associated with rendering health services, students must be selected carefully. They should possess average or high intelligence and good health, have a sustained interest in the health service field they wish to enter as a career and have a good record of dependability and citizenship. Pre-requisite subjects are general science and biology. Other natural sciences are recommended to be taken prior to or concurrently with this program.

Advisory Committees--A local advisory committee is especially important in organizing and operating a Cooperative Part-time Program in Health Occupations. The same committee organized to advise on a program of Industrial Cooperative Part-time Training will not have the qualifications necessary to advise on matters pertaining to health occupations. Membership on a representative committee is suggested as follows:

Employers -- Two members selected from physicians, dentists, hospital administrators or department heads.

Employees -- Two members selected from professional nurses, dental assistants, vocational nurses or technicians.

Public -- One member selected from county or city health doctors, members of the Parent-Teachers Association and civic leaders.

Suggested Steps in Inaugurating a Program

1. Contact key people engaging in health services in the community--doctors, dentists, hospital administrators, nurses and others--regarding the need and feasibility of training high school students in from one to ten different health occupations on a cooperative basis.

2. Survey students to be enrolled in grades eleven and twelve the following year to determine interest in training in health occupations.

3. If the above investigations are favorable, contact the Vocational Education Division of the Texas Education Agency and request staff assistance in providing additional information and in surveying the community for employment and training opportunities.

4. When the need has been established, request forms and apply for a vocational industrial education teacher unit. This should be done as early as possible before July 1.

5. Organize a local advisory committee. Secure the assistance of the committee in locating a qualified teacher-coordinator. She will need to attend the first six weeks summer teacher training session conducted at a designated teacher training institution before beginning employment on August 1.

Vocational Technical Education

Objectives of Programs--Vocational technical education for high school students shall be designed to provide instruction involving application of science, mathematics and technology in training programs preparing persons to become technicians. Included in the responsibilities of technicians is ability to use hand tools and instruments in the installation, operation and adjustment of technical equipment. Instruction in the program is designed to prepare the student for entrance into employment as a member of a team composed of the scientist or engineer, the technician, the skilled mechanic, and the production craftsman.

Types of Programs--Though many different types of technical education programs are conducted, principally by public junior and senior colleges and technical institutes operating programs on a two-year post-high school basis and enrolling more mature students with excellent scholastic achievement in science and mathematics, the following two types of programs are conducted for high school students:

a. Pre-employment Laboratory Training in Data Processing Technology
b. Pre-employment Laboratory Training in Electronics Technology

Objectives of These Programs--Pre-employment Laboratory Training programs in data processing and electronics shall be designed to provide technical instruction and practical experience for students preparing to enter employment in the data processing or electronics occupations. Student candidates for these programs must have appropriate qualifications described in "Student Selection" below. Technical training and practical experience in the classroom and specifically equipped laboratories shall be provided in the knowledge and skills required for successful employment in these technologies.

Approvable Occupations--Occupations approvable are data processing and electronics. Programs for qualified high school students in other technical occupations may be established as approved by the Texas Education Agency under General Policies on Vocational Education contained in this Guide.

Class Schedule--The program shall be scheduled for classroom and laboratory instruction for two consecutive hours each day for a minimum of one school year and a maximum of two school years.

High School Credits--Students may earn two credits per year for satisfactory completion of classroom and laboratory instruction for a minimum of 350 clock hours of training for one year and 700 clock hours during a two-year period.

Student Selection--High school students sixteen years of age or older who are of junior or senior classification are eligible for entrance into programs, provided they have the following qualifications:

a. Excellent aptitudes, ability and background in mathematics with completion of plane geometry and two years of algebra.
b. Good scholastic achievement in science courses.
c. Mental maturity and purposeful attitudes in achieving training objectives.

d. Excellent aptitudes for technical occupations and training in technological fields.
e. Satisfactory ratings from required testing and counseling programs providing justifiable evidence of interest, aptitudes and ability to benefit from training and succeed in employment in technical occupations.

In addition to these qualifications, training in typing and use of calculators will be advantageous to students enrolled in data processing programs.

Facilities--The laboratory as a minimum must average 55 square feet per student and be well planned to accommodate the technical equipment necessary for the program. Library space, bookcases, racks for technical magazines, bulletin boards, filing cases and a desk for the teacher are necessary. Good lighting necessary for precision work is essential, and since the technical equipment used in the program generates considerable heat, temperature controls should be installed.

Equipment, Supplies and Instructional Materials--Equipment used must be modern and comparable in kind and quality to that used in the technical occupations for which training is being conducted. Equipment shall be maintained and updated annually as new technological advances tend to cause obsolescence in technical equipment more rapidly than in many other types of equipment. The school shall provide textbooks, technical trade journals and other technical material and audio-visual media necessary for efficient instruction.

Instruction--Instruction shall be based upon an analysis of the technology being taught and the knowledge and skills required for performance of procedures and operations in accordance with accepted standards in the technical occupation for which training is being provided. Included will be the latest available information and techniques necessary for students to learn in order to have the knowledge and skills required for employment in the technical occupation for which they are being prepared. Regularly scheduled field trips to business and industrial establishments having technical operations and procedures in areas included in the program should be made by teachers and students to supplement instruction in the classroom and laboratory of the school.

Youth Leadership Organization--Students enrolled in vocational technical education programs have opportunities to develop leadership abilities through participation in the Vocational Industrial Club of Texas (VIC). Leadership activities include planning and carrying out approved social and civic projects, experience in group leadership, and State-wide competition as individuals and teams in leadership skills and technical competencies.

Teacher Qualifications and Certification--Teachers of vocational technical programs shall have as a minimum two years of post-high school education in technical, scientific or mathematical fields and, preferably, have the baccalaureate or higher degree from an accredited college or university. In addition, as a minimum, they shall have three years of occupational experience, including one year of continuous and successful experience in the technical occupation they apply to teach. When the qualifications of a teacher have been approved by the

Director of Vocational Technical Education and the teacher has been employed by a public school, an Emergency Permit for the employment of the teacher for one school year is issued to the school. A second Emergency Permit may be issued for the second year of teaching provided the teacher has completed six semester hours of specified teacher training courses. He will be eligible for a Provisional Certificate after completion of six semester hours of prescribed teacher training courses and has taught in his field successfully for two years. Before this certificate can be issued, the teacher must have completed the Federal and State Constitutions courses which are statutory requirements for all public school teachers.

Local Advisory Committee--An advisory committee composed of members who are well informed and interested in the technical field being taught can render valuable services in evaluating a technical education program. The committee should be composed of equal numbers of employers and employees appointed by the superintendent.. School officials should request the advice of the committee regarding selection of equipment, scope of instruction, technological changes, and other information those employed in technical occupations can supply.

Vocational Office Education

Objectives of the Program--Vocational office education emphasizes the career objectives of students. This program does not include instruction in clerical skills for personal use, nor does it include basic business or economic education. Students enrolled in the program have occupational objectives in one or more of the following employment categories: stenographic-secretarial, bookkeeping-clerical, office machines operation, and general office clerical.

Type of Program--Basically, the vocational office education program for high school students is conducted in one type of program described below. As this new phase of vocational education is further developed, other types of programs may be formulated.

Cooperative Part-time Training:

Objectives--Programs of Cooperative Part-time Training shall be designed to provide technical instruction and on-the-job supervised training and work experience for high school students preparing to enter employment in office occupations.

General Plan of Operation--Training is conducted through cooperation of local schools with local establishments having office occupational employment opportunities. Students receive practical, supervised on-the-job training in their chosen occupation by working each school afternoon. Each morning the school provides individual instruction directly related to the job of each student in a regularly scheduled cooperative part-time class conducted by the teacher who also has the responsibility of selecting students for training, placing them in employment according to their interests and abilities and correlating their work experiences on the job with the cooperative part-time classroom instruction directly related to the job of each student.

The plan of operation shall conform to requirements for all Cooperative Part-time Training Programs specified in this section of the Guide.

Approvable Occupations--To be approved for Cooperative Part-time Office Training, an occupation must be (1) classified as an office occupation, and (2) requiring a minimum of 175 hours of classroom instruction and 525 hours of supervised on-the-job training and work experience during the school year in an approved office occupation. Approved office occupations include the following:

Bookkeepers and cashiers
Bookkeeping machine operators
General office clerks
Insurance clerks
Correspondence clerks
File clerks
Library assistants and attendants having office responsibilities
Office machine operators
Payroll clerks
Timekeepers
Receptionists-stenographers
Secretaries
Stenographers and typists
Statistical clerks and compilers
Clerks and other kindred occupations

Occupations Not Approvable--Occupations which are not approvable for Cooperative Part-time Training in Office Occupations include those which come within the definition of programs for agriculture, home economics, distributive, industrial, and technical education and occupations generally considered professional or requiring the baccalaureate or higher degree.

Class Schedule--Students shall receive individual and group instruction in the classroom fifty-five minutes per day, five days per week. In addition, each student shall be employed for a minimum of fifteen hours per school week, receiving supervised job experience in his chosen office occupation. Employment on Saturdays and holidays is optional with student and employer but cannot be counted in the fifteen hours per school week required.

High School Credits--The student may earn two credits upon satisfactorily completing 175 clock hours of related classroom instruction and 525 hours of supervised work experience during his senior school year.

Student Selection--High school students sixteen years of age or older who are of senior classification are eligible to enter the program provided they have an interest in and a vocational need for such training. Acceptance for membership shall be on the basis of training objective, aptitude, interest, need, physical and mental competency, and other qualifications essential to successful employment. Applicants who are not employed at the time they are admitted to the class must be employed within two weeks. If they have secured their own job and wish to receive further training in their present work, the occupation must be an occupation approved for this program in this Guide or be approved as specified in General Policies on Vocational Education contained in the Guide.

Students entering the Cooperative Part-time Training Program are required to have completed basic skill subjects in business education prior to entering this program. They must have completed one or more basic business education subjects directly corresponding to the occupational classification for which they are to be provided vocational office training preparing them for employment.

The following basic business education subjects for each type of occupational employment classification should have been completed prior to entrance into the Cooperative Part-time Vocational Office Education Program:

Occupational Classification	Business Education Subjects
Stenographic-Secretarial	One Year Typewriting One Year Shorthand
Bookkeeping-Clerical	One Year Typewriting One Year Bookkeeping
Office Machine Operators	One Year Typewriting One Year Bookkeeping
General Office Clerical	One Year Typewriting

Facilities--The school shall provide an adequate combination classroom and vocational office education laboratory of approximately 1200 square feet to accommodate twenty students and the instructional equipment needed in this program. The classroom shall contain library space, bookcases, magazine racks, bulletin cases, filing cabinets, and a desk for the teacher-coordinator.

Equipment, Supplies, and Instructional Materials--The school shall furnish equipment, supplies, and instructional aids needed by the teacher and by students enrolled in the program. Individual student instructional materials and daily lesson assignments directly related to the job of each student must be supplied each student. In addition, the school shall provide reference books, manuals, bulletins, charts, and visual aids appropriate for each occupation in which training is offered. Standard equipment includes sufficient study tables for individualized study and student projects.

Equipment for the program should include machines required for developing further the knowledge and skills required of students in their employment in offices. Machines should be comparable to equipment in offices of the community. Equipment of the business education department of the school can be utilized in providing refresher training and further knowledge and skills needed by the Cooperative Part-time students. Additional equipment above the equipment of the business education department that is available to this program is required as needed to give Cooperative Part-time office students the competency necessary in employment.

Instruction--Students will receive individual and group instruction fifty-five minutes per day five days per week. Considerable time will be devoted to individualized supervised study of content directly related to the occupational objective of each student. The course of study shall be geared to job requirements, determined by job analysis made in cooperation with employer and teacher-coordinator, and shall be coordinated with the practical work experience the student is receiving in the office in which he is part-time employed. Students shall receive group instruction to orient and adjust to employment conditions, to develop proper attitudes toward school, employment, social and civic responsibilities, and acquire knowledge and skills common to all of the occupations being learned by the class group. Classroom instruction and practical work experience shall include the latest technical information and skills essential in developing competencies in the occupation for which training is being conducted. A student is not considered to be an eligible student until his approved training plan is on file in the Texas Education Agency not later than two weeks after job placement.

Training Stations--A training station is defined as the office which employs a Cooperative Part-time student and provides him supervised work experience in accordance with a written training agreement or plan. It is not necessarily true that all establishments engaging in the same type of work can provide the same quality of work experience. For this reason, appropriate criteria should be followed in placing students in various places of employment. Such criteria include: (1) the respectability and reputation of the employer, (2) competence of employees, (3) standards of workmanship, (4) adequacy and appropriateness of equipment, (5) volume of business, (6) policies of the company toward occupational training, including agreement of employer to employ students part time throughout the school year, and (7) employer-employee relationships existing.

Training Plans--The training of each student, both in the classroom and on the job, is conducted in accordance with a written training plan developed cooperatively by the teacher-coordinator and the employer. The training plan includes such pertinent points of agreement as:

1. Skills to be learned through on-the-job training and work experience.
2. Technical information to be taught in the classroom.
3. Length of training.
4. Hours of employment (a minimum of fifteen per school week throughout the school year is required).
5. Wages to be paid (trainees should receive the same hourly wages as other beginners in the occupation).
6. Periodic wage increments.

A student is not considered an eligible student until his approved training plan is on file in the Texas Education Agency, not later than two weeks after job placement. Individual training plans must bear the approval of the student, his parents, his employer, the school's coordinator and chairman of the local advisory committee.

Coordination Activities--Each school day afternoon the teacher-coordinator engages in numerous activities essential to the operation of successful programs. Such activities include the following: supervisory visits to the training station of each student at least once weekly, and more often as necessary, to confer with employers on student progress and needs, counsel with prospective employers, students and their parents, confer with advisory committee members, and prepare program records and reports.

Qualifications and Certification of Teachers--Teacher-coordinators as a minimum must have a baccalaureate degree from an accredited college or university with a minimum of 45 semester hours in business education, a minimum of one year of appropriate and successful wage-earning experience in office occupations, and shall have taught business education subjects for a minimum of two years. Additionally, teacher-coordinators shall be required to complete successfully an orientation workshop conducted by the Texas Education Agency, after which they shall be eligible for the Provisional Certificate in Vocational Office Education, and complete other teacher training courses in annual State-wide summer conferences.

Local Advisory Committee--Since the success of the Cooperative Part-time Training programs depends upon a close relationship between the school and office occupations of the community, there is a definite need for a local advisory committee. The committee should be composed of members of employers and employees representing the office occupations for which training is being offered, and should be appointed by the superintendent of schools with the assistance of the vocational office education teacher. The advisory committee has no administrative function but its members can be of valuable assistance in determining training needs, advising on the instruction required, adequate instructional materials and equipment, and in promoting, publicizing, reviewing and evaluating the program. These activities are essential in assuring properly trained persons for employment in the occupation for which training is being conducted.

Financing Programs of Vocational Education for High School Students

Minimum Foundation School Districts

Salaries of Teachers--The salaries of teachers of programs of vocational education in agriculture, homemaking (home economics), distributive, and industrial education, including teachers of health occupations and technical education, are allocated to public schools from the Minimum Foundation School Program Fund. These are bonus units, allocated in addition to other professional units included in the Minimum Foundation School Program Act.

Travel of Vocational Teachers--Maximum annual travel allocations for vocational teacher units are specified in the Handbook on Vocational Education, Bulletin 603, published by the Texas Education Agency in February, 1960 and amended by letter dated March 23, 1962 regarding revised allocations for vocational homemaking education teachers because of unavailability of sufficient funds for this program to pay the original allocations contained in this Handbook. Within funds available, one hundred per cent reimbursement is made on travel of vocational teachers paid by schools for travel performed in accordance with travel regulations contained in the Handbook on Vocational Education.

As the Texas Legislature revises mileage rates for use of personal conveyances by State employees for official travel and per diem rates for hotel room rent and meals, adjustments are made in travel regulations for vocational teachers to correspond to rates paid State employees, as funds are available.

Salaries and Travel of Teachers of Vocational Office Education--Reimbursement on this program is one hundred per cent of the salaries for which teachers are eligible under the Minimum State salary schedule and on travel of teachers, presently in the amount of a maximum of $400 for ten-months employment in the program, for performance of official and necessary duties directly related to this program.

Instructional Equipment and Supplies for New Programs Preparing High School Students for Gainful Employment--New programs preparing high school students for gainful employment are eligible for reimbursement on basic instructional equipment and supplies. A NEW program is defined as a program for which a new or additional unit or fractional part of a unit has been approved by the Assistant Commissioner for Vocational Education for the 1965-66 year, or in subsequent years for the first year a new or fractional unit is allocated.

Schools operating OLD programs started prior to the 1965-66 year have had responsibility to furnish from local funds adequate equipment and supplies in order to maintain approval of programs. If these facilities are presently inadequate, they must be supplied from local funds in order for approval to be continued.

Schools eligible for reimbursable expenditures on instructional equipment and supplies may secure forms for use in making application for approval of reimbursement at not to exceed a fifty per cent rate on items given prior approval of the Assistant Commissioner for Vocational Education before purchases are made.

When a school is eligible for reimbursement on the purchase of instructional equipment and supplies, notification of such eligibility will be made to the superintendent

by the appropriate Program Director accompanied by the necessary instructions and forms for use in making application, if the superintendent desires to do so. Upon receipt of applications properly made and complete in accordance with policies herein defined as to time for making application, they will be reviewed, date of approval will be made on applications and copies returned to the superintendent. Upon receipt, the school has authority to purchase items approved on the application by the Assistant Commissioner for Vocational Education.

Applying for Reimbursement--Periodically, schools whose applications for purchase of items under any of these priorities have been approved will be mailed forms for use in making application for reimbursement on these purchases. Instructions for preparing applications will accompany the forms sent to schools, including attachment to the application of the original invoice from each vendor from whom items approved by the Assistant Commissioner for Vocational Education were purchased and paid for prior to making application for reimbursement and attachment also of one copy of the school's purchase order for each vendor.

It is not contemplated to make substantial reimbursement on Cooperative Part-time Training programs since students enrolled in these programs will be utilizing equipment at their training stations in which they are employed.

Applications will be considered for one request for approval of reimbursable instructional equipment and supplies made during the summer before the school year begins or early in the first semester of operation of the new unit or fractional part of a unit. Only one supplemental application can be considered, if additional items are needed and approved, and this supplemental application must be made on or before November 1 for programs starting at the beginning of the school year or by April 1, when a new program has been approved to be initiated beginning with the second semester.

Budget Balance Districts

Reimbursement on salaries shall be in accordance with the policy defined for Budget Balance Districts specified in the section of this Guide on Allocation and Reallocation of Vocational Teacher Units. Within funds available, fifty per cent reimbursement shall be made on instructional equipment and supplies for new programs as defined in this section of the Guide.

Programs of Occupational Training

The program of occupational training is designed for in-school students fourteen years of age or older who have academic, socio-economic, or other handicaps preventing them from succeeding in regular programs of vocational educati~ The program consists of a combination of a modified or ungraded academic curriculum and occupational training, providing these students with a dual educational opportunity for achievement in acquiring basic education skills and preparation for employment to the maximum potential of their ability.

These students usually have one or more of the following characteristics:

1. Low or under-achievers, usually average. They are often handicapped academically because of low scholastic ability and/or lack of educational and cultural advantages. Retarded by one or more grades, they are potential dropouts.

2. Low ability in communication skills. They are at a disadvantage with other students because of low reading ability, lack of verbal fluency, creativity, ability to think abstractly, capacity for deferred gratification, short attention span, and slowness of learning.

3. Irregular in attendance, frequently tardy and disinterested in school. They feel that they are second-class citizens at school and as a result do not like school, believe they cannot learn, and feel their teachers neither accept nor understand them.

4. Have no personal goal, lack a sense of purpose, lack self-confidence, and often develop negative self-images. Because there is lack of opportunity for them at home or in the immediate neighborhood to become acquainted with a way of life different from their own or with persons in occupations of a higher status than those with whom they associate, they may not be motivated to attend school or to want something better. Standards of the family and neighborhood may discourage them from aspiring to a higher level of achievement or way of life.

5. Normal or above normal in potential ability to achieve satisfactorily in school but have failed courses for various reasons such as dislike of teachers and school, improper attitudes, poor study habits, laziness, poor reading ability, or have been enrolled in courses without adequate guidance and counseling.

6. Are members of families of low income or long-time recipients of welfare payments, or other subsistence. Often children from these families lack money for adequate clothing, food, or for participating in school activities requiring incidental expenses. These conditions contribute to feelings of insecurity and hopelessness, resulting in under-achievement in school.

Objectives of the Program--The program of occupational training has the following objectives to meet the needs of students having academic, socio-economic or other handicaps preventing them from succeeding in regular, or higher level, programs of vocational education:

1. To provide a type of program, both academic and occupational, appealing to students having academic, socio-economic, or other handicaps and encouraging them to remain in school, and encouraging such students who have dropped out to return to school.

2. To develop student attitudes, appreciations and understandings in relation to the school and the value of an education, respect for himself, his peers, and his country, and through providing motivation and opportunity to achieve at his level, providing him with a sense of succeeding.

3. To enter students in the program at their present academic level and assist them to progress to their maximum level of achievement.

4. To provide specialized vocational guidance and counseling for these students, including psychological and occupational aptitude testing.

5. To provide students with occupational training preparing them for gainful employment in jobs requiring low levels of knowledge and skills, or through participation in this program, prepare them to enter regular high school vocational education programs preparing them specifically for gainful employment in occupations requiring higher levels of training.

Students Eligible for the Program--Students must be fourteen years of age or older and have academic, socio-economic, or other handicaps preventing them from succeeding in regular programs of vocational education. Such students are usually two to three years below normal achievement in several academic courses.

Characteristics of Approvable Programs

Academic Phase of the Program--The academic portion of the program must be a special academic curriculum departing from traditional standards, and be conducted on an ungraded basis. Language, mathematics, science, and other courses must be adapted to the level and learning ability of the students. Students handicapped in reading ability must be provided remedial reading instruction instead of traditional English. Students of low achievement in mathematics, science or social studies must be given remedial instruction. Other academic provisions are:

a. Curricula must be flexible in all subject matter to teach on the achievement level of the student.

b. Remedial work shall be given students in areas of low level achievement parallel with identified ability.

c. Primary emphasis will be on the basic tools of language arts and mathematics, including skills in reading, speaking, writing and listening, and in acquiring basic arithmetic skills.

d. Content of academic instruction will be functional with practical application to occupational training.

Occupational Phase of the Program--The occupational training portion of the program will consist of a combination of classroom instruction with shop training, or actual on-the-job training, with students placed in part-time employment in the community. Training should be on a level adapted to the interest, aptitudes and ability of students.

The beginning phases of the training program for boys may be in relation to a cluster of occupations such as general building trades, general mechanical trades or general metal-working trades. The program for girls in the initial stages may be in occupational clusters relating to employment available to women, such as domestic jobs, employment in child care centers, or in clerical and office work. However, these suggestions are not intended to imply that separate programs should be organized for girls and boys, since employment opportunities are available to both in many occupations.

As students progress in the program with adequate counseling and guidance, the occupational objective for which they have appropriate interest, aptitudes and ability should become evident. Specific training programs must be included in the plan of organization proposed by schools applying for approval of programs.

Qualifications of Teachers

1. All counselors and teachers will be chosen because they have a deep desire to help students having academic, socio-economic or other handicaps.

2. Academic teachers shall hold regular teaching certificates, either provisional or professional, in the areas they will teach.

3. Teachers of occupational training phases of the program shall have a minimum of two years of successful employment experience in one or more occupational fields for which training is being included in the program. In addition, they should have a baccalaureate or higher degree from an accredited college or university, or meet requirements for vocational teachers in the occupational fields for which training is conducted.

Program Organization

Organization of the programs by the schools will be to meet the needs of individual students. This type of a special combination of academic-vocational education program may involve many different patterns in order to meet the needs of students in differing communities. Therefore, it is the policy of the Texas Education Agency that each school administrator desiring to conduct this special program should organize the type of proposed program believed to be needed by students in the applying district and submit a project proposal.

A minimum of thirty students as defined herein are required for each full-time occupational teacher, with this teacher supported by staff teaching the academic phases of the program.

Preparation of Project Proposal

The following guide is suggested in preparation of project proposals:

1. State the purposes and objectives of a program of occupational training. Include immediate and long-range goals and supply information to justify a program of occupational training in your school.

2. Give separately the number of boys and girls to be enrolled in the program, their ages and the highest grade in school they have completed.

3. List criteria used and methods of selecting students for occupational training.

4. Develop and submit a brief course outline for the academic program. (Specify skills to be developed in an ungraded or modified curriculum.)

5. Develop and submit a brief course outline of the vocational training to be offered for the first year. Specify the shop or laboratory skills to be developed.

6. Prepare and submit an outline of a special guidance and counseling program for students in this program.

7. Prepare proposed budget for the program, including

   a. Academic teachers to be used in program and portion of their time and salary to be devoted to this program.

   b. Occupational training teachers to be used in program and portion of their time and salary to be devoted to this program.

   c. Guidance counselcr(s) to be used in program and amount of their time and salary to be devoted to this program.

   d. Other professional personnel.

   e. Amount of travel proposed for above personnel for this program during the 1965-66 year.

   f. List instructional eq pment and supplies needed for program by different courses and schools, if more than one school campus is involved, and costs of this equipment.

   g. List instructional materials such as special remedial reading materials needed and costs of these items.

Financing Programs

Reimbursement can be made on the following items by the Texas Education Agency for approved programs:

1. Salaries and Necessary Travel of Vocational Teachers

   The portion of salaries of academic teachers and guidance counselors allocated to the schools as a part of the Minimum Foundation School Program can be used by the schools to match salaries and travel of vocational

teachers assigned to this program, and the portion of salaries of excess teacher units assigned to this program and can be used for matching salaries and travel of vocational teachers, and local funds can be used as matching.

Example: If the salaries and travel of vocational teachers assigned to this program amount to $10,000 and the salaries of Minimum Foundation and excess academic teachers amount to $10,000, the school will be eligible for one hundred per cent reimbursement on the salaries and travel of the vocational teachers assigned to this program.

2. Instructional Equipment and Teaching Aids

The Texas Education Agency can reimburse fifty per cent of the cost of these items when approval is given by the Assistant Commissioner for Vocational Education prior to their purchase.

Procedure for Making Application

Applications for programs for students having academic, socio-economic, or other handicaps preventing them from succeeding in regular programs of vocational education will be given consideration by the Texas Education Agency on a project basis. Schools desiring to make application for approval of these programs should develop their project and send copies to:

Mr. Joe B. Neely, Director
Vocational Program Development
Texas Education Agency
Capitol Station
Austin, Texas 78711

Area Vocational Schools

Area Vocational Schools have as their purpose the provision of a comprehensive program of vocational education designed to meet the needs of:

- Persons preparing to enter gainful employment,
- Persons who have already entered employment but need training and retraining to achieve greater efficiency and advancement, and to acquire new knowledge and skills as technological changes modify job requirements, and
- Persons who have academic, socio-economic or other handicaps preventing them from succeeding in regular programs of vocational education.

As a minimum, area schools must provide a program of vocational education preparing persons for gainful employment in five different occupational fields, with students enrolled being available full time for the school program, a part of which is the vocational education program in which they are being prepared for gainful employment. Additionally, the area school facilities must be available for out-of-school youth and adults desiring programs of vocational education to prepare for employment, or to receive training or retraining to increase their occupational knowledge and skills in present employment. And, facilities of the area school are available for persons having academic, socio-economic or other handicaps preventing them from succeeding in regular programs of vocational education.

The Texas Education Agency may designate a single school district of sufficient size, having adequate numbers of high school students desiring and needing programs of vocational education to justify operation of a minimum of five programs, each preparing students for gainful employment in different occupational fields, and with the area school also making available its facilities for training programs for adults when such programs are desired and needed.

The temporary policy of the Texas Education Agency, when this Guide was prepared, is that public schools eligible to be considered for designation as Area Schools are schools having an enrollment of 500 or more high school students, grades nine through twelve. This policy is under consideration at the present time.

House Bills 130 and 490 of the Fifty-ninth Legislature, if approved, will authorize establishment of County Area Vocational-Technical Schools. If such County Area Schools are established, students in smaller towns may have opportunity to participate in vocational programs of area schools to a greater extent than at the present time. At an early date plans are to supply additional information regarding House Bills 130 and 490, if they are approved, and requirements necessary for designation of area schools as may be authorized.

Designation of an Area Vocational School gives approval of reimbursement on construction of the area school facility. This may be a separate building or a wing attached to a present building, or when construction of a building is not involved, approval may be made of renovation of an existing facility for the purpose of housing programs of vocational education. Reimbursement is eligible at a fifty

per cent rate on the following:

Site acquisition of non-public owned land
Site grading and land preparation
General construction costs
Conventional furnishings of the classrooms, shops, laboratories and offices
Architectural and engineering costs
Legal costs

Students Required for Area School and Allocation of Vocational Teacher Units--Student membership required for each vocational program operated in an Area Vocational School shall be eligible students as defined in preceding sections of this Guide for each program. Allocation of vocational teacher units shall be on the basis of the number of such units in the programs for which need is justified in occupational surveys for the area served by the school. Requirements for reallocation of vocational teacher units shall be justified on the basis of the average eligible student membership in each program during the first six months of the school year. The formula for computing average membership is included in a preceding section of this Guide.

Specific Vocational Guidance and Counseling Program--Area Vocational Schools conducting a comprehensive program of vocational education justifying a full-time vocational guidance and counseling teaching position will be considered for allocation of this position or fractional part of a position if less than one counselor is needed, with reimbursement on the salary of the teacher to be at a fifty per cent rate. Such counselors must have a minimum of two years of recent and successful wage-earning experience in one or more occupations, preferably in one or more of the occupations being taught in the Area Vocational School. In addition, they must have a minimum of a baccalaureate degree from an accredited college or university and have had at least two courses in guidance and counseling.

Planning an Area School

Determining Need for Area Schools--Need for area schools must be determined upon the basis of occupational surveys in the area to be served by the school to ascertain the employment opportunities available, or anticipated to be available, for students upon completion of training programs preparing them for employment. Determination must also be made of the number of available students and employment opportunities for them in future years as the basis for approval of an area school facility involving considerable expense to the district and from reimbursement funds available from the Texas Education Agency.

Determination will also need to be made of the number of adults needing preparation for employment or training or retraining to increase their knowledge, skills and efficiency.

Staff members of the Texas Education Agency, Vocational Education Division, are available to schools without charge to assist in planning and conducting surveys.

Assisting in Planning Facilities--After surveys have been made and the types of programs needed have been determined -- and need for an area school is justifiable -- staff members of the Texas Education Agency, Vocational Education Division,

are available to consult with school officials in preparing applications for approval of their schools to be designated as Area Vocational Schools, and to review architectural drawings and sketches of proposed facilities.

Assisting in Planning Programs--Consultative services are also available from vocational education staff members of the Texas Education Agency in planning programs of instruction, advising on the qualifications required of instructors to teach the different vocational programs to be conducted, and in planning needed instructional equipment and supplies.

Information on Applications for Approval of Area Schools--Included in the Appendix of this Guide are two forms:

a. Application for Approval as an Area Vocational School.

b. Application for Approval of Reimbursable Construction of Area Vocational-Technical School Facilities.

Vocational education staff members of the Texas Education Agency are available to provide information to schools with regard to these applications and to supply additional information as desired relating to Area Schools.

The Work-Study Program

Objectives--The program is designed to provide part-time employment for youth in public educational agencies or some other public agency or institution who need the earnings from employment to commence or continue their vocational training. The opportunity for part-time employment should help many students who need financial assistance to stay in school or return to school.

State Administration and Leadership--The State Board shall approve, supervise and evaluate work-study programs administered by public schools and public junior colleges.

Responsibilities of Public Schools and Public Junior Colleges--Public educational agencies are responsible for:

1. Making application for prior approval of work-study programs for one or more students when it is determined they are enrolled in approved vocational education programs leading to gainful employment and have a need for the earnings from employment to remain in or return to school.

2. Determining work stations and assigning approved students tc jobs under adult supervision.

3. Paying approved students for actual work performed at the end of the month or each two weeks, if desired, withholding Social Security and income taxes in accordance with law and school district procedures.

4. Maintaining work records of actual time students perform work, nature of the work assignment, hourly rate of pay, total amount paid by check with number, and the adult supervisor in charge of the students while at work.

5. Preventing approved work-study students from supplanting any present employees who ordinarily perform such work.

6. Denying employment to an approved work-study student when employed under any other work-study program or under the Neighborhood Youth Corps program of the Economic Opportunity Act of 1964.

7. Supervising students approved under the work-study program and determining their effectiveness in terms of services to the district, retention of potential dropouts, and returning unemployed out-of-school youth to school.

8. Determining students to be in good standing in their full-time school program, a part of which is their approved vocational education program preparing them for gainful employment.

9. Determining the local prevailing hourly rate of pay for approved students.

10. Applying for reimbursement of funds expended for approved work-study students.

Priority--Priority in approval of schools and students for the amount of funds available for work-study programs will be given to schools having substantial numbers of school dropouts and unemployed youth fifteen years of age and less than twenty-one years of age who need financial assistance to enter or continue in a full school program, a part of which is an approved program of vocational education preparing for gainful employment. Public educational agencies must have job opportunities available for the employment of approved students in a public agency or institution.

Eligibility and Selection of Students--A work-study program may be approved for an eligible student provided (a) the student shall not be employed in excess of fifteen hours in any week during the school year, and (b) compensation shall not exceed $45 in any month or $350 in the regular academic year. Employment under the work-study program will be furnished only to a student who (a) has been accepted for enrollment in a full school program, a part of which is an approved vocational education program preparing for gainful employment or for a student already enrolled in such a program if in good standing and in full-time attendance, (b) is in need of the earnings from such employment in the work-study program to commence or continue his vocational education program, and (c) is at least fifteen years of age and less than twenty-one years of age at the commencement of his employment in the work-study program, and is capable in the opinion of school authorities of maintaining good standing in his school program while employed.

Determination of Financial Need--Determination of financial need of students for earnings in order to commence or continue participation in vocational programs should take into consideration student and family income, including wages, Social Security, Aid to Dependent Children, retirement benefits, and welfare support; occupation of person supporting family; and number of family members living at home. Financial assistance from employment for a student should be based on the amount of money needed for clothes, school lunches, participation in school activities and personal necessities. All students will not have the same financial needs and will not be capable of working the maximum number of hours per week while maintaining good standing in their full-time school program.

Type of Work Students May Perform--Students may participate in job assignments in or around the public educational agency. Work must be performed by the student. Some of the types of work activities a student may perform are as follows: teacher aides, school shop or laboratory assistant, work in school office such as typist or receptionist, cafeteria worker, library assistant, repairman, assistant in grounds and building maintenance, and school bus maintenance helper. Whenever possible, it is desirable to relate the work activity to the educational program of the student in vocational education. Students should be placed in jobs where their vocational competencies and interests can best be utilized. Through careful consideration of the possibilities for work opportunities, there should emerge a series of work-study job placements related to the students' educational program.

Places of Employment in Other Than Public Educational Agencies--Public agencies--local, State and Federal--are eligible as places of employment for students participating in the work-study program. Public agencies, departments and commissions, such as the courts, fire and police departments, hospitals, housing authorities, public works, health, welfare, conservation, recreation, libraries, parks and playgrounds are eligible public agencies for the employment of work-study students.

Eligible Vocational Education Programs--Students enrolled in vocational education programs approved by the Division of Vocational Education, Texas Education Agency, such as the following meet the requirement for training in a gainful, wage-earning or income-producing occupation: auto body repairing, automechanics, building construction trades, commercial cooking, cosmetology, drafting trades, dry cleaning and finishing, electrical trades, industrial electronics, metal trades, printing, radio and television servicing, refrigeration and air conditioning, data processing, vocational agriculture, and laboratory type programs in vocational office education. Academic, socio-economic or other handicapped students enrolled in an approved occupational training program are eligible also. These represent only a partial listing, as students may be eligible when enrolled in other approved programs training for gainful occupational employment. Students enrolled in regular vocational homemaking education programs are not eligible because this program is not designed to prepare for gainful employment, nor are students enrolled in Cooperative Part-time Training Programs since they receive wages for part-time employment and work experience as a part of their respective programs. Industrial arts and business education students are not eligible since these are not approved vocational education programs.

Reimbursement--The rate of reimbursement is 100 per cent on the amount approved in each of the fiscal years ending June 30, 1965, and June 30, 1966, and 75 per cent for each of the fiscal years ending June 30, 1967, and June 30, 1968. Requests for reimbursement should be submitted on forms provided by the Division of Vocational Education by July 15 for the period of January 1--June 30, and by January 15 for the period of July 1--December 31.

Procedure for Making Application--A school official should communicate with Scott Russell, Director, Work-Study Program, Division of Vocational Education, Texas Education Agency, Austin, Texas, requesting application forms for prior approval of a work-study program. The school's application is submitted in triplicate and must have the supporting student applications attached. Care should be exercised in making an application, especially in providing all the information and signatures requested.

Reporting to the Texas Education Agency on Programs of Vocational Education Conducted by the School

Local public schools conducting programs of vocational education will make such reports as required by the Texas Education Agency. Reports required during the past several years are included in the Handbook on Vocational Education, Bulletin 603, published by the Texas Education Agency in February, 1960.

Class organization reports for all programs preparing students for gainful employment shall be required and shall include such information as is necessary for verification of the eligibility of students for such programs as defined in this guide. A Training Plan or Agreement similar to the sample included in the Appendix of this Guide will be required for each student enrolled in Cooperative Part-time Training programs. In the near future, additional information will be sent to schools relating to reporting on programs of vocational education.

APPENDIX

TEXAS EDUCATION AGENCY
Division of Vocotionol Education

Time of day related class meets _____

Certificate Awarde ! _____ 19____

Grade _____

Age _____

Cooperative Training Plan

This training plan is to (1) define clearly the conditions and schedule of training whereby student _____ is to receive training as a (an) _____ _____ and (2) serve as a guide to the cooperating parties: the _____ (Company) and the _____

Public Schools, in providing the student with opportunities for training in the basic skills of the occupation and the technical information related to it. In order that a systematic plan which provides for well-rounded training can be followed, a schedule of work experiences and a course of study paralleling it have been worked out and agreed upon by the employer and representative of the school. They are listed on the reverse side of this page.

The student agrees to perform diligently the work experiences assigned by the employer according to the same company policies and regulations as apply to regular employees. The student also agrees to pursue faithfully the prescribed course of study and to take advantage of every opportunity to improve his efficiency, knowledge, and personal traits so that he may enter his chosen occupation as a desirable employee at the termination of the training period.

In addition to providing practical instruction, the employer agrees to pay the student for the useful work done while undergoing training according to the following plan:

1. The beginning wage will be $_____ per _____ for _____ hours per school week, which amount is approximately _____ per cent of that paid competent full-time employees in the same occupation in the community.

2. A review of the wages paid the student will be made jointly by the employer and coordinator at least once each semester for the purpose of determining a fair and equitable wage adjustment consistent with the student's increased ability and prevailing economic conditions.

The training period begins the _____ day of _____, 19___, and extends through _____, 19____. There will be a probationary period of _____ days during which the interested parties may determine if the student has made a wise choice of an occupation, and if the training should be continued.

This plan has been reviewed and recommended by the Local Advisory Committee. It may be terminated for just cause by either party.

Approvals:

_____ (Student)	_____ (Employer or Representative)
_____ (Parent or Guardian)	_____ (Teacher-Coordinator)
_____ (Chairman, Local Advisory Committee)	_____ Texas Education Agency

SCHEDULE OF WORK EXPERIENCES	RECORD OF WORK	COURSE OF STUDY	RECORD OF STUDIES

To be submitted in triplicate

TEXAS EDUCATION AGENCY
VOCATIONAL EDUCATION DIVISION
Austin, Texas

APPLICATION FOR APPROVAL AS AN AREA VOCATIONAL-TECHNICAL SCHOOL
(For use by public schools and colleges)

In order to assure that instructional programs are eligible for reimbursement, the following information shall be submitted by the applying institution.

Name of School _____

Address _____

Official Administering the Area School:

_____ _____
Name Title

A. INFORMATION

1. The geographic area proposed to be served: _____

_____

_____

2. In the geographical area to be served, give the approximate number of persons in the following categories:

Current high school enrollment _____

Average number high school graduates (past five years) _____

Estimated number of adults needing training or retraining _____

Estimated number of persons having academic, socio-economic, or other handicaps who cannot succeed in regular vocational programs _____

3. The proposed area school will operate as: (check one)

_____ A specialized high school used exclusively or principally for vocational education.

_____ The department of a high school used exclusively or principally for providing vocational education.

_____ A technical or vocational public school used exclusively for the provision of vocational education.

_____ The department or division of a public junior college, state college or university which provides or will provide vocational-technical education.

4. Vocational-Technical Education courses to be offered:

Course Title	Existing Programs	New Programs	Anticipated Enrollment

5. For the purpose of establishing reasonable need and ability to assure continuing success of these programs, the school will furnish the following information:

   a. Give the source or sources of information used in estimating the anticipated enrollment in each program listed in item 4 above.

   b. Based upon the best available data, project the total enrollment of students in your school's vocational-technical program for the next five year period:

   1965-66 Year _____ 1968-69 Year _____

   1966-67 Year _____ 1969-70 Year _____

   1967-68 Year _____

   c. The number and types of employment opportunities in the above occupational fields available in the area served by the school. Give the method of determining; for example, Texas Employment Commission data, Texas Education Agency Occupational Surveys, etc.

   d. A written cooperative agreement between public school boards and administrators in the proposed geographical area. (Applicable for Area Vocational Schools in the secondary school field)

B. AGREEMENT

1. Employers or managers in the occupations for which vocational or technical training will be given have been consulted regarding the need for such programs.

2. The Texas Employment Commission or other qualified agencies or groups have indicated there is available within the area an adequate source of individuals needing and desiring such training.

3. The Area program will be operated with the advice and counsel of an advisory committee appointed by the president of the college or superintendent of schools, and will be composed of representatives of employers and employees from the occupations or industries for which training is to be given.

4. The content of the courses of study and/or curriculum have been determined by an analysis of the job, or cluster of jobs, and have been formulated with the advice of qualified consultants on vocational education.

5. The programs are of sufficient duration to provide persons enrolled with training needed in preparation for employment, or to improve their efficiency in employment.

6. A system of student counseling, guidance, and selection based upon interests, aptitudes, previous education and work experience will be maintained.

7. Fees charged students, if any, and student admission standards will be the same for all students so long as they reside within the area served by the school.

8. Students to be enrolled in the program will have the necessary general educational background to benefit from the instruction to be given, or such general education will be made available as a part of their total curriculum.

9. Adequate physical plant, facilities and operating funds will be made available for conducting the Area program.

10. The school accepts the responsibility for operating the program in accordance with policies of the State Board for Vocational Education.

The _____ School (or College) certifies that the above requirements have been or will be met, and requests the Assistant Commissioner for Vocational Education to designate it as an approved Area Vocational-Technical School.

Date of Application _____ 19__

_____
Signature of Administrative Head of the College or Public School

_____
Title

Recommended for Approval _____ Date

_____
Program Development Staff Member, Texas Education Agency

Recommended for Approval (Junior College Programs) _____ Date

_____
Assistant Commissioner for Public Junior Colleges

Approved for State Board _____ Date

_____
Assistant Commissioner for Vocational Education

To be submitted in triplicate

TEXAS EDUCATION AGENCY
VOCATIONAL EDUCATION DIVISION
Austin, Texas

APPLICATION FOR APPROVAL OF REIMBURSABLE CONSTRUCTION OF AREA VOCATIONAL-TECHNICAL SCHOOL FACILITIES
(for use by public schools and colleges)

Name of School _____

1. The governing board of the above school certifies that the facility covered by this application is to be built for the purpose of conducting vocational-technical education programs in accordance with policies of the State Board for Vocational Education.

2. The school agrees that whenever these facilities, in which the Texas Education Agency has an interest, are sold or no longer used for approved purposes, the Texas Education Agency will be credited with its proportionate share of the value of such facilities, the value being determined on the basis of the sale price in the case of a bona fide sale, or the fair market value in the case of discontinuance of use for a vocational-technical education purpose or other diversion.

3. The school agrees that regular locally accepted school practices for contracting for new construction, expansion, or renovation will be used in awarding contracts for this project, and that all construction shall be done in accordance with local building codes and practices and is consistent with applicable State and Federal laws.

4. The school certifies the plans and specifications for construction are functional, economical, compatible with the design and appearance of the total school plant, and appropriate for the type of programs of instruction to be offered.

5. The Assistant Commissioner for Vocational Education will be consulted by the school for approval of any major revision of the plans and specifications that may be contemplated subsequent to this approval.

6. The school agrees that the contracts for construction for approved facilities shall require that all laborers and mechanics employed by contractors and subcontractors on all construction projects assisted under the 1963 Act will be paid wages at rates not less than those prevailing as determined by the Secretary of Labor in accordance with the Davis-Bacon Act (Act of March 3, 1931, P. L. 798, 71st Congress, 46 Stat. 1494 as amended, 40 U. S. C. 276a-5) and 29 CFR Part I (see 29 F. R. 95); and shall receive overtime compensation in accordance with and subject to the provisions of the Contract Work Hours Standards Act (P. L. 87-581, 76 Stat., 357, 40 U. S. C. 327-332), that such contractors and subcontractors shall comply with the provisions of 29 CFR Part 3 (see 29 F. R. 97), and that all construction contracts and subcontracts shall incorporate the contract clauses required by 29 CFR 5.5(a) and (c) (see 29 F. R. 100, 101).

7. Representatives of the Texas Education Agency will be permitted access at all reasonable times to the project wherever it is in preparation or progress.

8. The school understands and agrees that a contract encumbering funds for this project will be made on the basis that the school will provide matching funds.

9. A copy of the contractual agreement between the general contractor and the participating school official shall be filed with the Texas Education Agency as soon as such contract is awarded.

10. The school certifies that local funds, in addition to vocational education funds available through the Texas Education Agency, are adequate for the construction and efficient operation of the proposed facility on a continuing basis.

11. The school will provide the following information or data (to be attached to the application):

    a. Copy of the deed to the property on which the facility is to be constructed, or a copy of the purchase agreement for the property setting forth the terms of transfer over the signature of the present owner, or a copy of a long-term lease agreement.

    b. Detailed architectural drawings and specifications of the facilities to be constructed, including fixtures.

    c. Description and details of conventional furnishings of the classrooms, shops, laboratories and offices.

12. The school agrees that it will incorporate or cause to be incorporated into any contract for renovation, modification or construction of facilities reimbursed under this agreement, an equal opportunity clause. (See attachment.)

13. The detailed breakdown of cost of construction is as follows:

Site acquisition	$ _____
Site grading and land preparation	_____
General construction costs	_____
Architectural and engineering costs	_____
Legal costs	_____
Conventional furnishings	_____
TOTAL	$ _____
Amount of Reimbursement	$ _____ (leave blank)

The _____ School (or College) agrees to the above conditions, and requests the Assistant Commissioner for Vocational Education to approve the construction of the above described facilities. Approval of this agreement and attachments constitutes a contract for reimbursement between the applying school and the Texas Education Agency.

Date of Application _____ 19__ _____
Signature of Superintendent of Schools or President of College

Date of Application _____ 19__ _____
President of Local Board

Approved for State Board _____ 19__ _____
Date
Assistant Commissioner for Vocational Education

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SOUTH CAROLINA

The purpose of this guide is to assist industrial arts teachers, school administrators, school boards, and supervisors in planning, organizing, and conducting industrial arts programs. Chapter headings are: (1) Introduction, (2) Relationship to Other Curriculum Subject Fields, (3) Administration, (4) Instructional Areas, (5) Types of Laboratories, (6) Laboratory Facilities, (7) Arrangement and Equipment of Industrial Arts Education Department, (8) Records and Forms, Student Assistants, (9) School Laboratory Safety, (10) Teacher Preparation, Certification, and In-Service Training, and (11) Professional Growth. A bibliography of textbooks and program guides is also given. (EM)

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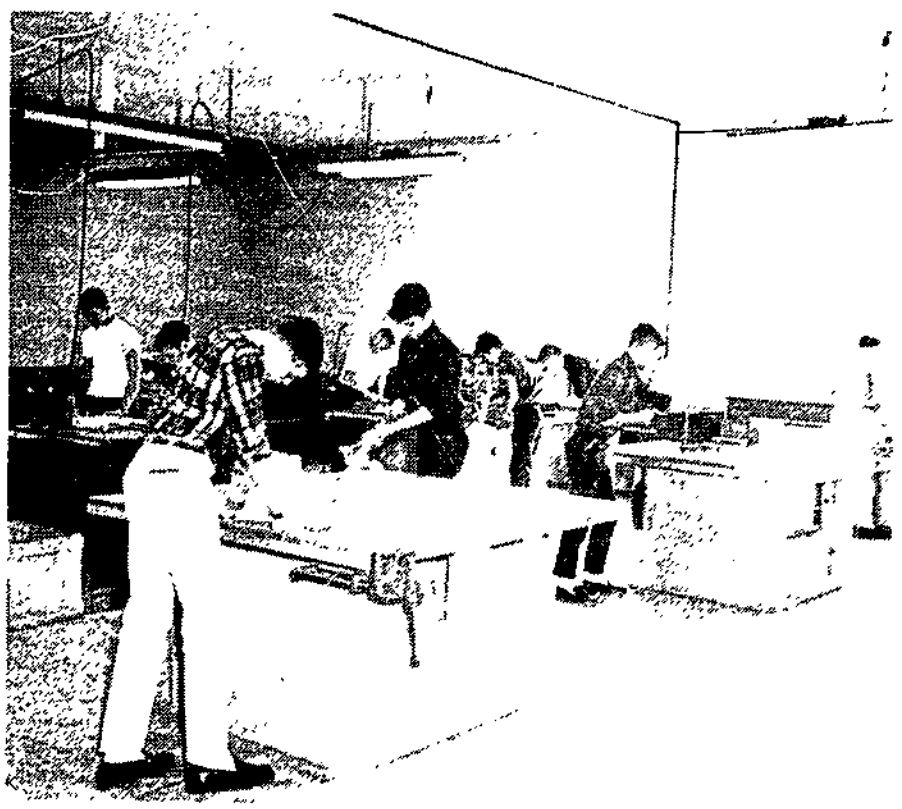
Guide for

INDUSTRIAL ARTS EDUCATION



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South Carolina
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Jesse T. Anderson, Superintendent

Columbia, South Carolina
1963

State of South Carolina
DEPARTMENT OF EDUCATION

Guide for

INDUSTRIAL ARTS EDUCATION

in

SOUTH CAROLINA SCHOOLS

Jesse T. Anderson
State Superintendent of Education

R. D. Anderson, State Director
of Vocational Education

Frank B. Reynolds, State Supervisor
of Industrial Arts Education

Prepared by
South Carolina Industrial Arts Education Committee
1963

VT 001 681

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Foreword

THE PURPOSE of this guide is to give assistance to industrial arts education teachers, school administrators, school boards and supervisors in planning, organizing and conducting programs of industrial arts education.

An effective industrial arts education program greatly enriches the school curriculum. Students need the experiences offered in these laboratories in order to appreciate more fully the industrial materials, processes, operations, tools, and machines of our industrial society.

South Carolina is advancing rapidly in industrial development. To keep pace with these advances, industrial arts education offerings must provide for subject areas more nearly representative of the vast technology of our expanding industrial environment.

The subject areas recommended in this guide represent a significant step forward from the earlier programs of woodwork and mechanical drawing.

It is my sincere desire that this guide will prove helpful in the further development of the industrial arts education programs in the public schools of South Carolina.

R. D. ANDERSON
State Director of Vocational Education

Acknowledgments

THE PERSONS listed below met in Columbia and worked as a committee for a number of weekends and also worked independently in their local communities in preparing the information contained in this guide. The cooperation of all concerned has been wholehearted and sincere.

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CHAPTER I

Introduction

THE INDUSTRIAL REVOLUTION, which began in England about the year 1760 and reached the United States in the early nineteenth century, caused changes in almost every area of man's endeavor. With these rapid and radical industrial changes came the need for changes in education. Prior to about the year 1870, the school curriculum in the United States was primarily the "three R's." During the last two decades of the nineteenth century one change which was introduced to the curriculum was designed to provide the student with general knowledge, skills, and attitudes considered essential in preparing him for the industrial society in which he was to live. This change, or movement, was called manual training. The first manual training school was established in St. Louis, Missouri, in 1880.

The manual training program did not propose to train the student in any particular trade, but did desire that the student acquire skill in the use of tools and materials which could be applied in almost all trades. These skills were to be developed by using the tools and materials in a series of graded exercises. Students were allowed to work on projects after school hours, but were required to follow the established course of exercises during the regular shop period.

The manual training programs of the nineteenth century have developed into the present-day industrial arts education programs. There have been many changes in philosophy, aims, purposes, teaching methods, evaluation techniques, and facilities since the manual training classes of the 1880's and the present-day industrial arts education program only slightly resembles the old program. The remaining part of this chapter, and chapters to follow, reflect those changes and present the philosophy and objectives of industrial arts education in South Carolina.

Philosophy

Industrial arts education is that phase of general education of a special nature which discovers and develops talents through

exploratory laboratory and classroom experiences with industrial materials, processes, operations, tools, and machines which are not provided elsewhere in the school curriculum.

Industrial arts education provides guidance in the realm of self-evaluation in our industrial society and is an important and integral part of the program of education. This program is both avocational and recreational. In addition to promoting home improvement, it develops good social habits, attitudes, and wholesome personalities.

Industrial arts education provides the individual with the opportunity for developing and satisfying creative desires, and through these experiences, enables the student to acquire an appreciation of skills and techniques as found in industry. The program is designed to motivate interest and pride in good workmanship and to develop the desire to accept responsibilities in our culture.

Industrial arts education promotes desirable working procedures which develop good health and safety habits.

The Difference Between Industrial Arts Education and Vocational Trade and Industrial Education

Industrial arts education is a subject in the general education program as is English, science, mathematics, or any other school subject. It is a multiple activity program taught as an essential part of general education to develop an appreciation of industry and industrial methods to all age groups.

Industrial arts education objectives are concerned with orientation, avocational interests, consumer literacy, a degree of manipulative skills, training in home mechanics, social understanding, and cultural relationship. One school period per day is usually devoted to industrial arts education.

Vocational trade and industrial education is designed to prepare high school students for gainful employment in a specific occupation or family of occupations. In this training, students spend three hours each school day in the shop-laboratory during the last years of high school developing skills and knowledges in their chosen occupation or trade.

Objectives

Suggested over-all objectives of industrial arts education in South Carolina are as follows:

1. **Industrial Exploration:** To develop in each student an insight and understanding of industry and its place in our culture through laboratory experience.
2. **Self-Evaluation and Initiative:** To discover and develop personal aptitudes, interests, abilities, self-reliance, good judgment, and resourcefulness through problem solving and self expression.
3. **Skills and Techniques:** To develop in each student a degree of skills and techniques through the use of common tools, machines, and materials, for the purpose of fulfilling the needs of the average citizen.
4. **Orderly Performance:** To develop in each student the habit of an orderly, complete, and efficient performance of any task.
5. **Health and Safety:** To require of each student the proper attitudes and practices of good rules regarding health and safety.
6. **Avocational-Recreational:** To create interest in leisure time and hobby activities through developing a degree of basic skills with tools, equipment and materials.

The above objectives, derived from the preceding statement of philosophy, form the basis for the planned program of industrial arts education in South Carolina. Basic criteria used in developing these objectives included: (1) objectives must be unique, (2) objectives must be attainable, and (3) objectives must be likely to give desired results. These criteria, with the recognized relationship of philosophy, objectives, and individual needs, gave direction to the development of the *State Guide for Industrial Arts Education.*

Many secondary objectives may be developed by industrial arts education teachers. The six major objectives should give direction to the development of these secondary objectives which are in accordance with the local needs. Once these objectives have been defined, they must be carried through three further steps before they can be used effectively as a learning guide. First, each objective must be translated into behavioral changes which are desired. The second step is to list the learning activities which will bring about the desired behavioral changes. The third step is to evaluate each objective in terms of behavioral changes.

In addition to the state-wide major objectives and the local program secondary objectives, there must be subject area objectives, or course aims. These objectives, or aims, should be developed by the local teacher and should provide for the individual needs of the students. The subject areas presented in Chapter IV of this guide will provide the teacher with information that will be helpful in planning courses of study in industrial arts education.

CHAPTER II

The Relationship of Industrial Arts Education to Other School Curriculum Subject Fields

INDUSTRIAL ARTS EDUCATION has many factors in common with other subject fields, such as content, principles, academic skills, knowledges, and attitudes. The following examples list some typical relationships.

Relationship of Industrial Arts to Fine Arts: Students apply knowledge of materials and tool processes to design. The adapting and combining of design elements in projects is encouraged. Ability to recognize and appreciate good design and construction is developed. Opportunities are provided for creative activity. Acquired technical skills are applied to design and construction problems in the fine and dramatic arts.

Relationship of Industrial Arts to Health and Recreation: Students develop safety attitudes for home, community and industry. Personal hygiene is practiced. Students learn to build recreational equipment. The therapeutic values of working with tools and materials as hobby and recreational activities are emphasized.

Relationship of Industrial Arts to Language Arts: Students utilize oral and written communication in school laboratory activities. Vocabulary is increased and enriched through the understanding and use of industrial terms. Special language skills are developed by written technical reports, specifications, material orders, and by using handbooks, catalogs, books, and reference materials.

Relationship of Industrial Arts to Mathematics: Students make extensive use of measuring processes. Accuracy and computational skills are developed. A wide range of experiences is provided in the use of symbols and formulas. Computations are an integral part of many processes and jobs. Concepts of

---

(Excerpt from an article by Robert L. Woodward, California State Industrial Arts Consultant, reprinted from "Improving Industrial Arts Teaching" conference report, published by the U. S. Government Printing Office, 1960.)

tolerance are developed. Skills are acquired in the estimating and judging of size, quantity, and fit.

Relationship of Industrial Arts to Science: Students are given opportunities for research, investigation, and experimentation. The scientific method is used in solving problems in the school laboratory. Mechanical skills are developed which are necessary in the construction of equipment for scientific experimentation.

Relationship of Industrial Arts to Social Studies: Students practice democracy in establishing procedures for laboratory management. Effective human relations are developed by student participation in laboratory management, by working together, and by sharing tools and facilities. Emphasis is placed on conservation when studying human and physical resources. Industrial materials and production methods are studied. A knowledge of history, geography, and economics is gained through the study of industry.

Relationship of Industrial Arts to Vocational Education: Students obtain information concerning requirements of occupations and discover vocational interests and aptitudes. Technical knowledge is applied to the solution of typical industrial problems. Tool and machine skills and accuracy are developed. Mass production, planning, and manufacturing techniques are used. Advanced students have an opportunity for some concentration in an industrial occupation.

CHAPTER III

Administration

THE FOLLOWING FACTORS should be considered by administrators, supervisors and classroom teachers in administering an effective program of industrial arts education.

State Supervisor's Responsibilities

The professional relations of the state supervisor to school administrators, supervisors, teacher educators, and teachers are:

I. Administration

1. Acquaint school officials and the general public with philosophy, aims, and objectives of industrial arts education.
2. Assist administrators in the promotion of programs of industrial arts education.
3. Assist in planning, reorganizing, and modernizing industrial arts education laboratories.
4. Assist in organizing machine, tool, and supply list in local situations.
5. Assist in selecting and securing suitable and qualified teachers.
6. Develop a long-term program of industrial arts education for the state.
7. Coordinate work with other supervisory groups of the state.
8. Keep teacher-training departments informed relative to the supply and demand for teachers.
9. Organize office services so that they may be of the most help to all concerned.

II. The Teacher

1. Cooperate with programs of teacher education in industrial arts education.
2. Upgrade qualifications of teachers.
3. Promote in-service teacher training.

4. Promote orientation of new teachers in their first professional positions.
5. Counsel with individual teachers.
6. Stimulate group meetings of industrial arts education teachers.
7. Hold small group conferences.

III. **Services**

1. Notices of new professional industrial arts education publications.
2. Notices of new instructional materials.
3. References on related informational materials.
4. Description and illustrations of new and interesting projects.
5. Information received at conferences and conventions.
6. Manipulative tips observed on visits.
7. Information about new industrial arts education products appearing on the market.
8. Promotion of safety practices in school laboratories.

IV. **Physical Plant and Equipment**

1. Assist in the remodeling of existing plants.
2. Assist in the planning of new laboratories.
3. Assist in equipping laboratories.
4. Advise on good housekeeping, care of equipment and tools, storage and issuing of supplies, and on general functioning and appearance of the laboratory.
5. Promote laboratory safety.

V. **Instructional Supervision**

1. Work with curriculum committees.
2. Assist teachers in preparing instructional materials, including visual aids.
3. Visit and supervise instruction in centers where industrial arts education programs are set up.
4. Make general evaluations of the work being done in the various school programs of industrial arts education.

VI. **Promotion of Program**

1. Initiate and develop legislative interest.
2. Advise on certification standards and regulations.

3. Promote the formulation of an adequate salary schedule.
4. Encourage the preparation and evaluation of textbooks and other instructional materials.

Pupil-Teacher Ratio

The size of classes should be determined on the basis of available floor space, work stations, equipment and tools, supplies and type of laboratory. In classes composed of students with average or above ability, enrollment may run as high as twenty-four students. The ideal class size is usually twenty students for each instructor.

Teacher Schedule

The industrial arts education teacher should be permitted one free period each school day for equipment maintenance, purchase of supplies and materials, organization of class work, preparing lesson plans, pupil conferences, and evaluation.

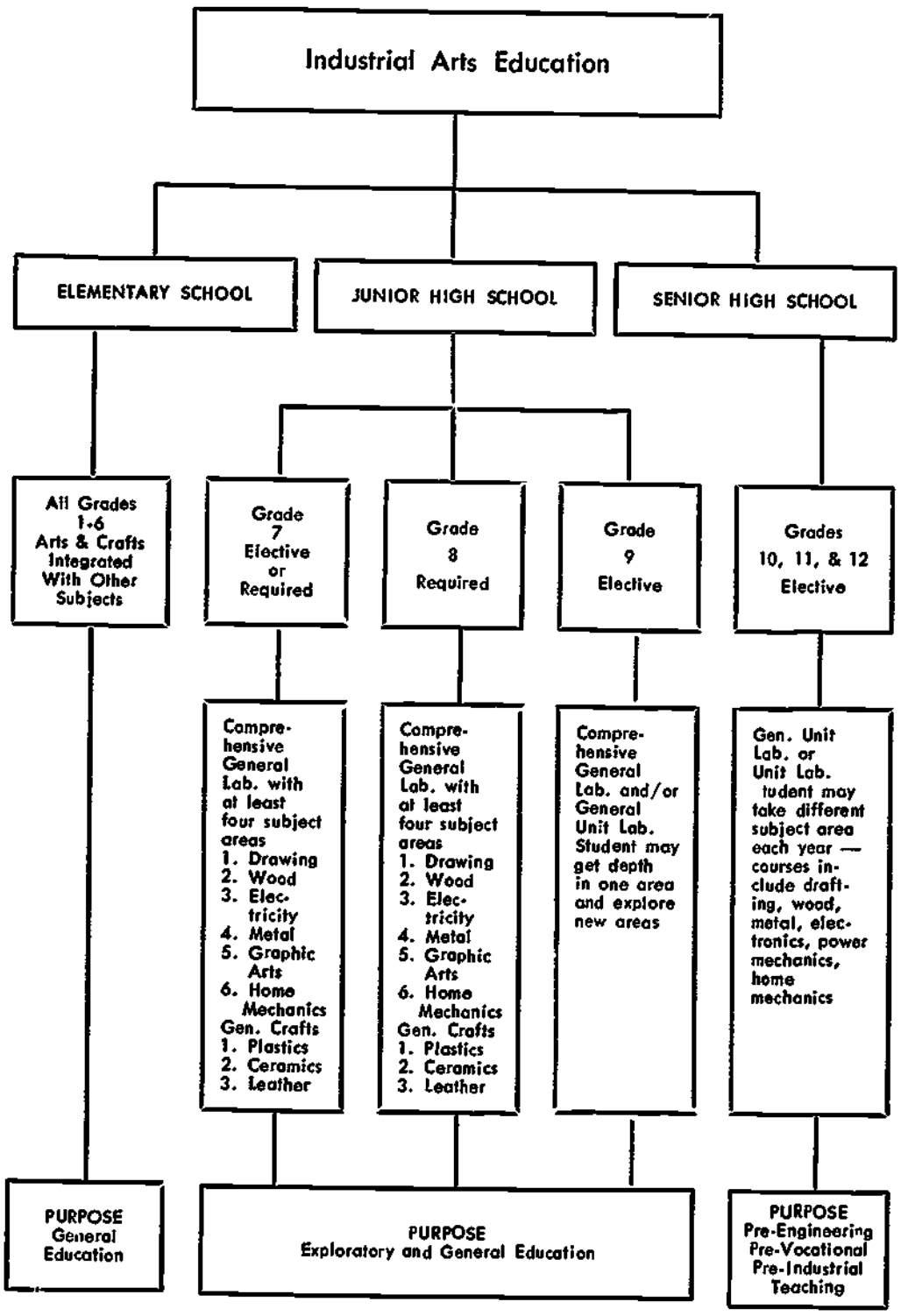
Industrial arts education should be offered five periods per week in the junior and senior high schools on the same basis as other subjects. It is recommended that classes be scheduled at least 55 minutes per day, five days per week.

Laboratory Use

It is recommended that industrial arts education laboratories be used for instructional purposes only. If the instructor is to be responsible for the condition of all tools, materials, supplies, and equipment listed on the inventory, he is the only one that should have a key to the laboratory. The use of laboratory equipment and tools by the school custodian or maintenance personnel should be avoided.

The safety of students depends largely on the condition of tools and equipment.

RECOMMENDED ORGANIZATIONAL PLAN



CHAPTER IV

Instructional Areas

INDUSTRIAL ARTS EDUCATION is an essential and a necessary part of the education of both boys and girls. It should be offered on the elementary school level, junior high school level, high school level, and in other programs serving special purposes.

Elementary School Level

The planning of industrial arts education experiences in the elementary grades (kindergarten through grade six) usually is the responsibility of the classroom teacher. All elementary teachers in South Carolina are required to pursue at least one three-semester hour course in "Arts for the Elementary Child." This course includes such subjects as practical arts, industrial arts, and creative arts and crafts. Such experiences include simple woodwork, clay modeling, poster and finger painting, interior decorating, puppetry, and others. Methods of assisting the classroom teacher should include the provision of:

1. Special industrial arts education training for the classroom teacher.
2. Separate facilities within the school staffed with trained industrial arts education teachers.
3. Services of an industrial arts education teacher, consultant, or supervisor who makes scheduled visits to the classroom to help the classroom teacher.
4. Services of an itinerant industrial arts education teacher who makes scheduled trips to the school with facilities in a portable laboratory.

Industrial arts education subjects in the elementary school should be taught as integral activities and experiences with other school studies, emphasizing interests, needs, and abilities of both the individual and group.

Junior High School Level

At the junior high school level (seventh and eighth, or seventh through ninth grades) industrial arts education is an integral and often required part of the total program of education.

Special emphasis should be given to help students discover and develop their aptitudes, abilities and interests. Students at this level are usually guided through a series of exploratory, creative, and manipulative experiences in a variety of industrial arts education areas. Safe practices in the use and care of industrial materials, tools, and equipment are emphasized. Activities involving the practical applications of mathematics, science, language and social studies are stressed. Areas in the recommended program are drawing, woodworking, metal working, electricity, graphic arts, plastics, ceramics, and home mechanics.

Subject Areas
Junior High School
(Grades 7 and 8, or 7 through 9)

Drawing: Freehand sketching, print reading, planning and designing.

Woodworking: Fundamentals of woodworking emphasizing hand tool operations, basic machine operations, upholstering, and finishing.

Metalworking: Elementary sheet metal involving various kinds of sheet metals and methods of joining together, folding, bending, etc. Casting of low temperature melting point metals.

Electricity: Practical application of such electrical principles as magnetism, flow of current, resistance and measurements through simple circuits, motor and appliance repair. Generation, transmission, distribution, consumption, and control of electrical power including basic electronics.

Graphic Arts: Block printing, silk screen printing, letterpress printing, rubber stamp making, and photography.

Plastics: Types of plastics, hand and machine operations, cementing, carving, dyeing, heating and bending, engraving, and finishing.

Ceramics: Pottery and tile, Keene cement, concrete, masonry and glassworking.

Home Mechanics: Minor repairs to electrical appliances, plumbing, heating equipment, doors, screens, upholstery, electrical switches, cement and plaster work, landscaping, painting, decorating, and wood finishing.

Senior High School Level

The school curriculum at the high school level (ninth through twelfth, tenth through twelfth, or eleventh and twelfth) includes industrial arts education as an elective subject for those students who have had previous experience in industrial arts education on the junior high school level. For those students who have not had the opportunity of taking exploratory courses in the junior high school, the high school program should provide for basic exploratory courses. It is recommended that students have experiences in each of the industrial arts education areas available in the school before they are encouraged to select an area of concentration.

The well planned high school curriculum includes opportunities in areas not provided at the junior high school level, opportunities for advanced experiences in areas previously studied, and prerequisites for vocational programs. The program should be directed toward the technical aspects of the fundamental elements of industry through study and experience utilizing a wide range of tools, machines, materials, processes, products, and occupations typical of our industrial technical society. High school industrial arts education programs should offer opportunities which are pre-vocational, pre-engineering, and pre-industrial education in nature.

Subject Areas
Senior High School
(Grades 9 through 12, 10 through 12, or 11 and 12)

Drawing: Blueprint reading machine, architectural, topographical, technical, basic engineering, drawing and reproduction techniques.

Woodworking: Furniture and cabinet making, wood finishing, upholstery, basic carpentry, and pattern making.

Metalworking: Sheet metal, art metal, ornamental iron work, forging, heat treating, foundry, welding, bench metal and machine tool work.

Electricity and Electronics: Construction and servicing of electrical equipment, appliances, and devices used in the generation, transmission, distribution, consumption, and control of electrical power. Electronics as applied to communications (radio-television and industrial control systems).

Power Mechanics: Fundamentals of engines, maintenance of internal combustion engines, such as lawn mowers, chain

saws, automobiles, etc. At this stage it might be desirable to have all parts mounted on standards allowing for practical experiment and actual tear down and assembly.

Home Mechanics: Minor repairs to household appliances, plumbing, heating equipment, doors, screens, upholstery, electrical circuits and switches, cement and plaster work, landscaping, painting, decorating and wood finishing.

Special Programs

Industrial arts education programs may also be organized to meet specialized needs for adults, mentally retarded children, the physically handicapped, and the mentally gifted. Team-teaching by the shop instructor with special education teachers is recommended for classes of mentally and physically handicapped students.

Adults: Adult classes can be geared to the study of technical subjects for the sake of creativity, craftsmanship, occupational exploration towards more specific vocational training, self-improvement, hobby development, and general maintenance and repair skills. Typical adult courses might include Fundamentals of Electricity, Fundamentals of Radio, Mechanical Drawing, Photography, Woodwork, Upholstering, Art Metal Work, Model-making and Small Engine Maintenance and Repair. Adult courses should be highly individualized, varied in offerings and designed to meet community needs.

Gifted: Classes for gifted students may be accelerated and correlated with the mathematics or science departments. Students preparing for future careers in engineering or other technological professions might follow a curriculum including one semester each of drafting, electricity, power mechanics, metals and technical drawing.

Handicapped: Physically handicapped youngsters can reap many practical and therapeutic benefits from working with tools. Equipment, supplies, and subjects must be adapted to the degree and nature of each child's disability, and precaution taken to plan a program which will avoid danger and fatigue to the children, challenge them to help themselves as much as possible, and assist them in developing occupational skills and worthwhile leisure activities.

Retarded: Classes designed for the mentally retarded should be small with emphasis on therapeutic value, home maintenance use, safe work practices, and developing self-confidence of each individual.

CHAPTER V

Types of Industrial Arts Education Laboratories

SINCE INDUSTRIAL ARTS EDUCATION is a planned program of educational experiences requiring special facilities, the type of industrial arts education laboratory established in a school curriculum would depend on the age and type of students, the objectives to be achieved, the facilities and resources available for instruction, and the qualifications and versatility of the instructor. The three major types of laboratory organizations for the teaching of industrial arts education are:

1. The Comprehensive General Laboratory
2. The General Unit Laboratory
3. The Unit Laboratory

The Comprehensive General Laboratory is designed to have two or more activities of work in progress in separate work areas of the laboratory at the same time. Work stations could

Drawing and Planning Area

Metal Area

Wood Area — Comprehensive General Laboratory — Thackston Junior High School, Orangeburg, S. C. (8th Grade)

be provided in the metal area, planning area, electricity-electronic area, wood area, drawing and graphic arts area, craft area, and so on. This type of laboratory lends itself to a wide range of activities. Generally a four-activity laboratory is considered a good comprehensive general laboratory. It is an economical plan in that one teacher directs a number of different activities. It requires, however, that the teacher be broadly trained and basically capable. This program has been found sound in school districts with only one or two industrial arts education laboratories.

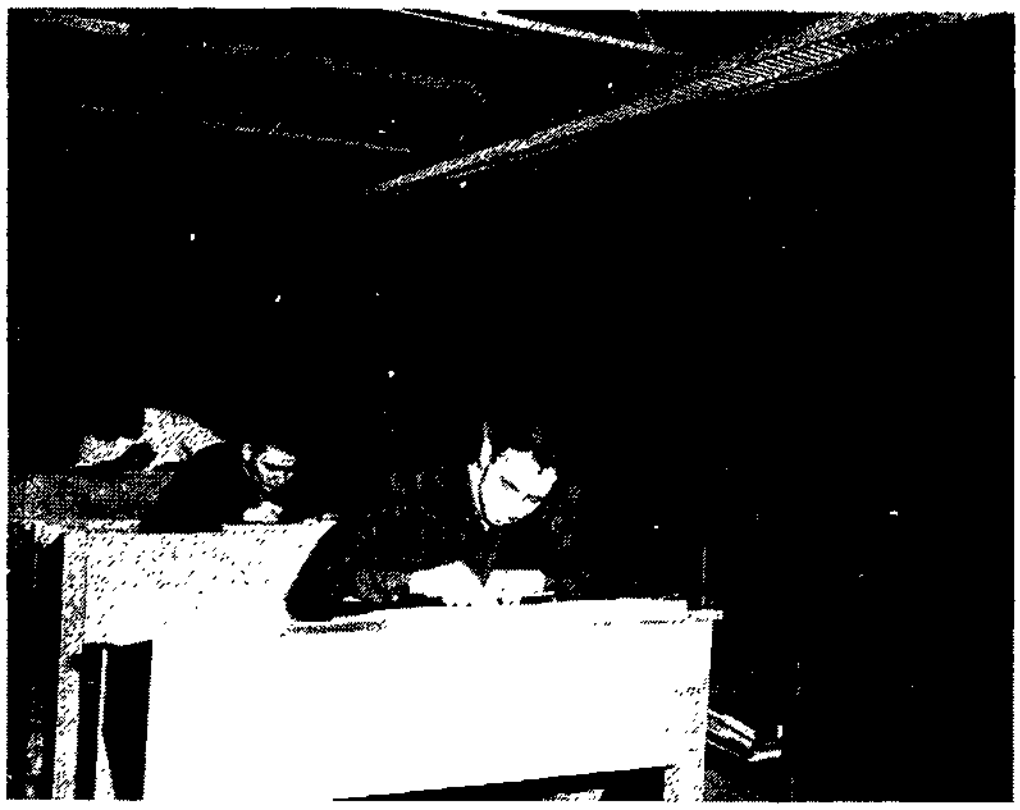
The General Unit Laboratory provides for a wide range of activities confined to one general classification of material. Thus a general metal shop will provide work areas in foundry, sheet metal, machine tool, forging, welding, and other metal production activities. The diversity of equipment, range of materials, and project possibilities dovetail very well into the aims and objectives of industrial arts education.

The general unit laboratory is recommended when two or more laboratory units are required to meet the industrial arts education needs of a school district. The laboratory titles are broad and indicate the wide range of activities which may be included. Suggested titles to be used are: General Metal, General Home Mechanics, General Wood, General Power Mechanics, General Graphic Arts, General Drawing, General Crafts.

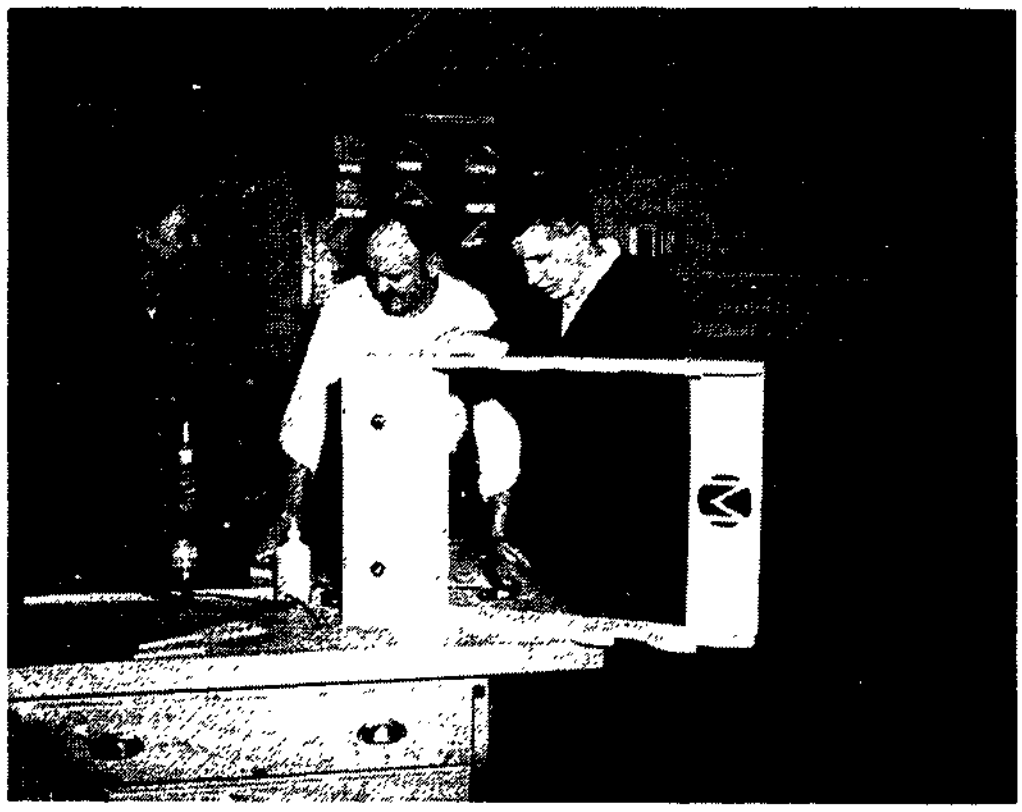
The Unit Laboratory deals in one industrial material such as wood, electricity, metal, or drafting. The unit laboratory should be in the larger senior high schools to meet the needs of the pupil capacity of the building. The unit laboratory is inclined towards vocational methods, procedures, and objectives, and seldom adequately fulfills the broader objectives of industrial arts education.

The unit laboratory is losing ground as a true industrial arts education organization, but will continue to find favor when the demand is for a hybrid organization having some of the features of both industrial arts education and vocational trade and industrial education.

The preparation of the teacher requires concentration in one field.



The Unit Laboratory — Drafting — A. C. Flora Senior High School
Columbia, S. C



The Unit Laboratory — Woodworking — A. C. Flora

Factors to Be Considered in Determining The Type of Program to Be Offered

Administrators and teachers planning a well balanced program should give consideration to the objectives formulated for industrial arts education. If the objectives provide a broad, general, and exploratory type of training where the development of interest, consumer knowledge, elementary skills, and an understanding of industrial life is paramount, the laboratory should provide experiences in several different activities.

The selection of the program and the type of facilities is influenced by community interest, the number of students enrolled in the school, and the potential enrollment in industrial arts education classes. In the smaller schools, the better program would be that of the comprehensive general laboratory in which several fields of experiences are offered. The larger schools could probably finance several general unit laboratories or several unit laboratories.

The occupational life or character of a community will often influence the type of program offered; however, industrial arts education will be of value to all students regardless of vocation or community.

Industrial arts education should be a part of the required curriculum at the junior high school level and facilities should be available for broad exploratory activity. This program should provide manipulative activity and emphasize the development of understanding, appreciation, interest, and good habits of work.

Where industrial arts education is required in the junior high school, the senior high school program should provide more specialized skills and more technical information. Classroom procedures should follow as nearly as possible the practice in industry. For students in the senior high school who do not expect to go to college, an extensive program should be given in order to prepare them for more specialized courses in trade school or industry.

It is suggested in planning a well coordinated program throughout the public school curriculum that industrial arts education be planned on the horizontal progression approach.

SUGGESTED PROGRAMS
Junior High School
(Grades 7-8-9)

Total School Enrollment	Number and Types of Laboratories	Subject Matter Areas
	One Laboratory	**Courses**
0-249	1—Comprehensive General Laboratory (Grades 7-8-9)	Planning and Drawing, General Wood, Electricity, Metal, Plastics, Ceramics, Home Mechanics, Graphic Arts (Suggestion-Use 4 Areas)
	Two Laboratories	**Courses**
250-499	1—General Crafts (Grade 7)	Plastics, Ceramics, Art Metal, Leather
	1—Comprehensive General Laboratory (Grades 8-9)	Drawing and Planning, Wood, Electricity, Metals, Home Mechanics, Graphic Arts
	Three Laboratories	**Courses**
500-749	1—General Woodwork (Grade 7)	Craftwork including Wood taught in woodwork area
	1—Drafting and Graphics (Grade 8)	Drawing, Photography, Silk Screen, Linoleum Block, Hand Press Work
	1—General Metals (Metal, Electricity, Mechanics) (Grade 9)	Machine Tool Operation, Sheet Metal, Electricity, Forge Work, Bench Metal Work, Home Mechanics
	Four Laboratories	**Courses**
750-1,000	1—General Wood Laboratory (Grade 7)	General Crafts including Wood taught in woodshop
	1—Drafting and Graphics (Grades 8-9)	Drafting including planning and other Graphic Arts
	1—General Metals (Grades 8-9)	General Metal Laboratory including Electricity and Metal Work
	1—Home and Power Mechanics (Grades 8-9)	Home and Power Mechanics including Maintenance and Operation of Home Equipment, and Small 2- and 4-Cycle Internal Combustion Engines

SUGGESTED PROGRAMS

Senior High School
(Grades 10-11-12)

Total School Enrollment	Number and Types of Laboratories	Subject Matter Areas
	One Laboratory	**Courses**
0-249	1—Comprehensive General Laboratory (Grade 10)	Wood, Metal, Drawing, Electricity, and Power Mechanics
	Two Laboratories	**Courses**
250-499	1—Comprehensive General Laboratory (Grade 10)	Wood, Sheet Metal, Machine Tool Operation, Electricity, Home Mechanics
	1—Drafting and Graphics (Grades 10-11)	All areas of Drafting, Blueprint Reading, and Graphic Arts
	Three Laboratories	**Courses**
500-749	1—Wood and Metals (Grades 10-11-12)	Hand and Machine Woodwork, General Metal Work
	1—Drafting and Graphics (Grades 10-11-12)	All areas of Drawing, Blueprint Reading, and Graphic Arts
	1—Electricity, Machine Work, and Mechanics (Grades 10-11-12)	Electricity - Electronics, Machine Tool Operation, Mechanics, including 2- and 4-Cycle Internal Combustion Engines
	Four Laboratories	**Courses**
750-1,000	1—Wood (Grades 10-11-12)	Hand and Machine Woodwork, Wood Finishing, Upholstery, Wood Turning, and Pattern Making
	1—Drafting and Graphic Arts (Grades 10-11-12)	All areas of Drawing, Blueprint Reading, and Graphic Arts
	1—Electrical (Grades 10-11-12)	Electricity, Basic Electronics, Radio, and Television
	1—General Metal (Grades 10-11-12)	General Metal Work to include Sheet Metal, Welding, Forging, and Machine Tool Operations, and Power Mechanics

CHAPTER VI

Laboratory Facilities

IN PLANNING the industrial arts education laboratory requirements for a particular school, many factors should be considered, such as: the grade levels to be served, the scope of the curriculum, and both the potential school enrollment and the anticipated enrollment in the industrial arts education program. These factors determine the type and number of laboratories needed, as well as the size, types, and quantity of equipment needed for each laboratory. Experience has shown that enrollments increase as the quality of the program increases. On the average, an enrollment of approximately 25 to 30% of the student body can be expected. For an accurate prediction of the number of laboratories and teachers needed, the predicted enrollment should be translated into the number and type of classes to be scheduled.

Wise planning pays dividends in constructing new facilities, remodeling existing facilities, or rearranging the layout in existing industrial arts education laboratories to facilitate a curriculum revision. Experience has shown that poor initial planning usually results in long-lasting ill effects to the program. Once a building is constructed, additional changes are slow in coming. It is recommended that experienced industrial arts education teachers or supervisors work closely with administrators and architects in planning industrial arts education laboratories.

The following recommendations may be used in planning laboratories in most communities with necessary modifications.

A. Size, Shape, and Location

A minimum of 75 square feet per pupil should be provided in laboratories and 40 square feet in drafting rooms. (General Metal laboratory and Power Mechanics laboratory require 100 to 150 square feet per student.)

Total **minimum** floor area for laboratory, drawing-planning room, and storage room should be not less than 3,000 square

feet; of this total area, not less than 1,800 square feet should be provided as training area.

Laboratories should be located on the first floor.

All floor space of a laboratory should be on one level.

Laboratories should be located where noise will cause the least interference with the rest of the school. A wing of the building or a separate building near the main building is preferable.

A laboratory area, square or of rectangular shape not exceeding a ratio of one to two, is best. Avoid recessed areas, "L" and "T" shapes. All parts of the laboratory should be visible to the instructor.

Ceiling height should be at least 12 feet.

The laboratory should not be a passage-way to other rooms.

B. **Walls, Floors, and Ceilings**

Concrete floors in drafting room and planning room floors should be covered with tile.

Where concrete floors are used and color is desired, the color should be added at the time the floor is poured and all exposed concrete floors should be finished smooth and dust-proofed.

Conduit for machines should be laid before the floor is poured and allowed to terminate at floor level; covered outlets should be placed at predetermined machine locations.

Wall raceways containing 220V three phase, 220V single phase, and 110V service should be provided as they permit flexibility in organizing or relocating machines.

Walls should have a smooth finish. A wainscoting 48"-72" high and of durable nature should be provided. Higher wainscotings permit more effective use of wall space.

Provide glass panels from wainscot height to 72" above the floor in partitions between laboratory and auxiliary rooms.

Partition walls should be non-bearing walls of ceiling height, and of a semi-permanent construction to permit future alterations in floor plan. Masonry walls are not recommended for this purpose.

Ceilings should be acoustically treated.

C. Windows and Doors

Use metal sash of the awning or deflector type when possible.

Windows should extend to the ceiling.

Select a northern exposure when possible. Drawing rooms should have a northeast exposure.

Sunlight should be controlled.

Provide only one door as the regular means of pupil entrance.

One 8'-10' entrance with overhead door should be provided on the service drive.

Door locks should have master-keys.

D. Illumination and Painting

A minimum of 50 foot-candles at bench height should be provided in shops and a minimum of 100 foot-candles in drawing rooms. Local lighting should be provided where necessary.

Direct or semi-direct types of fixtures are best for laboratories. Diffused light is preferred. Incandescent light is generally satisfactory. Fixture height should be at least 10 feet in laboratories.

Light switches should be located near the main entrance to laboratories and drawing rooms.

The lighting circuit should be separate from circuits for machines and wall convenience outlets.

Secure the advice of a lighting expert if possible.

Ceilings and walls should be painted with a flat, high reflection factor paint. Ceilings should be white with a reflection factor of 85% or above. Upper walls should be of a suitable color and with a reflection factor of 60%. Wainscoting should have a reflection factor of 40-60%. Equipment in the laboratory should be painted to carry out the color scheme. Color scheme suggestions are available from paint manufacturers.

E. Equipment

Provide aisles of travel to commonly used areas. Insure ample space around equipment.

Equipment used in sequential order should be located in the order of its operation.

Locate related areas together, i.e., welding, forging, foundry; ceramics, keene cement, plastics, etc.

Utilize naturally lighted areas for precision equipment such as lathes, drawing tables, grinders, saws, etc., and consider direction of light in locating equipment.

Purchase only self-contained machines, not combination machines. Never run two or more machines from the same motor.

Locate machines to accommodate largest sizes of materials commonly handled. Do not distort the most effective arrangement for the occasional extra large piece of material.

Locate the most frequently used equipment near the center of operation.

Allow sufficient floor space for assembly areas.

Where necessary, provide dust collectors for machines and exhausts for gas and fumes.

All machines should be controlled by a master switch conveniently located **in the shop** and near the entrance.

Tools and equipment should be purchased with the sizes of the pupils in mind.

Purchase high quality equipment, preferably of medium weight.

Planning and library centers should be located in an adjoining room separated from the work area by glass partition.

Lighted display cabinets or cases should be provided outside but near the working area of the laboratory.

Lumber and metal bar stock, band iron, etc., may be stored in vertical bins for economy of space.

F. **Other Facilities**

Provide adequate storage space for pupil projects, supplies, etc.

Provide sinks with hot and cold running water where needed.

Washing facilities and drinking fountains should be provided in the laboratory. If possible, toilet facilities should also be provided. Provide adequate chalk board and bulletin board space. Water, gas, and compressed air should be provided.

Locate convenience outlets in the walls of the laboratory at frequent intervals. Outlets should be at least 36" above the floor. Outlets for soldering irons and other heating equipment should be equipped with pilot lights.

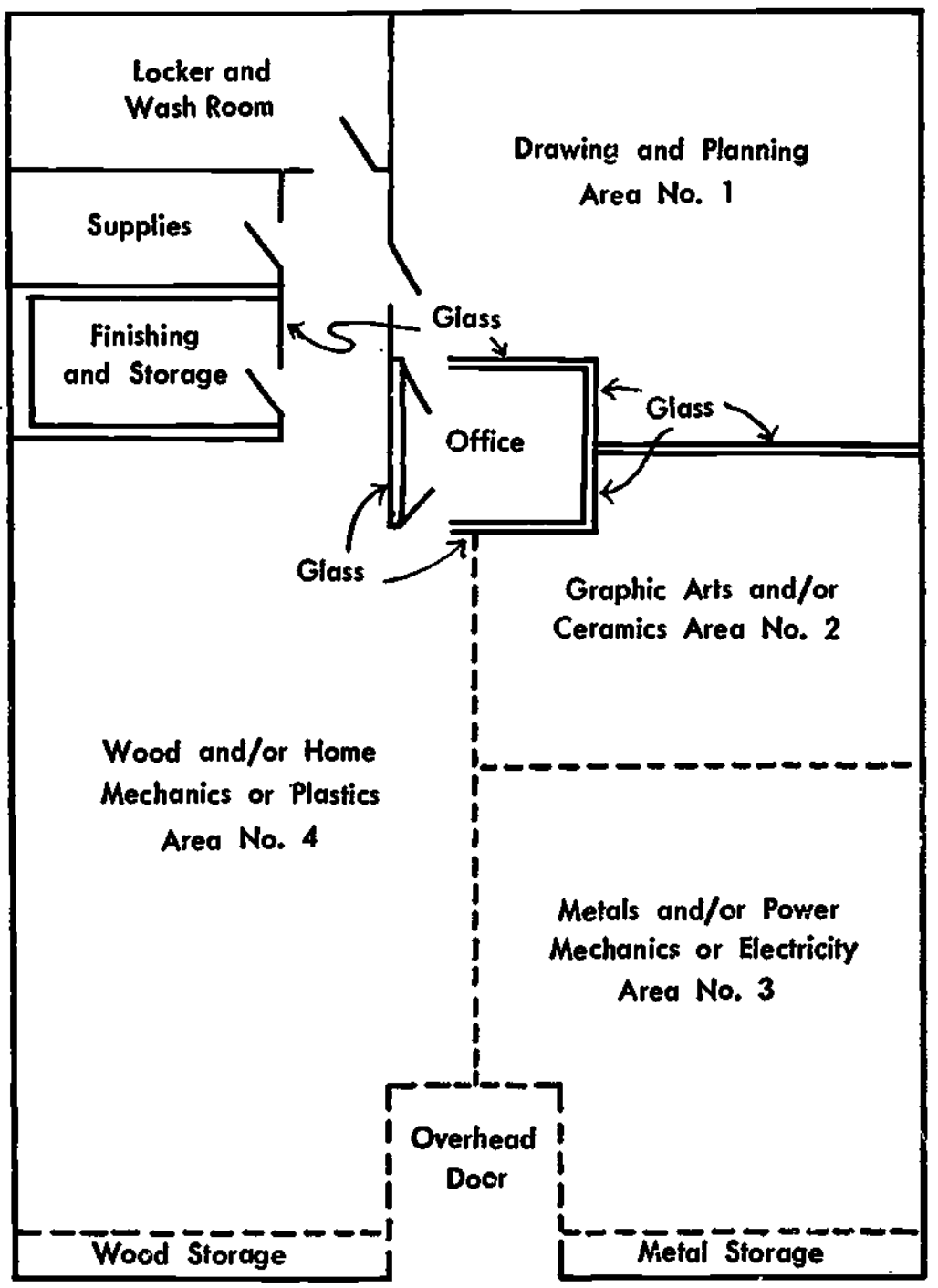
Unit type heaters mounted near the ceiling are generally suitable.

Ventilation systems for laboratories should be separate from the ventilation systems for the rest of the school.

A sounding unit for the school fire alarm and period bell systems should be installed in the laboratory.

Tools And Equipment

A list of up-to-date tools and equipment for each type of laboratory may be secured through the office of the state supervisor of industrial arts education.



Comprehensiv General Laboratory — Total area, 4,800 square feet (60 X 80). Areas 1 and 4 contain fixed equipment, while Areas 2 and 3 are adaptable to any of several instructional areas. The door for pupil entrance could be located from the corridor into areas 2, 3 or 4.

CHAPTER VII

Arrangement and Equipment of Industrial Arts Education Department

Office

IT IS RECOMMENDED that the instructor's office be built adjacent to the laboratory with a glass partition that will provide a view of the entire laboratory. However, the instructor should spend most of his time in the laboratory seeing that the work is being done properly, and giving instruction when needed. The office should be of convenient size and provided with equipment for record filing, conferences, and the instructor's personal study.

Lockers and Washroom

Some type of washroom facilities are necessary since most laboratory activity produces some dust, grease, etc., on the hands and clothes. Instructors should see that students wash their hands and clean up before reporting to the next class. Lockers should be provided for the storage of aprons and other clothes. They may be installed in corridors in the absence of a special locker room. A locker room is preferably connected with washroom and toilets.

Finishing Room

In programs offering woodwork, a finishing room should be provided adjacent to the laboratory. It should be well-lighted, ventilated, dust-free, and have an exhaust fan if spray equipment is used. Storage equipment in the finishing room should consist of metal containers for finishing materials, brushes, oily rags, waste, etc. Spray equipment should be installed in accordance with the fire underwriters' code, and a fire extinguisher of a suitable type and size placed in the finishing room. A sink with cold and hot water would be useful.

Storage

The storage of tools and materials will vary with the type of instructional units offered in the industrial arts laboratory.

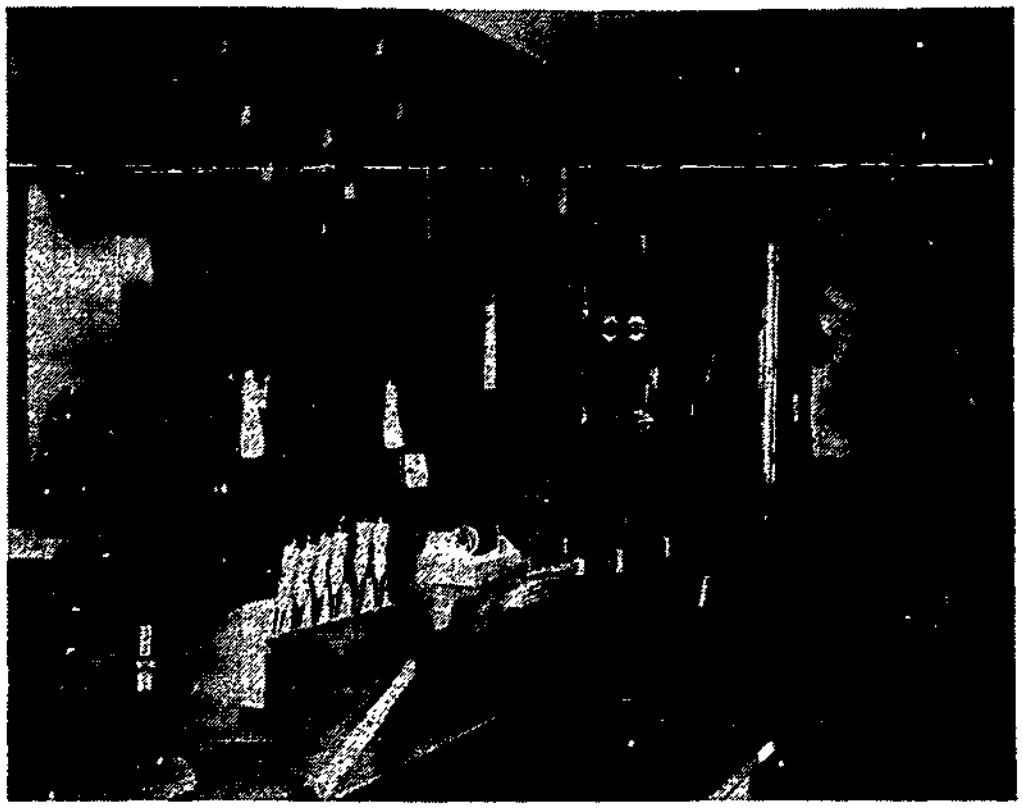
Adequate planning can be done only after the variety of activities has been determined.

A special toolroom may be provided, which in some respects approaches a representation of industry, but it is not always the best method of storage for the tools. The open tool panel or cabinet system is a time saver and has other advantages. Regardless of the system used, tools should be arranged so that the instructor can quickly determine if any tools are missing.

In woodworking laboratories, a lumber room should be located near an outside entrance to facilitate the transfer of long pieces of lumber to the working area. Some type of rack should be provided for "shorts" which will be used only if properly stored in marked racks.

Adequate storage facilities should be provided for other laboratory supplies such as nails, screws, glue, sandpaper, hardware, etc.

Storage space for finished and unfinished projects is necessary. Some beautifully designed laboratories have omitted project storage space, only to find the laboratory cluttered and unattractive after the program is in progress.



Tool Room, Thackston Junior High School, Orangeburg, S. C.

Care Of Laboratory

The industrial arts program's success in a community might be determined by the condition of the laboratory, its neatness, cleanliness, and orderliness. Supervisors, administrators and other visitors are influenced by the care of the laboratory. Students will also reflect orderliness and neatness in their work. Emphasis should be placed on the proper maintenance and care of equipment, as the expenditure on equipment cannot be justified unless it is kept in good working order.

Comprehensive General Laboratory — Thackston Junior High School, Orangeburg, S. C.

Library

Planning a job is one of the objectives of industrial arts education. Just as machines and tools are necessary in performing the job, the tools of planning are equally essential. A planning area in the classroom adjoining the laboratory should contain drawing equipment, project books, blueprints, reading material, etc. An adequate planning area will encourage instructor and students to do proper planning before undertaking a project.

Mr. Ross Corn, Teacher, Union High School, Union, S. C., Demonstrates to Students How to Sharpen and Set a Hand Plane

Housekeeping

Good housekeeping habits can be developed in students if a workable system is installed by the instructor. This is a task that should not be assigned to a janitor or one student. It is preferable that duties be assigned to every student and that these duties be rotated. The system used must be designed to fit the particular situation.

Suggested assignments are: Shop Superintendent, Assistant Superintendent, Record Clerk, Librarian, Tool Foreman, Supply Foreman, Safety Foreman, Clean-up Foreman and Area Foreman.

The following checklist may serve as a guide to the teacher in maintaining good housekeeping:

1. An orderly lumber rack and room.
2. Orderly tool storage facilities.
3. Benches well arranged and cared for.
4. Regular floor cleaning.

5. Neat finishing area.
6. A covered metal container for oily rags and waste.
7. The blackboard clean and neat.
8. Storage space for unfinished projects.
9. All tools and machinery kept clean of dirt, oil, and rust.
10. The bulletin board neat.
11. The glue bench, clamps, mixing pans or jars, and glue properly arranged and stored.
12. The books, blueprints, magazines and other reading material kept clean and in order.
13. Storage space for finished projects.
14. The cases, window ledges, etc., dusted frequently.
15. The material on the bulletin board kept in order and changed frequently.
16. The students wearing clean aprons.
17. A box of usable scraps of odd material.
18. The windows washed occasionally.
19. The sink or lavatory cleaned daily.
20. The lockers kept clean and orderly.
21. The teacher's desk kept in order.
22. A container for waste.

CHAPTER VIII

Records and Forms, Student Assistants

PROPER CONCERN for administrative organization must be given by the industrial arts education teacher if his laboratory is to function in a productive manner. From days of the earliest forms of industrial arts education training, it has been found that it was necessary to keep some form of administrative records if proper objectives were to be attained. Progress which is gained in laboratory type work is made possible through knowledge of past experiences; therefore, if no record of past experiences is kept, it will not be possible to make intelligent future decisions.

Record systems will vary from school to school, and individual to individual. The systems will depend greatly upon the teacher's efficiency. The important fact is that vital information regarding the activities of the laboratory and individual achievement must be kept on file for immediate use. The teacher who cannot refer quickly to dependable records when making decisions regarding his department is almost helpless.

Each industrial arts education teacher should have some organized method of keeping an assortment of well-planned records and forms, including the following:

STUDENT CUMULATIVE RECORD

This record should contain confidential data regarding the student. Information may be accumulated and kept in a folder or preferably printed on the folder. It should contain at least the following information:

1. Name, age, address, parents' names and occupations.
2. Classification, shop courses taken with grades, teacher observations and comments, occupational interests.
3. Standardized test results, special aptitudes and any unusual traits.

4. Any observations relating to students' personal, educational and occupational adjustments.
5. Follow-up record for future consideration in course improvement studies.

INDUSTRIAL ARTS EDUCATION CUMULATIVE RECORD

_____ **Public Schools**

_____ **Junior-Senior High School**

Last Name	First Name and Initial		Home Room
Birth Date	Birthplace	Sex	Race
Home Address	Date Leaving		Date Entering
Father's Name	Address	Occupation	Education
Mother's Name	Address	Occupation	Education
Physical Characteristics	Posture	Appearance	Deformities

1. Vision
2. Hearing
3. Strength
4. Co-ordination

Hobbies

Extracurricular Activities

Work Experience

Vocational Preference

INDUSTRIAL ARTS CUMULATIVE RECORD — Page 2

Industrial Arts Education Subjects	1963-64		1964-65		1965-66	
	Subject	Grade	Subject	Grade	Subject	Grade
Days Absent						
Days Tardy						

(Check Excellent, Satisfactory or Unsatisfactory)

	E	S	U	E	S	U	E	S	U
Effort									
Speed and Efficiency									
Promptness									
Self-reliance									
Co-operation									
Neatness									
Shop Language									

Name of Test	I.Q.-S.Q.	Raw Scores	Standard	% Class

Instructor's Summary _____

FOLLOW UP RECORD

Name of Firm	Address	Job	Comment

23

TEACHER'S CLASS RECORD

This record is indispensable in keeping track of a student's work. It usually contains the following information:

1. Name and number of the course, year and semester, number and days the class meets.
2. Names of the class members in alphabetical order with their work numbers, if work numbers are assigned as an aid in identifying projects.
3. Project grades and material completed, indicating dates when work is completed, and any other helpful information regarding a student's work during a given period.

PROJECT REPORT

A project-planning sheet is an invaluable part of an industrial arts laboratory. It provides one of the most worthwhile projects that can be carried on in the school shop. While these forms might vary with different shops, a well planned form will facilitate the instructor's job of checking and grading. This form should include space for the following information:

1. Student's name and date the project is begun.
2. Name of the project and its cost.
3. A sketch or drawing of the project.
4. A bill of materials and estimated cost of each.
5. A list of the steps, in proper order of sequence, which are required to complete the project, including any references which are to be read by the student in connection with different operations involved in the project.
6. Detailed drawings, if necessary.

PROJECT REPORT

_____ **High School**

Industrial Arts Education Department

Name_____ Class_____ Period_____

Project_____ Date Started_____ Completed_____

SKETCH

BILL FOR MATERIALS

Size	No. Pcs.	Material	Cost

TOTAL COST_____

ORDER OF PROCEDURE

Steps to be done	Tools and Machines to be used
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Approved by_____ _____ Date_____

CLASS PROGRESS CHART

The progress chart provides a simple, convenient way of showing to the student just what he is expected to do in the course. It can also serve as a powerful incentive to each student for better workmanship. The progress chart should contain at least the following information:

1. Name and number of the school course, class and section number, periods and days classes meet.
2. List alphabetically the names of each member in the class.
3. List in proper sequence learning units which are to be completed.
4. Provide space for each student's work to be evaluated when units are completed.

INDUSTRIAL ARTS EDUCATION DEPARTMENT

_____ **High School**

CLASS PROGRESS CHART

School Year_____ **Grade**_____

Subject_____

Student's Name	Units to Be Completed							

INVENTORY FORMS

Inventories should be kept in all school shops. Three types of inventories should be kept: equipment, supplies and books. Once a complete inventory is obtained, it is simple to keep in operation, and will give you an exact assessment of what is in the shop and its condition. Inventories usually contain the following information:

Supply Inventories:

1. Name, description, quantity of materials received.
2. Reasonable estimate of amount of materials on hand.
3. Names of companies from which items were purchased.

Equipment Inventories:

1. Name, make, catalog number of each item, description.
2. Cost and date of purchase.
3. Name of company from whom purchased.
4. Condition of equipment.

Book Inventories:

1. Title, author.
2. Condition of book.
3. Name of publisher and cost.

INDUSTRIAL ARTS EDUCATION DEPARTMENT

_____ High School

Condition
N—New
G—Good
F—Fair
P—Poor
U—Unusable

SUPPLY AND EQUIPMENT INVENTORY

Instructor	Sign
Name	Date

Laboratory_____ Building_____

Unit Price, Quantity and Condition at Inventory Time

	No.	Cond.	Check	No.	Cond.	Check	No.	Cond.	Check	No.	Cond.	Check	No.	Cond.	Check	No.	Cond.	Check
Date of Inventory																		

Value_____

BOOK INVENTORY

Industrial Arts Education Department

_____ High School

Title	Author	Condition	Date

REQUISITION FORMS

Requisition forms should contain the following information:

1. Correct name and address of company from which items are to be purchased. (Books: Publishers)
2. Quantity, description, correct catalog numbers and cost of each individual item. (Books: Name, Grade, Copyright, Edition)
3. Total cost and method of delivery.

INDUSTRIAL ARTS EDUCATION DEPARTMENT

_____ **High School**

_____ **Date**

Company _____

_____

(Full Address)

_____

Signature

Order	ARTICLE — Full Description	Cost

Total Cost _____

Delivery Method _____

MISCELLANEOUS RECORDS AND FORMS

In every school laboratory certain situations may arise which are not covered under normal procedures. The following are suggested forms which might be of assistance to the instructor in meeting those needs:

PARENT'S PERMIT SLIP

Name _____
has my permission to operate the machines and tools in the Industrial Arts Laboratories for the year 196__-19__.

In case an accident should occur, we prefer that he receive medical treatment from Dr._____.

Signed by his parents or legal guardian:

_____

Date_____

MACHINE OPERATING PERMIT

Name _____ has completed all requirements for operating the power equipment listed below. All operating tests and safety tests have been satisfactorily completed.

This permit is for operating the_____.

Date_____ Instructor_____

(Note: This permit will be revoked if any of the operational procedures or safety instruction pertinent to this equipment are violated. Reinstatement of this permit will be at the discretion of the instructor.)

SHOP LIBRARY

CHARGE SLIP

Book_____

Date_____

Student_____

Date Due_____

_____ High School

_____ S. C.

DO NOT REMOVE GLUE CLAMPS

This work glued at_____ A.M. P.M._____.
Clamps may be removed in 8 hours.

Name _____

10 10 10 10 10 10 10 10 10 10

Name _____ 10

Period_____ Date_____ 10

SHOP TICKET — $2.00 10

INDUSTRIAL ARTS DEPARTMENT 10

10

_____ **HIGH SCHOOL** 10

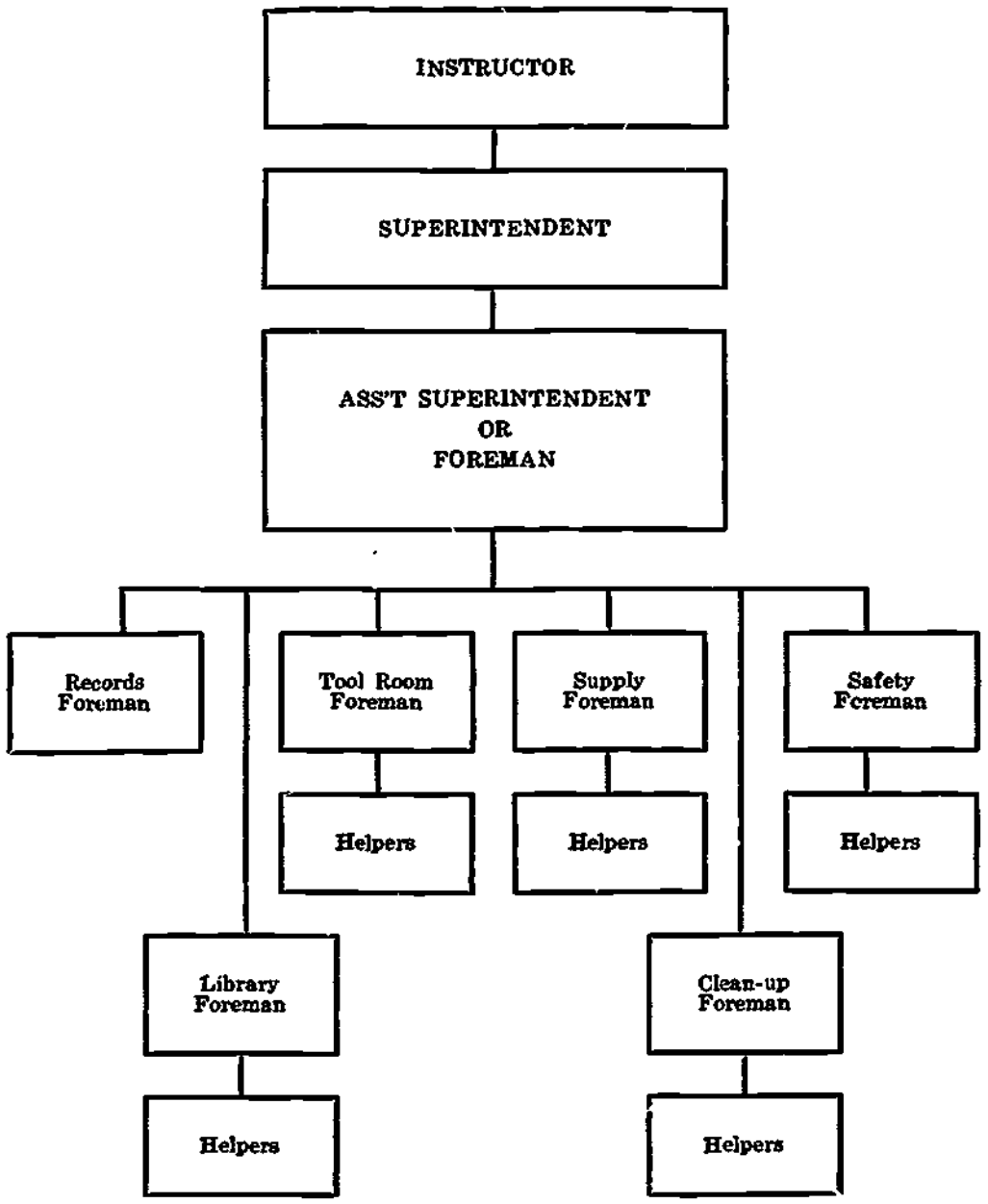
Teacher _____

1 1 1 1 1 1 1 1 1 1

STUDENT PERSONNEL DUTIES

Student personnel organization is of utmost importance for each class. It provides helpful instruction to the student, and is of considerable assistance to the instructor. A properly organized class will produce more and better work in the laboratory.

A good organization, which assigns many of the routine duties to students, will free the instructor and provide for him a better opportunity for concentrating on instructional activities. It must be noted that organization is not a "cure-all" for all the problems in the shop, but certainly it is of great assistance to the instructor who carefully selects his assistants. Following is a chart indicating a good suggested method of organization:



The following are suggested duties that may be performed by student officers, and may be modified to fit any particular situation the instructor may find.

Shop Superintendent

1. Checks attendance at the beginning of each period.
2. Sees that all assignments of instructor are carried out.
3. Replaces any officers who are absent.
4. Checks with foremen to see that all duties are carried out.
5. After everything has been checked at the end of the period, reports and clears with the instructor, then dismisses the class.

Assistant Superintendent

1. Takes over in the event the superintendent is absent.
2. Assists the superintendent with his duties.
3. Announces clean-up time at the end of the period.

Librarian

1. Checks planning area at the beginning of the period to see that all books and magazines are in proper places.
2. Assists the instructor in issuing instructional sheets and other aids.
3. Reports to the instructor or superintendent at the end of the period that all instructional guides are in proper places so that class may be dismissed.

Records Clerk

1. Fills out absentee slips while instructor checks roll.
2. Distributes cash receipts after instructor has recorded payments.
3. Assists instructor with shop cards, checking supplies and personnel charts.

Tool Room Foreman

1. Checks for missing tools and reports to superintendent or instructor.
2. Checks for damaged tools, and makes repairs as directed by the instructor.
3. Keeps tool board and tool room in neat condition.
4. Reports missing tools to superintendent at the end of the period.

Supply Foreman

1. Sees that all supplies are neatly arranged at all times.
2. Assists the instructor in issuing new supplies.

Safety Foreman

1. Checks for proper lighting and ventilation.
2. Checks for any violation of safety rules.
3. Assists in the care of first-aid supplies.
4. Assists the instructor with safety precautions.

Clean-up Foreman

1. Supervises all clean-up activities.
2. Makes sure that all machines have been cleaned properly.
3. Checks all special areas, i.e., gluing table, paint room, clamp rack, etc.
4. Reports to superintendent or instructor so that class can be dismissed.

CHAPTER IX

School Laboratory Safety

A PROGRAM OF SAFETY is a most important part of any activity where physical work is done either with hand tools or with machines. This has been proved in many industries where elaborate programs have been set up, and where good records have been established as a result. Therefore, safe habits and practices must be a part of the student's training as soon as he begins industrial arts education.

It is the school's responsibility to see that the student acquires these habits and practices so that he will be ready for adult employment without the handicap of having had an accident.

Safety in the industrial arts education program consists of providing conditions that will be favorable to the general health of the student and in offering instruction that will guide him in forming habits of procedure leading to the prevention of accidents.

Working conditions provided for the student should include:

A. The work area:

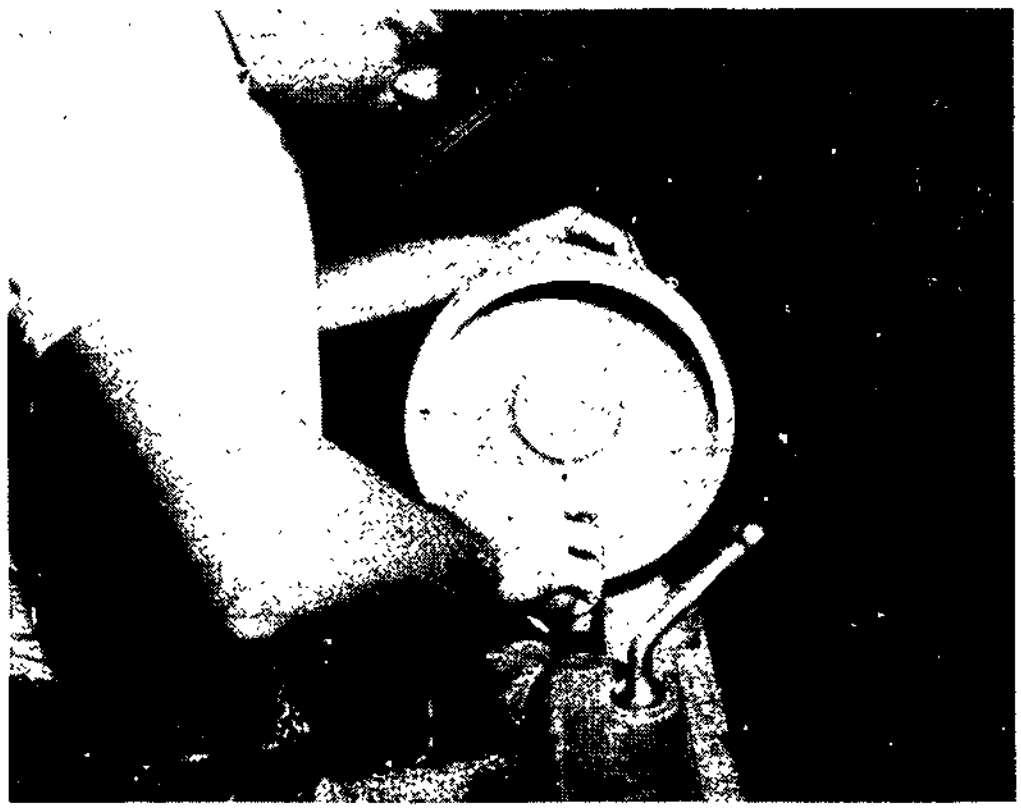
The size and shape is determined by the type of equipment to be used, type of work to be done, proper storage of supplies, and adequate space for project storage. It should be properly heated, ventilated, painted, and lighted, with safe and convenient power outlets. Precaution against fire requires control equipment and unrestricted exits.

B. Layout of area:

1. Arrangement of hand tools and portable machines.
2. Arrangement of machines with protection from movable parts, and with a well-defined operation zone of sufficient size. The floor must have no obstruction and be treated against slippage.
3. Adequate space for general assembly areas and for individual work stations.
4. Arrangement for storage of supplies and projects.
5. Machines should be painted and color coded to call attention to the operational and hazardous features.

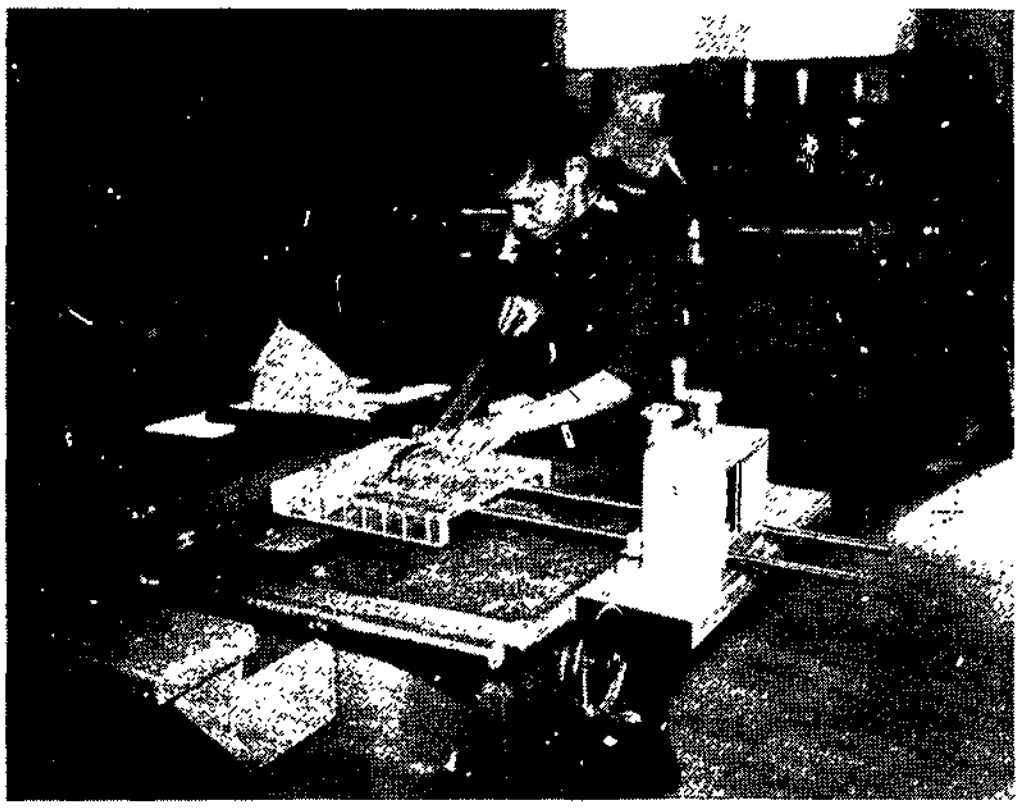
Of equal value with the provision of a well planned and equipped laboratory is its safe use. This phase is accomplished by giving information and instruction with insistence that safe practices be observed. Some of these practices are:

A. Protect eyes against dust, chips, and welding.
B. Wear proper clothing with no loose parts.
C. Protect body against hot materials and sharp edges.
D. Proper storage and use of volatile liquids.
E. Proper storage and handling of tools.
F. Keep hand tools in good condition and use only for purpose intended.
G. Use guards on all machines and observe operational instructions for each.



Safety Shield to Protect Eyes From Dust and Chips, Eau Claire High School, Columbia, S. C.

Minor accidents, if they occur, may be cared for by providing and using a properly stocked first aid kit. If there is doubt as to the effectiveness of the treatment, a parent should be notified. In the event of an emergency, professional aid must be obtained at once.



Safety Guard on Machine to Protect Fingers and Hands, Thackston Junior High School, Orangeburg, S. C.

In addition to treatment, each accident should be reported and a record kept, so that accurate information will be available if it is needed for additional treatment or for filing an insurance claim.

Safety practices are of such importance that they must be observed by the instructor and every member of the group. Any unsafe procedure should be reported immediately by the student designated as safety foreman, or by any other member of the group.

The safety program should be outlined and put into action on the first day of school. Information must be given by the instructor, but the program is best conducted by the safety foreman of the student personnel organization.

A checklist of hazardous items enables the safety foreman to mark daily any situation that needs attention. This list fastened to a clip board gives the safety foreman a mark of authority as he performs his duties. A sample check list is shown on the following page.

SAFETY FOREMAN'S CHECK LIST

Safety Foreman_____ Week_____

The safety foreman has the responsibility of moving around the room to see that safety practices are followed by all students. He may turn off the main switch for power machines at any time a violation may cause an accident, and report it to the instructor. The safety foreman should check daily the items listed below for the protection of the class at all times.

	M	T	W	T	F
1. Do any students have loose sleeves, neckties or other clothing?					
2. Do all students have aprons that are properly tied?					
3. Do all students have a job?					
4. Are grinding wheel rests 1/8" or closer?					
5. Are hot soldering irons kept in a rack?					
6. Is the gas turned off at the end of the day?					
7. Are guards kept in place on all machines?					
8. Are all hammers fitted to sound handles?					
9. Are tools fastened to storage panels correctly?					
10. Is all material clamped when drilling?					
11. Are sharp tools laid on bench so that they will not fall off?					
12. Is the push stick available at all times for work on saws and jointer?					
13. Are oily rags placed in fireproof containers?					
14. Are paint cans and brushes cleaned and stored?					
15. Is the stock room clean and orderly?					
16. Did each student clean his work station?					
17. Were there any unsafe conditions that are not listed?					
18. Were there any accidents? Was an accident report filled out?					
HAVE THE INSTRUCTOR GIVE YOU A DAILY GRADE					

ACCIDENT RECORD AND REPORT

_____PUBLIC SCHOOLS

Name _____ **Phone**_____

Address _____

Time of accident _____ **Date**_____

Cause of accident _____

_____

_____

_____

_____

Nature of accident _____

_____

_____

_____

_____

_____

Treatment administered_____

_____

_____

_____

_____

Were parents notified?_____ **Time**_____

Name of doctor, if needed_____

Results of treatment_____

_____

Was insurance claim filed?_____ **Date**_____

Name of company_____

Comments _____

CHAPTER X

Teacher Preparation, Certification, and In-Service Training

THE INDUSTRIAL ARTS EDUCATION TEACHER must be a craftsman as well as a teacher. He should possess skills sufficient to demonstrate all of the tasks he expects his students to perform. He should be a graduate of an approved teacher preparation program in industrial education or industrial arts education. The prescribed teacher education curriculum should include courses in which the prospective teacher can gain proficiency in at least four industrial arts education subject areas. He must also develop competency in "how to teach."

The certification of industrial arts education teachers depends on the applicant's college education, his score on the National Teachers Examination, and the number of years of his teaching experience.

The college preparation leading to the degree must include three categories as follows: (1) Basic Preparation, (2) Specialized Preparation, (3) Professional Preparation.

Specialized preparation for industrial arts education teachers is as follows:

1. A minimum of three semester hours in each of four or more shop activities such as wood, metal, graphic arts, electricity, automotive, ceramics, plastics, textiles, trowel work, art crafts, etc. 12
2. A minimum of four semester hours in courses of related drawing and design, including at least two of the following: mechanical drawing, sketching, drafting, mechanical equipment and design, graphic arts design 4
3. Electives from any of the above listed courses 8

New teachers meeting the above educational requirements with no experience receive a probationary teacher's certificate which is valid for two years. (Information on group, class, type of certificates, renewals, etc., may be secured from the Division of Teacher Education and Certification, State Department of Education, Columbia, South Carolina.)

If industrial arts education programs in South Carolina's public schools are to keep abreast of the rapidly changing industrial society, teachers must make an effort toward self-improvement professionally, as well as technologically.

One of the best means by which one can improve himself is to attend summer courses which deal with the many aspects of industrial arts education. Summer programs presently being offered at Clemson College and South Carolina State College are designed to serve the teachers of industrial arts education. Until larger numbers of teachers participate in these programs, little can be accomplished. Before an adequate summer program can be offered by either of these institutions, there must be a demand for such programs.

It is suggested that all industrial arts education teachers develop a personal plan for self-improvement by participating in the following activities:

1. Attend summer school for six (6) credit hours of work at least once in three years.
2. Attend district workshops or conferences in industrial arts education.
3. Subscribe to, and read, the professional journals and magazines in the field of industrial arts education.
4. Become an active and participating member of the state industrial arts teacher's organization.

Industrial Arts Education Skill Contest (Wood), Palmetto Trade and Industrial Education Club, District Convention, Lakeview High School, West Columbia, 1963

CHAPTER XI

Professional Growth

PROFESSIONAL ASSOCIATIONS

A. State Associations

South Carolina Education Association
South Carolina Vocational Association
South Carolina Trade and Industrial Education Association
South Carolina Industrial Arts Education Association
Palmetto State Trade and Industrial Education Association
Palmetto State Industrial Arts Education Association

B. National Associations

American Vocational Association
1010 Vermont Avenue, N. W.
Washington 5, D. C.

American Industrial Arts Association, Inc.
1201 Sixteenth Street, N. W.
Washington 6, D. C.

National Education Association
1201 Sixteenth Street, N. W.
Washington 6, D. C.

PERIODICALS

American Vocational Journal
American Vocational Association
1010 Vermont Avenue, N. W.
Washington 5, D. C.
(Subscription covered by AVA Membership)

Industrial Arts and Vocational Education
The Bruce Publishing Company
400 North Broadway
Milwaukee 1, Wisconsin—$4.00 a year

Industrial Arts Teacher
American Industrial Arts Association
1201 Sixteenth Street, N. W.
Washington 6, D. C.
(Subscription covered by AVA Membership)

School Shop
416 Longshore Drive
Ann Arbor, Michigan—Free to teachers

Power Tool Instructor
Rockwell Manufacturing Co.
554 N. Lexington Avenue
Pittsburgh 8, Pennsylvania—Free to teachers

Home Craftsman
Home Craftsman Publishing Co.
New York, New York—$2.25 year

Popular Mechanics
Popular Mechanics Co., Publishers
200 E. Ontario Street
Chicago, Illinois—$2.50 year

Popular Science Monthly
Popular Science Publishing Co.
353 Fourth Avenue
New York, New York—$2.50 year

Popular Photography
Ziff Davis Publishing Co.
New York, New York—$2.25 year

REFERENCE MATERIAL

The following list of materials do not in any way constitute a recommendation on the part of the committee. They are suggested only as some of the worthwhile materials which are available. The resourceful teacher will utilize additional references and resources by writing to the publishers where names and addresses are listed at the end of this section. The latest in books, pamphlets and audio-visuals appear in each issue of the periodicals listed on the preceding page.

Professional Books

1. *Course Construction in Industrial Arts, and Vocational Education,* Giachino and Gallington, American Technical Society, Chicago, 2nd Edition, 1961
2. *Course Making in Industrial Education,* John Friese, Charles A. Bennett Co., Peoria, Ill., 1946
3. *Diamond Dust,* Tom Diamond, Prakken Publishers, Ann Arbor, Michigan, 1961
4. *History of Manual and Industrial Education,* Charles Bennett, Charles A. Bennett Co., Peoria, Ill., 1937
5. *Industrial Arts for Grades K-6,* Gerbracht and Babcock, Bruce Publishing Co., Milwaukee, Wis., 1959
6. *Industrial Arts in General Education,* Gordon Wilber, International Textbook Co., 1954
7. *Leaders in Industrial Education,* W. T. Bawden, Bruce Publishing Co., Milwaukee, Wis., 1950
8. *Organizing Course Materials For Industrial Education,* Silvis and Bahn, McKnight & McKnight, Bloomington, Ill., 1961
9. *School-Shop Administration,* A. B. Mays, Bruce Publishing Co., Milwaukee, Wis., 1943
10. *Teaching the Industrial Arts,* E. E. Ericson, Charles A. Bennett Co., Peoria, Ill., Revised 1960
11. *The Instructor and His Job,* Homer C. Rose, American Technical Society, Chicago, Ill., 1961
12. *The Supervision of Industrial Arts,* William Bakamis, Bruce Publishing Co., Milwaukee, Wis., 1954
13. *Visual Aids,* Gilbert Weaver, D. Van Nostrand Co., New York, N. Y., 1949
14. *Vocational Education and Practical Arts in the Community School,* Harold Byrom, Macmillan Co., New York, N. Y., 1956

Craftwork and Hobbies

1. *Ceramic Handbook,* Hyman, Arco Publishing Co., New York, 1959
2. *Ceramics,* Vincent A. Roy, McGraw-Hill Co., Inc., New York, 1959
3. *Creative Handicraft,* Madden, Goodheart-Wilcox, Chicago, 1955
4. *Fiberglass Projects and Procedures,* Gerald L. Steele, McKnight & McKnight, Bloomington, 1962
5. *General Crafts,* Willoughby and Others, Charles A. Bennett Co., Peoria, 1959
6. *General Leathercraft,* Cherry, McKnight & McKnight, Bloomington, 1955

7. *Handcrafts Simplified*, Amon and Rawson, McKnight & McNnight, Bloomington, 1961
8. *Jewelry and Enameling*, Park, D. Van Nostrand, New York, 3rd Edition, 1961
9. *Leathercraft*, Fred W. Zimmerman, Goodheart-Willcox Co., Inc., Chicago, 1961
10. *Let's Whittle*, W. Ben Hunt, Bruce Publishing Co., Milwaukee, Wis., 1962
11. *Mosaics*, Doris and Diane Lee Aller, Lane Publishing Co., Menlo Park, Calif., 1959
12. *Plastics: Projects and Procedures With Polyesters*, Bruce Publishing Co., Milwaukee, Wis., 1962
13. *The Art of Lapidary*, L. J. Sperisen, Bruce Publishing Co., Milwaukee, Wis., 1961

Drafting

1. *American Technical Societies' Drafting*, J. W. Giachino and Henry J. Beukema, 2nd Edition, American Technical Society, Chicago, 1960
2. *Applied Drawing & Design*, Scrogin & Bettencourt, McKnight & McKnight, Bloomington, 1959
3. *Applied Drawing and Design*, Scrogin & Bettencourt, McKnight & McKnight, Bloomington, 4th Edition, 1959
4. *Architectural Drafting*, Hornung, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 3rd Edition, 1960
5. *Architectural Drawing*, Harvey W. Waffle, Bruce Publishing Co., Milwaukee, Wis., Revised 1961
6. *Basic Mechanical Drawing*, Herbert E. Welch, McGraw-Hill Co., New York, 1959
7. *Blueprint Reading*, Nicholson-Jones-Baughman, D. Van Nostrand Co., Princeton, New Jersey, 2nd Edition, 1959
8. *Drafting*, Walter C. Brown, Goodheart-Willcox Co., Inc., Chicago, 1961
9. *Drafting Rules and Principles*, Nelson, McKnight & McKnight, Bloomington, 1958
10. *Drawing and Planning*, Feirer, 1956
11. *Electrical and Electronic Drawing*, Baer, McGraw-Hill Co., Inc., New York, N. Y., 1960
12. *Engineering Drawing and Workbook*, Eugene G. Pare, Henry Holt & Co., New York, 1959
13. *Engineering-Technical Drafting and Graphics*, Giachino-Beukema, American Technical Society, Chicago, Ill., 1961
14. *General Drafting*, Fryklund & Kepler, McKnight & McKnight, Bloomington, 1960
15. *Graphic Architectural Drafting*, J. Edgar Ray, McKnight & McKnight, Bloomington, Ill., 1960
16. *Graphical Communication*, Earl D. Black, McGraw-Hill Co., Inc., N. Y., 1959
17. *How to Read Shop Drawings*, The Lincoln Electric Co., Cleveland 17, Ohio, 1962
18. *Industrial Arts Drafting*, Walker & Plevyak, Goodheart-Willcox Co., Inc., Chicago, 1960
19. *Industrial Arts Drawing and Blueprint Reading*, Shriver L. Cooper, McGraw-Hill Book Co., Inc., New York, 2nd Edition, 1961
20. *Introduction to Applied Drawing*, Hale, McGinnis, Hill, McKnight & McKnight, Bloomington, 1962

21. *Learning to Read Mechanical Drawings*, Bartholomew and Orr, Charles A. Bennett Co., Peoria, 1962
22. *Machine Trades Blueprint Reading*, Ihne and Streeter, American Technical Society, Chicago 37, 4th Edition, 1962
23. *Mechanical Drafting Essentials*, McCabe, Keith, & Farnham, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 3rd Edition, 1961
24. *Ortho Graphic Projection Simplified*, Charles Quinlan, Jr., McKnight & McKnight, Bloomington, 1960
25. *Sheetmetal Drafting*, Melvin L. Betterley, McGraw-Hill Co., Inc., 1961
26. *Sheetmetal Pattern Drafting and Shop Problems*, Daugherty & Powell, Charles A. Bennett Co., Peoria, Revised 1959
27. *Technical Illustration*, J. C. Gibby, American Technical Society, Chicago 37, 1962
28. *Tool and Die Drafting*, Hoover and Schumacher, Royalle Publishing Co., Inc., Detroit, Michigan, 2nd Edition, 1960
29. *Visualized Basic Mechanical Drawing*, J. J. Almon, Bruce Publishing Co., Milwaukee, Wis., 1961

Electricity

1. *All About House Wiring*, Mix and Pritchard, Goodheart-Willcox Co., Inc., Chicago, 1959
2. *An Introduction to Applied Electricity-Electronics*, Woodward and Goldsmith, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1963
3. *Application of Electronics*, Grab and Kiver, McGraw-Hill Co., New York, 1960
4. *Basic Electricity*, Marcus, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1959
5. *Basic Electricity*, C. E. Matson, McKnight & McKnight, Bloomington, 1961
6. *Basic Electronics*, Bernard Grob, McGraw-Hill Co., New York, 1959
7. *Basic Radio & Radio Receiver Servicing*, Zbar & Schildkraut, McGraw-Hill, New York, 2nd Edition, 1959
8. *Electricity*, Howard H. Gerrish, The Goodheart-Willcox Co., Inc., Chicago, Ill., 1961
9. *Electricity and Electronics Basic*, Steinberg and Ford, American Technical Society, Chicago 37, 1961
10. *Electronics*, Howard H. Gerrish, The Goodheart-Willcox Co., Inc., Chicago, 1961
11. *Electronic and Electrical Fundamentals*, Volumes I, II, and III, Philco Corp., Philadelphia, Pa., 1960
12. *Elementary Electricity*, William R. Wellman, D. Van Nostrand Co., Inc., Princeton, New Jersey, 1959
13. *Elements of Radio*, Marcus & Marcus, Prentice-Hall, Inc., New York, N. Y., Revised 1959
14. *Elements of Electronics*, Hickey & Villines, McGraw-Hill Co., Inc., N. Y., 1961
15. *Experimental Basic Electronics*, Porter, McKnight & McKnight, Bloomington, 1958
16. *Experimental Electricity for Boys*, Doan, John L. Rider Publisher, Inc., New York, 1959
17. *Exploratory Electricity*, Arnold and Schank, McKnight & McKnight Publishing Co., Bloomington, 1960
18. *Fundamentals of Electricity*, Calvin Bishop, Chilton Co., Philadelphia, Pa., 1960

19. *Fundamentals of Electricity*, K. C. Graham, American Technical Society, Chicago, 1960
20. *Industrial Arts Electricity*, Lush and Engle, Charles A. Bennett Co., Peoria, Revised 1959
21. *General Shop Electricity*, Dragoo and Porter, McKnight & McKnight, Bloomington, 1961
22. *National Electrical Code and Blueprint Reading*, K. C. Graham, American Technical Society, Chicago 37, 1961
23. *Primer of Lamps and Lighting*, Allphin, Chilton Co., Philadelphia, Pa., 1959
24. *Radio, Television and Basic Electronics*, R. L. Oldfield, American Technical Society, Chicago, 2nd Edition, Revised 1960
25. *Theory and Design of Small Induction Motors*, Cyril G. Veiott, McGraw-Hill Co., New York, 1959
26. *The Practical Dictionary of Electricity and Electronics*, R. L. Oldfield, American Technical Society, Chicago, 1959
27. *30 Instructional Units in Basic Electricity*, C. E. Matson, McKnight & McKnight, Bloomington, 1961
28. *Transistors in Radio, Television and Electronics*, Milton Kiver, McGraw-Hill Co., New York, 2nd Edition, 1959
29. *Understanding Electricity and Electronics*, Buban and Schmidt, McGraw-Hill Co., New York, 1962
30. *Understanding Radio*, Watson, Welch & Ebly, McGraw-Hill Co., Chicago, 3rd Edition, 1960

General Shop

1. *Comprehensive General Shop*, Bauer and Thompson, Bruce Publishing Co., Milwaukee, Wis., 1959
2. *Comprehensive General Shop II*, John Miller, Bruce Publishing Co., Milwaukee, Wis., 1962
3. *General Shop Bench Woodworking*, Fryklund-La Berge, McKnight & McKnight, Bloomington, 1958
4. *General Shop for Everyone*, L. V. Newkirk, D. C. Heath & Co., Boston, Massachusetts, Revised 1959
5. *General Shop Projects*, M. L. Zanco, McKnight & McKnight, Bloomington, 1960
6. *Industrial Arts for the General Shop*, Delmar W. Olson, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 5th Printing, 1960

Graphic Arts

1. *Basic Bookbinding*, A. W. Lewis, Dover Publishing, Inc., 920 Broadway, New York 10, N. Y., 1959
2. *Bookbinding Made Easy*, Klinefelter, Bruce Publishing Co., Milwaukee, Wis., 1960
3. *Exploring the Graphic Arts*, Anthony Marinaccio, D. Van Nostrand Co., Princeton, N. J., 2nd Edition, 1959
4. *General Printing*, Cleeton, Pitkin, McKnight & McKnight, Bloomington, 1953
5. *Graphic Arts*, Frederick D. Kagy, Goodheart-Willcox Co., Inc., Chicago, 1961
6. *Graphic Arts Technology — A Teacher's Workbook*, Dr. Ray A. Schwalm, International Graphic Arts Education Association, 1411 K Street, N. W., Washington 5, D. C.
7. *Photo-Offset Fundamentals*, John Cogoli, McKnight & McKnight, Bloomington, 1960

8. *Pocket Encyclopedia of Paper and Graphic Arts Terms*, Thomas Printing and Publishing Co., Ltd., Kaukauna, Wisconsin, 1960
9. *Practical Photography*, R. A. McCoy, McKnight & McKnight, Bloomington, Revised 1959

Metalworking

1. *Art Metal*, C. Vernon Siegner, Goodheart-Willcox Co., Inc., Chicago, 1961
2. *Basic Arc Welding*, Griffin and Roden, Delmar Publishers, Albany 5, New York, 1960
3. *Creative Metalworking*, Mattson, Bruce Publishing Co., Milwaukee, Wis., 1960
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*WORKING WOMEN; *MANPOWER UTILIZATION; *EMPLOYMENT PATTERNS; LABOR FORCE; EMPLOYMENT STATISTICS; *WORK LIFE EXPECTANCY; *EDUCATIONAL NEEDS

Information for employers and counselors of young and mature women is presented. The report shows the value of providing job opportunities for women who wish to work part-time and brings attention to the relatively long work life expectancy of mature women. It demonstrates that training and education for women may yield greater returns than most employers and counselors have recognized. Between 1950 and 1965, the number of women who contributed their energy, intelligence, and training in the production of goods and services increased from 19 million to 27 million. Most of these women were married. The current willingness and ability of women to enter the labor force is the result of many social, economic, and cultural factors as the steady rise in the educational level of women, a growing cultural acceptance of working women and the dual role, their significant contribution to higher family income, as well as, birth control methods and changed birth rates. The increasing participation of women in the work force will apparently continue in the years ahead. If we are to derive maximum utilization of their potential contribution, we may have to adjust the kind of education and training now provided for women. In addition, employers may have to develop new designs for jobs and be more flexible in providing work opportunities for women. Graphs and charts illustrate facts pertaining to the contemporary working woman. (FP)

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manpower report

NUMBER 12
MAY 1967

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WORK LIFE EXPECTANCY AND TRAINING NEEDS OF WOMEN

The well-being of the American family has come increasingly to depend on the abilities of women to manage both homemaking and paid work activities. Between 1950 and 1965, the number of women who were contributing their energy, intelligence, and training in the production of goods and services increased from 19 million to 27 million. Most of these women were married.

This study of the work life patterns has been made because women have undoubtedly contributed significantly to a sharp rise in family income and because they already constitute one-third of the labor force and serve as a supply of workers to meet critical current and future needs. In addition, the American economy is stimulated by the demand for equipment and services to make homemaking easier, particularly for working wives. The willingness of women to work for pay has also helped American business and industry to grow and to satisfy new markets.

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The current willingness and ability of women to enter the labor force result from many social, economic, and cultural factors. The steady rise in the educational level of women has undoubtedly contributed to their ability to satisfy a growing range of occupational requirements. The growing cultural acceptance of women who work, particularly in combination with their homemaking activities, has also been important.

In addition, the ability of families to exercise a large degree of control over both the number and spacing of their children has provided married women with a considerable freedom of choice between outside work and homemaking roles. Undoubtedly, recent and long-term increases in the availability and use of birth control methods have helped make possible the increase in the number of married women workers. Differences in the number of babies born each year are subject to short- and long-term variations, depending on many complex circumstances. Much of the variation is the result of deliberate choices with regard to the number of children desired and the number of years between each child.

Because the need to care for young children is a major reason why women do not work, changes in the birth rates have many implications for the availability of women workers and also for the nature of their work careers. In this context, the decline in the number of births since 1958, particularly for young women, is particularly significant.

The importance of childbearing patterns on work life is indicated by estimates which show that the birth of a child reduces the average number of years a married woman can be expected to spend in the work force by about 10 years. The birth of each additional child appears to further reduce the work life expectancy from 2 to 3 years for each child.

Information is provided in this study which may prove useful in job development and to counselors who work with young and mature women. As for employers, this report may show them the value of providing job opportunities for

U.S. DEPARTMENT OF LABOR: W. WILLARD WIRTZ, Secretary
MANPOWER ADMINISTRATION

women who wish to work part time and bring to their attention the relatively long work life expectancy of mature women who return to the labor force. Moreover, it demonstrates that training and education for women may yield greater returns than most employers and counselors have recognized heretofore.

Some basic policy issues concerning the education and training now being given to women seem evident. The discontinuous paid work career for women homemakers suggests that the education and training given to young women should enable them to be more flexible in career choices when they eventually return to the labor force. The large number of mature women returning to the labor force suggests that intensive midcareer retraining should be made much more available so that obsolete skills can be updated or totally new careers can be followed.

The largest portion of women's work life typically occurs after their children have grown. Consequently, it is at least as important to provide comprehensive job training and retraining for women about to reenter the work force as it is for women about to begin their first job. Two amendments to the Manpower Development and Training Act enacted in 1966 will facilitate such training for mature women. One directs the Secretary of Labor to formulate a program to meet the special employment needs of workers aged 45 years and older. Another reduces from 2 years to 1 year the amount of previous work experience needed to qualify for training allowances.

THE WORKING WOMEN

The pattern of work during the lives of women is, for the most part, quite different from that of men and the duration of their work life is generally shorter. Married women, in particular, have a less continuous work career than men. Their usual pattern is to work a few years after they complete their education, to leave the labor force in order to raise a family, and to return to the labor force after their children have reached school age or are grown. Women who never marry, however, may have a longer work life than men. Unmarried women constitute only a small part of the entire female labor force because only about 5 out of 100 women never marry. In 1965, about 2 million women or less than 1 in 10 of the female labor force were over 25 years of age and still single. Undoubtedly, some of these will also marry and leave the labor force.

Women begin work careers at about the same age as men but frequently leave the work force a few years after they marry, and have children. (See table A and chart 1.) Although a first child is the most important reason for leaving the work force, the arrival of additional children increases the likelihood that the mother will not work outside the home. (See table 1.) Other factors affecting reentry to the labor force are divorce and widowhood.

As they approach retirement age, women tend to leave the work force earlier than men. Married women, in particular, who can rely on their husband's income, may decide to retire early if they encounter minor disabilities, if the need for additional family income decreases, or if they have a desire for more leisure. Discrimination against older women workers may also be a factor in early retirement.

LENGTH OF WORKING LIFE

The more children a woman has, and the later she has her last child, the shorter is her expected work life. Under 1960 conditions,[1] women marrying at age 20 who will have only one child have a work life expectancy of 25 years compared with 22 years for women with two children, 20 years for women who will have three children, and 17 years for those who have four or more children. Partially as a result of these differences, the length of working life differs among women in various occupations. Women working in professional occupations, for example, typically have smaller families and a longer work life expectancy than women in other occupations.

Most 35-year-old women have completed their families. (See chart 2.) The work life expectancy of a 35-year-old working woman who has completed her family and who no

[1] Because the 1960 *Census of Population* provides the greatest amount of detail on work life patterns of women, most of the data in this study are based on that source.

Chart 1.

Presence of a child under 6 greatly restricts the paid work activities of married women. 1/

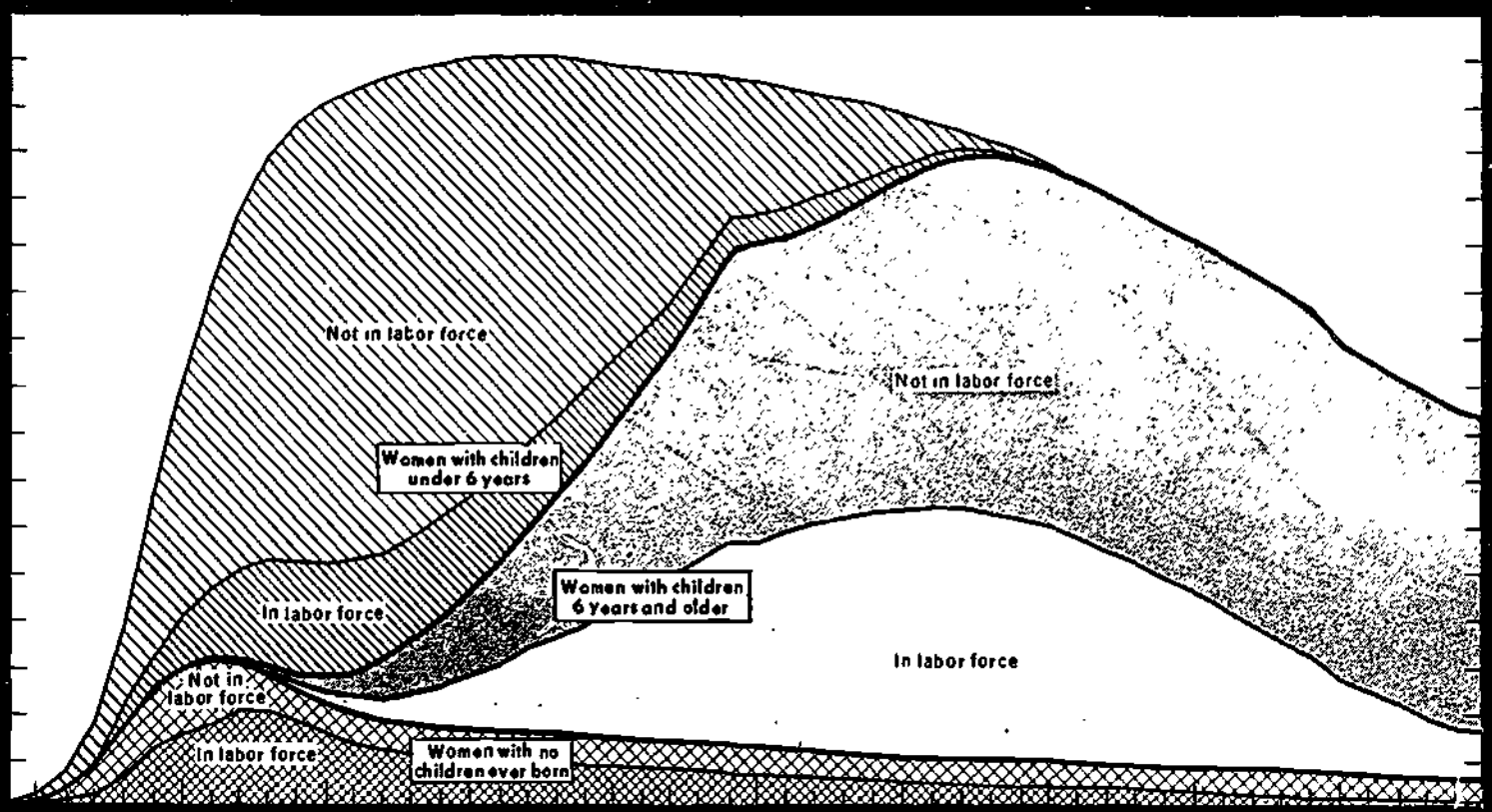

Table 1.

Labor Force Participation Rates, Married Women, Husband Present, Aged 30–34, By Number of Children and Age of Youngest Child

Age of youngest child	Number of children			
	1	2	3	4 or more
0–2	21.0	15.8	14.0	13.9
3–5	31.7	23.2	22.4	24.2
6–11	43.5	37.6	37.6	36.8
12–17	52.8	52.5	(1)	(1)

[1] Data not available.

SOURCE: *U. S. Census of Population, 1960.*

longer has responsibility for the care of young children is 24 years (table 2), essentially the same as for a newly married 20-year-old woman. This means that a far greater portion of a woman's work life occurs after she has raised her family and reentered the labor force.

Women who never marry have the most continuous and longest lifetime attachment to the labor force. Widowed and divorced women also have continuous work histories, particularly if they do not remarry. At age 40, widowed working women have a work life expectancy of 23 years and divorced women 24 years; both only slightly less than for single women. Childless married women also have a long working life but it is shorter than that of widowed or divorced women. It seems likely that the availability of a husband's income significantly reduces the work life expectancy of childless married women in relation to that of widowed or divorced women.

The longer work life expectancy of women who never marry applies to very few 18-year-olds who are beginning

Chart 2.

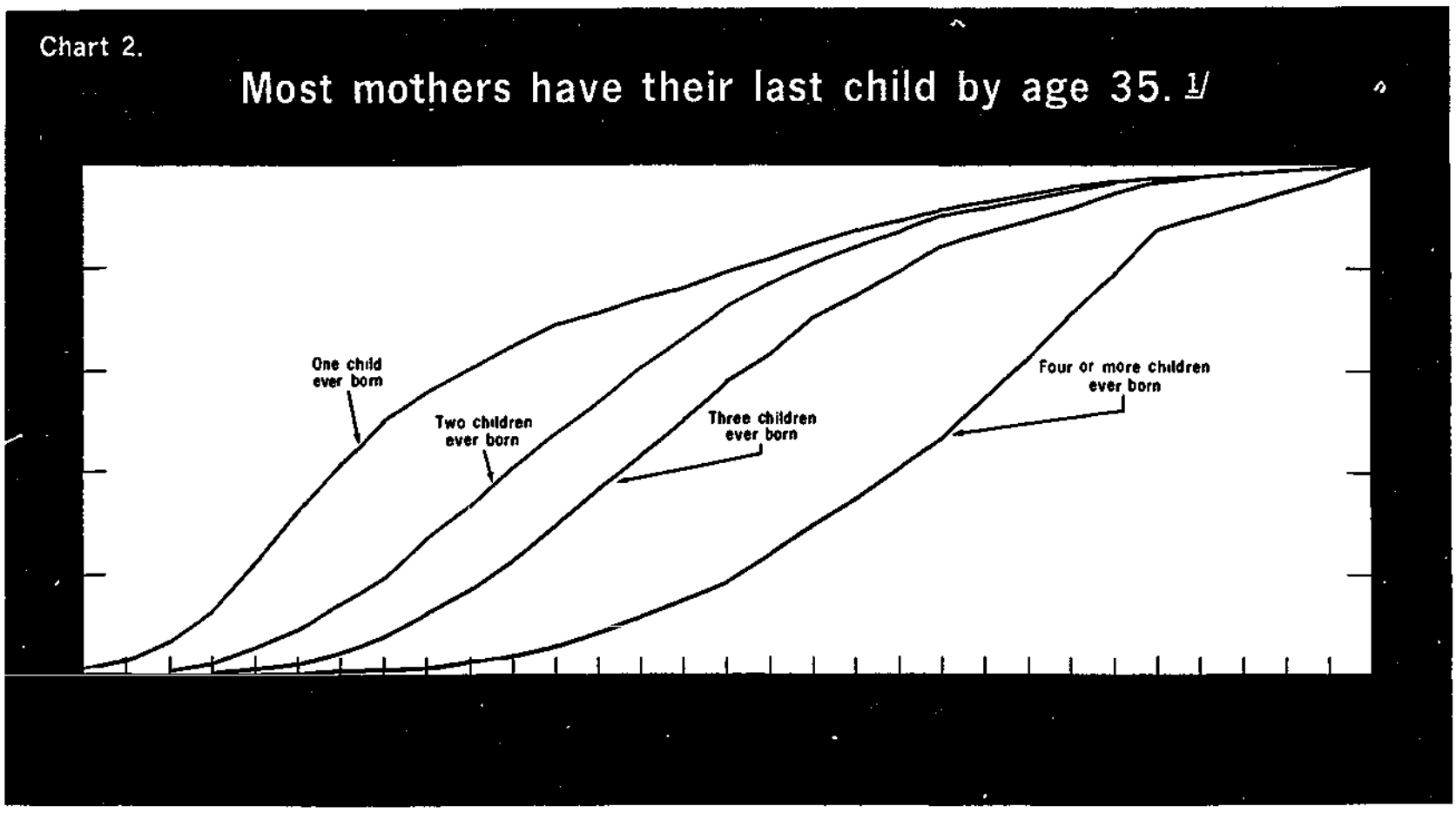

Table 2.

Average Number of Years of Labor Force Activity Remaining for Selected Groups of Women in the Labor Force, 1960

Age	Single women	Married, husband present, no children	Married, husband present, in labor force after birth of last child	Widowed	Divorced
20	45.3	34.9	(1)	41.8	43.3
25	40.5	30.1	(1)	37.0	38.5
30	35.7	26.6	(1)	32.1	33.6
35	31.2	24.4	23.8	27.3	28.8
40	26.3	20.8	19.1	22.5	24.1
45	21.6	16.7	14.5	17.8	19.7
50	17.1	13.7	11.9	13.4	15.5
55	13.1	10.9	9.4	9.8	11.6
60	10.0	8.7	6.9	7.1	8.4
65	7.8	6.5	5.9	6.0	6.7

[1] Amounts not significant.

SOURCE: Based on data from U. S. Department of Commerce; Bureau of the Census; and U. S. Department of Health, Education, and Welfare; Public Health Service.

their work career. Most 18-year-old single women workers will marry, have children, and leave the labor force for a number of years. However, the older a single woman is, the greater is her expectation for a longer work life. A working girl who is single at age 18 has a work life expectancy of only 25 years compared with 34 years for a single woman who is 24 years old, if allowances are made for the chances that both will become a wife and mother. The sharp increase in work life expectancy for single women between age 18 and 24 occurs because chances of marriage decline substantially between ages 18 and 24.

DYNAMICS OF THE FEMALE LABOR FORCE

The female work force is dynamic. Many young women under 20 years are entering the labor force while at the same time others in the same age group are already leaving as they begin to have children. (See tables 3 and 4.) This same situation occurs among

Table 3.
Estimated Number of Women Entering the Labor Force, 1960
[Numbers in thousands]

Age group	Female population	Total entries		Entries related to					
				Age		Children reaching school age		Loss of husband	
		Rate	Number	Rate	Number	Rate	Number	Rate	Number
Total	64,961	----------	1,296	----------	916	----------	309	----------	71
14–19	7,934	.0898	712	.0898	712	(1)	(1)	(1)	(1)
20–24	5,520	.0323	178	.0316	174	.0007	4	(1)	(1)
25–29	5,537	.0076	42	.0025	14	.0051	28	(1)	(1)
30–34	6,111	.0114	69	.0007	4	.0107	65	(1)	(1)
35–39	6,419	.0150	96	.0017	11	.0125	80	.0008	5
40–44	5,918	.0144	86	.0001	1	.0126	75	.0017	10
45–49	5,554	.0102	57	(1)	(1)	.0077	43	.0025	14
50–54	4,932	.0064	32	(1)	(1)	.0028	14	.0036	18
55–59	4,411	.0038	16	(1)	(1)	.0001	(1)	.0037	16
60–64	3,727	.0021	8	(1)	(1)	(1)	(1)	.0021	8
65 and over	8,898	(1)	(1)	(1)	(1)	(1)	(1)	(1)	----------

[1] Amounts not significant.

SOURCE: Based on data from U. S. Department of Commerce; Bureau of the Census; and U. S. Department of Health, Education, and Welfare; Public Health Service.

Table 4.
Estimated Number of Women Separated from the Labor Force, 1960
[Numbers in thousands]

Age group	Female labor force	Total separations		Separations related to							
				Marriage		Birth of children		Death		Age	
		Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number
Total	23,272	--------	1,119	--------	84	--------	440	--------	138	--------	457
14–19	2,073	.0634	131	.0140	29	.0488	101	.0006	1	(1)	(1)
20–24	2,542	.1066	271	.0159	40	.0900	229	.0007	2	(1)	(1)
25–29	1,955	.0393	77	.0031	6	.0353	69	.0009	2	(1)	(1)
30–34	2,180	.0122	27	.0022	5	.0088	19	.0012	3	(1)	(1)
35–39	2,627	.0084	22	.0015	4	.0051	13	.0018	5	(1)	(1)
40–44	2,773	.0188	52	(1)	(1)	.0026	7	.0028	8	.0134	37
45–49	2,879	.0269	78	(1)	(1)	.0006	2	.0042	12	.0221	64
50–54	2,349	.0377	89	(1)	(1)	(1)	(1)	.0063	15	.0314	74
55–59	1,797	.0645	116	(1)	(1)	(1)	(1)	.0092	17	.0553	99
60–64	1,196	.1079	129	(1)	(1)	(1)	(1)	.0143	17	.0936	112
65 and over	901	.1411	127	(1)	(1)	(1)	(1)	.0630	56	.0781	71

[1] Amount not significant.

SOURCE: Based on data from U. S. Department of Commerce; Bureau of the Census; and U. S. Department of Health, Education, and Welfare; Public Health Service.

women in their twenties, except that the predominant movement is out of the labor force. The large number of women leaving the work force between the ages of 20 and 30 is greater than the number entering. As a result, the size of the female work force declines in this age range. Reentries to the work force begin to occur in large numbers as children grow older and place fewer immediate demands upon their mothers. After age 50, relatively few women enter or reenter the work force except for those who become widowed or divorced.

For example, an estimated 900,000 women, most of whom were under 30 years of age, entered the labor force for the first time in 1960 and another 400,000 reentered as their children grew older or because they lost their husbands. During the same year, an estimated half million left the work force because of marriage and birth of children and another half million left because of retirement or death.[2]

EDUCATION, TRAINING, AND WORK ADJUSTMENT

The increasing participation of women in the work force will apparently continue in the years ahead. Women will become an even more significant source of educated, trained, and skilled workers. If we are to derive maximum utilization of their potential contribution, we may have to adjust the kind of education and training now provided for women. In addition, employers may have to evolve new designs for jobs and be more flexible in providing work opportunities for women.

To the extent that families are more able to control the number and spacing of their children, their working patterns may become much more predictable than in the past. As a result, employers will be able to estimate work life expectation from the age of the mother, the number and ages of children and be better able to assess how much training or responsibility should be given.

Many able and intelligent young women leave the labor force before they have acquired all the education and training they are capable of assimilating. If, when they return to the labor force as mature workers, they do not have the opportunity for additional training, they will not be able to make maximum contributions to our economy.

Professionally trained women who leave the labor force can also use retraining if they have been out of the labor force for a considerable period of time. Professional training for updating obsolete skills and acquainting women with the new knowledge developing in professional areas of work would enable some women to take jobs fully utilizing their abilities when they reenter the labor force.

By redesigning jobs and rethinking some attitudes about women's capabilities as workers, employers can make greater use of women's skills and talents.

Adjustments in hours of work and adapting of certain jobs to the physical capacity of women can also enable more women to be fully utilized. The location of plants and offices in suburban areas will also make available more women workers to some employers. Employers should also recognize that women have the capability to do many different kinds of work.

Because a very large proportion of married women become widowed, divorced, or separated from their husband and have to provide for themselves, it is essential that they prepare for the possibility of a lengthy work career. At present, about 1 out of 4 women in the work force who have been married no longer have husbands. Since many early marriages end in early divorce, and since marriage often occurs even before the girl has completed her education, it is essential that opportunities be made available for young divorced women to complete high school. Without such opportunities, those who do not remarry may have a long working life consisting of poorly paid and unsatisfying jobs.

The special problems of working mothers who have to support families without the help of husbands may require the development of new and different programs. A much higher proportion of widowed and divorced women work than do women who have husbands. These problems are particularly acute for nonwhite

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[2] These estimates do not allow for changes in the level of economic activity during 1960.

Table A.

Table of Working Life for Women, 1960

Year of Age	All women	Single	Married, husband present, by presence and age of children						Other marital status			
			Total	No children ever born	Age of youngest child				Total	Married husband absent	Widowed	Divorced
					0–5	6–11	12–17	18+				
	Population [1]											
14	97,035	95,948	534	534	----------	----------	----------	----------	553	495	29	29
15	96,995	94,725	1,503	771	732	----------	----------	----------	767	689	29	49
16	96,949	91,336	4,246	2,229	2,017	----------	----------	----------	1,367	1,221	39	107
17	96,898	85,106	9,369	4,382	5,007	----------	----------	----------	2,403	2,113	58	232
18	96,844	73,214	19,717	8,969	10,748	----------	----------	----------	3,913	3,361	97	455
19	96,785	57,810	33,430	13,855	20,075	----------	----------	----------	5,545	4,597	135	813
20	96,725	44,484	45,432	15,083	30,349	----------	----------	----------	6,809	5,406	184	1,219
21	96,662	33,445	55,755	16,013	39,647	95	----------	----------	7,462	5,618	251	1,593
22	96,596	24,777	64,091	15,209	48,664	218	----------	----------	7,728	5,591	299	1,838
23	96,526	18,697	69,962	14,699	54,675	588	----------	----------	7,867	5,454	357	2,056
24	96,454	15,153	73,334	12,943	59,027	1,364	----------	----------	7,967	5,382	424	2,161
25	96,380	12,674	75,726	11,594	61,383	2,749	----------	----------	7,980	5,138	488	2,354
26	96,302	10,978	77,244	10,366	62,313	4,565	----------	----------	8,080	5,043	569	2,468
27	96,221	9,709	78,305	9,490	62,112	6,609	94	----------	8,207	5,013	626	2,568
28	96,134	8,739	79,284	9,001	60,986	9,025	222	----------	8,161	4,860	712	2,589
29	96,048	7,972	79,917	8,719	59,155	11,452	591	----------	8,154	4,719	793	2,642
30	95,945	7,821	80,210	8,566	56,580	13,692	1,372	----------	8,414	4,734	910	2,770
31	95,840	6,747	80,266	8,460	53,425	15,644	2,737	----------	8,827	4,784	1,057	2,986
32	95,727	6,241	80,315	8,337	49,932	17,525	4,522	----------	9,171	4,859	1,207	3,145
33	95,605	5,794	80,260	8,178	46,374	19,182	6,525	----------	9,551	4,849	1,337	3,365
34	95,476	5,394	80,104	7,994	42,824	20,435	8,851	----------	9,978	4,874	1,569	3,535
35	95,337	5,034	79,978	7,822	38,765	21,410	11,181	800	10,325	4,894	1,851	3,580
36	95,187	4,712	79,838	7,632	34,512	21,946	13,348	2,395	10,642	4,924	2,040	3,678
37	95,025	4,428	79,688	7,451	30,640	22,345	15,268	3,984	10,909	4,959	2,155	3,795
38	94,851	4,183	79,106	7,215	24,665	22,276	17,039	7,911	11,562	4,989	2,437	4,136
39	94,659	3,966	78,662	7,001	18,887	21,994	18,619	12,161	12,031	4,974	2,787	4,270
40	94,451	3,778	78,111	6,788	17,895	21,535	19,793	12,099	12,567	4,906	3,331	4,330
41	94,225	3,769	77,547	6,452	16,649	21,031	20,728	12,687	12,909	4,821	3,752	4,336
42	93,976	3,759	76,825	6,154	14,697	20,597	21,181	14,197	13,392	4,730	4,249	4,413
43	93,708	8,748	76,138	5,901	12,418	19,857	21,494	13,469	13,822	4,705	4,597	4,520
44	93,417	3,737	75,294	5,655	9,796	18,982	21,436	19,426	14,386	4,605	5,272	4,509
45	93,102	3,724	74,435	5,426	7,153	18,132	21,117	22,606	14,943	4,569	5,805	4,569
46	92,760	3,710	73,605	5,366	4,703	17,172	20,661	25,703	15,445	4,509	6,387	4,555
47	92,391	3,696	72,465	5,283	2,667	15,870	20,037	28,609	16,230	4,431	7,203	4,536
48	91,991	3,680	71,293	5,197	1,397	13,938	19,527	31,233	17,018	4,377	8,148	4,493
49	91,554	3,662	70,039	5,106	609	11,690	18,693	33,941	17,853	4,431	8,863	4,559
50	91,080	3,643	68,765	5,013	261	9,180	17,776	36,535	18,672	4,376	9,771	4,525
51	90,565	3,623	67,380	4,912	----------	6,657	16,879	38,932	19,562	4,331	10,720	4,511
52	90,008	3,600	65,796	4,797	----------	4,329	15,817	40,853	20,612	4,299	11,812	4,501
53	89,412	3,576	64,153	4,677	----------	2,438	14,518	42,521	21,683	4,258	12,986	4,439
54	88,778	3,551	62,455	4,553	----------	1,274	12,647	43,981	22,772	4,124	14,368	4,280
55	88,104	3,524	60,704	4,425	----------	546	10,532	45,200	23,876	4,057	15,606	4,213
56	87,389	3,496	58,988	4,300	----------	236	8,205	46,247	24,905	4,023	16,735	4,147
57	86,623	3,465	57,171	4,168	----------	----------	5,906	47,097	25,987	3,814	18,207	3,966
58	85,797	3,432	55,296	4,031	----------	----------	3,821	47,444	27,069	3,729	19,501	3,839
59	84,898	3,396	53,443	3,896	----------	----------	2,143	47,404	28,059	3,570	20,771	3,718
60	83,919	3,357	49,505	3,609	----------	----------	1,064	44,832	31,057	3,520	23,867	3,670
61	82,856	3,314	47,725	3,479	----------	----------	458	43,788	31,817	3,454	24,859	3,464
62	81,705	3,268	46,003	3,354	----------	----------	198	42,452	32,434	3,245	25,963	3,226
63	80,468	3,219	44,380	3,235	----------	----------	----------	41,145	32,869	3,056	26,840	2,973
64	79,145	3,166	42,890	3,127	----------	----------	----------	39,763	33,089	2,857	27,500	2,732
65	77,735	3,109	43,026	3,137	----------	----------	----------	39,889	31,600	2,538	26,678	2,384
66	76,288	3,049	37,545	2,797	----------	----------	----------	34,808	35,639	2,528	30,737	2,374
67	74,627	2,985	35,746	2,606	----------	----------	----------	33,140	35,896	2,506	31,159	2,231
68	72,907	2,916	33,792	2,463	----------	----------	----------	31,329	36,199	2,365	31,782	2,052
69	71,057	2,842	31,620	2,305	----------	----------	----------	29,315	36,595	2,228	32,494	1,873
70	69,074	2,763	29,356	2,140	----------	----------	----------	27,216	36,955	2,113	33,118	1,724
71	66,951	2,678	27,015	1,969	----------	----------	----------	25,046	37,258	1,991	33,694	1,573
72	64,689	2,588	24,614	1,794	----------	----------	----------	22,820	37,487	1,899	34,148	1,440
73	62,278	2,491	22,171	1,616	----------	----------	----------	20,555	37,616	1,789	34,513	1,314
74	59,714	2,389	19,706	1,437	----------	----------	----------	18,269	37,619	1,691	34,738	1,190
75 and over [2]	544,661	21,786	121,743	8,875	----------	----------	----------	112,868	401,132	12,924	380,997	7,211

See footnotes at end of table.

Table A.

Table of Working Life for Women, 1960—Continued

Year of Age	All women	Single	Married, husband present, by presence and age of children						Other marital status			
			Total	No children ever born	Age of youngest child				Total	Married husband absent	Widowed	Divorced
					0–5	6–11	12–17	18+				
	Labor force[1]											
14	5,725	5,565	76	76	----------	----------	----------	----------	65	53	4	8
15	8,051	7,708	220	177	43	----------	----------	----------	125	103	6	16
16	15,221	14,306	671	528	143	----------	----------	----------	295	240	11	44
17	25,193	22,845	1,786	1,301	435	----------	----------	----------	687	561	21	105
18	41,837	34,513	5,091	3,916	1,175	----------	----------	----------	1,491	1,191	40	260
19	48,296	35,172	9,611	6,660	2,951	----------	----------	----------	2,501	1,913	59	529
20	47,589	29,882	13,710	8,111	5,599	----------	----------	----------	3,364	2,435	85	844
21	45,818	24,101	17,466	9,591	7,838	37	----------	----------	3,910	2,647	120	1,143
22	43,468	18,656	20,352	10,152	10,110	90	----------	----------	4,212	2,714	146	1,352
23	40,879	14,273	21,957	10,133	11,576	248	----------	----------	4,398	2,687	177	1,534
24	38,437	11,571	22,001	9,045	12,377	579	----------	----------	4,533	2,682	212	1,639
25	36,191	9,860	21,443	8,042	12,264	1,137	----------	----------	4,604	2,571	246	1,787
26	34,284	8,622	20,763	7,155	11,780	1,828	----------	----------	4,719	2,543	289	1,887
27	33,004	7,556	20,453	6,411	11,449	2,548	45	----------	4,842	2,546	321	1,975
28	32,493	6,803	20,714	6,020	11,139	3,447	108	----------	4,856	2,489	368	1,999
29	32,655	6,280	21,406	5,831	10,837	4,440	298	----------	4,884	2,423	416	2,045
30	32,909	5,808	21,978	5,664	10,332	6,280	699	----------	5,090	2,459	484	2,147
31	33,256	5,382	22,500	5,480	9,664	5,963	1,393	----------	5,400	2,512	571	2,317
32	33,696	4,997	23,171	5,277	8,972	6,621	2,302	----------	5,668	2,561	663	2,444
33	34,322	4,666	23,776	5,043	8,317	7,127	3,289	----------	6,979	2,609	749	2,621
34	35,135	4,375	24,652	4,832	7,725	7,539	4,456	----------	6,336	2,663	898	2,776
35	36,037	4,098	25,418	4,638	7,014	7,785	6,563	419	6,660	2,731	1,087	2,842
36	37,028	3,837	26,345	4,464	6,261	7,844	6,538	1,238	6,981	2,808	1,229	2,949
37	38,105	3,593	27,360	4,334	5,588	7,937	7,444	2,057	7,265	2,871	1,330	3,064
38	39,268	3,385	28,167	4,148	4,482	7,599	7,937	4,001	7,804	2,922	1,534	3,348
39	40,514	3,211	29,110	3,993	3,431	7,287	8,316	6,083	8,217	2,959	1,784	3,474
40	41,558	3,052	29,035	3,852	3,305	7,080	8,781	6,017	8,659	2,951	2,160	3,648
41	42,401	3,027	30,370	3,663	3,297	7,225	9,865	6,320	8,946	2,921	2,461	3,564
42	43,135	3,008	30,743	3,478	3,003	7,088	10,145	7,029	9,316	2,879	2,824	3,613
43	43,762	2,994	31,042	3,317	2,608	6,787	10,250	8,080	9,620	2,869	3,072	3,679
44	44,093	2,975	31,017	3,128	2,097	6,368	9,991	9,433	10,005	2,814	3,536	3,655
45	44,223	2,953	30,820	2,944	1,560	5,949	9,523	10,853	10,378	2,782	3,907	3,689
46	44,247	2,937	30,567	2,855	1,050	5,490	9,084	12,088	10,688	2,727	4,303	3,658
47	44,163	2,923	30,035	2,744	611	4,970	8,693	13,117	11,182	2,681	4,879	3,622
48	43,880	2,909	29,323	2,635	331	4,279	8,143	13,935	11,657	2,648	6,443	3,566
49	43,488	2,898	28,473	2,524	154	3,531	7,568	14,696	12,140	2,634	5,906	3,600
50	42,990	2,887	27,540	2,418	70	2,732	6,986	15,334	12,566	2,678	6,431	3,557
51	42,384	2,871	26,474	2,308	----------	1,957	6,420	16,789	12,989	2,516	6,954	3,619
52	41,584	2,777	25,174	2,186	----------	1,265	5,831	15,902	12,460	2,440	7,465	3,555
53	40,593	2,790	23,754	2,069	----------	702	5,117	15,866	13,877	2,353	8,124	3,400
54	39,417	2,729	22,232	1,949	----------	365	4,275	15,643	14,232	2,213	8,798	3,221
55	38,061	2,662	20,621	1,827	----------	156	3,406	15,232	14,517	2,108	9,231	3,128
56	36,529	2,591	19,060	1,709	----------	68	2,546	14,737	14,644	2,018	9,604	3,022
57	34,649	2,502	17,214	1,573	----------	----------	1,732	13,909	14,683	1,840	10,020	2,823
58	32,774	2,422	15,614	1,455	----------	----------	1,066	12,993	14,590	1,725	10,213	2,652
59	30,733	2,338	13,858	1,337	----------	----------	665	11,956	14,310	1,574	10,262	2,474
60	28,574	2,224	11,539	1,153	----------	----------	259	10,127	14,845	1,471	11,033	2,341
61	26,307	2,135	10,118	1,053	----------	----------	106	8,960	14,063	1,354	10,614	2,095
62	23,940	2,034	8,799	962	----------	----------	43	7,794	13,038	1,178	10,032	1,828
63	21,485	1,900	7,580	878	----------	----------	----------	6,702	11,767	1,008	9,208	1,551
64	18,955	1,691	6,580	817	----------	----------	----------	5,763	10,253	837	8,142	1,279
65	16,558	1,504	5,977	(3)	----------	----------	----------	(3)	8,437	640	6,806	991
66	14,370	1,330	4,430	(3)	----------	----------	----------	(3)	8,238	544	6,818	871
67	12,425	1,172	3,671	(3)	----------	----------	----------	(3)	7,287	469	6,094	724
68	10,717	1,030	3,013	(3)	----------	----------	----------	(3)	6,480	394	5,494	592
69	9,237	902	2,447	(3)	----------	----------	----------	(3)	5,782	329	4,969	484
70	7,978	790	2,260	(3)	----------	----------	----------	(3)	6,137	281	4,454	402
71	6,896	682	1,978	(3)	----------	----------	----------	(3)	4,545	234	3,980	331
72	5,984	592	1,273	(3)	----------	----------	----------	(3)	4,011	195	3,542	274
73	5,200	510	1,020	(3)	----------	----------	----------	(3)	3,498	157	3,116	225
74	4,538	441	824	(3)	----------	----------	----------	(3)	3,010	125	2,702	183
75 and over[2]	23,420	2,135	3,652	(3)	----------	----------	----------	(3)	15,300	575	14,093	632

See footnotes at end of table.

Table A.

Table of Working Life for Women, 1960—Continued

Year of Age	All women	Single	Married, husband present, by presence and age of children						Other marital status			
			Total	No children ever born	Age of youngest child				Total	Married husband absent	Widowed	Divorced
					0–5	6–11	12–17	18+				
	Percent of the population in the labor force											
14	5.9	5.8	14.2	14.2					11.8	10.7	13.0	26.1
15	8.8	8.1	14.6	23.0	5.9				16.3	14.9	19.8	32.8
16	15.7	15.7	15.8	23.7	7.1				21.6	19.7	27.0	40.9
17	26.0	26.8	18.5	29.7	8.7				28.6	26.6	36.8	45.3
18	43.2	47.1	25.8	43.7	10.9				38.1	35.4	40.9	57.1
19	49.9	60.8	28.8	49.9	14.7				45.1	41.6	48.9	65.1
20	49.2	67.2	30.2	53.8	18.4				49.4	45.0	46.1	69.2
21	47.4	72.1	31.3	59.9	19.8	39.0			52.4	47.1	47.7	71.8
22	45.0	75.3	31.8	66.8	20.8	41.3			54.5	48.5	48.8	73.6
23	42.4	76.3	31.4	68.9	21.2	42.2			55.9	49.3	49.5	74.6
24	39.8	76.4	30.0	69.9	21.0	42.4			56.9	49.8	50.0	75.8
25	37.6	77.8	28.3	69.4	20.0	41.4			57.7	50.0	50.4	75.9
26	35.6	78.5	26.9	69.0	18.9	40.0			58.4	50.4	50.8	76.5
27	34.3	77.8	26.1	67.6	18.4	38.6	47.9		59.0	50.8	51.2	76.9
28	33.8	77.8	26.1	66.9	18.3	38.2	48.6		59.5	51.2	51.8	77.2
29	34.0	78.8	26.8	66.9	18.3	38.8	50.4		59.9	51.4	52.4	77.4
30	34.3	79.3	27.4	66.1	18.3	38.6	51.0		60.5	51.9	53.2	77.5
31	34.7	79.8	28.0	64.8	18.1	38.1	50.9		61.2	52.5	54.0	77.6
32	35.2	80.1	28.8	63.3	18.0	37.8	50.9		61.8	53.1	55.0	77.7
33	35.9	80.5	29.6	61.7	17.9	37.2	50.4		62.6	53.8	56.0	77.9
34	36.8	81.1	30.6	60.4	18.0	36.9	50.3		63.5	54.6	57.2	78.5
35	37.8	81.4	31.8	59.3	18.1	36.4	49.8	52.4	64.5	55.8	58.7	79.4
36	38.9	81.4	33.0	59.5	18.1	35.7	49.0	51.7	65.6	56.9	60.2	80.2
37	40.1	81.1	34.3	59.2	18.2	35.5	48.8	51.6	66.6	57.9	61.7	80.7
38	41.4	80.9	35.6	57.5	18.2	34.1	46.6	50.6	67.5	58.6	63.0	81.0
39	42.8	81.0	37.0	57.0	18.2	33.1	44.7	50.0	68.3	59.5	64.0	81.4
40	44.0	80.8	37.2	56.8	18.5	32.9	44.4	49.7	68.9	60.2	64.8	81.9
41	45.0	80.8	39.2	56.8	19.8	34.4	47.6	49.8	69.3	60.6	65.6	82.2
42	45.9	80.0	40.0	56.5	20.4	34.4	47.9	49.5	69.6	60.9	66.5	81.9
43	46.7	79.9	40.8	56.2	21.0	34.2	47.7	49.1	69.6	61.0	66.8	81.4
44	47.2	79.6	41.2	55.3	21.4	33.6	46.6	48.6	69.5	61.1	67.1	81.1
45	47.5	79.3	41.4	54.3	21.8	32.8	45.1	48.0	69.4	60.9	67.3	80.7
46	47.7	79.2	41.5	53.2	22.3	32.0	44.0	47.0	69.2	60.6	67.4	80.3
47	47.8	79.1	41.4	51.9	22.9	31.3	42.9	45.8	68.9	60.5	67.2	79.8
48	47.7	79.0	41.1	50.7	23.7	30.7	41.7	44.6	68.5	60.5	66.8	79.4
49	47.5	79.1	40.6	49.4	25.3	30.2	40.5	43.3	68.0	59.4	66.6	79.0
50	47.2	79.2	40.0	48.2	26.8	29.8	39.3	42.0	67.3	58.9	65.8	78.6
51	46.8	79.2	39.3	47.0		29.4	38.0	40.6	66.4	58.1	64.9	78.0
52	46.2	77.1	38.3	45.6		29.0	36.9	38.9	65.3	56.8	63.2	79.0
53	45.4	78.0	37.0	44.2		23.8	35.2	37.3	64.0	55.2	62.6	76.6
54	44.4	76.8	35.6	42.8		28.6	33.8	35.6	62.5	53.6	61.2	75.3
55	43.2	75.5	34.0	41.3		28.6	32.3	33.7	60.8	52.0	59.5	74.2
56	41.8	74.1	32.3	39.7		28.8	31.0	31.9	58.8	50.2	57.4	72.9
57	40.0	72.2	30.1	37.7			29.3	29.5	56.5	48.2	55.0	71.2
58	38.2	70.6	28.1	36.1			27.9	27.4	53.9	46.2	52.4	69.1
59	36.2	68.8	25.9	34.3			26.4	25.2	51.0	44.1	49.4	66.5
60	34.0	66.2	23.3	32.0			24.3	22.6	47.8	41.8	46.2	63.8
61	31.8	64.4	21.2	30.3			22.9	20.5	44.2	39.2	42.6	60.5
62	29.3	62.2	19.1	28.7			21.7	18.4	40.2	36.3	38.6	56.7
63	26.7	59.0	17.1	27.1				16.3	35.8	33.0	34.3	52.2
64	24.0	53.4	15.3	26.1				14.5	31.0	29.3	29.6	46.8
65	21.3	48.4	14.4	[3]				[3]	26.7	25.2	25.5	41.6
66	18.8	43.6	12.1	[3]				[3]	23.1	21.5	22.2	36.7
67	16.6	39.3	10.5	[3]				[3]	20.3	18.7	19.6	32.4
68	14.7	35.3	9.1	[3]				[3]	17.9	16.6	17.3	28.8
69	13.0	31.7	7.8	[3]				[3]	15.8	14.9	15.3	25.8
70	11.6	28.6	7.5	[3]				[3]	13.9	13.3	13.4	23.3
71	10.3	25.5	7.0	[3]				[3]	12.2	11.8	11.8	21.0
72	9.2	22.9	5.3	[3]				[3]	10.7	10.2	10.4	19.0
73	8.4	20.5	4.8	[3]				[3]	9.3	8.9	9.0	17.1
74	7.6	18.5	4.4	[3]				[3]	8.0	7.4	7.8	15.4
75 and over [2]	4.3	9.8	3.0	[3]				[3]	3.8	4.4	3.7	8.8

[1] In order to provide a convenient means of describing the changes in women's paid work life patterns as they grow older, a stationary population and labor force have been constructed. The stationary population is based upon a hypothetical group of 100,000 girl babies born alive. Each subsequent year after they are born, the initial group is subject to death rates for the age group which they attain that year. In this study, death rates are assumed to be constant at the 1960 level. Marriage, the birth of children, divorce, widowhood, and other occurrences are basically reflected according to 1960 conditions. The number of women in the work force in each of the various population groups is based on the proportion of that group in the work force at the time of the 1960 Census.

[2] Data for age 75 and over represent the cumulative total of women in the hypothetical birth group of 100,000 who are still alive at each year of age after 75.

[3] Data not available.

NOTE: Detail may not add to totals due to rounding.

SOURCE: Based on data from U. S. Department of Commerce; Bureau of the Census; and U. S. Department of Health, Education, and Welfare; Public Health Service.

women because almost 1 out of 4 nonwhite families are headed by a woman compared with less than 1 out of 10 white families. Work for these women is of vital importance since many have children to support and most have little other income. The availability of more and better day care facilities for children might make it easier for many women who want to work to reenter the labor force. Many widowed, divorced, and separated women, particularly those with children, have to work. The coupling of job training with the provision of day care centers for young children might enable some women in poverty situations to provide a better living for their families.

The number of women in paid work activities increased from 14 million in 1940 to about 27 million by 1965. This striking increase clearly indicates the need to develop special programs designed to maximize the working potential of women who choose to work and to facilitate their entry into jobs.

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Sophia Cooper and Denis F. Johnston of the Bureau of Labor Statistics generously provided many consultations on the technical aspects of this study. Archibald Finley, also of the BLS, performed many of the intricate statistical computations.

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MANPOWER ADMINISTRATION
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This report presents a condensed transcript of the address and the discussion period which followed. The history of the South, including slavery, the Civil War, and the Reconstruction period, as it relates to present-day problems of employment, manpower, and the various sociological and educational problems is presented. It was predicted that the movement of cotton production from the South to the West will, in 10 years, place several hundreds of thousands of farmers on the job market with little education and no training. If, 3 years from now, the totally mechanized tobacco harvester is in operation to any great extent, another large number of farmers will need employment and training. For the past several years, approximately 1,000 persons per month from the South have been arriving in Watts of Los Angeles and of these, relatively few were educated to any degree. The nation needs a permanent Head Start program and a Poverty Program to combat the effects of the untrained, uneducated, unskilled groups migrating from the South. (PS)

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- This report is one in a series of proceedings of Seminars on Manpower Policy and Program sponsored by the U.S. Department of Labor's Manpower Administration. It presents a condensed transcript of the seminar held in Washington, D.C., September 16, 1965.

- The purpose of the seminars is to provide a platform for guest speakers and for members of the Department of Labor and other agencies concerned with manpower problems to discuss issues arising from the development of an Active Manpower Policy.

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SEMINAR ON MANPOWER POLICY AND PROGRAM

December 1966

The South and the Southerner

by RALPH E. McGILL

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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OPENING REMARKS

Chairman—Hon. Franklin D. Roosevelt, Jr., Chairman,

Equal Employment Opportunity Commission

MR. ROOSEVELT: Welcome to the first of the 1965-66 Seminars on Manpower Policy and Program.

I come here today not to make a speech, but because of my deep interest in the subject which our speaker will discuss—the South and the southerner in a very changing world and a very changing period in our history.

I also come because of my personal admiration and respect and affection for your speaker.

I should say that these last 3 months have been an unusually hectic period in what I have come to accept as a hectic life. We have, in 3 months, organized the Equal Employment Opportunity Commission. As you know, we were sworn into office by the President on June the 1st. It may interest you to know that in this period we have leased an office, we have gotten our budget through the Congress—never enough money, of course—we have hired a staff and we have received and are in the process of handling some 850 complaints. This is more than the State of New York received in the last year, and we are already at about the yearly average of the President's Committee which deals with Government contractors.

We are busily engaged in the more exciting—to me—and the more fruitful area of affirmative action programs. If we became a Commission which just shuffled papers, I think that we would fail in our opportunity, as well as our mission. But we are engaged with other agencies of the Government, particularly the Department of Labor—I attended a meeting this morning with Secretary Wirtz—in developing a broad and meaningful affirmative action program in all aspects of employment, from apprenticeship training, pretraining, preapprenticeship training, all the way up through the very complicated problems involved in seniority and promotion lines and segregated locals and all of the other aspects of employment.

So I am gratified to have this opportunity to come and give you a thumbnail description of what this Commission is doing.

Contrary to many expectations, I do not look upon the problems of eliminating discrimination from employment as a regional problem, although today we will be discussing the particular problems of a rapidly changing region.

We have received complaints and we, from our surveys, consider affirmative action is as important, if not more important, in the Northeast and West as it is in the South.

I should add one other thought. I am convinced that employment cannot be pulled out of context and attacked alone, that today the whole question of discrimination involves education and training, involves housing, involves all of the other aspects of an individual's life, including his rights as a citizen to vote, as well as his rights to go to any place of public accommodation.

And so my job as chairman is to keep in focus employment as part of—and a very vital part of—the whole pie, so to speak, because I think that by attacking only one piece of it you cannot be successful.

So I am cast in a rather unusual role, Mr. McGill. I am one who has tried, in the past, to cut through red tape and solve specific problems. I now have to be a diplomat and learn how to get along with all of the other agencies in Government.

And so today I know that you, who represent many of the agencies dealing with this problem, will be interested in the message which Mr. McGill brings us. I don't think that I need to spend much time in telling you about Ralph McGill.

I could tell you that he has been honored by degrees from many universities, and I am very pleased that Harvard University

was wise enough to give him an honorary degree. They are not always so farsighted.

I should tell you that, as strange as it may seem, Ralph McGill had a remarkable career as a sportswriter. But luckily Ralph McGill's direction from the field of sports turned in sound and humanitarian ways.

I could tell you many other things about the awards that he has been given: He received the Pulitzer Prize for editorial writing for an editorial he wrote in 1959 following the bombing of a Jewish synagogue.

I could tell you of the fact that *Editor and Publisher* issued a special edition compiling his reports from the various war theaters in World War II, which he visited as a reporter, as opposed to his activities as a Marine during World War I.

I had forgotten that the Marines did anything in World War II! That is said, of course, as an old Navy man!

I could go on and on about this guest of ours today, but I will simply tell you that to me his spirit, his leadership, his willingness to not only recognize the necessity of change, but to guide it, to interpret it to his fellow southerners, and now through his column (which is carried all over America and in parts of the world press), he has been doing the kind of job which we think has set a standard for forward-looking Americans in every section of the country.

And so, without further ado, I am pleased to introduce Mr. Ralph McGill.

THE SOUTH AND THE SOUTHERNER

An Address by Ralph E. McGill

MR. McGILL: Mr. Roosevelt, Mr. Walsh, ladies and gentlemen: I am very pleased to be here and a little bit nervous about it, and grateful for so generous an introduction. And, of course, we wouldn't expect a Navy man to know that the Marines simply won the First World War!

There is an old saying around our shop, credited to the days of Henry Grady, who was a post-Reconstruction editor of that paper, and it was said of Grady, and he said it himself, that he came by talking naturally because his father was Irish and his mother was a woman.

My colleagues insist that I have these same qualifications and am as garrulous as was Grady.

I am pleased to be here. The subject given me is "The South and the Southerner." It was suggested that I talk not specifically or in any complete detail about the economic or the manpower problems at present, but a little bit about the South and the southerner.

I am sure that there are persons here who are certainly better informed than I, or as well informed, and I am sure that in any group this large there are a number of southerners.

But this region, willy-nilly, is in the forefront. Mr. Roosevelt spoke about the petitions about unequal opportunity coming from cities in the Northeast and Northwest, and I am sure that they will come. But it has been the peculiar fate and destiny of this Nation and of the South to have many of its present-day problems of employment and manpower and the various sociological and educational problems enormously complicated by this area that we call the South. I suppose that I have spent a great many man-hours in reading and studying and interviewing people through the past 25 or 30 years, trying to determine what it is that has made this region what it is.

What is it which has made the southerner what he is?

Of course, there are the obvious reasons, the well-known reasons of slavery, the Civil War, the Reconstruction period. There are many other developments that have come, but they don't really quite explain it.

What is this burden of history that the distinguished historian, Woodbridge, says was placed upon us?

Well, these burdens are many, and we can review them and look back at what was a national tragedy. I will hurry over these preliminaries.

But certainly there was a time in the late 1700's and the 1790's and around 1800, the turn of that century even, when this frightful institution of slavery was about dying out because of its economic weight.

You can dig back into old diaries and into the reports of the days when it took a man working perhaps 10 or 12 hours, taking by hand what was called the "vegetable wool" off the seeds of cotton, to know that this was an uneconomic operation.

The Southern Colonies had tried the great growth of indigo, and this crop and operation failed. They began then to try silk—silk worms—and the Colony of Georgia actually shipped back to England over 1,000 pounds of silk, but this operation failed.

Flax was tried, and then Sea Island cotton, which would grow inland for some few miles, but which grew best on the islands and the immediate coastal areas. It had a different sort of cotton boll. They could run this very much more tender or less resilient boll between rollers, adopted from a Hindu custom of growing or rolling cotton, and crack these seeds and get the lint out more easily.

But a man had to pluck at the fibers of the old upland cotton with his fingers.

And it is said that Eli Whitney's cotton gin was the only machine born into original sin, and in a very real sense it was, because it was the invention of this machine which reversed the whole economic situation, and which made slavery boom.

Then you read that sectionalism began to make itself seen and felt in the twenties. By the 1850's there were certain attitudes and customs in the South brought on by living with this enormously unjust and immoral institution, attitudes which had great ramifications in all lines of thought and action, traditions, customs, and a way of thinking.

Tennyson, in one of his poems, has a character say that "I am a part of all that I have met." This, certainly, is true of an individual, of a city, of a region, of a nation, and the South is, and the southerner is, a part of all that he has met along the way.

I remember in 1920—and not many persons recall this—it was

in 1920 that something began to happen on a great scale which has produced the situation which troubles us now in manpower, in educational lacks, in riots in slum cities and slum areas, in education, and in the need for training. Not many persons recall the boll weevil.

I have in mind a study made by sociologists published in 1936 in *A Preface to Peasantry: A Tale of Two Black Belt Counties.*

It was my good luck to travel with some of these men in the twenties as they looked into the Cotton South, specifically in Georgia.

I have in mind Green County, Ga. It is up there with a half a dozen other counties, and you might have picked out any of these.

The boll weevil, which had been a long time coming up from Latin America and Mexico, finally reached the Cotton South about 1919, roughly.

This County of Green had produced a little over twenty-odd thousand bales of cotton. In 1923, using the same amount of hands, mules, fertilizer, seed, the total production was 333 bales.

The population of this county was about three-fifths Negro. It was a county which, as did all of the Cotton South in those days, contained a tremendous quantity of tenants and sharecroppers.

Something like 60 percent of the white residents of that county were sharecroppers or tenants. Roughly 90 percent of the Negro population of this county were sharecroppers or tenants. Of the population total, it was about three-fifths Negro.

There were 7,000 farms in this county, operated mostly by tenants and sharecroppers, white and Negro.

By 1930, a little over 7,000 persons had left this one rural county. The number of farms had declined to a little more than 3,000.

I can remember seeing two-story houses abandoned, their windows broken, the roofs falling in. There were three banks in the county—they all failed.

Valdosta, in Lowndes County in Georgia, is another city, a larger city, that I remember visiting at that time—seven banks in the county; they all failed because of the boll weevil.

So the out-migration—you might say a first-generation out-migration—began in this boll weevil disaster, a time of great agricultural recession.

By 1930 roughly 85 percent of all of the land in this group

of counties under the sociological study—of course, I had the good luck to be an onlooker—85 percent of all of the tillable land was in the hands of banks, mortgageholders, and insurance companies.

Now some of those people who left—7,000 persons from this one rural county—came to Atlanta, but most of them pushed on at that time toward Akron and Detroit.

The automobile tire business was booming. I remember going to Akron and Detroit and seeing where they were putting the tread on the cloth fiber and they had a lever to pull it into the sticky tops of the tire.

At any rate, there came then, on top of this boll weevil disaster, the Depression of 1930.

Well, it was pretty obvious by 1935 that the old cotton economy was through, that indeed the old row-crop system, depending on a plentiful supply of tenants and sharecroppers, was finished.

I can remember, by 1938 and 1939, when the Recovery was on, and when President Roosevelt, your honored father, sir, was already talking about the equal employment opportunities, when the Second World War lend-lease program began to go, and when we were to be the arsenal of freedom for these European countries. I can remember the labor recruiters coming into the South and taking out busloads of people, taking them out by the hundreds, by the thousands, trainloads of them, busloads of them, moving them to the great industrial areas.

Now this has kept on.

In the past 2 years, I have tried to spend some several days—at least a week—night and day, in about five of the larger eastern slum areas—Detroit, specifically Detroit, Chicago, Philadelphia, Baltimore, and Boston.

And it was almost like I had never left home, so to speak. I would walk the streets, stop in the little shops, talk to the people, talk to unemployed people in taverns and so forth, and they were all there from Alabama or Georgia or South Carolina or Mississippi or North Carolina or Tennessee.

In Detroit you could come upon, in this time, third-generation, so-called "hillbillies." And Chicago has a "hillbilly" problem. Now these are white southerners in slum conditions, and in Detroit they are third generation, I assure you, and they haven't improved any. I mean some of them have not.

Now I think that we must face the fact that certainly the out-migration had begun before 1920. I am simply saying that the boll weevil time was when it was greatly stepped-up to an enormous degree, and it has kept on all this time.

I am sure that you noted the figures about the latest of these unhappy and frightening riot situations in Watts of Los Angeles.

For over a year—and I was told that this probably was a figure that would stand up for the past several years—approximately 1,000 persons per month out of the South had been arriving at Watts—1,000 per month. Of these, relatively few were educated in any degree. These were white and Negro—mostly Negro.

I was in Chicago last week, and the best figure I could obtain was that there still arrive in the Chicago area each month somewhere around 300, 500, or 600 out of the South.

Now this is a story which is going on in all of the industrial areas.

San Francisco, with all of its great variety of peoples, had a Negro population of about 5,000, as I recall, in 1939, and now perhaps 50,000 or 60,000.

You see in this country, in these large cities, many fine, hard working, good, decent, yeomanlike people in these slums. But what we have in all of them is not merely an irreducible minimum—we have a minimum which grows, which is composed of just spontaneously combustible material. It is inflammatory material. It is human.

In this country in certain areas of the Appalachians, in some of our slum cities, in some of our rural slum areas, we, as the Secretary of Labor has said in the past, are developing something that we don't like to talk about, but it is a sort of a human scrap heap—the Appalachian coal fields, this hard core of the most hopeless ones in the slum areas. So that there is for this Nation a direct tie between a southern condition and the present condition of crowded cities and of uneducated, unskilled persons.

I remember a poet down our way trying to talk about these people who come out, and he was writing about how their hands were curved to fit plow handles and tractor wheels and that is all—no skill.

We have all read about it, the unhappy and miserable scrap-heap people—and I use that word, that phrase, reluctantly. In Mississippi they are still using a remnant of sharecropper-tenant

people to chop cotton, and to do other chores in the cotton fields. These are only a few thousand. They are a remnant, and they won't be needed—and the farmers say this coldly and brutally:

"We don't need them. We pay them $3 a day. They wouldn't be getting anything if we weren't paying them that."

There is a certain arrogance in this, a certain total lack of any comprehension of the human values involved, or of the sociological values which concern the whole State. I attended a national convention of agricultural engineers 3 months ago in Athens, Ga., at the University—and I am told that a tobacco harvesting machine, totally mechanized, will be on the market in 2 to 3 years.

This year in California a machine is harvesting a tomato grown specifically for mass mechanical harvesting.

But to get back to my South, most of the small-farmer, tenant, and hired labor workers in agriculture in the South today are in tobacco. Cotton—they are not in cotton, just a remnant, and cotton, of course, continues to move westward.

I want to go into this a minute, if I may, because this will affect manpower.

Cotton—the new cotton legislation (which I assume will complete its way through the Congress soon, in which a cotton farmer will receive a direct subsidy rather than a support price, with the Government buying the cotton and putting it in warehouses) will give the cotton farmer who crops for this direct subsidy a personal subsidy above the world market price of cotton.

Next year he will receive 9 cents per pound. To do this, he must agree to crop-acreage control, as he now does. But the man who doesn't want to take this subsidy may increase his acreage 50 percent.

I am sorry to say it, but I am very much afraid that in another decade perhaps two-thirds of the southern cotton farmers will be out of business. I am referring specifically to the small and relatively small cotton farmers. I apologize for mentioning statistics to people who deal with them every day, but if you haven't this one in mind, it might interest you to check up and see what has happened to southeastern cotton.

Last year, 65 percent of all of the cotton grown in Georgia went, as they say, "into Government loan." As I recall the statistics, on the average, over 50 percent of all the cotton grown in the Southeast went into Government loan.

That means the mills didn't buy it. Sixty-five percent of Georgia's cotton went into loan.

The mills didn't buy it because most of it is relatively a low-quality fiber, compared with the western fiber, where, with irrigated cotton growth, you can turn up two bales of a fiber which has been developed through research and which comes nearer to matching the old, wonderful Sea Island cotton, or the Egyptian fiber, the Pima cotton.

And the West is producing this. California is already the second great cotton State in the Nation. The mills now pay a premium price for western cotton, and less than half of what they buy is southeastern cotton.

Now this I give you, I think, as an example of a tremendous revolutionary fact. It means that the farmer with enough capital still can't get his whole region, the southeast, into a better quality. One farmer can't just decide to grow better quality fiber cotton because if his neighbors have poor quality, the cross fertilization at the time of the blooming of the cotton plants will pull down his to the same low quality.

And so this is one of the disturbing facts of the western cotton picture, also. You would almost have to have a whole State go into the better quality cotton to avoid this danger.

So this revolutionary thing, I predict, in 10 years is going to dump hundreds—several hundreds of thousands—small, middle-sized cotton farmers and their families on the job market. And they won't be well-educated, either, and they won't be trained.

Now there are about a million and a half farmworkers in the South—most in tobacco. If, 3 years from now, this mechanical tobacco harvester is in operation to any great extent, you will have dumped out of the tobacco-growing States another tremendous number of people who will need employment, who won't be trained for it.

So that it is of the utmost urgency, it seems to me, that we realize this fact.

Now it distresses me to say that while we are coming on in the South, and we are coming fast, the residue of history, and the residue of immoral social practices, and the residue of gross discrimination are going to be with us for some time.

I think that I could be honest and say that, in general, the reception of the Civil Rights legislation has been better, far better than anticipated. We can be optimistic about it.

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But this peculiar thing of the southerner and his region, the South and the southerner, prevents us from going as fast as we might.

One of the historical events was after the Civil War, when many of the great plantation systems were broken up into small farming plots. It may startle you to know that by about 1936, up to about 1940—almost three-fifths of all of the farms in the United States were in the Southeast.

This meant that we had a great many farms that were 20 and 30 and 40 and 50 acres and then 80 and 90 acres—an impossible unit well before the tractor came and made it definitely an impossible economic unit.

At any rate, Green County, which I have spoken of a while ago, the county seats of the rural South, and the small towns of the rural South, the small trading towns, almost literally became plantations.

The values, the prejudices, and the attitudes of the plantation culture simply moved into the town. And the people who worked in the new little cotton mill, in the new timber plant, at a processing plant of some sort, or in the sweatshop factories that we had in the twenties (pants and shirt factories that came and went after milking a town for a year, say) were just about what the sharecropper and the tenant had been back on the cotton farm. And this is true today.

This is why Selma, which was one of the great, rich cotton communities, where all of these values were fixed, was so bad.

This is why yesterday our paper carried a sad story out of Americus, Ga., which was in the old plantation area, 150 miles roughly south of Atlanta.

The county attorney happened to be an ex-Marine, too, Mr. Roosevelt. He is a fine young attorney, an elected county attorney. In Americus their troubles have been going on for a long time, 10 years; they have been having Ku Klux Klan types shoot into a colony of farms nearby there, and they have been having violence there for a decade, endemic—it breaks out.

And the mayor was saying that he would not set up an interracial committee. They were going to run the town, and they would not recognize this Negro leadership.

The county attorney publicly urged that they must do this, and that they must obey the Civil Rights Act, and that they must prepare to do it, and take steps to do it. This was all he did.

This, surely, was not heretical.

He lived in the town. He taught Sunday school in the Methodist Church. He had a nice wife and five children.

For this simple statement, "There must be an interracial council in this town"—which is still in the grip of the old days, still looking back at its grandparents instead of at its children of today and tomorrow—his church refused to reelect him as teacher of the Sunday school. He was the county attorney—the county officials put in an assistant to handle the county attorney's job, not letting the county attorney take any of it. His law practice fell away to nothing.

His two older children of the five—girls 10 and 12—were reviled on the school ploygrounds, cursed as "Negro lovers."

His wife and children were horassed by anonymous telephone colls—vile ond vulgar, some of them. So yesterday he moved his family to Atlanto.

He is o fine lowyer, ond I hope thot he can find some firm to go to work with.

But I do not want to knock down what I said originolly about optimism and o general better-than-hoped-for acceptance of Civil Rights legislation. This is still true.

But I want to give you an honest picture, if I can, ond say that there are o number of these smoll towns, almost oll of them in the old plantation-culture areos. They, themselves, took on the aspect of plantations, all the insistence on conformity, all of the old fixotions about States rights, the status, class, educotion, all of these things which are on inheritonce of the post.

We are going to have eruptions like boils or corbuncles come up from Americus, Ga., ond Selma, Alo., and Philadelphio, Miss.

But I hope you notice that in Philadelphia they have brought off a desegregation beginning without trouble so for.

I again want to say that, overall, the story is on encouroging one. But I still want to say, too—also, not to knock down my major premise—that there are many communities which signed plans of compliance with the Civil Rights Act in education in order to receive Federal money, which did so cynically and without any intent of really complying.

These are a few, a small percentage. We have a very bad one in Georgia down near the Florida line, Baker County—a very bad place with o long record of evil and wickedness and violent discrimination and prejudice. But on the whole, the picture is good. We are coming along.

And what the Nation obviously needs is, in my opinion, a permanent "Head Start." This was wonderful. I do not know how many of you went to see some of these schools in action. But this was really wonderful.

I am sure that maybe there were some bad ones. I had the good luck to see some good ones, and I think that, overall, the report is good.

And we need a Poverty Program. We have already got these "John Birch" types who are putting bumper stickers on their cars down our way.

I actually saw a Cadillac last Tuesday—and honestly, it was a Cadillac. The Cadillac always gets dragged into something! But this was a Cadillac. It had a bumper sticker which read, "I am fighting poverty, too. I am at work."

Now what sort of mentality is this?

I had an assistant bank president stop me on the street yesterday and say, "I read where in Atlanta we have the lowest unemployment figure in the Southeast; we have fewer people in need. And yet I read where we have done so well with our Poverty Program, we are getting some extra Government money because we are further along with our planning." He said, "Isn't this a paradox?"

And I said, "Not at all." And I tried to explain. I don't think that the Poverty Program has been quite as well explained as it should be yet. I think that we need it to be expanded because of its training.

I went the other day to see a class totally composed of Negro women. They ranged in age from the twenties up into the forties. The director told me that almost all of these women had been working as domestics, as 3-days-a-week maids, or 1-day-a-week, or doing laundry, ironing, and so forth, for, say, two or three families. All of them, I think he said, without exception in this particular class, had some children.

Now I have heard women, though, say, "I just can't stand this Government giving away so much money. I had a maid. I needed one. I tried to get one. I have 3-days-a-week work, and do you know what this giveaway Government is doing?

"They are training her, and they are paying her, and they are taking care of her children off of my taxes!"

And you try to say to such a person, "Well, this woman is being trained to be a checkout cashier in a supermarket or anywhere else, and isn't it much better for her to have a job that

will pay her enough to look after her own children and let her work 5 and 6 days a week, instead of three part-time jobs, in a job where she will have all of the benefits which go with employment under wage and hour laws?"

Somehow we haven't done enough education on this, and I am saying "we"—I am talking about the South. I think that it is our particular job and not Washington's job to do this, and our communication groups have not done enough work on it.

Another part of our problem is that of the low wages—I don't think you ever heard a sensible southerner protest the wage and hour laws.

I can remember in 1933 when they tried to put a 25-cents-an-hour guarantee limit on timber workers in southern timber woods, and the southern timber people protested that it would ruin them—it would ruin industry.

The curse of the South has been low wages. It still is the curse of the South, low wages.

And this "right to work" thing has been a curse to the South, because it has been misused and abused in some areas.

So that I ask you to remember that we are still a great rural area, and the Nation's problem is complicated and more expensive because of this out-migration process that went on almost unnoticed insofar as the ultimate sociological effects were concerned.

I have been trying to find and I can't find any city, or any newspaper for that matter, that made a real study of the tremendous growth in migrant population brought on largely by the war industries, but also by just the growth of an industrial area and the almost sudden lack of need for riveters and all of the thousands of wartime jobs which were semiskilled or labor, and I don't know of anybody that seemed to pay much attention to this, including me.

So that I think that there has been a great national neglect.

And now, all of a sudden, we are confronted with trouble, real trouble, and without any question we have got to do more, we have got to develop more bold, new plans of education and training, such as we have in the Poverty Program, which will reach these people, several millions of them, in Appalachian areas as well as in our cities in the South and in the rural South.

There just must be some bold planning, expansion of these plans of teaching, as well as of legislation. I appreciate your courtesy and your tolerance.

DISCUSSION PERIOD

Moderator—Dr. John P. Walsh, Assistant Manpower Administrator, Manpower Administration

DR. WALSH: Mr. McGill, we thank you for those interesting and enlightening words.

Now let us open up the discussion. I am sure that our speaker and chairman are willing to stand questioning.

MR. McGILL: I am willing. I don't think I know the answers, but I am willing.

DR. WALSH: In order to expedite the orderly give-and-take of the discussion period, I would suggest that we not get into too long a series of multiple questions on the part of one individual, that the questioner direct his question either to Mr. McGill or to Mr. Roosevelt, who would be ready and willing to respond if one comes his way.

FROM THE FLOOR: In this week's issue of the "National Observer," there was an article on the problem of the Negro—and it didn't say "The Negro Problem," but "The Problem of the Negro."

And the thesis of this article was that anybody who has any idea that the Negro can elevate himself by self-help suffers from some delusion, but that the problem of the Negro is that we are going to have to pour in a tremendous amount of time and money and personnel and sort of overbalance the assistance of this whole Poverty Program that has to be given to the Negro.

So I would like to have your comment and yours, Mr. Roosevelt, on this.

MR. McGILL: Well, sir, I think that is, in general, true.

There are, as usual, exceptions. There are in many areas—this comes down to many areas and individuals—there are certainly many areas where the Negro can help himself, literally help himself. This goes on all the time.

There are job opportunities opening up in the South, and again, we are paying the penalty. There has been no training.

In my own business, there have been no schools of journalism to which Negroes could go, no schools of advertising, very few

business schools. But by establishing on-the-job training, or, if you can't do that, helping your community to set up something, there certainly will—there can be self-help.

In general, sir, I would agree. But, it disturbs me to talk about just pouring money in. What we need is a lot of imaginative planning, and then let us get the money for it.

And I think that we have learned a lot from "Head Start" in education. And I think that we are learning a lot from the training in the Poverty Program.

Certainly we are going to learn a lot out of the publicity that grows out of these cases that are brought before the employment section which Mr. Roosevelt heads. I think that we will learn a lot.

But I would say, yes, we have had a hundred years, you might say, at least that, in which we have neglected, and this thing has accumulated, and accumulated, and accumulated, and you can't undo the effects of this.

When we began to educate voters, we found, for example, it was difficult to talk to a fellow, a man or a woman, who has never been allowed to vote and never been to a poll.

You start talking to them about voting, and they want to know, "What is a ballot?"

So you have to get slides and you put pictures of a ballot on a big sheet, and you come down to the "ABC's." Here are people who have been so completely separated from the American culture, and the American life, that they are, in a great sense, many of them at least, so deprived educationally—not just them, but their parents and grandparents—that you are going to have to spend a lot of money.

And my only hope is that we can plan how to spend it and then do it—but do it we must.

MR. ROOSEVELT: I agree with what Mr. McGill has said, but I would like to pinpoint a couple of possibilities in which both government and private industry, I think, can begin to do the job that you are talking about.

I also am familiar—not with this particular article, but with Whitney Young's thesis that we were able to do a massive job through the Marshall program for Western Europe after World War II; we saved it from Communism.

Now we have this group that has been held back, not only in the South, but in this out-migration group that Mr. McGill has described, moving into our big industrial centers.

I cannot officially say, as Chairman of the Equal Employment Opportunity Commission, that we are going to insist upon this or urge this because we are primarily interested in merit selection—select the individual for the job on the basis of his merits, and if there is equal opportunity, then there is no violation of the law.

But let me point out to you some possibilities within Government.

I find in too many agencies that the tabulation of all of the training courses that are available to employees within an agency or a department are never listed and publicized to the personnel of the department generally. They are held closely as guarded secrets by the personnel officers who select their friends for the training programs.

Now before I left the Department of Commerce, where I was Under Secretary, I asked for a compilation, a booklet, outlining all the training programs available. I knew that we had an agreement with Northwestern University for a 3-year course in highway safety. I knew that we sent people up to Princeton University for some special courses for a full year.

I asked, "Where is the list of all of the training programs?"

The personnel officers knew it, but they couldn't tell me. Well, I asked for a compilation. It didn't get to me before I left the Department of Commerce.

And I am sure that when I left, the personnel officer said, "Thank God! That fellow got out of here just in time!"

This is an area within Government, and you may be interested to know that I suggested this to the Vice President only yesterday morning, and he was shocked to find that this is the case in too many agencies. I am sure that it is not true in the Labor Department.

Now let me give you another aspect of this problem. I found in — I might as well come right out and say it — the Bureau of Public Roads that there was no Negro engineer, and outside of the Defense Department the Bureau of Public Roads, I believe, employs more engineers than any other Government agency.

I might say that while the Bureau of Public Roads comes under the Department of Commerce, it is quite often difficult for the senior officers of the Department, who come and go, to really know what goes on in this well-established agency.

And I find that their Congressional relations far exceed the Congressional relations of the Secretary and the Under Secretary.

But finally the Bureau of Public Roads was able to find a Negro

engineer, and you don't know how we went after that one fellow! We finally landed him. We got him from the outside.

I then started to check around with big contracting firms and engineering firms, and I found that the number of Negro engineers was almost infinitesimal. So I started a program with this agency under my direction, and all of the other agencies of the Department of Commerce, and I pointed out to them two things:

First of all, you have got to hold out the opportunity of employment to the young Negro student early in his student days.

You have got to send people around to the Negro colleges. And don't talk to the graduating class; talk to the freshmen the day they arrive on campus.

Go to high schools and talk to the graduating high school students.

Then you must talk to the deans about reorganizing the curriculum, because normally a Negro college curriculum does not train young men and women to go on to engineering schools. Or if it is a law school, they go to a Negro law school, or the other professions. So you may have to modify the curriculum.

At that point, you offer them a job down the road, if they will take the preparatory courses. You have got to then help them get a scholarship so that they can then go to an engineering school.

You have got to line up the top engineering schools so that they will take Negroes.

You have got to take these kids by the hand and perhaps arrange an interim year, so that they can get adjusted. I don't think that I have to tell most of you the problems of a young Negro student. He graduates from a Negro college in the South, having been born and brought up in a segregated community, and suddenly he goes to a big technical school in a northern city, where for the first time in his life he can go anywhere, he can associate with anyone he wants, he is treated as an equal.

This is, in all too many cases, a traumatic experience.

And so you have to take this fellow by the hand and see that he gets a year of adjustment, not only in his college training, perhaps a few extra courses. But the sociological evolution that he must go through, and the psychiatric adjustment that he must go through—or she. My commission also covers the sex problem!

So that I think that I have a few agencies of Government started on what I call, "Take them by the hand programs." This is what Government can do in two areas.

We are moving very diligently to try to get big corporations to open up training programs on an equal-opportunity basis, and particularly to open up management, young management, low-level management training programs. And these are the relatively few.

I think that there are some good signs. We do have some of our most eminent physicists today who are Negroes, and we have Negroes who are reaching the tops in almost every profession. But this is the rarity.

And I think that you are right; we may have to follow an affirmative selection program, where we get a Negro and a white equally trained and equally skilled for a particular job, we may have to go through a period in which we right the balance by giving the Negro the preference. Now my commission can't say that, but I think that there are companies and there are communities that are doing it.

In Milwaukee 170 company presidents got together and started their own voluntary program, and affirmative selection is part of it, because they consider that to be their responsibility in the city of Milwaukee.

FROM THE FLOOR: Well, would you prosecute such a case for discrimination?

MR. ROOSEVELT: Prosecute?

FROM THE FLOOR: Yes, for the white person?

MR. ROOSEVELT: For the whites?

FROM THE FLOOR: If a white person, who was in this equal—

MR. ROOSEVELT: At that point, we get into the subjective problems of what is in an employer's mind when he picks A. against B. And that is something we cannot judge, and as long as I am sure that there has been no discrimination against the white or the black, then I can't judge what is in his mind.

But I am saying that there is an affirmative selection going on in industry, and I am saying that the Government has an opportunity to go out, and whether you call it a "lead them by the hand program" or publicizing the educational and training programs within an agency or department, you will be helping to break the bottleneck that you have referred to.

FROM THE FLOOR: I wanted to ask the gentleman who just asked a question, How does he expect the Negro to be able to help himself, when we have this low-wage problem that is so prevalent in the South?

And I speak as a southerner; I am from Alabama. And when we come to the sociological, educational opportunities in my own State—I taught school myself in an area named for the big landowners, where the Negroes had no school at all for 3 years, and they were, actually, praying for a teacher.

Throughout that whole area there was just the 2-months school, even when there was an appropriation from the State.

And I was offered—holding a life certificate to teach in the State of Alabama—$25 a month to teach in that school, coming from State money.

Now some of the most talented young Negroes that I have found among young persons in this United States, wherever I had the privilege of seeing them, are in the deep South, and are some of the most ambitious.

It is only recently that they could go to certain schools where they could get certain courses. We have an engineering school at Howard, Tennessee State, and we have some little training that they can get at Tuskegee. But how many engineering schools, for example, do we have among colored colleges in the South?

And you know what the problem is at "Old Miss" and other places where Negroes have tried to go to take law.

The most outstanding Negro lawyer in Alabama is Arthur B. Shores at Birmingham. He was sent to law school at Bessemer High School. So he took law by correspondence at the University of Kansas.

And he has done a marvelous job, and he has a legal mind that has meant so much to the people in the State of Alabama.

Now I taught in Georgia, too, for a time.

And, Mr. McGill, I do want to thank you for your interest in the problem in the South.

And I am from the South, and I am a southerner, and I am just as proud to be a southerner as any white southerner, because it is where I first saw the light of day.

And to Mr. Roosevelt, I would like to say that I knew his mother. She came down there so often that it disturbed the white people terribly!

MR. ROOSEVELT: She also went down a coal mine!

FROM THE FLOOR: And they said, "Now, Sybil, what is she coming down here for? Why doesn't she stay in the White House?"

And I had the honor of a private conference with her at the

Tutwiler Hotel, and I checked myself into her private suite.

And she told me every time I saw her, she told me, "I want you to say the very same thing that you have said to me to so-and-so and to thus-and-so." And I went to New York on borrowed money to talk to certain people that she told me to go and talk with, and then came back here to report.

You will never know the thousands of Negroes and white people in this, and why is it—I want to ask you, Mr. McGill, why is it that so many of the very fine white people that we have in the South are standing so far in the background during this time? Why have they let the rabble and that sort of people take charge of government?

And now I know that they are fine people, but a great many other people above the Mason and Dixon Line don't even realize that.

What can we do to get them into action?

MR. McGILL: I really don't know how to answer that.

This young lawyer in Americus about whom I talked took a stand, but then "the good, church-going people" stood back and let him and his wife and children be driven out of town.

This goes back to this whole thing that I am trying to say:

Especially in the small towns—it doesn't work so much in the city—they have brought in these old values of conformity and these so-called "traditions" and so on of the plantations. That may seem a little odd, but it is literally true. They are there.

And the power structures—and it is another cliche phrase, but I do not know a better one—these so-called "good people" just don't want to be involved. They don't want their phone to ring and somebody to be cursing them or saying foul things to them, or they don't want to have a shot fired in their house, or they don't want their children abused.

So they stand back. But this is still a great blight. Of course, Mr. Roosevelt is quite right. There weren't many Negro high schools in the rural South, and there weren't too many in the cities until about 1945, 1946, and 1947 when they began to build Negro high schools.

Up until 1920, if a Negro in the rural South wanted to get a high school education, he had to leave where he was. If he went to high school, he couldn't look forward to employment when he got out of high school, so why go to college?

Well, I know how those good, church-going people worry me

to death, too!

FROM THE FLOOR: This is directed to both Mr. McGill and Mr. Roosevelt.

Incidentally, I have been an admirer of Mr. McGill since World War II, when I served at Camp Wheeler, Ga., and Fort Benning.

In the special programs of OMAT,[1] we have a good project in a northeastern city, and we have an outstanding job development program there. The program developer, a retired economist, has a system which he calls "one to one" and "quid pro quo," and I think that it might apply to your new industries in the South.

He calls up the president or a vice president or some other official of the company, and he says, "We have got a training program going here, and we have several trainees who are going to be looking for jobs soon. Would you consider hiring one of these trainees?"

And the official usually says, "Well, let us look at two or three," and then, "Send us a profile of the appraisal sheet."

And then sometimes it is turned over to personnel, and they will say, "Well, we would like to talk to two of those people." And this man comes back, and he says, "I have been talking to them here in the project. I have been talking to their counselors. I have talked to their trainers, and I will give you a promise on this:

"If you hire one of these trainees, he has promised that he will go on and take his high school training at night and get his diploma, or he will take a technical course that ties in with your operation."

And that is "quid pro quo."

Now what has happened is that this has been quite successful and, as you can guess, these companies have not just hired one man, but they have hired two or three or even four. And I think this could be duplicated again in private industry.

MR. ROOSEVELT: Could I just add one line to that? I know the very fine work that your outfit is doing. If you run a business, as I have, and as many of you have, you place with your supplier a firm order for next week's deliveries, next month's deliveries, and you give him a tentative order for the second and third month, which is confirmed or modified as you get to it.

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[1] Now Office of Manpower Policy, Evaluation, and Research (OMPER).

In the labor market, we don't have either the mobility of labor or really the advanced cataloging, and I think that in this whole area of training programs we are today deficient in not trying to get the advance orders from the employers in a given area, whether you do it countrywide or statewide or metropolitan-area-wide—these are the details to be worked out.

But if a business can plan ahead so that its suppliers know what the order will be for the next month, then it seems to me that we can do so in Government and through the State Employment Services. We ought to be able to similarly plan ahead for a year or 6 months or whatever it is, so that we are not training people where there is not going to be that kind of a skill required.

I have urged this on Secretary Wirtz and a lot of other people, and I know that he is giving it thought. But this problem of matching up our training programs with our anticipated labor market is, to me, one of the very vital ingredients of this whole training and educational process. You probably all know the story of Carson Pirie Scott, the department store in Chicago, that went out and got dropouts and gave them 3 days of work a week—at the bottom of the ladder, admittedly—while they agreed to go to school and either finish their education or take training courses so that they would learn a skill on the other 2 days a week. This gave them money to support themselves and their families and it started them down the road of learning a skill.

Ninety-five percent of the graduates of the Carson Pirie Scott experiment—and these were all dropouts—have either gone on in the company or found employment in other companies.

So it worked—if there is the kind of imagination to make it work.

I am sorry, but I have another meeting at 3:30, so I have got to leave. But, like you, I have greatly enjoyed Mr. McGill's address, and I have enjoyed meeting with all of you.

Thank you.

MR. McGILL: Well, I think that that idea is a good one, and it is being used in at least a couple of industries, and it is working very well.

One of the big department stores in our city now has 160-odd Negro women working as clerks and taking some training.

FROM THE FLOOR: This is not a commercial, Mr. McGill, but leaving the plantation for a moment, I wonder if you would pass on the Constitution via the New York Times and give us your

impression of the portent of this new newspaper in England, Automated?

MR. McGILL: Well, I read that yesterday with a sort of a shiver and yet with some interest.

I do not know if you saw the story, but in brief, this new newspaper—the first new one that has been started in Great Britain in a good many years—is an almost completely computerized plant or operation.

The type is all set through computer operation, and the computer justifies, as you say, at the end, and can hyphenate a word. It stores up in its memory how to hyphenate and so forth.

And the publisher envisions that he could have a number of newspapers all over Great Britain and set with type all from one computer office—center rather, not office. And this certainly can be done.

I already know of two newspapers owned by one company, and when one of them had a strike, they were able to get their wires fixed so that they set some of the type in the other city 250 miles away.

I guess because I am an optimist, I get to wondering about how many people would it take to make all of the parts in the computer? Would that be new jobs? To string the wires and to do the new typing that has to be done?

It is something that is coming, I guess. We already see it in New York, where the printing or the typographical union is demanding that the level of jobs be guaranteed if automation is introduced.

But, of course, I don't think that will be done, because the reason that they introduce automation is to reduce costs and employment and production costs. So it is one of the things that we are facing, sir, and I hope that it will not come too fast. But this is one of the things, as everybody in this Department, in the Labor Department certainly knows, the automation specter is—I don't know whether it is worse than we think it is or not as bad. You hear both stories. But it scares me. I don't know how to answer you, really.

FROM THE FLOOR: Well, you have virtually answered my question before I asked it. It was related to automation also.

But, more broadly, you mentioned that in 10 years you thought that about two-thirds of these farmers would be out of business in the South—presumably, the lower educated or the undereducated.

MR. McGILL: Farmworkers, I think, mostly, and small farmers and middle farmers, yes, sir.

FROM THE FLOOR: And they should be trained.

And my question is, what is industry going to do, and what new industries will you entice to utilize these hundreds of thousands?

And secondly, if you can, how do you think automation might affect this?

As you know, there is a new study that has been conducted recently that seems to show that just about as we get the Negro trained, we are going to run out of jobs for a lot of people.

MR. McGILL: Yes, I know. It is a real worry.

There is being discussed at a meeting of the Citizens' Committee of the Department of Agriculture a plan in agriculture which would attempt to, or which proposes to, set up for these people, the thousands who are simply work laborers, farm laborers working as tenants or as croppers or working for a wage, and certainly are not going to be needed in the next few years, less and less—to set up homestead-type operations where they would be helped to either work on or own a homestead plot—not a 160-acre, traditional homestead, but a plot the size of which would vary with the crop and the area.

This has been proposed by some of the people in Agriculture after a considerable study.

Now I must say that I don't believe that it will work. I don't see how any small unit is going to work as an agricultural unit.

Now I can see where if it is a fairly small unit, it might work for a while. This is particularly true if you have a daughter and a son who are working in an industry somewhere, and a wife and maybe another daughter are at home canning.

This is the old dream. But what happens when the parents get old and the children marry? They don't want to stay on a little piece of land which isn't rewarding economically.

And I have seen too much in the small southern farm where an old man and woman will tell you they were born on the place, and their fathers and mothers ran it and they all lived there, but "Now we are old and our children are in town working."

I remember one about a year ago:

A son was with the telephone company. A daughter was at Sears Roebuck. A daughter was in the variety store in the county seat. Another one was a county agent. And they had a farm,

as I recall, of 90 acres, and he had it for sale, and they were too old and there wasn't enough income.

And I don't see how this homestead thing can work.

I say this to indicate that there are people who are thinking and trying to find some way to take up the shock. And they haven't found it yet.

The service industries—I don't know why I say this to you people; you all know this very much better than I—but the service-industry employment keeps growing and expanding, like the illustration of the checkout cashiers in supermarkets; there is a turnover in these and in my area, at least, there is quite a demand for these. I do not know if that is a national demand or not, but I assume that the service industries are going to keep expanding for the foreseeable future.

So training in that area—I just don't see how they are going to stay in agriculture.

FROM THE FLOOR: We are a professional educational association. As an accredited commission, it is approved by the U.S. Office of Education. We have 72 accredited schools.

By way of supplementing my friend's remarks concerning a possible source of training, especially for high school dropouts and those who never reach high school, correspondence education would be too much. But supervised correspondence, where you have bona fide teachers who would bring students (trainees) together periodically and direct them, would be successful. In Michigan, where there are 13 adult education centers, 600 or 700 in these 13 education centers have been able to finish high school.

They come nightly—rather, twice a week, I should say—from 7 to 9:30. And as a result, they have been able to get employment and have been able to advance in their jobs.

It seems to me that with your problems in the South, Mr. McGill, that this source could be drawn on very readily.

It surmounts many of your human relations problems, facilities problems, staff problems, and budget problems, as well.

MR. McGILL: Well, sir, it does.

I am embarrassed to say that this is the first that I have heard about this. I didn't know that it was this large an operation.

This would come under the heading of what I was trying to say a while ago. I think we must think of some new ways, generally, to meet this demand. And this certainly, on this very brief hearing of it, seems to me to have very real merit.

FROM THE FLOOR: I would like to change the direction a little bit, if I may.

We have seen fairly significant shifts in Georgia politics, resulting from reapportionment, adjusting the balance of power, probably giving more votes to the Negroes.

I think that we have hoped for the same thing from the Voting Rights Bill throughout the South.

Now I see in the newspapers some rather disturbing items that indicate that economic intimidation and reprisals are very discouraging to registration in Mississippi, Alabama, etc.

Can you assess the weight and the impact and evaluate this and its probable short- or long-range outcome?

MR. McGILL: I think I can, and I think that if somebody would point the direction—I come up here once or twice a month, but I am a little bit lost—I would like to bow toward the Supreme Court Building.

This reapportionment decision is another real revolution, and we in Georgia also are freed by the Supreme Court from this really, really iniquitous, intolerable, county-unit system which kept Georgia, more than any other southern State, in real political bondage.

I lived through campaigns in which there would be one man who would get 12,000 or 14,000 more votes, and he would still lose the election, because he lost the county-unit vote.

And Senator Talmadge's father, for example, used to boast that he would never speak in a county that had a streetcar in it, and he didn't. For a long time we had 159 counties, and he could ignore the urban counties and carry the rural ones and win by a unit vote.

Well, at any rate this is going to be not as fast a revolution as some people think, but still a pretty speedy one.

The registration in some States, sir, is proceeding very well. I think that it is proceeding well in Tennessee, and in North Carolina, and in West Virginia. But there is not so much Negro population in West Virginia, to be sure, and less in North Carolina or Tennessee than in one of the old cotton States.

But, nevertheless, registration is proceeding very well, and I think rather well in Virginia—I haven't seen any late figures on it.

It is proceeding very well indeed in Georgia. But in Alabama and Mississippi, particularly those two, and in areas of Louisiana, it is being retarded. I said it is proceeding very well in Georgia

and it is. But in these little isolated, semi-isolated areas there is obvious coercion and intimidation. In Baker County, Ga., it is quite bad.

So the Negro organizations and some white organizations are beginning to replan for a stepped-up organizational drive for this fall. There are no elections really ahead for about a year. There will be direct resistance to this in the more rural areas.

Now this is a sort of a rule of thumb: Wherever most of the old plantation culture, tradition, and custom, and attitude—and "attitude" is the key word—where most of this prevails, in these old areas, this is where you can expect the most determined defiance, resistance, evasion, coercion, intimidation—all of these things. But I will wager, sir, that within 3 years, the Negro registration will be quite large and will be quite effective.

We probably were a little naive to think that people who had never voted, who had never been allowed to attend a PTA meeting, who had never been allowed to sit in on a community meeting where they discussed, "Shall we build a waterworks or a sewer works?" or "Shall we pave the streets?," who had been totally excluded from any experience of the citizenship of voting or the responsibility, could be brought quickly to participation. Nothing, I think, causes me to do a burn more than those people who say, "Well, let them show some responsibility; let them show that they are ready for it."

Well, you get ready by participating, and you won't participate until you are ready, and you have to start participating.

But I am sure that this registration thing is going to grow, is growing. But in some areas it is disappointing, and the people are fearful and apathetic, and this is what has disturbed them most. I am sure that this will be corrected.

And I believe that there will be a slow acceleration—a slowly accelerating voting registration.

FROM THE FLOOR: I have seen some indication recently that organized labor, mostly on a national level, is taking a greater interest in directing financial assistance to Civil Rights and community organizatior programs in the deep South, and I wonder if you would comment on the prospect for a Negro labor-political organization in the South, the implications of 14-B for a labor strength in the South, and the possibility that a reformed Democratic Party might arise in the South in the immediate future.

MR. McGILL: Well, I must say that I am afraid that there were sort of four or five questions in there.

There have been at least three national labor organizations that have sent assistance in to Civil Rights groups. Some of them are beginning to lend help in the voter registration, some of the union people, not many, but a few, and I think that this number will grow.

There already is, in some areas, not an official alliance of Negro-labor organization, but just a commonsense alliance, without going through the motions of making it official.

We just had a week ago in Atlanta, Ga., a municipal election and an election of State legislators for our county. Incidentally, you might be interested to know that the State of Georgia in January will have more Negroes in the State legislature—two of them being Senators—than any other State in the United States, except Michigan. Georgia is going to be second with the number of Negroes in the State legislature.

Now that is one of these "great leaps forward."

But in our municipal elections, where we have Mayor Allen, a very good mayor, who you might remember came up and was the only mayor—not the only southern mayor, but the only mayor in the United States—who came up to speak for Civil Rights about 2 or 3 years ago, and attracted national attention.

Well, he was running after a 4-year term. The alliance that gave him a 2-to-1 majority—and it was just a natural alliance—was the Negro vote, and the labor vote, and what one of the critics spoke of as the "silk stocking district" vote—the so-called more wealthy, north side of Atlanta. It is a very unusual combination. If you had tried to get them together officially, you never could have done it.

Certainly the wealthier north side would never have joined with labor. But here they all voted the same way because they all believed in this mayor. That is a little unusual.

I don't see any signs of a Negro-labor party and I think that the Negro would be much more intelligent not to affiliate himself with any other group, but to continue to be a sort of balance of power, and to make himself felt. If he wants to go with labor in some election, then let him do it. I don't see any necessity yet, certainly, for a Negro-labor party or organization. I don't see any signs of it down our way yet. It may come.

FROM THE FLOOR: Mr. McGill, would you care to comment on the prospects of the return of the plantation in the South? Plantations based on machines, and consolidation of the small holdings.

MR. McGILL: Well, it is already coming, sir, and some of them are already in existence. But they certainly wouldn't have any of the atmosphere or procedures of the old plantation.

You would have to dig up a phrase which is pretty common—they are really factories or industries in the field. They are very mechanized, and they are a factory sort of operation. We have got a few of those in the cotton area of Burke County, for example, in Georgia, in the center of our mechanized cotton area.

But I think that these are already coming, sir, and that they will be more and more automated and more and more of a factory operation, and well, we see what we can do. Less and less people can store up great surpluses.

I am interested in what some of the experts say: that by 1970 there is going to be a real world famine in great areas of the world.

We may be really in the grocery business by then!

FROM THE FLOOR: Just the other day, I read an article where two southern Congressmen, who had voted against the Poverty Bill, were now beaming, they were all smiles, because Community Action Programs were going into their areas, and they were photographed with Sargent Shriver in this undertaking.

I wonder if a reformed Democratic Party would mean a change in position, especially toward racial policies, by a lot of our southerners in Congress, in view of recent rapid changes in the Civil Rights area?

MR. McGILL: I think that you have got a very good approach. I think that this is going to happen. I have always had a very great sympathy not for all southerners in the Congress, by any means, but I have had a sympathy for many of the really fine and decent ones who were captives of a nonapportioned voting situation, and in our State we had the county unit, and if you didn't pay lip service to this, you just didn't get elected.

You say, "Well, he shouldn't get elected," but we managed to get some pretty good men who had to take some awfully bad positions.

I have gone to the offices of some of these men, across the

span of 35 years, and I have seen some of them nearly in tears at what they had to do to themselves, and I know that a lot of them—not all of them; some of them gloried in it and liked it and wanted to do it that way — but I know many good men who I have seen just almost in tears and just ashamed of themselves and disturbed terribly. And now I think that in the South reapportionment will almost reform the Democratic Party automatically.

DR. WALSH: The time has come to cut off this lively discussion. We thank you, Mr. McGill, for taking the time to be with us and congratulate you on your frank approach. Mr. McGill has had a busy day. We have kept him talking steadily.

We have kept him talking since 12 o'clock in the press conference. So it is a pretty good 4-hour stretch of talking for any man. Thank you.

MR. McGILL: That is a Henry Grady story!

DR. WALSH: We would like to underscore again the fact that the series of seminars will continue throughout the year.

Mr. McGill, we look forward to having you and your colleagues back for the forthcoming series of sessions.

We thank you.

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WHERE TO GET MORE INFORMATION

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A Manpower Report Concerning Occupations, Worker Traits and Qualifications, and Areas of Work in Architectural, Construction, and Related Fields for Jobs Above the Skilled Craftsmen Level. Manpower Study No. 66-3.

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Occupational information and job descriptions, based on the "Dictionary of Occupational Titles," are given for selected technical occupations such as quality control technician, building inspector, and estimator. (EM)

VT 001 942

OCCUPATIONS, QUALIFICATIONS, AND AREAS OF WORK IN ARCHITECTURAL, CONSTRUCTION AND RELATED FIELDS FOR JOBS ABOVE THE SKILLED CRAFTSMAN LEVEL

MANPOWER REPORT 66-3
10 March 1966

PROF. J. P. LISACK, DIRECTOR
OFFICE OF MANPOWER STUDIES
SCHOOL OF TECHNOLOGY
PURDUE UNIVERSITY
LAFAYETTE, INDIANA 47907

A MANPOWER REPORT

Concerning

Occupations, Worker Traits and Qualifications, and Areas of Work in Architectural, Construction and Related Fields for Jobs Above the Skilled Craftsman Level.

10 March 1966

Manpower Study No. 66-3

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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EXTRACT

This report describes selected occupations in the Architectural, Construction and Related Fields. It is designed to assist staff and faculty concerned with determining requirements for or objectives of related technical educational programs. The jobs described are above the skilled craftsman level and include: Architect, Construction Engineer, Quality Control Technician, Estimator, Building Inspector, Contractor, Construction Inspector, Estimating Engineer, and Salesman - Building and Construction Equipment and Supplies.

The titles, code and definitions are provided for each occupation, with an explanation of the area, division and group in which each is classified. The worker traits characteristics presented describe the work performed, worker requirements, education and training requirements, methods of entry, and a qualifications profile. Attachments to the report contain the definitions, categories and work traits details.

Purchasing Management Occupations and the broad field of work activities which involve supervising and coordinating the activities of other workers is discussed. The qualifications and traits for supervisory work personnel are identified.

A resume' of the educational, vocational preparation, and aptitudes required for each occupation is portrayed in a summary table for convenient review.

The basic reference is the U. S. Department of Labor Dictionary of Occupational Titles, 1965, Volumes I and II. An explanation of the basic occupational coding and classification systems and the recording of qualification profiles are in the report.

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1. Introduction

A knowledge of occupations and their classifications is of key importance in determining the needs for - or analyzing the objectives of - technical educational programs. The definitions and classification of related occupations are fundamental to an understanding of jobs; the traits, qualifications and aptitudes of those who fill them; and the work involved. This report provides these data for occupations in the title subject area which are above the skilled craftsman or tradesman level. A careful review of the information in this report should be of assistance in the review of the School of Technology's current or planned architectural, construction and allied educational programs.

2. Basic Reference

The basic reference for this report is the U. S. Department of Labor Dictionary of Occupational Titles (DOT), 1965, Volumes I and II, (Third Edition). In this Dictionary, occupations are incorporated in a classification structure in which each occupation is identified by a 6-digit code number. The structure consists of two arrangements of jobs. The Occupational Group Arrangement and the Worker Traits Arrangement.

Occupational Group Arrangement. Jobs are grouped according to work field, product, and/or industry, which are reflected in the first three digits of the code. The first digit identifies in which one of nine broad categories the job falls, (e.g., 0 or 1 denotes 'Professional, Technical, and Managerial Occupations'); the second digit identifies the division within the category (e.g. 00 or 01 denotes 'Occupations in Architectural Engineering'); the third digit identifies the group within the division, (e.g. 001 denotes 'Architectural Occupations').

The last three digits of the code express the level of complexity at which the job requires the worker to function. The job's relationships to Data (4th digit), People (5th digit), and Things (6th digit) are each indicated by use of a number from 0 to 8, wherein the lower the number, the higher the total level of complexity. (Please see attachment I for a listing of the nine occupational categories and the job relationships.)

Worker Traits Arrangement. Throughout this arrangement, jobs are grouped according to some combination of required general education, specific vocational preparation, aptitudes, interests, temperaments, and physical demands. Each group contains (1) narrative information identifying traits and abilities required of the worker, and (2) a listing of occupations which require these factors in common. There are 114 such worker trait groups organized within 22 broad areas of work. The five broad areas pertinent to this memo are essentially: (1) Business Relations; (2) Engineering; (3) Investigating, Inspecting, and Testing; (4) Managerial and Supervisory Work; and (5) Merchandising. (For a listing of all 22 areas of work and an example of related worker trait groups in Engineering, please see attachment II.)

3. Occupations of Interest.

Many jobs in the architectural support and construction areas are unique to the particular company, firm or establishment. Variations in size, locale, specialization, construction jobs, contracts, and other factors result in a continuously changing proliferation in occupational needs; many of which defy type-casting. However, although it is not possible to reflect all related occupational needs in standard packages, it is possible and feasible to identify many occupations which are defined and coded, and for which worker traits, characteristics and qualifications have been developed. Further, the "packaging" of worker traits and characteristics introduces some limitations. It is therefore often necessary to refer back to the actual definition of the occupation in order to identify the specific needs. It is in the above setting, that the following occupational titles have been selected as pertinent to this report:

	Occupational Title	Code
1.	Architect (professional and kindred) (hereafter abbreviated profess. & kin.)	001.081
2.	Construction Engineer (profess. & kin.)	005.081
3.	Quality Control Technician (profess. & kin.)	019.281
4.	Estimator (profess. & kin.)	160.288
5.	Building Inspector (govern. service)	168.168
6.	Contractor (construction) (hereafter abbreviated const.)	182.168
7.	Construction Inspector (const.)	182.287
8.	Estimating Engineer (profess. & kin.)	(no code)
9.	Salesman, Building and Construction Equipment and Supplies (wholesale trade) (hereafter abbreviated whole. tr.)	276.358
10.	Purchasing Management Occupations	162.xxx
11.	Supervisory Work (manufacturing and construction)	xxx.138

4. Appropriate Occupational Category

Please note that the first digit for every occupation listed in paragraph 3, except Salesman, is 0 or 1 which denotes they are in the broad category of "Professional, technical, and managerial occupations". The following definition applies:

> This category includes occupations concerned with the theoretical or practical aspects of such fields of human endeavor as art, science, engineering, education, medicine, law, business relations, and administrative, managerial, and technical work. Most of these occupations require substantial educational preparation (usually at the university, junior college, or technical institute level).[1]

Note: The above broad category is common to all the listed occupations but one. However, the division, group, and worker traits vary for each occupation, therefore a separate discussion and description for each occupation is necessary, and follows in subsequent paragraphs.

1. D.O.T., 1965, Volume II, Third Edition, pg. 33

5. The Architect (profess. & kind.) 001.081

This job is within the division of "Occupations in Architecture and Engineering (00 and 01) and within the job group of "Architectural Occupations (001)." The definitions of occupation, and the division and group in which it is classified, are given in attachment III. The Worker Traits Group characteristics (.081) are in the "Engineering Research and Design" group of the Engineering Area and are preeented in attachment IV. Noteworthy extractions from this attachment are the statements "A bachelor's degree in engineering is usually the minimum educational requirement for entrance into this field," and "most employers require either advanced graduate degree or significant experience on the basic engineering level for entry into research work." Also of import is the General Educational Development (GED) level of 6, which denotes the highest levels of logical and scientific thinking; application of knowledge of advanced mathematical and statistical techniques such as differential and integral calculus, factor analysis, and probability determination; and also the highest levels of comprehension and expression. (See Table 1 for explanation of GED and code details.)

6. Construction Engineer (profess. and kin.) 005.081

This job is also within the division of "Occupations in Architecture and Engineering (00-01)", as defined in attachment III. It is within the job group of "Civil Engineering Occupations (005.)". The definitions for this occupation, and for the group in which it is classified, are given in attachment V. The Worker Traits Characteristics (.081) are in the Engineering Area, the same as for the Architects. Please see related comment in preceding paragraph and attachment IV for a description of this Worker Traits Group. It is again noted that the GED code of 6 denotes the highest order of reasoning, mathematical, and language development.

7. Quality Control Technician (profess. and kin.) 019.281

This job also is included within the division of "Occupations in Architecture and Engineering (00-01)" defined in attachment III. It is within the job group of "Occupations in Architecture and Engineering, not elsewhere classified (019.)". The definitions for this occupation, and for the appropriate group, are presented in attachment VI. The appropriate work characteristics group (.281) is found in the Engineering Area; however, two of these worker trait groups are pertinent; they are "Technical Work, Engineering, and Related Fields" as presented in attachment VII, and the Drafting and Related Work" as presented in attachment VIII. Noteworthy are the following two extractions taken from each attachment respectively: "Graduation from a technical institute or the completion of specialized programs in junior colleges or universities is usually required for entry into this field," and "Graduation from vocational or technical high school is frequently the minimum educational requirement for entry into the field. Many employers require additional training, such as that received in a technical institute, junior or community college, ... or a college offering special 2-year programs. Training also may be obtained through 3- or 4 year apprenticeship programs .... courses include mathematics, physical sciences, mechanical drawing ..." Also of import is that the GED code of 4 and 5, denoting abilities to collect data, establish facts, solve practical problems; perform ordinary arithmetic, algebraic and geometric procedures in standard, practical applications; and in language development - are at levels lower than needed for the Architect or Construction Engineer.

8. Estimator (profess. and kind.) 160.288

This job has an alternate title of "Cost Estimator", and an undefined related title of "Construction Estimator". It logically falls within the division of "occupations in Administrative Specialization (16)". Perhaps somewhat strained in the case of those estimators who also need some technical skills and knowledge - is the group classification of "Accountants and Auditors (160.)". Please see Attachment IX for the job, division, and group definitions. The worker traits group may fall into the area of Engineering, "Industrial Engineering and Related Work", or in the Business Relations Area, "Accounting, Auditing, and Related Work". In case the engineering area applies, the following key statement re education pertains, "A bachelor's degree in engineering is usually the minimum educational requirement for entrance into this field. An increasing number of employers are requiring graduate degrees". See attachment X for more details. When it is determined the proper worker traits group is in the Business Relations Area, the most pertinent description is included with "Accounting, Auditing, and Related Work" group. Essentially, the basic framework for the necessary qualifications is found in this sentence, "A bachelor's degree in accounting and business administration is usually the minimum requirement for entrance into this work. Academic preparation should include courses in all phases of accounting and statistics, industrial and personnel management, marketing techniques, money and banking, investments and insurance." Please see attachment XI for further details.

9. Building Inspector (gov. service) 168.168

This job has two defined related titles of Electrical Inspector and Plumbing Inspector. The definitions for all of these titles are found in attachment XII. (In addition, the Building Inspector (insurance) 168.287 may be applicable, therefore its definition is included in attachment XI.) These jobs fall in the division of "Occupations in Administrative Specialization (16)," and the job group of "Inspectors and Investigators, Managerial and Public Service (168.)." The definitions for this division and group are presented in attachment XIII. When this worker trait group (.168) is in the Business Relations Area, the group is titled "Managerial Work," and a key statement of entry qualifications is: "Most of the larger employers consider only those individuals who are recent college graduates. They look for an educational background consisting of appropriate personnel, vocational business, merchandising or similar coursework, and then provide their new employees with management-trainee programs...." Please see appendix XIV for further details of this worker traits group under the Business Relations Area of Work. On the other hand, should the particular job indicate the Worker Trait Group is more applicable in the Engineering Area under the "Engineering, Scientific, and Technical Coordination" group, the work and qualification details in Appendix XV are pertinent. A key sentence here is "The minimum of a bachelors degree in the occupational specialty is usually required for entry, with many employers requiring education at the graduate level." (Underlined by writer). However, the most likely appropriate area is Investigating, where the "Investigating, Protecting, and Related Work" group applies. The key educational qualifications notes are "High school graduation is a prerequisite, in some cases, a college degree is required. Rigid examinations are required in most cases." See attachment XVI for details.

10. Contractor (construction) 182.168

This job has a number of defined related titles such as: Roadmaster (r.r.trans.); Superintendent, Concrete-mixing Plant (construction; Superintendent, Construction (const.) which is sometimes called Job Superintendent, (also some related but undefined titles are Mason Superintendent and Superintendent, Pipe-Line Construction); Superintendent, Maintenance of Way (r.r. trans.), a related title is Division Engineer; and finally, Supervisor, Bridges and Buildings (r.r. trans.). The definitions of the base title and selected related titles are included in attachment XVII. The base title of Contractor is within the division of "Managers and Officials, not elsewhere classified, (18)" and falls within the job group of "Construction Industry Managers and Officials (182)." The definitions for the division and group are found in attachment XVIII. The worker trait groups (.182) that are applicable are in two areas; One is the Business Relations Area "Managerial Work Group" (see attachment XIV) a key statement for entry qualifications, in this case is "Most of the larger employers consider only those individuals who are recent college graduates. They look for an educational background consisting of appropriate personnel, vocational, business, merchandising or similar coursework, and then provide their new employees with management-trainee programs...." Also, applicable is when if the job falls within the "Engineering, Scientific and Technical Coordination Work" group of the Engineering Area. (Please see attachment XV for details in this case.) As stated for the Building Inspector, a key sentence here is "The minimum of a bachelors degree in the occupational specialty is usually required for entry, with many employers requiring education at the graduate level" (Underlined by writer).

11. Construction Inspector (cont.) 182.287

This job also has a number of defined related titles which include, Building-Construction Inspector, Ditch Inspector, Highway Inspector, Masonry Inspector, Reinforced Concrete Inspector, Rivet Inspector, Rod Inspector, Structural-Steel Inspector and Tunnel-Headng Inspector. An undefined related title is Manufacturing-Process-and-Product Inspector. The definitions for these titles are found in attachment XIX. This basic job, like the contractor, falls within the division of "Managers and Officials, not elsewhere classified, (18)" and is within the job group of "Construction Industry Managers and Officials, (182)." The definitions for this division and group are found in attachment XVIII. The Worker Traits Characteristics group is in the "Investigating, Inspecting, and Testing" area and is titled "Appraising and Investigating Work (.287)." The general level of qualification is typified by this statement, "Entry is usually achieved by a record of successful technical preparation and/or experience in lower level positions which has enabled the individual to acquire a complete working knowledge of the field of endeavor under consideration." A GED level of 4 is listed first and, there is no mention of college degree requirements; this indicates that formal college educational qualifications are not essential. For more details please see attachment XX.

12. Estimating Engineer (profess. and kin.) (no code)

This term is common to a number of jobs and therefore it is not coded. The appropriate definition is:

> Estimating engineer.... A term applied to one who estimates total cost of specified project, such as building or roads.[2]

The most applicable coded occupation within this term, is the Estimator 160.288 (cost estimator). It is discussed in paragraph 8 above.

2. D.O.T. 1965, Vol. I, Third Edition, pg. 255.

13. Salesman, Building and Construction Equipment and Supplies (wholesale trade) 276.358.

The definition for this job is short and straightforward:

> Sells building materials, equipment and supplies such as heating or air-conditioning equipment, building insulation, bricks or lumber, plumbing fixtures, and roofing, utilizing knowledge of building construction and ability to read blueprints. (Performs other duties common to all salesmen such as visits, displays, calls, collects or contracts.)[3]

This job has a wide variety of related titles; some selected key ones are: Salesman- Construction Machinery, Hardware Supplies, Material-Handling Equipment, Safety Equipment, Welding Equipment. The appropriate division "(27) Salesmen and Salespersons, Commodities" is defined simply as:

> This division includes occupations concerned with selling commodities when knowledge of the commodities sold is required.[4]

The group "(276) Salesmen and Salespersons, Industrial, Construction, Mining, and Drilling Equipment and Supplies" likewise has a simple definition as follows:

> This group includes occupations concerned with selling construction machinery, such as steam shovels, bulldozers, and concrete mixers; building equipment, materials, and supplies, such as heating equipment and plumbing fixtures; and industrial machinery and equipment.[5]

The Worker Traits Characteristics group .358 is found in the Merchandising Area in the "Demonstration and Sales Work" group. The key to educational development is the statement "Employers will usually require the minimum of a high school education, with many requiring a college background or night school credits. At the college level, courses in business administration, marketing, and related areas, will give the individual excellent preparation." Please see attachment XXI for more worker trait details.

3. D.O.T. 1965, Vol. I, Third Edition, pg. 616
4. D.O.T. 1965, Vol. II, Third Edition, pg. 64
5. Ibid, pg. 65

14. Purchasing Management Occupations.

In the search for occupational information within the work areas of this report, it was determined that a possibility exists for occupations within the Purchasing Management Occupations group to be considered as secondary but still applicable. The definition follows:

> This group includes occupations concerned with negotiating and contracting for the purchase of equipment, products, and supplies for industrial plants, utilities, governmental units, or similar establishments, and the purchasing of merchandise for resale; determining quality to be purchased, costs, delivery dates, contract conditions, sources of supply, and taking inventories.[6]

Some of the pertinent occupational titles are:

Administrator, Contract and Other	162.118
Broker (ret. tr.; whole. tr.)	162.158
Purchase-Price Analyst (profess. & kind.)	162.188

Definitions for these occupations are not included in this report. They may be found in the alphabetical arrangement of Volume I of the D.O.T.

15. Supervisory Work (crafts) (... Manufacturing... Construction... and Related Activities)

In any discussion of the higher levels of technical occupations, the broad field of work activities which involve supervising and coordinating the activities of other workers is pertinent. Of course, this may occur in any of a large number of industries or wide range of occupational groupings. However, a good idea of the common qualifications needed for crafts supervisory work personnel can be obtained from a review of two work trait characteristics groups: namely, Supervisory Work .130 thru .134 and .137; and .138 in the crafts area. The former group requires skill in the appropriate trade or craft, and the mastery of its tools and skills is of paramount importance. In the case of .138, entrants are selected from outstanding personnel in the pertinent field

6. D.O.T. 1965, Vol. II, Third Edition, pg. 47

of work and experience in more than one facet of work is generally needed. In both cases, completion of technical courses are assets. Also, the formal General Educational Requirements are not as high as are the Specific Vocational Preparation needs in either case. See attachments XXII and XXIII for further worker traits details.

16. Summary of Key General Educational Development, Specific Vocational Preparation and Aptitudes Requirements.

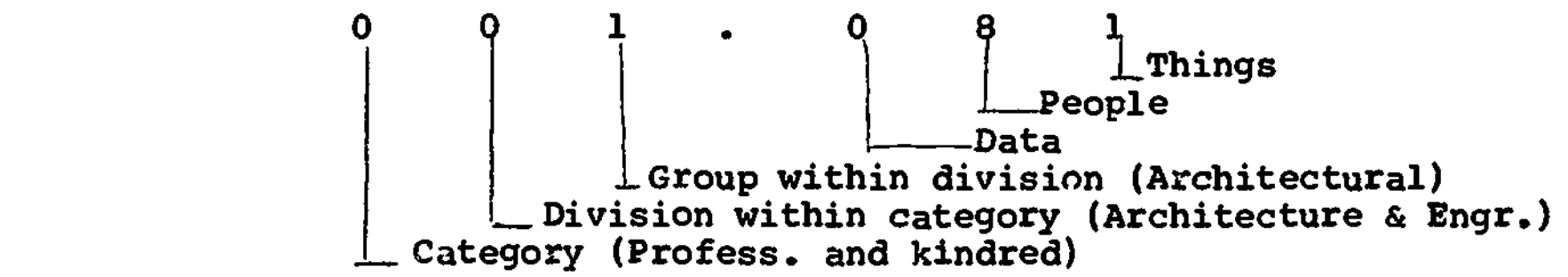
As stated in the Introduction, a knowledge of occupations and the education, qualifications, and aptitudes of those who would fill them, is essential in determining the need for and objectives of technical educational programs. Table IV was designed to provide a convenient resume' of the occupations selected for review in this study. However, the full definitions of each occupation, together with the category, division and group in which each is classified; plus the details in the appropriate worker trait group, should all be carefully examined before final judgements are made.

ATTACHMENT I

Extract from D.O.T. 1965 Vol. I (pgs. xv-xx)

OCCUPATIONAL GROUP ARRANGEMENT
(Six digit code)

Example of code 001.081 (Architect)



The nine occupational categories are: (1st digit)

1	Professional, technical and managerial occupations	6	Machine trades occupations
2	Clerical & sales occupations	7	Bench work occupations
3	Service occupations	8	Structural work occupations
4	Farming, fishery, forestry, & related occupations	9	Miscellaneous occupations
5	Processing occupations		

* * *

The job relationships and levels of complexity are: (last three digits)

DATA (4th digit)	PEOPLE (5th digit)	THINGS (6th digit)
0 Synthesizing	0 Mentoring	0 Setting-Up
1 Coordinating	1 Negotiating	1 Precision Working
2 Analyzing	2 Instructing	2 Operating-Controlling
3 Compiling	3 Supervising	3 Driving-Operating
4 Computing	4 Diverting	4 Manipulating
5 Copying	5 Persuading	5 Tending
6 Comparing	6 Speaking-Signaling	6 Feeding-Offbearing
7, 8 No significant relationship	7 Serving	7 Handling
	8 No significant relationship	8 No significant relationship

ATTACHMENT II

Extract from D.O.T. 1965 Vol. I, (pgs. xviii thru xx)

WORKER TRAITS ARRANGEMENT

Jobs are grouped according to some combination of required general educational development (GED), specific vocational preparation (SVP), aptitudes (Apt), interests (Int.), temperaments (Temp.), and physical demands (Phys. Dem.). Each of these traits is registered by use of a code in what is known as a "Qualifications Profile" for each of 114 worker trait groups. Narrative information and a listing of occupations which require these qualifying factors in common are provided for each group.

The 114 trait groups are organized within the following 22 broad areas of work:

Art
Business Relations
Clerical Work
Counseling, Guidance and Social Work
Crafts
Education and Training
Elemental Work
Engineering
Entertainment
Farming, Fishing and Forestry
Investigating, Inspecting, and Testing
Law & Law Enforcement
Machine Work
Managerial & Supervision
Mathematics & Science
Medicine & Health
Merchandising
Music
Personal Service
Photography & Communications
Transportation
Writing

Within each of the above areas of work there are several worker trait groups. For example, the Engineering area contains the following groups:

.081	Engineering Research and Design
.151	Sales Engineering
.168	Engineering, Scientific & Tech. Coordination
.181 .281	Drafting & Related Work
.181 .281	Tech. Work, Eng'g & Related Work
.187	Engineering & Related Work
.188 .288	Indus. Eng'g. & Related Work
.188 .288	Surveying, Prospecting, and Related Work
.188 .288	Technical Writing and Related Work

The numbers refer to the last three digits of the 6-digit occupational codes, (e.g. all jobs in engineering R & D have code numbers ending in .081, and all jobs in Industrial Engineering have numbers ending in either .188 or .288).

ATTACHMENT III

DEFINITIONS OF
JOB, DIVISION, AND OCCUPATIONAL GROUP FOR ARCHITECT

Job

ARCHITECT (profess. & kin.) 001.081. Plans and designs private residences, office buildings, theaters, public buildings, factories, and other structures, and organizes services necessary for construction: Consults with client to determine size and space requirements, and provides information regarding cost, design, materials, equipment, and estimated building time. Plans layout of project, and integrates structural, mechanical, and ornamental elements into unified design. Prepares sketches of proposed project for client. Writes specifications, and prepares scale and full size drawings and other contract documents for use of building contractors and craftsmen. May specialize in a particular type of structure or project. May confer with other consultants to develop feasibility studies, financial analyses and arrangements, site selection, and land assembly.[1]

Division

00-01 OCCUPATIONS IN ARCHITECTURE AND ENGINEERING. This division includes occupations concerned with the practical application of physical laws and principles of engineering and/or architecture for the development and utilization of machines, materials, instruments, structures, processes, and services. Typical specializations are research, design, construction, testing, procurement, production, operations, and sales. Also includes preparation of drawings, specifications, and cost estimates, and participation in verification tests.[2]

Group

001. ARCHITECTURAL OCCUPATIONS. This group includes occupations concerned with the design and construction of buildings and related structures, and/or floating structures, according to aesthetic and functional factors.[3]

[1]D.O.T. 1965. Vol I pg 18
[2]D.O.T. 1965. Vol II pg 33
[3] Ibid

ATTACHMENT IV

WORKER TRAITS

ENGINEERING AREA
ENGINEERING RESEARCH AND DESIGN GROUP

.081

Work Performed

Work activities in this group primarily involve using and adapting earth substances, properties of matter, natural sources of power, and physical forces to satisfy human needs and desires. Typically, workers are engaged in conducting analyses and experiments of materials and systems by application of known laws and relationships in conceiving and designing new structures, machines, tools, precision instruments, and other devices; in devising and constructing cooling, heating, lighting, communication, transportation, and other productive systems; in developing the most practical forms of new techniques, processes, and products; in performing structural, functional, and compositional tests of materials and parts; and in preparing technical reports of investigations.

Worker Requirements

An occupationally significant combination of: Ability to learn and apply basic engineering principles and methods; good visual acuity with respect to graphic representations; creative talent or imagination; ability to perceive or visualize spatial relationships of plane and solid objects; logical mind; organizational ability; and facility in mathematics.

Clues for Relating Applicants and Requirements

Level of attainment in language and mathematics as indicated by scores on aptitude tests and grades in educational courses.

Previous drawings or sketches produced, either freehand or mechanical.

Kind of literature read (whether scientifically or technically oriented).

Clear, coherent verbal expression.

Interest in scientific and technological developments.

Training and Methods of Entry

A bachelor's degree in engineering is usually the minimum educational requirements for entrance into this field. However, some draftsmen and engineering technicians having extensive experience together with some college-level training may qualify for entry.

Most employers require either advanced graduate degrees or significant experience on the basic engineering level for entry into research work.

Students interested in engineering should acquire a strong background in mathematics and the physical sciences.[1]

[1]D.O.T. 1965 Vol II pg 371

QUALIFICATION PROFILE

General Educational Development*: 6

Specific Vocational Preparation**: 8 7

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	1	1 2	1 2	1 2	2 3	4	3	3	3	5	4

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

ATTACHMENT V

DEFINITIONS OF
JOB AND OCCUPATIONAL GROUP FOR CONSTRUCTION ENGINEER

Job

CONSTRUCTION ENGINEER (profess. & kin.) 005.081. erecting engineer. Plans and designs details of structures, such as buildings, bridges, waterworks, drainage systems, and utility tunnels, and oversees their erection: Designs details of structure and writes materials and construction specifications. Estimates materials and labor costs. Oversees digging of excavations of building foundations, and raising of superstructures. Oversees erection of machinery, apparatus, towers, and hoists for handling of steel, concrete, and stone. Conducts tests of materials and machinery. May be designated according to project engineered as BUILDING-CONSTRUCTION ENGINEER (const.); CHIMNEY ENGINEER (const.); CIVIL ENGINEER, OIL FIELD; CIVIL ENGINEER, PIPE-LINE CONSTRUCTION.[1]

STRUCTURAL DESIGNER (profess. & kin.) Designs structures according to sketches formulated by ARCHITECT.

Division

00-01 OCCUPATIONS IN ARCHITECTURE AND ENGINEERING. (See Attachment III).

Group

005. CIVIL ENGINEERING OCCUPATIONS. This group includes occupations concerned with the design and construction of static structures, such as buildings, bridges, roads, harbors, airfields, dams, tunnels, and water supply and sewage systems. Frequently requires a knowledge of industrial trends, population growth, zoning laws, and State and local building codes and ordinances. Accessory techniques needed are those used in chemical, electrical, mechanical, and mining engineering. Typical specializations are construction; hydraulics; structures; purification plants; city planning; materials; and airport, railroad, irrigation, sewage disposal, sanitary, and highway engineering.[2]

[1]D.O.T. 1965 Vol I pg 158
[2]D.O.T. 1965 Vol II pg 34

ATTACHMENT VI

DEFINITIONS OF
JOB AND OCCUPATIONAL GROUP FOR QUALITY CONTROL TECHNICIAN

Job

QUALITY CONTROL TECHNICIAN (profess. & kin.) 019.281. Tests and inspects products at various stages of production process and compiles and evaluates statistical data to determine and maintain quality and reliability of products: Interprets engineering drawings, schematic diagrams, or formulas to arrive at specified quality and reliability standards. Selects products for tests at specified stages in production process, and tests for items, such as dimensions, performance, and mechanical, electrical, or chemical characteristics. Sets up and performs destructive and non-destructive tests on materials, parts, or products to measure performance, life, or material characteristics. Records test data using statistical quality control procedures and prepares data in graph or chart form. Evaluates data and writes summaries to validate or show deviations from existing standards. Suggests in written or oral form, modifications of existing quality or production standards to achieve optimum quality within limits of equipment capability. May specialize in any of following areas of quality-control engineering as design, incoming material, process control, product evaluation, inventory control, product reliability, research and development, and administrative application.[1]

Division

00-01 OCCUPATIONS IN ARCHITECTURE AND ENGINEERING. (See Attachment III.)

Group

019. OCCUPATIONS IN ARCHITECTURE AND ENGINEERING, not elsewhere classified. This group includes occupations, not elsewhere classified, concerned with the application of the practical and theoretical aspects of engineering.[2]

[1]D.O.T. 1965. Vol I, pg. 579

[2]D.O.T. 1965. Vol II, pg. 36

ATTACHMENT VII

WORKER TRAITS

ENGINEERING AREA
TECHNICAL WORK, ENGINEERING, AND RELATED FIELDS GROUP

.181 and .281

Work Performed

Work activities in this group primarily involve the application of engineering related and technical knowledge in direct support of the engineer. Typically, tasks performed are functional parts of engineering activities requiring the practical application of fundamental theory in such specialized areas as research, design, and development.

Worker Requirements

An occupationally significant combination of: Ability to learn and apply basic engineering and technical principles and methods; facility with mathematics and language; and spatial perception.

Clues for Relating Applicants and Requirements

Success in vocational and mathematical courses in high school.

Interest in current technological developments.

Subscriptions to engineering and technical magazines.

Training and Methods of Entry

Graduation from a technical institute or the completion of specialized programs in junior colleges or universities is usually required for entry into this field. A worker who has acquired the necessary knowledge of mathematics through apprenticeship or related programs also may find entry into this field.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 4 5

Specific Vocational Preparation**: 6 7

Aptitudes ***:	G	V	N	S	P	Q	K	F	M	E	C
	2	2	2	2	2	3	2	2	2	3	3
	3	3	3		3	3	3	3	3	4	4

*See Table I for explanation and code detail
**See Table II for explanation and code detail
***See Table III for explanation and code detail

[1]D.O.T. 1965 Vol II pg. 379

ATTACHMENT VIII

WORKER TRAITS

ENGINEERING AREA
DRAFTING AND RELATED WORK GROUP

.181 and .281

Work Performed

Work activites in this group primarily involve the translation of ideas, rough sketches, specifications, and calculations of engineers, architects, and designers into complete and accurate working plans for use in building or manufacturing.

Worker Requirements

An occupationally significant combination of: Ability and interest necessary to understand and apply technical knowledge and theoretical principles involved in drafting, engineering, mathematics, and related fields; ability to visualize spatial relationships, perceive slight differences in visual matter, and work with detail; and finger dexterity.

Clues for Relating Applicants and Requirements

Success in mechanical drawing and shop courses in high school.

Expressed preference for working around mechanical, architectural, or similar objects.

Demonstrated skill in drawing.

Training and Methods of Entry

Graduation from vocational or technical high school is frequently the minimum educational requirement for entry into the field. Many employers require additional training, such as that received in a technical institute, junior or community college, extension division of a university, correspondence school, or a college offering special 2-year programs. Training also may be obtained through 3- or 4-year apprenticeship programs or through on-the-job programs combined with part-time schooling. Courses include mathematics, physical sciences, mechanical drawing, standard methods of lettering, and tracing.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 4 5

Specific Vocational Preparation**: 7

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	2	3	2	1	2	3	2	2	3	5	4
				2			3	3			

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

[1]D.O.T. 1965 Vol II. pg. 377

ATTACHMENT IX

DEFINITIONS OF

JOB, AND OCCUPATIONAL DIVISION AND GROUP FOR ESTIMATOR

Job

ESTIMATOR (profess. & kin.) 160.288 cost estimator. Prepares cost and work completion estimates for engineering contract bids: Compiles itemized materials and price lists from blueprints and specifications. Itemizes equipment to be produced by company or to be purchased from outside sources. Computes cost estimates of raw materials, purchased equipment or subcontracted work and labor. Computes delivery dates from engineering proposals. May compute percentage profits and add to cost estimates to obtain bid price. May consult with engineering departments concerning cost problems. Usually specializes in area, such as construction, electrical equipment, or mechanical equipment. May be designated according to area of specialization as CONSTRUCTION ESTIMATOR.[1]

Division

16 OCCUPATIONS IN ADMINISTRATIVE SPECIALIZATIONS. This division includes occupations concerned with specialized administrative and managerial functions which are common to many types of organizations. (Managerial occupations which are peculiar to one or a few related types of organizations are included in Division 18.) In general, occupations included in the group listed below demand a knowledge of a particular function rather than a knowledge of the operations of an organization included in Division 18. Includes occupations which involve the more routine nonclerical duties or a combination of clerical and administrative work. Occupations involving clerical work exclusively in these fields are not included.[2]

Group

160. Accountants and Auditors. This group includes occupations concerned with examining, analyzing, and interpreting accounting records for the purpose of giving advice or preparing statements and installing or advising on systems of recording costs or other financial and budgetary data.[3]

[1]D.O.T. 1965 Vol I pg. 255

[2]D.O.T. 1965 Vol II pg. 46

3 Ibid

ATTACHMENT X

WORKER TRAITS

ENGINEERING AREA
INDUSTRIAL ENGINEERING AND RELATED WORK GROUP

.188 and .288

Work Performed

Work activities in this group primarily involve applying a knowledge of industrial organization and processes to insure the efficient utilization of machines, materials, and manpower. Typical activities include time, motion, and incentive studies; procedures and methods of planning; cost control; safety planning, plant layout; and operations research.

Worker Requirements

An occupationally significant combination of: Ability to learn and apply engineering principles and methods; organizational ability; facility with mathematics; clear verbal expression, and ability to perceive or envision relative paths or positions of stationary and moving objects.

Clues for Relating Applicants and Requirements

Success in pertinent college engineering courses.

Subscriptions to industrial magazines.

Expressed interest in working in industrial environment.

Training and Methods of Entry

A bachelor's degree in engineering is usually the minimum educational requirement for entrance into this field. An increasing number of employers are requiring graduate degrees. Some workers may be able to enter the field without a degree if they have an extensive background in some area related to industrial engineering in addition to some college-level training.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 5

Specific Vocational Preparation**: 7 8

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	1	1	1	2	2	3	4	4	4	5	5
	2	2	2	3	3						

*See Table I for explanation and code detail
**See Table II for explanation and code detail
***See Table III for explanation and code detail

[1]D.O.T. 1965, Vol II pg. 383

ATTACHMENT XI

WORKER TRAITS

BUSINESS RELATIONS AREA
ACCOUNTING, AUDITING, AND RELATED WORK GROUP

.188 and .288

Work Performed

Work activities in this group primarily involve the application of the principles of accounting, cost analysis, and statistical analysis to problems of fiscal management, auditing, and the like. Typically, workers are engaged in devising accounting systems and procedures; appraising assets and evaluating costing methods, investment programs, and monetary risks and rates; and preparing statistical tabulations and diagrams and financial reports, statements, and schedules for use by management.

Worker Requirements

An occupationally significant combination of: Ability to concentrate for long periods; good vacabulary and verbal expression; organizational ability; speed and accuracy in making numerical determinations; memory for detail; and the ability to understand the principles of accounting, statistics, and fiscal management.

Clues for Relating Applicants and Requirements

Level of attainment in language and mathematics as indicated by scores on aptitude tests and grades in educational courses.

Interest in working with numbers.

Interest in business activities.

Positions held (treasurer) in social and other organizations.

Training and Methods of Entry

A bachelor's degree in accounting and business administration is usually the minimum requirement for entrance into this work.

Adequate academic preparation should include courses in all phases of accounting and statistics, industrial and personnel management, marketing techniques, money and banking, investments, and insurance. Individuals with a degree qualify for many beginning jobs in budgeting, cost accounting, sales, or marketing, either in Government or private industry.

Positions entailing a degree of responsibility are usually reserved for those who have obtained a CPA (certified public accountant) certificate by passing rigorous examinations and meeting the educational and experience requirements prescribed by law in each State. Although most States require a college degree and 2 years of experience, requirements do vary and information on registration and certification should be obtained directly from the State board of accountancy in the State where the individual plans to practice.[1]

[1]D.O.T. 1965 Vol II pg. 252

QUALIFICATIONS PROFILE

General Educational Development *: 5

Specific Vocational Preparation**: 7 8

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	1	2	1	4	4	2	4	4	4	5	5
	2	1	2				3	3	3		

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

ATTACHMENT XII

DEFINITIONS OF JOBS FOR BUILDING INSPECTORS, ELECTRICAL INSPECTOR AND PLUMBING INSPECTOR

BUILDING INSPECTOR (gov. ser.) 168.168. Inspects buildings, issues permi s, and confers with contractors and property owners to enforce State and municipal building codes: Examines blueprints or specifications of new buildings or contemplated repairs of old ones for conformance with zoning ordinances and building codes. Inspects new buildings during construction to insure that footings, floor framing, completed framing, chimneys and stairways, and completed building meet zoning, fire, and safety regulations. Inspects old structures for structural and fire safety and warns owners to correct unsafe conditions. Interprets regulations and codes to builders and property owners and assists them in altering construction plans to meet established standards. Prepares reports of types and cost of construction within his jurisdiction. Attends hearings and presents views on changes in zoning regulations. Reviews requests for and issues building permits. Maintains records of permits granted and building inspected. Amends building code in compliance with legislative changes.

ELECTRICAL INSPECTOR (gov. ser.) Inspects electrical installations during construction or remodeling of buildings for conformance to municipal building and electrical codes. Issues permits to electrical contractors and certifies completed jobs to public utility company. May examine television antenna installations for compliance with safety regulations.

PLUMBING INSPECTOR (gov. ser.). Inspects plumbing installations and water and sewer connections and recommends changes in accordance with sanitary standards and municipal codes: Determines locations for water and sewer connections and approves extensions, using city maps. May compute fees for street-opening permits issued to utility companies. Licenses PLUMBERS (const.) who pass qualifications. May prepare and conduct examinations.[1]

BUILDING INSPECTOR (insurance) 168.287. Inspects buildings to determine fire insurance rates: Examines building for type of construction, condition of roof, and fireproofing. Determines risk represented by adjoining buildings, by nature of business, and building contents. Determines availability of fireplugs and firefighting equipment. Completes inspection report. May compute insurance rates.[2]

[1] D.O.T. 1965, Vol I pg. 82

[2] Ibid

ATTACHMENT XIII

DEFINITIONS OF OCCUPATIONAL DIVISION AND GROUP FOR BUILDING INSPECTORS

Division

16 OCCUPATIONS IN ADMINISTRATIVE SPECIALIZATIONS. This division includes occupations concerned with specialized administrative and managerial functions which are common to many types of organizations. (Managerial occupations which are peculiar to one or a few related types of organizations are included in Division 18.) In general, occupations included in the group listed below demand a knowledge of a particular function rather than a knowledge of the operations of an organization included in Division 18. Includes occupations which involve the more routine nonclerical duties or a combination of clerical and administrative work. Occupations involving clerical work exclusively in these fields are not included.[1]

Group

168. INSPECTORS AND INVESTIGATORS, MANAGERIAL AND PUBLIC SERVICE. This group includes occupations concerned with examining people, animals, plantlife, products, and establishments, in the capacity of city, county, Federal, or private inspector or investigator, for enforcement of health, safety, and other regulatory laws.[2]

[1] D.O.T. 1965 Vol II pg. 46

[2] Ibid pg. 48

ATTACHMENT XIV

WORKER TRAITS

BUSINESS RELATIONS AREA
MANAGERIAL WORK GROUP

.168

Work Performed

Work activities in this group primarily involve organizing and coordinating the functions of a unit, department, or branch of an organization or establishment. Certain activities are concerned with the managing of one organization that is part of a larger chain or of an establishment of limited size and diversification. Also included is the planning and coordination of a singular program, project, or other organized endeavor, either public or private, originated for a specific purpose.

Worker Requirements

An occupationally significant combination of: Ability to plan, initiate, and execute programs; ability to understand, interpret, and apply procedures and directives; numerical facility to analyze and use statistics and maintain production and inventory controls and records; leadership qualities; verbal facility; and the ability to relate to people in order to motivate and direct employees and to maintain good employer-employee and customer relationships.

Clues for Relating Applicants and Requirements

Successful experience in applicable work field at lower levels.

Academic preparation in pertinent coursework, such as business management.

Leadership qualities as indicated by elective offices held in academic or community environment.

Expressed interest in assuming management responsibilities.

Training and Methods of Entry

Promotion from within is the most common method employed for filling positions in this group. In some cases, however, employers desire new ideas, new techniques, new procedures, and new personalities, and recruit from outside the organization.

Most of the larger employers consider only those individuals who are recent college graduates. They look for an educational background consisting of appropriate personnel, vocational, business, merchandising, or similar coursework, and then provide their new employees with management-trainee programs which usually entail a combination of special training seminars and actual on-the-job training.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 4 5

Specific Vocational Preparation**: 6 7 8

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	2	2	3	4	4	2	4	4	4	5	5
	1	1	2								

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

[1]D.O.T. 1965 Vol II pg. 245

ATTACHMENT XV

WORKER TRAITS

ENGINEERING AREA
ENGINEERING, SCIENTIFIC, AND
TECHNICAL COORDINATION WORK GROUP

.168

Work Performed

Work activities in this group primarily involve planning and coordinating engineering, scientific, and technical programs and activities. Typically, work occurs in a scientific or industrial environment and involves formulating policies and standards, planning and directing projects and programs, and monitoring personnel.

Worker Requirements

An occupationally significant combination of: Intellectual capacity to comprehend and apply engineering, scientific, or technical principles and methods; organizational ability to plan, formulate, and carry out programs and policies; verbal facility to deal effectively with personnel; and mathematical ability.

Clues for Relating Applicants and Requirements

Successful background in appropriate field.

Expressed desire to work with people.

Clear, coherent, verbal expression.

Interest in scientific and technological developments.

Training and Methods of Entry

The minimum of a bachelor's degree in the occupational specialty is usually required for entry, with many employers requiring education at the graduate level. The worker usually enters the job by virtue of successful performance, length of experience, and demonstrated ability to organize complex activities and deal with people.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 5 6

Specific Vocational Preparation**: 7 8 9

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	2	2	2	2	2	3	4	4	4	5	5
	1	1	1	3	3	4	3	3	3	4	4

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

[1]D.O.T. 1965 Vol II pg. 375

ATTACHMENT XVI

WORKER TRAITS

INVESTIGATING AREA
INVESTIGATING, PROTECTING, AND RELATED WORK GROUP

.168 and .268

Work Performed

Work activities in this group primarily involve conducting investigations and examinations designed to determine or insure compliance with statutes, ordinances, and similar regulations affecting the public interest and welfare; and otherwise enforcing laws or regulations designed to protect the citizenry from harm to themselves or their property.

Worker Requirements

An occupationally significant combination of: Capacity to acquire knowledge of laws and regulations and learn investigative procedures and methods; verbal ability to converse with people at varied levels; tact and diplomacy in order to establish rapport with people; ability to perform under stress and maintain equanimity in the face of danger or resistance; organizational ability in order to gather and evaluate facts; an assurance of manner that will gain confidence and respect; and physical stamina.

Clues for Relating Applicants and Requirements

Expressed preference for public-contact work.

Experience as safety-patrol guide after school.

Success in pertinent academic subjects, such as criminology.

Personal reading preference, such as detective stories and legal biographies.

Training and Methods of Entry

A high school education is a prerequisite for entry into a majority of positions in this group. In some cases, college education is required. The educational requirement depends upon the responsibility of the job. In most instances, individuals are required to pass rigid entrance exams and then undergo intensive formal training followed by a period of on-the-job breaking in under the tutelage of an experienced worker.[1]

QUALIFICATIONS PROFILE

General Educational Development*:						5		4				
Specific Vocational Preparation**:						7		5		6		
Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C	
	2	2	3	4	4	4	4	4	4	5	4	
	3	2	3		3	3					5	
			4			2						

*For explanation and code details see Table I
**For explanation and code details see Table II
***For explanation and code details see Table III

[1]D.O.T. 1965 Vol II pg. 416

ATTACHMENT XVII

DEFINITIONS OF JOBS FOR CONTRACTOR; SUPERINTENDENT, CONSTRUCTION; AND SUPERVISOR, BRIDGES AND BUILDINGS

CONTRACTOR (const.) 182.168. Contracts to perform construction work (scope of work and responsibility of contractor being defined in contract and building specifications). Usually makes own estimate of cost of work, and submits bid. Makes arrangements with banks or other parties to provide any necessary financial assistance. Purchases materials for construction. Supervises work directly or through subordinate supervisors.[1]

SUPERINTENDENT, CONSTRUCTION (const.) 182.168, superintendent, job. Directs activities of workers concerned with construction of buildings, dams, highways, pipelines, or other construction projects: Studies specifications to plan procedures for construction on basis of starting and completion times and staffing requirements for each phase of construction, based on knowledge of available tools and equipment and various building methods. Assembles members of organization (foreman, clerical, engineering, and other workers) at start of project. Orders procurement of tools and materials to be delivered at specified times to conform to work schedules. Confers with and directs supervisory personnel and subcontractors engaged in planning and executing work procedures, interpreting specifications, and coordinating various phases of construction to prevent delays. Confers with supervisory personnel and labor representatives to resolve complaints and grievances within work force. Confers with supervisory and engineering personnel and inspectors and suppliers of tools and materials to resolve construction problems and improve construction methods. Inspects work in progress, materials used and costs, and adjusts work schedules as indicated by reports. May direct workers concerned with major maintenance or reconditioning projects for existing installations. May be designated according to project supervised as SUPERINTENDENT, PIPE-LINE CONSTRUCTION; or type of work coordinated as MASON SUPERINTENDENT.[2]

SUPERVISOR, BRIDGES AND BUILDINGS (r. r. trans.) 182.168. Supervises and coordinates, through subordinates, activities of workers engaged in construction and repair of railroad structures, such as bridges, culverts, tunnels, and buildings: Plans work schedules for construction and maintenance projects. Interprets and explains plans for construction of new projects. Insures that workers are supplied with tools, materials, and equipment for completion of construction or maintenance projects. Insures that building codes and railroad construction specifications are followed. Dispatches men and equipment to scenes of accidents to repair damaged bridges, tunnels, or right-of-way. Investigates reports of damage or accidents to determine and correct cause, if attributable to faulty construction or maintenance. Inspects right-of-way and structures to detect need for repairs. Prepares reports of man-hours, equipment, and materials used to complete each construction or maintenance project. May cooperate with engineering department to develop plans for new projects.[3]

[1] D.O.T. 1965 Vol I pg. 161
[2] Ibid pg. 709
[3] Ibid pg. 713

ATTACHMENT XVIII

DEFINITIONS OF
OCCUPATIONAL DIVISION AND GROUP FOR
MANAGERS AND OFFICIALS (N.E.C.)

Division

18 MANAGERS AND OFFICIALS, not elsewhere class. This division includes managerial occupations which require a knowledge of the management and operations of an organization, rather than a scientific, technical, or administrative specialty. Generally speaking, these are "line management" occupations in contrast to the "staff" and "specialist" occupations included in Division 16. Also includes such occupations as officers and executives of government, corporations, and nonprofit organizations; general managers; general foremen; and department heads and their assistants in industrial establishments. Many general administrators and managers are former scientific, professional, and administrative specialists. Care must be taken to classify occupations according to duties and requirements rather than an incumbent's education or experience. Occupations in the administration of a scientific, technical, or professional activity must be carefully scrutinized to determine whether they are concerned primarily with technical supervision or with general management or specialized administrative work.[1]

Group

182. CONSTRUCTION INDUSTRY MANAGERS AND OFFICIALS. This group includes managerial occupations concerned with construction of dwellings, office buildings, stores, farm buildings, bridges, roads, and similar structures; plumbing, painting, electrical work and carpentry.[2]

[1]D.O.T. 1965 Vol II pg. 49

[2] Ibid

ATTACHMENT XIX

DEFINITIONS OF JOBS FOR CONSTRUCTION INSPECTOR, BUILDING CONSTRUCTION INSPECTOR, HIGHWAY INSPECTOR, AND STRUCTURAL STEEL INSPECTOR

CONSTRUCTION INSPECTOR (const.) 182.287. Inspects and oversees construction of bridges, buildings, dams, highways, and other types of construction work to insure that procedures and materials comply with specifications: Measures distances to verify accuracy of dimensions of structural installations and layouts. Verifies levels, alinement, and elevation of installations, using surveyor's level and transit. Observes work in progress to insure that procedures followed and materials used conform to specifications, preparing samples of unapproved materials for laboratory testing. Examines workmanship of finished installations for conformity to standard and approves installation. Interprets blueprints and specifications for CONTRACTOR and discusses deviations from specified construction procedures to insure compliance with regulations governing construction. Records quantities of materials received or used during specified periods. Maintains daily log of construction and inspection activities and compares progress reports. Computes monthly estimates of work completed and approves payment for contractors. Prepares sketches of construction installations that deviate from blueprints and reports such changes for incorporation on master blueprints.

BUILDING-CONSTRUCTION INSPECTOR (const.). Oversees and inspects construction of buildings for conformance to blueprints: Inspects materials used in reinforced concrete, masonry, structural steel, electrical, and mechanical installations, such as plumbing, heating, and ventilating materials and equipment, for conformance to specifications. Measures distances to verify dimensions of concrete forms and layout of reinforcing steel, partitions, and electrical and mechanical installations. Verifies level and plumbness of foundations, walls, columns and steel structures with spirit level and plumb line. Examines workmanship of finish work, such as trim, cabinetwork, painting, tile, and floors for conformance to specifications.

DITCH INSPECTOR (const.). Inspects oil or gas pipeline ditches and earth borings, to verify depth, width, and alinement in accordance with contract specifications: Sights along ditch line stakes to verify alinement of trenches and earth borings. Verifies depth of trench, using rule or tape. Examines bottom of trench for rocks or other hard objects which might damage coating on pipeline.

HIGHWAY INSPECTOR (const.) inspector; road inspector. Inspects materials used in construction of highways and oversees workmanship to insure compliance with specifications: May specialize in phases of construction, such as bridge construction, flexible base, asphaltic pavement, concrete pavement, culverts, and small drainage structures. May observe and record structural tests on manufacturing products, such as concrete pipe, prestressed reinforced concrete beams, galvanized metal pipe, and aluminum bridge rail posts and be designated MANUFACTURING - PROCESS - AND - PRODUCT INSPECTOR.

MASONRY INSPECTOR (const.). Inspects materials and work of Bri -layers or Stonemasons to detect flaws and errors. Examines and tests brick or stone for color and flaws. Verifies line and level of footings and measures joints between bricks or stones. Inspects wall with level and plumb bob to determine whether wall is level and plumb.

REINFORCED - CONCRETE INSPECTOR (const.). Inspects concrete forms, reinforcing steel, and concrete to see that they conform to specifications; Checks dimensions of concrete forms and the lay-out of reinforcing steel, Performs tests in concrete and observes pouring to insure that forms and reinforcing steel retain their original position and shape. Verifies level of concrete in form and sets time for removing forms.

RIVET INSPECTOR (const.) moocher. Inspects driven rivets and welded joints and seams of steel structures to verify conformance to specifications: Taps rivet heads with hammer to detect loose rivets. Marks defective rivets with chalk and orders their replacement. Examines welded joints and seams for cracks, cold welds, and excessive welds, using flashlight and magnifying glass. Verifies welded units for conformance with blueprint, using measuring devices, such as squares, protractors, and rulers. Inspects members of riveted structure for strain caused by misalinement of rivet holes or improperly driven rivets. May inspect size of rivets and rivet holes before riveting.

ROD INSPECTOR (const.) reinforcing-steel inspector. Inspects reinforcing steel to make certain that the quantity and placement of reinforcing steel in a construction project complies with the specifications set forth in the blueprints.

STRUCTURAL-STEEL INSPECTOR (const.). Inspects structural-steel framework and verifies it with specifications: Checks steel with shipping lists and inspects steel for damage caused by shipping. Supervises erection, bolting-up, and riveting operations. May inspect rivets (RIVET INSPECTOR).

TUNNEL-HEADING INSPECTOR (const.) tunnel inspector. Inspects construction of tunnels to insure conformance to specifications: Interprets blueprints and specifications for SUPERINTENDENT, CONSTRUCTION. Verifies alinement and grade of tunnel excavations, using surveying instruments. Inspects installation of tunnel shield segments, elevators, gates, and tunnel lining forms for conformity to specifications, using rule or tape to verify layout dimensions. May set grade stakes to guide construction and run cross-sections to compute volume of excavation, using surveyor's instruments.

[1]D.O.T. 1965, Vol I, pg. 159-34-

ATTACHMENT XX

WORKER TRAITS

INVESTIGATING, INSPECTING AND TESTING AREA
APPRAISING AND INVESTIGATING WORK GROUP

.187; .284 and .287

Work Performed

Work activities in this group primarily involve applying a knowledge of the principles and techniques pertinent to such specific fields as mining, construction, merchandising, and sanitation in order to appraise the worth of or investigate the condition or state of objects, systems, activities, and procedures. Also involves verifying compliance with laws and standards and recommending remedial action.

Worker Requirements

An occupationally significant combination of: Intelligence and verbal facility to understand, learn, and apply concepts and procedures; numerical skill to apply mathematics to the investigation of specific situations; spatial aptitude to visualize three-dimensional forms and relationships as represented in blueprints; and form perception to distinguish details in objects or drawings.

Clues for Relating Applicants and Requirements

Successful experience of a technical or quasi-technical nature in specific fields.

Preference for analytical work as demonstrated by work history and interests.

Demonstrated ability and willingness to accept decision-making responsibility.

Training and Methods of Entry

Entry is usually achieved by a record of successful technical preparation and/or experience in lower level positions which has enabled the individual to acquire a complete working knowledge of the field of endeavor under consideration.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 4 5

Specific Vocational Preparation**: 8 7 6

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	2	2	2	3	3	4	4	4	4	5	4
		3	3		2	3					3

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

[1]D.O.T. 1965 Vol II pg. 420

ATTACHMENT XXI

WORKER TRAITS

MERCHANDISING AREA
DEMONSTRATION AND SALES WORK GROUP

.258; .358; and .458

Work Performed

Work activities in this group primarily involve using persuasive techniques to sell and/or demonstrate materials, products, or services, drawing upon some knowledge relevant to items or services sold. Some of these activities occur in retail, wholesale, or similar establishments, while some involve soliciting by telephone, going from door to door, or making appointments and visiting the customer to make sales. Demonstrations are made in many of the selling situations. Some demonstrating situations, however, do not involve making sales.

Worker Requirements

An occupationally significant combination of: Facility with words; ability to become familiar with the objects, materials, or services involved; numerical facility and perception for clerical detail; drive and initiative; diplomacy and tact in dealing with people; and powers of persuasion.

Clues for Relating Applicants and Requirements

Good grooming and attire.

Expressed preference for public-contact work.

Casual sales experience.

Poise and good vocabulary in an interview.

Training and Methods of Entry

Employers will usually require the minimum of a high school education, with many requiring a college background or night school credits. At the college level, courses in business administration, marketing, and related areas will give the individual excellent preparation. Many larger organizations have training programs designed to develop the worker's ability as he learns.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 4 5

Specific Vocational Preparation**: 2 3 4 5 6

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	3	3	4	3	3	4	3	3	3	5	2
	2	2	3	4	4	3	4	4	4		3
				2							5

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

[1]D.O.T. 1965, Vol II pg. 488

ATTACHMENT XXII

WORKER TRAITS

CRAFTS AREA
SUPERVISORY WORK GROUP (Farming, Logging, Manufacturing, Processing, Construction, Transporcation, and Related Activities)

.130; .131; .132; .133; .134; and .137

Work Perfo:rmed

Work activities in this group primarily involve supervising and coordinating the activities of workers in such fields as manufacturing, processing, construction, and transportation. Skill in the particular field of work and in the use of materials, tools, and machines involved is essential because workers are frequently required to participate in the work of their subordinates.

Worker Requirements

An occupationally significant combination of: Ability to understand, learn, and apply the techniques appropriate to the field of work supervised; ability to communicate this knowledge to the persons supervised; ability to demonstrate efficient technical "know-how" or work along with subordinates in difficult phases of a job; initiative and drive, and ability to maintain harmony in working relationships and among workers.

Clues for Relating Applicants and Requirements

Good physical condition.

Success as worker in applicable trade or craft.

Vocational training in school.

Desire for recognition.

Leadership in school, organiz ation, or community activities.

Training and Methods of Entry

Individuals usually enter into supervisory work of this type from the worker ranks since skill in the appropriate trade or craft and mastery of its tools and machines is of paramount importance. Training may be finished by the employer either on the job or in formalized courses. It also may be procured by the employee on his own initiative in technical or other appropriate schools.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 4

Specific Vocational Preparation**: 8 7

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	3	3	3	3	3	4	3	3	3	5	4
				2	2			2	2	3	5

[1]D.O.T. 1965, Vol II pg. 299

ATTACHMENT XXIII

CRAFTS AREA
SUPERVISORY WORK GROUP (Farming, Logging, Manufacturing, Processing, Construction, Transportation, and Related Activities)

.138

Work Performed

Work activities in this group primarily involve supervising and coordinating the activities of groups of workers representing different occupations in such fields as manufacturing, farming, logging, processing, construction, and transportation. Planning and supervision are the primary concerns, and the ability to perform the work of subordinates is not essential.

Worker Requirements

An occupationally significant combination of: Ability to understand and apply techniques appropriate to the type of work supervised; organizational ability to plan and assign duties to subordinates; and ability to maintain harmony in working relationships and among workers.

Clues for Applicants and Requirements

Interest in work of industrial nature.

Demonstrated success in nonsupervisory jobs.

Vocational training in school.

Leadership in school or organizations.

Training and Methods of Entry

Entrants into this type of work are commonly selected from outstanding personnel in the pertinent field of work. Experience in more than one facet of the work involved and completion of appropriate technical courses enhance entry prospects.[1]

QUALIFICATIONS PROFILE

General Educational Development*: 4 5

Specific Vocational Preparation**: 8 7 6

Aptitudes***:	G	V	N	S	P	Q	K	F	M	E	C
	3	3	3	3	3	4	4	4	4	5	5
	2	2	4	4	4	3			3	4	4

*See Table I for explanation and code details
**See Table II for explanation and code details
***See Table III for explanation and code details

[1]D.O.T. 1965, Vol II pg. 305

TABLE I

GENERAL EDUCATIONAL DEVELOPMENT[1]
(Explanation and Coding)

General Educational Development embraces those aspects of education (formal and informal) which contribute to the worker's (a) reasoning development and ability to follow instructions, and (b) acquisition of "tool" knowledges, such as language and mathematical skills. It is education of a general nature which does not have a recognized, fairly specific, occupational objective. Ordinarily such education is obtained in elementary school, high school, or college. It also derives from experience and individual study.

* * * * *

The following table explains the various levels of general educational development.

Level	Reasoning Development	Mathematical Development	Language Development
6	Apply principles of logical or scientific thinking to a wide range of intellectual and practical problems. Deal with nonverbal symbolism (formulas, scientific equations, graphs, musical notes, etc.) in its most difficult phases. Deal with a variety of abstract and concrete variables. Apprehend the most abtruse classes of concepts.	Apply knowledge of advanced mathematical and statistical techniques such as differential & integral calculus, factor analysis, and probability determination, or work with a wide variety of theoretical mathematical concepts and make original applications of mathematical procedures, as in empirical and differential equations.	Comprehension and expression of a level to -Report, write, or edit articles for such publications as newspapers, magazines, and technical or scientific journals. Prepare and draw up deeds, leases, wills, mortgages, and contracts. --Prepare and deliver lectures on politics, economics, education, or science. -Interview, counsel, or advise such people as students, clients, or patients, in such matters as welfare eligibility, vocational rehabilitation, mental hygiene, or marital relations. -Evaluate engineering technical data to design buildings and bridges.
5	Apply principles of logical or scientific thinking to define problems, collect data, establish facts, and draw valid conclusions. Interpret an extensive variety of technical instructions, in books, manuals and mathematical or diagrammatic form. Deal with several abstract and concrete variables.		

[1] D.O.T. 1965 Vol II pgs. 651-652

TABLE I (cont'd.)

Level	Reasoning Development	Mathematical Development	Language Development
4	Apply principles of rational systems[1] to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Interpret a variety of instructions furnished in written, oral diagrammatic, or schedule form.	Perform ordinary arithmetic, algebraic, and geometric procedures in standard, practical applications.	Comprehension and expression of a level to -Transcribe dictation, make appointments for executive and handle his personal mail, interview and screen people wishing to speak to him, and write routine correspondence on own initiative. -Interview job applicants to determine work best suited for their abilities and experience, and contact employers to interest them in services of agency. -Interpret technical manuals as well as drawings and specifications, such as layouts, blueprints, and schematics.
3	Apply common sense understanding to carry out instructions furnished in written, oral, or diagrammatic form. Deal with problems involving several concrete variables in or from standardized situations.	Make arithmetic calculations involving fractions, decimals and percentages.	Comprehension and expression of a level to -File, post, and mail such material as forms, checks, receipts, and bills. -Copy data from one record to another, fill in report forms, and type all work from rough draft or corrected copy.
2	Apply common sense understanding to carry out detailed but uninvolved written or oral instructions. Deal with problems involving a few concrete variables in or from standardized situations.	Use arithmetic to add, subtract, multiply, and divide whole numbers.	-Interview members of household to obtain such information as age, occupation, and number of children, to be used as data for surveys, or economic studies. -Guide people on tours through historical or public buildings, describing such features as size, value, and points of interest.

[1]Examples of "principles of rational systems" are: Bookkeeping, internal combustion engines, electric wiring systems, house building, nursing, farm management, ship sailing.

TABLE I (cont'd.)

Level	Reasoning Development	Mathematical Development	Language Development
1	Apply common sense understanding to carry out simple one- or two-step instructions. Deal with standardized situations with occasional or no variables in or from these situations encountered on the job.	Perform simple addition and subtraction, reading and copying of figures, or counting and recording.	Comprehension and expression of a level to -Learn job duties from oral instructions or demonstration. -Write identifying information, such as name and address of customer, weight, number, or type of product, on tags, or slips. -Request orally, or in writing, such supplies as linen, soap, or work materials.

TABLE II

SPECIFIC VOCATIONAL PREPARATION[1]

Specific Vocational Preparation is the amount of time required to learn the techniques, acquire information, and develop the facility needed for average performance in a specific job-worker situation. This training may be acquired in a school, work, military, institutional, or avocational environment. It does not include orientation training required of even every fully qualified worker to become accustomed to the special conditions of any new job. Specific vocational training includes training given in any of the following circumstances:

a. Vocational education (such as high school commercial or shop training, technical school, art school, and that part of college training which is organized around a specific vocational objective);

b. Apprentice training (for apprenticeable jobs only);

c. In-plant training (given by an employer in the form of organized classroom study);

d. On-the-job training (serving as learner or trainee on the job under the instruction of a qualified worker);

e. Essential experience in other jobs (serving in less responsible jobs which lead to the higher grade job or serving in other jobs which qualify).

The following is an explanation of the various levels of specific vocational preparation.

Level	Time	Level	Time
1	Short demonstration only.	5	Over 6 months up to and including 1 year.
2	Anything beyond short demonstration up and including 30 days.	6	Over 1 year up to and including 2 years.
3	Over 30 days up to and including 3 months.	7	Over 2 years up to and including 4 years.
4	Over 3 months up to and including 6 months.	8	Over 4 years up to and including 10 years.
		9	Over 10 years.

[1]D.O.T. 1965, Vol II pgs. 652-653

TABLE III
APTITUDES[1]

Aptitudes are the specific capacities and ability required of an individual in order to learn or perform adequately a task or job duty.

Code

G INTELLIGENCE: General learning ability. The ability to "catch on" or understand instructions and underlying principles. Ability to reason and make judgments. Closely related to doing well in school.

V VERBAL: Ability to understand meanings of words and ideas associated with them, and to use them effectively. To comprehend language, to understand relationships between words, and to understand meanings of whole sentences and paragraphs. To present information or ideas clearly.

N NUMERICAL: Ability to perform arithmetic operations quickly and accurately.

S SPATIAL: Ability to comprehend forms in space and understand relationships of plane and solid objects. May be used in such tasks as blueprint reading and in solving geometry problems. Frequently described as the ability to "visualize" objects of two or three dimensions, or to think visually of geometric forms.

P FORM PERCEPTION: Ability to perceive detail in objects or in pictorial or graphic material; To make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q CLERICAL PERCEPTION: Ability to perceive pertinent detail in verbal or tabular material. To observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation.

K MOTOR COORDINATION: Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and quickly.

F FINGER DEXTERITY: Ability to move the fingers and manipulate small objects with the fingers rapidly or accurately.

M MANUAL DEXTERITY: Ability to move the hands easily and skillfully. To work with the hands in placing and turning motions.

E EYE-HAND-FOOT COORDINATION: Ability to move the hand and foot coordinately with each other in accordance with visual stimuli.

C COLOR DISCRIMINATION: Ability to perceive or recognize similarities or differences in colors, or in shades or other values of the same color; to identify a particular color, or to recognize harmonious or contrasting color combinations, or to match colors accurately.

[1]D.O.T. 1965, Vol II pg. 653

(continued on next page)

APTITUDES (cont'd.)

Explanation of Levels

The digits indicate how much of each aptitude the job requires for satisfactory (average) performance. The average requirements, rather than maximum or minimum, are cited. The amount required is expressed in terms of equivalent amounts possessed by segments of the general working population.

The following scale is used:

1 The top 10 percent of the population. This segment of the population possesses an extremely high degree of the aptitude.

2 The highest third exclusive of the top 10 percent of the population. This segment of the population possesses an above average or high degree of the aptitude.

3 The middle third of the population. This segment of the population possesses a medium degree of the aptitude, ranging from slightly below to slightly above average.

4 The lowest third exclusive of the bottom 10 percent of the population. This segment of the population possesses a below average or low degree of the aptitude.

5 The lowest 10 percent of the population. This segment of the population possesses a negligible degree of the aptitude.

Significant Aptitudes

Certain aptitudes appear underlined on the qualifications profiles for the worker trait groups. These aptitudes are considered to be occupationally significant for the specific group; i.e., essential for average successful job performance. All underlined aptitudes are not necessarily required of a worker for each individual job within a worker trait group, but some combination of them is essential in every case.

TABLE IV - SUMMARY OF SIGNIFICANT GENERAL EDUCATIONAL DEVELOPMENT, SPECIFIC VOCATIONAL PREPARATION, AND APTITUDE REQUIREMENTS FOR SELECTED OCCUPATIONS IN THE ARCHITECTURAL, CONSTRUCTION, AND RELATED FIELDS OF WORK

OCCUPATION TITLE	CODE	GED[1]	SVP[2]	APTITUDES[3] G V N S P Q	KEY EDUCATIONAL REQUIREMENTS STATEMENTS
ARCHITECT	001.081	6	8 7	1 1 1 1½2 2 2 2 3	*Worker traits group in Engineering, "Engineering Research and Design". bachelors degree in eng'g. is usually min. educ. reqm'nt. for entrance. Some draftsmen and eng'g. tech. having extensive exper. with college-level training may qualify for entry. Also, - Most employers require advanced grad. degree or significant exper. on basic eng'g. level for research work. See attachment III.
CONSTRUCTION ENGINEER	005.081	(same as above)			*Worker traits group same as above. Key differences are in group and job definitions; see attachment V.
QUALITY CONTROL TECHNICIAN	019.281	4 5	6 7	2 2 2 2 3 3 3 -	*Work traits group in eng'g. "Drafting and Related Work". Grad. from a technical institute or completion of specialized program in junior col or university required for entry. Worker with required math thru apprenticeship or related program may also enter. See Attachments VI and VII.
ESTIMATOR	160.288	5	7 8	1 1 1 2 2 2 2 3	If worker traits group is in eng'g. "Industrial Engineering and Relate Work", a bachelor's degree in Engineering is usually the min. educ. reqm'nt. for entry. An increasing number of employers are requiring grad. degrees." (See attachment X.)
		5	7	1 2 1 - -«2	If worker traits group is in Business Relations area, "Accounting and Related Work", a bachelor's degree in accounting and business admin. i usually min. requirement for entry. (See attachment XI.)
BUILDING INSPECTOR	168.168	4 5	6 7	2 2 3 4 - 2 1 1 2	If worker trait group is in Business Relations area, "Managerial Work" - Most of larger employers consider only recent college graduates. Th look for an educ. background consisting of personnel, vocational business .. or similar coursework, then provide new employees with management-trainee programs... See attachment XIV.
		5 5 4	7 7 5	2 2 2 - - - 2 2 3 - - 4 3 2 3 - - 3	If worker trait groups is in Engineering area, "Engineering, Scientific and Tech. Coord." group, "The minimum of a bachelors degree in the occu pational speciality is usually required for entry, with many employers requiring educ. at the graduate level". Please see attachment XV.
					*If worker trait group is in Investigating area, "Investigating, Protect ing and Related Work", key sentence "High school educ. is prerequisite ... in some cases, a college education is required ... depends on job. In most cases, rigid entrance examination required. See attachment XV

1. GED (Genl. Educ. Devel.) See Table I for details
2. SVP (Spec. Voc. Prep.) See Table II for details
3. Aptitude Code. See Table III for details

*Most appropriate group.

TABLE IV - (continued)

OCCUPATION TITLE	CODE	GED[1]	SVP[2]	APTITUDES[3] G V N S P Q	KEY EDUCATIONAL REQUIREMENTS STATEMENT
CONTRACTOR	182.168	(Same as above)			*Most applicable are Business area and "Managerial Work" group. See above comments and attachment X V.
CONSTRUCTION INSPECTOR	182.287	4 5	8 7	2 2 2 3 3 - 3 3 - 2 -	*Investigating area, "Appraising and Investigating Work" group. Entry usually achieved by successful tech. preparation and/or experience in lower level positions enabling individual to acquire complete working knowledge of the field. See attachment XX.
ESTIMATING ENGINEER	None				Probably closest occupation within this term is ESTIMATOR; see above.
SALESMAN, BUILDING AND CONSTRUCTION EQUIPMENT & SUPPLIES	276.358	4 5	2 3	3 3 3 - - 4 2 2 3 - - 3	*Merchandising area, "Demonstration and Sales Work". Employers usually require min. of high school graduation, many require a college background or night school credits. College level courses: business admin., marketing and related areas. See attachment XXI.
SUPERVISORY WORK		4	8		Needed: skill in trade or craft, technical courses, outstanding performance, be selected to advance. (See attachments XXII and XXIII.

*Most appropriate group.

THE OFFICE OF MANPOWER STUDIES

and the

POLICY GUIDANCE COMMITTEE

On April 15, 1964, the BOARD OF TRUSTEES took action to create The School of Technology and simultaneously authorized the Dean to establish "...an administrative organization to conduct educational research and manpower studies to provide the necessary basic data and information concerning the growing and changing needs and demands for technologically oriented education and programs." The Office of Manpower Studies was activated in response to this action and was assigned two functions:

(1) to establish and operate a continuing survey of manpower requirements and trends in Indiana in order that educational and training agencies can better prepare people for employment opportunities; and

(2) to encourage research activity, in the University, aimed at solving problems and developing understandings of a more fundamental nature in the manpower and training field.

With the concurrence of the Vice President for Research, an Inter-discipiplinary Policy Guidance Committee of the Office of Manpower Studies was formed to further develop the concept of the office and to help identify the broad avenues of research that should be pursued. Membership of this committee includes:

C. H. Lawshe, Chairman, (Dean, School of Technology)

J. P. Lisack, Secretary, (Director, Office of Manpower Studies)

J. S. Day (Industrial Management)

E. M. Eddy (Industrial Education)

C. E. French (for L. S. Hardin) (Agricultural Economics)

B. R. Keenan (Political Science)

D. C. King (Graduate School - Psychology)

G. W. McNelly (Associate Dean, School of Technology)

E. W. Noland (Sociology).

The School of Technology
Purdue University

MANPOWER STUDIES, REPORTS AND SURVEYS

Number		Date
65-1	Industrial Survey 201, Specifications for the Baccalaureate Graduate	January 1965
65-2	Engineering Technicians - Production and Requirements	15 June 1965
65-3	A Manpower Study for Technician-Level Educational Planning Concerning the Chemical Technology	20 October 1965

* * * * *

66-1	A Manpower Study for Technician-Level Educational Planning Concerning the Electrical/Electronic Technology in the Greater Lafayette Area (Tippecanoe County, Indiana)	January 1966
66-2	A Report of Employment Trends in Five Indiana Counties (Allen, Lake, LaPorte, Marion and Porter)	February 1966
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*INDUSTRIAL ARTS; *YOUTH CLUBS; *MANUALS; *STUDENT ORGANIZATIONS
AIASA; *AMERICAN INDUSTRIAL ARTS STUDENT ASSOCIATION

This handbook describes: (1) reasons for joining, (2) organizational procedure, (3) regulations for national affiliation, (4) sources of club supples, (5) meeting procedure, (6) suggested club activities, (7) the constitution, and (8) organizational symbol, motto, creed, and colors. (EM)

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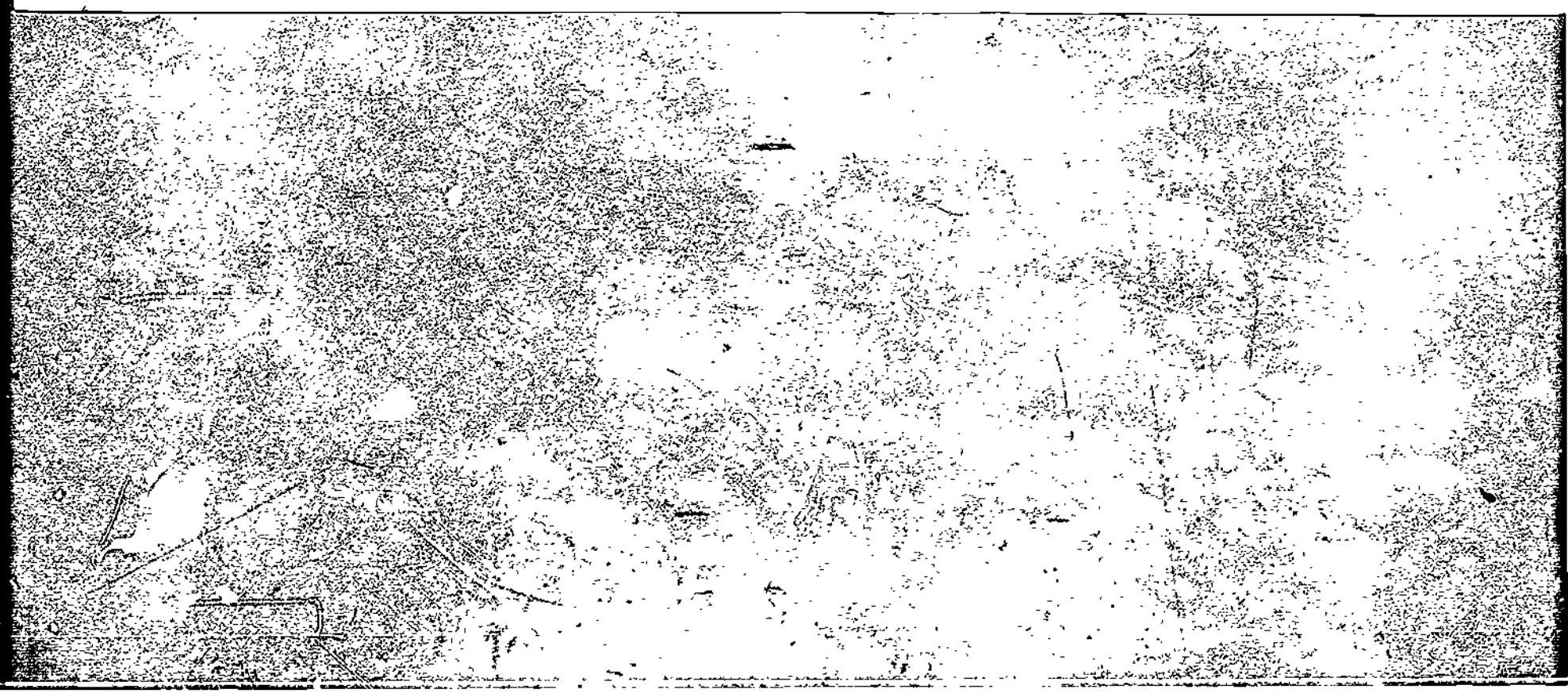

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American Industrial Arts Student Association Handbook

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Introduction

For many years there has been a group of industrial arts teachers which has expressed a genuine interest in sponsoring school industrial arts clubs. There are many clubs in existence today operating on a local basis. They often are a part of the school club program and, therefore, meet regularly during scheduled periods. Others must find time to meet in the afternoons after school, or at night.

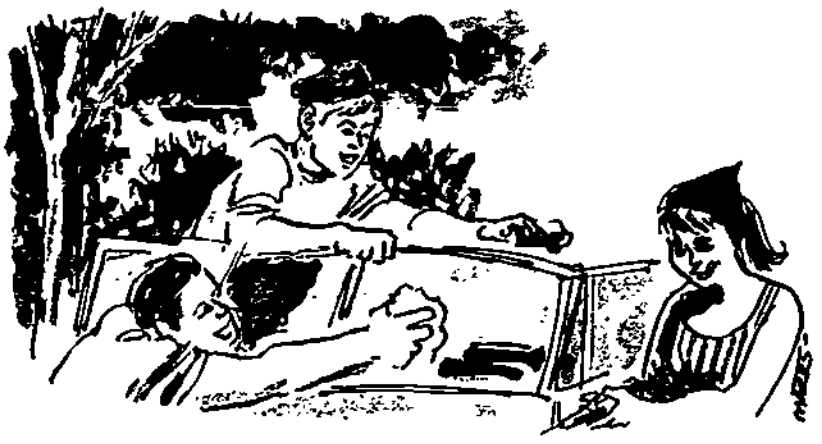
There has been a variety of purposes and objectives underlying the existence of these clubs. Some clubs are social in nature, while others undertake service-oriented projects. Others use this program to create more interest in industrial arts at the project level.

Efforts have been made from time to time to organize these clubs on a state level, but these efforts have met with little success. Recognizing the need for a unifying force to obtain the club benefits for more people and to extend industrial arts to more students, the American Industrial Arts Association has begun a program of assistance to high school advisors. This booklet represents many years of experience with clubs on the local, state, and national levels, and its pooled resources and suggestions should be valuable to anyone interested in getting a club started.

In an effort to extend services to more teachers and students of industrial arts, the Executive Board of the American Industrial Arts Association has approved funds to be used for the publication of information relative to industrial arts clubs.

The purpose of this handbook is to provide guidance to club leaders that will assist them in organizing and operating an industrial arts club on a local and national level.

It is impossible to give credit to all persons who have had a part in the club movement throughout the nation. The committee responsible for organizing this information and readying it for publication consisted of: Rex Miller, State University College, Buffalo, N. Y. (Chairman); Winifred A. Mayfield, Industrial Arts Consultant, State Dept. of Education, Austin, Texas; Leroy H. Bengtson, Oklahoma State University, Stillwater, Okla.; and Raymond Ginn, Jr., Industrial Arts Supervisor, State Dept. of Education, Atlanta, Ga.; in the national office: Miss Wilma Schlup, Student Club Coordinator, and Howard S. Decker, Executive Secretary, AIAA.



AIASA: How to Say It

I *(Eye)* and A *(Ay)* as in the initial letters of industrial arts, followed by a "za" sound. Eye-Ay-Za.

Why Join AIASA

Many potential club members of the American Industrial Arts Student Association ask the question: "Why join AIASA?" or "What are the advantages of joining?" All persons, students and faculty advisors alike, should stress the following advantages of national affiliation:

1. AIASA is your national association. It works full time to create a positive national image of the industrial arts student.

2. AIASA brings together industrial arts students from all over the nation into one club.

3. AIASA is the only national organization representing industrial arts students. It is sponsored by the American Industrial Arts Association, the association that represents the industrial arts teachers of the United States, its possessions, Canada, and many other foreign countries.

4. AIASA membership also offers a national publication, inter-club communications, and the services of a student club coordinator.

5. AIASA makes the purchase of supplies, pins and other club jewelry available at reasonable prices.

How to Organize a Club

Certain steps and procedures should be followed when organizing local clubs:

1. A group of interested students is required.

2. An industrial arts teacher must be willing to serve as sponsor or advisor for the group.

3. The project should be cleared through administrative channels.

4. A copy of the handbook, which includes the constitution and bylaws, should be acquired by writing to the Student Club Coordinator of the American Industrial Arts Association.

5. A student committee should be formed to study the constitution, bylaws, and handbook, and report its recommendations relative to its findings.

6. After the committee presentation has been made, if there is still sufficient interest in the project, a special meeting should be called to adopt the club constitution and elect officers.

7. An agenda of club activities should be planned immediately. Club interest will die without a successful program. The agenda should be rigorously followed.

8. The local club may be partially financed from dues collected locally. Additional monies may be acquired through fund-raising projects (see section on club activities).

9. The club should affiliate immediately with the National Student Club Program of AIAA.

How to Affiliate with AIASA

The following steps and procedures should be followed when affiliating with AIASA:

1. Student club year is from September 1 to June 30.

2. New clubs may affiliate on any date, but will expire on June 30 of that year. Requirement: one sponsor and five or more members.

3. Clubs wanting renewal must meet a deadline of October 15. (Extended deadline is November 15. After this date the club will be termed "inactive" until the student club coordinator has received notification of either renewal or termination). Renewal requires: one sponsor and five or more members.

4. The club, new or renewal, shall receive club materials only after the date of affiliation or renewal. No "back" materials or publications of that year may be offered.

5. Send to the student club coordinator:
   a. national dues of $1.00 per member
   b. names of club officers and sponsor
   c. names of all members (roll sheets may be obtained from the national office)
   d. proposed plan of club work for the coming year

6. Upon receipt of affiliation materials, the club will be awarded a signed charter and membership cards for each student. (The charter is given only on the date of affiliation and not on renewal dates). The club will then be placed on the national roll of AIASA.

Sources of Club Materials

An AIASA handbook will be furnished to the sponsor of each new club. Additional copies may be purchased for $1.50 through the American Industrial Arts Association.

Creeds, mottos, a certificate of merit and achievement, and a certificate of leadership may also be obtained from AIASA office.

Flags, banners, treasurer's books, secretary's books, scrapbooks, gavels and blocks, as well as blazers, and various jewelry items (Bylaws, Article V, Section B) may be purchased from The Balfour Supply Service, 8004 Norfolk Avenue, Washington, D. C. 20014.

Club Ceremonies and Meetings

OPENING CEREMONY

(At the prescribed time for meetings, the president assumes his position behind the rostrum in front center of room. Other officers are seated to the left and right of the president in a slightly arched line. They are seated in this order from left to right: vice-president, treasurer, secretary, president, advisor, reporter, and sergeant-at-arms).

President: *(Raps gavel twice)* Will the meeting please come to order? Mr. sergeant-at-arms, are all the officers in their places?

Sergeant-at-arms: They are, Mr. president.

President: *(Raps three times for assembly to rise)* Mr. sergeant-at-arms, please lead the assembly in the pledge to the flag of the United States of America.

Sergeant-at-arms: *(Leads pledge to flag)*

President: *(Raps once and assembly is seated)* Mr. secretary, will you please call the roll?

Secretary: Mr. sergeant-at-arms.

Sergeant-at-arms: Present. The symbol of my office is the "hearty hand shake," and it is my responsibility to see that the assembly is comfortable and properly welcomed. It is also my duty to serve as doorkeeper for this organization.

Secretary: Mr. reporter.

Reporter: Present. The symbol of my office is the beacon tower, and it is my duty to see that our school, community, and national association have a complete report of our organization's activities.

Secretary: Mr. advisor.

Advisor: Present. The duty of my office is to advise and counsel members and officers of this organization in such a way as to bring out the leadership abilities of each.

Secretary: Mr. president.

President: Present. The symbol of my office is the gavel. The duties vested in me by my office are to preside at all regular and special meetings of this organization and to promote cooperation in carrying out the activities and work of our organization.

Secretary: Mr. treasurer.

Treasurer: Present. The symbol of my office is a balanced budget. It is the duty of my office to keep accurate records of all funds and see that our financial obligations are met promptly.

Secretary: Mr. vice-president.

Vice-president: Present. The symbol of my office is a star. It is the duty of my office to see that we always have a strong membership, a good work program, and are alert to the welfare of our club.

Secretary: Mr. president, all officers are present and in their places.

President: Mr. sergeant-at-arms, do we have guests present?

Sergeant-at-arms: *(If so, introduce guests. If not)* — No, Mr. president.

President: Mr. secretary, we are ready to transact our business.

(Proceed according to the Order of Business)

ORDER OF BUSINESS

It is important that all organizations have an established order of business to be followed during regular meetings. The suggested order of business given below is for the benefit of both officers and members. The order may be altered to meet local needs.

1. The opening ceremony, including the call to order and roll call, should be the first matter.
2. Minutes of the previous meeting should be read by the club secretary.
3. Any or all officers who have reports should give them at this point in the meeting.
4. Reports on special club work projects should be presented.
5. Specially scheduled programs should be given at this time.
6. Old or unfinished business should be transacted.
7. Standing and special committee reports should be presented.
8. All new busines should be completed.
9. After the new business, installation and initiation or degree-presentation ceremonies should be held.
10. The formal closing ceremony should be given.
11. Entertainment, recreation, and refreshments should be the last portion of all meetings. This part of the meeting is usually turned over to a committe chairman.

CLOSING CEREMONY

President: *(Raps twice, assembly rises)* Mr. secretary, what is our motto?

Secretary: (Repeats motto)

President: Will the assembly repeat the creed after me? *(Creed is spoken)* Does anyone know of any reason why this assembly should not adjourn? I declare this meeting adjourned.

INSTALLATION OF OFFICERS

An installation team from another club, an advisor, or past president may install officers. The newly elected officers are placed in front of their stations. The installation officer stands behind the rostrum. The invocation is presented by one of the members.

Installation Officer: I consider it an honor to meet with this assembly and officially install the officers you have chosen to serve you this coming year. I know you have faith in each of them or they would not have been selected. In order for these officers to help this club progress, there must be enthusiasm and cooperation exercised by every member present. Will the assembly please rise and repeat the pledge to the flag.

(Pledge is said and the assembly is seated. New officers remain standing.)

Will the newly elected officers repeat the symbols and duties of their offices, beginning with the president?

(Proceeding in order from president to sergeant-at-arms, the new officers state their office symbols and duties)

Does each officer pledge to lead this organization forward to the best of his ability?

Officers in unison: We do.

Installation Officer: Will the assembly please rise. The newly installed officers will lead us as we repeat the creed.

(Creed is spoken)

Installation Officer: I now declare these officers officially installed and responsible for performing the duties of their offices. This meeting is adjourned.

THE PLEDGE TO THE FLAG

Facing the flag, members should place their right hands over their left breasts and keep them there while repeating the following pledge:

"I pledge allegiance to the flag of the United States of America and to the Republic for which it stands, one nation under God, indivisible, with liberty and justice for all."

WORK PROGRAM

Programs: Always have meetings well-organized and have something to offer in the form of a program at each meeting. This program can be informational, inspirational, demonstrational, recreational, business or consist of a field trip. A combination of two or more of these may be used to provide a well-rounded program. The program chairman is one of the most important members of the local club.

Projects: Yearly projects should always be included in the year's work plans. The project chosen should meet some school, club or community need, such as raising funds for the club, for community welfare, safety or some need in the school. Clubs should always set goals when planning project work. The local club should never be without a work project.

CLUB ACTIVITIES

All club activities come under one of four basic divisions: club, school, community, or state. Here is a list of suggested activities. Add yours to this list.

Community service activity examples:

1. Sponsoring safety campaigns.
2. Sponsoring fire prevention activities.
3. Repairing Christmas toys in cooperation with local fire departments.
4. Helping with clean-up drives.
5. Marking house numbers on street curbs.
6. Marking and numbering hubcaps and recording numbers.
7. Sponsoring community fair exhibits.
8. Collecting used clothing for service organizations.
9. Sponsoring special citizens' week.
10. Refinishing city library furniture.
11. Collecting food for community charity.
12. Helping in door-to-door fund-raising drives.

School service activity examples:

1. Making school bulletin boards.
2. Keeping parking stripes painted.
3. Sponsoring assemblies.
4. Building scenery for plays.
5. Stenciling numbers on stadium or gym bleacher seats.
6. Building items for special school events.
7. Being responsible for noon recreational equipment.
8. Building campus benches.
9. Sponsoring exhibits and banquets.
10. Purchasing needed items for school.
11. Taking charge of bonfire construction for special school events.
12. Making minor repairs on football gear, such as putting rivets in helmets.

13. Repairing hurdles for track teams.

Club activity examples for promotion of clubs:

1. Writing newspaper articles.
2. Writing reports for school paper.
3. Handling radio and television publicity.
4. Awarding Craftsman and Master Craftsman degrees.
5. Preparing past club honor rolls.
6. Using a "buddy" system to help slow students scholastically.
7. Preparing programs on good study habits.
8. Presenting entertainment.
9. Sponsoring competition between local clubs.
10. Sponsoring socials.
11. Handling project judging competition.
12. Selecting a "Mr. Industrial Arts" through a series of tests.
13. Selecting a faculty member or members of the week.
14. Having cards printed with the club motto to be passed out at special times, such as when the club has helped someone.

Examples of club fund-raising activities:

1. Sponsoring different types of concessions such as:
   a. Stands at football, basketball, and track events.
   b. Chili suppers, pancake suppers, cake or pie sales.
   c. Selling pillows, programs, or mums at athletic events.
2. Having light bulb or broom sales.
3. Sponsoring game nights in the school's gym or cafeteria.
4. Sponsoring movies.
5. Holding magazine subscription drives.
6. Making scrap metal drives (copper, aluminum, iron)
7. Printing a school directory.
8. Sponsoring rummage sales.
9. Marking curbs with house numbers in cooperation with cities.
10. Sponsoring Halloween carnivals.
11. Holding an automobile rodeo with emphasis placed on skilled driving.
12. Sponsoring talent shows.
13. Washing and waxing cars.
14. Making plasterware from molds.
15. Building and selling garbage can racks, portable book cases, telephone racks, etc.
16. Raising plants from seeds in hot beds or other plants from cuttings for spring sales.
17. Painting Christmas trees.
18. Selling ball-point pens engraved with club names and motto.

(Note: Some areas have more opportunities for fund-raising projects than others do, and what will work well in one area may not be successful in another. Try to find a need in your community and then fill it.)

Constitution

ARTICLE I — NAME

This organization shall be known as the American Industrial Arts Student Association. Each local club may have its own name. The local club's name should be placed on the application to the AIAA for purposes of recording same nationally.

ARTICLE II — PURPOSES

General: To widen and deepen the interests and knowledge of students in this technological age; to motivate regular school work; and to promote industrial arts in the public schools of America.

Specific:

1. To provide the student with opportunities for the development of leadership in social, civic, school, and community activities.
2. To develop through group action tbe ability of members to plan together, organize, and carry out worthy activities and projects.
3. To explore industry and the American industrial civilization.
4. To promote high standards of craftsmanship, scbolarsbip, and safety.
5. To foster a deep respect for the dignity of work.
6. To provide good leisure time activities and bobbies.
7. To provide opportunities for wholesome recreation.
8. To encourage students in creative expression.
9. To develop consumer knowledge in students.
10. To instill desirable habits and attitudes toward tbe American way of life in students.

ARTICLE III — MEMBERSHIP

Section A: Eligibility

A local club must have a group of members on the roll in good standing who meet tbe conditions specified in Section B of Article III in order to receive a charter. The AIAA Executive Secretary will give a qualified local club a charter.

Section B: Regular Active Membership

1. The club will accept for membership, by majority vote of active members, any student enrolled in or having completed satisfactorily any industrial arts course.
2. Prospective members must submit a written application to the club membership chairman, who in turn, presents the prospect's credentials to the club membership for approval.
3. Should a member violate the pledge or cast unsatisfactory reflections on the club or school, bis name may be removed from the roll by two-thirds vote of the members.
4. Membership is limited to local students.
5. An industrial arts teacber shall be affiliated with the club as sponsor. He must also be a member of the American Industrial Arts Association.

Section C: Alumni Members

Active members in good standing may obtain membership after separation from school by paying annual dues,

but cannot hold office or have the right to vote.

Section D: Honorary Members

Persons engaged in the fields of education, business and industry, who have manifested a sustained interest in the welfare of industrial pursuits, may be elected to honorary membership and enjoy all rights and privileges of the club except office holding and voting.

ARTICLE IV — OFFICERS

Section A: Slate of Officers

The officers of the club shall be a president, vice-president, secretary, treasurer, reporter, and sergeant-at-arms.

Section B: Eligibility

To be eligible to serve as officers, students must maintain at least average grades in all work.

Section C: Elections

Officers shall be elected locally during September of each year to serve for that year. National officers will be elected at the AIAA convention to serve, effective immediately.

Section D: Tenure of Officers

Officers shall serve for one year and may be re-elected.

ARTICLE V — MEETINGS

Section A: Regular Meetings

1. A minimum of one regular business meeting shall be held each month during the school year for local clubs, as well as one national meeting.

2. A quorum of two-thirds of the club's membership is required for the transaction of business.

Section B: Called Meetings

Special meetings may be called by the club president at any time he deems advisable. Such meetings may be outside or during the school day, according to the opportunities provided.

Section C: Program Meetings

1. Once each four weeks, an educational meeting may consist of prominent industrial speakers, demonstrations, films, or field trips. The program meetings may be followed by a social hour. These meetings may be a combination of business and pleasure.

2. The programs for national meetings shall be planned by officers and sponsors to meet the needs and occasions.

Section D: Local Level Work Night

One night or more each month shall be devoted to club activities such as individual, group, or community projects. Members may work in any instructional area they desire, but the area should be different from their daily class work. This work night is left to the discretion of the industrial arts teacher-sponsor.

ARTICLE VI — INITIATIONS

Section A: Initiation Ceremonies

All candidates for membership must be initiated into the industrial arts club by the regularly prescribed initiation ceremony used for the installation of officers as set forth in this handbook.

Section B: Initiation

Initiation may be conducted by members from another club, an advisor, or a past president.

ARTICLE VII — ATTENDANCE

1. All members shall be expected to attend all regular business meetings.

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Student
Club Charter
Certificate
and
Certificate of Leadership
American Industrial Arts Association

2. Three unexcused absences will invalidate membership, requiring two-thirds vote to reinstate.

3. Regular school excuses shall be accepted as valid excuses for absences.

ARTICLE VIII — AMENDMENTS

Section A:

Amendments shall be suggested and approved by a majority of active members of the club.

Section B:

Amendments to this constitution shall be submitted in writing and signed by at least two members. The amendments, after being submitted, may not be voted upon until the next regular meeting of the club, at which time they shall be read to the membership and a vote taken. Two-thirds vote of the members present shall be necessary for its adoption.

Bylaws

ARTICLE I — ELECTION OF OFFICERS

Section A: Local Club

At the first meeting held in September, a nominating committee of six shall be chosen. Three shall be appointed by the temporary chairman; two shall be elected from the floor; and the advisor shall be the sixth member. It shall be the duty of this committee to prepare election ballots and to present one name for each office to be filled. The list of candidates shall be read at the next regular meeting. Nominations also may be made from the floor. All officers shall be elected by secret ballot.

Section B: National Student Club

1. National officers shall be elected by delegates who have been selected to represent each state. Each state is entitled to two delegates for the purpose of electing officers and transacting business of the national student club.

2. No state may hold any one national office for more than one year in succession, except the offices of secretary or treasurer.

3. To be eligible to hold a national office, a member must be in good standing and have held office at the local level.

4. Election of officers shall be by ballot.

5. No state may hold more than one office (after the organization has been operating three years.)

6. Graduating seniors are not qualified to hold a national office.

ARTICLE II — DUTIES OF OFFICERS

Section A: President

The president shall:

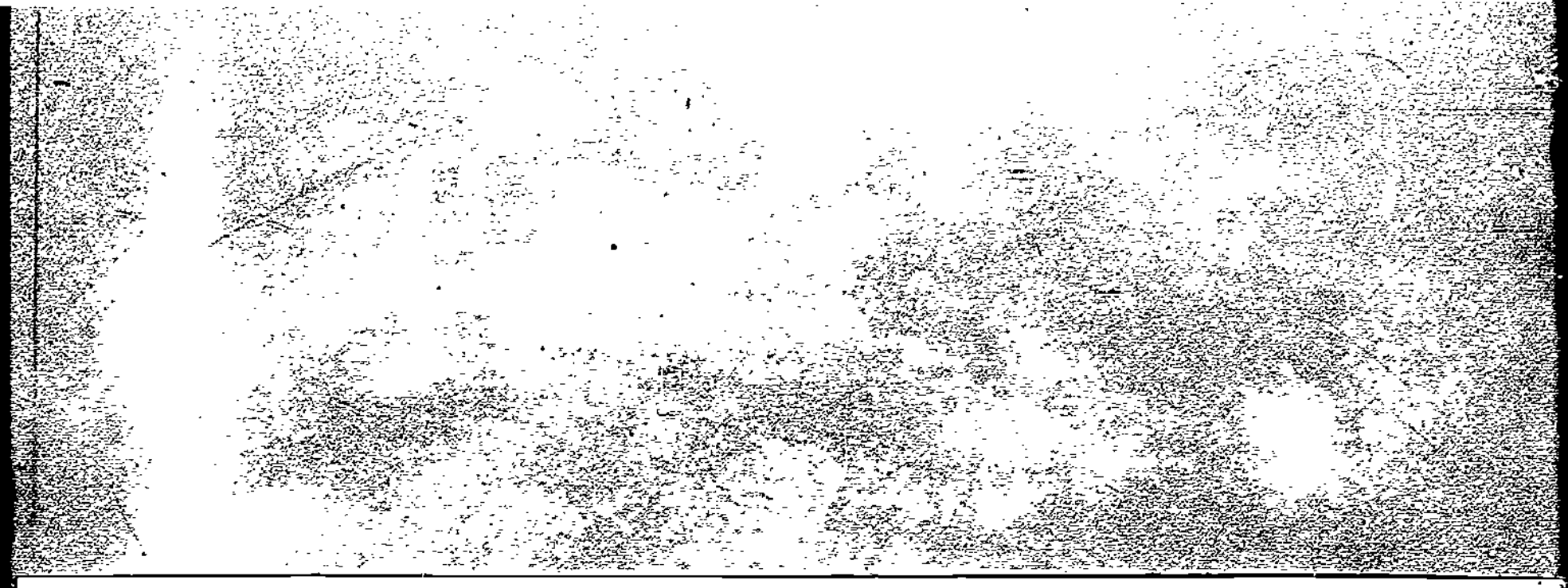
1. Preside at and conduct meetings according to parliamentary procedure.

2. Call extra meetings whenever necessary.

3. Appoint committees and serve as ex officio members of them.

4. Keep the meetings moving at an interesting pace.

5. Call upon other officers to take the chair when necessary or desirable.



6. Keep all club activities progressing in a satisfactory manner.

7. Represent the clubs in outside activities.

Section B: Vice-President

The vice-president shall:

1. Assist the president.
2. Serve as president in the absence of the president.
3. Succeed the president in case of vacancy.
4. Be chairman of the membership and program committees.
5. Meet with and be responsible for all committees.

Section C: Secretary

The secretary shall:

1. Prepare and read all the minutes of each meeting.
2. Count and record member votes when taken.
3. Read correspondence and communications at meetings.
4. Keep the club's permanent records.
5. Post notices to members pertaining to club activities and send invitations to guests.
6. Be responsible for all club correspondence.
7. Call the meetings to order in the absence of a presiding officer.

Section D: Treasurer

The treasurer shall:

1. Collect all dues and care for the club's funds.
2. Keep an accurate record of receipts and payments.
3. Obtain and present ideas and suggestions for increasing the treasury and financing club activities.

Section E: Reporter

The reporter shall:

1. Prepare articles for publication in local and school papers.
2. Contact members to obtain news regarding the club.
3. Contact personnel in charge of papers and provide copy conforming to their requests.
4. Keep news clippings and pictures of all club activities in the club's publicity and scrapbook.
5. Act as historian of the club.
6. Assist with planning and arranging club exhibits.
7. See that a news bulletin is published and sent out.
8. Pass on news items to the AIAA student publication.

Section F: Sergeant-at-Arms

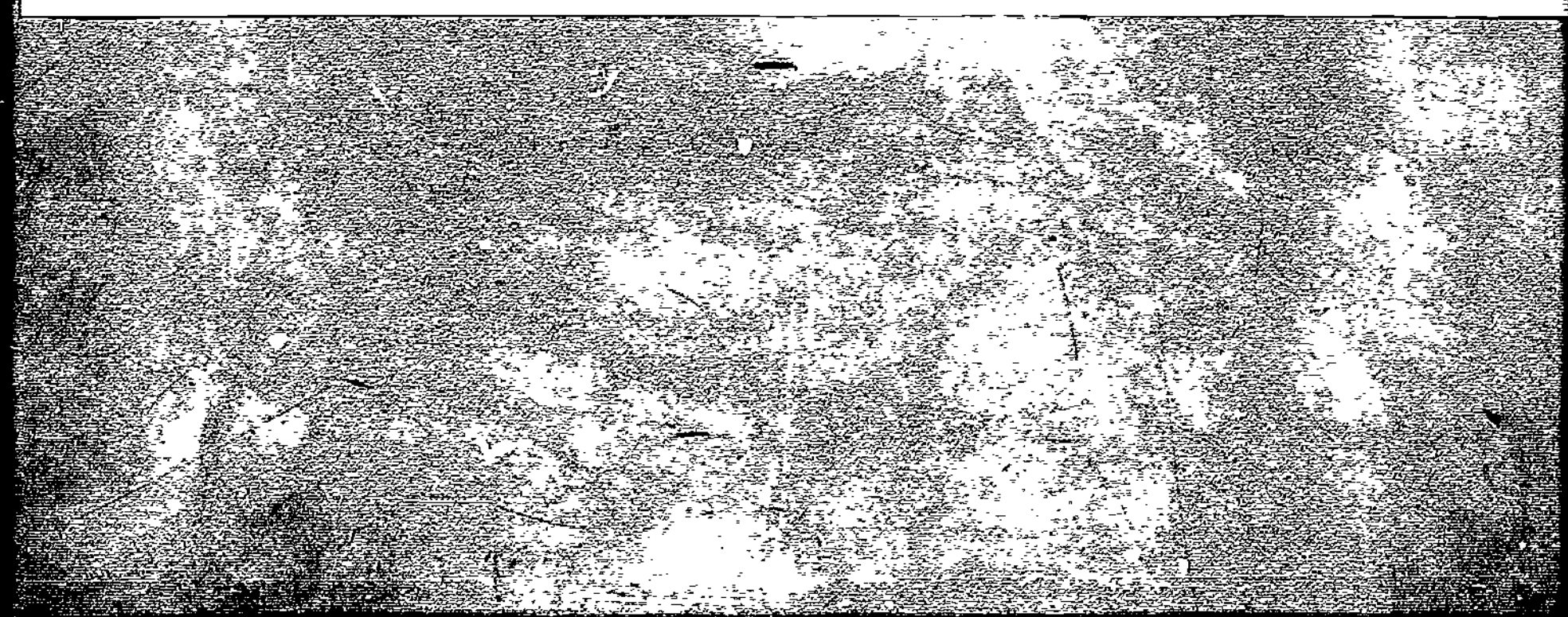
The sergeant-at-arms shall:

1. Arrange the meeting room and care for club paraphernalia.
2. Be responsible for the comfort of those present at all meetings.
3. Attend the door during meetings and welcome visitors.
4. Take charge of candidates prior to and during initiations.
5. Assist with entertainment, refreshments, and other details connected with programs.
6. Serve as chairman of the welfare committee.

ARTICLE III — FINANCES AND DUES

Section A:

1. Local dues shall be determined at the first meeting of each year by the local club.
2. National membership dues are $1.00 per year per member. Send to the Student Club Coordinator, American Industrial Arts Association, NEA, 1201 Sixteenth Street,



N.W., Washington, D. C. 20036.

Section B:

All funds shall be used for the welfare and promotion of industrial arts in the state and nation.

Section C:

All material and equipment purchased shall belong to the industrial arts department at the local level.

ARTICLE IV — COMMITTEES

Section A: Program Committee

1. This committee shall consist of three members, including the vice-president.

2. This committee shall be responsible for the educational and recreational portion of the program.

Section B: Welfare Committee

This committee shall consist of four members of which the sergeant-at-arms shall be chairman. This committee shall be responsible for all refreshments, decorations, and comfort of guests.

Section C: Membership Committee

This committee shall consist of three members: the vice-president, president, and sponsor.

Section D: Special Committees

Special committees may be appointed by the president whenever deemed necessary.

ARTICLE V — RECOGNITION OF ACHIEVEMENT

Section A:

Certificates of merit and achievement and certificates of leadership may be obtained from the AIASA. These certificates shall be used to recognize exemplary achievement by club officers, members, advisors, and other persons

who have provided leadership in club activities.

Section B: Pins

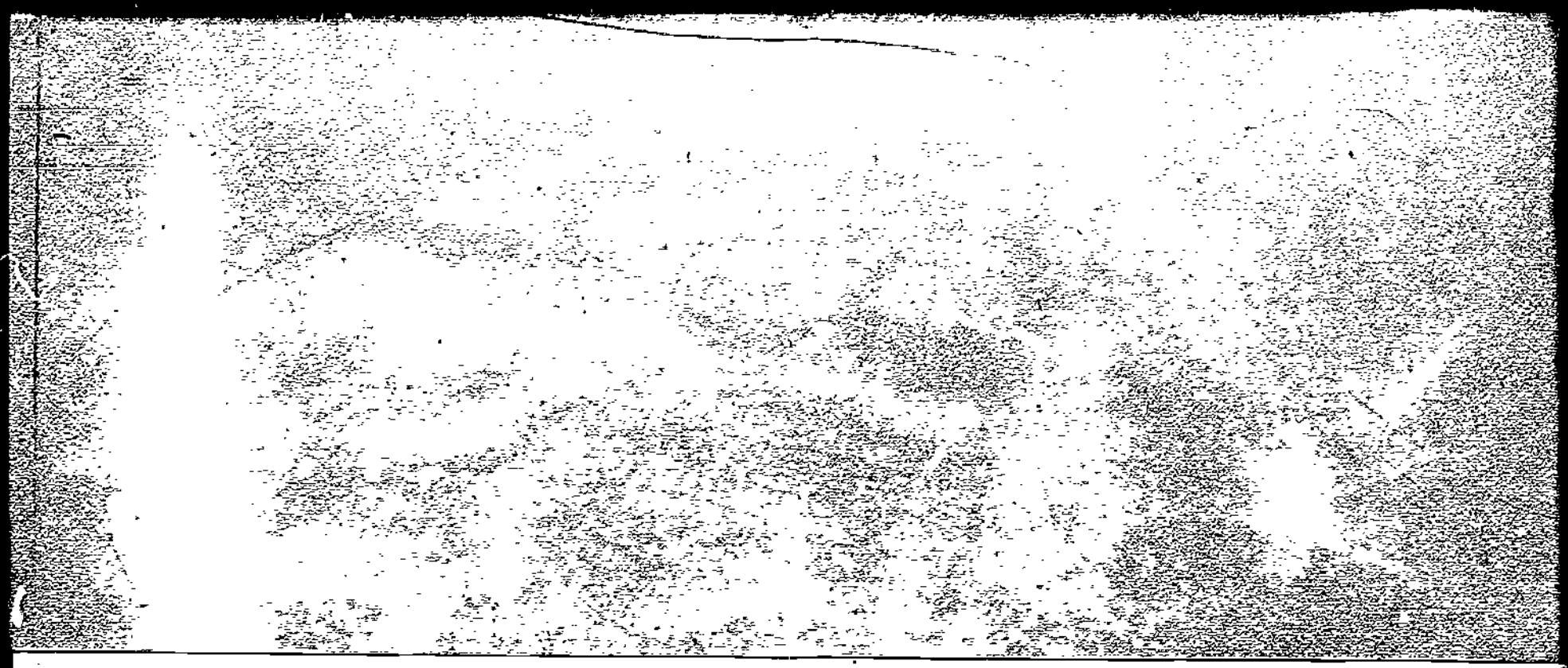
Club pins are available with the emblem on them for wear as a tie tack or as a pin. Membership pins are available in bronze, silver, and gold. Additional jewelry items are also available for purchase. For brochure write to The Balfour Supply Service, 8004 Norfolk Avenue, Washington, D. C. 20014.

ARTICLE VI — REPORTS

1. The local club shall report the names of newly elected officers immediately each year to the AIASA coordinator.

2. The local club shall send same with a list of members to the AIASA coordinator.

3. The proposed plan of work for the year shall accompany the national dues.



Code of Ethics

We will conduct ourselves in such a manner as to be a credit to our organization, our school, and our community at all times by:

1. Respecting the rights of our fellow men.
2. Respecting the property of others.
3. Practicing courtesy at all times.
4. Being honest and sincere.
5. Being conscious of our personal appearance and dressing appropriately.
6. Taking pride in our organization and its work.
7. Controlling self behavior and language.
8. Respecting the other follow's opinions and being tactful with any criticisms.
9. Demonstrating good sportsmanship and fair play in all competitive activities.
10. Sharing educational experiences with our fellow men.

The Symbolism of the Emblem

The gear blank surrounding the emblem represents all facets of American industry and its contribution to making America the great nation it is today.

The lightning bolt represents the rapid development of today's automated world and the space age changes needed to meet the challenge of tomorrow.

The framing square represents the degree of accuracy necessary to measure up to the demanding industrial society.

The triangle points the way to the stars and a rapidly developing technological age. It is a symbol of strength in structure and represents the cooperative efforts necessary in achieving our goals.

The hammer represents the dignity of work and its necessity in achieving success in an industrial society.

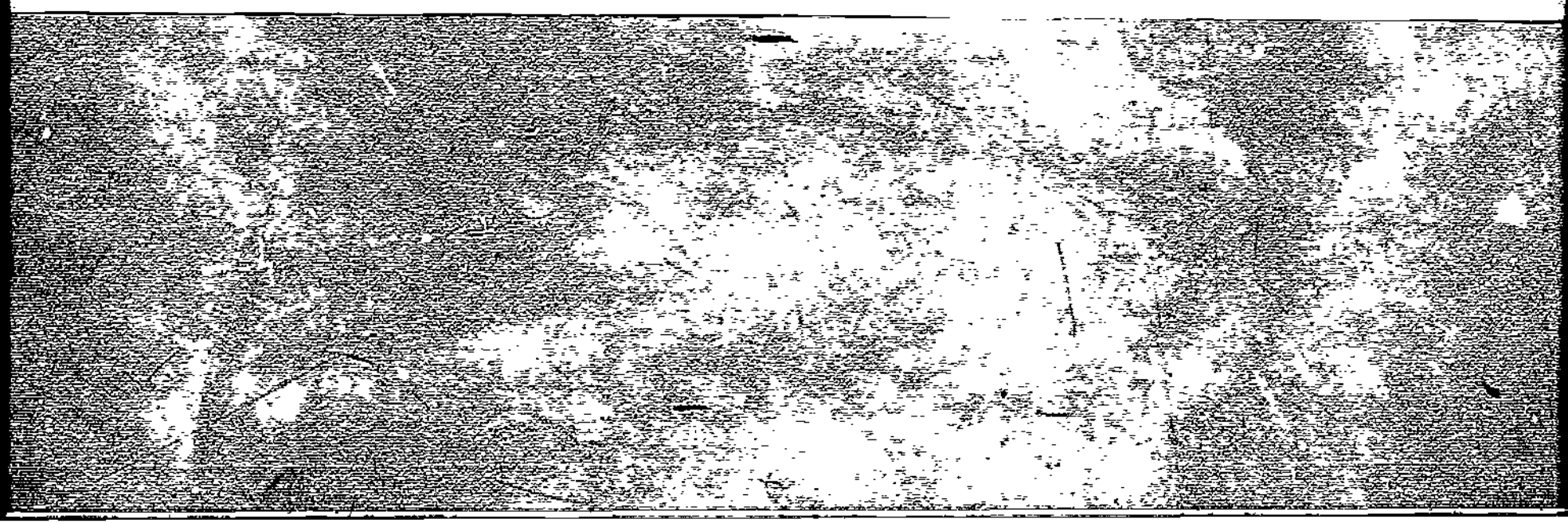
Motto

"Learning to Live in a Technical World."

Creed

I believe that industrial arts holds an important place in my life in the technical world. I know there is a necessity for the development of good attitudes concerning work, tools, materials, experimentation and processes of industry.

Guided by my teachers, craftsmen from industry, and



my own initiative, I will strive to do my best in making my school, community, state, and nation a better place in which to live.

I will accept the responsibilities that are mine. I will accept the facts proven by others. I will explore on my own for a safe, more effective method of working and living.

I will strive to develop a cooperative attitude and will exercise tact and respect for my fellow man.

Through the work of my hands and mind, I will express my ideas to the best of my ability.

I will make it my goal to do better each day the task before me, and to be steadfast in my belief in God, my country, and my fellow man.

Colors

Scarlet: Represents the strength and determination of the industrial arts students and teachers to obtain their goals.

White: Represents the high standards, morals, and religious beliefs we hold.

Royal Blue: Represents the sincerity of the industrial arts students and teachers in obtaining a greater knowledge of our technical world.

American Industrial Arts Association • 1201 16th Street, N. W. • Washington, D. C. 20036

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A Manpower Study Concerning Engineering Technicians Production and Requirements. Manpower Study No. 65-2.

Purdue Univ., Lafayette, Ind. Office of Manpower Studies
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*ENGINEERING TECHNICIANS; *EMPLOYMENT TRENDS; *EMPLOYMENT OPPORTUNITIES; TECHNICAL EDUCATION; OCCUPATIONAL SURVEYS; EMPLOYMENT; *MANPOWER NEEDS; EDUCATIONAL PLANNING
INDIANA

Due to the erratic pattern of engineering manpower needs in the past, it is necessary to continue to project requirements and to refine and validate these projections continuously. The area of projected requirements for engineering technicians needs more work, including: (1) the establishment of a base line from an engineering inventory, (2) an examination of the current technician inventory, (3) the establishment of ratios between technicians and engineers, and (4) the computation of technician employment needs which are categorized by industries or other meaningful classifications. We have produced about 16,700 engineering technicians annually since 1962 and we have 115,600 in the field. The next development of this study assumes a ratio of two technicians to one engineer. The Engineering Manpower Commission expects a 45 percent increase of engineering employment in the decade 1961-71. It is recommended that: (1) implications of this study be used to plan, develop, and publicize technician education, (2) further followup studies be made of Indiana's employment needs, (3) shortcomings of engineering technician programs be improved, and (4) related manpower research efforts be identified. (EM)

VT 001 973

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A MANPOWER STUDY

concerning

ENGINEERING TECHNICIANS PRODUCTION AND REQUIREMENTS

MANPOWER STUDY 65-2

JUNE 15, 1965

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By J. P. Lisack
Director, Office of Manpower Studies
School of Technology
Purdue University
West Lafayette, Indiana 47907

VT 01973

ENGINEERRING TECHNICIANS PRODUCTION AND REQUIREMENTS

JUNE 15, 1965

1. General

This study is a first effort to present pertinent elements bearing upon the current and future position of engineers and engineering technicians manpower production vs. requirements. Further statements and studies aimed more specifically to Purdue University, the School of Technology and Indiana area or industry targets will be forthcoming.

2. Rationale

A great deal of work has gone into the compilation of statistics concerning the engineering manpower population. There seems to be general agreement on the past and present total engineering population with the Bureau of Census data at given intervals and special surveys validating the figures to a substantial degree. (Note: Caution must be exercised when using these data due to the variation in (or lack of) definition of "engineer." Further, there is a large difference in the amount of applied vs. theoretical emphasis in engineering curricula - as well as other differences.) Projections to the engineering population are likewise possible on a fairly reasonable basis. Facts covering the population, high school and college graduation and the ratio of engineering freshmen to total college freshmen can be estimated after certain assumptions are made. Therefore, one may use past, present - and to a reasonable degree -

future statistics as to the trained engineering manpower pool with at least a moderate degree of confidence, recognizing of course there may be some temporary reverses to the general trends.

Projected requirements - or demand - for engineers are far more difficult to compile. But here too, studies by competent authorities have been accomplished. There is a divergence in view as to what the future needs might be, which is understandable when considering the numerous variables, the variety of assumptions that can be made and the shortness of valid quantifiable data. Naturally, the further the projection is made on this basis, the less confidence one has in the results. However, due to the erratic pattern of total engineering manpower needs in the past, which includes repeated reversals in trend, and the long lead times involved to initiate programs, recruit students, and complete related educational programs, it is necessary to continue to project requirements some time into the future (at least 8 to 10 years). It is also necessary to refine and validate such projections continuously.

The engineering technician is fast moving into his own. (For the purpose of this study an "engineering technician" equates with the graduate of a two-year college-level associate degree program.)[1] Whether one takes the position that a legitimate division exists within the engineering field - between the craftsman and the engineer[2]; or the position that a serious shortage

of engineers exists and training technicians over a two-year period, as opposed to four or more for an engineer is the best way to close the gap sooner; the fact remains technicians are needed. There is little question that engineering technicians are excellent engineer supporting personnel and the recognition of their skills and knowledge and new utilization techniques will further enhance their value.

What are the projected requirements for engineering technicians? This area needs more work, but there are studied opinions that are available.

In view of the foregoing, it appears reasonable to

(1) Establish engineering manpower inventory and production, and projected engineer requirements and use these as the base line;

(2) Then, examine current engineering technician inventory and production;

(3) Establish the relationships (ratios) of engineering technicians to engineers;

(4) Compute the present and future engineering technician requirements; breaking this down by industry and other meaningful and useful categories.

3. Inventory and Production of Engineers and Projected Requirements

The United States had an engineering population of about 520,000 engineers in 1950 and about 854,000 in 1960; an increase of 64%. Considering the new entries (engineering baccalaureate degrees awarded in 1961 and 1962) less losses due to death, retirement and transfers out of the profession, the total engineering population at end of '62 is estimated at between 950,000 and 1,000,000.[3]

In 1962, all U. S. engineering schools awarded 34,700 baccalaureate degrees.[4] Assuming the ratio of engineering freshmen to total college freshmen the same as in 1962, and considering other factors, the number of engineering graduates by 1970 should be about 47,000[5]. (However, in a related study projected to 1971 comment was made in a report that there was little prospect of graduating an annual average of 48,000 engineers.[6])

The prediction of over 45,000 college/engineer graduates to be produced annually by 1970 has just been verified in the most recent Manpower Report of the President.[7]

The startling projection was made in a National Science Foundation survey that there would be an average annual demand of 72,000 engineering graduates per year between 1959 and 1970![8] This contrasts with the present production rate of 34,700 graduates, and a questionable annual average of 48,000 graduates by 1971. Manifestly we are faced with a tremendous shortage; one

which will have an important effect on the nature and the demand of trained engineering technicians!

4. Engineering Technician Inventory and Production

The total U. S. engineering technician population has not been discovered by the author in any authentic publication. (Although there may well be some estimates.) Based on limited survey data taken from D. C. Metz,[9] the number of graduates from 1957 to 1962 averaged about 16,200 each year. A review of the annual production figures show no strong or definite trend. Assuming this production for 10 years past, and a 10% attrition per year, the estimate of inventory from technical institutes is computed to be 111,800 engineering technicians.

The actual production of nearly 16,200 technicians from technical institutes is really augmented by input from other training programs, estimated to be about 500 to 600 per year.[10] Applying the same computation technique described above, this supplemental source would have resulted in another approximately 3,800 engineering technicians.

In view of the foregoing, it appears we have produced around 16,700 engineering technicians each year through 1962, and we have over 115,600 trained engineering technicians on board. (The possibility of sizeable error in this estimate is acknowledged.)

5. The Relationship of Engineering Technicians to Engineers

It has been established that there is already a short supply of engineers which may be intensified in the future. Competent engineering technicians can do some of the work now occupying a part of the engineers' time. This is verified in the latest Manpower Report to the President, wherein, speaking of the problem of educating sufficient engineers, it is reported that "special efforts must be made to increase the number of qualified technicians and use them more effectively in order to conserve professional skills."[11] The actual ratio of technicians to engineers is suggested as follows:

> If we had enough qualified technicians available, engineers might be able to stretch their talents much farther. How far? Some experts believe that the optimum ratio is four technicians for every engineer. A conservative evaluation would call for at least two technicians working with the average engineer.[12]

6. Total Engineering Technician Requirements

For the purpose of the next development in this study, an assumption will be made that a ratio of two trained technicians are desirable for every engineer. The following then pertains:

Present Situation (end '62)		Future Situation (1970-1971)
Engineer Population	975,000[3]	
Engineer Production	* 34,700[3]	* 47,000 (est.)[5]
Engineer Demand (Reg.)		* 72,000[8]
Engr. Technician Pop.	115,600	
Technician Production	* 16,700	
Technicians to match Engineers	* 69,400	* 94,000
Technician Demand (Reg.)		*144,000

*Annually

Note: The engineer production and engineer demand refers to engineering graduates (baccalaureate degree). The "engineering technician" is defined on page 2.

7. Projected Growth of Employment

Based upon information from over five hundred participating companies, an Engineering Manpower Commission study determined that engineering employment in 1971 is expected to increase nearly 45% over the 1961 levels.[13] The percentage growth for each industry and government are shown in Table 1.[14] (The rank order of projected growth and size of industry were added by the author.) Assuming 2:1 ratio of technicians to engineers applies, it would appear from these data that the future requirements for technicians, considering both percent increase and numbers to be employed are:

Rank Order	Industry or Activity	Approx. # Techn. Needed End 1961	Percent Incr. (Projected 1971)	Projected # Technicians Required
1	Elect. Mach. & Electronics*	96,000	65%	158,400
2	Aircraft and Parts	40,300	67%	67,301
3	Utilities	26,500	14%	30,210
4	Research and Development	19,700	53%	30,141
5	Petroleum	18,500	13%	20,905
6	Chemical	11,800	66%	19,588
7	Machinery Mfg.	9,900	41%	13,959
8	Consulting	8,300	31%	10,873
9	Rubber and Plastics	5,600	70%	9,520
10	Fabricated Metal Products	5,100	31%	6,681
11	Instrument Mfg.	2,000	52%	3,040
12	Construction	2,100	44%	3,024
13	Railroads	2,800	6%	2,968
14	Primary Metals**	1,400	31%	1,834
15	Transportation Equipment	1,100	48%	1,628
16	Communications	1,100	38%	1,518
17	Food	1,100	21%	1,331
18	Stone, Clay and Glass	700	38%	966
	Miscellaneous***	1,400	26%	1,764
	INDUSTRY TOTAL	255,000	51%	
	GOVERNMENT, ALL LEVELS***	55,500	17%	
	ALL ACTIVITIES, TOTAL	310,500	45%	

*Note: More people (over 101,000) were employed in the electrical machinery industry than in any other manufacturing industry in the State of Indiana.[15]

** The total employment in the primary metals industry in Indiana was over 100,000 in 1964. This is the second largest manufacturing industry insofar as total employment is concerned.[18]

*** Specialities Unknown

8. Conclusions

It is abundantly clear that the present need for new engineering technicians far outstrips the production. To match current annual engineer production of 34,7000 graduates on a two for one basis, 69,400 technicians should be trained annually - we are training only about 16,700.*

It is also clear that if engineer production reaches the predicted 47,000 annually by 1970, we should be producing 94,000 technicians by then. (It is noted again, that no significant upward trend of technician graduates was evident during the 1957-1962 period studied.)

If the annual engineer demand (requirements) approaches the 72,000 mark by 1970-71, we should antiticpate a need for about 144,000 engineering technicians to be trained annually! In fact, if the 500 companies surved in the Engineering Manpower Commission[13] increases their engineers requirements by 45% by 1971 as projected, nearly a half million engineering technicians will be needed in their inventories.

---

*A verification of requirements is needed to determine actual job placement success of graduate technicians. Some preliminaty work is visualized in this regard. Failure to find jobs in turn must be analyzed to determine where more research and action are needed.

Insofar as the specific industries where most technicians are required nation-wide, there seems little doubt that the leader is in the Electrical Machinery and Electronics field - by far. Our Department of Electrical Engineering Technology pertains, as well as the Aviation Electronics curriculum and Industrial/Mechanical. (Altho the New England States are the primary national geographic locale for this field, the electrical machinery industry employed more people (62%) than any other manufacturing industry in the State of Indiana in 1964.)[15] Second comes Aircraft and Parts, also a huge requirement. The Department of Aviation Technology pertains as well as the electrical and industrial/ mechanical. (The West Coast is primary national locale for this field.)

Undoubtedly, the third largest field concerns the broad Industrial and Mechanical technology. This embraces, (or could if it doesn't) Machinery Manufacturing (non-electrical machinery manufacturing represents 9% of state employment in manufacturing industries.)[16] Included also are Fabricated Metal Products (7.4% of total manufacturing employment of State)[17], Primary Metals (which is the second largest manufacturing industry in Indiana insofar as employment (16%) is concerned).[18] Other fields are; Utilities, Instrument Manufacture, Transportation Equipment (14% of State total manufacturing employment)[19] and Railroads. As mentioned before, I and M technology is also pertinent to Electrical and Aircraft. This large grouping may

indicate a need for a study to break the specialized I and M field into options more clearly in parallel with job types in Industry groups.

The fourth classification might broadly include Chemical; Rubber and Plastics; Petroleum; - and possibly Stone, Clay, and Glass (3.9% of manufacturing employment in Indiana)[20]; and perhaps even Food.

The fifth largest field for technician requirements may be Research and Development, which probably could be grouped together with Consulting. (This field probably cuts across all of our departments - but more research may be fruitful to pin-point technician requirements and design and title programs more specifically to these fields.

The need for technicians in the field of construction is probably greater than indicated in this study. The selection of the 500 companies may not have included a fair sample in the Architectural and Civil Engineering technology. More work is needed here.

Note: About forty-five percent of Indiana manufacturing employment was concentrated in three industries: electrical machinery about 16%, primary metals about 15%, and transportation equipment 14%.

The average manufacturing employment in Indiana for 1963 was 611,500.

The employment in the electrical machinery industry averaged 96,200 in 1963; in the primary metals industry 94,500, and in the transportation equipment industry 88,700.[19]

9. Recommendations

First, those concerned capitalize on the implications of this study for planning purposes, in project development, use for student recruitment, and for publicity purposes.

Second, the undersigned conduct follow-on studies to more closely pin-point manpower requirements to meet Indiana's industrial, community and government needs.

Third, the undersigned gather and analyze data on job opportunities for graduates of engineering technician programs. Determine shortcomings and recommend actions needed.

Fourth, identify related manpower research efforts needed, plan necessary actions accordingly.

Suggestions are welcome.

J. P. Lisack
Director of Manpower Studies
School of Technology
Purdue University

Table I

GROWTH OF ENGINEERING EMPLOYMENT
(projections as a percentage of employed engineers in companies responding to EMC's survey in 1961)

ACTIVITY	RANK ORDER	ENGINEERS EMPLOYED BY RESPONDENTS Dec. 31, 1961	PERCENT INCREASE (PROJECTED) 1963	1966	1971	RANK ORDER '71
ALL ACTIVITIES		155,427	13.7	26.0	44.7	
INDUSTRY		127,673	15.1	29.2	50.8	
AIRCRAFT AND PARTS	2	20,154	18.5	31.8	67.0	2
CHEMICAL	6	5,885	12.9	33.2	65.8	3
COMMUNICATIONS		548	13.1	24.8	38.0	11
CONSTRUCTION		1,055	15.2	30.2	44.2	8
CONSULTING SERVICES	8	4,172	11.2	20.9	30.9	12*
ELECT. MACH. AND ELECTRONICS	1	47,939	21.0	40.5	64.6	4
FABRICATED METAL PRODUCTS	10	2,564	24.3	28.2	30.9	12*
FOOD PRODUCTS		532	9.4	13.9	20.9	15
INSTRUMENT MFG.		978	20.2	33.0	51.9	6
MACHINERY MFG.	7	4,960	12.6	26.3	40.9	9
PETROLEUM	5	9,270	2.1	6.9	13.1	17
PRIMARY METALS		677	9.7	19.2	30.7	13
RAILROADS		1,379	2.0	3.5	6.0	18
RESEARCH AND DEVELOPMENT	4	9,872	13.5	27.5	52.8	5
RUBBER AND PLASTICS	9	2,792	9.5	30.4	70.2	1
STONE, CLAY AND GLASS		385	18.2	26.5	38.4	10
TRANSPORTATION EQUIPMENT		548	19.0	34.7	48.2	7
UTILITIES	3	13,250	3.1	7.6	14.2	16
MISCELLANEOUS		713	4.3	8.3	25.9	14
GOVERNMENT		27,754	7.2	11.1	16.6	
FEDERAL GOVERNMENT		10,445	8.2	11.7	18.4	
STATE GOVERNMENT		14,729	6.4	10.8	14.7	
LOCAL GOVERNMENT		2,580	8.9	13.7	20.0	

* Same

SOURCE: Demand for Engineers, 1962; Engineering Manpower Commission.

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Lisack, J.P.
A Manpower Study for Technician-Level Educational Planning in Indiana Concerning the Chemical Technology.
Manpower Study No. 65-3.

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*OCCUPATIONAL SURVEYS; *CHEMICAL TECHNICIANS; *METALLURGICAL TECHNICIANS; CURRICULUM PLANNING; CURRICULUM; EMPLOYMENT TRENDS; INDUSTRY; *EDUCATIONAL NEEDS; EMPLOYMENT STATISTICS; PROFESSIONAL OCCUPATIONS; *MANPOWER NEEDS; EMPLOYMENT QUALIFICATIONS; OCCUPATIONAL CLUSTERS
INDIANA

This study examines data concerning employment of chemical technicians in chemical, rubber, plastics, primary metals, food processing, and petroleum plants in the state. An analysis of the data was done for educational program planning at Purdue University and its branch campuses. (EM)

VT 001 974

A MANPOWER STUDY
for
TECHNICIAN-LEVEL EDUCATIONAL PLANNING
in Indiana
Concerning the
CHEMICAL TECHNOLOGY

20 October 1965

MANPOWER STUDY NO. 65-3

By J. P. Lisack
Director, Office of Manpower Studies
Purdue University
School of Technology
West Lafayette, Indiana

VT 001 974

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EXTRACT

This study examines the industries related to the chemical technology in Indiana. It considers the National aspects briefly to provide bases for comparison and to fix perspective. The needs are determined for chemical technicians and metallurgical engineering technicians by industries in selected major metropolitan areas.

Data are presented showing the numbers of employees, trends, size and location of firms, occupations, and other pertinent information for the following industries; chemical, rubber and plastics, primary metals, food processing, and petroleum. Ratios of scientists and engineers and of technicians to total employment are computed for each industry. Parameters of manpower needs are found on one side by using actual (existing) ratios of technicians to total employment, and on the other by those ratios recommended by authorities as desirable. The 'new hires' portion of labor accessions are applied to determine an approximation of the numbers of technicians required annually for each industry by geographic area within Indiana.

It is concluded that consideration should be given to:

(1) Separation of the chemical and metallurgical engineering program at the Purdue Calumet Regional Campus into two separate curricula, in that sufficient occupational differences and manpower requirements exist which support both a chemical technician and a metallurgical engineering technician program in the Gary, Hammond, East Chicago complex; and

(2) Initiation of a chemical technician program at the Purdue Indianapolis Regional Campus as the data in this study indicate a need of sufficient magnitude.

Discussion of the orientation of these technician programs, curricula guidance matters and collateral items are also included.

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A MANPOWER REPORT FOR TECHNICIAN - LEVEL EDUCATIONAL PLANNING

Concerning the
CHEMICAL TECHNOLOGY
In the State of Indiana
October 1965

PURPOSE

1. The primary purpose of this study is to provide manpower data and educational implications concerning industries needs for technicians* in the chemical technology: a secondary purpose is to present related information concerning scientists and engineers. The industries selected for this study are Department of Labor Standard Industrial Classifications which include; the Chemical and Allied Products Industry, Rubber and Plastics Products Manufacturing, Primary Metals Industry, Food (manufacturing or process) Industry, and the Petroleum Refining Industry. These industries and their subgroups are analyzed in view of their close relationship to occupations within the chemical technology, their size and importance in Indiana, and their future prospects.

   Manpower data is presented for each industry including total employment; employment by industry subgroups; the location, number, types and size of firms; industry and employment concentrations, trends, and other facts. Also Indiana is compared to the rest of the Nation in related aspects in order to provide a basis for comparison and fix perspective.

   Actually, the technician needs reflected in this study are augmented slightly by jobs in nonmanufacturing areas such as Services (commercial laboratories, consulting services and sales), Agriculture, Mining and others.

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*The term technician as applied in this study refers to the upper portion of the range between the craftsman (normally high school level) and the engineer or chemist (baccalaureate level minimum).

Also, please see note on page 19.

RATIONALE

2. When the employment, size, location and other vital statistics are known for each selected industry, it is possible to apply known actual National ratios of scientists and engineers by industry subgroups, to total employment - and derive a reasonable approximation of the number employed by industry and locale in Indiana. The number of technicians employed can then be determined by applying the actual National average of technicians per 100 scientists and engineers for each industry subgroup. The ratio of technicians to scientists and engineers, as recommended by recognized authorities, must also be considered (as the actual inventory, according to many authorities, is low as a result of an inadequate number of training programs and other reasons). Next, by applying labor turnover factors (average monthly accession and separation rates) that are actually being experienced in Indiana, again by industry subgroups, it is possible to compute the related manpower needs. All of these factors must be adjusted considering time factors, trends, and other variables. Finally, by a careful analysis of these manpower and industry facts and ramifications, some conclusions and recommendations can be made concerning technician needs, educational program objectives, and curricula guidance matters. The latter items are added to this study in final sections separate from the basic manpower data, industrial facts, trends, ratios and rates.

THE CHEMICAL AND ALLIED PRODUCTS INDUSTRY

Employment

3. The total employment in the chemical and allied products industry in Indiana averaged 24,300 in 1963; this represented 4% of the total manufacturing employment in the State. There was an erratic employment pattern from 1953 to 1958, generally but not severely downward. Since 1959 however, there has been a steady increase in the annual averages of employees to it's present levels.[1] As of August 1965, employment was 25,100 and the current trend is still upward.

4. While Hoosier workers account for only 2.8% of the nation's employment in this total industry, they account for almost 11% of the nation's employment in the drugs subgroup! Nationwide, 13% of the workers in the chemicals and allied products industry are in the drugs subgroup, while in Indiana this proportion has stood at about 50% since 1959.[1]

Number and types of firms

5. There were 190 firms in the chemical and allied products industry in Indiana in March, 1964. Altho the largest number of firms (49) was in the Agricultural Chemicals Subgroups, this constituted only 6% of the employment. The second largest number of firms (30) was in the subgroup of Soap, Detergents and Cleaning preparations, Cosmetics and Other Toilet Preparations - and this subgroup constituted 15% of the employment. Altho there were but 26 drug manufacturing firms, they constituted over 50% of the employment in this industry (over 12,000 people). For a complete listing of the number of firms and per cent of employment by subgroups, see appendix 1.

Size of firms

6. As can be seen in Appendix 1, the greatest number of firms (70%) were made up of fewer than 50 employees. The probability of these smaller firms requiring technician level employees is high; in larger firms employing professional chemists and engineers, there are also requirements for supporting technicians. This is illustrated in Appendix 2 where it is shown technician occupations fit into the various stages in the life of a technical product.

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1. Refers to the reference number in the Selected Bibliography

Location of firms and industry concentration

7. The numbers of manufacturing firms in the chemical and allied products industry, by county, are shown in Appendix 3. It is noteworthy that Marion County (Indianapolis) is the Indiana center for the chemical and allied products industry. As of March 1964, there were 42 firms employing 36% of this industry's employment in Marion County, representing 8,750 people. Next came Lake County with 21 firms employing 14% (about 3,400) of this industry's employment. The only other counties employing over 1,500 were Vigo with 8 firms, Elkhart with 6, Vanderburgh with 5, and Clark with 4 firms. More than 80% of the employment in this industry is located in these six counties mentioned - with Marion County being the king-pin. For a listing of the largest firms by name in this industry and their location by city, please see Appendix 4.

Related occupations

8. There is a broad spread in the occupations in which chemical technicians may find employment. Over 35 are listed in Appendix 5. However, specialized chemical technicians who are trained in certain academic options, are better fitted for employment with certain industries or subgroups than others. Educational program objectives for technicians must be prepared with job requirements for the pertinent occupations in mind. The program should provide for some occupational mobility and provide a broad enough base, so that with additional experience, the graduate can advance successfully, and be able to do further study in order to increase his effectiveness.

RUBBER AND PLASTICS PRODUCTS MANUFACTURING

Employment

9. There was an average of 24,100 persons employed in rubber and plastics products manufacturing in Indiana during 1964. (Coincidentally, this is comparable to the state employment in the chemical industry.) Slightly less than 16,000 were employed in making rubber products, and slightly more than 8,000 were making plastic products. The employment gain in 1964 over '63 in rubber and plastics together was nearly 10%; however, it was only slightly over 1% for rubber and 12% for plastics![7]

10. The fact that employment in plastics has been growing steadily and faster than employment in rubber products in Indiana is true in the rest of the nation as well. In 1958, Hoosier employment in plastics was 33% as much as rubber employment; by 1964, plastics was 52% as much as rubber employment. The corresponding figures for the Nation are 42% and 63% respectively.[7]

Number and types of firms

11. There were 152 establishments manufacturing rubber and plastics products in Indiana in December, 1964. Altho the largest number of firms (97) was engaged in manufacturing miscellaneous plastic products, they employed only 35% of the work force in this group. There were 50 firms manufacturing fabricated rubber products other than tires and inner tubes - which constituted 56% of the employment. Five firms made tires and inner tubes, employing about 9% of the force. The number of rubber manufacturing establishments has been relatively stable from 1960 thru 1964 - moving from 52 to 55. In the plastics area, the number of firms moved from 76 to 97 during the same period. For a more complete listing, see Appendix 6.

Size of firms

12. The rubber products manufacturing establishments are generally larger in employment than those making plastic products. Greater percentages of employment are concentrated in the larger rubber products firms. For example, in March 1964, about 25% of the rubber products firms employed 250 or more persons while this was true of only 9% of the plastics firms. Almost 84% of those employed in rubber products firms worked in establishments of 250 or more: only half of those employed in plastics firms worked in plants of 250 or more. (For a complete listing of percent distribution of establishments by size and percent distribution of employment, please see Appendix 7.) In Indiana, there are more firms engaged in manufacturing plastics products than rubber products, but insofar as employment is concerned, they are much smaller in size. The probability of these smaller firms requiring technicians is high. (Please see Appendix 2 for examples of where technician occupations may fit into stages in the life of a technical product.)

Location of firms and industry concentration

13. The numbers of establishments in rubber and plastics products manufacturing by county are shown in Appendix 8. Of the 152 related establishments, 12 counties accounted for 75% of the approximately 24,000 employees. The major concentrations are:

Counties	Percent of Employment	Approximate Number Employed
St. Joseph and Elkhart	28%	6,750
Marion ahd Hamilton	15%	3,600
Wabash and Grant	9%	2,160
Vanderburgh	7%	1,680

For a listing of the names of the largest firms in this industry, and their location by city, please see Appendix 9.

Related occupations

14. As stated previously in paragraph 8, there is a very broad spread in the occupations in which chemical technicians may find employment. Over 35 of these occupations are listed in Appendix 5.

THE PRIMARY METALS INDUSTRY

Employment

15. The total employment in the primary metals industry in Indiana averaged 100,500 in 1964. This was a 6.1% increase over 1963. This industry is second in size only to the electrical machinery industry which averaged an annual employment of 101,200 in Indiana. There was a slightly erratic employment pattern in the primary metals industry from 1953 thru 1960. Since 1960 however, there has been a steady and uninterrupted growth.[10] In August, 1965, Indiana employment in the primary metals industry was 111,300 and still growing.

16. The Hoosier primary metals industry employment represented 16% of the total manufacturing employment in the State and 8% of the total primary metals industry employment in the Nation. According to 1964 figures, 10% of the Nation's steel mill employment was in Indiana: two thirds of the State's employment in this industry was in steel mills.[11]

Number and types of firms

17. There were 220 establishments in the Indiana primary metals industry in March, 1964. Altho the largest number of establishments were foundries (110), these accounted for slightly over 20,000 employees. The largest employment (over 63,000) is found in the 28 establishments in the subgroup of blast furnaces, steel works, and rolling and finishing mills. For a more complete listing of the number of establishments in each subgroup and the employment in each, please see Appendix 10.

Size of firms

18. Like the chemical industry, in the primary metals industry there are many more small than large firms - but a majority of the employees are found in the fewer large steel mills. For example, about 135 of the 220 firms each employ less than 100 people, but there are about 25 firms having more than 500 employees but less than 1,000 and another 25 having more than 1,000 employees. Please see Appendix 11 for more details.

Location of firms and industry concentration

19. The greatest concentration of establishments in the primary metals industry in Indiana is found in the Northwest corner of the State. Lake County,with 29 establishments, is of course the leader; where there are over 73,000 persons employed. Immediately adjacent counties, stretching to the east (viz. Porter, LaPorte, St. Joseph, Elkhart and Kosciusko), make up a northwest tier. Although Marion County, with 26 establishments is second to Lake in this regard, none of the counties adjacent to Marion has any related activity which is significant and there are only about 4,000 employed in Marion. There are over 6,000 employed in Howard County. There is no county on the State's southern border - or any county adjacent to those border counties - which has related employment of at least 600. Please see Appendix 12 for a more complete listing of primary metals establishments by county. See Appendix 13, for a listing of the largest firms, by name and city location.

Related occupations

20. Metallurgy engineering technicians are needed in a variety of occupations in the primary metals industries. However, there is a broad spread in the occupations where chemical technicians may find employment which are applicable to the primary metals industry. Some of these occupations are listed in Appendix 5.

THE FOOD INDUSTRY

Employment

21. In 1964, employment in the Indiana food industry averaged 46,900. Activities included in this industry are the manufacture of food and beverages for human consumption, ice, table and animal fats and oils, and prepared feeds for animals. In Indiana the food industry employs more people than any industry in non-durable goods manufacturing.[13] By August, 1965 this industry employed 49,200 people.

22. In November, 1964, meat and dairy products firms accounted for over 40% of the employment in the State's food industry; since 1960, there has been a very slight drop in the employment of meat and dairy products firms. Annual average employment in the food industry as a whole has been relatively stable. Within the total food industry, the annual average employment in canning (about 3,800 people) has been slowly rising, but it has not reached its 1953 high.

Number and types of firms

23. There were 782 establishments in the food industry in November 1964. The largest subgroup number (204 firms) processed dairy products and employed about 8,000 people. Next largest is meat products with 131 establishments but these employed over 11,000. Beverages were third and bakery products fourth, each employed about 6,800. Please see Appendix 14 for more details of establishments by subgroup and per cent of employment. Of some interest in the employment data, is the fact that most subgroups have a fairly consistent pattern over the calendar year - except, as expected; in the canning and preserving area. In this case, employment is fairly steady from January through July at nearly 4,000; it jumps to a peak of about 10,000 in September and by October-November is back to the 4,000 norm employment figure.

Location of firms and industry concentration

24. The location and concentration of firms and employment in the food industry generally is correlated with the population distribution within the State. For example, the largest number of firms in the food industry, 90 of them, are found in Marion County (viz. Indianapolis), employing over 12,500 people. Next comes Lake County with 46 firms (viz. East Chicago-Gary-Hammond); these firms employ more than 4,200. Third with 39 firms is Allen (Fort Wayne), fourth with 35 is Vanderbu gh (Evansville), and fifth with 34 is St. Joseph (South Bend). Elkhart County (Elkhart), Vigo (Terre Haute) and Delaware (Muncie) follow. For a more comprehensive listing of the number of establishments in the food industry, by county, please see Appendix 15.

25. For a listing of some of the largest manufacturers in this industry and the cities in which they are located, please see Appendix 16.

Related occupations

26. As stated earlier in this report, there is a wide variety in the occupations in which chemical technicians may find employment - a number are related to the food processing industry. For a listing of possible job titles or occupations, please refer back to Appendix 5.

THE PETROLEUM REFINING INDUSTRY

Employment and industry concentration

27. The employment in this industry totals about 7,400 people, which is the smallest insofar as employment is concerned, that is included in this study. However, the concentration in the Gary-Hammond-East Chicago complex is significant, where, as of August 1965, about 6,500 were employed.[16] An examination of the employment in this industry shows a steady decrease (e.g. it was approximately 8,000 in 1963); the downward trend is not great, but it is quite consistent: undoubtedly a reflection of applying automated and mechanized processes in modern plants.

28. In view of the fairly small numbers employed, the concentration in one area and the lack of employment growth potential, no more detailed data will be discussed here for the petroleum refining industry.

INDIANA WORK FORCE, STATE AND AREA SUMMARY EMPLOYMENT FOR STATE AND SELECTED CITIES BY INDUSTRY

Employment concentration summary

29. From the foregoing, insofar as industry employment concentrations related to the chemical technology are concerned, the following extract pertains[17]: (Figures in 000's)

Manufacturing Industry	Total Employed	Gary-Hammond East Chicago	Indianapolis	Fort Wayne	South Bend
Food	49.2	4.2	12.6	3.9	2.3
Chemicals	25.1	3.5	9.6	-	1.5
Rubber & Plastics	24.1	1.0	3.6	1.7	6.7
Petroleum Prod.	7.4	6.5	.3	-	-
Primary Metals	111.3	73.2	3.9	1.5	1.6
Sub-totals	217.1	88.4	30.0	7.1	12.1
All Manufacturing	664.9	111.1	123.4	40.5	34.3
Nonmanufacturing Services & Misc.	164.5	16.6	40.0	11.7	13.8

30. There is a heavy employment concentration of over 73,000 in the primary metals industry in the Gary-Hammond-East Chicago complex, and an expected concentration (over 4,000) in the food industry as well: the state's petroleum refining industry is almost entirely in this area - but total employment is relatively small at 6,500. In the Indianapolis area there is a concentration of almost 10,000 in the industrial chemical industry with a large percentage (over 50%) in the drugs and pharmaceutical subgroup. There is a large employment in the foods processing industry (over 12,000) and lesser numbers in rubber and plastics, and in primary metals. South Bend shows up pretty strong in the rubber and plastics industry (6,750). The employment trend is upward for all the above industries except for Food - where changes are relatively insignificant, and for Petroleum where employment is coming down steadily.

31. In addition to the Services and Miscellaneous subgroup shown in paragraph 29 above, there are other larger employment concentrations in the nonmanufacturing areas.[17] There is undoubtedly a need for chemical/technical professionals and technicians in a number of other subgroups; however, they are not believed to be critical to this study and the form of the data available does not permit a reasonable basis for chemical technician manpower estimates.

32. Appendix 17 contains an employment summary showing selected industries by state and key metropolitan areas. The author takes responsibility for the additions, estimates, and any errors that might have been made from basic statistical data supplied by the Indiana Employment Security Division.[17]

SCIENTISTS, ENGINEERS AND TECHNICIANS AS A PERCENT OF TOTAL EMPLOYMENT

Scientists and engineers percentages and numbers by selected industries

33. In all manufacturing industries in the United States, scientists and engineers comprised approximately 3.8 per cent of total employment in 1962.[18] This percentage varies considerably in each industry; please see Appendix 18 for a breakout. For the purposes of this study, considering the time elapse (from 1962), trends and other factors involved, but using reference 18 as the base point, the author's estimates are as follows:

PERCENTAGES AND NUMBERS OF CURRENT TOTAL EMPLOYMENT FOR SCIENTISTS AND ENGINEERS IN INDIANA BY SELECTED INDUSTRY CLASSIFICATIONS

INDUSTRY	Scientists and Engineers as a Percent of Total Employment	Estimated No. of Scientists and Engineers in Indiana
ALL MANUFACTURING	**3.8%**	**24,000**
Food and kindred	1.4%	700
Industrial chemicals	11.4	1,500
Drugs and pharmaceuticals	17.0	2,000
Petroleum refining	10.0	700
Rubber & miscellaneous plastics	2.1	500
Primary metals	2.8	3,000
NONMANUFACTURING		
Services and miscellaneous (includes labs, management consulting services, and engineering and architectural services)	6.4%	10,000

Technician percentages

34. The national average of technicians per 100 scientists and engineers is approximately 69.[19] (However, this existing ratio is lower than most authorities recommend - a point which requires separate treatment in this study.) Further, this existing technician ratio varies considerably between industries. It is necessary therefore that two technician-level requirements be computed for each industry. The first, ("A ratio") will be based on the national actual ratios as reported by the National Science Foundation (please see Appendix 19 and reference 19); the second technician-level requirements will be computed on a ratio considered desirable by identified authorities; these will be called the "B ratios".

"A ratios" of technicians to employment by industry

35. As stated earlier, the latest National Science Foundation report[19] will be used as the source for computing "A ratios". On this basis, the percentage factors to be applied against the total employment to determine the actual number of technicians for each industry, are computed by multiplying the average number of technicians per 100 scientists and engineers, as a percentage, with the scientists' and engineers' percentage of total employment, then multiplying this product with the total employment. The following pertains:

	Actual Aver. No. of Tech. Per Scientist or Engineer	Actual Aver. Percentage of Scientists and Engineers to Total Employment	Derived Percentage of Technicians to Total Employment
TOTAL	.69	3.0%	2.07%
ALL MANUFACTURING	.62	2.8%	2.36%
Industry			
Food and kindred	.63	1.4	.88%
Chemical (Industrial)	.46	11.4	5.24
Drugs and Pharmaceut.	.46	17.0	7.82
Petroleum refining	.45	10.0	4.50
Rubber & misc. plastics	.61	2.1	1.28
Primary metals	.59	2.8	1.65
NONMANUFACTURING	2.50	1.9	4.75
Services (non-manuf.)	1.20	6.4	7.68

Note: The preceding table reflects actual industry-wide ratios. There are important internal variations. For example, the Manufacturing Chemists' Association recently conducted a survey* of 133 companies having 11,000 employed chemical technicians and learned the actual ratio of technicians to researchers was .80 to 1 with the estimated ratio within ten years expected to be 1.2 to 1. This survey also indicated that more than one-third of the respondents were having difficulty in obtaining trained technicians, and about 80% favor a formal two-year college level course designed for chemical technicians.

*Report on Chemical Technician Training based on a survey among Research Directors of Member Companies of the Manufacturing Chemists' Association, Inc.

"B ratios" of technicians to employment by industry

36. "If we had enough qualified technicians available, engineers might be able to stretch their talents much farther .... Some experts believe the optimum ratio is four technicians for every engineer. A conservative evaluation would call for at least two technicians working with the average engineer. Based upon estimates of current graduates of technical institutes, we are now producing less than one technician for every two engineers". This quotation is taken from a statement of position prepared by the Engineering Manpower Commission of Engineers Joint Council in May 1963.[20] Manifestly, the ratio of technicians to engineers shown in situation "A" (paragraph 35) is too low - and the conservative estimate of technical institute graduates (one for every two engineers) is corroborated in the actual technician ratio statistics cited by the National Science Foundation. Therefore, for the purposes of this study and considering both factors (actual ratio and authorities views) the following average number of technicians per scientist and engineer will be applied to compute the "B ratios":

Industry	"B ratio" technicians Recommended No. of technicians per scientist or engineer	Aver. % of scientists and engineers to total employment	% of technicians to total employment
All manufacturing	2.2	3.8%	8.36%
Food and kindred	2.5	1.4	3.5
(Industrial) chemical	2.0	11.4	22.8
Drugs & pharmaceuticals	2.0	17.0	34.0
Petroleum refining	2.0	10.0	20.0
Rubber & misc. plastics	2.5	2.1	5.3
Primary metals	2.0	2.8	5.6
Nonmanufacturing	2.5	1.9	4.75
Services	3.0	6.4	19.2

Note: In 1959 the published results of the American Society of Engineering Education Survey of Technical Institute Education resulted in a report by G. Ross Henninger, that the companies surveyed indicated a median of desired ratios of technicians to engineers in 1967 at 1.9 to 1. (This is an increase over the present ratios and the trend is upward. J. P. L.)

LABOR TURNOVER

Accession and separation rates

37. In a manpower study of this sort, it was considered advisable to present the total accession rates and break out the new hires, as it is the latter which the author will apply as a factor in determing technician manpower needs. The separation rates will also be shown for comparative purposes. Please see Appendix 20 for labor turnover details for selected industries. Technically, when the total accession and separation rates are equal, the employment situation is in balance - or at least it is stable. (When accession rates exceed separation rates, employment is growing, as it is in the chemical industry, - and of course there is a vice versa as portrayed in the petroleum industry). The new hires include consideration of the job vacancies made by industry expansion, upward occupational mobility, job changes and attrition, and therefore are considered to be appropriate to a study concerning training program output goals.

Note: An "accession" is any addition to the employment rolls; "new hires" are additions who have never before been employed in the establishment or former employees not called back (viz. layoffs or transfers).

New Hires

38. Admittedly, applying "new hire" rates may result in understating the training needs, as other accessions, as well as regular employees require training. Further, proponents of technical training and education make a good case for all technicians to take refresher and new courses throughout their careers. Nevertheless, a conservative rate is considered appropriate to offset some of the other elements applied in this study which will undoubtedly reflect a high side of chemical technician needs.

39. The author will depend primarily on the actual and derived average new hire rates as reflected in Appendix 20, modified to reflect late trends and the author's judgements of related factors. The following data then apply:

Industry	Adjusted Monthly New Hire Rate	Adjusted Annual New Hire Rate
All Manufacturing	2.5%	30.0%
Primary metals	2.0	24.0%
Food industries	2.5	30.0%
Chemicals (Industrial)	1.8	21.6%
Drugs and pharmaceuticals	1.4	16.8%
Petroleum refining	.3	3.6%
Rubber and plastics	2.7	32.4%

DETERMINATION OF TECHNICIAN REQUIREMENTS - BY INDUSTRY AND LOCALE

Methodology review and extension

40. The past and present total employment by industry subgroups, and by local areas in Indiana has been determined. Likewise, the national percentage of scientists and engineers to total employment by industry has been presented. The national ratio of technicians to scientists and engineers by industry is also known - therefore the ratio of technician to total employment was computed; this was adjusted for time factors, trends, and variations between subgroups within each industry.

Next, the new hires were separated from the total labor accessions - by industry and subgroups. Again, trends and other factors were applied to arrive at a monthly new-hire accession rate for each industry. Using the following formula, the annual number of newly hired technicians needed for each industry can be computed:

> Annual new hire technicians = (total employment by industry) X (average % of scientists and engineers to total employment) X (ratio of technicians to scientists and engineers) X (annual new-hire rate).

The above calculations reflect existing rates of technicians to total employment and are labelled "A ratios". Authorities are agreed that the existing ratios are too low, therefore, recommended, in lieu of existing, technician ratios are applied to arrive at the more optimum situation, called "B ratios"....The next step is to actually compute the numbers of new hire technicians for each industry by locale.

Annual technician requirements - by industry and locale

41. The results of computing the many factors and data described earlier are reflected in Appendix 21. (In fact, these data signal areas for further study in other than the chemical technology - which should be accomplished in later studies ...) However, the real meat of the voluminous details can be summarized by making a few key extractions:

NUMBER OF NEW HIRE TECHNICIANS REQUIRED ANNUALLY BY INDUSTRY IN SELECTED METROPOLITAN AREAS

INDUSTRY	State Wide	Gary, Hammond East Chicago		Indiana-polis		Fort Wayne	South Bend	A or B Ratio
ALL MANUFAC-TURING	4,700	787		874		287	243	A
	16,700	2,786		3,095		1,016	860	B
Food	130	11		33		10	6	A
	517	44		132		41	24	B
Chemical (Ind. & Drugs)	313	39	*	129	*	--	17	A
	1,370	175		518		--	75	B
Rubber & Plastics	100	4		15		7	28	A
	415	17		62		29	115	B
Petroleum Products	12	11		1		--	--	A
	53	47		2		--	--	B
Primary Metals	441	290	*	15		6	6	A
	1,496	984		52		20	22	B
Sub-Totals	969	355		193		23	57	A
	3,851	1,267		766		90	236	B

*Attention is invited particularly to these areas - to be discussed in conclusions and recommendations.

Note: This study addresses the technician as the worker in the occupational area between the craftsman or skilled worker on one end, and the professional chemist or engineer on the other end, closest to the professionals. The technician has more knowledge of scientific and engineering theory and methods than the craftsman or skilled worker. The technology educational program consequently, is made up of college-level courses, of some two years duration, and usually leads to an associate degree. In this regard, the author knows of no such technician program of appreciable size for the chemical technology in the asterisked areas.

CONCLUSIONS

42. Chemical technicians are recognized and needed in the areas of production of chemical and allied products and in research of new and improvement of known products in Indiana industries.

43. In Indiana there are definite employment concentrations of industries related to the chemical technology. These are

(1) The Gary, Hammond, East Chicago complex where well over 100,000 employees are found in the primary metals area. On the conservative side, (using A ratios described in paragraph 35) about 290 related technicians are needed annually as new-hire accessions. This is an adequate basis to warrant a metallurgical engineering technology program - oriented essentially to the primary metal industries' needs. The data indicates that a separate chemical technician program is also justifiable on the basis of at least 40 new technicians needed annually for the chemical industries alone. This is at least doubled by the chemical technicians needed in primary metals, petroleum refining, food, rubber and plastics, services, and other areas. If the B ratios (explained in paragraph 36) were applied, the total technicians needed for these industries would be well over 1,000 per year. in the Gary, Hammond, East Chicago area! (Please see paragraph 8 regarding occupations and paragraphs 29 and 30 for employment summaries. Also, see listing in Appendix 5 for broad range of applicable occupations.) The possibilities of success for both of these programs is enhanced by the fact that employment is growing in the industries involved, except for petroleum refining.

(2) In the Indianapolis major metropolitan area, there are over 25,000 employees in the chemical industries; a large portion of these are employed in the drug and pharmaceutical industry sub-group. Important too is the fact employment has been growing in these industries. The computations show that conservatively speaking (A ratios), about 130 new-hire technicians are required annually in the chemical industry classification. These are supplemented by over 30 more technicians in the food processing industries; additional technicians are needed in the rubber and plastics, services and other groups. This is considered to be an adequate base for a chemical technician program, - but in this case, the orientation should be essentially to occupations related to the manufacture of chemicals and allied products -- to include drugs and pharmaceuticals, industrial chemical materials and allied products, food compounds and preservatives. If the B ratios were applied, the total new technicians needed annually would exceed 750 in the Indianapolis area. Please see paragraph 8 regarding occupations and paragraph 29 and 30 for employment summaries. Also see Appendix 5 for a listing of related occupations.

RECOMMENDATIONS

44. Based on the data, discussion, and conclusions in this study it is recommended that the Head of the Department of Industrial and Mechanical Engineering take into consideration:

a. Separating the present chemical and metallurgical engineering technology program at the Calumet Regional Campus into two curricula - one designed for chemical technicians - the other for metallurgical engineering technicians.

b. Presenting the chemical technician program at the Indianapolis Regional Campus.

c. Obtaining the advice and assistance of specialized ad hoc curriculum committees in the development of the curricula and related matters.

d. Establishing liaison with professional chemical societies for advice, assistance, and publicity. (See Appendix 22 for listing of chemical societies.

e. Including the following factors in the development of these programs in order that the graduate:

(1) Be qualified to enter the occupations in the industry concerned.

(2) Have a broad enough educational base for occupational mobility, and so that with additional experience, he can progress to higher job levels and increased responsibility and productivity.

(3) Be prepared for continuing studies to avoid job obsolescence and to enhance his chances of success.

f. Evaluating the advisability of applying provisions of Title VIII, inasmuch as both "Chemical Technology" and "Metallurgy Technology" are identified as specific curricula titles, related to occupational fields necessary for the national defense. (Please see Appendix 23.)

45. It is recommended that the Director of the Purdue Calumet Regional Campus take into consideration:

a. The desirability and feasibility of establishing a chemical technician program; and

b. Obtaining the assistance of members of the Industrial Advisory Board in planning the program implementation.

46. It is recommended that the Director of the Purdue Indianapolis Regional Campus take into consideration:

a. The desirability and feasibility of establishing a chemical technician program; and

b. Obtaining the assistance of members of the Industrial Advisory Board in planning the program implementation.

COLLATERAL ITEMS

Curricula

47. Chemical technicians are needed in the research of new and the improvement of known products, in pilot plant operations, and in the production of chemicals and allied products. The general requirements for a chemical technology program, with suggested curriculum guides and detailed supporting information (e.g. curriculum outline as shown in Appendix 24, course outlines and descriptions, library and laboratory needs, and cost estimates), are presented in a late U. S. Office of Education publication. It is OE-80031, Technical Education Program Series No. 5, Chemical Technology, A Suggested 2-Year Post High School Curriculum, U. S. Department of Health, Education and Welfare, Office of Education, 1964. (Available through the Superintendent of Documents, U. S. Government Printing Office - 70 cents.) This guide can be of value to program designers.

48. Another sample chemical technology curriculum is attached as Appendix 25. The emphasis (over 70%) is clearly on the technical subject area in this illustration.

Job factor comparison chart - selected chemical and metallurgical occupations

49. A publication[24] suggesting techniques for determining courses of study was issued in 1962 by the U. S. Office of Education covering both chemical and metallurgical technologies. Eleven job descriptions were shown in closely related jobs. Many of the significant characteristics in chemical activities pertain to both the chemical and metallurgical technologies - but this is not true of most of the metallurgical activities, - as they are unique to the metallurgical technology. Please see Appendix 26 for the job factor comparison chart.

The wrap-up

50. A quote from page 1 of the publication cited in paragraph 47 is considered appropriate. "His .. (a chemical technician's) special knowledge of the principles of chemistry, physics, and mathematics as applied in the chemical industry, combined with his broad knowledge of laboratory techniques, chemical processes, and the techniques of chemical analysis and control provide a basis for his working closely with the chemical scientists and chemical engineers ... The technician performs a special and indispensable role as a member of the scientific (and engineering) manpower team in chemical research, pilot plant operation, or production". Purdue University can provide the educational program for technicians to do just that.

J. P. Lisack
Associate Professor and
Director
Office of Manpower Studies
Purdue University
West Lafayette, Indiana

SELECTED BIBLIOGRAPHY AND NOTES

Reference No.

1. Labor Market Trends in Indiana, The Chemical and Allied Products Industry in Indiana, November, 1964. Indiana Employment and Security Division, Indianapolis, Indiana, pp. 1 and 2*

2. Ibid, page 4 (Source of Appendix 1)

3. Education for a Changing World of Work, Appendix 1, Technical Training inthe United States, U. S. Department of Health, Education and Welfare, OE 80022, 1963, p. 16. (Source of Appendix 2)

4. Labor Market Trends, Chemical, op. cit., p. 3 (Source of Appendix 3)

5. Ibid, pg. 1 (Source of Appendix 4)

6. Education for a Changing World ..., op. cit., p. 6 (Source of Appendix 5)

7. Labor Market Trends in Indiana, Employment in Rubber and Plastics Products Manufacturing in Indiana, September, 1965. Indiana Employment and Security Division, Indianapolis, p. 1 (also source of data for Appendix 9)

8. Ibid, pg. 2 (Source of Appendices 6 and 7)

9. Ibid, pg. 4 (Source of Appendix 8)

10. Labor Market Trends in Indiana, The Primary Metals Industry in Indiana, February 1965, Indiana Employment and Security Division, (Also source for appendices 13.) pg. 1

11. Ibid, pg. 2 (Source for appendixes 10 and 11)

12. Ibid, pg. 3 (Source for Appendix 12)

13. Labor Market Trends in Indiana, The Food Industry in Indiana, August, 1965, Indiana Employment and Security Division, Indianapolis, p. 1 (Also source of Appendix 16)

14. Ibid, pg. 2 (Also source for Appendix 14)

15. Ibid, pg. 5 (Source for Appendix 15)

16. Labor Market Trends ... Rubber ... op. cit., pg. 12

17. Ibid, pg. 12, Note: Some estimates and additions were made by the author: These have been marked on Appendix 17.

SELECTED BIBLIOGRAPHY AND NOTES (cont.)

Reference No.

18. Scientific and Technical Manpower Resources, National Science Foundation, NSF 64-28, November 1964, p. 27 (Also source for Appendix 18)

19. Ibid, pg. 24 (Also source for Appendix 19)

20. Engineering Manpower, A Statement of Position Prepared by the Engineering Manpower Commisssion of the Engineers Joint Council, May, 1963, pg. 23

21. Labor Market Trends in Indiana, January through December 1964, January through June 1965, Indiana Employment and Security Division, Indianapolis (Also source for Appendix 20)

22. Scientific and Technical Societies, Pertinent to the Education of Technicians, U. S. Department of Health, Education and Welfare, Office of Education, OE 80037, 1965 (Also source for Appendix 22)

23. Chemical Technology, U. S. Department of Health, Education and Welfare, U. S. Office of Education, OE 80031, 1964, pages 7 through 60 (Also source for Appendix 24)

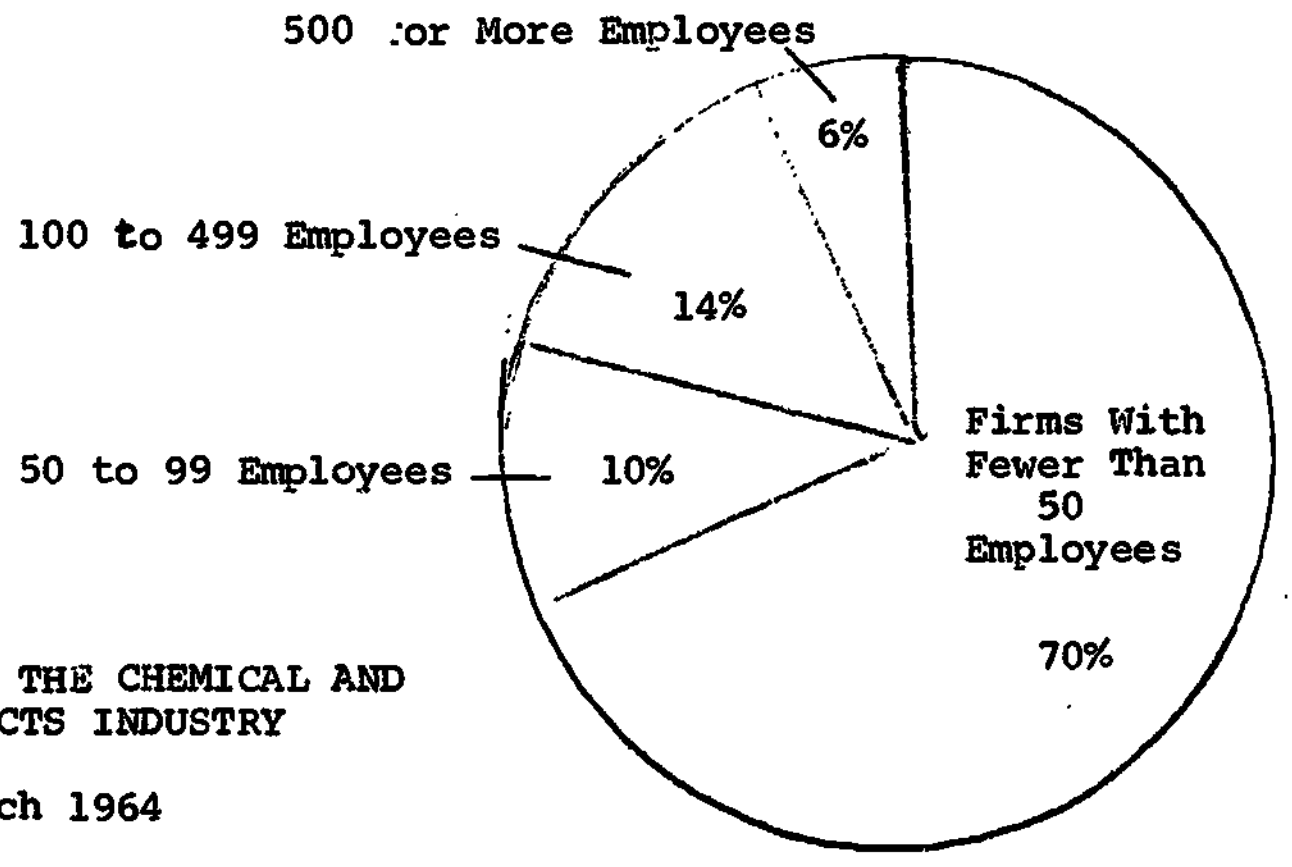
24. Vocations for Higher Education in Illinois, Tomorrow's Challenge, Bureau of Educational Research, College of Education, University of Illinois, 1960, pages 52-54 (Also source for Appendix 25)

*Indicates specific page or pages referred to.
Does not indicate total number of pages in publication.

APPENDIX 1

INDIANA CHEMICAL AND ALLIED PRODUCTS INDUSTRY:
NUMBERS OF FIRMS AND EMPLOYMENT IN THE SUBGROUPS
MARCH 1964*

Chemical and Allied Products Industry: Subgroups	No. of Firms	Per Cent of Employment
1. Industrial Inorganic and Organic Chemicals	28	15%
2. Plastics Materials and Synthetic Resins, Synthetic Rubber, Synthetic and Other Man-Made Fibers, Except Glass	5	6%
3. Drugs	26	50%
4. Soap, Detergents and Cleaning Preparations, Perfumes, Cosmetics and Other Toilet Preparations	30	15%
5. Paints, Varnishes, Lacquers, Enamels and Allied Products	29	6%
6. Gum and Wood Products	0	
7. Agricultural Chemicals	49	6%
8. (Not Classified)		
9. Miscellaneous Chemical Products	23	2%
TOTAL	190	100% (represents 24,300)



190 FIRMS IN THE CHEMICAL AND ALLIED PRODUCTS INDUSTRY

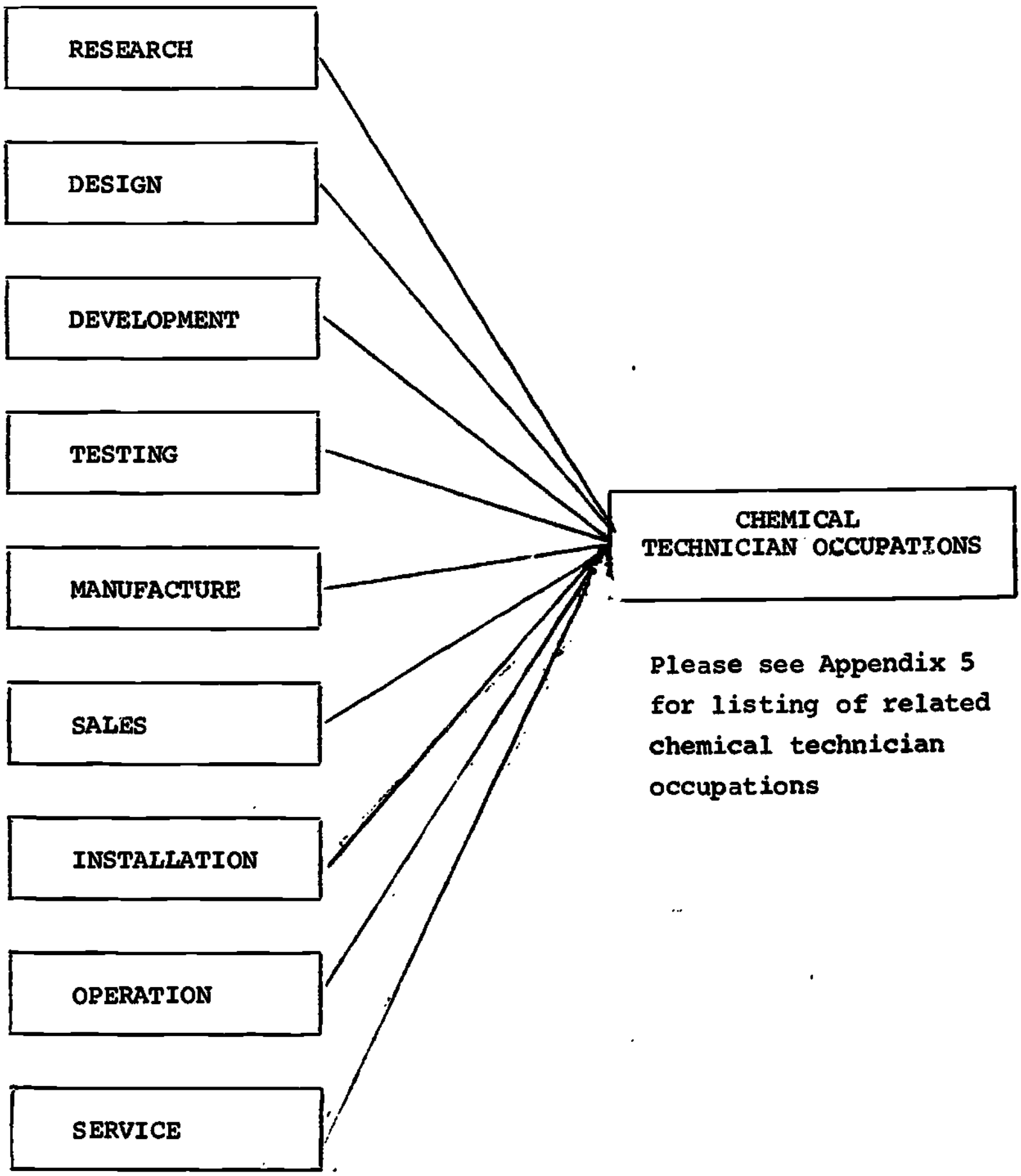
By Size, March 1964

*For source, see bibliography reference No. 2

APPENDIX 2

TECHNICIAN OCCUPATIONS IN THE VARIOUS PHASES OF INDUSTRIAL LIFE

To get a picture of the extent of technician occupations in the various phases of industrial life, one might follow the stages in the life of a technical product. This figure shows that technicians of one type or another are used in all of these stages.



Please see Appendix 5 for listing of related chemical technician occupations

*Note for source, see Bibliography reference number 3

APPENDIX 3

Number of Manufacturing Firms in the Chemical and Allied Products Industry* in Indiana, by County, March 1964

County	No. of Firms	Remarks
MARION	42	Employed about 8,750
LAKE	21	Employed about 3,400
VIGO	8	Employed over 1,500
ELKHART	6	Employed over 1,500
VANDERBURGH	5	Employed over 1,500
CLARK	4	Employed over 1,500

Note: More than 80% of the employment in this Industry is located in the above 6 counties. Marion is the center, surrounded by the remaining 5 which are on the State's border.

ST. JOSEPH	7	Employed less than 1,500
ALLEN	6	Employed less than 1,500
KOSCIUSKO	5	Employed less than 1,500
LAPORTE	4	Employed less than 1,500
All remaining	3 or less	Employed less than 1,500 in each

*Note: For source, see reference 4

APPENDIX 4

SOME OF THE LARGEST FIRMS IN THE CHEMICAL AND ALLIED PRODUCTS INDUSTRY IN INDIANA * (With Cities of Location)

FIRM	CITY
Eli Lilly & Company	Indianapolis, Greenfield, and Lafayette
Colgate-Palmolive Company	Jeffersonville
Lever Brothers Company	Hammond
Miles Laboratories, Inc.	Elkhart
Mead Johnson and Company	Evansville
Pitman-Moore Company (Division of Dow Chemical Co.)	Indianapolis and Zionsville
Olin Mathieson Chemical Corp.	Peru and Warren County
Union Carbide Corporation	
(Chemicals Division)	Whiting
(Linde Air Products Co.)	East Chicago
Charles Pfizer & Company, Inc.	Terre Haute
Ethyl VisQueen Company	Terre Haute
E. I. duPont de Nemours & Company, Inc.	East Chicago
Commercial Solvents Corporation	Terre Haute

*For source, see reference No. 5

APPENDIX 5

CHEMICAL TECHNICIAN OCCUPATIONS[1]

The range of occupational titles for jobs of chemical technician character is great. Some types of jobs, such as inspector, laboratory assistant or various types of production technicians, are found in almost all types of manufacturing firms; some jobs are found only in a specific industry. The following listing of chemical technician related occupations is presented to provide an overview of their great range.

Analyst or Sampler
Assistant (aide)* to chemical engineer
Assistant chemist
Chemical production operator or technician
Chemical (research) technician
Chemicals testor*
Control or process analyst* (or "trouble shooter")
Control chemist
Cost analysis or cost control technician*
Equipment service technician* (operation, maintenance and/or inspection)
Food process technician*
Inspector
Job methods technician*
Junior chemist
Laboratory assistant
Laboratory supervisor
Laboratory technician
Metals process technician*
Pilot plant operator or technician
Pilot plant supervisor
Plastics technician
Process foreman (or supervisor)
Product analyst
Production control or expediter* technician
Production supervisor
Quality control technician
Safety technician*
Salesman (product or equipment)*
Sales serviceman*
Spectographic technician
Technical illustrator
Technical writer

[1]Note: For source see reference No. 6 and occupations discussed in Chemical Technology, OE-80031, U. S. Department of Health, Education and Welfare, 1964.

*Added by author

APPENDIX 6

RUBBER AND PLASTICS PRODUCTS MANUFACTURING
IN INDIANA SHOWING
NUMBER OF ESTABLISHMENTS AND EMPLOYMENT BY INDUSTRY GROUP
AS OF DECEMBER, 1964*

Standard Industrial Classification Group Code and Title		Establishments	Per Cent of Employment
301	Tires and Inner Tubes	5	9%
302	Rubber Footwear	1	
303	Reclaimed Rubber	1	56%
306	Fabricated Rubber Products (Not elsewhere classified)	48	
307	Miscellaneous Plastics Products	97	35%
	TOTALS	152	100%

NOTE: There was an average employment of 24,100 in rubber and plastics products manufacturing in Indiana during 1964.

*For source, see reference No. 8

APPENDIX 7

RUBBER AND PLASTICS PRODUCTS MANUFACTURING IN INDIANA MARCH 1964*

In the following table it can be seen that in Indiana rubber products manufacturing establishments are generally larger than plastics products manufacturing establishments. Greater percentages of employment are concentrated in the larger establishments in rubber products than in plastics products. In March 1964 a quarter of the rubber products establishments employed 250 or more persons while only 9 per cent of the plastics products establishments employed 250 or more. Almost 84 per cent of those employed in rubber products establishments worked in establishments of 250 or more. About half of those employed in plastics products establishments worked in plants of 250 or more.

(1) Percentage Distribution of Establishments by Establishment Size

Employment Size of Establishment	0-3	4-9	10-19	20-49	50-89	100-249	250-499	500-899	1,000 & Over
Rubber Products	0	11.3	13.2	22.6	7.5	20.8	11.3	5.7	7.6
Plastics Products	9.1	12.5	18.2	22.8	13.6	14.8	4.5	4.5	0
Both	5.7	12.1	18.3	22.7	11.3	17.0	7.1	5.0	2.8

(2) Percentage Distribution of Employment by Size of Establishment

Employment Size of Establishment	0-3	4-9	10-19	20-49	50-89	100-249	250-499	500-999	1,000 & Over
Rubber Products	0	0.2	0.6	2.4	1.8	11.2	13.5	13.6	56.7
Plastics Products	0.2	1.0	2.9	9.2	11.1	25.9	18.7	31.0	0
Both	0.1	0.5	1.3	4.6	4.9	16.0	15.2	19.3	38.1

*For source, see reference No. 8

APPENDIX 8

NUMBER OF ESTABLISHMENTS IN RUBBER AND PLASTICS PRODUCTS MANUFACTURING BY COUNTY* DECEMBER, 1964

County	No. of Establishments	Remarks
Elkhart	19	County employment is more than 600
Marion	15	"
St. Joseph	13	"
Allen	11	"
Vanderburgh	10	"
DeKalb	5	"
Grant	4	"
LaPorte	4	"
Cass	3	"
Wabash	3	"
Noble	2	"
All others	4 or less	Employment is less than 600 in each county

*For source, see reference No. 9

APPENDIX 9

SOME OF THE LARGEST FIRMS IN RUBBER AND PLASTICS PRODUCTS IN INDIANA - BY CITY*

Establishments	Locations
United States Rubber Company	Mishawaka and Indianapolis
General Tire and Rubber Company	Wabash, Logansport, Marion, and Evansville
B. F. Goodrich Tire Company	Woodburn, Allen County
Firestone Industrial Products Co. Division, the Firestone Tire and Rubber Company	Muncie
The Richardson Company	Indianapolis
Monsanto Company	Ligonier
Kent Plastics Corporation	Evansville
Amos-Thompson Corporation	Edinburg

*For source, see reference No. 7

APPENDIX 10

INDIANA PRIMARY METALS INDUSTRY: NUMBER OF ESTABLISHMENTS AND EMPLOYMENT BY INDUSTRY GROUPS MARCH 1964*

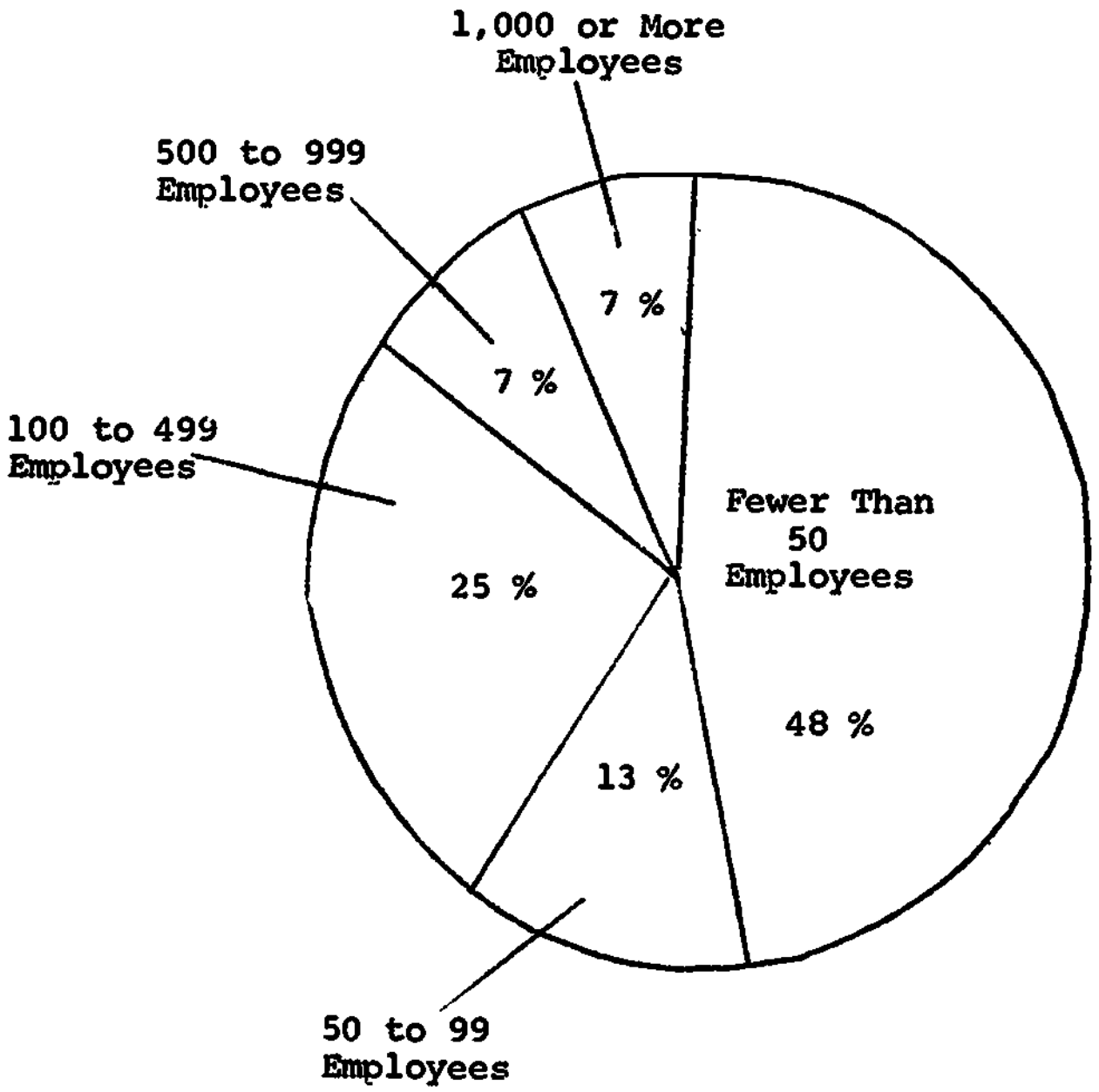
Standard Industrial Classification Industry Group Code and Title	Establishments	Per Cent of Employment
331 Blast Furnaces, Steel Works, and Rolling and Finishing Mills	28	63%
332 Iron and Steel Foundries	66	14% (= 14,000+)
333 Primary Smelting and Refining of Nonferrous Metals 334 Secondary Smelting and Refining of Nonferrous Metals	10	2%
335 Rolling, Drawing and Extruding of Nonferrous Metals	28	11%
336 Nonferrous Foundries	54	6% (= 6,000+)
337, 338 (No Classification)		
339 Miscellaneous (including iron and steel forging and primary metals manufacturing not elsewhere classified)	34	4%
TOTAL	220	100% (= 100,500 people)

NOTE: In 1964, total employment in the primary metals industry in Indiana was 100,500. This was a 6.1% increase over 1963.

*For source, see reference No. 11

APPENDIX 11

220 ESTABLISHMENTS IN THE
INDIANA PRIMARY METALS INDUSTRY
BY SIZE
MARCH 1964*



NOTE: In 1964, total employment in the primary metals industry in Indiana was 100,500. This was a 6.1% increase over 1963.

*For source, see reference No. 11

APPENDIX 12

NUMBER OF ESTABLISHMENTS IN THE PRIMARY METALS INDUSTRY IN INDIANA, BY COUNTY MARCH, 1964*

County	Number of Establishments	Remarks
Lake	29	Employed over 63,000
Marion	26	Employed over 3,000
Allen	16	Employed over 3,000
St. Joseph	11	Employed over 1,000
Howard	10	Employed over 600
Grant	10	Employed over 600
Delaware	10	Employed over 1,000
Vigo	9	Employed over 1,000
Elkhart	9	Employed over 600
Kosciusko	6	Employed over 600
Wayne	6	Employed over 600
Porter	5	Employed over 600
LaPorte	4	Employed over 600
Henry	4	Employed over 600
Noble	3	Employed over 600
Fountain	3	Employed over 600
Randolph	3	Employed over 600
Bartholomew	3	Employed over 600
Lawrence	3	Employed over 600
Tippecanoe	2	Employed over 600
All Others	6 or less	Employed under 600 in each county

Note: There were a total of 220 establishments. The 20 counties listed by name account for 95% of the total employment.

*For source, see reference No. 12

APPENDIX 13

SOME OF THE LARGEST FIRMS IN THE PRIMARY METALS INDUSTRY IN INDIANA*

Firm	Location
U. S. Steel Company	Gary
Inland Steel Company	East Chicago
The Youngstown Sheet and Tube Company	East Chicago
Continental Steel Corporation	Kokomo
Midwest Steel Division, National Steel Corporation	Portage
Harrison Steel Castings Company	Attica
Aluminum Company of America	Lafayette and Newburgh
Blaw Knox Company	East Chicago
Bethlehem Steel Company (new facilities)	Portage

*For source, see reference No. 10

APPENDIX 14

INDIANA FOOD INDUSTRY
NUMBER OF FIRMS AND EMPLOYMENT BY INDUSTRY GROUPS
NOVEMBER 1964*

Standard Industrial Classification Group Code and Title		No. of Establishments	Per Cent of Employment
201	Meat Products (slaughtering, meat packing, and wholesale poultry and small game dressing and packing)	131	24
202	Dairy Products	204	17
203	Canning and Preserving Fruits, Vegetables, and Sea Foods	74	8
204	Grain Mill Products	70	8
205	Bakery Products	98	14
206	Sugar (no firms in Indiana)		
207	Confectionery and Related Products	11	3
208	Beverages (including alcoholic)	113	15
209	Miscellaneous Food Preparations and Kindred Products	81	11
	TOTAL	782	100

NOTE: Total employment was 46,900

*For source, see reference No. 14

APPENDIX 15

NUMBER OF ESTABLISHMENTS IN THE FOOD INDUSTRY, IN INDIANA, BY COUNTY* NOVEMBER 1964*

County	No. of Establishments	Remarks
Marion	90	County employment over 500
Lake	46	"
Allen	39	"
Vanderburgh	35	"
St. Joseph	34	"
Elkhart	28	"
Vigo	25	"
Delaware	22	"
Madison	18	"
Bartholomew	12	"
LaPorte	10	"
Wayne	10	"
Adams	8	"
Floyd	7	"
Noble	7	"
Dearborn	5	"
Gibson	4	"
Scott	4	"

NOTE: There were 782 establishments in all. The above however, account for the employment of over 37,500 people, which represents over 80% of the industry.

The employment in all other counties was less than 500 people and are not listed.

*For source, see reference No. 15

APPENDIX 16

SOME OF THE LARGEST MANUFACTURERS IN THE FOOD INDUSTRY IN INDIANA IN 1964*

Firm	Location
Stark, Wetzel and Company, Inc.	Indianapolis
Emge Packing Company	Fort Branch and Anderson
Marhoefer Packing Company	Muncie
Hygrade Food Products Corporation	Indianapolis
Morgan Packing Company	Austin, Columbus, Brownstown, Franklin, Scottsburgh, Redkey and Converse
Joseph E. Seagram & Sons, Inc.	Lawrenceburg, Milan, and Jeffersonville
Great A & P Tea Company, Inc. (Quaker Maid Division)	Terre Haute
Central Soya Company, Inc.	Indianapolis, Ft. Wayne, Decatur
Continental Baking Company	Indianapolis, Gary, Hammond
The Borden Company	Indianapolis, Lafayette, Ft. Wayne, South Bend, Terre Haute, and Hammond
Stokely-Van Camp, Inc.	Indianapolis, Greenwood, Peru, Tipton, St. Paul, Elwood, and Shelbyville

*For source, see reference No. 13

APPENDIX 17

INDIANA WORK FORCE, STATE AND AREA SUMMARY BY MOST SIGNIFICANT INDUSTRIES IN EACH LOCAL AREA
AUGUST 1965*

(All figures in thousands)

EMPLOYMENT STATUS & INDUSTRY	State	MAJOR METROPOLITAN AREA						
		Gary Hammond E.Chicago	Evans-ville	Fort Wayne	Indiana-polis	Muncie	South Bend	Terre Haute
CIVILIAN WORK FORCE	1,919.2	228.3	91.1	111.3	408.7	45.5	102.8	59.1
Employed in Nonfarm Indus.	1,606.5	203.9	75.8	99.0	358.2	38.3	86.9	46.2
Manufacturing	664.9	111.1	28.1	40.5	123.4	17.4	34.3	13.2
Food	49.2	4.2[e]	2.9	3.9	12.6	1.9	2.3	2.5
Apparel & Textiles	13.8		1.8				0.6	
Lumber & Furniture	36.9		2.2				1.0	
Paper, Printing & Publ.	38.4				10.9			
Chemicals	25.1	3.5[e]	1.5[e]		9.6		1.5[e]	2.2
Petroleum & Coal Products	7.4	6.5			.3[e]			
Primary Metals	111.3	73.2		1.5[e]	3.9	1.6[e]	1.6	1.4
Fabricated Metals	49.0	7.7	3.1		8.9		1.8	1.4
Machinery	173.6		9.7	16.3	34.8			
Nonelectrical	61.2			4.3	14.2		6.6	
Electrical	112.4			12.0	20.6			
Transportation Equipment	88.7			11.9	29.3	6.4	9.8	
Rubber & Misc. Plastics	24.1	1.0[e]	1.7	1.7[e]	3.6		6.7	
Nonmanufacturing	941.7	92.8	47.7	58.5	234.8	20.9	52.6	33.0
Mining	8.7		2.0					1.0
Contract Construction	84.4	10.9	4.2	5.2	16.9	1.3	3.6	1.7
Trans., Comm., & Pub. Util.	91.8	12.8	4.9	7.1	24.7	2.2	4.5	4.2
Wholesale & Retail Trade	303.9	31.0	16.5	21.0	77.2	7.4	18.1	11.8
Finance, Ins., & Real Est.	65.8	5.4	2.8	5.2	23.6	1.4	4.6	1.6
Service & Misc.	164.5	16.6	10 0	11.7	40.0	3.9	13.8	5.2
Government	222.7	16.0	7.3	8.3	52.4	4.5	8.0	7.5

NOTE: Figures are preliminary

[e]Estimate J. P. Lisack

*For source, see reference 17

APPENDIX 18

TABLE III-11. SCIENTISTS AND ENGINEERS, BY INDUSTRY CLASSIFICATION, AS PERCENT OF TOTAL EMPLOYMENT IN THE INDUSTRY FOR 1961 and 1962*

Industry		January 1961	January 1962
MANUFACTURING (ALL)		3.9%	3.8%
Food and kindred products		1.2	1.3
Chemicals and allied products		10.5	10.2
Industrial chemicals	sub-groups	11.4	11.3
Drugs and pharmaceuticals	sub-groups	16.3	16.9
Other chemical products	sub-groups	7.2	7.0
Petroleum refining		8.1	9.7
Rubber and miscellaneous plastics products		2.1	2.0
Primary metals		2.8	2.6
Blast furnaces and basic steel products	sub-groups	2.5	2.2
Other primary metals	sub-groups	3.7	3.6
NONMANUFACTURING (ALL)		1.9	1.9
Mining		4.4	3.8
Contract construction		2.1	2.5
Services		6.5	6.4
Commercial laboratories, & consulting services	sub-groups	8.3	8.2
Engineering and architectural services	sub-groups	26.7	26.1
Other services (including medical & dental)	sub-groups	5.7	5.6
Agriculture, forestry and fisheries		3.7	5.6

*Extract from National Science Foundation, NSF 64-26, Scientific and Technical Manpower Resources, November, 1964, page 27

APPENDIX 19

TABLE III-7. SCIENTISTS AND ENGINEERS, TECHNICIANS, AND RATIO OF TECHNICIANS TO SCIENTISTS AND ENGINEERS, BY INDUSTRY CLASSIFICATION, 1962*

INDUSTRY	Scientists & Engineers	Technicians	Average number of technicians per 100 scientists and engineers
Total	851,600	585,100	69
Manufacturing (All)	613,600	379,500	62
Food & kindred products	22,200	13,900	63
Chemicals and allied products	95,500	43,400	46
Petroleum refining	20,900	9,400	45
Rubber and miscellaneous plastics	7,700	4,700	61
Primary metals industry	32,000	18,900	59
Blast furnaces and basic steel products	20,200	12,200	60
Other primary metals	11,800	6,700	57
Nonmanufacturing (All)	238,000	205,500	86
Mining	24,600	10,100	41
Contract construction	41,000	24,600	60
Services	86,000	103,800	120
Commercial labs, and consulting services	34,100	36,100	106
Engineering and architectural services	49,800	60,000	120
Other services	1,800	3,500	192
Medical and dental laboratories	700	4,100	580
Agricultural, forestry and fisheries	1,000	1,700	181

*Extract from National Science Foundation, NSF 64-28, Scientific and Technical Manpower Resources, November, 1964, page 24.

APPENDIX 20

LABOR TURNOVER IN MANUFACTURING INDUSTRIES IN INDIANA*[1]

	PER 100 WORKERS EMPLOYED														
	ACCESSION RATES										SEPARATION RATES				
	TOTAL					NEW HIRES ONLY									
	65*	64	63	62	Aver.*	65*	64	63	62	Aver.*	65*	64	63	62	Aver.*
MANUFACTURING	3.7	3.3	3.1	3.4	3.37	2.7	2.3	1.9	1.9	2.20	3.0	3.1	3.1	3.4	3.15
Primary Metals	2.9	2.7	2.6	2.3	2.62	2.5	2.2	1.4	1.0	1.77	2.0	2.0	2.3	2.7	2.25
Food Industries	4.1	3.5	3.4	3.5	3.62	2.7	2.3	2.1	2.2	2.32	3.7	3.6	3.8	3.7	3.70
Chemicals Ind.	2.8	2.1	2.2	2.1	2.30	2.0	1.3	1.4	1.2	1.47	2.4	2.1	2.1	.7	1.42
Drugs	1.7	1.2	1.4	1.3	1.40	1.5	1.0	1.2	1.1	1.20	.9	1.2	1.1	1.0	1.05
Petroleum Ref.	.9	.6	.6	.4	.62	.3	.3	.3	.2	.27	.9	1.1	1.4	1.0	1.10
Rubber & Plastics	3.8	3.1	3.3	4.1	3.57	2.9	2.2	2.1	2.8	2.52	3.5	3.3	3.4	3.5	3.42

[1]For source of 1962 thru 1964 data, see reference 21

[2]Excludes canning and preserving

*Determined or Computed by J. P. Lisack

APPENDIX 21

NUMBER OF TECHNICIANS REQUIRED BY INDUSTRY AND LOCAL AREAS

(Figures in 000's) INDUSTRY	Employment by Industry	Technicians Employed %	Technicians Employed No.	% New Hires Annually	No. New Hires, Technicians	Ratios
ALL MANUFACTURING	664.9	2.36% 8.36%	15.69 55.58	30.0% 30.0%	4.700 16.670	A B
FOOD & KINDRED	49.2	.88% 3.50%	.433 1.722	30.0% 30.0%	.130 .517	A B
Gary, Hammond East Chicago	4.2	.88% 3.50%	.037 .147	30.0% 30.0%	.011 .044	A B
Indianapolis	12.6	.88 3.50	.111 .441	30.0% 30.0%	.033 .132	A B
Fort Wayne	3.9	.88 3.50	.034 .134	30.0% 30.0%	.010 .041	A B
South Bend	2.3	.88 3.50	.020 .080	30.0% 30.0%	.006 .024	A B
Sub-totals					.060 .241	A B
CHEMICALS	25.1	6.5%[1] 28.4%[1]	1.630 7.128	19.2%[1] 19.2%[1]	.313 1.370	A B
Gary, Hammond East Chicago	3.5	5.5%[2] 25.0%[2]	.193 .875	20.0%[2] 20.0%[2]	.039 .175	A B
Indianapolis	9.6	7.5%[3] 30.0%[3]	.720 2.880	18.0%[3] 18.0%[3]	.129 .518	A B
South Bend	1.5	5.5%[2] 25.0%[2]	.083 .375	20.0%[2] 20.0%[2]	.017 .075	A B
(Fort Wayne, Insignificant)						
Sub-Totals					.185 .768	A B
RUBBER & PLASTICS	24.1	1.28% 5.30%	.310 1.280	32.4% 32.4%	.100 .415	A B
Gary, Hammond East Chicago	1.0	1.28% 5.30	.013 .053	32.4% 32.4%	.004 .017	A B
Indianapolis	3.6	1.28 5.30	.046 .191	32.4% 32.4%	.015 .062	A B
Fort Wayne	1.7	1.28 5.30	.022 .090	32.4% 32.4%	.007 .029	A B
South Bend	6.7	1.28 5.30	.086 .355	32.4% 32.4%	.028 .115	A B
Sub-Totals					.054 .223	A B

1. Average, Chemical (Indus.) and Drugs
2. Adjusted, favoring Chemical (Industrial)
3. Adjusted, favoring Drugs and Pharmaceuticals

APPENDIX 21 (continued)

INDUSTRY	Employment by Industry	Technicians Employed %	Technicians Employed No.	% New Hires Annually	No. New Hires, Technicians	Ratio
PETROLEUM REFINING	7.4	4.50%	.333	3.6%	.012	A
		20.0%	1.480	3.6%	.053	B
Gary, Hammond East Chicago	6.5	4.50%	.293	3.6%	.011	A
		20.0%	1.300	3.6%	.047	B
Indianapolis	.3	4.50%	.014	3.6%	.001	A
		20.0%	.060	3.6%	.002	B
Sub-Totals					.012	A
					.049	B
PRIMARY METALS	111.3	1.65%	1.837	24.0%	.441	A
		5.6%	6.233	24.0%	1.496	B
Gary, Hammond East Chicago	73.2	1.65%	1.208	24.0%	.290	A
		5.6%	4.100	24.0%	.984	B
Indianapolis	3.9	1.65%	.064	24.0%	.015	A
		5.6%	.218	24.0%	.052	B
Fort Wayne	1.5	1.65%	.025	24.0%	.006	A
		5.6%	.084	24.0%	.020	B
South Bend	1.6	1.65%	.026	24.0%	.006	A
		5.6%	.090	24.0%	.022	B
Sub-Totals					.317	A
					1.078	B

Note: For discussion of A or B ratios, please see paragraphs 35 and 36 of study.

APPENDIX 22

SELECTED SCIENTIFIC AND TECHNICAL SOCIETIES PERTINENT TO THE CHEMICAL TECHNOLOGY[1]

American Chemical Society *
American Association of Cereal Chemists, Inc.
American Association of Textile Chemists and Colorists
American Crystallographic Association
American Institute of Chemical Engineers
American Institute of Chemists
American Leather Chemists Association
American Oil Chemists Society
American Petroleum Institute
American Scientific Glassblowers Society
American Society for Metals
American Society for Quality Control, Inc.
American Society for Testing Materials
American Society of Brewing Chemists, Inc.
Association of Official Agricultural Chemists of North America, Inc.
Association of Vitamin Chemists
Electrochemical Society, Inc.
National Association of Corrosion Engineers
Radiation Research Society
Society for Applied Spectroscopy
Society of Cosmetic Chemists
Society of Petroleum Engineers (AIME)
Society of Plastics Engineers, Inc.
Society of the Plastics Industry, Inc.

****

*The American Chemical Society is largest with total membership of 99,500.

ACS Divisions are:

Agricultural and Food Chemistry
Analytical Chemistry
Biological Chemistry
Carbohydrate Chemistry
Cellulose, Wood, and Fiber Company
Chemical Education
Chemical Literature
Chemical Marketing and Economics
Colloid and Surface Chemistry
Fertilizer and Soil Chemistry
Fluorine Chemistry
Fuel Chemistry
History of Chemistry
Industrial and Engineering Chemistry
Inorganic Chemistry
Medicinal Chemistry
Microbial Chemistry and Technology
Nuclear Chemistry and Technology
Organic Chemistry
Organic Coatings and Plastics Chemistry
Petroleum Chemistry
Physical Chemistry
Polymer Chemistry
Rubber Chemistry
Water, Air and Waste Chemistry

[1]For Source and details of each society, see reference number 22.

APPENDIX 23

OCCUPATIONAL FIELDS FOR WHICH TITLE VIII PROVIDES TRAINING

Submitted herewith is a broad classification of occupational fields necessary for the national defense and for which Title VIII training programs are being offered. This list covers the major occupational fields but does not include all of the possible areas for which training may be provided by the several States.

1. AERONAUTICAL

Curriculum Titles:
- Aeronautical Engineering Technology
- Aircraft Design Technology
- Aircraft Maintenance Technology

Course Titles:
- Aerodynamics
- Assembly Drafting and Design
- Engineering Mathematics
- Stress Analysis
- Weight Analysis

2. CHEMICAL AND METALLURGICAL

Curriculum Titles:
- Chemical Technology
- Industrial Chemical Technology
- Metallurgical Technology

Course Titles:
- Chemical Anslysis
- Biochemistry
- Organic Chemistry
- Physical Chemistry
- Chemical Processes

3. CIVIL AND CONSTRUCTION

Curriculum Titles:
- Building Construction Technology
- Civil Technology
- Road Building Technology

Course Titles:
- Estimating
- Reinforced Concrete Design
- Strength of Materials
- Structural Drafting

4. ELECTRICAL

Curriculum Titles:
- Electrical Technology
- Electric Power Technology

Course Titles:
- Electrical Drafting
- Electrical Layout and Design
- Industrial Controls & Instru.
- Electric Power Equipment
- Electric Circuits

5. ELECTRONICS

Curriculum Titles:
- Electronic Communications Technology
- Industrial Electronics Technology

Course Titles:
- Electronic Circuits
- Transistor Theory & Application
- Applied Electronics
- Audio Amplifiers & Receivers
- Transducers

6. INSTRUMENTATION

Curriculum Titles:	Course Titles:
Aircraft Instrumentation Technology	Electrical Instruments
Instrument Control Technology	Temperature Indicators
Instrument Design Technology	Electronic Instruments
	Pressure & Flow Measuring Devices
	Automatic Control Instruments
	Analytical Instrumentation

7. MECHANICAL

Curriculum Titles:	Course Titles:
Mechanical Technology	Applied Mechanics
Mechanical Drafting & Design Technology	Metal Processing
	Kinematics
Air Conditioning and Refrigeration Technology	Strength of Materials
	Tool Design

8. PRODUCTION

Curriculum Titles:	Course Titles:
Production Engineering Technology	Production Planning & Control
	Manufacturing Analysis
Industrial Technology	Quality Control

9. TECHNOLOGIES, N.E.C.
(Not Elsewhere Classified)

Curriculum Titles	Course Titles:
Automotive & Diesel Technology	Diagnostic Laboratory
Nuclear Power Technology	Nuclear Physics
Shipbuilding Technology	Marine Drafting

APPENDIX 24

CHEMICAL TECHNOLOGY CURRICULUM*

First Year

	Class hours	Laboratory hours	Outside study	Total hours
FIRST TERM				
General Chemistry I	4	4	8	16
Mathematics I	5	0	10	15
Communication Skills	3	0	6	9
Physics I (Mechanics, Heat)	4	2	8	14
Chemical Technology Seminar	1	0	2	3
Total	17	6	34	57
SECOND TERM				
General Chemistry II	4	4	8	16
Mathematics II	4	0	8	12
Technical Reporting	2	2	4	8
Physics II (Electricity, Light)	4	4	8	16
Total	14	10	28	52

Second Year

THIRD TERM				
Quantitative and Instrumental Analysis I	3	6	6	15
Unit Operations I	3	4	6	13
Organic Chemistry I	3	4	6	13
General and Industrial Economics	3	0	6	9
Total	12	14	24	50
FOURTH TERM				
Quantitative and Instrumental Analysis II	3	6	6	15
Unit Operations II	3	4	6	13
Organic Chemistry II	3	4	6	13
Industrial Organization and Institutions	3	0	6	9
Total	12	14	24	50

*For source, see reference No. 23

APPENDIX 25

SAMPLE TECHNICAL CURRICULUM FOR THE CHEMICAL TECHNOLOGY*

The occupational demands on technicians call for broadly educated persons. Individuals must have some proficiency in the basic fields of knowledge, especially those most related to their fields of specialization. For this reason, the educational program might be viewed as having two fundamental components, the basic academic and the vocational specialty.

These illustrations are drawn from actual practice. A full description of the content is impossible, and the titles do not reveal the true nature of content. In many instances changes are either needed or are underway. Thus, while these examples give a general picture, they cannot be regarded as a fixed pattern.

The following classifications are used in listing the courses of each curriculum:

1. Technical Subjects: Course titles listed under this classification are identified as special laboratory or semi-professional courses designed for a specific curriculum.

2. Related Subjects: Courses listed under this category are classified as related technical subjects which could be applicable to two or more curricula but are not necessarily prerequisite for all curricula provided by a single institution.

3. General Subjects: Courses so listed are normally classified by the institution as "general education" or "constants" and are required of the majority of students within the educational institution.

*Extract from Vocational and Technical Education in Illinois University of Illinois, 1960, pp. 52-54.

Extract by J. P. Lisack 30 September 1965

(Continued on next page)

APPENDIX B (continued)

CHEMICAL TECHNOLOGY

First Year	Hours	Second Year	Hours
Technical Subjects		**Technical Subjects**	
General Chemistry	160	Organic Chemistry II	96
Organic Chemistry I	144	Quantitative Analysis	208
Qualitative Analysis	112	Physical Chemistry	64
		Industrial Chemistry	64
		Industrial Analysis	160
		Chemical Plant Operations	64
Related Subjects		**Related Subjects**	
Mathematics I	64	Mathematics II	32
Physics I	80	Physics II	32
General Subjects		**General Subjects**	
Sociology	48	Social Science I, II	96
Communications (English)	48		
Orientation	16		

Subject Totals		
Technical Subjects	1,072 hours	72.04%
Related Subjects	208	13.98
General Subjects	208	13.98
Curriculum Total	1,488 hours	100.00%

APPENDIX 26

JOB FACTOR COMPARISON CHART*

*For source see reference No. 24 Significant characteristics in:	CHEMICAL TECHNOLOGY						METALLURGICAL TECHNOLOGY				
	Assistant chemist (resins)	Ceramics analyst	Chemical technician, radiation	Control analyst	Laboratory assistant	Research laboratory analyst	Assistant metallurgist	Laboratory technician Foundry	Research laboratory analyst (extractive metallurgy)	Research laboratory analyst (physical metallurgy)	Assistant metallurgist, metal crystallization
CHEMICAL ACTIVITIES											
1. Has knowledge of fundamental concepts of inorganic chemistry.	X	X	X	X	X	X	X	X	X	X	X
2. Has knowledge of fundamental concepts of organic chemistry.	X		X	X	X	X					
3. Has knowledge of fundamental concepts of physical chemistry.			X		X	X	X	X	X	X	X
4. Understands and follows basic laboratory techniques and procedures in analyzing chemical compounds	X	X	X	X	X	X	X	X	X	X	X
5. Uses laboratory apparatus and instruments such as pH meter, microscope, electron microscope, and electro-analyzers	X	X	X	X	X	X	X		X	X	X
6. Tests chemical products to determine compliance with specifications	X		X	X	X	X			X		
7. Tests chemical products in process and recommends changes in formula or processing if necessary.	X		X	X	X	X					
8 Develops new chemical products or processes or improves existing ones	X	X			X	X					
9. Makes computations and tabulates and interprets results of tests and experiments	X	X			X	X	X	X	X		X
10. Determines combination of unit operations required for most effective manufacturing process				X							

JOB FACTOR COMPARISON CHART*

*For source, see reference No. 24 Significant characteristics in:	CHEMICAL TECHNOLOGY						METALLURGICAL TECHNOLOGY				
	Assistant chemist (resins)	Ceramics analyst	Chemical technician, radiation	Control analyst	Laboratory assistant	Research laboratory analyst	Assistant metallurgist	Laboratory technician foundry	Research laboratory analyst (extractive metallurgy)	Research laboratory (physical metallurgy)	Assistant metallurgist, metal crystallization
METALLURGICAL ACTIVITIES											
11. Understands fundamental concepts and principles of metallurgy			X				X	X	X	X	X
12. Uses laboratory equipment such as ovens, kilns, autoclaves, pyrometers, X-ray machines, hardness testers, and gas analyzers for testing and analyzing metals and alloys		X					X	X	X	X	X
13. Test ore samples to improve extraction methods									X	X	
14. Develops new or improved techniques for finishing, hardening, welding or brazing metals and alloys									X	X	
15. Develops new alloys to withstand specified environmental conditions and to improve workability of metals in manufacturing operations									X	X	
16. Makes nondestructive tests of metals and alloys and suggests modifications for product improvement							X	X	X	X	X

STUDIES, REPORTS AND SURVEYS

Number	Title	Date
65-1	Industrial Survey 201, Specifications for the Baccalaureate Graduate	January, 1965
65-2	Engineering Technicians - Production and Requirements	15 June, 1965
65-3	A Manpower Study for Technician-Level Educational Planning in Indiana Concerning the Chemical Technology	20 October, 1965

Publications available by writing to:

Professor J P. Lisack
Director, Office of Manpower Studies
School of Technology
Purdue University
West Lafayette, Indiana 47907

THE OFFICE OF MANPOWER STUDIES
and the
POLICY GUIDANCE COMMITTEE

On April 15, 1964, the BOARD OF TRUSTEES took action to create The School of Technology and simultaneously authorized the Dean to establish "...an administrative organization to conduct educational research and manpower studies to provide the necessary basic data and information concerning the growing and changing needs and demands for technologically oriented education and programs." The Office of Manpower Studies was activated in response to this action and was assigned two functions:

(1) to establish and operate a continuing survey of manpower requirements and trends in Indiana in order that educational and training agencies can better prepare people for employment opportunities; and

(2) to encourage research activity, in the University, aimed at solving problems and developing understandings of a more fundamental nature in the manpower and training field.

With the concurrance of the Vice President for Research, an inter-disciplinary Policy Guidance Committee of the Office of Manpower Studies was formed to further develop the concept of the office and to help identify the broad avenues of research that should be pursued. Membership of this committee includes:

C. H. Lawshe, Chairman, (Dean, School of Technology)

J. P. Lisack, Secretary, (Director, Office of Manpower Studies)

J. S. Day (Industrial Management)

E. M. Eddy (Industrial Education)

C. E. French (for L. S. Hardin) (Agricultural Economics)

B. R. Keenan (Political Science)

D. C. King (Graduate School - Psychology)

G. W. McNelly (Associate Dean, School of Technology)

E. W. Noland (Sociology).

VT 001 975
Lisack, J.P.
A Manpower Study for Technician-Level Educational Planning in the Greater Lafayette Area (Tippecanoe County, Indiana) Concerning the Electrical Electronic Technology. Manpower Study No. 66-1.

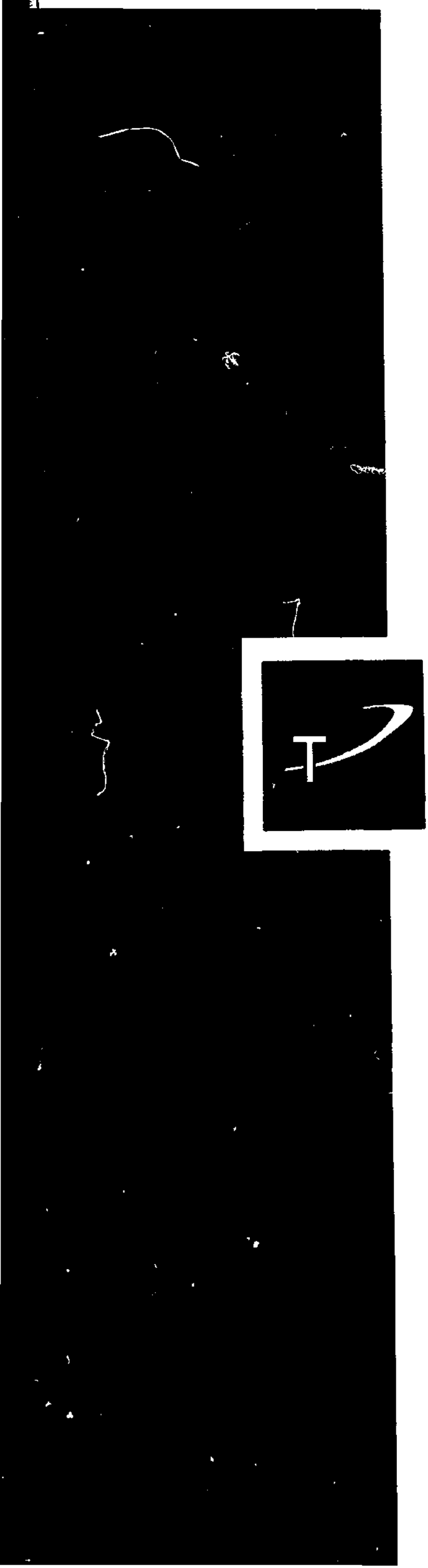
Purdue Univ., Lafayette. Office of Manpower Studies
MF AVAILABLE IN VT-ERIC SET.
Office of Manpower Studies, School of Technology, Purdue University, West Lafayette, Indiana 47907 (no charge).
Pub Date - Jan66 48p.

*OCCUPATIONAL SURVEYS; CURRICULUM PLANNING; CURRICULUM; *ELECTRONIC TECHNICIANS; *ELECTRICAL INDUSTRY; *MANPOWER NEEDS; PROFESSIONAL OCCUPATIONS; EMPLOYMENT TRENDS; EMPLOYMENT QUALIFICATIONS; *EDUCATIONAL NEEDS; TECHNICAL EDUCATION; OCCUPATIONAL CLUSTERS; EMPLOYMENT STATISTICS
INDIANA; LAFAYETTE; TIPPECANOE COUNTY

This study examines employment trends and needs for electrical-electronic technicians in the county for purposes of educational program planning. Discussion of the employment pattern and its implications for technical level programs is given. (EM)

VT 001 975

C1
H6P



TECHNICIAN-LEVEL EDUCATIONAL PLANNING IN THE GREATER LAFAYETTE, INDIANA, AREA CONCERNING THE ELECTRICAL/ELECTRONIC TECHNOLOGY

MANPOWER REPORT 66-1
January 1966

PROF. J. P. LISACK, DIRECTOR
OFFICE OF MANPOWER STUDIES
SCHOOL OF TECHNOLOGY
PURDUE UNIVERSITY
LAFAYETTE, INDIANA 47907

A MANPOWER STUDY
for
TECHNICIAN-LEVEL EDUCATIONAL PLANNING
in the Greater Lafayette Area
(Tippecanoe County, Indiana)
Concerning the
ELECTRICAL/ELECTRONIC TECHNOLOGY

January 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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MANPOWER STUDY NO. 66-1

By J. P. Lisack
Director, Office of Manpower Studies
Purdue University
School of Technology
West Lafayette, Indiana

EXTRACT

The purpose of this manpower study is to determine the number of technicians needed annually in the Greater Lafayette Area for the electrical/electronic technology. The study examines the employment distribution, trends and characteristics of selected industries within this technological area. The National and State aspects are also considered to provide perspective and bases for comparisons.

The industries included in the study are the standard industrial classification groups of Electrical Machinery, Equipment and Supplies; Communication; and Electric Utilities. Manpower data are presented including the numbers employed in each significant industry for the past ten years - with a projection for the next two years. Also included are Purdue University's electronic and electrical technician needs. Ratios of scientists and engineers, and of technicians to total employment are computed for each industry. The lower parameter of technician needs is determined by applying the actual (existing) ratios of technicians to total employment, and the higher parameter is based on applying ratios recommended by authorities as desirable. The new hire portion of labor accessions and other factors are applied to determine an approximation of the numbers of technicians required annually for each industry.

The study discloses that between 54 (minimum) and 195 (optimum) new technicians are required annually for these local industries alone - which is enough to warrant the establishment of an electrical/electronic technician educational program on Purdue's Lafayette Campus. This need is reinforced due to greatly expanding State and National requirements for technicians in this technology.

Discussion of the occupations concerned, orientation of the educational programs, curricula suggestions and collateral items are included.

J. P. Lisack
Director, Office of
Manpower Studies

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A MANPOWER REPORT FOR TECHNICIAN - LEVEL EDUCATIONAL PLANNING

Concerning the
ELECTRICAL TECHNOLOGY
for the Greater Lafayette, Indiana Area
January 1966

PURPOSES

1. The primary purpose of this report is to provide manpower data and the technical educational program implications for technicians[1] in the electrical and electronic industries in the Greater Lafayette Area. A secondary purpose is to present employment and manpower information concerning other occupational levels in this technology. Finally, employment patterns and data are presented for other significant industries. The primary industry groups selected for this study are the following Standard Industrial Classification Groups:

Major Group	Title
36XX	Electrical Machinery, Equipment and Supplies (Mfg.)
48XX	Communication: (Telephone, Telegraph, Radio)
4910	Electric Companies and Systems (Utilities)

2. Manpower data is presented for each industry including total employment, employment trends, ratios of engineers and technicians to total employment, new hire rates and other facts. Requirements data is projected two years into the future. Also, a brief review is made of employment in the electrical industries Nationally and for the State of Indiana in order to provide a basis for comparison and fix perspective.

Note: The [1] refers to the reference number in the Selected Bibliography.

The term "technician as applied in this study refers to the worker in the occupational area between the craftsman or skilled worker on one end, and the engineer (graduate of at least a baccalaureate program) on the other end. The technician is somewhat closer to the engineer than the craftsman or skilled worker, having more knowledge of scientific and engineering theory and methods than do the latter. The technology educational program consequently is usually made up of college-level courses presented in a two year program which usually leads to an associate degree.[1] The author knows of no such technical education program in the electrical technology area presented in the Greater Lafayette Area.

3. Actually, the technician needs reflected in this study are augmented by jobs requiring electrical technicians in other manufacturing, construction, and services areas. Therefore, the lower paramater of the needs reflected in this study is quite conservative.

RATIONALE

4. When the total employments are determined by industrial and service groups related to the electrical technology, it is possible to apply actual ratios of engineers (needed for each separate industry - as these ratios vary considerably) to total employment in each and derive a reasonable approximation of the number of engineers employed. The number of engineering technicians employed can then be computed by applying the actual National averages of technicians per 100 engineers for each industry. This actual (existing) ratio of technicians to engineers is considered to be too low by many recognized authorities due in part to the inadequate number of technical educational programs and other reasons. (This matter is discussed more fully in the body of the study.) Therefore, in this study, the technician and engineer employment is computed, based on both an actual and an optimum basis, forming the low and high parameters of requirements.
5. Next, by applying selected labor turnover factors, (new hire portion of average monthly accession rates) that are actually being experienced in Indiana for each industry concerned, it is possible to approximate the related new manpower needs. Of course, wherever the trends in industry employment or the ratios of engineers and technicians are up, which is true in the electrical and electronic industries and continuing growth is expected,[2] these additional needs must be included with replacement or attrition needs. Further, in order to provide bases for comparisons and background, related State-wide and National aspects must be examined. All factors used must be adjusted considering time elements, unique situations and other variables.

6. Finally, by an analysis of these industry and manpower facts and ramifications some conclusions and recommendations concerning technical education programs can be made.
7. The author believes that the effective development and improvement of technical education programs is directly related to the increased utilization of accurate manpower data.

SOME PERTINENT POPULATION AND ECONOMIC STATISTICS ON THE GREATER LAFAYETTE AREA AND TIPPECANOE COUNTY[3]

8. Population: The trend in population of Tippecanoe County is as follows:

	1950	1960	Percent Change	(Est.) 1970
Total	74,473	89,122	19.7%	106,600

(The 1970 estimate is based on projecting the 1950-1960 rate of change.) The 19.7% rate of growth was higher than that for the State-at-large, which was 18.5% during the 1950-60 decade.)

9. There are only two cities or towns having a population of more than 1,000 (1960 population). These are

Lafayette	42,330	
West Lafayette	12,680	(Special census count in November 1965 showed 17,608)

For all intents and purposes of this study, the population and industries of the above two cities comprise the heart of this county.

10. In a recent study conducted at Purdue University for Dr. John W. Hicks, Executive Assistant to the President, it was determined that about 688 high school graduates from Tippecanoe County schools would enter college in 1965. Based on current population data and assuming that high school retention will increase about 1 percent per year and the percentage of high school graduates who go to college will increase about 1 percent per year, it is expected there will be approximately 850 Tippecanoe high school graduates in 1970 and 1,103 in 1975 who will enroll as college freshmen.

11. Median Income and Earnings: The family median income for Tippecanoe in 1960 was $6,041; the median for Indiana was $5,798. The average weekly earnings (April 1 to June 30, 1961) for Tippecanoe was $122.09; the average for the State was $112.13. By 1963 the average weekly earnings in manufacturing industries for Tippecanoe County reached about $130. Actually, this county ranks among the highest in the State insofar as income and average weekly earnings are concerned.

12. Employment: The total employment in Tippecanoe County in 1960 was 33,538, of which over 2/3rds were male. Of all occupational groups, the largest was Professional, Technical and Kindred Workers, (which requires the highest educational levels of all other groups). Please see Appendix 1. This is not a typical manpower situation and it has significant educational ramifications. The fact that Purdue University is located in Tippecanoe, is of course a major factor contributing to this distribution - (this manpower pattern is also reflected in Monroe County where Indiana University is located).

13. A more typical manpower distribution by occupational groups is reflected in Appendix 2, which shows the overall employment pattern for the entire State of Indiana. Here, the largest employed group is Operative and Kindred Workers; next comes Craftsmen, Foremen and Kindred Workers; then Clerical and Kindred Workers followed by the fourth group - the Professional and Technical Workers. Please see Appendix 2 for further details.

14. As expected, the size of employment by industry groups parallel the size of the related occupational groups. In Tippecanoe County, over 30% of total employment is found in the Professional, etc. group followed by slightly over 21 percent found in Manufacturing. See Appendix 3. Again this differs from the typical manpower pattern as reflected in the situation prevailing for the State-at-large, wherein the largest employment at 607,633 is found in Manufacturing, which comprises nearly 35.4% of the entire State work force. This is followed by the Wholesale and Retail Trade - which is about half as large with 303,724 people comprising about 17.7%. Please see Appendix 4 for further details.

INDUSTRIES INFORMATION

15. National Employment in Electrical Equipment and Supplies Industry.

It is calculated by the author that the total National employment in this industry exceeded 1,500,000 in 1962. (Based on National Science Foundation's studies which indicate that an employment of over 123,000 engineers in this industry group comprises 7.8% of total employment.[4]) Further, the major employers in this industry have reported annual gains in employment of about 10% over the recent years.[5]

16. This National growth pattern is illustrated in the following three excerpts from the latest U. S. Department of Labor Occupational Outlook Report Series:

> Job opportunities in electronics manufacturing are expected to continue to expand rapidly during the remainder of the 1960's and in the longer run. More than 900,000 workers were employed in this field in 1962, about 3½ times the number in 1950 ... Opportunities in electronics manufacturing during the next 10 to 15 years will be particularly good for scientists, engineers, and technicians, as well as for skilled craftsmen.[6]

> Several thousand job opportunities for new [electric light and power] workers will occur each year during the remainder of the 1960's and in the early 1970's ....[7]

> The number of construction electricians is expected to rise substantially during the remainder of the 1960's and in the longer run primarily because of the large increase anticipated in construction activity.[8]

17. Indiana Industries. The next few sections in the study provide more specific data concerning the electrical and electronic related industries manufacturing and service employment situations. Probably the most important background statements to this study of the Electrical Technology in Tippecanoe County are the following:[9]

> More people were employed in Electrical Machinery Industry (Standard Industrial Classification - (SIC) - Major Group 36) than in any other manufacturing industry in the State. There are now over 118,500 people employed in this group representing well over 16% of all the manufacturing employment in Indiana. In fact, 9 new electrical machinery manufacturing plants were opened between January 1964 and June of 1965 employing over 1,000 more people. Next in size after the Electrical Machinery Industry in Indiana is the Primary Metals Industry which employs slightly over 110,000, followed by the Transportation Equipment Industry at over 92,000.

18. Also of significance is the fact that employment in the electrical machinery industry in Indiana has increased each and every year since 1961, and is now at its highest level ever.[10]

19. Tippecanoe Industries.[11] As explained in paragraphs 12 thru 14, the pattern of employment in this county is atypical. Insofar as the bulk of the county's population, all of its industries, and the great majority of those employed in the nonmanufacturing area are concerned, they are located primarily in the Greater Lafayette Area (includes West Lafayette). In the manufacturing industries area, the largest employment is found in the Primary Metals Group (Specifically SIC 3352; Rolling, drawing and extruding of aluminum.) The employment pattern here has been exceptionally stable over the years, with a modest increase since 1961. Please see Appendix 5.

20. Of more direct import to this study, is the employment pattern found in the Electrical Machinery, Equipment and Supplies Group (SIC 36 and subgroups). As can be seen in Appendix 5 there has been a phenomenal rate of growth in employment in this group since September 15, 1963; the employment virtually tripled, from 542 to 1,694 during this period.[11] A late check of December 15, 1965 employment shows a continuation in the growth, with a reported employment of 1,785. Please see Appendix 6 for the latest employment data by subgroups for this industry. As stated earlier, the National Science Foundation has reported a 10% annual rate of increase in the electrical equipment industry group as a national average.[5] Using a growth rate for Indiana of 12.5% per year is conservative - but will be applied in this study; it is fully justified by the above data. Therefore, a 25% increase for the two year employment projections for this group will be used.

21. It is also important to include employment considerations in the Communication Group (SIC 48) and the electrical utilities portion of the Electric, Gas and Sanitary Service Group (SIC 4910). The employment recorded in Appendix 5 shows a somewhat erratic pattern for the Communications Group, and a very stable situation in Electrical Utilities. Therefore, no rate of change will be applied to these groups for the two year projection. The latest employment in these areas on 15 December 1965 was approximately 415 and 500 respectively. See Appendix 7 for further details.

22. In addition to the above, there is a need for electrical and electronic technicians on the service staff of Purdue University. These are discussed in the next paragraph.

23. Purdue University Employment of Electronic Technicians. The Assistant to the Director of Personnel Administration at Purdue has provided related job analysis summaries and job requirements. A review of these indicates that at least 38 technicians and 3 foremen should be added to the Greater Lafayette Area Electrical and Electronic Technicians employment totals. More details concerning these positions, with sample job summaries, are included in Appendix 8

SCIENTISTS, ENGINEERS AND TECHNICIANS AS A PERCENT OF TOTAL EMPLOYMENT AND NUMBERS BY SELECTED INDUSTRIES

24. Scientists and Engineers Percentages and Numbers by Industry. In all manufacturing industries in the United States, the National Science Foundation has computed that as of January 1961, 3.9% of total employment was made up of scientists and engineers. This average dropped to 3.8% in January 1962. The percentage of scientists and engineers as a percent of total employment in the Electrical Equipment and Supplies Industry was much higher than for the total manufacturing area - namely, 8.2% in January 1961 and 7.8% in January of 1962. Further there was a wide disparity in the percentages of the subgroups within this industry.[4] Please see Appendix 9 for a more detailed breakout.

Note: The immediate employment of all engineering graduates - and their declining percentage of total employment, reflect the shortage of engineers. This fact further emphasizes the need for engineering technicians.

25. For the purpose of this study, the following table was derived using the data in Appendix 9 as the base line. The time elapse (from 1962) as well as the trends since then, resulted in an adjusted estimate of the percentages which were applied to the total employment by selected industries as reflected in Appendices 5, 6 and 7. The following then pertains:

Estimate of Percentages and Numbers of Scientists and Engineers Employed in Tippecanoe Industries

SIC Group and Industry		Scientists and Engineers as Percent of Total Employment	Estimated Number Scientists & Engineers
TOTAL		**3.0%**	**570**
All Manufacturing		3.9%	345
2433	Lumber and Wood	.5	5
3069	Rubber and Misc. Proc.	2.1	4
3352	Primary Metals	3.6	90
34XX	Fabricated Metals	2.5	16
3566	Non-elec. Mach.	4.6	35
36XX	Electric Mach. & Equip.*	7.8	139
3714	Transportation Equip.	3.2	34
	Others (estimate)	3.9	22
All Nonmanufacturing		**1.9%**	**195**
48XX	Communication*	1.8%	8
4910	Electric Utilities*	4.2%	4
	Others (estimate)	1.9	183

*Of primary interest in this study.

26. Technician Percentages and Numbers.

The national average of technicians per 100 scientists and engineers was approximately 69 in 1962.[2] However, this ratio varies between industries to a considerable degree - and each must be considered separately. These actual ratios are lower than most authorities recommend. Competent engineering technicians can do some of the work now occupying a part of the engineer's time. This is verified in the latest Manpower Report of the President, wherein speaking of the growing problem of educating sufficient engineers, it is reported:

> Special efforts must be made to increase the number of qualified technicians and use them more effectively in order to conserve professional skills.[12]

27. What is a more desirable, or optimum ratio? The following is an extract from a statement of position prepared by the Engineering Manpower Commission of Engineers Joint Council.

> If we had enough qualified technicians available, engineers might be able to stretch their talents much farther .... Some experts believe that the optimum ratio is four technicians for every engineer. A conservative evaluation would call for at least two technicians working with the average engineer. Based upon estimates of current graduates of technical institutes, we are now producing less than one technician for every two engineers.[13]

28. In view of the foregoing, it is necessary to compute two separate statements of technician requirements. In this study, one will be called "A" ratios and represent the actual situation as found by the National Science Foundation; the other will be called "D" ratios and represent the desirable situation, as identified by authorities. These two positions will form the low and high side of the parameters for technicians needed in each industry.

29. "A" Ratios of Technicians to Total Employment by Industry. The method to be used in computing this ratio (or percentage) of technicians to employment will be as follows:

$$\% \text{ of technicians} = \frac{\text{actual No. of tech. per 100 scientists \& engrs.} \times \text{actual \% of scients. \& engrs. to total employment}}{100}$$

30. Using data from appendixes 9 and 10, and applying the basic formula above, the following pertains:

"A" Technician Ratios

Industry	Actual No. of Tech. per 100 Scientists & Engineers	Actual % of Sci. & Engrs. to Total Employment	Derived % of Technicians to Total Employment
Totals	69	3.0%	2.07%
All manufacturing	62	3.9%	2.42%
Lumber & Wood Prod.	114	.5	.57
Chemical & Allied	46	10.4	4.78
Rubber Prod.	45	2.0	.90
Primary Metals	59	3.0	1.77
Fabricated Metals	98	2.3	2.25
Non-Electrical Mach.	82	4.6	3.77
Elec. Equip. & Sup.	69	8.0	5.52
Transp. Equip.	52	7.0	3.64
Instruments	71	8.6	6.11
Nonmanufacturing	86	1.9	1 63
Communication	154	1.7	2.62
Elec. Utilities	63	4.2	2.65

31. "D" Ratios of Technicians to Total Employment by Industry.

The basic formula used for the "A" ratios will be applied, substituting the more desirable numbers for the actual numbers of technicians per 100 scientists and engineers. Considering the recommendations of the Engineering Manpower Commission of Engineers Joint Council that between 2 and 4 technicians per engineer were desirable, the base line for judgments will be an overall ratio of 3 technicians per engineer. (See paragraph 27.) Slight variations are made to this base for each industry considering actual industry and personnel practices. The computations for the D ratios then become:

"D" Technician Ratios

Industry	Recommended No. of Tech. per Scient. or Engineer	% of Sci. & Engrs. to Total Employment	% of Tech. to Total Employment
Totals	3.0	3.0%	9.0%
All Manufacturing	2.8	3.9	10.9
Lumber & Wood	3.5	.5	1.8
Chemical & Allied	2.4	10.4	24.9
Rubber Products	2.5	2.0	5.0
Primary Metals	2.8	3.0	8.4
Fabricated Metals	4.0	2.3	9.2
Non-electrical Mach.	3.4	4.6	15.6
Elec. Equip. & Supp.	3.0	8.0	24.0
Transp. Equip.	2.4	7.0	16.8
Instruments	3.5	8.6	30.1
Nonmanufacturing	3.2	1.9	6.1
Communication	5.0	1.7	8.5
Elec. Utilities	3.0	4.2	12.6

LABOR TURNOVER AND GROWTH

32. Accession and Separation Rates.

In a manpower study of this sort, it is advisable to apply the New Hires Only portion of total labor accession rates for each industry. The total accession rates and separation rates are also presented for comparative purposes. Please see Appendix 11 for the 1962, 1963 and 1964 annual averages of labor turnover in selected manufacturing industries in Indiana. Actually, the 1964 new hire rate has increased over the 1963 and 1962 rates. It is well above the quit rate indicating that many new jobs opened up in 1964 .... in fact the employment [hiring] uptrend has continued since the 1961 recession.[14] A review of the 1965 new hire rates indicates the uptrend still prevails, therefore, the 1964 average rates will be applied later in this study. As can be seen in appendix 11, the monthly new hire rates approximate 2% per month, however, they vary considerably between industries; viz - high in Lumber and Wood Products, low in Instruments - therefore the appropriate separate rates must be applied for each industry concerned.

Note: Technically, when the Total Separation Rates equal the Total Accession Rates the total employment remains in balance. When accession rates exceed separations - as is true in the Electrical Machinery Industry under study - employment is growing. By way of explanation, an "accession" is any addition to the employment rolls; "new hires" are in additions who have never before been employed in the establishments, or former employees not called back (viz. layoffs or transfers).

33. New Hire Determinations. Admittedly, applying the "new hire" rates are understating the technical training needs, because other accessions as well as those already employed also require training in many cases. There is in fact more and more of a need for all technicians to take refresher and new courses throughout their careers, as well as to broaden their educational base. On the other hand, some technicians enter the labor force without the benefit of a formal training program. Therefore, for the purposes of this study, the author will depend primarily on the 1964 new hire rates as reflected in Appendix 11, modified to reflect overall trends and related factors. The following data then apply:

Industry	Adjusted Monthly New Hire Rate	Adjusted Annual New Hire Rate
All Manufacturing	2.3%	27.6%
Lumber and Wood Prod.	3.7	44.4
Rubber & Plastic Prod.	2.3	27.6
Primary Metals	2.1	25.2
Fabricated Metals	2.6	31.2
Non-elec. Mach.	2.2	26.4
Electrical Mach.	2.4*	28.8
Transp. Equipment	2.1	25.2
Nonmanufacturing (estimate)	2.5%	30.0%
Communication	2.4	28.8
Utilities	2.4	28.8

*This rate has reached highs of 3% and above in some late Employment Reports. However, the 2.4% represents a fairly firm and steady minimum.

34. Adjustment and Growth Factors.

The main elements that are considered in this study include total employment for each industry; percent and numbers of scientists and engineers as a finite part of that employment; the percent and numbers of technicians as a part of total employment calculated on both an actual and desirable basis; and finally; labor turnover rates, particularly the new hire portion. It was pointed out that total employment was up generally since 1961, and this was reflected in increasing new hire rates. The phenomenal growth of the electrical machinery and allied products group in Greater Lafayette was noted particularly. Actually this group is growing Nation and State wide as well. In view of all facets involved, the following justifiable factors are considered applicable for calculating near-future (2 years ahead) needs:

A. Employment figures for industries in the Lafayette Area will be increased 15%; as the totals shown represent only about 75% of total employment.

B. Projections of the Electrical Machinery and Supplies Group will be made on a 12.5% per year estimated growth. Altho the record locally exceeds this in the past 3 years, it is more consistent with the long-term patterns and is only slightly higher than State and National growth rates.

C. Projections of the Communications and Electric Utilities Groups will be made reflecting a stable employment situation with no growth. This estimate is conservative, but the dynamics of the increases described above do not apply; the record of past performance does not warrant application of any growth rate.

DETERMINATION OF TECHNICIAN REQUIREMENTS

35. Methodology Review. The past and present employment by industry with some projections have been determined for the Greater Lafayette Area - together with some related State of Indiana and National aspects. Next, the national percentages of scientists and engineers to total employment were presented - and the approximate numbers were computed for each industry. The National ratios of technicians to scientists and engineers are known, thereby permitting the derivation of technicians to total employment for each industry. Necessary adjustments were made due to time factors, trends, variables, and differences between subgroups. Also the differences between actual "A" ratios, and desirable "D" ratios of technicians to engineers were explained and calculated.

36. Next, the new hire portion of the accession rate of labor turnover was examined for each industry. Again, adjustments were made in light of time factors and trends. The derived monthly new hire rates were then presented and converted to annual new hire rates for each industry.

37. Finally, necessary adjustments to the basic employment data were recommended, together with growth rate factors to be used in connection with the different industries in order to compute near-future requirements.

38. Annual Electrical/Electronic Technician Requirements.

The results of computing the factors described above for the three selected groups of (1) Electrical Machinery, Equipment and Supplies; (2) Communication and (3) Electric Utilities, are shown in Appendix 12. (The data presented in this study concerning other industries signal areas for further study in addition to the electrical-related ones. Hopefully, these will be accomplished later.) The real meat of the voluminous details can be summarized by the following key extractions and computations:

Number of New Hire Technicians
Required Annually in
Electrical/Electronic Industries
Beginning in 1968

Industry	Technicians Minimum	Technicians Desired
Electrical Machinery, Equipment and Supplies	35	154
Communications	3	10
Electric Utilities	4	18
Purdue University	12	13
Totals	54	195

COLLATERAL ITEMS

39. Technician Occupations

The range of occupational titles for jobs of technician character is very great, and it is difficult to classify these jobs into occupational groupings. Some types of jobs, (such as various types of production technicians), are found in almost all types of manufacturing; this is also true of many types of technical service occupations. Some jobs are found only in a specific industry.[15] Many industries have their own job titles and requisite qualifications for each. It is therefore necessary to establish a close liaison with representatives of the more significant industries for which technicians are being trained to better ascertain educational program objectives, curricula content, and related facilities and equipment needs. However, in a manpower study of this sort, it is possible to provide an overview of the more common occupations found in the electrical and electronic occupational groups. Appendix 13 presents 35 electrical and 25 electronic occupations.

40. Knowledge of jobs is fundnamental to the planning of an effective technical educational program. The Office of Educ., U.S. Department of Health, Education and Welfare, recognizing the need for general job descriptions and suggested techniques for determining technical courses of study, has issued a series of pertinent publications. The publication applicable to the area of this study covers the electrical and electronic technologies and contains the following information:

a. General information about these technologies,
b. Composite job descriptions of key representative occupations,
c. Training requirements analyses showing subject matter areas required for various electrical/electronic occupations, and
d. A method for determining the courses of study required to prepare students for a group of closely related occupations.[17]

41. Generally speaking, technicians trained in electrical technology usually work in one or two major areas -- the generation and distribution of electric power or the manufacture of electrical machinery, controls, and equipment. They also work in the field of industrial electronics such as induction or dielectric heating, use of x-rays, diathermy, ultrasonics and others. In such jobs their work overlaps that of electronic technicians.[17]

42. Graduates of a technical course in electronic technology may work in two broad areas -- the field of communications, where they usually specialize in radio, TV, or radar; or in manufacturing, where they are specialists in the design, modification, installation, or production of electronic units used in a broad variety of controlling and activating mechanical systems; in evaluating the operating characteristics of electronic equipment; or in performing trouble shooting or repair. The general pattern is to work from the more simple, functional work assignments to higher levels of duties such as modification, design, test and experimentation with commensurately higher levels of skill and knowledge requirements.

43. Technician occupations are found in the various phases in the life of a technical product.[18] The principle phases are Research, Design, Development, Testing, Manufacture, Sales, Installation, Operation, and Service. It follows that the nature of the establishment utilizing technicians, and the emphasis placed on particular phases, will affect the kinds of technicians needed. This may vary or change in time within an establishment. This reinforces the need for close liaison to assure that technician educational programs are meeting the needs.

44. Curricula. The Department of Health, Education and Welfare, Office of Education, recognizing the great contribution of the technician and the critical demand for their skills and knowledge, has prepared a series of comprehensive bulletins designed to help administrators, supervisors, teacher trainers, and teachers in the promotion and development of technical educational programs. These bulletins are also useful for evaluating and upgrading existing technology curricula. Again however, it is reiterated that consideration should be given to meet local needs and preferences. The two bulletins appropriate to this study are the suggested 2-year post high school curricula for the Electrical Technology,[19] and Electronic Technology[20], For an outline of the suggested curriculum for the Electrical Technology, please see Appendix 14, and for the Electronic Technology, see Appendix 15. As can be seen, the courses in the first year are identical with some specialization or branching coming in the second year.

FACTS AND CONCLUSIONS

45. Facts

A. Engineering technicians are recognized as a bona-fide occupational level by scientists, engineers, and man-power planning authorities. Generally a two year college-level program, usually leading to an associate degree, is required to prepare students to work in the field of engineering technology.

B. There is an existing nation-wide shortage of engineering technicians in general. There is an existing and growing need for electrical/electronic technicians in particular.

C. The Electrical Machinery, Equipment and Supplies Industry employs more people (over 118,500) than than any manufacturing industry in the State of Indiana, and the employment and number of establishments in this industry have grown steadily since 1961.

D. The employment pattern of this Electrical Machinery Industry Group for the Greater Lafayette Area shows a phenomenal rate of growth during 1963 and 1964, actually tripling during this period - and it is still growing. Employment by 1967 is expected to be at least 2,230 persons.

E. The employment in the Communications and Electrical Utilities groups is quite stable - nearly 1,000 persons in the Greater Lafayette Area.

F. Purdue University now employs more than 40 electrical and electronic technicians in the service department.

G. There is no electrical/electronic engineering technician educational program being presented in the Greater Lafayette Area.

46. Conclusions

A. An adequate base exists in the Greater Lafayette Area for the justification of establishing an electrical/ electronic technician educational program in the School of Technology. Between 54 (minimum) and 195 (optimum) new technicians are required annually to meet the Electrical Machinery and Allied Equipment Manufacturing, Communication, Electrical Utility Industries' and Purdue Universities' needs.

B. The requirements for these technicians has been growing consistently over the past few years in Tippecanoe County, the State of Indiana, and Nation-wide. Predictions of authorities are that the need will continue to grow.

C. Due to the dynamic nature of these industries and the changing patterns of occupational requidite qualifications, job requirements and employers preferences must be known to plan effective related technical education programs.

RECOMMENDATIONS

47. Based on the data, discussion, facts and conclusions in this study it is recommended that:

A. The Head of the Department of Electrical Engineering Technology proceed with the establishment of an electrical/electronic engineering technician program on the Lafayette campus. Further, a non-credit, practical industrial electrical/electronics program should be offered in special evening classes.

B. The Staff and Faculty of the School of Technology take cognizance of the industries' needs and data reflected herein, and establish a working liaison with the major electrical/electronic establishments in the Greater Lafayette Area to definitize educational program objectives, refine the curriculum and substantiate facilities and equipments needed.

C. Due to the growth and changes within this technology, the staff and faculty include the following factors in the development of the program in order that the graduate:

(1) Is qualified to enter the occupations found within the industries described in this study,

(2) Has a broad enough educational base for job mobility, so with additional experience and training, he can progress successfully to higher job levels, and

(3) Is prepared for continuing studies to avoid job obsolescence , increase his effectiveness and qualify for greater responsibilities.

D. This manpower study be used as verification and justification of the need for this program at all decision levels at Purdue University.

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APPENDIX 1

Tippecanoe County*
EMPLOYED WORKERS
14 Years Old and Over, 1960
OCCUPATIONS

	Total	Male	Female
PERSONS EMPLOYED	33,538	22,733	10,805
Professional, technical and kindred workers	6,556	4,602	1,954
Farmers and farm managers	1,070	1,034	36
Managers, officials, and proprietors, except farm	2,513	2,163	350
Clerical and kindred workers	4,783	1,266	3,517
Sales workers	2,444	1,515	929
Craftsmen, foremen and kindred workers	3,899	3,783	116
Operatives and kindred workers	4,588	3,914	674
Private household workers	653	33	620
Service workers, except private household	4,327	2,165	2,162
Farm laborers and farm foremen	527	478	49
Laborers, except farm and mine	1,096	1,088	8
Occupation not reported	1,082	692	390

APPENDIX 2

Indiana State*
EMPLOYED WORKERS
14 Years Old and Over, 1960
OCCUPATIONS

	Total	Male	Female
PERSONS EMPLOYED	1,717,241	1,182,645	534,596
Professional, technical and kindred workers	168,815	105,799	63,016
Farmers and farm managers	80,622	77,054	3,568
Managers, officials, and proprietors, except farm	125,328	107,174	18,154
Clerical and kindred workers	230,384	72,215	158,169
Sales workers	117,180	71,428	45,752
Craftsmen, foremen and kindred workers	255,090	247,909	7,181
Operatives and kindred workers	373,099	283,539	89,560
Private household workers	33,189	907	32,282
Service workers, except private household	141,990	61,637	80,353
Farm laborers and farm foremen	26,020	21,567	4,453
Laborers, except farm and mine	86,513	82,755	3,758
Occupation not reported	79,011	50,661	28,350

*For source see reference 3

APPENDIX 3

Tippecanoe County*
EMPLOYED WORKERS
14 Years Old and Over, 1960
INDUSTRY GROUPS

	Number Employed Workers			Per Cent of Total Employed
	Total	Male	Female	
PERSONS EMPLOYED	33,538	22,733	10,805	100.00
Agriculture, Forestry & Fishing	1,662	1,577	85	4.96
Mining	42	1,473**	56**	.13
Construction	1,487			4,43
Manufacturing	7,099	6,039	1,060	21.17
Transportation and Other Utilities	1,820	1,409	411	5.43
Wholesale and Retail Trade	5,826	3,387	2,439	17,37
Finance, Insurance and Real Estate	1,015	562	453	3,03
Business and Repair Services	635	534	101	1.89
Personal Services	1,747	517	1,230	5.21
Amusement, Recreation, etc.	225	144	81	.67
Professional Services, etc.	10,158	5,851	4,307	30.29
Public Administration	942	689	253	2,80
Industry, Not Specified	880	551	329	2.62

**Number represents total in mining and construction combined - no breakdown as to the sexes is available.

APPENDIX 4

Indiana State*
EMPLOYED WORKERS
14 Years Old and Over, 1960
INDUSTRY GROUPS

	Number Employed Workers			Per Cent of Total Employed
	Total	Male	Female	
PERSONS EMPLOYED	1,717,241	1,182,645	534,596	100.00
Agriculture, Forestry and Fishing	111,899	102,823	9,076	6.52
Mining	8,530	91,520**	4,061**	.50
Construction	87,051			5.07
Manufacturing	607,633	478,877	128,756	35.38
Transportation and Other Utilities	108,701	89,605	19,096	6.32
Wholesale and Retail Trade	303,724	181,178	122,546	17.69
Finance, Insurance, & Real Estate	58,314	29,854	28,460	3.40
Business and Repair Services	32,227	26,198	6,029	1.88
Amusement, Recreation, etc.	8,921	6,122	2,799	.52
Professional Services, etc.	185,132	75,266	109,866	10.78
Public Administration	59,170	39,530	19,640	3.45
Industry Not Specified	65,514	40,638	24,876	3.81
Personal Services	80,425	21,034	59,391	4.68

**Number represents total in mining and construction combined - no breakdown as to the sexes is available.
*For source, see reference 3

APPENDIX 5

EMPLOYMENT IN SIGNIFICANT INDUSTRIES IN GREATER LAFAYETTE AS OF SEPTEMBER 15, 1956-1965

INDUSTRY	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
GRAND TOTAL	15,349	15,276	14,840	16,084	15,362	15,566	16,132	15,579	17,231	18,923*
MFG. TOTAL	7859	7702	7248	7980	6648	6867	6910	7196	7578	8771
Food & Kindred	148	154	174	164	147	115	127	119	108	103
Lumber & Wood Prod.	1210	1247	1596	1679	1176	1437	1030	1119	1024	1035
Paper & Allied Prod.	122	122	122	108	108	108	103	106	102	105
Print. & Publishing	319	364	317	294	304	298	276	302	295	276
Rubber Products	628	762	724	759	6	5	14	59	103	194
Primary Metals	2481	2403	1963	2134	2340	2188	2319	2342	2350	2500
Fabricated Metals	377	382	377	423	415	491	490	553	540	625
Non-Elect. Mach.	631	571	481	565	517	506	652	682	785	765
Elect. Mach. & Equip.	809	623	521	558	530	553	542	544	730	1694
Transp. Equipment	810	744	725	999	784	820	1032	1020	1148	1056
Misc. Mfg.	324	330	248	297	321	346	325	350	393	418
NON-MFG. TOTAL	7490	7474	7492	8104	8714	8699	9222	9383	9653	10,152
Interstate R. R.	650	640	569	630	615	446	429	433	452	372
Communications	308	226	227	243	248	202	201	175	157	171
Utilities	167	167	167	169	165	166	162	161	168	163
Ret..Gen. Merchandise	557	554	622	657	683	706	699	696	697	741
Finance Agency	134	158	146	179	186	218	228	193	193	192
Insurance	99	105	114	115	122	122	566	538	587	559
Med. & Health Serv.	675	724	747	811	945	939	937	1087	1099	1154
Schools	4900	5000	5000	5300	5750	5900	6000	6100	6300	6800

Note: *The above represents nearly 2/3rds of the reported Greater Lafayette Work Force:
Total estimated employment is 28,500.
Data obtained thru cooperation of Mr. Everett E. Closson, Employment Security Division, Lafayette, Indiana.

APPENDIX 6

Selected Extract of Employment* in Industries Related to Manufacturing in the Electrical and/or Electronic Fields for the Greater Lafayette Area

MAJOR GROUP	MANUFACTURING INDUSTRY	December 1965 Estimated Employment
36	Electrical Machinery and Equipment	
361	Electric Transmission and Distribution Equipment	
3611	Electric measuring instruments and test equipment	600
362	Electrical Industrial Apparatus	
3629	Electrical industrial apparatus (special equipments)	85
366	Communication Equipment	
3662	Radio and TV transmitting, signalling, and detection equipment and apparatus	10
367	Electronic Components and Accessories	
3679	Electronic components and accessories (specialty equipments)	490
369	Miscellaneous Electrical Machinery Equipment and Supplies	
3699	Electrical machinery equipment and supplies, not elsewhere classified	600
	Total	1,785

Note: This listing comprises employment of the largest firms and although it represents the largest part of related employment, it is not a complete listing.

*For source, see Reference 11

APPENDIX 7

SELECTED EXTRACT OF EMPLOYMENT* IN COMMUNICATION AND ELECTRIC SERVICES FOR THE GREATER LAFAYETTE AREA

Major Group	Industry	1965 1st Quarter Estimated Employment
48	Communication	
4810	Telephone Communication (Wire or Radio)	350
4820	Telegraph Communication (Wire and Radio)	7
4850	Radio Broadcasting and TV	44
4890	Other Communications Service (TV Cable)	14
	Sub-total	415
	* * * *	
49	Electric, Gas, and Sanitary Services	
4910	Electric Companies and Systems	85
	Sub-Total	85
	TOTAL	500

Note: This listing comprises employment of the largest firms and although it represents the largest part of related employment, it is not a complete listing.

*For source, see Reference 11

APPENDIX 8

PURDUE UNIVERSITIES' SERVICE STAFF EMPLOYMENT OF ELECTRONICS TECHNICIANS AND ALLIED FOREMEN

In response to a listing of job titles and needs in subject area, Mr. J. P. Nial, Assistant to the Director of Personnel Administration, provided the following tabulation:

Electrical Shop Foreman	1
Assistant Electrical Shop Foremen	2
Senior Electronics Technicians	7
Electronics Technicians	28
Electrical Instrumentation Tech.	3
	41

An idea of the scope and nature of the three largest jobs above may be obtained from the following job summaries:

Senior Electronics Technicians

Under the general supervision of the supervisor in charge, performs such duties as repairing electronics equipment, is responsible for .complete repair and maintenance of all electronic equipment as may be assigned. Repairs and maintains two Royal McBee computers located in the EE and CE Building. Designs, secures components, and fabricates electronics equipment needed in laboratories or on research projects. May assemble equipment from kit form. Advises graduate students and staff as to selection of equipment of equipment and components and general circuit application. Maintains a parts storeroom to supply the laboratories and research projects. Maintains files containing catalogs and electronic information. Checks, maintains, and orders supplies for all first aid kits in the EE Building. Cleans, and straightens own workplace, waxes benches and tables. Maintains records on service equipment. Orders equipment, and replacement components as required. Assists other staff members as required.

Electronics Technician

Under the general supervision of the supervisor in charge, performs such duties and functions as maintains, repairs, modifies, instructs personnel in operation of and maintains use of EE computers. Assists various researchers in use, selection, and fabrication of equipment used for various research projects. Prepares, sets-up, tests, and monitors experiments for use in controls laboratory. Maintains and repairs various items of equipment used in laboratories. Maintains manuals used in maintenance and repair of departmental equipment. Orders supplies and equipment as required. From time to time performs other duties as required.

Electrical Instrumentation Technician

Works under the general direction of the research staff of the Mechanical Engineering Department. Provides technical assistance on electrical and electronic instrumentation problems by consulting with researchers, computing and designing circuits, and advising on purchases and fabrication of electronic and electrical instruments used for the measurement, control, and recording of temperatures.

Builds, modifies, troubleshoots, and repairs all types of electrical and electronic equipment, and advises and assists others who may be building or repairing equipment.

Maintains and services analog and digital computers located in the department and may on occasion instruct students and staff members to operate these machines. Places orders for materials and supplies necessary to perform the operations associated with his job.

APPENDIX 9

SCIENTISTS AND ENGINEERS, BY SELECTED INDUSTRY CLASSIFICATION, AS PERCENT OF TOTAL EMPLOYMENT IN THE INDUSTRY 1961 and 1962*

INDUSTRY	January 1961	January 1962
Total	3.0	3.0
Manufacturing (All)	3.9	3.8
Lumber and wood products, except furniture	.5	.5
Chemicals and allied products	10.5	10.2
Rubber & misc. plastics products	2.1	2.0
Primary metal industries	2.8	2.6
Blast furnaces and basic steel products	2.5	2.2
Other primary metal industries	3.7	3.6
Fabricated metal products	2.4	2.2
Machinery, except electrical	4.8	4.6
Electrical equipment and supplies	8.2	7.8
Electric distribution equipment and industrial apparatus	7.7	7.4
Household appliances	3.3	2.6
Communication equipment	12.6	12.3
Electronic components and accessories	7.5	7.0
Radio and television receiving sets	8.3	7.8
Miscellaneous electrical equipment and supplies	3.9	3.8
Transportation equipment	7.2	6.8
Motor vehicles & equipment	3.3	3.0
Aircraft and parts	12.1	12.4
Other transportation equipment	2.1	2.4
Instruments and related products	8.3	8.6
Nonmanufacturing (All)	1.9	1.9
Contract construction	2.1	2.5
Transportation and public utilities	1.3	1.4
Communication	1.6	1.7
Electric, gas, and sanitary services	4.0	4.2
Other transportation services	.4	.4
Services	6.5	6.4

* For source, see Table III-11 of reference 4

APPENDIX 10

SCIENTISTS AND ENGINEERS, TECHNICIANS, AND
RATIO OF TECHNICIANS TO SCIENTISTS AND ENGINEERS,
BY INDUSTRY CLASSIFICATION, 1962*

INDUSTRY	Scientists & Engineers	Technicians	Average number of technicians per 100 scientists and engineers
Total	851,600	585,100	69
Manufacturing (All)	613,600	379,500	62
Lumber & wood products, except furniture	1,600	1,900	114
Chemicals & allied products	95,500	43,400	46
Rubber & misc. plastics products	7,700	4,700	61
Primary metal industries	32,000	18,900	59
Fabricated metal products	25,100	24,600	98
Machinery, except electrical	69,200	63,400	82
Electrical equipment & supplies	123,200	84,900	69
Electric distribution and industrial apparatus	25,300	20,500	81
Household appliances	3,700	2,700	73
Communication equipment	55,400	34,000	61
Electric lighting & wiring equipment	4,200	2,400	57
Electronic components & accessories	18,700	14,200	76
Radio & television receiving sets	10,800	1,100	66
Miscellaneous electrical equipment & supplies	5,100	4,100	80
Transportation equipment	110,400	57,800	52
Motor vechicles and equipment	22,200	15,900	71
Aircraft and parts	83,000	36,300	44
Other transportation equipment	51,000	56,000	110
Instruments & related products	30,200	21,300	71
Other manufacturing industries	8,300	7,200	86

*For source, see Table III-7 of reference 2

SCIENTISTS AND ENGINEERS, TECHNICIANS, AND RATIO OF TECHNICIANS TO SCIENTISTS AND ENGINEERS, BY INDUSTRY CLASSIFICATION, 1962*

INDUSTRY	Scientists & Engineers	Technicians	Average number of technicians per 100 scientists and engineers
Nonmanufacturing (All)	238,000	205,500	86
Mining	24,600	10,100	41
Contract construction	41,000	24,600	60
Transportation and public utilities	49,200	44,300	90
Railroad transportation	5,300	3,700	70
Communication	13,700	21,200	154
Electric, gas & sanitary services	26,000	16,400	63
Other transportation	4,200	3,000	71
Wholesale & retail trade	31,200	18,900	61
Finance, insurance and real estate	4,500	2,100	47
Services	86,500	103,800	120
Commercial laboratories; business & management consulting services	34,100	36,100	106
Medical & dental laboratories	700	4,100	580
Engineering & architectural services	49,800	60,000	120
Other services	1,800	3,500	192
Agriculture, forestry and fisheries	1,000	1,700	181

*For source, see Table III-7 of reference 2

APPENDIX 11

LABOR TURNOVER*
IN SELECTED MANUFACTURING INDUSTRIES IN INDIANA
1962, 1963 and 1964 ANNUAL AVERAGES (Monthly Rates)

INDUSTRY	Per 100 Workers Employed								
	ACCESSION RATES						SEPARATION RATES		
	Total			New Hires Only			Total		
	1964	1963	1962	1964	1963	1962	1964	1963	1962
MANUFACTURING	3.3	3.1	3.4	2.3	1.9	1.9	3.1	3.1	3.4
DURABLE GOODS	3.4	3.2	3.5	2.3	1.8	1.9	3.1	3.1	3.4
Lumber and wood products	5.3	4.8	4.4	3.7	3.2	3.2	5.2	4.4	4.2
Primary metals	2.7	2.6	2.3	2.2	1.4	1.0	2.0	2.3	2.7
Fabricated metals	4.2	3.8	3.6	2.7	2.1	2.1	4.2	3.7	3.7
Nonelectrical machinery	3.1	2.9	3.4	2.2	1.9	2.3	2.7	2.6	2.8
Electrical machinery	3.0	2.7	2.9	1.9	1.5	1.6	2.2	2.5	2.8
Radios, tv's, phones, electronic components	3.6	2.7	3.5	2.4	1.4	2.0	2.5	2.9	3.3
Equipment for autos, aircraft railroads	1.7	1.5	1.7	1.2	1.0	1.5	1.3	1.4	1.3
Transportation equipment	3.6	3.5	4.5	2.1	1.6	1.9	3.7	3.9	4.2
Instruments	2.7	2.1	2.2	1.7	1.6	1.5	3.0	2.2	2.6
NONDURABLE GOODS	3.0	3.0	3.1	2.1	2.0	2.2	3.1	3.2	3.2
Chemicals	2.1	2.2	2.1	1.3	1.4	1.2	2.1	2.1	2.1
Rubber and plastic prod.	3.1	3.3	4.1	2.2	2.1	2.8	3.3	3.4	3.4

*For source, see reference No. 14

APPENDIX 12

NUMBER OF TECHNICIANS REQUIRED BY INDUSTRY IN THE GREATER LAFAYETTE AREA FOR 1967

	END 1965 Approximate Employment by Industry	END 1967 Projected Employment		% of Employed Who Are Technicians		Projected No. of Techn. Employed		Annual New Hire Technician Needs		
		% Incr. (2 Yrs.)	Total	Act'l[1]	Des'd[2]	Act'l	Des'd	New Hire Rates	Act'l	Des'd
Grand Totals	22,000	5%	23,100	2.07%	9.0%	478	2,079	28%	134	582
ALL MFG. TOTAL	10,200	5%	10,710	2.42	10.9	259	1,167	27.6	71	322
Elec. Mach. & Equipment	1,785	25%	2,230	5.52	24.0	123	535	28.8	35*	154*
NON-MFG. TOTAL	11,800	5%	12,390	1.63	6.1	91	755	30.0%	27	226
Communications	415	0%	415	2.62	8.5	11	35	28.8	3*	10*
Elec. Utilities	500	0%	500	2.65	12.6	13	63	28.8	4*	18*
Purdue University						41	45	28.8	12*	13*
				*Electrical Technician Totals					54*	195*

1. Actual
2. Desired

APPENDIX 13

SELECTED TECHNICIAN OCCUPATIONS ARRANGED INTO ELECTRICAL AND ELECTRONIC GROUPS*

Electrical Technician Occupations

Applications specialist
Communications technician
Controls specialist
Development technician, X-ray
Electrical contractor
Electrical cost estimator
Electrical designer
Electrical draftsman
Electrical engineering aide
Electrical equipment erector
Electrical equipment salesman
Electrical equipment tester
Electrical experimental technician
Electrical instrument technician
Electrical laboratory technician
Electrical maintenance technician
Electric motor analyst
Electro-mechanical technician
Engineering aide
Lighting technician
Line supervisor
Meter and instrument technician
Power distribution specialist
Power station operator
Powerhouse load dispatcher
Powerhouse maintenance technician
Product designer
Project supervisor
Quality control technician
Rectifier technician
Relay specialist
Technical service correspondent
Technical illustrator
Technical writer
Test technician, motors

Electronic Technician Occupations

Aircraft electronic technician
Broadcast transmitter technician
Communications technician
Color television monitor
Computer technician
Customer service technician, radio - TV
Design draftsman
Electronic draftsman
Electronic equipment testman
Electronic control technician
Electronic instrument inspector
Electronic laboratory technician
Electronic layout technician
Electronic maintenance technician
Electronic sales technician
Guided missile technician
Industrial control specialist
Industrial electronics technician
Manufacturer's sales representative
Medical electronics technician
Radar technician
Radio-communications maintenance technician
Radio-television production supervisor
Recording technician
Sound-studio technician
Television studio technician
Technical writer

*For Source, Please see reference 16

APPENDIX 14

ELECTRICAL TECHNOLOGY CURRICULUM*

First Year

First Semester		Class	Lab.	Total
ER 114	Technical Mathematics I (Algebra and Trigonometry)	4	0	4
ER 115	Direct Current Circuits and Machines	3	6	9
G 113	Social Science	3	0	3
G 123	Technical Drawing	1	6	7
G 133	Communication Skills	3	0	3
	Subtotal	14	12	26
Second Semester				
ER 164	Technical Mathematics II (Applied Analytical Geometry and Calculus)	4	0	4
ER 185	Time Varying Circuits	3	6	9
ER 165	Basic Electronics	3	6	9
G 111	Shop Processes	1	2	3
G 161	Technical Report Writing	1	0	1
G 162	Graphic Analysis	1	3	4
	Subtotal	13	17	30

Second Year

Third Semester				
G 204	Engineering Science	3	3	6
E 213	Electrical Instruments and Measurements	2	3	5
E 215	Alternating Current Machines	3	6	9
E 272	Electrical Installation Planning	2	0	2
G 213	Chemistry and Applications in Electricity	2	3	5
	Subtotal	12	15	27
Fourth Semester				
E 264	Industrial Electronics	3	3	6
E 274	Electrical Control Circuits	3	3	6
E 284	Electrical Power Systems-In-Plant Distribution (With Utility Systems Option)	3	3	6
E 294	Operating Problem Analysis	2	6	8
	Subtotal	11	15	26
	GRAND TOTAL	50	59	109

Course letters:
- ER - Technical specialized courses common to Electronic and Electrical curriculums
- G - General and related courses
- E - Technical Electrical Courses

*For source, see reference 19.

APPENDIX 15

ELECTRONIC TECHNOLOGY CURRICULUM*

First Year

First Semester		Class	Lab.	Total
ER 114	Technical Mathematics I (Algebra and Trigonometry)	4	0	4
ER 115	Direct Current Circuits and Machines	3	6	9
G 113	Social Science	3	0	3
G 123	Technical Drawing	1	6	7
G 133	Communication Skills	3	0	3
	Subtotal	14	12	26
Second Semester				
ER 164	Technical Mathematics II (Applied Analytical Geometry and Calculus)	4	0	4
ER 185	Time Varying Circuits	3	6	9
ER 165	Basic Electronics	3	6	9
G 111	Shop Processes	1	2	3
G 161	Technical Report Writing	1	0	1
G 162	Graphic Analysis	1	3	4
	Subtotal	13	17	30

Second Year

Third Semester				
G 204	Engineering Science	3	3	6
R 212	Circuit Tracing	1	3	4
R 215	Special Electronic Circuit Design and Analysis	3	6	9
R 225	Transmitter Theory and Operation	3	6	9
	Subtotal	10	18	28
Fourth Semester				
R 262	Research Report (Special Problem)	0	6	6
R 265	Ultra-High Frequencies and Microwaves	3	6	9
R 275	Television Circuits	3	6	9
R 285	Industrial Electronics	3	6	9
	Subtotal	9	24	33
	GRAND TOTAL	46	71	117

Course Letters:
- ER - Technical specialized courses common to Electronic and Electrical curriculums
- G - General and related courses
- R - Technical Electronic courses

*For source, see reference 20.

27

THE OFFICE OF MANPOWER STUDIES
and the
POLICY GUIDANCE COMMITTEE

On April 15, 1964, the BOARD OF TRUSTEES took action to create The School of Technology and simultaneously authorized the Dean to establish "...an administrative organization to conduct educational research and manpower studies to provide the necessary basic data and information concerning the growing and changing needs and demands for technologically oriented education and programs." The Office of Manpower Studies was activated in response to this action and was assigned two functions:

(1) to establish and operate a continuing survey of manpower requirements and trends in Indiana in order that educational and training agencies can better prepare people for employment opportunities; and

(2) to encourage research activity, in the University, aimed at solving problems and developing understandings of a more fundamental nature in the manpower and training field.

With the concurrance of the Vice President for Research, an inter-disciplinary Policy Guidance Committee of the Office of Manpower Studies was formed to further develop the concept of the office and to help identify the broad avenues of research that should be pursued. Membership of this committee includes:

C. H. Lawshe, Chairman, (Dean, School of Technology)

J. P. Lisack, Secretary, (Director, Office of Manpower Studies)

J. S. Day (Industrial Management)

E. M. Eddy (Industrial Education)

C. E. French (for L. S. Hardin) (Agricultural Economics)

B. R. Keenan (Political Science)

D. C. King (Graduate School - Psychology)

G. W. McNelly (Associate Dean, School of Technology)

E. W. Noland (Sociology).

VT 001 976
Lisack, J.P.
A Report of Employment Trends in Five Indiana Counties (Allen, Lake, Laporte, Marion, and Porter). Manpower Report No. 66-2.

Purdue Univ., Lafayette. Office of Manpower Studies
MF AVAILABLE IN VT-ERIC SET.
Office of Manpower Studies, School of Technology, Purdue University, West Lafayette, Indiana 47907 (no charge).
Pub Date - 1Feb66 31p.

*OCCUPATIONAL SURVEYS; *LABOR FORCE; *EMPLOYMENT TRENDS; WAGES; *EMPLOYMENT STATISTICS; EDUCATIONAL PLANNING; EMPLOYMENT; INDUSTRY; DEMOGRAPHY; TECHNICAL EDUCATION
INDIANA

The purpose of this study was to report employment trend data in counties where Purdue University has branch campuses with technical programs. (EM)

VT 001 976

A REPORT OF EMPLOYMENT TRENDS IN FIVE INDIANA COUNTIES (ALLEN, LAKE, LAPORTE, MARION, AND PORTER)

1 February 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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MANPOWER REPORT
NO. 66-2

J. P. Lisack, Director
Office of Manpower Studies
School of Technology
Purdue University
Lafayette, Indiana 47907

VT 001 976

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A Report of Employment Trends in Significant Industries for Five Selected Counties in Indiana 1 February, 1966

PURPOSE

1. The primary purpose of this report is to present employment trend data for the more significant industries in selected counties in order to facilitate technical education program and facilities planning. The counties selected are those in which Purdue University has Regional Campuses offering technical education programs as follows:

Regional Campus	County
Calumet* (E. Chicago, Gary & Hammond)	Lake
Fort Wayne	Allen
Indianapolis	Marion
Michigan City*	LaPorte

*Inasmuch as Porter County is located between these two campuses and is largely covered within a 25 mile radius of each, Porter County is included in this report.

Pertinent Indiana State data and descriptions are also provided to fix perspective and bases for comparisons.

DESCRIPTION OF REPORT

2. Format:

The information of the report is so arranged as to present first some important State-wide data and maps related to population, economic and industry factors. Also some highlights of the relative standing of Indiana in the Nation are shown. The description of some key points is followed by maps having special notation. The State-wide descriptive material is followed by a discussion and selected statistical data for counties in turn.

3. Description of Data

Information concerning Indiana and the Nation includes the relative size and ranking of Indiana to other States; State population data and employment by occupational and industry groups. The Indiana population changes and the average weekly earnings in manufacturing are depicted for each county on enclosed maps.

A general description and discussion for each of the selected counties is then presented including population, occupational, and economic background material. Employment data of each county is included for all significant industries having three or more establishments. (This is necessary to avoid objections of single firms having their records of growth or decline made public.) The 1964 employment figures and the 1957 employment as a percentage of 1964 are listed for each industry to indicate changes. In most cases, the November 1965 employment is also shown as the latest status.

Special acknowledgement is made to Dr. Henry A. Wadsworth of Agricultural Economics, Purdue University, for his cooperation and preparation of much of the data presented in this study. Also the help of Dwight Kelley, Chief of Research, Indiana Employment Security Division, is gratefully acknowledged.

An explanation of the more significant industries in each county and the relative size or other characteristics of each in relationship to the State of Indiana as a whole are also presented.

INDIANA AND THE NATION

4. Relative Standing

The measurement of a state is more than its geographical area, population and an array of economic statistics. But, the following will help describe the Hoosier State in broad terms. Indiana is:

11th in population among the states;
38th in land area (36,185 sq. miles);
8th in manufacturing industry;
8th in cash receipts from farm marketing;
1st in biological products, prefabricated buildings, and musical instruments;
2nd in book printing, storage batteries; veneer mills; and wood office furniture;
3rd in steel production, aircraft equipments, motors and generators, pharmaceutical preparation and refrigeration machinery.

A major manufacturer of mobile homes, radios and TV sets and their parts, household furniture, automobile and truck parts, railway and transportation equipment, structural clay products and metal working.

Indiana produces two-thirds of the dimensional limestone quarried in the U. S.

Note: The above was extracted from the Statistical Abstract of Indiana Counties published by the Indiana State Chamber of Commerce in 1963.

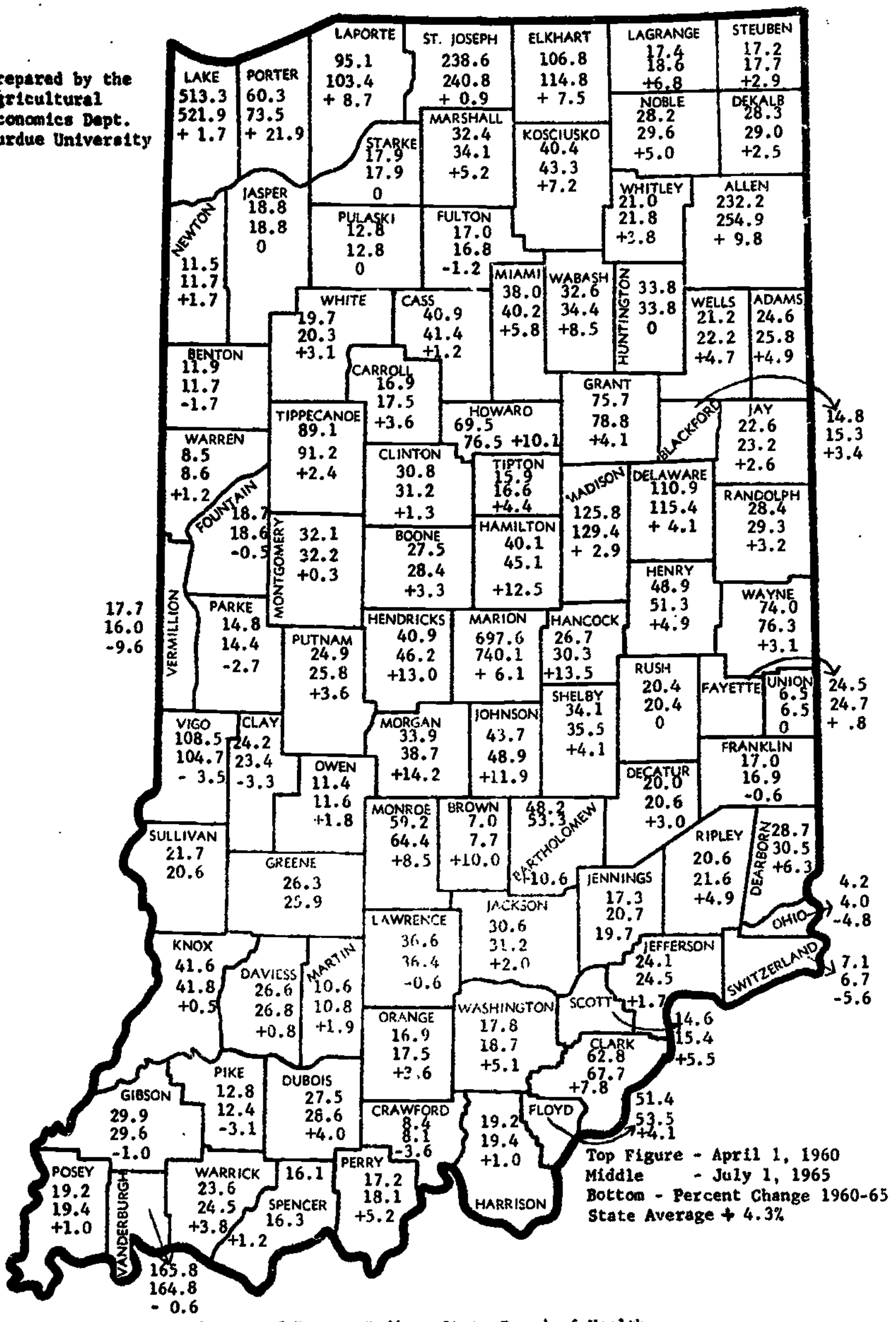
5. Population

In 1960, the State population was 4,662,498 and its increase of 18.5% since 1950 was about the same as that of the nation. 62.4% of Indiana's population is urban, and 37.6% rural. (In 1950 it was 59.5% urban and 40.1% rural). The population density of 128.9 persons per square mile compares with 50.5 persons nationally, 654.5 in Massachusetts and 812.4 in Rhode Island. The State is still growing (an estimate of 4,914,000 in 1965 was recently published.) The average population increase from 1960 to 1964 was 3.8%, however, this increase is not shared equally by each of the 92 counties. Generally speaking, the southernmost counties are not gaining as much in population (in fact, some are actually declining) as are the central and northern counties. The largest county population by far is Marion (largest city is Indianapolis) with over 735,000 people; this is followed by Lake County (E. Chicago, Gary, Hammond complex is largest concentration) at nearly 520,000. Coming in closely at third and fourth are Allen (with Fort Wayne) and St. Joseph (with South Bend) having a population of nearly 250,000 and over 242,000 respectively. Figure 1 shows the April 1960 and July 1965 county populations with the percentage change for each.

Figure 1

INDIANA POPULATION CHANGES 1960-65

Prepared by the Agricultural Economics Dept. Purdue University



Top Figure - April 1, 1960
Middle - July 1, 1965
Bottom - Percent Change 1960-65
State Average + 4.3%

Source of Data: Indiana State Board of Health

6. Income and Earnings

The median income for Indiana families and the average weekly employee earnings for 1960 are shown below* with data for the counties pertinent to this report:

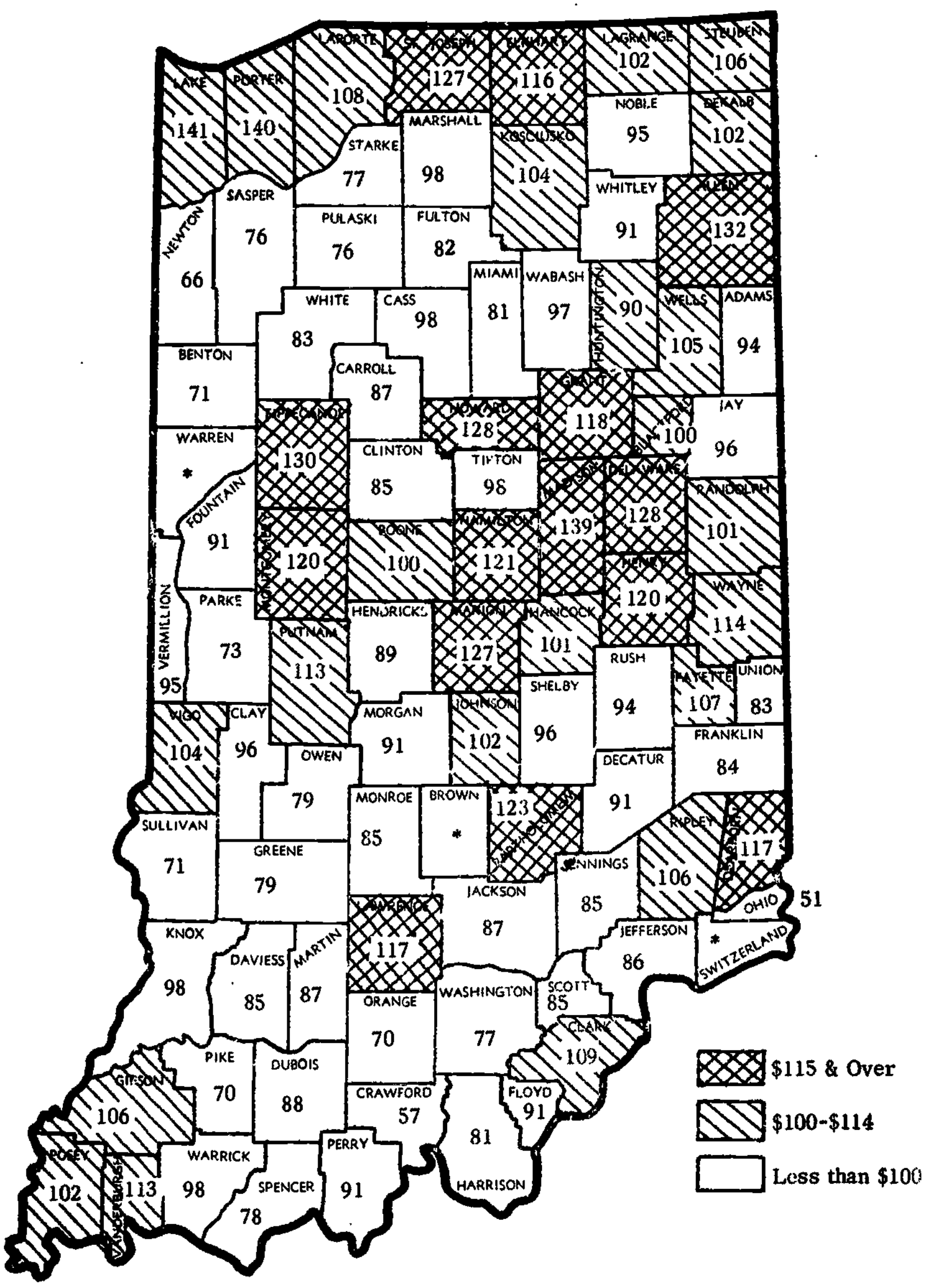
		Counties				
	Indiana State	Allen	Lake	LaPorte	Marion	Porter
Median Income (family)	$5,798	$6,562	$6,542	$6,093	$6,609	$6,598
Aver. Weekly Earnings (Apr.-June '61)						
(All employees)	$ 98.54	105.13	116.69	95.82	100.60	100.58
(All mfg. employees)	$112.13	124.07	129.36	103.29	116.00	131.83

As can be seen above, the median family income of each of these counties is higher than the State average, with LaPorte falling slightly below in average weekly earnings. There has been and there is a continuing rise in the average weekly earnings in manufacturing: for example, in 1963, this reached $141 in Lake and $140 in Porter - which are retaining State leadership in this regard. Please see Figure 2 for county averages of weekly earnings in manufacturing for 1963.

*Data from the Indiana State Chanber of Commerce

Figure 2

Average Weekly Earnings in Manufacturing, 1963



Source: Labor Trends in Indiana, Indiana Employment Security Division.

7. Employed Workers by Occupations

The total civilian work force in Indiana as of November 1965 was nearly 2,000,000 people with about 2.6% unemployed. These unemployed, with about 4,000 more involved in labor-management disputes, result in about 1,910,000 employed. (Please see appendix 1 for details.) In the State-at-large, more people are employed in the "Operatives and Kindred Workers" occupational group than any other. This is followed by "Craftsmen, Foremen and Kindred Workers", then come "Clerical and Kindred Workers", "Service Workers" and "Professional, Technical and Kindred Workers." (Please see Appendix II for specific numbers and additional data.) The distribution of employment in these occupational groups is typical of other industrial states, however, there are some interesting variations which have training implications in the counties that are described later in this report.

8. Employed Workers by Industries

In the preceding paragraph, Indiana was included as an "industrial state". This is exemplified by the fact that over 680,000 people were employed in all Manufacturing Groups in 1960. This is more than twice the employment in the second industry group which is Wholesale and Retail Trades, having over 323,000 employees. Third came "Professional and Technical Services" with over 185,000, fourth was "Agriculture, Forestry and Fishing"with about 112,000 people, and fifth at about 109,000 came Transportation and Other Utilities. Again, although this is a typical pattern, there are variations of import pointed out later in the report for each county.

DESCRIPTIONS OF SELECTED COUNTIES

9. Allen County

This county is located in the North-East section of the State and has an area of 670 square miles. It has nearly 5% of the State's population with a density of about 347 persons per square mile.

The population and average weekly earnings specifics for this county are included in Figures 1 and 2. The employment data for the more significant industries in Fort Wayne (the largest city in this county) are shown in APPENDIX I. Fort Wayne has the third largest civilian metropolitan area work force in the State at 110,300. Indianapolis is first at 412,000 and the Gary, Hammond, E. Chicago complex is second at 222,200.

The total 1964 employment of the more significant industries in Allen County having three or more firms (to avoid objections of specific firms having their growth or decline records made public) are presented in Table 1 - together with the 1964 employment as a percentage of 1957. This seven year span gives some indication of the changes from an employment-statistical reporting point of view. The employment in selected significant industries for Fort Wayne as a Metropolitan Area, as of November, 1965 is also shown in the right hand column of the table.

Insofar as the more significant manufacturing industries in Allen County are concerned, Transportation Equipment is now largest (at about 12,100) replacing Electrical Machinery and Supplies where 11,900 are employed. This reflects continuance of the impressive local rate of growth of Transportation Equipment manufacture in past years. (The Transportation Manufacturing industry group is third largest in the State of Indiana, with a 1964 annual average employment of over 85,000.) However, note on Table 1 that the Electrical Machinery group has had an employment growth of well over 1,000 in about one year; this group is growing throughout the State and the Nation as well, at a rate

of about 10% per year! In the State of Indiana as a whole, the electrical machinery group was the largest, with a 1964 average employment of over 101,200. Employment opportunities are predicted to continue for engineers, technicians and skilled workers in electronics and electrical industries throughout the 1960's.

The employment is also sizeable in Allen County in Non-electrical Machinery (4,100). This is the fourth largest manufacturing industry in the State with a 1964 average annual employment of over 58,000.

The Primary Metals Manufacturing Group (about 3,200) shows a very nominal rate of growth in this County. This manufacturing group is second largest in the State with over 101,000 employed. The heart of this industry is in Lake County.

Not shown on Table 1 due to restriction explained above, yet noteworthy are establishments in Textile Mill Products, Petroleum and Coal,and Instruments and Related Products.

In the nonmanufacturing area, the largest numbers employed in the Fort Wayne Metropolitan Area are in the Wholesale and Retail Trades, wherein, as of November 1965 about 21,500 were employed. (This reflects a typical employment pattern.) Second in size comes the Service and Miscellaneous areas at about 11,900 people which represents a wide diversity of activities. These total figures are not on the attachment - but sub-groups within each are shown.

TABLE 1

Employment in Industries with Three or More Firms, Allen County, Indiana, 1964, as % of 1957, and as of November 1965.

Industry	1964 Employment	1964 as % of 1957	Nov. '65 Fort Wayne Area
ALL MANUFACTURING			39,800
Food and kindred products	3690	137.8	3,600
Apparel & other finished fabtic prod.	310	40.1	
Lumber & wood products, except furn.	274	65.6	
Furniture and Fixtures	110	82.3	
Paper and allied products	641	193.4	
Printing, publishing & allied indus.	904	107.2	
Chemicals and allied products	129	30.0	
Rubber & misc. plastics products	1212	92.3	
Stone, clay, and glass products	198	254.0	
Primary metal industries	3185	101.1	
Fabricated metal products, except ordnance, machinery & transp.equip.	768	149.2	
Machinery, non-electrical	4035	101.9	4,100
Electrical machinery, equip. & supp.	10606	83.9	11,900
Transportation equipment	10524	135.9	12,100
Professional, scientific & control. instruments, photographic & optical goods; watches & clocks	509	196.2	
ALL NONMANUFACTURING			58,500
Local & suburban transit & interurban passenger transportation	352	198.6	
Motor freight transportation & warehousing	2116	122.8	
Communication	1440	136.7	
Electric, gas and sanitary services	1080	1588.0	
Wholesale trade	4650	194.8	
Retail trade-building materials, hardware, & farm equipment	939	89.0	
Retail trade-general merchandise	4127	125.2	
Retail trade--food	2006	91.5	
Automotive dealers and gasoline service stations	1719	120.5	
Retail trade--apparel and accessories	944	128.4	
Retail trade--furniture, home furn. and equipment	635	33.6	
Retail trade--eating & drinking places	2686	122.0	
Retail trade--miscellaneous retail stores	1384	403.3	

10. Lake County is located on the Northwest tip of the State. It borders Lake Michigan and is composed of an area of 514 square miles. It has over 11% of the State's population with the relatively heavy density of nearly 1,000 persons per square mile. The population and average weekly earnings specifics for this county are included in figures 1 and 2. (Also see paragraph 6). The employment data for the more significant industries in the Gary, Hammond, East Chicago metropolitan complex are shown in Appendix 1. This metropolitan area is the second largest in the entire State, having over 222,000 in the work force. It is second only to Indianapolis which has over 412,000; third comes Fort Wayne with about 110,300 in the work force. Other cities in Lake County of over 10,000 population are Hobart, Highland, Griffith and Whiting.

The total 1964 employment of the more significant industries in Lake County having three or more firms (to avoid objections of specific firms having their growth or decline records made public) are presented in Table 2. -- together with the 1964 employment as a percentage of 1957. This seven year span gives some indication of the changes from an employment-statistical reporting point of view. The employment in the significant industries for the Gary, Hammond, East Chicago Metropolitan Area as of November 1965, is also shown in the right hand column of table 2.

Insofar as the more signficant manufacturing industries are concerned, of course the leader far and away in this County is the Primary Metals Group. Although the seven-year span shows a stable employment picture, there has been a gain of over 2,000 during the past year to a figure approaching 65,000! There are some 29 major establishments in this group in Lake County. This manufacturing industry group is second in size only to the electrical machinery industry in Indiana. (The State 1964 annual employment averages were over 101,000 in Electrical Machinery, over 100,000 in Primary Metals,

over 85,000 in Transportation Equipment, 58,000 in Nonelectrical Machinery and 47,000 in Fabricated Metals.)

The second largest manufacturing group in Lake County is in the Fabricated Metals Products industries, where employment has shown a recent gain to a total of some 7,800 employees.

The third largest is in Petroleum Refining and Related Industries Group, wherein the last employment figure was 6,400. The decline in this group has been consistent and the 'new hire rate' is low. However, it does not necessarily follow there are no technical education implications. The tremendous production and equipment changes being experienced undoubtedly require the retraining of many people. A special study is needed to identify the real manpower and educational ramifications involved.

Transportation Equipment manufacture is fourth at 4,673 employed, and the record disclosed this is a growing industrial group.

Chemicals and Allied Products Group is next with 3,850 employed in 1964 and has a record of growth. For details in this industrial group, see Office of Manpower Studies No. 65-3. A Manpower Study for Technician-Level Educational Planning in Indiana Concerning the Chemical Technology, dated 20 October 1965. (This study also presents additional data concerning the Primary Metals area.)

Not shown in Table 2, due to restrictions explained earlier, yet noteworthy, is Textile Mill Products.

In the nonmanufacturing area, the largest numbers employed in Gary, Hammond, East Chicago complex are in the Wholesale and Retail Trades - where nearly 32,000 employees were working as of November 1965. This reflects a typical employment distribution within this area. Second in size is Service and Miscellaneous at about 6,700 followed closely by employment in Government at 6,600. These totals are not shown on the attachments, but some internal sub-groups are.

An interesting situation prevails when the total employment in manufacturing industries is compared with total employment in nonmanufacturing industries for Lake County. Normally, about one-third more people are employed in the nonmanufacturing than in the manufacturing areas. (This is true of the State of Indiana as a whole.) As expected then, in every major metropolitan area in Indiana, the numbers found employed in the non-manufacturing area are larger, except one: this one. The strong manufacturing industry employment is an important characteristic of this metropolitan complex.

TABLE 2

Employment in Industries with Three or More Firms, Lake County, Indiana, 1964, as a percentage of 1957, and as of November, 1965.

Industry	1964 Employment	1964 as % of 1957	Gary, Hammond E. Chicago Nov '65
ALL MANUFACTURING			102,000
Food and kindred products	3158	115.9	
Apparel & other finished fabric products	1076	109.1	
Lumber & wood products, except furniture	112	139.2	
Furniture and fixtures	1857	752.4	
Paper and allied products	576	114.9	
Printing, publishing, allied industries	1849	100.1	
Chemicals and allied products	3850	104.5	
Petroleum refining and related industries	7217	62.0	6,400
Rubber & miscellaneous plastics products	280	NA	
Stone, clay, and glass products	2521	87.8	
Primary metal industries	62224	93.8	64,500
Fabricated metal products, except ordnance, machinery & transportation equipment	7603	90.8	7,800
Machinery, nonelectrical	725	34.8	
Electrical machinery, equipment & supplies	424	256.1	
Transportation equipment	4673	106.7	
Professional, scientific, & controlling instruments; photo & optic goods; watches and clocks	160	242.7	
Miscellaneous manufacturing industries	102	14.6	
ALL NONMANUFACTURING			95,500
Local & suburban pass. transportation	689	208.7	
Motor freight transportation & warehousing	2288	122.9	
Communication	1281	62.8	
Electric, gas, and sanitary services	3245	2065.7	
Wholesale trade	3856	175.1	
Retail trade--building materials, hardware, & farm equipment	1112	94.5	
Retail trade--general merchandise	4670	122.8	
Retail trade--food	4385	119.0	
Automotive dealers & gasoline stations	2687	133.8	
Retail trade--apparel & accessories	1449	96.0	
Retail trade--furniture, home furn & equip	761	24.9	
Retail trade--eating and drinking places	4227	123.0	
Retail trade--miscellaneous retail stores	1762	248.2	

11. LaPorte County is located in the Northwest section of Indiana, borders Lake Michigan, and is composed of an area of 608 square miles. It has slightly over 2% of the State's population with a density of about 157 persons per square mile. The population and average weekly earning specifics for this county are included in Figures 1 and 2 (also see paragraph 6). The largest city in LaPorte is Michigan City with a population of over 40,200. Also of significance is the city of LaPorte with a population of over 22,000

The total 1964 employment of the more significant industries in LaPorte County having three or more firms (to avoid objections of specific firms having their growth or decline records made public) are presented in Table 3, together with the 1964 employment as a percentage of 1957. This seven year span gives some indication of the changes from an employment-statistical reporting point of view. The employment data has been extracted from Indiana State Employment Security Division records.

Insofar as the more significant manufacturing industries in LaPorte County are concerned, the largest is the Nonelectrical Machinery Manufacture industries group in which over 3,400 were employed in 1964. The employment pattern for this group throughout Indiana is quite stable, and it is fourth largest of the major industrial groups in this State (over 58,000 employed) in 1964.

Transportation Equipment Manufacture employment at 2,360 employed in 1964 is second largest in size (in LaPorte County) with a good growth record. This industry group is third largest in the State of Indiana as a whole, with a 1964 annual average employment of over 85,000, and still growing.

Fabricated Metals Products is next in size for this county with over 1,700 employees. This industry group employs about 47,000 in the State at large, and is the fifth largest manufacturing group.

Furniture and Fixtures is next in size for LaPorte with employment at 1,446 in 1964. Its growth record is quite impressive. However, this industry group employs fewer than 23,000 in the State at large.

The real "comer" appears to be in the Electrical Machinery, Equipment and Supplies group; the growth of over 500% to nearly 1,050 people in this county is impressive. This group is growing throughout the State and the Nation at a rate of about 10% per year. In the State of Indiana, the electrical machinery manufacturing group was the largest in size with a 1964 annual average of over 101,200 people employed. There is now, and there will continue to be throughout the 60's, a shortage of engineers, technicians and skilled workers in this industrial group, according to leading National authorities.

Not shown in Table 3 due to restrictions explained earlier, yet noteworthy, are Textile Mill Products, Leather and Leather Products, and Stone, Clay and Glass Products.

In the nonmanufacturing area, the largest numbers employed in this county are in the Wholesale and Retail Trades. This reflects a typical employment pattern, with employment in the general services area next.

TABLE 3

Employment in Industries with Three or More Firms, LaPorte County, Indiana in 1964 and as a Percentage of 1957.

Industry	1964 Employment	1964 as % of 1957
Food and kindred products	641	307.1
Apparel and other fabric products	598	122.7
Lumber and wood products, except furniture	317	111.5
Furniture and fixtures	1446	127.9
Paper and allied Products	148	508.6
Printing, publishing and allied industries	599	173.8
Chemicals and allied products	101	85.1
Rubber and miscellaneous plastics products	736	277.7
Primary metal industries	785	166.9
Fabricated metal products, except ordnance, machinery, and transportation equipment	1711	104.7
Machinery, nonelectrical	3406	78.8
Electrical machinery, equipment, & supplies	1044	506.1
Transportation equipment	2360	108.4
Professional, scientific, & controlling instruments; photographic & optical goods; watches and clocks	550	112.0
Motor freight transportation & warehousing	186	115.0
Communication	288	59.9
Electric, gas, and sanitary services	445	NA
Wholesale trade	484	122.2
Retail trade--bldg. materials, hardware, and farm equipment	360	192.4
Retail trade--general merchandise	786	124.1
Retail trade--food	704	89.2
Automotive dealers and gasoline service stations	565	156.0
Retail trade--apparel and accessories	233	128.0
Retail trade--furniture & home equip.	142	23.8
Retail trade--eating and drinking places	850	114.7
Retail trade--miscellaneous retail stores	407	779.7

Source: Indiana Employment Security Division.

12. Marion County is located pretty much in the center of the State. Although it is relatively small in size (just over 400 square miles), its population of well over 700,000 people comprises over 15% of the State. It has the very high density of over 1,750 persons per square mile. More specifics concerning population and average weekly earnings are included in Figures 1 and 2 (also see paragrach 6 above). The largest city in Marion County (and the State) is Indianapolis. This city has a population of over one-half million people and it is the seat of government being the Marion County Seat and the State Capital.

The total 1964 employment of the more significant industries in Marion County with three or more firms (to avoid objections of single firms having their growth or decline records made public) are presented in Table 4--together with the 1964 employment as a percentage of 1957 employment. This seven-year span covers a long enough period to get some indication of the changes from an employment-statistical reporting point of view. The employment in selected industries for Indianapolis as a Major Metropolitan Area, as of November 1965 is also shown in the right hand column.

Insofar as the more significant manufacturing industries in Marion County are concerned, the size and growth of employment in Electrical Machinery, Equipment and Supplies is very impressive--particularly considering the Nov. '65 total of 20,600 employed. This industrial group is growing throughout the State of Indiana, where total employment exceeds 101,000 people. This represents over 16 percent of all the manufacturing employment in the State: more people were employed in this industry than in any other manufacturing industry in Indiana. The growth rate of this industry nation-wide is about 10% per year--and occupational opportunities now exist, and are predicted to continue to exist throughout this decade for engineers, technicians and skilled workers.

Transportation Equipment manufacturing industries have the largest employment (now over 32,600) than any other group for this county. Although the long-term pattern reflects a somewhat stable situation, the difference between the 1964 total at 28,000 and the Nov '65 total of over 32,000 shows a significant increase. This industrial group is the third largest in the State of Indiana, with a 1964 annual average employment of over 85,000--and growing.

The employment in Nonelectrical Machinery manufacturing group is quite considerable in Marion County at well over 12,000 employed. The employment pattern appears stable from these data. This industrial group ranks fourth in the State of Indiana with a 1964 annual average employment of over 58,000. (Electrical Machinery was first and Transportation Equipment third as explained above. Second in size in this state is the Primary Metals group with 1964 employment at over 100,000 people.)

The Chemicals and Allied Products industries come next in employment-size in Marion County. This group has shown a consistent employment pattern over the years--with evidence of growth appearing in recent years. Note the increase of nearly 1,000 between the 1964 and 1965 totals to a figure of 9,600 as of Nov '65. Although this is not one of the top 5 industries in the State (the 1964 total employment being slightly over 24,000), its concentration and strength in Marion County is significant. This industrial area was reported in Office of Manpower Study, No. 65-3, dated 20 Oct '65, titled, A Manpower Study for Technician-Level Educational Planning in Indiana, Concerning the Chemical Technology.

Fabricated Metal Products manufacturing industries are also important in size in Marion County. This group has a fine past record of growth with continuance indicated by 1964 employment of 7,500 growing to 9,000 as of November 1965. In fact, this manufacturing group was the fifth largest in the State with employment at about 47,000 in 1964.

Not shown in Table 4 due to restrictions explained earlier, yet noteworthy, is Textile Mill Products.

In the nonmanufacturing areas, the largest numbers employed are in the composite Wholesale and Retail Trades, wherein, as of November 1965 about 79,400 were employed. As a seat in Government, this area of employment is also large having about 54,400 people in November 1965. (These figures are not shown on table 4.)

TABLE 4

Employment in Industries with Three or More Firms, Marion County, Indiana, 1964, change since1957, and as of November 1965.

Industry	1964 Employment	1964 as % of 1957	Nov '65 Indpls Area
ALL MANUFACTURING			124,700
Food and kindred products	11,584	111.2	12,300
Apparel & other finished fabric products	462	60.8	
Lumber & wood products, except furniture	759	100.4	
Furniture and fixtures	578	55.1	
Paper and allied products	2,863	105.0	10,900
Printing, publishing & allied industries	6,661	110.6	
Chemicals and allied products	8,717	100.5	9,600
Petroleum refining & related industries	388	111.7	
Rubber & miscellaneous plastics products	2,292	93.9	
Stone, clay, and glass products	1,409	152.8	
Primary metal industries	3,416	69.4	3,900
Fabricated metal products	7,524	106.6	9,000
Machinery, nonelectrical	12,179	95.7	12,800
Electrical machinery, equipment & supplies	16,214	103.8	20,600
Transportation equipment	28,005	98.9	32,600
Prof., scien. & control instruments; photo & optic goods; watches & clocks	465	91.8	
Miscellaneous manufacturing industries	1,350	98.3	
ALL NONMANUFACTURING			237,800
Local & suburban pass. transportation	1,529	209.7	
Motor freight transportation & warehousing	7,103	127.1	
Transportation by air	737	316.1	
Transportation services	260	NA	
Communication	4,754	249.7	
Electric, gas and sanitary services	2,186	572.8	
Wholesale trade	18,945	166.2	
Retail trade--bldg. mat. hdwre & farm equip	2,712	120.2	
Retail trade--general merchandise	12,757	120.0	
Retail trade--food	5,852	37.4	
Auto dealers & gasoline service stations	5,799	143.8	
Retail trade--apparel & accessories*	1,786	83.8	
Retail trade--furniture, home furn & equip	1,617	19.8	
Retail trade--eating & drinking places	9,042	119.4	
Retail trade--miscellaneous retail stores*	4,966	392.2	

*Believe this shows the impact of new "Discount Stores" and large food-chain outlets.

13. Porter County.

This county, located in the Northwest section of the State, borders Lake Michigan and is wedged between Lake and LaPorte Counties. It has an area of 425 square miles and a population of over 70,000 with a density of more than 180 persons per square mile. It undoubtedly has the fastest rate of growth in the State. Please see Figures 1 and 2 for population and weekly earning specifics. The largest city is Valparaiso with a population over 15,000 followed in size by Portage with over 12,000 inhabitants.

The employment of selected industries in Porter County having more than three firms (to avoid objections of single firms having their records of growth or decline made public) are presented in Table 5, together with the 1964 employment as a percentage of 1957 employment. This seven year span should give some indications of changes from an employment-statistical reporting point of view.

Not shown in Table 5, due to restriction explained above, but still noteworthy are; Apparel and Related Products, Rubber and Plastics, Chemicals and Allied Products, and Electrical Machinery Manufacture.

TABLE 5

Employment by Major Industries, Porter County, Indiana, 1964

Industry	1964 Employment	1964 as % of 1957
Food and kindred products	57	133.3
Lumber and wood products, except furniture	50	78.2
Printing, publishing and allied industries	99	144.4
Primary metal industries	1664	1600.0
Fabricated metal products, except ordnance machinery and transportation equipment	510	69.0
Machinery, except electrical	840	126.0
Motor freight transportation and warehousing	118	137.1
Communication	182	235.0
Wholesale trade	331	341.7
Retail trade-building materials, hardware and farm equipment	120	160.1
Retail trade-general merchandise	361	135.6
Retail trade-food	278	106.3
Automotive dealers and gasoline service stations	377	178.9
Retail trade - apparel and accessories	24	137.2
Retail trade - furniture, home furnishings and equipment	54	21.5
Retail trade--eating and drinking places	511	166.5
Retail trade - miscellaneous retail stores	205	333.6

SOURCE: Indiana Employment Security Division.

Note: Although there is no Purdue Regional Campus in Porter County, the Calumet Campus in Lake County (adjacent on the West) and the Michigan City Campus in LaPorte County (adjacent on the East) cover and overlap most of Porter County within a 25 mile radius of each. Therefore, the industry employment patterns for Porter are appropriate considerations for both of these Purdue Regional Campuses.

The data above indicate that the Primary Metal Manufacturing Group built up to over 1,650 employed in the few years just prior to 1964. Bethlehem Steel Company's new facilities at Portage will undoubtedly shoot this employment figure much higher - and have important population growth, training and educational implications.

APPENDIX I

INDIANA WORK FORCE, STATE AND AREA SUMMARY
November 1965

(All figures in thousands)

EMPLOYMENT STATUS & INDUSTRY	State	MAJOR METROPOLITAN AREA			
		Gary Hammond E. Chicago	Fort Wayne	Indiana-polis	South Bend
CIVILIAN WORK FORCE	1,959.5	222.2	110.3	412.4	103.1
Manufacturing	680.4	102.0	39.8	124.7	35.3
Food	46.0		3.6	12.3	2.2
Apparel & Textiles	14.3				0.6
Lumber & Furniture	37.9				
Paper, Printing & Publ.	39.5			10.9	1.0
Chemicals	24.5			9.6	
Petroleum & Coal Products	7.5	6.4			
Primary Metals	103.4	64.5		3.9	
Fabricated Metals	52.0	7.8		9.0	1.9
Machinery	184.1		16.0	33.4	
Nonelectrical	61.8		4.1	12.8	6.9
Electrical	122.3		11.9	20.6	
Transportation Equipment	96.2		12.1	32.6	9.9
Nonmanufacturing	986.1	95.5	58.5	237.8	53.7
Contract Construction	82.1	12.5	4.6	15.9	3.3
Trans., Comm., & Pub.Util.	93.7	12.4	7.0	24.6	4.5
Wholesale & Retail Trade	323.0	31.9	21.5	79.4	18.5
Finance, Ins.,& Real Estate	64.5	5.4	5.0	23.2	4.6
Service & Misc.	173.5	16.7	11.9	40.3	14.4
Government	241.3	16.6	8.5	54.4	8.4

Manufacturing estimates shown for most significant industries. Figures are preliminary.
Source: Labor Market Trends in Indiana, Indiana Employment Security Div., Indianapolis, December, 1965.

APPENDIX II

EMPLOYED WORKERS IN INDIANA*
14 Years Old and Over, 1960

by OCCUPATIONS

	Total	Male	Female
PERSONS EMPLOYED	1,717,241	1,182,645	534,596
Professional, technical and kindred workers	168,815	105,799	63,016
Farmers and farm managers	80,622	77,054	3,568
Managers, officials, and proprietors, except farm	125,328	107,174	18,154
Clerical and kindred workers	230,384	72,215	158,169
Sales workers	117,180	71,428	45,752
Craftsmen, foremen and kindred workers	255,090	247,909	7,181
Operative and kindred workers	373,099	283,539	89,560
Private household workers	33,189	907	32,282
Service workers, except private household	141,990	61,637	80,353
Farm laborers and farm foremen	26,020	21,567	4,453
Laborers, except farm and mine	86,513	82,755	3,758
Occupation not reported	79,011	50,661	28,350

*Source, Statistical Abstract of Indiana Counties. Indiana State Chamber of Commerce, 1963.

THE SCHOOL OF TECHNOLOGY
PURDUE UNIVERSITY

STUDIES, REPORTS AND SURVEYS

Number	Title	Date
65-1	Industrial Survey 201, Specifications for the Baccalaureate Graduate	January 1965
65-2	Engineering Technicians - Production and Requirements	15 June 1965
65-3	A Manpower Study for Technician-Level Educational Planning Concerning the Chemical Technology	20' October 1965

* * * * *

66-1	A Manpower Study for Technician-Level Educational Planning Concerning the Electrical/Electronic Technology in the Greater Lafayette Area (Tippecanoe County, Indiana)	January 1966
66-2	A Report of Employment Trends in Five Indiana Counties (Allen, Lake, LaPorte, Marion, and Porter)	1 February 1966

THE OFFICE OF MANPOWER STUDIES
and the
POLICY GUIDANCE COMMITTEE

On April 15, 1964, the BOARD OF TRUSTEES took action to create The School of Technology and simultaneously authorized the Dean to establish "...an administrative organization to conduct educational research and manpower studies to provide the necessary basic data and information concerning the growing and changing needs and demands for technologically oriented education and programs." The Office of Manpower Studies was activated in response to this action and was assigned two functions:

(1) to establish and operate a continuing survey of manpower requirements and trends in Indiana in order that educational and training agencies can better prepare people for employment opportunities; and

(2) to encourage research activity in the University, aimed at solving problems and developing understandings of a more fundamental nature in the manpower and training field.

With the concurrence of the Vice President for Research, an Interdisciplinary Policy Guidance Committee of the Office of Manpower Studies was formed to further develop the concept of the office and to help identify the broad avenues of research that should be pursued. Membership of this committee includes:

C. H. Lawshe, Chairman, (Dean, School of Technology)

J. P. Lisack, Secretary, (Director, Office of Manpower Studies)

J. S. Day (Industrial Management)

E. M. Eddy (Industrial Education)

C. E. French (for L. S. Hardin) (Agricultural Economics)

B. R. Keenan (Political Science)

D. C. King (Graduate School - Psychology)

G. W. McNelly (Associate Dean, School of Technology)

E. W. Noland (Sociology).

VT 001 988
College and Career Information for High School Pre-Technology Students.

Cogswell Polytechnic Inst., San Francisco,Calif.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Apr65 42p.

*OCCUPATIONAL INFORMATION; *TECHNICAL EDUCATION; *EDUCATIONAL NEEDS; ADMISSION CRITERIA; CURRICULUM
*ENGINEERING TECHNICIANS; PRETECHNOLOGY PROGRAMS; CAREER OPPORTUNITIES; COMMUNITY COLLEGES; *EDUCATIONAL
OPPORTUNITIES; CAREER PLANNING; COLLEGE PROGRAMS; HIGH SCHOOL GRADUATES
CALIFORNIA

Designed to assist students in matching their abilities and amibitions to appropriate college programs, this booklet gives guidance information and requirements for the pre-technology students in California, including: (1) associate degree requirements, (2) technical assistance programs, (3) occupational-centered curriculums, (4) apprenticeship programs, (5) certificate programs, (6) college transfer programs, (7) a checklist of offerings at Bay Area junior colleges, (8) other post secondary school requirements, and (9) a section of question and answer which contains pertinent information. (EM)

VT 001 988

ED039370

(CT)

COLLEGE AND CAREER INFORMATION

FOR

HIGH SCHOOL PRE-TECHNOLOGY STUDENTS

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

Pre-Technology Program
Cogswell Polytechnical College
April, 1965

VT01988

PREFACE:

This booklet is designed to assist high school students who are interested in technical careers match their abilities and ambitions to appropriate college programs. The discussion is primarily directed to students enrolled (or contemplating enrollment) in high school engineering pre-technology programs. However, this emphasis does not materially reduce the value of this report for other students.

The Pre-Technology Program is a high school program designed to meet the needs of those students who wish to become one of a great variety of technicians in the engineering field. The Program is college preparatory, it is <u>not</u> "watered down," and requires considerable effort on the part of students and teachers. The Pre-Tech subjects are science, mathematics, technical laboratory and English. The Pre-Tech teaching team tries to make high school more meaningful for Pre-Tech students by relating the subjects taught and by teaching topics which are essential for college level study in engineering technology. The success of the Program depends upon how well the teaching team and the students live up to their mutual contract.

There is little question that most technically oriented students will go to college. Perhaps this report will help you decide what kind of college, what kind of program, and, of course, what kind of job is in your future. Today, your education is a significant predictor of your success as a citizen. No longer can you afford to make a substantial mistake in choosing your future occupation and its concomitant education. Educational and occupational errors are difficult to correct in the new world of work.

Hitch your dreams and hopes to your interests, match your choice to your commitment to study and work hard, and base your decision upon a realistic evaluation of your abilities and a thorough knowledge of all the alternatives.

<u>Ad astra per aspera</u>!

YOUR EDUCATION AND JOB OPPORTUNITIES

A long continuing trend has been to require two or more years of college for an ever increasing percentage of jobs. This development, which represents a radical change in occupations in the United States since the end of World War II, is recognition of the fact that our increasingly technical society requires larger numbers of college educated technical assistants and a general upgrading of the educational preparation for all jobs.

For example, it is now becoming extremely difficult for even the apprentice craftsman to learn all of his skills on the job. Increasing numbers of craft unions require post high school schooling as an integral part of the apprenticeship program.

The really dramatic change in jobs has been the creation of new types of work, mostly technical, which simply did not exist before. The computer programmer is an outstanding example of an occupation which, for all practical purposes, did not exist ten years ago and which now employs thousands of people. Paralleling this is the rapid disappearance of manual work of all kinds due to automation. Even the modern "ditch digger" operates a machine, not a shovel, and must have far more technical competence than his counterpart of a generation ago.

In engineering technology you will be preparing for new jobs instead of old, and you will be job seeking in a market which offers far more jobs than there are people to fill them. It is optimistically estimated that 200,000 science and engineering technician jobs will be available annually during the next few years. The lowest estimate is for 100,000 such new jobs each year. Our schools are turning out barely 50,000 qualified persons each year for these jobs. What could be more to your advantage?

As a direct result of technological change, the largest increase in new jobs is occurring in occupations that require the most education and training. Jobs are becoming more mental and less physical. The new worker is expected to think and be able to communicate the results of his thinking. Even the armed forces are offering fewer opportunities to the under-educated. The fact of the matter is that business and industry today have little place for the young worker, or any worker, without a definite skill.

Table I of this report clearly shows the technological trend in employment. It compares the percentage of workers in each of the major occupational groups from 1900 to a projected 1975. Note that almost all of the increase in the white-collar classification is in the professional-technical area, and that this increase took place while the number of semi-skilled, unskilled and farm workers were rapidly decreasing. In 1900, 70 percent of the nation's labor force was engaged in production of all kinds; today, only 40 percent of the labor force is engaged in production.

Our technological economy has little to offer the untrained, under-educated would-be worker. In the new technology, job entry and upgrading are increasingly a matter of educational preparation. More and more of what is basic to successful performance in today's occupations is best taught in educational institutions. In the same way that apprenticeship gave way to professional education in medicine and law, so on-the-job technical training and apprenticeship is giving way to occupational and technical education in our schools.

TABLE I

MAJOR OCCUPATIONAL GROUPS AS A PERCENTAGE OF THE TOTAL LABOR FORCE *

Group	1900	1947	1960	1975
White-collar workers	17.6	34.9	43.1	47.8
Professional & technical	4.3	6.6	11.2	14.2
Managers & proprietors	5.8	10.0	10.6	10.7
Clerical workers	3.0	12.4	14.7	16.2
Sales personnel	4.5	5.9	6.6	6.7
Blue-collar workers	35.8	40.7	36.3	33.4
Craftsmen & foremen	10.5	13.4	12.8	12.8
Semi-skilled operatives	12.8	21.2	18.0	16.3
Laborers (exclusive of farm & mine)	12.5	6.1	5.5	4.3
Service workers	9.0	10.4	12.5	14.3
Farm workers	37.6	14.0	8.1	4.5

* Grant Venn: Man, Education, and Work, p.8, 1964, American Council on Education, Washington, D.C.

As you begin to think seriously about your first job, take a good look at today's unemployed. Five percent of our nation's citizens who need work cannot find work. Fully 20 percent of all out-of-school youth under 21 years of age are unemployed. These unemployed are the under-educated and the under-skilled, workless because they are not qualified to work, not because of any depression of our national economy.

Students who do not pursue occupational goals in school, and who are able to find work, usually end up in low-skilled, low-paying jobs -- jobs without security or future, jobs frustratingly below their potential.

Of course there are always exceptions. How much a student profits from his educational experience is more important that the number of years he spends in schools -- nor does all education take place in school. But our human ego always leads us to believe that "we" are exceptional and that statistical laws work for others but not for ourselves. It is indeed sad to see these over-confident people play "educational roulette" with their future!

AUTOMATION AND COMPUTERS: THEIR AFFECT ON EDUCATION AND WORK

In the fore front of technological development has been the introduction of automation and computers into industry and commerce.

Automation encompasses a class of devices that automatically perform both the sensing and motor tasks formerly performed by human labor. Automated machines can mine coal, make automobile engine blocks, pick cotton, sort bank checks, grade oranges, roll steel and aluminum, and type letters.

Computers are devices which rapidly perform traditional human tasks involving experience, memory, analysis, logic, and decision-making. They can prepare monthly bank statements for thousands of customers, read envelopes for the postman, translate foreign languages, regulate production in oil refineries, fly missiles and navigate planes.

The impact of these devices has been profound:

* Automatic elevators have displaced 40,000 operators in New York City alone.

* New equipment in the U.S. Census Bureau now enables 50 statisticians in the 1960's to do work that required 4000 such people in the 1950's.

* The check-writing staff in the U.S. Treasury Department has been reduced from 400 persons to 4.

* The railroad fireman is about to disappear.

* Employment in the coal fields has been reduced from 415,000 in 1950 to 136,000 in 1962.

* Since 1956 construction work has jumped 32% while construction job opportunities have fallen off 24%.

The above effects of automation seem to imply that old jobs are being destroyed without the creation of new jobs for the people being laid off. This is not quite the

case. For example, the loss of the elevator jobs throughout the United States has been accompanied by the simultaneous creation of new jobs in the design, building, sale, installation and servicing of the new equipment. Automated and computerized manufacture has also made possible the mass marketing of consumer items of greater complexity and/or smaller unit cost. New industries and markets have come into existence where none existed before, leaving new jobs in their wake.

The most profound effect of automatic devices and computerized control has been in the change of occupations. These devices are obviating the need for manual labor in manufacture, but at the same time creating an army of designers, operators, maintenance workers, programmers, etc. <u>These new jobs are mental rather than physical, requiring more school preparation. These are the jobs of the future!</u>

Table II presents some statistical proof of this job change.

TABLE II

PERCENTAGE OF NON-PRODUCTION WORKER EMPLOYMENT TO TOTAL EMPLOYMENT IN SELECTED INDUSTRIES, 1947 and 1962. *

Industry Group	1947	1962
Ordnance (weapons and ammunition used in warfare)	18.5	54.0
Instruments	20.2	36.3
Petroleum	23.1	35.7
Transportation equipment	18.5	31.8
Machinery	20.9	30.4

* Grant Venn: <u>Man, Education and Work</u>, p. 9, 1964, American Council on Education, Washington, D. C.

GLOSSARY OF OCCUPATIONAL TERMS

Professional occupations are those occupations generally requiring four or more years of college. A profession may or may not require manual skills, but always requires a high degree of abstract thought. The professional must have a vast amount of knowledge available in his memory and be able to find information readily through references. He must be broadly educated and be quite able in the communication skills of reading, writing and speaking. He must be able to organize facts, find relationships, use symbols, and unify his knowledge through conceptual thinking. The professional may practice as an individual or be salaried on a contractual basis. Whether independent or salaried, he usually conducts his work as he sees fit. His work is of a problem solving nature and seldom repetitive. It is difficult to describe his work except in broad and general terms.

Professional-assistance or semi-professional occupations are intermediate between vocational and professional occupations. They combine the thinking, communicating, and problem solving abilities of the professional with the skills and daily routines of the non-professional. There are no clear-cut divisions between the vocational, the semi-professional, and the professional worker. Tje differences are often of degree rather than of kind. Educational background is usually the criterion used to identify the semi-professional worker: he has two or more years of college. It is still possible for the vocational worker to become semi-professional and for the semi-professional to enter certain professional occupations while on the job; not all learning takes place in schools. These opportunities, however, are becoming less frequent, and one's station in life depends more and more upon his educational attainments.

Examples of professional assistance jobs are:

Engineering technician	Technical photographer
Computer programmer	Electronics technician
Medical technician	Quality control technician

Vocational occupations, are all those occupations whose work can be easily described and whose work tends to be rather repetitive. The vocational worker must be basically competent in written and oral English and mathematics. High school graduation usually provides adequate general educational background. In addition, many of the highly skilled vocations require extensive job training in schools and apprenticeships. Vocational work is of many types:

Service	Manufacture
Repair	Business
Trade	

Though some vocations require extensive and highly developed skills, the work remains repetitive, and once workers have learned their job, it continues more or less the same, day in and day out.

Technician: This is a very flexible term which implies a type of job dealing with complex, technical devices, or machines, together with the application of theoretical knowledge of a technical-scientific nature. The word technician does not indicate whether the person is educated or trained, whether his school background was broad or narrow, or whether he is skilled manually or cognitively (mentally). To make the meaning clear, an adjective is used. An engineering technician combines some of the manual skills of the craftsman with the cognitive skills of the engineer. He is often involved in design, research, supervision, etc. At the opposite extreme, a machine technician may have a minimum of theoretical skills but may be highly competent in machine installation, maintenance and repair. The salary and future of a technician depends much more on his theoretical than

his manual skills.

Don't base your future career upon a job name! Study the job description and job opportunities that go with the name of the occupation before you make up your mind. Junior college and technical institute catalogs are very helpful in this respect. You should also seek the help of your teachers and counselors.

A.A. degree: The A.A., or Associate in Arts, degree is awarded by California Junior Colleges after the completion of 60 to 64 units of work in specified areas. There are two types of degree requirements, state and local. Every public junior college student must, under state law, take the following in order to graduate:

American History and institutions.....	3 units
Health.....	2 units
Physical Education.....	2 units
	7 units

Each college has its own additional requirements. It is not possible to list them all, but a consensus would be:

History.....	3 units
English (reading - writing - speech).....	0-6 units
(satisfied by exam. in some colleges)	
Mathematics.....	0-3 units
(may be satisfied by test)	
Major *.....	20 + units
Electives.....	up to 30 units
	60 units minimum

(* NOTE: The unit requirements for a major vary from college to college and major to major. Generally, the semi-professional programs leave little room for free electives.)

The Standard College Unit: One unit of college credit is awarded for one hour per week of classroom instruction in the academic areas. This is coupled with an expected minimum of two hours of home preparation for each unit undertaken. An average college load consists of 16 units. This represents approximately

16 hours of classroom instruction per week and 32 + hours of outside preparation. Some courses require more than one hour of classroom instruction per week per unit. A three hour laboratory period per week is considered the equivalent of one college unit because it combines the one hour of "lecture" with the two hours of "preparation." Other courses may have similar equivalancies when study is combined with instruction. You should note that the average college student is expected to spend 50 or more hours per week working on his education to achieve a minimum level of competence.

Classification Tests: All collegiate institutions now require classification tests before admission. These tests measure two quantities: (a) general college aptitude (related to intelligence) and (b) achievement levels in basic areas such as English, mathematics, science, etc. These tests are generally used for assisting the student in choosing an appropriate college program commensurate with his existing and potential abilities.

The Scholastic Aptitude Test of the College Entrance Examination Board is used by many universities and colleges. Junior colleges often use the American College Testing Program battery of tests, known as The ACT, which consist of tests in English, mathematics, social and natural science.

CALIFORNIA'S MODERN JUNIOR COLLEGES:

Because of the careful screening that all Pre-Tech students are subject to before entering the Program, it is assumed that all are college capable. It is further assumed that most Pre-Tech Program graduates will continue into college or extend their education in some other way. (To assume otherwise is to admit that our arguments in favor of continued education are not valid.) Since California's modern junior college system is rapidly gearing to meet the occupational needs of a majority of California's youth, while other colleges continue to cater to students with special abilities, it is much to the advantage of the Pre-Tech student to go to junior college. It has always been a goal of the Pre-Tech Program to see most of its students through junior college.

Although there are local variations, every California junior college offers the following type programs:

1. Technical Assistance Programs:

These are the technician level programs for which the Pre-Technology Program was designed. They are also known as semi-professional or professional assistance programs. They result in an A.A. degree at the end of two years and are occupationally oriented, but not occupationally centered. Basic science and mathematics are stressed, together with a broad theoretical background in the field of study. The technician knows something of the skills of the tradesman and of the technical problems of the professional.

Technician jobs are extremely varied, even within the area of specialization. Moreover, the technician's work tends to change with time even on the same job. He is seldom employed in direct manufacture or in service and repair. His responsibilities are in design, mock-up, research and development, quality control, etc.

Examples of this type of work are the engineering technician, chemical technician, non-destructive testing technician, welding technician, data processing technician, computer programmer, etc.

Starting salaries and working conditions are generally excellent in this type of work. All junior colleges offer technical assistance curricula, but they try not to compete with each other. If your local college does not offer a program of your choice, another may. You may attend a junior college outside your district if this is the case.

It is possible to complete a junior college technology program and transfer to a four year college or university in a related course of study. (See questions in this report regarding future job opportunities.) Junior college scholarship must be reasonably high to do this. Technician programs are ideal for the student who is not sure of his ability to complete a four year college course. The work in these programs is rigorous, but they are generally not on as high a level of abstraction as the college transfer programs.

2. Occupationally-Centered Curricula:

These are terminal, two year programs which earn the A.A. degree and which result in the acquisition of a vocational skill upon graduation. In some areas the student is prepared to enter a trade as an apprentice, such as curriculums in machine and metals technology. In other areas the student is prepared to meet state or federal training regulations and to take required examinations. Curriculums in airframe mechanics and aircraft power plants are examples of such regulated programs. Programs are also offered in highly skilled areas which are traditionally non-trade oriented and in which traditional apprenticeships are not required. An example of this type of curriculum would be drafting or business equipment operation.

The occupationally centered programs emphasize the practical side of work, requiring the student to develop specialized manual skills to a high degree. Considerable theory is taught, but it tends to be less general in nature, being more oriented to a particular job or skill. These programs are commonly known as trade and industry (T & I) type curricula.

3. Apprenticeship Programs:

Most junior colleges have arrangements with local joint-apprenticeship committees for combined school-work apprenticeship programs. Related courses at the college are a required part of the training for regularly indentured apprentices. Such courses may be used for credit toward the Associate in Arts degree. These apprenticeship courses are usually given at night and average five hours per week.

Colleges which offer these apprenticeship courses also offer pre-apprenticeship programs during the day. These pre-apprenticeship programs exist for many reasons. In some cases the student is required to complete such a program before he can apply for an apprenticeship. In other cases the pre-apprenticeship offers the student a chance to learn and practice a trade while waiting for apprenticeship vacancies to occur. Students are encouraged to earn the A.A. degree in these programs. In most cases, the time spent in an apprenticeship before becoming a journeyman is reduced upon completion of the pre-apprenticeship school program. Whenever junior colleges do not offer apprenticeship courses, they are offered by another branch of the public school system.

4. Certificate Programs:

Most junior colleges offer "certificate programs" in which Certificates of Completion are awarded. The completion of these programs does not result in the A.A. degree, although the units earned may apply towards the degree. The

programs are designed to teach basic competencies in many areas, and are often required for employment in these areas. Again, there is a great variation from college to college. In one local junior college the certificate programs are geared to the young adult, who must be 25 years of age upon award of the certificate. In other junior colleges the certificate is awarded to the student who wishes to specialize in an area of study, such as medical assisting or plumbing, without taking the history and English courses required for the A. A. degree. The unit requirements for certificates vary from 20 to 40 or more depending upon the complexity of the subject. Besides the trades, certificates are issued in such areas as real estate, business management, purchasing, transportation, vocational nursing, etc.

Certificates of Proficiency are also awarded after, or simultaneous with, the completion of the A. A. degree. These certificates indicate the achievement of a minimum scholarship level, and are used as a rough measure of program quality and difficulty. They are usually awarded in the technical areas. Sometimes they show the completion of more than the 60-64 units required for the A. A. degree.

5. College Transfer Programs:

These programs in the junior college are identical to the freshman and sophmore years in four year colleges. Instruction is excellent and costs are minimal. Junior college transfer programs exist to give the high school graduate a chance to qualify for four year college entrance. They also reduce the cost of a college education by a considerable amount because there is no tuition and the student may live at home.

6. General Education:

Many students who desire college education have no particular vocational or professional goal. They recognize general education programs, broadly based upon the humanities, as being extremely valuable to the individual. All junior colleges offer such "cultural" majors, and they remain quite popular in spite of the lack of tangible benefits to be derived. Although much personal intellectual growth and some prestiege is associated with a "broad" education, such college preparation has limited value in the job market. These programs may be terminal or lead to college transfer.

SAN FRANCISCO BAY AREA JUNIOR COLLEGE CHECKLISTS OF TWO YEAR TECHNICAL PROGRAMS:

1. Because only the above average Pre-Tech Student indicates four year college or university capability (at this time), the following checklists include only two year courses. (However, many four year colleges will accept junior college non-college transfer graduates with above average scholarship for related bachelor programs. Virtually full credit is given for the work in junior college if the student demonstrates good scholarship in his junior and senior college years.)

2. As yet there is no uniform terminology for technical programs in the junior colleges. The programs range from trade and industry (T & I) type of instruction in which manual skills are emphasized over theory to the technical assistance type of program in which theory is emphasized over manual skills.

   The first list attempts to cover the technical assistance area, and the second list covers the trade and industry type of preparation. There is, however, some overlapping. The student should examine the college catalog for the course requirements in the program of his choice. Emphasis on mathematics, science, engineering principles and English is evidence for the technical assistance (semi-professional) type of program. The Pre-Tech student should ask his college counselor for a list of the occupations a particular college program would prepare him for.

3. All of the colleges listed are accredited by the Western Association of Schools and Colleges (WASC) except Cogswell Polytechnical College,

which is accredited by the Engineer's Council for Professional Development (ECPD). Some of the engineering technology programs at the City College of San Francisco are also accredited by E. C. P. D. E. C. P. D. is an engineering education accrediting agency sponsored by the professional engineering societies of the United States. They accredit engineering and engineering technology college programs.

4. If your local junior college does not offer a particular program you may, with the permission of the superintendent of your junior college district, enroll in a nearby junior college which provides that program.

5. These lists are not exhaustive. They present only those programs which have a fairly clear relationship to your work in the Pre-Technology Program. The Pre-Tech Program was oriented towards engineering technology, to be sure, but was deliberately general in nature nevertheless! You should find that your junior and senior years have given you an excellent background for <u>whatever</u> you choose to do -- with the possible exception of high level, abstract university work. If you are not intrigued by any of the occupations mentioned, by all means pay a visit to your local junior college office and get all the information you can. They all have excellent counselling staffs.

A CHECK-LIST OF OCCUPATIONAL PROGRAMS IN ENGINEERING TECHNOGY IN BAY AREA JUNIOR COLLEGES ASSOCIATED WITH THE PRE-TECHNOLOGY PROGRAM.

Technical Assistance type Programs (A. A. degree awarded)	College								
	Chabot	Cogswell	Contra Costa	Diablo Valley	Foothill	Peralta	San Francisco	San Mateo	
Aeronautics: Commercial Aeronautics (for piloting)								X	
Architecture: Architectural technician			X	X			X		
Chemical:									
Chemical engineering technology			X			X			
Chemical laboratory technician				X					
Construction: Construction technology							X		
Data Processing:									
Data processing in science					X			X	
Data processing in business and industry	X		X		X	X		X	
Drafting:									
Architectural drafting			X					X	
Civil-structural drafting	X								
Design drafting					X		X		
Electro-mechanical drafting	X								
Engineering drafting technician				X		X			
Technical drafting								X	
Electro-Mechanical:									
Electrical engineering technology							X		
Electro-mechanical drafting	X								
Electronics technology:									
Electronics technician	X				X			X	
Electronics engineering technology		X	X				X		
Engineering electronics technician				X					

	Chabot	Cogswell	Contra Costa	Diablo Valley	Foothill	Peralta	San Francisco	San Mateo
Industrial electronics			X					
Industrial electronics technician				X				
Microwave technician					X			X
Engineering Materials:								
Engineering materials testing technician			X	X				
Engineering Technology:								
Civil engineering technology			X			X	X	
Electrical engineering technology							X	
Electronics engineering technology		X					X	
General engineering technology				X	X		X	
Mechanical engineering technology		X				X	X	
Structural engineering technology		X						
Illustration: Technical illustration					X		X	
Photo-Technology:								
General photography (with technical options)					X	X	X	
Refrigeration and Air Conditioning:								
General Engineering Technology							X	
Surveying:								
Engineering surveying technician				X				
Surveying	X							
Telecommunications: Telecommunications engineering								X
Tool design: Tool design technician					X			
Welding: Welding technology	?		X					X
X-Ray Technology: X-Ray technology					X	X	X	

A CHECK-LIST OF TRADE AND INDUSTRY PROGRAMS RELATED TO ENGINEERING TECHNOLOGY IN BAY AREA JUNIOR COLLEGES ASSOCIATED WITH THE PRE-TECHNOLOGY PROGRAM.

Trade and Industry Type Programs (Leading to A. A. degree for those who fulfill the general college requirements.)	College								
	Chabot	Cogswell	Contra Costa	Diablo Valley	Foothill	Peralta	San Francisco	San Mateo	
Air Conditioning: Air Conditioning & Refrigeration Tech.						X			
Aircraft:									
Powerplant Technician						X		X	
Airframe Mechanics						X		X	
Automotive:									
Auto mechanics	X		X			X			
Diesel mechanics						X			
Body and fender repair			X			X			
Business: Business equipment technology						X			
Drafting:									
Industrial drafting and design						X			
Architectural drafting						X			
Electricity and Electronics:									
Electrical-electronic technology						X			
Radio and television repair			X						
Electricity			X						
Electrical maintenance				X					
Machine Shop:									
Machine shop						X			
Machine technician								X	
Machine Technology	X								
Photography: Photography						X			
Welding: Welding			X			X			

ADDITIONAL NOTE:

Many of the junior colleges listed also offer apprenticeship and trade related courses which may or may not lead to the A. A. degree. They are often taught in the evening and are usually cooperative programs with the local unions and businesses concerned. They serve to upgrade the more experienced journeyman as well as train the new apprentice. Typical Courses are:

Electrical wiring	Blue print reading
Plumbing	Contractor's license and law
Tool and die making	Operating engineers
Sheet metal	Auto body and fender repair
Sheet metal welding	Auto mechanics, etc.

Where the local junior college does not offer these programs, other provisions are made. Information may be obtained at the college, at the high school district office, or at the county education office.

Most of the junior colleges mentioned also offer "certificate" programs in the non-trade areas, usually in the evening. These programs are most commonly 20-30 units. On completion, the student receives a Certificate of Completion.

Examples of such programs are:

Construction supervision
Management and supervision
Real estate
Purchasing
Transportation
Fire science, etc.

Again -- check your local college catalog for details.

QUESTIONS AND ANSWERS CONCERNING YOUR FUTURE JOB OPPORTUNITIES

1. Q. How does the U.S. Dept. of Labor associate schooling with future job opportunities?

   A. The U.S. Dept. of Labor estimates that in the years immediately ahead:

   * At least a quarter of the nation's youth will be needed in occupations for which a baccalaureate (or higher) degree is necessary and proper preparation.

   * At least one-half of the nation's youth must seek employment in occupations for which one to three years of education and training beyond high school are necessary and proper.

2. Q. What are the causes of this fundamental change in educational requirements for future jobs?

   A. The causes for the shift to higher education for a majority of future jobs are:

   * The continuing change from an agricultural to an industrial economy.

   * The rapid expansion of research and development activities.

   * The tremendously rapid increase in the application of technological improvements in business, commerce and industry, particularly automation.

   * The increased size and complexity of business organization.

   * The widespread growth of record keeping among all types of enterprises.

   * The growing need for educational and medical services.

3. Q. Is it really necessary to continue school after high school graduation?

   A. As you consider looking for your first permanent job bear this in mind: THE TECHNOLOGICAL WORLD OF WORK IS ONE OF SPECIALIZATION AND SOPHISTICATED SKILLS, AND BEING A "BRIGHT YOUNG MAN" CUTS RELATIVELY LITTLE ICE WITH EMPLOYERS LOOKING FOR SKILLS TO DO SOME SPECIFIC KIND OF WORK. You MUST continue

your education to learn these skills. And remember, these skills are much more mental than manual. There is real emphasis today upon knowing, not just doing!

4. Q. Why do you have to go to school, after high school graduation, to learn the new job skills? Can't you learn on the job?

A. While it is true that school is not the only place where learning can occur, it is rapidly becoming the best place. Learning through experience is as valid today as ever, but the experience is more and more frequently taking place in school. The sophisticated manufacturing process of today do not allow production slow downs for on-the-job learning, and cannot tolerate the costly mistakes of inexperience. In fact, because job skills are becoming more and more cognitive, learning must take place in school. On-the-job training is just not capable of this type of instruction. On-the-job training is now confined to instruction in the application of what one has learned in school.

5. Q. How will my high school and post high school education affect my future job security?

A. As you prepare for today's jobs, you must also prepare for jobs in the future which do not exist today. Your education must enable you to change jobs, for it is now estimated that the average person entering today's job market will hold an average of five or six different kinds of positions during his working life. This changing pattern of jobs is caused by our rapid technological pace. Witness the rapid demise of the elevator operator, and the equally rapid development of television repair, and you have a good idea of the situation. (And as solid state devices replace vacuum tubes, and space age developments improve the life of coils,

condensers and resistors, the T. V. repairman may well find himself looking for a new job, too!) The implications of this situation point towards more education and less training for the majority of job seekers. When a job ceases to exist, the trained individual must look for a new job requiring a minimum of retraining and knowledge. These jobs are difficult to find. On the other hand, the educated need only learn new ways to apply their basic knowledge. The better educated person is therefore qualified for many different types of work and will have more job opportunities.

<u>The importance of these facts to the individual is that low skilled jobs are harder to find and provide the least security and the lowest incomes</u>.

6. Q. Why can't I go to work after high school graduation and then attend night school for job advancement?

   A. You can. Many people do, and some succeed; but this route is fraught with difficulties. While it is true that adult evening education is booming, affording millions the opportunity of upgrading their present jobs, it is never-the-less uncommon to make large educational and occupational leaps in this way. Adult responsibilities usually preclude more than a few hours of classroom instruction per week. Face the fact that the days of the office boy becoming company executive are over. To leave school during this decade without something close to a technical skill is self denial carried to an extreme. Forty or more years of your future are at stake.

7. Q. I have always wanted to go to a four year college. Why shouldn't I?

   A. If you have a B average, or better, as a Pre-Tech student, you can go to

a four year college. But is it a wise choice? You were selected for the Pre-Tech Program because you were experiencing difficulty in the traditional college prep courses. You were also told that the Pre-Tech Program was not designed to send you on to a four year college, although it would not prevent you from doing so if you wished. The attitude of the Pre-Tech Program has been, from the beginning, that all of its graduates should at first attend a junior college or technical institute in an occupational program. The decision to continue through four years of college could then be based upon your proven ability to succeed in college after the first two year's experience. This concept is called the 2-2-2 plan. Finish two years of high school and two years of junior college or technical institute, then decide whether to go on. The entire value of the 2-2-2 concept rests upon taking an occupationally centered program in junior college. With good scholarship in a semi-professional junior college program you may transfer to related programs in four year colleges. If your scholarship is only average you will complete two years of college with an employable skill and nothing will have been lost. If you had gone directly to a four year college, you might have had to drop out before graduating. (Less than half the freshmen who enter U.C. at Berkeley graduate). The college drop-out is in an awkward position as he looks for a job. He has not attained an employable skill. His only advantage over the high school graduate is maturity.

8. C. Suppose I follow the 2-2-2 plan. Can you be more specific about the last two years of college, provided I have the scholarship to enter this phase of my education?

A. The Design-Art-Industry Program (D.A.I.) of San Francisco State College is a very good example of further college opportunities for technical students. With the completion of a two year technical program the student may enroll in the D.A.I. course of study which combines liberal, creative and technical education for industry. A Bachelor of Arts Degree is awarded upon the completion of 124 units of work (with a maximum of 70 units through junior college transfer). The D.A.I. Program is justified by a need in industry for personnel with bachelor degrees, technical competencies and a liberal arts background. The D.A.I. course of study can be classified as an "upsidedown" curriculum in which the liberal arts portion is taken during the last two years, rather than during the first two years, of college.

The student should realize that the D.A.I. Program does not lead to an engineering degree. It is preparation for junior executive type of work where technical ability at the technician level is combined with industrial creativity and management competencies for which a more liberal college background is required.

The qualified technical graduate may also transfer to engineering programs at the state college level with a minimal loss of junior college credit. However, the majority of university engineering schools do not accept technician level credits from junior colleges and technical institutes unless they are specifically labeled as university transfer courses.

9. Q. Are technical, or semi-professional programs in junior college <u>overspecialized?</u>

A. No. Swiftly changing job patterns indicate that the typical job holder must look forward to several occupational shifts during his working life. Even

in highly specialized technical programs the student spends a major share of his time studying the basic subjects: mathematics, science, communication and research skills. These basic subjects are becoming as occupationally important as the manual skills were a few generations ago. With increasing frequency the employer is providing the special training required for a particular job, building on the general knowledge of the employee obtained in school.

The job of the technician is, in fact, a direct outgrowth of this increasing tendency for change. His job tends to be non-repetitive, continually involving new problem situations. The technician's education prepares him for this type of work.

10. Q. What will be required of me in college?

A. You must be realistic about what is expected of you in college. You should consider college in the same light as you would a regular job. You will not be paid directly as you would on a job, but your investment in college will surely bear dividends in the future, dividends in the form of higher pay, more job security, better working conditions, more interesting work, etc. You will be expected to work diligently, to do your best at all times and to complete your assignments on time and as directed. Your unit load will average 16. Thus, the typical student work-week is a minimum of 48 hours, and excellence usually requires many more. As you think about college be honest and forthright with yourself. Weigh very carefully in your mind the hard work required to achieve a goal along with the consequences of not achieving the goal. College demands a very mature attitude towards education on the part

of the student. College will require more of your time and a higher standard of achievement than high school. To believe otherwise is wishful thinking. Over 50 percent of entering junior college freshmen drop out during the first semester. Don't let this happen to you! As a matter of fact, the purpose of the Pre-Tech Program is not so much to get you into college, but to help you stay there once in.

11. C. "Go to college, young man" is a watchword for success I have heard all my life. So, what's new?

A. What advice givers once meant by this statement was that the future was virtually secured for the person who was able to graduate from college. However, one could still be successful in business, commerce and industry without going to college. His chances for high paying, responsible positions were not as good as the college graduate's, but an individual could still learn on the job. As late as 1960, 76.6 percent of all 24 year olds in the U.S. had never attended college and only 9.9 percent of them had graduated from 4 year college. This means that the majority of young people only a few years ago never took the advice, and of those who did, less than half completed four years.

Today, you must accept this advice much more literally. For any job success at all, you must go to college. This does not necessarily mean four years of college. (Although it is expected that the percentage of young persons completing four years of college will gradually increase). The really big change is the increased enrollment in two year colleges. Remember the Department of Labor estimate, that in the years ahead at least one-half of the nation's youth must extend their education one

to three years after high school?

Most of the "old" four year colleges are not offering this "new" college education. They are still catering to the 10 percent. The "new" colleges (junior colleges, community colleges, technical institutes) are offering occupationally oriented curriculums which makes college useful to a large portion of our population.

12. Q. How can I judge my possible success in college?

A. First, consider the choices you have regarding college. The list below outlines the general types of college programs, beginning with the most theoretical and ending with the most practical.

Professional	(4 + years of college or university)
Professional assistance (or semi-professional)	(2 year junior college or technical institute programs, occupationally oriented, stressing theory over practice)
Vocational	(1-2 year programs in which skills are emphasized over theory, such as pre-apprentice, business certificate programs, etc.)

To aim too high and fail is a costly error which you may not be able to correct. To aim too low is like lighting the fuse of an educational "time bomb" which may deprive you of job security at almost any time in the future.

The goal you choose depends upon many factors, such as your interests, personal ambitions and abilities to meet the requirements of the goal. When we speak of your ability we do not necessarily mean intelligence. Intelligence does have something to do with the speed at which you can

learn when you want to learn, but it does not necessarily limit what you can learn or accomplish. Many people who have difficulty with abstract ideas are still able to learn and use them, provided they are willing to take the time and make the effort.

Probably the best criteria for you to use in mapping your college future is your ability and desire to read and write. As valuable as the spoken word is, most knowledge is conveyed through writing. Your ability to read with understanding the professional literature in your college curriculum is most indicative of your probable success. If you have trouble with your senior high school texts, you had better check the reading level (for you) of the texts in the college program of your choice before making your final decision. Bear in mind, too, that technical and professional literature is quite different from the story form. In general, the less proficient you are in reading the less theoretical your college program should be.

You will find the advice of your high school and college counselors quite valuable in choosing an appropriate college program. Sometimes, if the student is properly motivated, special reading improvement programs in college enable the student to raise his sights.

13. Q. Must I choose a technical type of college program?

A. Indeed no! The Program is technical in nature because of the employment opportunities which exist in this area now and in the forseeable future. Obviously, school programs should reflect national needs and student career opportunities. In spite of this orientation, however, the Pre-Tech Program has deliberately been kept general so as to provide all particip-

ating students a service regardless of their future plans as graduating students. Your English, science and mathematics backgrounds are qualifying for any junior college major and for many college majors, depending upon your Pre-Tech scholarship. You can not, of course, take from any course or program more than you give.

14. Q. What are the hard facts on employment and unemployment today?

A. Employment in February, 1965, was the highest it has been since 1957. Unemployment was down to 4.8% of job holders and job seekers. The big unemployment problem now involves teen agers who often lack education, training or skills. The unemployment situation among these young people is amply illustrated by the graph (Fig. 1), reproduced below, showing the unemployment rate vs. years of schooling completed.

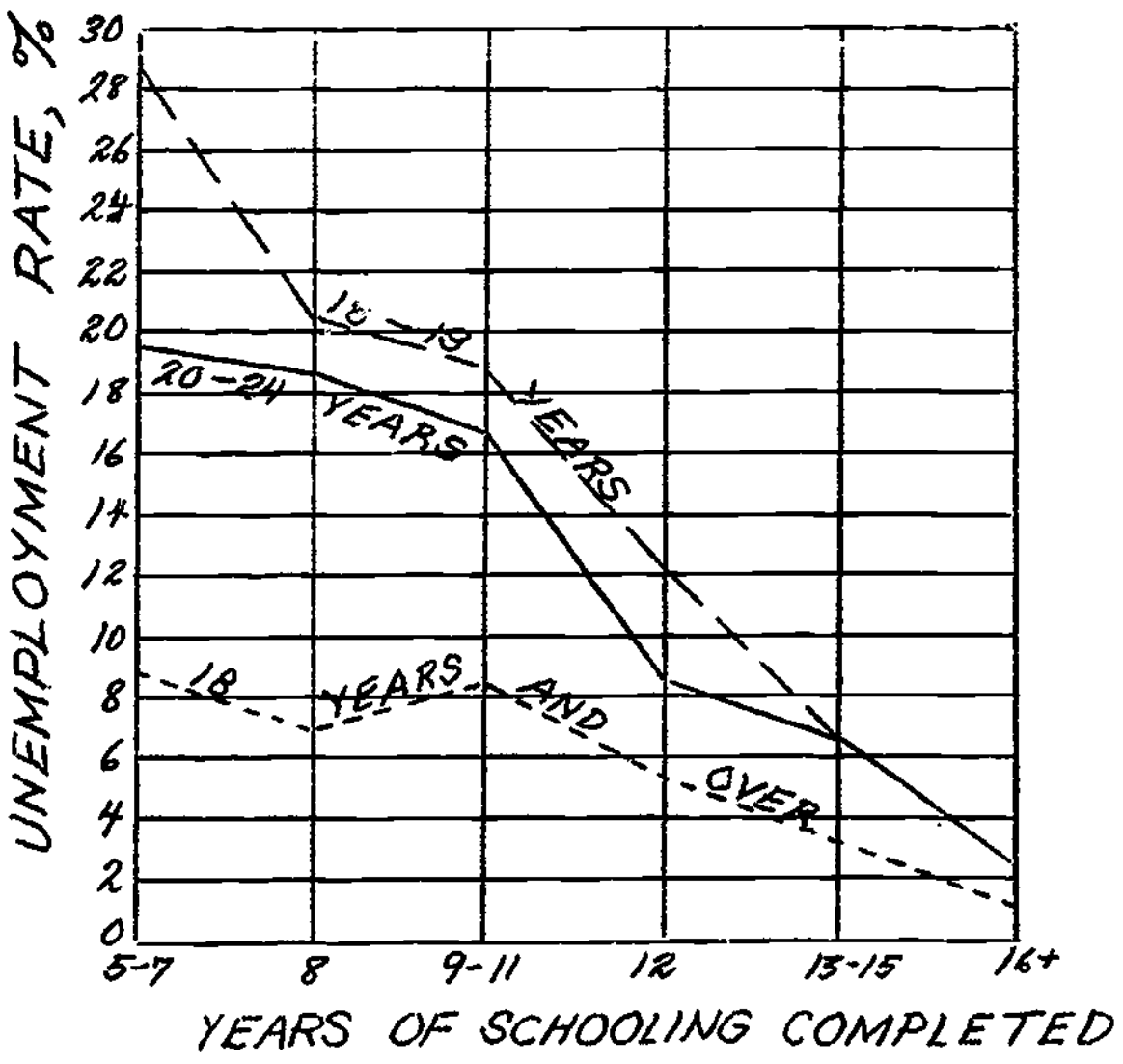
Prior to 1950 our economy was able to accommodate almost all young people entering the job market. With the sudden shift of working skills from manual to mental, our economy is no longer able to supply all out-of-school young people with jobs. This situation will rapidly become worse. During the 1960's approximately 6,200,000 more young people (ages 14-24) will be added to the job markets than during the 1950's. In 1964 approximately 2,750,000 individuals became 18. During 1965 it is reliably estimated that 3,750,000 persons will become 18. Since our economy has already shown unmistakable signs of not being able to supply unskilled jobs for these teen agers during the last decade (when each new year produced only a few hundred thousand more 18 year olds than the previous year), the conclusion is almost obvious. Many will not be able to get jobs! Teen age unemployment will soar!

Graduation from high school still provides some advantage to the new job seeker. The only real solution, however, is for the majority of young people to remain in school until they have learned an employable skill. Though there is some return to vocational education in high school where the student will be given job training before graduation, the principal trend is to obtain the vocational skills in college.

The post war "baby boom" has finally hit the job markets, and at a most inopportune time. The clash between the population explosion and the technological revolution is, to say the least, creating quite a storm.

FIGURE I

UNEMPLOYMENT RATES BY AGES AND YEARS OF SCHOOL COMPLETED AS OF MARCH, 1962
(Source: U. S. Department of Labor)



ENTRANCE AND TRANSFER REQUIREMENTS FOR COLLEGIATE INSTITUTIONS IN CALIFORNIA

1. Junior College: All persons who are high school graduates or who are 18 years of age and who live within a junior college district are eligible to attend that junior college. If a student within a college district desires a program or major not offered by that district, he may apply to the superintendent of the district for permission to attend another college.

Students who enroll for seven or more units of study must complete the following steps:

1. File an official application for admission.
2. Submit transcripts of ALL school work undertaken since the eighth grade.
3. Take all required classification tests (English, mathematics, etc.)
4. Submit evidence of having complied with state law regarding poliomyelitis immunization.
5. Take any required health examinations (for certain programs).
6. Meet all course or program prerequisites.

Students who enroll for six or fewer units of study must:

1. File an official application.
2. Comply with the state poliomyelitis law.
3. Meet all course or program prerequisites.

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* Edited for the information of Pre-Tech students. The student contemplating enrollment in any of these institutions should, of course, obtain their bulletin for details.

2. State Colleges: All applicants for admission to any California State College must make formal application, submit all high school and college transcripts and take the Scholastic Aptitude Test* of the College Entrance Examination Board if less than 60 college units have been completed. Application for admission to the college and for the entrance examination should be made fairly early during the senior year in high school. All application materials must be received at the college by July 1st. The application fee is $5.00; the examination fee, $4.75.

NEW ADMISSION REQUIREMENTS FOR FALL:

The new admission requirements to go into effect for fall 1965 admission to the California state colleges using the Scholastic Aptitude Test (SAT) are as follows:

"Residents: An applicant who is a graduate of a California high school or a legal resident for tuition purposes must have a grade point average and total score on the Scholastic Aptitude Test (SAT) which provides an eligibility index placing him among the upper one-third of the California high school graduates. (For 1965-66 the minimum eligibility index is 3596 with the SAT. It is computed by multiplying grade point average by 1000 and adding it to the total SAT score).

"The grade point average is based upon the last three years and does not include physical education or military science. The table below does not cover every case, but gives several examples of the test score needed with a given grade point average to be eligible for admission."

GRADE POINT AVERAGE	SAT SCORE NEEDED
3.20 and above	Eligibility with any score
2.80	796
2.40	1,196
2.00	1,596
1.99 and below	Not eligible

* Some of the state colleges use the American College Testing Program battery of tests (ACT). The formula for admission is similar to that described above.

Students wishing to transfer from accredited collegiate institutions will be considered for admission only if they have earned a grade point average of C (2.0) in all college work previously attempted, and if they are in good standing at the last college or university attended.

Students applying as transfers who were not eligible for admission as high school graduates must complete at least 60 acceptable units with a C average or 24-59 units with a B average to be eligible for consideration for admission.

Junior college credit is allowed up to a maximum of 70 units. No upper division credit may be allowed from a junior college.

In addition, the State Colleges point out to all entering students that the ability to write clearly and to read with understanding and appreciation is essential to success in college. It is therefore highly desirable that the student complete at least three years, and preferably four, of high school English with strong emphasis on writing.

Any student applying for admission to any of the State Colleges should also be aware of the very crowded conditions that exist on most of the State College campuses. It is now clear that present facilities will not allow the State Colleges to enroll all of the students who desire and are eligible to attend. The California Education Code not only requires that the entering student be among the top one-third of all high school graduates in ability, but "Admission to a state college shall be limited to the number of students for whom facilities and competent instructors are available to provide opportunity for an adequate college education. . ." At the moment students are being accepted on a first come first serve basis.

3. <u>The Technical Institute</u>: There are very few technical institutes in California. Cogswell Polytechnical College is the only college in the entire San Francisco Bay Area devoted exclusively to technical institute programs. The entrance re-

quirements stated below are Cogswell's and are similar to those of other technical institutes.

As with other colleges, each student must file a formal application for admission together with his high school transcript. Cogswell also requires a personal interview with the Dean of Men. Graduation from high school, or equivalent, is required of all applicants for admission as regular students.

The high school program should include the courses that are included in a specialized pre-technology program, or in any standard pre-engineering program.

The student preparing for a Technical Institute education in the field of Engineering Technology should keep in mind the fact that a broad, solid foundation of mathematics and science is extremely important. Of equal importance is the ability to communicate his ideas to others, in writing, orally and graphically. Consequently, the student should take mathematics through trigonometry, physics, chemistry, mechanical drawing, some machine shop and as much English as possible.

A glance at the first semester program of each of the engineering curriculums at Cogswell will show that they consist almost entirely of mathematics and science. Without the background provided above, the new student will find himself having a rather "rough" time competing with those who do have the suggested mathematics and science.

An applicant wishing to enroll as a regular student must have satisfactorily completed a one year high school level course in each of the following; elementary algebra, intermediate algebra, plane geometry, chemistry, physics, and one half year of trigonometry, or their equivalents.

Because of Cogswell's historical policy of providing maximum educational service for its students within the limits of excellence demanded of engineering

technicians, students not meeting the minimum subject requirements may enroll on a non-regular basis as follows. Whenever the number of applicants deficient in one or more of these requirements is large enough to warrant it, remedial courses in these subjects may be offered. Being remedial, such courses carry no credit toward the A.E. degree. Such non-regular students are allowed to take certain "regular" courses during this "make up" period. However, the major portion of Cogswell's program is restricted to regularly enrolled students. Admission in all cases is at the discretion of the Dean of Men.

4. University of California (All Campuses)

The admission requirements of the University are based upon two principles: (1) The best assurance of success is shown by high quality scholarship in previous work, and (2) The study of certain specified subjects will give the student good preparation for the work of the University and reasonable freedom in choosing a field of specialization.

The specific subject requirements are:

(a) History, 1 unit (one class meeting per day for one school year)

(b) English, 3 units

(c) Mathematics, 2 units (Algebra and Geometry)

(d) Laboratory Science, 1 unit (11th or 12th grade courses certified as being college preparatory).

(e) Foreign Language, 2 units

(f) Advanced Course, 1 unit (may be selected from mathematics, foreign language, or science)

Electives: Additional elective units are required to complete a minimum of 15 units.

At least a B (3.0) grade average is required in courses taken after the ninth year used to meet the "a" through "f" subject requirements listed above.

Subject requirements are satisfied by courses in which a grade of C or higher has been assigned. A grade of A in one course may be used to balance a C in another, but an A grade may not be used to compensate for D or F grades. Courses in which a grade of C or lower is received may be repeated to establish subject credit and improve scholarship. Grades earned in the first repetition may be used to satisfy scholarship, grades of C or higher in additional repetitions will satisfy the subject requirement but will not be counted higher than a C in scholarship. A maximum of two units of courses may be repeated.

Candidates for admission must be graduates of high schools accredited by the University of California or seek admission by examination. Applicants who are otherwise ineligible (but who are state residents) may also be admitted by examination. Such students should obtain more specific information from the general catalog. There are also special requirements for non-resident students.

An applicant who was eligible for admission to the University in freshman standing may be admitted at any time he has established an overall grade point average of C or better in another college. Generally, an applicant who was not eligible for admission as a freshman may be admitted when the following conditions are met: (a) he has taken a minimum of 56 units passed with an overall grade-point average of 2.4 or better, and (b) he has satisfied with appropriate courses his subject deficiencies (some of which may be waived in an amount not exceeding 2 high school units).

Up to 70 college units will be accepted from California Junior Colleges. No upper division credit is allowed for junior college credits.

Every entering student must pass an examination in English composition (the Subject A examination) or complete in the university an acceptable 3 unit course in English composition. The Subject A examination requirement may be met

by a composition score of 600 in the College Entrance Examination Board Achievement Test in English Composition or by the completion of an English composition course of acceptable college-level. Students failing the course must take the non-credit course in English composition, for which a fee of $35.00 is charged.

Entering students must take a medical examination and present at this time evidence of smallpox vaccination within the last three years.

Attention is called to the fact that many departments, colleges and schools of the University have special entrance requirements. High school counselors have this information.

March 1st is the deadline for making application for admission to the fall semester.

If you have any remaining doubts . . .

YOU NEED 14 YEARS OF EDUCATION TO COMPETE WITH MACHINES -- Wirtz

Any high school senior in doubt about whether to seek a higher education, faces an unflattering proposition, according to Secretary of Labor Willard Wirtz: "The machine now has a high school education in the sense that it can do most jobs that a high school graduate can do, so machines will get the jobs because they work for less than a living wage. A person needs fourteen years of education to compete with machines."

VT 001 992
Stocum, Robert L.
Education and Employability, An Area Vocational Study.

Ingham Intermediate Board of Education, Mason, Mich.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Jan67 64p.

*SCHOOL SURVEYS; *AREA VOCATIONAL SCHOOLS; *EDUCATIONAL NEEDS; HIGH SCHOOLS; *POST SECONDARY EDUCATION; *COMMUNITY COLLEGES; EMPLOYMENT OPPORTUNITIES
INGHAM COUNTY; MICHIGAN

The school superintendents of Ingham County, Michigan, initiated this study because they felt the county was not adequately meeting the occupational training needs of their students. Based upon the evidence of the study it was concluded that: (1) Comprehensive vocational programs were inadequate, (2) More vocational counseling was needed, (3) An expansion at the community college level was needed, (4) A continuity between secondary and community college offerings should be provided, and (5) Job openings were available to warrant increased facilities. It was recommended that vocational and technical education should be made available to all youths and adults who need it, want it, and can profit by it. Numerous recommendations are made for finances, locations, course offerings, admittance, staffing, etc. Course offerings and physical facilities needed are listed. Better utilization of staff and facilities should be a result of the location recommended and the availability for use of the Centers by special secondary programs. Sixteen school districts and approximately 67,000 students were included in the study. The two new proposed Area Vocational Technical Centers would serve 1,900 secondary students and 2,200 college students. (MS)

VT 001 992

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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ED039370

Education and Employability

AN AREA VOCATIONAL STUDY CONDUCTED BY THE INGHAM INTERMEDIATE BOARD OF EDUCATION

(Including Ingham Intermediate School District, Lansing Community College District, and Portions of Eaton Intermediate School District.)

JOBS GO BEGGING THOUGH MILLIONS ARE UNEMPLOYED

Sylvia Porter, Detroit Free Press
August, 1966

What Are Implications for Schools of this Headline?

And

Of These Findings?*

Job vacancies exist not just in such well publicized Professions as medicine or trades; they run across the board.

Employers place increased vocational training in subjects required by the unfilled jobs in first place among proposed solutions.

Educators must adapt training facilities to fit the jobs available and also guide the unemployed into those training fields which hold the greatest promise of future employment.

*Manpower Research Council Conclusions based on 1966 Nation-Wide Survey of Employers

DEDICATION

This study is dedicated to the continued concern of American people for better education for all, to the educators who willingly examined their programs of vocational education in order to make them better, and to the future generations who will ultimately benefit.

Preface

Historically, vocational education has gone through several phases in the past as it has reflected both the nation's need for skilled manpower and the need of the schools to have extra financing for this type of education from other than local sources. The Smith-Hughes Act of 1917 provided the first real federal impetus to vocational education. This Act provided for federal funds to be matched by grants from the states to be used in local schools to promote programs in agriculture, home economics, and trade and industrial occupations. Agriculture and home economic courses, in particular, began to flourish especially in the rural school districts. Facility costs and employment opportunities tended to restrict trade and industrial offerings to the large urban schools.

In 1946, just after World War II, the George-Barden Act was passed which provided matching funds for the promotion of education in the fields of marketing, fishery trades, and practical nursing. This Act provided for expanding vocational education in all schools, but the monies have primarily been used in urban schools.

After an intensive study by a specially appointed presidential panel, the Congress passed the most comprehensive vocational education law to date called the Vocational Education Act of 1963. This act supports any vocational curriculum developed to prepare students for gainful employment in jobs not requiring a four year college degree. It has great implications for both the high school and the community college if they are interested in training students and adults for entry jobs and up-grading.

The local area schools included in this study have very much reflected the national pattern of vocational offerings through the years with agriculture and home economics classes dominating the vocational offerings in the small high schools, while the trade and industrial offerings were available only in the Lansing schools. The old Lansing Technical school came into being at a time when the idea was prevalent that it was expedient to put all students who were interested in vocational training in one building where they would take both vocational and general subjects and finally graduate. Educational ideas changed in the early 50's and this school was broken up and each of the Lansing high schools tried tc be comprehensive in that all programs, academic and vocational, were made available to youngsters without having to change schools. However, available students for each special vocational class and costs prevented this from completely being accomplished. These very same factors have prevented the smaller school districts from becoming truly comprehensive even though some have added business and industrial arts courses. In addition, the smallest of the school districts which have only been able to offer vocational classes in agriculture and the traditional home economics programs are faced with the problem that many of their students need to seek employment in areas outside of agriculture and home making and their preparation is not adequate.

The Lansing Community College was brought into being as the old Technical High School was dissolved. Programs were started to provide entry into the more sophisticated technical jobs just beginning to appear. This same spirit still prevails in the Community College which has now changed from a Lansing school district operation to a county-wide district basis plus added out-county areas. Its enrollment is growing at a very rapid rate and a new building program is trying to keep pace.

Philosophically, vocational training has been recommended for inclusion in the comprehensive high school program ever since the committee on the Reorganization of Secondary Education published its "Seven Cardinal Principals" in 1918. More recently it has been reiterated by Dr. James B. Conant, and spelled out in detail by the President's Panel of Consultants on Vocational Education in a 1962 report. However, as the Panel's report indicated, even though vocational and technical education are universally recognized as sound investments in people such training is still not available in enough high schools. Dr. Conant commented on the same problem and particularly referred to the small school's inability to provide broad vocational offerings to their students.

The manpower need today is even more critical than in the past and will continue to remain so as technology continues to increase. In addition, the traditional idea of preparing only for work that would be available locally is no longer valid as transportation and economic factors have encouraged a more mobile population. Comprehensive vocational education must be made available to all at a cost that is reasonable and in a manner compatible with our understanding of how people function and learn. The Area School concept, which provides specialized occupational training in a regional center for secondary students while they still retain home high school membership, is being recognized as the answer for needed training at a reasonable cost. This idea combined with a strong technically and vocationally oriented area community college can provide needed occupational training for all.

It was due to the growing concern of the superintendents of the Ingham County school districts regarding their schools' general inability to provide adequately for the occupational training needs of their students that this study project was born.

After numerous small group discussions it was decided to appoint a committee to look into the matter of occupational training and the implications of the 1963 Vocational Act. This committee reported back to the superintendents' group with the recommendation that a thorough study should be made of the whole field of vocational and technical education in Ingham County. The Ingham Intermediate Board of Education was asked to undertake this project and upon its agreement to do so the intermediate superintendent prepared and submitted a project proposal to the State Office of Vocational Education. This proposal was accepted with the provision that it be reworked to include some special considerations of two other separate, but related, proposals and include certain school districts adjacent to the Ingham Intermediate School District. The school districts of Charlotte, Grand Ledge, and Potterville in Eaton County asked to become members of the study. The Lansing Community College also became an active participant.

The funding was provided through Federal, State, and matching local school district monies and the project got underway in the summer of 1965.

The cooperation of the leaders of each of the various school district organizations and their school staff members has been of the highest degree. In addition, much credit goes to those lay people who have given of their time and energy working on various committees. It was not a one man job.

Special thanks go to Dr. L. Borosage of Michigan State University for his advice and help.

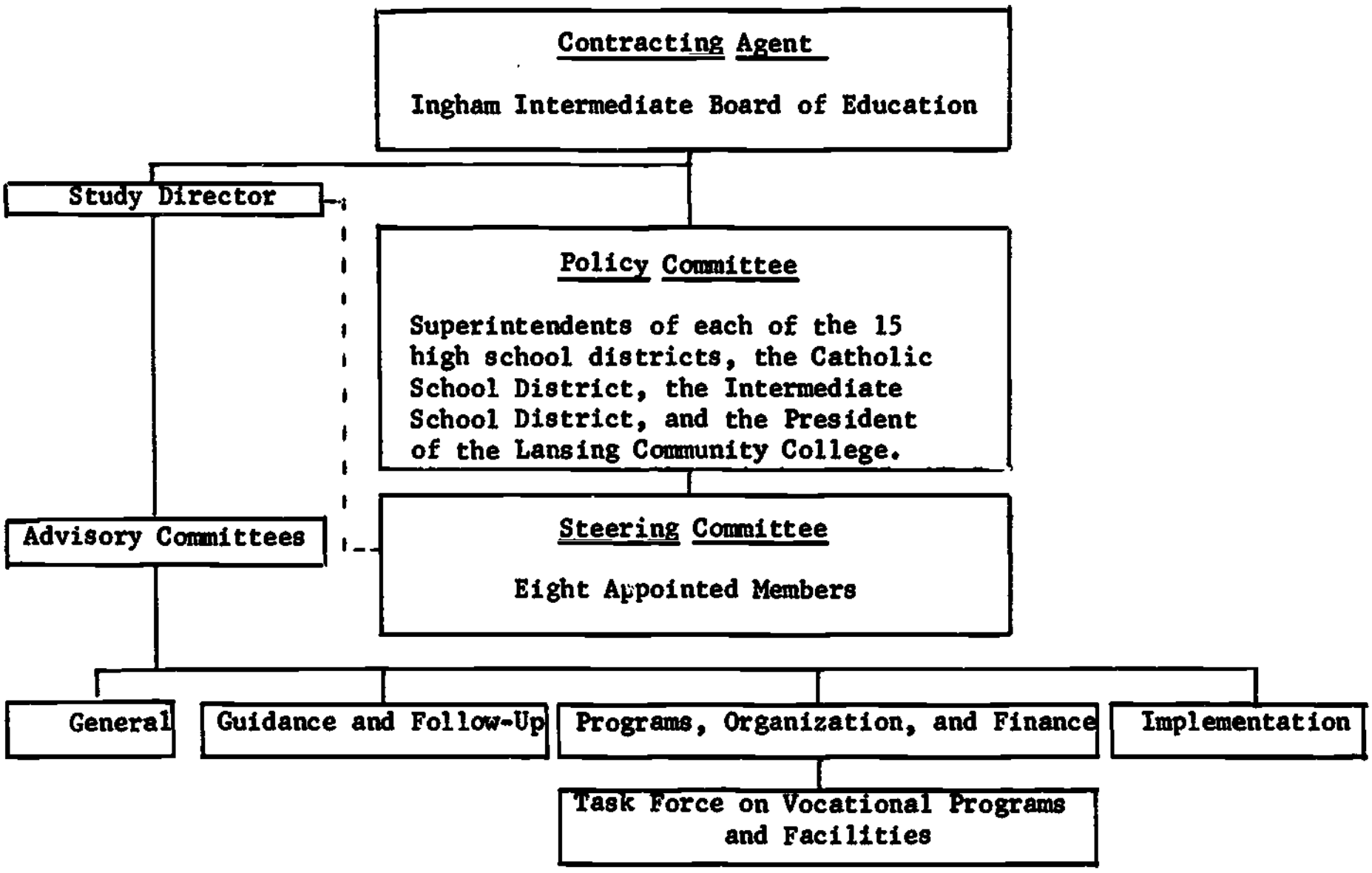
Robert L. Slocum
Study Director
January 1967

FIGURE I

ORGANIZATION CHART

FOR THE

INGHAM INTERMEDIATE AREA VOCATIONAL STUDY



Committee and Memberships

Policy Committee

Name	School District	Committee Functions
C. Muma	Charlotte	The original study initiators, communication clearinghouse, and the official body to accept the final reports.
S. Briggs	Dansville	
C. Young	East Lansing	
K. Beagle	Grand Ledge	
F. Jappinga	Haslett	
M. Pernert	Holt	
P. Gannon	Lansing Community College	
Rev. W. Meyers	Lansing Roman Catholic Diocese	
W. Manning	Lansing	
C. Bode	Leslie	
C. Nauts	Mason	
G. Richards	Okemos	
H. Kuehn	Potterville	
J. Batchelor	Stockbridge	
E. Olds	Waverly	
W. Chadderdon	Webberville	
R. Fitch	Williamston	
W. Anderson	Eaton Intermediate	
A. Stroud	Ingham Intermediate	

Steering Committee

K. Beagle	Grand Ledge	To give direction as to the method of conducting the study.
J. Batchelor	Stockbridge	
R. Slocum	Ingham Intermediate	
P. Gannon	Lansing Community College	
R. Maples	Lansing	
R. Chamberlain	Lansing	
A. Stroud	Ingham Intermediate	
T. MacClure	Lansing Community College	

COMMITTEES AND MEMBERSHIP (CON'T.)

General

Name	School District	Committee Functions
M. Flower	Charlotte	To provide advice and help in specific areas within the total study as to what questions should be asked and then to consider the results of those answers in relation to the study.
A. Hansen	Charlotte	
V. Carlen	Dansville	
L. Kinney	East Lansing	
J. Faust	Grand Ledge	
R. Richmond	Grand Ledge	
D. Brown	Haslett	
L. Sumpter	Haslett	
M. Guenther	Holt	
H. Lockhart	Holt	
R. Maunder	Lansing	
S. Silvernail	Lansing	
W. Lentz	Leslie	
R. Shipment	Leslie	
V. Snook	Mason	
W. Godfrey	Okemos	
T. Lamb	Okemos	
E. Scutt	Potterville	
A. Twitchell	Potterville	
D. Cronkite	Stockbridge	
S. Fay	Stockbridge	
R. Maki	Waverly	
D. Page	Waverly	
J. Kent	Webberville	
L. Silsy	Webberville	
P. Zaldokas	Williamston	

Guidance and Follow-up

J. Mahrt	East Lansing	To give advice and help in determining the role of guidance and counseling in relation to potential occupationally orientated students, and to devise an instrument to check facts and opinions of high school graduates and their parents.
R. Jastrab	Gabriels	
H. Bliss	Holt	
J. Silvernail	Lansing	
R. Frohriep	Leslie	
V. Snook	Mason	
K. Sproull	Lansing Community College	
J. Stanfield	Williamston	
T. Trescott	Potterville	
T. Waldron	Grand Ledge	

COMMITTEES AND MEMBERSHIP (CON'T.)

Programs, Organization, and Finance

Name	School District	Committee Functions
Committee #1		To provide advice and recommendations to the following five questions:
V. Snook	Mason	
P. Zaldokas	Williamston	
F. Rockey	Stockbridge	1. What kind of vocational/technical training is needed for our youth and adults?
R. Chamberlain	Lansing	
T. Thomas	Lansing	
R. Shong	Lansing	2. At what age level, or maturity level, should this training be made available?
W. Godfrey	Lansing	
J. Gatrost	Lansing	
D. Pound	Lansing	3. What would be the most feasible organizational pattern to effectively provide this proposed training?
H. Barbour	E. Lansing	
F. Hanses	Lansing	
S. Meade	Lansing	4. How should the proposed training be financed?
E. Tubbs	Lansing	
N. Britten	Lansing	5. What should be the next step for implementation?
R. Pangman	Lansing	
B. Bell	Lansing	
Committee #2		
R. Maples	Lansing	
J. Batchelor	Stockbridge	
K. Beagle	Grand Ledge	
S. Briggs	Dansville	
R. Fitch	Williamston	
P. Gannon	Lansing	
R. Gelina	Lansing	
L. Kinney	East Lansing	
T. MacClure	Lansing	
W. Manning	Lansing	
F. Meyers	Lansing	
M. Pernert	Holt	
A. Stroud	Mason	
B. Rowden	Lansing	
P. Bailey	Lansing	

Task Force on Vocational Programs and Facilities

F. Hanses	Michigan Employment Securities Commission	To provide specific advice and recommendations for implementing the findings of the Programs, Organization, and Finance Committee.
T. MacClure	Lansing Community College	
R. Maples	Lansing School District	
B. Rowden	Tri-County Planning Commission	
R. Shong	Oldsmobile Corporation	
R. Slocum	Ingham Intermediate Board of Education	
V. Snook	Mason School District	

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CHAPTER 1

CONCLUSIONS AND RECOMMENDATIONS

Based upon the sampled evidence of the Study, together with advice of advisory committees and consultants, the following conclusions and recommendations are presented:

I. CONCLUSIONS

A. By and large secondary students of the Study Area are not adequately being served with comprehensive vocational program offerings.

B. More vocational counseling is needed.

C. There is a vital need to continue expanding the occupational offerings at the Community College level as demand for this level of training is growing at a rapid pace.

D. There should be continuity between the secondary offerings and the community college offerings for those who wish to take training beyond high school.

E. Present and projected job openings are available in sufficient numbers to warrant increased training facilities.

F. Indications point to the increased need for training in order for people to enter and advance in tomorrow's jobs.

II. RECOMMENDATIONS

A. Philosophical Beliefs

Vocational/technical education should be made available to all youths and adults who need it, want it, and can profit by it.

1. High schools have an obligation to provide broad vocational programs for their students in keeping with their needs for entry level employability upon graduation, and/or as pre-training for technical education at the Community college level, and/or meet college entrance requirements.

   a. Area Centers for special vocational offerings at the high school level should be available. Such Centers would allow for a student enrollment of sufficient size to make multiple offerings feasible along with the necessary supporting tax base for adequate financing. Students would attend on a half day basis only. These Centers would be considered only as extensions of each regular high school.

2. The Community College should continue to provide vocational and technical education to all out-of-school youth and adults in keeping with their needs and the occupational opportunities available.

3. Quality occupational guidance and counseling must be made available at all training levels.

4. Education should provide, as a matter of policy, a broad exposure to occupational experiences beginning with the elementary level and expanding through the secondary level.

5. All courses having application to the world of work must be taught in such a manner as to show that relationship.

6. An area wide vocational consultant should be made available to all schools seeking help with vocational and pre-vocational programs.

7. Entry level training for the handicapped should be considered for program offerings.

8. Human relations and attitudes need to be stressed to assure real employability.

B. Suggested Guidelines for the Establishment of Area Vocational Centers

1. In order to provide sufficient high school student enrollment, Area Centers should have a half-day student enrollment of not less than 1000 or more than 2000. Fifteen percent of the total enrollment of the 10th, 11th, and 12th grades of the districts served appears valid as an estimate of potential enrollees in a Center.

2. Center locations should be considered in relation to the travel time of the attending students. Forty-five minutes should be used as the maximum one-way travel from the sending school to the Center.

3. Vocational students will normally attend the Center servicing their school district; however, they may attend another Center if it better serves their vocational goals.

4. Financing for building and operating these Centers should be paid with state and federal money inasmuch as possible, and the balance derived from a district-wide tax or tuition for sending districts.

5. An advisory committee composed of school and business representatives from each school district should be established to assist in providing operational direction to the Center.

6. An overall committee should be formed to aid in coordinating all secondary and Community College vocational/technical programs to insure continuity. Members would carry on continuous evaluation to determine continued needed occupational training and the appropriate training agencies.

8. Special advisory committees for each program should be established to assure proper course content.

9. Local high schools would continue to offer and maintain adequate exploratory and pre-vocational as well as general vocational courses.

C. Specific Recommendations

It is specifically recommended that the Ingham Intermediate Board of Education, as sponsor of the Study, enter into discussion with the Board of Trustees of the Lansing Community College on matters of taxing, constructing, staffing, and operating the recommended Area Vocational Centers for secondary students as permitted under Act 237 of the Public Acts of 1964. It is also recommended that the Intermediate Board of Education appropriately involve representatives of local school districts in these discussions.

This discussion would lead substantially to the operational agreements listed.

1. Finance.
   a. Capital outlay: The tax levy will be based upon an approved architectural cost estimate less any available State and Federal funds.

   b. Operational: At an agreed upon date each year each school district served by the Community College Area Centers will estimate its enrollment at the Centers for the following year. On the basis of total estimated full-time equated school enrollment, the Community College will determine a total budget for the operation of occupational programs. From estimated costs thus computed State and Federal funds available for operation and college student tuition would be deducted and the balance certified for tax collection.

2. Center Locations. Two area Centers: one in the Lansing school district combined with the Community College Technical Center, and another in an area south of Lansing convenient to the center of pupil population.

3. Center Offerings. Course offerings for high school pupils would normally consist of specialized occupational courses. The secondary (high school) programs would be operated on the basis of two three-hour sessions, one in the morning and one in the afternoon, Monday through Friday, with related general educational courses being provided by the parent high school on a non-conflicting basis. "Home" high schools may continue to offer common occupational courses and pre-vocational courses.

   Special advisory committees for each occupation would be maintained. It is understood and agreed that the Centers will also serve out-of-school youth and adults.

4. Admittance to Centers. Program and facilities will be open to all secondary pupils within the Community College district under admission

policies jointly agreed upon by the Community College and an advisory committee representative of secondary schools. To insure that programs will be equally available to high school and to non-high school enrollees it is proposed that during daytime hours an equal number be admitted from each category, should demand warrant. Students from school districts outside of the Community College District will, in the discretion of the Community College Board, be admitted on a tuition basis when space is available.

5. Staffing Centers. It is recognized that due to this type of secondary vocational organization certain on-going programs may be phased out of high schools and therefore provisions must be made for absorption of this staff in an equitable manner.

6. Advisory Committee. An Area Center Committee advisory to the Community College is to be appointed by the Ingham Intermediate Board of Education upon consultation with the Eaton and Clinton Intermediate Boards. In addition, the Ingham Intermediate Board shall appoint to this committee five members from business and industry at large. This committee will include representation from each school district within the Community College district. Members appointed will be nominated by the boards of education of the several districts.

   The general purpose of the advisory committee will be to recommend to the Community College administration policies designed to best meet the vocational needs of secondary pupils enrolled at the Centers. The initial meeting of this committee will be at the joint call of the Ingham Intermediate superintendent and the president of the Community College. The group will organize and adopt its own by-laws.

7. Steering Committee. To assist in implementing recommendations of the Advisory Committee and to serve in such other ways as may be appropriate, provisions for a 10-member steering committee is proposed. It should include the superintendent of each of the three intermediate districts, and six administrators from the Ingham Intermediat schools of whom one will be from the Lansing School District. The 10th member will be the administrator responsible for the secondary occupational ares of instruction. Either the president of the Community College (or representative) is eligible to call meetings of this committee. It will organize and adopt its own by-laws.

D. General Recommendations for Course Offerings and Physical Facilities

1. Proposed Program Offerings

Secondary (Proposed)	Community College (Current & Planned*)
Agricultural Occupations	
Machinery Repair	Technical programs in this area
Nursery Work and Grounds Keeping	implemented as required

**Distributive Occupations

Cashiering
Sales and Distribution
Real Estate
Marketing
Management
Note: Sales and Cashier training are included in the above programs

**Office Occupations

Bookkeeping
Data Key Punch Operation
Data Processing Operation
Office Machine Operation
Steno-Secretary Training
Accounting
Business Data Processing Programmer
Court Reporter
Executive Secretary
General Clerical
Stenographic
Secretarial
Legal Secretarial
Medical Secretarial
Note: Office Machine and Key Punch training are included in above programs.

**Service and Health Occupations

Cosmetology
Custodial Training
Food Preparation
Hospital Attendant
Nurses Aides and Orderly Training
Tailoring and Alterations
Teacher Aide
Waitress & Waiter Training
Dental Assistant
Associate Degree Nursing
Practical Nursing
Truck Driver Training
X-Ray Technology
*Health Care Administration
*Medical Record Technology
*Medical Librarian
*Environmental Health Technology
*Operating Room Technology
*Physical Therapy Aide
*Radiologic Technology
*Inhalation Therapy Technology
*Hospital Engineering Technology
*Medical Instrumentation Technology
*Radio Studio Technology
Heavy Equipment Operators
Hotel-Motel-Food Services Technology
Law Enforcement
Library Technology

Trades and Industrial Occupations

Air Conditioning, Heating and Ventilating Mechanic
Appliance Repairman
Carpentry
Auto Collision Repair
Auto Mechanic
Building and Construction, Gen.
Diesel Mechanic
Drafting, Architectural
*Architectural Technology
Chemical Technology
Civil Technology
Community Development Technology
Computer Technology
Drafting Technology
Electronics Technology
Fire Science Technology
Mechanical Technology

Offset Printing
Machinist
Mason
Metal Machining Operations
Office Machine Repairman
Photographic Reproduction
Plumber
Service Station Operations
Sheet Metal Worker
Small Engine Repair
Welding, General

**These secondary offerings may be phased into Community College facilities in the school year 1968-69 if the recommendations are accepted.

Die Sinking
Drafting (Architectural)
Drafting (Mechanical)
Electrical (Construction)
Electrical (Industrial)
Engraver, Die
Machine Repair
Machinist
Millwright
Model Making
Painting and Decorating
Plumbing and Pipefitting
Sheet Metal
Tool Design
Tool Inspection
Tool and Die Making
Auto and Truck Mechanic (includes Diesel Engines)

The following additional Vocational-Technical courses are also offered by the College (usually on a day and evening basis.)

Vocational-Technical Courses

Sheet Metal I, II, III
Blueprint Reading for Plumbers
Welding for Plumbers I, II, & III
General Welding I, II, & III
Advanced Welding I, II, & III
Blueprint Reading for Plumbers II
Blueprint Reading I & II
Die Design Blueprint Reading
Template and Model Checking
Die Construction

Employer and Employee Relations
Strength and Workability of Metals
Precision Inspection I & II
Basic Mathematics
Applied Alge., Plane Geom. & Trig.
Ad. Trig. Applications
Compound Angles I & II
Machinery Handbook I & II
Die Design Handbook I, II, & III
Metallurgical Testing of Welds I, II, & III

The proposed secondary vocational courses have been determined by the facts learned from the Tri-County Area Job Count Study made by the Community College and adjusted to information from the Michigan Employment Security Commission and the Battelle Study of Michigan's employment trends. These course offerings will be adjusted to meet the changing needs of the service area in the future.

2. Physical Facilities

Plans would provide for two Area Vocational-Technical Centers to be operated by the Lansing Community College--one new facility to be located on the College Downtown Campus and one new facility to be located at a Satellite Campus in the Holt-Mason region adjacent to an interchange of the new Interstate Highway System. The downtown facility would house approximately 1,000 secondary students and approximately 1,700 college students. The Satellite Center would house approximately 900 secondary students and 500 college students. It should be kept in mind that these facilities will be operated both day and evening as well as on Saturdays.

3. Service to Outside School Systems

Provisions of services to school systems outside of the Lansing Community College District could be provided on the basis of tuition payments by the sending school districts based upon a proportionate share of total net costs. An alternate plan would be by annexation to the Lansing Community College District. In case of tuition students, the school districts of Charlotte and Potterville, original Study participants, should have initial precedence in sending their students to the Area Training Centers over any other school district not in the Lansing Community College District.

III. SUMMARY

Implementation of the recommendations would make possible a truly full range of training opportunities for all of the people, youth and adults, in the Study Area by providing:

A. All area youth and adults equal opportunities for special vocational or technical training.

B. Better coordinated occupational programs at all age levels starting with the 11th grade and going through the first two years of college.

C. A certain positive degree of prestige which would be given to vocational education at all levels because of the Community College involvement.

D. Locations offering a minimum of driving time from all school districts.

E. A cost that is moderate and spread over the broadest possible tax base because the Community College is eligible for additional federal and state construction money as well as extra operational money.

F. Better utilization of staff and facilities. A savings of approximately 27,500 square feet in capital construction is estimated by combining the downtown Center with the Technical Center. In addition, the new Community College Health, Business, and Distributive facilities would be available for special secondary programs.

G. Future expansion and adjustment of both program offerings and facilities at the least cost.

CHAPTER II

DEFINITIONS AND CONCEPTS

Vocational-Technical Education. What is it? What does it do? Who needs it? These questions are often asked by citizens and educators alike. More and more this aspect of education is being talked about, although it is not really new. It is now commanding public attention because of the influence of our economic boom and the skilled manpower shortage.

Vocational education in essence refers to that education and training that is aimed at an employable skill. In its broadest use this could mean the high school English course taken by the Journalism student or the Machine shop course for the student planning to become a Machinist. Commonly, however, it refers to the training needed to produce a skilled or semi-skilled worker. Examples would be a steno-typist, a baker, or an automotive mechanic.

Technical education refers to the education and training needed to produce a technician or semi-professional worker. Examples would be the computer programmer or the engineering aide.

In general, vocational education requires a great deal of manipulative skill and less emphasis on the theoretical aspects; whereas technical education is the reverse with heavy emphasis on theory and its application and less on manipulative skills. Another distinction is that vocational education can be accomplished at the high school level and that technical training requires post-high school education. However, it must be kept in mind that much adult training is in the area of vocational education for up-grading purposes and is often conducted by the community college.

Both vocational and technical training are aimed at providing a person with a saleable skill whereby he or she can qualify for an entry type of job commensurate with his level of training. Today, as never before, this saleable skill aspect is becoming important in getting one's first job. The possibilities of obtaining work without a skill is very rapidly becoming impossible because of the changing labor market.

Everyone who will have to work for a living is in need of occupational training. For some the need is while still in high school in order to be able to get employment upon graduation; for others, ability and goals are such that additional training beyond high school is essential. For almost all, opportunities must exist whereby training is available at various levels for improving existing skills in order to keep pace with new demands.

Those who conduct retraining programs and most employers find that persons possessing some saleable skills are much more easily retrained for new jobs. Those who employ and place beginning workers insist that the young person seeking work must have skills for initial entry and that his vocational education must avoid being too general, arguing that some specialization is a must even though retraining will be needed.

The new era of rapid change in which we now find ourselves compels us to critically examine our education programs with an eye to truly meeting the occupational needs of all. Studies have shown that those high school students graduating with saleable skills do not have the difficulty of finding employment that is experienced by those graduates with a general education only and further that they have greater employment security.(1)

In addition, it should be noted that a recent study done at the University of Michigan indicated that those vocational high school students who went on to college succeeded as well as or better than the academic students.

Area Vocational Centers. What are they? The Area Vocational concept is based upon the premise that collectively school districts can offer a much broader range of vocational subjects than can be done by any one school on an individual basis. A center would be a centrally located facility where many special vocational courses could be offered because of the interest and availability of a sufficient student population, employment opportunities, and adequate financial resources. Students would retain their home high school identity since they would obtain their general education, participate in extra curricular activities, and graduate from their own high schools. The home high school would continue to offer a strong pre-vocational program. General vocational courses such as Agriculture, Home Economics, and Business would also be continued by the home high school where student interest warranted. This concept was urged in a comprehensive study of Vocational Education in Michigan completed in 1963.(2) This same center should be operated by a community college in the evening hours for training adults and out-of-school youth.

It should be noted that the community college is in effect an area center for technical education programs. This is possible because the same factors of enrollment, job opportunities, and financing are concentrated in one place as would be true for high school Area Vocational Centers.

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(1) "Studies of Communities Which Have Vocational Education Programs", American Institute for Research, 1966.

(2) "Vocational Education in Michigan"
Michigan State University, Dr. L. Borosage, Director

CHAPTER III

INTRODUCTION

Description of the Study. Our American heritage is based upon respect for every person's worth and dignity as an individual. In America, education has been the main vehicle of promoting this heritage. This study is aimed at examining one phase of educational opportunity, namely--vocational, to see if it truly is available to all and if not, how it may be made so.

The study is limited to the answering of four major questions:

1. What kind of training is needed?
2. At what age level is this training feasible?
3. What agencies should provide the training?
4. How do we organize and pay for this training?

Basic to any vocational study is the collection of facts regarding employment needs and trends. Upon invitation the Lansing Community College undertook this task and contacted over 5,000 places of business within about a 30 mile radius of Lansing which in essence covered the tri counties of Ingham, Eaton, and Clinton. The Michigan Employment Security Commission and the Tri-County Planning Commission gave a great deal of help with addresses and names of contact people.

A general advisory committee supplied many of the questions that needed to be answered, thus broadening the base of the study.

Another committee worked on selecting items for soliciting facts and opinions of 1963 high school graduates and their parents. These were converted to questionnaires which were sent out and collected by each high school in the study area.

Finally the committee on Plans and Programs provided the basic hard look at present and future needs for training and organization.

The committee yet to be named, and upon whose shoulders the difficult task of practical planning will fall is the Implementation Committee. Its responsibility will be to translate recommendations, herein contained, into reality.

It should be kept in mind that although this study encompasses only fifteen high school districts and the Lansing Community College district, there are other high school districts within the serving area of the Community College that geographically and economically could well become a part of any future plans for cooperative efforts to provide vocational education. These school systems need to be kept informed and their students offered a chance to participate in any vocational programs available on an area basis.

Vocational education is not a dead-end kind of education, but one designed to provide immediate employability and/or basic training for going on into advanced technical training at the post-high school level. It is hoped that no one will misconstrue this report as trying to build a case for one phase of education at the expense of another because this is not the intent. Specialized vocational education and general education complement each other and authorities agree that it would be inconceivable to have only one or the other available and consider it total education.

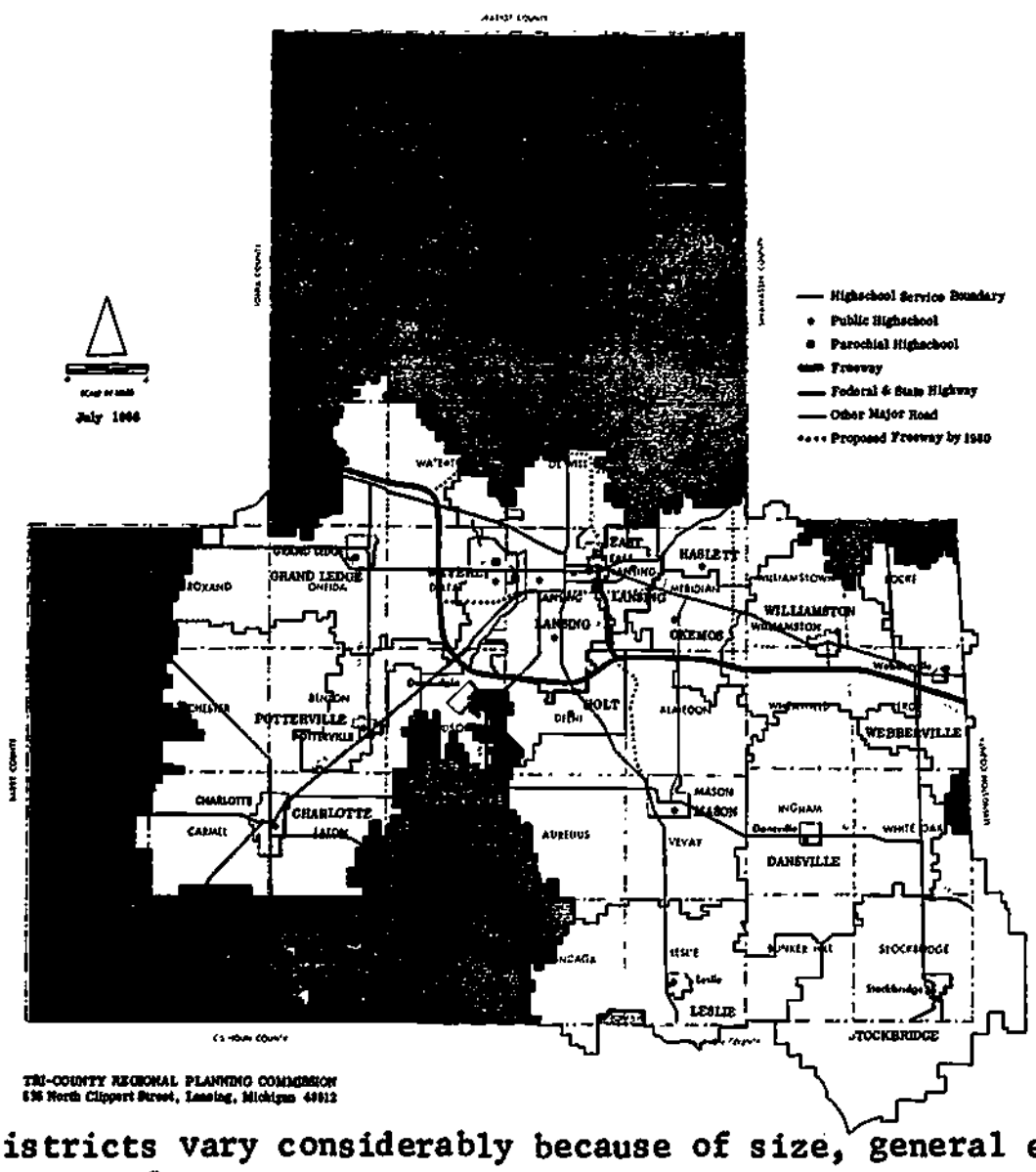
CHAPTER IV

THE AREA STUDIED

Background Information. Geographically the Ingham Intermediate School District comprises the County of Ingham and some small portions of each of the surrounding counties. Collectively there are 12 high school districts. In addition there are two Roman Catholic high schools, one located in the City of Lansing School district and the other in the Waverly School district. There is also a very small Christian high school. The Lansing Community College district encompasses all of the school districts of Ingham County plus the Grand Ledge district in Eaton County and the De Witt and Bath districts in Clinton County. However, the college presently serves people outside of its immediate district in a geographical area within a 25-30 mile radius from the city of Lansing. Three of the school districts of Eaton County (Charlotte, Grand Ledge, and Potterville) adjacent to the Ingham Intermediate district also are participants in this study.

FIGURE II

Service Area
Ingham Intermediate
Vocational Education Study



School districts vary considerably because of size, general employment patterns, and other factors. Some are rural and others completely urban. All are concerned with good education and all try to meet the general and special education needs of their youth.

School Valuation. A significant phenomenon has taken place in the last five years in respect to the per pupil state equalized valuation available to support education. In seven out of the fifteen school districts there was an actual decline, while only three districts had a significant increase in per pupil valuation. The increased millage levied for operational and building purposes is barely keeping pace with escalating school expenses and expansion needs. As noted by Table I the amount of money that can be raised on the same millage from the higher valuation school district to the lower varies considerably. This poses the question as to how a complete program of education, including the critical area of vocational training, can be made equally available to the students of all of the districts? The Community College faces much the same problem as the secondary schools in trying to match dollars raised with their burgeoning enrollments.

TABLE I

Changes in Valuation and Millage by School Districts

School District	State Equalized Valuation		Mills Levied		Per Pupil Valuation	
	1960	1965	1960	1965	1960	1965
East Lansing	67,236,562	88,143,265	18.88	22.612	16,193	18,619
Lansing	474,642,891	456,887,423*	17.885	23.633	17,775	15,056
Okemos	22,963,510	31,253,890	22.94	27.092	12,201	12,378
Waverly	54,334,856	85,272,448	16.5	21.70	18,169	21,223
Dansville	7,245,258	7,751,237	14.75	14.112	8,041	7,607
Haslett	11,010,980	13,788,560	27.19	29.912	7,173	7,349
Holt	18,703,453	21,660,488	25.96	27.927	6,314	6,203
Leslie	9,212,591	9,881,608	16.19	23.412	7,015	6,610
Mason	23,125,903	27,986,646	19.07	19.872	8,911	8,804
Stockbridge	13,955,943	15,170,974	15.37	21.582	7,849	8,518
Webberville	5,243,111	5,952,695	23.25	25.112	8,511	8,651
Williamston	12,980,864	15,974,316	18.86	22.112	11,200	11,250
Charlotte	22,086,121	32,210,688	9.125	18.16	9,202	11,302
Grand Ledge	27,585,109	39,122,374	15.75	17.16	8,500	8,890
Potterville	4,486,885	3,718,761	14.125	17.16	7,077	6,047
Lansing Community College		828,000,000		1.00		

Source: Local School District Data From Ingham Intermediate and Eaton Intermediate School District Reports

* The State reduced the Equalized Value of Lansing City in 1963.

School Enrollment. Another significant difference in school districts is in enrollment and growth patterns over the last five years.

TABLE II

INGHAM AND EATON COUNTY
HIGH SCHOOL DISTRICT ENROLLMENTS
1961 & 1965

High School District	Enrollment 1961	1965	Percent Change
Dansville	916	1,024	12
East Lansing	4,264	4,717	11
Haslett	1,628	1,877	15
Holt	2,257	3,483	54
Lansing	28,982	31,607	9
Lansing Catholic	890	1,492	68
Leslie	1,304	1,495	15
Mason	2,720	3,180	17
Okemos	1,958	2,563	31
Stockbridge	1,778	1,781	0
Waverly	2,711	4,020	48
Webberville	621	679	9
Williamston	1,230	1,420	15
Charlotte	2,514	2,850	13
Grand Ledge	3,308	4,401	33
Potterville	661	615	-7
Total	57,742	67,204	16
Lansing Community College			
Full Time	622	1,526	145
Part Time	982	2,316	136
Total	1,604	3,842	139

Note: Figures for Lansing Catholic are based on grades 9-12. All other School District Figures are on grades K-12.

As noted in Table II, with one exception, all districts increased in enrollment during the 1961 through the 1965 period. Some increases were very substantial. It is estimated that there will be about 36% overall growth in the 15-19 year olds from 1965 to 1975.(3) Presumably the growth patterns by school districts may continue over the next five years with certain districts growing at a much faster rate than others.

A most phenominal growth has occurred in the enrollment of the Lansing Community College over the last five years--145% growth in full time students and a 136% growth in part time students. The Community College changed from a

(3) Dr. David Goldberg, Michigan Population 1960-1980.

city school to a county district in 1964, and since then additional outside school districts have been annexed. More are expected to annex. College officials predict that in the next five years enrollment will grow to about 8,000 equated full time students.

In the years ahead, more youngsters will need initial occupational training, and also more out-of-school adults will need additional training. This is our challenge.

Graduates. Based on information gathered from the last annual University of Michigan High School Report, it was found that of the 3944 students who graduated in 1965, 50.6% were going on to either a two or four year college, 8.3 percent were enrolled in a business or trade school, and 41.1 percent were going to enter the labor market. College entrance by schools ranged from a low of 30 percent to a high of 89 percent. No figures are available, locally, pertaining to the number of those graduating from college as against the number entering. National figures published by the President's Panel of Consultants on Vocational Education in 1962 indicated that only half of those entering a four year program would actually graduate.

Dropouts. The State Office of Education published figures for the 1962-63 school year which indicate that a state average of 6.3 percent of the total enrollment for grades 9 through 12 would drop out of school in one year. During the 1962-63 school year the school districts in Ingham County reported 922 youngsters leaving school prior to graduation. Authorities agree, that of those people seeking full time employment, the school dropout has the most difficult time of finding a job because of the lack of training and when work is obtained it is almost always in the unskilled labor field. One of the main reasons given by dropouts for leaving school is dissatisfaction with the vocational training available in their school.

Vocational Courses. Vocational courses for the purpose of this study will be those courses for which the State Office of Vocational Education pays a portion of the teacher's salary and also pays a percentage of the major equipment costs. These courses are directed toward skill development only. Other courses, similar in name but less in content, are normally called pre-vocational or exploratory.

TABLE III

COURSE AND FACILITIES INVENTORY

AGRICULTURAL COURSES	No. of Schools	Hours Per Day			Length		Orientation		Equipment			Space		
	Total	1	2	3	Sem.	Yr.	Skill	Explor.	Good	Fair	Poor	Good	Fair	Poor
Agriculture I	8	6	2			8	5	7	3	5		5	3	
Agriculture II	9	7	2			9	8	4	2	7		5	3	
Agriculture III	9	7	2			9	8	4	3	6		5	3	
Agriculture IV	5	5				5	4	3	2	3		3	2	
Farm Mechanics	5	3	2			5	5	2	2	3		2	2	1
Farm Power	1		1			1	1			1		1		
Coop Training	4			4		4	4							

TABLE III (Continued)

OFFICE COURSES	No. of Schools	Hours Per Day			Length		Orientation		Equipment			Space		
	Total	1	2	3	Sem.	Yr.	Skill	Explor.	Good	Fair	Poor	Good	Fair	Poor
Bookkeeping I	19	19			1	18	18	11	13	6		12	7	
Bookkeeping II	6	6				6	6	1	6			5	1	
Business English	5	5			3	2	5	1	3			5		
Business Law	6	6			6		1	6	3			5	1	
Business Math	5	5			3	2	1	2	4			5		
General Business	9	9			[illegible]	6		9	3	1		7	1	
Off. Mach. & Prac.	15	15			2	13	14	4	10	4	1	10	5	
Off. Work Exp.	6	6			2	4	6		3	1		4	1	
Typing I	18	17	1		4	14	16	7	15	3		12	6	
Typing II	18	17	1		5	13	17	2	14	4		9	9	
Personal Typing	2	2			2			2	1	1		2		
Notehand	3	3			3		2	1	3			3		
Shorthand, Gregg I	18	18			6	12	17	8	14	4		15	3	
Shorthand, Gregg II	14	14			7	7	13	2	10	4		11	3	
Shorthand, Forkner	3	3				3	3		3			3		
Data Processing	1	1			1		1		1			1		
Cooperative Training	10			10		10	10							
Typing III	6	6			4	2	6		6			4	2	
Typing IV	1	1			1		1		1			1		
Transcription	6	6			2	4	6		6			6		

DISTRIBUTIVE COURSES	No. of Schools	Hours Per Day			Length		Orientation		Equipment			Space		
	Total	1	2	3	Sem.	Yr.	Skill	Explor.	Good	Fair	Poor	Good	Fair	Poor
Merchandising	5	5			3	2	1	4	2	2	1	3	2	
Record Keeping	1	1			1			1				1		
Retailing	4	4			1	3	3	3		1	3	1	3	
Salesmanship	3	3			3		1	3	1			2	1	
Cooperative Train.	10			10		10								

TABLE III (Continued)

SHOP COURSES	No. of Schools	Hours Per Day			Length		Orientation		Equipment			Space		
	Total	1	2	3	Sem.	Yr.	Skill	Explor.	Good	Fair	Poor	Good	Fair	Poor
Draft I, General	15	15			2	13	10	13	10	4		5	9	
Draft II, General	12	12			1	11	12	5	10	2		5	7	
General Mech. I	3	3				3	2	1	1	2		2	1	
General Mech. II	1	1				1	1		1			1		
Printing I	4	4				4	4	4	1	3		4		
Printing II	3	3				3	3	3		3		3		
Gen. Woodworking I	9	9				9	3	9	5	3	1	5	3	1
Gen. Woodworking II	5	5				5	5	4	3	2		3	2	
Service Sta. Attd.	1			1		1	1			1				1
Machine Operator	1			1		1	1			1		1		
Furniture Repair	1	1				1	1	1		1			1	
Auto Body Repair I	1			1		1	1		1				1	
Auto Body Repair II	1			1		1	1		1				1	
Engine Mech. I	5	4		1		5	5	5	1	3	1	2	2	1
Engine Mech. II	1			1		1	1		1			1		
Machine Shop I	5	3		2		5	5	3	2	3		2	3	
Machine Shop II	4	2		2		4	4	2	2	2		2	2	
Resident. Devel. I	1			1		1	1		1			1		
Resident. Devel. II	1			1		1	1		1			1		
Tech. Drafting I	3	1		2		3	3	1	3			3		
Tech. Drafting II	3	1		2		3	3		3			3		
Auto Mech. I	2	1		1		2	2	1	1	1		1	1	
Auto Mech. II	1			1		1	1		1			1		
Elec.-Electronic I	2	1		1		2	2	1	1			1		
Elec.-Electronic II	1			1		1	1		1			1		
Appliance Repair I	1			1		1	1		1			1		
Appliance Repair II	1			1		1	1		1			1		
Printing Voc. I	1			1		1	1		1			1		
Printing Voc. II	1			1		1	1		1			1		
General Metals I	3	3				3	3	3	1	2			3	
General Shop I	10	10				10	3	7	3	7		3	5	2

TABLE III (Continued)

SHOP COURSES	No. of Schools	Hours Per Day			Length		Orientation		Equipment			Space		
	Total	1	2	3	Sem.	Yr.	Skill	Explor.	Good	Fair	Poor	Good	Fair	Poor
General Shop II	6	5		1		6	6	3	3	3		3	1	2
Adv. Woodworking	5	5				5	5		5			3	2	
Arch. Drafting	5	5				5	5	5	5			5		
Building Const.	2	2				2	2		1	1			1	1
Coop. Training	10			10		10	10							

HOMEMAKING COURSES	No. of Schools	Hours Per Day			Length		Orientation		Equipment			Space		
	Total	1	2	3	Sem.	Yr.	Skill	Explor.	Good	Fair	Poor	Good	Fair	Poor
Homemaking I	14	13	1			14	13	10	9	5		12	1	1
Homemaking II	13	11	2			13	12	9	8	5		11	1	1
Homemaking III	13	12	1			13	13	7	8	5		11	2	
Homemaking IV	3	3				3	3	2	1	2		2	1	
Clothing I	6	6			1	5	4	3	6			6		
Clothing II	5	5			1	4	5		5			5		
Food Service	1	1				1		1	1			1		
Quantity Cookery I	1			1		1	1		1			1		
Quantity Cookery II	1			1		1	1		1			1		
Mod. Liv. (Ser. Aide)	2		2			2	2	1	1	1		1	1	
Home & Fam. Living	6	6			4	2	1	5	6			6		
Home Management	4	4			3	1	3	4	3	1		2	2	
Food I	6	6			1	5	2	5	5	1		6		
Food II	1	1				1		1	1			1		
Child Care	1	1			1			1	1				1	

Of the nineteen high schools included in this study, sixteen have one or more reimbursed vocational courses, but only the Lansing high schools offer a broad program for student selection. All of the schools have courses that could be described as pre-vocational in nature, but even these offerings are limited in scope.

In the area of Agriculture there are nine high schools offering one or more courses. Five offer four years plus Farm Mechanics. Seven of the nine high schools have vocational reimbursed programs.

Limited courses in Distributive education are offered by only five schools.

Home Economics is offered in some form by fourteen high schools. Thirteen of the schools offer three years of Home Economics. Only the Lansing high schools offer courses in wage earning occupations.

All nineteen high schools offer some type of course in the area of Office Education. Beginning, or first year, bookkeeping, shorthand and typing are the courses most offered. A second year of typing is almost universally available. fourteen high schools are receiving some State reimbursement for special pre-vocational courses this year for the first time. These are the second year business courses whose student enrollment is aiming for employment.

The Trade and Industrial area courses, or shop classes as they are commonly called, are available in fifteen high schools. However the variety of courses in any one high school is quite limited in most cases. General Drafting is offered in fifteen high schools but Technical Drafting is only available in three. General Shop courses are available in ten schools but Machine Shop training is offered only in five and only two of those offer programs of sufficient depth so as to be eligible for vocational reimbursement. Auto Body Repair is offered in one high school as is Auto Mechanics, on a reimbursed basis, where the training is to develop a saleable skill. One school offers vocational Printing and one vocational course in Electricity-Electronics. Only the three Lansing high schools have any reimbursed vocational courses which are normally taught on a fifteen hour a week basis. All the other courses are taught on a five hour per week basis and could only be considered as pre-vocational in nature.

Cooperative training is offered in ten high schools. This kind of vocational program allows students to work on an actual paid training job outside of school on a half time basis. They receive supervision from their school and are granted credit toward graduation. This program makes use of the facilities of Business and Industry for high school training.

The Community College provides vocational courses pertaining primarily to Apprentice programs and Manpower Retraining programs. In addition, certain technical courses are offered in the fields of Business, Distributive, Trade and Industry and the Health Science area. Additional courses are being planned and evaluated for introduction.

Summary. While many schools offer trade and industrial type courses only the three Lansing high schools offer this kind of vocational course recognized by the State Department of Vocational Education. Home Economics courses are available in most of the high schools but only two courses are offered in wage earning occupations. Distributive Education classes are available in only five high schools. None of

them receive State reimbursement. Agricultural education is available in nine schools. The Cooperative Training Program covers a number of possible occupations and is vocationally reimbursed in eight of the public schools and made available, on a shared time basis, to the two Catholic high schools.

Most of the so-called vocational courses available in the secondary schools are really classified as exploratory or pre-vocational and as such are not designed to completely prepare a student with job entry skills. The Community College provides certain vocational and technical courses and plan to add more as demand warrants.

CHAPTER V

THE CHANGING SITUATION

Demographic Change. Population-wise the area encompassed by the Study has shown a steady increase, and the 0-19 age population is growing at a faster rate than the State of Michigan as a whole. From 1960-1965 the 0-19 age group increased by 8.4 % in the State of Michigan while in the Study area the increase was an average of 11.2%. In projected figures, the State of Michigan's expected increase in this age group by 1975 is 7.9%. In contrast, that of the area under study is 14.4% for the same period.

Table IV

POPULATION BY YEARS AND AGE GROUPS

	Age	1960	1965	1970	1975
State of Michigan	0-4	969,000	882.000	900,000	999,000
Clinton County	0-4	5,146	4,978	6,139	7,209
Eaton County	0-4	6,085	5,672	7,216	8,428
Ingham County	0-4	26,060	26,032	26,463	29,797
State of Michigan	5-9	879,000	950,000	872,000	892,000
Clinton County	5-9	4,774	5,225	4,699	5,649
Eaton County	5-9	5,828	6,074	5,387	6,706
Ingham County	5-9	22,435	25,529	25,508	25,369
State of Michigan	10-14	744,000	870,000	945,000	870,000
Clinton County	10-14	3,983	4,856	5,067	4,452
Eaton County	10-14	5,128	5,850	5,907	5,131
Ingham County	10-14	18,538	22,237	25,290	24,875
State of Michigan	15-19	564,000	721,000	855,000	934,000
Clinton County	15-19	2,928	4,591	5,462	5,550
Eaton County	15-19	4,060	5,819	6,574	6,483
Ingham County	15-19	18,799	20,790	25,363	28,243
State of Michigan	Total	3,156,000	3,423,000	3,572,000	3,695,000
Clinton County	Total	16,831	19,650	21,367	22,860
Eaton County	Total	21,101	23,415	25,084	26,748
Ingham County	Total	85,832	94,588	102,624	108,284

Dr. David Goldberg, Michigan Population 1960-1980

Working Paper #1, January 1966

In the critical training age group of 15 to 19 years old, the projected percentage of change from 1965 to 1975 shows an increase in Ingham County of 35% and Eaton County an increase of 11.4%. However, it is estimated that in the study area of Eaton County the growth rates might be very comparable to that of Ingham. These increases are significant when considered in the light of needed training by these young people in order to qualify for a job.

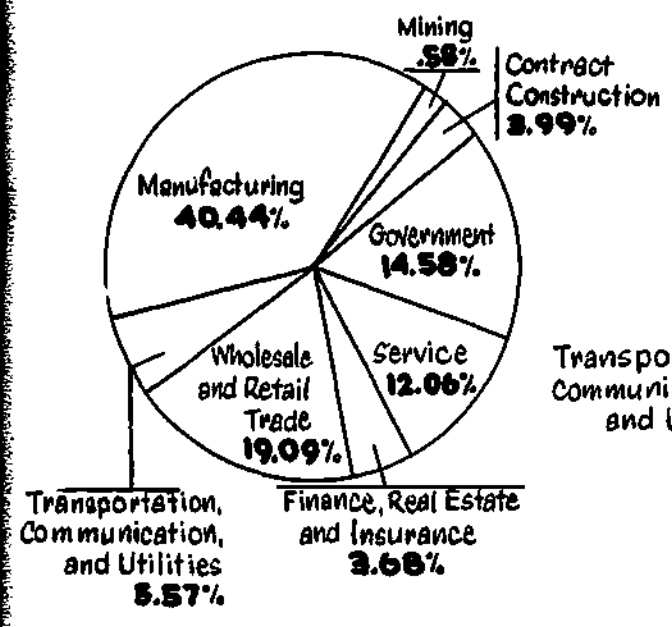
Industrial Change. The area's industrial structure shows some similarities and some sharp differences when compared to the industrial structures of both the Nation and the State. Agricultural employment (on the farm) went down by 1200 persons while non-farm labor increased by over 9,000 during the same 1960-64 period.

Refer to Table V.

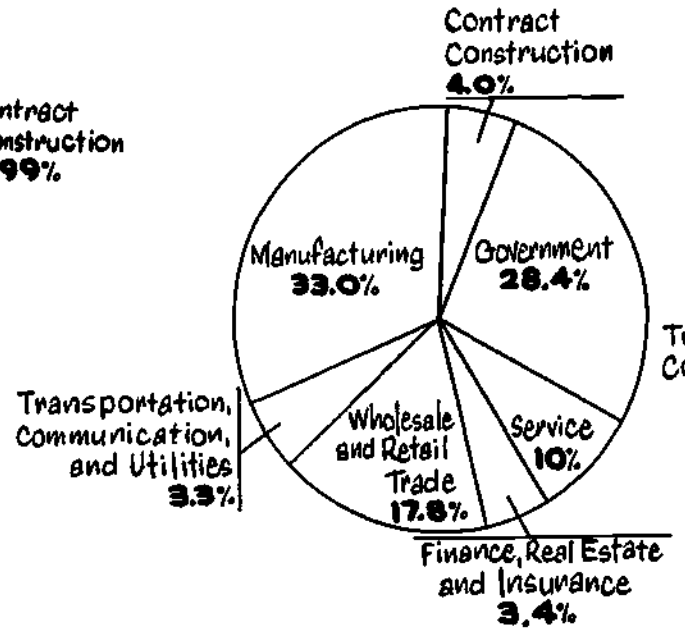
TABLE V

INDUSTRIAL STRUCTURES

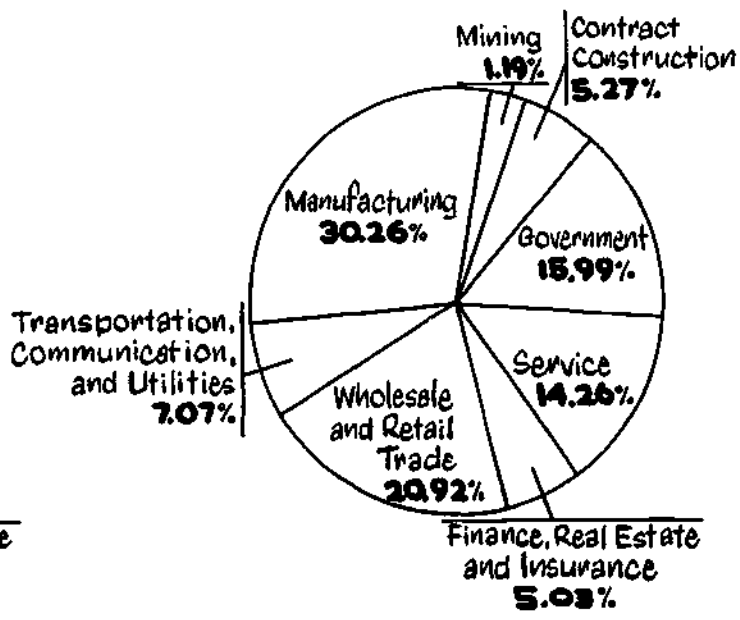
Michigan



Ingham, Eaton, and Clinton Counties



United States



*Agricultural Employment	4,700	1964
	5,900	1959
	1,200	Net Loss
*Non-Farm Labor	108,400	1964
	99,200	1959
	9,200	Net Gain

Source MESC (*) Applies only to Ingham, Eaton and Clinton

Table VI shows projected annual growth rates for each segment of State's industry. Clearly shown are the differences of annual growth rates. This table is based upon all of the workers employed in the various industries and should not be confused with kinds of jobs.

The just completed Michigan Manpower Study-Phase I conducted by the Battelle Memorial Institute for the Michigan Employment Security Commission indicates that employment opportunities in Michigan will grow at the annual average rate of 1.9 percent until 1980. The rate of growth varies considerably by job classification, as is evidenced in Table VII, with clerical, service, and professional jobs showing a 3 percent, or better, growth per year while farm managers and laborers show a decline. The researchers from the Battelle Institute predict that there will be a decided increase in pressure from now on for labor-force skills to meet the demands of industry. Industry will more and more expect that those seeking employment will possess skills that the industry needs. This statement is underscored by a recent publication of the Michigan Employment Security Commission in which it is pointed out that there will be a continued up-grading of the educational and skill level required of the work force. Workers not adequately prepared, the Commission points out, will find it more and more difficult to find satisfactory and rewarding jobs. If these predictions are true, it has great significance for the public schools and the Community College as they try to meet their commitment to provide meaningful education for all.

TABLE VI

PROJECTED EMPLOYMENT BY INDUSTRY, COMPUTED ANNUAL RATE OF CHANGE, MICHIGAN, 1960-80

Category	Thousands Employed 1960	Thousands Employed 1980	Annual Rate of Change 1960-80
Agriculture, forestry, & fisheries	93.7	55.0	-2.6
Mining	15.3	11.0	-1.6
Construction	125.6	181.0	1.8
Manufacturing	1035.9	1150.0	0.5
Durable goods	818.4	968.2	0.8
Primary metal industries	71.7	101.3	1.7
Fab. mtl. Ind. (including not specified metals)	91.8	108.0	0.8
Machinery, exc. electrical	147.1	156.0	0.3
Electrical machinery equipment & supplies	31.7	36.9	0.7
Motor vehicles and motor-vehicle equipment	377.2	473.5	1.1
Other durables	98.9	92.5	-0.4
Nondurable goods*	217.5	181.8	-0.9
Food & kindred products	62.4	53.5	-0.8
Chemicals & allied products	40.9	33.5	-1.0
Petroleum & coal products	3.5	2.4	-1.9
Other nondurables*	110.7	92.4	-0.9
Transportation, communications, and utilities & sanitation services	155.6	188.0	0.9
Wholesale trade	80.7	124.0	2.2
Retail trade	403.3	586.0	1.9
Food & dairy product stores	74.1	78.5	0.2
Gen. merchandise retailing	54.0	90.0	2.6
Motor vehicle & accsory retailing	35.2	65.0	3.1
Gasoline service stations	28.3	44.0	2.2
Eating & drinking places	74.4	105.0	1.7
Other retail trade	137.3	203.5	2.0
Finance, insurance, & real estate	89.6	168.0	3.2
Banking & credit agencies	34.8	77.0	4.1
Insurance	34.2	65.0	3.2
Other finance, insurance, & real estate	20.6	26.0	1.2
Business and repair services	61.3	89.0	1.9
Personal services	134.0	187.0	1.7
Entertainment & recreation service	17.7	32.0	3.0
Professional & related services	329.9	872.0	5.0
Medical & other health service (including hospitilization)	117.7	287.3	4.5
Educational services	152.0	406.4	5.0
Private	29.1	63.1	3.9
Government	122.9	343.3	5.3
Other professional and related services	60.2	178.3	5.6
Public administration	94.8	178.0	3.2
Industry not reported	89.6	115.0	1.3
Total employment	2726.9	3936.0	1.9

*Includes Not Specified Manufacturing.

Note: Detail may not add to total due to rounding.

Source: "The Michigan Manpower Study--Phase I", 1966 Battelle Memorial Institute

TABLE VII PROJECTED EMPLOYMENT BY OCCUPATION, COMPUTED ANNUAL RATE OF CHANGE, MICHIGAN, 1960-1980

Occupation	Persons Employed 1960	1970	1980	Annual Rate of Change 1960-80
Professional	312,590	454,180	685,110	4.0
Engineers, Technical	43,806	65,420	86,880	3.5
Nurses	23,483	31,920	49,040	3.8
Teachers	68,698	90,420	134,810	3.4
All Other Professional and Kindred	176,603	266,420	414,380	4.3
Farm Managers	60,074	38,900	28,600	-3.7
Managers	200,022	253,680	323,170	2.4
Managers, Officials & Proprietors, NEC, Salaried	96,567	133,680	182,260	3.2
Managers, Officials & Proprietors, NEC, Self-Employed	71,441	80,450	93,070	1.3
All Other Managers, Officials & Proprietors	32,014	39,550	47,840	2.0
Clerical	379,592	499,970	675,040	2.9
Bookkeepers	33,980	42,260	51,500	2.1
Cashiers	19,509	24,730	32,460	2.6
Secretaries	54,769	77,280	114,380	3.8
Stenographers	10,979	14,080	18,330	2.6
Typists	21,182	32,105	41,140	3.4
All Other Clerical and Kindred Workers	239,173	309,515	417,230	2.8
Sales	202,416	237,530	285,660	1.7
Salesmen & Sales Clerks	160,097	192,220	232,270	1.9
All Other Sales Workers	42,319	45,310	53,390	1.2
Craftsmen	420,094	464,470	498,540	0.8
Carpenters	25,713	28,870	26,430	0.1
Electricians	15,967	19,230	20,500	1.3
Foremen, NEC	60,179	66,750	70,600	0.8
Machinists	20,015	20,750	20,480	0.1
Mechanics & Repairmen	108,670	128,880	151,720	1.7
Plumbers & Pipe Fitters	13,051	14,920	16,800	1.3
Toolmakers & Die Makers	35,628	39,710	41,230	0.7
All Other Craftsmen, Foremen, & Kindred Workers	140,871	145,360	150,780	0.3

TABLE VII (Continued)

Occupation	Persons Employed 1960	1970	1980	Annual Rate of Change 1960-80
Operatives	606,417	631,340	631,170	0.2
Assemblers	63,350	62,450	56,830	-0.6
Checkers, Examiners, & Inspectors - Manufacturing	39,250	40,900	39,280	--
Delivery & Routemen	18,642	20,150	20,820	0.6
Filers, Grinders, & Polishers - Metal	26,162	28,340	28,350	0.4
Truck & Tractor Drivers	65,347	77,870	93,940	1.8
All Other Operative & Kindred Workers	393,666	401,630	391,950	-0.1
Private Household	58,651	60,700	61,800	0.3
Service	236,427	310,890	437,290	3.1
Attendant, Hospital & Others	18,395	23,160	32,000	2.8
Cooks - Excluding Private Household	20,301	26,970	39,450	3.4
Janitors & Sextons	30,965	38,560	52,870	2.7
Protective Service Workers	30,700	40,170	53,570	2.8
Waiters & Waitresses	37,296	46,570	59,910	2.4
All Other Service Workers	98,770	135,460	199,490	3.6
Farm Labor	25,283	21,100	19,800	-1.2
Labor	109,273	121,500	134,010	1.0
Occupation Not Reported	116,025	133,740	155,810	1.5
Occupation Total	2,726,864	3,228,000	3,936,000	1.9

Source: "The Michigan Manpower Study--Phase I", 1966
Battelle Memorial Institute

TABLE VIII

DETAILED OCCUPATIONAL GROUP OF EMPLOYED PERSONS
Michigan: 1960-1970

Occupational Group	Number		Percent Change 1960 to 1970
	1960	1970	
Total	2,726,864	3,175,000	+16.4%
Professional & Technical Workers	326,513	511,000	+56.5
Proprietors & Managers	208,956	241,000	+15.3
Clerical & Sales Workers	607,884	775,000	+27.5
Skilled Workers	438,774	489,000	+11.4
Semi-skilled Workers	633,219	608,000	- 4.0
Unskilled Workers	114,143	82,000	-28.2
Service Workers	308,189	397,000	+28.8
Farmers and Farm Workers	89,186	72,000	-19.3

Source: "Manpower in Michigan. A reappraisal of the 1960's", Michigan Employment Security Commission.

Table VIII shows very graphically the gross change of major job categories. Although this type of prediction is not perfect it does provide expert opinion on discernable trends and needs to be considered carefully in counseling and training young people for the world of work.

CHAPTER VI

YOUNG ADULTS AND PARENTS EXPRESS THEIR VIEWS

The high school graduating class of 1963 and their parents were selected for questioning about their points of view regarding vocational education. This group was chosen because it was felt that members could provide comments on their out-of-school experiences as well as being close enough to their high school days to comment on that too. In addition, it was felt that the parents of these graduates might have opinions on the matter of vocational education both from the experiences of their youngsters as well as their own personal feelings.

Evaluations of results of any questionnaire must be in the light of generalizations rather than specifics. As a minimum, questionnaires provide one more source of raw material upon which to base judgments. Viewed in this perspective they are deemed worthwhile.

Young Adults: Analysis of Responses. 1,922 young people responded for a 41% return. Some schools had better returns than others, and a higher return from those schools having a large number of students going to college was observed. This should be kept in mind when examining the results.

#1. Present Activity. There were 41% of the respondents who were presently attending college either full or part time. In addition, 24.4% were working full time, 3.5% were unemployed, and 11.6% were housewives. A wide range of jobs were listed by the full time workers. The largest group of occupations were represented by office jobs; followed by laborers, sales, and construction workers. Many more classifications were listed but had only a few persons in each area.

#2. Job Satisfaction. About an equal number were satisfied with their present job as were dissatisfied.

#3. High School Preparation. 63% said they had taken a college prep course while in high school. It might be assumed that many of those listing college prep had also taken other courses in a major field; however, their perception of their program was that of college preparation. The second largest program of study was in the area of Business.

#4. Appropriateness of Training. Of those who indicated they took vocational work in high school, 60 percent said their present work was related. 29 percent indicated that they had not taken any vocational courses.

#5. Post-High School Training. A large number of respondents to this question indicated "on-the-job training." This suggests that additional training is required even after a person starts to work.

#6 and 7. Adequacy of High School Training. Quite a sizable group, 40 percent said that their high schooling did not adequately prepare them for college. About the same percentage of those entering the work force noted that their high school experience did not adequately prepare them for their job.

#8 and 9. Availability of Vocational Courses. When asked if their school had a sufficient number of vocational courses available for the work-bound student, 53 percent of those who expressed an opinion said "no." Then when asked if they would take more vocational courses if they were offered, 44 percent said "yes."

Some remained non-committal. The suggested list of additional offerings ran heavily to Business subjects and the conventional Trade and Industrial subjects. It could be conjectured that these young adults felt that even though some of these courses were offered (General Business and Industrial Arts are offered in almost every school) that they were not of sufficient depth or quality to really prepare them for employment.

#10. Finding a Job. Getting the first job was "on their own" in most cases. Fewer credited help from "friends" or "relative."

#11. Permanence of Vocational Choice. Of those who indicated that they had made vocational choice while in high school, 58 percent still maintained that choice. It may not be unrealistic to believe that high school students can make good vocational choices when good information about themselves and occupational opportunities is provided.

#12. High School Vocational Counseling. 39 percent answering this question said they had not received vocational counseling or advice while in high school. Note the parent comments to this same general question.

#13. Need for More Vocational Counseling. Of those who had opinions, about three to one said they would have liked more vocational counseling. Even those who had received some said they needed more. Note that this is viewed after three years out of high school.

#14. Program Selection. The answers to a question as to what program respondents would select were they now entering high school resulted in Business, College Prep, and General Combinations receiving the most listings.

#15. Additional Training. When asked if they plan to take additional training, graduates responded about two to one in the affirmative. These young people appear to be well aware of the need to keep up-to-date. General College courses were listed most frequently plus a variety of special courses.

Summary. The 1963 high school graduates indicated by their replies that, in most cases, those who had taken vocational work in high school were still engaged in work that was related to their training. About half indicated that they thought there were not enough vocational offerings in their school. More than a third said they had received no vocational counseling while in high school and three out of four would have liked more vocational counseling. In addition, those that are presently working planned to take more education.

Parent Opinion: Analysis of Responses. The parents of the 1963 high school graduating class were also contacted concerning their opinions regarding vocational education. Some questions invited opinions in areas where many may lack the experience upon which to base judgment. In part, this was done to alert people to some new trends in making vocational education available to more people. 825 replies were received representing an approximate 30 percent return.

#1. Adequacy of Preparation. Most responding parents, 83.2 percent, felt that the high schools were not doing a good job in helping prepare students to select a vocation. Their reasons included insufficient vocational classes and inadequate vocational counseling. Interestingly, too, about 18 percent noted that there was no time to take vocational classes.

#2 and 3. Need for More Vocational Courses. Parents overwhelmingly (90%) felt that there should be more vocational offerings. These respondents then went on to suggest what these additional offerings might be, and although many traditional type subjects were included, a large number indicated an awareness of newer occupational opportunities by including the sales, health, and food service fields.

#4. Type of Organization Needed. This question added other possible methods of providing vocational training opportunities to the traditional local school approach. A preponderance of those answering this question (80%) indicated their awareness for the need of a cooperative effort to provide a comprehensive vocational program. Community College was mentioned as an appropriate vocational training institution by 8 respondents.

#5. Financing. A number of respondents felt that the local school district and the intermediate school district both have a responsibility in the area of vocational education. The intermediate district, respondents tended to agree, should pay for buildings and equipment while the local schools should pay for the operational costs through tuition payments. However, about 30 percent said the intermediate school district should cover all costs. Other financing methods listed were State and Federal, and tuition.

#6. Utilization by Adults. Almost everyone agreed that these same facilities should be used for more than just high school students.

#7 and 8. Administration. Opinion was about evenly divided regarding whether the local school district or the Community College should administer the area high school vocational program and facilities. Other opinions listed a combination of local and Community College and special boards. 57 percent of respondents felt that the Community College should administer these facilities when used for adult and out-of-school youth. Also suggested was joint local and community college administration, or administration by the Intermediate Board and a special group.

#9. Liaison. Almost everyone felt that a close liaison should be maintained between the high schools and the Community College to assure continuity of programs.

Summary. Although a low return of replies from parents was received, the majority of those that did reply felt that more vocational courses were needed at the high school level as well as more vocational guidance in order to prepare students for today's changing jobs. They also supported the position that a cooperative effort should be made to provide and operate area centers in order to offer these better vocational courses. Most felt that a close liaison should be maintained between the high school and Community College to insure continuity of programs.

CHAPTER VII

EMPLOYERS EXPRESS THEIR VIEWS

Tri-County Occupational Survey. The Lansing Community College undertook the task of contacting both by mail and personally some 5,206 different employers within a 30 mile radius of Lansing. The Tri-County Regional Planning Commission and the United Community Chest were most helpful in providing current names and addresses of business places. In addition, a number of interested persons from small communities assisted in compiling business addresses in their areas.

The response to the detailed questionnaire was good and over 50,000 jobs were reported. Although the overall return was 42 percent (2195 respondents), the places of business employing twenty-five persons or more reported at the rate of 75 percent.

Employer responses indicated that the number of employed persons increased 54.6% from 1960 to 1964 in the case of jobs that normally require high school training for entry. Jobs normally requiring some formal education beyond high school, but less than a 4-year college degree, increased by 61.6% during the same period. The percent of increase in both cases indicates a substantial growth in the number of jobs available and is in keeping with national trends with technical jobs increasing at a faster rate.

Significant trends are shown by the fact that certain high employment areas, that could be filled by trained high school graduates, were expected to have a sizable increase in the number of workers by 1970 and even now those same workers are in short supply. Some examples of these types of jobs are as follows:

Industrial Jobs

1. Auto mechanics
2. Carpenters
3. Machine operators
4. Machinists
5. Millwrights
6. Sheet metal workers
7. Welders

Sales and Service Jobs

1. Nurses Aides
2. Sales People

Business Office Jobs

1. Office machine operators
2. Stenographers

Many other job categories employing relatively fewer numbers were mentioned as being in scarce supply at the present time. Some examples:

Industrial Jobs

1. Air conditioning, heating, and refrigeration mechanics
2. Electricians, linemen and wiremen
3. Electronic repairman
4. Plastics workers
5. Plumbers
6. Roofers

Sales and Service Jobs

1. Cooks
2. Florists
3. Laundry and dry cleaning workers
4. Service station attendants
5. Waiters and waitresses

Agricultural Jobs

1. Nursery workers

The results of an Agricultural Occupations survey conducted in Michigan in 1965 (4) indicated an increase in non-farm agricultural workers in the next five years of 24.5 percent. Over half of this increase was expected to be in the agricultural service occupations. The survey revealed that a preponderance of respondents listed "farm background" as a preference for employees.

The answers in part of the questionnaire provide some insight into the needs of employers for technically trained manpower. In many instances the Lansing Community College was suggested as the appropriate agency to provide the necessary technical training.

Some examples of technical areas where large percentages of growth in numbers employed from 1960 to 1964 has taken place and where the majority of employers indicated further growth by 1970 are as follows:

Industrial Jobs

1. Architectural
2. Civil and Highway technicians
3. Computer technicians
4. Drafting and design technicians
5. Foreman and first line supervisors
6. Mechanical technicians
7. Printing
8. Truck mechanics

Business Jobs

1. Advertising
2. Business data processing
3. Business Machine operators
4. Sales people

Health Occupations

Workers in every aspect of health occupations were listed as in scarce supply by over half of the respondents. An exception was ward clerks but even here there was an expected increase in the number expected to be employed over the next five years. The Health field is one of the most rapidly expanding fields of employment, and it is predicted that many new jobs will be emerging, particularly as Medicare gets into full operation.

In the section dealing with employment practices of hiring drop-outs, unskilled labor was mentioned as the level that most employers indicated they employed "drop-outs" as a common practice. Only about 50 percent of the employers would employ "drop-outs" under any circumstances. In contrast high school graduates were employed as common practice in all the entry job classifications by about 40 percent of responding employers except in highly skilled jobs.

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(4) Survey of Agricultural Occupations in Michigan, Agricultural conference and Michigan Department of Education.

Reacting to adequacy of training opportunities for students only 16.5 percent of employer respondents felt that the existing public educational facilities meet their businesses' occupational and training needs. Almost an equal number of the employers answered that vocational programs should be expanded at the high school or the Community College. Twice as many answered that both should expand their occupational offerings.

A number of employers indicated that they would like to help in any future planning for improved vocational education at the high school and post-high school level.

Only a very few employers reported that they offered any formal training classes in their business for up-grading their employees.

The following comments are representative of the several notations from employers:

"We have employed a number of young non-high school graduates, and have found they can perform satisfactorily in labor and semi-skilled jobs."

"We have found young non-high school graduates unsatisfactory for the following reasons: It seems to be quite difficult to teach them jobs which require a certain amount of skill. They lack work discipline."

In addition to the before mentioned comments the responses stressed that while some were quite well prepared to enter work and others were not, all needed additional on-the-job training in order to be of real value to the employer. Nearly everyone also indicated a need for improved job attitude on the part of the new worker.

Summary. The Lansing area has experienced a large growth in employment from 1960 to 1964 and indications are that this growth will continue. Although almost every job category showed an increase, some jobs showed a larger percentage of growth than others. Among the list of jobs increasing there are a sizable number that employers say can be filled by high school graduates with the proper training. This information is significant in planning new training programs for high school students. The jobs that require post-high school training also showed a large increase in the numbers employed. An examination of the percent of growth for these kinds of jobs shows further training needs at the community college level.

The high school drop-out faces greater difficulty in acquiring a job as half of the employers do not hire such a person, as common practice, even to fill unskilled jobs.

There was very little feeling among employers that the existing educational facilities in the area fully met their occupational and training needs. More training is indicated for entry type jobs and could be done at the high school level and the post-high school levels.

Only a very small number of employers said that their organization had formal training programs or classes, and a number of them felt that the Community College should help in this up-grading type of education.

CHAPTER VIII

SUMMARIZING

The fifteen high school districts and the Community College district described in this study do not have insolvable vocational problems any more than those elsewhere in the state of Michigan. Certain special problems do, however, need attention in order to avoid a costly waste of manpower in the form of under employment and unemployment. Together, well trained manpower and adequate employment opportunities contribute to the economic climate of the local area as well as the state and nation.

The population in the area is growing faster than that of the state as a whole. However, certain school districts are growing at a much faster rate than others with the Community College enrollment growing at an extremely fast rate. A problem arises when the valuation growth is plotted with the school population growth. Most of the school districts show a declining per pupil valuation because student population is rising faster than district valuation. The problem is how to finance additional vocational offerings.

From the answers given by the 1963 high school graduates, a few significant things stand out. Although 63 percent of the respondents said they had taken a college prep program in high school, only about 41 percent were still enrolled in either full time or part time college work. Of those who indicated that they had taken vocational courses in high school, 60 percent felt that their present work was related. A little over half of the graduates indicated there were not enough vocational offerings available in their high school, and three out of four would have liked additional vocational counseling. Finally, they responded in about a two-to-one ratio that they plan to take additional training.

The parents of these graduates, by a large majority, felt that the high schools were not adequately helping to prepare students to select a vocation, and they blamed it on insufficient number of vocational classes and inadequate vocational counseling. Almost 80 percent indicated an awareness of the need for cooperative action in order to provide a truly comprehensive vocational program. In addition these parents felt that the cost should be shared and the offerings made available to groups other than the regular high school enrollee. Finally they believed that it was important to maintain a close liaison between the high school and the Community College to assure continuity of programs.

There has been over 50% growth in employment in the Lansing area from 1960 to 1964 in entry level jobs open to prepared high school and post-high school students. This increase is not expected to continue at this rate. Experts expect an overall growth of about 2 percent per year through 1980. As might be expected certain kinds of jobs increased more rapidly than others and this differentiation will continue. There is need for trained people now and this need will not only continue but accelerate. Opportunities for the unskilled will continue to decline in the years ahead. Many employers reported that more training should be available to people to prepare them for entry level jobs and to allow employed people to upgrade themselves. Very few companies had any formal training for their employees.

True opportunities for vocational training, in many skill areas, at the high school level are not available in most school districts, and yet the business people in the area indicated that over 81 percent of their jobs could be filled by properly trained high school students. It is felt that training for about

30 basic jobs could be feasibly offered at the high school level based upon present and future employment needs and the availability of student enrollees. The Community College is in the technical training field and finding more and more demand from employers for this kind of training. Almost 30 basic courses, both vocational and technical, could be provided at the post high school level for entry job training.

The Study has shown that only Lansing's school district has breadth in their vocational offerings and even here more offerings would appear to be desirable. Many of the other school districts within the area of this Study provide only vocational training in General Business, some in Agriculture, and in a few instances, Cooperative Training. The rest of their offerings are considered as pre-vocational or exploratory in nature and scope. Even at this level breadth of offerings is lacking, being confined to the traditional rather than newer fields. Most high school students do not have the opportunity to learn about or to train for today's (much less tomorrow's) employment needs. On the favorable side at the post-high school level, the Lansing Community College has moved decisively into the area of vocational/technical education. High School graduates with a good vocational background are preferred as students in the technical courses. The Community College also helps industry and business by offering up-grading type courses for those presently employed. They also offer numerous retraining programs in cooperation with the Michigan Employment Security Commission.

The area encompassed by this Study has a great many more people (percentage-wise) employed in government work than either the state or the nation as a whole. The area's manufacturing concerns employ a somewhat smaller percentage than the state as a whole. The rest of the industrial breakdown in the area is quite similar to that of the state. Actual farm employment continues to drop, but an increase is predicted for other agricultural workers. Projected areas of employment and kinds of jobs for Michigan show some interesting changes reflecting economic and technological influences. While some jobs do not show a large rate of annual growth, the annual replacement rate based upon the large numbers presently employed calls for a continued need for training. While present unemployment is low, plans must be made for the future to assure continued full employment. It may safely be predicted that industry will increasingly demand that workers possess needed skills.

The research staff from the Battelle Institute observe that a change is taking place in the manpower picture in Michigan that has great implications for future job seekers. They say that employers are going to become more and more insistent that the people they employ possess the type of skills needed. There are indications that this trend has begun. Employers have always preferred workers possessing these skills but because of recent labor shortage they have had to settle for less. This is the trend that is changing. The implications are great when this employment trend is coupled with the ever increasing number of teenagers entering the labor market.

All the committee and study findings point to the validity of the idea that secondary school districts must cooperatively combine efforts in order to offer truly comprehensive vocational programs for their high school students. The Community College commitment to vocational and technical education must also be expanded. In addition, correlation and coordination of the various course offerings at the high school and the Community College level should be strengthened to insure needed continuity. Costs of future facilities and operations must also be considered in future planning to provide maximum use with the lowest cost for both secondary and post-secondary offerings.

Means must be found to assure all individuals a chance to earn a living commensurate with their abilities and to continue to allow our economy to move ahead. All committee findings point to the validity of the recommendations that school districts cooperatively establish Centers for offering truly comprehensive vocational programs for high school students. These same facilities should be available for use by adults and out-of-school youth for vocational training purposes under the direction of the Community College in the evenings. Such an arrangement would provide adequate facilities for basic vocational training and complement the presently expanding technical training facilities at the Community College.

Implementation of the recommendations contained in this study would make possible a truly full range of training opportunities for all of the people, youth and adults, in the Study area.

APPENDIX A

Ingham Intermediate Area Vocational Study

Under the Auspices of

Ingham Intermediate Board of Education

147 W. MAPLE STREET, MASON, MICHIGAN
TELEPHONE 677-3481

CHARLOTTE SCHOOL DISTRICT
C. Muma, Supt.

DANSVILLE SCHOOL DISTRICT
S. Briggs, Supt.

EAST LANSING SCHOOL DISTRICT
C. Young, Supt.

GRAND LEDGE SCHOOL DISTRICT
K. T. Beagle, Supt.

HASLETT SCHOOL DISTRICT
F. Jappinga, Supt.

HOLT SCHOOL DISTRICT
M. Pernert, Supt.

LANSING COMMUNITY COLLEGE
P. J. Gannon, Pres.

LANSING ROMAN CATHOLIC DIOCESE
Rev. W. F. Meyers, Supt.

LANSING SCHOOL DISTRICT
W. R. Manning, Supt.

LESLIE SCHOOL DISTRICT
C. Bode, Supt.

MASON SCHOOL DISTRICT
M. C. Nauts, Supt.

OKEMOS SCHOOL DISTRICT
G. H. Richards, Supt.

POTTERVILLE SCHOOL DISTRICT
H. A. Kuehn, Supt.

STOCKBRIDGE SCHOOL DISTRICT
J. Batchelor, Supt.

WAVERLY SCHOOL DISTRICT
E. B. Olds, Supt.

WEBBERVILLE SCHOOL DISTRICT
W. Chadderdon, Supt.

WILLIAMSTON SCHOOL DISTRICT
R. E. Fitch, Supt.

EATON INTERMEDIATE SCHOOL DISTRICT
W. H. Anderson, Supt.

INGHAM INTERMEDIATE SCHOOL DISTRICT
A. J. Stroud, Supt.

Dear Former High School Student:

All of the high schools in the area have been asked to contact the members of their senior class of 1963 in order to assist in gathering data to be used in evaluating and up-dating their school's vocational education programs. Even though you may not have taken any particular vocational courses, there are still a number of answers you can provide that would be helpful. We are interested in knowing about your employment experience and/or further training since leaving high school. Area Businesses and Industries are also being contacted to determine what they expect in the way of beginning workers as well as promotion requirements. Together, your answers and their's will provide a basis for training programs in the future.

Will you please take a few minutes and answer the enclosed questionnaire. Place your answers on the enclosed post card and drop it in the mail. Your answers will be confidential, and you will not be identified.

Thank you for your help in this <u>most important matter</u>.

Sincerely yours,

Robert L. Slocum
Study Director

RLS:hb
Enc.

P.S. You may also receive a questionnaire from the Lansing Community College. Please answer that too because it is not a duplicate.

INGHAM INTERMEDIATE AREA VOCATIONAL STUDY

Post High School Follow-up Questionnaire

Mark your answers to the following questions on the enclosed answer card and drop in the mail at your earliest convenience. Thank you.

1. What are you doing presently: Check all that apply.
   - 1a. Working Full-time (job title or description)
   - 1b. Working Part-time
   - 1c. Military
   - 1d. Housewife
   - 1e. Education Full-time
   - 1f. Education Part-time
   - 1g. Unemployed

2. If you are now working, is this the field of work in which you want to continue?
   - 2a. Yes
   - 2b. No
   - 2c. Undecided

3. Check program of study you followed while in high school.
   - 3a. Agriculture
   - 3b. Business-Distributive
   - 3c. College Prep
   - 3d. Vocational-Technical
   - 3e. Home Economics
   - 3f. General Combination-Specify

4. Is your present work related to any vocational courses you took in high school?
   - 4a. Yes
   - 4b. No
   - 4c. No vocational courses taken

5. What type of further education or training have you received since High School? Check all that apply.
   - 5a. On-the-Job Training
   - 5b. Apprenticeship
   - 5c. Trade or Technical Schools
   - 5d. Business College
   - 5e. Adult Education courses at H.S.
   - 5f. Correspondence Courses
   - 5g. Military Service School
   - 5h. College or University

6. If now engaged in advanced educational training, or having completed your advanced education, do you feel you were prepared for college as a result of your high school experience?
   - 6a. Yes
   - 6b. No

7. If you entered full time employment (exceptions, summer type jobs) directly from high school, do you feel you were prepared as a result of your high school experience?
   - 7a. Yes
   - 7b. No

8. Do you feel that your high school had a sufficient number of vocational courses available for the work-bound student?
   - 8a. Yes
   - 8b. No (Specify kind needed)
   - 8c. No opinion

9. Would you have taken more of these vocational courses in high school had they been offered?
   - 9a. Yes
   - 9b. No
   - 9c. Don't know

10. How did you obtain your first full time job after high school?
   - 10a. Michigan Employment Security Comm.
   - 10b. Friend
   - 10c. Relative
   - 10d. On your own
   - 10e. School
   - 10f. Other means

11. If you had made a vocational choice while in high school, have you changed your mind?
   - 11a. Yes
   - 11b. No
   - 11c. No choice at that time

12. Did you receive any vocational counseling or advice while in high school?
   - 12a. Yes From Whom: 12b. Counselor 12c. Vocational teacher 12d. Regular classroom teacher 12e. Principal
   - 12f. No

13. Would you have liked more vocational counseling regarding job opportunities and the type of training needed for entry?
    13a. Yes 13b. No 13c. No opinion

14. If you were a student just entering high school, what type of program would you now take?
    14a. Agriculture
    14b. Business-Distributive
    14c. College Prep
    14d. Vocational-Technical
    14e. Home Economics
    14f. General Combination (Specify)

15. Are you planning to take additional training?
    15a. Yes (Specify) 15b. No

STUDENT QUESTIONNAIRE RETURN
POST CARD

Answers to questionnaire — please check.

1. a. .....
   b..... c..... d..... e..... f..... g.....
2. a..... b.....
3. a..... b..... c..... d..... e.....
   f. .....
4. a..... b..... c.....
5. a..... b..... c..... d..... e..... f.....
   g..... h.....
6. a..... b.....
7. a..... b.....
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9. a..... b..... c.....
10. a..... b..... c..... d..... e..... f.....
11. a..... b..... c.....
12. a..... b..... c..... d..... e..... f.....
13. a..... b..... c.....
14. a..... b..... c..... d..... e.....
    f.....
15. a..... b.....

PARENT OPINIONNAIRE RETURN
POST CARD

Parent Opinionnaire

1. a..... b..... c..... d..... e..... f.....
2. a..... b..... c.....
3. a..... f..... k.....
   b..... g..... l.....
   c..... h..... m.....
   d..... i.....
   e..... j.....
   n .....
   o .....
4. a..... b..... c.....
   d .....
5. a..... b..... c.....
   d .....
6. a..... b.....
7. a..... b.....
   c .....
8. a..... b.....
   c .....
9. a..... b.....

Ingham Intermediate Area Vocational Study

Under the Auspices of

Ingham Intermediate Board of Education

147 W. MAPLE STREET, MASON, MICHIGAN
TELEPHONE 677-3481

CHARLOTTE SCHOOL DISTRICT
C. Muma, Supt.

DANSVILLE SCHOOL DISTRICT
S. Briggs, Supt.

EAST LANSING SCHOOL DISTRICT
C. Young, Supt.

GRAND LEDGE SCHOOL DISTRICT
K. T. Beagle, Supt.

HASLETT SCHOOL DISTRICT
F. Jappinga, Supt.

HOLT SCHOOL DISTRICT
M. Pernert, Supt.

LANSING COMMUNITY COLLEGE
P. J. Gannon, Pres.

LANSING ROMAN CATHOLIC DIOCESE
Rev. W. F. Meyers, Supt.

LANSING SCHOOL DISTRICT
W. R. Manning, Supt.

LESLIE SCHOOL DISTRICT
C. Bode, Supt.

MASON SCHOOL DISTRICT
M. C. Nauts, Supt.

OKEMOS SCHOOL DISTRICT
G. H. Richards, Supt.

POTTERVILLE SCHOOL DISTRICT
H. A. Kuehn, Supt.

STOCKBRIDGE SCHOOL DISTRICT
J. Batchelor, Supt.

WAVERLY SCHOOL DISTRICT
E. B. Olds, Supt.

WEBBERVILLE SCHOOL DISTRICT
W. Chadderdon, Supt.

WILLIAMSTON SCHOOL DISTRICT
R. E. Fitch, Supt.

EATON INTERMEDIATE SCHOOL DISTRICT
W. H. Anderson, Supt.

INGHAM INTERMEDIATE SCHOOL DISTRICT
A. J. Stroud, Supt.

Dear Parent:

We need your help. Would you please take a few minutes and answer the enclosed opinionnaire so that we might have the benefit of your thinking on a matter of concern to students in your school district.

All of this information is being gathered, along with information from business people, with the idea of evaluating the present vocational offerings against the needs of today's job market and to determine what steps should be taken in order to provide adequate vocational education for all regardless of the kind of work they want to do.

This is an area study being conducted by all of the school districts jointly in conjunction with the State Department of Vocational Education. Your answers will be confidential and you will not be identified. Thank you for your help in this important matter.

Sincerely yours,

Robert L. Slocum
Director

RLS:hb

INGHAM INTERMEDIATE VOCATIONAL STUDY
PARENT OPINIONNAIRE

Mark your answers to the following questions on the enclosed card and drop in the mail at your earliest convenience. Thank you.

1. In your opinion, are high school students adequately prepared by the schools to select a vocation? (Check all that apply.)

1a. Good	Why:	1d.	Guidance and Counseling inadequate
1b. Fair		1e.	Insufficient vocational classes
1c. Poor		1f.	No time to take vocational classes

2. In your opinion, is there a need for additional vocational classes on the 11th and 12th grade levels?

2a. Yes, many 2b. Yes, a few 2c. No

3. If additional classes were to be offered, what kinds would you think are needed? (Check any number)

3a. Machine Tool	3f. Appliance Repair	3k. Sales
3b. Building Trades	3g. Welding	3l. Medical Technology
3c. Automotive	3h. Electronics	3m. Food Service
3d. Graphic Arts (Printing)	3i. Drafting	3n. Other (Specify)
3e. Agriculture	3j. Beautician Training	3o. Other (Specify)

4. In order to provide equal vocational training, numbers of students interested in the training and costs of building, equipment and staff need to be considered. Therefore: Should each high school provide exactly the same training, should some be designated as Area Centers where a complete high school level vocational program could be offered and nearby high schools could send interested students on a half day basis, or should there be just one central Area School and all high schools would send their interested students?
   4a. Provide equal vocational offerings in each high school
   4b. Provide complete vocational offerings in some high schools and allow all students to attend on a special basis
   4c. One central Area Vocational School for all
   4d. Other methods (Specify)

5. What financial method would be most suitable for building, equipping and operating these extra vocational programs?
   5a. Local school district financing
   5b. County-wide school district financing
   5c. County-wide financing for building and equipment and local district financing for tuition costs of their own students
   5d. Other methods (Specify)

6. Should these facilities be also used for out-of-school youths and adults when not in use by high school students?

6a. Yes 6b. No

7. In your opinion, should these special vocational facilities be administered by the local school district or the community college while serving high school students?

7a. Local administration 7b. Community College administration 7c. Other-Specify

8. In your opinion, should these same facilities be administered by the local school district or the Community College while serving out-of-school youth and adults?

8a. Local administration 8b. Community College administration 8c. Other-Specify

9. In your opinion, should there be close liaison between high schools and the Community College in order to provide opportunity for those vocational students who wish to continue in special vocational/technical fields?

9a. Yes 9b. No

APPENDIX B

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING, MICHIGAN 48903

GEORGE ROMNEY
GOVERNOR

August 6, 1965

Dear Employer:

The Lansing Community College is conducting a job survey under the auspices of the Ingham Intermediate Board of Education, known as the Tri-County Survey.

It is the endeavor of those involved to evaluate the present and future manpower requirements of the various businesses and industries located in the area of Ingham, Eaton, and Clinton Counties. With this information they hope to determine whether or not the high school and post-high school units are adequately preparing young people for initial employment or up-grading.

Your cooperation in the preparation of this survey will be greatly appreciated and will serve as a useful tool in planning vocational training programs.

Sincerely,

George Romney

MICHIGAN
WATER WONDERLAND

PAUL H. TODD, JR.
3D DISTRICT, MICHIGAN

COMMITTEE:
BANKING AND CURRENCY

DISTRICT OFFICES:
363 N. ROSE STREET
KALAMAZOO, MICHIGAN

FEDERAL BUILDING
BATTLE CREEK MICHIGAN

Congress of the United States
House of Representatives
Washington, D.C. 20515

October 25, 1965

YOUR COOPERATION IS NEEDED . . .

. . . . .to help with the Tri-County Survey of employment needs in our area of Ingham, Eaton, and Clinton Counties.

As you may be aware, a massive research program is underway to evaluate the future manpower requirements of the various businesses and industries of the Tri-County area. The purpose of this particular survey, initiated under the direction of Lansing Community College as part of a comprehensive area vocational study being conducted by the Ingham County Intermediate Board of Education, is to determine which vocational and technical job opportunities will be available in the future so that our school system may be adjusted to provide more and better trained personnel to fulfill such employment needs.

I hope that you will be willing to participate in this endeavor which will be of special interest to you as an employer, since the improvement in the quality of training for today's youth . . . your future employees . . . is the goal of the program.

Sincerely,

Paul H. Todd, Jr., M. C.

CHARLES E. CHAMBERLAIN
SIXTH DISTRICT, MICHIGAN

COMMITTEES:
ARMED SERVICES
HOUSE ADMINISTRATION

Congress of the United States
House of Representatives
Washington, D. C.

July 16, 1965

YOUR COOPERATION IS NEEDED . . .

. . . to help with the Tri-County Survey of employment needs in our area of Ingham, Eaton, and Clinton Counties.

As you may be aware, a massive research program is now underway to evaluate the future manpower requirements of the various businesses and industries of the Tri-County area. The purpose of this particular survey, initiated under the direction of Lansing Community College as part of a comprehensive area vocational study being conducted by the Ingham County Intermediate Board of Education, is to determine which vocational and technical job opportunities will be available in the future so that our school system may be adjusted to provide more and better trained personnel to fulfill such employment needs.

I do hope that you will be willing to participate in this endeavor which should be of special interest to you as an employer, since the improvement in the quality of training for today's youth . . . your future employees . . . is the goal of the program.

Sincerely yours,

Charles E. Chamberlain

Serial Number _____

CONFIDENTIAL

TRI-COUNTY OCCUPATIONAL SURVEY

Introduction: The purpose of this questionnaire is to gather information and opinions from business, governmental, industrial, and professional employers to use in improving educational programs for youth and adults in The Tri-County Area. Please help by carefully completing the questionnaire. The results will be used for statistical analysis and your organization will not be identified in any published reports.

Special Note: Study the heading of each section. If it is applicable to your organization, please check or fill in the information; if not, proceed to the next section. Please keep in mind that only full-time employment should be considered.

PART I - General Information

1. Organization _____ Telephone _____
2. Street Address _____ City _____
3. Mailing Address (If Different) _____
4. Name of Person Reporting _____ Title _____
5. School District _____
6. Please check the space opposite the description which best identifies the activities of your business. Check more than one if needed.

____1. Agricultural Service (Farm Equip. dealers, etc.)

____2. Advertising (Radio, newspaper, etc.)

____3. Auto Service (Dealers, etc.)

____4. Bank and Finance (Loan, credit, etc.)

____5. Construction (Contractors)

____6. Education (Private schools, etc.)

____7. Entertainment and Recreation (Orchestras, etc.)

____8. Food, Dairy, Drink (Retail) (Super Markets, etc.)

____9. Retail--other than food, dairy and drink (Retail Merchants)

____10. Health, Hospital, Medical, Dental (Physicians, etc.)

____11. Professional--Other than medical and dental (Lawyers, etc.)

____12. Durable Manufacturing (Hard goods)

____13. Non-Durable Manufacturing (Soft goods)

____14. Government-Federal, State and Local (Mayors Off., etc.)

____15. Hotel and Motel (Inns)

____16. Insurance (Mutuals, etc.)

____17. Real Estate (Brokers)

____18. Service (other than auto) (Appliance shops, etc.)

____19. Transportation (Travel Bureaus, railroads, trucking, etc.)

____20. Utilities (Water and lights, etc.)

____21. Wholesaling (All products)

Other (write in below)

____22. _____

____23. _____

PART II
Jobs That Do Not Require Formal, In-School Education Beyond High School

Please supply the information requested, relative to your establishment, for the skilled, semi-skilled, and unskilled jobs listed below, for which high school level education and training (plus work experience) are considered sufficient and desirable. If formal education and training beyond high school are essential or desired, do not make entries here, but see PART III, following. Be sure all of the sections -A,B, C, D, E, are considered. (Pages 2-4).

Type Of Job (1)	Average No. On Payroll		Expected Average Annual Rate Of Employment 1965-70 (check one)			Local Supply Of Qualified Employees (Check one)		
	(2) 1960	(3) 1964	(4) In-crease	(5) Same	(6) De-crease	(7) Scarce	(8) Ade-quate	(9) Sur-plus
A. Industrial Jobs								
1. Air cond., refrig. and/or heating mechanic								
2. Appliance repairman								
3. Auto mechanic								
4. Assembly line worker								
5. Aviation mechanic								
6. Boat builder								
7. Cabinet maker								
8. Carpenter								
9. Chemical								
10. Electrician (wireman)								
11. Electrician (lineman)								
12. Electronic repairman								
13. Explosives worker								
14. Foundry worker								
15. Machine operator								
16. Machinist								
17. Mechanic-general								
18. Meat cutter								
19. Millwright								
20. Miner								
21. Painter								
22. Plasterer								
23. Plastics worker								
24. Plumber								
25. Printer								
26. Railway worker								
27. Roofer								
28. Sheet metal worker								
29. Stationary operator								
30. Steel worker								
31. Truck driver								
32. Welder & flame cutter								
33. Heavy equip. operator								
34. Unskilled laborer								
35. Other (describe below)								
36.								

PART II (Continued)

Type Of Job (1)	Average No. On Payroll		Expected Average Annual Employment 1965-1970 (check one)			Local Supply Of Qualified Employees (check one)		
	(2) 1960	(3) 1964	(4) Increase	(5) Same	(6) Decrease	(7) Scarce	(8) Adequate	(9) Surplus
B. Sales and Service Jobs								
1. Barber								
2. Bartender								
3. Beautician								
4. Bus boy								
5. Bus driver								
6. Cashier (retail store)								
7. Cook or chef								
8. Fireman								
9. Florist								
10. Gardener-yard care								
11. Hospital attendant								
12. Janitor								
13. Laborer								
14. Laundry and dry cleaning worker								
15. Law enforcement officer								
16. Marine service worker								
17. Meter reader								
18. Nurse's aid								
19. Plant security guard								
20. Postal worker								
21. Route salesman								
22. Salesperson (retail)								
23. Seamstress								
24. Service station attendant								
25. Shoe repairman								
26. Stock boy								
27. Tailor								
28. Waiter or Waitress								
29. Water treatment or sanitation worker								
30. Other (describe below)								
31.								
32.								
33.								

PART II (Continued)

Type Of Job (1)	Average No. On Payroll (2) 1960	(3) 1964	Expected Annual Average Employment 1965-1970 (check one) (4) Increase	(5) Same	(6) Decrease	Local Supply Of Qualified Employees (check one) (7) Scarce	(8) Adequate	(9) Surplus
C. Business Office Jobs								
1. Bank clerk or teller								
2. Bookkeeper								
3. Clerk-typist								
4. Dispatcher								
5. General office worker								
6. Office machine operator								
7. Stenographer								
8. Other (describe below)								
9.								
10.								
11.								
D. Agricultural Jobs								
1. Farm worker								
2. Nursery worker								
3. Packer or shipper								
4. Other (describe below)								
5.								
6.								
7.								
E. Miscellaneous Jobs Not requiring post-high school education (describe below) 1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

PART III
Jobs For People With Formal Education
Beyond High School, But Less Than 4-Year College Degree

Please supply the information requested from your organization for the kinds of semi-professional and technical jobs listed below for which special courses of one or two years of post-high school education are ordinarily considered desirable or essential. Be sure to consider all the sections - A, B, C, D, E, (Pages 5-7).

Type Of Job (1)	Average No. On Payroll		Expected Annual Average Employment 1965-1970 (check one)			Local Supply Of Qualified Employees (check one)			Should LCC Provide Training (check)
	(2) 1960	(3) 1964	(4) In-crease	(5) Same	(6) De-crease	(7) Scarce	(8) Ade-quate	(9) Surplus	(10)
A. Industrial Jobs									
1. Air cond., refrig. and/or heating tech.									
2. Airline mechanic									
3. Airline pilot									
4. Airplane stewardess									
5. Architectural									
6. Automotive tech.									
7. Avionics tech.									
8. Chemical tech.									
9. Civil & Highway Tech.									
10. Community Devel. tech.									
11. Computer tech.									
12. Drafting & design tech.									
13. Electrical tech.									
14. Electronic tech.									
15. Fire science tech.									
16. Foreman-first line supervision									
17. Industrial tech.									
18. Instrumentation technician									
19. Mechanical tech.									
20. Metallurgical tech.									
21. Printing									
22. Quantity control tech.									
23. Sanitary tech.									
24. Structure tech.									
25. Truck driver train.									
26. Truck mechanic									
27. Welding									
B. Business Jobs									
1. Accountant									
2. Advertising									
3. Business data Processing									

	Average No. On Payroll		Expected Annual Average Employment 1965-1970 (check one)			Local Supply Of Qualified Employees (check one)			Should LCC Provide Training? (check)
	(2) 1960	(3) 1964	(4) In-crease	(5) Same	(6) De-crease	(7) Scarce	(8) Ade-quate	(9) Surplus	(10)
B. Business Jobs (con'd)									
4. Business machine operator									
5. Business management									
6. Business Pilot									
7. Executive assist.									
8. Merchandizing									
9. Outside salesman									
10. Real-Estate, in-surance and/or finance									
11. Retail management and buying									
12. Sales manager									
13. Secretary									
14. Transportation & Traffic Management									
15. Other (Describe below)									
16.									
17.									
18.									
19.									
C. Health, Hospital and Medical jobs									
1. Dental Assistant									
2. Bio-medical Electronics Tech.									
3. Dental Hygienist									
4. Inhalation Therapy									
5. Medical Artist									
6. Medical Emergency Tech.									
7. Medical Assistant									
8. Medical Record Tech.									
9. Medical Secretary									
10. Practical Nurse									
11. Nurse, Registered									
12. Nurse, Assoc. Degree									
13. Occ. Therapy Asst.									
14. Operating Room Asst.									
15. Opthalmic Dispenser									
16. Other (Describe below)									
17.									
18.									
19.									
20.									

PART III (Continued)

	Average No. On Payroll		Expected Annual Average Employment 1965-1970 (check one)			Local Supply Of Qualified Employees (check one)			Should LCC Provide Training? (check)
	(2) 1960	(3) 1964	(4) Increase	(5) Same	(6) Decrease	(7) Scarce	(8) Adequate	(9) Surplus	(10)
C. Health, Hospital and Medical Jobs (con'd) 15. Physical Therapy Asst.									
16. Pyschiatric Tech.									
17. Ward clerk									
18. X-ray tech.									
19. Other (Describe below) 20.									
21.									
22.									
23.									
D. Agriculture jobs 1. Animal & Poultry									
2. Forestry									
3. Other (Describe below) 4.									
5.									
6.									
7.									
E. Public Service Jobs 1. Police methods tech.									
2. Library tech.									
3. Other (Describe below) 4.									
5.									
6.									
7.									

PART IV

Employer Opinion and Practice

A. With respect to the requirements of your organization for entry employment, in what job categories do you employ young persons who have "dropped out" without finishing high school? Please put check marks under the headings which best describe your establishment's operating policies.

	Frequency of Employment		
	Common Practice	Infrequently	Almost Never
1. Highly skilled jobs			
2. Business office jobs			
3. Sales jobs			
4. Apprenticeship for the highly-skilled trades and crafts			
5. Semi-skilled jobs (assembly line and production workers, machine operators)			
6. Service jobs			
7. Unskilled labor			

B. With respect to the requirements of your organization for entry employment, in what job categories do you employ young persons who have just graduated from high school? Please put check marks under the headings which best describe your establishment's operating policy.

ENTRY JOB CATEGORY	Frequency of Employment		
	Common Practice	Infre-quently	Almost Never
1. Highly skilled jobs			
2. Business office jobs			
3. Sales jobs			
4. Apprenticeship for the highly-skilled trades and crafts			
5. Semi-skilled jobs (assembly line and production workers, machine operators)			
6. Service jobs			
7. Unskilled labor			

C. Recalling the employing practices of your organization for the past five-year period, which one of the following statements best describes your evaluation of young persons who have applied for entry jobs with your organization? Please check one or more.

_____(1) We have employed a number of young non-high school graduates, and we have found they can perform satisfactorily in the following jobs:

_____

_____

_____(2) We have employed a number of young non-high school graduates during the past five years, but find they need a considerable amount of additional education and/or training before they can perform satisfactorily.

_____(3) We have found young non-high school graduates unsatisfactory for the following reasons: _____

_____

_____(4) Most young high school graduates who apply seem reasonably well prepared for entry employment and we have employed them as openings have occurred.

_____(5) We have employed a number of young high school graduates, but find they need a considerable amount of additional education and/or training before they can perform satisfactorily.

_____(6) We have found it inadvisable to employ young high school graduates, except for unskilled jobs.

_____(7) The nature of most of the entry jobs in our organization is such that young high school graduates are virtually unemployable because of a lack of occupational education and training.

_____(8) Use this space to amplify: _____

_____

_____

_____

D. To what extent do existing educational facilities in the Tri-County area meet the occupational and training needs of your company or establishment?

_____(1) Very well _____(2) Fairly well _____(3) Poorly

E. If you think occupational education and training in the area needs improvement, which of the following developments would you support?

_____(1) Expansion of vocational education programs in the existing Tri-County high schools.

_____(2) Expansion of the 2-year Lansing Community College vocational education programs.

_____(3) Both 1 and 2.

F. Would your organization be interested in participating in discussions for further study of plans for improving occupational education and training at high school and post-high school levels in the Tri-County area?

_____(1) Yes _____(2) No _____(3) Undecided

G. Is there a formal "in class" training program in your organization?

_____(1) None

_____(2) Apprenticeship

_____(3) Supervisory training

_____(4) Technician training

_____(5) Executive development

_____(6) Plant management

_____(7) Job upgrading

Other (Describe below)

_____(8) _____

_____(9) _____

H. Do you hire trained handicapped persons? _____(1) Yes _____(2) No

I. Please check below your desire for a complimentary copy of the survey analysis.

_____(1) Yes _____(2) No

General Comments

Kindly include any comments which you, or other officials of your firm, may wish to make about the improvement of education and training opportunities in the Tri-County area. Include in your suggestions the kind and level of education programs which should be provided. Your comments will be of great value to the Tri-County Occupational Committee. Please use reverse side for additional comments.

PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED.

THANK YOU FOR YOUR INTEREST AND COOPERATION!

Tri-County Survey Committee

29

VT 002 104
Emerson, Lynn A.
Occupational and Vocational-Technical Education in the United States. (Rhode Island Vocational-Technical Education Development Project).

Columbia Univ., New York, N.Y. Inst. of Field Studies
MF AVAILABLE IN VT-ERIC SET.
Pub Date - May65 29p.

*VOCATIONAL EDUCATION; TECHNICAL EDUCATION; *EDUCATIONAL HISTORY; FEDERAL LEGISLATION; *STATE PROGRAMS; AREA VOCATIONAL SCHOOLS; *EDUCATIONAL TRENDS

Intended to show how vocational-technical education has responded to changing social and economic conditions, the report is divided into three major sections. The first traces the development of vocational-technical education from the Smith-Hughes Act through recent legislation including the Vocational Act of 1963, the Manpower Development and Training Act, the Area Redevelopment Act, the Economic Opportunity Act, and the Appalachia Act. The second section describes the different patterns of vocational-technical education in 13 states. The final section reports: (1) developments such as increased enrollments in technical, preparatory trade and industrial, and practical nurse programs, (2) activities in business, distributive and agri-business education due to provisions of the 1963 Act, (3) program changes in home economics due to emphasis upon wage-earning occupations, and (4) the new structural pattern of the Office of Education providing for three major units dealing with professional services, field administration, and research development. (JK)

VT 002 104

Rhode Island Vocational-Technical
Education Development Project

OCCUPATIONAL

AND

VOCATIONAL-TECHNICAL EDUCATION

IN

THE UNITED STATES

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Prepared by

Lynn A. Emerson
Institute of Field Studies
Teachers College, Columbia University
New York, New York

May 1965

VT 002 104

STATE BOARD OF EDUCATION

PROVIDENCE, RHODE ISLAND

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FOREWORD

This is the fourth in a series of reports prepared by the Institute of Field Studies, Teachers College, Columbia University, to assist the State Board of Education in the development of a state-wide program of expanded and improved occupational and vocational-technical education.

The following three reports have previously been submitted:

1. Occupational Education in the Comprehensive High School
2. Where Should Occupational Education be Taught at the Secondary Level?
3. A Proposed Long-Range Plan for Occupational and Vocational-Technical Education for Rhode Island

The present report deals both with the history of occupational and vocational-technical education in the United States and with current developments and trends. Major federal legislation on the subject is reviewed. Programs developed by several of the states are described and in some instances comparisons are drawn. The intent is to show how occupational and vocational-technical education in the United States has responded to changing social and economic conditions. Such background information is valuable in appraising the future.

One of the tragedies of many educational programs is the lag between current practice and the emerging needs of the individual and society. The adequacy of Rhode Island's program of occupational and vocational-technical education two decades hence will depend upon the speed with which this lag can be reduced. Much will depend upon the foresight and the skill which present trends and future needs are interpreted.

I. THE DEVELOPMENT AND PRESENT STATUS OF OCCUPATIONAL AND VOCATIONAL-TECHNICAL EDUCATION IN THE UNITED STATES

Occupational and vocational-technical education in the United States today presents a vastly different picture from that which existed when the first federal vocational education act was passed in 1917. At that time most workers gained their skills and knowledge through learning on the job and through self-study. A few private vocational schools were in operation, both proprietary and nonprofit-making; a considerable number of workers were being trained through apprenticeship; many large industrial corporations ran their own training schools, and private profit-making business schools were in operation.

The Smith-Hughes Act

When the Smith-Hughes Act was passed in 1917, the educational level of the population as a whole was considerably lower than it is now. It was common practice to give boys with sixth grade education two years of intensive training in a vocational school and then place them on jobs as advanced apprentices. The Smith-Hughes Act provided federal funds, to be matched by state funds, for the training of youth and adults in the fields of agriculture, home economics, and industry. The provisions of the act pertaining to

the operation of programs were spelled out in much detail; for example, the hours per week to be devoted to shopwork were specified and farm practice was required in agriculture. All programs were to be "of less than college grade."

The Smith-Hughes Act was a great stimulus to vocational education. Prior to its passage a few states including Massachusetts, Connecticut, New Jersey, New York, and Wisconsin had organized programs of vocational education in industrial fields. The Connecticut trade schools (really apprentice training workshops) and the Massachusetts industrial schools were typical of the pattern upon which the legislation was based. Very soon after the passage of the act all the states prepared plans for vocational education and numerous programs emerged. The allotment of federal funds for the fiscal year 1917-1918 was $1,655,586, of which approximately one-half was expended. The Smith-Hughes Act is still on the statute books; the present appropriation is approximately $7,250,000.

The George-Barden Act

In 1946, the George-Barden Act greatly enlarged federal aid to the states for vocational education. This act added distributive education to the fields eligible for subsidy for instruction on a part-time basis and modified some of the rigid provisions

of the Smith-Hughes Act. Subsequent acts provided federal funds for practical nurse training and the training of technicians.

The Vocational Education Act of 1963

Growing out of the recommendations of the President's Panel of Consultants on Vocational Education, the Vocational Education Act of 1963 has changed markedly the scope and regulations of federal aid to the states. The new act substantially embodies the Smith-Hughes and the George-Barden Acts, makes changes in the provisions of the George-Barden Act, and provides substantial increases in federal appropriations. When the act becomes fully operative--in fiscal 1968--the additional funds will amount to $225,000,000 annually, including $22,500,000 for research and development grants. The act also includes temporary authorization of from $30,000,000 to $50,000,000 for work-study and residential school programs. Actual allotments made to the states for the fiscal year 1965 (excluding allotments made specifically for research and development) are as follows:

	All States	Rhode Island
Smith-Hughes Act	$ 7,161,455	$ 37,901
George-Barden Act	49,795,823	230,931
1963 Vocational Education Act	106,650,000	499,902
1963 Vocational Education Act (work-study programs)	5,000,000	30,633
	$168,607,278	$799,367

The State of Rhode Island in fiscal 1965 receives an allotment of nearly $800,000 as compared with some $270,000 for the previous year. If a state is unable to use its total allotment, the unused portion is reallotted among other states that are in position to use additional funds.

Other Federal Legislation

Other recent legislation provides federal funds for occupational education. The Manpower Development and Training Act (M. D. T. A.) and the Area Redevelopment Act (A. R. A.) have provided large sums to provide training programs for selected unemployed workers and to provide living allowances while in training. The programs are under the general direction of the Department of Labor working in cooperation with the United States Office of Education.

The Economic Opportunity Act has several facets that involve occupational training. Under this act, Job Corps training centers are planned for sixty-eight urban and rural locations, involving perhaps 40,000 students in the 1965-1966 school year. Contracts for operating these centers are made with universities, state schools, and private industry.

The Appalachia Act provides many millions for the retraining of workers. The task of occupational education is thus spreading far beyond the confines of the vocational schools.

II. PATTERNS OF OCCUPATIONAL AND VOCATIONAL-TECHNICAL EDUCATION DEVELOPED BY DIFFERENT STATES

Vocational education programs have developed in widely different patterns in various states. They have been influenced by the general character of the state's public educational programs, its traditions concerning vocational education, and many other factors.

Wisconsin

Wisconsin was operating a state-wide program of vocational education under a separate state board for vocational education at the time of the Smith-Hughes Act. It has continued this pattern of separate schools of adult and vocational education. Gradually the age pattern of the students has moved upward until these schools today are largely on the adult and post-high school level. The Board is considering a plan to provide occupational education for high school youth in the comprehensive high schools rather than in the separate adult and vocational schools.

California

In California the presence of a widespread system of comprehensive junior colleges has greatly influenced the development of vocational education. In the early years much of the

vocational education was centered in the high schools and in separate trade schools such as the Frank Wiggins Trade School in Los Angeles and the Laney Trade and Technical Institute in Oakland. The presence of the junior colleges and their willingness to offer organized occupational education programs on a wide scope of content and level has resulted in placing a high proportion of the vocational-technical education in the junior colleges. Some specific occupational education exists in the high schools, but the pattern in these schools appears to be moving toward basic education for clusters of occupations preparatory to specific training in the junior colleges. In the fall of 1963 the seventy-one junior colleges in California offered a total of 117 different occupational curriculums in day programs divided among the following occupational fields:

Agriculture-horticulture-forestry	10
Applied and graphic arts	12
Business and office occupations	19
Health services	10
Home economics	1
Trade and technical	55
Public and personal service	10
Total	117

The range of curriculums varied from two-year full-time programs in such areas as electronics technology and business data processing leading to an associate degree to courses of only a few weeks duration in power sewing-machine operation or PBX telephone

operator service. In October 1962, about one-third of the 354, 341 full and part-time students in the junior colleges were enrolled in occupationally oriented courses.[1]

New York

New York State has had an active program of public vocational education since shortly after the turn of the century. The Trades School Act of 1908 provided for the establishment and maintenance of general industrial and trade schools in the cities and union free districts of the state. In 1909 the Vocational School for Boys was established in New York City. Shortly thereafter the Manhattan Trade School for Girls and the Murray Hill Vocational School for Boys were established. Cooperative programs and continuation school programs were introduced in 1914. The continuation schools of New York City operated until 1929 when a shift took place toward full-time industrial schools, culminating in 1935 in the present pattern of vocational high schools in New York City. There are now thirty such institutions.

In New York City vocational education is almost entirely taught in the thirty vocational high schools.[2] In up-state

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[1]Data from A Guide for California Public Junior Colleges 1963-1964, California State Department of Education.

[2]In the spring of 1965, the Board of Education published its plan for abandonment of most of the separate vocational high schools and the development of vocational educational programs in the comprehensive high schools.

New York the 1964 directory shows fourteen vocational and technical high schools, twenty centers operated under Boards of Cooperative Education Services or other auspices, and fifty comprehensive high schools which operate full-time trade and technical programs. In addition there are more than sixty industrial cooperative programs in which the student divides his time between paid work and school. These are usually in the smaller high schools.

Post-high school occupational education developed in New York State much later than in California. Six state-operated agricultural institutes were in operation for many years before they were expanded to include technical curriculums in the mid-thirties. These have continued as state-supported institutions. In the 1940's the state established a series of institutes of applied arts and sciences, which were first supported entirely by state funds and later were converted into locally controlled community colleges. At present New York State has six agricultural and technical institutes with an enrollment in the fall of 1963 of 6,487 full-time students in different occupational curriculums, and twenty-five public community colleges with 22,849 students in twenty-five curriculums.

Massachusetts

The Massachusetts state-wide program of vocational education grew out of the recommendations of the Douglas

Commission of 1905-06. The legislation enacted in 1906 provided that industrial education be provided under a new Commission--separate from the State Board of Education--through local industrial schools operated by independent local boards. In 1909 the work of the Commission was merged with that of the State Board of Education, retaining the dual system under which approved local vocational schools were operated independently of other public schools of the community.[1]

The pattern of vocational industrial education in Massachusetts has remained much the same until the present time. In 1962-1963 preparatory programs for boys in the skilled trades were offered in fifty-four day industrial schools operated independently from the public high schools, and in industrial departments in seven Boston high schools. Ninety-two per cent of the boys enrolled for training in the skilled crafts were in the separate schools. Twenty-nine different curriculums were offered. The largest of the separate industrial schools enrolled 1,265 students; the smallest had 19 students. There are six vocational schools for girls with an average enrollment of 160 full-time students. Business education courses are offered in some 280 high schools, with twenty-six different course offerings and with course enrollments of 137,000 in 1961-1962.

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[1] Development of Vocational Education, by Hawkins-Prosser-Wright.

The curriculum and administrative pattern of the day industrial schools in Massachusetts is substantially the same as when the Smith-Hughes law was enacted. In a few of the schools technical curriculums are offered for a small number of students on the post-high school level. The six community colleges operating in the Commonwealth in September 1963, enrolled some 950 students in four occupational curriculums out of a total enrollment of some 2,300.

The Ford Foundation has recently provided a grant of $434,000 to the Newton Public Schools "to develop truly comprehensive secondary schools offering a full range of courses to all pupils without the traditional and damaging 'tracking' that restricts educational opportunities." In the report of the Massachusetts Education Survey, December 1964, it was recommended that "Occupational education should be integrated with general education and taught in institutions that provide both general and occupational education. On the high school level it should be offered in comprehensive high schools; on the post-high school level, in the community college."

Connecticut

The vocational education program in the State of Connecticut consists largely of fourteen regional vocational-technical

schools on the secondary level and four technical institutes operated and financed by the state. The first trade schools in Connecticut were established in 1909 at Bridgeport and New Britain. The curriculum pattern in the early years was aimed at the development of trade skills and knowledge with little attention to general education objectives. As late as the period from 1932 to 1937 the state plan for vocational education provided for forty-eight weeks of instruction per year, forty hours per week. The allocation of time provided that not less than sixty per cent of the total instructional time be given to practical, manipulative work on a useful or productive basis, not less than thirty per cent to related mathematics, science and drawing, and not more than ten per cent to general education subjects. In the early 1940's changes took place with respect to objectives and curriculum. The name "trade school" was changed to "vocational-technical school," embracing four-year skilled trades programs with eighth grade completion. In 1945, twenty-seven different curriculums were offered in the state-wide program.[1]

Recent years have seen extensive expansion of vocational education in Connecticut. Millions of dollars have been expended in new construction, including the post-high school technical institutes, which provide curriculums in electronic technology, mechanical technology, chemical technology, data processing, and

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[1]New Haven's Schools--Survey Report, 1946-47.

other fields. In 1962-1963 there were 2,384 students enrolled in preparatory technical curriculums in the state, 1,469 of whom were on the post-secondary level. Enrollments in trades and industry programs totaled 4,565, all on the secondary level. The trades and industry programs included 563 girls.

Space does not permit detailed description of what is happening in occupational education in all the states, but here are some brief statements in overview:

New Jersey

New Jersey in 1963 enrolled some 6,300 students in twenty-eight schools in day trade programs preparatory for thirty-nine different occupations. Most of these students were at high school level. Some 1,300 students were enrolled in technical curriculums. Of these nearly 500 were on the post-secondary level in twenty-three curriculums in nineteen schools.

North Carolina

North Carolina within the past few years has developed a state-wide program of industrial education centers, largely state financed. Originally planned as area schools to provide for high school students as well as others, these centers have moved toward adult and post-high school institutions. Under the new junior college

legislation in the state, some of these centers have changed to technical institute status; others to community colleges. Enrollments in technical education programs totaled some 1,650 preparatory students, of whom some 92 per cent were on the post-secondary level. Enrollment in full-time preparatory trades and industries programs numbered nearly 8,000, with some 68 per cent on the post-secondary level.

South Carolina

South Carolina has built and placed in operation eight technical education centers since 1961, with two more planned. These centers, operated by the State Committee on Technical Education, are designed for post-high school and adult programs and have contributed greatly to the development of new industries in the state. The same Committee operates some forty centers for training unemployed youth in special programs.

Georgia

Georgia has operated two state vocational-technical schools for many years, but recent legislation has provided authorization for some twenty-seven new area vocational-technical schools of which eighteen are now in operation. These schools and the junior colleges both look to high school graduates and adults as their

principal clientele with consequent overlapping. The recent report of the Governor's Commission to Improve Education recommends close cooperation between these types of institutions. The report indicates that if the clock could be turned back to the middle 1950's, it undoubtedly would be desirable to have developed comprehensive community colleges instead of junior colleges of the transfer type and area vocational-technical schools.[1]

The 1963 enrollment in full-time preparatory curriculums for trades and industries numbered about 4,400 students, of whom some 45 per cent were on the post-secondary level. Nearly 20 per cent of the enrollees were girls. Enrollments in technical education programs numbered 1,070, all on the post-secondary level.

Florida

Florida in 1963 had twenty-nine junior colleges, of which thirteen had area vocational and/or technical education programs. It is anticipated that practically all junior colleges will eventually offer technical education. A new technical institute was opened in 1963. In addition to the community colleges and the technical schools. Seven comprehensive high schools now offer technical education.

In 1963 the enrollments in full-time preparatory trades

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[1]Educating Georgia's People, Governor's Commission to Improve Education, 1963.

and industries programs totaled 8, 743 students, of whom 33 per cent were in post-secondary curriculums. Approximately 18 per cent of the total were girls and women. Enrollments in technical education programs number 3, 393 students, of whom 71 per cent were in post-secondary curriculums.

Minnesota

Minnesota has seventeen area vocational-technical schools. While some high school students may enroll in most programs, there has been a decided trend toward post-high school training in all area schools; 80 per cent or more of the students in some schools are at the post-high school level.

Washington

Washington has twenty area vocational-technical schools, of which thirteen are community colleges. In 1963 the enrollment in full-time preparatory trades and industries programs was 5, 379 students, of whom 85 per cent were in post-secondary curriculums. Enrollment in technical programs number 1, 780 students, all of whom were in post-secondary curriculums.

Texas

Texas has a system of thirty-four municipally owned junior colleges which can function as area vocational and technical

schools. In 1963 pre-employment programs were being conducted in seventeen centers, with plans for considerable expansion of the program. Enrollment in preparatory full-time programs in trades and industries number 8, 359, of which some 96 per cent were on the high school level. Enrollment in technical programs numbered 2, 154, with 78 per cent on the post-high school level.

III. CURRENT TRENDS IN OCCUPATIONAL AND VOCATIONAL-TECHNICAL EDUCATION

Construction of area vocational-technical education facilities as separate schools or as divisions of comprehensive high schools or community colleges has been under way for some years in various states. The trend has been implemented by funds available under the Vocational Education Act of 1963. In the case of community colleges funds have also been made available through the Higher Education Facilities Act.

Technician Training

Since the enactment of Title VIII N. D. E. A. in 1958 there has been a large increase in training programs for technicians. Data reported to the U. S. Office of Education for the fiscal year 1963 showed a nation-wide total of 75, 888 students enrolled in preparatory programs and 108, 700 in adult supplementary courses. (In 1959 the enrollments in preparatory and supplementary programs were only 19, 243 and 29, 321 students respectively.) In 1963, 74 per cent of the enrollments in preparatory programs were in post-secondary institutions, California leading the states with 22, 919 students. Nearly 20, 000 students were enrolled in technical programs on the high school level, with more than 7, 500 of them in New York and Pennsylvania. These two states reported very few

students on the post-high school level, but they have substantial enrollments in technical programs in the technical institutes and community colleges which did not receive federal aid during that year.

Trade and Industrial Training

The number of students in the United States enrolled in programs preparing them to enter trades and industries has grown markedly:

1954	247,179
1959	280,799
1963	299,011

The enrollment on the high school level for 1963 numbered 199,719 students; that on the post-high school level, 99,292 or approximately one-third of the total. No comparable data are available for the earlier years.

The distribution between high school and post-high school varied widely among the various states. Enrollments for selected states are presented in Table 1.

Wisconsin and California have no secondary level programs reported for trades and industries education. New York, Massachusetts, Pennsylvania and Texas show their programs as predominantly of high school level. Enrollments in Rhode Island were all on the high school level. [1]

[1] Digest of Annual Reports - 1963, The United States Office of Education.

TABLE 1

ENROLLMENTS IN PREPARATORY PROGRAMS
FOR TRADES AND INDUSTRIES - SELECTED STATES

1963

State	High School	Post-High School and Adult
California	..... *	26,540
Connecticut	4,565	..... *
Florida	5,851	7,463
Georgia	2,422	3,384
Illinois	6,307	253
Maryland	6,323	..... *
Massachusetts	13,342	490
New Jersey	6,042	280
New York	40,850	1,490
North Carolina	2,492	7,068
Pennsylvania	18,790	2,792
RHODE ISLAND	1,588	..... *
Texas	10,009	1,730
Virginia	3,621	3,659
Washington	787	4,630
Wisconsin	..... *	14,942

* None reported.

New Developments

In 1956 the George-Barden Act was amended by the addition of federal funds for the training of practical nurses. This stimulated the development of practical nurse training programs, which had previously been financed by other George-Barden funds. Enrollment in preparatory classes in 1957 numbered 19,431. By 1963 this enrollment had increased to 33,492 persons, of whom more than 31,000 were on the post-secondary level. Rhode Island reported 96 persons enrolled in preparatory classes in 1963, all on the post-secondary level.

The 1956 fishery amendment to the George-Barden Act provided special funds for vocational education in that industry. In fiscal 1963 the enrollment in such classes totaled 1,569, with two-thirds of the total in North Carolina and New York. Rhode Island did not report any such training for that year.

Until the enactment of the Vocational Education Act of 1963 no federal funds were available for business education, and funds for distributive education were limited to part-time training for employed workers. Under the new act there is much activity in developing and strengthening programs in these fields.

The Vocational Education Act of 1963 also widened the scope of permissive programs in agricultural education to include

agricultural-related occupations such as agri-business. With the large decreases in employment opportunities in farming, agricultural educators are turning their attention to this wider field. In addition, the act made changes in the use of home economics appropriations, emphasizing the need for attention to wage-earning occupations which require home economics skills. Program changes are underway toward this end.

The Division of Vocational and Technical Education in the United States Office of Education is undergoing significant changes in its structural pattern to provide greater conformity to the philosophy of the Vocational Education Act of 1963. In place of the previous branches organized by occupations--agriculture, trade and industry, home economics, etc. ---the new pattern provides for three major units dealing with professional services, field administration, and research development. Each of the nine regional offices of the Department of Health, Education, and Welfare will provide personnel to serve the needs of vocational-technical education within the region. (This reorganization is being vigorously opposed by the American Vocational Association, which prefers the old pattern of occupational branches.)

Mention should be made of the large expansion of occupational education in Canada under the Technical and Vocational

Training Assistance Act of 1960. Since that date Canada has expended some $650,000,000, of which approximately $400,000,000 represented state funds. Much of the money has been used for new construction, resulting in many excellent institutions such as the Northern Alberta Institute of Technology at Edmonton, costing more than $15,000,000 and now being enlarged. The programs on the secondary level are in comprehensive high schools; those for high school graduates, out-of-school youth, or adults are generally in separate vocational schools or technical institutes.[1]

It is difficult to isolate specific trends in occupational education in the nation as a whole when one finds great variations within the several states. But there is considerable evidence that specialized area vocational schools originally planned for high school students and out-of-school youth and adults tend in time to exclude the high school youth and confine their efforts to the out-of-school and adult group and the high school graduate. It also appears that the separate vocational-technical school at post-secondary level tends to move toward community college status.

Many area vocational-technical schools are being developed as separate schools to which high school students may be transported for a half-day program of occupational education, with

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[1]Presentation by Ross Ford at meeting of the American Vocational Association in Minneapolis.

credit being given in the high school for the course work taken in the vocational-technical school. In line with the felt need to relate the vocational education more closely to the academic curriculum, efforts are being made to broaden the vocational programs. The comprehensive high school appears to be the best place to achieve such breadth of program. Success of occupational education in the comprehensive high school means that comprehensive high school administrators must become thoroughly acquainted and concerned with occupational education, and personnel of quality must be recruited to supervise and teach in the programs.

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Vocational Agriculture in Indiana Schools.

Indiana State Dept. of Public Instruction, Indianapolis. Agriculture Education
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INDIANA

The purpose of this handbook is to assist school boards, administrators, and others to understand the relationships between local, state, and national levels in providing vocational education in agriculture. The legal requirements and current practices are explained. Reimbursement policies, instructional programs, and summer programs are specified. Recommended facilities are given for classroom, conference room, demonstration laboratory, and agricultural mechanics laboratory. Teacher qualifications are specified and teacher travel budgets are desc.ibed. The use of advisory committees is encouraged. Some desirable standards are listed relative to instruction, transportation, teacher employment, instructional follow-up, advisory committee, physical facilities, annual program of work, and local school policy. The appendix includes the system of classifying schools, reimbursement, and qualifications for classification of schools. (JM)

VT 002 111

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VOCATIONAL AGRICULTURE

in

Indiana Schools.

Department of Public Instruction
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VT 02311

FOREWORD

This handbook is designed to assist boards of education, school administrators and others in better understanding the basic relationships which exist between the local, state and national school communities in providing Education in Vocational Agriculture Programs.

Information concerning current practices which have proved most successful, as well as standards for both program and facilities, is included with the hope that it will prove helpful to those concerned with improvement of the quality of the total program for Vocational Agricultural Education.

Suggestions for the improvement and clarification of the material included in this handbook will be graciously received.

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(Revised 1965-66)

VOCATIONAL EDUCATION IN AGRICULTURE IN INDIANA SCHOOLS

The program of Vocational Education in Agriculture in Indiana is designed to provide training for occupations which entail activity in the areas of producing, processing, distributing, and servicing agriculture and/or agricultural products. The "State Plan for Vocational Education" establishes official policies for the organization, administration, operation and evaluation of the program of Vocational Education in Agriculture.

STATE AND FEDERAL RELATIONSHIPS

I. The State Plan -- An Agreement between the State Board for Vocational Education and the Office of Education -

The State and the Federal Government have certain responsibilities for the development of vocational education. Each state is required, under the terms of the Federal Vocational Education Acts, to submit a plan for the vocational education programs for which it expects to use Federal Funds. This plan, when approved by the U.S. Commissioner of Education, becomes a contract between the State and the Federal Government. The plan for a State is initiated by that State and is reviewed by the Office of Education only as it applies to the use of Federal Funds in that state. When a provision is included in a State Plan for any phase of work in which Federal reimbursement may be involved, such provision shall conform to the Federal Acts and the official policies of the Office of Education.

II. Responsibility of the State under the Vocational Education Acts -

In order to participate in the benefits of the funds provided by the Federal Acts, the State, through its legislative authority, must have accepted the provisions of the acts; appointed its State treasurer as custodian of the vocational education funds allotted to the State; and designated or created a State Board having all necessary power to cooperate with the Office of Education in the administration of the Federal Acts. The State Board for Vocational Education is the State agency which is responsible for carrying out the provisions of the Federal Acts in the State and for the expenditure of Federal Funds which are allotted to it.

LOCAL AND STATE RELATIONSHIPS

I. The Application - An Agreement between the local Board of Education and the State

An application for a department of vocational agriculture is initiated by the local school corporation. The application is

reviewed and recommendations are made by the appropriate state officials to the State Board for approval to conduct such a vocational education program. The application, when approved for a department of Vocational Agriculture, becomes a contract between the local school corporation and the State. Periodic evaluations shall be made of existing programs to determine the desirability of continuing the contract.

II. Responsibiltiy of the local School Corporation under the Vocational Education Acts.

In order to participate in the benefits of the funds provided by the state, the individual school corporation must have accepted the provisions of the State Plan and designated a local board as having the necessary authority to administer the agricultural education program. The local school board is the agency responsible for carrying out the provisions of the State Plan and for expenditure of funds allotted to the school corporation.

SCHOOL AND COMMUNITY RELATIONSHIPS

Vocational Education in Agriculture, in all of its phases, is a definite part of a community school program. The local school board contracts for a teacher or teachers of vocational agriculture which assume the instructional obligations and the agricultural leadership of the school community. A local vocational agriculture advisory committee assists the local school board and the teacher (s) in providing a Vocational Agriculture Education program designed to meet the needs of the local school community.

REIMBURSEMENT TO SCHOOL CORPORATIONS

Local school corporations may receive funds for vocational education program in addition to regular state support. The purpose of vocational reimbursement is to encourage the initiation of new programs and to improve, extend, and expand existing programs of vocational agriculture. Reimbursement to school corporations is made on the basis of the classification of their vocational agriculture program. A program is classified dependent upon quality, extent, and service to individuals in the training for occupations in agriculture.

See appendix 1 for existing plan for reimbursement.

VOCATIONAL INSTRUCTION

Vocational Education in Agriculture achieves its aims through systematic instruction with two types of organized groups:

1. High school students who have as their vocational objective an occupation in agriculture.

2. Out-of-school persons who are concerned with developing occupational skills in the field of agriculture.

3. Groups with special needs.

The interests and needs of these groups vary. One of the important responsibilities of the teacher of Vocational Agriculture is to collect general and factual information concerning the interests and needs of these groups, analyze this information, and then work with each group in formulating a program of instruction which will best develop the needed abilities.

Training for proficiency in agriculture requires a continuous program of systematic instruction. The high school student is concerned with the selecting of, and preparation for, an agricultural occupation. The problems of the young person after graduation are essentially those of becoming established in his chosen agricultural occupation. The adult student in agriculture is primarily concerned with adjusting his agricultural business operations to changing political, social, economic and other conditions. Agricultural research is constantly determining improved methods of producing, marketing, processing, distributing and/or servicing agricultural products. The local department of vocational agriculture must provide organized, systematic instruction in vocational agriculture for the high school students, young persons, and adults in the curriculum if each individual is to be able to obtain instruction which will help him solve his particular problems.

Individual instruction is an important and essential part of the instructional program with all groups. Vocational training requires "learning by doing." Although some "learning by doing" takes place in the classroom, laboratory, and on field trips, most of this kind of learning takes place during practical work experience. In planning instructional programs, ample provisions should be made for giving instruction at the place where practical experience is gained.

Recognizing the varying interests and needs of youth and adults, an instructional program for these groups is organized as follows:

I. High School Program

A. Vocational Education in Agriculture is an integral part of the high school curriculum. It is organized and is available to those high school students who desire training which will lead toward establishment in agricultural occupations. The nature of this instruction is such that much of the student's time should be spent in laboratory, shop, and field work.

Students enrolled in agricultural classes are required to plan and conduct a supervised work experience program as a definite part of their agricultural training. Classroom instruction is closely correlated with the work experience programs of the individuals enrolled. It is very desirable that these programs show comprehensive planning, continuation, growth, and increase in scope as the student advances from grade to grade.

The teacher's schedule of organized classes should be arranged so that ample time is available for supervising students for the purpose of giving on-the-job instruction.

The daily sessions shall conform to the following:

All high school vocational agriculture classes shall meet for a minimum of 275 minutes per week, and no class period shall be less than 55 minutes. Exceptions may be granted to this provision for ninth grade classes in vocational agriculture in junior high schools where the length of all periods in the school is less than 55 minutes.

B. The Future Farmers of America - The Future Farmers of America, or FFA, is the national organization of, by, and for boys studying Vocational Agriculture in public secondary schools. The FFA is an intra-curricular activity having its origin and root in a definite part of the school curriculum--Vocational Agriculture. The primary aim of the FFA is the development of agricultural leadership, cooperation, and citizenship. Among other things, members learn through active participation how to conduct and take part in a public meeting; to speak in public; to buy and sell cooperatively; to solve their own problems; finance their agricultural operations; and assume civic responsibility. The foundation upon which the organization is built includes leadership and character development, sportsmanship, cooperation, service, thrift, scholarship, improved agriculture, organized recreation, citizenship, and patriotism.

An FFA chapter shall have membership equal to 60% of the enrollment in vocational agriculture as active members. Membership dues shall be paid by December 1 of the current year.

1. Degrees of Membership

There are four grades or degrees of a tive membership -- "Green Hand," "Chapter Farmer," "State Farmer," and "American Farmer." These grades of membership are contingent upon definite accomplishment in connection with the Vocational Agriculture program of the school. Local chapters determine the individual's advancement in the first two grades of membership, the State association determines the third degree, and the National organization awards the fourth degree.

2. The FFA's part in Vocational Agriculture

The FFA was and is designed to supplement training opportunities for boys who are progressing toward the goal of establishment in an agriculture business.

II. Out-of-School

A. Training for proficiency in agriculture extends beyond the high school curriculum. During the period immediately following termination of high school training, young persons are

confronted with many real problems in becoming established in an occupation. An instructional program is needed to help them solve their problems.

The course for such young people is carefully planned, with the content based on their problems. In addition to classroom instruction, a very important phase of the young person's training is on-the-job instruction. It is on the job that the teacher has the best opportunity to follow-up classroom instruction and to apply new skills and understanding. Such instruction is necessary to assure proper application of new agricultural practices and skills.

B. Organized instruction is needed for those already established in an agricultural occupation. Agriculture is a rapidly changing industry. A knowledge of economic conditions throughout the world, and of new discoveries in producing, processing, distributing, and servicing agriculture are important in making decisions affecting the individual's business. Adults are seeking ways and means to solve their problems. Teachers of agriculture plan programs of organized instruction which meet the needs of this group. Definite improved practices are planned for each individual enrolled in the out-of-school program. These practices are carried out at the home or place of employment. This instruction requires individual supervision by the teacher of vocational agriculture. A careful analysis of the problems of adults is essential in planning instruction.

C. Intensive instructional programs shall be organized in units of not less than 20 clock hours of instruction offered within a twelve months period.

Extensive instructional programs shall be organized in units of not less than 90 clock hours of instruction offered within a single semester or an equivalent period of time.

III. Summer Program

A. Objectives

The teacher (s) of vocational agriculture are employed on a twelve months basis because instruction and supervision of students is needed during the entire year. Some of the objectives of the summer program are:

1. To provide an effective follow-up of the instruction of high school and out-of-school students. This provides for teaching while supervising the work experience programs.

2. To provide opportunity to discover and select agriculture problems of the students to be included in the instructional program.

3. To provide additional opportunity to render educational services to farmers and others in the community.

4. To provide organized class instruction in the community during the entire year.

5. To provide for the development of leadership abilities of FFA and YFA members through conducting meetings, educational tours and leadership training programs.

6. To provide opportunity for the teacher to contact prospective students of vocational agriculture.

7. To provide for continuity of instruction.

8. To provide for professional improvement of instructor personnel.

B. Activities

Definite written summer plans are to be carefully developed by every teacher of vocational agriculture. The following list of suggested activities may serve as a guide in developing a desirable program for your school community.

1. Supervisory Activities.

   a. Work with high school and out-of-school students.
   b. Counsel prospective students.
   c. Follow-up former students.
   d. Coordinate the activities of Vocational Youth Groups (FFA & YFA)

2. Tours and Trips

   a. Conduct group educational tours for students.
   b. Attend State FFA Convention.
   c. Attend State FFA Leadership Training program.

3. Program Meetings

   a. Hold meetings of high school and out-of-school students.
   b. Provide parent orientation.
   c. Meet with Advisory Council.
   d. Meet with School Administrators.

4. Experimental Plots, School Farms or Demonstrations

   a. Develop and supervise experimental trials or demonstrations with students and others.

5. Program Planning and Evaluation

   a. School administrators, advisory committee, and the vocational agriculture teacher complete annual program evaluation.
   b. Prepare annual program of work.

c. Secure needed supplies and equipment.
d. Revise courses of study.
e. Collect and prepare teaching materials.

6. Professional Improvement

a. Attend state and area conferences and workshops.
b. Take graduate courses.

7. Public Information

a. Provide the administrator a weekly itinerary of activities.
b. Write regular articles for local newspaper.
c. Prepare special articles for magazines and newspapers.
d. Make radio and television broadcasts.
e. Prepare exhibits and demonstrations.

8. Summer Semester Instruction

FACILITIES

The local school corporation shall provide adequate facilities and equipment to help insure efficient and effective instruction in all phases of the vocational agriculture program.

ITEM	STANDARDS
I. Classroom and Equipment	
A. Size of classroom	Floor space - 850 square feet
B. Location	Ground level, adjacent to or near the farm mechanics laboratory but separated from the laboratory with dust-proof wall and so located that it may be heated, lighted, and entered without interference with the rest of the building.
C. Chalkboard	Lineal feet - 15 or more
D. Bulletin Board	One or more bulletin boards totaling at least 24 square feet made of suitable material and located where it will be accessible and usable for both students and teacher.
E. Sink and Running Water	Hot and cold running water available in classroom or laboratory
F. Provisions for Heating Water	Available
G. Convenience Outlets	Two or more located at convenient places.

H.	Lighting, Heating, Ventilation	Sufficient for optimum comfort, health and working conditions for students and teacher with not less than 40 foot candles of glare-proof lighting at the table top.
I.	Student Tables and Chairs	Individual tables (2 ft. X 5 ft.) for two students are preferred. Chairs comfortable, durable, and non-folding.
J.	Teacher's Desk and Chair	Flat-top office desk and suitable chair.
K.	Filing Cases	Ball-bearing cradle suspension four-drawer letter-size steel files and sufficient quantities.
L.	Storage	Suitable, adequate, and conveniently located storage space for instructional materials and supplies, such as space for bulletins, books, charts, specimens, and student notebooks.
M.	Laboratory Equipment	Suitable and adequate for teaching the skills included in the course of study, Kitchen type sinks and cabinets are desirable.
N.	Projection Equipment	Available for use of audio-visual aids, such as movies, slides, film strips and opaque materials.
O.	Reference Material	
	1. Books	A variety of up-to-date authoritative reference books in sufficient quantity to provide references for individual students in each of the areas to be taught in the department.
	2. Bulletins	Up-to-date and adequate to meet needs of students.
	3. Periodicals	Types of agricultural and other magazines appropriate to the course of study.

	4. Audio-visual aids	Up-to-date teaching aids, such as movies, slides, film strips, samples, specimens, and models, charts, pictures suitable and adequate for teaching the skills included in the course of study.
II.	Conference Room	
	A. Size of room	150 square feet
	B. Location	Adjacent to classroom and agriculture mechanics laboratory.
	C. Equipment	Equipped appropriately.
III.	Demonstration Laboratory	
	A. Size of Laboratory	150 square feet
	B. Location	Contiguous to or a part of the agriculture classroom.
	C. Equipment	Contains built-in cabinets and double acid-proof sink with work area. Equipment appropriate for work in crops and livestock.
IV.	Agriculture Mechanics Laboratory	Available for use of high school and out-of-school classes.
	A. Size	2400 or more square feet.
	B. Outside Door	12' high by 14' wide.
	C. Equipment	Appropriate equipment in good working condition and in sufficient quantity to permit effective instruction in the following areas: 1. Agricultural Power and Machinery 2. Agricultural Buildings and Conveniences 3. Soil and Water Management 4. Rural Electrification 5. Agricultural Construction and Maintenance

D. Fenced, Paved Work Area	1200 or more square feet adjacent to large outside door of agriculture mechanics laboratory. Fenced and paved with two large gates. 110 and 220 volts current and water available.
V. Horticulture Laboratories (Greenhouse, hotbeds, cold frames, plant beds, work area, etc.)	
A. Size	1200 or more square feet plus storage area, work area, and heating facilities.
VI. Land Laboratories (Includes School Farm)	
A. Size	5 acres or more.
B. Location	A part of the school grounds nearby
C. Equipment	Tool benches, animal building and area, equipment appropriate for the work to be done.
D. Agreement for use	Written, annual and long-term.

QUALIFICATIONS OF TEACHERS

The effectiveness of any educational program is dependent to a large extent upon the qualifications of its teachers. Especially in the rapidly changing field of agriculture, the teachers must be versatile persons with a background of practical experience, adequate professional training, and desirable personality and leadership characteristics.

I. Regular and special teachers shall meet the qualifications as prescribed by the Division of Teacher Licensing, Department of Public Instruction. (Bulletin #400)

TEACHER TRAVEL

Teacher visits for instructional purposes to high school and out-of school students is essential to a good program of Vocational Education. The farm or other place of agricultural work provides a good learning situation for the student. Furthermore, the teacher must become familiar with the occupational environment in order that he may be able to give the best possible leadership and guidance to his students.

I. Monthly Service Reports, Form V-53

A. A supply of report forms is available in the office of the State Director of Agricultural Education.

B. This report is to be prepared by each teacher of vocational agriculture each month. It should be a day-by-day record of the teacher's activities as well as miles traveled.

C. The reports are to be sent through the office of the local Superintendent of Schools to the State Director of Agricultural Education, Old Trails Building, 6th Floor, 309 West Washington Street, Indianapolis, by the 15th of each month. Carbon copies should be prepared as a permanent record for the school, school administrators, etc.

D. The "purpose" of trips should be recorded, such as; preparing sow for farrowing, checking rate of gain, selecting supervised agricultural programs, enrolling farmers in evening classes, etc.

E. Travel strictly for official vocational agriculture promotion and supervision is considered as reimbursable travel.

1. It includes trips to:

   a. High school and out-of-school students
   b. Field days or tours
   c. FFA and YFA meetings and activities.
   d. Prospective vocational agriculture students.
   e. Community activities related to the vocational agriculture program.
   f. State and District vocational meetings.

2. It includes (when approved by local school administrator) out-of-state trips related to Vocational Agriculture, such as the National FFA Convention.

3. It does <u>not</u> include trips to purchase livestock for individual students when such a trip should be the obligation of the parent.

4. It does <u>not</u> include travel from teacher's residence to school building.

F. <u>All</u> travel must be approved by the local school administrator.

G. Use several sheets for the report if necessary. Account for each day of the month except Sundays and holidays. Carry page totals forward and place signatures on last page only.

II. Travel budget

A. A minimum travel budget for a teacher of vocational agriculture is $420 per year.

B. A travel budget above the minimum should be provided in schools where there is a need for greater service.

C. Reimbursement for travel is at the rate of 50 per cent of travel recorded and approved on Form V-53, but not in excess of the local budget.

THE ADVISORY COMMITTEE FOR VOCATIONAL EDUCATION IN AGRICULTURE

The Vocational Education Acts provides that "Boards of Education administering approved vocational schools for.....agriculture education shall.....appoint an advisory committee. It shall be the duty of the advisory committee to counsel with and advise the board and other school officials having the management and supervision of such schools or departments."

I. Duties of the advisory committee - The duties of the advisory committee are to counsel with and to advise the school officials including the vocational agriculture teachers concerning:

A. The new teacher's method of becoming acquainted with the people and agriculture in the community.

B. The courses of study as determined by the community needs.

1. Developing new courses of study.

2. Revising old courses of study.

C. The making of community surveys and the interpretation of pertinent information obtained.

D. The organization and enrollment of out-of-school programs.

E. The activities of the FFA and YFA Chapters.

F. The students' supervised work experience programs.

G. The determination of opportunities for the placement in establishment of selected individuals in agricultural occupations.

H. Proposed or suggest policy statements for the school board.

I. The evaluation of the program of vocational education in agriculture.

J. The improvement of the program of vocational education in agriculture.

K. The clarification of relationships with community organizations, institutions, and agencies.

II. Membership of the advisory committee

A. Appointment of the committee

1. The board of education shall appoint the committee. The school administrators and the vocational agriculture teacher should be asked to make suggestions concerning the committee membership.

2. The individual members of the committee should be appointed for a specific term and not be reappointed immediately to the committee.

3. A policy should be established whereby part of the committee membership will be changed each year.

B. Selection of the individual committee members.

A committee consisting of 9 or more members will usually prove most effective providing that it be representative of:

1. Parents of vocational agriculture students and those not parents of vocational agriculture students.

2. Renters and owners of farms.

3. Different age groups.

4. Geographic units of the entire shcool patronage area.

5. Unorganized as well as organized farm people.

6. Business and/or professional men from the community.

C. Ex-officio members of the committee

1. School officials such as high school principal, the superintendent of schools, vocational director, and school board members.

2. Representatives of agricultural and civic organizations or agencies.

SOME DESIRABLE STANDARDS FOR A PROGRAM OF VOCATIONAL EDUCATION IN AGRICULTURE

I.	Instruction -	
	A. High School Program	
	1. Number of students in vocational department	40 or more students in agriculture classes 9-12
	2. Enrollment	Open to any individual who desires to enroll and can benefit by the instruction, provided supervised occupational experience programs are available.
	3. Number and size of classes	Two or more classes of 10 to 20 students.
	4. Time Requirements	Meet the time requirements outlined in the State Plan. (Sec. 8.13-4)
	5. Course of Study	An up-to-date written course of study for each course taught.
	6. Supervised Work Experience	Each student will have a satisfactory program of work experience in agricultural occupations.
	7. Future Farmers of America	An active chapter whose members participate in local, district, and state activities.
	B. Out-of-School program	Have an organized and continuing program of instruction and follow-up for out-of-school persons.
	1. Young Farmers of Indiana	An active chapter whose members participate in local and state activities.
II.	Transportation -	
	A. Field Trips	Adequate and available transportation financed by the school corporation.
	B. Teacher Travel	A minimum travel allowance of $420 for instructional and supervisory duties of the vocational agriculture teacher.

III.	Teacher Employment -	
	A. Teacher Contract	A teacher certified by the State Board for Vocational Education shall be employed for a full fiscal year beginning July 1 with one of the following qualifying conditions: 1. Three weeks vacation with pay or 2. Three weeks to engage in college resident full-time professional
IV.	Instructional Follow-Up	Each student shall be provided individual instruction. In general, a teacher should visit the student at place where a work experience program is being carried out, an average of six times per year to a high school student, three times to each out-of-school student. Visits should be made throughout the year.
V.	Advisory Committee -	Nine or more members appointed by the school board who meet regularly at least six times each year to consider important problems of the vocational agriculture department. Administrators shall serve as ex-officio members.
VI.	Physical Facilities -	
	A. Classroom	850 square feet of floor space, well arranged and suitably equipped to provide a satisfactory and useful program in Vocational Agriculture. It should be located at the ground level, adjacent to the agriculture mechanics or other laboratory.
	B. Conference Room	150 square feet adjacent to the classroom and agriculture mechanics laboratory.

	C. Demonstration Laboratory	150 square feet
	D. Agriculture Mechanics Laboratory	2400 square feet of floor space with an outside door 12' high and 14' wide, well arranged and suitably equipped to provide effective instruction in all phases of agriculture mechanics. A fenced paved area 1200 square feet adjacent to the large door is desirable.
	E. Horticulture Laboratory (Greenhouse, hot beds, cold frames, plant beds, etc.)	Facilities that make the practical experience and instruction possible in horticulture
	F. Land Laboratory (Includes School Farm)	Suitable facilities well located and equipped for instruction in appropriate phases of plant and/or animal science and production.
VII.	Annual Program of Work	A written annual program of work has been developed for the Department.
VIII.	Local School Policy	A written statement of policies exists governing the administration and operation of the vocational agriculture program.
	A. Agreements	Written, annual and long-term agreements should be made for all facilities not owned by the school corporation.

INDIANA STATE BOARD
for
VOCATIONAL EDUCATION

PLAN OF REIMBURSEMENT FOR SCHOOLS
having
Departments of Vocational Agriculture
effective July 1, 1956

I. CLASSIFICATION

For purposes of reimbursement, all schools having departments of vocational agriculture shall be divided into the following three classes:

FIRST CLASS: Those schools having a vocational agriculture department with a complete program.

SECOND CLASS: Those schools having a vocational agriculture department with an average program.

LIMITED: Those schools having a vocational agriculture department with a limited program.

II. REIMBURSEMENT

FIRST CLASS

A. Each school corporation classified as having a FIRST CLASS vocational agriculture department shall receive the following reimbursement per year:

1. $750 special reimbursement.
2. Its share of the pro-rated reimbursement
3. $150 reimbursement for each approved Adult Farmer Program completed.
4. $150 reimbursement for each approved Young Farmer Program completed.
5. 50% reimbursement for teacher travel.

SECOND CLASS

B. Each school corporation classified as having a SECOND CLASS vocational agriculture department shall receive the following reimbursement per year:

1. $300 special reimbursement (to be paid only to those departments offering three of the following four areas of instruction; FFA Chapter, Farm Shop, Adult Farmer Program, Young Farmer Program).
2. Its share of the pro-rated reimbursement.
3. $150 reimbursement for each approved Adult Farmer Program completed.
4. $150 reimbursement for each approved Young Farmer Program completed.
5. 50% reimbursement for teacher travel.

CONDITIONAL (LIMITED APPROVAL)

C. Each school corporation classified as having a vocational agriculture department on LIMITED APPROVAL shall receive the following reimbursement per year:

1. $100 reimbursement.
2. $150 reimbursement for each approved Adult Farmer Program completed.
3. $150 reimbursement for each approved Young Farmer Program completed.
4. 50% reimbursement for teacher travel.

III. QUALIFICATIONS

FIRST CLASS *

A. To qualify as having a FIRST CLASS PROGRAM, a department shall meet the following qualifications:

1. Have classroom facilities equivalent to those recommended by the Indiana State Board for Vocational Education.
2. Have on file in the administrators office and the vocational department a copy of the course of study being followed.
3. Have reference materials adequate for the course of study currently being followed.
4. Meet one of the time requirements as outlined in the State Plan.
5. Every student shall have a Supervised Experience Program.
6. Every student shall be accounted for in the annual Supervised Experience Completion Record.
7. There shall be an active Advisory Committee for the vocational agriculture department.
8. The school corporation shall provide a minimum budget of $420 for teacher travel.
9. There shall be an approved FFA Chapter.
10. There shall be an approved Farm Shop Program.
11. There shall be an approved Adult Farmer program and the school corporation shall pay the teacher a minimum of $150 for each such program completed.
12. There shall be an approved Young Farmer program and the school corporation shall pay the teacher a minimum of $150 for each such program completed.
14. Whenever the teaching load in vocational agriculture exceeds 60 high school vocational agriculture students, a careful review of the program will be made to determine the advisability of an additional vocational agriculture teacher.

* Schools wishing to achieve this classification will make application to the State Director for review of the Vocational Agriculture program and facilities used for this program.

15. The school is certified by the General Commission of the Indiana State Board of Education as holding a First Class or higher commission. (Whenever a school meets all other qualifications (1-14), a careful review of the program by the State Board for Vocational Education to determine the advisability of granting an exception to #15 may be requested.)

SECOND CLASS

B. To qualify as having a SECOND CLASS program, a department shall meet the following qualifications:

1. Meet the qualifications as listed 1-8 as out-lined for a First Class program.
2. There shall be a least two of the following four areas of instruction provided:

   (1) Approved FFA Chapter.
   (2) Approved Farm Shop Program.
   (3) Approved Adult Farmer Program.
   (4) Approved Young Farmer Program.

   (In case an approved Adult Farmer or Young Farmer Program is included, the teacher shall have a minimum of one 55-minute period per day assigned to program supervision and farm visits, preferably the last period of the day.)
3. When a department shall have successfully completed three of the four areas of instruction listed above, the school corporation shall receive $300 additional reimbursement.
4. The school corporation shall pay the teacher a minimum of $150 for each approved Adult Farmer program completed, and $150 for each approved Young Farmer program completed.
5. The school is certified by the general commission of the Indiana State Board of Education as holding a Continuous or higher Commission. (Whenever a school meets all other qualifications (1-4), a careful review of the program by the State Board for Vocational Education to determine the advisability of granting an exception to #5 may be requested.)

LIMITED

C. A school shall be placed on LIMITED APPROVAL if it fails to meet the qualifications for a SECOND CLASS vocational agriculture department.

1. A school on LIMITED APPROVAL may be removed from limited approval in any year in which its program meets the qualifications of a SECOND CLASS or FIRST CLASS program.

2. A school shall not be allowed to stay on LIMITED APPROVAL more than three years. If the program has not improved sufficiently in this length of time to merit approval as a SECOND CLASS or FIRST CLASS department, the school shall be dropped from the list of schools having approved departments of vocational agriculture in the State.

IV. DEPARTMENTS NOT APPROVED FOR REIMBURSEMENT

A. A department shall be dropped from the list of approved programs if it fa to meet one of the time requirements as outlined in the State Plan, or is markedly deficient in meeting the qualifications for one phase of the pro

VT 002 124
Salerno, Albert
An Evaluative Report on the Programed Learning Center, Mahoning Valley Vocational School Experimental Project, 1965-1966.

Mahoning Valley Vocational School, Vienna, Ohio
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 66 67p.

*BIBLIOGRAPHIES; *PROGRAMED MATERIALS; PROGRAM EVALUATION; *PROGRAM DESCRIPTIONS; STUDENT PARTICIPATION; *VOCATIONAL EDUCATION; *PROGRAMED INSTRUCTION; VOCATIONAL SCHOOLS
PROGRAMED LEARNING CENTER; MAHONING VALLEY VOCATIONAL SCHOOL

The Center was established as an experiment in designing a complete educational program for each student at his own achievement level, and to help bridge the gap between basic education and vocational education. A brief sketch of the philosophy and procedures of the Center are given as well as tables furnishing data on: (1) 1965-66 student progress, (2) vocational areas, (3) completed courses, (4) courses dropped, and (5) courses incomplete because of graduation or school termination. A list of 246 programs and evaluations by students and directors are included. (EM)

VT 002 124

ED039370

69p

AN EVALUATIVE REPORT ON THE PROGRAMED LEARNING CENTER

MAHONING VALLEY VOCATIONAL SCHOOL

EXPERIMENTAL PROJECT

1965 - 1966

MR. ALBERT SALERNO, DIRECTOR
PROGRAMED LEARNING CENTER

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
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VT 021 124

FORWARD

This is the first annual cumulative report of the Programed Learning Center at the Mahoning Valley Vocational School. It marks the completion, of what we consider, a most successful experiment with a Programed Learning Center. As the new training year approaches, we cannot help but think that the contribution of Programed Instruction to our total program this year will be greatly enlarged.

The success of this endeavor and the compilation of this report could not have been accomplished without the help and encouragement of a great many people. Many thanks to the administration and the research staff for their discriminative advice on my ideas and policies as well as for the rendering of their own. The contribution of our faculty in the working of our referral system, plus the rendering of constructive criticism, was immeasureable over the course of the year. My most sincere appreciation to these people for their guidance and help in making this a most successful year for me as Director of the Center. I would also like to acknowledge the tireless work of the secretarial staff for their help with this report.

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EXPLANATION OF HEADINGS

STUDENT CODE NUMBER

Number assigned to each student for purposes of anonymity.

VOCATIONAL AREA CODE

8631	Electrical Appliance	8651	Draftsman
8632	Auto Body Mechanic	8641	Peripheral Machine Operator
8633	Auto Mechanic	8653	Peripheral Machine Operator
8634	Auto Service Mechanic	8642	Food Service Worker
8635	Baker	8643	Welding
8636	Accounting Clerk	8623	Welding
8621	Accounting Clerk	8652	Welding
8637	General Office Clerk	8644	Building Maintenance
8622	General Office Clerk	8645	Machine Operator
8638	Cooking	8626	Machine Operator
8639	Groundskeeper-Custodian	8646	Stock Inventory Clerk
8640	Draftsman	8654	Small Engine Repair
8624	Draftsman		

HOURS IN P.L.C.

Total assigned time in the Programed Learning Center - during the students stay at M.V.S.

HOURS TO COMPLETION

Amount of time in hours it took the student to complete the program. (excluding testing.)

POST TEST SCORES

Percentage scores given where available. (Range 0 - 100%). S -satisfactory as determined by 5 - 7% error rate while working an individual program. VS - unsatisfactory completion.

COURSE DROPPED

Student failed to complete program, but remained in P.L.C.

COURSE INCOMPLETE BECAUSE OF TERMINATION

Student was terminated from school before course could be finished.

COURSE INCOMPLETE BECAUSE OF GRADUATION

Student was successfully graduated before completion of program.

STUDENT REFERRAL DATA SHEET

An accumulation of statistical information concerning the boys sent to the Program Learning Center.

"GENERAL PHILOSOPHY OF THE CENTER"

The Programed Learning Center at the Mahoning Valley Vocational School was opened, on an experimental basis, in August of 1965. Using programed instruction in a center atmosphere was another step toward "customized education" at the Mahoning Valley Vocational School. "Customized Education" has become our watchword through the efforts of our Basic Education Supervisor, Mr. Nicholas J. Edgar. It is an attempt to design a complete educational program for each of the students at the students achievement level. It was into this philosophy that the Programed Learning Center was born.

In the P.L.C., as our center is affectionately known at Mahoning Valley, we tried to create a learning atmosphere from which none of our students could retreat. Our purpose has been to make learning so enjoyable and rewarding that our students would become almost completely self-motivated. The freedom of movement both physically and educationally within our Center was aimed at this goal. Our Center is technically a segment of the basic education branch of our program, however we feel that it bridges the gap between basic education and vocational education quite well.

Before proceeding any further perhaps it would do well to look at the total educational structure of the Mahoning Valley Vocational School. In this manner you will be better able to view the Center in its proper perspective. Our school came into being as a pilot project, in 1964 under the Manpower Development and Training Act of 1962. It is a federally funded, state chartered institution. The state MDTA organization, along with the Ohio State Department of Vocational Education, is responsible for supervising the project. The school

was created to provide saleable vocational skills for young men, ages 16 - 21 who are either unemployed or underemployed. The young students travel to us from all corners of the State of Ohio. We are the only MDTA residential project in the country. Some 16 vocational areas (welding, drafting, auto mechanic, computer peripheral machine operators, production machine operators, etc.) were taught at the installation in 1965. (Stock-Inventory and Small Engine Repair have since been dropped.)

Basic Education is also required of all M.V.V.S. students. The basic education departments include Reading, Mathematics, Communications, Adult Living, Driver Education, Speech and Hearing and, of course, Programed Learning. The reading program is geared to offer remedial and developmental reading with the hopes of attaining or strengthening a good seventh-grade reading communications level. It also includes training in specialized reading-communications for such training groups as drafting, accounting clerks, etc. The math department stresses remedial and basic math with the hope of attaining a junior high general math ability. All the math, whether on a high or low achievement level, is taught as a vocationally oriented program.

Adult Living is a daily class for our students and includes training in personal health habits, nature of man, etc. Driver education was added for the 1966-67 school year to provide training, especially for the auto areas, for students on a priority basis. The educational facilities of the Basic Education wing will be expanded in 1966-67, to include a separate reading center and a basic skills center. The latter will deal with young men, functioning below a 5th grade level in reading and math, who can be educated. The class will be structered in a center atmosphere with a reading-math teacher team.

It is in this setting then that our programed learning exists. Our primary object is to teach basic education skills and also to supplement vocational skills whenever possible. It is in this second area that we feel we have been unique in our project.

In the planning stages we realized, from the experience of the school's first year, that many students at M.V.V.S. could function well in individualized instruction. We were sure that not only would these students build vocational skills, but they would enjoy doing it on a programed basis. Both of these ideas were proven true in our first year of operation. There are many ways in which we have been able to help our students with our Programed Learning Center.

The following is a description of the many ways in which our center was used in our first year of operation.

(1). Teaching of vocationally oriented skills to students. (Blue print reading for welders, machine operators; Effective Business Letters for several office clerks.)

(2). An extension of the vocational course by allowing high achievement students to work on their own in advanced courses. (A peripheral machine operator taking a programed course in 1401 computer or 1620 computer.)

(3). Extension of high school for boys who are lacking in some basic skills. It is also used as a refresher for high school work.

(4). Students were able to do developmental work in a host of subject areas; English, math, science, etc.

(5). Programed Chess, Music, Interior Decoration, Contract Bridge and other leisure time courses were available to the students. Many of these courses were pursued on the students free time.

(6). The center was used as a means of preparing for Armed Forces Examinations, High School Equivalency tests, etc.

(7). Some of our students were given credit (from their respective high schools) for programed courses that were successfully completed. This was done on an individual contact basis with specific high schools.

These are but a few of the ways that we feel we were able to utilize our instructional center. We offer some 225+ different courses of study in many general areas.

From the very inception we have tried to create a learning atmosphere surrounded with a great deal of freedom. All of the programed work is done in our center. Only on rare occasions were programs permitted to be checked out. (We are not against this method, however.) The student is offered a wide range of free choice as to the particular courses he may want to pursue. Our object has usually been to guide the student into a broad course of study based upon his individual needs. We attempt to contain our student in vocationally-oriented courses, however,he may be allowed to pursue "leisure time" courses during regular class time at our option. We found that this intermingling of developmental programs with "leisure time" courses helped to balance our student between the things he wanted to do and those we felt had to be done.

We exist in a very informal mood at all times. Soft music from a stereo-recorder is playing usually all day. (Classical and semi-classical music.) In this manner relaxation is coupled with the exposure to culturally fine music.

The center also houses a library and a reference section for each vocationallarea. The students may read as much as they desire. This has in my estimation actually helped our programing completions. The magazines serve as an escape valve from the tedium of using programed materials day after day.

"REFERRAL PROCEDURE"

When an instructor recommends a student to the center he fills out a referral form containing pertinent educational information. The following is an example of the kind of information we need:

(1). Is he a high school graduate? If not, how many years has he completed?

(2). What academic subjects has he taken previously?

(3). What are his major interest areas?

(4) Is this boy able to perform his tasks on his own?

The form also contains Wide Range Reading and Math Scores, California Achievement Test scores in Reading and Math and other scores where necessary, (Otis, Peabody and GATB). These test scores give us an indication as to the achievement level into which a student can be placed. We try to put each boy into a plateau where he can function successfully from the start. Success in his first endeavor with programing will largely govern whether he takes a second course.

The referring instructor may specify a particular area or course for the student he sends. An example of this might be a student coming out of a math class for Applied Trigonometry or an Electrical Appliance class specifically for Basic Electricity.

Students may work in the Programed Learning Center on free time or they may be channeled out of class to pursue courses. In the case of the latter method any vocational or basic education instructor might refer, or in some instances, guidance counselors or supervisors. We have previously mentioned that students may be sent to develop basic education skills or supplement their vocational education. In light of this a student may spend his math or reading hour

(depending on his achievement level) in our center instead of the regular classroom.

All referral forms are channeled through the Basic Education Supervisor. He makes the final decision as to whether a boy does or does not enter the Center. Once a boy is sent to the center he enters our orientation phase. Each boy receives a personal conference at which we discuss his referral information (other than test scores) and his disposition, (whether he has been recommended for a specific course or whether he may choose anything that he wishes.)

A large segment of this individual conference is spent in explaining the mechanics of programing. We attempt to explain some of the theory behind it, the mechanics of it and expecially the excellent results we have had with it. The student is made aware of some of its pitfalls, the boredom and tedium. We contend that the more a student understands about the programing process, the greater are his chances for success.

The time spent on programed learning varied with our students. The maximum time per week was usually fifteen hours and the minimum time three hours. The entire referral procedure helped us in determining which students could possibly function under this heavy load of self-teaching.

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
1	8637	95	Effective Business Letters	9	S			Sound & Light	4		
			Stock Market	3	S						
			First Aid	12	S						
2	8653	30	Collator	12	S			ABC Shorthand	16		
3	8645A	86	Blue Print Reading	9	92			Algebra I	36		
			English Grammar BLR	35	90						
4	8641	25	Binary Math	3	95	ABC Shorthand	5	Computer Math	1		
5	8645	278	Vernier Scale	2	91			Algebra I	64		
			Blue Print Reading	11	97			Algebra II	15		
			Slide Rule	25	S						
6	8640	195	Verbal Problems in Algebra	5	100			Algebra Refresher	23		
			Plane Geometry	131	86						
7	8635A	152	Food Sanitation	3	S						
			Ratio & Proportion	15	S						
			Nutrition	35	92						
			Business Math - Payroll	35	85						
			Basic Math	21	S						
8	8637	171	English Grammar	18	89	Basic Computer Programming	4	Logic	4		
			Financial Reports	6	76						
			Writing Reports	6	S						
			Music Theory	6	S						

	STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
9	8637B	14	Stock Market	2	S						Reading & Evaluating Financial Reports	6
10	8637	89	Effective Business Letters	12	S				Spelling ABC Shorthand	8 39		
11	8624	45	Blue Print Reading	9	97				Chemistry	20		
12	8631	35	Introduction to Algebra	4	S	Transistors Modern Algebra	1 3					
13	8631A	291	Applied Electricity Algebra I Your Study Skill Applied Logic Prevention of Communicable Disease English 2200	26 33 3 17 6 1/2 20	94 S S 98 97 98				Electric Arc Welding	10		
14	8637	110	ABC Shorthand	85	S	Bookkeeping	1					
15	8641	30	Binary Math Music Notation	10 5	75 S	Algebra I	12					
16	8643	100	Blue Print Reading	21	95	Construction Measurement Skills	1					
17	8644A	55	Construction Measurement Skills Volumes & Area - Shop Math Blue Print Reading	7 4 14	85 90 80	Basic Electricity	12					

	STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
18	8652	65		Blue Print Reading	22	90			Verbal Problems in Algebra	9		
				Construction Measurement Skills	12	92						
19	8624	44		Trigonometry-Applied	19	S	Spanish	8				
20	8653	222		Collator	12	S						
				Computer Math	9	S						
				Algebra Refresher	70	83						
				Binary Math	8	92						
				Computer Programming	6	S						
21	8652	275		Spanish	14	87						
				Blue Print Reading	21	91						
				Music Notation	22	S						
				English Grammar	20	S						
22	8631A	158		Gears & Gearing	5							
				Improving Your Writing	7	S			Welding	7		
				Basic Electricity	21	VS			Algebra II	28		
				Applied Electricity	2	87						
				Gear Ratios	9	91						
23	8643	185		Verniers	2	91	French	2	Modern Algebra	33		
				Construction Measurement Skills	9	98			Electricity	12		
				Calipers	6	90						
				Verbal Problems in Algebra	14	100						
				Micrometer	2	100						
24	8639B	50		Construction Measurement Skills	15	VS	Blueprint Reading	10				
							G.E.D.	5				

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
25	8624	49	Blue Print Reading	9	95			Temac Algebra I	35		
26	8640A	343	Chemistry	43	70						
			Mechanics	10	85						
			Trigonometry-Applied	24	S						
27	8637	90	Computer Math	31	S			Business Math	21		
			Effective Business Math	10	S						
28	8646	22	Biology-Chemistry	12	60						
29	8640A	437	Food Sanitation	2	S	Chess	10				
			Trigonometry-Applied	5	S						
			Chemistry	13	73						
			Verbal Problems	8 1/2	100						
			Stock Market	2	S						
			Bridge	18	95						
			Computer Math	7	S						
			Trigonometry	44	94						
			Basic Electricity	11	S						
			Engines	10	S						
30	8635A	10	Food Sanitation	3	S						
31	8645	196	Blue Print Reading	15	92	Algebra I	16				
			Spelling	35	S	English 2600	11				
			Gears I	8	89						
32	8646B	59	Business Math I	30	91						
			Evaluating Financial Reports	14	85						

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
33	8653	92	Computer Math	7	S	Bridge	8	1401-Computer	9		
			Computer Programing	11	S						
34	8623		Blue Print Reading	19	87	Prevention of Communicable Disease	2				
35	8623	51	Construction Measurement Skills	21	61			Blue Print Reading	15		
36	8645A	169	Blue Print Reading	27	90	Algebra	17				
37	8642	175	Food Sanitation	2	S						
			Chemistry	36	S						
			Human Body & Its Functions	36	S						
			Ratios & Proportions	21	92						
38	8643	234	Blue Print Reading	13	94			Algebra II	34		
			Astronomy	12	78						
			German	45	87						
39	8637	85	Binary Math	10	100			Computer Math	4		
			Effective Business Letters	14	S						
			Basic Computer Programming	22	S						
40	8643A	28	Blue Print Reading	13	93					Math Measurement	3
41	8640A	315	Applied Electricity	30	65						
			Construction Measurement Skills	5	84						
			Blue Print Reading	13 1/2	97						
			First Aid	7	97						

	STUDENT CODE NUMBER	VOCATIONAL AREA COD	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRA TI	HOURS WORKED	COURSES INCOMPLETE CAUSE OF TERMINATIO FROM SCHOOL	HOURS
	42	8634B	50	Construction Measure-ment Skills	11	90						
				Area & Volume-Shop Math	6	84						
	43	8645A	53	Blue Print Reading	18	96						
				Caliper	6	90						
12	44	8637	67	Vocabulary	5	S			Algebra	14		
	45	8653	315	Computer Programing	6	S	Calculus	7				
				Electronic Data Processing	10	87	Mechanics	4				
				Binary Math	5	87	Russian	18				
				Computer Math	4	S						
				Applied Trigonometry	10	S						
				Statistics	31	73						
	46	8640	66	Applied Trigonometry	24	S						
	47	8636	87	Reading & Evaluating Financial Reports	11	84			Economics-Gross Nat'l Product	8		
				Free Enterprise-Economics	21	93						
	48	8641	27	Binary Math	5½	100	Collator	5				
				Basic Computer Pro-graming	5	S					Algebra I	29
				Computer Math	6	S						
	49	8636	230	Business Math II	20	95						
				Business Math III	25	93						
				Reading & Evaluating Financial Reports	8	90						

	STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
	50	8621	104	Business Math	19	80	Statistics	10	Algebra	22		
				Meteorology	5	86						
				Effective Letter Writing	4							
				Geology	3	93						
	51	8635	303	Food Sanitation	2	S			French	36		
				Astronomy	7½	88						
13				German	26½	94						
				Algebra Refresher	125	84						
	52	8631A	385	Trigonometry-Applied		S			Calculus	55		
				Basic Spanish	74	97						
				Temac Algebra II	114	95						
				Slide Rule	19	S						
	53	8640A	107	Mechanics	19	85						
				Trigonometry	19	S						
				Geology	9	90						
				Vocabulary Growth	2	100						
				Study Habits	3	S						
	54	8635A	276	Ratios & Proportions	14	92						
				Food Sanitation	3	S						
				Nutrition	13	97						
				Poetry	17	100						
				Economics-Free Enterprise	15	98						
				Basic Math	11	80						
				Interior Decorating	21	S						
				Music Notation	10	S						
				Sound & Light	9	96						
				Vocabulary Growth	5½	S						

	STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
55	8645	191		Vernier Scale	4	91	Algebra I	30	Blue Print Reading	18		
				Gears I	7	94						
				Gears II	10	69						
56	8646	90		Vocabulary Growth	12	S	Poetry	4	Algebra	9		
				English	38	82			Basic Math	14		
57	8640A	315		Stock Market	2	S	Algebra II	4				
				Improve Your Writing	14	S	Computer Math	6				
				Interior Decorating	22	S						
				Bridge	22	88						
58	8640A	450		Algebra II	91	95						
				Blue Print Reading	10	95						
				French I	40	97						
59	8623	105		English 2200	62	86						
				Blue Print Reading	16	97						
60	8643A	23..		Construction Measurement Skills	7	95					Algebra I	13
61	8643	185		Meteorology	16	85			Chess	21		
				Ratios & Proportions	19	92			Chemistry	11		
									Algebra II	18		
62	8635	75		Ratios & Proportions	12	80			Human Body & It's Functions	12		
				Engines	18	90						
				Food Sanitation	4	S						
63	8631	189		Modern Algebra	109	94			Spanish	35		

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64	8643A	142		Blue Print Reading	19	89						
				Basic Math	30	91						
				Verbal Problems in Algebra	24	85						
65	8643	52		Blue Print Reading	18	83			Construction Measurement Skills	5		
66	8640A	198		Basic German	32	93					Chemistry	22
											Bridge	3
											Spanish	16
67	8645A	181		Blue Print Reading	11	100	Algebra II	43				
				English 3200	41	86						
68	8640	160		Blue Print Reading	24	93	English 2600	23	Spelling	12		
				Trigonometry-Applied	42	S			Algebra II	40		
				Slide Rule	24	S						
69	8637	90		Effective Business Letters	8	S			Business Math IV	12		
70	8636	72		Reading & Evaluating Financial Reports	14	94					French	7
				Improving Your Writing	10	S					Algebra	9
71	8652	30		Blue Print Reading	23	91						
				Construction Measurement Skills	25	88						
72	8626	209		Vernier Scale	1½	91			Algebra I	38		
				Blue Print Reading	13	95						

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73		8640	172	Trigonometry	11	S		Slide Rule		8		
								Algebra Refresher		20		
74		8643A	153	Blue Print Reading	18	87						
75		8638A	62	Food Sanitation	3	S						
				Human Body & It's -Functions	31	72						
76		8641A	36	Binary Math	6	95					Algebra I	12
77		8636	234	Astronomy	7	95						
				Algebra I	70	93						
78		8651	35	Applied Trigonometry	21	S						
				Logarithms	5	S						
79		8651	50	Micrometer	3	100	Applied Electricity	6				
				Blue Print Reading	16	90						
				Chemistry	28	80						
80		8645A	59	Blue Print Reading	15	93			Algebra I	23		
81		8635	80	Food Sanitation	2	S					Chemistry	6
				Biology	16	S					Spanish	22
82		8644	54	Construction Measure-ment Skills	12	95			Electricity	17		
									Blue Print Reading	21		
83		8639	56	Business Math	32	82						
84		8641	10	Gears I	2	98			Temac			
				Gears II	1	69			Meteorology	2		
									Temac Calculus	6		

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	85	8631	139	Electricity	12	S			Applied Logic	5		
									Algebra II	21		
	86	8645A	173	Construction Measure--ment Skills	9	90			Algebra I	23		
				Calipers	4	97						
				Blue Print Reading	12	97						
				English 2600	33	94						
18	87	8640	180	Business Math I	18	85	Business Math	11				
				Business Math II	21	84						
				Algebra I	50	80						
	88	8634	16	Engines	14	85						
	89	8640A	316	Mechanics	28	75						
				Practical Trigono--metry	10	S						
				Biology	32	S						
				Algebra I	60	80						
	90	8637A	90	Astronomy	11	72			Algebra I	5		
				Effective Letters	12	S						
	91	8645A	157	Gears I	10	91						
				Blue Print Reading	25	93						
				Construction Measure--ment Skills	10	88						
				First Aid	18	90						
	92	8637	155	Bill of Rights	7	S			Business Math II	16		
				Introduction to -American Government	20	S			Effective Letter -Writing	7		
									German	15		

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	93	8641A	76	Computer Programing	20	S						
				Russian	30	S						
				Computer Math	10	S						
				Binary Math	4	91						
				Music Notation	15	S						
	94	8640	76	Stock Market	3	S						
				Bookkeeping	25	100						
	95	8652	68	Construction Measu--rement Skills	11	97						
				First Aid	11	94						
				Vocabulary Growth	9	S						
				Blue Print Reading	19	95						
	96	8626	118	Blue Print Reading	21	95						
				Vocabulary	8	S			Algebra I	26		
	97	8645A	179	Shop Algebra	8	81						
				Gears I	10	94						
				Gears II	12	86						
				Blue Print Reading	27	78						
				Construction Measure--Skills	8	96						
	98	8637B	40	American Government	35	89						
	99	8621	278	Human Body & It's -Function	19	98	Business Math IV	32	German	12		
				Vocabulary Growth	9	S	Statistics	9	Algebra II	23		
				Chess	31	S						

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100	8641A	30	Applied Logic	10	89						
			Computer Math	9	S						
101	8622	85	Basic German	32	90						
			Effective Business -Letters	8	S			Chemistry	9		
102	8645	95	Blue Print Reading	12	S	Algebra I	34				
			Drills I	9	85						
103	8646B	124	English 2200	48	86						
			Business Math	11	74						
104	8673A	108	High School Equiva- -lency	25	S	Evaluating Finan- cial Reports	4				
105	8638A	80	Ratios & Propor- tions	21	S			Bookkeeping	25		
			Food Sanitation	3	S						
106			Nutrition	18	76						
106	8637	95	German	22	98			English 3200	26		
107	8643A	183	Blue Print Reading	28½	93			Applied Electricity	16		
			Construction Measure- -ment Skills	12	86						
			Bill of Rights	10	92						
			Verbal Problems	24	85						

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108	8640A	115	Slide Rule	8	S	Chess	10	German	13		
			Applied Electricity	26	99						
			Applied Trigonometry	21	S						
			Calculus I	40	91						
109	8638	75	Ratios	29	US	Nutrition	6	English . 2200	2		
			Food Service	4	S						
110	8641	23	Computer Programming	15	S	ABC Shorthand	12	Arithmetic of Computers	2		
111	8640	42	Blue Print Reading	11	81						
112	8631	211	Spanish	65	73						
			Algebra I	75	83						
113	8643A	60	Blue Print Reading	28	89						
			Construction Measurement Skills	18	84						
114	8635A	39	Biology	14	S					Ratios & Proportions	2
			First Aid	12	S						
			Geology	8	82						
			Food Service	3	S						
115	8645A	48	Blue Print Reading	22	96						
			Gears I	6	80						
116	8635	76	Business Math I	35	86						
117	8643	89	Math Measurements	33	80						
			Blue Print Reading	12	87						
118	8645A	171	Blue Print Reading	11	97	Modern Algebra	30				
			English 2600	34	91						

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119	8645A	Computer Programing		27	S			Decimals	2		
120	8634	28	Engines	13	89			Payroll Math	2		
121	8645	75	Blue Print Reading	16		Algebra I	19				
			Drills I	6	94						
122	8631	71	Construction Measure-ment Skills	15	82					Applied Electricity	13
			Blue Prints Reading	20	85					Algebra I	22
123	8640	178	Stock Market	3	S						
			Trigonometry-Applied	20	S						
124	8634A	32	Business Math II	13	83						
125	8637	57	Binary Math	7	95			Computer Math	6		
126	8622	40	Effective Business Letters	7	S			Business Math	8		
			Vocabulary Growth	7	S						
127	8653	40	Business Math	10	84						
			Filing Skills	3	100						
			Bookkeeping	18	98						
			Reading & Evaluating Financial Reports	3	82						
128	8635A	342	Food Sanitation	3	S	German	6	Human Body and It's Functions	27		
			Ratios & Proportions	22	VS						
			Algebra I	32	85						

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129	8637A	30	Filing Skills	20	S						
130	8643A	95	Blue Print Reading	19	86						
			Construction Measurement Skills	20	83						
			Shop Math-Area & Volume	8	S						
131	8637	45	Evaluating Financial Reports	12	86						
132	8645A	167	Blue Print Reading	20	96	Algebra I	24	Effective Letters	8		
			Gears	6	93						
134	8645A	223	German	35	94			Calculus	13		
			Algebra Refresher	15	89						
			Russian	29	S						
			Calipers	2	100						
135	8639	52	Geology	9	77						
			Payroll Math	8	73						
136	8641	10	Binary Math	5	96						
137	8623	84	Caliper	2	96			Algebra	30		
			Micrometer	100	2						
			Construction Measurement Skills	10	89						
			Blue Print Reading	15	94						
			Vernier Scale	1½	90						

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
138	8635A	87	Construction Measurment Skills	15	VS						
			Blue Print Reading	23	80						
			Food Sanitation	3	S						
139	8631B	243	Elementary Electronics	18	S			Algebra I	41		
140	8636	225	Business Math IV	24	88						
			English 3200	45	89						
141	8646B	121	Business Math II	33	93						
			English 2600	46	92						
142	8652	37	Blue Print Reading	21	91						
143	8652	56	Blue Print Reading	15	87			Basic Math	48		
								Business Math II	2		
144	8634A	28	Engines	15	60						
145	8622	52	Algebra I	22	93	Spanish	6				
146	8631B	18	Basic Electricity	12	S					Spanish	4
147	8641	30	Applied Logic	24	94	Spanish	14				
148	8632	19	First Aid	12	S						

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
149	8635A	200	Bill of Rights	4	S	Ratios & Proportions	4				
			Vocabulary	7	S	Basic Math	9				
			Safety	10	85						
			Interior Decorating	17	VS						
			Logic	15	S						
			Food Sanitation	S	3						
			Study Skills	3	S						
			Figures of Speech	12	S						
150	8621	92	Geology	9	92	Statistics	19	Introduction to Calculus	22		
			Astronomy	12	91						
			Vocabulary Growth	8	S						
151	8652	30	Blue Print Reading	17	86						
			Construction Measurement Skills	10	90						
152	8637	89	Interior Decorating	23	S						
153	8635	87	Food Sanitation	5	S			Applied Electricity	17		
			Ratios & Proportions	14	96						
			Human Body	22	90						
154	8653	162	Computer Programing	12	S						
			Electronic Data Processing	8½	88						
			Binary Math	6	97						
			Collator	16	S						
			Computer Math	12	S						
155	8635A	30	Ratios & Proportions	12	VS						

	STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
156	8624		25	Algebra (Introduction)	18	VS						
157	8635A		242	Math Measurement	35	92						
				Spelling	35	94						
				Vocabulary Growth	7	S						
				Food Sanitation	2	S						
				Payroll Math	10	84						
				Ratios & Proportions	20	80						
25				English Grammar	25	S						
158	8635A		56	Ratios & Proportions	17	80						
				Food Sanitation	3	S						
				Decimals & Division	13	S						
159	8623		101	Calipers	3	93	English	4	Blue Print Reading			10
				Micrometer	2	100			Algebra I			12
				Measurements	12	77						
				Vernier Scale	2½	94						
160	8643A		56	Blue Print Reading	30	71			Construction Measurement Skills			13
161	8624		11	Algebra II	60	70			English			10
				Trigonometry	18	S						
162	8637		165	Interior Decoration	13	S	Algebra I	20	Business Math IV			9
				Effective Business Letters	9	S						
				Logic	13	96						
163	8640		175	Trigonometry	10	S	ABC Shorthand	21				
				Improving Your Writing	9	S						

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
164	8645	86	Blue Print Reading	10	89			Algebra I	52		
								Chemistry	28		
165	8635A	76	Ratios & Proportions	14	75	Constitution	8				
			Food Sanitation	3½	S	English Grammar	1				
166	8636	37	Beginning Algebra	5	S	ABC Shorthand	11			English Grammar 2	
167	8634A	141	High School Equivalency Test	20	S						
			Punctuation & Capitalization	6	S						
			Spelling	38	89						
168	8643A	70	Blue Print REading	11	88						
			Math Measurement Skills	32	86						
169	8652	68	Math Measurement Skills	15	S						
			Blue Print REading	30	94						
170	8641	22	Computer Programing	10	S						
171	8637A	15	American Government	26	87			English 2600	16		
172	8641A	105	Binary Math	5	97			Algebra II	34		
			Collator	25	S			Introduction to Data Processing	9		
173	8644	55	Stock Market	4	S	Blue Print Reading 1					
			Construction Measurement Skills	15	60						

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
174	8640A	121	Geology	5	92	Spanish	49				
175	8643	174	Astronomy	6	89	French	3	Elementary Electricity	13		
			German	27	93						
			Stock Market	1	S						
			Mechanics	14	85						
			Blue Print Reading	13	93						
176	8653	37	Binary Math	5	85						
177	8637	48	Effective Business	22	S			Reading & Evaluating Financial Reports	14		
178	8638	112	Chess	21	S	Algebra II	12	Poetry	8		
			Astronomy	11	98						
179	8642	6	Food Sanitation	3	S						
180	8640	196	Trigonometry	75	88	English Grammar	22				
			Algebra II	108	87						
181	8643	100	Gears & Gearing I	5	100					Chemistry	4
			Basic Measurement Skills	27	90					Free Enterprise	4
			Gears & Gearing II	8	91					Chess	2

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENTS	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
182	8643A	113	Blue Print Reading	20	95						
			Construction Measure-ment Skills	11	81						
183	8642	8	Food Sanitation	6	S						
184	8637A	30	Effective Business Letters	6	S						
			Filing Skills	10	S						
185	8644A	70	Blue Print Reading	15	85						
			Construction Measure-ment Skills	8	72						
			Shop Math - Area Volume	4	75						
186	8640	187	Astronomy	7	85	Trigonometry	31				
			BRL Astronomy	37	90						
187	8635A	70	First Aid	12	92						
			Ratios & Proportions	16	90						
			Food Sanitation	4	S						
188	8640A	294	Blue Print Reading	15	87	Algebra II	30				
			Engines	15	85	Spanish	12				
			Vocabulary Growth	12	S						
			Bridge	30	86						
189	8645	205	Blue Print REading	12	90	Algebra II	27				
			Gears I	5	99	English 2600	10				
			Vernier Scale	2	100	Chess	14				
						Bridge	15				
190	8638A	53	Food Sanitation	3	S			English 2600	15		

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENTS	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
191	8636	154	Improving Your Writing	15	S	Bridge	4				
192	8626	210	Blue Print Reading	16	94			Algebra Refresher	36		
			Economics I-Free Enterprise	18	S						
			Economics II-Taxes Government	16	S						
			Drills I	8	99						
193	8631A	41	Electricity	18	S						
194	8640	187	Logarithms	5	S						
			Blue Print Reading	16	95			Algebra I	45		
			Trigonometry-Applied	26	S						
			Slide Rule	23	S						
195	8646B	10						Basic Math I	9		
196	8637	100				Basic German	6				
197	8637	52						ABC Shorthand	13		
198	8637	42						Business Letters	3		
199	8637	30						Vocabulary Growth	3		
200	8637	47						ABC Shorthand	24		
201	8638	15						Ratios & Proportions	11		
202	8644	50						Blue Print Reading	26		

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
203	8645	71	Reading & Evaluating Financial Reports	.8	76			Business Math I	8		
204	8645	25						Algebra I	15		
205	8635							English 2200	10		
206	8641	15						Algebra I	9		
208	8651	30						Plane Geometry	10		
209	8639A	31						Payroll Math	9		
210	8641	5				ABC Shorthand	3				
211	8645	15				Basic German	6				
212	8645	22						Blue Print Reading	10		
213	8621	35				French I Algebra I	3 6	ABC Shorthand	5		
214	8641A	10						Vocabulary Growth	6		
215	8641	5						Temac Algebra I	4		
216	8624	30						Algebra Refresher	25		
217	8621	55						German	18		
218	8621	52						Spanish	21		

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSED	HOURS TO COMPLETE	POST TEST SCORES	COURSES DROPPED BY STUDENTS	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
219	8626	30						Algebra Refresher	25		
220	8643A	166	Basic Math-Addition Multiplication	14	100						
			Blue Print Reading	14	98						
221	8643	70	Blue Print Reading	20				English	14		
222	8626	94						Algebra II	47		
223	8634A	26						Applied Electricity	7		
224	8653	290				Statistics	7	Programing 1620	21		
						Applied Trigonometry	14				
225	8637B	10				Business Math	4				
226	8621	12				Vocabulary Growth	10				
227	8624	58				Spanish	40				
228	8624	45				German	28				
229	8643A	51	Blue Print Reading	15	83	Basic Electricity	10				
230	8651	45				Solid Geometry	12				
231	8651	48				Algebra I	10	Trigonometry Pract.	6		
232	8645	34				Blue Print Reading	24				
233	8651	50				Solid Geometry	16	Applied Electricity	17		

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
234	8636	174	ABC Shorthand	50	5	English Grammar	10				
235	8621	5				Business Math IV	4				
236	8641	15				Basic Math	10				
237	8641	10				Algebra I	7				
238	8641	20				Stenospeed	13				
239	8624	2				Basic Math	1				
240	8621	20				ABC Shorthand	16				
241	8641	10				Algebra I	2				
242	8640	29								Basic Math	10
243	8637A	5				High School Equivalency Test	5				
244	8631C	5				Basic Electricity	5				
245	8651	8								Algebra I	6
246	8634B	12								Shop Math	12
247	8644A	38								Basic Math	21
248	8636	55								Algebra I	29
249	8640A	62								French I	6
										Blue Print Reading	4
										Algebra I	29
										Plane Geometry	6

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BE-CAUSE OF TERMINATION FROM SCHOOL	HOURS
250	8636	18								Interior Decorating	11
										Bridge	3
251	8636	10								Bookkeeping	6
252	8635A	5								Food Sanitation	2
253	8634A	11								Engines	5
254	8636	10								Reading & Evalua-ting Financial Re-ports	3
255	8637	15									
255	8637	15								Reading & Evalua-ting Financial Re-ports	7
257	8637	15								English Auto Tutor	10
										ABC Shorthand	10
258	8631C	5								Basic Electricity	2
259	8637B	2								Basic Electricity	2
260	8623	40								Blue Print Reading	36
261	8643	29								Math Measurement	19
262	8645	15								Algebra I	15
263	8645	15								Algebra I	11

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
264	8640	45								Blue Print Reading	18
										Spanish	11
										Applied Logic	3
										Basic Measurement Skills	12
265	8631	158								Electricity	12
										Chess	4
266	8639	5								Geology	1
267	8640A	17								Bridge	12
268	8640	10								Business Math	4
										English Grammar	2
269	8634	2								Payroll	2
270	8645A	15								Spanish	5
										Chess	7
271	8626	10								Algebra I	9
272	8640A	10								Blue Print Reading	9
273	8623	30								Spanish	2
										Algebra-TMI 501	15
274	8635	12								Algebra I	5
										Chemistry	4
275	8621	20								Stenospeed	16

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORE	COURSES DROPPED BY STUDENTS	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BE-CAUSE OF TERMINATION FROM SCHOOL	HOURS
276	8636	16								Bookkeeping	11
277	8645	10								Basic Math	10
278	8623	31								Blue Print Reading Algebra I	8 13
279	8640A	26								Algebra I	9
280	8631A	40								Sound & Lignt Algebra I	10 19
281	8631B	50								Chemistry Punctuation Measurement-Math	8 12 21
282	8645A	24								Spanish	21
283	8631B	15								High School Equiva-lency Test	10
284	8651	17								Solid Geometry	12
285	8641 A	5								Binary Math	2
286	8634A	23								Blue Print Reading Basic Electricity	6 3
287	8651	50	Algebra II	86	30						
288	8646B	84								English 2600 American History	27 6

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORES	COURSES DROPPED BY STUDENTS	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
289	8640	234	Trigonometry - Practical	8	S	French	69				
			Applied Electricity	10	81						
290	8646B	116				Spanish I	30				
291	8651	25								Trigonometry	8
										Algebra-Introductory	19
292	8646B	76	Business Math II	30	93						
293	8640	78				Algebra I	30				
294	8651	35	Chemistry	35	83						
295	8651	28				Algebra II	9				
296	8637A	63				Business Math I	11				
						Spelling	18				
297	8651	48				Algebra I	14				
298	8651	50						Introduction to Algebra	19		
								Algebra I	16		
299	8651	40				Algebra I	8				
300	8651	25				Algebra II	11				
301	8651							Algebra I	13		
302	8651	51	Practical Trigonometry	8	S						

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORES	COURSES DROPPED BY STUDENT	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	hours
303	8651	20						Trigonometry	8		
304	8631C	57						Algebra I	33		
305	8631C	89				Spelling	15	Algebra I	25		
306	8638A	50	Music Notation Vocabulary Growth	25 15	S S						
307	8631C	97	English 3200	55	83			U.S. History	12		
308	8637A	56						Bookkeeping	20		
309	8637A	63						High School Equivalency Test	22		
310	8636	79								Algebra I	36
312	8622	125	Basic Math English 2600	35 59	85 83						
314	8639B	6						Effective Business Letters	3		
315	8646B	10								Business Math II	6
316	8631C	35						First Year Electronics	26		
317	8641	2						English 2600	6		

STUDENT CODE NUMBER	VOCATIONAL AREA CODE	ASSIGNED HOURS	COMPLETED COURSES	HOURS TO COMPLETE	POST TEST SCORES	COURSES DROPPED BY STUDENTS	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF GRADUATION	HOURS WORKED	COURSES INCOMPLETE BECAUSE OF TERMINATION FROM SCHOOL	HOURS
321	8638A	40						English 2200	12		
322	8653	3						Reproducing Punch	3		
323	8645A	7						Algebra I	5		
324	8646B	30	Vocabulary Growth	12		S					
325	8637A							Bookkeeping	7		
326	8654	25	Gears I	11	83						
327	8646B	35	Astronomy	28	88						
328	8624	36						English 2600	42		
329	8641	25						English 3200	17		
330	8635A	10	Food Sanitation	4		S					

VOCATIONAL AREA SHEET

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	VOCATIONAL AREA TITLE
12	Introduction to Algebra	S	4	8631	Elec. App.
13	Applied Electricity	94	26	8631A	" "
13	Algebra I	S	33	"	" "
13	Study Skills	S	3	"	" "
13	Applied Logic	98	17	"	" "
13	Prevention of Comm. Disease	97	6 1/2	"	" "
13	English 2200	98	20	"	" "
22	Gears & Gearing	94	5	"	" "
22	Improving Your Writing	S	7	"	" "
22	Basic Electricity	US	21	"	" "
22	Applied Electricity	87	21	"	" "
22	Gear Ratios	91	8	"	" "
52	Applied Trigonometry	S	14	"	" "
52	Spanish	97	74	"	" "
52	Temac Algebra II	95	114	"	" "
52	Slide Rule	S	18	"	" "
63	Modern Algebra I	94	109	8631	" "
85	Basic Electricity	S	12	"	" "
305	English 2600	83	55	8631C	" "
112	Spanish	73	65	8631	" "
112	Algebra I	83	75	"	" "
122	Construction Measurement Skills	82	15	"	" "
122	Basic Blue Prints	85	20	"	" "
139	Elementary Electronics	S	18	8631B	" "
139	Basic Electricity	S	15	"	" "
146	Basic Electricity	S	12	"	" "
193	Basic Electricity	S	18	8631A	" "
229	Basic Blue Prints	83	15	8631C	" "
148	First Aid	S	12	8632	Auto Body
144	Engines	60	15	8634A	Auto Serv.
120	Engines	89	13	8634	" "
124	Business Math II	83	13	8634A	" "
88	Engines	85	14	8634	" "
42	Area & Volume - Shop Math	84	6	8634B	" "
42	Construction Measurement Skills	90	11	"	" "
7	Food Sanitation	S	3	8635A	" "
7	Ratio & Proportions	15	15	"	" "
7	Nutrition	92	22	"	" "
7	Basic Math	94	21	"	" "
30	Food Sanitation	S	3	"	" "
51	Food Sanitation	S	2	8635	" "
51	Astronomy	88	7 1/2	"	" "
51	Basic German	94	26 1/2	"	" "
51	Algebra Refresher	84	125	"	" "

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	TITLE
54	Ratios & Proportions	92	14	8635A	Bakers
54	Food Sanitation	S	3	"	"
54	Nutrition	97	13	"	"
54	Poetry	100	17	"	"
54	Economics - Free Enterprise	98	15	"	"
54	Basic Math	80	11	"	"
54	Interior Decorating	S	21	"	"
54	Musical Notation	S	10	"	"
54	Vocational Growth	S	5 1/2	"	"
62	Ratios & Proportion	80	12	8635	"
62	Engines	90	18	"	"
62	Food Sanitation	S	4	"	"
81	Food Sanitation	S	2	"	"
81	Biology	S	16	"	"
128	Ratios & Proportions	US	22	8635A	"
330	Food Sanitation	S	4	"	"
187	First Aid	92	12	"	"
187	Ratios & Proportions	85	16	"	"
187	Food Sanitation	S	4	"	"
158	Ratios & Proportions	80	17	"	"
165	Ratios & Proportions	75	14	"	"
165	Food Sanitation	S	3 1/2	"	"
153	Food Sanitation	S	5	"	"
153	Ratios & Proportions	96	14	"	"
153	Food Sanitation	S	5	8635	"
153	Ratio & Proportion	96	14	"	"
153	Human Body & It's Functions	90	22	"	"
155	Ratio & Proportion	US	12	8635A	"
157	Math Measurement Skills	92	35	"	"
157	Spelling	94	35	"	"
157	Vocabulary Growth	S	7	"	"
157	Food Sanitation	S	2	"	"
157	Payroll Math	84	10	"	"
157	Ratios & Proportions	80	20	"	"
149	Bill of Rights	S	4	"	"
149	Vocabulary Growth	S	7	"	"
149	Safety	85	10	"	"
149	Interior Decoration	S	17	"	"
149	Applied Logic	US	25	"	"
149	Food Sanitation	S	3	"	"
149	Study Skills	S	8	"	"
138	Construction Measurement Skills	US	15	"	"
138	Blue Print Reading	80	23	"	"
138	Food Sanitation	S	3	"	"
128	Food Sanitation	S	3	"	"
128	Algebra I - Refresher	85	32	"	"
114	Biology	S	14	"	"
114	First Aid	S	12	"	"
114	Geology	82	8	"	"
114	Food Sanitation	S	3	"	"
116	Business Math I	86	35	8635	"

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	TITLE
158	Decimals & Division	S	13	8635A	Bakers
158	Food Sanitation	S	3	"	"
54	Sound & Light	96	9	"	"
157	English Grammar	S	25	"	"
149	Figures of Speech	S	12	"	"
7	Payroll Math	85	35	8635A	"
47	Reading & Evaluating Financial Reports	84	11	8636	Acc't. Clks.
47	Free Enterprise - Economics	93	21	"	" "
49	Business Math II	95	20	"	" "
49	Business Math III	93	25	"	" "
49	Reading & Eval. Financial Reports	90	8	"	" "
50	Business Math IV	80	19	8621	" "
50	Meteorology	86	5	"	" "
50	Effective Business Letters	S	4	"	" "
50	Geology	93	3	"	" "
70	Reading & Eval. Financial Reports	94	14	8636	" "
70	Improving Your Writing	S	10	"	" "
77	Astronomy	95	7	"	" "
99	Human Body & It's Functions	98	19	8621	" "
99	Vocabulary Growth	S	9	"	" "
99	Chess	S	31	"	" "
140	Business Math IV	88	24	8636	" "
150	Geology	92	9	8621	" "
150	Astronomy	91	12	"	" "
150	Vocabulary Growth	S	8	"	" "
166	Introducation to Algebra	S	5	8636	" "
203	Reading & Eval. Financial Reports	76	8	"	" "
191	Improving Your Writing	S	15	"	" "
140	English 3200	89	45	"	" "
234	ABC Stenospeed	S	50	"	" "
77	Algebra I	93	70	"	" "
177	Effective Business Letters	S	22	8637	Gen. Off.
184	Filing Skills	S	10	8637A	" "
171	American Government	87	26	"	" "
162	Interior Decoration	S	13	8637	" "
162	Effective Business Letters	S	9	"	" "
162	Applied Logic	96	13	"	" "
152	Interior Decoration	S	23	"	" "
145	Algebra - Factoring	93	23	8622	" "
129	Filing Skills	S	20	8637A	" "
131	Reading & Eval. Financial Reports	86	12	8637	" "
126	Effective Business Letters	S	7	8622	" "
126	Vocabulary Growth	S	7	"	" "
101	Basic German	90	32	"	" "
101	Effective Business Letters	S	8	"	" "

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS COMPLETE	VOCATIONAL AREA CODE	TITLE	
104	High School Equivalency	S	7	8637A	Gen.	Off.
106	Basic German	90	32	8637	"	"
98	American Government	89	35	8637B	"	"
92	American Government-Introduction	96	18	8637	"	"
92	Bill of Rights	S	7	"	"	"
90	Astronomy	72	11	8637B	"	"
90	Effective Business Letters	S	12	"	"	"
44	Vocabulary Growth	S	5	8637	"	"
39	Binary Math	100	10	"	"	"
39	Effective Business Letters	S	14	"	"	"
39	Basic Computer Programing	S	22	"	"	"
27	Computer Math	S	31	"	"	"
27	Effective Business Letters	S	10	"	"	"
1	Effective Business Letters	S	9	"	"	"
1	Stock Market	S	3	"	"	"
1	First Aid	S	11	"	"	"
8	English Grammar	89	18	"	"	"
8	Reading & Eval. Financial Reports	76	6	"	"	"
8	Writing Reports	S	6	"	"	"
8	Music Notation	S	6	"	"	"
9	Stock Market	S	2	8637B	"	"
14	Steno-Speed	S	85	8637	"	"
184	Effective Business Letters	S	6	8637A	"	"
312	English 2600	83	59	8622	"	"
312	Basic Math	85	35	"	"	"
125	Binary Math	95	7	8637	"	"
10	Effective Business Letters	S	12	"	"	"
190	Food Sanitation	S	3	8638A	Cooking	
178	Chess	S	21	8638	"	
178	Astronomy	98	11	"	"	
306	Vocabulary Growth	S	15	8638A	"	
105	Ratios & Proportions	S	21	"	"	
105	Nutrition	76	18	"	"	
105	Food Sanitation	S	3	"	"	
109	Ratios & Proportions	US	29	8638	"	
109	Food Service	S	4	"	"	
75	Food Sanitation	S	3	8638A	"	
190	Human Body & It's Functions	72	15	"	"	
75	Human Body & It's Functions	72	31	"	"	
306	Music Notation	S	25	"	"	
37	Food Sanitation	S	3	8642	Food Serv.	
37	Ratios and Proportions	92	21	"	"	"
37	Human Body and It's Functions	S	36	"	"	"
37	Chemistry	S	36	"	"	"
179	Food Sanitation	S	3	"	"	"
183	Food Sanitation	S	6	"	"	"

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	TITLE
135	Geology	77	9	8639	Grdsk.-Custod.
135	Payroll Math	73	8	"	"
83	Business Math	82	32	"	"
24	Construction Measurement Skills	US	15	8639A	"
123	Trigonometry-Applied	S	20	8640	Drafting
156	Algebra-Introduction	US	18	8624	"
289	Applied Electricity	81	10	8640	"
73	Trigonometry-Applied	S	11	"	"
194	Logarithms	S	5	"	"
194	Basic Blue Prints	95	16	"	"
194	Trigonomtry-Rpplied	S	26	"	"
186	Astronomy-Temac	85	7	"	"
188	Basic Blue Prints	86	15	8640A	"
188	Engines	85	15	"	"
188	Vocabulary Growth	S	12	"	"
188	Bridge	86	30	"	"
180	Trigonometry-Temac	88	75	"	"
180	Algebra II	87	108	"	"
174	Geology	92	5	"	"
161	AlgebraII	70	60	8624	"
161	Trigonometry-Applied	S	18	"	"
163	Trigonometry-Applied	S	23	8640	"
123	Stock Market	S	3	"	"
108	Slide Rule	S	8	8640A	"
108	Electricity-Applied	99	26	"	"
108	Trigonometry	S	21	"	"
111	Basic Blue Prints	81	11	8640	"
94	Stock Market	S	3	"	"
94	Bookkeeping	100	25	"	"
87	Business Math I	85	21	"	"
87	Business Math II	84	21	"	"
89	Trigonometry-Practical	S	10	8640A	"
89	Mechanics	75	28	"	"
89	Biology	S	32	"	"
89	Algebra I	80	60	"	"
78	Trigonometry-Applied	S	21	8651	"
78	Logarithms	S	5	"	"
79	Micrometer	100	3	"	"
79	Basic Blue Prints	90	16	"	"
79	Chemistry	80	78	"	"
66	Basic German	93	32	8640A	"
68	Basic Blue Prints	93	24	8640	"
68	Trigonometry-Applied	S	42	"	"
68	Slide Rule	S	24	"	"
57	Stock Market	S	2	8640A	"
57	Improving Your Writing	S	14	"	"
57	Interior Decorating	S	22	"	"
57	Bridge	88	22	"	"

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	VOCATIONAL AREA TITLE
58	Algebra II	95	91	8640A	Drafting
58	Basic Blue Prints	95	10	"	"
53	Geology	90	9	"	"
53	Vocabulary Growth	100	2	"	"
53	Study Habits	S	3	"	"
53	Mechanics	85	19	"	"
53	Trigonometry-Applied	S	19	"	"
46	Trigonometry-Applied	S	24	8640	"
289	Trigonometry-Practical	S	8	"	"
29	Food Sanitation	S	2	8640A	"
29	Trigonometry-2nd reel	S	5	"	"
29	Chemistry	73	13	"	"
29	Verbal Problems in Algebra II	100	8 1/2	"	"
29	Bridge	95	18	"	"
29	Computer Math	S	7	"	"
29	Trigonometry-Temac	94	44	"	"
29	Basic Electricity	S	11	"	"
41	Construction Measurement Skills	84	5	"	"
41	Blue Print Reading	97	13 1/2	"	"
25	Blue Print Reading	95	9	8624	"
26	Chemistry	70	43	8640A	"
26	Mechanics	85	10	"	"
26	Trigonometry-Applied	S	24	"	"
19	Trigonometry-Applied	S	19	8624	"
6	Algebra-Verbal	100	5	8640	"
11	Blue Prints	97	9	8624	"
41	First Aid	97	7	8640A	"
194	Alide Rule	S	23	8640	"
163	Improving Your Writing	S	9	"	"
87	Algebra I	80	50	"	"
302	Practical Trigonometry	S	8	8651	"
287	Algebra I	86	30	"	"
58	French I	97	40	8640A	"
108	Calculus	92	40	"	"
29	Engines	S	10	"	"
186	Astronomy	90	37	8640	
29	Stock Market	S	2	8640A	"
6	Plane Geometry	86	131	8640	"
294	Chemistry	83	35	8651	"
137	Vernier Scale	90	1 1/2	8623	Welding
137	Blue Print Reading	94	14	"	"
137	Construction Measurement Skills	89	10	"	"
137	Micrometer	100	2	"	"
137	Caliper	96	2	"	"
220	Basic Math	100	14	8643A	"
167	Spelling	89	38	"	"
221	Blue Print Reading		20	8643	"
181	Gears & Gearing I-Spur Gear	100	5	"	"
181	Gears & Gearing II Ratios	91	8	"	"
181	Math Measurement Skills	90	27	"	"

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	VOCATIONAL AREA TITLE
60	Construction Measurement Skills	97	7	8643A	Welding
130	Shop Math-Volume & Area	S	8	"	"
18	Basic Blue Prints	90	22	8652	"
18	Construction Measurement Skills	92	12	"	"
23	Vernier Scale	91	2	8643	"
23	Construction Measurement Skills	98	9	"	"
23	Calipers	90	2	"	"
23	Algebra-Verbal	100	14	"	"
23	Micrometer	100	2	"	"
34	Basic Blue Prints	87	18	8623	"
64	Verbal Problems	85	24	8643A	"
107	Verbal Problems	85	24	"	"
220	Basic Blue Prints	98	14	"	"
168	Math Measurement Skills	86	32	"	"
16	Stock Market	S	2	8643	"
167	General Educational Development	A	20	8643A	"
21	Blue Print Reading	91	21	8652	"
21	Music Notation	S	22	"	"
21	English Grammar	S	20	"	"
21	Basic Spanish	87	141	"	"
172	Binary Math	97	5	8641A	Tab. Opr.
154	Basic Computer Programing	S	12	8653	" "
154	Electronic Data Processing	88	8 1/2	"	" "
154	Binary Math	97	6	"	" "
154	Collator	S	16	"	" "
154	Computer Math	S	12	"	" "
147	Applied Logic	94	24	8641	" "
136	Binary Math	96	5	"	" "
127	Business Math II	84	10	8653	" "
127	Filing Skills	100	3	"	" "
127	Bookkeeping	98	18	"	" "
127	Reading & Eval. Financial Reports	82	3	"	" "
100	Applied Logic	89	10	8641A	" "
110	Basic Computer Programing	S	15	8641	" "
93	Basic Computer Programing	S	20	8641A	" "
93	Russian Alphabet	S	30	"	" "
93	Computer Math	S	10	"	" "
93	Binary Math	91	4	"	" "
84	Gears I - Spur Gears	98	2	8641	" "
84	Gears II - Ratios	69	1	"	" "
76	Binary Math	95	6	8641A	" "
48	Binary Math	100	6 1/2	8641	" "
48	Basic Computer Programing	S	5	"	" "
48	Computer Math	S	6	"	" "
45	Basic Computer Programing	S	6	8653	" "
45	Electronic Data Processing	87	10	"	" "
45	Binary Math	87	5	"	" "
45	Computer Math	S	4	"	" "
45	Trigonometry	S	10	"	" "

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	TITLE
182	Basic Blue Prints	95	20	8643A	Welding
167	Punctuation & Capitalization	S		8643	"
182	Construction Measurement Skills	81	11	8643A	"
167	Basic Blue Prints	87	20	8643	"
168	Math Measurement Skills	86	32	"	"
169	Measurement Construction Skills	S	16	8652	"
169	Basic Blue Prints	94	30	"	"
175	Astronomy	89	6	8643	"
175	Basic German	93	27	"	"
175	Stock Market	S	1	"	"
175	Mechanics	85	14	"	"
175	Basic Blue Prints	93	13	"	"
159	Calipers	93	3	8623	
159	Micrometer	100	2	"	"
159	Measurement Construction Skills	77	12	"	"
159	Vernier Scale	94	2 1/2	"	"
160	Basic Blue Prints	71	30	8643A	"
151	Basic Blue Prints	71	30	8652	"
151	Construction Measurement Skills	90	10	"	"
142	BMsic Blue Prints	91	21	"	"
143	Basic Blue Prints	87	15	"	"
130	Basic Blue Prints	86	19	8643A	"
130	Construction Measurement Skills	83	20	"	"
117	Math Measurement Skills	80	33	8643	"
117	Basic Blue Prints	87	12	"	"
107	Basic Blue Prints	93	28 1/2	8643A	"
107	Construction Measurement Skills	86	12	"	"
107	Bill of Rights	92	10	"	"
113	Basic Blue Prints	89	28	"	"
113	Construction Measurement Skills	84	18	"	"
95	Construction Measurement Skills	92	11	8652	"
95	First Aid	94	11	"	"
95	Basic Blue Prints	95	19	"	"
95	Vocabulary Growth	S	9	"	"
74	Basic Blue Prints	97	18	8643A	"
71	Basic Blue Prints	91	23	8652	"
71	Construction Measurement Skills	88	25	"	"
65	Basic Blue Prints	83	18	8643	"
64	Basic Math	91	30	8643A	"
64	Basic Blue Prints	89	19	"	"
61	Meteorology	85	16	8643	"
61	Ratios & Proportions	92	19	"	"
16	Blue Print Reading	88	21	8643	"
38	Blue Print Reading	94	13	"	"
38	Astronomy	78	12	"	"
38	Basic German	87	46	"	"
40	Basic Blue Prints	93	13	8643A	"
35	Measurement Construction Skills	61	21	8623	"
59	English 2200	86	62	"	"
59	Basic Blue Prints	97	18	"	"

TRAINEE NUMBER	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	TITLE
45	Statistics	73	31	8653	Tab. Opr.
33	Computer Math	S	7	"	" "
33	Computer Programing	S	11	"	" "
20	Collator	S	12	"	" "
20	Computer Math	S	9	"	" "
20	Algebra-Refresher	83	10	"	" "
20	Binary Math	92	8	"	" "
20	Basic Computer Programing	S	6	"	" "
2	Collator	S	12	"	" "
4	Binary Math	95	3	8641	" "
15	Binary Math	72	10	"	" "
15	Music Notation	S	5	"	" "
100	Computer Math	S	9	8653	" "
119	Basic Computer Programing	S	27	8641	" "
176	Binary Math	85	5	8653	" "
170	Basic Computer Math	S	10	8641	" "
172	Collator	S	25	8641A	" "
93	Music Notation	S	15	"	" "
185	Basic Blue Prints	85	15	8644A	Bld. Mtce.
185	Construction Measurement Skills	72	8	"	" "
173	Stock Market	S	4	8644	" "
173	Construction Measuremnt Skills	60	15	"	" "
17	Construction Measurement Skills	85	7	8644A	" "
17	Shop Math-Volumes & Areas	90	4	"	" "
185	Shop Math-Area & Volume	75	4	8644A	" "
17	Blue Print Reading	80	14	"	" "
82	Construction Measurement Skills	95	12	8644	" "
141	English 2600	92	46	8646B	Stock Clerk
28	Biology & Chemistry	60	12	8646	" "
32	Business Math I	91	30	8646B	" "
56	Vocabulary Growth	S	12	8646	" "
56	English	82	38	"	" "
327	Astronomy	88	28	8648B	" "
141	Business Math II	93	33	"	" "
103	English 2200	86	48	"	" "
324	Vocabulary Growth	S	12	"	" "
32	Reading & Eval. Financial Reports	85	14	"	" "
292	Business Math II	93	30	"	" "
103	Business Math II	74	11	8646B	" "
5	Vernier Scale	91	2	8645	Mach. Opr.
5	Basic Blue Prints	97	11	"	" "
5	Slide Rule	S	25	"	" "
3	Basic Blue Prints	92	9	8645A	" "
3	English Grammar	90	35	"	" "
36	Basic Blue Prints	90	27	"	" "
36	Shop Algebra	90	10	"	" "
31	Basic Blue Prints	92	15	8645	" "
31	Spelling	S	35	"	" "
31	Gears I	89	8	"	" "

TRAINEE NUMBERS	COURSES COMPLETED	SCORE	HOURS TO COMPLETE	VOCATIONAL AREA CODE	TITLE
43	Basic Blue Prints	96	18	8645A	Mach. Opr.
43	Caliper	90	6	"	" "
72	Vernier Scale	91	1 1/2	8626	" "
72	Basic Blue Prints	95	13	"	" "
67	Basic Blue Prints	100	11	8645A	" "
67	English 3200	86	41	"	" "
80	Basic Blue Prints	93	15	"	" "
86	Construction Measurement Skills	90	9	"	" "
86	Calipers	97	4	"	" "
86	Basic Blue Prints	97	12	"	" "
86	English 2600	94	33	"	" "
91	Gears I	91	10	"	" "
91	Basic Blue Prints	93	25	"	" "
91	Measurement Construction Skills	88	10	"	" "
91	First Aid	90	18	"	" "
96	Basic Blue Prints	95	21	8626	" "
96	Vocabulary Growth	S	8	"	" "
192	Basic Blue Prints	94	18	"	" "
192	Economics I - Free Enterprise	S	18	"	" "
192	Economics II - Government & Taxes	S	16	"	" "
192	Drills I	99	8	"	" "
189	Basic Blue Prints	90	12	8645	" "
189	Gears I	99	5	"	" "
189	Vernier Scale	100	2	"	" "
164	Basic Blue Prints	89	10	"	" "
132	Basic Blue Prints	96	20	8645A	" "
132	Gears I	93	6	"	" "
134	Basic German	94	35	"	" "
134	Algebra Regresher	89	15	"	" "
134	Russian Alphabet	S	29	"	" "
134	Calipers	100	1 1/2	"	" "
118	Basic Blue Prints	97	11	"	" "
118	English 2600	91	34	"	" "
121	Basic Blue Prints		16	8645	" "
121	Drills I	94	6	"	" "
102	Basic Blue Prints	S	12	"	" "
102	Drills I	86	9	"	" "
115	Basic Blue Prints	96	22	8645A	" "
115	Gears I	80	6	"	" "
97	Construction Measurement Skills	96	8	"	" "
97	Micrometer	100	3	"	" "
55	Vernier Scale	91	4	8645	" "
55	Gears I	94	7	"	" "
97	Shop Algebra	81	8	8645A	" "
97	Gears I	94	10	"	" "
97	Gears II	86	12	"	" "
97	Blue Print Reading	78	27	"	" "
326	Gears I	83	11	8654	Small Eng. Rep.

COMPLETED COURSES

COURSE TITLE	NUMBER OF COMPLETIONS	TOTAL HOURS	AVERAGE HOURS TO COMPLETE
Blue Print Reading	62	1065	17.1
Basic Math Measurement	5	157	31.5
Construction Measurement Skills	26	315	12.1
Algebra II	3	313	104.3
Algebra Refresher	2	195	97.5
Algebra Audit	1	15	15.0
Beginning Algebra	4	74	18.5
Algebra I	4	270	72.5
Algebra I -Review Partial	6	296	49.3
Verbal Problems in Algebra	5	86	17.2
Temac Trigonometry	2	119	59.5
Practical Trigonometry	3	26	8.6
Applied Trigonometry	15	297	19.8
Shop Math-Algebra	2	18	9.0
Shop Math-Area-Volume	4	22	5.5
Calculus	1	40	40.0
Business Math I	4	94	23.5
Business Math II	9	177	19.6
Business Math III	1	20	20.0
Business Math IV	2	43	21.5
Ratios & Proportions	13	246	18.8
Basic Math	5	115	23.0
Binary Math	13	80	6.1
Computer Math	8	95	11.8
Basic Computer Programing	10	134	13.4
Electronic Data Processing	2	19	9.5
Collator	4	65	16.2
Basic Spanish	3	280	93.3
French I	1	40	40.0
Basic German	7	188	26.8
Russian	2	59	29.5
Poetry	1	17	17.0
Descriptive Statistics	1	31	31.0
Effective Business Letters	13	129	9.9
ABC Stenospeed	2	135	67.5
Filing Skills	3	33	11.0
Basic Cookkeeping	2	43	21.5
Reading & Evaluating Financial Reports	8	73	9.1
Economics -Free Enterprise	3	54	18.0
Economics-Taxes & Government Spending	1	16	16.0
Plane Geometry	1	131	131.0
Spelling	3	108	36.0
Slide Rule	5	99	19.8
Logarithms	2	10	5.0
Stock Market	9	22	2.4
Interior Decorating	5	96	19.2
Music Notation	6	83	13.8
Applied Logic	5	79	15.8

COURSE TITLE	NUMBER OF COMPLETIONS	TOTAL HOURS	AVERAGE HOURS TO COMPLETE
Chess	2	52	26.0
Vocabulary Growth	14	123	8.7
Engines	6	85	14.1
Mechanics	4	71	17.7
Food Sanitation	24	79	3.3
Biology	3	65	21.6
Improving Your Study Skills	3	9	3.0
Equivalency Tests	3	77	25.8
American Government	3	77	25.8
Bill of Rights	3	21	7.0
Nutrition	3	53	17.6
Prevention of Communicable Disease	1	7	7.0
Chemistry	6	167	26.4
First Aid	7	83	11.8
Safety	1	10	10.0
Bridge	3	70	23.5
Human Body & It's Functions	5	123	24.6
Calipers	6	19	3.1
Drills I	3	23	7.6
Gears I - Spur Gear	11	79	7.1
Gears II -Gear Ratios	5	39	7.8
Micrometer	5	12	2.4
Vernier Scale	7	17	3.2
Elementary Electronics	1	18	18.0
Applied Electricity	5	113	22.6
Basic Electricity	6	89	14.8
How To Write A Report	1	6	6.0
Figures of Speech	1	12	12.0
Sound & Light	1	9	9.0
Meteorology	2	21	10.5
Geology	6	43	7.1
Astronomy-Temac	9	102	11.3
Astronomy-B.R.L.	1	37	37.0
English 2600	4	172	43.0
English 3200	3	137	45.6
Programed English	2	56	28.0
English 2200	3	130	43.3
English Grammar-B.R.L.	1	35	35.0
English Grammar -Auto Tutor	2	45	22.5
Improving Your Writing	5	55	11.0
Punctuation & Capitalization	1	6	6.0
TOTAL 88	481	8369	23.0

COURSES DROPPED BY STUDENTS

COURSE TITLE	NUMBER DROPPED	TOTAL HOURS COMPLETED	AVERAGE HOURS
Algebra I	21	366	
Business Math	9	91	
Spanish	8	169	
ABC Stenospeed	7	81	
Basic Electricity	5	49	
Algebra II	4	55	
Statistics - Descriptive	4	42	
French	4	77	
Bridge	3	27	
Blue Print Reading	3	35	
Basic German	3	20	
Chess	3	21	
English Grammar	3	44	
English 2600	3	27	
American History	2	18	
Solid Geometry	2	28	
Trigonometry - Applied	2	45	
Spelling	2	27	
Collator	1	5	
Constitution	1	8	
Nutrition	1	6	
Computer Math	1	6	
Poetry	1	4	
Reading & Evaluating Financial Reports	1	4	
Russian	1	18	
Mechanics	1	4	
Ratios & Proportions	1	4	
Vocabulary	1	10	
Prevention of Communicable Diseases	1	2	
Calculus	1	7	
G.E.D.	1	5	
Construction Measurement Skills	1	1	
Bookkeeping	1	1	
English Grammar - BRL	1	10	
Introduction to Transistors	1	1	
Computer Programming	1	4	
TOTAL	106	1322	

COURSES INCOMPLETE BECAUSE OF GRADUATION

COURSE TITLE	NUMBER OF COURSES	TOTAL HOURS	AVERAGE HOURS
Reading & Evaluating Financial Reports	1	14	
Vocabulary Growth	2	9	
Effective Letters	3	18	
Effective Business Letters	1	3	
Construction Measurement Skills	2	18	
Math Measurements	1	48	
Basic Math	2	21	
Meteorology	1	2	
Human Body & It's Functions	2	39	
Trigonometry	3	22	
Poetry	1	8	
Slide Rule	1	8	
Chess	1	21	
French	1	36	
Plane Geometry	1	10	
Spanish	2	56	
Calculus	4	96	
Economics-Gross National Product	1	8	
English 2600	6	121	
English 2200	3	30	
English 3200	3	41	
Basic German	4	58	
Electronics -First Year	1	26	
Elementary Electricity	1	13	
Applied Electricity	5	70	
Welding	1	7	
Arc Welding	1	10	
Chemistry	4	68	
Applied Logic	2	9	
Blue Print Reading	6	98	
Business Math	11	109	
Ratios & Proportions	1	11	
Computer Math	4	13	
ABC Stenospeed	8	156	
Sound & Light	1	4	
Introduction to Data Processing	1	9	
1401 Computer	1	9	
1620 Computer	1	21	
Bookkeeping	3	52	
Spelling	1	18	
Bill of Rights	1	13	
Algebra Refresher	4	104	
Verbal Problems in Algebra	1	9	
Introduction to Algebra	1	19	
Algebra I	34	871	
Algebra Ii	4	113	
Reproducing Punch	1	3	
TOTAL	145	2522	

SCHOOL TERMINATIONS PRIOR TO COMPLETING COURSE

COURSE TITLE	NUMBER OF COURSES	TOTAL HOURS	AVERAGE HOURS
Bookkeeping	2	17	
Economics - Free Enterprise	1	4	
Binary Math	1	2	
Ratios & Proportions	3	15	
Applied Logic	1	13	
Business Math	3	12	
Music Notation	1	2	
High School Equivilency	1	10	
Food Sanitation	1	2	
Basic Math	1	10	
Interior Decorating	1	11	
Basic Spanish	7	81	
Bridge	3	18	
Chemistry	5	42	
Geography	1	1	
French	2	13	
Engines	1	5	
Algebra I	15	216	
Sound & Light	1	10	
Plane Geometry	1	6	
ABC Stenospeed	2	26	
English -Auto Tutor	3	24	
English Grammar	1	2	
Construction Measurement	1	12	
Math Measurement	5	74	
Applied Electricity	2	25	
Basic Electricity	3	7	
Blue Print Reading	6	81	
Solid Geometry	1	12	
Geology	1	1	
Chess	3	13	
Reading & Evaluating Financial Reports	3	6	
TOTAL	83	763	

PROGRAMED LEARNING CENTER STUDENT REFERRAL DATA

STUDENT REFERRALS - 322

Mean Age	18.7
Mean School Year Completed	10.9

TEST RESULTS - MEAN SCORE

Otis Group I.Q.	101.6

NUMBER ADMINISTERED W.R.A.T.**

Total N	N Administered W.R.A.T.		Mean Score	
	Reading	Math	Reading	Math
322	164	142	10.1	6.8

NUMBER ADMINISTERED C.A.B.***

Total N	N Administered C.A.B.		Mean Score	
	Reading	Math	Reading	Math
322	195	201	9.6	10.1

STUDENT ASSIGNED FROM		PERCENTAGE OF TOTAL ADMITTED
A. Reading Class Only	98	32.6%
B. Math Class Only	42	14.0%
C. Reading & Math	111	37.0%
D. Vocational)		
E. Assigned by Coordinator	29)	16.4%
F. Free time	76)	
just free time	24)	
also assigned	52	
G. Health & Safety	2	

*This group of students must be classified together for they also may appear in A,B, or C
**Wide Range Achievement Test
***California Achievement Battery

STUDENT EVALUATION SHEET
PROGRAMED LEARNING CENTER

Please check as many boxes concerning your thoughts on the Programed Learning Center as you wish. We are very interested in your reac tions to Programed Learning and to our Center. You may also want to add some of your own ideas in the space allotted at the bottom of the page. Naturally it isn't necessary for you to sign your name.

Mr. Albert Salerno

"It helped me, and I learned a lot"	77	"Explained clearly"	59	"Don't like the music"	4
"Didn't help"	0	"Would like P.L. in other classes."	52	"Like the music"	88
"Liked it"	89	"Made me think"	61	" Am in P.L. too many hours"	3
"Waste of time"	0	"Know immediately why I'm right or wrong"	57	"Should be open at nite"	59
"Interesting"	84	"Liked working alone"	72	"No need to open at nite"	1
"Boring"	4	"Helped in my Vocational class"	64	"Like the magazines"	79
"Prefer to classroom text or teacher"	32	"Didn't really help in my Vocational class"	9	"Don't like the magazines."	2
"Good Review"	60	"Good study atmosphere"	69	"Am in P.L.C too few hours"	43
"Efficient"	58	"Poor place to do any studying"	1		
"Didn't like it"	0	"Not enough teacher help	6		

*** This evaluation sheet was filled out by a random sampling of 100 students.

THIS SPACE IS FOR WRITING ANY ADDITIONAL COMMENTS THAT YOU MAY HAVE CONCERNING THE CENTER:

STUDENT EVALUATION COMMENTS

"This kind of program in high school would have helped the slow student gain confidence."

"Best equipped study center I have ever been exposed to."

"Quiet and convenient enough to do anything."

"Very helpful to me in Algebra."

"Teaches the student how to help himself."

"To the rest of the guys I've talked to P.L. has helped in their vocational areas."

"Need more books."

"Good chance to review."

"Get a greater variety of magazines."

" There is no one on by back, if I feel uninterested I can do something else."

"Can learn better at my own speed."

"First time I've had a self-tutor program and it is challenging."

"All trainees should take advantage of this. It teaches the fundamentals of a subject area."

DIRECTOR'S EVALUATION

The first year experimental project in Programed Instruction has come to a fitting close. It has been a most rewarding and exciting educational endeavor for me as well as for the students. After having been involved with many hours of program application and statistical compilation I can only declare our experiment a tremendous success.

The 322 students, who were assigned to our center, completed four hundred and eighty one courses during our eleven months of actual operation. We had a completion average of 44 courses per month. Our students actually participated in 12, 976 hours of programed training.

One of our major concerns upon the inception of this project was whether we could keep young men on programed materials long enough to get courses completed. We knew that very few terminal behavior changes would occur with incompleted courses. The fact that 78% of all courses begun were completed (less graduation, etc.) was encouraging to us. We are doubly proud of this since most of our students were involved in programed instruction about 1 1/2 hours per day.

An attempt was made to keep the student on programed materials for most of his stay at the center. However, our students were free to use the reference and library facilities as frequently as was necessary. They were allowed to read the magazines and newspapers as long as this did not become the primary purpose for coming to the center. Some of our students programed 85 - 90 % of all the time they were assigned to us. Others programed as little as 25% of the time. On an overall basis the trainees in

our Program Learning Center actually worked on formalized programed instruction 60% of the time. We feel this is a compatible figure considering some of our students were involved in the Programed Learning Center as many as 15 assigned hours a week.

The center offered an unlimited educational playground for our students. Some completed as many as eight different courses while enrolled at Mahoning Valley Vocational School. The programed courses offered them a chance to pursue vocationally oriented subjects (as well as developmental) at their own pace, with detailed explanations and a minimum amount of trouble or error. The low error rates and questions - response - check format of programed materials was a great motivational tool in itself. Some of our young men were successful for the first time in their lives. This type of learning situation actually built confidence and gave direction to students.

Although not proven statistically, changes in skill behavior could definitely be observed in their vocational classes. The increase in knowledge and skills experienced by our students was most evident on our post test results. We experienced very few failures on post tests during the year.

Some of our students were helped through programed instruction for more than just building vocational skills. We were able to get high school diplomas for two young men, who received credit for courses taken in our Programed Learning Center.

There were also four students who passed the Ohio General Educational Development Test after having pursued a planned and structured program here. We know that more work of this nature will be done at the center in this

coming year, as more Ohio high schools recognize the value and effectiveness of programed instruction. The center also handled some psychological referrals - who could not be trained in the usual classroom situraion or even in the specialized program in effect - (boys, who could not easily function in a peer group classroom situation.)

All in all our year offered something unique to each and everyone of our students. It may have been the building of the basic math skills for a boy deficient in this area. It could also have afforded one of our more advanced sutdents a chance to master Calculus or Techniques in Programming. Whatever the particular case may have been, somehow programed materia's seemed to have some application.

After analyzing the results of this past year I would have to conclude that the most significant accomplishments were as follows:

1. That we used programed texts to do terminal teaching and were successful.
2. That, properly oriented and counseled, students can work for extended periods of time on programed courses.
3. That all of our students benefited in some way from the untraditional educational atmosphere of a center.
4. That both Basic Education and Vocational skills can be developed or improved upon through programed instruction.

PROGRAMED LEARNING CENTER
MAHONING VALLEY VOCATIONAL SCHOOL
P.O. BOX #278, VIENNA, OHIO

Following is an up to date list (August 1966) of the available programed courses in our center. You may find it useful in making recommendations concerning your particular referrals. Any additional information you deem necessary about the programed courses may be obtained by contacting me at the center in building 504.

Albert Salerno
Programed Learning Center

SERIES-HEALTH AND SAFETY

Body Structure and Functions
First Aid
Nutrition
Personal Health
Prevention of Communicable Disease
Safety

SERIES-AUTO TUTOR MACHINE PROGRAMS

Advanced Techniques in Programing
Basic Computer Programing
Basic Electricity
Business & Scientific Application of Computers
Computer Math
Effective Business Letters
Elementary Electronics
Food Sanitation
Improving Your Writing
Math-Introduction to Slide Rule
Sentence, Nouns, and Pronouns
Sentence Patterns'
Slide Rule Fundamentals
Trigonometry
Verbs and Verb Usage

SERIES-LEISURE

Advanced Bidding-Bridge
Applied Logic
Contract Bridge
Corens Bridge
How to Follow the Stock Market
How to Get Along With Your Bank Statement
Improving Your Chess
Interior Decorating
Introduction to Chess
Musical Notation
Structure of Poetry
Your Life Insureanc

SERIES-STUDY HABITS

Better Study Habits
How to Research and Write a Report
Your Study Skills

SERIES-MAST TEACHING MACHINE PROGRAMS

Algebra-Part I
Algebra-Part II
Algebra-Refresher
Introduction to Chemistry
Fundamentals of Human Psychology
Fundamentals of Electricity
Fundamentals of Music
Verbal Problems in Algebra

SERIES-ENGLISH

College English Grammar
Effective Letters
English Reviews
Figures of Speech
Junior High English Grammar
Grammar Punctuation
Sernio High English Grammar

SERIES-ENGLISH (con't.)

Spelling
Spelling Improvement
Their, There, They're
To, Tow, Too
Vocabulary Growth
Vocabulary-Office Workers

SERIES-LANGUAGE-WRITTEN

French I, II, III
German
Russian
Spanish

SERIES-GENERAL WORKS

American Government I - II
Bill of Rights
Caliper
Construction Measurement Skills
Complete Cyclo-Teacher Series
Drills I - II
Gears I - Spur Gears
Gbography of United States
History of United States
How to Measure Board Feet
How to Use a Micrometer
Quikrite - Shorthand
Reading Engineering Drawings
Reading & Eval. Financial Reports
Reamers
Reports
Stenography
Typing
United States Constitution
Vernier Scale
Welding Oxyacetylene

SERIES-SCIENCE

Applied Electricity
Astronomy
Astronomy-The Nite Sky
Astronomy-The Solar System
Basic Electricity
Basic Electronics
Basic Transistors
Biology
Chemistry
Engines
Fundamentals of Electricity
Fundamentals of Human Physiology
Geology
Human Body & It's Functions
Mechanics
Meteorology
Sound & Lsght
Trouble Shooting Refrigeration and Air Conditioning Systems

SERIES-LANGUAGE-CONVERSATIONAL

French
German
Russian
Spanish

SERIES-GENERAL WORKS

Field Sketching Exercises
Installation of Gears
Valves and their Function
Static Electricity
Shop Math - Algebra
Shop Math - Area Square & Volume
Shop Math - Powers of Ten
Chain Hoists
Hand Reamers - Expansion
Hand Reamers - Solid
Hand Reamers - Adjustable
Gears - Worms and Worm Gears
Gears - Bevel Gears
Gears II - Gear Ratios
hand Tools
Tapes and Squares

SERIES-CIVIL SERVICE-HOME STUDY COURSES

Civil Service Job Guide
Clerical & Typing Tests
High School Equivalency Diploma Study Course
Home Study Course for Civil Service Jobs

SERIES-CIVIL SERVICE (Con't.)

Mechanical Apptitudes & Spatial Relations Tests
Arco Course-Auto Mechanics
High School Civil Service
How To Pass Civil Service Tests
Resumes That Get Jobs
American College Testing Exams
Preliminary Practice for High School Equivalency
Diploma Tests
Beginning Office Worker
How To T.ke Tests and Pass Them
General Test Practice for 92 Federal Jobs
Civil Service Arithmetic and Vocabulary
Civil Service Handbook
Auto Courses
Electrician and Electricians Helper
Machinists Helper
Junior Draftsman
Tabulator Operator
Janitor Custodian
Vocabulary, Spelling & Grammar
Practice for Clerical Typing
Arco Course - Carpenter

SERIES - MATH

Additions & Subtractions
Algebra I
Algebra II
Algebra Refresher
Analytical Trigonometry
Arithmetic of Computers
Arithmetic of Whole Numbers
Basic Math
Basic Math Measurements
Binary Math
Decimals
Fractions
Introduction to Modern Math
Introduction to Numbers
Introductory Calculus
Language of Algebra
Logarithms-Self Taught
Modern Algebra
Modern Math Properties
Multiplication
Plane Geometry
Properties of Number Systems
Ratios & Proportions
Sets, Inequalities & Functions
Seventh Grade Math
Slide Rule Operation
Solid Geometry
Applied Trigonometry
Trigonometry-Practical
Verbal Problems in Algebra
Whole Numbers and Numerals

SERIES - ECONOMICS

Capitalism, Communism, & Socialism
Economic Stability & Growth
Free Interpretation
International Trade
Taxes and Government Spending
The Federal Reserve System & It's Effect on Mondy & Banking
The Gross National Product
The American Business System

SERIES - BUSINESS SKILLS

Basic Bookkeeping
Business Mathematics in Management Decisions
Fundamentals of Business Mathematics
Interest, Negotiables, Instruments, and Payroll Mathematics
Mathematics of Accounting & Finance
Filing Skills
Reading & Evaluating Financial Reports
The Accounting Process

SERIES - CONSUMER MATH

Vocational Opportunities & Lifetime Earnings
Pay Check
The Household Budget
The Wise Buyer
Income TAx
Insurance
Investments

SERIES - DATA PROCESSING

85 Collator
548 Interpreter
514 Reproducing Punch
Programming the 1620
Programming the I.B.M. 1401
Binary Math
Basic Computer Programming
Arithmetic of Computers
Electronic Data Processing Systems
Introduction to Electronic Data Processing

SERIES - PROGRAMED READING

Sullivan Levels 1-8 Programed Reading
Sullivan Readers 1 - 8
Skimmer Skanners
Craig Reading Programs

SERIES - DIDACTOR TEACHING MACHINE

AM-1-5D Basic Engine Lubricants
AM-1-7D Engine Tune Up
AM-18D Engine Component Concepts I
AM-1-9D Engine Component Concepts II
EM-16D Generation of Electricity
EM-1-7D Using Electricity
EM-1-18D Electrical Languare
MM-1-9D Basic Machines
MM-1-10D Sections Drawings
MM-1-13D Torch Cutting
Fractions, Addition, etc.
Fractions, multiplication
How to Read Scales
Beginning Work With Equations
Reading Engineering Drawings I
Reading Engineering Drawings II
Visualization and Transfer Part I
Remembering Words (Adult Remedial)
Lifting and Your Back (Adult Remedial)
Man and His Tools (Adult Remedial)
Remembering Words
Remembering What You Read

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*WORKING WOMEN; *SOCIAL CHANGE; *LABOR FORCE; EMPLOYMENT; *EMPLOYMENT TRENDS; *FEMALES; LABOR MARKET; LABOR STANDARDS; LABOR UNIONS

This document is one of a series of popular pamphlets designed to disseminate industrial relations research beyond the professional academic group. The number of working women both absolutely and relatively has been rising and is expected to continue to rise. Factors related to this trend are considered. The introductory sections describe womanpower as a resource, and historical work patterns. Another section considers reasons for and rates of women's participation in the American labor force. Facts and fiction of occupational concentration are discussed. The implications of legislation for women and employers, women in professions and management, and women and the union are also considered. The concluding section speculates on the future of women in the work force, considers their impact on economic and social life, and relates economic, social, and psychological barriers to women's employment. Recommendations of Esther Peterson and Eli Ginzberg are given. Reading recommendations and a statistical appendix are also included in the document. (FP)

VT 002 145

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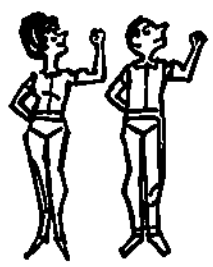
WOMEN & WORK.



By

MARJORIE B. TURNER.

Edited by Irving Bernstein

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UNIVERSITY OF CALIFORNIA, LOS ANGELES.

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Foreword

THE INSTITUTE OF INDUSTRIAL RELATIONS of the University of California was created for the purpose, among others, of conducting research in industrial relations. A basic problem is to reach as large an audience as possible. Hence the Institute seeks through this series of popular pamphlets to disseminate research beyond the professional academic group. Pamphlets like this one are designed for the use of management, labor organizations, government officials, schools and universities, and the general public. Those pamphlets already published (a list appears on the preceding page) have achieved a wide distribution among these groups. The Institute research program includes, as well, a substantial number of books, monographs, and journal articles, a list of which is available to interested persons upon request.

The problem discussed in this pamphlet—women at work—is of great and growing importance. At the present time one in three persons in the American labor force is a female. The number of working women, both absolutely and relatively, has been rising and is expected to rise further in the future. This trend raises a host of

questions—for employers, for unions, for public policy, and for women themselves. These questions are the subject matter of this pamphlet.

Professor Marjorie B. Turner teaches labor economics at San Diego State College. She holds the Ph.D. in economics from the University of Texas. She is the author of a previous title in this series, *Absenteeism*. By her training, her experience, and her sex Professor Turner is qualified as author of *Women and Work*.

The Institute wishes to express its gratitude to the following members of the reading committee which reviewed the manuscript: Professors Melville Dalton, Fred Massarik, and Frederic Meyers, all of UCLA. The cover and illustrations are the work of Bill Tara. Mrs. Anne Cook assisted with the editing. Mrs. Betty Wolkonsky typed the manuscript.

The viewpoint is that of the author and is not necessarily that of the Institute of Industrial Relations or of the University of California.

BENJAMIN AARON, *Director*
Southern Division

LLOYD ULMAN, *Director*
Northern Division

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I. Introduction

WORK, FROM THE POINT of view of the modern Western economy, is the performance of a service in anticipation of a monetary return. This wage or salary represents the economic value of the work and of the worker, and presumably is determined through individual or collective bargaining in a free market. Effort that is not compensated through a monetary payment in some form regardless of its social importance, has no economic value placed upon it. (The statistical exception is the unpaid family worker on a farm or in the family business.) Women who exert all their energy in housework in their own home, in rearing their own children, and in uncompensated community service are not considered to be working at all. Only those who clean others' homes, rear others' children, in fact, render services for pay, are "workers." Only those who seek paid jobs are participants in the labor force.

1. IS IT "NORMAL" FOR WOMEN TO WORK?

An implicit assumption underlies many studies of women and work in the Western world—that the

"normal" state is for women to be non-earners of money. This assumption is defensible only from a narrow point of view—if Victorian values are firmly entrenched, if upper-class attitudes provide the norm, if single women and low-income women do not provide the norm, and if the empirically verified relationship that wives' participation in a city's labor force varies inversely with husbands' incomes is of great significance.

Future studies may have to find new norms, in view of the increased labor force participation of women. This pamphlet is based on the assumption that some labor force attachment at some time is normal for American women. Indeed, eight of ten women do work at some time or other.

2. WOMANPOWER AS A RESOURCE

In Sir Thomas More's sixteenth-century Utopia, every woman as well as every man had an occupation. What was to More a utopian idea of the organization of human resources becomes a necessity in wartime. Even cold war effort increasingly depends upon a fuller utilization, particularly of scientific and professional manpower. Professional, technical, and kindred workers, who represented less than 3 per cent of the labor force in 1870 (2.8), more than 8 per cent (8.2) in 1950, and more than 11 in 1960, will rise to more than 14 per cent in 1975. Many of these must be women, for women clearly constitute one area of our unused human resources. The National Manpower Council has estimated

conservatively that women make up more than half the professional manpower reserve. At other levels, nonparticipation in the labor force may be less crucial, particularly during prolonged periods of underemployment of human resources. However, since there are probably as many women of superior intelligence as there are men, an increase in society's need for intelligent, capable, well-trained persons must increasingly tap the reservoir of "womanpower."

Some, Kenneth Boulding, for example, object to the whole idea of "manpower" or "womanpower" as an unfortunate oversimplification of life and society. Not only this, Boulding thinks this "manpower" abstraction, particularly when coupled with a society overdedicated to national defense and security, leads inevitably to a "*solution* in terms of a monolithic, military, communistic type of society" in which allocation is by conscript or police power.

In the search for new norms for female participation, it will be well to keep Boulding's warning in mind.

3. WOMEN AND WORK BEFORE THE TWENTIETH CENTURY

One of the persistent myths of our time is that women are new to the labor force. Elizabeth Hutchins, writing of English women in 1915, denied that there had been a "decline and fall of women from a golden age." There is evidence that primitive women may have invented the textile industry, agriculture, and the taming

of small animals. Early British records even show equal pay for equal work on the part of sixteenth-century men and women thatcher helpers.

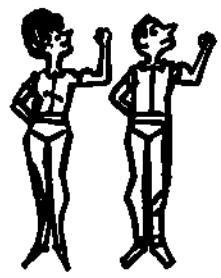
According to Charles and Mary Beard, the participation of women in every phase of life and labor was absolutely necessary for the development of a European civilization in America. The English women of the seventeenth century brought with them their lively interest in industrial, political, and religious activities. Neither women of the trading class nor of the landed families were idle. A granddaughter of Oliver Cromwell was director of a salt works, and women were pawnbrokers, moneylenders, shopkeepers, shipowners, and clothing contractors for the army and navy; they were bakers, butchers, brewers, innkeepers, as well as spinners and weavers. Other women came to the colonies as articles of commerce—to be sold as wives—or as indentured servants, willingly or unwillingly to work in the fields of the new country.

New England's cottage industries producing broadcloth, mostly by women in their homes, had a surplus for export by the early 1700's. The lives of these women were profoundly affected by the development of the factory system. The new methods occasioned their leaving the security of their homes for factories where they were easily exploited. While at one time the weaver had trudged many miles from cottage to cottage to procure his yarn from the women and had even had to resort to gifts to encourage diligence, the new inventions of the spinning jenny, waterframe, and Crompton's mule revolutionized spinning and eventually ended cottage

industries. By the nineteenth century (1839) there were more women than men employed in the English cotton industry. In the Lowell, Massachusetts, mills alone, 7000 female operatives were employed.

Nor is the woman worker in the American city a twentieth-century phenomenon. A U. S. Bureau of Labor investigation in 1889 studied 2364 such women in New York City and determined that nearly 95 per cent of them earned less than $500 a year, their average income being $329.25.

The frontier may have had an impact on women's participation in the labor force of the United States, but whether the westward movement reduced their participation by removing them physically from occupational access or rather opened up new opportunities, such as becoming a Harvey girl, is not clear. The frontier passed with the arrival of the twentieth century.



II. Women in the American Labor Force

1. OVER-ALL VIEW OF THE LABOR FORCE

The striking characteristic of the U. S. labor force of this century has been its stability as a proportion of population. This has been true in spite of the great changes in the internal composition, that is, the declining male participation and the rising female participation rate. Clarence Long, of the National Bureau of Economic Research, tried to discover whether the decrease in participation by males was systematically related to the increase on the part of females. Some circumstantial evidence suggests that the drop in participation rates among men over 45 years of age may be due to some extent to the entry of better-trained women who are available at somewhat lower wages. Also, the decline in the participation rates of young males, and their longer school attendance, might be related to this same competition, or perhaps to the help of working women in paying the cost of their education.

However, other difficult questions remain. Real income has risen significantly. Why haven't people left the labor force? There are two possible explanations: one,

that twentieth-century man's desire for goods rises as rapidly as his real income; the other, that in fact workers have increased their leisure through working fewer hours.

Actually some identifiable groups have temporarily reduced their participation rates, notably Negroes, including women, and the foreign-born. This may be due to improved economic status which allows the group to adjust *toward* the average rate of over-all participation.

In some cities remarkable changes in labor force participation rates—either significantly upward or significantly downward—took place between 1940 and 1950. This might be explained by the migration of workers toward cities where job opportunities and pay are most satisfactory. Migrating, they leave behind those with relatively low propensities to work.

As for women in this over-all picture, Long hypoth-

esizes that the increases in female participation are due to the release of women from home associated with the reduction in the birth rate, a rise in the female survival rate, and a shortening of the work week; the expanding employment opportunities for the female at the same time that she attained more education; and incidentally or marginally, the extended use of household appliances. The temporary decline in the participation rate of Negro and foreign-born women, as noted above, is probably explained by the rise in economic status of these groups, allowing Negro girls to remain in school longer. (See appendix tables 2 and 5.)

It has been suggested that what is operating is a long-term trend: the all-important position held by women before the Industrial Revolution took production out of the home is now being restored by the current advances in technology which permit women to leave the home for outside production activity.

2. WHY DO AMERICAN WOMEN WORK?

The reasons women work are no more complex than those of men. Women work to assure physical survival, for personal motives, and because of external factors. Long has examined these economic and non-economic factors at some length. He found that marital status, possession of children, husbands' earnings, and education are more important determinants of whether women work than mere availability of work or level of earnings. Thus, though the general reasons for working are the same, certain factors such as marital status are

more decisive in determining whether a woman works than in the case of a man.

a. *Physical survival.* Many women who work must do so. Many are unmarried, with dependents, either children or close relatives, and thus are forced to work. In 1963, 4.6 million women in the labor force were heads of families.

b. *Personal motives.* Like men, a woman may work to be able to consume or display, to achieve wealth or status, to avoid boredom or loneliness. She may work because she enjoys her job, or she may simply desire to earn at least minimum Social Security benefits.

A study by the Survey Research Center at the University of Michigan found that two fifths of their population reported that both the head of the spending unit and the wife were covered by Social Security; this coverage may have been an important reason for her working. In surveys made by several unions a quarter of the women members who were married and separated, or divorced, gave the education of their children as one of their main reasons for working. It is characteristic of our attitudes toward woman that we ask why she works at all, rather than why she chose one type of employment over another.

3. CHANGING PARTICIPATION RATES OF WOMEN

To say that women are and always have been participants in economic production is not to deny certain changes which have taken place, particularly during the twentieth century.

a. *Long-run upward trend.* In most Western countries female participation in the labor force has risen faster than the proportion of women in the population. Since 1890, there has been a gain of about 17 per decade for every 1000 women 14 years of age or older in the United States. In 1890 the participation rate was 18.3 per cent; in 1959 it was nearly twice that (35.2).

C. E. Persons found that between 1900 and 1910 the number of women wage earners in the U.S. increased by 43 per cent, although the percentage of total workers who were female rose only about 2 per cent. He also found a shift in female occupations away from domestic, agricultural, and factory work toward sales, clerical, and bookkeeping occupations in trade and transportation. He attributed much of the change to the development of large-scale business and to a continuing transferral of work from the home to manufacturing or trade. In his opinion, the change did not mean that the total amount of effort on the part of women was greater, but only that their work was increasingly compensated by wages.

More recently, the increase in labor force participation by women is due largely to a rise in the number of married women, particularly those over 35 years of age, who re-enter the labor force. (See appendix table 1.)

b. *War.* The United States was in World War I less than twenty months. According to the National Manpower Council, this was long enough to modify traditional patterns of female employment temporarily, but too short to produce permanent changes. Probably the only effect that remained was the alteration of the sex composition of high school faculties. Thus manpower

shortages of World War I did not lead to any heavy reliance on womanpower. This condition prevailed also in World War II even as late as the spring of 1942. An early effort to register trained women for possible use as scientific and specialized personnel met with general disfavor at the congressional level.

Before World War II was over, however, women who had never worked before, and who had probably never intended to work, rendered essential services, often in occupations traditionally filled by men. Their willingness permitted simultaneous mobilization of men and expansion of war industries without a general labor conscription act. The changeover is illustrated by these figures from a California aircraft assembly plant:

	Total Employees	*Women*
November 1940 . . .	14,000	0
November 1941 . . .	20,600	300
December 1941 . . .	24,600	900
April 1942	25,700	3,600
November 1942 . . .	24,000	13,000

By April 1945, 19.5 million women were in the labor force as compared to 13 million in 1940. Even during the Korean conflict, the willingness of women to work permitted a spurt in industry.

c. *Depression and recession.* It has been suggested that the depression of the thirties greatly accelerated the increase in the number of women wage earners. By 1937, nearly 32 per cent of the nation's gainful workers, including those seeking work, were women, up from 25 per cent in 1930. Studies of recent recessions, however,

have revealed no evidence that the labor market participation of wives is responsive to a particular spell of unemployment. Indeed, the Department of Labor has found that the growth of labor force rates since the early 1950's has been greater during boom periods than during recessions. The increase in labor force participation by women during the Great Depression may have been merely a part of the long-run increase so characteristic of twentieth-century America.

d. *Controversial aspects.* At times of postwar adjustment or during periods of unemployment, women's participation in the labor force becomes a controversial issue. After World War I public speakers and men's labor leaders took the stand that women should relinquish their jobs regardless of the resulting hardships. At such times, people generally speak of the Sanctity of Motherhood.

The Women's Bureau of the Department of Labor worked diligently against such pressures after World War II. The Bureau's new cry was that "full employment" meant women as well as men. Twenty-five years of study had convinced many that the vast majority of women workers sought employment for reasons of economic need.

Part of the antipathy toward women working in periods of unemployment may be due to the fact that women tend to hold jobs while men are losing them. J. B. Parrish thought this was explained by (1) the location of women principally in those industries having secular upward trends, (2) their location in industries having the least cyclical decline, and (3) the creation of

jobs, through machine refinement, for which women are particularly well adapted.

Another aggravation during the Great Depression was the phenomenon of many women seeking work when their husbands lost their jobs. Some, at least, were successful. In view of social attitudes, women finding jobs when men cannot raises a clamor.

e. *The women's reserve.* The London *Economist* has cited the "Reserve Regiment of Women" as the source of labor which permitted extra output in the nominally "fully employed" British economy of the postwar period. The British Trade Union Council believes that the unemployment figures generally understate unemployment by the amount of women who are would-be workers but fail to register. Married women, especially, fit very untidily into the classification of "civilian labor force." Clearly there is much "hidden unemployment," particularly among married women.

That the American labor force has its women's reserve is demonstrated by the experiences of two wars and the postwar boom. The increase in women employed in periods of boom supports the thesis that employment opportunities for women are a major factor in determining their proportion in the labor force.

Can it be that the wartime and boom participation rate of women represents not only patriotism but also their fundamental desire to take their place in the labor force?

III. Women and the Labor Market

FROM THE TIME of entry into the labor force, the distinguishing features of present-day women's employment experience are discontinuity of work and occupational concentration.

1. DISCONTINUITY OF LABOR FORCE ATTACHMENT

This is distinct from job turnover. Women enter the labor market, often as part-time workers, during their high school years. Upon marriage or, more recently, upon the arrival of the first child, they leave, perhaps to return again after the children are in school or no longer at home. This discontinuity of labor force participation is due only in part to personal preference or public social attitudes. As a country we have failed to provide a realistic alternative, except during wartime. Then we did provide nursery schools, at least, for the children of working women.

a. *Part-time work.* Probably some of the discontinuity is simply "hidden unemployment" of those desiring, if

not seeking, part-time jobs. Indeed, society loses the valuable services of many highly trained women through the failure to provide such employment. The clearest labor demand by the American woman today is for part-time work at all occupational levels. This demand is especially urgent among women under 35 years of age who have skills which, without use, may be lost.

b. *Return to work among older women.* Probably the most significant postwar development in the labor market behavior of women has been the return to full-time work by older women as their children grow up and their homemaking responsibilities decline. The return to the labor force was so marked, according to the *Monthly Labor Review*, that by 1950 women between the ages of 35 and 65 represented a greater proportion of the labor force than of the population as a whole. Women return to occupations of every sort, including service, sales, clerical, and managerial. Some women over 45 years of age become private household workers.

Older women face even more employer bias than older men. The experience of some employers, however, has been so satisfactory that they actively seek older workers as more stable and responsible than young girls.

Many older women returning to work must accept jobs at a lower status and pay than their abilities would warrant. Some have lost skill and competence. Where the maintenance of proficiency is most important—as in professional, managerial, and skilled occupations—it is also most difficult. Once again, the part-time work which women with home commitments desire, and which might permit skill-maintenance, is not usually available.

Whether a woman can re-enter the labor force at or near her exit status is, finally, a function of demand. For teachers and nurses, re-entry has been possible in recent years.

c. *Woman's dual role.* The discontinuity of labor force participation by women is clearly rooted, not in woman's perversity or flighty nature, but in her cultural role and her very biological being. Simone de Beauvoir in *The Second Sex* has described with great power the complex biological processes of the female and the physiological toll taken by childbearing. She demonstrates that the length of maternal servitude is not derived from biology, but is socially determined.

Whether biological or social, woman's role is indeed dual in our society and largely accounts for her occupational pattern of discontinuous attachment to the labor force. Single women do not exhibit this discontinuity of attachment. (See appendix table 1.) Sweden and the Soviet Union have recognized the need of the married working woman and her children to aid and protection, and also "the right of the working woman to marry and have children."

2. OCCUPATIONAL CONCENTRATION

To most generations there have been jobs which were "women's" jobs. The present generation is no exception. The National Manpower Council has found a concentration of high school girls in clerical studies. Those who enter the labor market after graduation often are employed as secretaries, stenographers,

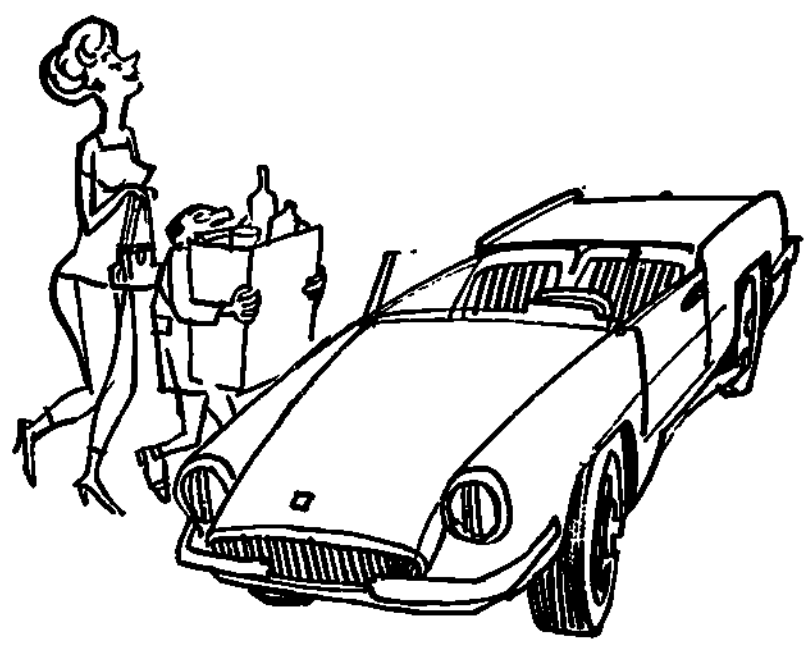
and typists. The majority of women completing college enter professional and related occupations, especially teaching, but also nursing, recreation, social work, and so on. The young woman who does not finish high school may be a farm worker, an operative in manufacturing, a service worker, a private household worker, or a saleswoman.

This occupational concentration is a fact which contrasts strongly with the initial work experience of young men. Without greater evidence to the contrary, it is largely a self-imposed concentration or acceptance of the now traditional occupations, at least among college graduates, who presumably have more choices open to them. In many cases, young college women may deliberately choose to train for occupations where discontinuity of job holding is an accepted practice, as in teaching.

a. *The sex label: a cultural factor.* "Sex labeling" seems to have a major influence on the distribution of jobs between men and women. It affects not only the initial work experience of a woman, but also her chance of promotion.

The sex label is a stable but not unchanging cultural factor in the labor market. Growth in the employment of women has, at least to some extent, been through their entering occupations heretofore exclusively male. An example is the virtual capture of clerical positions by the female. Even the executive secretarial position, the apex of the clerical pyramid, is now more often held by a woman than by a man. Her entrance into federal government employment dates from the Civil War,

when the Secretary of the Treasury discovered that his daughter could well replace men needed in the field. She was given long shears, about half pay, and the job of cutting money, a meager but important beginning for federal careers for women.



The real question is whether women have special characteristics which make them suitable employees for some jobs and not for others. Certain demonstrated average differences exist between the physical attributes of men and of women. How relevant are these to individual cases? Clearly some women are larger and stronger than some men.

Women who have been doing stoop farm labor in Texas have appealed to the Department of Highways to lift its ban against the hiring of women for roadside

clean-up. These women are seeking jobs somewhat lighter than those they have been filling. They have been barred from roadside jobs because of alleged unsuitability for women. The Soviet and Chinese societies have demonstrated to amazed Westerners how physically able women workers can be, an example not to be envied, but one which may help us to think more rationally about women and their capabilities.

Other than sheer physical strength, apparently there is no real evidence that there are sex-linked characteristics or aptitudes which suit women for some jobs and not others. Differences found between men and women are largely the product of such cultural factors as background, interest, and experience. In individual cases, generalizations are hardly reliable.

b. *Resistance to women in some jobs.* The resistance to permitting women to hold jobs labeled "men" has very little to do with whether women are qualified and able to hold such jobs. In studies made in wartime, neither the U.S. Air Force, the British armed forces, nor the Women's Bureau found real differences in women's performance in mechanical and technical work and lathe operation in comparison with men of similar aptitude.

The important giveaway is that the sex label is not consistently applied, even within a given country. The same job may be considered female in one region, city, company, plant, or department, and male in another. Although the label is often viewed as permanent, substitution of females for males may take place without difficulty, especially in periods of manpower shortage. The resistance that does occur comes from the existing work

force, employers, or perhaps customers, and varies markedly with members of different socio-economic or occupational groups. Paradoxically, some women support and even applaud the label which excludes their sex. Resistance may be strongest in occupations where job status is significant or where new women workers represent a direct threat to the job security of men.

3. FACT, FICTION, AND HALF-TRUTHS

The National Manpower Council has found ample fiction but little factual information to characterize women employees further.

a. *Fiction: Women are high-cost employees.* It is true that when women are hired for the first time, it may be necessary to provide separate rest rooms and cleaner, more agreeable working conditions, or perhaps to reorganize the work in such a way that heavy tasks are reallocated. The Council concluded that such costs are negligible in the few cases where they occur. Employers believe costs are sex-linked when they are more probably occupationally-linked.

b. *Fiction: Because of labor turnover of women, investment in their training is wasted.* The grounds for this belief are weak. A study under the auspices of the Social Science Research Council showed that among groups of men and women comparable in terms of age, marital status, length of time in the labor force, and migration patterns, in a given period women held about the same number of jobs as men did. The real point is

that American workers, men and women, are highly mobile, especially in times of high employment.

Further, the SSRC study indicated that job-leaving by men and women is concentrated in particular occupational groups. Age and length of service are also significant determinants, for men as well as for women.

c. *Fiction: Women do not make good supervisors.* Where women have been utilized as supervisors of men and women, assuming careful selection, adequate training, and the support by their superiors necessary to any effective supervision, they have demonstrated their ability to perform this function, according to the Manpower Council.

d. *Fiction: The low occupational status of women is due solely to the reluctance of male employers to promote them.* On the whole, women are less desirous of and less well prepared for promotion than men. This situation may result in part from the pervading necessity of women workers to divide their loyalties between job and home. Furthermore, the discontinuity of their work careers often prevents their acquisition of as much seniority, experience, and skill as men. They also tend to enter occupations offering restricted opportunities for advancement, or to take factory jobs out of the lines of progression. Sex labeling takes its toll. Women remain unprepared for promotion, believing such opportunities are not available.

Moreover, women may fail to consider their attachment to the labor force a permanent one, regardless of how many years they work. Negro women, who constitute more than 12% of the female labor force, accentuate

the pattern of low occupational status because of both inadequacy of training and racial discrimination. Finally, given the nature of the labor market, it must be expected that untrained women as well as men will continue to fill jobs of low economic status, when they can find work at all.

e. *Fiction: All women share a relatively high sickness rate.* Women as a group show a greater tendency toward work absence than men. Not all women, however, share the same high illness rate. There are apparently significant differences in absence rates due to menstruation and illness among women in white-collar and manual work, women from different racial and ethnic groups, and older and younger women.

Certainly a high sickness rate is not peculiarly and permanently female. A Public Health Service study of worktime lost because of illness or injury between July 1959 and June 1960 showed an average of 5.6 days lost by women and 5.5 days by men. A U.S. Civil Service Commission study of sick leave records for 1961 also found little difference between men and women. What difference existed might be attributable to the fact that women federal employees are concentrated in the lowest salary levels, where absences are more common, to men as well as women.

f. *Fiction: Family status is unaffected by a woman's job.* Most psychologists and sociologists have assumed that the status of women workers is more likely to be a function of their husbands' or fathers' occupations than

of their own, but some believe that married women contribute to the status of their families in important ways.

For one thing, a wife's earnings will give access to status symbols such as schooling, housing, furnishings, automobiles, vacations, and so on, which are largely a matter of income. This may be important to the husband, especially when he is becoming established in a business or profession, or as a means of obscuring his own lack of financial success. On the other hand, her working may imply that her husband is not doing well in his work and thus may lower the family status.

The position the woman holds may have some status implications for her family. Often, her job status will be lower than her husband's, but the effect of this may be overcome by the additional income she earns for the family. On the other hand, she may have a white-collar job and her husband a blue-collar job. Especially for Negro women has there been a wider range of occupations open than that available to Negro men.

The labor force entry of more and more middle- and upper-class women of extensive education probably will bring about the achievement of equal job status with their husbands. In any case, the wife's participation in the labor force will remain a powerful determinant of family status.

IV. Women, Employers, and the State

AGITATION IN THIS COUNTRY for limitation of the women's workday began as early as 1834, when a trade union group in Boston said of the cotton mill owners that "they must be forced to shut their mills at a regular hour." But the strikes and petitions for legislation were directed at achieving the ten-hour day for all workers. Somewhere along the line, the general demands were tailored to legislation specifically for women. Whether this was, as some have said, a design to keep women from becoming competitive for men's jobs is not known. But the fact is that the employer of women has been subject to special regulation, and courts and students have long debated whether such legislation was an interference with woman's freedom to contract, or simply a recognition of the weakness of her bargaining power and consequent need of protection.

1. DOES LEGISLATION HELP OR HURT WOMEN?

Laws directed at the welfare of the working woman have cut more than one way. One woman lawyer

has alleged: "All the rules of law that deprived women of their most fundamental rights have been called 'protective.'"

A study made in the 1920's concluded that protective labor legislation had probably inhibited the expansion of employment opportunities for women. The suggested solution to this dilemma was to raise the status of all sublevel workers. The Women's Bureau still holds this view.

E. E. Witte, however, thought the whole argument largely a tempest in a teapot. Writing in 1927, he claimed that special labor legislation for women was not widespread and therefore had little impact, for good or evil, and had almost no effect on the general level of women's hours of labor, wages, and working conditions. Of the four kinds of labor legislation—prohibitory laws, laws requiring special equipment where women are employed, minimum wage laws for women, and laws on women's hours of labor—Witte considered the regulation of hours the most important in 1927.

The controversy over whether legislation has worked to women's favor or disfavor remains unsettled, even today. Re-examining in 1959 three of the best studies of the impact of minimum wages on the employment of women, J. M. Peterson insists that there were indeed reduced employment opportunities. Surely the Women's Bureau is correct—the appropriate tactic is to improve substandard conditions generally rather than only those of women. But what of outright discrimination on account of sex? Can it be cured by law?

2. EQUAL PAY ISSUE

Probably no issue has concerned women, or economists, more than the question of how wages for women could remain permanently depressed vis-à-vis men. In a free market economy, such a phenomenon could be explained only if the efficiency of performance was not really equal or if other costs such as excessive sickness absences were present. Economist after economist has studied this question without being able to show that either was generally true, except for some heavy exertion jobs. Why, then, were not women substituted freely for men, at least in those occupations where their efficiency value was greater?

P. Sargant Florence, a British economist, wrote in 1931 that the fundamental factor was "women's supply price curve," that is, there was always a certain amount of "self-low-priced" labor, but otherwise the gains to women would have to be quite high to get them to work and thus the advantages to employers of hiring women would disappear. David Schwartzman goes even further, arguing that the total supply of female labor is invariant with respect to wages.

Another factor accounting for nonsubstitution is the documented resistance of trade unions to the extension of greater employment opportunities to women.

Since World War I the Women's Bureau of the Department of Labor has insisted that wage rates should be based on occupation, and not on sex. Their position on all social legislation is that characteristics such as sex

or race are not proper or appropriate reasons for differentiation of wages.

Nevertheless, in the 1963 congressional hearings on the equal pay bill, some employers continued to insist that state regulatory legislation and high absence rates already make women high-cost employees. Probably the difference between the experience of employers and the findings of studies may be explained by noting that many complaining employers have no meaningful comparative base, that any employees available to them for these jobs might have the same high absence rate. Nor do economists believe there are any other permanent high costs associated with hiring women, though there may

be initial costs such as the installation of rest rooms. The state law issue is further examined below.

The principle of unequal pay has died hard. Michigan and Montana in 1919 were the first states to pass a law carrying the principle of equal pay for equal work. Not until 1943 did any other states follow suit, and by 1949 there were only nine such laws. In 1963 only 22 states had such legislation. A federal equal pay bill was introduced in 1945 and in every session of Congress thereafter before it was finally passed in 1963. For whatever reason, the unregulated market had never adjusted women's wages to those of men.

The impact of the equal pay law will undoubtedly be studied by the Women's Bureau. Since more than half the women in the labor force work in the 22 states already having such legislation, it is not anticipated that the federal law will seriously reduce the employment opportunities of women. What is expected is that women's wages will be raised to the level of those of men working in the same plant and same occupation. Differentials in earnings due to seniority, merit, and nightwork will not disappear. But differentials based on minority group status or sex will be illegal. The occupation, not the sex of the worker, will determine the wage. What the free market never did for women, the law is attempting.

3. FEDERAL LAWS

Federal laws affecting women employees are of two kinds: those dealing directly with employee wel-

fare such as wages, hours, equal pay, and social security; and those extending protection to employees in their right to organize. None of these specifically mention women as a group to be treated separately. Even the equal pay law is drawn as a prohibition of wage differentials based on sex, and its remedies are available to men as well as women.

a. *Wages and hours.* In the wage and hour regulations certain exemptions have relevance to women in the labor force. Women working in small-volume retail or service (including laundry) establishments are not covered. Switchboard operators of few stations, harvest workers, hospital workers, seafood processors, all are unprotected. Domestic workers are not considered to be in interstate commerce and thus are dependent on state law, if protected at all.

Social Security laws, however, now include domestic workers and many others unprotected as to federal hour and wage standards. Assuming enforcement, a domestic worker regularly employed by one employer will be eligible at 62 at least for minimum Social Security benefits, almost regardless of her hourly wage rate, since coverage is mandatory for workers receiving $50 in a quarter from one employer.

b. *The right to organize.* The federal protection of the right to organize and bargain collectively extends to certain important occupations of women, such as jobs in the textile and garment industries and office and clerical occupations, when these are not supervisory.

The specific exemptions affecting women particularly are those of domestic servants and agricultural workers

as defined in the Fair Labor Standards Act (an exceedingly complicated definition based partly on geographical proximity to markets). Although these occupations are of less relative importance today than in the past, low standards continue to prevail in them.

Nor do women professional employees have protection. Teachers, of course, tend to be beyond the reach of federal protection. But nurses and other personnel in nonprofit hospitals are specifically denied federal protection. The American Nurses Association has for some time been conducting a legislative campaign to change this. Whether such excluded employees can organize or not depends to a large extent on state law.

4. STATE REGULATION

There is great disparity among the states in the amount and quality of regulation of women's working conditions. In 1960, 33 states had minimum wages for women (19 laws were for women only); 20 had equal pay (13 for females only); 43 had maximum daily and weekly hours for women in one or more industries; 25 regulated the length of the meal period; 12 required a rest period; 21 regulated nightshift work of women; 19 regulated industrial homework; 26 had occupational limitations which applied to women; 46 had some regulation on seating of women employees; and 12 regulated the amount of weight a women might be required to lift.

Other state laws important to women are unemployment insurance laws which deny benefits for specified periods during pregnancy and after childbirth, or when

a woman quits a job because she must move with her husband to a new location. The President's Commission on the Status of Women found that women employees predominate in several groups now excluded from coverage under unemployment compensation, including employees in firms with less than four workers, employees of nonprofit organizations, and domestic servants in private homes.

Welfare laws also affect women's participation and adjustment in the labor force. For example, in many states a mother receiving aid for her dependent children may not supplement this aid without losing her eligibility. Although the intention is proper care of the children, total disqualification would not seem to be the only solution.

Laws affecting female employees vary so greatly from state to state that generalization is difficult. California and Texas, both with sizable industrial as well as agricultural labor forces, will serve to illustrate some of the differences among the states.

a. *California.* The California legislative code extensively regulates occupations of women in industry, including those in trade and manufacturing; personal service (beauty shops, etc.); canning, freezing, and preserving; "homework"; public housekeeping (including restaurants, camps, clubs, hospitals, private schools and colleges); the laundry industry; and the amusement and recreation industries. Agricultural operations on the farm and with farm products and technical and clerical occupations are also regulated. About the only occupations common to women which are not covered are

public employment, including that in public schools, and service in private households.

Specifically excepted occupations are managerial, creative, or licensed professionals (law, medicine, teaching, accounting, etc.); telephone operators whose duties as operators are incidental to other duties; graduate or student nurses in accredited schools and hospitals; and performers.

These and other exceptions are clearly intended to support women's competitive ability to hold jobs. For instance, the prohibition of hours in excess of 8 a day or 48 a week does not affect workers in industries where perishable foods are being processed, or in licensed laboratories. Special orders, however, are issued on hours worked by performers, cannery workers, hotel and restaurant workers, and the like. The exceptions to the minimum wage are in the interest of entry workers, including women eighteen years of age or over; minors; and physically handicapped persons working under permits granted by the Industrial Welfare Commission.

Enforcement of the labor code and the promotion of wage earners' welfare are functions of the State Department of Industrial Relations, supplemented by such bodies as the Industrial Safety Board and the Industrial Welfare Commission. Written complaints are not necessary to initiate an investigation, since in most instances the administrative agency is empowered to prevent violations. However, any employer who discriminates against or discharges an employee because of a complaint is guilty of a misdemeanor.

California regulates the facilities for all employees extensively. In some instances there are special provisions for women: seating for female elevator operators; limitations on lifting weights and carrying heavy objects up and down stairs; provision of meal periods; rest periods; dressing and rest rooms; elevator service to the fourth or higher floors; suitable covering for cement floors. These regulations are directed toward the health and safety of female workers and the protection of their minimum wage, which is to be also an equal wage for equal work. Possibly these requirements do make the cost of hiring women somewhat higher than it would be in their absence, but the standards are not extraordinarily high and apparently have not resulted in substitution of men for women. Probably these regulations have simply resulted in better working conditions for all workers. Voluntary compliance is widespread.

Since 1961, public employees have had the right to participate in the activities of employee organizations of their own choosing unless forbidden to do so by the legislature. Public agencies may not discriminate against those employees who do join. This protection is intended to strengthen merit and civil service methods of employer-employee relations rather than to replace them. Consequently employees are also protected in their individual bargaining rights.

California's Fair Employment Practice Act safeguards the opportunity of persons to seek, obtain, and hold employment without discrimination on account of race, religious creed, color, national origin, or ancestry, but not on account of sex. The California guide to lawful

and unlawful pre-employment inquiries is not concerned, therefore, with the question of sex.

b. *Texas.* The paucity of regulation of working conditions in Texas is dramatized by the absence of any administrative body comparable to the California Department of Industrial Relations or the Industrial Welfare Commission. The Texas Bureau of Labor Statistics may collect facts and the Industrial Commission may investigate disputes, but no broad-powered agencies exist to promote the welfare of workers generally.

Texas has no minimum wage law, a 75-cent minimum wage law having failed to pass the 1963 legislature.

Certain minimal standards of health and safety are provided, presumably to be enforced by the Commissioner of the Bureau of Labor Statistics, who may enter a factory upon the written complaint of two or more persons. The remedy is to give notice of the facts to the county or district attorney, an elected official. No protection is afforded those registering such complaints.

The regulation of hours of females establishes a 9-hour day and a 54-hour week, but the exceptions are numerous. Executive or outside sales employees, hospital employees, clerical and food processing employees are all exempt. Female bank employees may work no more than 12 hours per day, and this only within a 54-hour week. In textiles, a 10-hour day and a 60-hour week are permitted, and in laundries an 11-hour day in a 54-hour week is legal, if double time is paid for hours in excess of 9. Even these provisions go out the window during national emergencies in industries covered by federal law.

About the only other special legislation for women has to do with seating, toilets, and washrooms. Female Texans must be provided with suitable seats for use when not engaged in active duties of their employment! Even these chairs may be removed in times of national emergency.

As for toilets, every covered industrial establishment must be equipped "with sufficient water closets, earth closets, or privies" in the proportion of one to every 25 males and one to every 20 females. Apparently these must remain, even during national emergencies.

It is unlikely that what special legislation there is for female employees in Texas seriously affects either their working conditions, the cost of hiring them, or their inherent right to make free individual contracts.

Texas has no specific legislation protecting employees in their right to strike. Although "the inherent rights of a person to work and bargain freely with his employer,

individually or collectively" are recognized, state law forbids any official or group of officials of the state, or of a city, municipality, county, or other political subdivision, to enter into a collective agreement with a labor organization. Indeed, such officials may not even recognize a labor organization as the bargaining agent of public employees. Presumably teachers are affected by this provision.

Texas regulates unions and union-security clauses extensively, having been one of the first states to pass a "right to work" law in 1947.

In legislative aspects Texas remains true to her pioneer tradition of being "Hell for women and oxen."

5. LAWS IN OTHER COUNTRIES

Women have received special legislative attention in all societies. European countries have generally had more prohibitory legislation, more childbirth protection, and more maternity benefits than have been afforded in the United States.

In the Soviet Union, women have extensive protective legislation. They enjoy the "right to work," that is, to hold a job, the right to equal pay on a job, and special rights during pregnancy, nursing, and motherhood. For instance, if during pregnancy a woman must be put on a lighter job, she will nevertheless receive her old, higher rate of pay. She is entitled to paid maternity leave of 56 days before and 56 days after a normal birth, and may combine this with her ordinary annual leave without penalty. Nursing mothers are permitted special

breaks for nursing, and these count as working time and are fully compensated.

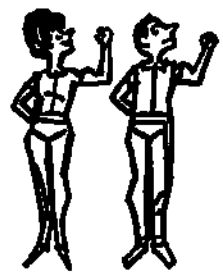
By 1968, all Soviet workers expect to have a 30- to 35-hour work week with at least 12 days' annual vacation. Supplementary maternity and family allowances as well as nurseries and kindergartens are available. The present plan includes an expansion of the boarding schools, the public kitchens, and the manufacture of laborsaving devices. Soviet women represent 43 per cent of the nonagricultural labor force, and outnumber men in teaching and in the medical profession.

Whether protective legislation promotes or is the result of the high participation rate of women in the labor force must be seen in the light of other facts. There were only 82 males to every 100 females in the Soviet Union in 1945, but the great expansion of the number of women working had apparently taken place even before the war. Between 1928 and 1938 their number doubled. Alex Inkeles believes this increase was due mainly to a need to supplement family income, and it occurred largely before the expansion of the kindergartens and communal services. This was a period of serious overcrowding in housing and of great dependence on the babushka, or grandmother, for child care.

That an ideological premium is placed upon the equal participation by Soviet women in the affairs of society is well documented. By giving women on collective farms concrete opportunities for training and advancement as well as direct payment for services, the socialist regime is supposed to have been successful in gaining the support of the village women.

Protective legislation similar to that in the Soviet Union exists as well in democratic Sweden. There it is more child-centered, but it includes the right of the working mother to maternity benefits, nursing time, and re-employment after maternity leave. Women employed in government service, banks, insurance companies, and the large business establishments have for some time received a major part of their salary during their four months' maternity leave. Yet women in Sweden constitute a much smaller part of the nonagricultural labor force (26% in 1950) than do Russian women. And without this protection, a larger proportion of married women work in the United States than in Sweden.

Surely the point is that such legislation is only a small factor in determining the labor force participation rate of women. Its major role in a democratic society will be the protection of family status and of children.



V. Women in the Professions and Management

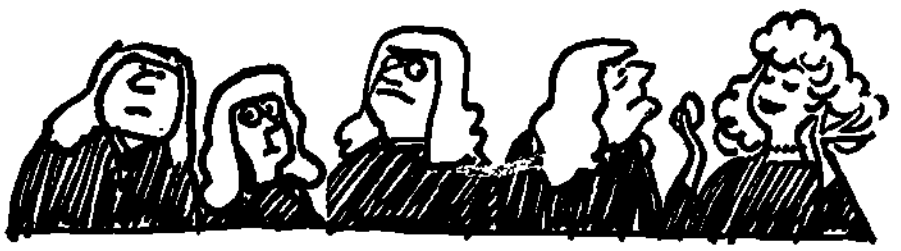
MUCH IS WRITTEN but, in fact, little is to be said regarding women in the professions. Why? Because outside teaching and nursing there are few American professional women, in either absolute or relative terms. Furthermore, in spite of the growth in labor force participation of women, the concurrent gains in the professional and technical occupational group, and the high level of educational attainment of women, between 1950 and 1960 women generally made smaller gains in professional employment than men, relatively as well as absolutely. (See appendix tables 3 and 4.) Only in teaching and nursing, their traditional professions, have their numerical gains outstripped those of men.

More than thirty years after women achieved the right to participate as citizens, a National Registry of Scientific and Technical Personnel indicated that only 7 per cent of those registered were female. When Lee Graham asked *New York Times Magazine* readers "Who's in Charge Here?" he found the answer was an emphatic "Not Women!" Moreover, in those professions where women predominate, earnings are significantly lower

than in occupations requiring similar training and education.

1. THE GAINS WOMEN HAVE MADE

There are some gains, of course. One writer claims that there were no women lawyers in the United States until the latter half of the nineteenth century. In 1940, 2.4 per cent of the lawyers were women, and by 1950, the figure had increased to 3.5 per cent, where



it remains today. This is indeed a gain, but is modest in comparison with the Soviet statistic, for instance, that in 1957 32 per cent of the legal profession of the USSR were women.

In the engineering profession, 1.2 per cent of engineers in the United States in 1950 were women. In the Soviet Union 36 per cent of all scientific personnel were women. As of 1962, 3 per cent of the seats in state legislatures were held by women; in the Soviet Union 26.4 per cent of the Supreme Council of the USSR and 32.3 per cent of the federal republic councils are women.

Yet American women have generally fared better at the state than at the federal level. Two of 100 U. S. senators and 11 of 435 representatives are women. Only two women have held cabinet rank, and no woman has

ever served on either the Supreme Court or the courts of appeals. Of 307 federal district judges, only two are women, according to the President's Commission on the Status of Women.

Nor are American women prominent among the top business executives. In 1956 *Fortune Magazine* carried an estimate that not more than 5000 women could be found among the quarter million "real" executives in the United States. When women did advance in industry, it tended to be among the small or middle-sized companies. For example, although 60 per cent of the employees of American Telephone and Telegraph are women, only one woman was in A.T. & T.'s central executive group.

However, a study of graduates of the Harvard-Radcliffe Program in Business Administration documents broadening opportunities for women in business. Accepted careers for women with no apparent limit on advancement are those of personnel directors, administrators of community agencies, department store executives, and educational administrators.

Though the over-all picture of women in the professions and executive positions is not impressive, this is not a unique American condition. The report of an international conference on "The Status of Women Around the World" revealed that much was yet to be done in bringing women into the professions of architecture, engineering, law, and science in both the underdeveloped and the Western nations.

The Soviet statistics on women's participation in law and science, though seemingly unquestionable, appear

to be virtually unique. Are women in Western nations so abused, or is a minor role in some professions their own behavioral choice? Actually, in the United States, taking women as a separate group, a slightly higher proportion of working women are in occupations classified as professional, technical, and kindred than is true of working men. (See appendix table 3.)

The American picture is not expected to brighten rapidly. Women are earning only 1 in 3 of the B.A.'s and M.A.'s awarded by American institutions of higher learning, and only 1 in 10 of the Ph.D.'s. This represents a loss of ground as compared with the 1930's, when 2 of 5 B.A.'s and M.A.'s and 1 of 7 Ph.D.'s were earned by women. No one suggests that discriminatory barriers have been erected in universities to establish such a pattern.

2. WHY GAINS HAVE NOT BEEN GREATER

The reasons usually advanced for women's poor showing in the professions range from cries of discrimination to accusations that American women are either uninterested in or incapable of sustained career commitments. Both factors are clearly involved.

a. *Discrimination.* It seems likely that discrimination has been a real barrier to a woman's achievement of a medical education which would permit her to practice medicine or dentistry. Medical education in the nineteenth century was segregated education; at the University of Michigan, for example, duplicate lectures

were arranged on embarrassing subjects. Even now, discriminatory quota systems are allegedly operating in many medical schools.

As recently as 1962, the last *legal* barrier to equal opportunity for women in the federal service was removed. With few exceptions, applicants are now certified without regard to sex. Previously, a study showed that of the requests to the Washington office of the Civil Service Commission, 94 per cent at the three highest regular grades were for men only. At the behest of the President's Commission on the Status of Women, the Civil Service Commission asked that requests for certifications of one sex only be accompanied by reasons. Rather dramatically, the requesting agencies dropped the specification of sex.

Interviews with public employment service personnel, conducted under the auspices of the Commission on the Status of Women in 1963, revealed widespread resistance to the employment of women in accounting, engineering, science, and architecture.

b. *Characteristics of women.* Many people think that the characteristics of women themselves, or of their role in society, account for their poor representation in the professions. In their competition for a mate, which comes ever earlier in our society, women presumably lose their interest in education and in a career. Eli Ginzberg believes that this may be reflected not so much in grades as in the selection by women of easier courses in college and in their disinclination to make special investments as serious students. Early childbearing further diminishes a young woman's interest in or hope for

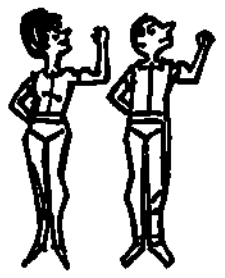
a career. Alva Myrdal has suggested that marriage represents one of the havens from competitive productivity.

Since work is especially competitive in business management and the professions, and since advancement often depends upon the willingness to travel or to relocate, these occupations may require too great sacrifices from women who still view work as supplemental to their major responsibilities of wife and mother. In short, in view of social custom, her own preferences, and the demands upon her, a woman may simply not aspire to professional status which requires long years of training in law, medicine, or the sciences. The National Science Foundation fears this condition will continue to inhibit entry into science, which now virtually requires the doctorate.

Another factor is that young women and even mature women are misinformed or uninformed regarding the probability of their working. It is possible that if intelligent young women understood the real world of work and knew about the women whose lives show that work and home are not necessarily conflicting goals, they would become interested in professional careers. Furthermore, as the president of Radcliffe College warns, girls need backing in their aspirations at crucial times, perhaps as early as the fourth grade.

In any case, the "silent revolution" of the role of women in paid employment is far from complete. Ginzberg cheers the passing of the old image of a woman's role as being limited to making an adjustment in marriage. Yet the new image is a blur. Early insight regarding the nature of the sex-labeled world is rein-

forced by advice from teachers and counselors. Ginzberg believes, however, that the changing world of work will inevitably have an important impact on woman's pattern of adjustment. Woman will come to realize that she, like man, lives in a world characterized by opportunity and choice.



VI. Women and the Union

ONE OF THE LEAST understood aspects of the working woman's life is her participation in unions. Historically women have been active organizers and militant members of labor organizations.

1. HISTORICAL CONTRIBUTIONS TO THE LABOR MOVEMENT

Alice Henry, writing in 1915 of the history of the American trade-union woman, documented the development of an understanding of trade unionism by women through their own organizations and through their cooperation with men.

a. *Before 1860.* Women of the early nineteenth century were both militant and flexible as to remedies. They used the strike or turnout, as it was often called, attempted peaceful negotiation, tried legislative petition, and fought for social reform on a broad base.

Their efforts were for the most part futile, although some turnouts were effective. Legislation enacted in New Hampshire, New Jersey, and Pennsylvania setting a maximum ten-hour day was unenforceable because of "saving clauses" which allowed employers to meet the

competition. Miss Henry notes that "the right to overwork and the 'right' to be overworked remained untouched by legislative interference" for fifty years thereafter.

Early efforts were sometimes spectacular. The 1836 strikes of the mill girls in Lowell, Massachusetts, captured the attention of the whole country. Nevertheless, a disheartening part of women's efforts to organize before 1840 was the want of continuity in the struggle. The leaders of the New York tailoresses were apparently

unknown to the leaders of the female labor reform association, or trade union, in Lowell.

Competition between men and women for jobs divided the labor movement. The Philadelphia Typographical Society was bitterly opposed to the employment of women or girls in the composing room in 1832. The Typographical Society in Washington claimed that women were used to break its strike in 1835.

The women's local unions that existed, however, often were affiliated with the National Labor Union. In addition, there were at least two state labor unions, in Massachusetts and New York, composed solely of women.

b. *1860–1880.* Throughout the nineteenth century, women's organizations remained for the most part weak and short-lived. The immigrant male and female gave American women severe competition for jobs. In the 1860's the sweating system left the working woman almost too broken to organize. When the Civil War widows joined the ranks of home sewers, conditions worsened. Unions among these home sewers and female factory workers did exist from time to time. A notable example is the Collar Laundry Workers of Troy, New York, which was affluent enough in 1866 to aid striking ironmolders and bricklayers with gifts totaling more than $1000. Even so, in 1869, after a desperate struggle, the Collar Laundry Workers Union went out of existence.

c. *The Knights of Labor.* The participation of women in the Knights of Labor in the 1880's is dramatized by the union work of Mrs. Leonora Barry, a widow with

three children. Mrs. Barry made extensive reports on actual conditions in the factories of that day. In a linen mill in Paterson, New Jersey, for example, women stood on a stone floor with water from a revolving cylinder flying constantly against the breast. Even in winter they had to go home with underclothing dripping because they were allowed neither time nor space in which to change their clothing. No wonder that during one eleven-month period Mrs. Barry received 337 applications for her help in organizing.

The 190 local assemblies composed entirely of lady Knights and most of the local women's unions eventually went out of existence.

d. *The American Federation of Labor.* Women also participated in the beginnings of the American Federation of Labor in the 1880's, acting as organizers for the AFL in the 1890's. As time wore on, women were less and less represented in AFL conventions by women delegates, a condition which Miss Henry attributes in part to the failure of men to recognize either the value of the women members or the necessity of organizing all working women.

2. SEX SEGREGATION WITHIN UNIONS

Participation by women in labor organization is significantly less than that of men. Policies of nonadmission, either to the union itself or to the apprenticeship program of various trades, have contributed to this condition.

a. *The nineteenth-century picture.* The early unions were all organized on a segregated basis, though some

cooperation between men's and women's locals always existed. After the Civil War the labor movement generally remained segregated. Of the thirty or so national trade unions, only two, the printers and the cigar makers, admitted women to their membership.

In at least one trade, the printers, the admission of women was a learned wisdom. The employer had long taken advantage of the union members' refusal to work with female compositors. Employers simply trained girls in the trade on the sly and then substituted women for men at lower wages. The change in union policy was at the level of the national union. Many local unions continued to refuse to admit women.

The cigar workers came to the same conclusion as the printers. They determined to handle female competition through restrictive labor legislation rather than through nonadmission to the union. As in the typographical union, some locals continued to bar women from membership, often to their detriment, as many Bohemian women immigrating after the Austro-Prussian war were highly skilled cigar makers and easily organized.

By the twentieth century, ten other important international unions were not segregated as to sex: boot and shoe workers, hotel and restaurant workers, bookbinders, retail clerks, garment workers (two unions), tobacco workers, shirtwaist and laundry workers, textile workers, and glove workers.

b. *The national picture today*. Only a little over 3⅓ million out of 24 million women in the labor force (14.5 per cent) are union members. The participation of women varies from union to union. By 1958, of the 186

international unions participating in a membership survey conducted by the Bureau of Labor Statistics, 137 unions indicated that they had women members. Thirty unions reported a membership which included 25,000 or more women members. Unions reporting more than 100,000 female members were the International Ladies' Garment Workers Union; Amalgamated Clothing Workers of America; International Brotherhood of Electrical Workers; Retail Clerks International Association; Hotel and Restaurant Employees and Bartenders International Union; International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America; Communications Workers of America; International Union of Electrical, Radio and Machine Workers; and International Union, United Automobile, Aircraft and Agricultural Implement Workers of America.

There were no separate unions for women alone, though in 9 unions women constituted at least 70 per cent of the membership. In 82 unions their representation was less than 20 per cent, not counting those unions with no women members. Among unions with no female members are those of bricklayers, fire fighters, locomotive engineers, and plasterers.

c. *The situation in California.* A study by the California Department of Industrial Relations of 3274 local unions shows that 52 per cent of these had no women members in July 1961. Of the 1 per cent reporting that all their members were women, most were unions of government employees. In textiles and apparel, where women members outnumber men, only three unions reported 100 per cent female locals.

Seventy per cent of the California locals reporting no women members were in construction, transportation and warehousing, and government. Whether this is a reflection of discrimination, segregated locals in government work, sex labeling of jobs, or difficulty or disinterest in organizing women, is not clear. Thirty-five per cent of all California workers in nonfarm employment belong to unions, but only around 20 per cent of the women wage and salary workers are union members.

d. *Apprenticeship programs.* Entry into many trades which are highly unionized is ordinarily through apprenticeship programs. Formal programs are usually operated by joint employer-employee groups, under conditions approved by a state agency or the U. S. Department of Labor's Bureau of Apprenticeship and Training.

Most of the approximately 300 skilled occupations having such programs fall into the classifications of building, printing, metal, and service trades. The Women's Bureau has estimated that in 1954 fewer than 1 per cent of the registered apprentices in seven reporting states were women. Presumably these few women are in occupations such as dressmaker, dental technician, fur finisher, fabric cutter, tailoress, and printer. In contrast, during World War II a number of women received training as welders and machine-tool operators.

The two reasons usually given for the fewness of women in apprenticeship programs are the physical requirements of the occupation and the length of training required. Another reason may be that many occupations that might interest women have not been

considered "apprenticeable" on rather arbitrary grounds.

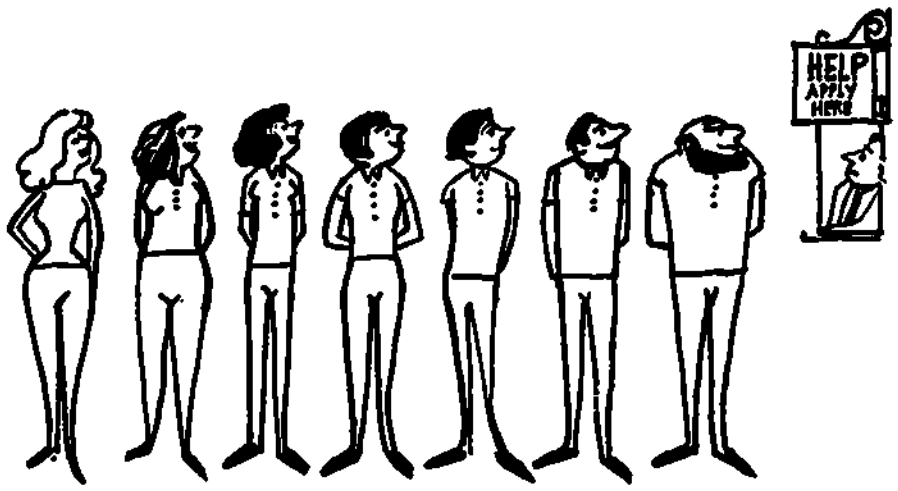
Women do not generally benefit from the publicly supported training programs for military personnel and veterans. However, 1.8 million women and girls were enrolled in federally aided vocational education programs in 1958–59, most of them in home economics classes. Where courses that are more occupationally oriented are offered, women respond eagerly to opportunities to become technicians, practical nurses, or other health workers. These courses have not been universally available.

In view of the eager participation of women in these educational programs, there seems little reason to believe that their nonparticipation in apprenticeship programs is due solely to female apathy.

e. *Relations within the bargaining unit.* Relations on the job between men and women in unionized plants may be affected or controlled through the basic collective agreements, supplemental agreements, and arbitration decisions. State law may represent a limiting factor.

In one case an arbitrator decided that a supplemental agreement spelling out that "a female employee can exercise her seniority as a catcher . . . or take the layoff" was controlling, even though this might create some administrative difficulties. (38 *LA* 164.) In an arbitration decision involving state law it was held that a female journeyman clerk could not use the contract provision protecting journeymen from layoffs while apprentices were retained, because state law prohibits female employees from lifting more than 25 pounds, and such work

was part of the apprentices' job. (38 *LA* 817.) Another arbitrator also ruled that due weight had to be given to state regulations governing the employment of female workers when bumping was in progress. (36 *LA* 599 and 36 *LA* 654.)



Sometimes jobs are divided on a sex basis and so maintained through a contract clause stating that "males may not replace females nor females replace males." An arbitrator decided that this rule applied also to the filling of a job vacancy and to a promotion even though the contract provision covering these situations read that the senior employee was to be given preference "provided he or she has the necessary qualifications." (38 *LA* 100.) Such a construction would generally limit opportunities for women. However, the most common bar to a woman's bumping a male or getting an open job which has had the "male" label is not the contract, but her physical characteristics, the dirtiness of the job, and the like. (34 *LA* 41 and 35 *LA* 657.)

On the other hand, males' opportunities are also limited by traditional beliefs. An arbitrator overturned one of these when he upheld the right of a senior male employee over a junior female employee to a job in the cafeteria. He rejected the contention that the "male animal suffers from natural handicaps to perform kitchen duties." (35 *LA* 268.)

Arbitrators' decisions sometimes go in favor of women. Noting that the contract made no distinction between male and female employees except through the specification of certain differential rates, an arbitrator ruled that this did not require that a job with a male rate should always be filled by a male employee. (36 *LA* 326.) When an art metal construction firm recalled men and not women, it was held that women employees' contractual seniority-recall rights had been violated, even though allegedly the union had surreptitiously agreed to bypass women permanently. (36 *LA* 458.) Nevertheless, protection of women's rights within the union agreement is at times inadequate or at least unnecessarily vague.

3. UNION GROWTH PATTERNS AND WOMEN

Union development in the United States has been characterized by long-run growth, periodic spurts of growth, and periodic declines from the highs. The participation of women in unions has generally followed the same pattern.

Long-run growth of labor organizations has been largely taken for granted, although recently some stu-

dents of the American labor movement have predicted that because of the shift from blue- to white-collar employment, and because the easily organized are already organized, future growth may be extremely slow.

When there have been spurts of growth, as in the 1880's through the ascendancy of the Knights of Labor, women have played a role. Again, with increased activity at the turn of the century, several new and important unions came into being, including the International Ladies' Garment Workers Union in 1900. Union membership also spread among women at other rapid growth periods, which have been analyzed by Irving Bernstein as periods characterized by structural changes in American trade unions. Whether women shared equally with men in proportion to their labor force participation is not known.

Similarly, women's union membership has declined when men's has, but not necessarily in the same proportion. This was true of the period immediately following the zenith of the Knights of Labor and again during the twenties. Yet unions made up primarily of women fared no worse than those of men. When David Dubinsky took over the leadership of the ILGWU in 1932, the union was in poor organizational and financial shape. But so were other unions. The weakness of the union could hardly be attributed to the large proportion of female members.

The most recent California experience has been a steady decline in the ratio of union membership to nonfarm employment. Since 1950, when a high of 43 per

cent of the nonfarm work force of California was organized, union membership has declined to about 35 per cent.

4. ARE WOMEN UNORGANIZABLE?

This question, in view of historical data, may seem preposterous. Yet it is a cliché that women are a "bar to unionization," an "obstacle" to the spread of unionization, a "roadblock to union growth."

But, as Bernstein points out, though women are not as highly organized as men and are, indeed, increasingly participating in the labor force, in fact we know nothing about the comparative propensity of men and women to join unions. The existing difference in the membership rate is largely explainable by the fact that women work primarily in industries and occupations into which unions have not made a deep penetration, for example, office, sales, and services. The men in these occupations are not highly organized.

Analyzing California data, Bernstein finds a modest secular rise in the rate of female union membership from 11 per cent in 1941 to 15 per cent in 1948 and 19 per cent in the decade 1950–1960. Recently there appears to be some stability, at about 20 per cent, in the proportion of women members in the state's unions.

VII. Where Are Women Headed?

1. WHAT CAN BE EXPECTED?

Much about the future of women and work is easy to foretell. The projected growth of the labor force is to 94.8 million in 1975, of which 32.4 million will be women. In other words, more than 8 million women are expected to join the labor force in the next twelve years. Much of the increase will come this time from young women under 35, as contrasted with the large increase between 1950 and 1960 in the number of women workers over 35.

Women will continue to find somewhat wider employment opportunities. The kind of jobs they get will depend to a large extent on their educational interests and achievements. Women's union participation rate will follow the general pattern, perhaps with a gradually rising rate of participation.

One other thing we can be sure of: women's participation in the labor force will have an impact on every phase of our economic and social life. Exactly what the effects will be is not clear. When women joined the work force during World War II, they found they could lift almost anything—with the fork lift. Neither women nor industry have been quite the same since.

As the young, single woman came into the office at the turn of the century, her economic independence created new industries—ladies' garment and beauty shops and women's magazines, to name a few. The female attitude toward job satisfaction, which includes greater concern about such things as cleanliness of working conditions and pleasantness of social relations, has had a permanent effect on personnel management. Women have offered a real challenge to the human engineers who fit the machine or the job to the worker. Indeed, when the Soviets put a female untrained pilot in orbit around the earth, the human engineers had a day of real triumph.

Job redesign not only for women, but for all workers who have suffered discrimination or have been, as Solomon Barkin says, "relegated to the human scrap heap," is a technique of full employment. Redesign might include the proliferation of part-time opportunities or of professionally supervised volunteer activities. War experience in agencies such as the OPA offers patterns for combination paid-volunteer agencies, for service-needing but cash-short communities with unused human resources.

Many of the wartime improvements in rest rooms and lunch rooms, the additional safety practices, and the use of clothes suitable for the job are representative of the permanent impression women have made on industry. The continued substitution of levers and pulleys for muscles is to be expected.

One apparition *not* expected is the return of the old-style "career woman," the feminist who devotes her life

single-mindedly to her career. As Ginzberg notes, all the signs are against the emergence of a new feminist type. What women will seek and largely achieve is a truly dual role, where, for most, work will be supplemental to the major responsibilities of wife and mother.

This is not to say that women will live in an enchanted world of having their cake while eating it. Women, like men, must stand ready to pay the price for the choices which they make, a price that usually involves a sacrifice of alternatives. The only new aspect is that women have more such choices.

Family life patterns both affect and will be affected by the new opportunities for women in some unpredictable way. Will the Negro family remain mainly matriarchal as Negro women retire from the labor force? Will the white family remain patriarchal as the married woman goes to work? In the Soviet Union, it is said, the emancipation of woman has weakened the effectiveness of patriarchal power and lessened the father complex. Will American family patterns, different from the Soviet to begin with, change as the Soviet pattern apparently has? Again, we do not know.

Will the children growing up with working mothers be adversely affected? The studies so far cannot reasonably be used to suggest that the effects on such children will be dire. Much will depend on our social efforts, if any, to provide supplementary services.

2. SPECULATIVE ISSUES

Nothing else can be foretold with assurance. Will all the women entering the labor force find jobs?

Will discriminatory barriers to women's employment melt away? An unemployment level of more than 5 per cent, if sustained, means that the probable answer to these questions is no. Only under conditions of full employment will the answers be yes. Competition for scarce jobs inevitably perpetuates sex labeling—through union agreements if other means fail.

Women's desires and ambitions will also play a significant and somewhat unpredictable role. Will women take their places in the professions and in science? The National Science Foundation has stated that the key to the whole series of complex psychological, social, and economic factors which militate against a woman's having sufficient training for a career in science is simply this: women bear children and their role in our society centers on this function.

Whether women generally will surmount the barriers that exist, indeed whether they want to, is not clear. Two current social trends work against a heavy commitment to science on the part of women. The first is the lengthening of the educational period required for a science career. The NSF reports that the average age at which scientists earn a doctoral degree is 30 years. The other trend is that toward early marriage and the consequent decline in labor force participation of women in their twenties. Nevertheless, for women with the aptitude and desire to become scientists, there will be greater economic opportunity to do so. But will women take advantage of this?

A recent sociological study suggests that whether women work or plan to work is directly related to certain

conditions. The women studied were middle-class white women living in suburban housing, with children; the median income of their husbands was $7900. Many of the husbands had a positive attitude toward outside employment for their wives and/or were willing to take care of the children and help with the chores. Women who had children of school age were much more likely to be working or planning to work than those with preschoolers. If before marriage a woman had been in an occupation requiring advanced education or specialized training, she was likely to be working or planning to work. Considerations found to be rather unimportant in determining these women's plans were debts of the family unit, plans to purchase big items, or the differential availability of employment. Whether these factors are important to women in other economic classes is not known.

In short, all that is known is that women will constitute about a third of the labor force. Whether they will be working, at what sort of jobs they will be working, and what the effects on society will be, are still matters of speculation.

3. ADVICE AND REMEDIES

Meanwhile, other than the prerequisite of full employment, what programs, approaches, and studies might facilitate the "silent revolution"?

Esther Peterson, director of the U.S. Women's Bureau, has cited these areas of social and economic need:

1) Improvement of earnings and working conditions for women in agricultural and domestic service. The women at the bottom of the wage scale tend to be excluded from coverage in protective social legislation.

2) Improvement in educational facilities, guidance, and counseling. This is critical for the worker of the future.

3) Development of services which conserve our human resources. These services include the care of children, of the aging, and of our homes.

Eli Ginzberg suggests that persons interested in the psychological aspects of womanpower might ask themselves these questions, among others:

1) Is there any effective way whereby young women in high school and college can be helped to appreciate that they will probably work throughout much of their lives after their children begin to grow up and that they should take this fact into consideration in their planning?

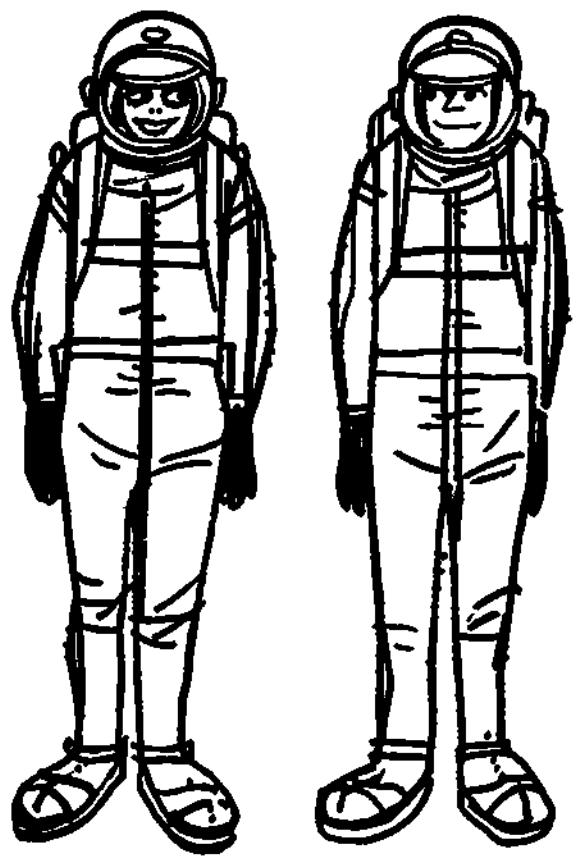
2) What kind of guidance and educational services can best help the increasing number of women who enter or re-enter the labor market in their late twenties or early thirties? What agencies should take up the challenge of providing the services?

3) Since women outlive men by an average of six to seven years, and marry men three years older than themselves, they must anticipate a period of widowhood of ten years. What changes can help older women adjust to this? Was the recent revision of the Social Security system which reduced the age of eligibility of women from 65 to 62 a move in the wrong direction?

Ginzberg especially urges that stereotyped psychological approaches be replaced by studies which take

into account the sociological and economic aspects of women's environment. Environmental conditions must have an impact on a woman's pattern of adjustment, and work is an institution with a pervasive influence on human behavior.

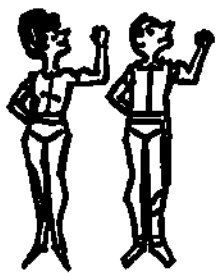
Personnel men, as well as psychologists, are advised to give up some of their opinions and take a hard



look at women's capabilities. Union leaders may well re-evaluate some of the entrenched attitudes toward women. Women might ponder their own circular dilemma of being too often unready and therefore incapable of advancement.

Americans generally might consider whether a large part of the secret of Russian achievements, including economic growth, is the role which the Russian woman has played in her society since the revolution. Her participation has been a function not so much of coercion as of a combination of necessity, opportunity, and legal protection of her femininity. Is the American woman any less necessary or less willing than the Soviet woman? Are her children less entitled to protection than the Soviet and Swedish children?

Finally, policymakers would do well to heed Arthur Goldberg's remark when he was Secretary of Labor: "We have utterly failed if, at this stage in our life, the general concept is that it is kind of a luxury to have women in the labor force. First the figures are against it, and secondly there *ought not* to be an argument about the right of anybody in the country who wants to work, man or woman."



VIII. Suggestions for Further Reading

In view of the important managerial, social, and psychological issues raised by the silent revolution, the literature is far from rich.

Publications of the Women's Bureau, especially the annual *Woman's Handbook*, are useful sources of general factual information on women. The working papers of the Commission on the Status of Women and its Report to the President, October 1963, are full of ideas as well as facts. Another recent and provocative report is *The Potential of Women* (New York: McGraw-Hill, 1963).

Enormous research resources are required for the acquisition of labor force information. Most of this comes from the Department of Labor, the National Bureau of Economic Research, the Survey Research Center, and the National Manpower Council.

Governmental reports such as the Bureau of Labor Statistics' Special Labor Force Report No. 7, *Family Characteristics of Workers*, by J. Shiffman (1960), and Department of Labor publications such as the *Monthly Labor Review* and the annual *Manpower Report to the President* are invaluable, mainly for data and special short-term studies. See, for example, the discussion of

women's labor force participation in recent recessions in Robert L. Stein, "Married Women and the Level of Unemployment," *Monthly Labor Review*, 84 (Aug. 1961), 869–70, and the labor force projections in *Manpower Report*, 1963, pp. 111–18. Congressional hearings on the Equal Pay Act of 1963 are of special interest. These were held on April 2, 3, and 16, 1963, before the Senate Subcommittee on Labor.

California's Department of Industrial Relations publishes labor force information and invaluable reports on union membership, for instance, *Union Labor in California, 1961* (California State Printing Office, Jan. 1963).

Clarence Long's definitive study for the National Bureau of Economic Research, *The Labor Force under Changing Income and Employment* (Princeton: Princeton University Press, 1958), gives extensive treatment to women. This is true also of the Survey Research Center study, *Income and Welfare in the United States* (New York: McGraw-Hill, 1962), by James N. Morgan, Martin H. David, Wilbur J. Cohen, and Harvey E. Brazer.

The National Manpower Council publications, especially *Womanpower* (New York: Columbia University Press, 1957), are useful. The NMC policy and conference publications (Columbia University Press, 1953 and 1954) summarize the thinking at that time on scientific and professional manpower resources and their utilization. The National Science Foundation has added its voice through addresses by its officers before the Commission on the Status of Women. The National Education Association and the American Council of Education also

show a continuing interest, particularly in the American woman's professional status.

Significant journal articles concerned primarily with the labor market are Nedra B. Belloc, "Labor Force Participation and Employment Opportunities for Women," *Journal of American Statistical Association*, 45 (Sept. 1950), 400–10, and Thomas Mahoney, "Factors Determining the Labor Force Participation of Married Women," *Industrial and Labor Relations Review*, 14 (July 1961), 563–77. Somewhat dated articles are J. B. Parrish, "Women in the Nation's Labor Market," *Quarterly Journal of Economics*, 54 (May 1940), 527–34, and Mary Anderson, "Postwar Role of American Women," *American Economic Review, Proceedings*, 34 (March 1944), 237–44. These and other economic journals are now indexed through the Irwin *Index to Economic Journals*.

Women and Work in America by Robert W. Smuts (New York: Columbia University Press, 1959), which grew out of research on the Conservation of Human Resources Project, is broadly useful and has an excellent bibliography. Other authors who speculate on the dual role of woman in society are Alva Myrdal and Viola Klein, *Women's Two Roles* (London: Routledge & Kegan Paul, 1956). The National Manpower Council's *Work in the Lives of Married Women* (New York: Columbia University Press, 1958) is also of interest in this regard.

Simone de Beauvoir's *The Second Sex* (New York: Bantam Books, 1961) and Viola Klein's *The Feminine Character* (New York: International Universities Press, 1949) give insight into the biological and psychological nature of woman in her social environment.

Eli Ginzberg is clearly interested in womanpower in all its aspects, and his article on "The Changing Pattern of Women's Work, Some Psychological Correlates," *American Journal of Orthopsychiatry*, 28 (Jan. 1959), 313–21, is of considerable interest. B. Von Haller Gilmer surveyed journal literature before 1957 on the "Psychological Aspects of Women in Industry," *Personnel Psychology*, 10 (Winter 1957), 439–52, to the great advantage of those seeking either a survey or a bibliography. Other articles on psychological or sociological aspects of women at work may be found in *Psychological Abstracts*, published bimonthly by the American Psychological Association, Washington, D.C. Among these are E. Ellis, "Social Psychological Correlates of Upward Social Mobility Among Unmarried Career Women," *American Sociological Review*, 17 (Oct. 1952), 558–63, which claims to confirm Karen Horney's theory that upward social mobility is likely to be an outgrowth of basically neurotic drives resulting from unsatisfactory early primary group relations; Mildred Weil, "An Analysis of the Factors Influencing Married Women's Actual or Planned Work Participation," *American Sociological Review*, 26 (Feb. 1961), 91–96, which was reviewed in Chapter VII of this pamphlet; L. T. Empey, "Role Expectations of Young Women Regarding Marriage and a Career," *Marriage and Family Living*, 20 (May 1958), 152–55, which suggests a growing tendency for young women to view their roles as dual; M. Woolf, "Revolution and Drive," *Psychoanalytical Review*, 44 (Oct. 1957), 410–32, which reports the decline in patriarchal power in the Soviet Union; and M. H. Donlon,

"Women's Education Today," *Education Record*, 39 (July 1958), 246–52, which critically examines the belief that women do not profit by an education and are motivated only by economic and power drives.

A significant discussion of job redesign is provided by Solomon Barkin of the Textile Workers Union of America, "Job Redesign: A Technique for an Era of Full Employment," in *Manpower in the United States: Problems and Policies*, Industrial Relations Research Association Publication No. 11 (New York: Harper, 1954), ch. 3.

Historical treatment of women in industry is available in such generally useful works as Charles and Mary Beard, *Rise of American Civilization* (New York: Macmillan, College Edition, 1949); Barbara and J. L. Hammond, *Rise of Modern Industry* (New York: Harcourt, Brace, 1926); and John R. Commons and Associates, *History of Labor in the United States, 1896–1932* (New York: Macmillan, 1921–1935). Specialized histories such as Elizabeth Hutchins, *Women in Modern Industry* (London: G. Bell and Sons, 1915); Edith Abbott, *Women in Industry* (New York: Appleton, 1909); Alice Henry, *The Trade Union Woman* (New York: Appleton, 1915); and Helen L. Sumner's *History of Women in Industry*, a report to a governmental body, may not be so widely available.

The law in history is interpreted in many articles, including E. E. Witte, "The Effects of Special Labor Legislation for Women," *Quarterly Journal of Economics*, 42 (Nov. 1927), 153–64, and Rebekah S. Greathouse, "The Effect of Constitutional Equality on

Working Women," *American Economic Review, Proceedings*, 34 (March 1944), 227–36. In addition to the Commons history volumes, Commons' and John Andrews' *Principles of Labor Legislation* (New York: Harper, 1936) is useful. The Commission on the Status of Women and the Women's Bureau have published useful comparative data. For the law itself, *State Labor Law Reports* (Bureau of National Affairs, Washington, D.C.) is invaluable. Arbitration cases referred to in this pamphlet are taken from BNA's *Labor Arbitration Reports*.

For the equal pay quasi-legal-economic issue, in addition to the hearings and the Women's Bureau comparative data, articles of some interest have appeared in journals mainly directed to economists over a long period: C. E. Persons, "Women's Work and Wages in the United States," *Quarterly Journal of Economics*, 29 (Feb. 1915), 201–34; P. Sargant Florence, "A Statistical Contribution to the Theory of Women's Wages," *Economic Journal*, 41 (March 1931), 19–37; Marguerite J. Fisher, "Equal Pay for Equal Work Legislation," *Industrial and Labor Relations Review*, 2 (Oct. 1948), 50–57; E. H. Phelps Brown, "Equal Pay for Equal Work," *Economic Journal*, 59 (Sept. 1949), 384–98; and David Schwartzman, "A Note on the Supply of Female Labor," *Review of Economic Statistics*, 32 (May 1950), 159–61.

Among the many articles on union growth, two of particular interest are those by Irving Bernstein, "Growth of American Unions," *Labor History*, 2 (Spring 1961), 131–57, and "Union Growth and Structural Cycles" which appeared in the Walter Galenson and

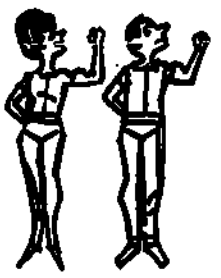
Seymour N. Lipset collection of readings, *Labor and Trade Unionism* (New York: Wiley, 1960).

An article of special interest on the Soviet Union is that of N. Tataninova and E. Korshunova, "Living and Working Conditions of Women in the USSR," *International Labor Review*, 82 (Oct. 1960), 341–57. Sociological insight into the Russian woman's role in the economy and society may be gained from any of three excellent books of readings: Alex Inkeles' and Kent Geiger's *Soviet Society* (London: Constable, 1961); Cyril E. Black, ed., *The Transformation of Russian Society* (Cambridge: Harvard University Press, 1960); and Samuel Hendel, ed., *The Soviet Crucible* (2d ed.; New York: Van Nostrand, 1963). Of special interest in the last named are an article by Alec Nove on the role of social welfare and one by Harry Schwartz on resource use in the USSR. John Gunther's *Inside Russia Today* (London: Hamilton, 1958) repeats the general story of women's work in all occupations and their achievements in the Soviet Union.

The earlier mentioned Myrdal and Klein book is especially rich in U. S. and European comparative statistics. Mrs. Myrdal's earlier study, *Nation and Family* (London: Kegan Paul, 1945), is of great interest to those thinking in the context of a democratic society about the social and family problems which are raised by the increasing tendency for married women to work outside the home. The Social Welfare Board of Sweden presents an authoritative, though now dated, account of social legislation in *Social Sweden* (Stockholm, 1952).

Issues of the London *Economist* periodically carry articles on women in Great Britain, the United States, and the Soviet Union. The many comparative articles appearing in the *International Labor Review* are typified by the comparison of the employment of older women in five countries, 72 (July 1955), 61–77. A recent article by Ralph C. James, "Discrimination Against Women in Bombay Textiles," *Industrial and Labor Relations Review*, 15 (Jan. 1962), 209–24, paints the women in Bombay textiles as militant, even violent, employees.

Actually, the important reading on women in the labor force is yet to come. It is to be hoped that more studies will be made of all the social, economic, and psychological aspects of the "silent revolution."



Statistical Appendix

TABLE 1

LABOR FORCE PARTICIPATION RATES OF SINGLE WOMEN AND OF MARRIED WOMEN WITH SPOUSE PRESENT, BY AGE, 1950 AND 1960

Age	Single women		Married women with husband present	
	1950	1960	1950	1960
Total all ages...	46.4%	42.9%	21.6%	30.7%
14–15.....	22.8	6.8	19.3	14.7
16–17.....		21.1		16.6
18–19.....		53.4		29.2
20–24.....	73.4	73.2	26.2	31.1
25–29.....	79.3	79.3	22.1	27.0
30–34.....	77.3	79.3	22.3	29.0
35–39.....	75.7	78.6	25.6	34.2
40–44.....	75.1	77.6	27.4	39.2
45–49.....	71.7	77.2	25.3	40.7
50–54.....	44.5	75.4	13.4	37.5
55–59.....		69.0		29.6
60–64.....		60.5		19.1
65–69.....		37.5		9.4
70–74.....		21.7		5.1
75 and over.....		9.8		3.1

SOURCE: U. S. Census of Population, U. S. Summary, Detailed Characteristics.

TABLE 2

LABOR FORCE PARTICIPATION OF WOMEN IN 1940, 1950, AND 1960, ACCORDING TO AGE AND RACE

Age	All women			White women			Nonwhite women		
	1940	1950	1960	1940	1950	1960	1940	1950	1960
Total all ages	25.8%	29.0%	34.5%	24.1%	28.1%	33.6%	37.3%	37.0%	41.8%
14-15.....	2.3	5.1	6.9	1.5	4.8	7.1	7.8	7.2	5.4
16-17.....	13.3	17.8	20.8	12.0	17.9	21.8	20.5	16.5	14.0
18-19.....	40.1	43.8	46.3	40.5	45.6	47.9	36.1	30.9	34.8
20-24.....	45.6	43.2	44.8	45.3	43.6	44.8	43.9	39.6	45.4
25-29.....	35.5	32.6	35.1	33.9	31.3	33.5	45.9	42.9	46.9
30-34.....	30.9	30.9	35.5	28.6	29.1	33.5	46.4	46.3	50.2
35-39.....	28.3	33.9	40.2	25.8	32.1	38.5	45.6	48.6	54.7
40-44.....	26.0	36.2	45.3	23.6	34.9	43.9	43.9	48.1	57.0
45-49.....	23.7	34.8	47.4	21.4	33.6	46.4	41.4	45.3	56.5
50-54.....	21.2	30.8	45.8	19.4	29.8	45.1	37.9	40.9	52.6
55-59.....	18.5	25.9	39.7	16.8	25.2	39.1	33.2	34.9	44.8
60-64.....	14.8	20.5	29.5	13.6	20.0	29.0	27.2	27.6	34.2
65-69.....	9.5	12.8	16.6	8.6	12.5	16.3	17.8	16.4	19.6
70-74.....	5.1	6.6	9.6	4.6	6.5	9.4	9.5	8.4	11.5
75 and over ..	2.3	2.6	4.2	2.0	2.5	4.1	4.4	3.8	5.5

SOURCE: U. S. Census of Population, U. S. Summary, Detailed Characteristics.

TABLE 3

Per Cent Distribution of Detailed Occupations of Employed, 1950 and 1960

Occupation	1950			1960			Per cent increase or decrease, 1950–1960		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total employed	100.0	100.0	100.0	100.0	100.0	100.0	14.5	6.9	34.2
Professional, technical, and kindred	8.72	7.30	12.37	11.19	10.31	13.00	47.0	50.8	41.1
Farm and farm mgrs.	7.64	10.31	0.74	3.88	5.49	0.56	−41.9	−43.1	.9
Managers, officials, proprietors, exc. farm	8.92	10.71	4.31	8.37	10.65	3.68	7.4	6.3	14.6
Clerical and kindred	12.32	6.51	27.31	14.40	6.94	29.72	33.8	13.9	46.0
Sales workers	6.92	6.33	8.46	7.18	6.85	7.85	18.7	15.8	24.5
Craftsmen, foremen, and kindred	13.86	18.65	1.50	13.52	19.53	1.19	11.8	11.9	6.8
Operatives and kindred	19.81	20.05	19.19	18.41	19.88	15.38	6.4	6.0	7.6
Private household	2.50	0.18	8.48	2.67	0.14	7.86	22.3	−16.8	24.4
Service workers, exc. household	7.61	5.85	12.17	8.42	5.98	13.44	26.7	9.3	48.2
Farm laborers and foremen	4.28	4.83	2.86	2.24	2.77	1.15	−40.2	−38.9	−46.2
Laborers, exc. farm and mine	6.09	8.14	0.81	4.81	6.90	0.52	− 9.6	− 9.4	−14.0
Occupation not reported	1.32	1.13	1.80	4.93	4.57	5.65	328.5	332.3	322.4

Source: U. S. Census of Population, U. S. Summary, Detailed Characteristics.

TABLE 4

PER CENT INCREASE OR DECREASE, 1950–1960, IN PROFESSIONAL, TECHNICAL, AND KINDRED OCCUPATIONS OF EMPLOYED MEN AND WOMEN

Occupation	Per cent increase or decrease		
	Total	Male	Female
Professional, technical, and kindred	**47.0**	**50.8**	**41.1**
Accountants and auditors	24.7	21.8	41.1
Actors	−37.5	−37.6	−37.3
Airplane pilots and navigators	92.2	93.7	−14.1
Architects	27.8	29.7	−18.4
Artists and art teachers	31.1	37.1	21.3
Athletes	−63.6	−64.3	−52.4
Authors	77.2	115.7	16.3
Chiropractors	10.9	16.7	−23.9
Clergymen	19.6	21.7	−31.2
College presidents, professors, and instructors (n.e.c.)	42.2	44.7	34.0
Dancers and dancing teachers	25.9	− 1.9	37.1
Dentists	10.1	10.6	− 5.9
Designers	137.2	206.8	17.9
Dietitians and nutritionists	16.2	40.2	14.7
Draftsmen	60.3	61.8	39.4
Editors and reporters	41.7	42.7	39.9
Engineers, technical	63.6	64.3	11.0
Entertainers (n.e.c.)	−26.9	−19.8	−44.3
Farm and home management advisers	9.1	14.0	4.2
Foresters and conservationists	22.4	23.4	− 6.3
Funeral directors and embalmers	− 6.3	− 5.6	−14.8
Lawyers and judges	16.9	16.9	18.5
Librarians	50.9	90.3	45.8
Musicians and music teachers	24.6	8.3	40.4
Natural scientists	27.7	30.0	10.4
Agricultural scientists	27.3	27.6	23.3
Biological scientists	51.2	56.6	38.2
Chemists	11.8	13.5	− 3.6
Geologists and geophysicists	75.0	81.1	−27.3

TABLE 4—*Continued*

Occupation	Per cent increase or decrease		
	Total	Male	Female
Mathematicians	345.1	428.1	209.8
Physicists	87.8	92.5	20.2
Miscellaneous	−43.3	−39.1	−65.1
Nurses, professional	45.5	50.6	45.4
Nurses, student professional	−25.0	−49.1	−24.5
Optometrists	9.6	11.4	−19.9
Osteopaths	−23.6	−20.7	−39.7
Personnel and labor relations workers	86.7	81.3	100.2
Pharmacists	4.3	4.9	− 2.3
Photographers	− 2.3	4.0	−32.4
Physicians and surgeons	18.9	18.1	32.0
Public relations and publicity	63.5	40.7	257.8
Radio operators	69.8	67.6	91.4
Recreation and group workers	124.5	121.2	129.1
Religious workers	34.7	66.3	20.9
Social and welfare workers, exc. group	27.4	54.0	15.5
Social scientists	60.1	77.2	24.2
Economists	117.7	128.0	71.8
Psychologists	150.2	206.8	77.5
Statisticians and actuaries	18.7	28.5	1.2
Miscellaneous social scientists	6.9	15.2	−10.4
Sports instructors and officials	70.3	53.0	122.9
Surveyors	70.1	69.7	79.0
Teachers: Elementary schools	48.7	132.1	40.3
Secondary schools	40.8	72.5	16.6
Teachers (n.e.c.)	80.7	−12.5	435.6
Technicians: Medical and dental	80.2	56.2	98.6
Electrical and electronic	679.2	643.1	n.a.
Other eng. and physical science	101.8	114.7	43.0
Technicians (n.e.c.)	253.2	309.4	144.7
Therapists and healers (n.e.c.)	48.9	35.9	62.2
Veterinarians	10.5	15.4	−63.4
Professional and technical (n.e.c.)	256.5	286.9	173.1

Source: U. S. Census of Population, U. S. Summary, Detailed Characteristics.

TABLE 5

LEVEL OF SCHOOL COMPLETED BY FEMALES 14 YEARS OLD AND OVER IN 1940, 1950, AND 1960

	None	1-4 grades elementary	5 grades elementary or more	8 grades elementary or more	4 years high school	1 year college or more	4 years college or more
1940							
Total 14 years old and over	2.8%	10.3%	89.7%	72.7%	27.4%	9.1%	3.2%
White	2.4	8.0	92.0	76.7	29.3	9.7	3.4
Nonwhite	7.1	31.7	68.3	35.6	9.2	3.2	1.0
1950							
Total 14 years old and over	2.1	8.6	91.4	76.4	36.3	12.2	4.5
White	1.8	7.0	93.0	79.6	38.6	12.9	4.8
Nonwhite	4.6	23.6	76.4	47.9	15.7	5.4	2.0
1960							
Total 14 years old and over	1.8	6.2	93.8	81.7	41.5	13.9	5.0
White	1.6	5.1	94.9	84.0	43.6	14.7	5.3
Nonwhite	3.7	15.8	84.2	62.6	23.7	7.6	3.0

SOURCE: U. S. Census of Population, U. S. Summary, Detailed Characteristics.

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*HOME ECONOMICS EDUCATION; HOME ECONOMICS TEACHERS; COMMUNITY RESOURCES; *INSTRUCTIONAL INNOVATION; *HIGH SCHOOLS; OCCUPATIONAL HOME ECONOMICS; HOMEMAKING EDUCATION; *PROGRAM DESCRIPTIONS; PROGRAM DEVELOPMENT
OKLAHOMA

The reports from secondary teachers of home economics reveal some of their programs and special efforts for innovative ideas in Oklahoma. Topics covered were: (1) Starvation without Hunger, (2) Playschool Highlights, (3) Money Management Units, (4) F.H.A. Family Night, (5) Nutrition Education, (6) Child Care Through Occupational Home Economics Programs, (7) Family Finance, (8) Family Living Classes for Boys and Girls, (9) Family Living Survey, and (10) PTA Programs for Parents and Teens. (MS)

VT 002 159

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H. E. 66-67
Curriculum Development #9

(1)

REPORTS FROM SOME VOCATIONAL HOME ECONOMICS PROGRAMS IN THE STATE.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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VT 02159

(As reported at the January 7, 1967 meeting for Oklahoma Vocational Home Economics Teachers)

STARVATION WITHOUT HUNGER

Jeanne Adkisson

Caddo High School

Most teen-agers tend to be unconcerned about nutrition. A project in which the students become teachers of nutrition proved to be very effective. The film "Starvation Without Hunger" (obtained from the School Lunch Division, Oklahoma City) was shown and the problem of America's seeming disregard for nutrition was presented, to impress upon them the harm done to future generations.

Then the students were asked for a solution to the problem. What can we as Junior Home Economics students do?

Their first role as teachers of nutrition began in the elementary grades. In pairs the girls went to the elementary classrooms 30 minutes a day for 2 weeks. Not only was this an enjoyable experience for the elementary students, but the young teachers found it very rewarding. Lesson plans were made which included: acquainting the students with the purpose for being there, a chart for evaluation of progress was made, illustrative materials to be used and activities to be carried out. "Rocket to Good Nutrition" (showing a rocket headed for the moon, which was Nutrition), "Eat a Squarecrow Breakfast" (showing the checkerboard scarecrow eating a square breakfast), "Climb the Ladder with Batman to Good Nutrition" (showing batman at the top of the ladder and the Riddler at the botton), "Follow Peter Rabbit through the Garden of Good Nutrition" (showing Peter Rabbit eating all the garden vegetables illustrated in the story) were some of the progress charts made. The young teachers showed much creativity with their art work. Some of the various activities were: scientific experiments (designed to show the importance of various foods), the game, "Chain Letter" using vegetables, a card game in which one student would describe a vegetable and the class would have to guess it, films related to nutrition (Stanley Takes a Trip obtained from State Department of Health), stories made up about "Gladys the Poorly Nourished Cow" with pictures to illustrate using the overhead projector. Peanuts and germ cells (fashioned after the ones in Mad magazine) shown in various parts of the body to illustrate the need for vitamins were star attractions with the overhead projector. Stories were read in coordination with tasting parties, such as Peter Rabbit. Each time Peter ate a food from the garden, each student in class had the same food to taste. Other tasting parties were conducted in hopes that students would have an opportunity to taste foods they had never tasted before.

Charts, flannel boards, food baskets, coloring sheets dealing with nutrition, all prompted discussions of the Basic 4 and the importance of a good breakfast and lunch. Most classes succeed in bringing the class progress chart up to 100% eating breakfast and 100% tasting all foods on their lunch plate.

With regrets and sad farewells the Junior teachers bade their young students good-bye to move on into adult education. A survey was taken of the eating habits in Caddo to see what needed stressing in our educational program. Letters were written to the television, radio and newspapers requesting an opportunity to present our program through their mass communication. We were given time on three radio stations, two television channels and one newspaper. A series of five articles were written and published in the Durant Daily Democrat, an adaption of Gladys the Poorly Nourished Cow (in which Gladys left the valley of Good Nutrition and wandered into the wicked world of sweets) was presented on KMAD, Madill. The plight of a Wooden Puppet (an adaption from an FHA skit) was presented on KSEO, Durant. The Rejuvenating Machine (someone goes in one side bad (fat) and comes out good (slim) was presented on KRRV, Sherman-Denison. On KXII-TV, we presented a skit centered around a family breakfast table in which parents were impressed by their children of the importance of nutrition. As a result of the programs, we learned about tape recorders and how much material it takes to fill a mere five minutes.

As an aftermath to our program KTEN-TV, Ada, offered us 30 minutes. This will be on the air April 22 concerning all the aspects of Vocational Home Economics. Also, we were given 15 minutes on Women's World KXII in which we did a program in child development.

HIGHLIGHTS OF OUR PLAYSCHOOL

Jeanne Adkisson — Caddo High School

The Sophomore class was conducting a playschool for 2-4- year old children. After 4 weeks my boys class indicated an interest in the playschool. By extending the school for two hours instead of one, the boys worked with the children 4 days. Outdoor play, free play with clay, puzzles and toys, games and songs, and a Christmas party with Santa Claus were some of the activities the boys conducted. At first the children were a little shy with the boys but very cute scenes resulted. The father instinct was shown in the wiping of little noses, washing little hands, reading stories and other activities. The boys showed amazement at the children's ability to do many things that girls take for granted, such as working puzzles and stringing beads.

MONEY MANAGEMENT UNITS IN HOME ECONOMICS CLASSES

Mrs. Ann Brown — Holdenville High School

In Holdenville this year we have 188 students enrolled in Home Economics and, with my partner, Mrs. Willa Mae McClure, we have already had a money management unit for 140 of these students. Units are planned for the remaining students in the spring semester.

In Home Economics I and II classes I was hampered because of lack of textbooks so I mimeographed material from resource books. I found a lot of good material at the county extension office and I also used the booklets, "Make Your Money Behave", from the Life Insurance Institute. We viewed two good films, "The Wise Use of Credit" and "Personal Financial Planning" from the National Consumer Finance Association. I especially found helpful the chapters on money from a new book, "Today's Home Living, by Hatcher and Andrews.

During our discussion of allowances, I was surprised to find that only a very small percentage of students received an allowance. Most of them are given money as they need it or can "wheedle" it out of their parents. We discussed the advantages of an allowance. We pointed out how receiving an allowance would help a person develop experience in handling money, create a feeling of security and independence, and develop the ability to make choices and satisfying decisions.

There were many interesting answers when I asked the question, "What would you do if you had $1,000 cash today?" Some said they would have a good time and buy clothes. Others recognized the need to save the money for further education and some wanted to help their parents pay family bills. This lead into a discussion of needs, desires, and values, and how they affect each family in a different way.

In all classes we discussed the fact that in planning the use of the family income, every family member should be included. I stressed the importance of money management in their future because records show that there are many broken homes and divorces due to - not lack of money - but due to poor money management in the home.

Mrs. McClure started out her units in her family living classes with lessons on plans for college. Students figured up the approximate cost of a college education and the school counselor gave a presentation on opportunities and costs of various colleges across the state. Also, included in the unit were lessons on how to use the bank, how to obtain and use credit wisely, and the principals of installment buying. The classes had a field trip to the local bank where their questions on banking services were answered. They found out that at the local bank, teen-agers do not have to pay service charges for a checking account and they may obtain loans if their parents co-sign the note. Each student had a special assignment to pick out a used car, find out the cost, the down payment needed, the cost of the liscense, title, and insurance, and how much interest they would have to pay in financing it through the dealer. They then computed the true annual interest rate and compared this to the cost of a bank loan. Both the boys and girls were very interested in this assignment and it seemed that this was the part that they enjoyed most.

Mrs. McClure ended up her unit with panel discussions of the agencies which protect the consumer, advertising, and standards, grades, and labels.

The merchants and businessmen who worked with the students were very courteous and helpful, and we haven't had any complaints from parents since we sent the students home to inquire about allowances, the family income and expenses. They seem to be accepting this start we have made in teaching personal and family money management.

As a whole we felt that the students did not actually enjoy the units on money management as well as they do some other units. We feel that this is due to the fact that they do not have the chance to be responsible for their money now, no matter how little the amount may be, and it is hard for them to realize the importance of money management in the future. However, we do feel that they learned some very useful and necessary information which will certainly be of value to them in the near future.

Another important thing that we learned in teaching these units was that there is a great need for adult education in the field of family money management in our community.

FHA- Family Night

Thelma Dellinger Byng

Under Title? Our school has 3 or 4 classes for adults, typing, English, math, history. They meet on Tuesday and Thursdays. Several of my parents are in these classes and cannot attend our meetings. I planned to have what I called "FHA Family Night," on the first Tuesday of each month.

I did not know which mothers would be interested enough to come so I waited until our first meeting and then selected five mothers to be on my advisory committee. On this committee I selected a Negro mother and four other mothers. I asked the Negro mother to bring another mother along as I did not know who had transportation. These mothers meet with me after the meeting--evaluate the meeting and make plans for the future meeting. I had made tentative plans for the year and I use that as a guide for planning.

The following is what we have had and some future plans are made:
October:-"Family Health"- The county health doctor, with our county nurse, showed some films and talked on family health and venereal disease. After the film and talks many questions were asked. In all my classes, a few days before the meeting, I read articles and discussed venereal disease with them to prepare them for this meeting. We had this same program last year but on surveying, I found I had 60 girls that were new in my classes (freshman and girls that have moved into our district.)

November:-"Family Communication" night- I invited a minister and a youth center director. They led a panel discussion on teen-age problems with one taking the parents view and one the teen-agers view. After discussion with each other many questions were asked from the audience. Both men are parents. The girls observed that both were taking the parents view.

December:-We had a Peace Corps veteran tell of her travels in the Holy Land.

January:-"Family Mental Health"-Mrs. Virginia Ramsey, Ada Health Center, (works with the rehabilitation of mental patients from state hospitals) talked to the group (just women and girls) for over 45 minutes and had good attention. She told them the value of a family, how families are formed for good mental health, how to train children so they can become independent mature people and then develop a family of their own. She pointed out how youth are not ready for marriage until they have reached this independence and can carry on without assistance of their families. After the lecture girls and mothers asked many questions and were not ready to leave when the meeting was over.

The committee of mothers met after the meeting and wanted me to get some films on personal hygiene and for me to talk to them. After our meeting in October (doctor talked on venereal disease) the committee then asked me to have this next meeting and said I could do more with that than was done. The doctor had given that program last year for us but didn't realize I had so many new pupils and many students didn't see it.

February:-I will show films and talk on personal hygiene and venereal disease.

(Programs will be developed for the remaining months)

NUTRITION EDUCATION THROUGHOUT THE SCHOOL

Ann Humphrey Duncan Senior

As a main project of the Duncan Future Homemakers, a nutrition education campaign for the high school and all eight elementary schools was launched. This was done at the same time that I was teaching a nutrition unit in my five foods classes. I believe this was the opportune time to do this because never before have I had such success with nutrition classes. It was from these classes that we got ideas for posters, skits, and survey forms. And, as you know, teenagers are ingenious and they came up with clever ideas for the posters--everything from "Batman eats breakfast" to the ever popular and versatile "happiness is" adapted to our theme. In the foods classes we made food charts and graphs from a list of foods they had eaten for a week. They compared these with national averages and this was an eye-opener for them.

In organizing for the elementary program we had an FHA committee to write the grade school principals a letter asking them if we could put up posters and present a skit to each room or if they would arrange for an assembly. Next, we contacted the school nurses and asked if they might like to use our skit in anyway with their nutrition program. One of the school nurses was getting ready to conduct a survey in the four elementary schools to which she is assigned. She was delighted to have some extra help and used our skit to "kick-off" her nutrition education. Many of the elementary teachers decided to teach nutrition in their health classes during this time. We had full cooperation from all of the principals.

Another FHA committee worked up a skit. The information that was provided for us in our August packets served as a basis for the skit. We hadan FHA member dressed as a Miss America--and incidentally, she wore a white formal and a long red satin robe with a tiara on her head--this really impressed the grade school children. Other FHA members were dressed as a cheerleader, football player and an astronaut. We made the fitness fuel tanks and adapted the material written by Mary Gray Thompson into a skit and added a few things to fit our own situation. The girls were excused from class and completed the skit at all grade schools within the week. Meanwhile, back at the high school, posters were put up all over the school. Everywhere you looked there was a sign asking if you had eaten breakfast, lunch, etc. Another committee was conducting a survey with the high school students. The forms were handed out during home room periods and this in itself was quite an operation because we wanted to survey the area vocational school, too. This involved contacting principal, teachers and counselors to get the forms passed out and returned. Most teachers thought this to be a worthwhile project and didn't mind taking the extra time. However, there were a few who did not participate. The survey questions themselves included such things as "where do you eat lunch?" The reason we were interested in this is because we only have 30 minutes for lunch and many of our students jump into their cars and dash down to the drive-in. We wanted to know what percent ate in the cafeteria, what percent ate at the drive-ins, and how many ate no lunch at all. We were surprised at the latter because we found 18% of the students do not eat lunch at all. The other questions were: "Do you eat breakfast?" "How much milk do you drink daily?"

Another committee wrote a short skit or gave an important fact about nutrition which was presented every morning over the "intercom" system.

As a follow-up I wrote an article for the newspaper giving to the public our findings on the survey.

ADULT STUDY GROUP

Mrs. Geneva Jackson — **Drumright**

A homemakers club was organized for a group of women in the Shamrock area, near Drumright. This group meets one evening each month. A variety of programs presented have included clothing, renovation, Christmas decorations for the home, inexpensive and quick family meals. Plans are for this group to continue throughout the year. Other topics of study will include money management, child development, family relations and aspects of home management.

GAINFUL EMPLOYMENT-CHILD CARE

Mrs. Claudine Meek — **Midwest City**

The Child Care class was an outgrowth of the one hour gainful employment classes that were begun at the three high schools in the Midwest City school system last year. The purpose of this course is to provide maturing high school junior or senior girls with adequate instruction and guidance, and with some practical work experiences under careful supervision, so that they may be prepared to find employment in child care services.

The classes are now being taught at the Vocational Technical Center that serves all the high schools in our district. The Center is located at 1621 Maple Drive. The temporary building consists of a very large laboratory, a classroom, an office, isolation room, kitchen, observation room with two-way mirror, and both boys and girls rest rooms.

The program consists of two classes daily, one three hour session and one two hour session. There are fifteen girls enrolled in each section.

The text we are using is The Developing Child by Brisbane and Riker. For our curriculum guide we are using Tenative Guides for Gainful Employment Programs in Vocational Home Economics. Supplementary materials can be obtained by writing the Department of Public Welfare, Sequoyah Memorial Office Building, Oklahoma City, Oklahoma 73105 and the Oklahoma State Department of Health, 3400 North Eastern, Oklahoma City, Oklahoma.

FAMILY FINANCE AND MONEY MANAGEMENT

Mrs. Ethel M. Outhier — **Woodward**

This unit is taught to junior and senior girls enrolled in Homemaking IV and is taught every other year due to alternating Homemaking III and IV in our school. The enrollment this past year in this unit was 31.

This unit is started weeks and months ahead of its actual beginning by visiting "key" people in the community, asking their cooperation when the time comes; this also gives them time to order educational material in their line to give to the students and time to prepare a lesson.

The unit is started by studying chapters in Thresholds To Adult Living. Then, "A Date With Your Future" is passed out to each student, studied and tested over. By this time, girls think they know all there is to know about money, so each girl makes out a budget for her senior year in high school, dividing it into weeks, months, school year, and entire year.

Filmstrips may be borrowed or purchased from the Money Management Institute of Household Finance Corporation on "You and Your Money", "Your World and Money", "Your Money's Worth

in Shopping", "Managing Your Clothing Dollars", "Spending Your Food Dollars". These are shown and then we are ready for the experts. We find one for each topic studies and these people make the unit more realistic for the girls.

Banker: A representative tells about bank services, types of loans, interest and savings and interest on loans. He explains about recording loans at the court house, cosigners, and answers all questions. Our banker usually brings us a booklet "How Banks Help".

Small Loans: The manager explains finance companies, methods of figuring interest rates, why loans not good enough for banks to make draw a higher rate of interest, and dwells on car loans. Following this, each girl buys on paper a car of her choice and figures the payments and then checks to see how much of this money was interest.

Building and Loan: The manager explains the functions of saving money and lending money, gives points that a loan company looks for in a house and in a borrower before making loans. He explains about amoritized mortgages and mortgage payments. Following this, I duplicate sheets of amoritized mortgage schedules and we go over them carefully in class. These will be used following our next guest speaker.

Real Estate Agent, Lumber Yard, or Contractor: We find houses that are finished and ready to move into on two price levels - $15,000 and $37,500. The agent or dealer sets up a field trip for us and the girls check the houses for points to be considered in getting a loan on these houses. I have the key to the house and there is nobody present but the class, so they are free to look in the attic and under the house if they choose, and they always do. The girls check the schedules to see how much the payments will be on each house and how much of that is interest. I obtain the blueprints or a sketch of the floorplan and to tie some housing into this part each girl selects either house, draws the floor plan to scale, and furnishes it in scale-both size and money-places the furniture on the plan and indicates colors, fabrics, etc.

Credit Bureau: The manager clarifies for us the term approved buyers that we have recently heard. He tells us who qualifies and how they do, what is credit, and why and how your credit history follows you. He brings reports on good and bad subjects (strictly imaginary) and lets each girl have a copy so that she may see exactly what people find out on a credit report. These are gone over in detail and the girls are amazed to find that they are each entered in credit files during their sophomore year in high school. At this time, each girl is given a booklet "Basic Principles in Family Money and Credit Management" published by the National Consumer Finance Association. Now we are ready to learn about the poor risks and what happens when people don't pay so-----

Collection Service: The manager tells the class why accounts are placed for collection, how money is collected, about the different types of bankruptcies, and what to do if they ever find that they can't meet a payment that is due.

General Insurance: An agent tells us about the different kinds of policies, what risks can be insured and those that can't be, and something of the laws pertaining to general insurance. He dwells on liability, house, and car insurance. The girls figure the insurance costs on both the house and the car that they purchased on paper.

Life Insurance: An agent tells of the different types of policies, both for protection and investment. Each student is given a booklet "Policies for Protection", from the Institute of Life Insurance. We still need to know more about investments because a dollar held onto and not invested becomes less valuable.

Stock Broker: We do not have a broker in our town, but one from Enid and one from Oklahoma City are glad to come if given a weeks notice. We study stocks and bonds. We use newspapers and I save some copies of the Wall Street Journal for six months prior to this unit.

We learn about Dow-Jones, Standard and Poor, holdings of major companies, and then each girl selects her own stock to follow in the paper. She follows her stock and reports on it weekly for four weeks - but they are still following them and about every week briefly telling how each stock is doing (18 weeks).

Each girl gives a report in class from Parents, Better Homes and Gardens, Consumer Reports, or Money Management Institute booklets. I make a list of these and the girls select the one they wish to work on.

The final assignment is a "fun" one, but impressive. Each girl creates an "imaginary" family complete with physical description, ages, occupation, and income. With the help of a slide rule and a "Family Budget Worksheet", she works out a budget in detail.

This unit carries over into all other units and is especially applicable planning budget meals, making clothing plans, and using the class budget. It is an asset in FHA budgeting, and often girls come in with their financial plans for college or a new home to check them with me.

The community is an active part of this unit - and the participants often tell others that they only wish all adults had a fourth of this knowledge. Each of the past two sessions has carried over into organized community work sponsored by the Chamber of Commerce. The first one was six sessions on investments given by a stock broker from Enid (and well attended, and I was there to learn all I could. This year the Small Business Administration helped sponsor and pay for a "Records Keeping Class."The speakers for the meeting were similar to ours - many of them, the same individuals using part of the same notes - two men for the Small Business Administration, two accountants, a credit bureau manager, a collection service manager, building and loan manager, attorney, a county treasurer who discussed taxes and representatives of the two banks. One bank brought in two men from the First National Bank and Trust of Oklahoma City who specialize in trust planning.

This unit really keeps me busy and as you can see, it keeps the whole town in motion to help the students learn the things we feel that they should know before entering the community as adults.

FAMILY LIVING CLASS FOR BOYS AND GIRLS

Mrs. Betty Parrett — Ramona

In the past we have had two sections of a combination junior and senior students alternating Homemaking III and IV. Even though each section was small, this arrangement had been continued for several years, because of conflicts with other subjects that students wanted or needed.

Last year the enrollment in each section was so small (8 and 11) that I felt I was wasting one hour of school time that might be used to an advantage if the sections were combined. I approached the principal with this idea in mind and he agreed with me. I suggested trying a mixed class in family living. He was in agreement with the idea and was able to get the superintendent to approve. During pre-enrollment, the principal also talked for a while with the senior boys, encouraging them to enroll. We have a final enrollment of 5 boys and 9 girls.

During the summer I was included on a committee to work with the state home economics office in development of some curriculum materials in this area. I was able to use the curriculum materials in development of plans for my class. I had to make a few changes, since the girls included in the class had studied some of the same units last year. I included the units in my final planning, but had to think of different class activities so the girls would be having new experiences. Other than this, the materials and the opportunity to work with the committee were a great help to me in making plans.

During the summer, I also attended a curriculum workshop on the campus at OSU. We gained many ideas, several of which were new to me. I gained a deeper understanding of the use of concepts and generalizations in teaching, which was very helpful to me. But the most important idea to me was concerning the planning of units and daily lessons, including class activities. We were faced constantly with information and attention to the knowledge "explosion". This idea was important to me in guiding my planning: "there is so much knowledge today that we cannot possibly teach everything. Therefore we must decide which things are vital. We must sift ideas and discard those that are unimportant or outdated. We must use the brief time we have these students in class to subject them to ideas that they may use in their lives, that they will remember and can apply to their lives presently and in the future."

FAMILY LIVING REPORT

Mrs. Frances Pike — Union City

To meet some of the needs of "Teens Living in a Changing World" the Union City home economics department used the survey "What Are Your Problems?" This survey was given to each of us in our August Conference packets. It is a very adaptable survey and can be used as is or changed to better fit your situation.

All the high school students, boys and girls, were surveyed anonymously. The survey asks about your problems with:

1) parents 2) brothers and/or sisters 3) girl friends 4) boy friends and finally it asks how you feel communications could be improved. The students were most cooperative and quite candid with their responses.

An advisory or program committee compiled and condensed the surveys to a logical sequence of panel questions. They selected a panel of girls, boys and mothers to discuss the problems at a joint meeting of the FFA and FHA. Students were asked to invite their parents, but seemed quite reluctant to do so. We did not coerce them as this was a new approach. The enthusiasm was high and only a few problems were discussed when time was gone. The students unanimously requested another meeting and volunteered to gladly bring their parents. Another meeting is being planned with great anticipation.

We've found this to be one very excellent way to improve communications and understanding not only between teens and adults, but among teens themselves. The teens realized that many of them were facing or had faced the same problems and had not communicated with each other. They need our understanding as well as our reprimanding.

The amazing outcome of this simple survey is the many doors it can open---adult classes, joint home economics, agriculture classes, enthusiastic family relations unit, family living home experiences, family living skits in the lower grades i.e. "Good Manners Help Make Good Families", newspaper articles---tremendous opportunities. Let me challenge you to use this survey to meet the needs of your "Teens Living in a Changing World".

PTA PROGRAMS FOR PARENTS AND TEENS

Mrs. Sherry White — Crescent

During the summer, I accepted the chairmanship of the Parent-Teacher Association program planning committee. I had two pilot committees composed of various people in the community. At these two meetings discussion was about "What Are the Needs of the Crescent Community and How Can PTA Best Meet These Needs". From these two meetings I chose a program planning committee and we proceeded to plan nine programs for the Crescent PTA.

One need of primary importance which came from the discussion was teaching our teen-agers morality and responsibility. To meet this need we planned a two-part program.

The first part was the showing of the film, "Dance Little Children" obtained from the State Health Department. This film was about a small midwestern town much like our own. It told of the pressures parents put on their children; how peer groups force conformity on its members; how teen-agers often commit these immoral acts as they try to find an escape from the problems they face.

After the showing of the film we had a panel composed of the county health nurse, a minister, junior high principal, and parent, and teacher. There was a lot of discussion. Parents expressed themselves freely about not feeling confident to tell their children about sex; of being guilty of the same mistakes made in the film, etc. Some parents missed the point of the film entirely. They wanted the film to go further in just explaining the symptoms and treatment of venereal disease.

As an outgrowth of the film, we decided to show sex education films to the young people. Many parents had expressed a desire for a program such as this. Parents must accompany their children to these films or give their written approval of their children's attendance. We had three meetings which had a snow-balling effect. Our attendance grew from 10 to over 40. We had to postpone the showing of any more films due to the busy schedule of our school calendar. The county health nurse was present to answer any questions of a technical nature.

The second-part program was to be a speaker with a speech about morals and responsibility. Almost every one I wrote couldn't come or their fee was quite expensive. We only had $20 budgeted for speakers. I had heard Dr. Vernon Sisney speak at a Worry Clinic in Oklahoma City and decided to write him. He said he would come for $100 and expenses. The PTA decided to have a Family Fun Night (Holloween carnival) to raise the needed money. Since Dr. Sisney was speaking to the adults, the program committee and I decided to try to get him to speak to our youth too. The administration prior to this year had been opposed to assemblies but agreed to letting Dr. Sisney talk to the junior and senior high students.

Dr. Sisney spoke to the youth in the afternoon about how they bring problems on themselves; how they can better communicate with their parents and teachers; the ways leisure time could be spent constructively; and such similar topics.

Dr. Sisney then spoke to the adults at PTA that evening about how parents drive their children to try to find an escape from pressures of the peer-group, etc. He told parents how they are inconsistent with discipline and bring trouble on themselves by their rash statements often made in anger. He described the difference between discipline and punishment. He gave pointers on how to communicate with teen-agers. The talk was followed by a period of questions and answers as was the talk to the teen-agers.

Recently the Crescent PTA had a workshop with one of the district presidents holding the workshop. She commended all our programs very, very highly. She wondered how we had been able to obtain Dr. Sisney because several of the PTA's she had worked with previously could never get a man of his reputation to speak. Oklahoma City had even failed to get him. Also she thought our program books were very clever.

VT 002 170
Murphy, Ottis
Attitudes and Social Characteristics of Vocational Rehabilitation Referrals; A Study of Differences Among Groups of Referrals..in 39 Counties of Eastern Kentucky.

Kentucky Univ., Lexington. Bureau of School Service
Vocational Rehabilitation Administration (DHEW), Washington, D.C.
Kentucky State Dept. of Education, Frankfort. Bureau of Vocational Rehabilitation Services
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*VOCATIONAL REHABILITATION; *INDIVIDUAL CHARACTERISTICS; *PROGRAM EFFECTIVENESS; *REFERRALS; INDIVIDUAL DIFFERENCES; COMPARATIVE ANALYSIS; DECISION MAKING; HANDICAPPED; AGENCIES; ATTITUDES
KENTUCKY

The study was undertaken to obtain information which might reveal some of the reasons why a large percentage of clients are not satisfactorily rehabilitated. Over 50 percent of the 1,489 referrals whose cases were closed during 1964 did not receive services beyond the advice that they were either eligible or ineligible. Through study of the records of closed cases and interviews with clients, three groups--699 who were accepted and served, 306 who declined services, and 218 to whom services were denied--were compared on seven characteristics. Some findings were: (1) Referrals living near district offices were more likely to accept and be accepted for services, (2) Males were more likely to decline services, (3) Referrals under 25 were more likely to decline services than those of the older age brackets, (4) Referrals who had been employed in clerical jobs, farming, homemaking, or as students were more likely to accept services than those who had been employed in construction jobs, factory jobs, or labor types of employment, while the latter were more likely to be denied them. Other factors which the findings indicated were relevant were (1) sources of referrals, (2) types of disabilities, and (3) educational levels. Individuals who accepted services held the most favorable image of the agency and those who were denied services the least favorable. (JK)

VT 002 170

Attitudes and Social Characteristics of Vocational Rehabilitation Referrals

A study of differences among groups of referrals who were accepted, who were denied, or who themselves rejected services of Vocational Rehabilitation in 39 counties of Eastern Kentucky

By OTTIS MURPHY, Ed.D.

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VITA

The writer was born at Artville, Menifee County, Kentucky, January 9, 1916. He attended the Ezel Elementary and High School in Morgan County, and graduated in May of 1935. The next two years were spent studying at Lee's Jr. College, Jackson, Kentucky.

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FOREWORD

The nation faces a hasic philosophic issue in the administration of aid to people of need:

Can we help an unfortunate citizen without taking from him his own unique responsibility for his own well being?

The commitment of the nation to help the disadvantaged, whatever the character of the disadvantage, hecomes increasingly clear. Ways and means for so doing, however, sometimes stir such a bahble of criticism that one may sometimes feel that a majority are opposed to "aid" of any kind. Nevertheless, when calm prevails, it does appear that America is unwilling to settle for a future in which some of its people enjoy affluence while others remain predestined to poverty, pain, futile toil, or unproductive idleness. When heard with patience, the debate over aid to those of unfortunate circumstance is not "Shall we?" but "*How* shall we?"

Vocational Rehabilitation stands on the firing line of this issue. It holds that people must be helped. It is stubborn, however, in pressing that its help generate self help. That is, it invests in making dependent people into independent people. It assumes that help given in the right way generates independence. Such a precarious role for Vocational Rehabilitation is difficult to define; and an accurate interpretation of that role is undoubtedly difficult to establish in the public mind; and also difficult, once established, to maintain in any practically precise form.

While this study is more than a study of the image people have of Vocational Rehabilitation, that image is a prime concern of it. It is an attempt to have Vocational Rehabilitation view itself as those it serves or might b.. expected to serve view it. It is an attempt to test the fidelity of the image thus viewed to that which Vocational Rehabilitation must consistently project if it is to represent society responsibly in the role it has been assigned.

Vocational Rehabilitation is not, of course, the only arm of government concerned with the disadvantaged. We now have an array of agencies ranging in the character of their work from what some view as plainly a palliative "hand-out" to rescue of the impossibly helpless. The special identity of Vocational Rehabilitation among this array has, we suggest, a significance to those who are concerned with preserving Vocational Rehabilitation's special role. One would guess that when Vocational Rehabilitation's role is indifferently interpreted, the malingerer, who is looking for a "hand out," is tempted to seek its service

—whereas, conversely, those who take pride in self-reliance are inclined to spurn its service because they mistakenly identify it with the "hand out." The actual effectiveness of the Vocational Rehabilitation program, therefore, depends in great part upon whether or not its purposes and its unique role are unmistakably clear to the unfortunate who have the potential, physically and morally, to become self reliant with its help.

It is toward the clarification and refinement of the image people have of the role of Vocational Rehabilitation, toward making that image a "true" one, that this study was projected and that it received the sponsorship of the Bureau of School Service.

—Paul Street, Director
Bureau of School Service

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CHAPTER 1

INTRODUCTION

The primary goal of the Bureau of Vocational Rehabilitation Services is restoration of vocationally handicapped individuals to a state of employability. The fullest realization of this objective is accomplished when an individual is discovered who needs services provided by this agency, desires the services, receives the services, and as a result becomes satisfactorily employed from the viewpoint of both the employer and the employee. Therefore, it can be understood that successful vocational rehabilitation is a cooperative process and the objective can best be achieved through a cooperative process on the part of the agency and the referral. In fact, the significance of cooperation can hardly be overemphasized.

The Problem

A large percentage of referrals to this agency are not satisfactorily rehabilitated. In an attempt to obtain information which may reveal some of the reasons—this study was conducted of certain social characteristics of referrals to Vocational Rehabilitation Services from thirty-nine eastern Kentucky counties whose cases were closed during the 1964 calendar year.

Perhaps the nature of this study can best be explained by indicating how it developed. The Bureau of School Service, College of Education, University of Kentucky, conducted a survey of the needs for vocational rehabilitation services in thirty-nine eastern Kentucky counties. This survey revealed that the cases of 1,489 referrals were closed in this area during the calendar year 1964.[1] The cases of 699 of these individuals were closed after they had been accepted and received services; the cases of 306 of these individuals were closed without services being rendered because they did not accept them; and the cases of 218 of these individuals were closed without services being rendered because the individuals were denied services by Vocational Rehabilitation personnel. Over fifty percent (789) of the referrals whose cases were closed (1,489) during 1964 did not receive services beyond that of simply being advised, by a representative of Vocational Rehabilitation Services, that they were either eligible or ineligible for services.

[1] *Vocational Rehabilitation Needs and Resources in Eastern Kentucky*, published by Bureau of School Service, University of Kentucky, Lexington, Kentucky, 1967.

For purposes of this study, three groups were selected from the 1,489 cases closed during 1964, and the problem posed itself in this manner:

1) Are there significant differences in certain social characteristics among the three groups and, if so,
2) What are some of those characteristics?

In other words, what differences possibly exist among the following three categories of referrals who were "closed" in the files of Vocational Rehabilitation Services during 1964?

1) The ones who were accepted for services – the *"A S Group,"*
2) Those who declined to accept services – the *"D S Group,"*
3) The individuals to whom services were denied– the *"S D Group."*

Delimitations

This study was limited to a concern with certain social characteristics of referrals to Vocational Rehabilitation Services in thirty-nine eastern Kentucky counties whose cases were closed during the 1964 calendar year–1,489 cases. It was further limited to the following subgroups from the above group:

1) The 699 who were accepted and served–the "A S Group,"
2) The 306 who declined to accept services–the "D S Group,"
3) The 218 to whom services were denied–the "S D Group."

The balance of the 1,489 closed cases (266) were not included in this study because they could not be classified under either of the three categories; e.g., those the Vocational Rehabilitation representatives were unable to locate or contact.

This study has not included the cases of referrals that were still in referral status at the end of the 1964 calendar year or the cases of referrals who had been accepted and were still in an inactive status at the end of that year. Since the cases of these two latter groups were either active or pending action, they were not relevant for purposes of this study.

Hypotheses

The basic null hypothesis for this study was that three groups of referrals to Vocational Rehabilitation Services which are the concern of this study would not be found to differ significantly in certain social

characteristics. Specifically, it was hypothesized that they would not be found to differ significantly in the following characteristics:

1) Distance of residence from District Vocational Rehabilitation Office,
2) Family and vital statistics,
3) Means of livelihood,
4) Referral source,
5) Disabling condition,
6) Education,
7) Image they hold of Vocational Rehabilitation Services.

In essence, three hypotheses were set up for the study:

1) That group one—"A S Group"—does not differ significantly from group two—"D S Group,"
2) That group one—"A S Group"—does not differ significantly from group three—"S D Group,"
3) That group two—"D S Group"—does not differ significantly from group three—"S D Group."

Basic Assumptions

It was assumed that the procedure which produced the records from which much of the data for this study were obtained was adequate. It was also assumed that the records of closed cases over a full calendar year provided a numerically adequate sampling of each group of closed cases for the study. However, the statistical adequacy of some sub-sample groups within these is evaluated in this study.

Relevant Literature

The study most directly related to this study is one directed by Martin Dishart, *A National Study of 84,699 Applicants for Services from State Vocational Rehabilitation Agencies in the United States*, published by the National Rehabilitation Association, Washington, D. C., in October of 1964.

Dishart's study revealed that about fifty-four percent of the referrals were accepted for services and about forty-six percent were, for some reason, rejected for services.[2]

[2] Martin Dishart, *A National Study of 84,699 Applicants for Services from State Vocational Rehabilitation Agencies in the United States* (Washington, D.C., National Rehabilitation Association, 1964), p. 4.

The survey by the Bureau of School Service, previously cited, which was the source of much of the data for this study, revealed that for the thirty-nine counties included in the study, about forty-seven percent of the closed cases had been accepted for services–a difference of seven percent fewer than that revealed by the Dishart study for the nation.

Rationale

The purpose was, as already indicated, to compare certain social characteristics of three groups of referrals to Vocational Rehabilitation Services from thirty-nine eastern Kentucky counties.

The aim was to reveal information which is not known about certain social characteristics of those referrals pertinent to effective efforts to successfully rehabilitate a higher percentage of them. Because of the number of referrals within each group, it can be assumed that others of like or similar characteristics will be referred from this area in the future.

The first group–the "A S Group"–was not the primary concern of the investigator. Rather the chief concern was with groups two and three–the "D S Group" and the "S D Group–and what difference or differences there may be between either of the latter groups and the first group, or between the latter groups. If there are differences in social characteristics among the three groups, this investigation presumably will establish some of those differences and whether they are significant.

It appears that, if Vocational Rehabilitation Services is going to expand its services and make them more effective in the thirty-nine counties area of this study in the future, staff personnel need a better understanding of referrals, especially the kinds that for some reason are rejecting services. If, for instance, this study revealed some reasons referrals, presumably in need of services, are not receiving them, it would be possible for personnel of Vocational Rehabilitation Services to take said reasons under consideration and deal with them in such a manner that needed services could be rendered. Thus, this study might make it possible for the agency to increase the percentage of referrals accepted and served in the area.

Methodology

The central concern of this study is with possible differences in certain social characteristics among three selected groups of referrals to Vocational Rehabilitation Services whose cases, as previously explained, were closed during the calendar year 1964.

Part of the data for this study was available and obtained from the records of individuals who had been referred to the agency for services. In order to obtain the rest of the needed data, it was necessary to go to the individuals who had been referred to the agency.

In making the comparisons, the data were processed according to the characteristics, with some characteristics being subdivided.

Developing Instruments

The procedure for this study began with the development of an instrument which made provision for recording data on the first six characteristics to be compared. After the instrument was completed, it was tested by checking to see whether information for filling in the prepared spaces was available from the records of Vocational Rehabilitation Services. As a result, certain necessary modifications were made.

In order to obtain data in the seventh characteristic—the image of the services held by clients—it was deemed necessary to develop an interview schedule and interview a random sampling of individuals from each of the three groups. Accordingly, a structural, fixed alternative "oral questionnaire," containing fifty-five questions, was constructed. This instrument was also further refined by trial on a sampling of vocational rehabilitation clients residing within the area of the study. As a result, the wording of some of the questions was simplified.

Collecting Data

Data on the first six characteristics to be examined were obtained from the records of 3,830 referrals included in the records during 1964 which were in the files of the vocational rehabilitation district offices serving the area of the study. They were recorded in the pattern provided by the instrument and transferred to IBM cards for computer processing. These records were used for the broader study made by the Bureau of School Service to which reference has previously been made. For purposes of this study, a computer was used to select the cards of the individuals of the three groups included in the study—from the closed-case cards.

The first group selected was composed of the 699 individuals who had been accepted and served—the "A S Group." The second group was the 306 individuals who had declined to accept services—the "D S Group." The third group was the 218 individuals to whom services had been denied—the "S D Group." The computer was used to print out the data on the first six characteristics examined for differences.

To obtain data regarding the image of Vocational Rehabilitation Services held by the three groups, the investigator made an attempt to contact and interview each of the 135 individuals selected by the method described below. Thirty-four of the "A S Group," thirty-one of the "D S Group," and thirty-two of the "S D Group" were contacted and interviewed. Each individual contacted was asked the fifty-five questions on the "oral questionnaire," and the responses were recorded on an instrument.

Selecting Interviewees

A random method was used to select a sampling of forty-five individuals from each of the three groups. This was done by assigning each individual in each group an identification number and placing this number on a separate piece of paper. These pieces were folded as nearly alike as possible and those representing individuals within each group were placed together in a separate container and thoroughly shaken until there could be little doubt that they were well mixed together in a random arrangement. Then numbers were drawn, one at a time--with more shaking between drawings--until forty-five numbers were drawn from each group and recorded.

Validating and Treating Data

Data on the three groups were arranged in tables and are presented in the following chapter. The tables show frequencies and percentages for each item considered under each characteristic.

The data on the first six characteristics used to test for differences among the groups were analyzed, using the following chi-square method of analysis--

$$x^2 = \sum \left[\frac{(fo - fe)^2}{fe} \right] \quad *$$

--to test the divergence of observed results from those expected under the null hypothesis. Tables showing the chi-square values of the differences have also been prepared and presented in the next chapter.

The chi-square test of independence was used to test the null hypothesis of equal probability. For purposes of this study, the equal probability hypothesis of expected frequencies has been rejected when the P (probability) was significant at the .05 or below level. That is to say, if the study were to be repeated there would be a 95 percent or

* fo =frequency occurrence; fe = frequency expected.

higher probability that the null hypothesis would be rejected again; in other words, the probability is that frequencies did not happen by chance but rather according to a pattern.

Garrett[3] indicates that the null hypothesis may be safely rejected when the P is .05 or less. Therefore, in this study, whenever the level of probability was .05 or less, the data were assumed to be reliable and valid for purposes of refuting the null hypothesis. It has been indicated in the next chapter whether the chi-square values were significant at the .05 or below level in each respective instance.

Data on the seventh characteristic, collected by interview from selected members of the three groups, also have been arranged in tables showing the frequencies and percentages of responses to each question.

To determine whether the number interviewed from each group was adequate, the PQ formula—

$$P \pm Z_c \sqrt{\frac{PQ}{N_s}} \sqrt{\frac{N_p - N_s}{N_p - 1}} \quad *$$

was applied to the percentage of positive responses to each question by each group. From the results indicated, it was decided that the confidence limits probably would not be significantly improved if more individuals were interviewed—that the number interviewed from each group was adequate.

In order to determine whether differences significant at the .05 or below level exist among the three groups, concerning each question, the standard error of differences between proportions formula—

$$Z_c = \frac{P_1 - P_2}{\sqrt{\frac{P_1 Q_1}{N_1} + \frac{P_2 Q_2}{N_2}}} \quad **$$

—was applied to the percentages of positive responses.

---

[3] Henry E. Garrett, *Statistics in Psychology and Education* (New York: Longmans, Green and Co., 1955), p. 256.

* N_p = total number within a group; N_s = number of individuals interviewed from the group; P = percentage of positive responses given by the interviewees; Q = percentage of non-positive responses given by the interviewees; Z_c = confidence-interval.

** N_1 = the number of individuals interviewed from group 1; P_1 = percentage of positive responses given by group 1; Q_1 = percentage of non-positive responses given by group 1; N_2 = the number of individuals interviewed from group 2; P_2 = percentage of positive responses given by group 2; Q_2 = percentage of non-positive responses given by group 2; Z_c = level of significance.

Tables have been arranged and presented in the next chapter showing the results of this method of analysis and statements made as to whether differences are significant at the .05 or below level.

CHAPTER II

ANALYSIS OF DATA

This chapter reports data on 1,223 individuals from thirty-nine eastern Kentucky counties who had been referred to Vocational Rehabilitation Services and whose cases were closed by this agency during the 1964 calendar year.

For purposes of this study, the 1,223 individuals were separated into three groups. They are: (1) the 699 individuals who accepted and received services--the "A S Group;" (2) the 306 individuals who for some reason declined to accept services--the "D S Group;" and (3) the 218 individuals to whom services were denied--the "S D Group."

The three groups were compared on the basis of the seven characteristics as listed in the hypotheses. The data on each characteristic have been presented in tables, showing the number and percentage of individuals in each division. Also, tables have been presented on the first six characteristics, showing the chi-square tests for differences among the groups significant at an acceptable level.

For the data collected by interviews on the seventh characteristic, tables have also been presented showing results of application of tests for significant differences, using a formula based on the standard error of differences between proportions.

These groupings of data were made to provide a way for determining whether or not there were differences among the groups significant at an acceptable level as measured by the seven characteristics.

Location of Residence in Relation to District Vocational Rehabilitation Office

There are six district offices serving the area of this study. They are located in Ashland, Bowling Green, Harlan, Lexington, Paintsville, and Somerset, Kentucky. Three of these offices--Ashland, Bowling Green, and Lexington--are not located within the area of the study, while three of the offices--Harlan, Paintsville, and Somerset--are so located.

The three counties within the area of this study containing district Vocational Rehabilitation offices are: (1) Harlan, (2) Johnson, and (3) Pulaski.

There are fifteen counties within the area of the study that adjoin counties containing district Vocational Rehabilitation offices. They are: (1) Bell, (2) Carter, (3) Casey, (4) Floyd, (5) Laurel, (6) Lawrence,

(7)Leslie, (8) Letcher, (9) McCreary, (10) Magoffin, (11) Martin, (12) Perry, (13) Rockcastle, (14) Russell, and (15) Wayne.

There are also twenty-one counties within the area of this study that do not adjoin any counties containing district Vocational Rehabilitation offices serving them. They are: (1) Adair, (2) Bath, (3) Breathitt, (4) Clay, (5) Clinton, (6) Cumberland, (7) Elliott, (8)Estill, (9) Jackson, (10) Knott, (11) Knox, (12) Lee, (13) Lewis, (14) Menifee, (15) Morgan, (16) Owsley, (17) Pike, (18) Powell, (19) Rowan, (20) Whitley, and (21) Wolfe.

Table 1 reveals data on the relationship of the location of referrals' residences to the district offices of Vocational Rehabilitation Services. For comparison, the referrals have been grouped into three locations and the three locations are: (1) the three counties containing district offices; (2) the fifteen counties adjoining counties containing district offices; and (3) the twenty-one counties not adjoining any counties containing district offices serving them (Appendix IV).

TABLE 1

Patterns of Data on Location of Residences

Location of Residences	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
Within the three counties containing District Vocational Rehabilitation Offices	150	21.5	43	14.1	37	17.0
Within the fifteen counties adjoining counties containing District Vocational Rehabilitation Offices	287	41.1	191	62.4	113	51.8
Within the twenty-one counties not adjoining counties containing District Vocational Rehabilitation Offices	262	37.5	72	23.5	68	31.2
TOTALS	699	100.0	306	100.0	218	100.0

Tabel 1 shows that the "A S Group" contained the highest percentage (21.5 percent) of the individuals living within the three counties containing district vocational rehabilitation offices, followed

by the "S D Group" with 17 percent, and by the "D S Group" with 14.1 percent.

The "D S Group" contained the highest percentage (62.4 percent) of the individuals living within the fifteen counties adjoining counties containing district vocational rehabilitation offices as compared to the "S D Group" with 51.8 percent, and the "A S Group" with 41.1 percent.

The "A S Group" contained the highest percentage (37.5 percent) of the individuals living within the twenty-one counties not adjoining any counties containing district vocational rehabilitation offices, followed by the "S D Group" with 31.2 percent, and by the "D S Group" with 23.5 percent.

Table 2 shows the results of tests for significance of differences among proportions of the groups according to locations of residences.

Table 2 shows that a difference significant at the accepted level is indicated among all the groups and between all except the "D S Group" and the "S D Group," the differences being caused by the "A S Group" containing the highest percentage of individuals living within the three counties having district Vocational Rehabilitation offices, while the "D S Group" and the "S D Group" contained the highest percentages of individuals living within the fifteen counties containing district Vocational Rehabilitation offices. With exception for the percentage of the "A S Group" living within the twenty-one counties not adjoining any counties containing district Vocational Rehabilitation offices serving them, the data indicate that the farther individuals live from a district office the more likely those individuals are to decline to accept services and to have services denied them.

Family and Vital Statistics

The second characteristic investigated for significance of differences among the groups was the family and vital statistics data of referrals. Four possible variables were examined within the area of this characteristic. They are sex, age, marital status, and dependents of referrals. Each of these sub-characteristics was analyzed to determine whether there are differences significant at an acceptable level among the three groups, and if so, the direction of those differences.

Sex

Table 3 reveals information on the sex of individuals within each of the three groups included in this study.

Table 3 shows that the "D S Group" contained the highest percentage (76.8 percent) of males, followed very closely by the "S D

Group" which contained 76.6 percent males. The "A S Group" contained 58.4 percent males.

Table 4 shows the results of tests for significance of differences among the groups on the basis of sex. In order that the tests for significance of differences among the groups on this characteristic include only known values, the individual whose sex was not indicated by the records was not included in the chi-square computations.

TABLE 2

Observed Frequency Distribution in the Tests for Differences In Location of Residences

Group Classification	Within the three counties containing District Vocational Rehabilitation Offices	Within the fifteen counties adjoining counties containing District Vocational Rehabilitation Offices	Within the twenty-one counties not adjoining counties containing District Vocational Rehabilitation Offices	Totals	x^2 P
"A S Group"	150	287	262	699	$x^2 = 35.16$
"D S Group"	43	191	72	306	P = .01
"A S Group"	150	287	262	699	$x^2 = 7.89$
"S D Group"	37	113	68	218	P = .02
"D S Group"	43	191	72	306	$x^2 = 5.96$
"S D Group"	37	113	68	218	P = .05 to .10
Composite	150	287	262	699	$x^2 = 40.26$
Data	43	191	72	306	P = .01
	37	113	68	218	

TABLE 3

Patterns of Data on Sex

Sex	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
Males	408	58.4	235	76.8	167	76.6
Females	291	41.6	71	23.2	50	22.9
Not Reported	0	0	0	0	1	.5
TOTALS	699	100.0	306	100.0	218	100.0

Table 4 reveals that a difference significant at the accepted level is indicated among all the groups and between all except the "D S Group" and the "S D Group," the differences being caused by these two groups containing considerably higher percentages of males. The data indicate that males are more likely to decline to accept services and to have services denied them.

TABLE 4

Observed Frequency Distribution in the Tests for Differences in Sex

Group Classification	Sex: Males	Sex: Females	Totals	x^2 P
"A S Group"	408	291	699	$x^2 = 25.25$
"D S Group"	235	71	306	P = .01
"A S Group"	408	291	699	$x^2 = 24.49$
"S D Group"	167	50	217	P = .01
"D S Group"	235	71	306	$x^2 = .00$
"S D Group"	167	50	217	P = .95
Composite Data	408 235 167	291 71 50	699 306 217	$x^2 = 45.79$ P = .01

Table 5 reveals information on the ages of individuals within each of the three groups included in this study.

Table 5 shows that the "A S Group" contained the highest percentage (3.4 percent) of the individuals in the 60 years and over age group.

The 50-59 year-old age group contained 10 percent of the members of the "A S Group" which was the highest percentage of either of the groups in this age bracket.

Nineteen percent of the members of the "A S Group" were in the 40-49 year-old age group and this was the highest percentage of either of the groups.

The 30-39 year-old age group contained 18.6 percent of the "A S Group." Although this was a higher percentage than of either of the other groups, each was almost as high.

In the 20-29 year-old age group, the "A S Group" contained the highest percentage—24.0 percent.

It is interesting to note that the pattern changed on the 16-19 year-old age group and that the "D S Group" contained the highest percentage in that group—27.1 percent.

It is recognized that this phase of the study is weakened because the records did not provide information on the ages of all individuals.

Table 6 shows the results of the tests for differences among the groups on the basis of age. Individuals have not been included in this

TABLE 5

Patterns of Data on Age

Age Groups	"A S Group" Number	%	"0 S Group" Number	%	"S 0 Group" Number	%
60 and over	24	3.4	1	.3	8	3.7
50 - 59	70	10.0	20	6.5	18	8.3
40 - 49	133	19.0	40	13.1	36	16.5
30 - 39	130	18.6	53	17.3	39	17.9
20 - 29	167	24.0	47	15.4	38	17.4
16 - 19	158	22.6	83	27.1	33	15.1
under 16	10	1.4	4	1.3	2	.9
not reported	7	1.0	58	19.0	44	20.2
TOTALS	699	100.0	306	100.0	218	100.0

TABLE 6

Observed Frequency Distribution in the Tests for age Differences

Group Classification	AGE GROUP								x^2
	60 and over	50-59	40-49	30-39	20-29	16-19	Under 16	Totals	P
"A S Group"	24	70	133	130	167	158	10	692	$x^2 = 19.06$
"D S Group"	1	20	40	53	47	83	4	248	P = .01
"A S Group"	24	70	133	130	167	158	10	692	$x^2 = 2.92$
"S D Group"	8	18	36	39	38	33	2	174	P = .80 to .90
"D S Group"	1	20	40	53	47	83	4	248	$x^2 = 18.66$
"S D Group"	8	18	36	39	38	33	2	174	P = .01
Composite	24	70	133	130	167	158	10	692	$x^2 = 24.55$
Data	1	20	40	53	47	83	4	248	P = .02
	8	18	36	39	38	33	2	174	

computation whose records did not provide information on their age.

It is shown in table 6 that a difference significant at the accepted level is indicated among all the groups and between all except the "A S Group" and the "S D Group," the differences being caused by these two groups containing higher percentages of individuals in the older age brackets. The data indicate that individuals under the age of twenty are more likely to decline to accept services.

Marital Status

Table 7 reveals information on the marital status of individuals within each of the three groups.

Table 7 shows that the group containing the highest percentage of married clients was the "A S Group" with 49.5 percent. There was very little difference between the percentage of the "D S Group" and the "S D Group" in this category.

The "A S Group" also contained the highest percentage (42.9 percent) of the clients who were single, and again there was very little difference between the percentage of the "D S Group" and the "S D Group" in this classification.

The percentage of clients who were divorced was small for each of the three groups, and this was also the case for the separated category.

It is recognized that the large number of individuals in the "D S Group" and in the "S D Group" whose records did not provide information on marital status weakens this phase of the study.

Table 8 shows the results of tests for differences among the groups on the basis of marital status, and whether any differences found are

TABLE 7

Patterns of Data on Marital Status

Marital Status	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
Married	346	49.5	93	30.4	67	30.7
Single	300	42.9	91	29.8	56	25.7
Divorced	34	4.9	6	2.0	5	2.3
Separated	11	1.6	1	.3	1	.5
Not reported	8	1.1	115	37.6	89	40.8
TOTALS	699	100.0	306	100.0	218	100.0

TABLE 8

Observed Frequency Distribution in the Tests for Difference in Marital Status

Group Classification	Marital Status				Totals	x^2_P
	Married	Single	Divorced	Separated		
"A S Group"	346	300	34	11	691	$x^2 = 2.96$
"D S Group"	93	91	6	1	191	$P = .30$ to $.50$
"A S Group"	346	300	34	11	691	$x^2 = .82$
"S D Group"	67	56	5	1	129	$P = .80$ to $.90$
"D S Group"	93	91	6	1	191	$x^2 = .66$
"S D Group"	67	56	5	1	129	$P = .80$ to $.90$
Composite Data	346	300	34	11	691	$x^2 = 3.59$
	93	91	6	1	191	$P = .70$ to $.80$
	67	56	5	1	129	

significant at an acceptable level. It may be noted that the individuals whose records did not provide information on marital status have not been included in the tests.

In table 8, it is shown that no difference significant at the accepted level is indicated among all the groups or between any of the groups on the basis of marital status.

Dependents

Table 9 shows information on the dependents of individuals within each of the three groups.

Table 9 reveals that the classification having the highest percentage within each of the groups was the "no dependents" category. The numbers and percentages within each of the following categories tended to decrease as the number of dependents increased.

It is recognized that the large numbers of individuals within the three groups whose records did not provide information on dependents weakens this phase of the study.

Table 10 shows the results of tests for differences significant at an acceptable level among the groups on the basis of dependents. The individuals whose records did not provide any information regarding dependents have not been included in the chi-square computations.

Table 10 reveals that on the basis of dependents, no difference significant at the accepted level is indicated among all the groups or between any of the groups.

Means of Livelihood

The third characteristic investigated for possible differences among the groups was the referrals' means of livelihood. Two possible variables have been examined within the area of this characteristic. They are the referrals' primary sources of support at the time they were referred for vocational rehabilitation services and their principal employment before they were referred for services.

Primary Source of Support

Table 11 reveals information concerning the primary sources of support of individuals within each of the three groups at the time of referral for services.

Table 11 shows that a higher percentage (15.2 percent) of the "A S Group" members were self-supporting at the time they were referred for services than of either of the other two groups. It also shows that a higher percentage (34.3 percent) of the "A S Group" members were being supported by their family and friends than of

TABLE 9

Patterns of Data on Dependents

Number of Dependents	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
0	261	37.3	85	27.8	54	24.8
1	61	8.7	10	3.3	11	5.0
2	47	6.7	14	4.6	9	4.1
3	54	7.7	14	4.6	7	3.2
4	53	7.6	9	2.9	9	4.1
5	39	5.6	10	3.3	8	3.7
6	34	4.9	5	1.6	4	1.8
7	17	2.4	5	1.6	3	1.4
8	16	2.3	5	1.6	4	1.8
9	8	1.1	3	1.0	1	.5
10	6	.9	0	.0	2	.9
11	1	.1	0	.0	0	.0
Not Reported	102	14.6	146	47.7	106	48.6
TOTALS	699	100.0	306	100.0	218	100.0

either of the other two groups. The "A S Group" contained a higher percentage (16.5 percent) of members that were supported by public assistance with federal funds than of either of the other two groups.

The "S D Group" contained the highest percentage (.9 percent) of individuals who were supported by funds from Workmen's Compensation than of either of the other two groups. The "A S Group"

TABLE 10

Observed Frequency Distribution in the Tests for Differences in Number of Dependents

Group Classification	DEPENDENTS 0	1	2	3	4	5	6	7	8	9	10	11	Totals	x^2 P
"A S Group"	261	61	47	54	53	39	34	17	16	8	6	1	597	x^2 = 10.15
"D S Group"	85	10	14	14	9	10	5	5	5	3	0	0	160	P = .50 to .70
"A S Group"	261	61	47	54	53	39	34	17	16	8	6	1	597	x^2 = 3.35
"S D Group"	54	11	9	7	9	8	4	3	4	1	2	0	112	P = .95
"D S Group"	85	10	14	14	9	10	5	5	5	3	0	0	160	x^2 = 6.04
"S D Group"	54	11	9	7	9	8	4	3	4	1	2	0	112	P = .80 to .90
Composite Data	261	61	47	54	53	39	34	17	16	8	6	1	597	x^2 = 13.28
	85	10	14	14	9	10	5	5	5	3	0	0	160	P = .90 to .95
	54	11	9	7	9	8	4	3	4	1	2	0	112	

contained a higher percentage (6.6 percent) of the individuals who were supported by Old-Age and Survivors' Insurance disability benefits than of either of the other two groups, although the percentage of "S D Group" members supported from this source was almost as high.

The "S D Group" contained the highest percentage (2.3 percent) of the individuals supported by other disability (non-private) insurance benefits and also the highest percentage (.5 percent) of the individuals supported by annuity non-disability private insurance benefits.

It is recognized that a weakness of this phase of the study results from the fact that the records of some of the individuals simply did not indicate any means of support.

Table 12 shows the results of tests for differences among the groups on the basis of primary sources of support. In order that the tests for significance include only known sources of support, the individuals

TABLE 11

Patterns of Data on Primary Sources of Support

Sources of Support	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
Self	106	15.2	13	4.2	17	7.8
Family and friends	240	34.3	60	19.6	30	13.8
Public assistance with federal funds	115	16.5	29	9.5	20	9.2
Workmen's compensation	4	.6	1	.3	2	.9
OASI disability benefits	46	6.6	8	2.6	12	5.5
Other disability (non-private) insurance benefits	14	2.0	5	1.6	5	2.3
Annunity non-disability private insurance benefits	1	.1	0	.0	1	.5
Not reported	173	24.7	190	62.0	131	60.0
TOTALS	699	100.0	306	100.0	218	100.0

whose sources of support were not indicated by the records were excluded from the chi-square computations.

It is shown in table 12 that on the basis of primary sources of support no difference significant at the accepted level is indicated among all the groups or between any of the groups.

TABLE 12

Observed Frequency Distribution in the Tests for Differences in Primary Sources of Support

Group Classification	Primary Sources of Support							Totals	x^2 P
	Self	Family & friends	Public assistance with federal funds	Workmen's compensation	OASI disability benefits	Other disability (non-private) insurance benefits	Annuity non-disability private insurance benefits		
"A S Group"	106	240	115	4	46	14	1	526	x^2 = 6.56
"0 S Group"	13	60	29	1	8	5	0	116	P = .30 to .50
"A S Group"	106	240	115	4	48	14	1	526	x^2 = 10.38
"S D Group"	17	30	20	2	12	5	1	87	P = .10 to .20
"0 S Group"	13	60	29	1	8	5	0	116	x^2 = 10.39
"S 0 Group"	17	30	20	2	12	5	1	87	P = .10 to .20
Composite Data	106	240	115	4	46	14	1	526	x^2 = 18.00
	13	60	29	1	8	5	0	116	P = .10 to .20
	17	30	20	2	12	5	1	87	

Principal Employment

Table 13 shows information on the principal employment of individuals within each of the three groups before they were referred for services.

TABLE 13

Patterns of Data on Principal Employment

Employment Classification	"A S Group" Number	%	"O S Group" Number	%	"S O Group" Number	%
Clerical and service	71	10.2	25	8.2	13	6.0
Construction work	18	2.6	5	1.6	9	4.1
Factory work	28	4.0	9	2.9	10	4.6
Labor	123	17.6	57	18.6	46	21.1
Office and business work	5	.7	2	.7	0	.0
Own business	10	1.4	2	.7	1	.5
Farming	27	3.9	3	1.0	4	1.8
Shopwork	5	.7	2	.7	1	.5
Homemaking	156	22.3	15	4.9	12	5.5
Student	88	12.6	9	2.9	14	6.4
None	103	14.7	43	14.1	13	6.0
Miscellaneous	10	1.4	3	1.0	2	.9
Not reported	55	7.9	131	42.8	93	42.7
TOTALS	699	100.0	306	100.0	218	100.0

This table shows that the "A S Group" contained the highest percentage (10.2 percent) of the individuals who had been principally employed in clerical and service types of work before being referred for services. The "S D Group" contained the highest percentage (4.1 percent) of the individuals who had been principally employed in construction work, and this same group also contained the highest percentage (4.6 percent) of those who had been principally employed in some kind of factory work. The "S D Group" also contained the highest percentage (21.1 percent) of the individuals who had been principally employed in jobs classified as some kind of labor. Neither

of the groups contained a very high percentage of members who had been engaged principally in office and business type of work.

Very few of the referrals had worked in their own business. The "A S Group" contained the highest percentage (3.9 percent) of those who had been principally engaged in farm work. Only a small percentage of the members of each group had been employed in some kind of shopwork.

Homemaking accounted for 22.3 percent of the members of the "A S Group" and this was higher than the percentage of either of the other two groups.

A higher percentage (12.6 percent) of students were in the "A S Group" than there were in either of the other two groups. The "A S Group" and the "D S Group" contained about the same percentage of individuals who were recorded as not having had any work experience.

The three groups were not very different in the percentage of their respective members who had been principally employed in some other type of work listed as miscellaneous.

Quite a number of individuals from the "D S Group" and the "S D Group" are listed in the not-reported category and this is recognized as a weakness in this phase of the study. The records of these individuals simply did not have anything filled in the space provided for recording principal employment.

Table 14 shows the results of tests for differences among the groups on the basis of principal employment before the time of referral of the individuals for vocational rehabilitation services. The individuals whose records did not provide any information on principal employment were excluded from the chi-square calculations.

Table 14 shows that a difference significant at the accepted level is indicated among all the groups and between all except the "D S Group" and the "S D Group." The differences were caused by the "A S Group" containing higher percentages of individuals who had been employed in clerical work, farming, homemaking, and as students, while the "S D Group" contained higher percentages of individuals who had been employed in construction work, factory, and labor types of employment.

Referral Source

The fourth characteristic investigated for possible differences among the groups concerned the referral sources of individuals within each of the groups. A referral source is the original source of information about an individual presumed to be in need of vocational rehabilitation services--the agent or agency that referred the individual for services.

TABLE 14

Observed Frequency Distribution in the Tests for Differences in Principal Employment

Group Classification	Clerical & service	Construction work	Factory work	Labor	Office and business work	Own business	Farming	Shopwork	Homemaking	Student	None	Miscellaneous	Totals	x^2 P
"A S Group"	71	18	28	123	5	10	27	5	156	88	103	10	644	x^2 = 45.99
"D S Group"	25	5	9	57	2	2	3	2	15	9	43	3	175	P = .01
"A S Group"	71	18	28	123	5	10	27	5	156	88	103	10	644	x^2 = 38.11
"S D Group"	13	9	10	46	0	1	4	1	12	14	13	2	125	P = .01
"D S Group"	25	5	9	57	2	2	3	2	15	9	43	3	175	x^2 = 18.85
"S D Group"	13	9	10	46	0	1	4	1	12	14	13	2	125	P = .05 to .10
Composite Data	71	18	28	123	5	10	27	5	156	88	103	10	644	x^2 = 77.90
	25	5	9	57	2	2	3	2	15	9	43	3	175	P = .01
	13	9	10	46	0	1	4	1	12	14	13	2	125	

Table 15 shows information on the referral sources of individuals within each of the three groups.

This table shows that 17 percent of the individuals in the "D S Group" were referred by public schools, as compared to 6.6 percent of the "A S Group," and 4.6 percent of the "S D Group." There was not much difference among the groups in the percentages of individuals who were referred by mental hospitals. The percentage of referrals was very low from this latter referral source for each of the groups.

The "A S Group" contained a higher percentage (6.4 percent) of referrals by tuberculosis hospitals than either of the other groups.

It can be seen from the foregoing table that each of the groups contained a low percentage of individuals who were referred by the state crippled children's agency and this was also the situation regarding the Public Health Department.

The "A S Group" contained the highest percentage (19.7 percent) of individuals who were referred by physicians. It is interesting to note the percentage of individuals in the "D S Group" and in the "S D Group" who were referred by the Bureau of Old-Age and Survivor's Insurance agency as compared to the percentage of individuals in the "A S Group" who were referred by this source. It is also interesting

TABLE 15

Patterns of Data on Referral Sources

Referral Sources	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
Public schools	46	6.6	52	17.0	10	4.6
Mental Hospital	5	.7	2	.7	2	.9
Tuberculosis Hospital	45	6.4	6	2.0	0	.0
State Crippled Children's Agency	8	1.1	1	.3	1	.5
Public Health Department	9	1.3	5	1.6	5	2.3
Physician	138	19.7	26	8.5	11	5.0
Bureau of Old-Age and Survivors' Insurance	16	2.3	47	15.4	62	28.4
Public assistance	178	25.5	78	25.5	55	25.2
State Employment Service	67	9.6	15	4.9	8	3.7
Individual other than client	98	14.0	33	10.8	23	10.6
Self referred	55	7.9	18	5.9	15	6.9
Miscellaneous	34	4.9	23	7.5	25	11.5
Not reported	0	.0	0	.0	1	.5
TOTALS	699	100.0	306	100.0	218	100.0

to note the percentage of individuals in each group who were referred by public assistance and the lack of differences in percentages among the three groups.

The "A S Group" contained the highest percentage (9.6 percent) of the individuals who were referred by the state employment service.

A higher percentage (14 percent) of individuals who were referred by an individual other than the client himself were members of the "A S Group." There wasn't much difference among the groups in the percentages of individuals who had referred themselves.

The "S D Group" contained the highest percentage (11.5 percent) of individuals who were referred by some referral source other than one of those already discussed.

Table 16 shows the results of tests for differences among the groups on the basis of referral source. The individual whose records did not indicate the source of referral was not included in the chi-square tests for significant differences.

It is revealed by table 16 that a difference significant at the accepted level is indicated among all the groups and between all the groups. The differences are caused primarily by: (1) higher percentages of the "A S Group" having been referred by tuberculosis hospitals, physicians, and individuals other than the clients themselves; (2) a higher percentage of the "D S Group" having been referred by public schools; and (3) higher percentages of the "S D Group" having been referred by the Public Health Department and by the Bureau of Old-Age and Survivors' Insurance.

Major Disabling Conditions

The fifth characteristic which was investigated for possible differences among the groups was the major disabling condition of the individuals within each group. In order for an individual to be eligible to receive vocational rehabilitation services, he or she must possess a physical and/or mental disability or impairment which causes a functional limitation in activity. The following section of this report presents information on the major disabling conditions of the individuals included in this study.

Table 17 reveals information concerning the major disabling conditions of individuals within each of the three groups at the time of referral.

This table shows that the "A S Group" contained the highest percentage (5.7 percent) of clients who were amputees.

The "S D Group" contained the highest percentage (3.2 percent) of the referrals with orthopedic impairments of the upper limbs, while

TABLE 16

Observed Frequency Distribution in the Tests for Differences in Referral Sources

Group Classification	Public schools	Mental hospitals	Tuberculosis hospitals	State crippled children's agency	Public Health Department	Physicians	Bureau of Old-Age and Survivors' Insurance	Public assistance	State Employment service	Individual other than client	Self referred	Miscellaneous	Totals	x^2 / P
"A S Group"	46	5	45	8	9	138	16	178	67	98	55	34	699	x^2 = 118.77
"D S Group"	52	2	6	1	5	26	47	78	15	33	18	23	306	P = .01
"A S Group"	46	5	45	8	9	138	16	178	67	98	55	34	699	x^2 = 193.37
"S D Group"	10	2	0	1	5	11	62	55	8	23	15	25	217	P = .01
"D S Group"	52	2	6	1	5	26	47	78	15	33	18	23	306	x^2 = 36.77
"S D Group"	10	2	0	1	5	11	62	55	8	23	15	25	217	P = .01
Composite Data	46	5	45	8	9	138	16	178	67	98	55	34	699	x^2 = 239.30
	52	2	6	1	5	26	47	78	15	33	18	23	306	P = .01
	10	2	0	1	5	11	62	55	8	23	15	25	217	

the "A S Group" contained the highest percentage (7.4 percent) of the referrals with orthopedic impairments of the lower limbs. The "D S Group" contained the highest percentage (15.7 percent) of the referrals with orthopedic impairments of the trunk of the body; however, the percentage (15.1 percent) of the "S D Group" with this disabling condition was very close to that of the "D S Group."

A higher percentage (8.3 percent) of the members of the "S D Group" was reported to be suffering from some kind of visual impair-

ment than of either the "A S Group" or the "D S Group." There was very little difference among the groups in the percentage of individuals with hearing impairments.

The "A S Group" contained the highest percentage (1.7 percent) of the individuals reported to be handicapped by impaired speech. It is interesting to note that 28 percent of the "D S Group"—those who declined to accept services—was listed as mentally retarded, which was a higher percentage than that of either of the other two groups.

A higher percentage of the "D S Group" (6.5 percent) was reported to be suffering from cardiac diseases than of either of the other two groups.

The "A S Group" contained a higher percentage (6.3 percent) of the individuals who were reported to have had tuberculosis than either of the other two groups.

TABLE 17

Patterns of Data on Major Disabling Conditions

Disabling Conditions	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
Amputations	40	5.7	4	1.3	3	1.4
Orthopedic impairments--upper limbs	14	2.0	7	2.3	7	3.2
Orthopedic impairments--lower limbs	52	7.4	14	4.9	8	3.7
Orthopedic impairments--trunk of body	66	9.4	48	15.7	33	15.1
Visual impairments	48	6.9	18	5.9	18	8.3
Hearing impairments	21	3.0	8	2.6	6	2.8
Impaired speech	12	1.7	1	.3	2	.9
Mental retardation	60	8.9	86	28.0	27	12.4
Cardiac disease	26	3.7	20	6.5	12	5.5
Tuberculosis	44	6.3	7	2.3	7	3.2
Hernia	36	5.2	7	2.3	2	.9
Miscellaneous	280	40.0	77	25.2	80	36.7
Not reported	0	.0	8	2.6	13	6.0
TOTALS	699	100.0	306	100.0	218	100.0

The "A S Group" also contained the highest percentage (5.2 percent) of individuals who had a hernia as a major disabling condition.

Forty percent of the members of the "A S Group" were reported to be disabled because of some condition listed under "miscellaneous" and this was the highest percentage in this category.

It is recognized that this phase of the study is weakened by the fact that the records did not provide information on the disabling conditions of some of the "D S Group" and "S D Group" members.

Table 18 reveals the results of tests for differences among the groups on the basis of major disabling conditions. In order that the chi-square calculations include only known disabling conditions, individuals whose records did not provide any information on this characteristic were excluded from the tests.

Table 18 reveals that a difference significant at the accepted level is indicated among all the groups and between all the groups. The differences are caused primarily by: (1) higher percentages of the "A S Group" having amputations, orthopedic impairments of lower limbs, ailments caused by tuberculosis, hernia, and ailments categorized "miscellaneous" as disabling conditions; (2) higher percentages of the "D S Group" having orthopedic impairments of the trunk of the body, and mental retardation as disabling conditions; and (3) higher percentages of the "S D Group" having orthopedic impairments of the upper limbs, and visual impairments as disabling conditions. This indicates that individuals with orthopedic impairments of the trunk of the body, or mental retardation, are more likely to decline to accept services; while individuals with orthopedic impairments of the upper limbs, or impaired vision, are more likely to have services denied them.

Education

The sixth characteristic investigated as a possible area of difference among the groups was the educational level (last grade completed or attended) as reported by the referrals at the time they were considered for vocational rehabilitation services.

Table 19 reveals information on the education of individuals within the three groups.

This table shows that, generally speaking, the percentages for each group increase as the grade level increases until the eighth grade level is reached; then the percentages decrease for each of the ninth and tenth year levels but increase again at the eleven years of higher level of education.

It is recognized that this phase of the study is weakened by the fact that the records of some of the individuals simply did not provide any

information in the space provided for indicating the individual's educational level.

Table 20 shows the results of tests for differences among the groups on the basis of education and again, the "not reported" column has been excluded from the chi-square computations.

It is shown by table 20 that a difference significant at the accepted level is indicated among all the groups and between the "A S Group" and the "D S Group." The differences were caused primarily by the

TABLE 18

Observed Frequency Distribution in Tests for Differences in Major Disabling Conditions

Group Classification	Major Disabling Conditions												Totals	x^2 / P
	Amputations	Orthopedic--upper limbs	Orthopedic--lower limbs	Orthopedic--trunk of body	Visual impairments	Hearing impairments	Impaired speech	Mental retardation	Cardiac diseases	Tuberculosis	Hernia	Miscellaneous		
"A S Group"	40	14	52	66	48	21	12	60	26	44	36	280	699	x^2 = 102.60
"D S Group"	4	7	15	48	18	8	1	86	20	7	7	77	298	P = .01
"A S Group"	40	14	52	66	48	21	12	60	26	44	38	280	699	x^2 = 32.25
"S D Group"	3	7	8	33	18	6	2	27	12	7	2	80	205	P = .01
"D S Group"	4	7	15	48	18	8	1	86	20	7	7	77	298	x^2 = 24.97
"S D Group"	3	7	8	33	18	6	2	27	12	7	2	80	205	P = .01
Composite Data	40	14	52	66	48	21	12	60	26	44	36	280	699	x^2 = 128.51
	4	7	15	48	18	8	1	86	20	7	7	77	298	P = .01
	3	7	8	33	18	6	2	27	12	7	2	80	205	

TABLE 19

Patterns of Data on Educational Levels

Last Grade Completed or Attended	"A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
0	23	3.3	2	.7	3	1.4
1	8	1.1	2	.7	2	.9
2	20	2.9	2	.7	4	1.8
3	35	5.0	10	3.3	8	3.7
4	41	5.9	14	4.6	14	6.4
5	44	6.3	6	2.0	7	3.2
6	56	8.0	8	2.6	9	4.1
7	58	8.3	24	7.8	13	6.0
8	131	18.7	46	15.0	21	9.6
9	27	3.9	16	5.2	11	5.0
10	31	4.4	20	6.5	4	1.8
11 or more	199	28.5	34	11.1	27	12.4
Not reported	26	3.7	122	39.9	95	43.6
TOTALS	699	100.0	306	100.0	218	100.0

"A S Group" having a higher percentage of individuals in each grade level, except the fourth, ninth, and tenth grade levels. This indicates that the members of the "D S Group" and the "S D Group," generally speaking, are not as well educated as the members of the "A S Group."

Image Referrals Hold of Vocational Rehabilitation Services

In an attempt to obtain information on this characteristic, fifty-five questions were asked each of the individuals interviewed. These questions were grouped into fifteen sections with each section containing from three to five questions. Each section of questions was intended to obtain the perceptions of members of the respective groups about a specific phase of Vocational Rehabilitation Services.

As already indicated in Chapter 1, information on this characteristic was obtained by interviewing ninety-seven individuals who had been referred to the agency for services.

TABLE 20

Observed Frequency Distribution in the Tests for Differences in Educational Levels

Group Classification	0	1	2	3	4	5	6	7	8	9	10	11 or more	Totals	x^2 P
"A S Group"	23	8	20	35	41	44	56	58	131	27	31	199	673	$x^2 = 37.03$
"D S Group"	2	2	2	10	14	6	8	24	46	16	20	34	184	P = .01
"A S Group"	23	8	20	35	41	44	56	58	131	27	31	199	673	$x^2 = 13.89$
"S D Group"	3	2	4	8	14	7	9	13	21	11	4	27	123	P = .20 to .30
"D S Group"	2	2	2	10	14	6	8	24	46	16	20	34	184	$x^2 = 14.68$
"S D Group"	3	2	4	8	14	7	9	13	21	11	4	27	123	P = .10 to .20
Composite Data	23	8	20	35	41	44	56	58	131	27	31	199	673	$x^2 = 49.43$
	2	2	2	10	14	6	8	24	46	16	20	34	184	P = .01
	3	2	4	8	14	7	9	13	21	11	4	27	123	

Information on their responses has been presented by sections according to each specific phase about which opinions were solicited, with the questions listed. Following the questions of each section are two tables. One table shows the number of positive responses, and the percentages, of each group to each question; and a second table shows the results of tests for significance of differences among the groups.

Section I

The questions in this section were intended to obtain information on what referrals believe about some procedures employed by Vocational Rehabilitation Services in processing cases of individuals referred for services. These questions were asked:*

1) What do you believe about the ways a person may be brought to the attention of Vocational Rehabilitation Services?
2) What do you think about the way Vocational Rehabilitation counselors contact individuals referred for services?
3) What is your opinion of the time, place, and manner in which tbe conference between the counselor and the individual is conducted?
4) What is your opinion of the way the general medical examination is conducted?
5) Wbat do you think about tbe procedure employed for accepting or rejecting individuals referred for services?

Table 21 provides information on the positive responses of members of the three groups to the questions about procedures. It reveals the number and percentage of each group who indicated approval of each part of the procedure employed by Vocational Rehabilitation Services in processing cases of individuals referred for services.

It is interesting to note that the members of the group who had received services–the "A S Group"–gave the highest and most consistent percentage (each above 90 percent) of positive responses to these questions, and that the members of the group who were denied services–the "S D Group"–gave the lowest and most inconsistent percentages (from 9.37 to 75 percent) of positive responses to the questions. The "S D Group" showed a definite lack of agreement with even the "D S Group" who declined to accept services.

Table 22 shows the results of the test for differences significant at the accepted level among the groups on the basis of their answers to the questions about procedures.

* Throughout the interviews, every effort was made to clarify the questions for the interviewees, by revised statements, simple illustrations, or use of vernacular.

TABLE 21

Patterns of Data on Positive Responses To Questions about Procedures

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	33	97.05	24	77.42	24	75.00
2	31	91.17	23	74.19	14	43.75
3	32	94.11	20	64.51	13	40.62
4	32	94.11	15	48.38	6	18.75
5	31	91.17	13	41.93	3	9.37

It can be seen from table 22 that the differences among the groups were all significant, except two, at the .05 level, and that they were all significant, except four, even at the .01 level. Responses from the members of the groups indicate that those of the "A S Group" view the procedures employed by Vocational Rehabilitation Services in processing cases of individuals referred for services more favorably than those of either group, and that members of the "S D Group" view the procedures less favorably than those of either group.

Section II

This section of questions was intended to obtain the opinions of referrals concerning efficiency of the program--how well the program actually operates. These questions were asked:

1) What is your opinion of the use made of funds appropriated for vocational rehabilitation services?

TABLE 22

Results of Tests for Differences of Opinions among the Groups Regarding Procedures

Questions	Significant Differences					
	"AS Group"&"DS Group"		"AS Group"&"SD Group"		"DS Group"&"SD Group"	
	.05	.01	.05	.01	.05	.01
1	Yes	No	Yes	Yes	No	No
2	No	No	Yes	Yes	Yes	Yes
3	Yes	Yes	Yes	Yes	Yes	No
4	Yes	Yes	Yes	Yes	Yes	Yes
5	Yes	Yes	Yes	Yes	Yes	Yes

2) What do you think about the way rehabilitation counselors spend their time?
3) What do you believe about the use made of facilities by this agency?

Table 23 reports information on the responses of members of the three groups to the questions concerning efficiency of the program.

TABLE 23
Patterns of Data on Positive Responses to Questions Regarding Efficiency

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	33	97.05	13	41.93	10	31.25
2	33	97.05	15	48.38	9	28.12
3	31	91.17	11	35.48	9	28.12

Table 23 reveals the number and percentage of each group who indicated approval of the efficiency of the program. Here again, the highest percentages (from 91.17 to 97.05 percent) of positive responses were from the "A S Group," while the "S D Group" gave the lowest percentages (from 28.12 to 31.25 percent) of positive responses. As can be noted in the table, the percentages of positive responses from each of the groups, although different from each other, were very consistent in trend.

Table 24 presents the results of tests for differences among the groups on the basis of their responses to questions concerning efficiency of the program.

TABLE 24
Results of Tests for Differences of Opinions among the Groups Regarding Efficiency

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	Yes	Yes	Yes	Yes	No	No
2	Yes	Yes	Yes	Yes	No	No
3	Yes	Yes	Yes	Yes	No	No

It can be seen from this table that significant differences, both at the .05 and .01 level, exist between the responses of the "A S Group" and each of the other two groups on each of the questions, but that no differences significant at the acceptable level exist between the responses of the "D S Group" and the "S D Group." The responses from members of the three groups indicate that those of the "A S Group" view the uses made of resources by Vocational Rehabilitation Services more favorably than those of either of the other groups and that the members of the "S D Group" view the uses less favorably than do those of the other groups.

Section III

The questions in this section were intended to obtain information on the opinions of referrals regarding the objective of the program—restoring vocationally handicapped individuals to a state of employability. These questions were asked:

1) What do you think about the guidance services provided by this agency?
2) What do you believe about Vocational Rehabilitation Services training individuals for a new job?
3) What is your opinion of Vocational Rehabilitation Services providing physical restoration services?
4) What do you think about this agency providing services to individuals who have never had a paying job?
5) What do you believe about only the individuals who show promise of becoming employable being accepted for services?

Table 25 reveals information on the positive responses of members of the three groups to the questions about the objective of the program.

Table 25 shows the number and percentage of each group that indicated approval of the program's objective—restoring vocationally handicapped individuals to a state of employability. The highest and most consistent percentages of positive responses (from 79.41 to 97.05 percent) were from the "A S Group." It can be seen that the percentages of positive responses from both the "D S Group" and the "S D Group" were inconsistent and somewhat similar.

Table 26 reveals the results of tests for significance of differences among the groups on the basis of their responses to questions about the objective of the program.

Table 26 shows significant differences in the opinions of the members of the "A S Group" and the "D S Group" regarding gnidance ser-

TABLE 25

Patterns of Data on Positive Responses to Questions about the Objective of the Agency

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	32	94.11	7	22.58	5	15.62
2	29	85.30	23	74.19	18	56.25
3	33	97.05	24	77.42	20	62.50
4	27	79.41	18	58.06	15	46.87
5	29	85.30	24	77.42	20	62.50

vices provided by the agency. These same two groups also differed significantly about whether physical restoration services should be provided. The responses indicate that members of the "A S Group" view the objective of Vocational Rehabilitation Services—restoring vocationally handicapped individuals to a state of employability—more favorably than those of either other group and that the members of the "S D Group" view this objective less favorably than those of either other group.

The differences between the "A S Group" and the "S D Group" were all significant at the .05 level. There were no differences signif-

TABLE 26

Results of Tests for Differences of Opinions among the Groups Concerning the Objective of Vocational Rehabilitation Services

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	Yes	Yes	Yes	Yes	No	No
2	No	No	Yes	Yes	No	No
3	Yes	No	Yes	Yes	No	No
4	No	No	Yes	Yes	No	No
5	No	No	Yes	No	No	No

icant at the acceptable level between the "D S Group" and the "S D Group" on either of the questions.

Section IV

This section is composed of three questions intended to obtain the opinions of referrals concerning the actual accomplishments of the program. These questions were asked:

1) What is your opinion of the counseling services provided by this agency?
2) What do you think about the training services provided by this agency?
3) What is your opinion of the physical restoration services provided by this agency?

Table 27 reveals information on the positive responses of members of the three groups concerning their opinions about the actual accomplishments of the program.

TABLE 27

Patterns of Data on Positive Responses to Questio... About Accomplishments of Vocational Rehabilitation Services

Questions	Positive Responses "A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
1	32	94.11	7	22.58	3	9.37
2	16	47.05	5	16.13	4	12.50
3	25	73.52	3	9.67	4	12.50

Table 27 shows that the members of the "A S Group" gave a high percentage of positive responses (94.11 percent) to the question about the counseling services, and that they also gave a fairly high percentage (73.52 percent) of positive responses to the question concerning physical restoration services. It is interesting to note, however, that this same group gave only 47.05 percent of positive responses to the question about training services.

The percentages of positive responses from the "D S Group" were low (from 9.67 to 22.58 percent), as also were the positive responses from the "S D Group" (from 9.37 to 12.50 percent).

One can understand the low percentages of positive responses from the members of the "S D Group" to these questions by application of the "sour grape" story—but why would the members of the "D S Group" who had declined the services give such low percentages of positive responses?

Table 28 shows the results of tests for differences among the groups on the basis of their answers to questions about accomplishments of the program.

TABLE 28

Results of Tests for Differences of Opinions Among the Groups Regarding Program Accomplishments

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	Yes	Yes	Yes	Yes	No	No
2	Yes	Yes	Yes	Yes	No	No
3	Yes	Yes	Yes	Yes	No	No

It can be seen from table 28 that the differences in opinions between the "A S Group" and the "D S Group" were significant at the .01 level. The differences between the "A S Group" and the "S D Group" were also significant at the .01 level.

The results of the tests indicate that the members of the "A S Group" view the accomplishments of Vocational Rehabilitation Services more favorably than those of either group and that, with exception for physical restoration services, the members of the "S D Group" view the accomplishments less favorably than those of either group. Probably the low percentage (47.05 percent) of positive responses from the members of the "A S Group" to the question concerning training services provided by the agency can be explained from the fact that many clients receive services that do not include training.

The differences between the "D S Group" and the "S D Group" were not significant at an acceptable level.

Section V

This section of questions was intended to obtain information on the opinions of referrals regarding adequacy of the program in eastern Kentucky. These questions were asked:

1) What is your opinion concerning the amount of money available to eastern Kentucky for vocational rehabilitation services?
2) Do you believe there is an adequate number of personnel engaged in providing services for this area?
3) Do you believe the facilities available to the area are adequate?

Table 29 reveals information on the positive responses of members of the three groups to the questions about adequacy of the program for meeting needs for vocational rehabilitation services in eastern Kentucky.

TABLE 29

Patterns of Data on Positive Responses to Questions Regarding Adequacy of the Program

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	17	50.00	10	32.25	18	56.25
2	19	55.88	10	32.25	20	62.50
3	20	58.82	14	45.16	18	56.25

The foregoing table reveals information on the opinions of members of the groups concerning adequacy of funds, personnel, and facilities for vocational rehabilitation services in eastern Kentucky. It is interesting to note the consistency of the percentages of positive responses within each of the three groups, and that the "D S Group" members gave the lowest percentage of positive responses among the groups. It is also interesting to observe that those who received services, the "A S Group" members and those who were denied services, the "S D Group," expressed very similar opinions.

TABLE 30

Results of Tests for Differences of Opinions Among the Groups Concerning Adequacy of the Program

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	No	No	Yes	No
2	Yes	No	No	No	Yes	No
3	No	No	No	No	No	No

Table 30 presents the results of tests for differences among the groups on the basis of their responses to questions about adequacy of the program.

Table 30 shows there were no differences significant at an acceptable level between the "A S Group" and the "D S Group" in their opinions concerning adequacy of funds and facilities. These two groups, however, differed at an acceptable level of significance on the question of personnel. It is interesting to note that the "A S Group" and the "S D Group" did not differ at a significant level on either of the questions. The "D S Group" and the "S D Group" differed at a significant level on the questions about funds and personnel but did not differ significantly on the question of adequate facilities.

The results of the test indicate that members of the "S D Group," with exception for facilities available to the area, view the total vocational rehabilitation program as more adequate than the members of either other group, and the members of the "D S Group" view the program as the least adequate. It may be noted from table 29 that less than two out of three individuals interviewed indicated an opinion that the program is adequate for eastern Kentucky.

Section VI

The questions in this section were intended to obtain information on whether referrals visualize the vocational rehabilitation program as similar to certain other programs. These questions were asked:

1) Do you view the vocational rehabilitation program as similar to the public assistance program?
2) Do you view the vocational rehabilitation program as an educational program?
3) Do you believe vocational rehabilitation is a program that is helping people who actually need and deserve help?
4) Do you believe this program operates similar to a political patronage program—rewards friends?

Table 31 reveals information on positive responses of members of the three groups to the questions regarding similarities between vocational rehabilitation and other programs.

This table shows that the three groups were not very different in their opinions about whether they viewed vocational rehabilitation as similar to public assistance; in fact, approximately three out of four of each group responded positively to this question. It can be seen that the "A S Group" differed from the other two groups on the question about whether they viewed vocational rehabilitation as similar

TABLE 31

Patterns of Data on Positive Responses to Questions in Section VI

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	23	67.64	24	77.42	24	75.00
2	22	64.70	14	45.16	13	40.62
3	33	97.05	16	51.61	6	18.75
4	5	14.70	10	32.25	24	75.00

to an educational program, but the "D S Group" and the "S D Group" did not differ very much on this question.

There was quite a difference of opinions as to whether vocational rehabilitation services are helping people who actually need and deserve help. The "A S Group" gave the highest percentage (97.05 percent) of positive responses to this question as compared to the lowest of only 18.75 percent by the "S D Group."

The "A S Group" gave a low percentage (14.70 percent) of positive responses to the question as to whether they believe vocational rehabilitation services operate similar to a political patronage program, but the "S D Group" gave a fairly high percentage (75 percent) of positive responses to this question. It is interesting to note that the individuals who received services supported the agency on this question, while those who were denied services gave a high percentage (75 percent) of positive responses to this question.

Table 32 shows the results of tests for differences among the groups on the basis of their answers to the questions in section six.

TABLE 32

Results of Tests for Differences of Opinions Among the Groups Concerning Questions in Section VI

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	No	No	No	No
2	No	No	Yes	No	No	No
3	Yes	Yes	Yes	Yes	Yes	Yes
4	No	No	Yes	Yes	Yes	Yes

Table 32 reveals no differences significant at an acceptable level among the groups on the question about vocational rehabilitation being viewed as similar to public assistance, and only the "A S Group" differed from the "S D Group" at the .05 level on the question of vocational rehabilitation being similar to an educational program. The groups each differed from the others, however, at the .01 level on the question about whether vocational rehabilitation services are helping people who need and deserve help. The differences were caused by 97.05 percent of the "A S Group" members indicating positive responses, while 51.61 percent of the "D S Group" members responded positively, and only 18.75 percent of the "S D Group" members responded positively.

There were differences at the .01 level between the "A S Group" and the "S D Group," and the "D S Group" and the "S D Group" on the question about vocational rehabilitation being similar to a political patronage program. As already stated, a higher percentage (75 percent) of the "S D Group" indicated that in their opinion vocational rehabilitation services were administered similarly to a political patronage program.

Section VII

This section was intended to obtain information on the opinions of members of the three groups regarding individuals accepted for service. These questions were asked:

1) Do you believe individuals with the greatest need are more likely to be accepted for services?
2) Do you believe the most interested individuals are always accepted for services?
3) Do you believe individuals with the best chances for success are the ones accepted?

Table 33 shows information on the positive responses of members of the three groups to questions regarding their opinions of individuals accepted for services.

Table 33 shows that the "A S Group" gave fairly high and consistent percentages (from 79.41 to 85.30 percent) of positive responses to each of the questions in this section. The percentages of positive responses which the "D S Group" gave were much lower than those of the "A S Group" but very consistent (from 38.70 to 41.93 percent). The "S D Group" gave very low but also consistent percentages (from 3.12 to 9.37 percent) of positive responses to these questions.

TABLE 33

Patterns of Data on Positive Responses to Questions About Individuals Accepted for Services

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	27	79.41	13	41.93	2	6.25
2	28	82.35	13	41.93	1	3.12
3	29	85.30	12	38.70	3	9.37

Table 34 presents the results of tests for differences among the groups on the basis of their responses to the questions.

Table 34 reveals that each group differed from each of the other two groups down to the .01 level of significance on each of the questions about individuals accepted for services. The differences were caused hy the members of the "A S Group" giving a fairly high percentage (from 79.41 to 85.30 percent) of positive responses, and the members of the "S D Group" giving a very low percentage (from 3.12 to 9.37 percent) of positive responses to each question.

TABLE 34

Results of Tests for Differences of Opinions Among the Groups Concerning Individuals Accepted for Services

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	Yes	Yes	Yes	Yes	Yes	Yes
2	Yes	Yes	Yes	Yes	Yes	Yes
3	Yes	Yes	Yes	Yes	Yes	Yes

Section VIII

This section was intended to ohtain information regarding referrals' opinions of the time element involved in processing cases. These questions were asked:

1) What is your opinion of the time lapse between referral and cortact?

2) What is your opinion of the time lapse between contact and interview?

3) What is your opinion of the time lapse between interview and acceptance or rejection?

Table 35 reports information on the positive responses of members of the three groups to the questions concerning the time involved in processing cases.

TABLE 35

Patterns of Data on Positive Responses to Questions About Time Lapses in Processing Cases

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	29	85.30	22	70.96	21	65.62
2	32	94.11	20	64.51	18	56.25
3	33	97.05	18	58.06	14	43.75

Table 35 reveals a fairly high and consistent percentage (from 85.30 to 97.05 percent) of positive responses by the "A S Group" members to questions regarding time lapses in processing cases. The "D S Group" members gave a lower and slightly less consistent percentage (from 58.06 to 70.97 percent) of positive responses to these questions, while the "S D Group" members gave a much lower and more inconsistent percentage (from 43.75 to 65.62 percent) of positive responses to these same questions than the members of either of the other two groups.

Table 36 shows there were no differences significant at an acceptable level of opinion among the groups on the question about time lapse between referral and contact. It is noteworthy that each of the groups gave a fairly high percentage (from 65.62 to 85.30 percent) of positive responses to this question.

There were differences significant at an acceptable level in the opinions of the "A S Group" and each of the other two groups on the question of time lapse between contact and interview, but no difference significant at an acceptable level between the "D S Group" and the "S D Group" on this matter. The members of the "A S Group" gave a higher percentage (94.11 percent) of positive responses to this question, while the members of the "D S Group" and the "S D Group" gave only 64.51 and 56.25 percent respectively.

TABLE 36

Results of Tests for Differences of Opinions Among The Groups Concerning Time Lapses

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	No	No	No	No
2	Yes	Yes	Yes	Yes	No	No
3	Yes	Yes	Yes	Yes	No	No

There were also significant differences between the opinions of the "A S Group" members and those of members of the other two groups on the question about time lapse between interview and acceptance or rejection. Here again, the members of the "A S Group" gave the highest percentage (97.05 percent) of positive responses. The "D S Group" and the "S D Group" did not, however, differ at a significant level of probability on this matter.

Section IX

The questions in this section were intended to obtain information on the opinions of individuals from each of the three groups regarding the sources of funds used for vocational rehabilitation services. These questions were asked:

1) Do you believe funds are provided by the county unit of government?
2) Do you believe funds are provided by the state unit of government?
3) Do you believe funds are provided by the federal government?
4) Do you believe funds are provided by more than one of these units of government?*

Table 37 reveals information on the positive responses of members of the three groups to the questions regarding their opinions about the sources of funds used for vocational rehabilitation services.

This table shows that only a minority of the individuals in each group thought funds were provided by the county unit of government. The second question was about the possibility of the state unit

*Actually 70 percent of funds for Vocational Rehabilitation Services are provided by the federal government and 30 percent by the state government.

TABLE 37

Patterns of Data on Positive Resonses to Questions about Sources of Funds

Questions	Positive Responses "A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
1	5	14.70	5	16.13	3	9.37
2	25	73.52	13	41.93	20	62.50
3	28	82.35	26	83.87	29	90.62
4	25	73.52	14	45.16	21	65.62

of government being a source of funds. The members of the "A S Group" gave the highest percentage (73.52 percent) of positive responses to this question, and the members of the "D S Group" gave the lowest percentage (41.93 percent).

A high percentage of the members of each of the groups gave positive responses to the question about the possibility of the federal government being a source of funds.

The "A S Group" members gave the highest percentage of positive responses (73.52 percent) about the possibility of funds being provided by more than one of the suggested sources, and the "D S Group" members gave the lowest percentage (45.16 percent) of positive responses to this question.

Table 38 reveals the results of tests for differences significant at an acceptable level among the groups on the basis of their responses to the questions.

TABLE 38

Results of Tests for Differences of Opinions among the Groups about Sources of Funds

Questions	Significant Differences "AS Group"&"DS Group"		"AS Group"&"SD Group"		"DS Group"&"SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	No	No	No	No
2	Yes	Yes	No	No	No	No
3	No	No	No	No	No	No
4	Yes	No	No	No	No	No

Table 38 reveals there were no differences significant at an acceptable level among the groups in their responses to the question about the possibility of the county unit of government providing funds for vocational rehabilitation services.

There was a significant difference between the responses of the "A S Group" and the "D S Group," even at the .01 level, on the question about the possibility of the state unit of government being a possible source of funds. A higher percentage (73.52 percent) of the "A S Group" members responded positively to this question.

There was also a significant difference, at the .05 level, between the responses of the same two groups about the question concerning the possibility of funds being provided by more than one of the sources mentioned. Here again, a higher percentage (73.52 percent) of the "A S Group" members gave positive responses to this question.

There were no other differences significant at an acceptable level among the groups when they were compared on the basis of their responses to the questions in this section.

Section X

The questions in this section were intended to obtain information from members of the three groups regarding their opinions of procedures employed by Vocational Rehabilitation Services in selecting and employing personnel. These questions were asked:

1) Do you believe rehabilitation counselors should be natives of the area they serve?
2) Do you believe rehabilitation counselors need special training for this type of work?
3) Do you believe the procedure employed for selecting and hiring rehabilitation counselors is a good one?
4) Do you believe politics are involved in selecting and hiring of rehabilitation counselors?

This table shows that the "A S Group" gave the lowest percentage (44.11 percent) of positive responses to the question about whether rehabilitation counselors should be natives of the areas they serve. It is interesting to note that positive responses among the "D S Group" were higher (64.51 percent) than among the members of the "A S Group," and that the members of the "S D Group" were the highest with 87.50 percent of positive responses.

A higher percentage (79.41 percent) of the "A S Group" members indicated they believed a rehabilitation counselor should have special

TABLE 39

Patterns of Data on Positive Responses to Questions about Procedures Emloyed in Selecting and Hiring Counselors

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	15	44.11	20	64.51	28	87.50
2	27	79.41	16	51.61	24	75.00
3	25	73.52	11	35.48	4	12.50
4	5	14.70	14	45.16	22	68.75

training for his work, as compared to only 51.61 percent of the "D S Group" members, and 75 percent of the "S D Group" members.

It is interesting to note that a smaller percentage (14.70 percent) of the "A S Group" members indicated they believed politics were involved in the selection and hiring of rehabilitation counselors than those of either of the other two groups. The "S D Group" members gave the highest percentage of positive responses to this question with 68.75 percent indicating they believed politics were involved.

Table 40 reveals the results of tests for differences among the groups on the basis of their responses to the questions.

This table shows there was no difference significant at an acceptable level between the responses of the "A S Group" members and those of the "D S Group" members to the first question, but that there was a difference significant at the .01 level between the "A S Group" members and those of the "S D Group," and a difference significant at the

TABLE 40

Results of Tests for Differences of Opinions among the Three Groups of Procedures Employed in Hiring Rehabilitation Counselors

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	Yes	Yes	Yes	No
2	Yes	No	No	No	Yes	No
3	Yes	Yes	Yes	Yes	Yes	No
4	Yes	Yes	Yes	Yes	No	No

.05 level between the "D S Group" members and those of the "S D Group" on the question. The differences were caused by higher percentages of the "D S Group" and "S D Group" members indicating counselors should be natives of the area they serve.

There were significant differences in responses between the "A S Group" members and the "D S Group" members to the question about whether they believed rehabilitation counselors should have special training. The "D S Group" members and the "S D Group" members also differed significantly in their responses to this question. Higher percentages of the "A S Group" and "S D Group" members indicated a belief that counselors should receive special training.

The groups were all different from each other at the .05 level in their responses to the question concerning selecting and hiring of rehabilitation counselors. The differences were caused by 73.52 percent of the "A S Group" members indicating approval of the system employed in selecting and hiring counselors; while the "D S Group" and "S D Group" members gave only 35.48 and 12.50 percent respectively of positive responses to this question.

The "A S Group" differed from each of the other groups at a significant level on the question about the possibility of politics being involved in the hiring of rehabilitation counselors; only a small minority affirmed the question. The "D S Group" and the "S D Group" did not differ at an acceptable level of significance on this question; however, a higher percentage of the "S D Group" members indicated they believed politics were involved.

Section XI

The questions in this section were intended to obtain information from members of the three groups concerning their opinions about the expenditure of tax money for vocational rehabilitation purposes. These questions were asked:

1) Do you believe vocational rehabilitation is a profitable investment for society?
2) Do you believe money should be invested in cases even though the outcome is uncertain?
3) Do you believe people should receive services from this agency even though they do not plan to obtain a job which will pay them money?
4) Do you believe Vocational Rehabilitation Services should own their facilities?

Table 41 shows information on the positive responses of members of the three groups to questions regarding their opinions about the expenditure of tax money for vocational rehabilitation purposes.

This table shows that 91.17 percent of those who had accepted and received services indicated they believed the expenditure of tax money for vocational rehabilitation purposes was a profitable invest-

TABLE 41

Patterns of Data on Positive Responses to Questions about Expenditure of Tax Money for Vocational Rehabilitation Services

Questions	Positive Responses "A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
1	31	91.17	11	35.48	16	50.00
2	26	76.47	14	45.16	14	43.75
3	25	73.52	11	35.48	5	15.62
4	30	88.23	24	77.42	27	84.37

ment for society, but only 35.48 percent of the "D S Group" took this position. It is interesting to note that even though they had been denied services, a higher percentage of the members of the "S D Group" than of the "D S Group" gave positive responses to this question.

Members of the "A S Group" indicated a fairly high percentage (76.47) percent) of positive responses to the question about spending money on people when the outcome cannot be foretold. Less than 50 percent of the "D S Group" members and the "S D Group" members gave positive responses to this question.

The "A S Group" members again have a fairly high percentage (73.52 percent) of positive responses to the question about whether a person should receive services who doesn't plan to get a money-paying job. It can be seen in the table that the percentage of the "D S Group" members who took this position was much lower and that the "S D Group" members gave the lowest percentage (15.62 percent) of positive responses to this question.

All three groups gave a fairly high percentage (from 77.42 to 88.23 percent) of positive responses to the question about whether they believed Vocational Rehabilitation Services should own their facilities.

Table 42 shows the results of tests for differences of opinions

among the groups on the basis of their responses to questions about expenditure of tax money for vocational rehabilitation purposes.

On the question about vocational rehabilitation being a profitable investment for society, the positive responses of the members of "A S Group" differed at both the .05 and .01 level from those of both the "D S Group" and "S D Group" members. This was also the situation with regard to the responses of the groups to the questions about whether money should be invested in uncertain cases and people be rendered services who do not plan to obtain a money-paying job. The

TABLE 42

Results of Tests for Differences of Opinions among the Groups about Expenditures of Tax Money for Vocational Rehabilitation Services

Questions	Significant Differences					
	"AS Group"&"DS Group"		"AS Group"&"SD Group"		"DS Group"&"SD Group"	
	.05	.01	.05	.01	.05	.01
1	Yes	Yes	Yes	Yes	No	No
2	Yes	Yes	Yes	Yes	No	No
3	Yes	Yes	Yes	Yes	No	No
4	No	No	No	No	No	No

"A S Group" members gave the highest percentage (73.52 percent) of positive responses to this question. The differences were caused by the members of the "A S Group" giving higher percentages of positive responses to these questions.

There were no significant differences among the groups about whether they believed Vocational Rehabilitation Services should own their facilities. A high percentage (from 77.42 to 88.23 percent) of each group responded positively to this question.

Section XII

The questions in this section were intended to obtain information from members of the groups concerning their opinions about disability determination policies and procedures of Vocational Rehabilitation Services. These questions were asked:

1) Do you agree with the policy that a member of the medical profession must first determine a person is disabled before services can be provided?

2) Do you agree with the policy that a rehabilitation counselor must decide that a disability constitutes a handicap to employment before services can be rendered?

3) Do you agree that a rehabilitation counselor must decide there are reasonable expectations that vocational rehabilitation services may render an individual ready for employment before the person will be accepted for services?

Table 43 presents information on the positive responses of members of the three groups to questions concerning their opinions of disability determination policies and procedures of Vocational Rehabilitation Services.

This table shows that a fairly high percentage (from 83.87 to 94.11 percent) of the members of each group indicated agreement with the first of the questions. The responses to the second and third questions were very similar by each of the groups. The "A S Group" was fairly high in its percentages (85.30 percent for each question) of positive responses; the "D S Group" was lower in percentages (58.06 and 64.5 percent) of positive responses; and the "S D Group" was quite low (12.50 percent) in percentages of positive responses to each of these questions.

Table 44 reveals the results of tests for differences of opinions among the groups on the basis of their responses to questions about disability determination policies and procedures of Vocational Rehabilitation Services.

There were no differences significant at the .05 level among the groups in their responses to the questions about a member of the medical profession first determining that an individual is disabled before services can be provided. As the table shows, each of the groups were fairly strong in support of this policy (from 83.87 to 94.11 percent).

TABLE 43

Patterns of Data on Positive Responses to Questions about Disability Determination Policies and Procedures

Questions	Positive Responses					
	"A S Group"		"D S Group"		"S D Group"	
	Number	%	Number	%	Number	%
1	32	94.11	26	83.87	30	93.75
2	29	85.30	18	58.06	4	12.50
3	29	85.30	20	64.51	4	12.50

There were differences of opinions, significant at the .05 level, among the groups on the policy that requires a rehabilitation counselor to recognize a disabled individual as vocationally handicapped before the disabled person can receive services. The "A S Group" members strongly supported (85.30 percent) but the members of the other two groups did not, especially those of the "S D Group" who gave only 12.50 percent approval to this policy. Many of the "S D Group" members who were interviewed indicated they believe some kind of review or appeal board should be established in each county, so that an individual who is dissatisfid with a ruling by a rehabilitation counselor could appeal the decision.

TABLE 44

Results of Tests for Differences of Opinions among the Groups Concerning Eligibility Determination Policies and Procedures

Questions	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	No	No	No	No
2	Yes	No	Yes	Yes	Yes	Yes
3	Yes	No	Yes	Yes	Yes	Yes

There were also differences significant at the accepted level among the groups in their responses to the question about a rehabilitation counselor having to decide there are favorable chances for success before an individual can be rendered services. Here again, the "A S Group" members strongly approved (85.30 percent) this policy; while the "D S Group" members gave 64.51 percent approval, and the "S D Group" members gave only 12.50 percent approval. Many of the "A S Group" members who were interviewed expressed doubt regarding a counselor being able to actually predict outcome.

Section XIII

The questions in this section were intended to obtain information from members of the groups concerning their opinions about general understanding of the program. These questions were asked:

1) Do you believe this agency is operated free of politics?
2) Do you believe people in general understand this program?
3) Do you believe that vocational rehabilitation personnel should increase their efforts to familiarize the public with this program?

4) Do you believe information about this program is being withheld from some people?

Table 45 shows information on the positive responses of members of the three groups to questions concerning their opinions about general understanding of the program.

TABLE 45

Patterns of Data on Positive Resonses to Questions about Public Understanding of the Program

Questions	Positive Responses "A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
1	17	50.00	11	35.48	6	18.75
2	6	17.65	4	12.90	0	.0
3	33	97.06	29	93.54	32	100.00
4	1	2.95	7	22.58	9	28.12

This table reveals that the highest percentage (50 percent) of positive responses was given by members of the "A S Group" to the question as to whether they believed vocational rehabilitation services are operated free of politics. This "S D Group" gave the lowest percentage (18.75 percent) of positive responses to this question, indicating many of all three groups, especially the "S D Group," believed politics are in some way involved in the operation of this agency.

Each of the groups gave a very low percentage (from 00.00 to 17.65 percent) of positive responses to the question, "Do you believe people in general understand this program?" Therefore, the groups were not very different in their opinions on this question. It is interesting to note that not a single member of the "S D Group" gave a positive response to this question.

It is also interesting to note the high percentages of positive responses to the question about whether vocational rehabilitation personnel should increase their efforts to familiarize the public with this program. The percentages of responses were not only high to this question, they were also very consistent.

The percentages of positive responses to the question as to whether they believed information was being withheld from some people were fairly low and consistent among the groups. It is interesting,

however, to observe that one member of the "A S Group" indicated a belief that information was being withheld from some people.

Table 46 shows the results of tests for differences of opinions among the groups on the basis of their responses to question about general knowledge of the program.

TABLE 46

Results of Tests for Differences of Opinions Among the Groups Concerning General Understanding of the Program

Question	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	Yes	Yes	No	No
2	No	No	Yes	Yes	Yes	No
3	No	No	No	No	No	No
4	Yes	No	Yes	Yes	No	No

Results of the tests on this section show that the only difference significant at the .05 level among the groups on the first question was between the "A S Group" and the "S D Group"; a higher percentage (50 percent) of the "A S Group" members affirmed the question. There was also a difference significant at the accepted level and in the same direction between these two groups on the second question, and between the "D S Group" and "S D Group" on this same question.

There were no differences significant at an acceptable level among the groups on the question as to whether they believed vocational rehabilitation personnel should increase their efforts to familiarize the public with the program. Members of each group gave a high percentage of positive responses to this question.

The "A S Group" differed from both the "D S Group" and "S D Group" at a significant level on the question about whether they believed information about the program was being withheld from some people, with higher percentages (22.58 and 28.12 percent) of the members of the latter two groups giving affirmative responses.

Section XIV

The questions in this section were intended to obtain information from members of the groups concerning their opinions about community attitudes toward the program. These questions were asked:

1) Do you believe people in your community are properly informed about vocational rehabilitation services?

2) Do you believe employers in your community are willing to employ handicapped individuals who have been rehabilitated?

3) Do you believe your community is concerned with helping handicapped individuals?

Table 47 shows information on the positive responses of members of the three groups to questions concerning their opinions about community attitudes toward vocational rehabilitation services.

TABLE 47

Patterns of Data on Positive Responses to Questions About Community Attitudes

Questions	Positive Responses "A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
1	7	20.59	2	6.45	1	3.12
2	10	29.41	5	16.13	2	6.25
3	15	44.11	8	25.80	7	21.87

This table shows that each of the groups gave a low percentage of positive responses to the question about whether they believed people in their communities were properly informed about vocational rehabilitation services. Each group also gave low percentages of positive responses to the question about whether they believed employers in their communities were willing to employ handicapped individuals after they were rehabilitated. The highest percentage (29.41 percent) of positive responses was given by the members of the "A S Group."

The "A S Group" gave the highest percentage (44.11 percent) of positive responses to the question about whether they believed their community is concerned about helping handicapped individuals. The "D S Group" and the "S D Group" did not differ very much in their responses to this question and they were both low.

Table 48 shows the results of tests for differences of opinion among the groups on the basis of their responses to questions about community attitude.

TABLE 48

Results of Tests for Differences of Opinions Among the Groups Concerning Community Attitudes

Question	Significant Differences					
	"AS Group" & "DS Group"		"AS Group" & "SD Group"		"DS Group" & "SD Group"	
	.05	.01	.05	.01	.05	.01
1	No	No	Yes	No	No	No
2	No	No	Yes	Yes	No	No
3	No	No	Yes	No	No	No

The results of tests for significant differences shown in this table reveal no differences significant at the .05 level between the "A S Group" and the "D S Group" on either of the questions.

However, the "A S Group" tested to be significantly different from the "S D Group" on each of the questions—the second question even at the .01 level—by giving higher percentages of positive responses to each question.

There were no differences significant at the .05 level between the "D S Group" and the "S D Group" in their responses to either of the questions.

Section XV

The questions in this section were intended to obtain information from members of the groups concerning their opinions about what should happen to this agency in the future. These questions were asked:

1) Do you believe services should be extended to more people?
2) Do you believe services are of long enough duration for an individual to become rehabilitated?
3) Do you believe vocational rehabilitation services should be merged with public assistance?
4) Do you believe vocational rehabilitation services should be discontinued?

Table 49 shows information on the positive responses of members of the three groups to questions concerning their opinions about what should happen to this agency in the future.

TABLE 49

Patterns of Data on Positive Responses to Questions About the Future of Vocational Rehabilitation Services

Questions	Positive Responses "A S Group" Number	%	"D S Group" Number	%	"S D Group" Number	%
1	34	100.00	19	61.29	27	84.37
2	29	85.30	5	16.13	1	3.12
3	15	44.11	12	38.70	11	34.37
4	1	2.95	0	0	0	0

This table reveals that 100 percent of the "A S Group" indicated they believed the services should be extended to more people, but only 61.29 percent of the "D S Group" expressed an agreement with this position; while 84.37 percent of the "S D Group" indicated they believed services should be expanded to include more people.

It is interesting to note that the group that had accepted and received services gave strong support (85.30 percent) to the position that services were of long enough duration for a person to become rehabilitated, while both the other groups, who for some reason did not receive services, gave very weak support to this position.

The three groups were fairly consistent in their percentages of positive responses to the question as to whether vocational rehabilitation services should be merged with public assistance; however, none of the groups gave as much as 50 percent support to this position.

It is interesting to note that only one individual among the ninety-seven interviewed expresed an opinion that vocational rehabilitation services should be discontinued, and it is more interesting when it is revealed in this table that this was an individual who had accepted and received services.

Table 50 shows the results of tests for differences of opinion among the groups on the basis of their responses to questions about what should happen to vocational rehabilitation services in the future.

As the table shows, the tests established the differences significant at an acceptable level among the groups, on the question of extending services to more people.

The differences between the "A S Group" and each of the other two groups, on the question of whether vocational rehabilitation services are of long enough duration for an individual to become rehabilitated, were significant even to the .01 level.

The differences were caused by the members of the "A S Group" giving 85.30 percent of their responses to this question in the affirmative, while the "D S Group" members gave only 16.13 percent of their responses in the affirmative, and the members of the "S D Group" gave a very low percentage (3.12 percent) of positive responses to this question.

There were no differences significant at the .05 level among the groups on the basis of the questions concerning merging vocational rehabilitation services with public assistance and discontinuing vocational rehabilitation services.

TABLE 50

Results of Tests for Differences of Opinions Among the Groups Concerning the Future of Vocational Rehabilitation Services

Questions	Significant Differences					
	"AS Group"&"DS Group"		"AS Group"&"SD Group"		"DS Group"&"SD Group"	
	.05	.01	.05	.01	.05	.01
1	Yes	Yes	Yes	No	Yes	No
2	Yes	Yes	Yes	Yes	No	No
3	No	No	No	No	No	No
4	No	No	No	No	No	No

CHAPTER III

Summary, Conclusions, Implications, and Recommendations

The purpose of this study was to determine whether three groups of referrals to Vocational Rehabilitation Services differ at an acceptable level of significance when compared on the basis of the following seven characteristics: (1) distance of residence from district Vocational Rehabilitation office, (2) family and vital statistics, (3) means of livelihood, (4) referral source, (5) disabling condition, (6) education, and (7) image referrals hold of Vocational Rehabilitation Services. The study was limited to referrals from thirty-nine eastern Kentucky counties whose cases were closed during the 1964 calendar year.

The referrals selected and included in the study were grouped according to the outcome of their respective cases with Vocational Rehabilitation Services. The individuals whose cases were closed during 1964 were categorized and grouped as follows: (1) the 699 individuals who accepted and received services–the "A S Group;" (2) the 306 individuals who declined to accept services–the "D S Group;" and (3) the 218 individuals to whom services were denied–the "S D Group."

Instruments were prepared for collecting the data, and information on the first six characteristics was obtained from records located in the district Vocational Rehabilitation offices serving the area. The data on the seventh characteristic were obtained by personal interviews.

The chi-square method of analysis was used to test for significance of differences among the groups on the basis of the first six characteristics and a formula based on the standard error or differences between proportions was used to test for differences significant at an acceptable level among the groups on the basis of the seventh characteristic. Accordingly, the data were statistically analyzed; and, although the findings failed to destroy the null hypotheses for some of the subordinate phases of some of the characteristics investigated, the findings in general made it necessary to reject the basic null hypotheses so that the following generalizations would appear to be established:

1) There is a difference significant at an acceptable level among the groups on the basis of distance of residence from a district Vocational Rehabilitation office.

2) There is a difference significant at an acceptable level among the groups on the basis of family and vital statistics.
3) There is a difference significant at an acceptable level among the groups on the basis of means of livelihood.
4) There is a difference significant at an acceptable level among the groups on the basis of referral source.
5) There is a difference significant at an acceptable level among the groups on the basis of disabling condition.
6) There is a difference significant at an acceptable level among the groups on the basis of educational level.
7) There is a difference significant at an acceptable level among the groups on the basis of the image they hold of the program.

Data on Distance of Residences from District Vocational Rehabilitation Offices

When the data on the distance of referrals' residences from district Vocational Rehabilitation offices were analyzed, there was a difference significant at the accepted level among all the groups and between all except the group that had declined services and the group to whom services had been denied by Vocational Rehabilitation personnel. The differences were caused by the group that declined services and the group to whom services were denied, each containing higher percentages of members living within the counties adjoining the counties containing district offices serving them; while the group that accepted and received services contained a higher percentage of those living within the counties containing district offices than either of the other two groups. This is to say, the members of the group accepted for services are more likely, percentagewise, to live near the center than are those of the groups who declined services or had services denied them.

Data on Family and Vital Statistics

Four variables were investigated for differences within the area of this characteristic. They were sex, age, marital status, and dependents.

When the data on the sex of referrals were analyzed, there were differences significant at the accepted level among all the groups and between all except the group that declined services and the group to whom services were denied. The differences were caused by higher percentages of the latter two groups being males. That is to say, a higher percentage of female referrals accepted and received services than of the male referrals.

The data on the ages of referrals were analyzed, and there were differences significant at the accepted level among all the groups and between all except the group that accepted and received services and the group to whom services were denied. The differences were caused by those two groups containing higher percentages of individuals within the older age brackets than were contained among the group who declined services.

When the data on marital status and on dependents of referrals were analyzed, there appeared no difference significant at the accepted level among all the groups or between any of the groups.

Data on Means of Livelihood

Two variables were investigated for differences within the area of this characteristics. They were the primary sources of support of referrals and their principal employment before referral.

When the data on the primary sources of support were analyzed, ever, there were differences significant at the accepted level among all the groups or between any of the groups.

When the data on the principal employment were analyzed, however, there were differences significant at the accepted level among all the groups and between all except the group that declined services and the group to whom services were denied. The differences were caused by the group that accepted and received services containing higher percentages of individuals who had been employed in clerical work, farming, homemaking, and as students, while a higher percentage of the group to whom services were denied had been employed in construction work, factory work, and labor types of employment. It appears, therefore, that the principal employment of an individual before referral has some influence in determining whether that individual is accepted or rejected for services.

Data on Referral Sources

When the data on the referral sources of referrals were analyzed, there were differences significant at the accepted level among all the groups and between all the groups. The differences were caused by the group accepted for services containing a higher percentage of individuals who had been referred by physicians; the group who declined services containing a higher percentage of individuals who had been referred by public schools; and the group to whom services were denied containing a higher percentage of individuals who had been referred by the Public Health Department and the Bureau of Old-Age and Survivors' Insurance.

Data on Disabling Conditions

The data on the disabling conditions of referrals were analyzed, and there were differences significant at the accepted level among all the groups and between all the groups. The differences were caused primarily by: (1) higher percentages of the group accepted for services having amputations, orthopedic impairments of lower limbs, ailments caused by tuberculosis, and hernia; (2) higher percentages of the group who declined services having orthopedic impairments of the trunk of the body, and mental retardation; and (3) higher percentages of the group to whom services were denied having orthopedic impairments of the upper limbs, and visual impairments.

Data on Education

The data on the educational level of referrals were analyzed, and there were differences significant at the accepted level among all the groups and between the group accepted for services and the group who declined services. The differences were caused by the group accepted for services containing higher percentages of members who had completed the higher grade levels of schooling.

Data on Image Referrals Hold of Vocational Rehabilitation Services

As previously stated, data on this characteristic were obtained by personal interviews. The data on the positive responses of the interviewees were analyzed; and although the differences among the groups did not test to be significant at an acceptable level on all the questions, the findings in general indicated that the three groups differed significantly, with the members of the group accepted for services holding the most favorable views, and those of the group to whom services were denied holding the least favorable views of Vocational Rehabilitation Services. To be more specific, it appears that the following generalizations on the image referrals hold of this agency are in order:

1) Referrals who accepted and received services indicated high approval of the procedures employed in processing referrals, the efficiency, and the objective of the program; while members of each of the other two groups differed from this position, especially those to whom services had been denied.
2) The accomplishments of the program also received high approval by the individuals who had received services, while those

who declined services or were denied services took the opposite position on this phase of the program.

3) There was not a great deal of difference of opinions among the groups concerning adequacy of the program; however, members of all the groups indicated that the program is not completely adequate for meeting the needs of the area.

4) There appeared to be a tendency on the part of members of each group to view Vocational Rehabilitation Services as similar to the public assistance program, but the groups differed in their views regarding the possibility of politics being involved in the program, with those who had been denied services strongly indicating that they believed politics were involved.

5) There was a difference of opinions among the groups concerning the kinds of individuals accepted for services. Individuals who had received services indicated they believed referrals who need and deserve services, receive them; while those who had been denied services disagreed strongly with this position.

6) There were some differences among the groups in their opinions regarding time lapses from referral to closure, with individuals who had been denied services indicating more dissatisfaction on this issue than those of either of the other two groups.

7) Individuals who had accepted and received services had the most accurate understanding of the sources of funds for vocational rehabilitation purposes. Referrals who had been denied services also had a fairly accurate understanding of the sources of funds.

8) Referrals who had accepted and received services indicated high approval of the system employed for selecting and hiring rehabilitation counselors, while those who had been denied services indicated strong disapproval of the system.

9) There were also differences of opinions among the groups on the questions concerning expenditures of tax money for vocational rehabilitation purposes, as presently practiced. Individuals who had accepted and received services indicated high approval of present policies and procedures on this issue, while those who declined services and those who were denied services differed with them. The latter two groups strongly disagreed with the policy of providing physical restoration services to individuals who do not plan to obtain a job that will pay them money.

10) On the matter of disability determination policies and procedures, the members of each group indicated high approval of the general medical examination, but the individuals who had been denied services strongly disagreed with the procedure of permitting only one person—the counselor—to make the final decisions regarding eligibility.

11) There was little difference of opinions among the groups concerning public understanding of the program. The members of each group indicated there is a need for providing the public with more information on the program.

12) There was not a great deal of difference of opinions among the groups regarding community attitudes toward handicapped individuals. The members of each group indicated a belief that community attitudes are not very favorable toward the disabled.

13) Individuals who had received services and those who had been denied services agreed that services should be expanded, but individuals who had declined services did not agree with them. There was little difference of opinions among the groups on the question of merging vocational rehabilitation and public assistance—more than one out of three individuals from each of the groups indicated this should be done. Ali except one of those interviewed gave strong support to continuing the program.

Conclusions Summarized

The findings of this study were:

1) Referrals living near district Vocational Rehabilitation offices are more likely to accept and to be accepted for services, while conversely, those living farther from a center are more likely to decline services or to have services denied them.

2) Males are more likely to decline services, and to have services denied them.

3) Referrals under twenty years of age are more likely to decline services than are those in any of the older age brackets.

4) There is no difference significant at an acceptable level in marital status among the groups.

5) There is no difference significant at an acceptable level in number of dependents among the groups.

6) There is no difference in primary sources of support among the groups that is significant at the accepted level.

7) Referrals who had been employed in clerical work, farming, homemaking, or as students are more likely to accept services, while those who have been employed in construction work, factory work, or labor types of employment are more likely to decline services, or to have services denied them.

8) Referrals who have been referred by tuberculosis hospitals, physicians, or individuals other than the client are more likely to accept services, while individuals referred by public schools are more likely to decline services; and individuals referred by the Public Health Department, or the Bureau of Old-Age and Survivors' Insurance are more likely to be denied services.

9) Referrals with disabilities caused by amputations, orthopedic impairments of lower limbs, tuberculosis, or hernia are more likely to accept services, while individuals with disabilities caused by orthopedic impairments of the trunk of the body or mental retardation are more likely to decline services; and referrals with orthopedic impairments of upper limbs, or visual impairments are more likely to be denied services.

10) Referrals with higher education levels are more likely to accept services.

11) As one would expect, individuals who accepted and received services appeared to hold a much more favorable image of the agency than those of either of the other two groups. Also, as one would expect, the individuals who were denied services appeared to hold the least favorable image of the agency. It is true that the individuals who received the services indicated the program is not adequate for meeting the needs of the area, that the program needs more favorable publicity, and needs to be expanded. The members of the group who were denied services indicated that the program is discriminatory, lacking in efficiency, withholding information, and involved in politics. The members of the group who declined services tended to agree more with those who were denied services but were not quite as critical.

Implications and Recommendations

The findings of this study appear to support the following implications or recommendations for the Bureau of Vocational Rehabilitation Services:

1) The percentage of referrals who accept services could be in-

creased by establishing more district Vocational Rehabilitation offices strategically dispersed throughout the area.

2) A study should be conducted of referrals who decline services and the findings of this study should be used in an effort to increase the percentage of individuals who accept services. Particular emphasis should be given to trying to determine *why* high percentages of the following groups decline services: (1) males, (2) 16-19 year-old individuals, (3) construction workers and laborers, (4) referrals from public schools, Public Health Departments, and the Bureau of Old-Age and Survivors' Insurance, and (5) referrals with back ailments or mental retardation.

APPENDIX I

INFORMATION ITEMS FOR SURVEY OF NEEDS AND RESOURCES FOR VOCATIONAL REHABILITATION IN A THIRTY-NINE COUNTY AREA OF EASTERN KENTUCKY

January 1-December 31, 1964

NAME:_____ADDRESS:_____

Words

**1-4 Identification number:_____

5 Page identity: 1)

** 6 Districts and area centers: Area supervisors:

1) Ashland, Ky.---------District----------Flege, R. F.
2) Bowling Green, Ky.---Dist. & Area Center---Baskett, Bessie R.
3) Harlan, Ky.----------Dist. & Area Center---Burkhart, John M.
4) Lexington, Ky.-------Dist. & Area Center---Flege, R. F.
5) Paintsville, Ky.-----District----------Mullins, Basil*
6) Somerset, Ky.--------District----------Burkhart, John M.

7-8 Counselors:

01) Augustyn, William F.
02) Connley, Ted L.
03) Heath, Flenor M.
04) Mullins, Basil*
05) Parkey, Donald K.
06) Roy, Cordell
07) Smith, W. M.
08) Stigall, Paul
09) Taylor, Esther K.(Mrs. Mason)
10) Wilson, Emily
11) Other_____

9 Special counselors:

1) Archer, Zella (M.R.)
2) Burchett, Carroll (P.A.)
3) Cawood, Billy Joe (M.R.)
4) Killion, Clarence (P.A.)
5) Linville, Clyde (M.R.)
6) Other_____

---

*Serves as area supervisor and counselor.

**This instrument was used to collect data for the broader study, Vocational Rehabilitation Needs and Resources in Eastern Kentucky, conducted by the Bureau of School Service. Only the sections marked with a double asterisk have been used for the purposes of this study.

**10-11 Counties:

01)	Adair	14)	Jackson	27)	Menifee
02)	Bath	15)	Johnson	28)	Morgan
03)	Bell	16)	Knott	29)	Owsley
04)	Breathitt	17)	Knox	30)	Perry
05)	Carter	18)	Laurel	31)	Pike
06)	Casey	19)	Lawrence	32)	Powell
07)	Clay	20)	Lee	33)	Pulaski
08)	Clinton	21)	Leslie	34)	Rockcastle
09)	Cumberland	22)	Letcher	35)	Rowan
10)	Elliott	23)	Lewis	36)	Russell
11)	Estill	24)	McCreary	37)	Wayne
12)	Floyd	25)	Magoffin	38)	Whitley
13)	Harlan	26)	Martin	39)	Wolfe

Words

** 12 Sex: 1) Male 2) Female 9) Not reported

** 13 Age: 1) 60 and over 5) 20-29
2) 50-59 6) 16-19
3) 40-49 7) Under 16
4) 30-39 9) Not reported

** 14 Marital status: 1) Married 2) Single 3) Divorced
4) Separated 9) Not reported

**15-16 Number of dependents:_____ 99) Not reported

**17-18 Highest grade level reached in school:_____ 99) Not reported

**19-20 Primary source of support when contact was made:_____

_____ 99) Not reported

**21-22 Principal employment:_____ 99) Not reported

23-24 Classification of referral source:*

Educational institution:
01) College or university (offering degrees at or beyond bachelor's level) (0001)
02) Other college (offering less than bachelor's degree); includes business college or school, junior college, and other specialized schools and colleges (0002)

***Numbers in parentheses following each referral source and disabling condition represent actual coding system used by Vocational Rehabilitation Services.

03) Private vocational school (0003)
04) Public vocational school (0004)
05) Public elementary or high school (0005)
06) Private elementary or high school (0006)
07) School for the physically and mentally handicapped (0007)
08) Other educational institution (0008)

Hospitals and sanatoriums:

09) State mental hospital (0110)
10) Other mental hospital (0111)
11) State or local tuberculosis hospital or sanatorium (0112)
12) Other tuberculosis hospital or sanatorium (0113)
13) General hospital (0114)
14) Hospital or other specialized facility for chronic conditions (0115)
15) Other hospital or clinic, n.e.c. (0116)

Other health agencies (public and private), including rehabilitation centers:

16) Rehabilitation center (0217)
17) State Crippled Children's Agency (0218)
18) State or local public health department or agency (including public health nurse, clinics, etc) (0219)
19) Arthritis and rhuematism organizations(private) (0220)
20) Blind organization (private) (0221)
21) Cancer organization (private) (0222)
22) Cerebral palsy organization (private) (0223)
23) Crippled children and adult organization (private) (0224)
24) Deaf and hearing organization (private) (0225)
25) Epilepsy organization (private) (0226)
26) Heart organization (private) (0227)
27) Mental retardation organization (private) (0228)
28) Mental health organization (private) (0229)
29) Multiple sclerosis organization (private) (0230)
30) Poliomyelitis organization (private) (0231)
31) Tuberculosis organization (private) (0232)
32) Other health agency or organization (public or private) (0233)
33) Physicians, not elsewhere classifiable (0334)
34) Bureau of Old-Age and Survivors' Insurance (0441)

Workmen's compensation agencies:

35) State workmen's compensation agency (0543)
36) U. S. Bureau of Employees' Compensation (Federal employees; longshoremen; etc.) (0544)

Welfare agencies (public and private):

37) Public assistance (State and local government) (0650)
38) Private welfare agency (0651)
39) United Mine Workers Welfare and Retirement Fund (0652)
40) Other labor union welfare fund (0653)
41) Civic organizations and clubs (0654)
42) Community advisory center (0655)

43) State employment service (0762)
44) Artificial appliance company (0870)
45) Individual, except client himself (0973)
46) Self-referred persons, not elsewhere classifiable (1074)

Other source:

47) Insurance company (1140)
48) State temporary disability insurance agency (1142)
49) Selective Service System (including local boards) (1160)
50) State vocational rehabilitation agency (1161)
51) Public official (local, State, & Federal, n.e.c.) (1163)
52) U. S. Divil Service Commission (1164)
53) Government agency (local, State, & Federal) other than listed above (1165)
54) Employer (1171)
55) Labor union (1172)
56) Other, n.e.c. (1175)
99) Referral source not reported (XX99)

***25-26 Major disabling condition:

01) Amputations (0002-0419)

Orthopedic impairments:

02) Upper part of body--limbs (0521-0639)
03) Lower part of body--limbs (0742-0855)
04) Trunk of body (0957-1276)

Blindness and visual defects:

05) Blind in both eyes (1379)
06) Other visual impairments (1479-1482)

Deafness and impaired speech:

07) Deaf and unable to talk (1583)
08) Deaf and able to talk (1684)
09) Other impairments of hearing (1785)
10) Impaired speech (1887-1888)
11) Psychosis (1989)
12) Psychoneurosis (1990)

Other personality disorders:

13) Character and behavior disorders (3091)
14) Alcoholism (not coded)
15) Mental retardation (2092)
16) Cardiac diseases (2194)
17) Epilepsy (2296)
18) Tuberculosis, pulmonary (2399)

Disabling conditions not elsewhere classified:

19) Arthritis (2493)
20) Diabetes (2495)
21) Hernia (2497)
22) Migraine (2498)
23) Other (YY)
99) Not reported (2900)

** 27 Action taken on referral: 1) Accepted 3) Deferred
2) Rejected 9) Not reported

**28-29 Primary reason why individual was not accepted:

01) Age
02) Residence
03) Applicant refused to accept services
04) Did not respond or appear
05) Unable to locate or contact
06) Insufficient disability
07) No employment handicap
08) Handicap too severe
09) Terminal illness
10) Multiple disabilities
11) Presently employed
12) Lack of motivation
13) Fear of losing present aid
14) Refuses to leave area for employment
15) No opportunity for employment
16) Cannot leave family unsupported
17) Culcurally deprived--illiterate
18) Other
98) Irrelevant
99) Not reported

30 Person referred elsewhere for services: 1) Yes 2) No
9) Not reported

**31-32 Status of case as of December 31, 1964:

01) Referral (Status 0)
02) Accepted for services (Status 1)
03) Plans made (Status 2)
04) Training and physical restoration (Status 3)
05) Physical restoration (Status 4)
06) Training (Status 5)
07) Ready for employment (Status 6)
08) Employed (Status 7)
09) Service interrupted (Status 8)
10) Successful closure (Status 12)
11) Closure but unemployed (Status 13)
12) Transferred (Status 14)
13) Closed other (Status 15)

If case is active (Statuses 1 through 7):

33-34 Date of referral (Status 0):_____99) Not reported

35-36 Date of acceptance (Status 1):_____98) Irrelevant
99) Not reported

37-38 Date of making of plan (Status 2):_____98) Irrelevant
99) Not reported

39-40 Date of reaching readiness for employment (Status 6):_____
98) Irrelevant
99) Not reported

41-42 Date employed (Status 7):_____ 98) Irrelevant
99) Not reported

If case is closed (Statuses 12 through 15): (Calculate to nearest month.)

43-44 Time from referral to acceptance (Status 0 to Status 1):_____
98) Irrelevant
99) Not reported

45-46 Time from acceptance to closure (Status 1 to 12,13,14,or 15):__
98) Irrelevant
99) Not reported

47-48 To prepare for employment:_____ 98) Irrelevant
99) Not reported

49-50 From employment to closure:_____ 98) Irrelevant
99) Not reported

51-55 Cost of services to nearest dollar (budgeted):_____
99998) Irrelevant
99999) Not reported

56-59 For physical retoration (actual):_____ 9998) Irrelevant
9999) Not reported

60-63 For training(actual):_____ 9998) Irrelevant
9999) Not reported

64-67 For maintenance and transportation to obtain service (actual):_____ 9998) Irrelevant
9999) Not reported

68-71 Other (actual):_____ 9998) Irrelevant
9999) Not reported

72 If deferred, why?

1) Lack of available resource
2) Lack of funds to purchase services
3) Lack of time
4) Too young or still in school
5) Other
8) Irrelevant
9) Not reported

73-74 Employment objective:_____ 98) Irrelevant
99) Not reported

75 General level of work done by client:_____ 98) Irrelevant
99) Not reported

76 General level of work planned for client:_____ 98) Irrelevant
99) Not reported

77 No information for second page -- this is all of data.
98) Irrelevant
99) Not reported

SECOND IBM SHEET STARTS HERE

Words
1- 4 Identification number_____.

5 Page identity: 2)

Final job placement (Status 12):

6- 7 Kind of job:_____ 98) Irrelevant
99) Not reported

8- 9 Location of job:_____ 98) Irrelevant
99) Not reported

10-12 Rate of pay per week (to nearest dollar)_____ 98) Irrelevant
99) Not reported

13-14 If case is closed without achieving employment (Status 13), why?

_____

_____ 98) Irrelevant
99) Not reported

If service was interrupted (Status 8):

15-16 Why:_____

_____ 98) Irrelevant
99) Not reported

17-18 When:_____ 98) Irrelevant
99) Not reported

19-20 For how long (in months to nearest month):_____ 98) Irrelevant
99) Not reported

Resources for services called for in plan (or actually utilized if case is closed):

Name of resource (Words 21-23)	Location (Words 24-25)	Kind of Service (Words 26-27)
98) Irrelevant 999) Not reported	98) Irrelevant 99) Not reported	98) Irrelevant 99) Not reported

APPENDIX II

INTERVIEW QUESTIONS*

_____, I would like to ask you some questions concerning Vocational Rehabilitation Services.

Section I

First, I would like to ask what you believe about the procedures employed by Vocational Rehabilitation Services in handling the cases of individuals referred to this agency for services.

1. What do you believe about the ways a person may be brought to the attention of Vocational Rehabilitation Services?

   Approve_____,Disapprove_____, No opinion_____.

2. What do you think about the way Vocational Rehabilitation counselors contact individuals referred for services?

   Approve_____,Disapprove_____, No opinion_____.

3. What is your opinion of the time, place, and manner in which the conference between the counselor and individual is conducted?

   Approve_____,Disapprove_____, No opinion_____.

4. What is your opinion of the way the general medical examination is conducted?

   Approve_____,Disapprove_____, No opinion_____.

5. What do you think about the procedure employed for accepting or rejecting individuals referred for services?

   Approve_____,Disapprove_____, No opinion_____.

---

*The percentages of positive responses were used as the basis for making comparisons among the groups.

Section II

Next, I would like to ask you some questions about the efficiency of the program--how well the program actually operates.

1. What is your opinion of the use made of funds appropriated for vocational rehabilitation services?

   Approve_____, Disapprove_____, No opinion_____.

2. What do you think about the way rehabilitation counselors spend their time?

   Approve_____, Disapprove_____, No opinion_____.

3. What do you believe about the use made of facilities by this agency?

   Approve_____, Disapprove_____, No opinion_____.

Section III

Now, I would like to have your opinion regarding the objective of the program--restoring vocationally handicapped individuals to a state of employability.

1. What do you think about the guidance services provided by this agency?

   Approve_____, Disapprove_____, No opinion_____.

2. What do you believe about Vocational Rehabilitation Services training individuals for a new job?

   Approve_____, Disapprove_____, No opinion_____.

3. What is your opinion of Vocational Rehabilitation Services providing physical restoration services?

   Approve_____, Disapprove_____, No opinion_____.

4. What do you think about this agency providing services to individuals who have never had a paying job?

   Approve_____, Disapprove_____, No opinion_____.

5. What do you believe about only the individuals who show promise of becoming employable being accepted for services?

   Approve_____, Disapprove_____, No opinion_____.

Section IV

Next, I would like to have your opinion about the actual accomplishments of the program.

1. What is your opinion of the counseling services provided by this agency?

   Approve_____, Disapprove_____, No opinion_____.

2. What do you think about the training services provided by this agency?

   Approve_____, Disapprove_____, No opinion_____.

3. What is your opinion of the physical restoration services provided by this agency?

   Approve_____, Disapprove_____, No opinion_____.

Section V

Now, I would like to have your opinion regarding the adequacy of this program in eastern Kentucky--how well the program is meeting the needs for vocational rehabilitation services.

1. What is your opinion concerning the amount of money available to eastern Kentucky for vocational rehabilitation services?

   Adequate_____, Inadequate_____, No opinion_____.

2. Do you believe there is an adequate number of personnel engaged in providing services for this area?

   Adequate_____, Inadequate_____, No opinion_____.

3. Do you believe the facilities available to the area are adequate?

   Adequate_____, Inadequate_____, No opinion_____.

Section VI

I would like to have your opinion concerning the type of program provided by Vocational Rehabilitation Services.

1. Do you view the vocational rehabilitation program as similar to the public assistance program?

   Yes_____, No_____, No opinion_____.

2. Do you view the vocational rehabilitation program as an educational program?

   Yes_____, No_____, No opinion_____.

3. Do you believe vocational rehabilitation is a program that is helping people who actually need and deserve help?

   Yes_____, No_____, No opinion_____.

4. Do you believe this program operates similar to a political patronage program--rewards friends?

   Yes_____, No_____, No opinion_____.

Section VII

I would like to have your opinion regarding the individuals who are accepted for services.

1. Do you believe individuals with the greatest need are more likely to be accepted for services?

   Yes_____, No_____, No opinion_____.

2. Do you believe the most interested individuals are always accepted for services?

   Yes_____, No_____, No opinion_____.

3. Do you believe individuals with the best chances for success are the ones accepted?

   Yes_____, No_____, No opinion_____.

Section VIII

Now, I would like to have your opinion regarding the time element involved in handling the cases of referrals.

1. What is your opinion of the time lapse between referral and contact?

   Approve_____, Disapprove_____, No opinion_____.

2. What is your opinion of the time lapse between contact and interview?

   Approve_____, Disapprove_____, No opinion_____.

3. What is your opinion of the time lapse between interview and acceptance or rejection?

   Approve_____, Disapprove_____, No opinion_____.

Section IX

What is your opinion regarding the source or sources of funds used for vocational rehabilitation services?

1. Do you believe funds are provided by the county unit of government?

   Yes_____, No_____, No opinion_____.

2. Do you believe funds are provided by the state unit of government?

   Yes_____, No_____, No opinion_____.

3. Do you believe funds are provided by the federal government?

   Yes_____, No_____, No opinion_____.

4. Do you believe funds are provided by more than one of these units of government?

   Yes_____, No_____, No opinion_____.

Section X

What is your opinion regarding the selecting and hiring of vocational rehabilitation personnel?

1. Do you believe rehabilitation counselors should be natives of the area they serve?

   Yes_____, No_____, No opinion_____.

2. Do you believe rehabilitation counselors need special training for this type of work?

   Yes_____, No_____, No opinion_____.

3. Do you believe the procedure employed for selecting and hiring rehabilitation counselors is a good one?

   Yes_____, No_____, No opinion_____.

4. Do you believe politics are involved in selecting and hiring of counselors?

   Yes_____, No_____, No opinion_____.

Section XI

What is your opinion regarding expenditure of tax money for vocational rehabilitation services?

1. Do you believe that vocational rehabilitation is a profitable investment for society?

   Yes_____, No_____, No opinion_____.

2. Do you believe money should be invested in cases even though the outcome is uncertain?

   Yes_____, No_____, No opinion_____.

3. Do you believe people should receive services from this agency even though they do not plan to obtain a job which will pay them money?

   Yes_____, No_____, No opinion_____.

4. Do you believe Vocational Rehabilitation Services should own their facilities?

   Yes_____, No_____, No opinion_____.

Section XII

Generally speaking, what is your opinion regarding disability determination policies and procedures employed by Vocational Rehabilitation Services?

1. Do you agree with the policy that a member of the medical profession must first determine a person is disabled before services can be provided?

   Yes_____, No_____, No opinion_____.

2. Do you agree with the policy that a rehabilitation counselor must decide that a disability constitutes a handicap to employment before services can be rendered?

   Yes_____, No_____, No opinion_____.

3. Do you agree that a rehabilitation counselor must decide there are reasonable expectations that vocational rehabilitation services may render an individual ready for employment before the person will be accepted for services?

   Yes_____, No_____, No opinion_____.

Section XIII

What is your opinion regarding the actual operation of this agency?

1. Do you believe this agency is operated free of politics?

   Yes_____, No_____, No opinion_____.

2. Do you believe that people in general understand this program?

   Yes_____, No_____, No opinion_____.

3. Do you believe that vocational rehabilitation personnel should increase their efforts to familiarize the public with this program?

   Yes_____, No_____, No opinion_____.

4. Do you believe information about this program is being withheld from some people?

   Yes_____, No_____, No opinion_____.

Section XIV

Now, I would like to have your opinion regarding community involvement in the program.

1. Do you believe people in your community are properly informed about vocational rehabilitation services?

   Yes_____, No_____, No opinion_____.

2. Do you believe employers in your community are willing to employ handicapped individuals who have been rehabilitated?

   Yes_____, No_____, No opinion_____.

3. Do you believe your community is concerned with helping handicapped individuals?

   Yes_____, No_____, No opinion_____.

Section XV

Last, what is your opinion regarding the continuation of vocational rehabilitation services?

1. Do you believe services should be extended to more people?

   Yes_____, No_____, No opinion_____.

2. Do you believe services are of long enough duration for an individual to become rehabilitated?

   Yes_____, No_____, No opinion_____.

3. Do you believe vocational rehabilitation services should be merged with public assistance?

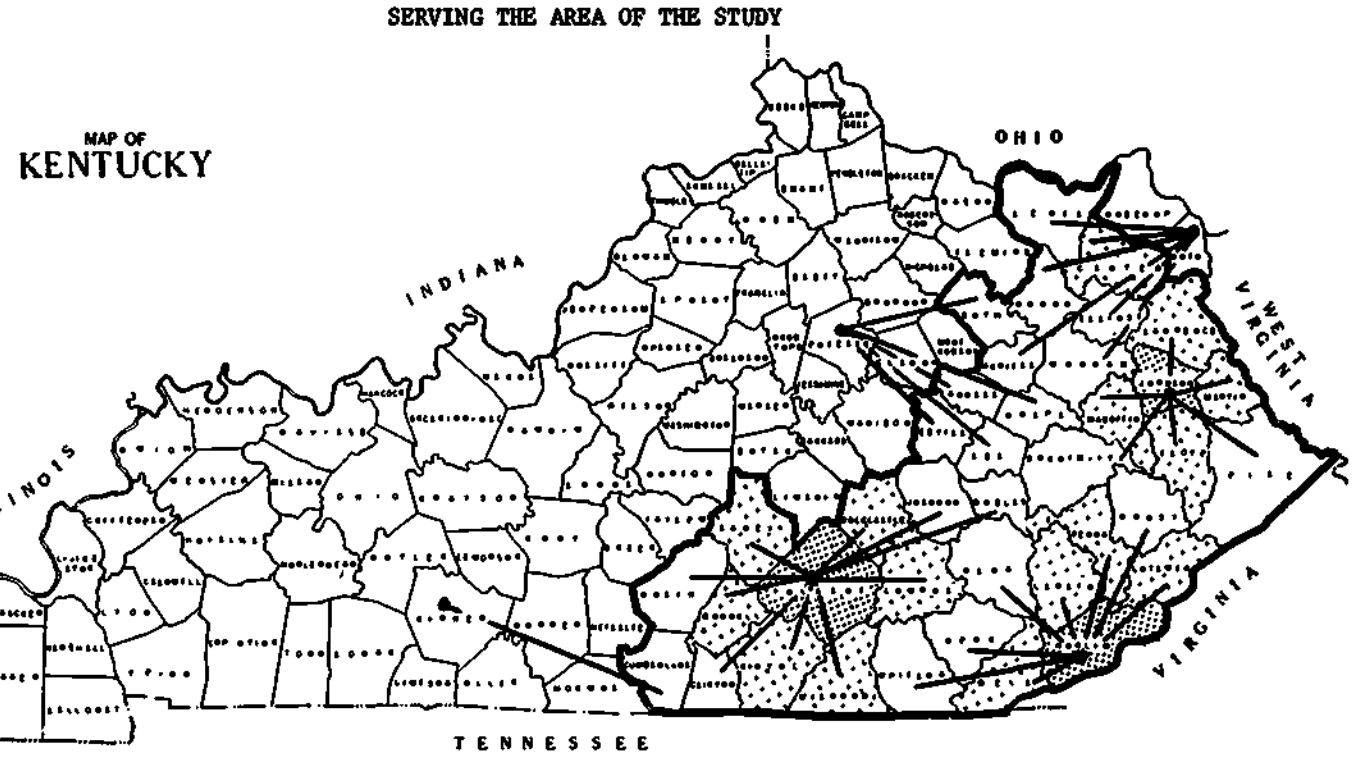
   Yes_____, No_____, No opinion_____.

4. Do you believe vocational rehabilitation services should be discontinued?

   Yes_____, No_____, No opinion_____.

APPENDIX III

LOCATIONS OF DISTRICT VOCATIONAL REHABILITATION OFFICES
SERVING THE AREA OF THE STUDY



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VT 002 197
Loudermilk, Kenneth M., And Others
A Study of the Nursing Profession in Idaho Medical Facilities.

Idaho Occupational Research Coordinating Unit, Moscow
Office of Education (DHEW), Washington, D.C.
MF AVAILABLE IN VT-ERIC SET. OEC-5-85-118
Pub Date - Jan67 81p.

*OCCUPATIONAL SURVEYS; *HEALTH OCCUPATIONS; *PERSONNEL POLICY; SALARIES; EMPLOYMENT; *NURSING; HEALTH FACILITIES; QUESTIONNAIRES; STATE SURVEYS; WORK ATTITUDES; LABOR SUPPLY; *EMPLOYMENT PRACTICES; MANPOWER NEEDS; LABOR CONDITIONS; LABOR TURNOVER
IDAHO

This study of working conditions and remuneration of nursing personnel is presented for the benefit of the nursing profession, medical personnel, educators, employment and personnel officials, and other interested groups. Questionnaires were sent to all hospitals and nursing homes and useable responses were returned from 83.9 percent of the 56 hospitals and 64.8 percent of the 54 nursing homes. Some findings were: (1) Hospitals reported 1,944 full-time and 643 part-time employees with 362 full-time and 39 part-time vacancies while nursing homes reported 67 full-time and 196 part-time employees with 55 full-time and 19 part-time vacancies, (2) Most of the full-time vacancies in hospitals and most of the full- and part-time vacancies in nursing homes were for practical nurses and nurse aides, and (3) The ratio of replacements to full-time employees equalled 28 percent for hospitals and 38.4 percent for nursing homes. Other subjects were information concerning comparative salaries, pay for evening and night duty, overtime compensation, salary increases, maintenance provision, insurance coverage, sick leave, holidays, vacation, retirement, written personnel policies and job descriptions, and inservice education. (JK)

VT 002 197

The State Occupational Research Unit
College of Education
University of Idaho
Moscow, Idaho

A STUDY OF THE NURSING PROFESSION IN IDAHO MEDICAL FACILITIES

Kenneth M. Loudermilk, Director
Robert W. Richman, Assistant Director
Eddie D. Cecil, Research Fellow
Robert H. Heger, Research Fellow
Jack C. Pease, Research Fellow

The research reported herein was performed pursuant to Contract Number OE-5-85-118 with the United States Department of Health, Education and Welfare, Office of Education

January, 1967

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OFFICE OF EDUCATION
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VT 002 197

FOREWORD

The nursing profession represents the largest group of employees in medical and health services, and occupies a key role in providing the services necessary to maintain desirable standards of public health. Nursing has, unfortunately, had a history of wages and working conditions less desirable than other occupational groups of comparable importance and responsibility. Only in recent years have nurses begun to appraise their situation and to make concerted efforts as a profession to improve their status as workers. These efforts on the part of the profession, the new Medicare program, and the generally increased demand for health services all indicate that nursing is an area of employment which merits serious study.

The study reported herein represents a joint effort between the State Occupational Research Unit, The Idaho State Nurses' Association, The Idaho Hospital Association, and the Idaho Association of Licensed Nursing Homes. The Idaho State Nurses' Association must be given credit for initiating the study. The State Occupational Research Unit joined the effort relatively early to provide consulting services and to conduct that portion of the study relating to medical facilities. The remaining two associations were invited to participate in later phases of the study which were dependent upon the cooperation and response of individual medical facilities in the state. A second part of the study involving all licensed nurses in Idaho was undertaken primarily by the Idaho State Nurses' Association. The results of the latter study were in preparation as this publication went to press.

The study of nursing in Idaho medical facilities was not intended to be a comparative evaluation in which nurses, as an occupational group, would be compared with other groups in which women are employed. The reader will find that this report is largely factual, with less emphasis placed on evaluations and interpretations. Any such statements which do occur would refer to comparisons which may be made only within the nursing profession. The primary purpose of the study was to provide certain factual data which could be used by a number of professional groups as they attempt to improve the working and financial status of nurses.

The staff of the State Occupational Research Unit extends its appreciation to the following individuals who participated in the study. Mrs. Betty M. Daley, Executive Director of the Idaho State Nurses' Association and Miss Dorothy J. Smylie, Chairman, Committee on Economic and General Welfare of the Association initiated the study, assisted in the construction of the questionnaire, and supplied a mailing list for all Idaho medical facilities. John D. Hutchison, Executive Director, Idaho Hospital Association, and Duane R. Higer, President, Idaho Association of Licensed Nursing Homes, provided consulting services during the construction of the questionnaire, and encouraged individual medical facilities to provide the information requested. Dr. Gladys I. Bellinger, Professor and Head, Home Economics Department, and Dr. Florence D. Aller, Associate Professor of Home Economics, University of Idaho provided assistance during the construction of the questionnaire.

A STUDY OF THE NURSING PROFESSION IN IDAHO MEDICAL FACILITIES

I. INTRODUCTION

The demand for medical and health-related services has increased considerably in the United States in recent years. Parallel increases thus have resulted in medical and health workers to provide the required services. The nursing profession, representing the largest group of workers, has been faced with several problems as its members have attempted to meet the demands for increased services.

Recent Issues and Activities in Nursing

The nursing profession has, in recent months, been characterized by a considerable amount of self examination and attempts to improve the basic economic position of its members. Issues such as shortages of personnel, low salaries, and assignments to non-nursing duties have been discussed by persons both in and outside the profession. Dissatisfaction with existing conditions has led to threats of mass resignations in many sections of the United States, and such action has resulted in some improvements in salaries and working conditions. These activities and events have received due recognition in the popular press (for example: Frank, 1966; Hunt, 1966; Elliott, 1966).

The American Journal of Nursing, official magazine of the American Nurses' Association, has carried numerous articles in recent months related to nursing problems and issues. A few examples will be cited. Moses (1965) compared salaries and fringe benefits received by nurses with those of other hospital employees and other occupational groups which provide employment for women. The data were obtained from surveys by the National Bureau of Labor Statistics and other organizations, and represent many areas of the United States. After several comparisons of nursing personnel with workers in other occupations, Moses states:

> This brief review of the data contained in the studies made by the Bureau of Labor Statistics shows that employment conditions for professional nurses do not measure up to those of other occupational groups. Obviously, in salaries, fringe benefits, and other conditions of employment, nursing today cannot compete with many occupations and professions which are now open to women aside from those which have been traditionally female. This is particularly detrimental to nursing today when funds are available to many more people for post high school education. Certainly, this affects recruitment into the profession adversely and bodes ill for efforts to maintain, much less to increase, the level of nurse supply for the years ahead. (Moses, 1965, p. 71)

The November, 1965 issue of the Journal carried a special supplement on money and nursing which contained seven separate articles. Porter (1963, pp. M-3-M-7) presents a historical account of the development of

nursing. She suggests that the origin of nursing as a religious service, coupled with such factors as the military authoritarianism of early hospitals and the subordinate social status of women, contributed to the tradition of nurses as unpaid or underpaid workers. In more recent times, nursing benefited from such legislation as that which created unemployment compensation and minimum wage and hour regulations. Porter, in closing, briefly describes an "economic security program" passed by the House of Delegates of the American Nurses' Association in 1946 which was designed to achieve for the profession a better bargaining position and thus better wages and working conditions.

Sutherland (1963, pp. M-7-M-12) based her article on the results of interviews with 12 directors of nursing and about 50 nursing staff members in small hospitals in the East and South. An interesting finding was that many nurses do not readily relate problems in their work to money matters. In some cases where money shortages are recognized, considerable apathy or indifference exists regarding what to do about the situation. Better communication between the hospital administrator and the director of nursing is suggested as a possible means to effect better organization of nursing functions and to meet the needs of individual staff members.

Dunn (1963, pp. M-12-M-16) discusses the desirability of a budget for nursing functions, and presents considerable detail on how a budget should be constructed and used.

Ginzberg (1963, pp. M-16-M-20) attempts several comparisons between the nurse's economic position and that of other occupational groups. His article illustrates the extreme difficulty encountered in such comparisons, and suggests that more than one interpretation is possible. At one point he summarizes several types of data by stating that:

> . . . nurses appear to be doing fairly well with regard to shift differentials, sick leave, and paid vacations. But they are far behind other occupational groups in such matters as extra pay for overtime and unemployment insurance. They are probably also lagging, and possibly seriously so, in other insurance coverage such as contributory pension and benefit schemes. (Ginzberg, 1963, p. M-19)

Ginzberg concludes with several observations regarding the situations faced by nurses in their efforts to improve their economic position, and suggests several methods whereby improvements may be realized.

Ro and Anderson (1963, pp. M-21-M-24) present data on the cost of health services broken down into several of its components. It is pointed out, however, that costs for nursing services are not given separately, but rather are merged with total costs for hospital care and other health services. Nursing costs are estimated at about 10 per cent of total expenditures. The authors state that more refined data are needed regarding nursing costs as a basis for negotiations and for clarification of the place and significance of nursing in the health services structure.

Esselstyn (1963, pp. M-24-M-27) discusses developments and trends in

medical and health insurance. He points out that about 80 per cent of all the people in this country are covered under some kind of plan. A trend toward more comprehensive coverage seems apparent, requiring increased and more varied services by nurses both inside and outside the hospital.

The final article in this supplement, by Freeman (1963, pp. M-28-M-32), discusses the influence of public funds on nursing. Examples are given which indicate that the government at all levels is a major employer of nurses, is active in nursing education, and is an important contributor to research activities. The implications of government involvement and financial support are discussed. Some problems have resulted, but several examples are given of how both governmental and voluntary health activities can complement each other. Professional implications are discussed such as, for example, the necessity of the nursing profession to accept its obligations as a political and social action group. Freeman (1963, p. M-32) states that "The increase of public funds for nursing seems more likely to benefit than to threaten the profession." The end result suggested is a wise use of public funds, orderly development of the nursing profession, and the provision of needed services.

Background of the Present Study

The issues and problems which have been of concern to the nursing profession nationally have had important influences in Idaho. Several professional groups in the state have, over the years, been concerned to a greater or lesser degree with needed improvements in nursing. Nurses have been in short supply, and their working conditions and remuneration have been matters of concern to several individuals and groups. The new Medicare program seemed likely to increase existent problems and to create others which might result in nursing services of less than the desired quality.

The Idaho State Nurses' Association had, for several months, desired to conduct a study of the nursing profession in Idaho. Official members of the Association, late in 1965, contacted the Department of Employment, State of Idaho, for assistance in conducting the study. The Department of Employment referred the Association officers to the recently-created State Occupational Research Unit, and the conferences which followed resulted in the initiation of the present study.

Soon after its inception, the nursing study was expanded into a joint project involving the State Occupational Research Unit, the Idaho State Nurses' Association, the Idaho Hospital Association, and The Idaho Association of Licensed Nursing Homes. The study design consisted of two parts. The first part was a study of the nursing profession in all medical facilities in Idaho. This part of the study was supervised by the State Occupational Research Unit, and the general design and results are presented in this report. The second part of the study was a survey of individual nurses in Idaho. This second part of the study was supervised by the Idaho State Nurses' Association. As this report went to press, the second part of the study was still in progress.

Organization of the Report

This report is organized into four major sections, one of which is this first introductory section. The second section, entitled Methods and Materials, includes a description of the study design and the construction and use of a questionnaire designed to obtain the basic data. The third section--Results--presents each of the 42 questions contained in the questionnaire and highlights of the results obtained for each question. The fourth section, entitled Discussion and Conclusions, completes the report. Five appendixes follow the main body of the report and contain detailed data which may not be of interest to the casual reader. Since the appendixes were prepared before the main body of the report was written, the pages in each appendix are numbered consecutively beginning with the number one. This should not, however, cause undue difficulty in locating desired data and information.

An additional explanation seems in order regarding the contents of the third section on results. The responses to the questionnaires were necessarily quite detailed. It seemed most appropriate, therefore, to place the highly detailed material in two appendixes. Thus, the body of the report presents only the highlights for each question. The casual reader may move through the section quite rapidly, although the reading may prove tedious due to the factual nature of the material. The reader who desires a greater amount of detail should be satisfied also, in that a relatively complete presentation of the questionnaire responses may be found in the two appendixes.

II. METHODS AND MATERIALS

The design of the study may be described as a questionnaire survey. The basic purpose was to obtain factual data which would be useful in planning improvements in the nursing profession in Idaho. The results, therefore, were treated mainly as facts, with few attempts to go beyond the facts with evaluative and interpretive comments. The reader will find, however, that several interpretations and evaluations seem implicit in the results. One caution seems appropriate, namely, that more than one conclusion may be drawn from several of the facts presented. The State Occupational Research Unit concluded early in the study that persons in the nursing profession and others more closely associated with nursing were the most logical ones to interpret and evaluate the results.

The study began with the construction of the questionnaire (see pages 1-7 of Appendix E). The work began in November, 1965 and was completed in April of 1966. Staff members of the State Occupational Research Unit and the Idaho State Nurses' Association designed most of the questionnaire. Copies of the instrument then were submitted to the Idaho Hospital Association and the Idaho Association of Licensed Nursing Homes for their approval and recommendations. Lastly, the questionnaire was field tested in one hospital and one nursing home.

A list of all medical facilities in Idaho, including mailing

addresses, was supplied to the State Occupational Research Unit by the Idaho State Nurses' Association. Early in May, 1966, two copies of the questionnaire and a cover letter printed on letterhead stationery (see page 8, Appendix E) were mailed to each facility. After a period of about one and one-half months, all non-respondents were mailed two more questionnaires and a follow-up cover letter (see page 9, Appendix E). During this period of time, officials of the Idaho Hospital Association and the Idaho Association of Licensed Nursing Homes used written notices and personal contacts to encourage several respondents to complete and return the questionnaires. The mailing list contained 56 hospitals and 54 nursing homes. Useable questionnaires were received from 47, or 83.9 per cent of the hospitals and 35, or 64.8 per cent, of the nursing homes. Names of the hospitals responding to the questionnaire are listed in Appendix A and the nursing home respondents are listed in Appendix B. The results from all questionnaires were tallied by hand, and are presented in detail in Appendixes C and D. Highlights of the results are presented in the section to follow.

III. RESULTS

This section of the report presents certain highlights of the questionnaire results. Each question will be presented as it was worded in the questionnaire, although the format may vary to conserve space. Comparisons may be made with the copy of the original questionnaire in Appendix E. Following each question, the important results will be presented separately for hospitals and nursing homes.

The complete range of responses to the questionnaire is presented in Appendixes C and D. Even the original wording in the answers to several questions is reproduced with few changes. The reader who is interested in detail may insert markers in this section and in the two Appendixes so that pages may be located quickly. The reader who desires only a quick overview of the results may read this section without reference to the Appendixes. Interpretations and comparisons of the results are held to a minimum, for reasons already stated in the preceding section and others which will be included in the section to follow.

Question # 1

Give the name and address of your medical facility.

This information was requested so that members of the State Occupational Research Unit could identify those facilities which had not yet responded and therefore could be sent follow-up requests. Omission of the name of the facility was considered as one means of obtaining more complete and candid answers, but it seemed best to request identifying information. Unsigned questionnaires still might have been identified through postmarks or by answers to certain questions. As noted in both cover letters (Appendix E, pages 8-9), the respondent was assured that his responses would be held strictly confidential. This promise has been kept.

Question # 1 Cont'd

Hospitals. Respondents are listed in Appendix A.

Nursing Homes. Respondents are listed in Appendix B.

Question # 2

Which classification most accurately describes the licensing of your medical facility? Circle one: a. General Hospital b. Nursing Home c. Psychiatric d. Rehabilitation e. Hospital-Nursing Home f. Other (specify).

The list of medical facilities received from the Idaho State Nurses' Association already was divided into two groups, namely, hospitals and nursing homes. This same division was maintained for the returned questionnaires, and it may be expected that the results for this question reflect this division.

Hospitals. The majority--30, or 63.8 per cent of the 47 respondents--indicated that they were classified as a general hospital. The next largest group was classified as a hospital-nursing home. The remainder classified themselves as specialized types of hospitals.

Nursing Homes. Thirty-three, or 94.3 per cent of the 35 respondents, classified themselves as nursing homes. Of the remaining two facilities, one did not respond and the other indicated it was an extended care facility.

Question # 3

How many beds are contained in your medical facility (exclusive of bassinets)? Give the number.

Hospitals. The number of beds per facility ranged from 8 to 459; the median is about 36 beds.

Nursing Homes. The number of beds per facility ranged from 5 to 120; the median is about 47 beds.

Question # 4

Describe the area served by your medical facility (for example, one city, a county, etc.).

Hospitals. The area served by the hospitals ranged from one city and the surrounding area to all of Idaho and parts of four other states. The largest number--16, or 34.0 per cent of the 47 respondents--served one county, followed by 9, or 19.1 per cent, which served one city and the surrounding area.

Nursing Homes. The area served by the nursing homes ranged from one

Question # 4 Cont'd

city and the surrounding area to all of Idaho and six additional counties. The largest number--13, or 37.1 per cent of the 35 respondents--served one county.

Question # 5

What is the total population of the area served?

Hospitals. The population served by the hospitals ranged from 1,700 to 700,000. The latter figure perhaps would have been larger if all of the facilities had responded. Idaho has a population of around 700,000, and responses to question four indicated that a few facilities served an area larger than Idaho. The median for those responding is about 14,000 population.

Nursing Homes. The population served by the nursing homes ranged from 6 to 100,000. The former figure likely is erroneous; it seemed the respondent started to write a figure like 6,000 or 60,000, but forgot to add the zeros. The latter figure of 100,000 is low, as some respondents in question four indicated that at least all of Idaho was served. The median for those responding is about 20,000 population.

Question # 6

Please indicate below the numbers of both full-time and part-time employees that compose your present nursing staff. (Note: See the last page of this questionnaire for a description of the duties of each of the six positions) Type of Position: a. Director and Assistant b. Supervisor and Assistant c. Head Nurse and Assistant d. General Duty Nurse e. Practical Nurse f. Nurse Aide Total Positions.

Hospitals. The totals for all 47 respondents were 1,944 full-time employees and 643 part-time employees. Employees per facility ranged from 2 to 168, with a median of about 22 employees for full-time; and from 0 to 61, with a median of about 11 employees for part-time.

Nursing Homes. The totals for all 35 respondents were 677 full-time employees and 196 part-time employees. Employees per facility ranged from 2 to 43, with a median of about 18 employees for full-time; and from 0 to 18, with a median of about 5 employees for part-time.

Question # 7

How many budgeted vacancies exist in each type of position? Type of Position: a. Director and Assistant b. Supervisor and Assistant c. Head Nurse and Assistant d. General Duty Nurse e. Practical Nurse f. Nurse Aide Total Vacancies.

Hospitals. No budgeted vacancies were reported by 9 facilities for full-time employees, and by 38 facilities for part-time employees. Those

Question # 7 Cont'd

reporting budgeted vacancies gave a total of 362 full-time and 39 part-time vacancies. Total vacancies per facility for full-time ranged from 0 to 133, with a median of about 4 employees. Most of the full-time vacancies were for Practical Nurses and Nurse Aides. Total vacancies per facility for part-time ranged from 0 to 15, with a median of less than 1 employee. Most of the part-time vacancies were for General Duty Nurses and Nurse Aides.

Nursing Homes. No budgeted vacancies were reported by 19 facilities for full-time employees, and by 28 facilities for part-time employees. Those reporting budgeted vacancies gave a total of 55 full-time and 19 part-time vacancies. Total vacancies per facility for full-time ranged from 0 to 22, with a median of less than 1 employee. Total vacancies per facility for part-time ranged from 0 to 8, with a median of less than 1 employee. Most of both the full-time and part-time vacancies were for Practical Nurses and Nurse Aides.

Question # 8

Referring to your answer to question six above, about how many new persons have you employed during the last year to replace those who moved away, were discharged, etc.? Type of Position: a. Director and Assistant b. Supervisor and Assistant c. Head Nurse and Assistant d. General Duty Nurse e. Practical Nurse f. Nurse Aide Total Replacements.

Hospitals. A total of 6 facilities reported no new full-time employees, and 20 facilities reported no new part-time employees. The remaining facilities reported a total of 545 new full-time and 148 new part-time employees. Most of the full-time replacements were Nurse Aides; most of the part-time replacements were General Duty Nurses and Nurse Aides. Compared with the total numbers of employees reported in question six above, the following percentages are found: 545/1,944 = 28.0 per cent; 148/643 = 22.8 per cent. These percentages should be interpreted cautiously, as several factors may be at work. For example: (a) mobility of families with the nurse moving from the area with her husband (b) expansions in the nursing staff (c) seasonal and other variations in numbers employed (d) movements of nurses into and out of the labor force. It is impossible from these figures alone to determine whether a shortage exists. Shortages may be determined by responses to such questions as number seven above and others to follow in this report. Total new employees per facility ranged from 0 to 81, with a median of about 5 employees for full-time; and from 0 to 31, with a median of about 1 employee for part-time.

Nursing Homes. A total of 6 facilities reported no new full-time employees, and 19 facilities reported no new part-time employees. The remaining facilities reported a total of 260 new full-time and 90 new part-time employees. Most of both the full-time and part-time replacements were Nurse Aides. Compared with the total numbers of employees reported in question six above, the following percentages are found:

Question # 8 Cont'd

260/677 = 38.4 per cent; 90/196 = 45.9 per cent. The cautions stated above in relation to the percentages calculated for hospitals also apply here. Total new employees per facility ranged from 0 to 25, with a median of about 5 employees for full-time; and from 0 to 20, with a median of less than 1 employee for part-time.

Question # 9

Do you expect that the new Medicare program, effective this year, will require increases in your present nursing staff? Circle one: Yes No If you circled "Yes," indicate the Types of Positions in which your largest increases will occur.

Hospitals. Twenty-eight facilities, or 59.6 per cent, circled "yes;" and 19, or 40.4 per cent, circled "no." Positions indicated most frequently were General Duty Nurse and Practical Nurse.

Nursing Homes. No answer was obtained from 3 facilities, or 8.6 per cent. Of the remaining facilities, 8, or 22.9 per cent, circled "yes;" and 24, or 68.6 per cent, circled "no." (Note: percentages do not total 100.0 due to rounding) Positions indicated most frequently were, once again, General Duty Nurse and Practical Nurse.

Question # 10

Looking farther ahead to around 1970, what increases, if any, do you expect in your present nursing staff? (Note: If possible, give the Types of Positions in which your largest increases will occur. If you plan to expand your present facility, construct a new facility, or move into new quarters, a brief description will be appreciated)

Hospitals. No answer was received from 6, or 12.8 per cent, of the facilities. Another 6 (also 12.8 per cent) said "none." The remaining 35 facilities, or 74.5 per cent, gave a variety of answers, most of which indicate that important changes will occur. (Note: percentages do not add to 100.0 due to rounding) Expansions of the facility or a new facility is planned by 16 of the respondents. Needs for additional nursing personnel were indicated by 25 of the respondents, but since several gave no numbers it is impossible to determine the number of positions which will need to be filled.

Nursing Homes. No answer was received from 3, or 8.6 per cent, of the facilities. Another 5, or 14.3 per cent, said "none." Of the remaining 27 facilities, or 77.1 per cent, 11 indicated expansion plans or a new facility. Needs for additional nursing personnel were indicated by 20 facilities. Similar to the results for hospitals, the absence of specific numbers makes it impossible to arrive at a specific number of positions which will need to be filled.

Question # 11

Give the beginning monthly salary and the maximum monthly salary for each Type of Position. (Note: Give the salary before any deductions for taxes, maintenance items, etc., and exclude extra pay for evening or night shifts, overtime, on-call, or special service differentials. Exclude nurses living in who receive maintenance free of charge in addition to salary and those who are members of religious orders) Type of Position: a. Director and Assistant b. Supervisor and Assistant c. Head Nurse and Assistant d. General Duty Nurse e. Practical Nurse f. Nurse Aide. If you have no set figures for either starting or maximum salaries, base your reply on the salaries paid to your present employees.

We wish to determine, in addition to the starting and maximum salaries requested on the preceding page, the entire range of salaries paid to your present nursing staff. Please record in the chart below all monthly salary rates for each Type of Position, and the numbers of your nursing staff in each. A sample has been prepared immediately below to guide you in completing the chart. (Note: The totals in each row should be the same as the numbers you recorded under Full-Time Employees in question 6, page 1, of this questionnaire.

This question, consisting of two parts on two different pages of the questionnaire, was left unanswered by large numbers of respondents in both of the general categories of hospitals and nursing homes. The casual reader, especially, should realize that the salary figures reported are based on a reduced number of facilities. The numbers giving no answer are included in Appendixes C and D (pages 7-10 and 6-8, respectively) and will not be repeated here. The Appendixes contain a large amount of data for this question. Individual figures for starting and maximum monthly salaries, for each type of position, are presented. Following this, individual monthly salaries and their respective frequencies for nurses presently employed are presented for each type of position. The data will be summarized here in the form of ranges and medians for starting and maximum salaries. Also, a few salary figures with the highest frequencies will be given for nurses presently employed.

Hospitals.

a. Director and Assistant. Starting salaries ranged from $350 to $885 per month, with a median of about $460. Maximum salaries ranged from $420 to $1,160 per month, with a median of about $525. Frequencies for present employees were highest at $500, followed closely by $460 per month.

b. Supervisor and Assistant. Starting salaries ranged from $350 to $680 per month, with a median of about $416. Maximum salaries ranged from $335 to $976, with a median of about $475. Frequencies for present employees were highest at $425, followed closely by $417 and $450 per month.

c. Head Nurse and Assistant. Starting salaries ranged from $310

Question # 11 Cont'd

to $623 per month, with a median of about $378. Maximum salaries ranged from $350 to $976 per month, with a median of about $430. Frequencies for present employees were highest at $420, followed closely by $405 per month.

d. General Duty Nurse. Starting salaries ranged from $300 to $475 per month, with a median of about $354. Maximum salaries ranged from $355 to $708 per month, with a median of about $407. Frequencies for present employees were highest at $375 per month. Several large frequencies occur, however, and even the casual reader should glance briefly at the lower half of page 9 of Appendix C.

e. Practical Nurse. Starting salaries ranged from $170 to $346, with a median of about $250. Maximum salaries ranged from $235 to $503, with a median of about $295. Frequencies for present employees were highest at $300 and $260 per month. Once again, however, several large frequencies are found over a wide range.

f. Nurse Aide. Starting salaries ranged from $160 to $318, with a median of about $199. Maximum salaries ranged from $180 to $503, with a median of about $235. Frequencies for present employees were highest at $200 and $232 per month.

Nursing Homes.

a. Director and Assistant. Starting salaries ranged from $345 to $550 per month, with a median of about $450. Maximum salaries ranged from $375 to $525, with a median of about $450. Frequency figures for present employees were highest at $500 per month.

b. Supervisor and Assistant. Starting salaries ranged from $340 to $550 per month, with a median of about $394. Maximum salaries ranged from $340 to $600 per month, with a median of about $460. Frequencies for present employees ranged from $345 to $550, with no concentration at any salary level.

c. Head Nurse and Assistant. Starting salaries ranged from $325 to $462 per month, with a median of about $375. Maximum salaries ranged from $325 to $468, with a median of about $405. Frequencies for present employees were highest at $350 and $400 per month.

d. General Duty Nurse. Starting salaries ranged from $300 to $396 per month, with a median of about $351. Maximum salaries ranged from $300 to $425 per month, with a median of about $376. Frequencies for present employees were highest at $355 and $320 per month.

e. Practical Nurse. Starting salaries ranged from $194 to $300 per month, with a median of about $241. Maximum salaries ranged fror

Question # 11 Cont'd

$220 to $325 per month, with a median of about $268. Frequencies for present employees were highest at $250 per month. However, several high frequencies occur over a wide salary range (see page 8, Appendix D).

f. Nurse Aide. Starting salaries ranged from $160 to $264 per month, with a median of about $180. Maximum salaries ranged from $176 to $244, with a median of about $220. Frequencies for present employees were highest at $176 per month. However, several high frequencies occur over a wide salary range (see page 8, Appendix D).

Question # 12

Give the numbers of your nursing staff in each Type of Position who work on an evening shift, and the extra pay per month given them for this work. (Note: Information for the night shift is requested in the next question) Type of Position: a. Director and Assistant b. Supervisor and Assistant c. Head Nurse and Assistant d. General Duty Nurse e. Practical Nurse f. Nurse Aide

A considerable amount of data is presented in the Appendixes for this question which will be summarized briefly. Individual responses for each facility are presented in the Appendixes. Included are numbers on the shift and extra pay per month, if any, for each type of position. More than half of the two groups of respondents gave no answer for several types of positions. The extra pay per month could not be converted easily into a percentage because each facility usually reported more than one salary rate for present employees in Question # 11. Therefore, the extra pay per month can be considered at face value.

Hospitals. Twenty-one facilities--or 44.7 per cent of the 47 respondents--answered "none" to this question, indicating no extra pay is given. Several others listed the number of employees and wrote "none" in the column for recording the extra pay per month. It is evident, therefore, that well over half of the facilities do not give extra pay for the evening shift. Those facilities which do give extra pay frequently offer $5 or $10 extra per month in the lower positions, and as high as $25 extra per month in the highest positions.

Nursing Homes. Twenty-seven facilities--or 77.1 per cent of the 35 respondents--answered "none" to this question, indicating no extra pay is given. Extra pay figures range from $5 to as high as $12.50 per month.

Question # 13

Give the numbers of your nursing staff in each Type of Position who work on a night shift, and the extra pay per month given them for this work. Type of Position: a. Director and Assistant b. Supervisor and Assistant c. Head Nurse and Assistant d. General Duty Nurse e. Practical Nurse f. Nurse Aide.

Question # 13 Cont'd

The format of this question is similar to Question # 12, so that the same general statements regarding presentation and interpretation also apply here.

Hospitals. Nineteen facilities--or 40.4 per cent of the 47 respondents--answered "none." Those facilities offering extra pay frequently give $5 to $10 extra per month in the lower positions, and $25 or more extra per month in the higher positions.

Nursing Homes. Twenty-seven facilities--or 77.1 per cent of the 35 respondents--answered "none." Extra pay figures range from $5 to $12.50 per month.

Question # 14

If any of the nursing staff are required to work overtime, what method of compensation is used? Circle one: a. Straight time pay b. Compensatory time off c. Time and a half pay d. Other (describe, including various combinations of the first three alternatives).

Hospitals. The most common arrangement is straight time pay, followed by compensatory time off.

Nursing Homes. The most common arrangement is straight time pay.

Question # 15

Does your medical facility provide regular salary increases? Circle one: Yes No.

Hospitals. The majority--40, or 85.1 per cent of the 47 respondents--answered "yes."

Nursing Homes. The majority--26, or 74.3 per cent of the 35 respondents--answered "yes."

Question # 16

If your answer to the previous question was "Yes," what determines the salary increases? Circle one: a. Length of service (automatic) b. Merit only c. Length of service and merit d. Additional education e. Other (describe, including various combinations of the first four alternatives).

Hospitals. Pay raises result most commonly from service and merit (alternative "c") and from length of service (alternative "a").

Nursing Homes. Pay raises result most commonly from service and merit (alternative "c").

Question # 17

What is the average length of time required for your nursing staff to reach the maximum salary? (Note: If there are differences according to Type of Position, please specify)

Hospitals. The most common response was no maximum or no regulation, followed closely by a requirement of 3 years and 4 years to reach maximum salary. One facility had a requirement of 20 years.

Nursing Homes. Similar to hospitals, no maximum or no regulation was the most common. A wide range was represented, from 3 months to 10 years required to reach the maximum salary.

Question # 18

Does your medical facility provide any type of maintenance in addition to salary? Circle one or more: a. None b. Rooms c. One or more meals d. Laundry of uniforms e. Allowance for purchase of uniforms f. Discount on drugs g. Other (specify).

Hospitals. The largest frequency of responses was "none." One or more meals and a discount on drugs were marked most frequently among the remaining alternatives.

Nursing Homes. The largest frequency of responses was "none." One or more meals was marked most frequently among the remaining alternatives.

Question # 19

Does your medical facility have unemployment insurance coverage for its employees? Circle one: Yes No.

Hospitals. The majority--36, or 76.6 per cent of the 47 respondents--answered "no."

Nursing Homes. The majority--25, or 71.4 per cent of the 35 respondents--answered "yes."

Question # 20

Regarding your answers to questions 11 through 19, are there any differences between provisions for part-time employees as compared with your full-time employees? Circle one: Yes No. If "Yes," record the question number and describe briefly.

Hospitals. The majority--29, or 61.7 per cent of the 47 respondents--answered "no." The comments of those answering "yes" indicated that the part-time employees usually receive no--or reduced--fringe benefits. However, some facilities pay the part-time employees a little more.

Nursing Homes. The majority--25, or 71.4 per cent of the 35 respondents--answered "no" to the question. Those answering "yes" indicated

Question # 20 Cont'd

no--or reduced--fringe benefits and no automatic salary increases for part-time employees.

Question # 21

Does your medical facility have a group hospitalization insurance plan available to members of your nursing staff? Circle one: Yes No.

Hospitals. The majority--40, or 85.1 per cent of the 47 respondents--answered "yes" to the question.

Nursing Homes. The majority--24, or 68.6 per cent of the 35 respondents--answered "yes."

Question # 22

If your answer to the previous question was "Yes," circle one of the following which describes the insurance plan: a. Blue Cross b. Medical Service Bureau c. Other (specify).

Hospitals. Most of the facilities indicated coverage under Blue Cross.

Nursing Homes. Blue Cross was indicated most frequently.

Question # 23

If you circled "Yes" in question 21, circle one of the following to indicate how the premiums are paid: a. Completely by your medical facility b. Shared by your facility and the employee c. Completely by the employee.

Hospitals. Sharing of the premiums by the facility and the employee was marked most frequently.

Nursing Homes. Sharing between the facility and the employee was marked most frequently.

Question # 24

Is sick leave with pay granted to members of your nursing staff? Circle one: Yes No.

Hospitals. The vast majority--45, or 95.7 per cent of the 47 facilities--answered "yes."

Nursing Homes. A slight majority--19, or 54.3 per cent of the 35 facilities--answered "no."

Question # 25

If your answer to the previous question was "Yes," how many working days of paid sick leave are granted annually after one year of employment?

Hospitals. The most frequent response was 12 days per year.

Nursing Homes. The majority gave no answer to the question, but 12 days per year was the most frequent response otherwise.

Question # 26

If you circled "Yes" in question 24, can all or part of the unused sick leave be carried over from year to year? Circle one: Yes No.

Hospitals. The majority--33, or 70.2 per cent of the 47 respondents--answered "yes."

Nursing Homes. A slight majority--19, or 54.3 per cent of the 35 respondents--did not answer the question. Ten, or 28.6 per cent, answered "yes."

Question # 27

How many paid holidays per year are granted to members of your nursing staff?

Hospitals. The most frequent response was 7 days, followed in order by 6 days and 8 days.

Nursing Homes. The most frequent response was "none," followed by 6 days.

Question # 28

If a nurse is required to work on a holiday, is the method of compensation (circle one): a. Compensatory time off b. Straight time pay c. Time and a half pay d. Double time pay e. Other (specify).

Hospitals. The majority indicated that they granted their employees compensatory time off.

Nursing Homes. Straight time pay was indicated most frequently.

Question # 29

How many working days of paid vacation are granted to members of your nursing staff after one year of employment? (Note: The next two questions are concerned with differences according to length of service)

Hospitals. The majority indicated 10 days.

Question # 29 Cont'd

Nursing Homes. The majority indicated 5 days.

Question # 30

Does your medical facility have a graduated vacation plan for full-time members of your nursing staff which varies according to length of service? Circle one: Yes No.

Hospitals. The majority--32, or 68.1 per cent of the 47 respondents--answered "yes."

Nursing Homes. The majority--20, or 57.1 per cent of the 35 respondents--answered "no."

Question # 31

If your answer to the previous question was "Yes," what is the maximum number of working days granted to a full-time nurse? How many years are required to reach this maximum?

Hospitals. Two responses were given with equal frequency--a maximum of 15 days after 5 years, and a maximum of 20 days after 10 years. The range was from a maximum of 3 days after 10 years to 30 days after 20 years. The 3-day maximum seems low, however, and may be erroneous.

Nursing Homes. The most frequent response was 10 days after 2 years. The range was from 10 days after 1 year to 20 days after 20 years.

Question # 32

Does your medical facility have Federal Social Security Coverage for its employees? Circle one: Yes No.

Hospitals. The vast majority--45, or 95.7 per cent of the 47 respondents--answered "yes."

Nursing Homes. The vast majority--32, or 91.4 per cent of the 35 respondents--answered "yes."

Question # 33

Does your medical facility have a group retirement plan (other than Social Security) for its employees? Circle one: Yes No.

Hospitals. A majority--28, or 59.6 per cent of the 47 respondents--answered "no."

Nursing Homes. The vast majority--33, or 94.3 per cent of the 35 respondents--answered "no."

Question # 34

If your answer to the previous question was "Yes," are the premiums (circle one): a. Paid completely by your facility b. Shared by your facility and the employee c. Paid by the employee?

Hospitals. The majority--27, or 57.4 per cent of the 47 respondents--did not answer the question, reflecting the majority who answered "no" to question 33. Otherwise the most frequent response was sharing by the facility and the employee.

Nursing Homes. Thirty-four of the 35 facilities gave no answer. The lone answer indicated payment by the facility.

Question # 35

Regarding your answers to questions 21 through 34, are there any differences between provisions for part-time employees as compared with your full-time employees? Circle one: Yes No. If "Yes," record the question number and describe briefly.

Hospitals. The majority--39, or 83.0 per cent of the 47 facilities--gave a written answer to this question. The gist of the answers is that the various benefits are reduced, or absent entirely, for part-time employees.

Nursing Homes. Slightly less than half--16, or 45.7 per cent of the 35 respondents--gave a written answer to this question. The results were very similar to those for hospitals.

Question # 36

Does your medical facility have written personnel policies? Circle one: Yes No.

Hospitals. The vast majority--43, or 91.5 per cent of the 47 respondents--answered "yes."

Nursing Homes. The majority--24, or 68.6 per cent of the 35 respondents--answered "yes."

Question # 37

If your answer to the previous question was "Yes," give the year the personnel policies were written and/or revised.

Hospitals. The most frequent response was 1966, followed closely by the year 1965.

Nursing Homes. The most frequent response was the year 1966.

Question # 38

Does your medical facility have written job descriptions for each classification in the nursing staff? Circle one: Yes No.

Hospitals. The majority--34, or 72.3 per cent of the 47 respondents--answered "yes."

Nursing Homes. The majority--25, or 71.4 per cent of the 35 respondents--answered "yes."

Question # 39

If your answer to the previous question was "Yes," give the year the job descriptions were written and/or revised.

Hospitals. The most frequent response was the year 1966.

Nursing Homes. The year 1966 was indicated most frequently.

Question # 40

Does your medical facility have a program of in-service training and education? Circle one: Yes No. If "Yes," describe briefly.

Hospitals. The majority--30, or 63.8 per cent of the 47 respondents--indicated some type of in-service training. The detail is such that the reader should refer to page 20 of Appendix C. Lectures, films, demonstrations and supervised experience are frequently mentioned.

Nursing Homes. About half--18, or 51.4 per cent of the 35 respondents--indicated some type of in-service training. Reference should be made to pages 16-17 of Appendix D. Workshops, lectures and films are some of the ways in which the training is given.

Question # 41

Does your medical facility have any program of orientation for new employees, aside from instruction pertaining to the specific tasks of their job? Circle one: Yes No. If "Yes," describe briefly.

Hospitals. Less than half--22, or 46.8 per cent of the 47 respondents--described some type of orientation program. The reader is referred to pages 20-21 of Appendix C.

Nursing Homes. A relatively small number--12, or 34.3 per cent of the 35 respondents--described some type of orientation program. The reader is referred to page 17 of Appendix D.

Question # 42

Do you feel that you have had problems in obtaining and holding

Question # 42 Cont'd

competent nursing staff employees? Circle one: Yes No. If "Yes," describe the problems and what you believe are the main causes.

Hospitals. Comments were made by 28, or 59.6 per cent, of the 47 respondents. A perusal of pages 21-23 of Appendix C reveals such problems as general personnel shortages, inadequate pay, mobility problems, conflicting home responsibilities, undesirable shifts and hours, and geographic locations removed from larger centers of population.

Nursing Homes. Comments were made by 24, or 68.6 per cent, of the 35 respondents. A perusal of pages 17-19 of Appendix D reveals problems very similar to those noted above for the hospitals.

IV. DISCUSSION AND CONCLUSIONS

This final section of the report is divided into two parts. Several points need to be discussed regarding the study design and the results presented in the preceding section and in Appendixes C and D. This discussion constitutes the first part. The second part is composed of several conclusions which seemed justified by the results of the study.

Discussion

Five separate points will be discussed relating to the study design and results. First, an additional word is in order regarding the predominantly factual nature of the results. Staff members of the State Occupational Research Unit organized the data in Appendixes C and D in a manner which seemed potentially the most useful to readers of the report. The preceding section represents an attempt to abstract the important highlights of this large amount of data. It should be evident, however, that only a few analyses were performed. Certain readers may wish to compute additional averages, percentages, etc. from the data in Appendixes C and D, and they should feel free to make such computations and analyses and use them in any way they wish. It is assumed, of course, that any uses and interpretations of the data will be made in the light of the major purposes of this study, the remaining four points of discussion, and the conclusions which follow.

Second, the data presented are largely quantitative in nature. This precludes several evaluations which might be possible if qualitative data had been obtained. For example, the majority of both hospitals and nursing homes have written personnel policies and written job descriptions. No insinuations whatsoever are intended, but these data merely indicate that the majority of the medical facilities reported some written documents designed for these two purposes. The quality of the materials might leave much to be desired, and we cannot be sure that they are used frequently and/or effectively in the facilities' ongoing programs. The same reasoning applies to the answers to several other questions. The

only conclusion possible is that the majority either do or do not provide a particular service or benefit; the quality and effectiveness are unknown.

Third, and somewhat contrary to the second point just discussed, several questions provide answers which seem appropriate for an appraisal of the present status of nursing personnel. Salary figures, days of paid vacation, and sick leave might be used to compare nurses as a group with employees in other types of work. It cannot be emphasized too strongly, however, that the present study does not provide sufficient data for such comparisons. Staff members of the State Occupational Research Unit know of no data sufficiently reliable and comprehensive in Idaho which could be used as a basis for a comparative study. Ginzberg (1963), cited earlier, points out the difficulties encountered when occupational groups are compared. The best that can be accomplished in the present study is to consider the results at face value, and suggest that services and benefits which are infrequently provided be considered further by those concerned with effecting improvements in nursing.

A fourth point of discussion pertains to the instrument used to obtain the basic data. It seems likely that the questionnaire developed for the study was too lengthy and detailed. Even though field tests indicated the questionnaire could be completed in one hour or less, persons in several facilities did not answer all of the questions for reasons not readily apparent. The response rate was fairly satisfactory for hospitals (83.9 per cent), but less satisfactory for nursing homes (64.8 per cent). More important than the overall response rates, however, is the fact that large numbers of respondents omitted answers to several questions. Consequently, it is unlikely that the results for several questions are representative of all facilities. This is unfortunate, in that certain results may be biased and misleading. Future studies perhaps should not depend upon questionnaire methods, but rather should arrange for data collections through personal interviews.

A fifth and final point pertains to the possibility of the data changing with the passage of time. As indicated earlier in this report, the questionnaires were mailed early in May, 1966, and the majority were returned within one month. More than half a year has thus elapsed since these data were collected. Several changes could easily have occurred which would alter the ranges, percentages, etc. for several questions. Indeed, changes have occurred in salaries, thus requiring upward adjustments in the salary figures reported for question 11. The Idaho Hospital Association reported that nursing salaries at all levels in Idaho hospitals had increased about 15 per cent by the end of 1966, and the Idaho Association of Licensed Nursing Homes reported similar increases of 10 to 15 per cent in Idaho nursing homes. The two Associations stated that further salary negotiations and adjustments likely would occur during the present year. A follow-up study designed to up-date the results of the present study thus would be most timely and appropriate.

Conclusions

Based on the results, interpretations, and discussions presented in the preceding pages of this report, the following conclusions seem justified:

1. The nursing profession in recent years has been characterized by a considerable amount of self examination and attempts to improve their remuneration and working conditions. Many of these efforts have been successful.

2. Efforts to improve nursing in Idaho in regard to salary, supply of trained personnel, and general working conditions may be expected to continue.

3. The results of this study should not be interpreted as indications that the nursing profession is better than, poorer than, or equal to any other occupational group. Rather, the data are presented for use by educators, medical personnel, other interested and qualified persons, and by the nursing profession itself as a partial basis for negotiations and activities which will improve the conditions in which the individual nurse must function and thus improve the services she provides.

4. A follow-up study should be made to up-date the results obtained in the present study. Personal interviews should be used instead of a questionnaire to obtain the desired data.

5. Medical facilities in Idaho vary over a wide range in regard to such items as number of beds, size of area served, and population served.

6. Nurses are in short supply and an increased demand for nursing personnel may be expected to develop between now and 1970. This is supported by large numbers of budgeted vacancies, increases anticipated to provide services under the Medicare program, expansions of present facilities or new facilities, and statements describing general personnel shortages by several respondents.

7. Nurses as a group are characterized by relatively frequent movements between medical facilities and in and out of the labor force. Replacements for those leaving their jobs may exceed 25 per cent of the total employment in any one year.

8. Responses from individual questionnaires are presented in two appendixes, and interested readers are encouraged to apply additional statistical analyses to these data to suit their own individual purposes.

9. The data presented are largely quantitative in nature. Certain qualitative interpretations or conclusions therefore are not possible for several items in the questionnaire.

10. Questionnaire responses reported in the study are more than six months old and thus may not represent the current state of affairs. Salary figures are known to have increased by the end of 1966, and the salary figures reported in this publication must be adjusted upward.

The State Occupational Research Unit presents this study to the nursing profession, medical personnel, educators, employment and personnel officials, and other interested and qualified groups with the hope that it will play some part in improving the Idaho nursing profession and the services it renders to our citizens.

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APPENDIX A

HOSPITALS RESPONDING TO QUESTIONNAIRES

Ashton Memorial Hospital	Ashton, Idaho
Bannock Memorial Hospital	Pocatello, Idaho
Bear Lake Memorial Hospital	Montpelier, Idaho
Benewah Community Hospital	St. Maries, Idaho
Bingham Memorial Hospital	Blackfoot, Idaho
Bonner General Hospital	Sandpoint, Idaho
Booth Memorial Hospital	Boise, Idaho
Boundary County Community Hospital	Bonners Ferry, Idaho
Caldwell Memorial Hospital	Caldwell, Idaho
Caribou County Hospital	Soda Springs, Idaho
Cassia Memorial Hospital	Burley, Idaho
Cassia Memorial Hospital, Convalescent Center	Burley, Idaho
Clearwater Valley Hospital	Orofino, Idaho
Elk's Rehabilitation Center	Boise, Idaho
Elmore Memorial Hospital	Mountain Home, Idaho
Franklin County General Memorial Hospital	Preston, Idaho
Fremont General Hospital	St. Anthony, Idaho
Gooding County Memorial Hospital	Gooding, Idaho
Grangeville General Hospital	Grangeville, Idaho
Gritman Memorial Hospital	Moscow, Idaho
Idaho State School & Hospital	Nampa, Idaho
Idaho State Tuberculosis & Chest Disease Hospital	Gooding, Idaho
Lake City General Hospital	Coeur d'Alene, Idaho
Lost Rivers Hospital	Arco, Idaho
Madison Memorial Hospital	Rexburg, Idaho
Magic Valley Memorial Hospital	Twin Falls, Idaho
Marsh Valley Hospital	Downey, Idahc
McCall Memorial Hospital	McCall, Idaho
Mercy Hospital	Nampa, Idaho
Minidoka Memorial Hospital	Rupert, Idaho
Oneida Hospital	Malad, Idaho
Power County Hospital	American Falls, Idaho
Samaritan Community Hospital	Nampa, Idaho
St. Alphonsus' Hospital	Boise, Idaho
State Hospital North	Orofino, Idaho
State Hospital South	Blackfoot, Idaho

APPENDIX A

HOSPITALS RESPONDING TO QUESTIONNAIRES (CONT'D)

St. Anthony Community Hospital	Pocatello, Idaho
St. Benedict's Hospital	Jerome, Idaho
Steele Memorial Hospital	Salmon, Idaho
St. Joseph's Hospital	Lewiston, Idaho
St. Luke's Hospital	Boise, Idaho
St. Mary's Hospital	Cottonwood, Idaho
Twin Falls Clinic Hospital	Twin Falls, Idaho
Valley County Hospital	Cascade, Idaho
Veteran's Administration Hospital	Boise, Idaho
Weiser Memorial Hospital	Weiser, Idaho
West Shoshone General Hospital	Kellogg, Idaho

APPENDIX B

NURSING HOMES RESPONDING TO QUESTIONNAIRES

Arcadian Nursing Home	Orofino, Idaho
Bingham County Nursing Home	Blackfoot, Idaho
Blakely Nursing Home	Caldwell, Idaho
Boulevard Nursing Home	Nampa, Idaho
Burley Nursing Home	Burley, Idaho
Carson Nursing Home	Rigby, Idaho
Casabello Estate	Salmon, Idaho
Elmore Memorial Nursing Home	Mountain Home, Idaho
Emmett Valley Manor Nursing Home	Emmett, Idaho
Greenview Chalet	Idaho Falls, Idaho
Hazeldel Manor	Twin Falls, Idaho
Hillcrest Haven Convalescent Home	Pocatello, Idaho
Idaho County Nursing Home	Grangeville, Idaho
Latah Nursing Home, Inc.	Moscow, Idaho
Lewiston Manor, Inc.	Lewiston, Idaho
Magic Valley Manor, Inc.	Wendell, Idaho
Midby Nursing Home	Nampa, Idaho
Midland Manor Nursing Home	Nampa, Idaho
Orchards Nursing Home, Inc.	Lewiston, Idaho
Park View Manor Nursing Home	Nampa, Idaho
Payette Valley Sanitarium	Payette, Idaho
Pinewood Manor Nursing Home	Coeur d'Alene, Idaho
Power County Hospital, Geriatrics Unit	American Falls, Idaho
Rexburg Nursing Home	Rexburg, Idaho
Sandpoint Manor Nursing Home	Sandpoint, Idaho
Shady Lane Guest Home, Inc.	Emmett, Idaho
Shoshone County Nursing Home	Wallace, Idaho
Skyview Manor, Inc.	Twin Falls, Idaho
Somerville Home	Lewiston, Idaho
Starr Nursing Home	Twin Falls, Idaho
St. Benedict's Hospital, Geriatrics Unit	Boise, Idaho
Thompson Nursing Home	Boise, Idaho
Treasure Valley Manor	Boise, Idaho
Valleyview Nursing Home	Lava Hot Springs, Idaho
Wood River Convalescent Center	Shoshone, Idaho

APPENDIX C

QUESTIONNAIRE RESULTS FOR HOSPITALS

Total N = 47

Question # 2

No answer 5
a. General Hospital 30
b. Nursing Home 0
c. Psychiatric 2
d. Rehabilitation 1
e. Hospital-Nursing Home . . . 6
f. Other (specify) 3*

*1. Diagnosis and Service Clinic; Intensive Care Hospital.
2. Tuberculosis Hospital.
3. Maternity Home and Hospital.

Question # 3

No answer 1

Number of Beds	Frequency	Number of Beds	Frequency	Number of Beds	Frequency
8	1	30	3	75	1
12	2	31	1	93	1
13	1	32	1	103	2
14	1	35	2	127	1
16	1	36	1	130	1
17	3	37	1	150	1
19	1	39	1	151	1
21	1	40	1	157	1
22	1	50	1	160	1
26	1	58	2	203	1
27	2	60	2	376	1
28	1	65	1	459	1

Question # 4

No answer 1
No geographical limit 2

Area Served	Frequency	Area Served	Frequency
One city, surrounding area	9	Parts of 4 counties	1
One-half a county	1	Ten counties	1
One county	16	Thirty-four counties	1
One county, part of another	2	State of Idaho	2
One county, part of 2 others	4	Parts of 2 states	1
One county, surrounding area	2	Parts of 3 states	1
Two counties	1	Idaho, parts of 4 other states	1
Parts of 3 counties	1		

APPENDIX C (CONT'D)

Question # 5

No answer 8

Population Served	Frequency	Population Served	Frequency	Population Served	Frequency
1,700	1	9,000	2	35,000	1
2,000	1	9,544	1	42,000	1
3,580	1	10,000	2	45,000	1
5,000	2	13,000	2	50,000	2
7,000	2	15,000	4	70,000	1
7,176	1	18,000	2	100,000	3
7,271	1	21,378	1	170,000	1
8,000	2	25,000	1	700,000	1
8,840	1	30,000	1		

Question # 6

Type of Position	Cumulative Frequency Full-Time Employees	Cumulative Frequency Part-Time Employees
a. Director and Assistant	42	5
b. Supervisor and Assistant	93	41
c. Head Nurse and Assistant	169	31
d. General Duty Nurse	316	251
e. Practical Nurse	627	166
f. Nurse Aide	697	149
Totals	1,944	643

Total Employees Per Facility,
Full-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
2	1	20	1	74	1
3	1	21	1	79	1
4	1	22	3	87	1
5	1	24	1	90	1
7	1	29	2	95	1
8	2	30	1	97	2
9	1	31	2	108	1
10	3	34	1	113	1
11	1	36	2	130	1
12	1	38	1	142	1
15	4	48	1	168	1
16	2				

Total = 1944

APPENDIX C (CONT'D)

Question # 6 Cont'd

Total Employees Per Facility,
Part-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
0	4	11	5	21	1
1	3	12	2	22	1
2	1	14	2	23	1
3	2	15	1	26	1
4	1	16	1	28	1
6	6	17	1	29	1
7	1	18	1	38	2
9	1	19	1	58	1
10	4			61	1

Total = 643

Question # 7

	Type of Position	Cumulative Frequency Full-Time Employees	Cumulative Frequency Part-Time Employees
a.	Director and Assistant	6	0
b.	Supervisor and Assistant	15	3
c.	Head Nurse and Assistant	30	2
d.	General Duty Nurse	69	11
e.	Practical Nurse	132	6
f.	Nurse Aide	110	17
	Totals	362	39
	Facilities reporting no vacancies	9	38

Total Budgeted Vacancies Per Facility,
Full-Time Employees

Total Vacancies	Frequency	Total Vacancies	Frequency	Total Vacancies	Frequency
0	9	6	4	12	2
1	4	7	3	13	1
2	5	8	2	20	1
3	5	10	2	23	1
4	2	11	1	133	1
5	4				

Total vacancies = 362

APPENDIX C (CONT'D)

Question # 7 Cont'd

Total Budgeted Vacancies Per Facility,
Part-Time Employees

Total Vacancies	Frequency	Total Vacancies	Frequency	Total Vacancies	Frequency
0	38	2	3	8	1
1	1	3	3	15	1

Total vacancies = 39

Question # 8

	Type of Position	Cumulative Frequency Full-Time Employees	Cumulative Frequency Part-Time Employees
a.	Director and Assistant	3	0
b.	Supervisor and Assistant	8	7
c.	Head Nurse and Assistant	19	2
d.	General Duty Nurse	110	51
e.	Practical Nurse	132	37
f.	Nurse Aide	273	51
	Totals	545	148

Facilities reporting
no new employees 6 20

Total New Employees Per Facility,
Full-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
0	6	8	2	24	1
1	5	9	3	27	1
2	6	11	1	36	1
3	3	13	1	48	1
4	2	16	2	50	1
5	3	13	1	68	1
6	3	20	1	81	1
7	1				

Total = 545

APPENDIX C (CONT'D)

Question # 8 Cont'd

Total New Employees Per Facility,
Part-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
0	20	5	2	10	1
1	4	6	2	11	1
2	6	7	1	17	1
3	3	9	1	31	1
4	4				

Total = 148

Question # 9

Yes	28
No	19

If Yes, types of positions listed:

Type of Position	Frequency of Response
Supervisor and Assistant	1
Head Nurse and Assistant	1
General Duty Nurse	14
Practical Nurse	18
Nurse Aide	3
General Clerical	1

Question # 10

No answer	6
None	6

Individual Responses

1. Fifty-five bed unit planned with intensive care unit integrated into general hospital. RNs: 19; LPNs: 17.
2. Plan to construct new 120-bed hospital (begins Dec., 1966). Increase in General Duty Nurses, Practical Nurses and Nurse Aides (no numbers given).
3. Add 10-bed nursing home; practical nurses (no numbers given).
4. No changes, but need RNs (no number given).
5. More General Duty Nurses and also Aides (no numbers given). Present facility being remodeled with a wing added--will increase hospital bed capacity to 21 beds and a 16-bed convalescent unit to be included in the change.
6. A 20 per cent increase in nursing personnel by 1970 due to construction of a new facility (no number given).

APPENDIX C (CONT'D)

Question # 10 Cont'd

7. Impossible to anticipate. Have just moved into a new facility and need more doctors on staff.
8. Nothing definite. Thinking of expanding to an extended care unit.
9. Both RNs and LPNs (no numbers given) in order to maintain adequate team nursing.
10. Cannot forsee.
11. Full-time--1 Director of Nursing Service; 4 RNs as Head Nurses; 13 Aides; 6 LPNs. Part-time--1 RN as Head Nurse; 3 Aides; 1 LPN.
12. RNs and LPNs (no numbers given).
13. New hospital building, new rehab. quarters, new admin. building. Main requirements in new personnel will be RNs (10) and LPNs (15).
14. More aide help for a larger Central Service. Added RN help for Intensive Care Unit (no numbers given).
15. Planning to construct a new facility, but do not anticipate any additional beds. No increase planned.
16. Increase due to expanded facilities (no numbers or types given).
17. We do need a supervisor of nurses. We have no immediate plans to increase our facility.
18. Two nurse aides.
19. Plan a new facility.
20. We should have an addition of 12 beds.
21. RN--10; LPN--30; Aidea--?? New wings--approximately one hundred new beds.
22. A 15 per cent increase in all categories.
23. RN and LPN (no numbers given).
24. Assistant to Director; 1 more superior; 3 head nurses; staff nurse; technicians (no number for last entry).
25. Expanding to twice the size facility (new hospital and nursing home) so expect twice the number of all nursing personnel.
26. It will depend on budget allocated by the legislature.
27. Supervisors and assistants--practical nurses (no numbers given). At this time we are adding 10 beds to hospital.
28. Increase in nursing staff and will probably expand our present facility (no number given).
29. RNs (no number given) and 2 LPNs. (head nurse placement for the RN)
30. Need more professional nurses (the 4-year type of which we don't have now. Few to no aides and more LPNs or nursing technicians (no numbers given).
31. Two more RNs. Presently constructing 4 more rooms and will add bathrooms to the present rooms, giving us a total of 2 more additional rooms, 29 beds.
32. No additions to building. RNs needed (no number given).
33. None--operating on a provisional license, and will be conducting pre-natal clinics only, after 1st of July, 1966. Deliveries will take place in the General Hospital. Patients will receive pre-natal and post-partum nursing care only.
34. Not projected at this time.
35. Expect very little increase in present staff, even though a need exists, until such time as the local college has established its contemplated professional nursing course.

APPENDIX C (CONT'D)

Question # 11

Type of Position	Starting Monthly Salary	Maximum Monthly Salary
a. Director and Assistant No answer (start.): 18 No answer (max.): 23	$350, 385, 390, 420, 425, 435, 450, 450, 450, 450, 450, 460, 460, 460, 460, 460, 500, 500, 500, 520, 525, 540, 559, 559, 600, 800, 885.	$420, 425, 425, 451, 500, 500, 500, 500, 500, 510, 520, 525, 525, 550, 559, 582, 600, 679, 679, 679, 679, 692, 825, 1160.
b. Supervisor and Assistant No answer (start.): 23 No answer (max.): 24	$350, 350, 368, 372, 380, 390, 400, 400, 405, 405, 410, 415, 417, 417, 420, 425, 431, 450, 450, 460, 460, 475, 623, 680.	$335, 370, 400, 400, 418, 435, 439, 440, 450, 453, 475, 475, 485, 491, 500, 507, 507, 550, 559, 559, 600, 680, 976.
c. Head Nurse and Assistant No answer (start.): 14 No answer (max.): 18	$310, 310, 330, 345, 350, 350, 350, 360, 366, 369, 370, 373, 375, 378, 378, 378, 378, 378, 378, 380, 385, 390, 390, 395, 400, 400, 400, 403, 405, 410, 420, 600, 623.	$350, 360, 380, 390, 390, 400, 400, 400, 407, 417, 418, 425, 425, 427, 430, 432, 435, 440, 441, 448, 455, 460, 460, 460, 460, 550, 600, 629, 976.
d. General Duty Nurse No answer (start.): 5 No answer (max.): 16	$300, 300, 325, 330, 330, 335, 335, 337, 340, 343, 343, 343, 343, 345, 350, 350, 350, 350, 350, 351, 351, 356, 360, 360, 360, 364, 365, 365, 370, 370, 370, 375, 375, 375, 375, 385, 385, 396, 400, 402, 450, 475.	$355, 363, 370, 370, 385, 385, 389, 390, 390, 400, 400, 400, 400, 402, 405, 407, 410, 410, 415, 415, 417, 417, 417, 423, 427, 440, 445, 450, 500, 526, 708.
e. Practical Nurse No answer (start.): 5 No answer (max.): 13	$170, 200, 216, 220, 225, 229, 230, 230, 230, 230, 235, 235, 237, 240, 240, 243, 245, 250, 250, 250, 250, 250, 250, 251, 251, 253, 255, 260, 260, 260, 260, 260, 275, 282, 282, 282, 282, 285, 292, 300, 340, 346.	$235, 240, 250, 260, 260, 263, 265, 270, 278, 280, 280, 283, 286, 288, 290, 290, 290, 300, 300, 304, 310, 311, 313, 317, 325, 330, 330, 343, 343, 343, 343, 350, 360, 503.

APPENDIX C (CONT'D)

Question # 11 Cont'd

Type of Position	Starting Monthly Salary	Maximum Monthly Salary
f. Nurse Aide	$160, 160, 168, 175, 176, 176, 176, 177, 180, 180, 183, 185, 185, 190, 194, 195, 196, 196, 198, 199, 200, 200, 200, 200, 200, 203, 205, 205, 210, 215, 220, 220, 221, 232, 232, 232, 232, 318.	$180, 210, 215, 215, 219, 220, 220, 220, 221, 222, 225, 230, 230, 233, 235, 235, 235, 239, 245, 246, 250, 250, 260, 264, 264, 265, 269, 275, 282, 378, 397, 503.
No answer (start.): 9		
No answer (max.): 15		

Salary Ranges

Director and Assistant

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$385	1	$460	5	$550	1
390	1	485	1	572	1
420	1	499	1	600	2
425	1	500	6	614	1
435	1	510	1	647	1
447	1	525	2	800	1
450	1	532	2	825	1
458	1	540	1	977	1
No answer from 18 facilities				1069	1

Supervisor and Assistant

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$335	3	$417	5	$470	2
367	3	419	1	475	1
385	1	420	3	483	1
387	1	425	6	495	2
389	1	429	1	500	2
395	2	435	3	505	1
399	1	438	4	507	1
400	2	439	3	516	2
402	2	440	4	535	1
405	2	445	1	566	1
409	1	450	5	600	1
414	1	455	2	616	2
415	2	460	1	680	1
No answer from 22 facilities				965	1

APPENDIX C (CONT'D)

Question # 11 Cont'd

Head Nurse and Assistant

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$340	1	$400	11	$440	4
350	5	405	14	446	1
365	3	407	4	450	2
370	1	410	7	454	5
375	3	411	1	457	1
378	2	415	3	460	3
379	1	417	8	466	4
385	2	420	15	480	1
388	1	422	3	550	1
390	6	423	1	600	1
392	1	425	4	623	1
393	2	430	3	644	4
396	3	435	3	666	2
397	5	438	3	687	2
398	1	439	4	708	2
				728	2

No answer from 18 facilities

General Duty Nurse

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$300	1	$378	1	$415	7
310	1	379	2	417	1
320	2	380	9	422	24
330	8	381	3	425	1
337	1	385	16	430	2
340	1	388	2	435	3
343	1	389	3	450	2
345	2	390	10	475	4
347	3	393	1	507	3
350	19	395	7	545	4
353	3	396	26	555	1
355	2	397	2	563	2
360	14	400	13	581	5
365	3	405	8	600	5
370	36	407	5	636	1
372	2	410	2	654	3
375	57	413	1	690	1

No answer from 18 facilities

APPENDIX C (CONT'D)

Question # 11 Cont'd

Practical Nurse

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$216	1	$260	39	$296	16
220	2	262	7	300	40
224	4	263	9	301	5
225	4	265	22	302	3
230	19	268	8	304	2
234	3	269	2	305	5
235	24	270	17	310	21
240	18	273	4	311	21
241	5	275	12	315	3
242	5	276	1	320	1
245	9	277	2	325	2
246	3	278	5	327	15
247	3	280	25	330	1
250	33	282	16	343	5
252	2	285	6	345	8
253	6	286	17	350	1
255	11	290	36	357	5
258	4	292	6	No answer from 9 facilities	

Nurse Aide

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$125	3	$215	18	$260	7
175	12	217	1	264	4
176	2	219	2	269	23
177	13	220	32	270	3
180	11	221	3	282	24
181	3	224	1	296	3
186	1	225	15	311	8
187	1	226	2	325	1
190	5	227	1	327	2
194	2	229	10	343	2
195	5	230	11	360	3
196	13	231	1	368	6
199	19	232	61	378	3
200	65	235	8	380	3
201	2	238	7	392	3
202	1	240	8	397	1
204	22	242	2	416	1
205	27	244	39	425	4
206	1	245	6	439	2
209	5	246	3	450	6
210	36	250	1	465	4
211	1	255	2	478	3
212	1	256	32	No answer from 12 facilities	

APPENDIX C (CONT'D)

Question # 12

Director and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1 . .	$15.57			No answer: 46			

Supervisor and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1 . .	$15.00	2 . .	none	1 . .	$25.00	1 . .	$10.00
1 . .	10.00	1 . .	none	1 . .	25.00	1 . .	none
2 . .	none	2 . .	$10.00	1 . .	none	1 . .	25.00
1 . .	10.00	1 . .	19.00	No answer: 33			

Head Nurse and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1 . .	none	1 . .	none	4 . .	$20.00	4 . .	$20.00
3 . .	$12.50	3 . .	$10.00	1 . .	10.00	3 . .	25.00
5 . .	none	7 . .	10.00	2 . .	none	2 . .	10.00
2 . .	10.00	2 . .	none	1 . .	none	2 . .	6%
1 . .	none	1 . .	none	No answer: 29			

General Duty Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
2 . .	$10.00	2 . .	none	1 . .	$10.00	1 . .	none
5 . .	none	9 . .	$10.00	1 . .	none	2 . .	none
5 . .	10.00	4 . .	10.00	10 . .	10.00	18 . .	$15.57
11 . .	none	3 . .	none	5 . .	none	4 . .	25.00
1 . .	none	3 . .	none	1 . .	none	2 . .	25.00
2 . .	11.00	2 . .	17.00	1 . .	10.00	1 . .	10.00
2 . .	11.00	3 . .	20.00	No answer: 21			

Practical Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1 . .	none	2 . .	none	15 . .	$ 5.00	1 . .	$ 5.50
3 . .	$15.00	4 . .	$ 5.50	1 . .	none	4 . .	10.38
4 . .	10.00	2 . .	5.00	4 . .	none	6 . .	15.00
6 . .	12.50	4 . .	5.50	12 . .	$ 5.00	1 . .	15.00
11 . .	none	2 . .	none	3 . .	10% base	1 . .	10.00
1 . .	none	11 . .	10.00	1 . .	10.00	1 . .	none
16 . .	none	4 . .	10.00	1 . .	none	1 . .	5.00
2 . .	none	2 . .	none	3 . .	$ 7.50	3 . .	6%
12 . .	none	2 . .	12.12	9 . .	20.00	No answer: 12	

APPENDIX C (CONT'D)

Question # 12 Cont'd

Nurse Aide

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
2	none	3	$ 5.50	4	none	2	none
2	none	10	5.50	1	none	2	$ 5.50
1	$ 7.50	9	10.00	21	none	13	10.38
13	none	5	none	2	none	6	none
1	none	2	none	3	10% base	1	none
9	none	3	10.00	2	$10.00	3	5.00
26	none	3	none	6	none	5	6%

No answer: 19

Twenty-one facilities wrote "none," indicating no extra pay is given.

Question # 13

Director and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	$15.57			No answer: 46			

Supervisor and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	$10.00	2	$10.00	1	$25.00	1	$10.00
1	10.00	1	20.00	1	25.00	1	25.00
3	12.50	1	19.00	No answer: 37			

Head Nurse and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
2	$10.00	7	$10.00	4	$15.00	1	$10.00
2	10.00	5	10.00	1	25.00	2	6%
2	10.00	1	10.00	No answer: 37			

General Duty Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	$10.00	2	$10.00	1	$16.80	5	$25.00
2	12.50	1	10.00	6	25.00	2	40.00
2	10.00	2	17.00	1	10.00	4	10.00
2	11.00	2	10.00	13	15.57	1	10.00
2	11.00	1	10.00	No answer: 29			

APPENDIX C (CONT'D)

Question # 13 Cont'd

Practical Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	$10.00	2	$20.00	1	$16.80	5	$10.38
2	10.00	4	10.00	6	5.00	4	15.00
7	12.50	10	10.00	1	10.00	1	15.00
2	5.50	1	10.00	2	7.50	1	10.00
2	5.00	1	12.12	5	15.00	1	10.00
3	5.50	7	10.00	1	5.50	1	6%

No answer: 23

Nurse Aide

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	$ 7.50	1	$10.00	1	$10.00	5	$10.38
4	5.50	1	10.00	5	10% base	2	6%
8	5.50	2	10.00	2	5.50	No answer: 36	

Nineteen facilities wrote "none," indicating no extra pay is given.

Question # 14

No answer	1
Straight time pay	25
Compensatory time off	16
Time and a half pay	6
Other	3*

*1. A combination of all three is used. Some nurses prefer the extra time off to being paid. We pay more for emergency calls, ambulance duty, etc.
2. Marked "c" also. For holidays we pay double.
3. $5.00 if on call and $10.00 if called for a case.

Question # 15

No answer	1
Yes	40
No	6

Question # 16

No answer	6
Length of service	16
Merit only	4
Service and merit	21
Additional education	4
Other	5*

APPENDIX C (CONT'D)

Question # 16 Cont'd

*1. Checked "a" also. Merit and experience for Aides.
2. Cost of living increase per Board of Directors.
3. Combination of A-B-C.
4. Registered Nurses--c and d. LPN and Nursing Assistant--c.
5. Blanket percentage increase to all employees annually.

Question # 17

No maximum or no regulation	9
No answer	6
1½ years	1
2 years	3
3 years	8
3½ years	2
4 years	8
4½ years	1
5 years	4
6 years	2
6½ years	1
16 years	1
20 years	1

Question # 18

None	20
Rooms	1
One or more meals	18
Laundry of uniforms	6
Allowance for purchase of uniforms	1
Discount on drugs	12
Other	7*

*1. Fifty per cent on meals (checked both f and g).
2. Insurance medical and retirement.
3. Laboratory and x-ray.
4. Also discounts on supplies and hospital services.
5. Ten per cent discount on personal hospitalization.
6. Insurance and retirement.
7. Discount on hospital bills.

Question # 19

No answer	1
Yes	10
No	36

APPENDIX C (CONT'D)

Question # 20

No answer	2
No	29

1. No fringe benefits for part-time; daily rate of pay is higher.
2. Part-time RN start at $18.00 shift and LPN start at $12.00 shift (slightly higher than full-time).
3. Vacation-sick leave benefits, salary (no description).
4. Part-time paid per shift and per hour; 50¢ additional for evening and night shifts (not stated if part-time paid more at hourly rate).
5. Those working less than 2 hours per week not covered by insurance.
6. Vacations, discounts, sick-leave are pro-rated. Holiday is double pay if worked.
7. No vacation--no sick leave--no holidays--no insurance.
8. Part-time paid hourly (not given); no regular salary increases.
9. Part-time do not receive paid vacations, paid sick leave, or paid holidays.
10. Part-time employees often work at their own convenience and do not receive the fringe benefits.
11. Salary increases based more on merit than length of service.
12. No longevity to part-time workers.
13. Less than 14 days per month receives no benefits (apparently means no fringe benefits).
14. No part-time employees.
15. Part-time do not get benefits (fringe) if work under 20 hours per week.
16. No vacations--no holidays--no paid sick leave.

Question # 21

No answer	1
Yes	40
No	6

Question # 22

No answer	7
Blue Cross	27
Medical Service Bureau	6
Other	7*

*1. Idaho Munincipal League Group Insurance (2 facilities).
2. Business Men's Assurance (3 facilities).
3. Metropolitan--Comprehensive, $25.00 deduotable.
4. Group Health-Major Medical--Prudential.

APPENDIX C (CONT'D)

Question # 23

No answer	8
Medical facility	10
Shared	26
Employee	3

Question # 24

No answer	2
Yes	45

Question # 25

No answer	1
5 days	1
6 days	2
7 days	2
10 days	6
12 days	30
14 days	4
18 days	1

Question # 26

No answer	1
Yes	33
No	13

Question # 27

No answer	1
4 days	2
6 days	14
7 days	17
8 days	10
9 days	1
10 days	1
24 days	1

Question # 28

No answer	1
Compensatory time off	38
Straight time pay	2
Time and a half pay	1
Double time pay	11
Other	0

APPENDIX C (CONT'D)

Question # 29

5 days	2
6 days	1
10 days	37
12 days	5
14 days	1
30 days	1

Question # 30

Yes	32
No	15

Question # 31

Maximum Days-Years Required	Frequency
3 days; 10 years	1
4 days; 10 years	1
12 days; 2 years	1
15 days; 3 years	3
15 days; 5 years	5
15 days; 9 years	1
15 days; 10 years	3
20 days; 3 years	1
20 days; 10 years	5
20 days; 11 years	1
20 days; 15 years	3
20 days; 16 years	1
20 days; 20 years	1
21 days; 10 years	1
30 days; 10 years	2
30 days; 15 years	1
30 days; 20 years	1
No answer from 15 facilities	

Question # 32

No answer	1
Yes	45
No	1

Question # 33

Yes	19
No	28

APPENDIX C (CONT'D)

Question # 34

No answer	27
Paid by facility	4
Shared by facility and employee	15
Paid by employee	1

Question # 35

No	8

1. Part-time employees do not acrue leave time or other benefits.
2. Five days paid vacation for anyone working over 24 hours per week (as opposed to 10 full-time).
3. Part-time no paid vacation if hours not sufficient. No holiday time; no sick leave benefits.
4. Based on hours worked--control sick leave and vacation (apparently pro-rated).
5. Part-time earn both sick leave and vacation at the rate of 1 day per 200 hours (not clear how this differs from full-time).
6. Sick leave to full-time only; part-time eligible for 5 working days vacation after 132 8-hour shifts (contrast with 10 days for full-time per year).
7. Employees working less than 2 hours per week not covered by insurance.
8. No paid vacation.
9. Part-time do have Social Security coverage; do not have any others implied in questions 21-34.
10. Part-time get 5 days vacation (compared with 10) and 3 holidays (compared with 6). Part-time work regularly at least 20 hours per week.
11. Prorated.
12. Vacations, sick leave are pro-rated.
13. Part-time receive vacation and sick leave on pro-rated basis.
14. Based on hours worked; 1 day vacation for 172 hours worked.
15. Part-time employees do not have insurance, vacations, or sick leave benefits.
16. In proportion to full-time employment (refers to questions 25-29).
17. Part-time are covered under Social Security (not stated, but maybe others do not apply).
18. No group insurance--no earned sick leave--straight wage if working--no acrued vacation.
19. Part-time do not get paid for holidays, sick leave, or vacation time.
20. Part-time acrue 5 days vacation (compared with 10), 3 paid holidays (compared with 7), and 5 days sick leave (compared with 18).
21. One-half benefits in all, except sick leave (latter not explained).
22. None of above applies to part-time employees.
23. Part-time do not receive fringe benefits.
24. Part-time no fringe benefits except Social Security.
25. Part-time paid more per shift with no fringe benefits.
26. No fringe benefits to part-time, except pro-rated vacation.
27. Part-time employees do not share with fringe benefits.

APPENDIX C (CONT'D)

Question # 35 Cont'd

28. Part-time receive percentage of benefits (apparently pro-rated).
29. No sick leave--no holidays--no paid vacations.
30. Anyone working less than 14 days per month--no benefits.
31. Vacation--pro rated.
32. Medical insurance available to members of nursing staff who work at least 80 hours per month. No other fringe benefits to part-time.
33. No part-time workers.
34. No fringe benefits except for regular part-time; 5 working days after one year (maybe reference to vacation--10 for full-time--but not stated).
35. "Yes" --(but nothing else stated).
36. No sick leave--no paid vacation--no holidays.
37. Everything is pro-rated.
38. Provisions only to full-time permanent; permanent part-time merit increases only.
39. Fringe benefits not given to part-time employees.

Question # 36

Yes	43
No	4

Question # 37

No answer	4
1954	1
1957	1
1959	1
1960	2
1961	3
1962	1
1963	1
1964	2
1965	13
1966	18

Question # 38

Yes	34
No	13

Question # 39

No answer	15
1960	1
1962	1
1963	1
1964	5
1965	5
1966	19

APPENDIX C(CONT'D)

Question # 40

No answer	2
Yes (but no description)	5
No	15

1. Limited to former trained nurses wanting to return to profession.
2. Physician's lectures; training films; demonstrations, etc.
3. Monthly meeting for all nursing personnel with discussion of some professional topic.
4. Most employees receive 1 hour per week in-service education.
5. Two weeks floor orientation.
6. It can be said to be continuous (no other description).
7. Doctor's lectures, films, nurses meetings, and speakers.
8. Demonstration of present equipment; new trends in medical and surgical therapy, regarding nursing care.
9. New employees given initial training when needed and refresher courses.
10. Two courses. Basic--Fundamentals of Patient Care and Orientation to Organization. Advanced--psychiatric nursing in greater depth.
11. For new Nurse Aides, orientation to nursing and basic training for Nursing Assistants. For all--refresher training in techniques and advances in nursing practice.
12. Monthly educational programs, including films, speakers, etc. under the direction of the Director of Nurses.
13. Monthly lectures and on-the-job training.
14. One hour per week in-service of varied topics presented by staff and outside speakers.
15. Full-time in-service director with weekly meetings.
16. Have a monthly meeting with films, visiting consultants. Special training given where and when needed.
17. Aides work directly with RN supervision.
18. Meeting each month for nursing, and films etc. as available.
19. Orientation; on-going. In-service.
20. Meetings with films, lectures, discussions, etc.
21. Quarterly workshops for all nursing personnel--semi-monthly classes with psychology department for Registered Nurses and classes twice weekly for other nursing personnel.
22. A 24-hour training program for nurse aides.
23. Films, workshops and team nursing.
24. Films, lectures, check lists, demonstrations, orientation.
25. Regularly scheduled programs of lectures, demonstrations, and films on a variety of hospital-related subjects.

Question # 41

No	20
Left blank or no description	5

1. A 90-day on-the-job program.

APPENDIX C (CONT'D)

Question # 41 Cont'd

2. Orientation (no other explanation).
3. All new employees are given a planned orientation to the whole institution.
4. A 3-hour general personnel orientation.
5. Aides must take instruction for a certain number of hours.
6. Written duties and hospital policies.
7. Nursing staff has orientation classes.
8. A 3-week orientation job description and procedure manual.
9. New employees made familiar with all departments of the hospital and advised of vacation, sick leave, etc.
10. Included in in-service training--hospital tour, Merit System, rules of Department of Health and hospital.
11. Includes orientation to all wards and shifts.
12. A 2-week orientation; 5-hour classroom orientation. The rest of the 2-week period on the job training under supervision.
13. Familiarization with the facility.
14. Full-time in-service director with weekly meetings.
15. Works with experienced person until oriented.
16. A 2-day review and orientation by a head nurse.
17. Performed by head nurse and immediate supervisor.
18. New employees work several shifts with experienced help.
19. A 16-hour course in nursing duties, then quarterly workshops--semi-monthly classes with psychology department for Registered Nurses, and classes twice weekly for other nursing personnel.
20. A class for aides conducted by the Director of Nursing with demonstrations and return demonstrations.
21. Monthly group orientation meetings are held for all new employees where group benefits and hospital policies are discussed and explained.
22. New employees are given a complete orientation of plant and general facilities as well as introduction to the various department heads.

Question # 42

No	16
Left blank or no description	3

1. General shortage of registered nurses.
2. Lack of pay adequate to normal living.
3. There does not seem to be an adequate supply of nurses in the area and the salary scale is not adequate to attract personnel from other areas.
4. (1) Holding competent nursing personnel is difficult because many are "needed at home" or "move" because of husband's job relocation.
   (2) Holding competent nursing service personnel is difficult when government can pay 30 per cent higher wages for similar work.
   (3) Obtaining competent nursing service personnel is difficult when they are expected to work the less desirable 3-11 and 11-7 shifts.

APPENDIX C (CONT'D)

Question # 42 Cont'd

5. Shortage of nurses. Low patient load due to shortage of doctors. Low salary scale because of low occupancy.
6. We are now in the process of rewriting our policies and advancing our pay schedule.
7. We employ military personnel and their husbands are transferred frequently.
8. We have, apparently, no attraction for the young RN graduate. All of our RNs are here because their husbands work in this area. When a RN leaves (the husband finds employment elsewhere, death, retirement, etc.) we have no available replacements. We have never hired a young RN graduate. We do not have employed every RN in the area who is willing to work. None of our recently hired RNs came here to nurse--they are all here because their husband's work brought them here.
9. Competition for employees in the area is high. Seasonal woods work means a high turnover in spring when woods open. Low pay scale compared to most other industries in area. Few RNs and LPNs available in area for employment and difficult to recruit from out of area because of low pay scale--not competitive.
10. They move when their own or their husband's education is completed. Our RNs whose home is here have long employment records.
11. In case of RN--due to required rotation of tours and shifts.
12. (1) Geographic location. (2) Low salaries. (3) No in-service education.
13. Get married, have babies, or move along with husband to another position.
14. Our RNs have left because of husband transfers. Aides have the greatest turnover, because of type and class (economic) of person involved.
15. Low wages; small community with small numbers of available trained help.
16. Lack of available qualified persons. Salaries low.
17. Personality problems. The problem that causes the most trouble is the wife who is resentful because she has to work to help support, or completely support, a family.
18. College student wives leave when husband's school is finished, for summer vacations, or transfers.
19. Location of area. Nothing re: housing or recreation to attract single people.
20. Agricultural community leads interests away from nursing to farming activities, particularly with young children to care for.
21. Inadequate salary; lack of resource of new graduates.
22. We are unable to get new RNs into our locality, probably because of geographic location. No problem in holding competent nursing staff as most of our employees have been with us several years.
23. Shortage of LPNs. Wage scale too low for nurses to commute from other communities.
24. The only problem is that we are in a small town and the social life isn't what the majority would want--no employment for a husband unless it would be farming so married nurses do not come into our town.

APPENDIX C (CONT'D)

Question # 42 Cont'd

25. Nursing here is outmoded. My nurses work in the fields and in the hospital, and have not kept up with the times. The doctors too are behind times and this doesn't help. The nurses lack for mandatory continuing education.
26. Agricultural community leads interest away from nursing to farming activities, particularly with young children to care for.
27. LPN supply has been inadequate. Many left for better paying positions at another hospital and in nursing homes.
28. Because this is a farming community, we lack a so-called "night life" to attract young single nurses. We get the married gals only when their husbands are transferred here. Lack of a professional nurse training school is also a contributing factor.

APPENDIX D

QUESTIONNAIRE RESULTS FOR NURSING HOMES

Question # 2

No answer 1
a. General Hospital 0
b. Nursing Home 33
c. Psychiatric 0
d. Rehabilitation 0
e. Hospital-Nursing Home . . . 0
f. Other (specify) 1*

*1. Extended care facility.

Question # 3

No answer 1

Number of Beds	Frequency	Number of Beds	Frequency	Number of Beds	Frequency
5	1	37	1	76	1
9	1	39	3	84	1
10	1	44	1	87	1
18	1	45	1	89	3
21	3	50	3	92	1
29	1	58	2	99	1
31	1	63	1	100	1
34	1	74	1	120	1
35	1				

Question # 4

No answer 2

Area Served	Frequency	Area Served	Frequency
One city, surrounding area	3	Five counties	2
Two cities and vicinity	1	Seven counties	1
Part of one county	1	Southwestern Idaho	2
One county	13	Southern Idaho	2
One county, part of another	2	State of Idaho	1
One county, part of 2 others	1	One state, 6 counties	1
Two counties	3		

APPENDIX D (CONT'D)

Question # 5

No answer 9

Population Served	Frequency	Population Served	Frequency	Population Served	Frequency
6	1	15,000	1	25,800	1
4,000	1	16,000	1	45,000	1
7,271	1	20,000	2	60,000	4
9,000	1	20,729	1	80,000	1
10,000	5	25,000	2	100,000	2
11,000	1				

Question # 6

Type of Position	Cumulative Frequency Full-Time Employees	Cumulative Frequency Part-Time Employees
a. Director and Assistant	18	4
b. Supervisor and Assistant	17	6
c. Head Nurse and Assistant	23	15
d. General Duty Nurse	14	13
e. Practical Nurse	101	41
f. Nurse Aide	504	117
Totals	677	196

Total Employees Per Facility,
Full-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
2	1	14	3	25	3
4	2	15	1	26	3
7	1	17	1	31	2
8	1	18	3	34	1
11	2	20	1	40	2
12	1	22	1	43	1
13	4	24	1		

Total = 677

APPENDIX D (CONT'D)

Question # 6 Cont'd

Total Employees Per Facility,
Part-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
0	5	5	4	10	3
1	4	6	1	11	2
2	1	7	3	17	1
3	1	8	3	18	1
4	5	9	1		

Total = 196

Question # 7

Type of Position	Cumulative Frequency Full-Time Employees	Cumulative Frequency Part-Time Employees
a. Director and Assistant	2	0
b. Supervisor and Assistant	1	0
c. Head Nurse and Assistant	6	1
d. General Duty Nurse	3	2
e. Practical Nurse	15	6
f. Nurse Aide	28	10
Totals	55	19
Facilities reporting no vacancies	19	28

Total Budgeted Vacancies Per Facility,
Full-Time Employees

Total Vacancies	Frequency	Total Vacancies	Frequency	Total Vacancies	Frequency
0	19	2	5	4	3
1	5	3	2	22	1

Total vacancies = 55

Total Budgeted Vacancies Per Facility,
Part-Time Employees

Total Vacancies	Frequency	Total Vacancies	Frequency	Total Vacancies	Frequency
0	28	3	1	8	1
1	4	4	1		

Total vacancies = 19

APPENDIX D (CONT'D)

Question # 8

Type of Position	Cumulative Frequency Full-Time Employees	Cumulative Frequency Part-Time Employees
a. Director and Assistant	3	1
b. Supervisor and Assistant	4	3
c. Head Nurse and Assistant	9	0
d. General Duty Nurse	5	6
e. Practical Nurse	31	18
f. Nurse Aide	208	62
Totals	260	90
Facilities reporting no new employees	6	19

Total New Employees Per Facility, Full-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
0	6	8	1	14	1
1	3	9	1	15	2
3	2	10	2	20	1
4	4	12	1	23	2
5	4	13	1	25	1
6	3				

Total = 260

Total New Employees Per Facility, Part-Time Employees

Total Employees	Frequency	Total Employees	Frequency	Total Employees	Frequency
0	19	5	2	11	1
1	5	6	2	16	1
2	1	8	1	20	1
3	2				

Total = 90

Question # 9

No answer	3
Yes	8
No	24

If Yes, types of positions listed:

APPENDIX D (CONT'D)

Question # 9 Cont'd

Type of Position	Frequency of Response
Director and Assistant	1
Supervisor and Assistant	0
Head Nurse and Assistant	0
General Duty Nurse	4
Practical Nurse	6
Nurse Aide	3
General Clerical	0

Question # 10

No answer	3
None	5

Individual Responses

1. A 10-15 per cent increase.
2. May require more Registered Nurses (no number given).
3. Would like to replace Aides with LPNs--not enough money now.
4. Indefinite at this time.
5. More licensed LPNs (no number given).
6. Not known.
7. Impossible to determine at this time.
8. Presently adding a new facility--greatest need for licensed personnel (no numbers or types given).
9. More LPNs and RNs (no numbers given).
10. Probable increase of 25 beds by 1970--longest increase will be in Nursing Aides (no number given).
11. Probable bed increase (no number given). Three full-time RNs, 2 part-time LPNs, plus about 7 Nurse Aides.
12. Add 30-56 patient-bed addition (no numbers or types given for personnel).
13. Expand present facility--25 beds. Four Aides, 1 LPN and 2 RNs.
14. One RN and one Physical Therapist.
15. Expanding present facility. More Aides (no number given) and 1 more full-time nurse (type not given).
16. Practical Nurses and Nurse Aides (no numbers given).
17. Possible addition of 8 beds; 3 Nurse Aides.
18. Possible expansion of 16 beds by 1970.
19. One part-time Head Nurse; 6 full-time Nurse Aides.
20. RN will be most difficult to fill--no expansion anticipated at this time.
21. Construct another facility; may possibly add more beds here (no number given).
22. A 50-bed expansion planned end of 1966; 3 General Duty Nurses. Largest increase will be in Aides (no number given).
23. Presently building a 60-bed addition. This means at least 2 more full-time RNs; 1 part-time RN; 3-4 full-time LPNs; and at least 8 full-time Aides.

APPENDIX D (CONT'D)

Question # 10 Cont'd

24. Two Registered Nurses; 2 LPNs.
25. One full-time RN for Head Nurse.
26. Nurses (no types or numbers given).
27. No expansion plans; present staffirg adequate.

Question # 11

Type of Position	Starting Monthly Salary	Maximum Monthly Salary
a. Director and Assistant	$345, 400, 400, 400, 415, 425, 450, 450, 500, 500, 500, 500, 500, 550.	$375, 415, 445, 450, 500, 500, 525.
No answer (start.): 21		
No answer (max.): 28		
b. Supervisor and Assistant	$340, 350, 360, 365, 370, 392, 396, 400, 414, 500, 550, 550.	$340, 370, 415, 422, 460, 500, 528, 600, 600.
No answer (start.): 23		
No answer (max.): 26		
c. Head Nurse and Assistant	$325, 340, 345, 350, 368, 370, 375, 375, 390, 400, 400, 450, 462.	$325, 340, 350, 375, 385, 425, 425, 450, 450, 468.
No answer (start.): 22		
No answer (max.): 25		
d. General Duty Nurse	$300, 300, 320, 350, 350, 350, 352, 355, 374, 375, 367, 396.	$300, 340, 350, 350, 355, 397, 400, 400, 402, 425.
No answer (start.): 23		
No answer (max.): 25		
e. Practical Nurse	$194, 200, 216, 225, 225, 225, 232, 235, 235, 235, 238, 238, 240, 240, 240, 242, 250, 250, 254, 255, 255, 258, 260, 262, 264, 265, 270, 270, 278, 300.	$220, 240, 242, 250, 250, 254, 260, 260, 264, 264, 264, 264, 265, 270, 275, 275, 276, 280, 280, 282, 292, 296, 308, 311, 325, 325.
No answer (start.): 5		
No answer (max.): 9		

APPENDIX D (CONT'D)

Question # 11 Cont'd

Type of Position	Starting Monthly Salary	Maximum Monthly Salary
f. Nurse Aide	$160, 160, 160, 165, 173, 173, 175, 175, 176, 176, 176, 176, 176, 176, 176, 180, 194, 194, 194, 194, 195, 195, 200, 200, 200, 202, 210, 211, 220, 264.	$176, 180, 184, 185, 185, 185, 194, 195, 199, 200, 202, 208, 220, 220, 220, 220, 225, 225, 225, 225, 225, 225, 231, 232, 244.
No answer (start.): 4		
No answer (max.): 10		

Salary Ranges

Director and Assistant

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$345	1	$415	1	$475	1
375	1	445	1	500	6
400	2	450	1	550	2

No answer from 20 facilities

Supervisor and Assistant

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$345	1	$374	1	$422	1
350	1	383	1	424	1
359	1	396	2	500	1
365	1	414	1	550	2
370	1	418	1		

No answer from 23 facilities

Head Nurse and Assistant

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$325	1	$368	1	$395	3
340	1	370	2	400	4
345	1	374	2	418	3
350	4	385	1	468	1

No answer from 22 facilities

APPENDIX D (CONT'D)

Question # 11 Cont'd

General Duty Nurse

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$300	1	$350	2	$375	1
319	1	355	4	396	2
320	3	360	1	420	1
340	2	367	1		

No answer from 24 facilities

Practical Nurse

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$216	1	$245	4	$270	7
220	4	246	6	275	4
225	2	250	13	276	1
230	1	254	6	280	2
232	1	255	3	290	1
235	11	258	6	293	1
238	1	260	2	296	3
240	11	264	4	300	6
242	5	265	3		

No answer from 3 facilities

Nurse Aide

Monthly Salary	Frequency	Monthly Salary	Frequency	Monthly Salary	Frequency
$160	16	$192	29	$215	4
164	8	194	17	220	64
165	10	195	25	222	4
170	6	199	12	225	35
172	1	200	28	227	7
173	14	201	6	229	1
175	24	202	7	231	1
176	91	204	3	240	1
177	3	205	4	255	1
180	23	208	12	265	2
182	9	210	22	280	1
185	54	211	4	290	1
190	19	213	5		

No answer from 1 facility

APPENDIX D (CONT'D)

Question # 12

Director and Assistant

No answer from any of the 35 facilities

Supervisor and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	$5.00	2	none

No answer: 33

Head Nurse and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	none	1	$12.50	1	none	2	none
1	none	1	none	2	none		

No answer: 28

General Duty Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	none	1	none	1	none	1	$10.00
1	$12.50	1	none	2	none	1	none

No answer: 27

Practical Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	none	1	none	3	none	1	none
1	none	1	none	1	none	2	$ 5.00
1	none	1	none	1	none	1	10.50
2	$12.50	1	none	1	none	1	11.00
3	none	1	none				

No answer: 17

Nurse Aide

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
3	none	11	none	2	none	3	$10.00
6	none	1	none	7	none	3	none
1	none	2	none	8	none	7	none
2	none	5	none	4	none	7	none
4	none	6	$5.00	2	$8.80	3	$ 8.00
5	none	1	none	3	none	3	11.00
3	$7.50						

No answer: 10

Twenty-seven facilities wrote "none," indicating no extra pay is given.

APPENDIX D (CONT'D)

Question # 13

Director and Assistant

No answer from any of the 35 facilities

Supervisor and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	$10.00	2	.none

No answer: 33

Head Nurse and Assistant

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	.none	1	.none	1	.none	2	.none
1	$12.50	2	.none				

No answer: 29

General Duty Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
2	$12.50	1	.none	1	$10.00	1	.none

No answer: 31

Practical Nurse

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	.none	2	$12.50	1	.none	1	.none
1	.none	1	.none	1	.none	1	.none
1	.none	1	.none	1	.none	1	$10.50
2	.none	1	.none	1	$10.56	1	11.00
1	.none	1	.none	1	.none	1	.none

No answer: 15

Nurse Aide

# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month	# on Shift	Extra Pay Per Month
1	.none	8	.none	3	.none	2	.none
4	.none	1	.none	6	$10.56	4	.none
2	.none	4	.none	2	.none	5	.none
1	.none	3	$5.00	1	$ 8.80	3	$ 8.00
3	.none	3	.none	2	.none	1	11.00
3	$7.50	1	.none	2	$10.00	No answer: 12	

Twenty-seven facilities wrote "none," indicating no extra pay is given.

APPENDIX D (CONT'D)

Question # 14

No answer	2
Straight time pay	24
Compensatory time off	2
Time and a half pay	3
Other	4*

*1. No overtime necessary.
2. Straight time pay and compensatory time off.
3. No overtime work.
4. No overtime required.

Question # 15

No answer	2
Yes	26
No	7

Question # 16

No answer	9
Length of service	7
Merit only	2
Service and merit	14
Additional education	0
Other	3*

*1. Length of service and merit and additional education.
2. Length of service (automatic) and additional education.
3. Length of service and merit and additional education.

Question # 17

No maximum or no regulation	8
No answer	7
3 months	1
1 year	3
1½ years	2
2 years	4
3 years	2
3½ years	0
4 years	2
4½ years	1
5 years	2
6 years	2
10 years	1

APPENDIX D (CONT'D)

Question # 18

No answer	2
None	14
Rooms	1
One or more meals	11
Laundry of uniforms	0
Allowance for purch. of uniforms	0
Discount on drugs	5
Other	4*

*1. Life Insurance and Blue Cross.
2. One or more meals and laundry of uniforms.
3. Holiday meals.
4. Annual lab and chest; educational leave and sick leave.

Question # 19

No answer	1
Yes	25
No	9

Question # 20

No answer	2
No	25

1. Part-time do not get paid vacation or life insurance.
2. Part-time receive 6 days paid vacation, instead of 12.
3. No automatic raises for part-time.
4. Part-time do not have automatic salary increases.
5. Vacation differences; salary differences (not described).
6. "Yes"--(but no description given).
7. Paid vacation after 2 years employment (contrasted with 2 weeks for RN and LPN and 1 week for Nurse Aides after 1 year).
8. Benefits--health. Education and paid vacation and sick leave (no description given).

Question # 21

No answer	2
Yes	24
No	9

Question # 22

No answer	11
Blue Cross	12
Medical Service Bureau	5
Other	7*

APPENDIX D (CONT'D)

Question # 22 Cont'd

*1. Mutual of Omaha (2 facilities).
2. Bankers Life.
3. Business Men's Assurance.
4. Continental Life and Accident.
5. White Cross.
6. Metropolitan.

Question # 23

No answer	10
Medical facility	5
Shared	13
Employee	7

Question # 24

No answer	2
Yes	14
No	19

Question # 25

No answer	21
No set amount	1
5 days	3
6 days	3
7 days	1
12 days	6

Question # 26

No answer	19
Yes	10
No	6

Question # 27

No answer	5
None	16
4 days	2
5 days	1
6 days	6
7 days	4
8 days	1

APPENDIX D (CONT'D)

Question # 28

No answer	2
Compensatory time off	6
Straight time pay	15
Time and a half pay	3
Double time pay	4
Other	5*

*1. $2.00 extra per shift. (3 facilities)
2. Straight-time pay; then holiday with pay given later. (2 facilities)

Question # 29

No answer	2
None	6
5 days	17
6 days	1
10 days	7
12 days	1
15 days	1

Question # 30

No answer	1
Yes	14
No	20

Question # 31

Maximum Days-Years Required	Frequency
10 days, 1 year	2
10 days, 2 years	5
10 days, 3 years	1
12 days, 2 years	1
20 days, 10 years	3
20 days, 20 years	1
No answer from 22 facilities	

Question # 32

No answer	1
Yes	32
No	2

APPENDIX D (CONT'D)

Question # 33

No answer 1
Yes 1
No 33

Question # 34

No answer 34
Paid by facility 1

Question # 35

No answer 2
No 17

1. Vacation and sick leave for permanent part-time figured on average number of hours per week worked.
2. Part-time employees do not receive sick leave or holiday time.
3. We don't give vacation to part-time employees.
4. Vacations apply only to full-time employees.
5. No fringe benefits except for regular part-time; 5 working days after one year.
6. Part-time employees do not share in fringe benefits.
7. Do not pay any of the hospital premium for those that work less than 30 hours per week.
8. Vacation time only.
9. Holidays and vacations apply to full-time workers.
10. Holidays and vacations apply to full-time workers.
11. No paid vacation--no sick leave--no medical.
12. Part-time employees receive vacation and sick leave benefits on a pro-rated basis.
13. No paid vacations for part-time.
14. Part-time must work 2 years for vacation. Holidays given to all employees from beginning.
15. Three paid holidays per year (6 for full-time); 6 days paid sick leave (12 for full-time).
16. Group insurance paid in proportion to full-time employ.

Question # 36

No answer 1
Yes 24
No 10

APPENDIX D (CONT'D)

Question # 37

No answer	11
1958	1
1959	1
1962	1
1963	1
1964	4
1965	3
1966	13

Question # 38

No answer	3
Yes	25
No	7

Question # 39

No answer	12
1958	1
1962	1
1963	2
1964	2
1965	5
1966	12

Question # 40

No answer	2
Yes (but no description)	1
No	15

1. Lectures and films. Attendance at workshops.
2. Every 6 months (no description).
3. Includes workshop-lectures, films on nursing procedures.
4. Trained with personnel that has been trained before and under RN supervision.
5. A 24-hour training program for Nurse Aides.
6. Monthly meeting with films, visiting consultants. Special training given where and when needed.
7. Classes held by director on general nursing care and also specific problems.
8. Nurse Aide training only (not described).
9. Rehab., fire. Bowel and bladder training, re-motivation.
10. Nurses Aide training (not described).
11. Nurses Aide training (not described).
12. Monthly meetings and speakers.
13. One hour meeting weekly for all Aides. Individual instruction as needed.

APPENDIX D (CONT'D)

Question # 40 Cont'd

14. Community Resources Review of Procedures.
15. Physiotherapy-medicine, nursing procedures, psychology--any new subject of interest to nurses--taught by RN.
16. Film workshop--reports. Redemonstrate techniques, etc.
17. A class for Aides instructed by RN periodically.

Question # 41

No answer 1
No 22

1. General and specific instruction pertaining to the working routine of the home.
2. Orientation to physical plant, chain of command and philosophy of the home, plus personnel policies.
3. The new Aides work with LPN or RN for one week.
4. New employee brought in on day shift where Head Nurse instructs her for 1 or 2 shifts.
5. Includes workshop, lectures, films on nursing procedures.
6. They are orientated in regard to the evacuation plan and the use of fire extinguishers.
7. Complete procedure manual presented and explained to each new employee. They are given special instruction as needed--they join classes currently in session.
8. They work with experienced help and study the Nurse Aide manual put out by U.S. Department of Health.
9. Pre-employment classes (no description).
10. In process (not described).
11. All evening and night nurses work 1-2 weeks for orientation on the day shift. All others oriented by LPN in charge and supervisor.
12. Introduction to whole plant and personnel--check off orientation list by personnel director and supervisor of department and on job.

Question # 42

No answer 2
No 9

1. Not in our licensed personnel, but turnover among Aides and Orderlies is quite common. Due mainly to dissatisfaction with wage scale or leaving the area or to obtain further education or training; 2 entering RN training and 1 LPN training this fall.
2. Low wages; no fringe benefits; lack of available personnel (competent personnel).
3. Nurse Aides are hard to find in this territory.

APPENDIX D (CONT'D)

Question # 42 Cont'd

4. The only problem I have in keeping nursing employees is they have other obligations to come up that they can't work, such as home situations change about and their family needs them more.
5. Shortage of working nurses. Too many nurses only want part-time or special duty.
6. Shortage of LPNs. Registered Nurse tendency to shun nursing homes because of lack of knowledge regarding function of nursing homes.
7. Shortage of LPNs. Wage scale too low for nurses to commute from other communities.
8. We have had problems obtaining supervisor RNs for two reasons: (a) a shortage of RNs in this area (b) salary relatively low as compared to surrounding areas.
9. Lack of qualified available personnel; low salaries.
10. It is hard to find RNs and LPNs that want to work. It is not the pay or shift or working conditions as much as the fact that they have families and just won't work.
11. There just doesn't seem to be enough licensed personnel--also at the present time this nursing home is unable to pay as large a wage as some doctor's offices, etc.
12. Higher pay elsewhere.
13. Scarcity of licensed help and low salaries.
14. Specifically Nurse Aides. Due to the low wages these come mainly from the uneducated classes and housewives.
15. Specifically Nurse Aides. Due to the low wages these come mainly from the uneducated class; also housewives who often find it necessary to quit due to the family.
16. Low wages.
17. It appears to me that the schooling the LPNs have received has a lot to be wanted. Could be that they were looking out the window when the instructor was instructing the class.
18. Military personnel are hired and they transfer frequently.
19. No trouble with Aides. There is a scarcity of licensed nurses in this area. Nurses, as a rule, do not enjoy Geriatric nursing. Courses should be changed to give more on Geriatric care. Due to the economy of this area we have very few private paying patients. DPA rates are very low in relation to what is required by the State Health Department. This puts a burden on the nursing home operators to run competition with County tax supported institutions for competent nursing staff.
20. (1) Mainly due to transient help (2) Men leave the area for work and take wives (3) We use college girls thru the summer which results in a turn-over in the fall (4) Women drawing Social Security work only part of the year, usually in the winter.
21. Comparatively little. I believe the job satisfaction and good RN supervision of non-professionals, as well as screening applicants, has kept our turnover fairly low. Low salary and lack of fringe benefits have had some effect in loss of personnel.

APPENDIX D (CONT'D)

Question # 42 Cont'd

22. Mainly Aides. A competitive salary rate is not possible.
23. At present I need another LPN because one of my staff is moving and I am having some difficulty competing with the salaries given at the (unnamed institution) here in this city.
24. I'd like to know where a couple of RN nurses are available.

A P P E N D I X E

SAMPLE QUESTIONNAIRE AND COVER LETTERS

The next 9 pages present the questionnaire mailed to a total of 110 medical facilities in Idaho, and the original and follow-up cover letters. Pages 4-5 of the main body of the report present the study design and describe the construction of the questionnaire.

SURVEY OF NURSING IN IDAHO

I. GENERAL INFORMATION

1. Give the name and address of your medical facility _____
_____
_____

2. Which classification most accurately describes the licensing of your medical facility? Circle one:

a. General Hospital	d. Rehabilitation
b. Nursing Home	e. Hospital-Nursing Home
c. Psychiatric	f. Other (specify)_____

3. How many beds are contained in your medical facility (exclusive of bassinets)? Give the number_____.

4. Describe the area served by your medical facility (for example, one city, a county, etc.). _____

5. What is the total population of the area served?_____

II. NURSING STAFF

6. Please indicate below the numbers of <u>both</u> full-time and part-time employees that compose your <u>present</u> nursing staff. (Note: See the last page of this questionnaire for a description of the duties of each of the six positions)

Type of Position	Full-Time Employees	Part-Time Employees
a. Director and Assistant	_____	_____
b. Supervisor and Assistant	_____	_____
c. Head Nurse and Assistant	_____	_____
d. General Duty Nurse	_____	_____
e. Practical Nurse	_____	_____
f. Nurse Aide	_____	_____
Total Positions	_____	_____

7. How many budgeted vacancies exist in each type of position?

Type of Position	Full-Time Employees	Part-Time Employees
a. Director and Assistant	_____	_____
b. Supervisor and Assistant	_____	_____
c. Head Nurse and Assistant	_____	_____
d. General Duty Nurse	_____	_____
e. Practical Nurse	_____	_____
f. Nurse Aide	_____	_____
Total Vacancies	_____	_____

8. Referring to your answer to question 6 above, about how many <u>new</u> persons have you employed during the last year to replace those who moved away, were discharged, etc.?

Type of Position	Replacements for Full-Time Employees	Replacements for Part-Time Employees
a. Director and Assistant	_____	_____
b. Supervisor and Assistant	_____	_____
c. Head Nurse and Assistant	_____	_____
d. General Duty Nurse	_____	_____
e. Practical Nurse	_____	_____
f. Nurse Aide	_____	_____
Total Replacements	_____	_____

9. Do you expect that the new Medicare program, effective this year, will require increases in your present nursing staff? Circle one: Yes No If you circled "Yes," indicate the Types of Positions in which your largest increases will occur._____

_____

10. Looking farther ahead to around 1970, what increases, if any, do you expect in your present nursing staff? (Note: If possible, give the Types of Positions in which your largest increases will occur. If you plan to expand your present facility, construct a new facility, or move into new quarters, a brief description will be appreciated)

_____

_____

_____

III. SALARY INFORMATION

(Note: Questions 11 through 19 should be answered for your full-time employees. Any differences for part-time employees may be indicated in your answer to question 20)

11. Give the beginning monthly salary and the maximum monthly salary for each Type of Position. (Note: Give the salary <u>before</u> any deductions for taxes, maintenance items, etc., and <u>exclude</u> extra pay for evening or night shifts, overtime, on-call, or special service differentials. <u>Exclude</u> nurses living in who receive maintenance free of charge in addition to salary and those who are members of religious orders)

Type of Position	Starting Monthly Salary*	Maximum Monthly Salary*
a. Director and Assistant	_____	_____
b. Supervisor and Assistant	_____	_____
c. Head Nurse and Assistant	_____	_____
d. General Duty Nurse	_____	_____
e. Practical Nurse	_____	_____
f. Nurse Aide	_____	_____

*If you have no set figures for either starting or maximum salaries, base your reply on the salaries paid to your present employees.

11. (Cont'd) We wish to determine, in addition to the starting and maximum salaries requested on the preceding page, the entire range of salaries paid to your present nursing staff. Please record in the chart below all monthly salary rates for each Type of Position, and the numbers of your nursing staff in each. A sample has been prepared immediately below to guide you in completing the chart. (Note: The totals in each row should be the same as the numbers you recorded under Full-Time Employees in question 6, page 1, of this questionnaire)

Sample

Type of Position										Totals
Practical Nurse	Salary Rates	225	235	245	250	260	275	280	300	
	Number of Employees	2	1	3	1	4	1	1	1	14

Type of Position										Totals
Director and Assistant	Salary Rates									
	Number of Employees									
Supervisor and Assistant	Salary Rates									
	Number of Employees									
Head Nurse and Assistant	Salary Rates									
	Number of Employees									
General Duty Nurse	Salary Rates									
	Number of Employees									
Practical Nurse	Salary Rates									
	Number of Employees									
Nurse Aide	Salary Rates									
	Number of Employees									

12. Give the numbers of your nursing staff in each Type of Position who work on an evening shift, and the extra pay per month given them for this work. (Note: Information for the night shift is requested in the next question)

Type of Position	Number on Evening Shift	Extra Pay Per Month*
a. Director and Assistant	____	____
b. Supervisor and Assistant	____	____
c. Head Nurse and Assistant	____	____
d. General Duty Nurse	____	____
e. Practical Nurse	____	____
f. Nurse Aide	____	____

*If no extra pay is given, write "none" here:_____.

13. Give the numbers of your nursing staff in each Type of Position who work on a night shift, and the extra pay per month given them for this work.

Type of Position	Number on Night Shift	Extra Pay Per Month*
a. Director and Assistant	____	____
b. Supervisor and Assistant	____	____
c. Head Nurse and Assistant	____	____
d. General Duty Nurse	____	____
e. Practical Nurse	____	____
f. Nurse Aide	____	____

*If no extra pay is given, write "none" here:_____.

14. If any of the nursing staff are required to work overtime, what method of compensation is used? Circle one:
    a. Straight time pay.
    b. Compensatory time off.
    c. Time and a half pay.
    d. Other (describe, including various combinations of the first three alternatives.)_____
    _____

15. Does your medical facility provide regular salary increases? Circle one: Yes No.

16. If your answer to the previous question was "Yes," what determines the salary increases? Circle one:

    a. Length of service (automatic).
    b. Merit only.
    c. Length of service and merit.
    d. Additional education.
    e. Other (describe, including various combinations of the first four alternatives.)_____
    _____

17. What is the average length of time required for your nursing staff to reach the maximum salary? (Note: If there are differences according to Type of Position, please specify) _____

_____

18. Does your medical facility provide any type of maintenance in addition to salary? Circle one or more:

a. None.
b. Rooms.
c. One or more meals.
d. Laundry of uniforms.
e. Allowance for purchase of uniforms.
f. Discount on drugs.
g. Other (specify)_____.

19. Does your medical facility have unemployment insurance coverage for its employees? Circle one: Yes No.

20. Regarding your answers to questions 11 through 19, are there any differences between provisions for part-time employees as compared with your full-time employees? Circle one: Yes No. If "Yes," record the question number and describe briefly. _____

_____

_____

IV. FRINGE BENEFITS

(Note: Questions 21 through 34 should be answered for your full-time employees. Any differences for part-time employees may be indicated in your answer to question 35)

21. Does your medical facility have a group hospitalization insurance plan available to members of your nursing staff? Circle one: Yes No.

22. If your answer to the previous question was "Yes," circle one of the following which describes the insurance plan:

a. Blue Cross.
b. Medical Service Bureau.
c. Other (specify)_____.

23. If you circled "Yes" in question 21, circle one of the following to indicate how the premiums are paid:

a. Completely by your medical facility.
b. Shared by your facility and the employee.
c. Completely by the employee.

24. Is sick leave with pay granted to members of your nursing staff? Circle one: Yes No.

25. If your answer to the previous question was "Yes," how many working days of paid sick leave are granted annually after one year of employment?_____

26. If you circled "Yes" in question 24, can all or part of the unused sick leave be carried over from year to year? Circle one: Yes No.

27. How many paid holidays per year are granted to members of your nursing staff?_____

28. If a nurse is required to work on a holiday, is the method of compensation (circle one):

    a. Compensatory time off.
    b. Straight time pay.
    c. Time and a half pay.
    d. Double time pay.
    e. Other (specify)_____.

29. How many working days of paid vacation are granted to members of your nursing staff after one year of employment?_____
(Note: The next two questions are concerned with differences according to length of service)

30. Does your medical facility have a graduated vacation plan for full-time members of your nursing staff which varies according to length of service? Circle one: Yes No.

31. If your answer to the previous question was "Yes," what is the maximum number of working days granted to a full-time nurse?_____
How many years are required to reach this maximum?_____

32. Does your medical facility have Federal Social Security Coverage for its employees? Circle one: Yes No.

33. Does your medical facility have a group retirement plan (other than Social Security) for its employees? Circle one: Yes No.

34. If your answer to the previous question was "Yes," are the premiums (circle one):

    a. Paid completely by your facility.
    b. Shared by your facility and the employee.
    c. Paid by the employee.

35. Regarding your answers to questions 21 through 34, are there any differences between provisions for part-time employees as compared with your full-time employees? Circle one: Yes No. If "Yes," record the question number and describe briefly._____
_____
_____

V. GENERAL PERSONNEL POLICIES

36. Does your medical facility have written personnel policies? Circle one: Yes No.

37. If your answer to the previous question was "Yes," give the year the personnel policies were written and/or revised._____

38. Does your medical facility have written job descriptions for each classification in the nursing staff? Circle one: Yes No.

39. If your answer to the previous question was "Yes," give the year the job descriptions were written and/or revised._____

40. Does your medical facility have a program of in-service training and education? Circle one: Yes No. If "Yes," describe briefly._____

_____

_____

41. Does your medical facility have any program of orientation for new employees, aside from instruction pertaining to the specific tasks of their job? Circle one: Yes No. If "Yes," describe briefly.

_____

_____

42. Do you feel that you have had problems in obtaining and holding competent nursing staff employees? Circle one: Yes No. If "Yes," describe the problems and what you believe are the main causes._____

_____

_____

_____

_____

_____

DESCRIPTIONS OF DUTIES OF NURSING POSITIONS

Director. A registered professional nurse who is responsible for all nursing services concerned with care of patients in the hospital.

Supervisor. A registered professional nurse who is responsible for the nursing service and patient care in two or more organized nursing units.

Head Nurse. A registered professional nurse who is responsible for the nursing service and patient care in one organized nursing unit.

General Duty Nurse. A registered professional nurse who gives direct and/or indirect nursing care to patients within an organized nursing unit.

Practical Nurse. A licensed practical nurse who gives direct care to the patients under the supervision of a professional nurse.

Nurse Aide. An unlicensed person on the nursing staff who functions as an assistant to licensed practical nurses and/or registered nurses. This group includes those with titles of nurse assistant, orderly, attendant, etc.

Dear Administrator:

The State Occupational Research Unit at the University of Idaho is conducting a survey of the nursing profession in Idaho. Nurses have been in short supply for several years, and the shortage may become more acute as the new Medicare program becomes operative in the near future. We believe that this study is timely and necessary to point the way toward improvements in the supply and quality of nursing personnel.

The nursing study consists of two separate parts. The State Occupational Research Unit is surveying all medical facilities in Idaho. The Idaho State Nurses' Association is conducting the other part of the study which is a survey of all licensed nursing personnel in Idaho. This will enable us to obtain information both from employers and employees concerned with nursing, and will make possible certain interesting comparisons.

This part of the study involving medical facilities has been approved by both the Idaho Hospital Association and the Idaho Association of Licensed Nursing Homes. Officials of both of these Associations expressed genuine interest in the results we expect to obtain. They voiced one concern, however, regarding disclosure of the information obtained from any single hospital, nursing home, or other medical facility. We can assure you that <u>all</u> questionnaires will be retained in the files of the State Occupational Research Unit, and will <u>not</u> be made available to anyone else. We do plan to publish the results obtained on the questionnaires, but this will be only in the form of general trends, averages, etc. Thus, the information received from any single facility will not be revealed. Indeed, once we have abstracted the information desired, we will destroy the questionnaires.

Two copies of the questionnaire have been enclosed. You may retain one copy for your own files. We will readily admit that the questionnaire is quite lengthy. We considered shortening it, but decided against this because each question proved too important for omission. But despite its length, field tests indicated that the entire questionnaire could be completed in one hour or less.

Please complete the questionnaire and mail us one copy in the enclosed stamped, self-addressed envelope. We are hoping that the questionnaires can all be completed and returned before the first of June. A copy of our final report will be mailed to you when it is completed later this summer. Thanking you in advance for your cooperation and assistance, I am,

Sincerely,

Dr. Kenneth M. Loudermilk
Director, State Occupational
Research Unit

Dear Administrator:

A few weeks ago we mailed to you two copies of a questionnaire that requested information pertaining to your nursing staff. We have not received a completed questionnaire from your facility. Perhaps the preparatory activities for the Medicare program and other items of business have subsided sufficiently to allow you to spend an hour at the most to complete and return the questionnaire to us. We have enclosed two new forms in the event that you have misplaced the original two. Please complete and return one copy in the enclosed stamped, self-addressed envelope; the other copy may be retained for your files.

The study has been approved by the Idaho Hospital Association and the Idaho Association of Licensed Nursing Homes. We desire the information requested in the questionnaire to aid us in planning training programs for nurses so that needs in this profession throughout the state can be met. As we stated in our first letter, the results for your own individual facility will be kept strictly confidential. Please give this request your prompt and careful attention.

Thanking you in advance for your cooperation and assistance, I am,

Sincerely,

Kenneth M. Loudermilk
Director, State Occupational
Research Unit

VT 002 234
Office of Education Instructional Codes, Titles and Definitions for Use in Office Occupations.

Wyoming State Dept. of Education, Cheyenne
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 67 9p.

*CODIFICATION; *OFFICE OCCUPATIONS EDUCATION; *OFFICE OCCUPATIONS

An ad hoc committee working with The National Center for Educational Statistics has developed Code 14-0000 for Office Education. It is intended that this system will assist in standardizing reporting by local and state educational agencies. Definitions are provided for the following codes and titles; .0100 Accounting and Computing, .0200 Business Data Processing Systems, .0300 Filing, Office Machines, and General Office Clerical, .0400 Information Communication, .0500 Materials Support, Transportation, Storing, and Recording, .0600 Personnel, Training, and Related, .0700 Stenographic, Secretarial, and Related, .0800 Supervisory and Administrative Management, .0900 Typing and Related, .1000 Miscellaneous Office, and .9900 Other. (PS)

VT 002 234

ED039370

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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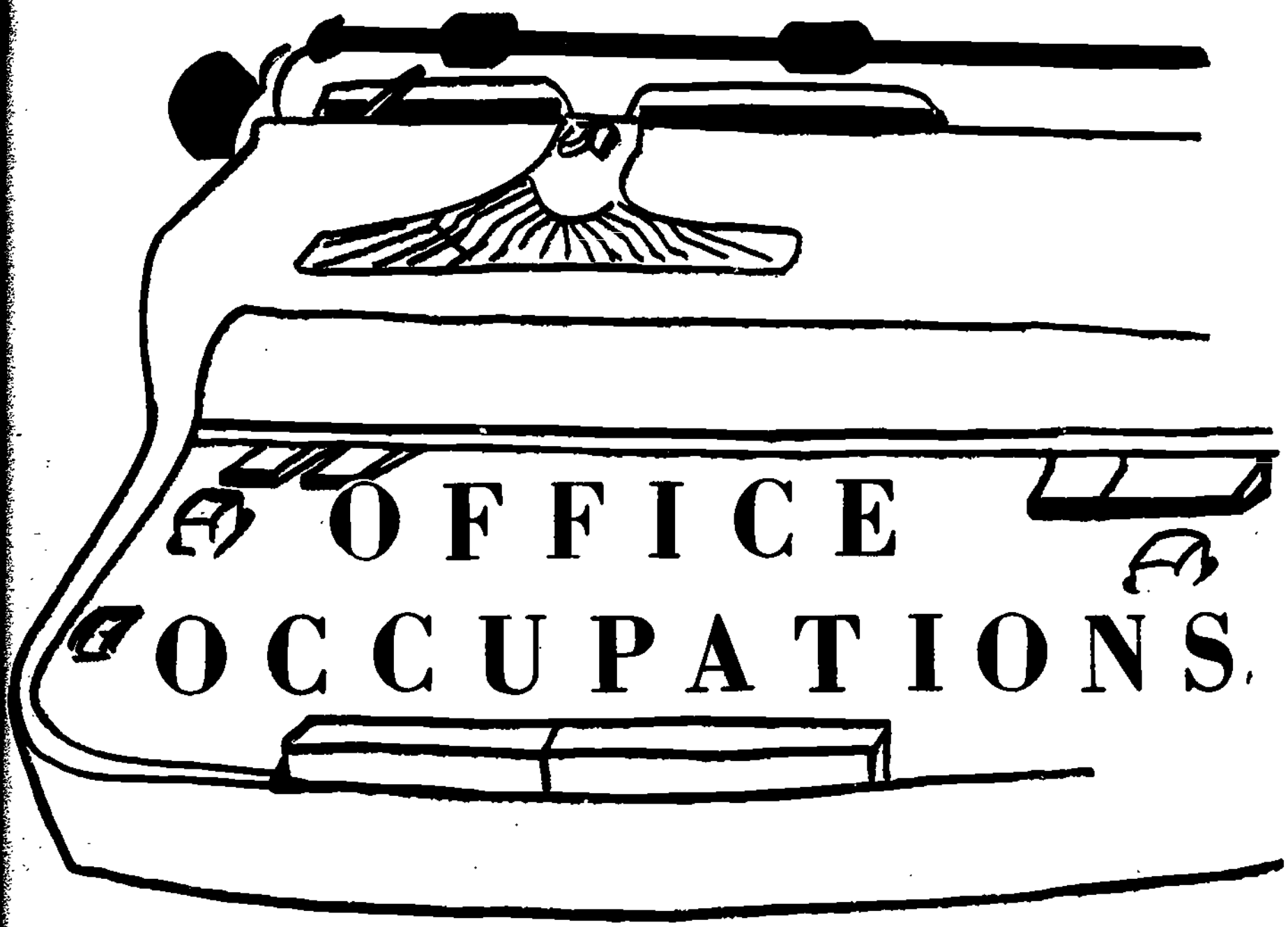
C1

OFFICE OF EDUCATION

INSTRUCTIONAL CODES, TITLES AND DEFINITIONS

FOR USE IN



VT 02234

Harry Roberts, State Superintendent of Public Instruction
Wyoming State Department of Education
1967

INTRODUCTION

Because of some of the past conflicts caused by a variety of reporting systems an Ad Hoc Committee working with The National Center for Educational Statistics has developed code 14.0000 for Office Education.

It is intended that this system will assist in standardizing reporting by local and state educational agencies and will provide more meaningful data for planning and implementing organized and sequential vocational office education programs.

Raymond J. Grandfield
State Director
Business and Distributive Education

OFFICE OCCUPATIONS

INSTRUCTIONAL CODES AND TITLES

14.0000	Office Occupations
0100	Accounting and Computing
0200	Business Data Processing Systems
0300	Filing, Office Machines, and General Office Clerical
0400	Information Communication
0500	Materials Support, Transportation, Storing, and Recording
0600	Personnel, Training, and Related
0700	Stenographic, Secretarial, and Related
0800	Supervisory and Administrative Management
0900	Typing and Related
1000	Miscellaneous Office (Specify)
9900	Other, NEC (Specify)

OFFICE OCCUPATIONS

14.00 00

The body of subject matter, or combinations of courses and practical experience, organized into programs of instruction to provide opportunities for pupils to prepare for and achieve career objectives in selected office occupations. In the instructional process substantive content frequently is comprised of subject matter drawn from other subject matter areas. Learning experiences are designed to lead to employment and/or advancement of individuals in occupations in public or private enterprises or organizations related to the facilitating function* of the office. Included is a variety of activities, such as recording and retrieval of data, supervision and coordination of office activities, internal and external communication, and the reporting of information. Under this heading are the items of information which identify categories of career objectives in office occupations, and around which courses and practical experiences are developed.

01 00 Accounting and Computing -- Planned learning experiences which include a combination of courses and practical experiences concerned with systematizing information about transactions and activities into accounts and quantitative records, and paying and receiving money. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the

* "Facilitating function," as used in Office Occupations Education, refers to the expediting role played by office occupations as the connecting link between the production and distribution activities of an organization.

Dictionary of Occupational Titles), such as Junior Accountants, Bookkeepers, Cashiers, Machine Operators, Tellers, and Other Accounting and Computing occupations.

02 00 Business Data Processing Systems -- Planned learning experiences which include a combination of courses and practical experiences concerned with business data processing systems and operations. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Computer and Console Operators, Peripheral Equipment Operators, Programmers, Systems Analysts, and Other Business Data Processing Systems Occupations.

03 00 Filing, Office Machines, and General Office Clerical -- Planned learning experiences which include a combination of courses and practical experiences concerned with the recording and retrieval of data, including classifying, sorting, filing, correspondence, records, and other data. Career objectives are identified with a variety of occupational groups and specialization (as indicated in the Dictionary of Occupational Titles), such as Duplicating Machine Operators, File Clerks, General Office Clerks, and Other Filing, Office Machines, and General Office Clerical Occupations.

04 00 Information Communication -- Learning experiences which include a combination of courses and practical experiences concerned with the distribution of information, e.g., by mail, telephone, telegraph, and in person. Career objectives are identified with a variety of occupational groups, (as indicated in the Dictionary of Occupational Titles), and specialization such as Communication Systems Clerks and Operators, Correspondence Clerks, Mail and Postal Clerks, Mail-preparing and Mail-handling Machine Operators, Messengers and Office Boys and Girls, Receptionists and Information Clerks, and Other Information Communication Occupations.

05 00 Materials Support Occupations: Transporting, Storing, and Recording -- Planned learning experiences which include a combination of courses and practical experiences concerned with (1) receiving, storing, issuing, shipping, requisitioning, and accounting for stores of material or material in use; (2) assigning locations and space to items, including verification of quality, identification, condition and value; (3) the physical handling of items, including binning, picking, stacking, and counting; (4) preparing or committing stocks for shipment; (5) inventorying stock; (6) replenishing depleted items; and (7) filling orders, and issuing tools, equipment, or materials to workers. Career objectives are identified with a variety of occupational groups and specilizations, (as indicated in the Dictionary of Occupational Titles),

such as Planning and Production Clerks, Shipping and Receiving Clerks, Stock and Inventory Clerks, Traffic, Rate, and Transportation Clerks, and Other Transporting, Storing, and Recording Occupations.

06 00 Personnel, Training, and Related -- Planned learning experiences which include a combination of courses and practical experiences concerned with personnel administration of an organization and the facilitating functions of scheduling and conducting clerical work and management and operations of organizations. Career objectives are identified with a variety of occupational groups and specilization (as indicated in the Dictionary of Occupational Titles), such as Educational and Training Assistants, Interviewers and Tests Technicians, Personnel Assistants, and Other Personnel, training, and Related Occupations.

07 00 Stenographic, Secretarial, and Related -- Planned learning activities which include a combination of courses and practical experiences concerned with making, classifying, and filing records, including written communications. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Executive Administrative Secretary, Secretaries, Stenographers, and other Stenographic, Secretarial, and Related Occupations.

08 00 Supervisory and Administrative Management -- Learning activities and experiences concerned with a variety of responsibilities such as (1) studying policies, organizational structures, and administrative practices of such organizations as governmental units, industrial firms, and nonprofit groups; (2) reviewing periodic budgets submitted by operations personnel; (3) preparing reports summarizing findings and recommending changes in policy, organization, and administration to line management; (4) consolidating the budget estimates and preparing financial reports for consideration and action by upper echelons of management; and (5) supervising and coordinating activities, determining work procedures, and assigning duties. (D. O. T. No._____)

09 00 Typing and Related -- Planned learning activities which include a combination of courses and practical experiences concerned with recording data, supervising and administering typing staffs and typing, and managing offices. Career objectives are identified with a variety of occupational groups and specialization (as, indicated in the Dictionary of Occupational Titles), such as Clerk Typists, Key Punch and Coding Equipment Operators, Typists, and Other Typing and Related Occupations.

10 00 Miscellaneous Office (Specify) -- Planned learning experiences (not elsewhere classified) which include a combination of courses and practical experiences concerned with the faciiitating functions, e. g., public contact such as registering hotel and motel guests,

examining claims and records, and collecting and tracing accounts. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Collectors, Hotel Clerks, Clerical Technicians, Credit Clerks, and other occupations and areas of specialization concerned with office occupations not listed or classifiable in the above categories, including emerging office occupations not classifiable in the above categories. (list D. O. T. Nos.)

99 00 Other, NEC (Specify)

VT 002 236
Vocational Education and the Colleges.

American Council on Education, Washington, D.C.
MF AVAILABLE IN VT-ERIC SET.
American Council on Education, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036.
Special Report on Federal Programs; v3 n5.

*FEDERAL LAWS; *FEDERAL AID; *VOCATIONAL EDUCATION
*VOCATIONAL EDUCATION ACT OF 1963

The Federal Vocational Education Act of 1963 made $262 million available in Fiscal 1966 for vocational education programs conducted by any type of public or private school or college. These included regular or vocational-technical high schools, secondary or post-secondary area vocational schools, technical institutes, junior and community colleges, and 4-year colleges and universities. Federal funds are allotted to the states on a matching basis of an equal amount of state or local public funds. Federal support may be provided for programs to train persons for semiskilled, skilled, or technical jobs in any recognized occupation except professional positions or those requiring a baccalaureate or higher degree. Except for area vocational schools, Federal assistance is limited to operating expenses of a program. The Act requires that at least 3 percent of each state's allotment be devoted to ancillary services and activities and 10 percent for research and experimentation to improve and strengthen the program. Information on the work-study program, residential schools, and application procedures is included. (WB)

VT 002 236

ED039370

Special Report On Federal Programs

Volume III, Number 5 June, 1965

VOCATIONAL EDUCATION AND THE COLLEGES

In recent years the Federal Government has given increasing attention to the vocational education and occupational training of the nation's young people and workers. This renewed interest stems from manpower studies showing a growing shortage of unskilled jobs, coupled with a growing demand for skilled workers both presently and in the projected future.

The government has provided support for vocational education for nearly half a century--ever since the Smith-Hughes Act was passed in 1917. The Smith-Hughes Act provided limited support for vocational education in several specified occupational fields, particularly agriculture and trades and industry. Some additions to the Act were made in 1946 and health occupations were provided for in 1956. Financial aid for the operation of area vocational schools to train highly skilled technicians was added in 1958.

It was the Vocational Education Act of 1963 (Public Law 88-210) which gave the greatest impetus to occupational education. Passage of this Act was the outgrowth of a report by a panel of consultants, appointed in 1961 at the request of President Kennedy. The panel found the nation's vocational education system unbalanced and inadequate. The 1963 Act revised, strengthened and greatly expanded the Federal vocational education program. As a result of this Act, Federal expenditures for vocational education have risen from $72 million in Fiscal 1963 to an expected $262 million in Fiscal 1966.

Although it excludes support for professional or baccalaureate degree education, the 1963 Act, nonetheless, has an impact upon colleges and universities. Colleges--both junior and four-year institutions--may conduct vocational or technical training courses, operate area and residential vocational schools, train vocational teachers and supervisors, provide vocational guidance and counseling, develop instructional materials, and conduct the research, demonstration and experimental projects which are a prominent feature of the Act. Furthermore, the Act specifies that one or more representatives of junior colleges, technical institutes or other higher education institutions which provide technical or vocational training must serve on each State Board of Vocational Education or an advisory council to it.

The 1963 Act, it has been said, seeks to develop an "all-age, all-job" program. It provides support for training for:

1. Students in high school.

2. Persons who have completed or left high school and are available for full-time study in preparing for a job.

VT 02236

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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3. Employees who need training or retraining to hold their job or to advance (but not workers already receiving training allowances under the Manpower Development and Training Program).

4. Persons with academic, socioeconomic or other handicaps that prevent them from succeeding in a regular vocational education program.

Under terms of the Act, the training provided should be "of high quality... realistic in the light of actual or anticipated opportunities for gainful employment... and suited to their needs, interests, and ability to benefit from such training."

Educational Programs

Federally-supported vocational education programs may be conducted in any type of school or college, public or private. These include regular or vocational-technical high schools, secondary or post-secondary area vocational schools, technical institutes, junior and community colleges, and four-year colleges and universities.

Federal funds are channeled through the State Boards of Vocational Education to local educational agencies. The State Boards administer the program according to a state plan which must be approved by the U.S. Commissioner of Education. Private schools and colleges may provide training under contract with the State Board or with a local public educational agency. The Federal funds are allotted to the states according to a formula based upon the number of persons who need vocational education and the state's per capita income. Federal funds must be matched by at least an equal amount of state or local public funds or combination thereof.

The 1963 Act authorizes $177.5 million for these vocational education programs for Fiscal 1966 and $225 million annually thereafter. One provision of the Act sets aside 10 percent of the funds for research, training, and experimental, developmental or pilot projects. (These will be discussed in detail later in this Report.)

Under the 1963 Act, Federal support now may be provided for programs to train persons for semiskilled, skilled or technical jobs in any recognized occupation, except professional positions or those requiring a baccalaureate or higher degree.

Except for area vocational schools, for which construction funds are available, Federal assistance is limited to operating expenses of a program. Such expenses include:

Salaries and expenses of teachers, supervisors, vocational guidance counselors, teacher trainers, directors, and other teaching and administrative personnel.

Instructional materials, equipment, and teaching aids.

Occupational studies and surveys needed to develop vocational education programs, and surveys to evaluate established programs.

Conducting work experience education programs.

Necessary costs of transportation of students, and persons enrolled in teacher training courses.

Area Vocational Schools: The 1963 Act for the first time provided assistance for the construction of area vocational schools in addition to support for operating expenses of their educational programs. An area school is designed to serve an entire state, or a particular area of it designated by the State Board of Vocational Education, rather than serving a single community. Con-

struction of an area school may be undertaken by a State Board or by a local educational agency with the Board's approval. Each State Board determines what proportion of the state's allotment in Federal vocational education funds may be used for construction of area vocational schools. Federal funds devoted to construction must be matched on a project basis--i. e., every dollar of Federal funds must be matched with at least a dollar of state or local funds for each construction project.

The 1963 Act defines four types of area schools:

1. A specialized high school.

2. A high school department providing education in at least five different occupational fields.

3. A technical or vocational school.

4. A department or division of a junior college, community college or university which offers, under supervision of the State Board, vocational education in at least five occupational fields, leading to immediate employment but not to a baccalaureate degree.

To be eligible for Federal support, the first three types of area schools must be "used exclusively or principally to give vocational education to persons available for full-time study in preparing to enter the labor market." The third and fourth types must admit as regular students both high school graduates and high school dropouts.

In addition to financing part of new buildings, Federal funds may be used to expand, remodel and alter existing buildings, acquire initial equipment for the facilities, acquire interests in land on which the facilities are constructed, grade and improve sites, and pay architect's fees.

Ancillary Services: In an effort to assure quality in all Federally-supported vocational education programs, the 1963 Act requires each state to devote at least three percent of its allotment to various ancillary services and activities. These include:

Training and supervision of teachers.
Evaluation of programs in the light of current and projected manpower needs and job opportunities.
Demonstration programs.
Development of instructional materials.
Improvement of state administration, supervision, and leadership.

U.S. Office of Education (USOE) regulations require that each state plan provide for teacher training programs, both before employment and in-service, "to the extent necessary to provide qualified vocational education personnel." Teacher training may be conducted by the State Board, or by public or private agencies or institutions under cooperatively developed written agreements with the State Board. Likewise, instructional materials may be developed and demonstration programs conducted by public or private agencies and institutions under agreements with a State Board.

Research, Training, Experimental, Developmental, and Pilot Programs

A special provision of the Vocational Education Act of 1963 emphasizes research and experimentation to improve and strengthen the program. This provision reserves 10 percent of

the basic appropriation each year for grants to pay part of the cost of research and training programs and experimental, developmental or pilot programs designed to meet the special vocational education needs of youths, particularly those with academic, socioeconomic or other handicaps.

These grants are awarded by the U.S. Commissioner of Education directly to colleges and universities, other public or nonprofit agencies and institutions, State Boards of Vocational Education, or to local educational agencies with approval of the State Board. While the State Board's approval is not required for a grant to a college or university, the USOE recommends that the proposal be developed with the knowledge of an appropriate Board official.

A total of $17.75 million is authorized for these grants in Fiscal 1966 and $22.5 million for each year thereafter.

In administering the research, training and experimental program, the USOE is concerned with three general subject areas:

1. The identification of current and future employment opportunities and the skills needed to hold the available jobs.

2. The development of human resources, including studies of the characteristics of vocational students and the implications of this information for vocational education programs.

3. The development of educational resources and training programs, including improvements in vocational curricula and vocational guidance and counseling.

The USOE staff offers consultation in the preparation of research proposals, particularly to institutions, school districts and community colleges which are not experienced in the planning and writing of research applications.

The USOE, through its Division of Adult and Vocational Research, also offers assistance in expanding state and regional capabilities for research and development in occupational education. Several research centers are planned to administer projects, develop materials, train teachers and serve as clearinghouses of information. The first such center has been established at Ohio State University under a $610,130 Federal grant.

Grants for research, training, experimental, developmental or pilot programs cover part of the cost of the project. The applicant institution or agency is expected to contribute some funds or services to the overall cost. No fixed percentage or amount is set. The average contribution has been 20 percent.

Application Procedure: Applications for research, training, experimental, developmental or pilot grants are submitted to:

Bureau of Research
Division of Adult and Vocational Research
Office of Education
Department of Health, Education, and Welfare
Washington, D.C. 20202

There are four deadlines per year for applications: September 1, December 1, March 1, and June 1.

Applications must be prepared in accordance with instructions and a format contained in a pamphlet published by the Division of Adult and Vocational Research, entitled "Conditions and

Procedures: Grants for Research, Training, Experimental, Developmental, or Pilot Programs in Vocational and Technical Education." Twenty copies of an application are required.

An application must describe the project and its objectives, list principal investigators or personnel involved, and include a budget. The budget may cover salaries and wages, costs of materials and supplies, rental of special equipment, travel, and costs of publishing results of the project. An allowance for indirect costs, to cover overhead expenses, is limited to 20 percent of the total direct costs.

Each institution or agency receiving a grant is expected to provide the Division of Adult and Vocational Research with 225 copies of its final report on the project and 25 copies of an abstract of the report.

Evaluation Criteria: Applications for grants are reviewed by the Division of Adult and Vocational Research and various review panels. All proposals are evaluated according to their educational significance, the plan for the program, the experience of key personnel and the adequacy of facilities, and the economic efficiency of the proposal.

With proposals for experimental, developmental, or pilot programs, special consideration is given to programs involving youths in economically depressed communities who have academic, socioeconomic or other handicaps which prevent them from succeeding in regular vocational education programs. Another factor is the experimental or innovative aspect of the proposal.

Work-Study Programs

A four-year work-study program for needy vocational education students is provided under the 1963 Act. The purpose of the program is to enable young people who need financial help to start or to remain in school.

Students are limited to part-time work for a local educational agency or some other public agency or institution--Federal, state or local. Work-study programs are administered by local educational agencies, under supervision of State Boards.

To be eligible a student must be at least 15 and no more than 20 years old at the time he enters the work-study program; must need the earnings in order to stay in school; and must be enrolled as a full-time student in good standing, or accepted for full-time enrollment in a vocational education program.

Students cannot work more than 15 hours in any week in which their classes are in session. Their earnings under the program cannot exceed $45 per month or $350 per academic year, or $60 per month and $500 per academic year if the students attend a school beyond reasonable commuting distance from their homes.

For Fiscal Years 1965 and 1966 Federal funds underwrite the entire cost of the payments to students. For Fiscal 1967 and 1968, the Federal Government will pay 75 percent of their compensation.

Residential Schools

Another new feature of the Vocational Education Act of 1963 calls for the establishment of residential vocational education schools which are experimental in nature. Such schools are intended for students from slum areas and home environments that make it otherwise almost impossible for them to obtain an education.

The U. S. Commissioner of Education is authorized to award grants to cover all costs of constructing, equipping, and operating such schools. The grants may be awarded to colleges, universities, State Boards or public educational agencies, institutions and organizations.

It has been estimated that no more than five schools could be built since the authorization for funds for such schools expires June 30, 1968. At this writing, funds for the first school or schools have been budgeted but not yet finally appropriated.

The schools are intended to provide vocational education, room, board and other necessities for youths who are between the ages of 15 and 21 at the time of enrollment and who need full-time study on a residential basis to derive maximum benefit.

In awarding grants, special consideration will be given to the needs of large urban areas with substantial numbers of youths who have dropped out of school or are unemployed. An equitable geographical distribution of such schools also must be considered.

Application Procedure: Applications and requests for information may be sent to:

Bureau of Adult and Vocational Education
Office of Education
Department of Health, Education, and Welfare
Washington, D. C. 20202

Applications must follow the directions and format contained in the Bureau's pamphlet entitled "Conditions and Procedures: Grants for Residential Vocational Education Schools." Twenty copies are required.

Requirements for an application include a description of the proposed school, its facilities, staff, plan of operation, method of recruiting and selecting students, education and occupational training, geographic area to be served, a budget, and plans for research and evaluation. The budget may cover costs of construction and equipment (including construction of new buildings or expansion, remodeling and repair of existing buildings), operation and maintenance of the school, and the conduct of related research and development.

Special Report On Federal Programs

A monthly bulletin prepared by the Commission on Federal Relations, edited by Betty Pryor. Specified quantities are sent free to heads of institutions and organizations holding membership in the Council. Additional subscriptions, available through the heads of Council member institutions and organizations only, $10.00 a year.

AMERICAN COUNCIL ON EDUCATION
1785 MASSACHUSETTS AVENUE, N.W., WASHINGTON 36, D.C.

VT 002 248
Manpower Development and Training Act of 1962, As Amended.

Congress of the U.S., Washington, D.C.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 66 22p.

*FEDERAL LAWS; *MANPOWER DEVELOPMENT; *VOCATIONAL EDUCATION; *FEDERAL PROGRAMS; *JOB TRAINING
*MANPOWER DEVELOPMENT AND TRAINING ACT PROGRAMS; MDTA PROGRAMS

The purpose of this Act was to require the federal government's appraisal of the manpower requirements and resources of the United States, and to develop and apply the information and methods needed to deal with the problems of unemployment resulting from automation and technological changes and other types of persistent unemployment. Title I sets forth the duties of the Secretary of Labor relative to evaluation, information, and research; job development programs; labor mobility demonstration projects; trainee placement assistance demonstration projects; skill and training requirements; and reports on manpower requirements, resources, utilization, and training. Title II further sets forth the duties of the Secretary relative to the selection of trainees, training allowances, on-the-job training, national advisory committees, state agreements, and the making of rules and regulations. It also gives the duties of the Secretary of Health, Education, and Welfare relative to administration of the Act, an annual report to Congress, redevelopment areas, correctional institutions, and work experience programs. Title III gives the apportionment of benefits under the Act, authorized appropriations, appropriation limitations, and terminal dates. (EM)

VT 002 248

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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MANPOWER DEVELOPMENT AND TRAINING ACT OF 1962, AS AMENDED [1] (42 U.S.C. 2571–2620)

AN ACT

Relating to manpower requirements, resources, development, and utilization, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Manpower Development and Training Act of 1962".

TITLE I—MANPOWER REQUIREMENTS, DEVELOPMENT, AND UTILIZATION

Statement of Findings and Purpose

SEC. 101. The Congress finds that there is critical need for more and better trained personnel in many vital occupational categories, including professional, scientific, technical, and apprenticeable categories; that even in periods of high unemployment, many employment opportunities remain unfilled because of the shortages of qualified personnel; and that it is in the national interest that current and prospective manpower shortages be identified and that persons who can be qualified for these positions through education and training be sought out and trained as quickly as is reasonably possible, in order that the Nation may meet the staffing requirements of the struggle for freedom. The Congress further finds that the skills of many persons have been rendered obsolete by dislocations in the economy arising from automation or other technological developments, foreign competition,

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[1] P.L. 87–415, Mar. 15, 1962, 76 Stat. 24–33, as amended by (a) P.L. 87–729, Oct. 1, 1962, 76 Stat. 679, (b) P.L. 88–214, Dec. 19, 1963, 77 Stat. 422, (c) P.L. 89–15, Apr. 26, 1965, 79 Stat. 75, (d) P.L. 89–792, Nov. 7, 1966, 80 Stat. 1434, and (e) P.L. 89–794, Nov. 8, 1966, 80 Stat. 1451.

relocation of industry, shifts in market demands, and other changes in the structure of the economy; that Government leadership is necessary to insure that the benefits of automation do not become burdens of widespread unemployment; that the problem of assuring sufficient employment opportunities will be compounded by the extraordinarily rapid growth of the labor force in the next decade, particularly by the entrance of young people into the labor force, that improved planning and expanded efforts will be required to assure that men, women, and young people will be trained and available to meet shifting employment needs; that many persons now unemployed or underemployed, in order to become qualified for reemployment or full employment must be assisted in providing themselves with skills which are or will be in demand in the labor market; that the skills of many persons now employed are inadequate to enable them to make their maximum contribution to the Nation's economy; and that it is in the national interest that the opportunity to acquire new skills be afforded to these people with the least delay in order to alleviate the hardships of unemployment, reduce the costs of unemployment compensation and public assistance, and to increase the Nation's productivity and its capacity to meet the requirements of the space age. The Congress further finds that many professional employees who have become unemployed because of the specialized nature of their previous employment are in need of brief refresher or reorientation educational courses in order to become qualified for other employment in their professions, where such training would further the purposes of this Act. It is therefore the purpose of this Act to require the Federal Government to appraise the manpower requirements and resources of the Nation, and to develop and apply the information and methods needed to deal with the problems of unemployment resulting from automation and technological changes and other types of persistent unemployment.

Evaluation, Information, and Research

SEC. 102. To assist the Nation in accomplishing the objectives of technological progress while avoiding or minimizing individual hardship and widespread unemployment, the Secretary of Labor shall—

(1) evaluate the impact of, and benefits and problems created by automation, technological progress, and other changes in the structure of production and demand on the use of the Nation's human resources; establish techniques and methods for detecting in advance the potential impact of such developments; develop solutions to these problems, and publish findings pertaining thereto;

(2) establish a program of factual studies of practices of employers and unions which tend to impede the mobility of workers or which facilitate mobility, including but not limited to early retirement and vesting provisions and practices under private compensation plans; the extension of health, welfare, and insurance benefits to laid-off workers; the operation of severance pay plans; and the use of extended leave plans for education and training purposes. A report on these studies shall be included as part of the Secretary's report required under section 107;

(3) appraise the adequacy of the Nation's manpower development efforts to meet foreseeable manpower needs and recommend needed adjustment, including methods for promoting the most effective occupational utilization of and providing useful work experience and training opportunities for untrained and inexperienced youth;

(4) promote, encourage, or directly engage in programs of information and communication concerning manpower requirements, development, and utilization, including prevention and amelioration of undesirable manpower effects from automation and other technological developments and improvement of the mobility of workers;

(5) arrange, through grants or contracts, for the conduct of such research and investigations as give promise of furthering the objectives of this Act; and

(6) establish a program of experimental, developmental, demonstration, and pilot projects, through grants to or contracts with public or private nonprofit organizations, or through contracts with other private organizations, for the purpose of improving techniques and demonstrating the effectiveness of specialized methods in meeting the manpower, employment, and training problems of worker groups such as the long-term unemployed, disadvantaged youth, displaced older workers, the handicapped, members of minority groups, and other similar groups. In carrying out this subsection the Secretary of Labor shall, where appropriate, consult with the Secretaries of Health, Education, and Welfare, and Commerce, and the Director of the Office of Economic Opportunity. Where programs under this paragraph require institutional training, appropriate arrangements for such training shall be agreed to by the Secretary of Labor and the Secretary of Health, Education, and Welfare. He shall also seek the advice of consultants with respect to the standards governing the adequacy and design of proposals, the ability of applicants, and the priority of projects in meeting the objectiv of this Act.

Job Development Programs

SEC. 103. The Secretary of Labor shall stimulate and assist, in cooperation with interested agencies both public and private, job development programs, through on-the-job training and other suitable methods, that will serve to expand employment by the filling of those service and related needs which are not now being met because of lack of trained workers or other reasons affecting employment or opportunities for employment.

Labor Mobility Demonstration Projects

SEC. 104. (a) During the period ending June 30, 1968, the Secretary of Labor shall develop and carry out, in a limited number of geographical areas, pilot projects designed to assess or demonstrate the effectiveness in reducing unemployment of programs to increase the mobility of unemployed workers by providing assistance to meet their relocation expenses. In carrying out such projects the Secretary may provide such assistance, in the form of grants or loans, or both, only to involuntarily unemployed individuals who cannot reasonably be expected to secure full-time employment in the community in which they reside, have bona fide offers of employment (other than temporary or seasonal employment), and are deemed qualified to perform the work for which they are being employed.

(b) Loans or grants provided under this section shall be subject to such terms and conditions as the Secretary shall prescribe, with loans subject to the following limitations:

(1) there is reasonable assurance of repayment of the loan;

(2) the credit is not otherwise available on reasonable terms from private sources or other Federal, State, or local programs;

(3) the amount of the loan, together with other funds available, is adequate to assure achievement of the purposes for which the loan is made;

(4) the loan bears interest at a rate not less that (A) a rate determined by the Secretary of the Treasury, taking into consideration the average market yield on outstanding Treasury obligations of comparable maturity, plus (B) such additional charge, if any, toward covering other costs of the program as the Secretary may determine to be consistent with its purposes; and

(5) the loan is repayable within not more than ten years.

(c) Of the funds appropriated for a fiscal year to carry out this Act, not more than $5,000,000 may be used for the purposes of this section.

Trainee Placement Assistance Demonstration Projects

SEC. 105. During the period ending June 30, 1968, the Secretary of Labor shall develop and carry out experimental and demonstration projects to assist in the placement of persons seeking employment through a public employment office who have successfully completed or participated in a federally assisted or financed training, counseling, work training, or work experience program and who, after appropriate counseling, have been found by the Secretary to be qualified and suitable for the employment in question, but to whom employment is or may be denied for reasons other than ability to perform, including difficulty in securing bonds for indemnifying their employers against loss from the infidelity, dishonesty, or default of such persons. In carrying out these projects the Secretary may make payments to or contracts with employers or institutions authorized to indemnify employers against such losses. Of the funds appropriated for a fiscal year to carry out this Act, not more than $300,000 may be used for purposes of this section.

Skill and Training Requirements

SEC. 106. The Secretary of Labor shall develop, compile, and make available, in such manner as he deems appropriate, information regarding skill requirements, occupational outlook, job opportunities, labor supply in various skills, and employment trends on a National, State, area, or other appropriate basis which shall be used in the educational, training, counseling, and placement activities performed under this Act.

Manpower Report

SEC. 107. The Secretary of Labor shall make such reports and recommendations to the President as he deems appropriate pertaining to manpower requirements, resources, use, and training; and the President shall transmit to the Congress within sixty days after the beginning of each regular session (commencing with the year 1963) a report pertaining to manpower requirements, resources, utilization, and training.

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TITLE II—TRAINING AND SKILL DEVELOPMENT PROGRAMS

PART A—DUTIES OF THE SECRETARY OF LABOR

General Responsibility

SEC. 201. In carrying out the purposes of this Act, the Secretary of Labor shall determine the skill requirements of the economy, develop policies for the adequate occupational development and maximum utilization of the skills of the Nation's workers, promote and encourage the development of broad and diversified training programs, including on-the-job training, designed to qualify for employment the many persons who cannot reasonably be expected to secure full-time employment without such training, and to equip the Nation's workers with the new and improved skills that are or will be required. Whenever appropriate, the Secretary of Labor shall coordinate and provide for combinations of programs, to be pursued concurrently or sequentially, under this Act with programs under other Federal Acts, where the purposes of this Act would be accomplished thereby.

Selection of Trainees

SEC. 202. (a) The Secretary of Labor shall provide a program for testing, counseling, and selecting for occupational training under this Act those unemployed or underemployed persons who cannot reasonably be expected to secure appropriate full-time employment without training. Workers in farm families with less than $1,200 annual net family income shall be considered unemployed for the purpose of this Act.

(b) Whenever appropriate the Secretary shall provide a special program for the testing, counseling, selection, and referral of youths, sixteen years of age or older, for occupational training and further schooling, who because of inadequate educational background and work preparation are unable to qualify for and obtain employment without such training and schooling.

(c) The Secretary of Labor shall provide, where appropriate, a special program of testing, counseling, selection, and referral of persons forty-five years of age or older for occupational training and further schooling designed to meet the special problems faced by such persons in the labor market.

(d) Although priority in referral for training shall be extended to unemployed persons, the Secretary of Labor shall, to the maximum extent possible, also refer other persons qualified for training programs which will enable them to acquire needed skills. Priority in referral for training shall also be extended to persons to be trained for

skills needed within, first, the labor market area in which they reside and, second, within the State of their residence.

(e) The Secretary of Labor shall determine the occupational training needs of referred persons, provide for their orderly selection and referral for training under this Act, and provide counseling and placement services to persons who have completed their training, as well as follow-up studies to determine whether the programs provided meet the occupational training needs of the persons referred.

(f) Before selecting a person for training, other than for training under subsection (i),[2] the Secretary shall determine that there is a reasonable expectation of employment in the occupation for which the person is to be trained. If such employment is not available in the area in which the person resides, the Secretary shall obtain reasonable assurance of such person's willingness to accept employment outside his area of residence.

(g) The Secretary shall not refer persons for training in an occupation which requires less than two weeks training, unless there are immediate employment opportunities in such occupation.

(h) The duration of any training program to which a person is referred shall be reasonable and consistent with the occupation for which the person is being trained.

(i) Upon certification by the responsible training agency that a person who has been referred for training does not have a satisfactory attendance record or is not making satisfactory progress in such training absent good cause, the Secretary shall forthwith terminate his training and subsistence allowances, and his transportation allowances except such as may be necessary to enable him to return to his regular place of residence after termination of training, and withdraw his referral. Such person shall not be eligible for such allowances for one year thereafter.

(j) Whenever appropriate, the Secretary of Labor may also refer, for the attainment of basic education and communications and employment skills, those eligible persons who indicate their intention to and will thereby be able to pursue, subsequently or concurrently, courses of occupational training of a type for which there appears to be a reasonable expectation of employment, or who have completed or do not need occupational training but do require such other preparation to render them employable. Such referrals shall be considered a referral for training within the meaning of this Act.

(k) The Secretary of Labor may enter into an agreement with the Secretary of Health, Education, and Welfare for the purpose of furthering the objectives of this Act by facilitating the provision of appropriate physical examinations, medical treatment, and prostheses for persons selected or otherwise eligible to be selected for training

[2] Apparent technical error; reference to subsection "(j)" probably intended.

under this Act. The agreement may provide that where any such person cannot reasonably be expected to pay the cost of the services and the services are not otherwise available without cost to him from any other resource in the community, there may be expended (from sums appropriated to carry out this title and pursuant to arrangements made by the Secretary of Health, Education, and Welfare) not more than an aggregate of $100 to provide such services to that person. If the Secretary of Health, Education, and Welfare is unable to arrange for the provision of services under this section, the Secretary of Labor may expend not more than an aggregate of $100 to provide such services to any one person.

(l) In order to assist in providing qualified workers in areas or in occupations in which there are critical skill shortages the Secretary of Labor shall, in accordance with regulations prescribed by him, provide an experimental program for part-time training of persons, including employed persons, to meet such skill shortages.

Training Allowances

SEC. 203. (a) The Secretary of Labor may, on behalf of the United States, enter into agreements with States under which the Secretary of Labor shall make payments to such States either in advance or by way of reimbursement for the purpose of enabling such States, as agents for the United States, to make payment of weekly training allowances to unemployed persons selected for training pursuant to the provisions of section 202 and undergoing such training in a program operated pursuant to the provisions of the Act. Such payments shall be made for a period not exceeding one hundred and four weeks, and the basic amount of any such payment in any week for persons undergoing training, including uncompensated employer-provided training, shall not exceed $10 more than the amount of the average weekly gross unemployment compensation payment (including allowances for dependents) for a week of total unemployment in the State making such payments during the most recent four-calendar-quarter period for which such data are available: *Provided*, That the basic amount of such payments may be increased by $5 a week for each dependent over two up to a maximum of four additional dependents: *Provided further*, That in any week an individual who, but for his training, would be entitled to unemployment compensation in excess of his total allowance, including payments for dependents, shall receive an allowance increased by the amount of such excess. With respect to Guam and the Virgin Islands the Secretary shall by regulation determine the amount of the training allowance to be paid any eligible person training under this Act.

With respect to any week for which a person receives unemployment compensation under title XV of the Social Security Act or any other Federal or State unemployment compensation law which is less than

the total training allowance, including payments for dependents, provided for by the preceding paragraph, a supplemental training allowance may be paid to a person eligible for a training allowance under this Act. The supplemental training allowance shall not exceed the difference between his unemployment compensation and the training allowance provided by the preceding paragraph.

For persons undergoing on-the-job training, the amount of any payment which would otherwise be made by the Secretary of Labor under this section shall be reduced by an amount which bears the same ratio to that payment as the number of compensated hours per week under the training program bears to forty hours.

The training allowance of a person engaged in training under section 204 or 231 shall not be reduced on account of employment (other than employment under an on-the-job training program under section 204) which does not exceed twenty hours per week, but shall be reduced in an amount equal to his full earnings for hours worked (other than in employment under such an on-the-job training program) in excess of twenty hours per week.

(b) The Secretary of Labor is authorized to pay to any person engaged in training under this title, including compensated fulltime on-the-job training, such sums as he may determine to be necessary to defray transportation expenses, and when such training is provided in facilities which are not within commuting distance of the trainee's regular place of residence, subsistence expenses for separate maintenance of the trainee: *Provided*, That the Secretary in defraying such subsistence expenses shall not afford any individual an allowance exceeding $35 per week, at the rate of $5 per day; nor shall the Secretary authorize any transportation expenditure exceeding the rate of 10 cents per mile, except in the case of local transportation where he may authorize reimbursement for the trainee's travel by the most economical mode of public transportation, and except that in noncontiguous States and in areas outside the continental United States where the per diem allowance prescribed under section 836 of title 5, United States Code, exceeds the maximum per diem allowance prescribed under that section for contiguous States, the Secretary may provide for a reasonable increase in the transportation and subsistence expenses in such amounts as he may deem necessary to carry out the purposes of this Act, and subject to such limitations as he may prescribe.

(c) The Secretary of Labor shall pay training allowances only to unemployed persons who have had at least one year of experience in gainful employment: *Provided*, That he shall not pay training allowances to members of a family or a household in which the head of the family or the head of the household as defined in the Internal Revenue Code of 1954 is employed, unless the Secretary determines that such payments are necessary in order for the trainees to undertake or to

continue training: *Provided further*, That, no allowances shall be paid to any member of a family or household if the Secretary of Labor determines that the head of such family or household has terminated his employment for the purpose of qualifying such member for training allowances under this section. Notwithstanding the preceding sentence, the Secretary may pay training allowances at a rate not in excess of $20 a week to youths seventeen years of age or older who require such training allowance in order to undertake training, who are referred for training in accordance with section 202(b), and who are not entitled to allowances under the preceding sentence, except that no such training allowance shall be paid to any such youth who has not graduated from high school, unless the Secretary has satisfied himself that such youth has continuously failed to attend school for a period of not less than one year or that the local authorities after pursuing all appropriate procedures, including guidance and counseling, have concluded, after considering any assistance available under section 13 of the Vocational Education Act of 1963, that further school attendance by such youth in any regular academic or vocational program is no longer practicable under the circumstances. The number of youths under the age of twenty-two who are receiving training allowances (or who would be entitled thereto but for the receipt of unemployment compensation) shall, except for such adjustments as may be necessary for effective management of programs under this section, not exceed 25 per centum of all persons receiving such allowances (or who would be entitled thereto but for the receipt of unemployment compensation). The Secretary of Labor may authorize continued payments of allowances to any youth who becomes twenty-two years of age during the course of his training, if he has completed a substantial part of such training. Notwithstanding any provision to the contrary in this subsection or in subsection (h), the Secretary may refer any individual who has completed a program under part B of title I of the Economic Opportunity Act of 1964 to training under this Act, and such individual may be paid a training allowance as provided in section 203(a) of this Act without regard to the requirements imposed on such payments by the preceding sentences of subsection (c) or by subsection (h) of this section. Such payments shall not exceed the average weekly gross unemployment compensation payment (including allowances for dependents) for a week of total unemployment in the State making such payments during the most recent four-calendar-quarter period for which such data are available. Such persons shall not be deemed youths for the purpose of applying the provision under this subsection limiting the number of youths who may receive training allowances.

(d) No training allowance shall be made to any person otherwise eligible who, with respect to the week for which such payment would

be made, has received or is seeking unemployment compensation under title XV of the Social Security Act or any other Federal or State unemployment compensation law, but if the appropriate State or Federal agency finally determines that a person denied training allowances for any week because of this subsection was not entitled to unemployment compensation under title XV of the Social Security Act or such Federal or State law with respect to such week, this subsection shall not apply with respect to such week.

(e) A person who refuses, without good cause, to accept training under this Act shall not, for one year thereafter, be entitled to training allowances.

(f) Any agreement under this section may contain such provisions (including, as far as may be appropriate, provisions authorized or made applicable with respect to agreements concluded by the Secretary of Labor pursuant to title XV of the Social Security Act) as will promote effective administration, protect the United States against loss and insure the proper application of payments made to the State under such agreement. Except as may be provided in such agreements, or in regulations hereinafter authorized, determinations by any duly designated officer or agency as to the eligibility of persons for weekly training allowances under this section shall be final and conclusive for any purposes and not subject to review by any court or any other officer.

(g) (1) If State unemployment compensation payments are paid to a person taking training under this Act and eligible for a training allowance, the State making such payments shall be reimbursed from funds herein appropriated. The amount of such reimbursement shall be determined by the Secretary of Labor on the basis of reports furnished to him by the States and such amount shall then be placed in the State's unemployment trust fund account.

(2) If employment benefits under the Railroad Unemployment Insurance Act are paid to a person taking training under this Act and eligible for a training allowance, the railroad unemployment insurance account in the unemployment trust fund shall be reimbursed, from funds herein appropriated, for all of such benefits paid. The amount of such reimbursement shall be determined by the Secretary of Labor on the basis of reports furnished to him by the Railroad Retirement Board and such amount shall then be placed in the railroad unemployment insurance account.

(h) A person who, in connection with an occupational training program, has received a training allowance or whose unemployment compensation payments were reimbursed under the provisions of this Act or any other Federal Act shall not be entitled to training allowances under this Act for one year after the completion or other termination (for other than good cause) of the training with respect to

which such allowance or payment was made unless the Secretary determines that there is good cause to permit an individual referred to further training to receive training allowances so that he may be prepared adequately for full-time employment.

(i) No training allowance shall be paid to any person who is receiving training for an occupation which requires a training period of less than six days.

(j) To assure the maximum use of training opportunities, the Secretary of Labor is authorized to make, or cause to be made, advance payments of training allowances or a part thereof to individuals selected for training who, because of immediate financial needs for the maintenance of themselves or their dependents pending receipt of training allowances, would otherwise be unable to enter or continue training. The total advance payments to a trainee under this subsection outstanding at any time shall not exceed the amount of the average weekly gross unemployment compensation payment (including allowances for dependents) for a week of total unemployment in the State making such payments during the four-calendar-quarter period for which such data are available most immediately prior to the commencement of training by such trainee. Such advance payments shall be repaid either through deductions from training allowances or through other arrangements with such trainee.

(k) Under such standards as the Secretary of Labor may find appropriate to achieve the purposes of subsection 202(l), an individual referred to part-time training under such section shall be paid an amount not to exceed $10 with respect to each week in which he is engaged in such training and such payment shall be in lieu of any other payments to which he may otherwise be entitled under this section.

(l)(1) No training allowance shall be paid to any person for any period for which a money payment has been made with respect to the need of that person under a State plan which has been approved under title I, IV, X, XIV, or XVI of the Social Security Act and which meets the requirements of the first sentence of paragraph (2) of this subsection. The Secretary of Labor is authorized to pay to any such person (A) such sums as the Secretary determines to be necessary to defray expenses of that person which are attributable to training pursuant to the provisions of this Act, and (B) a training incentive payment of not more than $20 per week. Persons receiving payments under the preceding sentence shall be counted for purposes of the third sentence of section 203(c) as though they were receiving training allowances.

(2) Notwithstanding the provisions of titles I, IV, X, XIV, and XVI of the Social Security Act, a State plan approved under any such title shall provide that no payment made to any person pursuant to para-

graph (1) of this subsection shall be regarded (A) as income or resources of that person in determining his need under such approved State plan, or (B) as income or resources of any other person in determining the need of that other person under such approved State plan. No funds to which a State is otherwise entitled under title I, IV, X, XIV, or XVI of the Social Security Act for any period before the first month beginning after the adjournment of the State's first regular legislative session which adjourns more than sixty days after the enactment of this subsection shall be withheld by reason of any action taken pursuant to a State statute which prevents such State from complying with the requirements of this paragraph.

On-the-Job Training

SEC. 204. (a) The Secretary of Labor shall encourage, develop, and secure the adoption of programs for on-the-job training needed to equip persons selected for training with the appropriate skills. The Secretary shall, to the maximum extent possible, secure the adoption by the States and by private and public agencies, employers, trade associations, labor organizations and other industrial and community groups which he determines are qualified to conduct effective training programs under this title of such programs as he approves, and for this purpose he is authorized to enter into appropriate agreements with them.

(b) In adopting or approving any training program under this part, and as a condition to the expenditure of funds for any such program, the Secretary shall make such arrangements as he deems necessary to insure adherence to appropriate training standards, including assurances—

(1) that the training content of the program is adequate, involves reasonable progression, and will result in the qualification of trainees for suitable employment;

(2) that the training period is reasonable and consistent with periods customarily required for comparable training;

(3) that adequate and safe facilities, and adequate personnel and records of attendance and progress are provided; and

(4) that the trainees are compensated by the employer at such rates, including periodic increases, as may be deemed reasonable under regulations hereinafter authorized, considering such factors as industry, geographical region, and trainee proficiency.

(c) Where on-the-job training programs under this part require supplementary classroom instruction, appropriate arrangements for such instruction shall be agreed to by the Secretary of Health, Education, and Welfare and the Secretary of Labor.

Advisory Committees

SEC. 205. (a) The Secretary shall appoint a National Advisory Committee which shall consist of ten members and shall be composed of representatives of labor, management, agriculture, education, and training, and the public in general. From the members appointed to such Committee the Secretary shall designate a Chairman. Such Committee, or any duly established subcommittee thereof, shall from time to time make recommendations to the Secretary relative to the carrying out of his duties under this Act. Such Committee shall hold not less than two meetings during each calendar year.

(b) For the purpose of making expert assistance available to persons formulating and carrying on programs under this title, the Secretary shall, where appropriate, require the organization on a community, State, and/or regional basis of labor-management-public advisory committees.

(c) The National Advisory Committee may accept gifts or bequests, either for carrying out specific programs or for its general activities or for its responsibilities under subsection (b) of this section.

(d) Appointed members of the National Advisory Committee shall be paid compensation at the rate of $50 per diem when engaged in the work of the National Advisory Committee, including travel time, and shall be allowed travel expenses and per diem in lieu of subsistence as authorized by law (5 U.S.C. 73b–2) for persons in the Government service employed intermittently and receiving compensation on a per diem, when actually employed, basis.

(e) (1) Any member of the National Advisory Committee is hereby exempted, with respect to such appointment, from the operation of sections 281, 283, and 1914 of title 18 of the United States Code, and section 190 of the Revised Statutes (5 U.S.C. 99), except as otherwise specified in paragraph (2) of this subsection.

(2) The exemption granted by paragraph (1) of this subsection shall not extend—

(A) to the receipt or payment of salary in connection with the appointee's Government service from any source other than the private employer of the appointee at the time of his appointment, or

(B) during the period of such appointment, to the prosecution or participation in the prosecution, by any person so appointed, of any claim against the Government involving any matter with which such person, during such period, is or was directly connected by reason of such appointment.

State Agreements

SEC. 206. (a) The Secretary of Labor is authorized to enter into an agreement with each State, or with the appropriate agency of each State, pursuant to which the Secretary of Labor may, for the purpose of carrying out his functions and duties under this title, utilize the services of the appropriate State agency and, notwithstanding any other provision of law, may make payments to such State or appropriate agency for expenses incurred for such purposes.

(b) Any agreement under this section may contain such provisions as will promote effective administration, protect the United States against loss and insure that the functions and duties to be carried out by the appropriate State agency are performed in a manner satisfactory to the Secretary.

Rules and Regulations

SEC. 207. The Secretary of Labor shall prescribe such rules and regulations as he may deem necessary and appropriate to carry out the provisions of this part.

PART B—DUTIES OF THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE

General Responsibilities

SEC. 231. The Secretary of Health, Education, and Welfare shall, pursuant to the provisions of this title enter into agreements with States under which the appropriate State education agencies will undertake to provide training needed to equip persons referred to the Secretary of Health, Education, and Welfare by the Secretary of Labor pursuant to section 202, for the occupations specified in the referrals, except that with respect to education to be provided pursuant to referrals under subsection (b) or (i)[3] of section 202, the Secretary of Health, Education, and Welfare may make arrangements for the provision of the education to be provided under such subsection through other appropriate education agencies. Such State agencies shall provide for such training through public educational agencies or institutions or through arrangements with private educational or training institutions where such private institutions can provide equipment or services not available in public institutions, particularly for training in technical and subprofessional occupations, or where such institutions can, at comparable cost, (1) provide substantially equivalent training, or (2) make possible an expanded use of the individual referral method, or (3) aid in reducing more quickly unem-

[3] Apparent technical error; reference to subsection "(j)" probably intended.

ployment or current and prospective manpower shortages. The State agency shall be paid not more than 90 per centum of the cost to the State of carrying out the agreement, unless the Secretary of Health, Education, and Welfare determines that payments in excess of 90 per centum are necessary because such payments with respect to private institutions or programs carried out in conjunction with programs or projects under section 102(6) are required to give full effect to the purposes of the Act: *Provided*, That for the period ending June 30, 1966, the State agency shall be paid 100 per centum of the cost to the State of carrying out the agreement. Non-Federal contributions may be in cash or kind, fairly evaluated, including but not limited to plant, equipment, and services. Such agreements shall contain such other provisions as will promote effective administration (including provision (1) for reports on the attendance and performance of trainees, (2) for immediate certification to the Secretary of Labor by the responsible training agency with respect to each person referred for training who does not have a satisfactory attendance record or is not making satisfactory progress in such training absent good cause, and (3) for continuous supervision of the training programs conducted under the agreement to insure the quality and adequacy of the training provided), protect the United States against loss, and assure that the functions and duties to be carried out by such State agency are performed in such fashion as will carry out the purposes of this title. The Secretary of Health, Education, and Welfare shall give preference to training and education provided through State vocational education agencies and other State education agencies. However, in any case in which he determines that it would permit persons to begin their training or education within a shorter period of time, or permit the needed training or education to be provided more economically, or more effectively, he may provide the needed training or education by agreement or contract made directly with public or private training or educational facilities or through such other arrangements as he deems necessary to give full effect to this Act.

Rules and Regulations

SEC. 232. The Secretary of Health, Education, and Welfare may prescribe such rules and regulations as he may deem necessary and appropriate to carry out the provisions of this part.

Annual Report

SEC. 233. Prior to April first of each year, the Secretary of Health, Education, and Welfare shall make an annual report to Congress. Such report shall contain an evaluation of the programs under section 231, the need for continuing such programs, and recommendations for

improvement. The reports shall also contain progress reports on the vocational training study which will be conducted under the supervision of the Secretary during 1966 and 1967.

PART C—REDEVELOPMENT AREAS

SEC. 241. The Secretaries of Labor and of Health, Education, and Welfare, in accordance with their respective responsibilities under parts A and B of this title, are authorized to provide a supplementary program of training and training allowances, in consultation with the Secretary of Commerce, for unemployed and underemployed persons residing in areas designated as redevelopment areas by the Secretary of Commerce under the Area Redevelopment Act or any subsequent Act authorizing such designation. Such program shall be carried out by the Secretaries of Labor and of Health, Education, and Welfare in accordance with the provisions otherwise applicable to programs under this Act and with their respective functions under those provisions, except that—

(1) the Secretary of Labor, in consultation with the Secretary of Commerce, shall determine the occupational training or retraining needs of unemployed or underemployed individuals residing in redevelopment areas;

(2) all unemployed or underemployed individuals residing in redevelopment areas who can reasonably be expected to obtain employment as a result of such training may be referred and selected for training and shall be eligible for training allowances under this section: *Provided*, That the amount and duration of training allowances under this section shall in no event exceed the amount and duration of training allowances provided under section 203(a) of this Act;

(3) the Secretaries of Labor and of Health, Education, and Welfare shall, each with respect to his functions under this section, prescribe jointly with the Secretary of Commerce such rules and regulations as may be necessary to carry out the purposes of this section; and

(4) no funds available under this section shall be apportioned to any State pursuant to section 301 of this Act, nor shall any matching funds be required.

PART D—CORRECTIONAL INSTITUTIONS

SEC. 251. Without regard to any other provision of this title or section 301 of this Act, the Secretary of Labor shall, during the period ending June 30, 1969, develop and carry out experimental and demonstration programs of training and education for persons in correctional institutions who are in need thereof to obtain employment upon release.

Arrangements for such education and training shall be made by the Secretary of Health, Education, and Welfare after consultation with the appropriate area manpower development and training advisory committee. Programs under this part shall be conducted through agreements with officials of Federal, State, and local correctional institutions. To the fullest extent practicable, the Secretary of Labor shall utilize the available services of other Federal departments and agencies. Programs under this part may include vocational education; special job development and placement activities; prevocational, basic, and secondary education, and counseling, where appropriate; supportive and followup services and such other assistance as is deemed necessary.

PART E—WORK EXPERIENCE AND TRAINING PROGRAMS

SEC. 261. (a) The Secretary of Labor in cooperation with the Secretary of Health, Education, and Welfare shall provide, under this part, programs for needy persons who require work experience or special family and supportive services, as well as training, in order that they may be assisted to secure and hold regular employment in a competitive labor market. Such programs shall—

(1) provide for the selection of participants pursuant to procedures and criteria jointly prescribed by the Secretary of Labor and the Secretary of Health, Education, and Welfare;

(2) include pretraining services and basic maintenance, health, family and day care, counseling, and similar social services, and basic education, as provided by the Secretary of Health, Education, and Welfare pursuant to section 502 of the Economic Opportunity Act of 1964, as amended;

(3) provide through agreements with appropriate public or private nonprofit agencies, work experience to the extent required to assist participants in developing necessary work attitudes or to prepare them for work or training involving the acquisition of needed skills;

(4) provide testing, counseling, training either on or off the job (including classroom instruction where needed through appropriate arrangements agreed to by the Secretary of Labor and the Secretary of Health, Education, and Welfare), to assist participants to develop their occupational potential, improve their occupational level and secure promotion or advancement;

(5) provide, through appropriate arrangements with employers, labor organizations, and other public and private agencies, for development where needed of additional employment opportunities for participants, for job referral and follow-up services required to assist participants in securing and retaining employment and securing possibilities for advancement; and

(6) provide, in accordance with the criteria prescribed in section 104 of this Act, relocation assistance to involuntarily unemployed individuals where the Secretary of Labor determines they cannot reasonably be expected to secure full-time employment in the community in which they reside.

(b) In developing and approving programs under this part, the Secretary of Labor shall give priority to programs with a high-training potential and which afford the best prospects for contributing to the upward mobility of participants.

(c) Notwithstanding any other provision of this Act, the provisions of section 503 of the Economic Opportunity Act of 1964, as amended, shall govern the use and apportionment among the several States of funds provided pursuant to such Act for the purpose of carrying out this part.

TITLE III—MISCELLANEOUS

Apportionment of Benefits

SEC. 301. For the purpose of effecting an equitable apportionment of Federal expenditures among the States in carrying out the programs authorized under parts A and B of title II of this Act, the Secretary of Labor and the Secretary of Health, Education, and Welfare shall apportion 80 per centum of the funds available for such purposes in accordance with uniform standards and in arriving at such standards shall consider only the following factors: (1) the proportion which the labor force of a State bears to the total labor force of the United States, (2) the proportion which the unemployed in a State during the preceding calendar year bears to the total number of unemployed in the United States in the preceding calendar year, (3) the la of appropriate full-time employment in the State, (4) the proportion which the insured unemployed within a State bears to the total number of insured employed within such State, and (5) the average weekly unemployment compensation benefits paid by the State. The remaining 20 per centum may be expended by the Secretary of Labor and the Secretary of Health, Education, and Welfare as they find necessary or appropriate to carry out the purposes of title II. The Secretary of Labor and the Secretary of Health, Education, and Welfare are authorized to make reapportionments from time to time where the total amounts apportioned under this section have not been fully obligated in a particular State, or where the State or appropriate agencies in the State have not entered into the necessary agreements, and the Secretaries find that any other State is in need of additional funds to carry out the programs authorized by this Act: *Provided*, That no funds apportioned with respect to a State in any fiscal year shall be reapportioned before the expiration of the sixth month of

such fiscal year and only upon 30 days' prior notice to such State of the proposed reapportionment, except that the requirement for prior notice shall not apply with respect to any reapportionment made during the last quarter of the fiscal year.

Maintenance of State Effort

SEC. 302. No training program which is financed in whole or in part by the Federal Government under this Act shall be approved unless the Secretary of Labor, if the program is authorized under part A of title II, or the Secretary of Health, Education, and Welfare, if the program is authorized under part B of title II, satisfies himself that neither the State nor the locality in which the training is carried out has reduced or is reducing its own level of expenditures for vocational education and training, including program operation under provisions of the Smith-Hughes Vocational Education Act, titles I, II, and III of the Vocational Education Act of 1946, and the Vocational Education Act of 1963, except for reductions unrelated to the provisions or purposes of this Act.

Other Agencies and Departments

SEC. 303. (a) In the performance of their function under this Act, the Secretary of Labor and the Secretary of Health, Education, and Welfare, in order to avoid unnecessary expense and duplication of functions among Government agencies, shall use the available services or facilities of other agencies and instrumentalities of the Federal Government, under conditions specified in section 306(a). Each department, agency, or establishment of the United States is authorized and directed to cooperate with the Secretary of Labor and the Secretary of Health, Education, and Welfare and, to the extent permitted by law, to provide such services and facilities as either may request for his assistance in the performance of his functions under this Act.

(b) The Secretary of Labor and the Secretary of Health, Education, and Welfare shall carry out their responsibilities under this Act through the maximum utilization of all possible resources for skill development available in industry, labor, public and private educational and training institutions, State, Federal, and local agencies, and other appropriate public and private organizations and facilities.

Appropriations Authorized

SEC. 304. (a) For the purposes of carrying out title I, there are hereby authorized to be appropriated not in excess of $46,000,000 for the fiscal year ending June 30, 1966, and for each fiscal year thereafter such amounts as may be necessary.

(b) For the purpose of carrying out parts A and B of title II, there are hereby authorized to be appropriated not in excess of $385,000,000 for the fiscal year ending June 30, 1966, and for each fiscal year thereafter such amounts as may be necessary.

(c) For the purpose of carrying out part C of title II, there are hereby authorized to be appropriated not in excess of $22,000,000 for the fiscal year ending June 30, 1966, and for each year thereafter such amounts as may be necessary.

(d) For the purpose of carrying out part D of title II, there are hereby authorized to be appropriated for the fiscal year ending June 30, 1968, and for the fiscal year ending June 30, 1969, such amounts as may be necessary.

(e) For the purpose of carrying out title III, there are hereby authorized to be appropriated not in excess of $1,000,000 for the fiscal year ending June 30, 1966, and for each year thereafter such amounts as may be necessary.

Limitations on Use of Appropriated Funds

SEC. 305. (a) Funds appropriated under the authorization of this Act may be transferred, with the approval of the Director of the Bureau of the Budget, between departments and agencies of the Government, if such funds are used for the purposes for which they are specifically authorized and appropriated.

(b) Any equipment and teaching aids purchased by a State or local education agency with funds appropriated to carry out the provisions of part B shall become the property of the State.

(c) No portion of the funds to be used under part B of this Act shall be appropriated directly or indirectly to the purchase, erection, or repair of any building except for minor remodeling of a public building necessary to make it suitable for use in training under part B.

(d) Funds appropriated under this Act shall remain available for one fiscal year beyond that in which appropriated.

(e) The costs of all training programs approved in any fiscal year, including the total cost of training allowances for such programs, may be paid from funds appropriated for such purposes for that fiscal year; and the amount of the Federal payment shall be computed on the basis of the per centum requirement in effect at the time such programs are approved: *Provided*, That funds appropriated for the fiscal year ending June 30, 1966, may be expended for training programs approved under this Act prior to July 1, 1965.

Authority To Contract

SEC. 306. (a) The Secretary of Labor and the Secretary of Health, Education, and Welfare may make such contracts or agreements, establish such procedures, including (subject to such policies, rules, and regulations as they may prescribe) the approval of any program under section 202, the cost of which does not exceed $75,000, and make such payments, either in advance or by way of reimbursement, or otherwise allocate or expend funds made available under this Act, as they deem necessary to carry out the provisions of this Act.

(b) The Secretary of Labor and the Secretary of Health, Education, and Welfare shall not use any authority conferred by this Act to assist in relocating establishments from one area to another. Such limitation shall not prohibit assistance to a business entity in the establishment of a new branch, affiliate, or subsidiary of such entity if the Secretary of Labor finds that assistance will not result in an increase in unemployment in the area of original location or in any other area where such entity conducts business operations, unless he has reason to believe that such branch, affiliate, or subsidiary is being established with the intention of closing down the operations of the existing business entity in the area of its original location or in any other area where it conducts such operations.

Selection and Referral

SEC. 307. The selection of persons for training under this Act and for placement of such persons shall not be contingent upon such person's membership or nonmembership in a labor organization.

Definition

SEC. 308. For the purposes of this Act, the term "State" includes the District of Columbia, Puerto Rico, the Virgin Islands, and Guam.

Secretaries' Reports

SEC. 309 (Repealed by P.L. 89-792, Nov. 7, 1966, 80 Stat. 1434.)

Termination of Authority

SEC. 310. (a) All authority conferred under title II of this Act shall terminate at the close of June 30, 1969.

(b) Notwithstanding the foregoing, the termination of title II shall not affect the disbursement of funds under, or the carrying out of, any contract, commitment or other obligation entered into prior to the date of such termination: *Provided*, That no disbursement of funds shall be made pursuant to the authority conferred under title II of this Act after December 30, 1969.

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Frances Perkins reviews the background of The New Deal in her lecture entitled "Labor Under The New Deal and New Frontier," and analyzes in that historical light the Kennedy Administration's approach to such labor problems as unemployment and discrimination. She speaks as one who had an important hand in shaping the basic labor legislation of the thirties, while J. Paul St. Sure speaks as a management representative in labor negotiations in his lecture "Reflections on Thirty Years of Collective Bargaining." He outlines six distinctive periods involving major changes in management-labor relationships: (1) The Great Depression, (2) The period following passage of the Wagner Act, (3) World War II, (4) The Taft-Hartley Act period, (5) The time following the McClellan Committee hearings and passage of the Lardrum-Griffin Act, and (6) The current period of experimentation and increasing uncertainties. (CD)

VT 002 264

Two Views of American Labor

FRANCES PERKINS

J. PAUL ST. SURE

INSTITUTE OF INDUSTRIAL RELATIONS
UNIVERSITY OF CALIFORNIA · LOS ANGELES

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THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

FOREWORD

The Institute of Industrial Relations at UCLA has been privileged in recent years to have as its guests two distinguished authorities in the labor relations field. Miss Frances Perkins served as Regents Lecturer in the spring of 1963 and Mr. J. Paul St. Sure as Regents Lecturer in the fall of 1964. Among her many contributions to campus life, Miss Perkins gave a series of public lectures under the title "Labor under the New Deal and the New Frontier," the essence of which is preserved in this publication. Among his numerous activities, Mr. St. Sure delivered a lecture entitled "Reflections on Thirty Years of Collective Bargaining," which is being published substantially as he gave it.

Frances Perkins was born in 1882 and was educated at Mt. Holyoke College, the University of Pennsylvania, and Columbia University. She served the State of New York in many capacities, notably as Industrial Commissioner between 1929 and 1933. She was appointed Secretary of Labor by President Franklin D. Roosevelt in 1933 and served until 1945. As Secretary of Labor during the critical years of the thirties, she had an important hand in shaping much of the basic labor legislation of the United States. Miss Perkins is also the author of a notable biography, *The Roosevelt I Knew*.

J. Paul St. Sure was born in 1902 and received his education at the University of California, Harvard Law School, and the University of California School of Jurisprudence. For a time his concern was the practice and enforcement of the law. In the thirties his interest turned to labor relations and he soon became an outstanding negotiator representing management in collective bargaining in the San Francisco Bay area and on the Pacific Coast as a whole. Since 1952 he has been president of the Pacific Maritime Association and has been a principal architect of the "new look" on the waterfront which culminated in the heralded Mechanization Fund.

IRVING BERNSTEIN
Acting Director

LABOR UNDER THE NEW DEAL AND THE NEW FRONTIER

FRANCES PERKINS

I would like to make it quite clear that I am not going to compare the New Deal with the New Frontier. Perhaps it is the adjective "new" that makes us think there must be something alike about the two systems of government. The circumstances and backgrounds of the two periods are so different that they cannot possibly be alike. The New Deal and the New Frontier differ as a result of the times, in their personnel, in the problems they faced, and in their approaches to these problems. The New Frontier has inherited not only what was done during the Roosevelt Administration, but also what happened during the two succeeding administrations.

Today we have the tools with which to work. The programs I was so bold as to suggest to the President-elect in 1933 are a case in point. These proposals included immediate federal aid to the states for direct unemployment relief, an extensive program of public works, a study of and an approach to the establishment by federal law of minimum wages and maximum hours, unemployment and old age insurance, abolition of child labor, and the creation of a federal employment service.

In 1932 we did not have unemployment insurance; we had no old age insurance nor a reformed and reorganized Department of Labor. We did not have the National Labor Relations Act. We had no way at the federal level of regulating hours and wages. We did not have the tools of our trade; these things were yet to come. Now they have come. They have been in effect for thirty years. No one speaks of repealing the Social Security Act. Even the wildest opposition does not call for modification of the Fair

Labor Standards Act, which regulates hours and minimum wages. The current administration started with equipment never available before in the United States.

A State of Mind

I would first like to deal with questions that people ask me over and over again. What was the New Deal anyhow? Was it a political plot? Was it just a name for a period in history? Was it a revolution? To all of these questions I answer "No." It was something quite different. It was very real but it certainly was not a plot. It wasn't even a plan. It wasn't a platform put through by a faction of the Democratic Party, and certainly it wasn't the plan or program of the Democratic Party as a whole. If you had seen the Democrats assembled at their convention in 1932, you would have known they had no such thoughts in mind. No, it wasn't any of these things. It was, I think, basically an attitude. An attitude toward government, toward the people, toward labor. It was an attitude that found voice in expressions like "the people are what matter to government," and " a government should aim to give all the people under its jurisdiction the best possible life."

I remember hearing the Irish Diplomatic Minister say just this in a speech he made in Canada. When he returned, I congratulated him for his statements and he said, "Why, there's nothing strange or new in that, is there?" And I said, "No, only strange and new in America because it *hasn't* been the idea to require the government to provide the best possible life for *all* the people." Roosevelt wrote and talked about this, and an awareness developed that the working people had never received full recognition. They had no opportunities to take part in the organization of their lives, their effort, and their obligations—through political action. The people had been left out of the planning, except for the economic plans of their employers. So when I say that the New Deal was an attitude, I do not mean to ask you to follow me into the realm of the imaginary, but I do ask you to recognize the basic elements underlying the measures we adopted. Roosevelt always said that the New Deal lasted from 1933 until war preparations in 1941, but actually the New Deal went right on and has been going on ever since.

The New Deal was a state of mind. But how did it come about? It was born in 1932 at the Democratic National Convention at Chicago. When the newly nominated candidate appeared on the platform at that convention (a departure from the established practice of having the candidate receive a delegation a few weeks later to hear from them that he had indeed been nominated—as if he hadn't read it in the papers!) he delivered a speech on which he had worked very hard. It was a good speech, but with very little remarkable about it until the last phrases when he went off into what we called his "literary oratory." He began to describe the prosperous man at the top of the pyramid and the forgotten man, the little man, at the bottom. That was what made everyone sit up and listen. Then he said, "I pledge you—I pledge myself—to a new deal for the American people." No content, no specifics, no program. Nothing in particular mentioned—but the convention roared. We were going to have a new deal. It was a card playing term that every American understood. We get a new deal, the cards fall better, so we play better. We get a better hand, we play in luck. The audience got the idea at once. The reporters who had been following the speech with care had found nothing they could headline until that moment, but the "New Deal" would easily headline. (It was the right size. I don't think Roosevelt had that in mind when he used the words, but it was the right size.) It was a striking phrase and was headlined ROOSEVELT PROMISES NEW DEAL.

Everyone caught the phrase "New Deal." It became significant right away. And soon people began to ask just what the New Deal meant. At that time we didn't know. Because the man who had made the statement didn't know himself, I'm quite sure. He had no program. He had some vague ideas, but no real plan of what might be done.

Nevertheless, as he campaigned you heard reverberations of this same speech over and over again. You heard promises to do something about the unemployed, but never specifically what he was going to do about them. On one occasion he said, "We're going to put the unemployed men and women to work." Not how, or where, or for whom. We were just going to put them to work. He hadn't thought of the Works Progress Administration; that

was Harry Hopkins' contribution. He campaigned all those months before his election without a specific program in mind. But he knew something would have to be done so the unemployed could go back to work. I remember him saying, "I know men are eating out their hearts, walking up and down, doing nothing."

You may recall one of the promises he made during that campaign. He said over and over again that he was going to balance the budget. And, of course, we had to use deficit spending; it was necessary. Roosevelt meant to balance the budget but he had a very rudimentary sense of arithmetic. I think—I say this in the warmest friendship—that he couldn't add up his accounts any better than I can mine.

People by instinct soon came to some conclusion about what he meant by a New Deal. Roosevelt liked people, he had a way with them. They could see he liked them and people began to warm up to him. They didn't know him very well but they began to feel a kind of warmth toward him, due, as the newspapers say today, to his charm. Gradually there came to be a sense that the New Deal would be something warm and comfortable. You would be getting dealt out of whatever terrible predicament you were in—and the whole country was in a terrible predicament. This was the period of the Great Depression, and an almost impenetrable fog of suffering and distress hung over the whole country.

I am one who is convinced that the Great Depression was the proximal cause of the New Deal. Not that there weren't other factors entering into the cause of the New Deal. There was the factor of long neglect, for example. If something had been done about the depression in the year it began, or the year after, it wouldn't have been so bad by the time Roosevelt came into office. Without that depression many of the things that were done and many of the bold stands that were taken (somehow thought of as purely political) would not have come about.

Catastrophe

The depression began suddenly, although not so suddenly to those who could read the signs of the times. No one had been informed. The government hadn't told us that things were shaky; most people thought the economy was going on as usual. The

depression began with the stock market crash, which was so sudden it could be dated. It was total and took place within a few hours. It was a shocking thing for those who had investments and for the rest of the country as well, as the results began to be seen in the gradual falling off and decline of business. All business, banking, and agriculture declined; the whole economy dropped by 38 per cent in two years. And when competition became heavy, layoffs, part-time work, reductions in wages, and closedowns all occurred. It seemed that if wages were reduced and the product could be made for a lower price, it might sell. Sell in what? In a market that was declining? In a market where there were people with no money in their pockets? An example of this situation was an old sweater factory up in Poughkeepsie that the President saw and that was a fascinating experience for him. In order to sell his sweaters at all the employer had to forgo profit and ask his employees to take a terrific wage cut. His workers ended up earning $6 a week to make sweaters to sell for $2.50 that normally sold for $7 or $8. This was the kind of economy we were in, and this was the kind of decline that even the great steel mills were having in a much larger and more complicated way.

The depression also hit those who were not counted in the labor force—the great middle class, including the self-employed, the artists, the painters, the writers, the research people. These people couldn't find buyers for their work. They had not been employed by anyone, they had never been on a payroll, so they were never counted among the unemployed. But they were people who regularly supported themselves by the sale of their talents. These people did not get hurt as much, of course, but it was very painful. They saw all their savings disappear, when the little money they had was needed for daily living.

This was, of course, definitely an economic crisis. It was also a social crisis because the suffering grew more and more intense as more and more people were put out of work. I remember that we used to wonder how people restrained themselves from stealing food. Remarkably little stealing went on. If you lived in a great city, you saw sights you never could forget. One morning I saw two women in two different streets—old women, decently dressed—opening the lids of garbage cans and looking for pieces

of bread or meat, things that might be edible, and putting them in paper bags to take home. This kind of thing happened every day. The police turned their backs despite the laws against it that existed to prevent the spread of disease. The police could not bear to deprive anyone of this last remaining source of food.

The New Deal came into being in the worst part of the Great Depression, in the most terrible and alarming time of the general economic decline throughout the world. This made a great difference in the way we viewed our goals and the manner in which they might be obtained. The New Frontier, on the other hand, took control of government when we were on a relatively high level of economic prosperity. There was, to be sure, a recession, but to the people in the New Deal a recession would hardly have been noticed. By the time inauguration day came in 1933 the people of this country were almost exhausted. The last three months had been the worst in the depression. The banks were closing and long runs began on banks in every town. The banking examiners of the various states were in despair as to what they should do. They believed that the underlying support of the banks was sound, but no bank, no matter how strong, can stand a long run. And the small country banks, where many little people often have their life's savings, were the hardest hit of all because these banks did not have enough working capital.

All these patterns were working together to bring about a New Deal for the people of the United States. Now, how did it come about? The first thing the President did, of course, was to close the banks. However, the banks were closed not so much by presidential proclamation as by general consent of the community. This had to be done. The government had to put its strength behind the banks and help prepare a program by which they could be guided safely through the disaster. This may have been regarded as an economic matter but the President viewed it as a humanitarian move. The people's money was in the banks; therefore they must be saved.

Once the bank situation was taken care of, we had to turn to the problem of more adequate relief. Traditionally all relief had been a local function, but relief funds had been exhausted in practically every state. Many of us were afraid that there would

be some hesitancy to go ahead with a great relief program financed by federal appropriation. Congress was not in the habit of making appropriations for the relief of poverty. I recall that after we had discussed the various aspects of this at some length John Garner, the Vice President, turned to the President and said, "Mr. President, when we came into office we promised the poorer kind of people we were going to do something for them. I think we had better be about it." It was a simple, straightforward statement to which most of us agreed, and we subsequently petitioned Congress for relief money to be distributed to the states.

Putting People to Work

However, a few weeks of such distribution gave no real comfort to anyone and it made people feel restless. It's a horrid thing to have to take relief from the government. Harry Hopkins came up with the idea of the WPA—the idea of giving people something to do and paying them a flat rate of $15 a week, no matter what they did. Whether the person worked as an artist painting murals on the wall of a post office or as an ironmonger beating out iron bars for a public building, the rate was $15 a week. Now I suppose that many of you have been told the story of the leaf rakers. It is possible that someone saw some old men raking leaves and doing it very badly and the conclusion was drawn that they were doing make-believe work. The only leaf rakers I ever saw were those who were too sick and old to do anything else. These were men who wanted to do something rather than nothing to get their $15. For the most part, the WPA jobs were very well chosen. The program was run at the local level by social workers in every part of the country, and on the whole the WPA was a satisfying solution to an immediate problem. A great many people were put to work. They were not, of course, earning economic wages—they were earning relief wages—but if it had not been a relief operation no one would have had them working for $15 a week.

Another of the earliest projects was the Civilian Conservation Corps, which was a modern program designed to put young boys to work. The CCC was reserved for boys who could learn something from the experience. For the most part it was confined

to young men between the ages of 15 and 19, until a little later when it took in some veterans. The project was a great success because the boys went into the woods and did healthful work and got some education at the same time. The Forestry Service supervised their work, the Labor Department ran them through the employment offices for their qualifications and general health, and the Army took care of the physical side while they were in camp. The Army called in reserve officers, most of whom were also out of work, and set them up in charge of the camps. The Army also supplied all of the housekeeping services: uniforms, camp kitchens, trucks, bedding, etc.

The CCC was no problem at all. Discipline turned out to be very easy although not because military rules were enforced. The reserve officers were carefully instructed that they were not under any circumstance to apply military discipline; CCC camp life was regulated by example and persuasion. Some of the officers said to me afterwards, "You know, it was one of the greatest experiences we reserve officers ever had, because later when we got into the European war and problems arose that could not possibly be settled by military discipline, we had already learned how to manage by persuasion and diplomacy." If a boy became too obstreperous or if he were absolutely incorrigible, he was just asked to go home; he was sent back to the relief family from which he came.

Each boy had come from a family on relief and he was paid a dollar a day for his work. He had his board, lodging, clothes, education, and all basic needs met. He sent all of what he earned except 25¢ a week to the head of his family, and the family relief allowance was reduced by that amount. Hardly a week goes by in my life that I don't meet someone who says to me, "You knew Roosevelt; he was a great fellow. I was in the CCC and it was the best experience I ever had." This, I think, is the memory that many men have of their period in the CCC camps. It was a form of relief but it was creative, constructive, imaginative relief. It was relief that did the government good, the Army good, and the forests good. It was a public service and it did enormous good for the people who did the work.

I remember that the President was disappointed because the AFL did not endorse his bill for the CCC; the AFL was horrified by the idea of establishing $1 a day as the wage for any work. I expected they would react this way but the President didn't. He thought they would endorse it. I explained to the unions that it was relief money. "Nevertheless," said William Green, "it is wages—they are getting it as wages." I told him that it was called wages only to save face, but he couldn't bring himself to endorse the bill and he went before the committee on the Hill and testified against it. It was passed, of course, because this was the heyday of Roosevelt's popularity and William Green had no particular influence at that time, but it disappointed the President because he supposed that labor would be delighted with this operation.

We couldn't seem to get ahead with public works, which was one of the things I thought essential. The WPA was good, but the WPA was of such a nature that it did not make demands upon the construction industry. There was a considerable difference of opinion among the cabinet officers about public works. Lewis Douglas, Budget Director, felt it was wrong to take millions of dollars out of the public treasury during the depression and spend it for public works. Others in the cabinet felt that public works were the historic pattern for relief of unemployment. General Hugh Johnson wanted the program included along with the National Recovery Act. Harold Ickes, who eventually became administrator of the public works program, thought the WPA was doing too much of his work. I mention these things only to indicate the degree of experimentation that was necessary, and the resulting disagreements. One thing we never lost sight of, however, was that people had to be put to work. You couldn't live with 15 million people unemployed in the country.

One of the tragic things about the whole situation was that, try as hard as we could and do as much as we could do, we never could put all of the unemployed to work. We never could put even a fair proportion of them to work until the war orders began to come in. This was a very disheartening thing. We were making progress; the people felt better and they were willing to try again. They could stand low wages and believe it would all come out right in the end. But we never did see a time when the 15

million unemployed were all back to work. There was a great deal of going in and out of the labor market: people got a few weeks' work, a few months' work, and then were idle again because the economy was not stable. It had not leveled off. In 1937 we thought we had it, we thought the economy was going to be all right, and then suddenly it began to fall again. Employment began to drop and we never got to the point where we could say: "See? We have done what we said we would do—we have cured unemployment."

Rebuilding the Economy

But we had other strings to our bow in the unemployment insurance act and the old age insurance act, which by then were already introduced into Congress and which passed through concurrently. (We would have had health insurance, too, if we had been able to get to it, but we couldn't get our information together quickly enough to get that part ready to present in the winter of 1935, so we let it go a year and by that time it was too late: the medical profession had found its voice and was not going to let it pass.)

My project for Social Security was a little slow in coming into existence. It didn't come about as a true project for almost a year after the election, when in June 1934 the Wagner-Lewis bill for unemployment insurance failed to get committee agreement. The President then appointed a committee on economic security. (It was not economic at all but rather of a social insurance nature, but the President preferred to call it "economic security" to avoid the implication of a dole.) The committee, consisting of five cabinet members, faced a difficult operation because a bill had to be prepared quickly since we were confronted with the possibility of losing the good will of Congress if we let it go for another year. We had to bring to Washington a large number of professional people: economists, statisticians, and people knowledgeable in insurance matters in order to have our report ready by the deadline of January 1, 1935.

The passage of the Social Security bill was one of the extraordinary occasions of the New Deal. We had a bill that was really so unusual, so revolutionary, and so fundamentally controversial,

and yet when the Social Security bill came before Congress it was passed on a broad tide of acceptance.

The National Recovery Act was a piece of economic planning that was fostered by the Roosevelt Administration. This program called for each industry to set up a code with standards for both business and labor that each firm would abide by. The NRA proved to be a really remarkable instrument, first, from an educational standpoint and, second, by terminating bad practices and insuring compliance with the hours and wages provided for in the Act. The NRA stimulated the economy; workers spent their money on the necessities. The outlook of the business community took on a tone of success rather than failure. The program went very well for the first five or six different industries but then began to run into trouble. If the NRA had covered only eight or ten or even twenty or thirty of the larger and more important industries, it might have lasted to this day. The principal cause of its failure was its attempt to spread its jurisdiction over too many and comparatively insignificant industries.

In spite of its relatively short life, the NRA did make a great contribution. This was the recognition given by the government to organized labor. The establishment of labor representatives in prominent advisory positions gave impetus to a good relationship between government and labor. This was the first time that the government had realized its right, and even its duty, to consult with labor in regard to wages, hours, and other working conditions, as well as general business conditions.

However, the most important part of the Act as far as labor was concerned was Section 7(a). This section gave to labor the right to organize and bargain collectively. It is true that all through the New Deal period there ran an attitude toward the working people of the United States—that they must be recognized as our nation's most important resource—but those who wrote the NRA bill hardly anticipated the results of this particular section. The business community believed that Section 7(a) meant that those who were organized could remain so, and those who bargained collectively could continue to do so. But John L. Lewis and Sidney Hillman used their entire treasuries to conduct extensive organizing drives. They met with tremendous success and others

followed their lead. Their right to do this was protected by the NRA and later by the Wagner Act.

During the first year of the National Recovery Act, as I recall, William Green said that over a million people joined the labor movement. It was a period of great energy and activity in a group of people who had almost ceased to function as a movement. With this came a new spark of life in people who ought to have been organizing long before and who ought to have been taking the lead in expressing their views and opinions, but who had never had any political power or force. The self-propelling, self-directing activity began that made the modern labor unions of America so effective for their own people, and so persuasive to other people.

The New Frontier

One must also remember that there were a great many differences in the general patterns of life and in the personnel and equipment of those who took over the reins of government in 1961. Many of the tools with which to work had already been forged. They had already proved their worth when the New Frontier came into office. When the New Deal took office, on the other hand, there was very little to work with, particularly in the field of labor. We had a meager little department with only $3 million to spend on the whole scope of labor in the United States. We had a great variety of problems, with not enough personnel suited to handle them. In addition to tested techniques and improved administrative procedures, the New Frontier has a great asset in highly sophisticated personnel, people who know a great deal about economics and political science. Those of you who can remember the New Deal will realize at once, if you think about it, that you didn't have much confidence in those of us who came in with the administration in 1933. We did not have the academic background or training that government administrative personnel now have. When most of the New Deal leaders went to college, economics was barely taught at all. (Dan Roper, Secretary of Commerce, confessed to having read a book about economics and Mr. Roosevelt used to tease him about it and call him "our economist." It was a private joke.)

Thus, when President Kennedy came into office during a recession, he had the tools available. As a student of what had not been done and perhaps should have been done before the Great Depression developed to the extent it did, he felt it necessary to take action at once. Almost immediately the Kennedy cabinet began consulting with other experts concerning what should be done. I think it was an extremely wise thing that they moved so swiftly. This brought them the respect and full cooperation of the labor movement in their efforts.

A significant amount of unemployment still exists, although it is not great compared to the proportions of unemployment during the depression. But the problem of unemployment is still very deep and very difficult. Unemployment is spotty as to industries and centered in various occupations and age groups. There are some industries, for example, that are obviously dying. There are some that are being completely changed to another kind of industry. Older people, if they are out of work, find it almost impossible to get back into any job, particularly if they are unemployed because of automation and must try to find work in a new trade. The minority groups have also been very badly affected by unemployment. The question of discrimination has been looked into, but more work needs to be done. The Kennedy Administration is doing a good job in coping with this problem, but the responsibility lies with both labor and management. Additionally, young folks just coming out of school or those who have dropped out of school are finding it increasingly difficult to get jobs. Most often they are not well enough educated or they lack the necessary skills. Even summer work is hard for them to find and they are getting less and less. These are the kinds of problems we face today. Unemployment is not as generalized as it was in the thirties and it's not as bad in some communities as it is in others. But it is just as serious to those out of work.

What has been the approach of the New Frontier to this situation? The measures worked on thus far have been of a strictly economic nature. The Kennedy Administration has worked on utilizing expanded trade under the Reciprocal Trade Agreements. The plan has been to push for the development of a larger amount

of foreign trade in the hope that this will give us an opportunity ultimately to increase our exports.

A second important project is the proposed federal tax cut. The idea is that this tax reduction would stimulate the investment of tax savings in production enterprises. It is also anticipated that the individual will spend his tax savings on consumer goods. I see promise in the utilization of this tax reduction for the stimulation of investment and distribution of goods. It would appear that such a reduction would encourage an upward surge in our economy.

It is, of course, necessary to do something directly about the unemployed. The Youth Conservation Corps is a project of this nature. The Kennedy Administration is planning for a long-term program in training and actual work experience for young men. About 15,000 youths will work in public parks and on public lands and will be given accommodations similar to those of the old CCC. These boys also will receive broad industrial training so that they may become more effective members of the labor force.

The current retraining programs for displaced workers are equally important. These persons have become unemployed by the collapse of an industry or because of automation. It is my understanding that, for the year, seven out of ten people who have been retrained under this government project have already found jobs in a new industry. This is encouraging, but retraining is not an easy task. Often the results will be disappointing. Some men do not learn new trades easily or won't stay with the program long enough to do so.

One of President Kennedy's recommendations is for federal help to general education in the form of buildings and supplies. This attempt to raise the level of general education is necessary. A high level of qualification is going to be required of men and women going to work in technologically oriented factories. A general improvement in the educational level of all our people is vital to a growing economy.

As I hope I have made clear, I regard the differences in the activities and points of view of the two administrations to be based primarily on the dissimilarities of the times. The basic laws are now on the statute books, so the Kennedy Administration does

not have to go to great lengths looking for possible remedies, but for the most part has only to apply remedies already in existence. The Full Employment Act, which was passed in the first year of the Truman Administration but prepared in the last year of Roosevelt's, is an example. Under this Act the government may extend the duration of unemployment insurance when it becomes necessary. The Fair Labor Standards Act, passed in 1938, is another. This Act requires working hours and minimum wages to be established by law. It is really remarkable that this Act was passed at all, but it has been effective to this day.

Industrial relations, in particular, is an example of contrast between the New Deal and the New Frontier. We did not have the National Labor Relations Board at the beginning of our administration. We forged that tool in the course of a few years but didn't have it to work with for a strategic period of time. We now have standard hour and minimum wage laws, so we don't get too many problems in these areas today. On the other hand, the whole approach of the New Frontier to the problem of industrial relations has been a somewhat new one, that is, a greater amount of intervention on the part of the President and the Secretary of Labor in labor problems.

Labor Then and Now

Another difference in the situations that faced the two administrations is that the New Frontier comes to grips with economic life with a full-fledged labor movement with which to work. Labor can make suggestions not only concerning the general economic health of the nation, but also on needs at the industry and factory levels as well. No one except the man who has been exposed to noxious gases, dust, and fumes in a factory really knows what the dangers of factory life can be. The continued existence of industrial hazards, both accident and health, in our great American factories is one of our oldest disgraces. Much has been done to improve this situation but a great deal remains to be done, particularly as new techniques such as those involving nuclear energy are developed.

The Roosevelt Administration did not have the assistance of a full-fledged labor movement. This became increasingly appar-

ent when we attempted to get the advice of labor representatives in order to establish the industrial codes under the NRA. There often just wasn't anyone to consult with. For example, when I wished to have the textile workers represented at the first public hearing under the NRA, I couldn't find anyone to represent them. There was one organization, the United Textile Workers Association, with a very pleasant old man at the head of it. He confessed to me that he had no members at all outside Massachusetts and Rhode Island, and not very many in those two states. There was no one I could call on for technical advice concerning the industry. It was essential to know how the machinery was run, the work distributed, the looms operated, etc., in order to establish work standards. This kind of problem was faced with many other industries. Therefore, an industry often had to be represented by rather makeshift arrangements in which some officer of the Federation of Labor, with no technical knowledge of the particular industry, attempted to help work out a satisfactory code. Labor was organized in the well-established crafts, but the manufacturing trades were increasing enormously in size owing to our mass production system and there was almost no effective labor organization in those areas.

The recognition of organized labor as an integral part of society during the New Deal and its resulting involvement in civic, charitable, and educational activities cannot be overemphasized. When I proposed to the president of the American Red Cross that he invite John L. Lewis to become a member of the board of directors, his mouth fell open and I thought he was never going to close it. He thought it over for a long time and said finally, "I understand the Miners have a fairly large treasury." He then talked to Lewis about it and Lewis was delighted at the prospect. This kind of thing had never been thought about before. The same was true in a great many situations; even civic committees didn't have labor men on them. Today, for example, the Minneapolis Symphony Orchestra has two labor leaders on its board of directors; at Cornell we have three labor leaders as university trustees. I believe this kind of thing has added greatly to labor's prestige and broadened the scope of those with whom labor is associated.

I sometimes think the labor movement never fully recognized what the Roosevelt Administration did for it; not because Roosevelt was trying to do something for labor, but as incidental to the fixing of a floor to wages and putting a ceiling over hours. In this way the work of the whole United States could be spread over thousands of people who were out of work, and this work might be paid for at a scale high enough to support a family. The whole Social Security program was merely a continuation of this idea, just as the National Labor Relations Act was an effort to establish collective bargaining as the normal way to settle labor disputes. These elements of the regulation of wages and hours and the introduction of unemployment insurance and old age insurance together with the National Labor Relations Act (which resulted in the formation of the NLRB with the consequent right of workers to organize into unions and to bargain collectively on their own behalf) were the bedrock of the improvement that the Roosevelt Administration made for the working people of this country. And what was this but the result of a change of attitude toward the working people?

Today labor would appear to be better off than ever before. However, the number of strikes has constantly increased. We had 3,100 last year and it looks now as if we will have about 3,500, if the present rate continues, in 1963. My hope is that more contracts between labor and management will include an agreement for compulsory conciliation upon termination of the contract. If the negotiators fail to reach an agreement, the matter is to be referred to a conciliator appointed in the contract by name or in some other stated manner. Then, if the conciliator does not reach an agreement, the parties will agree in the contract that the matter will be referred to an arbitrator, the decisions of the arbitrator to be final and binding upon both parties. This may sound drastic, and many people regard it as so, but there are on file now in the Labor Department over 150,000 such contracts and I think in only two cases have they gone to arbitration.

I do not wish to suggest that we outlaw strikes. However, I do think it is important somehow to curtail strikes that endanger the general population. At the same time we should not try to cut out all strikes since some of them are necessary, both for the

expression of the feelings of the workers and for arousing public interest in issues that affect the life of the community. Sometimes a strike can insure greater future industrial peace. We must not forget, however, that the union and the employer have an obligation to the community to attempt to come to some agreement and hold themselves to it.

I have attempted to describe the background, and some of the causes and results, of the New Deal in contrast to the New Frontier. Roosevelt, I think, and perhaps all of us in his cabinet as well as leaders in the House and Senate derived more from the humanitarian reformers of the last fifty to one hundred years than we did from any political theorists or political party, or from any revolutionary concepts. The items that have been under discussion by the New Frontier people for stimulation of economic growth have been primarily economic measures. They have thought less about humanitarian measures, which are equally necessary to overcome the emotional depression that goes along with the problems of people who are out of work. The humanitarian aspect of the Roosevelt program ought to be emphasized to a greater extent.

It is not the nature of man, as I see it, ever to be quite satisfied with what he has in life. The discontent within the labor movement today we sometimes view as unreasonable, but it is a discontent of spirit as well as of mind, and when we think about it we all know this feeling ourselves. Contentment tends to breed laxity, but a healthy discontent keeps us alert to the changing needs of our time.

REFLECTIONS ON THIRTY YEARS OF COLLECTIVE BARGAINING

J. Paul St. Sure

In looking back over thirty years of labor-management negotiation, principally as a management representative, it seems to me that there have been at least six distinctive periods wherein major changes have occurred in the basic relationships between management and labor. I would list these six as follows:

1) The period of the Great Depression, during which the desperate competition of unemployed people determined the patterns of wages and conditions of work.

2) The period following the passage of the Wagner Act, when legal sanctions were applied to require recognition of and bargaining with organized labor.

3) The World War II period, with wage and price controls and the War Labor Disputes Act.

4) The Taft-Hartley Act period, when unions claimed they were being enslaved.

5) The period following the McClellan Committee hearings and the passage of the Landrum-Griffin Act, with exposure of union corruption and adoption of a "Bill of Rights" for union members.

6) The current period of "human relations committees," automation pressures, government intervention, bargaining experimentation, and increasing uncertainties in the relationships between big labor, big management, and big government.

The San Francisco General Strike

In the San Francisco Bay area, during the first period, a major event occurred at the time of the 1934 waterfront strike which boiled over into a general strike affecting the entire metropolitan

community. Its repercussions had a lasting effect on employer-employee attitudes throughout the nation.

I was then a practicing lawyer in Oakland, with no contact with labor-management problems. I know the strike caused me, as well as other members of the communities affected, to become acutely aware of great areas of potential social conflict which I had not realized existed. Personally, these events changed the course of my professional life. In a situation where the normal operation of an entire community, encompassing more than a million people, was brought to a grinding standstill by the refusal of workers to report to their jobs in sympathetic support of a violent strike on the San Francisco docks, few could avoid reacting to what seemed to amount to a class revolution.

Even though neither the employers nor the unions involved in the basic strike had any direct connection with our community, the people of Oakland nevertheless found themselves without public transportation, without communications, without gasoline, without restaurants, without retail stores, without factory operations; in fact, with a complete paralysis of normal business activities. Since the people of our community had no direct involvement in the issues that caused the waterfront strike, they had no power to bring about its settlement. Quite naturally, the business community and the public authorities were not only confused but also frightened.

Although I had had no experience in labor-management bargaining at that time, I was employed by a rapidly formed organization, sponsored by the Oakland Chamber of Commerce, to act as liaison between various public agencies and employer groups on both sides of the Bay, primarily for the purpose of trying to find out what was going on. Hopefully, I was given additional assignments to make plans for avoiding violence and at the same time to try to devise some means of restoring essential services in our city.

The atmosphere was one of near hysteria. Public authorities were so convinced that we were experiencing a form of revolution that hastily contrived protective steps were taken. All the pawn shops and sporting goods stores were ordered to remove all firearms from window displays. The high school and university

military training units were directed to remove the firing mechanisms from all firearms and other weapons that were stored on their premises. The governor of the state was prevailed upon to send a unit of National Guardsmen into the city to maintain order. Numerous home guard volunteer organizations sprang up in residential areas, and these assumed the responsibility for intercepting and identifying all persons appearing on the streets of their particular neighborhoods.

The termination of the general strike came about as dramatically as it had begun. Largely through the intervention of a committee of the publishers of the daily newspapers in the Bay area, representatives of the federal government intervened and a formula was devised to induce the sympathetic strikers to return to work. General Hugh Johnson of NRA Blue Eagle fame came to San Francisco and a script was prepared whereby he, as a representative of the federal government, was to call upon the local head of the Teamsters Union to urge all unions to end their sympathetic strike in the public interest. The formula worked—albeit not as quickly as planned, for on the first day when this confrontation was to be staged, General Johnson discarded his prepared script and delivered a denunciation of unions in general. The program had to be rescheduled for the following day. On the second occasion the proper lines were spoken, the union leader issued his appeal for resumption of work, and that portion of the strike ended.

The basic waterfront strike was resolved finally by submission of all issues to a board named by the President of the United States. The findings of this board provided the basic coast-wide longshore agreement, including a six-hour day and rotational dispatch of workers, which is still operative in all Pacific Coast ports. Related strike issues involving the seafaring unions were also disposed of as a result of the publishers' committee announcing (without prior approval of the shipowners) that the employers had abandoned their refusal to arbitrate.

Much has been written about the San Francisco general strike and the violent clashes between strikers and public authorities, culminating in "Bloody Thursday." It is not my purpose to dwell upon the subject further except to suggest that it signaled the

beginning of a major change in management and labor attitudes. Unions obviously had demonstrated convincingly that by unified, concerted action, even with limited organization, they could paralyze an entire community. Employers learned of the tremendous pressures that unions could apply in any situation involving a conflict between management and labor. Bitter animosities persisted, long after the settlement.

But, as so frequently happens when situations involving great dangers end, my recollection is that as soon as operations had returned to normal, the immediate reaction of the community in general—as distinguished from the direct participants in the basic dispute—was that the strike was one which could not recur and that it should be looked back upon as a kind of nightmare to be forgotten as quickly as possible. Needless to say, however, organized labor, with its new-found strength, had reason to plan to consolidate its position for future bargaining. At the same time some employer groups came to believe that management should, of necessity, give more attention to labor-management relations.

The Development of Collective Bargaining

Against this dramatic background, the employers in the San Francisco Bay area and in the nation as a whole soon found themselves confronted with a new matter of concern, the passage of the Wagner Act in 1935. The second period began. For the first time in our history, a federal statute not only required that employers bargain with labor unions as representatives of employees, but also directed that employers not interfere with the self-organization of workers into unions, and protected concerted activity by unions.

My recollection is that a large segment of management viewed this statute simply as another piece of New Deal legislation and rather confidently expected that it would be declared unconstitutional. Much of the planning developed by management groups in this period was directed to a test of constitutionality, rather than accommodating to the impact of the new legislation.

When the first complaint case in the 20th Region of the newly established National Labor Relations Board was filed in San Francisco against the Santa Cruz Fruit Packing Company, I repre-

sented the employer in that proceeding. We made no defense other than to challenge the constitutionality of the Act. The NLRB found the company guilty of an unfair labor practice and the case rather quickly made its way to the Court of Appeals for an enforcement order, and then to the United States Supreme Court. I can assure you that I had a great deal of help in the preparation of my brief and oral argument before the Supreme Court. Counsel for many substantial employers volunteered to assist. Despite the fact that the Supreme Court had decided that the Act was constitutional in the *Jones & Laughlin* case, many employers held the view that the Court would drastically limit its application in local situations. Suffice it to say that the Supreme Court did not fulfill their expectations.

Following the court tests employers generally, and many of them for the first time, began to face up to the prospect of having to deal and bargain collectively with greatly expanding union organization. The Act imposed sanctions on those who might refuse to bargain or who interfered with "self-organization." It provided protection for concerted actions—that is to say, strikes—by workers in seeking improvement in wages, hours, and working conditions.

There followed a period of organizational drives by existing unions. Picket lines were established, in many instances, for "organizational" purposes. The structure of the labor movement itself underwent drastic changes. Craft jurisdictional claims were enlarged. Unions were chartered to "organize the unorganized"—unions for miscellaneous workers—unions for production workers. The major split between the American Federation of Labor and the Committee of Industrial Organizations (later the Congress of Industrial Organizations) developed by reason of the conflict between the philosophies of vertical and of horizontal organization.

Employer responses during this second period took a variety of forms. Some employers seized upon the statutory reference to "self-organization" to encourage or even promote what were referred to as independent unions (that is, not affiliated with organized labor) but which later came to be known as "company-dominated unions." A great deal of time and money as well as litigation costs was spent in connection with this activity. The

new agency of the National Labor Relations Board, usually acting upon complaints of pre-existing unions, was diligent in investigating the origin, structure, and support of these independent unions and most of them were disestablished by Board or court orders, based upon findings of management interference in the process of self-organization. During this period, I had on several occasions to advise disbelieving management that their encouragement of "inside unions" amounted to a violation of law.

Other employers elected to encourage organization of their employees by old-line established unions, limiting their influence to attempting to select the union deemed by management to be the most desirable to deal with. Still other employers embarked upon programs of resisting any type of organization, using various forms of communication with their employees to convince them that they had much to lose and little to gain by joining a union of any kind. The Labor Board promulgated rigid rules limiting the right of management to discuss the pros and cons of union organization with employees.

In a number of cities broadly-based employer organizations were formed to attempt to deal with organized labor on a community-wide basis. In the city of San Francisco, for example, an organization known as The Committee of 43 was established, and this led ultimately to the formation of the San Francisco Employers' Council, which is still in existence as a bargaining representative for its members. Another outgrowth of this type of organization is the Federated Employers of the Bay Area, which does not engage in collective bargaining, but does supply statistical information and policy advice to its employer members. On the mainland side of the Bay, an organization was launched under the name of The Oakland Plan whereby a group of employers sought to form a group with both employer and union participation. The unions declined to participate, and the employer sponsors modified the project to establish an organization now known as United Employers of Alameda County.

Similar groups were formed in other communities in northern California and the Central Valley. Some of these continue to operate and are active in the negotiation of collective bargaining contracts for member companies. Others such as the Associated

Farmers—avowedly antilabor—have disappeared. In addition, a number of industry groups, comprised of competing employers, dealing with the same unions, producing the same products or selling the same services, banded together to form associations for collective bargaining purposes. Many major corporations established industrial relations departments and assigned executive officers to the responsibility of dealing with labor-management matters. The growth of these employer organizations led to a congressional investigation by a committee chairmaned by Senator Robert M. La Follette as to their nature and motivation.

Whatever the posture assumed by management, organized labor reacted promptly and aggressively. Where independent unions claimed the right to represent the workers, established unions challenged the validity of their claimed independence and frequently succeeded in securing their dissolution under the new Act. Where employers sought out existing unions and encouraged them to claim the right to represent their employees, other existing unions in many situations challenged such representation either on the ground of conflicting jurisdiction or on the ground of employer sponsorship or both. Where employers sought to persuade their employees to join no union, such operations became a target for existing rival unions. And even those employers who sought to maintain a strictly neutral position and to allow "self-organization" to develop without employer direction or interference frequently found themselves under attack by unions having conflicting jurisdictional claims.

The jurisdictional conflicts on the Pacific Coast initially resulted from the rather loose federation of international unions which made up the American Federation of Labor, inasmuch as many of the international union constitutions contained claims of jurisdiction which overlapped with other crafts. The jurisdictional confusion was further aggravated by the fact that the American Federation of Labor rather indiscriminately granted new charters to so-called Federal Unions, with no international union affiliation, for the purpose of organizing in areas as yet unclaimed by the craft groups.

Above and beyond these conflicts, a major division developed when the CIO entered the national field to parallel and challenge

the jurisdictional claims of all American Federation of Labor unions. Although this division had its formal impact in California later than in the East, it was during this period that such basic conflicts as those created by the contest between the longshoremen and the teamsters for warehouse jurisdiction erupted in what was referred to as the "inland march" of the waterfront unions. In this situation not only the rival claims to represent men engaged in warehouse work clashed, but also the philosophical differences between horizontal and vertical type organization.

In the fruit and vegetable canning industry in California, for example, the employers and workers and contending unions became involved in jurisdictional strife which persisted over a period of many years and led to a series of Labor Board hearings. An interim resolution was reached by a consent decree in the Court of Appeals which validated a contract that had been entered into by a group of employers with a group of AFL unions in defiance of a Labor Board direction that such a contract should not be negotiated. Seven or eight years later the jurisdictional battle was renewed, and the NLRB again held extensive hearings.

In many areas and in many industries during this period organizing efforts and jurisdictional conflicts brought about mass picketing and frequently violence. Police and sheriffs' deputies were called upon to preserve order and to protect plant operations, in the face of mass picket lines. On numerous occasions they became embroiled in riotous situations. Organized labor regarded police as enemies. Management was insistent that law officers were obligated to protect property—including the protection of workers who crossed picket lines.

Many local ordinances purporting to outlaw picketing or even the displaying of placards or banners were challenged in the courts by the unions. They contended that these ordinances conflicted with the protections guaranteed by the Wagner Act as well as the right of free speech. In the main, these challenges were successful. The broad scope of the Supreme Court's application of the Wagner Act to labor disputes affecting commerce, together with the provisions of the Norris-LaGuardia Act taking from the federal courts the right to issue injunctions in cases of labor disputes, and the later doctrine of pre-emption, left many employers

with a conviction that all means of legal redress in labor disputes had been taken from them by federal legislation.

But in spite of this chaos of picketing, violence, litigation, Labor Board activity—or perhaps because of it—a number of new labor-management bargaining relationships were established, some by consent, some by coercion, some by court direction. Because the relationships were new, the initial issues, once majority representation had been established, had to do with such things as the fact and extent of recognition, the establishment of seniority, and the acceptance of what were referred to as management prerogatives.

The Wagner Act provided that a union authorized to represent a majority of employees was the bargaining agent for all employees, whether union members or not. Most employers resisted granting a "union shop" for two reasons: (1) some hoped that the majority might change from union to nonunion, and (2) others sincerely believed that they should not force nonunion employees to join the union under threat of discharge. The union-shop issue continued to be a basic one throughout this second period. Many contracts were executed providing recognition for "union members only," even though the union as a matter of law bargained for nonmembers as well. The conflict continued largely unresolved through the third period, when the War Labor Board developed the rather remarkable compromise formula of "maintenance of membership." This compromise required union members to remain members for the duration of a contract, but provided an "escape period" wherein employees could redetermine their union allegiance.

The issue of seniority also created a considerable area of conflict. Although employers generally agreed that length of service should be recognized as a factor in protecting against layoff and for promotion, many resisted the idea that a mere claim of length of tenure on a job should supersede considerations of merit or promise of future usefulness. The assertion by unions that seniority rights must be recognized brought into sharp focus a new concept that jobs, as such, were no longer the property of the employer but rather were the property of the union or of the individual on the job.

The whole area of management prerogatives, whereby management claimed that the right to manage should not be interfered with by unions' rules or restrictions, pointed up another major conflict in the field of collective bargaining that continues to this day.

Wartime Controls

With the onset of World War II, labor-management relations entered into what I have referred to as the third period. Even before Pearl Harbor, while we were officially neutral but regarded our productive establishment as an "arsenal of democracy" for the enemies of the axis powers, greater and greater attention was given to the need for avoiding strikes that might curtail defense production. The very magnitude of the defense effort contributed largely to the elimination of problems of depression and unemployment and led to increasing concern about such things as manpower shortages and inflation.

This third period involved a suspension by federal law of normal collective bargaining as well as the introduction of price controls. The right to strike was continued in theory under the War Labor Disputes Act, but the emergency powers of the federal government were held in reserve to provide for a take-over by the military of any plant or industry wherein a strike would interfere with war production. A War Labor Board was established on a national as well as a regional basis, and wages and conditions of work were frozen unless the tripartite panels representing management, labor, and the public, after formal hearing, approved increases. Even the decisions of the Board were subject to modification and review by administrative officials at the Washington level. These were the years when broad formulas were developed, such as the Big Steel formula and the Little Steel formula, whereby patterns of wage movement were applied as a guide for employers and unions generally.

During these years the theory of pattern bargaining was extended under War Labor Board direction, together with concepts of labor market areas within which equal pay for equal work should be recognized. Because of pressures developed by manpower shortages, employers and unions—previously at loggerheads—frequently made joint representations to the War Labor

Board for permission to increase wages and to provide so-called fringe benefits which began to appear as major issues in the collective bargaining process.

There is no gainsaying the fact that during this period of patriotic restraint both employers and unions looked forward to the day when the restrictive procedures of the War Labor Board and the Office of Price Administration would be removed. Immediately following V-J Day, major pressures developed to return to peacetime operation of the free enterprise system, which both parties seemed to regard as the right to go to Hell in their own way without government interference. In due course, although a technical state of war with certain belligerents continued, the wartime controls of wages and prices were removed and labor and management entered what I refer to as the fourth period.

Striking a Balance

Now management took the legislative offensive. It argued that the Wagner Act was aimed deliberately at encouraging the expansion of organized labor and that it had created an imbalance between the economic power of unions and that of employers. It claimed also that the Act had permitted abuses and excesses on the part of labor which should be corrected.

The argument was that the Wagner Act had swung the pendulum so far to the side of labor that the law should now be amended to swing the pendulum back, if not to the side of management, at least to a point of balance. Among the proposals was one to require that all bargaining be conducted on a single-plant basis with employees of that plant only. The amendment failed of passage by one vote in the Senate. After lengthy hearings before committees of Congress and debate in the Senate and the House, the amendments to the Wagner Act, which are referred to as the Taft-Hartley Act, evolved.

These amendments provided that unions, as well as employers, could be charged with unfair labor practices in certain situations, including those involving hot cargo and secondary boycott. They directed that the Labor Board should seek injunctions in certain cases of jurisdictional disputes. The amendments provided further for the establishment of an independent office of General

Counsel for the Board for the purpose of meeting employer criticism that the Labor Board, under the Wagner Act, acted as investigator, prosecutor, and judge. The unions promptly described the Taft-Hartley amendments as amounting to a slave labor act.

I think it is fair to say that the union spokesmen who coined the phrase "slave labor act" have been hard put to demonstrate that the Taft-Hartley amendments placed undue restrictions on the legitimate activities of organized labor. But it is true that the mood of Congress in passing the amendments did indicate a change of political atmosphere. Further evidence of this change was reflected in the composition of the National Labor Relations Board itself. New appointees of a new administration began to reinterpret many of the rules promulgated by previous boards, as well as to develop new doctrines for governing labor-management relationships.

In addition to the Taft-Hartley amendments, which were intended to bring into balance procedural remedies available to employers and unions, Congress reacted to the problems presented by major conflicts between big unions and big management by creating a new procedure which could be invoked by the President in strikes affecting the public health, safety, and welfare. No attempt was made to provide a specific definition of such strikes. Procedures were established whereby, upon determination by the President of the United States that a given strike threatened the national interest, the Executive was authorized to instruct the Attorney General to apply to a federal court for an injunction to prevent or call off the strike for an eighty-day "cooling off" period. No provision was made for any additional mechanism for preventing the resumption of such a strike after the expiration of the eighty-day period, except to direct the President to report to Congress his recommendations for legislative action if the strike should be resumed.

As another indication of the temper of the times, Congress included in the Taft-Hartley amendments a requirement that union officials subscribe to a loyalty oath specifically renouncing or denying any affiliation with Communism, and provided that if union officials failed to take such oath, the union would be denied access to the Labor Board or protection of the basic Act.

Perhaps the most dramatic evidence of the existing atmosphere of labor-management relationships in this period is to be found in the story of the Pacific Coast longshore strike in 1948. The ILWU—by now expelled from the CIO—announced as a matter of policy that none of its officials would execute the anti-Communist oath. The union also announced that it had no intention of seeking access to the National Labor Relations Board or the protection of the Labor Management Relations Act in any situation.

During the course of contract negotiations in that year an impasse was reached. The employers decided to add to the economic issue a declared public position that they would refuse to do business with the union because its leaders had rejected the oath-taking requirement. The employers' slogan became: "We won't do business with Communists."

When a strike was called by the Longshoremen's Union, the injunctive provisions of the newly enacted Taft-Hartley Act were invoked. The union promptly announced that the eighty-day "cooling off" period would be considered by it as a "heating up" period. No effective bargaining occurred during the term of the injunction. When the procedural provisions of the Act which called for a plebiscite by union members to accept or reject the final offer of the employers by secret ballot were implemented, the union instructed its membership to boycott the ballot and refuse to vote. The net result was that when the injunction expired and the Attorney General moved for its dismissal as required by law, the strike resumed and persisted for a period of 100 days. The President did not report to Congress his recommendations for further legislation. Ultimate settlement was reached largely by reason of a substantial abdication by the employers.

Perhaps the best that can be said for this experience is that both union and management leadership concluded that a recurrence of this type of conflict should be avoided in the future and that collective bargaining efforts should be directed to economic issues rather than political and emotional ones. It appears that this lesson was well learned. There has been no longshore strike on the Pacific Coast since 1948. The parties recently have negotiated long-

term agreements that have gained national recognition as partial solutions, at least, for the troublesome problems of restrictive work rules and mechanization.

Another thing emerged from this experience. It demonstrated that the eighty-day injunctive process under Taft-Hartley did not amount to a practical device for avoiding or settling national emergency strikes.

Grist for the McClellan Committee

I mentioned earlier that following the passage of the Wagner Act, the initial areas of labor-management conflict were related to recognition, union shop, seniority, and management prerogatives. Of course, basic economic issues having to do with wages and hours of work also were involved, but many of the numerous items which are now referred to as fringe benefits did not then enter the bargaining. In many industries overtime premiums were not paid, holidays were not recognized as premium days, vacations were not provided for hourly-rated workers, nor were weekends considered to be other than regular work periods. As bargaining experience progressed, more and more attention was given by the unions to seeking improvements in these areas. Today these items constitute a substantial portion of the cost package contained in a union contract.

Even later, unions began to seek "welfare" fringes in the form of employer-paid hospitalization and medical fee protection and pensions, as well. In most instances when union demands of this kind were presented, employers took the position that social benefits of this type were not included within the bargaining areas—wages, hours, and conditions of work—delineated in the Wagner Act. Many characterized the union demands as seeking employer-financed benefits from "womb to tomb."

Disputes concerning interpretation of the statutory langnage in this connection found their way to the National Labor Relations Board. Various employers' groups were not satisfied to allow the Board and subsequent court appeals to decide the questions raised. They presented to Congress a specific Labor Act amendment which, if passed, would exclude such welfare benefits from the bargaining area defined by the statute. Unfortunately for the pro-

ponents of the amendment, it failed of passage. The Labor Board promptly adopted the view that inasmuch as Congress had failed to pass the amendment, the legislative intent was now clear that such welfare items were not to be excluded from bargaining. The courts sustained this position. Thus, a complete new field for bargaining was opened to the unions.

A popular demand during this period was for what the unions called "health and welfare" coverage to provide payments for hospital care and medical fees. Neither employers nor unions nor insurance companies had had any experience which would permit them to determine what protections could be provided at predetermined costs. Blue Cross and Blue Shield were not in existence. Insurance companies which were asked to quote a premium for a list of minimum benefits declined to do so. Organized medical groups argued that such programs were a step toward socialized medicine.

Nevertheless, the pressures of bargaining led to the establishment of health and welfare funds on the basis of a cents-per-hour contribution to be made by the employer, with benefits to be determined after the fact. In this fashion, most of the early health and welfare programs were priced at $8.65 per month, this being the equivalent of a 5¢ per hour contribution for 173 straight-time working hours in an average month of 40-hour weeks. Only after these funds were established did insurance companies and other organizations begin to compete to provide a schedule of benefits. Over the years both the benefits and the costs have multiplied.

As to pensions, many employers had been providing plans, usually on a contributory basis, in the hope that such programs encouraged continuity of employment as well as loyalty to the employing organization. Unions soon sought to establish or extend pension plans on a noncontributory basis and to require that the negotiated programs be administered not by the employer but by joint trustees and in the name of the union.

As these fringe benefit funds and other negotiated funds became more numerous, the unions insisted upon handling the detailed administration of the payment of benefits. Many millions of dollars were accumulated to provide the benefit payments which had been negotiated. In a number of situations, employers abdi-

cated their joint legal responsibility to supervise administration, including the placing of insurance policies on a competitive basis and the manner of investing the trust funds being accumulated.

Situations of this kind, as well as complaints lodged by union members about the internal mismanagement of union affairs, led to the senatorial investigations conducted by Senator McClellan's committee. Testimony before that committee led directly to the Landrum-Griffin amendments to the earlier Wagner and Taft-Hartley Acts. The main thrust of these amendments was to provide what was referred to as a "Bill of Rights" for union members and to establish a detailed reporting system in connection with the management of the administration of joint welfare, pension, and other fringe benefit funds as well as internal union business. There can be little doubt that these provisions relating to the management of funds have corrected and will in the future prevent abuses of the kind that have led to the prosecution of numerous union officials.

With regard to the "Bill of Rights" provisions, however, many employers, as well as many union leaders, believe that the kind of democracy now available to union members has encouraged unwarranted rank-and-file revolts in some instances against established union leadership and has created complications in the process of bargaining. This is not to say that rank-and-file members should be denied their democratic rights, but it is to suggest, rather, that when democracy is construed to encourage minority challenges to responsible union leadership, collective bargaining mechanisms are bound to suffer.

As some union officials have expressed it, employers who cried out for democracy within unions are now finding that rank-and-file committees are obtaining too much democracy. Many union leaders are unwilling or are refusing to exercise their authority to influence their union membership in the making of decisions for fear that they, as officials, will be faced with charges by individuals or dissident groups that they have denied democratic rights to the objectors. Grievance complaints have multiplied because business agents are reluctant to refuse to process any claim, however unfounded.

The Situation Today

It seems to me that in the current or sixth period of the developing relationships that I have been attempting to describe, we have now reached a period of uncertainty as to the direction and future of labor-management bargaining. Although Congress and the administrative agencies and the courts have tried to maintain a kind of balance between the economic weapons that could be brought to the bargaining table by the parties, there can be no denying the fact that many changes in the structure of our economy and its organization have taken place since the passage of the Wagner Act.

Beginning in 1935, that Act gave great impetus to the organization of workers. While it is true that in recent years the rate of growth of unions has declined, I suspect that this has more to do with the changing character of the work force than it has to do, as some have suggested, with the exposure of certain union practices by the McClellan Committee.

Basic crafts and basic industries were generally organized, even before World War II. Since that time, a tremendous shift has taken place in the composition of our work force. Whereas blue-collar workers used to constitute a major portion of the total, the proportion of white-collar workers in the fields of engineering as well as in technical and clerical work has materially increased. Furthermore, the ratio of women employed now amounts to one out of three. Historically, labor has found it difficult to organize white-collar and professional groups, perhaps because union identification over the years has been with manual workers. Despite these shifts, however, unions continue to represent the workers in basic crafts and basic industries.

The changes in the composition of the work force are, in large measure, the result of the technological change which has taken place in our economy. Introduction of laborsaving machines, data processing, automation—whatever the elements are that are now referred to as cybernation—has created grave problems affecting not only union organization but our total social structure.

The management sector also has undergone structural changes. Improvements in communication and transportation, as

well as mass production, have led to an increasing interdependence within industry. Mergers of competitive corporations increase in number. Major corporations diversify and reach into new areas of service or production. Big industry tends to become bigger. Smaller industry tends to become more dependent on larger industry for materials, parts, services, and distribution of products.

The involvement of government has changed materially also. Whether it be considered the result of our moving away from isolationism in World War I, or the result of our participation in World War II, or the result of the "cold war" which even now continues, it cannot be denied that an increasing number of strikes or lockouts are claimed to affect the public interest. It appears that the consolidated strength of unions, the increasing interdependence of industry, and our international responsibilities and commitments have combined to contribute to this state of affairs. For whatever reasons, whether we like it or not, protection of the public interest against the impact of major work stoppages has become a matter of greater and greater concern.

It appears, however, that among the three major elements directly involved—big labor, big management, and big government—there is no agreement as to sharing responsibility or even as to the manner of approaching such an agreement. Big labor wants no interference by big government in any private war it may be waging with big business. Big business wants no interference by big government in any private war it may be waging with big labor. Cynically, it may be suggested that these basic objections are at times modified if the "interference" amounts to support, and the objections are loudest if governmental pressure is applied to bring about a change of position.

Big government itself seems unable to make up its pluralistic mind whether to get into or stay out of labor-management disputes that are big enough to cause economic losses to many people, inconvenience to many others, and consequently produce a substantial public clamor for government action. Even a definition of "public interest" escapes agreement. Recent experience suggests that even when a determination has been made on a case-by-case basis that the public interest is involved, there still is disagreement over what to do to protect the public and who should do it.

The current relationship between labor and management—and I think government must now be added—is further complicated by a number of uncertainties of rather recent origin. The uncertainties affecting labor have to do, among other things, with a declining authority of its leadership. Current challenges to union leadership among the auto workers, steel workers, electrical workers, and paper workers, as well as the restlessness in the teamsters' organization, all seem to indicate not only Landrum-Griffin reactions, but also the changing attitudes of a new generation of union members who may be more concerned with job security and the fear of technological layoff than they are with increased pensions for their declining years. The pressures of reduced work opportunity resulting from cybernation have created new problems, whose solutions are beyond the experience of many union officials. The very lack of solutions leads to increasing strike threats in substantial segments of industry, and this in turn to increasing demands by other than unions for government intervention to provide coercive mechanisms for settlement.

The uncertainties of management, in some degree, are a reflection of the uncertainties as well as the pressures of labor, but they are aggravated, in my opinion, by a sense of uneasiness related to the competitive need for improving productivity and efficiency by replacing men with machines, without knowing how to provide a cushion against resulting hardships to individuals—not only those displaced but those not yet employed. Further, a new generation of management has assumed responsibility and has little patience with the advice perhaps too freely offered by those who lived in a different period. Possibly the strange but deep divisions implicit in our recent national election have aggravated these uncertainties.

The uncertainties of government have to do not only with those of labor and management but also with its responsibilities in the undefined area of protecting the public interest. For even if a definition of such interest is achieved, the question of intervention remains troublesome, and the mechanism to be adopted undetermined. The Taft-Hartley injunctive process has proven ineffectual; direct intervention by the White House controversial

and sometimes divisive; and coercion by act of Congress—as in the recent railroad cases—inconclusive and impermanent.

Altogether, it appears to me that there are many new elements in current labor-management relationships that may lead to conflicts which will not be solved by attempting to apply methods of accommodation that have been developed in the past thirty years. New approaches through "human relations committees," "modernization and mechanization agreements," "long-range planning," and various other forms of experimentation seem to offer some hope. The proposal to substitute what has been called preventive mediation as a substitute for crisis bargaining would, if generally accepted, have undoubted value.

All of these techniques recognize the need for dropping the rigid connotations of the labels "labor," "management," and "government" in order to seek reasonable and broad solutions for all of the people who are involved in the public interest. As matters now stand, the expression "public interest" seems to be, as Secretary of Labor Wirtz recently said, "a substantially semantic fraud." I suggest that we should spend more time clarifying our notions about the true meaning of this expression without regard for our private labels.

The alternative seems to me to be illustrated by a favorite but somewhat shopworn story of mine. Shortly after General Douglas MacArthur and our army of occupation established a government in Japan in the American image, a young American-educated Japanese who had been named by the Supreme Commander to be chairman of the National Labor Relations Board of Japan was allowed to visit San Francisco to meet with selected management and labor representatives. Congressman Jack Shelley, now Mayor of San Francisco, and I were asked to have lunch with him. During our discussions, he described how Japanese workers and employers had been directed to affiliate with newly organized Japanese counterparts of the AFL, CIO, National Association of Manufacturers, and United States Chamber of Commerce. He described to us in detail also the organization of the Japanese National Labor Relations Board and its operations under a decree which paralleled the Wagner Act, or possibly the Taft-Hartley Act.

We asked if Japanese workers could strike. He assured us they could, but said that they had not done so because strikes would make the Supreme Commander unhappy. He added, however, that workers could not strike if the work stoppage would affect the public interest. Congressman Shelley and I immediately sought the answer to this troublesome matter of definition. We inquired how strikes affecting the public interest were defined under the newly proclaimed Japanese democratic system. After a long pause for reflection, our Japanese visitor replied, "The Supreme Commander hasn't told us yet."

I trust that we will find a better alternative.

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This study seeks to detemine if successful small business managers do have certain characteristics such as thinking ability, human relations ability, communications ability, drive, and technical knowledge that are partially or wholly lacking in the unsuccessful managers. Data reported in this study were obtained from: (1) standardized and specially composed surveys administered to owners, employees, customers, and suppliers, (2) informal interviews of creditors and competitors, (3) special surveys and standardized psychological testing devices administered to small business managers, and (4) numerous periodicals and books. The survey included 97 small businesses in Texas. The sample was stratified by the percent of the total number of such establishments in the state and consisted of 54 retail establishments, 26 service establishments, eight wholesale establishments, six manufacturers, and three oil and gas extraction businesses. The five characteristics studied showed a significant rank correlation to success and produced a .674 multiple correlation to success. This indicates that 45.5 percent of the difference in success of the 97 small business managers surveyed results from differences in the extent to which they possess the five characteristics. The information in the document is particularly important to educators, psychologists, management analysts, and the various specialists who study and help small business. (MM)

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Personality and Success

An Evaluation of Personal Characteristics of Successful Small Business Managers

By HAL B. PICKLE
Department of Business Administration
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San Marcos, Texas

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SMALL BUSINESS ADMINISTRATION
WASHINGTON, D.C. 1964

SMALL BUSINESS ADMINISTRATION

EUGENE P. FOLEY, *Administrator*

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Foreword

The management of small business concerns is a vital element in their success—and in the health of the economy. The development, production, and distribution of goods and services all depend on the know-how of the manager; and our business landscape is littered with the remains of businesses that have failed because of poor management of one kind or another.

For years, educators and management have sought the keys to management success. One of the major goals has been to determine, with some degree of accuracy, those personality traits of a successful business manager which have contributed measurably to the success of an enterprise.

The information in this book is therefore particularly important to the various specialists who study and help small business. Educators, psychologists, and management analysts, as well as policymakers in both Government and industry, will find the author's work helpful in formulating studies to determine the factors of success among the small business sector of the economy. It is hoped too that the publication of this book will also stimulate further study of the business manager's personality and its important contribution to the functioning of our economy.

The author, Hal B. Pickle, wrote this manuscript as part of his work for the degree of Doctor of Philosophy in Business Administration at the University of Arkansas, Fayetteville. Currently, Dr. Pickle is an Assistant Professor of Management in the Department of Business Administration at Southwest Texas State College, San Marcos, Texas. For purposes of this SBA publication, his manuscript was edited by L. D. Hefner of the Publications Division under the administrative direction of Robert A. Litzberg, Chief of that Division.

EUGENE P. FOLEY, *Administrator,*
Small Business Administration

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1

Problem, Factors, Hypothesis

The Problem: Statement of the Problem—Factors and Definitions: A Definition of Success; The Small Business Manager; Personal Characteristics—The Hypothesis

The success or failure of a small business is obvious; but the various "reasons why" are not so easily seen. These reasons, however, have long been of major concern to business school faculties, to the business community, and to the government. Studies of the causes of business failure have been made, of course; and most of them have indicated that *poor management* appears to be the most common contributor. For example, one study, reporting on failures in 1962, showed the following causes: neglect, 3.0 percent; fraud, 1.5; lack of experience in the line, 8.9; lack of managerial experience, 17.7; unbalanced experience, 19.8; incompetence, 44.9; disaster, 1.0; and reason unknown, 3.2.[1] All of these but "disaster" and "reason unknown" can be attributed to management.

Whether business managers succeed or fail is of major importance to the American economy. Our standard of living, material progress, and national survival are determined by the development, production, and distribution of goods and services. Production volume is important; but even more so is the innovation of improved goods and services. Both depend on the manager. It is he who decides how much of our resources—natural, human, and money—will be used for production and how much will be used for innovation.

Efficient use of resources is an economic commandment; its accomplishment is a primary responsibility of the manager. His own efficiency, or lack of it, is a major determinant of his success or failure. For many years, management and psychology-oriented researchers have attempted to determine whether of a business manager's personality traits contribute to his success or failure. However, problems of definition and distinction (see Chapter 5) have led only to theoretically derived opinions, untested and sometimes conflicting.

[1] Dun & Bradstreet, *The Failure Record Through 1962*, p. 12.

The Problem

If personality characteristics condition a business manager's success or failure, then identification of these characteristics is of significant value as a predictor, to a degree, of success or failure. Thus those persons appearing destined to fail could be discouraged from entering the management sector of business; the training and development of managers and management candidates would have a sounder basis; and determining the best curriculum for colleges and universities would be aided. The end result would be an advance in the continuing effort to put the entire field of management on a more scientific basis.

Statement of the Problem

This study seeks to determine if successful small business managers do have certain characteristics—such as thinking ability, human relations ability, communications ability, drive, and technical knowledge—that are partially or wholly lacking in the unsuccessful managers.

Because previous attempts to identify personality "traits" have produced conflicting opinions, this study uses selected "characteristics" instead. A "characteristic" is defined as the composite of several "traits"; for example, "human relations ability" is the composite of ascendancy, emotional stability, sociability, cautiousness, personal relations, consideration, cheerfulness, cooperation, and tactfulness.

Factors and Definitions

In order to deal with the problem of this study, it was necessary to answer the following questions:

1. What is meant by success?
2. What kinds of managers are to be investigated?
3. What characteristics are necessary if the business manager is to be successful?

Consequently, the study is concerned with: (1) satisfaction of interested parties; (2) evaluation of the small business manager; and (3) determination of these characteristics of success.

A Definition of Success

There are numerous criteria by which one can determine the degree of success of a business. One of the best is the satisfaction that a business firm is able to provide to its various interested parties.

Several groups have an interest in any business. To the employee, the business is his source of income; to the customer, it is a source of

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goods and services; and to other groups, it has other meanings. These "parties-at-interest" groups all have vested interest in the existence of the business. For purposes of this study, they may be divided into eight groups—customers, owners, employees, suppliers, communities, governments, creditors, and competitors.

- **Customers:** Persons making purchases of either goods or services from the businesses surveyed.

- **Owners:** The person or persons holding title to the assets of the business. "Owner" can vary from a single proprietor, to partners, to stockholders in a corporation.

- **Employees:** All persons among the businesses surveyed who are paid hourly, weekly, or monthly wages; full-time employees; part-time employees; and quasi-foremen. Management personnel are not included.

- **Suppliers:** Any business or person providing any economic goods or services—raw materials, equipment, supplies, goods to be resold—to the businesses surveyed. The term covers cities that provide water, electrical companies, office supply firms, merchant wholesalers, and so forth.

- **Communities:** All persons occupying the town site areas that embrace the businesses surveyed.

- **Governments:** Local, State, and Federal governments and their agencies and commissions.

- **Creditors:** Anyone who extends credit to the businesses surveyed; banks and other financial institutions which extend credit (in the form of currency or demand deposits) as their primary functions; and suppliers who extend credit to businesses by allowing them a period of time to pay for merchandise or supply purchases.

- **Competitors:** Those businesses engaged in the same general line of endeavor as the businesses surveyed, and within close enough proximity to compete for many of the same potential customers.

The Small Business Manager

Definitions of management probably are as profuse as the writers of managerial treatises. One of the most noted present-day authorities offers the following:

> Management is the function of executive leadership. Its organic subfunctions are the creative planning, organizing, and controlling

of the organizational activities for which the executive is responsible. They have to do with the accomplishment of the group and project objectives of the organization.[2]

This general definition is incorporated into the study. In addition, special definitions are used for small business managers, both successful and unsuccessful.

- **Small Business Managers:** For purposes of this study, managers of business firms which have only one major level of management. The study focuses on the manager who has the highest line authority in each of the small businesses surveyed. (That he might also own the business would have no effect on the definition.)

- **Successful Small Business Managers:** Those managers of the firms surveyed who satisfied the parties-at-interest to a high degree.

- **Unsuccessful Small Business Managers:** The managers of the businesses studied who had achieved a low degree of satisfaction of parties-at-interest.

Personal Characteristics

Personal "characteristics," those major aspects of a man's make-up, develop from the interaction of personality traits and aptitudes produced by numerous environmental and hereditary factors. The characteristics to be employed are thinking ability, human relations ability, drive, communications ability, and technical knowledge.[3] Use of these characteristics as criteria for determining potential managerial success is more comprehensive and more directly related to small business management than other similar concepts that have been suggested.[4]

- **Thinking Ability:** The creative and analytical ability of the mind; the actions of the mind that create new knowledge and analyze information. "Original thinking" is used synonymously with "creative thinking," and "critical thinking" synonymously with "analytical thinking."

- **Human Relations Ability:** The groups of personality traits that determine a person's capacity to interact favorably with other people and to motivate them—traits such as ascendancy, emotional stability,

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[2] Davis, *The Fundamentals of Top Management*, p. 785.
[3] The five characteristics used in this study were evolved by Robert D. Hay, University of Arkansas.
[4] Davis, for example, suggests a leadership "skill mix" which includes *conceptual* skill, *human* skill, and *technical* skill. See his *Human Relations at Work*, pp. 116–117.

sociability, cautiousness, personal relations, consideration of other people, cheerful nature, cooperation with other people, and tactfulness.[5]

- **Drive:** The motivating force that stimulates man's will to succeed—in this case, in the field of business. In this study, drive combines the factors of vigor, responsibility, initiative, persistence, and health.

- **Communications Ability:** The degree of competency the manager has in giving and receiving information. This skill has been defined as "the ability to use words meaningfully in communication, thinking, planning; [and the] reading speed and ability to understand written or spoken instructions." [6]

- **Technical Knowledge:** The information a manager has about the physical process of producing goods or services, and his ability to use his information purposefully. Technical knowledge includes a knowledge of equipment, processes, procedures, material, and methods employed in the business.

The Hypothesis

Proficiency in human relations, communications and thinking ability, and technical knowledge, together with a strong desire to perform well at the task of managing a small business, should greatly enhance an individual's chances of success. If this assumption is true, the successful small business manager can be expected to possess more of these characteristics (or possess them to a greater degree) than do the unsuccessful. The object of this study is to test these assumptions.

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[5] Reasons for defining human relations ability as the composite of these "traits" are given in Chapter 6.

[6] Western Psychological Services, *Catalog for the Professions,* p. 48.

2

Methodology

Methods of Research: Sources of Data; Determining the Sample; Criteria for Success; Psychological and Other Tests

Various methods of research with built-in checks and balances—library research, testing, questionnaires, interviews, and experimentation—were used in conducting the study.

Methods of Research

Library research was used to determine the types of businesses to be probed; who the parties-at-interest were in the businesses; and the personality traits expounded in other studies of the characteristics which contribute to business success and failure. Testing determined, in part, to what degree the small business managers possessed drive, communications ability, human relations ability, and thinking ability. Survey questionnaires, both standardized and specially formulated, were used to determine the degrees of satisfaction of owners, employees, customers, suppliers, communities, and governments. They were also used to measure the personality characteristics studied. Information gathered from standardized psychological testing devices was balanced by that gained from judgment survey questionnaires. Informal interviews not only measured the satisfaction of creditors and competitors, they also produced information that became a check and balance to the validity of the survey questionnaires and their weighting. Using "satisfaction of parties-at-interest" to measure degree of success was a form of experimentation not previously tried.

Sources of Data

The data reported in this study were obtained from (1) standardized and specially composed surveys administered to owners, employees,

customers, and suppliers; (2) informal interviews of creditors and competitors; (3) special surveys and standardized psychological testing devices administered to small business managers; and (4) numerous periodicals and books.

Determining the Sample

Determining the relevant personal characteristics involved in successful management entailed close study of currently operating businesses. A sample of 100 was selected because it would provide adequate representation and still be a manageable number.

Determining the types of small businesses to be surveyed presented certain problems. It was assumed that some types of small businesses demand different management characteristics or different intensities of the same characteristics, and that an unbalanced sample would produce biased data. To obtain a representative sample, Bureau of the Census publications were used to determine the distribution of types of businesses in current operation in the United States.[1]

To make the sample size both manageable and meaningful, some limits had to be imposed on the various types of businesses to be studied. It was decided to use only those industries designated by the two-digit code in the *Standard Industrial Classification Manual.*[2]

This decision produced two additional problems. Travel difficulties necessarily restricted the survey to the State of Texas. If Texas differed significantly from the United States in distribution of two-digit businesses, then the survey would be biased. Examination of Census data on area distribution showed, however, that differences in distribution were negligible (table 1). Only four two-digit categories varied by more than 1 percent: automotive dealers, 1.01; gasoline service stations, 1.82; auto repair, auto service, and garages, 1.01; and oil and gas extraction, 2.49.

Because State and National data did not vary significantly, Texas percentages were used to determine the number of businesses surveyed. The percentage was rounded to the nearest whole and then converted to an absolute number. This procedure was followed without exception in the retail, wholesale, and service trades, but not in the manufacturing and mineral industries.

Manufacturing businesses were so varied in nature that no category was large enough in either number or percentage to be of significant meaning in the survey. Because manufacturing totaled only 5.49 percent of all businesses, it was decided that six manufacturing firms of any type would suffice. In the mineral industries, only oil and gas extrac-

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[1] The 1958 data on retail trade, wholesale trade, services, mineral industries, and manufacturing (sources cited in bibliography).

[2] Bureau of the Budget, *Standard Industrial Classification Manual 1957 (Supp. 1963)*.

Table 1.—Distribution of types of business, United States and Texas, 1958; and size of sample

Type of establishment[1]	United States		Texas		Size of sample
	Number of establishments	Percent of total	Number of establishments	Percent of total	
Retail trade	1,788,325	52.91	99,093	52.68	54
Lumber, building materials, hardware, farm equipment dealers	108,248	3.20	6,062	3.22	3
General merchandise stores	86,544	2.56	5,090	2.70	3
Food stores	355,508	10.51	18,355	9.75	11
Automotive dealers	93,656	2.76	7,106	8.77	3
Gasoline service stations	206,302	6.10	14,902	7.92	6
Apparel and accessory stores	118,759	3.51	5,246	2.78	4
Furniture, home furnishings and equipment stores	103,417	3.05	5,363	2.85	3
Eating, drinking places	344,740	10.19	17,124	9.10	10
Drug and proprietary stores	56,232	1.66	3,256	1.73	2
Other retailers	240,140	7.10	13,033	6.92	7
Nonstore retailers	74,679	2.20	3,556	1.89	2
Selected services	975,250	28.85	56,435	30.00	26
Personal services	411,507	12.17	23,269	12.37	12
Miscellaneous business services	113,923	3.37	5,709	3.03	3
Auto repair, auto services, garages	125,240	3.70	8,867	4.71	4
Miscellaneous repair services	144,759	4.28	9,785	5.20	4
Motion pictures	19,545	.57	1,309	.69	1
Amusement, recreation services, except motion pictures	74,696	2.20	3,060	1.62	2
Wholesale trade	285,996	8.45	16,255	8.64	8
Manufacturing	298,182	8.82	10,338	5.59	6
Food and kindred products	41,619	1.23	2,042	1.08	.....
Tobacco manufactures	504	.01	2	.00	.....
Textile mill products	7,675	.22	67	.03	.....
Apparel and related products	29,297	.86	542	.28	.....
Lumber and wood products	37,789	1.11	918	.48	.....
Furniture and fixtures	10,160	.29	474	.25	.....
Pulp, paper, and allied products	5,271	.15	118	.06	.....
Printing and publishing	35,368	1.04	1,568	.83	.....
Chemicals and allied products	11,309	.33	343	.28	.....
Petroleum and coal products	1,608	.04	130	.06	.....
Rubber and plastic products	4,462	.13	101	.05	.....
Leather and leather products	4,534	.13	91	.04	.....
Stone, clay, and glass products	15,022	.44	675	.35	.....
Primary metal industries	6,446	.18	186	.09	.....
Fabricated metal products	24,782	.73	804	.42	.....
Machinery, except electrical	29,839	.88	1,157	.61	.....
Electrical machinery	8,091	.23	153	.08	.....
Transportation equipment	6,607	.19	308	.16	.....
Instruments and related products	3,526	.10	106	.05	.....
Miscellaneous manufactures	14,273	.42	353	.18	.....
Mining	31,830	.94	5,953	3.16	3
Metal	1,906	.05	17	.009	.....
Anthracite	1,157	.03	.....	.....	.....
Bituminous coal and lignite	6,300	.18	.....	.....	.....
Oil and gas extraction	15,363	.45	5,541	2.94	.....
Nonmetallic	7,236	.21	395	.21	.....

[1] The Bureau of the Census gives only 3-digit code totals; therefore, the number of establishments within the various types do not add to the totals given.

Source: Adapted from *Statistical Abstract of the United States*, 1960.

tion were significant, amounting to 2.94 percent of the total. It was decided that three oil and gas extraction businesses would be sufficient for the sample.

Altogether, the survey included 97 small businesses: 54 retail establishments, 26 service establishments, 8 wholesale establishments, 6 manufacturers, and 3 oil and gas extraction businesses.

Criteria for Success

Traditionally, the measure of business success has been profit. Yet such an attitude considers only the ownership group, which has a vested interest in the business. A more comprehensive criterion—particularly in judging the success of the business manager—is how well all of the various parties-at-interest are satisfied. A survey of the literature revealed these parties-at-interest to be customers, owners, employees, suppliers, communities, governments, creditors, and competitors.

Psychological and Other Tests

The degree to which management provides satisfaction to the other parties-at-interest would be an index to the managers' success or lack of success. To measure the degree of the characteristics possessed by successful and unsuccessful small business managers, the managers were given psychological and other tests; [3] the findings from these were evaluated and summarized; and rank correlations were calculated to determine significance of results (see chapter 6).

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[3] *Gordon Personal Profile, Gordon Personal Inventory, Watson-Glaser Critical Thinking Appraisal,* and *Employee Aptitude Survey,* Test 1—*Verbal Comprehension.*

3

Identification of Criteria for Success

Measuring Success—Parties-at-Interest: Importance of Customers; The Example of History; Employees Produce Goods and Services; Owners and Creditors Provide Funds; Suppliers Provide Economic Goods and Services; Community Wants and Needs Less Evident; Governments Provide the Social Structure; Competitor Satisfaction Least Important

From society's viewpoint, the purpose of business is to satisfy human wants and needs. How well management achieves this task should be the measure of its success. A review of the literature determined the parties-at-interest to a business and indicated certain means which each uses to derive satisfaction from management.

Measuring Success

To measure the small business manager's success, it is necessary to measure the success of his particular business. And in determining whether or not a business is successful, it is necessary to know the ultimate goals or purposes of the business. However, one person's idea about purpose may be entirely different from another's. The owner of a small business probably thinks its purpose or justification is to provide him with profit and psychic rewards. On the other hand, his employees are more likely to be concerned with salary and security. Whose viewpoint is to be used?

Rather than concentrate only on individual viewpoints, it seems more realistic to try to determine society's view of purpose or justification. Using this approach, one can conclude that providing the economic goods and services that satisfy the wants and needs of the population is the purpose or justification of small business.[1]

[1] The purpose or justification of business has been an important consideration to management oriented people for a long time. William G. Scott presents a historical perspective, from "mutuality of interest," discussed in the middle 1830's, to the more modern concept of business as a community of interests in itself. See Scott, *Human Relations in Management*, pp. 22–41.

In addition, the wants of interested parties must be satisfied; and it must be determined if these interested parties form any kinds of groups that have particular wants and needs.

Those having a vested interest, something to gain or lose, in the business are the persons whose wants and needs must be satisfied.

Who are these parties-at-interest? It was decided that if business and management writers named essentially the same groups, then these groups would apply to the small businesses to be surveyed.

A study of 22 sources showed that although the number of parties-at-interest varied considerably (from a minimum of three to a maximum of eight), the choices were markedly consistent (table 2). Often, synonymous names were used for the same basic group; for example, the terms *stockholders* and *investors* are merely different names for owners.

Table 2.—Parties-at-interest terminology

Term used in survey	Terms used in sources	Number of times mentioned
Employees	Employees	20
	Workers	2
Owners [1]	Owners	6
	Stockholders	13
	Investors	4
Customers	Customers	13
	Consumers	7
	Consuming public	1
Suppliers	Suppliers	3
Creditors	Creditors	3
Government [2] / Community [2]	Government	8
	Community	6
	Public	8
	Society	3
	Nation	1
	People	1
Competitors	Competitors	6
Others	Management	5
	World	1
	Management profession	1
	Other firms	1

[1] Some sources listed two or more parties-at-interest that appear in the same category.
[2] Parties-at-interest in this category overlap considerably and cannot be separated into government or community categories.

Source: See p. 73.

Parties-at-Interest

The terms *employees*, *owners*, *customers*, *suppliers*, *creditors*, *governments*, *communities*, and *competitors* appeared with surprising frequency. Indeed, it was unusual to find such unanimity of opinion among the business and management authors. Although the term "management" appeared five times, it was decided to exclude it from the list. Granted, management must receive satisfaction from a business, and is in this sense a party-at-interest; but because management is the originator and initiator of the satisfaction of the other parties-at-interest, it has an appreciably different status. In addition, owner and manager are the same person in almost all of the small business studied in the survey. Thus it could not be considered a separate party-at-interest.

The study considered which parties-at-interest management must satisfy. Management meets constant bombardment for want and need satisfaction from its parties-at-interest, but there is considerable difference in the immediate pressure that the various groups can bring into play. Over a long period of time, however, all of them are able to make significant demands. An investigation of each group reveals what can, and often does, happen when its needs are not fairly met by management.

Importance of Customers

Though all parties-at-interest in the small business firm are essential to its continued operation and well being, customers are indispensable.[2] The purpose of the business firm is to produce economic goods and services to satisfy wants and needs. The customer buys these goods and services and provides the means for management to satisfy other parties-at-interest. Without the customer, management would be unable to satisfy any group.

Defining the wants and needs of customers is no easy task. Many are closely related to price. Some customers are willing to pay a higher price for high quality goods or services. Others will be quite satisfied with less. Some businesses cater to carefully determined groups, while others attempt to satisfy several by offering different qualities at different prices.

Price has another important role—that of determining the resources management will use to satisfy the various parties-at-interest. Prices set by management must usually be competitive with prevailing market prices. Excessive prices prompt customers to shift their satisfaction seeking to another business, and management is unable to obtain funds with which to satisfy other parties-at-interest. On the other hand, too low a price will yield such a small income that the firm will not be able to satisfy other parties-at-interest.

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[2] This idea has given rise in recent years to the "total marketing concept." See, for example, Arthur Felton, "The Marketing Concept in Action," pp. 14–21.

Because competition is a major motivating device in private enterprise economies, the satisfaction of customers is a very important aspect of any firm's operation. First, a firm must equal or exceed the efforts of its competitors; second, it must always be flexible in its operations. The goods and services produced by business are constantly changing because what satisfies the customer one day will not necessarily satisfy him the next day. As a result, one of the most important avenues to customer satisfaction is the development and introduction of new and better goods and services.

Customers exert a constant and immediate pressure on management to satisfy their wants and needs. Any time management fails to satisfy them, they are apt to shift their patronage to a competitor. Without the income provided by the patronage of customers, employees cannot be paid, owners do not receive any profit, suppliers lose a customer, creditors lose a customer and cannot be paid, and governments no longer receive taxes from the business. The only party-at-interest not immediately suffering a loss would be competitors, who would gain the customers lost by the firm.

The Example of History

History illustrates what happens when customers fail to get an adequate share of available resources. Before the Civil War, the United States was largely agrarian; the war heralded the Industrial Revolution in the United States and with it brought a fantastic increase in the optimum scale of production in most industries. Fewer and fewer companies were able to produce a greater and greater volume of products, and large-scale production became the order of the day. The giant financial organizations that developed introduced two new characteristics into business: absentee ownership and the ability to limit competition.

Through its impersonal nature and financial strength, absentee ownership increased the degree of pressure the owners were able to use on management. The actions of the "robber barons" of this period comprised a wide and ingenious range of dishonesty.

At the same time, limiting competition—through the use of trusts, collusion, and unfair practices—reduced the pressure customers could bring to bear. Customer pressure depends on competition. If a competitor increases a customer's satisfaction, purchases will shift to the competitor. But with no competitors to turn to, this consumer leverage is thwarted.

In the U.S. industrializing period, management overlooked one important fact, however—that the customer, as a member of a democratic society, can have life-and-death power over our society's economic practices. The Sherman Act (1890), Clayton Act (1914), Federal Trade Commission Act (1914), and other legislation regulating business were

largely the direct result of dissatisfaction with management's practice of satisfying the owner group at the expense of the customer group.

Employees Produce Goods and Services

Employees are a vital party-at-interest because only through their efforts are economic goods and services produced. The employee also has distinctive wants and needs that he looks to management to satisfy. He depends on management for wages, security, and good working conditions, as well as for other economic, psychological, and social satisfaction. Also, like the customer, he has wants and needs that change and increase; what satisfies him one day will not necessarily satisfy him the next day.

A vital factor in any business is the morale of employees; it is a good index of their satisfaction with management. Employee morale has long been recognized as a basic contributor to a firm's production and technology, and management's fund of resources for party-at-interest satisfaction depends on this level.

Management has not always recognized this fact. Until the advent of the Industrial Revolution, business was comprised of large numbers of small shops. Employees enjoyed close personal contact with management and a resulting degree of bargaining power. With the advent of large-scale production, however, this bargaining power began to deteriorate, and management increased the share of owners at the expense of the employees.

In attempting to get satisfaction from management, employees tried to combine their efforts and bargain as a unit; but management, using various methods, was able to counteract most of their actions and continued to increase the satisfaction of other parties-at-interest at their expense.

But as in the case of the antitrust laws, the labor legislation that was enacted represents the results of management's unwillingness to satisfy the employee group.

Owners and Creditors Provide Funds

Management uses funds provided by owners to purchase the resources used to produce economic goods and services; hence, owners are an essential party-at-interest in any business.

Owners have their own peculiar wants and needs, too. Profit undoubtedly is the most important and prominent, but there are also security of investment, reasonable expectation of continued profits, and certain psychic rewards.[3]

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[3] Davis contends that profit is a collateral personal objective of businessmen; see his *The Fundamentals of Top Management*, p. 104.

If these wants and needs are not satisfied, owners are capable of bringing immediate and powerful influences to bear on management. They can discharge management, or they can withdraw the funds they have invested in the business.

Management has had little success in bypassing the wants and needs of owners in the past; in fact, management has often felt the wants and needs of owners more strongly than any other party-at-interest.

Creditors are a vital party-at-interest because of the funds they provide for purchases of resources. The creditor has his own particular wants and needs—security of his funds, and payment of interest that is proportionate to the security of funds.

Management must satisfy the wants and needs of creditors if it expects to obtain more funds in the future. If management does not promptly repay its borrowed funds, the creditor refuses future loans. Consequently, creditors exert a strong influence on management to force satisfaction of their wants and needs.

Suppliers Provide Economic Goods and Services

Suppliers are those businesses which provide raw materials, equipment, supplies, tools, etc., that the dependent firms use in producing economic goods and services.

Suppliers have their own wants and needs that management must satisfy. The supplier cannot exist without the dependent firm; but unless the supplier has sufficient funds to satisfy his own parties-at-interest, he cannot continue to produce economic goods and services. Without the economic goods and services provided by the supplier, the dependent firm cannot produce.

As with other parties-at-interest, the satisfaction of suppliers is largely a matter of competition. If the supplier is the only producer in a field, he may be able to exact a large degree of satisfaction for himself; if there is a high degree of competition, he may be forced to accept much less.

Community Wants and Needs Less Evident

For the most part, the wants and needs of the community are not as evident or definite as the wants and needs of other parties-at-interest. Management is expected to be an integral part of the community and to assist in community efforts to enhance the common environment. It is expected to support many of the community's organizations, drives, and charities; but there are other areas in which the community wants and needs are less clearly defined.

Traditionally, communities are slow and indefinite in their actions if their wants and needs are not satisfied. Yet many community laws reflect specific attitudes toward businesses that failed to satisfy these

wants and needs—for example, laws prohibiting sidewalk vending, laws requiring businesses to keep fire lanes clear, and so forth. The legislation of laws is traditionally slow, and communities do not exert pressure as immediately as some of the other parties-at-interest in the business. Yet when they do, their efforts are difficult to reverse.

Governments Provide the Social Structure

Local, State, and Federal governments are a necessary party-at-interest in any business. They provide the social structure—the roadways, police and fire protection, legal system, national defense, and other services—essential to the operation of any business. In return for these services, management must support and finance these government operations. Governments have their own particular wants and needs, and they have immediate and powerful weapons to use to force management to satisfy them. Corporation taxes, income taxes, and varying types of licenses and fees are all used to finance management's part of the cost of government operations. The fines, imprisonment, and other forms of penalties that are permitted are strong enough to induce management to meet most of its financial obligations to governments.

Competitor Satisfaction Least Important

Of all the parties-at-interest, competitors are probably least important to management, and thus require the least amount of need and want satisfaction. In our competitive system, the only form of satisfaction that management owes its competitors is fair and honest practices. Competitors have very few weapons at their command with which to force management to satisfy their wants and needs. It should be noted, however, that the satisfaction of competitors is related to the satisfaction of customers. Competition produces the maximum satisfaction of customer wants and needs, and if management is not fair and equitable in its dealings with competitors, then possibilities for customer satisfaction will not have been maximized.

4

Measurement of Satisfaction of Parties-at-Interest

Satisfaction of Owners: Financial Satisfaction; Security and Psychic Rewards—Satisfaction of Community—Satisfaction of Governments—Satisfaction of Customers—Satisfaction of Suppliers—Satisfaction of Competitors—Satisfaction of Creditors—Satisfaction of Employees—Assigning Degree of Success

Satisfaction of parties-at-interest was measured by a special survey questionnaire, informal interviews, and a standardized survey. The special questionnaire was used for owners, communities, governments, customers, and suppliers. Owner satisfaction was determined by measuring financial satisfaction, security, and psychic rewards. Community satisfaction was determined by measuring management support of organizations, support of charities and schools, and participation in political activities. Government satisfaction was measured in terms of communication of information and provision of financial support. The measurement of customer satisfaction, using personal interviews, centered around physical features and environment of a store, the usefulness or attractiveness of the goods or services offered, the extent and quality of customer services, and an overall ranking. The measurement of supplier satisfaction used a mail survey, rather than personal interviews, to determine customer purchasing habits as related to supplier's product, the customer's record of meeting his financial obligations to the supplier, the customer's stability in relations with his supplier, and summary evaluations.

The ratings of banks, retail merchant associations, and Dun & Bradstreet were used to assign five degrees of creditor satisfaction to the small businesses. And informal interviews were also used to measure creditor and competitor satisfaction.

Employee satisfaction was measured by *The Core Survey*, a standardized employee morale measuring device.

The satisfaction of each party-at-interest was ranked, weighted, and then reranked to obtain the final results (see Tables 3–7).

Satisfaction of Owners

The basic wants and needs of the owner group are financial satisfaction, security, and psychic rewards. Traditionally, financial satisfaction has been stressed most.

Financial Satisfaction

As used in the study, financial satisfaction is composed of absolute money amounts, return on net worth, return per hour of work, and money reward compared with that of other similar businesses.

● **Absolute Amounts.** An owner is vitally interested in the absolute amount of money he derives from his business, because it determines his level of purchasing power and standard of living. For example, an owner would probably be more satisfied with $20,000 profit from his business than with $10,000. Question 1 of the *Questionnaire for Man-*

Table 3.—Owner satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	26	40	34	27	35	67	26	40
2	25	45	35	25	45	68	29	23
3	13	90.5	36	30	17.5	69	28	29.5
4	22	63	37	17	83	70	22	63
5	21	70	38	27	35	71	10	93.5
6	24	49.5	39	21	70	72	23	55
7	45	4.5	40	32	12	73	38	29.5
8	21	70	41	79	1	74	51	3
9	45	4.5	42	31	15	75	7	95
10	24	59.5	43	23	55	76	23	55
11	29	23	44	29	23	77	22	63
12	16	85.5	45	22	63	78	21	70
13	26	40	46	29	23	79	10	93.5
14	27	35	47	22	63	80	16	85.5
15	53	2	48	3	97	81	18	82
16	20	75	49	37	8.5	82	30	17.5
17	32	12	50	23	55	83	19	79.5
18	14	89	51	41	6	84	20	75
19	27	35	52	30	17.5	85	38	29.5
20	25	45	53	24	49.5	86	25	45
21	22	63	54	23	55	87	23	55
22	30	17.5	55	13	90.5	88	21	70
23	5	96	56	19	79.5	89	24	49.5
24	22	63	57	27	35	90	29	23
25	29	23	58	19	79.5	91	16	85.5
26	50	7	59	20	75	92	15	88
27	28	29.5	60	29	23	93	26	40
28	22	63	61	26	40	94	23	55
29	32	12	62	16	85.5	95	32	12
30	22	63	63	19	79.5	96	28	29.5
31	20	75	64	25	45	97	37	8.5
32	20	75	65	28	29.5			
33	11	92	66	32	12			

Score range, 3 to 79; score mean, 25.11; score median, 24.

Table 4.—Community satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	13	85	34	37	18	67	41	12.5
2	17	72.5	35	17	72.5	68	14	81
3	23	58.5	36	30	35.5	69	16	76.5
4	23	58.5	37	31	33	70	9	90.5
5	48	4	38	25	52	71	30	35.5
6	33	27	39	6	95	72	11	88
7	32	30.5	40	23	58.5	73	7	94.5
8	16	76.5	41	57	2	74	13	85
9	47	5	42	12	87	75	24	55
10	28	40.5	43	42	11	76	37	18
11	37	18	44	33	27	77	23	58.5
12	27	46	45	14	81	78	21	63.5
13	28	40.5	46	34	24	79	32	30.5
14	26	49.5	47	38	40.5	80	17	72.5
15	16	76.5	48	18	69	81	9	90.5
16	45	7	49	27	46	82	19	66
17	29	37	50	33	27	83	22	61.5
18	19	66	51	17	72.5	84	35	22.5
19	8	93	52	27	46	85	49	3
20	16	76.5	53	45	7	86	14	81
21	45	7	54	4	97	87	18	69
22	44	9.5	55	14	81	88	37	18
23	13	85	56	19	66	89	9	90.5
24	22	61.5	57	31	33	90	41	12.5
25	25	52	58	55	9.5	91	31	33
26	36	21	59	18	69	92	14	81
27	65	1	60	35	22.5	93	27	46
28	24	55	61	28	40.5	94	33	27
29	9	90.5	62	28	40.5	95	28	40.5
30	24	55	63	7	94.5	96	38	15
31	39	14	64	26	49.5	97	33	27
32	25	52	65	27	46			
33	21	63.5	66	37	18			

Score range, 4 to 65; score mean, 26.28; score median, 26.

agement, Owner section, attempts to measure the absolute money satisfaction derived by the owners of the small businesses surveyed.

• **Return on Net Worth.** Another important factor of financial satisfaction is return on net worth. For example, if the owners of two different businesses each receive a profit of $10,000 per year, it would appear at first glance that both have equal financial satisfaction. However, if the net worth of one is $100,000 and the other only $10,000, the financial satisfaction derived from the same amount of return is obviously not equal. In addition, the owner with the $100,000 net worth tied up in a business is not able to invest it in other profit producing ventures.

• **Return per Hour of Work.** Another factor of an owner's satisfaction is the amount of effort he must exert for the monetary reward he gets from the business. Assume, as an example, that two owner-managers each receive $10,000 per year from their businesses, each of which has a net worth of $100,000. Do they derive equal financial

satisfaction? Again, there are other factors that have to be taken into consideration. Assume that one owner-manager works 80 hours per week and the other 40 in order to get the same profit figure. Which owner-manager derives the greater satisfaction? In an attempt to quantify the degree of satisfaction, question 8 of the Owner section was multiplied by 52 to convert it to a yearly figure. The yearly figure was then divided into the average yearly profit figure (obtained in question 1) to get the average return per hour worked.

• **Comparative Reward.** People often judge the adequacy of their money rewards by comparing them to those of others performing the same function. A man earning $3 per hour might be content with his pay. Yet, let him discover that another person performing exactly the same duties is earning $6 per hour, and what is likely to be the result? In most cases, the lower paid worker would probably become much dissatisfied with his wage scale. It seems safe to assume that owners would react in a like manner (see question 3, Owner section).

Table 5.—Government satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	8	39	34	9	26.5	67	7	55
2	7	55	35	5	79	68	0	94
3	9	26.5	36	2	86.5	69	11	8.5
4	7	55	37	7	55	70	6	72.5
5	9	26.5	38	1	90.5	71	9	26.5
6	8	39	39	9	26.5	72	9	26.5
7	11	8.5	40	9	26.5	73	6	72.5
8	−2	96	41	7	55	74	7	55
9	11	8.5	42	7	55	75	6	72.5
10	2	86.5	43	8	39	76	11	8.5
11	9	26.5	44	3	84.5	77	13	1
12	6	72.5	45	9	26.5	78	1	90.5
13	9	26.5	46	7	55	79	6	72.5
14	1	90.5	47	6	72.5	80	9	26.5
15	1	90.5	48	11	8.5	81	6	72.5
16	4	82.5	49	7	55	82	11	8.5
17	10	15.5	50	7	55	83	9	26.5
18	7	55	51	7	55	84	11	8.5
19	1	90.5	52	9	26.5	85	11	8.5
20	7	55	53	7	55	86	7	55
21	5	79	54	5	79	87	7	55
22	7	55	55	7	55	88	10	15.5
23	7	55	56	4	82.5	89	7	55
24	6	72.5	57	9	26.5	90	12	2
25	5	79	58	5	79	91	7	55
26	−5	97	59	3	84.5	92	7	55
27	9	26.5	60	11	8.5	93	7	55
28	1	90.5	61	8	39	94	11	8.5
29	7	55	62	7	55	95	9	26.5
30	11	8.5	63	8	39	96	9	26.5
31	9	26.5	64	7	55	97	−1	95
32	9	26.5	65	11	8.5			
33	7	55	66	9	26.5			

Score range, −5 to 12; score mean, 6.96; score median, 7.

Table 6.—Customer satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	3.58	47.5	34	3.51	56	67	3.16	91
2	3.65	33	35	3.71	26	68	4.19	4
3	3.03	94	36	3.20	87	69	3.52	55
4	3.60	42	37	3.69	27	70	3.42	63
5	3.60	42	38	3.60	42	71	2.89	97
6	3.75	24.5	39	3.91	12	72	3.77	22.5
7	3.49	57.5	40	3.78	20	73	3.62	39
8	3.59	45.5	41	4.51	3	74	4.09	7.5
9	3.56	51	42	3.63	37	75	3.35	70
10	3.68	28	43	3.34	72	76	3.04	93
11	4.14	5.5	44	4.09	7.5	77	3.79	18
12	3.19	89.5	45	3.55	62.2	78	3.40	65.5
13	3.23	81.5	46	3.27	78	79	3.75	24.5
14	3.66	31	47	3.90	13	80	3.32	74
15	4.01	11	48	3.60	42	81	3.33	73
16	3.37	67.5	49	3.84	16	82	3.67	29.5
17	4.03	9	50	3.37	67.5	83	3.20	87
18	3.19	89.5	51	3.60	42	84	3.47	60.5
19	3.78	20	52	3.45	62	85	3.88	14
20	3.55	52.5	53	3.58	47.5	86	3.78	20
21	3.64	35	54	2.92	96	87	4.02	10
22	4.14	5.5	55	3.28	75.5	88	3.27	78
23	3.63	37	56	3.23	81.5	89	3.27	78
24	3.35	70	57	3.41	64	90	3.87	15
25	3.43	43	58	3.28	75.5	91	3.59	45.5
26	3.49	57.5	59	3.20	87	92	3.00	95
27	3.77	22.5	60	3.25	80	93	3.63	37
28	4.56	2	61	3.65	33	94	3.63	37
29	3.40	65.5	62	3.35	70	95	3.22	83.5
30	3.48	59	63	4.84	1	96	3.67	29.5
31	3.57	49.5	64	3.81	17	97	3.47	60.5
32	3.22	83.5	65	3.21	85			
33	3.65	33	66	3.57	49.5			

Score range, 2.89 to 4.84; score mean, 3.57; score median, 3.57.

Security and Psychic Rewards

One of man's basic needs is security. Owners of small businesses are no exception. The study examined records of past security and expectations of growth as elements in business security that would affect owner satisfaction (see question 2).

Expected growth is an element in security satisfaction of the owner. Some owners probably continue to maintain investments in businesses not currently providing satisfactory financial or psychic rewards because they have strong expectations of future profits. The expectation in the mind of the owner is sufficient to produce a degree of satisfaction (see questions 5 and 6)

For a long time, economists have been interested in determining the motivating force of business owners. The classical economists held that it was man's greed. But with the advent of applied psychology, others were discovered. Aside from interest in financial and security satisfaction, the owner maintains a desire for psychic rewards—particularly

those of work satisfaction and status. An owner who gets pleasure from his work will usually have a much higher degree of owner satisfaction than will one who thoroughly dislikes his work, even though financial and security satisfaction are equal (see questions 9, 11, and 12).

Because of man's basic gregariousness, he is often sensitive to other people's evaluation of him. An important form of psychic reward to the owner of a business is the status, as perceived by the owner, which it attains in society (questions 10 and 12).

Satisfaction of Community

The study sought to measure three categories of community satisfaction: support of organizations, support of charities and schools, and participation in political activities. Such organizations as Kiwanis, Lions, chambers of commerce, and others propose to have as their principal aim and purpose the enhancement of their community. Communities generally recognize these orgnaizations as being desirable. The

Table 7.—Supplier satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.56	4	34	3.62	70	67	3.92	35.5
2	4.55	5	35	3.69	59.5	68	4.04	25
3	3.96	30	36	3.85	48	69	3.92	35.5
4	3.92	35.5	37	3.31	88.5	70	3.38	86
5	3.78	55	38	3.92	35.5	71	2.92	95
6	3.69	59.5	39	3.79	53	72	3.93	32
7	4.02	26	40	3.65	65	73	3.88	44
8	3.65	67	41	4.01	27	74	3.86	47
9	4.06	22.5	42	3.59	77.5	75	3.24	90
10	2.58	96	43	3.68	62.5	76	4.09	20.5
11	4.13	18.5	44	3.49	82	77	4.00	38
12	3.59	77.5	45	3.63	68	78	3.89	41
13	3.69	59.5	46	3.79	53	79	3.70	47
14	4.15	17	47	3.65	65	80	3.76	56
15	4.06	22.5	48	4.64	2	81	3.60	65
16	4.18	14.5	49	3.83	49	82	3.89	41
17	4.50	6	50	2.96	93.5	83	4.19	12
18	3.61	73.5	51	2.54	97	84	3.90	39
19	3.65	65	52	3.88	44	85	3.92	35.5
20	2.96	93.5	53	3.62	70	86	3.61	63.5
21	4.91	1	54	3.46	84.5	87	4.58	3
22	4.09	20.5	55	3.50	81	88	3.31	88.5
23	4.26	10	56	3.52	80	89	4.38	8
24	3.68	62.5	57	3.89	41	90	4.45	7
25	3.96	30	58	4.31	9	91	3.81	50.5
26	3.69	59.5	59	3.56	79	92	3.36	87
27	3.92	35.5	60	4.19	12	93	3.81	50.5
28	3.88	44	61	3.61	73.5	94	3.96	30
29	3.87	46	62	3.22	91	95	4.05	24
30	3.00	92	63	3.46	84.5	96	3.79	53
31	3.61	73.5	64	4.16	16	97	4.13	18.5
32	3.62	70	65	4.18	14.5			
33	3.48	83	66	4.19	12			

Score range, 2.54 to 4.91; score mean, 3.80; score median, 3.83.

Table 8.—Competitor satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	[1] S	46.5	34	S	46.5	67	S	46.5
2	S	46.5	35	S	46.5	68	S	46.5
3	S	46.5	36	S	46.5	69	S	46.5
4	S	46.5	37	S	46.5	70	U	46.5
5	S	46.5	38	U	46.5	71	S	46.5
6	S	46.5	39	S	46.5	72	S	46.5
7	S	46.5	40	S	46.5	73	S	46.5
8	S	46.5	41	S	46.5	74	S	46.5
9	S	46.5	42	S	46.5	75	S	46.5
10	S	46.5	43	S	46.5	76	S	46.5
11	S	46.5	44	S	46.5	77	S	46.5
12	[2] U	46.5	45	S	46.5	78	S	46.5
13	S	46.5	46	U	46.5	79	S	46.5
14	S	46.5	47	S	46.5	80	S	46.5
15	S	46.5	48	S	46.5	81	S	46.5
16	S	46.5	49	S	46.5	82	S	46.5
17	S	46.5	50	S	46.5	83	S	46.5
18	S	46.5	51	S	46.5	84	S	46.5
19	S	46.5	52	S	46.5	85	S	46.5
20	S	46.5	53	S	46.5	86	S	46.5
21	S	46.5	54	S	46.5	87	S	46.5
22	S	46.5	55	S	46.5	88	S	46.5
23	S	46.5	56	S	46.5	89	S	46.5
24	S	46.5	57	S	46.5	90	S	46.5
25	S	46.5	58	S	46.5	91	S	46.5
26	S	46.5	59	S	46.5	92	S	46.5
27	S	46.5	60	S	46.5	93	S	46.5
28	S	46.5	61	S	46.5	94	S	46.5
29	S	46.5	62	S	46.5	95	S	46.5
30	S	46.5	63	S	46.5	96	S	46.5
31	S	46.5	64	S	46.5	97	S	46.5
32	S	46.5	65	S	46.5			
33	S	46.5	66	S	46.5			

[1] Satisfied. [2] Unsatisfied.

Questionnaire attempted to gage this area of community satisfaction by measuring the participation of 97 business managers in such organizations (questions 1, 2, and 3, Community section).

Support of charities and schools is another category of importance to community satisfaction. Hence, the extent to which small business managers support these charities and schools is important in any attempt to determine community satisfaction (questions 4, 6, and 7).

In the United States, it is important to every community that its citizens participate in political activities. Participation is not only a right, but also a responsibility. Consequently, a business manager has an obligation to participate in political affairs (questions 8, 9, 10, 11, and 12).

Satisfaction of Governments

Business would be unable to exist without the social structure provided by various governments; governments, in turn, depend to an extent upon business. Government wants and needs are partly satisfied by business;

and two major categories of wants—communication of information and provision of financial support—are measured in the study.

Any elected official benefits from communication with his constituents. Effective communications with constituents is necessary to effective performance in office. U.S. business managers, an integral segment of a democratic society, have a responsibility to communicate information and viewpoints to their government officials. (For a measure of their performance, see questions 1 and 2, Governments section.)

The various governments, whether State, local, or Federal, must have financial support if they are to continue operating. Part of management's responsibility is to provide this support—through taxes. (Questions 3 and 4, Governments section, measure managers' attitudes toward payment of their tax obligation.)

To insure that tax obligations are being met, the various government tax agencies keep careful watch over their various groups of taxpayers. A business manager who has not been penalized or reprimanded for failing to meet his tax obligation is obviously satisfying his share of the various governments' financial needs (see questions 5, 6, and 7).

Table 9.—Creditor satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	3	66.5	34	2	93.5	67	3	66.5
2	3	66.5	35	4	28.5	68	3	66.5
3	3	66.5	36	5	8	69	3	66.5
4	3	66.5	37	3	66.5	70	5	8
5	4	28.5	38	3	66.5	71	3	66.5
6	4	28.5	39	3	66.5	72	5	8
7	3	66.5	40	3	66.5	73	4	28.5
8	1	96.5	41	4	28.5	74	3	66.5
9	5	8	42	2	93.5	75	4	28.5
10	3	66.5	43	4	28.5	76	4	28.5
11	4	28.5	44	5	8	77	3	66.5
12	3	66.5	45	3	66.5	78	3	66.5
13	4	28.5	46	3	66.5	79	4	28.5
14	4	28.5	47	3	66.5	80	3	66.5
15	5	8	48	3	66.5	81	3	66.5
16	3	66.5	49	5	8	82	3	66.5
17	5	8	50	4	28.5	83	3	66.5
18	4	28.5	51	4	28.5	84	3	66.5
19	3	66.5	52	3	66.5	85	4	28.5
20	5	8	53	5	8	86	3	66.5
21	5	8	54	3	66.5	87	5	8
22	3	66.5	55	3	66.5	88	4	28.5
23	3	66.5	56	2	93.5	89	2	93.5
24	3	66.5	57	3	66.5	90	5	8
25	3	66.5	58	4	28.5	91	4	28.5
26	1	96.5	59	3	66.5	92	3	66.5
27	3	66.5	60	4	28.5	93	3	66.5
28	4	28.5	61	4	28.5	94	3	66.5
29	3	66.5	62	3	66.5	95	3	66.5
30	3	66.5	63	5	8	96	4	28.5
31	4	28.5	64	4	28.5	97	3	66.5
32	4	28.5	65	3	66.5			
33	3	66.5	66	5	8			

Score range, 1 to 5; score mean, 3.49; score median, 3.

Table 10.—Employee satisfaction

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	53.25	60	34	55.50	55	67	43.75	83
2	56.75	49	35	49.50	69	68	67.66	5
3	32.99	96	36	47.78	76	69	57.33	47
4	60.33	30	37	41.50	88	70	46.33	80
5	55.86	53	38	44.90	81	71	48.00	74
6	48.17	73	39	55.75	54	72	39.66	90
7	63.00	20	40	48.80	71	73	57.75	43.5
8	60.60	29	41	63.70	19	74	65.25	12.5
9	65.50	11	42	61.50	26	75	65.75	8.5
10	43.40	84	43	64.50	14.5	76	57.75	43.5
11	56.70	50	44	62.50	23	77	61.00	28
12	57.83	42	45	50.00	67.5	78	52.75	63.5
13	62.80	21	46	60.20	32	79	61.38	27
14	54.00	59	47	48.30	72	80	62.20	24
15	61.80	25	48	36.27	94	81	30.00	97
16	65.75	8.5	49	58.22	39	82	50.60	66
17	65.75	8.5	50	64.00	17.5	83	64.00	17.5
18	59.50	33	51	54.40	57	84	74.50	1
19	65.75	8.5	52	58.00	40.5	85	47.90	75
20	60.25	31	53	55.90	52	86	71.00	2
21	68.00	3.5	54	50.00	67.5	87	65.25	12.5
22	64.20	16	55	53.11	62	88	41.00	89
23	42.75	86.5	56	37.83	91	89	44.50	82
24	68.00	3.5	57	52.75	63.5	90	56.33	51
25	36.00	95	58	57.60	45	91	57.00	48
26	58.50	38	59	37.60	92.5	92	59.00	37
27	59.10	36	60	53.14	61	93	52.50	65
28	67.25	6	61	59.40	34.5	94	57.50	46
29	37.60	92.5	62	59.40	34.5	95	58.00	40.5
30	42.75	86.5	63	43.33	85	96	49.30	70
31	54.20	58	64	64.50	14.5	97	62.75	22
32	47.75	77	65	54.63	56			
33	47.67	78	66	47.40	79			

Score range, 30.00 to 74.50; score mean, 54.88; score median: 56.75.

Satisfaction of Customers

Satisfaction of customer wants and needs by management can be categorized broadly in three areas: the physical and environmental features of the business, the usefulness or attractiveness of the goods offered for sale, and the extent and quality of customer services. Appendix B was designed to evaluate customer attitudes toward these factors.

Satisfaction of Suppliers

The satisfaction of a supplier's wants and needs depends on three related elements: the customer's purchasing habits as related to the supplier's product, the customer's record of meeting his financial obligations to the supplier, and the customer's stability in a continuing relationship with the supplier.

Suppliers are vitally concerned with how much it costs to fill the orders of their customers, because this cost helps to determine their margin of profit. Naturally, they get most satisfaction from filling big-volume orders of their high-markup products. In many instances, the profitability of a customer also depends on the amount of special service—emergency orders, special billing, and so forth—that the supplier is called upon to give. (Questions 1, 2, 3, and 9 of section I of the Questionnaire for Suppliers, as shown in Appendix C, measure suppliers' satisfaction with the small business managers surveyed.)

Another major kind of supplier satisfaction depends on customers' records of meeting their financial obligations to the supplier. Prompt payment of accounts by customers is important to the supplier. The amount of working capital the supplier must maintain largely depends on how promptly his customers pay their bills. In addition, suppliers often offer cash discounts for early payment of accounts. Customers who obtain these discounts add to the satisfaction of the supplier (see section I, question 6, and also section VI).

Table 11.—Rank of weighted totals measuring party-at-interest satisfaction

Business	Rank totals	Rank	Business	Rank totals	Rank	Business	Rank totals	Rank
1	925.5	50	34	956.5	57	67	1098.5	74
2	858.5	38	35	971.5	60	68	659	17
3	1345	89	36	1031	68	69	850	37
4	924.5	48	37	1133	79	70	1290.5	87
5	811.5	29	38	1080.5	71	71	1364	93
6	820	31	39	930.5	51	72	880.5	40
7	593	11	40	788	27	73	900	44
8	1243	85	41	343.5	2	74	610	12
9	385	3	42	923.5	47	75	1129	78
10	1118	76	43	826	34	76	1165	82
11	470.5	5	44	617.5	13	77	679.5	18
12	1341	88	45	1112	75	78	1146.5	81
13	865.5	39	46	949.5	54	79	883	41
14	823.5	33	47	972.5	61	80	1094	73
15	566.5	8	48	1059.5	70	81	1466.5	95
16	888	42	49	569	9	82	759	22
17	277	1	50	942	53	83	998.5	66
18	1216.5	84	51	909	45	84	769.5	25
19	699	19	52	814.5	30	85	1363.5	92
20	829.5	35	53	821	32	86	799.5	28
21	652	16	54	1432	94	87	559	7
22	521	6	55	1353	90	88	1135	80
23	1011	67	56	1528	97	89	1247	86
24	953	55	57	912	46	90	387.5	4
25	997	65	58	974	62	91	963	59
26	932	52	59	1475	96	92	1360	91
27	700	20	60	761	23	93	925	49
28	635.5	14	61	765	24	94	961.5	58
29	955	56	62	1172.5	83	95	833	36
30	1093	72	63	996	64	96	709	21
31	978.5	63	64	591	10	97	774	26
32	1053	69	65	894	43			
33	1119.5	77	66	646.5	15			

Rank totals range, 277 to 1,528; rank totals mean, 923.84; rank totals median, 925.

Continuity of relationship is the third kind of supplier satisfaction examined by the survey. Consistent and stable customers benefit almost any business; they are a vital factor in any forecast of future business activities. A continuing stable relationship with customers would undoubtedly lower a supplier's overall costs and assure him of a more stable profit margin (sections III, IV, and V).

Table 12.—Summary of party-at-interest satisfaction and success rank

Business	Owner	Community	Government	Customer	Supplier	Competitor	Creditor	Employee	Success
1	40	85	39	47.5	4	46.5	66.5	60	50
2	45	72.5	55	33	5	46.5	66.5	49	38
3	90.5	58.5	26.5	94	30	46.5	66.5	96	89
4	63	58.5	55	42	35.5	46.5	66.5	30	48
5	70	4	26.5	42	55	46.5	28.5	53	29
6	49.5	27	39	24.5	59.5	46.5	28.5	73	31
7	4.5	30.5	8.5	57.5	26	46.5	66.5	20	11
8	70	76.5	96	45.5	67	46.5	96.5	29	85
9	4.5	5	8.5	51	22.5	46.5	8	11	3
10	49.5	40.5	86.5	28	96	46.5	66.5	84	76
11	23	18	26.5	5.5	18.5	46.5	28.5	50	5
12	85.5	46	72.5	89.5	77.5	95.5	66.5	42	88
13	40	40.5	26.5	81.5	59.5	46.5	28.5	21	39
14	35	49.5	90.5	31	17	46.5	28.5	59	33
15	2	76.5	90.5	11	22.5	46.5	8	25	8
16	75	7	82.5	67.5	14.5	46.5	66.5	8.5	42
17	12	37	15.5	9	6	46.5	8	8.5	1
18	89	66	55	89.5	73.5	46.5	28.5	33	84
19	35	93	90.5	20	65	46.5	66.5	8.5	19
20	45	76.5	55	52.5	93.5	46.5	8	31	35
21	63	7	79	35	1	46.5	8	3.5	16
22	17.5	9.5	55	5.5	20.5	46.5	66.5	16	6
23	96	85	55	37	10	46.5	66.5	86.5	67
24	63	61.5	72.5	70	62.5	46.5	66.5	3.5	55
25	34	52	79	54	30	46.5	66.5	95	65
26	7	21	97	57.5	59.5	46.5	96.5	38	52
27	29.5	1	26.5	22.5	35.5	46.5	66.5	36	20
28	63	55	90.5	2	44	46.5	28.5	6	14
29	12	90.5	55	65.5	46	46.5	66.5	92.5	55
30	63	55	8.5	59	92	46.5	66.5	86.5	72
31	75	14	26.5	49.5	73.5	46.5	28.5	58	63
32	75	52	26.5	83.5	70	46.5	28.5	77	69
33	92	63.5	55	33	83	46.5	66.5	78	77
34	35	18	26.5	56	70	46.5	93.5	55	57
35	45	72.5	79	26	59.5	46.5	28.5	69	60
36	17.5	35.5	86.5	87	48	46.5	8	76	68
37	83	33	55	27	88.5	46.5	66.5	88	79
38	35	52	90.5	42	35.5	95.5	66.5	81	71
39	70	96	26.5	12	53	46.5	66.5	54	51
40	12	58.5	26.5	20	65	46.5	66.5	71	27
41	1	2	55	3	27	46.5	28.5	19	2
42	15	87	55	37	77.5	46.5	93.5	26	47
43	55	11	39	72	62.5	46.5	28.5	14.5	37
44	23	27	84.5	7.5	82	46.5	8	23	13
45	63	81	26.5	52.5	68	46.5	66.5	67.5	75
46	23	24	55	78	53	95.5	66.5	32	54
47	63	40.5	72.5	13	65	46.5	66.5	72	61
48	97	69	8.5	42	2	46.5	66.5	94	70
49	8.5	46	55	16	49	46.5	8	39	9
50	55	27	55	67.5	93.5	46.5	28.5	17.5	53
51	6	72.5	55	42	97	46.5	28.5	57	45

Table continued on next page.

Table 12.—Summary of party-at-interest satisfaction and success rank—Con.

Business	Owner	Community	Government	Customer	Supplier	Competitor	Creditor	Employee	Success
52	17.5	46	26.5	62	44	46.5	66.5	40.5	30
53	49.5	7	55	47.5	70	46.5	8	52	32
54	55	97	79	96	84.5	46.5	66.5	67.5	94
55	90.5	81	55	75.5	81	46.5	66.5	62	90
56	79.5	66	82.5	81.5	80	46.5	93.5	91	97
57	35	33	26.5	64	41	46.5	66.5	63.5	46
58	79.5	9.5	79	75.5	9	46.5	28.5	45	62
59	75	69	84.5	87	79	46.5	66.5	92.5	96
60	23	22.5	8.5	80	12	46.5	28.5	61	23
61	40	40.5	39	33	73.5	46.5	28.5	34.5	24
62	85.5	40.5	55	70	91	46.5	66.5	34.5	83
63	79.5	94.5	39	1	84.5	46.5	8	85	64
64	45	49.5	55	17	16	46.5	28.5	14.5	10
65	29.5	46	8.5	85	14.5	46.5	66.5	56	43
66	12	18	26.5	49.5	12	46.5	8	79	15
67	40	12.5	55	91	35.5	46.5	66.5	83	74
68	23	81	94	4	25	46.5	66.5	5	17
69	29.5	76.5	8.5	55	35.5	46.5	66.5	47	37
70	63	90.5	72.5	63	86	95.5	8	80	87
71	93.5	35.5	26.5	97	95	45.5	66.5	74	93
72	55	88	26.5	22.5	32	46.5	8	90	40
73	29.5	94.5	72.5	39	44	46.5	28.5	43.5	44
74	3	85	55	7.5	47	46.5	66.5	12.5	12
75	95	55	72.5	70	90	46.5	28.5	8.5	78
76	55	18	8.5	93	20.5	46.5	28.5	43.5	82
77	63	58.5	1	18	28	46.5	66.5	28	18
78	70	63.5	90.5	65.5	41	46.5	66.5	63.5	81
79	93.5	30.5	72.5	24.5	47	46.5	28.5	27	41
80	85.5	72.5	26.5	74	56	46.5	66.5	24	73
81	82	90.5	72.5	73	76	46.5	66.5	97	95
82	17.5	66	8.5	29.5	41	46.5	66.5	66	22
83	79.5	61.5	26.5	87	12	46.5	66.5	17.5	66
84	75	22.5	8.5	60.5	39	46.5	66.5	1	25
85	29.5	3	8.5	14	35.5	36.5	28.5	75	92
86	45	81	55	20	73.5	46.5	66 5	2	28
87	55	69	55	10	3	46.5	8	12.5	7
88	70	18	15.5	78	88.5	46.5	28.5	89	80
89	49.5	90.5	55	78	8	46.5	93.5	82	86
90	23	12.5	2	15	7	46.5	8	51	4
91	85.5	33	55	45.5	50.5	46.5	28.5	48	59
92	88	81	55	95	87	46.5	66.5	37	91
93	40	46	55	37	50.5	46.5	66.5	65	49
94	55	27	8.5	92	30	46.5	66.5	46	58
95	12	40.5	26.5	82.5	24	46.5	66.5	40.5	36
96	29.5	15	26.5	29.5	53	46.5	28.5	70	21
97	8.5	27	95	60.5	18.5	46.5	66.5	22	26

Three other factors did not seem to fit in any specific category, but appeared to be sufficiently important to warrant their inclusion in the attempt to measure supplier satisfaction. Questions 6, 7, and 8 of section I of the Questionnaire for Suppliers measure the degree of fairness the business managers maintain in their relationship with the supplier; the managers' receptiveness to their suppliers' suggestions; and the managers' expectations of and pressure for gifts from the suppliers.

In addition, two summary evaluation questions were used to ask the supplier for an overall evaluation of the firm being surveyed as a cus-

tomer, and for any additional comments he might like to make about the customer firm (question 5, section I, and section VII).

Satisfaction of Competitors

Because of the difficulty in measuring competitors' satisfaction with a business, it was decided that informal interviews would be used. Apart from two basic questions—"What do you think of businessman X?" and "Do you think businessman X is fair and honest in his dealings?"—each interview was allowed to take the direction deemed advisable by the interviewer. It did not seem necessary or possible to assign meaningful and useful numerical weightings to the results obtained by the interviews; but a "satisfied" or "unsatisfied" ranking was assigned to each of the small businesses. Results and their rank order are presented in Table 8.

Satisfaction of Creditors

Banks, retail merchant associations, and organizations such as Dun & Bradstreet continually attempt to measure creditor satisfaction of various businesses. Hence, it seemed sufficient to use these as sources for measuring the business being surveyed. No one source measured all of the businesses, however, and not all banks and retail merchant associations were willing to provide information for the study. However, it was possible to obtain a credit rating from one or another of the three sources. Numerical results and their rank order are shown in Table 9.

Satisfaction of Employees

Measuring the satisfaction of owners, communities, governments, customers, suppliers, creditors, and competitors was accomplished by the use of informal interviews and a special survey questionnaire. To measure employee satisfaction, *The Core Survey* was used.[1] It measures 14 basic categories of employee satisfaction: job demands, working conditions, pay, employee benefits, friendliness and cooperation of fellow employees, supervisor-employee interpersonal relations, confidence in management, technical competence of supervision, effectiveness of administration, adequacy of communication, security of job and work relations, status and recognition, identification with the company, and op-

[1] For a description and explanation of the development of *The Core Survey*, see Science Research Associates, *General Manual for the Science Research Associates Employee Inventory*.

portunity for growth and advancement. These 14 categories can be analyzed separately or used as a total measurement of employee satisfaction. This study chose the latter method.

The Core Survey was administered to all employees of businesses having at least 4 employees; the maximum number surveyed in any one firm was set at 10. Altogether, 513 surveys—4.29 per business surveyed—were completed. The scores and their rank order are presented in Table 10.

Assigning Degree of Success

Assigning degree of success was possible after each ranking of party-at-interest satisfaction. But because the parties-at-interest differ in their importance to business management, they were weighted as follows: customers, 4; employees, 3; suppliers, 2; communities, 2; governments, 2; creditors, 2; and competitors, 1. Weighted totals were converted into rank orders (shown in Table 11), which indicate the degree of success. Table 12 summarizes parties-at-interest satisfaction and gives a success rank for each of the businesses surveyed. The 97 businesses are not classified as successful or unsuccessful; assigning rank order of degree of success is a more refined breakdown. If the five characteristics tested in the survey vary significantly with degree of success, then successful managers must surely possess greater proportions of the characteristics tested.

5

Identification of Characteristics Contributing to Success

Previous Difficulties—No General Agreement in Literature

Previous attempts to identify the personal traits of business managers that contribute to success have experienced considerable difficulty. One major problem is that of definition, which depends upon the meaning assigned by individuals; and individuals have widely differing concepts of the same terms. Second, overlapping of terms makes it difficult to draw sharp distinctions between various traits. Third, a person is not just a sum total of his personality traits, but is the product of the interaction of these traits. Finally, of considerable importance is the previous inadequacy of criteria of success. In an attempt to overcome these past problems, this study employs *characteristics*—summations of the interaction of various personality traits.

The study was formulated with the intention of using five characteristics—drive, thinking ability, human relations ability, communications ability, and technical knowledge—provided the literature did not yield sufficient evidence of the substantial importance of other characteristics. A survey of 25 sources indicated no significant consensus on the identity of traits vital to business manager success, but it did bear out the validity of employing the selected five characteristics.

Previous Difficulties

Any effort to isolate personality traits faces the primary problem of definition. For example, honesty has different meanings for different people. Some people receiving a dime too much in change at the grocery store would return it, but the same people receiving a dime too much from a vending machine might keep it and suffer no feelings of dishonesty. In many instances, the meaning of honesty depends on individual definition. Until a standardized concept is applied to the definition of personality traits, the problem will remain. In the English language, more than 18,000 words refer to personal qualities or conduct,

and thus the likelihood of standardizing definitions would not appear very great.[1]

Not only is it difficult to define personality traits, but many times it is difficult to draw sharp distinctions between various ones. For example, in the sources surveyed, initiative appears eight times and energy four times (table 13). Obviously, the two traits are interrelated, but it is difficult to determine where one begins and the other leaves off. In addition, some personality traits are the result of interaction of several other traits. Ambition is probably not merely a personality trait, but is the combination and interaction of several.

It seems reasonable to assume that a person is the sum total, not of his traits, but of all interactions of them. Because people have several hundred such traits, it is obvious that measuring the importance of one trait is difficult.

The experience of an insurance company will illustrate the point. The company evolved a special test that was supposed to be a statistically

Table 13.—Personality traits contributing to success, frequency mentioned by 25 authoritative sources

Trait given	Times mentioned	Trait given	Times mentioned
Technical competence	9	Exacting, executive attitude, executive caliber, experience, expression, family, flexibility;	1
Initiative	8		
Personality	7		
Good judgment, intelligence, leadership characteristics, understanding	6	Foresight, generous spirit, health, helpful, high morals, hopeful, human relations ability;	
Appearance, courage, responsibility, restraint, self-confidence, training ability	5	Humility, imagination, incentive, individuality, industry, influential friends, ingenuity;	1
Energy, friendliness, ability to organize	4	Initiates, inspiration, integrity, intensity, interest in people, loyalty;	
Attitude, communications ability, creativeness, education, fairness, honesty, sincerity, tactfulness, emotional maturity	3	Management knowledge, manners, moral character, morale builder, motivation, objectivity, optimism;	1
Administrative skill, ambition, cheerfulness, character, ability to delegate authority	2	Originality, perception, perseverance, persistence, personal drive, perspective, persuades;	
Ability to criticize, readiness to accept criticism and suggestions, aggressiveness, balance, breadth, calm, interest in civic affairs;	1	Planning ability, realistic, reasonable, receptiveness, reliable, religious training, resourcefulness;	1
Compatibility, confidence in employees, conservative politically, considerate, convictions, cooperativeness, ability to coordinate activities;		Scientific mind, self sacrifice, sense of justice, skill in interpersonal relations, sociable, sympathetic;	
Courtesy, curious, decision ability, dependability, efficient, emotional stability, enthusiasm;		Tenacity, thoroughness, virtue, vision, willingness to learn, worried.	1

Source: See p. 73.

[1] See Allport and Odbert, "Trait-Names: A Psychological Study," p. 317.

valid predictor of success of insurance agents. However, the company's most successful agent ranked extremely low on the test. Depth interviews revealed the top agent to have an almost fanatical desire to be best in anything he attempted. Evidently, this trait was so intense it completely overshadowed many others. (It seems safe to assume, however, that other traits, such as initiative, vigor, and so forth, were necessary to complement this desire to excel.)

No set of personality traits essential to managerial success has been established to the satisfaction of psychologists and personnel authorities.[2] The above difficulties are a very good reason; another, and perhaps more important, one is the previous inadequacy of criteria of success. Traditionally, profit has been the principal criteria, but in reality it is only one measure of satisfaction of owners, who in turn are only one party-at-interest. The present study therefore attempts to employ *characteristics,* which are the sum total of interaction of various traits, to discover the personality factors of success.

No General Agreement in Literature

One intention of this study was to investigate the effect that five characteristics—drive, thinking, ability, human relations ability, communications ability, and technical knowledge—have on the success of business managers. To discover what various authorities consider to be the personality factors of success, 25 sources were surveyed. Although there was no consensus, there was a recurrent similarity in the terms used.

Thus technical competence, training ability, ability to organize, administrative skill, and ability to delegate authority are all closely related to technical knowledge. Initiative, responsibility, energy, and ambition are related to drive. Personality, leadership characteristics, understanding, appearance, courage, restraint, self-confidence, friendly attitude, fairness, honesty, sincerity, tactfulness, emotional maturity, cheerfulness, and character are related to human relations ability. Good judgment, creativeness, and education are closly related to thinking ability. And communications ability appears in the sense used in this study.

Because the 25 sources substantiated the present use of drive, thinking ability, human relations ability, communications ability, and technical knowledge, it was decided that no additional characteristics need be added.

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[2] Gordon and Howell, *Higher Education for Business,* p. 77.

6

Measurement of Characteristics Contributing to Success

Definition of Characteristics: Testing Devices Used; Characteristics Arbitrarily Defined; How Characteristics Were Measured—Measurement of Drive—Measurement of Thinking Ability—Measurement of Human Relations Ability—Measurement of Communications Ability—Measurement of Technical Knowledge

Definition of the five personal characteristics that contribute to a businessman's success was a major task of the study. Standardized testing devices were chosen as the best measure of certain traits; and it was found that all parts of these tests could be employed in one or another part of the study.[1] The personality aspects comprising the standardized testing devices were defined "as measured by the standardized testing device." Some traits were measured by customer and supplier questionnaires; they are defined "as popularly interpreted by the people."

The characteristics studied more than likely combine traits other than those chosen in this study; but it is assumed that they are sufficient to provide a reasonable representation. Measuring each trait separately and then combining the totals for each characteristic provides interaction of the factors.

Definition of Characteristics

As defined in the study, the characteristics are composed as follows: *drive* is comprised of responsibility, vigor, initiative, persistence, and health; *thinking ability* is comprised of original thinking, creative thinking, critical thinking, and analytical thinking; *human relations ability* is comprised of ascendancy, emotional stability, sociability, cautiousness, personal relations, consideration, cheerfulness, cooperation, and tactfulness; *communications ability* is comprised of verbal comprehension, oral communications, and written communications; and *technical knowledge* is all encompassing.

[1] These tests were chosen because they seemed to be the best measure of various areas of the five characteristics. For example, the sections of the *Gordon Personal Profile* dealing with ascendancy, emotional stability, and sociability were used to measure human relations ability. It was decided that another section, on responsibility (not a factor of human relations ability), could be used in the measurement of "drive."

Testing Devices Used

Four standardized psychological testing devices were employed to measure various traits of the five characteristics. The *Gordon Personal Profile* measured responsibility, ascendancy, emotional stability, and sociability; the *Gordon Personal Inventory* measured vigor, original thinking, cautiousness, and personal relations; the *Watson-Glaser Critical Thinking Appraisal* measured critical thinking; and the *Verbal Comprehension Test* measured reading speed, understanding of written and spoken instructions, and the ability to use words.

The Customer Survey and Questionnaire for Suppliers (Appendixes B and C) contained sections that measured initiative, persistence, health, creative thinking, analytical thinking, consideration, cheerfulness, cooperation, tactfulness, oral communications ability, written communications ability, and technical knowledge.

Characteristics Arbitrarily Defined

Defining the five characteristics employed in the study to the complete satisfaction of all management and psychology people is probably impossible. As a practical consideration, therefore, each term was defined in a manner that would allow its use in the study. The definitions (see Chapter 1) are somewhat arbitrary because of the use of standardized testing devices. Naturally, the traits comprising the various testing devices must be defined in the terms of those devices. Thus the definition of "ascendancy," a contributor to human relations ability, must be the one given by the *Gordon Personal Profile*.

In the customer and supplier questionnaires, the individual traits evaluated were grouped under the five characteristics being measured. For example, consideration, cheerfulness, cooperation, and tactfulness were placed under the heading "human relations ability." In this way, traits were rated in light of the total characteristic.

Because a customer or supplier evaluated a business manager on the basis of his own personal interpretation of traits, the definition of these traits is "as popularly interpreted by the general populace."

How Characteristics Were Measured

Characteristics were measured by measuring each trait in the characteristic. The total of all traits measures, to some degree, the total interaction of the traits. For example, suppose in measuring a manager's drive he was found to have high levels of responsibility and vigor but low levels of persistence, initiative, and health. Combining the measurement of all traits would produce a figure lower than the single scores for responsibility or vigor, but higher than for initiative, persistence, or health. Low levels of initiative, persistence, and health would con-

siderably negate high levels of responsibility and vigor. Therefore, the combination measurement would yield a good indication of the interaction of several traits.

Measurement of Drive

The traits of responsibility, vigor, initiative, persistence, and health are the components of *drive*. Consequently, the measurement of drive is the total of the measurements of each of these traits.

The *Gordon Personal Profile* was used to gage responsibility; it gives reliable measures of ascendancy, responsibility, emotional stability, and sociability. An early experimental edition produced a validity coefficient of .64 for 55 college men and .70 for 63 college women. Reliability coefficients for *responsibility* ranged from .80 for 200 college freshmen to .85 for 140 college students. The numerical results and their rank order are presented in Table 14.

Table 14.—Responsibility

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	5	84	34	16	7.5	67	8	60.5
2	1	92.5	35	3	88	68	9	52
3	12	22.5	36	3	88	69	7	69.5
4	11	34	37	10	44.5	70	9	52
5	16	7.5	38	2	90	71	11	34
6	14	13.5	39	−1	95	72	12	22.5
7	9	52	40	8	60.5	73	9	52
8	13	16	41	10	44.5	74	12	22.5
9	6	78	42	11	34	75	13	16
10	12	22.5	43	11	34	76	8	60.5
11	10	44.5	44	7	69.5	77	17	2.5
12	6	78	45	12	22.5	78	6	78
13	16	7.5	46	7	69.5	79	1	92.5
14	11	34	47	11	34.5	80	7	69.5
15	14	13.5	48	9	52	81	3	88
16	8	60.5	49	5	84	82	8	60.5
17	7	69.5	50	6	78	83	17	2.5
18	6	78	51	6	78	84	−4	96
19	1	92.5	52	10	44.5	85	9	52
20	13	16	53	−9	97	86	11	34
21	11	34	54	8	60.5	87	15	11.5
22	15	11.5	55	7	69.5	88	8	60.5
23	12	22.5	56	6	78	89	9	52
24	6	78	57	11	34	90	11	34
25	16	7.5	58	7	69.5	91	17	2.5
26	11	34	59	5	84	92	11	34
27	10	44.5	60	4	86	93	16	7.5
28	10	44.5	61	10	44.5	94	12	22.5
29	8	60.5	62	11	34	95	10	44.5
30	6	78	63	16	7.5	96	17	2.5
31	1	92.5	64	12	22.5	97	8	60.5
32	8	60.5	65	12	22.5			
33	12	22.5	66	7	69.5			

Score range, −9 to 17; score mean, 9.78; score median, 10.

Table 15.—Vigor

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	3	73	34	3	73	67	14	13.5
2	7	49.5	35	6	56.5	68	12	22.5
3	−3	92.5	36	11	28.5	69	4	65.5
4	12	22.5	37	3	73	70	8	43
5	16	3	38	9	37.5	71	3	73
6	−7	96	39	5	61.5	72	8	43
7	7	49.5	40	16	3	73	9	37.5
8	6	56.5	41	11	38.5	74	−1	89.5
9	7	49.5	42	11	28.5	75	1	85.5
10	6	56.5	43	7	49.5	76	14	13.5
11	9	37.5	44	13	18	77	7	49.5
12	2	81.5	45	8	43	78	3	73
13	15	8	46	2	81.5	79	−6	94
14	9	37.5	47	6	56.5	80	3	73
15	14	13.5	48	8	43	81	12	22.5
16	−2	91	49	1	85.5	82	14	13.5
17	15	8	50	3	73	83	8	43
18	2	81.5	51	11	28.5	84	−3	92.5
19	4	65.5	52	−7	96	85	10	33
20	5	61.5	53	2	81.5	86	6	45.5
21	0	87.5	53	9	27.5	87	10	33
22	3	73	55	7	49.5	88	5	61.5
23	4	65.5	56	15	8	89	7	49.5
24	15	8	57	7	49.5	90	16	3
25	3	73	58	6	56.5	91	14	13.5
26	11	28.5	59	2	81.5	92	12	22.5
27	13	18	60	3	73	93	13	18
28	10	33	61	3	73	94	12	22.5
29	0	87.5	62	4	65.5	95	11	28.5
30	−1	89.5	63	16	3	96	12	22.5
31	−7	96	64	15	8	97	5	61.5
32	2	81.5	65	14	13.5			
33	16	3	66	12	22.5			

Score range, −7 to 16; score mean, 7.02; score median, 7.

Vigor was measured by the *Gordon Personal Inventory*, which gages cautiousness, original thinking, personal relations, and vigor. Reliability coefficients for vigor ranged from .77 for 103 high school seniors to .84 for 124 college students. The results obtained are shown in Table 15.

Initiative, persistence, and health were measured by customer and supplier judgment ratings of the business managers' characteristics (see Customer Survey, Appendix B; and Questionnaire for Suppliers, Appendix C). Customers and suppliers were asked to rate the business managers very high, above average, average, below average, very low, none, or don't know on the following traits: initiative; persistence; health; creative thinking; analytical thinking; consideration of other people; cheerful nature; cooperation with other people; tactfulness; oral communication; written communication; and the manager's technical knowledge of his type of business. Points were assigned to the completed questionnaires as follows: very high, 5; above average, 4; average, 3; below average, 2; very low, 1; none, 0; and don't know, letter N.

The total points obtained for each trait were divided by the number of numerical responses (excluding N) to obtain an average rating.

The resulting numerical data and rank orders are presented in the following tables: initiative, Table 16; persistence, Table 17; and health, Table 18. Ranks of all traits that contribute to drive were totaled and converted into a single rank order, as shown in Table 19; and rank order summary of drive and its component traits is given in Table 20.

Measurement of Thinking Ability

Thinking ability, as defined in Chapter 1, consists of original (creative) thinking and critical (analytical) thinking. The *Gordon Personal Inventory* uses "original thinking"; and the *Watson-Glaser Critical Thinking Appraisal* uses "critical thinking". "Creative thinking" and "analytical thinking" were used in the customer and supplier surveys because of clearer understanding by these groups.

Table 16.—Initiative

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.22	17	34	4.11	21	67	3.29	78
2	4.00	27	35	3.90	34	68	4.27	13
3	3.07	90	36	3.33	74.5	69	4.00	27
4	4.05	23.5	37	4.57	4	70	3.58	53
5	4.24	15.5	38	4.00	27	71	3.00	92.5
6	3.92	33	39	3.63	50.5	72	3.87	36
7	3.55	57	40	4.33	10	73	3.84	37
8	3.55	57	41	4.13	20	74	4.41	6
9	3.68	47	42	3.25	82	75	3.50	59
10	3.57	54.5	43	3.35	72.5	76	2.79	95
11	4.38	67	44	4.66	2	77	3.96	30
12	3.37	68.5	45	4.05	23.5	78	3.33	74.5
13	3.35	72.5	46	3.10	89	79	3.47	60.5
14	4.07	22	47	3.25	82	80	3.37	68.5
15	4.56	5	48	3.30	76	81	3.67	48
16	3.89	35	49	3.73	42.5	82	4.17	19
17	4.40	7	50	3.44	62	83	3.64	49
18	3.06	91	51	3.21	84	84	3.76	41
19	3.78	40	52	3.55	57	85	4.00	27
20	3.63	50.5	53	4.18	8	86	3.82	28
21	3.36	70.5	54	2.96	94	87	4.71	1
22	4.29	11.5	55	3.57	54.5	88	2.62	97
23	3.61	52	56	3.29	78	89	3.38	67
24	3.41	64	57	3.16	85	90	4.24	15.5
25	3.81	39	58	3.94	31	91	3.25	82
26	3.00	92.5	59	3.36	70.5	92	3.27	80
27	4.29	11.5	60	3.43	63	93	3.71	44.5
28	4.60	3	61	3.40	65.5	94	2.71	44.5
29	3.13	87.5	62	3.40	65.5	95	2.71	44.5
30	3.13	87.5	63	3.71	44.5	96	4.00	27
31	3.47	60.5	64	4.35	9	97	3.73	42.5
32	3.29	78	65	3.69	46			
33	3.23	32	66	4.25	15			

Score range, 2.62 to 4.71; score mean, 3.68; score median, 3.64.

Table 17.—Persistence

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.06	17	34	3.89	24	67	3.14	78
2	4.00	21.5	35	3.48	47.5	68	4.23	7.5
3	3.08	84.5	36	3.29	60	69	3.29	60
4	4.00	21.5	37	4.23	7.5	70	3.75	30.5
5	4.05	18.5	38	3.71	32	71	3.00	91
6	3.76	28	39	3.61	39.5	72	3.76	28
7	3.60	41.5	40	4.00	21.5	73	3.85	25
8	3.55	44	41	4.08	15	74	4.51	3
9	3.68	35	42	3.20	73.5	75	3.60	41.5
10	3.35	55	43	3.29	60	76	3.08	84.5
11	4.52	2	44	4.58	1	77	3.75	30.5
12	3.11	80.5	45	3.76	28	78	3.00	91
13	3.04	86.5	46	3.10	82	79	3.22	69
14	4.13	10	47	3.69	33.5	80	3.28	63
15	4 33	4.5	48	3.04	86.5	81	3.44	51.5
16	3.00	91	49	3.22	69	82	4.00	21.5
17	3.78	26	50	3.50	56	83	3.29	60
18	2.25	97	51	3.20	73.5	84	3.53	45
19	3.31	47	52	3.47	49.5	85	4.25	6
20	3.41	53	53	4.09	14	86	3.20	73.5
21	3.29	60	54	2.95	94	87	4.10	13
22	4.05	18.5	55	3.48	47.5	88	2.40	96
23	3.36	54	56	3.11	80.5	89	3.23	67
24	3.18	77	57	3.21	71	90	3.61	39.5
25	3.44	51.5	58	3.69	33.5	91	3.22	69
26	3.00	91	59	3.02	88	92	3.20	73.5
27	3.62	38	60	3.09	83	93	3.57	43
28	4.14	9	61	3.26	64	94	2.86	95
29	3.19	76	62	3.47	49.5	95	3.00	91
30	3.25	65.5	63	3.63	36.5	96	4.33	4.5
31	3.32	56	64	4.12	11	97	3.63	36.5
32	3.25	65.5	65	3.13	79			
33	4.07	16	66	4.11	12			

Score range, 2.25 to 4.58; score mean, 3.53; score median, 3.47.

Table 18.—Health

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.07	6.5	17	3.08	84	33	3.75	27.5
2	3.80	24.5	18	3.00	90	34	3.40	49
3	3.00	90	19	3.38	53	35	3.23	73
4	4.00	11	20	3.29	65	36	3.33	61
5	3.29	65	21	3.50	40.5	37	4.07	6.5
6	3.44	46	22	3.85	19	38	3.67	29
7	3.36	56	23	3.39	50.5	39	3.60	33.5
8	3.36	56	24	3.33	61	40	4.42	1
9	3.82	22.5	25	2.92	95	41	3.96	14
10	3.33	61	26	3.25	69.5	42	3.45	44.5
11	4.38	2	27	3.85	19	43	3.25	69.5
12	3.15	79.5	28	4.00	11	44	4.29	3
13	3.09	83	29	3.19	77	45	3.24	72
14	3.47	43	30	3.42	47	46	3.20	75.5
15	3.77	17	31	3.41	48	47	3.59	35
16	3.64	31	32	3.45	44.5	48	2.76	96

Table continued on next page.

Table 18.—Health—Continued

Business	Total	Rank	Business	Total	Rank	Business	Total	Rank
49	3.66	30	66	3.61	32	83	3.00	90
50	3.50	40.5	67	3.29	65	84	3.33	61
51	3.38	53	68	4.15	5	85	4.00	11
52	3.53	37.5	69	3.85	19	86	3.20	75.5
53	3.16	78	70	3.60	33.5	87	4.05	8
54	2.95	94	71	3.00	90	88	3.25	69.5
55	4.00	11	72	3.33	61	89	3.38	53
56	3.01	86	73	3.36	56	90	3.50	40.5
57	3.39	50.5	74	3.82	22.5	91	3.94	15
58	3.15	79.5	75	3.00	90	92	3.13	81.5
59	3.04	85	76	3.00	90	93	3.83	21
60	3.35	58	77	3.79	26	94	3.50	40.5
61	3.00	90	78	2.00	97	95	3.25	69.5
62	3.80	24.5	79	3.53	37.5	96	3.75	27.5
63	3.21	74	80	3.26	67	97	3.56	36
64	4.00	11	81	3.91	16			
65	3.13	81.5	82	4.25	4			

Score range, 2.00 to 4.42; score mean, 3.48; score median, 3.40.

Table 19.—Drive totals and rank order

Business	Total	Rank	Business	Total	Rank	Business	Total	Rank
1	197.5	32	34	174.5	270	67	295.0	66
2	215.0	34	35	299.0	67	68	100.0	7
3	379.5	88	36	312.0	74	69	241.0	44
4	112.5	11	37	135.5	19	70	212.0	33
5	109.5	10	38	315.5	35	71	380.5	90
6	216.5	36	39	280.0	56	72	190.5	30
7	256.0	51	40	96.0	6	73	170.5	26
8	228.5	39	41	122.0	13	74	143.5	21
9	232.0	40.5	42	285.5	58.5	75	292.0	64
10	249.5	50	43	285.5	58.5	76	343.5	82
11	153.0	24	44	93.5	5	77	138.5	20
12	388.0	92	45	189.0	29	78	413.5	96
13	257.5	52	46	397.5	94	79	353.5	84.5
14	146.5	22	47	241.5	45	80	311.0	72.5
15	53.3	1	48	353.5	84.5	81	226.0	38
16	308.5	71	49	311.0	72.5	82	118.5	12
17	194.5	31	50	299.5	68	83	244.5	47.5
18	437.5	97	51	317.0	76	84	335.5	80
19	308.0	70	52	284.5	57	85	129.0	14
20	246.0	49	53	288.5	61.5	86	277.5	55
21	292.5	65	54	380.0	89	87	66.0	3
22	133.5	17	55	232.0	40.5	88	384.5	9
23	244.5	47.5	56	330.5	78	89	288.5	61.5
24	288.0	60	57	290.0	63	90	132.5	16
25	266.0	53	58	270.0	54	91	182.0	28
26	315.5	75	59	409.0	95	92	306.5	69
27	131.0	15	60	363.0	86	93	134.0	18
28	100.5	8	61	337.0	81	94	225.0	37
29	388.5	93	62	239.0	43	95	319.5	77
30	367.5	87	63	165.5	25	96	84.0	4
31	353.0	83	64	161.5	2	97	237.0	42
32	330.0	78	65	242.5	46			
33	101.0	9	66	150.0	23			

Score range, 53.3 to 437.5; score mean, 245.64; score median, 246.

The *Gordon Personal Inventory* was used to measure original thinking ability of the 97 small business managers. Reliability coefficients range from .79 for 124 college students to .83 for 168 college students. The numerical and rank order results are presented in Table 21.

The *Watson-Glaser Critical Thinking Appraisal* was employed to measure critical thinking ability. It tests for inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments.

Table 20.—Summary of drive ranks

Business	Responsibility	Vigor	Initiative	Persistence	Health	Drive
1	84	73	17	17	6.5	32
2	92.5	49.5	27	21.5	24.5	34
3	22.5	92.5	90	84.5	90	88
4	34	22.5	23.5	21.5	11	11
5	7.5	3	15.5	18.5	65	10
6	13.5	96	33	28	46	36
7	52	49.5	57	41.5	56	51
8	16	56.5	57	44	56	39
9	78	49.5	47	35	22.5	40.5
10	22.5	56.5	54.5	55	61	50
11	44.5	37.5	67	2	2	24
12	78	81.5	68.5	80.5	79.5	92
13	7.5	8	72.5	86.5	83	52
14	34	37.5	22	10	43	22
15	13.5	13.5	5	4.5	17	1
16	60.5	91	35	91	31	71
17	69.5	8	7	26	84	31
18	78	81.5	91	97	90	97
19	92.5	65.5	40	57	53	70
20	16	61.5	50.5	53	65	49
21	34	87.5	70.5	60	40.5	65
22	11.5	73	11.5	18.5	19	17
23	22.5	65.5	52	54	50.5	47.5
24	78	8	64	77	61	60
25	7.5	73	39	51.5	95	53
26	34	28.5	92.5	91	69.5	75
27	44.5	18	11.5	38	19	15
28	44.5	33	3	9	11	8
29	60.5	87.5	87.5	76	77	93
30	78	89.5	87.5	65.5	47	87
31	92.5	96	60.5	56	48	83
32	60.5	81.5	78	65.5	44.5	78
33	22.5	3	32	16	27.5	9
34	7.5	73	21	24	49	27
35	88	56.5	34	47.5	73	67
36	88	28.5	74.5	60	61	74
37	44.5	73	4	7.5	6.5	19
38	90	37.5	27	32	29	35
39	95	61.5	50.5	39.5	33.5	56
40	60.5	3	10	21.5	1	6
41	44.5	28.5	20	15	14	13
42	34	28.5	82	73.5	44.5	58.5
43	34	49.5	72.5	60	69.5	58.5
44	69.5	18	2	1	3	5
45	22.5	43	23.5	28	72	29
46	69.5	81.5	89	82	75.5	94
47	34.5	56.5	82	33.5	35	45
48	52	43	76	86.5	96	84.5
49	84	85.5	42.5	69	30	72.5

Table continued on next page.

Table 20.—Summary of drive ranks—Continued

Business	Responsibility	Vigor	Initiative	Persistence	Health	Drive
50	78	73	62	46	40.5	68
51	78	28.5	84	73.5	53	76
52	44.5	96	57	49.5	37.5	57
53	97	81.5	8	14	78	61.5
54	60.5	37.5	94	94	94	89
55	69.5	49.5	54.5	47.5	11	40.5
56	78	8	78	80.5	86	78
57	34	49.5	85	71	50.5	63
58	69.5	56.5	31	33.5	79.5	54
59	84	81.5	70.5	88	85	95
60	86	73	63	83	58	86
61	44.5	73	65.5	64	90	81
62	34	65.5	65.5	49.5	24.5	43
63	7.5	3	44.5	36.5	74	25
64	22.5	8	9	11	11	2
65	22.5	13.5	46	79	81.5	46
66	69.5	22.5	14	12	32	23
67	60.5	13.5	78	78	65	66
68	52	22.5	13	7.5	5	7
69	69.5	65.5	27	60	19	44
70	52	43	53	30.5	33.5	33
71	34	73	92.5	91	90	90
72	22.5	43	36	28	61	30
73	52	37.5	37	25	56	26
74	22.5	89.5	6	3	22.5	21
75	16	85.5	59	41.5	90	64
76	60.5	13.5	95	84.5	90	82
77	2.5	49.5	30	30.5	26	20
78	78	73	74.5	91	97	96
89	92.5	94	60.5	69	37.5	84.5
70	69.5	73	68.5	63	67	72.5
81	88	22.5	48	51.5	16	38
82	60.5	13.5	19	21.5	4	12
83	2.5	43	49	60	90	47.5
84	96	92.5	41	45	61	80
85	52	33	27	6	11	14
86	34	56.5	38	73.5	75.5	55
87	11.5	33	1	13	8	3
88	60.5	61.5	97	96	69.5	91
89	52	49.5	67	67	53	61.5
90	34	3	15.5	39.5	40.5	16
91	2.5	13.5	82	69	15	28
92	34	22.5	80	73.5	81.5	69
93	7.5	18	44.5	43	21	18
94	22.5	22.5	44.5	95	40.5	37
95	44.5	28.5	86	91	69.5	77
96	2.5	22.5	27	4.5	27.5	4
97	60.5	61.5	42.5	36.5	36	42

The reliability coefficient is .85 for 200 senior college girls. Results and rank orders are shown in Table 22.

Creative thinking and analytical thinking were measured by the customer and supplier questionnaires. The numerical values and rank orders are presented in Table 23 and Table 24.

The total of all trait ranks and the rank order of the total ranks comprising thinking ability are given in Table 25. A rank order summary of thinking ability and its component traits is shown in Table 26.

Table 21.—Original thinking

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	−4	93	34	8	18	67	4	52.5
2	3	64.5	35	3	64.5	68	6	28
3	8	18	36	15	3	69	3	64.5
4	6	28	37	1	78	70	0	83
5	2	73.5	38	6	28	71	3	64.5
6	−3	89.5	39	1	78	72	9	13.5
7	2	73.5	40	8	18	73	4	52.5
8	−6	96	41	11	8	74	3	64.5
9	17	2	42	5	39	75	2	73.5
10	4	52.5	43	−2	87	76	4	52.5
11	7	22	44	12	5.5	77	2	73.5
12	11	8	45	4	52.5	78	4	52.5
13	4	52.5	46	10	10	79	−6	96
14	5	39	47	3	64.5	80	0	83
15	4	52.5	48	−4	93	81	6	28.5
16	3	64.5	49	0	83	82	5	39
17	9	13.5	50	7	22	83	4	52.5
18	0	83	51	7	22	84	2	73.5
19	18	1	52	−4	93	85	13	4
20	−3	89.5	53	0	83	86	0	83
21	6	28	54	11	8	87	3	64.5
22	−3	89.5	55	4	52.5	88	4	52.5
23	3	64.5	56	9	13.5	89	2	73.5
24	3	64.5	57	5	39	90	9	13.5
25	7	22	58	9	13.5	91	3	64.5
26	9	13.5	59	−6	96	92	5	39
27	5	39	60	3	64.5	93	5	39
28	6	28	61	1	78	94	5	39
29	5	39	62	5	39	95	4	52.5
30	0	83	63	12	5.5	96	4	52.5
31	−3	89.5	64	5	39	97	5	39
32	7	22	65	5	39			
33	6	28	66	5	39			

Score range, −6 to 18; score mean, 3.77; score median, 4.

Table 22.—Critical thinking

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	72	31.5	17	82	4.5	33	62	72
2	68	46	18	68	46	34	65	59.5
3	81	7	19	88	2	35	47	97
4	69	41	20	66	57	36	73	28
5	76	19	21	75	23	37	58	83
6	80	10	22	80	10	38	59	81.5
7	51	95.5	23	63	66.5	39	75	23.5
8	51	95.5	24	73	28	40	62	72
9	80	10	25	69	41	41	82	4.5
10	54	90.5	26	64	62	42	62	72
11	64	62	27	63	66.5	43	60	79
12	56	87	28	56	87	44	76	19
13	67	52	29	53	93	45	75	23
14	59	81.5	30	72	31.5	46	76	19
15	61	65	31	61	76	47	80	10
16	75	23	32	67	52	48	54	90.5

Table continued on next page.

Table 22.—Critical thinking—Continued

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
49	73	38	66	67	52	83	68	46
50	82	4.5	67	63	66.5	84	78	15
51	64	62	68	70	37.5	85	72	31.5
52	71	35	69	69	41	86	67	52
53	54	90.5	70	65	59.5	87	72	31.5
54	62	72	71	71	35	88	61	76
55	68	46	72	63	66.5	89	74	26
56	79	13.5	73	63	66.5	90	87	1
57	56	87	74	82	4.5	91	60	79
58	57	84.5	75	77	16.5	92	60	79
59	52	94	76	66	57	93	75	23
60	54	90.5	77	57	84.5	94	63	66.5
61	67	52	78	67	52	95	71	35
62	69	41	79	79	13.5	96	70	37.5
63	80	10	80	68	46	97	69	41
64	66	57	81	62	72			
65	67	52	82	77	16.5			

Score range, 47 to 89: score mean, 67.69: score median, 68.

Table 23.—Creative thinking

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	3.82	42	34	4.00	25.5	67	3.14	79
2	4.00	25	35	4.00	75	68	4.61	3
3	3.38	61.5	36	3.36	63.5	69	3.50	56
4	4.13	16	37	4.07	21	70	3.58	50.5
5	4.06	22	38	3.86	35.5	71	3.00	86.5
6	3.96	28.5	39	3.24	73	72	3.85	38
7	3.91	31	40	4.30	7	73	3.38	61.5
8	3.00	86.5	41	3.29	69	74	4.24	11
9	4.00	25	42	2.95	89	75	3.21	76
10	3.45	58	43	4.24	11	76	3.00	86.5
11	4.59	4	44	4.64	2	77	3.83	40.5
12	3.30	68	45	4.08	20	78	3.22	75
13	2.09	97	46	3.10	82	79	3.32	65
14	4.21	13	47	4.00	25	80	3.26	70.5
15	4.11	17	48	3.26	70.5	81	3.65	44.5
16	2.25	96	49	3.59	3.49	82	3.83	40.5
17	4.50	5.5	50	3.25	72	83	3.87	34
18	3.64	47.5	51	3.58	50.5	84	3.31	66.5
19	4.77	1	52	3.85	38	85	4.14	15
20	3.23	74	53	4.10	8.5	86	3.78	43
21	2.91	91	54	2.82	93.5	87	3.89	32.5
22	4.50	5.5	55	4.10	18.5	88	2.60	95
23	3.74	44	56	3.11	80	89	3.00	86.5
24	3.36	63.5	57	3.50	56	90	4.24	11
25	3.31	66.5	58	3.65	45.5	91	3.20	77
26	3.50	56	59	3.06	84	92	3.15	78
27	4.29	8.5	60	3.55	53.5	93	4.20	14
28	4.29	8.5	61	2.90	92	94	2.82	93.5
29	3.44	59	62	2.93	90	95	3.64	47.5
30	3.10	82	63	3.55	53.5	96	3.86	35.5
31	3.89	32.5	64	3.85	38	97	3.39	60
32	3.10	82	65	3.56	52			
33	3.93	30	66	3.96	28.5			

Score range, 2.09 to 4.77; score mean, 3.62; score median, 3.59.

Table 24.—Analytical thinking

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	3.72	42	34	3.78	36.5	67	3.29	77
2	4.31	7.5	35	4.21	12.5	68	4.47	3
3	3.47	58	36	3.22	83	69	3.76	38.5
4	3.94	28	37	4.36	6	70	3.58	51
5	3.95	27	38	3.86	33.5	71	3.17	87
6	3.76	38.5	39	3.45	60	72	3.81	35
7	3.90	30.5	40	4.00	23	73	3.46	59
8	3.25	80.5	41	4.10	18.5	74	4.21	12.5
9	3.90	30.5	42	2.90	94	75	3.29	77
10	3.22	83	43	4.24	10	76	4.31	7.5
11	4.39	5	44	4.45	4	77	3.68	45.5
12	3.11	89	45	3.86	33.5	78	3.33	70
13	3.78	36.4	46	3.35	67.5	79	3.26	79
14	3.71	43.5	47	3.61	48.5	80	3.33	70
15	4.00	23	48	3.35	67.5	81	3.61	48.5
16	3.42	62	49	3.75	40	82	4.00	23
17	4.24	10	50	3.31	73.5	83	3.14	88
18	3.88	32	51	3.57	53	84	3.44	61
19	4.61	1	52	3.53	55	85	4.17	14
20	3.36	66	53	3.91	29	86	2.89	95
21	3.58	51	54	2.91	93	87	4.10	18.5
22	4.16	15	55	4.00	23	88	3.22	83
23	4.14	16.5	56	3.32	72	89	3.31	73.5
24	3.50	56.5	57	3.74	41	90	4.24	10
25	3.58	51	58	2.83	96	91	3.33	70
26	3.63	47	59	3.25	80.5	92	3.29	77
27	4.00	23	60	3.43	63	93	4.00	23
28	4.50	2	61	3.20	85	94	2.71	97
29	3.40	64	62	2.93	92	95	3.19	86
30	3.30	75	63	3.08	90	96	3.50	56.5
31	3.68	45.5	64	3.71	43.5	97	3.06	91
32	3.38	.....	65	3.56	54			
33	4.14	16.5	66	4.04	20			

Score range, 2.71 to 4.61; score mean, 3.63; score median, 3.61.

Table 25.—Thinking ability totals and rank order

Business	Total	Rank	Business	Total	Rank	Business	Total	Rank
1	208.5	50.5	17	33.5	2	33	146.5	22
2	143	20	18	208.5	50.5	34	139	17
3	144.5	21	19	5	1	35	199	48
4	113	11	20	286.5	89	36	177.5	32
5	141.5	19	21	193	45	37	188	40
6	166.5	.....	22	120	13.5	38	178.5	34.5
7	230.5	59	23	191.5	43	39	234.5	61
8	358.5	97	24	212.5	53	40	120	13.5
9	67.5	5	25	180.5	36	41	177.5	32
10	284	86.5	26	178.5	34.5	42	284	86.5
11	93	9	27	137	16	43	168	28.5
12	252	75	28	125.5	15	44	87.5	7
13	238	64	29	255	76	45	181	32
14	177	30	30	271.5	81	46	235	62.5
15	168.5	28.5	31	357.5	96	47	218	55
16	245.5	69	32	221	57.5	48	285	88

Table continued on next page.

Table 25.—Thinking ability totals and rank order—Continued

Business	Total	Rank	Business	Total	Rank	Business	Total	Rank
49	245	70.5	66	139.5	18	83	220.5	56
50	249.5	72.5	67	265	85	84	216	54
51	189.5	41	68	71.5	6	85	64.5	4
52	257	78	69	200	49	86	273	83
53	184.5	39	70	244	67.5	87	147	23
54	256.5	77	71	273	83	88	306.5	93
55	162	26	72	153	24	89	259.5	79
56	244.5	69	73	239.5	65	90	35.5	3
57	192	44	74	92.5	8	91	290.5	91
58	212	52	75	243	66	92	273	83
59	312	94	76	290	42	93	99	10
60	235	62.5	77	244	67.5	94	296	92
61	322	95	78	249.5	72.5	95	221	57.5
62	290	90	79	253.5	75	96	181.5	37
63	159	25	80	269.5	80	97	231	60
64	177.5	32	81	193.5	46			
65	197	47	82	119	12			

Score range, 5 to 358.5; score mean, 201.82; score median, 200.

Table 26.—Summary of thinking ability ranks

Business	Original thinking	Critical thinking	Creative thinking	Analytical thinking	Thinking ability
1	93	31.4	42	42	50.5
2	64.5	46	25	7.5	20
3	18	7	61.5	58	21
4	28	41	16	28	11
5	73.5	19	22	27	19
6	89.5	10	28.5	38.5	27
7	73.5	95.5	31	30.5	59
8	96	95.5	86.5	80.5	97
9	2	10	25	30.5	5
10	52.5	90.5	58	83	86.5
11	22	62	4	5	9
12	8	87	68	89	74
13	52.5	52	97	36.5	64
14	39	81.5	13	43.5	30
15	52.5	76	17	23	28.5
16	64.5	23	96	62	69
17	13.5	4.5	5.5	10	2
18	83	46	47.5	32	50.5
19	1	2	1	1	1
20	89.5	57	74	66	89
21	28	23	91	51	45
22	89.5	10	5.5	15	13.5
23	64.5	66.5	44	16.5	43
24	64.5	28	63.5	56.5	53
25	22	41	66.5	51	36
26	13.5	62	56	47	34.5
27	39	66.5	8.5	23	16
28	28	87	8.5	2	15

Table continued on next page.

Table 26.—Summary of thinking ability ranks—Continued

Business	Original thinking	Critical thinking	Creative thinking	Analytical thinking	Thinking ability
29	39	93	59	64	76
30	83	31.5	82	75	81
31	89.5	76	32.5	45.5	96
32	22	52	82	65	57.5
33	28	72	30	16.5	22
34	18	59.5	25.5	36.5	17
35	64.5	97	75	12.5	48
36	3	28	63.5	83	32
37	78	83	21	6	40
38	28	81.5	35.5	33.5	34.5
39	78	23.5	73	60	61
40	18	72	7	23	13.5
41	8	4.5	69	18.5	32
42	39	72	89	94	86.5
43	87	79	11	10	28.5
44	5.5	19	2	4	7
45	52.5	23	20	33.5	32
46	10	19	82	67.5	62.5
47	64.5	10	25	48.5	55
48	93	90.5	70.5	67.5	88
49	83	28	49	40	70.5
50	22	4.5	72	73.5	72.5
51	22	62	50.5	53	41
52	93	35	38	55	78
53	83	90.5	8.5	29	39
54	8	72	93.5	93	77
55	52.5	46	18.5	23	26
56	13.5	13.5	80	72	69
57	39	87	56	41	44
58	13.5	84.5	45.5	96	52
59	96	94	84	80.5	94
60	64.5	90.5	53.5	63	62.5
61	78	52	92	85	95
62	39	41	90	92	90
63	5.5	10	53.5	90	25
64	39	57	38	43.5	32
65	39	52	52	54	47
66	39	52	28.9	20	18
67	52.5	66.5	79	77	85
68	28	37.5	3	3	6
69	64.5	41	56	38.5	49
70	83	59.5	50.5	51	67.5
71	64.5	35	86.5	87	83
72	13.5	66.5	38	35	24
73	52.5	66.5	61.5	59	65
74	64.5	4.5	11	12.5	8
75	73.5	16.5	76	77	66P
76	39	57	86.5	7.5	42
77	73.5	84.5	40.5	45.5	67.5
78	52.5	52	75	70	72.5
79	96	13.5	65	79	75
80	83	46	70.5	70	80
81	28.5	72	44.5	48.5	46
82	39	16.5	40.5	23	12
83	52.5	46	34	88	56
84	73.5	15	66.5	61	54
85	4	31.5	15	14	4

Table continued on next page.

Table 26.—Summary of thinking ability ranks—Continued

Business	Original thinking	Critical thinking	Creative thinking	Analytical thinking	Thinking ability
86	83	52	43	95	83
87	64. 5	31. 5	32. 5	18. 5	23
88	52. 5	76	95	82	93
89	73. 5	26	86. 5	73. 5	79
90	13. 5	1	11	10	3
91	64. 5	79	77	70	91
92	39	79	78	77	83
93	39	23	14	23	10
94	39	66. 5	93. 5	97	92
95	52. 5	35	47. 5	86	57. 5
96	52. 5	37. 5	35. 5	56. 5	37
97	39	41	60	91	60

Measurement of Human Relations Ability

Human relations ability was measured through its components—ascendancy, emotional stability, sociability, cautiousness, personal relations, consideration, cheerfulness, cooperation, and tactfulness. The *Gordon Personal Profile*, *Gordon Personal Inventory*, and customer ratings were the means used.

Ascendancy, emotional stability, and sociability were measured by the *Gordon Personal Profile*. Reliability coefficiency ranges are as follows: ascendancy, from .74 for 200 college freshmen to .88 for 140 college students; emotional stability, from .77 for 85 ROTC seniors (college) to .88 for 140 college students; sociability, from .84 for 140 college students to .94 for 85 ROTC seniors (college). The numerical results and rank order of ascendancy are presented in Table 27; emotional stability in Table 28; and sociability in Table 29.

Cautiousness and personal relations were measured by the *Gordon Personal Inventory*. The reliability coefficient for cautiousness is .83 for 168 college students, 103 high school seniors, and 124 college students; for personal relations, from .80 for 103 high school seniors to .83 for 168 college students. Resulting data are in Tables 30 and 31.

Consideration, cheerfulness, cooperation, and tactfulness were measured by the customer and supplier questionnaires. The results and their rank order are presented as follows: consideration, Table 32; cheerfulness, Table 33; cooperation, Table 34; and tactfulness, Table 35.

Total drive component ranks, their total, and the rank order of the totals comprising human relations ability are presented in Table 36. A rank order summary of human relations ability and the component traits comprising thinking ability is presented in Table 37.

Table 27.—Ascendancy

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	−4	93.5	34	8	21	67	6	39
2	3	64.5	35	3	64.5	68	7	29
3	8	21	36	15	3	69	3	64.5
4	6	39	37	1	76.5	70	5	50
5	2	72	38	6	39	71	1	76.5
6	−3	89.5	39	1	76.5	72	8	21
7	2	72	40	8	21	73	5	50
8	−6	95.5	41	11	9.5	74	3	64.5
9	17	2	42	5	50	75	5	50
10	4	57	43	−2	85.5	76	8	21
11	7	29	44	12	7	77	−1	83.5
12	11	9.5	45	4	57	78	−7	97
13	4	57	46	10	12.5	79	8	21
14	5	50	47	3	64.5	80	9	15
15	4	57	48	−4	93.5	81	6	39
16	3	64.5	49	0	80.5	82	13	4.5
17	9	15	50	7	29	83	3	64.5
18	0	80.5	51	10	12.5	84	0	80.5
19	18	1	52	−6	95.5	85	14	4
20	−3	89.5	53	−3	89.5	86	1	76.5
21	6	39	54	6	39	87	5	50
22	−3	89.5	55	7	29	88	2	72
23	3	64.5	56	−2	85.5	89	2	72
24	3	64.5	57	8	21	90	11	9.5
25	7	29	58	13	5.5	91	6	39
26	9	15	59	−3	89.5	92	6	39
27	5	50	60	8	21	93	2	72
28	6	39	61	8	21	94	7	29
29	5	50	62	3	64.5	95	4	57
30	0	80.5	63	5	50	96	6	39
31	−3	89.5	64	7	29	97	11	9.5
32	7	29	65	6	39			
33	6	39	66	−1	83.5			

Score range, −7 to 18; score mean, 4.65; score median, 5.

Table 28.—Emotional stability

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	−1	86	17	7	54	33	8	43
2	−4	91	18	−2	88	34	13	8.5
3	0	83.5	19	−5	92.5	35	3	89.5
4	10	23	20	11	17.5	36	7	54
5	13	8.5	21	4	75	37	8	43
6	13	8.5	22	9	31.5	38	−9	95
7	5	68	23	16	1	39	4	75
8	6	61	24	4	75	40	5	68
9	6	61	25	7	54	41	7	54
10	3	79.5	26	8	43	42	12	13
11	8	43	27	9	31.5	43	11	17.5
12	9	31.5	28	10	23	44	4	75
13	10	23	29	9	31.5	45	11	17.5
14	9	31.5	30	8	43	46	8	43
15	−1	86	31	2	81	47	6	61
16	14	4.5	32	7	54	48	9	31.5

Table continued on next page.

Table 28.—Emotional stability—Continued

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
49	10	23	66	8	43	83	13	8.5
50	5	68	67	1	82	84	−12	96.5
51	9	31.5	68	4	75	85	5	68
52	5	68	69	6	61	86	8	43
53	−12	96.5	70	8	43	87	0	83.5
54	14	4.5	71	15	2	88	5	68
55	10	23	72	9	31.5	89	3	79.5
56	−3	89.5	73	10	23	90	11	17.5
57	6	61	74	12	13	91	5	68
58	5	68	75	−1	86	92	7	54
59	7	54	76	12	13	93	12	13
60	3	79.5	77	8	43	94	12	13
61	7	54	78	−7	94	95	14	4.5
62	14	4.5	79	−5	92.5	96	8	43
63	9	31.5	80	7	54	97	5	68
64	8	43	81	10	23			
65	9	31.5	82	8	43			

Score range, −12 to 16; score mean, 6.37; score median, 8.

Table 29.—Sociability

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	−5	93.5	34	3	57.5	67	13	2.5
2	0	76.5	35	10	15.5	68	12	7
3	−10	97	36	4	49	69	0	76.5
4	3	57.5	37	5	44.5	70	8	31.5
5	1	71	38	−1	82.5	71	3	57.5
6	0	76.5	39	8	31.5	72	3	57.5
7	12	7	40	14	1	73	0	76.5
8	0	76.5	51	8	31.5	74	9	23
9	9	23	42	−3	88	75	11	11.5
10	10	15.5	43	1	71	76	4	49
11	9	23	44	13	2.5	77	2	66.5
12	2	66.5	45	3	57.5	78	−6	95
13	5	44.5	46	4	49	79	−2	85
14	3	57.5	47	10	15.5	80	11	11.5
15	1	71	48	−3	88	81	10	15.5
16	−4	91.5	49	5	44.5	82	7	37.5
17	−1	82.5	50	10	15.5	83	3	57.5
18	−3	88	51	9	23	84	12	7
19	12	7	52	−3	88	85	8	31.5
20	3	57.5	53	−4	91.5	86	12	7
21	8	31.5	54	2	66.5	87	4	49
22	0	76.5	55	12	7	88	3	57.5
23	3	57.5	56	−3	88	89	2	66.5
24	0	76.5	57	7	37.5	90	3	57.5
25	8	31.5	58	9	23	91	6	41
26	6	41	59	−1	82.5	92	8	31.5
27	10	15.5	60	9	23	93	2	66.5
28	6	41	61	9	23	94	5	44.5
29	0	76.5	62	8	31.5	95	2	66.5
30	−5	93.5	63	4	49	96	3	57.5
31	9	23	64	9	23	97	12	7
32	7	37.5	65	7	37.5			
33	−1	82.5	66	−8	96			

Score range, −10 to 14; score mean, 4.38; score median, 4.

Table 30.—Cautiousness

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	−2	94	34	13	13.5	67	10	30
2	3	95	35	7	57.5	68	9	38
3	15	8	36	6	64.5	69	4	76
4	10	30	37	4	76	70	8	47
5	8	57	38	5	70	71	15	8
6	9	38	39	2	85.5	72	7	57.5
7	13	13.5	40	−1	92.5	73	10	30
8	11	22.5	41	12	17.5	74	8	47
9	1	88	42	10	30	75	15	8
10	4	76	43	10	30	76	−1	92.5
11	7	57.5	44	4	76	77	17	2
12	8	47	45	15	8	78	12	17.5
13	8	47	46	6	64.5	79	7	57.5
14	3	82	47	7	47.4	80	8	47
15	14	11.5	48	8	47	81	8	47
16	18	1	49	6	64.5	82	2	85.5
17	6	64.5	50	8	47	83	10	30
18	6	64.5	51	5	70	84	4	76.5
19	1	88	52	8	47	85	9	38
20	11	22.5	53	10	30	86	16	4
21	16	4	54	3	82	87	8	47
22	12	17.5	55	7	57.5	88	0	90.5
23	15	8	56	7	57.5	89	6	64.5
24	0	90.5	57	8	47	90	5	70
25	11	22.5	58	4	76	91	10	30
26	8	47	59	7	57.5			
27	5	70	60	12	17.5	93	10	30
28	10	30	61	3	82	94	9	38
29	3	82	63	14	11.5	95	4	76
30	16	4	64	5	70	96	11	22.5
31	−5	96	64	10	30	97	9	38
32	1	88	65	12	17.5			
33	12	17.5	66	3	82			

Score range, 7 to 18; score mean, 7.64; score median, 8.

Table 31.—Personal relations

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	−9	97	17	6	46	33	4	58
2	3	65.5	18	4	58	34	16	2.5
3	8	36	19	11	18.5	35	4	58
4	6	46	20	9	29.5	36	4	58
5	8	36	21	6	46	37	4	58
6	1	83	22	12	15	38	4	58
7	2	72.5	23	8	36	39	0	90.5
8	3	65.5	24	5	51	40	1	83
9	1	83	25	19	1	41	6	46
10	4	58	26	10	23.5	42	10	23.5
11	−1	92.5	27	13	11.5	43	3	65.5
12	1	83	28	2	72.5	44	−3	95.5
13	7	41.5	29	8	36	45	5	51
14	11	18.5	30	3	65.5	46	2	72.5
15	4	58.5	31	9	29.5	47	12	15
16	13	11.5	32	−1	92.5	48	10	23.5

Table continued on next page.

Table 31.—Personal relations—Continued

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
49	9	29. 5	66	2	72. 5	83	9	7. 5
50	14	7. 5	67	2	72. 5	84	3	65. 5
51	5	51	68	11	18. 5	85	0	90. 5
52	1	83	69	5	51	86	14	7. 5
53	6	46	70	10	23. 5	87	1	83
54	1	83	71	13	11. 5	88	11	18. 5
55	16	2. 5	72	12	15	89	7	41. 5
56	1	83	73	1	83	90	8	36
57	2	72. 5	74	4	58	91	9	29. 5
58	15	4. 5	75	8	36	92	—3	95. 5
59	1	83	76	2	72. 5	93	8	36
60	2	72. 5	77	10	23. 5	94	10	23. 5
61	1	83	78	3	65. 5	95	7	41. 5
62	13	11. 5	79	1	83	96	7	41. 5
63	1	83	80	5	51	97	15	4. 5
64	—2	94	81	14	7. 5			
65	9	29. 5	82	9	29. 5			

Score range, —9 to 19; score mean, 6.02; score median, 5.

Table 32.—Consideration

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4. 47	3	34	4. 30	13	67	3. 24	90
2	4. 39	6	35	4. 14	25. 5	68	4. 35	9
3	3. 29	85	36	3. 50	76	69	4. 05	33
4	3. 84	53	37	4. 14	25. 5	70	3. 55	73
5	4. 10	28. 5	38	4. 00	40. 5	71	3. 06	95
6	3. 80	54. 5	39	4. 04	35	72	3. 59	71
7	3. 85	51	40	3. 38	82	73	4. 08	31
8	3. 33	83. 5	41	4. 04	35	74	4. 35	9
9	4. 09	30	42	3. 60	68	75	3. 85	51
10	4. 10	28. 5	43	4. 06	32	76	3. 20	92
11	4. 33	11. 5	44	4. 25	19	77	4. 26	17. 5
12	3. 44	79	45	3. 90	46	78	3. 33	83. 5
13	3. 74	57	46	3. 25	87. 5	79	4. 00	40. 5
14	4. 00	40. 5	47	3. 25	87. 5	80	3. 63	63
15	4. 11	27	48	4. 04	35	81	3. 88	47
16	3. 86	48. 5	49	4. 24	20	82	4. 35	9
17	4. 38	7	50	3. 50	76	83	3. 60	68
18	3. 80	54. 5	51	3. 50	76	84	4. 33	11. 5
19	4. 29	14	52	4. 00	40. 5	85	4. 00	40. 5
20	3. 65	61	53	4. 00	40. 5	86	4. 27	15. 5
21	4. 53	2	54	3. 41	81	87	4. 80	1
22	3. 76	56	55	3. 71	58. 5	88	3. 07	94
23	4. 26	17. 5	56	3. 66	60	89	3. 23	91
24	3. 61	65	57	3. 58	72	90	4. 44	4
25	3. 85	51. 5	58	3. 50	76	91	3. 60	68
26	4. 00	40. 5	59	3. 60	68	92	3. 60	68
27	3. 95	45	60	3. 86	48. 5	93	4. 00	40. 5
28	4. 27	15. 5	61	3. 25	87. 5	94	2. 74	96
29	3. 19	93	62	4. 04	5	95	3. 25	87. 5
30	3. 42	80	63	2. 26	97	96	3. 50	76
31	4. 21	21	64	4. 20	23	97	3. 63	63
32	3. 71	58. 5	65	3. 63	63			
33	4. 20	23	66	4. 20	23			

Score range, 2.26 to 4.80; score mean, 3.83; score median, 3.86.

Table 33.—Cheerfulness

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.47	6.5	34	4.07	42.5	67	3.35	84
2	4.52	4	35	4.41	12	68	4.30	22.5
3	3.06	94	36	3.40	81.5	69	4.19	32
4	3.84	55	37	4.07	42.5	70	3.91	50.5
5	4.00	46	38	4.13	39.5	71	3.06	94.5
6	4.16	37	39	4.40	13	72	3.82	58
7	4.54	3	40	4.29	24.5	73	4.00	46
8	3.77	62.5	41	3.91	50.5	74	4.30	22.5
9	4.19	32	42	3.90	52	75	4.05	44
10	3.82	58	43	4.12	41	76	3.21	89
11	4.50	5	44	4.45	9	77	4.17	35.5
12	3.22	88	45	3.64	74	78	3.78	61
13	4.13	39.5	46	3.15	90	79	4.35	15.5
14	4.18	34	47	3.44	79	80	3.74	67
15	4.44	11	48	4.22	28	81	3.94	48
16	4.21	30	49	4.32	20.5	82	4.32	20.5
17	4.59	2	50	3.46	78	83	3.60	75
18	3.75	65	51	3.67	71.5	84	4.35	15.5
19	4.33	18	52	3.85	53.5	85	4.17	35.5
20	3.92	49	53	4.14	38	86	4.45	9
21	3.33	85	54	3.41	80	87	4.80	1
22	4.29	24.5	55	3.71	68	88	3.40	81.5
23	4.22	28	56	3.77	62.5	89	3.31	86
24	3.83	56	57	3.68	29.5	90	4.26	26
25	3.85	53.5	58	3.75	65	91	3.75	65
26	3.50	76.5	59	3.82	58	92	3.37	83
27	4.38	14	60	3.68	29.5	93	4.33	18
28	4.45	9.5	61	3.25	87	94	2.79	96
29	3.06	94	62	4.47	6.5	95	3.10	91
30	3.08	92	63	2.54	97	96	4.00	46
31	3.50	76.5	64	4.19	32	97	3.79	60
32	3.67	71.5	65	3.65	73			
33	4.33	18	66	4.22	28			

Score range, 2.54 to 4.80; score mean, 3.90; score median, 3.92.

Table 34.—Cooperation

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.37	8	17	4.41	6	33	4.27	18.5
2	4.15	27	18	3.56	73	34	4.30	14.5
3	3.00	94	19	3.65	60	35	4.09	33
4	3.89	47.5	20	3.35	85	36	3.30	87.5
5	4.00	37	21	3.67	57	37	4.00	37
6	3.68	55.5	22	4.29	16	38	4.13	28.5
7	3.92	42	23	3.96	39	39	4.12	30.5
8	3.81	49.5	24	3.61	64	40	4.21	24.5
9	3.91	43.5	25	3.89	47.5	41	3.91	43.5
10	3.72	52	26	3.50	76	42	3.90	45.5
11	4.04	35	27	4.33	11	43	4.12	30.5
12	3.26	89	28	4.64	2	44	4.45	5
13	3.48	77	29	3.19	90.5	45	3.64	63
14	4.40	7	30	3.58	68	46	3.15	92
15	4.00	37	31	3.60	65.5	47	3.44	80.5
16	3.71	53	32	3.57	70	48	4.22	22

Table continued on next page.

Table 34.—Cooperation—Continued

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
49	4.32	13	66	3.81	49.5	83	3.60	65.5
50	3.46	78.5	67	3.19	90.5	84	4.18	26
51	3.65	60	68	4.30	14.5	85	4.33	11
52	3.95	40	69	4.10	32	86	4.36	9
53	4.05	34	70	3.36	83.5	87	4.80	1
54	3.36	83.5	71	3.06	93	88	3.33	86
55	3.57	70	72	3.68	55.5	89	3.46	78.5
56	3.57	70	73	4.25	21	90	4.53	3.5
57	3.79	51	74	4.27	18.5	91	3.65	60
58	3.56	73	75	3.90	45.5	92	3.65	60
59	3.55	75	76	3.43	82	93	4.33	11
60	3.59	67	77	4.21	4.5	94	2.70	96
61	3.30	87.5	78	3.56	73	95	2.95	95
62	4.53	3.5	79	4.26	20	96	4.20	23
63	2.38	97	80	3.65	60	97	3.70	54
64	4.13	28.5	81	3.94	41			
65	3.44	80.5	82	4.28	17			

Score range, 2.38 to 4.80; score mean, 3.82; score median, 3.81.

Table 35.—Tactfulness

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.37	5	34	3.93	31	67	3.29	82.5
2	4.15	13	35	4.05	22	68	4.20	10.5
3	3.00	93.5	36	3.20	86.5	69	3.86	41
4	3.89	34.5	37	4.21	9	70	3.64	56.5
5	4.00	25.5	38	3.88	36.5	71	3.06	91
6	3.68	51	39	3.96	28.5	72	3.64	56.5
7	3.92	32	40	4.08	20.5	73	3.50	62.5
8	3.81	43	41	4.13	17	74	4.40	3.5
9	3.91	33	42	3.35	77.5	75	3.68	51
10	3.72	47	43	3.88	36.5	76	3.00	93.5
11	4.04	23	44	4.08	20.5	77	4.09	19
12	3.26	84	45	3.24	85	78	3.33	79
13	3.48	65.5	46	3.10	89	79	3.89	34.5
14	4.40	3.5	47	3.40	75	80	3.42	74
15	4.00	25.5	48	3.45	68.5	81	3.94	30
16	3.71	48	49	3.86	41	82	4.14	14.5
17	4.41	2	50	3.50	62.5	83	2.93	96
18	3.56	38.5	51	3.48	65.5	84	3.78	44
19	3.65	55	52	4.00	25.5	85	4.00	25.5
20	3.35	77.5	53	3.86	41	86	3.45	68.5
21	3.67	53.5	54	3.18	88	87	4.57	1
22	4.29	7	55	3.67	53.5	88	3.09	90
23	3.96	28.5	56	3.50	62.5	89	3.31	81
24	3.44	71	57	3.74	46	90	4.28	8
25	3.70	49	58	3.38	76	91	3.47	67
26	3.50	62.5	59	3.56	58.5	92	3.29	82.5
27	4.14	14.5	60	3.32	80	93	4.17	12
28	4.30	6	61	3.00	93.5	94	3.00	93.5
29	3.75	45	62	3.87	38.5	95	3.20	86.5
30	3.43	73	63	2.04	97	96	4.20	10.5
31	3.44	71	64	4.13	17	97	3.68	51
32	3.53	70	65	3.44	71			
33	3.87	38.5	66	4.13	17			

Score range, 2.04 to 4.57; score mean, 3.70; score median, 3.70.

Table 36.—Human relations ability totals and rank order

Business	Total	Rank	Business	Total	Rank	Business	Total	Rank
1	486	64	34	204	2	67	573	80
2	442	48	35	377.5	32	68	224	3
3	612	88	36	560	77	69	467	56.5
4	385	36	37	412	40	70	456.5	54
5	371.5	31	38	489.5	66	71	529	71
6	493	67	39	466	44	72	523.5	44
7	360.5	29	40	417	41	73	523	52.5
8	559.5	76	41	379.5	33	74	259	7
9	395.5	38	42	435	56	75	383	34
10	471.5	59	43	409.5	39	76	604.5	84
11	320	19	44	263.5	10	77	315	15
12	577	81	45	528	70	78	665.5	96
13	452	53	46	543.4	74	79	449.5	52
14	324	20	47	542.5	73	80	442.5	49.5
15	384.5	35	48	447.5	51	81	299	14
16	352.5	25	49	319	17	82	262	8
17	280	11.5	50	479.5	63	83	472.5	60
18	630	92	51	438	47	84	423	42.5
19	354	27	52	564	79	85	344.5	24
20	489	65	53	507	69	86	240	6
21	393	37	54	607.5	86	87	316.5	16
22	333.5	22	55	369	30	88	658	93
23	280	11.5	56	658.5	94	89	660.5	95
24	613.5	89	57	477.5	61	90	232	4
25	339.5	23	58	467	56.5	91	467.5	58
26	425	45	59	626	91	92	610.5	87
27	263	9	60	478.5	62	93	298	13
28	238.5	5	61	618.5	90	94	529.5	72
29	598.5	82	62	177	1	95	605.5	85
30	599.5	83	63	672.5	97	96	359	28
31	553	75	64	319.5	18	97	355	26
32	561	78	65	442.5	49.5			
33	330	21	66	494.5	68			

Score range, 177 to 672.5; score mean, 443.37; score median, 442.5.

Table 37.—Summary of human relations ability ranks

Business	Ascendancy	Emotional stability	Sociability	Cautiousness	Personal relations	Consideration	Cheerfulness	Cooperation	Tactfulness	Human relations ability
1	93.5	86	93.5	94	97	3	6.5	8	5	64
2	64.5	91	76.5	95	65.5	6	4	27	13	48
3	21	83.5	97	8	36	85	94	94	93.5	88
4	39	23	57.5	30	46	53	55	47.5	34.5	36
5	72	8.5	71	47	36	28.5	46	37	25.5	31
6	89.5	8.5	76.5	38	83	54.5	37	55.5	51	67
7	72	68	7	13.5	72.5	51	3	42	32	29
8	95.5	61	76.5	22.5	65.5	83.5	62.5	49.5	43	76
9	2	61	23	88	83	30	32	43.5	33	38
10	57	79.5	15.5	76	58	28.5	58	52	47	59
11	29	43	23	57.5	92.5	11.5	5	35	23	19
12	9.5	31.5	66.5	47	83	79	88	89	84	81
13	57	23	44.5	47	41.5	57	39.5	77	65.5	53
14	50	31.5	57.5	82	18.5	40.5	34	7	3.5	20

Table continued on next page.

Table 37.—Summary of human relations ability ranks—Continued

Business	Ascendancy	Emotional stability	Sociability	Cautiousness	Personal relations	Consideration	Cheerfulness	Cooperation	Tactfulness	Human relations ability
15	57	86	71	11.5	58.5	27	11	37	25.5	35
16	64.5	4.5	91.5	1	11.5	48.5	30	53	48	25
17	15	54	82.5	64.5	46	7	2	6	2	11.5
18	80.5	88	88	64.5	58	54.5	65	73	38.5	92
19	1	92.5	7	88	18.5	14	18	60	55	27
20	89.5	17.5	57.5	22.5	29.5	61	49	85	77.5	65
21	39	75	31.5	4	46	2	85	57	53.5	37
22	89.5	31.5	76.5	17.5	15	56	24.5	16	7	22
23	64.5	1	57.5	8	36	17.5	28	39	28.5	11.5
24	64.5	75	76.5	90.5	51	65	56	64	71	89
25	29	54	31.5	22.5	1	51.5	53.5	47.5	49	23
26	15	43	41	47	23.5	40.5	76.5	76	62.5	45
27	50	31.5	15.5	70	11.5	45	14	11	14.5	9
28	39	23	41	30	72.5	15.5	9.5	2	6	5
29	50	31.5	76.5	82	36	93	94	90 5.	45.5	82
30	80.5	43	93.5	4	65.5	80	92	68	73	83
31	89.5	81	23	96	29.5	21	76.5	65.5	71	75
32	29	54	37.5	88	92.5	58.5	71.5	70	70	78
33	39	43	82.5	17.5	58	23	18	18.5	38.5	21
34	21	8.5	57.5	13.5	2.5	13	42.5	14.5	31	2
35	64.5	89.5	15.5	57.6	58	25.5	12.	33	22	32
36	3	54	49	64.5	58	76	81.5	87.5	86.5	77
37	76.5	43	44.5	76	58	25.5	42.5	37	9	40
38	39	95	82.5	70	58	40.5	39.5	28.5	36.5	66
39	76.5	75	31.5	85.5	90.5	35	13	30.5	28.5	55
40	21	68	1	92.5	83	82	24.5	24.5	20.5	41
41	9.5	54	31.5	17.5	46	35	50.5	43.5	17	33
42	50	13	88	30	23.5	68	52	45.5	77.5	46
43	85.5	17.5	71	30	65.5	32	41	30.5	36.5	39
44	7	75	2.5	76	95.5	19	9	5	20.5	10
45	57	17.5	57.5	8	51	46	74	63	85	70
46	12.5	43	49	64.5	72.5	87.5	90	92	89	74
47	64.5	61	15.5	57.5	15	87.5	79	80.5	75	73
48	93.5	31.5	88	47	23.5	35	28	22	68.5	51
49	80.5	23	44.5	64.5	29.5	20	20.5	13	41	17
50	29	68	15.5	47	7.5	76	78	78.5	62.5	63
51	12.5	31.5	23	70	51	76	71.5	60	65.5	47
52	95.5	68	88	47	83	40.5	53.5	40	25.5	79
53	89.5	96.5	91.5	30	46	40.5	38	34	41	69
54	39	4.5	66.5	82	83	81	80	83.5	88	86
55	29	23	7	57.5	2.5	58.5	68	70	53.5	30
56	85.5	89.5	88	57.5	83	60	62.5	70	62.5	94
57	21	61	37.5	47	72.5	72	69.5	51	46	61
58	5.5	68	23	76	4.5	76	65	73	76	56.5
59	89.5	54	82.5	57.5	83	68	58	75	58.5	91
60	21	79.5	23	17.5	72.5	48.5	69.5	67	80	62
61	21	54	23	82	83	87.5	87	87.5	93.5	90
62	64.5	4.5	31.5	11.5	11.5	5	6.5	3.5	38.5	1
63	50	31.5	49	70	83	97	97	97	97	97
64	29	43	23	30	94	23	32	28.5	17	18
65	39	31.5	37.5	17.5	29.5	63	73	80.5	71	49.5
66	83.5	43	96	82	72.5	23	28	49.5	17	68
67	39	82	2.5	30	72.5	90	84	90.5	82.5	80
68	29	75	7	38	18.5	9	22.5	14.5	10.5	3
69	64.5	61	76.5	76	51	33	32	32	41	56.5
70	50	43	31.5	47	23.5	73	50.5	83.5	56.5	54
71	76.5	2	57.5	8	11.5	95	94.5	93	91	71
72	21	31.5	57.5	57.5	15	71	58	55.5	56.5	44

Table continued on next page.

Table 37.—Summary of human relations ability ranks—Continued

Business	Ascendancy	Emotional stability	Sociability	Cautiousness	Personal relations	Consideration	Cheerfulness	Cooperation	Tactfulness	Human relations ability
73	50	23	76.5	30	83	31	46	21	62.5	52.5
74	64.5	13	23	47	58	9	22.5	18.5	3.5	7
75	50	86	11.5	8	36	51	44	45.5	51	34
76	21	13	49	92.5	72.5	92	89	82	93.5	84
77	83.5	43	66.5	2	23.5	17.5	35.5	24.5	19	15
78	97	94	95	17.5	65.5	83.5	61	73	79	96
79	21	92.5	85	57.5	83	40.5	15.5	20	34.5	52
80	15	54	11.5	47	51	63	67	60	74	49.5
81	39	23	15.5	47	7.5	47	48	41	30	14
82	5.5	43	37.5	85.5	29.5	9	20.5	17	14.5	8
83	64.5	8.5	57.5	30	7.5	68	75	65.5	96	60
84	80.5	96.5	7	76.5	65.5	11.5	15.5	26	44	42.5
85	4	68	31.5	38	90.5	40.5	35.5	11	25.5	24
86	76.5	43	7	4	7.5	15.5	9	9	68.5	6
87	50	83.5	49	47	83	1	1	1	1	16
88	72	68	57.5	90.5	18.5	94	81.5	86	90	93
89	72	79.5	66.5	64.5	41.5	91	86	78.5	81	95
90	9.5	17.5	57.5	70	36	4	26	3.5	8	4
91	39	68	41	30	29.5	68	65	60	67	58
92	39	54	31.5	97	95.5	68	83	60	82.5	87
93	72	13	66.5	30	36	40.5	18	11	12	13
94	29	13	44.5	38	23.5	96	96	96	93.5	72
95	57	4.5	66.5	76	41.5	87.5	91	95	86.5	85
96	39	43	57.5	22.5	41.5	76	46	23	10.5	28
97	9.5	68	7	38	4.5	63	60	54	51	26

Measurement of Communications Ability

Communications ability is measured through its components—verbal comprehension, oral communications ability, and written communications ability.

The Verbal Comprehension Test, used to measure that component, has a reliability coefficient of .83, based on 535 industrial job applicants; validity based on 170 prison inmates is a .83 correlation with the total mental factors "IQ" of the *California Test of Mental Maturity.*[2] Numerical results and rank order obtained from the verbal comprehension test are presented in Table 38.

Oral communications ability and written communications ability were measured by the customer and supplier questionnaires. The results and their rank order are shown in Table 39 and Table 40.

Total component ranks of communications ability and their total rank order are presented in Table 41. A rank summary of communications ability and the component traits comprising communications ability is contained in Table 42.

[2] More detailed discussion can be found in *Examiner's Manual, Employee Aptitude Survey,* Test 1—*Verbal Comprehension,* pp. 1–4.

Table 38.—Verbal comprehension

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	10	91	34	22	31.5	67	22	31.5
2	17	65.5	35	14	84	68	15	78.5
3	22	31.5	36	18	59.5	69	15	78.5
4	10	91	37	15	78.5	70	29	2.5
5	21	41.5	38	23	23.5	71	11	88.5
6	29	2.5	39	21	41.5	72	20	48.5
7	25	12.5	40	15	78.5	73	14	84
8	17	65.5	41	23	23.5	74	25	12.5
9	21	41.5	42	19	52.5	75	9	93.5
10	9	93.5	43	21	41.5	76	18	59.5
11	18	49.5	44	25	12.5	77	28	4.5
12	10	91	45	16	71.5	78	23	23.5
13	21	41.5	46	16	71.5	79	19	52.5
14	23	23.5	47	26	7	80	14	84
15	20	48.5	48	22	31.5	81	22	31.5
16	23	23.5	49	25	12.5	82	21	41.5
17	25	12.5	50	22	31.5	83	14	84
18	19	52.5	51	21	41.5	84	16	71.5
19	30	1	52	18	59.5	85	23	23.5
20	16	71.5	53	19	52.5	86	18	59.5
21	26	7	54	16	71.5	87	25	12.5
22	22	31.5	55	28	4.5	88	16	71.5
23	11	88.5	56	19	52.5	89	18	59.5
24	24	18	57	25	12.5	90	26	7
25	15	78.5	58	23	23.5	91	7	95
26	21	41.5	59	16	71.5	92	5	97
27	21	41.5	60	25	12.5	93	18	59.5
28	24	18	61	17	65.5	94	16	71.5
29	17	65.5	62	13	87	95	21	41.5
30	15	78.5	63	24	18	96	23	23.5
31	19	52.5	64	21	41.5	97	22	31.5
32	14	84	65	21	41.5			
33	6	96	66	18	59.5			

Score range, 5 to 30; score mean, 19.19; score median, 18.

Table 39.—Oral communications ability

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.07	19	17	3.44	71.5	33	3.71	48
2	4.05	20	18	3.90	31.5	34	3.56	58.5
3	3.60	56	19	3.42	74.5	35	3.77	43
4	3.90	31.5	20	3.87	36	36	3.30	85.5
5	3.86	37.5	21	4.33	6.5	37	4.29	8
6	4.83	1	22	3.61	54.5	38	3.57	57
7	3.36	78	23	3.47	69.5	39	3.84	39
8	4.09	17	24	2.92	95	40	4.27	9
9	3.15	89	25	3.50	66.5	41	3.90	31.5
10	4.67	3	26	4.38	5	42	3.25	88
11	3.48	68	27	2.45	97	43	4.24	10
12	3.96	25	28	3.33	82	44	4.43	4
13	3.56	58.5	29	3.70	50.5	45	3.86	37.5
14	4.13	14.5	30	3.33	82	46	3.35	79
15	3.75	44	31	3.70	50.5	47	3.53	62.5
16	4.13	14.5	32	3.33	82	48	3.52	64

Table continued on next page.

Table 39.—Oral communications ability—Continued

Business	Score	Rank	Business	Score	Rank	Bnsiness	Score	Rank
49	3.92	28	66	4.19	13	83	3.00	92
50	3.50	66.5	67	3.40	76.5	84	3.88	34.5
51	3.90	31.5	68	3.88	34.5	85	4.33	6.5
52	3.71	48	69	3.95	26.5	86	3.73	46
53	4.00	22.5	70	3.55	60.5	87	4.76	2
54	3.00	92	71	3.00	92	88	2.93	94
55	3.95	26.5	72	3.71	48	89	3.29	87
56	3.55	60.5	73	3.79	41	90	4.21	11
57	3.42	75.4	74	4.20	12	91	3.67	52.5
58	3.79	41	75	3.43	73	92	3.13	90
59	3.51	65	76	3.55	71.5	93	4.12	16
60	3.91	29	77	4.00	22.5	94	2.74	96
61	3.30	85.5	78	3.33	82	95	3.79	41
62	3.47	69.5	79	3.53	62.5	96	4.00	22.5
63	3.40	76.5	80	3.33	82	97	3.74	45
64	4.00	22.5	81	3.67	52.5			
65	3.61	54.5	82	4.08	18			

Score range, 2.45 to 4.83; score mean, 3.71; score median, 3.71.

Table 40.—Written communications ability

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	3.46	52	34	3.67	35.5	67	2.71	95
2	3.87	24.5	35	3.63	39	68	3.88	23
3	3.00	89	36	3.13	78.5	69	3.59	43
4	3.67	35.5	37	4.17	7.5	70	3.00	89
5	4.79	1	38	3.38	62.5	71	3.00	89.5
6	3.78	30	39	2.86	93	72	3.61	41
7	3.82	28	40	4.00	18	73	3.46	52
8	3.19	73	41	4.19	6	74	4.09	14
9	4.14	10.5	42	2.42	97	75	3.32	65
10	2.63	96	43	3.31	67	76	3.31	67
11	3.95	20	44	4.27	3	77	3.54	47
12	3.07	81.5	45	3.50	49.5	78	3.22	69.5
13	3.87	24.5	46	3.40	59.5	79	3.73	32
14	4.15	9	47	3.31	67	80	3.18	74
15	4.14	10.5	48	3.39	61	81	3.42	55
16	3.92	21.5	49	3.13	78.5	82	4.13	12
17	4.17	7.5	50	3.40	59.5	83	3.07	81.5
18	3.44	54	51	3.06	84	84	3.36	64
19	4.00	18	52	3.63	39	85	4.00	18
20	3.57	45	53	3.65	37	86	3.00	89
21	4.07	15	54	2.77	94	87	4.10	13
22	4.25	4	55	3.86	26	88	3.50	49.5
23	3.41	57	56	3.01	85	89	3.14	76.5
24	3.57	45	57	3.41	57	90	3.71	33
25	3.00	89	58	3.79	29	91	3.38	62.5
26	3.63	39	59	3.21	71	92	3.15	75
27	4.05	16	60	3.69	34	93	3.85	27
28	4.20	5	61	3.20	72	94	3.00	89.5
29	3.97	81.5	62	3.07	81.5	95	3.46	52
30	3.00	89	63	3.22	69.5	96	4.50	2
31	3.57	45	64	3.92	21.5	97	3.53	48
32	3.14	76.5	65	3.41	57			
33	3.60	42	66	3.74	31			

Score range, 2.42 to 4.79; score mean, 3.54; score median, 3.50.

Table 41.—Communications ability totals ar ! rank order

Business	Total	Rank	Business	Total	Rank	Business	Total	Rank
1	162	62	34	125.5	35	67	203	77
2	110	28	35	166	64	68	136	38
3	165.5	68	36	223.5	84	69	148	49.5
4	158	59.5	37	94	23	70	152	51
5	80	16	38	143	45	71	270	97
6	33.5	4	39	173.5	66	72	137.5	40.5
7	118.5	30.5	40	135.5	37	73	177	69
8	155.5	55	41	61	12	74	38.5	5
9	141	44	42	237.5	88	75	231.5	86
10	192.5	71	43	118.5	30.5	76	197	73
11	137.5	40.5	44	19.5	1	77	74	14
12	197.5	74.5	45	158.5	61	78	175	67
13	124.5	34	46	210	79.5	79	147	48
14	47	6	47	136.5	39	80	240	90
15	103	25	48	156.5	56	81	139.5	43
16	59.5	11	49	119	32	82	71.5	13
17	91.5	20	50	157.5	58	83	257.5	94.5
18	138	42	51	157	57	84	170	65
19	93.5	21.5	52	146.5	47	85	58	7.5
20	152.5	52	53	112	29	86	194.5	72
21	28.5	3	54	257.5	94.5	87	27.5	2
22	90	19	55	57	10	88	215	81.5
23	215	81.5	56	198	76	89	223	84
24	158	59.5	57	144	33	90	51	8
25	235	87	58	93.5	21.5	91	210	79.5
26	85.5	17.5	59	207.5	78	92	262	96
27	154.5	54	60	75.5	15	93	102.5	24
28	105	27	61	223	84	94	257	93
29	197.5	74.5	62	238	89	95	134.5	36
30	249.5	92	63	164	62	96	48	7.5
31	148	49.5	64	85.5	17.5	97	124	33
32	242.5	91	65	153	53			
33	186	70	66	103.5	26			

Score range, 19.5 to 270; score mean, 147.5; score median, 148.

Table 42.—Summary of communications ability ranks

Business	Verbal comprehension	Oral communications ability	Written communications ability	Communications ability
1	91	19	52	62
2	65.5	20	24.5	28
3	31.5	56	89	68
4	91	31.5	35.5	59.5
5	41.5	37.5	1	16
6	2.5	1	30	4
7	12.5	78	28	30.5
8	65.5	17	73	55
9	41.5	89	10.5	44
10	93.5	3	96	71
11	49.5	68	20	40.5
12	91	25	81.5	74.5
13	41.5	58.5	24.5	34
14	23.5	14.5	9	6
15	48.5	44	10.5	25
16	23.5	14.5	21.5	11
17	12.5	71.5	7.5	20
18	52.5	31.5	54	42
19	1	74.5	18	21.5

Table continued on next page.

Table 42.—Summary of communications ability ranks—Continued

Business	Verbal comprehersion	Oral communications ability	Written communications ability	Communications ability
20	71.5	36	45	52
21	7	6.5	15	3
22	31.5	54.5	4	19
23	88.5	69.5	57	81.5
24	18	95	45	59.5
25	78.5	66.5	89	87
26	[illegible].5	5	39	17.5
27	41.5	97	16	54
28	18	82	5	27
29	65.5	50.5	81.5	74.5
30	78.5	82	89	92
31	52.5	50.5	45	49.5
32	84	82	76.5	91
33	96	48	42	70
34	31.5	58.5	35.5	35
35	84	43	39	64
36	59.5	85.5	78.5	84
37	78.5	8	7.5	23
38	23.5	57	62.5	45
39	41.5	39	93	66
40	78.5	9	18	37
41	23.5	31.5	6	12
42	52.5	88	97	88
43	41.5	10	67	30.5
44	12.5	4	3	1
45	71.5	37.5	49.5	61
46	71.5	79	59.5	79.5
47	7	62.5	67	39
48	31.5	64	61	56
49	12.5	28	78.5	32
50	31.5	66.5	59.5	58
51	41.5	31.5	84	57
52	59.5	58	39	47
53	52.5	22.5	37	29
54	71.5	92	94	94.5
55	4.5	26.5	26	10
56	52.5	60.5	85	76
57	12.5	74.5	57	33
58	23.5	41	29	21.5
59	71.5	65	71	78
60	12.5	29	34	15
61	65.5	85.5	72	84
62	87	69.5	81.5	89
63	18	76.5	69.5	62
64	41.5	22.5	21.5	17.5
65	41.5	54.5	57	53
66	59.5	13	31	26
67	31.5	76.5	95	77
68	78.5	34.5	23	38
69	78.5	26.5	43	49.5
70	2.5	60.5	89	51
71	88.5	92	89.5	97
72	48.5	48	41	40.5
73	84	41	52	69
74	12.5	12	14	5
75	93.5	73	65	86
76	59.5	71.5	67	73
77	4.5	22.5	47	14
78	23.5	82	69.5	67
79	52.5	62.5	32	48

Table continued on next page.

Table 42.—Summary of communications ability ranks—Continued

Business	Verbal comprehension	Oral communications ability	Written communications ability	Communications ability
80	84	82	74	90
81	31.5	52.5	55	43
82	41.5	18	12	13
83	84	92	81.5	94.5
84	71.5	34.5	64	65
85	23.3	6.5	18	7.5
86	59.5	46	89	72
87	12.5	2	13	2
88	71.5	94	49.5	81.5
89	59.5	87	76.5	84
90	7	11	33	8
91	95	52.5	62.5	79.5
92	97	90	75	96
93	59.5	16	27	24
94	71.5	96	89.5	93
95	41.5	41	52	36
96	23.5	22.5	2	7.5
97	31.5	45	48	33

Table 43.—Technical knowledge

Business	Score	Rank	Business	Score	Rank	Business	Score	Rank
1	4.39	19	34	4.67	4	67	3.24	92
2	4.15	34.5	35	4.41	18	68	4.60	6.5
3	3.38	86	36	4.44	14.5	69	3.95	51
4	4.15	34.5	37	3.93	54.5	70	4.17	31.5
5	4.24	28	38	4.75	3	71	3.00	95.5
6	4.28	24	39	4.00	46	72	3.64	70
7	4.00	46	40	4.13	38	73	3.57	76.5
8	3.68	64.5	41	4.13	38	74	4.35	20.5
9	4.17	31.5	42	4.00	46	75	3.63	72
10	4.16	33	43	4.12	40	76	3.00	95.5
11	4.52	12	44	4.92	1	77	4.14	36
12	3.26	89	45	4.58	8	78	3.44	83
13	4.43	16.5	46	3.65	67.5	79	3.73	61
14	4.44	14.5	47	4.35	20.5	80	3.39	85
15	4.43	16.5	48	3.59	76	81	3.94	52.5
16	3.96	40	49	4.05	41	82	4.32	23
17	4.63	5	50	4.00	46	83	3.93	54.5
18	3.69	63	51	4.19	30	84	3.88	57
19	4.26	26	52	3.53	81	85	4.00	46
20	3.57	76.5	53	4.24	28	86	3.91	56
21	4.13	38	54	3.05	94	87	4.83	2
22	4.57	9.5	55	3.71	62	88	3.55	79.5
23	4.57	9.5	56	3.66	66	89	3.55	79.5
24	3.76	59	57	4.00	46	90	4.56	11
25	4.04	42	58	3.94	52.5	91	3.56	78
26	3.25	90.5	59	3.64	70	92	3.35	87
27	4.48	13	60	3.64	70	93	3.75	60
28	4.60	6.5	61	4.40	84	94	3.33	88
30	3.25	90.5	63	3.48	82	96	3.60	74
31	4.00	46	64	4.27	25	97	3.61	73
32	2.95	97	65	3.68	54.5			
33	4.33	22	66	4.24	28			

Score range, 2.95 to 4.92; score mean, 3.95; score median, 4.00.

Measurement of Technical Knowledge

Technical knowledge was measured solely by the judgment ratings of customers and suppliers. Results are presented in Table 43.

A rank summary of the five characteristics, the characteristics' total rank, and the success rank of each business are presented in Table 44.

Table 44.—Summary of success rank, rank of characteristics, and total characteristics, rank order

Business	Success	Drive	Thinking ability	Human relations ability	Communications ability	Technical knowledge	Total characteristics
1	50	32	50.5	64	62	19	43
2	38	34	20	48	28	34.5	29
3	89	88	21	88	68	86	78
4	48	11	11	36	59.5	34.5	24
5	29	10	19	31	16	28	14
6	31	36	27	67	4	24	26
7	11	51	59	29	30.5	46	39
8	85	39	97	76	55	64.5	72.5
9	3	40.5	5	38	44	31.5	27
10	76	50	86.5	59	71	33	64
11	5	24	9	19	40.5	12	15
12	88	92	74	81	74.5	89	88
13	39	52	64	53	34	16.5	40
14	33	22	30	20	6	14.5	11
15	8	1	28.5	35	25	16.5	16
16	42	71	69	25	11	40	41
17	1	31	2	11.5	20	5	8
18	84	97	50.5	92	42	63	76
19	19	70	1	27	21.5	26	22
20	35	49	89	65	52	76.5	72.5
21	16	65	45	37	3	38	33
22	6	17	13.5	22	19	9.5	9
23	67	47.5	43	11.5	81.5	9.5	34
24	55	60	53	89	59.5	59	67.5
25	65	53	36	23	87	42	50
26	52	75	34.5	45	17.5	90.5	55
27	20	15	16	9	54	13	17
28	14	8	15	5	27	6.5	5.5
29	56	93	76	82	74.5	93	90
30	72	87	81	83	92	90.5	93
31	63	83	96	75	49.5	46	77
32	69	78	57.5	78	91	97	87
33	77	9	22	21	70	22	21
34	57	27	17	2	35	4	10
35	60	67	48	32	64	18	44
36	68	74	32	77	84	14.5	58
37	79	19	40	40	23	54.5	31
38	71	35	34.5	66	45	3	32
39	51	56	61	55	66	46	59
40	27	6	13.5	41	37	38	20
41	2	13	32	33	12	38	19
42	47	58.5	86.5	46	88	46	71
43	34	58.5	28.5	39	30.5	40	36
44	13	5	7	10	1	1	1
45	75	29	32	70	61	8	37
46	54	94	62.5	74	79.5	67.5	82
47	61	45	55	73	39	20.5	45
48	70	84.5	88	51	56	76	79

Table continued on st page.

Table 44.—Summary of success rank, rank of characteristics, and total characteristics, rank order—Continued

Business	Success	Drive	Thinking ability	Human relations ability	Communications ability	Technical knowledge	Total characteristics
49	9	72.5	70.5	17	32	41	46
50	53	68	72.5	63	58	46	65
51	45	76	41	47	57	30	53
52	30	57	78	79	47	81	75
53	32	61.5	39	69	29	28	42
54	94	89	77	86	94.5	94	97
55	90	40.5	26	30	10	62	30
56	97	78	69	94	76	66	84
57	46	63	44	61	33	46	51
58	62	54	52	56.5	21.5	52.5	48
59	96	95	94	91	78	70	92
60	23	86	62.5	62	15	70	62
61	24	81	95	90	84	84	94
62	83	43	90	1	89	48	60
63	64	25	25	97	62	82	61
64	10	2	32	18	17.5	25	12
65	43	46	47	49.5	53	64.5	54
66	15	23	18	68	26	28	28
67	74	66	85	80	77	92	86
68	17	7	6	3	38	6.5	4
69	37	44	49	56.5	49.5	51	52
70	87	33	67.5	54	51	31.5	49
71	93	90	83	71	97	95.5	95
72	40	30	24	44	40.5	70	38
73	44	26	65	52.5	69	76.5	57
74	12	21	8	7	5	20.5	5.5
75	78	64	66	34	86	72	69
76	82	82	42	84	73	95.5	80
77	18	20	67.5	15	14	36	25
78	81	96	72.5	96	67	83	89
79	41	84.5	75	52	48	61	67.5
80	73	72.5	80	49.5	90	85	81
81	95	38	46	14	43	52.5	35
82	22	12	12	8	13	23	7
83	66	47.5	56	60	94.5	54.5	66
84	25	80	54	42.5	65	57	63
85	92	14	4	24	7.5	46	13
86	28	55	83	6	72	56	56
87	7	3	23	16	2	2	3
88	80	91	93	93	81.5	79.5	96
89	86	61.5	79	95	84	79.5	85
90	4	16	3	4	8	11	2
91	59	28	91	58	79.5	78	74
92	91	69	83	87	96	97	91
93	49	18	10	13	24	60	18
94	58	37	92	72	93	88	33
95	36	77	57.5	85	36	67.5	70
96	21	4	37	28	7.5	74	23
97	26	42	60	26	33	73	47

7

Relationship of Success to the Five Characteristics

Coefficient of Rank Correlations—Computations of Rank Correlations—Rank Correlation Analysis

After obtaining rank orders for party-at-interest satisfaction and intensity of characteristics, it became possible to compute rank correlations to test for relationships between success and the five characteristics.

Coefficient of Rank Correlations

The coefficient of rank correlations was computed from the formula: [1]

$$r' = 1 - \frac{6\Sigma d^2}{n(n^2-1)}$$

In order to test the statistical significance of the results obtained by the rank correlation, the standard error of the estimate was calculated from the formula:

$$pr = \frac{1}{\sqrt{N-1}}$$

Substituting the sample size, 97, in the above formula produces a standard error of the estimate of .102. Standard error divided into the rank correlation (obtained by the r′ formula) provides the test for significance. For example, the .489 rank correlation of creative thinking compared to

[1] Rank correlation was used instead of a parametric analysis because of the widely varying numerical measuring systems employed in the study. In addition, rank correlation is not subject to distortion by material departures from normality that might be introduced in the study because of the varying sizes and types of businesses surveyed.

satisfaction of parties-at-interest is more than four times the standard error of the estimate, indicating the correlation to be significant. In addition, r′ is significant at the 5 percent level when r′ is greater than .200.

Computation of Rank Correlations

In order to measure part of the relationship between parties-at-interest satisfaction and the five characteristics and their component traits, rank correlations were computed. Table 45 presents the results.

After identifying the relationship of each characteristic to success, the ranks for each small business manager's characteristics were then totaled, and these totals were ranked to produce a sum total of the interaction of the characteristics. The total rank order of characteristics was then correlated to parties-at-interest satisfaction. These computations produced a rank correlation of .628.

Table 45.—Rank correlation of parties-at-interest to success characteristics

Characteristics and component traits	Correlation
Drive	0. 467
Responsibility	.064
Vigor	.133
Initiative	.532
Persistence	.475
Health	.426
Thinking ability	.464
Original thinking	.027
Critical thinking	.236
Creative thinking	.489
Analytical thinking	.457
Human relations ability	.532
Ascendancy	.178
Emotional stability	—.008
Sociability	.148
Cautiousness	.040
Personal relations	
Consideration	.507
Cheerfulness	.540
Cooperation	.493
Tactfulness	.537
Communications ability	.615
Verbal comprehension	.401
Oral communications ability	.309
Written communications ability	.634
Technical knowledge	.522

Multiple and partial correlations were computed on party-at-interest success rank as they related to the ranks of the five characteristics. The multiple correlation is .674, and the multiple coefficient of determination (R^2) is 45½ percent. Although the coefficient suggests that the correlation is statistically significant, only 45½ percent of the variance in the measure of success is explained by the five characteristics. The remaining 54½ percent of the variance comes from unknown causes—probably because the measuring devices for parties-at-interest and characteristics do not provide highly accurate measures. Another causal factor probably would be the differences in business environment among the businesses surveyed.

Table 46.—Partial correlation analysis

Variable	Correlation
Success correlated to:	
Drive	—0.032
Thinking ability	—.012
Human relations ability	.193
Communications ability	.401
Technical knowledge	.124
Drive correlated to:	
Thinking ability	.286
Human relations ability	.334
Communications ability	.078
Technical knowledge	.160
Thinking ability correlated to:	
Human relations ability	.020
Communications ability	.292
Technical knowledge	.320
Human relations ability correlated to:	
Communications ability	.081
Technical knowledge	.266
Communications ability correlated to:	
Technical knowledge	.043

The partial correlations obtained in the analysis are presented in Table 46. The partial correlation analysis of the relation between success and the five characteristics produces a range from —.012 to .40.; however, the multiple correlation is .674. This difference in correlation seems to bolster the contention that small business managers are the total interaction of all their personality traits rather than the sum total of their personality traits.

Rank Correlation Analysis

In addition, in the rank correlation analysis, all five characteristics were significantly rank correlated to success (not so in the partial analysis); yet not all component traits of the characteristics were significantly correlated. For example, in the human relations ability characteristic, the traits of ascendancy, emotional stability, sociability, cautiousness, and personal relations are not significantly correlated to success at the 5 percent level. Yet human relations ability is .532 rank correlated to success. This would also seem to indicate that small business managers are the product of personality trait interaction.

The .628 correlation does assume, however, that the five characteristics are of equal weight in determining success; but it is not possible at this time to identify the degree to which each characteristic contributes to success. A rather arbitrary weight was assigned to each characteristic in an attempt to test the effect on the rank correlation results. Assuming that drive, rather than technical knowledge, contributes more to success, the rank orders of the five characteristics were multiplied as follows: drive was multiplied by 3; thinking ability, by 2; human relations ability, by 2; communications ability, by 2; and technical knowledge, by 1. The totals were then arranged in rank order and correlated to success, producing a correlation of .623, which varies little from the correlation obtained by equal weighting. It seems safe to assume that no matter what weighting system is applied to the characteristics, the rank correlation results will continue to be most significant at the 5 percent level.

8

Conclusions

Hypothesis Is Valid—Reasons Previous Attempts Failed—Future Studies Indicated

The results of this study provided the basis for several conclusions, and tney indicate the potential worth of additional investigations in this general area.

Hypothesis Is Valid

The empirical data gathered by this study validates the hypothesis that successful businessmen possess superior amounts of certain personality characteristics. The five characteristics studied—drive, thinking ability, human relations ability, communications ability, and technical knowledge—showed a significant rank correlation to success; and an interaction measure of the whole group of characteristics produced a .674 multiple correlation to success. This indicates that 45½ percent of the difference in success of the 97 small business managers surveyed results from differences in the extent to which they possess the five characteristics. Also, an additional part of the unexplained difference in success probably results from inaccuracies in the measuring devices used.

The five characteristics tested in the survey can be named, then, as important contributors to the success of small business managers. And because management functions are performed in all businesses, regardless of size, it is quite likely that these characteristics are important contributors to any business manager's success.

Reasons Previous Attempts Failed

Previous attempts to identify personality factors of business manager success have failed largely because of two basic weaknesses: the criteria

of success were inadequate, and the investigators failed to measure the interaction of personality traits.

Previous studies have used various criteria, such as profit; but in each instance the criteria were only a small part of the total party-at-interest satisfaction. Use of only profit does not appear to be realistic when one considers that the ultimate purpose of management is to operate a business that in addition to making a profit will also serve the social goal of satisfying human wants and needs. Using the satisfaction of all parties-at-interest to gage success would seem to be a more valid approach.

Previous studies also failed to measure interaction of traits. People are an amalgam of traits which modify, intensify, and reduce each other in their interaction. Measuring a trait and not its interaction with other traits distorts the contribution it makes to business manager success. By measuring interaction, this study overcame the weakness of previous tests, but it should be pointed out that the traits measured as the components of the five characteristics are not all inclusive. Much more investigation will be needed to pinpoint all of the component traits of these characteristics. Also, more investigation will be needed to determine if there are additional characteristics.

This study has not solved the identity of all contributors to business manager success, but it has opened several previous bottlenecks and pointed the way to future development of knowledge in this field.

That there are other variables which contribute to the success of small business managers seems a reasonable assumption. The business environment, for example, is probably of major importance. A small business manager who operates in an environment of intensive competition would encounter more difficulties in satisfying his parties-at-interest than would a manager meeting less competition. Future studies would do well to identify and measure such variables. (To overcome, to a degree, the environment variable, the survey should probably deal with small businesses of the same type.)

Future Studies Indicated

The results of this study—showing that certain personal characteristics are important contributors to success—have certain implications for the business community. It would seem reasonable that the preparation of future business managers provide for the development of these characteristics. Colleges and universities offering business administration curricula would do well to evaluate their courses as they relate to these five characteristics. A suggested curriculum designed to develop the characteristics among future business managers would seem worthwhile. Business training programs would also do well to consider these characteristics in training management personnel.

The screening process for hiring and promoting business managers should be evaluated in the light of the five characteristics. And it would also be worthwhile to design devices that more accurately measure the characteristics.

These are only a few areas of investigation in which the contributors to manager success might be studied. Refinements are seemingly limitless. In addition, developments can definitely increase the efficiency of business management; and this in turn increases the satisfaction of parties-at-interest, which is the ultimate goal of business.

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* Sources used to determine parties-at-interest terminology, as shown in Table 2.

** Sources consulted to determine personality traits that contribute to success, as given in Table 13.

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Appendix A

Questionnaire for Management

Name of firm:_____

Location: _____

I. Owners:

1. Average yearly profit for last 10 years (approximately) : $_____

2. How many times in the last 10 years has this amount varied by more than 50%, and by how much (approximate percentage) : ____ Times ____%.

3. This profit compared with other stores the same size in your field is: Very high____ Above average____ Average____ Below average____ Very low____.

4. What is the approximate total net worth of the business (assets minus liabilities) ? $_____.

5. Do you think this business will be operating 10 years from now? Yes____ No____.
   If no, why?_____

6. In 10 years, the dollar volume of this business should: Increase____ Stay the same____ Decrease____. Approximately how much decrease or increase do you expect_. _%

7. Are you the owner as well as the manager? Yes____ No____.

8. How many hours a week do you average working at the business? ____hours per week.

9. Do you enjoy your work? There is no other work I would rather do____ I like it very much____ It's all right____ I don't like it, but it's a living____ I despise it____.

10. How do you feel about the business as a part of the community? With pride____ A way of making a living____ No particular feeling____.

11. If you could make 25% more money working for someone else, would you? Yes____ No____.

12. If you are the owner, why have you continued operations in this business?

II. Community:

1. List the local organizations of which you are a member. If an officer, indicate office you hold or have held.

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2. List organizations *other than* local of which you are a member. If an officer, indicate office you hold or have held.

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3. List the committees or drives you have participated in during the past 2 years.

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4. Do you contribute to charities? Yes____ No____.
Approximate yearly amount: $_____.

5. Do you usually attend the fund-raising dinners, bazaars, etc., that you are asked to attend? Most____ Many____ Few____ None____.

6. Do you usually buy advertising space in school newspapers or yearbooks? Yes____ No____. Other publications, not including commercial media. Yes____ No____.

7. Do you ever allow local organizations to place notices in your business (fund-raising advertisements, March of Dimes containers, etc.)? Yes____ No____.

8. How active are you in local politics? Very active____ Active____ Just vote____ Inactive____.

9. Have you ever held a political position? Yes____ No____.
If yes what office or position?

---

10. Have you ever been called to serve on jury duty? Yes____ No_____. Did you serve when called? Yes____ No_____. If not, why?

---

11. Do you think your property tax evaluation is fair? Yes____ No_____. If no, high_____ low_____.

12. In which of the following elections do you normally vote? City____ County____ State____ National____ School board____

III. Governments:

1. Do you ever communicate with State or Federal officials? Yes____ No_____. If yes, is it on your own initiative? Yes____ No_____.

2. Do you currently support, directly or indirectly, any lobbying group? Yes____ No_____.

3. Do you prepare your own income tax reports? Yes____ No_____. If not, who does (attorney, C.P.A., tax accountant, etc.)?

---

4. Do you think you are taking all possible items that are tax deductible? Yes____ No_____.

5. Have you ever been called in by the Internal Revenue Service for a conference about your income tax? Yes____ No_____. What was the reason for the conference?

What was the outcome of the conference?

---

6. Have you ever paid a penalty on your local, State, or Federal taxes? Yes____ No_____. If yes, which_____.

7. Have you ever been censured or reprimanded by tax officials?

IV. Employees:

Name

1. _____	6. _____
2. _____	7. _____
3. _____	8. _____
4. _____	9. _____
5. _____	10. _____

V. Suppliers:

	Name	*Address*
1.	----------	----------
2.	----------	----------
3.	----------	----------
4.	----------	----------
5.	----------	----------

VI. Creditors:

Name of bank used by the business----------

VII. Customers:

Approximate total number of customers:

	Name	*Address*
1.	----------	----------
2.	----------	----------
3.	----------	----------
4.	----------	----------
5.	----------	----------
6.	----------	----------
7.	----------	----------
8.	----------	----------
9.	----------	----------
10.	----------	----------
11.	----------	----------
12.	----------	----------
13.	----------	----------
14.	----------	----------
15.	----------	----------

Etc.

Appendix B

Customer Survey

Name of firm: _____

Location: _____

I. Please rank the above-named firm by placing a √ in the appropriate column:

	Very high	Above average	Average	Below average	Very low	None	Not applicable	Comments
1. Convenience of location								
2. Quality of goods or services								
3. Variety of choice of goods or services								
4. Quantity of goods or services								
5. Appearance of establishment:								
a. Neatness								
b. Cleanliness								
c. Spaciousness								
d. Uniformity of appearance								
6. Number of hours a day the business is open								
7. Number of days in a week the business is open								
8. Management's knowledge of product or service.								
9. Availability of latest fashion or style								
10. Speed of service								
11. Prestige of business								
12. Adequacy of merchandise display								
13. Customer services:								
a. Liberal credit policy								
b. Layaway								
c. Delivery								
d. Product guaranty								
e. After guaranty repairs								
f. Product return policies								
g. Purchase bonuses (trading stamps, etc.)								
14. Satisfaction of customer complaints								
15. Availability of parking facilities								
16. Quality of advertising								
17. Dependability of business								

Table continued on next page.

	Very high	Above average	Average	Below average	Very low	None	Not applicable	Comments
18. Rank of this business, overall, in relation to other businesses in its field								
19. Employees:								
a. Knowledge of product or service								
b. Attitude:								
1. Helpful								
2. Friendly								
c. Appearance								
20. Price of goods or services								
21. Sales pressure								
22. Traffic congestion:								
a. Street								
b. Sidewalk in front of store								
c. Inside store								

II. How would you rank the following characteristics of the owner or manager:

	Very high	Above average	Average	Below average	Very low	None	Not applicable	Comments
1. Thinking ability:								
a. Creative (originality)								
b. Analytical (logical reasoning)								
2. Ability to communicate:								
a. Oral								
b. Written								
3. Drive or energy:								
a. Initiative								
b. Persistence								
c. Health								
4. Human relations ability:								
a. Consideration of other people								
b. Cheerful nature								
c. Cooperation with other people								
d. Tactfulness								
5. Manager's technical knowledge of his type of business								

III. Is this business air conditioned? ____Yes ____No.

IV. Additional comments_____

_____

_____

Appendix C

Questionnaire for Suppliers

Name of firm_____

Location _____

I. Place a √ in the column that best represents the above customer of your firm:

	Not applicable	None	Very low	Below average	Average	Above average	Very high	Comments
1. Number of emergency orders								
2. Normal size of orders								
3. Usual length of time customer notifies you in advance of his needs								
4. Promptness in payment of accounts								
5. Overall evaluation as a customer								
6. Fairness								
7. Receptiveness to suggestions								
8. Expectation of gifts as special favors								
9. Convenience of facilities for receiving goods								

Continued on next page.

II. How would you rank the following characteristics of the owner or manager:

	Not applicable	None	Very low	Below average	Average	Above average	Very high	Comments
1. Thinking ability:								
a. Creative (originality)								
b. Analytical (logical reasoning)								
2. Ability to communicate:								
a. Oral								
b. Written								
3. Drive or energy:								
a. Initiative								
b. Persistence								
c. Health								
4. Human relations ability:								
a. Consideration of other people								
b. Cheerful nature								
c. Cooperation with other people								
d. Tactfulness								
5. Manager's technical knowledge of his type of business								

III. Approximately how long has this firm been one of your customers? ____Years.

IV. Does this customer purchase from you on a regular basis? ____Yes ____No.

V. Does he purchase goods from your competitors? ____Yes ____No.

VI. Does he take his cash discounts regularly (for example: 2/10, n/30)? ____Yes ____No.

VII. Additional comments _____

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SMALL BUSINESS ADMINISTRATION

Field Offices

Agana, Guam
Albuquerque, N. Mex.
Anchorage, Alaska
Atlanta, Ga.
Augusta, Maine
Baltimore, Md.
Birmingham, Ala.
Boise, Idaho
Boston, Mass.
Buffalo, N.Y.
Casper, Wyo.
Charleston, W. Va.
Charlotte, N.C.
Chicago, Ill.
Clarksburg, W. Va.
Cleveland, Ohio
Columbia, S.C.
Columbus, Ohio
Concord, N.H.
Dallas, Tex.
Denver, Colo.
Des Moines, Iowa
Detroit, Mich.
Fargo, N. Dak.
Hartford, Conn.
Helena, Mont.
Honolulu, Hawaii
Houston, Tex.
Indianapolis, Ind.
Jackson, Miss.
Jacksonville, Fla.
Kansas City, Mo.
Knoxville, Tenn.
Little Rock, Ark.
Los Angeles, Calif.
Louisville, Ky.
Lubbock, Tex.
Madison, Wis.
Marquette, Mich.
Marshall, Tex
Miami, Fla.
Minneapolis, Minn.
Montpelier, Vt.
Nashville, Tenn.
Newark, N.J.
New Orleans, La.
New York, N.Y.
Oklahoma City, Okla.
Omaha, Nebr.
Philadelphia, Pa.
Phoenix, Ariz.
Pittsburgh, Pa.
Portland, Oreg.
Providence, R.I.
Richmond, Va.
St. Louis, Mo.
St. Thomas, Virgin Islands
Salt Lake City, Utah
San Antonio, Tex.
San Diego, Calif.
San Francisco, Calif.
Santurce, Puerto Rico
Seattle, Wash.
Sioux Falls, S. Dak.
Spokane, Wash.
Syracuse, N.Y.
Washington, D.C.
Wichita, Kans.

For addresses and telephone numbers of the field offices listed above, consult the appropriate telephone directory.

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LeRay, Nelson L.
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New York Agricultural Experiment Station, Ithaca
Economic Research Service (DOA), Washington, D.C. Economic Development Div.
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NEW YORK

To determine the exteht to which differences exist among full-time commercial farmers and part-time farmers on selected socio-economic characteristics, 206 farmers were interviewed in 1963 from a low income area of northern New York State. Data organized by characteristics of the farm operator, characteristics of the operator's family, and characteristics of the farm were analyzed by a chi-square statistical technique. Some conclusions were: (1) There was little difference among full-time farmers and part-time farmers in terms of characteristics of the farm operator and characteristics of the operator's family, (2) Part-time farmers were a heterogeneous group, (3) More difference was found between commercial part-time farmers and part-time farmers engaged in off-farm work than between commercial part-time farmers and full-time farmers, (4) The greatest number of significant differences were found between part-time farmers engaged in off-farm work and full-time farmers. Some implications were: (1) Change agents should decide if they are to serve part-time farmers and full-time farmers or concentrate on one group, (2) Change agents desiring to reach part-time farmers must be more readily available during evenings and on Saturdays, and (3) Much of the material and methods of working with full-time farmers would be appropriate for working with commercial part-time farmers. (DM)

VT 002 311

C.1

DECEMBER 1967 BULLETIN NO. 67-3

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FULL-TIME AND PART-TIME FARMERS IN A LOW-INCOME AREA

by

Nelson L. Le Ray

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Department of Rural Sociology
Cornell University Agricultural Experiment Station
New York State College of Agriculture
A Statutory College of the State University
Cornell University, Ithaca, New York

in cooperation with

Economic Development Division
Economic Research Service
United States Department of Agriculture

VT002311

FULL-TIME AND PART-TIME FARMERS

IN A LOW-INCOME AREA

by

Nelson L. Le Ray

PREFACE

Pockets of poverty in parts of rural America are a major problem in the development of rural areas and the economic growth of our nation. In some areas, poverty is closely related to conditions in the agricultural sector of the economy of the area and, in turn, to the sweeping changes which are occurring throughout American agriculture as a result of the application of new technology and government programs to farming enterprises. Such changes necessitate a continuous shifting and recombination of both the physical and human factors of production within agriculture as well as between agriculture and the nonfarm sectors of the social system.

This is the third special report for a study entitled "The Dynamics of Adjustments in Human and Physical Resource Use in a Low-Income Area of Northern New York State with Special Emphasis on Part-Time Farming." The study is a cooperative undertaking of the Department of Rural Sociology, Cornell University Agricultural Experiment Station, and the Economic Development Division of the Economic Research Service, U. S. Department of Agriculture.

The over-all study deals with the nature and process of socio-economic adjustment during the period 1949 to 1962 in human and physical resource use for rural farm families in an area of northern New York State. The study appraises causes from and effects on the community, area, and economy-wide characteristics and developments which comprise the general socio-economic environment within which adjustments have evolved.

The objective of the present report is to determine the extent to which differences exist among full-time commercial farmers and several types of part-time farmers in terms of selected socio-economic characteristics of the farm operator, the family and the farm in a low-income area. The first report, Factors Influencing Occupational Decisions In A Low-Income Area, dealt with the hypothesis that an occupational decision is a type of social action and that the factors which direct social occupational decisions come from the same array of factors that direct social action in general.[1/] The second report, Ex-Farm Operators In A Low-Income Area, dealt with farm operators who left farming during the period 1950-1962.[2/]

The author wishes to express his appreciation to others who had a role in this research project. These include: Olaf F. Larson of the Department of Rural Sociology, Cornell Agricultural Experiment Station, E. L. Baum, formerly with the Economic Development Division, Economic Research Service, and Robert B. Glasgow of the Economic Development Division, Economic Research Service, for their support and assistance in organizing and conducting the research project; William W. Reeder, Department of Rural Sociology, Cornell Agricultural Experiment Station, for assistance and counsel at all stages of the

---

1/ Reeder, William W., Le Ray, Nelson L., and Craig, Wesley W. Factors Influencing Occupational Decisions in A Low-Income Area. Department of Rural Sociology, Cornell University Agricultural Experiment Station Bulletin 67-1, October 1965.

2/ Le Ray, Nelson L., and Reeder, William W. Ex-Farm Operators in A Low-Income Area. Department of Rural Sociology, Cornell University Agricultural Experiment Station Bulletin 67-2, November 1965.

project; Robert L. Bruce of the Department of Extension and Adult Education, Gordon J. Cummings of the Department of Rural Sociology, and Lawrence Hamilton and Gustav Swanson of the Department of Conservation, Cornell University for serving on my Special Graduate Committee and for directing the thesis on which this report is based; and to Don Huddleston, County Agricultural Agent and Mark Connor, Farmers Home Administration Supervisor, St. Lawrence County, and to the rural people of the area who furnished the data that made this study possible.

FULL TIME AND PART-TIME FARMERS IN A LOW-INCOME AREA

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SUMMARY AND CONCLUSIONS

Summary

The purpose of this research was to determine the extent to which differences exist among selected types of full-time and part-time farmers. This study was based upon the premise that farmers, and more specifically part-time farmers, are not a homogeneous category. A general null hypothesis was formulated to investigate the problem:

> THERE ARE NO DIFFERENCES AMONG FULL-TIME FARMERS AND PART-TIME FARMERS AND SUBTYPES OF PART-TIME FARMERS IN TERMS OF SELECTED PERSONAL AND SOCIO-ECONOMIC CHARACTERISTICS.

The area selected for testing the hypotheses was St. Lawrence County, an area of northern New York State with relatively low incomes and high rates of unemployment and underemployment. Dairying is the major agricultural activity.

The data for the research came from a sample of 206 farmers who were interviewed during the summer of 1963. The sample was distributed as follows: 124 full-time commercial farmers, 43 commercial part-time farmers and 39 off-farm work part-time farmers.

Analysis of the data was organized under three major areas--characteristics of the farm operator, characteristics of the family of the farm operator, and characteristics of the farm. Chi-square tests of significance were run. The five percent level was accepted as the level of significance.

Significant differences were found between full-time farmers and all part-time farmers in terms of:

Farm Operator	Operator's Family	The Farm
1. Class of off-farm work	1. Stage of family life cycle	1. Land class
2. Nonfarm occupational choice		2. Acres operated
		3. Acres in cropland
		4. Change in number of cows milked
		5. Farm practices: a. fertilizer test

Significant differences were found between commercial part-time farmers and off-farm work part-time farmers in terms of:

Farm Operator	Operator's Family	The Farm
1. Work done on home place	1. No significant differences	1. Land tenure
2. Feeling that off-farm job interferes with farming		2. Land class
		3. Acres in cropland
		4. Change in number of cows milked
		5. Farm practices: a. chemical weed control b. lime test
		6. Production for home use

Significant differences were found between full-time farmers and commercial part-time farmers in terms of:

Farm Operator	Operator's Family	The Farm
1. Major type of off-farm work	1. Stage of family life cycle	1. No significant differences
2. Class of off-farm work		
3. Work done on home place		
4. Feeling that off-farm job interferes with farming		
5. Nonfarm occupational choice		

Significant differences were found between full-time farmers and off-farm work part-time farmers in terms of:

Farm Operator	Operator's Family	The Farm
1. Education	1. Stage of family life cycle	1. Land tenure
2. Class of off-farm work		2. Land class
		3. Acres operated
		4. Acres in cropland
		5. Change in number of cows milked
		6. Farm practices: a. lime test b. fertilizer test
		7. Production for home use

This study is based on data secured in a single county. It is unsound to generalize beyond the boundaries of this county. Yet the findings of this study cast doubt upon any assumption of no difference between full-time and part-time farmers in terms of the farm operators, their families or their farms.

Conclusions

Of special importance is the general finding that there was little difference among full-time farmers, part-time farmers and subtypes of part-time farmers in terms of characteristics of the farm operator and characteristics of the operator's family. Special note should be taken of the significant differences found between full-time farmers and commercial part-time farmers and between full-time farmers and off-farm work part-time farmers in terms of stage of family life cycle. With respect to characteristics of the farm operator, the difference in educational attainment between full-time farmers and off-farm work part-time farmers should be of special note.

Significant differences were found in the relation of the operator to the land, characteristics of the natural resource used in agricultural production, and the technology used in production. Further

justification for considering part-time farmers as a heterogeneous group is present in that when full-time farmers and all part-time farmers were compared, significant differences were found in terms of five characteristics of the farm. However, when type of part-time farm was controlled, no significant differences were found between full-time farmers and commercial part-time farmers, but differences were noted between full-time farmers and off-farm work part-time farmers in characteristics of the farm.

This summary statement would fall short of its potential if reference were not made to the magnitude and direction of differences among the categories studied. The general nature of significant differences between commercial and off-farm work part-time farmers was:

	Commercial Part-time Farmers (Percent)	Off-farm Work Part-time Farmers (Percent)
Farm Operator:		
Percent of work done on home place:		
Less than 50	50.0	18.4
50-79	45.2	34.2
80 or more	4.8	47.4
Felt off-farm job interferes with farming	54.8	30.6
The Farm:		
Full owners	67.4	92.3
Class I, II & III land	61.0	86.5
Acres in cropland:		
Under 50	14.0	54.1
50-99	32.6	35.1
100 and over	53.4	10.8
Increase of 25 percent or more in number of cows milked	41.9	17.6
Farm practices used:		
Chemical weed controls	32.6	12.8
Test for lime needs	83.7	46.2
Value of production for home use of $600 or more	60.5	20.5

Thus, commercial part-time farmers when compared to off-farm work part-time farmers, do less of the farm work done on the home place and are less likely to be full owners of the farm they operate. But they are more likely to feel that the off-farm job interferes with farming, operate more and better land, are more likely to have increased their herd size by 25 percent or more during the period 1949 to 1962, more likely to have tested their soil for lime, to have used chemical weed controls, and to have a higher value of production for home use.

In most respects, differences between commercial part-time farmers and full-time farmers were not significant. The direction and magnitude of significant differences between these two categories were:

	Commercial Part-time Farmers (Percent)	Full-time Farmers (Percent)
Farm Operator:		
Off-farm work:		
Manual type	88.4	66.7
Class:		
Family business	18.6	44.5
Government	32.6	14.8
Private	48.8	40.7
Percent of work done on home place:		
Less than 50	50.0	22.6
50-79	45.2	42.7
80 or more	4.8	34.7
Felt off-farm job interferes with farming	54.8	21.7
Manual nonfarm occupational choice	76.9	41.0
Operator's Family:		
Stage of family life cycle:		
Early	45.2	20.5
Late	54.8	79.5

Although there were no significant differences between commercial part-time farmers and full-time farmers in terms of the farm and the relationship of the farm operator to the land, commercial part-time farmers, when compared to full-time farmers who did some off-farm work,

were more likely to be employed at a manual type of work for a government agency or private employer, while full-time farmers were more likely to be employed in a non-manual occupation in their own or a family business. Full-time farmers did more of the farm work done on the home place and were more likely to in a late stage of the family life cycle, but were less likely to make a manual occupational choice and less likely to feel that their off-farm job interfered with farming than were commercial part-time farmers.

Of the categories tested, the greatest number of significant differences were found between off-farm work part-time farmers and full-time farmers. These differences were:

	Off-Farm Part-time Farmers (Percent)	Full-time Farmers (Percent)
Farm Operators:		
Completed high school	30.8	16.1
Class of off-farm work:		
Family business	13.2	44.5
Government	28.9	14.8
Private	57.9	40.7
Operator's Family:		
Stage of family life cycle:		
Early	42.1	20.5
Late	57.9	79.5
The Farm:		
Full owners	92.3	70.2
Class I, II & III land	86.5	56.1
Acres operated:		
Under 200	71.8	38.7
200-299	20.5	26.6
300 and over	7.7	34.7
Acres in cropland:		
Under 50	54.1	5.6
50-99	35.1	34.7
100 and over	10.8	59.7
Increase of 25 percent or more in number of cows milked	17.6	35.5
Farm practices used:		
Test for lime needs	46.2	73.4
Test for fertilizer needs	7.7	29.0
Value of production for home use of $600 or more	20.5	47.6

In terms of characteristics of the farm operator, off-farm work part-time farmers, when compared with full-time farmers, were more likely to have completed high school, more likely to be employed by an agency of government or a private employer, but less likely to be employed in a family off-farm business and less likely to feel that farming interferes with their off-farm job. They were more likely to be in an early family life cycle stage. With respect to the farm, off-farm work part-time farmers reported a higher proportion of full owners, operated poorer land, operated fewer total acres and had smaller acreage in cropland, were less likely to have increased their dairy herd by 25 percent or more, less likely to have tested for lime or fertilizer needs, and less likely to have home production with a value of $600 or more than were full-time farmers. 1/

Implications

The findings of the study have practical implications for educators, for full-time farmers, part-time farmers and subtypes of part-time farmers, for administrators and legislators and others concerned with programs that serve the several types of farmers, and for individuals and organizations at the local, State, and national level that work with or depend upon the support of farmers.

Within agriculture, as the proportion of part-time farmers increases with respect to the total number of farm operators, it may be necessary for change agents and others to decide if they are to serve both populations and, if not, which population they are to serve. They must decide

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1/ See page 29 for a listing of all independent variables and Table 1.0, pages 39-40; Table 2.0, page 47; and Table 3.0, page 51 for factors studied for which no significant differences were found.

whether to only serve a declining number of full-time commercial farmers, or as many farmers as possible. Since, in a large measure, the educational program of change agents is dependent upon its effectiveness in terms of number reached, it might be desirable to initiate programs designed to assist farmers who are not fully committed to agriculture as a way of making a living, but who do have a commitment to farming as a way of life.

With respect to the characteristics of the farm operator, the results of this study offer no major evidence to substantiate any assumption that the subtypes of part-time farmers would be any more difficult for change agents to work with than would full-time commercial farmers. However, since commercial and off-farm work part-time farmers by definition spend more time at off-farm work than do full-time commercial farmers, it may be necessary for change agents desiring to reach part-time farmers to be more readily available during evenings and on Saturdays.

With respect to the natural resources used in agricultural production, it is important to note that there were no significant differences between full-time commercial farmers and part-time commercial farmers. Thus, much of the material and methods of working with full-time farmers might be appropriate for working with commercial part-time farmers. Significant differences do exist between off-farm work part-time farmers and both full-time commercial farmers and commercial part-time farmers in terms of the relation of the farm operator to the land, the natural resources used in agriculture and the way in which these resources are used.

Research should be encouraged to determine the generality of types of part-time farmers under various cultural conditions and in different geographic locations and over extended periods of time. In other areas, and at other times, it might be necessary to include different independent variables and/or operational definitions of these variables.

FULL-TIME AND PART-TIME FARMERS IN A LOW-INCOME AREA [1]

by

Nelson L. Le Ray [2]

INTRODUCTION

The attention and concern of the people of the nation and of local, State, and national groups are increasingly being directed toward adjustments in human and physical resource use.[3] Analysis of Census and other secondary data has focused attention on low-income areas and disadvantaged segments of the population that harvest - but do not consume - the products of an affluent society. Within rural areas, considerable effort has been and is being expended in efforts to increase the productive efficiency of full-time farmers and in developing opportunities whereby surplus human agricultural resources may become productive resources in the nonfarm sector of society. Little research has been directed toward the human resources that have a foothold in two worlds - the part-time farmer with one foot on the land and one foot in the nonfarm employment market. The combination of farm operation and off-farm work has been, and continues to be, an important way of living and of making a living. A relatively high proportion of American farmers work off their farms 100 or more days a year. In 1949, 23 percent of the 5.4 million farms in the United States were operated by individuals who reported working off their farms 100 days or more (U. S. Department of Commerce, 1962, Table 26).[4] Between 1949 and 1959, the number of farms decreased by 31 percent but the proportion of farm operators working off their farms

---

[1] This report is based in part on a dissertation presented to the faculty of the Graduate School of Cornell University in candidacy for the degree of Doctor of Education in 1965.

[2] Sociologist, Economic Development Division, Economic Research Service, U. S. Department of Agriculture cooperating with Cornell Univ. Agricultural Experiment Station.

[3] Galbraith, 1958; Rigbee, 1963; and Humphrey, 1964.

[4] References in parenthesis refer to items in Literature Cited, p. 58.

100 days or more rose to 30 percent.[1/]

Information from the U. S. Bureau of the Census also indicates that the practice of combining farm operation and off-farm work has been increasing in New York State and in the study area--St. Lawrence County, New York (U. S. Department of Commerce, 1961, Table 5). During the period 1949 to 1959, the number of farms in New York State and St. Lawrence County decreased by 34 and 32 percent, respectively. During the same period the proportion of New York farm operators working off their farms 100 days or more increased from 30 to 33 percent; while in St. Lawrence County the increase was from 24 to 32 percent.

Rural people are faced with steadily rising standards of technical and managerial proficiency.[2/] Continuing increases in labor productivity and concurrent decreases in labor requirements mean that a part of the human adjustment to technological change must be the shifting of large numbers of people out of full-time farming. This movement is highly selective and related not only to agricultural conditions, but also to nonfarm conditions in the immediate area and in other parts of the country and the world.

Industrialization and transfer of surplus farm labor to off-farm employment are viewed as solutions to problems of agricultural adjustment

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[1/] These changes would have been greater if the Bureau of the Census had used the same definition of farm in 1949 and 1959 (U. S. Department of Commerce, 1962, pp. XXVI-XXXIV). The change in definition of farm resulted in 232,059 places being classified as rural nonfarm under the 1959 definition that would have been classified as farm under the 1949 definition. The "operators" of over three-fifths of these places worked off the place 100 days or more in 1959. Data about multiple job holding in the United States are very limited. However, it is interesting to note that during December 1959, 2,966,000 individuals or 4.5 percent of total employed held two or more jobs. Of those with a primary occupation in agriculture, 6.7 percent were dual job holders while of those with a primary occupation in non-agricultural work, 4.3 percent were dual job holders (U. S. Department of Labor, 1964, p. 221). For additional national and regional data on dual job holding by farm operators, see Hathaway and Waldo, 1964.

[2/] A detailed discussion of human and physical resource adjustment to technological change in agriculture is beyond the scope of this study. For a discussion of the impact of new technology in agriculture upon human and physical resources see: Le Ray, 1962, pp. 207-227, and Green and Le Ray, 1960, pp. 331-335.

and low-income in many rural areas. In commenting on this type of solution, Levin noted:

> The situation seems quite clear. Substantial numbers of workers could be removed from agriculture without lowering farm output. If these people were put to work in some other industry, total national output could be increased. The answer is simple--move the people out as fast as possible to prevent further resource waste . . . . What the adherents of out-migration fail to recognize is that more than increased efficiency in the allocation of resources is involved. First of all, there are the social and psychological dislocations alluded to above. More important in the present context, however, are the economic costs involved in the achievement of resource adjustment. It is not enough merely to point out, . . . the amount by which total farm output and average farm income would be increased through reorganization of agriculture in a particular area via larger farm size, increased mechanization and fewer farm workers. Where the excess population is to go and how their needs are to be met must be taken into account. The most obvious economic factor is simply the cost of transferring the people and their belongings. Less obvious is the effect on the economic functioning of the area to which they migrate and on the nonfarm sectors of the area from which they emanate (Levin, 1959, p. 216).

Part-time farmers may not be needed for commercial agricultural production. They have been overlooked by most agricultural programs and agencies serving farmers. In this regard, it is interesting to note that almost thirty years elapsed between the time that Walker and DeVault wrote:

> Small farms are generally overlooked in most agricultural programs. We have neglected to consider small farms in our public policy. Irrespective of the trend toward large-scale, mechanized farming, small farms, like other small business enterprises, are here to stay in sufficient numbers to be a factor in our land policies (Walker and DeVault, 1933, p. 223).

and the time that Evans et. al. concluded:

> It is obvious that the 56 percent of the nation's farmers accounting for only nine percent of the total farm sales receive little direct help from such programs (farm price support and related programs) because these farmers market farm products in very small quantities, and it is in the market place where most of the support programs are put into effect (Evans et. al., 1961, pp. 33-34).

The socio-economic implications of part-time farming are far-reaching. Part-time farming serves as a way out of agriculture for farmers, as a permanent way of life for former full-time farmers and urban residents, as a step to full-time farming for nonfarm residents or sons of farmers

and as a means by which low-income farmers can accumulate additional capital needed for full-time commercial farming.

Staniforth and Christiansen (1958, pp. 11-12), after studying 71 Wisconsin farmers during the period 1950-54, conclude that part-time farming provides the low-income farm family the means of entering into off-farm employment without giving up the home, community, or the financial security of a farm unit. The farm is looked upon as something to fall back on. Since many nonfarm job opportunities available to low-income farm people are low-status jobs, and farming has higher status in the community, part-time farming may be a means of avoiding the status-decreasing effect of the nonfarm job (Olson, 1960, pp. 12-13).[1/] Low-income rural people frequently lack nonfarm skills. They are often the first to be separated when there is a reduction in nonfarm employment (Inman and Southern, 1960, p. 15).

> Part-time farming not only offers some hope and even final solution to a portion of the low-income problem, but is consistent with the total needs of adjustment to economic growth in agriculture . . . . Part-time farming helps move otherwise immobile farm people into nonfarm employment as a major or total source of income; and it results in more extensive use of land resources which helps resolve the initial conflict between needed individual farm development (and results in increases in production) and the need for adjusting total agricultural production to demand (Staniforth and Christiansen, 1958, pp. 13-14).

Ohio studies (Moore and Wayt, 1957; Wayt, et. al. 1959; Wayt and Dix, 1961) indicate that the development of part-time farming originates from two main sources: (1) urban residents moving to small farms and (2) full-time farmers obtaining employment at off-farm jobs. Nearly all of the Ohio part-time farmers interviewed indicated a preference to farm full-time (Wayt and Dix, 1961, p. 8). However, part-time farming was an acceptable alternative because it provided the income needed for living and the "personal satisfactions associated with farm living."

The shift from farm to nonfarm work does not necessarily involve change in residence and the occupational shift may be partial rather than

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1/ See also, Geschwin and Ruttan, 196[illegible], pp. 22-23.

complete--i.e., dual occupations and/or part-time farming. Persons may combine nonfarm work with a farm operation to supplement inadequate income from the farm, to complement nonfarm income, or because of a set of value orientations related to the desirability of farming as a way of life (Tate, 1934, p. 532; John, 1938, p. 49; Wilcox, 1940, p. 1; Heady et. al., 1956, p. 31; Hady, 1958, p. 31; Blosser, 1958, pp. 16-17; Iwanska, 1958, p. 38; Staniforth and Christiansen, 1958, pp. 11-12; Betrand and Osborne, 1959, p. 8; Olson, 1959, p. 4; Woods and Buddemeier, 1959, p. 40; Loomis and Wirth, 1962, p. 643; Sargent, 1965; Reeder, Craig and Le Ray, 1965).

Many low-income farming areas are characterized by a high proportion of farmers working off their farms (McElveen, 1953, and Inman and Southern, 1960). Martin and Southern (1963, p. 2) in a study of alternative uses for resources in part-time farming conclude that "Considering the resources of most farms in the area (Northeast Texas) . . . that both part-time and full-time farmers might find it profitable to work full-time (a 40-hour per week job) off the farm if possible."[1/] Crosswhite, writing in the 1963 Yearbook of Agriculture--A Place to Live, notes that part-time farmers will continue to be an important segment of the farm population. Implications of the increasing importance of part-time farming in agriculture are:

> For some time in the future . . . part-time farming will provide a means of facilitating the movement of farm operators out of agriculture; enable many families to supplement family income from farm earnings; bring about a decreased dependence on farming as a source of family income; control a large portion of total farm resources; and foster a continued response to differentials in labor productivity and wages between the agricultural and non-agricultural sectors of the economy (Crosswhite, 1963, p. 150).

Research findings in Tennessee (Bonser, 1949, p. 69) and Louisiana (Boonstra and Jackson, 1941, p. 17) indicate that the chief agricultural economic gain from part-time farming is the production of food for home consumption. However, the tendency of part-time farmers to hold on to idle land lowers the total agricultural production of some areas (Pugh

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1/ See also, Woods and Buddemeier, 1959 and Wayt et. al., 1959.

and Bishop, 1955, p. 45). Sargent (1965, p. 21) concludes that, "The compelling reasons behind this phenomenon (part-time farming) are not only economic, but also historical and social."

Some part-time farmers feel that the programs of public agricultural agencies apply to large farms, but not to part-time farms (Bonser, 1949, p. 70). Conklin and Starbird (1958, p. 33) note that "data on the farming activities of part-time farmers are not complete, and very little information is available on the nonfarm incomes of part-time farmers and rural residents of open-country areas as distinct from other segments of what is listed by the census as rural."

Douglas and Mackie have classified the problems of part-time farmers desiring to leave or remain in agriculture as credit, limited farm operations, limited production resources, health, education, welfare, job procurement, vocational training and guidance, and social adjustment. They point out that:

> The problems of agricultural education and production of part-time farmers are different from commercial farmers. Therefore agricultural, educational, and action programs designed to aid part-time farmers need to be different in nature and scope (Douglas and Mackie, 1957, p. 24).

Since a large share of the low-income population of low-income farming areas is made up of persons engaged in part-time farming activities, the importance of this group is obvious. Action programs concerned with the areas as wholes and the relation of these areas to total national development must also be concerned with the part-time farm population. To be effective, such programs must be based upon a knowledge of the characteristics of part-time farmers and their families and the relationship of these people to the natural resources of the area.

The literature on part-time farming suggests that there is a need to determine the relative significance of different kinds of part-time farmers and the significance of differences between part-time farmers and full-time farmers.

Purpose

The purpose of this report is to determine the extent to which differences exist among full-time farmers, part-time farmers, and subtypes of part-time farmers. This study is based upon the premise that part-time farmers are not a homogeneous category and that an understanding of the differences will contribute to a more precise understanding of part-time farmers.

If significant differences exist among different types of part-time farmers and between full-time farmers and all part-time farmers, the results of this study should be of substantial usefulness to students in their attempts to understand the phenomenon of part-time farming; to the State and Federal Extension Service, the Farmers Home Administration, State and local government officials, farm organizations and other administrators of programs for rural people; and to farmers and others who are now farming part-time or considering the combination of farm operation and off-farm work.

Historical Setting

Part-time farmers are not a new phenomenon in the United States.[1/] American Indian agriculture was primarily a part-time commitment to farming, as was colonial and frontier farming. The subsistence farming activities of early settlers were supplementary to hunting and fishing and have come down through the centuries as an economic institution responsible for "providing security and protection against hunger and starvation" brought about by scarcities in other sources of food supply, scarcity of jobs, or scarcity of money (Zeuch, 1935, p. 710).

The statement by Salter and Darling illustrates the nature of part-time farming in Colonial America:

> Farming was undertaken in the area in 1654 when the first settlers came to live near the trading post at Derby (Connecticut). Three years later, in 1657, the first ship-building yard was established in Derby. The combination of

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[1/] For a review of definition of part-time farmer see pp. 19-24. See pp. 25-27 for definition to be used in this study.

> farming and ship-building formed the basis for an early development of the area. Fishing was added shortly afterwards and became one of the major industries. After 1679, the date of the establishment of the first water-power mill, the products of numerous small manufacturing chops contributed to the general prosperity . . . . The first products shipped from Derby were fish and grain, cattle, beef, horses, and other farm products; but as the area developed, casks, stoves, furniture, and other forest products were added to the list. As the hill farmers began to supplement their income by operating mill shops during the winter, manufactured products including women's shoes, saddles, woolen cloth, stockings, metal buttons, iron screws, and augers were also exported (Salter and Darling, 1935, p. 11).

Return-to-the-land solutions were used to integrate veterans of 1776, 1812, and the Civil War into the civilian labor force (Lord and Johnstone, 1942, p. 5). Back-to-the-land solutions for urban and industrial unemployment were proposed during the depression which began in 1873 (House, 1938, p. 49).[1/]

During the 1930's, part-time farming and back-to-the-land movements were promoted by government officials and industrialists (Ford, 1932, p. 17; Tate, 1934, p. 530; Allen et. al., 1937, pp. 77-78; Lord and Johnstone, 1942). The 1935 report, Part-Time Farming in Four Representative Areas of Kentucky (Oyler and Rose) - Louisville, Lexington, Richmond, and Corbin-Babourville Area - illustrates the extent of the back-to-the-land movement during the 1930's. Of the 329 part-time farmers in the study, 281 came to their present location from a city and only 48 from the country; one-third had been full-time farmers at one time or another. The high proportion of part-time farmers who had previously lived in urban areas was also noted in a 1930 report of part-time farming in Massachusetts. The report concludes that:

1/ Movement back to the land has been viewed as a solution to both individual, family and group problems. See Taylor, 1953 for an analysis of farmer's movements and back to the land attempts. For a discussion of group attempts to relocate on the land see: Bestor, 1950; Nordhoff, 1961; Lord and Johnstone, 1942; and Lord, 1962. For examples of individual and family experiences at part-time farming and subsistence farming see: Thoreau, 1854; Rich, 1942; Seymour, 1962; and Collier, 1962.

> . . . once city-bred operators learned enough about agriculture to carry on the necessary operations, they displayed, as a general rule, a great interest in their farming activities, often greater than the operators who originally came from rural environment (Rozman, 1930, p. 123).

Part-time farming research conducted during the 1930's was designed to determine the adjustments part-time farmers were making and how they were conducting their farming operations. Out of this research recommendations were prepared and handbooks developed for those interested in part-time and subsistence farming.[1/]

Interest in part-time and subsistence farming changed following the Great Depression. With the advent of World War II, low incomes and unemployment ceased to be viewed as a national problem. Most of those who were skilled and unskilled, as well as those who were unemployed and underemployed were able to find employment. However, interest in part-time farming continued. Part-time farming and "victory-gardens" were promoted as a desirable part of the war effort. It was patriotic to grow things. Many people found gardening a suitable form of recreation.

Current interest in part-time farming has evolved out of rural development studies. Part-time farming is seen not only as a way of life, but as a necessary step in agricultural adjustment of certain sectors.

Once again low-income rural people are receiving the attention of researchers. Much current research relative to part-time farming has developed out of studies designed to find solutions to the rural low-income problem. Movement out of agriculture is also viewed as necessary for expansion of commercial agriculture (Heady, 1957, pp. 181-182). Concern has also been expressed that low-income rural people are not contributing as much as they might to national economic growth (Hendrix, 1956, p. 6).

1/ For a review of much of this research see: Salter and Diehl, 1940, pp. 581-600. During the 1930's there was a feeling in some quarters that America had no new industrial frontiers and that no amount of "pump-priming" would overcome the depression. Redistribution of wealth was seen as the solution to national depression. For an analysis of this situation see: Brunner and Lorge, 1937; Raper, 1936, and Vance, 1945.

A large number of part-time farming studies have been conducted by State Agricultural Experiment Stations.[1/] The studies conducted prior to 1940 have been analyzed in "Part-Time Farming Research" (Salter and Diehl, 1940). Recent studies have compared part-time and full-time farmers (Galloway, 1956; Donohue, 1957a, pp. 221-227; Loomis, 1965), have studied part-time farming as a route to full-time commercial farming (Moore and Wayt, 1957), have looked at the degree of commitment to farm and nonfarm occupations (Fuguitt, 1961, p. 40; Christiansen, et.al., 1959) and have reviewed the role and prospects of part-time farming (Hoover and Crecink, 1961).

The development of handbooks or guides for part-time farmers and small scale farmers has continued into the present. Some of the more popular publications have been: Five Acres and Independence: A Practical Guide to the Selection and Management of the Small Farm (Kains, 1935); We Farm for a Hobby and Make It Pay (Tetlow, 1938); Farming for Security, (Duryee, 1943); Success on the Small Farm (Pearson, 1946); Land for the Family: A Guide to Country Living (Gustafson et.al., 1947); A Few Acres and Security: Your Complete Guide to Independence with Little Capital and Lots of Contentment (Steelman, 1951); Living the Good Life (Nearing and Nearing, 1954); Farmers' Bulletin No. 2178--Part-time Farming (Scoville, 1961). Continued interest in information on part-time farming is reflected by the publication of Extension Service Bulletins by Michigan (Wilt, 1957), Minnesota (Hartmans et.al., 1959), Washington (Cagle, 1953), and the Northeast Regional Publication in 1962 of Spare-Time Farming and You (Foster, 1962).

[1/] For a list of references to part-time farming studies conducted prior to 1943 see: McNeil, 1943. See Davis, 1955, for a list of part-time farming studies for the period January, 1945 to April, 1955.

Review of Definitions of Part-Time Farming and Part-Time Farmer

Part-time farmers and part-time farming have been defined in several different ways.[1/] The basic elements of a definition are the farm, the farm operator, and the farm household.

The statement by Jenkins and Robison in Part-Time Farming in the United States provides a review of several concepts of part-time farming.

> The concept of part-time farming varies somewhat according to the whims of the researcher and possibly to the data at hand, or to data which may be made available for a particular study . . . . Not all interpretations have made an occupation outside of farming a prerequisite, as income from agricultural work not connected with the farm on which the family resides or outside income from non-occupational sources such as pensions, interests, dividends, etc., may be a part of the interpretation. Some have conceived that the term "part-time farming" is broad enough to include those farms on which some member of the operating family engage in quasi or strictly non-farming activities at-the-farm, such as operating roadside stands and filling stations, maintaining boarding and lodging accommodations, and custom grinding, sawing, cider-making, syrup-making, etc. Or, again, part-time farming may be thought of from the standpoint of the amount of farming activity without any reference to an outside source of income (Jenkins and Robison, 1935, p.5).

[1/] For a comparison of eight definitions of part-time farming used between 1930 and 1935 see: McNeil, 1943, pp. 191-197.

United States Census Definitions[2/]

One of the least restrictive definitions of part-time farmer was the one employed in the 1935 Census of Agriculture special report, Part-Time Farming in the United States (Jenkins and Robison, 1935, p. 7). Part-time farmers were "those operators of farms who spent one or more

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[2/] Changes in the definition of a farm and in the classification of farms make it difficult to compare Census data over a period of time.

For the 1950 Census of Agriculture:

> .....places of 3 or more acres were counted as farms if the value of agricultural products in 1949, exclusive of home gardens, amounted to $150 or more. The agricultural products could have been either for home use or for sale. Places of less than 3 acres were counted as farms only if the value of sales of agricultural products in 1949 amounted to $150 or more (U.S. Department of Commerce, 1952, p. XII).

For the 1959 Census of Agriculture:

> .....places of 10 or more acres in 1959 were counted as farms if the estimated sales of agricultural products for the year amounted to at least $50. Places of less than 10 acres in 1959 were counted as farms if the estimated sales of agricultural products amounted to at least $250 (U.S. Department of Commerce, 1962, p. XXVI).

The change in definition of a farm from 1950 to 1959 was thus related to both size of farm as measured in terms of acreage and the amount of agricultural production and sales in the following way:

1. For places of less than 3 acres in size, the only change was the increase of the minimum value of agricultural products sold from $150 to $250 . . . .

2. For places of 3 to 10 acres in size, the criteria relating to quantity of agricultural production was changed from a value of farm products produced (exclusive of home-garden products) of $150 to a value of farm products sold of $250 (U.S. Department of Commerce, 1962, p. XXVII).

An indication of the effect of the change in definition is gained through a comparison of 1954 and 1959 Census definitions applied to 1959 data. For the United States, a total of 232,059 places not counted as farms in 1959 would have been classified as farms if the 1954 definition had been employed. The operators of over three-fifths of these places worked off the "place" operated 100 days or more in 1959 (U.S. Department of Commerce, 1962, p. XXVII).

days off their farms at work for pay or income during the calendar year immediately preceding the census date.[1/]

The 1950 and 1959 Census definitions employ elements of the farm unit, farm operator, and household and thus are much more restrictive. For the 1950 Census of Agriculture, part-time farms were defined as:

> Farms with a value of sales of farm products of $250 to $1,199 ... provided the farm operator reported (1) 100 or more days of work off the farm in 1949 or (2) the nonfarm income received by him and members of his family was greater than the value of farm products sold (U.S. Department of Commerce, 1952, p. XIX).

In the 1959 Census of Agriculture:

> Farms with a value of sales of farm products of $50 to $2,499 were classified as "part-time" if (1) the operator was under 65 years of age and (2) he either worked off the farm 100 or more days during the 1959 year or the income he and members of his household received from off-the-farm-operated sources was greater than the total value of farm products sold (U.S. Department of Commerce, 1962, p. 1192).

Thus, both the 1950 and 1959 Census require that either the farm operator work off the farm 100 days or more a year or the income received by the operator and members of his household from off-farm sources must be greater than the total value of farm products sold. Both censuses placed an upper and lower limit on value of sales--$250 to $1,199 in 1949 and $50 to $2,499 in 1959. The 1959 Census included - new restriction--the farm operator must be under 65 years of age. Although the Census of Agriculture definition is useful for many purposes, it is not inclusive enough to "identify the true characteristics of farm families who depend mainly on nonfarm income as their means of living" (Martin and Southern, 1961, p. 7). Limitations of the Census definition are:[2/]

[1/] See Loomis, et.al., 1962 for a contemporary study that utilized this type of definition. "For this study, a farmer was classified as part-time if he worked off the farm at all during the year." p. 646.

[2/] For criticisms of the Census definition of part-time farm see: Roy and Slocum, 1958, pp. 2-4 and Bishop, 1955, pp. 1428-1435.

1. Farmers with sales of farm products of $1200 or over in 1949 or $2500 or over in 1959 are not included as part-time farmers regardless of the amount of off-farm work performed by the operator.

2. The requirement that off-farm income must exceed farm sales is not realistic. To gain perspective concerning part-time farming, a more desirable requirement would be that off-farm income exceed net farm income.

3. The 1950 and 1954 Census definitions of farm have placed subsistence (part-time in terms of farm unit approach) farmers with little or no agricultural sales in the rural nonfarm classifications. Thus it is possible that the hard core of the rural, low-income farm problem--i.e., the subsistence farm--has been defined out of existence as a rural farm problem by the Census definition.

Other Definitions

Most definitions of part-time farm and part-time farmer incorporate elements of the farm operator, the farm unit, and the farm household--e.g., Alleger, 1953; Wills and Koeller, 1954; Hillman, 1956; Martin and Southern, 1961. Assumptions are generally made that one element is more important than the others.

The Farm Unit Approach

Studies concerned primarily with adjustment of agriculture resources and farm management types of studies frequently use the farm unit approach in defining a part-time farmer or farm. The basic assumption is that a part-time farm does not require one man equivalent of labor for operation under improved methods of technology and therefore cannot provide the family with an adequate income. The farm unit element is present in the census definition because only farms with sales of less than $1,200 in 1949 or $2,500 in 1959 are classified as part-time farms. Sales are used as a measure of size of the farm.

Cunningham (1959, p. 5) placed primary emphasis on farm unit approach in his study of commercial dairy farming in the North Country Region of New York State although elements of the farm operator approach are also

presented: "A part-time farm is defined as one with less than 100 days of productive work on the farm or whose operator receives more than 25 percent of his gross income from off-farm sources."

Farm Operator Approach

Studies with a primary interest in farming as an occupation and rural industrialization studies frequently employ a farm operator approach in delineating part-time farmers. The primary concern is not the farm unit or the household, but how the farm operator divides his labor between farm and off-farm work. Definitions are usually formulated in terms of part-time farmer rather than part-time farm.

The definition used by Moore and Wayt in a study of part-time farming as a route to full-time farming is representative of the definitions emphasizing the farm operator approach:[1/]

> Part-time farmers. A farm operator who personally spent 100 days or more in nonfarm employment during the year preceding the interview; and further provided that the functions of labor and management by the operator were not replaced by someone working for him under a wage or rental contract (Moore and Wayt, 1957, p. 5).

A less precise definition was used by Hood in a study of part-time farming in the Elmira and Albany areas of New York State:

> The term part-time farmer as used in this study, means a person who lives in the country but who obtains a large portion of his income from some occupation other than farming. In some instances considerable farming was done. In others, the operator had only a small garden (Hood, 1936, p. 16).

Household Unit Approach

When the household unit is the basis of definition, the household is considered a production and/or consumption unit. The usefulness of the household unit approach to defining part-time farming has been pointed out by Bishop (1955, pp. 1428-1435)and Salter (1936). The study of part-time farming in St. Lawrence County by Mellor and Takahashi is an example

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1/ For studies using the farm operator approach see: Bondurant and Criswell, 1951; Loomis and Wirth, 1962.

of the household unit approach to defining part-time farming: "A farm is defined as a part-time farm if either the operator or members of his family living in the same household had one month or more of off-farm employment" (Mellor and Takahaski, 1958, p. 2). Under this definition a farm that furnished full-time employment for the farm operator would be classified as a part-time farm if any household member worked off the farm for one month or more.

Ducoff and Hagood state that:

> No single criterion is satisfactory for defining 'part-time' farmers, for as used by various writers the term may include such divergent cases as those represented by a man who regularly works full time at a nonfarm job, but who, living on a farm, spends a little time at farm work after regular working hours, weekends, or during vacations; and by a man whose principle work and source of income is the operation of a farm, but who spends some minor part of the year in other work . . . . In both cases, however, the part-time farmers represent an occupational pattern that involves less than complete dependence on agriculture. Another type of part-time farming, which is also numerically important, . . . is that in which a farm operator spends part of the year operating his own farm, and part working for wages on farms operated by others. But for such part-time operators the off-farm work does not involve any lessening in the degree of economic dependence on agriculture (Ducoff and Hagood, 1949, pp. 249-250).

DEFINITION FOR THIS STUDY[1/]

The purpose of this research is to determine the extent to which differences exist among full-time commercial farmers and subtypes of part-time farmers. Primary emphasis is placed upon the farm operator. Thus the study is concerned primarily with part-time farmers. This investigation is not intended to be a study of part-time farming as an occupation. The farm and the family are used in this study as independent variables to provide insight into and understanding about the phenomenon of part-time farmers.[2/]

The study of part-time farms, families living on part-time farms, or part-time farming communities will need other typologies. Increased understanding of part-time farmers should provide a basis for developing hypotheses about part-time farms, families living on part-time farms, and part-time farming communities.

To achieve utility and understanding beyond the geographic area where the data were gathered and over a period of time, it was deemed desirable that (1) the definitions and types used in this study be useful in other types of farming areas and in areas at different stages of industrial and agricultural development, and (2) the definitions would not become obsolete through development and adoption of agricultural technology. To accomplish this and at the same time develop a classification that would not have the limitations of the 1950 and 1959 Census classification,[3/] it was necessary to employ a broad concept of part-time farmer in developing the typology.

[1/] See Appendix B, Classification and Terminology for operational definitions used during enumeration and analysis.

[2/] For a review of some typologies developed in the social sciences see McKinney and Loomis, 1957, pp. 12-25. These include Durkheim's Mechanical and Organic Solidarity; Redfield's Folk-Urban Continuum; Becker's Sacred and Secular Societies; and Tonnies' Gemeinschaft and Gesellschaft. See: Becker, 1940, p. 31; Becker, 1945; Fuguitt, 1961; Goode, 1947, pp. 473-474; Martindale, 1960, p. 383; McKinney, 1950, p. 237; McKinney, 1954; Winch, 1947, for statement of the validity of typologies for research purposes.

[3/] For limitations of the Census classification see pp. 21-22.

For purposes of this study, a farm has been defined as all of the land upon which some agricultural enterprise was conducted during 1962 by an individual - either by his own labor alone or with the assistance of members of his household or hired employees.

The classification was developed with the need for completeness in mind. In any practical application, only parts of the classification need to be considered. The classification of farmers used in the analysis of data for this study is divided into two major types - full-time commercial farmers and part-time farmers.

Part-time farmers are sub-divided into commercial and non-commercial part-time farmers. Non-commercial part-time farmers are sub-divided into off-farm work commercial part-time farmers.[1] The classification and description of each type of farmer follows:[2]

I. Commercial Full-Time Farmer - An operator of a farm with a value of agricultural products sold amounting to $2,500 or more per year who does not work off the farm 100 or more days per year.

II. Part-Time Farmer:

A. Commercial Part-Time Farmer - An operator of a farm with value of agricultural products sold amounting to $2,500 or more per year and who works off the farm 100 or more days per year.

B. Non-Commercial Part-Time Farmer:

1. Off-Farm Work Part-Time Farmer - An operator of a farm with a value of agricultural products sold of less than $2,500 per year and whose major source of income is off-farm work.

2. Subsistence Part-Time Farmer - An operator of a farm with a value of agricultural products sold of less than $2,500 per year and whose net farm income exceeds the income from off-farm work or non-work sources.

3. Non-Work Income Part-Time Farmer - An operator of a farm with a value of agricultural products sold of less than $2,500 per year and whose major source of income is from non-work sources.

1/ For other classifications of part-time farmers, farms and/or households see: Gordon, 1942; Cunningham, 1959, p. 5; Donohue, 1957b, p. 984; Wayt, et al. 1959, pp. 4-5; Galloway, 1956, pp. 7-9; and Alleger, 1953. Although not analyzed, distinct types of part-time farmers are recognized by Wakeley, 1935, pp. 22-23.

2/ See pp. 36-37 for a statement of the distribution of these subtypes in the sample.

Figure I is a diagrammatic representation of the typology.[1/]

Hypotheses

The major premise of this study is that there are identifiable differences among the various categories of part-time farmers and full-time commercial farmers. To test the validity of the classification, one must determine the extent to which differences actually exist among types of farmers. The following general null hypothesis was formulated:

> THERE ARE NO DIFFERENCES AMONG FULL-TIME FARMERS AND PART-TIME FARMERS AND SUB-TYPES OF PART-TIME FARMERS IN TERMS OF SELECTED PERSONAL AND SOCIO-ECONOMIC CHARACTERISTICS

A large number of sub-hypotheses are possible in attempting to test this general hypothesis.

The sub-hypotheses were categorized on the basis of primary emphasis--on the farm operator, the family, and the farm unit. These categories of sub-hypotheses will constitute separate sections for analysis. The independent variables to be used as operational measures related to the farm operator are:

[1/] The typology incorporates aspects of the U.S. Census of Agriculture in that it uses $2,500 value of agricultural products sold. In addition, the typology incorporated into the definition 100 or more days of off-farm work, which is a statistic furnished by the Bureau of the Census. Additional justification for the 100 days per year cutting point is that individuals who work less than 100 days per year in an occupation may be considered only as marginally associated with that occupation and the seasonal nature of agricultural activity permits 100 days of off-farm employment without requiring a major adjustment in the farm work pattern.

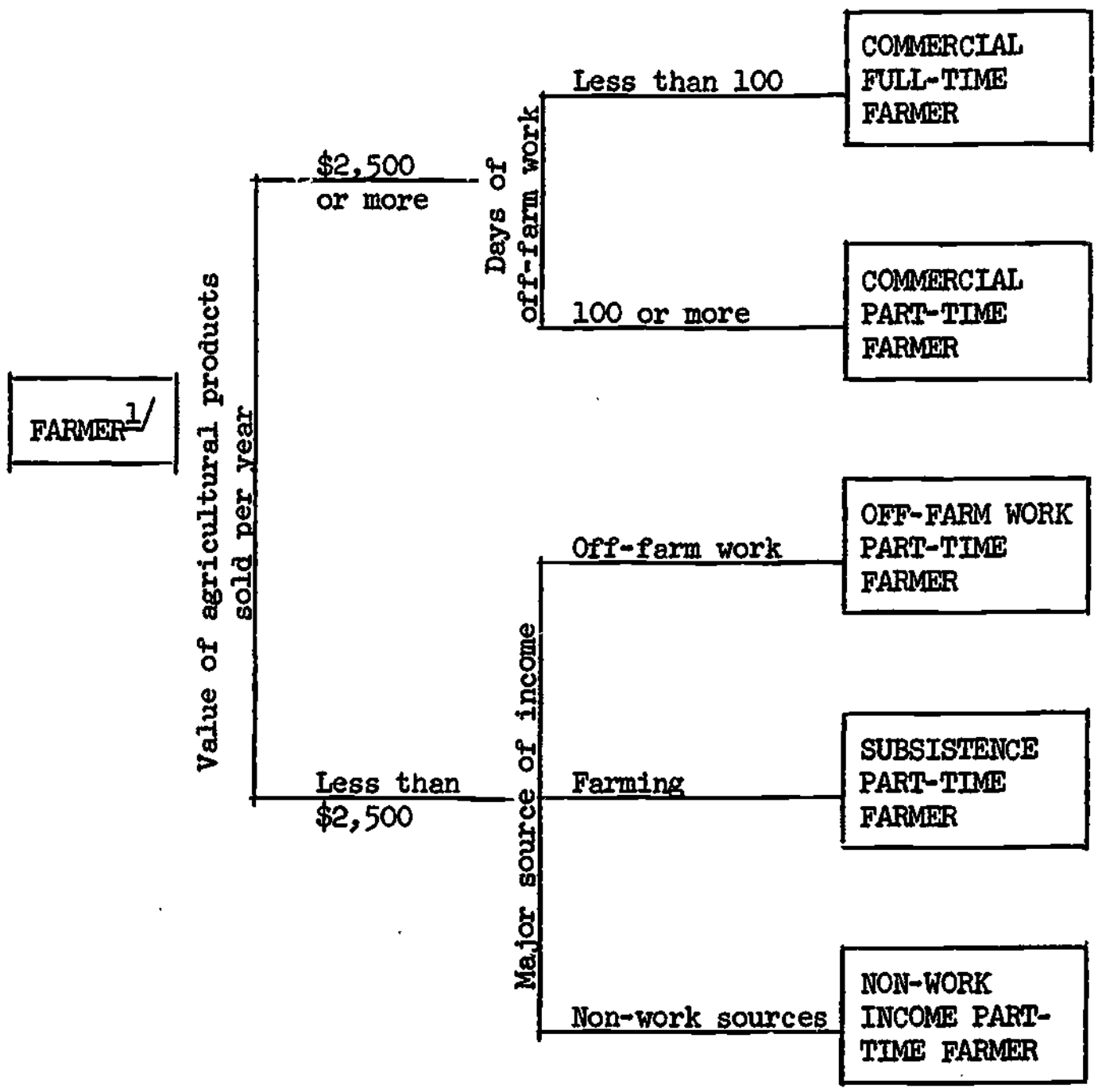
By providing for more than one type of part-time farmer, the typology overcomes the limitations of the Census classification for studying part-time farmers by:

1. Differentiating between commercial and non-commercial part-time farmers,
2. Removing the restriction that off-farm income must exceed farm sales,
3. Placing subsistence farmers in a type of farmer category rather than in the rural nonfarm classification.

The syb-types of farmers as described in the typology differentiate between full-time commercial farmers and commercial part-time farmers on the basis of days of off-farm work. Between commercial part-time farmers and non-commercial part-time farmers, value of agricultural products sold is the basis of differentiation. Major source of income differentiates the sub-types of non-commercial part-time farmers from one another.

FIGURE I

Diagrammatic Representation of the Typology of Farmers



1/ For definition of farmer see Appendix B.

1.1 - Age

1.2 - Educational attainment

1.3 - Type of off-farm work

1.4 - Class of off-farm work

1.5 - Proportion of farm work done on the home place by the farm operator

1.6 - Feeling that off-farm job interferes with farming

1.7 - Choice of dairy farmer as an occupation

1.8 - Choice of farming as an occupation until retirement

1.9 - Choice of nonfarm occupation until retirement

In terms of primary emphasis on the family, the following independent variables will be tested:

2.1 - Stage of family life cycle

2.2 - Size of family

2.3 - Off-farm employment of the wife

2.4 - Proportion of farm work done on the home place by the wife of the farm operator

In terms of primary emphasis on the farm, the following variables will be tested:

3.1 - Land tenure

3.2 - Class of land

3.3 - Total acreage

3.4 - Acres in cropland

3.5 - Change in number of cows milked

3.6 - Farm practices followed - use of chemical weed controls, lime test, fertilizer test, artificial breeding

3.7 - Value of food and fuel produced for home use.

Description of the Study Area--St. Lawrence County, New York[1/]

St. Lawrence County is located between the Adirondack Mountains and the St. Lawrence River. The northern boundary of the area is the International Line between the United States of America and Canada. It is bounded on the south by Hamilton and Herkimer counties, on the east by Franklin County, and on the southwest by Jefferson and Lewis counties. St. Lawrence County, the largest county in New York State, contains 1,771 thousand acres and 41 percent of this land area is used for agricultural purposes. Ogdensburg, the largest city in St. Lawrence County is only 63 miles south of Ottawa and 128 miles from Montreal, Canada, but 218 miles from Albany and 371 miles from New York City.

Acres of land in farms and the number of farms in St. Lawrence County have declined since the turn of the century while over-all farm size has increased (Table 1). New low points for land in farms and number of farms were recorded by the 1959 Census of Agriculture.

St. Lawrence County is one of the leading dairy counties in New York State, ranking first in the number of milk cows and third in the value of dairy products sold in 1959. In 1959 the number of part-time farms, as defined by the Census of Agriculture, was 695--20 percent of all farms in St. Lawrence County (Table 2).[2/] However, approximately 45 percent of all farm operators in the county reported off-farm employment.

Land in the St. Lawrence area that is now sub-marginal for agricultural purposes was not sub-marginal for subsistence farming. It has become sub-marginal because of technological and economic changes. Along with this

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[1/] Except as noted, data for this section were obtained from: Bratton, 1962; Department of Rural Sociology, Cornell University Agricultural Experiment Station, 1962; Department of Rural Sociology, Cornell University Agricultural Experiment Station, 1963; Huddleston, 1953; New York State Department of Commerce, 1962; U.S. Department of Commerce, 1961; U.S. Department of Commerce, 1962. A comparison of county, regional, state and national data is beyond the scope of this study. Comparative data are to be found in the sources noted above and in Anderson, 1956, and Bond, 1954. For a more detailed description of the study area see Le Ray, 1965.

[2/] See Table 2 for definition.

Table 1 --Land in farms, number of farms and average size of farm, St. Lawrence County, New York, for selected years 1880 to 1959

Year	Land in Farms Acres 000	Farms Number	Size of Farm Acres
1880	1,067	9,278	115
1890	1,048	8,665	121
1900	1,068	8,353	128
1910	1,061	8,224	129
1920	1,047	7,652	136
1930	1,001	6,979	144
1940	925	6,236	148
1950	886	5,091	174
1954	834	4,380	190
1959	718	3,426	210

U.S. Censuses of Agriculture

Table 2 --Farms by economic class and amount of off-farm work reported by operator, United States, New York State, and St. Lawrence County, New York, 1959

Item	United States		New York State		St. Lawrence Co.	
	Number	Percent	Number	Percent	Number	Percent
All Farms	3,707,973	100	82,359	100	3,445	100
Commercial:[1]	2,416,017	65	56,760	69	2,530	73
Class I	102,099	3	2,112	3	3	[5]
Class II	210,402	6	6,657	8	132	4
Class III	483,004	13	16,717	20	564	16
Class IV	653,881	18	17,313	21	1,036	30
Class V	617,677	16	11,208	14	670	19
Class VI	348,954	9	2,753	3	125	4
Other Farms:	1,291,956	35	25,599	31	915	27
Part-Time[2]	884,785	23	18,728	23	695	20
Part-Retirement[3]	404,110	11	5,769	8	220	6
Abnormal[4]	3,061	1	102	[5]	0	0
Days of Off-Farm Work Reported by Operator:						
1 to 99	556,235	15	9,059	11	438	13
100 or more	1,107,606	30	27,946	34	1,100	32
Total	1,663,841	45	37,005	45	1,538	45

1959 Census of Agriculture

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[1] For the 1959 Census of Agriculture commercial farms are divided into six groups on the basis of the total value of farm products sold, as follows: Class I - $40,000 and over; Class II - $20,000 to $39,999; Class III - $10,000 to $19,999; Class IV - $5,000 to $9,999; Class V - $2,500 to $4,999; and Class VI - $50 to $2,499, and the farm operator was under 65 years of age and (1) he did not work off the farm 100 or more days, and (2) the income that he and members of his household received from nonfarm sources was less than the total value of farm products sold.

[2] Farms with a value of sales of farm products of $50 to $2,499 and farm operator under 65 years of age and he worked off the farm 100 or more days or the income he and members of his household received from nonfarm sources was greater than the total value of farm products sold.

[3] Farm with a value of sales of farm products of $50 to $2,499 and farm operator 65 years of age or over.

[4] Indian Reservations and institutional farms including those operated by hospitals, penitentaries, schools, grazing associations, government agencies and other.

[5] Less than 0.5 percent.

has come the inevitable change in the relation of the people to the land. The land is basically the same--but people now have changed their standards of living. Much of this land is still being farmed either on a full or part-time basis.[1/]

The area has deposits of talc, iron ore, lead, zinc, graphite, peat, feldspar, titanium, wollastonite, and limestone. The forests of the area vary from a scrub vegetation on recently abandoned agricultural land to mature forests that have not been damaged by forest fires or over-cutting in recent years. Excellent stands of yellow birch, maple, beech, spruce, hemlock, and pine are located in the area. However, extensive areas have grown up to grey birch thickets, blueberry and blackberry thickets, wild strawberries and hardhack.

The completion of the St. Lawrence Seaway and Power Project, technological changes in the aluminum industry, and the closing of plants in the area[2/] have all contributed to the recent economic decline. Cullen concludes that "the shock dealt local agriculture by the seaway undoubtedly accentuated the operation of those forces which, in this area as elsewhere, have long produced a steady dwindling in the number of full-time farmers and a corresponding increase in the size of the average farm" (Cullen, 1960, pp. 246-247).

A percentage distribution of persons employed in nine major industrial groups in 1960 is given in Table 3. The four major industries in order of percentage of persons employed are: services, manufacturing, wholesale and retail trade, and agriculture, forestry and fisheries. For New York State as a whole, manufacturing, wholesale and retail trade, and services were the top three employment industries, while agriculture ranked eighth.

1/ See Nobe and Conklin, 1957, pp. 6-9; Nobe and Thomas, 1957; and Thomas, 1956, for a discussion of agricultural opportunities and problems in the area.

2/ These include: Malone Milling Company, Malone; Bronze Powder Plant, Malone; U.S. Bobbin and Shuttle Company, Tupper Lake; Heywood Wekefield, Tupper Lake; Dairymen's League Co-op., Massena; Reynolds Talc Company, Talcville; Waddington Milk Company, Waddington; Loomis Talc Company, Gouverneur; St. Lawrence Foundry and Machine Company, Ogdensburg; St. Lawrence Paper Company, Norfolk; Cleveland Container Company, Ogdensburg; Rushmore Paper Company, Gouverneur; Martin Pulp and Paper Company, Norwood; McCadam Cheese Company, Morristown; Warner Brothers Garment Company, Massena; Sheffield Chemical Company, Hermon.

Table 3--Percentage distribution of employed persons by major industry, St. Lawrence County, 1960

Industry	Number Employed	Percentage Employed
Agriculture, forestry and fisheries	3,967	12.1
Mining	1,322	4.1
Construction	2,008	6.2
Manufacturing	7,267	22.4
Transportation, communication, and public utilities	1,797	5.5
Wholesale and retail trade	5,769	17.8
Finance, insurance and real estate	695	2.1
Services	8,580	26.4
Public administration	1,061	3.3
Total	32,466	100.0

Calculated from data given in U.S. Department of Commerce, May, 1962, p. 3.

In 1960 the County had a population of 111,238 inhabitants, which was an increase of 12,342 from 1950 to 1960, or a 12.5 percent population increase. The County ranked 25th in rate of population increase among the 57 Upstate counties. The County, with 40 persons per square mile, is the seventh least densely populated of the 57 Upstate counties.[1/] The rural farm and rural nonfarm population in 1960 and the percentage change 1950 to 1960 was as follows:

	1960		Percent Change in
	Number	Percent	Number, 1950-1960
Total rural population	61,882	100.0	17.2
Rural farm	14,042	22.7	-39.3
Rural nonfarm	47,840	77.3	61.3

In 1960, St. Lawrence County had a dependency ratio of 74, which was considerably higher than the ratio of 60 for the State.[2/] The County dependency ratio increased by 10 from 1950 to 1960; the rural farm ratio decreased by 1, while the rural nonfarm and urban increased by 12 and 11, respectively.

The St. Lawrence area has been referred to as:

> Perhaps the most thoroughly under-developed area in New York State . . . for it is indeed an area in which the full potential in its natural and human resources has never been approached. In this sense the area is one of the great frontiers of the state and the region. But it is particularly a frontier for American industrial expansion (Sufrin and Palmer, 1957, p. 5).

Procedure for Presenting the Analysis[3/]

Analysis of data is divided into three sections. The first analysis section deals with differences among full-time farmers, part-time farmers and sub-types of part-time farmers in terms of characteristics of the

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1/ This section was developed primarily from: Department of Rural Sociology, Cornell University Agricultural Experiment Station, 1963.

2/ The dependency ratio is a measure of the average number of persons under 15 and 65 years of age and over that each 100 adults aged 15-64 is required to support.

3/ See Le Ray, 1965 for a more detailed analysis and presentation of the data covered in this study.

farmer. The next shows the differences among full-time farmers, part-time farmers and sub-types of part-time farmers in terms of family characteristics. The final analysis section is concerned with differences among full-time farmers, part-time farmers and sub-types of part-time farmers in terms of the characteristics of farms they operate and the method of operation. Each section contains a summary statement.

The dependent variable for this research is type of farmer. The independent variables are the characteristics specified in the hypotheses as contributing to or explaining the heterogeneous nature of part-time farmers and the differences between part-time farmers and full-time farmers in terms of characteristics of the farm operator, the family, and the farm.

The Chi-square value has been computed for all of the tables used in the analysis of data for this study. Degrees of freedom are always one or two since one type of farmer is being compared with another type in terms of the independent variable. The 5 percent level (two-tailed test) was accepted as the level of significance.

The coefficient of contingency was computed in all cases where the Chi-square value indicated significance at the 5 percent level in order to give an indication of the magnitude of the relationship. To facilitate the comparison of the magnitude of the relationship between tables with different Chi-square values and sample size, the coefficients of contingency were corrected.

Of the 232 respondents who were operating farms in 1962, 222 or 96 percent were available for classification in terms of the typology for this study.[1/] When typed, the respondents were distributed as follows:

	Number	Percent
Full-time commercial farmers	124	55.8
Part-time farmers:		
Commercial	43	19.4
Noncommercial:		
Off-farm work	39	17.6
Subsistence	6	2.7
Nonwork income	10	4.5
Total	222	100.0

[1/] Totals vary from table to table because of changes in the base and the deletion of respondents who failed to furnish data for a given characteristic.

The relatively small proportion of subsistence and nonwork income noncommercial part-time farmers in the sample does not permit an analysis of data on these two types of part-time farmers. Any replication of the present study would need to consider these two types of part-time farmers in the research design. Since off-farm work part-time farmers are the only type of noncommercial part-time farmers to be analyzed in this study, this type will be referred to as off-farm work part-time farmers rather than noncommercial, off-farm work, part-time farmers.

DEMOGRAPHIC AND ATTITUDINAL CHARACTERISTICS

This section will examine the demographic and attitudinal characteristics of the farm operators.[1/] The following characteristics of farm operators will be presented: age of farm operator, education of farm operator, major type of nonfarm work, proportion of work done on the home place by the farm operator, feeling on the part of the farm operator that his off-farm job interferes with his farming, choice of dairy farming as an occupation and the farm operator's occupational choice until retirement (Table 1.0). The general null hypothesis for this section is:

> THERE ARE NO DIFFERENCES AMONG FULL-TIME FARMERS AND PART-TIME FARMERS AND SUB-TYPES OF PART-TIME FARMERS IN TERMS OF CHARACTERISTICS OF THE FARM OPERATOR

Age of Farm Operator (1.1)[2/]

In general, individuals 50 years of age or over experience considerable difficulty in changing occupations: Six out of 10 (61.2 percent) of all farm operators in the sample were 50 years of age or over in 1963. Age differences between types of farmers were not significant.

[1/] Analysis of data for this report is divided into three major sections-the farmer, the family and the farm. Each major section contains one summary table showing the results of testing the association among full-time farmers and part-time farmers and sub-types of part-time farmers with respect to selected independent variables. Statements in the text are based upon summary tables in the text and upon Appendix Tables. Sub-sections in the text are followed by notations, i.e., Age of Farm Operator (1.1). The notation (1.1) refers to the number of the table in the appendix upon which statements about age of the farm operator are based. This procedure for notations is used in subsequent sections of this report. In the text reference will be made only to significant differences unless differences with respect to an independent variable and all types of farmers studied were not significant.

[2/] The sample was drawn from farm operators who were under 55 years of age in 1950. This places a limitation upon the study when considering the total group of farmers in the area. The oldest respondent was 67 years of age in 1963.

Table 1.0--Summary table showing the results of testing the association among full-time farmers and part-time farmers and sub-types of part-time farmers by independent variables related to the farm operator, St. Lawrence County, New York, 1963

Independent Variable	Comparison of											
	Full-time farmers and part-time farmers			Commercial and off-farm work part-time farmers			Full-time farmers and commercial part-time farmers			Full-time farmers and off-farm work part-time farmers		
	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$
Age of farm operator . .	1.47	NS	-	.25	NS	-	1.64	NS	-	.39	NS	-
Education of farm operator	2.15	NS	-	1.64	NS	-	.14	NS	-	4.03	.05	.24
Major type of off-farm work	3.73	NS	-	1.33	NS	-	8.47	.01	.52	1.23	NS	-
Class of off-farm work .	9.40	.01	.41	.75	NS	-	6.23	.05	.42	8.05	.02	.48
Work done on home place by farm operator . . .	4.79	NS	-	20.78	.001	.66	18.41	.001	.46	2.01	NS	-
Feeling that off-farm job interferes with farming	3.58	NS	-	4.62	.05	.37	6.61	.02	.48	.53	NS	-

WWR:66:2427

Table 1.0--Summary table showing the results of testing the association among full-time farmers and part-time farmers and sub-types of part-time farmers by independent variables related to the farm operator, St. Lawrence County, New York, 1963, continued

Independent Variable	Comparison of											
	Full-time farmers and part-time farmers			Commercial and off-farm work part-time farmers			Full-time farmers and commercial part-time farmers			Full-time farmers and off-farm work part-time farmers		
	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$
Choice of dairy farming as occupation:												
80 cow herd first choice	1.57	NS	-	.01	NS	-	.91	NS	-	1.01	NS	-
25 cow herd first choice	1.64	NS	-	1.03	NS	-	.14	NS	-	2.59	NS	-
Occupational choice until retirement:												
Farming	.18	NS	-	.65	NS	-	.65	NS	-	.03	NS	-
Nonfarm work	9.64	.01	.45	1.02	NS	-	9.43	.01	.49	3.33	NS	-

1/ NS indicates the Chi-square tests were not significant at the 5 percent level; coefficients of contingency corrected (C) are not reported.

WMR:66:2427

Educational Attainment (1.2)

About four out of five of all the farmers (80.6 percent) reported less than a high school education. The educational difference between full-time farmers and off-farm work part-time farmers is significant. Only 16.1 percent of the full-time farmers had a high school education or better compared with 30.8 percent of the off-farm work part-time farmers.

Type of Off-Farm Work (1.3)

With respect to type of off-farm work, the sample was divided into two groups - manual and nonmanual - according to major type of off-farm work done during 1962.[1/] For individuals with more than one off-farm job, the major off-farm job was the job at which the farm operator spent the greatest amount of time. It will be recalled that, by definition, full-time farmers worked off their farms less than 100 days during 1962, while part-time farmers worked off their farms 100 or more days during this period. Therefore, not all full-time farmers are included in the test of this hypothesis. Excluded are the 97 full-time farmers who reported no off-farm work. The 27 full-time farmers with off-farms work are used as the basis of comparison.

Over three-fourths of the sample with off-farm employment during 1962 had a manual job as the major type of off-farm work. The difference between full-time farmers and commercial part-time farmers is significant. One-third of the full-time farmers reported nonmanual off-farm work compared to about one-tenth of the commercial part-time farmers.

[1/] See Lipset and Bendix, 1960, for a discussion of the problems encountered in comparing types of employment and a justification for the use of a manual - nonmanual classification as well as a presentation of data using this technique. Nonmanual occupations include professional, technical and kindred workers; managers, officials and proprietors; sales workers; and clerical and kindred workers. Manual workers include craftsmen and foremen; other services and private household workers, operatives, and laborers.

Class of Off-Farm Work (1.4)

Of the total sample of farmers who reported off-farm employment, 23.1 percent were self-employed or employed in a business operated by a family member, 26.9 percent worked for federal, State, county, or town units of government, and 50.0 percent worked for private employers. With the exception of differences between commercial and off-farm work part-time farmers all types of farmers showed significant differences in class of off-farm work.

A higher proportion (44.5 percent) of the full-time farmers than either the commercial (18.6 percent) or the off-farm work part-time farmers (13.2 percent) who did off-farm work were employed in a family business. The proportion of full-time farmers, commercial part-time farmers, and off-farm work part-time farmers employed by units of government was 14.8, 32.6 and 28.9 percent, respectively. Of the off-farm work part-time farmers, 57.9 percent were employed by private employers compared with 48.8 percent of the commercial part-time farmers and only 40.7 percent of the full-time farmers.

The difference between full-time farmers and all part-time farmers between full-time farmers and commercial part-time farmers and between full-time farmers and off-farm work part-time farmers in class of off-farm work is significant.

Proportion of Farm Work Done on the Home Place by the Farm Operator (1.5)

Farm operators were placed in three groups according to the proportion of farm work done on the home place that was done by themselves. Of the total farmers sampled, 27.4 percent did less than one-half of the work done on the home place, 41.7 percent did 50 to 79 percent of the work, and 30.9 percent did 80 percent or more of the work. The difference between commercial and off-farm work part-time farmers and between full-time and commercial part-time farmers is significant.

Farm Operator's Feeling That His Off-Farm Job Interferes with Farming (1.6)

In response to the question, "Does your off-farm job interfere with your farming?" - 38.6 percent of all farm operators with off-farm work replied "yes" and 61.4 percent responded "no". Only 21.7 percent of the full-time farmers replied with a "yes" compared with 54.8 percent of the commercial part-time farmers and 30.6 percent of the off-farm work part-time farmers.

The probability of the difference between commercial and off-farm work part-time farmers and between full-time farmers and commercial part-time farmers is beyond the .05 level of significance.

Choice of Dairy Farmer As An Occupation (1.7)

Respondents were asked to indicate their choice of dairy farmer, either with a 25 cow herd or an 80 cow herd as an occupation for themselves. An 80 cow herd was the first occupational choice for 22.7 percent of all farm operators, while a 25 cow herd was the first choice for 35.7 percent.

The differences among the groups in the typology with respect to choice of 80 and 25 cow herds as first occupational choice are not significant.

Occupational Choice Until Retirement (1.8)

The preceding section was concerned with differences among full-time farmers and part-time farmers and sub-types of part-time farmers with respect to choice of dairy farming as an occupation. This section and the one to follow is concerned with occupational choice until retirement. The question related to this section was worded as follows: "If you could choose any occupation to work in until you retire, what would be your first choice?"[1/]

Almost two-thirds (62.3 percent) of all the farmers studied indicated a preference for an occupation other than farming. When respondents are classified on the basis of the typology, differences with respect to occupational preference are not significant.

[1/] This question was not asked of individuals 65 years of age or over.

Choice of Nonfarm Occupation Until Retirement (1.9)

It was shown in the preceeding section that 62.3 percent (109 individuals) of the farm operators under 65 years of age would prefer an occupation other than farming to work in until retirement. This section deals with the type of nonfarm occupation chosen by those farm operators who did not make farming their first choice of occupation.

A slightly higher proportion of the farm operator's sampled who chose a nonfarm occupation made a manual occupational choice (54.1 percent) than a nonmanual choice (45.9 percent). Over three-fourths (76.9 percent) of the commercial part-time farmers, but less than one-half (41.0 percent) of the full-time farmers, chose a manual occupation. The differences between full-time farmers and all part-time farmers and between full-time farmers and commercial part-time farmers in nonfarm occupational choice are significant.

Summary

The purpose of this part of the study has been to report on differences among full-time farmers and part-time farmers and sub-types of part-time farmers in terms of characteristics of the farm operator.

The first important finding reported in this part is the rejection of the hypothesis that there are no differences among full-time farmers and part-time farmers and sub-types of part-time farmers in terms of characteristics of the farm operator.

The second major finding of this chapter is that for some variables differences were not significant between full-time farmers and all part-time farmers, but differences were significant between full-time farmers and sub-types of part-time farmers. These differences support the idea that part-time farmers are not a homogeneous category, and that important differences between full-time farmers and part-time farmers are not revealed when part-time farmers are considered as a a single category. For example, no significant difference was noted in educational attainment of full-time farmers and all part-time farmers. However, when full-time farmers and off-farm work part-time farmers were compared the difference was significant.

The third important finding is that for some variables, differences did not appear to exist among full-time farmers and all part-time farmers and sub-types of part-time farmers. For example, differences were not noted with respect to choice of dairy farming as an occupation or farming as an occupational choice until retirement.

Although there are some important differences among the types of farmers with respect to demographic characteristics of the farm operator, differences with respect to occupational choice, in general, were not significant. This would indicate that occupational goals were not different but that different means of reaching these goals might have to be developed because of other differences.

This part of the report has been concerned with differences among full-time farmers and part-time farmers and sub-types of part-time farmers in terms of characteristics of the farm operator. The next part will be concerned with the characteristics of the families of these farm operators. A final major section will shift from the human resource to the natural resource and look at the natural resource (the farm) - its characteristics and how it is managed.

FAMILY CHARACTERISTICS

This part of the report is concerned with examining the families of different types of farm operators. It will be recalled that St. Lawrence County, New York, the study area, is a low-income county. One-fourth of the households studied reported total earnings of all family members from off-farm work, nonwork income (income from rents, royalties, interest, dividends, veterans' allotments, unemployment insurance, welfare, etc.) and net cash farm income of less than $3,000 in 1962. The percentage distribution of households by household income and type of farmer during 1962 was:

Household income (Dollars)	Full-time farmer (N = 120)	Commercial part-time farmer (N = 43)	Off-farm work part-time farmer (N = 38)
Under 3,000	35.8	2.3	15.8
3,000-5,999	30.0	46.5	39.5
6,000 and over . . .	34.2	51.2	44.7
Total	100.0	100.0	100.0

The general null hypothesis for this section is:

> THERE ARE NO DIFFERENCES AMONG FULL-TIME FARMERS AND PART-TIME FARMERS AND SUB-TYPES OF PART-TIME FARMERS IN TERMS OF CHARACTERISTICS OF THE FAMILY OF THE FARM OPERATOR

Stage of family life cycle, size of family, off-farm employment of the wife of the farm operator, and proportion of farm work done on the home place by the wife are the independent variables tested (Table 2.0).

Table 2.0--Summary table showing the results of testing the association among full-time farmers and part-time farmers and sub-types of part-time farmers by independent variables related to the farm family, St. Lawrence County, New York, 1963

Independent Variable	Comparison of											
	Full-time farmers and part-time farmers			Commercial and off-farm work part-time farmers			Full-time farmers and commercial part-time farmers			Full-time farmers and off-farm work part-time farmers		
	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$
Stage of family life cycle	12.23	.001	.38	.08	NS	-	9.58	.01	.37	6.98	.01	.33
Size of family	4.42	NS	-	1.03	NS	-	1.01	NS	-	5.04	NS	-
Off-farm employment of wife	.001	NS	-	.27	NS	-	.09	NS	-	.12	NS	-
Work done on home place by wife	3.39	NS	-	3.25	NS	-	4.84	NS	-	1.86	NS	-

1/ NS indicates the Chi-square tests were not significant at the 5 percent level; coefficients of contingency corrected ($\bar{C}$) are not reported.

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Stage of Family Life Cycle (2.1)[1/]

Three out of 10 farm families (29.9 percent) were in the early life cycle stage and seven out of 10 (70.1 percent) were in the late stage. The differences between full-time farmers and all part-time farmers, between full-time farmers and commercial part-time farmers, and between full-time farmers and off-farm work part-time farmers in stage of family life cycle are significant. A higher proportion of the full-time farm families (79.5 percent) were in the late stage of the family life cycle then were the families of commercial part-time farmers (54.8 percent) or off-farm work part-time farmers (57.9 percent).

Size of Family (2.2)

Farm operator families were divided into three groups according to the number of household members living at home - small (1 to 3 individuals), medium (4 and 5 individuals), and large (6 or more individuals). Of the total families, 81 (39.3 percent) were small, 65 were medium size (31.6 percent) and 60 were large (29.1 percent).

The differences among types of farmers with respect to family size are not significant.

Off-Farm Employment of the Wife (2.3)

It was anticipated that if the farm operator was a part-time farmer his wife would be less likely to work off the farm and that his wife would do more of the farm work that was done on the home place. About one-fourth (26.4 percent) of the wives of farm operators had off-farm employment during 1962 and three-fourths (73.6 percent) did not work off the farm.

[1/] The sample was divided into two groups. Group or Stage I is made up of families in the early life cycle stage and includes childless couples with wife of child-bearing age (20-44 years of age), couples with oldest child living at home under 10 years of age, and couples with one or more children under 10 years of age and one or more single children age 10 to 21 living at home. The second group or Stage II includes couples with youngest child age 10 to 21, single, and living at home, and couples with wife over child-bearing age and no single children under 21 living at home. Widowers and separated farm operators have been excluded from this analysis. See Voth, 1966 for a discussion of family life cycle and occupational behavior.

However, the differences among full-time farmers and part-time farmers and sub-types of part-time farmers with respect to off-farm employment of the wife are not significant.

Proportion of Work Done on the Home Place by Wife (2.4)

It was shown previously that of the farmers sampled, 27.4 percent did less than one-half of the work done on the home place, 41.7 percent did 50 to 79 percent of the work, and 30.9 percent did 80 percent or more of the work.

Four out of 10 (42.1 percent) of the wives of all farmers sampled did no farm work on the home place, 39.1 percent did some, but less than 20 percent of the work, and 18.8 percent did over 20 percent of the work. The differences among wives by the type of farmer classification of their husband are not significant.

Summary

The purpose of this part of the study has been to report on differences among full-time farmers and part-time farmers and sub-types of part-time farmers in terms of characteristics of the family.

The findings of this section provide additional support for the hypothesis that farmers are not a homogeneous group and additional validation of the typology. Conclusions based on these findings are:

1. Since one-fourth of all families studied had household income of less than $3,000 in 1962, there is a need for programs designed to increase income in the area.

2. Since by definition the commercial and off-farm work part-time farmers are multiple job holders and since about one-fourth of the wives of farm operators are employed at off-farm work, it would appear that for a large segment of the population, the low-income problem is not one of unemployment but rather one of underemployment in the sense of low returns to labor.

CHARACTERISTICS OF THE FARM

The preceding parts of this study have been concerned with differences between types of farm operators in terms of demographic and attitudinal characteristics of the human resource. The objective of this part of the study is to report on differences in the relation of the human resource to the physical resource, the characteristics of the physical resource and its use among full-time farmers, commercial and off-farm work part-time farmers. As was noted previously, dairy farming is the major agricultural activity in St. Lawrence County. Eight out of 10 (84.5 percent) of the farm operators studied reported dairying as the major source of farm sales. Of the 32 farmers that did not report dairying as the major source of farm sales, only three were full-time farmers; two were commercial pert-time farmers and 27 were off-farm work part-time farmers.

The following independent variables are discussed: land tenure, land class, total acres operated, acres in cropland, change in number of cows milked, use of selected farm practices, and production of food and fuel for home use (Table 3.0).

The general null hypothesis for this part is:

THERE ARE NO DIFFERENCES AMONG FULL-TIME FARMERS AND PART-TIME FARMERS AND SUB-TYPES OF PART-TIME FARMERS IN TERMS OF CHARACTERISTICS OF THE FARM OPERATED.

Land Tenure (3.1)[1/]

The sample was divided into two groups: those farmers who owned all of the land they operated (full owners) and those farmers who owned part and rented part of the land they operated (part owners). Nearly three-fourths (73.9 percent) of all farm operators owned all of the land they operated and only about one-fourth (26.1 percent) rented part of the land they operated.

Of the full-time farmers, 70.2 percent were full owners compared with 67.4 percent, and 92.3 percent for commercial part-time farmers and off-farm

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1/ Three of the 206 farm operators in the sample were tenants. These three operators have been excluded from the analysis.

Table 3.0--Summary table showing the results of testing the association among full-time farmers and part-time farmers and sub-types of part-time farmers by independent variables related to the farm, St. Lawrence County, New York, 1963

Independent Variable	Comparison of											
	Full-time farmers and part-time farmers			Commercial and off-farm work part-time farmers			Full-time farmers and commercial part-time farmers			Full-time farmers and off-farm work part-time farmers		
	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$	X^2	Level of significance 1/	$\bar{C}$
Land tenure	2.06	NS	-	6.26	.02	.42	.12	NS	-	7.79	.01	.34
Land class	10.20	.01	.32	6.57	.02	.41	4.04	NS	-	11.71	.01	.38
Acres operated	11.43	.01	.33	5.61	NS	-	2.96	NS	-	15.02	.001	.42
Acres in crops	28.45	.001	.51	20.70	.001	.66	3.22	NS	-	43.91	.001	.68
Change in number of cows milked	26.99	.001	.50	20.48	.001	.67	3.62	NS	-	48.31	.001	.71
Farm practices:												
chemical weed control	.47	NS	-	4.48	.05	.36	.41	NS	-	3.47	NS	-
lime test	1.34	NS	-	12.84	.001	.58	1.87	NS	-	9.93	.01	.38
fertilizer test . . .	8.07	.01	.30	.72	NS	-	2.72	NS	-	6.29	.02	.30
artificiel breeding .	1.19	NS	-	.20	NS	-	.44	NS	-	1.05	NS	-
Production for home use	.75	NS	-	13.45	.001	.59	2.12	NS	-	8.98	.05	.29

1/ NS indicates the Chi-square tests were not significant at the 5 percent level; coefficients of contingency corrected ($\bar{C}$) are not reported.

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work part-time farmers, respectively. The difference between commercial and off-farm work part-time farmers and between full-time farmers and off-farm work part-time farmers is significant.

Class of Land Used for Production of Agricultural Products (3.2)

Land operated by the farmers studied was classified on the basis of the Cornell Land Classification. For purposes of analysis the land was placed in three groups: Land Classes I, II and III; Land Class IV; and Land Classes V and VI. Land Classes I, II and III include land most suited for forestry, summer grazing and recreation, and include farms with subsistence and moderate income expectations. Farms with medium income expectation predominate in Land Class IV. Land Classes V and VI consist of areas in which a major proportion of farms have high to very high income expectations. (Nobe and Conklin, 1957).

A smaller proportion of full-time farmers (56.1 percent) than of commercial part-time farmers (61.0 percent) and off-farm work part-time farmers (86.5 percent) were located on poorer agricultural land. Full-time farmers were the only type of farmers with Class V and/or VI as their major class of land.

The difference between full-time farmers and all part-time farmers, between commercial and off-farm work part-time farmers, and between full-time farmers and off-farm work part-time farmers is significant.

Total Acres Operated (3.3)[1/]

Forty-eight percent of the farm operators operated less than 200 acres, 23.8 percent operated between 200 and 299 acres, and 28.2 percent operated 300 acres or more during 1962. Full-time farmers reported the highest percentage (34.7 percent) with farms of 300 acres or more, while off-farm work part-time farmers had the lowest proportion (7.7 percent) reporting this characteristic. Only 38.7 percent of the full-time

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[1/] Total acres operated include the land owned, land rented from others, land occupied rent free, and land worked on shares by the farm operator. It does not include land rented to others, land that others use rent free, and land worked on shares by others.

farmers operated less than 200 acres compared with 53.5 percent of the commercial part-time farmers and 71.8 percent of the off-farm work part-time farmers.

The difference between full-time farmers and all part-time farmers and between full-time farmers and off-farm work part-time farmers is significant.

Acreage in Cropland (3.4)

The sample was divided into three classes - farms with less than 50 acres in cropland, 50 to 100 acres, and 100 acres and over. The same general relationship that existed with respect to total acres operated is present with respect to acres in cropland. Of all farm operators, 16.2 percent reported less than 50 acres in crops, 34.3 percent 50 to 100 acres, and 49.5 percent 100 acres and over. A smaller proportion of the full-time farmers (5.6 percent) than either the commercial part-time farmers (14.0 percent) or the off-farm work part-time farmers (54.1 percent) had under 50 acres in crops. On the other hand, a larger proportion of the full-time farmers (59.7 percent) than either the commercial (53.4 percent) or the off-farm work part-time farmers (10.8 percent) reported 100 acres or more in crops in 1962.

The differences between full-time farmers and all part-time farmers, between commercial and off-farm work part-time farmers, and between full-time farmers and off-farm work part-time farmers are significant.

Change Between 1949 and 1962 in Number of Cows Milked (3.5)

The 201 farmers who milked cows during the period 1949 to 1962 were placed in one of three groups according to the percentage change in number of cows milked during this period: those who decreased 25 percent or more; those who showed less than a 24 percent increase or decrease; and those who increased 25 percent or more. Three in 10 (28.4 percent) of the farmers decreased the number of cows milked by 25 percent or more, 37.8 percent reported a change of less than 24 percent, and 33.8 percent increased the number of cows milked by 25 percent or more. The commercial part-time farmers were the group with the highest proportion (41.9 percent) reporting

increases of 25 percent or more, while the off-farm work part-time farmers were the group reporting the highest proportion (76.5 percent) of decreases of 25 percent or more.

The difference between full-time farmers and all part-time farmers, between commercial and off-farm work part-time farmers, and between full-time farmers and off-farm work part-time farmers is significant.

Use of Selected Farm Practices (3.6)

Four farm practices were selected to test the hypothesis of no difference between types of farmer and use of selected farm practices - weed controls, soil test for lime, soil test for fertilizer, and the artificial breeding of dairy cows. Use of chemical weed controls was reported by 25.7 percent of all farm operators, soil test for lime by 70.4 percent, soil test for fertilizer by 22.3 percent, and articicial breeding of dairy cows by 64.0 percent. Commercial part-time farmers reported the highest proportion using chemical weed controls (32.6 percent) and having soil tested for lime (83.7 percent), while full-time farmers had the highest porportion with soil tested for fertilizer needs (29.0 percent) and the use of artificial breeding (66.7 percent).

Except as indicated below, differences are not significant. The difference between commercial and off-farm work part-time farmers in the use of chemical weed controls is significant. With respect to soil test for lime the difference between commercial and off-farm work part-time farmers and between full-time farmers and off-farm work part-time farmers is significant. Concerning soil test for fertilizer needs, the difference between full-time farmers and all part-time farmers and the difference between full-time farmers and off-farm work part-time farmers is significant.

Value of Food and Fuel Produced for Home Use (3.7)

Each farm operator was asked, "What products, if any, were produced on this place and used in the home last year?" Respondents were then asked to indicate the quantity of home production of each product used in the home. In consultation with home demonstration agents, staff of the College of Home Economics, Cornell University, and local people, values

were determined for each product in terms of cost if purchased locally or return if sold through usual market channels.[1/]

A value of home produced food and fuel, if purchased, of less than $600 was computed for 54.9 percent of all farm operators and a value of $600 or more for 45.1 percent. Of the types of farmers studied, commercial part-time farmers had the highest proportion (60.5 percent) reporting home production valued at $600 or more, while off-farm work part-time farmers had the highest proportion (79.5 percent) with home production valued at less than $600.

The difference between commercial and off-farm work part-time farmers and between full-time farmers and off-farm work part-time farmers is significant.

Summary

In terms of the research problem, the most important finding of this part of the report is the validation of the typology by the finding of significant differences among full-time farmers and part-time farmers and sub-types of part-time farmers in terms of characteristics of the farm operated. First and foremost is the finding that, while full-time farmers were the only ones operating farms offering a prospect of high to very high income, only 8.9 percent of the full-time farmers were located on this "good" land. Over one-half of the full-time farmers, almost two-thirds of the commercial part-time farmers and over four-fifths of the off-farm work part-time farmers were located on land most suited for forestry, summer grazing and recreation. In general, off-farm work part-time farmers did not control land resources that commercial farmers could utilize for agricultural production. The low quality of the land resource controlled by many farmers studied would indicate that opportunities for human resource use adjustment through land use changes are very limited. There may be some possibility for adjustments based on development of forest resources, summer grazing and/or recreation.

With the above-mentioned limitations and "opportunities" in mind, the following implications are presented.

1/ See Table 4.0 for factors used to compute value of home produced food and fuel.

1. During the period 1949 to 1962 a higher proportion of commercial part-time farmers than of the off-farm work part-time farmers or the full-time farmers increased by 25 percent or more the number of cows milked. Efforts should be made to determine why and how one category was able to change while others were not able to change or did not change. The group that changed may be facing problems that could be alleviated by education or action programs, while those that did not change may be faced with situations where education or action programs could be utilized to initiate changes, if necessary.

2. Selected agricultural practices were not in general use in the area. Of the farmers studied, only one-fourth used chemical weed controls, less than three-fourths had their soil tested for lime needs, less than one-fourth had their soil tested for fertilizer deficiencies, and of the farmers with dairy cows, less than two-thirds used artificial breeding. Commercial part-time farmers reported the highest use of chemical weed controls and soil testing for lime needs, while full-time farmers had the highest proportion with soil test for fertilizer deficiencies and the greatest use of artificial breeding. It appears that, with respect to the practices studied, a high proportion of the farmers have not reached the adoption stage, with the rate of non-adoption being highest among the off-farm work part-time farmers. Additional research should be conducted with respect to the adoption of these practices in the study area. Based on this new research, educational programs might be developed to diffuse knowledge about the practices, and action programs might be developed to provide the means for adoption.

3. The highest value of production of food and fuel for home consumption was reported by commercial part-time farm families and the lowest by off-farm work part-time farm families. Production of items for home consumption represents a possible use for labor that may not be needed or may not have an opportunity for use in other activities. Home production represents, in general, basic necessities for living. When the cost of production at home is less than the cost of these items if purchased, there is a positive return to labor. To the extent that this exists, there is justification for encouraging home production of food and fuel

items. When viewed in relation to the limited opportunities for human and physical resource use adjustment in the area, it appears that there should be an education program in the area directed toward increasing home food and fuel production, especially among families with limited alternatives for increasing levels of living.[1/]

[1/] It is recognized that not all farmers would have the equipment necessary for home production and/or processing of fruits and vegetables. These deficiencies, when present, might be overcome by rental of equipment, custom work, exchange of labor or formation of clubs or cooperatives.

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APPENDICES

APPENDIX A

Tables[1/]

[1/] The chi square value has been computed for all of the tables used in developing the analysis of data for this report. The five percent level (two-tailed test) was accepted as the level of significance.

Table 1.1--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by age of farm operator, St. Lawrence County, New York, 1963

Age (Years)	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Under 50	80	38.8	35.5	43.9	46.5	41.0
50 and over	126	61.2	64.5	56.1	53.5	59.0
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	1.47	.30	1/
Commercial and off-farm work part-time . .	1	.25	.70	1/
Full-time and commercial part-time. . . .	1	1.64	.20	1/
Full-time and off-farm work part-time . .	1	.39	.70	1/

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.2--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by educational attainment, St. Lawrence County, New York, 1963

Educational Attainment	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Less than high school	166	80.6	83.9	75.6	81.4	69.2
High school completion or more	40	19.4	16.1	24.4	18.6	30.8
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	2.15	.20	1/
Commercial and off-farm work part-time. .	1	1.64	.20	1/
Full-time and commercial part-time. . . .	1	.14	.80	1/
Full-time and off-farm work part-time . .	1	4.03	.05	1/

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.3--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by type of off-farm work, St. Lawrence County, New York, 1963

Type of Off-Farm Work	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	- - - - - - - - - Percent - - - - - - - - -			
Nonmanual	22	20.4	33.3	16.0	11.6	21.1
Manual	86	79.6	66.7	84.0	88.4	78.9
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number 1/	108	----	27	81	43	38

Comparison:	d.f.	X^2	$p \leq$	$\bar{C}$
Full-time and all part-time	1	3.73	.10	2/
Commercial and off-farm work part-time. .	1	1.33	.30	2/
Full-time and commercial part-time. . . .	1	8.47	.01	.52
Full-time and off-farm work part-time . .	1	1.23	.30	2/

1/ Excludes 98 cases with no off-farm work or data not available.

2/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.4--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by class of work of major off-farm job held by farm operator, St. Lawrence County, New York, 1963

Class of Off-Farm Work	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Family business[1/]	25	23.1	44.5	16.0	18.6	13.2
Government[2/]	29	26.9	14.8	30.9	32.6	28.9
Private employer	54	50.0	40.7	53.1	48.8	57.9
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number[3/]	108	---	27	81	43	38

Comparison:	d.f.	X^2	p<	$\bar{C}$
Full-time and all part-time	2	9.40	.01	.41
Commercial and off-farm work part-time. .	2	.75	.70	4/
Full-time and commercial part-time. . . .	2	6.23	.05	.42
Full-time and off-farm work part-time . .	2	8.05	.02	.48

1/ Includes self-employed.

2/ Includes federal, state, county and town government.

3/ Data not available for 1 case with off-farm employment.

4/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.5--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by proportion of work done on home place by farm operator, St. Lawrence County, New York, 1963

Work Done on Home Place by Farm Operator (percent)	All Farmers		Type of Farmer			
			Full Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	- - - - - - - - Percent - - - - - - - -			
Less than 50	56	27.4	22.6	35.0	50.0	18.4
50 - 79	85	41.7	42.7	40.0	45.2	34.2
80 or more	63	30.9	34.7	25.0	4.8	47.4
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number[1/]	204	----	124	80	42	38

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	2	4.79	.10	2/
Commercial and off-farm work part-time. .	2	20.78	.001	.66
Full-time and commercial part-time. . . .	2	18.41	.001	.46
Full-time and off-farm work part-time . .	2	2.01	.50	2/

1/ Data not available for 2 cases.

2/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.6--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers in farm operator's feeling that off-farm job interferes with farming, St. Lawrence County, New York, 1963

Farm Operator Felt that Off-Farm Job Interferes with Farming	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
No	62	61.4	78.3	56.4	45.2	69.4
Yes	39	38.6	21.7	43.6	54.8	30.6
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number[1/]	101	----	23	78	42	36

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	3.58	.10	2/
Commercial and off-farm work part-time. .	1	4.62	.05	.37
Full-time and commercial part-time. . . .	1	6.61	.02	.48
Full-time and off-farm work part-time . .	1	.53	.50	2/

1/ Data not available for 8 cases.

2/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.7a-Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by choice of dairy farmer - 80 cow herd - as first choice of occupation, St. Lawrence County, New York, 1963

80 Cow Herd - First Occupational Choice	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	- - - - - - - - Percent - - - - - - - -			
Yes	45	22.7	25.9	18.3	18.6	17.9
No	153	77.3	74.1	81.7	81.4	82.1
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number 1/	198	----	116	82	43	39

Comparison:	d.f.	X^2	p<	$\tilde{C}$
Full-time and all part-time	1	1.57	.30	2/
Commercial and off-farm work part-time	1	.01	.95	2/
Full-time and commercial part-time	1	.91	.50	2/
Full-time and off-farm work part-time	1	1.01	.50	2/

1/ Data not available for 8 cases.

2/ $\tilde{C}$ not computed when X^2 not significant at the 5 percent level.

Table 7b--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by choice of dairy farmer - 25 cow herd - as first choice of occupation, St. Lawrence County, New York, 1963

25 Cow Herd - First Occupational Choice	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Yes	71	35.7	39.3	30.5	25.6	35.9
No	128	64.3	60.7	69.5	74.4	64.1
Total:						
Percent	----	100.0	100.0	100.0	100.0	100.0
Number 1/	199	----	117	82	43	39

Comparison:	d.f.	X^2	p <	$\tilde{C}$
Full-time and all part-time	1	1.64	.20	2/
Commercial and off-farm work part-time. .	1	1.03	.50	2/
Full-time and commercial part-time.	1	.14	.80	2/
Full-time and off-farm work part-time . .	1	2.59	.20	2/

1/ Data not available for 7 cases.

2/ $\tilde{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.8--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers under 65 years of age by choice of farming as an occupation until retirement, St. Lawrence County, New York, 1963.

Farming Was Occupational Choice Until Retirement	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off Farm Work
	Number	Percent	- - - - - - - - - Percent - - - - - - - - -			
Yes	66	37.7	39.0	36.0	31.6	40.5
No	109	62.3	61.0	64.0	68.4	59 5
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number[1/]	175	-----	100	75	38	37

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	.18	.70	2/
Commercial and off-farm work part-time. .	1	.65	.50	2/
Full-time and commercial part-time. . . .	1	.65	.50	2/
Full-time and off-farm work part-time . .	1	.03	.90	2/

1/ Data not available or not applicable for 31 cases.

2/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 1.9--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers under 65 years of age by choice of type of nonfarm occupation until retirement by farm operator making a nonfarm occupational choice, St. Lawrence County, New York, 1963

Type of Nonfarm Occupational Choice	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Nonmanual	50	45.9	59.0	29.2	23.1	36.4
Manual	59	54.1	41.0	70.8	76.9	63.6
Total:						
Percent	----	100.0	100.0	100.0	100.0	100.0
Number	109	----	61	48	26	22

Comparison:	d.f.	X^2	p<	$\bar{C}$
Full-time and all part-time	1	9.64	.01	.45
Commercial and off-farm work part-time. .	1	1.02	.50	1/
Full-time and commercial part-time. . . .	1	9.43	.01	.49
Full-time and off-farm work part-time . .	1	3.33	.10	1/

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 2.1--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by stage of family life cycle, St. Lawrence County, New York, 1963

Stage of Family Life Cycle	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
I [1]	59	29.9	20.5	43.8	45.2	42.1
II [2]	138	70.1	79.5	56.2	54.8	57.9
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number [3]	197	----	117	80	42	38

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	12.23	.001	.38
Commercial and off-farm work part-time	1	.08	.80	[4]
Full-time and commercial part-time	1	9.58	.01	.37
Full-time and off-farm work part-time	1	6.98	.01	.33

[1] Stage I includes childless couples with wife of child-bearing age (20-44), couples with oldest child living at home under 10 years of age and couples with one or more children under 10 years of age and one or more single children age 10-21 living at home.

[2] Stage II includes couples with youngest child age 10-21, single, and living at home and couples with wife over child-bearing age and no single children under 21 living at home.

[3] Excludes 9 widowers or separated farm operators.

[4] $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 2.2--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by size of family, St. Lawrence County, New York, 1963

Size of Family	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Small[1/]	81	39.3	45.2	30.5	25.6	35.9
Medium[2/]	65	31.6	28.2	36.6	39.5	33.3
Large[3/]	60	29.1	26.6	32.9	34.9	30.8
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	$p <$	$\bar{C}$
Full-time and all part-time	2	4.42	.20	4/
Commercial and off-farm work part-time. .	2	1.03	.70	4/
Full-time and commercial part-time. . . .	2	1.01	.70	4/
Full-time and off-farm work part-time . .	2	5.04	.10	4/

1/ One to three individuals.
2/ Four to five individuals.
3/ Six or more individuals.
4/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 2.3--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by off-farm employment of the wife, St. Lawrence County, New York, 1963

Wife Employed Off Farm	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
No	145	73.6	73.5	73.8	76.2	71.1
Yes	52	26.4	26.5	26.2	23.8	28.9
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	197	----	117	80	42	38

Comparison:	d.f.	X^2	p<	$\bar{C}$
Full-time and all part-time	1	.001	.98	1/
Commercial and off-farm work part-time. .	1	.27	.70	1/
Full-time and commercial part-time. . . .	1	.09	.80	1/
Full-time and off-farm work part-time . .	1	.12	.80	1/

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 2.4--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by proportion of work done on the home place by the wife of the farm operator, St. Lawrence County, New York, 1963

Work Done on Home Place by Wife (percent)	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	- - - - - - - - - - Percent - - - - - - - - - -			
Zero	83	42.1	41.0	43.7	35.7	52.6
1 to 20	77	39.1	43.6	32.5	33.3	31.6
20 and over	37	18.8	15.4	23.8	31.0	15.8
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	197	----	117	80	42	38

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	2	3.39	.20	1/
Commercial and off-farm work part-time. .	2	3.25	.20	1/
Full-time and commercial part-time. . . .	2	4.84	.10	1/
Full-time and off-farm work part-time . .	2	1.86	.50	1/

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.1-Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by land tenure, St. Lawrence County, New York, 1963

Tenure Status 1/	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Full owner	150	73.9	70.2	79.3	67.4	92.3
Part owner	53	26.1	29.8	20.7	32.6	7.7
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	203	---	121	82	43	39

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	2.06	.20	2/
Commercial and off-farm work part-time. .	1	6.26	.02	.42
Full-time and commercial part-time. . . .	1	.12	.80	2/
Full-time and off-farm work part-time . .	1	7.79	.01	.34

1/ Excludes 3 full tenants.

2/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.2--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by land class, St. Lawrence County, New York, 1963

Land Class[1/]	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm-Work
	Number	Percent	Percent			
I, II and III	126	62.7	56.1	73.1	61.0	86.5
IV	64	31.8	35.0	26.9	39.0	13.5
V and VI	11	5.5	8.9	0.0	0.0	0.0
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number[2/]	201	----	123	78	41	37

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	2	10.20	.01	.32
Commercial and off-farm work part-time. .	1	6.57	.02	.41
Full-time and commercial part-time. . . .	2	4.04	.20	3/
Full-time and off-farm work part-time . .	2	11.71	.01	.38

1/ See Nobe and Conklin, 1957, for definition of land class.

2/ Data not available for 5 cases.

3/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.3--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by total acres operated, St. Lawrence County, New York, 1963

Acres Operated	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm-Work
	Number	Percent	Percent			
Under 200	99	48.0	38.7	62.2	53.5	71.8
200-299	49	23.8	26.6	19.5	18.6	20.5
300 and over	58	28.2	34.7	18.3	27.9	7.7
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	p ≤	$\bar{C}$
Full-time and all part-time	2	11.43	.01	.33
Commercial and off-farm work part-time	2	5.61	.10	1/
Full-time and commercial part-time	2	2.96	.30	1/
Full-time and off-farm work part-time	2	15.02	.001	.42

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.4--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by acreage in cropland, St. Lawrence County, New York, 1963

Crop Acreage	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm-Work
	Number	Percent	- - - - - - - - Percent - - - - - - - -			
Under 50	33	16.2	5.6	32.4	14.0	54.1
50-99	70	34.3	34.7	33.8	32.6	35.1
100 and over	101	49.5	59.7	33.8	53.4	10.8
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number[1/]	204	----	124	80	43	37

Comparison:	d.f.	X^2	$p <$	$\bar{C}$
Full-time and all part-time	2	28.45	.001	.51
Commercial and off-farm work part-time. .	2	20.70	.001	.66
Full-time and commercial part-time. . . .	2	3.22	.20	2/
Full-time and off-farm work part-time . .	2	43.91	.001	.68

1/ Data not available for 2 cases.

2/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.5--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by change in number of cows milked between 1949 and 1962, St. Lawrence County, New York, 1963

Change in Cows Milked (percent)	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	- - - - - - - - Percent - - - - - - - -			
Decrease of 25 or more	57	28.4	16.1	48.0	25.6	76.5
Decrease of 24 to increase of 24	76	37.8	48.4	20.8	32.5	5.9
Increase of 25 or more	68	33.8	35.5	31.2	41.9	17.6
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	201	----	124	77	43	34

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	2	26.99	.001	.50
Commercial and off-farm work part-time. .	2	20.48	.001	.67
Full-time and commercial part-time. . . .	2	3.62	.20	1/
Full-time and off-farm work part-time . .	2	48.31	.001	.71

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.6a--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by use of chemical weed controls, St. Lawrence County, New York, 1963

Used Chemical Weed Controls	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Yes	53	25.7	27.4	23.2	32.6	12.8
No	153	74.3	72.6	76.8	67.4	87.2
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	p<	$\bar{C}$
Full-time and all part-time	1	.47	.50	1/
Commercial and off-farm work part-time	1	4.48	.05	.36
Full-time and commercial part-time	1	.41	.70	1/
Full-time and off-farm work part-time	1	3.47	.10	1/

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.6b--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by soil test for lime, St. Lawrence County, New York, 1963

Had Soil Tested For Lime	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Yes	145	70.4	73.4	65.9	83.7	46.2
No	61	29.6	26.6	34.1	16.3	53.8
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	$\geq$	$\bar{C}$
Full-time and all part-time	1	1.34	.30	1/
Commercial and off-farm work part-time. .	1	12.84	.001	.58
Full-time and commercial part-time. . . .	1	1.87	.20	1/
Full-time and off-farm work part-time . .	1	9.93	.01	.38

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.6c--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by soil test for fertilizer, St. Lawrence County, New York, 1963

Had Soil Tested For Fertilizer	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Yes	46	22.3	29.0	12.2	16.3	7.7
No	160	77.7	71.0	87.8	83.7	92.3
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	8.07	.01	.30
Commercial and off-farm work part-time	1	.72	.50	1/
Full-time and commercial part-time	1	2.72	.10	1/
Full-time and off-farm work part-time	1	6.29	.02	.30

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.6d--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by use of artificial breeding of dairy cows, St. Lawrence County, New York, 1963

Used Artificial Breeding	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Yes	114	64.0	66.7	58.2	60.0	53.3
No	64	36.0	33.3	41.8	40.0	46.7
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	178	----	123	55	40	15

Comparison:	d.f.	X^2	p <	$\bar{C}$
Full-time and all part-time	1	1.19	.30	1/
Commercial and off-farm work part-time. .	1	.20	.70	1/
Full-time and commercial part-time. . . .	1	.44	.70	1/
Full-time and off-farm work part-time . .	1	1.05	.50	1/

1/ $\bar{C}$ not computed when X^2 not significant at the 5 percent level.

Table 3.7--Differences among full-time farmers and part-time farmers and sub-types of part-time farmers by value of home-produced food and fuel consumed at home, St. Lawrence County, New York, 1963

Value of Home Production 1/ (dollars)	All Farmers		Type of Farmer			
			Full-Time	Part-Time		
				All Part-Time	Commercial	Off-Farm Work
	Number	Percent	Percent			
Under 600	113	54.9	52.4	58.5	39.5	79.5
600 and over	93	45.1	47.6	41.5	60.5	20.5
Total:						
Percent	---	100.0	100.0	100.0	100.0	100.0
Number	206	----	124	82	43	39

Comparison:	d.f.	X^2	p <	$\tilde{C}$
Full-time and all part-time	1	.75	.50	2/
Commercial and off-farm work part-time. .	1	13.45	.001	.59
Full-time and commercial part-time. . . .	1	2.12	.20	2/
Full-time and off-farm work part-time . .	1	8.98	.01	.36

1/ Based on cost if purchased.

2/ $\tilde{C}$ not computed when X^2 not significant at the 5 percent level.

Table 4.0--Factors used to compute value of home produced food and fuel

	Unit	Return if sold (dollars)	Cost if bought (dollars)
Milk	Quart	.07	.22
Butter	Pound	.60	.70
Eggs	Dozen	.36	.50
Poultry (dressed)			
Ducks	Pound	.38	.60
Turkeys	Pound	.28	.45
Chickens	Pound	.25	.40
Pork (dressed)	Pound	.25	.40
Beef (dressed)	Pound	.30	.50
Lamb (dressed)	Pound	.25	.40
Fruits and Vegetables [1/]			
Frozen or Canned	Quart	.35	.35
Fresh			
Less than seven family members--7.50 for each family member for each $\frac{1}{4}$ acre of garden.			
Seven or more family members--52.00 for each $\frac{1}{4}$ acre of garden.			
Irish Potatoes	Bushel	1.50	2.00
Honey	Pound	.35	.45
Maple Syrup	Gallon	5.00	5.00
Fuel Wood	Cord	6.00	6.00

SOURCE: Guide for Home-Produced Food, FHA-NY 431-1, Farmers Home Administration, U.S. Department of Agriculture, Syracuse, New York, October, 1962; Home Demonstration Agent, St. Lawrence County, New York; Respondents for St. Lawrence County Study; Department of Household Economics and Management, College of Home Economics, Cornell University; and Department of Public Assistance, St. Lawrence County, New York.

[1/] For farm households, production expenses are included under farm expenses. For nonfarm household expenses for home production were charged at the rate of $20 for $\frac{1}{4}$ acre or less and $20 for each additional $\frac{1}{4}$ acre.

APPENDIX B

Procedures

THE SAMPLE AND OBJECTIVES OF THE OVER-ALL STUDY

The objectives of the over-all project were to determine for a given population of rural farm families in an area of northern New York State with different resource characteristics and levels of family income the following:

A. The nature and processes of socio-economic adjustment over the past decade in human and physical resource use and their basic causes;

B. The community, area, and economy-wide characteristics and developments which comprise the general socio-economic environment within which adjustments have evolved.

Stated more specifically, the objectives of the over-all study were:

1. To develop the nature, processes and causes of change in the sizes and types of farm organization and land use.

2. To relate incidence of part-time and full-time commercial farming to patterns of occupational mobility between farm and nonfarm activities and level of agricultural and nonfarm economic activity of the economy.

3. To explore the relationship of different patterns of farm organization and land use to patterns of communication, rate of adoption of selected farm practices and goals and values.

4. To develop a typology of part-time farmers based upon relative commitment to farm and nonfarm activity.

5. To develop a typology of part-time farm households based upon source of household income.

6. To compare present and base period social and economic characteristics of persons in the basic sample who have: (a) migrated from the area, (b) remained in the area as farmers, and (c) become nonfarm residents within the area.

The sample for the study was drawn from the 20 percent sample for the 1950 U.S. Census of Agriculture for St. Lawrence County, New York. The 20 percent sample yielded the names of 1,017 individuals who were operating

farms in St. Lawrence County in 1949. Individuals who were 55 years of age or over in 1950 were excluded from the study. As a result of this selection, this study is not representative of all farms or farm operators in the area. It represents farm operators, their farms, and their families meeting the criteria outlined above.

Of the total 417 farm operators who were in the sample based on the 1950 Census of Agriculture, 32 had died and 8 could not be located (Table A). Of the 377 remaining, only 26 or 6.9 percent had left the county. In other words, more than 9 out of 10 of the 1950 farm operators are trying to work out their adjustments within the area. Even though this is a county which is classified as an area of substantial and persistent unemployment by the Department of Labor, these farm operators are not moving to areas of greater opportunity. Of 320 farm operators who were engaged in farming in 1950 and who have remained in the area and for whom we have information, 234 or 73 percent were still engaged in farming on a full-time basis in 1962. In other words, of those who remain in the area more than seven out of 10 are still engaged in farming on a full-time or part-time basis.

Construction of the Schedule

The schedule used in this research was designed to obtain data necessary to meet the several objectives of the over-all study.

The schedule was constructed over an eighteen-month period during which several conferences were held in Ithaca, New York, and Washington, D.C., with representatives of the cooperating agencies. The schedule was reviewed and approved by the U.S. Bureau of the Budget.

Pretest

Formal pretest was conducted during the period March 27-30, 1963, in the towns of Moira, Brushton, Bombay, and Dickinson Center, Franklin County, New York.

Table A.--Distribution of 417-1950 farm operators who were under 55 years of age in 1950 by availability for interview and farm-nonfarm classification, St. Lawrence County, New York, 1963

Item	Number	Percent
No Interviews:		
Deceased	32	7.7
Moved out of St. Lawrence County area	26	6.2
Unable to locate	8	1.9
Not available for interview during the time that survey team was in the field	7	1.7
Refused to be interviewed	16	3.8
Total	89	21.3
Interviews:		
Not farming in 1950	4	1.0
Incomplete interview	4	1.0
Complete interviews	(320)	
Farming in 1962[1/]	234	56.1
Not farming in 1962[2/]	86	20.6
Total	328	78.7
Total Sample	417	100.0

1/ Includes three female farm operators.

2/ Includes one female who operated a farm in 1950.

Data Collection

The questionnaire was administered to the respondents during the months of June, July and August 1963 by undergraduate and graduate students in the College of Agriculture, Cornell University. Interview time varied from about one hour to about two and one-half hours. The work activities of the respondents necessitated evening and Saturday interviewing. Rapport was good. Sixteen individuals refused to be interviewed. The writer supervised the field operations. Schedules were field edited by the writer.

Coding

The code was developed by the cooperating parties. The writer developed the code for the part-time farming section of the schedule. Coding was done directly from the questionnaire to flow sheets for IBM punching of source cards. The writer supervised the coding operation which was done at Cornell University and West Virginia University.

CLASSIFICATIONS AND TERMINOLOGY

Concepts preceded by an asterisk (*) were operationally defined for purposes of analysis. Concepts not preceded by an asterisk (*) were operationally defined for purposes of enumeration. Except when noted, enumeration definitions have not been changed for purposes of analysis.

Dwelling Unit - Dwelling unit is a house, a group of rooms, or a room occupied as separate living quarters. A single room occupied as separate living quarters is a dwelling unit if it has separate cooking equipment or if it is the only living quarters in the structure. The basis of distinction is separateness or self-containment. In the majority of cases, a dwelling unit is a house, an apartment, or a trailer.

Farm - For purposes of this study, a farm is all of the land upon which some agricultural enterprises were conducted by an individual either by his own labor alone or with the assistance of members of his household or hired employees during 1962. For enumeration purposes, it was considered that agricultural enterprises were conducted during 1962 if:

(a) Any livestock -- hogs, cattle, sheep, goats, or hourses -- were kept on the land.

(b) A combined total of 20 or more chickens, turkeys and ducks were raised or kept on the land.

(c) Any grain, hay, or other field crops were grown on the land either for sale or home use.

(d) A combined total of 20 or more bearing or non-bearing fruit trees, grapevines and nut trees were on the land and not abandoned.

(e) Any vegetables, berries, or nursery or greenhouse products were grown on the land for sale.

(f) A combined total of one-fourth acres of vegetables, berries, grapevines, fruit trees, or nut trees were grown on the land either for home consumption or for sale.

(g) A combined total of 10 or more days were spent in harvesting forest products or in carrying out reforestation or timber stand improvement practices on the land.

The above requirements resulted in the enumeration of farm information for 1962 from some individuals that were classified as nonfarm when the criteria for classifying individuals and farms were applied to the questionnaires during the analysis.

This enumeration procedure is comparable to the procedure used by the Bureau of the Census. Enumerators are instructed to obtain an agricultural questionnaire for each person who had charge of one or more agricultural operations whether or not the individual considered himself to be a farm operator. During the office processing operations that follow the enumeration, criteria are applied to sort out for tabulation those questionnaires that represent farms according to the Census definition of farm.[1/] As has been noted, the basic sample for the present study is the 20 percent sample of the 1950 Census of Agriculture for St. Lawrence County, New York. Therefore, all the individuals in the sample for the present study were farm operators in 1950 as determined by the office processing operations of the Bureau of the Census that followed the 1950 enumeration.

Farm Operator - 1950 - The individual designated on Form Al Agricultural Questionnaire 1950 - U.S. Department of Commerce as the person in charge of agricultural operations on April 1, 1950.

Farm Work - Farm work is work put on crops, work with livestock, maintenance work on farm improvements, farm machinery and equipment, and management of the farm including maintaining records and accounts. It does not include time spent redecorating, remodeling, or repairing the family living quarters or time spent at nonfarm businesses operated from the home place--for example, auto repair business or dress-making shops.

Included as farm work on the home place are any work, chores, or planning necessary to the agricultural operations of the place, such as the following:

Working in fields, orchards, or home gardens;

Feeding and caring for livestock and poultry;

Irrigating crops;

[1/] U.S. Bureau of the Census, U.S. Census of Agriculture: 1959, Vol. II, General Report Statistics by Subjects, (Washington, D.C. 1962).

Hauling farm or ranch products to market;

Hauling feed, fertilizer, and other supplies to the farm or ranch;

Cleaning and caring for milk pails and separators;

Cleaning and repairing machinery and other farm equipment;

Constructing or repairing buildings and fences with regular farm help;

Contract farm work for which labor is hired, but for which machines and equipment are furnished by the farm operator;

Planning farm work;

Keeping farm records;

Supervising hired employees.

Not included are:

Housework;

Contract construction work;

Custom work for which equipment is hired from a contractor who also supplies the labor for operating the equipment;

Repair, installation or construction work done by persons employed specifically for such work.

Farmer - Farmer is an individual who conducted an agricultural enterprise upon a farm during 1962 either by his own labor alone or with the assistance of members of his household or hired employees during 1962.

Household - Household, as used in this study, includes all persons who occupy a house, an apartment, a group of rooms, or a room that constitute a dwelling. A household includes the family and also lodgers, foster children, wards or employees who share the dwelling unit. A person living alone in a dwelling unit or a group of unrelated persons sharing a dwelling unit as partners is also counted as a household.

Persons who were away from the sample unit because they were inmates of the following types of institutions at the time of enumeration were not considered members of the household unit. As inmates, they were considered usual residents at the institution. These institutions include:

(1) Penal institutions;

(2) Homes for the aged, infirmed and needy;

(3) Mental institutions (including mental hospitals for veterans);

(4) Nursing, convalescent and rest homes;

(5) Other hospitals and homes providing specialized care.

*Labor Force - Labor force refers to all persons 14 years old or over who are either (1) employed; (2) unemployed; or (3) members of the Armed Forces.

Land:

Land Operated - Land operated represents the total of all land used for agriculture by the person in charge. Including land he owns, land he rents or leases from others, land he occupies rent free, and land he works on shares for others. Not included is land he rents to others, land he permits others to use rent free, and land worked on shares for him by others.

Land Rented to Others - Land rented to others is the total acreage of all land which the person in charge rents or leases to others, land he permits others to use rent free, and land worked for him by others on shares. Included is cropland, pastureland, woodland, wasteland, and other land whether in one tract or several.

Land Rented from Others - Land rented from others is the total acreage of all land which the farm operator rents or leases from others, uses rent free, or works on shares for others.

Land in Crops - Land in crops include all of the following for reporting period:

(1) Land seeded with the expectation of harvesting a crop;

(2) Land from which a crop was harvested;

(3) Land in both bearing and non-bearing fruit trees, nut trees, and grapevines, including those on which the blossoms, but not the trees were killed by freezing;

(4) Land in nursery and greenhouse products;

(5) Land used for pasture if this could have been used for crops without additional improvement (such as brush clearing, stone removal, tree clearing, etc.);

(6) Land that was idle but that has been cropped in recent years.

Other Pasture - Other pasture includes all land other than woodland and cropland that was used only for pasture and grazing, non-crop open or brush pasture and cut-over or deforested land improved and used for pasture.

Woodland - Woodland refers to all woodlots or timber tracts, natural or planted and to cut-over and deforested land with young growth which has or will have value for wood products. It does not include cut-over or deforested land that has been improved for pasture; such land is reported as other pasture.

Woodland Pastured - Woodland pastured includes all woodland where livestock were pastured or grazed during reporting period.

Major Activity - Major activity is the activity at which an individual spent the greatest amount of his time during the period under study.

Income:

*Household Income - Household income is net cash farm income plus total nonwork income and off-farm work income for all household members.

*Net Cash Farm Income - Net cash farm income includes cash receipts from sales of farm products, custom farm work, and government agricultural payments minus cash farm expenditures.

*Net Farm Income - Net farm income is net cash farm income plus perquisites. (Note: This definition does not include an allowance for depreciation on farm machinery and equipment or a change in livestock or equipment inventory.)

*Nonwork Income - Nonwork income is income other than wages or salary; e.g., from rents, royalties, interest, dividends, veterans allotments, social security, unemployment insurance, public assistance.

*Off-Farm Work Income - Off-farm work income is the total wages or salaries earned at nonfarm work.

*Part-Time Farmer - See definition employed in this study pp. 25-27.

Perquisites - For this study perquisites are farm products including food produced on the home place and consumed in the home. For purposes of analysis, dollar values were assigned to home production on the basis of cost if purchased locally or return if sold through usual marketing channels in the area.

Unpaid Family Workers - Unpaid family workers are persons who worked without direct compensation on a farm or in a business. They are usually related by blood or marriage to the operator of the farm or business.

*Underemployment - Underemployment refers to under-utilization of a worker's time and ability through (1) employment for less than a full working year or (2) employment at work which does not make full use of his training and ability.

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Coded Occupational Titles in Trade and Industrial Education.

Office of Education (DHEW), Washington, D.C.
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*TRADE AND INDUSTRIAL EDUCATION; *OCCUPATIONS; *NUMERIC CODES

This booklet lists occupations by title and Dictionary of Occupational Title (DOT) numbers for use in reporting trade and industrial education enrollments. It is designed to help close the gap in reporting occupational information on a national scale. There are 414 job titles listed with their corresponding DOT numbers. (EM)

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CODED OCCUPATIONAL TITLES in TRADE and INDUSTRIAL EDUCATION

Includes a listing of the more commonly reported occupational titles in trade and industrial education programs

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
ANTHONY J. CELEBREZZE, *Secretary*

Office of Education
FRANCIS KEPPEL, *Commissioner*

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FOREWORD

THIS PUBLICATION, lists the commonly reported occupations in trade and industrial education. The listings conform to those appearing in the *Dictionary of Occupational Titles.*[1] Occupations have been alphabetized and cross-indexed for convenience in assembling data for inclusion in the annual reports submitted to the U.S. Office of Education, Division of Vocational and Technical Education.

Extreme care should be exercised in copying code numbers. The transposition of digits can cause errors in compiling figures in the State office or in the Office of Education. Careful selection of the correct code will permit use of abbreviations in recording occupational titles.

Space is provided in the back of the booklet for recording frequently used codes and occupational titles that do not appear in the booklet. Careful search of all the listings should be made before turning to the *Directory of Occupational Titles* for additional code numbers.

Attention is called to the Technician's List which appears at the end of the regular listings. Many common occupational titles used in technician training have been cataloged here. It has been necessary to utilize the professional code designation

[1] *Dictionary of Occupational Titles*, Volumes I and II, Washington: U.S. Government Printing Office, 1949. (U.S. Department of Labor, Bureau of Employment Security.) Occasionally a description following an occupational code will vary in slight detail from the wording of a description used in Volumes I and II of DOT.

in order to arrive at occupational titles that match the variety of areas in which trade and industrial educators offer training. It is well recognized that the objective of trade and industrial training is occupational preparation.

This booklet brings closer together data gathered by the Bureau of the Census, the U.S. Employment Service, and the U.S. Office of Education. The listing of occupations by title for use in reporting trade and industrial education enrollments is an important first step in closing the gap in reporting occupational information on a national scale.

W. M. ARNOLD,
Assistant Commissioner for Vocational and Technical Education.

Coded Occupational Titles in Trade and Industrial Occupations

A

4–85.030—Acetylene Welders
5–83.941—Air Conditioning and Refrigeration Mechanics
5–03 —Aircraft Manufacturing Occupations, N.E.C.
5–80 —Aircraft Mechanics and Repairmen
0–41.60 —Aircraft Navigators

4–54 —Ammunition Manufacturing Occupations
4–87 —Annealers, Temperers, and Heat Treaters
4–85.020—Arc Welders
0–44 —Artists, Commercial
5–33 —Asbestos and Insulation Workers

0–23.25 —Assistant or Technician—Medical Record
5–81.510—Auto Body and Fender—Mechanics and Repairmen
5–02 —Automobile Manufacturing Occupations, N.E.C.
5–81.010—Automobile Mechanics
4–35.610—Auto Upholsterer and Trim

0–41 —Aviators
7–87 —Axmen, Chainmen, and Rodmen—Surveying

B

4–01 —Bakers
4–02 —Bakery Products. Occupation Production, N.E.C.
2–32.01 —Barbers
2–21 —Bartenders
2–32.15 —Beauty Operator (Cosmetologist)

4–03 —Beverage Product n Occupation, N.E.C.

4-86 —Blacksmiths, Forgemen, and Hammermen
7-70 —Boiler Tenders (Firemen), N.E.C.
4-83 —Boilermakers
4-61 —Boot and Shoe Manufacturing Occupation

5-38 —Brakemen, Railroad
5-24 —Brick Masons and Stone Masons and Tile Setters
4-77 —Buffers, Filers, Grinders, and Polishers (Metal)
0-87 —Building—Managers and Superintendents
5-36 —Bus, Taxi, Truck, and Tractor—Drivers and Chauffeurs

C

4-32 —Cabinet Makers
2-25.41 —Cafeterias, Kitchens, Restaurants, and Hotels—Managers and Supervisors
4-05 —Candy Making—Confections Production Occupation
4-04 —Canning and Preserving Occupations
5-25 —Carpenters

7-59.220—Carpet Layers
5-26 —Cement and Concrete Finishers
4-67 —Cement, Concrete, Gypsum, and Plaster Products Manufacturing Occupations
7-87 —Chainmen, Axmen, and Rodmen—Surveying
5-36 —Chauffeurs and Drivers—Bus, Taxi, Truck, and Tractor

0-52.22 —Chemical Laboratory Assistant
4-52 —Chemical Manufacturing Occupation—Industrial
4-66 —Clay Products Manufacturing Occupations
5-57 —Cleaning, Pressing, Dyeing, and Laundering Occupations (Apparel and other articles)
4-72 —Clock, Watch, Jewelry Manufacturing Occupations

0-46.01 —Clothes or Fashion—Designer

4-85.040—Combination Welders
0-44 —Commercial Artists
2-26 —Commercial Cooks
0-56 —Commercial Photographers

5-32.752—Composition—Floor Layers
4-44 —Compositors and Typesetters
5-26 —Concrete and Cement Finishers
4-67 —Concrete, Cement, Gypsum, and Plaster Products Manufacturing Occupations
4-05 —Confections Production Occupations (candy making)

5-27 —Construction and Maintenance Painters
5-23 —Construction Machinery Operators, N.E.C. (Heavy Road Building Machinery Operators)
7-32 —Construction Occupations, N.E.C.
1-18.68 —Control Clerks—Production
2-26 —Cooks, Commercial

4-80 —Coppersmiths, Tinsmiths, and Sheet Metal Workers
2-32.15 —Cosmetologist (Beauty Operator)
5-73 —Cranemen, Derrickmen, Hoistmen, and Shovelmen
2-84 —Custodians (Janitors)

D

5-48 —Deckhands and Sailors
0-43.40 —Decorator, Interior
1-32.10 —Dentist's Assistants (Dental Assisting)
5-73 —Derrickmen, Cranemen, Hoistmen, and Shovelmen
0-46.01 —Designer—Clothes or Fashion

0-43.60 —Designer—Floral
0-46.32 —Designer, Stage Scenery
0-46 —Designers, N.E.C.
2-65 —Detectives and Policemen (except in public service)
2-66 —Detectives and Policemen (public service)

4-06 —Dairy Products Processing Occupations

4-76 —Die Sinkers and Setters, and Toolmakers
5-83.931—Diesel—Mechanics and Repairmen
1-32.20 —Doctor's Assistant (Medical)
2-09 —Domestic Workers—Servants, Miscellaneous

0-48 —Draftsmen
4-25 —Dressmakers and Seamstresses
5-36 —Driver—Commercial Vehicle
5-36 —Drivers and Chauffeurs—Bus, Taxi, Truck, and Tractor
5-57 —Dyeing, Pressing, Cleaning, and Laundering Occupations (Apparel and other articles)

5-18 —Dyers (Textile Manufacturing)

E

5-83.433—Electric Motor Repairmen
5-00 —Electrical Equipment Manufacturing Operations
4-99 —Electrical Machinery and Accessories Manufacturing Occupations
5-53 —Electrician, Lineman
4-97.420—Electricians, Maintenance and Repair

4-97 —Electricians, N.E.C.
4-97.510—Electricians, Powerhouse
4-97.010—Electricians, Wiremen
4-98 —Electronic Manufacturing Occupations (Radios, Phonographs, etc.)
4-74 —Electroplating and Galvanizing Occupations

4-45 —Electrotypers and Stereotypers (Printing)
0-65 —Embalmers, Undertakers, and Morticians
5-41 —Engineers, Locomotive
0-88 —Engineers, Pilots, Ship Captains, and Mates
5-72 —Engineers, Stationary

4-73 —Engravers
5-99 —Executives (See Foremen and Supervisors)

F

3-35 —Farm Machinery Mechanics
0-46.01 —Fashion or Clothes—Designer
4-07 —Feed, Flour, Grain—Millers
4-77 —Filers, Grinders, Buffers, and Polishers (Metal)
4-39 —Finished Lumber Products Manufacturing Occupations

7-70 —Fireman (Boiler Tender), N.E.C.
5-42 —Fireman, Locomotive
2-63 —Firemen, Fire Department
3-87 —Fishermen and Oystermen
3-89 —Fishing Occupations, N.E.C.

4-16 —Fixers—Loom
5-32.752—Floor Layers (Composition)
0-43.60 —Floral Designer
4-07 —Flour, Grain, and Feed—Millers
4-10 —Food Products Producing Occupations, N.E.C.

5-99 —Foremen and Supervisors
4-86 —Forgemen, Hammermen, and Blacksmiths
6-82 —Foundry Occupations, N.E.C.
4-81 —Foundry Workers—Molders
4-91 —Foundrymen—Furnacemen, Smelters, and Pourers

4-91 —Furnacemen, Smelters, and Pourers—Foundrymen
4-36 —Furniture Manufacturing Occupations, N.E.C.
4-35.710—Furniture Upholsterers and Repairmen
4-21 —Furriers and Fur Goods Fabricating Occupations, N.E.C.

G

4-74 —Galvanizing and Electroplating Occupations
4-27 —Garment Trades Worker, N.E.C.
4-27.432—Garment Trades Worker, Pattern Makers
4-26 —Garment Trades Worker, Tailors
5-30 —Gas Fitters, Steam Fitters, and Plumbers

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4-65 —Glass Products Manufacturing Occupations
5-77 —Glaziers
4-29 —Graders, Inspectors, Sealers—Logs and Lumber
4-77 —Grinders, Buffers, Polishers, and Filers (Metal)
5-83.542—Gunsmiths

4-67 —Gypsum, Cement, Concrete, and Plaster Products Manufacturing Occupations

H

4-86 —Hammermen, Forgemen, and Blacksmiths
4-24 —Hat and Cap Manufacturing Occupations, N.E.C.
4-87 —Heat Treaters, Annealers, and Temperers
5-32 —Heavy Road Building Machinery Operators—Construction
5-73 —Hoistmen, Shovelmen, Cranemen, and Derrickmen

2-42 —Hospital Attendants, N.E.C. (Nurse Aides)
2-25 —Hostesses, Housekeepers, and Stewards
2-25.41 —Hotel, Restaurant, Cafeteria, or Kitchen—Managers and Supervisors
2-24 —Hotel Maids and Housemen
2-25.21 —Housekeepers—Hotel and Hospital

I

4-52 —Industrial Chemical Manufacturing Occupations
4-85.025—Inert Gas Welders
5-76 —Inspectors, N.E.C.
4-29 —Inspectors, Sealers, Graders—Logs and Lumber
5-83.971—Instrument—Mechanics and Repairmen

5-33 —Insulation and Asbestos Workers
0-43.40 —Interior Decorator

J

2-84 —Janitors (Custodians)
4-71 —Jewelers, Watchmakers, Goldsmiths, and Silversmiths
4-72 —Jewelry, Clock, and Watch Manufacturing Occupations

K

4-14 —Knit Goods Manufacturing Occupations

L

0-52.22 —Laboratory Assistant, Chemical
0-50.01 —Laboratory Assistant, Medical
3-38 —Landscapers, and Nurserymen
5-32.761—Lather (Metal and Wood)
5-57 —Laundering, Cleaning, Pressing, and Dyeing Occupations (Apparel and other articles)

4-59 —Leather Manufacturing Occupations
4-62 —Leather Products Manufacturing, N.E.C.
5-08 —Lens Grinders, Opticians, and Polishers
5-53 —Linemen and Servicemen—Telegraph, Telephone, and Power
4-46 —Lithographers

5-41 —Locomotive Engineers
5-42 —Locomotive Firemen
7-47 —Longshoremen, Stevedores
4-16 —Loom Fixers
4-29 —Lumber and Log Inspectors, Scalers, and Graders

4-30 —Lumbermen, Raftsmen, and Wood Choppers

M

6-78 —Machine Operators (Machine Shop)
4-75 —Machinist
2-24 —Maids and Housemen—Hotel, Restaurants, etc.
4-97.420—Maintenance and Repair—Electricians
5-83.621—Maintenance and Service (Industrial)—Mechanics and Repairmen

5-99 —Managers (See Foremen)
2-25.41 —Managers, Supervisors—Hotel, Restaurant, or Cafeteria Kitchen
0-87 —Managers and Superintendents, Building
4-72 —Manufacturing Occupations—Clock, Watch, and Jewelry
0-52.41 —Masseurs

0-88 —Mates, Pilots, Engineers, and Ship Captains
5-58 —Meat Cutters (except in slaughtering and packinghouses)
3-35 —Mechanic—Farm Machinery
5-83.941—Mechanic—Refrigeration and Air Conditioning
4-88 —Mechanical Treatment of Metal Occupations (rolling, stamping, pressing, etc.)

5-80 —Mechanics and Repairmen—Aircraft
5-81.510—Mechanics and Repairmen—Auto Body and Fender
5-81.010—Mechanics and Repairmen—Automobile

5-83.931—Mechanics and Repairmen—Diesel
5-83.971—Mechanics and Repairmen—Instrument
5-83.621—Mechanics and Repairmen—Maintenance and Service (Industrial)
5-81 —Mechanics and Repairmen—Motor Vehicles, N.E.C.
5-83 —Mechanics and Repairmen, N.E.C.
5-83.411—Mechanics and Repairmen—Radio and T.V. Servicemen
5-79 —Mechanics and Repairmen—Railroad and Car Shops

5-83.111—Mechanics and Servicemen—Office Machines
1-32.20 —Medical Assistant (Assisting Physician in his office)
0-50.01 —Medical Laboratory Assistant
0-23.25 —Medical Record Technician or Assistant
0-52 —Medical Service Occupations, N.E.C.

4-77 —Metal—Buffers, Filers, Grinders, and Polishers
4-07 —Millers—Grain, Flour, and Feed
4-23 —Milliners
5-78 —Millwrights
5-21 —Miners and Mining Machine Operators

5-17 —Model and Pattern Makers (Except paper)
4-81 —Molders (Foundry Workers)
0-65 —Morticians, Undertakers, and Embalmers
5-56 —Motion Picture Occupations, N.E.C.
5-55 —Motion Picture Projectionist

5-83.433—Motor Repairmen—Electric
5-81 —Motor Vehicles—Mechanics and Repairmen, N.E.C.

N

0-41.60 —Navigators (Aircraft)
5-83.871—Neon Sign Servicemen
2-42 —Nurse Aides (Hospital Attendants)
2-07.05 —Nursery School Assistants
3-38 —Nurserymen and Landscapers

2-38 —Nurses, Practical
1-05.01 —Nursing Unit Administration Assisting (Management assisting)

O

2-43.33 —Occupational Therapy Assisting
5-83.111—Office Machines—Mechanics and Servicemen
2-32.15 —Operators, Beauty (Cosmetologist)
5-23 —Operators—Construction Machinery, N.E.C. (Heavy Road Building Machinery Operators)
6-78 —Operators—Machine (MachineShop)

5-51 —Operators, Power Station
0-61 —Operators, Radio
1-41 —Operators, Telegraph
1-42 —Operators, Telephone
5-08 —Opticians and Lens Grinders and Polishers

5-12 —Organ and Piano Tuners

4-84 —Ornamental and Structural Metal Workers (Iron Workers)
3-87 —Oystermen and Fishermen

P

4-50 —Paint and Varnish Manufacturing Occupations
5-16 —Painters (Except construction and maintenance)
5-27 —Painters, Construction and Maintenance
5-27.910—Painters—Sign
4-41 —Paper and Pulp Manufacturing Occupations

5-28 —Paperhangers
5-17 —Pattern and Model Makers (Except paper)
4-27.432—Pattern Makers, Garment Trades Worker
5-20 —Petroleum Production Occupations
4-55 —Petroleum Refining Occupations

4-98 —Phonographs, Radios, etc.—Electronic Manufacturing Occupations
4-47 —Photoengravers
0-56 —Photographer (Commercial)
2-42.34 —Physical Therapy Assistant
5-12 —Piano and Organ Tuners

0-88 —Pilots, Engineers, Ship Captains, and Mates
0-68.50 —Planner, Production
4-67 —Plaster Products, Cement, Concrete, and Gypsum Manufacturing Occupations
5-29 —Plasterers
5-10 —Plastics Products Manufacturing Occupations

5-30 —Plumbers, Gas Fitters, and Steam Fitters
2-65 —Policemen and Detectives (Except in public service)
2-66 —Policemen and Detectives (Public service)
4-77 —Polishers, Buffers, Filers, and Grinders (Metal)

5-08 —Polishers, Lens Grinders, and Opticians

4-91 —Pourers, Smelters, and Furnacemen—Foundrymen
5-53 —Power, Telegraph, and Telephone—Linemen and Servicemen
6-27 —Power Sewing Machine Operators
5-51 —Power Station Operators
4-97.510—Powerhouse Electricians

2-38 —Practical Nurses
4-04 —Preserving and Canning Occupations
5-57 —Pressing, Dyeing, Laundering, and Cleaning Occupations (Apparel and other articles)
4-48 —Pressmen and Plate Printers
4-44 —Printing—Compositors and Typesetters

4-45 —Printing—Electrotypers and Stereotypers
4-46 —Printing—Lithographers
4-48 —Printing—Pressmen and Plate Printers
4-49 —Printing and Publishing Occupations, N.E.C.
1-18.68 —Production Control Clerk

0-68.50 —Production Planner
5-09 —Professional and Scientific Apparatus Manufacturing Occupations, N.E.C.
5-55 —Projectionist—Motion Picture
4-41 —Pulp and Paper Manufacturing Occupations

R

5-83.411—Radio and T.V. Servicemen—Mechanics and Repairmen
5-83.447—Radio Mechanic—Installation
0-61 —Radio Operators
4-98 —Radios, Phonographs, etc.—Electronic Manufacturing Occupations
4-30 —Raftsmen, Woodchoppers, and Lumbermen

5-79 —Railroad and Car Shops—Mechanics and Repairmen

5-38 —Railroad Brakemen
4-55 —Refining Occupations (Petroleum)
5-83.941—Refrigeration and Air Conditioning Mechanics
2-25.41 —Restaurant, Hotel, and Cafeteria Kitchen—Managers and Supervisors

7-87 —Rodman, Chainmen, and Axmen—Surveying
7-31 —Roofer and Slaters
4-57 —Rubber Goods Manufacturing Occupations

S

5-48 —Sailors and Deckhands
4-31 —Sawmill Occupations, N.E.C.
5-09 —Scientific and Professional Apparatus Manufacturing Occupations, N.E.C.
4-29 —Scalers, Graders, Inspector—Logs and Lumber
4-25 —Seamstresses and Dressmakers

2-09 —Servants, Miscellaneous—Domestic Workers
4-76 —Setters, Die Sinkers, and Toolmakers
9-54 —Sewage and Water Treatment Plant Workers
6-27 —Sewing Machine Operator (Power)
5-84 —Sharpeners and Tool Dressers

4-80 —Sheet Metal Workers—Coppersmiths and Tinsmiths
0-88 —Ship Captains, Mates, Pilots and Engineers
4-84.012—Shipfitter
4-61 —Shoe and Boot Manufacturing Occupations
4-60 —Shoe Repairmen and Shoemakers (Not in factory)

5-73 —Shovelmen, Cranemen, Derrickmen, and Hoistmen
5-27.910—Sign Painters
5-83.871—Sign Servicemen—Neon
7-31 —Slaters and Roofers
4-09 —Slaughtering Occupations

4-91 —Smelters, Pourers, and Furnacemen —Foundrymen
0-46.32 —Stage Scenery Designer
5-72 —Stationary Engineer
5-30 —Steam Fitters, Gas Fitters, and Plumbers
4-45 —Stereotypers and Electrotypers (Printing)

7-47 —Stevedores, Longshoremen
2-25 —Stewards, Hostesses, and Housekeepers
5-24 —Stone Masons, Brick Masons, and Tile Setters
4-68 —Stonecutters
4-84 —Structural and Ornamental Metal Workers

0-84 —Superintendents and Managers—Building
5-99 —Supervisors (See Foremen)
2-25.41 —Supervisors and Managers—Hotel, Restaurant, and Cafeteria Kitchens
7-87 —Surveying—Chainmen, Axmen, and Rodmen
0-64 —Surveyors

T

4-26 —Tailors, Garment Trade Workers
5-36 —Taxi, Truck, Tractor, and Bus—Drivers and Chauffeurs
0-23.25 —Technician or Assistant—Medical Record
1-41 —Telegraph Operators
5-53 —Telephone, Telegraph, and Power—Linemen and Servicemen

1-42 —Telephone Operators
4-87 —Temperers, Heat Treaters, and Annealers
5-18 —Textile Manufacturing—Dyers
4-19 —Textile Manufacturing Occupations, N.E.C.
4-15 —Textile Weavers

5-24 —Tile Setters, Brick Masons, and Stone Masons
4-80 —Tinsmiths, Coppersmiths, and Sheet Metal Workers

4-12 —Tobacco Products Manufacturing Occupations
5-84 —Tool Dressers and Sharpeners
4-76 —Toolmakers, Die Sinkers, Setters

5-36 —Tractor, Truck, Taxi, and Bus—Drivers and Chauffeurs
5-05 —Transportation Equipment and Manufacturing Occupations, N.E.C. (Except automobile and aircraft)
5-49 —Transportation Occupations, N.E.C.
5-36 —Truck, Taxi, Tractor, and Bus—Drivers and Chauffeurs
4-44 —Typesetters and Compositors

U

0-65 —Undertakers, Embalmers, and Morticians
4-35.610—Upholsterers—Auto and Trim
4-35.710—Upholsterers—Furniture
5-54 —Utilities Furnishing Occupations, N.E.C.

V

4-50 —Varnish and Paint Manufacturing Occupations

W

2-27 —Waiters and Waitresses
5-88 —Warehousemen
4-72 —Watch, Clock, Jewelry Manufacturing Occupations
4-71 —Watchmakers, Jewelers, Goldsmiths, and Silversmiths
9-54 —Water Treatment and Sewage Plan, Workers

4-15 —Weavers, Textile
4-85.030—Welders, Acetylene
4-85.020—Welders, Arc
4-85.040—Welders, Combination
4-85.025—Welders, Inert Gas

4-97.010—Wiremen—Electricians
4-30 —Woodchoppers, Raftsmen, and Lumbermen
4-33 —Woodworking Occupations, N.E.C.

Technician's List

0-19.01 —Air Conditioning Technician
5-03.810—Aircraft Technician (Inspector)
5-81.920—Automotive Technician (Auto Tester)
0-05.22 —Chemical Laboratory Technician (Assistant)
0-61.85 —Communication Technician

5-83.641—Construction Technician
0-01.10 —Cost Estimator
0-66.31 —Criminology (Ballistic Technician)
0-50.06 —Dental Technician
0-19.01 —Design Technician (Production)

0-48 —Draftsman, N.E.C.
0-17.01 —Electrical Technician
0-50.05 —Electro Cardiograph Technician
5-83.444—Electronic Technician
0-18 —Engineer Aide, Industrial

0-18.01 —Engineering Technician
0-16.01 —Highway Engineering Aide Technician
5-92.768—Inspector—Production Manufacturing Technician
0-95 —Inspector, Public Service, N.E.C.
0-64.30 —Instrument Technician

0-05.70 —Laboratory Testing Technician
0-44.41 —Medical Illustrator
0-50.01 —Medical Laboratory Assistant
0-14.20 —Metallurgist
0-36.88 —Meteorological (Weather) Technician

0-32.04 —Occupational Therapist Assistant
5-83.456—Oil and Gas Heating Technician
0-52.80 —Physical Therapist Assistant
0-18.01 —Production Technician
0-66.01 —Radio Broadcast Technician

0-48.32 —Technical Illustrator
0-66 —Technician (Except Laboratory)
0-66.80 —Technician, N.E.C.
0-50.70 —Testing Technician

0-69.453—Tool Designer
0-50.04 —X-Ray Technician

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SCHOOL PLANNING; *HOME ECONOMICS EDUCATION; FACILITY GUIDELINES; FACILITY REQUIREMENTS; *EDUCATIONAL EQUIPMENT; *EDUCATIONAL FACILITIES; SPACE UTILIZATION; CLASSROOM ARRANGEMENT; CLASSROOM DESIGN; CLASSROOM ENVIRONMENT

The purpose of this guide is to provide assistance in planning space and facilities for the expanding program in home economics. Background materials were obtained from school visits, state and local supervisors of home economics, teacher educators, and consultants of school plant services. It does not set standards but illustrates an approach to good planning and hopes to stimulate creativity. Educational trends are discussed with their corresponding implications for instructional space and facility development. Suggestions are made to planners on the purpose of the home economics department and various users, e.g., school age pupils, adults, or handicapped. Facilities for the curriculum areas of (1) family relationships, (2) child development, (3) foods and nutrition, (4) clothing and textiles, (5) management and family economics, (6) housing, home furnishings, and equipment, and (7) family health are suggested in several sketches. A section on specialized furniture and equipment considers cost and usage factors. Relationships of spatial factors, aesthetic appeal, sound and temperature control, safety measures, and visual environment are described. Floor plans, sketches and references are included in the document. (FP)

VT 002 360

(39)

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PLANNING FUNCTIONAL FACILITIES FOR HOME ECONOMICS EDUCATION

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Planning School Buildings

JOHNIE CHRISTIAN, *Program Specialist*
Home Economics Education

VT 002 360

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE.....JOHN W. GARDNER, SECRETARY

Office of Education.....FRANCIS KEPPEL, COMMISSIONER

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FOREWORD

THIS PUBLICATION ON FUNCTIONAL PLANNING AND DESIGN of home economics facilities, one of a series of publications in specialized areas of the school plant, is a cooperative project involving home economics educators and school facilities specialists. It is an attempt to answer requests for assistance in planning space and facilities for the expanding program in home economics. School administrators, specialists on school facilities, home economics supervisors and teachers, representatives of State education agencies, lay citizens, and school architects should find this publication helpful in planning the physical setting for teaching.

Background materials for this study were obtained from visits to schools, some of which were selected by staff members in State education agencies as illustrating a variety of desirable home economics programs and facilities. Helpful information and suggestions were also obtained from State and local supervisors of home economics, teacher educators, and consultants of school plant services.

Many home economics teacher educators and supervisors and State school plant consultants read the manuscript and made valuable suggestions. They also provided photographs and layouts from which ideas were drawn for the illustrations.

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CHAPTER 1

Introduction

AN ENORMOUS AMOUNT OF MONEY is being spent today in the nationwide school construction program. To secure full value for capital outlay, careful planning is essential to design functional facilities for today's school program and to provide for tomorrow's adjustments.

To design functional facilities for home economics instruction, planners must understand the scope of the program, the classroom activities, and the instructional methods to be used. The responsibility for planning rests largely with the educators who will use the department. They should interpret the needs to school administrators and architects who must have reliable information about the program in order to plan adequate space and facilities. Only through such coordination can functional home economics quarters and equipment be provided.

The allocation of space to specific departments of a school and the budgeting of funds for equipment and teaching materials are matters of concern to both administrators and teachers. This is true for home economics as well as mathematics, science, language, and other areas of the curriculum. Some factors which add to the complexity of the situation are (1) the high cost of construction and equipment, (2) the growing school enrollment, (3) the mounting emphasis on a better education for both youth and adults, and (4) the rapidity with which equipment becomes obsolete because of technological advances and/or curriculum changes.

School authorities recognize that space, equipment, and teaching materials are important factors in updating both teaching and learning, in promoting a carryover of learning into life outside the classroom, and in enhancing the pleasure and satisfaction which teachers find in their work. As far back as 1948 a study of home economics teachers revealed that the adequacy of equipment available for teaching all elements of home economics was a significant factor in the general satisfaction which teachers felt in their work. It was found, for example, that: "Those teachers in departments equipped for teaching all phases of home economics had significantly higher mean job satisfaction scores than those who had less complete equipment, such as that for teaching foods and/or clothing only."[1] With today's shortage of teachers, equipment in relation to job satisfaction may become an increasingly important factor.

The demands for change, however, make the planning of facilities in home economics or any other subject uncertain. No one can predict with complete accuracy either the goals or the content of tomorrow's curriculum, the facilities that will be needed for implementing the program, or the age groups that will be using the facilities. The explosion of knowledge, the developments in technology, and the resulting changes in our way of life impose upon those responsible for home economics education the necessity for carefully evaluating not only what is taught, but also the materials and facilities used in teaching. Educational responsibilities have to be met, however, and these include the provision of a physical setting for learning which meets today's needs and which may be adapted to meet the unforeseen demands of tomorrow.

In preparation for writing this publication, the authors visited home economics departments in new and remodeled

[1] American Vocational Association, Committee on Research and Publications. *Factors Affecting the Satisfactions of Home Economics Teachers.* Washington: The Association. 1948. p. 10.

buildings in a variety of high schools—junior and senior high schools; large urban, small town, and county high schools—in the following States, representing different sections of the country: Illinois, Kansas, Kentucky, Maryland, Michigan, Minnesota, Nebraska, Ohio, South Dakota, Virginia, West Virginia, and Wisconsin. The purposes of these visits were (1) to see, firsthand, facilities in use; (2) to determine what trends, if any, were developing in planning and furnishing home economics departments; and (3) to find out which features teachers, administrators, and supervisors had found particularly satisfactory and which ones had not served the purpose for which they had been planned. As would be expected, not all teachers agreed on what would be desirable.

Purpose of This Publication

This publication is designed to assist planners of home economics departments to prepare meaningful educational specifications for functional space and facilities. It does not propose to set standards, but rather to illustrate an approach to good planning and to stimulate the imagination of those who will be responsible for making plans. It should be helpful in preservice and inservice education of teachers who will later participate in school and community planning. Creative school architects welcome the opportunity to communicate with supervisors and teachers to secure pertinent information on the educational obectives and the program of activities so that they can design functional facilities. Since activities may vary from community to community, each school is encouraged to plan and design its own home economics department to suit the local program.

Sketches in this publication depict innovations in home economics facilities and architectural design which should stimulate planners and architects.

Definition of Terms

Certain terms are defined below to show their use in this publication:

A functional home economics department — a department planned and equipped to facilitate the teaching of all areas of home economics. This includes adequate and adjustable space for individual and group work, modern equipment, and conveniently placed storage for all supplies and mobile equipment when not in use.

Curriculum — all the learning experiences which are planned and supervised by school authorities. This includes activities of the Future Homemakers of America as well as all aspects of home economics classwork.

Facilities — the room or space which the department occupies, the furnishings, equipment, teaching materials, and the effective arrangement of all of these for teaching purposes.

Flexibility—freedom to adjust, rearrange, and alter the space or any aspect of the facilities as the need arises.

All-purpose room—a room equipped for teaching all aspects of home economics.

Team teaching—a teaching situation in which more than one teacher is involved in the planning and/or presentation of a particular unit or lesson within a unit.

Multipurpose room—a room equipped for teaching two or more aspects of home economics, but not necessarily all.

Machine teaching—programed learning which is presented to pupils individually through teaching machines (audio-instructional or self-instructional devices).

CHAPTER II

The Emerging Home Economics Program

Educational Trends and Concepts Which Affect Home Economics

EDUCATION ALWAYS REFLECTS, to some degree, the spirit of the times and the society which supports it. As changes take root in the curriculum, modifications of the physical environment follow sooner or later. Home economics as a part of the total program of education is responsive to the concepts and trends which develop in the whole field of education and the ways in which these are reflected in the secondary school. Some which are apparent in the educational program of today and which have clear implications for home economics and the facilities for this area are outlined below. Most of these are not new, but because of present conditions, they have taken on added significance.

Increased enrollments are resulting in larger laboratory classes as well as discussion groups. Some communities anticipate this trend by providing large classrooms from the outset, even though the growth in pupil population may be several years coming. Others prefer to build in terms of present enrollments with a plan for removing partitions or adding new wings to the building when the need arises. If it becomes necessary to extend the facilities of the home economics department at a later date, this can be done with reduced expense if permanent fixtures such as a sink, range, dishwasher, and the laundry unit are located on a wall which will not be involved in any major remodeling of the building.

Flexibility in all aspects of education is an unmistakable trend of the times. The subject matter taught, the people reached, the objectives sought, and the teaching facilities used are responsive to the needs of a growing and evolving society. The atmosphere of change which now characterizes education is, no doubt, due in part to modern advances in science and technology. These developments have resulted in obsolescence of many facts and ideas and have set the stage for a critical examination of American education. As society grows in complexity and the consequences of day-to-day decisions of the individual grow in significance for him personally and for the community at large, education becomes more crucial.

One resulting change is that many schools are now making a concerted effort to meet the needs of a greater variety of pupils. They are trying to reach not only the average and those who are college bound, but also the slow, the unusually gifted, the physically handicapped, the mentally retarded, and the culturally deprived. Programs include both in-class and out-of-class learning opportunities with provision for pupils to work sometimes alone and sometimes with groups of varying sizes. Not only do pupils go into the community, but the community also comes into the school; and no one pattern fits all situations.

A reexamination of the goals of education has brought renewed interest in usefulness and functionalism. These are concepts imbedded in our cultural heritage, for education has always been seen as providing "useful" preparation for life. Both academic and vocational education have been viewed in this context since each contributes to the broad overall purpose of enriching life. Events of the times and conditions of

society have, however, brought a new importance to "usefulness" in all education. Every discipline is being urged to extend its goals, particularly vocational education as it moves into broader fields and becomes more related to the realities of the day. For example, preparation for the world of work is now widely accepted as a goal for an increasing number of high school youth and adults. With the enactment of the 1963 Vocational Education Act, the program of home economics education was broadened to include preparation for wage-earning occupations based on home economics knowledge and skills. This will enable home economics to help individuals meet their economic needs while also rendering a service to individuals, families, and communities. As the wage-earning phase of home economics expands, the space and facilities needed to carry out the program will undoubtedly change. Flexibility in space and equipment will make it possible to adjust the facilities with a minimum of cost in money, time, and frustration.

As the school program is modified in terms of new goals and reaches a greater range of pupils, provision for a variety of learning situations will be needed. For example pupils who have reached different stages of development may need to spend a part of the time studying alone and some time working with others. Space which will provide privacy, such as carrels where a tape recorder or other teaching aids can be used, will encourage individual study. But space will also be needed for group activity and discussion.

A continuing education program, starting with early childhood and persisting throughout life, is a concept which more and more communities see as inevitable. The rapid rate at which knowledge and jobs become obsolescent, and the fact that problems of living take on different connotations and require different solutions as one moves through the cycles of life mean that education completed yesterday is inadequate for today. Added to this is the problem of dropouts who, in order to secure a job or make a living, find it necessary to return to school for more and perhaps a different kind of education. The school is challenged to provide adequate space and appropriate facilities for all who would continue their education throughout life. As adults and youth return to school in increasing numbers, special provision will be needed in terms of space and equipment. Some of the same facilities used by high school pupils may be used by adult classes. For example, school facilities may be used during the day for regular high school classes and by adults in the evening. The more classes scheduled for the space, however, the more storage will be needed for supplies and materials used by the many groups.

Team teaching, designed to integrate the various aspects of allied disciplines, is receiving increased attention. Boundaries of subject matter fields are shifting, and courses in some areas are being developed and taught cooperatively by two or more teachers representing different aspects of a problem. Such courses usually deal with some life situation which is of concern to all pupils. This is illustrated where social studies, home economics, and health cooperate to teach youth how to deal with certain problems in family living; where economics and home economics combine their resources to teach consumer education; and where art and home economics focus on aesthetic aspects of clothing, home furnishings, and housing. Home economics draws upon many disciplines and offers numerous possibilities for developing cooperative units of work. Location of rooms in the building in relation to related disciplines and flexibility in room arrangement can encourage teacher cooperation. Also space for groups of teachers to work together when developing plans can make team teaching more feasible.

More extensive use of mechanical teaching devices has resulted from technological developments. These devices are

improving in quality, and teachers are also becoming more skillful and displaying more imagination in their use. In addition to films, slides, and filmstrips, teachers are using overhead projectors, tape recorders, television sets, and teaching machines for programed learning. The outlook for further development of mechanical teaching aids is promising, particularly if education is to meet individual needs of a great variety of learners: for example, there is need to serve the pupil who for some reason does not grasp ideas as they are presented, or the individual who thinks far ahead of his group.

Current Developments in the Home Economics Curriculum

Physical facilities for teaching home economics are influenced not only by trends and concepts which affect *all* education, but also by developments occurring specifically in this specialized field. Home economics education is particularly sensitive to changes and conditions affecting homes and families. Below are some of the more clearly defined directions in which home economics appears to be tending:

Consumer aspects of the curriculum are receiving larger proportions of time in the program. This may be due in part to the increase in family income, since many women are working outside the home and therefore have more money to spend. It is also true that, when women are earning salaries, they have less time to produce goods and services in the home, and as a result consumer demands mount. Also the increase in available products growing out of the new technology, expansion of the teenage market, and increased pressures to buy through the use of credit have all played a role in bringing this emphasis to the fore. Facilities for dealing with this phase of home economics are needed in each laboratory, since every phase of the program has some consumer aspect. Food, clothing, home furnishings, equipment, and houses — all represent some expenditure of money; but health of the family, education, recreation, and even relationships within the home also depend to some degree upon wise expenditure of the family income.

Management of money, time, energy, and human resources in relation to successful homemaking is growing in importance. Problems in the area of management often spring from those of consumption and are also closely related to the fact that women are working outside the home in increasing numbers. As demands on time, energy, and money multiply, homemakers find they must plan for the use of these commodities with greater care. Moreover, when women take jobs outside the home, the children often assume more responsibility in the home, which means a shift in management. To meet this situation, the home economics curriculum, whether keyed to youth or adults, is adjusted to give added emphasis to this aspect of the program. The teaching of management can be enhanced by facilities which illustrate good management principles and encourage teachers and pupils to experiment with ideas dealing with management.

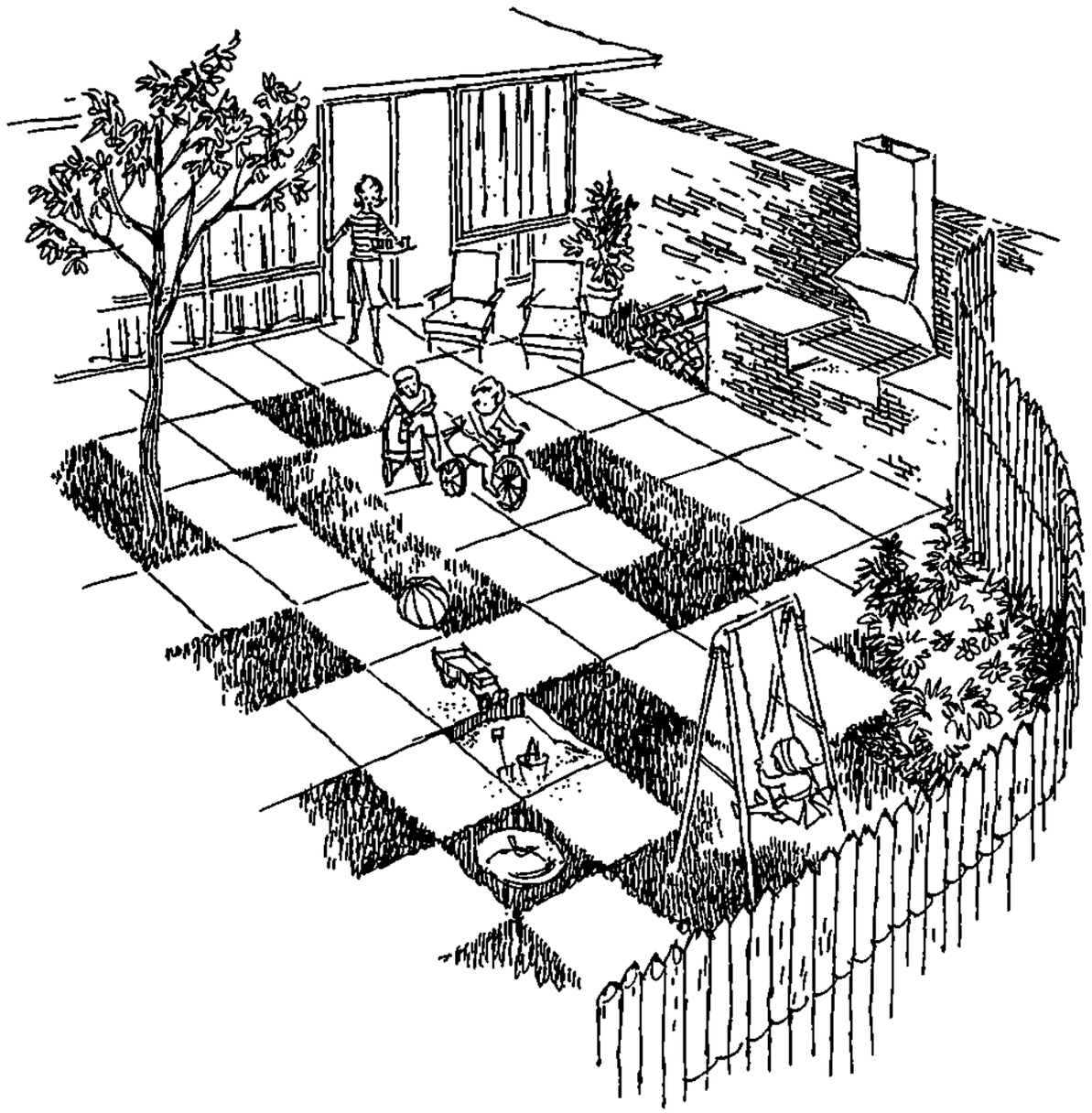
Human relationships were never more important than they are today. The building of stable homes and the development of satisfying relations within the neighborhood and the community are receiving increasing emphasis. Every area of the home economics curriculum offers opportunity for teaching some aspect of human relations. For example, the preparation and serving of family meals, the care and education of children, the allocation of money to meet the family clothing needs, the selection and care of the house, and all other problems with which home economics deals involve family relationships in their solution. Teaching facilities can help to implement this aspect of the curriculum. Many films dealing

with family relationships are available, and facilities are needed which will encourage their use. Also the arrangement of space and the furnishings of the department can help to create an atmosphere of informality and ease which encourage good human relations and draw parents to the school.

Implications of Developments for Space and Facilities

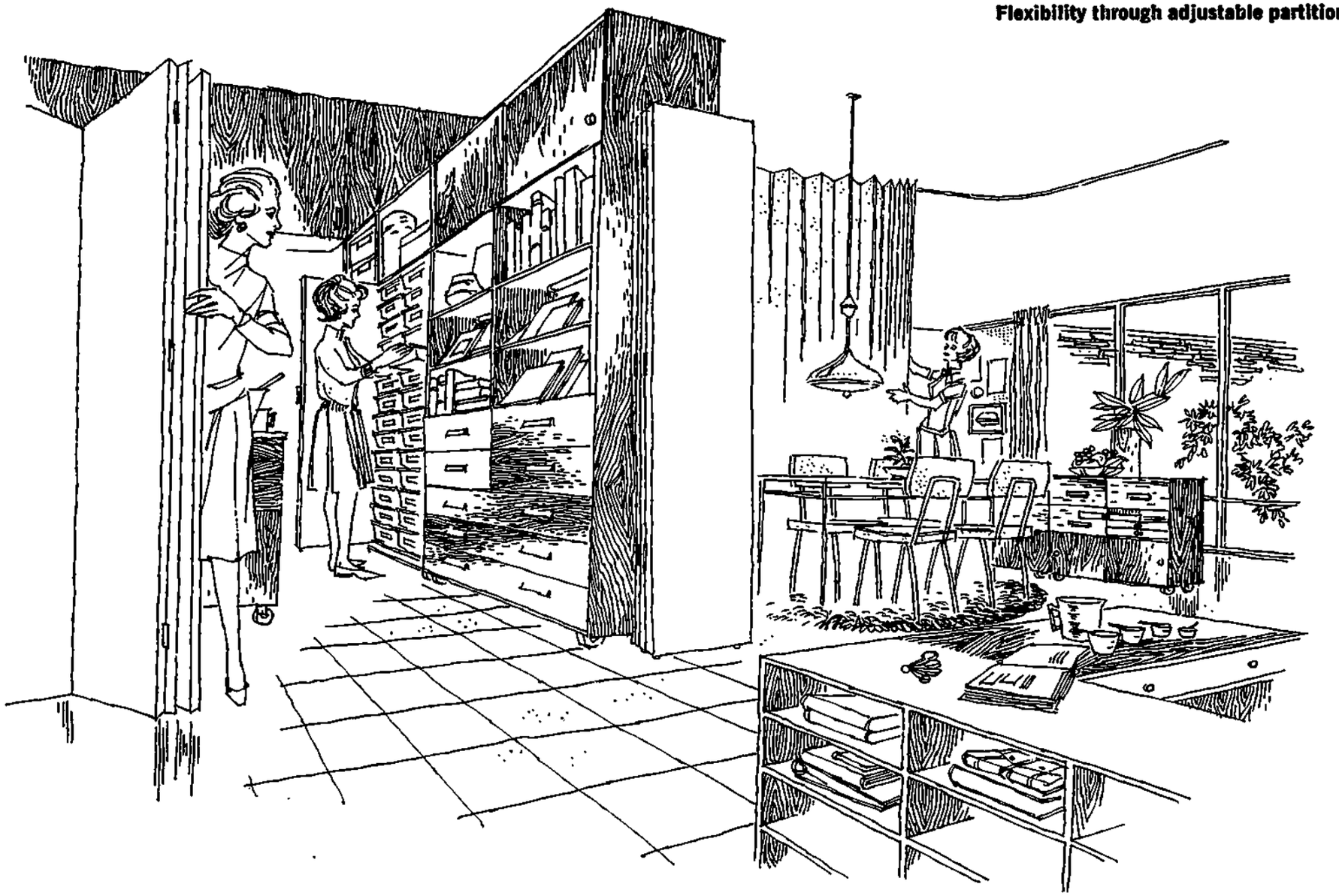
A careful examination of the above suggests some standards and ideas for planning the facilities to be used in teaching home economics. The following criteria are general in nature and relevant to all aspects of home economics:

- Space and facilities can be designed to help teachers do a specific job with ease and competence. Facilities which assist the teacher, save time and energy, and are keyed to contemporary life can add to the effectiveness of teaching home economics.
- Flexible space and equipment which can be easily altered to accommodate one individual working alone as well as different sizes of groups and different units of instruction add to the flexibility of a program.
- Mobile equipment and convenient space for storing it make the same space available for many purposes and thus reduce building costs.
- An atmosphere which evidences cordiality and hospitality will tend to draw people to the school, put them at ease, and contribute to the enjoyment of learning.
- Cooperation among teachers in developing interdisciplinary units of courses may be encouraged by the proximity, flexibility, and convenience of classrooms and by work areas where teachers can plan gether and produce materials.
- The effective use of mechanical teaching aids — such as projectors, screens, recorders, and other devices — will depend largely on their accessibility and convenient storage.
- Movable partitions, screens, folding doors, room dividers, and portable furnishings and equipment can help in adjusting space to meet specific needs.
- Accessible, convenient outdoor space adds to the flexibility and the homelike character of a home economics department, and can be used in units dealing with child care and family recreation.



Outdoor space adaptable to units on family relations, child development, and foods.

Flexibility through adjustable partitions.



CHAPTER III

Planning the Home Economics Department

Those Involved in Planning

SOME INDIVIDUALS AND GROUPS have special contributions to make when plans are being developed for a home economics department. The full use of whatever resources a community may have will increase the possibility of achieving satisfactory results, both in terms of meeting community needs and gaining the support and confidence of the people to be served. The following individuals and groups can make unique contributions to the task of planning adequate facilities:

- The home economics teaching staff because of their understanding of the curriculum, the goals to be accomplished in the program, their knowledge of home conditions, and the need to key the school program to the home.
- Local school administrators because of their overall view of the total school program, the broad educational goals of the school, and the interrelationships existing between subject matter fields.
- Local school board members because of their knowledge of the long-range needs of the community, the financial arrangements that have to be made, and the attitude of the community toward a building program.
- State supervisors of home economics because of their firsthand experience in the schoolroom both as teachers and as supervisors, and their knowledge of the many different kinds of facilities in schools throughout the State.
- Representative parents who, because of their definite interest in home economics, are aware of all the groups that can be served by the program, and know firsthand the needs and challenges of family life.
- The State director of school plants and facilities because of his knowledge of State regulations and wide experience with school building problems, needs, and possibilities.
- Outstanding pupils from both high school and adult classes who have used laboratory facilities in analyzing and solving home and family life problems.
- A building engineer because he understands the lighting, heating, and other problems involved in making a building both safe and functional.
- A professional architect who has imagination and who understands how to incorporate the ideas of others into a creative plan which will meet the educational needs of the community today and reflect some of their hopes for tomorrow.

Organization for Planning

If planners of new or remodeled home economics departments are to develop functional as well as imaginative plans which will meet both present and future needs, they should have some understanding of the home economics program and the community it is to serve. They should know something of the home and family life of the people, the way they make their living, the private and public organizations which they support, the ethnic background of families, and other information which will help those who plan to relate the home economics facilities to community conditions.

Visits to other schools in comparable communities, making arrangements to discuss the facilities with teachers and supervisors and others who helped to plan and later used the laboratories, will be valuable background for planning. On such visits it would be helpful to interview the architect who drew the plans since his knowledge and experience make him a valuable resource person. Planners should realize, however, that simply copying another building plan is not likely to be the best solution for their situation. The facilities for teaching home economics in one school may not necessarily be appropriate for another. Just as families and individuals differ, so do communities; no two have the same characteristics, interests, or needs. Population trends, taxable wealth, national origins, and educational objectives are only some of the factors which influence the planning of school buildings and specific facilities for teaching home economics. Population growth due to industrial development often leads to rapid expansion of the school plant. On the other hand, a community with a decreasing population and far removed from any likely industrial development may face consolidation in the near future which will greatly alter plans for school buildings. Also a community wishing to extend its home economics program to include some elementary school pupils as well as postsecondary youth and adults wishing to prepare for wage occupations will need to plan in terms of these goals. The space, materials, equipment, and storage facilities will be influenced by the program which is envisioned by the community.

Educational Specifications

After a preliminary study, planners should be ready to convey to the architect specifically what they want in a home economics department. The composite report of planners of home economics facilities should represent group thinking and be based upon reliable data concerning trends in education and in school buildings, as well as an overview of the local situation. Much of the information in educational specifications can be presented in straightforward, written composition; however, other information is best expressed and presented in diagrams or tabular format. Specifications should be prepared in simple language so that they may be readily interpreted by the architect and others. Good educational specifications for the home economics department should reflect: (1) the number and characteristics of the pupils to be taught; (2) the educational philosophy of the school; (3) the activities, experiences, services, methods of instruction, teaching materials, and furniture and equipment on hand and to be purchased; (4) space requirements and floor plans; and (5) facilities and services needed, such as audiovisual aids, adequate light, heat, ventilation, sound control, floor coverings, plumbing, and decorations. Well-prepared educational specifications are an instrument of good planning and design and, if used effectively, should result in functional facilities which can expedite the school's program.

Good planning and design by the architect are possible only when he has a clear picture of the programs. It would be helpful if, before making drawings, he would visit home economics classes that will occupy the building. If not these classes, then others that are similar. This can provide a background of understanding that is important in seeing possibilities for using space, for designing facilities that fit specific needs, and for placing equipment. This would also encourage originality in planning facilities, and help schools move away from adopting established patterns.

Cooperation between the architect, the educators, and the community is important. This can be achieved as each sees the role of the other in relation to the job to be done. The school administrator can provide leadership in this. The architect's interpretation of the needs should be submitted to the planners who prepared the educational specifications, the consultant, and the superintendent. The problem may be one of remodeling an old department, adding a new wing to an old building, or designing a completely new building. In any case the planners, particularly those for special areas of the curriculum, may need to make compromises. Certain recommendations may have to be given up because of demands for space in all departments, but planners in such instances should be given a hearing so that they may at least help determine what adjustments can be made.

A good school architect will be alert to all possible means of meeting requirements with the funds available. Consultants, principals, and superintendents should guard against any recommendations that represent fads which may soon be outmoded or obsolete, or promoting a pattern simply because other schools have used it.

Special Purposes Served by the Department

Many school buildings are used as community centers. Home economics departments often serve in the evening as a meeting place for Future Homemakers of America and for parents working on problems related to the home. These groups as well as out-of-school youth and adults concerned with wage-earning are considered an integral part of the total home economics program, and many times such groups use the regular day school facilities. Planning a school plant to accommodate out-of-school classes and community activities related to home and family life may entail some extra cost; however, greater value from building funds of the district are realized when the plant is used by both school and community groups after day school hours, on holidays, and during summer vacation.

The home economics department can serve as a resource for families in the community who are planning new homes or remodeling old ones. The performance test of specific equipment, furnishings, and finishes used in the department may provide useful information for families seeking help with problems in connection with housing, equipment, and home furnishings. The department can also be used to demonstrate functional equipment and arrangements, as well as the achievement of aesthetic effects in the home. Since the most expensive item does not necessarily represent the best taste or give the most satisfactory performance, and since the income of families varies considerably within a community, it is important that the department represent variety in choices and a range of prices. The home economics department has a responsibility to reflect a standard of living in

harmony with that which families in the community can afford and also to illustrate modern technological developments. Otherwise, the school, instead of drawing families to it, may only create a barrier to their participation in the program and to their learning.

Because of the very nature of the home economics curriculum, the department usually has an atmosphere of hospitality and conveys a feeling of "welcome" to visitors. On occasion, the school, administration, the PTA, or some other group may wish to have available a pleasant and informal setting where faculty and others can meet special guests and where light refreshments can be served with ease. The home economics department may be used for such occasions. While this function can be overdone, if planned and carried out with discretion it can serve a useful purpose.

Location in the Building

When planning the location of the department, one should consider the convenience of people who will be using it. Evening classes, parents seeking help with home-related questions, and school groups such as the PTA, who would like to use the facilities, can become discouraged searching for a department through long winding hallways or at the top of several flights of stairs. Easy accessibility is, therefore, an important matter.

Since home economics deals with practical aspects of everyday life, teachers in this field often bring into the classroom a great variety of exhibits and illustrative materials. These may include ready-to-wear clothing, household linens, drapery and upholstery fabric, children's toys, and household equipment. In addition groceries needed by the foods and nutrition classes will be delivered to the department regularly. The problems involved in bringing materials and supplies in and out of the department, therefore, have a bearing on the physical location and should be given careful consideration.

In order for the home economics department to render the best service to all of the groups who will be using it and to facilitate bringing materials and supplies in and out of the department, a location on the first floor and accessible to an outside entrance is desirable. It would also be desirable to have the department convenient to the administrative offices.

Student Groups and Their Needs

The people for whom the program is intended may include a wide range of individuals. In some situations, considerable uncertainty exists as to who will be using the department a few years hence. The potential student groups, however, together with their characteristics and needs, should be considered insofar as possible when planning and equipping a home economics department.

Junior high school pupils. — In many communities the junior high school includes grades seven to nine and represents the level at which the majority of the girls take home economics. Very often boys are also enrolled for short units in the seventh or eighth grade. For many girls this will be the only opportunity they will have to take home economics courses; therefore, facilities should be provided at this level

for teaching all aspects of the home economics curriculum. Some characteristics of this age group that have a bearing on the space and equipment needed at this level are:

- Junior high school youth vary a great deal in height; and some variation in height of such equipment as tables, sinks, and cabinets should be provided.
- Junior high school pupils, particularly in the seventh and eighth grades, are usually very energetic, like to experiment, and prefer laboratory experiences to observation of others at work. Since they find it difficult to concentrate during long discussion periods, it is desirable that equipment be planned for full participation of the total group in all laboratory work.
- Pupils of this age group move about freely, and their activities are more easily supervised and regulated if conditions are spacious rather than crowded.
- Interest in home-related activities is at a very high point during this period of an individual's life, and learning occurs rapidly. It seems well to take advantage of this by providing great variety in learning opportunities through equipment.

Senior high school pupils. — These pupils are approaching adulthood, and they take home economics because of their interest in making a home. Boys in some schools enroll in home economics courses, particularly those in family living, during their junior or senior year. Both boys and girls are interested in personal problems and in the role they will someday play in homes of their own. Some characteristics of this age group are:

- They are interested in abstract thinking and can concentrate on a problem for a relatively longer period of time than before, but activity is still enjoyed. Space and equipment are needed which encourage the testing of ideas and the development of judgment.
- They are concerned with personal appearance, friendships, future careers, and other personal problems. Materials and equipment dealing with these are needed.
- Boys and girls enjoy working together on committee assignments and in classroom activities, which space arrangements can facilitate.
- They are approaching adult levels in physical and mental growth. While their behavior may not always be adult-like, they expect responses, opportunities, and freedom that would be accorded adults. Teaching facilities can help to stimulate pride in one's surroundings and provide opportunities for developing mature judgment with reference to many aspects of homemaking.

Future Homemakers of America. — Youth organizations play an increasingly important role in all aspects of education. Activities in connection with the Future Homemakers of America are an integral part of the high school home economics program and should have consideration when space and equipment are being planned. Some of their needs are:

- A meeting room large enough to accommodate the total group at one time. If no one of the home economics rooms is large enough, folding partitions between rooms may provide for such a room.

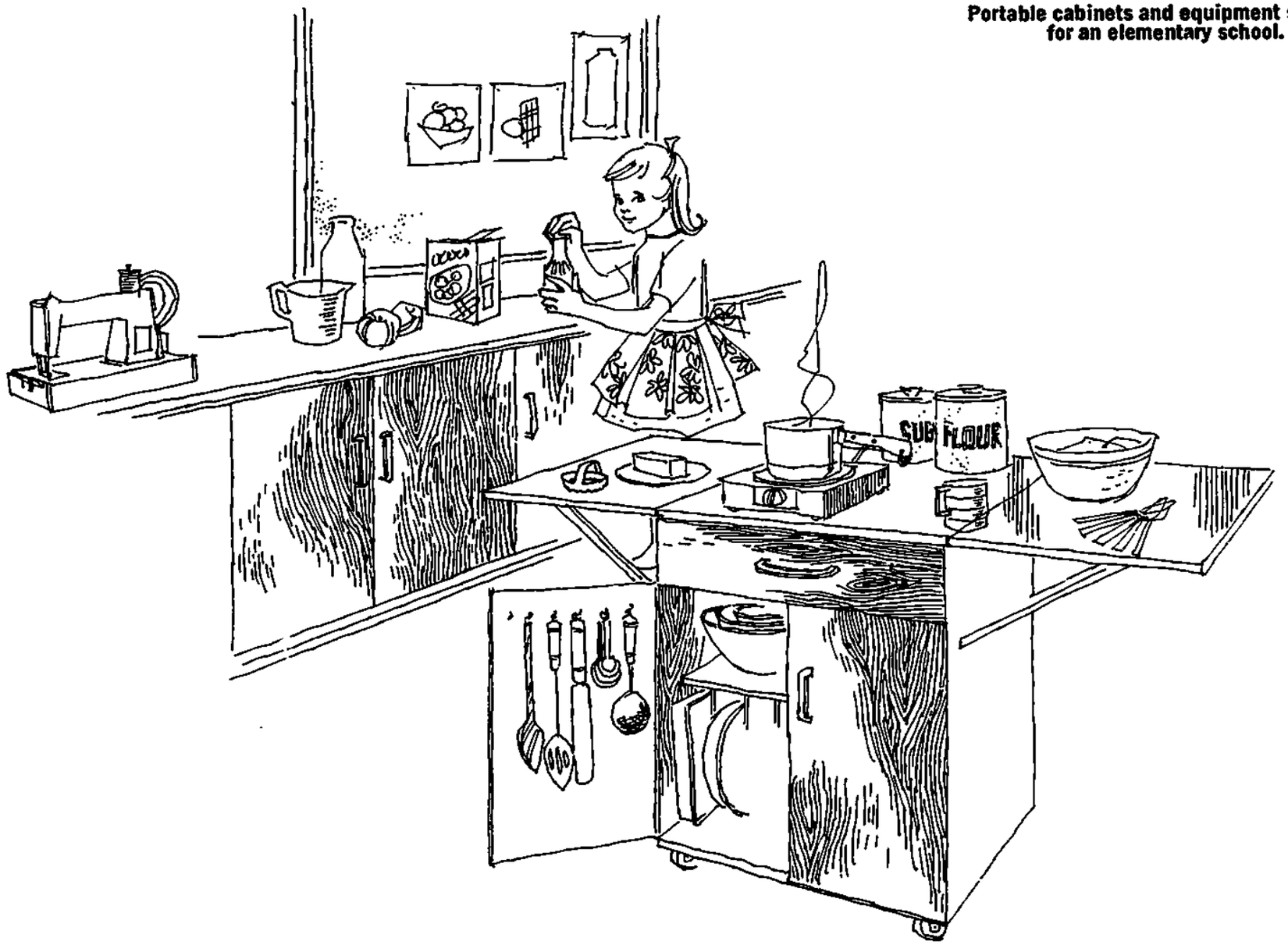
- Space for officers and advisers to work on various materials, such as yearbooks, posters, and charts. Usually one of the home economics classrooms can be used for this purpose, or it may be possible to use the space set aside for teachers to prepare materials.
- Storage space for items such as initiation materials, scrapbooks, back issues of *Teen Times*, club records, and newsletters. A standard filing case may be used for some items and especially planned shelves for others.

Adults. — Education for adults is becoming increasingly important due to the changes in society which affect home and family life. The knowledge and skills learned yesterday are inadequate for today. The same space and equipment used for teaching high school groups may also be used for teaching adults if scheduled classes do not conflict. In some communities, because of the large numbers of adults enrolled and the fact that many of these prefer to meet during the day, special rooms are needed for adult classes. If, however, adults use the same facilities provided for high school youth, special attention should be given to storage problems. Space will be needed for storing such items as unfinished garments, supplies used in various types of classes, furniture being repaired, and personal items. Some storage which can be locked and kept completely separate for both adults and high school classes should be provided. Adults can profit from individual experimentation, demonstrations, and group thinking; and the space should be arranged to permit this.

Wage-earning classes. — The department can be used for teaching youth and adults who are concerned with job opportunities in occupations involving home economics knowledge and skills. Many of the same facilities used for teaching homemaking classes may be used in preparation for wage earning. In addition, these classes may also need access to commercial-type appliances and equipment such as that used in quantity food service or for heavy duty cleaning in hotels and motels. If the floor space is flexible and storage is available, such commercial equipment can be brought into the room as needed from time to time. These students can also profit by opportunities to try out ideas that are related to the jobs for which they are preparing. Therefore, space and facilities should be available for individual and small group experimentation.

Elementary school pupils. — This age group can profit from a study of many aspects of home economics if the material is adapted to meet the needs. Home economics teachers from the junior and senior high school often consult with elementary school teachers concerning units of instruction on foods in relation to health, family life, and home responsibilities. Some specific equipment for such units are:

- A portable cabinet fitted with an electric hot plate, electric oven, saucepan, and other simple equipment that might be used in preparing such foods as soup, cookies from a packaged mix, and cocoa.
- Plastic or easily cared-for dishes, place mats, and stainless steel flatware.
- A portable, electric sewing machine useful in making gifts during a Christmas, birthday, or Mother's Day unit.
- A portable kit with scissors, large needles, heavy thread, tailor's chalk, detergent, and other simple equipment for sewing on buttons and for projects dealing with the care of clothing.



Portable cabinets and equipment suitable for an elementary school.

Handicapped pupils. — These pupils require special facilities tailored to their needs. In some instances they can participate along with regular pupils if some slight adjustment is made in equipment. For example, wheel chair patients can use a pull-out table if it is suitable in height. They can also use pans, dishes, portable sewing machines, and other equipment if placed at a height which can be reached from a wheel chair.

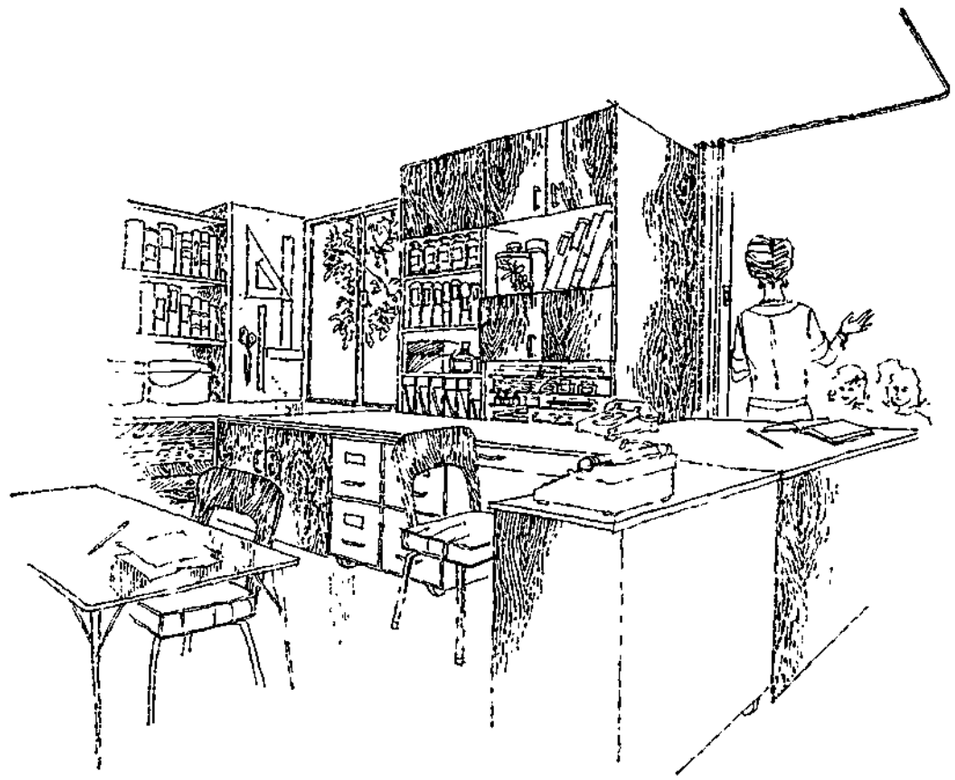
In large school systems it is not uncommon to have a home economics department in one school designed for and used only by handicapped individuals. Many features would need to be designed, however, in terms of the specific handicap of individual pupils. The following suggestions are offered for planning space and facilities for handicapped pupils:

- A ramp is needed for entrance into the building and the department in case it is not on a level with the surrounding area.
- Handrails may be needed at such strategic points as the sink, range, washing machine, and cabinets.
- Controls that regulate lights, water, and electricity should be at a convenient level and easy to manipulate.
- Acoustical treatment of the room will aid the hard of hearing.
- Cabinet and closet doors that slide are safer and more easily operated than those that swing out on hinges.
- Small equipment such as pans, electrical appliances, dishes, reference materials, and other items should be stored on a level and in a manner that make them easily accessible.

Home economics pupils from the junior high school, the senior high school, the elementary and adult levels, as well as those who are handicapped and who are wage-oriented have both common and unique needs in relation to space and equipment. A resourceful teacher can articulate these needs and avoid much duplication of facilities if these are adjustable.

Work space and equipment for teacher's use. — The appeal of the program to pupils, as well as its effectiveness, may depend a great deal on the materials and equipment which are used in teaching. The time and effort required for preparing materials may be greatly reduced by having a convenient place in which the teacher can work. Each teacher needs a pleasant and private atmosphere in which to plan, study, and confer with others. This may be an office set aside for her use or an area of a classroom that is somewhat private. The following equipment and space are needed:

- A desk with at least one file drawer, a comfortable chair, and space for a typewriter.
- Table space for spreading out materials when making posters, charts, and transparencies.
- A four-drawer standard filing case for keeping budgets, accounts, letters, student records, and other materials connected with the department.
- A storage cabinet with wide bins or shelves planned specifically for posters, charts and other materials used in teaching.
- Space for reference books and bulletins which are for the teacher's exclusive use.
- Space for filing back issues of magazines used in the program.
- Library boxes for filing bulletins and clippings, and space for them.
- Space designed especially for films, filmstrips, slides, and magnetic tapes.
- Lock storage for personal belongings of each teacher.



Teacher's work area and space for conferences.

CHAPTER IV

Facilities for Teaching Home Economics

ADEQUATE AND FUNCTIONAL FACILITIES aid learning and encourage pupils to continue in school. Facilities are, in a large measure, the curriculum translated into wood, steel brick, cement, or stone. Movable partitions and storage walls, portable equipment and furnishings, and adequate electrical outlets and water connections are means which may enable schools to adapt space and equipment for present and for undefined future needs.

The Learning Environment

To help make the time spent in school a happy experience, school facilities should be attractive and pleasing, and create a friendly atmosphere. Pupils in school, and particularly in home economics, often work together in pairs, in small groups, and as a total group. These experiences can be made more meaningful and satisfying through the physical environment.

A general description of the learning environment needed for the areas of the curriculum commonly associated with the secondary school program in home economics follows. Some provisions are needed by all classes regardless of the unit being taught, such as:

- Enough space for easy movement of class members and for the teacher to walk among the group easily when supervising.
- Tables and chairs for comfortable seating of the entire group in discussion, and with enough room to add some parent and community groups on occasion.
- Chalkboard, bulletin board, and display areas which are adequate in size and available to all groups. Eight to ten linear feet of chalkboard is recommended for each room.
- An atmosphere which is conducive to, and which facilitates the use of, mechanical teaching devices, such as recordings, films, slides, television, and transparencies.
- Controls for outside light and adequate artificial lighting.
- Storage for reference books, books belonging to pupils, and personal items.
- A file case or file drawers for pamphlets, teacher's records, and other materials.

In some small high schools with one home economics teacher, a single room may be used for teaching all aspects of the program. However, if more than one teacher is employed, or if it is anticipated that in the near future more than one teacher will be needed, it is recommended that two, and preferably three, rooms be provided at the outset. Each of these can be planned for teaching more than one area without duplication of equipment so that the rooms

complement each other. If the space is to receive maximum use, each room should be large enough to accommodate an entire class with some allowance for an increase in enrollment.

The kind of learning activities for which the room is to be used will have a definite bearing on the size of the room and the arrangement of space and equipment. When parent groups are to be brought in for discussions with youth, the room should be large enough to accommodate all who will be involved. If activity periods for small children are anticipated, flexible space which can be adjusted to meet this situation will be important.

Regardless of the number of rooms in a department, it is desirable to plan so that each one can be used for teaching more than one aspect of the curriculum. The following arrangement suggests some possibilities in a three-room apartment:

First room — A room with emphasis on family living can be so oriented to other rooms in the department that equipment can easily be set up for teaching units in housing, home furnishings, care of a convalescent in the home, child development, home management, and family relations. From this room there should be easy access to the food preparation area. Projectors for visual aids, mobile units, convenient storage, and uncommitted floor space can increase the uses to which the room can be put.

Second room — A room designed to give emphasis to foods and nutrition cannot have the same flexibility as the one described above because of the need for such large, heavy equipment as refrigerators, ranges, dishwashers, disposals, and cabinets. By limiting the number of such pieces, however, through the use of some mobile models, and by locating all heavy, nonmobile equipment around the wall, it is possible to attain a great deal of flexibility in the room. Thus the room can also be used for teaching units in child development, laundry, home management, housing, family economics, and family health. In addition, the space might be used for teaching classes concerned with wage-earning.

Third room — This room might be planned to emphasize various aspects of textiles and clothing. If the major floor area is free from heavy or permanently fixed equipment, and if mobile equipment can be brought in when needed, the room can be adjusted for teaching such units as housing, home furnishings, health of the family, management, family relations, and child care. Storage for such items as sewing machines, garment exhibits, swatches of material, ironing boards, and household linens could be located in the room or nearby.

Curriculum Areas

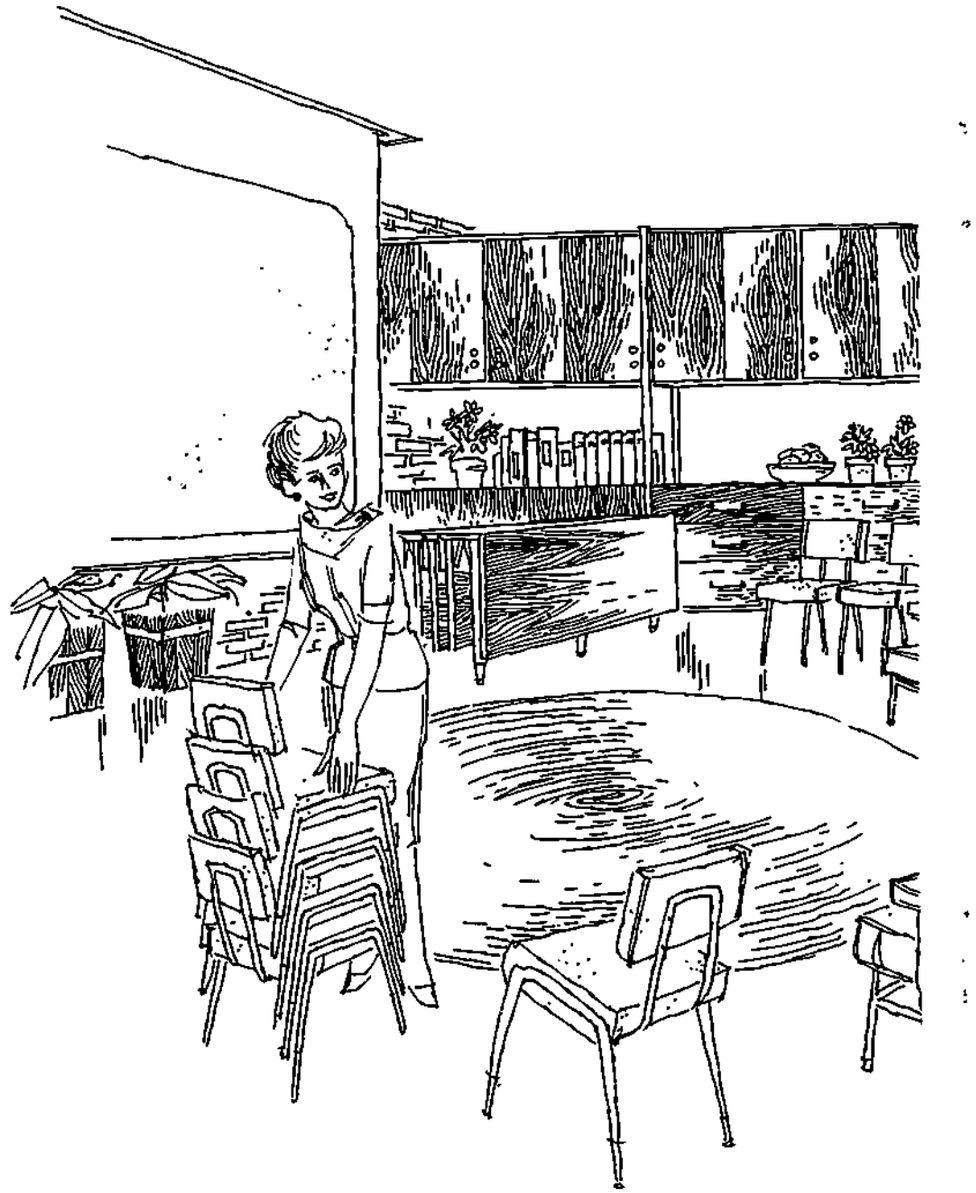
Home economics, like many other disciplines, deals with several specialized areas. The titles may vary somewhat, but specific units are developed within the following broad framework: (1) Family relationships; (2) child development; (3) foods and nutrition; (4) clothing and textiles; (5) management and family economics; (6) housing, home furnishings, and equipment; and (7) family health. Specific units are focused on the family and, because of this, a certain blending of concepts occurs at many points. For example, what the family spends for housing, home furnishings, and equipment may have a bearing on how much money is left for food. Also, certain threads, such as relationships, management, and family economics, run throughout all areas. The facilities and equipment used in teaching a specific unit in housing

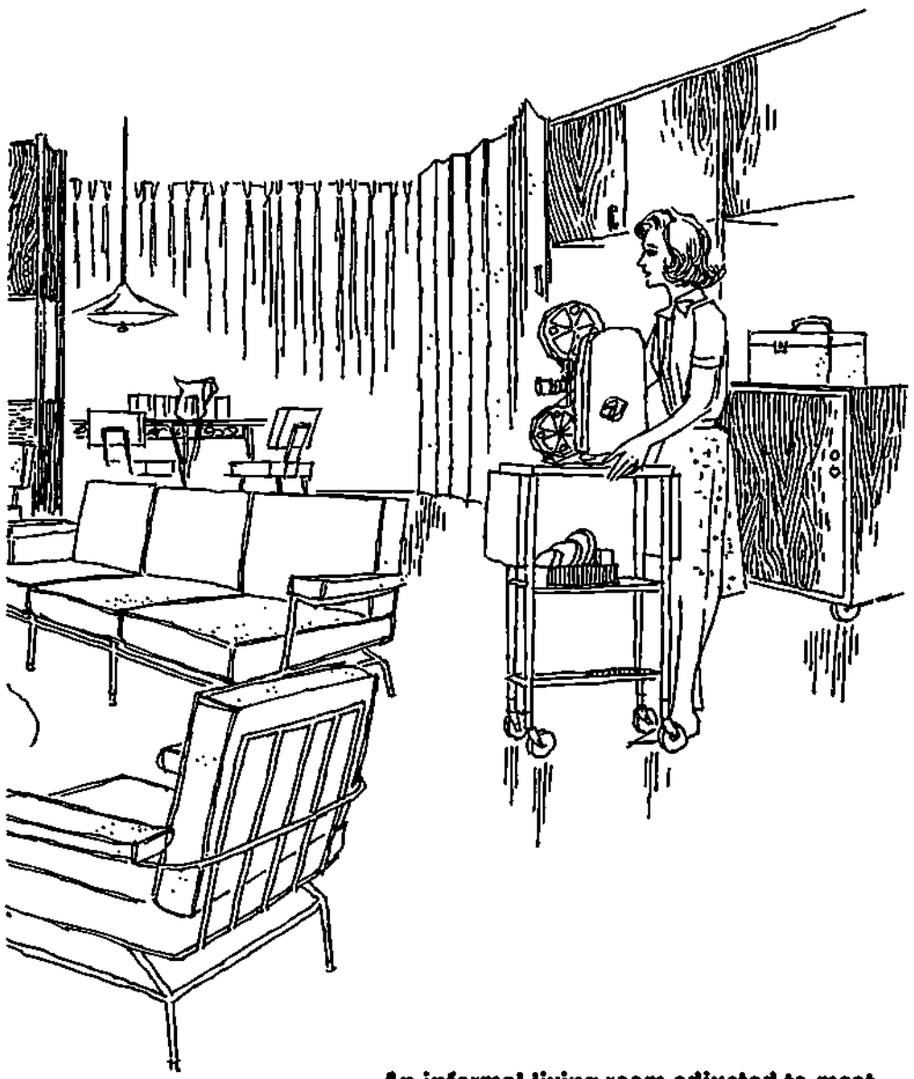
or equipment can also be used in teaching areas such as child care and family health. Much of the kitchen equipment is needed for certain lessons in all of these areas. The same space can be converted to accommodate a variety of equipment if the room is kept flexible and if the equipment is mobile.

In addition to the facilities common to all phases of home economics, certain specialized equipment is needed for each of the following seven areas of the curriculum:

Family relationships. — The area of family relationships, because it is somewhat intangible and because it is often thought of as representing a thread which runs throughout the whole home economics curriculum, is sometimes overlooked when space and equipment are planned. The teaching of relationships can be greatiy enriched, however, through a well-planned physical environment. Below are some suggestions for space and equipment needs:

- A room which has some of the atmosphere of a home. This will include access to kitchen and serving equipment, and flexible space which can be converted into an informal social setting.
- The use of an outside instructional area to add to the informality.
- Space which can be adjusted to accommodate mobile cabinets as well as various arrangements of home furnishings.
- Conveniently located and especially planned storage space where mechanical equipment, posters, charts, books, pamphlets, tapes, and other teaching materials and supplies can be stored when not in use.





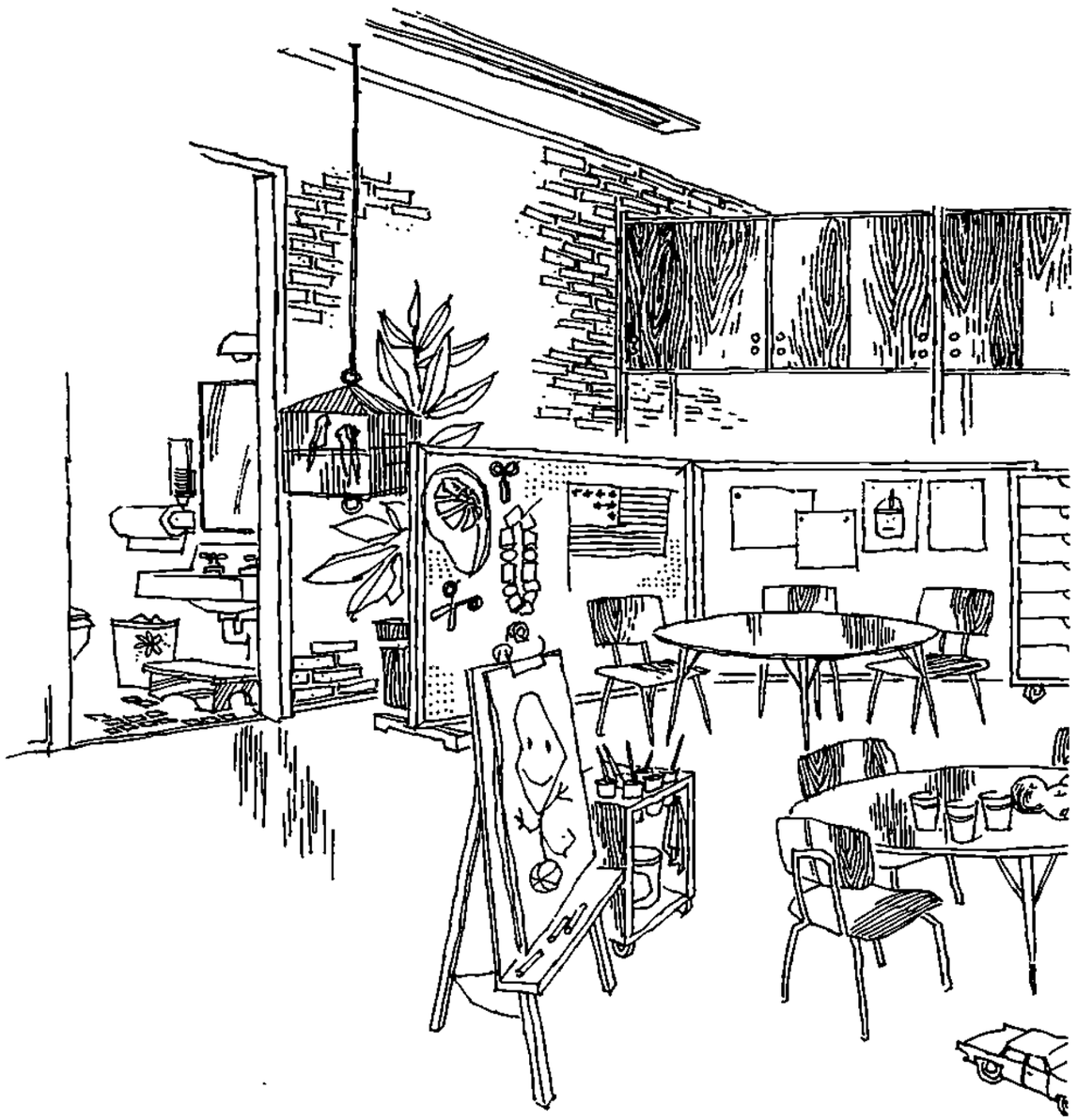
An informal living room adjusted to meet the needs of a discussion group.

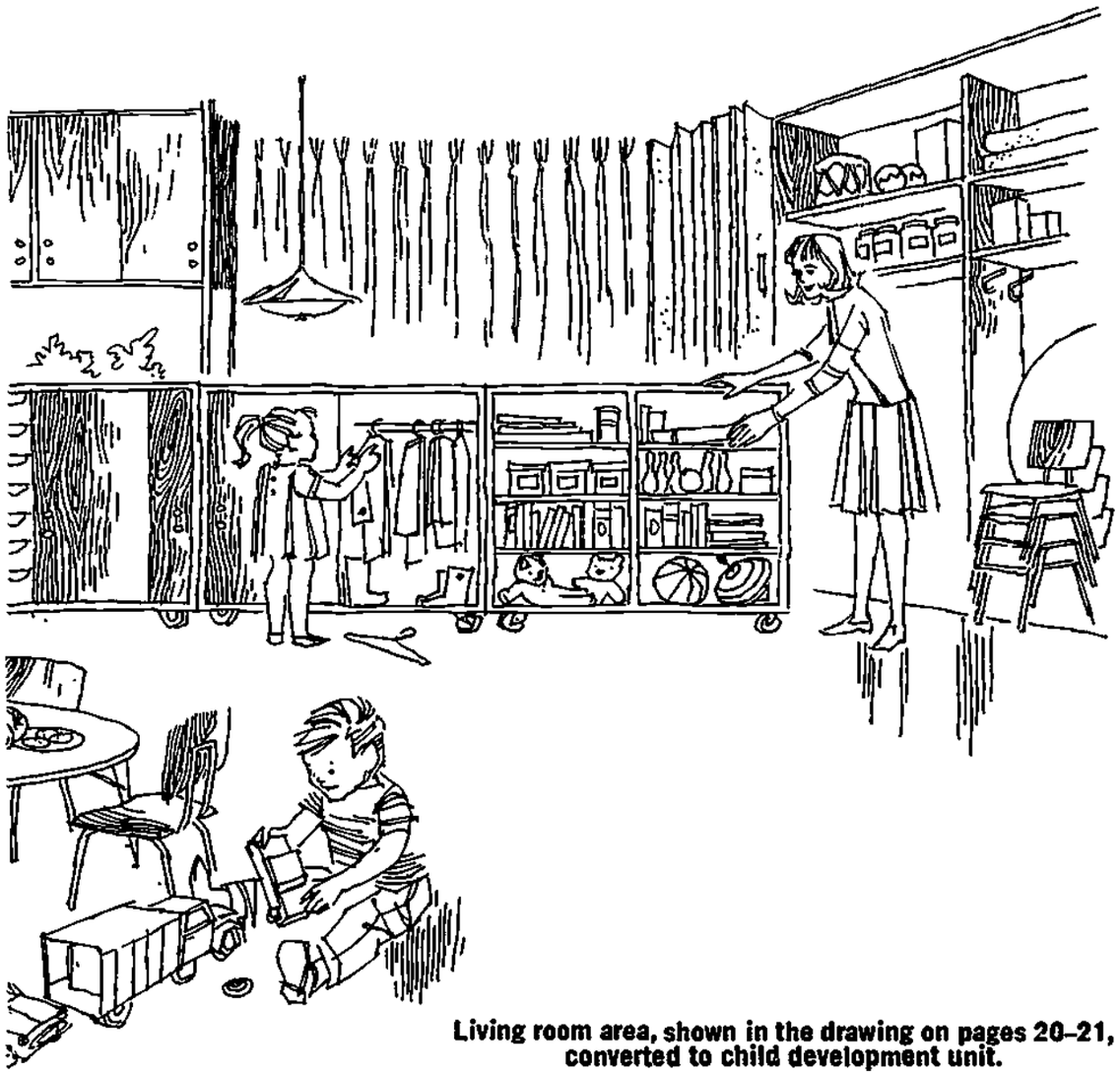
Child development. — This phase is closely related to family relationships and may be taught in the same space, provided some additional facilities are availiable for bringing children into the department on occasion to participate in the program. Equipment used in teaching child development should be planned for easy storage when not in use. The following space and facilities are suggested:

- Enough safe indoor and outdoor space for groups of 6 to 10 small children, and an equal number of high school youth to move about and work in an atmosphere of ease and comfort.
- Accessible toilet and wash basin facilities suitable for small children.
- Space to seat, as observers, that part of the class not actively participating in the group. A one-way screen with space behind this to seat 10 to 15 observers is very useful, particularly when parents are observing their children.
- Low folding tables and stack chairs for seating the total group of children and youth who will be working together at any one time.
- Easels, finger paints, modeling clay, blunt scissors, paper, and other materials suitable for creative play.
- Building blocks, wheel toys, portable sand box, and differently shaped boards useful in improvising play equipment.
- Low tackboards and pegboards which may be set up temporarily and stored when not in use.
- Storage for storybooks, record player, and records suitable for small children.

- Portable small lockers for use of children in storing their personal belongings during the child development units.
- Space and seating arrangements for parent groups to meet for discussions, film showings, or other educational activities, and a convenient arrangement for storing and using mechanical teaching aids.
- Access to food preparation and serving equipment, and space for social gatherings of the parent group with their children.
- Small, individual cotton rugs or folding cots with space for placing these so that children can rest.

Foods and nutrition. — This area is one of the oldest aspects of home economics and one vital to the health of the family. The cost of equipment for teaching foods and nutrition represents a large percentage of the budget for physical plant and facilities, and because of technological developments the equipment can quickly become obsolete. It is important, therefore, to plan with care the space and equipment to be used. Certain aspects of other areas of the curriculum — such as child development, management, and housing — may also be taught in this space. With some portable work counters and storage, electrical plug-in ovens, other small appliances, portable dishwashers, and sinks, it is possible to eliminate some permanently located unit kitchens and thus achieve more flexible floor space. One or perhaps two kitchen ranges, when supplemented with portable plug-in equipment, could meet the needs adequately. If permanent models of sinks, dishwashers, and disposals are preferred, however, these can be spaced around the room so that mobile counters and equipment of various kinds can be assembled near the sink when needed. This will make it possible to adjust the space when



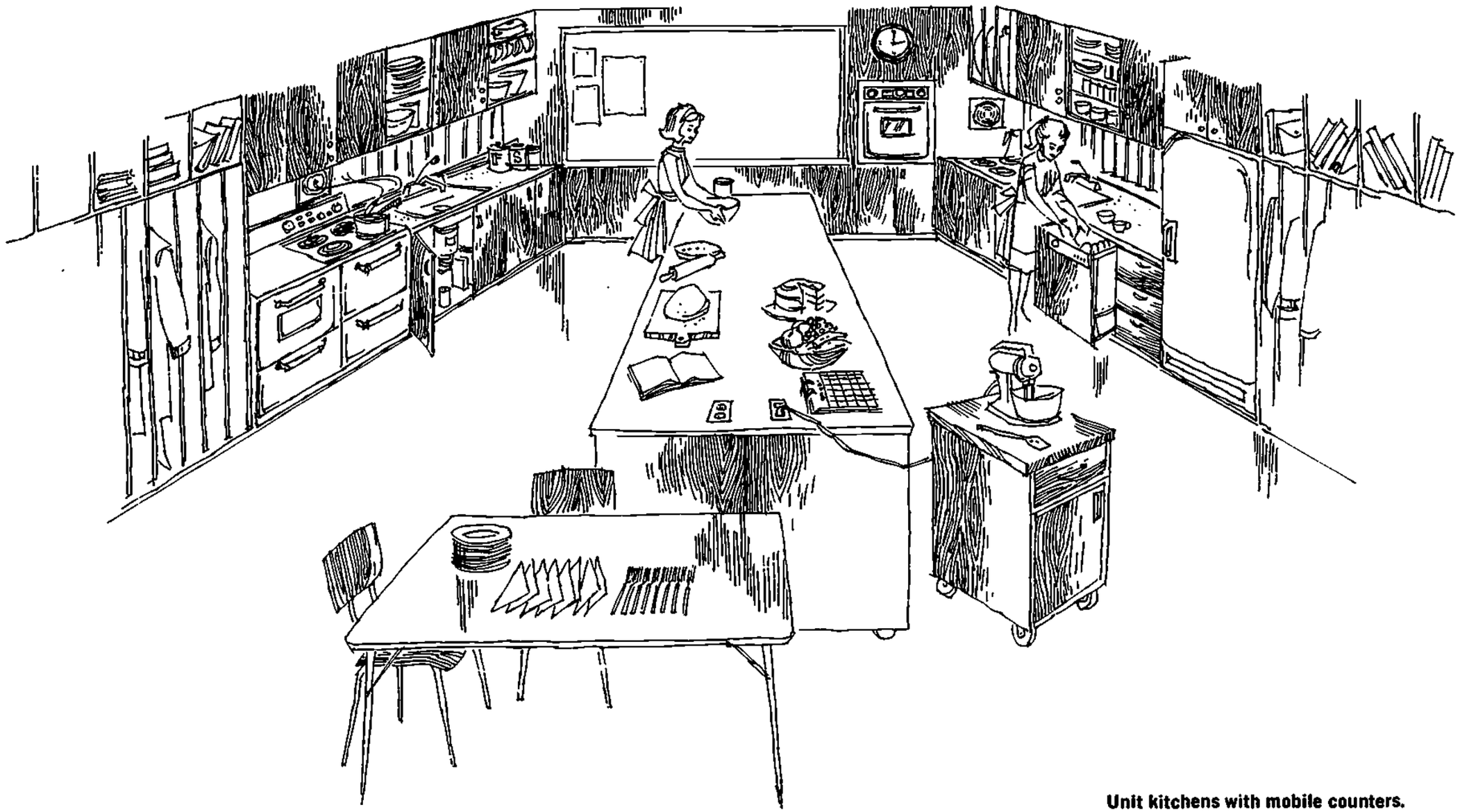


Living room area, shown in the drawing on pages 20–21, converted to child development unit.

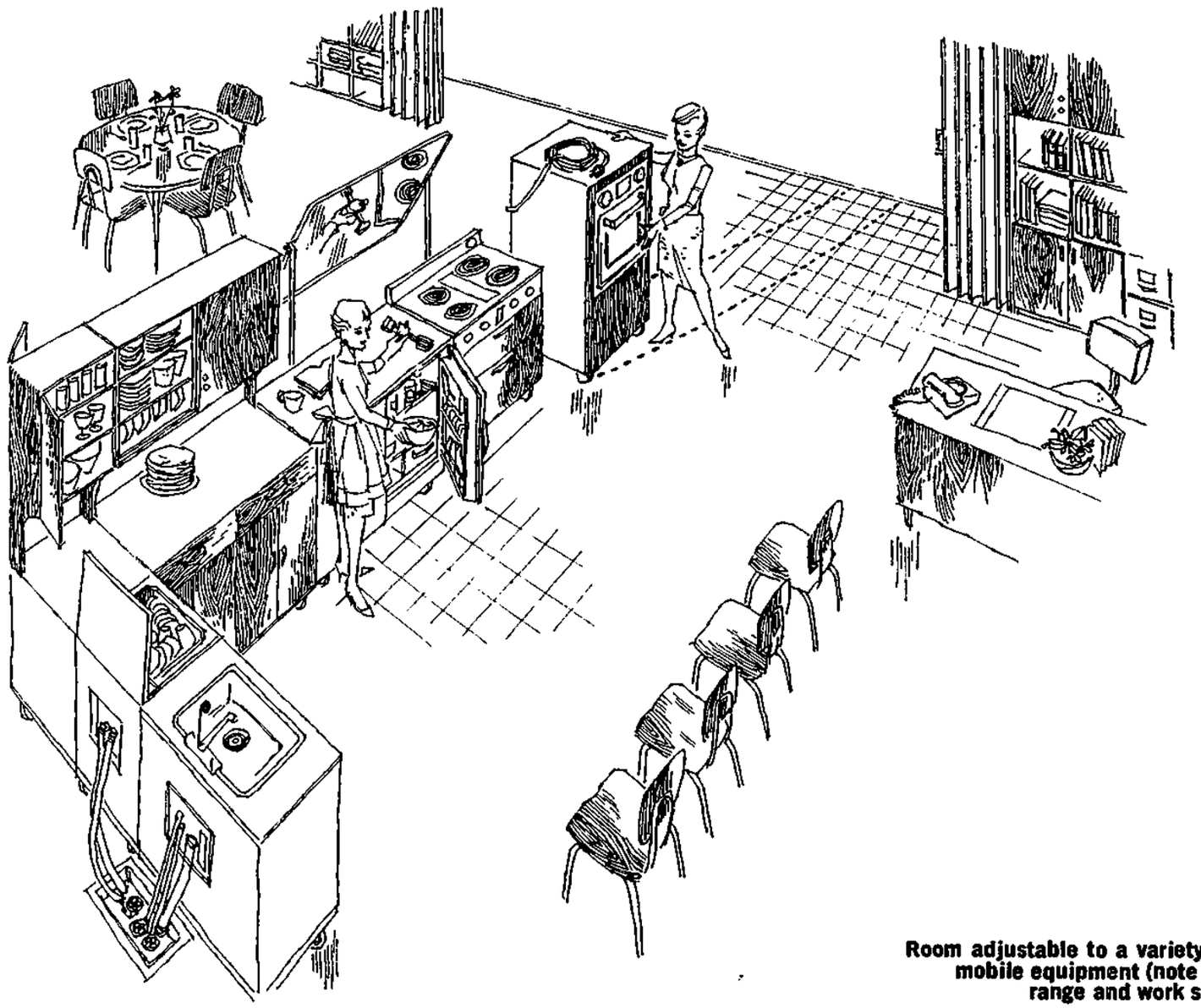
teaching other aspects of the program in what has been commonly called the "foods laboratory."

The following space and facilities for teaching units dealing with foods and nutrition are recommended:

- Some stationary unit kitchens (perhaps one to three) illustrative of what families in the community may either have or might reasonably hope to have.
- Portable storage and work space, refrigerator, and electrical plug-in equipment to be used in demonstrating flexibility in kitchen arrangement and management.
- Space and equipment for the majority of, if not the total, class to prepare meals at the same time.
- Specially designed cabinets with adjustable shelves and dividers that fit specific shapes and sizes of equipment for teaching management and equipment.
- Electrical outlets, conveniently located, that will carry a maximum load of current for electrical appliances.
- Water connections that will accommodate five or six sinks located around the outer wall.
- A portable demonstration cabinet with an overhead mirror and electrical outlets, which can be used with large groups in a variety of demonstrations and which can be moved from one room to another.
- Facilities for quick freezing of foods for class use — either a freezer or large freezing unit in a refrigerator.
- Access to planned space and facilities for small animal experiments.



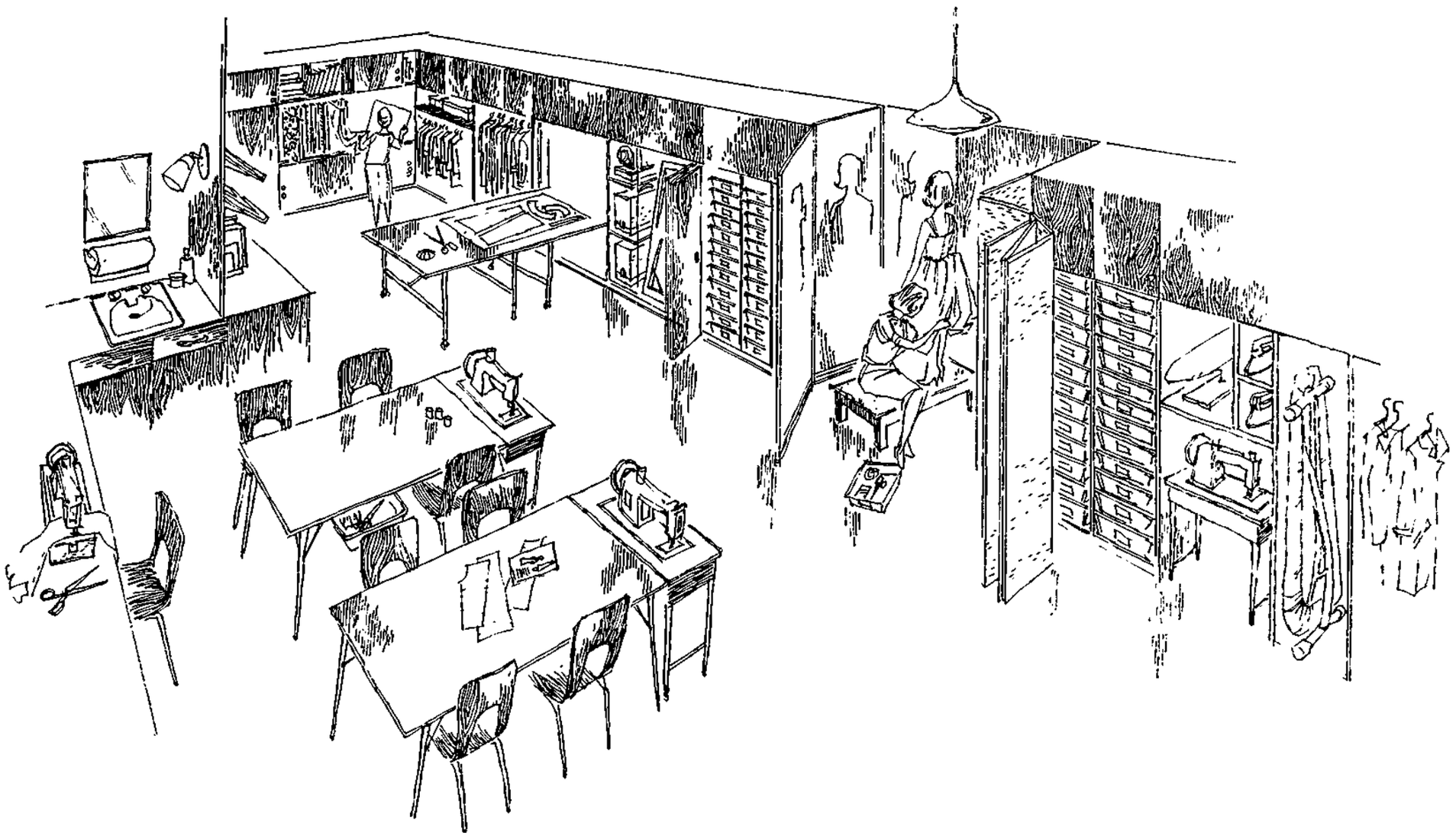
Unit kitchens with mobile counters.



Room adjustable to a variety of units by use of mobile equipment (note tilt mirror over range and work surface).

Clothing and textiles. — These units require specialized equipment; and much of this, if portable, can be used in different rooms. Facilities which are needed include:

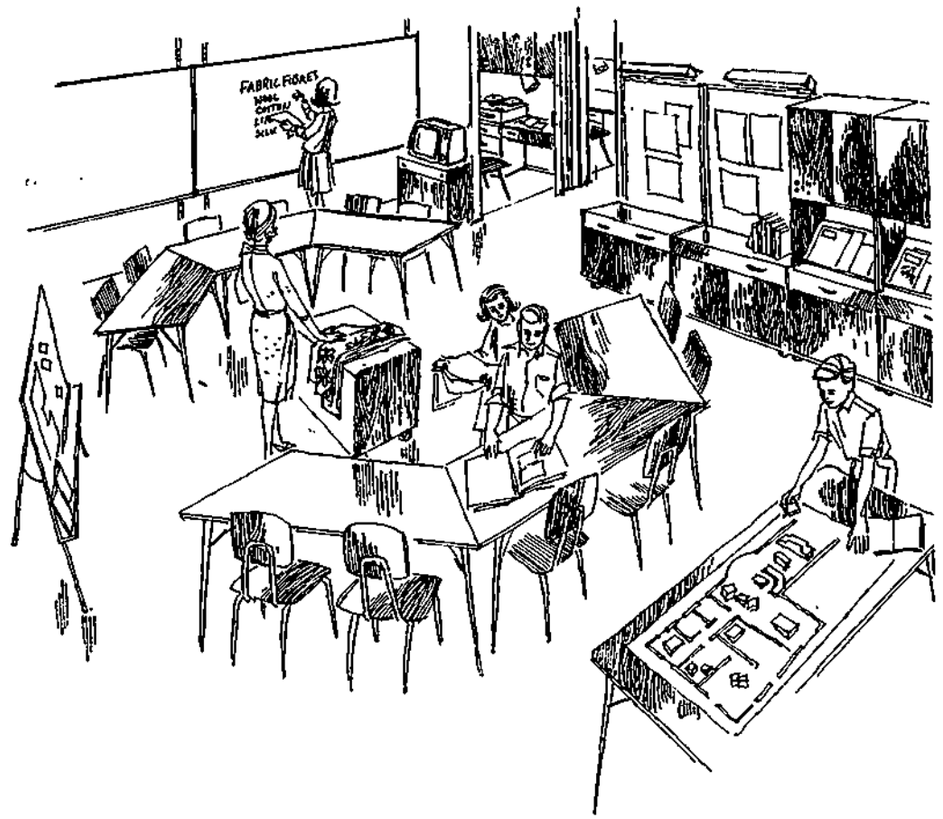
- Space and seating arrangement for group at tables, with plenty of room for spreading materials when making clothes.
- Folding tables and cutting boards that can be brought in for temporary use in such processes as cutting out garments.
- Portable and/or upright sewing machines and safe electrical outlets. Convenient storage is needed for the machines when they are not in use.
- Storage for unfinished and finished garments, accessories, and clothing exhibits.
- Tote trays suitable for storing student supplies which can be transferred from central storage to pupils' desks or tables.
- Running water and sink that can be used in grooming, in testing fabrics, and in caring for clothing.
- Storage designed for magazines, swatches of material, supplies used in the care and cleaning of garments, and exhibits used in lessons on selection.
- A private, flexible space with adjustable mirrors for fitting garments. A portable screen can provide adequate privacy.
- Access to laundry equipment for teaching the washing, drying, and care of clothing and household linens.
- Pressing and ironing equipment, including some portable boards that can be moved to different parts of the room. One unit for four students is suggested.



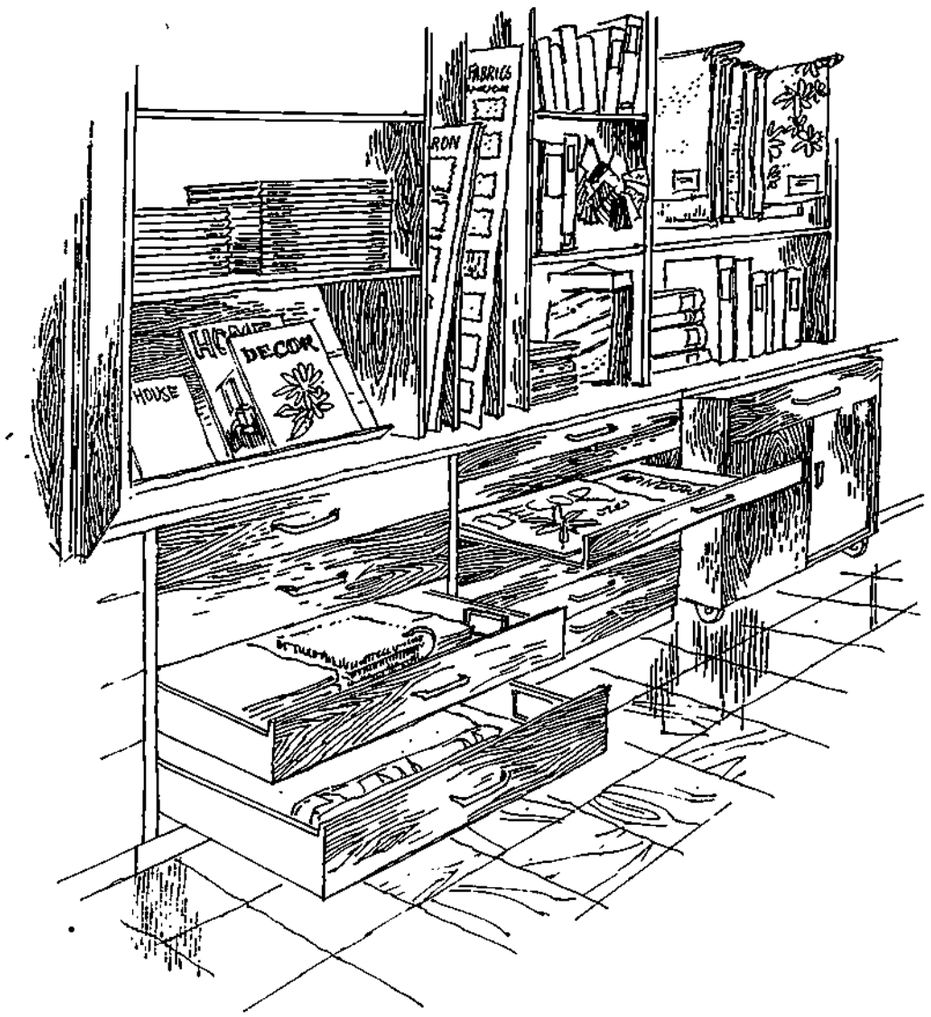
Flexible clothing area adjustable for teaching such units as management, buying, and wage-earning occupations.

Management and family economics. — The use of time, energy, and money is an integral part of all areas. The application of certain management principles, however, may not become apparent unless these are brought out in a special unit on management. The following facilities can help to make teaching in this area effective:

- Tables, storage space, chairs, sinks, and other equipment and furnishings of different heights and with adjustable features.
- Adjustable and mobile furnishings and equipment, such as dishwasher, folding bed, and small electrical equipment, with which pupils can experiment in making time and motion studies.
- Different brands and makes of kitchen equipment, furniture, and household linens and supplies to illustrate what families and individuals may buy at different income levels.
- A variety of household textiles — such as bed linen, table linen, and draperies — to illustrate different fiber content, care needed, and uses.
- Exhibits of good and poor buys of clothing and household textiles, with space designed for storage.
- Charts, pamphlets, posters, and magazines used in teaching, and special storage designed for these.
- Exhibits of advertising materials, labels, buying guides, and other teaching material, with suitable storage space.



Specially designed storage and materials for teaching management.



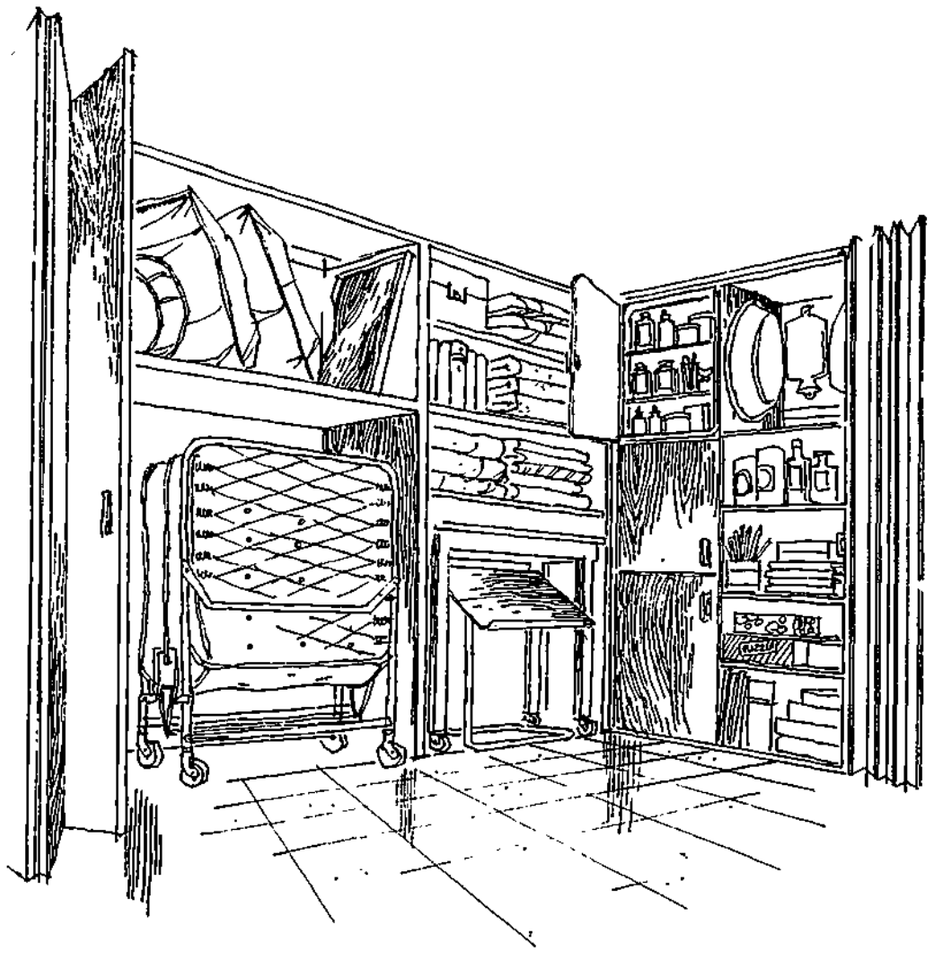
Functional storage and materials for teaching housing.

Housing, home furnishings, and equipment. — These areas need specific teaching facilities. The space and equipment used for other units of instruction, however, if flexible and portable, can easily be adapted for use in these areas. Also the equipment and furnishings throughout the department can provide illustrative material. The following special needs should also be provided:

- Space for demonstrations and laboratory activities of pupils in operating and experimenting with such household equipment as sweeper, floor polisher, washer, dryer, and other electrical appliances.
- Illustrations of house plans containing special features which can be studied individually or projected on a screen.
- Slides which illustrate arrangement of rooms in house plans, household storage, and other features.
- File space for folders, clippings, swatches of rugs, curtains, and household linens that may be used by individuals working alone or as a group.
- Convenient access to the kitchen area where electrical appliances, cleaning supplies, household fabrics, and other items may be tested by individuals or by small groups.
- Home equipment used in the department and home furnishings such as tables, chairs, book shelves, bed, couch, lamps, flower containers, and household textiles which will blend sufficiently to be used together yet provide some illustrations of variety in construction, price, and design.
- Storage space for some household items not in daily use, such as linens, flower containers, pictures, and other items.

Family health. — If this aspect of the program is to be taught in cooperation with biology and the health and physical education departments, the planning of facilities should be shared with those departments. The following space and equipment are related to this area:

- Facilities for making bacteria studies and for testing methods of maintaining home sanitation, such as various methods of dishwashing, safe handling of food, and other problems related to family health.
- Specific storage designed for such items as light cords, plugs, household tools, and other materials useful in teaching safety.
- An improvised back rest, blocks for raising the level of a bed, games, and other materials to make a bed patient comfortable and to help him "pass the time."
- A family medicine cabinet fitted with simple supplies and located where it may be easily accessible.
- A bed with linens and covers to be used in teaching, and area to store these when not in use.



Materials for teaching care of convalescents in the home.

CHAPTER V

Specialized Furniture and Equipment

General Characteristics

ALL FURNISHINGS AND EQUIPMENT used in a public building may be expected to receive hard wear over a long period of time; therefore, fragile or poorly constructed items represent a poor investment. Sturdy furnishings need not necessarily be heavy in weight nor high in price. The quality of materials used in construction, finishes, joints, and any moving parts is an important consideration in terms of the initial cost, the upkeep, and the amount of wear the item can take. Other aspects to be kept in mind are ease of handling and operating, safety, and aesthetic qualities.

The type and kinds of equipment found in the homes of the community provide some useful guides when furnishing a home economics department. For example, if families are using electronic ovens and freezers, and the school does not have such equipment, the department may seem out of date. On the other hand, the most deluxe model of a kitchen range or an expensive rug may be inappropriate in the school serving underprivileged families. The school, however, has responsibility to illustrate some up-to-date home conveniences which modern technology has produced. Such items as a washer, dryer, disposal, dishwasher, sweeper, and other modern appliances can enrich the learning experiences in the classroom and also serve to illustrate some labor-saving devices which are available to families.

Furnishings for a Family Living Center

No schoolroom can convey the atmosphere or warmth of a real home. A home economics department can, however, approach this through the use of color, texture, arrangement of space, and choice of furnishings. A family living center can, for example, be made the focal point in the department and depict an inviting atmosphere. It can be a suitable place in which to teach family relationships, child development, home furnishings, hospitality, and other units of the curriculum. The walls, window treatment, floors, and large pieces of furniture help to create a background through color and texture. Subdued rather than strong colors, when used in large areas, are more likely to prove satisfying day after day. Bright colors in small areas can, however, add interest and life to a room. With careful planning, a background in soft, dull tones with some bright colors for accent can be blended into a pleasing contrast.

Couches and chairs in home economics departments commonly receive hard wear and are moved about frequently. It is recommended that they be light in weight, be soil- and scratch-resistant, have well-constructed joints, and present no particularly difficult problems when it becomes necessary to refurbish them. Plastic, stainless steel, and an oil-finished wood require less care and can take more wear than a veneer finish or a highly polished wood, particularly if it is dark.

Sturdy joints are important in wood furniture, and these pieces should be carefully examined and tested for strength. Box springs when used in cushions often sag and lose their shape after heavy wear. Foam rubber or some filler of a synthetic fiber may, therefore, prove more satisfactory over a period of time. Cushion covers with zipper openings for chairs and couches are easily removed for cleaning and replacement.

The type of upholstery material used in a room can enhance or mar the appearance of the furnishings. Plastic may be more durable than fabric, but if it is stiff and harsh, it can detract from the homelike atmosphere of a room. A soft, pliable plastic, however, or a fabric made of wool, heavy cotton, or one of the durable synthetic fibers can be pleasing. The care and cleaning needed to keep the upholstery looking well are as important as the original cost. The arms of chairs and couches receive a lot of hard wear and, if upholstered, can soon look soiled and shabby. The following general points should be considered in choosing a living room couch and chairs:

- Harmony of style of furniture in relation to the atmosphere of the school building, the room in which it will be used, and other furnishings.
- The ease with which the furniture can be moved about the room and into other rooms.
- Comfort in relation to sitting, reading, and joining conversation groups.
- Wood or other material used in the basic frame which is attractive, easily maintained, and fits into the general atmosphere of the department.
- Basic construction which will help determine the life of the furniture, such as firm joints, plain rather than upholstered arms, and neat finishes.
- Filler used in the cushions and the ease with which the cover can be removed for cleaning or replacement.

Draperies, while not necessary, can add to the attractiveness of a room, particularly one used as a family living center. If a color is used, it should blend with the rest of the background and remain fast to sun and light. A neutral color will present no problem in fading or blending with other colors. It is possible to get material with fiber content that will withstand the sun's rays. Light can be controlled, however, by shades as well as draw drapes. The following special points are suggested for consideration when deciding how windows are to be treated:

- The appearance of the windows from the outside of the building as well as the inside.
- The initial expense involved, problems of making and hanging, as well as the cost of upkeep.
- The durability of both fiber and color in relation to sun and cleaning processes.
- The alternative ways in which light could be controlled, including advantages and disadvantages.

Rugs help to provide a quiet, pleasant atmosphere in a living room and also increase learning opportunities for pupils. Such problems as blending the floor covering into the decor of the room, testing the wearing qualities of different fibers, and daily and seasonal cleaning can be included as learning experiences. If rugs are used in the department, they

will require special care; otherwise, the whole effect may be spoiled. Grinding dirt can not only affect the appearance but also reduce the life of the rug. It is not necessary to have rugs if plastic or rubber tiles are used for the flooring, as these make a very satisfactory floor covering which can be used either with or without rugs. The following points should be considered in selecting rugs:

- The fiber content in relation to the appearance, resiliency, life of the rug, cleaning problems, and initial cost.
- The available equipment for cleaning and the amount of time that will be required to keep rugs in good condition.
- The wear which the rug will receive because of its location and the people who will be using it.
- Colors which resist footprints, soil, and fading.
- Colors which permit a choice of draperies, upholstery, and wall paint.
- A variety of possibilities of achieving some sound control, including the ceiling and use of draperies.

Dining furniture, which includes a table and chairs, can be used for serving meals; but it may also be a part of the family living area. This furniture need not be formal, but of a type that fits into a living room atmosphere and is adaptable for meal service. The chairs, if comfortable, can be used as occasional chairs in the living room. Some points to be kept in mind when selecting these items of furniture are:

- An adjustable table that can be used to serve more than one purpose.
- Chairs that will be comfortable for sitting at a table or in informal conversation groups, and that will fit into the decor of the room.
- Basic material used in the table and chairs that blends with other furnishings in the room and has a durable finish.
- Upholstering, if used on chairs, that will wear well, blend with other colors in the room, and present a soft rather than harsh effect.

Equipment for the Kitchen

Refrigerators represent a big outlay of money, and the number needed in a department will depend upon the size of the foods laboratory as well as the number of classes and pupils enrolled. One refrigerator for four unit kitchens is usually considered adequate. If two refrigerators are used, one might be the standard upright type and the other a portable or apartment size. One refrigerator might also use gas and another, electricity. Some features to consider in choosing a refrigerator are:

- Space adequate for tall containers, such as milk cartons and water bottles.
- Special compartment for keeping fresh meat and poultry.
- Large hydrator for fresh fruits and vegetables.

- Special storage arrangement for small items such as fresh eggs, salad dressing, and small containers that may be difficult to locate on a shelf.
- Sliding shelves for ease in finding items.
- Removable shelves for cleaning.
- A door which opens conveniently in relation to the sink and work surface nearby.
- Automatic defrosting system.
- Surface inside and out that is easy to clean and will not scar or chip easily.
- Separate door for freezer compartment.
- A color that is pleasing and blends with others in the room.

A freezer may be desirable in some home economics departments. Unless it is used a great deal in conserving food and as a means of providing learning experiences for pupils, however, it can represent a questionable expenditure. If more than one refrigerator with large freezing compartments is available, these may adequately meet class needs. Some points of consideration in selecting a freezer are:

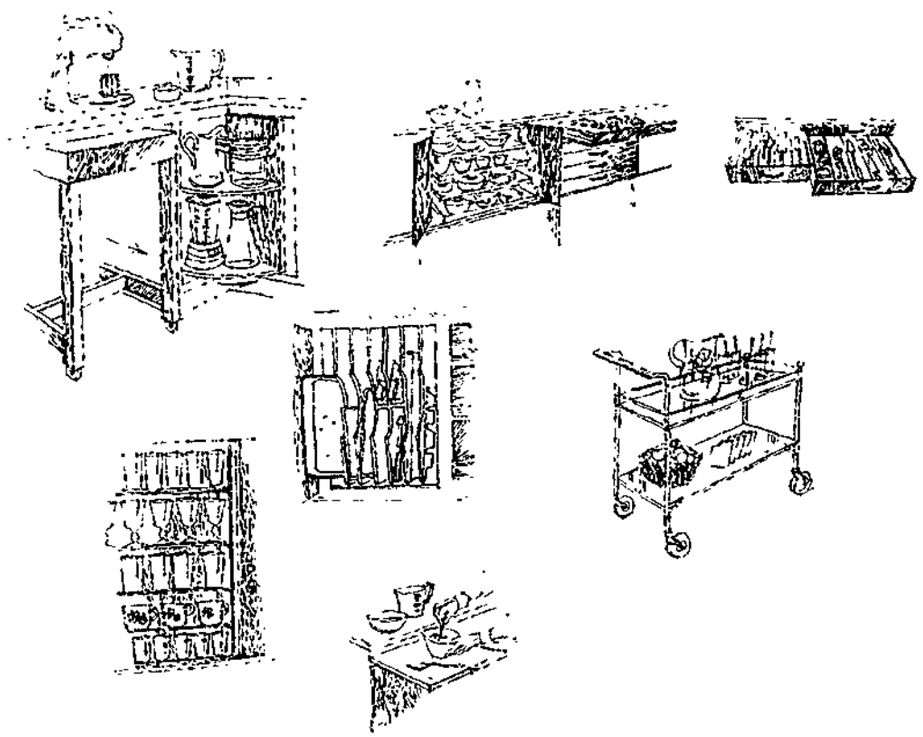
- The extent to which it will be used in connection with seasonal food preservation and in teaching meal management.
- The initial cost and the cost of operation and upkeep.
- The amount of money available for purchasing equipment and the importance of a freezer in relation to other equipment needs.
- The ease of storing and locating food in the various compartments.
- The amount of space it will occupy in the room and its accessibility to foods classes.

Cabinets and work surfaces can be used to teach management and to illustrate a variety of materials, finishes, and arrangements suitable for home kitchens. Cabinets may be made of wood or metal. If wood is used, it can be of natural or painted finish. Some cabinets are needed both above and below the table surface in order to give pupils an opportunity to study management problems in stooping, stretching, and control of energy. The height at which cabinets and work surfaces are placed will depend upon whether seventh- and eighth-grade youth or older pupils will be using the room. If all groups are to share the facilities, some variation in height of storage space is desirable. Some cabinets which serve as a base for work surface can be placed on rollers and moved about. Mobile equipment should, however, have locks so that it can be made stationary.

Counter tops and work surface can add to or detract from the convenience of a department. Meal preparation and management require space for laying out equipment and organizing work. If floor area is kept flexible and cabinets are mobile, both space and furnishings may be adjusted to fit the size of the class. If the physically handicapped are to use the facilities, some low, pull-out tables will add to the convenience of the room. This is also an excellent feature for teaching home management. Some variety in materials used in covering work surfaces adds to the teaching opportunities. The following points may be considered when planning and choosing cabinets and work counters:

- Finishes which are durable, easily kept, and aesthetically pleasing.
- Shelves conveniently spaced, adjustable, and tailored to fit the size and shape of the equipment to be stored.
- Drawers, easy to operate, depth-planned in terms of materials or equipment to be stored, and located near the place where contents will be used.
- A range in height of work surfaces, planned to accommodate both tall and short workers.
- Mobile cabinets and work counters with provision for locking the casters so as to make a firmer work surface.
- Some variety in finish or covering for work surfaces, such as stainless steel, plastic, and tile.
- Original cost, upkeep required, and the kind of material, such as tile, in relation to breakage of dishes.
- A small area of unfinished hardwood for chopping and slicing foods.

A dishwasher, sink, and disposal are useful in providing learning experiences and demonstrating some characteristics of a convenient kitchen. At least one dishwasher and one disposal unit are needed. If more than one is used, different models may be chosen. Sinks may be stainless steel or porcelain, double or single. Some variety, both as to style and material, will be useful in teaching selection, use, and care of household equipment. One portable sink, disposal unit, and dishwasher will add to the flexibility of the teaching facilities, and water and sewage connections will be needed for these appliances. The following considerations are related to the selection of sinks, dishwashers, and disposal units:



Lightweight furnishings and adjustable features.

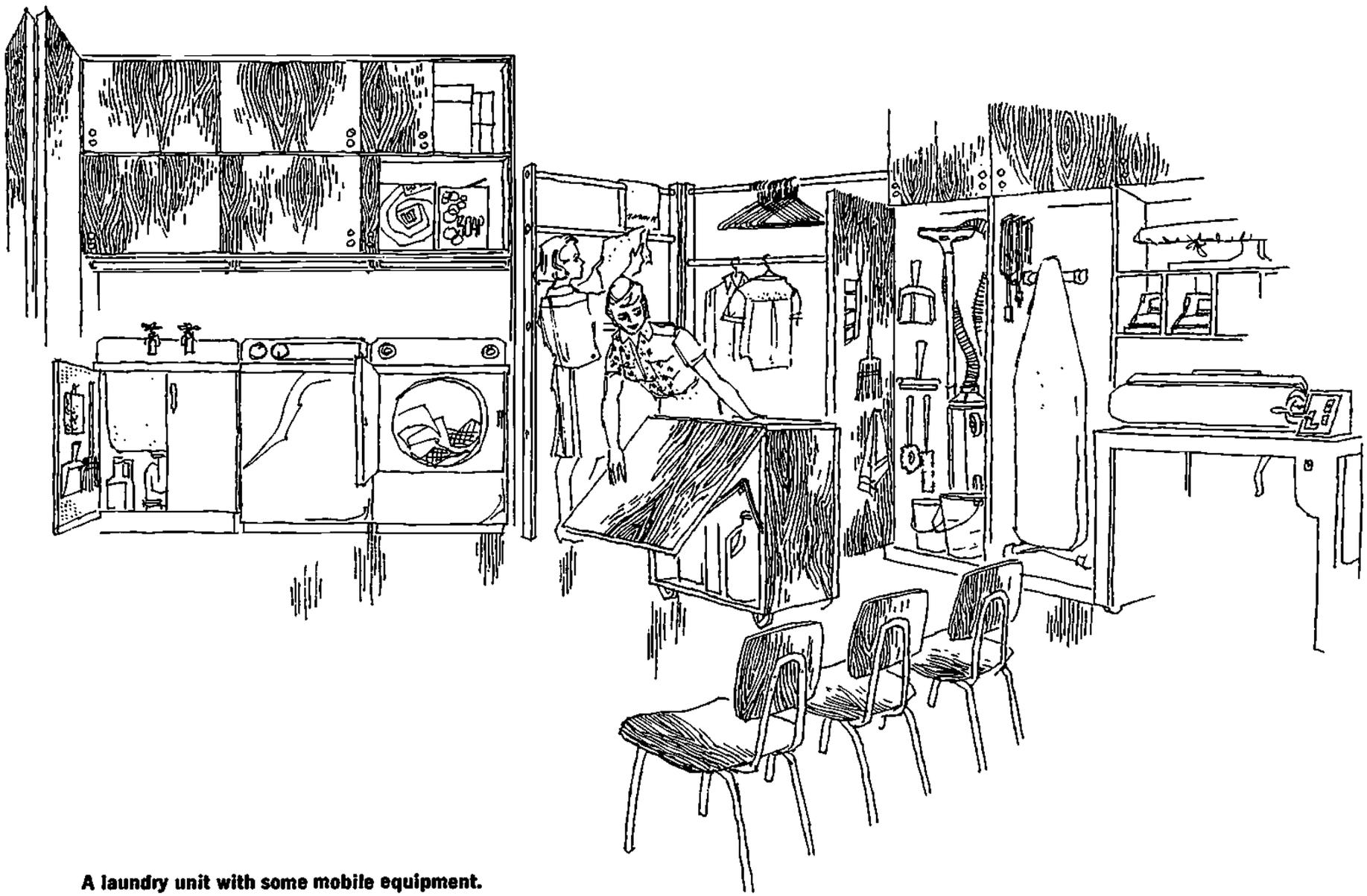
- The initial cost and upkeep.
- The care required for retaining the finish and appearance.
- The convenience features, such as a double sink, a dishwasher which can be conveniently loaded, and the quietness of operation of any automatic equipment.
- The location of equipment in the room in terms of water connections, convenience to all groups that may be using it, future changes in models, and any anticipated remodeling of the room.
- The variety of learning opportunities which the facilities provide for pupils and parents in the community, such as operation, cost features, and general appearance.
- The features which the department illustrates with reference to up-to-date equipment — ease of care, saving of labor, durability, and cost.
- The comfort and safety of the people who will use the facilities.

Ranges may be either electric or gas, and many departments use both in order to increase the learning experiences of the pupils. It is possible to illustrate variety not only in the fuel used but also in the style or model. The upright range, the wall oven type with surface units, the plug-in oven, and small appliances provide variety in learning opportunities. Since the range is an expensive item and by its nature adds to a "fixed" arrangement of a room, and since portable substitutes are available, the number of ranges in the department can be limited. It is possible that one or two would be adequate. Below are some points to consider when selecting kitchen ranges for a department:

- Variety of models to enable pupils to test different kinds of ovens, burners, fuel, and stove arrangements.
- Oven controls that are reliable in regard to temperature and permit experimentation with food preparation.
- Timing equipment which will enable pupils to experiment with management problems in food preparation.
- Burners and ovens that can be easily cleaned and adjusted.
- Colors that will blend with other equipment.
- Portable plug-in equipment suitable to home use and easily stored.
- Safety measures in relation to construction, installation, and use of equipment.
- Adequate connections, strategically placed, for gas and electric current.

Washing Machine and Dryer

Since these appliances may be used in several units of instruction, the location is very important. Whether in the foods or clothing area or in a separate room, sufficient space should be allowed for both individuals and groups to work. Room dividers may be used to make the equipment accessible to classes working on a variety of units. The washing machine and dryer may be separate pieces of equipment or combined



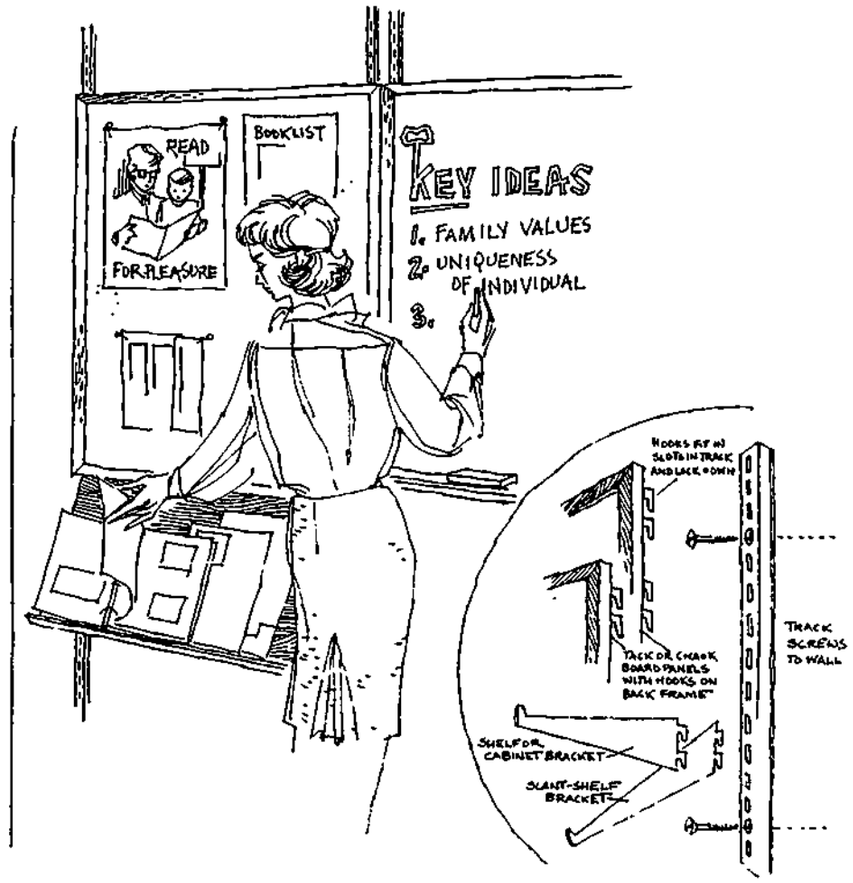
A laundry unit with some mobile equipment.

into one. If they are separate, two operations can be in progress at the same time and the equipment may serve more than one group at a time. Some points to consider when choosing these appliances are:

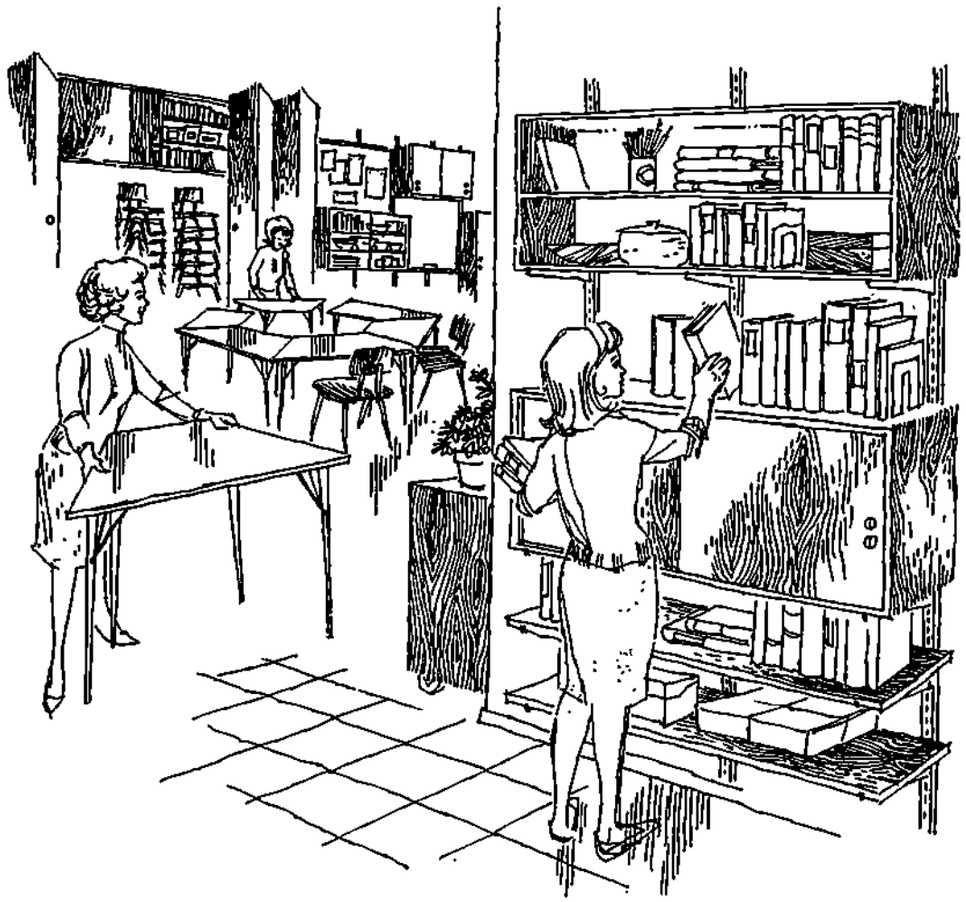
- Initial cost and upkeep.
- Safety of operation.
- Number of classes which will use the equipment, and the need, perhaps, to have both washing and drying in progress at the same time.
- The amount of space required for this equipment, and the area needed for seating a class for discussion purposes.
- The ease of loading and unloading the machine.
- Noise and vibration produced by the machinery and the placement of equipment where it will not disturb classes in session.

Classroom Tables and Chairs

Laboratory chairs and tables for daily use by pupils are an important part of the furnishings in a home economics department. Posture can be greatly influenced by the design of chairs and height of tables. Before chairs are selected,



Adjustable shelves and wall units.



pupils should try them out for comfort. Stacking chairs, which can be stored when not in use, add to the flexibility of a room. The following points should be considered in choosing tables and chairs:

- Adjustability — for meal service, working space, round-table discussion, and cutting out garments.
- Height, weight, and mobility.
- A finish that will stand up under hard wear.
- Attractive appearance which blends with the other furnishings in the department.
- Versatility in terms of room arrangement.

The home economics department, like the home, should be envisioned as a whole if it is to present a feeling of harmony. All of the furnishings need not be purchased at one time to achieve this, but the overall planning should be in terms of the total effect which is desired. Extending the time of selection and purchasing of equipment will permit more pupils to participate. Many times it is well to live with one piece of furniture such as a chair or couch before selecting a rug, lamp, table, or other items to be used in the same room. Each should be chosen because it serves a real function — and this often becomes clearer as teachers and pupils operate in the department.

CHAPTER VI

Planning the General Physical Environment

PLANNING AND CONDITIONING home economics departments for maximum learning and teaching is an important administrative responsibility involving many technical problems. These include: (1) calculating the total amount of space needed; (2) working out appropriate relationships between space areas; (3) achieving an aesthetic atmosphere; (4) safeguarding the health and safety of teachers and pupils; and (5) controlling sound, temperature, and light. Home economics teachers working with administrators can determine what is needed, but architects and engineers will have the responsibility for providing practical solutions to the problems.

Spatial Factor

The total amount of space provided for home economics should be planned in terms of today's program and what is envisioned for tomorrow. All of the learning activities as well as the methods of teaching will influence the amount of space needed and how this is treated. Pupils may be dealing with such problem areas as family meals, management of time and energy in relation to homemaking, the care and development of small children, and quantity food production as needed in preparation for wage earning. Such experiences require space for specialized equipment and for people to use it. In addition to laboratory work space, adjacent space will be needed for the entire class to be seated for discussion and for study.

Projects involving the entire class at one time, in such processes as the preparation and serving of meals, require considerably more space than the demonstration method of teaching. Space should also be provided for individuals or small committees to work in privacy when necessary. If, through team teaching, two classes are brought together, adequate space will be needed. In some units of instruction, such as family relations and child development, where films and tape recorders are used a great deal, space should be so arranged that equipment is easily accessible and no readjustment needed to seat the class.

Aesthetic Appeal

A school building can be both functional and beautiful. If it is functional, it can help the teacher to plan and implement the curriculum with the least amount of frustration and effort and the greatest amount of learning. Beautiful physical surroundings can meet a certain emotional need of both teachers and pupils. If one accepts the premise that "form follows function," space arrangements, furniture, and equipment are beautiful only if they are functional in terms of implementing the program.

Color and light are controlling factors which can destroy or reaffirm structural beauty of a building — its unity, its proportion, and the seeming flow of space. Color may be used solely as a means of contributing to th. beauty of the whole, but should be applied with the recognition of its psychological effect on pupils. Pleasing color is important in any schoolroom, but especially where standards for use of colors are taught, as in home economics. Appropriate use of color in schools not only promotes better vision, but also stimulates pupil interests and alertness. The homemaking department offers an unusual opportunity for pupils and all who use or visit the department to understand and enjoy color.

The first step in color selection is to choose the basic color for the room or rooms. This will be determined in some measure by the quality of natural light most predominant in the room. When the light is warm and bright, a soft cool color is appropriate; when a cool, northern light prevails, warm colors are usually preferable. In color and design, accessories can be used to accent the main theme of decoration chosen for the home economics department. The living center is perhaps the space in a school building which provides the greatest opportunity for achieving an aesthetically appealing and homelike atmosphere.

Rugs in a living room give a background and introduce a tone for basic colors. The design, color, and type of rug should be in harmony with the furnishings and architecture. A plain rug of a soft, neutral shade provides a greater choice of drapery and upholstery fabric than a bright colored rug with design. A rug of hemp or sisal lends itself to a more informal atmosphere than a wool rug. In departments having composition floors, as in the foods laboratory, a rug in an adjoining area adds pleasing textural contrasts. Pupils can gain valuable experience by helping to select and maintain rugs in the department.

The style of architecture which characterizes the building will determine to some degree the style of furnishings in the building. Contemporary furnishings are less formal than period furniture and give a sense of "belonging" in a building of contemporary style. Simplicity of design, however, will usually give a pleasing effect even though furnishings may have been bought at different times and represent different periods.

Safety Measures

Safety for pupils and teachers is one of the first considerations in planning the home economics department. The use of gas and electrical appliances always presents some hazards even though every precaution is taken.

A threefold approach to fire safety involves: (1) prevention of fire by avoiding hazards, (2) provision of adequate escape facilities, and (3) control of any possible fire to minimize its damage to life and property. More than 50 percent of the school fires are caused by faulty electrical and mechanical devices, according to the National Fire Protection Association. Safety from electrical fires in home economics departments can be promoted by conforming to the standards of the *National Electrical Code*:

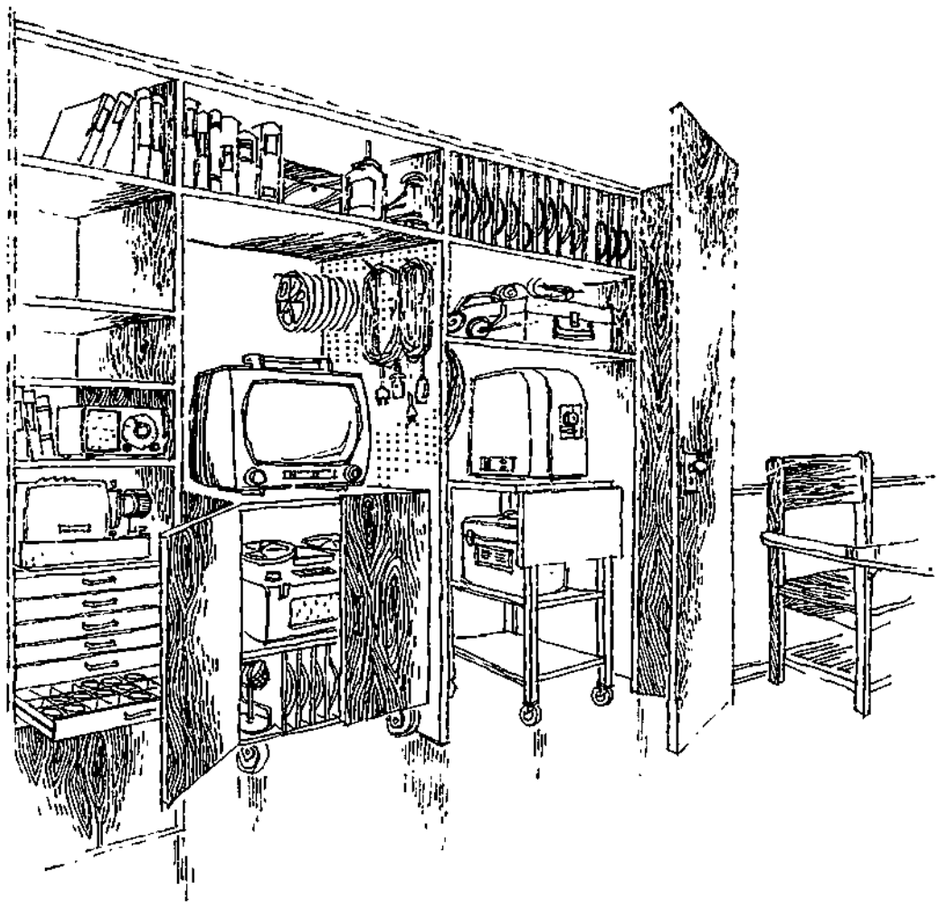
1. Electrical units placed too near sinks and other plumbing are hazardous.
2. There should be safety controls for opening and closing electric circuits.
3. Electrical cords may become frayed from use or storage and thus can create a danger when in use.
4. Any combustible materials such as matches, oiled cloths, and the like should be stored in UL-approved containers.

Storage space, while a necessity in a well-planned home economics department, can be a hazard if poorly arranged or poorly lighted. A light switch conveniently located near the door can be a safety factor. Many items — such as electrical appliances with dangling extension cords; wheel toys from the nursery school; and carelessly stored posters, charts, and other visual aids — can cause accidents by obstructing passageways or by falling from shelves. Accidents can often be avoided by providing storage bins or shelves wide enough to accommodate the items and at a height which can be reached comfortably. The materials stored should be kept in order when not in use; and a strong, well-constructed stepstool or stepladder with wide tread should be available to reach those above eye level.

Another important safety measure in home economics kitchens is adequate ventilation where gas is used. Some means should also be included for ventilating unit kitchens. Exhaust ducts should have fans to pull odors and fumes out of the room when students are cooking. Ample openings for air intake should also be available.

Small scatter rugs are a hazard because they slide easily and can cause accidents. Doors that swing toward the outside exit and in the direction of the normal flow of traffic are a safety measure.

Equipment and furniture with sharp corners or edges that project into a room or corridor are not safe. In the placement of all furniture and equipment, aisles should be left wide enough and unencumbered for safe passage around the room and to all exits.



Convenient storage for mechanical teaching aids.

Sound Control

Sound control in home economics departments, as in other instructional areas, is necessary for maximum hearing con-

ditions in regular class discussions. Pupils in home economics often work in small groups, and noise from one group or individual may be disturbing to others if provisions are not made for sound absorption.

Sound control methods within the rooms may include acoustical materials on walls, ceilings, and floors. It is a mistake to assume that sound is controlled only by ceiling and wall treatment; in fact, floor treatment, such as carpeting, may be even more effective than the use of acoustical tile on the walls or ceilings. Other methods used to control sound within the room include hanging draperies and pictures on walls and constructing unparalleled walls and uneven ceilings. Based on the premise that prevention is better than correction, another method of controlling sound is sometimes called "zoning" or arranging facilities so that noisy activities are grouped in one part of the building. In this way, departments that often engage in very noisy activities, such as band and shop, can be grouped together; those with less noisy activities, such as home economics and biology, are located together; while the library, languages, and other quiet departments form a third group. Movable partitions often create sound problems and should be made of sound-resistant materials.

Temperature Control

In designing for thermal control in the home economics department, four main factors should be given due consideration: (1) air temperature, (2) radiant temperature (the mean effective surface temperature of all surrounding objects), (3) relative humidity, and (4) air motion. For an optimum environment for maximum learning efficiency in an occupied classroom, air temperature should be maintained at about 70° Fahrenheit, measured 30 inches above the floor, when the mean radiant temperature is at the same level as the air. A minimum relative humidity of about 45 percent is recommended.[1]

Home economics departments occasionally require less heat: when a classroom is suddenly filled with pupils or when extra heat is generated by kitchen ranges. Controls which the teacher can conveniently regulate should be provided. The control of room temperature generally, however, should be adjusted by custodians upon request by the school principal and not by pupils or teachers.

The type of heating system and control selected for the school will depend upon the buiiding design, the extent of its use for community activities during nonschool hours, the climate, the available funds, the designer's preferences, and other factors. Home economics rooms are often used after school hours, for evening classes for adults and FHA activities. Day-night controls may be used when portions of the building are regularly occupied at night, and it is desirable that the heating system be adjustable to heat only a part of the building at a time.

Many school buildings will undoubtedly soon be air conditioned. Home economics departments, where funds permit, should be among the first to be air conditioned for they are used more and more by school pupils, out-of-school youth, and adults in the summer months. A pleasant climate in the home economics department encourages better housekeeping and, in general, helps to implement the program of instruction.

The transfer of heat or cold through glass is so swift that it heavily taxes the performance of any system. Since lights

[1] U.S. Department of Health, Education, and Welfare. *Environmental Engineering for the School.* Washington: U.S. Government Printing Office. 1961.

generate heat, the thermal system should be capable of adjusting itself so that the temperature for efficient learning is maintained. The reduction in the use of large glass areas for natural light has improved the performance of thermal systems. The use of smaller areas of double-pane or tinted glass is effective in controlling temperature and sunlight radiation. Exterior solar screening, long roof overhangs, and/or tree planting significantly contribute to radiation control from the sun.

For home economics suites having movable walls, the thermal system will need to be adjustable to maintain proper temperatures in the newly created rooms. Food laboratories and kitchens need separate exhaust ventilating facilities. Fume hoods when used in laboratories should have noncorrosive ducts with automatic fume hood controlled fans to provide positive exhaust control.

Visual Environment

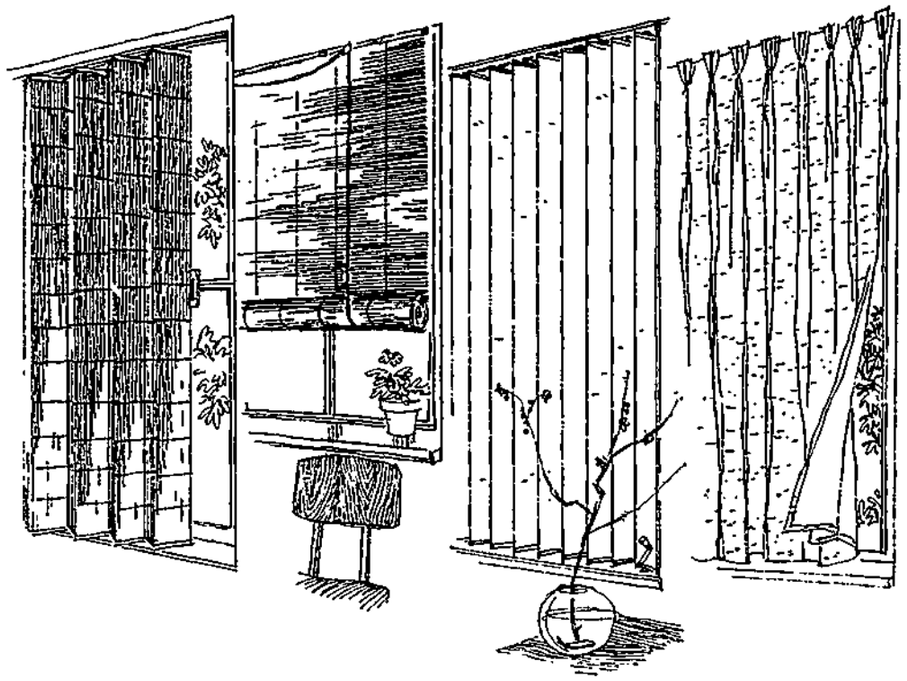
A properly designed, luminous environment helps pupils and teachers to see tasks with more comfort, speed, and accuracy. Even more significant, according to the National Council on Schoolhouse Construction, is the fact that a well-balanced and well-controlled visual environment lessens the expenditure of energy required to perform visual tasks, reduces restlessness and inattention, and contributes to the conservation of energy required for physiological growth and development needs.[2] Another advantage often overlooked in good lighting is that it helps to equalize educational opportunity for pupils with substandard vision. A well-lighted environment encourages good housekeeping practices and orderliness, and lessens discipline problems.

An intelligent analysis of the design factor for comfortable seeing should begin with the study of tasks to be seen. In home economics instruction there are visual tasks of almost every degree of difficulty, including sewing with black thread on black cloth.

The competent "visual engineer" is concerned with interrelationships of the visual factor with other basic design factors and with lighting different size areas as adjustments are made for accommodating individuals and various size groups in the home economics program. He takes into account in design the fact that geometry of light sources changes when walls are moved. He works with climate and acoustical engineers since loads produced by lighting systems may create overall building design problems. He also collaborates with the architect, the school administrators, and school boards on a lighting system which contributes to the pleasantness of space and general aesthetic tone of the home economics department.

Home economics teachers, in general, prefer some natural daylight in the classroom because they work with such problems as color in relation to people and the home. Large areas of glass, however, may cause glare and consume wall space needed for storage, display, and other work areas. Windows can be potentially a great source of discomfort because of glare. The balance of brightness is sometimes upset from reflected sunlight on bright wall areas of adjacent buildings. Three of the most popular methods of shielding from glare

[2] Floyd G. Parker, *Guide for Planning School Plants*. East Lansing, Mich.: National Council on Schoolhouse Construction, College of Education, Michigan State University. 1964.

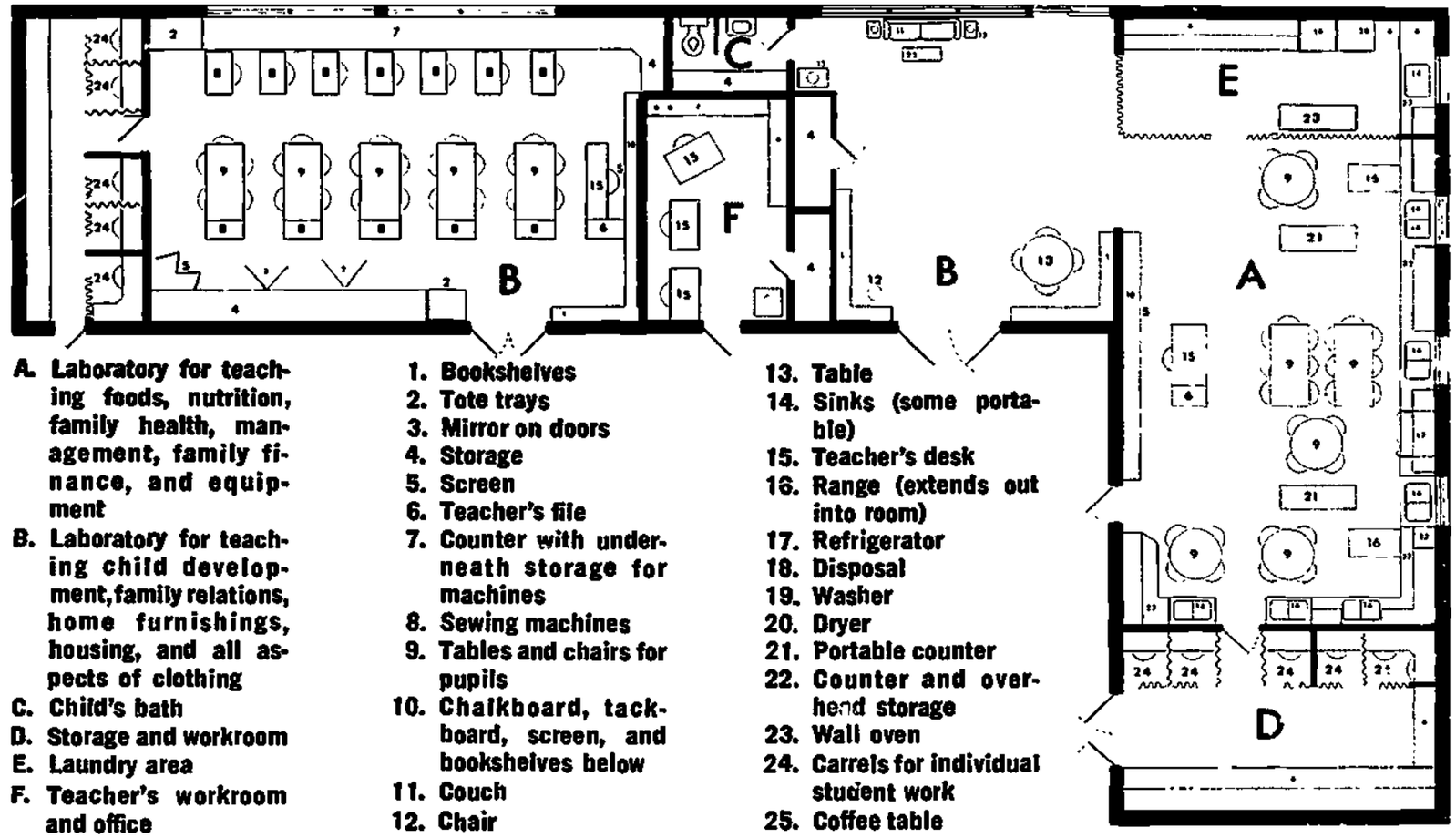


Suggestions for control of light at windows.

(excessive high brightness) are window shades, venetian blinds, and draw curtains. Other methods are fixed and adjustable louvers and low transmission glass.

The portion of a window in the home economics department which is designed to permit "seeing out" should be such that the reflection of light prevents glare and the colors of objects seen through the window are not distorted. Where the exterior environment is of low brightness value such as a wooded area, conventional clear glass may well be used. However, where there is not satisfactory brightness control, glass of low transmission with a neutral characteristic should be used to provide the required balance.

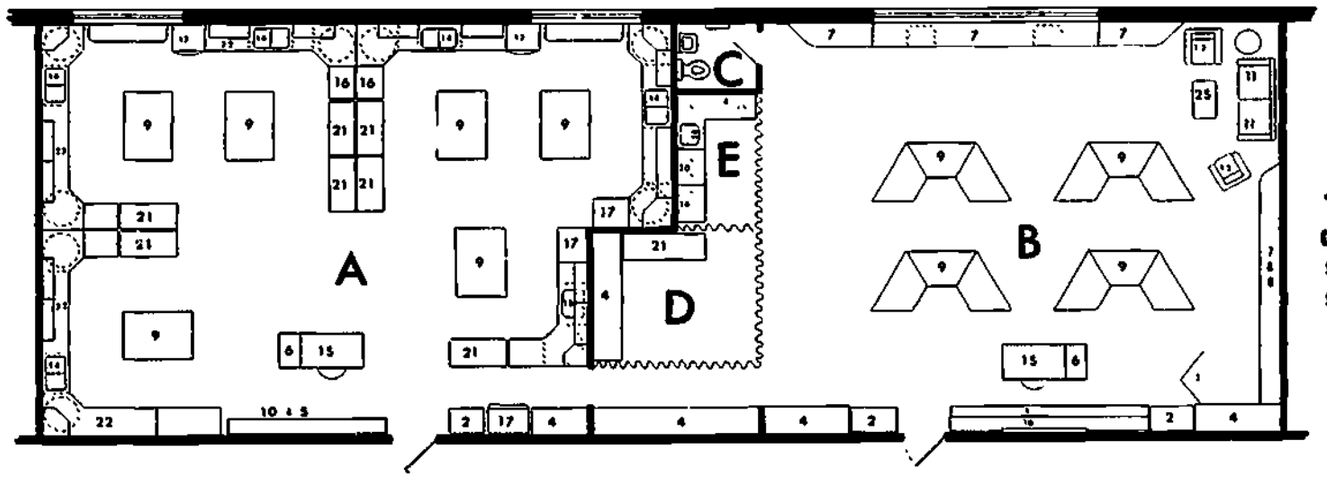
In designing home economics departments for visual comfort and efficiency, consideration should be given to finishes and paint colors. Ceilings should be finished with 70 to 90 percent reflection factor with flat white paint. The effectiveness of the ceiling as a light-reflecting agent may, however, be compromised to a degree when acoustic materials are applied. Upper walls from the ceiling line to the wainscot should be finished with 40 to 60 percent reflection factor paint and lower walls 40 to 60 percent. Trim finishes may vary in color from the walls, but should retain about the same reflection factor. Floor finishes in general should have from 30 to 50 percent reflection factor. Chalkboards are now available with practical reflection factors from 20 to 25 percent. When a conventional chalkboard is used, convenient means, such as sliding panels, can be available for covering it with lighter colored surfaces when not in use.



KEY:

A. Laboratory for teaching foods, nutrition, family health, management, family finance, and equipment
B. Laboratory for teaching child development, family relations, home furnishings, housing, and all aspects of clothing
C. Child's bath
D. Storage and workroom
E. Laundry area
F. Teacher's workroom and office

1. Bookshelves
2. Tote trays
3. Mirror on doors
4. Storage
5. Screen
6. Teacher's file
7. Counter with underneath storage for machines
8. Sewing machines
9. Tables and chairs for pupils
10. Chalkboard, tackboard, screen, and bookshelves below
11. Couch
12. Chair
13. Table
14. Sinks (some portable)
15. Teacher's desk
16. Range (extends out into room)
17. Refrigerator
18. Disposal
19. Washer
20. Dryer
21. Portable counter
22. Counter and overhead storage
23. Wall oven
24. Carrels for individual student work
25. Coffee table



Two floor plans showing different arrangements of space, equipment, and storage.

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ARKANSAS

To determine the aspirations and capabilities of rural youth and relate them to experience, background, and occupational plans tests, inventories, and a questionnaire were administered to 165 senior boys in 10 high school in two low-income Arkansas counties. Significant relationships between variables were ascertained through the use of multiple linear regression techniques. Conclusions included: (1) Mechanical interests, scientific interests, ascendance, social class value orientation, and the number of years of education and training planned after high school were significantly related to occupational aspirations, (2) Reading speed, age, race, reading comprehension, and the student's estimate of his ability for his chosen occupation were significantly related to capabilities, (3) Reading speed, ascendance, and sociability were found to be significantly related to the discrepancy between aspirations and capabilities, and (4) Wide discrepancies were found between the occupational plans of the students and the projected U.S. needs for 1970 in some occupational categories. Recommendations included: (1) inclusion of remedial reading in the curricula, (2) development of an occupational unit in each department of the high school, (3) establishment of guidance services, and (4) development of special programs for low capability students. (DM)

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Aspirations and Capabilities of Rural Youth

In Relation to Present and Projected Labor Market Requirements

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Aspirations and Capabilities of Rural Youth

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The income position of rural areas of the United States relative to the rest of the country has improved little in the recent past, although it has been a period of rapid technological change. Per capita incomes in Arkansas did gain relative to incomes in the United States, but not at a rate that would bring them into parity with the United States in the immediate future (28).

Technology has changed very rapidly not only in farming but throughout most of the non-farm sector. Brisk technological change profoundly affects the role of future participants in the labor force in several ways. First, technical change has been unevenly distributed, and it is forcing a relocation of the labor force spatially and among skills. Second, technical production changes are reflected eventually in demands for different types of goods and services in the market, and they force concurrent shifts in job skills. Third, technical change results in greater productivity per worker. It forces some workers to change jobs and those remaining in present jobs to become more highly skilled. Fourth, farm youth, usually with less training and perhaps lower aspirations, are thrown into a labor market for which they are not prepared because they do not possess the proper skills.

Justification for the Study

Some years ago, the State of Arkansas began a concerted effort to adopt measures designed to facilitate economic growth. The needs of the state were described well by the emergency clause in Act 404 of the 1955 Legislature establishing the Arkansas Industrial Development Commission (1):

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> It has been found . . . that the State of Arkansas has had heretofore an inadequate program for the agricultural and industrial development of the State and . . . has been unable to provide for its inhabitants sufficient opportunities in agriculture and industry, . . . on account thereof the State of Arkansas has suffered great losses of population and a decreasing standard of living for its inhabitants . . . unless such an adequate program for the agricultural and industrial development of the State be immediately undertaken the State of Arkansas will suffer immediate and irreparable further loss in population and industrial expansion . . .

The difficulty of preparing the labor force in low-income farm areas for non-farm employment has been compounded by the process of selective migration. At high levels of national employment, individuals with higher levels of aspiration and ability apparently migrate quickly to non-farm jobs. Therefore, those remaining on the farm might be expected to have relatively lower levels of aspiration or ability.

Studies by Johnson (21) and by Pihlblad and Gregory (34) support the hypothesis that migration of rural youth toward urban areas tends to be selective of the more intelligent and of those with superior capabilities. Fliegel (10) contended that there is a significant relationship between levels of aspiration and farm family income from off-farm sources in areas where non-farm jobs are generally available. He concluded that many members of the labor force with high aspiration levels are rejecting farming as an occupation. Bishop (2) has argued that much of the low income rural population has low levels of aspiration.

It is generally accepted that training improves the capabilities of individuals and promotes economic development. However, specific programs are meaningful only if designed in relation to existing and desired levels of attainment. Furthermore, programs can be successfully carried out only if the personal characteristics in question are amenable to change. A sufficiently high level of motivation or aspiration in prospective trainees is necessary to cause them to put aside other alternatives and devote themselves to training.

A critical need exists at this time for descriptive studies to provide guidelines for planning training programs. Such studies should examine levels of aspiration as well as physical and intellectual capabilities of the trainees, and should be related to present and projected needs of the labor market.

Statement of the Research Problem

The objectives of this study are: (1) To determine the vocational aspirations and capabilities of youth in selected areas of

Arkansas in relation to present and projected needs of the labor market; (2) To relate these aspirations and capabilities to the experience backgrounds of the youths studied; and (3) To develop from (1) and (2) recommendations for education and training programs and occupational information services that will place program participants in occupations providing adequate incomes.

The following questions were addressed in this study: (1) Which characteristics under investigation are significantly related to occupational aspiration? (2) Does information readily available from school records contribute significantly to the prediction of occupational aspirations? (3) Does information that can be gathered by interview contribute significantly to the prediction of occupational aspirations? (4) Does test information contribute to the prediction of occupational aspirations? (5) Which variables are closely related to capabilities? (6) Which variables are significantly related to the discrepancy between occupational aspirations and capabilities? (7) What are the occupational plans for the students in this sample in relation to present and projected labor market requirements?

PROCEDURES

Description of the Sample

A low income area comprised of two predominately rural counties—Little River and Sevier—was studied. The 197 senior boys in the seven white and three Negro secondary schools in the two counties were included in this study. A complete battery of tests and questionnaires was administered to 155 of these boys—44 Negro and 121 white students.[2] Two-thirds of the boys were rural residents and half of these rural residents were farm boys.[3]

Little River County, located in the southwestern corner of Arkansas, contains 350,000 acres (544 square miles) of relatively level land. Approximately 65 percent of the county (227,000 acres) is in a variety of hardwood and rapidly growing pine timber. Nearly 14,000 acres in the western part are predominately used for beef cattle production. The remainder of the county along the Red River produces both livestock and row crops. The county seat, Ashdown, is the trade center for the county. A trailer manufacturing plant, a garment factory, a cement plant, some wood

[2]The questionnaire with a tabulation of responses is included in Appendix A.
[3]The other one-third, classed as non-rural, lived in Ashdown and DeQueen, which had populations of only about 3,000 each and exhibited rural characteristics.

industries, and a few smaller enterprises comprise the industrial base.

Sevier County is located just north of Little River County. It is bounded on the west by Oklahoma. It contains 374,000 acres (585 square miles). Approximately 79 percent of the county (295,800 acres) is in hardwood and pine timber. The remainder of the land is used for pasture, orchards, poultry, and crop production. DeQueen is the county seat and trade center for the area. Industrial facilities include timber processing plants, a poultry processing plant, and other small industries.

Both counties had severe population losses from 1940 to 1960 (46). Little River County had a loss of 48 percent. The 1960 population was 9,211 with approximately 70 percent rural and 31 percent Negro. Sevier County had a loss of 33 percent. The 1960 population was 10,156 with 72 percent rural and 8 percent Negro. These losses were associated with mechanization of farming, increased holdings by large timber companies, lack of employment opportunities for young people, and changes in the type of employment skills required in the industry of the area.

Characteristics of the school districts in the two counties are indicated in Table 1. Ashdown, DeQueen, Foreman, and Horatio schools had guidance and counseling programs.

Data Used in the Study

The dependent variables for this study are the level of occupational aspiration, the capabilities score, and the discrepancy between aspirations and capabilities.

The vocational aspirations of the students were determined through the use of Haller's Occupational Aspirations Scale, OAS (16). The scale assigns a numerical score, based on prestige ratings, to occupational choices. OAS scores indicating the individual's level of occupational aspiration may range from 0 to 72.

The students' capabilities were measured with the General Aptitude Test Battery (GATB). The capability score was derived by considering together the North-Hatt hierarchy of occupations as reflected in the OAS and the GATB.[4] Each occupation listed in the OAS was given a minimum cutoff score on the relevant tests of the GATB. The choices of relevant tests and cutoff scores were determined by a panel of professional vocational counselors using as guidelines publications on occupational requirements (47). The

[4]The North-Hatt score is also called the NORC score(31).

Table 1. Characteristics of the School Districts Included in Little River and Sevier Counties, 1964-65

Characteristics	Little River County			Sevier County					State average, per district
	Ashdown[1]	Foreman[2]	Winthrop	Gillham	Horatio	Lockesburg	County District[3]	DeQueen	
Area (square miles) 1964-65	339	161	50	150	108	120	25	150	130
Number of senior boys, 1964-65	69	28	10	10	11	8	17	44	n.a.
Average daily attendance, 1964-65	1,414	726	178	287	408	310	165	1,143	985
Enumeration, 1964	1,601	807	212	318	429	357	183	1,136	1,115
Mills voted, 1964	45	46	45	36	36	40	46	42	39
Number of classroom teachers, 1964-65	62	37	10	15	18	13	10	43	41
Average salary per classroom teacher, 1964-65	$3,880	$3,862	$3,802	$4,110	$3,861	$4,050	$4,200	$4,304	$4,094
Per ADA									
Assessed valuation, 1984	$3,301	$4,404	$3,910	$4,595	$3,087	$4,217	$1,081	$3,923	$3,931
Local receipts, 1964-65	$ 122	$ 168	$ 158	$ 154	$ 109	$ 152	$ 46	$ 147	$ 154
Vocational aid, 1964-65	$ 4	$ 7	.....	$ 10	$ 8	.....	$ 17	$ 3	$ 3
Instructional expense, 1964-65[4]	$ 8	$ 9	$ 3	$ 5	$ 3	$ 3	$ 1	$ 4	$ 8
Current expense, 1964-65	$ 251	$ 297	$ 283	$ 322	$ 250	$ 284	$ 331	$ 244	$ 256

[1]Includes Little River County Training School.

[2]Includes Unity High School.

[3]Sevier County High School.

[4]Excludes teacher salaries.

Source: State Department of Education Report on House Concurrent Resolution No. 58 of 1961 Arkansas General Assembly, State Dept. Educ., Little Rock, January, 1965.

scores of each student on the relevant aptitude test were then compared to the cutoff scores assigned occupations within each of the eight OAS questions. The highest occupation the student was capable of attaining in each of the OAS questions was ascertained. The equivalent OAS score for that occupation was assigned as the capability score of the student on that question. The maximum possible score was 9 on each of the eight questions. Thus the capability and OAS scores were defined on the same scale and were directly comparable.

The discrepancies between individuals' aspirations and capabilities—discrepancy scores—were determined by subtracting the aspiration scores from the capability scores and adding 100 to eliminate negative scores. For example, a student with a capability score of 28 and an aspiration score of 40 would have a discrepancy score of 88.

The independent variables are described by the instruments used to measure them. The GATB, used to determine aptitudes of the individuals (48), was produced by the U. S. Employment Service (ESD) for use in guiding persons seeking work. The ESD cooperated in administering the test. The nine aptitudes measured are intelligence, verbal aptitude[5], numerical aptitude, spatial aptitude, form perception, clerical perception, motor coordination, finger dexterity, and manual dexterity.

The Kuder Preference Record-Vocational-Form C was administered to measure the interests of the subjects (23). Interests are measured in the following areas: outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical.

The Guilford-Zimmerman Temperament Survey was administered to assess personality traits (14). Traits assessed are general activity, restraint, ascendance, sociability, emotional stability, objectivity, friendliness, thoughtfulness, personal relations, and masculinity.

Reading speed and comprehension were measured by the Davis Reading Test (6). Two reading scores are derived: level of comprehension and speed of comprehension.

The Social Class Value Orientation Inventory was administered to determine the middle-class or lower-class orientation of the student (43). It is made up of the following dimensions: time

[5]Verbal aptitude has been defined as the ability to associate word meanings correctly and to weave ideas together and make inferences about them. "Verbal aptitude" has also been used synonymously with "reading comprehension" (6).

orientation, control of destiny, preservation of self, and social world.

The Rural-Urban Orientation Inventory was administered to determine the rural-urban tendencies of the student (44). This instrument consists of the following value and opinion statements: individual autonomy over actions and time-use; moral attributes in man's work or nature; distinctive city characteristics—social density, distance, and heterogeneity; and institutional variety and richness.

Other data used in this study were obtained from school records and a questionnaire adapted from one used by Haller and Miller giving background information concerning the student, his parents, his siblings, and his socio-economic status (16). Data from the questionnaire and school record information, along with test data, were related in regression analysis (see Appendix B). A description of these selected variables is as follows:

Age, to the nearest birthday, converted to age in months.

Regular home of student, whether with parents or others.

Semesters of extra-curricular activities, in terms of regular, active participation in recognized extra-curricular school activities.

Semesters of vocational subjects, including business education, industrial arts, and vocational agriculture subjects completed by the end of the senior year.

Semesters of vocational agriculture, completed by the end of the senior year.

Knowledge of work planned, showing the extent of the student's knowledge about his chosen occupation and where he received or expected to receive that knowledge.

Student's estimate of his ability, indicating the student's perception of his ability for his chosen occupation.

Years training and education expected, including any type of training or education that the student expected to get after high school.

North-Hatt score for student's planned occupation, based on the North-Hatt scale. (Occupations not included on the scale were given a score by five persons based on the mean score for the occupational classification and the score for a similar occupation of the North-Hatt scale.)

Where student lived, whether on a firm, or in a village or town.

Where student expected to get help in becoming established in his chosen occupation, whether from parents, relatives, others, or no one.

North-Hatt score for father's occupation. The North-Hatt score assigned to the occupation of the student's father or guardian. (Occupations not listed on the scale were given the same treatment as were students' occupational choices that were not listed.)

Mother's work, based on work outside the home.

Father's education, based on the number of grades completed in school.

Mother's education, based on the number of grades completed.

Parents' income, based on the student's conception of parents' income in relationship to other families in the area.

Importance of job parents want for son, based on the student's perception of his parents' desire.

Family help in securing education and training, based on the student's estimate of financial help from the family.

Number of persons living in the home, at the time the information was given.

Father's church attendance, at least monthly.

Educational status of eldest sibling, including high school and college attendance.

Number of senior boys, based on the number in the student's school at the time the information was secured.

Race, classified as either white or Negro.

Grade point average, based on seven semesters of credit in the solid subjects (mathematics, languages, sciences, and social sciences), computed on the basis of A equals 4, B equals 3, C equals 2, D equals 1.

Statistical Procedure

A multiple regression model was used to test the importance of each variable or each group of variables under consideration. The statistical test involves a comparison of a full regression model—one with a complete set of independent variables—and a restricted regression model. The restricted model has only one variable, or one group of variables, excluded to see what effect it had on explanatory power. An appropriate statistical procedure indicated significance, or lack of significance, of the variable or group dropped. The statistical tests are in Appendix C, D, and E.

This procedure results in a set of variables that are significantly related to each of the dependent variables, but are not closely related among themselves. Other variables, not discussed here, may be highly associated with the dependent variable, but their addition to the set of variables used here would not add greatly to the explanatory power of the regression model.

OCCUPATIONAL ASPIRATIONS ANALYSIS

The regression of occupation aspiration scores on selected variables and groups of variables was used to determine (1) which characteristics are related to occupational aspirations, and (2) whether the relationship between occupational aspirations and

groups of other variables (e.g., data from school records, interview data, and other test data) is close enough to use indirect methods of estimating occupational aspirations.

Significance of Groups of Variables

The grouping of information available from school records (Group 1) included grade point average, extra-curricular activities, training in vocational subjects, student age, and number of senior boys in the school. The information that could be gathered by interviews (Group 2) included the years of education and training expected, the parents' educational levels, the importance of the job the parents wanted for their son, the National Opinion Research Center (NORC or North-Hatt) score for the student's planned occupation and for the father's occupation, and the father's church attendance.

The data from the testing and inventory instruments were subdivided into three groups. The individual aptitude scores from the GATB, the rural-urban orientation scores, and the social class value orientation scores comprised Group 3. Group 4 consisted of scores from the Kuder Vocational Preference Scale on outdoor, mechanical, computational, and scientific interests. Scores from the Guilford-Zimmerman Temperament Survey on ascendance, sociability, and thoughtfulness traits comprised Group 5.

The only groups significantly related to the OAS were Groups 3 and 4 (Appendix C). Thus, an estimation of levels of occupational aspirations cannot be obtained readily without some testing.

Significance of Individual Variables

To determine which individual characteristics under investigation were significantly related to occupational aspirations, each variable was deleted singly from the full model and the significance of the drop in R^2 was determined by the F test (Appendix C). Variables 12 (mechanical interest), 14 (scientific interest), 23 (ascendance), 35 (social class value orientation), and 38 (number of years of education and training expected) were significantly related to the OAS.

Mechanical Interest

Mechanical interest, one of the scales on the Kuder Interest Inventory, had a mean value of 42 and a standard deviation of 10.79. The mean score of 42 ranked in the 40th percentile on the Kuder Interest Inventory norms.[9] Mechanical interest had a nega-

[9]The 25th to 75th percentile is considered the average range in all Kuder Interest categories.

tive correlation of -.365 with the OAS. This relationship indicates that if a person has high mechanical interest (prefers work with machines and tools), he will probably have low occupational aspirations. This relationship is in the expected direction since the mechanical trades are not accorded the higher status of professional, technical, and managerial occupations.

The probability of obtaining a certain aspiration level with a given mechanical interest score is presented in Table 2. For example, of the 15 students who scored in the 16 to 27 range on the mechanical interest scale, 27 percent (4) scored in the 30 to 44 range on the OAS, 53 percent (8) scored in the 45 to 59 range, and 20 percent (3) scored in the 60 to 74 range.

Table 2. Mechanical Interest: Number and Percent of Students Scoring in Specified Score Groups on the Mechanical Interest and the Occupational Aspirations Scale

Mechanical interest scale	Occupational aspirations scale: 0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	Total
			Number			
16 to 27			4	8	3	15
28 to 39		7	26	15	5	53
40 to 51		10	36	14	1	61
52 to 63	1	14	10	5	2	32
64 to 75		1	3			4
Total	1	32	79	42	11	165
			Percent[1]			
16 to 27			27	53	20	100
28 to 39		13	49	28	10	100
40 to 51		16	59	23	2	100
52 to 63	3	44	31	16	6	100
64 to 75		25	75			100
Total	1	19	48	25	7	100

[1]Percentages are rounded to the nearest whole percent.

Scientific Interest

Scientific interest, also on the Kuder Interest Inventory, had a mean score of 43 and a standard deviation of 10.38. This mean score ranked at the 56th percentile on the normative group of the Kuder Inventory. Scientific interest had a correlation of .41 with the OAS. This indicates that persons having high scientific interest tend to have high occupational aspirations. Scientific interest indicates that the student likes to discover new facts and

solve problems. Occupations in this area are usually in the professional and technical group. Since these occupations have high status, the scientific scale would be expected to have a fairly high correlation with the OAS. The only other interest scale that had a significant positive correlation with the OAS was computational (.27).

The probability of obtaining a certain aspiration level with a given scientific interest score is presented in Table 3. For example, of the 57 students who scored in the 28 to 39 range on the scientific interest scale, 28 percent (16) scored in the 15 to 29 range on the OAS, 56 percent (32) in the 30 to 44 range, and 16 percent (9) in the 45 to 59 range.

Table 3. Scientific Interest: Number and Percent of Students Scoring in Specified Score Groups on the Scientific Interest and the Occupational Aspirations Scale

Scientific interest scale	Occupational aspirations scale					
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	Total
			Number			
16 to 27		2	6	1		9
28 to 39		16	32	9		57
40 to 51	1	13	31	16	4	65
52 to 63		1	9	14	6	30
64 to 75			1	2	1	4
Total	1	32	79	42	11	165
			Percent[1]			
13 to 27		22	67	11		100
28 to 39		28	56	16		100
40 to 51	2	20	47	25	6	100
52 to 63		3	30	47	20	100
64 to 75			25	50	25	100
Total	1	19	48	25	7	100

[1]Percentages are rounded to the nearest whole percent.

Ascendance

Ascendance, one of the scales on the Guilford-Zimmerman Temperament Survey, concerns leadership habits; speaking with individuals and groups, persuading others, being conspicuous, self-defense, and bluffing. Positive qualities in these items would be expected to be related to higher occupational aspirations since most of the occupations associated with high aspirations also require these positive qualities.

Ascendance had a mean score of 15 and a standard deviation of 4.45. This ranked at the 50th centile on the norms of the Guilford-Zimmerman.[7] The correlation coefficient (.31) of the ascendance with the OAS was similar to the findings of other studies, in that personality variables had only low and moderate correlations with aspirations. Other significant correlations between the Guilford-Zimmerman scales and the OAS were thoughtfulness (.28), sociability (.24), and general activity (.17).

The probability of obtaining a certain aspiration level with a given ascendance score is presented in Table 4. For example, of the 29 persons who scored in the 6 to 11 range on the ascendance scale, 27 percent (8) scored in the 15 to 29 range on the OAS, 59 percent (17) scored in the 30 to 44 range, and 14 percent (4) scored in the 45 to 59 range.

Table 4. Ascendance: Number and Percent of Students Scoring in Specified Score Groups on the Ascendance and the Occupational Aspirations Scale

Ascendance scale	Occupational aspirations scale					
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	Total
			Number			
0 to 5	1	1	1	1		4
6 to 11		8	17	4		29
12 to 17		18	38	18	3	77
18 to 23		5	23	17	7	52
24 to 30				2	1	3
Total	1	32	79	42	11	165
			Percent[1]			
0 to 5	25	25	25	25		100
6 to 11		27	59	14		100
12 to 17		23	50	23	4	100
18 to 23		10	44	33	13	100
24 to 30				67	33	100
Total	1	19	48	25	7	100

[1]Percentages are rounded to the nearest whole percent.

Social-Class Value Orientation

The SCVO was designed to distinguish between middle-class and lower-class orientation. Higher scores indicate middle-class orientation; lower scores indicate lower-class orientation. SCVO had a correlation coefficient of .40 with the C^S. This coefficient

[7]The 50th centile is about average for the norm group.

would be expected to be .40 or higher since other studies have shown that socio-economic levels are related to occupational aspirations, in that the higher the socio-economic level the higher the aspiration level (8). Students of lower socio-economic level desire to get ahead but at lower levels than do students of higher socio-economic level.

The probability of obtaining a certain aspiration level with a given SCVO score is presented in Table 5. For example, of the 13 students who scored in the 22 to 25 range on the SCVO, 54 percent (7) scored in the 15 to 29 range on the OAS, and 46 percent (6) scored in the 30 to 44 range.

Table 5. Social Class Value Orientation: Number and Percent of Students Scoring in Specified Score Groups on the Social Class Value Orientation and the Occupational Aspirations Scale

Social class value orientation scale	Occupational aspirations scale					
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	Total
			Number			
14 to 17		1				1
18 to 21		1	3			4
22 to 25		7	6			13
26 to 29	1	18	48	22	3	92
30 to 33		5	22	20	8	55
Total	1	32	79	42	11	165
			Percent[1]			
14 to 17		100				100
18 to 21		25	75			100
22 to 25		54	46			100
26 to 29	1	20	52	24	3	100
30 to 33		9	40	36	15	100
Total	1	19	48	25	7	100

[1]Percentages are rounded to the nearest whole percent.

Years Education and Training Expected

The number of years of education and training expected after high school would be expected to be a good predictor of the OAS since the OAS is based on the North-Hatt scale, which is a prestige scale. Usually the higher the prestige of an occupation, the higher the educational requirements. The mean value of this variable indicated that these students expected between 2 and 3 years of further education and training after high school. Great emphasis on educational requirements may not be viewed realistically by the high school senior. Werner and Murray (51)

found that parents as well as their children want high status jobs for the children; therefore, the children enroll in the college preparatory curriculum in high school.

The number of years of education and training expected had a correlation coefficient of .47 with the OAS. This relationship would be expected since more emphasis is placed on the need for education for higher-status jobs. Haller and Miller reported a correlation of .64 between the OAS and years of college planned (16). Sewell and others reported a correlation of .52 between the level of occupational aspiration and the years completed in college 7 years later (16).

The probability of obtaining a certain aspiration level with a given number of years of education and training expected is presented in Table 6. For example, of the 30 students who expected two years of education and training, 30 percent (9) scored in the 15 to 29 range on the OAS, 57 percent (17) scored in the 30 to 44 range, 10 percent (3) scored in the 45 to 59 range, and 3 percent (1) scored in the 60 to 74 range.

Table 6. Additional Education or Training Expected: Number and Percent of Students Expecting a Certain Number of Years of Education or Training After High School, and Scoring in Specified Groups on the Occupational Aspirations Scale

Years of education and training expected after high school	Occupational aspirations scale					Total
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	
			Number			
No response		1	2			3
None		8	8	2		18
Less than 1 year		3	3			6
1 year		2	5	1		8
2 years		9	17	3	1	30
3 years			3			3
4 years	1	6	34	24	1	66
5 years or above		3	7	12	9	31
Total	1	32	79	42	11	165
			Percent[1]			
No response		33	67			100
None		44	45	11		100
Less than 1 year		50	50			100
1 year		25	63	12		100
2 years		30	57	10	3	100
3 years			100			100
4 years	2	9	51	36	2	100
5 years or above		10	22	39	29	100
Total	1	19	48	25	7	100

[1]Percentages are rounded to the nearest whole percent.

Summary

This section has presented the results of the regression of the OAS on selected variables and their relationship to the OAS. The following variables were significantly related to occupational aspirations: mechanical interest, scientific interest, ascendance, social class value orientation, and years of education and training expected.

Variables that could be obtained easily from school records were not significantly related to occupational aspirations.

With the exception of information on education and training desires, variables that could be gathered easily by interview were not significantly related to occupational aspirations.

Testing and inventory instruments that produced information significantly related to occupational aspirations were: Kuder Preference Record-Vocational (mechanical and scientific interest were the scales that were significant), Guilford-Zimmerman Temperament Survey (ascendance was the significant scale), and the social class value orientation inventory.

CAPABILITIES ANALYSIS

The regression of capability scores on selected variables and groups of variables in full and subsequent restricted models was used to determine which characteristics (variables) are related to capability scores, and which groups of variables are related to capability scores.

Significance of Groups of Variables

Before tests of significance were completed, variables were grouped according to the test data and variables concerning family, self, and occupation (see Appendix B). The test data were divided into three groups: Group 1, the Kuder Inventory Group included Variables 11 to 20; Group 2, the Guilford-Zimmerman Group included variables 21 to 30; and Group 3, the Davis Reading Test Group included variables 31 and 32. The Family Group (Group 4) included variables 39 to 43, 47, 55 to 71, and 84 to 87. A further subdivision of this group, the Home Group (Group 5), included variables 40, 42, 47, 55 to 60, and 68 to 71. The Self Group (Group 6) included variables 33, 36, 38, 48, 51, 52, and 78 to 83. The Occupations Group (Group 7) included variables 37, 44 to 46, 53, and 72 to 77.

Each group of variables was dropped from the full model in order to determine which groups were significantly related to capabilities. Group 3 was significant at the 5 percent level (see Appendix D); Groups 2 and 6 were significant at the 10 percent level.

Significance of Individual Variables

Each variable was dropped singly to determine which individual variables were significantly related to capabilities. Variables 32 (reading speed), 51 (age) and 88-89 (race) were significant at the 5 percent level (see Appendix D); variables 31 (reading comprehension) and 78 to 83 (student's estimate of his ability for his chosen occupation) were significant at the 10 percent level.

Reading Comprehension

Reading comprehension, as measured by the Davis Reading Test, was not significant at the 5 percent level (it was at the 10 percent level); however this variable was included in the final model because the score is secured at the same time that reading speed is determined. Reading comprehension had a mean score of 12 and a standard deviation of 8.14. The score of 12 had a percentile rank of 29 on the Davis Reading Test norms, which would indicate that the reading comprehension of this group

Table 7. Reading Comprehension: Number and Percent of Students Scoring in Specified Score Groups on the Reading Comprehension Test and the Capability Index

Reading comprehension score	Capability index score					Total
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	
	Number					
0 to 8	53	8	1			62
9 to 17	23	25	8	2		58
18 to 26	4	19	7	3	4	37
27 to 35		4	2		2	8
Total	80	56	18	5	6	165
	Percent[1]					
0 to 8	85	13	2			100
9 to 17	40	43	14	3		100
18 to 26	11	51	19	8	11	100
27 to 35		50	25		25	100
Total	48	34	11	3	4	100

[1]Percentages are rounded to the nearest whole percent.

was considerably below average for senior boys. Reading comprehension had a correlation of .67 with the capabilities score. This variable had a high correlation (.92) with reading speed and a moderate correlation (.45) with grade point average.

The probability of obtaining a certain capability score with a given reading comprehension score is presented in Table 7. For example, of the 62 students who scored in the 0 to 8 range on the reading comprehension scale, 85 percent (53) scored in the 0 to 14 range on the capability index, 13 percent (8) scored in the 15 to 29 range, and 2 percent (1) scored in the 30 to 44 range.

Reading Speed

Reading speed, as measured by the Davis Reading Test, had a mean score of 18 and a standard deviation of 14.12. A score of 18 ranks at the 36th percentile on normative data for this test. This indicates that the reading speed, like reading comprehension, was below average for senior boys.

Reading speed had a correlation of .79 with the capabilities score. This indicates that as reading speed increases, the capabilities score increases also. Reading speed had a lower correlation with grade point average (.47), years of education and training (.38), and social-class value orientation inventory (.36).

Table 8. Reading Speed: Number and Percent of Students Scoring in Specified Score Groups on the Reading Speed Test and on the Capability Index

Reading speed score	Capability index score					
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	Total
			Number			
0 to 14	62	14	1			77
15 to 29	16	29	8	1		54
30 to 44	2	12	9	3		26
45 to 59		1		1	5	7
60 to 74						
75 to 80					1	1
Total	80	56	18	5	6	165
			Percent[1]			
0 to 14	81	18	1			100
15 to 29	29	54	15	2		100
30 to 44	8	46	35	11		100
45 to 59		14		14	72	100
60 to 74						
75 to 80					100	100
Total	48	34	11	3	4	100

[1]Percentages are rounded to the nearest whole percent.

The probability of obtaining a certain capability score with a given reading speed score is presented in Table 8. For example, of the 77 students who scored in the 0 to 14 range on the reading speed test, 81 percent (62) scored in the 0 to 14 range on the capability index, 18 percent (14) scored in the 15 to 29 range, and 1 percent (1) scored in the 30 to 44 range.

Student's Estimate of His Ability

The student's estimate of his ability for his chosen occupation was a discrete variable with the following categories and correlations with capabilities:

No choice	—.145
Below average	—.014
Somewhat below average	—.094
Average	—.201
Somewhat above average	.345
Very much above average	—.072

This would indicate that a person who feels that he is somewhat above average in ability for his chosen occupation has a better understanding of his capabilities than one who places himself in the other categories indicated. It is likely that the person who feels he is just average in ability for his chosen occupation does

Table 9. Student's Estimate of His Ability: Number and Percent of Students According to Their Estimate of Their Ability for Their Chosen Occupation and Their Score on the Capability Index

Students' estimate of their ability for chosen occupations	Capability index score					
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	Total
			Number			
No response	12	11	1			24
Very much below average		1				1
Somewhat below average	4	1				5
Average	27	14	6			47
Somewhat above average	33	27	11	5	6	82
Very much above average	4	2				6
Total	80	56	18	5	6	165
			Percent[1]			
No response	50	46	4			100
Very much below average		100				100
Somewhat below average	80	20				100
Average	57	30	13			100
Somewhat above average	40	33	14	6	7	100
Very much above average	67	33				100
Total	48	34	11	3	4	100

[1]Percentages are rounded to the nearest whole percent.

not have the proper understanding of the needs of the occupation nor of his ability for it.

The probability of obtaining a certain score on the capability index with a given estimate of the student's ability for his chosen occupation is presented in Table 9. For example, of the 47 students who estimated their ability as average, 57 percent (27) scored in the 0 to 14 range on the capability index, 30 percent (14) scored in the 15 to 29 range, and 13 percent (6) scored in the 30 to 44 range.

Age

Age in months had a mean of 218 (18.16 years) and a standard deviation of 7.42. This variable had a correlation of —.31 with the capabilities score. This would indicate that a person who is above the average age for his class would have lower capabilities according to this capabilities index. However, since this relationship is not strong it may indicate that other factors are involved such as promotional policies of the school, attendance of the stu lent, and demands upon the student.

The probability of obtaining a certain capability level with a given age is presented in Table 10. For example, of the 104 students who were in the 215 to 234 months range, 53 percent (55) scored in the 0 to 14 range on the capability index, 31 percent (32) scored in the 15 to 29 range, 10 percent (11) scored in the 30 to 44 range, 2 percent (2) scored in the 45 to 59 range, and 4 percent (4) scored in the 60 to 74 range.

Table 10. Age: Number and Percent of Students of Certain Age Groups (in Months) Scoring in Specified Groups on the Capability Index

Age (months)	Capability index score					Total
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	
			Number			
175 to 194		1				1
195 to 214	22	23	7	3	2	57
215 to 234	55	32	11	2	4	104
235 to 254	3					3
Total	80	56	18	5	6	165
			Percent[1]			
175 to 194		100				100
195 to 214	39	40	12	5	4	100
215 to 234	53	31	10	2	4	100
235 to 254	100					100
Total	48	34	11	3	4	100

[1]Percentages are rounded to the nearest whole percent.

Race

Tumin (45) reported that three conditions had to be met before claims could be made concerning racial differences in intelligence. These conditions are:

1. The distinctive genetic or "racial" homogeneity of the Negro group being tested, as well as that of the white group being tested, must be demonstrated, not assumed.

2. The social and cultural backgrounds of the Negroes and whites being tested or otherwise being measured must be fully equal.

3. Adequate tests of native intelligence and other mental and psychological capacities, with proven reliability and validity, must be used.

Since none of these conditions were met in this study, no effort is made here to measure racial differences in intelligence or capabilities. In fact the relative capability scores in this study probably point to lack of uniformity in these three conditions among the racial groups.

The probability of obtaining a certain capability score with either the white or Negro student is presented in Table 11. For example, of the 44 Negro students, 89 percent (39) scored in the 0 to 14 range on the capability index, 9 percent (4) scored in the 15 to 29 range, and 2 percent (1) scored in the 30 to 44 range.

Table 11. Race: Number and Percent of Students of the White and Negro Races Scoring in Specified Groups on the Capability Index

Race	Capability index score					Total
	0 to 14	15 to 29	30 to 44	45 to 59	60 to 74	
	Number					
White	41	52	17	5	6	121
Negro	39	4	1			44
Total	80	56	18	5	6	165
	Percent[1]					
White	34	43	14	4	5	100
Negro	89	9	2			100
Total	48	34	11	3	4	100

[1]Percentages are rounded to the nearest whole percent.

Summary

This section has presented the results of the regression of the capability scores on selected variables. The following variables

were found significantly related to capability score: reading speed, student's estimate of his ability for his chosen occupation, age, and race. The following groups of variables were found significant: the Guilford-Zimmerman Group, the Davis Reading Group, and the Self Group.

ANALYSIS OF THE DISCREPANCY BETWEEN ASPIRATIONS AND CAPABILITIES, AND RELATIONSHIP OF STUDENTS' PLANS TO LABOR MARKET REQUIREMENTS

Discrepancy Scores

As indicated previously, the differences between aspirations and capabilities of the youths were expressed as discrepancy scores. These discrepancy scores were computed by subtracting the aspiration scores from the respective capability scores and adding 100 to the result, thus eliminating negative scores. Students with discrepancy scores under 100 appear to be over-aspiring relative to their capabilities while those with scores over 100 appear to under-aspire. The regression of these discrepancy scores on the variables under investigation was used to determine which variables are related to the discrepancy scores, and which groups of variables are related to the discrepancy scores.

Significance of Groups of Variables

The groupings of variables used in the discrepancy analysis were the same as those used in the capabilities analysis (see page 17). Each group of variables was dropped from the full model in order to determine which groups were significantly related to the discrepancy score. The Davis Reading Group, which included both speed and comprehension scores, was significant at the 5 percent level (see Appendix E).

Significance of Individual Variables

Each variable was dropped singly to determine which variables are significantly related to the discrepancy scores. Variable 32 (reading speed) was significantly related at the 5 percent level (see Appendix E). Variables 23 (ascendance) and 24 (sociability) were significantly related at the 10 percent level.

Reading Speed

Reading speed, one of the scales of the Davis Reading Test, was the only variable significantly related to the discrepancy score at the 5 percent level. Reading speed had a correlation of .48 with the discrepancy score. This relationship indicates that students with low reading scores tend to have low discrepancy scores—tend to over-aspire considerably for current capabilities. Students with high reading scores tend to have high discrepancy scores—scores above 100 indicate capabilities higher than aspirations.

The probability of obtaining a certain discrepancy score with a given reading speed score is presented in Table 12. Of the 26 students who scored in the 30 to 44 range on the reading speed test, 16 percent (4) scored in the 55 to 69 range on the discrepancy index, which indicates that capabilities are considerably lower than aspirations; 38 percent (10) scored in the 70 to 84 range on the discrepancy index, indicating that capabilities are somewhat lower than aspirations; 38 percent (10) scored in the 85 to 99 range, which indicates capabilities are lower, but not significantly lower, than aspirations, and 8 percent (2) scored in the 100 to 114 range, indicating that capabilities are higher, but not significantly higher, than aspirations.

Table 12. Reading Speed and Discrepancy Score: Number and Percent of Students Scoring in Specified Groups on the Reading Speed Test, with Their Discrepancy Scores

Reading speed score	Discrepancy score: 40 to 54	55 to 69	70 to 84	85 to 99	100 to 114	115 to 129	Total
			Number				
0 to 14	7	26	37	6	1		77
15 to 29	2	6	23	18	5		54
30 to 44		4	10	10	2		26
45 to 59			1		1	5	7
60 to 74							
75 to 80					1		1
Total	9	36	71	34	10	5	165
			Percent[1]				
0 to 14	9	34	48	8	1		100
15 to 29	4	11	43	33	9		100
30 to 44		16	38	38	6		100
45 to 59			14		14	72	100
60 to 74							
75 to 80					100		100
Total	5	22	43	21	6	3	100

[1]Percentages are rounded to the nearest whole percent.

Ascendance

Ascendance, one of the scales on the Guilford-Zimmerman Temperament Survey, was discussed previously under Occupational Aspirations Analysis. This variable was negatively correlated with the discrepancy score.

The probability of obtaining a certain discrepancy score with a given ascendance score is presented in Table 13. Of the 77 students who scored in the 12 to 17 range on the ascendance scale, 4 percent (3) scored in the 40 to 54 range on the discrepancy index indicating capabilities much lower than aspirations; 29 percent (22) scored in the 55 to 69 range indicating capabilities considerably lower than aspirations; 41 percent (32) scored in the 70 to 84 range which indicates capabilities somewhat lower than aspirations; 18 percent (14) scored in the 85 to 99 range which indicates capabilities are lower, but not significantly lower, than aspirations; 4 percent (3) scored in the 100 to 114 range, indicating that capabilities are higher, but not significantly higher, than aspirations; and 4 percent (3) scored in the 115 to 129 range, indicating capabilities significantly higher than aspirations.

Table 13. Ascendance and Discrepancy Score: Number and Percent of Students Scoring in Specified Score Groups on the Ascendance Scale, with Their Discrepancy Scores

Ascendance score	Discrepancy score: 40 to 54	55 to 69	70 to 84	85 to 99	100 to 114	115 to 129	Total
				Number			
0 to 5				3	1		4
6 to 11		5	14	8	2		29
12 to 17	3	22	32	14	3	3	77
18 to 23	5	8	24	9	4	2	52
24 to 30	1	1	1				3
Total	9	36	71	34	10	5	165
				Percent[1]			
0 to 5				75	25		100
8 to 11		17	48	28	7		100
12 to 17	4	29	41	18	4	4	100
18 to 23	10	15	46	17	8	4	100
24 to 30	33	33	34				100
Total	5	22	43	21	6	3	100

[1]Percentages are rounded to the nearest whole percent.

Sociability

Sociability, another of the scales on the Guilford-Zimmerman Temperament Survey, involves having many acquaintances and friends, entering into conversations, liking social activities, seeking social contacts, and seeking limelight as opposed to the opposite of these qualities. Sociability had a mean score of 19 and a standard deviation of 5.68. The mean score would rank at the 50th centile on the norms of the Guilford-Zimmerman, which is almost average for the norm group. This variable was negatively correlated with the discrepancy score.

The probability of obtaining a certain discrepancy score with a given sociability score is presented in Table 14. Of the 38 students who scored in the 12 to 17 range on the sociability scale, 3 percent (1) scored in the 40 to 54 range on the discrepancy index which indicates a wide discrepancy between aspirations and capabilities; 34 percent (13) scored in the 55 to 69 range, indicating capabilities considerably lower than aspirations; 39 percent (15) scored in the 70 to 84 range, indicating a smaller discrepancy; 13 percent (5) scored in the 85 to 99 range, indicating capabilities lower, but not significantly lower, than aspirations; and 11 percent (4) scored in the 100 to 114 range which indicates that capabilities are higher, but not significantly higher, than aspirations.

Table 14. Sociability and Discrepancy Score: Number and Percent of Students Scoring in Specified Score Groups on the Sociability Scale, with Their Discrepancy Scores

Sociability score	Discrepancy score						
	40 to 54	55 to 69	70 to 84	85 to 99	100 to 114	115 to 129	Total
				Number			
0 to 5		1			1		2
8 to 11		1	8	3			12
12 to 17	1	13	15	5	4		38
18 to 23	2	17	27	20	2	2	70
24 to 30	6	4	21	6	3	3	43
Total	9	36	71	34	10	5	165
				Percent[1]			
0 to 5		50			50		100
6 to 11		8	67	25			100
12 to 17	3	34	39	13	11		100
18 to 23	3	24	39	28	3	3	100
24 to 30	14	9	49	14	7	7	100
Total	5	22	43	21	6	3	100

[1]Percentages are rounded to the nearest whole percent.

Relationship of the OAS and Capability Score, and the Discrepancy Score

The relationship between the OAS and the Capability Score, and the Discrepancy Score, are presented in a scatter diagram (Figure 1). The aspiration level of this sample appears to be similar to the findings of Haller and Miller (16). The OAS scores ranged from 14 to 68 on the 72-point scale and had a mean score

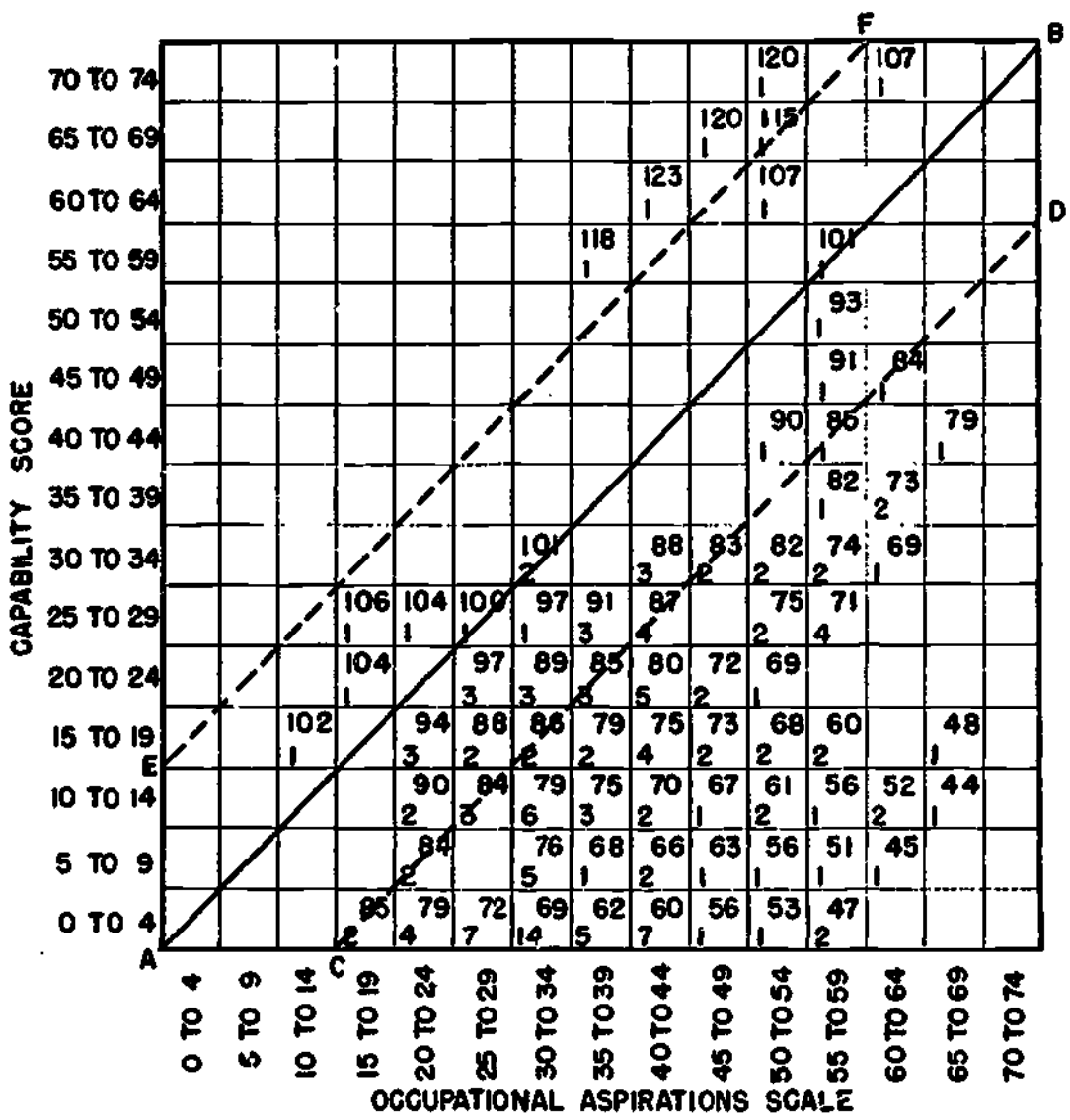

Figure 1. Scatter Diagram Showing Relationship between Capability Scores and Aspirations, with Resulting Discrepancies

The number in the lower half of each cell is the frequency; the number in the upper half is the average discrepancy score for that cell. A score of 100 indicates no difference between occupational aspirations and capabilities. Discrepancy scores below 100 (line AB) indicate aspirations higher than capabilities; scores above 100 (line AB) indicate capabilities above aspirations.

of 40 and standard deviation of 12. The Lenawee County (Michigan) sample of Haller and Miller had a mean score of 36 and a standard deviation of 13. Their Mason (Michigan) sample had a mean score of 37 and a standard deviation of 12. The OAS had a correlation coefficient of .41 with the capabilities score. Literature has indicated that aspiration level is positively associated with intelligence and aptitudes. The OAS had correlations of .42 with general intelligence, .41 with verbal aptitude, and .40 with numerical aptitude. However, these variables were not significantly related to OAS when included in the regression analysis.

Since the capability score was equated with the OAS score and since the mean capabilities score, 18, is considerably below the mean OAS score, 40, it can be concluded that the aspiration level was generally higher than the capability level, as determined in this study. This factor should be considered in determining further education and training programs for high school seniors in this area. These programs should concentrate on upgrading capability levels.

The discrepancy score shown in Figure 1 is the average discrepancy score for the frequencies shown in each cell. For example, the cell frequency of 14 for interval 0 to 4 (capability score) and interval 30 to 34 (OAS) had a mean discrepancy score of 69. The discrepancy score range for the 14 observations in this cell was from 66 to 73. The discrepancy scores in the study had a mean of 77 and a standard deviation of 15.

Discrepancy scores above line AB indicate that capabilities are higher than aspirations. Discrepancy scores on line AB, 100, indicate no difference between the OAS and capabilities. Discrepancy scores below line AB indicate that aspirations are higher than capabilities. Students with discrepancy scores below 85 (1 standard deviation below the no discrepancy score of 100, line CD) probably need counseling to help reduce the discrepancy between their aspirations and capabilities. Students with discrepancy scores above 115 (1 standard deviation above the no discrepancy score of 100, line EF) also probably need counseling to help bring their aspiration level in line with their capability level. Such discrepancies are most serious for under-aspirants and for those over-aspirants who planned no further education or training after high school.

Higher mean discrepancy scores, which in this study meant more nearly congruent aspirations and capabilities, were found in the larger of the study schools. The incidence of these higher scores may be attributable to the functioning of the guidance and

counseling programs in these larger schools and their more nearly adequate basic curricula.

The realistic expression level of the occupational aspirations might be construed as more nearly approximating occupational expectations than the total OAS score.[8] The realistic subset (adjusted to represent a comparable scale) averaged 35 compared with the OAS mean of 40. The mean of the discrepancy scores based on the realistic subset was 83, while that based on the total OAS scores was 77.

Occupational Plans in Relation to Present and Projected Labor Market Requirements

The occupational plans of the students were grouped according to the United States Census occupational classification, and the percentages of students planning occupations in each classification were compared with the percentage of the working population in the U. S. employed in each classification in 1965 and with the projections for 1970 (Table 15).

The relative geographic mobility of the students warrant the use of the United States labor force distribution.[9] If regional data were available for 1965 and 1970 an even wider discrepancy be-

Table 15. Relationship of Student Occupational Plans to Present and Projected Labor Market Requirements for the United States

Occupation	1965 student plans	1965 employment[1]	1970, projected[1]
Professional, technical, and kindred workers	41.8	12.3	13.7
Managerial	5.5	10.1	10.3
Clerical	2.4	15.5	16.3
Sales workers	0.6	6.5	6.5
Craftsmen, foremen, and kindred workers	12.1	12.7	12.8
Operatives	3.0	18.6	17.5
Service workers	4.8	12.9	13.5
Laborers, except farm and mine	2.4	5.4	4.6
Farmers, farm managers, and farm laborers	6.7	6.0	4.8
None reported	20.6		

[1]From the United States Department of Labor, "Manpower Report of the President and a Report on Manpower Requirements, Resources, Utilization, and Training," March, 1966, pp. 43 and 165. Since the students anticipated an average of nearly 3 years of education and training after high school, the 1970 projections appropriately indicate the likely job situation at the time they complete the anticipated education and training.

[8]The OAS score represents scores for both idealistic and realistic expression levels.

[9]Ninety percent of the students indicated willingness to move to another state for a job after training.

tween occupational plans and projected regional requirements would be expected, particularly in the professional and technical category (32).

Approximately 41.8 percent of the students in this sample indicated plans for professional, technical, and kindred occupations. In 1965, 12.3 percent of the working population were employed in this category. Projections for 1970 indicate that 13.7 percent of the working population may be employed in professional, technical, and kindred occupations. This wide discrepancy between occupational plans and projected requirements, like the discrepancy between aspirations and capabilities, points out the need for more realistic occupational and educational information and for increased guidance services to help students choose their careers in line with expected requirements. (The 1965 student plans include senior boys only, while 1965 employment and 1970 projection figures include both males and females of working age.)

A smaller percentage of students indicated plans for most other categories than the projected labor market will require. Many of the students who chose professional, technical, and kindred occupations will seek employment in other classifications.

Projections for managerial occupations show little change in percentage, from 10.1 percent for 1965 to 10.3 percent for the 1970 projection. This classification was chosen by 5.5 percent of this sample.

Clerical occupations will probably increase from 15.5 percent for 1965 to 16.3 percent for 1970. Clerical occupations were chosen by 2.4 percent of this sample. Since more women than men enter this field, probably only a few students in this sample will change from the professional, technical, and kindred classification to clerical.

Only one person in this sample indicated that he had plans for a sales career. The 1970 projections show no expected increase from 6.5 percent for 1965. Many of the students who chose professional, technical, and kindred occupations probably will become established in sales occupations and work toward management positions.

The craftsmen, foremen, and kindred workers occupation was selected by 12.1 percent of this sample. Projections for 1970 (12.8) remain nearly the same as the 1965 employment percentage (12.7).

The operative category was chosen by 3 percent of the students in this sample. In 1965, 18.6 percent of the working population were employed in this category, and projections show a

decline to 17.5 percent for 1970. Persons with mechanical and manual interests and abilities who do not plan to finish college may find employment in the operative and in the craftsmen, foremen, and kindred groups. These groups usually involve vocational training and/or apprenticeships. Information concerning such training programs should be made available.

The laborers (excluding farm) classification was chosen by 2.4 percent of this sample. Employment figures for 1965 show that 5.4 percent of the workers were employed in this area. Projections indicate that 4.6 percent will be employed as laborers. Probably students with lower capabilities or aspirations will be competing for these jobs. Special training programs will be needed to help qualify some of these youths for participation in occupational training programs. Special occupational materials need to be designed for persons with low reading and aptitude levels.

The service workers classification was chosen by 4.8 percent of this sample. There were 12.9 percent of the working population employed in this category in 1965, and projections show a change to 13.5 by 1970. More students from this sample probably will be working in this classification than was indicated.

The farmers, farm managers, and farm laborers classification was chosen by 6.7 percent of this sample. In 1965, 6.0 percent of the work force was engaged in this activity. Projections show a decline to 4.8 percent by 1970.

About one-fifth (20.6 percent) of this sample had not chosen their occupation when these data were collected. The high percentage who chose professional, technical, and kindred occupations (41.8) indicates that many of the students will have to change their plans to other occupational classifications. More occupational and educational counseling is needed to help the students make these choices.

SUMMARY AND CONCLUSIONS

The purposes of this study were to determine the aspirations and capabilities of rural youth in selected low-income counties in Arkansas; to relate aspirations, capabilities, and the discrepancy between aspirations and capabilities to the experience background of the youths studied; and to relate the youths' occupational plans to present and projected laber market requirements. Tests, inventories, and a questionnaire were administered to 165 senior boys in the ten high schools in Little River and Sevier Counties.

The following tests and inventories were administered:

Occupational Aspiration Scale
General Aptitude Test Battery
Kuder Preference Record-Vocational
Guilford-Zimmerman Temperament Survey
Social Class Value Orientation Inventory
Rural-Urban Orientation Inventory
Davis Reading Test

Background information concerning the student, his parents, and his siblings was obtained from school records and a questionnaire.

Significant relationships between dependent and independent variables, ascertained through the use of multiple linear regression techniques, were shown in expectancy tables.

Conclusions from the study may be summarized as follows:

1. Five variables were found to be significantly related to occupational aspirations. These were mechanical interest, scientific interest, ascendance, social class value orientation, and the number of years of education and training planned after high school.

2. The information readily available from school records, and that which could be readily gathered by interview, was not significantly related to occupational aspirations. Test instruments providing information significantly related to the OAS scores were Kuder Preference Record-Vocational (mechanical and scientific interest scales), Guilford-Zimmerman Temperament Survey (ascendance scale), and the Social Class Value Orientation Inventory.

3. The level of occupational aspirations of the senior boys in these two low-income counties was similar to that of similar groups in high-income, more urban areas in Michigan.

One implicit hypothesis when the research began was that the basic school curriculum was essentially adequate, but should be tailored to develop the aspirations of the low-income subjects. A more appropriate hypothesis in light of this study would seem to be that the basic education is not adequate. While the students had aspirations similar to those of students in other areas, their reading skills were below national norms, disqualifying many from having capability scores matching their aspirations.

4. Five variables were found to be significantly related to capabilities. These were reading speed, age, and race (significant

at the 5 percent level) and reading comprehension and the student's estimate of his ability for his chosen occupation (significant at the 10 percent level).

The mean scores from the General Aptitude Test Pattern indicate that the students in the study were similar to the general population test norms for the test except in verbal aptitude and finger dexterity.

5. Reading speed, ascendance, and sociability were found to be significantly related to the discrepancy between aspirations and capabilities (ascendance and sociability were significant at the 10 percent level).

There is apparently little need for counseling and guidance to upgrade aspirations. Approximately 70 percent (116) of the students studied over-aspired significantly for their current capability levels. About 16 percent of these over-aspirants planned little or no further education and training after high school to upgrade their capabilities. Only 13 students had capability scores above aspiration scores; for only 4 of these was their capability score significantly higher than their respective aspiration score.

6. The incidence of higher mean discrepancy scores (in this study more nearly congruent aspirations and capabilities) in the larger of the schools may be attributable to the functioning of the guidance and counseling programs in these larger schools and their more nearly adequate basic school curricula. However, further investigation is needed to verify this conclusion.

7. Wide discrepancies were found between the occupational plans of the students and the projected U. S. needs for 1970 in some occupational categories. Nearly 42 percent of the students chose professional, technical, and kindred occupations, while the projected need for 1970 for these occupations is only about 14 percent of the work force. Agricultural occupations (farmers, farm managers, and farm laborers) were chosen by a slightly greater proportion of the students than the projected U. S. needs would warrant. However, with one-third of the students living on farms and the general prominence of agriculture in the region, the plans may be reasonable. The student plans in all other occupational categories were below projected national needs for 1970.

8. Education and training programs and occupational information services for placing participants in occupations providing adequate incomes should consider the following:

A. The inclusion of remedial and/or developmental read-

ing in both the elementary and secondary school curricula.

B. The development of an occupational information unit in each department in the high schools (for example, the business education department would place special emphasis on the occupations available in that field).

C. The establishment of guidance services, at least on a part-time basis, for those high schools without counselors.

D. The development of special training programs for students with low capabilities in an effort to qualify them for participation in the regular vocational training programs.

E. The collection and utilization of the following test and background information in the counseling of program participants: occupational aspirations, mechanical and scientific interests, ascendance traits, social class value orientation, reading speed, the number of years of education and training expected by the student after high school, the student's estimate of his ability for his chosen occupation, and his age.

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APPENDIX A

Questionnaire Used Showing Number and Percent of Responses

Schedule Number_____

THE OCCUPATIONAL PLANS OF HIGH SCHOOL YOUTH[1]

Student:

This survey is an attempt to get a better picture of the problems you young people face in choosing your life's work and the attitudes you have toward these problems. By carefully filling out this questionnaire you will help us gain a better knowledge of how these problems look from where you stand. This information will be of great value in developing counseling, education, and training programs for high school youth. For this reason we are anxious to have you answer the questions on this form to the best of your ability.

PLEASE FOLLOW THE DIRECTIONS:

1. Read each item carefully. Answer to the best of your knowledge.
2. BE SURE TO ANSWER EACH QUESTION. Where there are brackets, fill in an "X". Be sure that your "X" is squarely in the proper bracket before your choice. Where only a space is left, enter the words or figures called for.
3. There are several questions which refer to parents. If for any reason you are not living with your parents, answer for the person who acts as your parent or guardian.
4. If you have any comment to make, if you do not understand any item, if your attitudes differ from those given, or if you have problems which we failed to mention, write about them on the margin close to the items near them in meaning.

I. ABOUT MYSELF

1. MY NAME IS:_____.
2. MY MAILING ADDRESS IS:_____.
3. THE NAME OF MY HIGH SCHOOL IS:_____.
4. THE NUMBER OF YEARS I HAVE ATTENDED THIS HIGH SCHOOL IS:_____.

Transferred[1]		All 4 years[1]	
19	11.5	146	88.5

5. MY AGE (to the nearest birthday) IS:_____,

   AND THE DATE OF MY BIRTH WAS _____ _____ _____.
   Month Day Year

[1]From here on, the first number shown is the number who responded in this way to the question, and the second number is the percent of all responses.

6. I MAKE MY REGULAR HOME WITH:

( ) my own parents.	129	78.2
( ) a parent and a step-parent.	12	7.3
( ) one parent only.	10	6.1
( ) my grandparents.	6	3.6
( ) an uncle or aunt.	5	3.0
( ) other (specify). _____	3	1.8

7. NUMBER OF **SEMESTERS** OF EXTRA CURRICULAR ACTIVITIES IN WHICH I HAVE ACTIVELY PARTICIPATED ARE: (Check the ones in which you participate regularly and add to the list if necessary.) 1 year = 2 semesters.

( ) athletics	( ) National Honor Society	( ) student council
( ) band		( ) science club
( ) chorus	( ) 4-H, FFA, or NFA	( ) FTA
( ) library	( ) school paper	( ) Business Club
( ) _____	( ) annual	( ) _____
	( ) _____	

8. NUMBER OF **SEMESTERS** OF THE FOLLOWING HIGH SCHOOL SUBJECTS I HAVE STUDIED ARE: (Add other vocational subjects if necessary.)

( ) business education	( ) music
( ) vocational agriculture	( ) other _____
( ) industrial arts	

9. I LIVE:

( ) on a farm	55	33.3
( ) in the open country but not on a farm.	35	21.2
( ) in a village of under 2,500.	19	11.5
( ) in a town of 2,500-10,000.	56	34.0

10. OF ALL THE MEN I KNOW WELL, THE ONE I ADMIRE MOST IS:
HIS NAME:_____.
HIS OCCUPATION (job title):_____.
HIS RELATIONSHIP TO ME (friend, relative, teacher, minister, etc.):
_____.

II. ABOUT MY CHOICE OF A LIFE'S OCCUPATION

1. THE OCCUPATIONS WHICH I HAVE THOUGHT ABOUT GOING INTO ARE:
1. _____ 2. _____

2. THE OCCUPATION THAT I PLAN TO FOLLOW IS: (Indicate a particular type of job.) _____

3. AS TO MY KNOWLEDGE OF THE WORK I INTEND TO ENTER:

( ) I have good knowledge because I have worked at it.	34	20.6
( ) I have good knowledge because I have relatives or friends who work at it.	17	10.3
( ) I have a general knowledge, but I don't know much about the details of it.	44	26.7
( ) I don't know much about it yet, but I will find out by experience on the job.	15	9.1
( ) I don't know much about it yet, but I will find out when I go on to school.	34	20.6
( ) I don't know because I have not yet made a choice.	21	12.7

4. FOR THE OCCUPATION I HAVE CHOSEN I THINK MY ABILITY IS:

( ) very much above the average.	6	3.6
( ) somewhat above the average.	82	49.7
( ) just average.	47	28.5
( ) somewhat below average.	5	3.0
( ) very much below average.	1	.6
( ) I don't know because I have not yet made a choice.	24	14.6

5. IN THE OCCUPATION I HAVE CHOSEN I CAN EXPECT HELP IN GETTING STARTED:

( ) from my father or mother who is in this type of work.	30	18.2
( ) from relatives who are in this type of work.	18	10.9
( ) from friends who are in this type of work.	44	26.7
( ) from no one.	41	24.8
( ) I don't know because I have not yet made a choice	32	19.4

6. IF I WERE ABSOLUTELY FREE TO GO INTO ANY KIND OF WORK I WANTED, MY CHOICE WOULD BE: _____

7. THE TYPE OF WORK I WOULD LIKE TO BE DOING WHEN I AM 30 YEARS OLD IS: _____

8. THE NUMBER OF YEARS TRAINING AND EDUCATION I PLAN TO GET AFTER HIGH SCHOOL IS:

( ) none.	18	10.9
( ) less than 1 year.	6	3.6
( ) 1 year.	8	4.9
( ) 2 years.	30	18.2
( ) 3 years.	3	1.8
( ) 4 years.	66	40.0
( ) 5 years or more.	31	18.8
no response[2]	3	1.8

9. I WOULD BE WILLING TO MOVE TO ANOTHER STATE (other than Texarkana, Texas) AFTER TRAINING IN ORDER TO GET A JOB:

( ) yes.	150	90.9
( ) no.	10	6.1
no response.	5	3.0

10. THE NAME AND LOCATION OF THE SCHOOLS I AM THINKING ABOUT ATTENDING ARE:

	Name of school	Location of school
1.	_____	_____
2.	_____	_____

11. THE COURSES OF STUDY I AM THINKING ABOUT TAKING ARE:
1. _____
2. _____

III. ABOUT MY PARENTS

1. MY FATHER'S OCCUPATION IS: (If living with step-father, grandfather, or other male, tell his occupation.) (Specify the kind of work he does).
_____

[2]No response to questionnaire statement.

2. MY MOTHER:

( ) has no job outside the home.	110	66.7
( ) has a part-time job outside the home.	16	9.7
( ) has a full-time job outside the home.	38	23.0
no response.	1	.6

HER JOB IS: _____.

3. IF FATHER IS A FARMER HE IS:
( ) owner ( ) renter ( ) laborer
IF OWNER. HOW MANY ACRES DOES HE OWN?
CROPLAND _____ TOTAL _____
IF RENTER. HOW MANY ACRES DOES HE RENT?
CROPLAND _____ TOTAL _____

4. MY FATHER'S EDUCATION CONSISTED OF:

( ) 5 grades or less.	23	13.9
( ) 6-8 grades.	46	27.9
( ) 9-11 grades.	26	15.7
( ) 12 grades.	37	22.4
( ) above 12 grades.	15	9.1
( ) college degree.	9	5.5
no response.	9	5.5

5. WHERE DID YOUR FATHER LIVE (mostly) DURING THE FIRST FIVE YEARS OF HIS LIFE?

( ) on a farm.	113	68.5
( ) in the open country but not on a farm.	15	9.1
( ) in a village of under 2,500 population.	13	7.9
( ) in a town of 2,500-9,999 population.	3	1.8
( ) in a city of 10,000 to 50,000 population.	4	2.4
( ) in a city of over 50,000 population.	0	0
( ) I don't know.	17	10.3

6. MY MOTHER'S EDUCATION CONSISTED OF:

( ) 5 grades or less.	6	3.6
( ) 6-8 grades.	32	19.4
( ) 9-11 grades.	39	23.6
( ) 12 grades.	56	33.9
( ) above 12 grades.	16	9.7
( ) college degree.	8	4.9
no response.	8	4.9

7. WHERE DID YOUR MOTHER LIVE (mostly) DURING THE FIRST FIVE YEARS OF HER LIFE?

( ) on a farm.	100	60.6
( ) in the open country but not on a farm.	15	9.1
( ) in a village of under 2.500 population.	23	13.9
( ) in a town of 2,500-9,999 population.	7	4.3
( ) in a city of 10,000 to 50,000 population.	3	1.8
( ) in a city of over 50,000 population.	1	.6
( ) I don't know.	16	9.7

8. COMPARED WITH THE INCOME OF THE FAMILIES IN THIS AREA, THE INCOME OF MY PARENTS IS:

( ) one of the highest incomes.	7	4.2
( ) higher than average.	43	26.1
( ) just average.	100	60.6
( ) less than average.	12	7.3
( ) one of the lowest incomes.	2	1.2
no response.	1	.6

IV. ABOUT ME AND MY PARENTS

1. AS TO THE KIND OF JOB I GO INTO. MY PARENTS:

( ) want me to have a very important job.	53	32.1

( ) want me to have a job that is quite a bit better than most jobs around here.	59	35.8
( ) want me to have a job that is a little bit better than most jobs around here.	25	15.1
( ) feel that the job I take should be as good as most jobs around here.	16	9.7
( ) do not care how good the job I go into is.	9	5.5
no response.	3	1.8

2. AS TO ANY FURTHER HELP FROM MY FOLKS IN GETTING A START OR IN CONTINUING MY EDUCATION AND TRAINING AFTER HIGH SCHOOL, MY PARENTS WOULD BE:

( ) financially able to help me a great deal.	34	20.6
( ) financially able to give me some help.	99	60.0
( ) financially able to give me no help.	30	18.2
no response.	2	1.2

V. ABOUT MY BROTHERS AND SISTERS

1. BELOW IS THE NAME, SEX, AGE, HIGHEST GRADE COMPLETED IN SCHOOL, OCCUPATION, AND PLACE OF RESIDENCE OF MY BROTHERS AND SISTERS: (Start with the oldest brother or sister and include all brothers and sisters.) If in school, put "student" under occupation. If sister is married and not working outside the home, put "housewife".

	Name	Male or Female	Age	Highest Grade	Occupation	Place of Residence (town and state)
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Educational status of eldest sibling		
No response.	7	4.2
No sibling.	14	8.5
Younger sibling.	41	24.9
Older sibling—didn't finish high school.	5	3.0
Older sibling—completed high school.	51	30.9
Older sibling—attended college.	32	19.4
Older sibling—completed college.	15	9.1

VI. ABOUT MY HOUSE

1. OUR HOME IS:

( ) owned.	143	86.7
( ) rented.	20	12.1
no response.	2	1.2

2. THE NUMBER OF PERSONS WHO LIVE AT OUR HOUSE IS: ____

3. THE NUMBER OF ROOMS IN OUR HOUSE IS: _____.
(Do not include basements, bathrooms, porches, closets, and halls.)

4. THE CONSTRUCTION OF OUR HOUSE IS:

( ) brick.	16	9.7
( ) unpainted frame.	18	10.9
( ) painted frame.	107	64.9
( ) other. (Specify) _____.	23	13.9
no response.	1	.6

5. THE LIGHTING IN OUR HOUSE IS:

( ) oil lamps.	2	1.2
( ) electric.	163	98.8

( ) gas, mantel, or pressure lamps.
( ) other. (Specify) _____.

6. THE KIND OF REFRIGERATOR WE HAVE IS:		
( ) ice.	6	3.6
( ) gas or electric.	158	95.8
( ) none.	1	.6
7. WE HAVE A DEEP FREEZE LOCKER AT OUR HOME:		
( ) yes.	93	56.0
( ) no.	71	43.4
no response.	1	.6
8. WE HAVE RUNNING WATER IN OUR HOME:		
( ) yes.	126	76.0
( ) no.	39	24.0
9. WE TAKE A DAILY NEWSPAPER:		
( ) yes.	99	60.0
( ) no.	65	39.4
no response.	1	.6
10. WE HAVE A RADIO:		
( ) yes.	156	94.5
( ) no.	9	5.5
11. WE HAVE A TELEVISION SET:		
( ) yes.	155	93.9
( ) no.	8	4.9
no response.	2	1.2
12. WE HAVE A CAR (other than a truck):		
( ) yes.	137	83.0
( ) no.	28	17.0
13. WE HAVE A TELEPHONE:		
( ) yes.	103	62.4
( ) no.	62	37.6
14. WE HAVE A POWER WASHING MACHINE:		
( ) yes.	136	82.4
( ) no.	29	17.6
15. MY FATHER GOES TO CHURCH AT LEAST ONCE A MONTH:		
( ) yes.	86	52.1
( ) no.	67	40.6
no response.	12	7.3
16. MY MOTHER GOES TO CHURCH AT LEAST ONCE A MONTH:		
( ) yes.	129	78.2
( ) no.	34	20.6
no response.	2	1.2

17. LIST NAME AND ADDRESS OF TWO PEOPLE (not your parents) WHO SHOULD ALWAYS KNOW WHERE TO CONTACT YOU:

	Name	Address
1.	_____	_____
2.	_____	_____

GO BACK AND CHECK TO SEE IF YOU HAVE ANSWERED EVERY QUESTION. THANK YOU

APPENDIX B

Appendix Table 1. Variable Identification

Variable number	Identification
1.	Occupational aspiration scale
2.	General intelligence
3.	Verbal aptitude
4.	Numerical aptitude
5.	Spatial perception
6.	Form perception
7.	Clerical perception
8.	Motor coordination
9.	Finger dexterity
10.	Manual dexterity
11.	Outdoor interest
12.	Mechanical interest
13.	Computational interest
14.	Scientific interest
15.	Persuasive interest
16.	Artistic interest
17.	Literary interest
18.	Musical interest
19.	Social service
20.	Clerical interest
21.	General activity
22.	Restraint
23.	Ascendance
24.	Sociability
25.	Emotional stability
26.	Objectivity
27.	Friendliness
28.	Thoughtfulness
29.	Personal relations
30.	Masculinity
31.	Reading comprehension
32.	Reading speed
33.	Grade point average
34.	Rural-urban orientation inventory
35.	Social-class value orientation
36.	Number of semesters of extra curriculum activities
37.	Where student expects to get help
38.	Years education and training expected
39.	Father's education
40.	Where father lived first 5 years
41.	Mother's education
42.	Where mother lived first 5 years
43.	Student's estimate of parent's income
44.	Importance of job parents want for son
45.	Further help for education and training
46.	North-Hatt score student's occupation
47.	Number of persons living at home
48.	Number of semesters of vocational subjects
49.	Capabilities score
50.	Discrepancy score
51.	Age in months
52.	Number of semesters of vocational agriculture
53.	North-Hatt score father's occupation
54.	Number of senior boys in class
(55-60)	Regular home of the student
55.	Own parent
56.	Parent-step parent
57.	One parent only
58.	Grand parents
59.	Uncle or aunt
60.	Other
(61-67)	Educational status of eldest sibling
61.	No response
62.	No sibling
63.	Younger sibling
64.	Older sibling –didn't finish high school
65.	Older sibling—completed high school
66.	Older sibling—attended college
67.	Older sibling — completed college
(68-71)	Where student lives
68.	On farm
69.	In open country
70.	Village of under 2,500
71.	Village of over 2,500
(72-77)	Knowledge of work planned
72.	No choice
73.	Learn in school
74.	Learn on job
75.	General knowledge—no details
76.	Learn from friends
77.	Own experience
(78-83)	Student's estimate of ability for job
78.	No choice
79.	Below average
80.	Somewhat below average
81.	Average
82.	Somewhat above average
83.	Very much above average
(84-87)	Mother's work outside of home
84.	No response
85.	No job
86.	Part-time job
87.	Full-time job
(88-89)	Race
88.	White
89.	Negro
(90-82)	Father's church attendance
90.	No response
91.	Yes
92.	No

APPENDIX C

Appendix Table 2. Significance of Groups of Variables in the Analysis of the Occupational Aspirations Scale

Group	R^2_R [1]	df [2] f_1/f_2	F
School records	.6197	5/132	.912
Interview	.6060	8/132	1.184
GATB and inventory	.5624	11/132	2.285*
Kuder	.5372	4/132	8.541*
Guilford-Zimmerman	.6150	3/132	2.081

[1] R^2_R = multiple R^2 for restricted model;

R^2_F = (.6324) = multiple R^2 for full model.

[2] df = degrees of freedom; f_2 = 132.

* Significant at .05 level.

Appendix Table 3. Significance of Individual Variables in the Analysis of the Occupational Aspirations Scale

Variable deleted [1]	R^2_R [2]	$R^2_F - R^2_R$	df [3] f_1	F
2	.6321	.0003	1	.092
3	.6323	.0001	1	.022
4	.6323	.0001	1	.018
5	.6324			
6	.6308	.0016	1	.580
7	.6285	.0039	1	1.414
8	.6224	.0100	1	3.582
9	.6303	.0021	1	.737
10	.6293	.0031	1	1.104
11	.6279	.0045	1	1.611
12	.5749	.0575	1	20.624*
13	.6321	.0003	1	.106
14	.5978	.0346	1	12.429*
23	.6177	.0147	1	5.278*
24	.6249	.0075	1	2.692
28	.6314	.0010	1	.350
33	.6266	.0058	1	2.078
34	.6312	.0012	1	.414
35	.6172	.0152	1	5.465*
36	.6313	.0011	1	.389
38	.6171	.0153	1	5.478*
39	.6316	.0008	1	.275
41	.6322	.0002	1	.078
44	.6297	.0027	1	.974
46	.6324			
48	.6281	.0043	1	1.541
51	.6319	.0005	1	.190
53	.6322	.0002	1	.063
54	.6322	.0002	1	.053
90-92	.6273	.0051	2	.912

[1] See Appendix B for identification of variables.

[2] R^2_R = multiple R^2 for restricted model;

R^2_F = (.6324) = multiple R^2 for full model.

[3] df = degrees of freedom; f_2 = 132.

* Significant at .05 level.

APPENDIX D

Appendix Table 4. Significance of Groups of Variables in the Analysis of Capability Scores

Group	R^2_R [1]	$R^2_F - R^2_R$	df [2] f_1/f_2	F
Kuder	.8272	.0205	10/94	1.266
Guilford-Zimmerman	.8149	.0328	10/94	2.025**
Davis Reading	.7439	.1038	2/94	32.034*
Family	.8096	.0381	23/94	1.023
Home	.8371	.0106	11/94	.595
Self	.8067	.0410	11/94	2.304**
Occupations	.8424	.0053	10/94	.331

[1] R^2_R = multiple R^2 for restricted model;

R^2_F = (.8477) = multiple R^2 for full model.

[2] df = degrees of freedom; f_2 = 94.

* Significant at .05 level.

** Significant at .10 level.

Appendix Table 5. Significance of Individual Variables in the Analysis of Capability Scores

Variable deleted [1]	R^2_R [2]	$R^2_F - R^2_R$	$\frac{df}{f_1}$ [3]	F
11	.8477			
12	.8477			
13	.8431	.0046	1	2.831
14	.8470	.0007	1	.443
15	.8438	.0039	1	2.429
16	.8443	.0034	1	2.099
17	.8465	.0012	1	.753
18	.8477			
19	.8426	.0051	1	3.157
20	.8457	.0020	1	1.224
21	.8430	.0047	1	2.914
22	.8418	.0059	1	3.624
23	.8467	.0010	1	.617
24	.8416	.0061	1	3.782
25	.8477			
26	.8424	.0053	1	3.300
27	.8467	.0010	1	.637
28	.8460	.0017	1	1.093
29	.8440	.0037	1	2.309
30	.8477			
31	.8407	.0070	1	4.345**
32	.7938	.0539	1	33.318*
33	.8436	.0041	1	2.522
34	.8477			
35	.8467	.0010		.636
36	.8416	.0061	1	3.751
37	.8477			
38	.8461	.0016	1	1.028
39	.8477			
40	.8456	.0021	1	1.136
41	.8474	.0003	1	.174
42	.8454	.0023	1	1.409
43	.8436	.0041	1	2.539
44	.8477			
45	.8477			
46	.8477			
47	.8445	.0032	1	1.979
48	.8450	.0027	1	1.662
51	.8339	.0138	1	8.556*
52	.8477			
53	.8477			
54	.8454	.0023	1	1.384
55-60	.8405	.0072	5	.893
61-67	.8299	.0178	6	1.838
68-71	.8457	.0020	3	.407
72-77	.8424	.0053	5	.662
78-83	.8277	.0200	5	2.467**
84-87	.8465	.0012	3	.248
88-89	.8305	.0172	1	10.639*
Final model Nos. 31, 32, 51, 78-83, 88-89	.6971	.1506	62	1.500

[1] See Appendix B for identification of variables.

[2] R^2_R = multiple R^2 for restricted model;

R^2_F = (.8477) = multiple R^2 for full model.

[3] df = degrees of freedom; f_1 = 94.

* Significant at .05 level.

** Significant at .10 level.

APPENDIX E

Appendix Table 6. Significance of Groups of Variables in the Analysis of Discrepancy Scores

Group	R^2_R [1]	$\frac{R_2 \quad R^2}{F \quad R}$	$\frac{df}{f_1/f_2}$ [2]	F
Kuder	.5837	.0424	10/94	1.064
Guilford-Zimmerman	.5881	.0379	10/94	.953
Davis Reading	.5253	.1008	2/94	12.665*
Family	.5547	.0714	23/94	.780
Home	.6145	.0016	11/94	.264
Self	.6020	.0241	11/94	.551
Occupations	.6212	.0049	10/94	.123

[1] R^2_R = multiple R^2 for restricted model;

R^2_F = (.6261) = multiple R^2 for full model.

[2] df = degrees of freedom; f_2 = 94.

* Significant at .05 level.

Appendix Table 7. Significance of Individual Variables in the Analysis of Discrepancy Scores

Variable deleted [1]	R^2_R [2]	$R^2_F - R^2_R$	df [3] / f_1	F
11	.6193	.0068	1	1,692
12	.6258	.0003	1	.068
13	.6262	.0000 [4]	1	
14	.6177	.0084	1	2.094
15	.6241	.0020	1	.487
16	.6262	.0000 [4]	1	
17	.6200	.0061	1	1.522
18	.6260	.0001	1	.004
19	.6170	.0091	1	2.301
20	.6283	.0000 [4]	1	
21	.6250	.0011	1	.275
22	.6258	.0003	1	.073
23	.6085	.0176	1	4.412**
24	.6072	.0188	1	4.728**
25	.6251	.0010	1	.249
26	.6167	.0094	1	2.358
27	.6246	.0014	1	.359
28	.6261			
29	.6238	.0023	1	.561
30	.6254	.0007	1	.174
31	.6166	.0095	1	2.378
32	.5609	.0652	1	16.368*
33	.6265	.0000 [4]	1	
34	.6261			
35	.6282	.0000 [4]	1	
36	.6284	.0000 [4]	1	
37	.6234	.0027	1	.661
38	.6220	.0041	1	1.013
39	.6287	.0000 [4]	1	
40	.6252	.0009	1	.220
41	.6209	.0052	1	1.298
42	.6271	.0000 [4]	1	
43	.6233	.0028	1	.687
44	.6261			
45	.6238	.0023	1	.558
46	.6265	.0000 [4]	1	
47	.6249	.0012	1	.299
48	.6228	.0032	1	.807
49	capability			
50	discrepancy			
51	.6245	.0015	1	.378
52	.6244	.0017	1	.425
53	.6260	.0001	1	.019
54	.6259	.0002	1	.045
55-60	.6179	.0082	5	.408
61-67	.5939	.0322	6	1.348
68-71	.6253	.0008	3	.059
72-77	.6215	.0046	5	.227
78-83	.6207	.0054	5	.268
84-87	.6204	.0057	3	.470
88-89	.6266	.0000 [4]	1	
Significant variables	.2689	.3572	68	1.320

[1] See Appendix B for identification of variables.

[2] R^2_R = multiple R^2 for the restricted model;

R^2_F = (.6261) = multiple R^2 for the full model.

[3] df = degrees of freedom; $f_2 = 94$.

[4] R^2_R exceeds R^2_F due to rounding.

* Significant at .05 level.

** Significant at .10 level.

APPENDIX F

Appendix Table 8. Means, Standard Deviations, and Correlations between Selected Variables and the OAS, Capabilities Score, and Discrepancy Score

Variable identification	Mean	Standard deviation	OAS	Cap. Score	Disc. Score
Occupational aspiration scale (OAS)	39.92	12.24			
Capabilities	17.87	16.37			
Discrepancy	77.37	15.27			
General intelligence	102.15	18.54	.420		
Verbal aptitude	95.93	16.00	.406		
Numerical aptitude	105.60	20.84	.395		
Spatial perception	101.41	18.94	.288		
Form perception	109.80	22.56	.350		
Clerical perception	106.26	14.14	.228		
Motor coordination	106.40	18.54	.366		
Finger dexterity	92.32	20.57	.340		
Manual dexterity	108.74	21.22	.205		
Outdoor interest	43.45	15.61	—.230	.072	.274
Mechanical interest	42.48	10.79	—.356	.111	.324
Computational interest	28.70	7.49	.272	.070	—.097
Scientific interest	42.93	10.38	.407	.258	.006
Persuasive interest	40.86	11.11	—.060	—.103	—.105
Artistic interest	24.50	7.75	.011	.173	.138
Literary interest	16.70	7.08	.153	—.134	—.226
Musical interest	12.16	6.41	.082	.005	—.035
Social service interest	38.82	9.88	—.127	—.341	—.233
Clerical interest	51.67	10.89	.060	—.191	—.270
General activity	18.45	4.81	.172	.219	.077
Restraint	15.58	4.35	.089	.034	—.063
Ascendance	15.45	4.45	.314	.157	—.147
Sociability	19.49	5.68	.240	.171	—.015
Emotional stability	15.87	5.25	.081	—.008	—.081
Objectivity	14.01	5.16	.136	.102	.001
Friendliness	12.85	4.95	—.013	—.029	.034
Thoughtfulness	18.59	4.10	.278	.108	—.121
Personal relations	14.82	4.39	.074	.070	.111
Masculinity	19.28	3.89	.107	.304	.223
Reading comprehension	11.92	8.14	.356	.668	.375
Reading speed	17.95	14.12	.404	.793	.477
Grade point average	2.22	.76	.391	.435	.171
Rural-urban orientation inventory	6.70	3.03	.177	.037	—.088
Social-class value orientation	28.08	2.58	.400	.255	—.041
North-Hatt score—student's occupation	58.76	31.39	.300	.285	.059
Number of persons living at home	4.73	2.12	—.103	—.204	—.105
Number of semesters of vocational subjects	5.45	3.44	—.216	—.148	—.021
Number of semesters of vocational agriculture	3.74	3.32	—.240	—.223	—.054
Semesters of extra-curricular activities	13.29	7.03	.374	.249	.001
North-Hatt score of father's occupation	64.32	10.82	.224	.224	.024
Number of boys in senior class	27.41	13.35	.197	.353	.171
Age in months	217.86	7.42	—.114	—.306	—.008
Years education and training expected [1]	4.89	1.99	.465	.337	.009
Father's education [2]	2.85	1.54	.285	.281	.121
Mother's education [2]	3.27	1.37	.266	.303	.156

[1] Coding for years of education and training expected: 1, none; 2, less than 1 year; 3, 1 year; 4, 2 years; 5, 3 years; 6, 4 years; and 7, 5 or more years.

[2] Coding for parental education: 1, 5 grades or less; 2, 6 to 8 grades; 3, 9 to 11 grades; 4, 12 grades; 5, above 12 grades; 6, college degree.

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The more technical aspects of this study are treated in: James F. Golden, "Aspirations and Capabilities of Rural Youth in Selected Areas of Arkansas in Relation to Present and Projected Labor Market Requirements," unpublished Doctor's dissertation, University of Arkansas, Fayetteville, 1966.

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Coates, Margaret D.
A Follow-Up Study of Selected Graduates from the 1962-1965 Classes of the Pocono Mountains Jr.-Sr. High School to Evaluate the Need for Business Training in Attaining Job Satisfaction.

Pocono Mountain Junior-Senior High School, Swiftwater, Pa.
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POCONO TOWNSHIP HIGH SCHOOL; TANNERSVILLE; PENNSYLVANIA

The purpose of this study was to determine (1) whether the 43 percent of graduates of the Pocono Mountain Junior-Senior High School for the years 1962-1965 who were not enrolled in a regular business course and did not go on to college would have derived greater job satisfaction if they had taken business subjects in high school, (2) which business subjects would have been of most value to the respondents, and (3) the reasons for non-election of such courses while attending high school. A questionnaire was mailed to 193 graduates with a 64 percent (125 students) return. The study revealed that almost half of the female graduates would find business subjects helpful in their present positions, but only a small percentage of the male respondents would find them valuable. Some female graduates (44 percent of employed females) have been able to find office employment as a result of the few business subjects they elected. Typewriting, shorthand, and bookkeeping were the three subjects that most students consider to be most helpful in getting a satisfactory position. (CH)

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A FOLLOW-UP STUDY OF SELECTED GRADUATES FROM THE 1962-1965 CLASSES OF THE POCONO MOUNTAIN JR.-SR. HIGH SCHOOL TO EVALUATE THE NEED FOR BUSINESS TRAINING IN ATTAINING JOB SATISFACTION

by

Margaret D. Coates

Pocono Mountain Jr.-Sr. High School
Swiftwater, Pennsylvania

June, 1966

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CHAPTER I

INTRODUCTION

High school students who pursue the academic or general courses and do not attend college may find themselves unable to secure occupations other than those unskilled jobs that provide little interest, advancement opportunities, or remunerative advantages.

This is evidenced by the time and money currently being spent by the Federal Government on vocational education, anti-poverty measures, and manpower retraining programs. For despite the lowest unemployment rate in years, there is still a high percentage of unemployment among young people under twenty-one years of age. On the other hand, there is a shortage of clerical and secretarial personnel.

Follow-up studies of the students who graduated from the Pocono Mountain Jr.-Sr. High School during the last four years indicate that 31.5 per cent of the graduates attend or attended institutions of higher learning. These studies also show that 25.5 per cent of the graduates completed the business course in high school, and the majority of these business students are employed in offices.

Evidence indicates that these two groups of students have found their high school training satisfactory and adequate for their post-graduate pursuits. This study is concerned with the remaining 43 per cent and whether they have found satisfaction in the work they are doing. Would they have derived greater job satisfaction if they had taken some business courses? If so, why did they not elect

business subjects? What business subjects do they feel would be helpful to them?

The results of this study can guide school personnel in revising the business curriculum. If there is a need for special programs to attract the male students, such a sequence can be developed. Perhaps students need more guidance in selecting at least a few business subjects that can help them in the occupations which they choose after graduation from high school. Until knowledge is available as to the reasons why students did not elect business subjects, the school administrators, guidance counselors, and business teachers can only guess at the reasons for non-election of business courses by non-college-bound students.

Because information is already available on the post-graduate experience of business and college students, this study is limited to those academic and general students who are not attending an institution of higher learning. It is also recognized that the questionnaire method will not always result in accurate answers. Likewise, since the subjects of the study are from the Pocono Mountain region and are, for the most part, still residing in the same area, the results of the investigation are pertinent only to this locality. Because this is a resort area, comprised mainly of small businesses, the results may not be applicable in all communities in the state. In addition, although some of the subjects may express regret at not having elected business subjects, it must be remembered that not all students have the intelligence necessary to successfully complete the

business course.

Definitions of Unusual Terms.--For the purpose of this paper, the following terms are used in a special context:

College Students--This term includes all students who attend any institutions of learning after leaving high school--business colleges, nursing schools, junior colleges, as well as four-year colleges and universities.

Business Students--This term is applied to students who have earned more than four credits in business subjects. Notehand and personal typing are not classified as business subjects.

Keypunch--A business machine which records data by punching holes in cards. The instruction in the operation of this machine is separated from the general term "data processing" because it is a term which is more familiar to high school graduates who wish to enter this particular phase of data processing.

Data Processing - Functional Wiring Principles--The basic principles of the external wiring of control panels to cause the machines to perform the desired operations.

Data Processing - Computer Programming--The writing of instructions (programs) to cause an electronic system to perform a specific task.

It is believed that a number of the students who did not elect business subjects in high school and did not enter college may regret their lack of business training after their graduation from high school. If they remain in the community, most of the girls who

have not developed any marketable skills will have to take unskilled jobs in industry or work as waitresses in the local resorts. Such positions are generally not very interesting nor do they provide many opportunities for advancement. Although many girls marry within a few years after graduation from high school, they will probably find that a high school business course would be advantageous should they find it necessary to earn their own living.

In this resort community many small businesses flourish. Boys who enter the family businesses or establish small enterprises of their own may find a need, particularly for a knowledge of bookkeeping and typewriting. In the Armed Services, a shortage of office skills often exists, and male graduates may find that a high school business course would have helped them to fill this need. Since a great majority of the subjects of this study are male graduates, it is believed that boys look upon the business course primarily as a secretarial course. Probably boys would elect more business subjects if the school offered courses in modern electronic data processing methods.

CHAPTER II

REVIEW OF RELATED LITERATURE

Numerous follow-up studies have been made to determine the relationship of the graduate's high school training to his job or educational activity after graduation.

Results of these studies usually agree with the conclusion reached by George Powers Dye, Jr.[1] that high school graduates who major in business seem to find employment in work related to their curriculum more readily than those who have followed any other curriculum.

On the other hand, some researchers, such as James L. Andersen[2] and Elroy V. Bosshard,[3] find the relationship between the business course taken in high school with post-graduate business employment more pronounced in the experience of the females than of the male students.

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[1]George Powers Dye, Jr., "Survey of Employment Experience of 1963 Graduates of Knoxville High Schools, June through December, 1963" (unpublished Master's dissertation, The University of Tennessee, 1964), p. 75.

[2]James L. Andersen, "A Follow-Up of the 1962 Graduating Class of the Boone United Community High School, as a Basis for Curriculum Appraisal" (unpublished Master's dissertation, Drake University, 1963), p. 22.

[3]Elroy V. Bosshard, "An Evaluation of the Business Education Program of Worthington Senior High School, Worthington, Minnesota" (unpublished Master's dissertation, Mankato State College, 1964), p. 67.

Sister Mary Debrecht,[4] however, in comparing the occupations of non-business graduates with those of graduates who had taken at least three business subjects in high school, reveals that in private high schools almost as many non-business as business graduates find employment in office work.

Reasons for failing to select a curriculum related to post-graduate employment are explored by Norman K. Ahrendt.[5] He points out that the difficulty may be caused by the necessity for selecting a curriculum in the ninth grade. Furthermore, he finds that students who elect the pre-college curriculum are able to make a more suitable selection than those selecting vocational or general courses.

Both Mr. Ahrendt and Nina Elizabeth Williams[6] recommend improvement in guidance services so that the student will be directed into the proper course to prepare him to take his place in the community.

Wayne Kelderman in his study suggests that the guidance and counseling programs are often limited to college prep students.

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[4]Sister Mary David Debrecht, C.P.P.S., "The Occupational Pursuits of the Lower I.Q. Students of the Graduating Classes from Two Catholic High Schools in St. Louis, Missouri, 1954-1956, Inclusive," National Business Education Quarterly, Vol. 29-30, 1960-1962, p. 21.

[5]Norman K. Ahrendt, "Follow-Up Study of Members of the Class of 1959 as to Selection of School Curriculum and Occupational Choice," (unpublished Master's dissertation, Mankato State College, 1962), p. 44.

[6]Nina Elizabeth Williams, "A Follow-Up Study of Selected Graduates of DuPont High School, Old Hickory, Tennessee" (unpublished Master's dissertation, The University of Tennessee, 1952), p. 79.

> Almost all the graduates and drop-outs agree that they should be helped by the school with their course of study or vocational problems as well as with their personal and social adjustment problems . . . Almost all of the graduates and drop-outs (94 per cent) feel that the guidance and counseling program should be considerably improved, mostly in the areas of individual counseling and occupational information.[7]

Although most of these studies establish a significant relationship between the curriculum studied by business students and post-graduate employment, no evidence exists as to whether guidance counselors should encourage more widespread election of business subjects.

Job satisfaction is usually considered an important factor in evaluating the success of the individual. If the student has achieved a reasonable degree of success in his post-graduate employment and does not believe election of business courses would have improved his opportunities for finding satisfactory employment, nothing can be gained by steering such students into business courses. On the other hand, if a significant number of these students would have profited by election of business courses, the guidance counselors must work closely with the business department in presenting to the students the need for realistically choosing courses that can serve as a basis for employment after graduation.

There is some basis for exploring this factor because in

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[7]Wayne A. Kelderman, "A Follow-Up Study of Former Students of the Pella, Iowa, Community High School as a Basis for Curriculum Improvement" (unpublished Master's dissertation, Drake University, 1961), p. 39.

studies where graduates have been asked to state the subjects that they wished they had taken in high school, typing, shorthand, and bookkeeping are frequently listed. This was true in 1948, when W. E. Moser[8] found typing, shorthand, Spanish, and mathematics rated highest as the courses that graduates wished they had taken. It was also true in 1961, when Will E. Jacobs,[9] as a result of his study, learned that more graduates listed business courses than any other group of subjects.

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[8]W. E. Moser, "Graduates Appraise Their High School Courses," California Journal of Secondary Education, Vol. XXIII, March, 1948, p. 170.

[9]Will E. Jacobs, "Follow-Up Study of 1956-1960 Graduates of Wellsville, Kansas, High School" (unpublished Master's dissertation, Kansas State College of Pittsburg, 1961), p. 49.

CHAPTER III

PROCEDURE

The subjects of the study include all graduates from the classes of 1962, 1963, 1964, and 1965 who did not take the business course and who, according to the guidance counselor's records, did not attend any institutions of higher learning.

The questionnaire was chosen as the instrument for obtaining the desired information because of the difficulty of contacting the graduates personally. Several questionnaires which were used in other surveys conducted by the school were studied, and a tentative questionnaire was formulated.

This proposed questionnaire was completed by six graduates from the Pocono Township High School, Tannersville, Pennsylvania, which was one of the high schools that was consolidated into the Pocono Mountain Jr.-Sr. High School in 1961. The questionnaire was also submitted for criticism to two business educators from other high schools and one of the guidance counselors of the Pocono Mountain Jr.-Sr. High School. On the basis of the answers obtained from the former students and the suggestions of the educators and guidance counselor, the questionnaire was revised. Copies were then duplicated on the offset and mailed to the list of subjects.

The list of subjects was compiled from the school's graduation lists. The present senior class was consulted to obtain the current addresses of those students who were no longer living at the

addresses given in the school records. In addition, parents of graduates who had entered the Armed Services were contacted by telephone in order to get their service addresses. A master list was prepared, and a number assigned to each subject.

On March 7, 1966, the questionnaires were mailed to the 193 graduates who were included in the survey. In order to encourage students to be completely frank in their answers, it was not required that they sign the questionnaire. An attempt was made to learn the new addresses for all letters returned by the post office because of a lack of forwarding addresses, and another letter was mailed. Current addresses were found for all except three subjects.

On March 31, 1966, a second letter and another copy of the questionnaire were sent to all students who had not returned the questionnaire.

Beginning April 12, 1966, the researcher called the homes of every subject who had not returned his questionnaire and whose telephone number could be ascertained. In many cases, it was learned that the subject was serving in the Armed Forces; and most of the parents supplied service addresses. A personal letter was written to each graduate who had been called or whose new address had been learned, and a third copy of the questionnaire was enclosed. In addition, a third letter and a copy of the questionnaire were mailed to all subjects whom it was impossible to contact by telephone.

Copies of the questionnaire and covering letters are included in the Appendix.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

During the four-year period from 1962 to 1965, the Pocono Mountain Jr.-Sr. High School graduated 451 students. Questionnaires were mailed to 193 of these graduates. It was impossible to locate the correct addresses of three of these graduates. Also, it was learned that one of the subjects was deceased. Of the remaining 189, questionnaires were returned by 125 of the subjects. These responses constitute a return of 66.14 per cent.

Questionnaires distributed and percentage of response.--Table 1 shows the number of male and female graduates in each class, the number of questionnaires sent, and the number and percentage of replies received.

Since the usual enrollment of the business department is approximately 85 per cent female, this study is more concerned with the female student. The 83.6 per cent response of the female graduates receiving questionnaires makes it possible to draw relatively accurate conclusions about this group.

Through telephone calls, it was learned that twenty-one (15.7 per cent) of the male graduates who did not return their questionnaires are in the Armed Services and are located outside the United States. This may explain the relatively low percentage (59.0 per cent) of male returns.

TABLE 1

NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED

	Year of Graduation				
	1962	1963	1964	1965	Total
Number of Graduates:					
Male	47	48	75	68	238
Female	43	45	67	58	213
Total	90	93	142	126	451
Number Mailed:					
Male	31	28	34	41	134
Female	14	16	12	13	55
Total	45	44	46	54	189
Number Returned:					
Male	13	15	19	32	79
Female	13	16	9	8	46
Total	26	31	28	40	125
Per Cent Returned:					
Male	42.0	53.6	55.9	78.1	59.0
Female	92.9	100.0	75.0	61.5	83.6
Total	57.8	70.5	60.9	74.1	66.1

Course selections of respondents.--Table 2 indicates the high school course selections of the respondents. While a majority of

TABLE 2

HIGH SCHOOL COURSE SELECTIONS OF RESPONDENTS

	Academic		General		Total	
Sex	Number	Per Cent	Number	Per Cent	Number	Per Cent
Female	31	67.4	15	32.6	46	100.0
Male	29	36.7	50	63.3	79	100.0
Totals	60	48.0	65	52.0	125	100.0

the females (67.4 per cent) who returned their questionnaires were

academic students, the opposite was true of the male graduates. Approximately 63.3 per cent of the males took the general course. This breakdown according to course selection is used in many of the tables because it was considered desirable to determine whether the needs for business subjects varied according to the course selection in high school.

Additional education of graduates.--The questionnaires which were returned revealed that not all graduates had previously reported to the high school that they were attending institutions of higher learning. Also, if it was known that a graduate had dropped out of college after only one or two semesters, he was included in the study.

Table 3 indicates that a total of fifty-three (42.4 per cent) of the one hundred twenty-five respondents received some further

TABLE 3

ADDITIONAL EDUCATION RECEIVED BY RESPONDENTS

	Received Additional Education		Did Not Receive Additional Education		
	Number	Per Cent	Number	Per Cent	Totals
Female:					
General Course	5	33.3	10	66.7	15
Academic Course	16	51.6	15	48.4	31
Total Female	21	45.7	25	54.3	46
Male:					
General Course	11	22.0	39	78.0	50
Academic Course	21	72.4	8	27.6	29
Total Male	32	40.5	47	59.5	79
Total Male and Female	53	42.4	72	57.6	125

education after graduation from high school.

Types of educational institutions attended.--Table 4 contains a breakdown of the educational institutions that graduates attended.

TABLE 4

TYPES OF EDUCATIONAL INSTITUTIONS ATTENDED

Types of Institutions	Female		Male		Totals	
	General	Academic	General	Academic	Number	Per Cent
4-year colleges	0	9	1	12	22	41.6
Armed Services (Special Training)	0	1	4	6	11	20.8
Cosmetology	3	2	0	0	5	9.4
Business	0	1	1	1	3	5.7
Nursing	1	2	0	0	3	5.7
Jr. Colleges	0	1	0	1	2	3.7
Technical	0	0	1	1	2	3.7
Correspondence	0	0	2	0	2	3.7
IBM	1	0	0	0	1	1.9
School of Design	0	0	1	0	1	1.9
Extension	0	0	1	0	1	1.9
Totals	5	16	11	21	53	100.0

Many of the twenty-two (41.6 per cent) who enrolled in four-year colleges attended nearby East Stroudsburg State College, some for only one semester. The Armed Forces sent eleven (20.8 per cent) of the graduates to special training classes, including electronics technician school, jet mechanics school, and neuro-psychiatric technique school.

Present employment status of respondents.--From the breakdown of present employment status contained in Table 5, it is evident that some of the above post-graduate education was of short duration.

TABLE 5

EMPLOYMENT STATUS OF RESPONDENTS

Employment Status	Female		Male		Totals	
	Academic	General	Academic	General	Number	Per Cent
Employed Full-Time	13	5	5	24	47	37.6
Employed Part-Time	0	1	0	0	1	.8
Housewife (Employed Full-Time)	2	2	0	0	4	3.2
Housewife (Employed Part-Time)	2	0	0	0	2	1.6
Student (Employed Full-Time)	0	0	0	1	1	.8
Student (Employed Part-Time)	0	0	2	1	3	2.4
Total Employed	17	8	7	26	58	46.4
Unemployed	1	1	0	1	3	2.4
Student	5	0	8	1	14	11.2
Armed Services	1	0	14	21	36	28.8
Housewife	7	6	0	0	13	10.4
No Answer	0	0	0	1	1	.8
Total Respondents	31	15	29	50	125	100.0

The largest group (46.4 per cent) are those who are presently employed and are the subjects who are of major concern in this study.

Since so many high school graduates are in the Armed Services, their experiences and needs must be taken into consideration when curriculum changes are made. Therefore, the opinions of the thirty-six (28.8 per cent) respondents who are in the Armed Services are also considered.

The fourteen (11.2 per cent) students who are still attending college were inadvertently sent questionnaires because they had not informed the school that they had entered college. Their opinions are, for the most part, not included since the study was limited to non-college and non-business graduates.

Types of positions held by respondents and the business subjects they studied.--As shown in Table 6, 24.1 per cent of the employed respondents perform clerical and sales jobs. It is important to note that the majority of these graduates, eleven out of fourteen, are female. Ten of the fourteen subjects are performing clerical work and indicated that they had taken at least one year of typewriting. Six had studied bookkeeping. Thus, even a limited amount of business training had enabled these graduates to gain entry into office employment.

This may not be unusual, for Dr. Elvin S. Eyster points out that "Many students who are not academically inclined or who are not highly motivated to learn . . . eventually seek employment in the business occupations. Some of the business jobs in which these students obtain employment require certain simple skills but none require high-

level technical knowledge or skills."[1]

The next largest group of twelve persons (20.7 per cent) are engaged in personal service occupations. Seven of these subjects are employed as waiters or waitresses, and one as a maid at local reorts. Only two of these had received any typewriting instruction and four had studied some other business subjects.

Eleven (19.0 per cent) of the respondents were employed in semiskilled occupations. Six of these had instruction in typewriting and bookkeeping.

The next largest group (15.5 per cent) are performing unskilled jobs. Only three of these unskilled male workers had taken typewriting. Two had taken business arithmetic and one bookkeeping.

Four of the seven (12.1 per cent) graduates who are classified as semiprofessional are employed at nearby National Drug Company. Their work consists primarily of inoculating eggs with live flue germs and preparing the equipment used in the laboratories.

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[1]Elvin S. Eyster, "A Philosophy of Business Education to Meet Change," Business Education Meets the Challenge of Change (Washington: National Business Education Association, 1966), p. 198.

TABLE 6

TYPES OF POSITIONS HELD BY EMPLOYED RESPONDENTS

Occupations	Female Academic	Female General	Male Academic	Male General	Totals Number	Totals Per Cent
Semiprofessional						
Lab Technician	3	0	0	1	4	
Junior Draftsman	0	0	0	1	1	
Time-Study Man	0	0	0	1	1	
Production Illustrator	0	0	0	1	1	
Total Semiprofessional	3	0	0	4	7	12.1
Clerical and Sales						
Clerk Typist	1	3	0	0	4	
General Clerk	2	0	0	0	2	
Shipping Clerk	1	0	0	0	1	
Cost Clerk	0	1	0	0	1	
Dental Assistant	0	1	0	0	1	
Stock Clerk	0	0	1	0	1	
Desk Clerk	0	0	0	1	1	
Sales Clerk	2	0	0	1	3	
Total Clerical & Sales	6	5	1	2	14	24.1
Personal Service						
Waiter and Waitress	4	1	1	1	7	
Nurse's Aid	1	1	0	0	2	
Practical Nurse	1	0	0	0	1	
Maid at Resort	0	1	0	0	1	
Veterinary Ass't	0	0	0	1	1	
Total Personal Service	6	3	1	2	12	20.7
Fishery Occupations						
Fish Hatchery Worker	0	0	0	1	1	1.7
Skilled Occupations						
Auto Mechanic	0	0	1	1	2	
Ski Mounter	0	0	0	1	1	
Total Skilled Occup.	0	0	1	2	3	5.2
Carried Forward	15	8	3	11	37	

TABLE 6--Continued

Occupations	Female Academic	Female General	Male Academic	Male General	Totals Number	Totals Per Cent
Brought Forward	15	8	3	11	37	
Semiskilled Occupations						
Truck Driver	0	0	0	3	3	
Blouse Presser	1	0	0	0	1	
Looper--Knitting	1	0	0	0	1	
Carpenter	0	0	0	1	1	
Wall-to-Wall Carpet Installer	0	0	0	1	1	
Spot Welder	0	0	0	1	1	
Service Station Attendant	0	0	0	1	1	
Machine Operator	0	0	0	1	1	
Candlemaker	0	0	0	1	1	
Total Semiskilled Oc.	2	0	0	9	11	19.0
Unskilled Occupations						
Inspector Assembly Line	0	0	0	2	2	
Machine Operators	0	0	0	2	2	
Laborer	0	0	1	0	1	
Pressman Helper	0	0	1	0	1	
Floor Helper (Garment Industry)	0	0	0	1	1	
Electrician's Helper	0	0	0	1	1	
Maintenance Mechanic's Helper	0	0	0	1	1	
Total Unskilled Oc.	0	0	2	7	9	15.5
Total All Occupations	17	8	5	27	57	98.3
Occupations Not Known	0	0	1	0	1	1.7
Total Employed	17	8	6	27	58	100.0

It may be significant that the two occupational groups, personal services and unskilled occupations, which are usually considered the least desirable jobs, also contain the greatest percentage of students who did not elect business subjects. A breakdown of the

business subjects which were studied by employed graduates is shown in Table 7.

TABLE 7

BUSINESS SUBJECTS STUDIED BY EMPLOYED GRADUATES

Types of Occupations	No. Employed	Business Subjects Studied: Typewriting No.	Typewriting %	Others No.	Others %	None No.	None %
Clerical & Sales	14	10	71.4	7	50.0	3	21.4
Personal Services	12	2	16.7	4	33.3	8	66.7
Semiskilled Occupations	11	6	54.5	6	54.5	4	36.4
Unskilled Occupations	9	3	33.3	3	33.3	5	55.6
Semiprofessional	7	3	42.9	3	42.9	3	42.9
Skilled Occupations	3	2	66.7	2	66.7	1	33.3
Fishery Occupations	1	0	00.0	0	00.0	1	100.0

Features of Their Jobs That Graduates Like and Dislike Most.--Table 8 contains a list of the features that graduates like most about their jobs. A large number, 46.6 per cent, expressed satisfaction with the type of work they are doing. Returned questionnaires contained such comments as: "I like the challenge of the job," "Getting a chance to learn a trade at very interesting work," "I enjoy assisting him at the chair and greeting his patients," "Typing and working with IBM cards," "The variety of duties that I have is what makes it interesting."

In the Personal Services classification, only three, the nurse's aid, the practical nurse, and the veterinary assistant, expressed any interest in the work itself. Four of the nine who were

engaged in unskilled occupations wrote that they were interested in the learning of a trade. Two waitresses, one waiter, one spot welder, and five unskilled workers found nothing especially desirable about their jobs.

TABLE 8

FEATURES GRADUATES LIKE MOST ABOUT THEIR JOBS

Features	Female		Male		Total	
	Academic	General	Academic	General	Number	Per Cent
Type of Work	7	4	4	12	27	46.6
Meeting People	5	1	0	1	7	12.1
Hours	3	1	0	3	7	12.1
Pleasant Atmosphere	3	0	1	2	6	10.3
Fellow Workers	2	0	0	3	5	8.6
Salary	3	0	1	1	5	8.6
Job Opportunities	0	0	1	2	3	5.2
Responsibility	1	0	0	1	2	3.5
Job Security	1	0	0	0	1	1.7
Benefits	1	0	0	0	1	1.7
Easy Work	1	0	0	0	1	1.7
Employer	1	0	0	0	1	1.7
Steady Work	0	0	0	1	1	1.7
Close to Home	0	0	0	1	1	1.7
No Answers	1	1	1	6	9	15.5

As shown in Table 9, only a few respondents expressed a dislike for any parts of their jobs. Twenty-one (36.2 per cent) of the

TABLE 9

FEATURES GRADUATES DISLIKE MOST ABOUT THEIR JOBS

Features	Female		Male		Total	
	Academic	General	Academic	General	Number	Per Cent
Boring Work	3	1	0	4	8	13.8
Low Pay	1	1	2	3	7	12.1
Type of Work	1	1	0	3	5	8.6
Hours	1	0	2	2	5	8.6
No Chance for Advancement	1	0	0	2	3	5.2
Crowded Working Conditions	1	0	0	2	3	5.2
Fellow Employees	0	1	0	0	1	1.7
Exposed to Incurable Diseases	1	0	0	0	1	1.7
Employers	0	0	0	1	1	1.7
No Answers	9	5	2	5	21	

fifty-eight employed graduates found no reason to dislike their jobs, while 15.5 per cent disliked all features of their work. Boring work constituted the greatest problem with 13.8 per cent of the employed graduates, and low pay was another common complaint. One laboratory technician did not like being exposed to "incurable diseases."

One particularly poignant comment was made by a student who was employed as a general office worker for a small business: "The work is not difficult and there is not much pressure as long as I do my work properly. This situation is good for me because I had no typing

or bookkeeping in school--I am learning as I go along, so to speak, and probably couldn't hold a job in a larger, formal office. The pay is low (without training for any career, I'm not worth much more than I'm getting) and there isn't chance of advancement."

In general, the results indicate that the graduates consider the work itself more important than other factors, such as opportunities for advancement, conditions under which they work, and job security and benefits.

Helpfulness of business subjects in the graduates' present positions.--Subjects of the study were asked to indicate whether they could have taken any business subjects in high school that would have been helpful in their present occupations. Table 10 contains an analysis of their answers.

TABLE 10

GRADUATES WHO BELIEVE BUSINESS SUBJECTS WOULD BE HELPFUL IN THEIR PRESENT OCCUPATIONS

Course Taken	Yes		No		No Answer	Total
	Number	Per Cent	Number	Per Cent		
Female						
Academic	8	47.1	9	52.9	0	17
General	4	50.0	4	50.0	0	8
Total Female	12	48.0	13	52.0	0	25
Male						
Academic	0	00.0	6	85.7	1	7
General	4	15.4	21	80.8	1	26
Armed Services	8	22.9	26	74.3	1	35
Total Male	12	17.7	53	77.9	3	68
Total Male & Female	24	25.8	66	71.0	3	93

As might be expected, more female (48 per cent) than male (17.7 per cent) graduates believe that business subjects would be useful in their present jobs. Since eleven of the twelve females who answered affirmatively are employed in clerical and sales positions, it is possible that the study of additional business subjects would make it possible to increase their opportunities for advancement.

It is also interesting to note that more male graduates (22.9 per cent) who are serving in the Armed Forces would find business subjects helpful than would those who are employed in industry (15.4 per cent).

As shown in Table 11, typewriting, bookkeeping, and shorthand were listed most frequently by the respondents as subjects that would have been helpful in their present occupations.

TABLE 11

BUSINESS SUBJECTS THAT WOULD HAVE BEEN HELPFUL IN GRADUATES' PRESENT POSITIONS

Subject	Female		Male		Armed Services	Total	
	Academic	General	Academic	General		No.	Per Cent
Typewriting	2	1	0	0	4	7	22.7
Bookkeeping	2	1	0	1	3	7	22.7
Shorthand	3	2	0	1	0	6	19.4
Business Machines	0	1	0	0	1	2	6.4
Business Math	0	0	0	1	1	2	6.4
Data Processing	0	0	0	1	1	2	6.4
General Business	0	1	0	0	1	2	6.4
All Bus. Subj.	2	0	0	0	0	2	6.4
Filing	0	1	0	0	0	1	3.2
Total	9	7	0	4	11	31	100.0

Opinions of graduates concerning their ability to get a more satisfactory job.--Graduates were asked whether they were capable of holding more satisfactory jobs than their present ones. Of the fifty-eight employed respondents and thirty-six who are in the Armed Services, only thirteen (13.8 per cent) expressed complete satisfaction with their present positions and did not believe they were capable of holding a more satisfactory position. Table 12 contains an analysis according to course selection.

TABLE 12

OPINIONS OF GRADUATES CONCERNING THEIR ABILITY TO HOLD A MORE SATISFACTORY POSITION

	Armed Services		Employed		Total	
	Academic	General	Academic	General	No.	%
Yes	11	18	17	29	75	79.8
No	4	0	4	5	13	13.8
No Answer	0	3	3	0	6	6.4
Totals	15	21	24	34	94	100.0

Business subjects that graduates believe would have helped them to get a more satisfactory position.--Respondents were equally divided in their opinions as to whether business subjects would help them to get a more satisfactory position. However, as might be expected, there was a great difference of opinion between male and female graduates.

Twenty-one (80.8 per cent) of the employed female graduates believed they could have obtained more satisfactory jobs had they taken

business subjects in high school, and twenty-one (30.9 per cent) of the male graduates were of the same opinion. Table 13 contains an analysis by course selection.

TABLE 13

GRADUATES WHO BELIEVE THEY COULD HAVE OBTAINED A MORE SATISFACTORY JOB HAD THEY TAKEN BUSINESS SUBJECTS IN HIGH SCHOOL

	Female				Male					
	Academic		General		Academic		General		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	14	77.8	7	87.5	6	28.6	15	31.9	42	44.6
No	4	22.2	1	12.5	10	47.6	27	57.4	42	44.6
No Answer	0		0		5	23.8	5	10.7	10	10.8
Totals	18	100.0	8	100.0	21	100.0	47	100.0	94	100.0

The female academic students were quite articulate in discussing their need for some business courses. One student who had taken three years of college work and was working as a waitress suggested: "Put typing and basic business subjects in the academic course because most students do work their way through college, and these subjects would help them financially as well as add the security of having a good job."

Another female graduate who is working at general office work stated: "The academic course does not prepare one for a job of any consequence--if I hadn't thought I was going to college I would have taken the business course."

A number of female respondents expressed the idea that the

school counselors should take each student's qualifications and needs into mind when he is trying to help him decide which course is best for him.

One male student enclosed a letter in which he discussed his experiences as a mail clerk in a local office. Eventually he was transferred to the data processing department where they gave him some study courses. He wrote: "While I was in high school I had no desire to work in an office; thus I saw no reason for taking business courses. After being in data processing for a short time I did realize that it would have been to my advantage to take some business courses."

This points out the necessity of helping students to select appropriate courses, particularly those female academic students whose records of achievement, interests, or financial situations indicate that they may not realize their expectations of entering college. This coincides with the view expressed by Tonne[2] in the American School Board Journal:

> Bright students take shorthand and typewriting as additional subjects apart from their college preparatory subjects, and in many cases, can and do secure jobs, requiring considerable competency on the basis of this limited experience. It is true they are highly motivated. Girls who thought they were going to college and in their senior year find that this is not probable, and therefore recognize the need for a job skill, are ideal candidates for such intensive work.

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[2]Herbert A. Tonne, "Desirable Curriculum Trends in Business Education," The American School Board Journal, February, 1966, p. 25.

Edward T. Chase,[3] in an article entitled "Learning to Be Unemployable," emphasizes the danger in not realistically facing this problem. He cautions:

> Unemployment among youths . . . is a direct consequence of the gross imbalance in our educational system. Its attention has been overwhelmingly concentrated on the 20 per cent of students who go through college. The vocational future of the other 80 per cent has been either ignored or sabotaged by an archaic system of job training.

This is not meant to suggest that students should not take the academic course if they can do the work and intend to go to college, but rather that some business courses should be worked into the schedules of those students whose college ambitions may not materialize. A recent survey made by U.S. News and World Report concluded that:

> Even in today's complex world, a person who did not go to college has a wide choice of rewarding careers. One thing to note, however. It is important to have some kind of skill or special training.[4]

Some of this responsibility rests with the business teachers, who should work with the counselors in guiding these students into the proper selection of the few courses they might be able to work into their schedules. For, as Dr. Paul S. Lomax[5] has pointed out:

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[3]Edward T. Chase, "Learning to Be Unemployable," Harper's Magazine, April, 1963, p. 33.

[4]"Careers Without College: Plenty of Good Ones," U.S. News and World Report, November 29, 1965, p. 68.

[5]Paul S. Lomax, "Changes in the Philosophy of Business Education," Recent and Projected Developments Affecting Business Education, (Washington: National Business Education Association, 1964) p. 13.

> It is well to keep in mind that the largest group of high school students who go directly into employment is the business employed group. It includes both business trained and nonbusiness trained students. And among them are some of the most capable students. In a recent study made of the most able high school graduates of 1960, it was found that one-third of them did not go to college. On the other hand, many of the graduates of below average ability did go to college.

Typewriting, bookkeeping, and shorthand were the subjects that were most frequently listed by graduates as being of value in obtaining more satisfactory jobs. A knowledge of data processing, office machines, keypunch, and general business were also frequently listed. A breakdown is shown on Table 14.

TABLE 14

BUSINESS SUBJECTS THAT GRADUATES INDICATED WOULD HAVE HELPED THEM TO GET MORE SATISFACTORY POSITIONS

Subject	Female	Male	Total
Typewriting	16	9	25
Bookkeeping	15	8	23
Shorthand	18	3	21
Data Processing: Wiring Principles	7	10	17
Office Machines	11	6	17
Keypunch	7	4	11
Office Procedures	4	6	10
Data Processing: Computer Programming	4	6	10
General Business	5	5	10
Business Arithmetic	4	4	8

TABLE 14--Continued

Subject	Female	Male	Total
Business English	3	5	8
Business Law	3	4	7

Opinions of graduates concerning business subjects that would have helped them in operating a business of their own.--Because there are many small businesses in the Pocono Mountain area, graduates were asked whether they felt that election of some business courses in high school would have helped them to have a business of their own. As shown in Table 15, 17.6 per cent of the respondents reported that business subjects would be of some value.

TABLE 15

GRADUATES WHO BELIEVED BUSINESS SUBJECTS WOULD HAVE HELPED THEM IN OPERATING A BUSINESS OF THEIR OWN

	Female				Male				Total	
	Academic		General		Academic		General			
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	3	9.6	2	12.5	2	5.9	15	34.1	22	17.6
No	18	58.0	11	68.8	13	38.2	26	59.1	68	54.3
No Answer	10	32.4	3	18.7	19	55.9	3	6.8	35	28.1
Total	31	100.0	16	100.0	34	100.0	44	100.0	125	100.0

The greatest number who answered affirmatively were male graduates who had taken the general course. Fifteen (34.1 per cent) from this group were of the opinion that business subjects would be valuable in operating their own businesses.

Table 16 contains a breakdown of the number of times graduates considered a business subject to be of value in the operation of their own businesses. Typewriting, business law, and bookkeeping were

TABLE 16

BUSINESS SUBJECTS THAT WOULD HAVE HELPED GRADUATES IN OPERATING A BUSINESS OF THEIR OWN

Subject	Female	Male	Total
Typewriting	4	9	13
Business Law	4	9	13
Bookkeeping	2	10	12
Office Procedures	2	8	10
Business Arithmetic	3	6	9
General Business	3	5	8
Business English	1	6	7
Office Machines	2	5	7
Data Processing: Wiring Principles	1	5	6
Keypunch	1	2	3
Data Processing: Computer Programming	1	1	2
Shorthand	1	1	2

thought to be the most valuable by respondents. Since most of these respondents are interested in owning very small businesses, it is not surprising that the data processing courses and shorthand were considered of value by only a few respondents.

This question was inserted in the questionnaire because of the great demand shown for the bookkeeping and typewriting adult classes which were offered by the Pocono Mountain Jr.-Sr. High School several years ago. Most of the adult students who attended these classes owned small businesses and wished to learn these skills to help them run their businesses more efficiently.

The response of the graduates to this question seems to indicate that they may be too young to have given much consideration to owning their own businesses. It appears that the adult education classes are the most satisfactory means of providing for this need.

Opinions of housewives concerning the value of high school business courses.--Housewives were asked whether they would feel more secure if they had taken some business courses in high school. As shown in Table 17, this group of graduates expressed a great deal of

TABLE 17

OPINIONS OF HOUSEWIVES CONCERNING THE VALUE OF HIGH SCHOOL BUSINESS COURSES

	Academic		General		Total	
	No.	%	No.	%	No.	%
Yes	11	100.0	6	75.0	17	89.5
No	0	0.0	2	25.0	2	10.5
Totals	11	100.0	8	100.0	19	100.0

interest in the value of high school business subjects. Seventeen (89.5 per cent) of the nineteen housewives answered this question affirmatively. Housewives who had taken the academic course in high

school were unanimous in their belief that having taken some business subjects in high school would make them feel more secure if they were faced with the prospect of earning their own living.

The female academic students who were housewives very often wrote comments concerning their regret that they lacked any business training. Many made suggestions similar to that of the student who wrote: "I think that every academic student should have some business subjects in his schedule. If the academic students do not go on to college for some reason, it is so much harder for them to get a good job than a person who has some knowledge of business subjects." This would seem to indicate that the same care should be taken with these students as with those who expected to go to college and did not do so. Guidance counselors and teachers should try to single out these girls who appear to be contemplating matrimony immediately upon graduation from high school and encourage them to take a few business skill subjects.

Table 18 contains a list of the number of times each business subject was considered of value to the housewives. Once again, typewriting, shorthand, and bookkeeping were listed as the most valuable business subjects.

TABLE 18

BUSINESS SUBJECTS THAT HOUSEWIVES BELIEVE WOULD BE HELPFUL TO THEM

Subject	No. of Times Subject Was Checked
Typewriting	15
Shorthand	13
Bookkeeping	13
Keypunch	7
Office Machines	6
Office Procedures	6
Business Arithmetic	5
Business English	4
Data Processing: Wiring Principles	4
Data Processing: Computer Programming	4
Business Law	4
General Business	3

Opinions of members of the Armed Services on the value of business subjects to the graduate who enters the Armed Services.--Of the thirty-six graduates who entered the Armed Services, twenty-one (58.3 per cent) believe it would have been advisable for them to study some business subjects. More graduates who had taken the general course (71.4 per cent) expressed the need for business training than did the academic students (40.0 per cent). This tabulation is shown on Table 19.

TABLE 19

GRADUATES IN THE ARMED SERVICES WHO BELIEVE IT WOULD HAVE BEEN ADVISABLE TO STUDY SOME BUSINESS SUBJECTS IN HIGH SCHOOL

	Academic		General		Total	
	No.	%	No.	%	No.	%
Yes	6	40.0	15	71.4	21	58.3
No	8	53.3	6	28.6	14	38.9
No Answer	1	6.7	0	00.0	1	2.8
Total	15	100.0	21	100.0	36	100.0

Typewriting once again heads the list of subjects which would have been helpful in the Armed Services. As shown in Table 20,

TABLE 20

SUBJECTS THAT WOULD HAVE BEEN HELPFUL TO GRADUATES WHO ARE IN THE ARMED SERVICES

Subjects	No. of Times Checked
Typewriting	15
Data Processing:	
Wiring Principles	9
Computer Programming	9
Bookkeeping	8
Keypunch	6
Office Procedures	6
Business English	6
Office Machines	5
Business Arithmetic	4
Business Law	4

TABLE 20--Continued

Subjects	No. of Times Checked
General Business	4
Shorthand	3

the two data processing courses were next in frequency of listing, followed by bookkeeping, keypunch, and office procedures.

It is significant that, in all questions relating to the business subjects that would be most helpful to graduates, typewriting is most frequently mentioned. Therefore, there is reason to agree with Ray Price that "The personal uses of typewriting should be taught to all students as should the vocational uses. Who knows how they will use it after graduation?"[6]

On May 8, 1966, Dr. Bernard E. Donovan,[7] superintendent of New York City Schools, underscored this need when he announced a program to teach typing to every child in the city. "Typing is necessary for almost everybody today," Dr. Donovan said, and he advocated instruction in the skill for all children regardless of whether they would need it in their future professional life.

Graduates' reasons for not taking business subjects in high school.--Individual graduates gave multiple reasons for not electing business courses in high school. The percentages which are shown in

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[6]Ray Price, Written Statement, April 17, 1966, as reported by Jerre E. Gratz in Major Issues in Business Education, (Cincinnati: South-Western Publishing Company, 1962), p. 84.

[7]The New York Times, May 8, 1966, p. 1.

Table 21 are based on the total number of respondents who answered this question rather than on the total number of reasons given.

TABLE 21

REASONS FOR NOT TAKING VOCATIONAL BUSINESS SUBJECTS IN HIGH SCHOOL

Reasons Given by Female Graduates	Academic No.	Academic %*	General No.	General %*	Total No.	Total %*
Expectations of going to college	24	88.9	0	00.0	24	66.7
Lack of interest in business subjects	2	7.4	3	33.3	5	13.9
Inability to do office work	0	0.0	2	22.2	2	5.6
Desire to attend same classes as friends	1	3.7	0	00.0	1	2.8
More prestige as an academic student	1	3.7	0	00.0	1	2.8
Scheduling difficulties	0	00.0	1	11.1	1	2.8
Unnecessary for beautician work	0	00.0	1	11.1	1	2.8
Greater challenge in academic course	1	3.7	0	00.0	1	2.8
No Answer	4				4	

*Percentages are based on total number of students answering this question: Female Academic - 27; Female General - 9

Reasons Given by Male Graduates						
Lack of interest in business subjects	9	31.0	11	42.3	20	36.4
Lack of interest in office employment	4	13.8	11	42.3	15	27.3
Expectations of going to college	13	44.8	1	3.8	14	25.5
Inability to do office work	2	6.9	4	15.4	6	10.9
Belief that office work required additional training	1	3.4	3	11.5	4	7.3
Belief that it was a girls' course	0	00.0	2	7.7	2	3.6
More prestige as an academic student	0	00.0	1	3.8	1	1.8
Indecision as to future goals	1	3.4	0	00.0	1	1.8

*Percentages are based on total number of students answering this question: Male Academic - 29; Male General - 26

Twenty-four (66.7 per cent) of the thirty-six females gave as their reason for non-election of business subjects that they had expected to go to college and therefore took the academic course. Most females who took the general course in high school gave as their reasons lack of interest in the subjects and the belief that they were incapable of doing the work.

On the other hand, twenty (36.4 per cent) of the fifty-five male graduates who answered this question gave lack of interest in business subjects as their reason for non-election of business courses. Lack of interest in office employment was also frequently mentioned.

One male graduate wrote: "At one time I was given the impression or I jumped to the conclusion that a person must take the academic course in order to get into college (business college) . . . Now I have found that it would have made my work at business college easier had I taken the business course. I found out a little late. I think some other students might have been misled."

Non-college students who believe they could have been helped to finance a college education if they had taken some business subjects. --Table 22 indicates that only nine (7.2 per cent) of the one hundred twenty-five respondents thought they could have been helped to finance a college education if they had taken some business subjects. Typewriting, shorthand, and bookkeeping were the subjects most frequently mentioned.

Therefore, although many authorities, such as,

S. J. Wanous[8] recommend that high schools provide business programs to assist college-bound students to obtain part-time employment, the results of this study seem to indicate that very few students were unable to go to college because they did not have the proper skills to help finance such education. More conclusive evidence of the need for providing such courses could be obtained by contacting those students who are in college.

TABLE 22

NON-COLLEGE STUDENTS WHO BELIEVE THEY COULD HAVE BEEN HELPED TO FINANCE A COLLEGE EDUCATION IF THEY HAD TAKEN SOME BUSINESS SUBJECTS

	Female		Male		Total	
	No.	%	No.	%	No.	%
Yes	6	13.2	3	3.8	9	7.2
No	8	17.4	17	21.5	25	20.0
No Answer	32	69.4	59	74.7	91	72.8
Total	46	100.0	79	100.0	125	100.0

Table 23 contains a listing of the business subjects non-college students believe would have been helpful to them in financing

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[8]S. J. Wanous, "Preparation and Retraining of Business Teachers for Change," Business Education Meets the Challenges of Change (Washington: National Business Education Association, 1966), p. 226.

a college education.

TABLE 23

SUBJECTS THAT WOULD HAVE BEEN HELPFUL
TO GRADUATES IN FINANCING A COLLEGE EDUCATION

Subject	No. of Times Checked
Typewriting	5
Shorthand	4
Bookkeeping	2
Business Mathematics	1
Filing	1
All Business Subjects	1

Reasons given by graduates for not attending college.--

Table 24 contains a list of the reasons that were given by graduates for not actually attending college even though they had expected to do so. Many of tne respondents gave multiple reasons; therefore, no totals have been taken nor percentages figured.

TABLE 24

REASONS GIVEN BY GRADUATES FOR NOT ATTENDING COLLEGE

	Female	Male	Total
Entered the Armed Services	0	25	25
Poor grades in high school	3	12	15
Necessity of working to finance a college education	3	6	9
Lack of interest in spite of family pressure	2	6	8
Marriage	7	1	8
Financial Inability	4	3	7
Interest in work not requiring college	2	5	7

TABLE 24--Continued

	Female	Male	Total
College Dropout--Inability to do the work	4	1	5
Poor score on College Boards	1	3	4
Expectations of scholarship	1	0	1

"Service in the Armed Forces" and "Poor Grades" were reasons given by the majority of males for not attending college. The majority of females gave marriage as their reason for not entering college.

Opinions of graduates regarding adequacy of high school education as a preparation for earning a living.--A breakdown of the opinions of graduates concerning the adequacy of their high school education as a preparation for earning a living is given in Table 25.

TABLE 25

OPINIONS OF GRADUATES REGARDING ADEQUACY OF HIGH SCHOOL EDUCATION AS A PREPARATION FOR EARNING A LIVING

	Female				Male					
	Academic		General		Academic		General		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	14	53.8	12	80.0	14	66.7	33	67.3	73	65.7
No	10	38.5	2	13.3	5	23.8	11	22.5	28	25.2
No Answer	2	7.7	1	6.7	2	9.5	5	10.2	10	9.1
Total	26	100.0	15	100.0	21	100.0	49	100.0	111	100.0

Although the subjects of the study were those graduates who had not been given any extensive vocational training, 65.7 per cent of all respondents, except those who are presently attending college, believe

that the education they received at the Pocono Mountain High School adequately prepared them to earn a living. It must be remembered, however, that 86.2 per cent of the employed respondents also indicated that they were not completely satisfied with the work they were doing.

It may be significant that here again the highest percentage (38.5 per cent) of the graduates who showed dissatisfaction with their high school education were the female academic students.

Some students indicated that they could have learned a lot more if they had tried harder. Many of the male respondents expressed the same opinion as the young man who wrote: "The academic and business courses do prepare their students for college and business. But, I think in the general course there should be more classes on things like mechanics and simple electronics."

The Pocono Mountain Jr.-Sr. High School was a new high school that was opened in September, 1961, and combined four smaller high schools. Some students from the first graduating class thought that they could have had a better education if they could have spent all of their high school years in the new jointure.

Three persons suggested that more mathematics should be offered.

Several graduates stated that the career counseling program of the school could be improved, and others believed that teachers should take more interest in the individual students. Some respondents wrote that more guidance should be given to the student who is not going to college.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine whether the 43 per cent of the graduates of the Pocono Mountain Jr.-Sr. High School for the years 1962-1965 who were not enrolled in the regular business course and did not go to college would have derived greater job satisfaction if they had taken business subjects in high school. Also, the study attempted to learn which business subjects would have proved to be of most value to the respondents and their reasons for non-election of such courses while they were in high school. With this information, the business curriculum could be revised if necessary and guidance practices could be evaluated.

A questionnaire was mailed to one hundred ninety-three graduates and one hundred twenty-five, or 66.14 per cent, were returned.

Conclusions

From these returns, the following conclusions may be made:

1. A majority of the graduates (65.7 per cent) of the Pocono Mountain Jr.-Sr. High School for the years 1962-1965 who did not take the business course and who did not go to college expressed satisfaction with the training they had received in high school. However, although this group found their high school education adequate for earning a living, only 13.8 per cent of the employed

respondents and those in the Armed Services believed they were not capable of holding a more satisfactory job.

2. Among the girls, with whom this study is most concerned, 87.5 per cent believe that they could have obtained more satisfactory positions had they studied some business subjects in high school. A definite need exists for encouraging election of some business subjects by those female students whose records of achievement or personal situations indicate that they may not realize their expectations of going to college.

3. Most of the housewives (89.5 per cent) indicated that election of some business courses would be advantageous to them if they should find it necessary to earn their own living.

4. There does not appear to be a need for a sequence of business subjects designed especially for male students who might wish to have their own businesses. However, over half the male graduates (58.3 per cent) believe such courses would be of value tc them while they are in the Armed Services.

5. There is no great need for an accelerated business course for the academically talented students to assist them in financing a college education. A further study of students who are attending college would have to be made to draw definite conclusions concerning such a program.

6. The reason given by most male graduates for non-election of business subjects was a lack of interest in business subjects and office employment.

7. Most female graduates gave the expectation of entering college as their reason for not electing business subjects.

8. Typewriting, shorthand, and bookkeeping are the three subjects that students consider to be most helpful in getting a satisfactory position.

9. Data processing ranked highly as a subject which would have been helpful to the graduates who entered the Armed Services and also to those graduates who indicated that they could have obtained a more satisfactory position if they had taken some business subjects.

10. Almost half the female graduates would find business subjects helpful in their present positions, but only a small percentage of the male respondents would find them valuable. Some female graduates (44.0 per cent of employed females) have been able to find office employment as a result of the few business subjects they elected.

11. It is recognized that the results of this study might have been different if returns had been received from all the subjects of the study.

Recommendations

As a result of this study, the following recommendations may be made:

1. Since many academic students are not successful in entering, or in remaining in, college, it is recommended that the guidance department encourage election of some vocational business subjects by

those students whose records of achievement or personal situations indicate that they may not realize their expectations of going to college.

2. The business teachers should cooperate with the guidance counselors in acquainting such non-business students with the job opportunities in the area and the minimum skills which are required. This should be done early enough in the students' school years, perhaps in the ninth grade, so that such subjects can be worked into the schedule whenever possible.

3. All students should be encouraged to elect a course in typewriting. This should be taken in the ninth or tenth grade, if possible, so that they can make use of the skill in their school work.

4. It is not necessary to establish a special business sequence that is designed especially for boys. However, wherever it is possible to work bookkeeping, typewriting, and office practice into the schedules of the boys without interfering with their selected course sequence, this should be done.

5. A follow-up study should be made of the college students to determine the need for an accelerated business course for the academically talented to assist them in financing their college educations.

APPENDIX

POCONO MOUNTAIN JOINT SCHOOLS

SWIFTWATER, PENNSYLVANIA
18370

C. WILLIS DUNLAP
Supervising Principal

Telephone: Area Code 717
839-7121

March 7, 1966

The Business Education Department of the Pocono Mountain Jr.-Sr. High School is reviewing its curriculum in order to learn whether it is adequately serving the needs of all the students in this school district. We need your help in order to do this job.

You are one of a number of graduates who is being asked to participate in this study. Do not feel your experience is unimportant in this survey. It is only by knowing what every graduate thinks that we can get a clear indication of what improvements we can make in our course offerings.

Enclosed is a short questionnaire. We ask that you complete it now for if you lay it aside, it may be forgotten. Fill this out carefully because you realize that the success of this study depends on the accuracy of the information you give us.

Thank you.

Sincerely yours,

Margaret D. Coates, Chairman
Business Education Department

mc

POCONO MOUNTAIN JOINT SCHOOLS

SWIFTWATER, PENNSYLVANIA
18370

C. WILLIS DUNLAP
Supe.vising Principal

Telephone: Area Code 717
839-7121

March 31, 1966

Are you one of the few who has not yet returned the questionnaire which was sent to you several weeks ago?

Conclusions are drawn only from the questionnaires which are returned, and we are sure you will want your opinions to be included in the final results. Since you are one of a selected group of graduates, your opinions are very important to us.

If you have not returned your questionnaire, won't you please take ten minutes to fill out the enclosed copy and return it at once. Because we want you to express your opinions freely, we are not asking you to sign this questionnaire. If you have already returned the original copy, please disregard this letter.

Thank you for your assistance.

Sincerely yours,

Margaret D. Coates, Chairman
Business Education Department

mc

Enclosures - 2

POCONO MOUNTAIN JR.-SR. HIGH SCHOOL
Follow-Up Questionnaire

1. Are you Male_____ or Female_____?

2. What course did you take in high school?

   Academic_____ Business_____ General_____

3. Have you attended any school or college since you graduated from high school?

   No_____ Yes_____ For how long?_____ What type of school?_____

4. Did you study any business subjects while you were in high school?

   No_____ Yes_____ Which subjects?_____

5. What is your present employment status?

   Employed Full Time_____ Employed Part Time_____ Unemployed_____ Student_____

   Housewife_____ Armed Services_____ Self-Employed_____ Other_____

6. What is the nature of your present position? Describe the duties you perform regularly.

7. What features of your present job do you like most?

8. What features of your present job do you dislike?

9. Are there any business subjects you could have taken while in high school that would have helped you in your present job?

   No_____ Yes_____ Which subjects?_____

10. Do you think that you are capable of holding a more satisfactory job than the one you now have?

Yes_____ No_____

11. Do you believe that had you taken one or more business subjects in high school, you would have been able to get a more satisfactory position? Yes_____ No_____ If so, please number those subjects that would have been most helpful in order of importance, 1, 2, 3, etc.

Typewriting (2 years)	_____	Office Machines	_____
Data Processing:		Business Arithmetic	_____
(Functional Wiring Principles)	_____	Office Procedures	_____
(Computer Programming)	_____	Business English	_____
Keypunch	_____	Business Law	_____
Shorthand	_____	General Business	_____
Bookkeeping	_____	List Others	_____

12. Do you think that had you taken one or more business subjects in high school, they would have helped you to have a business of your own? Yes_____ No_____ If so, please number those that would have been most helpful in order of importance, 1, 2, 3, etc.

Typewriting (2 years)	_____	Office Machines	_____
Data Processing:		Business Arithmetic	_____
(Functional Wiring Principles)	_____	Office Procedures	_____
(Computer Programming)	_____	Business English	_____
Keypunch	_____	Business Law	_____
Shorthand	_____	General Business	_____
Bookkeeping	_____	List Others	_____

13. If you are a housewife who could be faced with the prospect of earning your own living, would you feel more secure had you taken some business courses in high school? Yes_____ No_____ If so, please number those subjects that would be most helpful in order of importance, 1, 2, 3, etc.

Typewriting (2 Years)	_____	Office Machines	_____
Data Processing:		Business Arithmetic	_____
(Functional Wiring Principles)	_____	Office Procedures	_____
(Computer Programming)	_____	Business English	_____
Keypunch	_____	Business Law	_____
Shorthand	_____	General Business	_____
Bookkeeping	_____	List Others	_____

14. If you are in the armed services, do you think that it would have been advisable for you to have studied one or more business subjects? Yes_____ No_____ If so, please number those subjects that would have been most helpful in order of importance, 1, 2, 3, etc.

Typewriting (2 years)	_____	Office Machines	_____
Data Processing:		Business Arithmetic	_____
(Functional Wiring Principles)	_____	Office Procedures	_____
(Computer Programming)	_____	Business English	_____
Keypunch	_____	Business Law	_____
Shorthand	_____	General Business	_____
Bookkeeping	_____	List Others	_____

15. If you did not take any vocational business subjects when you were attending high school, please check your reasons for not doing so.

Expected to go to college and took the academic course _____
Wanted to be in the same classes with my friends _____
Had no interest in business subjects _____
Believed I would appear to be more intelligent if I chose the academic course _____
Believed it was an indication that our family was not wealthy enough to send me to college _____
Did not believe I was capable of doing the work _____
Did not believe I would like working in an office _____
Did not believe I could get a job in an office without going to to business college _____
Thought it was a course for girls and it had nothing to offer boys _____
I wanted to take business but my family did not want me to _____
Please state your reason if other than above _____

16. If you did not go to college because of financial difficulties, do you believe it would have been possible for you to do so if you had taken some business subjects which would have provided you with sufficient skills to get part-time employment at college?

No_____ Yes_____ Which subjects?_____

17. If you intended to go to college after graduation from high school and did not go, what were your reasons for not going?

My family was financially unable to send me _____
My grades were not good enough to enable me to be accepted in college _____
My family wanted me to go, but I had no interest in it _____
I married _____
I became interested in other work which did not require a college education _____
I expected to get a scholarship and did not _____
I entered the Armed Services _____
I did not have a good score on my College Boards _____
I am working in order to earn enough to finance my college education _____
Please state your reason if other than above _____

18. Do you think the Pocono Mountain High School adequately prepared you to earn a living? Yes_____ No_____

If your answer is "no," what improvements would you suggest?

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VT 002 369
Occupations of Former Students of Vocational Agriculture in Arizona. Report 227.

Arizona Agricultural Experiment Station, Tucson
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Jul65 22p.

*VOCATIONAL AGRICULTURE; *VOCATIONAL FOLLOWUP; *AGRICULTURAL OCCUPATIONS; *OCCUPATIONAL CHOICE; *PROGRAM EVALUATION; HIGH SCHOOL GRADUATES; EMPLOYMENT EXPERIENCE; PROGRAM IMPROVEMENT; PARTICIPANT SATISFACTION QUESTIONNAIRES
ARIZONA

This study sought to determine the present occupations of former students of vocational agriculture, the additional post-high school education they had received, and their opinions about the effectiveness of selected phases of the vocational agriculture program in Arizona. Completed questionnaires were obtained from 669 of 2,925 former students for which addresses could be obtained who studied vocational agriculture from September, 1953 to June, 1962. Some findings were: (1) 60 percent were employed in jobs that might be permanent, 26 percent were enrolled in institutions of higher learning, and 14 percent were in temporary positions, (2) Of those in permanent jobs, 30 percent were in production agriculture, 11 percent in off-farm agricultural occupations, and 59 percent in non-related occupations, (3) Of students in college, 22 percent are preparing for production agriculture, 29 percent for off-farm agricultural occupations, and 48 percent for non-related occupations, (4) Of students in the armed forces, 38 percent indicate they plan to enter production agriculture, (5) More than 95 percent of former students attended some type of post-high school educational institution. Areas listed as most useful to students of the vocational agriculture program are working with others, leadership training, farm mechanic skills, FFA activities, and recordkeeping and analysis. (DM)

VT 002 369

OCCUPATIONS OF FORMER STUDENTS OF VOCATIONAL AGRICULTURE IN ARIZONA

Report 227

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Agricultural Experiment Station

The University of Arizona

Tucson, Arizona

July 1965

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OCCUPATIONS OF FORMER STUDENTS OF VOCATIONAL AGRICULTURE IN ARIZONA

John R. Williams[1]

INTRODUCTION

The Problem

The objectives of vocational education in agriculture have recently been expanded to include not only preparing young men for farming, but also preparing youth for any of the many occupations in the agricultural industry that require some knowledge of and abilities in production agriculture. Before embarking on new programs to meet the needs of youth preparing to enter occupations in the agricultural industry, it was felt that an effort should be made to learn the present occupations of former students of vocational agriculture, what additional post high school education they have received and their opinions about the effectiveness of selected phases of the present program of vocational education in agriculture in Arizona.

Procedure

All teachers of vocational agriculture in Arizona were asked to provide the names and current address of all former students who studied vocational agriculture in their departments for two or more years during the ten year period from September 1953 to June 1962. The names and addresses of 2,925 former students were furnished from thirty-two schools. A tentative questionnaire was developed to acquire the desired information about each former student and to enable the former students to express their opinions about the program. The tentative questionnaire was evaluated by members of the agricultural education state supervisory and teacher training staffs, revised to include their suggestions and tried out on thirty-nine former vocational agricultural students. Deficiencies identified by the tryout were corrected and the final form of the questionnaire prepared.[2] The questionnaire was sent to each former student requesting information on their present occupations, additional education they have received and their opinions on the effectiveness of the various phases of the vocational agriculture program in preparing them for their present occupation. Questionnaires were completed and returned by 669 former students.

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[2]See Appendix for a copy of the final questionnaire.

Assumptions

The following assumptions were used as a basis for this study:

1. Former Arizona students of vocational agriculture are interested in the vocational education program in agriculture and will be willing to furnish the information and opinions requested.

2. The responses and opinions of these former students will be valid data for evaluating the present program of vocational education in agriculture, will suggest improvements that can be made in that program and provide information helpful for planning new programs of vocational education in agriculture.

Limitations of the Study

1. It is recognized that the comparatively small number of former students who completed and returned questionnaires may not be a representative sample of all former students of vocational agriculture in Arizona, and therefore we cannot be certain that the occupations and additional education reported accurately represent the occupations and additional education of all former Arizona vocational agriculture students. However, it is believed that those former students who did respond have a greater than average interest in the program and therefore the facts they reported and the opinions they have expressed provide information that will be useful in evaluating the Arizona program of vocational education in agriculture.

2. The absence of an effective procedure for keeping an up-to-date address of former students made it extremely difficult for the cooperating teachers of vocational agriculture to furnish accurate addresses of all former students who enrolled for two or more years in their departments. Therefore a large number of former students who should have been included never received the questionnaire sent them.

3. Some of the questions on the questionnaire may not have been completely understood by some of the respondents; different interpretations of the questions may have altered the responses.

PRESENTATION AND INTERPRETATION OF DATA

Occupations of Former Students

The former students were asked to give the title of their present occupations if they were working at some job full-time or, if they were in some temporary occupation such as student or in the military service, to give the occupation for which they were preparing themselves or hoped to enter. The job titles or occupations given were classified in three categories:

1. Production agriculture, including such jobs as farmer, rancher, dairyman, farm manager, etc.

2. Agricultural occupations other than production agriculture, requires some knowledge of or ability in production agriculture, such as feed, fertilizer or insecticide salesman, farm machinery sales or services, county agent, soil scientist, etc.

3. Not related to agriculture, which includes all other occupations for which no knowledge of or abilities in production agriculture is required.

Table 1. Comparison of the Number and Percentage of Former Arizona Vocational Agriculture Students Employed or Anticipating Employment in Three Categories of Occupations.

Occupational Status	Production Agriculture		Agricultural Occupations		Not Related to Agriculture	
	Number	Percent	Number	Percent	Number	Percent
Presently employed	117	30.00	41	10.51	232	59.49
Student	39	22.29	50	28.57	84	48.00
Military, non-career[a]	25	37.88	12	18.18	19	28.79
Other temporary	5	18.52	5	18.52	14	51.85
TOTALS	186	28.27[b]	108	16.41[b]	349	53.04[b]

Table 1 shows the number and percentage of those former students now employed in occupations grouped into the three categories and the number and percentage of the former students now occupied in temporary activities who are preparing themselves for or who expect to enter occupations in each of the three categories. These data show that 30 percent of those former students

[a]The respondents who are in one of the military services and said they expect to make a career of the service are included in the "Presently Employed" group under the heading "Not Related to Agriculture."

[b]Percentage given is percent of total former students who responded. It does not add up to 100% because 15 or 2.28% of the former students now in one of the 3 temporary occupations were not certain what occupation they wished to enter.

of vocational agriculture who are presently employed are in the category of production agriculture and 10.51 percent are employed in agricultural occupations other than production agriculture. Responses from former students who are temporarily in the military services indicated that 37.88 percent hoped to enter production farming and 18.18 percent hoped to enter other agricultural occupations. Responses from former students who are continuing their education indicated that only 22.29 percent are preparing to go into production agriculture while 28.57 percent are preparing to go into other occupations in agriculture, including the agricultural professions. These data indicate that 44.68 percent of the former students who completed the questionnaire are either in some agricultural occupation or planning to enter an agricultural occupation.

Table 2. Number and Percentage of Former Arizona Vocational Agriculture Students Presently Employed in Various Categories of Production Agriculture

Category	Number	Percentage of Total
Owner-Operator	32	27.30
Partnership	24	20.51
Hired Hand (not at home)	15	12.82
Hired Hand (home farm)	14	11.97
Renter	14	11.97
Manager	13	11.11
Other	5	4.32
TOTAL	117	100.00

Table 2 shows the number and percent of the former students of vocational agriculture who are occupied in production agriculture, divided into various categories of responsibility. Although production agriculture in Arizona requires large amounts of capital and these men are all young, almost 40 percent of them are owner-operators or renters. Less than 25 percent of them fall into the hired hand category.

Table 3. Positions Held by Former Arizona Students of Vocational Agriculture who are in Agricultural Occupations Other than Production Agriculture

Occupation Group	Number	Percentage of Total
Professional	14	34.15
Salesmen, Clerks	10	24.39
Equipment Operator	7	17.07
Technician	5	12.20
Mechanics	3	7.32
Business (manager, foreman)	2	4.87
TOTALS	41	100.00

Table 3 lists broad categories of agricultural occupations related to production agriculture and shows the number and percentage of former students who are employed in each category. More than one third of these young men are

employed in agricultural professions including teachers of agriculture at both the high school and university levels, research scientists and other professions vital to agriculture.

Table 4. Positions Held by Former Arizona Students of Vocational Agriculture who are Employed in Non-Agricultural Occupations

Occupational Group	Number	Percentage of Total
Construction	53	22.84
Public Service	42	18.10
Business (manager, foreman)	24	10.34
Professional	21	9.05
Salesmen, Clerks	18	7.76
Military (career)	16	6.90
Drivers	13	5.60
Technician	12	5.17
Mechanics	11	4.74
Miscellaneous	22	9.50
TOTALS	232	100.00

Table 4 shows the broad categories of occupations not related to agriculture in which the 59.49 percent of these former students of vocational agriculture are employed. The largest percentage is employed in jobs in the construction business; carpenters, masons, electricians, etc. About 40 percent of the total time in vocational agriculture is devoted to instruction and practice in mechanics.

These data compare favorably with data collected in similar studies in other states. A ten-year study in New York State conducted by Bail (1959) found that 45 percent of former students were employed in agricultural occupations. A similar study conducted by the Agricultural Education Service in Alabama (1962) found that 51 percent of former students who had been out of school for five years were engaged in agricultural occupations. Wood (1958) found that 47.9 percent of former vocational agriculture students in Illinois, and Bender (1961) found that 60 percent of the same group in Ohio, were employed in agricultural occupations. Nelson (1961) found that 25 percent of the graduates in Minnesota, and Webb (1961) found that 49 percent of the graduates in Missouri went into farming, but no effort was made to find out how many went into other agricultural occupations.

Student Tenure in the Vocational Agriculture Program

Vocational agriculture is normally offered in all four grades of high school. Each student was asked how many years he studied vocational agriculture in high school. If he studied less than four years, he was asked to indicate why.

Table 5. Reasons Given by Former Students for not Completing Four Years of Vocational Agriculture

Reasons	Number	Percentage of Total
No reason given (took all 4 years)	400	59.79
Need for other subjects	72	10.76
Did not offer Voc-Ag all 4 years	66	9.87
No interest	33	4.93
Didn't take the first year	30	4.48
Quit school (service, marriage)	22	3.29
Dislike of teachers	13	1.94
Moved to another school	12	1.79
Didn't know what I was missing	6	.09
Other	15	3.06
TOTALS	669	100.00

Table 5 shows the number and percent of students who dropped out of the vocational agriculture program after two years and the reasons they gave for that action. The reason given by more students than any other was that they (or their parents or the high school counselor) felt they needed other subjects that were scheduled at the same time more than they needed agriculture.

Post-High School Education Received

There were 349 of the 669 former students who cooperated in the study who attended a college or university after completing high school. An additional 182 attended a junior college or a technical vocational school.

Table 6. Education Beyond High School Received by Former Students of Vocational Agriculture by Types of Institutions

Type of Institution	Number	Percentage of Total
College or University	349	52.16
Junior College	118	17.64
Technical-Vocational	64	9.57
Other types of Schools	110	16.44
Did not attend any institutions beyond high school	28	4.19
TOTALS	669	100.00

Table 6 gives a breakdown of the types of schools these former students attended. More than half attended a college or university and more than 95 percent participated in some kind of post-high school education.

Table 7. Degrees Received by Former Vocational Agriculture Students Who Attended Colleges or Universities

Degree	Number	Percentage of Total
None	493	73.69
B.S. or B.A.	88	13.15
Still attending-none yet	77	11.51
M.A. or M.S.	6	.90
Combination of B.S. or B.A. and advanced degrees other than M.A. or M.S.	2	.30
Ph.D. or D.Ed.	1	.15
Other	2	.30
TOTALS	669	100.00

Table 7 shows the number and percentage of various degrees received by these former students who attended colleges and universities.

Table 8. Colleges and Universities Attended by Former Students of Vocational Agriculture

Name of Institution	Number	Percentage of Total
Attended none	320	47.84
University of Arizona	105	15.70
Arizona State University	123	18.39
Arizona State College	16	2.39
Brigham Young University	21	3.14
Out of State	24	3.59
Combination of Arizona and out of state	25	3.74
Combination of two or more in Arizona	12	1.79
Grand Canyon College	5	.75
Did not name college	18	2.67
TOTALS	669	100.00

Table 8 shows the number and percentage of those former students who attended each of the more popular colleges and universities in Arizona and out-of-state. All four-year colleges in the state are included in the table. Brigham Young University is also included because almost as many former vocational agriculture students attended that institution as all other out-of-state institutions put together.

Opinions of Former Students about Vocational Agriculture Program

The former students of vocational agriculture were asked to indicate their opinions as to the value of the vocational agriculture program they experienced in high school in helping them develop specific abilities. Sixteen abilities that are generally accepted objectives of instruction in vocational agriculture were listed, and each student was asked his opinion on whether

instruction in vocational agriculture was very useful, of some value, or of little or no value in his development of each specific ability.[1] Space was provided for any additional comments anyone might wish to make. It was felt that these opinions would have more significance in the evaluation of the vocational agriculture program if the responses were tabulated according to the classification of the occupation of each respondent.

Table 9 shows the opinions of the former students now employed in some phase of production agriculture compared with the opinions of former students employed in agricultural occupations related to production farming, former students in occupations not related to agriculture and former students who are are attending any institution of post high school education. All figures are percentages of the total in each category. Since space was limited, only the responses "very useful" and "little or no value" are shown. The percentage of respondents who checked in the "some value" column may be determined by adding the two figures shown for each occupational category and subtracting this figure from 100.

The abilities that scored highest by all four groups were: (1) work harmonoiously with others; (2) exercise leadership; (3) perform farm mechanics skills effectively; (4) conserve natural resources; (5) understand the importance of agriculture in the national welfare; (6) maintain high standards of workmanship. The ability that they said instruction in vocational agriculture had the least effect on was the ability to study effectively. There was considerable variation in the responses of the men from the various categories regarding the development of an ability. For example, more than 52 percent of the men in the production category and the men in the agricultural occupations category indicated that the vocational agriculture program was very useful in the ability "Select, obtain and advance in your present occupation," while less than 21 percent of the men in occupations not related to agriculture said it was very useful. Almost 61 percent of the men in the agricultural occupations and 63 percent of the students said the vocational agriculture program was very useful in helping them "appreciate the need for post-high school education," while less than 44 percent of the men in the other categories rated it that high.

Very little use was made of the opportunity to add comments about each of the abilities listed. The Future Farmers of America organization was mentioned very often as being a very effective tool in helping boys develop most of the abilities. Another remark made almost as frequently for most abilities was "should be stressed more."

The former students were also asked to indicate their opinion of the contribution various phases of the vocational agriculture program had made in helping them enter and advance in their present job. They were asked to indicate their opinion by placing a check in one of three columns: (1) very useful; (2) some value, and (3) little or no value. Additional space was provided by each item where they could make any further comments if they wished.

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[1] See Appendix for exact form of questions.

Table 9. A Comparison of Opinions of Former Arizona Vocational Agriculture Students Who Are Now Employed in one of Three Categories of Occupations or Who Are Students Enrolled in an Institution of Higher Education Regarding the Effectiveness of the Vocational Agriculture Program in Developing Selected Abilities

	Opinion *							
	Very Useful				Little or No Value			
Ability	Production Agriculture	Agricultural Occupations	Not Related	Student	Production Agriculture	Agricultural Occupations	Not Related	Student
Accept responsibilities of Citizenship	41.88	63.41	56.48	54.71	5.98	4.88	7.41	5.29
Apply scientific principles in your work	52.14	41.46	35.65	30.00	6.84	7.32	17.13	11.18
Appreciate the need for post-high school education	43.59	60.98	43.98	62.94	10.26	4.88	12.96	8.24
Conserve natural resources	53.85	63.41	69.44	57.65	8.55	4.88	6.94	6.49
Exercise leadership	61.54	68.29	62.50	67.06	7.69	2.44	5.09	2.35
Locate, organize and use information	52.14	39.02	50.00	38.82	4.27	7.32	8.80	6.47
Maintain high standards of workmanship	64.96	60.98	62.04	55.29	1.21	2.44	5.09	3.53
Make decisions and solve problems	58.12	48.78	54.63	49.41	8.55	4.88	6.48	8.24
Manage money efficiently	44.44	41.46	51.39	43.53	14.53	7.32	11.11	14.12
Perform farm mechanics skills effectively	66.67	60.98	58.33	58.82	5.98	4.88	10.19	5.29
Perform farm and ranch skills effectively	59.83	51.22	54.17	52.35	6.84	2.22	10.19	.59
Select, obtain and advance in your present occupation	52.14	53.66	20.83	32.94	9.40	14.63	43.98	20.59
Study effectively	23.08	21.95	24.07	12.35	15.38	31.71	19.44	28.82
Understand importance of agriculture in the national welfare	52.14	51.22	69.44	61.18	6.84	4.88	8.33	4.71
Use time effectively	42.74	31.71	44.44	24.12	7.69	7.32	11.11	11.76
Work harmoniously with others	64.10	78.05	65.74	64.71	4.27	0.00	3.70	1.76

*Each figure given is the percentage of the total in each category.

Table 10. A Comparison of Opinions of Former Vocational Agriculture Students Who Are Now Employed in One of Three Categories of Occupations or Are Students Enrolled in an Institution of Higher Education Regarding the Effectiveness of Selected Areas of Instruction in Vocational Agriculture in Helping Them Enter and Advance in Their Present Occupations.

Areas of Vocational Agricultural Program	Very Useful Opinions*				Little or no Value			
	Production Agriculture	Agricultural Occupations	Not Related	Student	Production Agriculture	Agricultural Occupations	Not Related	Student
Basic Principles of Animal Life	55.56	53.66	20.37	37.65	11.11	12.20	43.98	12.35
Basic Principles of Plant Life	48.72	60.98	19.44	28.82	7.69	12.20	43.06	19.41
Cooperative Activities	32.48	34.15	32.41	44.12	10.26	9.76	16.67	8.24
Farm Management	58.97	36.59	19.91	34.71	5.98	19.51	37.50	17.07
Farm Mechanics Instruction	62.39	46.34	33.80	40.00	10.26	19.51	29.63	22.35
Field Crop Production Information	41.03	56.10	14.81	30.00	13.68	12.20	47.22	22.94
Future Farmers of America Activities	59.83	63.41	38.89	58.82	6.84	12.20	21.30	5.88
Livestock Production Information	52.14	48.78	22.69	39.41	9.40	14.63	43.98	12.94
Occupational Planning	36.75	21.95	31.02	38.82	14.53	17.07	23.15	11.18
Record Keeping and Analysis	58.97	39.02	51.39	48.82	5.98	14.63	13.43	11.18
Supervised Farming Program	52.14	48.78	19.91	45.29	8.55	14.63	41.63	11.76

*Each figure given is the percentage of the total in each category.

Table 10 shows the opinions of those former students who are now employed in some phase of production agriculture compared with the opinions of those former students who are employed in agricultural occupations related to production farming, former students in occupations not related to agriculture, and former students who are attending an institution of post-high school education. A column showing the opinions of all former students was not included on the table because it was felt that when the opinions of the men in such different occupations and, therefore, such different needs, were grouped together, the significance of the data was lost. All figures are percentages of the total in each category.

The two areas of the vocational agriculture program that all the former students rated as most useful were: (1) Future Farmers of America activities and (2) Record Keeping and Analysis. The men in production agriculture rated Farm Mechanics instruction highest, FFA activities second, with Record Keeping and Farm Management tied for third. The men in other agricultural occupations rated FFA activities highest and Basic Principles of Plant Life next. The men in occupations not related to agriculture rated Record Keeping and Analysis 12.5 percent higher than the next closest area, the FFA, while instruction in Farm Mechanics was rated the third most important. Areas that all former students felt had contributed least were: (1) Occupational Planning, (2) Cooperative Activities, and (3) Field Crop Production information.

As indicated by the data in Table 9, Table 10 also shows considerable variation in the responses of the men from the various categories regarding the value of an area. For example, the men in production agriculture and agricultural occupations related to production agriculture rated instruction in the "Basic Principles of Animal and Plant Life" quite high, but those in occupations not related to agriculture rated both areas quite low.

In a further effort to determine the satisfaction of the former students with the vocational agriculture program they took in high school, they were asked "If you were to repeat your high school education, would you study more, the same, or less vocational agriculture," and additional space was provided for them to tell why they responded as they did.

Table 11. Opinions of Former Students Regarding Their Satisfaction with the Amount of Vocational Agriculture They Studied in High School

Opinions	Number	Percentage of Total
Would study more	369	55.16
Would study the same	216	32.29
Would study less	75	11.21
No opinions given	9	1.34
TOTALS	669	100.00

Table 11 shows the number and percentage of former students who checked each choice. More than 87 percent indicated they would study more or the same amount, and 11.21 percent indicated they would have studied less vocational agriculture. Reasons given by those former students who said they would have studied less were: (1) more time should be devoted to basic subjects, (2) no

connection with agriculture in my present occupation, (3) disappointed or not interested in subject matter, (4) did not learn much.

The former students were also requested to indicate their opinions on whether more, the same amount or less vocational education subjects other than agriculture should be offered in high schools today. The responses to that question are reported in Table 12.

Table 12. Opinions of Former Students Regarding the Amount of Vocational Instruction, Other Than Agriculture, Offered in High Schools Today

Opinions	Number	Percentage of Total
Should offer more	517	77.28
Should offer same amount	95	14.20
Should offer less	25	3.74
No opinion given	32	4.78
TOTALS	669	100.00

More than three fourths of the former students indicated that there should be more vocational instruction in high schools and less than four percent said there should be less. Some of the reasons given for including more vocational education courses were: (1) gives a broader education, (2) better educate non-college bound students to earn a living, (3) gives an opportunity to choose one's life work sensibly, (4) schools should provide for all vocational interests, (5) gives an opportunity to learn a trade.

Reasons given for offering less vocational instruction included: (1) high schools should provide only general education (2) vocational courses should be taught in trade schools, (3) vocational skills can be learned on the job.

Suggestions for Improvement

The last item on the questionnaire sent to former students was an open end request for any suggestions they might have for improving the program. A total of 24.48 percent of the respondents made some comments and suggestions. Many of the remarks were most complimentary and were really testimonials on the high quality and value of the program and the teacher under whom they studied rather than suggestions for the improvement of the program. However, there were also many entries of constructive criticism. They have been grouped and are recorded in Table 13 in the order of the frequency of each suggestion.

Table 13. Suggestions of Former Students for Improving Instruction in Vocational Agriculture.

Suggestion	Frequency
Teach more about farm business and management	29
Teach more about related occupations	24
Stress more college preparation - science of agriculture	16
Conduct more field trips	15
Hire teachers that are better prepared	13
Provide facilities at school to give practice in farming skills	10
Stress practical studies more and theory less	10
Teaching material should be more thorough, more difficult	10
Teach more about farm machinery care and operation	9
Teach more farm shop skills	9
Stress the development of the individual more	9
Teach longer periods	8
Hire teachers that are more devoted, more enthusiastic	8
More on-the-job training	7
Better support of vocational agriculture program by school administrators	7
More emphasis on FFA activities	7
More emphasis on importance of going to college	7
Weed out loafers	6
Keep stricter discipline	5
More stress on supervised farming programs	4
Less emphasis on FFA	4
Better support of agriculture program by parents and community	3
More variety - make it more interesting	2
Teachers keep more up to date	2
More competitive activities	2
Better recruitment of vocational agriculture students in high schools	2
Have more research materials available	1
Less emphasis on farm work and maintenance	1
Shorter periods	1
Allow both boys and girls to take vocational agriculture	1
Teach more about Arizona water problem	1
Teach marketing	1
Teach two different programs - one for college bound and the other for those who will not go to college	2
TOTAL	236

SUMMARY OF FINDINGS

Responses from the 669 young men who studied vocational agriculture in Arizona for two or more years during the 10 year period from July 1953 to June 1962 and who returned useable questionnaire support the following summary statements:

Present Occupations

1. Sixty percent of the former students are employed in jobs that may be permanent, 26.60 percent are students enrolled in an institution of higher education, and 14.40 percent are in temporary positions such as the armed services, Peace Corps, etc.

2. Of those now employed in permanent jobs, 30.00 percent are in production agriculture, 10.51 percent are employed in an agricultural occupation related to production agriculture, and 59.49 percent are employed in occupations not related to agriculture.

3. Of the former students who are now enrolled in institutions of higher education, 22.29 percent are preparing for jobs in production agriculture, 28.57 percent are preparing for agricultural occupations related to production agriculture, and 48.00 percent are preparing for occupations not related to agriculture.

4. A total of 37.88 percent of the former students now temporarily in the armed services indicated they expect to enter production agriculture when they leave the service.

Post-High School Education

1. More than 95 percent of the former students attended some kind of post-high school educational institution. Fifty-two percent attended a college or university, 17.6 percent attended a junior college, 9.5 percent attended a technical-vocational school and 6.4 percent attended a variety of other schools.

2. Of the 349 former students who attended a college or university, 105 or 30.73 percent attended the University of Arizona, 123 or 35.96 percent attended Arizona State University and another 3.51 percent attended both institutions. Other institutions attended included Arizona State College, Grand Canyon College, Brigham Young University and other out of state institutions.

Opinions on Instruction Received

1. The vocational agriculture program was most useful in helping the former students develop the following abilities: (1) work harmoniously with others; (2) exercise leadership; and (3) perform farm mechanic skills. The instruction was least useful in helping them: (1) develop the ability to study effectively; (2) select and advance in an occupation and (3) manage money.

Opinions on Instruction Received (continued)

2. The areas of the program most useful in helping them enter and advance in their present jobs were: (1) FFA activities; (2) Record Keeping and Analysis; and (3) Farm Mechanics instruction. Areas that contributed least to helping them enter and advance in their present jobs were: (1) Occupational Planning; (2) Cooperative activities; and (3) Field Crop Production information.

3. If the former students were to repeat their high school education, 87.45 percent would study more vocational agriculture or the same amount, while 11.21 percent would study less. Only 1.35 percent expressed no opinion on the question.

Suggestions for Improving the Program

Suggestions for improving the vocational agriculture program, listed in the order of frequency, were as follows: (1) teach more about farm business, management and accounts; (2) teach more about related agricultural occupations; (3) stress preparation for college; (4) conduct more field trips; (5) hire more competent teachers; (6) provide school facilities to give practice in farming skills; (7) make instruction more practical; (8) provide more thorough, more difficult materials for teaching; (9) teach more about farm machinery care and operation; (10) teach more skills in agricultural mechanics; (11) stress development of the individual.

A P P E N D I X

SURVEY OF FORMER STUDENTS OF VOCATIONAL AGRICULTURE IN ARIZONA

Name_____High School Attended_____From 19__ to 19__

(If you would prefer that your name be deleted from this form before it is returned to the high school you attended, check here_____.)

OCCUPATION

1. If you are usually employed in some kind of a full time civilian occupation, other than farming and ranching, please complete the blanks below:
   a. Your present job_____ b. No. of years on job_____
   c. Nature of your work_____
   d. Nature of business of your employer_____
   e. What influenced you to go into this line of work?_____
   _____
2. If farming or ranching, check your status below:
   a. Owner-operator_____ b. Manager_____ c. Renter_____ d. Partnership_____
   e. Hired hand_____ f. Part time_____ g. Working on home farm_____
   h. Other (Please describe):_____
3. If you are now attending some educational institution, please complete:
   a. Technical school_____ Field of study_____
   b. College or University_____ Field of study_____
   c. Other (describe)_____ Field of study_____
   d. What occupation do you expect to enter when you complete your studies?_____
   _____
4. If you are now in military service, please complete:
   a. Do you expect to make a career of the service? Yes_____ No_____
   b. If no, what occupation do you expect to enter when you complete your service?_____
   _____
5. If you are in an occupation (other than military service or school) that you consider to be temporary, such as the Peace Corps, LDS Mission, etc., what occupation do you expect to follow when you complete that temporary assignment?_____
   _____

EDUCATIONAL PREPARATION

1. Years of vocational agriculture completed _____9th _____10th _____11th _____12th
2. If you did not complete 4 years of vocational agriculture, please state briefly why____
   _____
3. Year of high school completed _____9th _____10th_____11th_____12th
4. If you did <u>not</u> graduate from high school, please state briefly why _____
   _____
5. Did you attend a technical school?_____ If yes, how many years?_____
   Field of study? _____ Name of technical school_____
6. Did you attend a junior college? _____ If yes, how many years?_____
   Field of study? _____ Name of junior college?_____
7. Did you attend a college or university?_____ If yes, how many years? _____
   Field of study?_____ Degrees received? _____
   Name of college or university attended_____
8. Other education or training (Please describe) _____
   _____
9. What was the major factor that influenced you to select this field of study?_____
   _____

EVALUATION OF THE VOCATIONAL AGRICULTURE PROGRAM

Indicate the contribution you believe vocational agriculture made in helping you develop the following abilities: (Check in one of the first three columns for each ability and add any comments or suggestions in the fourth.)

Ability to:	Very Useful	Some Value	Little or no Value	Comments or Suggestions (Use other side if needed)
1. Accept responsibilities of citizenship				
2. Apply scientific principles in your work				
3. Appreciate the need for post high school education				
4. Conserve natural resources				
5. Exercise leadership				
6. Locate, organize and use information				
7. Maintain high standards of workmanship				
8. Make decisions and solve problems				
9. Manage money efficiently				
10. Perform farm mechanics skills effectively				
11. Perform farm and ranch skills effectivelv				
12. Select, obtain and advance in your present occupation				
13. Studv effectivelv				
14. Understand importance of agriculture in the national welfare				
15. Use time effectivelv				
16. Work harmoniouslv with others				
17. Other (please list)				

Indicate the contribution that you believe the following areas of the vocational agriculture program made in helping you to enter and advance in your present job: (Check in one of the three columns for each area and make suggestions in the fourth.

Areas of the Vocational Agriculture Program	Very Useful	Some Value	Little or no Value	Comments or Suggestions for Improvement of Program (Use other side if needed)
1. Basic Principles of Animal Life				
2. Basic Principles of Plant Life				
3. Cooperative Activities				
4. Farm Management				
5. Farm Mechanics Instruction				
6. Field Crop Production Information				
7. Future Farmers of America Activities				
8. Livestock Production Information				
9. Occupational Planning				
10. Record Keeping and Analvsis				
11. Supervised Farming Program				

CONCLUSIONS

1. If you were to repeat your high school education, would you study more_____the same_____ less_____vocational agriculture? Why?_____

2. Do you believe that more_____the same amount_____or less_____instruction in vocational subjects other than agriculture (such as building trades, commercial subjects, mechanics, etc.) should be offered in high schools today? _____ Why?_____

3.. Please give any suggestions you have for improving the vocational agriculture program: (Use back of this sheet if necessary.)

LIST OF REFERENCES

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VT 002 433
An Analysis of the Role that Schools of Vocational, Technical and Adult Education Play in Attracting and Enabling Business and Industrial Relocation and Expansion in Wisconsin.

Wisconsin State Board of Vocational, Technical, and Adult Education, Madison
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Feb67 31p.

QUESTIONNAIRES; *EMPLOYMENT OPPORTUNITIES; EMPLOYERS; EDUCATIONAL DEMAND; *EMPLOYER ATTITUDES; PERSONNEL SELECTION; *VOCATIONAL EDUCATION; RELOCATION; ECONOMIC PROGRESS; *EDUCATIONAL SUPPLY; *EDUCATIONAL PLANNING; SKILLED OCCUPATIONS
WISCONSIN

The objectives of this survey were to determine the extent to which newly relocated or expanded business and industry had (1) considered the availability of vocational education as a factor in relocating or expanding, (2) made use of vocational courses, (3) a need for skilled workers, and (4) suggestions for improvement of vocational offerings. Questionnaires were returned by 320 firms which relocated or expanded in 1962, 1965, and 1966. About 50 percent of these employed over 100 persons and were in towns having vocational programs. Some findings were (1) 60 percent indicated vocational schools had been of service to them, (2) about 50 percent attempted to recruit from such schools, (3) 75 percent encouraged employees to enroll in job related courses, (4) 40 percent offered incentives or had a policy of preferential treatment of persons who attended courses, (5) about 1,700 vocational students had been employed since relocation or expansion, and (6) about 2,400 skilled workers were needed by these firms. In general, the firms expressed satisfaction with the vocational programs. Data for each question are furnished in the report and specific suggestions from employers are reported. (EM)

VT 002 433

ED039370

STATE BOARD OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION
Room 720, 1 West Wilson Street
Madison, Wisconsin 53702

AN ANALYSIS OF THE ROLE THAT SCHOOLS OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION PLAY IN ATTRACTING AND ENABLING BUSINESS AND INDUSTRIAL RELOCATION AND EXPANSION IN WISCONSIN.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT002433

February 1967

SUMMARY OF REPORT

The central problem of this study was to analyze the role that schools of vocational, technical and adult education play in attracting and enabling business and industrial relocation and expansion in Wisconsin.

The objectives were to determine the extent to which newly relocated or expanded business and industry: (1) have considered the availability of vocational, technical and adult school programs as a factor in relocating or expanding, (2) have made use of the services of vocational, technical and adult schools, (3) have need for skilled workers, and (4) have suggestions for improvement of vocational, technical and adult school services.

The procedures involved the procurement of directories from the Wisconsin Department of Resource Development and the mailing of questionnaires to 590 business and industrial establishments which had relocated or expanded in Wisconsin during the years of 1962, 1965, and 1966.

Of the 320 (54%) returns, about fifty (50%) per cent came from employers who had addresses in cities having a local vocational, technical and adult school including evening schools. Practically all of the responding firms were in the manufacturing category. Nearly half (49.1%) of the respondents employed 101 or more persons.

Major findings indicate that although a small percentage of the employers considered the nearness of a vocational, technical and adult school when deciding to relocate or expand, over three-fourths of those who considered this as a factor had addresses in cities where there were vocational, technical and adult schools. Likewise, about three-fourths of all respondents felt that vocational, technical and adult schools had contributed to the quality of labor force in their areas. Nearly all (97%) of the employers with addresses in cities with vocational, technical and adult schools felt this was true.

Nearly sixty (60%) per cent of the respondents indicated the vocational, technical and adult schools had been of service to them. Slightly over half (52%) had attempted to recruit graduates from vocational, technical and adult schools. Employers in vocational, technical and adult cities were more likely to employ graduates of vocational, technical and adult schools than were those outside of vocational, technical and adult cities.

Over three-fourths of the respondents encouraged their employees to enroll in job related training courses and over half said their employees were attending job related courses. Nearly forty (40%) per cent offered incentives or had a general policy which offered promotions or higher wages to employees who complete job related courses or who have attended vocational, technical and adult schools.

Nearly 30% had requested development of new programs while about 21% said that new programs had been established as a result of their requests. About 1700 "graduates" of vocational, technical and adult full-time and part-time courses had been employed since relocation or expansion.

Data indicates that approximately 2300-2400 skilled workers were needed immediately by the 320 firms responding to the survey. This does not include those which indicated "several" or those which indicated a type of worker needed but didn't indicate how many.

Significant comments indicated that several employers were generally satisfied with vocational, technical and adult services and that several of the smaller plants conducted training programs of their own.

Significant suggestions indicated by employers centered around the need for continued or more personal contact between the vocational, technical and adult schools and business and industry, the desire for training programs in outlying areas, and that efforts should be expanded to counsel or encourage youth to enroll in vocational, technical and adult schools.

Some firms expressed a desire for a list of graduates which could be interviewed. Some indicated a need for improving instruction and upgrading equipment.

Generally, the findings indicate that the vocational, technical and adult schools are doing a satisfactory job of offering educational services sought by business and industry. On the other hand, the findings seem to indicate a need for improvement in certain areas such as in communication between vocational, technical and adult schools and business and industry. The development of vocational, technical and adult districts will facilitate the development of programs to meet the needs of business and industry in outlying areas of the State.

TABULATIONS AND FINDINGS

This section of the report constitutes tabulations of responses indicated on 320 returns of 590 mailings to employers who relocated or expanded in Wisconsin during the years 1962, 1965, and 1966.

Mailings and Returns

1962			1965			1966			Total		
Mail	Return	% Ret.	Mail	Return	% Ret.	Mail	Return	% Ret.	Mail	Return	% Ret.
216	108	50%	336	194	57%	38	18	47%	590	320	54%

Of the three-hundred and twenty (320) returns, one-hundred and sixty-one (161) or fifty (50%) per cent came from employers who had addresses in cities having a local school of vocational, technical and adult education including evening schools.

Specifically, 59 of 108 (55%) of the returns of the 1962 group, 92 of 194 (48%) of the 1965 group, and 10 of 18 (55%) of the 1966 group were from employers with addresses in cities with vocational, technical and adult schools.

The questions and responses are as follows: (Percentages are based on number of returns for that year and not on the number of items answered. In many instances not all items were answered by all employers. Total percentages are based on total number of returns of 320.) Questions 1-4 pertained to identification information.

QUESTION 5: What is the major product, function or activity of your establishment at this location?

	1962	1965	1966	Total
Manufacturing	105	179	17	301
Contract Construction	2	4	1	7
Transportation		2		2
Wholesale Trade	2	9	1	12
Retail Trade	1	1	1	3
Providing Services	3	4	1	8

The figures add up to more than 320 because some employers indicated more than one function or activity.

In addition to the tabulations above, four employers of the 1962 group indicated additional information of manufacturing and repair of truck bodies, manufacturing of metal products, shipbuilding, and reconditioned steel drums. Nine employers of the 1965 group indicated printing, foundry, contract fabrication, teflon coating, job shop, and buying and warehousing of tobacco.

QUESTION 6: What is the approximate number of persons employed by your firm at this location?

	1962		1965		1966		Total	
	No.	%	No.	%	No.	%	No.	%
From 1-5	2	1.9	5	2.5	1	5	8	2.5
From 6-20	4	3.7	39	20.2	4	22	47	14.7
From 21-50	20	18.5	34	17.6	3	16	57	17.8
From 51-100	18	16.6	25	12.9	1	5	44	13.7
From 101-250	27	25	38	19.6	3	16	68	21.3
From 251 up	33	30.5	52	26.4	5	27	89	27.8

Five employers indicated different numbers required for seasonal employment.

QUESTION 7: Was the nearness of a vocational, technical and adult school given consideration when deciding to locate or expand at this location?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
15	86	13.8%	30	155	15.5%	1	17	.55%	46	257	14.4%

Of the fifteen employers in the 1962 group who answered "yes" to the above question, twelve (80%) had addresses in cities where there are schools of vocational, technical and adult education. Nine of these employed 101 or more people.

In the 1965 group twenty-two of the thirty (73%) who answered "yes" were in communities with vocational, technical and adult education schools. Seventeen of these employed 101 or more people. The one employer (100%) in the 1966 group was in a city with a vocational, technical and adult school.

Of those employers who answered "no" to this question 45 of 86 (52%) of the 1962 group, 88 of 155 (57%) of the 1965 group and 8 of 17 (47%) of the 1966 group had addresses outside of a city having a vocational, technical and adult school.

The information indicates that while only 14.4% of the employers submitting returns considered the nearness of a vocational, technical and adult school when deciding to relocate or expand, 35 of 46 or 76% of those who answered "yes" were located in communities having a vocational, technical and adult school.

A little more than half of those who were located outside of the city having a vocational, technical and adult school indicated they did not consider the nearness of a vocational, technical and adult school when deciding to locate or expand at their present location.

QUESTION 8: If the answer to question #7 is "yes" how much consideration was given to the availability of a vocational, technical and adult school as a factor in locating or expanding in this location.

	1962	1965	1966
Very Much	5	5	
Much	2	10	No Responses
Some	10	11	
Very Little	4	6	

QUESTION 9: Were other locations given consideration when the decision was being made to relocate or expand?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
49	45	45.3%	113	69	58%	7	10	38%	168	124	52%

QUESTION 10: Did the lack of vocational-technical training facilities in the other locations enter into the decision not to locate there?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
10	80	9.2%	17	148	8.8%	0	17	0	27	245	8.5%

Of the 10 employers in the 1962 group who answered "yes" to question #10, seven were located in cities having vocational, technical and adult schools. Of the 17 in the 1965 group, 12 were in cities having vocational, technical and adult schools.

Of the 161 employers submitting returns and having addresses in cities with vocational, technical and adult schools 19 (12%) indicated that the lack of a vocational, technical and adult training facility in other locations entered into the decision not to locate there.

For the employers answering "no" to the above question 37 of 80 (46%) of the 1962 group, 82 of 148 (55%) of the 1965 group, and 8 of 17 (47%) of the 1966 group had addresses outside of cities having vocational, technical and adult schools. The data indicates that while only 8.5% of the returns were answered affirmatively a large portion, 19 of 27 (70%), of these were in communities having vocational, technical and adult schools.

About half, 127 of 245 (52%), of the employers who answered "no" were outside of the city having a vocational, technical and adult school. This indicates that the lack of vocational, technical and adult training facilities in a locality was considered by a larger per cent (70%) of the employers who were located in cities having vocational, technical and adult schools than was considered by (52%) of the employers located outside a vocational, technical and adult city.

QUESTION 11: Since the time of your relocation or expansion in this locality has the vocational, technical and adult school been of service to you?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
70	33	64%	112	75	58%	8	10	44%	190	118	59%

Of the 70 employers in the 1962 group who responded affirmatively, 49 (70%) had addresses of cities having vocational, technical and adult schools. Of the 112 "yeses" in the 1965 group, 77 (69%) had addresses of cities having vocational, technical and adult schools. Of the 8 affirmative replies in the 1966 group, 7 (87%) had addresses from cities with a vocational, technical and adult school including evening schools.

Of the employers answering "no" to this question 20 of 33 (67%) of the 1962 group, 56 of 75 (75%) of the 1965 group, and 6 of 10 (60%) of the 1966 group were in areas outside of the city having a vocational, technical and adult school.

The information indicates that 59% of the employers submitting affirmative responses to the above question 70% had addresses in cities having vocational, technical and adult schools while 82 of 118 (69%) of those who answered "no" were located outside of vocational, technical and adult cities.

This indicates that a larger percentage of employers benefit from vocational, technical and adult service if they are located in cities with vocational, technical and adult schools as compared to those located outside of vocational, technical and adult cities.

QUESTION 12: Have you attempted to recruit new employees (graduates) from the local vocational, technical and adult school?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
70	33	64%	89	97	45%	9	9	50%	168	139	52%

QUESTION 13: How many graduates of full-time one and two-year programs have you employed from the local vocational, technical and adult school since your relocation or expansion?

1962 Number	1965 Number	1966 Number	Total Number
162	571	14	747

Of the employers with addresses in cities having vocational, technical and adult schools, 21 of 59 (36%) of the 1962 group, 31 of 92 (34%) of the 1965 group, and 4 of 10 (40%) of the 1966 group had employed graduates of full time programs.

Of the employers with addresses outside of vocational, technical and adult cities 8 of 49 (16%) of the 1962 group, 20 of 102 (20%) of the 1965 group and 1 of 8 (13%) of the 1966 group had employed graduates of full time programs.

The data indicates that a higher per cent (35%) of employers with addresses in cities with vocational, technical and adult schools employ graduates of full time programs than do employers (18%) located outside of cities having vocational, technical schools.

QUESTION 14: How many graduates of part-time programs have you employed from the local vocational, technical and adult school since your relocation or expansion?

1962 Number	1965 Number	1966 Number	Total Number
447	518	4	969

Of the employers with addresses in cities having vocational, technical and adult schools, 27 of the 59 (46%) of the 1962 group, 30 of 92 (33%) of the 1965 group, and 2 of 10 (20%) of the 1966 group had employed graduates of part time programs.

Of the employers with addresses outside of vocational, technical and adult cities, 14 of 49 (30%) of the 1962 group, 17 of 102 (17%) of the 1965 group, and none of 8 (0%) of the 1966 group had employed graduates of part time programs.

The data indicates that a greater percentage (37%) of employers in cities with vocational, technical and adult schools employ graduates of part time programs than do employers (19%) located outside of cities having vocational, technical and adult schools.

QUESTION 15: Do you encourage your employees to enroll in job related training courses at the local vocational, technical and adult school?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
88	19	81%	151	39	77%	8	5	44%	247	63	77%

QUESTION 16: Do you have an incentive plan to encourage your employees to take job related training courses at the local vocational, technical & adult school?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
53	51	49%	68	119	35%	5	13	27%	126	183	39%

QUESTION 17: Do you have a general policy which offers promotions or higher wages to employees who complete job related courses or who have attended vocational, technical and adult schools?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
34	70	31%	84	104	43%	3	13	16%	121	187	37%

QUESTION 18: Do your employees attend job related training courses at the local vocational, technical and adult school?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	%Yes
71	34	65%	95	89	48%	7	9	38%	173	132	53%

Of the 71 employers of the 1962 group who indicated their employees attended job related training courses, 50 (70%) had addresses of cities with vocational, technical and adult schools. Sixty-five of the 95 employers (70%) in the 1965 group and 6 of 7 (86%) in the 1966 group had addresses of cities with vocational, technical and adult schools.

Also, of the 161 employers in the study who had addresses in cities with vocational, technical and adult schools 121 (75%) reported employees attending related training courses. The per cent was the highest (85%) in the 1962 group.

Of the employers who answered "no" to the above question 21 of 34 (62%) of the 1962 group, 64 of 89 (72%) of the 1965 group, 5 of 9 (55%) of the 1966 group were located outside of cities having a vocational, technical and adult school.

The data indicates that nearly three-fourths (3/4) of the employers in cities with vocational, technical and adult school had employees attending job related training courses, and approximately 2/3 of the employers outside of cities having vocational, technical and adult schools did not have employees attending job related courses. This would tend to indicate a need for providing such courses in outlying areas.

QUESTION 19: Have you requested the establishment of new training programs at the local vocational, technical and adult school?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
32	73	29%	58	127	30%	2	16	11%	92	216	28%

QUESTION 20: Has a new program(s) been established by the vocational, technical and adult school as a result of your request?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
25	65	23%	41	117	21%	1	12	5%	67	194	21%

Twenty-two of the 25 employers in the 1962 group had addresses from cities having vocational, technical and adult schools, while 30 of the 41 in the 1965 group, and none of the 1966 group had addresses of cities with vocational, technical and adult schools.

Also, of the 161 employers with addresses in vocational, technical and adult cities 90 (56%) reported that new programs had been established as a result of their requests.

Of the 194 who answered "no" to this question, 35 of 65 (54%) of the 1962 group, 63 of 117 (54%) of the 1965 group, and 6 of 12 (50%) of the 1966 group had addresses other than in cities having vocational, technical and adult schools.

Although only 21% of the employer returns and 26% of the responses to this item indicate that new programs had been established, 80% of the programs which had been established were for employers with addresses in cities having a vocational, technical and adult school. Slightly over half of the employers who reported no programs established were outside of cities having vocational, technical and adult schools.

QUESTION 21: If the answer to question #20 is "yes" did this new program influence your relocation or expansion?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
4	22	3.7%	5	38	2.5%	0	2	0	9	62	2.8%

QUESTION 22: Do you feel the vocational, technical and adult school has contributed to the quality of labor force in your area?

1962			1965			1966			Total		
Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes	Yes	No	% Yes
85	13	78%	144	26	74%	13	2	72%	242	41	75%

Of the 85 employers in the 1962 group who felt that vocational, technical and adult schools had contributed to the quality of labor force in their area, 59 (70%) had addresses from cities with vocational, technical and adult schools, while 92 of the 144 (64%) in the 1965 group, and 9 of the 13 (70%) in the 1966 group had addresses from cities with vocational, technical and adult schools. Of the 41 who answered "no", 35 or 85% were outside of cities having vocational, technical and adult schools.

The data indicate that while 75% of all employers in the study felt that the vocational, technical and adult school has contributed to the quality of labor force in their area, about 70% of these had addresses from cities with a vocational, technical and adult school.

Of the 161 employers with addresses in cities with vocational, technical and adult schools, 156 (about 97%) felt that vocational, technical and adult schools had contributed to the quality of labor force in their area.

QUESTION 23: If the answer to question #22 is yes to what extent do you feel the school has contributed to this quality?

	1962	1965	1966
Very Much	10	33	2
Much	36	36	4
Some	31	69	6
Very Little	2	8	-

SUGGESTIONS FOR IMPROVEMENT

Following is a summary of the most common or significant responses to the question (#25) asking for <u>suggestions</u> for improvement of vocational, technical and adult school services. About a dozen comments expressing satisfaction with vocational, technical and adult schools are not included. Emphasis is placed on those which suggest improvements.

"Vocational, technical and adult school service appears to be excellent, we are satisfied."

"Additional contact with industry to insure type of training offered is related to area industry requirements" and "to inform companies and graduates of what is available."

"We have a special set of requirements and usually do our own training - high school level is inadequate."

"More personal contact, informing companies what is available or what could be available if companies would 'pool' trainees."

"Instructors with more shop experience."

"Up-date equipment used in schools to keep up with new equipment now being used in industry."

"Include blueprint reading with welding courses."

"Upgrade level of instruction aiming for all courses to be qualified for Associate Degree level of accomplishment."

"Instructors must be in close touch with industry so as to teach modern processes as actually used at the time of teaching."

"A 'local' school that can be sensitive to the needs of the local county area will be more effective in filling many needs. Granted the school has to be large enough to have adequate facilities."

"Develop better methods of encouraging boys not going on to college - to spend a couple of extra years to learn a skill."

"It is the hope of all local marine industries that future vocational educational plans for this area will take into consideration their expanding needs."

"I do believe that if a company could sponsor their own choice of candidates for this adult training program, we would get a better grade of trainees enrolled in school."

"Prior to graduation notification of how many students in each skill are to be graduated and date of graduation, thus enabling us to interview them for possible jobs."

"Spend your budget to improve earning capacity by offering frequent and adequate courses which serve this purpose. It is easy to learn a 'Hobby' at vocational school but difficult to learn a trade."

"No complaint on school. Just a lack of labor force."

"Would you please send address and program of nearest school?"

"More vocational schools in areas remote from large cities."

"Offer courses specifically designed for a particular industry - perhaps right at the premises of that industry."

"Encourage completion of curriculum."

"Better textbooks and material - more detail training in subjects - up-to-date equipment."

"I would like more literature regarding our local school so as to better be informed of their current programs."

"Continued and increased availability of special courses and seminars on plant maintenance details like bearings, pump technology, special welding techniques, blueprint reading and shop math for maintenance workers, etc. These courses to be available at nights as most maintenance workers are "day" workers and could attend on their own at night."

"Consider use of circuit instructor group, don't limit to indentured apprentices."

"Consider use of programmed instruction to provide greater teacher-pupil ratios (to alleviate teacher shortage)-couple programmed instruction with lab work at school."

"Constant awareness by instructors and administrators of needs and changes of curriculum brought about by changing technology."

"Gear school hours to industrial requirements."

"Motivate these boys in doing a good job - that money comes only when the latter is performed."

"I have called vocational schools for help many times and cannot get any. Vocational schools should be enlarged."

"More advertising of advantage of technical schools, etc."

"The vocational, technical and adult schools can best serve us by upgrading the quality of instruction and improving course content in their present offerings."

"More effective method of recruiting unemployed or unskilled people with the proper desire and direct their inclinations in the correct areas."

"Our local school has always been alert to offer courses in line with the changing times."

"Improve flexibility so related training for apprentices would provide greater challenge."

"It is hard for us to hire these people after they are graduates because we must bid for them with the larger companies."

"Consult with us more so we know what is available in terms of people and courses."

"Twenty hours over 10 weeks is not enough time for any real job skill training. In this short time about all they learn is how the machine works and how to take care of it."

The above list of suggestions is only a partial list and indicate only the more common or significant comments indicated in returns. Further detailed suggestions and their sources are on file at the State Board of Vocational, Technical and Adult Education.

It is recommended that local vocational, technical and adult schools give consideration to these comments to better meet the needs of business and industry in their respective areas.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Nearly all of the responding employers were in the manufacturing business and the most frequently indicated size of firm was 251 employees and over (27.8%). Nearly half (49%) of the employers submitting returns employed 101 persons or more.

Since the nearness of a vocational, technical and adult school was given limited consideration by employers in making the final decision to relocate or expand, there apparently are other factors which enter in to this decision. Other studies indicate availability of markets, raw materials, labor and transportation facilities rank high as factors entering into the decision to relocate or expand. These other considerations were not included within the scope of this study. Information relative to the vocational, technical and adult educational opportunities at other possible sites was not collected. In addition, where industries expanded, no attempt was made to determine the extent vocational, technical and adult school facilities were considered in previous decisions to locate or expand. It is highly possible that the nearness of a vocational, technical and adult school could have been given consideration in earlier decisions to locate or expand in the same community. From the available data it could be concluded that industry is willing to seek skilled workers outside their immediate location. This could be associated with the fact that employee personnel are more mobile and flexible than other factors essential to the operation of a successful business or industrial firm.

Regardless of the extent to which the nearness of a school facility is considered in locating, relocating, or expanding an industrial or business firm, it is apparent that vocational, technical and adult schools are very important to business and industry in satisfying the training needs of their employees. Fifty-nine per cent of the employers utilized the services of a vocational, technical and adult school since the time of their expansion or relocation. In addition to hiring graduates as new employees, over three-fourths (77%) of the employers reported they encouraged participation in part-time training programs. While 53% of the industries responding employed adults that were participating in part-time job related educational activities at vocational, technical and adult schools.

The data indicate a substantial increase in the employment of graduates from the 1962 group to the 1965 group. Although the number of employers responding in the 1965 group is slightly less than twice as many as in the 1962 group, they reported over 3.5 times as many graduates employed from full-time programs.

Examination of the employment of "graduates" from part-time programs indicates the ratio is somewhat inverse to the above. Over 4 "graduates" were hired per employer in 1962 as compared to 2.6 per employer in 1965.

Reasons for the above findings cannot be established from the tabulations presented. However, factors which could have influenced the data are trends in the labor market, an increase in availability of graduates from full-time programs from 1962 to 1965, the increasing need for better trained persons, and others.

The 320 industries responding to the survey expressed satisfaction with the services provided by vocational, technical and adult schools in Wisconsin. Seventy-five (75%) of the respondents felt that the vocational, technical and adult schools

were contributing to the quality of labor force in their areas.

While this survey was in no way a comprehensive study of the role of the vocational, technical and adult schools in Wisconsin, it does indicate that these schools are preforming a valuable service to newly relocated or expanded business and industrial firms.

Although the number of skilled workers needed immediately (2300-2400) may appear large, one could hypothesize as to the reasons for the large number, such as: (1) the present thriving economy might be creating a high rate of employment resulting in a short labor supply, (2) the need for skilled workers could be the result of a lack of coordination activities and consequently a lack of needed skill developing programs sponsored by vocational, technical and adult schools, especially for areas outside of vocational, technical and adult cities, (3) the figures could be inadvertently inflated, and (4) other possible reasons.

Recommendations

The "suggestions for improvement" indicated by the employers should be studied by schools of vocational, technical and adult education with a view toward improvement of services needed by business and industrial establishments. There is some indication that industry and business is not knowledgeable of the services already offered by our vocational, technical and adult schools.

The somewhat small number of requests by employers for the establishment of new programs (28%) may suggest that adequate programs are being offered, but it also suggests a need for expansion of communication and coordination activities between our vocational, technical and adult schools and business and industrial firms. A smaller percentage of employers (21%) indicated that new programs had been established as a result of their requests. The fact that the data suggests fewer new programs were <u>established</u> than were <u>requested</u> must be examined by all local vocational, technical and adult schools.

Since the data suggest that employers outside of cities having vocational, technical and adult schools are receiving less service than employers in vocational, technical and adult cities, it is recommended that as soon as possible steps be taken by vocational, technical and adult schools to improve this service where needed. The development of vocational, technical and adult districts in Wisconsin will facilitate the expansion of services to all areas of the state.

State Board of Vocational, Technical and Adult Education
Madison, Wisconsin 53702

INDICATIONS OF SKILLED WORKERS NEEDED BY RECENTLY EXPANDED OR RELOCATED BUSINESS AND INDUSTRY IN WISCONSIN. DECEMBER, 1966

This report (January, 1967) constitutes tabulations of responses to question #24 on 320 returns of a questionnaire mailed in November, 1966, to 590 employers who had relocated or expanded during 1962, 1965, or 1966.

Question #24 was: "In what areas do you presently lack skilled workers at this location?" Space was provided for the employer to indicate the "Type of Skilled Worker" and "Approximate Number Needed Immediately." The report is divided into three sections according to responses from employers who expanded or relocated in: (1) 1962, (2) 1965, and (3) 1966.

The number and types of skilled workers needed are grouped by industries by community and/or city, (i.e., a double space between entries indicates a different business or industrial establishment follows).

Employers who Expanded or Relocated in 1962

City/ Community	Approximate Number Needed Immediately	Type of Skilled Worker
Antigo		Tool & Die (Machinist)
Antigo		Draftsmen (Mechanic)
Beaver Dam	18	Wire Feed Welders
Brillion	15	Molders - Coremakers
Brillion	3-4	Maintenance Mechanics
Brillion	2	Machinists
Brodhead	4	Welders
Brodhead	1	Draftsman
Brookfield	Several	Set-up Welders
Brookfield	Several	Metal Fab. Machine Operator
Butler	10	Toolroom Machinists (night)
Campbellsport	3	Sheet Metal Press Brake Operator
Campbellsport	3	Detailers & Draftsmen
Campbellsport	2	Welders
Cedarburg	6	Drill Press, Turret Lathe & Chucker Operators
Cedarburg	2-3	Electronics Technicians
Cedarburg	10	Saw operators, Machine operators, Assemblers

Chilton	4	Maintenance
Chippewa Falls	10	Machinists
Chippewa Falls	1	Draftsman
Cudahy	2	Machinists
Cudahy	6	N/C Part Programmers
Cudahy	25	Machine Tool Operators
Cudahy	6	Machine Designers
Eau Claire	7	Electronic Test Operators
Fond du Lac	2	Structural Steel Layout
Fort Atkinson	1-2	Crane Operators
Fort Atkinson	1	Auto Mechanic
Fort Atkinson	1	Secretary
Fort Atkinson	1	IBM Keypunch Operator
Fort Atkinson	1	Receiving Clerk
Fort Atkinson	2	Maintenance
Fort Atkinson	1	Electrician
Grafton	1	Spray Painter
Grafton	1	Jig & Fixture - Tool & Die Maker
Grafton	1	Metal Spinner
Grafton	1	Draftsman
Grafton	1	Time Study Man
Grafton	2	Electronic Technicians
Green Bay	5	Diesel Mechanics
Green Bay	3	Material Handling Equipment Mechanic
Green Bay	4	Welders
Hartford	6	Mechanical Supervision
Hartford	4	Line Foremen
Hartford	2	Office - Cost Accounting
Hartland	4	Tool and Die Makers
Hudson	5-10	Machine Operators
Hudson	5	Spray Painters & Metal Finishers
Janesville	5	Machinists
Janesville	2	Forktruck Operators
Jefferson	10	Upholsterers

Kaukauna	15	Semi-skilled Machine Operators
Lake Geneva	2	Design Technicians
Lake Geneva	1	Draftsman
Lake Geneva	1	Testing Technician
Lodi	4	Layout Metal Workers
Lodi	3	Welders
Lodi	2	Draftsmen
Madison		Tool and Die Makers
Madison		Good Welder
Marshfield	100	Variety of Skills
Mayville	15	All Types of Sheet Metal and Metal Fabricators
Mayville	30	All Phases of Metal Fabrication Skilled or Unskilled
Merrill		Machinists
Milwaukee		Steel Foundryman - Apprentice
Milwaukee		Machine Operator - Learners
Milwaukee	40	Machinists
Milwaukee	20-30	Draftsmen
Milwaukee	10	Electricians
Milwaukee	25	Machine Operators
Milwaukee	15	Molders
Milwaukee	20	Draftsmen - Journeymen
Milwaukee		Automatic Turret Lathes
Milwaukee		Radial Drills
Milwaukee		Large and Small Mills
Milwaukee		Assemblers
Milwaukee	100	Machine Operators
Milwaukee	10	Skilled Trades
Neenah	10-15	Sheet Metal Workers
Neillsville	1	Spray Painter
Neillsville	1	Electronics Technician
New London	3	Welders
Oshkosh	3-4	Management Trainees
Oshkosh	32	Machinists

Port Washington		Molders
Racine	3	Tool and Die Makers
Racine	5	Pattern Makers
Racine	10	Foundrymen
Racine	3	Machinists
Richland Center		All Types
River Falls	8	Welders Mig and Tig
River Falls	4	Metal Finishers
River FAlls	4	Sheet Metal Layout
River Falls	4	Machine Operators
River Falls	2	Draftsmen - Mechanical - Structural Steel
Sheboygan	1	Die Maker
Sheboygan	1	Printer
Sheboygan	3	Machine Setup
Sheboygan	2	Maintenance
Sheboygan	1	Industrial Engineering
Shell Lake		Use & handling of fiberglass
South Milwaukee	2	Machinists
South Milwaukee	4	Draftsmen
Stevens Point	10	Experience in high volume bakery prod. machinery
Sturgeon Bay	2	Electronics
Sturgeon Bay	3	Carpenter and cabinet makers and welders
Sturgeon Bay	20	Aluminum Non-Ferrous Welders
Sturgeon Bay	10	Ship Fitters
Sturgeon Bay	10	Pipe Fitters
Two Rivers	20	Wood Machine Operators
Two Rivers	5	Brake Press Operators
Two Rivers	8	Spot Welders
Two Rivers	5	Drafting Top Assemblers
Two Rivers	5	Cabinet Assemblers
Waterford	2	Fit up
Waterford	1	Layout
Waterford	2	Welders
Waukesha	20	Machinists
Waukesha	5	Welders
Waukesha	3	Inspectors

Waukesha	4	Technical Grads. in Electricity
Waupun	1	Electrician
Waupun	1	Plumber
Waupun	1	Carpenter
Wausau		Operators of Woodworking Machines
Wausaukee	1	Woodworker
Wausaukee	5-6	Assembly workers
West Allis	5	Loose Molders
West Allis	4	Coremakers
West Allis	2	Plate Grainers
West Allis	2	Chemical Lab Trainees
West Milwaukee	5	Draftsmen
West Milwaukee	1	Electricians
Whitewater		Tool and Die Makers
Whitewater		Machinists
Wisconsin Rapids	2	Canning Fety Mechanics

Employers who Expanded or Relocated in 1965

City/ Community	Approximate Number Needed Immediately	Type of Skilled Worker
Algoma	10	Arc Welders
Almena	4	Dairy Plant Workers
Antigo	4	Veneer Graders
Antigo	6	Splicer Operators
Antigo	2	Electrical
Appleton	2	Electricians
Appleton	2	Pipefitters
Appleton	2	Millwrights
Arcadia	2	Draftsmen
Arcadia	6	Blueprint
Arcadia	15	Woodworking Machine Operator
Arcadia	2	Maintenance - Skilled
Arcadia	2	Electricians
Arcadia	3	Cabinet Makers
Ashland		Draftsmen
Ashland	3	Journeymen Crafts, Pipe

Ashland	10	Set-up Welders
Ashland	4	Machinist
Baraboo	5	Tool and Die Mold Makers
Baraboo	2	Welding (heliarc)
Baraboo	5	Electronic Technicians
Baraboo	4	Sheet Metal Fabrication
Belgium	5	Plant Maintenance
Belgium	4	Warehouse Inventory
Brillion	12	Assemblers
Brillion	6	Press Operator
Brillion	6	Welders
Brookfield	10	Lithographic Pressmen & Assistant
Browntown	3	Machine Molders-Bench & Mach Coremkrs
Burlington	1	Machinist
Butler	10	Platers
Cuba City	3	Arc Welders
Cudahy	10	Welders and Set-up men
De Forest	2	Machine set-up men
De Forest	1	Tool and Die Maker for Plastic
Delavan	3	Machinists
Delavan	3	Executive Secretary
Delavan	3	Secretary w/shorthand training
Delavan		Swiss-type Auto. Screw Machine set-up man
Delavan	1	Draftsman (Mechanical)
Delavan	1	Machinist
Delavan	4	Maintenance Press & Rivet Supervisors
Dresser	5	Machinists, Machine Operators and Toolmakers
Eau Claire	4	Welders
Fond du Lac	4	Patternmakers
Fond du Lac	10	Die Makers
Fond du Lac	12	Tool Makers
Fond du Lac	15	Draftsmen

Fond du Lac	50	Machinist
Fond du Lac	50	Assemblers - Machine Tool
Fond du Lac	10	Industrial Eng. Technicians
Fond du Lac	15	Draftsmen
Footville		Experienced Sewers
Fort Atkinson	6	Skilled Printers
Franksville	5	High Grade Sheet Metal Workers
Franksville	5-10	General Machine Shop Machinists
Franksville	5-10	Farm Machinery Mechanics & Testers
Glendale	2	Truck Drivers
Grafton	1	Pattern Maker
Grafton	6	Leadmen, set-up men
Green Bay	10	Machinists
Hartford	4-5	Lathe Operators
Hartford	1-2	Grinder Operator
Hartford	3-4	General Machinist
Hartford	4	Machinists
Hazelhurst	2	Coil Winders
Hurley	10	Electrical & Mechanical Assemblers
Janesville	25	Mechanical Assemblers
Janesville	10	Electronic Assemblers
Kaukauna	20	Machine Shop Skills
Kaukauna	10	Foundry Skills
Kaukauna	3-4	Punch Press & Brake Press Operators
Kaukauna	2	Welders
Kewaskum	2	Printer Slotter Operators
Kewaskum	2	Tool and Die Makers
Kewaskum	3	Maintenance Mechanics
Kewaskum	4	Lathe Operators
La Crosse	2	Computer
La Crosse	5	Secretarial
La Crosse	2 (within 6 mo.)	Woodworking Machine Operators
La Crosse		Tool Makers
La Crosse		Arc Welders
La Crosse		Machinists (Prod. & Tool run)

Ladysmith	2	Maintenance
Lake Mills	2	Engineer Assistants
Lake Mills	1	Tool Maker
Lake Mills	1	Electronic Technician
Lancaster	6	Sales
Lancaster		Service
Lomira	2	Sales
Madison	7-8	Web-offset 2nd Pressmen
Madison	3-4	Lithographic Strippers
Madison	4-5	Offset Pressmen
Manitowish Waters	2	Maintenance Men
Manitowoc		Set-up man, Inspectors, Machine Operators, etc.
Manitowoc	10	Molders, Coremakers, Machinists
Manitowoc	10	Electricians
Marinette	3	Draftsmen
Marinette	4	Machinists
Marinette	1	Tool and Die Apprentice
Marinette	1-3	Cabinet Workers
Marshfield	2	Electrician
Marshfield	1	Machinist
Marshfield	2	Jr. Accountants
Marshfield	60	Cabinet Makers (In Spring)
Marshfield	2	Welders
Marshfield	3	Electricians
Mauston	3	Metal Fabricator
Mayville	2	Tool Maker
Mayville	2	Machinist
Menomonee Falls	3	Set-up Skills & Blueprint Reading
Menomonee Falls	10	Machine Assemblers
Menomonee Falls	2	Machine Adjusters
Menomonee Falls	8	Machine Operators
Menomonee Falls	5	Sheet Metal
Menomonee Falls	2	Electrical Technicians
Mequon	1	Cabinetmaker
Mequon	1	Set-up and Machine Operator

Mequon	4	Machinist - Mold Makers
Merrill	2	Machinists
Milton		Electronic Technician
Milwaukee	3-4	Bindery Workers
Milwaukee	24	Machine Operators (Drill Press)
Milwaukee	6	Machine Tool Set-up Men
Milwaukee	2	Tool and Die Makers
Milwaukee	10	Fitter Erectors
Milwaukee	5	Manufacturing Technician Level
Milwaukee	3	Manufacturing Skilled Tradesmen
Milwaukee	20	Manufacturing Semi-skilled (welders)
Milwaukee	10	Manufacturing Semi-skilled (Mach. Op.
Milwaukee	1	Candymaker
Milwaukee	1	Slitter Operators
Milwaukee	1	Shear Operators
Milwaukee	1	Plate Saw Operators
Milwaukee		Mechanical & Electrical Technicians
Muskego		Tool and Die Makers
Muskego		Tool Makers
Muskego		Machinists
Neillsville	Few at all times	Arc, Tig, Mig, Welding, etc.
New Glarus	2	Electronics Technicians
New Glarus	1	Machinist (Tool & Die Maker)
New Holstein	1	Typist
New Holstein	6	Welders
New Holstein	2	Mechanics
New Holstein	1	Machinist
New London	2-3	Directing Labor (Foremen)
New London		Electricians, Machinist, Plumbers, Carpenters, General Mechanics
New Richmond	5	Tool and Die Makers
New Richmond	10	Machinists
New Richmond	4	Welders
New Richmond	2	Electricians
Oak Creek	1	Layout Man
Oak Creek	2	Machine Flame Cutters
Oak Creek	4	Welders

Oconto	20	Industrial Sewing
Oconto		Diesel Mechanics
Oconto Falls	6	Precision Woodworkers
Oshkosh	5-10	Testers, Coil Winders, Tech.
Oshkosh	6	Molders
Oshkosh	3	Grinders
Oshkosh	10	Unskilled
Oshkosh	3	Tool Makers
Oshkosh	3	Maintenance Machinists
Oshkosh	1	Tool Designer
Oshkosh	2	Simple Eng., Estimating, Supervisor
Portage	10	Aircraft Mechanics
Portage	10	Assemblymen - Welders - Riveters
Portage	10	Layout - Blueprint - Draftsmen
Portage	20	Hand Sewing Craftsmen
Portage	40	General Shoe Making Skills
Port Washington	6	Welders
Port Washington	2	Burners
Port Washington	25	Machinists, Tool and Die
Prentice	20	Machinists
Racine	5	Machine Repairmen
Racine	3	Electricians
Racine	1	Electrician
Racine	125	<u>All</u> Classifications
Racine	4	Set-up, Grinder, Tool Maker
Racine	1-2	Electricians
Racine	1-2	Tool and Die Makers - Mold Makers
Racine	3-4	Maintenance Trades - Top Men
Reedsburg	1	Maintenance Man w/Mechanical ability
Reedsburg	2	Office Clerical
Reeseville	1	Machinist
Rhinelander	10	Mechanical & Elec. Tech. and Office Workers
River Falls	20	Sheet Metal Workers

Sheboygan	10	Metal Fabricating
Sheboygan	25	Machinists
Sheboygan	5	Draftsmen
Sheboygan		Office
Sheboygan		Laboratory
Sheboygan	1	Electrician
Sheboygan Falls	50	Skilled Machinists
Spencer		Secretarial & Clerical
Spencer		Maintenance
Spooner		Machinists
Spooner		Tool & Die Makers
Spooner		Clerical
Sturgeon Bay	3	Machine Workers
Two Rivers	25	Welders, Fitters, Machinists
Walworth	5	Machinists
Waterloo	10	Web-fed offset pressmen
Waterloo	20	Related Printing Jobs
Watertown	2	Metal Workers
Wauke ha	1	Assemblyman
Waukesha	4	Machinists - Turret Lathe
Waukesha	2	Toolmakers
Waukesha	12-15	Patternmaker - Coremaker
Waukesha	7	Screw Machine Setup Men
Waukesha	3	Tool and Die Makers
Waukesha	3	Machinists
Waukesha	1	Tool Design
Waukesha	1	Time Study
Waupaca	1	Engineering
Waupaca		Supervisory Training
Waupun	20	Machinists - Tool and Die Skilled Machine Operators Tool Room Hands
Wausau	2	Welders
Wausau	2	Tool and Die Makers
Wausau	2	Printers
Wausau	2	Jr. Engineers

West Bend	2	Engine Lathe Operator
West Bend	1	Electrician
West Bend	5	Automatic Screw Machine Set-up
Whitehall	10	Maintenance Men
Whitehall	25	Butchers and Boners
Whitehall	25	Kill Floor Butchers
Whitewater	2	Machinists
Whitewater	1	Welder
Whitewater	1	Stock Clerk
Winneconne	1	Inspector
Winneconne	6	Assemblers
Winneconne	2	Arc Welders
Wisconsin Dells	2	Welders
Wisconsin Dells	1	Machinist

Employers who Expanded or Relocated in 1966

City/ Community	Approximate Number Needed Immediately	Type of Skilled Worker
Appleton	3	Punch Press Operators
Appleton	2	Machinists
East Troy		Machinists
East Troy		Electricians
East Troy		Draftsmen
Green Lake	1	Sewing Machine Mechanic
Kenosha	4-5	Mach. Hands Trained on Lathes-Shapers
Kenosha	3	Machinists
Kenosha	2	Draftsman
Menomonee Falls	50	Welding-Tool & Die-Punch Press-Sheet Metal Men-Assemblers-Painter Brake Men-Press Set-up Men
Oshkosh	2	Detail Draftsmen
Racine	4	Skilled Precision Mach.
Racine	1	Tool Makers
Racine	4	Punch Press Operators
South Milwaukee	2	Lab Technicians (1 Elec. - 1 Mech.)
Tomah	6	Mechanical
Waupaca	2	Machinists - Cabinet makers

The State of Wisconsin

STATE BOARD
OF
VOCATIONAL, TECHNICAL AND ADULT EDUCATION
ROOM 720, 1 WEST WILSON STREET
MADISON 53702

C. L. GREIBER
DIRECTOR

November 11, 1966

To Whom It May Concern:

We want to take this opportunity to congratulate you on your recent (move or expansion) in the State of Wisconsin.

Wisconsin Schools of Vocational, Technical and Adult Education stand ready to be of service to assist wherever possible by providing occupational training and education for your employees whenever required. Our schools not only offer various preparatory programs from which to choose graduates, but also offer short courses on a full-time or part-time basis for those employees needing related job refresher or upgrading training.

We know that nearness to market, to raw materials, and to an adequate labor force are important factors in decision-making relative to new plant location and expansion. But we would like to know how much the nearness of a vocational, technical and adult school was considered before making your decision to move or expand.

To improve and expand our services to your firm we need your help. Please complete to the best of your knowledge and return the enclosed questionnaire. This questionnaire will provide us with vital information which will be considered in determining boundaries of vocational, technical school districts, preparing budgets, developing new programs and improving existing programs.

We are asking how the local vocational, technical and adult school is being used by you and your employees. Most important we are asking for your suggestions on how our schools of vocational, technical and adult education can better serve your needs. If you are not located near one of our schools it is perhaps even more important to you that the questionnaire be completed and returned.

Please complete and return the enclosed questionnaire and any other information you care to submit in the addressed return envelope at your earliest convenience. We would like to have all returns in by November 28, 1966, so we may start on our analysis. All information will be treated as confidential.

If you should desire further information, or if you should desire assistance in completing the questionnaire, please feel free to call on us or the local vocational, technical and adult school in your area.

Sincerely yours,

C. L. Greiber

State Director
Vocational, Technical and Adult Education

C.L.Greiber/je

The State of Wisconsin

EXECUTIVE OFFICE
MADISON
53702

WARREN P. KNOWLES
GOVERNOR

November 11, 1966

To Whom It May Concern:

Members of the Legislature and I are keenly aware of the increasing importance that quality schools of vocational, technical and adult education play in the business and industrial development of the State of Wisconsin.

Our rapidly changing technological society requires a highly trained labor force second to none.

We urge you to support this study being conducted by the State Board of Vocational, Technical and Adult Education and to offer as many suggestions as you can which will contribute toward improving and expanding their services to yo

Sincerely yours,

Warren P. Knowles
G O V E R N O R

WPK:je

EMPLOYER QUESTIONNAIRE

1. Name of Establishment or Firm _____

2. Address _____

3. If this is a branch of a larger firm indicate name and address of home office:
_____ _____

4. Name and title of person completing questionnaire _____

5. What is the major product, function or activity of your establishment at this location? (Check)

____ Manufacturing
____ Contract Construction
____ Transportation, Communication, Electric, Gas and Sanitary Service (Underline specific activity)
____ Wholesale or Retail Trade (Underline specific activity)
____ Finance, Insurance or Real Estate (Underline specific activity)
____ Providing Services

6. What is the approximate number of persons employed by your firm at this location?

____ From 1-5	____ From 51-100
____ From 6-20	____ From 101-250
____ From 21-50	____ From 251 up

Encircle "Yes" or "No" Where Appropriate

7. (Yes, No) Was the nearness of a vocational, technical and adult school given consideration when deciding to locate or expand at this location?

8. (Yes, No) If the answer to question #7 is "yes" how much consideration was given to the availability of a vocational, technical and adult school as a factor in locating or expanding in this location.

___ Very much ___ Much ___ Some ___ Very Little

9. (Yes, No) Were other locations given consideration when the decision was being made to relocate or expand?

10. (Yes, No) Did the lack of vocational-technical training facilities in the other locations enter into the decision not to locate there?

11. (Yes, No) Since the time of your relocation or expansion in this locality has the vocational, technical and adult school been of service to you?

12. (Yes, No) Have you attempted to recruit new employees (graduates) from the local vocational, technical and adult school?

13. How many "graduates" of full-time one and two-year programs have you employed from the local vocational, technical and adult school since your relocation or expansion? _____

14. How many "graduates" of part-time programs have you employed from the local vocational, technical and adult school since your relocation or expansion? ____

15. (Yes, No) Do you encourage your employees to enroll in job related training courses at the local vocational, technical and adult school?

16. (Yes, No) Do you have an incentive plan to encourage your employees to take job related training courses at the local vocational, technical and adult school?

17. (Yes, No) Do you have a general policy which offers promotions or higher wages to employees who complete job related courses or who have attended vocational, technical and adult schools?

18. (Yes, No) Do your employees attend job related training courses at the local vocational, technical and adult school?

19. (Yes, No) Have you requested the establishment of new training programs at the local vocational, technical and adult school?

20. (Yes, No) Has a new program(s) been established by the vocational, technical and adult school as a result of your request?

21. (Yes, No) If the answer to question #20 is "yes" did this new program(s) influence your relocation or expansion?

22. (Yes, No) Do you feel the vocational, technical and adult school has contributed to the quality of labor force in your area?

23. If the answer to question #22 is "yes", to what extent do you feel the school has contributed to this quality? ___Very Much ___Much ___Some ___Very Little

24. In what areas do you presently lack skilled workers at this location?

Approximate Number Needed Immediately	Type of Skilled Workers

25. What suggestions do you have for the improvement of vocational, technical and adult school services to you? (Use back of sheet if necessary)_____

Please return completed questionnaire in the enclosed self addressed envelope by November 28, 1966, to:

State Board of Vocational, Technical and Adult Education
Room 720, 1 West Wilson Street
Madison, Wisconsin 53702

VT 002 479
Cassara, Beverly B.; Langford, Ann
New England Committee on Training of Household Help. Conference Report (Goddard College, Plainfield, Vermont, December 13, 1967).

Goddard Coll., Plainfield, Vt.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 13Dec67 16p.

*OCCUPATIONAL HOME ECONOMICS; HOME MANAGEMENT; *SERVICE WORKERS; *MAIDS; *CONFERENCE REPORTS; WORKING WOMEN; *EDUCATIONAL NEEDS; STATUS; COMMUNITY SERVICES
*NEW ENGLAND COMMITTEE ON TRAINING OF HOUSEHOLD HELP, GODDARD COLLEGE, PLAINFIELD, VERMONT, DECEMBER 13, 1967

Objectives of the group were to: (1) become aware of household help training programs in the nation, (2) discuss nondeductibility of household wages, (3) focus attention on other New England projects, and (4) initiate a plan of action for the central Vermont area. Mrs. Evelyn Farber, Women's Bureau, commented on the need for a code of standards on wages, hours, etc., and the advantages of having an intermediary agency to train, place, supervise, and handle business details. Mrs. Anita Wells of the Treasury Department Office of Tax Analysis, explained why the cost of household help should not be tax deductible. Mrs. Dorothy Parrish described the In-Migrant Program of Boston. A Group Session unanimously concluded that state minimum wage laws would raise the status of the household worker. Other factors discussed were public apathy, problems unique to the rural area, cooperative programs between Goddard College and the Office of Economic Opportunity, homemaker aids in conjunction with the neighborhood youth corps, and public relations strategies. (FP)

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CONFERENCE REPORT

NEW ENGLAND COMMITTEE ON TRAINING OF HOUSEHOLD HELP

December 13, 1967

Goddard College

Plainfield, Vermont

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Written by:
Mrs. Beverly B. Cassara
Director of Adult Education
with the assistance of:
Miss Ann Langford

VT002479

New England Committee on Training of Household Help:

Miss Evalyn Bates, Assistant to the President, Goddard College
Mrs. Beverly B. Cassara, Director of Adult Education, Goddard College
Mrs. Stella B. Hackel, Commissioner, Vermont State Department of Employment Security
Mrs. Dorothy Hanna, Director, The Radcliffe College Fund
Mrs. Lois Harper, Executive Director, The National Committee on Household Employment
Mrs. Margaret Morris, Project Director, The National Committee on Household Employment
Mrs. Dorothy Parrish, Director, In-Migrant Program, Women's Service Clubs, Inc.
Miss Dorothy Pendergast, Regional Director, Women's Bureau, U.S. Department of Labor
Miss Jean MacKenzie Pool, Research Associate, Radcliffe Institute

Conference Participants:

Mr. Dale Anderson, Director, Community Aids Service Training, Montpelier
Miss Evalyn Bates, Assistant to the President, Goddard College
Mrs. Beverly B. Cassara, Director of Adult Education, Goddard College
Mrs. Ruth Colombo, Director of Women's Activities, Commission on Political Education, Vermont Labor Council (AFL-CIO)
Miss Evelyn W. Farber, Chief, Branch of Employment Opportunities, Women's Bureau, U.S. Department of Labor
Mrs. Stella B. Hackel, Commissioner, Vermont State Department of Employment Security
Mrs. Lenore McNeer, College Counselor, Vermont College
Mrs. Virginia Morrissey, Tax Lawyer
Mrs. Dorothy Parrish, Director, In-Migrant Program, Women's Service Clubs, Inc.
Miss Dorothy Pendergast, Regional Director, Women's Bureau, U.S. Department of Labor
Dr. and Mrs. Royce S. Pitkin, President, Goddard College
Mrs. Rosemary Rexford, Director, Cooperative Community Services Agency, Goddard College
Mrs. Maxine Romney, Assistant Director, Community Aids Service Training, Montpelier
Miss Blair Williams, Chairman, Department of Home Economics, The University of Vermont

List of those who sent greetings expressing their interest and concern for the work of the Committee:

Mrs. Mary Dublin Keyserling, Director, Women's Bureau, U.S. Department of Labor

Miss Mary Hilton, Deputy Director, Women's Bureau, U.S. Department of Labor

Mrs. Chase Going Woodhouse, Chairman, Governor's Committee on the Status of Women (Connecticut)

Mrs. Rita L. Crowley, Chairman, Advisory Council on the Status of Women (Maine)

Senator Mary Fonseca, Chairman, Special Commission on the Status of Women (Massachusetts)

Miss Margaret E. Normandin, Chairman, New Hampshire Commission on the Status of Women

Mrs. Harold M. Burkholder, Chairman, Rhode Island Commission on the Status of Women

Mrs. Evelyn Patnod, Chairman, Governor's Commission on the Status of Women in Vermont

As I take pen in hand to write this report, two facts stand our clearly. One is that through the far-sighted and enlightened efforts of the Women's Bureau of the Department of Labor and through the efforts of the National Committee on Household Employment, some very interesting projects are underway in the training of various kinds of help needed in the home. The other fact that stands out all too clearly is that only a few persons have any knowledge of this effort; an even fewer number have recognized the need for such training and most persons have not yet defined the problem in their own minds.

I believe the basic cause of the disinterest is the magnitude of the problem. This has been stated well by Miss Jean MacKenzie Pool of the Radcliffe Institute:

> The complexity of psychological security, status, and pride coupled with economic remuneration, health benefits, vacations, and social security makes the role of the household worker in relation to her employer a precarious one. And to be untrained and unsupervised adds to the factors making this one of the least desirable positions to occupy.

It is not our purpose here to go into the cultural, sociological, psychological, or economic causes that have contributed to the situation. Whatever they may be, the fact is that working women do need household help, more help than is now available.

That is why we here at Goddard decided to have a one-day conference on the subject of training household workers and scheduled this conference for December 13, 1967. We realized that in some parts of the country a few public and private projects were already in effect, but none of these were in northern New England even though Boston boasts a fine pilot program at the Women's Service Club, called the In-Migrant Program. We wanted to bring together persons from our central Vermont area as well as representatives from the State Commissions on the Status of Women from the other New England States, as a small working group to 1) inform ourselves as to what is being done across the country regarding the training of

household help, 2) to discuss the question of the non-deductability of household help wages, 3) to focus our attention on projects now in effect in New England, 4) to try to come up with a plan that would start some action on this problem in the central Vermont area and in New England generally.

During the morning session of the conference, Mrs. Evelyn Farber of the Women's Bureau told of the work of the National Committee on Household Employment, citing examples of the types of projects being submitted to the National Committee on Household Employment for funding and others which are to be sponsored by local groups.

The National Committee on Household Employment, organized in 1965 as a non-profit organization, sponsored by some twenty-five national women's organizations, provides the impetus for some creative solutions to the problem of procuring adequate household help. The story of the work of this committee has been written up in various magazines, but is still not well-known and the Committee stands in need of persons to pick up the challenge in local communities.

Mrs. Farber's important message, however, was that the problem of supplying household help is not just a matter of training, but rather a concern for the human individuals involved. If it appears obvious that a woman might need to be trained in personal grooming, cooking, cleaning, child care, etc., there are other phases of the programs which are equally important but not so obvious. The employer must be helped to understand and respect a code of standards for the worker so that the limits of the job are very clear to her as well as the employee. These standards include wages, hours, vacations, holidays, sick leave, Social Security, insurance, changes in schedules, duties and working relationships.

This list of responsibilities makes the load of the employer sound very heavy indeed. For this reason Mrs. Farber suggested that agencies of some type, whether

public, private or cooperative, are the best means of handling the training and placement of household workers. Then the worker is employed by an agency whose business it is to train, employ and place the worker, to supervise the worker, to make sure the code of standards is observed, to serve as a go-between for the purpose of solving difficulties between employer and employee, and to take care of the business details of insurance, Social Security, wages, etc.

Mrs. Farber pointed out other ramifications of the problem which should not be ignored. An agency should when possible make sure that day care centers are available for the worker's children. In some instances it is necessary to make transportation arrangements for the workers. Some workers need actual basic education in reading, writing and comprehension.

In other words the purpose of the National Committee on Household Employment is more than just to make household workers available. The purpose is a larger one; it takes into account the basic human needs of people. It aims to train persons so that they may respect themselves and then be in a position to command respect. Respect must also be a concern of the employer. She must be helped to understand that she cannot uly respect herself if she takes undue advantage of her employee. Mutual respect is one way to build a foundation upon which household workers may acquire new status. Increased wages alone will never give the household worker a feeling of pride and worth.

One session of the conference at Goddard College was devoted to the question of the non-deductability of the cost of household help. This subject was of particular concern to Mrs. Stella Hackel, Commissioner of Employment Security for the State of Vermont.

Miss Anita Wells who works in the Office of Tax Analysis at the Treasury Department prepared a six-page statement for the group concerning her thinking on the

problem up to this time. The complete report of Miss Wells will be appended here in full. Her arguments generally were against deduction of the cost of household help, to the effect that: 1) the cost to the Government would be so large as to make it prohibitive, 2) many of the women who need financial relief of this type most would not gain from such a deduction because they cannot afford to hire the help in the first place; that the people in the higher income brackets would actually benefit most, 3) a tax deduction is not a good answer to what she feels is perhaps more a matter of inadequate salaries of employed women, 4) there are perhaps "non-tax" measures at hand with which to attack the social problems involved in this issue.

While the participants in the conference realized the validity of some of these objections they did raise certain questions. They wondered whether deductions for the cost of child care at least might not be as valid a business expense for the working women as secretarial help, which is tax deductible. Since it is deemed desirable from an economic point of view for women to take their places in the labor force, it would seem to make sense that special account be taken of the fact of the need for household and child care. Especially one-parent families need some consideration. In order for women to find their way back into the labor force, they have to be able to meet the rising costs of household help.

The basis for arriving at the figure of one billion dollars tax revenue lost to the government as suggested by Miss Wells, was questioned. It was pointed out that at present many household workers may not be reporting earnings from household work, and therefore new revenue could well come in from wages not now being reported.

The third session of the conference was concerned with projects now on-going in the New England area.

Mrs. Dorothy Parrish, director of the In-Migrant Program, came to Goddard to tell us about her work. Sponsored by the Office of Economic Opportunity and the Women's Service Club of Boston, the In-Migrant Program was set up to assist Negro women who come to Boston from the South to find employment. The truth is that they often find themselves exploited by employment agencies and employers, so that life becomes very difficult for them. The Women's Service Club provides opportunities for training, job placement, legal aid and emergency housing for these women. Also plans have been built into this program to turn it into a cooperative effort as soon as possible, in which case the workers as members of a cooperation will have charge of running their own affairs. The In-Migrant program is concerned to raise the standards of housework by training the employer as well as the employee. The Radcliffe Institute helps and supports the program by providing training for the employer and also by providing many job opportunities for those in training, since the women in the Radcliffe program stand in dire need of good household help.

An instance was reported in New Britain, Connecticut where a woman has established a small business for the purpose of providing various kinds of household help. She has successfully trained several persons, but now stands in need of financial aid in order to get over the hurdle of training a dozen or so. The demand for the services of her growing company would seem to be great enough to support that number.

The final session of the conference was concerned with the hope of finding a way to work on the problem of training household help in the northern New England area.

The demand for household help is obviously much smaller here than in the large cities. There is obviously a great disparity between the articulated problem felt in urban areas, and the slight inarticulated need felt here. Yet more and more women in this area are going into the labor force. Those here who need help, need it as much as anyone in the city. There is undoubtedly more public apathy to this

problem in a semi-rural area than in the city. However, the type of work in the household such as is projected by the National Committee on Household Employment could provide good employment opportunities for those rural girls who are now unskilled and doing the dullest of routine kinds of jobs. If the status of the job can be raised over a period of time, girls and women who are now not happily employed might find really rewarding jobs, both personally and financially, in the field of household employment. Representatives from the local Office of Economic Opportunity were hopeful that a cooperative program might be set-up whereby they might be able to provide stipends to women, and child care, while Goddard College might provide training. This however has not matured as money was not available from O.E.O. plus the fact that other needs seemed to have priority over this one in the O.E.O. program.

Another way of getting at this problem, which seems to be right smack up against the wall of public apathy in this area, would be to do some public education work. Therefore, the Director of Adult Education at Goddard and the Director of the Cooperative Community Services Agency at Goddard under Title I,have decided to start bringing the message to community groups, not asking them to do anything at the moment but listen and discuss. Hopefully after doing this during the Spring we will then be able to see how we might proceed to a next step.

We are considering some sort of pilot training project in the Fall which might operate in conjunction with the Neighborhood Youth Corps. This program might be training for homemakers aids. While the demand for cleaning service is not too great in this area, there is a definite need for help in caring for the elderly and mother substitutes in times of emergencies.

It was decided unanimously by the group meeting at the Goddard Conference that one first step nationally at upgrading the status of the household worker would be

the inclusion of household wages under state minimum wage laws. To this end, the group asked the Women's Bureau to supply sample legislation to the State Commissions on the Status of Women, in the hope that they will make it their business to work toward the includion of household wages in the minimum wage laws of the various states. We are pleased to hear that this sample legislation has already been prepared and is being distributed.

In conclusion, we are deeply indebted to all those persons mentioned earlier in this report for their help and encouragement in this project. It is indeed a small impact we have made, but nothing is more important in this particular case than perseverence and the willingness to work slowly, taking small steps. We are prepared to continue our work.

In closing, I would like to make one suggestion. Would it be feasible to prepare a movie showing various aspects of the problem and the kinds of solutions being offered? In a rural area like this where no one knows that other people are really concerned about training household help and upgrading it generally, it might be more convincing than just hearing about it, to be able to witness scenes from pilot projects, etc.

PROPOSAL TO ALLOW A DEDUCTION FOR THE COST OF HOUSEHOLD HELP

December 8, 1967
Prepared by Miss Anita Wells
Office of Tax Analysis
U. S. Treasury Department

Proposals have been made from time to time that a deducation be allowed under the Federal individual income tax for the cost of household help. As a general rule, the income tax does not allow a deduction for personal, living, or family expenses.[1] The cost of household help is considered a personal expense and is, therefore, not deductible.

The proposal to allow a deduction for the cost of household help is offered in several different contexts with several different objectives. It is not generally proposed to allow all taxpayers a full deduction for their expenditures for domestic services. In recognition of the fact that it would be difficult to justify special tax concessions for the cost of household help while denying similar treatment to various other personal expenses for which an equally good or better case for favored treatment could be made, most proposals for such a deduction have been limited to those situations where it is argued that they are in the nature of business expenses.

Revenue Cost of Full Deduction for all Taxpayers

A rough indication of the magnitude of the cost to the Government of a full deduction for household help may be obtained by reference to total income of private household workers. According to Department of Labor reports, in 1966 there were about 2.2 million private household workers. National income data indicate that these workers received about $4 billion that year. Assuming a marginal tax rate of 25 percent, the cost of a deduction of that amount would be about $1 billion. The cost would probably be in excess of this amount since a substantial proportion of employers

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[1] The deduction for medical expenses which is one of the exceptions to the general rule is allowed only with respect to extraordinary expenses, that is, those above a specified percentage of gross income.

of such workers would be in middle or higher income brackets and thus subject to rates above 25 percent.

The Equity Argument

The most common proposal is that working wives should be allowed to deduct their expenses for domestic services because they are attributable to employment outside the home. If the wife were at home she would perform house work herself, but when she obtains gainful employment, she must hire someone to do part or all of this work. It is argued that it is not fair that all of the additional earnings of a wife be subject to tax in such cases since they are partly absorbed in meeting the extra expenses of household help.

The Committee on Social Insurance and Taxes of the Commission on the Status of Women considered the broader question of a tax deduction (or credit) for the additional expenses working women incur in the maintenance of their households. Their conclusion was:

> There is no doubt that wives incur additional expenses when they work outside the home. Many of these expenses are common to men and women. However, a wife maintaining a household usually has--in addition to any costs for the care of her children--extra household expenses for household help, laundry done outside the home, prepared foods, and so on. The Committee recognized that such expenses also are incurred by women who are not working and that it would, therefore, be very difficult to establish whether the additional household expenses were due to the wife being at work. Accordingly, the Committee is making no recommendation on this matter.

Another difficulty in justifying the deduction on equity grounds is that most of the tax benefits would accrue to middle and higher income families who can afford domestic servants. Lower income families generally would not be able to hire domestic help even with a tax concession.

The deduction would also be unfair to families--usually those with low incomes but also some with low-middle incomes--in which the household work is done by the

working wife or other members of the family in the evenings or on weekends compared with families which hire household help and thus have more leisure.

The Incentive Argument

Incentive to employ household help

Some propose a deduction for the cost of household help on the grounds that it would have a desirable incentive effect in encouraging employment of more household workers. More recently in connection with training programs for household workers, it has been suggested that a deduction for the cost of household help would result in the provision of more jobs for those being trained in this occupational area.

The difficulty with this tax incentive proposal, as in the case of many other such proposals, is that it would be impossible to distinguish between actions which are the result of the incentive and actions which would have occurred even without it. This means that some part--frequently a large part--of the Government's revenue loss might go as a windfall to those who were prepared to take action without regard to the incentive. Many middle and upper income families already have domestic help so there would be little or no effect in stimulating employment by such families. For families in lower income brackets the fact that a small percentage of the cost would be borne by the Government would not make it possible for them to fit this type of expenditure into their budgets. In the first income bracket a deduction would be worth only 14 percent of the expense and even at a marginal rate of 20 percent which would be higher than the rate for a substantial number of families, the tax saving would still be insufficient to encourage the expenditure.

Incentive to accept outside employment

Another type of incentive argument favoring the deduction of the cost of household help is that such a deduction would encourage more women to take jobs outside the home. This objective would be particularly applicable in times of a general

labor shortage. It is also suggested specifically as a means of encouraging more educated and trained women to fill jobs in some of the professions and occupations in which there are shortages of qualified personnel, such as teachers, social workers, nurses, medical technicians, and the like.

The need for some type of special allowance for working women is most frequently mentioned with respect to working mothers and the cost of care of their children while they work, rather than other kinds of extra household expenses.[1] One bill in the present Congress (S. 1879, introduced by Senator McCarthy) which is concerned with professional nurses only, proposes a deduction for expenses for care of children and disabled dependents as well as domestic help (with the upper limit on the amount of the deduction fixed at the lesser of $2,600 or one-half of the income of a professional nurse from services as a nurse). It would obviously be extremely difficult to justify singling out a particular occupational group for such special tax treatment. If it were granted to nurses, other medical technicians, teachers, social workers, and others would consider it fair.

Part of the problem in these areas where shortages exist is the fact that salary levels are not commensurate with the education and training required for these occupations. The question is whether a tax deduction for costs of child care and household help is a satisfactory substitute for salary increases. The benefits from the deduction would vary from family to family and because of the progressive rates of the income tax would be affected by such generally unrelated facts as the size of the family income from other sources. It is certain that the benefits would not

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[1]Since 1954 a limited deduction has been allowed to certain taxpayers for care of young children and disabled dependents which are incurred in order to enable the taxpayer to engage in gainful employment. It is a narrowly restricted deduction which was intended to provide some relief in hardship situations. It is clear, however, that low income families derive little benefit from this deduction. If a mother is to benefit, she must be able in the first place to make an expenditure for child care, to make an arrangement for child care, and finally must have sufficient income in excess of her personal exemptions and deductions to take advantage of this deduction. Few low-income families can meet these requirements.

be distributed in a manner even roughly comparable to a straight-forward adjustment in salaries to accord with those paid in competitive occupations. Furthermore, the provision of such a deduction might well tend to divert attention from the salary question itself. The significance of the benefits of such a deduction to the individual nurse, teacher, or social worker, might well be exaggerated in the minds of the general public and of those who fix the salary scales.

General Considerations Regarding Tax Incentives

The proposal to provide a tax deduction for household help as an incentive measure is similar to the numerous other proposals to use tax deductions (or credits) to help solve some social problem. In connection with almost any social problem which exists today a proposal has been made to solve it through some kind of tax provision. In many cases the tax proposal serves a useful purpose in calling attention to the fact that a serious social problem exists. The question, however, always is whether a tax provision is the most efficient and equitable means of achieving a specific laudable purpose. Frequently, the objective could be better accomplished through a straight-forward approach through explicit expenditure, grant or subsidy, through direct Government provision of goods and services.

With respect to the popular appeal of proposals to use tax deductions or credits as a method of achieving specific policy goals, the Assistant Secretary of the Treasury for Tax Policy, Stanley S. Surrey, recently enumerated some of the endless number of claimants for such use of the tax system:

> If you object to polluted air or polluted water, then a tax incentive will clean it right up. If a college education appears to costly to a family, then a tax credit will open the college doors. If our business firms are not training enough workers, then a tax incentive will set them to improving worker skills. If private enterprise and city officials will not eradicate our slums, then a tax incentive will remove this urban blight. If businesses won't locate in depressed areas, then a tax incentive will show them the way. If electric companies will not place their transmission lines underground, then a tax incentive will turn the soil. If urban transportation is too slow and too antiquated, then a tax incentive will make it fast and attractive. Indeed, all you need to learn what is wrong with America is to read the tax bills in Congress--wherever you see a tax proposal, that is where the action is....

> I suspect that there are better ways to clean our rivers and skies, to eradicate our urban ills, to give a college education to all who are qualified. Those ways will require loan guarantees, credit programs, direct subsidies and other Federal expenditure programs, and our facing up squarely to the costs involved.

A tax deduction costs public funds as surely as does an expenditure program. It is the equivalent of an appropriation, but unlike an expenditure program it is a hidden form of assistance and not subject to careful annual scrutiny in the budget and appropriation processes. In every case where a tax deduction is proposed the question must be raised whether there are alternative ways of accomplishing these results in a more efficient and equitable and less costly manner. The tax route may be chosen because it is feared that a direct appropriation for the purpose cannot be obtained. Chairman Mills of the House Ways and Means Committee, for example, has said he considers such tax incentives as "a form of back door spending." He thus fully recognized it is the door of his Committee that is being knocked on as the entrance to the Budget through tax incentives, rather than the direct route of government assistance. And he can also recognize if that door opens for one or two tax incentives, it must inevitably stay permanently ajar for the wave of tax incentives that would follow.

Closing the back door of tax incentives does not mean that no solution to these specific social problems will be provided. Rather it means that the doors and windows are opened to the whole horizon of approaches through the non-tax measures at hand with which to attack these social problems.

VT 002 535
Labor Force Survey of Sheridan and Johnson Counties, Wyoming.

Wyoming Employment Security Commission, Casper. Research and Analysis Section
MF AVAILABLE IN VT•ERIC SET.
Pub Date - 66 90p.

*OCCUPAIONAL SURVEYS; *LABOR FORCE; PROFILE EVALUATION; EMPLOYMENT; INDIVIDUAL CHARACTERISTICS; TABLES (DATA); DEMOGRAPHY; *EMPLOYMENT STATISTICS; EMPLOYMENT TRENDS; LABOR FORCE NONPARTICIPANTS; UNEMPLOYMENT; OCCUPATIONS
SHERIDAN COUNTY; JOHNSON COUNTY; WYOMING

Information for this study was obtained by personal interviews of a randomly selected sample of households. To achieve the desired reliability the two counties were divided into four areas: the cities of Sheridan and Buffalo, Sheridan County excluding urban Sheridan, and Johnson County excluding Buffalo. A sample size and blow up factor was computed for each of the four areas. Households were used as the sample unit with every member 14 years of age or over being interviewed. The interviewers took every "kth" dwelling after a random start. Dwellings which were obviously not occupied were not included. Dwellings which were apparently occupied but in which no contacts were made were followed up with return visits. The few households which could not be contacted were considered to have the same number of members as the rest of the households surveyed in their respective area. These non-respondents were considered when computing the blow up factor and total population, but no attempt was made to include them in any of the breakouts. Tables include: (1) population by age and sex, (2) covered work force summary, (3) covered employment, (4) primary activities of respondents during the reference week, (5) characteristics of workers, (6) characteristics of women keeping house, (7) characteristics of students, (8) seasonal employment, and (9) agricultural employment. Other graphic and tabular data are given. (EM)

VT 002 535

LABOR FORCE SURVEY

OF

SHERIDAN & JOHNSON COUNTIES, WYOMING

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
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VT 002 535

Prepared by

RESEARCH & ANALYSIS SECTION
EMPLOYMENT SECURITY COMMISSION OF WYOMING
P. O. Box 760 Casper, Wyoming

1966

PREFACE

The Labor Force Survey was conducted to give a profile of the work force of Sheridan and Johnson Counties, Wyoming. When the findings were completed, the characteristics of full time employed persons, part time employed persons, women keeping house, high school, and college students were made available. The results provide a basis for determining the availability of additional workers for new industries and the willingness of those presently employed to change occupations.

The information for this study was obtained by personal interviews of a randomly selected sample of households. To achieve the desired reliability the two counties were divided into four areas; the cities of Sheridan and Buffalo, Sheridan County excluding urban Sheridan, and Johnson County excluding Buffalo.

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For each area the ratio of the number of households listed in the 1960 census to the number of households in the survey was used as the blow up factor. The sample results were listed on EDP equipment. The tables in the report were compiled from this sample listing and then increased to population size by using the blow up factors. The results were rounded to the nearest whole number. This procedure caused a difference between totals made up of many small numbers and the same totals made up of a few large numbers. This procedure also causes a repetition of some numbers, particularly 3, 8, and 9. This does not affect the reliability of the information.

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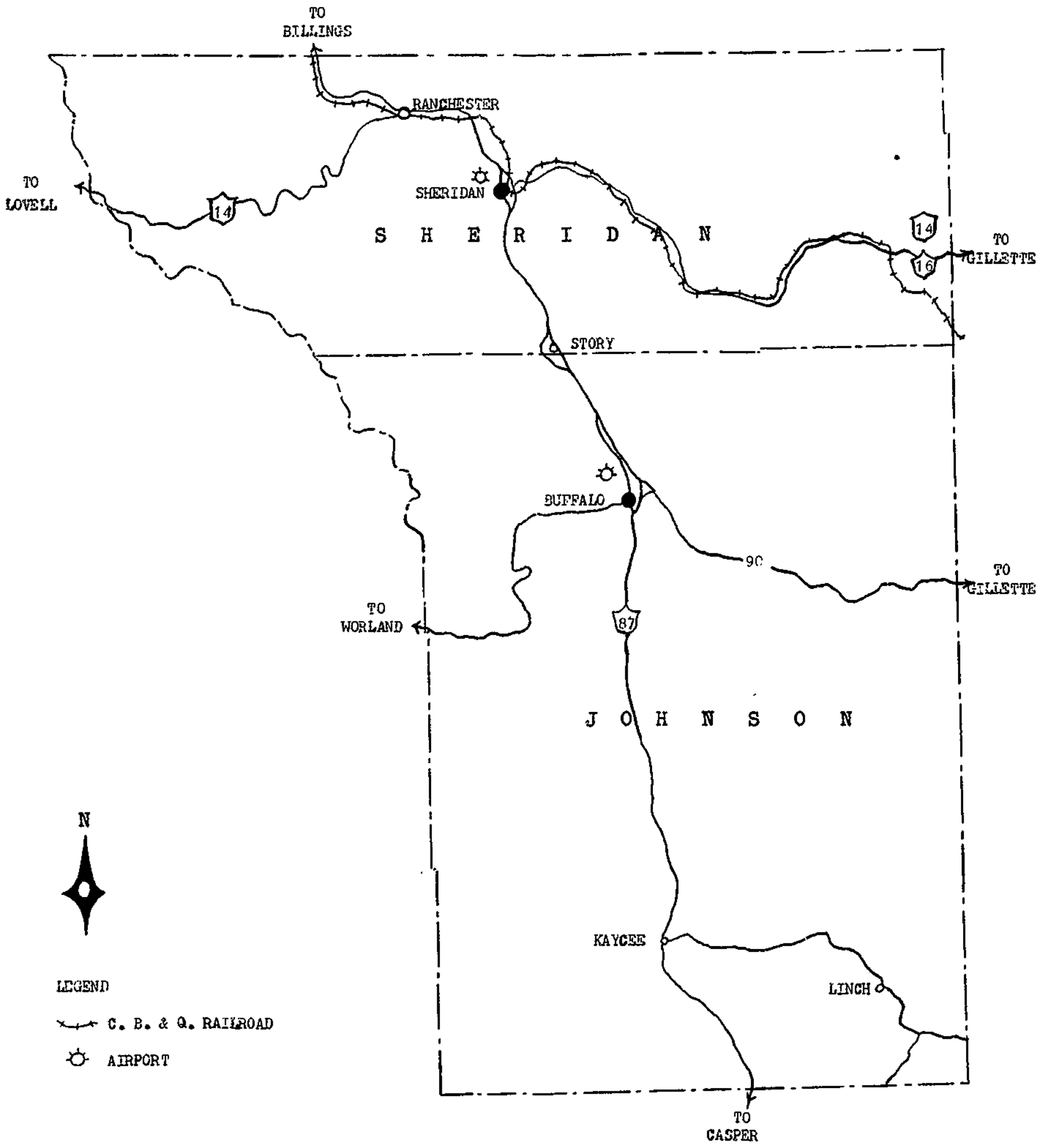
The Employment Security Commission of Wyoming acknowledges with grateful appreciation, the encouragement and assistance provided by United States Senator and former Governor, Clifford P. Hansen, the Wyoming Natural Resources Board, and William P. Rock and Associates. Appreciation is especially extended to the University of Wyoming's College of Commerce and Industry's Statistical Department for their assistance in establishing the sample design and structure; the many public and private employers and officials; the school officials who so graciously expended their time and effort in completing the survey questionnaires; the citizens of Sheridan and Jonnson Counties who responded to the interviews; and the cooperation and efforts of the members and employees of the Employment Security Commission. Through the efforts of all the above mentioned, this study was made possible.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WORLAND
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J O H N S O N
KAYCEE
LINCH
TO
CASPER
N
LEGEND
C. B. & Q. RAILROAD
AIRPORT

POPULATION
1950-1960

SHERIDAN COUNTY

Significant increases in both male and female population occurred in the school age group (5 - 19) and in the 65 & Over age group. The 45% increase of persons age 65 and over has been attributed to the large number of people moving into the area to retire. There is an apparent irony in the increased number of school age children, since there has been a marked decrease in both the male and female population between the ages of 20 and 44, as well as a significant decrease in male population between the ages of 50 and 64. One reason for these losses has been a difference between job opportunities locally and elsewhere. Doubtlessly, many have left the Sheridan County area in search of employment.

JOHNSON COUNTY

In Johnson County, the picture is somewhat brighter, regarding population shifts. There has been a large increase in school age population, coupled with substantial gains in population in the age group 40 - 54. However, as in Sheridan County, there has been some out-migration of persons in the age group 20 - 34, doubtlessly being attracted from the area by brighter job opportunities elsewhere. Overall, both male and female population has been on the increase during the past 10 years.

POPULATION BY AGE AND SEX
1950-1960
SHERIDAN COUNTY

Age Groups	Men			Women		
	1950	1960	Percent Change	1950	1960	Percent Change
0-5	1,069	917	- 14.2	1,018	844	- 17.1
5-9	885	1,004	+ 13.4	883	892	+ 1.0
10-14	784	962	+ 22.7	692	841	+ 21.5
15-19	657	673	+ 2.4	655	696	+ 6.2
20-24	610	384	- 37.0	630	394	- 37.5
25-29	658	394	- 40.1	713	428	- 40.0
30-34	732	520	- 29.0	686	555	- 19.1
35-39	763	609	- 20.2	742	573	- 22.8
40-44	690	633	- 8.3	642	596	- 7.2
45-49	630	643	+ 2.1	556	614	- 10.4
50-54	660	561	- 15.0	531	541	+ 1.9
55-59	751	445	- 40.7	523	468	- 10.5
60-64	627	526	- 16.1	473	480	+ 1.5
65 & Over	1,061	1,538	+ 45.0	864	1,258	+ 45.6
Total All Ages:	10,577	9,809	- 7.3	9,608	9,180	- 4.4
15-34	2,657	1,971	- 25.8	2,684	2,073	- 22.8
35-54	2,743	2,446	- 10.8	2,471	2,324	- 5.9

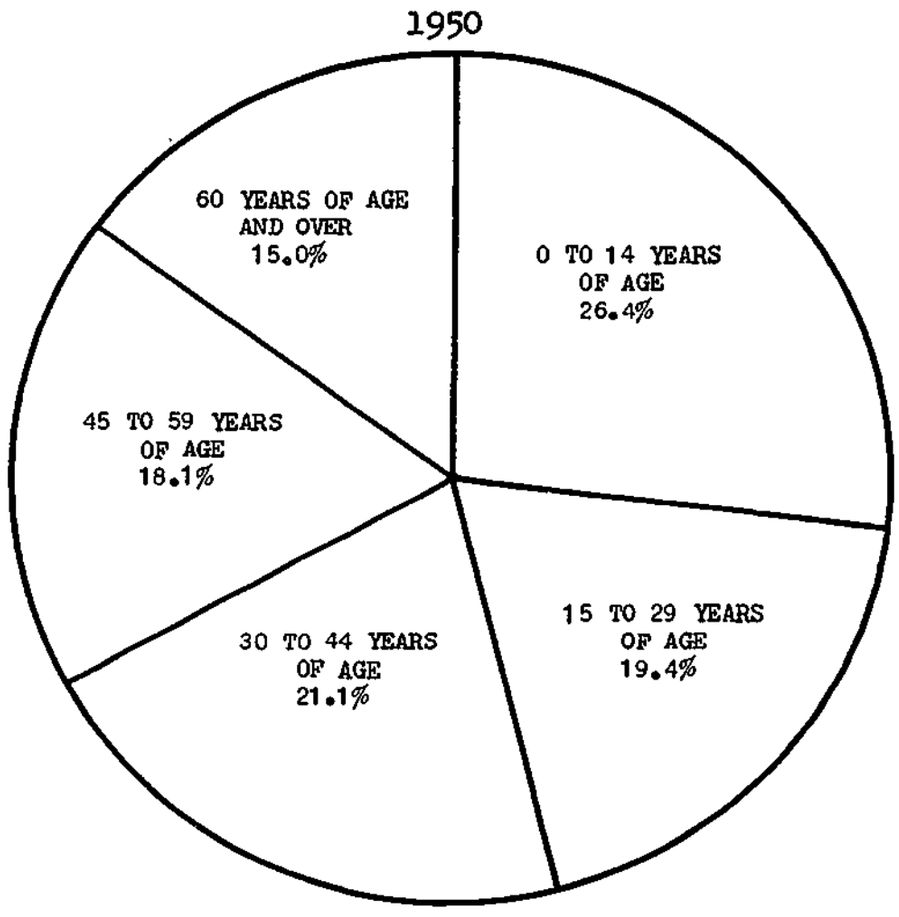
JOHNSON COUNTY

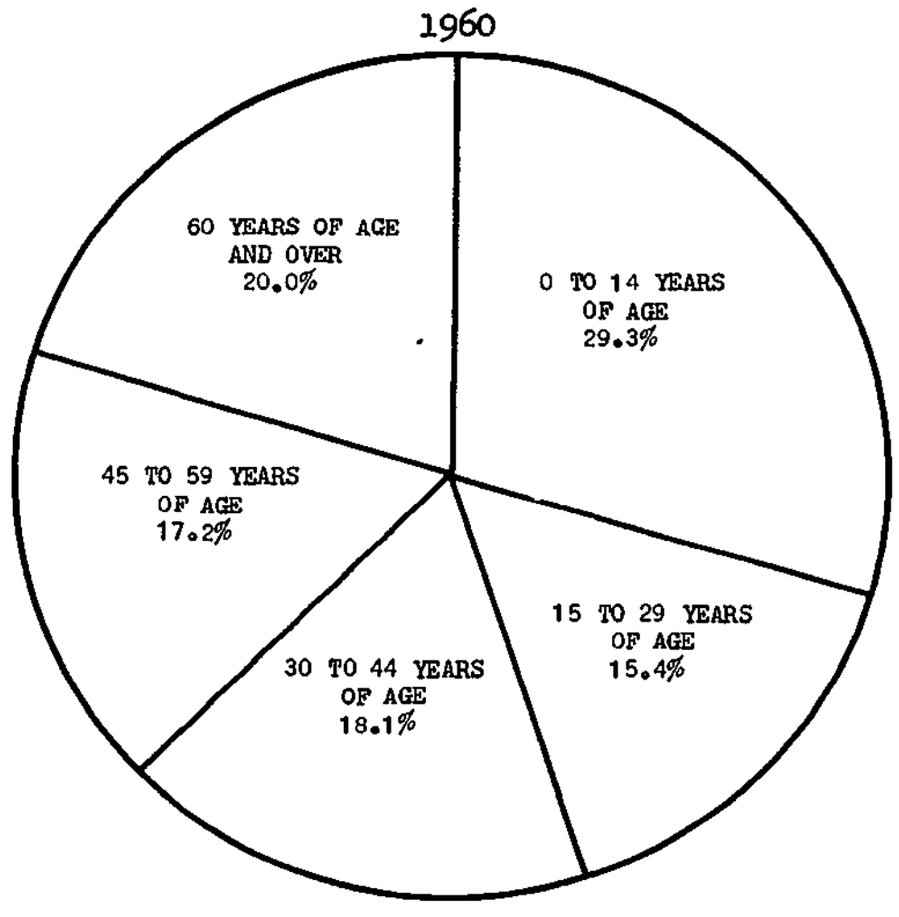
Age Groups	Men			Women		
	1950	1960	Percent Change	1950	1960	Percent Change
0-5	276	298	+ 8.0	245	326	+ 33.1
5-9	230	294	+ 27.8	213	311	+ 46.0
10-14	184	297	+ 61.4	199	264	+ 32.7
15-19	163	198	+ 21.5	148	172	+ 16.2
20-24	139	103	- 25.9	120	134	+ 11.7
25-29	158	132	- 16.4	160	156	- 2.5
30-34	181	160	- 11.6	190	157	- 17.4
35-39	179	179	0.0	147	165	+ 12.2
40-44	164	174	+ 6.1	130	175	+ 34.6
45-49	135	164	+ 21.5	113	133	+ 17.7
50-54	123	169	+ 37.4	124	151	+ 21.8
55-59	156	120	- 23.1	105	122	+ 16.2
60-64	128	123	- 3.9	115	125	+ 8.7
65 & Over	260	370	+ 42.3	222	303	+ 36.5
Total All Ages:	2,476	2,781	+ 12.3	2,231	2,694	+ 20.8
15-34	641	593	- 7.5	618	619	+ 0.2
35-54	601	686	+ 14.1	514	624	+ 21.4

Source: U. S. Census of Population for 1950 and 1960.

POPULATION OF SHERIDAN COUNTY

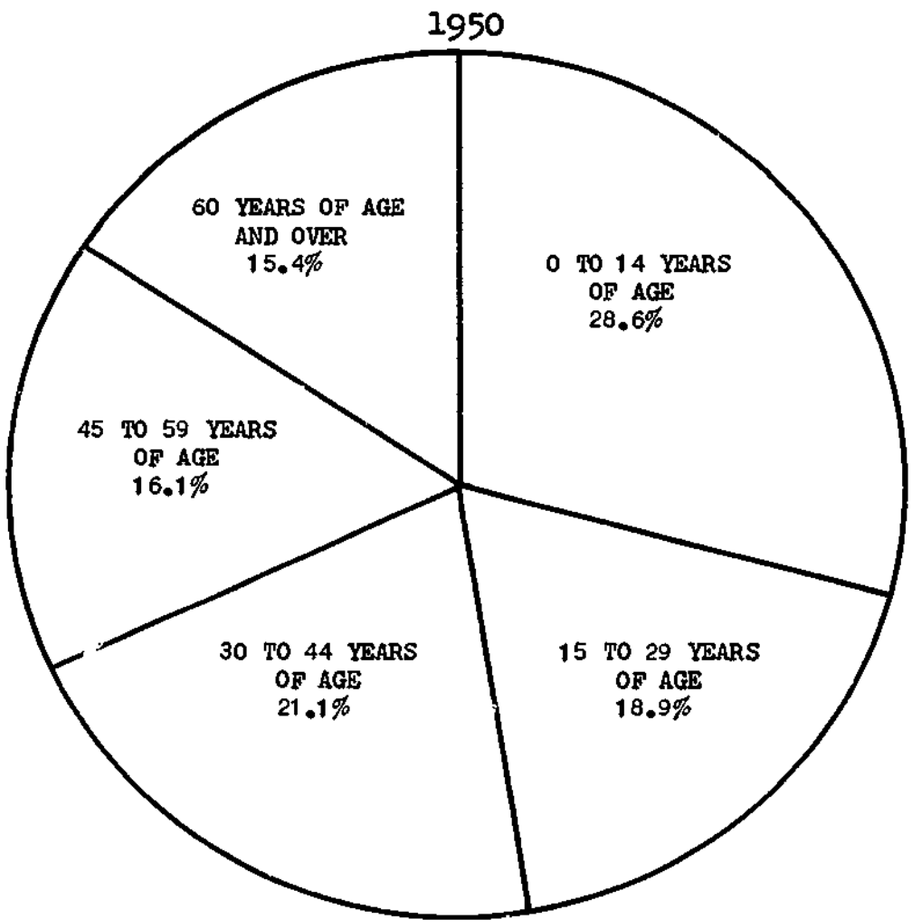
BY AGE GROUPS

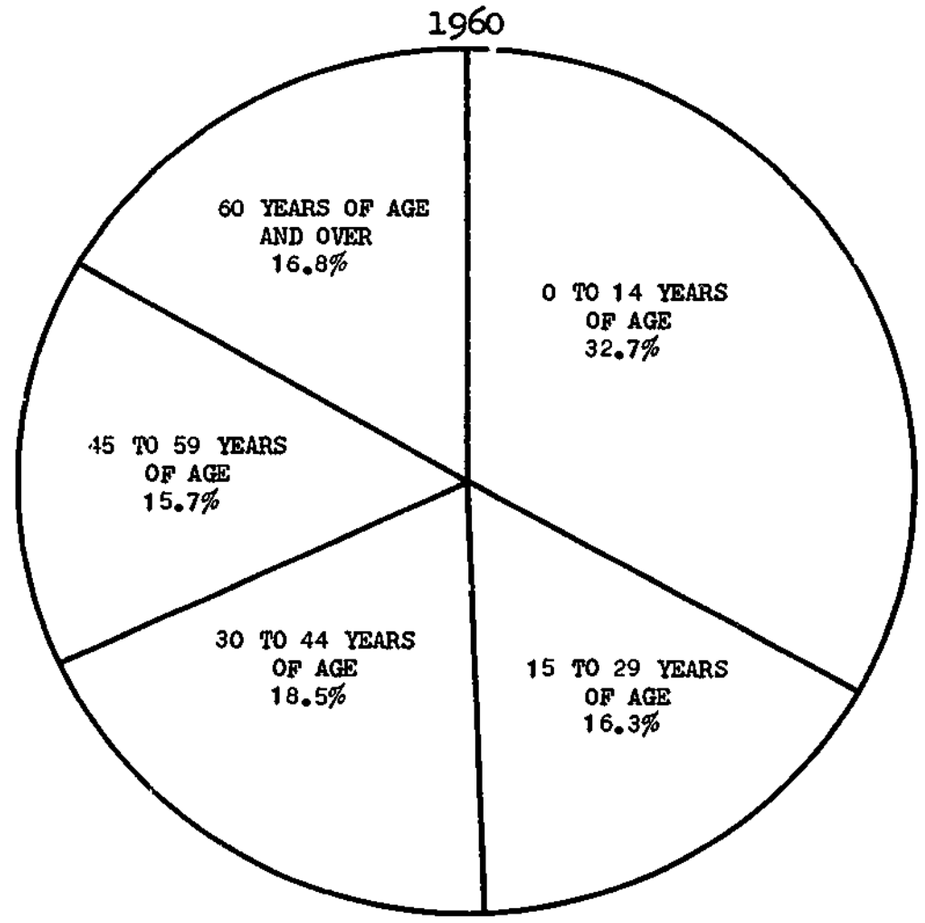




POPULATION OF JOHNSON COUNTY

BY AGE GROUPS





EMPLOYMENT INFORMATION

SHERIDAN COUNTY

From 1961 through 1964, work force statistics indicated that the employment situation in Sheridan County was improving at a good rate, while unemployment was on the decline. Although there were some minor fluctuations in various segments of the work force during 1963, most of these areas had regained their losses in 1964. But, again in 1965, Sheridan County's workforce suffered slight reductions in most areas of employment.

These minor declines were not felt exclusively in Sheridan County. A decline in work force statistics was being experienced throughout the State from 1964 to 1965, due to a combination of setbacks sprinkled throughout the State's economic picture. Statewide declines in Contract Construction employment, which extended through associated enterprises including suppliers, transportation firms, communications and utility firms, had some effect on Sheridan County's economic situation.

For the selected years, 1955, 1960, 1965 and 1966, covered employment has shown steady increases. At the same time, total wages paid on covered employment, has been on the increase since 1950. For the 16 year period covered, this indicates a steady rate of growth -- the difference being a gain of about 1,600 workers and roughly $5.8 million in wages. Percentage wise, covered employment has increased 57.1 percent during the period, while wages increased 59.8 percent.

JOHNSON COUNTY

In Johnson County, from 1961 through 1963, work force statistics showed a healthy rate of growth. However, in 1964, the Civilian Work Force dropped to the 1961 level, but due to out-migration in the meantime, the unemployment rate had improved.

There were minor fluctuations within the work force structure during 1964 and a trend toward very slight improvement during 1965, but for the most part, the trend of Johnson County's work force structure, as in other sections of the state, was toward stability. By the end of 1965, Johnson County's Civilian Work Force was still somewhat below the peak reached in 1963, for as in Sheridan County, and indeed, the entire state, the general economic slump had some effect on the local economic situation.

Since 1950, covered employment in Johnson County for selected years, 1950, 1955, 1960, 1965 and 1966, has more than doubled from an annual average of 554 in 1950, to 1,296 in 1966 -- an increase of 133.9 percent. Meanwhile, wages paid on covered employment have increased approximately $1.8 million during the 16 year period, a 134.1 percent jump.

Thus, despite the current trend of economic stability being experienced by both counties, overall growth patterns have been impressive

ESTIMATED EMPLOYMENT

Estimated employment in both counties follows closely the pattern established by Civilian Work Force statistics. In Sheridan County, employment peaked in 1964, then declined in 1965. While in Johnson County, employment reached its high in 1963, declined in 1964 and gained slightly in 1965.

ESTIMATED UNEMPLOYMENT

Unlike employment and work force trends, unemployment in Sheridan and Johnson Counties followed a relatively consistent pattern of decline. In Sheridan County, unemployment declined through 1964, then increased only very slightly in 1965. Meanwhile, in Johnson County, unemployment has been on the decline since 1961. The reason for the continuing unemployment declines in both counties is due, primarily, to out-migration.

WORK FORCE SUMMARY

SHERIDAN COUNTY

ANNUAL AVERAGES

	1961	1962	1963	1964	1965
Civilian Work Force	7,650	8,230	8,010	8,270	8,140
Total Unemployment	440	450	420	300	310
Unemployment Rate (Percent)	5.8	5.5	5.3	3.8	4.0
Total Employment	7,210	7,780	7,590	7,970	7,830
Total-Covered Employment	4,110	4,270	4,090	4,390	4,300
State U. I. Covered (Private Wage & Salary)	3,220	3,360	3,190	3,490	3,410
Federal Government	690	720	720	730	710
Railroads	200	190	180	170	180
Total Non-Covered Employment	3,100	3,510	3,500	3,580	3,530
Agriculture	1,130	1,070	1,140	1,100	1,040
Self Employed & Unpaid Family	660	610	650	590	540
Wage & Salary Workers	470	460	490	510	500
Nonagriculture	1,970	2,440	2,360	2,480	2,490
Non-Profit Institutes (Private Wage & Salary)	130	100	100	110	130
Domestic	300	390	370	380	370
Self Employed & Unpaid Family	790	1,170	1,080	1,150	1,090
State & Local Government (Less Covered Employment)	750	780	810	840	900

Figures rounded to nearest ten

WORK FORCE SUMMARY

SHERIDAN COUNTY

1965

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
Civilian Work Force	7,060	7,200	7,390	7,830	8,650	9,390	9,320	8,990	8,470	7,970	7,860	7,500	8,140
Total Unemployment	420	470	510	330	260	300	250	210	250	160	300	300	310
Unemployment Rate (Percent)	6.0	6.5	6.9	4.2	3.0	3.2	2.7	2.3	3.0	2.1	3.8	4.1	4.0
Total Employment	6,640	6,730	6,880	7,500	8,390	9,090	9,070	8,780	8,220	7,810	7,560	7,200	7,830
Total-Covered Employment	3,770	3,700	3,750	4,080	4,540	4,860	4,890	4,920	4,470	4,310	4,230	4,120	4,300
State U. I. Covered (Private Wage & Salary)	2,900	2,820	2,880	3,200	3,660	3,950	3,960	4,000	3,580	3,420	3,350	3,240	3,410
Federal Government	700	710	700	700	700	720	750	740	720	700	710	710	710
Railroads	170	170	170	180	180	190	180	180	170	190	170	170	180
Total Non-Covered Employment	2,870	3,030	3,130	3,420	3,850	4,230	4,180	3,860	3,750	3,500	3,330	3,080	3,530
Agriculture	590	750	850	1,000	1,210	1,660	1,490	1,210	1,130	1,000	880	670	1,040
Self Employed & Unpaid Family	440	440	540	540	590	640	640	590	590	540	490	440	540
Wage & Salary Workers	150	310	310	460	620	920	850	620	540	460	390	230	500
Nonagriculture	2,280	2,280	2,280	2,420	2,640	2,570	2,690	2,650	2,620	2,500	2,450	2,410	2,490
Non-Profit Institutes (Private Wage & Salary)	120	110	120	130	140	150	150	140	140	140	130	130	130
Domestic	330	330	330	360	410	410	420	410	370	360	350	340	370
Self Employed & Unpaid Family	980	980	960	1,060	1,210	1,230	1,230	1,220	1,090	1,070	1,040	1,010	1,090
State & Local Government (Less Covered Employment)	850	860	870	870	880	880	890	880	920	930	930	930	900

Figures rounded to nearest ten

WORK FORCE SUMMARY

JOHNSON COUNTY

ANNUAL AVERAGES

	1961	1962	1963	1964	1965
Civilian Work Force	2,310	2,350	2,440	2,310	2,320
Total Unemployment	170	150	130	120	90
Unemployment Rate (Percent)	7.4	6.4	5.7	5.4	4.2
Total Employment	2,140	2,200	2,310	2,190	2,230
Total-Covered Employment	760	750	790	710	750
State U. I. Covered (Private Wage & Salary)	730	720	760	670	700
Federal Government	30	30	30	40	50
Railroads	-	-	-	-	-
Total Non-Covered Employment	1,380	1,450	1,520	1,480	1,480
Agriculture	650	610	650	620	580
Self Employed & Unpaid Family	400	380	400	360	330
Wage & Salary Workers	250	230	250	260	250
Nonagriculture	730	840	870	860	900
Non-Profit Institutes (Private Wage & Salary)	40	30	30	30	40
Domestic	40	60	60	50	50
Self Employed & Unpaid Family	270	370	380	360	360
State & Local Government (Less Covered Employment)	380	380	400	420	450

Figures rounded to nearest ten

Figures rounded to nearest ten

WORK FORCE SUMMARY

JOHNSON COUNTY

1965

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
Civilian Work Force	1,860	2,040	2,100	2,250	2,400	2,720	2,740	2,520	2,460	2,350	2,240	2,140	2,320
Total Unemployment	160	200	150	90	50	70	80	70	50	50	50	90	90
Unemployment Rate (Percent)	8.5	9.7	7.1	4.0	2.3	2.5	3.1	2.6	2.2	2.3	2.2	4.0	4.2
Total Employment	1,700	1,840	1,950	2,160	2,350	2,650	2,660	2,450	2,410	2,300	2,190	2,050	2,230
Total-Covered Employment	560	590	620	710	750	870	880	850	790	790	770	760	750
State U. I. Covered (Private Wage & Salary)	510	550	580	670	710	820	810	790	730	740	730	720	700
Federal Government	50	40	40	40	40	50	70	60	60	50	40	40	50
Railroads	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-Covered Employment	1,140	1,250	1,330	1,450	1,600	1,780	1,780	1,600	1,620	1,510	1,420	1,290	1,480
Agriculture	350	430	490	570	680	830	810	680	700	570	500	390	580
Self Employed & Unpaid Family	270	270	330	330	360	390	370	360	420	330	300	270	330
Wage & Salary Workers	80	160	160	240	320	440	440	320	280	240	200	120	250
Nonagriculture	790	820	840	880	920	950	970	920	920	940	920	900	900
Non-Profit Institutes (Private Wage & Salary)	30	30	30	40	40	40	40	40	40	40	40	40	40
Domestic	40	50	50	50	60	60	60	60	50	60	50	50	50
Self Employed & Unpaid Family	300	310	320	350	390	410	420	390	360	370	360	350	360
State & Local Government (Less Covered Employment)	420	430	440	440	430	440	450	430	470	470	470	460	450

Figures rounded to nearest ten

Figures rounded to nearest ten

SHERIDAN AND JOHNSON COUNTIES, WYOMING

ESTIMATED CIVILIAN WORK FORCE

1960 - 1966

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	ANNUAL AVERAGE
Sheridan County													
1960				7,050	7,660	8,280	8,200	7,700	7,660	7,270	7,040	6,820	7,520*
1961	6,740	6,880	7,180	7,530	7,800	8,310	8,360	8,490	8,120	7,800	7,440	7,180	7,650
1962	7,230	7,320	7,570	8,240	8,880	9,380	9,630	8,950	8,330	8,070	7,760	7,360	8,230
1963	7,300	7,510	7,670	8,080	8,360	9,040	8,970	8,630	8,120	7,860	7,380	7,220	8,010
1964	7,080	7,260	7,280	8,170	8,600	9,020	9,450	9,160	8,920	8,590	8,310	7,410	8,270
1965	7,060	7,200	7,390	7,830	8,650	9,390	9,320	8,990	9,470	7,970	7,860	7,500	8,140
1966	7,020	7,270	7,420	7,790	8,270	9,060	9,110	8,800	8,440				
Johnson County													
1960				2,000	2,340	2,550	2,640	2,410	2,430	2,420	2,280	2,060	2,350*
1961	1,950	2,180	2,360	2,390	2,460	2,600	2,500	2,400	2,360	2,300	2,140	2,110	2,310
1962	1,970	2,060	2,210	2,350	2,430	2,830	2,740	2,590	2,450	2,330	2,210	2,020	2,350
1963	2,080	2,270	2,220	2,370	2,410	2,700	2,890	2,820	2,590	2,600	2,250	2,130	2,440
1964	2,160	2,150	2,210	2,290	2,400	2,500	2,530	2,510	2,520	2,290	2,140	2,020	2,310
1965	1,860	2,040	2,100	2,250	2,400	2,720	2,740	2,520	2,460	2,350	2,240	2,140	2,320
1966	2,080	2,200	2,290	2,320	2,520	2,800	2,870	2,690	2,560				

* 1960 Annual Averages based on 9 month's figures.

SHERIDAN AND JOHNSON COUNTIES, WYOMING

ESTIMATED EMPLOYMENT

1960 - 1966

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
Sheridan County													
1960				6,710	7,420	7,980	8,010	7,540	7,460	7,090	6,730	6,400	7,260*
1961	6,170	6,230	6,520	7,100	7,340	7,950	8,050	8,180	7,840	7,440	7,030	6,710	7,210
1962	6,540	6,560	6,820	7,660	8,440	8,910	9,320	8,690	8,080	7,850	8,480	6,980	7,780
1963	6,710	6,660	6,980	7,550	7,990	8,610	8,650	8,400	7,900	7,680	7,100	6,870	7,590
1964	6,690	6,860	6,880	7,860	8,390	8,780	9,260	8,940	8,700	8,440	7,780	7,030	7,970
1965	6,640	6,730	6,880	7,500	8,390	9,090	9,070	8,780	8,220	7,810	8,560	7,200	7,830
1966	6,720	6,910	7,090	7,560	8,080	8,860	8,920	8,630	8,280				

Johnson County													
1960				1,930	2,250	2,480	2,570	2,350	2,390	2,310	2,200	1,920	2,270*
1961	1,740	1,800	1,930	2,210	2,280	2,490	2,420	2,350	2,260	2,270	2,030	1,870	2,140
1962	1,700	1,680	1,820	2,270	2,400	2,690	2,660	2,490	2,410	2,300	2,120	1,910	2,200
1963	1,870	1,910	1,960	2,230	2,360	2,600	2,810	2,780	2,540	2,580	2,170	1,940	2,310
1964	1,900	1,950	2,040	2,120	2,300	2,420	2,490	2,450	2,440	2,230	2,050	1,860	2,190
1965	1,700	1,840	1,950	2,160	2,350	2,650	2,660	2,450	2,410	2,300	2,190	2,050	2,230
1966	1,990	2,060	2,150	2,240	2,460	2,750	2,810	2,660	2,530				

* 1960 Annual Averages based on 9 month's figures

SHERIDAN AND JOHNSON COUNTIES, WYOMING

ESTIMATED UNEMPLOYED

1960 - 1966

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	ANNUAL AVERAGE
Sheridan County													
1960				340	240	300	190	160	200	180	310	420	260*
1961	570	650	660	430	460	360	310	310	280	360	410	470	440
1962	690	760	750	580	440	470	310	260	250	220	280	380	450
1963	590	850	690	530	370	430	320	230	220	180	280	350	420
1964	390	400	400	310	210	240	190	220	220	150	530	380	300
1965	420	470	510	330	260	300	250	210	250	160	300	300	310
1966	300	360	330	230	190	200	190	170	160				
Johnson County													
1960				70	90	70	70	60	40	110	80	140	80*
1961	210	380	430	180	180	110	80	50	100	30	110	240	170
1962	270	380	390	180	30	140	80	100	40	30	90	110	150
1963	210	360	260	140	50	100	80	40	50	20	80	190	130
1964	260	200	160	170	100	80	40	60	80	60	90	160	120
1965	160	200	150	90	50	70	80	70	50	50	50	90	90
1966	90	140	140	80	60	50	60	30	30				

* 1960 Annual Averages based on 9 month's figures.

SHERIDAN COUNTY

COVERED EMPLOYMENT - 1966

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	AVG
Agriculture	39	38	36	47	52	50	51	50	65	48
Mining	119	124	125	81	63	61	92	98	100	96
Construction	506	510	505	648	796	984	979	921	817	741
Manufacturing	377	398	400	380	217	424	463	462	443	396
Transportation	83	79	74	81	89	93	92	98	96	87
Utilities	174	172	170	168	172	184	183	183	180	176
Wholesale Trade	171	168	174	186	186	196	193	195	206	186
Retail Trade	941	928	959	1,104	1,151	1,170	1,118	1,123	1,069	1,063
Finance	144	143	142	145	145	146	148	152	146	146
Service	282	295	295	332	357	415	463	472	414	369
Professional	233	237	238	238	235	245	242	244	238	239
Government	1,622	1,630	1,649	1,662	1,699	1,710	1,680	1,670	1,691	1,668
Federal	684	682	678	696	692	744	727	727	716	704
State	938	948	971	966	1,007	966	961	943	975	964
Total	4,691	4,722	4,767	5,072	5,162	5,678	5,712	5,668	5,465	5,215

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	TOTAL
Agriculture	$ 22,408	$ 22,317	$ 27,474	$ 72,199
Mining	164,513	123,512	149,832	437,857
Construction	812,547	1,477,299	1,826,993	4,116,839
Manufacturing	459,917	471,980	582,420	1,514,317
Transportation	101,915	105,442	126,228	333,585
Utilities	245,119	262,409	289,764	797,292
Wholesale Trade	205,541	216,302	250,449	672,292
Retail Trade	795,671	950,078	958,588	2,704,337
Finance	208,648	190,609	191,384	590,641
Service	173,053	227,504	272,248	672,805
Professional	144,022	137,317	155,574	436,913
Government				
Federal	974,075	1,116,352	1,057,383	3,147,810
State	INA	INA	INA	INA
Total	$ 4,307,429	$ 5,301,121	$ 5,888,337	$ 15,496,887

Latest Available Information INA Information Not Available

Latest Available Information INA Information Not Available

SHERIDAN COUNTY

COVERED EMPLOYMENT - 1965

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Agriculture	44	35	35	33	33	30	30	34	32	42	40	37	35
Mining	83	68	68	70	65	69	50	72	80	88	84	86	74
Construction	434	416	456	617	932	1,165	1,097	1,087	809	741	745	599	758
Manufacturing	352	360	338	378	392	401	384	394	388	401	389	390	381
Transportation	82	66	66	77	76	93	84	82	84	89	91	93	82
Utilities	171	168	169	170	171	175	177	175	173	171	169	169	172
Wholesale Trade	191	189	193	186	187	199	210	211	205	192	182	182	194
Retail Trade	923	898	937	1,022	1,056	1,078	1,098	1,101	1,043	988	976	1,015	1,011
Finance	143	143	142	142	144	142	141	142	142	142	141	167	144
Service	246	242	243	271	368	370	445	462	389	336	303	303	331
Professional	226	237	232	229	238	232	243	239	231	234	232	225	233
Government	1,550	1,570	1,573	1,573	1,579	1,607	1,639	1,623	1,644	1,637	1,636	1,642	1,606
Federal	704	710	704	704	700	724	747	744	719	703	707	708	714
State	846	860	869	869	879	883	892	879	925	934	929	934	892
Total	4,445	4,392	4,452	4,768	5,241	5,561	5,598	5,622	5,220	5,061	4,988	4,908	5,021

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL
Agriculture	$ 15,394	$ 15,759	$ 17,992	$ 23,334	$ 72,479
Mining	112,744	105,613	89,980	132,433	440,770
Construction	687,552	1,423,236	1,707,914	1,187,978	5,006,680
Manufacturing	420,233	468,435	495,940	520,202	1,904,810
Transportation	89,668	100,428	104,346	110,308	404,750
Utilities	227,558	242,826	250,764	264,465	985,613
Wholesale Trade	215,516	245,757	239,396	273,454	974,123
Retail Trade	751,033	865,246	893,230	936,393	3,445,902
Finance	201,625	188,928	187,300	245,632	823,485
Service	139,172	192,102	264,691	207,652	803,617
Professional	131,682	134,370	138,791	153,839	558,682
Government	938,798	1,086,241	986,411	1,132,450	4,143,900
Federal	938,798	1,086,241	986,411	1,132,450	4,143,900
State	INA	INA	INA	INA	INA
Total	$3,930,975	$5,068,941	$5,376,755	$5,188,140	$ 19,564,811

INA Information Not Available

INA Information Not Available

SHERIDAN COUNTY

COVERED EMPLOYMENT - 1960

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Agriculture	22	17	22	21	24	17	22	23	22	15	26	20	21
Mining	37	33	30	23	32	32	62	80	81	102	83	84	57
Construction	278	295	303	509	584	623	655	648	573	472	424	412	481
Manufacturing	332	321	346	385	422	465	417	397	385	343	352	330	374
Transportation	60	53	53	50	57	64	68	70	83	88	73	66	65
Utilities	165	164	166	162	165	169	168	168	169	161	158	159	165
Wholesale Trade	186	179	180	180	179	195	188	181	168	165	162	164	177
Retail Trade	958	980	962	1,022	1,078	1,092	1,072	1,071	1,032	982	980	1,003	1,019
Finance	143	140	140	144	137	142	151	149	150	154	151	152	146
Service	312	316	321	325	344	403	457	454	382	344	317	307	357
Professional	165	170	165	175	173	176	173	173	171	188	179	175	174
Government	648	645	638	664	669	692	718	713	708	674	662	654	674
Federal	648	645	638	664	669	692	718	713	708	674	662	654	674
State	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3,306	3,313	3,326	3,660	3,864	4,070	4,151	4,127	3,924	3,688	3,567	3,526	3,710

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTALS
Agriculture	$ 15,378	$ 16,353	$ 17,595	$ 26,414	$ 75,720
Mining	43,756	32,822	92,157	126,936	295,671
Construction	360,126	774,854	832,531	626,291	2,593,802
Manufacturing	324,537	400,241	389,668	360,784	1,475,230
Transportation	40,402	37,596	49,987	52,855	180,840
Utilities	181,733	186,147	206,573	209,066	783,519
Wholesale Trade	185,424	192,237	202,441	226,854	806,956
Retail Trade	716,343	760,277	749,905	760,712	2,987,237
Finance	144,099	150,512	150,010	186,493	631,114
Service	145,078	182,698	234,781	188,391	750,948
Professional	84,260	85,438	91,621	98,648	359,967
Government	821,739	754,800	916,428	771,540	3,264,507
Federal	821,739	754,800	916,428	771,540	3,264,507
State	0	0	0	0	0
TOTAL	$ 3,062,875	$ 3,573,955	$ 3,933,697	$ 3,634,984	$ 14,205,511

SHERIDAN COUNTY

COVERED EMPLOYMENT - 1955

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Mining	42	39	42	47	55	62	190	190	191	183	197	164	117
Construction	289	255	300	300	417	504	604	629	636	538	419	342	436
Manufacturing	289	296	298	352	358	356	334	334	322	316	320	287	322
Transportation	114	128	147	137	132	106	136	132	134	140	179	177	139
Utilities	171	171	172	173	176	182	185	190	185	187	185	183	180
Wholesale Trade	277	262	258	258	271	288	300	321	318	306	311	281	287
Retail Trade	991	938	995	1,039	1,039	1,094	1,121	1,094	1,055	1,057	1,048	1,068	1,045
Finance	158	159	154	140	150	141	152	151	153	152	156	159	152
Service	353	351	349	451	477	493	504	540	447	420	407	392	432
Professional	170	199	196	205	202	228	195	201	189	180	187	190	195
Miscellaneous	8	7	8	9	6	12	20	19	11	17	23	27	14
Government	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,862	2,805	2,919	3,111	3,283	3,466	3,741	3,801	3,641	3,496	3,432	3,270	3,319

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL
Mining	$ 49,122	$ 53,043	$ 213,397	$ 207,879	$ 523,441
Construction	249,996	370,360	671,027	438,693	1,730,076
Manufacturing	245,975	314,140	288,690	277,929	1,126,734
Transportation	131,259	145,682	162,973	189,513	629,427
Utilities	161,699	158,478	171,712	151,175	643,064
Wholesale Trade	232,194	234,503	269,282	312,717	1,048,696
Retail Trade	666,660	732,188	737,286	762,755	2,898,889
Finance	149,396	187,468	137,344	179,216	653,424
Service	159,697	234,581	252,323	214,522	861,123
Professional	92,470	114,316	126,941	134,119	467.846
Miscellaneous	2,265	9,124	13,663	11,026	36,078
Government	0	0	0	0	0
Total	$ 2,140,733	$ 2,553,883	$ 3,044,638	$ 2,879,544	$ 10,618,798

SHERIDAN COUNTY

COVERED EMPLOYMENT - 1950

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Mining	113	466	454	392	361	277	266	275	276	303	308	287	315
Construction	283	306	324	437	547	723	990	1,003	841	672	540	333	583
Manufacturing	366	371	374	372	402	417	447	448	444	418	420	421	408
Transportation	86	82	80	57	60	56	79	74	77	84	71	72	73
Utilities	160	157	161	162	166	172	203	203	203	181	177	176	177
Wholesale	241	243	253	251	250	260	299	316	286	287	286	283	271
Retail	1,099	1,063	1,058	1,068	1,079	1,101	1,117	1,104	1,071	1,061	1,067	1,089	1,081
Finance	118	118	120	128	127	129	129	132	133	125	121	135	126
Service	366	360	375	417	435	480	510	519	470	431	400	389	429
Professional	124	119	119	130	118	139	133	140	131	123	126	127	127
Miscellaneous	11	10	9	9	9	9	15	15	13	10	9	7	12
Total	2,967	3,295	3,327	3,423	3,554	3,763	4,188	4,229	3,945	3,695	3,525	3,319	3,602

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL
Mining	$ 284,941	$ 278,258	$ 204,499	$ 283,393	$ 1,051,091
Construction	210,286	472,238	789,931	436,305	1,908,760
Manufacturing	257,759	298,581	340,376	335,713	1,232,429
Transportation	42,506	32,596	42,769	47,186	165,057
Utilities	124,955	118,383	138,719	120,506	502,563
Wholesale	173,090	182,609	216,777	294,199	866,675
Retail	624,721	643,696	664,191	717,995	2,650,603
Finance	68,204	79,587	79,176	104,582	331,549
Service	157,788	192,522	222,905	188,100	761,315
Professional	49,910	53,370	55,860	51,374	210,514
Miscellaneous	2,269	2,539	6,082	2,806	13,696
Total	$1,996,429	$2,354,379	$2,761,285	$2,582,159	$ 9,694,252

JOHNSON COUNTY

COVERED EMPLOYMENT - 1966

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	AVG.
Agriculture	1	1	1		1	1	2	1	1	1
Mining	219	208	207	176	174	199	218	195	195	199
Construction	63	59	58	73	108	108	76	72	65	76
Manufacturing	38	35	36	34	40	55	56	53	53	44
Transportation	12	13	12	14	16	16	14	16	14	14
Utilities	25	25	24	24	25	23	26	26	27	25
Wholesale Trade	15	15	15	15	15	14	14	15	15	15
Retail Trade	204	199	200	222	240	275	283	291	263	242
Finance	34	34	35	39	39	44	42	43	44	39
Service	53	52	52	60	66	108	129	130	92	82
Professional	31	29	29	30	31	33	32	34	32	31
Government	507	511	522	520	541	542	541	533	539	528
Federal	38	37	37	37	37	59	60	61	51	46
State	469	474	485	483	504	483	481	472	488	482
Total	1,202	1,181	1,191	1,207	1,296	1,418	1,433	1,409	1,340	1,296

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	TOTAL
Agriculture	$ 670	$ 225	$ 361	$ 1,256
Mining	326,735	324,218	366,180	1,017,133
Construction	81,451	137,428	94.140	313,019
Manufacturing	30,632	36,715	48,657	116,004
Transportation	11,246	14,268	16,724	42,238
Utilities	29,104	32,210	36,081	97,395
Wholesale Trade	16,031	17,026	20,844	53,901
Retail Trade	144,199	167,647	197,443	509,289
Finance	35,187	39,812	39,523	114,522
Service	18,064	29,637	53,114	100,815
Professional	21,087	26,084	24,419	71,590
Government	58,312	65,682	87,956	211,950
Federal	58,312	65,682	87,956	211,950
State	INA	INA	INA	INA
Total	$ 772,718	$ 890,952	$ 985,442	$ 2,649,112

Latest Available Information INA Information Not Available

Latest Available Information INA Information Not Available

JOHNSON COUNTY

COVERED EMPLOYMENT - 1965

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Mining	97	128	131	149	128	163	166	179	189	209	210	190	162
Construction	44	43	68	125	162	167	109	113	84	74	73	66	94
Manufacturing	29	29	27	36	38	41	44	43	48	45	44	45	39
Transportation	8	8	7	12	13	15	13	10	13	19	16	18	13
Utilities	21	21	25	29	28	26	25	25	25	23	22	22	24
Wholesale Trade	12	12	12	12	12	13	12	11	11	12	14	15	12
Retail	194	197	201	192	209	236	253	250	223	229	224	240	221
Finance	33	33	35	34	35	36	34	34	34	34	34	36	34
Service	44	43	45	49	56	96	105	106	73	69	62	54	67
Professional	31	32	30	29	29	31	32	33	32	30	30	31	31
Government	468	475	478	478	482	492	509	503	523	515	510	513	496
Federal	45	45	43	43	43	50	63	64	61	48	45	46	50
State	423	430	435	435	439	442	446	439	462	467	465	467	446
Total	981	1,021	1,059	1,145	1,192	1,316	1,302	1,307	1,255	1,259	1,239	1,230	1,193

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL
Mining	$ 203,853	$ 263,785	$ 279,096	$ 324,138	$ 1,070,872
Construction	61,993	207,364	135,632	99,159	504,148
Manufacturing	24,535	37,002	36,494	29,648	127,679
Transportation	5,361	8,387	13,516	16,288	43,553
Utilities	29,705	34,453	35,137	30,066	129,361
Wholesale Trade	11,290	11,481	12,715	17,003	52,489
Retail	127,315	145,131	180,787	183,072	636,305
Finance	31,110	34,083	30,751	38,873	134,817
Service	14,082	25,507	42,358	22,436	104,383
Professional	21,733	24,696	22,985	22,904	92,318
Government	57,885	66,395	75,875	71,387	271,542
Federal	57,885	66,395	75,875	71,387	271,542
State	INA	INA	INA	INA	INA
Total	$ 588,862	$ 858,284	$ 865,347	$ 854,974	$ 3,167,467

JOHNSON COUNTY

COVERED EMPLOYMENT - 1960

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Agriculture	4	4	4	4	4	4	3	3	2	2	2	2	3
Mining	233	201	196	192	202	192	220	219	224	233	260	219	216
Construction	45	43	42	62	68	86	99	89	76	153	175	107	87
Manufacturing	60	69	72	68	73	84	88	81	75	73	72	54	72
Transportation	17	12	13	10	10	9	15	14	17	17	21	19	15
Utilities	24	25	24	25	25	26	26	26	26	23	22	24	25
Wholesale Trade	11	11	11	11	12	11	12	12	11	11	12	12	11
Retail Trade	165	160	181	180	194	205	215	222	205	202	192	189	193
Finance	36	34	37	37	35	38	35	35	35	34	34	34	35
Service	55	51	51	67	84	104	152	159	144	74	61	60	89
Professional	26	28	30	29	27	28	29	37	35	32	31	30	30
Government	29	28	28	28	28	29	29	29	29	28	28	28	28
Federal	29	28	28	28	28	29	29	29	29	28	28	28	28
State	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	705	666	689	713	762	816	923	926	879	882	910	778	804

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTALS
Agriculture	$ 2,285	$ 2,598	$ 1,742	$ 1,500	$ 8,125
Mining	338,815	305,556	370,169	367,687	1,382,227
Construction	46,692	83,103	89,495	166,767	386,057
Manufacturing	52,170	56,776	69,786	52,960	231,692
Transportation	5,788	8,910	9,583	12,375	36,656
Utilities	27,371	29,486	31,149	29,725	117,731
Wholesale Trade	9,243	11,593	11,916	17,032	49,784
Retail Trade	103,280	109,529	131,424	131,662	475,895
Finance	26,058	32,652	29,007	31,241	118,958
Service	16,504	26,699	63,866	21,150	128,219
Professional	12,373	13,851	14,178	14,420	54,822
Government	32,828	29,482	35,450	32,871	130,631
Federal	32,828	29,482	35,450	32,871	130,631
State	0	0	0	0	0
TOTAL	$ 673,407	$ 710,235	$ 857,765	$ 879,390	$ 3,120,797

JOHNSON COUNTY

COVERED EMPLOYMENT - 1955

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Mining	25	26	25	30	41	56	189	188	189	182	182	184	110
Construction	48	49	89	100	109	98	98	114	107	128	98	93	94
Manufacturing	249	222	220	239	249	252	147	155	153	141	139	108	190
Transportation	11	11	15	8	9	6	12	13	11	8	8	8	10
Utilities	21	21	21	21	22	22	22	22	22	21	21	20	21
Wholesale Trade	14	16	16	16	16	17	18	18	17	17	18	18	17
Retail Trade	167	158	160	173	176	197	203	210	192	189	190	185	183
Finance	31	30	30	34	34	37	36	35	35	34	35	34	34
Service	39	38	37	39	58	72	102	108	54	47	36	33	55
Professional	17	16	15	14	13	25	15	15	17	14	15	13	16
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	622	587	628	674	727	782	842	878	797	781	742	696	730

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL
Mining	$ 22,181	$ 29,933	$ 269,595	$ 269,691	$ 591,400
Construction	56,487	114,167	116,398	161,743	448,795
Manufacturing	215,353	252,440	117,817	102,594	688,204
Transportation	4,848	3,485	11,021	5,112	24,466
Utilities	17,744	18,321	20,467	18,056	74,588
Wholesale Trade	11,500	12,013	15,686	18,765	57,964
Retail Trade	95,324	100,516	113,558	111,998	421,396
Finance	14,566	20,114	19,904	21,656	76,240
Service	12,714	19,136	36,004	15,862	83,716
Professional	5,871	9,906	6,836	7,463	30,076
Miscellaneous	0	0	0	0	0
Government	0	0	0	0	0
Total	$ 456,588	$ 580,031	$ 727,286	$ 732,940	$ 2,496,845

JOHNSON COUNTY

COVERED EMPLOYMENT - 1950

INDUSTRY	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	AVG.
Mining	84	66	71	69	74	79	106	87	83	123	95	114	88
Construction	20	27	21	25	36	35	45	51	50	69	68	58	42
Manufacturing	59	56	56	50	47	71	87	91	85	85	81	87	71
Transportation	8	7	6	8	6	8	12	12	15	13	12	12	10
Utilities	29	26	32	29	31	28	29	31	32	37	39	35	32
Wholesale	18	18	19	18	19	21	21	22	23	21	21	20	20
Retail	183	181	179	170	177	205	216	216	206	197	195	196	193
Finance	19	19	19	19	21	19	20	21	19	21	22	22	20
Service	41	38	38	44	46	59	85	96	72	46	41	34	53
Professional	15	14	14	14	16	21	20	25	23	28	44	52	24
Miscellaneous	0	0	0	0	0	0	0	1	3	3	1	1	1
Total	476	452	455	446	473	546	641	653	611	643	619	631	554

TOTAL WAGES PAID ON COVERED EMPLOYMENT

INDUSTRY	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	TOTAL
Mining	$ 71,710	$ 87,864	$ 82,214	$ 122,833	$ 364,621
Construction	10,908	19,428	42,904	40,385	113,625
Manufacturing	27,950	28,972	57,420	49,733	164,075
Transportation	2,602	2,903	5,639	5,207	16,351
Utilities	18,506	19,510	20,768	24,280	83,064
Wholesale	12,253	13,458	15,959	26,847	68,517
Retail	88,306	86,461	104,095	99,251	378,113
Finance	7,799	11,377	8,876	11,123	39,175
Service	12,388	16,303	31,128	12,371	72,190
Professional	4,754	7,349	11,497	27,102	50,702
Miscellaneous	0	0	1,143	1,018	2,161
Total	$ 257,176	$ 293,625	$ 381,643	$ 420,150	$ 1,352,594

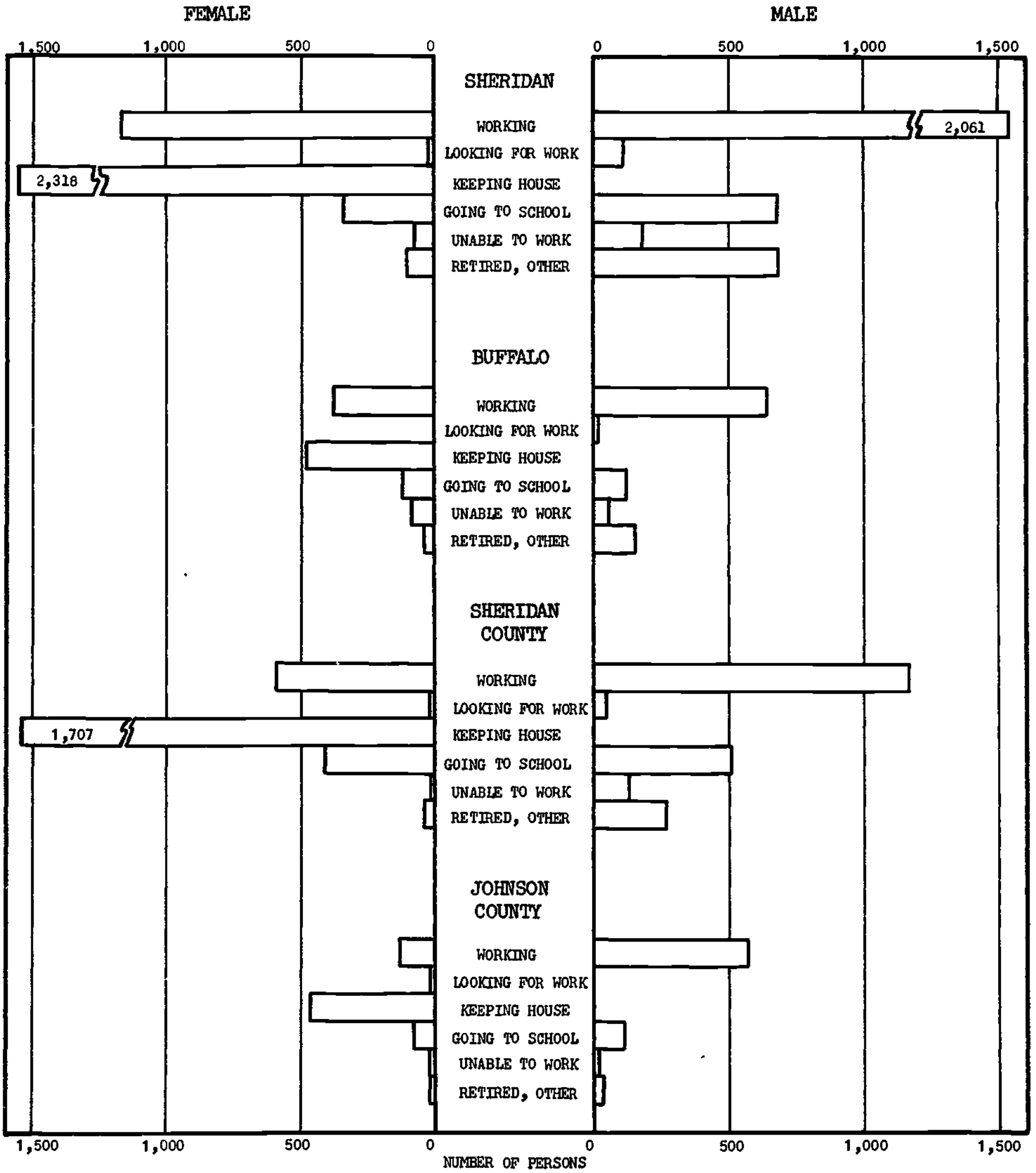
PRIMARY ACTIVITY

The majority of the male persons (64 percent) living in the area spend most of the time working, while most of the females (58 percent) are keeping house. Fourteen percent of the persons fourteen years of age and over are attending school (59 percent are males and 41 percent are females). While most of the older females are included in those keeping house, their counterparts are listed as being retired. About 57 percent of the retired males live in Sheridan. Of those persons working, 40 percent of the males and 52 percent of the females live in Sheridan, while 36 percent of the males and 26 percent of the females live in rural Sheridan County.

PRIMARY ACTIVITY OF PERSONS INTERVIEWED

	Working	Looking For Work	Keeping House	Going To School	Unable To Work	Retired, Other	Total
Male							
Sheridan	2,061	110		690	175	598	3,634
Buffalo	653	7		125	53	161	999
Sheridan County	1,885	42		408	127	255	2,717
Johnson County	584			115	3	30	742
Total	5,193	159		1,338	358	1,044	8,092
Female							
Sheridan	1,159	18	2,318	340	74	92	4,001
Buffalo	358		489	105	82	36	1,070
Sheridan County	594	8	1,707	416	17	34	2,776
Johnson County	136	3	458	66	12	6	681
Total	2,247	29	4,972	927	185	168	8,528
Grand Total	7,440	188	4,972	2,265	543	1,212	16,620

PRIMARY ACTIVITY OF PERSONS INTERVIEWED



FULL TIME WORKERS

Most full time male and female workers in both Sheridan and Johnson Counties range in age from 25 to 64, with the highest concentration appearing in the age group 35 to 54. Male workers outnumber female workers almost two to one, in both counties.

About 75 percent of the male workers in Sheridan and Johnson Counties have a high school education or less. About 73 percent of the female workers in both counties have a high school education or less.

The majority of male persons employed full time in Sheridan and Johnson Counties are working in the urban areas (Sheridan and Buffalo). It is noteworthy, that in every occupation group, at least 10 percent of the workers indicated willingness to accept light industry assembly work. The group showing the greatest willingness to change jobs were those engaged in processing (38 percent), while those least willing to change were those engaged in professional, technical and management work, (about 10 percent). About 30 percent of the full time workers employed in services, machine trades and miscellaneous work indicated willingness to accept light industry assembly work.

Females employed full time, in Sheridan and Buffalo, outnumber those employed full time in rural areas by about two to one. Thirty-eight percent of the females engaged in clerical and sales, 50 percent engaged in service occupations, and over 40 percent of those engaged in structural work and miscellaneous occupations, indicated willingness to accept light industry assembly work.

The ratio of males employed full time in Sheridan County is about two to one over those in Johnson County. In Johnson County, the heaviest concentration of male workers is found in Contract Construction and Government, while in Sheridan County, the greatest number of workers are engaged in government work or retail trade. Industries in Johnson County with the fewest number of male employees are: Manufacturing, Wholesale Trade, and Finance, Insurance and Real Estate. In Sheridan County, industries with the fewest number of male employees are: Mining, Wholesale Trade and Finance, Insurance and Real Estate.

Females employed full time in Sheridan County, outnumber females employed full time in Johnson County by about three to one. The heaviest concentration of female workers in both counties are located in the Government, Retail Trade and Service Industries.

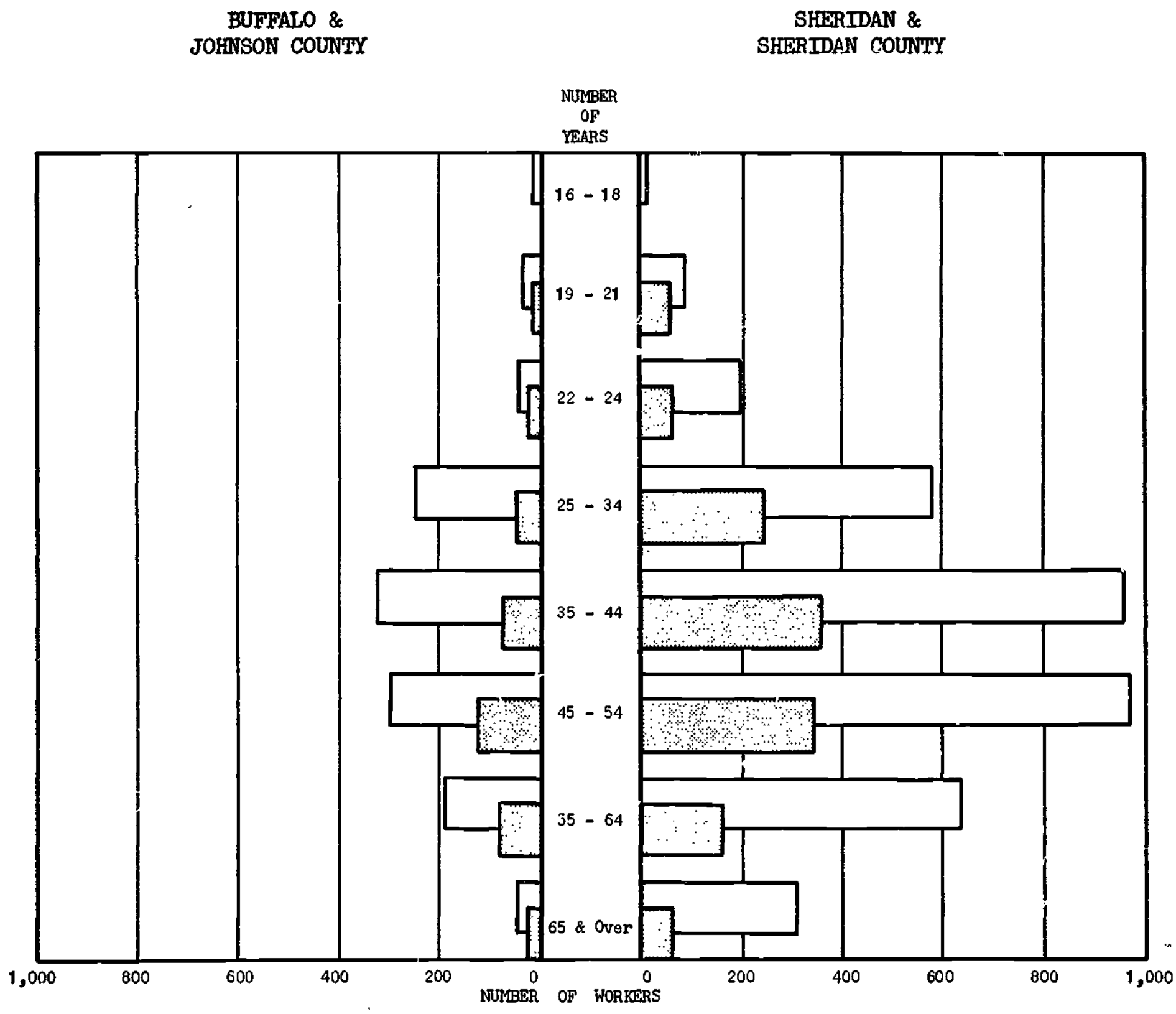
Half of the full time employed males who will accept light industry assembly work have completed at least 12 years of education, or more. A large majority have six or more years experience in their jobs. Those occupations in which a substantial number of male employees have completed more than 12 years of education are: Professional, Technical and Managerial and Clerical and Sales. Those occupations in which a substantial number of male employees have completed less than 12 years of education are: Service; Farming; Fishery, Forestry and Related; Bench Work; Structural Work; and Miscellaneous.

Approximately two-thirds of the full time employed females who will accept light industry assembly work have completed at least 12 years of education or more. The majority of female workers have less than six years of experience.

FULL TIME WORKERS BY SEX AND AGE

	AGE GROUP								
	16-18	19-21	22-24	25-34	35-44	45-54	55-64	65 & Over	Total
MALE									
Sheridan		37	92	313	570	442	294	166	1,914
Buffalo	10	13	30	141	144	151	89	26	604
Sheridan County	8	42	85	263	391	527	340	144	1,800
Johnson County		18	12	103	175	154	100	18	580
Total	18	110	219	820	1,280	1,274	823	354	4,898
FEMALE									
Sheridan		46	55	101	239	248	92	46	827
Buffalo	3	13	20	20	43	85	66	23	273
Sheridan County		8	8	136	119	93	68	8	440
Johnson County		3	6	24	27	33	12	9	114
Total	3	70	89	281	428	459	238	86	1,654
GRAND TOTAL	21	180	308	1,101	1,708	1,733	1,061	440	6,552

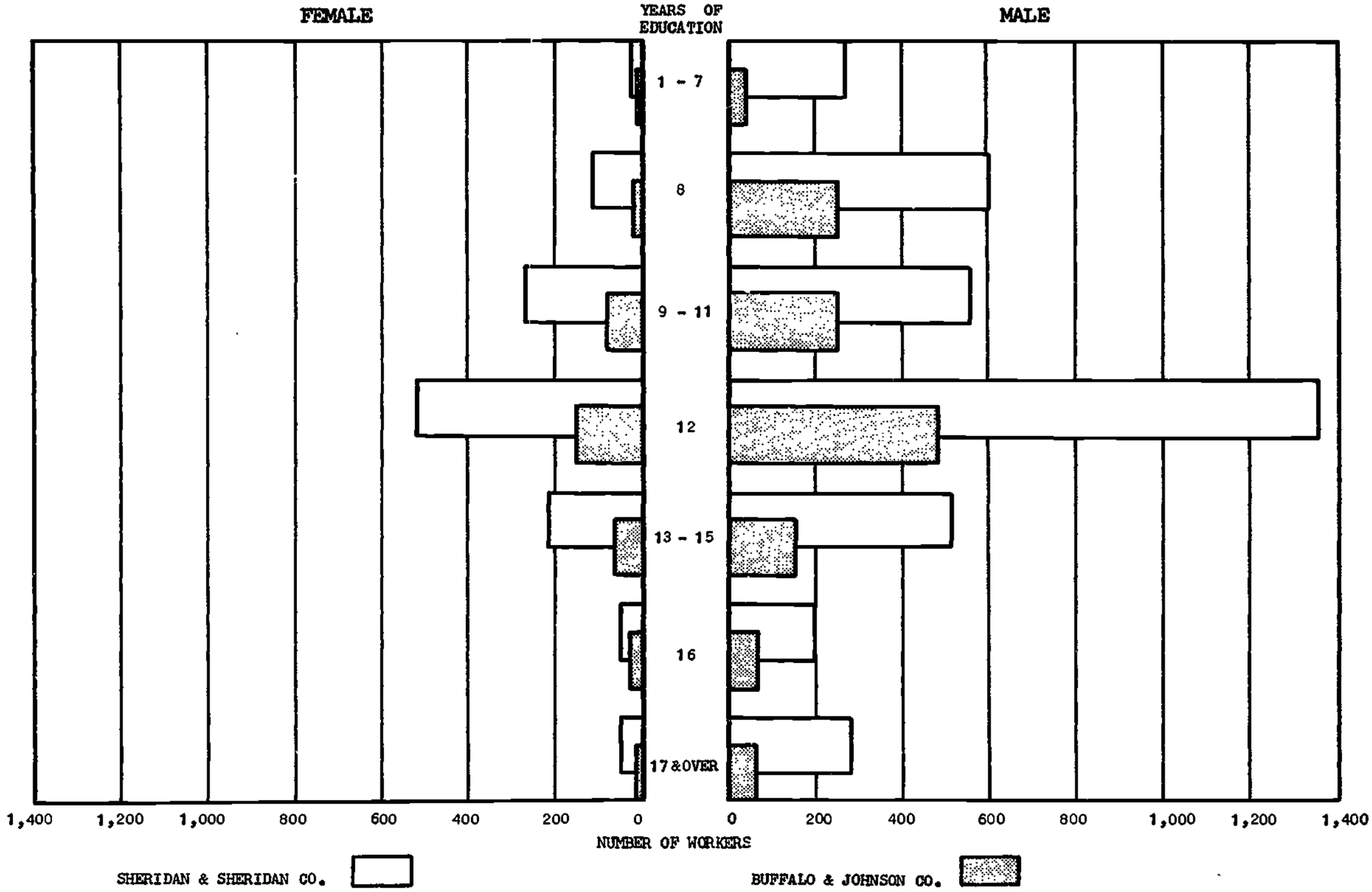
AGE OF FULL TIME WORKERS



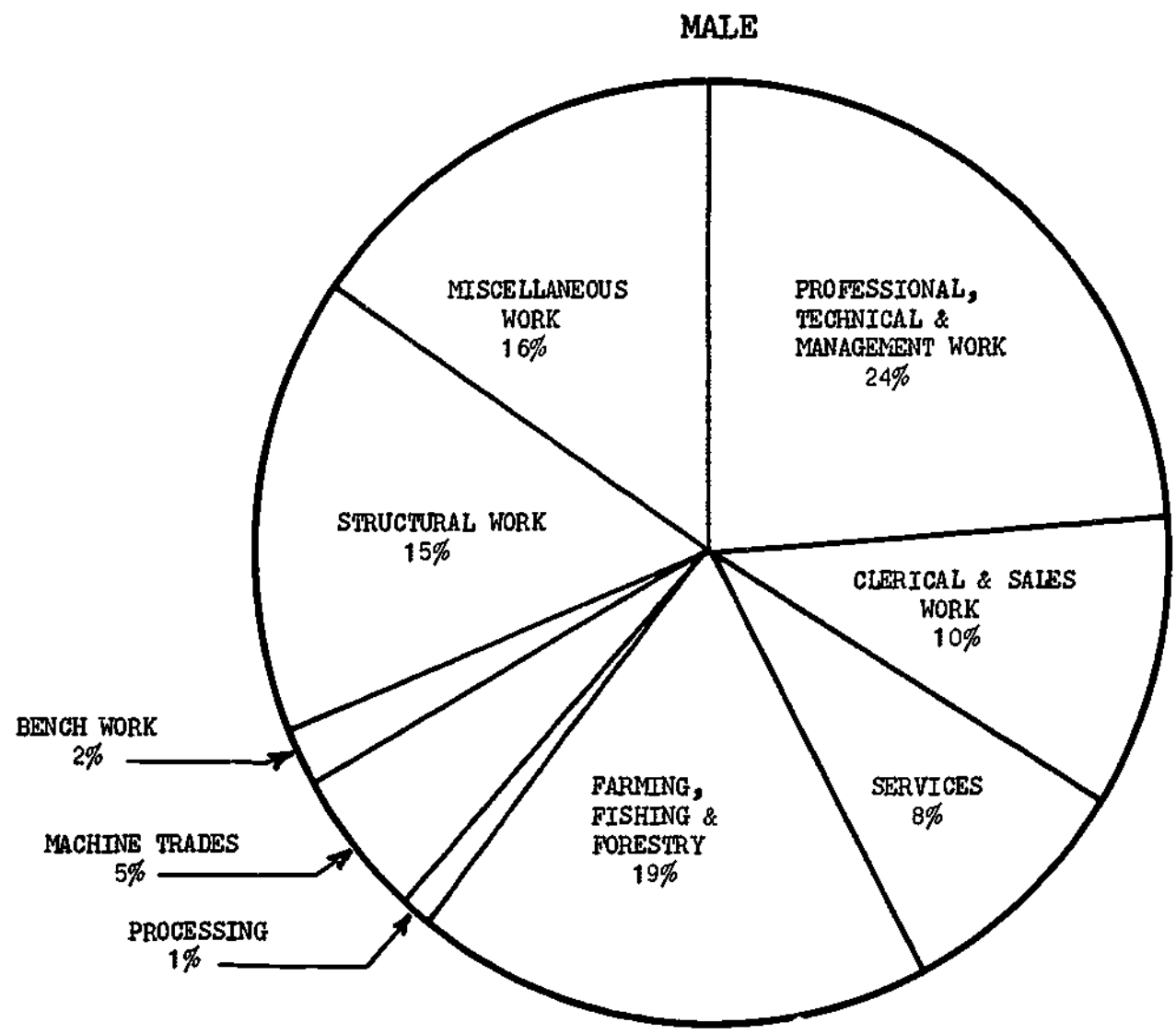
FULL TIME WORKERS BY SEX AND EDUCATION

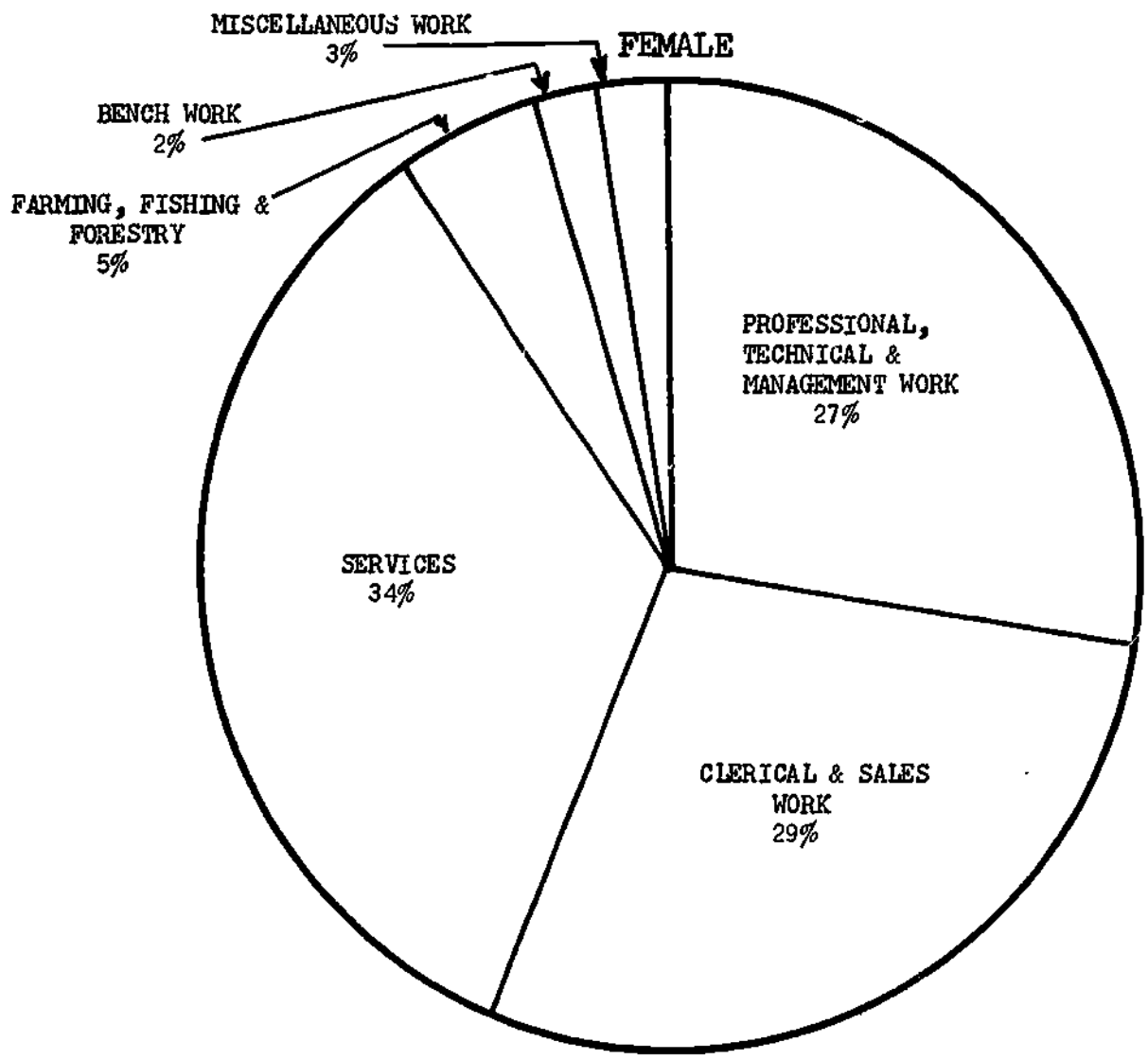
	Years of Education							
	1-7	8	9-11	12	13-15	16	17 & Over	Total
Male								
Sheridan	129	212	313	681	294	101	184	1,914
Buffalo	10	95	115	246	82	33	23	604
Sheridan County	110	382	238	654	221	102	93	1,800
Johnson County	18	124	103	217	72	22	24	580
Total	267	813	769	1,798	669	258	324	4,898
Female								
Sheridan	18	55	156	377	147	28	46	827
Buffalo	3	13	56	99	53	39	10	273
Sheridan County		59	110	170	68	25	3	440
Johnson County	3	15	18	51	18	3	6	114
Total	24	142	340	697	286	95	70	1,654
GRAND TOTAL	291	955	1,109	2,495	955	353	394	6,552

FULL TIME WORKERS BY SEX & EDUCATION



DISTRIBUTION OF FULL TIME WORKERS IN MAJOR OCCUPATION CLASSIFICATIONS





OCCUPATIONS OF FULL TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW)

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	PROFESSIONAL TECHNICAL AND MANAGEMENT WORK										
003	Electrical Engineer		19		19						
005	Civil Engineer		40		37						3
007	Mechanical Engineer		6				6				
013	Agriculture Engineer		3								3
018	Surveyor	13	16			13	16				
019	Architecture & Engineering		22		9		10				3
020	Mathematics		9		9						
022	Chemistry		11				3		8		
025	Meteorology		9		9						
029	Mathematics & Physical Sciences	3	25		9	3	7		9		
040	Agricultural Sciences		13		10						3
041	Biological Sciences		9						9		
045	Psychology		29		9		3		17		
070	Physicians & Surgeons		20		9		3		8		
072	Dentists		26		18				8		
073	Veterinarians		9						9		
074	Pharmacists		18		18						
078	Medical & Dental Technology		8						8		
079	Medicine & Health		27		18				9		
090	College & University Education		21		9		3		9		
091	Secondary School Education	9	60	9	28		4		25		3
092	Primary School & Kindergarten Ed.		33		9		13		8		3
096	Home Economist & Farm Advisor		8						8		
099	Education		10		10						
100	Librarian	9	9	9	9						
110	Lawyers		40		37		3				
120	Clergymen	7	23		10	7	10				3
139	Writer		3								3
141	Commercial Artist		9		9						
151	Dancer		9		9						
152	Music		9		9						
159	Entertainment & Recreation	9	19	9	19						
160	Accountants & Auditors		12				3		9		
161	Budget & Management Analysis		3				3				
162	Purchasing Management		8						8		
163	Sales & Distribution Management		31		18		4		9		
166	Personnel & Training Admin.	8	17					8	17		

OCCUPATIONS OF FULL TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW) Cont'd.

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	PROFESSIONAL TECHNICAL AND MANAGEMENT WORK Cont'd.										
168	Inspector & Investigators		9						9		
169	Administrative Specialization	9	13	9	10						3
180	Ag., Forestry & Fishing Mgrs.	7	68		9	7	26				33
182	Const. Industry Mgrs.		49		9		3		34		3
183	Mfg. Industry Mgrs.	12	15	9	9		3			3	3
184	Trans., Comm., Util. Mgrs.		29		18				8		3
185	Wholesale, Retail Trade Mgrs.		88		55		10		17		6
187	Service Industry Mgrs.	12	81	9	64				8	3	9
188	Public Admin. Mgrs.		28		18		7				3
189	Misc. Mgrs. & Officials		18		9		9				
193	Radio Operators		22		9		4		9		
195	Social & Welfare Admin.		9						9		
198	Railroad Conductors	9	19	9	19						
199	Misc. Professional Tech. Mgrs.	3	3			3	3				
	Total	110	1,094	63	579	33	156	8	272	6	87
	CLERICAL AND SALES WORK										
202	Stenographers		9		9						
210	Bookkeepers		16		10		6				
211	Cashiers		3				3				
219	Computing & Account Recorders		17						17		
222	Shipping & Receiving Clerks		9		9						
223	Stock Clerks		8						8		
232	Post Office Clerks	18	37	18	28				9		
233	Mail Carriers	8	16				7	8	9		
242	Hotel Clerks		3				3				
249	Misc. Clerks		4				4				
250	Real Estate & Ins. Salesmen		37		9				25		3
251	Security Salesmen		17		9				8		
252	Business & Financial Salesmen		19		19						
259	Service Salesmen		35		18				17		
260	Horticultural & Nursery Salesmen	3	7			3	7				
261	Ag. Products Salesmen		3				3				
262	Foodstuff, Beverage, Tobacco Slsmen		9		9						
263	Textile & Apparel Salesmen		18		18						
267	Fuel & Pet. Prod. Salesmen		17		9				8		
290	Sales Clerks	52	100	46	74	3	3		17	3	6

OCCUPATIONS OF FULL TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW) Cont'd.

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	CLERICAL AND SALES WORK Cont'd.										
292	Routemen	9	43	9	28		6		9		
294	Auctioneers		3				3				
299	Merchandising Occupations		4				4				
	Total	90	434	73	249	6	49	8	127	3	9
	SERVICES										
304	Housemen & Yardmen	9	18	9	10				8		
311	Waiters & Waitresses		11						8		3
312	Bartenders	37	51	18	28			16	17	3	6
313	Chefs & Cooks		3				3				
315	Miscellaneous Cooks	8	27		18			8	9		
316	Meat Cutters		12		9		3				
318	Kitchen Workers	18	18	18	18						
320	Boardinghouse & Lodging Housekeepers		35		9				26		
330	Barbers		29		18		3		8		
355	Hospital, Morgue Attendants	17	88	9	46			8	42		
372	Guards & Watchmen	9	9	9	9						
373	Firemen	9	28	9	19				9		
375	Policemen & Detectives		10				4				6
381	Porters & Cleaners	3	6			3	6				
382	Janitors	9	43	9	28		3		9		3
	Total	119	388	81	212	3	22	32	136	3	18
	FARMING, FISHERY, FORESTRY & RELATED WORK										
406	Horticulture Specialist		9		9						
409	Plant Farming		17						17		
411	Dairy Farming	8	96					8	93		3
412	Poultry Farming		11						8		3
413	Livestock Farming	79	349			15	34	34	119	30	196
419	Animal Farming		24		9		7		8		
421	General Farming	43	374				10	43	349		15
422	Irrigation Farm Workers	8	9					8	9		
423	Farm Couples		33				7		17		9
424	Farm Machinery Operator	3	3			3	3				

OCCUPATIONS OF FULL TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW) Cont'd.

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	FARMING, FISHERY, FORESTRY & RELATED WORK Cont'd.										
429	Misc. Farming	8	152		10		23	8	119		
431	Fisherman		3				3				
439	Fishery		8						8		
441	Forest Conservationist		9		9						
	Total	149	1,097	—	37	18	87	101	747	30	226
	PROCESSING										
523	Freezing, Food	9	10	9	10						
526	Cooking & Baking Food		4				4				
540	Mixing & Blending Food		3								3
563	Seasoning & Drying Wood	9	9	9	9						
570	Crushing & Mining Stone		21		18		3				
	Total	18	47	18	37		7				3
	MACHINE TRADES										
600	Machinists		9		9						
620	Vehicle & Equipment Mechanics	31	91	28	46	3	16		17		12
621	Aircraft Mechanics	9	9	9	9						
624	Farm Equipment Mechanics		9						9		
629	Special Machinery Mechanics		12								12
633	Business & Commercial Machine Repairs	9	9	9	9						
638	Misc. Machine Installation & Repairs		14						8		6
639	Misc. Mechanics & Repairmen	17	51		19		3	17	26		3
650	Typesetters & Composers		3				3				
660	Cabinet Makers		17		9				8		
699	Misc. Machine Operators		18		18						
	Total	66	242	46	119	3	22	17	68	—	33
	BENCH WORK										
715	Watch & Clock Repairs		18		10				8		
716	Instruments Repairs		18		18						
722	Comm. Equipment Repairs	8	9					8	9		
729	Electrical Equipment Repairs		9		9						
740	Painters	9	9	9	9						

OCCUPATIONS OF FULL TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW) Cont'd.

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALAIW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	BENCH WORK Cont'd.										
749	Painting, Decorating, Etc.		9		9						
760	Carpenters	3	16			3	7		9		
780	Upholstering & Furniture Repair		18		18						
	Total	20	106	9	73	3	7	8	26	—	—
	STRUCTURAL WORK										
804	Sheetmetal Workers		17						17		
807	Body Repairmen		12		9		3				
809	Misc. Metal Fabrication & Repair		18		9				9		
812	Welder	3	37		28		6			3	3
820	Generator Electric Motor Repair		8						8		
821	Electric Transmission Lineman		3				3				
822	Electrician		10		10						
828	Elect. & Electronic Prod. Repair		4				4				
829	Electrical Products Repair	8	11					8	8		3
840	Painting & Paperhangers	3	52		46		3			3	3
844	Cement & Concrete Finishing	18	45	18	28				17		
849	Plastering, Waterproofing	9	9			3	3			6	6
850	Excavating, Grading, Etc.		49		9		20		17		3
851	Drainage, Etc.	6	12							6	12
853	Asphalt Paving	3	13			3	13				
859	Misc. Dirt Work	47	139		9	16	30	25	76	6	24
860	Carpenters	36	132	28	83		29	8	17		3
861	Brick & Stone Masons		9		9						
862	Plumbers & Pipe Fitters	3	37		18		10			3	9
864	Floor Layers & Finishers		9		9						
869	Misc. Construction Trades	32	123		28	3	10	8	25	21	60
891	Maintenance Men		19		19						
899	Misc. Structural Work		15						9		6
	Total	168	783	46	314	25	134	49	203	48	132
	MISCELLANEOUS WORK										
903	Gasoline & Chemical Truck Drivers		3				3				
905	Heavy Truck Drivers	30	125	9	55	10	16	8	42	3	12
906	Light Truck Drivers	9	35	9	18				17		
909	Truck Terminal Workers	18	18	18	18						

OCCUPATIONS OF FULL TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW) Cont'd.

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	MISCELLANEOUS WORK Cont'd.										
910	Railraod Workers		84		55		4		25		
913	Bus Drivers		9		9						
914	Pipeline Employees		18		10				8		
915	Service Station Attnds.,Etc.	64	127	28	55	13	20	17	43	6	9
919	Misc. Trans. Employees	9	18	9	18						
920	Packaging		9		9						
922	Moving & Storage	17	38		9			17	26		3
929	Materials Handling	21	57	18	46	3	3		8		
930	Mining of Minerals	19	79			10	49			9	30
939	Extraction of Minerals	3	50			3	20		9		21
940	Timber Cutting	3	31			3	3		25		3
942	Log Sorting, Gathering & Storing	8	27		19			8	8		
950	Utilities Engineers		9						9		
951	Utilities Firemen	9	9	9	9						
952	Electric Power Generation & Transmission	9	17	9	9				8		
953	Prod. & Distribute Nat. Gas		3								3
954	Water Purification & Distb.	17	21					17	18		3
963	Radio & TV Production		10		10						
	Total	236	797	109	349	42	118	67	246	18	84
	Grand Total	976	4,988	445	1,969	133	602	290	1,825	108	592

OCCUPATIONS OF FULL TIME EMPLOYED FEMALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW)

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	PROFESSIONAL, TECHNICAL AND MANAGERIAL OCCUPATIONS										
019	Draftsmen		9		9						
045	Psychology		8						8		
070	Physicians and Surgeons		9		9						
071	Osteopaths		3				3				
075	Registered Nurses	9	130	9	92		13		25		
079	Medicine & Health	3	40		27	3	13				
091	Secondary School Education		24		18		3				3
092	Primary School & Kindergarten Education		43				23		17		3
094	Education of Handicapped		3				3				
142	Designers		4				4				
160	Accountants & Auditors	9	9	9	9						
161	Budget & Management Analysis		6				1				
162	Purchasing Management	9	9	9	9						
180	Ag., Forest., & Fishing Mgrs.	3	26			3	17				9
183	Mfg. Industry Managers		9						9		
185	Wholesale & Retail Trade Mgrs.	3	7			3	4				3
186	Finance, Ins. & Real Estate Mgrs.		3				3				
187	Service Industry Managers	9	21	9	18						3
188	Public Administration Managers	6	39			6	10		26		3
189	Other Officials	3	3							3	3
195	Social & Welfare Workers		26		19		7				
199	Miscellaneous Managers	3	3			3	3				
	Total	57	434	36	210	18	112	—	85	3	27
	CLERICAL & SALES OCCUPATIONS										
201	Secretaries	18	88	18	64		16		8		
202	Stenographers	3	7			3	7				
209	Clerk-Typists	17	30	9	10		3	8	17		
210	Bookkeepers	27	114	27	74		17		17		6
211	Cashiers	44	56	36	37		10	8	9		
219	Computing & Account Recording	8	11				3	8	8		
223	Stock Clerks	8	17					8	17		
232	Post Office Clerks		7				4				3
235	Telephone Operators		9		9						
237	Receptionists		9		9						

237 Receptionists 9 9

OCCUPATIONS OF FULL TIME EMPLOYED FEMALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW)

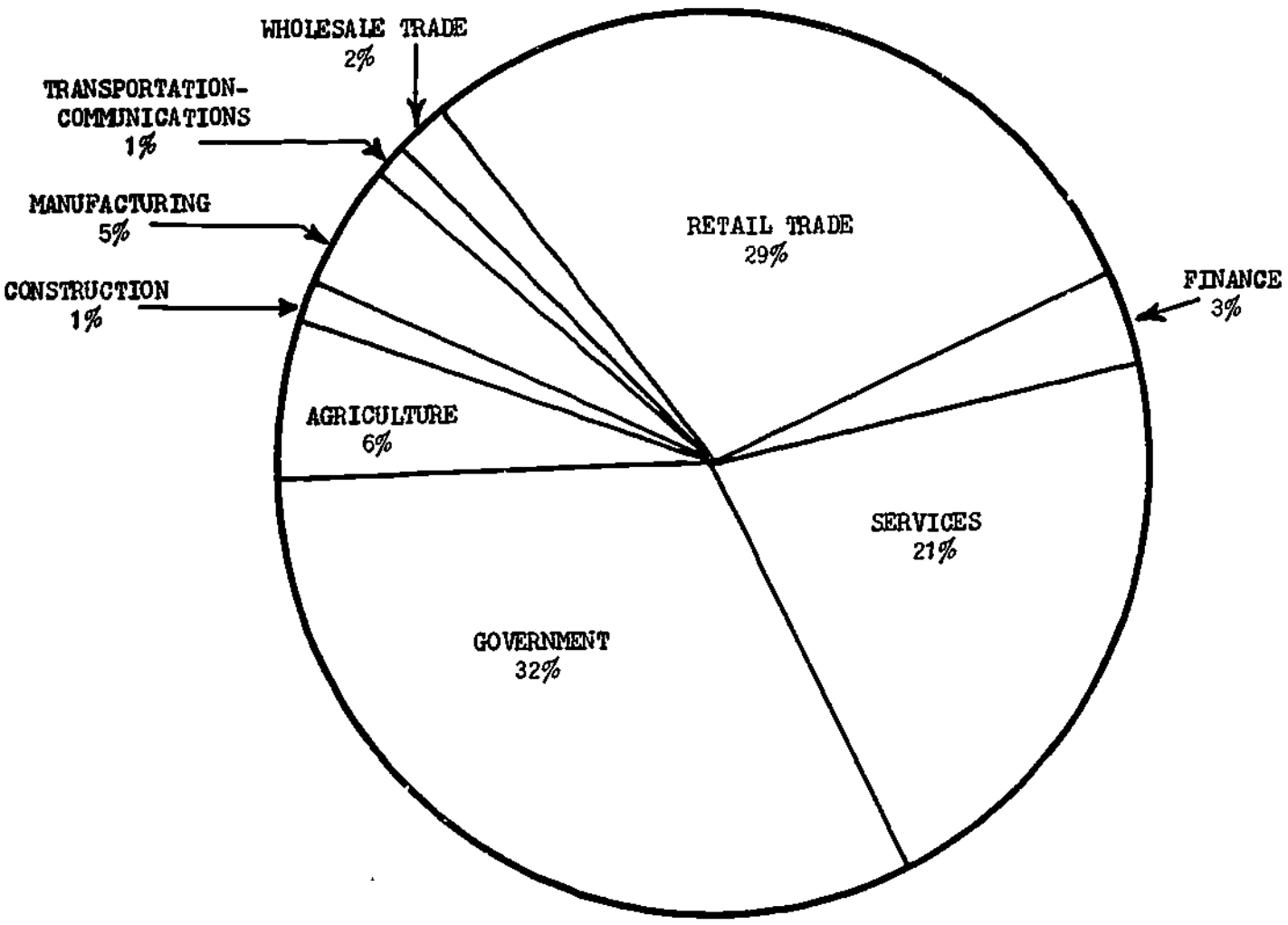
Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	CLERICAL & SALES OCCUPATIONS(Cont'd)										
242	Hotel Clerks	3	3			3	3				
263	Apparel & Textile Salespersons	9	9	9	9						
266	Drug Store Salespersons	8	9					8	9		
274	House Furnishings Salespersons	9	9	9	9						
289	Other Sales Persons		11						8		3
290	Sales Clerks	25	76	9	36	13	20		8	3	12
291	Peddlers		10		10						
	Total	179	475	117	267	19	83	40	101	3	24
	SERVICE OCCUPATIONS										
301	Day Workers		10		10						
303	Housekeepers, Private Homes	8	12					8	9		3
306	Maids, Domestic	9	12	9	9		3				
307	Nursemaids	18	37	18	37						
309	Housekeepers, Domestic	8	14					8	8		6
311	Waitresses, Cafe	90	118	46	55	10	23	34	34		6
312	Waitresses, Cocktail	11	20					8	17	3	3
313	Cooks	39	96	9	18			24	60	6	18
318	Kitchen Workers	6	15		9	6	6				
320	Boarding Housekeepers		28		28						
321	Housekeepers, Hotel		3				3				
323	Maids, Hotels & Motels	12	19	9	9	3	10				
332	Hairdressers & Cosmetologists		25		18		7				
355	Hospital & Morgue Attendants	24	65	18	46	3	16			3	3
361	Laundresses	36	48	36	37		3		8		
369	Apparel & Furnishings Service		19		19						
381	Cleaners	9	9	9	9						
388	Elevator Operators	9	10	9	10						
	Total	279	560	163	314	22	71	82	136	12	39
	FARMING, FORESTRY & FISHING										
413	Ranching	16	67						34	16	33
421	Farming		9						9		
423	Farm Couples		6								6

OCCUPATIONS OF FULL TIME EMPLOYED FEMALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW)

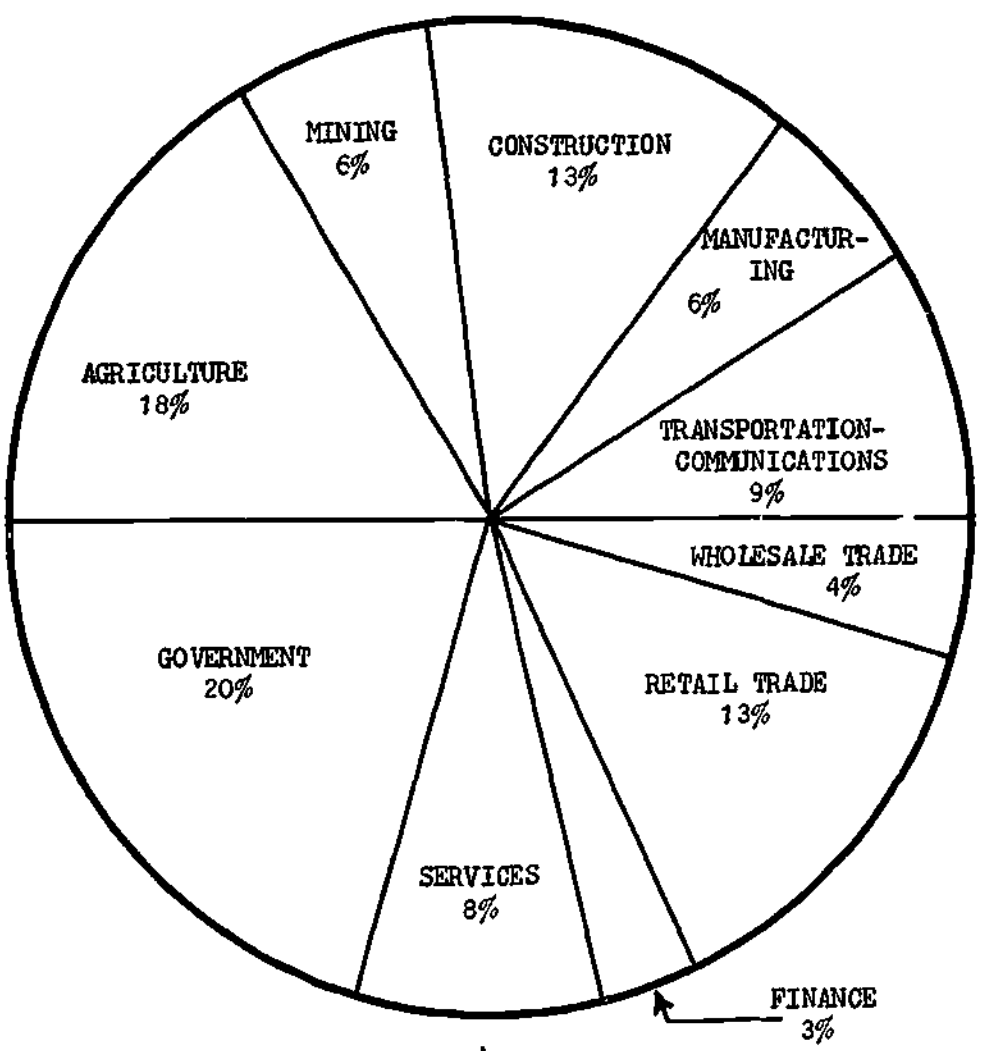
Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	FARMING, FORESTRY & FISHING Cont'd.										
429	Misc. Farming & Ranching	16	17	—	—	—	—	—	17	16	39
	Total		99						60		
	PROCESSING OCCUPATIONS										
526	Baking	—	9	—	—	—	—	—	9	—	—
	Total		9						9		
	BENCH OCCUPATIONS										
706	Assemble Metal Units		9		9						
724	Assemble Coils, Armatures, Etc.	—	18	—	18	—	—	—	—	—	—
	Total		27		27						
	STRUCTURAL WORK										
850	Excavating, Grading, Etc.	3	7	—	—	3	7	—	—	—	—
	Total	3	7			3	7				
	MISCELLANEOUS OCCUPATIONS										
915	Service Station, Parking Lot Attendants		9						9		
920	Packaging		8						8		
963	Radio & TV Production	8	17					8	17		
976	Photography, Etc.	9	9	9	9	—	—	—	—	—	—
	Total	17	43	9	9			8	34		
	GRAND TOTAL	551	1,654	325	827	62	273	130	425	34	129

SHERIDAN - JOHNSON COUNTY

INDUSTRY AT WHICH FULL-TIME EMPLOYEES WORK
FEMALE



MALE



INDUSTRY AT WHICH FULL TIME MALE EMPLOYEES WORK

Industry Code	Industry	Total	Sheridan	Buffalo	Sheridan County	Johnson County
	AGRICULTURE, FORESTRY & FISHERIES					
012	Fruit and Vegetable Farms	9		3		
013	Livestock Farms & Ranches	305		62	110	133
014	General Farms	503	9	7	484	3
019	Misc. Commercial Farm	148	18	9	34	87
072	Animal Husbandry Services	17			17	
	Total	976	27	81	645	223
	MINING					
121	Bituminous Coal	70	28		42	
131	Crude Petroleum & Nat. Gas	70		4	9	57
138	Oil & Gas Field Services	215	9	89	8	109
141	Dimension Stone	3		3		
142	Crushed and Broken Stone	16			16	
144	Sand and Gravel	34	9		25	
145	Clay, Bentonite, etc.	3				3
148	Nonmetallic Minerals	3				3
	Total	414	46	96	100	172
	CONTRACT CONSTRUCTION					
151	General Building Contractors	187	83	7	85	12
161	Highway and Street Construction	175	72	42	33	27
162	Heavy Construction	78	10	26	42	
171	Plumbing, Heating, & Air Condition	24	9	6	9	
172	Painting, Paper Hanging & Decorating	25	18	7		
173	Electrical Work	21	9	3	9	
174	Masonry, Stonework & Plastering	12	9	3		
175	Carpentry and Wood Flooring	20	9	3	8	
176	Roofing and Sheet Metal Work	9	9			
177	Concrete Work	12	9			3
178	Water Well Drilling	18	10		8	
179	Misc. Trades Contractors	45	19		17	9
	Total	625	266	97	211	51
	MANUFACTURING					
201	Meat Products	28	28			
202	Dairy Products	9	9			
204	Grain Mill Products	9	9			
205	Bakery Products	29	9	3	17	
206	Sugar	36	27		9	
208	Beverage Industries	18	18			
241	Logging Camps & Logging Contrs.	26	9		17	
242	Sawmills and Planing Mills	58	28	10	17	3
271	Newspapers Publishers	13	9	4		
275	Commercial Printers	22	19	3		
327	Concrete Products	12	9	3		
344	Structural Metal Products	26	18		8	
	Total	286	192	23	68	3

INDUSTRY AT WHICH FULL TIME MALE EMPLOYEES WORK

Industry Code	Industry	Total	Sheridan	Buffalo	Sheridan County	Johnson County
	TRANSPORTATION, COMMUNICATIONS, AND UTILITIES					
401	Railroads	144	83	3	58	
411	Passenger Transportation	47	9	4	34	
421	Trucking	86	55	13	9	9
423	Motor Freight Terminals	9			9	
451	Air Transportation	18	10		8	
458	Airport & Terminal Services	10	10			
481	Telephone Companies	33	19	3	8	3
483	Radio Stations	27	27			
491	Electric Companies	17	9		8	
492	Gas Companies	24	9	7	8	
497	Irrigation Systems	12			9	3
	Total	427	231	30	143	15
	WHOLESALE TRADE					
501	Automobile & Automotive Equipment	9	9			
504	Groceries & Related Products	56	37	3	16	
506	Electrical Goods	3		3		
507	Hardware, Plumb. & Heating Supplies	10	10			
508	Machinery and Equipment	9	9			
509	Miscellaneous Wholesalers	82	55	10	17	
	Total	169	120	16	33	0
	RETAIL TRADE					
521	Lumber & Building Supplies	17	9		8	
523	Paint, Glass & Wallpaper	17	9		8	
525	Hardware & Farm Equipment	27	18		9	
531	Department Stores	21	18			3
535	Direct Sales Organizations	3		3		
539	Miscellaneous General Merchandise	27	9	6	9	3
541	Grocery Stores	97	55	19	17	6
546	Retail Bakeries	6		6		
551	New and Used Cars	80	55	11	8	6
553	Tires, Batteries & Accessories	18	10		8	
554	Gasoline Service Stations	100	55	20	25	
561	Men's & Boy's Clothing Stores	10	10			
562	Women's Ready-to-Wear Stores	9	9			
566	Shoe Stores	9	9			
571	Furniture & Home Furnishings Store	19	19			
572	Household Appliance Store	13	10	3		
581	Eating and Drinking Places	116	45	3	59	9
591	Drug Stores	9	9			
592	Liquor Stores	9	9			
594	Book & Stationary Stores	10	10			
595	Sporting Goods Stores	8			8	
597	Jewelry Stores	18	9		9	
598	Fuel and Ice Dealers	4		4		
599	Miscellaneous Retail Stores	11		3	8	
	Total	658	377	78	134	27

INDUSTRY AT WHICH FULL TIME MALE EMPLOYEES WORK

Industry Code	Industry	Total	Sheridan	Buffalo	Sheridan County	Johnson County
	FINANCE, INSURANCE AND REAL ESTATE					
602	Commercial and Savings Banks	25	18	7		
612	Savings and Loan Associations	9	9			
614	Personal Credit Institutions	3		3		
621	Security Brokers & Dealers	17	9		8	
631	Life Insurance Agents	18	9		9	
641	Insurance Agents & Brokers	38	9	6	20	3
661	Real Estate Agents	17	9		8	
	Total	127	63	16	45	3
	SERVICES					
701	Hotels and Motels	48	18	7	17	6
703	Trailer Parks and Camps	22		7	9	6
721	Laundries & Dry Cleaners	18	18			
724	Barber Shops	30	19	3	8	
734	Janitorial Services	12	9	3		
739	Business Services	6		6		
753	Automobile Repair	30	18	3		9
762	Electrical Repair Shops	10	10			
764	Reupholstery & Furniture Repair	9	9			
769	Misc. Repair Shops	13		7		6
801	Physicians & Surgeons	23	19	4		
802	Dental	21	10	3	8	
809	Health and Related Services	9	9			
811	Legal	31	28	3		
821	Elementary and Secondary Schools	25	9	7	9	
822	College, Universities & Jr. Colleges	18	9		9	
861	Business Associations	14		3	8	3
864	Civic, Social & Fraternal Organizations	9	9			
866	Religious Organizations	13		10		3
869	Non Profit Membership Organizations	10	10			
881	Private Households	9	9			
891	Engineering and Architectural	9	9			
893	Accounting, Auditing, Bookkeeping	12	9	3		
	Total	401	231	69	68	33
	GOVERNMENT					
910	Federal					
	Post Office	90	55	10	25	
	Forest Service	29	18	3	8	
	Veteran's Administration Hospital	276	175		101	
	Agriculture	23	9		8	6
	Other Agencies	35	27		8	
920	State					
	Highway	99	27	46	17	9
	Game and Fish	45	9	16	17	3
	Girls School	33	9		24	
	Soldiers-Sailors Home	6		3		3
	Other Agencies	17	9		8	

INDUSTRY AT WHICH FULL TIME MALE EMPLOYEES WORK

Industry Code	Industry	Total	Sheridan	Buffalo	Sheridan County	Johnson County
	GOVERNMENT (cont'd)					
930	Local					
	Schools - Primary	33	9	10	8	6
	Schools - Secondary	40	18	3	16	3
	Schools - College	26	18		8	
	Police & Fire Protection	27	18	3		6
	Highway	45	18	7	17	3
	Administrative	22	19	3		
	Hospital	17	9		8	
	Other Agencies	28	19		9	
	Total	891	466	104	282	39
	GRAND TOTAL	4,974	2,019	610	1,779	566

INDUSTRY AT WHICH FULL TIME FEMALE EMPLOYEES WORK

Industry Code	Industry	Total	Sheridan	Buffalo	Sheridan County	Johnson County
	AGRICULTURE, FOREST & FISHERIES					
013	Livestock Farms & Ranches	21				21
014	General Farms	85			85	
019	Misc. Commercial Farms	9				9
	Total	115			85	30
	CONTRACT CONSTRUCTION					
138	Oil & Gas Field	3				3
161	Highway Street Construction	9	9			
171	Plumbing, Heating & Air Condition	3		3		
179	Special Trade Contractors	11			8	3
	Total	26	9	3	8	6
	MANUFACTURING					
204	Grain Mill Products	9	9			
205	Bakery Products	8			8	
206	Sugar	9	9			
208	Beverage Industry	9	9			
242	Saw Mills	3		3		
271	Newspapers	9	9			
287	Agricultural Chemicals	3		3		
327	Concrete Gypsum & Plaster	4		4		
367	Electronic Components	28	28			
	Total	82	64	10	8	
	TRANSPORTATION, COMMUNICATIONS & UTILITIES					
421	Trucking	9			9	
422	Public Warehousing	3				3
481	Telephone Communications	6				6
	Total	18			9	9
	WHOLESALE TRADE					
505	Farm Products -Raw Materials	10	10			
509	Miscellaneous Wholesalers	13	9	4		
	Total	23	19	4		
	RETAIL TRADE					
525	Hardware & Farm Equipment	9		6		3
531	Department Store	46	37	9		
533	Limited Price Variety Stores	31		3	25	3
535	Direct Sales Organizations	8			8	
539	Misc. General Merchandise	12		3	9	
541	Grocery Stores	30	9	10	8	3
546	Retail Bakeries	15		7	8	
551	New & Used Cars	33	18	3	9	3
554	Gasoline Service Stations	25	9	7	9	
561	Men's & Boy's Clothing Stores	9	9			
562	Ladies Ready to Wear Stores	13	9	4		
566	Shoe Stores	8			8	
581	Eating & Drinking Places	210	110	23	68	9
591	Drug Stores	10	10			
598	Fuel & Ice Dealers	3		3		
599	Misc. Retail Stores	17		6		3
	Total	479	211	84	160	24

INDUSTRY AT WHICH FULL TIME FEMALE EMPLOYEES WORK

Industry Code	Industry	Total	Sheridan	Buffalo	Sheridan County	Johnson County
	FINANCE, INSURANCE & REAL ESTATE					
602	Commercial & Savings Banks	19		9	10	
614	Personal Credit Institutions	9		9		
641	Insurance Agents & Brokers	10		10		
661	Real Estate Agents	9		9		
	Total	47		37	10	
	SERVICES					
701	Hotels & Motels	60	28	26		6
703	Trailer Parks & Camps	28	18	7		3
721	Laundries & Dry Cleaners	46	46			
723	Beauty Shops	25	18	7		
739	Business Services	9	9			
769	Misc. Repair Shops	3		3		
801	Physicians & Surgeons	3		3		
802	Dentists	4		4		
803	Osteopathic Physicians	3		3		
809	Health & Related Services	66	55	3	8	
811	Legal	9			9	
864	Civic Social & Fraternal Organ.	18	18			
866	Religious Organizations	13	9	4		
881	Private Households	41	18	6	17	
893	Accounting, Auditing, Bookkeeping	9	9			
	Total	337	228	66	34	9
	GOVERNMENT					
910	Federal					
	Post Office	23	9		8	6
	Veterans Admin. Hospital	117	83		34	
	Agriculture	20	9	3	8	
920	State					
	Soldiers and Sailors Home	25		16		9
	Other Agencies	18	9	9		
930	Local					
	Schools - Primary	60	18	22	17	3
	Schools - Secondary	48	28	13	4	3
	Schools - College	9	9			
	Administrative	33	18	7	8	
	Hospital	138	64	26	42	6
	Other Agencies	18	9	9		
	Total	509	256	105	121	27
GRAND TOTAL		1,636	787	309	435	105

SEX AND AGE OF FULL-TIME EMPLOYED PERSONS WILLING TO ACCEPT
LIGHT INDUSTRIAL ASSEMBLY WORK (ALIAW)
COMPARED TO TOTAL EMPLOYED PERSONS

Age	Sheridan			Sheridan County			Buffalo			Johnson County			Area Total		
	ALIAW	Total	%	ALIAW	Total	%	ALIAW	Total	%	ALIAW	Total	%	ALIAW	Total	%
MALE															
16-18				0	8	0	3	10	30.0				3	18	16.6
19-21	18	37	48.6	17	42	40.5	3	13	23.1	9	18	50.0	47	110	42.7
22-24	46	92	50.0	25	84	29.8	13	30	43.3	6	12	50.0	90	218	41.3
25-34	92	313	29.4	59	263	22.4	39	138	28.3	18	103	17.5	208	817	25.5
35-44	92	570	16.1	59	450	13.1	39	141	27.7	36	175	20.6	226	1,336	16.9
45-54	120	441	27.2	93	527	17.6	36	151	23.8	30	154	19.5	279	1,273	21.9
55-64	55	294	18.7	51	339	15.0	26	89	29.2	6	99	6.1	138	821	16.8
65 & Over	18	175	10.3	0	144	0	0	26	0	3	18	16.7	21	363	5.8
Total	441	1,922	22.9	304	1,857	16.4	159	598	26.6	108	579	18.7	1,012	4,956	20.4
FEMALE															
16-18							3	3	100.0				3	3	100.0
19-21	28	46	60.9	8	8	100.0	3	13	23.1	3	3	100.0	42	70	60.0
22-24	28	55	50.9	8	8	100.0	7	20	35.0	3	6	50.0	46	89	51.7
25-34	55	101	54.5	50	135	37.0	7	20	35.0	9	24	37.5	121	280	43.2
35-44	83	239	34.7	25	119	21.0	23	44	52.3	3	27	11.1	134	429	31.2
45-54	110	248	44.4	34	93	36.6	13	85	51.3	9	33	27.3	166	459	36.2
55-64	18	92	19.6	8	67	11.9	10	66	15.2	3	12	25.0	39	237	16.5
65 & Over	9	46	19.6	0	8	0	0	23	0	0	9	0	9	86	10.5
Total	331	827	40.0	133	438	30.4	66	274	24.1	30	114	26.3	560	1,653	33.9

FULL TIME EMPLOYED MALES WHO WILL ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
OCCUPATION CODE BY YEARS OF SCHOOL COMPLETED AND EXPERIENCE

Occupation Code Number	Occupation	Years of School Completed												Years of Experience In This Occupation						
		6 & Under	7	8	9	10	11	12	13	14	15	16	17	18 & Over	1	2	3	4	5	6&Over INA
	PROFESSIONAL, TECHNICAL AND MANAGERIAL OCCUPATIONS																			
18	Surveyor						3	7			3				3		7		3	
29	Mathematic & Physical Science							3										3		
91	Secondary School Education													9						9
100	Librarian							9												9
120	Clergyman					3						3					3			3
166	Personnel & Training Admin.											8			8	8				
169	Administrative Specialization										9									9
180	Ag., Forestry & Fishing Mgrs.							3		3							3			3
183	Mfg., Industry, Mgrs.							9	3						9			3		
187	Service Industry Mgrs.			12																12
198	Miscellaneous, Managers & Officials	9																		9
199	Misc., Professional Tech. Mgrs.							3												3
	Total	9		12		3	3	34	3	3	12	11		9	20		13	3	6	57	
	CLERICAL AND SALES OCCUPATIONS																			
232	Post Office Clerks							18										9	9	
233	Mail Carriers							8												8
259	Service Salesmen					8														8
260	Horticultural & Nursery Salesmen							3												3
290	Sales Clerk						9	12	12	9	9				9	3	3	18		18
292	Routeman			9																9
	Total			9		8	9	41	12	9	9				9	3	3	27	9	46	
	SERVICE OCCUPATIONS																			
304	Housemen & Yardmen			9																9
312	Bartenders			17				3		9					17					12
315	Miscellaneous Cooks				8												8			
318	Kitchen Workers					9		9									9			9
355	Hospital, Morgue Attendants			8	9															17
372	Guards & Watchmen				9																9
373	Firemen				9															9
381	Porters & Cleaners						3													3
382	Janitors			9																9
	Total			43	35	9	3	12		9					17		17			68	9

FULL TIME EMPLOYED MALES WHO WILL ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
OCCUPATION CODE BY YEARS OF SCHOOL COMPLETED AND EXPERIENCE

Occupation Code Number	Occupation	Years of School Completed												Years of Experience In This Occupation						
		6 & Under	7	8	9	10	11	12	13	14	15	16	17	18 & Over	1	2	3	4	5	6&Over	INA
	FARMING, FISHERY, FORESTRY AND RELATED OCCUPATIONS																				
411	Dairy Farming			8											8						
413	Livestock Farming			17	8	3	11	9		6	11	6			3	17		3	12	38	
419	Animal Farming							9												9	
421	General Farming		8	8				16				8								41	
422	Irrigation Farm Workers							8												8	
424	Farm Machinery Operator							3												3	
429	Miscellaneous Farming							8							8						
	Total	—	8	33	8	3	11	53	—	6	11	14	—	—	19	17	—	3	12	99	—
	PROCESSING OCCUPATIONS																				
523	Freezing, Food				9			9							18						
	Total	—	—	—	9	—	—	9	—	—	—	—	—	—	18	—	—	—	—	—	—
	MACHINES TRADES OCCUPATIONS																				
620	Vehicle & Equipment Mechanics			21				9	9										3	37	
633	Business & Commercial Machine Repairs									9					9						
639	Misc. Mechanics & Repairmen							17												17	
	Total	—	—	21	—	—	—	26	9	9	—	—	—	—	9	—	—	—	3	54	—
	BENCH WORK OCCUPATIONS																				
722	Comm. Equipment Repairs							8												8	
740	Painters		9																	9	
760	Carpenters				3															3	
	Total	—	9	—	3	—	—	8	—	—	—	—	—	—	—	—	—	—	—	20	—
	STRUCTURAL WORK OCCUPATIONS																				
819	Welder				3															3	
829	Electrical Products Repair			8																8	
840	Painting & Paperhangers			3																3	
844	Cement & Concrete Finishing			9				9										9		9	
849	Plastering, Waterproofing					3		6								3	3			3	
850	Excavating, Grading, Etc.			7		3		3											3	10	
851	Drainage, Etc.					3	3	3							3					6	

FULL TIME EMPLOYED MALES WHO WILL ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
OCCUPATION CODE BY YEARS OF SCHOOL COMPLETED AND EXPERIENCE

Occupation Code Number	Occupation	Years of School Completed													Years of Experience In This Occupation						
		6 & Under	7	8	9	10	11	12	13	14	15	16	17	18 & Over	1	2	3	4	5	6&Over	INA
	STRUCTURAL WORK OCCUPATIONS (cont'd)																				
853	Asphalt Paving							3												3	
859	Misc. Dirt Work.			8			3	36								11		3	6	10	17
860	Carpenters	9			9	9		10	8							11		9		25	
862	Plumber							3												3	
869	Misc. Construction Trades			14		3		15							3		3		6	12	8
	Total	9		49	12	21	6	88	8						6	25	15	12	15	95	25
	MISCELLANEOUS OCCUPATIONS																				
905	Heavy Truck Drivers	3		15		9												3		15	9
909	Truck Terminal Workers				9			9									9			9	
910	Railroad Workers					3					8									11	
915	Service Station Attendants, Etc.			3		17	6	12	11	12					12	18	3		17	12	
919	Misc. Transportation Employees				9										9						
922	Moving & Storage		8														8				
929	Materials Handling	18		3	8															29	
930	Mining of Minerals						6	9	3						3					16	
939	Extraction of Minerals		3												3						
940	Timber Cutting			3																3	
942	Log Sorting, Gathering & Storing			8				9							17						
951	Utilities Fireman							9												9	
952	Electric Power Generation & Trans.					9														9	
954	Water Purification & Distribution			8				8									8		8		
	Total	21	11	40	26	38	12	56	14	12	8				44	27	19	3	25	113	9
	TOTAL MALES	39	28	207	93	82	44	327	46	48	40	25	0	9	142	72	67	48	70	552	43

FULL TIME EMPLOYED FEMALES WHO WILL ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
OCCUPATION CODE BY YEARS OF SCHOOL COMPLETED AND EXPERIENCE

Occupation Code Number	Occupation	Years of School Completed: 6 & Under	7	8	9	10	11	12	13	14	15	16	17	18 & Over	Years of Experience In This Occupation: 1	2	3	4	5	6&Over	INA
	PROFESSIONAL, TECHNICAL AND MANAGERIAL OCCUPATIONS																				
75	Registered Nurses					9														9	
79	Medicine & Health								3						3						
160	Accountants & Auditors												9			9					
162	Purchasing Management							9												8	
180	Ag. Forest & Fishing Mgrs.						3								3						
185	Wholesale & Retail Trades Mgrs.							3												3	
187	Service Industry Mgrs.						9													9	
188	Public Admin. Mgrs.							3		3					3				3		
199	Miscellaneous Mgrs.							3									3				
	Total	—	—	—	—	9	12	18	3	3	—	—	9	—	9	9	3	—	3	29	—
	CLERICAL AND SALES OCCUPATIONS																				
201	Secretaries									18										18	
202	Stenographers									3										3	
209	Clerk-Typists							8	9									9	8		
210	Bookkeepers							9	18							9				18	
211	Cashiers					9	9	17	9							9	8	9		18	
219	Computing & Account. Recording							8										8			
223	Stock Clerks							8												8	
242	Hotel Clerks						3											3			
263	Apparel & Textile Salespersons							9								9					
266	Drug Store Salespersons				8										8						
274	House Furnishings Salespersons							9									9				
290	Sales Clerks				7		3	15							7			3		16	
	Total	—	—	—	15	9	15	83	36	21	—	—	—	—	15	27	17	32	8	81	—
	SERVICE OCCUPATIONS																				
303	Housekeepers, Private Homes							8								8					
306	Maids, Domestic							9									9				
307	Nursemaids		9					9										9		9	
309	Housekeepers, domestic							8													8
311	Waitresses, cafe				17	9	20	42							26		11	3		31	17
312	Waitresses, cocktail							3	8											11	

FULL TIME EMPLOYED FEMALES WHO WILL ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
OCCUPATION CODE BY YEARS OF SCHOOL COMPLETED AND EXPERIENCE

Occupation Code Number	Occupation	Years of School Completed													Years of Experience In This Occupation						
		6 & Under	7	8	9	10	11	12	13	14	15	16	17	18 & Over	1	2	3	4	5	6&Over	INA
	SERVICE OCCUPATIONS (cont'd)																				
313	Cooks				3		8	24										8		27	
318	Kitchen Workers					3	3								3		3				
323	Maids, Hotels & Motels			12																3	9
355	Hospital & Morgue Attendants					3	3	18									11		3	10	
361	Laundresses		9	9				18							9			9		18	
381	Cleaners				9													9			
388	Elevator Operators					9									9						
	Total	—	18	21	29	24	34	139	8	—	—	—	—	—	47	8	34	38	3	109	34
	FARMING, FISHERY, FORESTRY AND RELATED OCCUPATIONS																				
413	Ranching	—	—	—	—	—	—	12	—	—	—	—	—	—	—	—	—	—	—	12	—
	Total							12												12	
	STRUCTURAL WORK OCCUPATION																				
850	Excavating, Grading, Etc.	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	3	—	—
	Total							3											3		
	MISCELLANEOUS OCCUPATIONS																				
963	Radio & TV Production							8							8						
976	Photography, Etc.	—	—	—	—	—	—	9	—	—	—	—	—	—	—	—	—	9	—	—	—
	Total							17							8			9			
TOTAL FEMALE		0	18	21	44	42	61	272	47	24			9		79	44	54	79	17	231	34

PART TIME WORKERS

Of the 1,779 part-time workers in Sheridan and Johnson counties, 12 percent are working males, 30 percent are working females, and 24 percent are females keeping house. The remaining 34 percent is made up of males going to school (23 percent); females going to school (nine percent); and other males (two percent). The majority of females and females keeping house are age 25 and over. Most part-time working males are age 45 and over, or under 21.

A substantial majority of part-time working males and females and females keeping house have a high school education or less. The majority of those having more than 12 years of education are the working females, females keeping house and students.

Some of the principle reasons given by both sexes for working less than 35 hours a week were: housework, school or business; did not want full time work; or full time less than 35 hours.

A comparatively large number of students in Sheridan and Johnson counties indicated they are willing to accept light industrial assembly work. Most females from age 22 through 54, who are keeping house, indicated interest in assembly work, as did working females in all age groups. Working males, ages 14 through 21 and over 45, indicated willingness to accept assembly work.

Most part-time workers who indicated interest in light assembly work are females working, looking for work, or attending school. The majority of this group has 12 years of education or less. The majority of part-time employed male persons interested in light assembly work are located in Sheridan and are engaged in Clerical and Sales work, Services, Structural or Miscellaneous work. The greatest concentration of part-time employed females interested in light assembly work is also located in Sheridan. This group is engaged in Professional, Technical and Managerial work, Clerical and Sales work, or Services.

PART-TIME WORKERS BY AGE, SEX AND PRIMARY ACTIVITY

	Age Group									
	14-15	16-18	19-21	22-24	25-34	35-44	45-54	55-64	65 & Over	Total
Working-Male										
Sheridan		28	18				9	37	9	101
Buffalo	3	13				3		3	21	43
Sheridan County		9					16	25	9	59
Johnson County		3						3	9	15
Total	3	53	18			3	25	68	48	218
Working-Female										
Sheridan	9	18	23		46	46	83	64	28	322
Buffalo	3	7	7	3	10	22	7	19	7	85
Sheridan County				8	17	25	68		9	127
Johnson County					3		3			6
Total	12	25	35	11	76	93	161	83	44	540
Keeping House-Female										
Sheridan		9		9	64	28	46	18	18	192
Buffalo				3	3		11	3		20
Sheridan County			9		60	25	51	42		187
Johnson County					6	15	6	3	3	33
Total		9	9	12	133	68	114	66	21	432
Going to School-Male										
Sheridan	64	156	37		18					275
Buffalo	13	33	3							49
Sheridan County		25	34							59
Johnson County	3	15	6							24
Total	80	229	80		18					407
Going to School-Female										
Sheridan	28	18	28							74
Buffalo	3	17								20
Sheridan County	8	34	17							59
Johnson County										
Total	39	69	45							153
Other-Male										
Sheridan									18	18
Buffalo									3	3
Sheridan County								8		8
Johnson County										
Total								8	21	29
GRAND TOTAL	134	385	187	23	227	164	300	225	134	1,779

PART-TIME WORKERS BY EDUCATION, SEX AND PRIMARY ACTIVITY

	Years of Education							
	1-7	8	9-11	12	13-15	16	17 & Over	Total
Working-Male								
Sheridan		28	37	18	9	9		101
Buffalo	6	10	10	10	7			43
Sheridan County	9	16	17		9		8	59
Johnson County	3	3		6			3	15
Total	18	57	64	34	25	9	11	218
Working-Female								
Sheridan	28	46	55	119	28	28	18	322
Buffalo	6	12	21	26	17	3		85
Sheridan County		34	17	51	25			127
Johnson County					3	3		6
Total	34	92	93	196	73	34	18	540
Keeping House-Female								
Sheridan	18	28	18	46	45	28	9	192
Buffalo			6	14				20
Sheridan County		34	8	77	59		9	187
Johnson County				9	12	9	3	33
Total	18	62	32	146	116	37	21	432
Going to School-Male								
Sheridan		18	165	37	55			275
Buffalo		10	36		3			49
Sheridan County			34		25			59
Johnson County	3		18	3				24
Total	3	28	253	40	83			407
Going to School-Female								
Sheridan			47	9	18			74
Buffalo			20					20
Sheridan County			26	8	25			59
Johnson County								
Total			93	17	43			153
Other-Male								
Sheridan	9	9						18
Buffalo			3					3
Sheridan County	8							8
Johnson County								
Total	17	9	3					29
GRAND TOTAL	90	248	538	433	340	80	50	1,779

PART-TIME WORKERS BY
HOURS WORKED, SEX AND PRIMARY ACTIVITY

Hours Worked	Working Male	Working Female	Keeping House Female	Going To School Male	Going To School Female	Other Male
0 - 5	12	12	67	71	29	9
6 - 10	30	66	140	68	45	9
11 - 15	39	57	79	84	42	8
16 - 20	41	174	103	86	20	3
21 - 25	45	107	28	73	9	
26 - 30	31	59	15	16	8	
31 - 35	20	45		9		
35 & Over	—	12	—	—	—	—
Total	218	532	432	407	153	29

AGE OF PART-TIME WORKERS BY REASON FOR WORKING LESS THAN 35 HOURS A WEEK

Reason Sex and Area		Age 14-15	16-18	19-21	22-24	25-34	35-44	45-54	55-64	65 & Over	Total
Could Find Only Part-Time Work											
Male	Sheridan	9	9					18	9		45
	Buffalo								3		3
	Sheridan Co.										
	Johnson Co.										
	Total	9	9					18	12		48
Fem.	Sheridan		18	18	9	9		28	18		100
	Buffalo			7	3		3		3		16
	Sheridan Co.					8		8		8	24
	Johnson Co.							3			3
	Total		18	25	12	17	3	39	21	8	143
Housework, School or Business											
Male	Sheridan	37	166	46		9					258
	Buffalo	13	36	3							52
	Sheridan Co.		8	17							25
	Johnson Co.	3	18	6						3	30
	Total	53	228	72		9				3	365
Fem.	Sheridan	28	9	37		18	28	9	9		138
	Buffalo	7	20			7	10	7	3		54
	Sheridan Co.		8	8	8	8	8	25			65
	Johnson Co.					6	12	6	3		27
	Total	35	37	45	8	39	58	47	15		284
Did Not Want Full-Time Work											
Male	Sheridan	9	9						18	18	54
	Buffalo									16	16
	Sheridan Co.								25		25
	Johnson Co.								3	6	9
	Total	9	9						46	40	104
Fem.	Sheridan		18			64	37	46	37	46	248
	Buffalo		3		3		3	3	10	3	25
	Sheridan Co.	8	17	8		8	8	25	8		82
	Johnson Co.					3				3	6
	Total	8	38	8	3	75	48	74	55	52	361

AGE OF PART-TIME WORKERS BY REASON
FOR WORKING LESS THAN 35 HOURS A WEEK Cont'd.

Reason Sex and Area		Age 14-15	16-18	19-21	22-24	25-34	35-44	45-54	55-64	65 & Over	Total
Full-time Less Than 35 Hours											
Male	Sheridan	9									9
	Buffalo	3	10				3			7	23
	Sheridan Co.		8	8				8			24
	Johnson Co.										
	Total	12	18	8			3	8		7	56
Fem.	Sheridan	9				18		28	9		64
	Buffalo					7	7	7	3	3	27
	Sheridan Co.		8			51	25	51	17		152
	Johnson Co.						3				3
	Total	9	8			76	35	86	29	3	246
Other											
Male	Sheridan			9		9		9		9	36
	Buffalo										
	Sheridan Co.		17	8				8	8	8	49
	Johnson Co.										
	Total		17	17		9		17	8	17	85
Fem.	Sheridan						9	18			27
	Buffalo										
	Sheridan Co.			8			8				16
	Johnson Co.										
	Total			8			17	18			43
Total All Reasons											
Male	Sheridan	64	184	55		18		27	27	27	402
	Buffalo	16	46	3			3		3	23	94
	Sheridan Co.		33	33				16	33	8	123
	Johnson Co.	3	18	6					3	9	39
	Total	83	281	97		18	3	43	66	67	658
Fem.	Sheridan	37	45	55	9	109	74	129	73	46	577
	Buffalo	7	23	7	6	14	23	17	19	6	122
	Sheridan Co.	8	33	24	8	75	49	109	25	8	339
	Johnson Co.					9	15	9	3	3	39
	Total	52	101	86	23	207	161	264	120	63	1,077

PART-TIME WORKERS AND PRINICPLE REASONS FOR WORKING LESS THAN 35 HOURS A WEEK, BY AGE AND SEX

Age Group	Could Find Only Part-time M.	Could Find Only Part-time F.	Illness M.	Illness F.	Vacation M.	Vacation F.	Housework. School Business M.	Housework. School Business F.	Did Not Want Full-time M.	Did Not Want Full-time F.	Full-time Less Than 35 Hr. M.	Full-time Less Than 35 Hr. F.	Other M.	Other F.	Total M.	Total F.
14-15	9						53	35	9	8	12	9			83	52
16-18	9	18					228	37	9	38	18	8	17		281	101
19-21		25					72	45		8	8		17	8	97	86
22-24		12						8		3						23
25-34		17					9	39		78		76	9		18	210
35-44		3						58		48	3	35		17	3	161
45-54	18	39						47		74	8	86	17	18	43	264
55-64	12	21	17					15	46	55		29	8		66	137
65 & Over		8		9			3		40	52		3	17		69	63
Total	48	143	17	9			365	284	104	364	49	246	85	43	660	1,097

PART-TIME WORKERS AND PRINCIPLE
REASONS FOR WORKING LESS THAN 35 HOURS A WEEK BY
PRIMARY ACTIVITY

Reasons	Working Male	Working Female	Keeping House Female	Going to School Male	Going To School Female	Other Male
Could Only Find Part-Time Work	21	108	37	9	-	-
Own Illness	-	-	18	-	-	-
On Vacation	9	-	-	-	-	-
Too Busy With Housework, School Personal Business, Etc.	46	97	88	320	102	-
Did Not Want Full-Time Work	68	205	117	18	43	20
Full-Time Work Week Under 35 Hours	31	92	146	26	8	-
Other	43	26	17	34	-	9
INA	-	12	9	-	-	-
Total	218	540	432	409	153	29

MAXIMUM COMMUTING DISTANCES & MINIMUM HOURLY WAGE
ACCEPTABLE TO PART-TIME WORKERS FOR FULL TIME
EMPLOYMENT BY PRIMARY ACTIVITY

Up To 10 Mi.	Working Male	Working Female	Keeping House Female	Going To School Male	Going To School Female	Other Male
$ 1.60	67	169	87	105	64	
2.00	61	161	78	100	56	
2.50	17	120	57	77	19	
3.00	9	81	41	57	19	
Total	154	531	263	339	158	
Up To 20 Mi.						
$ 1.60	12	48	15	49	10	
2.00	21	118	42	47	38	
2.50	56	86	59	59	47	8
3.00	48	107	43	36	29	
Total	137	359	159	191	124	8
Up To 30 Mi.						
$ 1.60			4	20		
2.00		28	3	54		
2.50	6	73	14	40	17	
3.00	34	52	52	67	35	
Total	40	153	73	181	52	
Up To 40 Mi.						
$ 1.60		9	9			
2.00			9			
2.50		31	12	32		
3.00	6	56	24	3		8
Total	6	96	54	35		8
Up To 50 Mi.						
$ 1.60	3	29		12		
2.00				12		
2.50	3	12		21		
3.00	4	12		75		
Total	10	53		120		

MINIMUM STARTING RATE AND MAXIMUM COMMUTING DISTANCE
OF PART TIME WORKERS BY PRIMARY ACTIVITY, SEX AND AREA

Max. Commuting Dist. / Min. Starting Rate	Working Male					Working Female					Keeping House					
	Sheridan	Buffalo	Sheridan Co.	Johnson C.	Total	Sheridan	Buffalo	Sheridan Co.	Johnson C.	Total	Sheridan	Buffalo	Sheridan Co.	Johnson C.	Total	Total
Up To 10 Miles																
$1.60 an Hr.	46	10	8	3	67	101	26	42		169	56	3	25	3	87	323
2.00 an Hr.	46	7	8		61	110	17	34		161	37	7	34		78	300
2.50 an Hr.	9		8		17	82	13	25		120	37	3	17		57	194
3.00 an Hr.	9				9	46	10	25		81	37	4			41	131
Total	110	17	24	3	154	339	66	126	—	531	167	17	76	3	263	948
Up To 20 Miles																
$1.60 an Hr.	9			3	12	37	3	8		48	9			6	15	75
2.00 an Hr.	9	6		6	21	46	13	59		118	28		8	6	42	181
2.50 an Hr.	46	10			56	28	7	51		86	46	4	9		59	201
3.00 an Hr.	37	3	8		48	46	10	51		107	18		25		43	198
Total	101	19	8	9	137	157	33	169	—	359	101	4	42	12	159	655
Up To 30 Miles																
$1.60 an Hr.											4				4	4
2.00 an Hr.						28				28				3	3	31
2.50 an Hr.				6	6	55	10	8		73			8	6	14	93
3.00 an Hr.	28	3	—	3	34	46	3		3	52	37	3	9	3	52	138
Total	28	3		9	40	129	13	8	3	153	37	7	17	12	73	266
Up To 40 Miles																
$1.60 an Hr.								9		9	9				9	18
2.00 an Hr.						28	3			31	9				9	40
2.50 an Hr.											9			3	12	12
3.00 an Hr.		3		3	6	37	10	9		56	18	—	—	6	24	86
Total		3		3	6	65	13	18	—	96	45			9	54	156
Over 40 Miles																
$1.60 an Hr.		3			3		3	9		12						15
2.00 an Hr.																
2.50 an Hr.		3			3		3	9		12						15
3.00 an Hr.		4			4	18	3	8		29						33
Total		10			10	18	9	26		53						63
Total	239	52	32	24	347	708	134	347	3	1,192	350	28	135	36	549	2,088

MINIMUM STARTING RATE AND MAXIMUM COMMUTING DISTANCE
OF PART TIME WORKERS BY PRIMARY ACTIVITY, SEX AND AREA Cont'd.

Max. Commuting Dist. / Min. Starting Rate	Going To School Male					Going To School Female					Other Male					
	Sheridan	Buffalo	Sheridan Co.	Johnson C.	Total	Sheridan	Buffalo	Sheridan Co.	Johnson C.	Total	Sheridan	Buffalo	Sheridan Co.	Johnson C.	Total	Total
Up To 10 Miles																
$1.60 an Hr.	83	14	8		105	37	10	17		64						169
2.00 an Hr.	82	10	8		100	46	10			56						156
2.50 an Hr.	65	4	8		77	9	10			19						96
3.00 an Hr.	46	3	8		57	9	10			19						76
Total	276	31	32		339	101	40	17		158						497
Up To 20 Miles																
$1.60 an Hr.	37	3		9	49	9	1			10						59
2.00 an Hr.	28	10		9	47	18	3	17		38						85
2.50 an Hr.	46	10		3	59	37	1	9		47			8		8	114
3.00 an Hr.	28	8			36	28	1			29						65
Total	139	31		21	191	92	6	26		124			8		8	323
Up To 30 Miles																
$1.60 an Hr.			17	3	20											20
2.00 an Hr.	28		17	9	54											54
2.50 an Hr.	28	3		9	40	9		8		17						57
3.00 an Hr.	55	3		6	64	18		17		35						99
Total	111	6	34	27	178	27		25		52						230
Up To 40 Miles																
$1.60 an Hr.																
2.00 an Hr.																
2.50 an Hr.	9		17	6	32											32
3.00 an Hr.		3		3	6								8		8	14
Total	9	3	17	9	38								8		8	46
Over 40 Miles																
$1.60 an Hr.	9	3			12											12
2.00 an Hr.	9	3			12											12
2.50 an Hr.	18	3			21											21
3.00 an Hr.	46	3	17	9	75											75
Total	82	12	17	9	120											120
Total	617	83	100	66	866	220	46	68		334			16		16	1,216

AGE OF PART-TIME WORKERS WILLING TO ACCEPT LIGHT INDUSTRIAL ASSEMBLY WORK
BY PRIMARY ACTIVITIES AND SEX

Area, Primary Activities & Sex	Age Groups 14-15	16-18	19-21	22-24	25-34	35-44	45-54	55-64	65 & Over	Total
Working Male										
Sheridan		18	9				18	9		54
Buffalo	3	10				4				17
Sheridan County		8					8			16
Johnson County									3	3
Total	3	36	9			4	26	9	3	90
Working-Female										
Sheridan	9	9	28		9	9	28	18		110
Buffalo		3	7	4	3	10	3	13		43
Sheridan County					17	25	25		8	75
Johnson County					3					3
Total	9	12	35	4	32	44	56	31	8	231
Keeping House-Female										
Sheridan		9		9	37		28			83
Buffalo				3	4		3			10
Sheridan County					8		25			33
Johnson County						3				3
Total		9		12	49	3	56			129
Going To School-Male										
Sheridan	28	74	37							139
Buffalo	7	19								26
Sheridan County		8	8							16
Johnson County	3	12	3							18
Total	38	113	48							199
Going To School-Female										
Sheridan	28	18	18							64
Buffalo		7								7
Sheridan County		17	8							25
Johnson County										-
Total	28	42	26							96
Other-Male										
Sheridan County								8		8
Total								8		8
GRAND TOTAL	78	212	118	16	81	51	138	48	11	753

PART-TIME WORKERS WHO WILL ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
BY AGE, SEX AND PRIMARY ACTIVITY

Age	Working & Looking For Work Male	Female	Keeping House Female	Going To School Male	Female	Other Male	Total
14-15	3	9		38	28		78
16-18	36	12	9	113	42		212
19-21	9	35		48	26		118
22-24		4	12				16
25-34		32	49				81
35-44	4	44	3				51
45-54	26	56	56				138
55-64	9	31				8	48
65 & Over	3	8	—	—	—	—	11
Total	90	231	129	199	96	8	753

PART-TIME WORKERS WHO WILL ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
BY EDUCATION, SEX AND PRIMARY ACTIVITY

Education Grade	Working & Looking For Work Male	Female	Keeping House Female	Going To School Male	Female	Other Male	Total
6		12				8	20
7		3		3			6
8	39	60	45	24			168
9		12		31	28		71
10	15	20	10	31	3		79
11	18	7	9	54	30		118
12	15	76	48	28	9		176
13	4	11		28	26		69
14		18	9				27
15		8					8
16	—	3	9	—	—	—	12
Total	91	230	130	199	96	8	754

HIGHEST GRADE COMPLETED BY PART-TIME WORKERS WILLING TO ACCEPT LIGHT INDUSTRIAL ASSEMBLY WORK BY PRIMARY ACTIVITY, AREA AND SEX

Primary Activity Sex and Area		Highest Grade Completed 1-7	8	9-11	12	13-15	16	Total
Working								
Male	Sheridan		28	18	9			55
	Buffalo		3	7	3	4		17
	Sheridan County		8	8				16
	Johnson County	—	—	—	—	—	—	—
	Total		39	33	12	4		91
Female	Sheridan	9	28	18	37	18		110
	Buffalo	6	7	13	14	3		43
	Sheridan County		25	8	25	16		74
	Johnson County						3	3
	Total	15	60	39	76	37	3	230
Keeping House								
Female	Sheridan		28	9	28	9	9	83
	Buffalo				10			10
	Sheridan County		17		17			34
	Johnson County	—	—	—	3	—	—	3
	Total		45	9	58	9	9	130
Going To School								
Male	Sheridan		18	64	28	28		138
	Buffalo		6	20				26
	Sheridan County			17				17
	Johnson County	3	—	18	—	—	—	21
	Total	3	24	119	28	28		202
Female	Sheridan			46	9	9		64
	Buffalo			7				7
	Sheridan County			8		17		25
	Johnson County	—	—	—	—	—	—	—
	Total			61	9	26		96
Other								
Male	Sheridan County	8	—	—	—	—	—	8
	Total	8						8
	Total	26	168	261	186	104	12	757

PART-TIME WORKERS, EXCLUDING STUDENTS, WHO WOULD ACCEPT LIGHT INDUSTRY ASSEMBLY WORK
BY AGE, EDUCATION AND SEX

Grade	6		7		8		9		10		11		12		13		14		15		16		Total	
Sex	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Age:																								
14-15					3	9																	3	9
16-18	8				9	9			15	9	9	9	4										45	27
19-21						9		3					9	13		9							9	34
22-24														3		4		9						16
25-34						21								39								12		72
35-44						8				3		3		18	3	8		9					3	49
45-54					26	46		9						39						8			26	102
55-64		3		3								9		12									9	18
65 & Over													3	8									3	8
Total	8	3		3	38	102		12		15	12	18	12	16	132	3	21		18		8		12	98	335

OCCUPATIONS OF PART TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW)

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	PROFESSIONAL, TECHNICAL & MANAGERIAL WORK										
019	Draftsman		3				3				
040	Agricultural Science		9		9						
091	Secondary School Education		8						8		
159	Entertainment & Recreation		9		9						
169	Admin. Specialization		9		9						
187	Service Industry Managers		3								3
199	Misc. Prof. Technical Managers	3	3	—	—	3	3	—	—	—	—
	Total	3	44		27	3	6		8		3
	CLERICAL & SALES WORK										
223	Stock Clerks		3				3				
267	Fuel & Pet. Prod. Salesmen		25						25		
290	Sales Clerk	9	9	9	9						
291	Peddlers	28	37	28	37						
292	Routemen	21	21	18	18	3	3	—	—	—	—
	Total	58	95	55	64	3	6		25		
	SERVICES										
304	Housemen & Yardmen	9	26	9	18				8		
306	Maids		9		9						
311	Waiters & Waitresses	9	18	9	18						
313	Chefs & Cooks		3				3				
318	Kitchen Workers	24	27	9	9	7	10	8	8		
341	Golf Course, etc. Attendants	18	18	18	18						
355	Hospital, Morgue Attendants	9	9	9	9						
365	Shoe & Luggage Repairmen		3				3				
372	Guards & Watchmen		9		9						
381	Porters & Cleaners	11	15			3	7	8	8		
382	Janitors	20	42	9	28	—	3	8	8	3	3
	Total	100	179	63	118	10	26	24	32	3	3
	FARMING, FISHING, FORESTRY & RELATED WORK										
407	Gardening & Groundskeeping		9		9						
411	Dairy Farming		8						8		
413	Livestock Farming	15	27	9	9		3			6	15
421	General Farming	3	32			3	7		25		

OCCUPATIONS OF PART TIME EMPLOYED MALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW) (cont'd.)

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
429	Misc. Farming	—	11	—	—	—	3	—	8	—	—
	Total	18	87	9	18	3	13	—	41	6	15
	PROCESSING										
529	Processing of Food	8	8					8	8		
579	Processing of Stone, Clay & Glass	—	3	—	—	—	—	—	—	—	3
	Total	8	11	—	—	—	—	8	8	—	3
	MACHINE TRADES										
600	Machinists		3				3				
633	Bus. & Comm. Machine Repair	—	8	—	—	—	—	—	8	—	—
	Total		11				3		8		
	BENCH WORK										
709	Assembly & Repair of Metal Prod.	9	9	9	9						
760	Bench Carpenters	9	12	9	9	—	3	—	—	—	—
	Total	18	21	18	18		3				
	STRUCTURAL WORK										
850	Excavating, Grading, etc.	12	21	9	18	3	3				
859	Misc. Dirt Work		9		9						
860	Carpenters	12	21	9	18	3	3				
862	Plumbers	3	3							3	3
869	Misc. Construction		20		9				8		3
899	Misc. Structural Work	9	9	9	9						
	Total	36	83	27	63	6	6	—	8	3	6
	MISCELLANEOUS WORK										
915	Service Station Attnd., Etc.	16	44		18	10	17			6	9
919	Misc. Trans. Employees	18	18	18	18						
920	Packaging		31		28		3				
922	Moving & Storage		9		9						
960	Movie Picture Projectionists	3	7			3	7				
963	Radio & TV Production	3	3			?	3				
976	Darkroom Occupations		9		9						
	Total	40	121	18	82	16	30	—	—	6	9
	Grand Total	281	652	190	390	41	93	32	130	18	39

OCCUPATIONS OF PART TIME EMPLOYED FEMALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW)

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	PROFESSIONAL, TECHNICAL & MANAGERIAL WORK										
019	Architecture & Engineering		9		9						
075	Registered Nurses		27		27						
079	Medicine & Health		9		9						
090	College Education Work		17		9				8		
091	Secondary School Education	3	3							3	3
092	Primary School & Kindergtn.Ed.		14				3		8		3
096	Home Economists	9	9	9	9						
099	Occ. in Education		11				3		8		
100	Librarian	8	8					8	8		
142	Designers		3				3				
152	Occ. in Music		3								3
163	Sales & Distribution Mgmt.	7	7			7	7				
187	Service Industry Mgrs.		9		9						
	Total	27	129	9	72	7	16	8	32	3	9
	CLERICAL & SALES WORK										
201	Secretaries	9	50	9	37		13				
209	Stenographers	3	3			3	3				
210	Bookkeepers	8	63		37		10	8	16		
211	Cashiers	25	25	9	9			16	16		
213	ADP Equip. Operators	9	9	9	9						
219	Computing & Accounting		9		9						
223	Stock Clerks		8						8		
232	Post Office Clerks		3								3
233	Mail Carriers		8						8		
240	Collectors		9		9						
249	Misc. Clerical		9		9						
259	Service Salesmen	9	9	9	9						
263	Textile & Apparel Salesmen	9	9	9	9						
289	Salesmen & Salespersons	9	9	9	9						
290	Sales Clerks	6	17			6	17				
299	Merchandising Occupations		8						8		
	Total	87	248	54	146	9	43	24	56		3
	SERVICES										
301	Day Workers	51	78	37	64	6	6	8	8		
307	Nursemaids	38	72	28	37	10	10		25		

OCCUPATIONS OF PART TIME EMPLOYED FEMALE PERSONS AND THOSE WILLING TO ACCEPT LIGHT INDUSTRY ASSEMBLY WORK (ALIAW) Cont'd.

Occupation Code No.	Occupation	Area Total ALIAW	Area Total Occ. Total	Sheridan ALIAW	Sheridan Occ. Total	Buffalo ALIAW	Buffalo Occ. Total	Sheridan Co. ALIAW	Sheridan Co. Occ. Total	Johnson Co. ALIAW	Johnson Co. Occ. Total
	SERVICES Cont'd.										
311	Waiters & Waitresses	58	131	18	64	6	17	34	50		
313	Chefs & Cooks	6	6			3	3			3	3
314	Fry Cooks	9	9	9	9						
315	Misc. Cooks		9		9						
317	Cook Helpers	9	34	9	18				16		
319	Food Service Mgrs.	9	18	9	18						
323	Maids & Housemen	19	46	9	18	10	20		8		
332	Beauticians	9	17	9	9				8		
361	Laundry Workers	9	21	9	18		3				
379	Protective Service	9	9	9	9						
381	Porters & Cleaners	18	21	18	18		3				
382	Janitors	17	26	9	18			8	8		
	Total	261	497	173	309	35	62	50	123	3	3
	PROCESSING										
525	Butcher	8	8					8	8		
526	Cooking & Baking Food		8						8		
583	Ironing & Pressing	9	9	9	9						
	Total	17	25	9	9			8	16		
	MACHINE TRADES										
650	Typesetters & Composers	3	3			3	3				
	Total	3	3			3	3				
	BENCH WORK										
780	Upholstering & Furniture Repair		9		9						
785	Tailors & Dressmakers		9		9						
787	Sewing Machine Operators		9		9						
	Total		27		27						
	MISCELLANEOUS WORK										
915	Service Sta. Att., Etc.	9	9	9	9						
	Total	9	9	9	9						
	GRAND TOTAL	404	938	254	572	54	124	90	227	6	15

FEMALES KEEPING HOUSE

Of the 4,899 females keeping house in the two-county area, 61.6 percent are high school graduates or above. About 70 percent of those with at least a high school education are in the age group 19-54. The median age of this group is 49.9 years, with a median of 11.3 years of education. Twenty-one percent of the group indicated that they would be willing to accept light industrial assembly work. The age group of 19-54 includes 81.1 percent of those females interested in light assembly work. Sixty percent of the females keeping house, who would accept light industrial assembly work , have at least a high school education; 76.0 percent are from the City of Sheridan or Sheridan County. Married females account for 84.2 percent of females keeping house in Sheridan and Johnson Counties.

FEMALES KEEPING HOUSE

AGE BY YEARS OF SCHOOL COMPLETED

Age	Year 0-7	8	9	10	11	12	13	14	15	16	17	18
16 - 18		19	9	9	8	3		9				
19 - 21			17	19	24	67	18	9				
22 - 24			12	12	3	78	41	12	8	8		
25 - 34		24	34	42	35	465	44	70	17	33	46	
35 - 44	24	51	22	35	39	377	61	77	77	66	3	9
45 - 54	20	134	63	34	43	323	78	61	24	43	9	
55 - 64	43	191	39	47	27	254	41	73	33	34		
65 & Over	207	295	115	131	44	262	43	58	12	65		9
Total	294	714	311	329	223	1,829	326	369	171	249	58	18

FEMALES KEEPING HOUSE BY AGE

	Age								
	16-18	19-21	22-24	25-34	35-44	45-54	55-64	65 & Over	Total
Sheridan	37	64	64	313	304	340	350	846	2,318
Buffalo	3	7	33	95	118	75	66	92	489
Sheridan County	17	68	59	288	297	331	339	271	1,670
Johnson County	___	15	21	115	121	84	33	33	422
Total	57	154	177	811	840	830	788	1,242	4,899

FEMALES KEEPING HOUSE WILLING TO ACCEPT LIGHT INDUSTRIAL ASSEMBLY WORK - BY AGE

	Age								
	16-18	19-21	22-24	25-34	35-44	45-54	55-64	65 & Over	Total
Sheridan	18	37	27	140	46	149	92	28	537
Buffalo		7	10	24	37	15			93
Sheridan County	17	42	17	59	51	51	25	17	279
Johnson County	___	9	9	45	45	27	___	___	135
Total	35	95	63	268	179	242	117	45	1,044

FEMALES KEEPING HOUSE, BY EDUCATION

Location	Years of Education 1-7	8	9-11	12	13-15	16	17 & Over	Total
Sheridan	211	434	402	684	421	120	46	2,318
Buffalo	26	34	98	190	100	34	7	489
Sheridan County	49	204	288	781	254	77	17	1,670
Johnson County	6	39	81	178	93	18	6	421
Total	292	711	869	1,833	868	249	76	4,898

FEMALES KEEPING HOUSE WHO WOULD ACCEPT LIGHT INDUSTRY ASSEMBLY WORK, BY EDUCATION

Location	Years of Education 1-7	8	9-11	12	13-15	16	17 & Over	Total
Sheridan	28	64	129	175	120	18		534
Buffalo		7	30	40	16			93
Sheridan County	8	42	67	126	34			277
Johnson County	3	9	30	78	15			135
Total	39	122	256	419	185	18		1,039

FEMALES KEEPING HOUSE
AGE BY RELATIONSHIP TO HOUSEHOLD HEAD

Age	Total	Head With Other Relative	Head With No Other Relative	Wife of Head	Other Relative
16-18	57	3		37	17
19-21	154			128	26
22-24	177	3		165	9
25-34	811	15		785	11
35-44	840	33		798	9
45-54	827	42	12	761	12
55-64	788	45	32	674	37
65 & Over	1,242	172	338	659	73
Total	4,896	313	382	4,007	194

AGE BY MARITAL STATUS

Age	Total	Married Civilian Spouse Present	Married Spouse Absent	Widowed or Divorced	Never Married
16-18	57	40			17
19-21	154	137	8		9
22-24	177	165	12		
25-34	811	796		15	
35-44	840	820		12	8
45-54	830	770		51	9
55-64	788	710		75	3
65 & Over	1,242	662	9	516	55
Total	4,899	4,100	26	669	101

FEMALES KEEPING HOUSE

AGE BY HOURS WORKED, LOOKED FOR WORK, AND GOING TO LOOK FOR WORK

	Hours Worked				Looked For Work During Last 4 Wks.			Going To Look For Work During Next 12 Months						Interested In Light Industry Assembly Work		
Age	0	1 to 14	15 to 34	35 & Over	Yes	No	INA	Yes	Prob-ably	May-be	No	Don't Know	INA	Yes	No	INA
16-18	48		9		9	39	9	9		8	31		9	35	22	
19-21	148	9				139	18	17	18	12	87	6	17	92	50	15
22-24	147	12	9			156	12	8	9	26	104	6	12	54	91	20
25-34	638	107	32	9	31	595	160	21	45	19	515	21	168	229	455	105
35-44	753	20	63	15		736	115	11	44	42	593	25	136	152	600	99
45-54	715	72	47	12	7	717	130	26	9	31	635	18	135	245	537	72
55-64	711	32	37	17		711	86	26	3	37	597	24	102	117	630	50
65 & Over	1,209	19	5			1,215	18	9		9	1,197		18	45	1,136	44
Total	4,369	270	202	53	47	4,308	548	127	128	184	3,759	100	597	966	3,521	405

NUMBER OF FRIENDS AND RELATIVES BELIEVED INTERESTED
IN RETURNING TO AREA IF WORK WERE AVAILABLE

AREA	Relatives Who Would Return If Work Were Available		Friends Who Would Return If Work Were Available	
	No. of Persons Answering YES	No. of Persons Who Might Return	No. of Persons Answering YES	No. of Persons Who Might Return
Sheridan	901	1,775	855	4,112
Buffalo	105	213	82	258
Sheridan County	501	1,232	416	1,317
Johnson County	220	482	202	576
Total	1,727	3,702	1,555	6,263

STUDENTS

Over 34 percent of the high school students in Sheridan and Johnson Counties (excluding Kaycee, Clearmont, and Arvada High Schools) indicated that they plan to attend Sheridan College after high school graduation. Forty-seven percent of the students plan to attend college outside Sheridan.

The students who plan to remain in the two-county area after graduation from high school, but who do not plan to attend college, represent nearly 10 percent of the high school students surveyed.

Of the students attending Sheridan College, 91.6 percent plan to further their educations. Only 5.8 percent plan to remain in the survey area after leaving Sheridan College.

FUTURE PLANS OF HIGH SCHOOL STUDENTS
BY AGE, SCHOOL YEAR, & SEX

Year in School	Age	Plan To Attend College						Do Not Plan To Attend College					
		Sheridan College			Other College			Plan To Remain			Plan To Leave		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
9	13	1		1									
	14	39	40	79	45	60	105	6	6	12	10	2	12
	15	31	34	65	42	34	76	8	5	13	7	2	9
	16	4	2	6	6	4	10		3	3	1		1
	18							1		1			
	Total	75	76	151	93	98	191	15	14	29	18	4	22
10	15	43	35	78	43	73	116	9	6	15	5	10	15
	16	35	25	60	52	38	90	14	13	27	12	2	14
	17	7	1	8	9	1	10	6	4	10	4	2	6
	18				1		1						
	Total	85	61	146	105	112	217	29	23	52	21	14	35
11	14		1	1									
	15							1		1			
	16	36	26	62	41	67	108	8	4	12	17	6	23
	17	30	20	50	28	31	59	12	6	18	10	5	15
	18	5		5	5		5	4		4	4	2	6
	19	2		2								1	1
	Total	73	47	120	74	98	172	25	10	35	31	14	45
12	15	1		1	1	1	2						
	16	1		1									
	17	39	28	67	45	62	107	2	1	3	9	8	17
	18	35	13	48	22	22	44	15	11	26	9	5	14
	19	4		4				3	5	8	3		3
	Total	80	41	121	68	85	153	20	17	37	21	13	34
Grand Total		313	225	538	340	393	733	89	64	153	91	45	136

FUTURE PLANS OF STUDENTS ATTENDING SHERIDAN COLLEGE
BY SEX AND SCHOOL YEAR

Sex	Grade	Plan To Continue Education	Plan To Leave School After Sheridan College	
			will stay in area	will leave area
Male	13	71	2	2
Total Male	14	46 117	- 2	2 4
Female	13	35	7	1
Total Female	14	23 58	2 9	- 1
Total Male & Female		175	11	5

SEASONAL EMPLOYMENT
SHERIDAN AND SHERIDAN COUNTY

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Mining	45	45	40	20	20	20	20	40	42	45	45	45
Construction	532	554	543	650	826	1,022	1,115	1,125	1,000	753	772	626
Services	309	315	350	375	438	500	517	509	470	331	320	316
Agriculture	275	275	275	325	350	450	450	450	400	375	350	300
Part Time												
(Male)	50	50	40	30	25	25	25	10	10	10	25	40
(Female)	50	50	50	50	20	20	20	20	20	25	35	35

BUFFALO AND JOHNSON COUNTY

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Mining	200	190	192	149	149	173	170	167	175	202	204	183
Construction	79	75	76	128	176	185	181	222	257	249	224	222
Services	53	56	68	81	83	137	110	114	93	61	61	67
Agriculture	160	160	165	170	175	185	185	185	170	160	160	160
Part Time												
(Male)	15	15	15	10	10	0	0	0	0	10	15	20
(Female)	20	20	20	15	15	5	0	0	0	5	10	20

AGRICULTURE EMPLOYMENT
IN SHERIDAN AND JOHNSON COUNTIES, WYOMING
1961 to 1966

Sheridan County	Agriculture Units	Agriculture Employers	EMPLOYMENT Hired Men High	Low	Average	Estimated Annual Hires
1961	555	300	700	200	395	755
1962	535	290	690	200	395	755
1963	520	285	400	125	230	745
1964	505	283	515	120	240	700
1965	475	275	500	120	235	675
1966	465	270	450	115	220	640
Johnson County						
1961	250	140	300	150	210	240
1962	230	130	285	140	210	240
1963	225	125	245	70	160	230
1964	220	123	240	65	158	220
1965	200	110	220	65	150	200
1966	195	105	185	60	150	185

RESEARCH COORDINATING UNIT
STATE DEPARTMENT OF EDUCATION
Division of Vocational—Technical Education
CAPITOL BLDG. CHEYENNE, WYO. 82001

VT 002 554
Technicians for Florida Industries.

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*TECHNICAL OCCUPATIONS; *INDUSTRY; *MANPOWER NEEDS; EMPLOYMENT TRENDS; *OCCUPATIONAL SURVEYS

Projections of the anticipated need for technicians in major technologies over the next 12 months were obtained by questionnaires from 2,300 Florida industries. This survey was a follow-up of a 1964 survey and was conducted to assist in planning for technical education. The 1967 survey indicates that over 29,000 technicians are employed in 14 technical fields. This represents an increase of over 100 percent since the 1964 survey. The top six fields by rank order were: (1) Electronics, (2) Mechanical, (3) Civil and Construction, (4) Drafting and Design, (5) Graphic Arts, and (6) Data Processing. The number of technicians will need to be increased by 25 percent during the next 12 months to meet the needs for present vacancies, replacements, and new positions. The greatest need appears to be in electronics, drafting and design, mechanical, civil and construction, and data processing. Other technical fields with substantial needs are: (1) Aeronautical, (2) Air Conditioning, Heating and Refrigeration, (3) Chemical, (4) Electrical, (5) Electromechanical, (6) Graphic Arts, (7) Industrial Engineering, (8) Instrumentation, and (9) Tool and Die Design. (HC)

VT 002 554

ED039370

DIVISION OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION

Technical and Health Occupations Education Section

TECHNICIANS FOR FLORIDA INDUSTRIES

January, 1967

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
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State Department of Education
Floyd T. Christian, Superintendent

Division of Vocational, Technical, and Adult Education
Carl W. Proehl, Assistant Superintendent

Technical and Health Occupations Education Section
Thomas W. Strickland, Director

VT02554

TECHNICIANS FOR FLORIDA INDUSTRIES

The successful completion of the 1967 Survey of Technicians For Florida Industries would not have been possible except for the fine cooperation of more than 2300 industries (73% of those surveyed) whose staff contributed their time and efforts in completing the questionnaire sent to them by the Technical and Health Occupations Education Section, Division of Vocational, Technical, and Adult Education, of the State Department of Education.

This survey is a follow-up of the 1964 Survey of Technicians For Florida Industries, but different in that, upon the recommendation of the State Advisory Committee for Technical Education, it requested information for a one year, instead of a three year, period. The committee believed that industry could make accurate projections for only one year, and that an annual survey would be of greater value in planning for technical education. It is anticipated that in the future a survey will be conducted on an annual basis.

The attached report presents the highlights of the survey and summarizes the number of technicians employed in 1964 and 1967 and projects the anticipated need for technicians in major technologies over the next twelve months.

HIGHLIGHTS OF THE SURVEY

1. <u>The Technical Education Survey of 1967 reports over 29,000 technicians employed in fourteen technical fields</u>.

This represents an increase of over 100% during the last three years. Rank order of the top six fields and the number of technicians employed were:

Electronics	7300
Mechanical	4000
Civil and Construction	3400
Drafting and Design	3300
Graphic Arts	2400
Data Processing	2000

2. <u>Firms report substantial increases anticipated in the need for technicians during 1967</u>.

The number of technicians in Florida will need to be increased by more than 25% to meet the needs for present vacancies, replacements, and filling of new positions during the next twelve months. The greatest need appears to be:

Electronics	2400
Drafting and Design	1500
Mechanical	1100
Civil and Construction	1000
Data Processing	900

3. <u>The survey identifies eleven counties as having the highest anticipated demand for additional technicians</u>.

In order these are: Dade, Brevard, Hillsborough, Pinellas, Orange, Polk, Duval, Palm Beach, Broward, Okaloosa, and Escambia.

SUMMARY OF SURVEY RESULTS BY TECHNICAL FIELD

Technician	Number Employed 1964	Number Employed Jan., 1967	Percent Increase 1964-1967	Tech ** Needed 1967	Percent Increase Anticipated During 1967
Aeronautical	139	477	243%	243	51%
A/C, Heating, and Refrigeration	*	464	*	171	37%
Chemical	757	1,043	37%	293	28%
Civil and Construction	2,269	3,407	50%	980	28%
Data Processing	594	2,029	241%	908	44%
Drafting and Design	2,836	3,371	19%	1,512	45%
Electrical	815	1,866	129%	389	21%
Electromechanical	*	1,082	*	332	30%
Electronics	2,709	7,322	170%	2,387	32%
Graphic Arts	1,146	2,446	113%	616	25%
Industrial Engineering	*	523	*	269	51%
Instrumentation	*	426	*	196	46%
Mechanical	1,414	4,065	187%	1,110	27%
Tool and Die Design	244	508	109%	286	56%
TOTAL	12,923	29,029	124%	9,692	33%

* Not surveyed in 1964.

** Includes present vacancies, needed for replacement, and needed to fill new positions.

THE MAJOR TECHNICAL FIELDS

Aeronautical

Aeronautical Technology appears to be increasing rapidly in Florida. Employment is up 243% since 1964 with an increase from 139 to 477 technicians employed. This growth is expected to continue. Major employment opportunities appear to be in Brevard, Dade, Orange, and Palm Beach counties.

A/C, Heating, and Refrigeration

Air Conditioning, Heating, and Refrigeration Technology ranked as one of the smallest areas of employment among the technologies surveyed. The need was sparsely spread over a number of counties, but the greatest opportunity for employment appears to be in Brevard, Broward, Dade, Duval, and Polk counties.

Chemical

The employment of Chemical technicians increased by 37% since 1964 and is expected to show a 28% increase during the next twelve months. Counties showing the greatest need are Brevard, Dade, Duval, Escambia, Hillsborough, and Polk.

Civil and Construction

Half of the counties in Florida showed some need for Civil and Construction technicians during 1967. Those requiring 15 or more during the next twelve months are: Brevard, Broward, Dade, Duval, Hillsborough, Lake, Leon, Marion, Orange, Palm Beach, Pinellas, Polk, and Volusia.

Data Processing

Data Processing Technology (Computer Programming) is one of the most rapidly expanding fields in the state with a 240% gain since 1964. Another 900 employees are needed this year. Major areas of employment are in the following counties: Brevard, Dade, Duval, Hillsborough, Orange, Palm Beach, Pinellas, and Polk.

Drafting and Design

Employment of Drafting and Design technicians is expected to increase by about 1500 during 1967, if the supply is available. This should bring the employment level to about 5000 in the state.

The greatest need appears to be in Bradford, Brevard, Broward, Dade, Duval, Hillsborough, Indian River, Marion, Okaloosa, Orange, Palm Beach, Pinellas, Polk, and Sarasota counties.

Electrical

As expected, this technology has shown considerable growth since 1964. At that time approximately 815 technicians were employed; this has increased

to over 1800. A continued demand is expected in Brevard, Dade, Duval, Orange, Pinellas, and Polk counties. Opportunities also exist in Bradford, Hillsborough, Marion, and Volusia counties, but to a lesser degree.

Electromechanical

Electromechanical technology was surveyed for the first time and appears to be a field of some importance in Florida, having over 1000 technicians presently employed and a need for 400 anticipated. At the present time there are no programs to prepare these individuals.

Greatest opportunity for employment will be in Bradford, Brevard, Broward, Dade, Hillsborough, Okaloosa, and Pinellas counties.

Electronics

The electronics field in Florida continues to need technicians as new industries move to the state and existing companies are undergoing major expansions. According to survey projections, about 200 job vacancies will occur each month.

Major areas of employment will be in the following counties: Brevard, Broward, Dade, Duval, Hillsborough, Okaloosa, Orange, Palm Beach, Pinellas, Sarasota, and Seminole.

Graphic Arts

This technology showed impressive gains in employment (over 100%) during the last three years and shows considerable employment increase for the future. Most of this increase is expected to take place in seven counties - Brevard, Dade, Duval, Escambia, Leon, Orange, and Pinellas.

Industrial Engineering

Industrial Engineering technicians are being utilized more by industry as evidenced by more than 500 presently employed in the state, and a need for an additional 269 projected for the end of 1967.

At the present time substantial employment opportunity exists in several counties - Brevard, Broward, Dade, Orange, and Polk.

Instrumentation

Instrumentation is the smallest of the technologies with less than 500 employed in the industries surveyed. A need for an additional 200, an increase of 46%, is projected. Greatest demand is in Brevard, Broward, Dade, and Polk counties.

Mechanical

In terms of percent growth, this technical field shows a dramatic increase of almost 200%. A number of counties will need additional mechanical technicians during 1967. Those counties which project 30 or more new job openings during the next twelve months are: Bradford, Brevard, Broward, Dade, Duval, Hillsborough, Orange, Palm Beach, Pinellas, Polk, and Sarasota.

Tool and Die Design

Although still a relatively minor technology in Florida, Tool and Die Design has shown an increase of 109% since 1964. Present indications are that it will continue to be one of the faster growing fields. Employment will be highest in five counties - Broward, Dade, Orange, Palm Beach, and Pinellas.

VT 002 558
A Guide for Oeveloping an Agreement between the School and the Hospital.

Florida State Dept. of Education, Tallahassee. Technical and Health Occupations Education Section
MF AVAILABLE IN VT-ERIC SET.
Florida State Department of Education, Room 271, Knott Building, Tallahassee, Flordia 32304 (single copies without charge).
Pub Oate - Sep65 6p.

*HEALTH OCCUPATIONS EDUCATION; *CONTRACTS; *HOSPITALS; CLINICAL EXPERIENCE; *VOCATIONAL SCHOOLS; *JUNIOR COLLEGES; AGENCY ROLE; INTERAGENCY COOPERATION; COOPERATIVE PROGRAMS; GUIOELINES

A sample form for an agreement between a school controlling an educational program in practical nursing and a hospital providing clinical facilities includes the following sections: General Provisions, The School's Responsibility, The Hospital's Responsibility, School Policies, Request for Withdrawal of Students, Oiscontinuance of Agreement, Renewal of Agreement, and availability of copies of the agreement. (JK)

VT 002 558

ED039370

DIVISION OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION
Technical and Health Occupations Education Section

September 1965

A GUIDE FOR DEVELOPING

AN AGREEMENT

BETWEEN

THE SCHOOL AND THE HOSPITAL

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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STATE DEPARTMENT OF EDUCATION
Tallahassee, Florida

FLOYD T. CHRISTIAN
Superintendent of Public Instruction

CARL W. PROEHL
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THOMAS W. STRICKLAND
Assistant State Director
Technical and Health Occupations Education

V 702558

MEMORANDUM

2558

TO: The ERIC Clearinghouse on Vocational and Technical Education
The Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

FROM: **(Person)** Thomas W. Strickland **(Agency)** State Department of Education

(Address) Room 271, Knott Building, Tallahassee, Florida

DATE: April 9, 1968

RE: **(Author, Title, Publisher, Date)** A Guide For Developing An Agreement Between The School and The Hospital - State Department of Education, September, 1965

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Geographic Adaptability not limited
Uses of Material Development of agreement
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A GUIDE FOR DEVELOPING

AN AGREEMENT

BETWEEN

THE SCHOOL AND THE HOSPITAL

I. PARTICIPATING AGENCIES:

The participating agencies in this agreement are the

_____ and the _____.
Name of School Name of Hospital

II. STATEMENT OF AGREEMENT:

This is a mutual agreement between the administration of the

_____ and the _____
Name of Hospital Name of School

that the hospital will accept practical nurse students from the

_____ for supervised learning experiences in
Name of School

the care of patients in accordance with the provisions set forth in this agreement.

III. GENERAL PROVISIONS OF THE AGREEMENT:

1. The education of the student shall be the primary purpose of the training program.

2. The school shall be responsible for the education of the student.

3. The hospital agrees to share in the responsibility for the education of the student through the cooperation and assistance of its nursing staff with the faculty of the school and in the guidance and supervision of students.

4. The faculty of the school shall be responsible for selecting learning experiences for the students with the assistance and cooperation of hospital nursing personnel.

5. The school agrees to comply with the established policies and practices of the hospital.

6. The hospital agrees to accept _____ class(es) of practical nursing students for clinical experience annually with the understanding that the maximum number of students will not exceed _____ at any time including the normal overlapping period.

7. The hospital agrees to allow students and faculty, at their own expense, to use the cafeteria facilities provided for personnel.

IV. THE SCHOOL'S RESPONSIBILITY:

1. To maintain standards recommended in the Rules and Regulations of the Florida State Board of Nursing and in the State Plan for Practical Nurse Education of the State Department of Education.

   These include provision for physical examination, chest X-ray and certain immunizations prior to hospital experience.

2. To employ qualified registered professional nurse faculty who shall be responsible for determining the philosophy and the objectives of the school and developing the curriculum.

   The faculty shall be responsible for:

   a. Selecting patient assignments in cooperation with nursing personnel and supervising students in their learning experiences.

   b. Planning for concurrent related instruction (informal and formal classroom) as needed to meet the objectives of the program. This instruction will be scheduled during the regular school day.

   c. Maintaining individual records of class and ward instruction, nursing practice, evaluation of student competency, and health.

   d. Preparing a clinical rotation plan for services to be used for experience and securing the approval of the plan from the Director of Nursing prior to the beginning of the affiliation. Before any major changes are made in the plan they will be discussed and approved by the Director of Nursing.

   e. Interpreting to hospital and nursing personnel the roles of the practical nurse within the occupation of nursing.

V. THE HOSPITAL'S RESPONSIBILITY:

1. To make available to faculty and students hospital facilities and clinical services for planned learning experiences in patient care included in the practical nursing curriculum.

   The following services will be used for experience:

	Service
	Medical
	Surgical
*	Obstetrical:
	Labor Room and Observation in the Delivery Room
	Post Partum
	Newborn
	Pediatrics
	Other:

*EXCEPTION FOR MALE STUDENTS:

Male students will substitute experience in Obstetrics and Gynecology by the following: genito-urinary conditions, surgery, orthopedics, emergency room, cast room, and psychiatric nursing.

2. To provide classroom and office space with adequate lighting and ventilation for the faculty and student use. Telephone to be conveniently located for faculty use.

3. To share and assist in the responsibility for the guidance and supervision of the students, particularly in such restricted areas as nursery.

4. To include members of the faculty of the school in hospital staff meetings when policies to be discussed will affect or are related to the practical nursing program.

5. To provide faculty and students with emergency medical care in case of illness or accidents incurred while on duty.

6. To provide each student with a chest X-ray at the completion of the course at no cost to the student.

VI. <u>SCHOOL POLICIES:</u>

1. The educational program shall consist of no less than thirty hours per week of classroom instruction, laboratory practice and experience in selected learning situations in hospitals and other health agencies. The division and arrangement of time to include the theoretical and clinical learning experiences shall be determined by the faculty, and be based upon the needs of the students for specific learning experiences to meet the objectives of the program.

   If the faculty decides that it is desirable for students to have experiences in the hours other than those of the regular school day, this will be planned as a part of the curriculum during the last three months. This experience will be limited to two weeks and will not extend beyond the evening hour of 9:00 p.m. If students are assigned for this experience in this manner, a faculty member will accompany them to provide supervision and instruction.

2. The vocational school day is six hours, Monday through Friday.

3. Students will be regularly assigned for hospital experience Monday through Friday.

4. Students will be given holidays as provided for in the regular school calendar.

VII. REQUEST FOR WITHDRAWAL OF STUDENT:

The participating hospital has the right to request the school to withdraw any student from its facilities whose conduct or work with patients or personnel is not, in the opinion of the administrator of said hospital, in accordance with acceptable standards of performance.

The School may at anytime withdraw a student whose progress, conduct or work does not meet the standards of the School for continuation in the program.

Final action on the student is the responsibility of the School.

VIII. DISCONTINUANCE OF AGREEMENT:

If either party to this agreement wishes to withdraw, it is understood that at least ninety days shall be given by either participating agency, provided that students currently enrolled in the program shall be permitted to complete the course.

IX. MODIFICATION OF THE AGREEMENT:

Modification of the agreement shall be made by mutual consent of both parties. A memorandum noting the modification shall be attached to this agreement and shall include the date, and signature of parties agreeing to it.

X. RENEWAL OF AGREEMENT:

This agreement shall be in effect for one year from the date of signing. It shall thereafter be reviewed and/or revised annually and for another year.

XI. COPIES OF THIS AGREEMENT:

Copies of this agreement shall be placed on file and be available to the following:

* 1. The Florida State Board of Nursing

2. The State Department of Education

3. The Administrator of the Affiliating Hospital

4. The Director of Vocational Education and/or Principal of the School

5. The Faculty of the School

* A copy of a revised contractual agreement shall be submitted to the office of the Board.

A letter of notification of review of the contract and its continuance for another year shall be sent to the office of the Board, if no changes are made in the contract.

VT 002 571
Training Home Economics Program Assistants to Work with Low Income Families.

Department of Agriculture, Washington, D.C. Federal Extension Service
MF AVAILABLE IN VT-ERIC SET.
Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (A1.68:681, $.55).
Pub Date - 65 112p.

*OCCUPATIONAL HOME ECONOMICS; *NONPROFESSIONAL PERSONNEL; *TEACHER AIDS; FAMILY LIFE EDUCATION; FAMILY MANAGEMENT; *PROGRAM GUIDES; *VISITING HOMEMAKERS; LOW INCOME GROUPS; COMMUNITY INVOLVEMENT; HOMEMAKING EDUCATION; PROGRAM DEVELOPMENT; INSTRUCTIONAL AIDS; QUESTIONNAIRES

The program proposes to train non-professional workers to help low income families raise their aspirations, develop pride in homemaking, improve homemaking skills, have a more satisfying home and family life, improve family health, gain knowledge of child development and to understand their community and its resources. Section I outlines the philosophy of the program, community resources, program assistant recruitment, relationships and other program planning and initiation considerations. Section II covers selection and training of program assistants. Teaching procedures and aids are discussed and illustrated in Section III with forms, questionnaires, discussion guides, case studies, role playing skits, and a course of study. Section IV, A Handbook for Program Assistants, contains information about job responsibilities, standards, home visits, adult education, interaction with family members, motivation and family record keeping. (FP)

VT 002 571

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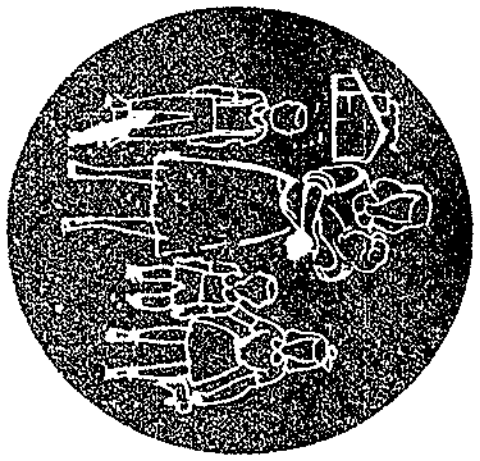

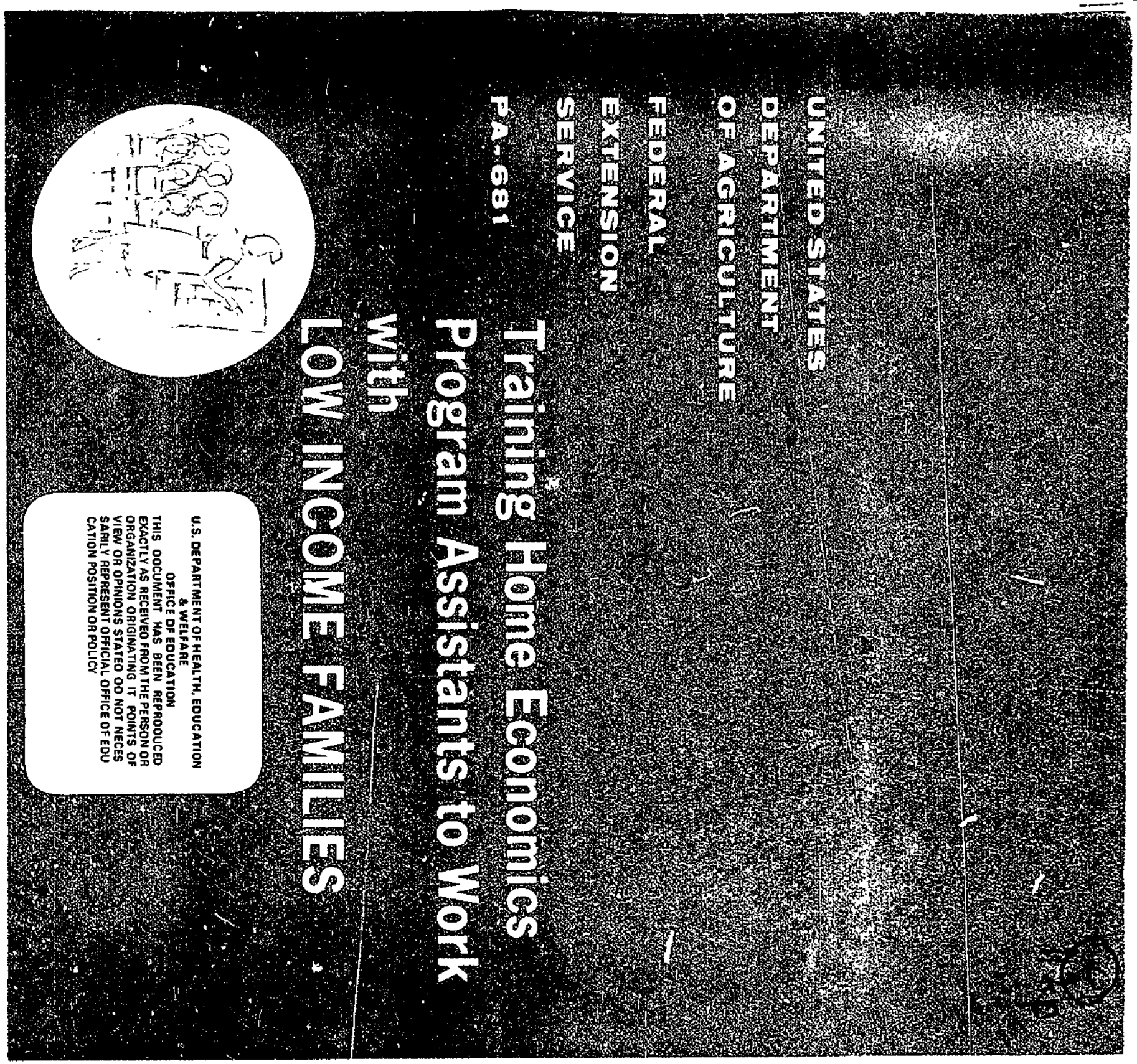

Appendix
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Handbook for
Program Assistants
Page 72

Teaching Aids
Page 36

Selecting and
Training
Page 18

Planning and
Initiating
Page 1

Prepared under direction of Janalyce Rouls, Consultant,
Division of Home Economics, Federal Extension Service.*

Assisted by: Barbara Rice, Milwaukee County Home Demonstration
Agent, Wisconsin Extension Service.
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Alabama Extension Service.

* On leave from Extension Supervisor, Home Economics,
Indiana Extension Service.

For sale, Superintendent of Documents, Government
Printing Office, Washington, D. C. 20402 Price 55 Cents

SECTION 1. PLANNING AND INITIATING

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PURPOSE

The purpose of these materials is to present ideas for developing a program for training nonprofessional workers to help low-income families to

1. raise their aspirations,
2. develop pride in homemaking,
3. improve homemaking skills,
4. have a more satisfying home and family life,
5. improve health of family members,
6. gain knowledge to help children develop,
7. increase understanding of their community and its resources.

Note to Trainer Agent:

Section 4 was written for program assistants. Each program assistant will need her own copy. It is suggested that Section 4 be used as a basis for the program assistants' training. You will need to thoroughly discuss the information in Section 4 with your program assistants to make sure that they understand the challenges, opportunities, and responsibilities offered them by their jobs.

GLOSSARY OF TERMS USED

Program Assistant: The paid or volunteer nonprofessional leader who works directly with low-income homemakers. Other titles such as program aides are being used in similar programs.

Indigenous Program Assistant: The program assistant who emerges from the audience to be served and is assumed to have rapport with and understanding of this audience.

Trainer Agent:
Supervising Agent:
Program Leader: Titles used somewhat interchangeably for the professional home economist responsible for training and supervising program assistants and for developing the program.

Low-Income Audience: Marginal families existing on very little money and with very poor living conditions. Within this audience the main target is families with children. Families include those with one or both parents.

Homemaker: The woman or mother in the low-income family whom the program assistant will reach through the program.

Working Visit: A session in the home of the low-income family when the program assistant demonstrates and works with the homemaker to improve a homemaking skill of interest and need. Sometimes more than one skill will be taught at a session. This would be to reach homemakers not interested or ready to attend meetings.

Small Group Meeting: An informal unstructured meeting with a demonstration or lesson (although it may not be called a meeting or lesson). A very small group of three or four homemakers would meet in homes. Later they might be willing to attend a somewhat larger or more formal meeting.

AUDIENCE TO BE REACHED

There are generally three broad classifications of low-income families. One group includes families with social characteristics of middle-income families, whose incomes are now low. Regular programs and subject matter may frequently be adapted to fit their needs. Families might include elderly couples on pensions, young students, widows, or families with the head temporarily unemployed.

A second group includes families who now have fairly adequate income but need knowledge in managing it and in creating a better way of living. Some of these families will be moving up socially and are interested in improving their living conditions. Many such families will be living in public housing, tenant housing, and marginal areas. Some of these participate in small church or settlement house activities and can be reached through these institutions.

Another group of low-income families is often found living in a slum, with low living standards, little education, and different cultural values. They may be isolated within this setting without much, if any, first-hand exposure to the opportunities middle-class American families know. The ignorance of these low-income families makes them easy prey for unscrupulous businesses and salesmen. They are often trapped in feelings of despair and defeat. Many of them do not realize or believe it is possible to control their fate and certainly do not think of education as a means of improving their situation. Although applicable for all, these materials were written especially to support educational efforts for the third group.

Within the three above classifications will be every age of homemaker, each with special needs. When program resources are limited, the most promise is in reaching homemakers with children.

Families Can Be Helped

Home economists have made contacts with the most disadvantaged and found that very simple beginnings bring these rewarding results:

1. Personal cleanliness and clean clothing which fits can increase self-respect.

2. Clean and neat housing helps a family feel more accepted in a community and gives a homemaker self-respect.

3. A small accomplishment by the homemaker frequently inspires her to attempt more difficult tasks. Such success helps change her attitude from hopeless to hopeful.

4. The interest of someone they trust can help the family build a better way of life and help them accept responsibility.

5. With greater self-respect, a homemaker who has withdrawn socially will gradually move into a group situation.

6. As physical conditions and human relations are improved in the home, the children's school attendance is more regular.

A disadvantaged family who has failed often and been insecure clings to what it knows and has. A change would mean a risk of losing too much. Education for this family must first reach the individual--to help the individual gain respect, hope, and faith.

Education has much to offer at any social level, but low-income families have not sought it out. The underprivileged person is slow to enroll in a formal class. As a reminder of school, a class suggests unpleasant memories of failure. A way must be found to reach them and to build a bond of trust. For someone they trust, they may try some simple thing such as shortening a child's school dress or baking cookies. When successful, this effort often brings pride and satisfaction leading to another step if assistance is still available.

At first the low-income homemaker may respond for the sake of the worker. Gradually the worker can help the homemaker make the transfer to response for her own satisfaction. A willingness to change or improve becomes possible as self-respect is built and pride overcomes fear.

As the low-income homemaker becomes involved with subject matter and "doing," she finds how to relate to others. In this way she learns social skills and a feeling of adequacy with others. As a result, the pattern of family living is upgraded and living standards are raised. Family members are then better prepared to seek jobs and to attend school.

What Is The Situation In Your Area?

A program can be more meaningful when it is based on facts. An informal survey will point up needs of the families, help you determine the scope of the problems, and justify your work with low-income families.

As you secure statistics you will be making contacts with agencies and institutions. By explaining your interest and concern you have made an overture toward a future meeting to discuss initiating a program for homemakers.

The following facts, plus others you will think of, will help you identify your audience.

BASIC STUDY OF LOCAL SITUATION

In My Area:

1. _____families receive welfare assistance. (Contact welfare department.)

2. _____mothers receive Aid to Families of Dependent Children. (Contact welfare department.)

3. _____families have incomes listed as less than $3,000. (See U. S. census.)
(This is _____ percent of families in area.)

4. _____(number or percent) adults have less than 5th grade education. (See U. S. census.)

5. _____5-year-olds are enrolled in kindergarten in area. (See school superintendent.)
(This is _____ percent of 5-year-olds.)

6. _____young people of the area are school dropouts. (See school superintendent or principal.)

7. _____(number or percent) houses in area are deteriorating and dilapidated. (See U. S. Census of Housing.)

8. _____families receive donated foods or are on Food Stamp Plan. (Contact local welfare authorities.)

9. _____persons receive unemployment compensation. (Contact local U. S. Employment Service.)

10. _____families live in low-rent public housing. (See local public housing authority.)

11. _____families are clients of Farmers Home Administration, including those applying for assistance under Economic Opportunity Act.

PHILOSOPHY OF THE TRAINING PROGRAM

Working with this audience will require certain adaptations in traditional programing. Differences in reaching low socio-economic and middle-class families might be envisioned this way:

For Middle-Class Audience	For Low Socio-Economic Audience
--Group learning (May be impersonal)	--Individual and personal contacts (warm and friendly)
--Emphasis on subject-matter	--Build confidence (homemaker does a small task and succeeds)
	--Develop pride (homemaker achieves satisfaction by cleaning house or improving personal appearance)
--Leadership encouraged or required	--Homemaker learns to be comfortable with and relate to others
--Abstract, subtle, indirect approach	--Assertive, specific, direct approach

This program is based on the philosophy that:

- Through small but successful learning experiences homemakers can change a self-image of defeat and failure to one of confidence.
- The long-range goal is the development of the individual and her family. Teaching homemaking skills is a means of achieving this goal.
- Some homemakers may not be interested in attending meetings. For them, teaching will begin by home visits.
- While success in the early stage of the program will be important, a small defeat is not the end.
- The things taught should have immediate and practical application related to problems each family faces.

- A sequence of home visits will reveal interests and needs of the homemaker, will provide opportunity to try and to practice homemaking skills, and will move the homemaker to participate in a group of two or three, and, finally, in a larger group.

- It is important to motivate the homemaker to group experiences.

- The real focus must be on education. Donations are not the same as helping a family learn how to acquire the same thing. Service to the family should be given in terms of learning experiences.

- Working intensively with homemakers in this audience is necessary for their personal development.

- Small evidences of change in people will be the marks of real progress.

- Too few professional home economists are available to make more than a token effort to reach the more than 9 million low-income families.

- Nonprofessionals can be trained as program assistants to perform effectively and can also learn by helping others.

- The warmth and support that program assistants offer the homemaker are important.

- Several agencies can work together more effectively than one, after responsibilities are defined. The trainer agent and program assistants need to know resources in the community to which the trainer agent can refer families with special problems.

- The trainer agent assists the program assistant in putting families that need help in touch with appropriate agencies.

INITIATING A PROGRAM FOR LOW-INCOME FAMILIES

1. Discuss ideas with own staff coworkers to gain their cooperation. Keep them informed. Better yet, involve them in the planning sessions.

2. Invite your supervisor to assist--review progress, make suggestions, meet with planning group, etc.

3. Keep leaders in established program informed regularly, and if possible draw them into background study and planning.

4. Review "Principles of Social Action," (Appendix, p. 97) and check for steps. Some steps may need to be taken twice.

General Recommendations

Start in locality where you think it possible to succeed. Success breeds success.

Visit some low-income families. Home visits are a vital part of your program. They will improve your teaching.

Allow a reasonable time for each step. A time schedule usually spurs action.

Study experiences from other such projects. It can help you avoid mistakes.

Answer questions in terms of the objectives. This gives the best direction and also checks validity of the goals.

Consider joining efforts with other agencies who have an interest in the low-income audience. Many agencies working together can be more effective than one agency working alone.

Send frequent progress reports to leaders of cooperating agencies by telephone, excerpts of reports, case studies of an individual's learning, or invitation to achievement programs, etc. "Feedback" is essential.

Give credit to all cooperating agencies for their specific contributions to the program.

Don't be modest in taking credit for the educational part. Interpret the educational purpose of the program activities whenever possible. Use your name and agency title.

Community Teamwork

If two or more agencies wish to sponsor educational work with the low-income audience, the following will be needed:

1. A joint study and review of the situation locally. Why a problem? See p. 6.

2. Defining the audience to be reached, their characteristics and problems, through:
   a. Visits to some homes of this audience.
   b. Listening to leaders or professionals who know this audience.

3. Develop a written plan with mutual agreement including:
   a. Joint decision on goals. (What you hope to accomplish.)
   b. Joint decision on where and how to work, outlining realistic timetable and size of project.
   c. Specific statement of the responsibility of each cooperating agency. (In writing--may be in memo or minutes.)
   d. Plans for checking progress.

COMMUNITY RESOURCES FOR DEVELOPING THE PROGRAM

Who	Contributions
Local government officials	-Provide ways for recipients of donated foods to get information on use of foods. -Provide names and encourage recipients to participate in series of meetings or other type of program.
County welfare department	-Legitimize program. -Provide criteria for establishing definition of families in need. -Exchange training with social workers. -Get audience for classes or meeting. -Help plan content of program. -Advise on stipends families receive. -Be a resource for solving special problems of families.
Employment agency (State and U. S.)	-Communicate about jobs available, vocational needs, and employment.
Public Housing Authority and Farmers Home Administration housing projects	-Provide names and contact with people who may need help. -Provide facilities for meetings.

Who	Contributions
Labor unions	-Provide audience. -Help plan program content. -Accept material for labor union publication. -Provide support and facilities for meetings.
School administration, including vocational technical education	-Advise on needs of people and direction of program. -Provide facilities for meetings. -Provide leaders or teachers. -Communicate through counsellors (school) about vocational needs. -Offer special training for available jobs.
Church groups and ministerial association	-Provide criteria for establishing definition of families in need. -Provide audience and leadership. -Provide facilities for meetings. -Give prestige and influence to the program. -Advise about needs. -Maintain contact with individuals involved.
Community agencies or councils such as Salvation Army, settlement houses, Red Cross, board of health, Good Will Industries, Y.W.C.A., Boys Clubs and Girls Clubs, Visiting Nurses.	-Provide criteria for establishing definition of families in need. -Provide audience. -Advise on program. -Provide materials, facilities, and services. -Maintain contact with individuals. -Offer incentive to participants in program.
Ethnic group leaders	-Legitimize program. -Provide leadership for establishing program and securing audience. -Advise on program. -Maintain continuing contact with individuals.

Who	Contributions
Community Action Groups -Neighborhood groups -Specialized, as merchants, service clubs, Chamber of Commerce, and Urban League -Professional groups	-Support and sponsor audience and programs. -Encourage participation. -Provide materials and facilities.
OEO Community Action Programs	-Provide supporting programs for youth, health programs, day-care centers, etc.
City or county planning commission and other area development groups, such as RAD Committee	-Help determine trends. -Provide references. -Provide resources.
Other social institutions, such as libraries, colleges, etc.	-Provide references. -Provide resources. -Provide technical assistance.
Newspapers, radio, television	-Support program by informing public.

RECRUITING PROGRAM ASSISTANTS

What pattern of leadership will you use? The answer to this question points out how and where to recruit program assistants.

Will You Use Volunteers?

Who They Are	Where Recruited
1. Capable leaders with homemaking skills, maturity, and ability to work with people.	1. Through home economics Extension clubs, church, and other community-minded groups.
2. Leaders who emerge from the low-income audience.	2. In classes for low-income homemakers or through community agencies.

3. Professionally trained home economists not now employed, or retired school teachers.	3. Through professional organizations.

Will You Employ Program Assistants?

Who They Are	Where Recruited
1. Women who need to work, have suitable arrangements for care of children, and meet standards for the job.	1. Through welfare agency, settlement houses, employment agency, public health, urban league, Salvation Army, Good Will, etc. 2. Through recommendations of low-income homemakers. (The degree of publicity of these job opportunities may depend on number of program assistants to be hired.)

Will You Use Both Volunteer and Paid Assistants?

Who They Are	Where Recruited
1. Paid program assistants--to work individually with homemakers in a general way, and to interest homemakers in meetings or classes. 2. Volunteers--teach a special skill a. to train program assistants or b. to teach at classes or meetings for homemakers.	1. As listed above for both.

RELATIONSHIPS BETWEEN THE PROFESSIONAL AND NONPROFESSIONAL

How the professional and the nonprofessional "get along" together will affect both the program and the morale of all. When workers understand the part each one plays in attaining a mutual goal, no one need feel threatened. The following steps are suggested to insure this kind of team approach:

1. Clarify the job of the program assistant for yourself.... in writing:

   a. Describe the tasks of program assistants.
   b. List competencies they need.
   c. Define points at which the work of the program assistants and that of the professional meet.

2. Share written outline above with coworkers on your staff.

3. Discuss with coworkers and your supervisor any adjustments the position of the program assistant will make in the current tasks of your position and in your office.

4. Discuss with your coworkers the ways in which the nonprofessionals will be part of the "team" and will need acceptance and support.

Professional people need to understand how the program assistant may and does contribute, and to respect that contribution.

The contribution of the program assistant is based on warmth, neighborliness, and mutuality. The professional's role will be more objective and impersonal. Both aspects are needed. The program assistant will be able to do things of a more personal nature with the homemaker than a professional worker could take time for or find wise.

The professional worker	should see	the program assistant as a server and dispenser as one who takes the "doing" jobs and releases time for professional to do program planning, guiding, and appraisal.
The program assistant	should see	the professional worker as a program leader as one with responsibility for all aspects of the educational program, who supports and helps program assistants in their everyday activities.

Criticisms Affect Relationships

Professional workers not responsible for training may have criticisms of program assistants or see need for corrections. In most cases such criticisms and corrections might best be channeled to the trainer agent, who could build these into the training program.

Since the relationship between professionals and nonprofessionals can be damaged if criticisms and corrections are not handled thoughtfully, the following suggestions may be helpful:

1. Make criticism positive--suggest something better--and in a friendly manner.

2. Compliment before criticizing.

3. Use a technique so program assistant will suggest the criticism or correction herself.

4. Whenever possible, criticize privately and not before others.

5. Make the criticism on what was done and avoid a rejection of the person herself.

6. Be slow in blaming the program assistant. Perhaps the training was faulty.

7. Don't overdo criticism. (A little goes a long way.)

"Esprit de Corps"

When program assistants are encouraged to meet and visit together, they tend to develop their own "esprit de corps." When relationships among program assistants are satisfying, the desire to compete is lessened.

CAUTION: CHECK THESE POINTS

The right kind of training and supervision may prevent problems. Here are points important to the success of your program. If you are alert to some of the trouble spots that may appear as your program develops, you can handle them in the early stages.

1. Relationship between the professional and nonprofessional.
   a. Inside the organization: How does the program assistant respond to supervision, consider office and secretarial staff, etc.? What is the nonprofessional's concept of her role and that of the professional? Clarification of role is especially important when program assistants are paid.
   b. Outside the organization: How does the program assistant explain the organization? How does the organization explain the role and competence of program assistants to others?

2. Relationships among the program assistants.
   Are they anxious, competitive, or insecure?

3. Clear definition of the job.
   Do program assistants clearly understand the purpose of the program and exactly what they are to do?

4. Impartiality.
   Do some families receive such personal attention or concrete help from program assistant as to lessen effectiveness with other families or cause competition?

5. Being confidential.
   Does program assistant hold each family situation in strict confidence?

6. Authority.
   Will program assistant take initiative? Be a leader? Will program assistant be domineering or does she help homemaker learn to make decisions?

7. Not being overwhelmed.
   Do the problems of families and the job look so big that the small steps required to start seem useless? Does it begin to look impossible or hopeless?

8. Guarding against false optimism.
   Is everything "fine" and "jolly"? Does the program assistant recognize her own problems and those of the families?

9. Keeping within her role.
   Does program assistant see herself as teacher and neighbor, not trying to serve also as doctor, lawyer, minister, banker, policeman, and psychiatrist? Does she contact trainer agent about referring families to professionals or community agencies for specific needs?

Can she refrain from donating material things? Does she inspire families to acquire these things on their own?

10. Relationship with community.
Does community hold program assistant in high regard, or tend to discriminate against her because of her job?

Does program assistant relate to agency and community so much that she becomes critical of low-income families?

SECTION 2. SELECTING AND TRAINING PROGRAM ASSISTANTS

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SELECTION OF PROGRAM ASSISTANTS

Consider These Points When Selecting

Her personal traits. The program assistant should:

1. Be trustworthy and responsible.
2. Have a sincere desire to share knowledge with the low-income audience.
3. Be willing to learn and believe others can learn.
4. Show willingness to apply skills and management in own home.
5. Be able to read and understand materials you plan to use with her and have the ability to keep simple records and make reports.
6. Be receptive to training and supervision.
7. Be sensitive to the values of others and have empathy for people regardless of their situation.
8. Be resourceful and improvise; try new ideas.
9. Not gossip about the people she visits in program.
10. Have reasonable need for earning money.
11. Reflect healthy mental attitudes.
12. Have personal standards of life acceptable to this audience.
13. Have good health, as determined by a physical examination.
14. Be able to arrange home situation to devote time to the job.

Her social and communicative skills. The program assistant should be able to:

1. Talk with people easily.
2. Focus on interests of others.

3. Get response from others.

4. Feel at ease in group meetings.

Her physical resources. The program assistant should:

1. Have transportation (car may be needed in some programs.)

2. Be able to provide space in her home for files and materials (if needed).

3. Have access to a telephone.

Have applicants submit a simple written application. It is also important to interview them personally. Usually you should contact the references listed by applicants. Both the employer and the applicant should sign a written contract.

Background of Program Assistants

You can give more appropriate training when you know the background of program assistants. You can gain an understanding of their experience from:

1. Data as to age, schooling, family, etc. (Available if they submitted application forms.)

2. Visits to their homes. (Interests and skills can be found this way.)

3. Interest or experience quiz will point out practices they use at home. (See Section 3, p. 37.)

Visits to homes of some program assistants will help you plan the right kind of training based on facts rather than on assumptions. Start by finding out what household equipment program assistants are skilled in using, their standards, management ability, and special household interests. There is no substitute for a home visit.

One way to check how much program assistants have learned is to set a benchmark at the start of the training. A simple yet informative test of practices and knowledge may be formulated and given twice--early in the training and at the end. The quiz referred to in 3 above could be given both times. Of course, the test should encourage, not frighten, the program assistant.

OBJECTIVES OF TRAINING PROGRAM ASSISTANTS

Program assistants to--

1. Understand the purpose of program--to assist homemakers in growth as individuals through development of competence in needed homemaking skills.

2. Understand how people learn and change as they develop personally.

3. Be able to provide suitable learning situations.

4. Acquire basic homemaking and management skills so they can teach others.

5. Develop empathy as a means of establishing rapport with low-income families.

6. Perform in a role of teacher rather than of giving service or being a "lady-bountiful."

7. Know principles of group participation and help homemakers relate to groups as soon as possible.

8. Be able to help prepare children for school experiences, and encourage children to stay in school for continued learning.

9. Be able to determine signs of progress as learning takes place.

10. Have knowledge of agencies and community resources for family reference by the trainer agent when specific needs arise.

11. Know their role and the policies, rules, standards, and ethics by which they are expected to operate.

12. Know what records to keep and how to keep them.

GUIDELINES FOR TRAINING PROGRAM ASSISTANTS

Your role in this program will be to plan, program, guide, train, and to research. This means the actual "doing" will be in the hands of the program assistants because:

1. They are closer to the audience involved.

2. They are part of the community.

3. They influence people in their own ways and by their own language.

4. They are enthusiastic and responsive.

5. They serve as role models.

Pre-Service Training

How much time should you allot to pre-service training? Training time may vary from 3 days to 16 weeks. A short pre-service training means more intensive on-the-job training and supervision. The length of the pre-service training will depend on:

1. The background of the program assistants.

2. How much time you have before the program goes into effect.

3. The nature of the program...whether it is to be entirely conducted in group situations or will start with home visits.

More time will be needed to teach nonprofessional than professional workers. "Presenting" ideas and facts will not be enough. "Doing" will be essential and will offer situations in which principles can be pointed out.

Good training will give the learner time to try new ideas and skills. A wise trainer will use examples generously in discussion. Stop often to listen to what program assistants are saying. This will indicate to you how much they have understood.

Program assistants should start their jobs when psychologically ready. Many trainers believe a long training period creates anxiety about the job and dulls enthusiasm. Space further training regularly between periods of practice on the job. For example, the program assistants might have an orientation period of 1 week or 10 days and then make home visits. After this they would have a session to appraise what they learned. They would continue regular sessions in subject matter and methods while working on the job.

All trainees need help in understanding (1) how to interest people; (2) how people learn; (3) how to build helpful relationships; (4) what to teach; (5) what community resources families can call on; (6) what are the policies and ethics of the job.

Define policies or "ground rules" carefully for program assistants. These must be clear in your mind. Put them into writing for easy reference. All must know (1) when families should be referred to other agencies by the trainer agent, (2) ethics in working with families, and (3) how to report what they do. If such policies are vague and unwritten, misunderstandings will probably occur. Such clarification will be part of defining the job. (For suggested policies see Appendix, p. 102)

The pre-service training will probably include some or all the above. Plan continuing sessions to develop each area as interest and experience grow.

Indigenous Program Assistants

Training for volunteers and for indigenous program assistants would probably not start at the same point. Indigenous workers usually need to learn specific household skills with techniques for showing others. Volunteers are often skillful in homemaking tasks and need only a review of skills with emphasis on what is practical for low-income families.

If indigenous program assistants can practice household activities under supervision and guidance, the experience will be more meaningful. Demonstration kitchens or an assigned apartment in public housing are often used as laboratories.

When program assistants show ability, they may be asked to "show how" or to assist others in learning. A plan for trainees to show or teach each other is a valuable training technique. Combining the "doing" of a skill with "how to teach" and "principles of learning" could reinforce all three.

Role playing makes situations seem real, interesting, and best of all, gives people a "feel" for themselves. It can be effective with the low-income audience.

Don't assume that indigenous program assistants will automatically relate or apply subject matter. Subject matter must be applied as taught and related to what was taught before. Use different approaches, such as movies, slides, trips or tours, assignments, etc. Ask the group to draw conclusions and discuss what they saw.

The indigenous worker may seem slow to lead a meeting, show initiative, or assume authority. As a professional you should be patient with this and realize why. The worker may:

1. Have negative feelings from dealing with people in authority.

2. Have been a recipient of authority rather than a dispenser of it.

3. Resist "power structure" because she feels it is not working for her.

4. Be limited in know-how.

5. Lack background.

Program assistants may begin to take more initiative when they believe the program is working for "their people" and that you are genuinely concerned with them.

Training should provide knowledge so that program assistant will never have to guess how to act or what to do in taking the lead.

Some psychologists believe that indigenous workers may learn to be authoritative without being "authoritarian" much more successfully than middle-class people. They have flair for combining authority with warmth.

Indigenous program assistants need to understand the complete picture of the low-income audience of which they are a part. Since past experience may distort the view for some, the training will need to expose the true picture. You may want to balance the aspects of failure and problems of the low-income audience by presenting the positive viewpoint. Low-income families have strengths, such as their willingness to help each other, their frankness, their freedom to express emotions, and their delight in family sociability.

The effectiveness of program assistants will probably depend more on their own personality, sincerity, and interest in people than on their socio-economic class level.

Small Classes

Experience suggests that small classes for training are more effective than large ones, with 12 to 15 as a maximum enrollment. Each class member needs opportunity to practice and participate in all the learning experiences.

If the program assistants have not been especially conscious of punctuality, you may find it wise to emphasize that the classes start and end at specific times.

Recognize Achievement

You may want to consider training as a "course." Such a course could involve an orientation period of training plus perhaps a month of apprenticeship. Apprenticeship would include both job performance and regular training sessions. Each program assistant would meet standards set up for completion. Completion should be regarded as a real achievement and honored accordingly.

A special event to recognize trainees for completing the course will give satisfaction to the trainees and prestige to the program. Frequently professional workers are unaware of the significance the nonprofessional person may attach to a certificate awarded for a training course.

Certificates should be presented in the presence of the trainee's family and with community leaders present, people who "matter" to the program assistant.

On-The-Job Training

When program assistants start their work after the initial training period, they should meet together frequently and regularly to discuss their reactions, specific problems, and approaches. Allow time for them to share experiences and to learn from each other. This discussion is important in their training. It will need guidance with principles pointed out and definite conclusions drawn.

Regular meetings of program assistants seem best. At each meeting include (1) applied subject-matter, (2) teaching ideas, (3) experiences of program assistants. Allow time for all three. In this way each person gains in knowledge and satisfactions.

At times you may be torn between what you want to teach and what the program assistants want to do. Use your judgment to adapt to what is most meaningful to them. Talk individually with each trainee. Schedule conferences regularly to keep in touch and to advise on planning and teaching. This helps the trainee see you as a helper rather than as a "checker upper."

METHODS AND TECHNIQUES

After you become acquainted with the low-income audience, select appropriate methods of reaching them. Review familiar methods and adapt them to this audience. Teach program assistants how to use and further adapt them. Consider the following:

Home Visits

Personal contact is considered the most effective means of "getting through" to this audience. A home visit can reach homemakers who would never come to a meeting. The first visit should establish rapport and prove the sincerity and personal concern of the worker who calls. Later home visits can be "working sessions" for the program assistant and homemaker on a project of interest to the homemaker. In this way, casual teaching and learning take place naturally and informally.

Home visits, however, should have a future. A home visit can (1) reveal an interest of the homemaker in a household skill; (2) show how the skill is performed; (3) teach the homemaker how to do it herself. The confidence she gains should inspire her to other tasks. It should also encourage her to meet with other women with mutual interests.

Special Attention to Children, See Section 4, Page 86.

1. Help program assistants collect or improvise "silent toys" to take along for children during at-home work periods with homemakers.

2. Discuss with program assistants why each toy or play material contributes to the development of a child.

3. Recommend best ways to use toys or play materials--take different ones on different visits, not all at one time, etc.

4. Suggest using name tags for children to teach them self-identity.

5. Provide recipe for making modeling clay at home. This might be demonstrated for program assistants, with a handout recipe for them to share with homemakers.

Meetings

"Calling a meeting" sounds commonplace to the middle-class person. However, the word "meeting" seems to conjure up a different meaning for many of the low-income audience. "Having a lesson" may suggest an unpleasant classroom experience.

With this in mind, the worker may easily learn to say, "Why don't we get together to....." or, instead of referring to a lesson, say, "Would you like me to show you how to....."

The place chosen for a meeting can influence attendance. Is the place familiar to the homemaker? Does she have transportation? Will she feel at ease there? Does she know the person having the meeting?

"Know-how" in arranging a meeting is important. Emphasize putting people at ease in a group. First meetings attended by the low-income homemaker may need to be so informal that some professional workers might not even define them as meetings. They may be more like getting the family together than holding a meeting in the middle-class sense.

As homemakers move into the meeting situation, they have opportunity to acquire social skills essential in personal development and home life. Gradually, then, the same homemaker can move comfortably to a somewhat larger or more formal meeting.

Best results usually come from sessions that are less than 1 hour and are presented by a peer or someone known to the group.

Participation in such a "get-together" is crucial. The program assistant involves the learners by asking questions, getting their comments and especially their help in "doing things." Always emphasize the "doing" and "showing."

Care of Children at Meetings (See Appendix, p. 106.)

1. Children need care while mothers attend meetings. Club leaders, 4-H girls, Girl Scouts, college classes, church groups, or other organizations may assist.

2. There should be play equipment for all ages of children.

3. Librarians might train volunteers to read or tell stories to children, while mothers are in meetings.

Tours

Tours offer a dramatic and vivid way of teaching. Unless you are using them as interest-getters, they serve best by supplementing teaching that has gone before. They introduce many new dimensions.

Poor people are often described as "locked within a certain area." Frequently they may not have ventured far from their homes. For this reason a tour might be a very broadening experience. At first short trips might be practical. Sometimes these homemakers or their children have never visited a supermarket, a library, or department store, etc. As you discuss certain subjects, a tour may evolve as part of learning.

Plan the tour in detail. Planning can stimulate all kinds of interest. "What shall we wear?" "How do people behave at.....?" "What will we see?" Such questions can be answered to prepare the learner and to provide knowledge at a teachable time.

Of course, contact would be made previously at the place to be visited so every opportunity to learn would be open. Likewise, the planner should consider many ways to make the experience pleasant and interesting.

Consider complete safety for the trip. The planner must assume responsibility for the group. Investigate group insurance. It is inexpensive. A costly accident to a poor person would be a disaster. In fact, buying insurance for a few cents per person might open up an interest in learning about money or business matters.

Leaflets

What better followup than a leaflet to reinforce what was taught! Fortunately, readable and specific leaflets are being written now for this audience.

Be sure to select leaflets to fit the reading level as well as the specific interest of the homemaker. If none is available, you might write something yourself.

The program assistant has an excellent opportunity to discuss leaflets personally with the homemakers. Don't assume that the homemaker will study the leaflet just because it is given to her. The program assistant should go over the leaflet with the homemaker and make it sound alive and interesting. She can point out a step that might be difficult, or a part that fits the homemaker's situation. They can look at the pictures and discuss what these mean. In short, a good teacher can inspire a learner to want to read and use a leaflet.

The program assistants must be well acquainted with any leaflet used. To make sure they are familiar with it, teach subject matter to program assistants from the leaflet intended for the homemaker. Respect for written materials can be developed if program assistants help families devise a place to keep leaflets, recipes, etc.

Letters

Letters used with this audience should be carefully fashioned to fit. When attached to a familiar agency or name, the letters will get attention. For example, Extension agents have worked with local welfare departments to include a brief letter on a timely subject to be enclosed with each welfare check.

Used as a single method, circular letters to this audience ordinarily do not bring much response. However, a personal letter as a meeting followup has sometimes proved effective.

Flyers

Under-the-door flyers used with families in public housing brought substantial learning. These were written on various homemaking subjects to reach homemakers who received little mail and who did not come to meetings.

Although the method may not be practical for other than an urban housing situation, it seemed to work there, especially for homemakers with above fourth-grade education.

Visuals

Visuals are a "must." They should hold interest, make the important points, and be as attractive as possible. For home visits and small meetings simple homemade illustrations may be more effective than sophisticated styles.

Program assistants need practice in learning how to improvise visuals from magazine pictures, flannel boards, cardboard boxes, or objects. Program assistants often show talent in preparing these and can be taught the best ways to use them.

Role Playing

Role playing is an effective way of training nonprofessional people. The experience of "skits" helps prepare program assistants to meet real situations and to consider what to say or how to act.

The "skits" should be planned so they are more than fun. They should have a definite content, and structure. Stop them when the points are made. Draw conclusions.

Further Suggestions on Techniques

1. Watch examples. Use examples generously but for each example ask the question, "Does this fit the experience of the low-income homemaker?" If so, it can be rich in meaning. This is why a good teacher must be familiar with the way learners live and must avoid references that have meaning for only middle-class families.

2. Be explicit. Never assume the program assistants or the low-income audience know what you know. Start from the very beginning. Explain all the details. Use many illustrations. Repeat often. Summarize several times. Have learners explain what they heard or understood. Never take any background or learning for granted. Go slowly and be patient about all details.

3. Involve learners in doing. Provide activity for the learners as soon as possible. Talk that delays "doing" may ruin interest. Include the homemaker in the activity. Involvement creates a learning opportunity and keeps interest high.

4. Avoid creating frustrations in learners. The lack of resources can be frustrating unless the teacher is realistic and perceptive. A homemaker can be upset if she is expected to have supplies that she has no money to buy. Can the homemaker read well enough to follow written instructions?

5. Help program assistants plan for children. In contacts with low-income families, program assistants will interact frequently with children. If planned, opportunities to influence children become valuable.

   Program assistants will need to know a few basic principles of child development. They may use such principles in casual conversation with parents and apply them to simple ideas for play and play materials.

   Most of all the program assistant should know how important her relationship is to each child.

   See "You and the Children" Section 4, p. 86, for suggestions to program assistants.

6. Plan for success. The program leader and every program assistant should plan to start where the low-income homemaker can succeed. This audience especially needs to succeed at something.

REINFORCING THE PROGRAM ASSISTANTS' MORALE

Helping program assistants gain satisfaction from their work is important. A program assistant who considers her work important and enjoys it can perform better, will be more apt to stay on and thus use the training invested in her.

Program assistants may be motivated by these rewards:

1. Pay for work is a great motivator for some. For others, service to others is rewarding.

2. A sense of "motherliness" inherent in the work--watching others "grow."

3. Certificates for their training and service given at achievement programs or community gatherings.

4. Slides of their work shown to community organizations with the assistants' role explained.

5. Pride in wearing a uniform which their group has decided upon.

6. Newspaper pictures and articles about their work with homemakers (not mentioning low-income audience as such).

7. Having their advice sought by agency representatives.

8. A special pin or symbol awarded to wear as a badge of honor.

9. A special party or picnic on their own or for them--or a tour, such as a trip to a cultural center or a place new to them.

SUGGESTIONS FOR EVALUATION

Built in evaluation is recommended. Plan it before teaching or training. In this program, evaluation may be approached in three ways:

1. Check on how well program assistants are learning as training progresses.

2. Train program assistants to watch for evidences of their teaching.

3. Find changes made by homemakers participating in the program.... long-term progress.

Checking Learning of Program Assistants

"Before" and "after" questionnaires used with program assistants will set a benchmark and reveal changes. The questionnaire probably should evaluate adoption of practices as well as knowledge. For example, when a program assistant has never before used powdered milk but adopts the idea herself, she will be more effective in teaching this to others. The change in practice is evidence of teaching and learning.

Suggestions for such a questionnaire:

1. Plan it to cover what will be taught--that is, to cover objectives.

2. Keep it direct and not too long. (Let's not frighten the newcomers.)

3. Use simple wording and avoid implying the correct answer. (Also, no tricky questions.)

4. Pre-test for clarity of meaning.

5. Give it twice to some program assistants: Early in training and sometime later.

6. Avoid making it like a school test.

7. Check completed questionnaires for progress of learners.

Training Program Assistants to Watch for Evidences of Learning

Three kinds of check-ups by program assistants are listed in their handbook. See Section 4, p. 94. It tells them how to record evidences of learning that they observe.

They can keep this record in each homemaker's file or in a daily log, or both. At some time they will need to summarize these records. They will probably need guidance in doing this--certainly an assignment.

Train program assistants to listen for verbal clues to attitudes of homemakers. Simple remarks have meaning. You can encourage program assistants to discuss this with you and also with other program assistants.

Long-Term Progress

After 6 to 8 months or a year you will want to show or prove some results.

Evidence of progress may be collected by actual visits to homes, through reports of the program assistants, or in other ways. Results may be measured by example or by numbers, or both.

You might ask how many homemakers showed any of these signs of progress:

1. Were inspired to change. (Interest created and attitudes changed.)
2. Increased self-respect.
3. Improved housekeeping and sanitation practice.
4. Showed changes in managing on a limited income.
5. Improved food preparation and nutrition of family.
6. Kept children in school who were potential dropouts.
7. Became better parents. (Specify.)
8. Improved family clothing and its care.
9. Had a more satisfying family life. (Specify.)
10. Became better prepared to get or hold a job.
11. Improved appearance of their home.
12. Improved health of the family.
13. Improved safety of the home.
14. Broadened community understanding or relationship.

CHECK LISTS FOR TRAINER AGENT

1. Do you maintain your role as an educator in charge of purposeful learning?

2. Have you established good relationships with other agencies?

3. Do you inform coworkers and program leaders in your own agency about this program and get their help?

4. Can you relate to the low-income audience and feel empathy for them?

5. Have you created "learn by doing" situations?

6. Do you analyze each training effort to improve your approach?

7. Do you test teaching materials to see if they are realistic for this audience?

8. Do you use the positive approach?

9. Do you plan for and give individual counsel and support to program assistants in addition to group training?

10. Can you enjoy satisfactions through the program assistants rather than firsthand experiences with this audience?

11. Do you help program assistants recognize progress by observing changes in people--the way they feel, talk, act, and dress?

12. Do you record results as you go, so program evidence can be summarized?

13. Are you helping people set goals they can realize?

14. Do you manage to get information and reports about the program to all agencies and organizations involved?

Another way of appraising yourself is to determine whether the following nine conditions of learning have been provided (From Dr. Ralph Tyler, Educator):

1. Motivation--People are motivated by factors in their social environment. We merely identify and make use of this motivation. Such motivation falls generally into three categories: (1) the need to belong, to feel at home with peers; (2) the need for satisfaction or for learning some concept or skill; (3) the need to understand the world in which they live.

2. Desire to Change--We have to capitalize on the dissatisfaction of people because it means they want to change. Sometimes it means we must help them become dissatisfied in order to change.

3. Goal--In learning, we must have goals which are attainable.

4. Sequence--The learner wants sequence--an ever broader and deeper view.

5. Satisfaction--Satisfaction is necessary for continued effort.

6. Guidance--Guidance is necessary in the tough spots, but not in all spots.

7. Time--Time must be allowed for practice of a new behavior. Learning is not measured in a minute.

8. Material--We must give something to practice on and watch the "feed back."

9. Evaluation--A yardstick is needed to measure progress. No yardstick--no satisfaction, and no continued progress.

SECTION 3. SUGGESTED TEACHING OUTLINES AND OTHER TEACHING AIDS

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(Use early in training.)

WHAT DO YOU DO?

(Suggested quiz to be given to program assistants (1) to learn their background and set a benchmark, and (2) same test later to check their learning or changes made.)

1. When you buy milk for drinking, which do you do most often? (Check the one you do most)

   a. Buy milk from milkman _____
   b. Buy milk at the grocery store _____
   c. Buy milk at the grocery store and mix it with powdered milk _____
   d. Buy powdered milk and mix it with water _____

2. At how many meals each day do you drink milk? (Check them)

   a. Breakfast _____
   b. Lunch _____
   c. Dinner _____
   d. Between-meal snack _____ How often per day? _____
   e. None _____

3. Write down any of the "Basic Four" food groups that should be in each day's meals:

   a. _____

   b. _____

   c. _____

   d. _____

4. Check all of the following that you know how to do:

   _____ Bake cookies.
   _____ Make vegetable soup (not canned soup).
   _____ Make a stew from left-over meat.
   _____ Make muffins (or cornbread or biscuits).
   _____ Bake a pie.
   _____ Make a cake from a packaged cake mix.
   _____ Make a powdered pudding mix.
   _____ Make and bake a casserole (dinner-in-a-dish).
   _____ Prepare and unmold a gelatin salad.
   _____ Mix powdered milk.
   _____ Cook vegetables to save their food value.

5. Do you write down your grocery list? (Check one)

   a. Usually _____ b. Never _____ c. Sometimes _____

6. Do you study grocery ads in the newspaper before you buy your groceries? (Check one)

   a. Usually _____ b. Never _____ c. Sometimes _____

7. Do you write down the way you spend your money each day? (Check one)

   a. Usually _____ b. Never _____ c. Sometimes _____

8. Check all of the following you know how to do:

   _____ Make a shelf for dishes or spices.
   _____ Paint a room.
   _____ Paper a wall.
   _____ Make a waste-paper basket.
   _____ Wax a floor.
   _____ Patch a window screen.

9. How often do you use bleach when you do the washing? (Check one)

   a. All the time _____
   b. About half time _____
   c. Never _____

10. Where would you store supplies that are poison--bug spray, rat killer, bleaches? (Check one)

    a. In kitchen cupboard _____
    b. Bathroom shelf _____
    c. Anywhere high _____

11. What house work do you enjoy most? _____

    _____

12. What house work do you like least? _____

    _____

13. Check all the these you know how to do:

_____Thread a sewing machine.
_____Change the hem in a dress.
_____Rip out a broken zipper and put in a new one.
_____Make curtains.
_____Shorten a pair of men's pants.
_____Take measurements to buy a dress pattern.
_____Set an automatic iron to press a nylon dress.
_____Put in a patch.
_____Make a simple dress.
_____

14. Remember when you bought your last coat (or some other piece of clothing)? In how many different stores did you shop?

a. One _____
b. Two _____
c. Three or more _____

15. When you are shopping for a cotton blouse how important are the following? (Write 1 by the most important, 2 by the next, 3 by the next and 4 by the least important)

a. Price _____
b. Style _____
c. How well it is made _____
d. Ease of care _____

16. Do you ever buy any used clothing for yourself or your family? (Check one)

a. Yes _____ b. No _____

(Use early in training.)

THE IMPORTANCE OF PROGRAM ASSISTANTS
(Teaching Outline)

Aim:

To help program assistants appreciate the importance of homes and why program assistants' work is important in helping families have desirable home life.

Discussion with program assistants

A. Ask program assistants to name where people learn. (List on blackboard)

-They will mention school, work, play, Sunday school, friends, etc. (Include home, parents, family)

-Draw star or circle around home, parents, or family.

B. Ask program assistants to mention the things or kinds of things people learn at home, in a family, or from parents.

-They may say: courtesy, honesty, cleanliness, what mother does, what father does, to cook, how to get along together, etc.

-Make the list inclusive. Group qualities together, such as skills, appreciations, etc.

C. Discuss where else people could learn these things if no homes existed, or if a home fails. What would be the result?

D. Draw conclusions:

1. A good home is very important for every child to learn important things.

2. Some things can be learned only from parents or in a home setting.

3. Good homes are important to our Nation (society).

4. Some homes (or homemakers) need assistance and knowledge to provide a more desirable setting for their family living.

5. For this reason the program assistant can do very worthwhile work.

VALUES
(Discussion Guide)

Teaching about values is important. Here are four exercises for discussion. Drawing conclusions will help clarify how values fit into the program assistant's job.

A. It's fun to talk about values because the answers vary.

For example, try these "for size":

1. If you had some "free" time, which of these would you do:

____Read a magazine?
____Go to an amusement park?
____Mop your kitchen floor?
____Or _____

2. If you won a contest prize of $500, would you:

____Save it?
____Invest it?
____Spend it for clothes?
____Spend it for a trip?
____Buy gifts for your children?
____Or _____

Notice that--

Your answer may be different from answers of others.

What everyone answers depends on what seems important to that person at this time.

We are talking about VALUES -what we put first, or choose as being important.

B. Program assistants may discuss the following situation and point out how people's choices show us their values:

A woman has just enough time to dress and go to a meeting. Suddenly she sees that her shoes need shining. If she stops to shine her shoes, she will be late for the meeting.

1. If she shines her shoes: What value does she show us? _____

2. If she does not shine her shoes: What value does she show? _____

C. Examples of values. (Ask program assistants to give examples and discuss.)

1. If a homemaker placed a high value on cleanliness, name some things she would insist on doing in her home: _____

   (Examples: wash her hands before cooking; keep the floor swept; use hot water for washing dishes; have screen at the windows.)

2. If a homemaker places a high value on order in her house, name some things she would insist be done in her home: _____

   (Examples: hang up clothes, keep kitchen table cleared, pick up paper, use a trash can.)

3. If a homemaker placed a high value on safety, name some things she might do in her home: _____

   _____

D. A group activity about family values:

1. Trainer agent can find magazine pictures to represent the sets of values listed later.

2. Prepare pictures for use on flannel board or a set for each two program assistants.

3. Give each program assistant a written list of values. (Use two different sets for variety.)

4. Ask each person or pair of program assistants to match the values with the pictures and rank in order of importance as she sees it.

5. Discuss how and why they ranked the values as they did.

Set A--Pictures	Set A--Values (List)
Car	Owning a home
Bill or receipt	Three good meals a day
Young person with books	No debts (keeping bills paid)
House	Keeping the children in school
Food or meal	Having a good car

(Find in magazines)

Set B--Pictures

Mattress or bed
Dishes or pans
Glass or pitcher of milk
Shelves
Window with curtains

Set B--Values (List)

Milk for health
Equipment for cooking
A place to put things
Pretty windows
Sleep and rest

Conclusions

Our values show in our homes.

YOU will show the homemaker some new values.

The homemaker may trust you enough

and

Find these values satisfying enough to

ADOPT THEM too!!

THE HIERARCHY OF HUMAN NEEDS[1]
(Suggestions for Teaching)

Aim:

Program assistants to understand their part in helping homemakers reach the different levels of satisfaction as they arrive at each stage of development.

1. The trainer agent will explain and interpret in simple words The Hierarchy of Human Needs. (p. 45)

   Use visuals.

2. Hold discussion with program assistants to make sure they understand how it applies to everyone and especially to the homemakers they work with.

3. Assign each program assistant to:

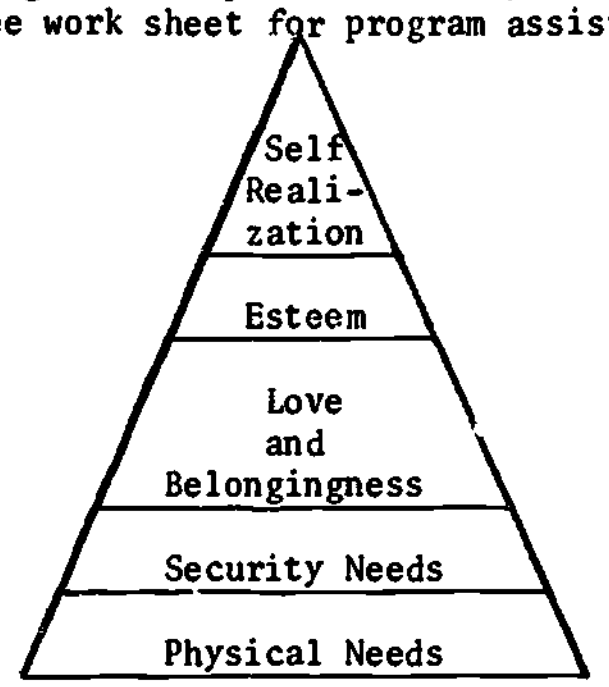
   a. Think of a homemaker who cooperates.
   b. Point out what kind of needs the homemaker has had satisfied.
   c. Decide what needs the homemaker has now and how these can be fulfilled. Use Need Chart, p. 46.

4. Discuss above assignment in individual conferences with program assistants if possible.

---

[1]A. H. Maslow, Motivation and Personality

The diagram pictures a sequential analysis of human needs with each set of needs dependent on fulfillment of the set below it. These apply to all of us and can help us understand how homemakers respond. You can use the diagram to explain hierarchy of needs to the program assistants. (Also see work sheet for program assistants, p. 46.)



1. First needs are physical. A family that is ill or hungry cannot move, do, act, or learn until this need is taken care of.

2. Security needs demand attention next. Knowing one is safe within a pattern of life is important. A homemaker has a need to know what may happen to her or her family if she participates in the program. Will this action cut off her welfare check, threaten her husband's work, etc.? She needs to know what to expect and to feel safe.

3. A desire to be liked then becomes a third need. At this point the homemaker will do many things if someone cares. Being praised and feeling accepted will be of great importance. For this reason she may respond for or because of the program assistant herself. A small failure could make her feel rejected as a person. She will need much support, assurance, and personal warmth.

4. Esteem needs are next in the development after other needs are satisfied. Not only does the homemaker want to be liked, she will then wish to be regarded highly by others--as the woman who makes the best cake, dresses her children well, has a clean house, etc. In this way she gains confidence and feels necessary in the world.

5. The need to develop one's potentialities. A person is free to make the most of herself only when she feels that the preceding four needs are being adequately met. She can then attend to developing her own unique potentialities. She wants to learn simply because she wants to be a "fuller" person. She will have pride and self-respect. She can show individuality in the face of social pressure. She will dare to have her own opinion and to express it.

THE NEED CHART
(For Program Assistant's Use)

(Homemaker you have in mind _____)

1. Mark her progress* on the Need Chart.

2. What YOU can do to help her fulfill her present needs:

_____

_____

_____

_____

V
- Wants to do things for her own satisfaction.

For Herself

IV
-Wants to be useful and known as someone of worth.

Esteem

III
-Knows someone cares about her and will praise her if she does well.

Love and Belongingness

II
-Knows what to expect from program--that she can fit in and will benefit from it.

Security

I
-Has basic food and clothing and place to live. No physical suffering.

Physical Needs

*Her progress will be in terms of how she feels about this.

Note: She must take each step in order shown.

FACTORS THAT INFLUENCE LEARNING
(For discussion)

There are driving forces within us which we call motives and these help us to grow, to change, and to learn. Usually we learn:

1. If we want to
2. Because we have to
3. Because we are able to
4. According to how we feel physically
5. When we are interested
6. When the learning makes sense and seems worthwhile
7. When we set goals
8. If the risk is not too great
9. If our values do not block us
10. When we want to learn a new skill or improve old skills
11. When it is satisfying
12. When we can control our anxieties

Learning means action. The learner must "discover," "come to know," "learn a skill," "notice something new," "change his opinion."

When we learn we are reorganizing all we know. At the same time we may be unlearning some things. We may be shuffling and sorting ideas or readjusting our attitudes.

As a result, one's behavior changes because in the process the learner has changed. Teachers don't really teach--they help people learn.

Suggested Exercise: Give examples of learning in each of the situations numbered (above).

HOW ADULTS LEARN
(Discussion Guide)

Principles of Learning

A simplified version of this discussion appears in Section 4, p. 81.

Here's the principle:	An example:
1. READINESS	
Each learner has a "teachable moment"--a time when she is interested or ready for a new idea.	Mrs. G. was ready to learn about powdered milk when she discovered it tasted good and it saved money.
2. CONNECTION	
A learning experience should be linked to what the learner does now or believes important.	Mrs. L. was interested in baking cookies because her children liked cookies.
3. DOING	
Adults learn by doing. Learning is a personal experience involving feeling and thinking.	By following along with the program assistant, Mrs. G. mixed the powdered milk herself. Once she had done it under supervision, she knew what to expect. She would have more self-confidence in doing it the next time.
4. WHEN	
All learners do not adopt an idea at the same time. People go at their own speed and are influenced by various factors. Some may never accept the whole idea.	Mrs. M. was aware of powdered milk about 3 years before she tried it. Mrs. G. started using it about 10 days after she learned about it.

5. TIME

Decision to adopt an idea usually takes time. Final decision usually comes after a series of stages--awareness, interest, appraisal, and trial.

Mrs. M. hears that powdered milk is available (awareness). She may see how it looks and discover her neighbor is using it (interests her). She discovered its low cost and considers how it would work for her (appraisal). She tries it. If successful, she tries again.

6. FOLLOWUP

Learning needs practice and support--also satisfactions and encouragement.

Mrs. M. mixes milk because:
- The program assistant praises her.
- The children enjoy it.
- She gets another recipe using milk.
- Her husband shows pride in her skill.
- Each time she mixes it, it is easier to do.

7. INFLUENCE

Learners are often influenced by friends who have learned.

Mrs. M. said, "If Mrs. G. can do it. I can, too."

(A program assistant may influence others by sharing her learning experiences.)

Barriers to Adult Learning

1. Fear of failure. (Failure at school, in marriage, in jobs, etc., causes fear of losing again.)

2. Dislike of school. (Learning should be informal and different from the schoolroom.)

3. "Too old to learn." (Emphasis on education for the young has conditioned many people to believe they cannot learn as adults.)

4. Competition for time. (Some families are occupied with problems of survival.)

5. Interfering past experiences. (Old learnings may conflict with the new or keep a person from listening.)

6. Lack of opportunity. (People can't learn if they don't know what there is to learn.)

7. Lack of fundamental learning skills. (A person who doesn't read or write well is hampered from learning.)

LOOKING FOR LEARNING
(A Case Study)

Characters: Mrs. Mary Cobb, Program Assistant
Mrs. Seymour, Homemaker
Johnnie Seymour, aged 4 years

Setting: The Seymour home on a spring morning.

Your assignment:

Part 1. What progress would you say Mary Cobb was making with the Seymour family? Pick out every "hint" that shows someone in the family learned.

Part 2. How many times did the program assistant support the homemaker's comments?

Part 3. What are some interests and concerns of the homemaker that will help plan future programs?

When Mary Cobb drove up to the Seymour home for a working visit, four-year-old Johnnie came running to meet her. He was wearing a badge with his name on it. This told Mary she was expected.

"Hi, I'm Johnnie!" he called out.

"Hi, Johnnie. Remember me? I'm Mrs. Cobb," answered Mary, "My, I'm glad to see you so full of pep this morning."

"Guess what I had for breakfast," said Johnnie, eyes aglow.

"Mmm, let's see," replied Mary, gathering up her kit and supplies. "A jelly sandwich? Peanut butter? Scrambled eggs?"

While Mary guessed, Johnnie danced up and down and kept shaking his head. He liked to play this guessing game with her.

By this time they had reached the front door, and Mrs. Seymour appeared. Mary and Mrs. Seymour greeted each other while Johnnie hopped around urging Mary to keep guessing about his breakfast.

Finally Mary confessed she had to give up. "What did you have for breakfast, Johnnie?"

"Mush," he said importantly, "With bugs in it!"

"Bugs?" Mary asked.

Mrs. Seymour laughed. "They were raisins," she said.

Johnnie was full of glee. (He is expanding the game by adding an element of shock which children of this age love to do.)

"Do you like mush with...uh, bugs?" Mary asked Johnnie.

He nodded his "yes" and continued to beam.

"That's a good way to use cornmeal, Mrs. Seymour," Mary commented. "And milk? Did you have milk with it?"

"Oh, yes. I used half whole milk with half made from dry milk. The family like it fine. The girls didn't used to eat breakfast before they went to school." She sighed. "I just finished mopping the kitchen floor. It's still hard to keep it clean, even if I don't get down on my knees to do it any more. Everyone tracks in so much dirt and mud."

"The floor looks very nice," Mary observed. "Maybe we can think up a way to....."

Johnnie interrupted. "Did you bring your toys?"

"I forgot to bring them in," said Mary. "Why don't you show me what you play with."

"Get your clay," said Mrs. Seymour to Johnnie. "I made him some modeling clay like you showed me. The girls say it's like they have at school."

"That's good. Mrs. Seymour, I wonder what we could do to keep mud from being tracked in?" asked Mary.

"Here's my clay," said Johnnie, both hands clasping a hunk of green clay.

"O. K., Johnnie. Isn't that nice clay? Now let's see what you can make out of it," replied Mary. "Mrs. Seymour, I was thinking about old boards. If we had old boards to lay down outside the back door..."

Mrs. Seymour interrupted. "There's plenty of old boards out back and it wouldn't hurt anything to lay down some of 'em. Oh," she added, "there's Alice and Jennie, come to help make curtains. I kind of worried about getting stuff ready. I could only find one needle."

Mary opened her sewing kit. "I brought enough needles to use today," she said.

****

Case Study Interpretation (For discussion)

Part 1.

Mrs. Seymour had cooperated in many ways. She showed interest in going on. She seemed bothered about getting ready to have friends come to her house but she was going through with it.

These are signs that someone "learned."

-Johnnie was wearing his name badge. He called out his name. He and Mary greeted each other by name. He was conscious of his name. (During the visit his mother did not once call him by name.)

-Johnnie was proud of eating breakfast. He seemed to think it a good meal.

-Mother had made modeling clay for child. This helped child play creatively.

-He had learned to play the "guessing game" with the program assistant.

-If Mrs. Cobb had taught the use of cornmeal or given a recipe for mush, she would assume the homemaker had used this lesson. The program assistant may have suggested adding the raisins.

-Homemaker was stretching her food dollar by mixing half whole milk and half made from dry milk. The family accepted it. She was concerned about whether they would.

-Girls had begun eating breakfast.

-Homemaker tries to keep kitchen floor clean and had used better management practices.

-Homemaker had learned to follow through with assignments.

-Homemaker had invited friends to her home--evidence of pride, self-respect, and a desire to share and work with others.

-Program assistant had made an assignment. Homemaker had attempted to complete it (have material, needle, etc.)

Part 2.

<u>How many times did program assistant reinforce the homemaker as housekeeper and mother?</u>

-"That's a good way to use cornmeal."

-Could have complimented her for using half whole milk and half dry milk.

-"The floor looks very nice."

-Good, you made the modeling clay.

-"Isn't that nice clay?" (Indirect praise.)

<u>Note</u>: Only 3 or 4 comments of praise! The program assistant might easily have offered much more praise because the homemaker had tried hard and had applied many recommendations. Of course, Mary's warm, friendly attitude was surely reinforcing. Also, she remembered to bring needles so Mrs. Seymour would not be embarrassed by not having enough. (This is real support.)

Part 3.

<u>What are some interests and concerns for future program?</u>

-Homemaker voiced concern about care of the floor. Program assistant was quick to discuss this--even offered help.

-Homemaker might be interested in preparing more breakfast foods the girls like. The mother seemed pleased the girls eat breakfast now.

-The curtains and the windows may bring up other ideas about the house which could be developed.

Note: The program assistant was showing a good relationship with a child. The mother could model after this. Mary recognized Johnnie by name; she played a "guessing game" with him; she was patient with his interruptions; she gave him assignments ("Show me your toys," "see what you can make"). The whole first section indicates reinforcement for both Johnnie and his mother. Johnnie's social development makes his mother feel good.

THINGS TO THINK ABOUT WHEN HELPING PEOPLE

"She has never asked for help."

"Why didn't they ask, we'd have helped" are frequent questions of those learning to work with disadvantaged families. A discussion on "helping" may prevent errors by program assistants and avoid disappointments.

Consider What It Takes To Ask For Help:

1. An admission of failure and defeat.

2. A willingness to expose one's weakness.

3. A willingness to be advised and accept power over one's life.

4. A willingness to risk the unknown--to give up the present, however bad, for something that may be worse.

- All helping takes place within a relationship. And a relationship is a two-way thing.

- Helping is not a thing or commodity. It can be offered, but not given.

- Our relationship with those to be helped must be one in which negative feelings can be expressed without fear of blame, anger, sorrow, or loss of face.

- The relationship must be centered entirely on the interests of the person served.

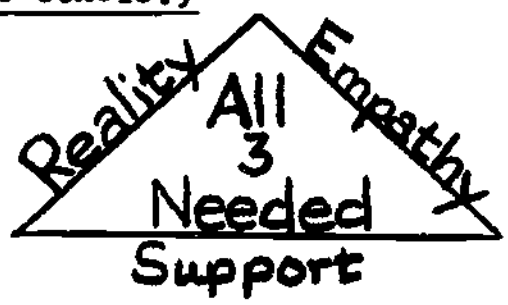
- Helping must deal with real things and immediate needs. (Even if unpleasant.)

- Help must be based on belief that people can be taught, helped, and encouraged.

Trinity of Helping

(One of the three parts is ineffective without the others.)

Interpretation of the diagram might be:



1. (Reality) "This is it."

2. (Empathy) "I know it is difficult."

3. (Support) "I am here to work with you if you want me and can use me."

Reality means recognizing the true situation. It should not involve false reassurances or overprotection.

Empathy is feeling with and for a person, not like him. Empathy means you accept or respect the person yet may not agree with what he does or how he lives.

Support offers material help and boosts the spirits.

These are part of a helping feeling between two people:

1. Sincerely wanting to understand.

2. Being sensitive to the other's attitudes.

3. A warm, friendly interest without emotional overinvolvement.

Attitudes speak more loudly than words. Even so, a program assistant's intentions may be misinterpreted. In the long run, it's what the homemaker thinks is intended that counts.

YOUR REACTION ON A HOME VISIT
(Discussion guide. Use early in training.)

Suppose--

You stopped to talk with a homemaker and found some or all of these things:

- Dirty dishes on the table
- No curtains at window
- No place to put or hang things
- The beds stacked with clothing
- The toilet plugged up
- No screens at windows
- A littered floor

A. Describe your first reactions.

The personal feelings of the visitor are reflected in what she says and does. One can develop an attitude that supports the purpose of the program.

B. Describe a feeling of empathy you might have.

If you do not judge, if you can be sympathetic yet not agree, if you want to understand--you can "get through" to the other person.

C. Where or how would you begin?

Homemaker may lose interest unless she can start where she wants to begin. She may be interested in learning to dye a sweater first, rather than attack one of the above problems directly.

Note: Study "Home Visits" in Section 4, Handbook for Program Assistants. Use with suggested role playing.

BUILDING RELATIONSHIPS
BETWEEN
PROGRAM ASSISTANT AND HOMEMAKER
(Work sheet)

Although our attitudes are always showing, what we say counts too. Let's assume you make some statements from the left column during a home visit. How do you think they affect the relationship between you and the homemaker.

Your assignment:

Fill in the blanks with a letter from the right-hand column. Each letter stands for a feeling the homemaker may have because of your comment.

-Explain why she might feel this way.

-How else might you have made the remark?

If you said:	Response you might get from homemaker
_____1. "I'd like to show you how I make the kind of corn-bread my children brag about."	a. Respect for you b. Respect for self c. Hope d. Interest e. Self-confidence f. Pride g. Cooperation h. (Other)_____
_____2. "Next time I come I'll bring you a blouse pattern."	
_____3. "Isn't your husband working?"	
_____4. "I noticed your clean floor."	Response you might get from homemaker
	s. Anger t. Confusion u. Uncertainty v. Apologies w. Fear x. Lack of self-respect y. Over-dependence z. (Other)_____
_____5. "What is your favorite pan--the one you use most?"	
_____6. "You haven't cleaned this room lately, I guess."	
_____7. "Do you have any curtains?"	
_____8. "Why don't we try to fix this step?"	
_____9. "What do you think?"	

Your conclusion: How do you influence the homemaker's response?

ROLE PLAYING SKITS
(For trainer agent)

See "Methods and Techniques" in Section 2, Training Program Assistants, p. 26.

One good way to learn is to be involved in an experience. A "staged experience" is an opportunity to make mistakes that won't really matter, yet give experience that is deeper than listening.

The following suggestions may help you teach your program assistants:

-Be sure to structure the following skits carefully.

-Write out the parts each is to play.

-Feel free to stop the skit the minute the points are made.

-Always discuss what the players said and effects created.

(Suggest players reverse roles and try it again.)

Skit 1. How to make a home visit. Refer to Home Visits in Section 4, p. 76, Handbook for Program Assistants. Use role playing.

Skit 2. Using Yellow Cornmeal.

Mary Cobb, the program assistant, knows the Reed family has several bags of yellow cornmeal on hand from surplus commodities. Mary wants Mrs. Reed to see the importance of using all her resources. Mary hopes to convince Mrs. Reed that yellow cornmeal is a good food to use.

Mrs. Reed	Mary Cobb, Program Assistant
-Thinks yellow cornmeal is for chickens.	-Hopes to show how homemakers can use what is on hand.
-Knows Grandpa will make fun of it.	-Knows yellow cornmeal has more more vitamins than white meal.
-Doesn't like it herself.	-Uses yellow cornmeal herself.

Skit 3. Signing a Credit Contract.

Mary Cobb has shown Mrs. Clark some pointers on fitting dresses. Mrs. Clark is very interested. She wishes she owned a sewing machine.

On this visit Mary found Mrs. Clark about ready to buy a sewing machine. All Mrs. Clark had to do was sign her name and pay $5.00! The salesman had given her a special demonstration that morning. However, "something told me to wait and ask Mary Cobb what to do," she said.

Mrs. Clark	Mary Cobb, Program Assistant
-Thinks she could make pretty things for her children if she bought the sewing machine.	-Is pleased Mrs. Clark shows interest in sewing.
-Has not really considered price.	-Must point out the costs and price, and the importance of signing her name.
-Thinks the down payment is very reasonable.	-Wants to help Mrs. Clark think of several ways to get sewing machine.
	-Wants Mrs. Clark to make her own decision after knowing some of the facts.

Skit 4. An Upset Homemaker.

Mary Cobb finds Mrs. Raver upset. Mrs. Raver got her electric bill that morning but was not given credit for $2.00 she paid between bills. This made her very nervous and perhaps caused her to cut her finger with a razor blade when she was ripping seams. They had planned to re-fit a dress for Susie that day and Mrs. Raver expected to have it ripped apart.

Mrs. Raver	Mary Cobb, Program Assistant
-Wanted to keep her bills paid.	-Had expected they would get the dress cut out and basted today.
-Was afraid the company had cheated her out of $2.00.	-Knew the $2.00 credit on the bill was okay since Mrs. Raver had her receipt.
-Knew $2.00 meant a lot to her family.	

-Thought it was a "bad day" but didn't want to cry in front of Mary.

-Was disappointed to fail Mary by not having the dress ripped.

CASE STUDIES

You can give the following case studies to program assistants individually or in pairs. After they have analyzed the case studies they should report them, and the entire group should discuss the case studies.

Be sure specific suggestions are given to fit local situation.

Case 1.

Mary Cobb, program assistant, stopped to see the Smith family and discovered Emma, the 16-year-old daughter, at home from school. The girl was not ill but said she was not going back to school. After some conversation Mary found that Emma's "school dress" was torn and Emma had no substitute.

1. What could Mary do to help Emma?

2. Where could she buy second-hand clothing?

3. To what agencies could the family be referred? (By the trainer agent.)

Case 2.

When Mary Cobb, the program assistant, visited the Crane family she noticed that George, the 4-year-old, had a rag tied around his left leg and could hardly put his weight on the leg. He seemed cross and feverish. Mrs. Crane said George had cut his leg on a nail several days ago but the sore did not heal.

1. What should Mary do?

2. To whom should the family be referred? (By the trainer agent.)

Suggested followup: Have health service or community nurse meet with program assistants to discuss health services available to families.

Case 3.

In the Maxwell home Mary Cobb, program assistant, found Mrs. Maxwell reluctant to sew. Neither did Mrs. Maxwell seem to read the recipe when they were making cornbread. Otherwise Mrs. Maxwell was responsive and enthusiastic.

At last Mary interested Mrs. Maxwell in hemming a dress. When they were ready to stitch the hem Mary discovered Mrs. Maxwell had trouble threading the needle.

1. What could be done?

2. To whom could Mrs. Maxwell be referred? (By the trainer agent.)

Case 4.

When Mary Cobb, program assistant, was working with Mrs. Jones she found that the Jones family did not have enough silverware for the family to sit down and eat together. Mary happens to have some old silverware on hand because her husband gave her a new set for Christmas.

1. What advantages and disadvantages would there be if Mary gave her old silverware to the Jones family?

2. In what ways might this damage her role as a teacher?

3. What else might be done?

(Use later in training.)

PROBLEMS FOR DISCUSSION*

1. How long should you work with a homemaker who shows no improvement?

   Give her many opportunities and exposures to learn or try things, especially if she seems interested. However, if she makes no change, focus on other homemakers for awhile. You could tell her where to find you if she wants your help. Perhaps a followup later would bring a response. We never win 100% of the people.

*Suggested after program assistants have had some experience in making home visits or holding meetings.

2. How do you tell the difference between "doing for" the homemaker and helping her to learn?

   "Doing with" the homemaker is important at first. She can see how and can practice. You are there to see that she does not make mistakes. However, you can help her move from depending on you to doing it alone. This change may be slow but it shows learning. You can encourage it in many ways.

3. How firm or insistent should you be in working with homemakers in this program?

   At first you need to be definite and specific. Some homemakers may be confused by too many choices. They respond better to positive directions. It is not necessary to be "bossy" to be definite. However, a shift should gradually be made to allow homemakers to learn and to make choices on their own.

4. How do you involve the homemaker who shows no interest?

   You try many approaches and offer many ideas. If she shows one glimmer of interest, talk more about that interest. She may mention something she would like to have or do. Offer to help her do this. Ask for her ideas and opinions. Be sure to wait for her answer. Involve her in several ways. Leave pauses in your conversation so she can speak. Leave with a reason to return. With her, set a specific time to go back. She might become interested if you ask her to teach you how to braid a rug or have her tell you how she's been successful in keeping her children in school.

5. What would you do if you think the homemaker doesn't like you very well?

   Be as understanding as possible. By all means avoid an open clash. If she is greatly burdened with life she may not react to you as she would like to.

   Think about what you said to her. Right after a visit, for instance, you could write down every comment you made to her. Study these. How do they add up? How do they sound now? Try a new way. Try to work with her rather than against her.

   If your differences are great, be sure to talk this over with your supervising agent.

THREE-WEEK CHECK-UP*
(For Program Assistants)

After three weeks of work, what are your opinions and feelings?

Try checking yourself on these:

1. Do you feel encouraged by any reaction of home-makers

Much	Some	Little	None
_____	_____	_____	_____

Explain _____

_____

_____

2. Do you feel overwhelmed by all the home problems you see?

Much	Some	Little	None
_____	_____	_____	_____

Explain _____

_____

_____

_____

3. Check what has been most difficult for you:

Getting ready for working visits _____.

Getting homemakers interested _____.

Inspiring homemakers to use what you've taught _____.

Other (list) _____.

4. Describe how you see the job now.

_____

_____

_____

_____

*A time other than 3 weeks might also be suitable.

SIX-WEEK CHECK-UP
(For Program Assistants)

Congratulations on six weeks of working with homemakers! What are your opinions now?

Try checking yourself on these:

1. Do you see signs that the children or husbands appreciate the changes that homemakers have made? Much Some Little None

   Explain _____

2. Do you see signs that the homemakers have more pride or self-confidence? Much Some Little None

   Explain _____

3. Have you had some success in teaching indirectly (while doing something else--or showing it without speaking of it)? Much Some Little None

   Explain _____

4. Check the areas most difficult for you:

   Getting ready for working visits _____.

   Finding concerns of the homemaker for future work _____.

   Praising, complimenting, and giving support to homemakers _____.

   Gathering a small group of 2, 3, or 4 homemakers to work together _____.

   Other (list) _____.

5. If a stranger asked you what kind of work you do, what would you say?

_____

_____

_____

_____

HOMEMAKERS AS AN ADVISORY GROUP

After the program is underway a few weeks, you might find it helpful to form an advisory group of homemakers. It could help you and your program assistants evaluate the program and it could give direction to the program.

Have each program assistant bring one of her homemakers to a central meeting for an informal discussion. Provide transportation. Let homemakers tell what they learned, what families are doing, and what problems they have. Everyone would share ideas for programs. By keeping the meetings small and unstructured, homemakers are more likely to express themselves and to develop leadership.

HOW TO TEACH HOMEMAKERS*

(Here's a suggested guide that will help program assistants with their teaching. It also appears in Section 4, the Program Assistants Handbook.)

You may want to adapt the guide and use it, yourself, to train program assistants. You might expand sections--for example: in the TO SHOW section you could include posters, slides, film strips.)

****

When you teach your homemakers, you...

1. TELL
2. SHOW
3. DO
4. TELL AGAIN

---

* Developed by Lora M. Laine, Head, Home Management-Family Economics Department, Georgia; Mrs. Gladys Lickert, Housing Specialist, Kentucky; Mary Frances Lamison, Extension Specialist in Home Management, Minnesota; and Stella L. Mitchell, Home Management Specialist, Division of Home Economics, Federal Extension Service, USDA.

You can use any or all of these ways to teach things in the leaflets. Choose the ways that best suit the homemaker and are most comfortable for you.

TO TELL:

Talk about real situations.

To get the homemakers to talk about what they will learn that day...

- Ask questions
- Tell stories
- Get them to tell their experiences
- Tie in your experiences
- Use familiar sayings
- See if they agree

Don't preach!

Don't set yourself or your family up as an example.

TO SHOW:

We remember better what we see. Show what you want the group to remember.

Show how to do something using real things.

Use exhibits and displays--(show degrees of cleanliness--for example, clothes poorly washed, washed fairly well, and washed well) or use an example of your own such as window pane or dishes.

Use games:

1. (Make a game of identifying tools and supplies--what is each item and what is it used for?)

2. (Name the job--have them pick out the tools and/or supplies for the job. You may have them match jobs and tools.)

TO DO:

We remember longer what we "do."

Let each homemaker practice the "skill" that was taught.

Give them homework to do about the skill you have taught.

Have homemakers talk about this homework the next time you meet.

Encourage homemakers to try their own ideas. Give time for them to tell what happened.

TO TELL AGAIN:

Repeating helps people learn, so--tell again.

Pull out the main points of each lesson you teach.

Let the group tell the main points they learned.

Ask homemakers to practice teaching each other what they learned.

Other Suggestions:

Give an award to homemakers when they finish a series of lessons. This might look like a diploma.

Make sure homemakers know the meaning of the words in the leaflets.

SUGGESTED 4-WEEK TRAINING PROGRAM FOR PROGRAM ASSISTANTS

Twelve days of training interspersed with 8 days of home visits.
Objectives--See Section 2, p. 21.

FIRST WEEK

First Day

8:30 a.m.

A. Get acquainted. (Coffee, name tags.)

B. Explain tentative plans for the next four weeks.
(1) Monday, Wednesdays, and Fridays will be spent in classes; Tuesdays and Thursdays on home visits. Classes from 8:30 a.m. to 5:00 p.m., half-hour break at noon, 15-minute breaks mid-morning and mid-afternoon.
(2) Lunch each day as part of the educational program.
(3) Informational part of program. Topics to be taken from Section 4, Program Assistants Handbook, mainly.

"The Audience to be Reached," Section 1, p. 4.
"What Do You Do?" (Quiz for background of program assistants), Section 3, p. 37.
"Your Job as Program Assistant," Section 4, p. 74.
"Standards for Program Assistants," Section 4, p. 74.

12:00 noon Lunch

"The Importance of Program Assistants" (Discussion), Section 3, p. 40.
"Home Visits," Section 4, p. 76.

Second Day — Home visits.

Third Day

8:30 a.m. "Values," (Discussion), Section 3, p. 41.
Food lesson #1

12:00 noon Lunch

"The Hierarchy of Human Needs," (Discussion), Section 3, p. 44.
"The Need Chart," Section 3, p. 46.
"Getting Families to Accept You," Section 4, p. 80.

Fourth Day — Home visits.

Fifth Day

8:30 a.m. "Keeping Records About the Family," Section 4, p. 80 and Appendix, p. 104.
Clean house lesson #1

12:00 noon Lunch

"Factors that Influence Learning," Section 3, p. 47.
"How Adults Learn," Section 3, p. 48.
"Looking for Learning," Section 3, p. 50.

SECOND WEEK

Sixth Day

8:30 a.m. "Things to Think About When Helping People," Section 3, p. 54.
"How to Get the Homemaker Interested," Section 4, p. 82.
Storage lesson #1

12:00 noon Lunch

"Your Reaction on a Home Visit," (Discussion), Section 3, p. 56.
Clothing lesson #1
"How to Teach Homemakers," Section 4, p. 84.
"Building Relationships Between Program Assistant and Homemaker," Section 3, p. 57.

Seventh Day — Home visits.

Eighth Day

8:30 a.m. Role Playing Skits, "How to Make a Home Visit"
"Using Yellow Cornmeal"
"Signing a Credit Contract"
"An Upset Homemaker" Section 3, p. 58.
Clean house lesson #2

12:00 noon Lunch

"You and the Children," Section 4, p. 86.
"Parents and Teenagers," Section 4, p. 92.

Ninth Day — Home visits.

Tenth Day

8:30 a.m. "Community Resources," Section 1, p. 10.
"Policies for Program Assistants," Appendix, p. 102.
Food lesson #2

12:00 noon Lunch

Case Studies "Needs, Community Resources," Section 3, p. 60.
Clothing lesson #2

THIRD WEEK

Eleventh Day

8:30 a.m. Money management lesson #1
Storage lesson #2

12:00 noon Lunch

Clean house lesson #3
Clothing lesson #3

Twelfth Day — Home visits.

Thirteenth Day

8:30 a.m. — Money management lesson #2
Food lesson #3

12:00 noon — Lunch

Clothing lesson #4

Fourteenth Day — Home visits.

Fifteenth Day

8:30 a.m. — Money management lesson #3
Clean house lesson #4

12:00 noon — Lunch

Clothing lesson #5

FOURTH WEEK

Sixteenth Day

8:30 a.m. — Money management lesson #4
Food lesson #4

12:00 noon — Lunch

Storage lesson #3
Child development lesson

Seventeenth Day — Home visits.

Eighteenth Day

8:30 a.m. — Money management lesson #5
Food lesson #5

12:00 noon — Lunch

Clean house lesson #5
Storage lesson #4

Nineteenth Day — Home visits.

Twentieth Day

8:30 a.m. — Storage lesson #5
Food lesson #6

12:00 noon — Lunch

Clothing lesson #6
"Did You Succeed?," Section 4, p. 94.

The suggested training program above may not fit your time schedule. For a one or two week program, home visits may need to be eliminated. A longer program could include more subject matter. The needs of your community or the nonprofessionals to be trained could change the kind and amount of home-making skills to be included.

SECTION 4. HANDBOOK FOR PROGRAM ASSISTANTS

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TERMS AND TITLES TO HELP US TALK TOGETHER

Homemaker: A housewife, or the woman who runs a household.

Program Leader:
Trainer Agent:
Your Supervising Agent: The person who assists and supports you in your work with homemakers. She wants you to become an expert in working with homemakers. She will help you learn. She knows what to teach. She will help you learn how to teach. Talk over your problems with her.

Approach: The way you choose to open a new subject. Or, how you start to talk with a stranger.

Community Resources: All the agencies, institutions and people nearby who could help a family learn, improve, develop, or solve problems. Churches, libraries, schools, and clinics are a few examples.

Sequence: A series with an order of steps. Each part depends on the one before it and builds to the next. A series of home visits are an example.

Support: Helping someone else succeed.

Values: What a person thinks is important. A neat appearance and being honest are values for many people.

Working Visit: You "show and teach" as you and the homemaker work together in her home.

Small Group Meeting: Like a working visit but with 2 or 3 homemakers there. It is as easy to "show" 2 or 3 as one homemaker if you plan carefully. The "get together" will be informal. The homemakers may not call it a meeting.

YOUR JOB AS PROGRAM ASSISTANT

These are the main things you will do as a program assistant:

1. Take training for the job. You will do this before you begin to work with homemakers.

2. Get in touch with homemakers personally. Interest them in your program. You will work in certain parts of your town or county.

3. Visit homes. Find out what the homemaker needs. What is she interested in?

4. Go back and visit again to give help. Keep going back until you can get a few women together to learn.

5. Hold small meetings of homemakers in a neighborhood. Show and talk about homemaking skills.

6. Make simple charts and pictures. These help homemakers understand what you show and tell.

7. Ask your supervising agent for special help that families need. She will see that other persons, such as the health nurse or welfare workers, help the family with their problem.

8. Ask your supervising agent for special homemaking information, such as a question about nutrition. The supervising agent will give you regular help and guidance.

9. Plan your work. Keep records of home visits. Keep track of how many hours you work.

STANDARDS FOR PROGRAM ASSISTANTS

Congratulations on your new job! We hope you find it interesting and satisfying, as you help others learn. When you see problems, be sure to discuss them with your supervising agent.

Any woman taking a job wants to know what people expect of her. Remember these things:

An Image

A woman who works away from home must act refined and dignified. Be pleasant and straightforward when you meet people. The way you look and act are an example for others to follow.

Talk to people about what interests them. Talk about your personal life only as an example for teaching. Avoid talking about other people in ways they would not like.

Anyone in an office should be business-like.

Personal Interests During Working Time

Employers pay for your time on the job. Sort out what is personal and what belongs to your job. Keep your personal and family matters in the background while at work. Limit personal telephoning. Avoid visiting with friends or relatives during working hours.

Appearance

A neat and clean appearance is important. If you wear fancy dresses or flashy jewelry, people might think you are "showing off." Use simple makeup and hair-do's. Don't use much jewelry. This shows good taste.

If homemakers know you made the dress you are wearing, it might inspire them to sew.

Be careful of your grooming. You encourage homemakers by your example. You are well groomed when you look, fresh, neat, clean, and well pressed. A schedule to take care of grooming jobs will help.

Take care of your clothing. Press and hang your coats and dresses. This keeps them from wrinkling Wear boots in rainy weather to keep shined shoes neat.

Remember you are a "model" for the families you work with. If you dress neatly and the right way, people will respect you.

HOME VISITS

You need to know all you can about home visits. Many women will talk to you in their own homes even if they won't go to meetings.

First Visit

Go to the home at the time of day that suits the family. Does your visit seem to be at a bad time for the homemaker? Tell her you would like to stop by later. Set a time.

Be friendly and sincere. Smile and be natural. You could pretend you are calling on your favorite neighbor. You may need to "Yoohoo" to bring someone to the door. Children may meet you outside. They will make the greeting easier. Usually you can find something favorable to mention. You may say "What a nice way your child has with people," or "Your flowers are so pretty!" The word "your" makes the woman feel important.

Introduce yourself. Tell her your name. Find out hers. Use it. All of us like to hear our names. If you already know her name (from your visit next door or from a list) explain how you know. This will give you something to talk about. Tell her why you came. Your purpose must be clear. You don't want her to think you are a bill collector or investigator.

Talk in a natural way. Probably you can talk easily with people. You can learn to do this. Practice helps. If one homemaker refuses to talk with you or you fail once in awhile, don't worry about it. No one wins all the time. She may change her mind later and send you a message to stop by again.

It's fun to talk. When you can make other people feel comfortable, they'll talk to you. Think, "whatever you are, I like you." Even if one person is very shy, it takes two to talk. Friendly questions should bring answers. But don't sound nosy. Be sure to pause so the other person can talk. How do you feel when another person talks all the time and you can't get a word in? Plan for the other person to talk. Listen to what she says.

How the homemaker feels about your first visit is very important. Try to connect it with pleasant, hopeful things. She may be suspicious at first. Or she may be naturally shy. On the other hand, she may be friendly and very glad to talk with somebody.

On the first visit talk about things in general. Although you may be ready to go right to work, to the homemaker you are still a stranger. She is not ready for what you have been thinking about for some time. Winning her confidence is your first goal. The first visit to a family will be brief. You could make six or eight such visits in a day.

You will get a general idea of the home on your first visit. Talk will bring out a few facts about the family. Write down some things you want to remember. But not in front of them. What you see or hear is important, but the main purpose of your first visit is to be neighborly. The first visit is to make it easy for you to come back and work with the homemaker.

Practice first. Choose another program assistant and practice how to make a home visit. Then change places and try it again.

1. What interest did the homemaker have?

2. What did you learn?

3. How did you "sell" the program to the homemaker?

4. If you were the homemaker would you believe in the program assistant? Would you want her to help you?

When the homemaker shows she wants you to come back to help her, she has "enrolled" in the program. On your next visit you will teach and help the homemaker do better.

Remember these things:

- It is a privilege to go into the home of another person.

- Keep a positive, happy approach.

- Respect the family's values even though you hope to change some of them some day.

- The homemaker must trust you before you can teach.

- Keep a family's secrets. Don't tell anyone else anything you learn about them.

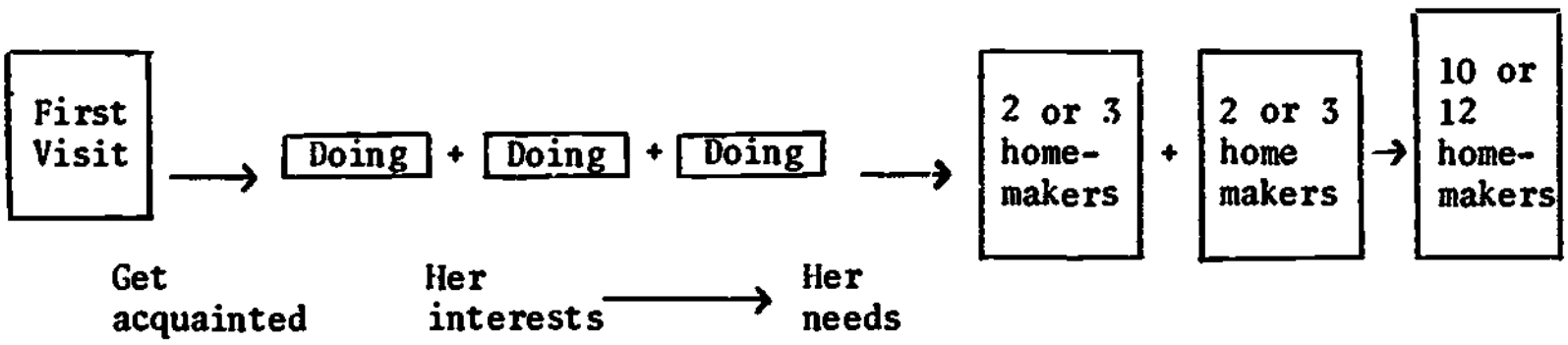
- Listen carefully to get information. That is better than asking personal questions.

- Begin with what the homemaker is interested in.

- But <u>you</u> may have to decide what help she really needs.

As soon as possible help her graduate to a group. There she can see and try homemaking ideas with other women. For this reason your home visits should be in a sequence. Build each one on the last and progress to the next.

In your mind you might see your visits something like this:



Of course this pattern may never be quite the same for any two homemakers. Some may take more time to become interested and others will be slower at other stages.

During this sequence you will probably contact the homemakers in brief, informal ways. <u>Each contact will be important to give support to what you plan to happen</u>.

After your first visit you might knock at the door of one homemaker to ask if she had invited her neighbor to the work session next day since you "just happened to be going by." Or, if you meet the homemaker on the street, you would naturally stop to talk about whatever you and she were working on.

<u>Working Visits</u>

The working visit must always seem informal. But you must arrange and plan it carefully. It will develop from an interest the homemaker has shown. She'll be interested in something that has to do with her family--like cooking. You and the homemaker should plan ahead for the working visit.

1. Decide together on something to do--bake cookies, make dinner-in-a-dish, repair clothing, etc. Often you can work at two things. Leave her a recipe or leaflet but be sure to talk it over with her.

2. Get the homemaker to promise to have supplies you'll need. Help her make a list of what she'll furnish. Be sure she can do this and has time.

3. Decide together on a time to work--the day and hour. You might ask to mark it on her calendar.

Set a definite time. This is important. It gives the homemaker a goal so she can get ready. Many times a homemaker sweeps the floor, washes the dishes or dresses up especially for your visit. If the two of you make an agreement, expect her to do her part. However, be sure she can. For instance if she can't read a recipe, or get the supplies for it, she may be upset.

Make your working visit fun. It will be almost like doing housework in your own home. The difference will be that it is not as routine. You will be pointing out certain things you usually take for granted.

These might be:

1. Have a place to work. This could mean stacking, piling, etc., to clear a spot.

2. Have everything clean--your hands, equipment, etc., especially around food.

3. Collect supplies before you start and keep things that are alike together.

4. Use a recipe or directions as you work.

5. Watch for safety--fire danger, knives, poisons, etc.

Point these out to the homemaker. You will have a lot to teach. She can't learn all of it in one easy lesson. However, you are her model. She will probably do as you do. If you make it seem worthwhile she will probably catch your spirit. Sooner or later she will learn.

When you finish the working visit praise the homemaker for what she has done. If you can, help her family see how important she is and how well she can do. You will be helping them learn values, too.

When fixing food with the homemaker see that the family is served neatly and nicely with whatever they have. You will be teaching standards.

Your work session will suggest things to do next time. On each visit you can find out what the homemaker would like to do when you come again. Soon you can suggest that she invite her neighbors and relatives to come watch and help.

For working visits be sure to make plans with your supervising agent. She is a specialist at this. She can help you get ready and teach.

KEEPING RECORDS ABOUT THE FAMILY

Be sure to write down what you did and saw. Do this soon after you are away from the house. Write down information about the family. Make notes about your visits. What progress is the family making? Put a date on your notes. Keep them together in a private place.

Keeping records is important.

1. They help you remember facts about each family.
2. They show change and step-by-step progress of families.
3. They will help others work with the family if you are not there.
4. They can be put together with other family records to see what the whole neighborhood needs.

Remember that all you hear and write down is <u>secret</u>. Be careful with these records.

GETTING FAMILIES TO ACCEPT YOU

Here are some things to remember about making home visits:

1. Get to know your families--members, names, interests.
2. Set date of visit when it suits the homemaker.
3. Let her know how long you will be there.
4. Be friendly.
5. Find something to praise. Something important to the family.

6. Let them know you are there to help them with information and suggestions.

7. Make them feel that their part is important, too.

8. Start where they are.

9. Talk on their level.

10. Teach only as much as they can learn at one time.

11. Keep information simple.

12. Be a good listener.

13. Ask them for suggestions.

14. Be sincere.

15. Be willing to admit you don't know something but will try to find the answer.

16. Let them know you had to learn before you could help them.

17. Don't be critical.

18. Be satisfied with a little progress, at first.

19. Keep private any information about families.

20. Don't make promises you can't keep.

21. Be patient and courteous.

22. Ask them to help you do something.

23. Write down things you need to help them with so you don't forget.

HOW ADULTS LEARN

When you teach homemakers, some will learn faster than others. Some will start doing what you suggest sooner than others. If you remember these things you'll be more patient with slow learners.

1. Adults learn when they are interested in what you tell them.

2. They learn when they see a connection with something they think is important.

3. They learn better by doing things themselves.

4. They are influenced by people they admire.

Why some adults don't learn...

1. They don't want to lose again. Maybe they've already failed at school or marriage.

2. They don't like school.

3. They think they're "too old to learn."

4. They are too busy.

5. Old ideas keep them from listening to new ones.

6. They don't read or write very well.

7. They don't know what there is to learn.

8. The teacher doesn't explain it so they understand.

HOW TO GET THE HOMEMAKER INTERESTED

Find out from the homemaker:

1. What does she like to do? Tie your teaching to this.

   Example: She says she likes to sew.

   So, perhaps she would like to make a tablecloth, a skirt for her child, etc.

2. What seems hard to her? Is it cooking, housecleaning or dressing her family? Is there something that she is afraid to try? She can't do? Can't afford?

Example: She says buying cookies for the children takes so much of the grocery money.

So, perhaps she would like to learn how to make cookies.

ALWAYS CHECK TO SEE:

1. Does she want to do this?
2. Is it easy enough for her to succeed?
3. Does it seem important to her?

SHE MUST NOT FAIL.

Some things homemakers might like to learn to do:

- Find places to hang clothes
- Change a dress hem
- Wash a sweater
- Fit or repair clothing
- Sort old clothes--use soft things for cleaning rags
- Make child's dress from used clothes
- Make a tote bag or diaper bag
- Make a place to hang dish towels
- Make an ironing board
- Make an ironing board cover
- Paint coffee cans for cannister set
- Make trash or garbage can (paint 5 gallon can)
- Paint a chair
- Store flour and cereals in containers
- Make some shelves
- Patch pants
- Figure out a way to bake without an oven
- Make a salad
- Store drinking water so it stays clean
- Make cookies from donated foods
- Use powdered milk to make:
  Chocolate pudding mix
  Buttermilk
  Milk-drink
- Clean the refrigerator
- Build a cooler for food
- Measure wet and dry foods with cans or jars they have
- Fix a balanced meal
- Make a simple casserole
- Make table look nice for a meal
- Make hot breads
- Spray for bugs (Be safe)
- Cover cardboard boxes to store clothes
- Make simple curtains
- Make soap
- Refinish some furniture
- Make beds more comfortable
- Braid a rug
- Check house for safety

HOW TO TEACH HOMEMAKERS

When you teach your homemakers, you...

1. TELL
2. SHOW
3. DO
4. TELL AGAIN

You can use any or all of these ways to teach things in the leaflets. Choose the ways that best suit the homemaker and are most comfortable for you.

TO TELL:

Talk about real situations.

To get the homemakers to talk about what they will learn that day...

- Ask questions
- Tell stories
- Get them to tell their experiences
- Tie in your experiences
- Use familiar sayings
- See if they agree

Don't preach!

Don't set yourself or your family up as a perfect example.

TO SHOW:

We remember better what we see. Show what you want the group to remember.

Show how to do something using real things.

Use exhibits and displays--(show degrees of cleanliness--for example, clothes poorly washed, washed fairly well, and washed well) or use an example of your own such as window pane or dishes.

Use games:

1. (Make a game of identifying tools and supplies--what is each item and what is it used for.)

2. (Name the job--have them pick out the tools and/or supplies for the job. You may have them match jobs and tools.)

TO DO:

We remember longer what we "do."

Let each homemaker practice the "skill" that was taught.

Give them homework to do--about the skill you have taught.

Have homemakers talk about this homework the next time you meet.

Encourage homemakers to try their own ideas. Give time for them to tell what happened.

TO TELL AGAIN:

Repeating helps people learn, so--tell again.

Pull out the main points of each lesson you teach.

Let the group tell the main points they learned.

Ask homemakers to practice teaching each other what they learned.

Other Suggestions

Give an award to homemakers when they finish a series of lessons. This might look like a diploma.

Make sure homemakers know the meaning of the words in the leaflets.

YOU AND THE CHILDREN*

The Children Are Important

Children may be at home when you work with families. Pre-school children will need some care from the mother and you. School age children won't need as much attention. Or you can include them in your teaching. You may think that the children will interfere. But the way you get along with them is important.

You can help the children feel that they are important. You can show them that outsiders are friendly. Show you care about them.

You can show the children how to do household jobs. They can empty trash cans, dust furniture or do other jobs. You can encourage mothers to teach them how to share the housework. Teach them simple health habits.

You can listen to them. Talk to them.

If the mother knows you care about her children, she'll know you care about her, too.

Help the mother feel that she is a worthwhile person. This helps the children.

Your First Home Visit

The children may come to meet you before the mother comes to the door. Tell them your name and learn their names.

Use the child's name when you talk with him.

Calling a child by his name helps him know who he is.

Talk naturally with the child. Wait for him to answer. Show him that you are interested in his answer.

Are the children shy and don't want to talk? You can play a little guessing game. "Is your name Susie?" "Is it Timmie?" Usually after a few guesses a child will tell you his name. If he doesn't you can learn it from his mother or older brother or sister. Children like to have you guess their ages, too.

---

* Prepared by Roberta C. Frasier, Family Life Specialist, Oregon Extension Service, and Edward V. Pope, Human Development and Human Relations Specialist, Federal Extension Service, USDA.

Children usually respond better if you don't "push" them. Let them get acquainted with you at their own pace.

Bring some little gift for each child. It may be a piece of ribbon, a picture, or a flower. This gift is for the child and is something he may keep.

Also bring a few things in a basket for the children to play with while you visit with their mother. Include some small toy cars and planes. Bring pictures you cut out of a magazine and pasted on cards. Maybe a few picture books.

When you leave, take these things with you. Explain that they are yours. You will bring them back on your working visit.

Your Working Visit

This time bring a name tag for each child. Print the name tag while the child watches you. Use big letters. Pin it on for him.

You'll want to bring extra toys for your working visit.

Pack the toys in cardboard boxes that can be used for a stove or table when the child is playing with the toys.

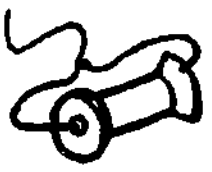
Bring some toys in the house for the children to play with, but keep extra ones in the car. If you need something different to keep the child interested, you can bring other things into the house.

These don't cost much. You might take along:

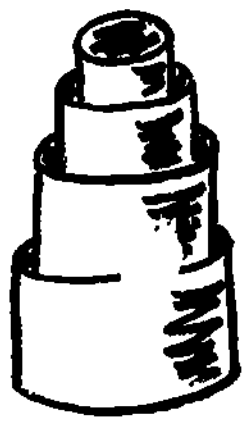
1. Art Supplies, crayons, big paper, old magazines to cut up, blunt scissors.

2. Picture Books, from a library.

3. Empty spools. Paint spools different colors. Use lead-free paint. Tie a string around one spool like this. Then let children put other spools on the string.

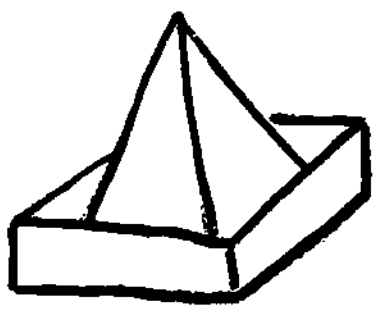


4. Cans of Different Sizes. Get cans that fit inside each other. Paint them different colors or leave the labels on. Be sure the edges of the cans are smooth.



5. Clothespins. Children can put clothespins around the edges of the cans.

6. Newspapers, fold to make hats, boats, trains, airplanes.



7. Stool. Take a wooden stool suitable for a child to sit or stand on.

Ideas to Share With Mothers

Here are a few ideas about children. You can mention them to mothers while you work or talk. Put the idea in your own words.

- Each child grows in his own way and at his own speed.
- Each child needs encouragement. This helps him be a special person.

- No two children are alike. Each one does things his own way.

- Each child needs to feel good about himself. He needs to feel that he is a capable person.

- A child needs to see and do and feel new things. This helps him discover the world around him.

- It is good for a child to ask questions. He needs good answers that he can understand.

- A child needs to be encouraged to tell what he saw or did.

- A child has to learn how to act. He learns from the people around him.

- The most important examples in a child's early life are his mother and father.

- Parents and family are very important teachers. Children learn things at home that they can't learn anywhere else.

Helps For Getting Along With Children

The way you treat children while you are in the home can:

- help the child in his growth

- teach him how to act

- make him behave better

Treat each child as if he is "somebody." Call each child by his name. Help him to feel that you like him. Let him know you think he is able to do things according to his age.

Say "please" and "thank you" to children. Be as polite to a child as you would be to a grownup.

Talk to the children. Stoop or squat down when talking to a child. Then he can look you in the eye and see you on his own level. Think how you would feel if everyone were twice as tall as you are.

Listen to the children. Pay attention to the children when they talk to you. It may take some time. It lets them feel that someone thinks they are important enough to listen to. It also helps them to talk better.

Give experience with sounds. Whisper to a child and let him whisper back to you.

Play games. Have the child shut his eyes and listen for a special sound.

Touch a child to get his attention. Put your hand on a child's shoulder, take his hand, or stoop down and put your arm around a child to get his attention. Speak in a soft voice. Speak slowly so he understands. This takes more time, but works better than yelling across a room.

Give directions carefully. If you want a child to do something:

- Get his attention.
- Explain carefully what you want him to do.
- Tell why he should do it.
- Show him how to do it.
- Give him a reward. You may say "That's a fine job." You may give a special hug. Do something that shows you are proud of him.

If you want a child to hang up his clothes:

- Show where to hang them.
- Show how to hang them.
- Have him practice hanging them.
- Tell him why clothes need to be hung up.
- Reward him. Show him that you noticed that he hung up his clothes.

Instead of saying "Don't" "Quit" "Stop" show children what to do. Children learn how to act when you show them what to do. Just stopping them doesn't teach what to do next time. Telling a child "Wait until the floor is dry" is better than "Don't walk on the wet floor."

"Hold it this way" is better than "Don't drop it."

Use substitution. If you have to take something away from a child, give him something else to play with.

Get tiny tots to think of something else when they are unhappy. Small children forget quickly. Call a child's attention to something else. This will take his mind off his unhappiness. This method is most useful with the child under 2 years of age.

When a child bothers you. If a child is bothering you as you work, find something else for him to do. Show him how he can help. Giving him your attention may be more necessary right then than the job you are doing with the homemaker.

Give children some choice. Give children a chance to choose whenever you can. "Would you rather wash the dishes or dry them?" Choices should be as equal as possible. Be willing to accept what he chooses.

See the child's point of view. The things children do make sense to them. Try to think why a child is acting the way he is.

Avoid comparisons. Avoid comparing one child with another. When you compare, the child thinks this means "I'm not as good as someone else" or "I am better than he is." Don't say, "Why can't you do as well as Johnny?"

Help children learn about time. Children first learn about time by learning when things are done. "First we wash our hands, then we eat our dinner." "Now is the time to take a nap."

Arrange things to suit the child's needs. Give the child a small box or stool to sit on. He can climb on it to reach things.

Give him a cardboard box. It makes a place he can keep things that are his very own.

Do not interfere with parents' discipline. Parents are the ones to punish children.

Your job is not to interfere. Teach by your own example as you work with the children.

PARENTS AND TEENAGERS

Parents often feel that their teenagers are getting out of hand. They want to know why kids act the way they do. They may ask you what you would do, if you were in their shoes.

<u>You Can Help Parents Most When You:</u>

- Don't tell them what to do or what you would do
- Ask questions when they talk about their children
- Help them find out that other parents have the same problems
- Talk about what parents and children need.

<u>Don't Tell Parents What You Would Do.</u>

This does not help. How parents act depends on:

- How a problem looks to them
- How they have handled problems like this before
- How they feel at the time
- What they know how to do

You would handle it in a different way because you are a different person.

<u>Ask Questions When Parents Talk About Their Children.</u>

This helps them to think about what to do. Here are some questions you can ask when the time seems right:

- "How do you suppose Johnny feels about this?"
- "How do you think this looks to Johnhy?"
- "If you do this, how will Johnny act?"
- "What do you want Johnny to learn?"
- "How do you feel about this?"
- "Would it help if you do this?"

Help Them Find Out That Other Parents Have the Same Problems.

This makes them feel that they are not alone. Other parents have teenagers who:

- Go through a time when they think parents are old-fashioned
- Think parents don't know anything
- Feel their parents treat them like babies
- Fight against being treated like younger children
- Break rules
- Get sassy

They learn that other parents sometimes forget that children are growing up. They learn that "letting-go" is hard for parents. Some parents don't want their children to grow up and leave them.

Help Them Learn What Parents and Children Need.

- Teenagers need rules, but they need some say about what the rules are.
- They need to help make rules that affect them.
- Teenagers need help in knowing how to act.
- They need to know that some behavior is wrong.
- Teenagers need a chance to tell how they feel and what they think.
- Teenagers need to talk about themselves and their plans.
- Teenagers try to find answers to hard questions like:

  Who am I?

  What can I be?

  Who should my friends be?

  Who needs me?

  Whom do I need?

. Teenagers need to feel good about themselves.

. They need to know their family cares for them.

. They need attention and praise:

When they help.

When they are kind.

When they try.

DID YOU SUCCEED?

Did you succeed in your work with a homemaker? Did she make a change within herself or in her home as a result?

Here are three ways you can find out.

You may wish to talk these over with your supervising agent. Learn to watch and listen for small signs of change. Here are some suggestions:

1. Check samples

   a. Ask to see a sample of what the homemaker did.

   b. Examine the sample to see what is good about it. What needs correcting?

   c. Suggest improvements tactfully. Mention good things first. Let homemaker point out what is wrong if she can.

   d. Write down what you see. Write the date. Do this after your visit.

Be sure the homemaker feels good about what she made. After a time your records will show her progress.

2. Check conversation

   a. Listen for comments. Does she mention small things she tried that you recommended?

      "I made cookies for the first time in my life." or "I don't buy cookies any more, I bake them myself and save money."

b. After your visit, write down these comments. Write the date.

3. Check attitudes

a. Listen for comments that show that the homemaker enjoyed or learned something.

b. Watch for improvement in looks of the homemaker or her house. This shows a growing pride.

c. Look for changes in way homemaker acts toward her children now.

d. After your visit, write down what you notice. Write the date.

APPENDIX

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APPLYING PRINCIPLES OF SOCIAL ACTION

If you hope to initiate a program for low-income homemakers, you cannot be effective without support from others in the community. Perhaps plans are already being considered by the time you are asked to cooperate. In either event, the principles of "social action" still apply.

To analyze how they fit your situation, take the following steps:

Step 1. A successful program must relate to the community (or local area) and to the existing situation. See Section 1, p. 6 (Basic Study of Local Situation).

Cite data that point up problems and opportunities:

_____

_____

_____

_____

_____

Step 2. Every program relates to some past experience.

Who tried what, with whom, before? _____

_____

_____

Results? _____

What can be learned from this? _____

_____

_____

Step 3. Identify the problem, situation or opportunity.

What is it? _____

_____

_____

_____

Step 4. Consider outside forces that may be influential in stirring people to action. (In this instance, national concern about low-income families and school dropouts.) Others?

_____

_____

Step 5. Initiating a project is usually done by a small number originating the idea or seeing the need.

With what educators and persons concerned with low-income families would you talk this over? (Use "Basic Study," Section 1, p. 6, and Step 1. above)

_____

_____

_____

Step 6. Action must be approved by legitimizers.

These will include more than those who legitimize your traditional program.

Such as:

a. Leaders and organizations that will provide sympathy and support: Their Response

_____

_____

b. Leaders and groups who will add prestige: Their Response

_____

_____

c. Any who might oppose, whose help you also need: Their Response

_____

_____

d. People and groups who can provide skills, resources, program needs: Their Response

_____

_____

_____

(Use "Basic Study" and Step 1 to explain the problem and opportunity.)

What advice was given? _____

_____ _____

_____

If they oppose action, who else might influence them? _____

_____

(Sometimes from another level or with other influence.) Try another channel.

Which, if any, wish to participate further? _____

_____

Step 7. Involvement of many people to nurture and support idea.
Such as:
Groups in your own organization _____

_____

Agencies concerned with human development _____

_____

Local community organizations _____

_____

Step 8. Who should be involved to help with planning and participation? (Often these people make up a steering committee. Sometimes they may not meet together but their involvement and opinions are both important.)

List Organizations	or	List Persons

No special number recommended but broad community involvement is good.

Whenever possible, representatives of audience to be reached is desirable.

Step 9. Organizing for Action: Ask these people (in Step 8) to help with these decisions: Get their commitment whenever possible during a meeting, in a committee, or before others. Write out the goals and assigned responsibilities for guidance in your program.

a. What are the specific program goals? _____

Set priorities. As time goes by you may need to change the plans. However, refer to the goals frequently to maintain program direction.

b. Assign responsibilities:

- Who does overall planning? _____
- Who coordinates? _____
- Who provides what resources? _____

- How will supplies be financed? _____

_____

- Who recruits leaders? _____

- If leaders are paid, who handles personnel details and money? _____

- Who trains leaders? _____

- Who supervises leaders? _____

- What is your role? _____

_____

_____

c. Where will program start? _____

When? _____

d. How many leaders will be practical? _____

e. How long will program be continued? _____

_____

Where should it be 1 year from now? _____

_____

(When the many ideas arise on how to do the job, all plans should be considered and the best one selected by the initiating group.)

Step 10. Evaluate results in light of goals:

What specific evidence will you look for?

a. _____

b. _____

c. _____

d. _____

Note: Sometimes it is necessary to repeat the process a second or third time. Or, frequently, a certain step may need to be taken again.

SUGGESTED POLICIES FOR PROGRAM ASSISTANTS

(Adapt to local situation and have program assistant add to her "Handbook.")

Check with your supervising agent before you:

1. Buy supplies or materials for lessons.
2. Use sample products or recommend brand names.
3. Contact cooperating agencies.
4. Release information to newspapers or radio.
5. Give out names or information about homemakers or families in the program.

Working with families:

1. Keep all records about families confidential. Never take records into a home when making a visit.
2. Discuss family situations with your supervising agent only.
3. Make an appointment with the homemaker if a home visit for teaching is in your plan. Notify her in advance if you must cancel.
4. If a meeting is your responsibility, be sure to arrive 30 minutes early to arrange materials and be ready to start on time.

Operation:

*1. Make a monthly schedule and weekly plan of work with guidance of supervising agent.

*2. Keep a file of each family to remember all observations and points taught. Keep confidential.

*3. Write a report each (week or month) as follows: _____

_____

*4. (If employed) report time as follows: _____

_____

*Special forms may be used.

SUPPLIES NEEDED

You will need certain forms, records, and supplies to operate the program efficiently. Prepare these materials ahead of time so you will have them when you need them.

1. Application Blank--especially if program assistants are to be paid. An adaptation of an application blank might be used for volunteers for a record of address, telephone number, etc.

2. Handbooks for Program Assistants, See Section 4. They will serve as a symbol of the job and will be valuable references. Plan to use them in different ways during the training so program assistants will learn to refer to them.

3. Family Record Form--To be filled in by program assistants for each family. It will contain data on the home situation. Dates of visit, work done with homemaker. Evidence of change may be added from time to time. See p. 104 of Appendix.

4. Itinerary Outline--for program assistants to record homes visited and meetings held. It may have space for brief summary of what happened.

5. Time Worked Report Form--for reporting the amount of time worked and transportation costs, if costs are to be reimbursed.

Other Supplies You May Want

*1. Graduation certificates--for program assistants who meet apprenticeship standards.

*2. Small identification badge with the name of the program and a blank for program assistant's signature.

*3. Small enrollment card--with program assistant's name and slogan or objective or program. This card will be left with the homemaker. Leave a space on the card for the homemaker to sign her name.

4. Adapted copies of techniques for activities or discussion during training.

5. Name tags for use as needed.

6. Kits of suggested materials for children's toys. Urge program assistants to collect materials with your help.

*Cooperating organization may supply or help with printing costs.

FAMILY RECORDS

You and the program assistant will need information about each family in the program. You must decide what information should be collected so you can train program assistants to collect it.

These records will help you plan the program and fit it to the audience. A folder for each family can also include records of the family's progress as reported by the program assistant.

You should decide where to keep these records. When program assistants work out of a central location, keep records there. If program assistants work some distance from you, they might be responsible for the folders.

However, you should continue to emphasize the confidential treatment of these records. Stress to program assistants (1) never fill out records during a visit and (2) never take records into a home.

Much of the data needed would be recorded only once. The following list will suggest information you need for family records. You will think of other items.

Family--Names of family members
--Age, education, and health
--Marital status of mother
--Immunization of children

Family income--Approximate total income and sources

Desire for training or further schooling

Housing conditions--Number of rooms
--Type of heat
--Water supply
--Number of beds
--Appliances
--Kind of cooking stove
--Refrigerator, ice box
--Freezer
--Electric iron
--Home owned or other
--Electricity
--Garden
--Bathroom
--What disposal for waste
--Radio
--Television
--Sewing machine
--Washer

Transportation--Car? (condition?) Bus?

School bus service

Reading materials--Magazines, newspapers, books?

Kind of programs family listens to on radio or television

Homemaker's interests--(At beginning of program and later)
--Attitudes toward program assistant
--Outlook on life
--Does she go to a club or church?
--What she does well
--Relationship with family members
--Pride in accomplishments
--Housekeeping skills

Current records:
Number and date of each visit by program assistant--what was done or shown, and response of homemaker.

OPERATIONAL RECORDS
(End of _____ Months)
(1,2,or 3)

The items below are suggested as basic for a statistical summary. You may want to add other items. Base report blanks for program assistants on this or your adapted form.

A. Program Assistants

_____1. Number program assistants working during the period.

_____2. Number of days worked by program assistants during the period.

B. Families Contacted

_____1. Number of different families contacted by program assistants during the period.

_____2. Number of home visits made by program assistants.

_____3. Number of different families that program assistants worked with in homes for three or more visits.

_____4. Number of small group meetings held by program assistants.

_____5. Total attendance of homemakers at small group meetings.

C. Cite small or large evidences of change made by homemakers as result of the teaching.

CHILD CARE ARRANGEMENTS WHILE MOTHERS MEET

(You may need to guide your program assistants in making arrangements for care of children while mothers meet. You might give them the following suggestions.)

Sometimes volunteers will take care of the children or someone can be hired to be with the children.

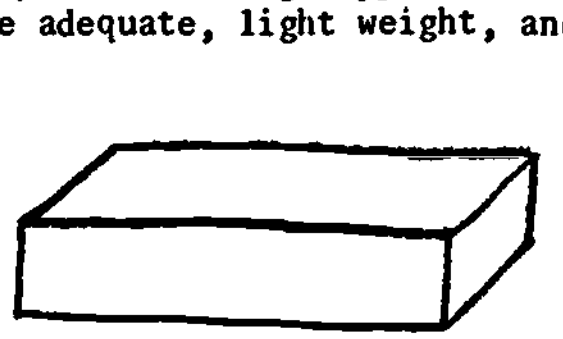
Plan the child care so it will be a good experience for the children. Children need toys to play with and experience with paints, color crayons, and pasting. Books, reading, and storytelling should be an important part of the child care.

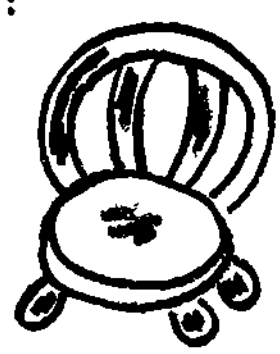
Make a name tag for each child and pin it on him. As you print his name, show him how you write it. Most children enjoy wearing a name tag. It also helps the person caring for the children to learn names. In case some child may not want a name tag, put it aside and tell him he can get it later if he wants it.

Do the mothers meet in a church or a school? Maybe the church nursery or the kindergarten room can be used as a play center for the children. Arrange for a room near the place where the mothers will be meeting. The room should be warm, airy, and light. Toilets should be nearby.

Supplies You Will Need

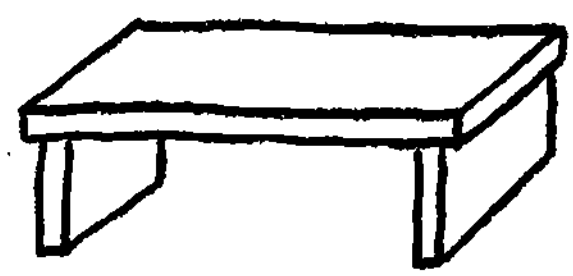
If you must bring supplies for each meeting, these are good ones. They are adequate, light weight, and easy to store:



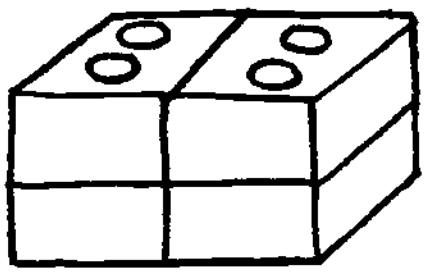


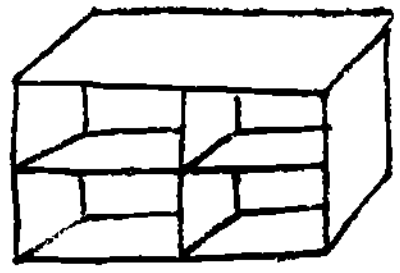
Low boxes, stools, small chairs, rugs, or blankets for children to sit on.

Low tables where children can work. A board with a box under each end can be used for a table or a bench.



Furniture and equipment for a housekeeping corner.





Turn cardboard or wooden boxes upside down for use as tables and stoves. You can stack them on top of each other for cupboards. Boxes can also be used as doll beds.

Mirror--stainless steel, hand mirror, or mirror to hang on the wall.

Lids, dishes, pans.

Dressup clothes--hats, purses , aprons, dresses for girls; coats, jackets, hats, lunch pails for boys.

Dolls, blankets, and doll clothes.

Art Supplies

Crayons, newsprint, magazines for cutting, blunt scissors, paste, modeling dough.

Paste	Modeling Dough
Mix together 1/4 cup flour, 1/4 cup cold water. Add 1 cup boiling water and cook until clear.	Mix together 2 cups flour, 1 cup salt. Mix food coloring in 3/4 cup water. Add to flour and salt, mix, and add water to make non-sticky dough.

Books: From a library, borrow picture books suitable to the ages of the children.

Other Supplies and Equipment: A box of empty spools, cans of different sizes, clothespins, newspapers to make hats, boats, etc. (See supplies listed under "You and the Children," Section 4.)

Additional Supplies: The above listed are minimum equipment. If possible add: blocks, puzzles, toy cars, trains.

People to Help With Child Care

Select people who are warm and friendly and who like children. A former school teacher or a Sunday school teacher has had experiences with children in groups. Older boys and girls in the community can help. Some elderly men and women may enjoy reading to the children and watching them play. Help volunteers take part where they are best suited.

How many people will you need to care for the children? That will depend on the number and ages of the children, the kind of room, how close it is to toilets and to the room where the mothers are meeting. Try to have at least two adults with a group of children.

SUGGESTED PLAN FOR A MEETING

(For Supervising Agent. Also suggested for use by program assistants.)

1. Get to know each other--(game-song-coffee)
2. Tell of plans for the meeting
   a. What you will teach that day
   b. How long it will take
   c. Why they need to know this
3. Give the information and involve the homemakers
   If part of series, relate to previous topics.
   Show how to do it.
   Let homemaker practice skill.
   Let homemaker ask questions.
4. Talk over what was learned

5. What homemaker should do before next meeting

6. Make plans for the next meeting.

   When and where to meet.

   What the group will do.

Cooperative Extension Work: United States Department of Agriculture and State Land-Grant Colleges and Universities Cooperating. Issued November 1965.

VT 002 574
Louisiana Study of Manpower and Training Needs--Auto Dealers, Services, Repair Shops, Miscellaneous Retail Stores, Miscellaneous Services.

Louisiana Vocational Curriculum Development and Research Center, Natchitoches
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 65 144p.

LABOR MARKET; *OCCUPATIONAL SURVEYS; EMPLOYMENT OPPORTUNITIES; *SERVICE OCCUPATIONS; *SALES OCCUPATIONS; *OCCUPATIONAL INFORMATION; *EMPLOYMENT PROJECTIONS; INDIVIDUAL CHARACTERISTICS; EMPLOYMENT STATISTICS; EMPLOYMENT QUALIFICATIONS; OCCUPATIONS; EMPLOYMENT PATTERNS; EQUAL OPPORTUNITIES (JOBS); EMPLOYMENT PRACTICES; EDUCATIONAL NEEDS
LOUISIANA

The objective was to determine the manpower and training needs for the state so that trade and vocational-technical school training could be more realistic. The report consists of three studies, using the questionnaire method and stratified random samples. A sample of 94 firms employing 2,513 workers in the fields of auto dealers, service and repair shops, revealed: (1) a need for a large number of trained mechanics and repairmen, (2) no experience requirements for 26 percent of the occupations, and (3) 44 percent of the jobs required a high school graduation. A sample of 16 respondents employing 204 in the fields of miscellaneous retail stores revealed: (1) The number of men and women employed are about equal, (2) Almost 50 percent were in the 46-65 age group, and (3) 46 percent of the jobs required high school graduation. Findings from a sample of 67 respondents employing 4,832 workers in miscellaneous services were: (1) 32 percent of the occupations had no experience requirement, (2) 11 percent of the employees were under 21 years of age, and (3) 49 percent of these jobs required high school graduation. Each study includes study highlights, findings, summary and conclusion. Tables, pie charts and graphs for detailed break-downs are also provided. Definitions of major occupational groups are in the appendix. (MM)

VT 002 574

LOUISIANA STUDY OF MANPOWER AND TRAINING NEEDS

- **AUTO DEALERS, SERVICES, REPAIR SHOPS**
- **MISCELLANEOUS RETAIL STORES**
- **MISCELLANEOUS SERVICES**

In Cooperation With:

Research and Statistics Unit
Employment Security Division
Louisiana Department of Labor

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT 002 574

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- **AUTO DEALERS, SERVICES, REPAIR SHOPS**

STUDY HIGHLIGHTS

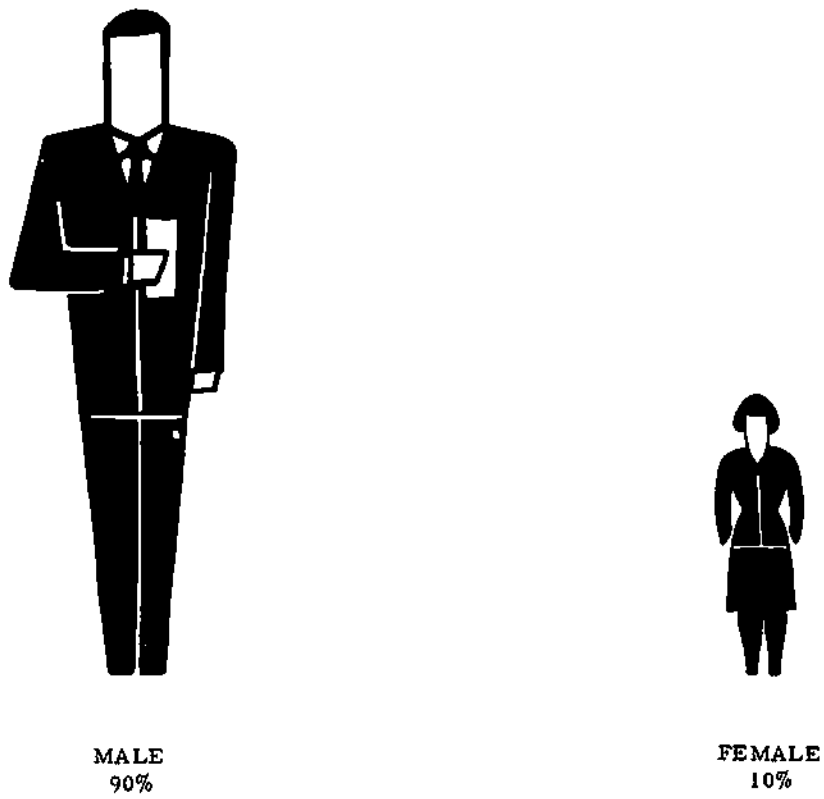


FIGURE I: DISTRIBUTION BY SEX IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

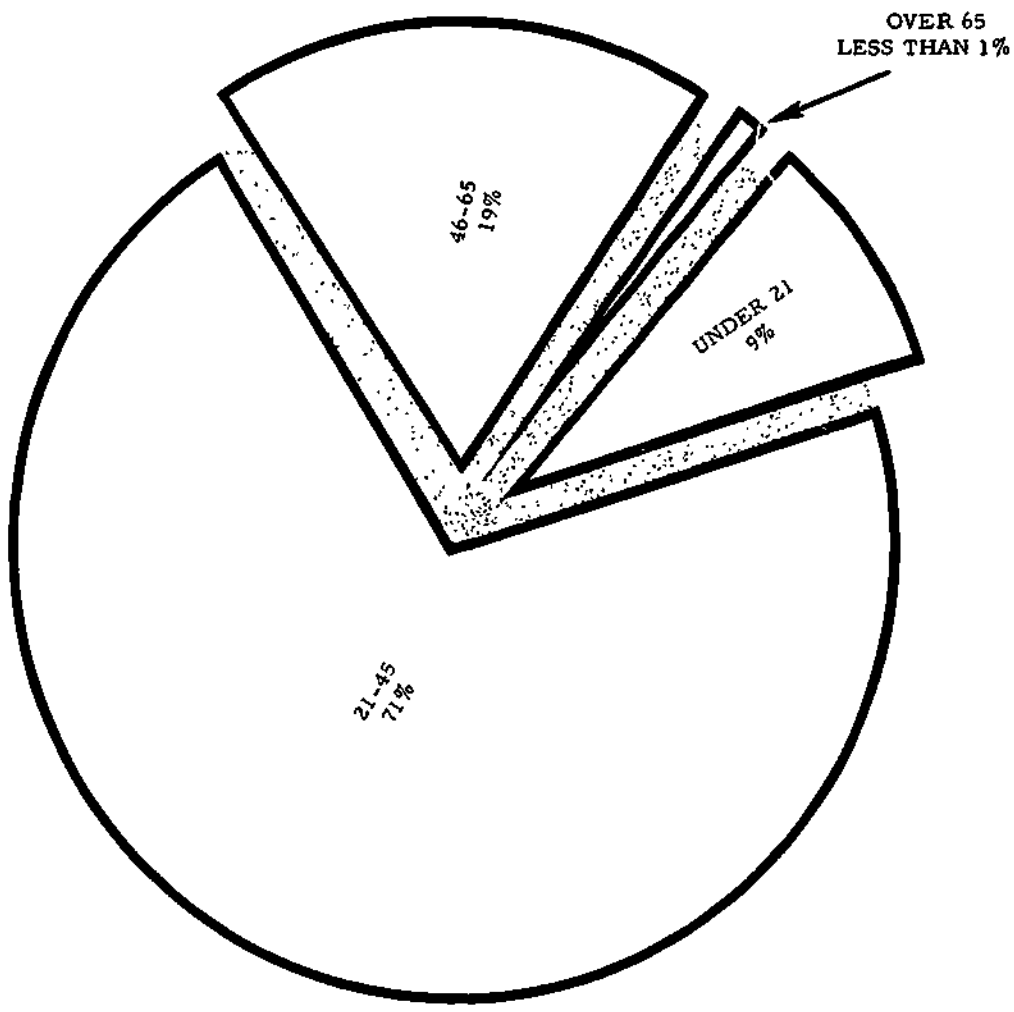


FIGURE II: DISTRIBUTION OF WORKERS BY AGE GROUPS IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

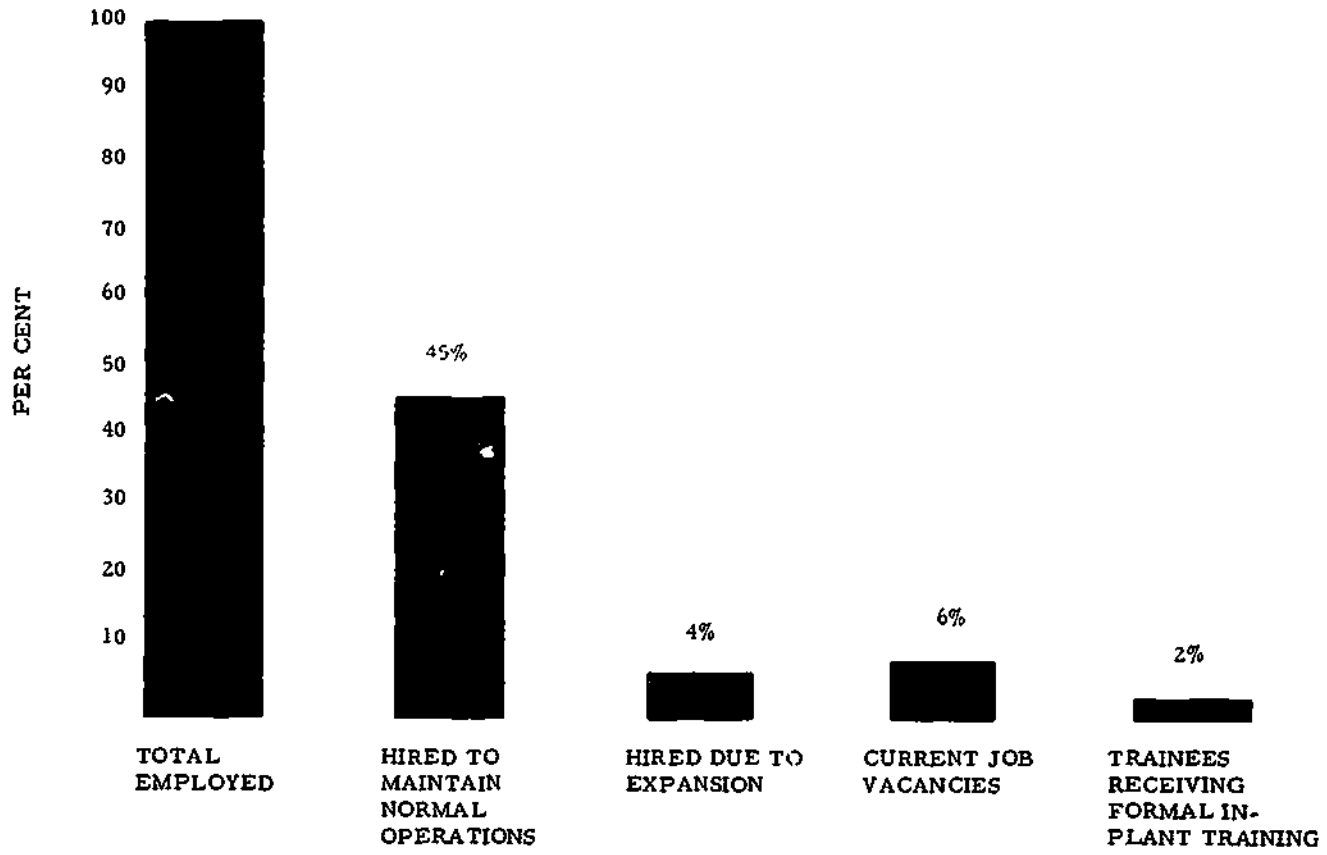


FIGURE III: DISTRIBUTION OF WORKER HIRES, VACANCIES, AND TRAINEES IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

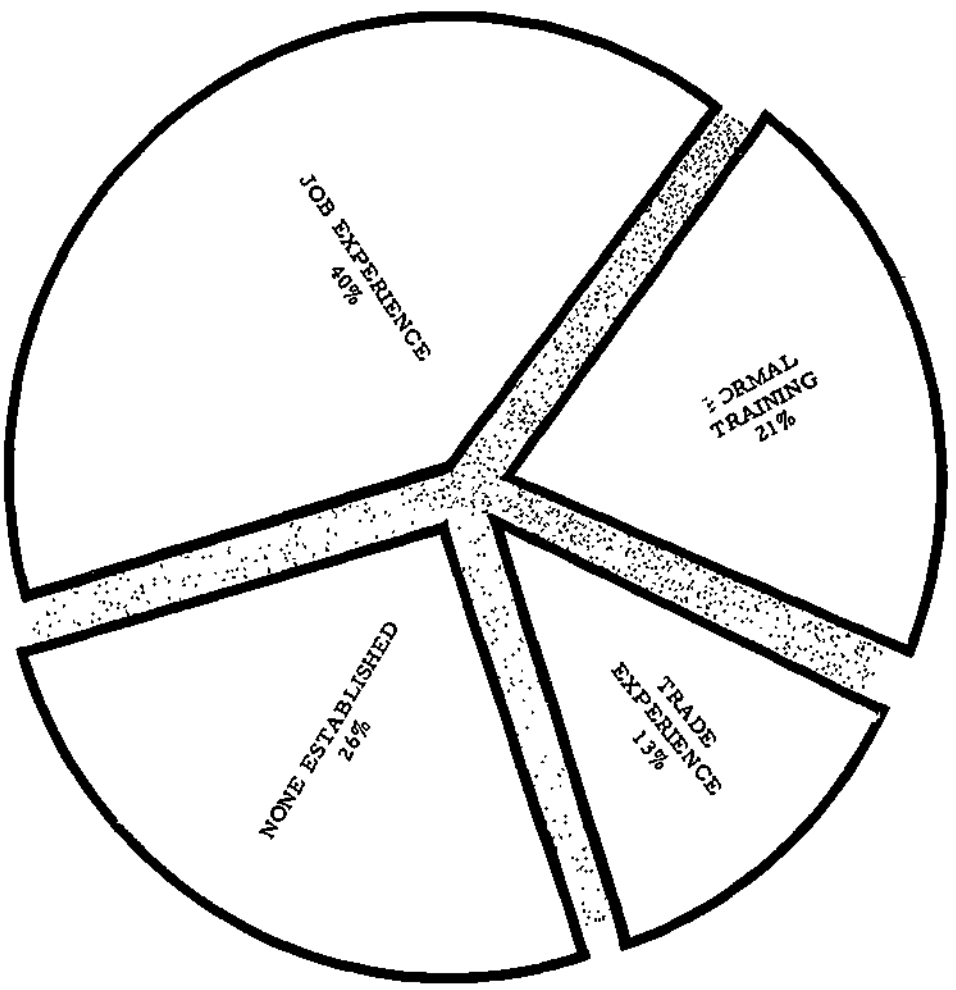


FIGURE IV: EXPERIENCE REQUIREMENTS OF AUTO DEALERS, SERVICES, AND REPAIR SHOPS

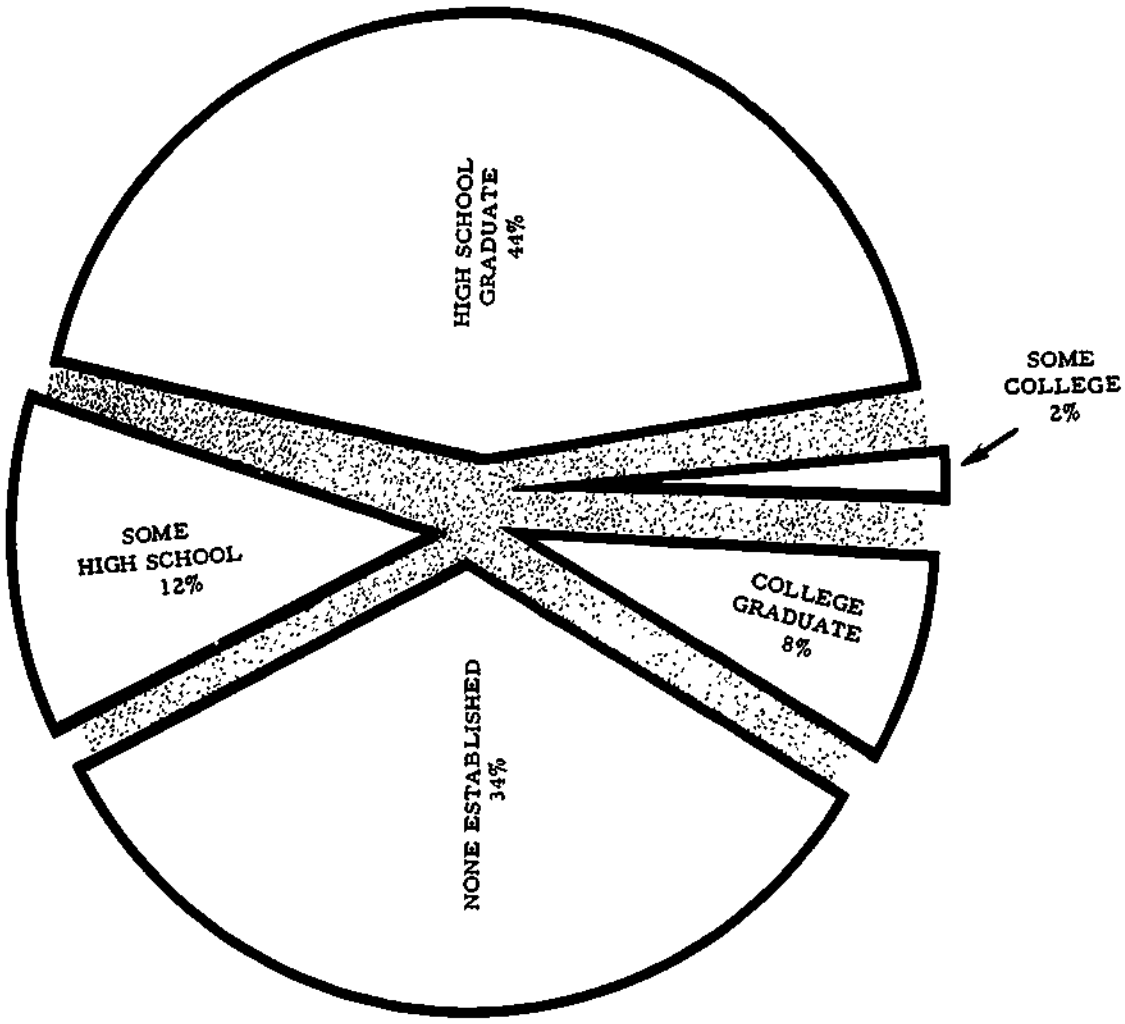


FIGURE V: EDUCATIONAL REQUIREMENTS FOR AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

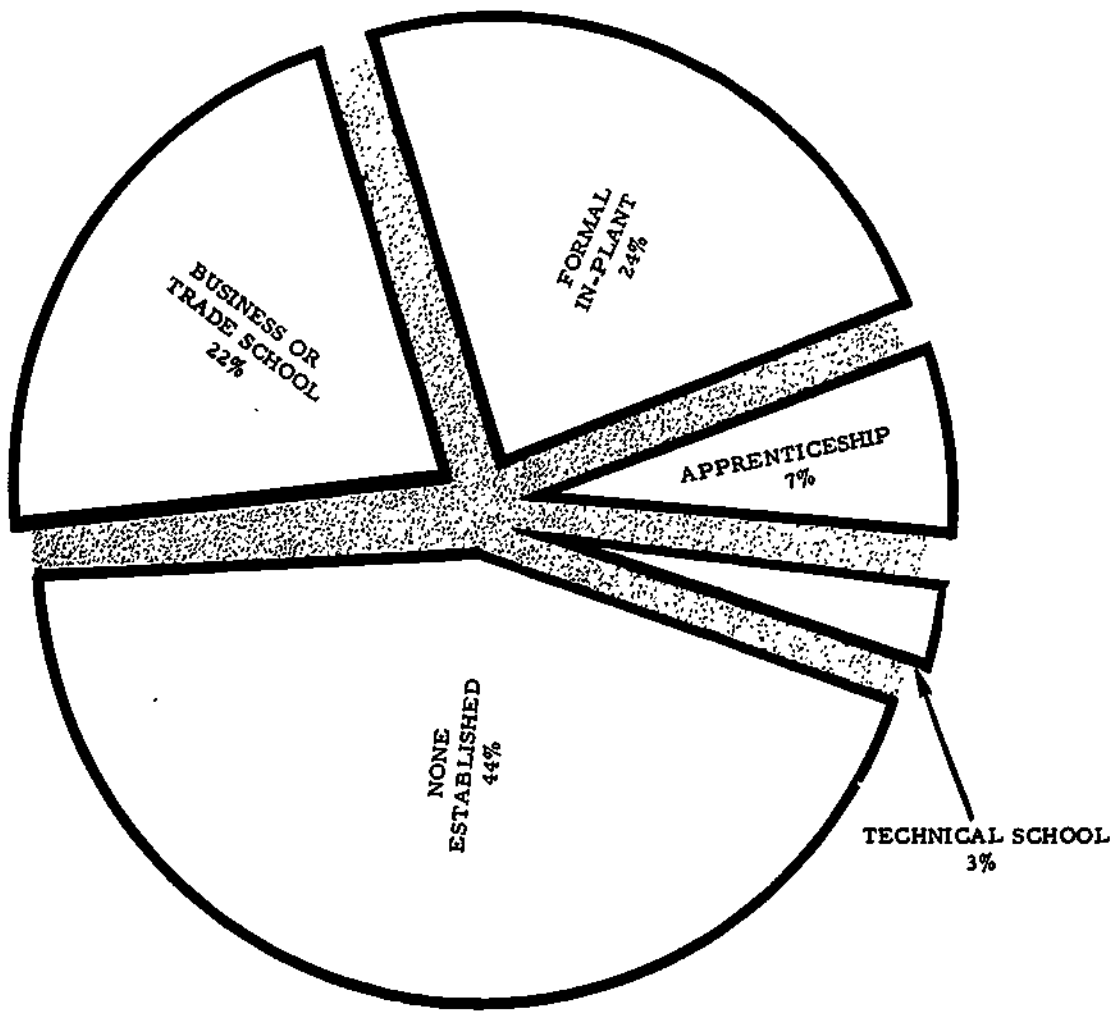


FIGURE VI: TRAINING REQUIREMENTS FOR AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

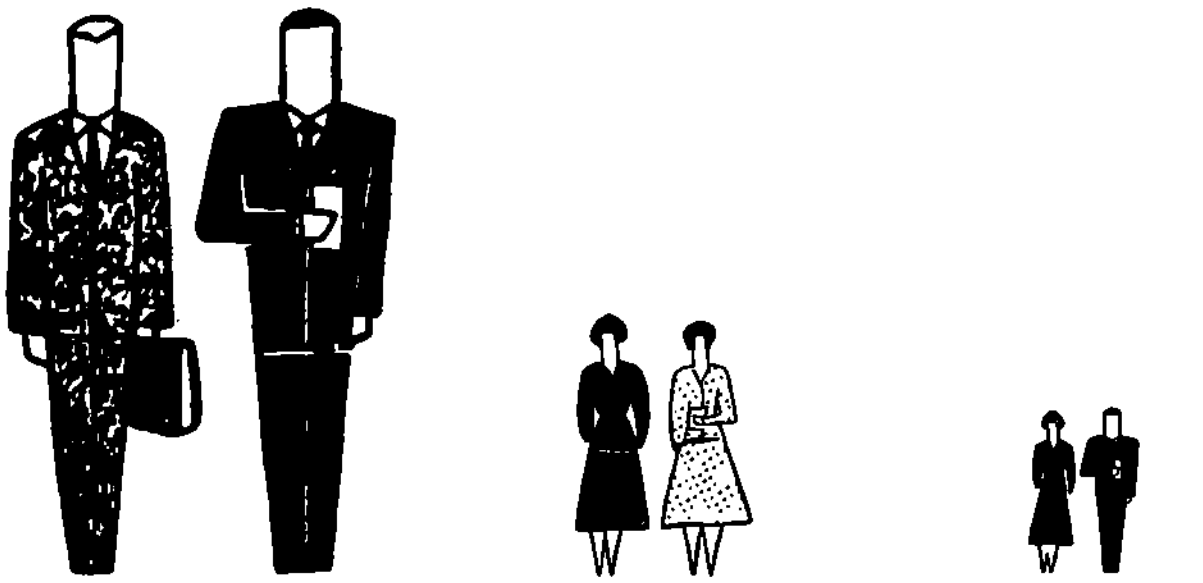


FIGURE VII: PREFERENCE TO HIRE EQUALLY QUALIFIED PERSONNEL IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

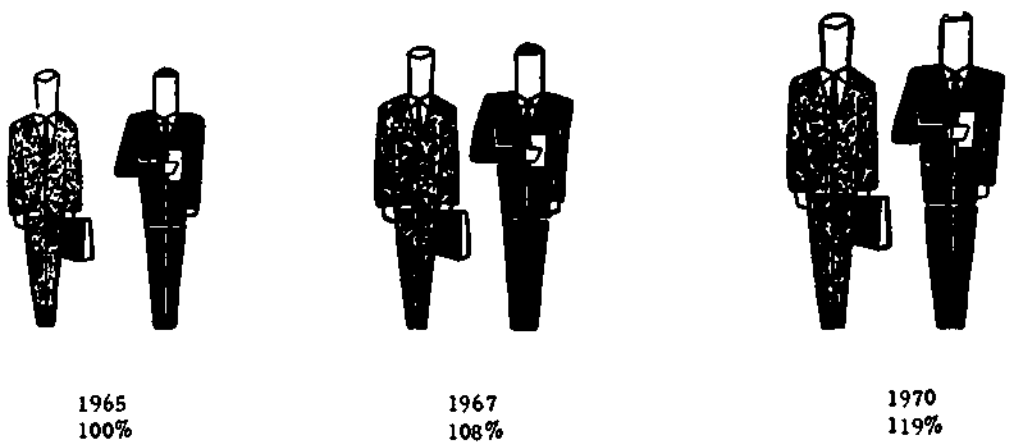


FIGURE VIII: ESTIMATED GROWTH IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

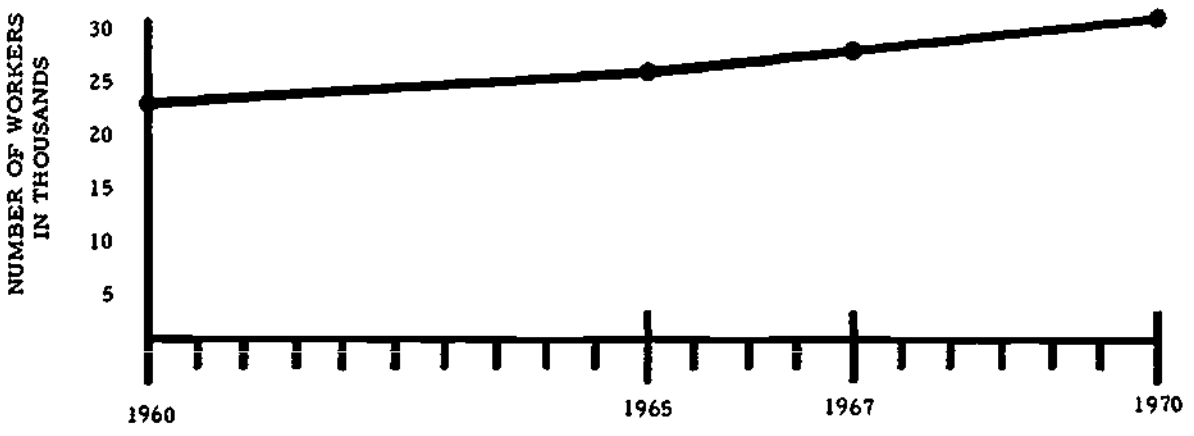


FIGURE IX: ESTIMATED NUMBER OF WORKERS IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS, 1960-1970

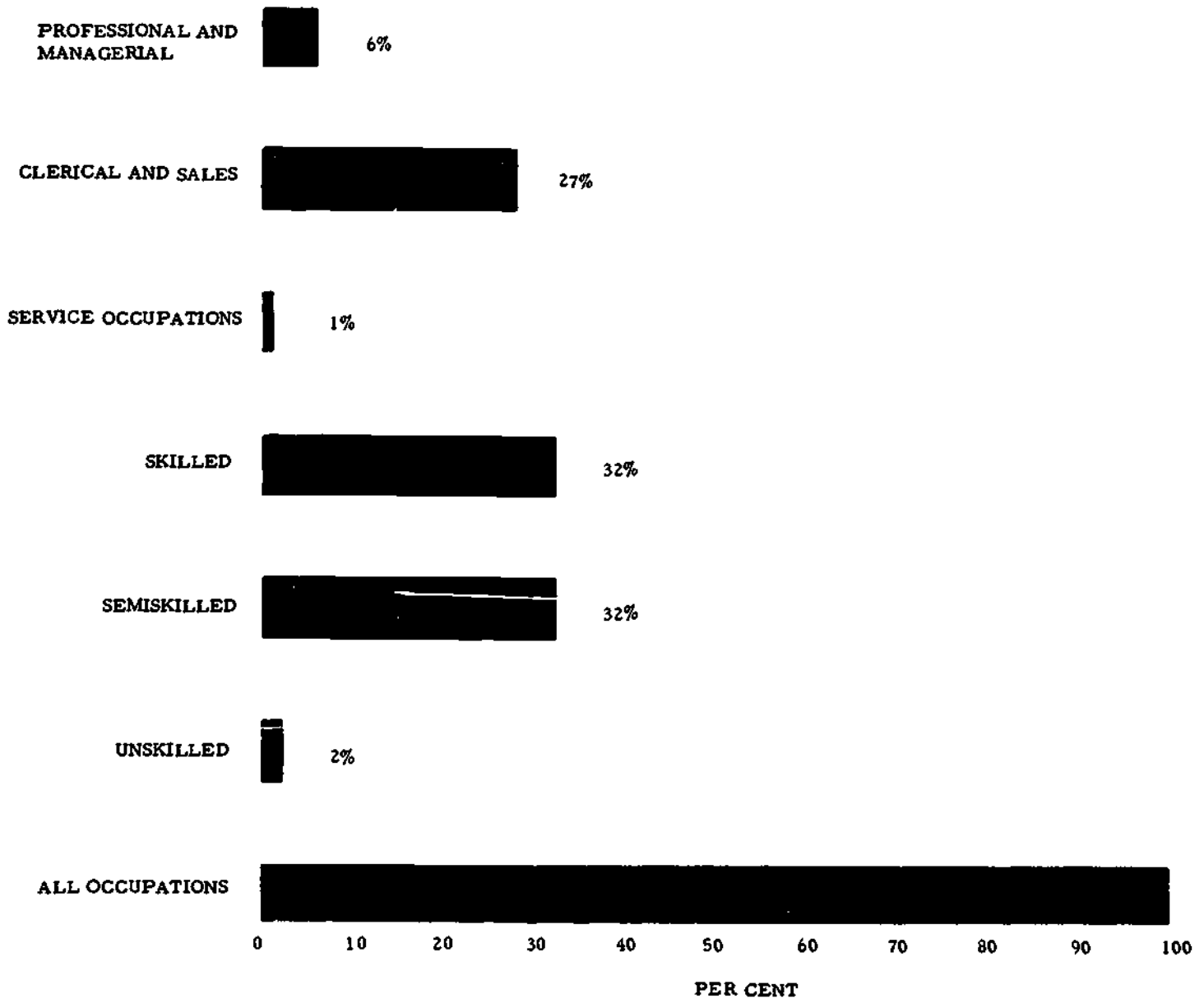


FIGURE X: DISTRIBUTION OF JOBS IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS IN 1965

LOUISIANA STUDY OF MANPOWER AND TRAINING NEEDS IN AUTO DEALERS, SERVICES, AND REPAIR SHOPS OCCUPATIONS

Introduction. The purpose of this study was to determine the manpower and training needs for technical, skilled, office, medical and health occupations in Louisiana. State-operated trade and vocational-technical schools offer training which prepares students for employment. The schools' training programs must be realistic in the light of actual or anticipated opportunities for gainful employment. Employment opportunities and training requirements in the Auto Dealers, Services, and Repair Shops industry have been indicated in this section of this report.

Procedures. In order to determine the employment opportunities and training needs in Louisiana, a survey of selected occupations was conducted on a state-wide basis, covering both manufacturing and non-manufacturing industries. Data were collected throughout the state by interviews conducted by trained personnel of the Division of Employment Security, Louisiana Department of Labor. These data were collated and expanded by the Research and Statistics Unit, Division of Employment Security, Louisiana Department of Labor. The report of findings was prepared and issued by the Vocational Curriculum Development and Research Center, Natchitoches Trade School.

The data reported in this study were obtained from personal interviews of 94 firms employing 2,513 workers. This

stratified random sample represents 10.8 per cent of the Auto Dealers, Services, and Repair Shops occupations in Louisiana. This sample was selected to include: small, medium-sized and large units, from the standpoint of employment; and a cross section of the activities of the industry.

Definition of terms. The definitions of the following terms will be applicable for this study.

> Services--The Division as a Whole. This division includes establishments primarily engaged in rendering a wide variety of services to individuals and business establishments. Hotels and other lodging places; establishments providing personal, business, repair, and amusement services; medical, legal, engineering, and other professional services; educational institutions; nonprofit membership organizations; and other miscellaneous services are included.

> Retail Trade--The Division as a Whole. Retail Trade includes establishments engaged in selling merchandise for personal, household, or farm consumption, and rendering services incidental to the sale of the goods. In general, retail establishments are classified by kinds of business according to the principal lines of commodities sold (groceries, hardware, etc.), or the usual trade designation (drug store, cigar store, etc.). Some of the important characteristics of retail trade establishments are: the establishment is usually a place of business and is engaged in activities to attract the general public to buy; the establishment buys or receives merchandise as well as sells; the establishment may process its products, but such processing is incidental or subordinate to selling, the establishment is considered as retail in the trade; and the establishment sells to customers for personal, household, or farm use. Not all of these characteristics need be present and some are modified by trade practice.[1]

The major group applicable to this study has been illustrated and defined in Appendix A.

---

[1]Technical Committee On Industrial Classification, Office of Statistical Standards, Standard Industrial Classification Manual (Washington, D. C.: U. S. Government Printing Office, 1957), p. 153.

The various job titles or occupations have been defined and listed in Appendix B.

Findings. In 1965, 23,174 persons were employed in Louisiana in Auto Dealers, Services, and Repair Shops Occupations. There were 20,916 men, 90 per cent, and 2,258 women, 10 per cent employed in fifty-six different jobs. Table I lists the job titles or occupations, the Dictionary of Occupational Titles code numbers, and the distribution of workers according to sex. Study of Table I will reveal there were seven professional and managerial occupations, twenty clerical and sales occupations, six service occupations, nine skilled occupations, twelve semi-skilled occupations, and two un-skilled occupations listed in this section of the study.

The nine skilled occupations contained 32 per cent of the workers. One job classification, mechanics and repairmen D.O.T. 5-81, alone contained 25 per cent of all the workers. The skilled occupations when combined with the semi-skilled, and clerical and sales occupations contained 91 per cent of all the workers.

Almost three-fourths of the workers were in the 21 - 45 years age group. Slightly more than 9 per cent of the workers were under 21 years of age. Study of Table II will reveal that there was less than 1 per cent over 65 years of age.

Table III reflects that 45 percent of the total work force were hired during the past year to maintain normal operations. This high percentage could contain possible inaccuracies, however,

many of the jobs are subject to variables that cause a greater mobility of the work force when compared to other occupations. Four per cent were hired due to expansion. Six per cent of the job classifications contained current job vacancies while 2 per cent of the work force were receiving formal in-plant training. One job classification, mechanics and repairmen, D.O.T. 5-81, should be singled out for special mention. There is an immediate need for a large number of trained men in this occupation. Study of Table III will reveal the distribution of hires, vacancies, and in-plant trainees listed according to the percentage of total workers in each job title.

The approximate range of hourly entry wages for the jobs or occupations in this section of the study have been arranged in Table IV. Some of these figures will indicate the range; the others will indicate the exact entry wage. In some cases the entry wage was not available. Eleven of the jobs listed indicate some firms pay an entry wage of less than one dollar per hour.

Table V reflects the percentage distribution of experience requirements for the job classifications or occupations. No experience requirements had been established for 26 per cent of the occupations. Job experience was required for 40 per cent of the occupations while trade experience was required for 13 per cent. Job experience indicates work experience within the exact job title in an identical industry. Trade experience would indicate work experience in the same general

area or trade but not necessarily within the same industry. Twenty-one per cent of the jobs surveyed required completion of a formal training program for employment.

Education requirements for occupations in this section of the study are not firmly established. Study of Table VI will reveal that 34 per cent of the job classifications had no educational requirements for employment. Twelve per cent of the occupations required some high school education and 44 per cent of the jobs required high school graduation. Only 2 per cent of the jobs required some college, while 8 per cent required college graduation.

The state-operated trade and vocational-technical schools could provide training for those occupations which did not require some college or college graduation. This group eligible for training would comprise 90 percent of the workers in the industry.

Table VII lists the training requirements by percentage distribution. Forty-four per cent of the occupations have had no training requirements established. Seven per cent of the job classifications required apprenticeship training. Twenty-two per cent required business or trade school training and 3 per cent required technical school training. Twenty-four per cent of the jobs required formal in-plant training.

The greater preference to hire only men in these occupations is reflected in Table VIII. Eighty-nine per cent of the occupations reported preference for men while only 8

per cent of the employers preferred equally qualified women. Only 3 per cent of the occupations reported could be filled by either sex with no difference in preference by the employer. Preferences to employ equally qualified men or women might be compared with actual employment where currently 90 per cent male and 10 per cent female comprise the work force.

Table IX reveals the estimated required employment in Auto Dealers, Auto Services, and Auto Repair Shops occupations for 1967 and 1970. An additional 1,762 workers will be required for 1967 bringing the estimated total employment to 24,936 from the present 23,174. For the five-year period of 1965-1970, an additional 4,398 employees will be required and will bring the work force to an estimated total of 27,572 employees.

Summary and conclusion. The work force in the occupations listed in this section of the study consisted of an estimated 23,174 employees, 90 per cent men and 10 per cent women. Seventy-one per cent of the workers were in the prime age group of 21-45 years. Less than 1 per cent were over 65 years of age. There was a great deal of hiring to maintain normal operations during the past year, some 45 per cent of the total work force. This high percentage could be the result of some duplications and could contain other possible inaccuracies, however, many of the jobs are subject to variables which cause a higher degree of labor mobility than for other occupations. The total work force increased 4 per cent due to expansion, had 6 per cent current job vacancies, and had 2 per cent receiving

formal in-plant training. One job classification, mechanics and repairmen, D.O.T. 5-81, has an immediate need for a large number of trained men.

By percentage, there were no experience requirements for 26 per cent of the occupations, job experience was required for 40 per cent, trade experience was required for 13 per cent, and formal training was required for 21 per cent of the jobs. There were no education requirements for 34 per cent of the jobs. Some high school was required for 12 per cent, high school graduation for 44 per cent, some college for 2 per cent, and college graduation for 8 per cent of the occupations. There were no training requirements established for 44 per cent of the occupations. Formal in-plant training was required for 24 per cent of the jobs, business or trade school for 22 per cent, apprenticeship training for 7 per cent, and technical school training for 3 per cent.

There was a definite preference to hire equally qualified men, and the actual employment percentages indicated that this was carried out in actual practice. The hourly wage range for entry workers was from a 62¢ per hour low to a $3.50 per hour high.

The industry has experienced a slow growth over the past five years, but it is estimated that it will accelerate in the years ahead to the extent that employment in 1967 will be 108 per cent of 1965 and employment in 1970 will be 119 per cent of 1965. It is estimated that 4,398 additional employees will be needed by 1970. The state-operated trade and vocational-

technical schools offer training which prepares students for employment. These schools can provide training for those occupations which do not require some college or college graduation. As indicated in this report these occupations comprise 90 per cent of the workers in the industry which would be 3,958 of the additional employees needed by 1970. The trade and vocational-technical schools do not offer specific training for such jobs as maid, porter, janitor, glass grinder, etc. They do offer instruction that can be advantageously used by persons seeking employment in those occupations listed in Table X.

Additional study of these occupations is recommended in order to determine if any changes are required in existing training programs. Those job classifications not listed in Table X that require no college education should also be studied to determine if specific training courses should be established or existing programs adapted to include such training.

State-operated trade and vocational-technical schools should plan their instructional program to train these 2,762 additional workers that will be required by 1970.

TABLE I

AUTO DEALERS, SERVICES, REPAIRS
OCCUPATIONAL DISTRIBUTION BY TITLE AND SEX
S.I.C. CODES 55 & 75

Job Title	D.O.T. Code	Workers In This Job			
		Male	Per Cent	Female	Per Cent
Auditor	0-01	37	100%	---	---
Public Relations	0-06	15	100%	---	---
Retail Manager	0-72	498	100%	---	---
Department Manager	0-74	46	100%	---	---
Credit Manager	0-85	95	100%	---	---
Managers and Officials	0-97	407	96%	15	4%
Managers	0-98	173	100%	---	---
Bookkeepers and Cashiers	1-01	241	30%	556	70%
Bookkeeping Mach. Oper.	1-02	---	---	18	100%
General Clerk	1-04	---	---	148	100%
General Office Clerk	1-05	98	11%	799	89%
Clerk	1-07	37	50%	37	50%
File Clerk	1-17	---	---	2	100%
General Industry Clerk	1-18	53	78%	15	22%
Parts Runner	1-23	2	100%	---	---
Office Machine Operator	1-25	32	50%	32	50%
Payroll Clerk	1-26	---	---	2	100%
Secretary	1-33	---	---	118	100%
Ship Clerk	1-34	15	100%	---	---
Stenographer and Typist	1-37	---	---	233	100%
Stock Clerk	1-38	49	96%	2	4%
Telephone Operator	1-42	---	---	56	100%
Claim Agent	1-48	2	100%	---	---
Sales Person	1-75	1568	100%	---	---
Consumer Salesman	1-80	1989	100%	---	---
Salesman, Except to Cons.	1-85	116	100%	---	---
Salesman, Except to Cons.	1-86	8	100%	---	---

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Maid	2-06	---	---	109	100%
Chamber Maid	2-24	---	---	37	100%
Porter	2-26	6	100%	---	---
Watchman	2-61	2	100%	---	---
Janitor	2-84	52	100%	---	---
Porter	2-86	90	100%	---	---
Upholsterer	4-35	36	100%	---	---
Machinist	4-75	34	100%	---	---
Welder	4-85	11	100%	---	---
Painter	5-16	255	100%	---	---
Painter	5-16	2	100%	---	---
Gin Pole Operator	5-73	2	100%	---	---
Mechanics and Repair	5-81	6811	100%	---	---
Repairman	5-83	139	100%	---	---
Foreman	5-97	199	100%	---	---
Glass Grinder	6-65	30	100%	---	---
Machinist	6-78	34	100%	---	---
Painter	7-16	55	41%	79	59%
Driver	7-36	477	100%	---	---
Ser. Sta.-Garage Attend.	7-60	4771	100%	---	---
Miscellaneous Mechanic	7-81	426	100%	---	---
Mechanic and Repairman	7-83	60	100%	---	---
Greaser	7-85	1225	100%	---	---
Operator	7-88	75	100%	---	---
Retreader	7-89	61	100%	---	---
Auto Apprentice	7-99	60	100%	---	---
Auto Mechanic Apprentice	7-99	6	100%	---	---
Wash Rack Boy	9-02	63	100%	---	---
Auto Washer	9-85	453	100%	---	---
Totals		20916	90%	2258	10%

TABLE II

AUTO DEALERS, SERVICES, REPAIRS
OCCUPATIONAL DISTRIBUTION OF EMPLOYMENT BY AGE GROUPS
S.I.C. CODES 55 & 75

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Auditor	---	---	37	100%	---	---	---	---
Public Relations	---	---	15	100%	---	---	---	---
Retail Manager	---	---	191	38%	307	62%	---	---
Department Manager	15	33%	31	67%	---	---	---	---
Credit Manager	---	---	78	82%	17	18%	---	---
Managers and Officials	---	---	273	65%	149	35%	---	---
Managers	---	---	102	59%	71	41%	---	---
Bookkeepers and Cashiers	10	1%	626	79%	146	18%	15	2%
Bookkeeping Mach. Oper.	1	5%	17	95%	---	---	---	---
General Clerk	102	69%	30	20%	16	11%	---	---
General Office Clerk	124	14%	725	81%	48	5%	---	---
Clerk	---	---	74	100%	---	---	---	---
File Clerk	2	100%	---	---	---	---	---	---
General Industry Clerk	17	25%	47	69%	4	6%	---	---
Parts Runner	2	100%	---	---	---	---	---	---
Office Machine Operator	---	---	64	100%	---	---	---	---
Payroll Clerk	---	---	2	100%	---	---	---	---
Secretary	---	---	118	100%	---	---	---	---
Ship Clerk	---	---	15	100%	---	---	---	---
Stenographer and Typist	32	14%	198	85%	3	1%	---	---
Stock Clerk	15	29%	33	65%	3	6%	---	---
Telephone Operator	2	4%	52	92%	2	4%	---	---
Claim Agent	---	---	2	100%	---	---	---	---
Sales Person	137	9%	1326	84%	105	7%	---	---
Consumer Salesman	---	---	1450	73%	522	26%	17	1%
Salesman, Except to Cons.	---	---	54	47%	62	53%	---	---
Salesman, Except to Cons.	---	---	8	100%	---	---	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Maid	---	---	72	66%	37	34%	---	---
Chamber Maid	---	---	---	---	37	100%	---	---
Porter	---	---	6	100%	---	---	---	---
Watchman	---	---	---	---	2	100%	---	---
Janitor	---	---	15	29%	37	71%	---	---
Porter	2	2%	36	40%	52	58%	---	---
Upholsterer	---	---	34	94%	2	6%	---	---
Machinist	---	---	34	100%	---	---	---	---
Welder	---	---	11	100%	---	---	---	---
Painter	---	---	171	67%	84	33%	---	---
Painter	---	---	2	100%	---	---	---	---
Gin Pole Operator	---	---	2	100%	---	---	---	---
Mechanics and Repair	218	3%	4737	69%	1842	27%	14	-1%
Repairman	---	---	139	100%	---	---	---	---
Foreman	---	---	105	53%	94	47%	---	---
Glass Grinder	---	---	30	100%	---	---	---	---
Machinist	---	---	23	68%	11	32%	---	---
Painter	34	25%	75	56%	25	19%	---	---
Driver	---	---	368	77%	109	23%	---	---
Ser. Sta.-Garage Attendants	970	20%	3237	68%	555	11%	9	-1%
Miscellaneous Mechanic	131	31%	254	59%	41	10%	---	---
Mechanic and Repairman	15	25%	45	75%	---	---	---	---
Greaser	154	13%	950	77%	121	10%	---	---
Operator	---	---	75	100%	---	---	---	---
Retreader	---	---	61	100%	---	---	---	---
Auto Apprentice	15	25%	45	75%	---	---	---	---
Auto Mechanic Apprentice	---	---	6	100%	---	---	---	---
Wash Rack Boy	6	10%	57	90%	---	---	---	---
Auto Washer	191	42%	260	57%	2	1%	---	---
Totals	2195	9%	16418	71%	4506	19%	55	-1%

TABLE III

AUTO DEALERS, SERVICES, REPAIRS
OCCUPATIONAL DISTRIBUTION OF WORKER HIRES - VACANCIES - TRAINEES
S.I.C. CODES 55 & 75

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Auditor	---	---	---	---	---	---	---	---
Pub. Relations	---	---	15	100%	---	---	---	---
Retail Manager	209	42%	3	-1%	41	8%	---	---
Depart.Manager	15	33%	15	33%	---	---	---	---
Credit Manager	---	---	---	---	---	---	---	---
Mgrs. & Off'ls.	1	-1%	---	---	2	-1%	1	-1%
Managers	15	9%	---	---	---	---	---	---
Bkkprs & Cash'r.	86	11%	16	2%	---	---	6	-1%
Bkkping Mach.Op.	---	---	---	---	---	---	---	---
General Clerk	---	---	15	10%	---	---	---	---
Gen.Off.Clerk	164	18%	---	---	---	---	17	2%
Clerk	---	---	---	---	---	---	---	---
File Clerk	---	---	---	---	---	---	---	---
Gen.Ind.Clerk	30	44%	---	---	---	---	2	3%
Parts Runner	2	100%	---	---	---	---	---	---
Off. Mach. Op.	---	---	15	23%	---	---	---	---
Payroll Clerk	---	---	---	---	---	---	---	---
Secretary	2	2%	---	---	1	1%	---	---
Ship Clerk	---	---	---	---	---	---	---	---
Steno.& Typist	9	4%	---	---	6	3%	---	---
Stock Clerk	---	---	---	---	---	---	2	4%
Tel. Op.	18	32%	---	---	---	---	---	---
Claim Agent	2	100%	---	---	---	---	---	---
Sales Person	326	21%	45	3%	84	5%	17	1%
Cons. Salesman	453	23%	113	6%	85	4%	46	2%
Salesman, Except to Consumer	6	5%	---	---	---	---	---	---

TABLE III (Continued)

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Salesman, Except to Consumer	---	---	---	---	---	---	3	38%
Maid	---	---	---	---	---	---	---	---
Chamber Maid	---	---	---	---	---	---	---	---
Porter	---	---	---	---	---	---	---	---
Watchman	---	---	---	---	---	---	---	---
Janitor	---	---	---	---	---	---	---	---
Porter	1	1%	---	---	---	---	---	---
Upholsterer	---	---	---	---	---	---	---	---
Machinist	11	32%	---	---	---	---	11	32%
Welder	---	---	---	---	---	---	---	---
Painter	32	13%	---	---	2	1%	2	1%
Painter	---	---	---	---	---	---	---	---
Gin Pole Oper.	---	---	---	---	---	---	---	---
Mechanic & Rep.	1057	16%	218	3%	307	5%	62	1%
Repairman	15	11%	---	---	---	---	---	---
Foreman	15	8%	---	---	---	---	---	---
Glass Grinder	---	---	---	---	---	---	---	---
Machinist	11	32%	---	---	---	---	11	32%
Painter	26	19%	---	---	---	---	---	---
Driver	309	65%	---	---	---	---	---	---
Attendants, Ser. Station & Gar.	7036	95%	36	-1%	215	3%	9	-1%
Misc. Mech.	131	31%	15	4%	---	---	11	3%
Mech. & Repair.	---	---	---	---	---	---	---	---
Greaser	280	23%	15	1%	15	1%	---	---
Operator	---	---	---	---	---	---	---	---
Retreader	15	25%	---	---	---	---	---	---
Auto Apprentice	15	25%	---	---	---	---	---	---
Auto Mech. App.	3	50%	---	---	---	---	6	100%
Wash Rack Boy	3	5%	---	---	---	---	---	---
Auto Washer	151	33%	---	---	6	1%	---	---
Totals	10449	45%	521	4%	764	6%	206	2%

TABLE IV

AUTO DEALERS, SERVICES, REPAIRS
OCCUPATIONAL OF ENTRY WAGES
S.I.C CODES 55 & 75

Job Title	Approximate Entry Wage For This Job -Range-	
Auditor	2.50	
Public Relations	Not Available	
Retail Manager	1.08 -	1.80
Department Manager	1.25	
Credit Manager	1.87 -	2.82
Managers and Officials	1.50 -	2.89
Managers	1.62 -	2.00
Bookkeepers and Cashiers	1.00 -	2.27
Bookkeeping Machine Operator	1.25 -	1.73
General Clerk	1.03 -	1.25
General Office Clerk	.80 -	1.75
Clerk	1.16	
File Clerk	1.25	
General Industry Clerk	1.25 -	1.81
Parts Runner	1.25	
Office Machine Operator	1.50 -	2.25
Payroll Clerk	1.25	
Secretary	1.25 -	2.00
Ship Clerk	1.51	
Stenographer and Typist	1.03 -	2.50
Stock Clerk	.81 -	1.16
Telephone Operator	1.00 -	1.10
Claim Agent	Not Available	
Sales Person	.90 -	3.00
Consumer Salesman	1.18 -	2.50
Salesman, Except to Consumer	2.50	
Salesman, Except to Consumer	Not Available	
Maid	Not Available	
Chamber Maid	.79	
Porter	Not Available	
Watchman	1.25	
Janitor	.92	
Porter	.81 -	1.25
Upholsterer	Comm.	
Machinist	1.25	
Welder	3.25	
Painter	1.25 -	2.50
Painter	2.16	
Gin Pole Operator	Not Available	
Mechanics and Repair	1.16 -	2.88
Repairman	1.00 -	2.20

TABLE IV (Continued)

Job Title	Approximate Entry Wage For This Job -Range-		
Foreman	1.50	-	3.50
Glass Grinder		Comm.	
Machinist		2.50	
Painter	1.00	-	1.35
Driver	1.05	-	1.50
Service Station-Garage Attendants	.62	-	2.00
Miscellaneous Mechanic	.72	-	1.30
Mechanic and Repairman		Comm.	
Greaser	.62	-	1.44
Operator		1.50	
Retreader	1.25	-	2.75
Auto Apprentice	1.16	-	1.30
Auto Mechanic Apprentice		Not Available	
Wash Rack Boy	.85	-	1.25
Auto Washer	.62	-	1.25

TABLE V

S.I.C. CODES 55 & 75

Job Title	Experience Requirements by Job Title			
	None Established	Job Experience	Trade Experience	Formal Training
Auditor	100%	---	---	---
Public Relations	---	---	100%	---
Retail Manager	36%	11%	53%	---
Department Manager	100%	---	---	---
Credit Manager	---	29%	29%	42%
Managers and Officials	18%	45%	33%	4%
Managers	---	59%	41%	---
Bookkeepers and Cashiers	16%	46%	5%	33%
Bookkeeping Mach. Oper.	6%	47%	---	47%
General Clerk	49%	---	---	51%
General Office Clerk	28%	15%	4%	53%
Clerk	100%	---	---	---
File Clerk	100%	---	---	---
Gen. Industry Clerk	70%	3%	5%	22%
Parts Runner	100%	---	---	---
Office Machine Operator	---	95%	---	5%
Payroll Clerk	100%	---	---	---
Secretary	44%	22%	---	34%
Ship Clerk	100%	---	---	---
Stenographer and Typist	27%	30%	---	43%
Stock Clerk	100%	---	---	---
Telephone Operator	6%	61%	---	33%
Claim Agent	---	---	---	100%
Sales Person	36%	21%	5%	38%
Consumer Salesman	43%	23%	11%	23%
Salesman, Except to Cons.	60%	---	---	40%
Salesman, Except to Cons.	---	---	---	100%
Maid	100%	---	---	---
Chamber Maid	100%	---	---	---
Porter	100%	---	---	---
Watchman	100%	---	---	---
Janitor	100%	---	---	---
Porter	100%	---	---	---
Upholsterer	---	86%	8%	6%
Machinist	68%	32%	---	---
Welder	---	100%	---	---
Painter	5%	84%	5%	6%
Painter	---	100%	---	---
Gin Pole Operator	100%	---	---	---
Mechanics and Repair	1%	59%	22%	18%
Repairman	---	100%	---	---

TABLE V (Continued)

Job Title	Experience Requirements by Job Title			
	None Established	Job Experience	Trade Experience	Formal Training
Foreman	---	57%	32%	11%
Glass Grinder	---	100%	---	---
Machinist	---	100%	---	---
Painter	100%	---	---	---
Driver	16%	8%	---	76%
Ser. Sta.-Gar. Attend.	33%	39%	10%	18%
Miscellaneous Mechanic	86%	1%	10%	3%
Mechanic and Repairman	---	100%	---	---
Greaser	55%	45%	---	---
Operator	100%	---	---	---
Retreader	---	39%	---	61%
Auto Apprentice	100%	---	---	---
Auto Mechanic App.	100%	---	---	---
Wash Rack Boy	100%	---	---	---
Auto Washer	83%	---	---	17%
Totals	26%	40%	13%	21%

TABLE VI

EDUCATION REQUIREMENTS BY PERCENTAGE
DISTRIBUTION FOR AUTO DEALERS, SERVICES, REPAIRS OCCUPATIONS
S.I.C. CODES 55 & 75

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Auditor	---	---	---	---	100%
Public Relations	---	---	---	---	100%
Retail Manager	---	22%	64%	14%	---
Department Manager	---	---	---	---	100%
Credit Manager	---	---	51%	49%	---
Manager & Officials	7%	13%	48%	25%	7%
Managers	---	8%	74%	10%	8%
Bookkeepers & Cashiers	2%	13%	75%	7%	3%
Bookkeeping Mach. Oper.	---	---	100%	---	---
General Clerk	---	---	100%	---	---
General Off. Clerk	15%	---	83%	2%	---
Clerk	---	50%	50%	---	---
File Clerk	---	---	100%	---	---
General Ind. Clerk	---	3%	97%	---	---
Parts Runner	---	---	100%	---	---
Office Mach. Operator	---	---	95%	5%	---
Payroll Clerk	---	---	100%	---	---
Secretary	---	---	100%	---	---
Shipping Clerk.	---	---	100%	---	---
Steno and Typist	---	6%	89%	5%	---
Stock Clerk	---	---	100%	---	---
Telephone Operator	---	27%	73%	---	---
Claim Agent	---	100%	---	---	---
Sales Persons	22%	3%	75%	---	---
Consumer Salesman	39%	12%	39%	10%	---
Salesman, Exc. to Cons.	---	---	100%	---	---
Salesman, Exc. to Cons.	---	---	---	---	100%

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Maid	100%	---	---	---	---
Chamber Maid	100%	---	---	---	---
Porter	100%	---	---	---	---
Watchman	100%	---	---	---	---
Janitor	71%	29%	---	---	---
Porter	100%	---	---	---	---
Upholsterer	83%	17%	---	---	---
Machinist	---	---	100%	---	---
Welder	100%	---	---	---	---
Painter	82%	16%	2%	---	---
Painter	---	---	100%	---	---
Gin Pole Operator	---	100%	---	---	---
Mechanics and Repairman	37%	34%	28%	1%	---
Repairman	22%	---	78%	---	---
Foreman	21%	23%	56%	---	---
Glass Grinder	100%	---	---	---	---
Machinist	100%	---	---	---	---
Painter	93%	---	7%	---	---
Driver	84%	15%	1%	---	---
Ser. Sta. & Gar. Attend.	54%	32%	14%	---	---
Miscellaneous Mechanics	36%	29%	35%	---	---
Mechanics and Repairman	100%	---	---	---	---
Greaser	54%	11%	35%	---	---
Operator	100%	---	---	---	---
Retreader	50%	25%	25%	---	---
Auto Apprentice	---	---	100%	---	---
Auto Mech. Appr.	---	100%	---	---	---
Wash Rack Boy	100%	---	---	---	---
Auto Washer	76%	---	24%	---	---
Totals	34%	12%	44%	2%	8%

TABLE VII

TRAINING REQUIREMENTS BY PERCENTAGE DISTRIBUTION
FOR AUTO DEALERS, SERVICES, REPAIRS OCCUPATIONS
S.I.C. CODES 55 & 75

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Auditor	100%	---	---	---	---
Public Relations	100%	---	---	---	---
Retail Manager	18%	---	6%	22%	54%
Department Manager	---	---	---	---	100%
Credit Manager	18%	---	18%	---	64%
Manager & Officials	63%	---	14%	5%	18%
Managers	14%	---	58%	21%	7%
Bookkeepers & Cashiers	44%	---	47%	---	9%
Bookkeeping Mach. Oper.	11%	---	89%	---	---
General Clerk	49%	---	51%	---	---
General Off. Clerk	19%	2%	49%	---	30%
Clerk	67%	---	---	---	33%
File Clerk	---	---	---	---	100%
General Ind. Clerk	51%	---	24%	3%	22%
Parts Runner	---	---	---	---	100%
Office Mach. Oper.	---	---	100%	---	---
Payroll Clerk	100%	---	---	---	---
Secretary	52%	---	46%	---	2%
Shipping Clerk	100%	---	---	---	---
Steno and Typist	60%	---	34%	---	6%
Stock Clerk	38%	---	---	---	62%
Telephone Operator	39%	---	53%	4%	4%
Claim Agent	---	---	100%	---	---
Sales Persons	30%	15%	---	---	55%
Consumer Salesman	43%	8%	9%	---	40%
Salesman, Exc. to Cons.	60%	---	---	---	40%
Salesman, Exc. to Cons.	---	---	---	---	100%

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Maid	100%	---	---	---	---
Chamber Maid	---	---	---	---	100%
Porter	---	---	---	---	100%
Watchman	100%	---	---	---	---
Janitor	71%	---	---	---	29%
Porter	55%	---	---	---	45%
Upholsterer	---	44%	47%	---	9%
Machinist	32%	---	68%	---	---
Welder	---	---	100%	---	---
Painter	41%	29%	15%	---	15%
Painter	100%	---	---	---	---
Gin Pole Operator	---	---	---	---	100%
Mechanics and Repairman	30%	12%	41%	7%	10%
Repairman	78%	---	---	---	22%
Foreman	23%	---	57%	1%	19%
Glass Grinder	---	50%	50%	---	---
Machinist	---	50%	50%	---	---
Painter	100%	---	---	---	---
Driver	16%	---	---	---	84%
Ser. Sta. & Gar. Attend.	61%	1%	1%	---	37%
Miscellaneous Mechanics	45%	11%	5%	---	39%
Mechanics and Repairman	---	50%	50%	---	---
Greaser	75%	---	---	---	25%
Operator	100%	---	---	---	---
Retreader	25%	---	---	---	75%
Auto Apprentice	40%	---	30%	---	30%
Auto Mech. Appr.	---	---	---	50%	50%
Wash Rack Boy	100%	---	---	---	---
Auto Washer	72%	---	---	---	28%
Totals	44%	7%	22%	3%	24%

TABLE VIII

PREFERENCE TO HIRE EQUALLY QUALIFIED MEN OR WOMEN
IN AUTO DEALERS, SERVICES, REPAIRS OCCUPATIONS
S.I.C. CODES 55 & 75

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Auditor	37	100%	---	---	---	---
Public Relations	15	100%	---	---	---	---
Retail Manager	498	100%	---	---	---	---
Department Manager	46	100%	---	---	---	---
Credit Manager	95	100%	---	---	---	---
Manager & Officials	407	96%	15	4%	---	---
Managers	173	100%	---	---	---	---
Bookkeepers & Cashiers	111	14%	379	48%	307	38%
Bookkeeping Mach. Oper	---	---	18	100%	---	---
General Clerk	---	---	148	100%	---	---
General Off. Clerk	15	2%	671	74%	211	24%
Clerk	37	50%	---	---	37	50%
File Clerk	---	---	2	100%	---	---
General Ind. Clerk	53	78%	15	22%	---	---
Parts Runner	2	100%	---	---	---	---
Office Mach. Operator	---	---	---	---	64	100%
Payroll Clerk	---	---	2	100%	---	---
Secretary	---	---	118	100%	---	---
Shipping Clerk	15	100%	---	---	---	---
Steno and Typist	60	26%	173	74%	---	---
Stock Clerk	49	96%	2	4%	---	---
Telephone Operator	---	---	56	100%	---	---
Claim Agent	2	100%	---	---	---	---
Sales Persons	1568	100%	---	---	---	---
Consumer Salesman	1928	97%	61	3%	---	---
Salesman, Exc. to Cons.	116	100%	---	---	---	---
Salesman, Exc. to Cons.	8	100%	---	---	---	---

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Maid	---	---	109	100%	---	---
Chamber Maid	---	---	37	100%	---	---
Porter	6	100%	---	---	---	---
Watchman	2	100%	---	---	---	---
Janitor	52	100%	---	---	---	---
Porter	90	100%	---	---	---	---
Upholsterer	36	100%	---	---	---	---
Machinist	34	100%	---	---	---	---
Welder	11	100%	---	---	---	---
Painter	257	100%	---	---	---	---
Gin Pole Operator	2	100%	---	---	---	---
Mechanics & Repairman	6950	100%	---	---	---	---
Foreman	199	100%	---	---	---	---
Glass Grinder	30	100%	---	---	---	---
Machinist	34	100%	---	---	---	---
Painter	33	25%	---	---	101	75%
Driver	477	100%	---	---	---	---
Serv. Sta. & Gar. Attend.	4771	100%	---	---	---	---
Miscellaneous Mechanic	426	100%	---	---	---	---
Mechanics and Repairman	60	100%	---	---	---	---
Greaser	1225	100%	---	---	---	---
Operator	75	100%	---	---	---	---
Retreader	61	100%	---	---	---	---
Auto Apprentice	66	100%	---	---	---	---
Wash Rack Boy	63	100%	---	---	---	---
Auto Washer	453	100%	---	---	---	---
Totals	20648	89%	1806	8%	720	3%

TABLE IX

ESTIMATED REQUIRED EMPLOYMENT IN
AUTO DEALERS, SERVICES, REPAIRS OCCUPATIONS
S.I.C. CODES 55 & 75

Job Title	1965 Estimated Totals	Increase Over 1965	1967 Estimated Totals	Increase Over 1965	1970 Estimated Totals
Auditor	37	3	40	7	44
Public Relations	15	1	16	3	18
Retail Manager	498	38	536	95	593
Department Manager	46	3	49	9	55
Credit Manager	95	7	102	18	113
Manager & Officials	422	32	454	80	502
Managers	173	13	186	33	206
Bookkeepers & Cashiers	797	61	858	151	948
Bookkeeping Mach. Oper.	18	1	19	3	21
General Clerk	148	11	159	28	176
General Office Clerk	897	68	965	170	1067
Clerk	74	6	80	14	88
File Clerk	2	-	2	-	2
General Ind. Clerk	68	5	73	13	81
Parts Runner	2	-	2	-	2
Office Mach. Operator	64	5	69	12	76
Payroll Clerk	2	-	2	-	2
Secretary	118	9	127	22	140
Shipping Clerk	15	1	16	3	18
Steno and Typist	233	18	251	44	277
Stock Clerk	51	4	55	10	61
Telephone Operator	56	4	60	11	67
Claim Agent	2	-	2	-	2
Sales Persons	1568	119	1687	298	1866
Consumer Salesman	1989	151	2140	378	2367
Salesman, Exc. to Cons.	116	9	125	22	138
Salesman, Exc. to Cons.	8	1	9	2	10

TABLE IX (Continued)

Job Title	1965 Estimated Totals	Increase Over 1965	1967 Estimated Totals	Increase Over 1965	1970 Estimated Totals
Maid	109	8	117	21	130
Chamber Maid	37	3	40	7	44
Porter	6	-	6	1	7
Watchman	2	-	2	-	2
Janitor	52	4	56	10	62
Porter	90	7	97	17	107
Upholsterer	36	3	39	7	43
Machinist	34	3	37	6	40
Welder	11	1	12	2	13
Painter	257	19	276	48	305
Gin Pole Operator	2	-	2	-	2
Mechanics & Repairman	6950	529	7479	1320	8270
Foreman	199	15	214	38	237
Glass Grinder	30	2	32	6	36
Machinist	34	3	37	6	40
Painter	134	10	144	25	159
Driver	477	36	513	91	568
Serv. Sta. & Gar. Attend.	4771	363	5134	906	5677
Miscellaneous Mechanic	426	32	458	81	507
Mechan' s and Repairman	60	5	65	11	71
Greaser	1225	93	1318	233	1458
Operator	75	6	81	14	89
Retreader	61	5	66	12	73
Auto Apprentice	66	6	72	12	78
Wash Rack Boy	63	5	68	12	75
Auto Washer	453	34	487	86	539
Totals	23174	1762	24936	4398	27572

TABLE X

OCCUPATIONAL AREAS THAT CAN BE EFFECTIVELY SERVED BY EXISTING TRAINING PROGRAMS

Job Title	Estimated Additional Number Needed by 1970
Retail Manager	82
Credit Manager	9
Managers and Officials	54
Managers	27
Bookkeepers and Cashiers	136
Bookkeeping Machine Operators	3
General Clerk	28
General Office Clerk	167
Clerk	14
General Industry Clerk	13
Parts Runner	0
Office Machine Operator	11
Secretary	22
Shipping Clerk	3
Stenographer and Typist	42
Stock Clerk	10
Telephone Operator	11
Sales Persons	298
Consumer Salesman	340
Salesman, Except to Consumers	22
Upholsterer	7
Machinist	6
Welder	2
Mechanics and Repairman	1307
Foreman	38
Machinist	6
Mechanics and Repairman	11
Miscellaneous Mechanics	81
Auto Mechanic Apprentice	12
Total	2762

• MISCELLANEOUS RETAIL STORES

FIGURE I: EMPLOYMENT BY SEX IN MISCELLANEOUS RETAIL STORES OCCUPATIONS

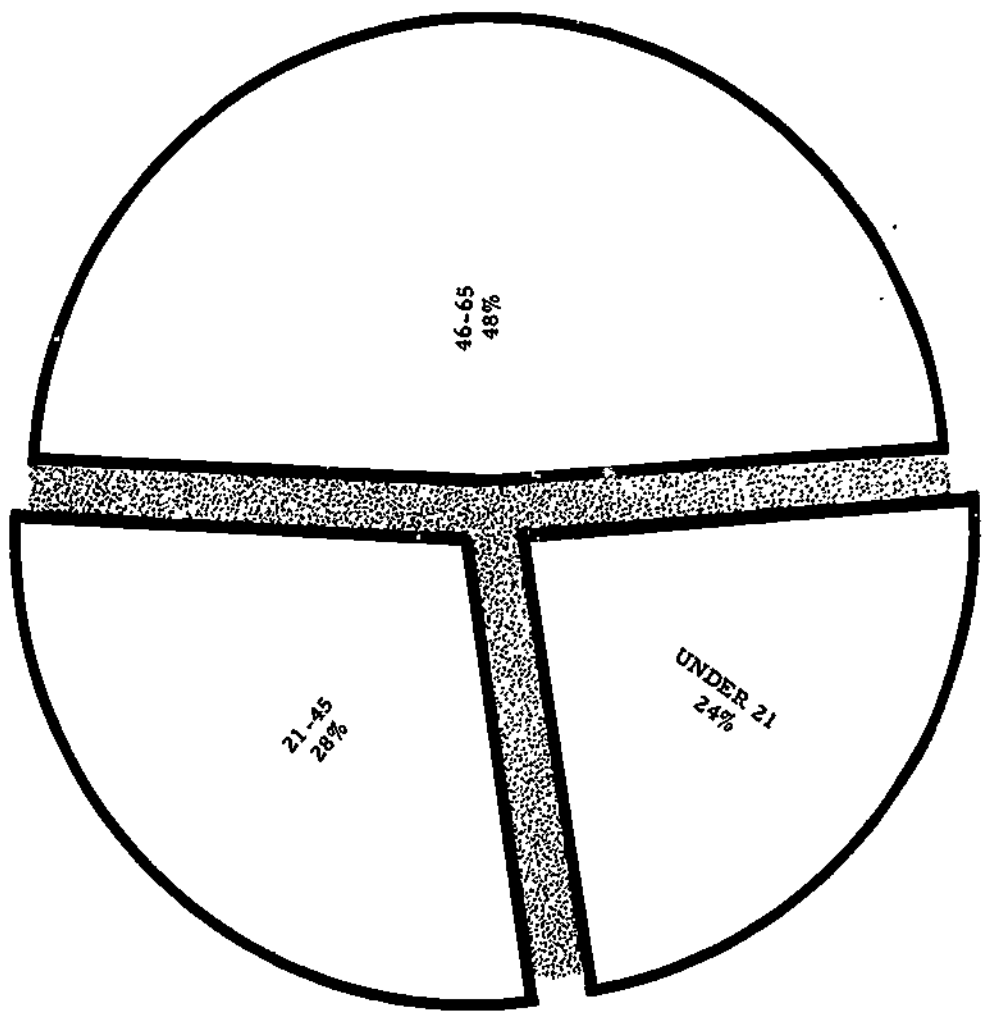


FIGURE II: DISTRIBUTION OF WORKERS BY AGE GROUPS IN MISCELLANEOUS RETAIL STORES OCCUPATIONS

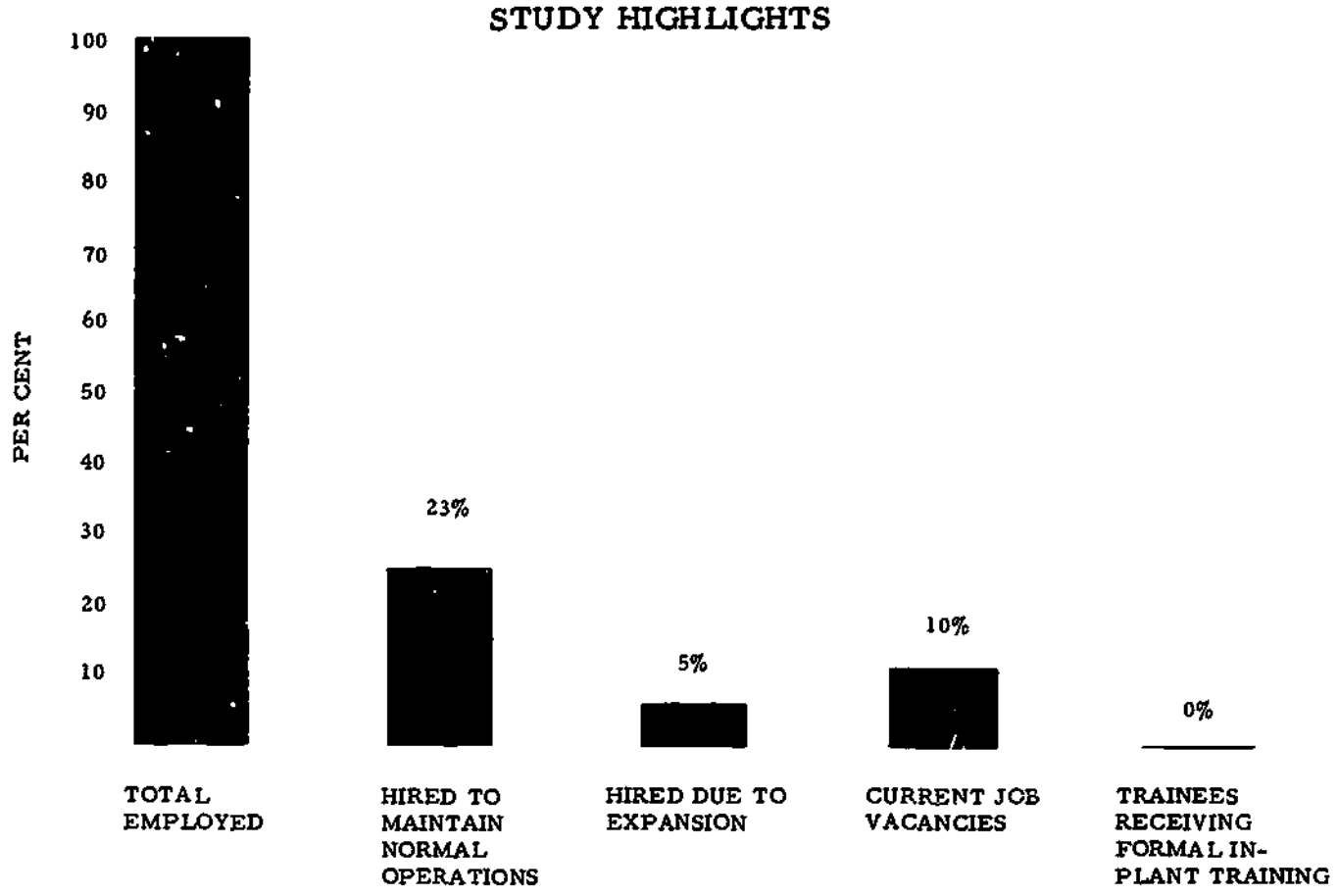


FIGURE III: DISTRIBUTION OF WORKER HIRES, VACANCIES, AND TRAINEES IN MISCELLANEOUS RETAIL STORES OCCUPATIONS

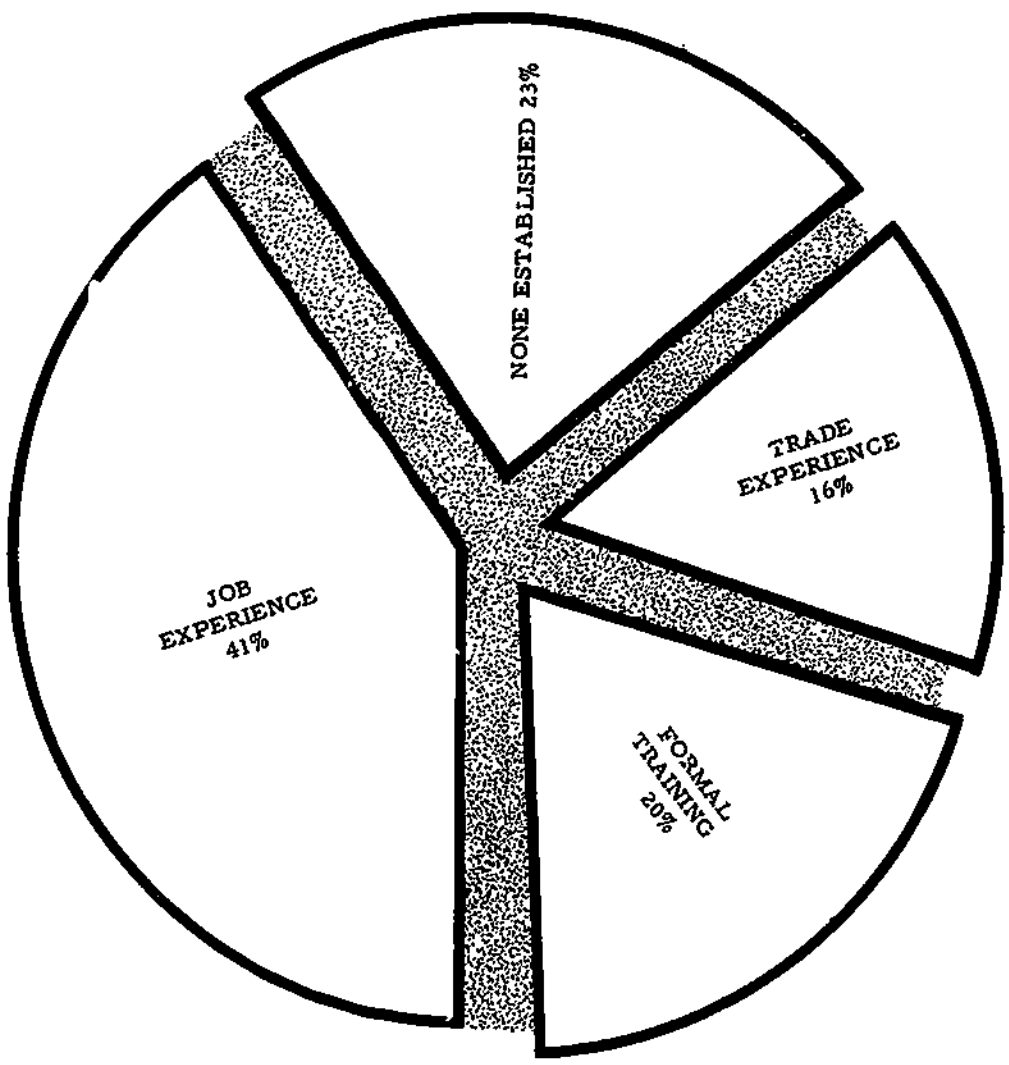


FIGURE IV: EXPERIENCE REQUIREMENTS OF MISCELLANEOUS RETAIL STORES OCCUPATIONS

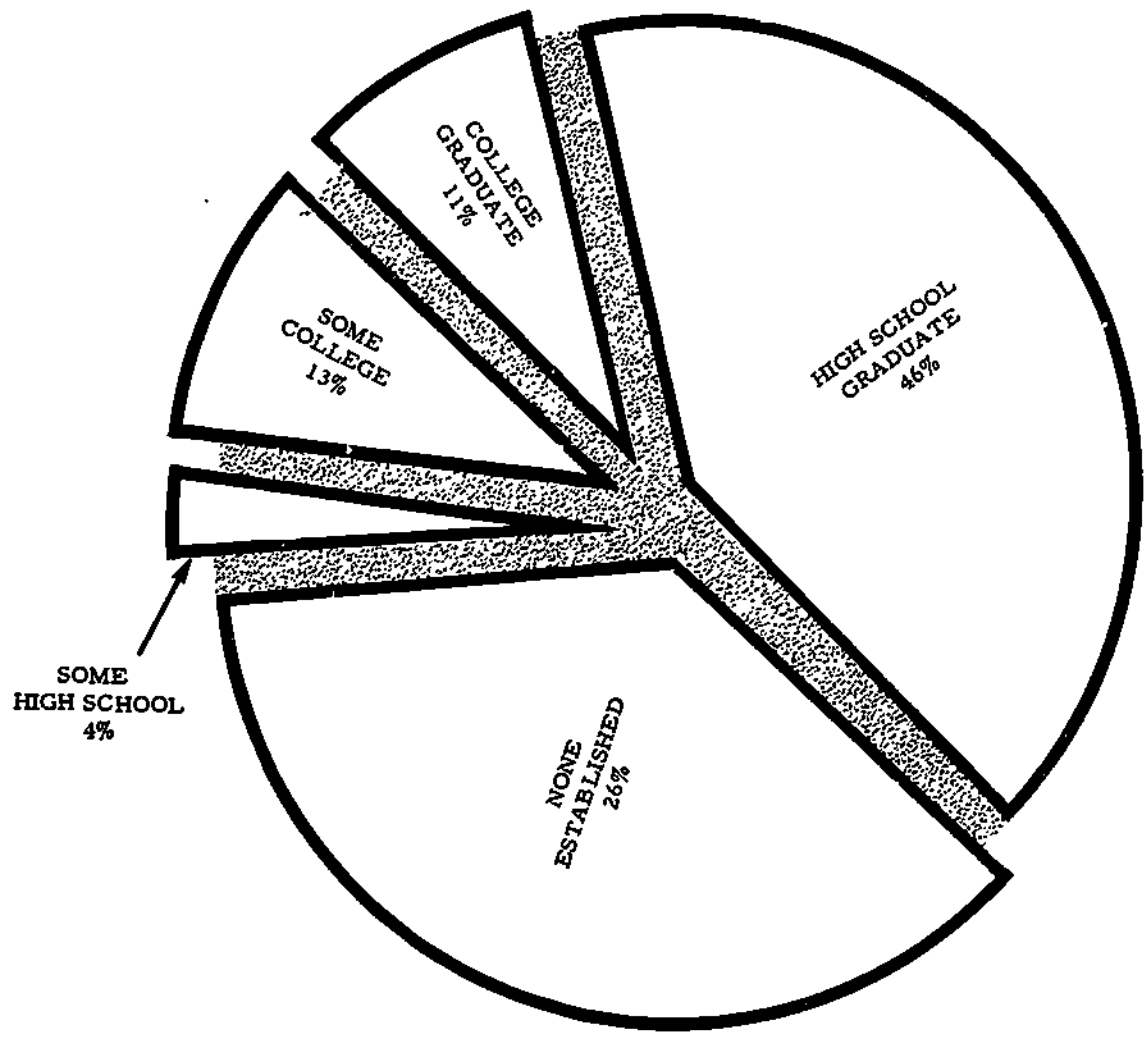


FIGURE V: EDUCATION REQUIREMENTS FOR MISCELLANEOUS RETAIL STORES OCCUPATIONS

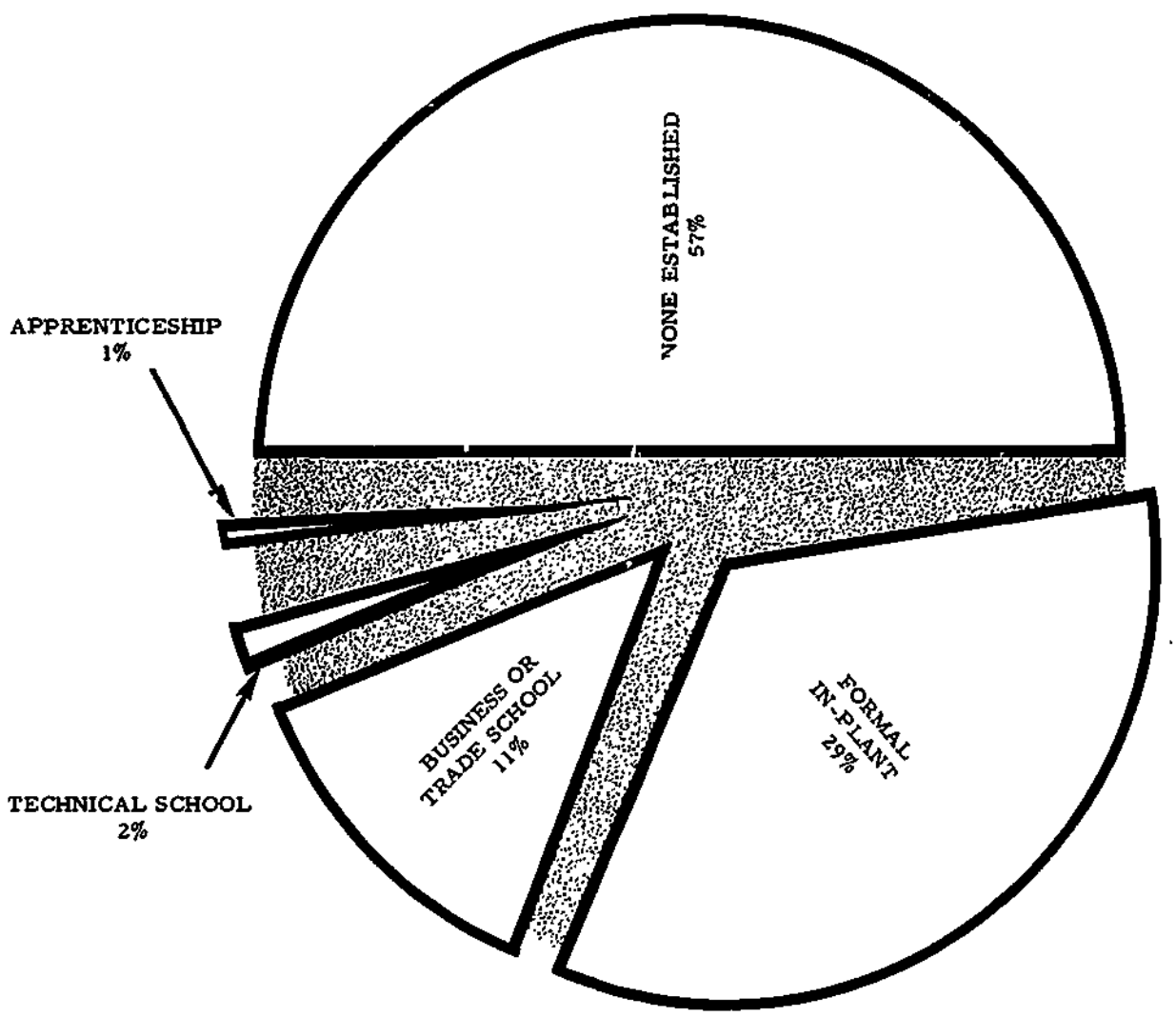


FIGURE VI: TRAINING REQUIREMENTS FOR MISCELLANEOUS RETAIL STORES OCCUPATIONS

FIGURE VII: PREFERENCE TO HIRE EQUALLY QUALIFIED PERSONNEL IN MISCELLANEOUS RETAIL STORES OCCUPATIONS

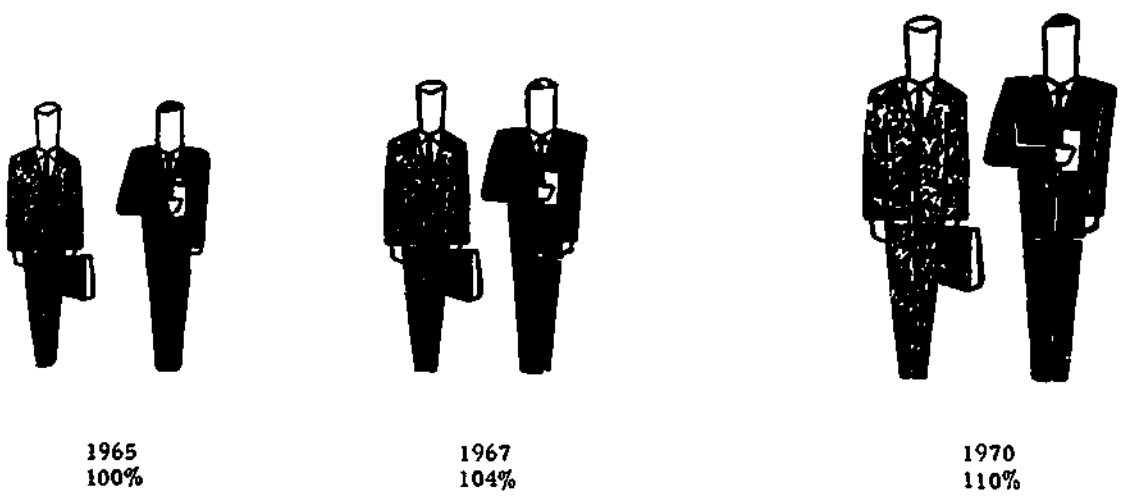


FIGURE VIII: ESTIMATED GROWTH IN MISCELLANEOUS RETAIL STORES OCCUPATIONS

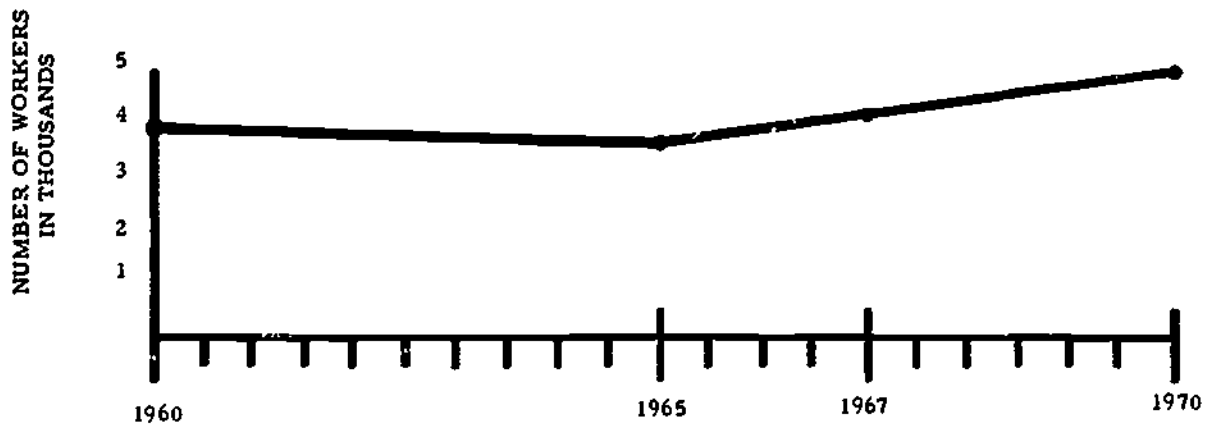


FIGURE IX: ESTIMATED NUMBER OF WORKERS IN MISCELLANEOUS RETAIL STORES OCCUPATIONS

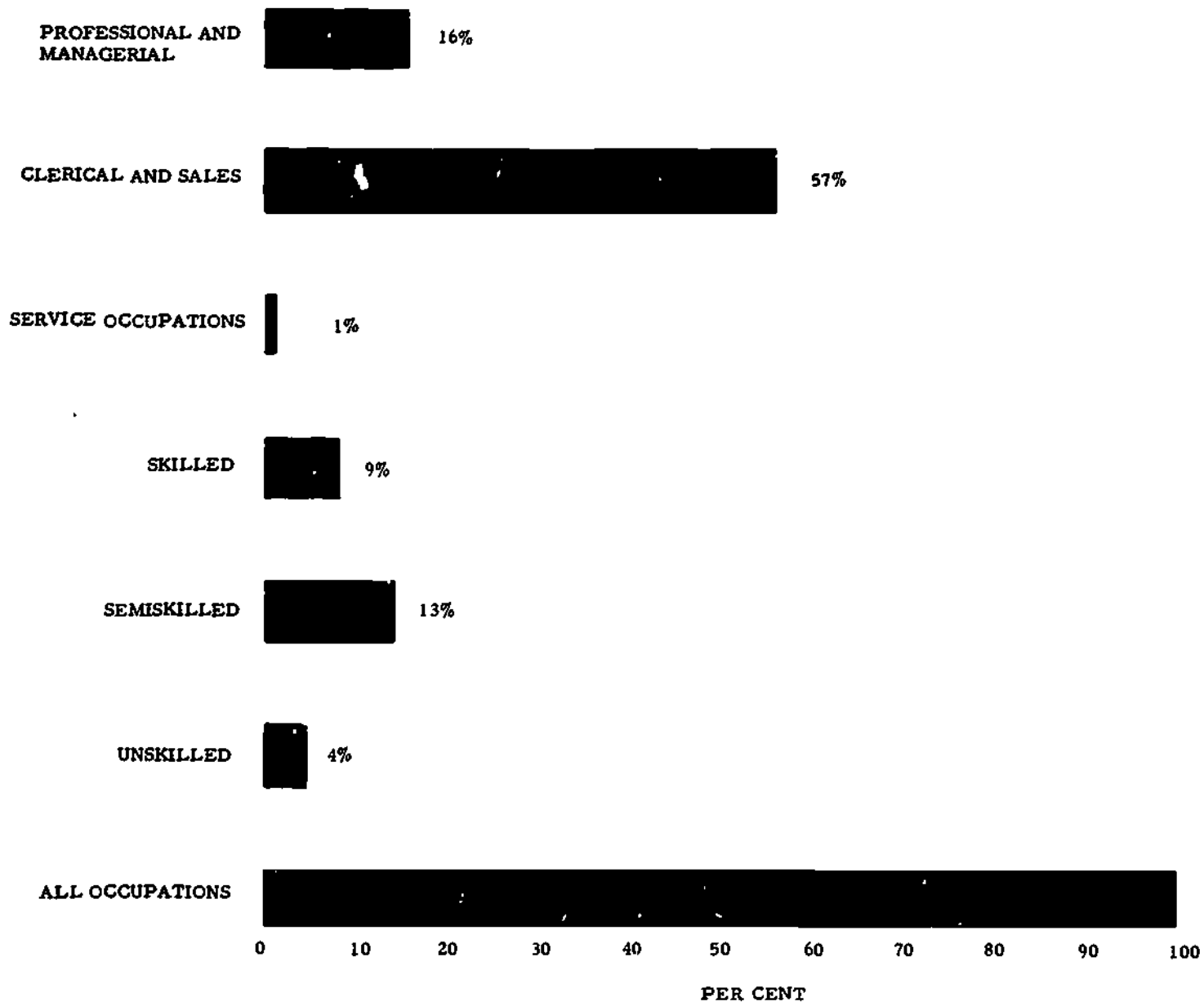


FIGURE X: DISTRIBUTION OF JOBS IN MISCELLANEOUS RETAIL STORES IN 1965

LOUISIANA STUDY OF MANPOWER AND TRAINING NEEDS IN MISCELLANEOUS RETAIL STORES

The data reported in this section of the study were obtained from personal interviews of 16 respondents employing 204 workers. This stratified random sample repr sents 6.52 per cent of the miscellaneous retail stores occupations in Louisiana. This sample was selected to include: small, medium-sized, and large units, from the standpoint of employment; and a cross section of the activities of the industry.

Definition of terms. The definitions of the terms as defined in the section on Auto Dealers, Auto Services, and Auto Repair Shops will also apply to this section on Miscellaneous Retail Stores. (See page 7)

The major group applicable to this part of the study has been illustrated and defined in Appendix A. The various job titles or occupations have been defined and listed in Appendix B.

Findings. In 1965, 3,128 persons were employed in Louisiana in occupations in Miscellaneous Retail Stores. There were 1,501 men, 48 per cent, and 1,627 women, 52 per cent, employed in twenty-nine different jobs or occupations. Table I lists the job titles or occupations, the Dictionary of Occupational Titles code numbers, and the distribution of workers according to sex. Study of Table I will reveal there were four professional and managerial occupations, fifteen clerical and sales occupations, one service occupation, five skilled occupations, one semi-skilled occupation, and three unskilled occupations listed in the Miscellaneous Retail Stores area of this study. The

fifteen clerical and sales occupations contained 56.8 per cent of the workers in the industry.

Only 28 per cent of the workers were in the prime age group, 21-45 years. Almost one-half of the workers were in the 46-65 age group, and none were listed in the over 65 age group. Study of Table II will reveal that nearly one-fourth of the workers were listed as being under 21 years of age.

Table III reflects that 23 per cent of the total work force were hired during the past year to maintain normal operations and 5 per cent were hired due to the needs of expansion. Ten per cent of the job classifications contain current job vacancies while none were listed as receiving formal in-plant training. Study of Table III will reveal the distribution of hires, vacancies, and in-plant trainees listed according to the percentage of total workers in each job title or occupation classification.

The approximate range of hourly entry wages for the jobs or occupations in the miscellaneous retail stores occupations has been arranged in Table IV. Some of these figures will indicate the range; the others will indicate the exact entry wage. Six of the jobs listed indicate a beginning wage of less than one dollar per hour.

Table V reflects the percentage distribution of experience requirements for the job classifications or occupations. No experience requirements had been established for 23 per cent

of the occupations. Job experience was required for 41 per cent of the jobs while trade experience was required for 16 per cent of the occupations. Twenty per cent of the jobs required completion of a formal training program. In many classifications it was unlikely that this formal training was a formal in-plant training program.

Education requirements have been well established. Study of Table VI will reveal that 26 per cent of the job classifications had no educational requirements for employment. Four per cent of the occupations required some high school education and 46 per cent of the jobs required high school graduation. Some college was indicated for 13 per cent of the jobs and 11 per cent required college graduation.

Table VII lists the training requirements by percentage distribution. Fifty-seven per cent of the occupations have had no training requirements established. Only 1 per cent of the job classifications required apprenticeship training. Eleven per cent required business or trade school training while technical school training was required in only 2 per cent of the jobs. Twenty-nine per cent of the jobs required formal in-plant training.

The greater preference to hire equally qualified men is reflected in Table VIII. Forty-three per cent of the jobs reported preference for equally qualified men, while 27 per cent of the employers preferred equally qualified women for these occupations. Thirty per cent of the occupations reported

could be filled by either sex with no difference in preference by the employer. Preferences to employ equally qyalified men or women might be ccmpared with actual employment where currently 48 per cent male and 52 per cent female comprise the work force.

Data on employment in these Miscellaneous Retail Stores occupations reflect a small decrease for the years 1960-1965. This decrease will be eliminated and a modest growth has been indicated for the 1965-1970 period. Table IX reveals the estimated required employment for 1967 and 1970. An additional 317 employees will be required by 1970 and will bring the total work force to an estimated total of 3,445 employees.

Summary and Conclusion. The work force in the occupatio listed in this section of the study consisted of an estimated 3;128 employees, 48 per cent men and 52 per cent women. Only 28 per cent of the workers were in the prime age group of 21-45 years. Almost one-half of the workers were in the 46-65 age group.

Twenty-three per cent of the total work force were hired during the part year to maintain normal operations. Another five per cent were hired due to the needs of expansion.

By percentage, there were no experience requirements for 23 per cent of the occupations, job experience was required for 41 per cent, trade experience was required 16 per cent, and formal training was required for 20 per cent of the jobs.

Some high school education was required for 4 per cent of the jobs and high school graduation was required for 46 per cent. Some college was indicated for 13 per cent of the jobs and 11 per cent required college graduation.

There were no training requirements established for 57 per cent of the occupations. Formal in-plant training was required for 29 per cent of the jobs, business or trade school for 11 per cent, technical school training for 2 per cent, and apprenticeship training for 1 per cent.

There was a definite preference to hire equally qualified men, but the actual employment percentage reflects that more women are employed than men. The hourly wage range for entry workers was from a low of 75¢ per hour to a high of $2.85 per hour.

It has been predicted that employment in 1967 will be 104 per cent of 1965 and employment in 1970 will be 110 per cent of 1965. It is estimated that 317 additional employees will be needed by 1970. The state-operated trade and vocational-technical schools offer training which prepares students for employment. These schools can provide training for those occupations which do not require some college or college graduation. As indicated in this section of this report these occupations comprise 76 per cent of the workers in the industry. The trade and vocational-technical school do not offer specific training for such jobs as porter, bookbinder, etc. They do offer instructions that can be advantageously used by persons seeking employment in those occupations listed in Table X.

Additional study of these occupations is recommended in order to determine if any changes are required in existing training programs. Those job classifications not listed in Table X that require no college education should also be studied to determine if specific training courses should be established or existing programs adapted to include such training.

TABLE I

MISCELLANEOUS RETAIL STORES OCCUPATIONAL DISTRIBUTION
OF EMPLOYMENT BY TITLE AND BY SEX
S.I.C. CODE 59*

Job Title	D.O.T. Code	Workers In This Job			
		Male	Per Cent	Female	Per Cent
Retail Manager	0-72	37	100%	---	---
Buyer	0-74	19	100%	---	---
Credit Manager	0-85	19	100%	---	---
Sales Manager	0-97	111	25	332	75%
Cashier	1-01	56	14%	332	86%
General Clerk	1-04	---	---	37	100%
General Office Clerk	1-05	---	---	203	100%
Credit Clerk	1-12	---	---	295	100%
Collector	1-15	19	100%	---	---
General Industry Clerk	1-18	---	---	19	100%
Office Machine Operator	1-25	---	---	37	100%
Secretary	1-33	---	---	19	100%
Stenographer	1-37	---	---	94	100%
Telephone Operator	1-42	---	---	19	100%
Sales Agent	1-48	19	100%	---	---
Sales Clerk	1-70	19	17%	92	83%
Sales Person	1-75	56	38%	92	62%
Sales Person	1-85	240	87%	37	13%
Sales Men	1-86	73	79%	19	21%
Porter	2-86	37	100%	---	---
Upholsterer	4-35	19	100%	---	---

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Bookbinder	4-49	37	100%	---	---
Jeweler Watchmaker	4-71	129	100%	---	---
Engraver	4-73	19	100%	---	---
Repairman	5-83	75	100%	---	---
Truck Driver	7-36	405	100%	---	---
Metal Sander	8-36	19	100%	---	---
Packer	9-68	56	100%	---	---
Gas Appliance Serviceman	9-83	37	100%	---	---
Totals		1501	48%	1627	52%

TABLE II

MISCELLANEOUS RETAIL STORES OCCUPATIONS DISTRIBUTION
OF EMPLOYMENT BY AGE GROUPS
S.I.C. CODE 59*

Job Title	Distribution of Workers by Age Groups							
	Under 21		21 - 45		46 - 65		Over 65	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Retail Manager	---	---	37	100%	---	---	---	---
Buyer	---	---	19	100%	---	---	---	---
Credit Manager	---	---	19	100%	---	---	---	---
Sales Manager	---	---	276	62%	167	38%	---	---
Cashier	111	29%	204	53%	73	18%	---	---
General Clerk	37	100%	---	---	---	---	---	---
General Office Clerk	37	18%	110	54%	56	28%	---	---
Credit Clerk	148	50%	128	43%	19	7%	---	---
Collector	---	---	19	100%	---	---	---	---
General Industry Clerk	---	---	---	---	19	100%	---	---
Office Machine Operator	---	---	37	100%	---	---	---	---
Secretary	---	---	19	100%	---	---	---	---
Stenographer	56	60%	19	20%	19	20%	---	---
Telephone Operator	---	---	19	100%	---	---	---	---
Sales Agent	---	---	---	---	19	100%	---	---
Sales Clerk	---	---	75	68%	36	32%	---	---
Sales Person	---	---	75	51%	73	49%	---	---
Sales Person	---	---	148	53%	129	47%	---	---
Sales Men	---	---	92	100%	---	---	---	---
Porter	---	---	19	51%	18	49%	---	---
Upholsterer	---	---	---	---	19	100%	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups							
	Under 21		21 - 45		46 - 65		Over 65	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Bookbinder	---	---	37	100%	---	---	---	---
Jeweler Watchmaker	---	---	19	15%	110	85%	---	---
Engraver	---	---	19	100%	---	---	---	---
Repairman	19	25%	56	75%	---	---	---	---
Truck Driver	---	---	332	82%	73	18%	---	---
Metal Sander	---	---	---	---	19	100%	---	---
Packer	---	---	56	100%	---	---	---	---
Gas Appliance Serviceman	17	46%	20	54%	---	---	---	---
Totals	425	24%	502	28%	849	48%	---	---

TABLE III

MISCELLANEOUS RETAIL STORES OCCUPATION DISTRIBUTION
OF WORKER HIRES - VACANCIES - TRAINEES
S.I.C. CODE 59*

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Retail Manager	---	---	---	---	---	---	---	---
Buyer	---	---	---	---	---	---	---	---
Credit Manager	---	---	---	---	---	---	---	---
Sales Manager	56	13%	56	13%	129	29%	---	---
Cashier	92	24%	---	---	19	5%	---	---
General Clerk	19	51%	---	---	---	---	---	---
Gen. Office Cl.	56	28%	---	---	19	9%	---	---
Credit Clerk	73	25%	---	---	---	---	---	---
Collector	---	---	---	---	---	---	---	---
Gen. Ind. Clerk	---	---	---	---	---	---	---	---
Office Mach. Op.	19	51%	---	---	---	---	---	---
Secretary	---	---	---	---	---	---	---	---
Stenographer	19	20%	37	40%	---	---	---	---
Tele. Operator	---	---	---	---	---	---	---	---
Sales Agent	---	---	---	---	19	100%	---	---
Sales Clerk	19	17%	---	---	---	---	---	---
Sales Person	---	---	---	---	---	---	---	---
Sales Person	165	60%	---	---	19	7%	---	---
Sales Men	19	19%	19	19%	37	37%	---	---
Porter	---	---	---	---	---	---	---	---
Upholsterer	---	---	---	---	---	---	---	---

TABLE III (Continued)

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-Plant Training Number	% Total
Bookbinder	19	51%	---	---	---	---	---	---
Jeweler Watchmaker	--	---	---	---	---	---	---	---
Engraver	---	---	---	---	---	---	---	---
Repairman	---	---	---	---	---	---	---	---
Truck Driver	---	---	---	---	---	---	---	---
Metal Sander	---	---	---	---	---	---	---	---
Packer	37	66%	---	---	---	---	---	---
Gas Appl. Ser.	37	100%	---	---	---	---	---	---
Totals	556	23%	112	5%	242	10%	---	---

TABLE IV

MISCELLANEOUS RETAIL STORES OCCUPATIONAL
DISTRIBUTION OF ENTRY WAGES
S.I.C. CODE 59*

Job Title	Approximate Entry Wage For This Job -Range-		
Retail Manager	1.85	-	2.00
Buyer		2.00	
Credit Manager		1.80	
Sales Manager		Comm.	
Cashier	.95	-	1.60
General Clerk		.75	
General Office Clerk	.80	-	1.50
Credit Clerk	1.00	-	1.25
Collector		1.37	
General Industry Clerk		1.06	
Office Machine Operator		1.50	
Secretary		1.62	
Stenographer		1.50	
Telephone Operator		1.25	
Sales Agent		2.00	
Sales Clerk	.90	-	1.00
Sales Person	1.00	-	1.50
Sales Person	1.50	-	1.87
Sales Men		1.50	
Porter	.75	-	.81
Upholsterer		1.25	
Bookbinder		1.25	
Jeweler-Watchmaker	1.50	-	2.85
Engraver		Comm.	
Repairman	1.00	-	1.50
Trauck Driver	.90	-	2.63
Metal Sander		1.50	
Packer		1.25	
Gas Appliance Serviceman		1.25	

TABLE V

EXPERIENCE REQUIREMENTS BY PERCENTAGE DISTRIBUTION
FOR MISCELLANEOUS RETAIL STORES
S.I.C. CODE 59*

Job Title	Experience Requirements by Job Title: None Established	Job Experience	Trade Experience	Formal Training
Retail Manager	50%	50%	---	---
Buyer	---	---	---	100%
Credit Manager	---	100%	---	---
Sales Manager	8%	---	92%	---
Cashier	10%	76%	---	14%
General Clerk	100%	---	---	---
General Office Clerk	48%	26%	---	26%
Credit Clerk	12%	81%	---	7%
Collector	---	---	---	100%
General Industry Clerk	---	100%	---	---
Office Machine Operator	50%	50%	---	---
Secretary	---	---	---	100%
Stenographer	---	21%	---	79%
Telephone Operator	100%	---	---	---
Sales Agent	---	100%	---	---
Sales Clerk	83%	17%	---	---
Sales Person	25%	25%	50%	---
Sales Person	---	100%	---	---
Sales Men	60%	---	---	40%
Porter	100%	---	---	---
Upholsterer	100%	---	---	---
Bookbinder	---	---	---	100%
Jeweler-Watchmaker	---	58%	9%	33%
Engraver	---	33%	33%	33%
Repairman	50%	50%	---	---
Truck Driver	21%	35%	9%	35%
Metal Sander	---	33%	33%	33%
Packer	---	---	---	100%
Gas Appliance Serviceman	100%	---	---	---
Totals	23%	41%	16%	20%

TABLE VI

EDUCATION REQUIREMENTS BY PERCENTAGE DISTRIBUTION
FOR MISCELLANEOUS RETAIL STORES OCCUPATIONS
S.I.C. CODE 59*

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Retail Manager	---	50%	---	50%	---
Buyer	---	---	100%	---	---
Credit Manager	---	---	100%	---	---
Sales Manager	---	---	14%	43%	43%
Cashier	5%	---	90%	5%	---
General Clerk	100%	---	---	---	---
General Office Clerk	9%	9%	82%	---	---
Credit Clerk	---	7%	93%	---	---
Collector	---	---	100%	---	---
Gen. Industry Clerk	---	100%	---	---	---
Office Machine Oper.	---	---	100%	---	---
Secretary	---	---	100%	---	---
Stenographer	21%	---	79%	---	---
Telephone Operator	---	---	100%	---	---
Sales Agent	100%	---	---	---	---
Sales Clerk	83%	---	17%	---	---
Sales Person	---	---	100%	---	---
Sales Person	40%	---	60%	---	---
Sales Men	---	---	100%	---	---
Porter	50%	---	50%	---	---
Upholsterer	100%	---	---	---	---

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Bookbinder	---	---	100%	---	---
Jeweler-Watchmaker	40%	---	60%	---	---
Engraver	100%	---	---	---	---
Repairman	50%	---	50%	---	---
Truck Driver	82%	14%	4%	---	---
Metal Sander	100%	---	---	---	---
Packer	100%	---	---	---	---
Gas Appliance Serviceman	100%	---	---	---	---
Totals	26%	4%	46%	13%	11%

TABLE VII

TRAINING REQUIREMENTS BY PERCENTAGE DISTRIBUTION
FOR MISCELLANEOUS RETAIL STORES OCCUPATIONS
S.I.C. CODE 59*

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Retail Manager	100%	---	---	---	---
Buyer	---	---	---	---	100%
Credit Manager	100%	---	---	---	---
Sales Manager	4%	---	---	---	96%
Cashier	81%	---	19%	---	---
General Clerk	100%	---	---	---	---
General Office Clerk	46%	---	37%	---	17%
Credit Clerk	100%	---	---	---	---
Collector	---	---	---	---	100%
Gen. Industry Clerk	100%	---	---	---	---
Office Machine Oper.	50%	50%	---	---	---
Secretary	---	---	100%	---	---
Stenographer	21%	---	79%	---	---
Telephone Operator	100%	---	---	---	---
Sales Agent	100%	---	---	---	---
Sales Clerk	100%	---	---	---	---
Sales Person	100%	---	---	---	---
Sales Person	100%	---	---	---	---
Sales Men	60%	---	---	---	40%
Porter	100%	---	---	---	---
Upholsterer	100%	---	---	---	---

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Bookbinder	---	---	---	---	100%
Jeweler-Watchmaker	28%	---	28%	44%	---
Engraver	---	---	100%	---	---
Repairman	50%	---	50%	---	---
Truck Driver	32%	---	---	---	68%
Metal Sander	---	---	100%	---	---
Packer	---	---	---	---	100%
Gas Appliance Serviceman	100%	---	---	---	---
Totals	57%	1%	11%	2%	29%

TABLE VIII

PERFERENCE TO HIRE EQUALLY QUALIFIED MEN OR WOMEN
IN MISCELLANEOUS RETAIL STORES OCCUPATIONS
S.I.C. CODE 59*

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Retail Manager	37	100%	---	---	---	---
Buyer	---	---	---	---	19	---
Credit Manager	19	100%	---	---	---	---
Sales Manager	37	8%	---	---	406	92%
Cashier	296	76%	---	---	92	24%
General Clerk	---	---	37	100%	---	---
General Office Clerk	---	---	203	100%	---	---
Credit Clerk	---	---	295	100%	---	---
Collector	19	100%	---	---	---	---
Gen. Industry Clerk	---	---	19	100%	---	---
Office Machine Oper.	---	---	37	100%	---	---
Secretary	---	---	19	100%	---	---
Stenographer	---	---	75	80%	19	20%
Telephone Operator	---	---	19	100%	---	---
Sales Agent	19	100%	---	---	---	---
Sales Clerk	---	---	74	66%	37	33%
Sales Person	37	25%	74	50%	37	25%
Sales Person	---	---	---	---	277	100%
Sales Men	55	60%	---	---	37	40%
Porter	37	100%	---	---	---	---
Upholsterer	19	100%	---	---	---	---

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Bookbinder	37	100%	---	---	---	---
Jeweler-Watchmaker	129	100%	---	---	---	---
Engraver	19	100%	---	---	---	---
Repairman	75	100%	---	---	---	---
Truck Driver	405	100%	---	---	---	---
Metal Sander	19	100%	---	---	---	---
Packer	56	100%	---	---	---	---
Gas Appliance Serviceman	37	100%	---	---	---	---
Totals	1352	43%	852	27%	924	30%

TABLE IX

ESTIMATED REQUIRED EMPLOYMENT IN
MISCELLANEOUS RETAIL STORES OCCUPATIONS
S.I.C. CODE 59*

Job Title	Estimated Required Employment In Job 1965	1967	1970
Retail Manager	37	38	41
Buyer	19	20	21
Credit Manager	19	20	21
Sales Manager	443	461	487
Cashier	388	404	427
General Clerk	37	38	41
Gen. Office Clerk	203	210	223
Credit Clerk	295	307	325
Collector	19	20	21
Gen. Industry Cl.	19	20	21
Office Mach. Oper.	37	38	41
Secretary	19	20	21
Stenographer	94	98	103
Telephone Operator	19	20	21
Sales Agent	19	20	21
Sales Clerk	111	115	122
Sales Person	148	154	163
Sales Person	277	288	305
Sales Men	92	96	101
Porter	37	38	41
Upholsterer	19	20	21
Bookbinder	37	38	41
Jeweler-Watchmaker	129	134	142
Engraver	19	20	21
Repairman	75	78	83
Truck Driver	405	421	446
Metal Sander	19	20	21
Packer	56	58	62
Gas Appliance Ser.	37	38	41
Totals	3128	3252 +124	3445 +317

TABLE X

OCCUPATIONAL AREAS THAT CAN BE EFFECTIVELY SERVED BY EXISTING TRAINING PROGRAMS

Job Title	Estimated Additional Number Needed by 1970
Retail Manager	2
Buyer	2
Credit Manager	2
Sales Manager	6
Cashier	37
General Clerk	4
General Office Clerk	20
Credit Clerk	30
Collector	2
Gen. Industry Clerk	2
Office Machine Operator	4
Secretary	2
Stenographer	9
Telephone Operator	2
Sales Agent	2
Sales Clerk	11
Sales Person	43
Salesmen	9
Upholsterer	2
Jeweler-Watchmaker	13
Engraver	2
Repairman	8
Metal Sander	2
Gas Appliance Serviceman	4
Total	220

• MISCELLANEOUS SERVICES

FIGURE I: EMPLOYMENT BY SEX IN MISCELLANEOUS SERVICES OCCUPATIONS

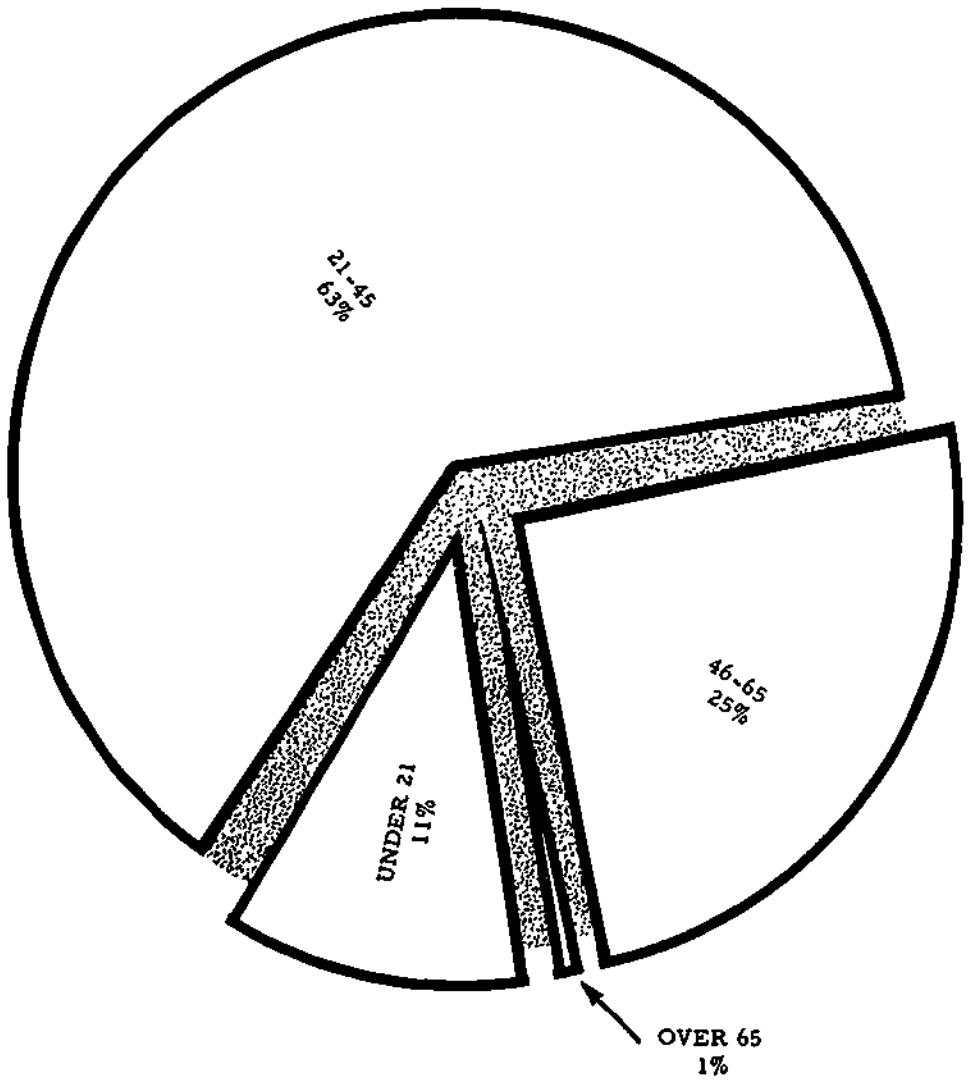


FIGURE II: DISTRIBUTION OF WORKERS BY AGE GROUPS IN MISCELLANEOUS SERVICES OCCUPATIONS

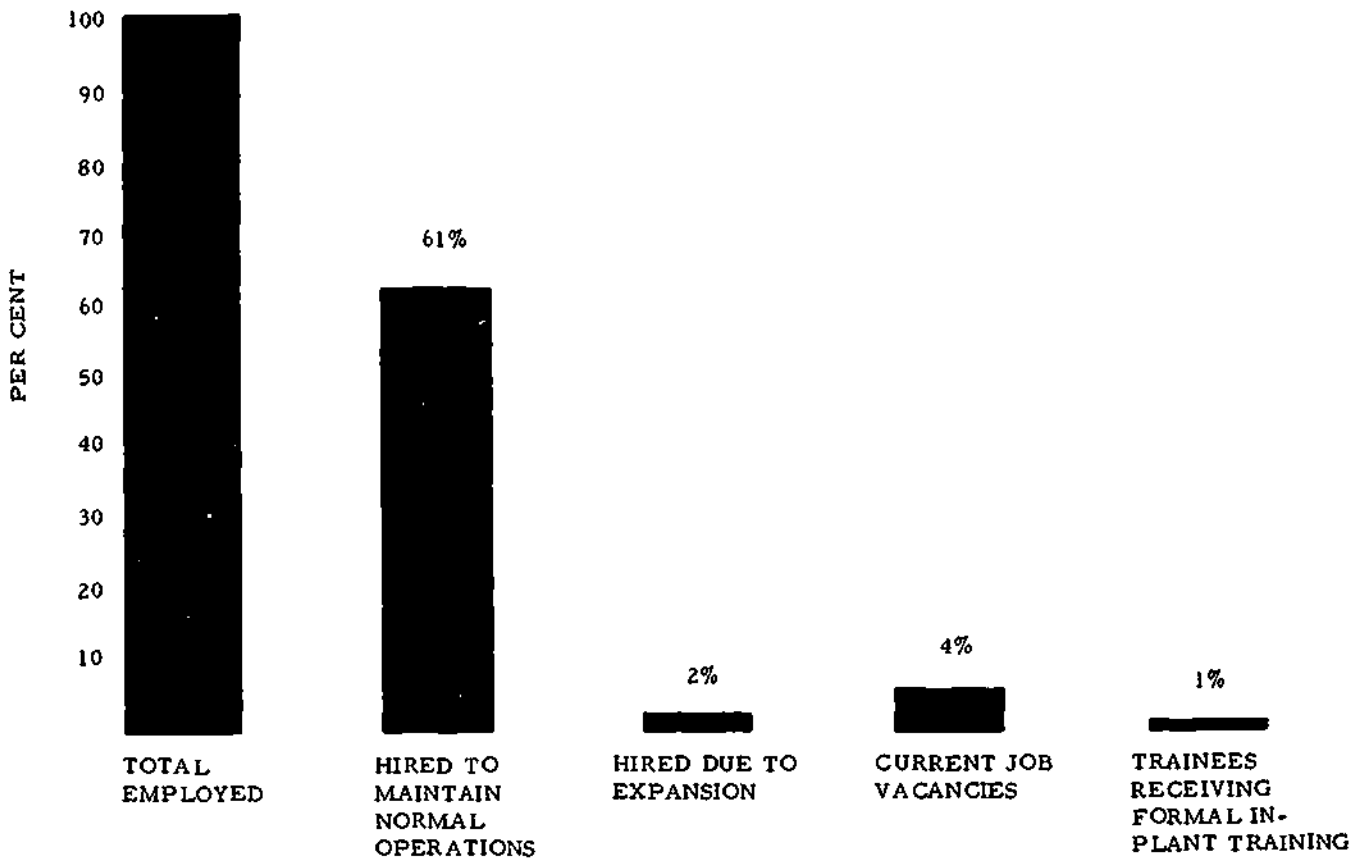


FIGURE III: DISTRIBUTION OF WORKER HIRES, VACANCIES, AND TRAINEES IN MISCELLANEOUS SERVICES OCCUPATIONS

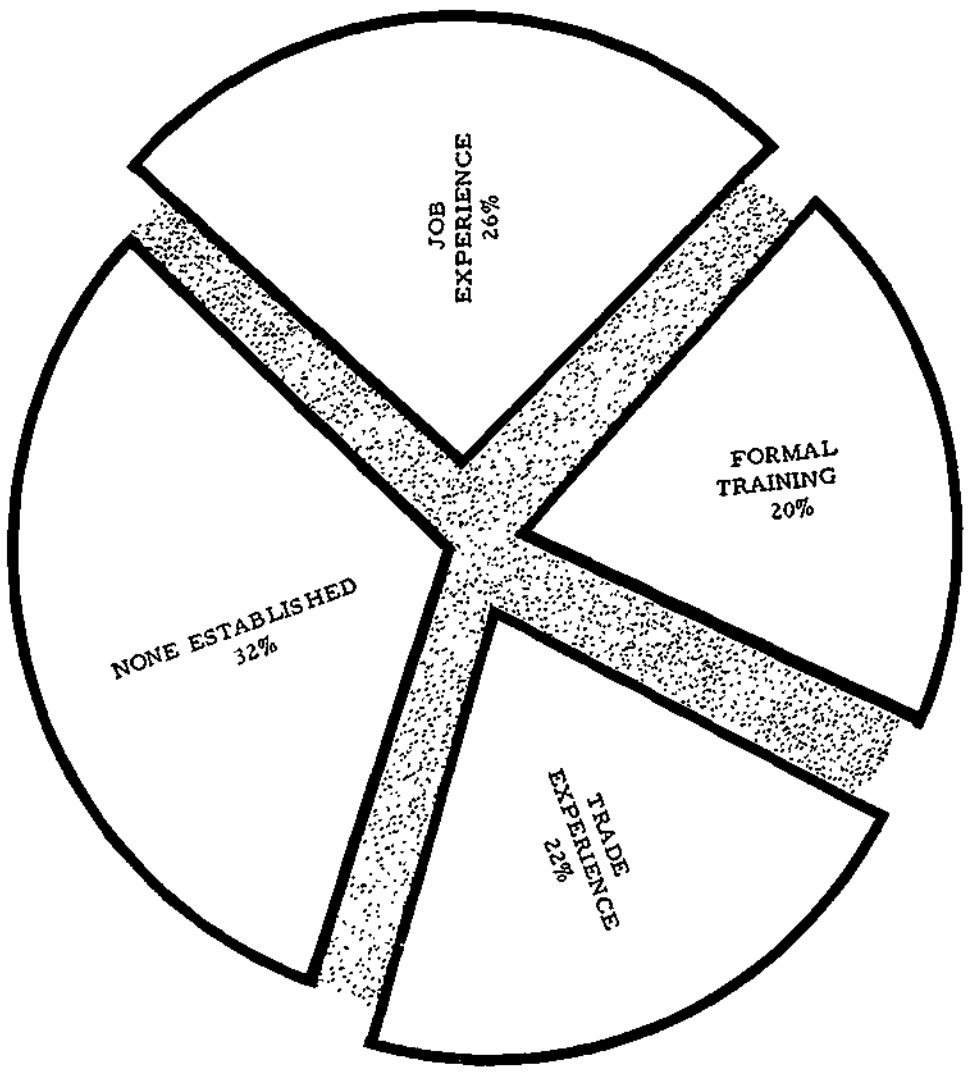


FIGURE IV: EXPERIENCE REQUIREMENTS OF MISCELLANEOUS SERVICES OCCUPATIONS

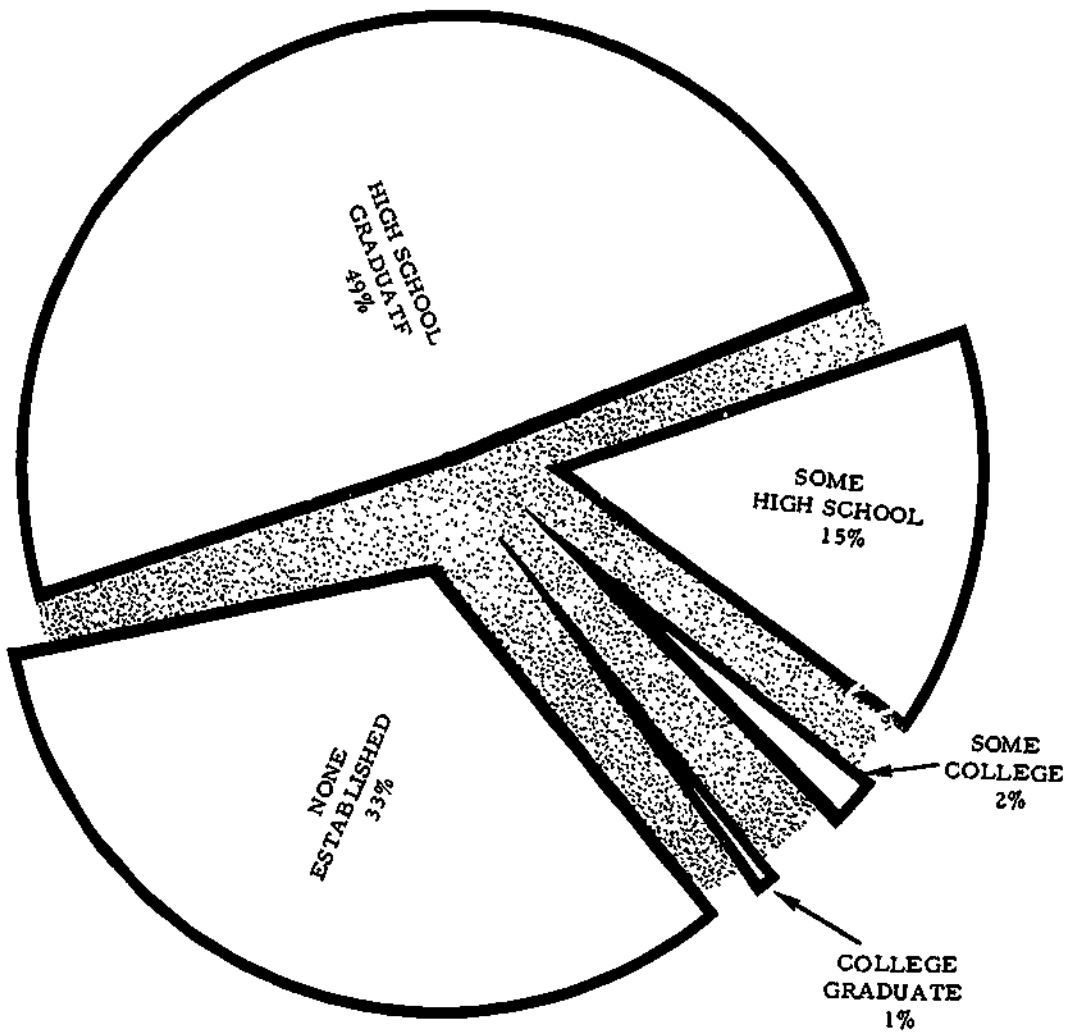


FIGURE V: EDUCATION REQUIREMENTS FOR MISCELLANEOUS SERVICES OCCUPATIONS

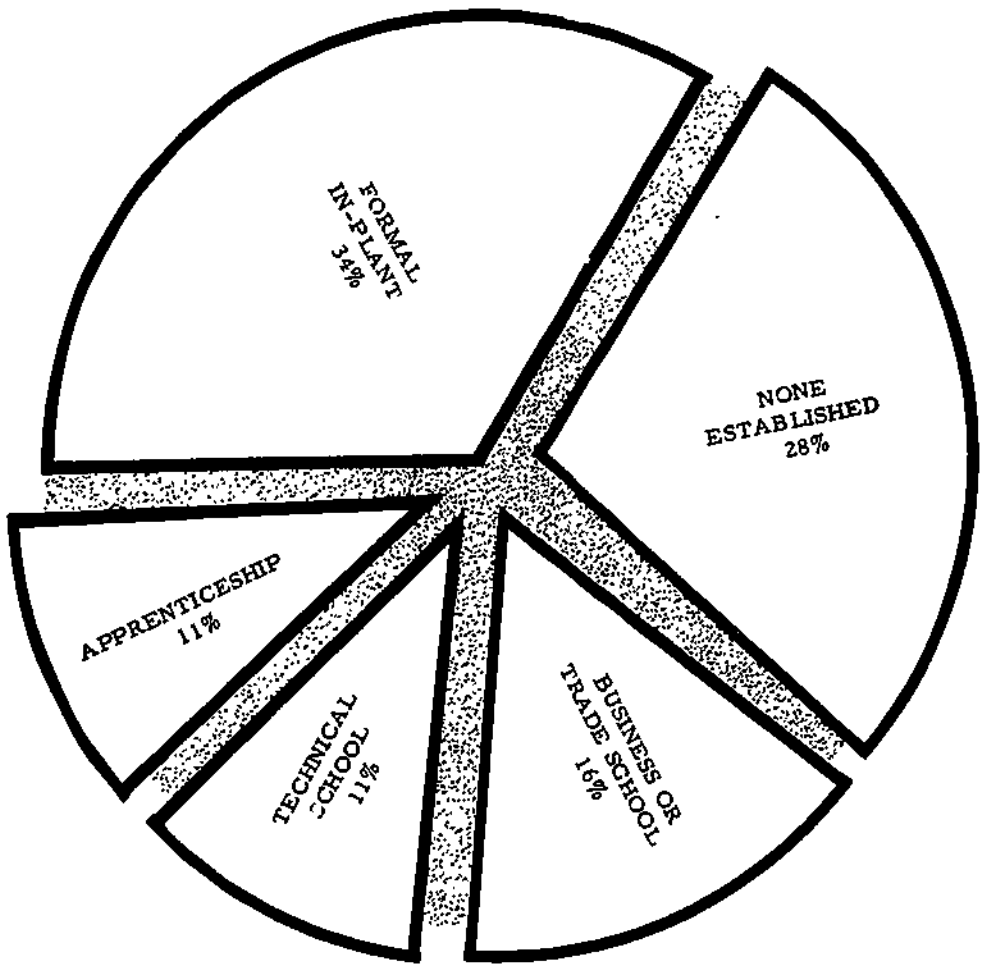
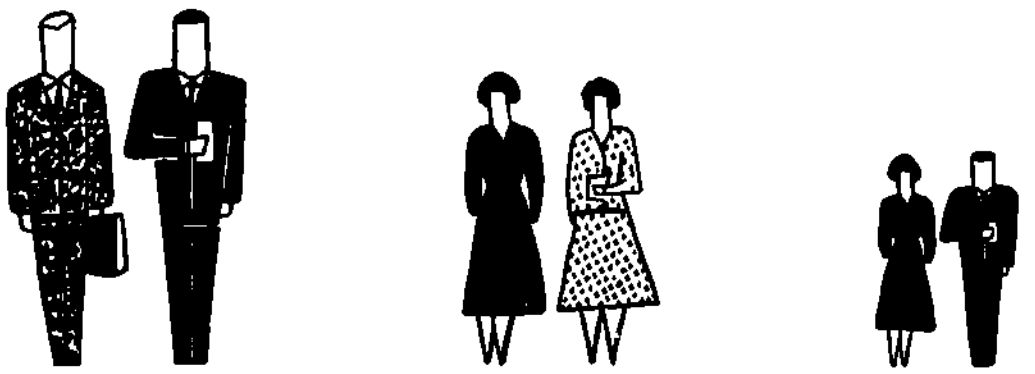


FIGURE VI: TRAINING REQUIREMENTS FOR MISCELLANEOUS SERVICES OCCUPATIONS

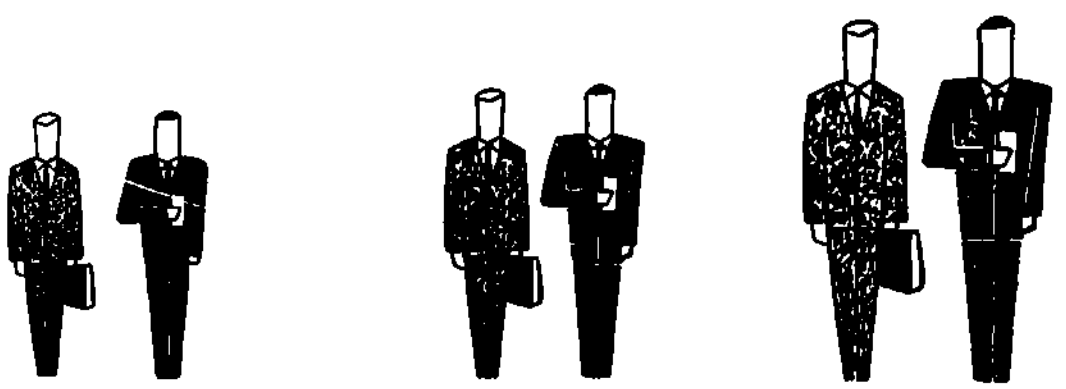


MEN ONLY
63%

WOMEN ONLY
29%

MEN OR WOMEN
8%

FIGURE VII: PREFERENCE TO HIRE EQUALLY QUALIFIED PERSONNEL IN MISCELLANEOUS SERVICES OCCUPATIONS



1965
100%

1967
113%

1970
132%

FIGURE VIII: ESTIMATED GROWTH IN MISCELLANEOUS SERVICES OCCUPATIONS

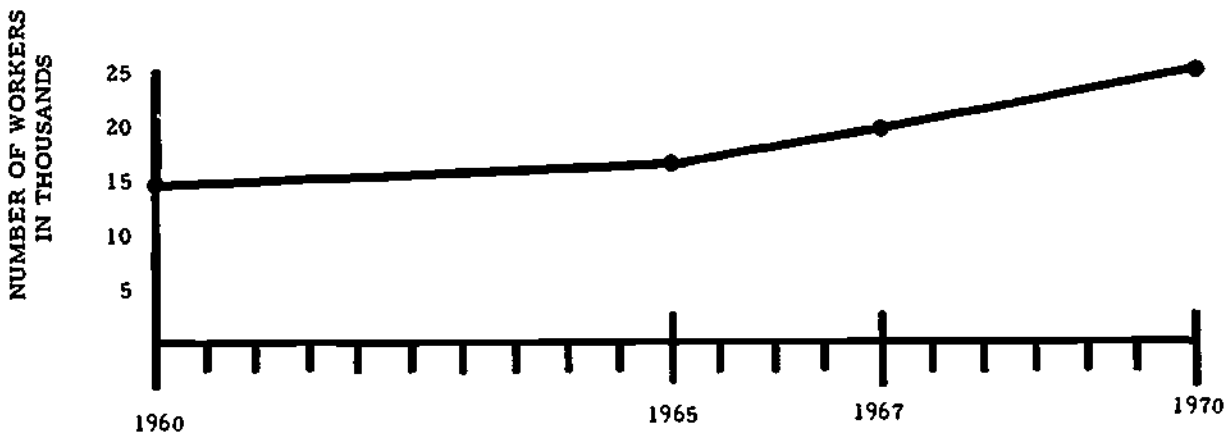


FIGURE IX: ESTIMATED NUMBER OF WORKERS IN MISCELLANEOUS SERVICES OCCUPATIONS

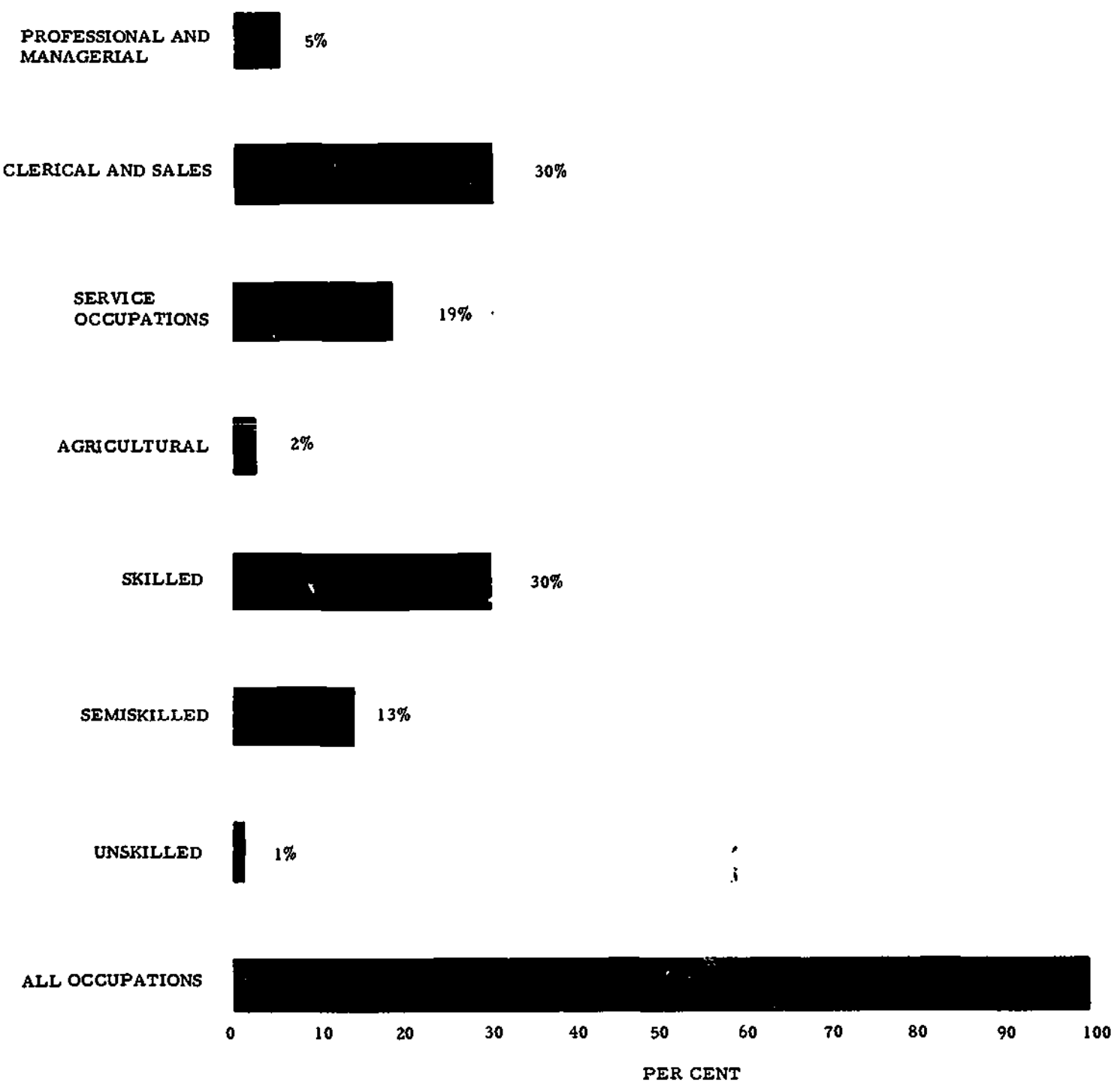


FIGURE X: DISTRIBUTION OF JOBS IN MISCELLANEOUS SERVICES OCCUPATIONS IN 1965

LOUISIANA STUDY OF MANPOWER AND TRAINING NEEDS IN MISCELLANEOUS SERVICES OCCUPATIONS

The data reported in this section of the study were obtained from personal interviews of 67 respondents employing 4,832 workers. This stratified random sample represents 26.2 per cent of the Miscellaneous Services Occupations in Louisiana. This sample was selected to include small, medium-sized, and large units, from the standpoint of employment; and a cross section of the activities of the industry.

Definition of terms. The definitions of the terms as defined in the section on Auto Dealers, Auto Services, and Auto Repair Shops will also apply to this section on Miscellaneous Services Occupations. (See page 7)

The major group applicable to this part of the study has been illustrated and defined in Appendix A. The various job titles or occupations have been defined and listed in Appendix B.

Findings. In 1965, 18,465 persons were employed in Louisiana in Miscellaneous Services Occupations. There were 12,903 men, 70 per cent, and 5,562 women, 30 per cent, employed in ninety-one different jobs or occupations. Table I lists the job titles or occupations, the Dictionary of Occupational Titles code numbers, and the distribution of workers according to sex. Study of Table I will reveal there were fourteen professional and managerial occupations,

twenty clerical and sales occupations, nine service occupations, one horticultural occupation, twenty-nine skilled occupations, and four unskilled occupations listed in this section of the study. The twenty clerical and sales occupations contained 30 per cent of the workers in the industry. The twenty-nine skilled occupations contained 30 per cent.

Over 60 per cent of the workers were in the prime age group, 21-45 years. One-fourth of the workers were in the 46-65 age group, and only one per cent were over 65. Study of Table II will reveal that 11 per cent of the workers were listed as being under 21 years of age.

Table III reflects that 61 per cent of the total work force were hired during the past year to maintain normal operations. This high percentage resulted partially from the high known use of short-time and transient workers by employing units. Duplication of count probably occurred due to several employers having had the same person on their separate payrolls during the course of the year. Those job classifications having extreme rates of replacement should be considered as containing possible inaccuracies.[1] Two per cent were hired due to the needs of expansion. Four per cent of the job classifications contain current job vacancies while 1 per cent were listed as receiving formal in-plant training. Study of Table III will reveal the distribution of

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[1]Letter from S. D. Garvin, Chief, Research and Statistics Unit, Division of Employment Security, Louisiana Department of Labor, dated April 6, 1966.

hires, vacancies, and in-plant trainees listed according to the percentage of total workers in each job title or occupation classification.

The approximate range of hourly entry wages for the jobs or occupations in the Miscellaneous Services Occupations has been arranged in Table IV. Some of these figures indicate the range; some of the others will indicate the exact entry wage.

Table V reflects the percentage distribution of experience requirements for the job classifications. No experience requirements had been established for 32 per cent of the occupations. Job experience was required for 26 per cent of the jobs while trade experience was required for 22 per cent of the occupations. Twenty per cent of the jobs required completion of a formal training program. In many classifications it was unlikely that this formal training was a formal in-plant training program.

Education requirements have not been firmly established. Study of Table VI will reveal that nearly one-third of the job classifications had no educational requirements for employment. Fifteen per cent of the occupations required some high school education and 49 per cent of the jobs required high school graduation. Some college was indicated for 2 per cent of the jobs and 1 per cent required college graduation.

Table VII lists the training requirements by percentage distribution. Twenty-eight per cent of the occupations have

had no training requirements established. Eleven per cent of the job classifications required apprenticeship training. Sixteen per cent required business or trade school training while technical school training was required in 11 per cent of the jobs. Thirty-four per cent of the jobs required formal in-plant training.

The greater preference to hire equally qualified men is reflected in Table VIII. Sixty-three per cent of the jobs reported preference for equally qualified men, while 29 per cent of the employers preferred equally qualified women for these occupations. Only 8 per cent of the occupations reported could be filled by either sex with no difference in preference by the employer. Preference to employ equally qualified men or women might be compared with actual employment where currently 70 per cent male and 30 per cent female comprise the work force.

Data on employment in these occupations reflect a substantial growth for the years 1960-1965. Continued growth has been indicated in the years ahead. Table IX reveals the estimated required employment for 1967 and 1970. An additional 5,818 employees will be required by 1970 and will bring the work force to an estimated total of 24,283 employees.

Summary and Conclusion. The work force in the occupations listed in this section of the study consisted of an estimated 18,465 employees, 70 per cent men and 30 per cent women. Over 60 per cent of the workers were in the prime age group of 21-45 years, and only 1 per cent were over 65.

The use of short-time and transient workers in some occupations caused possible inaccuracies in the percentage of the work force hired to maintain normal operations. This percentage is listed as being 61 per cent, while only 2 per cent were hired due to the needs of expansion.

By percentage, there were no experience requirements for 32 per cent of the occupations, job experience was required for 26 per cent, trade experience was required for 22 per cent, and formal training was required for 20 per cent of the jobs.

Some high school education was required for 15 per cent of the jobs and high school graduation was required for 49 per cent. Some college was indicated for 2 per cent of the jobs and 1 per cent required college graduation.

There were no training requirements established for 28 per cent of the occupations. Formal in-plant training was required for 34 per cent of the jobs, business or trade school for 16 per cent, technical school training for 11 per cent, and apprenticeship training for 11 per cent.

There was a definite preference to hire equally qualified men, and the actual employment percentages indicated that this was carried out in actual practice. The hourly wage range for entry workers was from a low of 38¢ per hour to a high of $4.00 per hour.

It has been predicted that employment in 1967 will be 113 per cent of 1965 and employment in 1970 will be 132 per cent of 1965. It is estimated that 5818 additional employees

will be needed by 1970. The state-operated trade and vocational-technical schools offer training which prepares students for employment. These schools can provide training for those occupations which do not require some college or college graduation. As indicated in this section of this report these occupations comprise 97 per cent of the workers in the industry. The trade and vocational-technical schools do not offer specific training for such jobs as interior decorator, x-ray technician, porter, glass bender, exterminator, etc. They do offer instruction that can be advantageously used by persons seeking employment in those occupations listed in Table X.

Additional study of these occupations is recommended in order to determine if any changes are required in existing training programs. Those job classifications not listed in Table X that require no college education should also be studied to determine if specific training courses should be established or existing programs adapted to include such training.

TABLE I

MISCELLANEOUS SERVICES OCCUPATIONAL DISTRIBUTION OF
EMPLOYMENT BY TITLE AND BY SEX*
S.I.C. CODES 73-79

Job Title	D.O.T. Code	Workers In This Job			
		Male		Female	
		Number	Per Cent	Number	Per Cent
Accountant	0-01	13	100%	--	---
Public Relations Copy Writer	0-06	57	70%	25	30%
Case Worker	0-27	25	100%	--	---
Int. Decorator	0-43	25	50%	25	50%
Illustrator	0-44	97	100%	--	---
Sign Designer	0-46	47	100%	--	---
Draftsman	0-48	44	100%	--	---
X-ray Technician	0-50	11	100%	--	---
Instructor	0-57	34	52%	32	48%
Still Picture Photographer	0-69	125	100%	--	---
Manager	0-71	32	100%	--	---
Manager, Credit & Collection	0-85	--	---	47	100%
Exec. Sec. & Mgr.	0-97	47	23%	159	77%
Mgr. & Dispatcher	0-98	34	50%	34	50%
Bookkeeper & Cash.	1-01	375	29%	926	71%
Bookkeeper	1-02	--	---	72	100%
Checker	1-03	--	---	4	100%
Clerk	1-05	85	12%	627	88%
Proof Reader	1-10	25	50%	25	50%
Credit Clerk	1-12	78	12%	600	88%
Collector	1-15	167	87%	25	13%
File Clerk	1-17	--	---	142	100%
Gen. Ind. Clerk	1-18	6	1%	681	99%

*Excluding #75 - Auto Services

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job			
		Male		Female	
		Number	Per Cent	Number	Per Cent
Dup. Mach. Oper.	1-25	240	62%	148	38%
Clerk	1-26	13	32%	27	68%
Secretary	1-33	--	---	308	100%
Clerk	1-34	9	100%	--	---
Steno & Typist	1-37	9	2%	396	98%
Stock Clerk	1-38	34	100%	--	---
Tel. Operator	1-42	--	---	107	100%
Agent	1-48	199	100%	--	---
Sales Clerk	1-70	--	---	72	100%
Salesmen	1-85	136	100%	--	---
Salesmen	1-87	38	100%	--	---
Bartender	2-21	8	100%	--	---
Cook	2-26	237	71%	98	29%
Waitress	2-27	132	44%	165	56%
Kitchen Worker	2-29	199	60%	132	40%
Attendant	2-40	263	33%	528	67%
Watchman	2-61	1098	100%	--	---
Maid	2-82	--	---	32	100%
Janitor	2-84	184	100%	--	---
Porter	2-86	520	100%	--	---
Keeper-Grounds	3-40	297	100%	--	---
Seamstress	4-25	--	---	119	100%
Cabinetmaker	4-32	36	100%	--	---
Upholsterer	4-35	53	100%	--	---
Compositor	4-44	263	100%	--	---
Offset Pressman	4-48	44	100%	--	---
Glass Bender	4-65	25	100%	--	---
Machinist	4-75	127	100%	--	---
Sheet Metal Worker	4-80	57	100%	--	---
Iron Worker	4-84	325	100%	--	---
Welder	4-85	918	100%	--	---
Electrician	4-97	216	100%	--	---

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job			
		Male		Female	
		Number	Per Cent	Number	Per Cent
Finisher	5-16	17	100%	--	---
Formation Test Operator	5-20	25	100%	--	---
Oper. Engineer	5-23	23	100%	--	---
Carpenter	5-25	78	100%	--	---
Painter	5-27	454	100%	--	---
Pipefitter	5-30	182	100%	--	---
Asbestos Worker	5-33	17	100%	--	---
Power Plant Worker	5-51	34	100%	--	---
Projectionist	5-55	549	100%	--	---
Termite Treater	5-59	551	100%	--	---
Stationary Eng.	5-72	4	100%	--	---
Heavy Equip. Oper.	5-73	9	100%	--	---
Mill Wright	5-78	17	100%	--	---
Mechanic	5-81	11	100%	--	---
Mechanics & Repairman	5-83	1244	100%	--	---
Photo Process Occupations	5-86	57	100%	--	---
Foreman-Mfg.	5-92	9	100%	--	---
Foreman-Extraction Minerals	5-93	17	100%	--	---
Upholsterer	6-35	36	100%	--	---
Proof Pressman	6-49	48	100%	--	---
Sheet Metal Mechanic	6-94	87	100%	--	---
Helpers	6-95	369	100%	--	---
Winder	6-99	153	96%	6	4%
Assembler	7-00	36	100%	--	---
Wire Assembler	7-13	144	100%	--	---
Roofer	7-31	6	100%	--	---
Bill Poster	7-59	407	100%	--	---
Mechanics & Repairman	7-83	454	100%	--	---
Tool Grinder	7-84	9	100%	--	---
Photo Process Occupations	7-86	551	100%	--	---
Exterminator	7-89	144	100%	--	---

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job			
		Male		Female	
		Number	Per Cent	Number	Per Cent
Apprentices	7-97	9	100%	--	---
Mach. Stripper	8-36	36	100%	--	---
Machinist	8-78	9	100%	--	---
Painter	9-16	9	100%	--	---
Stock Boy & Filler	9-88	91	100%	--	---
Totals		12903	70%	5562	30%

TABLE II
MISCELLANEOUS SERVICES OCCUPATIONS DISTRIBUTION
OF EMPLOYMENT BY AGE GROUPS*
S.I.C. CODES 73-79

Job Title	Workers In The Age Groups							
	Under 21		21 - 45		46 - 65		Over 65	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Accountant	--	---	9	69%	4	31%	--	---
Public Relations Copy Writer	--	---	82	100%	--	---	--	---
Case Worker	--	---	--	---	25	100%	--	---
Int. Decorator	--	---	--	---	50	100%	--	---
Illustrator	--	---	97	100%	--	---	--	---
Sign Designer	--	---	47	100%	--	---	--	---
Draftsman	4	9%	34	77%	6	14%	--	---
X-ray Technician	--	---	11	100%	--	---	--	---
Instructor	--	---	66	100%	--	---	--	---
Still Picture Photographer	--	---	125	100%	--	---	--	---
Manager	--	---	32	100%	--	---	--	---
Manager, Credit & Collection	--	---	47	100%	--	---	--	---
Exec. Sec. & Mgr.	--	---	32	16%	174	84%	--	---
Mgr. & Dispatcher	--	---	32	47%	36	53%	--	---
Bookkeeper & Cash.	42	3%	793	61%	460	35%	6	1%
Bookkeeper	--	---	72	100%	--	---	--	---
Checker	--	---	--	---	4	100%	--	---
Clerk	62	9%	464	65%	182	26%	4	-1%
Proof Reader	--	---	25	50%	25	50%	--	---
Credit Clerk	25	4%	551	81%	102	[illegible]%	--	---
Collector	--	---	120	62%	72	38%	--	---
File Clerk	28	20%	114	80%	--	---	--	---
Gen. Ind. Clerk	146	21%	494	72%	47	7%	--	---

*Excluding #75 - Auto Services

TABLE II (Continued)

Job Title	Workers In The Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Dup. Mach. Oper.	59	15%	301	78%	28	7%	--	---
Clerk	4	10%	11	28%	25	62%	--	---
Secretary	100	32%	151	49%	57	19%	--	---
Clerk	9	100%	--	---	--	---	--	---
Steno & Typist	89	22%	259	64%	57	14%	--	---
Stock Clerk	11	32%	15	44%	8	24%	--	---
Tel. Operator	6	6%	76	71%	23	21%	2	2%
Agent	--	---	133	67%	66	33%	--	---
Sales Clerk	--	---	47	65%	25	35%	--	---
Salesmen	--	---	4	3%	132	97%	--	---
Salesmen	--	---	34	89%	4	11%	--	---
Bartender	--	---	8	100%	--	---	--	---
Cook	--	---	203	60%	132	40%	--	---
Waitress	--	---	231	78%	66	22%	--	---
Kitchen Worker	297	90%	34	10%	--	---	--	---
Attendant	496	63%	263	33%	32	4%	--	---
Watchman	--	---	153	14%	873	80%	72	6%
Maid	--	---	32	100%	--	---	--	---
Janitor	--	---	87	47%	87	47%	10	6%
Porter	--	---	210	40%	310	60%	--	---
Keeper-Grounds	98	33%	199	67%	--	---	--	---
Seamstress	--	---	--	---	119	100%	--	---
Cabinetmaker	--	---	26	72%	10	28%	--	---
Upholsterer	--	---	27	51%	26	49%	--	---
Compositor	--	---	191	73%	72	27%	--	---
Offset Pressman	--	---	23	52%	21	48%	--	---
Glass Bender	--	---	25	100%	--	---	--	---
Machinist	--	---	53	42%	74	58%	--	---
Sheet Metal Worker	--	---	57	100%	--	---	--	---
Iron Worker	--	---	204	63%	121	37%	--	---
Welder	.6	-1%	721	79%	191	21%	--	---
Electrician	--	---	153	71%	63	29%	--	---

TABLE II (Continued)

Job Title	Workers In The Age Groups							
	Under 21		21 - 45		46 - 65		Over 65	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Finisher	--	---	--	---	17	100%	--	---
Formation Test Operator	--	---	25	100%	--	---	--	---
Oper. Engineer	--	---	17	74%	6	26%	--	---
Carpenter	--	---	70	90%	8	10%	--	---
Painter	--	---	327	72%	127	28	--	---
Pipefitter	6	3%	119	66%	57	31%	--	---
Asbestos Worker	--	---	13	76%	4	24%	--	---
Power Plant Worker	--	---	28	82%	6	18%	--	---
Projectionist	--	---	384	70%	165	30%	--	---
Termite Treater	144	26%	407	74%	--	---	--	---
Stationary Eng.	--	---	--	---	4	100%	--	---
Heavy Equip. Oper	--	---	9	100%	--	---	--	---
Mill Wright	--	---	13	76%	4	24%	--	---
Mechanic	--	---	11	100%	--	---	--	---
Mechanics & Repairman	44	4%	1020	82%	180	14%	--	---
Photo Process Occupations	23	40%	34	60%	--	---	--	---
Foreman-Mfg.	--	---	9	100%	--	---	--	---
Foreman-Extraction Minerals	--	---	--	---	17	100%	--	---
Upholsterer	17	47%	19	53%	--	---	--	---
Proof Pressman	--	---	25	52%	23	48%	--	---
Sheet Metal Mechanic	--	---	72	83%	15	17%	--	---
Helpers	79	21%	290	79%	--	---	--	---
Winder	26	16%	120	76%	13	8%	--	---
Assembler	--	---	17	47%	19	53%	--	---
Wire Assembler	--	---	144	100%	--	---	--	---
Roofer	--	---	6	100%	--	---	--	---
Bill Poster	--	---	360	88%	47	12%	--	---
Mechanics & Repairman	25	6%	401	88%	28	6%	--	---
Tool Grinder	--	---	9	100%	--	---	--	---
Photo Process Occupations	47	9%	457	83%	47	8%	--	---
Exterminator	47	33%	97	67%	--	---	--	---

TABLE II (Continued)

Job Title	Workers In The Age Groups							
	Under 21		21 - 45		46 - 65		Over 65	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Apprentices	--	---	9	100%	--	---	--	---
Mach. Stripper	--	---	26	72%	10	28%	--	---
Machinist	--	---	9	100%	--	---	--	---
Painter	9	100%	--	---	--	---	--	---
Stock Boy & Filler	91	100%	--	---	--	---	--	---
Totals	2040	11%	11725	63%	4606	25%	94	1%

TABLE III

MISCELLANEOUS SERVICES OCCUPATIONAL DISTRIBUTION OF
WORKER HIRES - VACANCIES - TRAINEES*
S.I.C. CODES 73-79

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	Maintain Normal Ops. Per Cent	Due To Expansion Number	Due To Expansion Per Cent	Current Vacancies For This Job Number	Current Vacancies For This Job Per Cent	Trainees Receiving Formal In-plant Training Number	Trainees Receiving Formal In-plant Training Per Cent
Accountant	--	---	--	---	--	---	--	---
Public Relations**	--	---	--	---	32	39%	--	---
Case Worker	--	---	25	100%	--	---	--	---
Int. Decorator	--	---	--	---	--	---	--	---
Illustrator	--	---	--	---	--	---	--	---
Set Designer	--	---	--	---	--	---	--	---
Draftsman	4	9%	4	9%	6	14%	--	---
X-ray Technician	4	36%	--	---	--	---	--	---
Instructor	--	---	--	---	--	---	--	---
Still Picture Phot.	47	38%	--	---	--	---	--	---
Manager	--	---	--	---	--	---	--	---
Mgr, Cr. & Coll.	--	---	--	---	--	---	--	---
Exec. Sec. & Mgr.	--	---	--	---	--	---	--	---
Mgr. & Dispatcher	--	---	--	---	--	---	--	---
Bookkeeper & Cash.	79	6%	--	---	--	---	--	---
Bookkeeper	--	---	--	---	--	---	--	---
Checker	--	---	--	---	--	---	--	---
Clerk	121	17%	9	1%	--	---	--	---
Proof Reader	25	50%	--	---	--	---	--	---
Credit Clerk	159	23	--	---	--	---	6	1%
Collector	--	---	--	---	47	24%	--	---
File Clerk	28	20%	--	---	--	---	--	---
Gen. Ind. Clerk	390	57%	--	---	--	---	--	---

*Excluding #75 - Auto Services

**Copy Writer

TABLE III (Continued)

	Workers Hired During Past Year				Current Vacancies For This Job		Trainees Receiving Formal In-plant Training	
	Maintain Normal Ops.		Due To Expansion					
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Dup. Mach. Oper.	81	21%	--	---	25	6%	--	---
Clerk	4	10%	--	---	--	---	--	---
Secretary	11	4%	25	8%	--	---	--	---
Clerk	9	100%	--	---	--	---	--	---
Steno & Typist	197	49%	28	7%	11	3%	4	1%
Stock Clerk	6	18%	--	---	--	---	--	---
Tel. Operator	11	10%	--	---	--	---	--	---
Agent	--	---	--	---	--	---	--	---
Sales Clerk	--	---	--	---	--	---	--	---
Salesmen	--	---	--	---	--	---	--	---
Salesmen	--	---	--	---	--	---	--	---
Bartender	--	---	--	---	--	---	--	---
Cook	32	10%	--	---	32	10%	--	---
Waitress	263	89%	--	---	--	---	--	---
Kitchen Worker	297	90%	--	---	--	---	--	---
Attendant	327	41	--	---	66	8%	--	---
Watchman	288	26	--	---	--	---	--	---
Maid	--	---	--	---	--	---	--	---
Janitor	10	5%	149	81%	--	---	--	---
Porter	6	1%	--	---	32	28%	--	---
Keeper-Grounds	64	22%	--	---	--	---	--	---
Seamstress	25	21%	--	---	--	---	--	---
Cabinetmaker	--	---	--	---	--	---	--	---
Upholsterer	17	32%	--	---	--	---	36	68%
Compositor	47	18%	--	---	--	---	--	---
Offset Pressman	28	64%	--	---	--	---	--	---
Glass Bender	--	---	--	---	--	---	--	---
Machinist	--	---	9	7%	--	---	--	---
Sheet Metal Worker	--	---	--	---	--	---	--	---
Iron Worker	11	3%	--	---	--	---	--	---
Welder	5011	546%	--	---	100	11%	--	---
Electrician	132	61%	9	4%	--	---	--	---

TABLE III (Continued)

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	Maintain Normal Ops. Per Cent	Due To Expansion Number	Due To Expansion Per Cent	Current Vacancies For This Job Number	Current Vacancies For This Job Per Cent	Trainees Receiving Formal In-plant Training Number	Trainees Receiving Formal In-plant Training Per Cent
Finisher	--	---	--	---	--	---	--	---
Formation Test Oper.	--	---	--	---	--	---	--	---
Oper. Engineer	6	26%	--	---	--	---	--	---
Carpenter	17	22%	--	---	--	---	--	---
Painter	40	9%	--	---	--	---	--	---
Pipefitter	619	340%	--	---	28	15%	--	---
Asbestos Worker	--	---	23	135%	--	---	--	---
Power Plant Worker	17	50%	--	---	--	---	--	---
Projectionist	199	36%	--	---	132	24%	--	---
Termite Treater	263	48%	--	---	47	9%	--	---
Stationary Eng.	--	---	--	---	--	---	--	---
Heavy Equip. Oper.	6	67%	--	---	--	---	--	---
Mill Wright	--	---	--	---	--	---	--	---
Mechanic	8	73%	--	---	--	---	--	---
Mech. & Repairman	138	11%	21	2%	61	5%	44	4%
Photo Process***	--	---	--	---	--	---	--	---
Foreman-Mfg.	--	---	--	---	--	---	--	---
Foreman-Ext Minerals	--	---	--	---	--	---	--	---
Upholsterer	--	---	--	---	--	---	17	47%
Proof Pressman	--	---	--	---	--	---	--	---
Sheet Metal Mech.	6	7%	--	---	--	---	--	---
Helpers	982	266%	--	---	17	5%	--	---
Winder	83	54%	--	---	--	---	--	---
Assembler	9	25%	--	---	--	---	9	25%
Wire Assembler	--	---	--	---	--	---	--	---
Roofer	--	---	--	---	--	---	--	---
Bill Poster	--	---	--	---	--	---	--	---
Mech. & Repairman	725	160%	9	2%	17	4%	--	---
Tocl Grinder	--	---	--	---	--	---	--	---
Photo Process***	191	35%	25	5%	--	---	--	---
Exterminator	25	17%	--	---	--	---	--	---

***Occupations

TABLE III (Continued)

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	Per Cent	Due To Expansion Number	Per Cent	Current Vacancies For This Job Number	Per Cent	Trainees Receiving Formal In-plant Training Number	Per Cent
Apprentices	--	---	--	---	--	---	--	---
Mach. Stripper	--	---	--	---	--	---	--	---
Machinist	--	---	--	---	--	---	--	---
Painter	9	100%	--	---	--	---	--	---
Stock Boy & Filler	157	173%	--	---	--	---	--	---
Totals	11234	61%	336	2%	653	4%	125	1%

TABLE IV

MISCELLANEOUS SERVICES OCCUPATIONAL DISTRIBUTION
OF ENTRY WAGES*
S.I.C. CODES 73-79

Job Title	Approximate Entry Wage For This Job -Range-		
Accountant	2.00	-	2.50
Public Relations Copy Writer	1.59	-	2.00
Case Worker		1.32	
Int. Decorator		Not Available	
Illustrator		2.00	
Sign Designer		2.59	
Draftsman		2.60	
X-ray Technician		2.46	
Instructor	1.59	-	2.31
Still Picture Photographer	2.74	-	3.25
Manager		1.56	
Manager, Credit & Collection		1.45	
Exec. Sec. & Mgr.	1.50	-	4.00
Mgr. & Dispatcher	2.00	-	2.60
Bookkeeper & Cash.	.73	-	4.00
Bookkeeper		1.30	
Checker		1.50	
Clerk	1.00	-	2.30
Proof Reader		2.25	
Credit Clerk	1.25	-	2.31
Collector		1.45	
File Clerk	1.25	-	1.33
Gen. Ind. Clerk	1.15	-	1.44
Dup. Mach. Oper.	1.39	-	2.16
Clerk	1.45	-	2.25
Secretary	1.16	-	2.25
Clerk		1.85	
Steno & Typist	.75	-	2.25
Stock Clerk	1.25	-	1.80
Tel. Operator	1.25	-	1.75
Agent		2.30	
Sales Clerk		1.30	
Salesmen	3.06	-	4.00
Salesmen	2.16	-	2.89
Bartender		1.08	
Cook	.73	-	3.05
Waitress	.63	-	1.40
Kitchen Worker	.38	-	.90
Attendant	.50	-	1.15
Watchman		1.25	

*Excluding #75 - Auto Services

TABLE IV (Continued)

Job Title	Approximate Entry Wage For This Job -Range-		
Maid		.84	
Janitor	.92	-	2.19
Porter	.75	-	2.50
Keeper-Grounds	1.06	-	3.05
Seamstress		1.25	
Cabinetmaker		1.50	
Upholsterer	2.25	-	3.00
Compositor	2.88	-	3.25
Offset Pressman		2.20	
Glass Bender		3.25	
Machinist	1.25	-	3.37
Sheet Metal Worker	2.00	-	3.50
Iron Worker	2.42	-	3.37
Welder	1.25	-	3.35
Electrician	2.00	-	3.47
Finisher		2.00	
Formation Test Operator		2.88	
Oper. Engineer		2.40	
Carpenter	2.50	-	3.75
Painter	2.00	-	3.37
Pipefitter	1.35	-	3.38
Asbestos Worker		3.37	
Power Plant Worker		3.34	
Projectionist	1.25	-	3.70
Termite Treater		2.00	
Stationary Eng.		1.05	
Heavy Equip. Oper.		3.37	
Mill Wright		3.37	
Mechanic	2.75	-	3.37
Mechanics & Repairman	1.25	-	3.40
Photo Process Occupations	1.50	-	2.75
Foreman-Mfg.		Union Scale	
Foreman-Extraction Minerals		3.30	
Upholsterer	1.25	-	1.50
Proof Pressman		2.75	
Sheet Metal Mechanic		3.37	
Helpers	1.25	-	2.75
Winder	1.25	-	3.40
Assembler		1.25	
Wire Assembler		3.50	
Roofer		3.37	
Bill Poster		1.44	
Mechanics & Repairman	1.24	-	3.03
Tool Grinder		1.25	
Photo Process Occupations	1.25	-	1.30
Exterminator		1.25	

TABLE IV (Continued)

Job Title	Approximate Entry Wage For This Job -Range-		
Apprentices		1.25	
Mach. Stripper	1.50	-	2.00
Machinist		1.25	
Painter		1.25	
Stock Boy & Filler	1.25	-	1.50

TABLE V

EXPERIENCE REQUIREMENTS BY PERCENTAGE
DISTRIBUTION FOR MISCELLANEOUS SERVICES OCCUPATIONS
S.I.C. CODES 73-79*

Job Title	Experience Requirements by Job Title: None Established	Job Experience	Trade Experience	Formal Training
Accountant	---	31%	---	69%
Public Relations Copy Writer	---	---	63%	37%
Case Worker	---	---	100%	---
Int. Decorator	---	---	---	100%
Illustrator	---	50%	---	50%
Sign Designer	---	---	50%	50%
Draftsman	---	34%	33%	33%
X-ray Technician	---	34%	33%	33%
Instructor	---	---	100%	---
Still Picture Photographer	---	29%	42%	29%
Manager	---	---	100%	---
Manager, Credit & Collection	---	---	100%	---
Exec. Sec. & Mgr.	9%	18%	55%	18%
Mgr. & Dispatcher	48%	3%	49%	---
Bookkeeper & Cash.	43%	10%	36%	11%
Bookkeeper	---	50%	---	50%
Checker	100%	---	---	---
Clerk	59%	15%	19%	7%
Proof Reader	---	100%	---	---
Credit Clerk	84%	16%	---	---
Collector	---	100%	---	---
File Clerk	100%	---	---	---
Gen. Ind. Clerk	47%	---	24%	29%
Dup. Mach. Oper.	1%	59%	3%	37%
Clerk	---	70%	---	30%
Secretary	---	45%	5%	50%
Clerk	100%	---	---	---
Steno & Typist	51%	14%	18%	17%
Stock Clerk	50%	---	50%	---
Tel. Operator	---	100%	---	---
Agent	---	100%	---	---
Sales Clerk	100%	---	---	---
Salesmen	---	100%	---	---
Salesmen	---	100%	---	---
Bartender	50%	50%	---	---
Cook	29%	11%	58%	2%
Waitress	---	---	100%	---
Kitchen Worker	90%	---	10%	---
Attendant	96%	---	4%	---
Watchman	100%	---	---	---

*Excluding #75 - Auto Services

TABLE V (Continued)

Job Title	Experience Requirements by Job Title None Established	Job Experience	Trade Experience	Formal Training
Maid	100%	---	---	---
Janitor	1%	33%	33%	33%
Porter	79%	2%	19%	---
Keeper-Grounds	89%	11%	---	---
Seamstress	---	---	100%	---
Cabinetmaker	---	28%	---	72%
Upholsterer	---	76%	---	24%
Compositor	---	34%	33%	33%
Offset Pressman	---	34%	33%	33%
Glass Bender	---	100%	---	---
Machinist	3%	33%	32%	32%
Sheet Metal Worker	---	---	55%	45%
Iron Worker	---	72%	14%	14%
Welder	5%	81%	7%	7%
Electrician	1%	37%	26%	36%
Finisher	---	50%	---	50%
Formation Test Operator	---	100%	---	---
Oper. Engineer	---	100%	---	---
Carpenter	---	35%	30%	35%
Painter	---	54%	23%	23%
Pipefitter	---	44%	44%	12%
Asbestos Worker	---	34%	33%	33%
Power Plant Worker	---	34%	33%	33%
Projectionist	58%	38%	2%	2%
Termite Treater	100%	---	---	---
Stationary Eng.	---	50%	50%	---
Heavy Equip. Oper.	---	34%	33%	33%
Mill Wright	---	34%	33%	33%
Mechanic	---	35%	35%	30%
Mechanics & Repairman	10%	14%	51%	25%
Photo Process Occupations	---	63%	27%	10%
Foreman-Mfg.	---	50%	50%	---
Foreman, Extraction Minerals	---	100%	---	---
Upholsterer	100%	---	---	---
Proof Pressman	---	34%	33%	33%
Sheet Metal Mechanic	---	34%	33%	33%
Helpers	40%	60%	---	---
Winder	13%	18%	---	69%
Assembler	100%	---	---	---
Wire Assembler	---	---	50%	50%
Roofer	---	34%	33%	33%
Bill Poster	---	---	---	100%
Mechanics & Repairman	5%	19%	4%	72%
Tool Grinder	100%	---	---	---
Photo Process Occupations	87%	13%	---	---
Exterminator	100%	---	---	---

TABLE V (Continued)

Job Title	Experience Requirements by Job Title None Established	Job Experience	Trade Experience	For Trai
Apprentices	100%	---	---	-
Mach. Stripper	---	50%	---	5
Machinist	100%	---	---	-
Painter	100%	---	---	-
Stock Boy & Filler	100%	---	---	-
Totals	32%	26%	22%	2

TABLE VI

EDUCATION REQUIREMENTS BY PERCENTAGE
DISTRIBUTION FOR MISCELLANEOUS SERVICES OCCUPATIONS
S.I.C. CODES 73-79*

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Accountant	---	---	69%	31%	---
Public Relations Copy Writer	---	---	100%	---	---
Case Worker	---	---	---	100%	---
Int. Decorator	---	---	---	---	100%
Illustrator	---	---	100%	---	---
Sign Designer	---	---	100%	---	---
Draftsman	---	---	100%	---	---
X-ray Technician	---	---	100%	---	---
Instructor	50%	---	50%	---	---
Still Picture Photographer	---	---	31%	27%	42%
Manager	---	---	100%	---	---
Manager, Credit & Collection	---	---	100%	---	---
Exec. Sec. & Mgr.	---	---	62%	23%	15%
Mgr. & Dispatcher	48%	---	52%	---	---
Bookkeeper & Cash.	10%	23%	64%	3%	---
Bookkeeper	---	---	100%	---	---
Checker	---	100%	---	---	---
Clerk	1%	1%	98%	---	---
Proof Reader	---	---	50%	50%	---
Credit Clerk	---	---	90%	10%	---
Collector	---	---	100%	---	---
File Clerk	---	---	100%	---	---
Gen. Ind. Clerk	---	1%	99%	---	---
Dup. Mach. Oper.	---	5%	95%	---	---
Clerk	---	16%	84%	---	---
Secretary	---	4%	96%	---	---
Clerk	---	100%	---	---	---

*Excluding #75 - Auto Services

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Steno & Typist	---	1%	99%	---	---
Stock Clerk	---	---	100%	---	---
Tel. Operator	46%	2%	52%	---	---
Agent	---	---	100%	---	---
Sales Clerk	---	---	100%	---	---
Salesmen	---	---	97%	3%	---
Salesmen	---	---	100%	---	---
Bartender	100%	---	---	---	---
Cook	100%	---	---	---	---
Waitress	100%	---	---	---	---
Kitchen Worker	100%	---	---	---	---
Attendant	33%	67%	---	---	---
Watchman	100%	---	---	---	---
Maid	100%	---	---	---	---
Janitor	5%	95%	---	---	---
Porter	95%	3%	2%	---	---
Keeper-Grounds	100%	---	---	---	---
Seamstress	100%	---	---	---	---
Cabinetmaker	100%	---	---	---	---
Upholsterer	100%	---	---	---	---
Compositor	---	100%	---	---	---
Offset Pressman	---	---	100%	---	---
Glass Bender	---	---	100%	---	---
Machinist	7%	7%	86%	---	---
Sheet Metal Worker	---	---	100%	---	---
Iron Worker	---	81%	19%	---	---
Welder	99%	1%	---	---	---
Electrician	2%	80%	18%	---	---
Finisher	100%	---	---	---	---
Formation Test Operator	---	---	100%	---	---
Oper. Engineer	100%	---	---	---	---
Carpenter	5%	73%	22%	---	---
Painter	37%	5%	58%	---	---

TABLE VI (Continued

Job Title	Education Requirements By Job Title None Established	Some High School	High School Graduate	Some College	College Graduate
Pipefitter	71%	5%	24%	---	---
Asbestos Worker	---	100%	---	---	---
Power Plant Worker	---	100%	---	---	---
Projectionist	9%	37%	54%	---	---
Termite Treater	---	---	100%	---	---
Stationary Eng.	100%	---	---	---	---
Heavy Equip. Oper.	---	100%	---	---	---
Mill Wright	---	---	100%	---	---
Mechanic	18%	82%	---	---	---
Mechanics & Repairman	16%	3%	76%	---	---
Photo Process Occupations	42%	42%	16%	---	---
Foreman-Mfg.	---	---	100%	---	---
Foreman, Extraction Minerals	---	---	50%	50%	---
Upholsterer	100%	---	---	---	---
Proof Pressman	---	100%	---	---	---
Sheet Metal Mechanic	---	---	100%	---	---
Helpers	100%	---	---	---	---
Winder	77%	23%	---	---	---
Assembler	---	---	100%	---	---
Wire Assembler	---	100%	---	---	---
Roofer	---	100%	---	---	---
Bill Poster	---	---	100%	---	---
Mechanics & Repairman	77%	17%	6%	---	---
Tool Grinder	100%	---	---	---	---
Photo Process Occupations	13%	---	87%	---	---
Exterminator	---	100%	---	---	---
Apprentices	---	---	100%	---	---
Mach. Stripper	100%	---	---	---	---
Machinist	50%	50%	---	---	---
Painter	100%	---	---	---	---
Stock Boy & Filler	100%	---	---	---	---
Totals	33%	15%	49%	2%	1%

TABLE VII

TRAINING REQUIREMENTS BY PERCENTAGE DISTRIBUTION
FOR MISCELLANEOUS SERVICES OCCUPATIONS*
S.I.C. CODES 73-79

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Accountant	100%	---	---	---	---
Public Relations Copy Writer	---	---	---	40%	60%
Case Worker	100%	---	---	---	---
Int. Decorator	---	---	---	---	100%
Illustrator	---	---	---	100%	---
Sign Designer	---	---	---	100%	---
Draftsman	---	---	50%	50%	---
X-ray Technician	---	---	---	100%	---
Instructor	50%	---	50%	---	---
Still Picture Photographer	---	---	38%	4%	58%
Manager	---	---	---	---	---
Manager, Credit & Collection	---	---	100%	---	---
Exec. Sec. & Mgr.	12%	---	54%	---	34%
Mgr. & Dispatcher	3%	---	48%	---	49%
Bookkeeper & Cash.	51%	30%	15%	3%	1%
Bookkeeper	---	---	100%	---	---
Checker	100%	---	---	---	---
Clerk	56%	---	10%	---	34%
Proof Reader	---	---	---	---	---
Credit Clei	100%	---	---	---	---
Collector	100%	---	---	---	---
File Clerk	50%	---	---	---	50%
Gen. Ind. Clerk	3%	---	30%	---	67%
Dup. Mach. Oper.	35%	4%	57%	4%	---
Clerk	89%	---	11%	---	---
Secretary	9%	---	91%	---	---
Clerk	100%	---	---	---	---

*Excluding #75 - Auto Services

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprentichship	Business or Trade School	Technical School	Formal In-plant
Steno & Typist	31%	25%	16%	2%	26%
Stock Clerk	50%	---	---	---	50%
Tel. Operator	54%	---	---	46%	---
Agent	100%	---	---	---	---
Sales Clerk	---	---	---	---	100%
Salesmen	100%	---	---	---	---
Salesmen	100%	---	---	---	---
Bartender	100%	---	---	---	---
Cook	66%	---	2%	---	32%
Waitress	56%	---	---	---	44%
Kitchen Worker	---	---	---	---	100%
Attendant	47%	40%	---	---	13%
Watchman	21%	---	---	---	79%
Maid	---	---	---	---	100%
Janitor	---	33%	33%	33%	1%
Porter	82%	---	---	---	18%
Keeper-Grounds	---	---	---	11%	89%
Seamstress	---	---	---	---	100%
Cabinetmaker	---	---	100%	---	---
Upholsterer	34%	---	33%	---	33%
Compositor	---	---	50%	---	50%
Offset Pressman	---	34%	33%	33%	---
Glass Bender	100%	---	---	---	---
Machinist	---	---	52%	44%	4%
Sheet Metal Worker	---	55%	---	---	45%
Iron Worker	40%	---	10%	50%	---
Welder	23%	12%	18%	27%	20%
Electrician	---	1%	84%	15%	---
Finisher	---	---	---	---	100%
Formation Test Operator	100%	---	---	---	---
Oper. Engineer	---	---	---	100%	---
Carpenter	35%	2%	13%	30%	20%
Painter	54%	4%	38%	4%	---

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Pipefitter	---	4%	75%	21%	---
Asbestos Worker	---	34%	33%	33%	---
Power Plant Worker	---	34%	33%	33%	---
Projectionist	61%	38%	---	1%	---
Termite Treater	---	---	---	---	100%
Stationary Eng.	---	---	100%	---	---
Heavy Equip. Oper.	---	34%	33%	33%	---
Mill Wright	---	---	50%	50%	---
Mechanic	---	36%	44%	20%	---
Mechanic & Repairman	6%	4%	12%	40%	38%
Photo Process Occupations	42%	---	42%	16%	---
Foreman-Mfg.	---	100%	---	---	---
Foreman-Extraction Minerals	---	---	100%	---	---
Upholsterer	34%	---	33%	---	33%
Proof Pressman	---	---	50%	---	50%
Sheet Metal Mechanic	---	---	50%	50%	---
Helpers	---	63%	---	---	37%
Winder	22%	21%	---	---	57%
Assembler	---	---	---	---	100%
Wire Assembler	---	---	100%	---	---
Roofer	---	34%	33%	33%	---
Bill Poster	---	---	---	---	---
Mechanics & Repairman	14%	4%	9%	4%	69%
Tool Grinder	---	---	---	---	100%
Photo Process Occupations	13%	---	---	---	87%
Exterminator	100%	---	---	---	---
Apprentices	50%	---	---	---	50%
Mach. Stripper	---	---	---	---	100%
Machinist	---	---	---	---	100%
Painter	---	---	---	---	100%
Stock Boy & Filler	73%	---	---	---	27%
Totals	28%	11%	16%	11%	34%

TABLE VIII

PREFERENCE TO HIRE EQUALLY QUALIFIED
MEN OR WOMEN IN MISCELLANEOUS SERVICES OCCUPATIONS*
S.I.C. CODES 73-79

Job Title	Preference to Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Accountant	4	31%	---	---	9	69%
Public Relations Copy Writer	---	---	---	---	82	100%
Case Worker	25	100%	---	---	---	---
Int. Decorator	---	---	---	---	50	100%
Illustrator	---	---	---	---	97	100%
Sign Designer	47	100%	---	---	---	---
Draftsman	---	---	---	---	44	100%
X-ray Technician	11	100%	---	---	---	---
Instructor	34	52%	---	---	32	48%
Still Picture Photographer	78	62%	47	38%	---	---
Manager	32	100%	---	---	---	---
Manager, Credit & Collection	---	---	47	100%	---	---
Exec. Sec. & Manager	47	23%	159	77%	---	---
Mgr. & Dispatcher	---	---	2	3%	66	97%
Bookkeeper & Cashier	47	4%	843	64%	411	32%
Bookkeeper	---	---	72	100%	---	---
Checker	---	---	4	100%	---	---
Clerk	59	8%	526	74%	127	18%
Proof Reader	---	---	---	---	50	100%
Credit Clerk	78	12%	600	88%	---	---
Collector	192	100%	---	---	---	---
File Clerk	---	---	142	100%	---	---
Gen. Ind. Clerk	---	---	677	99%	10	1%
Dup. Mach. Oper.	185	48%	144	37%	59	15%
Clerk	10	25%	17	43%	13	32%
Secretary	---	---	308	100%	---	---
Clerk	9	100%	---	---	---	---

*Excluding #75 - Auto Services

TABLE VIII (Continued)

Job Title	Preference to Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Steno & Typist	---	---	367	91%	38	9%
Stock Clerk	34	100%	---	---	---	---
Tel. Operator	---	---	107	100%	---	---
Agent	---	---	---	---	199	100%
Sales Clerk	---	---	72	100%	---	---
Salesmen	4	3%	132	97%	---	---
Salesmen	38	100%	---	---	---	---
Bartender	8	100%	---	---	---	---
Cook	167	50%	66	20%	102	30%
Waitress	132	44%	165	56%	---	---
Kitchen Worker	199	60%	98	30%	34	10%
Attendant	263	33%	528	67%	---	---
Watchman	1098	100%	---	---	---	---
Maid	---	---	32	100%	---	---
Janitor	184	100%	---	---	---	---
Porter	511	98%	---	---	9	2%
Keeper-Grounds	297	100%	---	---	---	---
Seamstress	---	---	119	100%	---	---
Cabinetmaker	36	100%	---	---	---	---
Upholsterer	53	100%	---	---	---	---
Compositor	263	100%	---	---	---	---
Offset Pressman	---	---	---	---	44	100%
Glass Bender	25	100%	---	---	---	---
Machinist	127	100%	---	---	---	---
Sheet Metal Worker	57	100%	---	---	---	---
Iron Worker	325	100%	---	---	---	---
Welder	918	100%	---	---	---	---
Electrician	216	100%	---	---	---	---
Finisher	17	100%	---	---	---	---
Formation Test Operator	25	100%	---	---	---	---
Oper. Engineer	23	100%	---	---	---	---
Carpenter	78	100%	---	---	---	---
Painter	454	100%	---	---	---	---

TABLE VIII (Continued)

Job Title	Preference to Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Pipefitter	182	100%	---	---	---	---
Asbestos Worker	17	100%	---	---	---	---
Power Plant Worker	34	100%	---	---	---	---
Projectionist	549	100%	---	---	---	---
Termite Treater	551	100%	---	---	---	---
Stationary Eng.	4	100%	---	---	---	---
Heavy Equip. Oper.	9	100%	---	---	---	---
Mill Wright	17	100%	---	---	---	---
Mechanic	11	100%	---	---	---	---
Mechanic & Repairman	1244	100%	---	---	---	---
Photo Process Occupations	57	100%	---	---	---	---
Foreman-Mfg.	9	100%	---	---	---	---
Foreman-Extraction Minerals	17	100%	---	---	---	---
Upholsterer	36	100%	---	---	---	---
Proof Pressman	48	100%	---	---	---	---
Sheet Metal Mechanic	87	100%	---	---	---	---
Helpers	369	100%	---	---	---	---
Winders	159	100%	---	---	---	---
Assembler	36	100%	---	---	---	---
Wire Assembler	144	100%	---	---	---	---
Roofer	6	100%	---	---	---	---
Bill Poster	407	100%	---	---	---	---
Mechanics & Repairman	454	100%	---	---	---	---
Tool Grinder	9	100%	---	---	---	---
Photo Process Occupations	551	100%	---	---	---	---
Exterminator	144	100%	---	---	---	---
Apprentices	9	100%	---	---	---	---
Mach. Stripper	36	100%	---	---	---	---
Machinist	9	100%	---	---	---	---
Painter	9	100%	---	---	---	---
Stock Boy & Filler	91	100%	---	---	---	---
Totals	11715	63%	5274	29%	1476	8%

TABLE IX

ESTIMATED REQUIRED EMPLOYMENT IN
MISCELLANEOUS SERVICES OCCUPATIONS
S.I.C. CODES 73-79*

Job Title	Estimated Required Employment in Job 1965	1967	1970
Accountant	13	15	17
Public Relations Copy Writer	82	92	108
Case Worker	25	28	33
Int. Decorator	50	56	66
Illustrator	97	109	128
Sign Designer	47	53	62
Draftsman	44	50	58
X-ray Technician	11	12	14
Instructor	66	74	87
Still Picture Photographer	125	141	164
Manager	32	36	42
Manager, Credit & Collection	47	53	62
Exec. Sec. & Manager	206	232	271
Mgr. & Dispatcher	68	77	89
Bookkeeper & Cashier	1301	1465	1711
Bookkeeper	72	81	95
Checker	4	4	5
Clerk	712	802	936
Proof Reader	50	56	66
Credit Clerk	678	763	892
Collector	192	216	252
File Clerk	142	160	187
Gen. Ind. Clerk	687	774	903
Dup. Mach. Oper.	388	774	510
Clerk	40	45	53
Secretary	308	347	405
Clerk	9	10	12
Steno & Typist	405	456	533
Stock Clerk	34	38	45
Tel. Operator	107	120	141
Agent	199	224	262
Sales Clerk	72	81	95
Salesmen	136	153	179
Salesmen	38	43	50
Bartender	8	9	11
Cook	335	377	441
Waitress	297	334	391
Kitchen Worker	331	373	435
Attendant	791	891	1040
Watchman	1098	1236	1444
Maid	32	36	42

*Excluding #75 - Auto Services

TABLE IX (Continued)

Job Title	Estimated Required Employment in Job 1965	1967	1970
Janitor	184	207	242
Porter	520	586	684
Keeper-Grounds	297	334	391
Seamstress	119	134	156
Cabinetmaker	36	41	47
Upholsterer	53	60	70
Compositor	263	296	346
Offset Pressman	44	50	58
Glass Bender	25	28	33
Machinist	127	143	167
Sheet Metal Worker	57	64	75
Iron Worker	325	366	427
Welder	918	1034	1207
Electrician	216	243	284
Finisher	17	19	22
Formation Test Operator	25	28	33
Oper. Engineer	23	26	30
Carpenter	78	88	103
Painter	454	511	597
Pipefitter	182	205	239
Asbestos Worker	17	19	22
Power Plant Worker	34	38	45
Projectionist	549	618	722
Termite Treater	551	620	725
Stationary Eng.	4	5	5
Heavy Equip. Oper.	9	10	12
Mill Wright	17	19	22
Mechanic	11	12	14
Mechanics & Repairman	1244	1401	1636
Photo Process Occupations	57	64	75
Foreman-Mfg.	9	10	12
Foreman-Extraction Minerals	17	19	22
Upholsterer	36	41	47
Proof Pressman	48	54	63
Sheet Metal Mechanic	87	98	114
Helpers	369	415	485
Winders	159	179	209
Assembler	36	41	47
Wire Assembler	144	162	189
Roofer	6	7	8
Bill Poster	407	458	535
Mechanics & Repairman	45	511	597
Tool Grinder	9	10	12
Photo Process Occupations	551	620	725
Exterminator	144	162	189
Apprentices	9	10	12
Mach. Stripper	36	41	47

TABLE IX (Continued)

Job Title	Estimated Required Employment in Job 1965	1967	1970
Machinist	9	10	12
Painter	9	10	12
Stock Boy & Filler	91	102	120
Totals	18465	21125	24283
Increase		2660	5818

TABLE X

OCCUPATIONAL AREAS THAT CAN BE EFFECTIVELY SERVED BY EXISTING TRAINING PROGRAMS

Job Title	Estimated Additional Number Needed by 1970
Accountant	2
Public Relations Copy Writer	26
Illustrator	31
Sign Designer	15
Draftsman	14
Instructor	21
Manager	10
Bookkeeper and Cashier	398
Bookkeeper	23
Checker	1
Clerk	224
Credit Clerk	193
Collector	60
File Clerk	45
Gen. Ind. Clerk	216
Dup. Mach. Operator	122
Clerk	13
Secretary	97
Clerk	3
Steno and Typist	126
Stock Clerk	11
Telephone Operator	34
Agent	63
Sales Clerk	23
Salesmen	43
Salesmen	12
Cook	106
Cabinet Maker	11
Upholsterer	17
Compositor	83
Offset Pressmen	14
Machinist	40
Sheetmetal Worker	18
Welder	289
Electrician	68
Carpenter	25
Power Plant Worker	11
Mechanic	3
Mechanics and Repairman	392
Upholsterer	11
Proof Pressman	15
Sheet Metal Mechanic	27
Mechanics and Repairman	143

TABLE X (Continued)

Job Title	Estimated Additional Number Needed by 1970
Tool Grinder	3
Apprentices	3
Machinist.	3
Total	3108

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APPENDIX A

DEFINITIONS OF MAJOR INDUSTRIAL GROUPS FOR AUTO DEALERS, SERVICES, REPAIR SHOPS MISCELLANEOUS RETAIL STORES MISCELLANEOUS SERVICES*

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*Technical Committee on Industrial Classification, Office of Statistical Standards, Standard Industrial Classification Manual (Washington, D. C.: U. S. Government Printing Office, 1957), pp. 160-202.

APPENDIX A

DEFINITIONS OF MAJOR INDUSTRIAL GROUPS FOR MANUFACTURING OCCUPATIONS

Major Group 55. - AUTOMOTIVE DEALERS AND GASOLINE SERVICE STATIONS

THE MAJOR GROUP AS A WHOLE

This major group includes retail dealers selling new and used automobiles and trucks, and new parts and accessories; aircraft and marine dealers; and gasoline service stations. This group includes establishments dealing in used automobiles exclusively, but not establishments dealing exclusively in used parts (Group 593). Automobile repair shops maintained by establishments engaged in the sale of new automobiles are also included. Automotive distributors, the greater part of whose sales are to dealers, are classified in Wholesale Trade.

Major Group 59. - RETAIL TRADE--MISCELLANEOUS RETAIL STORES

THE MAJOR GROUP AS A WHOLE

This major group includes retail stores, not elsewhere classified. These stores fall into the following subgroups: (1) drug stores, (2) liquor stores, (3) secondhand stores, (4) book and stationery stores, (5) sporting goods stores and bicycle shops, (6) farm and garden supply stores, (7) jewelry stores, (8) fuel and ice dealers, and (9) miscellaneous retail stores not elsewhere classified.

Major Group 73. - MISCELLANEOUS BUSINESS SERVICES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments rendering services not elsewhere classified to business enterprises on a fee or contract basis.

Major Group 75. - AUTOMOBILE REPAIR, AUTOMOBILE SERVICES, AND GARAGES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments primarily engaged in furnishing automobile repair, rental, and storage

services to the general public. Similar facilities owned and operated by concerns for their own use and not for the general public are treated as auxiliary establishments and are not included in this group. Automobile repair shops maintained by establishments engaged in the sale of automobiles are classified in Group 551, and gasoline service stations in Industry 5541. Repair shops of railroad companies are classified in transportation industries, and ship and boat repair establishments are classified in manufacturing, Group 373.

Major Group 76. - MISCELLANEOUS REPAIR SERVICES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in miscellaneous repair services. It does not include some repair services of which the more important are automotive repair which is classified in Group 753, custom work in Industries 5671 and 5681, and shoe repair in Industry 7251.

Major Group 78. - MOTION PICTURES

THE MAJOR GROUP AS A WHOLE

The major group includes establishments producing and distributing motion picture films, exhibiting motion pictures in commercially operated theaters, and furnishing services to the motion picture industry.

Major Group 79. - AMUSEMENT AND RECREATION SERVICES, EXCEPT MOTION PICTURES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments whose primary function is to provide amusement or entertainment on payment of a fee or admission charge, except motion pictures (Major Group 78).

APPENDIX B

DEFINITIONS OF JOB TITLES FOR

AUTO DEALERS, SERVICES, REPAIR SHOPS

MISCELLANEOUS RETAIL STORES

MISCELLANEOUS SERVICES

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*Division of Occupational Analysis, United States Employment Service, Dictionary of Occupational Titles, Volume I, Definitions of Titles, Second Edition (Washington, D. C.: U. S. Government Printing Office, 1949) pp. 1-1518.

APPENDIX B

DEFINITIONS OF JOB TITLES FOR AUTO DEALERS, SERVICES, REPAIR SHOPS OCCUPATIONS MISCELLANEOUS RETAIL STORES OCCUPATIONS MISCELLANEOUS SERVICES OCCUPATIONS

AUDITOR: (profess. & kin.) 0-01.60. Examines and vouches for the accuracy and completeness of bookkeeping records of an establishment: Inspects items in books of original entry, such as the daybook or journal, to insure proper recording of transactions. Reviews postings to verify transfer of journal entries to the ledger. Counts cash on hand, and checks amount with bank balance. Inspects and verifies notes receivable and payable, and negotiable securities. Examines canceled checks to authenticate amounts, signatures, cancellations, and dates of entry into cash book. Verifies journal and ledger entries for cash payments, purchases, expenses, and trial balances. Examines and authenticates inventory items. Checks arithmetic totals for accuracy. May prepare financial statements for client, such as profit-and-loss statements and balance sheets. May prepare detailed reports showing items such as operating costs, total assets, liabilities, volume of sales, net profits, and depreciation costs. May work independently or supervise others in performing routine phases of audit.

PUBLIC-RELATIONS MAN: (profess. & kin.) I. 0-06.97. director, advertising; director, publicity; director, publicity bureau; director, public relations; manager, promotion; manager, publicity; press agent; promotional aide; promotion man; publicity agent; publicity man; publicity specialist; publicity supervisor; publicity writer; public-relations counsel. Selects and assembles favorable publicity material for groups or organizations, releasing it through the media of magazines, newspapers, posters, and the radio: Scans statements of policy to secure most favorable publicity. Writes news releases and submits photographs to newspapers. Purchases advertising space in newspapers and magazines and prepares advertisements. Makes arrangements for billboard displays. Writes script for radio advertising.

CASE WORKER: (profess. & kin.) 0-27.20. Performs any one or a combination of the following social service duties, usually requiring a college degree and applying techniques acquired through postgraduate training in social service work, in pursuance of a welfare program organized by a

public or private agency or organization: Studies physical and social envirnnment of a family, person, or persons in order to determine and execute practical plans for alleviating existing undesirable conditions. Visits persons in need of assistance or receives clients at intake desk of agency. Interviews clients to ascertain nature of their problem. Diagnoses problems, considering factors involved, and plans treatment. Makes necessary contacts to ascertain background and needs of clients and their eligibility for financial, medical, and material assistance. Helps clients understand their situation more clearly and assists them to reach satisfactory solutions for their problems. Refers clients to community resources, such as hospitals, clinics, recreational facilities, and schools, which may assist in rectifying the maladjustments. Endeavors to foster self-development of individuals in order that they may successfully meet social exigencies. Follows progress of cases beyond solution of immediate problems. Keeps case histories and other records.

INTERIOR DECORATOR: (profess. & kin.) 0-43.40. consulting decorator. Designs artistic interiors for homes, hotels, clubs, boats, and motion-picture arts: Makes a sketch of room showing arrangement of furniture, wall decorations, and the color scheme, and presents to client for approval. Estimates cost and the amount of material necessary. Makes necessary purchases, utilizing knowledge of period furniture to obtain correct size and authenic decorations, and supervises placement of furniture and other decorations in position.

COMMERCIAL ARTIST, ILLUSTRATING: (profess. & kin.) 0-44.21. advertising designer; artist, advertising; illustrator. Creates and designs figures to illustrate advertising copy, books, and magazines: Creates posters, signboards, billboards, and showcards. Designs and prepares charts, diagrams, sketches, and maps for publication and exhibition. Designs labels for containers, such as cans and cartons. Illustrates books and magazines. Draws cartoons and comic strips advertising various products. Performs responsible illustrative work in the compilation, coloring, and lettering of photographs.

SIGN DESIGNER: (signs) 0-46.96. sketch artist. Visualizes and sketches the design for a neon or electric sign in accordance with the general instructions of the purchaser: Guided by the specifications for the sign, conceives the arrangement and form of the letters, and makes a design in any commercial color medium for the customer's inspection, altering the design according to his criticism. Makes a scale drawing of approval design for the production department.

DRAFTSMAN: (profess. & kin.) 0-48. Prepares clear, complete, and accurate working plans and detail drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions: Makes final sketch of the proposed drawings, checking dimension of parts, materials to be used, the relation of one part to another, and the relation of the various parts to the whole structure. Makes any adjustments or changes necessary or desired. Inks in all lines and letters on pencil drawings as required. Exercises manual skill in the manipulation of triangle, T-square, and other drafting tools. Lays tracing paper on drawing and traces drawing in ink. Makes charts for representation of statistical data. Makes finished designs from sketches.

X-RAY TECHNICIAN: (any ind.) 0-50.40. industrial X-ray operator. X-ray photographs metal castings, weldments, metal samples, and other metal objects to detect imperfections, such as cracks, porosity, and inclusion of foreign matter: Alines metal piece on X-ray stand, manually or using crane. Places film or plate in machine chamber. Masks out superfluous areas with lead shields. Focuses machine, adjusts penetration and time of exposure, and takes X-ray picture by manipulating instrument panel controls. Removes and develops film or plate (Developer). Marks defects appearing on negative. May assist in analyzing findings.

INSTRUCTOR, PHYSICAL: (education) 0-57.51. director, athletic; director, physical; teacher, physical education. Gives individual or group beginning or advanced instruction in calisthenics, gymnastics, and reducing or corrective exercises: Teaches the use of dumbbells, bars, and other equipment. Organizes, leads, instructs, and referees games, such as volley ball, indoor baseball, and basketball. May give massages and alcohol rubs. May assist clients in taking heat or ultra-violet treatments and hot baths.

PHOTOGRAPHER APPRENTICE, PORTRAIT: (profess. & kin.) 0-69.44. Performs duties as described under APPRENTICE.

MANAGER, CAFETERIA OR LUNCHROOM: (hotel & rest.) 0-71.21. manager, lunchroom or cafeteria. Supervises and directs the work and conduct of and assigns duties to, cafeteria employees. Inspects floors, furniture and equipment for cleanliness and serviceability. Directs employees in cleaning and making repairs. May assist at various stations during rush periods by filling water glasses, aiding patrons to remove food from trays, and performing other duties to facilitate service.

RETAIL MANAGER: (ret. tr.) 0-72.21. Manages a retail store devoted to selling several types of merchandise, performing duties as described under MANAGER, STORE. Typical of establishments who managers are covered by this classification are general store, department stores, dry-goods stores, and mail-order houses. Some of these establishments sell groceries as a sizable, but secondary, line of goods.

BUYER: (ret. tr.; whole. tr.) 0-74.11. Purchases merchandise within budgetary limitations in sufficient quantiity and with sufficient appeal to warrant its rapid and profitable sale. Assigns selling price to merchandise. Initiates procedure, such as price reductions and special sales, to promote the sale of surplus or slow-moving goods. Designated according to type of merchandise bought, as floorcovering buyer, meat buyer, or toy buyer. Merchandise purchase is resold and is not processed, consumed, or used in the organization, as opposed to PURCHASING AGENT.

CREDIT MANAGER: (any ind.) 0-85.10. accounts supervisor; credit man; manager, credit investigations. Manages credit and collection department of commercial house, department store, hotel, or similar establishment: Investigates financial standing and reputation of prospective customer who is seeking to establish credit. Approves or disapproves extension of credit. Supervises collection of bad accounts and worthless checks. Makes up collection notes to customers. Keep records of collections.

SALES MANAGER: (any ind.) 0-97.61. sales agent. Administers all activity pertaining to selling of merchandise by manufacturer, retail store, wholesale house, jobber, or other establishment: Advises with department executives relative to sales technique and plans sales policies and selling campaigns. Supervises distribution activity, such as sales through jobbers' branch houses, or direct sales to customers. Selects, trains, and supervises selling personnel. Prepares and delivers sales talks. Assigns sales territory and list of prospects, or if in store assigns selling personnel to various departments.

DISPATCHER, CHIEF: (petrol. production: petrol. refin.; pipe lines) I. 0-98.27. general-office dispatcher. Coordinates transportation of oil and other liquid petroleum products from wells and storage tanks by pipe line to carriers, terminals, and refineries: Prepares shipping schedules of oil movements to meet shipper's requests. Directs DISPATCHERS I as to time

of oil movements, quantities to be moved, and destinations specified. Issues instructions regarding gaging, sampling, and other procedures in handling oil. May direct air patrol or pipe lines. May negotiate with property owners regarding land leases or claims for damages from oil leaks or other causes.

CASHIER: (clerical) 1-01.52. Keeps a record of cash transactions, receipts, and disbursements incident to the conduct of a business: Enters data to proper accounts and periodically balances cash books. Receives incoming cash from company employees customers, or by mail. Examines currency to detect counterfeit, foreign, or damaged money. Counts money and compares amounts with sales slips or cash receipts. Makes change and cashes checks. Read totals on cash registers and checks with the amount of currency in the registers. Prepares money for deposit in bank. Makes up vouchers or checks in payeent of plant expenditures. May authorize various plant expenditures or purchases. May perform a variety of related duties. May operate an adding machine (ADDING-MACHINE OPERATOR), a calculating machine (CALCULATING-MACHINE OPERATOR), and a check-writing machine CHECK-WRITING-MACHINE OPERATOR).

BOOKKEEPING MACHINE OPERATORS: (clerical) 1-02.01. Keeps set of records of business transactions, using bookkeeping machine: Places selected bookkeeping form on flat writing surface of machine and sets carriage. Depresses keys to type on sheet desired data, such as name, address, items purchased or sold, and services rendered, and to calculate totals, net amounts, and other items, recording final computations on the form. Performs related clerical duties (BOOKKEEPER II). May make up bills, invoices, and statements on billing machine (BILLING-MACHINE OPERATOR I).

CHECKER: (clerical) 1-03.10. Checks the quantity, quality, condition, value, and type of articles purchased, sold, or produced, with records or reports. May sort data or items into a predetermined sequence or group before or after checking. May keep records of items checked. May be designated according to type of establishment where checking is done, as WAREHOUSE CHECKER.

GENERAL CLERK: (clerical) 1-04.01. A classification title for the clerical jobs, requiring little or no previous training, which involve the performance of routine clerical duties, such as addressing envelopes, keeping simple records, gathering and delivering messages, and assisting in operating office machines, and which may require the ability to do simple typing.

GENERAL OFFICE CLERK: (clerical) 1-05.01. administrative clerk; clerk, general duty; office girl, general office man; utility clerk. Depending on the size and type of office, performs any combination of the following or similar clerical duties: Makes up and files reports. Tabulates and posts data in various record books. Takes telephone orders. Checks cash registers. Gives information to callers. Sends out bills. Checks calculations. Keeps a small set of books (BOOKKEEPER II). Takes inventories (INVENTORY CLERK).

ROOM CLERK: (hotel & rest.) 1-07.60. In small hotels, registers and assigns rooms to incoming guests. Checks out departing guests and receives payment of their account. Maintains records of reservations, rooms occupied, and guests' accounts. Gives information to guests. Checks room keys and valuables. Receives and distributes mail, telegrams, and packages. Notifies HOUSEKEEPER of arrivals and departures. May sell cigars, cigarettes, or newspapers. May supervise BELLMAN; ELEVATOR OPERATOR, PASSENGER; and TELEPHONE OPERATOR II. In large hotels, rents and assigns rooms, arranges transfer of registered guests to other rooms, checks out guests, time-stamps bills, and refers guests to CASHIER, FRONT OFFICE for payment.

PROOFREADER: (print. & pub.) 1-10.07. Reads typescript or proof of type set-up to detect and mark for correction any grammatical, typographical, or compositional errors, checking proof against original copy: (1) Places proof and copy side by side on reading board. Reads proof against copy, a line at a time, marking, by standardized code, errors that appear in proof. Returns marked proof for correction and later checks corrected proof against copy. (2) Reads and corrects proof while Copy Holder reads aloud from original copy, or reads proof aloud to Copy Holder who calls out discrepancies between proof and copy.

CREDIT CLERK: (clerical) 1-12.02. Investigates credit status of individuals applying for credit. Obtains credit history from customers who wish to open an account (NEW-ACCOUNT CLERK). Verifies this information by writing to credit organizations and references listed by applicant on the credit application form. Determines credit limit, following specific instructions, based on applicant's assets and ability to pay, referring more difficult cases to MANAGER, CREDIT AND COLLECTION. Notifies customer of acceptance or rejection of credit. May keep a record or file of credit transactions and payments and send letters to customers having delinquent accounts. May keep informed on all transactions that affect credit rating of customers.

COLLECTOR: (clerical) 1-15.02. collection agent; collector man; outside collector; outside-contact man. Makes collections from customers on installment or overdue accounts, or arranges for payment at a later date. May trace addresses of skips (customers who change residences without notification) by inquiring at post office, questioning neighbors, or pursuing any other method. May keep records of status of all accounts (COLLECTION CLERK).

FILE CLERK: (clerical) I. 1-17.01. filer; filing clerk. Keeps correspondence, cards, invoices, receipts, and other records arranged systematically according to subject matter in file cabinets, drawers, boxes, or in special filing cases: Reads information on incoming material and sorts and places it in proper position in filing cabinet which is usually indexed for ready reference. Locates and removes material from file when requested. May keep record of material removed.

GENERAL INDUSTRY CLERK: 1-18. This group includes occupations concerned with the preparation, transcribing, transferring, systematizing, or preserving of written communications. Examples are MAIL CLERK (clerical), EMPLOYMENT CLERK (clerical), and APPOINTMENT CLERK (clerical).

MESSENGER: (clerical) 1-23.14. delivery boy; errand boy; errand girl; floor boy; messenger boy or girl; runner; wheel boy. Sorts and delivers letters, messages, packages, documents, records, interoffice memoranda, and other items at offices or departments within an establishment or to other business concerns, plants, and banks. Makes trips to and from outside establishments to deliver or to obtain messages or small articles, walking, using bicycle or motorcycle, or riding on public conveyance. May perform a variety of other duties, such as cleaning office machines, cleaning office, and assisting with stockroom inventory.

OFFICE MACHINE OPERATORS: 1-25. This group includes occupations concerned with the preparation, transcribing, transferring, systematizing, or preserving of written communications. Examples are BILLING MACHINE OPERATORS (clerical), ADDING-MACHINE OPERATOR (clerical), and CALCULATING-MACHINE OPERATOR (clerical).

PAYROLL CLERK: (clerical) 1-26.02. Computes wages of company employees and writes the necessary corresponding data on the pay-roll sheets: Calculates each worker's earnings based on TIMEKEEPER's report, individual time cards, and work or production tickets. Posts calculated data on pay-roll sheet, showing information such as worker's

name, working days, time, rate, deductions for insurance, and total wages due. May make out pay checks and assist the PAYMASTER in making up and distributing the pay envelopes. May use a calculating machine (CALCULATING-MACHINE OPERATOR).

SECRETARY: (clerical) 1-33.01. Performs general office work in relieving executives and other company officials of minor executive and clerical duties: Takes dictation using shorthand or uses a Stenotype Machine (STENOTYPE OPERATOR). Transcribes dictation or the recorded information reproduced on a transcribing machine (TRANSCRIBING MACHINE OPERATOR). Makes appointments for executive and reminds him of them. Interviews people coming into office, directing to other workers those who do not warrant seeing the executive. Answers and makes phone calls. Handles personal and important mail, writing routine correspondence on own initiative. May supervise other clerical workers. May keep personnel records. (PERSONNEL CLERK).

SHIPPING AND REC. CLERK: (clerical) 1-34.15. delivery checker; load checker; loading clerk; order checker; outgoing-merchandise checker; packing checker; platform checker; record clerk; shipping-clerk assistant; tally-in-tally-out clerk. Insures completeness and correctness of outgoing shipments by examining such details as quantity, quality, labeling, and addressing of items of merchandise and comparing them with customer's order or other records. May check incoming merchandise (RECEIVING CHECKER).

STENOGRAPHER AND TYPIST: (clerical) 1-37.12. Takes dictation in shorthand of correspondence, reports, and other matter and transcribes dictated material, writing it out in long hand or using a typewriter. May be required to be versed in the technical language and terms used in a particular profession. May perform a variety of related clerical duties (CLERK, GENERAL OFFICE). May take dictation on a stenotype machine (STENOTYPE OPERATOR), or may transcribe information from a sound-producing record (TRANSCRIBING-MACHINE OPERATOR).

STOCK CLERK: (clerical) 1-38.01. counterman; material handler; material keeper; stock attendant; stock checker; stock counter; stock-house clerk; stockkeeper; stockman; stock-room attendant; stockroom clerk; stockroom man; stock-service clerk; stock tender; storekeeper; storeman; store-room attendant; storeroom clerk; storeroom keeper; stores clerk; stores-supply clerk; supply clerk; supply-room clerk. Receives, stores, and issues equipment, material, merchandise, or tools in a stockroom or storeroom: Checks incoming orders against items as listed on requisitions or invoices, counting, grading, or weighing

the articles (RECEIVING CLERK II). Stores supplies in bins, on floor, or on shelves in a convenient position for removal when needed. Marks identifying codes, figures, or letters on articles. Fills orders requisitioning stock, or issues supplies on his own initiative. Takes periodic inventory or keeps a perpetual inventory of stock on hand, making up necessary reports (INVENTORY CLERK). Requests or orders supplies when needed. May make minor adjustments or repairs to articles carried in stock. May distribute stock among workers on production work, keeping a record of the material issued.

TELEPHONE OPERATOR: (clerical) 1-42.31. control-board operator; p.b.x. operator; private-branch-exchange operator; switchboard operator; telephone-switchboard operator. Operates a cordless telephone switchboard to relay to the different phones in the establishment incoming and interoffice calls, and make connections with outside lines for outgoing calls: Manipulates switch keys to receive incoming calls, to make connection, to relay calls, and to ring phones.

CLAIM AGENT: (any ind.) 1-48.08. Renders and investigates claims for losses, shortages, damages, or overcharges on shipments of merchandise, checking their movement and handling between consignor and consignee. Examines freight bills, bills of lading, invoices, and other records and, if possible, compares with actual goods to determine extent of loss or damage. Adjusts claims and complaints by allowing credit or replacing lost or damaged goods.

SALES CLERK: (ret. tra.) 1-70.10. Receives cash payment for articles selected by customers. Wraps article, makes change, and gives article to customer. Keeps merchandise neatly arranged on counter. Must complete each sale quickly. Sells any of a large variety of inexpensive merchandise, usually without specializing in any single commodity or group of commodities.

SALES PERSON: (ret. tra.) 1-75.71. Displays and sells merchandise, such as kitchenware, linens, men's furnishings, perfumes, radios, toys, and women's lingerie, performing duties as described under SALESPERSON. Performs selling duties that require no special knowledge or technique not obtainable from a short training course. Generally specializes in one commodity or closely related groups or commodities. May be designated according to merchandise sold, as salesperson, linens; salesperson, radios; salesperson, toys.

SALESMAN, GENERAL (ret. tr.) 1-80.01. Solicits customers, frequently outside the store, to demonstrate and sell merchandise, such as automobiles, radios, refrigerators,

and washing machines, the selling of which requires no special knowledge of technique not obtainable from a short training course. Usually specializes in one commodity or related groups of commodities. Performs duties as described under SALESMAN, RETAIL.

SALESMAN, AMUSEMENT AND SPORTING GOODS: (whole. tr.) 1-85.01. salesman, sporting and amusement goods. Sells amusement and sporting goods, such as cameras, motion-picture equipment and supplies, firearms, playground equipment, athletic goods, toys, and games, performing duties as described under SALESMAN, WHOLESALE.

SALESMAN, METALS: (whole. tr.) 1-86.01. Sells metals which have not been fabricated, such as brass, copper, iron, and steel, performing duties as described under SALESMAN, WHOLESALE.

SALESMAN, PUBLICATIONS: (whole. tr.) 1-87.21. distributor, publications. Sells publications, such as books and periodicals, performing duties as described under SALESMAN, WHOLESALE.

MAID, GENERAL: (dom. ser.) 2-06.11. housekeeper, home; maid. Performs, in accordance with instructions from employer, any domestic duty such as cleaning and dusting household furnishings, hallways, and lavatories, changing and making beds, watching children at play, purchasing, preparing, cooking, and serving meals, and washing and ironing clothes. Is frequently the only domestic household employee employed. Is not employed by the day, as opposed to DAY WORKER.

BARTENDER: (hotel & rest.) 2-21.10. bar attendant; barkeeper; barman; beverage dispenser; drink mixer. Mixes and serves acoholic drinks, proportioning ingredients according to formulas. May collect money due for drinks. Orders supplies. Replaces empty beer kegs with full ones. Washes glasses, bar, and equipment. Arranges bottled goods and glasses about bar to make attractive display. Many hotels in order to speed up service, have a service bar which is not open to the public and from which waiters order drinks to be served in guest rooms or various dining rooms. When tending such a bar, worker may be known as service bartender.

CHAMBERMAID: (hotel & rest.) 2-24.11. Housemaid; maid; room maid. Does all general cleaning in hotel rooms: Collects and may count soiled linens. Makes beds. Empties trash from waste baskets. Dusts furniture and woodwork in guest room. Removes small trash from floor with broom or vacuum cleaner. Replenishes stationery and bathroom supplies. Cleans bathroom (BATH MAID). When working at night is known as NIGHT CHAMBERMAID; NIGHT MAID.

EXECUTIVE CHEF: (hotel & rest..) 2-26.01. chef; chef de cusine; chef, head; chef, managing; dietitian; manager, food production; manager, kitchen; manager, lunch. Plans meals for large hotel or restaurant. Supervises and coordinates the work of chefs, cooks, and other kitchen employees, seeing that food preparation is economical and technically correct. Requisitions food supplies. May be responsible for the profitable operation of the food-preparation department. In some establishments may supervise a STEWARD and in others may cooperate with a STEWARD or MAITRE D'HOTEL II in matters pertaining to the kitchen, pantry, and storeroom.

WAITRESS: (hotel & rest.) 2-27.12. table girl. Performs the usual duties of WAITER, INFORMAL.

KITCHEN WORKER: 2-29.71. Performs duties in the kitchen requiring little skill, such as scrubbing, scraping, and scouring work tables and meat blocks, sweeping and mopping floors, obtaining and distributing supplies and utensils, kindling kitchen fires, and watching cooking foods to prevent burning. May cut and peel or otherwise prepare vegetables for the cooks.

CADDIE: (amuse. & rec.) 2-40.01. caddie boy; golf caddie. Carries bags of golf equipment around golf course, delivering clubs to players as requested. Advises players, on request, on selection of proper club for strokes or concerning peculiarities of course. Locates driven balls and holds marker out of cup while players putt.

GUARDS AND WATCHMEN: (any ind.) 2-61.03. Guards an industrial plant, warehouse, or other property against fire, theft, and illegal entry. Makes periodic inspection tours about building and grounds, examining doors, windows, and gates to see that they are properly secured and have not been tampered with, and continually watches for irregularities, such as broken water pipes. Registers at regular watch stations as a record of having made inspection rounds at specified times. May perform general maintenance duties, such as sweeping floors, or supervise others in these duties. May fire boilers or do other similar duties, or may operate various plant equipment, performing productive operations. Sometimes designated according to type of property he guards, as dock watchman, warehouse watchman.

CHARWOMAN: (any ind.) 2-82.10. Keeps premises of a public building, office, commercial establishment, or apartment house in clean, orderly condition: Sweeps floors and disposes of waste or litter. Scrubs floors. Polishes metal fixtures and fittings. Frequently works in evenings, after daytime employees have left the premises,

JANITOR: (any ind.) 2-84.10. Keeps public parts of building in clean, orderly condition and good state of repair, and operates furnaces and boilers to provide heat and hot water for tenants: Sweeps, mops, and scrubs public halls and stairways (PORTER I). Tends the furnace, stocking coal and removing clinkers and ashes and refuse, trucking or rolling the cans to the street for pick-up by local sanitation department. Makes minor repairs to defective plumbing, electrical wiring, or other parts of the building. Replaces burned-out electric lamps in public halls. Cleans sidewalks of snow or debris. May grease elevator slides and clean elevator pits. In large establishments, tending furnace may be the full-time job as FIREMAN, LOW PRESSURE.

PORTER: (any ind.) 2-86.10. Works in an establishment, such as an office building, bank, insurance company, educational institution, place of amusement, beauty parlor, public bath, dental laboratory, advertising agency, store, or repair shop, performing any combination of duties involved in cleaning the premises, furniture and equipment (as opposed to cleaning production departments in a factory (PORTER II)). Typical of the duties the worker performs are: Cleaning floors and stairways (CLEAN-UP MAN); washing walls (WALL WASHER; PAINT CLEANER); washing windows (WINDOW CLEANER); baling wastepaper for sale to junk dealers (BAILING-MACHINE OPERATOR); burning trash in incinerators (INCINERATOR MAN.)

GROUNDS KEEPER: (any ind.) 3-40.04. Maintains and protects grounds surrounding buildings of an industrial or business concern, race track, or other property: Mows lawns, trims hedges, rakes and burns leaves and refuse, and trims driveway and sidewalk edges, using spades and hoes. In winter shovels snow from driveways and sidewalk edges, using spades and hoes. In winter shovels snow from driveways and sidewalks, and spreads sand, salt, or ashes on icy surfaces to prevent slipping. May plant and maintain flower beds, select bushes and flowers to be planted, and perform other landscaping duties (GARDNER (dom. ser.)). May supervise workers doing the less-skilled duties entailed in the upkeep of grounds.

ALTERATION WOMAN: (any ind.) 4-25.020. repair dressmaker; repair seamstress; repair woman. Performs various cutting and sewing operations to make alterations or repairs to garments.

CABINETMAKER: (woodworking) 4-32.100. Performs the hand carpentry necessary to cut, shape, and assemble prepared parts of high-grade articles of furniture, such as

store fixtures, office equipment, and home furniture: Studies drawing of article to be made. Lays out outline or dimensions of part on paper or stock lumber specified. Operates such woodworking machines as band saw, jointer, mortiser, tenoner, molder, gainer, and variety machine to cut and shape parts from stock, or may obtain parts already prepared by other workers. Trims component parts of joints to make them fit together snugly, with hand tools, such as plane, chisel, or wood file. Bores holes for the insertion of screws or dowels, by hand or machine. Daubs glue on joints with brush. Fits parts together tightly until glue is dry. Drives nails, dowels, or screws through joints to reinforce them. Glues and fits subassemblies and other parts together in clamps to form completed unit. Finishes surfaces and joints of article with sandpaper and hand scrapers. May install such hardware as hinges, catches, or drawer pulls. May work on either a production line or on special orders.

UPHOLSTERER: 4-35.720. Installs, arranges, and secures springs, padding, and covering material, such as cloth or leather, to frames of overstuffed chairs, davenport, and stationary seats: Fits and secures in place springs, cotton, rubber composition, or other cushioning materials to form a smooth, rounded pad. Cuts and tacks in place binding materials, such as canvas, burlap, or muslin. Either draws assembled cover over binding and tacks cover tightly to frame, or alines and stretches covering material over cushions and framework, wetting the leather as necessary and sews, cements, or tacks it in place. Cuts away excess materials. Tacks or glues covering over back and trims along seams. May be designated according to part or furniture upholstered, as ARM MAKER; BACK MAKER.

COMPOSITOR: (print. & pub.) I. 4-44.010. compositor, hand; typesetter; typographer. Sets type by hand for the printing of short articles, headings, and other printed matter, and breaks down and distributes type after use: Measures sample of copy to be set with line gage to determine length of lines. Sets stick to desired length of line, using accurate quadrats or method indicated on stick. Sets type in lines in stick, reading from copy and selecting type from compartments in type case. Slides type from stick into galley when set-up is complete. Measures type and sample copy and inserts leads between lines to adjust type to length of copy. Makes or has made proof of set-up. Inspects proof for errors and corrects set-up. Forwards corrected set-up to imposing stone or bank. Distributes type back in type case after use. May set up linotype slugs (machine-cast lines of type) in stick with individual type. May set up material that is

unaccompanied by instructions, by visualizing finished product and setting type to conform to mental image.

OFFSET-PRESS MAN: (print. & pub.) 4-48.050. Makes ready and tends an offset printing press that imprints stock sheets with illustration or type material from lithograph (prepared zinc) plates: Washes plate to remove protective coating and cleans back of plate to perfect smoothness. Builds up back of plate to desired printing thickness (about 0.015) with sheets of tissue paper. Clamps one edge of plate to plate cylinder, using hand tools. Operates press slowly to wrap plate and backing in place around cylinder, and clamps other edge to cylinder. Adjusts diameter of blanket cylinder exactly to diameter of plate cylinder by building up tissue paper sheets under rubber blanket (covering) of cylinder. Pours supply of ink in fountain (trough) of press and runs press until ink rollers are thoroughly coated. Adjusts space between blanket and impression cylinders to thickness of stock to be printed and sets water roller so as to deliver proper moisture to plate cylinder. Starts press and runs several sheets through press to prepare proofs. Scans proofs closely for flaws and cleans plate or cylinder to correct any found. Starts motor and press and tends press during production run. Removes plate from press at end of run, and cleans plate and cylinders. Lubricates and cleans press.

BOOKBINDER: (printing & pub.) 4-49.010. Performs any or all operations entailed in affixing covers to sewed-together signatures to form books or pamphlets, and in finishing books or pamphlets: Creases folds of sewed-together signatures of unbound books and compresses books to size (SMASHER). Applies glue to back of sewed signatures to stiffen back of book body, and forms joint of book covers and book bodies (BACKER). Colors edges of signatures with plain colors or with mixed colors that give appearance of marble (MARBLER). Reinforces backs of books by gluing fabric strips to them (BACK LINER). Glues cover boards to end sheets and dries books in press (PRESSER). May tool designs on book covers (BOOK FINISHER). May repair books (BOOK REPAIRER).

GLASS BENDER: (signs) 4-65.420. glass blower; blass-tube bender. Heats and bends glass tubes to form the scroll of electric neon signs. Tacks asbestos pattern on workbench. Ignites gas burners with match or flint igniter. Estimates length of tubing required to form the letter, notches it with a file, and breaks it between the hands. Holds the tube in the gas flame at the point where a bend is desired, rotating the tube to heat it uniformly.

Places a rubber hose over one end of the glass and the other in his mouth. Blows into the hose to prevent the glass from collapsing, and bends it on hand. Superimposes the bent glass in the asbestos pattern to check accuracy. When letter or scroll has been completely formed, places an electrode into each end of the tube and applies heat with the gas burner to fuse it in place.

JEWELER-WATCHMAKER: (jewelry; ret. tr.) 4-71.010. bench worker; jewelry jobber; jewelry repairman. Makes and repairs articles of jewelry, such as rings, pins, and lockets: Forms a mold of sand and pours molten metal into it. Cuts, saws, files, and polishes molded pieces of jewelry. Uses soldering iron or torch to fasten clasps on pins or settings on rings. Enlarges rings by sawing through band, inserting piece of metal, and soldering it in place, using graduated ring stick to measure size. Reduces size of rings by sawing through band in two places, removing sawed-out section and forcing and soldering the two ends together. Repairs broken clasps, pins, and other jewelry by soldering together the broken parts or by replacing them with new parts. Reshapes old jewelry and cuts new jewelry, following designs or instructions, using hand tools (ENGRAVER, JEWELRY) and jeweler's lathe, drill, or other machines. Smooths soldered joints and rough spots with hand file and emery paper (FILER (jewelry)).

ENGRAVER: (print. & pub.) 4-73.510. pantographer; pantographer operator. Engraves lettering or designs in copper or steel printing plates, using a pantograph engraving machine. Thoroughly polishes surface of blank plate, using emery or charcoal and oil. Clamps plate in position under diamond cutting point of pantograph. Clamps master plate in position under tracing point of pantograph. Starts electric motor that revolves cutting point and lowers engraving control bar, simultaneously moving bar sideways until tracing point enters desired figure on master plate. Manipulates bar so that tracing point follows figure on master plate, thus reproducing figure on blank plate. Reproduces figures larger or smaller than on master plate by loosening thumbscrew on pantograph bar and changing position of bar.

MACHINIST: (mach. shop) 4-75.010. machinist, all-around; machinist, construction; machinist, first class; machinist, general; machinist, journeyman; machinist, precision. Carries through to completion the construction and repair of all kinds of metal parts, tools, and machines: Understands blueprints and written specifications. Uses skillfully all machinist's hand tools including lathes (ENGINE-LATHE OPERATOR I); milling

machines (MILLING-MACHINE OPERATOR); planers (PLANER OPERATOR); shapers (SHAPER OPERATOR); and specialized machines that have been developed from them. Possesses knowledge of shop mathematics, use of charts and tables, efficient planning of shop work, dimensions and uses of standard bolts, screws, threads, and tapers. Must be familiar with the working properties of such metals as aluminum, brass, cast and wrought iron, and various steels, and should be capable of shaping metal parts to precise dimensions within the close tolerances prescribed.

SHEET METAL WORKER: (sheet metal) 4-80.010. Fabricates, assembles, alters, repairs, and installs sheet-metal articles and equipment: Cuts metal with hand shears, rotary shears (ROTARY-SHEAR OPERATOR), and square shears (SQUARE-SHEAR OPERATOR). Shapes metal with brake (BRAKE OPERATOR, HAND; BRAKE OPERATOR, MACHINE) and forming machine (FORMING-MACHINE OPERATOR). Punches or drills holes for rivets, bolts, and screws with center punch and hammer or hand drill. Assembles sheet-metal parts, brackets, and hangers. Bolts, rivets, or fits them into units for erection, Makes attachments, seams, and joints by welding, riveting, bolting, soldering, or nailing, or by fastening with metal ties and wood screws. Grinds or files seams, joints, or rough surfaces with grinding wheel or file. May mark lay-out on sheet metal according to blueprints or specifications (SHEET-METAL LAY-OUT MAN).

STRUCTURAL-STEEL WORKER: (const.) 4-84.010. bridgeman; housesmith; iron erector; ironworker; steel erector; structural-iron erector; structural-iron worker; structural-steel erector. Works as a member of a group that raises and places fabricated structural steel members, such as girders, plates, and columns, and unites them permanently to form a completed structure or the framework of a structure. May also perform the duties of ORNAMENTAL-IRON WORKER. Usually structural steel work is broken down into various phases, such as rigging up hoisting equipment, raising (erecting) steel, and riveting, with separate gangs (raising gang, riveting gang) performing each phase. The workers are usually, though not always, interchangeable on all phases of work except the heating of rivets, which requires a technique not possessed by all workers. Workers within a gang perform various duties, such as those described under BUCKER-UP; CONNECTOR; RIGGER; RIVET CATCHER; RIVETER, PNEUMATIC; RIVET HEATER.

WELDER: (any ind.) 4-85.030. Fuses welds) metal parts together by means of an oxyacetylene torch and welding rods to fabricate metal shapes or articles or to repair broken or cracked metal objects: Places the parts to be joined or the object to be repaired on a flat surface, and wires, clamps, or otherwise holds

objects in their position. Assembles welding apparatus by connecting torch to hose and hose to regulators on tank of oxygen and acetylene. Lights torch and regulates flow of gases by manipulating valves until desired flame is attained. Holds flame against metal until it melts, guiding flame along joint between the parts, and at the same time applying a metal rod to the molten area to supply the excess metal needed to form the weld. May dip rod into flux and apply the flux to the molten area. May preheat the parts with torch before welding to obtain a better weld and to lessen internal strains set up in the metal by the intense heat of the welding flame. May lay out (mark) metal, in accordance with blueprints, before welding. May cut metal (ACETYLENE-BURNER OPERATOR). May also weld with electric welding apparatus (WELDER, ARC), in which case worker would be classified as WELDER, COMBINATION.

ELECTRICIANS, N.E.C.: (any ind.) 4-97.010. Lays out, assembles, installs, and tests electrical fixtures, apparatus, control equipment, and wiring used in the alarm, radio, communication, light, and power systems of buildings or other construction projects, or telecommunication systems: Plans proposed installation, from blueprints, of boxes, pull boxes, and other concealed or recessed equipment to the frame of the structure, prior to erection of walls, the plastering of rooms, or pouring of concrete. Measures, cuts, threads, bends, assembles, and installs conduit which connects the various outlets, panels, and boxes, using such tools as hacksaw, pipe benders, and threading tool. Draws wires through conduit. Splices wires by removing (skinning) insulation from conductors, scraping conductors clean with a knife or cutting pliers, twisting conductors together, soldering the connection, and applying several layers of friction tape. Installs and connects equipment to wiring system. Tests circuits for continuity and proper connections, using a battery and buzzer or light bulb.

PAINTER, AUTOMOBILE: (auto ser.) 5-16.910. paint sprayer. Repaints automobiles, busses, and trucks, or damaged places on such vehicles: Removes old paint by applying liquid paint remover and rubbing or scraping off the paint. Masks (covers) with masking tape or paper those portions of automobile not to be painted. Sandpapers rough spots or instructs SANDER (any ind.) to do so. Mixes paints by hand to produce desired color or uses prepared paints. Fills reservoir of spray gun with paint. Adjusts nozzle, and paints automobile, insuring that all surfaces are evenly coated with paint and no streaks or blemishes appear (PAINTER, SPRAY I). Touches up inaccessible spots with hand brush. Paints stripes by hand. May rub intermediate coats and polish final coat (SANDER any ind.)). May apply

lettering to exterior of body and interior of windows of motor vehicles by means of decalcommania or transfer stickers. May use metal lettering set and spray gun to paint canvas roller signs of busses.

FORMATION-TESTING OPERATOR: (petrol. production) 5-20.150. oil-well formation tester; testing-tool operator. Obtains pressure charts and samples of fluids, gas, or oil from specified formations in oil well to determine productivity of strata, by using special testing equipment: Directs ROTARY DRILLER and drilling crew to attach valve device with automatic pressure recorder to bottom of drill pipe and lower pipe into formation being tested. Opens valve by surface control, allowing sample of fluid or gas to enter into testing device and simultaneously charting pressure exerted by formation. Closes valve and directs withdrawal of drill pipe and equipment containing sample. Analyzes chemical content of sample and interprets pressure chart to determine presence and quantity of oil, water, gas, or other fluids in formation. Advises SUPERINTENDENT, DRILLING AND PRODUCTION as to probable productivity of well. Dismantles, repairs, and assembles testing device.

OPERATING ENGINEER: (const.) II. 5-23.910. A worker who is skilled in the maintenance and operation of all power construction equipment ranging from air compressors to steam shovels. Worker usually serves an apprenticeship of several years during which he is gradually instructed in the care and operation of increasingly complex machines.

CARPENTER: (const.) 5-25.110. Performs general carpentry work involved in the erecting of wooden building frames, installing exterior and interior trim, laying floors, building concrete forms, pouring chutes, wooden scaffolds, and similar work entailing the cutting, shaping, and fastening together of wood or material, such as fiberboard, that is treated and used the same as wood. Usually workers specialize in one type of carpentry work performed, as CARPENTER, DOCK; CARPENTER, FINISH.

PAINTER: (const.) 5-27.010. Performs all classes of painting work, such as painting the exterior of houses, sheds, and other structures (PAINTER, ROUGH), and painting and decorating the interior of buildings (GRAINER, HAND (any ind.); PAINTER, INTERIOR FINISH). Mixes paint and matches colors by stirring together the proper proportions of pigment, base, and thinner. Uses brushes and spray gun to apply paint. Erects working scaffold, Removes old paint by applying liquid paint remover or by heating surface with blowtorch and scraping off paint.

PIPE FITTER: (const.) 5-30.010. plumber, pipe fitting. Installs, bends, cuts, and threads air, water, and gas pipe and fittings: Locates position of pipe by

measuring. Cuts holes in walls or floors with an ax, saw, or drill. Bolts or screws pipe hangers to supports. Cuts large pipe to correct length with chisel and hammer, or oxyacetylene torch, and small pipe with pipe-cutting machine. Threads pipe with stock and dies. Bends pipe by hand or power-driven machines. Assembles pipe with couplings and fastens pipe to hangers. If pipe has flange fittings, places gasket in flanges and bolts pipes together. Calks pipe. Makes hydrostatic pressure tests of complete work (STEAM FITTER).

ASBESTOS WORKER, GENERAL: (const.) 5-33.110. Covers with insulating material exposed hot or cold surfaces of equipment, such as boilers, ducts, pipe lines, and tanks. Binds wires around object being insulated either to hold prefabricated insulating material in place or to form a base and reinforcement for plastic insulating material. Applies coats of plastic insulating material with trowel.

POWER-PLANT ATTENDANT: (radio broad.) 5-51.020. maintenance engineer; maintenance technician. Operates and maintains in proper working order all regular and emergency electrical power qquipment and all radio equipment associated with the studios and the transmitter. Performs routine and emergency repair work. Periodically examines, cleans, and tests all equipment.

MOTION-PICTURE PROJECTIONIST: (amuse. & rec.; motion pic.) 5-55.010. cinema operator; cinematographer; cinematograph operator; motion-picture-machine operator; projectionist; theater projectionist. Operates motion-picture projection and sound-reproducing equipment to produce coordinated effects on a screen: Feeds films into projector. Regulates projection light and adjusts sound-reproducing equipment. Watches operation of machines and anticipates such duties as transferring operation from one machine to another without interrupting smooth flow of action on screen. In case of film breakage, must refeed broken end through machine with a minimum loss of time. Inspects and rewinds projected films for another showing (FILM INSPECTOR I). Repairs faulty sections of film (FILM SPLICER). May operate a spotlight on stage performers, following directions on prepared cue sheets. Periodically cleans lenses, oils equipment, and makes minor repairs and adjustments.

TERMITE TREATER: (bus. ser.) 5-59.950. termite exterminator. Treats termite-infested buildings with a chemical solution to check their destructive attack on woodwork; Inspects building, testing the structural members, walls, and other woodwork with a hammer and electric drill to determine whether internal structure has been weakened by termites. Drills holes in concrete, brick or masonry walls or pillars with an electric hammer, (rock-drilling machine) and in wooden props, timbers, and beams with

an electric drill at all points where termites might gain entrance to the building from their subterranean nest. Inserts nozzle in holes and opens compressed-air valve of treating unit to force termicide (chemical solution) under pressure into holes. May drill holes into ground near building and impregnate the ground with termicide.

STATIONARY ENGINEER: (any ind.) 5-72.010. Operates and maintains stationary engines and mechanical equipment such as steam engines, air compressors, generators, motors turbines, ventilating and refrigerating equipment, steam boilers, and boiler-feed-water pumps. Observes meters and gages to determine operating condition of equipment, and makes adjustments or minor repairs necessary to insure efficient performance. Keeps clerical records, such as temperature of equipment and hours of operation, fuel consumed, and temperature and analysis of flue gases. In most states and municipalities, licenses (first, second, or third class) are required for boiler attendance and for the operation of the various engines and machines, the worker being restricted to the operation of types and sizes of equipment authorized by the license possessed.

ELECTRIC-BRIDGE-CRANE OPERATOR: (any ind.) 5-73.010. bridge-crane engineer; bridge-crane man; electric-overhead-crane operator; electric-traveling-crane operator; overhead-crane man; overhead-crane operator; overhead man; overhead-traveling-crane operator; way-crane operator. Lifts and moves heavy objects with an electrically powered hoist, mounted on a metal bridge, which runs along overhead rails: Closes switch to turn on electricity. Moves electrical controller levers and brake pedal to run the crane bridge along overhead rails, to run the hoisting trolley (rack) back and forth across the bridge, and to raise and lower the load line and anything attached to it (motions of the crane are usually carried out in response to signals from other workers on the ground). (HOT-METAL-CRANE OPERATOR.)

MILLWRIGHT: (any ind.) 5-78.100. installation man; machine erector; machine repairman; machine-set-up man; maintenance mechanic; plant changer. Changes the lay-out and set-up of machines and mechanical equipment in a plant or mill wherein the machinery is usually of the heavy type, and keeps the machines and equipment in efficient operating condition: Performs duties, such as dismantling, moving, installing, or repairing machines, power shafting pulleys, conveyors, hoist, and other equipment. Uses hoists, dollies, rollers, and trucks to aid in moving machinery. Uses wrenches, hammers, and other hand tools in erecting or dismantling machines and in installing new or repair parts. Uses measuring devices, such as square micrometers, calipers,

and plumb bobs in erecting machine foundations, in installing the machines and equipment in correct position, and in alining power shafting and pulleys. Is primarily concerned with installing, changing lay-out, and setting up machines usually of the heavy type, rather than with keeping them in a state of good repair (MAINTENANCE MECHANIC II).

AUTOMOBILE MECHANIC: (auto. ser.) 5-81.010. automobile repairman; automobile-service mechanic; garage man; garage mechanic; garage repairman. Repairs passenger automobiles and light delivery trucks, performing such duties as disassembling and overhauling engines, transmissions, clutches, rear ends, and other assemblies on automobile, replacing worn or broken parts, grinding valves, adjusting brakes, tightening body bolts, and alining wheels. Uses hoists, wrenches, gages, drills, grinding wheels, and other general or specialized machines, gages, and tools. This worker may be restricted to repair of automobile motors, trassmissions, and clutches, the remainder of repair work being performed by other workers (AUTOMOBILE TESTER; BRAKEMAN, AUTOMOBILE: CARBURETOR MAN; MOTOR ANALYST; TIRE REPAIRMAN; WHEEL-ALINEMENT MECHANIC).

MECHANIC AND REPAIRMAN: (any ind.) 5-83.641. fixer; machine adjuster; machine fixer; machine-maintenance man; machine overhauler; machine repairman; machine set-up man; mechanical handyman; repair mechanic; tool-and-machine maintenance man. A classification for workers who keep machinery and mechanical equipment of an establishment in a state of good repair: Examines machines for defects in operation, locating faulty parts by listening to machine while it is in operation or by other methods based on his mechanical knowledge. Dismantles or partially dismantles machine to gain access to defective part and removes part, using various hand tools such as wrenches, screw drivers, and pliers. Repairs part, using hand tools, or obtains replacement part from stock. Reassembles machine, making necessary adjustments to insure efficient operation. Affixes special attachments, sets dies, oils and greases machinery, repairs belts (BELTMAN), and performs other similar duties as necessary. Moves heavy machine parts with aid of hoists and rollers. Is usually required to have a knowledge of the operation of machines he repairs. In general, works with lighter machinery than a MILLWRIGHT and is primarily concerned with keeping machinery in good repair rather than with changing layout and setting up or installing machines. If worker performs other types of maintenance work, such as repairing plumbing, brickwork, or electrical fixtures, he should be classified as MAINTENANCE MAN, FACTORY OR MILL.

REPRODUCTION OPERATOR: (any ind.) 5-86.518. Produces copies of tracings, documents, photographic positives or negatives, and other originals on cloth by photographic process: Places original on, or projects its image onto, sensitized cloth in vacuum frame (a boxline device from which air can be removed) or lithographing table. Directs light onto cloth to expose it, leaving unexposed tracing of lines and figures of original. Washes and develops reproduction (DEVELOPER). Touches up reprint by hand work with chemicals, inks, and other procedures. May produce copy in sections and match parts.

MACHINE FOREMAN: (mach. shop) 5-92.768. Supervises workers engaged in grinding, drilling, shaping, turning, and milling metal parts. May supervise fitting and assembling of machined, welded, or prefabricated parts into completed units.

FOREMAN: (anth. coal mining) 5-93.110. A classification title for supervisors in this industry who perform duties as described under FOREMAN II (any ind.). Typical of the supervisors included in this classification are: BANK BOSS, BREAKER BOSS, DOCK BOSS, DUMP BOSS, LOADER BOSS, MOTOR BOSS, PIT BOSS, SECTION FOREMAN, SLATE-PICKER BOSS, WASHERY BOSS.

GARAGE FOREMAN: (auto. ser.) 5-97.110. automobile-mechanic foreman; mechanic, chief; transportation-department foreman. A FOREMAN. Supervises garage workers engaged in repairing, adjusting, servicing, and storing motor vehicles operated by an industrial or commercial establishment; Supervises AUTOMOBILE MECHANICS and TRUCK MECHANICS engaged in disassembling and repairing passenger cars and trucks. Visually inspects and drives repaired vehicles to insure that repairs are adequate. Supervises TRUCK DRIVERS, HEAVY in trucking materials or carrying passengers to nearby points. Oversees tire repair and issuance of gas and oil for motor vehicles. May supervise workers engaged in the inspection and repair of miscellaneous equipment, such as cement mixers and electric trucks. May assign vehicles to drivers (DISPATCHER, MOTOR VEHICLE).

UPHOLSTERER HELPER: (any ind.) 6-35.720. Assists AUTOMOBILE UPHOLSTERER or UPHOLSTERER II in the installation and repair of upholstery for overstuffed chairs, davenports, or stationary seats, performing duties as described under HELPER. Removes spots from upholstery, using cleaning fluid. May assist in rebuilding of fabric automobile tops.

PROOF-PRESS MAN: (print. & pub.) 6-49.510. galley boy; imprinting-machine operator; proof boy; proofer. Makes ready a small printing press and takes proofs of type

set-up: Affixes galley of type to bed of press. Steps on pedal to ink face of type. Places a sheet of paper on type and steps on pedal or turns crank to pass rollers over paper, thus printing impression of type on paper. Removes printed sheet from type and delivers it to PROOFREADER.

GLASS GRINDER (auto. mfg.; glass mfg.) 6-65.210. Grinds and bevels the edges of automobile window glass to a smooth finish, holding the glass against a revolving grinding wheel and moving the glass about as needed to remove roughness and sharp edges from portions to be left exposed in the finished car, producing a much finer finish than GLASS ROUGHER. May cut glass (GLASS CUTTER (any ind.).) May polish surfaces (GLASS POLISHER).

LATHE OPERATOR: (mach. shop) 6-78.165. Shapes and finishes precision machined parts on one or more multiple-chuck automatic lathes: Lifts parts into machine and clamps them in place, alined with cutting tools. Operates electric switches and hand levers to start machine, which automatically performs a series of operations, such as facing, surfacing, chamfering, boring, tapping, rough cutting, and finish cutting. Loads one machine while others are operating. Removes finished pieces, inspecting them visually and by gage. Observes operation of machines closely to locate tool defects or failures, and changes defective tools. May set up machine JOB SETTER).

SHEET-METAL-WORKER HELPER: (sheet metal) 6-94.201. tinsmith helper. Assists SHEET-METAL WORKER by performing the more simple flanging, punching, shearing, and soldering operations in the fabrication of sheet-metal products, using various hand tools and sheet-metal-working machines. Performs other duties as described under HELPER.

WELDER HELPER, COMBINATION (any ind.) 6-95.043. Performs duties as described under HELPER. A worker who assists another worker by performing specific or general duties usually of lesser skill, such as keeping a worker supplied with materials, tools, and supplies; cleaning working area, machine, and equipment; performing routine machine operations, such as feeding or unloading machine; and assisting worker by holding materials or tools. The title, HELPER, is sometimes loosely used as a synonym for APPRENTICE, which practice is technically incorrect. A HELPER may learn a trade but does so on his own, without an agreement with his employer that such is the purpose of their relationship. Classifications for HELPERS are made according to the type of work involved.

ARMATURE WINDER: (elec. equip.) I. 6-99.011. Winds coils of wire into slots of armature core: Mounts core vertically in a frame fixed to a horizontal shaft and lines

each core slot with insulating material. Fastens end of wire from reel to core and rotates frame by hand. Guides wire from one slot to another to form coil and cuts wire when revolution counter shows enough wire has been wound. Taps coils firmly into slots and drives in wedges to hold them in place against centrifugal force. When winding stator cores is known as STATOR-CORE WINDER.

ASSEMBLER: (light. fix.) I. 7-00.928. Puts together component parts of lighting fixtures such as chandeliers, motor-vehicle lamps, shades, and reflectors to form complete units of subassemblies, using soldering equipment, screw drivers, pliers, and other hand tools.

WIRE ASSEMBLER: (signs) 7-13.348. assemblyman; electrician, signs. Assembles neon signs, and mounts tubing and other electrical equipment to the sign box; Mounts transformer to the sign box with bolts. Attaches tubing supports to the sign box with self-tapping screws. Screws or clamps glass elevation posts to the brackets. Places neon sign on the elevation posts and binds it to each post with fine wire. Makes wiring connections between the tubing electrodes and secondary-winding terminals of the transformer, and hooks up the wiring between transformer and lead cable.

PAINTER, SPRAY I: (any ind.) 7-16.210. airbrush operator; sprayer; sprayer operator; spray-gun operator; spray man; spray masker. Coats surfaces of machines, manufactured articles, and working areas with finishing or protecting material, such as enamel, lacquer, paint, porcelain glaze, stain, and waterproofing, using a spray gun: Stirs coating liquid with paddle and pours it into spray-gun container. Couples gun to air hose and starts compressor, or opens valve on compressed air line. Adjusts nozzle of gun by turning adjusting sleeve. Squeezes trigger and directs spray over surfaces to obtain smooth, even finish. Cleans gun and hose with solvent. May place articles in revolving holder before spraying. May do two-color work by masking areas with tape to shield them from second coloring. May be designated according to article sprayed or material used, as ARTIFICIAL-LIMB SPRAYER; ENAMELER (pottery & orc.); HAT SPRAYER; JAPANNER I; LACQUERER; LACQUER SPRAYER; MOLDING FINISHER; PAINTER, ORDNANCE; PANEL FINISHER; PORCELAIN-ENAMEL SPRAYER; SLUSHER SPRAYER; SPRAYER, AUTO PARTS; SPRAYER, RAILROAD CAR.

ROOFER, COMPOSITION: (const.) 7-31.100. smoky. Lays all kinds of commercial compositions for the surfacing of roofs, such as roll roofing and asphalt shingles: Cuts roofing paper, asphalt shingles, and other roofing materials to fit roof corners, pipes, and other objects

on roof, using a knife. Fastens composition to roof base, using nails or asphaltic cement. Paints overlapping joints with asphalt to seal them. Cements or nails flashing to side walls. May spread asphalt over roof with a mop, and spread pebbles over asphalt with a rake. (ROOFER, ASPHALT, TAR, AND GRAVEL.)

TRUCK DRIVER, HEAVY: (any ind.) 7-36.250. Drives a truck with a capacity greater than 3 tons to haul heavy loads performing duties as described under TRUCK DRIVER, LIGHT.

BILLPOSTER: (bus. ser.) 7-59.950. Pastes advertising posters on walls and billboards: Mixes paste powder with water to make paste. May scrape old paper from billboard with scraping tool. Smears paste over surface to be covered by poster, using long-handled brush. Smooths sections of poster on wall or billboard with dry brush, matching and joining them.

ATTENDANTS: (auto. ser.) 7-60.500. Performs duties at automobile service station as requested by customer: Supplies car or truck with oil, water, air, and gasoline. Changes oil and lubricates automobile or truck (GREASER). Sells and installs such accessories as windshield wipers, rear-view mirrors, and spark plugs. Changes and repairs tires (TIRE CHANGER; TIRE REPAIRMAN). May wash automobiles (CLEANER III (any ind.)).

MECHANIC ASST.: (auto ser.) 7-81.010. Assists AUTOMOBILE MECHANIC by performing lesser skilled duties involved in automobile repair and maintenance, such as greasing and oiling cars and trucks (GREASER), washing automobiles and trucks (CLEANER III(any ind.)), and making minor adjustments and repairs to automobile under close direction of AUTOMOBILE MECHANIC.

MAINTENANCE MAN: (any ind.) 7-83. repairman; serviceman; service worker; trouble man; trouble shooter. A general term used to designate one who keeps machinery, equipment, or structure of an establishment in good repair, and is capable of using the tools of one trade, such as carpenter's tools, machinist's tools, or painter's tools. Sometimes designated according to trade, as MACHINIST, MAINTENANCE, or according to type of equipment maintained (repaired), as ELEVATOR REPAIRMAN, (MAINTENANCE MAN, BUILDING; MAINTENANCE MAN, FACTORY OR MILL.)

TOOL GRINDER: (any ind.) II. 7-84.110. grinder man; tool sharpener. Sharpens leather-cutting, stone-cutting, wood-cutting, and metal-cutting tools, such as axes, rock drills, cold chisels, and wood chisels, that need not be ground to a very fine tolerance: Grinds tools on grinding wheel as described under TOOL GRINDER I. May temper sharpened tools by heating them to a critical

temperature and then quenching them in water, oil, or brine. May hone burrs from ground edges by hand with a whetstone. Does not grind stoneworking machine tools, woodworking machine tools, or metalworking machine tools, the grinding of which requires a knowledge of shop mathematics, use of tools, and use of machines, and other specialized knowledge. (KNIFE GRINDER (woodworking); TOOL GRINDER (stonework); TOOL-GRINDER OPERATOR.)

GREASER: (auto. ser.) 7-85.010. bus greaser; car greaser; car oiler; grease man; grease monkey; lubrication man; lubricator, oiler; truck greaser; truck oiler. Lubricates parts of automobiles, busses, or trucks, using the proper type of lubricant on various parts of chassis or motor: Injects grease at various points on chassis, such as alemite cups on springs, universal joints, and steering knuckles, using hand-operated or compressed air-operated grease guns. Inspects transmission, differential, and rear axle housings and fills them with grease. Drains and refills crankcases. Sprays spring leaves with lubricant, using spray guns. May add water to radiator check and add distilled water to battery, clean and polish windshield and door glass, repair flat tires, mount tires on wheel rims, inflate tires and perform other related duties as assigned. (AUTOMOBILE-SERVICE-STATION ATTENDANT.)

DEVELOPING-MACHINE OPERATOR: (motion pic.) 7-86.020. Feeds exposed rolls of motion-picture film to a developing machine: Unwinds several feet of the end of the film and, using a hand brush and purple ink, paints the job ticket number on the film for identification purposes. Mounts reel of film on machine by clamping reel on spindle of machine and sets end of film between roller feed. Feeds fresh roll of film into machine by splicing it to the previous film, thus making possible a continuous operation of the developing machine.

LOADER OPERATOR: (any ind.) 7-88.010. bucket-loader operator; car unloader operator; elevating-machine operator, portable; loader operator, portable; loading-machine operator. Operates a portable, gasoline-driven bucket conveyor to load loose material, such as rocks, sand, or coal from stock piles into railroad cars or trucks: Manipulates levers to advance machine into pile, to start and stop endless chain of buckets that scoop up the material and elevate it to discharge spout, and to raise or lower discharge end of loading chute. Manipulates levers and pedals to move machine from one pile to another. Greases, adjusts, and makes minor repairs to machine. When unloading material is known as UNLOADER OPERATOR.

TIRE BUILDER: (auto. ser.) 7-89.421. retreader; tire rebuilder. Rebuilds rubber treads on tires that are to be retreaded: Applies rubber-cement compound to entire fabric with brush. Builds up treads with single layer or several layers of raw rubber tread stock, selecting proper width and length of stock, and rolling layers with hand roller to secure good adhesion. May cut away old tread (TREAD CUTTER, HAND). May buff tires (TIRE BUFFER II).

SHEET METAL APPRENTICE: (sheet metal) 7-97.040. A worker who learns, according to a written or oral contractural agreement, a recognized skilled trade requiring two or more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

AUTOMOBILE-UPHOLSTERER APPRENTICE: (auto. ser.) 7-99.824. passenger-car-upholsterer apprentice; upholsterer apprentice. Performs duties as described under APPRENTICE.

METAL SANDER: (furn.) 8-36.01. Cleans and polishes surfaces of metal furniture with sandpaper to provide a smooth surface for the priming coat of paint. May apply plaster to nicks and blemishes in surface of metal (PLASTERER).

MACHINIST HELPER: (mach. shop) 8-78.10. handyman; machine helper; mechanic helper. A LABORER. Performs duties as described under HELPER.

WASH-RACK MAN: (auto. mfg.) 9-02.01. car washer. A LABORER. Washes finished cars with a hose and dries them with cloths and chamois skins.

PAINTER, SPRAY: (any ind.) II. 9-16.20. Performs duties as described under PAINTER, SPRAY I, but not requiring a comparable degree of skill. Sprays articles (usually on an assembly line) which do not require finished surfaces. Work is repetitive and generally confined to a single type of article. May be classified according

to article sprayed or material used, as COIL SPRAYER; LACQUER SPRAYER; MICA-PARTS SPRAYER; MORTEX SPRAYER; PAINTER, BARREL (petrol. refin.); PAINTER, CHASSIS; PAINTER, DRUM; PAINTER, ELECTRIC MOTOR; TILE SPRAYER.

PACKER: (any ind.) 9-68.30. Packs finished or wrapped products in cardboard or wooden boxes, cartons, kegs, or other containers preparatory to shipment or storage. Folds, stacks, or arranges articles in container, using excelsior, waste paper, or other material to prevent breakage or damage. May close and seal containers with glue or gummed tape. May weigh articles and inspect them for size, color, defects, or other characteristics, and keep a record of articles packed. May be designated according to container packed, as BOX PACKER; CADDY PACKER; CAN PACKER; CARTON PACKER; CASE PACKER; CRATE PACKER.

GAS APPLIANCE SERVICEMAN: (any ind.) 9-83.01. A classification title for jobs concerned with the maintenance, repair, and installation of household and industry service machines and appliances, such as stoves, ranges, refrigerators, water heaters, warm-air furnaces, domestic steam and hot water heating apparatus, or oil-burner units. Occupations concerned with the repair and installation of large industrial-type furnaces and boilers should be classified under LABORER, INDUSTRIAL EQUIPMENT REPAIRING. Classified under the title are the following jobs: FURNACE-REPAIRMAN HELPER; GAS-APPLIANCE-SERVICEMAN HELPER; GAS-RANGE-REPAIRMAN HELPER; OIL-BURNER-INSTALLATION-AND-SERVICEMAN HELPER; REFRIGERATION-MECHANIC HELPER; SNOW MAN.

CLEANER: (any ind.) III. 9-85.02. Cleans interiors and exteriors of transportation vehicles, such as airplanes, automobiles, busses, railroad passenger cars, and streetcars: Cleans interior with broom, cloth, mop, vacuum cleaner, and whisk broom. Cleans windows with water, cleansing compound, and cloth or chamois. Removes dust, grease, and oil from exterior surfaces by spraying or washing them with soap and water or acid solutions, rubbing surfaces with brush or sponge. Washes off solutions with clean water and sponge. May be designated according to type of vehicle cleaned, as AIRPLANE CLEANER; AUTOMOBILE POLISHER; AUTOMOBILE WASHER; BUS CLEANER; CAR CLEANER; COACH CLEANER; WAGON WASHER. May polish exterior by rubbing it with liquid polish or wax, and cloth.

STOCK BOY: (any ind.) 9-88.40. errand boy; parts chaser; stock handler; stock helper; supply boy; supply clerk; supply-room runner. A LABORER, STORES. Replenishes depleted stock or materials in the operating departments of a manufacturing plant, department store, or other

establishment, either carrying the stock or materials or pushing them on a handtruck or rack from the supply room (TRUCKER, HAND). Usually obtains supplies only on requisition. May keep records of supplies obtained. May sort supplies in stockroom and pile them on shelves or in bins (STOCK CLERK). Feminine titles: ERRAND GIRL; STOCK GIRL; SUPPLY GIRL.

APPENDIX C

INTERVIEW SCHEDULE

Name of Firm _____

Kind of Business (or Major Product) _____

Name of Person Completing this Form _____

Title _____ Date _____

JOB TITLE OR OCCUPATION	Workers in this Job January 1, 1965		Number of workers in the Following Age Groups				Number of Workers Hired During the Past Year	
	Male	Female	Under 21	22-45	46-65	Over 65	To Maintain Normal Operations	Due to Expansion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)								
(2)								
(3)								
(4)								
(5)								
(6)								
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(18)								
(19)								
(20)								

CONFIDENTIAL REPORT ON MANPOWER

The purpose of this survey is to determine the manpower and training needs for technical, skilled, office, medical and health occupations in Louisiana at the present time and to estimate these needs for the next ten years. The validity of this survey will depend upon the response from Louisiana industry in furnishing the data requested in this questionnaire. If exact data are not available, reliable estimates are requested from respondents. Only summary data will be published and respondents will not be identified.

Total N

Total N

Total N

...of Workers Hired ...g the Past Year		Number of Current Vacancies For This Job	Number of Trainees Receiving Formal In-plant Training to Enter This Position	Approximate Entry Wage For This Job	Experience Requirements for this Job				Education Requirements for this Job					Trai...
...intain ...al ...ions	Due to Expansion				None Estab-lished	Job Exper-ience	Trade Exper-ience	Completion of Formal Training	None Estab-lished	Some High School	High School Graduate	Some College	College Graduate	None Estab-lished
...)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)

Total Number of Persons on your Payroll January 1, 1960_____

Total Number of Persons on your Payroll January 1, 1965_____

Total Number of Persons on your Payroll N O W _____

Education Requirements for this Job					Training Requirements for this Job					Preference to Hire Equally Qualified Men or Women			Estimated Required Employment in Job		
None Established	Some High School	High School Graduate	Some College	College Graduate	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant	Men Only	Women Only	Either	1967	1970	1975
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)

VT 002 581
Louisiana Study of Manpower and Training Needs in Manufacturing Occupations.

Louisiana Vocational Curriculum Development and Research Center, Natchitoches
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LOUISIANA

The purpose of this study was to determine the manpower and training needs for technical, skilled, office, medical, and health occupations in Louisiana. Data reported were obtained from personal interviews at 160 firms employing 50,167 workers. The stratified random sample represented 39.2 percent of the manufacturing industries. In 1965, 128,070 persons were employed in these industries in 197 jobs or occupations. Skilled and semi-skilled occupations accounted for 72 percent of these workers. Unskilled occupations accounted for 12 percent. Clerical and sales occupations accounted for slightly less than 10 percent. The age group between 21-45 years contained almost two-thirds of the workers and less than 1 percent was over 65 years of age. Formal in-plant training was given to 5 percent of the total work force. No experience was required for 19 percent of the occupations. Formal education was required for 21 percent of the jobs surveyed while 31 percent had no educational requirements. Only 1 percent required college graduation; 23 percent required apprentice training. Equal opportunities were found for either sex in 17 percent of the occupations. (EM)

VT 002 581

LOUISIANA STUDY OF MANPOWER AND TRAINING NEEDS

IN MANUFACTURING OCCUPATIONS

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
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STUDY HIGHLIGHTS

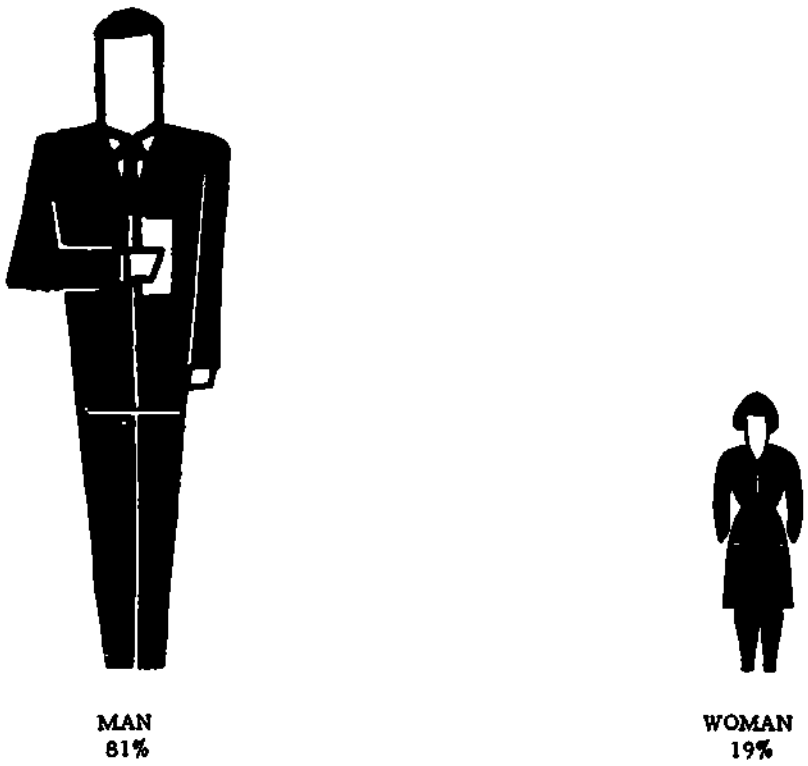


FIGURE I: MANUFACTURING OCCUPATIONAL DISTRIBUTION OF EMPLOYMENT BY SEX

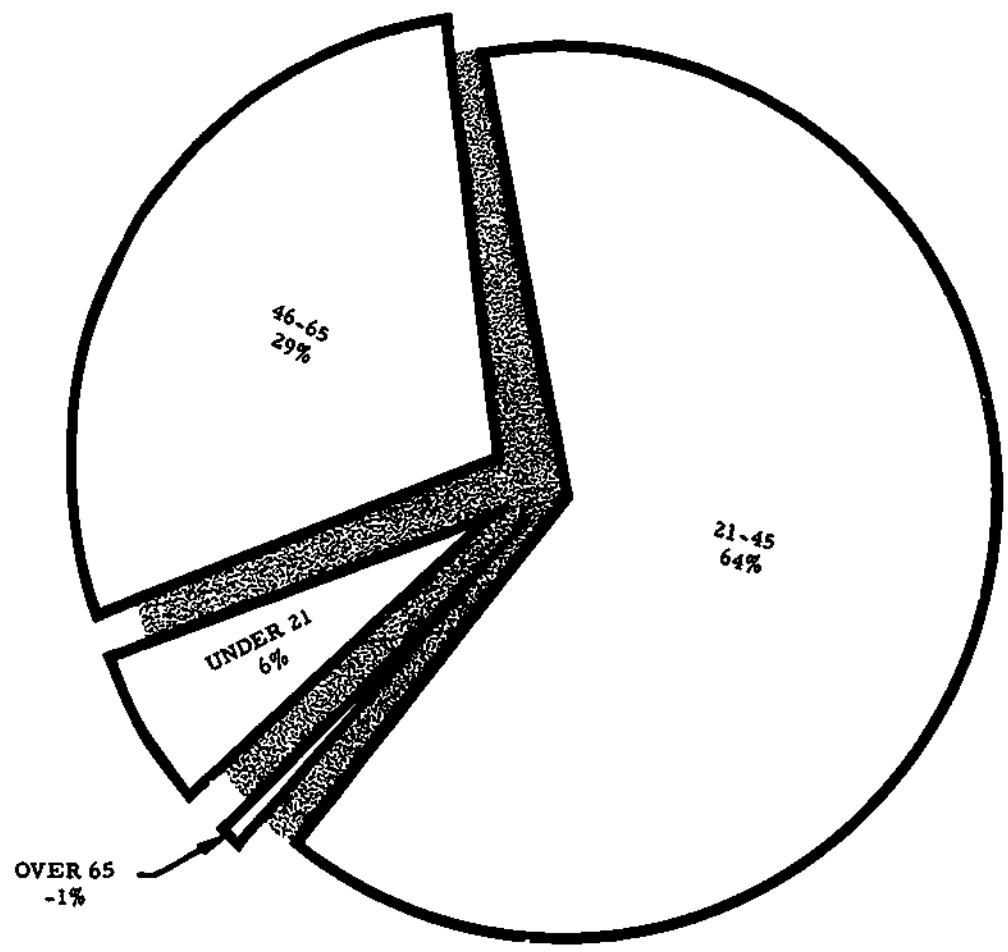


FIGURE II: DISTRIBUTION OF WORKERS BY AGE GROUPS IN MANUFACTURING OCCUPATIONS

STUDY HIGHLIGHTS

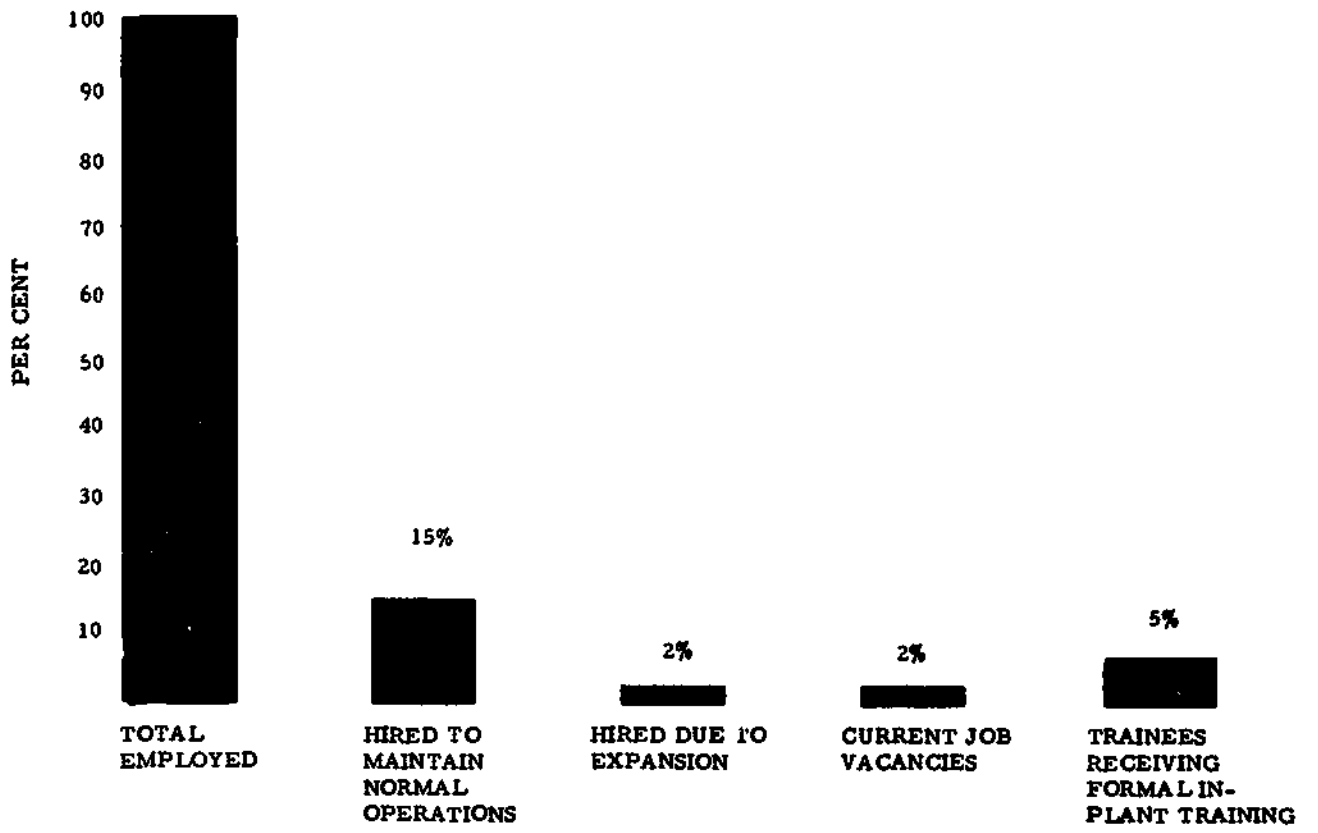


FIGURE III: DISTRIBUTION OF WORKER HIRES, VACANCIES, AND TRAINEES IN MANUFACTURING OCCUPATIONS

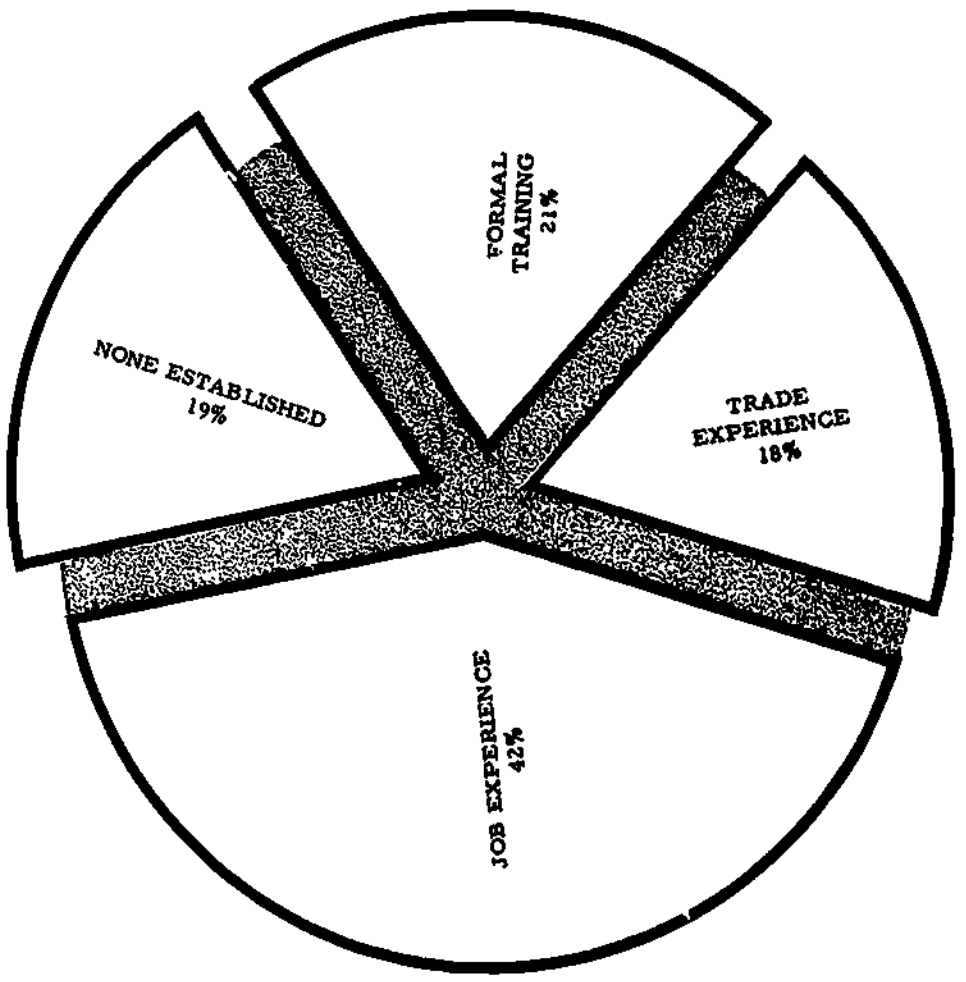


FIGURE IV: EXPERIENCE REQUIREMENTS OF MANUFACTURING OCCUPATIONS

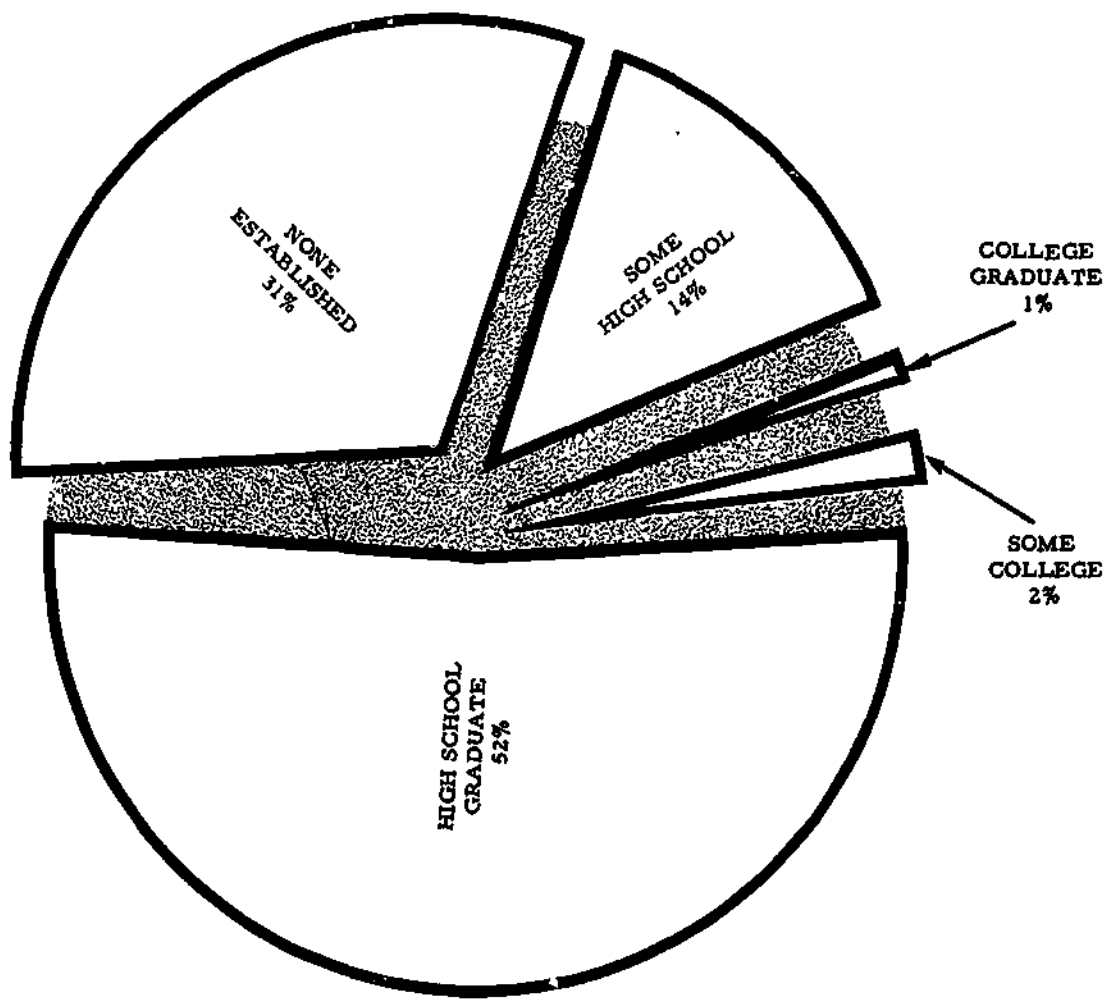


FIGURE V: EDUCATION REQUIREMENTS FOR MANUFACTURING OCCUPATIONS

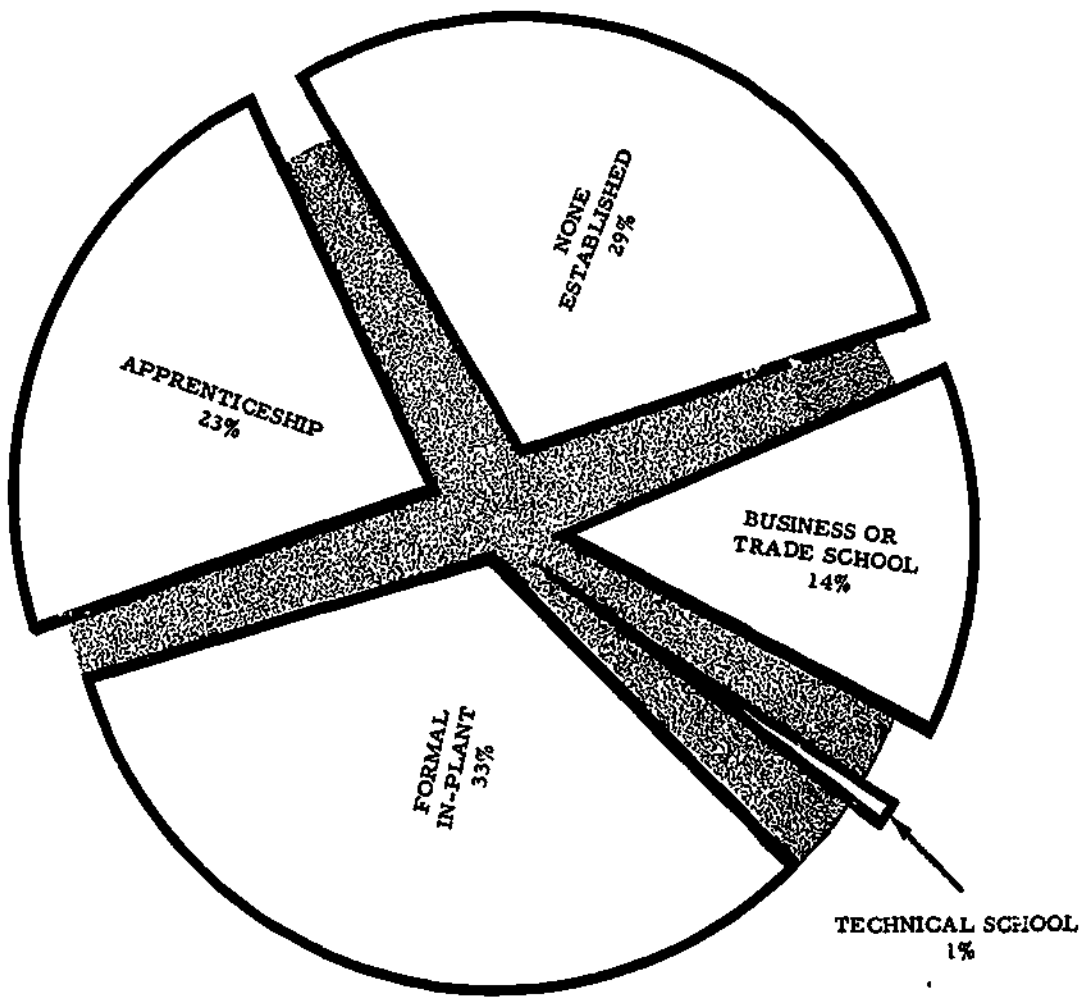
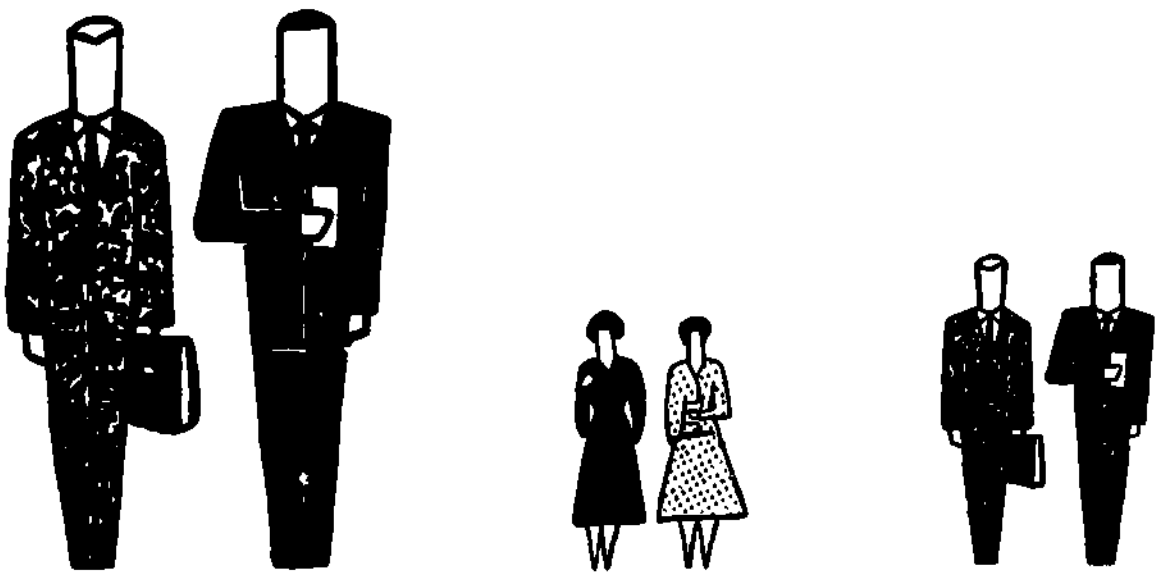


FIGURE VI: TRAINING REQUIREMENTS FOR MANUFACTURING OCCUPATIONS

STUDY HIGHLIGHTS

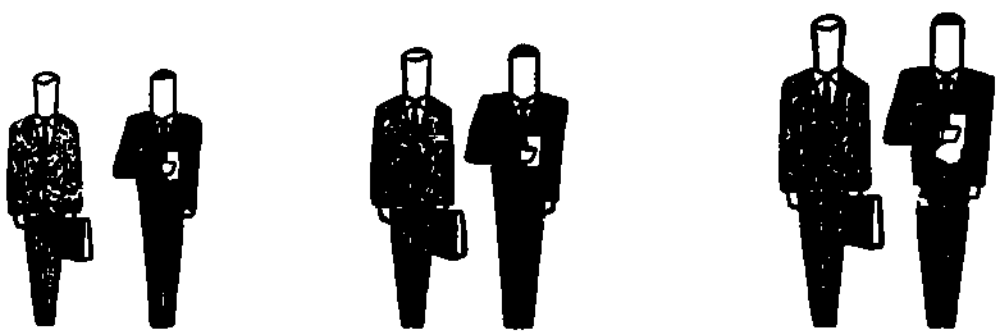


MEN
69%

WOMEN
14%

MEN OR WOMEN
17%

FIGURE VII: PREFERENCE TO HIRE EQUALLY QUALIFIED



1965
100%

1967
108%

1970
119%

FIGURE VIII: ESTIMATED GROWTH IN MANUFACTURING OCCUPATIONS

STUDY HIGHLIGHTS

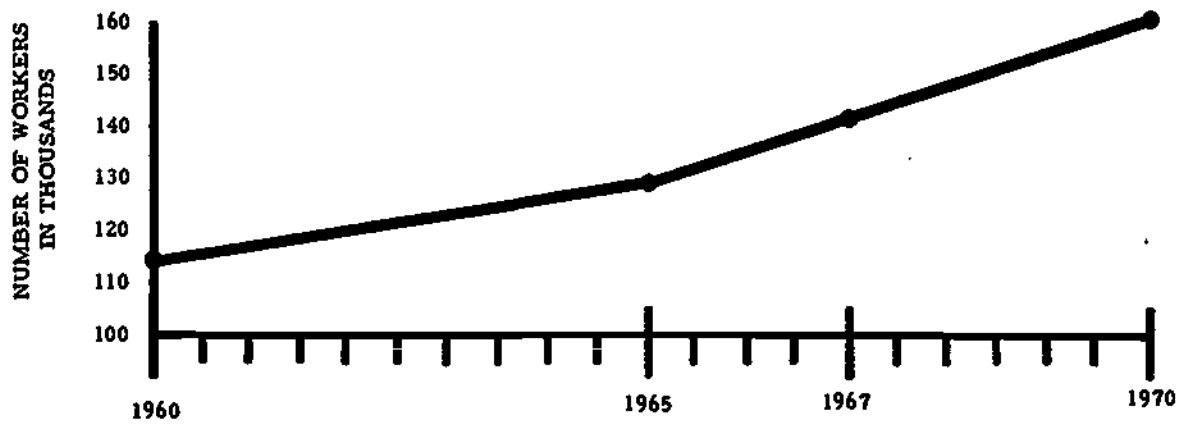


FIGURE IX: ESTIMATED NUMBER OF WORKERS IN MANUFACTURING OCCUPATIONS, 1960-1970

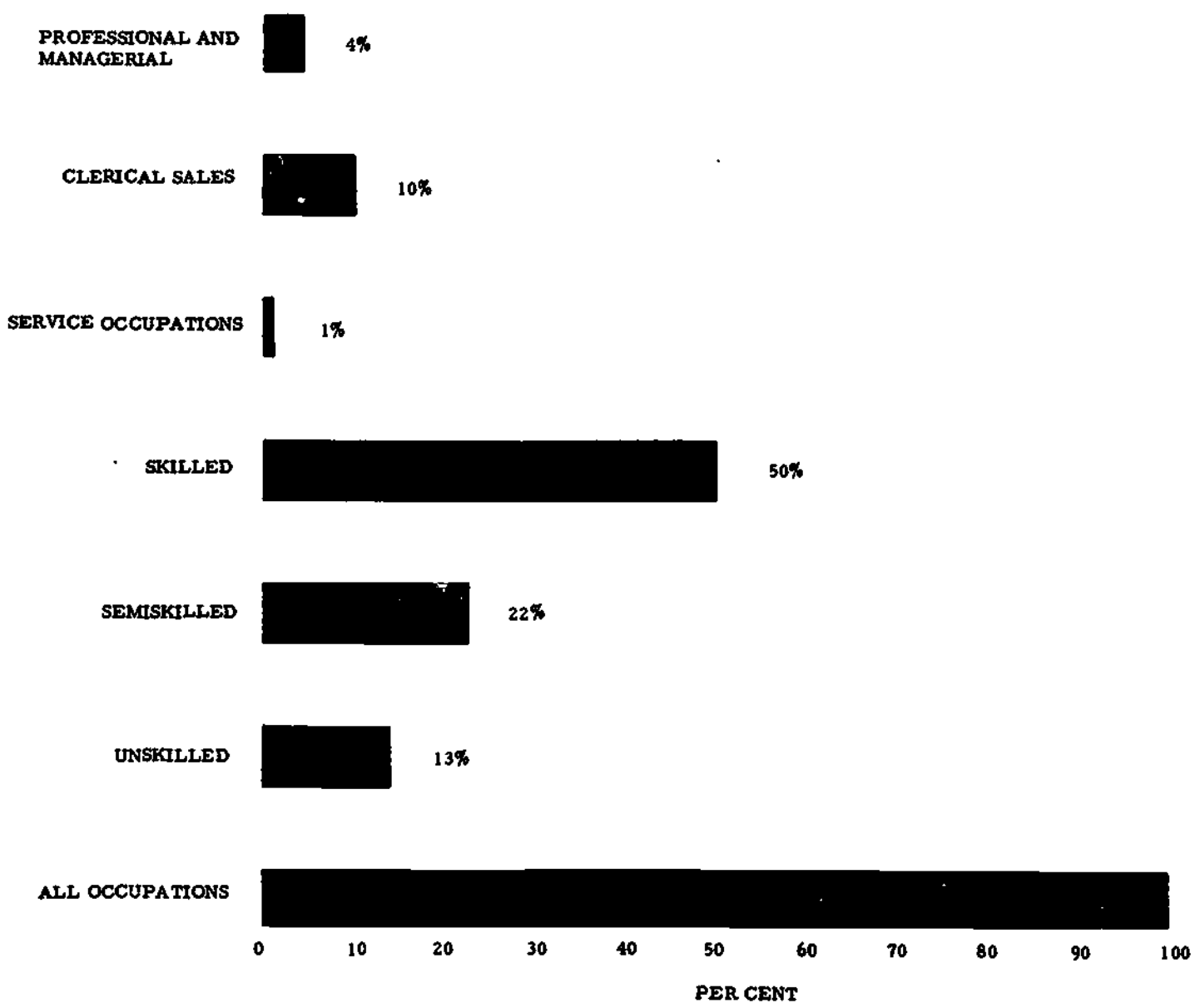


FIGURE X: DISTRIBUTION OF MANUFACTURING JOBS IN 1965

LOUISIANA STUDY OF MANPOWER AND TRAINING NEEDS IN MANUFACTURING OCCUPATIONS

Introduction. The purpose of this study was to determine the manpower and training needs for technical, skilled, office, medical and health occupations in Louisiana. State-operated trade and vocational-technical schools offer training which prepares students for employment. The schools' training programs must be realistic in the light of actual or anticipated opportunities for gainful employment. Employment opportunities and training requirements in the Manufacturing industry have been indicated in this report.

Procedures. In order to determine the employment opportunities and training needs in Louisiana, a survey of selected occupations was conducted on a state-wide basis, covering both manufacturing and non-manufacturing industries. Data were collected throughout the state by interviews conducted by trained personnel of the Division of Employment Security, Louisiana Department of Labor. The data were collated and expanded by the Research and Statistics Unit, Division of Employment Security, Louisiana Department of Labor. The report of findings was prepared and issued by the Vocational Curriculum Development and Research Center, Natchitoches Trade School.

The data reported in this study were obtained from personal interviews of 160 firms employing 50,167 workers.

This stratified random sample represents 39.2 per cent of the Manufacturing industry in Louisiana. This sample was selected to include: small, medium-sized and large units, from the standpoint of employment; and a cross section of the activities of the industry.

Definition of terms. The definitions of the following terms will be applicable for this study.

> Manufacturing. The manufacturing division includes those establishments engaged in the mechanical or chemical transformation of inorganic or organic substances into new products, and usually described as plants, factories, or mills, which characteristically use power-driven machines and materials-handling equipment. Establishments engaged in assembling component parts of manufactured products are also considered manufacturing if the new product is neither a structure nor other fixed improvement.
>
> The materials processed by manufacturing establishments include products of agriculture, forestry, fishing, mining, and quarrying. The final product of a manufacturing establishment may be "finished" in the sense that it is ready for utilization or consumption, or it may be "semifinished" to become a raw material for an extablishment engaged in further manufacturing. For example, the product of the copper smelter is the raw material used in electrolytic refineries; refined copper is the raw material used by copper wire mills; and copper wire is the raw material used by certain electrical equipment manufacturers.
>
> The materials used by manufacturing establishments may be purchased directly from producers, obtained through customary trade channels, or secured without recourse to the market by transferring the product from one establishment to another which is under the same ownership. Manufacturing production is usually carried on for the wholesale market, for interplant transfer, or to order for industrial users, rather than for direct sale to the domestic consumer.

> Printing, publishing, and industries servicing the printing trades are classified as manufacturing industries.[1]

The major groups comprising the division of Manufacturing have been illustrated and defined in Appendix A.

The various job titles or occupations have been defined and listed in Appendix B.

Findings. In 1965, 128,070 persons were employed in Louisiana in the Manufacturing industry. There were 103,537 men, 81 per cent, and 24,533 women, 19 per cent, employed in 197 different jobs or occupations. Table I lists the job titles or occupations, the Dictionary of Occupational Titles code numbers, and the distribution of workers according to sex. Study of Table I will reveal there were twenty-three professional and managerial occupations, twenty-five clerical and sales occupations, seven service occupations, seventy-two skilled occupations, fifty-seven semiskilled occupations, thirty-two unskilled occupations, and one horticultural occupation listed in the manufacturing industry in Louisiana in 1965.

The skilled occupations when combined with the semiskilled occupations contained approximately 72 per cent of the workers in the industry. More than 12 per cent of the workers

---

[1]Technical Committee On Industrial Classification, Office of Statistical Standards, Standard Industrial Classification Manual (Washington, D. C.: U. S. Government Printing Office, 1957), p. 43.

in the industry were classified in unskilled occupations. Slightly less than 10 per cent of the workers were classified in clerical and sales occupations.

Almost two-thirds of the workers in the Manufacturing industry were in the prime age group, 21-45 years. Less than 1 per cent of the workers were over 65 years of age. Study of Table II will reveal that of the 252 workers over 65 years of age, 166 were in skilled occupations. Almost one-third of the workers were in the 46-65 age group.

Table III reflects that 15 per cent of the total work force were hired during the past year to maintain normal operations and 2 per cent were hired due to the needs of expansion. Two per cent of the job classifications contained current job vacancies while 5 per cent of the total work force were receiving formal in-plant training. Study of Table III will reveal the distribution of hires, vacancies, and in-plant trainees listed according to the percentage of total workers in each job title or occupation classification.

The approximate range of hourly entry wages for the jobs or occupations in the Manufacturing industry have been arranged in Table IV. Some of these figures indicate the exact entry wage and some indicate the range. They cannot be further treated to indicate a measure of central tendency, i. e., a mean or median wage. There were no jobs listed with a beginning wage of less than one dollar per hour.

Table V reflects the percentage distribution of experience requirements for the job classifications or occupations in the Manufacturing industry in Louisiana. No experience requirements had been established for 19 per cent of the occupations. Job experience indicates work experience within the same exact job title in an identical industry. Trade experience would indicate work experience in the same general area or trade but not necessarily within the same industry. Twenty-one per cent of the jobs surveyed required completion of a formal training program for employment.

Educational requirements for the occupations in the Manufacturing industry are listed in Table VI. Study of this table will reveal that 31 per cent of the job classifications had no educational requirements for employment. Fourteen per cent of the occupations required some high school education and 52 per cent of the jobs required high school graduation. Two per cent of the jobs required some college and only one per cent required college graduation.

Table VII lists the training requirements by percentage distribution. Twenty-nine per cent of the occupations have had no training requirements established. Twenty-three per cent of the job classifications required apprenticeship training. Only 1 per cent required technical school training while business or trade school training was required in 14 per cent of the jobs. Thirty-three per cent of the jobs required formal in-plant training.

The greater preference to hire equally qualified men in the Manufacturing industry is reflected in Table VIII. Sixty-nine per cent of the occupations reported preference for equally qualified men while 14 per cent of the employers preferred equally qualified women for these occupations. Seventeen per cent of the occupations reported could be filled by either sex with no difference in preference by the employer. Preferences to employ equally qualified men or women might be compared with actual employment where currently 81 per cent male and 19 per cent female comprise the work force.

The Manufacturing industry has indicated growth in the past five years and has been predicted a greater growth by 1970. There were an estimated 117,419 employees working in 1960. This work force had increased to an estimated 128,070 employees by 1965, an increase of 10,651 for the past five years. Table IX reveals the estimated required employment for 1967 and 1970. An additional 9,988 workers will be required for 1967 bringing the estimated total employment to 138,058 from the present 128,070. For the five-year period of 1965 to 1970, an additional 24,963 employees will be required and will bring the total work force to an estimated total of 153,043 employees. The increase for the period 1965 to 1970 has been estimated to be more than double the increase for the 1960-1965 period.

Summary and conclusion. In order to determine the employment opportunities and training needs in Louisiana,

a survey of selected occupations was conducted on a state-wide basis, covering both manufacturing and non-manufacturing industries. Data were collected throughout the state from personal interviews conducted in cooperation with the Employment Security Division of the Louisiana Department of Labor. While it was not feasible to survey all manufacturing and non-manufacturing industries in the state due to the large number of small units with few employees, an adequate sample was selected to provide valid data. Data collected were collated and statistically expanded by the Research and Statistics Unit of the Employment Security Division, Louisiana Department of Labor. The report for the Manufacturing industry has been contained in this study.

The work force of the Manufacturing industry in Louisiana consisted of an estimated 128,070 employees, 81 per cent men and 19 per cent women. Sixty-four per cent of the workers were in the prime age group of 21-45 years. Less than 1 per cent of the workers were over 65 years of age and only 6 per cent were under the age of 21. There was considerable hiring to maintain normal operations during the past year, some 15 per cent of the total work force. The total work force increased 2 per cent due to expansion and had 2 per cent current job vacancies. Five per cent were receiving formal in-plant training.

By percentage, there were no experience requirements for 19 per cent of the occupations, job experience required

for 42 per cent, trade experience for 18 per cent, and formal training required for 21 per cent of the jobs. Education requirements had not been established for 31 per cent of the jobs. Some high school was required for 14 per cent, high school graduation for 52 per cent, some college for 2 per cent, and college graduation for 1 per cent of the occupations in the industry. There were no training requirements established for 29 per cent of the occupations. Formal in-plant training was required for 33 per cent of the jobs, business or trade school training for 14 per cent, apprenticeship training for 23 per cent, and technical school training for 1 per cent. There was a definite preference to hire equally qualified men, and the actual employment percentages indicated that this was carried out in actual practice. The entry hourly wage range was from a $1.00 per hour low to $4.75 per hour high. Almost 25 per cent of the workers in the industry were contained in only four skilled occupations--welder, machinist, chemical operator, and mechanics and repairmen.

It is predicted that the Manufacturing industry will experience steady growth in the years ahead. Employment in 1967 will be 108 per cent of 1965 and employment in 1970 will be 119 per cent of 1965. It is estimated that 24,963 additional employees will be needed by 1970. The state-operated trade and vocational-technical schools offer training which prepares students for employment. These schools can provide training for those occupations which do not require some

college or college graduation. As indicated in this report these occupations comprise 97 per cent of the workers in the industry which would be 24,214 of the additional employees needed by 1970. The trade and vocational-technical schools do not offer specific training for such jobs as lens grinder, sand blaster, porter, janitor, groundkeeper, etc. They do offer instruction that can be advantageously used by persons seeking employment in those occupations listed in Table X.

Additional study of these occupations is recommended in order to determine if any changes are required in existing training programs. Those Manufacturing occupations not listed in Table X that require no college education should also be studied to determine if specific training courses should be established or existing programs adapted to include such training.

State-operated trade and vocational-technical schools should plan their instructional program to train the 12,208 additional workers that will be required by 1970.

TABL[illegible]

TABLE I

MANUFACTURING OCCUPATIONAL DISTRIBUTION BY TITLE AND BY SEX
S.I.C. CODES 19-39

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Auditor	0-01	224	98%	5	2%
Reporters	0-06	555	93%	42	7%
Chemist - Organic	0-07	2	100%	---	---
Engineer, Ind.	0-18	58	100%	---	---
Engineer Mech.	0-19	5	100%	---	---
Trained Nurse	0-33	---	---	21	100%
Mgr. Personnel	0-39	2	100%	---	---
Com. Artists	0-44	639	81%	149	19%
Draftsmen	0-48	999	100%	---	---
Lab. Tech. & Asst.	0-50	1409	96%	63	4%
Photographers	0-56	21	100%	---	---
Radio Operator	0-61	23	100%	---	---
Elec. Technician	0-66	553	100%	---	---
Cost Estimators	0-68	100	100%	---	---
Programmer	0-69	7	100%	---	---
Inspectors	0-79	30	100%	---	---
Adv. Mgrs.	0-81	21	100%	---	---
Tugboat Oper.	0-88	49	100%	---	---
Purchasing Agents	0-91	19	100%	---	---
Conductors, Freight	0-92	2	100%	---	---
Mgr. Production	0-97	184	80%	47	20%
Roadmaster	0-98	5	100%	---	---
Mgr. Warehouse	0-99	7	100%	---	---
Bookkeepers & Cashiers	1-01	296	32%	642	68%
Bookkeeping Mach. Opr.	1-02	5	12%	37	88%
Checkers	1-03	16	76%	5	24%
Clerks, Gen.	1-04	54	10%	474	90%
Gen. Off. Clerk	1-05	712	37%	1213	63%
Printing & Pub. Clerk	1-10	42	100%	---	---
Credit Clerk	1-12	---	---	12	100%
File Clerk	1-17	121	52%	112	48%

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Gen. Ind. Clerk	1-18	189	59%	131	41%
Dispatcher, Locom.	1-19	2	100%	---	---
Messenger	1-23	5	100%	---	---
Office Mach. Oper.	1-25	168	32%	355	68%
Timekeeper	1-26	191	59%	133	41%
Secretaries	1-33	21	3%	679	97%
Shipping & Rec. Clerk	1-34	492	95%	26	5%
Stat. Clerk	1-36	5	42%	7	58%
Steno & Typist	1-37	422	9%	4209	91%
Stock Clerks	1-38	530	95%	28	5%
Tele. Operator	1-42	12	6%	203	94%
Weighers	1-45	68	100%	---	---
Sales Clerk	1-70	9	100%	---	---
Sales Persons	1-75	114	100%	---	---
Salesmen Except Consumer	1-85	117	100%	---	---
Salesmen Except Consumer	1-86	124	100%	---	---
Salesmen Except Consumer	1-87	649	100%	---	---
Cook	2-26	33	100%	---	---
Waiters	2-27	19	100%	---	---
Kitchen Workers	2-29	2	100%	---	---
Guards	2-61	460	100%	---	---
Firemen	2-63	51	100%	---	---
Janitors	2-84	397	100%	---	---
Porters	2-86	166	100%	---	---
Groundkeeper	3-40	5	100%	---	---
Baker	4-01	2	100%	---	---
Sugar Boilers	4-10	329	100%	---	---
Alteration Lady	4-25	---	---	257	100%
Pattern Makers	4-27	511	100%	---	---
Cabinet Maker	4-32	168	100%	---	---
Millman	4-33	86	100%	---	---
Mattress Maker	4-36	79	100%	---	---
Pulp Tester	4-41	189	100%	---	---

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Printer Slotter	4-42	121	100%	---	---
Printer	4-44	2158	100%	---	---
Pressman	4-45	124	100%	---	---
Photo Lithographer	4-46	301	100%	---	---
Photoengraver	4-47	364	100%	---	---
Pressman & Plate Printer	4-48	1659	100%	---	---
Polymerization Oper	4-51	280	100%	---	---
Chemical Oper.	4-52	7830	100%	---	---
Oil Refin. Plant Oper.	4-55	2151	100%	---	---
Glass Mfg. Teaser	4-65	75	100%	---	---
Caster	4-66	854	100%	---	---
Jewel Fitter	4-71	77	100%	---	---
Electroplater	4-74	9	100%	---	---
Machinist	4-75	8128	100%	---	---
Toolmaker	4-76	100	100%	---	---
Lathe Oper.	4-78	1362	100%	---	---
Sheet Metal Worker	4-80	618	100%	---	---
Molder	4-81	1038	100%	---	---
Chainsaw Coremaker	4-82	40	100%	---	---
Boilermaker	4-83	553	100%	---	---
Structural Worker	4-84	3192	100%	---	---
Welder	4-85	10496	100%	---	---
Blacksmith	4-86	98	100%	---	---
Heat Treater	4-87	16	100%	---	---
Metal Treatment Oper.	4-88	231	100%	---	---
Digester Oper.	4-90	245	100%	---	---
Furnace Tender	4-91	16	100%	---	---
Lead Fi..'shers	4-95	14	100%	---	---
Elect. Repairman	4-97	3094	100%	---	---
Elec. Inspector	4-98	37	100%	---	---
Assembler & Riveter	5-03	257	100%	---	---
Calker	5-05	100	100%	---	---
Optician	5-08	21	60%	14	40%

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Orthopedic Tech..	5-09	63	100%	---	---
Plast. Molder	5-10	2	100%	---	---
Pattern Maker	5-17	100	100%	---	---
Rig Builder	5-20	49	100%	---	---
Engineer Oper.	5-23	352	100%	---	---
Carpenter Maint.	5-25	1873	100%	---	---
Cement Finisher	5-26	138	100%	---	---
Painter	5-27	1106	100%	---	---
Pipefitter	5-30	2898	100%	---	---
Insulator	5-33	145	100%	---	---
Yard Brakeman	5-38	21	100%	---	---
Locomotive Eng.	5-41	16	100%	---	---
Yard Fireman	5-42	12	100%	---	---
Railroad Switchman	5-44	14	100%	---	---
Turbine Oper.	5-51	140	100%	---	---
Tele. Repairman	5-53	112	100%	---	---
Stat. Engineer	5-72	58	100%	---	---
Crane Oper.	5-73	765	100%	---	---
Railroad Car Insp.	5-76	2	100%	---	---
Glazier	5-77	21	100%	---	---
Millwright	5-78	1466	100%	---	---
Car Repairman	5-79	33	100%	---	---
Mechanics	5-81	595	100%	---	---
Mechanics & Repairman	5-83	4853	100%	---	---
Tool Grinder	5-84	35	100%	---	---
Reproduction Oper.	5-86	21	68%	10	32%
Assembly Handler	5-88	453	100%	---	---
Foreman	5-91	460	75%	152	25%
Mach. Foreman	5-92	208	100%	---	---
Foreman	5-95	40	100%	---	---
Foreman	5-97	14	100%	---	---
Misc. Occup. Food	6-10	147	100%	---	---
Sewing Mach. Oper.	6-27	597	5%	11175	95%

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Gen. Mach. Oper.	6-33	756	100%	---	---
Tape Mach. Oper.	6-36	16	100%	---	---
Carpenter	6-39	77	100%	---	---
Inspector*	6-42	698	75%	231	25%
Inspector**	6-41	994	77%	292	23%
Printing Press Oper.	6-44	5	100%	---	---
Engraver & Printers	6-49	245	59%	168	41%
Multiple Oper.	6-51	177	100%	---	---
Chem. Plant Oper.	6-52	1943	100%	---	---
Chem. Mixer	6-53	21	100%	---	---
Inspector	6-54	65	23%	222	77%
Acid Mixer	6-55	394	100%	---	---
Bottle Mach. Oper.	6-65	131	11%	1020	89%
Mold Mixer	6-66	210	100%	---	---
Inspector	6-67	187	100%	---	---
Polisher	6-77	7	100%	---	---
Lathe Oper.	6-78	523	100%	---	---
Machine Molder	6-81	54	100%	---	---
Welders & Flamecutters	6-85	1486	100%	---	---
Iron Workers	6-88	509	100%	---	---
Ladle Pourer	6-91	166	100%	---	---
Sheet Metal Worker	6-94	341	100%	---	---
Welder Helper	6-95	294	100%	---	---
Assembler	7-00	79	87%	12	13%
Structural Insp.	7-03	224	100%	---	---
Lens Grinder	7-08	42	75%	14	25%
Plastic Mach. Op.	7-10	583	95%	28	5%
Spray Painter	7-16	434	100%	---	---
Packer Loaders	7-21	63	100%	---	---
Heavy Grader	7-23	40	100%	---	---
Painter	7-27	285	100%	---	---
Pipefitter Helper	7-32	201	100%	---	---
Heavy Tr. Driver	7-36	884	100%	---	---

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Turbine Attend.	7-51	14	100%	---	---
Filterman & Tender	7-54	16	100%	---	---
Presser	7-57	61	21%	236	79%
Gasoline Attend.	7-60	5	100%	---	---
Stat. Fireman	7-70	268	100%	---	---
Oiler	7-71	182	100%	---	---
Stat. Engineer	7-72	72	100%	---	---
Mobile Oper.	7-73	37	100%	---	---
Carmen Helper	7-79	14	100%	---	---
Mech. Asst.	7-81	70	100%	---	---
Mech.& Repairmen, N.E.C.	7-83	138	100%	---	---
Knife Grinder	7-84	14	100%	---	---
Steam Rack Op.	7-85	30	100%	---	---
Truck Oper.	7-88	982	100%	---	---
Exterminators	7-89	2	100%	---	---
Carpenter Appren.	7-93	5	100%	---	---
Machine Appren.	7-94	245	100%	---	---
Elec. Appren.	7-95	56	100%	---	---
Pipefitter Appren.	7-96	37	100%	---	---
Sheet Metal Appren.	7-97	58	100%	---	---
Printer Appren.	7-98	163	100%	---	---
Millwright Appren.	7-99	184	100%	---	---
Laborer-Misc. Food	8-10	1080	100%	---	---
Laborer-Woodworking	8-33	810	100%	---	---
Plugger	8-34	14	100%	---	---
Mach. Tender & Deckman	8-41	2594	100%	---	---
Bag Mach. Op. & Bundle	8-42	3196	67%	1577	33%
Pressman Appren.	8-49	42	100%	---	---
Laborer-Plastics	8-51	152	100%	---	---
Laborer-Ind. Chem.	8-52	240	100%	---	---
Laborer-Chem. N.E.C.	8-53	182	100%	---	---
Explosive Oper. II	8-54	392	52%	364	48%
Oper. Helper	8-55	49	100%	---	---
Laborer-Misc. Petro.	8-56	30	100%	---	---

TABLE I (Continued)

Job Title	D.O.T. Code	Workers In This Job Male	Per Cent	Female	Per Cent
Glass Prod. Insp.	8-65	75	100%	---	---
Bricklayer Helper	8-66	5	100%	---	---
Air Tool Oper.	8-67	714	100%	---	---
Mach. Helper	8-78	691	100%	---	---
Sand Blaster	8-82	16	100%	---	---
Heat Treater Helper	8-87	16	100%	---	---
Stress Helper	8-92	16	100%	---	---
Utility Man & Crane Oper.	8-93	322	100%	---	---
Laborer-Light Fixtures	8-94	425	100%	---	---
Elect. Helper	9-00	1127	100%	---	---
Burster Oper.	9-03	2	100%	---	---
Paint & Steel Worker	9-16	35	100%	---	---
Carpenter Helper***	9-32	852	100%	---	---
Deck hand	9-48	96	100%	---	---
Bundles-Wrappers & Packers	9-68	280	98%	5	2%
Boiler Room Helper	9-70	61	100%	---	---
Oilers	9-71	96	100%	---	---
Maint. Helpers	9-83	180	100%	---	---
Stockers	9-88	712	81%	163	19%
Waste Mat'ls Oper.	9-89	5	100%	---	---
Totals		103537	81%	24533	19%

* Paper & Pulp Sewing & Bag
** Paper & Pulp Cutter & Bag
*** Construction

TABLE II

MANUFACTURING OCCUPATIONAL DISTRIBUTIONS OF EMPLOYMENT BY AGE GROUPS
S.I.C. CODES 19-39

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Auditor	---	---	138	60%	86	38%	5	2%
Reporters	---	---	532	89%	65	11%	---	---
Chemist - Organic	---	---	---	---	2	100%	---	---
Engineer, Ind.	---	---	51	88%	7	12%	---	---
Engineer Mech.	---	---	5	100%	---	---	---	---
Trained Nurse	---	---	12	57%	9	43%	---	---
Mgr. Personnel	---	---	---	---	2	100%	---	---
Com. Artists	---	---	623	79%	165	21%	---	---
Draftsman	47	5%	702	70%	234	23%	16	2%
Lab. Tech. & Asst.	51	3%	1125	77%	296	20%	---	---
Photographers	---	---	21	100%	---	---	---	---
Radio Operator	---	---	16	70%	7	30%	---	---
Elec. Technician	23	4%	420	82%	70	14%	---	---
Cost Estimators	---	---	79	79%	21	21%	---	---
Programmer	---	---	7	100%	---	---	---	---
Inspectors	---	---	30	100%	---	---	---	---
Adv. Mgrs.	---	---	---	---	21	100%	---	---
Tugboat Oper.	---	---	30	61%	19	39%	---	---
Purchasing Agents	---	---	12	63%	7	37%	---	---
Conductors, Freight	---	---	---	---	2	100%	---	---
Mgr. Production	---	---	91	39%	140	61%	---	---
Roadmaster	---	---	5	100%	---	---	---	---
Mgr. Warehouse	---	---	5	71%	2	29%	---	---
Bookkeepers & Cashiers	91	10%	721	77%	126	13%	---	---
Bookkeeping Mach. Oper.	---	---	42	100%	---	---	---	---
Checker	9	43%	12	57%	---	---	---	---
Clerks, Gen.	---	---	486	92%	42	8%	---	---
Gen. Off. Clerk	149	7%	1496	78%	280	15%	---	---
Printing & Pub. Clerk	---	---	42	100%	---	---	---	---
Credit Clerk	---	---	7	58%	5	42%	---	---
File Clerk	61	26%	172	74%	---	---	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Gen. Ind. Clerk	70	22%	229	72%	21	6%	---	---
Dispatcher, Locom.	---	---	2	100%	---	---	---	---
Messenger	---	---	---	---	5	100%	---	---
Office Mach. Oper.	23	4%	423	81%	72	14%	5	1%
Timekeeper	12	4%	191	59%	112	34%	9	3%
Secretaries	79	11%	525	75%	96	14%	---	---
Shipping & Rec. Clerk	49	9%	357	69%	112	22%	---	---
Stat. Clerk	---	---	7	58%	5	42%	---	---
Steno & Typist	728	16%	3268	70%	635	14%	---	---
Stock Clerks	28	5%	404	72%	126	23%	---	---
Tele. Operator	2	1%	168	78%	45	21%	---	---
Weighers	---	---	21	31%	47	69%	---	---
Sales Clerk	---	---	---	---	9	100%	---	---
Sales Persons	7	6%	37	33%	70	61%	---	---
Salesmen Except Consumer	---	---	72	62%	45	38%	---	---
Salesmen Except Consumer	---	---	98	79%	26	21%	---	---
Salesmen Except Consumer	124	19%	436	67%	89	14%	---	---
Cook	---	---	17	52%	16	48%	---	---
Waiters	---	---	7	37%	12	63%	---	---
Kitchen Workers	---	---	---	---	2	100%	---	---
Guards	---	---	182	40%	266	58%	12	2%
Fireman	---	---	21	41%	30	59%	---	---
Janitors	---	---	369	93%	28	7%	---	---
Porters	---	---	77	46%	89	54%	---	---
Groundkeeper	---	---	3	60%	2	40%	---	---
Baker	---	---	2	100%	---	---	---	---
Sugar Boilers	---	---	30	9%	299	91%	---	---
Alteration Lady	47	18%	149	58%	61	24%	---	---
Pattern Makers	---	---	483	95%	28	5%	---	---
Cabinet Maker	16	10%	82	49%	61	36%	9	5%
Millman	---	---	16	19%	70	81%	---	---
Mattress Maker	---	---	79	100%	---	---	---	---
Pulp Tester	---	---	98	52%	91	48%	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Printer Slotter	---	---	46	38%	75	62%	---	---
Printer	---	---	1598	74%	560	26%	---	---
Pressman	---	---	124	100%	---	---	---	---
Photo Lithographer	---	---	301	100%	---	---	---	---
Photoengraver	147	40%	203	56%	14	4%	---	---
Pressman & Plate Printer	47	3%	863	52%	749	45%	---	---
Polymerization Oper.	---	---	154	55%	126	45%	---	---
Chemical Oper.	---	---	3516	45%	4314	55%	---	---
Oil Refin. Plant Oper.	---	---	1726	80%	425	20%	---	---
Glass Mfg. Teaser	---	---	75	100%	---	---	---	---
Caser	---	---	698	82%	156	18%	---	---
Jewel Fitter	16	21%	45	58%	16	21%	---	---
Electroplater	---	---	5	56%	4	44%	---	---
Machinist	96	1%	5267	65%	2704	33%	61	-1%
Toolmaker	---	---	42	42%	51	51%	7	7%
Lathe Oper	320	24%	697	51%	345	25%	---	---
Sheet Metal Worker	30	5%	359	58%	229	37%	---	---
Molder	112	11%	742	71%	184	18%	---	---
Chainsaw Coremaker	---	---	40	100%	---	---	---	---
Boilermaker	---	---	371	67%	180	32%	2	-1%
Structural Worker	327	10%	1654	52%	1211	38%	---	---
Welder	681	6%	6805	65%	2985	28%	28	-1%
Blacksmith	---	---	19	19%	79	81%	---	---
Heat Treater	---	---	---	---	16	100%	---	---
Metal Treatment Oper.	12	5%	196	85%	23	10%	---	---
Digester Oper.	---	---	184	75%	61	25%	---	---
Furnace Tender	---	---	16	100%	---	---	---	---
Lead Finishers	---	---	7	50%	7	50%	---	---
Elect. Repairman	16	-1%	1769	57%	1309	42%	---	---
Elec. Inspector	---	---	37	100%	---	---	---	---
Assembler & Riveter	---	---	231	90%	26	10%	---	---
Calker	---	---	100	100%	---	---	---	---
Optician	---	---	28	80%	7	20%	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Orthopedic Tech.	21	33%	35	56%	7	11%	---	---
Plast. Molder	---	---	2	100%	---	---	---	---
Pattern Maker	---	---	74	74%	26	26%	---	---
Rig. Builder	---	---	28	57%	21	43%	---	---
Engineer Oper.	---	---	242	69%	110	31%	---	---
Carpenter Maint.	---	---	1133	60%	712	38%	28	2%
Cement Finisher	---	---	110	80%	28	20%	---	---
Painter	47	4%	536	49%	523	47%	---	---
Pipefitter	56	2%	1171	40%	1671	58%	---	---
Insulator	---	---	77	53%	68	47%	---	---
Yard Brakeman	---	---	14	67%	7	33%	---	---
Locomotive Eng.	---	---	2	13%	14	87%	---	---
Yard Fireman	---	---	7	58%	5	42%	---	---
Railroad Switchman	---	---	7	50%	7	50%	---	---
Turbine Oper.	---	---	47	34%	93	66%	---	---
Tele. Repairman	---	---	54	48%	58	52%	---	---
Stat. Engineer	---	---	42	72%	16	28%	---	---
Crane Oper.	7	-1%	550	72%	208	27%	---	---
Railroad Car Insp.	---	---	2	100%	---	---	---	---
Glazier	---	---	16	76%	5	24%	---	---
Millwright	---	---	693	47%	768	52%	5	-1%
Car Repairman	---	---	---	---	33	100%	---	---
Mechanics	23	4%	287	48%	285	48%	---	---
Mechanics & Repairman	98	2%	2968	61%	1780	36%	7	-1%
Tool Grinder	---	---	---	---	26	74%	9	26%
Reproduction Oper.	5	16%	26	84%	---	---	---	---
Assembly Handler	---	---	250	55%	203	45%	---	---
Foreman	---	---	376	61%	236	39%	---	---
Mach. Foreman	16	8%	110	53%	82	39%	---	---
Foreman	---	---	---	---	40	100%	---	---
Foreman	---	---	---	---	14	100%	---	---
Misc. Occup. Food	---	---	16	11%	131	89%	---	---
Sewing Mach. Oper.	1208	10%	8852	75%	1712	15%	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Gen. Mach. Oper.	47	6%	450	60%	259	34%	---	---
Tape Mach. Oper.	---	---	16	100%	---	---	---	---
Carpenter	---	---	30	39%	47	61%	---	---
Inspector*	121	13%	528	57%	280	30%	---	---
Inspector**	58	5%	710	55%	518	40%	---	---
Printing Press Oper.	---	---	3	60%	2	40%	---	---
Engraver & Printers	---	---	266	64%	147	36%	---	---
Multiple Oper.	---	---	61	34%	117	66%	---	---
Chem. Plant Oper.	72	4%	1113	57%	758	39%	---	---
Chem. Mixer	---	---	9	43%	12	57%	---	---
Inspector	---	---	250	87%	37	13%	---	---
Acid Mixer	19	5%	334	84%	42	11%	---	---
Bottle Mach. Oper.	37	3%	1094	95%	19	2%	---	---
Mold Mixer	---	---	180	86%	30	14%	---	---
Inspector	---	---	187	100%	---	---	---	---
Polisher	---	---	7	100%	---	---	---	---
Lathe Oper.	23	4%	385	74%	114	22%	---	---
Machine Molder	---	---	54	100%	---	---	---	---
Welders & Flamecutters	163	11%	966	65%	357	24%	---	---
Iron Workers	---	---	299	59%	203	40%	7	1%
Ladle Pourer	---	---	166	100%	---	---	---	---
Sheet Metal Worker	77	23%	201	59%	63	18%	---	---
Welder Helper	128	44%	166	56%	---	---	---	---
Assembler	---	---	91	100%	---	---	---	---
Structural Insp.	21	9%	173	77%	30	14%	---	---
Lens Grinder	---	---	49	88%	7	12%	---	---
Plastic Mach. Op.	---	---	466	76%	145	24%	---	---
Spray Painter	5	1%	294	68%	135	31	---	---
Packer Loaders	5	8%	58	92%	---	---	---	---
Heavy Grader	---	---	40	100%	---	---	---	---
Painter	---	---	215	75%	70	25%	---	---
Pipefitter Helper	51	26%	149	74%	---	---	---	---
Heavy Tr. Driver	23	3%	516	58%	345	39%	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Turbine Attend.	---	---	---	---	14	100%	---	---
Filterman & Tender	---	---	9	56%	7	44%	---	---
Presser	33	11%	194	65%	70	24%	---	---
Gasoline Attend.	---	---	5	100%	---	---	---	---
Stat. Fireman	---	---	133	50%	135	50%	---	---
Oiler	2	1%	124	68%	56	31%	---	---
Stat. Engineer	---	---	26	36%	47	64%	---	---
Mobile Oper.	---	---	30	81%	7	19%	---	---
Carmen Helper	---	---	9	64%	5	36%	---	---
Mech. Asst.	21	30%	21	30%	28	40%	---	---
Mech. & Repairmen, N.E.C.	---	---	54	39%	79	57%	5	4%
Knife Grinder	---	---	7	50%	7	50%	---	---
Steam Rack Op.	7	23%	16	54%	7	23%	---	---
Truck Oper.	72	7%	718	73%	191	20%	---	---
Exterminators	---	---	2	100%	---	---	---	---
Carpenter Appren.	---	---	---	---	5	100%	---	---
Machine Appren.	30	12%	198	81%	12	5%	5	2%
Elec. Appren.	---	---	42	75%	14	25%	---	---
Pipefitter Appren.	---	---	23	62%	14	38%	---	---
Sheet Metal Appren.	23	40%	23	40%	12	20%	---	---
Printer Appren.	75	46%	88	54%	---	---	---	---
Millwright Appren.	---	---	123	67%	61	33%	---	---
Laborer-Misc. Food	---	---	607	56%	457	42%	16	2%
Laborer-Woodworking	84	10%	341	42%	385	48%	---	---
Plugger	7	50%	7	50%	---	---	---	---
Mach. Tender & Deckman	327	13%	1546	59%	721	28%	---	---
Bag Mach. Op. & Bundles	334	7%	2918	61%	1521	32%	---	---
Pressman Appren.	21	50%	21	50%	---	---	---	---
Laborer-Plastics	---	---	117	77%	35	23%	---	---
Laborer-Ind. Chem.	---	---	165	69%	75	31%	---	---
Laborer-Chem. N.E.C.	35	19%	124	68%	23	13%	---	---
Explosive Oper. II	---	---	714	94%	42	6%	---	---
Oper. Helper	---	---	42	86%	7	14%	---	---
Laborer-Misc. Petro.	14	47%	16	53%	---	---	---	---

TABLE II (Continued)

Job Title	Distribution of Workers by Age Groups: Under 21 Number	Under 21 Per Cent	21 - 45 Number	21 - 45 Per Cent	46 - 65 Number	46 - 65 Per Cent	Over 65 Number	Over 65 Per Cent
Glass Prod. Insp.	---	---	75	100%	---	---	---	---
Bricklayer Helper	---	---	---	---	5	100%	---	---
Air Tool Oper.	---	---	637	89%	77	11%	---	---
Mach. Helper	154	22%	407	59%	114	16%	16	2%
Sand Blaster	---	---	---	---	16	100%	---	---
Heat Treater Helper	---	---	16	100%	---	---	---	---
Stress Helper	---	---	16	100%	---	---	---	---
Utility Man & Crane Oper.	---	---	233	72%	89	28%	---	---
Laborer-Light Fixtures	54	13%	341	80%	30	7%	---	---
Elect. Helper	65	6%	553	84%	109	10%	---	---
Burster Oper.	---	---	2	100%	---	---	---	---
Paint & Steel Worker	9	26%	21	60%	5	14%	---	---
Carpenter Helper***	315	37%	500	59%	37	4%	---	---
Deckhand	37	39%	59	61%	---	---	---	---
Bundles-Wrappers & Packers	23	8%	182	64%	80	28%	---	---
Boiler Room Helper	14	23%	21	34%	26	43%	---	---
Oilers	---	---	73	76%	23	24%	---	---
Maint. Helpers	35	20%	96	53%	49	27%	---	---
Stockers	96	11%	466	53%	313	36%	---	---
Waste Mat'ls Oper.	---	---	---	---	5	100%	---	---
Totals	7638	6%	82467	64%	37675	29%	252	-1%

* Paper & Pulp Sewing & Bag
** Paper & Pulp Cutter & Bag
*** Construction

TABLE III

MANUFACTURING OCCUPATION DISTRIBUTION OF
WORKER HIRES - VACANCIES - TRAINEES
S.I.C. CODES 19 - 39

Job Title	Workers Hired During Past Year Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Auditor	9	4%	28	12%	5	2%	5	2%
Reporters	---	---	---	---	21	4%	---	---
Chemist - Organic	---	---	---	---	---	---	---	---
Engineer, Ind.	19	33%	---	---	---	---	---	---
Engineer Mech.	---	---	---	---	---	---	---	---
Trained Nurse	---	---	---	---	---	---	19	90%
Mgr. Personnel	---	---	---	---	---	---	---	---
Com. Artists	212	28%	35	4%	---	---	---	---
Draftsman	121	12%	42	4%	38	4%	7	-1%
Lab.Tech.& Asst.	124	8%	79	5%	2	-1%	82	6%
Photographers	---	---	---	---	---	---	---	---
Radio Operator	---	---	---	---	---	---	---	---
Elec. Technician	58	10%	98	18%	51	9%	---	---
Cost Estimators	5	5%	19	19%	7	7%	5	5%
Programmer	---	---	---	---	---	---	7	100%
Inspectors	16	53%	16	53%	---	---	16	53%
Adv. Mgrs.	---	---	---	---	---	---	---	---
Tugboat Oper.	---	---	---	---	---	---	---	---
Purchasing Agents	---	---	---	---	---	---	---	---
Conductors, Frgt.	---	---	---	---	---	---	---	---
Mgr. Production	---	---	---	---	---	---	7	3%
Roadmaster	---	---	---	---	---	---	---	---
Mgr. Warehouse	---	---	---	---	---	---	---	---
Bkkprs & Cashiers	110	12%	7	-1%	5	-1%	47	5%
Bkkping Mach. Opr.	19	45%	---	---	---	---	5	12%
Checker	---	---	---	---	---	---	---	---
Clerks, Gen.	37	7%	---	---	---	---	26	5%
Gen. Off. Clerk	103	8%	7	-1%	16	-1%	54	3%
Print'g & Pub.Clk.	---	8%	---	---	---	---	---	---
Credit Clerk	---	---	---	---	---	---	---	---
File Clerk	119	51%	---	---	2	-1%	---	---

TABLE III (Continued)

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	Maintain Normal Ops. % Total	Due To Expansion Number	Due To Expansion % Total	Current Vacancies For This Job Number	Current Vacancies For This Job % Total	Trainees Receiving Formal In-plant Training Number	Trainees Receiving Formal In-plant Training % Total
Gen.Ind.Clerk	58	18%	---	---	---	---	26	8%
Dispatcher*	---	---	---	---	---	---	---	---
Messenger	---	---	---	---	---	---	5	100%
Off.Mach.Oper.	61	12%	23	4%	---	---	51	10%
Timekeeper	28	9%	5	2%	---	---	7	2%
Secretaries	75	11%	14	2%	7	1%	21	3%
Shipp'g & Rec.Clk.	37	7%	5	1%	---	---	12	2%
Stat.Clerk	---	---	---	---	---	---	---	---
Steno & Typist	818	-1%	131	3%	33	-1%	5	-1%
Stock Clerks	44	8%	2	-1%	---	---	---	---
Tele.Oper.	33	15%	---	---	---	---	19	9%
Weighers	---	---	---	---	---	---	---	---
Sales Clerk	---	---	---	---	---	---	---	---
Sales Persons	14	12%	---	---	---	---	---	---
Salesmen**	5	4%	---	---	---	---	---	---
Salesmen**	5	4%	---	---	7	6%	---	---
Salesmen**	30	5%	21	3%	---	---	---	---
Cook	---	---	---	---	---	---	---	---
Waiters	---	---	---	---	---	---	---	---
Kitchen Workers	---	---	---	---	---	---	---	---
Guards	---	---	---	---	---	---	37	8%
Fireman	---	---	---	---	---	---	---	---
Janitors	---	---	---	---	---	---	---	---
Porters	---	---	---	---	---	---	---	---
Groundkeeper	2	40%	---	---	---	---	---	---
Baker	2	100%	---	---	---	---	---	---
Sugar Boilers	---	---	---	---	16	5%	9	3%
Alteration Lady	54	21%	---	---	---	---	---	---
Pattern Makers	---	---	---	---	---	---	---	---
Cabinet Maker	19	11%	---	---	---	---	---	---
Millman	---	---	---	---	---	---	---	---
Mattress Maker	---	---	---	---	---	---	---	---
Pulp Tester	---	---	---	---	---	---	73	39%

TABLE III (Continued)

Job Title	Workers Hired During Past Year Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Printer Slotter	---	---	---	---	---	---	---	---
Printer	30	1%	---	---	---	---	84	4%
Pressman	---	---	---	---	---	---	---	---
Photo Lithogrphr	---	---	---	---	---	---	---	---
Photoengraver	---	---	---	---	147	40%	---	---
Pressman***	189	11%	---	---	168	10%	---	---
Polymerization Op.	12	4%	---	---	---	---	---	---
Chemical Oper.	107	1%	40	-1%	---	---	---	---
Oil Ref.Plant Op.	---	---	---	---	---	---	---	---
Glass Mfg. Teaser	---	---	---	---	---	---	---	---
Caser	77	9%	---	---	---	---	---	---
Jewel Fitter	7	9%	---	---	---	---	---	---
Electroplater	2	22%	---	---	---	---	---	---
Machinist	1055	13%	828	10%	362	4%	466	6%
Toolmaker	---	---	---	---	---	---	---	---
Lathe Oper.	30	2%	---	---	---	---	---	---
Sheet Metal Worker	86	14%	7	1%	7	1%	12	2%
Molder	---	---	---	---	---	---	---	---
Chainsaw Coremkr	---	---	---	---	---	---	---	---
Boilermaker	---	---	---	---	---	---	14	3%
Structural Wrkr	3503	110%	28	-1%	28	-1%	---	---
Welder	1913	18%	343	3%	336	3%	345	3%
Blacksmith	---	---	---	---	---	---	5	3%
Heat Treater	---	---	---	---	---	---	---	---
Metal Treatm't Op.	28	12%	170	73%	---	---	---	---
Digester Op.	---	---	---	---	---	---	---	---
Furnace Tender	7	43%	---	---	---	---	---	---
Lead Finishers	---	---	---	---	---	---	---	---
Elect. Repairman	474	16%	54	1%	56	1%	159	5%
Elec. Inspector	7	19%	23	62%	---	---	---	---
Assembler & Rivtr.	184	72%	---	---	---	---	---	---
Calker	28	28%	---	---	---	---	---	---
Optician	7	20%	---	---	---	---	---	---

TABLE III (Continued)

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Orthopedic Tech.	---	---	---	---	14	22%	---	---
Plast. Molder	---	---	---	---	---	---	---	---
Pattern Maker	---	---	---	---	---	---	---	---
Rig.Builder	---	---	---	---	---	---	---	---
Engineer Op.	---	---	---	---	---	---	5	1%
Carpenter Maint.	173	9%	30	2%	14	-1%	54	3%
Cement Finisher	23	17%	---	---	---	---	28	20%
Painter	49	4%	---	---	21	2%	5	-1%
Pipefitter	1003	35%	23	-1%	12	-1%	119	4%
Insulator	---	---	---	---	---	---	5	3%
Yard Brakeman	---	---	---	---	---	---	21	100%
Locomotive Eng.	---	---	---	---	---	---	12	75%
Yard Fireman	---	---	---	---	---	---	12	100%
Railroad Switchmn	---	---	---	---	---	---	7	50%
Turbine Op.	---	---	---	---	---	---	44	31%
Tele.Repairman	---	---	---	---	---	---	---	---
Stat. Engineer	7	12%	---	---	---	---	---	---
Crane Op.	2	-1%	47	6%	---	---	40	5%
Railrd Car Insp.	---	---	---	---	---	---	---	---
Glazier	---	---	---	---	---	---	5	24%
Millwright	23	2%	19	1%	16	1%	180	12%
Car Repairman	---	---	---	---	---	---	5	15%
Mechanics	33	5%	---	---	9	1%	---	---
Mechs. & Repairmn	301	7%	348	8%	112	1%	390	8%
Tool Grinder	---	---	---	---	---	---	---	---
Reproduction Op.	---	---	---	---	---	---	---	---
Assembly Handler	16	3%	---	---	9	1%	---	---
Foreman	16	7%	---	---	---	---	---	---
Mach.Foreman	21	3%	---	---	---	---	8[illegible]	14%
Foreman	---	---	---	---	---	---	---	---
Foreman	---	---	---	---	---	---	---	---
Misc.Occup.Food	---	---	---	---	---	---	---	---
Sewing Mach.Op.	3028	25%	---	---	219	2%	684	6%

TABLE III (Continued)

Job Title	Workers Hired During Past Year Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Gen. Mach.Op.	259	34%	---	---	19	2%	---	---
Tape Mach. Op.	9	56%	---	---	---	---	---	---
Carpenter	7	9%	---	---	---	---	---	---
Inspector/	---	---	---	---	---	---	89	10%
Inspector//	---	---	---	---	---	---	175	14%
Print'g Press Op.	---	---	---	---	---	---	---	---
Engravers & Prntrs	168	41%	---	---	---	---	12	3%
Multiple Op.	5	2%	---	---	---	---	44	24%
Chem.Plant Op.	128	6%	---	---	28	1%	30	2%
Chem.Mixer	---	---	---	---	---	---	---	---
Inspector	---	---	---	---	---	---	---	---
Acid Mixer	---	---	---	---	---	---	---	---
Bottle Mach.Op.	131	11%	---	---	---	---	---	---
Mold Mixer	---	---	---	---	---	---	---	---
Inspector	63	33%	---	---	---	---	100	53%
Polisher	---	---	---	---	---	---	---	---
Lathe Op.	23	4%	---	---	---	---	---	---
Machine Molder	16	29%	---	---	---	---	---	---
Wldrs & Flamectrs	280	19%	72	5%	61	4%	9	-1%
Iron Workers	58	11%	---	---	30	6%	68	13%
Ladle Pourer	---	---	---	---	---	---	---	---
Sheet Metal Wrkr	35	10%	51	15%	---	---	---	---
Welder Helper	---	---	23	8%	---	---	7	2%
Assembler	42	8%	---	---	5	6%	---	---
Structural Insp.	26	12%	117	52%	---	---	---	---
Lens Grinder	14	25%	---	---	---	---	---	---
Plastic Mach.Op.	1400	229%	---	---	93	15%	---	---
Spray Painter	---	---	---	---	---	---	56	12%
Packer Loaders	---	---	---	---	---	---	---	---
Heavy Grader	---	---	---	---	---	---	---	---
Painter	86	30%	---	---	---	---	---	---
Pipefitter Helper	---	---	---	---	---	---	---	---
Heavy Tr. Driver	44	7%	19	2%	---	---	26	3%

TABLE III (Continued)

Job Title	Workers Hired During Past Year: Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Turbine Attend.	---	---	---	---	---	---	14	100%
Filterman & Ten.	---	---	---	---	---	---	---	---
Presser	110	37%	---	---	16	5%	---	---
Gasoline Attend.	---	---	---	---	---	---	---	---
Stat.Fireman	---	---	---	---	---	---	30	11%
Oiler	---	---	---	---	---	---	70	38%
Stat.Engineer	---	---	---	---	---	---	---	---
Mobile Op.	---	---	---	---	---	---	---	---
Carmen Helper	---	---	---	---	---	---	14	100%
Mech. Asst.	---	---	---	---	---	---	---	---
Mech.##	---	---	---	---	---	---	131	94%
Knife Grinder	---	---	---	---	---	---	14	100%
Steam Rack Op.	---	---	---	---	---	---	---	---
Truck Op.	49	5%	54	5%	---	---	196	20%
Exterminators	---	---	---	---	---	---	---	---
Carpenter Appren.	---	---	---	---	---	---	5	100%
Machine Appren.	47	19%	7	3%	19	7%	19	7%
Elec. Appren.	---	---	---	---	---	---	26	46%
Pifeftr Appren.	---	---	---	---	---	---	37	100%
Sheet Mtl Appren	7	12%	---	---	---	---	12	20%
Printer Appren	21	12%	---	---	---	---	163	100%
Millwrght Appren.	---	---	---	---	---	---	105	57%
Laborer-Misc.Food	366	33%	16	1%	---	---	---	---
Laborer-Woodwrk'g	294	36%	---	---	56	7%	---	---
Plugger	---	---	---	---	---	---	---	---
Mach.Tend.&Deck.	117	5%	---	---	---	---	819	32%
Bag Mach.Op.≠	117	2%	---	---	---	---	761	16%
Pressman Appren	---	---	---	---	---	---	---	---
Laborer-Plastics	5	3%	---	---	---	---	---	---
Laborer-Ind.Chem.	9	4%	---	---	---	---	---	---
Laborer-Chem N.E.C.	40	22%	---	---	---	---	---	---
Explosive Op.II	---	---	---	---	---	---	---	---
Op.Helper	7	14%	16	33%	---	---	---	---
Laborer-Misc.Petro.	---	---	---	---	---	---	---	---

TABLE III (Continued)

Job Title	Workers Hired During Past Year Maintain Normal Ops. Number	% Total	Due To Expansion Number	% Total	Current Vacancies For This Job Number	% Total	Trainees Receiving Formal In-plant Training Number	% Total
Glass Prod.Insp.	---	---	---	---	---	---	---	---
Bricklayer Helpr	---	---	---	---	---	---	5	100%
Air Tool Op.	47	7%	---	---	---	---	77	11%
Mach. Helper	219	32%	30	4%	33	5%	---	---
Sand Blaster	---	---	---	---	7	44%	7	44%
Heat Treater Helpr	---	---	---	---	---	---	---	---
Stress Helper	---	---	---	---	---	---	---	---
Utility Man≠≠	16	5%	---	---	---	---	---	---
Laborer-Lt Fixture	324	76%	---	---	107	25%	---	---
Elect.Helper	252	22%	---	---	---	---	26	2%
Burster Op.	2	100%	---	---	---	---	---	---
Paint & Steel Wrkr	---	---	---	---	---	---	---	---
Carp Helpr, Constr	35	4%	---	---	---	---	12	1%
Deckhand	---	---	---	---	---	---	---	---
Bundles-Wrapper≠≠≠	---	---	---	---	---	---	---	---
Boiler Rm Helper	---	---	---	---	---	---	30	49%
Oilers	---	---	---	---	---	---	19	20%
Maint. Helpers	23	13%	---	---	---	---	21	12%
Stockers	152	17%	---	---	26	3%	58	7%
Waste Mat'ls Op.	---	---	---	---	---	---	5	100%
Totals	19731	15%	2897	2%	2240	2%	6624	5%

* Locomotive
** Except Consumer
*** And Plate Printer
≠ Paper & Pulp Sewing & Bag
≠≠ Paper & Pulp Cutter & Bag
≠≠≠ And Repairmen, N.E.C.
≠ And Bundles
≠≠ And Crane Operator
≠≠≠ And Packers

TABLE IV

MANUFACTURING OCCUPATIONAL
DISTRIBUTION OF ENTRY WAGES
S.I.C. CODES 19-39

Job Title	Approximate Entry Wage For This Job -Range-		
Auditor	2.25	-	3.75
Reporters	1.25	-	2.10
Chemist - Organic	Not Available		
Engineer, Ind.	2.99	-	3.44
Engineer Mech.		2.60	
Trained Nurse		2.25	
Mgr. Personnel		2.60	
Com. Artists	2.00	-	3.75
Draftsman	1.40	-	4.75
Lab. Tech. & Asst.	1.35	-	4.15
Photographers	Not Available		
Radio Operator		1.25	
Elec. Technician		3.75	
Cost Estimators	1.50	-	3.75
Programmer		2.14	
Inspectors		2.10	
Adv. Mgrs.		2.00	
Tugboat Oper.	3.25	-	3.50
Purchasing Agents	1.73	-	2.50
Conductors, Freight		2.38	
Mgr. Production	1.25	-	3.27
Roadmaster		2.82	
Mgr. Warehouse		2.60	
Bookkeepers & Cashiers	1.25	-	3.13
Bookkeeping Mach. Opr.	2.14	-	2.25
Checker	1.35	-	2.02
Clerks, Gen.	1.41	-	2.14
Gen. Off. Clerk	1.16	-	3.00
Printing & Pub. Clerk	1.20	-	1.25
Credit Clerk		1.60	
File Clerk	1.05	-	2.33
Gen. Ind. Clerk	1.15	-	3.44
Dispatcher-Locom.		2.26	
Messenger		2.14	
Off. Mach. Oper.	1.40	-	3.00
Timekeeper	1.25	-	3.45
Secretaries	1.25	-	3.28
Shipping & Rec. Clerk	1.25	-	3.45
Stat. Clerk	1.75	-	2.14
Steno Typist	1.15	-	3.00
Stock Clerk	1.25	-	3.27
Tele. Operator	1.25	-	2.67
Weighers	1.35	-	3.07
Sales Clerk		1.25	
Sales Persons	1.50	-	1.90

TABLE IV (Continued)

Job Title	Approximate Entry Wage For This Job -Range-		
Salesmen Except Consumer		2.50	
Salesmen Except Consumer	2.50	-	3.13
Salesmen Except Consumer		Comm.	
Cook	1.68	-	2.83
Waiters		2.08	
Kitchen Workers		2.27	
Guards	1.25	-	3.16
Fireman	1.89	-	2.97
Janitors	1.50	-	2.93
Porters	1.25	-	2.15
Groundkeeper		1.50	
Baker		2.83	
Sugar Boilers	2.25	-	3.00
Alteration Lady		1.25	
Pattern Makers	1.25	-	1.75
Cabinet Maker	1.50	-	2.40
Millman	2.25	-	2.40
Mattress Maker		1.50	
Pulp Tester	2.15	-	4.47
Printer Slotter		2.12	
Printer	1.25	-	3.50
Pressman		2.00	
Photo Lithographer	2.50	-	2.99
Photoengraver	1.55	-	1.65
Pressman & Plate Printer	1.25	-	3.60
Polymerization Oper	2.35	-	2.45
Chemical Oper.	1.99	-	3.40
Oil Refin. Plant Oper.	2.32	-	3.12
Glass Mfg. Teaser		2.50	
Caser		2.04	
Jewel Fitter		2.95	
Electroplater		2.79	
Machinist	1.50	-	3.83
Toolmaker	1.80	-	3.71
Lathe Oper.	1.88	-	2.82
Sheet Metal Worker	1.50	-	3.54
Molder	1.89	-	3.32
Chainsaw Coremaker	1.90	-	2.41
Boilermaker	2.77	-	3.49
Structural Worker	2.37	-	3.47
Welder	1.50	-	3.75
Blacksmith	1.01	-	3.54
Heat Treater		2.77	
Metal Treatment Oper.	1.31	-	3.75
Digester Oper.		2.76	
Furnace Tender	1.90	-	2.41
Lead Finishers		2.99	

TABLE IV (Continued)

Job Title	Approximate Entry Wage For This Job -Range-	
Elect. Repairman	1.79 -	4.00
Elec. Inspector	3.75	
Assembler & Riveter	2.37 -	2.79
Calker	3.49	
Optician	1.25	
Orthopedic Tech.	1.25	
Plast. Molder	1.50	
Pattern Maker	2.41 -	3.70
Rig. Builder	2.41	
Engineer Oper.	2.54 -	3.45
Carpenter Maint.	1.50 -	3.80
Cement Finisher	3.31 -	3.55
Painter	2.00 -	3.67
Pipefitter	2.05 -	2.25
Insulator	2.21 -	3.54
Yard Brakeman	2.95	
Locomotive Eng.	2.48 -	3.35
Yard Fireman	2.78	
Railroad Switchman	2.28 -	3.35
Turbine Oper.	2.15 -	3.55
Tele. Repairman	2.15 -	2.73
Stat. Engineer	3.00 -	3.45
Crane Oper.	1.50 -	3.75
Railroad Car Insp.	2.20	
Glazier	1.62 -	3.04
Millwright	2.00 -	3.54
Car Repairman	3.05 -	3.54
Mechanics	1.50 -	3.66
Mechanics & Repairman	1.40 -	3.75
Tool Grinder	2.99	
Reproduction Oper.	1.65 -	2.27
Assembly Handler	1.80 -	3.54
Foreman	1.25 -	3.72
Mach. Foreman	1.75 -	2.89
Foreman	1.95 -	2.20
Foreman	1.80 -	2.25
Misc. Occup. Food	1.80 -	2.15
Sewing Mach. Oper.	1.10 -	1.50
Gen. Mach. Oper.	1.35	
Tape Mach. Oper	1.75	
Carpenter	2.90	
Inspector, Paper & Pulp Sewing & Bag	1.99 -	2.51
Inspector, Paper & Pulp Cutter & Bag	2.06 -	3.35
Printing Press Oper.	1.75	
Engraver & Printers	1.45 -	2.49
Multiple Oper.	1.41 -	3.15
Chem. Plant Oper.	1.55 -	3.66
Chem. Mixer	1.85 -	2.75
Inspector	1.91	

TABLE IV (Continued)

Job Title	Approximate Entry Wage For This Job -Range-		
Acid Mixer	2.50	-	3.83
Bottle Mach. Oper.	1.91	-	2.79
Mold Mixer		2.04	
Inspector	1.99	-	2.30
Polisher		1.00	
Lathe Oper.	1.15	-	3.25
Machine Molder	1.90	-	2.41
Welders & Flamecutters	1.25	-	3.45
Iron Workers	1.65	-	4.10
Ladle Pourer		1.74	
Sheet Metal Worker	1.35	-	3.75
Welder Helper	1.25	-	2.65
Assembler	2.37	-	2.74
Structural Insp.	2.85	-	3.75
Lens Grinder	1.25	-	1.35
Plastic Mach. Op.		1.25	
Spray Painter	1.25	-	2.25
Packer Loaders		1.25	
Heavy Grader	1.75	-	1.95
Painter		3.39	
Pipefitter Helper	1.25	-	2.55
Heavy Tr. Driver	1.25	-	3.45
Turbine Attend.		3.19	
Filterman & Tender	1.80	-	2.36
Presser	1.10	-	1.25
Gasoline Attend.		1.99	
Stat. Fireman	1.75	-	3.42
Oiler	1.25	-	3.46
Stat. Engineer	1.85	-	3.08
Mobile Oper.		2.20	
Carmen Helper	2.36	-	2.57
Mech. Asst.		1.25	
Mech. & Repairmen, N.E.C.	2.16	-	3.35
Knife Grinder		2.57	
Steam Rack Op.		2.75	
Truck Oper.	1.85	-	3.75
Exterminators		2.10	
Carpenter Appren.		2.16	
Machine Appren.	1.25	-	2.66
Elec. Appren.		2.16	
Pipefitter Appren.	2.16	-	2.65
Sheet Metal Appren.	2.16	-	2.66
Printer Appren.		1.25	
Millwright Appren.	1.50	-	2.66
Laborer-Misc. Food	1.00	-	2.40
Laborer-Woodworking		1.25	
Plugger		1.99	
Mach. Tender & Deckman	1.99	-	3.10
Bag Mach. Op. & Bundler	1.99	-	2.23

TABLE IV (Continued)

Job Title	Approximate Entry Wage For This Job -Range-		
Pressman Appren.		1.25	
Laborer-Plastics		2.35	
Laborer-Ind. Chem.	2.00	-	3.08
Laborer-Chem. N.E.C.	1.25	-	2.55
Explosive Oper. II	1.91	-	1.92
Oper. Helper		2.68	
Laborer-Misc. Petro.		1.25	
Glass Prod. Insp.		2.26	
Bricklayer Helper		2.22	
Air Tool Oper.		1.93	
Mach. Helper	1.25	-	2.69
Sand Blaster		1.50	
Heat Treater Helper		1.90	
Stress Helper		3.00	
Utility Man & Crane Oper.	2.76	-	4.00
Laborer-Light Fixtures		1.64	
Elect. Helper	1.25	-	2.25
Burster Oper.		2.17	
Paint & Steel Worker	1.25	-	1.35
Carpenter Helper-Construction	1.25	-	2.66
Deckhand		1.25	
Bundles-Wrappers & Packers	1.30	-	2.15
Boiler Room Helper	1.25	-	2.23
Oilers	1.99	-	3.25
Maint. Helpers	1.25	-	2.51
Stockers	1.25	-	2.61
Waste Mat'ls Oper.	Not Available		

TABLE V

EXPERIENCE REQUIREMENTS BY PERCENTAGES
DISTRIBUTION FOR MANUFACTURING OCCUPATIONS
S.I.C. CODES 19-39

Job Title	Experience Requirements by Job Title			
	None Established	Job Experience	Trade Experience	Formal Training
Auditor	---	90%	2%	8%
Reporters	75%	25%	---	---
Chemist - Organic	---	---	---	100%
Engineer, Ind.	---	100%	---	---
Engineer Mech.	---	100%	---	---
Trained Nurse	10%	90%	---	---
Mgr. Personnel	---	---	100%	---
Com. Artists	40%	4%	56%	---
Draftsman	5%	48%	26%	21%
Lab. Tech. & Asst.	17%	6%	14%	63%
Photographers	---	---	100%	---
Radio Operator	---	100%	---	---
Elec. Technician	---	50%	50%	---
Cost Estimators	---	48%	41%	11%
Programmer	---	100%	---	---
Inspectors	---	---	100%	---
Adv. Mgrs.	---	100%	---	---
Tugboat Oper.	---	100%	---	---
Purchasing Agents	61%	39%	---	---
Conductors, Freight	---	---	100%	---
Mgr. Production	7%	66%	23%	4%
Roadmaster	---	---	100%	---
Mgr. Warehouse	---	---	29%	71%
Bookkeepers & Cashiers	37%	35%	3%	25%
Bookkeeping Mach. Opr.	---	78%	11%	11%
Checker	82%	9%	---	9%
Clerks, Gen.	---	100%	---	---
Gen. Off. Clerk	28%	22%	6%	44%
Printing & Pub. Clerk	100%	---	---	---
Credit Clerk	---	100%	---	---
File Clerk	100%	---	---	---
Gen. Ind. Clerk	64%	29%	4%	3%
Dispatcher-Locom.	---	---	100%	---
Messenger	---	100%	---	---
Off. Mach. Oper.	10%	59%	4%	27%
Timekeeper	14%	82%	2%	2%
Secretaries	5%	64%	-1%	30%
Shipping & Rec. Check	50%	17%	23%	10%
Stat. Clerk	42%	58%	---	---
Steno Typist	39%	35%	6%	20%
Stock Clerk	34%	13%	28%	25%
Tele. Operator	19%	67%	10%	4%
Weighers	---	34%	---	66%
Sales Clerk	---	100%	---	---
Sales Persons	26%	74%	---	---

TABLE V (Continued)

Job Title	Experience Requirements by Job Title			
	None Established	Job Experience	Trade Experience	Formal Training
Salesmen Except Consumer	58%	42%	---	---
Salesmen Except Consumer	---	73%	27%	---
Salesmen Except Consumer	51%	42%	7%	---
Cook	---	72%	28%	---
Waiters	---	---	---	100%
Kitchen Workers	---	---	---	100%
Guards	61%	12%	6%	21%
Fireman	59%	18%	23%	---
Janitors	14%	86%	---	---
Porters	50%	---	---	50%
Groundkeeper	100%	---	---	---
Baker	---	100%	---	---
Sugar Boilers	---	62%	---	38%
Alteration Lady	89%	11%	---	---
Pattern Makers	---	99%	1%	---
Cabinet Maker	22%	36%	21%	21%
Millman	---	38%	31%	31%
Mattress Maker	100%	---	---	---
Pulp Tester	7%	33%	33%	27%
Printer Slotter	---	50%	---	50%
Printer	-1%	69%	15%	15%
Pressman	---	100%	---	---
Photo Lithographer	67%	---	33%	---
Photoengraver	80%	20%	---	---
Pressman & Plate Printer	40%	37%	20%	3%
Polymerization Oper	---	---	---	100%
Chemical Oper.	7%	77%	---	16%
Oil Refin. Plant Oper.	---	100%	---	---
Glass Mfg. Teaser	---	50%	---	50%
Caser	100%	---	---	---
Jewel Fitter	---	100%	---	---
Electroplater	---	100%	---	---
Machinist	-1%	48%	27%	24%
Toolmaker	---	64%	18%	18%
Lathe Oper.	92%	4%	2%	2%
Sheet Metal Worker	1%	37%	33%	29%
Molder	55%	45%	---	---
Chainsaw Coremaker	---	81%	19%	---
Boilermaker	---	59%	20%	21%
Structural Worker	---	43%	29%	28%
Welder	1%	54%	30%	15%
Blacksmith	5%	51%	34	10%
Heat Treater	---	100%	---	---
Metal Treatment Oper.	1%	---	2%	97%
Digester Oper.	---	---	---	100%
Furnace Tender	---	50%	50%	---
Lead Finishers	100%	---	---	---

TABLE V (Continued)

Job Title	Experience Requirements by Job Title: None Established	Job Experience	Trade Experience	Formal Training
Elect. Repairman	1%	41%	30%	28%
Elect. Inspector	---	50%	50%	---
Assembler & Riveter	5%	95%	---	---
Calker	---	100%	---	---
Optician	50%	---	50%	---
Orthopedic Tech.	---	---	---	100%
Plast. Molder	---	100%	---	---
Pattern Maker	---	93%	7%	---
Rig. Builder	---	100%	---	---
Engineer Oper.	---	31%	36%	33%
Carpenter Maint.	-1%	56%	23%	20%
Cement Finisher	80%	20%	---	---
Painter	1%	62%	18%	19%
Pipefitter	-1%	45%	27%	27%
Insulator	5%	47%	28%	20%
Yard Brakeman	---	---	100%	---
Locomotive Eng.	---	---	100%	---
Yard Foreman	---	---	100%	---
Railroad Switchman	---	---	100%	---
Turbine Oper.	10%	58%	32%	---
Tele. Repairman	---	100%	---	---
Stat. Engineer	---	36%	29%	35%
Crane Oper.	28%	57%	9%	6%
Railroad Car Insp.	---	---	100%	---
Glazier	76%	---	24%	---
Millwright	1%	27%	42%	30%
Car Repairman	---	46%	8%	46%
Mechanics	2%	59%	29%	10%
Mechanics & Repairman	4%	47%	26%	23%
Tool Grinder	---	100%	---	---
Reproduction Oper.	---	100%	---	---
Assembly Handler	---	60%	20%	20%
Foreman	15%	35%	41%	9%
Mach. Foreman	---	63%	37%	---
Foreman	---	100%	---	---
Foreman	---	100%	---	---
Misc. Occup. Food	---	100%	---	---
Sewing Mach. Oper.	61%	22%	5%	12%
Gen. Mach. Oper.	100%	---	---	---
Tape Mach. Oper	---	100%	---	---
Carpenter	---	100%	---	---
Inspector*	20%	37%	6%	37%
Inspector**	21%	34%	9%	36%
Printing Press Oper.	---	100%	---	---
Engraver & Printers	36%	59%	5%	---
Multiple Oper.	---	63%	30%	7%
Chem. Plant Oper.	15%	21%	-1%	63%
Chem. Mixer	24%	76%	---	---
Inspector	100%	---	---	---

TABLE V (Continued)

Job Title	Experience Requirements by Job Title: None Established	Job Experience	Trade Experience	Formal Training
Acid Mixer	15%	80%	---	5%
Bottle Mach. Oper.	---	11%	---	89%
Mold Mixer	100%	---	---	---
Inspector	---	63%	---	37%
Polisher	100%	---	---	---
Lathe Oper.	26%	52%	---	22%
Machine Molder	---	43%	57%	---
Welders & Flamecutters	10%	38%	26%	26%
Iron Workers	---	82%	18%	---
Ladle Pourer	100%	---	---	---
Sheet Metal Worker	30%	35%	35%	---
Welder Helper	98%	---	2%	---
Assembler	18%	82%	---	---
Structural Insp.	---	52%	48%	---
Lens Grinder	57%	---	43%	---
Plastic Mach. Op.	100%	---	---	---
Spray Painter	51%	44%	5%	---
Packer Loaders	100%	---	---	---
Heavy Grader	---	100%	---	---
Painter	---	100%	---	---
Pipefitter Helper	92%	---	4%	4%
Heavy Tr. Driver	10%	67%	10%	13%
Turbine Attend.	---	---	100%	---
Filterman & Tender	88%	12%	---	---
Presser	34%	57%	9%	---
Gasoline Attend.	100%	---	---	---
Stat. Fireman	15%	39%	18%	28%
Oiler	24%	37%	39%	---
Stat. Engineer	---	78%	---	22%
Mobile Oper.	100%	---	---	---
Carmen Helper	---	---	100%	---
Mech. Asst.	30%	70%	---	---
Mech. & Repairman, N.E.C.	1%	4%	95%	---
Knife Grinder	---	---	100%	---
Steam Rack Op.	100%	---	---	---
Truck Oper.	11%	37%	15%	37%
Exterminators	---	---	100%	---
Carpenter Appren.	---	100%	---	---
Machine Appren.	4%	6%	49%	41%
Elec. Appren.	---	46%	54%	---
Pipefitter Appren.	---	50%	50%	---
Sheet Metal Appren.	48%	7%	45%	---
Printer Appren.	100%	---	---	---
Millwright Appren.	43%	22%	35%	---
Laborer-Misc. Food	6%	-1%	93%	---
Laborer-Woodworking	100%	---	---	---
Plugger	100%	---	---	---
Mach. Tender & Deckman	17%	44%	23%	16%
Bag Mach. Op. & Bundler	12%	40%	-1%	47%

TABLE V (Continued)

Job Title	Experience Requirements by Job Title None Established	Job Experience	Trade Experience	Formal Training
Pressman Appren.	100%	---	---	---
Laborer-Plastics	---	---	---	100%
Laborer-Inc. Chem.	---	10%	---	90%
Laborer-Chem. N.E.C.	82%	9%	9%	---
Explosive Oper. II	100%	---	---	---
Oper. Helper	100%	---	---	---
Laborer-Misc. Petro.	100%	---	---	---
Glass Prod. Insp.	---	50%	---	50%
Bricklayer Helper	---	---	100%	---
Air Tool Oper.	---	100%	---	---
Mach. Helper	96%	4%	---	---
Sand Blaster	---	50%	50%	---
Heat Treater Helper	---	---	100%	---
Stress Helper	---	100%	---	---
Utility Man & Crane Oper.	---	---	5%	95%
Laborer-Light Fixtures	50%	---	50%	---
Elect. Helper	85%	15%	---	---
Burster Oper.	100%	---	---	---
Paint & Steel Worker	100%	---	---	---
Carpenter Helper***	75%	24%	1%	---
Deckhand	100%	---	---	---
Bundles-Wrappers & Packers	90%	5%	---	5%
Boiler Room Helper	50%	---	50%	---
Oilers	4%	44%	13%	39%
Maint. Helpers	62%	12%	4%	22%
Stockers	21%	34%	13%	32%
Waste Mat'ls Oper.	---	---	100%	---
Totals	19%	42%	18%	21%

* Paper & Pulp Sewing & Bag
** Paper & Pulp Cutter & Bag
*** Construction

TABLE VI

EDUCATION REQUIREMENTS BY PERCENTAGE
DISTRIBUTION FOR MANUFACTURING OCCUPATION
S.I.C. CODES 19-39

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Auditor	---	---	5%	48%	47%
Reporters	7%	10%	7%	10%	66%
Chemist-Organic	---	---	---	---	100%
Engineer, Ind.	---	---	64%	---	36%
Engineer Mech.	---	---	100%	---	---
Trained Nurse	---	---	100%	---	---
Mgr. Personnel	---	---	---	100%	---
Com. Artists	18%	---	30%	27%	25%
Draftsman	2%	1%	47%	26%	24%
Lab. Tech. & Asst.	---	---	72%	28%	---
Photographers	100%	---	---	---	---
Radio Operator	---	100%	---	---	---
Elec. Technician	---	---	50%	50%	---
Cost Estimators	---	---	38%	31%	31%
Programmer	---	---	50%	50%	---
Inspectors	100%	---	---	---	---
Adv. Mgrs.	---	---	---	100%	---
Tugboat Oper.	---	100%	---	---	---
Purchasing Agents	---	---	100%	---	---
Conductors, Freight	---	100%	---	---	---
Mgr. Production	8%	---	62%	21%	9%
Roadmaster	---	100%	---	---	---
Mgr. Warehouse	---	---	100%	---	---
Bookkeepers & Cashiers	19%	1%	79%	1%	---
Bookkeeping Mach. Opr.	---	---	100%	---	---
Checker	67%	---	33%	---	---
Clerks, Gen.	---	---	100%	---	---
Gen. Off. Clerk	---	---	92%	8%	---
Printing & Pub. Clerk	---	---	100%	---	---
Credit Clerk	---	---	100%	---	---
File Clerk	6%	94%	---	---	---

TABLE VI (Continued)

Job Title	Education Requirements By Job Title None Established	Some High School	High School Graduate	Some College	College Graduate
Gen. Ind. Clerk	8%	---	92%	---	---
Dispatcher, Locom.	---	---	100%	---	---
Messenger	---	---	100%	---	---
Office Mach. Oper.	---	---	100%	---	---
Timekeeper	---	---	100%	---	---
Secretaries	---	---	82%	17%	1%
Shipping & Rec. Clerk	19%	6%	65%	10%	---
Stat. Clerk	---	---	100%	---	---
Steno & Typist	---	-1%	97%	-1%	-1%
Stock Clerks	6%	10%	82%	2%	---
Tele. Operator	9%	20%	71%	---	---
Weighers	---	13%	87%	---	---
Sales Clerk	100%	---	---	---	---
Sales Persons	100%	---	---	---	---
Salesmen Except Consumer	16%	20%	10%	54%	---
Salesmen Except Consumer	---	---	28%	37%	35%
Salesmen Except Consumer	23%	---	21%	56%	---
Cook	---	72%	28%	---	---
Waiters	---	---	100%	---	---
Kitchen Workers	---	---	100%	---	---
Guards	19%	40%	41%	---	---
Fireman	---	---	100%	---	---
Janitors	---	---	100%	---	---
Porters	7%	---	93%	---	---
Groundkeeper	---	---	100%	---	---
Baker	---	---	100%	---	---
Sugar Boilers	100%	---	---	---	---
Alteration Lady	100%	---	---	---	---
Pattern Makers	98%	---	1%	1%	---
Cabinet Maker	100%	---	---	---	---
Millman	100%	---	---	---	---
Mattress Maker	100%	---	---	---	---
Pulp Tester	---	---	100%	---	---

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Printer Slotter	---	---	100%	---	---
Printer	---	5%	94%	---	1%
Pressman	---	---	100%	---	---
Photo Lithographer	33%	33%	34%	---	---
Photoengraver	---	44%	56%	---	---
Pressman & Plate Printer	39%	26%	35%	---	---
Polymerization Oper.	---	---	100%	---	---
Chemical Oper.	---	2%	98%	---	---
Oil Refin. Plant Oper.	---	---	100%	---	---
Glass Mfg. Teaser	100%	---	---	---	---
Caser	---	---	100%	---	---
Jewel Fitter	100%	---	---	---	---
Electroplater	---	100%	---	---	---
Machinist	31%	27%	42%	---	---
Toolmaker	7%	9%	84%	---	---
Lathe Oper.	2%	2%	96%	---	---
Sheet Metal Worker	59%	8%	33%	---	---
Molder	45%	---	55%	---	---
Chainsaw Coremaker	---	---	100%	---	---
Boilermaker	---	4%	96%	---	---
Structural Worker	43%	52%	5%	---	---
Welder	44%	34%	22%	---	---
Blacksmith	79%	---	21%	---	---
Heat Treater	---	---	100%	---	---
Metal Treatment Oper.	2%	49%	49%	---	---
Digester Oper.	---	---	100%	---	---
Furnace Tender	---	---	100%	---	---
Lead Finishers	---	---	100%	---	---
Elect. Repairman	24%	25%	51%	---	---
Elec. Inspector	---	50%	50%	---	---
Assembler & Riveter	---	95%	5%	---	---
Calker	100%	---	---	---	---
Optician	---	---	100%	---	---

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Orthopedic Tech.	---	---	100%	---	---
Plast. Molder	100%	---	---	---	---
Pattern Maker	93%	---	7%	---	---
Rig. Builder	---	50%	50%	---	---
Engineer Oper.	46%	2%	52%	---	---
Carpenter Maint.	52%	17%	31%	---	---
Cement Finisher	96%	---	4%	---	---
Painter	14%	32%	54%	---	---
Pipefitter	35%	3%	62%	---	---
Insulator	---	3%	97%	---	---
Yard Brakeman	---	---	100%	---	---
Locomotive Eng.	---	29%	71%	---	---
Yard Fireman	---	---	100%	---	---
Railroad Switchman	---	14%	86%	---	---
Turbine Oper.	---	---	100%	---	---
Tele. Repairman	---	2%	98%	---	---
Stat. Engineer	---	---	100%	---	---
Crane Oper.	18%	27%	55%	---	---
Railroad Car Insp.	---	100%	---	---	---
Glazier	---	76%	24%	---	---
Millwright	15%	4%	81%	---	---
Car Repairman	---	---	100%	---	---
Mechanics	51%	21%	28%	---	---
Mechanics & Repairman	10%	36%	51%	2%	-1%
Tool Grinder	---	---	100%	---	---
Reproduction Oper.	---	---	100%	---	---
Assembly Handler	---	42%	58%	---	---
Foreman	23%	19%	58%	---	---
Mach. Foreman	43%	---	57%	---	---
Foreman	100%	---	---	---	---
Foreman	100%	---	---	---	---
Misc. Occup. Food	100%	---	---	---	---
Sewing Mach. Oper.	99%	---	1%	---	---

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Gen. Mach. Oper.	50%	50%	---	---	---
Tape Mach. Oper.	100%	---	---	---	---
Carpenter	100%	---	---	---	---
Inspector*	---	---	100%	---	---
Inspector*	---	---	100%	---	---
Printing Press Oper.	---	---	100%	---	---
Engraver & Printers	75%	---	25%	---	---
Multiple Oper.	36%	---	64%	---	---
Chem. Plant Oper.	-1%	3%	85%	11%	---
Chem. Mixer	76%	---	24%	---	---
Inspector	---	---	100%	---	---
Acid Mixer	---	---	100%	---	---
Bottle Mach. Oper.	100%	---	---	---	---
Mold Mixer	---	---	100%	---	---
Inspector	---	---	89%	11%	---
Polisher	100%	---	---	---	---
Lathe Oper.	21%	12%	67%	---	---
Machine Molder	---	---	100%	---	---
Welders & Flamecutters	78%	20%	2%	---	---
Iron Workers	76%	---	12%	12%	---
Ladle Pourer	---	---	100%	---	---
Sheet Metal Worker	30%	35%	35%	---	---
Welder Helper	52%	45%	3%	---	---
Assembler	---	82%	18%	---	---
Structural Insp.	---	48%	52%	---	---
Lens Grinder	57%	43%	---	---	---
Plastic Mach. Op.	50%	50%	---	---	---
Spray Painter	44%	23%	32%	1%	---
Packer Loaders	---	100%	---	---	---
Heavy Grader	23%	77%	---	---	---
Painter	100%	---	---	---	---
Pipefitter Helper	24%	62%	14%	---	---
Heavy Tr. Driver	38%	19%	43%	---	---

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Turbine Attend.	---	---	100%	---	---
Filterman & Tender	87%	13%	---	---	---
Presser	100%	---	---	---	---
Gasoline Attend.	---	---	100%	---	---
Stat. Fireman	23%	26%	51%	---	---
Oiler	3%	32%	65%	---	---
Stat. Engineer	22%	56%	22%	---	---
Mobile Oper.	---	---	100%	---	---
Carmen Helper	---	---	100%	---	---
Mech. Asst.	---	100%	---	---	---
Mech. & Repairmen, N.E.C.	---	---	100%	---	---
Knife Grinder	---	---	100%	---	---
Steam Rack Op.	100%	---	---	---	---
Truck Oper.	3%	15%	82%	---	---
Exterminators	---	100%	---	---	---
Carpenter Appren.	---	---	100%	---	---
Machine Appren.	34%	1%	65%	---	---
Elec. Appren.	---	54%	46%	---	---
Pipefitter Appren.	---	---	100%	---	---
Sheet Metal Appren.	80%	---	20%	---	---
Printer Appren.	---	---	100%	---	---
Millwright Appren.	43%	---	57%	---	---
Laborer-Misc. Food	100%	---	---	---	---
Laborer-Woodworking	100%	---	---	---	---
Plugger	---	---	100%	---	---
Mach. Tender & Deckman	---	---	100%	---	---
Bag Mach. Op. & Bundler	---	---	100%	---	---
Pressman Appren.	---	---	100%	---	---
Laborer-Plastics	---	---	100%	---	---
Laborer-Ind. Chem.	---	2%	98%	---	---
Laborer-Chem. N.E.C.	82%	9%	9%	---	---
Explosive Oper. II	---	100%	---	---	---
Oper. Helper	---	---	100%	---	---
Laborer-Misc. Petro.	---	---	100%	---	---

TABLE VI (Continued)

Job Title	Education Requirements By Job Title				
	None Established	Some High School	High School Graduate	Some College	College Graduate
Glass Prod. Insp.	100%	---	---	---	---
Bricklayer Helper	---	---	100%	---	---
Air Tool Oper.	78%	---	22%	---	---
Mach. Helper	84%	10%	6%	---	---
Sand Blaster	33%	---	33%	34%	---
Heat Treater Helper	---	---	100%	---	---
Stress Helper	100%	---	---	---	---
Utility Man & Crane Oper.	5%	---	95%	---	---
Laborer-Light Fixtures	---	---	100%	---	---
Elect. Helper	53%	2%	45%	---	---
Burster Oper.	---	---	100%	---	---
Paint & Steel Worker	40%	60%	---	---	---
Carpenter Helper, Constr.	10%	27%	63%	---	---
Deckhand	---	100%	---	---	---
Bundles-Wrappers & Packers	6%	---	94%	---	---
Boiler Room Helper	50%	---	50%	---	---
Oilers	7%	9%	84%	---	---
Maint. Helpers	30%	---	70%	---	---
Stockers	9%	12%	79%	---	---
Waste Mat'ls Oper.	---	---	100%	---	---
Totals	31%	14%	52%	2%	1%

* Paper & Pulp Sewing & Bag
** Paper & Pulp Cutter & Bag

TABLE VII

TRAINING REQUIREMENTS BY PERCENTAGE
DISTRIBUTION FOR MANUFACTURING OCCUPATIONS
S.I.C. CODES 19-39

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Auditor	---	2%	98%	---	---
Reporters	93%	---	---	---	7%
Chemist-Organic	100%	---	---	---	---
Engineer, Ind.	100%	---	---	---	---
Engineer Mech.	100%	---	---	---	---
Trained Nurse	---	48%	---	52%	---
Mgr. Personnel	100%	---	---	---	---
Com. Artists	48%	---	7%	45%	---
Draftsman	21%	9%	69%	---	1%
Lab. Tech. & Asst.	19%	8%	3%	40%	30%
Photographers	100%	---	---	---	---
Radio Operator	---	100%	---	---	---
Elec. Technician	---	---	---	100%	---
Cost Estimators	71%	9%	---	20%	---
Programmer	---	33%	33%	---	34%
Inspectors	---	100%	---	---	---
Adv. Mgrs.	100%	---	---	---	---
Tugboat Oper.	33%	33%	34%	---	---
Purchasing Agents	100%	---	---	---	---
Conductors, Freight	---	100%	---	---	---
Mgr. Production	65%	12%	15%	---	8%
Roadmaster	100%	---	---	---	---
Mgr. Warehouse	29%	71%	---	---	---
Bookkeepers & Cashiers	51%	15%	32%	-1%	-1%
Bookkeeping Mach. Opr.	79%	11%	10%	---	---
Checker	90%	---	10%	---	---
Clerks, Gen.	45%	5%	50%	---	---
Gen. Off. Clerk	29%	2%	61%	---	8%
Printing & Pub. Clerk	100%	---	---	---	---
Credit Clerk	100%	---	---	---	---
File Clerk	100%	---	---	---	---

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Gen. Ind. Clerk	58%	16%	2%	---	24%
Dispatcher, Locom.	100%	---	---	---	---
Messenger	---	100%	---	---	---
Office Mach. Oper.	36%	8%	47%	9%	---
Timekeeper	89%	4%	7%	---	---
Secretaries	37%	3%	60%	---	---
Shipping & Rec. Clerk	61%	20%	---	---	19%
Stat. Clerk	---	58%	---	---	42%
Steno & Typist	62%	-1%	30%	---	7%
Stock Clerks	50%	18%	---	---	32%
Tele. Operator	80%	13%	7%	---	---
Weighers	---	13%	87%	---	---
Sales Clerk	100%	---	---	---	---
Sales Persons	74%	---	---	---	26%
Salesmen Except Consumer	67%	33%	---	---	---
Salesmen Except Consumer	95%	5%	---	---	---
Salesmen Except Consumer	94%	6%	---	---	---
Cook	---	100%	---	---	---
Waiters	---	---	---	---	100%
Kitchen Workers	---	---	---	---	100%
Guards	23%	16%	---	---	61%
Fireman	77%	23%	---	---	---
Janitors	5%	47%	---	---	48%
Porters	46%	7%	---	---	47%
Groundkeeper	50%	50%	---	---	---
Baker	---	100%	---	---	---
Sugar Boilers	52%	6%	6%	---	36%
Alteration Lady	11%	---	---	---	89%
Pattern Makers	99%	1%	---	---	---
Cabinet Maker	---	26%	36%	---	38%
Millman	---	19%	81%	---	---
Mattress Maker	100%	---	---	---	---
Pulp Tester	22%	39%	---	---	39%

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Printer Slotter	---	---	---	---	100%
Printer	24%	24%	23%	---	29%
Pressman	---	---	---	---	100%
Photo Lithographer	65%	33%	---	-1%	1%
Photoengraver	55%	45%	---	---	---
Pressman & Plate Printer	43%	34%	20%	---	3%
Polymerization Oper.	---	---	---	---	100%
Chemical Oper.	9%	---	---	---	91%
Oil Refin. Plant Oper.	---	44%	---	---	56%
Glass Mfg. Teaser	---	---	---	---	100%
Caser	100%	---	---	---	---
Jewel Fitter	100%	---	---	---	---
Electroplater	100%	---	---	---	---
Machinist	8%	34%	29%	-1%	28%
Toolmaker	44%	18%	6%	18%	14%
Lathe Oper.	61%	---	---	---	39%
Sheet Metal Worker	11%	56%	30%	---	3%
Molder	100%	---	---	---	---
Chainsaw Coremaker	100%	---	---	---	---
Boilermaker	3%	31%	8%	---	58%
Structural Worker	19%	35%	46%	---	---
Welder	34%	17%	30%	1%	18%
Blacksmith	62%	36%	---	---	2%
Heat Treater	100%	---	---	---	---
Metal Treatment Oper.	3%	-1%	---	---	96%
Digester Oper.	---	---	---	---	100%
Furnace Tender	100%	---	---	---	---
Lead Finishers	---	---	---	---	100%
Elect. Repairman	28%	35%	21%	-1%	15%
Elec. Inspector	100%	---	---	---	---
Assembler & Riveter	5%	---	---	---	95%
Calker	---	50%	50%	---	---
Optician	50%	50%	---	---	---

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Orthopedic Tech.	---	---	---	---	100%
Plast. Molder	100%	---	---	---	---
Pattern Maker	100%	---	---	---	---
Rig. Builder	50%	50%	---	---	---
Engineer Oper.	---	68%	32%	---	---
Carpenter Maint.	12%	43%	33%	---	12%
Cement Finisher	44%	56%	---	---	---
Painter	35%	35%	8%	---	22%
Pipefitter	5%	56%	16%	---	23%
Insulator	13%	51%	---	---	36%
Yard Brakeman	---	100%	---	---	---
Locomotive Eng.	---	100%	---	---	---
Yard Fireman	---	100%	---	---	---
Railroad Switchman	---	100%	---	---	---
Turbine Oper.	---	24%	---	---	76%
Tele. Repairman	2%	---	---	---	98%
Stat. Engineer	---	---	80%	---	20%
Crane Oper.	67%	16%	11%	---	6%
Railroad Car Insp.	100%	---	---	---	---
Glazier	76%	24%	---	---	---
Millwright	21%	70%	6%	---	3%
Car Repairman	---	15%	---	---	85%
Mechanics	37%	22%	31%	---	10%
Mechanics & Repairman	19%	21%	15%	6%	39%
Tool Grinder	---	---	---	---	100%
Reproduction Oper.	---	---	---	---	---
Assembly Handler	42%	25%	---	---	33%
Foreman	31%	30%	---	---	39%
Mach. Foreman	70%	---	---	---	30
Foreman	100%	---	---	---	---
Foreman	100%	---	---	---	---
Misc. Occup. Food	100%	---	---	---	---
Sewing Mach. Oper.	7%	14%	---	---	79%

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Gen. Mach. Oper.	100%	---	---	---	---
Tape Mach. Oper.	100%	---	---	---	---
Carpenter	---	100%	---	---	---
Inspector*	---	10%	---	---	90%
Inspector*	-1%	13%	---	---	86%
Printing Press Oper.	100%	---	---	---	---
Engraver & Printers	95%	5%	---	---	---
Multiple Oper.	65%	29%	---	---	6%
Chem. Plant Oper.	3%	2%	---	---	95%
Chem. Mixer	76%	---	---	---	24%
Inspector	100%	---	---	---	---
Acid Mixer	---	---	---	---	100%
Bottle Mach. Oper.	11%	---	---	---	89%
Mold Mixer	100%	---	---	---	---
Inspector	---	41%	---	---	59%
Polisher	100%	---	---	---	---
Lathe Oper.	65%	8%	17%	---	10%
Machine Molder	100%	---	---	---	---
Welders & Flamecutters	29%	14%	57%	---	---
Iron Workers	-1%	85%	---	---	14%
Ladle Pourer	100%	---	---	---	---
Sheet Metal Worker	100%	---	---	---	---
Welder Helper	98%	2%	---	---	---
Assembler	18%	---	---	82%	---
Structural Insp.	100%	---	---	---	---
Lens Grinder	57%	43%	---	---	---
Plastic Mach. Op.	50%	50%	---	---	---
Spray Painter	76%	22%	---	---	2%
Packer Loaders	100%	---	---	---	---
Heavy Grader	100%	---	---	---	---
Painter	---	50%	50%	---	---
Pipefitter Helper	85%	---	4%	---	11%
Heavy Tr. Driver	39%	28%	22%	---	11%

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Turbine Attend.	---	100%	---	---	---
Filterman & Tender	100%	---	---	---	---
Presser	95%	5%	---	---	---
Gasoline Attend.	---	---	---	---	100%
Stat. Fireman	17%	33%	17%	---	33%
Oiler	21%	65%	---	---	14%
Stat. Engineer	78%	22%	---	---	---
Mobile Oper.	---	---	---	---	100%
Carmen Helper	---	100%	---	---	---
Mech. Asst.	30%	70%	---	---	---
Mech. & Repairmen, N.E.C.	-1%	95%	---	---	4%
Knife Grinder	---	100%	---	---	---
Steam Rack Op.	---	---	---	---	---
Truck Oper.	15%	24%	---	---	61%
Exterminators	100%	---	---	---	---
Carpenter Appren.	---	100%	---	---	---
Machine Appren.	27%	5%	51%	---	17%
Elec. Appren.	---	100%	---	---	---
Pipefitter Appren.	---	100%	---	---	---
Sheet Metal Appren.	---	20%	80%	---	---
Printer Appren.	53%	47%	---	---	---
Millwright Appren.	43%	57%	---	---	---
Laborer-Misc. Food	52%	48%	---	---	---
Laborer-Woodworking	50%	50%	---	---	---
Plugger	---	---	---	---	100%
Mach. Tender & Deckman	29%	33%	---	---	38%
Bag Mach. Op. & Bundler	11%	16%	---	---	73%
Pressman Appren.	100%	---	---	---	---
Laborer-Plastics	---	---	---	---	100%
Laborer-Ind. Chem.	---	---	---	---	100%
Laborer-Chem. N.E.C.	55%	---	15%	15%	15%
Explosive Oper. II	100%	---	---	---	---
Oper. Helper	---	---	---	---	100%
Laborer-Misc. Petro.	100%	---	---	---	---

TABLE VII (Continued)

Job Title	Training Requirements By Job Title				
	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant
Glass Prod. Insp.	---	---	---	---	100%
Bricklayer Helper	---	100%	---	---	---
Air Tool Oper.	78%	22%	---	---	---
Mach. Helper	90%	9%	---	---	-1%
Sand Blaster	---	50%	---	---	50%
Heat Treater Helper	100%	---	---	---	---
Stress Helper	---	50%	50%	---	---
Utility Man & Crane Oper.	5%	---	---	---	95%
Laborer-Light Fixtures	50%	50%	---	---	---
Elect. Helper	47%	52%	---	---	-1%
Burster Oper.	100%	---	---	---	---
Paint & Steel Worker	100%	---	---	---	---
Carpenter Helper, Constr.	77%	22%	---	---	-1%
Deckhand	---	100%	---	---	---
Bundles-Wrappers & Packers	69%	5%	---	---	26%
Boiler Room Helper	50%	50%	---	---	---
Oilers	2%	25%	7%	---	66%
Maint. Helpers	42%	3%	---	---	27%
Stockers	44%	12%	---	---	44%
Waste Mat'ls Oper.	---	100%	---	---	---
Totals	29%	23%	14%	1%	33%

* Paper & Pulp Sewing & Bag
** Paper & Pulp Cutter & Bag

TABLE VIII

PREFERENCE TO HIRE EQUALLY QUALIFIED MEN OR WOMEN
IN MANUFACTURING OCCUPATIONS
S.I.C. CODES 19-39

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Auditor	5	2%	---	---	224	98%
Reporters	173	29%	42	7%	382	64%
Chemist-Organic	---	---	---	---	2	100%
Engineer, Ind.	---	---	---	---	58	100%
Engineer Mech.	5	100%	---	---	---	---
Trained Nurse	---	---	19	90%	2	10%
Mgr. Personnel	2	100%	---	---	---	---
Com. Artists	622	81%	147	17%	19	2%
Draftsman	968	97%	5	-1%	26	2%
Lab. Tech. & Asst.	644	44%	---	---	828	56%
Photographers	21	100%	---	---	---	---
Radio Operator	23	100%	---	---	---	---
Elec. Technician	553	100%	---	---	---	---
Cost Estimators	100	100%	---	---	---	---
Programmer	7	100%	---	---	---	---
Inspectors	30	100%	---	---	---	---
Adv. Mgrs.	21	100%	---	---	---	---
Tugboat Oper.	49	100%	---	---	---	---
Purchasing Agents	7	37%	---	---	12	63%
Conductors, Freight	2	100%	---	---	---	---
Mgr. Production	173	75%	9	4%	49	21%
Roadmaster	5	100%	---	---	---	---
Mgr. Warehouse	7	100%	---	---	---	---
Bookkeepers & Cashiers	145	15%	532	57%	261	28%
Bookkeeping Mach. Opr.	---	---	---	---	42	100%
Checker	16	76%	5	24%	---	---
Clerks, Gen.	---	---	---	---	528	100%
Gen. Off. Clerk	177	9%	429	22%	1319	69%
Printing & Pub. Clerk	21	50%	---	---	21	50%
Credit Clerk	---	---	12	100%	---	---
File Clerk	51	22%	44	19%	138	59%

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Gen. Ind. Clerk	129	40%	105	33%	86	27%
Dispatcher, Locom.	2	100%	---	---	---	---
Messenger	5	100%	---	---	---	---
Office Mach. Oper.	110	21%	163	31%	250	48%
Timekeeper	131	40%	62	20%	131	40%
Secretaries	---	---	520	74%	180	26%
Shipping & Rec. Clerk	418	81%	---	---	100	19%
Stat. Clerk	5	42%	5	42%	2	16%
Steno & Typist	9	-1%	3623	78%	999	21%
Stock Clerks	416	74%	16	3%	126	23%
Tele. Operator	12	6%	149	69%	54	25%
Weighers	68	100%	---	---	---	---
Sales Clerk	9	100%	---	---	---	---
Sales Persons	114	100%	---	---	---	---
Salesmen Except Consumer	117	100%	---	---	---	---
Salesmen Except Consumer	124	100%	---	---	---	---
Salesmen Except Consumer	422	65%	---	---	227	35%
Cook	33	100%	---	---	---	---
Waiters	---	---	---	---	19	100%
Kitchen Workers	2	100%	---	---	---	---
Guards	434	94%	---	---	26	6%
Fireman	51	100%	---	---	---	---
Janitors	397	100%	---	---	---	---
Porters	82	49%	---	---	84	51%
Groundkeeper	5	100%	---	---	---	---
Baker	2	100%	---	---	---	---
Sugar Boilers	329	100%	---	---	---	---
Alteration Lady	---	---	257	100%	---	---
Pattern Makers	511	100%	---	---	---	---
Cabinet Maker	168	100%	---	---	---	---
Millman	86	100%	---	---	---	---
Mattress Maker	79	100%	---	---	---	---
Pulp Tester	131	69%	---	---	58	31%

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Printer Slotter	---	---	---	---	121	100%
Printer	2137	99%	---	---	21	1%
Pressman	124	100%	---	---	---	---
Photo Lithographer	299	99%	---	---	2	-1%
Photoengraver	364	100%	---	---	---	---
Pressman & Plate Printer	1659	100%	---	---	---	---
Polymerization Oper.	280	100%	---	---	---	---
Chemical Oper.	7569	97%	---	---	261	3%
Oil Refin. Plant Oper.	2151	100%	---	---	---	---
Glass Mfg. Teaser	75	100%	---	---	---	---
Caser	854	100%	---	---	---	---
Jewel Fitter	77	100%	---	---	---	---
Electroplater	9	100%	---	---	---	---
Machinist	7883	97%	---	---	245	3%
Toolmaker	100	100%	---	---	---	---
Lathe Oper.	1362	100%	---	---	---	---
Sheet Metal Worker	609	99%	---	---	9	1%
Molder	1038	100%	---	---	---	---
Chainsaw Coremaker	40	100%	---	---	---	---
Boilermaker	448	81%	---	---	105	19%
Structural Worker	3122	98%	---	---	70	2%
Welder	10198	97%	---	---	298	3%
Blacksmith	72	74%	19	19%	7	7%
Heat Treater	16	100%	---	---	---	---
Metal Treatment Oper.	231	100%	---	---	---	---
Digester Oper.	---	---	---	---	245	100%
Furnace Tender	16	100%	---	---	---	---
Lead Finishers	14	100%	---	---	---	---
Elect. Repairman	2779	90%	---	---	315	10%
Elec. Inspector	37	100%	---	---	---	---
Assembler & Riveter	257	100%	---	---	---	---
Calker	100	100%	---	---	---	---
Optician	---	---	---	---	35	100%

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Orthopedic Tech.	---	---	---	---	63	100%
Plast. Molder	2	100%	---	---	---	---
Pattern Maker	100	100%	---	---	---	---
Rig. Builder	49	100%	---	---	---	---
Engineer Oper.	175	50%	---	---	177	50%
Carpenter Maint.	1796	96%	---	---	77	4%
Cement Finisher	138	100%	---	---	---	---
Painter	1010	91%	---	---	96	9%
Pipefitter	2548	88%	---	---	350	12%
Insulator	145	100%	---	---	---	---
Yard Brakeman	21	100%	---	---	---	---
Locomotive Eng.	16	100%	---	---	---	---
Yard Fireman	12	100%	---	---	---	---
Railroad Switchman	14	100%	---	---	---	---
Turbine Oper.	58	41%	---	---	82	59%
Tele. Repairman	2	2%	---	---	110	98%
Stat. Engineer	58	100%	---	---	---	---
Crane Oper.	504	66%	---	---	261	34%
Railroad Car Insp.	2	100%	---	---	---	---
Glazier	21	100%	---	---	---	---
Millwright	992	68%	---	---	474	32%
Car Repairman	33	100%	---	---	---	---
Mechanics	565	95%	---	---	30	5%
Mechanics & Repairman	4568	94%	---	---	285	6%
Tool Grinder	35	100%	---	---	---	---
Reproduction Oper.	21	68%	10	32%	---	---
Assembly Handler	453	100%	---	---	---	---
Foreman	402	66%	---	---	210	34%
Mach. Foreman	208	100%	---	---	---	---
Foreman	40	100%	---	---	---	---
Foreman	14	100%	---	---	---	---
Misc. Occup. Food	147	100%	---	---	---	---
Sewing Mach. Oper.	170	1%	9526	81%	2076	18%

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Gen. Mach. Oper.	756	100%	---	---	---	---
Tape Mach. Oper.	16	100%	---	---	---	---
Carpenter	77	100%	---	---	---	---
Inspector*	301	32%	201	22%	427	46%
Inspector*	588	46%	---	---	698	54%
Printing Press Oper.	5	100%	---	---	---	---
Engraver & Printers	224	54%	147	35%	42	11%
Multiple Oper.	177	100%	---	---	---	---
Chem. Plant Oper.	1602	82%	---	---	341	18%
Chem. Mixer	21	100%	---	---	---	---
Inspector	---	---	---	---	287	100%
Acid Mixer	394	100%	---	---	---	---
Bottle Mach. Oper.	131	11%	1020	89%	---	---
Mold Mixer	210	100%	---	---	---	---
Inspector	187	100%	---	---	---	---
Polisher	7	100%	---	---	---	---
Lathe Oper.	523	100%	---	---	---	---
Machine Molder	54	100%	---	---	---	---
Welders & Flamecutters	1486	100%	---	---	---	---
Iron Workers	509	100%	---	---	---	---
Ladle Pourer	166	100%	---	---	---	---
Sheet Metal Worker	341	100%	---	---	---	---
Welder Helper	294	100%	---	---	---	---
Assembler	---	---	---	---	91	100%
Structural Insp.	224	100%	---	---	---	---
Lens Grinder	42	75%	---	---	14	25%
Plastic Mach. Op.	226	37%	---	---	385	63%
Spray Painter	434	100%	---	---	---	---
Packer Loaders	63	100%	---	---	---	---
Heavy Grader	40	100%	---	---	---	---
Painter	285	100%	---	---	---	---
Pipefitter Helper	201	100%	---	---	---	---
Heavy Tr. Driver	749	85%	---	---	135	15%

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Turbine Attend.	14	100%	---	---	---	---
Filterman & Tender	16	100%	---	---	---	---
Presser	---	---	112	38%	185	62%
Gasoline Attend.	5	100%	---	---	---	---
Stat. Fireman	164	61%	---	---	104	39%
Oiler	182	100%	---	---	---	---
Stat. Engineer	72	100%	---	---	---	---
Mobile Oper.	37	100%	---	---	---	---
Carmen Helper	14	100%	---	---	---	---
Mech. Asst.	70	100%	---	---	---	---
Mech. & Repairmen, N.E.C.	138	100%	---	---	---	---
Knife Grinder	14	100%	---	---	---	---
Steam Rack Op.	30	100%	---	---	---	---
Truck Oper.	641	65%	---	---	341	35%
Exterminators	2	100%	---	---	---	---
Carpenter Appren.	5	100%	---	---	---	---
Machine Appren.	245	100%	---	---	---	---
Elec. Appren.	56	100%	---	---	---	---
Pipefitter Appren.	37	100%	---	---	---	---
Sheet Metal Appren.	58	100%	---	---	---	---
Printer Appren.	163	100%	---	---	---	---
Millwright Appren.	184	100%	---	---	---	---
Laborer-Misc. Food	1080	100%	---	---	---	---
Laborer-Woodworking	810	100%	---	---	---	---
Plugger	14	100%	---	---	---	---
Mach. Tender & Deckman	1262	49%	---	---	1332	51%
Bag Mach. Op. & Bundler	317	7%	761	16%	3695	77%
Pressman Appren.	42	100%	---	---	---	---
Laborer-Plastics	152	100%	---	---	---	---
Laborer-Ind. Chem.	240	100%	---	---	---	---
Laborer-Chem. N.E. C.	182	100%	---	---	---	---
Explosive Oper. II	---	---	---	---	756	100%
Oper. Helper	49	100%	---	---	---	---
Laborer-Misc. Petro.	30	100%	---	---	---	---

TABLE VIII (Continued)

Job Title	Preference To Hire Equally Qualified					
	Men Only		Women Only		Either	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Glass Prod. Insp.	75	100%	---	---	---	---
Bricklayer Helper	5	100%	---	---	---	---
Air Tool Oper.	714	100%	---	---	---	---
Mach. Helper	691	100%	---	---	---	---
Sand Blaster	16	100%	---	---	---	---
Heat Treater Helper	16	100%	---	---	---	---
Stress Helper	16	100%	---	---	---	---
Utility Man & Crane Oper.	16	5%	---	---	306	95%
Laborer-Light Fixtures	425	100%	---	---	---	---
Elect. Helper	1127	100%	---	---	---	---
Burster Oper.	2	100%	---	---	---	---
Paint & Steel Worker	35	100%	---	---	---	---
Carpenter Helper, Constr.	852	100%	---	---	---	---
Deckhand	96	100%	---	---	---	---
Bundles-Wrappers & Packers	255	89%	---	---	30	11%
Boiler Room Helper	61	100%	---	---	---	---
Oilers	33	34%	---	---	63	66%
Maint. Helpers	180	100%	---	---	---	---
Stockers	336	38%	---	---	539	62%
Waste Mat'ls Oper.	5	100%	---	---	---	---
Totals	88081	69%	17940	14%	22049	17%

* Paper & Pulp Sewing & Bag
** Paper & Pulp Cutter & Bag

TABLE IX

ESTIMATED REQUIRED EMPLOYMENT IN
MANUFACTURING OCCUPATIONS
S.I.C. CODES 19-39

Job Title	Estimated Required Employment in Jobs 1965	1967	1970
Auditor	229	247	274
Reporters	597	644	713
Chemist-Organic	2	2	2
Engineer, Ind.	58	62	69
Engineer Mech.	5	5	16
Trained Nurse	21	23	25
Mgr. Personnel	2	2	2
Com. Artists	788	849	942
Draftsman	999	1077	1194
Lab. Tech. & Asst.	1472	1587	1759
Photographers	21	23	25
Radio Operator	23	25	27
Elec. Technician	553	596	661
Cost Estimators	100	108	120
Programmer	7	8	8
Inspectors	30	32	36
Adv. Mgrs.	21	23	25
Tugboat Oper.	49	53	59
Purchasing Agents	19	20	23
Conductors, Freight	2	2	2
Mgr. Production	231	249	276
Roadmaster	5	5	6
Mgr. Warehouse	7	8	8
Bookkeepers & Cashiers	938	1011	1121
Bookkeeping Mach. Opr.	42	45	50
Checker	21	23	25
Clerks, Gen.	528	569	631
Gen. Off. Clerk	1925	2075	2300
Printing & Pub. Clerk	42	45	50
Credit Clerk	12	13	14
File Clerk	233	251	278
Gen. Ind. Clerk	320	345	382
Dispatcher-Locom.	2	2	2
Messenger	5	5	6
Off. Mach. Oper.	523	564	625
Timekeeper	324	349	387
Secretaries	700	755	837
Shipping & Rec. Clerk	518	558	619
Stat. Clerk	12	13	14
Steno Typist	4631	4992	5534
Stock Clerk	558	602	667
Tele.Operator	215	232	257
Weighers	68	73	81
Sales Clerk	9	10	11
Sales Persons	114	123	136

TABLE IX (Continued)

Job Title	Estimated Required Employment in Jobs 1965	1967	1970
Elect. Repairman	3094	3335	3697
Elec. Inspector	37	40	44
Assembler & Riveter	257	277	307
Calker	100	108	120
Optician	35	38	42
Orthopedic Tech.	63	68	75
Plast. Molder	2	2	2
Pattern Maker	100	108	120
Rig. Builder	49	53	59
Engineer Oper.	352	379	421
Carpenter Maint.	1873	2019	2238
Cement Finisher	138	149	165
Painter	1106	1192	1322
Pipefitter	2898	3124	3463
Insulator	145	156	173
Yard Brakeman	21	23	25
Locomotive Eng.	16	17	19
Yard Fireman	12	13	14
Railroad Switchman	14	15	17
Turbine Oper.	140	151	167
Tele. Repairman	112	121	134
Stat. Engineer	58	63	69
Crane Oper.	765	825	914
Railroad Car Insp.	2	2	2
Glazier	21	23	25
Millwright	1466	1580	1752
Car Repairman	33	36	39
Mechanics	595	641	711
Mechanics & Repairman	4853	5232	5799
Tool Grinder	35	38	42
Reproduction Oper.	31	33	37
Assembly Handler	453	488	541
Foreman	612	660	731
Mach. Foreman	208	224	249
Foreman	40	43	48
Foreman	14	15	17
Misc. Occup. Food	147	158	176
Sewing Mach. Oper.	11772	12690	14068
Gen. Mach. Oper.	756	815	903
Tape Mach. Oper.	16	17	19
Carpenter	77	83	92
Inspector*	929	1001	1110
Inspector*	1286	1386	1537
Printing Press Oper.	5	5	6
Engraver & Printers	413	445	494
Multiple Oper.	177	191	212
Chem. Plant Oper.	1943	2095	2322
Chem. Mixer	21	23	25
Inspector	287	309	343

TABLE IX (Continued)

Job Title	Estimated Required Employment in Jobs 1965	1967	1970
Salesmen Except Consumer	117	126	140
Salesmen Except Consumer	124	134	148
Salesmen Except Consumer	649	700	776
Cook	33	36	39
Waiters	19	20	23
Kitchen Workers	2	2	2
Guards	460	496	550
Fireman	51	55	61
Janitors	397	428	474
Porters	166	179	198
Groundkeeper	5	5	6
Baker	2	2	2
Sugar Boilers	329	355	393
Alteration Lady	257	277	307
Pattern Makers	511	551	611
Cabinet Maker	168	181	201
Millman	86	97	103
Mattress Maker	79	85	94
Pulp Tester	189	204	226
Printer Slotter	121	130	145
Printer	2158	2326	2579
Pressman	124	134	148
Photo Lithographer	301	324	358
Photoengraver	364	392	435
Pressman & Plate Printer	1659	1788	1983
Polymerization Oper.	280	302	335
Chemical Oper.	7830	8441	9357
Oil Refin. Plant Oper.	2151	2319	2570
Glass Mfg. Teaser	75	81	90
Caser	854	921	1021
Jewel Fitter	77	83	92
Electroplater	9	10	11
Machinist	8128	8762	9713
Toolmaker	100	108	120
Lathe Oper.	1362	1468	1628
Sheet Metal Worker	618	666	739
Molder	1038	1119	1240
Chainsaw Coremaker	40	43	48
Boilermaker	553	596	661
Structural Worker	3192	3441	3814
Welder	10496	11315	12543
Blacksmith	98	106	117
Heat Treater	16	17	19
Metal Treatment Oper.	231	249	276
Digester Oper.	245	264	293
Furnace Tender	16	17	19
Lead Finishers	14	15	17

TABLE IX (Continued)

Job Title	Estimated Required Employment in Jobs 1965	1967	1970
Acid Mixer	394	425	471
Bottle Mach. Oper.	1151	1241	1375
Mold Mixer	210	226	267
Inspector	187	202	223
Polisher	7	8	8
Lathe Oper.	523	564	625
Machine Molder	54	58	65
Welders & Flamecutters	1486	1602	1776
Iron Workers	509	549	608
Ladle Pourer	166	179	198
Sheet Metal Worker	341	368	407
Welder Helper	294	317	351
Assembler	91	98	109
Structural Insp.	224	241	268
Lens Grinder	56	60	67
Plastic Mach. Op.	611	659	730
Spray Painter	434	468	519
Packer Loaders	63	68	75
Heavy Grader	40	43	48
Painter	285	307	341
Pipefitter Helper	201	217	240
Heavy Tr. Driver	884	953	1056
Turbine Attend.	14	15	17
Filterman & Tender	16	17	19
Presser	287	320	355
Gasoline Attend.	5	5	6
Stat. Fireman	268	289	320
Oiler	182	196	217
Stat. Engineer	72	78	86
Mobile Oper.	37	40	44
Carmen Helper	14	15	17
Mech. Asst.	70	75	84
Mech. & Repairmen, N.E.C.	138	149	165
Knife Grinder	14	15	17
Steam Rack Op.	30	32	36
Truck Oper.	982	1058	1173
Exterminators	2	2	2
Carpenter Appren.	5	5	6
Machine Appren.	245	264	293
Elec. Appren.	56	60	67
Pipefitter Appren.	37	40	44
Sheet Metal Appren.	58	63	69
Printer Appren.	163	176	195
Millwright Appren.	184	198	220
Laborer-Misc. Food	1080	1164	1291
Laborer-Woodworking	810	873	968
Plugger	14	15	17
Mach. Tender & Deckman	2594	2796	3100
Bag Mach. Op. & Bundler	4773	5145	5701

TABLE IX (Continued)

Job Title	Estimated Required Employment in Jobs 1965	1967	1970
Pressman Appren.	42	45	50
Laborer-Plastics	152	164	182
Laborer-Ind. Chem.	240	259	287
Laborer-Chem. N.E.C.	182	196	217
Explosive Oper. II	756	815	903
Oper. Helper	49	53	59
Laborer-Misc. Petro.	30	32	36
Glass Prod. Insp.	75	81	90
Bricklayer Helper	5	5	6
Air Tool Oper.	714	770	853
Mach. Helper	691	745	826
Sand Blaster	16	17	19
Heat Treater Helper	16	17	19
Stress Helper	16	17	19
Utility Man & Crane Oper.	322	347	385
Laborer-Light Fixtures	425	458	508
Elect. Helper	1127	1215	1347
Burster Oper.	2	2	2
Paint & Steel Worker	35	38	42
Carpenter Helper*	852	918	1018
Deckhand	96	103	115
Bundles-Wrappers & Packers	285	307	341
Boiler Room Helper	61	66	73
Oilers	96	103	115
Maint. Helpers	180	194	215
Stockers	875	943	1046
Waste Mat'ls Oper.	5	5	6
Totals	128070	138058	153043
Increase		9988	24973

* Paper & Pulp Sewing & Bag
** Paper & Pulp Cutter & Bag
*** Construction

TABLE X

OCCUPATIONAL AREAS THAT CAN BE EFFECTIVELY SERVED BY EXISTING TRAINING PROGRAMS

Job Title	Estimated Additional Number Needed by 1970
Draftsman	195
Radio Operator	4
Elec. Technician	108
Cost Estimators	20
Purchasing Agents	4
Mgr. Production	45
Bookkeepers & Cashiers	183
Bookkeeping Mach. Opr.	8
Checker	4
Clerks, Gen.	103
Gen. Off. Clerk	375
Printing & Pub. Clerk	8
Credit Clerk	2
File Clerk	45
Gen. Ind. Clerk	62
Off. Mach. Oper.	102
Timekeeper	63
Secretaries	137
Shipping & Receiving Clerk	101
Stat. Clerk	2
Steno Typist	903
Stock Clerk	109
Telephone Operator	42
Sales Clerk	2
Sales Persons	22
Elect. Repairman	603
Elec. Inspector	7
Assembler & Riveter	50
Carpenter Maint.	365
Pipefitter	565
Tele. Repairman	22
Millwright	286
Mechanics	116
Tool Grinder	7
Foremen	271
Sewing Mach. Oper.	2296
Carpenter	15
Printing Press Oper.	1
Cook	6
Cabinet Maker	33
Millman	17
Printer	421
Photo Lithographer	57
Jewel Fitter	15

TABLE X (Continued

Job Title	Estimated Additional Number Needed by 1970
Machinist	585
Lathe Oper.	256
Sheet Metal Worker	121
Welder	2047
Lathe Oper.	102
Welders & Flamecutters	290
Sheet Metal Worker	166
Welder Helper	57
Pipefitter Helper	39
Mech. Asst.	14
Mech. & Repairmen, N.E.C.	27
Carpenter Appren.	1
Machine Appren.	48
Elec. Appren.	11
Pipefitter Appren.	7
Sheet Metal Appren.	11
Printer Appren.	32
Millwright Appren.	36
Mach. Helper	135
Elect. Helper	220
Carpenter Helper	166
Maint. Helpers	35
Total	12,208

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APPENDIX A

DEFINITIONS OF MAJOR INDUSTRIAL GROUPS FOR MANUFACTURING OCCUPATIONS*

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*Technical Committee on Industrial Classification, Office of Statistical Standards, Standard Industrial Classification Manual (Washington, D. C.: U. S. Government Printing Office, 1957), pp. 45-118.

APPENDIX A

DEFINITIONS OF MAJOR INDUSTRIAL GROUPS FOR MANUFACTURING OCCUPATIONS

Major Group 19. - ORDNANCE AND ACCESSORIES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing artillery, small arms, and related equipment; ammunition; tanks and specialized tank parts; sighting and fire control equipment; and miscellaneous ordnance and accessories, not elsewhere classified.

Major Group 20. - FOOD AND KINDRED PRODUCTS

THE MAJOR GROUP AS A WHOLE

This major group includes establishments manufacturing foods and beverages for human consumption, and certain related products, such as manufactured ice, chewing gum, vegetable and animal fats and oils, and prepared feeds for animals and fowls.

Major Group 21. - TOBACCO MANUFACTURES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing cigarettes, cigars, smoking and chewing tobacco, and snuff, and in stemming and redrying tobacco. The manufacture of insecticides from tobacco byproducts is included in Major Group 28.

MAJOR GROUP 22. - TEXTILE MILL PRODUCTS

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in performing any of the following operations: (1) preparation of fiber and subsequent manufacturing of yarn, thread, braids, twine, and cordage; (2) manufacturing broad woven fabric, narrow woven fabric, knit fabric,

carpets and rugs from yarn; (3) dyeing and finishing fiber, yarn, fabric, and knit apparel; (4) coating, waterproofing, or otherwise treating fabric; (5) the integrated manufacture of knit apparel and other finished articles from yarn; and (6) the manufacture of felt goods, lace goods, bonded-fiber fabrics, and miscellaneous textiles.

This classification makes no distinction between the two types of organizations which operate in the textile industry: (1) the "integrated" mill which purchases materials, produces textiles and related articles within the establishment, and sells the finished products; and (2) the "contract" or "commission" mill which processes materials owned by others. Converters or other nonmanufacturing establishments which assign materials to contract mills for processing (other than knitting) are classified in nonmanufacturing industries; establishments which assign yarns to outside contractors or commission knitters for the production of knit products are classified in Group 225.

Major Group 23. - APPAREL AND OTHER FINISHED PRODUCTS MADE FROM FABRICS AND SIMILAR MATERIALS

THE MAJOR GROUP AS A WHOLE

This major group, known as the cutting-up and needle trades, includes establishments producing clothing and fabricated products by cutting and sewing purchased woven or knit textile fabrics and related materials such as leather, rubberized fabrics, plastics and furs.

Included in the apparel industries are three types of establishments, (1) the "regular" or inside factories, (2) contract factories, and (3) apparel jobbers. The regular factories perform all of the usual manufacturing functions within their own plant; the contract factories manufacture apparel from materials owned by others; and apparel jobbers perform the entrepreneurial functions of a manufacturing company such as buying raw materials, designing and preparing samples, arranging for the manufacture of the garments from their materials and selling of the finished apparel.

Custom tailors and dressmakers not operating on a factory basis are classified in nonmanufacturing industries; establishments which purchase and resell finished garments but do not perform the functions of the apparel jobbers are classified in wholesale trade as wholesalers and dealers.

Major Group 24. - LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE

THE MAJOR GROUP AS A WHOLE

This major group includes logging camps engaged in cutting timber and pulpwood; merchant sawmills, lath mills, shingle mills, cooperage stock mills, planing mills, and plywood mills and veneer mills engaged in producing lumber and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood or wood substitutes. Certain types of establishments producing wood products are classified elsewhere. For example, furniture, and office and store fixtures are classified in Major Group 25; pianos, musical instruments, toys and playground equipment, and caskets and coffins in Major Group 39. Woodworking in connection with construction, in the nature of reconditioning and repair, or performed to individual order, is classified in nonmanufacturing industries.

Major Group 25. - FURNITURE AND FIXTURES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing household, office, public building, and restaurant furniture; and office and store fixtures. Establishments primarily engaged in the production of millwork are classified in industry 2431, and woodworking to individual order or in the nature of reconditioning and repair in nonmanufacturing industries.

Major Group 26. - PAPER AND ALLIED PRODUCTS

THE MAJOR GROUP AS A WHOLE

This major group includes the manufacture of pulps from wood and other cellulose fibers, and rags; the manufacture of paper and paperboard; and the manufacture of paper and paperboard into converted products such as paper coated off the paper machine, paper bags, paper boxes, and envelopes. Certain types of converted paper products are classified elsewhere, such as abrasive paper in Industry 3291, carbon paper in Industry 3955, and photosensitized and blueprint paper in Industry 3861,

Major Group 27. - PRINTING, PUBLISHING, AND ALLIED INDUSTRIES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in printing by one or more of the common processes, such as letterpress, lithography, gravure, or screen; and those establishments which perform services for the printing trade, such as bookbinding, typesetting, engraving, photo-engraving, and electrotyping. This major group also includes establishments engaged in publishing newspapers, books, and periodicals, regardless of whether or not they do their own printing. News syndicates are classified in Service Industries, and textile printing and finishing in Major Group 22.

Major Group 28. - CHEMICALS AND ALLIED PRODUCTS

THE MAJOR GROUP AS A WHOLE

This major group includes establishments producing basic chemicals, and establishments manufacturing products by predominantly chemical processes. Establishments classified in this major group manufacture three general classes of products: (1) basic chemicals such as acids, alkalies, salts, and organic chemicals; (2) chemical products to be used in further manufacture such as synthetic fibers, plastics materials, dry colors, and pigments; (3) finished chemical products to be used for ultimate consumption such as drugs, cosmetics, and soaps; or to be used as materials or supplies in other industries such as paints, fertilizers, and explosives. The mining of natural rock salt is classified in mining industries. Establishments primarily engaged in manufacturing nonferrous metals and high percentage ferroalloys are classified in Major Group 33; silicon carbide in Major Group 32; baking powder, other leavening compounds, and starches in Major Group 20; and embalming fluids and artists' colors in Major Group 39. Establishments primarily engaged in packaging, repackaging, and bottling of purchased chemical products, but not engaged in manufacturing chemicals and allied products, are classified in trade industries.

Major Group 29. - PETROLEUM REFINING AND RELATED INDUSTRIES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments primarily engaged in petroleum refining, manufacturing paving and

roofing materials, and compounding lubricating oils and greases from purchased materials. Establishments manufacturing and distributing gas to consumers are classified in public utilities industries, and those primarily engaged in producing coke and byproducts in Major Group 33.

Major Group 30. - RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS

THE MAJOR GROUP AS A WHOLE

This major group includes establishments manufacturing from natural, synthetic, or reclaimed rubber, gutta percha, balata, or gutta siak, rubber products such as tires, rubber footwear, mechanical rubber goods, heels and soles, flooring, and rubber sundries. This group also includes establishments manufacturing or rebuilding retreaded tires, but automobile tire repair shops engaged in recapping and retreading automobile tires are classified in Services. This group also includes establishments engaged in molding primary plastics for the trade, and manufacturing miscellaneous finished plastics products. The manufacture of elastic webbing is classified in Major Group 22; products made of elastic webbing and garments made from rubberized fabrics in Major Group 23; synthetic rubber in Industry 2822; and plastics materials in the form of sheets, rods, tubes, granules, powders, or liquids in Industry 2821.

Major Group 31. - LEATHER AND LEATHER PRODUCTS

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in tanning, currying, and finishing hides and skins, and establishments manufacturing finished leather and artificial leather products and some similar products made of other materials. Leather converters are also included.

Major Group 32. - STONE, CLAY, AND GLASS PRODUCTS

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing flat glass and other glass products, cement, structural clay products, pottery, concrete and gypsum products, cut stone products, abrasive and asbestos products, etc., from materials taken principally from the

earth in the form of stone, clay, and sand. When separate reports are available for mines and quarries operated by manufacturing establishments classified in this major group, the mining activities are classified in mining industries; when separate reports are not available, the mining activities are classified with the manufacturing operations and classified herein.

Major Group 33. - PRIMARY METAL INDUSTRIES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in the smelting and refining of ferrous and nonferrous metals from ore, pig, or scrap; in the rolling, drawing, and alloying of ferrous and nonferrous metals; in the manufacture of castings, forgings, and other basic products of ferrous and nonferrous metals; and in the manufacture of nails, spikes, and insulated wire and cable. This major group also includes the production of coke.

Major Group 34. - FABRICATED METAL PRODUCTS, EXCEPT ORDNANCE, MACHINERY, AND TRANSPORTATION EQUIPMENT

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in fabricating ferrous and nonferrous metal products such as metal cans, tinware, hand tools, cutlery, general hardware, nonelectric heating apparatus, fabricated structural metal products, metal stampings, and a variety of metal and wire products not elsewhere classified. Certain important segments of the metal fabricating industries are classified in other major groups such as ordnance in Major Group 19; machinery in Major Groups 35 and 36; transportation equipment in Major Group 37; professional, scientific, and controlling instruments, watches and clocks in Major Group 38; and jewelry and silverware in Major Group 39. Establishments primarily engaged in producing ferrous and nonferrous metals and their alloys are classified in Major Group 33.

Major Group 35. - MACHINERY, EXCEPT ELECTRICAL

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing machinery and equipment, other than electrical equipment (Major Group 36) and transportation equipment (Major Group 37). Machines powered by built-in or detachable motors ordinarily are included in this major group, with the exception of electrical household appliances (Major Group 36). Portable tools, both electric and pneumatic powered, are included in this major group, but hand tools are classified in Major Group 34.

Major Group 36. - ELECTRICAL MACHINERY, EQUIPMENT, AND SUPPLIES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing machinery, apparatus, and supplies for the generation, storage, transmission, transformation, and utilization of electrical energy. The manufacture of household appliances is included in this group, but industrial machinery and equipment powered by built-in or detachable electric motors is classified in Major Group 35.

Major Group 37. - TRANSPORTATION EQUIPMENT

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing equipment for transportation of passengers and cargo by land, air, and water. Important products produced by establishments classified in this major group include motor vehicles, aircraft, ships, boats, railroad equipment, and miscellaneous transportation equipment such as motorcycles, bicycles, and horse drawn vehicles.

Major Group 38. - PROFESSIONAL, SCIENTIFIC, AND CONTROLLING INSTRUMENTS; PHOTOGRAPHIC AND OPTICAL GOODS; WATCHES AND CLOCKS

THE MAJOR GROUP AS A WHOLE

This major group includes establishments engaged in manufacturing mechanical measuring, engineering, laboratory, and scientific research instruments; optical instruments and lenses; surgical, medical, and dental instruments,

equipment, and supplies; ophthalmic goods; photographic equipment and supplies; and watches and clocks. Establishments primarily engaged in manufacturing instruments for indicating, measuring, and recording electrical quantities and characteristics are classified in Industry 3611.

Major Group 39. - MISCELLANEOUS MANUFACTURING INDUSTRIES

THE MAJOR GROUP AS A WHOLE

This major group includes establishments primarily engaged in manufacturing products not classified in any other manufacturing major group. Industries in this group fall into the following categories; jewelry, silverware and plated ware; musical instruments; toys, sporting and athletic goods; pens, pencils, and other office and artists' materials; buttons, costumes novelties, miscellaneous notions; brooms and brushes; morticians' goods; and other miscellaneous manufacturing industries.

APPENDIX B

DEFINITIONS OF JOB TITLES FOR MANUFACTURING OCCUPATIONS*

*Division of Occupational Analysis, United States Employment Service, Dictionary of Occupational Titles, Volume I, Definitions of Titles, Second Edition (Washington, D. C.: U. S. Government Printing Office, 1949) pp. 1-1518.

APPENDIX B

DEFINITIONS OF JOB TITLES FOR MANUFACTURING OCCUPATIONS

AUDITOR: (profess. & kin.) 0-01.60. Examines and vouches for the accuracy and completeness of bookkeeping records of an establishment: Inspects items in books of original entry, such as the daybook or journal, to insure proper recording of transactions. Reviews postings to verify transfer of journal entries to the ledger. Counts cash on hand, and checks amount with bank balance. Inspects and verifies notes receivable and payable, and negotiable securities. Examines canceled checks to authenticate amounts, signatures, cancellations, and dates of entry into cash book. Verifies journal and ledger entries for cash payments, purchases, expenses, and trial balances. Examines and authenticates inventory items. Checks arithmetic totals for accuracy. May prepare financial statements for client, such as profit-and-loss statements and balance sheets. May prepare detailed reports showing items such as operating costs, total assets, liabilities, volume of sales, net profits, and depreciation costs. May work independently or supervise others in performing routine phases of audit.

PUBLIC-RELATIONS MAN: (profess. & kin.) I. 0-06.97. director, advertising; director, publicity; director, publicity bureau; director, public relations; manager, promotion; manager, publicity; press agent; promotional aide; promotion man; publicity agent; publicity man; publicity specialist; publicity supervisor; publicity writer; public-relations counsel. Selects and assembles favorable publicity material for groups or organizations, releasing it through the media of magazines, newspapers, posters, and the radio: Scans statements of policy to secure most favorable publicity. Writes news releases and submits photographs to newspapers. Purchases advertising space in newspapers and magazines and prepares advertisements. Makes arrangements for billboard displays. Writes script for radio advertising.

CHEMIST, ORGANIC: (profess. & kin.) 0-07.03. A classification title for chemists who specialize in working with materials whose essential constituent is carbon or its compounds: Analyzes and tests materials such as dyes, paints, petroleum, rubber, textile, and other organic substances to determine composition or other

physical and chemical properties. Develops process-control methods and supervises routine testing of materials during processing. The following occupations are classified under this title: CHEMIST, DYE; CHEMIST, GEOCHEMICAL PROSPECTING; CHEMIST, INDUSTRIAL ALCOHOLS; CHEMIST PAINT; RUBBER; CHEMIST, TEXTILE; CHEMIST, WOOD.

ENGINEER, INDUSTRIAL: (profess. & kin.) 0-18.01. A classification title for engineers who supervise production departments of manufacturing plants, lay out machinery and apparatus and determine flow of work for most efficient production, conduct and interpret time-and-motion studies, devise means and set up personnel policies and procedures and evaluate jobs, and devise and install acccunting and inventory-control systems. May specialize in such fields as setting up production cost records and control systems, developing jigs and fixtures, training production personnel, and wage administration. The following jobs are typical of those classified under this title: EFFICIENCY ENGINEER; FACTORY LAY-OUT MAN; METHODS ENGINEER; PRODUCTION ENGINEER II; SAFETY ENGINEER; TIME-STUDY ENGINEER.

MECHANICAL ENGINEER: (profess. & kin.) 0-19.91. A classification title for engineers who specialize in design of tools, engines, machines, or industrial equipment; installation and maintenance of industrial equipment; supervision of mechanical industrial processes; or planning and operation of central distribution systems for heat, gas, water, or steam. May also specialize in research, consulting, inspecting, testing, teaching at the university level, technical writing and editing, or technical sales and service.

TRAINED NURSE: (medical ser.) 0-33. nurse, certified; nurse, graduate; nurse, licensed; nurse, professional; nurse, trained. A term applied to a NURSE I who has successfully completed a prescribed course of study and training at an accredited school and hospital and who has passed State examinations or otherwise complied with legal requirements to practice nursing.

MANAGER, PERSONNEL: (any ind.) 0-39.83. director, personnel manager, employee relations; manager, industrial relations; personnel supervisor. Formulates policies relating to the selection, training, promotion, welfare, compensation, recreation, and discharge of employees, and other employer-employee relationships, supervising subordinates engaged in executing the policies or performing these duties himself: Directs the hiring of employees (MANAGER, EMPLOYMENT), the training of the employee (DIRECTOR, EDUCATIONAL), and welfare and recreational activities

(DIRECTOR), WELFARE). The scope of personnel work and the duties and responsibilities vary widely in different establishments, depending upon the policies of the management.

ARTISTS, COMMERCIAL: (profess. & kin.) 0-44.21. advertising designer; artist, advertising; illustrator. Creates and designs figures to illustrate advertising copy, books, and magazines: Creates posters, signboards, billboards, and showcards. Designs and prepares charts, diagrams, sketches, and maps for publication and exhibition. Designs labels for containers, such as cans and cartons. Illustrates books and magazines. Draws cartoons and comic strips advertising various products. Performs responsible illustrative work in the compilation, coloring and lettering of photographs.

DRAFTSMAN: (profess. & kin.) 0-48. Prepares clear, complete, and accurate working plans and detail drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions: Makes final sketch of the proposed drawings, checking dimension of parts, materials to be used, the relation of one part to another, and the relation of the various parts to the whole structure. Makes any adjustments or changes necessary or desired. Inks in all lines and letters on pencil drawings as required. Exercisees manual skill in the manipulation of triangle, T-square, and other drafting tools. Lays tracing paper on drawing and traces drawing in ink. Makes charts for representation of statistical data. Makes finished designs from sketches.

MEDICAL TECHNICIAN (medical ser.) 0-50.01. hospital technician; laboratory assistant, medical; laboratory technician, medical. Performs medical duties in a hospital or medical laboratory making laboratory tests of urine, blood, animal parasites, infections, and animal inoculations. Makes blood counts and smears Gives biological skin tests. Prepares vaccines. Types blood for transfusions. May engage in research. May take electrocardiograms (ELECTROCARDIOGRAPH OPERATOR).

PHOTOGRAPHER: (profess. & kin.) 0-56.11. still cameraman. Photographs persons, motion-picture sets and personnel, merchandise, exteriors and interiors, machinery, and fashions, both indoors and outdoors, to be used in advertising and selling: Arranges lights and moves various objects to secure proper background. Sets camera at desired angle and distance from object he is to photograph. Adjusts lens for proper focus and places a plate in the camera. Removes slide from plate, grasps

lens-shutter, bulb, and when objects to be photographed are in the desired position on the finder of camera depresses the bulb which opens the lens shutter and exposes plate. Prepares solutions and chemicals used in developing plates and films and printing positives. Enlarges, reduces, and intensifies prints. May take portraits (PHOTOGRAPHER, POTRAIT).

OPERATORS, RADIO: (air trans.; tel. & tel.; water trans.) 0-61.33. radio officer; radiotelephone radioman. Receives and sends messages using radiotelegraph or radiotelephone equipment, or both: Snaps switch to connect transmitter to generator, to connect either telephone or telepraph equipment to transmitter, and to cut in one of the various kinds of antennae. Turns dials to tune set to desired frequency and to secure necessary volume. Transmits messages by radiotelephone or radiotelegraph, frequently using a code. Receives messages received in accordance with Government regulations. Must be licensed by the Federal Government.

HOME-LIGHTING ADVISER (light, heat & power) 0-66.98. home-lighting demonstrator. Advises electric-power consumers concerning adequate electric-lighting facilities in homes: Tests distribution and intensity of light in rooms with existing arrangement, using a light meter; and demonstrates advantages of changes, such as light rearrangement, bulbs suitable for reading, sewing, or other purposes, and use of reflectors. Suggests changes in color decorations and furnishings to increase light.

ESTIMATOR AND DRAFTSMAN: (light, heat, & power) 0-68.67. detail and lay-out draftsman; draftsman and estimator; lay-out and detail draftsman. Draws up specifications and instructions for electric power system installations, such as power transformers or extensions from main lines to buildings, following standardized procedures: Studies work-order request to determine type of service, such as lighting or power, demanded by installation. Visits site of proposed installation and draws rough sketch of location. Takes measurements, such as street dimensions, distances to be spanned by wire and cable, or of space available, for equipment installations. Estimates materials, equipment, and incidentals needed for installation. Draws master sketch showing relation of proposed installation to existing facilities. Makes other drawings, such as pertaining to wiring connections or cross sections of underground cables, as required for instruction to installation crew. Consults DISTRIBUTION ENGINEER on difficulties encountered. May draft sketches to scale (DRAFTSMAN, ELECTRICAL). May estimate labor and material costs, using price lists and records on previous projects. May inspect completed installation for conformance to working drawings. Usually specializes in one type of installation and is designated accordingly.

PROGRAMMER: 0-69. Develops and prepares diagrams and plans for solution of mathematical, business, scientific and technical problems by means of automatic data processing machines.

RETAIL MANAGER: (ret. tr.) 0-72.21. Manages a retail store devoted to selling several types of merchandise, performing duties as described under MANAGER, STORE. Typical of establishments whose managers are covered by this classification are general store, department store, dry-goods stores, and mail-order houses. Some of these establishments sell groceries as a sizable, but secondary, line of goods.

MANAGER, DEPARTMENT (ret. tr.) 0-74.13. buyer assistant. Assumes responsibility for the operating efficiency of an entire department, supervising its personnel in selling, stock handling, display, and inventory. Recommends purchase of new stock to BUYER II. May be designated according to department in which he functions, as candy-department manager; meat department manager; toy-department manager. In some establishments these duties are included with those of BUYER II.

INSPECTOR: (any ind.) II. 0-79. A general term applied to a worker who examines or tests articles and materials for serviceability and conformity to specifications after various stages of manufacturing or processing, or after completion, or who examines equipment, machines, and tools for serviceability after periods of use. Classifications are made according to article, equipment, or material inspected or tested, as ASSEMBLY INSPECTOR; CARTON CHECKER; CHASSIS INSPECTOR; COIL INSPECTOR; ENGINE INSPECTOR; LENS EXAMINER; METAL-CAP INSPECTOR; PAINT TESTER; PAPER-BAG INSPECTOR; SAW-LINE INSPECTOR; STOCKING INSPECTOR I; STONE GRADER (quarry), method used, as BURLER; CHECK WEIGHER; DEFLECTOR OPERATOR, or type of work inspected, as BEAMING INSPECTOR; FINISHING INSPECTOR; GLAZING INSPECTOR; TUBER. Workers performing inspection operations may also be designated as CHECKER; EXAMINER; GAGER; TESTER.

ADVERTISING MANAGER: (any ind.) 0-81.02. Plans advertising policies of department store, factory, or other organization and arranges for the execution of these policies: Purchases advertising space in magazines, newspapers, or other advertising media. Allocates advertising space to departments or products of establishment. Inspects and approves all advertisements before their release. Supervises and may assist subordinates in advertising department engaged in making up and illustrating advertisements. May authorize information for publication, such as interviews with reporters or articles describing any phase of the work of the establishment.

CREDIT MEN: (any ind.) 0-85.10. accounts supervisor; credit man; manager, credit investigations. Manages credit and collection department of commercial house, department store, hotel, or similar establishment: Investigates financial standing and reputation of prospective customer who is seeking to establish credit. Approves or disapproves extension of credit. Supervises collection of bad accounts and worthless checks. Makes up collection notes to customers. Keeps records of collections.

TUGBOAT OPERATOR (water trans.) 0-88.02. Has full charge of tugboat: Gives orders to entire crew. Signals to engine room the propulsion requirements. Steers or directs steering. Plans towing procedures and hook-ups. Must be licensed by Government.

PURCHASING AGENTS: (any ind.) 0-91.60. Purchases at the most favorable prices consistent with quality, quantity, and other factors, raw materials, equipment, machinery, and supplies necessary for the operation of the particular organization (industrial plant, governmental unit, or public utility) in which he is employed. Goods purchased are processed, consumed, and used in the organization and are not purchased for resale at a profit (BUYER II (ret. tr; whole. tr.)). Interviews selling agents of other establishments. Draws up contracts and specifications, or approves contracts and specifications drawn up by technical workers. Approves bills for payment. Keeps records pertaining to goods purchased, costs, delivery, inventories, and other items pertaining to purchases. Worker is usually required to have a thorough knowledge of the goods purchased and the work done by the organization in which he is employed. Usually designated according to material bought, as cotton buyer, tobacco buyer, or according to locale, as factory purchasing agent.

CONDUCTORS, FREIGHT: (rr trans.) 0-92.11. Supervises the activities of freight-train crew. Receives bills of lading and written orders from STATION AGENT I. Supervises the make-up of trains. Supervises the removal of freight at wayside destinations. Signals LOCOMOTIVE ENGINEER at time of departure.

MANAGER, PRODUCTION: (any ind.) 0-97.51. Controls and coordinates all production activities of an industrial establishment, supervising the work of the various production departments directly or through subordinate foremen or superintendents: Interprets and executes over-all plant policies of MANAGER, INDUSTRIAL ORGANIZATION or other administrator. Authorizes the hiring, discharging, transferring, and promoting of employees, or performs these duties himself. Consults

with superiors and subordinates to plan and develop production policies, procedures, specifications, and cost and time estimates for manufacturing plant products. Periodically analyzes and interprets production records to insure that operating costs are being maintained at lowest possible level. Originates or approves measures to improve process efficiency, equipment performance, quality of final product, and working conditions, and performs other administrative and supervisory duties to insure efficient and profitable operation. May personally conduct or supervise the conducting of a particular process (GENERAL FORMAN II). May be designated according to type of industrial establishment, as GASOLINE-PLANT FOREMAN; REFINERY CHIEF.

ROADMASTER: (r. r. trans.) 0-98.71. Supervises the maintenance of railroad track and roadbed within a division or subdivision ranging from 50 to 100 miles of way.

MANAGER, WAREHOUSE: (any ind.) 0-99.92. Manages one or more warehouses of an industrial or commercial establishment to maintain stocks of materials on hand for processing or distribution: Directs through intermediate supervisors checking of incoming and outgoing shipments, keeping of stock records, and other clerical processes. Directs handling and disposition of materials in warehouse space through foremen. Establishes and enforces operations procedure according to work requirements. May purchase materials (PURCHASING AGENT) or direct reclamation of damaged or used materials to maintain normal stocks. May advise department heads regarding government regulations affecting availability of materials and equipment (MANAGER, PROCUREMENT).

BOOKKEEPERS AND CASHIERS: 1-01.02. Keeps complete and systematic records of establishment's business transactions. Balances books and compiles reports at regular intervals to show receipts, expenditures, accounts payable, accounts receivable, profit or loss and other pertinent items. May calculate wages of employees and make up checks or draw cash from bank for payment of wages. 1-01.52. Keeps a record of cash transactions, receipts, and disbursements incident to the conduct of a business. Enters data to proper accounts and periodically balances cash books. Receives payment and issues receipts.

BOOKKEEPING MACHINE OPERATOR: 1-02.01. Keeps a set of records of business transactions, using a bookkeeping machine. Places selected bookkeeping form on flat writing surface of machine and sets carriage. Depresses keys to type on sheet desired data, such as

name, address, items purchased or sold, and services rendered, and to calculate totals, net amounts, and other items, recording final computations on the form. Performs related clerical duties (BOOKKEEPER II). May make up bills, invoices, and statements on billing machine (BILLING-MACHINE OPERATOR I).

CHECKER: (clerical) 1-03.10. Checks the quantity, quality, condition, value, and type of articles purchased, sold, or produced, with records or reports. May sort data or items into a predetermined sequence or group before or after checking. May keep records of items checked. May be designated according to type of establishment where checking is done, as WAREHOUSE CHECKER.

GENERAL CLERK: (clerical) 1-04.01. A classification title for the clerical jobs, requiring little or no previous training, which involve the performance of routine clerical duties, such as addressing envelopes, keeping simple records, gathering and delivering messages, and assisting in operating office machines, and which may require the ability to do simple typing.

GENERAL OFFICE CLERK: (clerical) 1-05.01. administrative clerk; clerk, general duty; office girl, general; office man; utility clerk. Depending on the size and type of office, performs any combination of the following or similar clerical duties: Makes up and files reports. Tabulates and posts data in various record books. Takes telephone orders. Checks cash registers. Gives information to callers. Sends out bills. Checks calculations. Keeps a small set of books (BOOKKEEPER II). Takes inventories (INVENTORY CLERK).

ROOM CLERK: (hotel & rest.) 1-07.60. In small hotels, registers and assigns rooms to incoming guests. Checks out departing guests and receives payment of their account. Maintains records of reservations, rooms occupied, and guests' accounts. Gives information to guests. Checks room keys and valuables. Receives and distributes mail, telegrams, and packages. Notifies HOUSEKEEPER of arrivals and departures. May sell cigars, cigarettes, or newspapers. May supervise BELLMAN; ELEVATOR OPERATOR, PASSENGER; AND TELEPHONE OPERATOR II. In large hotels, rents and assigns rooms, arranges transfer of registered guests to other rooms, checks out guests, time-stamps bills, and refers guests to CASHIER, FRONT OFFICE for payment.

CREDIT CLERK: (clerical) 1-12.02. Investigates credit status of individuals applying for credit. Obtains credit history from customers who wish to open an account (NEW-ACCOUNT CLERK). Verifies this information by writing to credit organizations and references

listed by applicant on the credit application form. Determines credit limit, following specific instructions, based on applicant's assets and ability to pay, referring more difficult cases to MANAGER, CREDIT AND COLLECTION. Notifies customer of acceptance or rejection of credit. May keep a record or file of credit transactions and payments and send letters to customers having delinquent accounts. May keep informed on all transactions that affect credit rating of customers.

FILE CLERK: (clerical) 1-17.01. filer; filing clerk. Keeps correspondence, cards, invoices, receipts, and other records arranged systematically according to subject matter in file cabinets, drawers, boxes, or in special filing cases: Reads information on incoming material and sorts and places it in proper position in filing cabinet which is usually indexed for ready reference. Locates and removes material from file when requested. May keep record of material removed.

GENERAL INDUSTRY CLERK: 1-18. This group includes occupations concerned with the preparation, transcribing, transferring, systematizing, or preserving of written communications are performed. Examples are MAIL CLERK (clerical), EMPLOYMENT CLERK (clerical), and APPOINTMENT CLERK (clerical.)

PROCUREMENT CLERK: (clerical) 1-19.11. Edits purchase requests and draws up purchase orders for procurement of supplies, materials, or equipment by an industrial concern, Army supply depot, or other organization, performing the simpler duties of PURCHASING AGENT: Examines purchase requests received from component departments and edits entries for accuracy of nomenclature and specifications according to standardized regulations. Consolidates information relating to kind, quantities, and prices of supplies. Consults manufacturer's catalog to determine with which manufacturer to place order. Types invitation-of-bid forms and mails forms to contracting agencies or to post office for public posting, as directed by PURCHASING AGENT, or telephones prospective supplies to obtain quotations. Types purchase orders and sends copies to successful bidders and departments concerned. Keeps files and records of materials purchased, cost prices, inventories, and deliveries. Types correspondence relative to purchases. May study price quotations and award contract to lowest bidder. May compute total cost of items purchased by referring to purchase orders or bids, using a calculating machine. May drive light truck to pick up urgently needed supplies. May classify priority regulations (PRIORITIES CLERK). May be designated according to manner in which supplies are procured or market in which they are obtained, as local-purchase clerk; record clerk, local purchase; town runner.

MESSENGER: (clerical) 1-23.14. delivery boy; errand boy; errand girl; floor boy; messenger boy or girl; runner; wheel boy. Sorts and delivers letters, messages, packages, documents, records, interoffice memoranda, and other items of offices or departments within an establishment or to other business concerns, plants, and banks. Makes trips to and from outside establishments to deliver or to obtain messages or small articles, walking, using bicycle or motorcycle, or riding on public conveyance. May perform a variety of other duties, such as cleaning office machines, cleaning office, and assisting with stockroom inventory.

OFFICE-MACHINE OPERATORS: 1-25. This group includes occupations concerned with the preparation, transcribing, transferring, systematizing, or preserving of written communications are performed. Examples are BILLING-MACHINE OPERATORS (clerical), ADDING-MACHINE OPERATOR (clerical), and CALCULATING-MACHINE OPERATOR (clerical).

PAYROLL CLERK: (clerical) 1-26.02. Computes wages of company employees and writes the necessary corresponding data on the pay-roll sheets: Calculates each worker's earnings based on TIMEKEEPER'S report, individual time cards, and work or production tickets. Posts calculated data on pay-roll sheet, showing information such as worker's name, working days, time, rate, deductions for insurance, and total wages due. May make out pay checks and assist the PAYMASTER in making up and distributing the pay envelopes. May use a calculating machine (CALCULATING-MACHINE OPERATOR).

SECRETARY: (clerical) 1-33.01. Performs general office work in relieving executives and other company officials of minor executive and clerical duties: Takes dictation, using shorthand or uses a Stenotype Machine (STENOTYPE OPERATOR). Transcribes dictation or the recorded information reproduced on a transcribing machine (TRANSCRIBING MACHINE OPERATOR). Makes appointments for executive and reminds him of them. Interviews people coming into office, directing to other workers those who do not warrant seeing the executive. Answers and makes phone calls. Handles personal and important mail, writing routine correspondence on own initiative. May supervise other clerical workers. May keep personnel records (PERSONNEL CLERK).

SHIPPING AND REC. CLERK: (clerical) 1-34.15. delivery checker; load checker; loading clerk; order checker; outgoing-merchandise checker; packing checker; platform checker; record clerk; shipping-clerk assistant; tally-in-tally-out clerk. Insures completeness and correctness of outgoing shipments by examining such

details as quantity, quality, labeling, and addressing of items of merchandise and comparing them with customer's order or other records. May check incoming merchandise (RECEIVING CHECKER).

STATISTICAL CLERK: (clerical) 1-36.01. record clerk; report clerk. Compiles regular and special reports, for the use of the management and as a basis for statistical studies, using the regular bookkeeping and accounting records as a source of information: Makes up reports showing information, such as amount and type of material ordered, used, and rejected, volume and class of daily sales, number and kind of accumulative pending sales, and average working time and wage rate of company employees. May check material used as a source of information. May operate an adding machine and a calculating machine.

STENOGRAPHER AND TYPIST: (clerical) 1-37.12. Takes dictation in shorthand of correspondence, reports, and other matter and transcribes dictated material, writing it out in long hand or using a typewriter. May be required to be versed in the technical language and terms used in a particular profession. May perform a variety of related clerical duties (CLERK, GENERAL OFFICE). May take dictation on a stenotype machine (STENOTYPE OPERATOR), or may transcribe information from a sound-producing record (TRANSCRIBING-MACHINE OPERATOR).

STOCK FOREMAN CLERK: (clerical) 1-38.01. Supervises clerical workers engaged in moving, handling, and storing parts and materials, performing duties as described under SUPERVISOR.

TELEPHONE OPERATOR: (clerical) 1-42.31. control-board operator; p.b.x. operator; private-branch-exchange operator; switchboard operator; telephone-switchboard operator. Operates a cordless telephone switchboard to relay to the different phones in the establishment incoming and interoffice calls, and make connections with outside lines for outgoing calls: Manipulates switch keys to receive incoming calls, to make connection, to relay calls, and to ring phones.

WEIGHERS: (clerical) 1-45.01. Weighs incoming or outgoing materials or products of an establishment, or weighs products or waste products between processing steps, for the purpose of keeping clerical records pertaining to the shipping or receipt of articles, plant or work production or other phases of operation.

CLAIM AGENT: (any ind.) 1-48.08. Renders and investigates claims for losses, shortages, damages, or overcharges on shipments of merchandise, checking their movement

and handling between consignor and consignee. Examines freight bills, bills of lading, invoices, and other records and, if possible, compares with actual goods to determine extent of loss or damage. Adjusts claims and complaints by allowing credit or replacing lost or damaged goods.

SALES CLERK: (ret. tra.) 1-70.10. Receives cash payment for articles selected by customers. Wraps article, makes change, and gives article to customer. Keeps merchandise neatly arranged on counter. Must complete each sale quickly. Sells any of a large variety of inexpensive merchandise, usually without specializing in any single commodity or group of commodities.

SALES PERSON: (ret. tr.) 1-75.71. Displays and sells merchandise, such as kitchenware, linens, men's furnishings, perfumes, radios, toys, and women's lingerie, performing duties as described under SALESPERSON. Performs selling duties that require no special knowledge or technique not obtainable from a short training course. Generally specializes in one commodity or closely related groups or commodities. May be designated according to merchandise sold, as salesperson, linens; salesperson, radios; salesperson, toys.

SALESMAN, GENERAL (ret. tr.) 1-80.01. Solicits customers, frequently outside the store, to demonstrate and sell merchandise, such as automobiles, radios, refrigerators, and washing machines, the selling of which requires no special knowledge of technique not obtainable from a short training course. Usually specializes in one commodity or related groups of commodities. Performs duties as described under SALESMAN, RETAIL.

SALESMAN, AMUSEMENT AND SPORTING GOODS: (whole. tr.) 1-85.01. salesman, sporting and amusement goods. Sells amusement and sporting goods, such as cameras, motion-picture equipment and supplies, firearms, playground equipment, athletic goods, toys, and games, performing duties as described under SALESMAN, WHOLESALE.

SALESMAN, METALS (whole. tr.) 1-86.01. Sells metals which have not been fabricated, such as brass, copper, iron, and steel, performing duties as described under SALESMAN, WHOLESALE.

SALES REPRESENTATIVE: (hotel & rest.) 1-87.01. Seeks out prospects who may be interested in the hotel's facilities for social gatherings, banquets, and conventions. Attempts to induce the prospects to hold social functions at the hotel.

MAID, GENERAL: (dom. ser.) 2-06.11. housekeeper, home; maid. Performs, in accordance with instructions from employer, any domestic duty such as cleaning and dusting household furnishings, hallways, and lavatories, changing and making beds, watching children at play, purchasing, preparing, cooking, and serving meals, and washing and ironing clothes. Is frequently the only domestic household employee employed. Is not employed by the day, as opposed to DAY WORKER.

CHAMBERMAID (hotel & rest.) 2-24.11. Housemaid; maid; room maid. Does all general cleaning in hotel rooms: Collects and may count soiled linens. Makes beds. Empties trash from waste baskets. Dusts furniture and woodwork in guest room. Removes small trash from floor with broom or vacuum cleaner. Replenishes stationery and bathroom supplies. Cleans bathroom (BATH MAID). When working at night is known as NIGHT CHAMBERMAID; NIGHT MAID.

EXECUTIVE CHEF: (hotel & rest.) 2-26.01. chef; chef de cusine; chef, head; chef, managing; dietitian; manager, food production; manager, kitchen; manager, lunch. Plans meals for large hotel or restaurant. Supervises and coordinates the work of chefs, cooks, and other kitchen employees, seeing that food preparation is economical and technically correct. Requisitions food supplies. May be responsible for the profitable operation of the food-preparation department. In some establishments may supervise a STEWARD and in others may cooperate with a STEWARD or MAITRE D'HOTEL II in matters pertaining to the kitchen, pantry, and storeroom.

WAITER: (hotel & rest.) 2-27.11. Serves food to patrons in a quick and efficient manner. Sets tables with clean linen and silverware. Removes dirty dishes to kitchen. Cleans equipment. This worker differs from WAITER FORMAL in the less formal manner in which the serving duties are performed.

KITCHEN WORKER: 2-29.71. Performs duties in the kitchen requiring little skill, such as scrubbing, scraping, and scouring work tables and meat blocks, sweeping and mopping floors, obtaining and distributing supplies and utensils, kindling kitchen fires, and watching cooking foods to prevent burning. May cut and peel or otherwise prepare vegetables for the cooks.

GUARDS AND WATCHMEN: (any ind.) 2-61.03. Guards an industrial plant, warehouse, or other property against fire, theft, and illegal entry. Makes periodic inspection tours about building and grounds, examining

doors, windows, and gates to see that they are properly secured and have not been tampered with, and continually watches for irregularities, such as broken water pipes. Registers at regular watch stations as a record of having made inspection rounds at specified times. May perform general maintenance duties, such as sweeping floors, or supervise others in these duties. May fire boilers or do other similar duties, or may operate various plant equipment, performing productive operations. Sometimes designated according to type of property he guards, as dock watchman, warehouse watchman.

FIREMEN: (any ind.) 2-63.10. Any member of the paid or volunteer fire-fighting force of a city, township, or industrial plant, below the rank of lieutenant. Rides on fire truck to scene of fire. Connects and mans hose to play water or chemicals on the fire, or uses a portable fire extinguisher in places not easily accessible with a hose. Demolishes doors, windows, partitions, or buildings as necessary, to reach and combat the fire. Rescues persons overcome by fire or smoke, and administers artificial respiration to them. May drive the fire truck. May periodically fill portable fire extinguishers throughout an industrial plant.

JANITOR: (any ind.) 2-84.10. Keeps public parts of building in clean, orderly condition and good state of repair, and operates furnaces and boilers to provide heat and hot water for tenants: Sweeps, mops, and scrubs public halls and stairways (PORTER I). Tends the furnace, stoking coal and removing clinkers and ashes and refuse, trucking or rolling the cans to the street for pick-up by local sanitation department. Makes minor repairs to defective plumbing, electrical wiring, or other parts of the building. Replaces burned-out electric lamps in public halls. Cleans sidewalks of snow or debris. May grease elevator slides and clean elevator pits. In large establishments, tending furnace may be the full-time job as FIREMAN, LOW PRESSURE.

PORTER: (any ind.) 2-86.10. Works in an establishment, such as an office building, bank, insurance company, educational institution, place of amusement, beauty parlor, public bath, dental laboratory, advertising agency, store, or repair shop, performing any combination of duties involved in cleaning the premises, furniture and equipment (as opposed to cleaning production departments in a factory (PORTER II)). Typical of the duties the worker performs are: Cleaning floors and stairways (CLEAN-UP MAN); washing walls (WALL WASHER; PAINT CLEANER); washing windows (WINDOW CLEANER); baling wastepaper for sale to junk dealers (BALING-MACHINE OPERATOR); burning trash in incinerators (INCINERATOR MAN).

GROUNDS KEEPER: (any ind.) 3-40.04. Maintains and protects grounds surrounding buildings of an industrial or business concern, race track, or other property: Mows lawns, trims hedges, rakes and burns leaves and refuse, and trims driveway and sidewalk edges, using spades and hoes. In winter shovels snow from driveways and sidewalk edges, using spades and hoes. In winter shovels snow from driveways and sidewalks, and spreads sand, salt, or ashes on icy surfaces to prevent slipping. May plant and maintain flower beds, select bushes and flowers to be planted, and perform other landscaping duties (GARDENER (dom. ser.)). May supervise workers doing the less skilled duties entailed in the upkeep of grounds.

BAKER: (bake prod.) 4-01.100. Produces finished baked goods, such as bread, cake, cookies, pastries, and pies, from raw materials. Measures and mixes ingredients. Forms dough, prepares fillings. and decorates specialties with icings. Bakes products in ovens, regulating and timing oven temperature. May specialize in baking one type of product, such as danish bread, french bread, grissini, rye bread, sweet crackers, vienna bread, or french pastries. May be designated according to products baked, as BAKER, BREAD; BAKER, CAKE; BAKER, COFFEE CAKE; BAKER, COOKY; BAKER, CRACKER; BAKER, FANCY BREAD; BAKER, ROLLS; SWEET-DOUGH MAN.

SUGAR BOILER: (sugar) 4-10.611. Boils the filtered sugar juice in vacuum pans to evaporate the water until the mass in the pans becomes a thick mixture of crystals and sirup (massacuite): Creates vacuum in pan by operating vacuum pump and allowing cold water to enter the water condenser above the pan. Turns wheel lever to allow juice to enter the pan to the proper level. Opens valve to admit steam to pan. Boils juice until he determines from a sampling made with a proof stick that juice has crystalized to the proper point. Shuts off condenser which breaks the vacuum and turns off vacuum pump. Allows mass to flow into the mixer.

ALTERATION WOMAN: (any ind.) 4-25.020. repair dressmaker; repair seamstress; repair woman. Performs various cutting and sewing operations to make alterations or repairs to garments.

PATTERNMAKER: (aircraft mfg.; garment) 4-27.432. Draws outline of parachute or garment parts on paper from which fabric pieces are cut, using sample pieces, sketches, or specifications as guides: Lays paper on table and draws pattern outline, using rules, T-square, triangle, yardstick, and pencil. Rolls pattern and writes identifying information on outside. Stacks rolls for future use. May cut out pattern pieces (PATTERN CUTTER (garment; knit goods)).

CABINETMAKER: (woodworking) 4-32.100. Performs the hand carpentry necessary to cut, shape, and assemble prepared parts of high-grade articles of furniture, such as store fixtures, office equipment, and home furniture: Studies drawing of article to be made. Lays out outline or dimensions of part on paper or stock lumber specified. Operates such woodworking machines as band saw, jointer, mortiser, tenoner, molder, gainer, and variety machine to cut and shape parts from stock, or may obtain parts already prepared by other workers. Trims component parts of joints to make them fit together snugly, with hand tools, such as plane, chisel, or wood file. Bores holes for the insertion of screws or dowels, by hand or machine. Daubs glue on joints with brush. Fits parts together tightly until glue is dry. Drives nails, dowels, or screws through joints to reinforce them. Glues and fits subassemblies and other parts together in clamps to form completed unit. Finishes surfaces and joints of article with sandpaper and hand scrapers. May install such hardware as hinges, catches, or drawer pulls. May work on either a production line or on special orders.

MILLMAN: (woodworking) 4-33.914. all-around-machine man; carpenter, machine; machine hand; machine operator; machinist, wood; millwright; woodworker; woodworking-machine operator; woodworking millman. Fabricates various lumber products, such as sashes, window frames and door frames, doors, dressed lumber, and furniture parts, using hand tools and woodworking machines, usually including molders, planers, shapers, and hand or powered saws. This job usually occurs in small plants where separate operators for the various machines and operations are not employed.

UPHOLSTERER: (4:35.720) Installs, arranges, and secures springs, padding, and covering material, such as cloth or leather, to frames of overstuffed chairs, davenport, and stationary seats: Fits and secures in place springs, cotton, rubber composition, or other cushioning materials to form a smooth, rounded pad. Cuts and tacks in place binding materials, such as canvas, burlap, or muslin. Either draws assembled cover over binding and tacks cover tightly to frame, or alines and stretches covering material over cushions and framework, wetting the leather as necessary and sews, cements, or tacks it in place. Cuts away excess materials. Tacks or glues covering over back and trims along seams. May be designated according to part or furniture upholstered, as ARM MAKER; BACK MAKER.

MATTRESS MAKER: (matt. & bedspring) 4-36.414. mattress assembler; mattress builder. Performs all operations necessary to assemble prepared materials and finish

the assembly into a completed mattress: Fills prepared covers with padding or with padding and innersprings (MATTRESS-FILLING-MACHINE OPERATOR). Closes the filled cover (CLOSING-MACHINE OPERATOR I). Evens out the padding in the filled cover (BEATER). Finishes the mattress by tufting and sewing in the rolled edges (MATTRESS FINISHER).

PULP TESTER: (paper & pulp) 4-41.910. Tests pulp used in each batch of paper for moisture content, color, purity, and strength.

PRINTER SLOTTER: (paper goods) 4-42.315. Directs and participates in setting up, adjusting, and operating a printer-slotter machine which slots (cuts) and scores (creases) corrugated or plain cardboard or paperboard sheets to form box blanks and prints monocolored or multicolored designs, trade-marks, or legends on box blanks: Oversees positioning of printing dies, feeding guides, and cutting devices. Turns valves to control distribution of ink to cylinders, pressure of rollers, and speed of machine. Runs trail cardboard or paperboard sheet through machine to insure that slotting, scoring, and printing conform to specifications, and makes adjustments to feed rollers, printing dies, and slotting or cutting shafts as separate units or to all units to obtain precise alinement. Supervises SLOTTER OPERATOR I in alining and feeding of sheets to machine.

PRINTER: (print. & pub.) 4-44.010. Performs any or all of the duties concerned with the hand and machine setting of type, the assembling of type and cuts in chases, and related duties prior to the actual printing operations. Is typically a skilled worker who has completed a lengthy apprenticeship and is thoroughly versed in type style and printed page make-up. (BANKMAN; COMPOSITOR I; LINOTYPE OPERATOR; LUDLOW-MACHINE OPERATOR; MAKE-UP MAN; MONOTYPE-KEYBOARD OPERATOR; OVERLAY CUTTER; TELETYPE OPERATOR).

ELECTROTYPER (print. & pub.) 4-45.010. A classification title for jobs concerned with the making of wax or composition electrotype molds from type and cuts set up in a chase, and the electroplating of the molds to form shells that are used as plates in printing. Included are the following jobs: ELECTROTYPE CASTER; ELECTROTYPE-MOLD BUILDER; ELECTROTYPE MOLDER; ELECTROTYPE MOLDER, WAX; ELECTROTYPE STRIPPER; PLATE FINISHER; WAX RUNNER.

PHOTOLITHOGRAPHER: (print. & pub.) 4-46.200. cameraman; copy cameraman; lithographic-camera man; photographer, lithography, photographer, stone; photographer, wet

plate; photolithographic process man; process man. Photographs in artificial light either illustration of typeset material to prepare a positive print for use in lithographic printing, enlarging or reducing print to desired size. May use screen to break up shadings of copy into dots for half-tone printing. May use color filters one at a time to prepare various plates for color printing.

PHOTOENGRAVERS: (print. & pub.) 4-47.100. engraver operator. Performs any of the following tasks entailed in the preparation of copper or zinc plates used in printing, particularly in halftone reproduction work: Nails prepared plates to wooden blocks to make blocks type high for use in printing. Photographs illustration material to prepare negatives that are later used in preparing zinc or copper plates for etching. Etches photographically printed zinc or copper plates with acid to prepare them for use as printing plates. Refines or corrects imperfections in the designs on etched zinc or copper plates to finish them into final form for use as printing plates.

PRESSMEN AND PLATE PRINTERS: (print. & pub.) 4-48.080. platepress operator; plate printer; plate-printer operator. Sets up plate press and prints business cards, letterheads, announcements, and similar forms from engraved copperplates: Marks guide lines on plate to fit stationery. Glues plate to plate holder of press. Inks plate with inked roller and removes ink from face of plate by wiping it with cloth and palm of hand, leaving ink only in engraving. Places stationery on plate, alining it with the guide lines. Pulls lever, which causes roller to press sheet against plate. Releases lever, removes imprinted sheet, and places sheet on rack to dry.

POLYMERIZATION OPERATOR: (chem.; plastic mat.) 4-51. A general term applied to workers who are engaged in the polymerization of chlorobutadiene (chloroprene) to neoprene rubber, including the making of solutions used in preparation of the chloroprene emulsion.

CHEMICAL OPERATOR: (chem.) 4-52. A general term applied to any worker engaged in the operation of equipment used in manufacturing chemical products.

STILLMAN (petrol. refin.) 4-55.030. refinery operator; still tender. Supervises, directs, and is responsible for continuous, economical, and safe operation of one or a battery of stills in which crude or other oil is distilled to break it down into such products as gasoline, kerosene, lubricating oil, fuel oil, and petroleum coke: Patrols entire unit regularly to check

operating condition. Regularly observes and records readings of temperature, pressure, and flow gages and meters. Regulates temperature, pressure, and flow of oil through unit by adjustment of pipe valves or automatic controls. May direct CONTROL MAN; FIREMAN, STILL; PUMPMAN I; or STILLMAN HELPER to make adjustments. Tests products for specific gravity and observes color to determine whether the processing is being carried out properly. Draws sample of products for laboratory analysis. Makes minor adjustments to equipment. Notifies mechanical department of need and supervises making of major repairs. Shuts down still for cleaning (CLEANER), and opens it up when completed. May fire oil- or gas-burning furnace through which oil is run to heat it to processing temperature (FIREMAN, STILL). Directs work of and maintains close contact with such workers as CONTROL MAN; FIREMAN, STILL; GAGER; PUMPMAN I; STILLMAN HELPER; and TOPMAN. May be designated according to type of still, kind of oil processed, or department, as COKING; STILLMAN, CONTINUOUS-CRUDE OIL; STILLMAN, CRACKING COIL; STILLMAN, CROSS; STILLMAN, DEBUTANIZATION PLANT; STILLMAN, LOW PRESSURE; STILLMAN, PENTANE PLANT; STILLMAN, PIPE; STILLMAN, PRESSURE; STILLMAN, RERUN.

GLASS MFG. TEASER: 4-65.010. furnaceman. Feeds raw materials to the glass-melting tank. Reverses the gas fire at stated intervals from one side of the gas-and-air regenerative chambers to the other side to equalize heat in tank. Regulates draft dampers which control pressure on inside of melting tank and regulates pressure of gas fed to tank.

CASTER: (pottery & porc.) 4-66.454. pourer. Forms ware by pouring slip (semiliquid clay) into plaster-of-paris molds to harden, draining excess slip, removing mold, and finishing ware with sponge: Stirs slip thoroughly in barrel, adding water if needed. Fills pitcher with slip and pours into mold when it appears to be of proper consistency. Pours excess slip from mold after a shell of clay has formed inside mold, judging time by appearance of top clay or by cutting off top clay. Sets molds on bench upside down to drip and dry. Trims top of partly dry ware with knife, opens mold, and removes it from ware. Scrapes ware with knifelike tool, sponges it, and sets it on drying rack ready for kiln.

JEWELER: (jewelry; ret. tr.) 4-71.010. bench worker; jewelry jobber; jewelry repairman. Makes and repairs articles of jewelry, such as rings, pins, and lockets: Forms a mold of sand and pours molten metal into it. Cuts, saws, files, and polishes molded pieces of jewelry.

Uses soldering iron or torch to fasten clasps on pins or settings on rings. Enlarges rings by sawing through band, inserting piece of metal, and soldering it in place, using graduated ring stick to measure size. Reduce size of rings by sawing through band in two places, removing sawed-out section and forcing and soldering the two ends together. Repairs broken clasps, pins, and other jewelry by soldering together the broken parts or by replacing them with new parts. Reshapes old jewelry and cuts new jewelry, following designs or instructions, using hand tools (ENGRAVER, JEWELRY) and jeweler's lathe, drill, or other machines. Smooths soldered joints and rough spots with hand file and emery paper (FILER (jewelry)).

PLATER: (electroplating) 4-74.010. bath plater; electric plater; electroplater; plating-tank operator; vatman. Covers metal objects electrolytically with a coating of nickel, chromium, cadmium, or other metal to provide the objects with a corrosion-protective coating to build up worn surfaces, or for other purposes: Cleans objects by immersing them in a succession of cleaning baths (PICKLING OPERATOR). Immerses cleaned objects in a vat or tank containing a solution of metallic salts of the plating metal. Connects negative terminal of plating equipment to objects or container holding objects, or fastens hooks to objects and hangs them on negative electrode. Fastens stick or plate of silver, nickel, or other plating metal to positive terminal (if this method of plating can be used). Allows objects to remain in tank until desired thickness of coating is obtained, regulating electrical controls to maintain the desired intensity of electricity flowing through the plating solution. Removes metal objects from tank and rinses them in water. May dry objects by hanging them in air or rolling them in sawdust (SAWDUST DRIER I). May mix plating solution. The strength of the plating solution, amount of electric current used, thickness of plate, size of object to be plated, size of electrodes, and length of immersion are interrelated factors taken into account in the plating process by the worker. May be designated according to kind of plating done, as BRASS PLATER; BRONZE PLATER; CADMIUM PLATER; CHROMIUM PLATER; COPPER PLATER; GOLD PLATER; NICKEL PLATER; SILVER PLATER; TIN PLATER.

MACHINIST: (mach. shop) 4-75.010. machinist, all-around; machinist, construction; machinist, first class; machinist, general; machinist, journeyman; machinist, precision. Carries through to completion the construction and repair of all kinds of metal parts, tools, and machines: Understands blueprints and written specifications. Uses skillfully all machinist's hand tools

including lathes (ENGINE-LATHE OPERATOR I); milling machines (MILLING-MACHINE OPERATOR); plarers (PLANER OPERATOR); shapers (SHAPER OPERATOR); and specialized machines that have been developed from them. Possesses knowledge of shop mathematics, use of charts and tables, efficient planning of shop work, dimensions and uses of standard bolts, screws, threads, and tapers. Must be familiar with the working properties of such metals as aluminum, brass, cast and wrought iron, and various steels, and should be capable of shaping metal parts to precise dimensions within the close tolerances prescribed.

TOOL MAKER: (mach. shop) 4-76.210. Specializes in the construction, repair, maintenance, and calibration of machine-shop maintenance, and calibration of machine-shop tools, jigs, fixtures, and instruments, operating various machine tools nnd performing other highly skilled work, such as laying out, fitting, and assembling parts (MACHINIST).

LATHE OPERATOR: (mach. shop) 4-78.011. Shapes external and internal cylindrical surfaces of metal objects with a lathe on which rotations of work and feeding of tools may be accomplished mechanically: Clamps or bolts work on spindle, using faceplate or chuck, or fastens work between centers. Sharpens tools on a grinding lathe (BENCH GRINDER) and clamps them in place. Shifts belts or moves levers to select appropriate speeds of rotation and tool-feed. Engages an accurately made lead screw, adjusts its rate of rotation to a definite ratio with that of spindle, when preparing to cut threads, and turns on motor to start machine. Turns handwheels to bring tools into contact with work. Engages automatic feed or continues to turn handwheels to feed tools into or along work. May be classified according to size of machine.

SHEET METAL WORKER: (sheet metal) 4-80.010. Fabricates, assembles, alters, repairs, and installs sheet-metal articles and equipment: Cuts metal with hand shears, rotary shears (ROTARY-SHEAR OPERATOR), and square shears SQUARE-SHEAR OPERATOR). Shapes metal with brake (BRAKE OPERATOR, HAND; BRAKE OPERATOR, MACHINE) and forming machine (FORMING-MACHINE OPERATOR). Punches or drills holes for rivets, bolts, and screws with center punch and hammer or hand drill. Assembles sheet-metal parts, brackets, and hangers. Bolts, rivets, or fits them into units for erection. Makes attachments, seams, and joints by welding, riveting, bolting, soldering, or nailing, or by fastening with metal ties and wood screws. Grinds or files seams,

joints, or rough surfaces with grinding wheel or file. May mark lay-out on sheet metal according to blueprints or specifications (SHEET-METAL LAY-OUT MAN).

MOLDER: (found.) 4-81.020. Assembles and repairs halves or sections of sand molds made by machine molders: Sprays sections of mold with graphite solution and dries surface with torch. Opens and cleans sprue and riser, using fingers, scrapers, and bars. Punches holes, by inserting and withdrawing wires through sand of upper section of mold, to vent mold for escape of gas during pouring. Repairs minor breaks in mold, using spoons and spatulas. Assembles halves or sections of mold. May make sand molds on machine (MACHINE MOLDER, JARRING; MACHINE MOLDER, SQUEEZE).

COREMAKER: (found.) 4-82.010. Makes sand cores used in molds to form hollows or holes in metal castings: Cleans core box, blowing out old sand with compressed air. Dusts parting sand over inside of core box to facilitate removal of finished core. Packs and rams core sand solidly into core box, using shovel, hands, and tamping tools. Sets vent wires and reinforcing wires as sand rises in box. Lifts box from core, leaving core on plate for handling and drying. Repairs breaks in core with spoon. Sends core to baking oven to harden it for use in foundry molds. May bake cores to harden them (CORE-OVEN TENDER). May assemble cores of more than one part.

BOILERMAKER: (boilermaking) 4-83.100. Performs any or all machine and hand operations necessary to fabricate and assemble boilers, tanks, vats, and other vessels made of heavy steel plates: Lays out work on plates (LAY-OUT MAN). Cuts plate to size and shape (FLAME-CUTTER OPERATOR; CIRCLE-SHEAR OPERATOR; FLAME-CUTTING-MACHINE OPERATOR; POWER-SHEAR OPERATOR). Punches holes in plates for rivets or bolts (PUNCH-PRESS OPERATOR II (any ind.)). Bends angle irons or plates to desired radius (ANGLE-ROLLER-MACHINE OPERATOR; BENDING-ROLL OPERATOR; SLIP-ROLLER OPERATOR). Forms flanges on plates (FLANGING-PRESS OPERATOR). Forms concave plates for boiler or tank heads (DISHING-MACHINE OPERATOR). Forms or shapes plates in bulldozer (BULLDOZER OPERATOR (forging)). Bends plates (BRAKE OPERATOR, MACHINE). Assembles headers, tubes, baffle plates, and other parts, riveting or welding parts together (RIVETER, HYDRAULIC; RIVETER, PNEUMATIC; WELDER, ACETYLENE; WELDER, ARC). Calks seams and rivet heads (STEEL-PLATE CALKER). Chips burrs from plate edges (CHIPPER, METAL). Fastens boiler tubes of flues into headers, expanding tube ends with an expanding tool.

STRUCTURAL WORKER: (const.) 4-84.010. Works as a member of a group that raises and places fabricated structural steel members, such as girders, plates, and columns, and unites them permanently to form a completed structure or the framework of a structure. May also perform the duties of ORNAMENTAL-IRON WORKER. Usually structural steel work is broken down into various phases, such as rigging up hoisting equipment, raising (erecting) steel, and riveting, with separate gangs (raising gang, riveting gang) performing each phase. The workers are usually though not always interchangeable on all phases of work except the heating of rivets, which requires a technique not possessed by all workers. Workers within a gang perform various duties, such as those described under BUCKER-UP; CONNECTOR; RIGGER; RIVET CATCHER; RIVETER, PNEUMATIC; RIVET HEATER.

WELDER: (any ind.) 4-85.030. Fuses (welds) metal parts together by means of an oxyacetylene torch and welding rods to fabricate metal shapes or articles or to repair broken or cracked metal objects: Places the parts to be joined or the object to be repaired on a flat surface, and wires, clamps, or otherwise holds objects in their position. Assembles welding apparatus by connecting torch to hose and hose to regulators on tank of oxygen and acetylene. Lights torch and regulates flow of gases by manipulating valves until desired flame is attained. Holds flame against metal until it melts, guiding flame along joint between the parts, and at the same time applying a metal rod to the molten area to supply the excess metal needed to form the weld. May dip rod into flux and apply the flux to the molten area. May preheat the parts with torch before welding to obtain a better weld and to lessen internal strains set up in the metal by the intense heat of the welding flame. May lay out (mark) metal, in accordance with blueprints, before welding. May cut metal (ACETYLENE-BURNER OPERATOR). May also weld with electric welding apparatus (WELDER, ARC), in which case worker would be classified as WELDER, COMBINATION.

BLACKSMITHS, FORGEMEN, AND HAMMERMEN: (forging) 4-86.010 blacksmith, fire; iron burner; smith; striker. Forges metal articles and parts for building, repairing, or manufacturing equipment: Heats metal in forge and hammers it into desired shape on anvil, in steam, electric, or compressed-air-powered hammer (DROP-HAMMER OPERATOR II; DROP-HAMMER OPERATOR III). Forge-welds by heating parts and hammering them together. Sharpens hand and machine tools, such as chisels, drills, and picks, by heating them and hammering cutting edges to proper shape (TOOL DRESSER I (any ind.)).

Tempers metal by heating it to proper temperature and then dipping it into quenching medium. Repairs or builds equipment, such as sleds, wheelbarrows, small tools, and hooks. May be designated as blacksmith, heavy fires; blacksmith, light fires. May operate an annealing furnace (ANNEALER I (heat treat.)), power hacksaw (HACKSAWING-MACHINE OPERATOR), grinding wheels, and pneumatic press. May cut and weld metal with oxyacetylene or electric-arc torch (WELDER, ACETYLENE). May shoe horses (HORSESHOER).

HEAT TREATER: (heat treat.) 4-87.010. brakeman; steel-heat treater. Alters the physical and chemical properties of the steel of such parts as dies, cutters, and machine parts, to produce a specified degree of hardness, or strength by an established process of controlled heating and cooling (ANNEALER I; CASE HARDENER; FURNACE TENDER, HEAT TREATING; HARDENER; TEMPERER).

PULPIT MAN: (iron & steel) 4-88.012. manipulator operator; mill-control operator. Operates the complex controls of a rolling mill, in which iron and steel ingots or billets are rolled into such shapes as bars, T's, rails, and sheets, by throwing the correct electric switches when signaled, or by personal observation: Watches rolling process closely to obtain smooth mill operation. Starts and stops various motors that drive the rolls between which iron and steel is passed to shape it or reduce it to specified thickness, constantly watching for any emergency signals.

DIGESTER-AND-EVAPORATOR OPERATOR: (ore dress., smelt., & refin.) 4-90.640. Dissolves alumina from bauxite slurry and cools it preparatory to further processing: Manipulates steam valves to raise and lower temperature and pressure in digesters and separate alumina from silica and other waste materials. Cools hot digested slurry in flash tanks utilizing heat given off by cooling process to operate evaporators that evaporate process water from spent alumina liquor. Manipulates steam, pressure, and blow-off valves to balance cooling and evaporation process so as to reduce hot slurry to specified temperature and simultaneously secure maximum evaporation of water from liquor. Periodically records temperature, pressure, and flowmeter readings on log sheet. Inspects pumps and other parts of system, and reports defects to maintenance department.

FURNACE TENDER: (found.) 4-91.571. Fires and charges an oil-fired or gas-fired pit furnace in which various metals or alloys are melted to be used in making castings; Ignites oil or gas burner and regulates valves on fuel and air lines to heat furnace to pouring temperature of metal. Fills crucibles with

pig or scrap metal. Attaches tongs to crucibles and lowers them into furnace by hand or with a hoist. Removes crucibles from furnace when molten metal is at proper pouring temperature, using a pyrometer or judging by the color of the metal. May transport crucible and pour molten metal into molds to make castings (POURER, CRUCIBLE).

LEAD BURNER: (any ind.) 4-95.031. Installs and repairs lead linings of tanks, lead pipes, sheet-lead flooring, and lead fixtures and equipment: Cuts out section of sheet lead or lead pipe. Scrapes and levels edges of old and new sections of lead. Fits new section in place. Applies flame of burner to joint, melting in additional lead from a bar and manipulating the torch to make a tight joint and trim the added lead to a smooth, even contour. Makes lead fittings, cutting and shaping the lead and burning it to seal the joints. May melt lead scrap, shavings, and surplus sheet lead, and cast it into bars or pigs. May band steel surfaces by burning lead into the joints. May supervise one or more helpers.

ELECTRICAL REPAIRMAN: (any ind.) 4-97.420. electrician, maintenance; electrician, repair; trouble man, electrical; trouble shooter, electrical; wireman. Keeps electrical equipment, such as wiring, motors, switches, switchboards, and electrical mechanisms, in good repair and operating condition: Performs various duties, such as replacing defective wiring and making connections to new electrical installation (ELECTRICIAN, WIRING AND WIRE RUNNING), replacing burnt out fuses, replacing small parts on motors, cleaning and oiling motors, and repairing electrical fixtures. May make new installations of fixtures, motors, and other electrical equipment (ELECTRIC-MOTOR REPAIRMAN). May repair elevators (ELEVATOR REPAIRMAN).

GRID INSPECTOR: (radio mfg.) 4-98.020. aliner and inspector; inspector and aliner. Makes visual inspection of completed grids for radio tubes, and alines minor distortions with tweezers.

ASSEMBLYMAN: (aircraft mfg.) 5-03.552. metal fabricator. A MAJOR ASSEMBLER I. Joins the component parts of airplane units put together by SMALL-PARTS ASSEMBLER I to make complete assemblies, such as tails, wings, and fuselage sections: Fits together, in jigs, structural members, such as bulkheads, ribs, and spars, and rivets the parts together (SKELETON ASSEMBLER I). Covers airplane skeleton work with sheet metal (skin), trimming the metal as necessary and riveting the skin to the skeleton (SKIN MAN). May repair damaged sheet metal

surfaces (SKIN MAN). Usually designated according to the degree of proficiency attained, as assemblyman, first class; assemblyman, second class, and according to the assembly worked on.

CALKER: 5-05. A general term applied to any worker who makes watertight or airtight joints in pipes, tunnel linings, and steel plates by forcing sealing material into joints with a hand or compressed-air-driven calking tool.

OPTICIAN: (optical goods; ret. tr.) 5-08.010. Makes eyeglass lenses to prescription of OCULIST or OPTOMETRIST and assembles lenses in frames: Selects standard strength lens blanks with focus nearest to that specified on prescription. Grinds and polishes surfaces of blanks to prescription specifications (SURFACER I). Cuts, edges, and mounts lenses in frames (BENCHMAN II). May determine specifications for new lenses by using special optical instruments and matching broken lenses with standard lenses. May specialize in one operation and be designated accordingly, as cutter; dotter; edger; inspector; lens grinder; lens polisher; mounter. May supervise workers who specialize in one operation.

ORTHOPEDIC TECHNICIAN: (surgical appl.) 5-09.410. Makes and repairs arch supports, orthopedic braces, and appliances for feet, legs, and body deformities: Forms plaster cast of limb or body deformity (FITTER), and makes patterns from measurements of members to be fitted. Cuts and fashions supports from stainless steel, plastics, cork, steel, and leather, using welding equipment, shears, rivet punch, electric drill, chisels, saws, hammers, and other hand tools. Heats metal supports in forge or furnace and hammers them to shape. Molds leather parts over wooden lasts and rivets them to braces with riveting machine. Pads brace with leather, felt, and cork. Polishes completed aids on buffing wheel. Adjusts nuts and screws at joints of artificial limbs to insure proper bending radius, using wrench.

PLASTICS MOLDER: (fabric. plastics prod.) 5-10.014. custom molder; molder, hand press. Molds plastics materials into desired shapes, usually of complex design, in a hand molding press: Studies specifications for molded product and assembles mold (DIE ASSEMBLER). Determines weight of charge, pressure, temperature, and curing time for molding. Molds plastics material, performing duties essentially as described under COMPRESSION-MOLDING-MACHINE OPERATOR. Examines and gages product for conformity to plant and customer standards. Reports deviations from standards or makes minor adjustments in molding procedures to eliminate defects, and remolds product.

PAINTER, AUTOMOBILE: (auto. ser.) 5-16.910. paint sprayer. Repaints automobiles, busses, and trucks, or damaged places on such vehicles: Removes old paint by applying liquid paint remover and rubbing or scraping off the paint. Masks (covers) with masking tape or paper those portions of automobile not to be painted. Sandpapers rough spots or instructs SANDER (any ind.) to do so. Mixes paints by hand to produce desired color or uses prepared paints. Fills reservoir of spray gun with paint. Adjusts nozzle, and paints automobile, insuring that all surfaces are evenly coated with paint and no streaks or blemishes appear (PAINTER, SPRAY I). Touches up inaccessible spots with hand brush. Paints stripes by hand. May rub intermediate coats and polish final coat (SANDER (any ind.)). May apply lettering to exterior of body and interior of windows of motor vehicles by means of decalcomania or transfer stickers. May use metal lettering set and spray gun to paint canvas roller signs of busses.

PATTERNMAKER: (aircraft mfg.) 5-17.248. model maker. Builds patterns of plaster, clay, or other materials for use in making open sand molds from which dies and airplane parts are cast: Determines from blueprint and work order the methods to be used in making the pattern and the number and kinds of templates needed. Lays out templates on sheet-metal stock and gives directions for the machining of the metal. Assembles templates and cuts wooden frame parts to size, combining the two to form a framework (jig or modeling board) to receive the clay or plaster. Tacks open-mesh wire to the frame and spreads clay or plaster over the mesh, smoothing it to exact blueprint dimensions with hand tools to complete the mock-up. Spreads a mixture of hemp and plaster thinly over the mock-up to form a splash cast. Makes die patterns from the splash cast (PLASTER-PATTERN CASTER).

RIG BUILDER: (petrol. production) 5-20.840. One of a crew of men who erect the steel or wooden structure used to support the tools, cable, and machinery for drilling oil or gas wells: Erects bottom section and builds other sections on top of each other, selecting, fitting, and bolting structural members in place with wrenches. (Structural pieces are hoisted to workers in rig with a small hoisting engine operated by a RIG-BUILDER HELPER or by the RIGGING FOREMAN.) Dismantles rig when drilling or pumping operations are concluded, or lays track and skids drilling derrick to new location. May pour concrete foundatinns for the rig if this is not done by ROUSTABOUTS I. May be designated as metal-rig builder; wood-rig builder.

ENGINEER OPERATOR: (const.) 5-23.910. A worker who is skilled in the maintenance and operation of all power construction equipment ranging from air compressors to steam shovels. Worker usually serves an apprenticeship of several years during which he is gradually instructed in the care and operation of increasingly complex machines.

CARPENTER, MAINTENANCE: (any ind.) 5-25.830. Performs the carpentry duties necessary to construct and maintain in good repair structural woodwork and equipment in an establishment, performing such duties as making and repairing counters, benches, partitions, floors, doors, and building framework. Uses rules, saws, hammers, braces, bits, and other carpenter's tools. May also be designated according to place at which work is performed as CARPENTER, HOTEL; CARPENTER, HOUSE; CARPENTER, MILL; CARPENTER, PLANT.

CEMENT FINISHER, HIGHWAYS AND STREETS: (const.) 5-26.200. float finisher; hand-float operator; sidewalk layer; surfaceman; template man; troweler. Levels fresh concrete road or sidewalk surface to desired grade and contour by pushing and pulling screed or template over the surface, and smooths with a float or straightedge. Removes marks with a brush or by pulling a canvas belt or burlap strip across surface (BELTMAN II).

PAINTER: (const.) 5-27.010. Performs all classes of painting work, such as painting the exterior of houses, sheds, and other structures (PAINTER, ROUGH), and painting and decorating the interior of buildings (GRAINER, HAND (any ind.); PAINTER, INTERIOR FINISH). Mixes paint and matches colors by stirring together the proper proportions of pigment, base, and thinner. Uses brushes and spray gun to apply paint. Erects working scaffold. Removes old paint by applying liquid paint remover or by heating surface with blowtorch and scraping off paint.

INSULATOR: (const.) 5-33.110. Covers with insulating material exposed hot or cold surfaces of equipment, such as boilers, ducts, pipe lines, and tanks. Binds wires around objects being insulated either to hold prefabricated insulating material in place or to form a base and reinforcement for plastic insulating material. Applies coats of plastic insulating material with trowel.

BRAKEMAN, YARD: (any ind.) 5-38.020. brakeman, locomotive; railway switchman; switchman; trainman; yard coupler. Switches and stops narrow or standard gage railroad cars within yard of industrial plant, quarry, construction project, or similar location, except railroad yards,

for purpose of loading or unloading cars: Couples and uncouples cars by means of standard car couplings, links and pins, or hooks and cables. Stops car at desired position by turning hand brakes on car. Throws switches to shunt cars and locomotives onto different tracks to spot cars or to make up train. Signals INDUSTRIAL-LOCOMOTIVE OPERATOR to start and stop movement of train.

LOCOMOTIVE ENGINEER: (r. r. trans.) 5-41.010. Operates a steam locomotive on a railroad: Supervises the activities of an engine crew. Starts train upon signal from CONDUCTOR, PASSENGER CAR OR CONDUCTOR, ROAD FREIGHT, and controls movement of train in accordance with train orders, schedule, and the semaphore signals along the route. Inspects locomotive at beginning and end of each run, and lubricates the mechanism.

YARD FIREMAN: 5-42.100. Fires and operates the boiler of a railroad locomotive: (1) Manipulates valves to control flow of fuel oil to firebox of locomotive. (2) Stokes coal into firebox of locomotive with hand shovel or with mechanical stoker. Maintains proper amount of water in tender of cistern. Assists LOCOMOTIVE ENGINEER in observing operation signals and standard rules and regulations.

RAILROAD SWITCHMAN: (r. r. trans.) 5-44.010. Supervises the switching of railroad cars in the yard in accordance with written orders concerning the make-up of trains. Issues orders to SWITCH TENDERS and exchanges signals with BRAKEMAN, YARD and YARD ENGINEER. Couples cars and connects air hose leading to brakes. Sets brakes by hand on cars not coupled to train or locomotive.

TURBINE OPERATOR: (light, heat, & power) 5-51.120. Controls the operation of steam or water turbines which drive generators to produce electricity. Starts or instructs AUXILIARY-EQUIPMENT OPERATOR to start turbine and boiler auxiliaries in preparation for turbine operation. Opens throttle of turbine quickly to start rotor spinning, then partially closes it to allow turbine to run at slow speed for predetermined time. Notifies SWITCHBOARD OPERATOR that he is about to apply speed to turbine. Alternately opens throttle and closes vacuum-breaker valve until valve is entirely closed and throttle wide open, making sure that governor takes hold at proper speed. Notifies SWITCHBOARD OPERATOR that turbine-driven generator can be synchronized with other units in plant. Reviews recorded meter readings and constantly observes steam, water, vacuum, oil, and r.p.m. (revolutions per minute) gages on control board to determine if turbine can handle load and is operating efficiently.

Shuts down turbines on order to decrease power output or to cut out malfunctioning units, by pulling valve to shut off steam supply and closing throttle. May record various instrument readings (TURBINE ATTENDANT).

TELEPHONE REPAIRMAN: (tel. & tel.) 5-53.240. Tests, diagnoses, locates, and clears trouble at manual and dial private branch exchange telephone switchboards, and maintains associated equipment, such as storage batteries and power plants.

STATIONARY ENGINEER: (any ind.) 5-72.010. Operates and maintains stationary engines and mechanical equipment such as steam engines, air compressors, generators, motors turbines, ventilating and refrigerating equipment, steam boilers, and boiler-feed-water pumps. Observes meters and gages to determine operating condition of equipment, and makes adjustments or minor repairs necessary to insure efficient performance. Keeps clerical records, such as temperature of equipment and hours of operation, fuel consumed, and temperature and analysis of flue gases. In most states and municipalities, licenses (first, second, or third class) are required for boiler attendance and for the operation of the various engines and machines, the worker being restricted to the operation of types and sizes of equipment authorized by the license possessed.

CRANE OPERATOR: (any ind.) 5-73. A general term applied to a worker who operates a crane to hoist and move materials, raise and lower heavy weights, and perform other related operations. Workers are designated according to the type of crane or crane attachment used, location of crane, or work performed, as DEMOLITION-HAMMER OPERATOR who raises and lowers weights to break up and crush materials; CLAMSHELL OPERATOR and ORANGE-PEEL OPERATOR when cranes are equipped with hinged-type bucket attachment; PIT CRANEMAN (bit. coal mining) and DIPPAGE MAN who move coal and other materials from pits or storage bins; and WHIRLEY OPERATOR who controls cranes that rotate through 360°.

RAILROAD CAR INSPECTOR: (r. r. trans.) 5-76.020. brake inspector; car checker; journal-box inspector; passenger-car inspector. Inspects railroad cars and tags them for needed repairs: Inspects car roofs, ice hatches, brake beams, brakes, doors, floors, couplings, wheels, and journal boxes. Packs journal boxes with lubricant. Writes and submits report on condition of each car.

GLAZIER: (const.) 5-77.010. glass setter; glassworker. Cuts and sets window or skylight glass, or glazing of any character: Cements glass panes into sash with

putty and putty knife. Installs plate glass in store fronts, bolting it to molding. Fastens by clips and bolts plate-glass panes into puttyless steel skylight sash. Installs sheets of structural glass to form decorative building fronts, walls, ceilings, or partitions by spreading mastic cement over support and pressing glass into it.

MILLWRIGHTS: (any ind.) 5-78.100. installation man; machine erector; machine repairman; machine-set-up man; maintenance mechanic; plant changer. Changes the lay-out and set-up of machines and mechanical equipment in a plant or mill wherein the machinery is usually of the heavy type, and keeps the machines and equipment in efficient operating condition: Performs duties, such as dismantling, moving, installing, or repairing machines, power shafting, pulleys, conveyors, hoist, and other equipment. Uses hoists, dollies, rollers, and trucks to aid in moving machinery. Uses wrenches, hammers, and other hand tools in erecting or dismantling machines and in installing new or repair parts. Uses measuring devices, such as squares, micrometers, calipers, and plumb bobs in erecting machine foundations, in installing the machines and equipment in correct position, and in alining power shafting and pulleys. Is primarily concerned with installing, changing lay-out and setting up machines usually of the heavy type, rather than with keeping them in a state of good repair (MAINTENANCE MECHANIC I1).

CAR REPAIRMAN: (any ind.) 5-79. A general term used to designate a worker who repairs cars operated on tracks and used for transporting passengers, or freight, such as mined or processed materials.

AUTOMOBILE MECHANIC: (auto. ser.) 5-81.010. automobile repairman; automobile-service mechanic; garage man; garage mechanic; garage repairman. Repairs passenger automobiles and light delivery trucks, performing such duties as disassembling and overhauling engines, transmissions, clutches, rear ends, and other assemblies on automobile, replacing worn or broken parts, grinding valves, adjusting brakes, tightening body bolts, and alining wheels. Uses hoists, wrenches, gages, drills, grinding wheels, and other general or specialized machines, gages, and tools. This worker may be restricted to repair of automobile motors, transmissions, and clutches, the remainder of repair work being performed by other workers (AUTOMOBILE TESTER; BRAKEMAN, AUTOMOBILE; CARBURETOR MAN; MOTOR ANALYST; TIRE REPAIRMAN; WHEEL-ALINEMENT MECHANIC).

MECHANIC AND REPAIRMAN: (any ind.) 5-83.641. fixer; machine adjuster; machine fixer; machine-maintenance man; machine overhauler; machine repairman; machine set-up man;

mechanical handyman; repair mechanic; tool-and-machine maintenance man. A classification for workers who keep machinery and mechanical equipment of an establishment in a state of good repair: Examines machines for defects in operation, locating faulty parts by listening to machine while it is in operation or by other methods based on his mechanical knowledge. Dismantles or partially dismantles machine to gain access to defective part and removes part, using various hand tools such as wrenches, screw drivers, and pliers. Repairs part, using hand tools, or obtains replacement part from stock. Reassembles machine, making necessary adjustments to insure efficient operation. Affixes special attachments, sets dies, oils and greases machinery, repairs belts (BELTMAN), and performs other similar duties as necessary. Moves heavy machine parts with aid of hoists and rollers. Is usually required to have a knowledge of the operation of machines he repairs. In general, works with lighter machinery than a MILLWRIGHT and is primarily concerned with keeping machinery in good repair rather than with changing layout and setting up or installing machines. If worker performs other types of maintenance work, such as repairing plumbing, brickwork, or electrical fixtures, he should be classified as MAINTENANCE MAN, FACTORY OR MILL.

TOOL GRINDER: (stonework) 5-84.140. Grinds the cutting tools for stoneworking planers and lathes to a keen edge of the desired shape: (1) For straightedged tools, alines and clamps tool in grinder. Adjusts stops which control travel of tool holder. Starts machine, causing holder to move back and forth across rapidly rotating wheel, and feeds wheel against edge of tool. Checks edge at intervals and removes tool when it is ground to desired edge. (2) For irregular-edged tools, lays pattern on piece of steel roughly cut to shape of tool and scratches outline on surface to which it must be ground. Adjusts tool rest on grinding wheel to proper grinding angle. Starts rotation of wheel and slides tool rest forward, bringing cutting edge into contact with wheel. Moves tool on rest so as to grind metal wheels of different widths to grind cutting edge to required shape.

REPRODUCTION OPERATOR: (any ind.) 5-86.518. Produces copies of tracings, documents, photographic positives or negatives, and other originals on cloth by photographic process: Places original on, or projects its image onto, sensitized cloth in vacuum frame (a boxline device from which air can be removed) or lithographing table. Directs light onto cloth to expose it, leaving unexposed tracing of lines and figures of original. Washes and develops reproduction (DEVELOPER). Touches up reprint by hand work with chemicals, inks, and other procedures. May produce copy in sections and match parts.

RIGGER II: (any ind.) 5-88.040. craneman; crane rigger; groundsman; hook-and-chain man; hook tender; slinger; yard rigger. Selects and attaches (rigs) proper lifting and grappling equipment and directs the lifting and moving of loads in various parts of a shipyard or manufacturing plant: Estimates weight of load to be moved and determines method best suited, using his knowledge of roping and rigging sheaves, blocks, pulleys, and booms, and the running and splicing of hemp or steel cables and ropes. Attaches load securely with loops, wires, ropes, or chains and hangs sling in crane hook. Directs crane operator with hand signals in the hoisting and moving of loads to insure safety of materials handled and the safety of workmen. Sets up, braces, and rigs hoisting equipment (RIGGER (cement; const.)). Splices rope and wire cable (CABLE SPLICER; ROPE SPLICER) to make and repair slings and tackles.

SUPERINTENDENT, GRAIN ELEVATOR: (grain and feed mill.) 5-91.031. grain-elevator foreman. A FOREMAN. Supervises workers in a grain elevator, engaged in unloading, loading, blending, and storing grain for milling or shipment. Keeps record of type of grain in each storage tank Manipulates light signals to indicate to GRAIN-ELEVATOR MAN when to begin or stop loading on conveying operations.

MACHINE FOREMAN: (mach. shop) 5-92.768. Supervises workers engaged in grinding, drilling, shaping, turning, and milling metal parts. May supervise fitting and assembling of machined, welded, or prefabricated parts into completed units.

CAR-LOADING FOREMAN: (motor trans.) 5-95.020; (r.r. trans.) 5-95.040. A FOREMAN. Supervises workers who pack and unpack materials from cases, crates, and boxes, load containers into trucks and railroad cars, and large machinery onto flatcars (CAR-UNLOADING FOREMAN).

GARAGE FOREMAN: (auto. ser.) 5-97.110 automobile-mechanic foreman; mechanic, chief; transportation-department foreman. A FOREMAN. Supervises garage workers engaged in repairing, adjusting, servicing, and storing motor vehicles operated by an industrial or commercial establishment; Supervises AUTOMOBILE MECHANICS and TRUCK MECHANICS engaged in disassembling and repairing passenger cars and trucks. Visually inspects and drives repaired vehicles to insure that repairs are adequate. Supervises TRUCK DRIVERS, HEAVY in trucking materials or carrying passengers to nearby points. Oversees tire repair and issuance of gas and oil for motor vehicles. May supervise workers engaged in the inspection and repair of miscellaneous equipment, such as cement mixers and electric trucks. May assign vehicles to drivers (DISPATCHER, MOTOR VEHICLE).

MISC. OCCUP. FOOD: 6-10. (See Dictionary of Occupational Titles.

SEWING-MACHINE OPERATOR: (any ind.) 6-27. machine hand; power-sewing-machine operator; sewer, machine; stitcher, machine; stitching-machine operator. Performs any or all sewing operations on fabrics or similar materials by use of a sewing machine to produce articles, such as garments, upholstery, awnings, or textile bags: Places spools of thread and wound bobbins on machine. Draws thread under tension spring, through guides into eye of needle. Adjusts tension on thread and raises pressure foot of machine to admit piece for sewing. Lowers presser foot onto material. Starts machine and guides material to be sewed under needle. May be designated according to the type of machine operated, as BLIND-STITCH-MACHINE OPERATOR; HEMMER; SEWING-MACHINE OPERATOR, DOUBLE NEEDLE; SEWING-MACHINE OPERATOR, MULTIPLE NEEDLE; SEWING-MACHINE OPERATOR, SINGLE NEEDLE; SHELL-STITCH-MACHINE OPERATOR; ZIG-ZAG-MACHINE OPERATOR. Classifications for sewing-machine operators are made according to the industry in which the work is done.

BELT SANDER (woodworking) 6-33.111. belt sander, hand block; belt-sander operator; belt-sanding-machine operator; flexible-belt-sander operator; flexible-belt-sanding-machine operator. Smooths rough surfaces of boxes, wooden furniture parts, milled stock, and other wooden sections or articles, using a revolving belt, surface of which is covered with abrasive material: Adjusts tension of sanding belt and height of table with handwheels. Starts belt revolving. Manipulates stock against revolving belt or presses belt down on stock with pressure block and moves table bearing stock so that entire surface of stock is smoothed. Replaces worn out belts with new ones. May be designated according to type of machine used, as BELT SANDER, HORIZONTAL; BELT SANDER, VERTICAL, or by article sanded, as HANDLE SANDER (cooperage; shaped wood. art.); MOLDING SANDER; SEAT SANDER.

TAPE MACHINE OPERATOR: (matt. & bedspring) 6-36.432. closing-machine operator; tape-machine operator. Builds up a filling for mattresses and operates a power sewing machine to sew covers around the filling: Lays innerspring assembly on machine table. Builds up desired amount of cotton felt smoothly over spring. Spreads one panel of cover over padding. Lays edges of panel and boxing in place under needle of machine with tape properly placed over seam. Lowers presser foot on edges. Starts machine and guides edges and tape together under needle by hand as machine travels around table. Stops machine and removes it from cover when panel is completely sewed. Turns spring, filling, and cover over on table, by hand. Pads exposed

side of spring and sews other panel to boxing to completely enclose mattress filling. May sew untaped seams to close cover. May sew and tape panels to borders to enclose preassembled springs and padding.

BOX MAKER, WOOD III: (any ind.) 6-39.114. box nailer; carpenter, box; carpenter, packing; case maker; crate builder; crate maker; crate nailer; nailer; sawyer. Cuts lumber to size, as shown by sketch or requisition, using hand or power-driven saw, and nails pieces together to form shipping boxes or crates (NAILING-MACHINE OPERATOR). May pack articles for shipment (PACKER II). May load containers on trucks or railroad cars.

PAPER-BAG INSPECTOR: (paper goods) 6-42.421. bag inspector; bag-machine watcher; bundler; inspector; watcher. Inspects finished paper bags to see that they are properly folded, glued, and printed: Observes bags as they are discharged from machine onto chute or thumbs through small stacks of bags, removing imperfect ones. Wipes excess glue from bags. Informs other workers who adjust bag-making machines when repeated imperfections, such as excessive glue or improper folding, are noted. Stacks bags for bundling operation, or slips paper ring around prescribed number to form bundles.

INSPECTOR II: (paper and pulp) 6-41.844. Examines sheets of paper for defects: Collects samples of paper from cutting machines or examines previously stacked sheets. Measures dimensions of sheet with a rule and folds sheets to note alinement of edges. Weighs sheets to determine if weight agrees with specifications. Discards faulty sheets, or returns stacks containing torn, soiled, streaked, or poorly shaded sheets.

PRINTING PRESS OPERATOR: (print. and pub.) 6-44.010. Operates small printing press to print tickets, tags, and posters on which style number, yardage, and similar information are shown. May also print record cards for plant office.

ENGRAVER AND PRINTERS: (print. and pub.) 6-49.920. Engraves hard rubber printing plates, cutting along scribed lines on blank plate with a knife and pulling away cut-out sections.

EVAPORATOR OPERATOR (any ind.) 6-51.758. concentrator man; evaporator man; vacuum-pan operator. Concentrates solutions and suspensions by boiling off excess water in evaporators or vacuum pans: Pumps liquids into evaporator tank or pan. Starts vacuum pumps and tends their operation to maintain specified pressure. Turns valves to pass steam into evaporator chest, coils, tubes, or jackets, and regulates steam input to maintain required

temperature. Lights gas fires under evaporator tank for auxiliary heating. Periodically tests concentration of evaporator solution, using refractometer, hydrometer, or other simple chemical tests. Adjusts feeds, temperature, and pressure in accordance with these tests. Pumps concentrated liquors to storage. May tend auxiliary equipment, such as settling tanks, preheating tanks, condensers, and cooling equipment. CAUSTIC-EVAPORATOR (chem.); GLUE-EVAPORATOR OPERATOR (glue); TOMATO-PASTE MAKER (can. & preserv.)

CHEMICAL PLANT OPERATOR: (chem.) 6-52.770. Tends a number of pieces of automatic and semiautomatic equipment to carry out chemical reaction processes: Performs a sequence of operations on equipment which is operated under atmospheric or low pressure, maintaining temperature and pressure control within relatively broad limits as contracted to CHEMICAL OPERATOR III who tends high-pressure equipment and works within highly critical limits. Inspects equipment, looking through sight glasses and peepholes. Observes automatic temperature and pressure recorders, and performs simple chemical tests. Regulates operation of equipment accordingly to obtain required product, adjusting feeds of gaseous, liquid, and solid materials to reactors and introducing coolants or steam to the cooling and heating systems.

MIXING-MACHINE OPERATOR: (any ind.) 6-53.012. chemical mixer; mixer, machine. Mixes ingredients to prepare products, such as rouge, tooth paste, shaving cream, pills, and chemical materials, by machine: Weighs and measures ingredients according to formula. Pours ingredients in bowl of mixer, which may be an open trough with paddles, a kettle with agitating arms, or an enclosed mixer. Starts mixer, allows it to run specified time, and removes mix by opening drain or tilting. Cleans equipment with hot water and cloths. May make routine tests and adjust mixture to specifications.

INSPECTOR I: (ammunition) 6-54.038. inspector, metal components. Examines metal components of ammunition, such as primers, cartridges, cases, shells, and bombs, for defects of material or workmanship: Picks up parts for examination or scrutinizes parts moving on conveyor. Examines metal components for irregularities, such as scaly metal, malformations, discolorations (indicative of improper heat treating), nicks, burrs, and dents. Smooths minor imperfections with file, portable grinder, or chisel. Gages components for sizes (GAGER (mach. shop)). Segregates imperfect parts according to nature of defects. Inspects interiors of shell or bomb parts, using light bulb. May examine cases for conformance to dimensions, using electric limit gage equipped with colored lights. May test welded parts of bombs and shells for airtightness

with compressed-air hose and soap solution. May gage strength of fitted or welded parts of ammunition, using bullet-pull-tester or hydraulic pump equipped with hooks and dial indicators. Sometimes designated as inspector, bomb; inspector, cartridge; inspector, case; inspector, shell; inspector, tracer bullets.

ACID MIXER: 6-55.530. Mixes sulfuric acid of different concentrations to prepare acids for the treatment of oil: Unloads fuming (concentrated) acid from tank cars, connecting pump-out or pressure lines, and turning on compressed air to force acid into storage drums. Forces fuming acid into mixing tank in same manner and gages tank with steel tape to determine amount of weaker acid to be added. Operates pumps to force weaker acid into tank, adding calculated amount to produce an acid of required concentration. Sets line valves and operates pumps to transfer acid through lines to various treating plants and stills. Keep records of acid received, mixed, and transferred.

BOTTLE MACHINE OPERATOR: (glass mfg.) 6-65.420. Tends automatic machine which forms bottles from molten glass: Regulates flow of molten glass to machine by turning valve on furnace outlet, and sets lubrication valves to an adjustment which prevents glass from sticking to molds. Occasionally picks up finished bottle and, using tongs, places it on scale for check-weighing. Regulates glass-flow valve accordingly. Notifies foreman whenever turning of machine is difficult.

MOLD MIXER: 6-66.411. blocker; caser. Makes block mold, case mold, and working molds of plaster of paris: Sets model (of clay or plaster) in clay so that only one half is exposed. Applies soap solution to model. Sets wooden form around or builds up wooden box sides around model. Pours plaster of paris over model to make one half of block mold. After it has dried, turns this half over, leaving model in it. Builds box sides as before. Pours in plaster to form other half of block mold. Using as pattern, casts case mold in same way as above. Using case mold as pattern, casts several dozen working molds, which duplicate block mold exactly, in same way.

INSPECTOR I: (any ind.) 6-67. A general term applied to a worker who examines or tests articles and materials for serviceability and conformity to specifications after various stages of manufacturing or processing, or after completion, or who examines equipment, machines, and tools for serviceability after periods of use.

POLISHER: (any ind.) 6-77.060. Polishes metal articles by holding the articles at various angles against a rotating wheel to polish them uniformly and to remove surface

blemishes: Selects proper polishing wheel, such as wire brush, abrasive-coated cloth, or emery-covered cloth, depending on type of finish desired. Applies tallow wax or other wheel-dressing compounds to wheel to aid in polishing. Polishes those parts of the articles that cannot be reached by the wheel by rubbing with emery cloth. May clean metal objects in chemical and water baths, preparatory to polishing (PICKLING OPERATOR). May be designated as BRASS POLISHER I; BRONZE POLISHER.

LATHE OPERATOR: (mach. shop) 6-78.165. Shapes and finishes precision machined parts on one or more multiple-chuck automatic lathes: Lifts parts into machine and clamps them in place, alined with cutting tools. Operates electric switches and hand levers to start machine, which automatically performs a series of operations, such as facing, surfacing, chamfering, boring, tapping, rough cutting, and finish cutting. Loads one machine while others are operating. Removes finished pieces, inspecting them visually and by gage. Observes operation of machines closely to locate tool defects or failures, and changes defective tools. May set up machine (JOB SETTER).

MACHINE MOLDER: (found.) 6-81.010. Makes various sized sand molds into which molten metal is poured to form castings, using a jarring machine to compact the sand in the molds: Assembles flask and pattern on table of machine. Shovels sand into flask and opens compressed-air valve, causing table to rise and fall repeatedly and thus jolting the sand so that it compacts about the pattern. Turns flask over and carefully withdraws pattern. Assembles cope (upper) and drag (lower sections of molds. May assist in pouring molten metal into molds.

FLAME-CUTTER OPERATOR (any ind.) 6-85.215. burner; burner operator; flame burner; flame cutter; gas-burner operator; gas cutter; torch shearer. Sets up and operates gas-burning (cutting) equipment that uses acetylene, thermalene, propane, or other appropriate gas to perform metal-cutting operations: The object cut and the purpose of cutting vary in different establishments, such as burning sprues from castings in a foundry, cutting up scrap metal in a scrap-metal yard, or trimming girders or other structural shapes on a project. Assembles cutting equipment by connecting torch to hose and hose to regulator on appropriate gas tanks. Screws proper tip into torch nozzle, lights torch, and regulates the flow of gases to obtain a suitable cutting flame by manipulating small valves on handle of torch. Holds torch to metal and guides torch along the desired cutting line as the flame cuts a narrow channel

through the metal. May interpret blueprints or sketches and lay out (mark) cutting lines on the metals, using scales, dividers, and other instruments. May charge gas generator by renewing gas-generating chemicals and manipulating valves and other mechanism on tanks. Frequently the worker is familiar with only one type of cutting operation, such as cutting scrap metal, and is not transferable to other types of cutting. May weld (WELDER, ACETYLENE). May operate a flame-cutting machine (FLAME-CUTTING-MACHINE OPERATOR).

IRONWORKER-MACHINE OPERATOR: (boilermaking) 6-88.662. Operates a special power-driven machine to cut, trim, or punch bars, angle irons, or plates used in the fabrication of boilers and tanks: (1) Cuts bars and angle iron to length by inserting bar or angle iron into cutting slot on machine, alining lay-out marks on bar with edge of shear blade, and moving lever that causes blade to descend and cut through bar or angle iron at mark. (2) Trims edges of small pieces of boilerplate by inserting the plate between knives of scissorlike slitter and moving levers to bring knives together and cut plate along lay-out marks on plate. (3) Punches holes in small pieces of boilerplate by inserting the plate under punch on machine, alining lay-out marks under punch, and moving lever that causes punch to descend and shear through plate.

POURER, CRANE LADLE (found.) 6-91.613. ladle man; ladle tender. Pours metal from a large ladle suspended from an overhead traveling crane: Signals ELECTRIC-BRIDGE -CRANE OPERATOR to transport ladle to a location beneath melting furnace. May assist CUPOLA TENDER in filling ladle. Signals ELECTRIC-BRIDGE-CRANE OPERATOR to convey ladle to location where metal is desired. Operates geared handwheel to tilt ladle and pour molten metal into large molds or into smaller ladles. Pours surplus metal into pig molds. Inverts ladle and dumps slag. Cleans and repairs ladle for next pouring (LADLE LINER).

SHEET-METAL-WORKER HELPER (sheet metal) 6-94.201. tinsmith helper. Assists SHEET-METAL WORKER by performing the more simple flanging, punching, shearing, and soldering operations in the fabrication of sheet-metal products, using various hand tools and sheet-metal-working machines. Performs other duties as described under HELPER.

WELDER HELPER, COMBINATION (any ind.) 6-95.043. Performs duties as described under HELPER. A worker who assists another worker by performing specific or general duties usually of lesser skill, such as keeping a worker supplied with materials, tools, and supplies; cleaning

working area, machine, and equipment; performing routine machine operations, such as feeding or unloading machine; and assisting worker by holding materials or tools. The title, HELPER, is sometimes loosely used as a synonym for APPRENTICE, which practice is technically incorrect. A HELPER may learn a trade but does so on his own, without an agreement with his employer that such is the purpose of their relationship. Classifications for HELPERS are made according to the type of work involved.

ASSEMBLER: (elec. equip.) 7-00.921. Puts together mechanical parts of such electrical equipment as light sockets, switches, plugs, and similar small parts: Fits together, by hand, numerous small parts, such as plastic socket bases, shafts, contacts, brackets, springs, washers, and terminals, following a prearranged sequence, using a screw driver as necessary to tighten entire assembly. Tests operation of moving parts by observing their action and listening for sounds indicative of defective parts of faulty operation. May be designated according to type of equipment assembled, as PULL-SOCKET ASSEMBLER; TUMBLER-SWITCH ASSEMBLER.

LINE-ASSEMBLY INSPECTOR: (aircraft mfg.) 7-03.801. Visually inspects assembled aircraft carburetors on conveyor line for tightness of wires, belts, and screws, condition and position of gaskets, and appearance of painting. Routes rejected assemblies to designated departments.

LENS-EDGE GRINDER, HAND: (optical goods) 7-08.065. edger; lens edger. Grinds edges of lenses or lens blanks by manually holding lens edge against a revolving wet grindstone, allowing lens to turn slowly and exercising care to exert proper pressure to avoid chipping or cracking the lens as it is ground. Bevels or square-cuts lens edge for rimless or frame spectacles. Measures lens for conformance to specifications (LENS-BLANK GAGER). May finish-grind machine-edged or molded lenses by hand to eliminate defects. May dress grinding wheel (GRINDING-WHEEL DRESSER). May be designated as bevel-edge grinder; rimless-edge grinder; molded-blank-edge grinder.

COMPRESSION-MOLDING-MACHINE OPERATOR: (fabric, plastics prod.) 7-10.014. hydraulic-press operator; molder; molder operator; mold setter; plunger operator. Sets up and tends one or more compression-molding machines that mold thermosetting plastics materials into desired shape: Sets up compression-molding machine (MOLD SETTER I). Loads plastics material into machine and molds plastics object (COMPRESSION-MOLDING-MACHINE TENDER). May position a variety of inserts in mold cavity prior to molding object. May disassemble mold to remove plastics object and assemble mold for reuse. May heat plastics material or preformed plastics material over steam table

or in automatically controlled oven to prepare material for molding. May be designated according to kind of molded plastics object or according to type or trade name of press, as helmet pressman; celluloid-compressor operator; Mycalix-press operator. Worker who only tends machine should be classified as COMPRESSION-MOLDING-MACHINE TENDER.

PAINTER, SPRAY I: (any ind.) 7-16.210. airbrush operator; sprayer; sprayer operator; spray-gun operator; spray man; spray masker. Coats surfaces of machines, manufactured articles, and working areas with finishing or protecting material, such as enamel, lacquer, paint, porcelain glaze, stain, and waterproofing, using a spray gun: Stirs coating liquid with paddle and pours it into spray-gun container. Couples gun to air hose and starts compressor, or opens valve on compressed air line. Adjusts nozzle of gun by turning adjusting sleeve. Squeezes trigger and directs spray over surfaces to obtain smooth, even finish. Cleans gun and hose with solvent. May place articles in revolving holder before spraying. May do two-color work by masking areas with tape to shield them from second coloring. May be designated according to article sprayed or material used, as ARTIFICIAL-LIMB SPRAYER; ENAMELER (pottery & porc.); HAT SPRAYER; JAPANNER I; LACQUERER; LACQUER SPRAYER; MOLDING FINISHER; PAINTER, ORDNANCE; PANEL FINISHER; PORCELAIN-ENAMEL SPRAYER; SLUSHER SPRAYER; SPRAYER, AUTO PARTS; SPRAYER, RAILROAD CAR.

LOADER, MACHINE: (anth. coal mining; bit. coal mining) 7-21.410. loader engineer; loader operator; loader runner; loading-machine man; loading-machine operator; loading-machine runner. Operates an electric loading machine which digs, elevates, and loads coal blasted from the working face into cars by means of a conveyor loaded by a scraping device, a digging conveyor, or a shoveling mechanism: Mounts track-mounted machine or crawler-tread-mounted machine in working place. Adjusts sectional conveyor system which extends from the front of the machine to the rear. Makes power connections and starts machine. Manipulates levers to sump (advance) machine into the pile and to keep the conveyor lip in contact with the loose material, the coal being scraped up by clawlike gathering arms or an endless conveyor scraper, or scooped up by a small shovel and forced back onto the conveyor which elevates and discharges it into cars at the rear. Advances machine across face as loading progresses. Lubricates, adjusts, and makes minor repairs to machine as needed. May be designated according to machine used, as JOY LOADER.

BLADE-GRADER OPERATOR: (const.) 7-23.010. blade man; grader, machine; road grader; subgrade finisher. Hitches blade

grader to team or tractor. Stands on platform of blade grader and manipulates hand controls to guide machine and set depth of grading blade to perform finishing work, as scraping and leveling dirt on highways and finishing subgrade for roads, and to perform rough work, as making shallow cuts and leveling banks. The rough work and finishing may be performed by separate workers.

PAINTER, ROUGH: (const.) 7-27.010. painter, brush; painter, exterior; painter, plain. Performs a type of painting work (PAINTER) generally classified as rough work, usually on the exteriors of such structures as barns, sheds, highway guard rails, and fences, but does not possess the skill or experience to perform finish painting work, such as interior decoration, or tinting and shading work. May mix paints and match colors, or use prepared paints (PAINTER).

PIPE-FITTER HELPER: (const.) 7-32.811. fitter helper. Assists in cutting, threading, and connecting pipe for gas, water, and air lines: Selects proper size of pipe from stock pile. Holds section of pipe with pipe wrench while PIPE FITTER attaches next section. Performs other duties as directed (PIPE CUTTER; PIPE THREADER, HAND).

TRUCK DRIVER, HEAVY: (any ind.) 7-36.250. Drives a truck with a capacity greater than 3 tons to haul heavy loads performing duties as described under TRUCK DRIVER, LIGHT.

TURBINE ATTENDANT: (light, heat, & power) 7-51.030. Observes and records readings of various meters and recording instruments, such as oil and steam thermometers and pressure gages, on each of several turbines and their driven generators which produce electricity (in contrast to recording powerhouse control-board readings (POWER-HOUSE RUNNER)). Notifies STATION SUPERVISOR of dangerous fluctuations in pressure and temperature. Cleans and oils equipment (POWERHOUSE OILER).

WATER FILTERER: (waterworks) 7-54.621. filter operator; purifying-plant operator; water-control station engineer; water-filter plant tender; water purifier. Purifies water for industrial processes or to prevent accumulation of scale in boiler tubes or pipes of drinking water system: Admits water into flume or large tank. Adds specified amounts of chemicals or adjusts automatic device which admits chemicals in correct proportion. Starts agitators to mix ingredients. Allows impurities, precipitated by chemicals, to settle to bottom of tank. Removes fine suspended impurities by draining water through filter (sand) beds. Pumps purified water into water main. Cleans tanks and filter beds by flushing with a hose or backwashing (reversing flow of water). Makes minor repairs to machinery and equipment. May test acidity

and color of water by standard color reaction tests, and test amount of impurities in water, using conductivity meter, adding alum and caustic to coagulate impurities and reduce acidity. May filter water through rotating screens to remove coarse impurities.

PRESSER: (any ind.) 7-57. A general term applied to a worker who heats or presses materials or articles to smooth, shape, or compress them, or to extract liquids from them.

GASOLINE ATTENDANTS: (auto. ser.) 7-60.500. Performs duties at automobile service station as requested by customer: Supplies car or truck with oil, water, air, and gasoline. Changes oil and lubricates automobile or truck (GREASER). Sells and installs such accessories as windshield wipers, rear-view mirrors, and spark plugs. Changes and repairs tires (TIRE CHANGER; TIRE REPAIRMAN). May wash automobiles (CLEANER III (any ind.)).

FIREMAN, STATIONARY BOILER: (any ind.) 7-70.040. boilerhouse man; boilerman; boiler operator; boiler-room man; fireman, boilerhouse; fireman, stationary. Fires stationary boilers (FIREMAN, HIGH PRESSURE) used in a factory, power plant, or other establishment to generate power or to supply steam for industrial processes.

OILER: (any ind.) 7-71.010. Lubricates mechanical equipment in same manner as OILER I. Usually selects proper lubricants and performs additional duties that vary considerable in different plants, such as firing boilers in engine room or boiler-house (FIREMAN, HIGH PRESSURE), assisting STATIONARY ENGINEER or other superior to repair and overhaul machines and motors, and operating, or relieving superiors in operation of, motors, engines, and machines.

PUMPMAN: (any ind.) 7-72.510. pumper; pump-machine operator; pump minder; pump operator; pump runner; pumpsman; pump tender. Tends and maintains one or more power-driven pumps used to pump liquids from one vessel to another, to pump liquids from storage tanks to processing equipment, or to pump liquids from one process to another: Starts pumps. Stands by while pumps are in operation, increasing or decreasing force of pumping as conditions warrant. Cleans, greases, oils, and adjusts pumps. Usually receives instruction from superior as to amount of liquid to be pumped and is not responsible for mixing or processing of liquids. May repair pumps. May connect pipe lines from pumps to vessel to be filled or emptied.

CRANE OPERATOR, PORTABLE: (ship & boat bldg. & rep.) 7-73.010. mobile hoistman. Moves designated loads from point to point in a shipyard, using a tractor equipped with a

1-ton hoist: Starts engine by turning crank. Drives tractor to required place, hooks onto pile or part, and raises it clear from ground by manipulating a lever. Drives to unloading point, lowers load to ground, and unhooks.

CARMEN HELPER: (loco. & car bldg. & rep.) 7-79.130. Assists CARMEN in building, repairing, dismantling, and assembling various types of railroad cars: Oils cars and packs grease cups. Threads bolts (BOLTS-THREADING-MACHINE OPERATOR). Drills, punches, and shears bar and scrap metal stock. Taps nuts (NUT-TAPPING-MACHINE OPERATOR). Bucks rivets (BUCKER-UP (const.; ship & boat bldg. & rep.)). Straightens metal parts with hammers and sledges. Refinishes brass trim on cars. Repairs steam and air hose. Removes paint from inside and outside of cars and washes surfaces preparatory to painting. Keeps stock and performs other duties as assigned.

MECHANIC ASST.: (auto ser.) 7-81.010. Assists AUTOMOBILE MECHANIC by performing lesser skilled duties involved in automobile repair and maintenance, such as greasing and oiling cars and trucks (GREASER), washing automobiles and trucks (CLEANER III (any ind.)), and making minor adjustments and repairs to automobile under close direction of AUTOMOBILE MECHANIC.

MAINTENANCE MAN: (any ind.) 7-83. repairman; serviceman; service worker; trouble man; trouble shooter. A general term used to designate one who keeps machinery, equipment, or structure of an establishment in good repair, and is capable of using the tools of one trade, such as carpenter's tools, machinist's tools, or painter's tools. Sometimes designated according to trade, as MACHINIST, MAINTENANCE, or according to type of equipment maintained (repaired), as ELEVATOR REPAIRMAN, (MAINTENANCE MAN, BUILDING; MAINTENANCE MAN, FACTORY OR MILL.)

GREASER: (auto. ser.) 7-85.010. bus greaser; car greaser; car oiler; grease man; grease monkey; lubrication man; lubricator, oiler; truck greaser; truck oiler. Lubricates parts of automobiles, busses, or trucks, using the proper type of lubricant on various parts of chassis or motor: Injects grease at various points on chassis, such as alemite cups on springs, universal joints, and steering knuckles, using hand-operated or compressed air-operated grease guns. Inspects transmission, differential, and rear axle housings and fills them with grease. Drains and refills crankcases. Sprays spring leaves with lubricant, using spray guns. May add water to radiator, check and add distilled water to battery, clean and polish windshield and door glass, repair flat tires, mount tires on wheel rims, inflate tires and perform other related duties as assigned. (AUTOMOBILE-SERVICE-STATION ATTENDANT.)

ELECTRIC-TRUCK OPERATOR: (any ind.) 7-88.410. electric-mule driver; electric-tractor operator; electric-truck driver; industrial-truck driver; inside-delivery transfer man; jitney operator; power trucker; transfer operator. Drives a small truck powered by electric batteries, used for hauling heavy materials in and about an industrial plant or other establishment: Controls starting or stopping and forward or backward motion of truck by manipulating levers. Steers truck by means of a steering bar or wheel. If truck is equipped with a lift platform, controls lifting mechanism by manipulating a lever. May load and unload truck or hand trucks towed by it. May maintain equipment (ELECTRIC-TRUCK REPAIRMAN).

EXTERMINATORS: (bus. ser.) 7-89.121. Kills, by application of chemicals, vermin such as roaches, beetles, moths, ants, bedbugs, rats, and mice which infest buildings: Fumigates rooms, apartments, and entire buildings with one of several types of vermin-killing gases. Sprays chemical solutions throughout rooms and into hiding places with a spray gun to kill insects. Dusts sodium fluoride and other poisonous chemical powders into hiding places or roaches. Sets out poisonous paste or bait in boxes or other containers at or near places where vermin are present. Removes mattresses, upholstered furniture, and clothing from building and fumigates them in a vault at the business establishment to destroy insects.

CARPENTER APPRENTICE: (const.) 7-93.100. A worker who learns, according to a written or oral contractual agreement, a recognized skilled trade requiring 2 or more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

MACHINE APPRENTICE: (mach. shop) 7-94.100. A worker who learns, according to a written or oral contractual

agreement, a recognized skilled trade requiring 2 or more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

ELECTRICIAN APPRENTICE: (any ind.) 7-95.100. A worker who learns, according to a written or oral contractual agreement, a recognized skilled trade requiring 2 or more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

PIPE-FITTER APPRENTICE: (const., ship & boat bldg. & rep.) 7-96.200. A worker who learns, according to a written or oral contractual agreement, a recognized skilled trade requiring 2 or more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade

as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

SHEET METAL APPRENTICE: (sheet metal) 7-97.040. A worker who learns, according to a written or oral contractural agreement, a recognized skilled trade requiring 2 or more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

PRINTER APPRENTICE: (print. & pub.) 7-98.010. A worker who learns, acccrding to a written or oral contractural agreement, a recognized skilled trade requiring 2 or more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

MILLWRIGHT APPRENTICE: (any ind.) 7-99.025. A worker who learns, according to a written or oral contractural agreement, a recognized skilled trade requiring 2 or

more years of on-the-job work experience and related instruction prior to the time that he may be considered a qualified skilled worker. APPRENTICES are seldom over 30 years of age. The terms of an apprenticeship agreement usually include specific reference to the duration of the apprenticeship period, a progressive scale of wages, the processes to be taught, and the amount of related schooling in vocational subjects which worker should receive during his apprenticeship period. It is essential that both management and labor accept the trade as apprenticeable and requiring all-around skill. This acceptance is best evidenced by registration of the trade as apprenticeable by the Federal or a State apprenticeship agency. The title, APPRENTICE, is often loosely used as a synonym for HELPER or LEARNER, which practice is technically incorrect, and leads to confusion in properly determining what is meant.

LABORER-MISCELLANEOUS FOOD: 8-10.91. A classification title for jobs bearing this industrial designation and code number.

LABORER-WOODWORKING: 8-33.11. A classification title for jobs bearing this industrial designation and code number.

PLUGGER: (plan. mill) 8-34.02. A LABORER. Assists SWINGING-CUT-OFF SAW OPERATOR in setting lumber in place on saw table and in sliding lumber along table for desired cuts.

MACHINE TENDER AND DECKMAN: (paper & pulp) 8-41.01. Fills mixer with water, casein, lime, starch, or other ingredients, and agitates mixture to make coating for paper: Drains mixture into tubs for further processing. May cook ingredients, such as starch and casein, preparatory to making coating mixture. May weigh ingredients before loading mixer.

BAG-MACHINE OPERATOR: (paper goods) 8-42.01. A LABORER. Tends machine that automatically prints, cuts, and glues roll of paper to make finished paper bags. Observes bags as they are ejected from machine to determine that bags are properly formed and glued. Stops machine if roll of paper breaks or if machine is not functioning properly and notifies BAG-MACHINE OPERATOR HELPER to correct minor troubles.

PRESSMAN APPRENTICE: (print. & pub.) 8-49.01. A LABORER. Assists PRINTER in setting up type and in printing operations, performing duties as described under HELPER.

LABORER-PLASTICS: 8-51.41. A classification title for jobs bearing this industrial designation and code number.

LABORER-IND. CHEM.: 8-52.71. A classification title for jobs bearing this industrial designation and code number.

LABORER-CHEM. N.E.C.: 8-53.90. A classification title for jobs bearing this industrial designation and code number.

EXPLOSIVE OPERATOR II: (ammunition) 8-54.01. A LABORER. Performs any one of a number of simple, repetitive, manual tasks (all of which require a working knowledge of open explosives) incidental to the manufacturing, assembling, and loading of fuses, detonators, primers, boosters, shells, and bags: Performs duties, such as weighing, blending, and pouring explosives into containers, compressing powder into pellets, screwing together threaded parts of shells, and checking dimensions of ammunition. Usually designated according to product worked on, as explosive operator, bomb; explosive operator, fuse; explosive operator, grenade.

OPERATOR HELPER: 8-55.01. A classification title for jobs bearing this industrial designation and code number.

LABORER-MISCELLANEOUS PETROLEUM: 8-56.01. A classification title for jobs bearing this industrial designation and code number.

GLASS-PRODUCTS INSPECTOR: (glass mfg.) 8-65.01. A LABORER. Visually examines finished glassware, such as dishes and automobile light lenses, for blisters, cracks, strains, and other obvious defects. May clean and polish glassware with soft cloth. May wrap glassware in paper.

BRICKLAYER HELPER: (brick & tile) 8-66.01. A worker who assists another worker by performing specific or general duties, usually of lesser skill, such as keeping a worker supplied with materials, tools, and supplies; cleaning working area, machine and equipment; performing routine machine operations, such as feeding or unloading machine; and assisting worker by holding materials or tools. The title, HELPER, is sometimes loosely used as a synonym for APPRENTICE, which practice is technically incorrect. A HELPER may learn a trade but does so on his own, without an agreement with his employer that such is the purpose of their relationship.

AIR-TOOL OPERATOR: (const.) 8-67. pneumatic-tool operator. A general term applied to any worker who operates a tool driven by compressed air to perform such work as breaking old pavement, loosening or digging hard earth, trimming bottom and sides of trenches, breaking large rocks, driving sheeting, chipping concrete, trimming

or cutting stone, or calking steel plates. Classifications are made according to kind of work performed, as DRIFTER; DRILLER, HAND I (any ind.); PAVING-BREAKER OPERATOR; SHEET-PILE HAMMER OPERATOR; STEEL-PLATE CALKER; STONE DRILLER (stonework); TUNNEL CALKER.

MACH. HELPER: 8-78.10. A classification title for jobs bearing this industrial designation and code number.

SANDBLASTER HELPER: (any ind.) 8-82.11. sandblast-machine operator; sandblast-pressure-tank loader. Loads and regulates operation of machine which produces a sandblast for cleaning dirt and scale from metal or masonry surfaces: Connects compressed-air hose and sand hose to machine. Dumps sand abrasive into hopper of machine. Opens air valve. Opens sandblast valve at signal of SANDBLASTER (any ind.) or SANDBLASTER (const.), releasing sand through the hose under pressure. Replenishes mixture in hopper and regulates sandblast pressure by manipulation of valves.

HEAT-TREATER HELPER: (heat treat.) 8-87.10. A LABORER. Assists HEAT TREATER III by cleaning metal parts and stringing them together with wire prior to heat treating. Protects threaded parts by covering threads with asbestos cement. Loads parts on hand truck and pushes to furnace.

CLASSIFIED-OPERATOR HELPER (ore dress., smelt., & refin.) 8-92.61. hydrate-thickener-operator helper. A LABORER. Assists CLASSIFIED OPERATOR in operating hydroseparators, thickeners, and classifiers to separate coarse and fine precipitated alumina particles from rich liquor: Turns screws to raise and lower rakes in separators and thickeners. Adjusts strokes of pumps that pump fine particles of alumina to seed storage tanks. Performs other duties as described under HELPER.

CRANEMAN: (forging) 8-93.71. A LABORER. Assists DROP-HAMMER OPERATOR I to reduce hot steel blooms to smaller billet-size dimensions: Manipulates levers of hoist to move, lift, and support blooms on anvil of drop hammer. Guides movement of blooms on anvil following signals from DROP-HAMMER OPERATOR I.

LABORER-LIGHT FIXTURES: 8-94.11. A classification title for jobs bearing this industrial designation and code number.

ELECTRICIAN HELPER: (any ind.) 9-00.95. electrical-wireman helper; wireman helper, Performs duties as described under HELPER.

WASH RACK BOY: (auto. mfg.) 9.02.01. car washer. A LABORER. Washes finished cars with a hose and dries them with cloths and chamois skins.

BUMPER-OPERATOR HELPER: (aircraft mfg.) 9-03.01. power-hammer-operator helper. A LABORER. Assists BUMPER OPERATOR to shape or smooth sheet metal according to specifications: Changes dies of machine as instructed. Holds and manipulates one end of large sheets of metal in machine as directed. Cleans and oils machine when necessary.

PAINTER, BRUSH: (any ind.) 9-16.90. painter, hand. Applies coats of ready-mixed paint, stain, or varnish to fabricated articles with a brush. May sandpaper intermediate coats to remove rough spots. May be designated according to article painted, as PAINTER, DRUM.

CARPENTER HELPER: (const.) 9-32.01. Assists CARPENTER in constructing wooden structures: Cleans used lumber, and selects and saws new and used lumber to size specified by CARPENTER. Carries materials, such as lumber, shingles, and nails, to work site. Holds and braces lumber and carries tools. May dig and level ground with pick and shovel. May place guy wires and spring cables.

DECKHAND: (const.; water trans.) 9-48.10. Performs manual duties aboard tugboats, barges, or river boats, under direction of officers, such as fastening hawsers and mooring ropes to tows or piers, scrubbing decks, loading and unloading material, and keeping a lookout for obstructions in path of boat. May be designated according to type of watercraft used in work done, as BARGEMEN; DREDGE DECKHAND; SCOW DECKHAND; TUGBOAT DECKHAND.

BUNDLERS - WRAPPERS AND PACKERS: (any ind.) 9-68.30. Wraps packages or finished products of an establishment, making a neat, durable bundle. Secures package with twine, ribbon, gummed tape, or paste. May cursorily inspect articles before wrapping for defects, size, color, number, or other items. May segregate articles according to size or type, or according to customers' orders. May be designated according to container wrapped, as BOX WRAPPER.

BOILER-ROOM HELPER: (any ind.) 9-70.10. A LABORER, BOILER AND FURNACE. Assists FIREMAN, STATIONARY BOILER, performing duties as described under HELPER: Wheels coal to fire door (COAL PASSER). Removes and wheels ashes to waste-disposal area (ASHMAN). Cleans boilers (BOILER CLEANER). Paints and polishes boiler parts and power-plant equipment.

OILER: (any ind.) 9-71.01. Lubricates in routine manner the moving parts or wearing surfaces of mechanical equipment, such as shaft and motor bearings, sprockets, drive chains, gears, and pulleys, working in engine room or throughout the plant: Fills oilcan, grease gun, or other container with lubricant. Squirts or pours oil on moving parts or into holes, oil cups, or reservoirs. Adjusts feed of oil from cups or reservoirs so that proper amount reaches moving parts. Forces grease into bearings with grease gun, or packs grease cups by hand and screws down cap to force grease to moving parts. Pours oil or smears grease on friction surfaces, such as driving chains and guides. Keeps sumps or wells for lubricating systems filled with oil. Cleans machines and equipment (MACHINE CLEANER).

MAINTENANCE MECHANIC: (any ind.) 9-83.641. A classification title for workers who keep machinery and mechanical equipment of an establishment in a state of good repair: Examines machines for defects in operation, locating faulty part by listening to machine while it is in operation,or by other methods based on his mechanical knowledge. Dismantles or partially dismantles machine to gain access to defective part and removes part, using various hand tools such as wrenches, screw drivers, and pliers. Repairs part, using hand tools, or obtains replacement part from stock. Reassembles machine, making necessary adjustments to insure efficient operation. Affixes special attachments, sets dies, oils and greases machinery, repairs belts (BELTMAN), and performs other similar duties as necessary. Moves heavy machine parts with aid of hoists and rollers. Is usually required to have a knowledge of the operation of machines he repairs. In general, works with lighter machinery than a MILLWRIGHT, and is primarily concerned with keeping machinery in good repair rather than with changing layout and setting up or installing machines.

CLEANER III: (any ind.) 9-85.02. Cleans interiors and exteriors of transportation vehicles, such as airplanes, automobiles, busses, railroad passenger cars, and streetcars: Cleans interior with broom, cloth, mop, vacuum cleaner, and whisk broom. Cleans windows with water, cleansing compound, and cloth or chamois. Removes dust, grease, and oil from exterior surfaces by spraying or washing them with soap and water or acid solutions, rubbing surfaces with brush or sponge. Washes off solutions with clean water and sponge. May be designated according to type of vehicle cleaned, as AIRPLANE CLEANER; AUTOMOBILE POLISHER; AUTOMOBILE WASHER; BUS CLEANER; CAR CLEANER; COACH CLEANER; WAGON WASHER. May polish exterior by rubbing it with liquid polish or wax, and cloth.

STOCK BOY: (any ind.) 9-88.40. errand boy; parts chaser; stock handler; stock helper; supply boy; supply clerk; supply-room runner. A LABORER, STORES. Replenishes depleted stock or materials in the operating departments of a manufacturing plant, department store, or other establishment, either carrying the stock or materials or pushing them on a handtruck or rack from the supply room (TRUCKER, HAND). Usually obtains supplies only on requisition. May keep records of supplies obtained. May sort supplies in stockroom and pile them on shelves or in bins (STOCK CLERK). Feminine titles: ERRAND GIRL; STOCK GIRL; SUPPLY GIRL.

WASTE MATERIALS OPERATOR: (any ind.) 9-88.86. Salvages rubber, cloth, metal, and other materials from scrap, refuse boxes, and floor sweepings. Sorts materials according to type, quality, condition, coloring, marking, and other characteristics. Separates metal particles, using magnet or wire screen. Bales materials and stacks bales. Fills customers' orders by weighing required quantities. Removes baled or loose materials.

APPENDIX C

INTERVIEW SCHEDULE

CON

Name of Firm _____

Kind of Business (or Major Product) _____

Name of Person Completing this Form _____

Title _____ Date _____

JOB TITLE OR OCCUPATION	Workers in this Job January 1, 1965		Number of workers in the Following Age Groups				Number of Workers Hired During the Past Year		Nu C Va P
	Male	Female	Under 21	22-45	46-65	Over 65	To Maintain Normal Operations	Due to Expansion	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
(1)									
(2)									
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
(11)									
(12)									
(13)									
(14)									
(15)									
(16)									
(17)									
(18)									
(19)									
(20)									
(21)									

CONFIDENTIAL REPORT ON MANPOWER

The purpose of this survey is to determine the manpower and training needs for technical, skilled, office, medical and health occupations in Louisiana at the present time and to estimate these needs for the next ten years. The validity of this survey will depend upon the response from Louisiana industry in furnishing the data requested in this questionnaire. If exact data are not available, reliable estimates are requested from respondents. Only summary data will be published and respondents will not be identified.

Number of Workers Hired During the Past Year		Number of Current Vacancies For This Job	Number of Trainees Receiving Formal In-plant Training to Enter This Position	Approximate Entry Wage For This Job	Experience Requirements for this Job				Education Requirements for this Job					
To Maintain Normal Operations	Due to Expansion				None Established	Job Experience	Trade Experience	Completion of Formal Training	None Established	Some High School	High School Graduate	Some College	College Graduate	No E...
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(

Total Number of Persons on your Payroll January 1, 1960 _____

Total Number of Persons on your Payroll January 1, 1965 _____

Total Number of Persons on your Payroll N O W _____

Education Requirements for this Job					Training Requirements for this Job					Preference to Hire Equally Qualified Men or Women			Estimated Required Employment in Job		
None Established	Some High School	High School Graduate	Some College	College Graduate	None Established	Apprenticeship	Business or Trade School	Technical School	Formal In-plant	Men Only	Women Only	Either	1967	1970	197-
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)

VT 002 584
Kaufman, Jacob J., And Others
The Role of the Secondary Schools in the Preparation of Youth for Employment. Summary, Conclusions, and Recommendations.

Pennsylvania State Univ., University Park. Inst. for Research on Human Resources
Office of Education (DHEW), Washington, D.C.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Feb67 22p.

*VOCATIONAL EDUCATION; *PUBLIC OPINION; HIGH SCHOOL GRADUATES; *PROGRAM ADMINISTRATION; TEACHER EDUCATION; ADVISORY COMMITTEES; OCCUPATIONAL GUIDANCE; JOB PLACEMENT; *PROGRAM EVALUATION; EMPLOYER ATTITUDES; LABOR UNIONS; *HIGH SCHOOL ROLE; TEACHER ATTITUDES; EMPLOYMENT LEVEL; EMPLOYMENT PATTERNS; PPOGRAM EFFECTIVENESS

Data were gathered by interview and questionnaire in nine cities from 1,600 teachers in 16 schools, 658 employers, 90 union officials, 2,626 job supervisors, and a total of 8,523 graduates from high school academic, general, and vocational curriculums. The study concerned the adequacy and image of vocational education, how it should be conducted, and the role of vocational education in preparing minority groups and disadvantaged youth. Findings concerned (1) the image of vocational education in schools, communities, and in relation to advisory committees, and (2) vocational education in relation to girls, minority groups, and the disadvantaged. Recommendations were made regarding offerings, administration, personnel, advisory committees, guidance, placement, followup, evaluation, and organization. The complete report, of which this is a summary, appears in Research in Education, September 1967, as ED 011 060. (JM)

VT 002 584

ED039370

THE ROLE OF THE

IN THE PREPARATION OF

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Jacob J. Kaufman, Carl J. Schaefer, Morgan V. Lewis,
David W. Stevens, and Elaine W. House

FEBRUARY 1967

Institute for Research on Human Resources
The Pennsylvania State University, University Park, Pa.

SUMMARY, CONCLUSIONS, and RECOMMENDATIONS

VT02584

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent Office of Education position or policy.

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

SECTION I: INTRODUCTION

The Issues

In the coming years America will have entering its labor force a larger number of young people than at any time in its past. These young people will be entering a labor market where the need for the unskilled and untrained is at its lowest point. At the same time technology is becoming increasingly complex and the need for skilled manpower has never been higher.

These trends have been evident, of course, to educators, government officials, economists, and others interested in the efficient allocation of human resources. One result of this awareness was the Vocational Education Act of 1963. Through it, the nation pledged itself to make a substantially greater effort to train its young people.

Despite this commitment at the highest levels, vocational education has been the subject of continuous, heated, and, at times, even bitter debate. This debate usually centers on issues such as the usefulness, or adequacy, of vocational education. Do graduates really use the training they receive in school? How effective is this training? Does it really prepare for the types of jobs young people obtain upon graduation? Should training be conducted in a comprehensive or separate vocational high school? Another issue often raised concerns the image of vocational education which is seen by some observers as only appropriate for those students who cannot succeed in the more "demanding" academic curriculum. The phrase "dumping ground" is often heard when this point is discussed. A third issue, probably the most sensitive of all, is the role of vocational education with regard to minority groups and others from disadvantaged backgrounds.

The Method

This study gathered data on all these points so that this very necessary dialogue on vocational education could be conducted with reference to the appropriate facts.

The study was conducted by selecting nine communities which met criteria of size, labor force composition, type and quality of vocational programs, and geographic accessibility. Profiles of the economic and demographic characteristics of the cities were prepared.

When the cooperation of the school officials of the selected cities was obtained, those parties most vitally concerned with vocational education were contacted and their attitudes and experiences were examined. These parties were the schools, employers (including direct supervisors), and unions, and, of course, the graduates themselves.

The schools were examined through an on-site evaluation of their vocational programs. This evaluation was conducted in the nine selected cities by a group of educators each of whom was an authority on the vocational program he assessed. Included on this team were guidance experts and representatives from labor and management. During the school visitation, classes were observed and interviews were conducted with administrators, teachers and students. Questionnaires were distributed to the teachers to measure their attitudes towards vocational and college preparatory education. In all, programs in 25 schools were visited and evaluated, and 1,600 questionnaires were completed by teachers.

Employers and union officials were personally interviewed. The employers were questioned about the jobs for which they hired young people, and how well their current applicants were trained for these jobs. They were also asked about their contacts with and ideas about vocational education. After the interviews, they were given an attitude questionnaire and asked to complete it and return it by mail. Of the 658 employers interviewed, slightly over half (52 per cent) returned the questionnaire.

Many of the questions directed to the 90 union officials were identical to those asked of the employers. These were the questions on contact with and ideas about vocational education. The questions that were asked only of union people concerned their sources of new members, their attitudes towards young people as union members, and the role of their union in the training of young people.

The direct supervisors of the graduate respondents were asked to complete a rating scale on the preparation and job performance of these graduates. Usable ratings were received from 2,826 supervisors. These represented 55 per cent of the graduates interviewed.

A total of 5,181 usable graduate interviews were obtained. The total was composed of almost equal numbers of vocational (2,111) and general curriculum (2,023) graduates with the remainder (1,047) being academic (college preparatory) graduates. All of these respondents had entered the labor force upon graduation. Graduates who entered college directly from high school were eliminated from consideration before the interview sample was drawn.

The graduates were questioned at some length about each job they had held since leaving high school. These questions included: type of job, how obtained, and length of time held; type of company; pay, both starting and leaving (or current); ratings of school preparation and job satisfaction; and their reasons for leaving each job they had left. They also completed a standardized measure of job satisfaction, and were asked about their school experiences and family background.

As a check on the data obtained from these interviews, another 3,342 respondents completed and returned mail questionnaires. The results from these questionnaires were compared to those obtained from the personal interviews. The actual significant differences as a proportion of the total possible responses were only slightly higher than would be expected by chance.

All of these data were analyzed with reference to the issues in vocational education mentioned above. Each of the chapters of the main report focuses on one or more of these issues. This summary, however, does not discuss these chapters separately. The last section of each chapter contains a summary and conclusion. Instead an attempt will be made to interrelate the major issues with the various sources of data bearing on each issue.

The first major issue discussed is the question of adequacy. Data from all the sources bore on this point. The second major issue is the image of vocational education. The interviews with employers and union officials, the attitude questionnaires, and the impressions of the labor and management representatives on the visiting team provided the material for this area. The third major issue presented is concerned with vocational education and groups with special problems. The interviews of the graduates, about 20 per cent of whom were nonwhite, were the primary source for this data. One group with special problems some might be surprised to find included in this section -- females. The results indicate females are in many ways being ignored by vocational education.

SECTION II: THE ADEQUACY OF VOCATIONAL EDUCATION

Adequacy as Evaluated by the Visiting Team

An examination of the economic and demographic profiles prepared for each community revealed little relationship between the proportions of enrollment in the various vocational programs and the occupational distributions in the communities. The proportions of graduates placed in related occupations as reported by the schools were relatively high. But even if these are accepted, the small enrollments negate any significant impact on manpower needs. The relationships between training and employment found by the follow-up interviews were, for many of the vocational programs, much lower than those reported by the schools. Apparently, the schools were using a more liberal definition of related employment than that used in this study.

The low enrollments existed despite the generally high quality of the programs being offered. The visiting teams consistently rated quality of instruction, physical facilities, equipment, etc., as adequate or better for all programs. The weaknesses that were noted usually referred to such things as the limited number of offerings, the lack or inadequate use of advisory committees, and poor guidance, placement, and follow-up.

The school officials in charge of the vocational programs had limited opportunity to expand their offerings or provide auxiliary services. Most of the vocational directors did not have easy access to their superintendents and hence were not able to assure that adequate attention and resources were directed to vocational offerings.

In the small communities better communications existed and resulted in an understanding of the goals of vocational education across all levels of administration. Consequently, these communities were judged to have the best overall vocational curriculum both in quality and in the proportion of students enrolled.

The medium-sized communities had sympathetic administrations which provided good facilities and adequate materials. Despite this support, the programs offered were frequently narrowly conceived and students were not attracted in sufficient numbers to fill all available work stations.

The strength of the vocational offerings in the large cities lay in their greater breadth and in their potential to meet the needs of all students. In these cities, however, the goals of vocational education were found to have had the least influence on total educational policy, and, in proportion to enrollment, the vocational expenditures were lowest.

In general, the results of the program evaluations present a picture of sins of omission rather than sins of commission. What the schools were doing, they were doing adequately. Their weaknesses reflect those things they should have been doing but they were not. Most prominent among these omissions was the failure to develop programs for those students who could not profit from present offerings. The proportion of students enrolled in the vocational curriculum compared to the proportion of those who obtained jobs upon leaving school attests to the need for new approaches. Other significant weaknesses were the poor guidance programs and the insufficient use of advisory committees. Each of these areas is discussed further below.

Adequacy as Evaluated from Follow-up Interviews

If, as indicated by the program evaluations, the schools were training their vocational students adequately, this training should be reflected in the actual work experiences of these graduates. Comparisons were made on various measures of the job experiences of graduates of all three curricula -- vocational, academic, and general. Few advantages were found in these measures for any of the curricula.

There were some differences in the occupational distributions of the graduates from the three curricula. Graduates of the vocational curriculum obtained more manufacturing jobs while graduates of the academic and general curricula obtained more white collar, primarily clerical, jobs. Despite these differences, graduates from all three curricula tended to earn about the same amount of money, to remain on jobs for about the same length of time, to leave jobs for much the same reasons, and to have about the same levels of job satisfaction. The differences that were associated with curricula referred to evaluations of training. The vocational graduates clearly thought that they had been better prepared for their jobs than did the academic or general graduates. These attitudes of the respondents, however, were not confirmed by their direct supervisors who rated the preparation of students provided by all three curricula about the same.

Another major difference in occupational experiences among the curricula was the method used to obtain a first job. The primary method used by all graduates was by direct application or other personal methods, revealing the tendency to find jobs in a rather disorganized fashion. Although vocational graduates, both male and female, were much more likely than graduates of the other curricula to have been placed by their school, the extent of school participation was generally quite low.

From these findings a clear case cannot be made that vocational education has a direct payoff in the occupational experiences of its graduates. These graduates do believe they are better prepared, and their schools do find jobs for a greater proportion of them, as compared with the other curricula. Besides these measures, there are few objective indices that show a definite advantage to the vocational graduates.

Despite the lack of clear differences, it cannot be concluded that one curriculum provides as good a preparation for employment as another. There were many differences in the characteristics of students in the three curricula. Attempts were made to control for the more obvious of these, but it was impossible to control for all of them. For many characteristics, such as personality, interest, and motivation, no measures were available, and these variables may have had just as much influence as IQ or curriculum on the vocational experiences of graduates. It could reasonably be argued that the personal qualities that enable a boy to complete the typical general curriculum will also enable him to do well in the labor market. It might also be contended that without the appeal that the vocational curriculum has to many students, these young people might never have completed high school. Although these are legitimate questions for further research, it might be suggested that the physical environment of vocational education -- the large shops, some degree of individualized instruction, the attempt to relate academic to vocational subjects, etc. -- might be the "holding" factor for many students.

The Adequacy of Guidance in Vocational Education

When considered in light of need, it is the vocational and not the academic or general curriculum graduate who needs guidance the most. The decision to follow the vocational track is a more limiting one, in terms of post-high school options, than the choice of either of the other curricula. This is not to say that a decision made in the ninth or tenth grade must be followed throughout the individual's career. Quite the reverse is usually true. For example, in this study the percentage of trade and industrial graduates who obtained jobs that were directly related to their training was less than one-third. This figure is confirmed by other studies.

When choices that do not follow from previous decisions are made, the individual must accept the costs involved. In the case of the vocational graduate, one of the inevitable costs of such a change is the loss of the investment, both personal and social, made in obtaining skills that are not uaed.

The uninitiated observer, upon considering these facts, would expect the major counseling effort in the schools to be directed towards helping the vocationally-oriented student to choose among the possible occupational clusters that interest him. Anyone familiar with the operation of American high achools knows that the prevailing situation is just the opposite.

Data from this study revealed that the vocational students were the least likely to have discussed either their course choices or their occupational plans with a guidance counselor. Among the vocational graduates about one-half recalled discussing their course choices, and about one-fifth recalled discussing their job plans. Among the academic graduates about three-fourths reported discussing their course choices and about one-third reported discussing job plans. Neither of these sets of figures is reassuring, but the direction of the difference should cause the most concern.

The conclusions reached from the analysis of the follow-up interviews were fully confirmed by the evaluation of the guidance programs in the schools. The primary reason for the inadequate counseling was the high, unrealistic student-counselor ratio. On the average in the senior high schools this ran about 440 students to one counselor. At best, this ratio would make it extremely difficult to see each student, if for only one hour during the total school year. The handicap of this ratio is coupled with the fact that typically counselors spend most of their time with college-bound students. When these two facts are considered, it is easy to understand why the follow-up interviews, all of which were with graduates who did not go on to college, revealed few contacts with counselors.

Many other specific weaknesses of guidance programs were noted in the evaluation. These referred to such things as inadequate physical facilities, lack of counselor-employer contact, incomplete pupil records, etc. By any criterion, guidance, as currently carried on, was one of the major weaknesses found in this study of vocational education.

The Proper Setting for Vocational Education: The Comprehensive or Separate Vocational High School

Another issue often raised in connection with the adequacy of vocational education is whether it should be conducted in a comprehensive or in a separate vocational high school. Those who argue for the separate school claim such schools can offer better training. Their claims are made on the basis of greater student interest, broader offerings, modern equipment, coordinated courses, etc. The advocates of the comprehensive school will concede some of these advantages for the separate vocational school, but counter with the democratic virtues of the comprehensive high school. In these schools, it is claimed, students from all segments of society study together and acquire increased familiarity and understanding of one another. What these advocates tend to ignore is that "form" is not a substitute for "substance." The advantages of a comprehensive school accrue from activities and programs in such a school which lead to an integration of the academic and vocational students.

The interviews of graduates from the two types of schools did not support the claims of either of the advocates. There was no evidence that graduates of separate vocational schools were better prepared or more successful in their first jobs. Neither was there any evidence that comprehensive schools were leading to greater acceptance among students from different curricula. On the contrary, male vocational graduates from comprehensive schools were much more likely than graduates of separate schools to report they felt "looked down on" because of the courses they took. Other questions on friendship groups and participation in school activities yielded similar patterns of responses.

The case, therefore, was not made for either school. In a negative sense, though, the evidence was more favorable to the separate school. While it did not appear that graduates of the separate schools were better trained, neither did these graduates perceive attitudes of condescension in their school. If a decision as to type of school were to be based on probable attitudes of its students, the evidence would favor the separate vocational school.

SECTION III: THE IMAGE OF VOCATIONAL EDUCATION

In any discussion of vocational education the phrase "image problem" is almost sure to be heard. The implications of this phrase are that while vocational education is commonly seen as a second-class education, it is in reality as successful as any other type. The follow-up interviews indicated that vocational graduates performed just as well in their jobs, and, in fact, considered themselves better prepared for them. Still vocational education is considered by many as in some way "inferior" and the term "dumping ground" is often applied to it.

The Image in the Schools

Negative attitudes toward vocational education were even detected among teachers. The 1,600 attitude questionnaires returned by the teachers were analyzed both by subjects taught and by the type of school in which the teachers worked. Type of school was found to be more closely associated with attitudes towards vocational education. Teachers from exclusively vocational high schools were the most favorable. Teachers of academic subjects in these schools were as favorable as vocational teachers from comprehensive high schools.

It was the academic teachers from comprehensive high schools who ranked lowest in support of vocational education. Tallies of their responses to the separate scale items revealed that they agreed with the idea of vocational education, but were skeptical of the effectiveness of its actual operation. It was these teachers who tended to reject any suggestion to expand vocational education. They believed more "basic" education was necessary. They also thought vocational students had inferior ability. This last attitude apparently was communicated to their students for it was vocational students from comprehensive schools who were most likely to feel "looked-down on."

The Image in the Community

The labor and management representatives, on the school evaluation team, detected similar attitudes in their conversations with employers, labor officials, and other community representatives. Many employers, especially large ones, were pessimistic about vocational education. These employers thought they could give better training themselves. Union officials in the skilled trades were reluctant to give credit for training received in the school programs.

These findings of the labor and management representatives were, of necessity, impressionistic, because they spoke with only a few people in each community. The large scale interviewing of samples of employers and union officials largely confirmed these impressions. Few employers expressed a strong preference for vocationally trained graduates. Personal characteristics, such as initiative and conscientiousness, were the traits most desired in prospective employees. Most employers were, however, satisfied with the preparation their young employees were receiving. Few union officials knew what curriculum their young members had taken in high schools. They reported that their major source of new members was from sons or relatives of current members.

When employers said they could train their employees, they were usually referring to on-the-job training. Most of this training is specific to the particular job and has little transfer value. In general, neither employers nor unions had really thought about the problem of where young people acquire the training necessary to take a productive place in society. When asked about current and projected future skill needs, the majority of both groups either could not answer or replied in vague generalities. They were concerned with the need for training only as it affected their day-to-day operations. One of the major reasons for this lack of interest may have been their limited contact with vocational education. This is discussed further under the topic of advisory committees.

The Image and Advisory Committees

The weaknesses cited most frequently in the evaluations of all the vocational programs were their inadequate use of advisory committees. Many programs were being conducted without any advisory committees; other programs had committees in name only or had so few meetings that the committees could not function effectively. Where they were in existence, large employers and union officials were either absent or poorly represented. The evaluation team, both the program experts and the labor and management representatives, concluded that the schools were not utilizing the full resources of the community.

The interviews of employers and union officials led to an identical conclusion. These interviews revealed that the respondents had had limited contact of any type with the vocational programs in their communities. A comparison of the degree of support of vocational education, as measured by the attitude questionnaire, and the type of contact with it, showed that employers who had had the more active types of contact were most favorable. Those employers who had only been visited by representatives of the schools were no more favorable than those employers who had no contact.

Advisory committees would appear to be a natural way of solving both problems -- the limited use of advisory committees and the limited contact of the community with the schools. The responsibility is, of course, with school officials to stimulate increased participation. The key seems to be the degree of activity. A few meetings of an advisory committee each year is not sufficient. Continuous cooperation in such efforts as work-study and apprenticeship programs, career days, adult education and retraining, the planning of new programs to meet community needs, etc., offers more promise.

There is reason to believe that any technique that increases community participation in some phase of vocational education will be associated with

more positive attitudes. This is the reverse of the usual approach of attempting through educational programs to change attitudes which, it is hoped, will lead to changes in behavior. Bringing about a change in behavior is, of course, more difficult than just disseminating information. One way to bring about behavioral changes may be for school officials to approach employers, union officials, and others with specific requests for participation in specific projects. The probable payoffs of such attempts to all phases of vocational education warrant their increased use.

SECTION IV: VOCATIONAL EDUCATION AND GROUPS WITH SPECIAL PROBLEMS

Vocational Education and Minorities

The role of vocational training in the education of the urban disadvantaged, primarily Negro, groups has been the topic of considerable discussion. To some observers, vocational training appears to be the quickest, most direct way to convert an alienated or unskilled youth into a productive member of society. Critics of this approach claim that it is the old "hewers of wood" argument in a new form -- the justification of the inferior position of Negroes in terms of their alleged "natural inferiority." Vocational educators, for their part, point out that traditionally vocational education is not designed for the individual of limited abilities. The skills usually taught require average or better ability. They further state that many of the problems that have plagued vocational education have resulted from the "dumping" of poorer students into its programs. In addition, some vocational administrators believe it is necessary to advise qualified Negroes not to take vocational training because of what the administrators see as barriers to their employment.

In light of this debate, what is the evidence concerning the experiences of Negroes who completed the vocational curriculum? It must be kept in mind that these findings are based on interviews with Negro graduates. Because they are graduates, they may not be typical of severly disadvantaged, alienated Negroes. The socio-economic background of these Negro graduates did differ from that of whites in predictable ways: family income was lower, fathers were more often absent or employed in service or non-specific skill jobs, and more mothers were employed full-time. In addition, the measured IQs of these graduates were definitely skewed towards the lower scores in comparison to the IQs of the white respondents. Thus, in many ways, these graduates reflect the characteristics of the severly disadvantaged, but there are probably differences in degree.

Given the differences between the white and Negro respondents and the employment problems Negroes face, one would expect quite different school and labor market experiences and quite different attitudes concerning these experiences. There were differences, but they were not as sizable or as frequent as might be expected, especially for the vocationally trained graduates.

Negroes from each of the three curricula tended to react to their school experiences in much the same way as whites from the same curricula. Both Negro and white vocational graduates thought they were better prepared for employment than academic and general curricula graduates. With regard to feelings of acceptance by classmates and school officials, Negroes were just as positive as whites. This last finding is qualified by the fact that most of the Negroes attended segregated schools. They evaluated their acceptance with reference to classmates of the same color.

Two questions on school experiences did reveal some differences. Male Negro graduates of the general curriculum were over twice as likely as any other group to report that they chose that curriculum on the advice of school officials. There was some evidence from the school evaluations that some Negro males who expressed a preference for training in one of the skilled trades were persuaded not to take that training. The school officials explained that this advice was given because it was impossible to place Negroes in trades requiring apprenticeships. This may well explain the disproportionate number of Negro males who took the general curriculum at the suggestion of school officials. The other question on school experience will be discussed after the work experience data are presented.

The most obvious difference in the employment experiences of the Negro and white respondents was in the distribution of the types of jobs they obtained. Negro males and females were both more heavily represented in the manufacturing and service sectors than were whites. Negroes also received less pay than whites for all comparable sex-curriculum classes. Negro males from a vocational curriculum, however, received the best pay relative to the difference in the other Negro-white comparisons.

Despite these differences in occupational distribution and wage levels, there were few differences associated with color in individual perception of job satisfaction. The exceptions were male Negroes from the academic curriculum. These respondents were less satisfied than their white counterparts with their work, pay, and promotion opportunities.

The Negro male who graduated from a vocational curriculum showed up as relatively "better off" than the Negro graduates of the other curricula. The indices of his work experience were not as favorable as the white graduates, but it seemed that the vocational curriculum had the greatest yield for the Negro -- at least for the Negro male. When the respondents, however, were asked if they would recommend their curriculum to a young person, there were no differences consistently associated with sex or race. This was about the only evaluation of school experience where the vocational curriculum did not yield an advantage for Negro males.

These findings, of course, do not answer all the charges with regard to vocational education and minorities. They do, however, suggest that Negroes can benefit from the vocational curriculum and, given present conditions in society, probably benefit more than from the other curricula. If these conditions -- employer and union discrimination, guidance, and family environment -- were to change, the relative outcomes of the various curricula might not be significantly different.

Vocational Education and Girls

Some observers could argue, after reviewing the results of the study of vocational education and females, that there is little justification for including these data under the aection "Groups with Special Problems." They could point to the high percentage of girls from the vocational and general curricula who obtain jobs that are directly related to their training. They could cite the measures of job satisfaction and the ratings of the female graduates and their direct supervisors as to the adequacy of the graduates' school preparation. On all of these measures the female graduates were rated as high as the males, and there were no differences of any real significance among the curricula.

On most of the questions regarding school experiences the results for the female graduates are more favorable than the results for the males. Among the vocational graduates, females were less likely than males to report feelings of condescension and exclusion from school activities. Girls from each of the curricula were more likely than males from the same curricula to have received guidance in their course choices and job plans.

The only question on which females responded in a way that might be considered less favorable than the way males responded concerned reasons for their course choices. Girls were twice as likely as males to say they chose courses to prepare for a job, and they were less likely to say they chose courses on the basis of interest. These results were unexpected for it is males who are supposed to be concerned about jobs and careers. Females, it was revealed by other questions in the interview, regarded post-high school employment as an interlude before they assumed their real roles as wives and mothers.

These apparently contradictory results are explained by the limited number of vocational offerings available to females. Office occupations accounted for about half of all the students, male and female, enrolled in the vocational curriculum. It was the only vocational program open to girls which could accommodate any significant number. Girls who wanted to obtain vocational preparation had very few options open to them. They chose their high school courses, therefore, not out of interest, but to prepare for a job.

The girls did not react negatively to the limitations on the choices available to them. They have learned their cultural lessons well: there are few occupations appropriate for girls; girls should only plan on working until they get married; girls should not prepare themselves for important jobs because they will marry and waste their training. All of these cultural stereotypes restrict the schools in the programs they offer to girls, and, even more, they restrict the vocational self concepts of young girls so that they are satisfied with these limited offerings.

The result of these limitations is that many girls of high natural ability never prepare themselves for the occupations they are capable of filling. Their skills are lost to society throughout their vocational lives. And many women, contrary to the stereotype, do have extensive occupational experience. Girls, however, are not made aware of their probable vocational careers, and they are not trained to plan and to prepare for them. It would seem the schools should take the lead in expanding the vocational self concepts of young girls. Through expanded offerings and skillful guidance, young girls can be led to prepare themselves for the variety of occupations where their skills are needed.

The school, itself, cannot change the attitudes of the girls regarding their occupational goals. It must be recognized that the family environment and the social milieu in which the girls are raised contribute significantly to the development of their attitudes. The school, however, can play a role in changing these conditioning factors which can lead to a fuller utilization of the natural capabilities of women.

RECOMMENDATIONS

Vocational Offerings and the Needs of Students and the Community

1. Secondary education should be reoriented to provide offerings of an occupational nature for those students who expect to obtain employment after graduation but who do not wish to commit themselves to one of the traditional vocational programs.

   This recommendation is based more on the potential of vocational education than on its actual present performance. At present, except for office occupations, low proportions of students are enrolled in vocational programs. These programs have little impact on the occupational needs of their communities. Yet the majority of students enter the labor market upon leaving high school. It is apparent that present programs have not been able to serve the needs of either the students or the communities.

   New programs should be devised that are comprised of occupational clusters and are taught by appropriately prepared teachers in work-oriented settings. These programs should provide opportunities for vocational exploration as well as for familiarizing students with the basic skills that are characteristic of the occupational clusters.

2. The special features of vocational education should be utilized to design programs for those students who cannot benefit from the current content of any of the three curricula.

   A substantial proportion of students in most high schools lack either the interest or the ability to profit from current offerings. These are often students from disadvantaged environments who lack verbal skills. The physical requirement of academic courses -- the necessity of sitting quietly for an hour at a time -- is incompatible with their life styles. They are prevented from taking traditional vocational programs by the ability requirement of these programs.

   The physical setting, freedom of movements, individualized instruction, and stress on physical rather than verbal skills that characterize vocational programs seem to have a potential to motivate these students. The programs that are designed for them,

however, should have a goal of occupational familiarization rather than skill attainment. The differences should be essentially of breadth rather than depth and of guidance rather than mastery of subject and skill. Eventual movement from these programs into the more specific, traditional vocational programs should be encouraged.

3. Substantial efforts should be expanded to enroll Negroes of average and above-average ability in the traditional vocational programs and to pursue actively their subsequent placement in jobs utilizing the skills learned.

   Employers, on the one hand, report they are being pressured to increase their number of Negro employees at every skill and occupational level. They assert larger number of Negroes are not already employed because of the limited number of qualified applicants. On the other hand, some vocational directors claim it is difficult to place their Negro graduates. Because of these obstacles, many Negroes are reluctant to prepare for occupations where Negroes are not normally employed.

   Vocational educators should accept the challenge to break this cycle by preparing qualified applicants and by working with representatives of their communities to create the conditions necessary to assure their eventual employment.

4. A wider option of vocational preparation should be offered to female students.

   The high enrollment in office occupations and the high percentage of graduates who obtain related jobs present a reassuring picture of the success of this program. It is less reassuring when it is noted that female graduates of academic and general curricula have much the same occupational experiences as vocational graduates. A more basic criticism, however, is the limited choice that is offered vocationally-oriented girls. The school system tells them, in effect, that they can parpare to be clerks and secretaries or receive no vocational preparation. And girls have been so conditioned by society that they believe these are the only types of jobs appropriate for them. It is well established that the distribution of abilities in the female population is comparable to that in the male population. The restricted vocational self-concepts of young girls coupled with the limited number of programs offered by the schools result in an inefficient allocation of the skills of females.

5. The reorientation of vocational offerings should be conducted without the constraint of the traditional organization of vocational programs.

   The traditional areas of vocational education -- agriculture, trade and industrial, etc. -- result from their history and legislation. New approaches may require that programs be designed without being limited to these traditional areas. Planning in terms of these areas seems to have limited the ability of vocational educators to innovate and to have prevented them from trying different and creative programs.

6. Vocational educators should give consideration to the development of revised methods of instruction that will enable them to meet the needs of occupationally oriented youth more effectively.

   Many experiments have been, and are being, conducted for the purpose of developing new methods for teaching youth preparing to enter the labor force after graduation. Such new methods include: new grouping patterns which recognize individual differences among students; revision of curricula for the purpose of stressing student inquiry into basic concepts, principles, and processes; and flexible scheduling procedures. These developments, in general, have been ignored by vocational educators.

The Administration of Vocational Education

7. The director of vocational education for a school system should hold an administrative position directly below the superintendent of schools.

   In many school systems the aims and objectives of vocational education have not been accepted. Vocational education is regarded as a service which is offered those students who do not fit into the usual curricula. As a result vocational expenditures are held to a minimum. A director who holds a position where he has the opportunity to influence educational policy increases the probability that adequate attention and resources will be directed to vocational education.

8. The director of vocational education should have sufficient staff so that his concern over the day-to-day operations of this program is limited and he can have the opportunity to develop new programs in relation to the changing needs of the community.

   A frequent criticism of vocational education, often raised in the main report, is that it has not adapted to changing conditions. If it is to adapt, someone must be sensitive to changes and plan to meet them. This is the function of the director. He should be anticipating the needs of his students and his community and should be planning programs to meet these needs. To do so he must be freed from some of the other demands on his time.

9. One member of the staff of the vocational director should be responsible for community relations. The person holding the position should be a specialist, and he should be given sufficient time to perform the function properly.

   Often, if community relations are specifically recognized, they are carried on in a hit-or-miss fashion by someone whose primary job is quite different. More typically, they are assumed to be an inherent part of the job of each teacher and coordinator. The usual outcome of these approaches is that community relations are neglected and the results are conditions such as those found in this study.

   To many teachers, employers, parents, and students the image of vocational education is that of a second-class education. This erroneous impression can be partially counteracted by providing

recognition for occupational success and achievement through the use of the techniques of public relations. Since these techniques require skill and experience in their application, school systems cannot expect anyone to handle them. The responsibility should be assigned to a person who has both the ability and the time required to carry out the function. The results would probably include greater industry participation, up-to-date vocational programs, higher rates of placement of graduates, and the placement of graduates in the areas of their training.

The Preparation of Vocational Teachers and Administrators

10. Schools of education should train potential teachers and administrators in terms of understanding the conditions under which students learn rather than in terms of "how to teach." This would require a radical reorganization of teacher education programs.

    It is quite evident that a poor image of vocational education exists among many teachers in comprehensive high schools, particularly those who teach academic subjects. These negative attitudes reflect, to a large degree, the inadequate understanding of the environments out of which many youth come. The teaching process has failed to adapt itself to the needs of the students who live in these different environments.

    Teacher preparation should give future teachers and administrators a sensitivity to the effects of differing cultural backgrounds on the life styles of people. Along with this sensitivity they should be prepared to adapt teaching styles to the needs of students from different backgrounds.

11. Educational administrators should become endowed with greater sensitivity and capability to understand and deal with the problems of providing various forms of education to prepare youth for employment.

    The preparation for the highest administrative levels in education must include knowledge and understanding of education for the world of work which will enable administrators to exercise appropriate and competent leadership. Graduate study designed for preparing school administrators must concern itself far more with proper philosophy, curriculum design and school structure for the large proportion of youth who do not continue their education immediately upon graduation. Although a new style of administrators can be eventually generated from re-structured advanced degree programs, immediate steps should be taken to reorient the thinking of present administrators through a series of national and regional seminars and workshops designed to acquaint them with not only the problems of providing vocational education in all of its aspects at all of its levels but also the new methods for meeting these problems.

The Use of Advisory Committees

12. All segments of society including business, industry, government, and organized labor should play a more active role in the structure and execution of vocational offerings.

The effective utilization of advisory committees is a difficult and time-consuming job. Although isolated examples to the contrary can be cited, in general committees either do not exist or function in an ineffective manner.

The active participation of advisory committees holds much promise for improving vocational education. Contact with the employers of vocational graduates stimulates vocational educators to keep their offerings geared to the needs of the community. In turn, employers are more favorably disposed towards vocational education and give it more support and cooperation.

If this promise is to be realized, the schools must assume the responsibility to stimulate active participation. They cannot expect the community to come to them. Nor can they simply ask for more cooperation. The schools must design the programs and make the effort necessary to have industry operationally involved in the educational process.

Vocational Guidance

13. To provide meaningful guidance to occupationally oriented youth, student counselors ratios should be made more realistic. Counselors who work with these students should be sensitive to their needs and should possess the skills necessary to serve them.

    As a general rule, very little effective vocational counseling takes place in high school. In the junior high school the counselor's role is to slot students into tracks -- academic, vocational, or general. In the senior high school most of the counselor's time is spent with those seniors who plan to go on to college.

    An evaluation of the effectiveness of vocational guidance was impossible because so little of it is being conducted. The need for vocational guidance and its apparent potential would seem to warrant increased effort. These efforts should be undertaken by counselors who are trained to work with non-college young people. Such counselors must be familiar with the psychological, sociological, and economic characteristics of these students, and must have sufficient knowledge of the occupational literature to guide vocational exploration.

14. Young women should be made aware, while still in high school, of the probable extent of their future vocational experience, and they should be trained to prepare for this.

    Females in American society do not think in terms of long-range careers. At an increasing rate, women are remaining in, or re-entering, the labor market except for brief periods during their childbearing years. Despite this trend, young women are not as yet anticipating vocational careers. Most of the females who were interviewed had no real career plans. They regarded their post-high school employment as a necessary interval before they progressed on to their real roles of wife and mother.

Young women should be given the opportunity under careful guidance, to exsmine the occupational role of women in society. They should be informed that many married women with children still spend 30 to 40 years in the labor force. The skills necessary for women to anticipate and plan for changes in their vocational status should be developed.

15. Vigorous efforts should be made to acquaint both Negroes snd guidance counselors with the opportunities now open to Negroes in occupations where traditionally they have not been employed.

    Prevailing attitudes as to the types of occupations "appropriste" for Negroes must be counterscted. These attitudes limit the aspirations of Negroes and they limit the kinds of guidance Negroes receive. Proper guidance coupled with training and placement should silence the frequent claim that there are no qualified Negroes to hire.

16. Vocational orientation should begin in grade school to acquaint youngsters with the tasks and values of all types of occupations.

    Most young people of high school age have very limited occupational knowledge. Such information as they have is more often based on popular myths and stereotypes rather than on actual facts. In the absence of information, occupational decisions are either postponed until after high school or made because of identification with a particular social class. If a decision is made, it is typically tentative and it is often changed after the individual leaves school.

    To counteract this condition, the presentation of occupational information should begin on a systematic basis in grade school and continue on through junior high school. In the lower grades this information should, of course, be broad and geared to the interest level of the students. In the later grades it should become increasingly specific. Care must be taken to assure the total occupational spectrum is presented with proper recognition of the value of all levels of work.

    A probable side effect of such a program would be an improvement in the popular image of vocational education. The undue emphasis on the necessity of a college education may also be counteracted.

Placement

17. The high school should assume the responsibility to establish a post-high school plan for each departing student. For those students who desire employment, the school should provide active assistance until they are placed in jobs.

    The evidence is ample, from this study and from many others, that the labor market operates in an inefficient manner. Informal sources are used fsr more frequently than the institutions organized to place workers. Young people frequently seem to take anything that comes along rather than seeking out jobs where they can find outlets for their interests and abilities.

School officials should attempt to coordinate all the community organizations involved in the placement of workers. There are some who think that this function could best be handled by guidance counselors. Their argument is that making counselors responsible for placement will produce an increased appreciation for the vocational problems of young people. Others contend that the placement task will hamper the efforts of counselors to assist young people in the process of vocational exploration. There is little evidence on either side, but it is known that if performance is measured by placement, efforts are put into placement.

Evaluation Through Follow-up of Graduates

18. Evaluation of the effectiveness of vocational education should be conducted in a more systematic manner. More comprehensive data should be gathered in follow-up surveys to provide feedback to modify current programs.

    Vocational educators make a greater effort than any other group of educators to evaluate the effectiveness of their offerings through follow-up surveys. The major effort required in such surveys is in contacting the graduates. Unfortunately once this effort is made, often insufficient data are gathered. There is more to evaluation than determining the number of graduates who hold jobs that are related to their training.

    Many of the questions raised in the main report could be answered if all educators would conduct comprehensive evaluations of the experiences of their graduates. To be effective, such evaluation should be conducted on a continuing basis. The relative payoffs of the different curricula and programs should be explored in relation to their costs. The results of such studies can provide the basis for effective educational planning.

    The effectiveness of school training is most clearly seen in the first job held after graduation. In subsequent jobs it becomes more difficult to assess the relative influence of training and post-high school work experience. This consideration should not prevent schools from conducting more long-range evaluation at periods of five and ten years after graduation.

The Comprehensive or the Separate Vocational High School

19. On the issue of the comprehensive or the separate vocational high school no specific recommendation can be made.

    The data from this study are not clear enough to support a firm recommendation for either the comprehensive or the separate vocational high school. The evidence that does exist, however, favors the separate school. It is suggested that the discussion be carried on with reference to real issues. A school is not more conducive to democratic values simply because all students are housed in

the same building. Nor is a student better trained just because he has access to more modern equipment. What happens in that building and how well the student learns to use the equipment are the more crucial variables. Evaluation requires that the substance of the operation, and not just its form, be examined.

VT 002 605
Major Agricultural Migrant Labor Demand Areas (By Month and Principal Crops).

Manpower Administration (DOL), Washington, D.C. Bureau of Employment Security
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 67 16p.

*MIGRANT WORKERS; *SEASONAL LABORERS; *MANPOWER NEEDS; *AGRICULTURAL PRODUCTION; MANPOWER UTILIZATION; EMPLOYMENT OPPORTUNITIES; AGRICULTURAL LABORERS

Designed to acquaint the pulic with the complexity of placing and scheduling domestic migratory agriculture workers, this reference includes 12 charts which present, by month, where migratory workers are usually employed to supplement local farm labor in the United States. No attempt was made to indicate the number of out-of-area workers employed or the exact duration of their stay. Areas utilizing significant numbers of migrant farm workers in production of apples, berries, cherries, citrus, nuts, peaches, fruits, beans, corn, peas, potatoes, tomatoes, vegetables, cotton, hay, small grain, specialty crops, sugar beets, sugar cane and tobacco are shown by month. Also included are addresses of state employment security agencies affiliated with the Bureau of Employment Security. (DM)

VT 002 605

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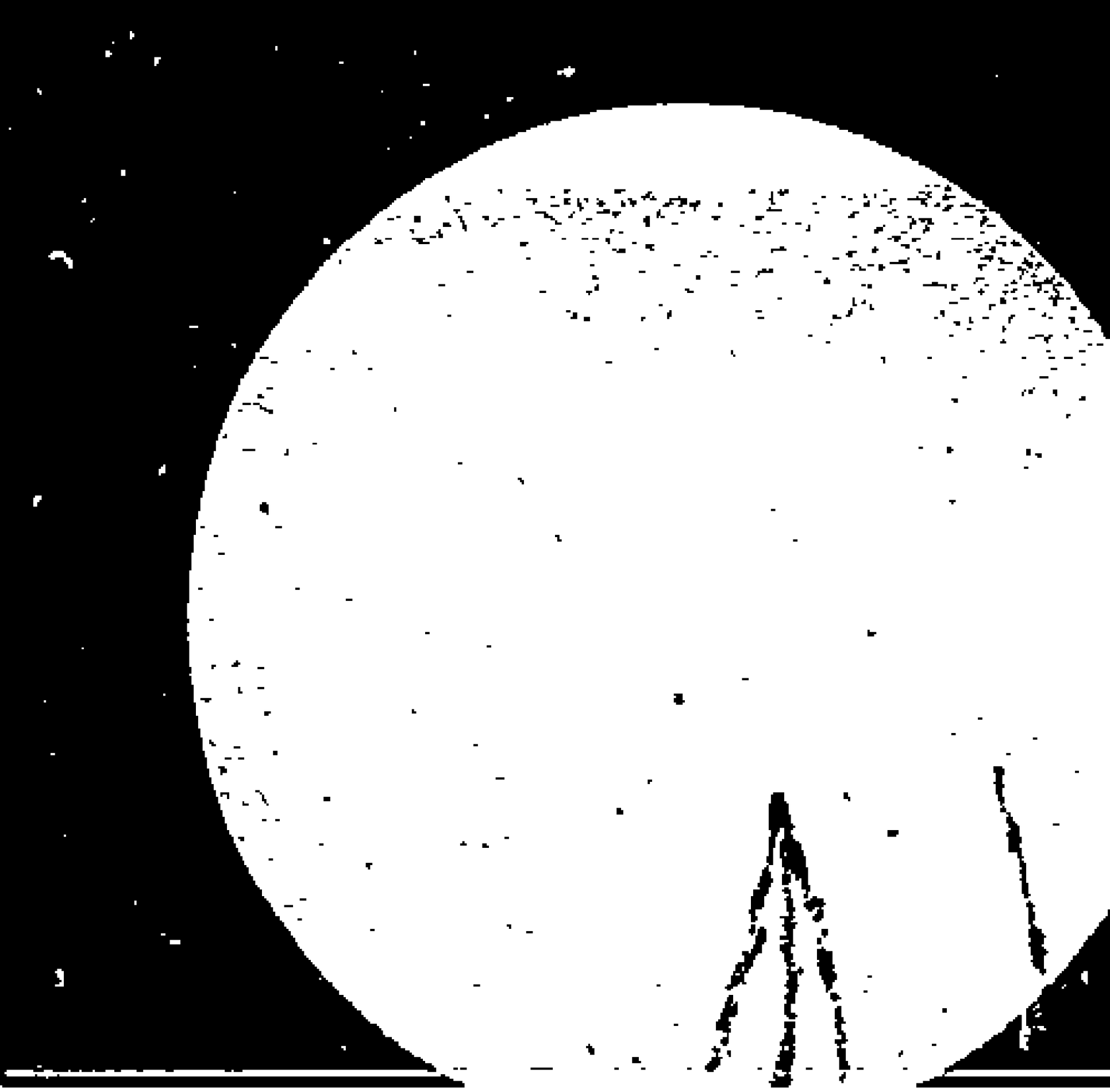


U.S. DEPARTMENT OF LABOR W. Willard Wirtz, Secretary
MANPOWER ADMINISTRATION Stanley H. Ruttenberg, Administrator
BUREAU OF EMPLOYMENT SECURITY Robert C. Goodwin, Administrator

Major Agricultural Migrant Labor Demand Areas

(By Month and Principal Crops)

The information in this booklet is designed to acquaint the public with the complexity of placing and scheduling domestic migratory agricultural workers under the Annual Worker Plan--an Employment Service technique to provide continuity of employment to migratory farm workers and to furnish employers with an experienced labor force when needed.

The twelve charts in this booklet show the major crop production centers in the United States where, each month, migratory agricultural workers are usually employed to supplement local farm labor.

The State employment agencies, affiliated with the United States Employment Service, furnished the information for compiling these charts.

There is no attempt to indicate the number of out-of-area workers employed within these areas, or the exact duration of their stay. Activity in any crop, as shown on these maps, could be starting, at its peak, or near completion during any month shown. For specific information of this type, Farm Labor Service publishes five crop work guides by geographic area, a wall map titled "Peak Seasonal Farm Labor Force and Crop Production Centers by Agricultural Reporting Area," and a booklet, "Crops Requiring Seasonal Hired Workers." These latter two publications supplement one another.

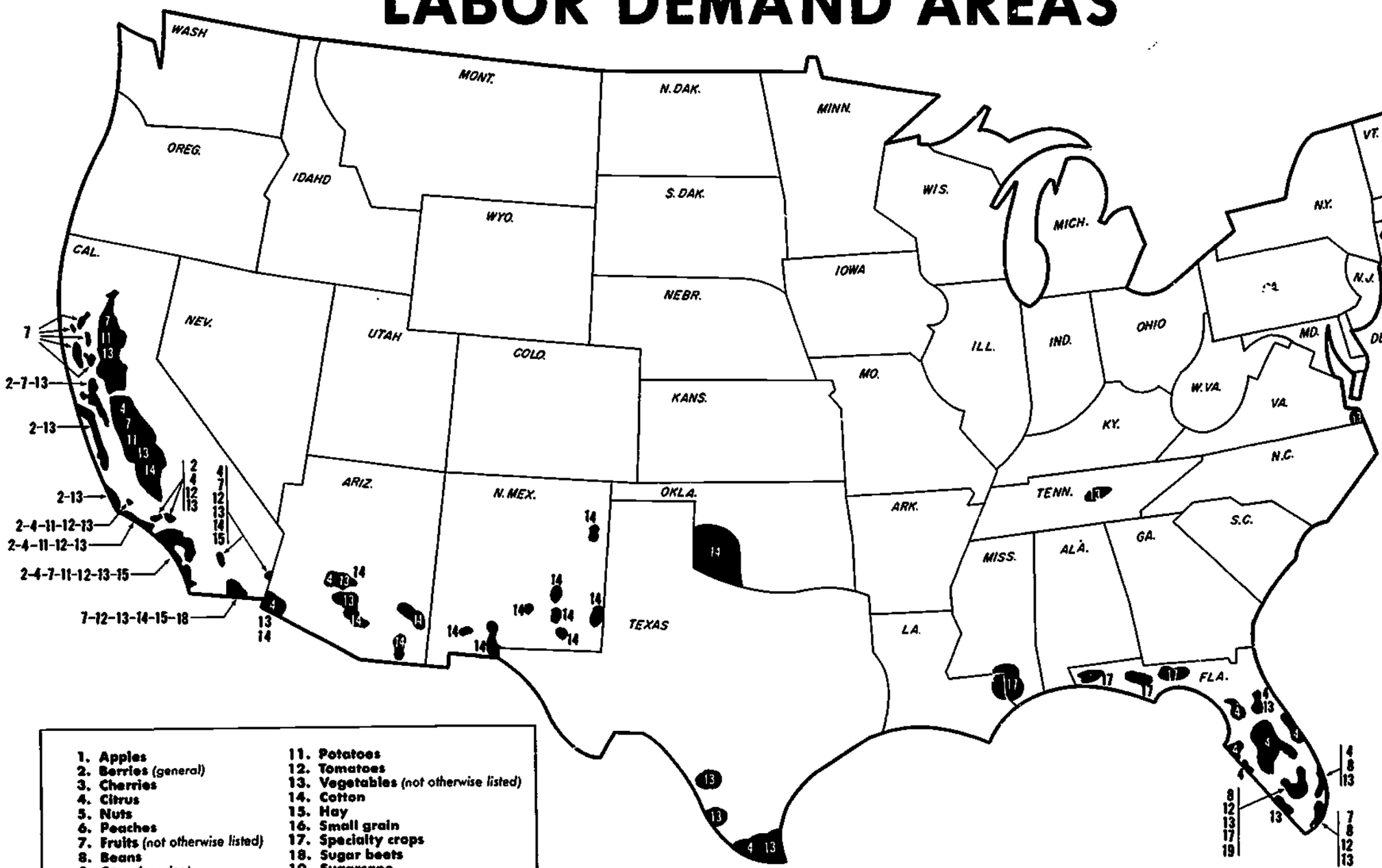
All crops o· crop areas are not included. Only the areas utilizing significant numbers of migrant farm workers are shown. In these areas are grown:

1. Apples
2. Berries (general)
3. Cherries
4. Citrus
5. Nuts
6. Peaches
7. Fruits (not otherwise listed)
8. Beans
9. Corn (canning)
10. Peas
11. Potatoes
12. Tomatoes
13. Vegetables (not otherwise listed)
14. Cotton
15. Hay
16. Small grain
17. Specialty crops
18. Sugar beets
19. Sugarcane
20. Tobacco

Distribution of this booklet should be limited to operating farm labor personnel and the inquiring public interested in the information contained in the following twelve charts. It is not intended as a composite guide for migrant workers. Area work guides and individual State work guides are for this purpose. Agricultural workers expecting to travel should contact the nearest office of the State employment service as the best source of current information on farm job opportunities.

JANUARY

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS



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JANUARY

FEBRUARY

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS

1. Apples
2. Berries *(general)*
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5. Nuts
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FEBRUARY

MARCH

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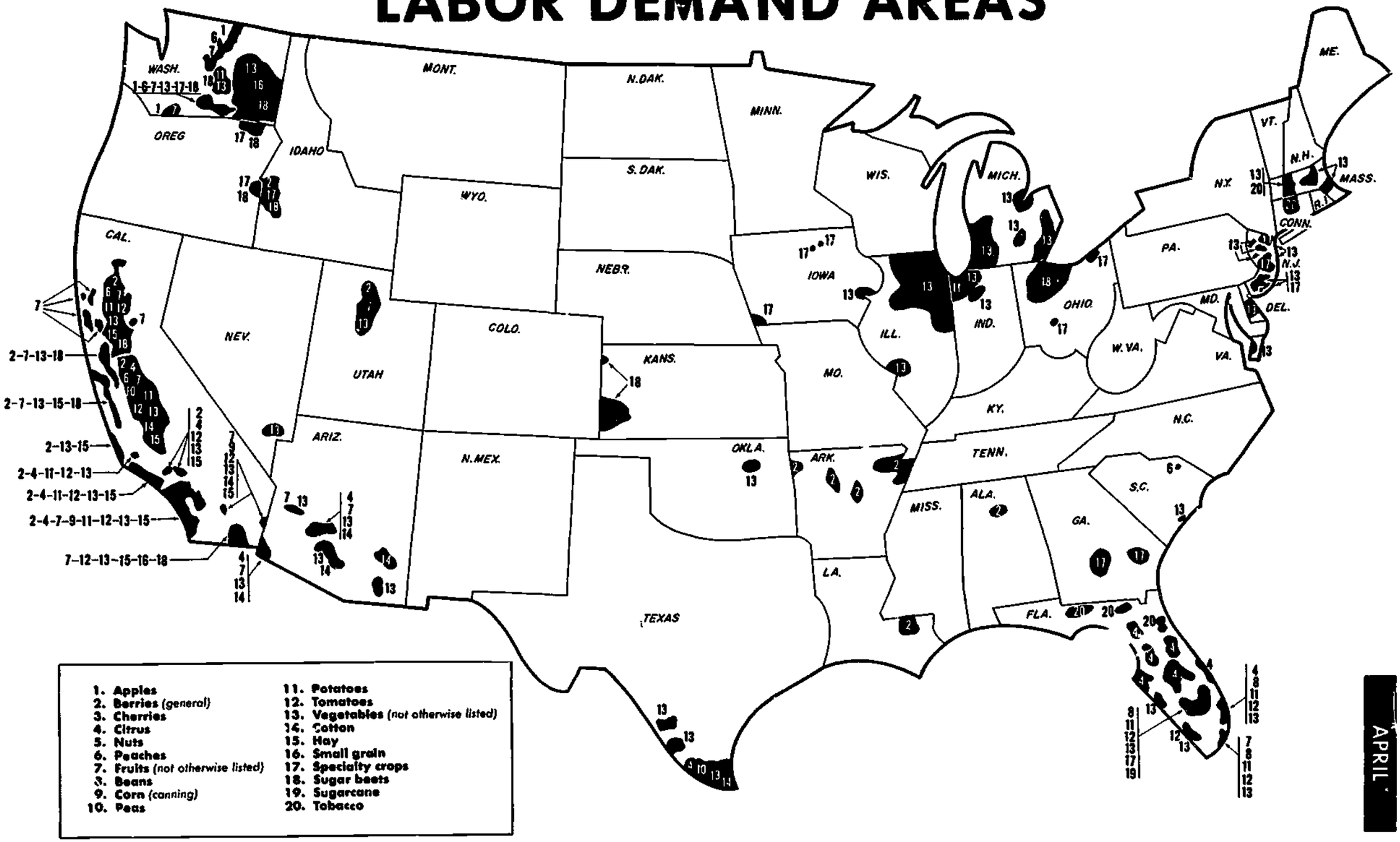
20. Tobacco

APRIL

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS



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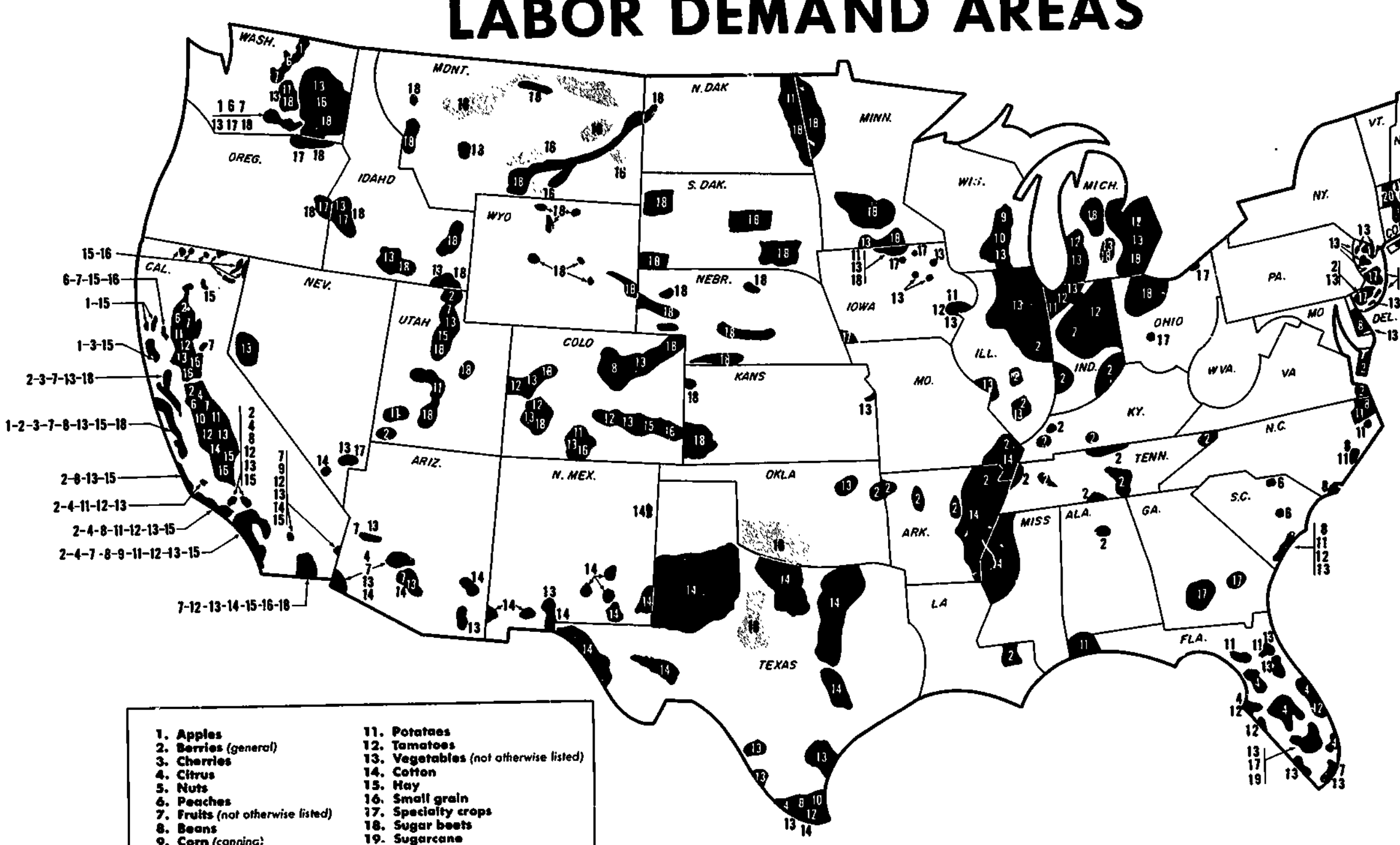
MAY

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS



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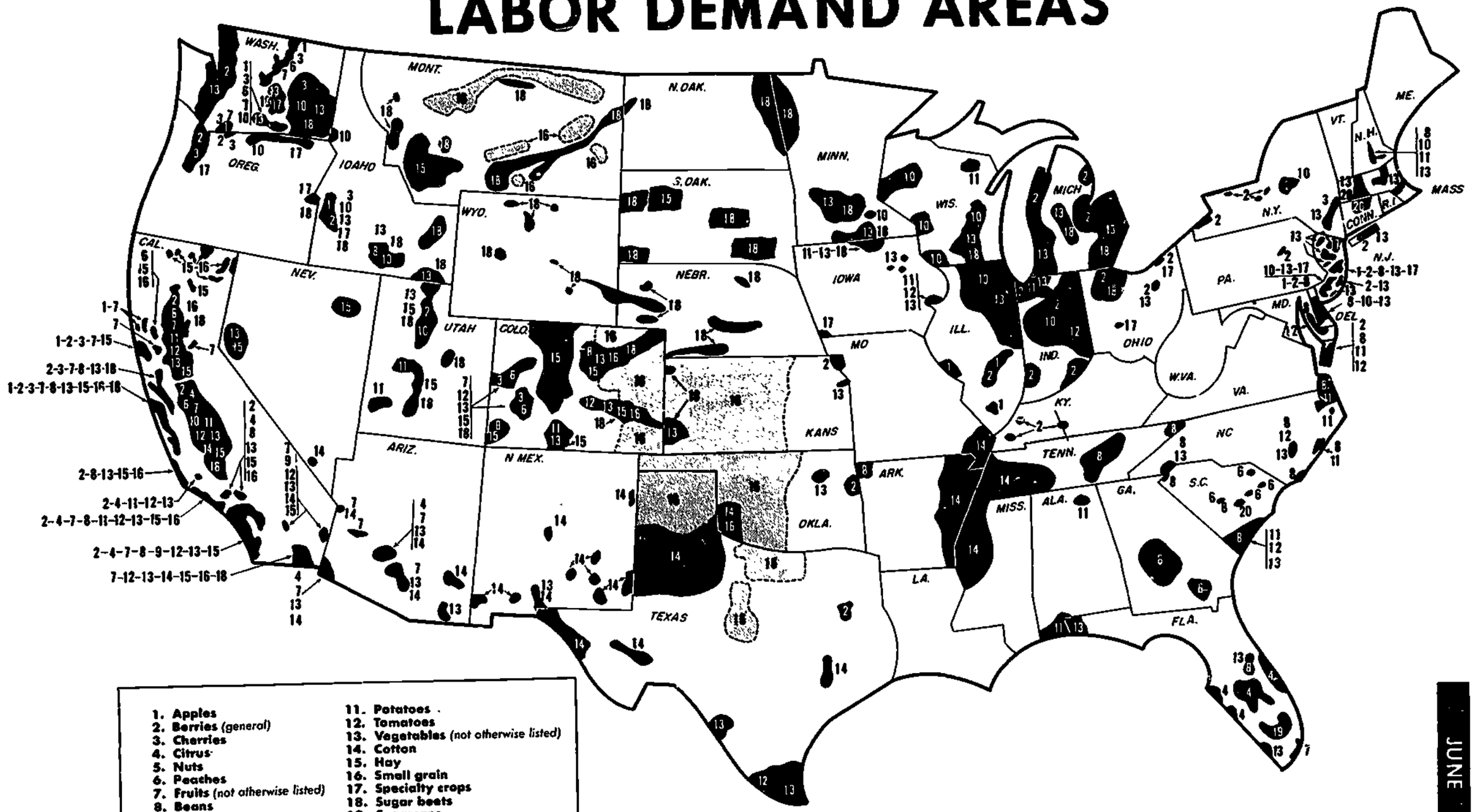
JUNE

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS



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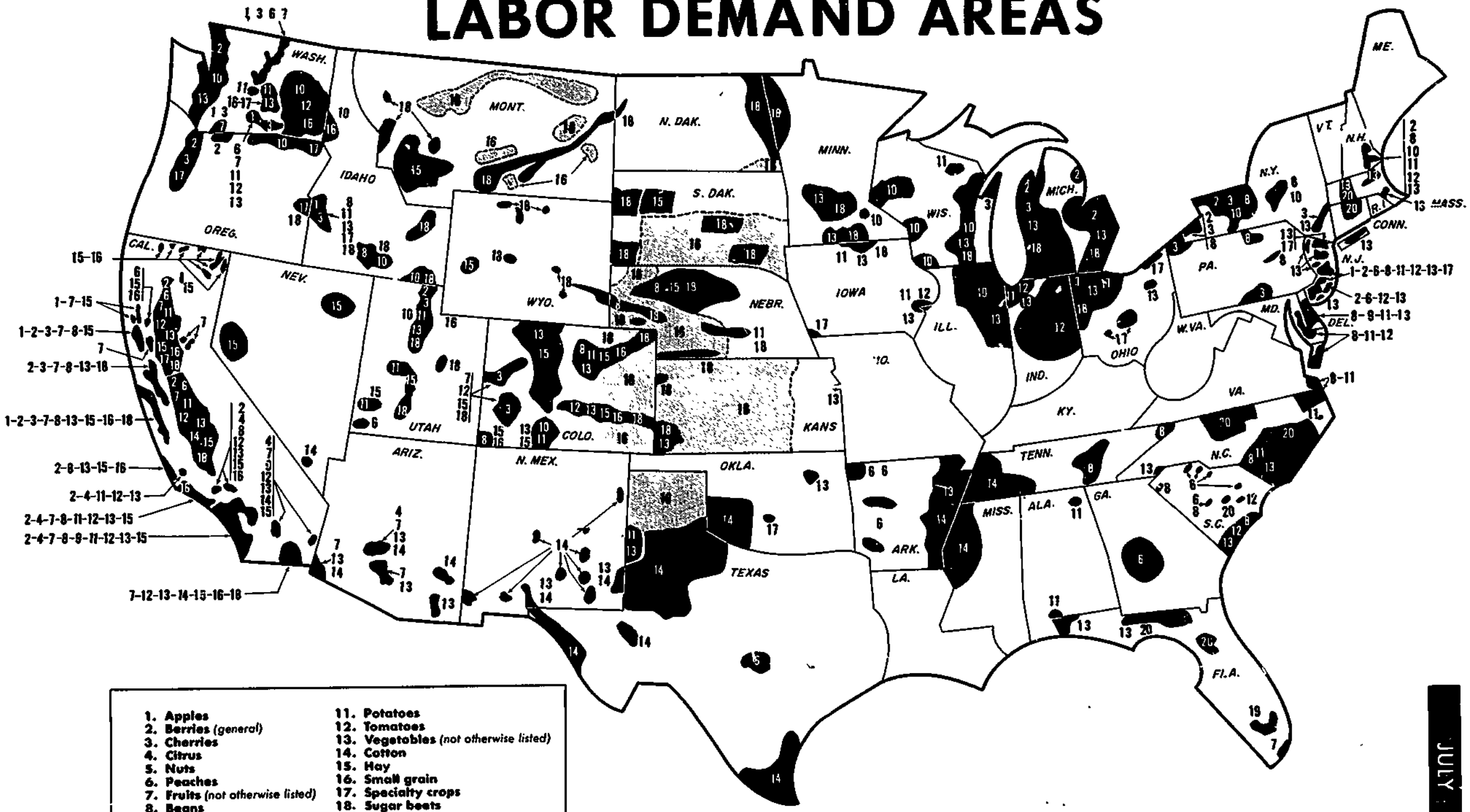
JUNE

JULY

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS



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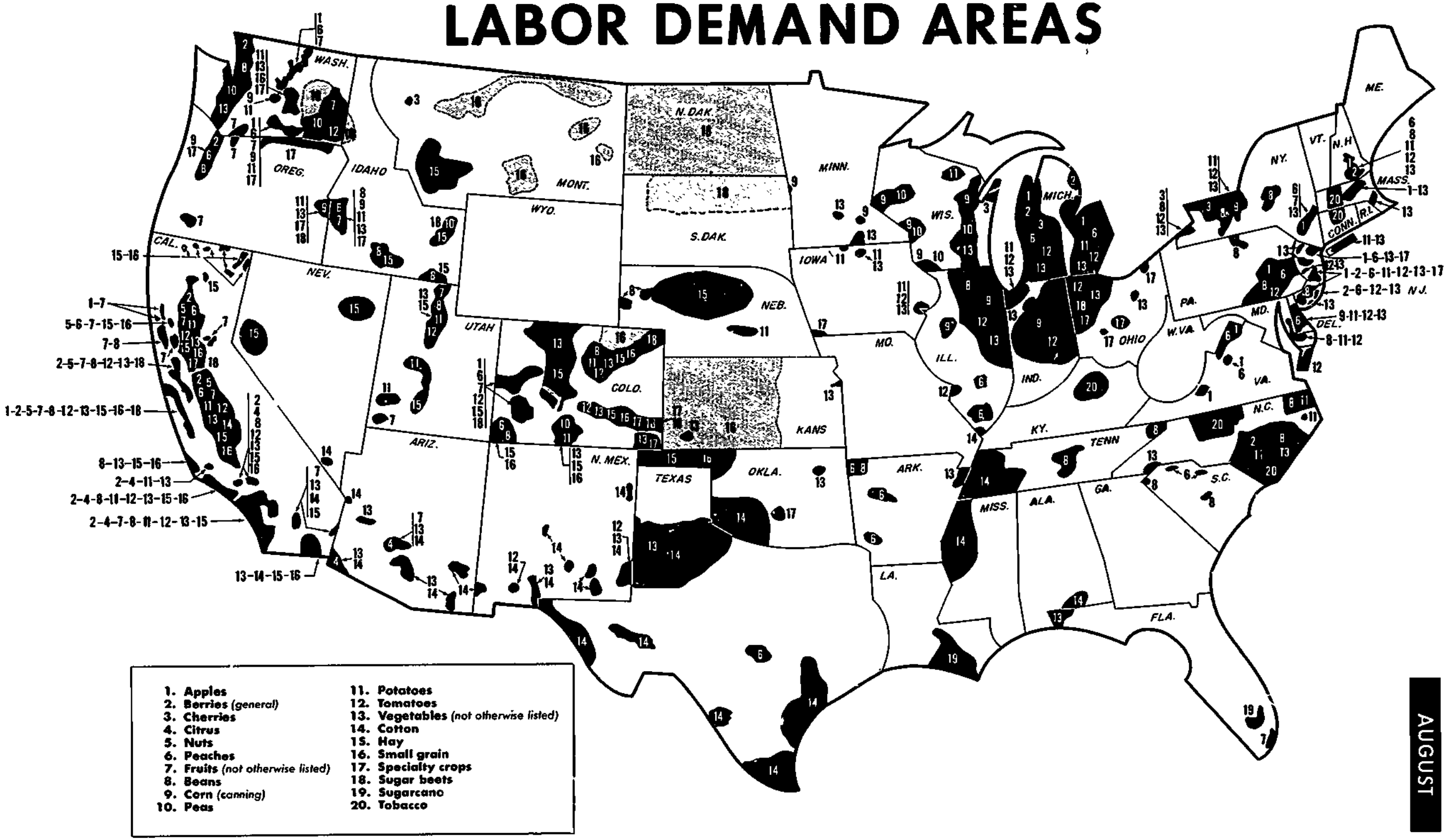

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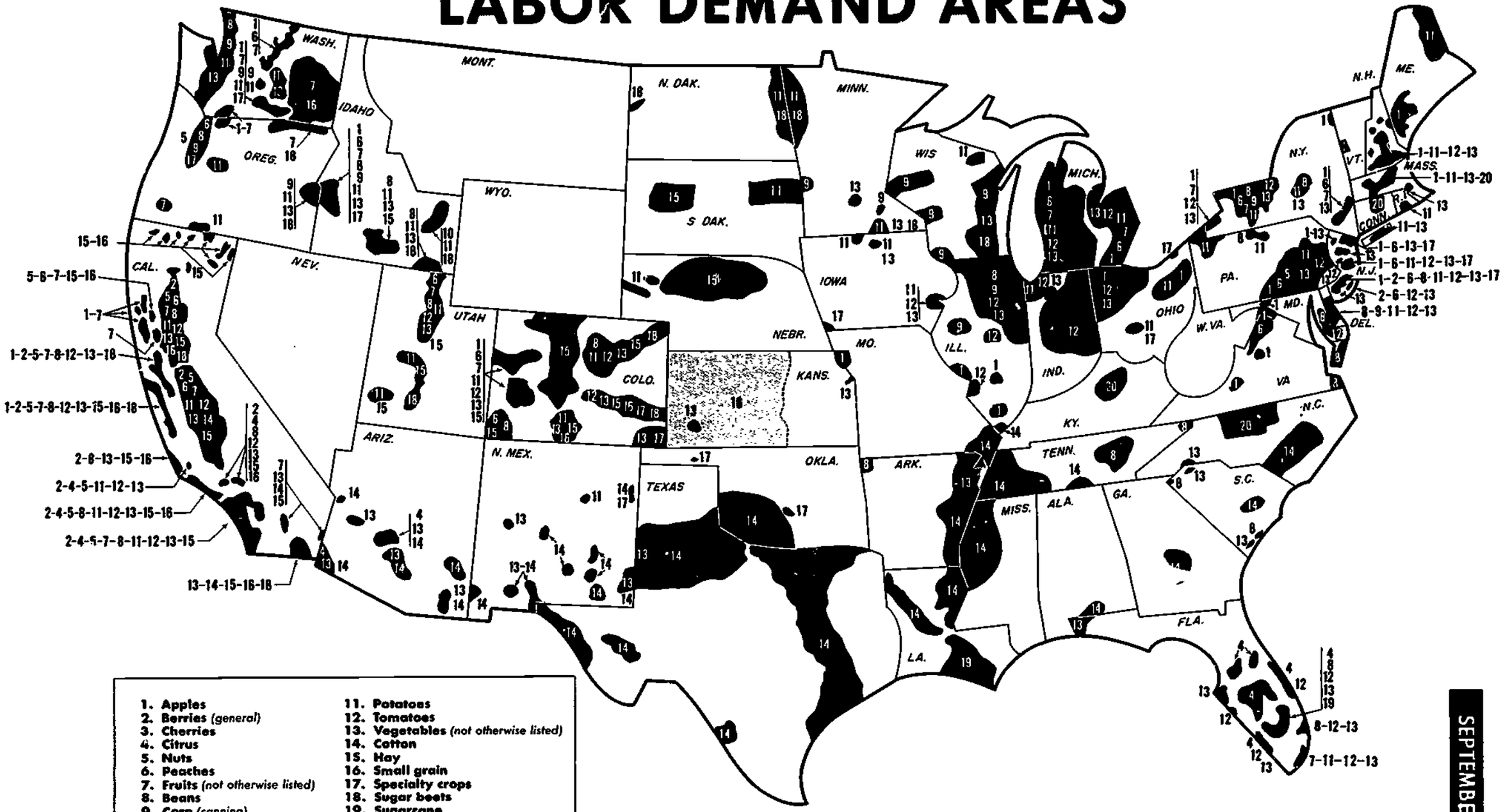
AUGUST

SEPTEMBER

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS



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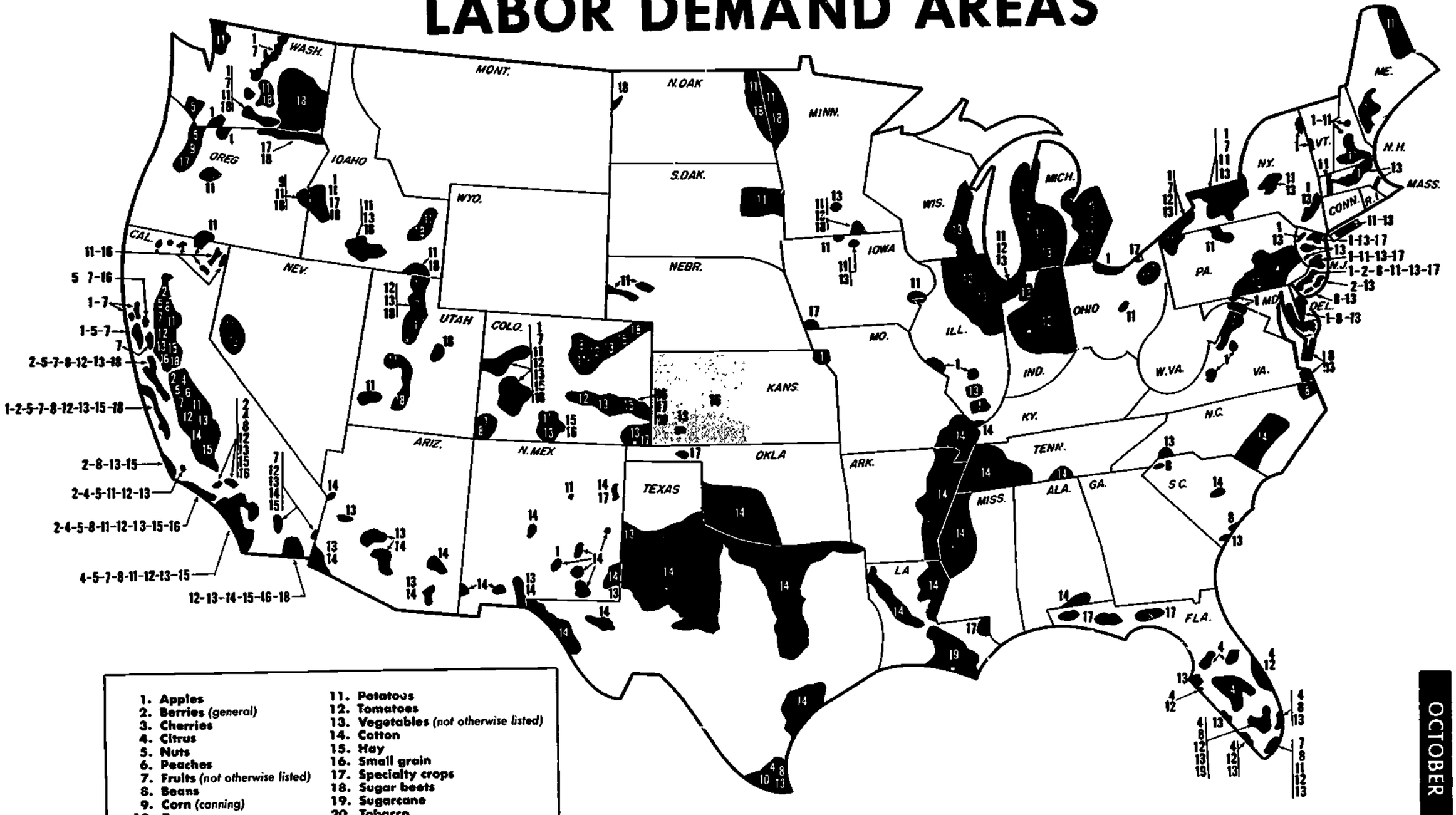
SEPTEMBER

OCTOBER

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS

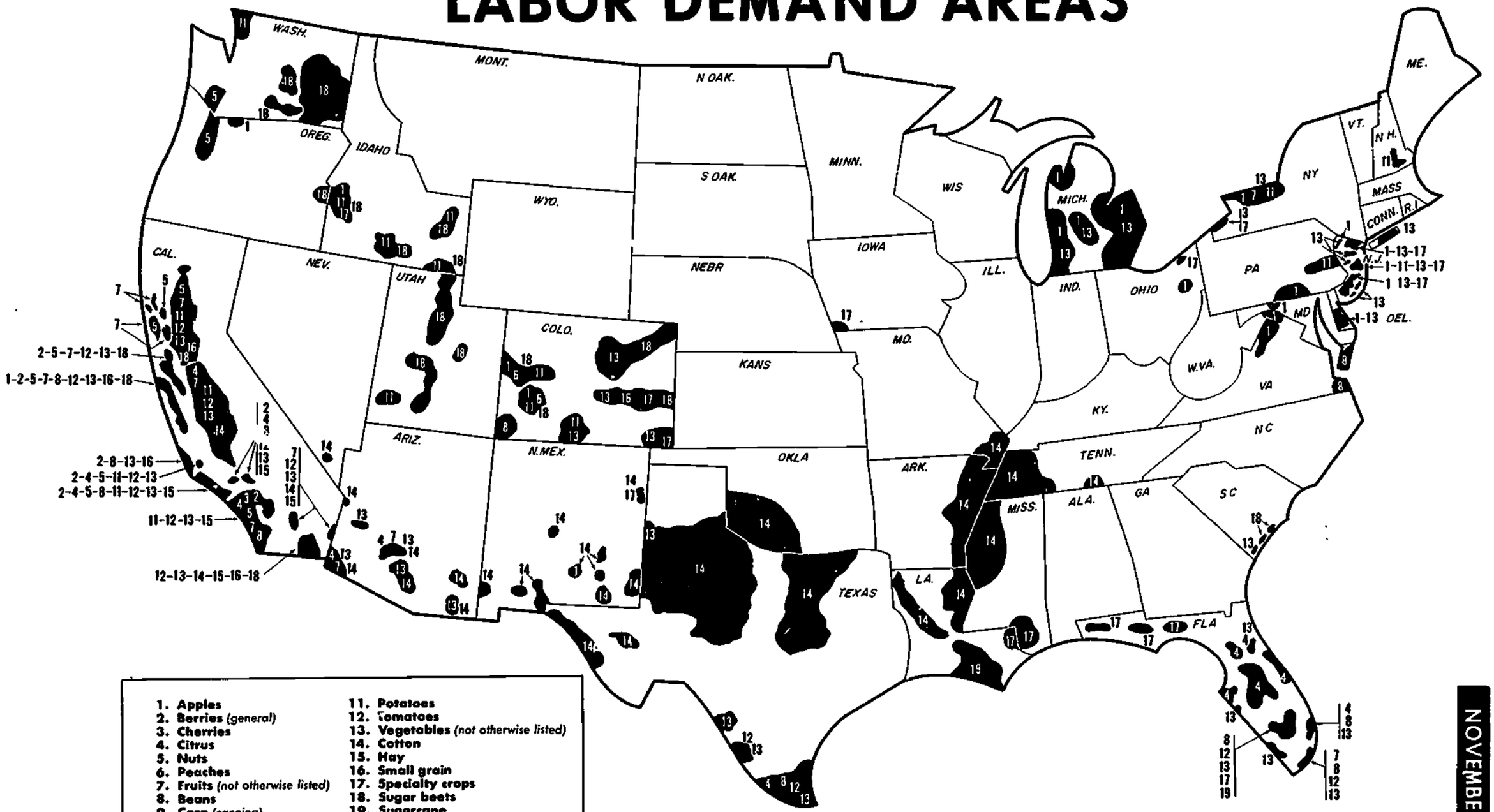


1. Apples
2. Berries (general)
3. Cherries
4. Citrus
5. Nuts
6. Peaches
7. Fruits (not otherwise listed)
8. Beans
9. Corn (canning)
10. Peas
11. Potatoes
12. Tomatoes
13. Vegetables (not otherwise listed)
14. Cotton
15. Hay
16. Small grain
17. Specialty crops
18. Sugar beets
19. Sugarcane
20. Tobacco

OCTOBER

NOVEMBER

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS



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NOVEMBER

DECEMBER

MAJOR AGRICULTURAL MIGRANT LABOR DEMAND AREAS

DECEMBER

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*LEADERSHIP FOR QUALITY CONFERENCES, ST. LOUIS, MISSOURI, MARCH 4-5, 1966

"Principles, Practices, and Problems of Accreditation--A Few Observations," a speech by Norman Burns, is summarized. Other speeches, presented in total, are: (1) "The Accrediting Program of the National League for Nursing" by Mar F. Liston, (2) "A Position Paper on Specialized Accreditation in the Junior Community College" by Dwight C. Baird, (3) "Audio Tutoring--A Method for Independent Study" by Samuel N. Postlethwait, (4) "Audio-Tutorial Laboratory" by Patricia Ann Walker, (5) "Audio-Tutorial and Mobile-Tutorial Laboratory Techniques in Nursing Education" by Crystal M. Lange, (6) "Cooperative Education in a Nursing Curriculum" by Charlotte E. Voss, (7) "Newer Uses of Television" by Anastasia M. Hartley, (8) "Multiple Assignments" by Janet T. Galeener, and (9) "New Approach to Education" by Mary E. Jensen. A report of a discussion on accreditation is included in the Appendix. (JK)

VT 002 638

LEADERSHIP

FOR

QUALITY

Report of a Conference Held by the Department of
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League for Nursing in St. Louis, Missouri
March 4-5, 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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PRINCIPLES, PRACTICES, AND PROBLEMS OF ACCREDITATION--A FEW OBSERVATIONS*

Norman Burns

The voluntary accrediting agency is a distinctly American phenomenon. It represents an attempt to accomplish through voluntary means what in other nations is accomplished through a ministry of education. The accrediting agency exists for the purpose of protecting the public against unsatisfactory educational programs. To this end, it engages in a continuing program of evaluation of institutions and guidance for institutions through the use of its resources. The accrediting agency places its stamp of approval on an institution only when what is judged to be a minimum level of acceptability is reached. It is not, however, satisfied when an institution reaches the threshold of acceptability; it also attempts to provide guidance for institutions working toward continuing improvement beyond the point of accreditability.

Institutional evaluation was formerly based on the application of fixed standards, stated in quantitative terms, to which institutions were expected to conform as a condition of accreditation. More recently, the process has become considerably more sophisticated in the sense that recognition is given to the fact that all institutions cannot be forced into the same mold--that institutions do and should differ one from another both in purposes and educational methods and that these differences must be taken into account in the evaluative process. As a consequence, considerably more reliance is placed today on the judgments of competent persons.

In arriving at judgments, the evaluator makes use of certain general guidelines, which generally are of two kinds: (1) normative data, stated in quantitative terms, on the characteristics of similar institutions and (2) what is generally accepted in the trade as good practice.

How does one get informed judgment? The prime requisite is the selection of able, interested, and knowledgeable persons to perform the evaluative task. Accrediting agencies differ as to the ways in which they prepare these persons for the task of institutional evaluation. The North Central Association has for a number of years made systematic efforts to prepare evaluators through an initial orientation program followed by a series of regularly scheduled conferences. It is also the obligation of the accrediting agency to make available to these persons materials that are relevant to the task.

The process of institutional evaluation has two dimensions. One is the assembling of data that lend themselves to empirical analysis--objective data on people, programs, and facilities; the other, value judgments supported by empirical data where they are available or based on logical analysis.

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*This paper is a summary of the address given by Dr. Burns.

Dr. Burns is secretary of the Commission on Colleges and Universities, North Central Association of Colleges and Secondary Schools.

The principles of accrediting set forth above are operative in both general (or regional) accrediting and professional accrediting. The general accrediting agency evaluates the institution in its entirety; the professional agency looks at the particular program within the institution with which it is concerned. The general accrediting agency carries on its evaluative activities in terms of institution-wide characteristics--institutional structure, qualifications of faculty, characteristics of students, physical facilities, organization of the curriculum, student personnel services, institutional financing. It is also concerned with the dynamics of the institution--interpersonal and intergroup relations, communication, decision-making, morale, campus climate or tone.

But though primarily concerned with general institutional characteristics, the general accrediting agency also gives attention to the parts of the institution. This it does largely through including on the teams persons with competence in the main areas of work offered in the institution. Inadequacy in one or more parts of the institution means denial of accreditation, or if the situation is not serious enough to justify denial, accreditation is granted after appropriate assurances from the institution that the weak parts will be strengthened within a reasonable period of time. The general accrediting agency does not attempt to evaluate individual programs in the depth and the detail that would be expected of a professional accrediting agency.

What, then, can the general accrediting agency say about the meaning of its accrediting actions? It can say (1) that the institution possesses the general characteristics of an acceptable institution and (2) that no major part or program is so poor as to justify denial of total institutional accreditation. The general accrediting agency may not be satisfied with all parts of the institution at any one point in time, but if it grants accreditation, it has good reason to be confident that the weak parts can and will be strengthened.

THE ACCREDITING PROGRAM OF THE NATIONAL LEAGUE FOR NURSING

Mary F. Liston

The accreditation of educational programs in nursing is one of the ways in which NLN fosters the development and the improvement of nursing education to the end that the nursing needs of the people will be met.

Prior to describing the accrediting program, I would like to review briefly both NLN structure and the relationship of the accrediting program to that structure.

The certificate of incorporation of the League, dated January 26, 1952, states, "the object of this organization shall be to foster the development and improvement of hospital, industrial, public health, and other organized nursing service and of nursing education through the coordinated action of nurses, allied professional groups, citizens, agencies, and schools to the end that the nursing needs of the people will be met."

Two of the functions of the organization are:

1. To promote education for nursing in all fields by defining and developing sound standards of nursing education and by planning the development of adequate facilities for good organization, administration, and curricula.
2. To accredit educational programs in nursing.

These functions are delegated to the Division of Nursing Education, which comprises the following departments:

1. The Department of Practical Nursing Programs.
2. The Department of Diploma Nursing Programs.
3. The Department of Associate Degree Programs.
4. The Department of Baccalaureate and Higher Degree Programs.

The Division implements its functions through the four departments by a variety of activities, including:

1. Conducting and promoting appropriate studies and research, and encouraging experimentation.
2. Promoting general and professional understanding and active participation in the support of sound nursing education.
3. Conducting upon request community and regional surveys or studies to determine how existing educational programs in nursing might best be organized for maximum effectiveness and whether additional facilities are needed.
4. Formulating and administering a plan for the accreditation of educational programs in nursing.

Dr. Liston is associate general director of NLN and director of the Division of Nursing Education.

Thus, accreditation is only one of the functions of the Division of Nursing Education and must be viewed in the context of total divisional activities. It does not stand isolated from the others but is vitally interrelated. This, I believe, is a viewpoint that does not receive the attention that it merits.

Participation in the NLN accrediting program by a school of nursing or an educational unit in nursing is voluntary in the sense that there is no such legal necessity involved as there is for approval by a state board of nursing. The values of participation are those that result from association with other schools or units in promoting progress in education for nursing and those that accrue from the listing of an educational program by the national accrediting agency.

The NLN accrediting program has the following purposes:

1. To stimulate continued improvement of nursing education throughout the United States and its territories and thus to promote the improvement of nursing service.
2. To provide assistance to educational units in nursing in the continuous process of self-evaluation and self-improvement.
3. To describe the characteristics that each type of educational program in nursing should have in order to make its appropriate contribution to society.
4. To identify those programs of each type that are worthy of public recognition.
5. To guide prospective students in the choice of educational programs in nursing best suited to their interests and needs.
6. To assist secondary schools, colleges, and universities in advising students with respect to choosing an educational program in nursing.
7. To serve as a guide in interinstitutional relationships, such as those involved in transfer of students and admission to graduate programs.
8. To aid employers of nurses in assessing the qualifications of candidates for various kinds of positions.

The policies and procedures followed and the criteria used in accrediting educational programs in nursing are based on principles widely accepted and tested in education for other professions and in general education and found acceptable by national nursing organizations in the past.

Accreditation in nursing is conceived of as a program in which the educational units themselves play a vital part. Faculties of educational units in nursing have the major role in the whole process of educational development and evaluation in the department. They are constantly engaged in the development and the evaluation of their own programs. Individual members and faculty groups define objectives of courses and curriculums and prove what can be accomplished. They establish standards for themselves and their programs and envisage goals for further development of nursing education. Therefore, as part of the accrediting process, every effort is made to involve as large a number as possible of the administrative and the teaching staff of each educational unit in nursing in its own self-evaluation and thus to encourage self-improvement.

The policies of accreditation and the criteria adopted by NLN's Division of Nursing Education reflect good practices that are already widely followed in individual units in nursing and also a consensus as to what characteristics the education should have to be recognized as satisfactory for its purpose, but policies and criteria must change as the profession itself evolves and as the society that it serves makes changing demands. A Divisional Advisory Committee on Policies and Procedures of Accreditation, widely representative

of authorities in the accrediting field, assists in the continuing development and improvement of accreditation procedures. Faculties of nursing programs and their representatives on committees within the departments of the Division of Nursing Education share the responsibility of initiating reconsideration of any part or the whole of the accrediting program. When recommended revisions of policies, procedures, or criteria are under consideration, faculty members participate by making specific suggestions for improvement and by testing the validity of proposed measures.

Faculty members serving as NLN accrediting visitors and as members of the boards of review also play a vitally important role, individually and as representatives of faculty groups, in the development and the maintenance of a sound accrediting program the ultimate goal of which is the improvement of nursing education and thereby the improvement of nursing services in our society.

The NLN accrediting program is based on the belief that the individuality of institutions and their special contributions are of paramount importance. Therefore, emphasis is placed upon the evaluation of the total program and its general excellence as well as upon its achievement with regard to particular aspects, provided that there is basic conformity to the standards generally accepted by the profession and by society as essential for the effective functioning of the graduates of an institution at the level and in the field for which the institution purports to train. Furthermore, the dynamic quality of a program and the rapidity with which it is moving toward clearly defined and desirable goals are recognized. This implies that there will be flexibility in accrediting procedures.

The process of accreditation can be said to involve five major steps:

1. Initiation of the accrediting process by the school.
2. The self-evaluation study and the writing of the self-evaluation report.
3. The accreditation visit.
4. The evaluation by the board of review.
5. Continuing self-evaluation and program development, using the board's recommendations in the process.

For some faculties. there may be an additional step that involves submitting progress reports based on the board's recommendations.

An attempt has been made in this presentation to describe the NLN accrediting program. It is our hope and earnest wish that associate degree nursing programs will actively participate in their own improvement through participation in the accrediting program.

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A POSITION PAPER ON SPECIALIZED ACCREDITATION IN THE JUNIOR COMMUNITY COLLEGE

Dwight C. Baird

I consider it a great privilege to be invited to participate in the Third National Conference for Associate Degree Programs in Nursing, sponsored by the Department of Associate Degree Programs of the National League for Nursing. I come to you, as you know, as the president of a public community college and as the immediate, and I do mean immediate, past-president of the American Association of Junior Colleges. The topic under discussion this afternoon, accreditation, is a timely one indeed.

It is a privilege to share the platform with two persons as knowledgeable in this field as Dr. Norman Burns, Secretary of the Commission on Colleges and Universities of the North Central Association of Colleges and Secondary Schools, and Dr. Mary Liston, Director of the Division of Nursing Education of the National League for Nursing. I was much impressed, as I am sure you were, with the presentations that they have just made. Most of the points covered in their addresses were noncontroversial; much of what I will have to say will, I suspect, prove to be controversial. After having said this, let me hasten to say that I believe in accreditation. I like the National League for Nursing. And, obviously, I believe in the American Association of Junior Colleges.

I have been involved in accreditation practices and procedures, either at the secondary or collegiate level, for 30 years. I am currently a member of the Higher Commission of the Northwest Association of Secondary and Higher Schools, and I am one of the six commissioners representing the American Association of Junior Colleges on the National Commission on Accrediting. I consider the two great organizations represented here today, the National League for Nursing and the American Association of Junior Colleges, to be powerful and useful national organizations, and I repeat powerful and useful, which unfortunately, are proceeding at this point in history on a collision course on the question of how and by whom programs of nursing education shall be evaluated in the junior community college.

Much of what I will be saying in the next 20 minutes reflects in up-to-date form the ideas expressed in a statement prepared some months ago by a committee (including the speaker) representing the American Association of Junior Colleges.

Some months ago, the American Association of Junior Colleges requested the National Commission on Accrediting to urge the regional accrediting associations to conduct a thorough study of junior college accreditation. Such a study should be as broad and as deep as is necessary to formulate valid recommendations for evaluating junior colleges and their programs. The intent of the American Association of Junior Colleges in seeking this study is to obtain an objective analysis of total accreditation of junior colleges, including consideration of specialized programs. The Association believes that general and special accreditation are inseparable--a study of one involves the other--and that this study must include both. This paper seeks to define the purpose and scope of the study.

Dr. Baird is president of Clark College, Vancouver, Washington, and immediate past-president of the American Association of Junior Colleges.

I believe that a major study of policies, procedures, and practices of junior college accreditation is imperative at this time because:

1. Relationships between junior colleges and other segments of education are growing more complex, not only because of the rapid growth of junior colleges but also because junior colleges have become basic, essential components in the scheme of education in many states. The quality of junior college education is of pivotal importance to millions of individuals and to hundreds of institutions across the nation. This position of importance mandates special concern for the junior college, not only for the welfare of the junior college but also for the welfare of all segments of education.
2. New responsibilities that have been accepted by junior colleges in extending post-high-school educational opportunity to new and larger segments of society are creating problems that are not faced by institutions that provide only traditional programs to students screened by selective admissions policies. The comprehensive programs of community colleges that appropriately serve such a wide spectrum of post-high-school and adult students pose problems of evaluation that extend far beyond those of traditional liberal arts colleges. These new responsibilities are of such social importance as to warrant high priority in any scheme of institutional evaluation.
3. Pressing demands for semiprofessional, technical, and skilled manpower to serve advancing technologies require junior colleges to provide programs not previously offered by other educational institutions. It is essential to our nation's economy and general welfare that appropriate development of these programs be fostered by appropriate evaluative criteria and by attention of accreditation commensurate with their importance.
4. New standards must be formulated for a variety of programs provided by junior colleges that heretofore have not existed and therefore have not previously been subject to accreditation review. Qualifications of staff, curriculum organization and content, facilities and equipment, and characteristics of students should be viewed in a perspective different from that appropriate for baccalaureate, graduate, or professional programs.
5. Allocation of federal funds to junior colleges is contingent upon evidence of institutional and program quality and capability. Present accreditation procedures do not provide the evidence needed to make possible a just distribution of funds, and consequently the intent of Congress is not being fully achieved. A better system for assessing the existing and the potential strength of institutions that are capable of improving and extending educational opportunity is urgent.
6. Rapid changes must be commonplace if junior colleges and their programs are to be responsive to changing societal needs, especially those programs attuned to technological development. Accreditation processes should have comparable flexibility if accreditation is to provide a positive influence in orderly program development. Obsolescent accreditation practices and insufficient attention to accreditation policies and procedures that are appropriate for junior colleges are having an adverse influence on the development of these institutions. A new framework for junior college accreditation is indicated.

Aware of the necessity of developing an improved scheme of accreditation, the American Association of Junior Colleges for the past several years has sought changes in accreditation policies, procedures, and practices. Junior

college leaders are in general agreement that accreditation procedures can be designed that are both simple and effective; they believe that an elaborate scheme of multiple accreditation is undesirable and detrimental. In view of the complexity of the problem, the long history of tightly controlled practice, and the relative newness and uniqueness of the junior college, the American Association of Junior Colleges believes that it is highly desirable to stand back from the complex maze of accreditation machinery and view the matter in a new perspective, asking such questions as: What evaluation is essential? Is accreditation of any kind necessary? What is the simplest effective means of accomplishing the essential?

The implications of the answers to such questions suggest that such a study should be planned and conducted cooperatively and jointly by the American Association of Junior Colleges, the National Commission on Accrediting, and the Federation of Regional Accrediting Commissions of Higher Education. It is the hope of AAJC that the study will boldly chart a realistic course of development of accreditation that will be valid for many years to come. We are asking that this study be jointly sponsored by major national organizations because the problem is of broad national concern.

Future developments in education are uncertain. Any scheme of accreditation for the future must be adaptable. What scheme will provide for flexibility and at the same time encourage junior colleges to strengthen as well as extend their educational services? It is my hope that this study will provide basic guidelines for appropriate action toward these ends.

The problem is intricate and the issues are many, complex, and interrelated. Satisfactory solutions may require only minor modification of existing accreditation procedures. However, solutions may require the formulation of a scheme that would set junior college accreditation apart from the accreditation of other institutions of higher education. The study should be initiated with provision for maximum latitude in its recommendations.

Critical issues that the study must consider include:

1. Is any accreditation necessary? Is there a defensible rationale for accreditation? What purposes does accreditation serve? Are there procedures other than accreditation that could serve these purposes better?
2. What are the merits and the limitations of the several kinds of accreditation now in operation? Are the present systems of accreditation the most effective and efficient means of achieving the essential requirements for which accreditation is designed?
3. Responsibilities for accreditation or quality control or evaluation are currently assumed in one way or another by a number of agencies. These include the National Commission on Accrediting, the Federation, the regional accrediting associations and their commissions, special program agencies such as ECPD and NLN, state and national licensing boards, state departments of education, and federal government agencies. The actions of these many agencies are largely autonomous, competitive, and often conflicting. Collectively, they do not provide a simple, efficient, and effective method for accrediting institutions, programs, or graduates. What number of agencies, what kinds of agencies, and what differentiation of responsibility among agencies would be most desirable?
4. On what bases can the overlapping responsibilities of regional accreditation associations, specialized accreditation agencies, and state licensing and approval boards be defended?
5. What are the relative merits of national- , regional- , or state-centered accreditation?

6. What are the relative merits of accreditation by governmental and nongovernmental agencies?
7. Is there valid evidence that accreditation strengthens institutions and programs and directs their development toward desirable ends? Does the evidence indicate equal effectiveness of state, regional, and professional agencies? Is effectiveness a factor of the agency or the process?
8. Tradition imposes an inflexibility that makes major change difficult. This difficulty is intensified for junior colleges because junior colleges usually have a minority representation in the bodies that conduct or control accreditation, such as the regional associations and the National Commission on Accrediting. What organization and control of accreditation will insure equitable and just attention to problems of junior college accreditation?
9. Is a separate system of junior college accreditation warranted?
10. What advantages does affiliation with NCA offer to junior colleges? In matters dealing with junior colleges, do six commissioners provide adequate junior college representation on the NCA board?
11. Are NCA procedures for determining a need for accreditation sound? On what basis and by what process does NCA determine that a social need for accreditation exists?
12. Should criteria for accrediting programs related to one of the professions be fundamentally different from criteria appropriate for accrediting nonprofessional programs?
13. Should all specialized programs be reviewed for accreditation purposes, or do professionally related programs warrant consideration different from that given to programs that are not affiliated with professions?
14. If specialized accreditation is desirable, what are the appropriate responsibilities for the accreditation of professional associations, education associations, state boards, business and industry, respectively?
15. Are standards and procedures used to accredit professional programs in universities appropriate for accrediting semiprofessional programs in junior colleges? (I believe that in many instances, they are not.)
16. What level of quality verification is necessary to fulfill the purposes of accreditation? Are different levels of quality verification necessary for different purposes? For example, is the level of program quality verification provided by regional accreditation adequate for the purpose of assuring Congress that federal funds are being spent appropriately? Are standards absolute or relative?
17. Is program accreditation of any kind necessary in junior colleges? If so, for what purposes, what programs, and why?
18. At what point do the costs of accreditation to the college, both direct and hidden, outweigh the advantages of accreditation and limit its effectiveness?

Problem

The purpose of this study would be to recommend an effective, efficient, and feasible plan or alternate plans for attesting to the quality of junior community colleges and their educational programs.

The study might test the hypothesis that accreditation by regional associations can adequately fulfill all of the accreditation requirements of junior colleges.

Specific objectives of the study would include:

1. For what purposes is the evaluation of these institutions and their programs necessary? Is accreditation necessary?
2. By what means are institutional and program evaluation being made currently?
3. To what extent are present methods of program and institutional evaluation satisfactory for present and future requirements?
4. What are the essential elements of an ideal plan for program and institutional evaluation? How could an ideal program be organized and operated? How should necessary changes in present accreditation practices be brought about?

Delimitations

The study would focus attention on junior colleges. It would consider the total responsibilities of these institutions, but it would give special attention to problems of evaluation of the responsibilities these institutions have for vocational-technical education. Because of the interrelatedness of junior colleges and other segments of education, the study must be concerned with implications of its recommendations for all segments of education. In addition, the study should be concerned with problems that already are critical and that require immediate solution as well as with problems that would be better solved by an orderly evolution. The study at its best would produce sound recommendations and guidelines for immediate and long-term action.

Conclusion

In asking for this study, we are seeking a comprehensive review of present practices of accreditation in the light of emerging needs. The study should concentrate on the problems of the junior college specifically, but it should not avoid issues that have relevance to other segments of education. It is hoped that the recommendations of the study would foster the orderly development of strong institutions and programs that would serve well all who depend on them for personal and societal improvement.

Again, my deep appreciation to the National League for Nursing for inviting me to participate in the Third National Conference for Associate Degree Programs in Nursing. As I said in the beginning, I believe in accreditation and I like the National League for Nursing. I recognize that both the AAJC and the NLN are powerful national organizations dedicated to worthwhile objectives, and I have full confidence that in this one great area of common interest--nursing education--we can work cooperatively and find satisfactory solutions to the problems that confront us.

AUDIO TUTORING--A METHOD FOR INDEPENDENT STUDY

Samuel N. Postlethwait

Because of all of the psychologists and other informed people present, I find myself, a plant morphologist teaching freshman botany at Purdue University, just a little out of context.

I think I will just tell my story plainly and not try to do anything differently from what I would do with a group of people who are interested in teaching biology.

The president of Purdue University tells the freshmen at the beginning of the year how good-looking they are, how much smarter than previous students--that they are the greatest--and that this is going to be the greatest group that has ever gone through Purdue. Then he tells them that learning is an "independent process." The idea that he is attempting to convey is that if there is any learning to be done, it is entirely up to the student--that the facilities and the teachers, whether they are good or bad, will not make the student. It is only through their own efforts that they will be able to learn. It is kind of a paradox, it seems to me, that we say to these students that all learning is independent learning and that learning can only be done by the individual learner--and then take them into an educational system that is so structured that there is little or nor opportunity to work independently. The bell rings and the students walk into classrooms--the bell rings and they walk out of the classrooms.

A few years ago, I became concerned about students who had ability but who, because of poor training in high school, were not able to compete with students who had had excellent training. Biological Science Curriculum Study and other updating activities have created an even greater diversity of backgrounds of students. The upper third of the high school graduating class may represent a great variation in the ability of students to compete one with the other. To my way of thinking, the American way is to provide everybody with an opportunity to go as far as they are able if they have the desire and energy. Why didn't we construct some sort of a system that would permit these students who have a poor background to exploit their potential?

The people in audio-visual suggested that I record a special lecture on tape each week so that those students who had poor backgrounds could listen to it. This would fill them in and help them keep up. After a while, it seemed reasonable to take the textbook and have the students open it to relevant material so that they could see how the material in the textbook is related to the subject matter on the tape. This worked all right. The next step was to take the laboratory manual and permit the students to see how the material in it is related to the material in the textbook, is related to the subject matter on tape; and this worked fine. Finally, why not take a plant to the study session so the students could see how the plant is related to the laboratory manual, is related to the textbook, is related to what I am talking about on the tape. Do you see that after a while, it wasn't a lecture on tape at all? It was quite different from a lecture. It was simply a matter of utilizing the various items that I thought

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would contribute to learning and tutoring the students through a sequence of learning events. It might mean that at one point, they would be doing an experiment; at another point, they would be reading from the textbook; and at another point, they would be doing something from their laboratory manual--examining a specimen or doing whatever the situation might require. Toward the end of the session, some of the students asked if they might discontinue their attendance in the regular, conventional classes because with the tapes they could turn me off when they wanted to and they could study when they wanted to. They found that it didn't take nearly so much time to learn what they were required to learn. If this was true with some students, would it be true with students that were randomly selected?

A group of 36 students, used in an exploratory way, received all of their exposure to the course through this audio-tutorial approach, as we called it, inasmuch as it is audio and it is tutoring. By the end of the session, they had moved along so successfully that we totally restructured our course. We now forego all of the conventional limitations that are commonly imposed by the registrars and administration and teachers and consider only those activities that contribute to learning.

I met with the 36 students, and we had quite a session. As we talked, there were certain things--certain ingredients--that seemed to be required in the totally restructured course that I hadn't thought about and some that I think they hadn't thought about either. For example, some of them said that the tape becomes pretty impersonal after a while and that there ought to be an opportunity for them to at least see the person whose voice is on the tape and hear the jokes he would crack in a regular class. They had heard about my jokes; I had used them for some time--14 years--and you can't blame them, you know. This meant that we ought to have at least one session in this newly structured course in which I could express myself in the conventional fashion, i.e., at least one hour for general assembly sessions, G.A.S. It seemed also that there ought to be an opportunity for them to express themselves, so we ought to have at least one hour of small assembly sessions, S.A.S. This meant that in our course we would have at least two hours of scheduled sessions per week. The course initially was taught with two hours of lecture, one hour of recitation, and three hours of laboratory. Theoretically, the students then would owe us a total of six hours. But hopefully, if we were going to do what I am saying I would like to do, we would not be equating learning with hours spent. A good old farm boy who has plenty of capacity but weak background might spend eight hours, while some other person, who was well informed, might spend only an hour or so in the independent study session (I.S.S.)

I think perhaps I can best tell you what is involved in the independent study session by showing you a movie of some of the activities that take place in them.

(Movie shown at this point.)

May I just say a quick word about the general assembly session and the small assembly session. The general assembly session should be more than a joke session, and it is. It is an occasion for bringing in a guest lecturer. It is an occasion for me to present raw data and help the students with problem-solving. It is an occasion for showing long films--and there certainly are some excellent long films in biology that we need to show our students. There are a number of things that you can just do better when you have a lot of people together. If there are occasions when I have nothing to present, I don't kid anybody--we just don't have a general assembly session for that week. By setting up this pattern, the students expect that any kind of session you have is one that is useful to them, and they expect to participate.

The first two small assembly sessions take care of some of the mechanics that must be taken care of at the beginning of the semester. Then the students are divided into groups of eight, and we meet them for one half-hour each week during the remainder of the semester. This is more of the seminar-type session than the so-called recitation type. We sit around a table, and I have behind me on a cart many of the materials that have been in the laboratory the previous week. (We don't like to use the word laboratory. Learning center is a little bit sophisticated, but since this is what we hope it is, rather than just a laboratory, this is what we now call it.) I pick up these materials one at a time, and each of the eight students is given an oral quiz. I simply take whatever the item might be--it might be experimental apparatus; it might be a twig or a specimen of some sort; it might even be one of these films--and hand it to the student and tell him to discuss it. He knows in every case what we are going to be asking him to do. We expect him to discuss it in a specified way. First, he is to identify it. What is it? Is it a piece of experimental apparatus? a twig? what? Second, we expect him to tell us what we were trying to teach with it--i.e., put the thing into context; and third, tell us how it fulfills its role.

This has been one of the most pleasant sessions and one of the most effective innovations of all. Sitting with eight students, I get some feedback that tells me for sure whether my program is good or poor. The students now are not trying to answer specific questions but are telling me what they know about a subject. I am finding out whether they understand the direction in which the whole course is going, because if they can't tell me where the subject fits into the program of this week's work and into the whole program of the year, then it is quite obvious that I haven't gotten it across.

It is, of course, necessary to evaluate the students. We began with a pass-fail arrangement, but the students wanted to know if it was a good pass or a mediocre pass; therefore, we do grade them. Doing so is an encouragement to be present and also to perform well. We can grade them--we can say that something was excellent. If I handed you a twig and you talked about it, I could, with my experience in botany, tell whether you knew something about it or not and whether you were doing an excellent job or a poor job. If it is an excellent job, you would be graded 9; if it is a mediocre job, you would be graded 7; if it is poor, it would be graded 5. Six is a passing score. If you do a poor excellent, that is 8, and if you do a good mediocre job, that also is 8.

The only people that this type of grading bothers are people with whom I talk, people who talk like this: They say, "How can you evaluate people in this subjective way?" Well, I can!! I know what botany is and what I have been trying to teach, et cetera. Someone has asked, "You don't trust some of your graduate students to do this?" Yes, I do, my senior graduate students; they are not different this year than they will be next year; and next year, they will have a course all to themselves somewhere. If I tend to err, I'll err on the positive side--if I am not sure about my judgment, then I will give the student an extra point. We give conventional exams as everyone else does in his course, so if a student doesn't know something when asked on this oral basis, he is only contributing to his grade--it isn't the final grade. This is what makes the difference. We can exercise some judgment here.

Question: In your film, you said only two setups of the experimental tables might be needed for 500 students. Won't you have all of the tables filled up at one time? How many are there in the course?

Answer: There were 520 students in the course this past semester. The first week everybody comes in on Wednesday afternoon, and they find that spaces are not available. We keep a record of the number of spaces that are available at

other times during the week, and we find that at 7:30 in the morning all week long there are spaces available. There are only 2 students in 500, I found, that didn't have time available at 7:30--at least one morning a week. It is a choice that the student will have to make--whether to stand around at two o'clock and wait for a booth to become available or to come in at 7:30 when booths are available. It is a problem the first week and second week, but every semester I have asked the students if they would rather be scheduled in some fashion so that a space is assured. The answer from about 90 percent of these kids is something like, "No, because when I have a physics test I don't have to work on botany. I can work on physics and know this, and then in my spare time, I can come in and work on my botany. I would rather take a chance on botany later." You can't force botany into them when they are studying physics anyhow.

Question: What was the cost, and how did you get your money for this equipment?

Answer: The cost was--well, a good tape player would cost around $175.00. The cost of our tape players, initially, was about $115.00. The department bought my materials for me.

Question: This whole system sounds tremendous. Let's say there are 520 students. Would you see these students at least once during the semester? You can't see them every week.

Answer: We see all 500 each week. I don't see all 500 myself, but I and my graduate students see them at half-hour intervals, and that means that we can take care of 16 per hour. We run simultaneous sessions, and we take care of 500 on Monday and Tuesday. This sounds like an overwhelming task, but the thing is we have saved time from the routine of dispensing information. We are no longer dealing with routine subject matter; now we are dealing with the kinds of things that we think are useful. I listen to the student and I talk with him and try to help him. As a matter of fact, we have found that one doesn't just give an oral quiz, one programs the oral quiz--if the oral quizzing starts with a fundamental idea that was basic to the whole thought for the week. This may be the first time that some students have learned the subject, but who cares? They came with the readiness to learn. Our objective is to help the student learn, not to regiment or to categorize students. I am distressed that much of education, much of the time of the teachers, has been spent in learning how to categorize people without learning how to help them to learn. I also contact all students through the G.A.S.

Question: Do your colleagues use this same setup?

Answer: We have one laboratory devoted to this. It is set up for botany only. For 500 students, one laboratory--well, we would be using two laboratories under the conventional approach. Thirty microscopes are used now, but in the conventional situation, we were using seventy-two. We were running simultaneous sessions. Now, coming back to your question about people, with conventional teaching, we had to have four people in lab all the time; now we use one. Of course, I am there all week and available to the students via the tape. No student depends on teaching assistants or anybody else for the initial exposure to the subject matter, since I take care of that via tape.

Question: Do you find any loopholes in this? The question came to my mind when you said they put in their time. Are these students required to put in a certain amount of time?

Answer: No. We do not equate time with learning. You can trust students. As a matter of fact, we find that students have as much concern for themselves as we had for ourselves at that age. They like progress, but they get awfully disgusted hearing us repeat things that they already know, although repetition is an important component of the learning process.

I want to get to the creative aspect of our course before I forget, and it

seems that I am about to run out of time. Do you see that because of the lack of timing, our experiments don't have to fit a three-hour module. We don't have to tailor our experiments to time, and we don't have to substitute experiments to keep students going for three hours when it is not helping them learn. This means, then, that students come in on Monday, if you please, and Tuesday and Wednesday and collect data. To teach the scientific method, we meet with them--30 students--in one of the initial small assembly sessions and say, "Look, this is a course in plant science. What is science?" They have the image of a man with a white coat counting cavities. So we say, "All right, if this is a science course, then you should do some research." In this course, we do three miniature research projects during the semester. We give full assistance during the first project and progressively less for the other two. It works perfectly.

Question: Have any other departments tried to parallel this experiment?

Answer: Yes, nearly all of the departments where my students have gone--science, pharmacy, vet, et cetera. These departments are developing the audio-tutorial system.

Question: Is there any opportunity for reviewing tapes?

Answer: Yes. There is a real key point here. We provide the tapes for the students to review, but I am anxious that they don't start listening to the tapes and do associated study later. For years, students have been trained to collect information to be learned later. Here I think is the thing that you are talking about. Under these circumstances, the students can learn immediately because nothing is going to escape; the integrated sequence of events is of great consequence. I don't know how we missed it for so many years. Under the conventional system, one gives students a splattering of information in lecture, a splattering in lab, and a splattering in recitation. If you did this with an orchestra, what would happen? You would get a splattering of sound here and there, and the result would be noise. I think there is noise in education. I also think the opposite is possible. If you take these same sounds and sequence them, the result is a melody. There is a melody of learning. Some say teaching is an art. I believe they are right, but I believe education is a science, and we have to define the problem first. The problem is: "The student has to do the learning." The learner learns. All activities ought to contribute and involve the student in learning. Now, the art comes in the skill of the teacher to bring together those items that contribute to learning. Teachers have to provide the facilities--that is our job. We also provide motivation, but this comes pretty much without any trouble. But we also have to provide direction. You can't take students to the woods and say, "Learn botany." I know what botany is, and so I provide them with this direction. So there is no magic in the tape, no magic in any of these devices. The magic and the advancement are in the skill of the teacher in sequencing learning experiences.

Question: This is very time-consuming--right?

Answer: Exactly, and you have to be overwhelmed with the desire to help. This is the one important criterion for being a teacher--the desire to help.

Question: Does this take care of individual differences?

Answer: Yes, individuals can adjust to their own needs. Very often, it is the good student who is frustrated. He becomes so annoyed and distressed when you are repeating for another student, and the other student is half-asleep. You may repeat a dozen times, and you still have not reached the other student.

I've enjoyed visiting with you. Thanks so much for your kind attention.

AUDIO-TUTORIAL LABORATORY

Patricia Ann Walker

In thinking about using audio-tutorial teaching in nursing, I usually start by considering how it can be accomplished and end by realizing the profound effect it could have on the entire program in nursing, beginning with the increase of student learning and ending with increasing the number of students admitted without affecting the total cost of the program alarmingly.

To discuss how we can use this method of teaching, I will use examples from the medical-surgical nursing course; the orthopedic nursing area does lend itself most readily for solid examples. I would like to stress that I do not visualize limiting this method only to the medical-surgical nursing course but that I am convinced that the other courses--introduction to nursing, maternal-child nursing, and even psychiatric nursing--use this method for greater effectiveness in student learning.

In the teaching of medical-surgical nursing, it seems the problem of insufficient numbers of patients with a particular condition is always a problem. Regardless of how broad the objective for a given laboratory may be--and I'm sure we want the big broad objectives that cover a multitude of sins--in the smaller community hospital, only a few patients are available at a given time that will provide a means of meeting the objectives. For example, one of the objectives may be: "To care for the patient with balanced traction." If enough patients with balanced traction are available for each student or group of students, if multiple assignment is being used to provide experience in this type of care, then in the postconference discussion, all readily understand the implications of giving nursing care to a patient with balanced traction; if not, then the students become more involved with the principles of physics utilized in traction than with patient care. The principles of physics are essential to patient care, but they could be learned and experimented with in a situation away from the patient and yet be very meaningful when the student is giving direct patient care. You may have noticed that I said experimented with as well as learned--I have never found it feasible for the student to actually "play" and experiment with the traction of a patient with a broken bone; yet, in an audio-tutorial laboratory, the student could do just this--remove a weight on one side and see what happens. The student would truly learn what this traction apparatus is doing, why and how it works as it does, without being detrimental to a patient. Then the instructor would be utilizing the clinical laboratory and the postconference discussion for the individuality of the patient rather than for the equipment. It would not be absolutely necessary for every possible traction to be available in the audio-tutorial laboratory, but enough of the basics for the student to really grasp the concepts and principles of a balanced traction versus a fixed traction.

Another aspect of teaching nursing that I have become much aware of is how frequently it happens that something such as traction is discussed in the class

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and the student arrives in the clinical situation with the theory of the subject well mastered. Soon the realization hits that this knowledge is only on the level of theory and that the student needs much guidance in the practical application of the theory.

I recognized a few years ago that with individual instruction on equipment in the clinical laboratory on a given subject such as traction, I could grade my own performance in teaching,--and I was truly surprised when I realized what actually was occurring. It was student feedback that led me to this discovery, and since I'm sure it is a human trait, I'm almost positive I'm not alone with it. I found that I could divide the class into thirds. The first third received all aspects of the subject--facts, principles, and concepts, from A to Z; the last third had the really essential points; while the middle third had the least amount possible. In analyzing the situation, I immediately knew why this occurred. That middle third received the minimum because I began to feel like a broken record with the particular subject; I cut it short. The third group then benefited, since they received the essential, with few thrills and frills.

The point is, of course, that the teaching is basically the same but that it oftentimes differs in quality and quantity, according to the situation. If the subject matter were on an edited tape, with the appropriate equipment or experimental material available for a student, how much more each student would learn about a particular concept! The instructor would be assured that each student would have the same individual guidance.

Another example of how this method could be used comes from the area of the care of the patient involved in an accident. Oftentimes the CircOlectric bed or the Stryker frame is used. Unfortuantely for the student, these may not be in use at the time this area of teaching is planned, so the student does not have the opportunity to see them in action. To get this equipment out for each group of students (and this could well be two or three times during the one-week period) requires the time of both the instructor and the hospital personnel who are responsible for the equipment. The instructor repeats this particular demonstration each time in exactly the same manner that could be done once on the tape, with filmstrip showing each aspect of operating the equipment. The tape and filmstrip would be superior to the live demonstration because the tape would be edited and carefully structured, with the filmstrip showing the essential steps without the danger of the student's view being blocked at the precise moments important points are shown. Besides, if the instructor does conduct this demonstration at the hospital for each group of students, valuable time during which the student could be learning about the individuality of patients is being used.

A well-prepared filmstrip and tape could be used for several years. This is an important aspect of using audio-tutorial methods in nursing. The initial investment of time would probably be more than for one live demonstration for students, but in terms of 100 students per class for two to four years, the time investment is minimal.

Certain materials can be presented to the student in a clear concise manner with opportunity to experiment with various pieces of equipment. It is obvious that if a tape is edited for conciseness, clearness, et cetera, the student really learns the major points because the instructor emphasized their importance. In teaching, I always test for a breakdown in communications by analyzing what I said, what I think I said, and what the listener thinks I said. The breakdown does occur in teaching but could be cut to a minimum if audio-tutorial methods were utilized to a greater extent in the nursing curriculum.

Content, material, and principles could be correlated more effectively for greater meaning to the student. Again, with a carefully constructed study guide, reference could be made to past learning experiences. If the student is not able

to see the relationships, she can return to the study guide for that material for clarification; the student who readily sees the relationships can proceed further. When two different treatments use the same principles, and the instructor is attempting to guide the student to this realization without directly citing the same principles involved in both treatments, here again is a frustration for both student and teacher in the clinical laboratory. This type of guidance is time-consuming, and needless to say, well worth the time spent, but again the same question--could this not be accomplished more effectively and more efficiently in an audio-tutorial laboratory?

Dr. Postlethwait has brought out the fact that the student may move at his own speed. This is another important aspect for us to consider. Student "A" may come to the orthopedic area content with an excellent background in physics and move through it very rapidly with complete understanding, while student "B" has never had a course in physics and requires a much greater amount of time to comprehend the principles and their utilization in nursing. Then, a few months later, student "A" experiences difficulty in the content of nutritional needs, while student "B" breezes through without difficulty. In both situations, the needs of both students are met without requiring either one to devote time to content that is relatively easy for him.

This enabling of the student to move at his own speed has another implication for student learning. I have seen a student who grasps material rapidly become bored and eventually block out the teacher and the class; actually, she doesn't return her attention to that class for the remainder of the hour. Many times, this is the student who changes her degree objective because she doesn't find nursing a challenge. Or she may be of the temperament that requires her, in order to combat boredom, to pick points with the teacher--always being ready to cite the exception to the rule. And it takes 15 to 20 minutes of class time for each exception. The audio-tutorial method does provide individualized teaching, and it does take differences in ability into consideration.

Another advantage of using the method in nursing is that it increases the security of students in the clinical laboratory. A student has the opportunity to become more adept in handling equipment and in utilizing principles. Instead of becoming terrified at the thought of caring for, say, a patient with traction, she has the security that comes from having had contact with the situation. Now she understands it and can concentrate on the patient and the patient's needs.

Another implication regarding student security results from the fact that we do differ from other professions in that we are dealing directly with human life--and this we can never forget, not even for a second. Yet, the student does have to learn to think for herself because eventually she leaves the guidance of a teacher. Thus, we are faced with the old question of how far to let a student proceed on her own initiative. One way of solving the problem is to question in detail exactly how the student is going to proceed in administering a treatment. Here again, the time required in clinical teaching could be cut in the audio-tutorial laboratory with well-constructed study guides to raise the questions necessary for the student to think in terms of the particular treatment. Safety aspects can be stressed. Maybe it would be advisable to give a student selected opportunities to violate these safety aspects in the audio-tutorial laboratory. A student would learn what could happen and what the result could be without actually harming a patient. It would not be necessary to have a great many of the selected opportunities to violate safety factors because there would be transfer of learning. If the violation were well selected, the impact on the student would have great meaning for future experiences.

As I said, in thinking about audio-tutorial teaching, I start with how to do it and end with the impact it can have on the whole nursing program. One of

the major impacts derives from utilizing qualified faculty to the fullest extent. I see this as a means of increasing the number of students admitted, retaining the same number of faculty, yet not destroying the quality of the program. How do I visualize this? I think that using the audio-tutorial laboratory is an effective means of shortening the actual number of hours of clinical laboratory without endangering student learning--in fact, I think student learning would be increased. Instead of the student being in the clinical laboratory a full nine hours, or however many hours you have students scheduled for laboratory per week, she would be there approximately one-half of that time; the other half of the time she would be working in the audio-tutorial laboratory. If she comprehended the material rapidly, then she might spend only a few hours working in the laboratory. If she met with difficulty and needed six hours, she could spend the six hours there without holding the other students back.

From another standpoint, you might say that the master teacher is in two places at once. She would have prepared the study guides and so forth for the audio-tutorial laboratory, from which the students are receiving her individual guidance to attain a greater depth of understanding of the material. At the same time that some students are in this laboratory, the master teacher is free to be in the clinical area with another group of students guiding their learning experiences.

If the actual clinical laboratory were cut by a half, then each faculty could be assigned more groups of students per week for clinical laboratory. From this alone, we could admit more students and not raise the cost of the program, since the cost does come from the student-teacher ratio in the clinical laboratory and the comparatively high number of hours in the clinical laboratory. Being an individual who believes in making a list for grocery shopping, a list for wardrobe planning--or I'm simply a compulsive list-maker--I have started three lists for audio-tutorial teaching, which I want to share with you.

The first is a small one of several precautions for myself. I'm sure that my list will increase as I make attempts to utilize this method of teaching. Thus far, I have:

1. The planned experiences must involve the thinking process and utilize the basic principles from previous learning.
2. This must not be rote memory material that could be obtained from a textbook.
3. This must not be a method of "spoon-feeding."
4. Never think that this can completely replace the clinical laboratory.

The second list consists of the problems that I anticipate solving at a later date:

1. What hours will the nursing audio-tutorial laboratory be opened? Who will monitor this laboratory?
2. How much material should be covered in a given laboratory?
3. Defining course content worthy of time, effort, and material to be used.
4. Means of effectively evaluating the use of the audio-tutorial laboratory in nursing and evaluating all of the content included to determine if some of the material really is not worth the time involved, which goes back to reevaluating the objectives originally determined for the content.
5. Being assured that the material of the audio-tutorial laboratory is not something unrelated to the clinical laboratory.
6. Being assured that all teachers in this area are working together to use the material for the fullest benefit of the student, without involving more teacher time for planning.

The third list is the method of approach to using audio-tutorial teaching in nurs.ng, which I believe follows basic rules of good teaching. My initial method, which may change, is:

1. Identify the first unit--one well- constructed unit of content will be of greater value than ten units of a course haphazardly thrown together.
2. Identify definite objectives and outcomes desired--this I think is the key to success. It may be as small as to impress upon the student why she should watch, and watch with both eyes, the clinitest reacting process and to insist that this is not the time to be efficient and start the preparation to do the acetest. (Incidentally, this is one place where you can show the student emphatically what can happen when she doesn't follow the directions.)
3. Identify the principles underlying the material and correlate these with other content.
4. Identify means of accomplishing the objectives most effectively--when you arrive at one means of accomplishing the objective, don't stop there and don't do anything--think of three or four more ways this objective could be accomplished and then decide which of them would do the job best. It may be tapes with film-strips, tapes with experimental materials, or equipment.
5. Plan continuity of learning experiences--this is within the audio-tutorial laboratory as well as the clinical laboratory. It could well be that you could dream up a fascinating experience for audio-tutorial but that it would simply have no meaning to the clinical lab.

AUTO-TUTORIAL AND MOBILE-TUTORIAL LABORATORY TECHNIQUES IN NURSING EDUCATION

Crystal M. Lange

In the summer of 1964, the Delta nursing faculty attended a workshop at Purdue University to prepare for the associate degree program. At that time, we had an opportunity to visit Dr. Postlethwait's botany laboratory. That experience served as an impetus for us to apply the same principles in the teaching of nursing techniques.[1] We decided as a group to utilize the facilities available to us at Delta College, namely, the language laboratory and excellent tape-recording facilities.

We had usually presented the unit, Mathematics for Nursing, as part of Fundamentals of Nursing. We decided to try a preliminary application of the auto-tutorial techniques, utilizing the mathematics unit of study. For the purposes of our study, the group of 31 students was randomly divided into two groups. The control group met for 10 hours of traditional classroom experience, consisting primarily of lecture and problem-solving. The experimental group of 15 students met as a group with the instructor for approximately 5-15 minutes each week. The balance of their learning experience, five lessons averaging 30 minutes each, was provided in the language laboratory. Students had the opportunity to repeat any lesson at any time desired. The instructor was available for consultation at prescribed hours. In the experimental group, the objectives for each lesson were listed, and the equipment needed for the lesson and a worksheet were provided. For example, the objectives for Lesson I included:

1. To learn what a cubic centimeter is; what a milliliter is.
2. To learn how many cubic centimeters are in a teaspoon, a dram, an ounce.
3. To learn how to read, write, and use the symbols for dram and ounce.
4. To learn the equivalents between the household, apothecary, and metric systems.

For Lesson I, the equipment that the student worked with included a medicine glass, teaspoon, tablespoon, dropper, syringes of varying sizes, container of water, and worksheets. The student was given basic information by means of an audio tape. With specific instructions, he performed tasks wherein he measured centimeters and teaspoons and compared the different measurements, using the specified equipment. The student practiced writing the symbols with an example and had an opportunity to compare the various measurement systems, both by doing and by consulting a printed chart. Following the lesson or the auto-tutorial laboratory experience, the student had additional problems to solve individually (homework). When the student was ready, and during a prescribed time period, he

1. Postlethwait, S.N., Novak, J., and Murray, H. An Integrated Experience Approach to Learning. Minneapolis, Minn. Burgess Publishing Company, 1964.

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presented himself for a quiz covering the materials for a lesson. Each of the lessons followed in sequence and built upon the previous experiences.

The students' reactions to the auto-tutorial laboratory presentation varied, as evidenced in their responses to a questionnaire. Fifty percent of the experimental group classified their learning experience as interesting, 20 percent classified their experience as stimulating, 13 percent classified the experience as exciting, and 13 percent as satisfactory. One student did not find any of the responses provided to be acceptable and indicated that the learning experiences were "helpful and complete." All 15 of the students, or 100 percent, indicated that the quality of the auto-tutorial learning experience was an improvement over other classroom learning. Eighty-six percent of the students strongly urged the use of the auto-tutorial methods on the basis of their experience in the laboratory and considering some recommended modifications. One of the students was undecided, and one student indicated that it would be preferable to have both the auto-tutorial and the classroom experience or a combination of both. (The total intent includes such a plan.) In comparing the method of presentation in the auto-tutorial laboratory to their previous classroom learning, 33-1/3 percent of the experimental group classified the presentation as superior; 66-2/3 percent classified the presentation as satisfactory.

The length of time for group discussion was brief, namely, 5-15 minutes. Sixty percent of the students evaluated this time as satisfactory. Forty percent considered it to be too short. Both the experimental and the control group were given the same final examination. The control group of 16 students had 9 students, or 56 percent passing with a score of 70 percent or better. Seven students failed with a score of less than 70 percent, constituting 44 percent failures. In the experimental group of 15 students, 11, or 73 percent, passed with a score of 70 percent or better. Four students, or 27 percent, failed with a score of less than 70 percent.

Achievement on Final Exam

	Control Group (N = 16)	Experimental Group (N = 15)
Passed	56%	73%
Failed	44%	27%

We admit that this group was not sufficiently large to produce valid comparisons. At the same time, our faculty considered the difference to be sufficiently significant to warrant further work with these techniques.

With this encouragement, we began to produce 8-mm films demonstrating nursing techniques and complex situations that are not ordinarily study material in the traditional classroom. For example, we went to the homes of children in various age groups and photographed their behavior and activities both with their parents and with their siblings. We have used the 8-mm films in preliminary fashion with faculty description and discussion accompanying the films. In our projected work with these materials, we expect to use the 8-mm films with audio tapes, transparencies, written verbal descriptions projected on a screen (comparable to those used in reading improvement laboratories), and specific equipment involved in the technique. For example, a film shows how to change a surgical dressing in a step-by-step fashion with an actual patient and the equipment ordinarily used for the procedure. The audio tape describes the procedure in step-by-step fashion accompanying the film. The student has an added advan-

tage in that he may stop the film and/or the audio tape at any point for closer study. The student may review the learning experience as many times as he desires. Following the visual and audio experience, the student will do the dressing himself. The speed of progression of the word directions in front of him on a screen are controlled by him. He handles the equipment as often as he needs to in order to learn the technique. The auto-tutorial laboratory utilizes as many stimuli as possible to enforce the learning. The instructor would be available to assist the student at any stage and to evaluate the student.

By utilizing the auto-tutorial materials developed, the following objectives will be achieved:

1. The release of the instructor for the individual-student teaching needed in areas of patient communication and adaptations of techniques in specific situations.
2. The full utilization of faculty in teaching greater numbers of students without loss of instructional quality.
3. The permitting of the student to proceed at his individual speed to develop the necessary competencies in the nursing major.
4. The facilitation of the use of the materials developed on a local, regional, and/or national basis in institutions conducting nursing education programs.

Using the multisensory approach, which has not been extensively attempted in nursing education to date, will allow one nursing instructor to teach 15 or more students in the clinical area without loss in quality of instruction. Further, students are able to learn selected materials at their own rate, thus enabling faculty to be more flexible in the use of time in assisting the more able student to gain greater knowledge and the less gifted student to become more proficient in the specific area of study.

The student will request an oral or written examination and/or will demonstrate a skill when he feels secure in his knowledge before a designated time interval has elapsed. This has several positive aspects: (1) it helps the student maintain motivation, (2) it helps the student gain satisfaction in mastering techniques needed in nursing, (3) it reduces the frustration encountered by either the very slow or the very rapid learner, (4) it allows the instructor more flexibility in utilizing time, and (5) it maintains the quality of instruction while increasing the number of students under a faculty member's supervision.

The mobile tutorial unit will be in the instructor's possession in the hospital laboratory whenever he has a group of students caring for patients. As the student or faculty determines the need for reviewing the nursing technique under study or being practiced (for example, the student is going to change a dressing for a patient today), the student secures the materials, namely, the single-concept film and accompanying explanations, and reviews them immediately prior to performing the specific procedure or practicing the technique. The student is able to reinforce his learning, utilizing these materials at any time. For example, an advanced student may not have had an opportunity to practice a specific technique for some time. The student can quickly review, reinforce, and recall his previous learning by utilizing the materials in the mobile-tutorial unit. At the same time, when the instructor observes that a student is deficient in a specific technique, the instructor is able to refer the student to a specific procedure, for example, putting on sterile gloves. The instructor will spend less time with students in reviewing techniques and procedures. We expect to develop materials covering the entire spectrum of nursing techniques taught in a basic nursing curriculum. We foresee taping

selected situations in nursing that will better prepare the student for his role in interpersonal relations in nursing care.

Delta College serves the tricounty area of Bay, Midland, and Saginaw, Michigan, which has a combined population of approximately 350,000. In the area, there is a combination of farming and diversified industry. Among the industries represented are Dow Chemical, Dow Corning, General Motors, and Wickes Corporation. Many resource people are available for consultation in technical areas.

The auto-tutorial laboratory is to be located in the main building of the Delta Campus. The necessary renovations will occur in a classroom that will be readily available to students during regular scheduled class hours. The laboratory is to be equipped with 20 booths, each containing the following equipment: individual lights, 8-mm film cartridge projector, tape playback with earphones, and nursing equipment such as syringes, vials, dressing trays, or whatever is indicated by the specific technique under study. A patient unit with larger equipment is accessible to students as well. The ATL will be open daily with an instructor available as a resource person.

The rationale is that the ATL will utilize multisensory stimuli to bring the clinical situation and/or patient-nurse interaction situation to the student where he can objectively study and gain skill in a nursing technique. The lesson can be repeated several times or until the student feels reasonably sure of being able to perform the procedure in a testing situation, in a hospital laboratory, or in an agency setting. Each student is exposed to the same learning experience and basic nursing technique, thus eliminating many of the individual faculty differences in the teaching of nursing techniques. In other words, the faculty must agree on the technique to be taught, and all faculty members must therefore follow this technique in teaching students and then in evaluating the students in the clinical situation. (The basic technique does not eliminate individual student adaptations; rather, it serves as an initial or suggested guide.) The evaluation of the student's performance will be the ultimate measure of the efficiency of these techniques. Checklists outlining the critical elements in nursing techniques to be evaluated are being designed by the Delta faculty. These checklists will be used to determine the level of student learning and/or performance in the hospital or agency laboratory.

Items of equipment needed to convert the classroom into an auto-tutorial laboratory and their approximate cost are as follows:

	Each	Total
20 tapes, playbacks	$180	$3,600
7 filmstrip cabinets	400	2,800
7 audio-tape cabinets	150	1,050
20 tables, 42" X 24" X 30", and wall construction		975
30 8-mm technicolor projectors, 20 for lab and 10 for mobile		6,135
Total		$14,560

The cost of equipping a similar room in another institution would be comparable or approximately the same.

To date, in addition to the materials developed for the mathematics course we described earlier, our faculty has prepared approximately 25 8-mm films. We have learned a great deal by this experience--things not to do as well as the things to do. A number of the films will be redone because they are not of the quality that we had hoped to have, and some of them do not do the job we had expected. We have prepared films on handwashing technique, putting on sterile gloves, dressing change, catheterization, isolation technique, tracheostomy care with an actual patient in a hospital, and colostomy ca · wherein a patient in a hospital demonstrates care of her own colostomy. ' have prepared a number of films in the area of child development, starting with the newborn--a film of a child less than 12 hours old showing its specific responses and a film of the bathing of an infant in the newborn nurser. Children at specific ages, 4 weeks, 8 weeks, 12 weeks, 3 months, 6 months, 9 months, 12 months, 2 years, et cetera, have also been filmed for classroom study.

The first film example shows isolation technique and represents the kind of thing one could do that involves multiple or complex equipment preparation. We will show this and have an opportunity to stop at various points for discussion. The second film represents the kind of thing one could do with children in their home setting.

COOPERATIVE EDUCATION IN A NURSING CURRICULUM

Charlotte E. Voss

I think it would be appropriate to give you a short history of cooperative education. There may be some of you who are quite familiar with this method of education, but I suspect that there are many of you who have very little knowledge of it. Cooperative education was inaugurated at the University of Cincinnati in 1906, by Dean Herman Schneider, in the College of Engineering. He had observed during his own experience, first as a student and then as a teacher, that it seemed to be quite appropriate to give students an opportunity to practice what they were learning in school while they were going to school. He had also felt that the financial benefit of this certainly could not be minimized. In 1909, this type of educational program was established at Northeastern University in the College of Engineering. Since then, over the years, it has been extended to several colleges, and today, all of the programs in the University are operated on the cooperative plan of education.

The cooperative plan of education is an educational plan that integrates classroom experience and work experience in industrial, business, government, or service-type work situations. Although the work does not carry academic credit, acceptable work performance in the specified number of cooperative work periods is required for graduation. The freshman year is the conventional succession of academic quarters, but during the succeeding years, the students alternate quarters of academic work at the University with quarters of employment.

A two-year national study of cooperative education was completed in 1960. This study was made possible by a grant from the Fund for the Advancement of Education; the study committee was chaired by Dr. Ralph W. Tyler. The following educational advantages were confirmed in the study--advantages that were long affirmed by those schools operating this type of educational plan. First, by coordinating work experience with the campus education program, theory and practice are more closely integrated and students find greater meaning in their studies. Second, this coordination of work and study increases student motivation. As students see connections between the jobs they hold and the things they are learning on the campus, greater interest in academic work develops. Third, for many students, work experience contributes to a greater sense of responsibility for their own efforts, greater dependence on their own judgments, and a corresponding development of maturity. Fourth, because the work experiences involve the students in relations with co-workers who come from a variety of backgrounds and because success in these jobs requires constructive relationships with colleagues, most students in cooperative education develop greater understanding of other people and greater skills in human relations. It is particularly valuable for these students to work with adults as a bridge between their years of schooling, when they live almost entirely with their own contemporaries, and their own adult life among mixed age groups. Fifth, cooperative education helps markedly to orient college students to the world of work. Most college students are greatly concerned about their future life work. They want

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to know more about the range of occupations open to them and the potentials and the limitations of these fields. They want to know about the qualifications demanded and their own fitness. In cooperative education programs, students have opportunities for exploring their own abilities in connection with real jobs, and they find a direct means of gaining vocational information and guidance not only in the occupations in which they are employed but in a number of related fields as well. They have a chance to test their own aptitudes more fully than is normally possible on the campus. With this realistic tryout, a student may discover that he wants a different career from the one he thought he wanted on entering college; he can then change academic plans to prepare for this more informed vocational choice. Furthermore, students are able to understand and appreciate more fully the meaning of work to the individual and the function of occupations in providing the wide range of goods and services characteristic of our economy.

Following is a description of the program in the College of Nursing at Northeastern University. The chart indicates the type of schedule for a class to be graduated in an even year and the type of schedule for a class to be graduated in an odd year. (See chart on page 28.) There are three successive academic quarters in the first year, followed by a summer vacation. In the second year and the third year, the class is divided in half to form Divisions A and B. While Division A is at school, Division B is employed. Each student then experiences two academic quarters and two employment quarters during the second year and two academic quarters and one employment quarter during the third year.

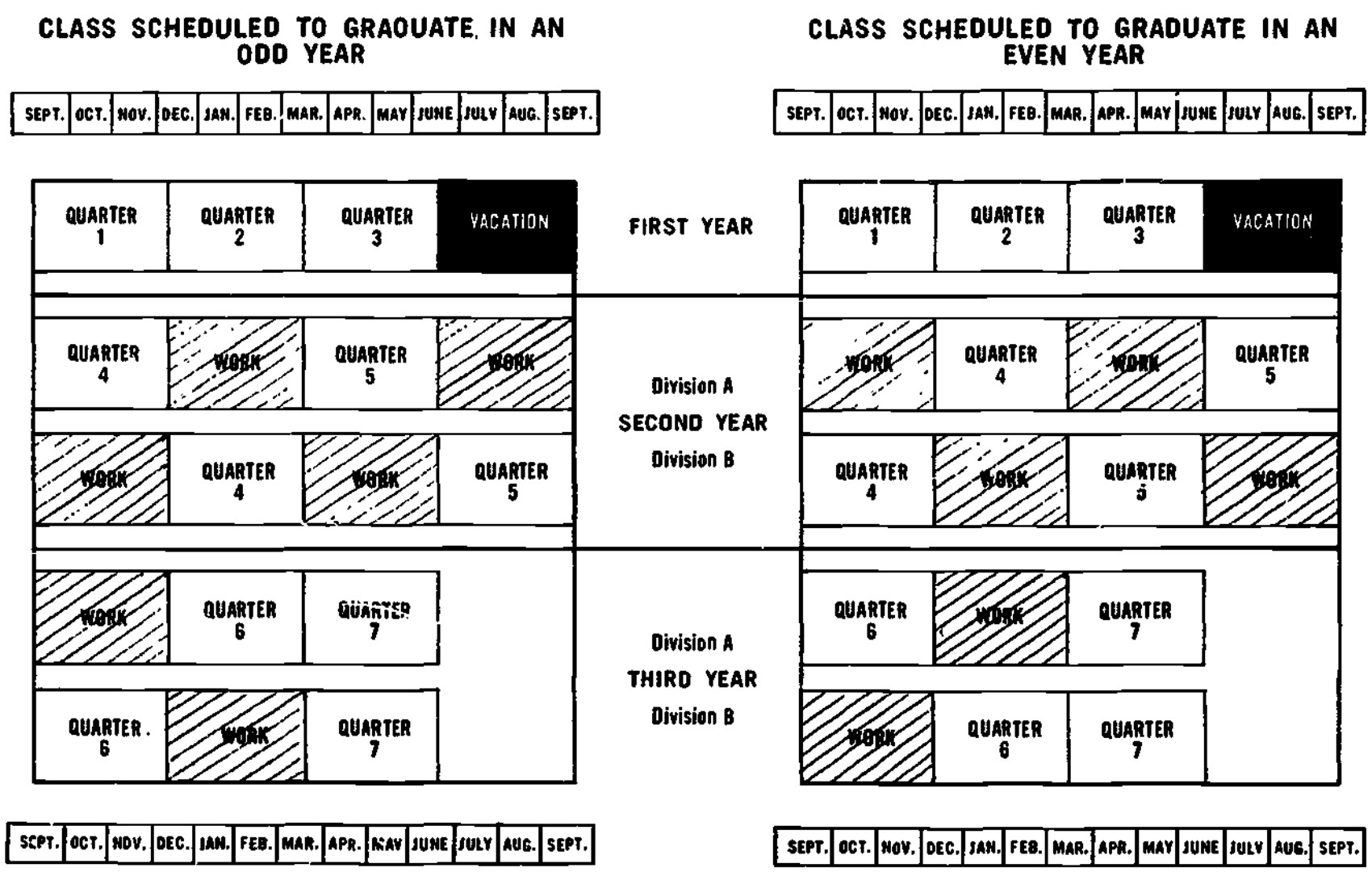
The University Division of Cooperative Education consists of a director and coordinators who are specialists in the various disciplines of the colleges represented in the University. Associated with the College of Nursing is a nurse coordinator, who functions as liaison between the College of Nursing and employers. The coordinator selects the kinds of jobs available in health agencies and arranges employment for the students. At the present time, three hospitals in the Boston area are participating in our cooperative employment program. They are Beth Israel Hospital, Childrens Hospital Medical Center, and Massachusetts General Hospital. The nursing service personnel are very interested in providing a worthwhile employment experience for the students. The students are not under the supervision of faculty while they are employed; they are responsible to the employer. Work activities in line with the educational and experience background of the student as a worker are provided by the employing agency.

The coordinator visits employing agencies periodically and has conferences with students when they return to school to evaluate the preceding work experience. The immediate supervisor of the student-employee completes a standard evaluation form and sends it to the coordinator. In the nursing program, our coordinator has made provision for the group working at a particular agency to have one conference at school during the work quarter. This provides opportunity for free discussion of current experiences.

Our experience to date is very limited; one group of students has completed a quarter of work experience--during the fall of 1965. The faculty members who have had subsequent contact with these students are quite favorably impressed with them. They feel that compared with the students in the other division who had not had "co-op" experience, the group had a greater sense of responsibility, seemed to have acquired more curiosity, and asked for clarification of incidents observed during their work experience. There was a noticeable difference between the two groups.

This is a very new program--our first students having entered in September, 1964. At this point, we cannot speak from long experience. However, this type of program has been proven in other areas such as engineering, business administration, education, liberal arts, and pharmacy, and we believe that it has great potential in nursing education.

COLLEGE OF NURSING



NEWER USES OF TELEVISION

Anastasia M. Hartley

Dr. B. Lamar Johnson published his report of a cross-country survey of experiments in teacher utilization in the spring of 1964. In his pamphlet, Islands of Innovation, he reported on many dynamic teaching concepts and techniques in use throughout the United States. As the title implies, the innovations are isolated. Although there are original attempts at trying new ideas, the manner of spreading the information for the help of all is unplanned, sporadic, and many times lost in the general stream of efforts to improve educational experiences for students.

Many separate colleges and universities have individually experimented with the use of television, and the results of the efforts have depended upon many factors. There are many ways of teaching and learning. Some colleges have their own closed-circuit TV studios and equipment; some have only open-circuit television available; and others are dependent upon "film transfers."

I will not spend time justifying the use of television, because those of us who have been using TV tapes know that they answer many problems in the area of teaching nursing. I shall confine my remarks to the use of TV in junior colleges.

As you have already noted, different programs use different methods, depending on their particular philosophy, faculty, and physical facilities. Two of the junior college nursing programs that have been making tapes in large numbers include Delta Junior College in Bay City, Michigan, and us at St. Petersburg Junior College in Florida. There may be other nursing programs in junior colleges experimenting in this area of audio-tape development, but I am not aware of large numbers doing so at this time.

You are all familiar with the exciting experiment that Miss Avis Pitman of Bronx Community College has completed and the newer ideas that she is now incorporating into the curriculum. The students giving patient care are able to replay the tape to the total group of students in a postconference while the experience is fresh in their minds.

To give you an idea of the number and nature of the tapes we have made at St. Petersburg Junior College, I have a list here for you to see.

You will notice that they cover different subject matter and that they would be of varying lengths, depending on the use of the tape by the instructors. All of the nursing faculty members had an inservice education program before starting to use TV. They had time to talk about how they feel about being on television, and they had two-minute individual tryouts in front of the camera, with our own TV director making comments and answering questions. Guidelines, movies, bibliography, and trips to the Medical Television Council were all a part of the inservice preparation for the use of TV. We operated on the principle that different instructors should be involved, and I kept asking, "What is a

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master teacher?" We used all the instructors who were interested and did what they wanted to do. Usually, what they wanted and liked to do they did best.

Just to make tapes would be busywork; the real challenge comes from a need to better illustrate areas that may be difficult to teach, and these can only be determined by the teacher. Our nursing faculty believe the climate for learning is most important and have the philosophy that many beginning nursing skills, including skills in communications and so on, can be taught better in a college laboratory setting than in an overcrowded, distracting hospital situation.

They believe that in the broad concept of skill development, with large numbers of students, tapes can do effectively what cannot be done as well otherwise. The magnification properties, the sharing of a similar experience for all students, and the impact of the use of audio, visual, and kinesthetic avenues of learning create the dynamic learning situation.

Some colleges use live TV to show demonstrations to large numbers of students. But the important aspect in nursing is not the numbers to be taught, but the improvement possible in the quality of instruction. With the use of a TV enlargement made with a closeup lens, you can see better than you could with the naked eye if you were being taught on a one-to-one basis. The cost of instructors' time in collecting equipment or arranging a selected nursing situation can be cut down a great deal, and once the lesson is put on tape, it can be shown over and over. Tapes can, of course, be revised and kept up to date. We are already doing over our tape of the nursing students in a postconference in psychiatric nursing.

Special speakers are busy people, and special equipment that cannot be moved can, of course, be captured on tape. Special areas--for example, the nurse--we film and dub in later on tape. Naturally, the tapes will emphasize what the instructor wants, because a teletape guide needs to be written out before presentation. Better planned and better executed classes necessarily follow.

We have as an illustration a 12-minute tape on TV showing the beginning skill in the maintenance of asepsis. All the freshman students are assigned to the AutoTutor machine to take Dr. Marie Seedor's programmed instruction course, Introduction to Asepsis, before viewing the tape. This tape is the second in a series to be used in teaching the application of principles of asepsis. The third tape is being made this week.

(Tape shown)

The students see the tape through once, which gives them a gestalt or general concept of all that is involved in the material. Then the tape is played back in segments, and the students are lined up in groups, with trays and forceps available for practice. We have an instructor present at this initial learning time for the students. Actually, we have two monitors in each of the two laboratories, all going at the same time, with numbers of students lined up with the practice equipment.

The schedule for several reruns of the tape that week is posted on the bulletin board later in the afternoon, and as many students as wish may come for extra practice. We do not check on the students--it is their responsibility to get extra practice if they feel they need it. Students who do not have this need for extra skill development do not come.

The faculty feels that the tremendous impact of this kind of teaching is that it is one step toward allowing for individual differences in student learning in a junior college nursing program, which involves such a heterogeneous group of students and places the responsibility for learning on the students.

Another impact is felt in the fact that with tapes, practice is reinforced

correctly, so that the student does not keep reinforcing wrong patterns in the nervous system.

This is but one illustration of how one junior college nursing program is working with television. We in the Nursing Division of St. Petersburg Junior College feel very fortunate to have a college president who is committed to TV and a cooperative Radio-Television Department that has helped us so very much in the use of this teaching method.

One of the ways I learned about the use of TV in nursing, in addition to our own experience, was through the Southern Regional Education Board Nursing Project Committee on New Instructional Media. As a member of this committee, I visited several universities that had nursing groups working on the use of television. We were able to attend the meetings of the Council on Medical Television, and I am at present maintaining membership in the nursing section that has been formed. These workshops helped my faculty and me to realize the many effective and creative ways in which we could work with TV.

In regional planning, faculty members have been working with Dr. Mary Howard Smith in planning for the nursing phase of ETV under the project of SREB. This project, directed by Mr. Duff Browne, is under a contract with the U. S. Office of Education to investigate and develop procedures and techniques for the inter-institutional planning and use of instructional television. Two nursing groups are planning content for a series of videotapes. One series is in public health, for use in teaching in baccalaureate programs, and the junior college nursing series will be in mental health concepts, for use in associate degree programs. This project is well under way and promises exciting joint planning, top-quality tapes, and film transfers for use in our nursing programs.

I'm proud to report to you at this time a new development in ETV that is in the planning stages in Florida. A committee was formed, through the impetus of SREB, for statewide planning for collegiate nursing education. In our state, we voted to become a committee under the Florida Nurses Association, and a subcommittee was appointed to explore the possible coordinated use of TV for our nursing programs in the state.

After many meetings, our subcommittee (which was composed of nursing representatives from two university programs and four junior colleges, as well as television directors and the State Commissioner for Educational TV) recommended that one of the universities, Florida State, apply for a grant for the statewide project. A representative from the Nursing Division of the Department of Health, Education, and Welfare attended one of our meetings and helped us prepare the grant application.

It has just been submitted, and we are all anxiously awaiting the results of this tremendous endeavor. If the grant is approved, each of our 13 junior college nursing programs in the state would be able to show video tapes. There would be an advisory committee responsible for policy-making and the quality of the tapes released. Committees will be working in subject context areas, projection, et cetera. The great advantages in a statewide approach beyond the usual ones in TV teaching are:

1. The instructors who are best qualified in specific subject areas will make the tapes. Teaching in all schools can improve thereby.
2. Consensus regarding certain core material that can be taught well in baccalaureate, associate degree, inservice education, and refresher courses will evolve.
3. Standardization of the type of machines used and acquiring materials that are compatible will be most economical.
4. Expert television direction and top-quality technical equipment for programming can be obtained.

5. Better instruction for TV teaching requires more exacting preparation, and better organization of material will result.
6. Suggested tele-guides will be included with each audio tape, and bibliographies for the use of tapes.
7. Timesaving factors are involved, for studies have shown that a maximum of 30 minutes of TV instruction is equivalent to 50 minutes of conventional classroom instruction.
8. The cost to each institution will be tremendously reduced.
9. A central audio-tape pool and film-transfer material, with many copies available, can be set up.
10. As new material comes out, audio tapes can be constantly upgraded and revised.
11. Smaller colleges can be assisted to have a high quality of education.
12. Evaluation of tapes will be going on constantly for the improvement of nursing education.

The subcommittee on television also recommended that the Florida Nurses Association request a series of short-term professional traineeship grants to use the existing TV centers in different parts of the state to hold workshops for the preparation of faculty members in the use of TV. The idea is to have these workshops before the actual tapes are ready to be made under the main grant. This has been submitted to the Committee of Deans and Directors of Nursing Programs in Colleges and Universities, Florida Nurses Association, and we have received permission to write up a traineeship proposal.

I know of no other state that has, through joint planning, presented this coordinated effort of collegiate nursing programs. We are naturally very enthusiastic about this project proposal, for it can fit right into the regional TV project of SREB. In this way, we will be able to have audio tapes available for their planning and completion.

The use the teacher wishes to make of the material remains within his or her prerogative. The junior colleges in Florida are planning statewide coordination, and nursing will be represented with this group, since several of the nursing subcommittee members met with the junior college group on the statewide TV planning committee.

The real importance of the joint planning is that we have attempted to reach one of the main goals of the task force on statewide planning for collegiate nursing education. The main goal has been stated as follows:

> To more effectively meet the nursing needs of people and to realize the highest returns from investments in nursing education, there should be provision within each state for a central body or group to coordinate and plan for undergraduate nursing programs in colleges and universities. With the shortage of faculty personnel, cooperative effort can make the most expeditious use of educational resources, especially faculty, students, educational and clinical laboratories, and finances.

The "islands of innovation" can be connected and form an entire region of innovators. Perhaps with this joint approach, we won't need individual "vice presidents in charge of heresy," but will convince faculty that each one is an island that must join with others to share for improved quality teaching for numbers of students.

As John Gardner said at the recent White House Conference on Education:

> The toughest question facing us now is whether we have the courage and flexibility and imagination to innovate as the times require. Let us not deceive ourselves. The old ways of doing things are not good enough. But

giving up the old ways will be painful. Institutions fear change. In the face of change we all grow defensive, we all move toward protecting our particular vested interests. But the overriding vested interest of all of us is in the vitality of American education. That is the precious thing that we hold in trust.

MULTIPLE ASSIGNMENTS

Janet T. Galeener

I am pleased to be able to discuss with you the multiple- or group-method of assignment. First of all, we need a working definition of the term multiple assignment. It is a method of student assignment within the clinical area in which several nursing students are assigned to one or more patients during the same laboratory period.

Professor Maura Carroll, at the University of California, did a research project contrasting nursing students using this clinical assignment method with those using the conventional assignment method (one student to one or two patients). Testing at the end of her project indicated that the students under the multiple-assignment method gained at least as much nursing knowledge as those in the control group. Maura Carroll reported her research project in a Medical-Surgical Workshop sponsored (in part) by Manatee Junior College in late September, 1964. I was fortunate enough to visit Manatee Junior College in October of that year, and my concept of the multiple-assignment method was really expanded during the visit.

As instructors in clinical laboratory situations, you are every bit as aware as I am of how difficult it is to find several patients on a unit who exhibit the specific nursing needs that your objective for the day indicates you want your students to learn to meet. If you use the traditional method of clinical assignment, you must find 10 or 12 or 15 patients who exhibit specific clinical nursing problems. Even on large nursing units, it is difficult to find 12 patients who have gastrointestinal problems or frank rehabilitive needs or who are new postoperative patients. And then, in a reasonable length of time, you must learn the history, medical problems, nursing problems, treatments, prognoses preferences, and so on, for 12 patients. You must know these things or decrease your effectiveness as a teacher. We agree, then, that finding an adequate number of suitable patients and then informing yourself regarding their care are real problems.

Most of you have assigned your students to laboratory periods of 3 or 4 hours each. You would like your students to gain an appreciation of total comprehensive patient care, perhaps even to be given total patient care. Think of what this might entail if you use the traditional method of assignment. One student might be expected to give hygienic care, give the patient his medicine, know specific details concerning his medications, understand his disease process with its implications for medical care and nursing care, take his blood pressure, evaluate his BP against the normal range and his usual reading, correlate his BP reading and his disease, converse with the patient, assess the meaning of his illness to him and to his family, and write nurse's notes. If this one student's laboratory period were three hours in length, and you took out of it a half-hour for preconference and an hour for postconference, then she would have one and a half hours left in which to accomplish her assignment.

Mrs. Galeener is assistant professor in the Department of Nursing, Purdue University, Lafayette, Indiana.

How much depth do you have a right to expect from a nursing student who must meet many responsibilities of patient care, as well as learn several new things, in one and a half hours?

Multiple assignment does help us handle situations similar to the one I have just presented. Multiple assignment is not a cure-all; it is not the one method we all must use; and it is not without problems of its own. Yet, it is easy to appreciate that if you have 12 students and use the multiple-assignment method, you assign the students to work in groups of 4, and you need to have only 3 patients. If you need have only 3 patients, you can choose the 3 that most closely fit your objective of the day, and in a reasonable length of time, you can gain much more detailed knowledge about those 3 patients than you could about 12. Also, if 4 students share in the care of one suitable patient, each of them can acquire much more depth in understanding a particular aspect of that patient's care, and then, in sharing what they have learned individually, they can attain a much more detailed understanding of their patient and his care.

Using the multiple-assignment method, students are assigned in groups of two, three, four, five, or sometimes more to care for one patient or sometimes to care for a small group of patients. Each student fills a specific role in relation to the group's assignment. Let me list the roles we commonly have students assume, and then I will elaborate on them. The role titles we usually use are: Doer, Information Gatherer, Observer, and Special Assignment Student.

The Doer

The doer bears the burden of the patient's physical care. She usually is responsible for meeting the patient's hygienic needs, adapting general patient-care principles to a specific patient, conversing with the patient, teaching him about his care, and so on. One of the small problems we run into is that in the beginning, when an observer is present, the doer is uncomfortable, and this is something of a deterrent to the doer's learning. As the doer gains more skill and becomes accustomed to being observed, she, of course, becomes more comfortable in the situation. One of the benefits of the doer's being observed is that when the patient's family wish to remain in the room, or when the doctor comes in when care is being given, the doer remains calm and confident and functions well without self-consciousness. At Purdue, one of the techniques we used to orient new faculty to the multiple-assignment method was to have all the faculty go to the clinical area and use multiple assignment in caring for patients. It amused us to notice that those of the faculty who were assigned to be doers immediately found their observers and let them know precisely how long it had been since they, the doers, had given direct patient care. After that, we could understand the beginning student's apprehension at having an observer in the room while she had her first experiences in giving patient care.

The Information Gatherer

The information gatherer is the one who delves into the patient's chart and into reference books to provide detailed knowledge of the patient's medical problem, et cetera. But information gathering does not stop there. The information gatherer is the one group member who might go to the Radiology Department to find out what is done to a patient when he's having a colon x-ray. She might go to the OR to determine what a child might find frightening as he waits to be anesthetized. She might also call the physician regarding her patient's visiting nurse referral. Usually, the information gatherer does not have direct contact with the patient, but it might occasionally be appropriate for her to inter-

view the patient or his relatives in order to gather information. Her role may be as narrow or as broad as you, her instructor, determine it should be to produce the most beneficial learning.

The use of clinical laboratory time for the student to gather information on the patient's illness and course of treatment catches the student at a period of peak interest in understanding what has happened to the patient. In addition, by using her reference books to meet her immediate needs for knowledge about a patient, she will, hopefully, be establishing a pattern that will persist after graduation.

The Observer

The observer's role probably needs the most detailed explanation. She observes patient interaction with hospital personnel and with visitors. She watches the patient's reactions to nursing care, to his roomate, to TV programs. She tries to pick up cues as to how his nursing care might be improved. Nursing students and graduates are often so involved in doing that they fail to assess the patient's reaction to what is being done. Moreover, all of us are probably less perceptive of unfavorable reaction to the care we give, and so we perpetuate practice that disturbs patients unnecessarily. A nursing student who has no other responsibilities for a period of time except to observe the patient's total care is more likely to pick up cues that will help in evaluating the plan of care and how it was carried out. Sharing these observations with the rest of her group--and learning what the others have discovered--allows for adaptations in care to be suggested, tried, observed, and reevaluated right within that laboratory period. The observer role is not an easy one for students to assume. They must know what to observe, exactly what cues to look for, and in addition, they must sit without participating, which is anxiety-producing and uncomfortable at first. For this reason, I feel students in the first several weeks of a nursing education program should not be exposed to a whole laboratory period of observing.

As an introduction to the observer role for first-semester students, I have assigned a student to observe a patient for 10-15 minutes. I then go over the purposes of observing with the students and set up some very definite rules. The observer must explain her presence to the patient; she must sit down out of his direct line of vision and be quiet; she must not participate in his care in any way unless his safety is threatened; she must not converse with anyone. Being given this directive helps the students (I think) to be more at ease in this role. Of course, as the students progress, they eventually fufill the observer role for the entire laboratory period.

I had never fully appreciated how hard it was to observe until I tried to do so when our faculty had its orientation to multiple assignment. The patient found it hard to believe that I was not going to help "the poor girl who was doing all the work" or that I was not "spying" on the doer. Yet, what I saw convinced me even more of the worthwhileness of having someone in an observer role. The patient was eating breakfast when we arrived, and after a brief introduction, I sat down out of the patient's line of vision, and the doer left. Almost immediately, the patient pushed her tray away and eased her dentures away from her gums. When she heard footsteps approaching her partially closed curtain, she readjusted her teeth, pulled her tray back, and picked up her fork. The doer entered, assumed the patient had not finished eating, and excused herself. This sequence of events was repeated three times. The patient had not eaten a bite since I entered. She finally said she was through and asked the doer to take her tray. Later in the morning, she asked the doer an ambiguous question that the doer tried to answer. From looking at the patient's face, I

felt the doer's interpretation of her question had not been correct. When the doer and I met with the information gatherer in the middle of the morning, we discussed several reasons for the patient's decreased appetite, the possible approaches in regard to her uncomfortable dentures, and how to reopen the topic about which the patient had asked her the ambiguous (and as yet unanswered) question. The techniques used in relation to that patient's ill-fitting dentures and the unanswered question were successful. The patient also accepted gratefully the midmorning snack the doer offered.

The importance to the student of the observer role should not be overlooked. In short periods of observation, a beginning nursing student does increase her familiarity with basic technical skills. Also, her observation of the nurse-patient relationship helps her to gain insight into her own behavior with patients. During longer, formal periods of observation, the more advanced student can be guided toward seeing an over-all picture of patient care. This provides her with several bases for comparison, which help her in evaluating the nursing care she gives to patients and increases her ability to analyze patient care.

The observer makes a major contribution to the nursing student who is giving direct patient care. The observer is a person with whom the doer can validate her experience with the patient. The observer is also in an excellent position to discover better ways of caring for a particular patient and to offer constructive criticism.

When students are just learning to use the multiple-assignment method, there is some difficulty in getting the observer to share her observations with the others in postconference. The observer seems to feel she's tattling on a classmate. The most effective way I have (so far) found to handle this has been to have a student who has observed a situation that I participated in report her observations to the group. It is like pulling teeth to get the student to relate in postconference cues in patient behavior that I missed. But once the student has come through with this information, the total group can evaluate the situation and suggest alternative nursing actions. Using myself in this way accomplishes at least two things: It demonstrates that everyone (even their instructor) does not always give the best possible nursing care and needs help from others in order to improve, and, since the students are very gentle in their criticism of their instructor, it also demonstrates that this need not be a traumatic or unpleasant situation but, rather, a situation from which all in the group learn.

The Special Assignment Role

The last role, the special assignment role, is often filled by a student who is mastering a new skill or by one who is practicing several already mastered skills. Much of A.D. nursing education philosophy is based on problem-solving. Yet, many opportunities for true problem-solving are ignored because the student is pushed for time. Assigning a student a specific new task that needs to be done and giving that student the entire laboratory period in which to complete it sets the stage for problem-solving. Allowing the student time to prepare herself, to become familiar with principles and equipment, to think out the step-by-step actions required by the task, to have ample time to perform the activity, and then to allow her time to evaluate her success in performing this skill are all integral parts of problem-solving technique.

These roles that we expect the student to assume are somewhat flexible in that the duties falling into one role for one level of student may fall into another role when the students are more advanced. For example: when students are just learning to take vital signs, it would be far more appropriate to assign

the skill to the student filling the special assignment role. As the students advance in their capabilities, a skill as basic as taking vital signs probably should be included among the tasks of the doer.

Likewise, the choice of which roles will be used and how many students will fill each role depends on the level of student achievement and the objectives for the day. Assigning students in groups of two is probably most appropriate for beginning students. They need and want practice in beginning nursing techniques such as bathing a patient, and when they are assigned in groups of two, the students get fairly frequent experience with the "doing" aspects of nursing. So one student of a group of two is probably the doer. The other student perhaps should be an information gatherer. There is so much beginning students need to and want to learn. It seems foolhardy not to structure the laboratory situation to meet the needs of young students for knowledge and practice. It also seems foolhardy not to capitalize on the motivations within nearly every beginning student to be good at "doing" and to know about and understand her patient's illness.

As students become more competent at giving basic hygienic care, the time comes to introduce them to some of the other skills in nursing. As they begin to learn about medicine-giving or irrigations, for example, you might wish the students to form groups of three--a doer, an information gatherer, and a special assignment student. It seems wise for a student to learn to master these skills separately before they are integrated into the basic patient care that students at a particular stage of nursing education are able to give. And even later, when students can tolerate a full laboratory period of observation, you might wish to add a fourth role, that of observer.

You realize, of course, that as the size of the group increases, the frequency with which each student is the doer and gives basic hygienic care decreases. In a group of four, any student would only be the doer every fourth laboratory day. This is really shocking, especially for those who think of nursing principally as "doing." Yet, how many times does a student have to give a bath and make a bed before she has learned the principles and mastered the basic techniques? My personal opinion is that if a student has not, in 8 or 10 tries, gained the basic knowledge and skills needed to safely give a patient a bath and make his bed, then she probably does not belong in nursing. Once a student has gained the basic knowledge and skills to give a patient AM care safely, subsequent practice becomes less meaningful. Certainly, the student needs to learn to adapt any skill to the patient's condition and idiosyncrasies and to equipment. Perhaps she can learn these adaptations better if her experience in giving basic hygienic care is infrequent enough--say, every third or fourth lab day, in order to make it interesting and exciting and not at all routine.

Students' needs for particular experiences as well as particular patient nursing care needs can dictate revisions of the usual group assignment of roles. A critically ill patient who needs detailed physical care and has complex treatments, and whose family stays at his bedside, might be available for clinical experience for more advanced nursing students. A sensible group might consist of two doers, one information gatherer, one special assignment nurse to give medication, one special assignment nurse to do treatments, and no observer. Another patient available for more advanced student experience might be a patient who has had radical gastrointestinal surgery but who has recovered to the point that he does most of his own physical care and is learning to do his own colostomy care. You might wish his group of nursing students to consist of one observer, two information gatherers--one to explore the patients preoperative work-up and operative procedure, the other to learn about the patient's postoperative course--and three special assignment students--one to give medications,

one to plan and carry out the patient's teaching concerning diet, and one to assist and teach the patient as he cares for his colostomy. It might not be necessary to assign a doer, since the students would perhaps learn least from helping this patient with this hygienic care.

Generally, the instructor determines which students will be in what group. A laboratory group of nursing students is just like any other group in that some of the members are diligent, some are lazy, some are quick to understand, some are not, some have very satisfactory interpersonal relationships, others do not, some are leaders, some are followers. By varying the types of group members in any one group, the instructor can vary what each student learns, both in specific nursing knowledge and in planning and carrying out patient care with a team. This learning to work together, we feel, is very important.

It is mandatory for nurses to learn how to work together, to evaluate each other's good points, and to plan so that the patient benefits most from each individual's particular capabilities. It is also necessary for nurses to deal effectively with the interpersonal-relationship problems that arise in any working situation. The experience of working closely with other students necessitates a certain amount of communication and cooperation. As the size of the group increases, so does the complexity of a working relationship among the nursing students in a particular group. Structuring the student's clinical situation so that she is exposed to some of these problems and then guiding her in solving them helps her learn the basics of team nursing.

We usually allow the students to decide which roles they will fill in caring for the patients. Permitting students to choose their own roles involves them more directly in their learning process. It gives them some opportunity to work out their own personal solutions for handling new, frightening, or less interesting situations. Within this framework, the student who is apprehensive about the appropriate techniques for irrigating a catheter, for example, has freedom within her group to volunteer for the special assignment role. Being the first in the group to do the catheter irrigation and so "getting it over with," she could also volunteer for one of the other roles and observe her classmate in a procedure before she has to do it herself. We stipulate only that in subsequent clinical laboratory periods the students in each group must change roles until each one has had experience in filling all the roles.

Sometimes we dissolve the group at this point. On other occasions, we keep the group members the same in order to allow them more time to work out their interpersonal relationships. Depending on the objective of the laboratory, the group of students might care for the same patient for several days or they might have a new patient each day. Pre- and post-conferences are handled much the same as they are with the traditional method of student assignments. Preconference usually begins with a brief explanation of the focus or objectives for the day. The small groups then meet to plan their patients' care. It is sometimes advisable to have the group summarize their plan of care at the end of preconference. Postconference is a discussion of the problems encountered, how and why specific plans of care worked, and changes that seem advisable. We expect groups to meet and share information, observations, and experiences, and adjust plans for patient care sometime during each lab period.

Some of the problems that you can expect to encounter if you use this multiple-assignment method are--first of all--with staff in the hospitals. Most hospital staff are concerned about any collegiate nursing program, particularly about the two-year associate degree nursing program, because of the lack of repeated practice in nursing skills. You can imagine how their concern increases when they learn that the students (using multiple assignment) are "doing" only every second or third or fourth lab day. Staff nurses are very hard to convince that students are getting adequate laboratory experiences. Staff nurses

also have difficulty appreciating the value of the observer and information gatherer. Our practice with the staff nurses has been to explain this method of assignment in detail before we begin using it. We have needed to explain more informally every month or two. It wasn't until recently that it occurred to us that we could be a bit more dramatic in proving our point. We have started inviting staff nurses to postconference. They seem impressed with the contributions the nondoers can make to the discussion and with the depth of understanding and ability to plan care that the students demonstrate. However, even at this point, after nearly two years' contact with multiple assignment, the staff remains concerned with the lack of practice.

Students who are using multiple assignment have two problems with it. Their first problem is understanding the observer role. As you would expect us to do, we do explain multiple assignment to the students and discuss role functions with them prior to assigning them in this manner in the clinical area. Repeated discussion and clarification of roles is necessary every month or two. And yet the students have difficulty with the observer role. The most successful approach I have found, once the students understand the purposes and functions of an observer, is to be very dictatorial. I just state that the observer is there to observe the patient's care--she is not to talk or help the patient or the doer unless the patient's safety is threatened. Being given this directive seems to help the students in fulfilling the observer role.

The other major problem that students have is that occasionally they feel they are not getting enough practice. This is partly due, I feel, to the students' preconceived idea of a nurse as a "doer," partly to the students' appreciation of the staff nurses' opinions, and partly because the expectations for safe performance of skills are not as stringent as the students' own expectation in performing skills.

Inherent in these feelings are the students' fears that upon graduation they will not be able to assume staff nurse responsibilities. Further explanation and discussion helps the students with these feelings--most of the time. But twice now, talking has been inadequate, so we have helped the students to set up a situation that they feel will test their capabilities as prospective staff nurses. On a predetermined day, most of the laboratory group would be assigned in the usual way--several students to care for one patient. Three or four students (none of them superior) would be given test assignments. These assignments have consisted of giving morning care to three or four patients. At the end of the laboratory period, each test student is exhausted because of the pace she had to maintain and frustrated by the lack of time to delve into the patient's chart or to talk at length with a patient--yet, she is sublimely happy. She has learned she could do the things an ordinary staff nurse does in a usual staff nurse's situation. Students who have not participated in this test situation size up those who have and decide that they themselves could function at least as well. In addition, the students decide they can learn more, and with less physical exertion, by using the multiple-assignment method. That solves our problem for several months.

Patients occasionally have negative comments about the multiple-assignment method. To solve this problem, we do talk very carefully with each patient before we put him in a situation that he would recognize as different from his usual type of care. The hospital units that we use for clinical experience all assign patient care using the functional method. So it is very usual for a patient to have one nurse give his bath, another bring his medications, and yet another take his blood pressure. The only aspect of multiple-assignment that a patient in our community would see as new is the observer role. Consequently, when we have an observer, the patient is interviewed before the assignments are made to see if we as instructors think he understands and can tolerate an ob-

server. Then, in effect, we ask his permission to use him for student experience. When we use this approach, we have no negative comments from the patients who agree to be a part of the student's learning experience. Now and again, a patient will refuse to have an observer. This, I feel, is his right, and he must be given the opportunity to refuse this type of an experience.

There is one further problem with multiple-assignment. Any individual patient's care seems to be segmented. You cannot help but be concerned that your students will have difficulty seeing the patient as a whole. In my experience with this method of assignment, I have found that when the group of students plan a patient's care in preconference, participate in and evaluate various aspects of his care, share their experience within their small group and in postconference, and have a variety of experiences with a patient as dictated by the various roles they fill, then the patient does gain a semblance of wholeness.

It is my belief that using the multiple-assignment method in the clinical laboratory helps to provide more meaningful experiences for nursing students. It also makes it possible for an instructor to stimulate the student to more nearly maximum learning in the clinical area.

NEW APPROACH TO EDUCATION

Mary E. Jensen

Approximately one and a half years ago, the administrative staff of Oakland Community College began to plan for the opening of a new college. They became convinced that some method other than a traditionally oriented and conventional lecture approach to the learning process was indicated. They conferred with leaders in education, business, industry, and the military in search of new ideas. They visited Dr. Samuel N. Postlethwait, who had been using an audio-tutorial approach since 1961. In a relatively short period of time, the administration made the decision that this approach would be utilized throughout the entire college.

Oakland Community College is dedicated to the application of a supervised, self-instruction, audio-tutorial method of instruction to achieve the best possible student learning and performance.

It was and still is the belief at Oakland Community College that conventional methods of instruction are basically teacher-oriented, with the student playing a rather passive role in the learning process. It was and still is the belief at Oakland Community College that the educational program must be learner-centered and that the student must be actively involved in the learning process and that this learning be directed toward meaningful, achievable goals. For these reasons, the college embarked on a systems approach to learning.

The systems approach demands that a rigorous analysis of the curriculum be made and that the material be structured systematically from the learner's, that is, the student's, point of view. The result of this analysis is a behaviorally oriented outline that specifics step by step the direction and the manner in which the learner will proceed from his starting point through fulfillment of previously determined objectives.

The systems approach utilizes many and varied techniques to accomplish the stated objectives. It is a carefully selected collection of elements and a carefully organized design for accomplishing a given set of objectives.

The systems approach demands that all terminal performance specifications be detailed and written in behavioral terms identifying the student performance when he has completed the course. The terminal performance specifications are detailed descriptions of the "need to know" and "need to do" element of the performance--the behaviors the student will be expected to demonstrate at the end of the course. These must be formulated and spelled out in advance.

The film, New Paths of Learning, illustrates the Oakland Community College story. In the film, you will see students enrolled in various courses, including nursing, all of which utilize the systems approach. You will see them in the laboratories and in the carrels, using media and materials chosen to aid them best in achieving the stated objectives for the courses. Following the film, I will try to summarize the approach.

(Film shown at this point)

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Essential to the implementation of the systems approach to education at Oakland Community College was the July-August workshop attended by approximately one-half of the total faculty. Consultants from the Instructional Materials Division of Litton Industries had a prominent role in this workshop and have maintained a consultant in residence this year.

Prerequisite readings were required of the faculty before beginning the detailed analysis. The readings were: Preparing Instructional Objectives, by Mager, and Why the Instructional Systems Approach, by Corrigan and Kaufman. Other specifically prepared and selected papers were distributed and were required reading assignments of the faculty during the workshop. One of these was An Integrated Approach to Learning, by S. N. Postlethwait.

Definite dates were established for the completion of each of the following tasks and assignments:

1. Derive and define curriculum Terminal Performance Specifications (T.P.S.)
2. Derive and define prerequisites, skills, and knowledges for curriculum and courses.
3. Derive and define T.P.S. for courses to be offered.
4. Derive and write Criterion Test Items for T.P.S.
5. Derive and define Interim Performance Specifications (I.P.S.) for establishing T.P.S.
6. Derive and specify criterion test questions for I.P.S.
7. Organize I.P.S. into appropriate blocks and units within blocks. (A unit would cover from one to three weeks' work.)
8. Derive and specify learning steps for each unit. (This involves a detailed task analysis of each unit and specification of all relevant skills, knowledges, concepts, and principles to be mastered. It includes expected behaviors and performance measurements.)
9. Specify methods and media--tapes, slides, filmstrips, single-concept films, books, programmed texts--for each learning step.
10. Prepare media for each unit.

The actual implementation of the general assembly sessions (G.A.S.) and small assembly sessions (S.A.S.) for each course is as follows:

1. G.A.S.--1 hour, once a week, attended by all students.
2. S.A.S.--held as specified and as needed in each course.
3. Laboratory--for large enrollment courses, open from 8 a.m.-10 p.m., Monday-Friday; not open for as many hours in smaller-enrollment courses. Students arrange their own laboratory hours. Nursing students are assigned to specific days for clinical laboratory experience.
4. Testing--majority of written tests are given in G.A.S. Oral testing may be done in laboratory or S.A.S.

Review, discussion, and revision for all courses offered the first and second sessions are essential. Planning was done for second session courses in the same fashion as it was for all first-session courses, and as it will be done for all new courses to be offered. This development, review, discussion, and revision based on feedback and research will continue and will be among the most important faculty assignments in making the systems approach operational at Oakland Community College.

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APPENDIX

Discussion Period

DR BAIRD (in answer to a question not recorded on the tape): That's a good question and one that we have discussed a great deal among ourselves. Actually, we're not at all unconcerned about evaluating the quality of our programs. I think the solution that you implied at the end of your question is, perhaps, at this point in history, the most likely answer to the problem. That is, if you have an evaluation team coming from the general association, you "coordinate," shall we say, and have a representative on the team fully qualified to judge the effectiveness of whatever programs your institution has. I know you can say, "Suppose you have fifteen or twenty programs." I think most of us would answer, "You have to do one big thorough institutional study, because remember, each of the associations that may want to come to our campus for accreditation purposes doesn't necessarily ask for the same kind of information about the institution. Pretty soon, you would find yourself spending a large share of your resources just trying to put together the different kinds of information that the different agencies would want to have about you. So this is one of the ways in which general and specialized accreditation can get together on the kind of information that is necessary and basic to the evaluation of the work within an institution. And then, suppose we do have many different kinds of programs--I think that I would rather have on my campus one real big party for one week than have twenty-five parties scattered throughout the year.

PARTICIPANT: I have a follow-up on this question certain aspects of which I do not understand. You would like and be willing to have one person, well prepared, come and evaluate a particular program. You are willing, then, are you, to have any other aspect of your college or the rest of the college evaluated by one person? Then may I ask: What criteria is this one person going to use? And on what basis will this one person alone make the kind of judgment that you can call or surely consider necessary in determing the quality of a particular program?

PANELIST: I don't have the same confidence that some of my friends have in the ability of a team--whether it's composed of one or five members or whether it stays for one day or a week. I don't think that I am confident that these people can really measure the effectiveness of every single teaching program going on on our campus. I really think that in the final analysis, when you hire somebody or when you do business with someone (I think educational institutions are business enterprises--we're in the business of teaching, of education), don't you have to rely on those measures of character and the intent to do the right kind of a job more than on measuring the height of the people? It seems to me that all you need is one person, provided that this person uses good criteria that have been developed by the group that is interested in the particular program and makes his work a coordinated part of the work of the visiting general team (and I've been chairman of many of these general teams). I think any team that visits a college campus and stays three days measures a lot of things that are vitally important in relation to the quality of the job being done--whether it be in nursing, engineering technology, data processing, food technology, or in any other field. So I think it's a matter of how definitive

we really think we can be in the business of the evaluation.

PARTICIPANT: Dr. Baird, you mentioned the study as being of crucial importance. You also mentioned an opinionnaire that had been sent out on a scientific basis to 172 schools--and I was wondering, is there any further commitment to the study actually being done? If so, by whom, when, and what do you do in the interim?

DR. BAIRD: First of all, the opinionnaire I referred to, which was sent to sample 172 institutions, is the internal study currently being conducted of its own operation by the National Commissioner on Accrediting. I thought I was about to run out of time and neglected to mention this big general study that we would like to see done of the total business of accreditation, and especially as it relates to community colleges. We really hope that by the time the National Commission meets in Chicago at the end of this month, the American Association of Community Colleges will be able to report that a foundation has agreed to underwrite a great national study in depth of accreditation practices and procedures--one that won't seek to criticize what is being done or what has been done but will try to be constructive and try to get some of the basic research data that might help us to create better systems of evaluation and accreditation. We've been trying for months to get this kind of financial support; we think we see it in the offing, although we're not quite sure yet. In the meantime--and we'll have to be very practical about this--to those institutions that are eligible and in desperate need or in need of the kind of financial support that some of the federal funding programs make possible, I think I would say that I'd probably be inclined to take present avenues open to us, such as the League. Or, I suppose, being a very stubborn individual, my first approach would be to insist to the commissioner that my institution, being a regional accrediting institution, should be eligible for federal funds. Failing that, I would probably put myself in the position of going to NLN on the matter. In the meantime, every institution would have to decide this for itself. And, as I said before, much as we need federal support for many of our programs, I think that the timing was most unfortunate in terms of the dialogue that was going on between NLN and AAJC, to be very specific again about this matter of how to get together on the accreditation of nursing and other health-related programs in the community colleges.

PARTICIPANT: As a colleague of Dwight Baird's, I'd like to ask him a leading question, if I may, referring back to a question already addressed to him. I think Dr. Baird omitted answering a portion of the question--I don't know if by accident or by design. The portion of the question was that having to do with what criteria should be applied by the blanket accrediting team or by the one person representing the specialized accrediting group as a component--as a single component--or element of this team of accrediting visitors. Should not the criteria to be applied by this individual, and therefore by the regional accrediting team, be the criteria of the profession as the profession has defined it with its specific knowledge of its own field?

DR. BAIRD: Thanks, Al. I think I skipped over that too fast in my answer I thought that what I had implied in the answer was the criteria developed by the agency interested in a particular program--the criteria developed by them as a part of the work of the whole team--plus the fact that--and I am not at all in disagreement with some of the implications that you made, Dr. Allen--every member of that evaluation team in applying good criteria of the general association, the general accrediting criteria, is measuring to a very real extent the great supporting things we have to look for in an institution that does all the kinds of things it does. When I've served on an accreditation team, I've found it rare that high-quality work was being done in one particular area and very bad work in another. I really don't think that over a long period,

an institution that is dedicated to doing a good job and to maintaining its accreditation status is going to do a rotten job, if we can put it that way, in any area. And besides, if I may project this a little, how many of us can afford to have the graduates of our nursing program fail the state boards too consistently? After all, they don't practice nursing in my state or in your state until they have passed the state boards--it doesn't matter where they got their training. So I think it is a matter of good business; we don't stay in business if we fail to live up to a reasonable level of performance in all areas.

PARTICIPANT: I have to go back to the interim period. Have the organizations NLN and AAJC approached each other recently concerning some sort of re-participation in the team for general accreditation?

DR. BAIRD: Well, I think Mary Liston will agree that there have been cooperative efforts between our two associations--we're not really at war with each other. In fact, the whole ADN program (Mary is such a nice person, I don't mind her knowing that I feel this way) probably would not be in existence today--at least, it would not be as far along as it is had it not been for a very considerable period of time of close cooperation between NLN, AAJC, Columbia University. I forget whether there were some other people involved in that basic research team that originally did the study to determine whether or not we could prepare professional nurses. Whether you call them technicians or anything else, I am proud of the fact that the nurses in this country--whether it was through two years of good preparation in your college or mine, three years at diploma school, or the baccalaureate degree program--have been able, literally by pulling themselves up by their own bootstraps, to get themselves accepted pretty generally as professionals. And I am not willing to quibble about whether professional is a better term than technician or technical or what have you. But in the very beginning, it was the kind of research effort that I am pleading for here--as we study the accreditation procedures--that made it possible. We did find, didn't we, that we could train at least good basic first-level bedside nurses--and that's what we're trying to do. That's where the desperate need is, outside of the need for somebody to direct the programs. I guess this is the critical need--and don't any of you come up there on the Columbia River looking for one; I've got a good one and I want to keep her. But we did this, we were looking for a better way, and we found it; we found the ADN Program. So we're continuing to cooperate, we've got some kind of a joint committee between us now. And I think that Jerry Griffin has been carrying on some correspondence with us, encouraging us, if nothing else, to set up an ad hoc committee or another one, maybe to address itself pretty much to this problem that has been raised here--what do we do in the interim? We can't turn our backs on each other, we've got to face this problem together. Mary Liston probably has a better answer than I.

DR. LISTON: I just wanted to mention that I know specifically that one of our regional associations does request names from NLN or already has its own list from which it names a nurse member for a team on a regional accreditation visit when the nursing program is not being reviewed for specialized accreditation. There are some people in this room who have been on this type of evaluation team. They look at the nursing program and also at other programs. As you know, when you're on a regional team, you may be looking at other programs as well as the specialized program that you are taking a look at. So this is in existence; but again, it varies according to the regional association. But the program may not necessarily be coming up for specialized NLN accreditation.

PARTICIPANT: It seems that a commissioner, in requiring membership in a voluntary organization, which our accrediting associations are, is either unwise or hasn't been exactly on the right track. I would like some reactions to this, possibly the results. It makes it involuntary, doesn't it, if you're going to get funds?

DR. BAIRD: You're raising a very important question of social policy, I think, but I don't think this is anything new. If this is not to be interpreted as agreement or disagreement with what the commissioner did in this instance but as a comment on this matter of public policy, this is not new. There are many instances in which private organizations that are not responsible to the public will, in the way that the public bodies are, have been assigned quasi-public responsibility. A good illustration, I think, is one close to your own profession. In every state in the union, I believe, a condition for being eligible for trying medical license examinations is that one must be a graduate of an institution approved by the American Medical Association, which is a private body. This goes back a good many years. I could point to a considerable number of other illustrations of this kind of thing. It is a question that has not been answered. I suspect that if some of these instances were brought as test cases into the courts, the interpretation might well be that this was an improper assignment of public responsibility to private industry. I merely make the point that this is far from the first time that this has happened; it runs through the whole fabric of our political government.

PARTICIPANT: Norman, while you're up, I think it might be helpful to this group to have you interpret "voluntary accreditation." There is further argument on the part of the commissioner that accreditation should be voluntary. Do I make myself clear?

DR. BAIRD: Yes, I think, if I understand you rightly what you've referred to is the desirability of this kind of activity contrasted with government control. This, of course, is a distinctive American phenomenon, as you know--this business of voluntary accrediting. The only alternative that is available to us is control through governmental bureaus. I suppose it's a series of historical accidents that has led us to the situation we're in today; for certainly, voluntary accrediting has performed a very important public service. Whether or not it has been given these public responsibilities, it still has performed a very important public service over the years; and had it not been performed voluntarily through the efforts of the people involved either in the professions or in the educational institutions, it would of necessity have been provided by some other agency. So I think this is a point that sometimes is lost sight of by those people who find themselves in strong opposition to voluntary accrediting. They probably wouldn't like the alternatives as well as what they have. I think the answer, then, lies in doing everything that is possible--there are plenty of channels through which pressures and influences can be brought to bear to make the voluntary accrediting activity as good as it can possibly be--and this is a continuing operation, of course.

PARTICIPANT: Mary Liston, in her remarks stressed one that I think is very important, and that is the involvement of the faculty in developing the whole criteria in a continuing self-evaluation process that has been very much a part of nursing education since unified accrediting began--in 1949, I believe--and one question I would ask Dr. Baird is, if we do not have the program of accreditation, which is simplest, really, to this kind of continuing self-involvement of the faculty, what would you see as an adequate substitute for it? My second comment--and I can't resist it--is in relation to a remark that has been made a few times, and I wonder if anyone has offered you an interpretation. We've mentioned the unfortunate timing of the confrontation between the two attitudes on accreditation. I don't think it was a matter of anyone's choice, really, but a fact that is being impressed on us very generously and is hitting us from all sides--and that is, there is a real need to produce nurses faster. And one of the things we needed in order to do that was federal aid. And one of the things that has been used in the past in programs of federal aid and has been necessary,

it seems, is some kind of accreditation other than state approval.

DR. BAIRD: Well, I certainly didn't intend to imply that, and I do think that the timing was unfortunate, but not through the choice of either NLN or AAJC. All of us at the same time have been working towards getting the funds we needed to do our job. It just happens, I think, in the ongoing of history that these three things came together at the same crossroads at the same time, and if we had had a way to choose differently, we would have probably planned them a little farther apart. I am not passing any blame for this. I think it's just one of the accidents of history that it happened this way. Back to the business concerning the part that the professional organizations can play in helping an institution, in helping a faculty to stay alive. I think this is tremendously important. I really don't think, however, it has to relate to accreditation. I think this would be a responsibility of NLN or any other organization interested in nursing education, whether or not it was involved in the accrediation process. The fact is, as I've said, I think, once before, probably no nursing program in this country--ADN program--has greater reason to be grateful to NLN than does my college. We were a part of the Sealantic Fund project. I've been through nursing conferences with my nursing director, Mildred Schmidt. The people of NLN have been tremendously important, I think, in helping us get our program off the ground. This can be an ongoing thing.

PARTICIPANT: I believe my question could be addressed rather to Dr. Liston, although I'm not sure. As a faculty member of a junior college, I am concerned with this whole matter of accreditation from the standpoint of both time and the drain on human resources. It does take place with the process of accreditation. One thing that, perhaps, concerns me more is the financial costs involved. These accumulate. We operate on a tight budget, and sometimes, they are quite disturbing. One of the things I would hope of any type of arrangement made would be the lessening of the cost--if that could be possible--to the institution. I'll be frank with you--I saw some figures the other day on the NLN costs of accreditation, and they were quite alarming to me. I was wondering if someone might explain what these costs were specifically? And where does the money go?

DR. LISTON: Certainly, costs, I think, are of concern to all of us. As I mentioned earlier to you, we do have several divisional committees--one being a committee on fees and dues for NLN, and this particular committee has been studying very carefully the whole fees and dues structure for the Division of Nursing Education. As you also know, it takes money to operate a program of accrediting. To be specific--at the present time, the costs of charges associated with accreditation depend on two facts--actually they might be separated into two areas. We mentioned earlier the Council of Member Agencies of NLN. This is the group that joins NLN as an agency member. The current dues for this group for associate degree programs is two hundred and eighty-five dollars a year. When a school that is a member of the Council of Member Agencies requests a visit for school accreditation, the charge for the visit is thirty dollars per day per visitor, which would amount to--if it was a three day visit--one hundred and eighty dollars. If the school is not a member of the Council of Member Agencies, there is a flat fee--and again, we are speaking of fees at the present time--fifteen hundred dollars, which may be prorated over a six year period. The hope is--and again, this is characteristic of all the councils in the division--that we are working towards obtaining agency membership so that the schools will actively participate in the criteria, the policies, the procedures, the development of materials, and so forth. We are doing everything practical to reduce the costs. I think many of you have been involved in trying to get grants to subsidize this kind of operation; this is at the present time a subsidy. The fees for the other departments are between five and six hundred

dollars and are based on student enrollment. But for the years 1965, 1966, and 1967, the NLN Board of Directors voted a fee of two hundred and eighty-five dollars. The costs for reasonable assurance--I'm not sure if you are interested in that--was a hundred dollars plus the per diem cost of the visitor. We have done rather careful cost analyses; we are continuing to do them. And the latest data we have had--and again, they have not been primarily data from the associate degree programs but from the other two departments--diploma and baccalaureate--show that actually, the costs for accreditation cover roughly 50 percent, the charge to the school; the rest is made up by the income of the League from consultation, from studies, test services, and a variety of other sources. But we do appreciate, believe me, the fee question--all of us do, and every attempt is being made to solve it. If anyone knows sources where we can get some additional funds to help us, we'd be very glad to learn about them.

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Vocational Education Opportunities for North Carolina High Schools, 1967-68 School Year.

North Carolina State Dept. of Public Instruction, Raleigh. Div. of Vocational Education
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NORTH CAROLINA

The publication is designed to assist supervisors, principals, teachers, and others in planning a program of vocational education. The suggested pattern includes: (1) ninth grade introductory courses, through which students learn about occupations, occupational requirements, and educational opportunities for meeting the requirements, (2) 10th grade offerings in trade and industrial, distributive, business occupations, home economics, and agricultural education, in which students explore occupational interests in greater depth and begin to develop occupational skills, and (3) 11th and 12th grade specialized courses in which specific skills for specific occupations are taught. Other sections of the document present: (1) the general conditions for allocation of positions in vocational education, (2) the conditions for allocation of the position of local director and the duties and minimum requirements of that position, and (3) brief descriptions of the specialized areas of vocational education. (JK)

VT 002 641

V O C A T I O N A L E D U C A T I O N

O P P O R T U N I T I E S

F O R

N O R T H C A R O L I N A

H I G H S C H O O L S

1967-68 School Year

NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION
DIVISION OF VOCATIONAL EDUCATION
RALEIGH, NORTH CAROLINA

VT002641

FOREWORD

The Smith-Hughes Act of 1917 provided for Federal-State-Local cooperation in planning and implementing vocational education programs. All subsequent Federal funds have been provided as an incentive to match State and local funds in the promotion of programs of vocational education.

As a condition for the receipt of Federal funds, a state is required to submit a State Plan indicating how the funds are to be used, and upon approval of the State Plan by the U. S. Office of Education the state must comply with the agreement.

The North Carolina State Board of Education extended the "State Plan" idea of Federal-State cooperation to the State-Local Administrative Unit level with the beginning of the 1964-65 school year. Thus, as a condition for the receipt of Federal-State funds for vocational education programs at the local level, the local administrative unit submits a "Local Plan for Vocational Education" describing the local vocational education programs to be offered. Administrative units are expected to base their Local Plans on careful socio-economic and job opportunity studies.

This publication is designed to help superintendents, principals, teachers, and others, in looking at a pattern of vocational education programs in a high school, to see the relationship of courses to specialized areas and of specialized areas to the total educational program. A suggested pattern for vocational and technical education in North Carolina high schools is on page 2 of this publication. General descriptions of specialized areas of study begin on page 7. Descriptions of specific courses may be found in Program of Studies, North Carolina Department of Public Instruction, 1964-65.

The staff of the Division of Vocational Education, State Department of Public Instruction, is available to help in planning and implementing comprehensive programs of vocational education which are meaningful and productive in local school systems.

A. S. Ballard

State Director of Vocational Education

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INTRODUCTION

Local planning for educational programs of any kind should be a continuous process. Local planning is a necessity if local educational programs are to reflect changing educational needs at the local level.

A rather detailed and comprehensive study should be made as a basis for planning local programs of vocational education. The staff of the Division of Vocational Education provides consultant services to assist local administrative units in making such studies. Administrative units should base requests for the allotment of vocational education teaching positions and funds for equipment on data available from studies already completed, those now in progress, and from as many other sources as possible.

Three major factors which should be considered in the development of local plans are:

(1) the total educational needs of students,

(2) the vocational developmental needs of students, and

(3) employment opportunities and the changing occupational structure.

In the development of local plans for vocational education, your attention is invited to the following pages describing a suggested pattern for vocational and technical education in North Carolina high schools. The general overviews of the several vocational areas in the latter part of this publication and descriptions of specific courses within each area as listed in the Program of Studies should be studied. By matching vocational education needs of present and potential enrollees with programs described in this publication and with courses as described in the Program of Studies, requests for positions and funds may be determined.

Requests for vocational education teaching and local director positions should be filed with the State Director of Vocational Education, North Carolina Department of Public Instrsuction, on the form Local Plan for Vocational Education for 1967-68 School Year not later than April 1, 1967. Evaluation of these requests will be made immediately and superintendents will be advised of action taken.

Consultative services in developing local plans may be requested of the Director's Office, Division of Vocational Education, North Carolina Department of Public Instruction, Raleigh, North Carolina.

SUGGESTED PATTERN FOR VOCATIONAL AND TECHNICAL EDUCATION IN NORTH CAROLINA HIGH SCHOOLS

On the following page is the Suggested Pattern for Vocational and Technical Education in North Carolina high schools which illustrates the interrelationships of the several vocational education courses described in the Program of Studies. No school will be able to offer every course in each area but should aim at providing courses in those areas where opportunities and needs exist.

Narrative Description of the Pattern

The courses listed as possible vocational education offerings at the ninth grade level may be characterized as "introductory" courses. Research in vocational maturity indicates that this is the age in which students begin to look at themselves and their opportunities in the world of work more realistically. They should also begin to look at their future roles as homemakers. They need to know more about occupations, occupational requirements, and the educational opportunities for meeting these requirements. Developing an awareness of the need for occupational and educational planning is a key concept here.

Tenth grade offerings are designed to help a student explore in greater depth some of the occupational interests developed as a ninth grader. At this point students select the broad occupational area (trade and industrial, distributive education, business occupations, home economics education, or agricultural education) in which they wish to do further exploration and/or begin to develop skills which might be applicable to clusters of occupations within the broad areas. Students at the tenth grade level may enroll in courses in any of the areas. It is hoped that most of these enrollees will have taken one of the suggested courses for the ninth grade level, although these are suggestions and not necessarily prerequisites.

Courses offered at the eleventh and twelfth grade levels are characterized by "specialization." Specific skills for specific types of occupations are taught. Crossover between areas is possible between the eleventh and twelfth grades by students whose occupational aspirations change, but these should be much fewer than crossovers at the lower grade levels.

Your attention is called to the fact that vocational education at the high school level is not terminal education. Graduates (even those going directly into employment) should be encouraged to enroll in post-high school vocational and technical education programs either on a full-time or part-time basis.

Relationship to State Board of Education Policies

The suggested pattern for vocational and technical education illustrated on the following page is consistent with policies of the State Board of Education promoting diversified and comprehensive programs of vocational education in the secondary schools of the State. Local administrative units are urged to move toward programs of this type as rapidly as feasible in order to provide realistic vocational education to as many students as possible who need and desire training in specific occupational areas.

SUGGESTED PATTERN FOR VOCATIONAL AND TECHNICAL EDUCATION IN NORTH CAROLINA HIGH SCHOOLS

To Employment, to Post-High School Technical or Vocational Education, or to College

Post-Secondary Schools and Colleges

Home Economics Education	Trade and Industrial Education	Agricultural Education	Distributive Education	Business & Office Education	
Home Economics 713* 715.1-2-3** 716-717 or Home Economics Occupations- 714.1-714.8	Industrial Cooperative Training 741-742-743 Trade Preparatory: Mechanics-750 Series Construction- 760 Series Electricity/ Electronics- 770 Series Service Occupations- 780 Series Metals-790 Series	Agricultural Production 703 or Agricultural Management 704 or Agricultural Electives- Off-Farm Agri. Occupations Select from Courses 705.1-705.9	Cooperative D.E. Programs- 721-722 Preparatory D.E. Programs Select from Courses 723-727	Cooperative Office Occupations Preparatory Office Occupations Data Processing ***	12th and 11th Grades (Specialization)

Home Economics II 712	Introduction to Industrial Education Select from Courses 731-739	Agricultural Science and Mechanics 702	Basic Economics for Business Occupations 720.1	10th Grade (Exploration)

Introduction to Vocations 799
and/or Home Economics I - 711.1 or 711.2
and/or Introduction to Agriculture - 701

9th Grade (Introduction)

NOTE: The course titles and numbers given in this chart refer to course descriptions given in the Program of Studies.

*Not recommended for college-bound student except where special interest is indicated and credit is not required for graduation.

**Special interest courses only. ***Not described in Program of Studies, 1964.

GENERAL CONDITIONS UPON WHICH VOCATIONAL EDUCATION PERSONNEL POSITIONS ARE ALLOCATED

1. Reimbursement to local administrative units for salaries of vocational teachers and local directors of vocational education for the 1967-68 school year will be as follows:

Agricultural Education	2/3
Home Economics Education	2/3
Trade and Industrial Education	3/4
Distributive Education	3/4
Introduction to Vocations	3/4
Business and Office Education	3/4
Local Directors of Vocational Education	3/4

2. Vocational education teachers must be certified by the Division of Professional Services. Only certified teachers may be hired to teach reimbursable vocational education courses. New teachers, as well as those presently employed, being assigned to new vocational courses must be approved for certification by the appropriate State Supervisors.

3. Adequate facilities, equipment, and instructional materials must be provided. Travel allowance of at least $25 per month must be budgeted for those teachers required to travel in connection with their official duties.

4. IN HOME ECONOMICS, ADULT HOMEMAKING EDUCATION IS THE RESPONSIBILITY OF HOME ECONOMICS TEACHERS.

   IN AGRICULTURE, ADULT FARMER EDUCATION IS THE RESPONSIBILITY OF AGRICULTURE TEACHERS.

   THESE TEACHERS MUST BE GIVEN TIME AND RESOURCES TO CONDUCT SUCH ADULT EDUCATION.

5. Vocational education teaching positions are allotted in addition to regular ADA teachers. Duties of all teachers are assigned by principals. However, according to State policies, when non-vocational teaching duties are assigned, salary reimbursements must be prorated (based on a six-period day) in proportion to the amount of time assigned to non-vocational teaching duties.

LOCAL DIRECTORS OF VOCATIONAL EDUCATION

In accordance with the North Carolina State Plan for Vocational Education, "The local director or supervisor of vocational education shall be responsible to the administrative officer of the local educational agency for administration and supervision of the vocational education program or specialized aspects of the program. He shall give general direction to planning vocational education programs. He shall organize, supervise, and evaluate programs of instruction in the area or areas assigned and shall recommend personnel to be employed under provisions of current laws and the State Plan."

Minimum Criteria for the Allotment of a Local Director of Vocational Education Position

The administrative unit must have a total of at least:

1. Two thousand vocational education students (students enrolled in a vocational course being taught by a State-reimbursed vocational teacher).

2. Thirty full-time vocational education teachers employed and teaching.

3. Four of the six vocational education programs available (Agriculture, Home Economics, Trade and Industrial Education, Distributive Education, Business and Office Education, and Introduction to Vocations).

There must also be evidence of a projected vocational education program for the administrative unit in the coming years which indicates a positive growth trend in the vocational area. The administrative unit must put in writing the proposed utilization of the local director, including his duties, responsibilities, and relationships with the local administrative staff and teachers.

Duties of the Local Director of Vocational Education

In addition to the duties and responsibilities as set forth in the State Plan, some specifics might be as follows:

1. Developing and recommending local plans for vocational education.

2. Recommending the courses needed.

3. Assisting in securing properly qualified vocational education teachers.

4. Assisting all vocational education teachers in the administrative unit in establishing and maintaining effective instructional programs.

5. Working with lay advisory committees in directing proper emphasis for local programs.

6. Determining and recommending equipment needed for the programs and ordering such equipment as is needed.

7. Assisting vocational education teachers in the preparation of all reports. Preparing over-all annual report of all vocational programs in the administrative unit.

8. Recommending inservice education of vocational teachers within the administrative unit.

9. Coordinating follow-up study of vocational students to ascertain if they are properly employed upon graduation.

10. In addition, this person would be responsible for any other duties that might be assigned in vocational areas by the superintendent.

Minimum Qualifications of the Local Director of Vocational Education

The State Plan specifies that "The local director or supervisor shall be a graduate of an accredited four-year college or university and shall have had a minimum of three years' experience in one or a combination of the following activities in vocational education: teaching, counseling, supervision, or teacher education. He shall also meet requirements for instructional personnel in one or more areas of vocational education."

Qualifications of the local director of vocational education must be approved by the State Director of Vocational Education.

The individual selected will be expected to take further training in the various specialized areas of vocational education to broaden his areas of competency in order that this position will be in line with other levels of administrative staff at the local level.

For further information contact: A. G. Bullard, State Director
Division of Vocational Education
Department of Public Instruction
Raleigh, North Carolina 27602

BRIEF DESCRIPTIONS OF SPECIALIZED AREAS

OF

VOCATIONAL EDUCATION

AGRICULTURAL EDUCATION

Vocational education in agriculture in the public schools of North Carolina provides educational opportunities for youth and adults who are interested in agricultural vocations. For our youth it provides an opportunity to elect a sequence of courses in agriculture, combined with other courses in the high school, that will result in a foundation of learning upon which they may continue their education in agriculture beyond the high school in a more specialized area of learning or to enter agricultural employment. For adults who are interested in continuing their education in agriculture, it provides an opportunity to acquire new agricultural technology needed in improving their vocational competencies by participating in short unit courses designed to meet their special needs.

Agricultural Education for High School Students

In the high school course in agriculture, emphasis is given to developing attitudes, understandings, and abilities necessary for the student to make a beginning and to advance in his educational preparation for a vocation in agriculture. This aim is accomplished by combining classroom and laboratory instruction at the school with off-campus supervised learning experiences. Opportunities are provided for the student to:

(1) explore his opportunities and potentialities in agriculture;

(2) make sound decisions regarding a career in agriculture and the educational requirements for entering and progressing in it;

(3) acquire a broad knowledge of agricultural science and technology and practice in the application of this knowledge; and

(4) acquire an appreciation of such values as leadership, cooperation, citizenship, and thrift and practice in developing those understandings and skills essential to participation in a progressive and democratic society.

Basal education is provided in the following learning areas: Agricultural Guidance, Agricultural Leadership, Agricultural Business Management, Agricultural Mechanics, Agricultural Policy, Plant Science and Technology, Animal Science and Technology, Soil Science and Technology, and Agricultural Resources.

Agricultural Youth Organizations--The Future Farmers of America is promoted and sponsored by the vocational agriculture departments of public high schools as a means of motivating students and providing supervised practice experiences designed to develop leadership, cooperation, and citizenship abilities.

Agricultural Education for Adults

Vocational education in agriculture for adults is essential to a dynamic and ever-changing agricultural economy. North Carolina, through its public high schools, is providing agricultural education opportunities for interested adults to continue their education on a part-time basis. Unit courses are tailor-made to fit the special interest and needs of the people in the community and area. In general, these courses are designed to develop attitudes, understandings, and abilities essential for advancing in farming or some other closely related business.

Emphasis is given to:

(1) agricultural economics and business management;

(2) soil and water management practices;

(3) an evaluation and application of agricultural research as it relates to new materials, equipment, and practices which might be used to increase agriculture income and to improve family living;

(4) record-keeping and the use of records in operating an agricultural business;

(5) agricultural credit and its wise use;

(6) development of mechanical abilities helpful in the maintenance and operation of agricultural machinery;

(7) development of leadership abilities; and

(8) identification and solution of individual problems.

Supervised Practice

As a part of the teaching-learning process, the local school provides time for the vocational agriculture teacher to follow up classroom and laboratory instruction with individual on-the-job instruction essential in the application and evaluation of knowledge acquired.

Teacher Qualifications

The teacher of vocational education in agriculture shall be a graduate in agricultural education of an accredited agricultural college which has been approved by the State Board of Education for training teachers of vocational agriculture. He also shall have completed the professional and technical requirements specified by the State Board of Education for certifying teachers of vocational agriculture.

However, a Provisional "A" Vocational Certificate may be granted an agricultural graduate who holds a B.S. or higher degree. An inservice education program will be provided to aid the teacher in converting the provisional certificate to a regular vocational certificate.

Facilities and Equipment

The facilities required for vocational education in agriculture vary with the courses included in the local school's offerings. In general, a classroom(s), an agricultural mechanics laboratory, and a land laboratory (including a greenhouse) are needed. Detailed suggestions are contained in the North Carolina Department of Public Instruction publication entitled "A Guide for Planning Buildings, Facilities, and Equipment for Vocational Education in Agriculture."

An equipment list for each of the courses included in the Program of Studies has been prepared and is available, upon request, from the Division of Vocational Education.

PROGRAM OF STUDIES
FOR
VOCATIONAL EDUCATION IN AGRICULTURE (HIGH SCHOOL)

Course Number	Course Title
701	Introduction to Agriculture
702	Agricultural Science and Mechanics
703	Agricultural Production
704	Agricultural Management
705.1	Agricultural Construction
705.21	Agricultural Machinery and Equipment - I
705.22	Agricultural Machinery and Equipment - II
705.3	General Horticulture
705.41	Ornamental Horticulture and Landscaping - I
705.42	Ornamental Horticulture and Landscaping - II
705.5	Forestry
705.6	Crop and Soil Technology
705.7	Livestock and Poultry Technology
705.8	Agricultural Chemicals
705.9	Agricultural Business Operation and Management
706.11	Agricultural Sales and Services - I
706.12	Agricultural Sales and Services - II

For further information contact: V. B. Hairr, State Supervisor
Agricultural Education
Department of Public Instruction
Raleigh, North Carolina 27602

HOME ECONOMICS EDUCATION

Education for Useful Employment or Basic Homemaking Courses

The basic homemaking courses are planned to comply with that section of the 1963 Act referred to as education for useful employment. Eight courses have been planned under this category. The objectives of these courses are to educate for satisfying personal and family living. The content includes food and nutrition; care, selection, and construction of clothing; child development; family and peer relations; family economics and consumer education; home care of the sick; housing and home furnishings; and home management. Each year is built on sequence basis with experiences planned to meet the maturation of the student.

The eight courses are listed in the Program of Studies for North Carolina Schools. In addition to the high school program, an introductory course for the eighth grade is likewise included. Two years of home economics must be offered in the school wherever vocational funds are allotted, although students are not required to take the second year.

To meet the needs and interests of a few students in large consolidated schools (1000 or more students) who for some reason were unable to schedule the basic homemaking program, three additional courses have been planned. These are one-semester courses developed around a specific area of interest. Since the content has been included in the comprehensive first-year course 711, the courses are repetitive and should be offered only when a real need arises.

Courses for boys, as well as a course for older youth in family life education, are included in the offerings for education for useful employment.

Education for Gainful Employment

Eight courses, having as their specific objectives training for entry-level employment, are also described in the Program of Studies. The content and experiences included in each are designed to prepare the student to enter the labor market in one or a cluster of related jobs. The first year of home economics is a required prerequisite for all of these courses, since the student will gain insight into the area which may motivate her vocational choice later. These courses are open to 17 and 18 year-olds who can enter full-time employment upon completion of an occupational training program.

Areas included in occupational training are: Homemaker Assistant, Housekeeping Aide, Child Care Aide, Custom Sewing, Food Services, Management Aide, Companion Aide, and Sewing Services. Each course requires daily instruction of one school period plus 50 to 60 hours of supervised observation under working conditions.

The space and equipment in home economics departments can be used for these courses with some additional equipment and materials. For Child Care Aide training, a day-care center must be provided. The approximate cost for teaching supplies and materials for each occupational course will range from $200 to $300.

Teachers of occupational courses will require additional training through summer courses or workshops.

PROGRAM OF STUDIES
FOR
HOME ECONOMICS EDUCATION

Course Number	Course Title
711.1	Home Economics I
711.2	Home Economics I (9th grade junior high school)
712	Home Economics II
713	Home Economics III
714.1	Home Economics Occupations - Housekeeping Aide
714.2	Home Economics Occupations - Management Aide
714.3	Home Economics Occupations - Food Service
714.4	Home Economics Occupations - Clothing Services
714.5	Home Economics Occupations - Child Care Aide
714.6	Home Economics Occupations - Homemaker's Assistant
714.7	Home Economics Occupations - Custom Sewing
714.8	Home Economics Occupations - Companion Aide
715.1	Home Economics - Foods (1/2 year)
715.2	Home Economics - Clothing (1/2 year)
715.3	Home Economics - Child Development and Family Relations (1/2 year)
716.1	Home Economics - Boys' Home Economics (1/2 year)
716.2	Home Economics - Boys' Home Economics (1 year)
717	Home Economics - Family Life Education

For futher information contact: Catherine T. Dennis, State Supervisor
Home Economics Education
Department of Public Instruction
Raleigh, North Carolina 27602

TRADE AND INDUSTRIAL EDUCATION

Trade and industrial education is a balanced program of classroom study and practical work experiences that have the common objective of producing competent workers in a variety of definite occupational areas.

Trade and industrial education develops the skills, abilities, understandings, attitudes, and working habits required by today's employers. It imparts knowledge and information needed by students who desire to enter and progress in a range of industrial employments.

The goal is an American citizen who as a young worker is competent economically, socially, emotionally, and physically.

The mission of trade and industrial education is:

- The development of PEOPLE - not products
- People who can produce
- People with adaptability to the dynamics of the era
- People whose occupational interest of employment is in trade, service, or technical pursuits - from the lowest to the highest positions
- People who share the benefits and the responsibilities of a democratic society with all other people

Currently, trade and industrial education includes three areas of industrial training:

Introduction to Industrial Education

This is a tenth-grade level course that starts the student toward experiences in definite occupational skill areas. It is the basic area from which all trade and industrial education develops.

Examples: 731-Automotive Industry; 733-Construction Industry; and 739-Textile Industry.

As indicated in the Program of Studies, Introduction to Industrial Education introduces the student to the basic skills and knowledges on a one-period basis which will be expanded in succeeding courses at the 11th and 12th grade levels.

Trade Preparatory Training

This area of trade and industrial education is designed for 10th, 11th, and 12th grade students who wish to pursue a specific trade or skill as their vocation for employment.

The training given is complete, and it includes both classroom study and practical shop instruction. General skill information is also included to prepare the student for employment after graduation from school.

Some courses taught in this area are: Auto Mechanics, Bricklaying, Carpentry, Cosmetology, Technical Drafting, Electricity/Electronics, Graphics and Industrial Communications, Health Occupations, Machine Shop, and Welding.

The time per day in these classes depends upon the course and these limits are outlined in the Program of Studies (or Planning Guides).

Industrial Cooperative Training

Industrial Cooperative Training is a cooperative enterprise between business and industry in the communities and high school. Industry furnishes part-time employment and on-the-job training for students, and the school teaches the technical subject material related to the job being learned. The student is allowed to receive on-the-job training during high school hours for which he receives units of credit. In addition, the student is paid for his on-the-job experience. Such a program enables the student to earn while learning.

Industrial Cooperative Training includes those occupations which are available in the particular community. Over our State, training is provided in more than 100 different occupations, such as: Nurse's Aide, Air Conditioning, Auto Mechanics, Dental Assistant, Electrician, Diesel Mechanic, Meat Cutter, Commercial Artist, Machinist, and Floral Designer.

Cooperative occupational training provides training for students from diversified cultures with varied abilities through supervised work experience and related classroom instruction.

For further information contact: Charles D. Bates, State Supervisor
Trade and Industrial Education
Department of Public Instruction
Raleigh, North Carolina 27602

PROGRAM OF STUDIES
FOR
TRADE AND INDUSTRIAL EDUCATION

Course Number	Course Title
731	Automotive Industry
732	Ceramics Industry
733	Construction Industry
734	Electrical Industry
735	Fishing Industry
736	Furniture Industry
737	Graphic Arts Industry
738	Personal Services
739.1	Textile Industry
739.2	Metals Industry
741	Industrial Cooperative Training
742	Cooperative Occupational Training
751	Auto Body and Fender Rapair
752	Automotive Engine Tune-up
753	Auto Mechanics
754	Internal Combustion Engines
754.3	Gas Engine Repair (Small)
754.4	Service Attendant - Automotive
754.5	Service Specialist - Automotive
755	Diesel Mechanics
755.3	Aircraft Mechanics
761	Bricklaying
761.3	Cement Finishing
762	Cabinetmaking
762.3	Furniture
763	Carpentry
764	Painting and Decorating
765.1	Introduction to Technical Drafting
765.2	Basic Technical Drafting II
765.3	Architectural Drafting III
765.4	Machine Design III
765.5	Surveying
767	Plumbing
771	Introduction to Electricity/Electronics I
772	Basic Electricity/Electronics II
773	Basic Electricity/Electronics I & II
773.2	Basic Electronics & Radio Operating
773.3	Radio Operator - Mechanic
773.4	Commercial & Industrial Communications
773.5	Home Entertainment Equipment
773.6	Industrial Controls Computer Process
774.1	Appliance Repair Service - Residential
774.2	Appliance Repair Service - Commercial
775.1	Electric Motor Repair
775.2	Industrial Motor Controls
776.1	Electrical Installations - Residential
776.2	Electrical Installations - Industrial
781	Commercial Cooking and Baking
782	Cosmetology
783.1	Health Occupations I
783.2	Health Occupations II
783.3	Health Occupations I & II
783.6	Technical Health Occupations
784	Marineology
785	Marine Vocations
786.1	Printing
786.3	Graphics & Industrial Communications
786.5	Photography
786.7	Commercial Art
787	Shoemaking and Repair
788	Tailoring
788.3	Industrial Textiles
788.5	Air Conditioning and Refrigeration
791	Machine Shop
792	Sheet Metal
793	Welding

DISTRIBUTIVE EDUCATION

Distributive education prepares young men and women for careers in some field of distribution, marketing, or services. The field includes a variety of occupations in such areas as banking, real estate, finance, retail and wholesale businesses, personal service businesses, repair services, transportation, and communication.

Opportunities for Students Enrolling in Distributive Education

To be effective, vocational education must be realistic in terms of employment opportunities. At least 35 percent to 45 percent of youth in secondary schools will find employment in some phase of distribution or services. In 1960, 38 percent of the working population in North Carolina was engaged in these fields of work and the percentage has been increasing for half a century.

Distributive education prepares students for:

(1) immediate employment or advancement in a distribution or marketing occupation using the knowledge and experience gained in high school;

(2) post-high school training to continue study in distribution and marketing; and

(3) college to continue formal education to prepare for a career in business administration, marketing, advertising, or teaching distributive education.

Economic Needs

The "bottleneck" to increased employment in manufacturing, agricultural production, and processing lies in the shortage of qualified persons to market the products of industry and agriculture. Distributive education prepares young people to market these products.

Types of Programs

There are two major types of train. g on the secondary level in the distributive education program:

(1) Cooperative distributive education encompasses formal classroom instruction and on-the-job training.

(2) Preparatory distributive education is designed for the following situations:

(a) in secondary schools where on-the-job training facilities are too limited for a cooperative program, and

(b) programs for those students who expect to make a career in some field of marketing or distribution but whose schedules will not permit regular on-the-job training.

Refer to the Program of Studies for descriptions of the distributive education courses. To further assist you, a publication, "Information Bulletin, 1965 - Organization of Distributive Education Programs," is available upon request from the State Supervisor of Distributive Education.

Enrollment

Students wishing to enroll in distributive education should have career objectives in the field of distribution and marketing if they are to benefit from the training.

Follow-up surveys are conducted periodically to determine where distributive education graduates are and if they are remaining in the occupations for which trained or in an occupation related to training. The U. S. Office of Education uses this information in evaluating the effectiveness of the programs.

Facilities -- Classroom-Laboratory

Facilities for distributive education programs must combine those in the classroom and laboratory since it has some aspects of both. The classroom should be located on a main floor corridor and should contain a minimum of 1000 square feet. An adjoining office should be provided with approximately 150 square feet of floor space. Adequate storage facilities are also essential.

For further information on classroom-laboratory layout and facilities for distributive education programs, refer to the "Information Bulletin, 1965 - Organization of Distributive Education Programs."

Securing Qualified Instructor

Teachers in distributive education must meet certain requirements for certification. They come from the following sources: (1) colleges or universities where they have majored in distributive education, (2) from various fields of business, and (3) experienced teachers who have had business experience. Basic requirements for meeting certification are as follows:

1. Must be a graduate of a recognized college or university with a major in distributive education, including six semester hours in professional distributive education courses (supervised work experience in distribution is required as a part of such a program); or

2. Must be a graduate of a recognized college or university with approximately two or more years' experience in some field of distribution. Six semester hours in professional distributive education courses are required also.

For further information contact: T. Carl Brown, State Supervisor
Distributive Education
Department of Public Instruction
Raleigh, North Carolina 27602

PROGRAM OF STUDIES
FOR
DISTRIBUTIVE EDUCATION

Course Number	Course Title
721	Cooperative Distributive Education I
722	Cooperative Distributive Education II
723	Marketing I
724	Marketing II
725	Commercial Art
726	Salesmanship
727	Advertising

INTRODUCTION TO VOCATIONS

Introduction to Vocations is a ninth-grade elective course for both boys and girls of all academic levels designed to introduce them to the world of work and their opportunities in it. Its major objective is to help students in planning for their educational and occupational futures.

Teacher objectives are designed to:

(1) help students understand the basic processes of production, processing, and distribution in the American work economy and the importance of human relations and ingenuity in these processes;

(2) help students gain a first-hand knowledge, understanding, and appreciation of the changing employment patterns and opportunities in the North Carolina world of work;

(3) acquaint students with the major occupational fields including economic structure, organizational structure, specializations, relationships to other occupational areas, kinds of work involved, and educational and other training requirements;

(4) acquaint students with educational opportunities, including the kinds and types of education and training available, and the location and requirements of institutions providing these opportunities;

(5) help students learn to appraise their own interests, aptitudes, personalities, and skills in relation to the variety of vocational opportunities;

(6) provide student opportunities for exploratory experiences in the various occupational areas; and

(7) work closely with the guidance counselor to help set up an organized approach to self-analysis for each student with the counselor providing materials and data available in the guidance office.

Course Content

The course outline has been designed to place primary emphasis on student planning and decision-making. Learning experiences are designed to make the course student-centered. The course is divided into the following six major areas or units:

I. Relating One's Characteristics, Interests, Aptitudes, and Abilities to Occupations

II. Relating Our Economic System to Occuations and to Us

III. Exploring Manual and Mechanical Occupations

IV. Exploring Clerical, Sales, and Service Occupations

V. Exploring Professional and Technical Occupations

VI. Evaluating and Planning Ahead

Facilities, Equipment, and Instructional Materials Required

Due to the large amount of teaching materials and instructional supplies needed for the Introduction to Vocations course, a permanently assigned classroom is essential. The classroom should be equipped with audiovisual aids, file and storage cabinets, bookcases, chalk boards, bulletin boards, and display racks for occupational materials. In addition, office space for student-teacher conferences should be available. The school with its vocational and business laboratories, as well as the various businesses and industries in the community, provide laboratory teaching-learning situations vital to developing occupational concepts. In order to use these laboratories effectively, the school schedule should be so organized that time for well-planned field trips is available and transportation provided on a non-fee basis.

Approximately $500 to $700 should be budgeted for teaching materials and equipment for the first year the program is in operation. Approximately $400 per year should be budgeted for existing programs. This amount should be in addition to materials already available in the library and the guidance counselor's office.

Qualifications of Teachers

Certification standards for Introduction to Vocations teachers have been adopted and appear in the revised edition of Teaching in North Carolina.

Three types of certificates are issued:

1. Provisional Class "A" Vocational
2. Class "A" Vocational
3. Class "G" Vocational

In all cases the teacher must hold a bachelor's degree from an approved institution and have the recommendation of the State Supervisor of Introduction to Vocations. A recommendation will be granted based on certification in any of the following areas: (1) Home Economics, (2) Agriculture, (3) Trade and Industrial Education, (4) Distributive Education, (5) Business Education[with work experience other than teaching], (6) Industrial Arts, (7) Guidance, or (8) be eligible for certification in any vocational area. In addition, new teachers must attend a special orientation workshop prior to teaching Introduction to Vocations.

For a teacher to be issued either the Class "A" or Class "G" Vocational Certificate, he shall also have completed the professional and technical requirements specified by the State Board of Education for certifying teachers of Introduction to Vocations.

Suggestions for Organization

One full-time teacher will be needed for four to five sections [four sections is considered a minimum teaching load for schools with a six-period teaching day and five sections a minimum load in schools with a seven-period teaching day]. A half-time position will be needed for three teaching periods or for two teaching periods plus a planning period in schools with a six-period teaching day. For schools with a seven-period teaching day, a half-time teacher must have a minimum of three teaching periods plus a planning period.

All teachers should have one period per day for activities such as student conferences, planning field trips, securing and organizing materials, securing resource people, and coordinating the program with other vocational teachers and guidance personnel.

The ideal Introduction to Vocations class should have an enrollment of 20 students. No class should have fewer than 15 nor more than 25 students.

Upon approval of the Director of Vocational Education, one section may be taught by other vocational teachers.

For further information contact: Tommie N. Stephens, State Supervisor
Introduction to Vocations
Department of Public Instruction
Raleigh, North Carolina 27602

BUSINESS AND OFFICE EDUCATION

Business and office education is an integral part of the total secondary school curriculum. Programs in this area are designed for students who have career interests in clerical, stenographic, bookkeeping, and data processing occupations. Training provides the prospective employee with skills and knowledge needed for initial job entry and for advancement in present and emerging office positions.

Future Outlook for Office Occupations

Office work is now the second largest of all the major occupational groups in the United States.

As population expands in North Carolina and our economy grows, business organizations will increase in size and complexity and additional jobs created. Opportunities in the area of office occupations, therefore, are expected to increase.

Programs

Vocational programs in the area of business and office education include the preparatory office occupations program (in-school work experience); the cooperative office occupations program (on-the-job work experience); and data processing (pilot programs).

The preparatory program consists of organized classroom learning experiences in specific office activities, designed to refine office skills and to provide the student with an understanding of the relationship of the course content to office occupations. Instruction in this program combines production assignment with in-school work experience which is in line with the student's career objective. This type of program is designed for schools unable to operate a cooperative program because of transportation problems or because a sufficient number of work stations do not exist in the community.

Schools participating in the preparatory office occupations program should provide an office practice laboratory with a simulated office environment.

The cooperative office occupations program, found in large high schools, is a cooperative education program between the business community and the school. This type program permits students to attend school in the morning and to be employed in an office training station in the afternoon where on-the-job instruction is provided and supervised.

While data processing programs (pilot programs) have been a phase of the regular business and office education curriculum only since 1965, enrollment has increased substantially during this two-year period. These two courses involve unit record equipment where the student receives "hands-on" instruction and practice and computer data processing concept, where symbolic programming practices are reviewed.

Staff Qualifications

The business and office education teacher-coordinator should have earned a bachelor's degree from an approved four-year college; should be certified according to certification requirements outlined by the North Carolina Department of Public Instruction as a comprehensive business education teacher; and should have at least two years of successful teaching experience. The teacher-coordinator should also have the equivalent of one year (2,000 hours) of verified office work experience. (Part-time work experience may be used to fulfill the work experience requirement.)

In addition to the above qualifications, the teacher-coordinator should have completed (or have plans to complete) courses in Business and Office Coordinating Techniques, Philosophy and Organization of Vocational Education, and Materials and Methods in Teaching Cooperative Business and Office Education.

All business teachers should have plans for continuing their education and for participating in programs for professional development and improvement.

Student Selection

A committee, including the business teacher, business department chairman, guidance counselor and/or the principal, should select students for office training programs. Students should be seniors and should be planning to enter the field of office occupations immediately upon graduation from high school.

Facilities, Equipment, and Instructional Materials

Classroom facilities required for the business and office education programs vary with the size of the school and courses offered in the curriculum. In addition to general classrooms and typing rooms, classroom facilities must include an office practice laboratory which provides adequate work space, furniture, and equipment to simulate actual office conditions.

For information on office practice laboratory layout and equipment, consult EDUCATION FOR BUSINESS, COURSE OF STUDY, AND CURRICULUM GUIDE, page 138.

Consult the Program of Studies, 1967 revised edition, for descriptions of courses included in the programs discussed herein.

For further information contact: D. Macil Via, State Supervisor
Business and Office Education
Department of Public Instruction
Raleigh, North Carolina 27602

PROGRAM OF STUDIES
FOR
BUSINESS AND OFFICE EDUCATION

Course Number	Course Title
643	Cooperative Occupations
643.1	Preparatory Office Occupations

VT 002 724
Sloan, Sue Katherine
Identification of Clusters of Items Relating to Personal and Home Life Values of Men.

Iowa State Dept. of Public Instruction, Des Moines. Div. of Vocational Education
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 67 79p.

FAMILY RELATIONSHIP; INTERPERSONAL RELATIONSHIP; *MALES; *PERSONAL VALUES; *BEHAVIOR RATING SCALES; MASTERS THESES; *FAMILY LIFE; HOME ECONOMICS EDUCATION; *CURRICULUM DEVELOPMENT

The objective of the study was to initiate development of an inventory to identify personal and home life values of men. The methodology involved obtaining 366 behavioral items believed to reflect eight personal and home life values: concern for others, economy, education, family life, friendship, health, status, and work efficiency. A form incorporating these items was administered to 30 men who were asked to indicate on a scale from 1 to 99 how socially desirable in other men they believed each behavior to be. Data were used to compute social desirability and ambiguity indexes. Eighty selected items (10 from each value group) were placed in a form and administered to 225 men who were asked to rate on the scale how certain they were that they would behave in the manner described in each item. The data were used to intercorrelate the items in order to identify item clusters, and socially desirable behaviors were identified. The study demonstrated the need for additional consideration of item choice to reflect behaviors from broader income, occupational, and educational range, to include means other than responses to behavioral terms, and to improve inventory directions. Inventory forms and a statistical analysis of the data are included. This M.S. thesis was submitted to Iowa State University. (FP)

VT 002 724

Identification of Clusters of Items Relating To Personal and Home Life Values of Men

by

Sue Katherine Sloan

Directed by

Eleanore L. Kohlmann, Ph.D.
Associate Professor, Home Economics Education

Thesis conducted as part of Project No. 17, Personal Values of Family Members and Their Relationship to Satisfying Home Life and Successful Employment, under grant from Iowa Department of Public Instruction, Division of Vocational Education, PL88-210 Sec. 4(a).

Iowa State University
of Science and Technology
Ames, Iowa
1967

VT 002 724

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IDENTIFICATION OF CLUSTERS OF ITEMS RELATING TO PERSONAL AND HOME LIFE VALUES OF MEN

by

Sue Katherine Sloan

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of
The Requirements for the Degree of
MASTER OF SCIENCE

Major Subject: Home Economics Education

Approved:

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Of Science and Technology
Ames, Iowa

1967

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INTRODUCTION

Values permeate every aspect of the life of each partner in a marriage. Although values are not directly observable in personal or family life any more than is culture, because of them each individual prefers one thing to another; shifts his attention from one event to another; praises one behavior and condemns another; and expresses likes and dislikes. As he does these things he is discriminating in light of his values which range from low to high on a continuum of importance to him, narrow to broad in their effects upon his behavior, shallow to deep in his conscious mind (7).

The behavior and interaction of the spouses in a marriage likewise are controlled or guided by a large body of values (6). The value structure of each partner affects the happiness of the marriage and the quality of home life. If the dominant values of one member of the marriage partnership are similar to those of the other partner, conflicts may be prevented for the similar value systems of the couple will provoke similar behavior (8). If the value systems of the marriage partners differ greatly, marital discord is likely to be felt. All marriages, however, involve some value differences between the partners (6). Researchers (1) have found that empathy, defined as an understanding of the values of the other spouse, and sympathy, defined as actual sharing of those values, are both

assets to a marriage and that a low degree of one may be compensated by a high degree of the other.

The values of the spouses give rise to goals in marriage and family life. They are the criteria by which goals are selected (11). The findings of a study by Ernest (4) indicated that sex was a factor related to choice of goals. In a study by Stinson (13), for only one of fifteen goals were there as many as one-half the sampled couples in agreement in the choice of goals. Because it seems apparent that sex is a factor related to the choice of goals, it may also be true that sex is a factor related to the choice of values. Therefore, agreement in values between a husband and wife is likely to contribute to similar goals for marriage and family life, whereas a dissimilarity in their values may result in contradictory goals. Within the home life, goals related to such aspects as child-rearing practices, managerial processes, use of money, and education are affected by the similarities and differences in the value systems of the spouses.

Because values are the basis for goals in marriage and family life, there is need to identify personal and home life values of the spouses. Separate but companion inventories are needed for each sex so that items may be geared toward the differing behaviors characteristic of each sex, although the underlying values incorporated into each instrument would be the same. An inventory is being developed to identify the personal and home life values of women (12) but a search of

the literature revealed no instrument for identifying personal and home life values of men.

The findings obtained from administering the two inventories would have potential use in curriculum development for programs in home and family life. The findings could provide a means for students to become more aware of their personal and home life values and those of the opposite sex and to investigate how different value systems within the same household may affect policies concerning the many aspects of family life.

The inventories could be used in premarriage counseling of couples in an effort to help them identify and clarify their personal and home life values--that is, to help couples more clearly understand the differences between their values. It is the opinion of Mudd (10) that all persons should learn to make this value clarification. By studying the values of the other partner, anger due to value differences--or even similarities--may be prevented. The data could also be used in diagnostic marriage counseling to help determine the nature of marital discord. It is in the treatment and prevention of diseased marital relations that value analysis has its largest role to play (6).

The objective of the present study was to initiate development of an inventory to identify personal and home life values of men. The development of the inventory would be carried through only to the extent of identifying clusters of

items which could be associated with the values included in the study.

The following qualities of values were accepted as a frame of reference for the study:

> Values are concepts of desirable objects and conditions, which are synthesized from an accumulation of experiences, and which tend to endure through time (8).
>
> By human values, by a value or system of values, I mean the basis upon which an individual will choose one course rather than another (9).
>
> A value is an internalized orientation, standard, code or guide, invested with a high degree of emotion, which is primarily an individual thing but which may be common to a group, exhibits a degree of performance through time and which states the desirable such that it influences the choice of means, modes, and ends of activity in situations offering alternatives of action (2).

The definition of social desirability as used in the study was in agreement with the work done by Edwards (3). Social desirability was considered as the tendency of individuals to select a behavior preferred by society when responding to behavioral statements in an affective-type instrument, whether or not the behavior is how they actually would perform if in the given situation.

REVIEW OF LITERATURE

A search of the literature was made for studies related to personal and home life values of men. Four were located which were pertinent to the present study: two dealing with methodology; and two dealing with techniques used to identify affective differences between spouses.

The first of the studies reviewed for methodology was conducted by Smith (12). It dealt with personal and home life values of women and employed techniques of instrument development similar to those used in the present study. The second study was made by Farber (5). Only one component of his work, that which dealt with ranking of domestic values by both husbands and wives, will be cited.

As the planned use of the value inventories resulting from the present study and the study by Smith was to identify one kind of affective difference between spouses, two studies were reviewed which identified other kinds of affective differences between spouses. A study by Buerkle and Badgley (1) dealt with the differential ability of a husband and wife to empathize and sympathize with one another. Strodtbeck (14) sought to determine power or influence differences between a husband and wife.

The study by Smith (12) centered on the refinement of an inventory to identify personal and home life values of women. She made two hypotheses: that homemakers had a hierarchy of

personal and home life values and that the hierarchy differed among homemakers; and that each item in the inventory was a measure of the value content indicated. The values incorporated in the study were: concern for others, economy, education, family life, friendship, health, status, and work efficiency. Only two parts of the study will be reviewed: the methodology used for determining the social desirability index and the ambiguity index of each item, which were indications of the suitability of an item for further use in the study; and the method used for identifying clusters of items related to the values.

Smith believed that the way an individual responded to an item in a value inventory was affected by his conception of the social desirability of the behavior expressed in the item. She therefore determined the social desirability index for each of 354 items and eliminated from the study those items with little agreement regarding the social desirability of the behavior. Smith administered a form incorporating the 354 items to 30 homemakers who were contacted individually. No attempt was made to obtain responses from women representing different socio-economic groups. The respondent was asked to indicate on a 1-99 scale her estimate of the social desirability of the behavior expressed in each item. The higher the number chosen, the more socially desirable the behavior was considered to be.

The data obtained from administering the form were analyzed for two different numerical values. The first of these, the standard deviation, which was an indication of the spread of response or the ambiguity of the item, was the criterion for the retention or elimination of the item. Within each value group items were ranked in order of increasing standard deviation. Fifty-four of the original 354 items had standard deviations greater than .85, the arbitrarily chosen cutting point, and were discarded from further use in the inventory as they were considered ambiguous.

The second numerical value obtained from the data analysis, the mean score or social desirability index, was to be the criterion for pairing items. For the forced-choice format of the instrument planned by Smith, only items with similar social desirability indexes could be paired in order to obtain responses that reflected a preference of one value over another rather than the socially more desirable behavior. A pool of items with similar means representing each of the values therefore was needed.

Difficulty was encountered in providing items reflecting the value status, however, because most of the status items had negative means, whereas this was true for only 12 items from all the other values. This circumstance would make it impossible to find a suitable item with which to pair most of the status items. Smith attempted, therefore, to obtain more status items that would yield positive means. Thirty-eight

additional items were written for the value status, placed in a form, and administered to 32 homemakers. The data analysis showed that 31 of these new items obtained a positive mean, a factor which would facilitate pairing; but the standard deviations were even higher than those obtained from administering the original 354 items, a factor automatically eliminating all but three from further use in the study. Because it seemed almost impossible to obtain enough status items with positive means if a cutting point of .85 were used, a new cutting point of 1.14 was established for all the status items. With the new cutting point, 33 status items had positive means and were acceptable for further use in the study; however, 32 of the status items still had negative means. Twelve of these items could be paired with the 12 items reflecting other values that had negative means. The remaining status items with negative means were eliminated from the study. Smith concluded that homemakers agreed less on what was socially desirable behavior regarding status than on any of the other values. A pool of 312 pairable items representing all the values remained for further use in the study.

The second hypothesis made by Smith was that each item in the inventory was a measure of the value content indicated. She planned to test the hypothesis by an empirical method involving intercorrelations of clusters of items identified for factor loadings. The 312 items were randomly placed in a new form. The instructions asked the respondent to indicate on a

scale of 1-99 how well she would like to be described by the behavior in each item. The higher the number chosen, the more certain she was that she would like to be described by the behavior. An attempt was made to obtain responses from homemakers in groups representing different ages and socio-economic levels.

The responses from 650 completed inventories were analyzed by correlating all possible pairs of the 312 items. Upon examining the correlation matrix to identify clusters of three to ten items that intercorrelated highly but had a low correlation with items from other clusters, only two were found. Originally eight had been hypothesized. Smith concluded that if homemakers can discriminate between the eight values included in her study, her method of measurement was successful in identifying only two.

Farber (5) devised an index of marital integration which was based on two components: rankings of domestic values by both husband and wife; and the perception of each spouse of the domestic role of the other. Marriage integration, the researcher believed, rested upon actual agreement between spouses in domestic value hierarchies, and upon the development of roles appropriate to these value hierarchies.

In constructing the index involving ranking the domestic values, the author had four goals. They were to: stress values relevant to family decision-making; permit the respondent to designate a hierarchy of the domestic values; make the

index applicable to a wide range of respondents by making value definitions quite general; and incorporate as many basic family issues as possible in the selection of the values and definitions.

The ten domestic values used in the index were defined as follows:

> A place in the community The ability of a family to give its members a respected place in the community and to make them good citizens (not criminals or undesirable people).
> Healthy and happy children [No definition was given by the author].
> Companionship The family members feeling comfortable with each other and being able to get along together.
> Personality development Continued increase in family member's ability to understand and get along with people and to accept responsibility.
> Satisfaction of affection shown Satisfaction of family members with amount of affection shown and of the husband and wife in their sex life.
> Economic security Being sure that the family will be able to keep up or improve its standard of living.
> Emotional security Feeling that the members of the family really need each other emotionally and trust each other fully.
> Moral and religious unity Trying to live a family life according to religious and moral principles and teachings.
> Everyday interest Interesting day-to-day activities having to do with house and family which keep family life from being boring.
> A home Having a place where the family members feel they belong, where they feel at ease, and where other people do not interfere in their lives (5, p. 120).

Two kinds of domestic values were incorporated into the index. Those related to the development of a system of personal relations were regarded as socio-emotional values. They

consisted of companionship, personality development, a home, emotional security, and satisfaction with affection shown. The remaining values, which described the continuity of the family, its administration, and its place among other institutions, were regarded as task-oriented. These were a place in the community, everyday interest, healthy and happy children, moral and religious unity, and economic security.

Farber made two hypotheses concerning the ranking of domestic values. The first was "the degree of marital integration varies directly with the ranks assigned by the husband to domestic values pertaining to social-emotional aspects of interaction" (5, p. 123). He believed the degree of marital integration was especially affected by the nature of the domestic value system of the husband, whether it was task-oriented or socially-emotionally oriented. This hypothesis was made on the basis that the wife is usually socially-emotionally oriented due to her role in the home as wife and mother, whereas the husband may or may not be so oriented, due to his role associated with his work away from home. The researcher believed, therefore, that the husband whose domestic values are socially-emotionally oriented tends to support the role of his wife, who otherwise may be caught between the demands of a task-oriented husband and her own social-emotional orientation in socializing the children, which she regards as her primary task in the family. The data showed that there

was greater marital integration when domestic value agreement was present between the spouses.

The second hypothesis, closely associated with the first, was "the ranking of items relating to social-emotional aspects of interaction by wives tends to be higher than th ranking by their husbands" (5, p. 123). The data also supported this hypothesis.

To test the two hypotheses related to roles of the spouses, the two components of the marital integration index were administered to a population of 99 married couples. Directions asked the respondent to rank the ten domestic values in order of decreasing importance to the family. Each spouse was to rank the values separately from his husband or wife. The index of the degree of consensus--that is, the extent of agreement between spouses on the ranking--was measured by the Spearman rank correlation coefficient, rho.

The scores obtained from the ranking by both spouses of domestic values and the scores from the other component of the marital integration index, were equally weighted and combined to form a single estimate of marital integration of the couple. The findings were examined for consistency with a current theory and/or knowledge, personal experiences and impressions, and past indices of marital success in an attempt to validate the index as an accurate estimate of marital integration.

Buerkle and Badgley (1) sought to discover if couples who were being counseled for marital problems displayed significantly

different interaction patterns from couples who believed their marriages were stable. The researchers charted the role-taking patterns of married couples and devised an index of the interaction bonds between each couple. They believed that empathy, interpreted as an understanding of the values of the other spouse, and sympathy, the actual sharing of these values, were both functions of the interaction process; and that both were assets to marriage, although a low degree of one could be compensated by a high degree of the other.

The population included 222 married couples believed to represent two distinctive marital categories. The first group was composed of 36 couples who were receiving marriage counseling. These couples stated that their marriages were in serious trouble from an interaction standpoint. The second group was 186 couples who regularly attended religion-affiliated clubs for couples. These couples reported their marriages were "not-in-trouble" and were not receiving marital counseling.

A device to measure marital interaction patterns, The Yale Marital Interaction Battery, was given to each couple. The Battery, which was in parallel form with separate questionnaires for each spouse, had comparable situations but reversed sex referents in the items. The respondents were exposed to a series of 40 contrived situations where a husband and wife were involved in role conflicts, and were asked to choose the alternative that would most closely approximate how they would solve

each problem. The dilemmas in the Battery represented a cross-section of the trouble areas most frequently reported by marriage counselors.

Four solutions to each dilemma were provided in the Battery. One alternative, if selected by the respondent, indicated no role-taking had occurred in his choice. In such a situation, no empathy or sympathy was present. Another alternative, if selected, indicated that the respondent perceived the role of the other but eventually decided in his own favor. According to the researchers, empathy but not sympathy was evidenced by this kind of choice. Selection of a third kind of alternative indicated an awareness of the conflict situation, a weighing of the two different attitudinal sets, and finally a decision in the favor of the other spouse. This alternative, according to the authors, represented a qualified kind of sympathy for the other spouse. The fourth alternative, if chosen, indicated the respondent immediately took the role of the other spouse and decided in his favor. This alternative represented unqualified sympathy for the other spouse, for there was no conflict between the two attitudinal sets considered by the respondent.

Scoring of the Battery results took place in two steps. The first was to obtain the individual score for each item for both the husband and wife. A weighted numerical value was assigned to the alterrative selected by each respondent: one was assigned to choices which indicated no role-taking had

occurred; two and three to the second and third alternatives; and four to the alternative representing unqualified sympathy and role-taking.

The second score, the couple raw score, was obtained by combining the individual scores of the respondents for each item. This couple raw score was the index of interaction. The researchers believed that couples who had high raw scores either had a high degree of reciprocal role-taking and reciprocal sympathy in the interaction sequences, or they had high agreement on a frame of reference, should both spouses choose in favor of one of the dyad. Under many conditions the researchers believed that a common frame of reference as a guide for action would be equally as important as mutual sympathy, although one partner would empathize more than the other in such conditions. Couples who had low couple scores were believed to have a low amount of sympathy, low role-taking, and did not agree on a frame of reference as a guide for action.

A chi-square test indicated there was a significant difference in the role-taking patterns of couples who said they were "not-in-trouble" and couples who said they were "in-trouble". The researchers therefore believed that couples who were experiencing marital difficulty and were receiving marriage counseling were less able to empathize and sympathize with one another than were couples who were not experiencing marital difficulties. The researchers also believed the idea of determining couple interaction could be extended to other

interaction situations, such as between parent-parent, parent-child, and child-child.

Strodtbeck (14) developed a technique for determining power or influence differences among members of primary groups. He believed his process, the "revealed difference technique", showed promise in application to husband-wife interaction. His belief was that interaction between members of small groups is a function of the power or influence exerted by each member of the group; he attempted to determine some of the correlates of the differential ability of group members to persuade others to accept their ideas or desires.

After first observing a decision-making session of a small, temporary, and unstructured group, he concluded that the exertion of the power influence of each member was affected by the fact that the group had no expectation of participating with one another at a later time. On the basis of this analysis he was led to consider experimentation with groups that had daily contact and permanence, so called primary groups. The husband-wife dyad, therefore, was selected for study because of the ease of replication.

Strodtbeck studied power influence in these primary groups by asking each couple within a sample of married couples to select three reference families with whom they were well acquainted. The husband and wife separately designated which of the three reference families they believed most satisfactorily fulfilled a series of 26 conditions such as: "Which

family has the happiest children?" "Which family is the most religious?" "Which family is the most ambitious?" The husband and wife were then requested to reconcile any differences between their individual answers to each question. They were instructed to indicate a final "best" choice from the standpoint of the family. It was found that the spouse who talked the most won the majority of the decisions: wives won 47 of the contested decisions and husbands won 36.

Because it had not been predetermined if the husband and wife had equal knowledge of the three reference families, the question was raised as to whether the wives had won more decisions because they knew more about the types of information under discussion, or whether the couples were equally informed and the decision-winning represented the operation of power relation, as the experimentor had hoped. Further application of the technique was needed, therefore, to determine if it was a valid indicator of power differences between spouses.

To test the validity of the power-differentiating technique, 30 couples representing three cultural groups in the New Mexico-Arizona area were chosen for study. Presumably these groups--Navajo, Morman, and Texan--differed in the degree to which the wife was culturally favored with power. Prior to administering the technique, it was believed that the Navajo woman was culturally endowed with power equivalent to the Navajo man; whereas the Mormon woman culturally was endowed with very little power as compared to the Mormon man. The

power culturally endowed to the Texan woman as compared to the Texan man was considered to be somewhere between the power of the Navajo and the Mormon woman. The communities in which the couples lived were sufficiently small to increase the probability that both spouses were adequately, if not equally, informed on the behavior of the reference couples.

The technique was applied to couples in the three cultural groups. Each couple chose three reference families, individually decided which family best fulfilled the given conditions, and then reconciled differences in their decisions. A summation of the decisions won showed that Navajo women won 46 decisions while Navajo men won only 34; Texan women won 33 decisions, Texan men 39; and Mormon women won only 29 decisions while Mormon men won 42. The data indicated that the spouse who talked the most won the most decisions.

Strodtbeck concluded that he was able to predict the balance of decision-winning from his study of comparative social and cultural organization of primary groups. He also concluded that the spouse who talked the most tended to ask more questions, carry out the opinion, and make more rewarding remarks. He believed the technique revealed that culture, and the amount of talking, both effect the balance of power between couples; and that the technique also produced a sample of interaction by which modes and techniques of interaction of other types of primary groups profitably could be studied.

METHOD OF PROCEDURE

The present study was planned to identify clusters of items reflecting personal and home life values of men. These items were to be incorporated into an inventory to be used as a companion instrument to the one constructed for women. To accomplish the purpose, items were written to reflect eight personal and home life values and were administered to a sample of men to collect data from which indexes of social desirability and ambiguity were to be computed. A select group of items then were administered to a sample of men to collect data for identification of clusters of items.

After exploring what values related to personal and home life are held by men, the following ones were accepted and defined for use in the study:

> Concern for others - consideration for the well-being of others outside of family and immediate circle of friends.
>
> Economy - use of money, goods, and services to get the greatest amount of return from the resources used.
>
> Education - purposeful self-improvement involving some form of learning for himself or family.
>
> Family life - sharing of common goods and experiences by a group of individuals related by blood or marriage and living together in an established home.
>
> Friendship - relationship between two persons that is characterized by mutual attraction.
>
> Health - state of physical and mental well-being.
>
> Status - holding a position equal to or better than other people with whom a person is associated.
>
> Work efficiency - accomplishing a task or producing a product to meet a desired standard in the shortest time and the least possible expenditure of energy (8, pp. 113-114).

These values and definitions were the same as those used by Kohlmann (8) and later by Smith (12) in the development of an inventory to identify personal and home life values of women. It was considered advantageous to involve the same ones in order to develop an inventory that could be used in conjunction with the inventory for women.

A pool of items reflecting each of the values was obtained in three ways. The first was a selection of items used in the inventory for homemakers that were considered appropriate for men as stated or could be made so by editorial changes. With these items serving as a core, others were written from information obtained through unstructured interviews with men who gave suggestions of behaviors they believed to be indicative of each value. A third group of items was devised after studying the experiences of other researchers.

Kohlmann (8) and Smith (12) had found that items representing the value status tended to obtain lower social desirability indexes, that is, means, than items representing each of the other values, thus making it impossible to successfully pair status items with items reflecting other values. Because it had been anticipated that the inventory would have a forced-choice format of paired items representing different values but having similar means, it was necessary in the present study to provide items that could be paired. Responses would thus reflect a preference of one value over the other, rather than reflect the socially more desirable behavior. Therefore, after

consulting a specialist in measurement in the Department of Psychology, Iowa State University, additional items were written that expressed an over-valuing or an extreme emphasis upon all of the values except status. The assumption was made that the behavior in such items would be socially undesirable and would obtain low means. Thus these items could be paired with items representing status.

A panel of researchers with experience in developing value inventories reviewed the pool of items for appropriateness for men and clarity of wording. The panel consisted of two members in the Department of Home Economics Education and one male member of the Department of Child Development. After obtaining the criticisms of the panel members, modifications in some items were made and a few additional items written.

A form incorporating the items was developed to be administered to a group of men to obtain data from which the means and standard deviations were to be computed. The form consisted of approximately 45 items for each value, totaling 366 items which were randomly placed. A listing of the item numbers according to the value they were written to reflect may be found in the Appendix, pages 59 and 60. Instructions were prepared that asked the respondent to indicate on a scale from 1 to 99 how socially desirable in other men he believed the described behavior in each item to be. The higher the number chosen, the more socially desirable; the lower the number, the more socially undesirable the behavior was believed to be. A

response of 50 indicated no opinion regarding the behavior. A copy of the form may be found in the Appendix, pages 40-58.

The criterion used in selecting respondents was that they be married men with children, thus making them similar to the population for whom the inventory was planned. In order to facilitate data collection, however, most of the respondents were professional men associated with Iowa State University. Forty-two forms were distributed and 30 were returned completed. The data obtained from administering the form were analyzed at the Computation Center, Iowa State University.

Items within each value group were arranged according to increasing standard deviation. A total of 80 items--the ten items with the lowest standard deviations from each value group--were incorporated into a form to be administered to a sample of 225 men to collect data for identification of clusters of items. Directions on the inventory instructed the respondent to use a 1-99 scale: the higher the number chosen, the more certain the respondent was that he would always behave in the manner described in each item; the lower the number chosen, the more certain that he would never behave in the manner described. A response of 50 indicated no opinion. A copy of the form containing the 80 items may be found in the Appendix, pages 61-65. A listing of the item numbers according

to the value they were written to reflect is on page 66 in the Appendix.

To facilitate data collection, men were contacted through groups to respond to the form. An attempt was made to obtain responses from men in groups representing different income and educational levels and occupations. The form was administered to a sample of 225 married men with children; the data from 213 forms were acceptable for analysis. Table 1 shows the groups of men that responded to the form, and the number of forms acceptable for analysis. Responses to each of the 80 items were intercorrelated with every other item, and characteristic roots were calculated to identify clusters related to personal and home life values of men.

Table 1. Groups of men that responded to the form containing 80 items, and the number of forms acceptable for analysis

Group	Number of completed forms
American Legion	15
Bricklayer's Union	5
Knights of Columbus	26
Advisory Board for Fire Instructors	15
Basic Principles of Managing Workshop	45
Moose Lodge	13
Phi Delta Kappa	26
School Superintendent's Clinic	68
	213

FINDINGS AND DISCUSSION

The findings which resulted from administering two preliminary inventory forms will be discussed in two parts. The first is a discussion of the development of indexes of social desirability and ambiguity. The second part of the discussion concerns the development of clusters of items.

The indexes of social desirability and ambiguity were computed from data obtained from administering a form containing 366 behavioral statements to 30 men. The index of social desirability of each item was the mean and the index of ambiguity was the standard deviation. The means and standard deviations of the 366 items, based on 30 responses, are listed in Table 5 in the Appendix.

Indexes of Social Desirability

The means, indexes of social desirability, derived for the items were given the following interpretations: a high mean indicated the behavior described in the item was considered socially desirable; whereas a low mean indicated the behavior was socially undesirable. When the means for the 366 items were grouped within ranges of ten, an examination of the distribution revealed the largest group fell between 70-79. See Table 2 for the distribution of the means of 366 items, based on 30 responses. The second largest group of means, which was substantially smaller in number than the first, was in the range 80-89. The third largest group of means fell between

Table 2. Distribution of means of 366 items, based on 30 responses

Range of means	Concern for others	Economy	Education	Family life	Friendship	Health	Status	Work effic.	Total
1-19	0	0	1	1	0	0	0	0	2
20-29	1	1	0	1	1	1	2	1	8
30-39	0	1	2	1	0	0	1	2	7
40-49	4	6	2	1	3	4	4	4	28
50-59	1	9	2	3	0	2	10	4	31
60-69	6	16	10	2	8	3	6	13	64
70-79	17	11	21	16	20	22	10	19	136
80-89	17	4	13	27	12	11	2	3	89
90-99	0	0	0	1	0	0	0	0	1
Total	46	48	51	53	44	43	35	46	366

60-69. A total of 79.2 per cent of the means of the 366 items fell in ranges of 70-79 or above. These findings indicated that most of the behaviors expressed in the items were considered socially desirable.

Indexes of Ambiguity

The standard deviation of each item, index of ambiguity, was the criterion of retention or elimination of the item from the study. The original plan was to set a cutting point for the 366 items which would retain approximately 30 items for each value group. Only the ten items with the lowest standard deviations were retained from each group, however, after the results of the study by Smith (12) became known. When the modified cutting point was established, 80 items remained in the study. The distribution of the means of the 80 items is presented in Table 6 in the Appendix.

An examination was made of the distribution of the standard deviations of the 80 items. The highest standard deviation, 16.17, was obtained by an item reflecting status: Takes advantage of opportunities to make friends with community leaders. The lowest, 10.28, was obtained by an item reflecting concern for others: Conscientiously considers the rights of others. When the standard deviations of the 80 items were studied by ranges of 1.00 from 10 to 16, it was found that the largest number was in the 11.00-11.99 range. See Table 3 for the distribution of the standard deviations by value group. The

Table 3. Distribution of standard deviations of 80 items, based on 30 responses

Range of standard deviations	Concern for others	Econ-omy	Educe-tion	Family life	Friend-ship	Health	Status	Work effic.	Total
10.00-10.99	2	0	2	2	3	1	0	0	10
11.00-11.99	8	0	5	5	3	2	0	1	24
12.00-12.99	0	2	3	3	4	3	1	0	16
13.00-13.99	0	2	0	0	0	4	?	2	10
14.00-14.99	0	3	0	0	0	0	1	6	10
15.00-15.99	0	3	0	0	0	0	3	1	7
16.00-16.99	0	0	0	0	0	0	3	0	3
Total	10	10	10	10	10	10	10	10	80

second largest number fell in the 12.00-12.99 range. The number of standard deviations in three ranges--10.00-10.99; 13.00-13.99; and 14.00-14.99--placed each range in a position of having the third largest group of standard deviations.

The distribution of the standard deviations of items was also examined by value groups. Three values--concern for others, family life, and education--had more items with standard deviations in the 11.00-11.99 range than in any other range. Many items reflecting concern for others and family life also had high means. Apparently the respondents agreed on their estimate of the social desirability of the behavior expressed in these items. The standard deviations of items reflecting friendship were approximately equally distributed between the lower three ranges. With an increase in range of standard deviation, there was also an increase in the number of items reflecting health. The largest number of standard deviations for the value work efficiency fell between 14.00-14.99. Over one-half of the items reflecting economy had standard deviations which fell between 14.00-14.99 and 15.00-15.99. The value with the highest standard deviations, however, was status: over half of the items fell in the ranges of 15.00-15.99 and 16.00-16.99. Each of the values which had many items with high standard deviations--work efficiency, economy, and status--also had many items which received low means. Apparently the respondents did not agree on their estimates of the social desirability of the behavior expressed in these items.

Identification of Clusters

The data used to identify item clusters were obtained by administering the form containing 80 items to 225 men. Prior to calculating the intercorrelations, the data were transformed to normal deviates. An intercorrelation matrix, composed of the correlation coefficients of the 80 items, was constructed. Characteristic roots were calculated from the intercorrelations. An inspection of the results made it apparent that there was only one factor.

Items in this factor were determined by studying the intercorrelations. Tentative items were identified by selecting those which correlated at or above .35 with another item. Thirty-five such items were identified. An item was retained in the factor if it met two criteria: it correlated at .35 or above with at least five other items; and it contributed to the reliability of the factor. Twenty-five items met the first criterion. The second criterion for final identification of an item was determined by maximizing the reliability of the cluster, as calculated by the Spearman-Brown prophecy formula. The intercorrelation matrix for the 16 items which produced the highest reliability (.90) is shown in Table 4.

An examination of the content of the 16 items in the factor was made by the value the item was written to reflect. The content proved to be varied, with a representation of seven of the eight values believed to be incorporated. Of the intended values, one item reflected concern for others; one,

Table 4. Correlation[a] matrix for 16 items in factor

Item No.	5	8	13	17	18	22	32	36	42	44	50	54	57	76	79	80
5																
8	35															
13	34	24														
17	47	38	49													
18	31	40	32	45												
22	33	41	46	49	47											
32	36	35	31	31	32	49										
36	27	36	44	36	35	47	46									
42	40	19	34	35	33	38	33	30								
44	35	37	28	45	37	33	34	33	31							
50	25	24	43	40	33	28	36	35	25	37						
54	44	37	32	40	38	37	39	33	48	47	41					
57	31	40	39	41	29	42	37	32	26	31	42	38				
76	36	28	34	29	29	28	31	29	33	39	35	42	29			
79	24	22	37	39	26	41	36	43	25	24	34	33	34	23		
80	36	38	45	51	40	59	37	42	38	45	32	44	47	37	48	

[a]Decimal points have been omitted.

economy; two, education; and seven, family life. Two items had been written to reflect friendship; two, health; and one, work efficiency. The only value not represented by an item was status. It was thus concluded that rather than a reflection of any value content, the factor represented socially desirable behaviors: ones approved or accepted as being desirable by the respondents, regardless of income, educational, or occupational level.

The items in the factor are listed below:

5. Teaches his children to maintain friendships and also to nurture new ones.

8. Teaches his children that strong family units are essential for a strong nation.

13. Takes time to do things with his family even if it means neglecting other interests.

17. Takes time to listen to his children's problems and counsel with them.

18. Conscientiously considers the rights of others.

22. Makes a conscious effort to do his part in making home life happy.

32. Maintains high standards of personal cleanliness.

36. Buys his wife equipment to make her tasks easier and more efficient.

42. Encourages his children to bring their friends home with them.

44. Encourages his children to develop an inquiring mind as they are growing up.

50. Teaches his children the importance of proper use and care of tools and equipment.

54. Teaches his children the value of having friends.

57. Encourages his wife to talk over her problems with him.

76. Encourages his children to find what their special talents are and to develop them.

79. Is careful not to expose others to his colds.

80. Takes an active part in helping raise his children.

SUMMARY AND RECOMMENDATIONS

The values an individual holds affect every aspect of his life, including his home and family life. The quality of the interaction between a husband and wife is a function of the values held by each. If their values are similar, family life decisions are more easily made and conflicts avoided because the spouses have a common frame of reference. If the values of the spouses differ greatly, marital discord is likely to be felt. Because values give rise to goals in family life, and the choice of goals of each spouse is believed to be a function of his sex, it can be expected that the values of each spouse also are a function of his sex.

There is a need to identify personal and home life values of men and women. An instrument for such identification is being developed for women. The purpose of the present study is to begin development of one for men. Upon completion, the findings from administering the companion instruments would have potential use in curriculum development for programs in home and family life education. The two inventories could be useful in premarriage and diagnostic marriage counseling.

The methodology of the present study involved obtaining 366 behavioral items believed to reflect eight personal and home life values: concern for others; economy; education; family life; friendship; health; status; and work efficiency. These items were incorporated into a form which was administered

to 30 men whc were asked to indicate on a scale from 1 to 99 how socially desirable in other men they believed each behavior to be. The data were used to compute social desirability indexes, that is, means, for later use in pairing items in a forced-choice format. Also obtained were ambiguity indexes, that is, standard deviations, so that ambiguous items could be eliminated. All but ten items from each value group were eliminated from the study. The remaining pool of 80 items was placed in a form and administered to 225 men who were asked to indicate on a 1 to 99 scale how certain they were that they would behave in the manner described in each item. The data were used to intercorrelate the items, in order to identify item clusters.

Analysis of the data was conducted in two parts. That obtained from administering the form containing 366 items showed that the largest group of the means were in the 70-79 range when based on a 1-99 scale. The largest group of standard deviations fell in a low range, 11.00-11.99. The data obtained from administering the form containing 80 items was used for intercorrelating the items to identify clusters relating to value groups. The intercorrelations revealed only one factor. This factor was believed to be composed of items describing socially desirable behaviors in the estimate of the men who responded to the form containing 80 items, regardless of the income, educational, or occupational level of the respondents.

It is recommended that the exploratory methodology of the present study be evaluated prior to further study of home life values of men. Implications are for additional study in the choice of items for an inventory. Items are needed which reflect behaviors common to men in a wide range of income, occupational, and educational levels. Many of the items in the present study were appropriate to only a select group of men--those in the upper levels of income and education. Many of the respondents thus were forced to estimate what their behavior would be--a fact which may have decreased the validity of the responses as reflecting values.

Implications regarding the directions of the inventory also are drawn. Unambiguous directions are needed to increase the validity of the responses. It is believed that the term social desirability in the directions on the form containing 366 items was not well defined and thus may have had different meanings to different respondents.

It also is recommended that in devising an inventory of values, consideration be given to value measurement through means other than responses to behavioral items. Problems created by the influence of the social desirability of items thus might be eliminated.

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Acknowledgment also is made to the men who gave of their time to respond to the trial inventories.

NOTE
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PART OF TEXT
AND TO BE
FILMED

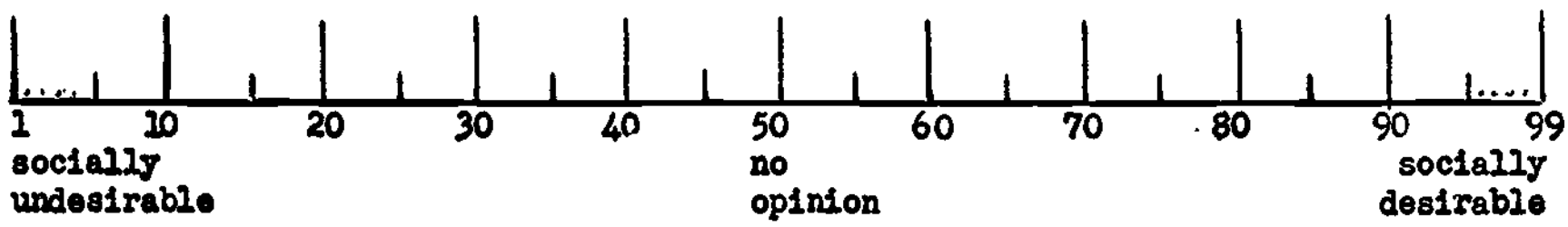
APPENDIX

Iowa State University Agricultural and Home Economics Experiment Station
Project No. 1607
4/1/66

SOCIAL DESIRABILITY INVENTORY

We are interested in knowing what behaviors husbands believe are socially desirable or undesirable. Will you please rate the following statements of behavior as to how socially desirable or socially undesirable you consider each to be when used to describe men in general? We are not interested in whether the statement does or does not describe you.

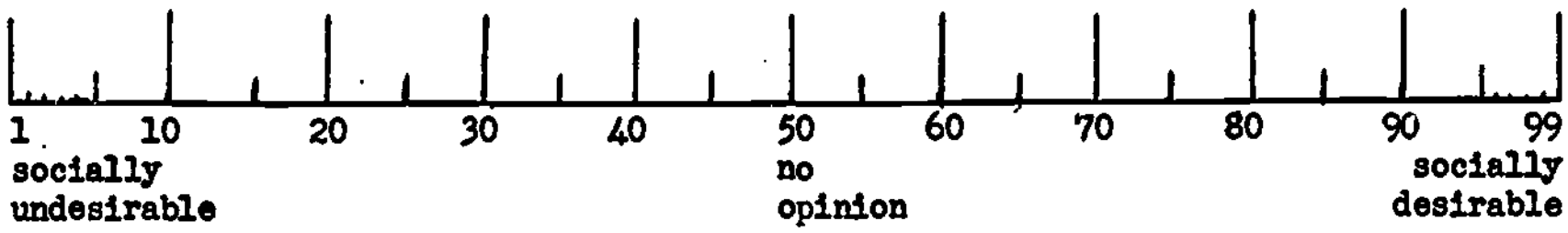
The following scale will help you in making your ratings. Choose <u>any</u> number between 1 and 99 to show how desirable you believe each behavior to be. The higher the number you choose, the more desirable you believe the behavior is. Write the number in the blank after each statement. Remember to judge each behavior in terms of whether you consider it desirable or undesirable in other men.



Please be sure to rate <u>each</u> statement.

****

1. When in public places, holds the door for those behind him. _____
2. Makes savings deposits before the tenth of the month to draw a full month's interest. _____
3. Financially sponsors a college student. _____
4. Picks up his own clothing so someone else will not have to do it for him. _____
5. Loans clothing to a friend when the need arises. _____
6. Teaches his children the health dangers resulting from smoking. _____
7. Encourages his children to become their own boss in business rather than work for someone else. _____



8. Buys up-to-date equipment for his office so that work can be done more efficiently. _____

9. Avoids making telephone calls late at night. _____

10. Participates only in free recreational activitities although he could afford others. _____

11. Enjoys exchanging ideas with other people in his field of work. _____

12. Makes a point to clean up the bathroom after himself. _____

13. Makes an effort to introduce his friends and acquaintances whom he thinks would enjoy one another. _____

14. Conscientiously attempts to stop smoking because of the ill effects on his health. _____

15. Chooses a home in a neighborhood where influential families live although it means going into debt. _____

16. Reads publications that help him run his business more efficiently. _____

17. Checks with his secretary before assigning her a heavy work load. _____

18. Teaches his children the importance of proper use and care of tools and equipment. _____

19. Contributes to a scholarship fund to help worthy students receive an education. _____

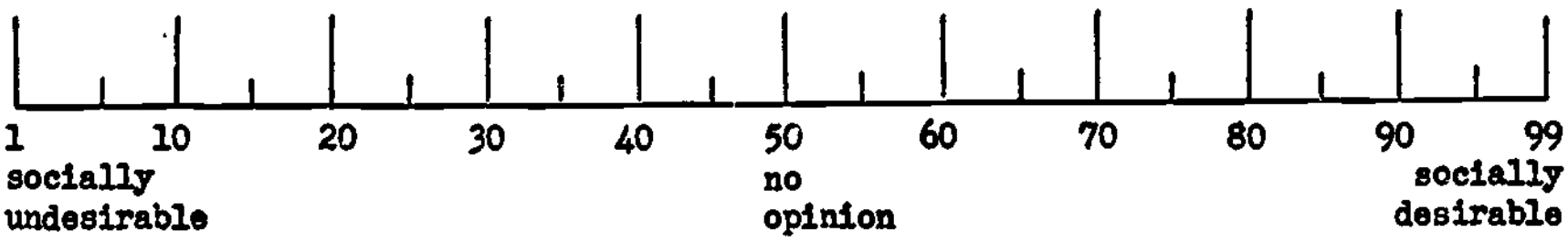
20. Encourages his wife to talk over her problems with him. _____

21. Considers the companionship opportunities before moving to a new neighborhood. _____

22. Sets an example of good health habits for his children to follow. _____

23. Spends more money than he would otherwise in order to join his friends in activities they are interested in. _____

24. Buys a four-door rather than a two-door car to provide greater ease in getting in and out. _____



25. Consults all concerned on the job before deciding upon a new policy. _____

26. When calling long-distance, makes it a point to call after night rates are in effect. _____

27. Would rather have his children learn things at school than learn them by experience. _____

28. Feels that strong family units are essential for a strong nation. _____

29. Encourages his wife to invite mutual friends and acquaintances to their home. _____

30. Has high regard for the opinions of those in the medical profession. _____

31. Supports a program that would compel everyone to attend a college or trade school. _____

32. Joins in activities that are popular with his friends even though he may not be especially interested in them himself. _____

33. Sees that he has sufficient equipment and materials before beginning a job. _____

34. Works overtime without pay to help a friend who is trying to meet a deadline. _____

35. Purchases camping equipment for use on family vacations to save money that would be spent on motel bills. _____

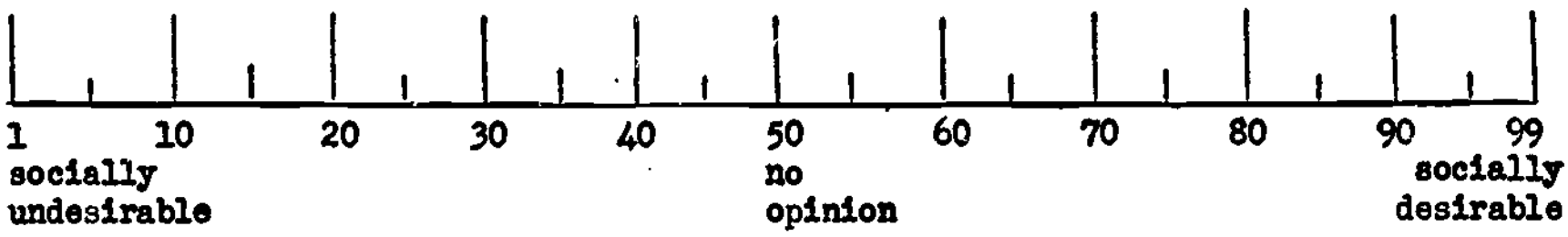
36. Shows special respect for school teachers in the community. _____

37. Keeps a picture of his wife and children on his desk at the office. _____

38. Teaches his children to maintain friendships and also to nurture new ones. _____

39. Cultivates sports or hobbies as a means of easing tensions produced at work. _____

40. Works to be a recognized authority in some area of his business. _____



41. Has his car checked for proper running condition before taking a trip. _____

42. Teaches his children to be kind to animals. _____

43. Drives a few miles further to avoid traveling on a toll road. _____

44. Is pleased his children want to become school teachers. _____

45. Shares household tasks with his wife if she also works outside the home. _____

46. Helps a friend repair machinery or equipment. _____

47. Contributes to funds for fighting diseases. _____

48. Moves his family to another city to accept a position of higher rank even though it offers little increase in pay. _____

49. Packs a car trunk for a family trip so that everything does not have to be removed every day. _____

50. Writes letters to public officials urging their support of a bill providing equal opportunities for all. _____

51. Prefers compact cars because they are more economical. _____

52. Supports legislative bills designed to improve schools. _____

53. Denies himself personal pleasure so there will be money for the family to take excursions together. _____

54. Invites the children of a friend to join his family for an outing. _____

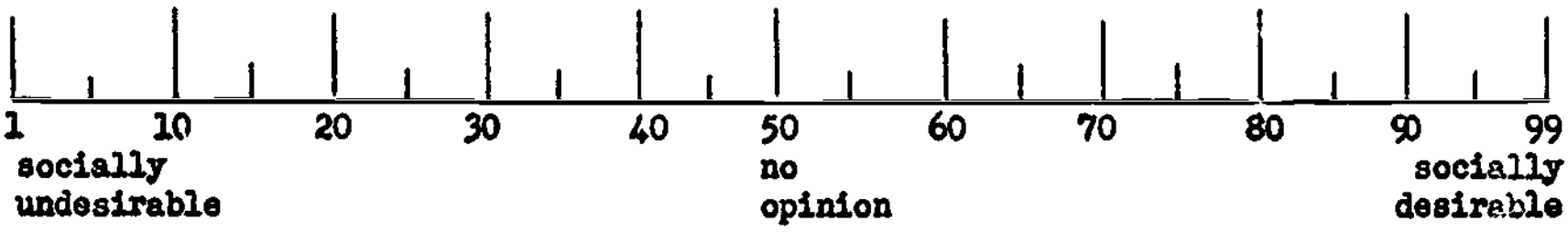
55. Takes an active part in a community pest-control program. _____

56. Teaches his children to respect people in authority and high position. _____

57. Listens to the news by radio or television rather than taking time to read the newspaper. _____

58. Offers employment to a qualified member of a minority group. _____

59. Patronizes stores that he thinks pass benefits on to the consumer. _____



60. Helps support the college of his choice by donations. ____

61. Seeks reliable sources of counseling help when serious marital discord arises. ____

62. Takes care of the family of a close friend who is ill or out-of-town. ____

63. Manages the family budget so that all family members can have adequate medical attention. ____

64. Rears his children in such a way that the family will be well-accepted in the community. ____

65. Polishes several pairs of shoes at once, while he has the equipment out. ____

66. Keeps the television or radio turned low in consideration of others. ____

67. Parks his car a distance from his destination to avoid paying a parking fee. ____

68. Buys a set of encyclopedias for his home. ____

69. Helps his children work together toward family goals. ____

70. Helps a friend run his business should an emergency arise. ____

71. Washes his hands before eating. ____

72. Encourages his children to strive for leadership positions in school organizations even though they will have less time at home. ____

73. Uses snow tires or chains in winter to avoid wasting time and energy. ____

74. Gives his seat to an elderly person on a public transportation vehicle. ____

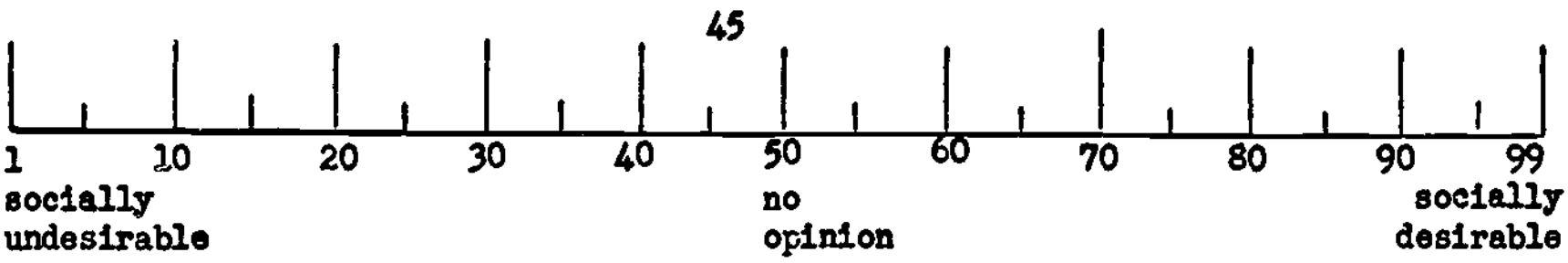
75. Insists that his teenage son get a part-time job and learn to manage his own money. ____

76. Wants his children to have more education than he received. ____

77. Keeps situations from occurring that might create jealousy among family members. ____

78. Tells a friend of a good job opportunity he has heard about. ____

79. Encourages those working under him to take sick leave if they are ill, to prevent the spread of germs. ____



80. Emphasizes the importance of succeeding in school rather than cultivating friendships or personal interests. ____

81. Buys a more expensive car than is necessary so his family will have one like those driven by friends and associates. ____

82. Uses equipment to save energy when doing yard work. ____

83. Takes an active part in a civic organization concerned with community problems. ____

84. Has his children ride the school bus rather than taking them to school or buying them a car. ____

85. Enjoys reading up-to-date magazines and books. ____

86. Encourages strong family loyalty. ____

87. Attends the funeral of a friend's close relative. ____

88. Patronizes only those public eating establishments that he feels have sanitary kitchens and facilities. ____

89. Buys luxury items for himself so he will have some nice things. ____

90. Improvises or builds aids to make household tools and equipment more accessible or easier to use. ____

91. Asks someone away from home to share a special family occasion in his home. ____

92. Makes toys for his children rather than buying them. ____

93. Believes education is as important for girls as it is for boys. ____

94. Encourages each family member to make contributions to the welfare of the family. ____

95. Helps a friend move to another house. ____

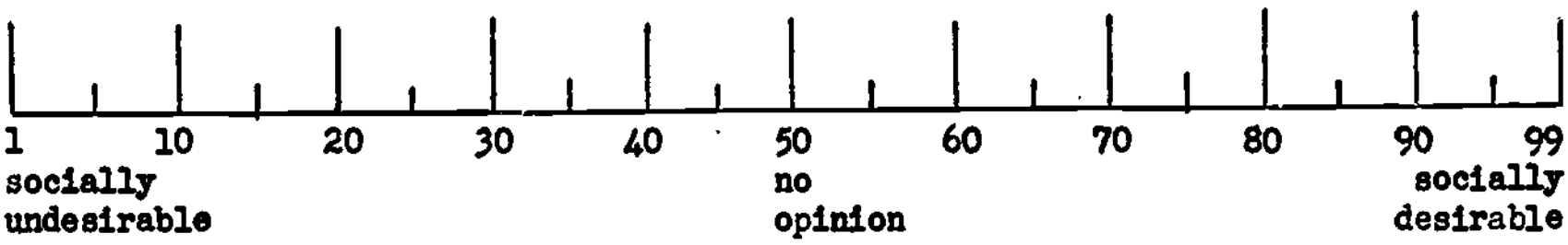
96. Buys his wife a dishwasher, because it makes the dishes more sanitary. ____

97. Advances his military rank through participation in reserve units of the service. ____

98. When traveling, makes advance reservations for hotel or motel accommodations. ____

99. Loans money to a friend in an emergency. ____

100. Mows his own lawn rather than spending money to have it done. ____



101. Makes a point of listening to the radio or television news each day. _____

102. Takes time to do things with his family even if it means neglecting other interests. _____

103. Helps a friend paint, reshingle, or repair his house. _____

104. Consults a counselor when in need of help in solving emotional problems. _____

105. Belongs to fraternal organizations. _____

106. Puts things away after he uses them. _____

107. Invites newcomers in the community to attend a meeting of his club. _____

108. Washes his own car rather than spending money to have it done. _____

109. Encourages his family members to make use of the public library. _____

110. Encourages family projects, outings, and activities. _____

111. Invites a friend and his family to come to his home for an evening. _____

112. Contributes time to work with local, county, or state mental health associations. _____

113. Learns a new card game or takes on a new hobby that is becoming popular in his community. _____

114. Uses travel time for paper work. _____

115. Puts his trash in a receptacle when on public property. _____

116. Makes a point to buy his wife usable and practical gifts on special occasions. _____

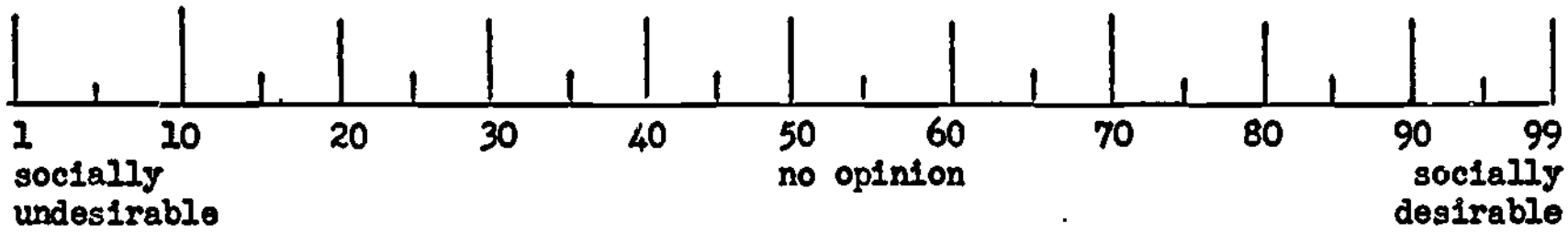
117. Accumulates a personal library. _____

118. Arranges his time so he can do things with other family members. _____

119. Secures football or other sports tickets for a friend. _____

120. Complies with city sanitation ordinances such as garbage disposal or testing of well water. _____

121. Remembers jokes so he can tell them when an appropriate situation occurs. _____



122. Does one thing at a time rather than having several jobs underway at the same time. _____

123. Helps a motorist move his stalled car. _____

124. Buys magazines by yearly subscriptions rather than by individual copies. _____

125. Admires those who have more formal education than he does. _____

126. Takes his wife and children with him on business trips if possible. _____

127. Sees that a friend is not left out of group plans. _____

128. Moves from a big city to avoid living in poluted air. _____

129. Plans vacations to include places that his friends and neighbors also have visited. _____

130. Buys equipment to get a quality job done in a minimum amount of time. _____

131. Appears in court as a witness to an accident. _____

132. Encourages his wife to freeze and can homegrown food products. _____

133. Believes scholastic achievement should be the main purpose of the school. _____

134. Provides opportunities for his children to develop a feeling of closeness to their grandparents. _____

135. Listens to a friend's problem and trys to understand it. _____

136. Maintains high standards of personal cleanliness. _____

137. Buys his wife a diamond ring that she has always wanted. _____

138. Keeps his office desk or work area well-organized. _____

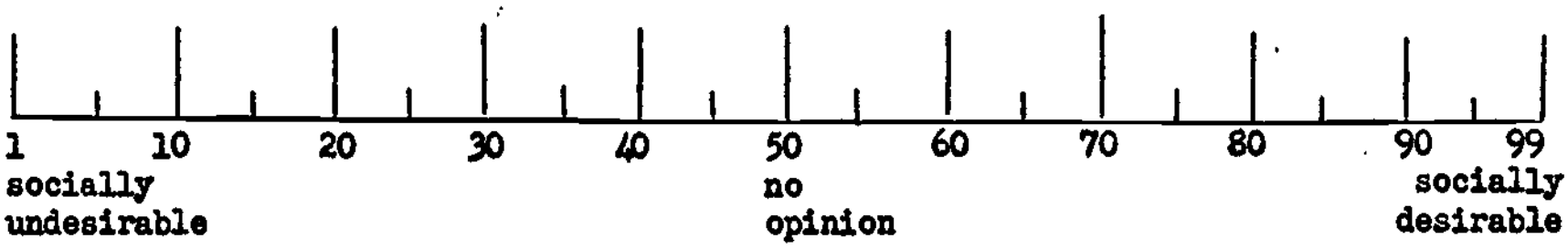
139. Patronizes a restaurant that serves minority groups. _____

140. Rents rather than buys equipment that is used only occasionally. _____

141. Attends lectures, plays, and concerts when he can. _____

142. Believes a happy home life is essential in the lives of all his family members. _____

143. Spends time helping a friend with a problem. _____



145. Gives special recognition to his children when they make the honor roll. _____

146. Directs the work of those under him to provide the greatest efficiency possible. _____

147. Picks up his own clothing so someone else will not have to do it for him. _____

148. Works to help change city zoning laws which do not provide equal rights for all. _____

149. Purchases used cars to avoid the depreciation on a new one. _____

150. Enjoys reading to his young children. _____

151. Consults with each family member before deciding to move or change jobs. _____

152. Invites a friend passing through town to stay in his home. _____

153. Tries new medicines and health products in the market. _____

154. Employs a professional interior decorator to plan the refurnishing of the family living room. _____

155. Organizes office letter answering in an efficient manner. _____

156. Stops at the scene of an accident to see if he can assist those involved. _____

157. Hires professional help in figuring his income tax to avoid unnecessary payments. _____

158. Is willing to serve on the local school board. _____

159. Prefers entertainment that the whole family can enjoy. _____

160. Passes information concerning a good investment along to a friend. _____

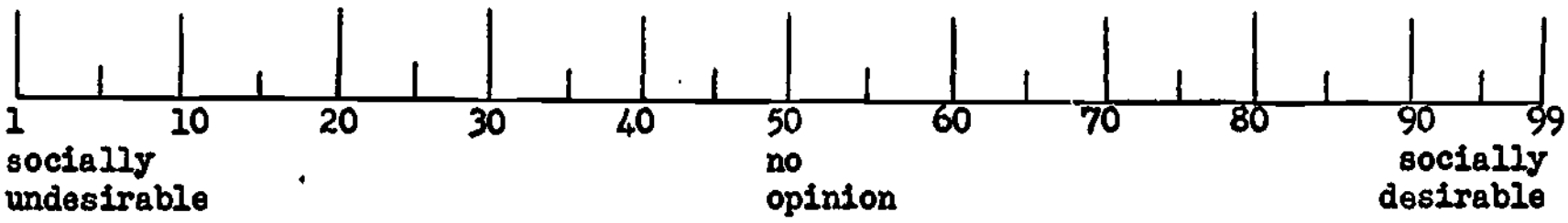
161. Consults a physician when he is sick. _____

162. Encourages his sons to practice and become skilled in at least one sport. _____

163. Has an extension phone installed to save steps. _____

164. Stops to remove a sharp object from the street to prevent tire damage to other cars. _____

165. Itemizes deductions on his income tax return if he can save money by doing so. _____



166. Insists that his children complete their homework before engaging in other activities. _____

167. Makes an effort to learn more about his family tree. _____

168. Works on community projects as a means of companionship with his friends. _____

169. Participates in community drives to have all pets vaccinated. _____

170. Does extra work at the office so he will be considered for a promotion. _____

171. Pays to have the kitchen remodeled so his wife can more easily work there. _____

172. Gives of his time and energy in emergencies such as floods or fires. _____

173. Is willing to take his lunch to work to save the expense of eating out. _____

174. Supports the educational programs of organizations such as the Peace Corps. _____

175. Is usually pleased when relatives come to visit. _____

176. Attends night classes to be with his friends as well as for the learning opportunity involved. _____

177. Gets adequate rest as one way to insure good health. _____

178. Is among the first to wear a new style of clothing. _____

179. Plans periods of heavy or extra work so he can use his energy to the best advantage. _____

180. Improves playgrounds for children in the neighborhood even though his own children are grown. _____

181. Cultivates his own vegetable garden to cut down on the food bill. _____

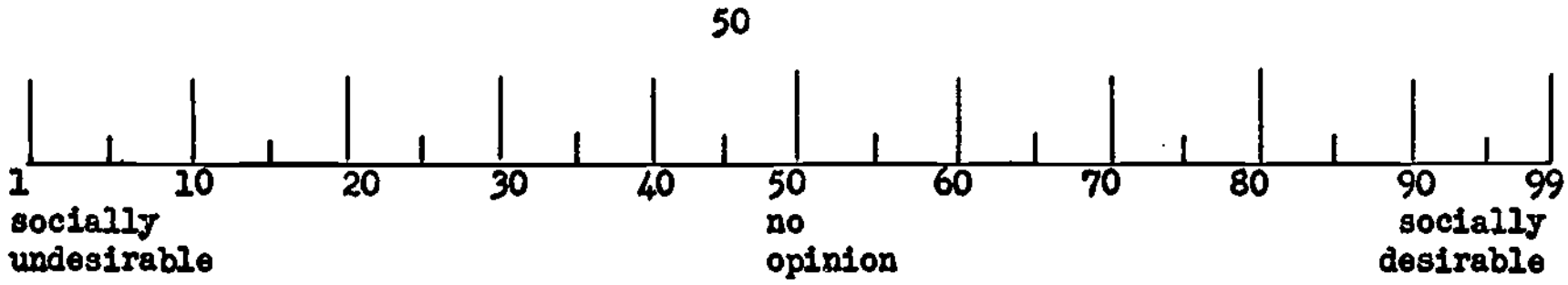
182. Regularly adds to a fund for his children's college education. _____

183. Encourages his children to bring their friends home with them. _____

184. Frequently meets with his friends for a cup of coffee. _____

185. Always uses his own drinking cup. _____

186. Keeps his shoes shined and in good repair. _____



187. Arranges his office or place of work for convenience and accessibility of commonly used items. _____

188. Does not intentionally hurt the feelings of others. _____

189. Compares prices at several stores before making a large purchase. _____

190. Reads magazines related to his work. _____

191. Avoids unpleasant scenes or discussions at mealtime. _____

192. Hunts, fishes, or bowls because of the opportunity such sports provide for companionship. _____

193. Avoids being outside in bad weather if he is not feeling well. _____

194. Treats those without a college education as being inferior. _____

195. Picks up the bill for coffee more than his share of the time. _____

196. Does a job in logical sequence. _____

197. Extends the same courtesies in everyday contacts with people of other races as to those of his own race. _____

198. Buys goods in large quantities when possible, to save money. _____

199. Prefers to watch educational programs on television. _____

200. Makes a conscious effort to do his part in making home life happy. _____

201. Loans tools, equipment, and sports gear to his friends. _____

202. Locates a family physician after moving to a new town. _____

203. Plans and saves so that his children can get more education and a better job than he has. _____

204. Keeps most frequently used equipment in accessible places. _____

205. Does not let prejudices keep him from being friendly. _____

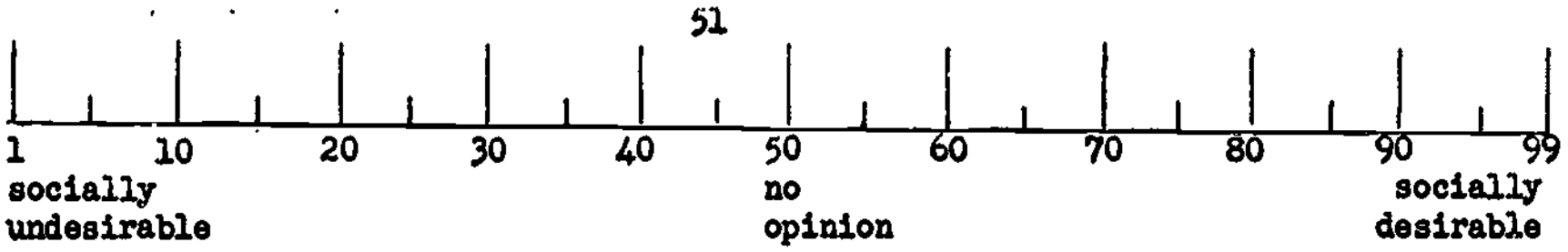
206. Turns lights out as he leaves a room. _____

207. Reads the editorial page of the newspaper regularly. _____

208. Carries pictures of his wife and children in his billfold. _____

209. Teaches his children how to be a good friend. _____

210. Has chest X-ray taken yearly. _____



211. Buys his teen-age child a car because everyone else has one. _____

212. Organizes his errands to avoid backtracking. _____

213. Makes another person comfortable when a situation becomes awkward or difficult. _____

214. Avoids making purchases with time payments because of the high interest rates. _____

215. Uses his recreational time to attend adult education classes to extend his knowledge. _____

216. Chooses a job that lets him be with his family during the evenings and on week-ends. _____

217. Drives a few miles out of his way to visit a friend he seldom sees. _____

218. Does not smoke because of the health hazard involved. _____

219. Works in the yard to make his home as attractive as possible. _____

220. Usually plans a whole days work the first thing in the morning. _____

221. Promotes community health projects. _____

222. Makes a point of paying bills early if reduced rates are offered for doing so. _____

223. Buys only educational toys and games as gifts for his children, to encourage learning. _____

224. Takes time to listen to his children's problems and counsel with them. _____

225. Makes a point of contacting friends when he is in their town. _____

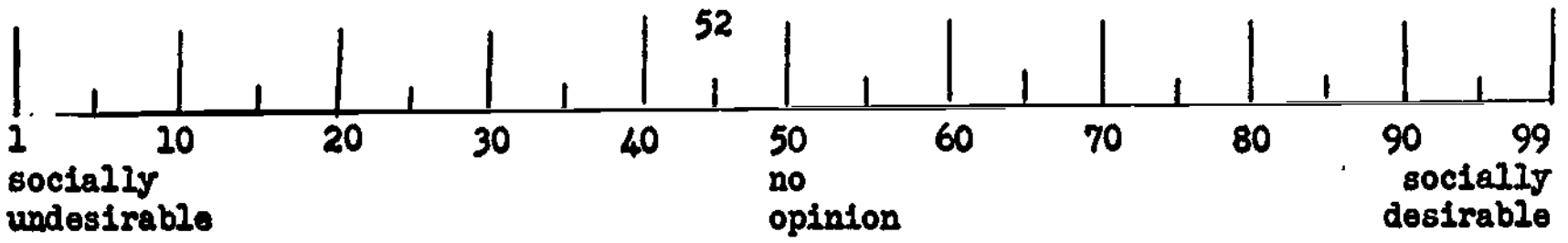
226. Encourages his children to participate in outdoor sport activities throughout the year. _____

227. Keeps his car clean and in good repair as he feels it reflects upon him personally. _____

228. Strives to do a task right the first time to avoid having to do it over. _____

229. Takes a child from a broken home into his family, even though it means his own children may have to give up things they could otherwise have. _____

230. Regularly saves or invests a percentage of his income. _____



231. Is well informed on both sides of a controversial issue before taking a stand. _____

232. Believes his children can contribute to happy home life. _____

233. Attends class reunions to renew friendships. _____

234. Is careful not to expose others to his colds. _____

235. Often buys new products and equipment that his friends have. _____

236. Tries doing a task several ways to find which is the quickest and most efficient. _____

237. Helps provide summer camp experiences for under-privileged children. _____

238. Makes a point of purchasing needed clothing when it is on sale. _____

239. Is a strong supporter of the local school program even after his children are out of school. _____

240. Is willing to take an elderly relative into his home. _____

241. Attends club meetings as a way of keeping up friendships. _____

242. Protects his eyes by having good lighting when working or reading. _____

243. Takes advantage of opportunities to make friends with community leaders. _____

244. Makes allowances for interruptions when scheduling his time. _____

245. Supports plans that provide for better housing for poor families. _____

246. Buys motor oil by the case rather than a quart at a time. _____

247. Regularly attends the meetings of the parent-teacher association to become better informed about educational issues. _____

248. Lets his sons use his tools and equipment. _____

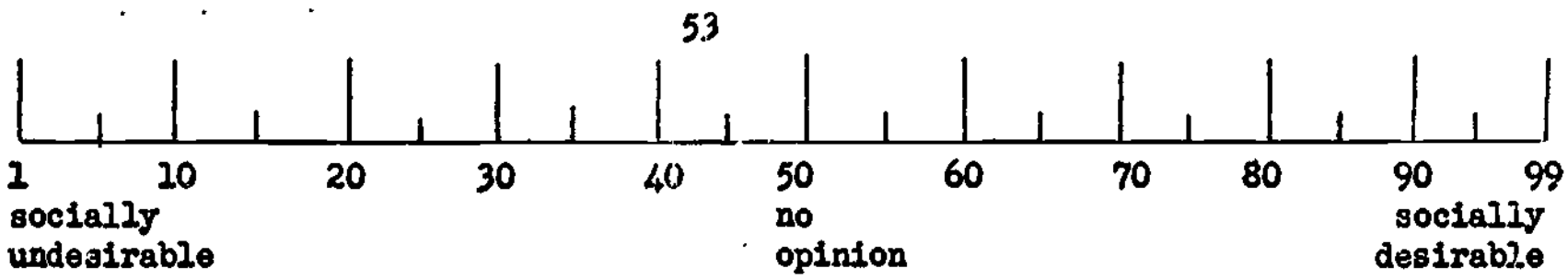
249. Works to have a wide circle of friends. _____

250. Treats minor cuts with an antiseptic. _____

251. Makes a habit of doing the best he can at his work. _____

252. Uses many short-cuts and time savers in doing his work. _____

253. Makes a point of being polite and courteous to others less fortunate than himself. _____



254. Buys a six cylinder car rather than an eight because it is cheaper to operate. _____

255. Encourages his wife to attend night school to broaden her interests, increase her general knowledge, or improve some skill. _____

256. Encourages his children to bring their problems to their parents. _____

257. Accepts criticism from a friend. _____

258. Is safety-conscious to prevent accidents. _____

259. Teaches his children to apply themselves to their schoolwork so they can be proud of themselves. _____

260. Always is on the look-out for new kinds of equipment that will streamline his work. _____

261. Conscientiously considers the rights of others. _____

262. Shops at discount stores to save money. _____

263. Makes it a practice to look up information concerning issues of the day or articles of special interest to him. _____

264. Is proud of the things his children make for him. _____

265. Encourages his wife to spend some time regularly with her friends. _____

266. Has a medical check-up at least once a year. _____

267. Trades his car in every year or two to keep up to date. _____

268. Becomes angry when things are out of place at home. _____

269. Treats public property as well as he does his own. _____

270. Pays cash for purchases so he will not have to pay interest or carrying charges. _____

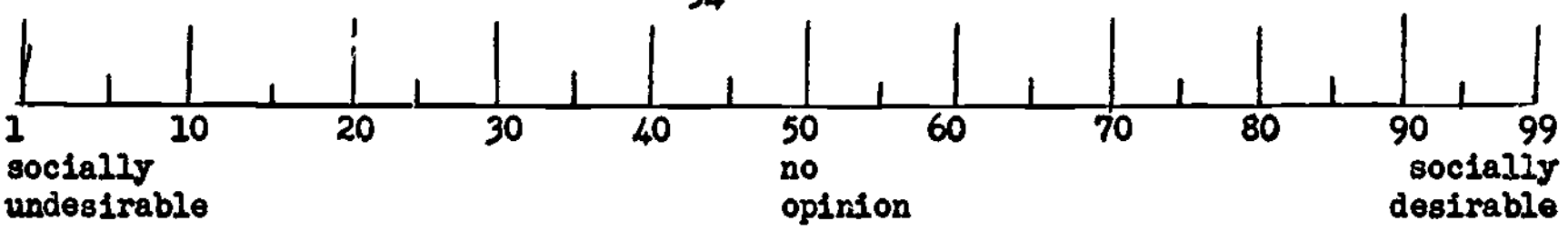
271. Makes a practice of giving his children books for gifts to encourage them to read more. _____

272. Teaches his children to be loyal to each other. _____

273. Is loyal to a friend even though the friend's actions are not approved by others. _____

274. Eats a well-balanced diet. _____

275. Buys a boat so his family also can participate with others in water sports. _____



276. Is more concerned in getting a job done in the fastest way than with the quality of work that is done. _____

277. Tells the clerk of an error in making change so he will not have to make up the loss from his paycheck. _____

278. Purchases needed items where a discount is given for cash payments. _____

279. Encourages his children to develop an inquiring mind as they are growing up. _____

280. Works at hobbies the entire family enjoys. _____

281. Teaches his children the value of having friends. _____

282. Plans his schedule so that he usually gets some outdoor exercise daily. _____

283. Dresses similarly to those he associates with. _____

284. Becomes depressed if he is not entirely efficient at a task. _____

285. Makes a point to clean up the bathroom after himself. _____

286. Has time to be courteous to people whenever they meet. _____

287. Makes a point of taking care of minor repairs to avoid more extensive expense later. _____

288. Before buying a new home, considers the quality of the school that his children would attend. _____

289. Encourages the celebration of the birthday of each family member. _____

290. Goes out of his way to help a friend who is alone. _____

291. Sees that he is protected against polio. _____

292. Insists that his wife redo housework that he feels does not measure up to his standard. _____

293. Gives of his time to assist with a community welfare project. _____

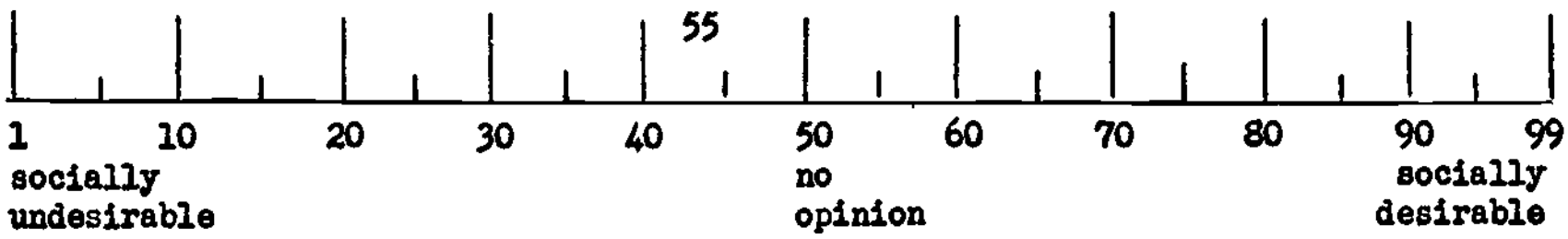
294. Takes care to avoid waste in the use of his supplies. _____

295. Encourages his children to watch educational television programs when possible. _____

296. Takes an active part in helping raise his children. _____

297. Takes time to keep in touch with friends in the community. _____

298. Sees that the temperature and ventilation in a work area promote good health.



299. Supports management that replaces the average workers with more productive and efficient help. ____

300. Contributes to a welfare fund even though it means a financial sacrifice. ____

301. Avoids buying on impulse without previous planning. ____

302. Helps his children realize the importance of education in the world today. ____

303. Participates in activities in the community that include the whole family. ____

304. Is active in community activities as one means of making new friends. ____

305. Insists on having windows open the year around for health reasons. ____

306. Becomes extremely irritated at the inefficiency of others. ____

307. Gives time to working with youth organizations which he thinks provide wholesome activities for youth in the community. ____

308. Saves costs by walking instead of driving when an errand is within walking distance. ____

309. Makes any vacation travel a time to learn more about the places visited. ____

310. Plans vacations so that all the family members will be together. ____

311. Prefers to spend his free time with friends rather than doing things by himself. ____

312. Keeps his children from being in crowded public places so they will not be exposed to germs. ____

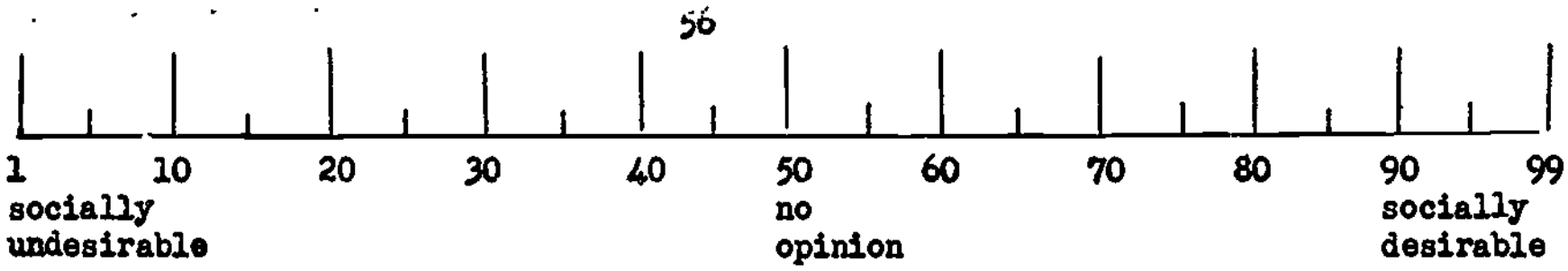
313. Buys his wife equipment to make her tasks easier and more efficient. ____

314. Disciplines his children's friends to help them behave in a manner he believes is acceptable. ____

315. Invests his savings where there is little risk involved although the interest rate may be higher elsewhere. ____

316. Makes an effort to take his children to museums so historical events will mean more to them. ____

317. Corresponds with brothers and sisters to keep up family ties. ____



318. Upsets his plans to accommodate a friend. _____

319. Punishes his children if they do not dress appropriately for the weather. _____

320. Keeps his car waxed so it will be easier to keep clean. _____

321. Buys items for his associates that he knows they will enjoy even though it strains his budget. _____

322. Contributes to those causes where he believes the money is handled wisely. _____

323. Obtains bulletins from the state extension services or federal agencies to provide helps with his work. _____

324. Insists that all the family members be together for at least one meal a day. _____

325. Often loans money to his friends in need. _____

326. Moves to another chair if he is sitting by someone with a cold. _____

327. Has needed work done on his car at one time to avoid making several trips to the garage. _____

328. Insists that others follow his ideas and suggestions because he knows it is to their best interest. _____

329. Makes an effort to protect his belongings that get hard use to avoid having to replace them often. _____

330. Encourages his child to hunt for information so he will learn more. _____

331. Takes his sons hunting or fishing with him. _____

332. Spends a good deal of money making long-distance telephone calls to keep in touch with his friends. _____

333. Avoids his children when they are sick so he will not contract their illness. _____

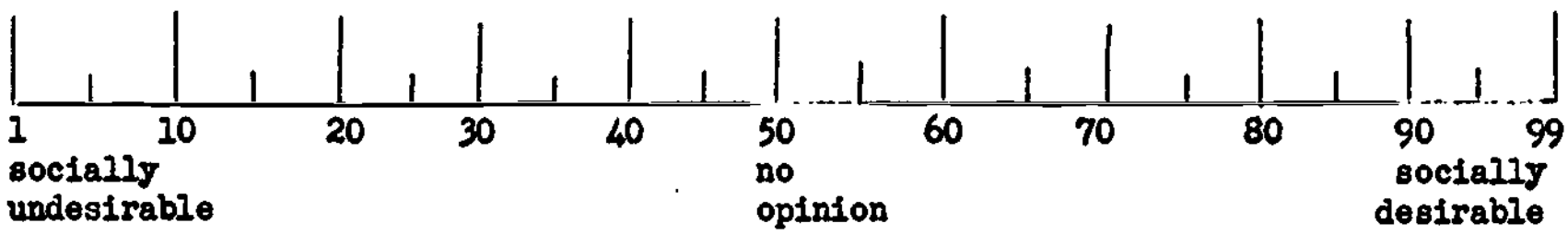
334. Has his car serviced and checked regularly. _____

335. Neglects home and family responsibilities to give more time to helping others with their problems. _____

336. Makes a practice of watching for bargains on the things he buys. _____

337. Encourages his wife to talk over her problems with him. _____

338. Makes a practice of exploring the various viewpoints on a controversial issue. _____



339. Promotes family reunions because he believes they help keep family ties strong. ____

340. Lets a friend in need move into his home even though it disrupts his family life. ____

341. Has regular dental check-ups. ____

342. Devises a decision-making process to avoid spending too much time making routine decisions. ____

343. Criticizes those who do not seem to be concerned with the well-being of others. ____

344. Eats only at restaurants where tipping is not necessary. ____

345. Belongs to a club or organization because of the exchange of ideas it provides. ____

346. Is more concerned for his family than for his church or his nation. ____

347. Rearranges his schedule to attend his child's performance at school. ____

348. Does not ask for a promotion so he will not be in competition with a friend. ____

349. Uses tape recorders to send personal messages to family members rather than taking the time to write. ____

350. When in public places, holds the door for those behind him. ____

351. Never gives money to charities because he believes they mishandle their funds. ____

352. Encourages his children to find what their special talents are and to develop them. ____

353. Insists that his children participate in all family activity, regardless of previous plans they may have made. ____

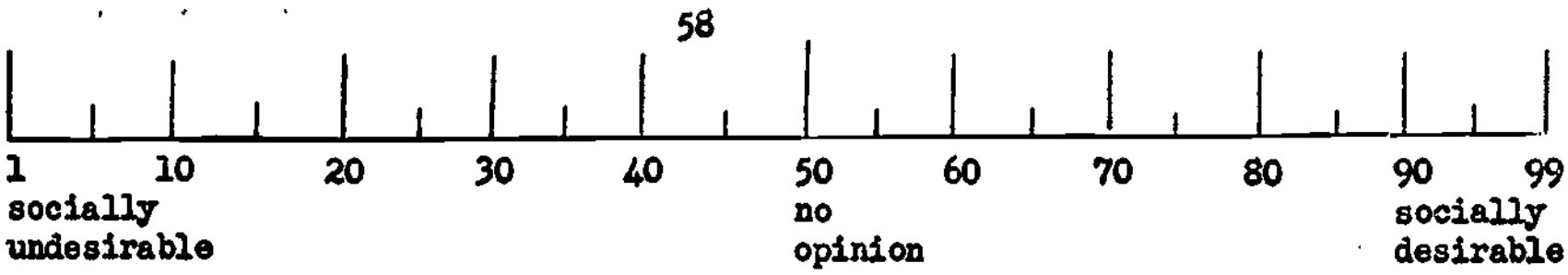
354. Spends more time with his friends than with his family. ____

355. Teaches his children to think through plans before carrying them out so that the desired effects will be obtained. ____

356. Avoids making telephone calls late at night. ____

357. Punishes his children if he believes they have spent money foolishly. ____

358. Considers himself a teacher who should provide many learning experiences for his children. ____



359. Has only family members for companions and friends rather than outsiders. _____

360. Files financial records in an organized way. _____

361. Insists that his wife keep a record of all money spent in running the household. _____

362. Always enrolls for night classes although it makes life more complicated. _____

363. Cancels all engagements that conflict with family wishes or plans. _____

364. Wears old or outdated clothing so he will not have to spend money to buy new clothes. _____

365. Spends a great deal of time reading, even though it keeps him from his responsibilities. _____

366. Feels justified in not reporting all his income for tax purposes so that he can spend more money on his children. _____

Listing of 366 items by number in Social Desirability Inventory, according to the value they were written to reflect

Concern for others		Economy		Education		Family life	
1	237	2	238	3	215	4	232
9	245	10	246	11	223	12	240
17	253	18	254	19	231	20	248
25	261	26	262	27	239	28	256
34	269	35	270	31	247	37	264
42	277	43	278	36	255	45	272
50	286	51	287	44	263	53	280
58	293	59	294	52	271	61	285
66	300	67	301	60	279	69	289
74	307	75	308	68	288	77	296
83	314	84	315	76	295	86	303
91	321	92	322	80	302	94	310
99	328	100	329	85	309	102	317
107	335	108	336	93	316	110	324
115	343	116	344	101	323	118	331
123	350	124	351	109	330	126	337
131	356	132	357	117	338	134	339
139		140	361	125	345	142	346
148		149	364	133	352	147	347
156		157		141	358	151	353
164		165		150	362	159	359
172		173		158	365	167	363
180		181		166		175	366
188		189		174		183	
197		198		182		191	
205		206		190		200	
213		214		194		208	
221		222		199		216	
229		230		207		224	

Listing of 366 items by number - (Continued)

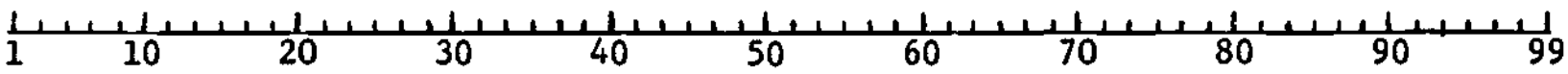
Friendship		Health		Status		Work efficiency	
5	257	6	258	7	259	8	260
13	265	14	266	15	267	16	168
21	273	22	274	23	275	24	276
29	281	30	282	32	283	33	284
38	290	39	291	40		41	292
46	297	47	298	48		49	299
54	304	55	305	56		57	306
62	311	63	312	64		65	313
70	318	71	319	72		73	320
78	325	79	326	81		82	327
87	332	88	333	89		90	334
95	340	96	341	97		98	342
103	348	104		105		106	349
111	354	112		113		114	355
119		120		121		122	360
127		128		129		130	
135		136		137		138	
143		144		145		146	
152		153		154		155	
160		161		162		163	
168		169		170		171	
176		177		178		179	
184		185		186		187	
192		193		195		196	
201		202		203		204	
209		210		211		212	
217		218		219		220	
225		226		227		228	
233		234		235		236	
241		242		243		244	
249		250		251		252	

Iowa State University Agricultural and Home Economics Experiment Station
Project 1607
10/66

ACTION INVENTORY

Supposing that the circumstances made it possible for you to be in each of the following situations, how would you act? If you are certain that you would act in the manner described, choose any number between 51-99 and write it in the blank. The higher the number you choose the more certain you are that this is how you would always act. If you would not act in this way choose any number between 1-49, the lower the number the more certain you are that you would never act this way. If you are not sure how you would act write 50 in the blank.

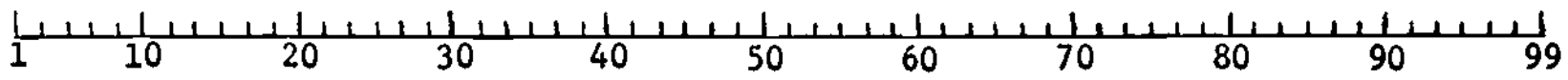
Use the following scale as a guide in marking your answer:



I would NEVER act this way	I am NOT SURE how I would act	I would ALWAYS act this way

Please be sure to write a number in every blank.

1. Plans his schedule so that he usually gets some outdoor exercise daily. _____
2. Drives a few miles out of his way to visit a friend he seldom sees. _____
3. Checks with his secretary before assigning her a heavy work load. _____
4. Pays to have the kitchen remodeled so his wife can more easily work there. _____
5. Teaches his children to maintain friendships and also to nurture new ones. _____
6. Makes another person comfortable when a situation becomes awkward or difficult. _____
7. Consults a counselor when in need of help in solving emotional problems. _____
8. Teaches his children that strong family units are essential for a strong nation. _____



I would NEVER act this way — I am NOT SURE how I would act — I would ALWAYS act this way

9. Makes it a practice to look up information concerning issues of the day or articles of special interest to him. _____

10. Improves playgrounds for children in the neighborhood even though his own children are grown. _____

11. Makes an effort to introduce his friends and acquaintances whom he thinks would enjoy one another. _____

12. Makes a habit of doing the best he can at his work. _____

13. Takes time to do things with his family even if it means neglecting other interests. _____

14. Encourages his wife to spend some time regularly with her friends. _____

15. Does a job in logical sequence. _____

16. Belongs to a club or organization because of the exchange of ideas it provides. _____

17. Takes time to listen to his children's problems and counsel with them. _____

18. Conscientiously considers the rights of others. _____

19. Attends class reunions to renew friendships. _____

20. Extends the same courtesies in everyday contacts with people of other races as to those of his own race. _____

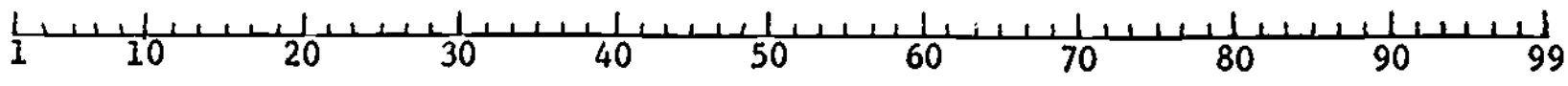
21. Gives time to working with youth organizations which he thinks provide wholesome activities for youth in the community. _____

22. Makes a conscious effort to do his part in making home life happy. _____

23. Has his children ride the school bus rather than taking them to school or buying them a car. _____

24. Sees that a friend is not left out of group plans. _____

25. Participates in activities in the community that include the whole family. _____



I would NEVER act this way — I am NOT SURE how I would act — I would ALWAYS act this way

26. Is a strong supporter of the local school program even after his children are out of school. _____

27. Always is on the look-out for new kinds of equipment that will streamline his work. _____

28. Gives his seat to an elderly person on a public transportation vehicle. _____

29. Provides opportunities for his children to develop a feeling of closeness to their grandparents. _____

30. Encourages his wife to invite mutual friends and acquaintances to their home. _____

31. Regularly saves or invests a percentage of his income. _____

32. Maintains high standards of personal cleanliness. _____

33. Makes allowances for interruptions when scheduling his time. _____

34. Sets an example of good health habits for his children to follow. _____

35. Buys motor oil by the case rather than a quart at a time. _____

36. Buys his wife equipment to make her tasks easier and more efficient. _____

37. Plans vacations to include places that his friends and neighbors also have visited. _____

38. Takes advantage of opportunities to make friends with community leaders. _____

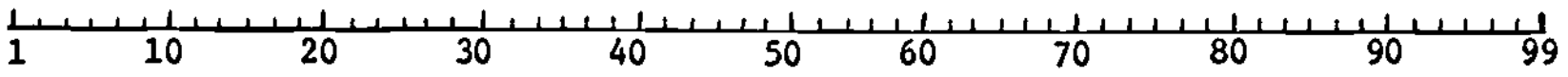
39. Teaches his children the health dangers resulting from smoking. _____

40. Teaches his children to think through plans before carrying them out so that the desired effect will be obtained. _____

41. Complies with city sanitation ordinances such as garbage disposal or testing of well water. _____

42. Encourages his children to bring their friends home with them. _____

43. Itemizes deductions on his income tax return if he can save money by doing so. _____



I would NEVER act this way

I am NOT SURE how I would act

I would ALWAYS act this way

44. Encourages his children to develop an inquiring mind as they are growing up. _____

45. Works in the yard to make his home as attractive as possible. _____

46. Employs a professional interior decorator to plan the refurnishing of the family living room. _____

47. Teaches his children to apply themselves to their schoolwork so they can be proud of themselves. _____

48. Compares prices at several stores before making a large purchase. _____

49. Keeps his shoes shined and in good repair. _____

50. Teaches his children the importance of proper use and care of tools and equipment. _____

51. Keeps his office desk or work area well-organized. _____

52. Attends club meetings as a way of keeping up friendships. _____

53. Consults a physician when he is sick. _____

54. Teaches his children the value of having friends. _____

55. Enjoys exchanging ideas with other people in his field of work. _____

56. Is well informed on both sides of a controversial issue before taking a stand. _____

57. Encourages his wife to talk over her problems with him. _____

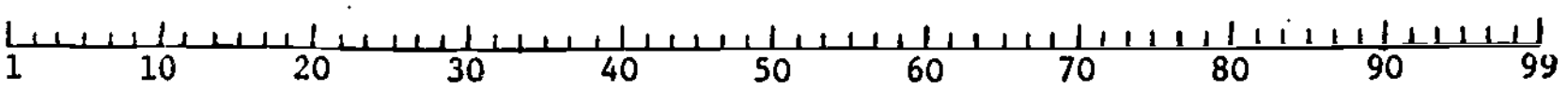
58. Reads magazines related to his work. _____

59. When in public places, holds the door for those behind him. _____

60. Encourages his children to become their own boss in business rather than work for someone else. _____

61. Makes a point of purchasing needed clothing when it is on sale. _____

62. Spends time helping a friend with a problem. _____



I would NEVER act this way — I am NOT SURE how I would act — I would ALWAYS act this way

63. Insists that his teenage son get a part-time job and learn to manage his own money. _____

64. Rearranges his schedule to attend his child's performance at school. _____

65. Hires professional help in figuring his income tax to avoid unnecessary payments. _____

66. Is willing to serve on the local school board. _____

67. Rents rather than buys equipment that is used only occasionally. _____

68. Encourages his sons to practice and become skilled in at least one sport. _____

69. Encourages his children to participate in outdoor sport activities throughout the year. _____

70. Regularly adds to a fund for his children's college education. _____

71. Helps provide summer camp experiences for underprivileged children. _____

72. Plans and saves so that his children can get more education and a better job than he has. _____

73. Strives to do a task right the first time to avoid having to do it over. _____

74. Reads publications that help him run his business more efficiently. _____

75. Gives of his time and energy in emergencies such as floods or fires. _____

76. Encourages his children to find what their special talents are and to develop them. _____

77. Organizes office letter answering in an efficient manner. _____

78. Encourages those working under him to take sick leave if they are ill, to prevent the spread of germs. _____

79. Is careful not to expose others to his colds. _____

80. Takes an active part in helping raise his children. _____

Listing of 80 items by number in Action Inventory, according to the value they were written to reflect:

Concern for others	Economy	Education	Family life
3	23	9	8
6	31	16	13
10	35	26	17
18	43	44	22
20	48	55	25
21	50	56	29
28	61	58	42
59	63	66	57
71	65	70	64
75	67	76	80

Friendship	Health	Status	Work efficiency
2	1	12	4
5	7	37	15
11	32	38	27
14	34	45	33
19	39	46	36
24	41	47	40
30	53	49	51
52	69	60	73
54	78	68	74
62	79	72	77

Table 5. Mean and standard deviation of 366 items, based on 30 responses, classified according to value group

Concern for others			Economy			Education		
Item	Mean	SD	Item	Mean	SD	Item	Mean	SD
261	87.00	10.28	18	84.70	12.50	158	81.47	10.86
17	82.97	10.99	230	79.07	12.89	11	85.43	10.95
237	77.90	11.23	238	73.10	13.06	231	83.93	11.11
172	80.60	11.30	75	82.27	13.53	352	83.77	11.54
197	86.17	11.37	189	81.53	14.04	239	80.30	11.60
307	76.30	11.54	246	55.87	14.68	190	84.03	11.73
74	88.37	11.75	84	66.37	14.87	263	77.00	11.78
1	82.57	11.79	165	81.77	15.13	279	86.50	12.28
213	82.20	11.81	140	68.30	15.26	182	80.43	12.30
180	77.07	11.89	157	72.13	15.34	345	72.77	12.75
286	85.10	11.97	181	57.50	15.52	338	83.67	11.35
131	76.50	12.18	336	64.50	15.55	247	77.43	12.78
350	81.33	12.44	35	58.13	15.82	150	79.43	12.91
269	83.47	12.61	222	75.47	15.83	302	82.83	13.40
293	74.80	12.83	294	75.03	15.88	330	80.60	13.53
123	73.37	12.85	214	74.90	15.97	288	83.77	13.82
205	81.63	13.48	149	59.33	16.17	93	82.30	13.87
139	67.17	13.49	278	70.60	16.19	358	75.67	14.47
188	87.03	13.53	262	63.30	16.49	323	72.97	14.48
221	80.13	13.59	301	68.90	16.55	194	13.97	14.50
156	82.70	13.68	287	77.20	16.71	117	75.37	14.54
245	73.23	14.76	132	62.33	16.85	109	78.70	14.55
83	78.13	14.92	51	45.33	17.36	365	31.83	15.20
107	77.47	15.24	92	54.47	17.43	36	78.90	15.23
321	47.67	15.46	322	72.63	17.50	207	76.40	15.30

Table 5. (Continued)

Concern for others			Economy			Education		
Item	Mean	SD	Item	Mean	SD	Item	Mean	SD
115	84.60	15.49	364	29.37	17.66	85	77.60	15.311
356	76.37	16.47	100	68.43	17.69	174	67.70	15.315
300	59.37	16.52	198	68.80	17.73	141	70.97	15.38
148	73.37	16.70	10	43.67	17.90	101	76.90	15.53
335	23.07	16.964	270	72.63	18.17	19	76.87	15.56
229	67.90	16.965	206	72.60	18.22	125	61.40	15.74
91	72.63	17.15	124	65.80	18.41	215	68.53	16.82
164	78.07	17.66	173	63.93	18.47	362	32.33	16.94
253	82.40	17.94	108	59.67	18.56	199	64.40	17.34
99	69.67	19.72	43	40.43	18.59	255	67.57	17.37
9	75.77	21.17	344	40.57	18.84	271	72.70	17.48
25	68.60	21.48	351	30.03	18.96	309	73.20	17.83
343	44.37	21.65	308	61.93	18.99	295	76.30	18.10
277	75.50	21.76	315	65.27	19.21	166	75.13	18.21
328	40.60	22.38	254	54.30	19.92	166	75.13	18.21
58	69.77	22.70	329	67.37	20.19	316	72.60	18.55
314	40.53	22.92	67	46.83	20.27	76	72.87	18.58
50	67.13	23.66	29	57.53	20.63	80	47.80	22.30
42	78.43	24.13	361	46.67	21.06	223	61.27	22.46
66	75.27	24.62	2	62.07	21.13	60	67.80	22.56
34	83.67	99.67	357	51.67	21.30	44	61.57	22.58
			116	69.93	21.80	133	53.97	23.91
			59	69.80	23.81	68	63.80	23.93
						52	74.20	24.07
						3	60.27	24.73
						27	51.23	25.98
						31	44.03	27.97

Table 5. (Continued)

Family life			Friendship			Health		
Item	Mean	SD	Item	Mean	SD	Item	Mean	SD
224	87.97	10.733	29	84.73	10.32	22	88.90	10.66
296	89.23	10.734	281	86.23	10.54	161	83.53	11.47
337	83.83	11.13	143	81.43	10.62	104	79.40	11.59
200	87.77	11.23	217	79.17	11.27	136	84.90	13.51
303	83.03	11.30	38	86.43	11.34	6	85.17	13.69
134	77.90	11.80	13	82.40	11.92	120	83.63	13.70
28	89.17	11.97	127	78.30	12.21	79	80.73	14.18
102	83.97	12.20	241	70.00	12.31	234	79.27	14.26
183	81.60	12.38	233	70.20	12.341	282	78.77	14.62
347	83.10	12.60	265	82.70	12.348	226	76.50	14.73
118	83.80	12.64	257	81.37	12.36	202	79.47	14.94
264	83.47	12.813	111	82.23	12.64	30	74.93	15.03
110	84.20	12.818	290	82.90	13.22	258	82.20	15.25
94	84.93	12.92	184	75.80	13.27	291	82.00	15.26
77	81.10	12.94	297	79.70	13.36	112	72.93	15.45
256	84.13	13.11	311	63.40	13.42	177	77.77	15.91
240	70.80	13.20	78	82.40	13.69	71	84.97	16.22
232	86.90	13.35	225	77.30	14.14	242	77.10	16.23
175	76.83	13.42	21	77.17	14.25	266	77.07	16.28
216	80.57	13.55	152	74.87	14.33	88	80.13	16.31
272	85.60	13.92	354	20.67	14.40	193	75.23	16.44
126	70.07	14.30	209	83.43	14.66	153	49.20	16.56
147	82.10	14.67	103	71.10	15.39	144	76.40	16.90
359	29.77	14.68	304	73.43	15.86	341	74.20	16.93
191	83.93	14.70	119	67.00	16.13	326	48.33	17.27
191	83.93	14.70	119	67.00	16.13	326	48.33	17.27

Table 5. (Continued)

Family life			Friendship			Health		
Item	Mean	SD	Item	Mean	SD	Item	Mean	SD
331	83.17	14.71	176	66.17	16.17	128	60.67	17.67
86	84.20	14.97	273	76.43	16.28	298	76.53	17.72
280	75.50	15.55	249	73.17	16.73	274	78.67	18.44
289	79.83	15.60	160	73.10	17.53	210	76.07	18.55
285	79.40	15.64	95	78.13	17.79	14	77.53	18.93
248	75.50	15.83	318	69.00	18.30	305	44.77	18.98
339	68.47	15.91	168	64.97	18.59	169	66.93	19.16
208	73.50	15.98	87	69.90	19.52	250	72.60	19.63
151	75.33	16.06	332	44.20	19.85	218	76.63	20.17
12	82.00	16.37	348	47.17	20.58	319	52.90	20.21
310	82.00	17.20	201	69.53	20.72	185	70.37	20.52
366	13.83	17.36	5	72.00	20.90	333	24.43	20.90
363	46.03	17.56	340	47.50	20.95	96	51.37	21.33
159	79.40	17.71	325	57.47	22.04	312	44.33	21.91
324	76.63	17.95	54	72.70	22.56	55	62.50	22.85
317	76.20	18.74	46	67.67	22.84	47	71.87	22.94
167	55.03	19.60	70	78.17	23.40	39	77.57	23.48
353	37.70	20.73	62	79.00	24.03	63	84.37	24.95
4	82.13	21.50	135	81.73	95.19			
37	62.83	22.29	192	72.33	92.59			
53	76.90	23.99						
346	59.97	24.33						
69	80.30	24.41						
45	75.50	24.76						
61	79.73	24.89						
20	89.47	86.45						
142	90.80	97.32						

Table 5. (Continued)

Status			Work efficiency		
Item	Mean	SD	Item	Mean	SD
251	88.20	12.13	355	80.60	11.31
129	52.33	13.04	244	74.83	13.71
219	80.30	13.77	16	82.03	13.88
162	75.70	14.89	138	74.00	14.04
203	73.63	16.64	171	76.77	14.24
7	56.50	15.48	196	73.17	14.29
186	76.73	15.74	196	73.17	14.29
154	53.00	15.78	228	81.73	14.54
259	77.73	16.45	313	79.07	14.70
243	73.97	16.71	155	70.83	14.74
235	47.07	17.24	260	72.17	15.62
145	77.73	17.42	8	72.87	16.03
267	50.07	17.60	252	71.70	16.06
195	54.00	17.63	220	69.67	16.18
137	64.93	17.82	360	74.97	16.24
170	65.63	17.87	187	75.23	16.29
227	73.13	18.16	349	49.50	16.31
113	60.00	18.42	106	78.87	16.82
211	22.17	18.49	90	67.77	16.91
275	54.13	18.641	204	74.93	17.17
97	58.83	18.647	334	73.30	17.18
48	50.57	18.88	33	71.83	17.20
283	71.13	19.35	98	71.50	17.32
89	49.53	20.05	327	67.90	17.51
121	64.80	20.32	212	71.60	17.60
105	58.67	21.37	130	65.83	17.91
178	48.83	21.48	236	64.07	18.15

Table 5. (Continued)

Status			Work efficiency		
Item	Mean	SD	Item	Mean	SD
32	51.40	22.74	146	75.27	18.24
23	40.00	22.96	276	29.07	18.43
81	25.70	23.31	320	60.53	18.58
64	78.77	24.55	284	41.17	18.83
56	77.53	24.73	73	67.27	18.89
15	33.07	25.62	342	64.00	18.95
40	67.70	26.48	306	35.30	19.07
72	62.00	26.60	122	52.20	19.13
			24	67.33	19.50
			82	59.17	20.63
			299	61.80	20.80
			163	59.87	21.17
			179	65.63	21.59
			268	41.03	22.08
			114	57.80	23.08
			57	43.83	23.71
			292	33.07	24.03
			49	67.90	24.11
			41	78.83	25.87
			65	62.63	26.00

Table 6. Distribution of means of 80 items, based on 30 responses

Range of means	Concern for others	Economy	Education	Family life	Friendship	Health	Status	Work effic.	Total
1-19	0	0	0	0	0	0	0	0	0
20-29	0	0	0	0	0	0	0	0	0
30-39	0	0	0	0	0	0	0	0	0
40-49	0	0	0	0	0	0	0	0	0
50-59	0	1	0	0	0	0	3	0	4
60-69	0	2	0	0	0	0	0	0	2
70-79	3	3	2	1	4	4	5	7	29
80-89	7	4	8	9	6	6	2	3	45
90-99	0	0	0	0	0	0	0	0	0
	10	10	10	10	10	10	10	10	80

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FOREIGN COUNTRIES; *HUMAN RESOURCES; *ECONOMIC DEVELOPMENT; MANPOWER DEVELOPMENT; *VOCATIONAL EDUCATION; MANPOWER NEEDS; *PLANNING; *DEVELOPING NATIONS; SEMINARS

This second annual manpower seminar was held for the purpose of exploring the relationship between economic development plans and human resources policies in developing countries. Twenty-two policy-level officials from 14 countries participated in order to discuss, analyze, and study these subjects. Presentations and papers are summarized under these topics: (1) Problems of Economic Development, (2) Problems of Labor Force Distribution, (3) Problems of Skill Acquisition in the Rural Labor Force, (4) Problems of Skill Acquisition in the Urban Labor Force, (5) Manpower Problems in Planning, and (6) Manpower Administration. (EM)

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Seminar on
PROBLEMS OF MANPOWER PLANNING, DEVELOPMENT, UTILIZATION, DISTRIBUTION AND ADMINISTRATION

VT002733

June 18, to September 19, 1962

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
COMMUNICATIONS RESOURCES DIVISION
WASHINGTON 25, D. C.

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PREFACE

Proceedings of the 1962 Manpower Seminar were carefully recorded on a daily basis by the rapporteurs of the permanent staff, Judith L. McConahy and Janet Morrissey Sentz. Inclusive of research reports and article-length papers submitted by participants and guest lecturers, the record of proceedings is quite voluminous. It seemed necessary, therefore, to edit and digest this material. An attempt has been made to use as much of the original record as possible, considering requirements of space. Also, it seemed essential to reduce editorial changes to a minimum. It is hoped that the following digest of the proceedings may convey the essence of the contributions made by seminar leaders, participants, and guest lecturers.

A number of individuals associated with the work of the Seminar made valuable suggestions to the editors. Thanks are due to Mr. George Tobias and Mr. Raphael Brown, who read the manuscript in its entirety as well as the edited digest. Thanks are also due the Seminar Leaders who contributed their own digests and made valuable suggestions for this final report. Special thanks are due to Judith L. McConahy and Bette Blackistone for reading the manuscript and being responsible for its preparation for publication.

It is hoped that this report may be of use not only to those who participated in the 1962 and 1961 meetings and to participants in future seminars, but also to persons interested in the subject matter of human resources development.

J. Fletcher Wellemeyer
Francis L. Hauser

INTRODUCTION

This report on the proceedings of the 1962 Manpower Seminar, prepared by J. Fletcher Wellemeyer and Francis L. Hauser, Director and Deputy Director of the program, is a comprehensive digest of contributions made by seminar leaders, participants, and guest lecturers as selected from the almost verbatim notes of the two staff rapporteurs.

The sessions were held in Washington, D. C. during the period June 18 to September 19, 1962. The program was conducted by the U. S. Department of Labor, Bureau of International Labor Affairs, under the auspices of, and for participants selected by, the Agency for International Development. The Seminar was designed to assist policy-level officials from developing nations discuss, analyze, and study the relationship of principles of human resources development and economic planning. Inquiries and lectures operated through an organized exchange of information provided by representatives from the developing nations and American, as well as foreign, experts under the direction of seminar leaders. World-wide, as well as United States source materials were used so as to present a selection of universal best practices in the solution of human resources problems.

The 1962 Seminar was the second such meeting. The plan for 1962 was formulated by Mr. George Tobias, Special Assistant for Manpower to the Assistant Secretary of Labor, International Affairs. 1/ It took into account suggestions by participants and lecturers associated with the work of the previous Seminar. In evaluating these latter proceedings, participants and seminar-connected experts agreed that future seminars should concentrate on the relationship between developmental economics and manpower techniques; and that representatives from developing countries should be asked not only to attend lectures and participate in an exchange of views, but also to prepare research papers prior to arrival or during the proceedings, and present these orally as well as in writing. These suggestions were adopted and made part of the program for the 1962 Seminar. The work sessions, therefore, were divided between presentations by a seminar leader, systematic discussion by participants, and oral presentations by officials from developing countries, as well as by guest lecturers. Finally, participants prepared and submitted at the end of the Seminar a series of definitive research papers.

The objective of exploring the relationship between economic development plans and human resources policies seemed to require the grouping of the Seminar sessions around six key themes or segments:

1/ Mr. George Tobias is now associated with the International Bank for Reconstruction and Development as a Manpower Advisor.

I. Problems of Economic Development

II. Problems of Labor Force Distribution

III. Problems of Skill Acquisition in the Rural Labor Force

IV. Problems of Skill Acquisition in the Urban Labor Force

V. Manpower Problem in Planning

VI. Manpower Administration

The editors of the report have maintained this structure, and the report, therefore, is divided into six component parts.

To facilitate the application of findings growing out of discussions, and to assist study of specific conditions and problems in the area in which individual participants were doing research, two members of the Seminar Faculty, Professor Benjamin Higgins of the University of Texas, Austin, Texas, and Professor Simon Rottenberg of Roosevelt College, Chicago, Illinois, were assigned full time to provide advice and to supplement the presentation of seminar leaders through special lectures. These presentations have also been integrated into the report.

During their attendance at the Seminar participants and faculty had professional, as well as social, contacts with top officials from the U. S. Department of State, the Agency for International Developme t, and the U. S. Department of Labor. They were invited to a special luncheon on July 3 given in their honor by the Agency for International Development in the private dining room of the Secretary of State. They were also invited to the Secretary of State's Independence Day Reception on July 4, held at the U. S. Department of State. A number of private parties were given for participants and faculty. Among these were garden parties given in their homes in Maryland and Virginia by Mr. Harry Weiss, Deputy Assistant Secretary of Labor, International Affairs, and Mrs. Weiss, and Mr. Ealton L. Nelson, Manpower Advisor, Agency for International Development, and Mrs. Nelson. In the closing days of the Seminar participants in turn gave a party for the faculty and staff at 2101 R Street, N. W.

In addition to these events, there were a number of informal meetings between the participants and U. S. and foreign officials of corresponding levels and interests. Of special note were the visits by Secretary of Labor of the Philippines Norberto Romualdez, and Mrs. Petroamerica Colon of the Department of Labor of Puerto Rico; also Mr. Marcel Guay of Canada, President of IAPES.

At the conclusion of the Seminar separate certificates were awarded to all participants by Fowler Hamilton, Administrator of the Agency for International Development, and by Secretary of Labor W. Willard Wirtz.

STAFF RESPONSIBLE FOR THE SEMINAR

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3/ Professor Simon Rottenberg is now associated with the University of Buffalo, School of Business Administration, Buffalo, New York.

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REPORT OF 1962 SEMINAR

on

PROBLEMS OF MANPOWER PLANNING, DEVELOPMENT, UTILIZATION, DISTRIBUTION AND ADMINISTRATION

Edited by

J. F. Wellemeyer

and

Francis L. Hauser

I. Problems of Economic Development

This segment of the Seminar was intended to deal with the economic problems facing developing countries and with efforts to apply the lessons of economic history in the Western world and the methods of analysis developed by Western economists and other social scientists. The course touched on the following topics:

1. "Analytical Tools" - Ways of Classifying National Economies with an Extended Discussion of W. W. Rostow's "Stages".....p. 1

2. Welfare Programs and Economic Development.....p. 4

3. Economic Development Since World War II.....p. 6

4. The Issue of Balanced Versus Unbalanced Growth.....p. 7

5. Foreign Trade and Development -- Problem of Commodity Stabilization Programs.....p. 10

6. Agricultural Aspects of Development Policy.....p. 12

7. Inflation and the Cost of Living.....p. 16

8. Trade Unions in Developing Countries and Social Security.....p. 19

9. Social Institutions and Economic Development -- The Impact of Religion.....p. 22

10. A Preview of Concepts and Some Types of Planning with Examples from Puerto Rico and Several Other Countries.....p. 26

Throughout this segment participants made many contributions to the discussion, drawing on the experience of their own countries.

In the framework of the proceedings this segment was to serve as an orientation on current economic and sociological thought concerning problems of development. It should also acquaint administrators with outlook and thought patterns of a representative sample of economists and other social scientists whose ideas have influenced aid policy of international bodies as well as national governments.

Mr. Irvin Sobel of Washington University, St. Louis, Missouri was the Seminar Leader. In addition to his lectures, other members of the Seminar staff, notably Professor Benjamin Higgins (University of Texas), Professor Sumner Rosen (Harvard University), and Mr. Lloyd Prochnow (U. S. Department of Labor) spoke about special aspects and approaches. Three guest lecturers also addressed the group. These were the main topics covered:

1. ANALYTICAL TOOLS: The problems of economic and social development constitutes a challenge not only to the political leadership of the nations involved in overcoming impediments to lifting living standards to plateaus comparable to those of industrialized countries, it also represents a challenge

to economists and other social scientists. The challenge to the scholar is one of how to help political leaders and administrators of developing nations, and of aid-dispensing governments as well, formulate economic and social policies with the analytical tools of their discipline.

Some of the best brains in economics, sociology and political science have struggled with the problem of how to use experience gained and theories formulated over two centuries of Western history for the novel and probably quite different problems confronting the nations of Africa, Asia and Latin America. Economists in particular have tried to apply the traditional concepts of their discipline to classify key aspects of the problem of development. These attempts are quite useful tools for an analysis preceding the formulation of plans, policies and programs. Among the prominent tools of classification are analysis of a developing country's economy according to its endowment with resources (capital, manpower, land, and minerals); its market system, its size, its relationships to the economies of other countries; its "stage of development"; the character of ownership of its means of production (public, private, or mixed); its potentialities for increased production; its society's responsiveness, or resistance to change; its geographic conditions and its degree of political or economic independence.

Classification in terms of market system types and market constellation is largely determined by the amount of international involvement and the volume of national enterprise. Concentration on one or two exports, for example, subjects a country to relatively greater fluctuations in export prices and revenue. The form development takes will differ as between, say, mining or plantation economies and those countries characterized by small enterprise or peasant farming. One difference between the two types will be the reservoir of administrative capacity which is a fairly important contributing factor to economic development.

The size and magnitude of an economic system may be connected to the physical size of a country, although physical smallness does not, of course, inevitably lead to low output per capita. It is not uncommon, however, to find international entities faced with problems arising from diseconomies of government resource endowment sufficiently small to preclude economical resource combination and efficient organization of goods and services.

International differences in the internal decision-making apparatus should also be taken into account in classifying an economy. The developmental results in countries in which markets play an effective role will differ from those in which, for instance, labor is allocated on a subsistence basis.

Recently the concept of "stages" through which economic development proceeds has again attracted attention.[1/] W.W. Rostow has used the concept to formulate a theory of economic development designed to provide theoretical guidelines in meeting the problems of developing nations.

1/ The stage concept goes back to Friedrich List's early 19th Century essay, "The National System of Political Economy," which established it as an analytical tool of economics. It plays an important part in Marxist theory.

W. W. Rostow's "stages" has provoked some criticism but his approach to economic development may be thought of as another classificatory scheme; an analysis of economic systems in terms of the proportion of national income devoted to investment. According to W. W. Rostow's thesis, a nation goes through five stages until it reaches the highest currently known degree of development.

The first stage is called the "Traditional Society". In it there is an accepted limitation on per capita output, no social mobility, and a concentration of population (usually over 70%) in agriculture.

The next stage is the "Pre-Condition" for take-off. In this one some saving takes place, change and a concept of forward motion become the characteristic features; per capita productivity increases somewhat and formation of social overhead capital begins.

The third stage is the "Take-Off Period". It is characterized by substantial growth in per capita output and a rise in the rate of investment from 5% to 10% of the gross national product or more. A political structure emerges which encourages growth and income flows to the developing entrepreneurial group who have a relatively high proclivity to save and invest it. Leading sector industries which encourage growth are increasingly identifiable.

The following "Drive to Maturity" is the stage in which the economy becomes so versatile that it has the technical ability to produce anything it chooses to. The leading sector is likely to be in the production of machine tools and other products identified with a sophisticated industrial system.

Finally, the "Age of High Mass Consumption" is reached. Concentration of manpower in service industries is characteristic of this stage. Leading sectors are those in which consumer durables are produced. The economy also has sufficient productivity to afford welfare expenditures as well as large military expenditures to reflect its international power position.

Many classification tools are not derived from economics. Technical efforts towards development can be ineffective if the psychological condition of a given society is such that it lacks the capacity to innovate or to respond to motivation. International differences between technically similar societies may arise from differences in exposure to modernizing influences. Religious and anthropological influences may cause differences. A very important non-economic classification is by extent of autonomy. How independent can the development efforts in one country remain from the rate of development in other countries with which it is economically or politically associated?

The presentations were supplemented by brief statements by Messrs. Aybarsu (Turkey); Tung (Viet-Nam); Onfray (Chile); Siahaan and Brotosewojo (Indonesia).

"Turkey faces two crucial problems, namely its supplies of technically proficient labor and capital. All arable land is being utilized resulting in a redundant agriculture population (untrained for industrial employment) moving

to urban centers and creating an unemployment problem there. The man-land ratio is such that higher total output might be achieved in agriculture with a lower supply of human resources and a substitution of capital. Capital is scarce in Turkey, insufficient to organize efficiently the other factors of production. It is poorly distributed--underused in education, underinvested in machinery and plant."

"Viet-Nam, an exporter of rubber and rice, but with an abundance of unskilled labor, still has arable land available and can exploit more. The size of rice farms is larger on the average than is the case in most Asian nations. Nevertheless, rural unemployment exists because the tending and harvesting of two rice crops (average) per year in some sections is not sufficient to occupy the agricultural labor force and results in a drifting of this unskilled, untrained labor to urban centers."

"Chile presently experiences no land shortage. Land area is large in proportion to the population (642,000 square kilometers: 7 million people). The proportion of population living in rural areas is decreasing. A land distribution problem does exist, but land reform is now being studied. The chief problem is capital because the rate of capital formation is low--10% of national income is invested (Rostow considers this level the 'take-off' point). Chile also has organization problems. There is less than full utilization of capital - machinery in plants is underutilized, while vocational training institutions in some instances are underequipped. With proper organization this situation could be rectified and Chile could also make better use of outside technical assistance."

"Indonesia, rich in natural resources, presently has a generally very high man-land ratio. However, this situation varies among the various islands. For example, overall, Indonesia has had to import food since World War II; but Java, to highlight the diversity of economic situations, is a heavy net importer from abroad, while the other islands are net exporters. Unusual cultural and sociological circumstances influence decision-making in Indonesia. Unlike Turkey, which has a tradition of strong central government, the initiative in projects which benefit the community, like irrigation, is taken by the villages as an aggregate."

2. WELFARE PROGRAMS AND ECONOMIC DEVELOPMENT: One of the characteristics of economic development in the industrialized nations of the West was that its numerous welfare services were created in the last two (the most advanced) stages of development. Some economists have questioned whether national economies in earlier stages can carry the financial burden of social legislation and welfare programs. It has been argued, on the other hand, that such programs may be relatively costless and also that it is dubious whether not providing for social services means that the expenditures saved by their absence are used to further economic growth. It has also been held that welfare expenditures are costless because they generate a volume of economic expansion large enough to balance the costs of social measures. From a realistic point of view it is also questionable whether governments of developing nations can, in these times of social strife and aspirations, afford not to initiate welfare programs and services without courting revolution. This expose of views by the Seminar Leader was followed by these reports on the status of welfare programs in their countries.

Mr. Aybarsu (Turkey): In Turkey funds used for social welfare come from retirement funds and workers' insurance. This program has been in existence for a number of years. When the program was initiated, Turkey had no statistics relative to the age structure of its population, so it relied on Western statistics. Once in operation it happended that the old age pension funds in particular accumulated at a faster rate than payments were made to beneficiaries from them. The capital thus made available to the Turkish Government was used to create medical expertise.

With regard to social welfare systems generally the question may be raised as to whether these divert significant resources from other growth projects to collective consumption. In the absence of social welfare systems would resources have been activated anyway? Are these programs relatively costless or not?

Indonesia's experience indicates that social welfare efforts have been relatively cheap to that economy. The Department of Social Affairs, charged with administering these programs, amasses the necessary funds by means of sweepstakes, cinema taxes, and lotteries. Funds thus accumulated are used to construct hospitals, organize emergency rescue units, and orphanages.

Over a period of time, it has paid Turkey to have its doctors trained abroad, an expensive undertaking in the short run and one which may have diverted resources from investment. Once trained, however, it was found that although this supply of doctors could not be fully absorbed into the Turkish community, the overflow could be utilized in the social welfare system.

Mr. Tung (Viet-Nam): My country has no public insurance. Workers are paid a small allowance by the employer according to the size of their family and are given hospital care as well. The worker with the large family claims a larger share of the benefits. These family allowances represent a transfer of consumption from the worker with a small family to workers with large families.

Mr. Aybarsu: Turkey, in lieu of paying family allowances, permits tax deductions for families with children. Some districts also have unemployment compensation benefits.

Mr. Onfray(Chile): A transfer of funds similar to the system in Viet-Nam occurs in Chile. However, in Chile a transfer of funds takes place not only between the small and large families, but between the low-income agricultural worker and the higher-income industrial worker, with the latter funding benefits to the former.

Mr. Fonseca (Brazil): My country maintains specific institutions for pensions, retirement funds, etc. Contributions are divided equally among the government, the worker, and the employer, such funds being used for purely paternalistic purposes in the form of family allowances. (This system is now under scrutiny in the Brazilian Congress with a view toward passing legislation governing it).

After additional discussion the Seminar Leader summarized the views of participants and of authorities referred to. He said:

"The implications of funding a social welfare system are complex. At certain levels of economic development, welfare expenditures represent a diversion of resources into consumption at the expense of capital formation. This form of consumption may have to be restrained or economic progress may suffer. Further analysis, however, may prove that a large proportion of the welfare funds expended by a developing economy represents either costless transfer payments or may use otherwise unutilized resources. The particular impact of a given social welfare system can be assessed in terms of an analysis of the way in which the resources are collected. It can be said that real costs to the economy in resources terms may be much less than is apparent and may be quite small compared to the total apparent volume of welfare expenditures. Welfare expenditures improve the well-being of the population and may help to increase productivity, thereby offsetting some of the costs of the program. This again shows that the true costs to the economy of a social welfare system are difficult to define and are definitely not clear-cut."

3. ECONOMIC DEVELOPMENT SINCE WORLD WAR II: In the past 15 years spectacular growth has been observed in Western Europe, Hong Kong, and Japan. The Latin American Countries, on the other hand, grew rapidly in the post-war period up to 1957. After 1957, they have, for the most part, been stagnant. Much of this recent sluggishness can be attributed to the neglect of agriculture. Improve technology and productivity in agriculture provides forward and backward linkages in the economy which stimulate development. Without increased agricultural productivity, there is danger that the many countries which have established some of the pre-conditions will be unable to take advantage of them to launch themselves into the take-off stage.

When growth rates in the developing countries are compared to Western growth rates in the 19th Century, they look impressive. However, an economy's performance is ultimately judged by the (largely non-objective)aspirations of its people. On this basis, growth rates have been inadequate.

A part of the failure of many countries to achieve development levels they consider acceptable is attributable to basic conflicts in national objectives. One objective is to achieve self-sufficiency, and another is to stimulate production. Most of the developing nations are primarily agricultural and primary product producers. The development of synthetic and chemical fibers, and a slower rate of American economic growth in the 1950's, have caused the world demand for the products of these countries to decline relatively.

Additional conflict is generated from the politically based dichotomy of market systems resulting from the East-West conflict.

The crucial issue is whether the policy-makers in underdeveloped countries have gained sufficient knowledge and experience in the general field of economic development and in planning itself to justify optimism for the future. Do economists have enough knowledge or insights to be helpful in this regard? Are the crucial variables in economic development really economic or are they sociological? What developments are underway in countries participating in this Seminar? From the discussion and replies by members of the group these three statements were considered significant.

Mr. Yeh (Republic of China): An unusual situation exists in Taiwan. The population is increasing rapidly (high birth rate plus immigration). Material resources are limited with the resulting necessity of importing raw materials and exporting finished products and agricultural products. Owing to the rapid growth of the population, it has become necessary to consume agricultural products that would normally be designated for export. This has resulted in an increasing emphasis on industrial build-up.

Mr. Siahaan: In Indonesia, according to statistics from the Committee on Economic Development, national per capita income should be about $89 annually. As yet, this goal has not been attained. In this accounting, measurement of services is not accurate because important services rendered by the villages are frequently impossible to measure. Fluctuations in price levels and prices of export goods do not permit a proper estimate of economic growth. It is more accurate to use education per capita; improvement in the general health level, etc. In this nation where self-help is such a major factor GNP is not a good measure of change of welfare. Proxy variables are more important. For example, the daily caloric intake in Indonesia is about 2,000 calories. In high income countries it is only about 3,000 so this makes for a more logical basis for comparison from the welfare standpoint between the United States and Indonesia than a comparison of per capita income.

Mr. Habed (Nicaragua): My country is reasonably well developed economically, enjoys a favorable balance of trade, but experiences an unfavorable balance of payments. This balance of payments problem is due to invisible payments (interest on capital investment, insurance, etc.). Between 1956-1959 the growth rate was variable. The national per capita income is $237.57. Agriculture accounts for 62% of economic activity. Difficulties arise because 32% of the land is owned outright by a small group of families. Agrarian reform is now underway.

4. THE ISSUE OF BALANCED VERSUS UNBALANCED GROWTH: In recent years countries have been considering conditions under which their own economic development should be taking place, and there has been a great deal of concern and speculation as to the most appropriate paths to follow to attain growth.

The economic history of industrialized nations may be valuable, but in many cases it may be of limited applicability. Economic development of Western societies followed this pattern: at first, production concentrated on increased output of two or three staples for export. For such sales abroad raw materials of semi-finished goods were selected. In regard to costs of production the exporting economy--if successful--established a comparative advantage (over competition from other nations) in the world market. The expansion of these few export industries had a stimulating effect upon additional lines of production of the developing (Western) society consisting of industries which could cater to the growing demand of the export industries. Thus, the initially narrow specialization in production became over the long run pervasive until rationalization and increased productivity extended over all sectors of the economy. Developing nations are inclined to adopt policies designed to speed up economic growth. The motives for this tendency are political and social in most cases. Population pressures, and the anticipation of their increasing momentum in the future, accentuate the urgency back of such policy directions. In this connection, many economists today question whether the Western patterns

of development can provide realistic formulae for developing countries. Their path, as well as their pace, may be too roundabout and too slow to permit governments of developing nations to ease social tensions. The record of economic history indicates that it took the life span of one generation to achieve an (economic) advance through one single stage. Moreover, such a forward thrust occurred in the 19th Century simultaneously in only one or two countries. In the world today a galaxy of nations aim--and may be compelled to aim--at rapid economic development within an identical span of years.

Search for new approaches has tended to divide political leaders as well as economists into two schools of thought. One school attempts to adjust and apply the lesson of history and it emphasizes specialization accepting the unevenness and frequent economic disequilibria and social crisis periods which seem to accompany this course of action. The other school of though de-emphasizes the specialization for export angle and aims more at the development of production for domestic consumption. It consequently tries to establish industries which would substitute domestic goods for imported ones with the aim also of increasing the degree of independence from the fluctuations of the world market. The latter approach to economic development is known as balanced growth as distinguished from the traditional policy of specialization or (acceptance of) unbalanced growth.

Adherents of both schools of thought have tended to present their ideas as if they were mutually exclusive. The argument between economists has also been carried on in terms of whether the one or the other view is right or wrong in all situations and for all countries. It is questionable whether one should think of the two approaches in terms of contradictions. Both are significant. But in choosing a particular growth pattern, consideration must be given to the following questions: (1) What are the manpower aspects or differences inherent in each pattern of growth? (2) Does what is known of manpower development and manpower development possibilities permit balanced growth, or is the manpower supply more likely to be sufficient when there is unbalanced growth?

The conflict between balanced and unbalanced growth may result from an attempt to assess one side of the equation to the exclusion of the other. One point of view stresses the demand side. The other is the consequence of concentration upon the supply side. It can be questioned whether the results would be substantially different at the end of the growth process, whichever policy were selected. Unbalanced growth ultimately achieves a balance, although disequilbria may exist at a given time.

Mr. Tung: In Viet-Nam, the agricultural sector has remained the most important because 80% of the total population is involved in it. Other sectors utilize the remaining 20% of the labor force.

Mr. Sobel: Should Viet-Nam be putting more emphasis on import-substituting industries? Perhaps the best response is illustrated by Brazil's experience. In that nation resources were diverted too quickly from the agricultural sector into industry. While it is true that a country cannot achieve full development with more than 40% of its labor force utilized in the agricultural sector, labor must be diverted from agriculture at a pace slow enough to permit more efficient agricultural methods and technology to compensate for the shift of rural labor to industry. The society must also

be willing to invest sufficient capital to insure this. Viet-Nam's development plan must include measures for increasing agricultural productivity, but at the same time it is necessary also to regulate the decline of employment in agriculture.

Mr. Fonseca: In Brazil has there been excessive emphasis on import-substituting industries? Investment in the industrial sector has not been sufficient to permit transfer of low-productivity agricultural workers to industries or high-productivity agriculture. Brazil has not invested enough in agricultural technology to increase its productivity sufficiently to be able to make the transfer feasible. (Russia and China likewise have not improved agricultural technology sufficiently to make it economically safe to divert human resources into other fields).

Mr. Sobel: The controversy can perhaps be reduced to two questions: (1) In the 20th Century world have changes in developed countries produced sufficient demand for certain products produced by less developed countries to enable them to grow through export specialization? (2) Which system (specialization or balanced growth) is likely to produce the greatest linkage within the economy?

Nineteenth Century growth was sufficiently rapid and provided enough demand to permit commerce to develop. International trade in primary products increased ten times; output only five times. In many countries, especially in tropical ones, this concentration, even in the 19th Century, resulted in lopsided development. That is to say, developed an export sector producing primary products (foreign owned and directed) while the great bulk of the domestic economy remained primitive. There were substantial gaps in income, and levels of well-being between the "center" and the other sectors of the economy. The major argument, however, against development along specialized lines is empirical and is based on movements of world trade in the 20th Century. World trade has increased slowly since 1913. The result has been a much smaller rise in demand for the exports of the poor or developing countries and an even smaller increase in their ability to finance growth. In addition, trade is increasingly between countries of like structure.

Rich countries export 25% of all exports to poor countries.
25% of all exports are from poor countries to rich countries.
40% of exports are rich to rich.
10% of exports are shared among the underdeveloped nations.

Another indicator of this trend is that although in the United States we have had roughly slightly more than doubled the 1929 GNP, we have increased our primary products imports only 25%. This small increase has been in face of the fact that between 1929 and 1960 the U. S. has become an importer of many primary products never imported before, (due to depletion of natural resources and a desire to conserve them). These data support the thesis that it would be impossible for all developing countries today to anticipate growth through reliance on export of primary products. Additional support for the balanced growth position results from an unwillingness to submit the domestic economy to changes inherent in uncontrolled change of demand. Internal demand, unless stimulated, is not sufficient to permit countries to develop this way.

The discussion of these policy choices in planning was further elaborated in a guest lecture by Dr. Adler, Director of the Economic Institute of the International Bank for Reconstruction and Development.

5. FOREIGN TRADE AND DEVELOPMENT - PROBLEM OF COMMODITY STABILIZATION PROGRAMS: Presentation by the seminar leader and subsequent discussions concerning balanced versus unbalanced development policies indicated strong interest in the relationship between foreign trade and development. Professor Benjamin Higgins was invited to lecture on this subject on two successive days. This is a digest of his presentation:

There is no clear evidence to support the argument that there is an inherent tendency for the terms of trade for primary products to deteriorate in the long run.

The experience of Canada, Australia, and New Zealand has been to reach high levels of production and income without much diversification of export products but with further processing of their products. Historical experience suggests that economic development requires diversification of output rather than diversification of exports. The desirability for a particular country to launch into industrialization without the necessary resource base cannot be ascertained from general principles alone. It is necessary to appraise the potential of the country in technical, scientific, and managerial skills, transportation costs, and availability of markets in order to decide whether it should attempt industrialization. If any country wants to increase its total output faster than the world market for its exports is expanding, it cannot be content with its present share of the market and leave its structure of production unchanged; the rate of growth would depend on the rate of growth of the world market. It must change its share of the world market or change its structure of production to achieve a higher rate of growth.

There is no doubt about the fact that the export markets have been unstable for primary goods. A part of the instability is generated from the supply side. This is true especially for crops with long periods of maturation. Below is a Table indicating combined fluctuations in volume and price.

1956-59 Average Year to Year Fluctuations in the Value of Exports

Product	Percent
Indonesian Rubber	15.3
Pakistani Cotton	67.3
Philippine Abaca	10.3
Indonesian Tin	43.8
Thailand Rice	9.6
Indonesian Petroleum	2.6
Ceylon Tea	0.1

The degree of instability in the value of exports has been less since World War II than before for the products of underdeveloped countries.

1920-38 Average Annual Fluctuations in Value

Product	Interwar Period	Postwar Period
Natural Rubber	33%	30%
Cacao	19%	17%
Tin	26%	14%
Copper	23%	15%

There is indeed a disturbing degree of instability in export earnings of the underdeveloped countries which is partly due to fluctuations in supply because of crop failures and other disturbing internal factors, such as civil war. International war is also responsible to a great degree for the fluctuations in prices. Some developing countries have expanded certain types of production in order to supply the war and stockpiling needs of belligerent countries. When the threat of conflict subsides, the prices of these products go down. The instability of prices is a problem that requires some kind of direct policy intervention. It is possible to have an international stabilization scheme that would take into account the prospect of war.

The unfavorable trends in demand for primary products is the most serious aspect of the foreign trade problem and the most clearly calling for direct policy action. A number of the major exports of the underdeveloped countries are being replaced by substitutes developed by the technological processes in the developed countries. Improved techniques in production also permit the use of fewer raw materials. Improved technology in the developing countries allows them to get more production with fewer workers.

The outlook for Philippine abaca and for all vegetable fibers is poor. Their major use has been in making ropes for ships, but not steel cables and synthetic fibers are better for ships. The policy in the Philippines should be directed to removing capital and labor from abaca production into something more useful. The same is true of coconut oil which is being replaced by corn and soybean oil. New lines of production should be selected with a view of whether or not such foreign exchange is needed to get started.

There are mixed prospects for natural rubber. The experts say that it must expect a declining share of the world market for rubber, but if costs are kept down by replanting with improved strains, the decline could be kept low enough so that total sales will increase with the expanding market for rubber from new uses.

The good Latin American coffee is losing its demand to the poorer African coffee because of the technological change of the development of instant coffee.

The United States is committed to participate in an international stabilization program in Latin America. This program should not be limited to Latin America because it is not possible from a technical point of view to have stabilization for one area alone.

The big problem in setting up this kind of program is to distinguish between fluctuations and trends. To stabilize the price at a peak level and to guarantee that all produced would be bought at that price, would be bad policy because it may be buying worthless products and not reallocating resources to products with real value. It is not easy to discern what is short-term fluctuation followed by a rise and what is long-term trend due to technological change or change in tastes.

Stabilization programs must mean stabilization around a long-term trend, but it is hard to determine where the trend is. Any decision as to the level of stabilization is of fundamental importance to the exporting and the stabilizing countries. The responsibility for such a program must be an international one, and not just that of one country alone, because of the danger of increasing friction between the industrial and the developing countries through unpopular decisions.

The best proposal for an international stabilization program is between the lines of the GATT report, Trends in International Trade. Under this program the decision as to where to stabilize the income of the producers in a particular country would be left to the government of the country. The International Monetary Fund would undertake to lend foreign exchange to the country against stockpiles valued at a predetermined trend price. It would be necessary to determine the trend of the prices on the basis of the best information and analysis by the country and the International Monetary Fund. Any country could pursue its own policy of stabilizing domestic income, and the IMF would lend 90% of the stockpile valued at the predetermined trend price, so that development plans would not be endangered by temporary fluctuations in foreign exchange. The forecast of trends would have to be revised regularly. If producing countries increase their production and stockpiles, then the trend price would be revised downward, and the stabilization level would go down also. With overproduction, the average price goes down so that the value of the stockpiles for stabilization loans would go down, and overproduction would be punished. Under this program, the necessary long-run contraction in production would result.

The amount of change in the structure of production required to stabilize prices and demand would be paralleled by changes in the structure of occupation. There would have to be mobility and training in the manpower sector to make the program a success.

6. AGRICULTURAL ASPECTS OF DEVELOPMENT POLICY: The strong interest in agricultural development problems made it desirable to present a preview by the Seminar Leader of the land question within the framework of this course, although a subsequent segment of the seminar was exclusively devoted to this area.

Mr. Sobel: Economic history indicates no nation has achieved a high standard of living with more than 40% of its labor force utilized in the agricultural sector. With the exception of some Latin American nations where in some cases the percentage of the labor force in agriculture is 50%, it is not uncommon elsewhere to find 70% to 90% in agriculture. In general terms the proportion of persons engaged in agriculture varies inversely with the levels of income and well-being. Identification of an underdeveloped country's status in terms of a high proportion of the population in agriculture is partially correct; however, it also represents what may prove to be a dangerous or misleading over-simplification,

since the high proportion of the population in agriculture is more likely a consequence than a cause of the particular traditional patterns prevailing in the country.

In developing societies, there is sometimes a tendency to assume that output would not be reduced substantially, or at all, by a transfer of the abundant human resource from agriculture to industry. This assumption, depending upon the country and its pattern of development, may not be valid in terms of its existant technology. Without a change in technology economies cannot necessarily transfer human resources from agriculture to industry without suffering losses in total output or at least in insufficient increase in total output sufficient to justify the transfer. In order to shift a human being from agriculture to the urban sector, certain resources are involved which necessitate an increase in agricultural output to assure that the transfer will be accomplished without harm to the over-all economy. For example, the individual moving from one sector to another must still be fed in the new sector; but the transfer of food must also be made, calling for increased transportation and marketing facilities. In sum, it should be kept in mind that increased agricultural productivity is not an automatic result of the transfer of resources.

Changing agricultural technology implies more than its mere mechanization. First of all, the change must be made <u>gradually</u>--reducing the labor intensity gradually rather than suddenly, as would happen if rapid mechanization were adopted. Far from absorbing any portion of the growing labor force, it can be predicted that agriculture in developing countries will require even fewer workers in years to come. If development is successful, this is even more appreciably true. There seems to be every indication that given technological progress, even expanded demands for foodstuffs can and will be met by a small, technologically more literate labor force exercising a higher level of skill; this skill including decision-making or entrepreneurial skill. In fact, much of the change in agricultural technology is the result of a more rational response to the changes which go along with development. One may say that this more rational response comes with the movement from the traditional society to the more advanced stages. As a result, the secular problem of agricultural adjustment in most parts of the world promises to be one of creating in other sectors appropriately productive occupations for former agricultural workers. While ultimate diversification would appear to be the long-run goal of every developing economy, one must maintain that in achieving the pre-condition of take-off stage, economic policy makers may have to concentrate, or at least devote initially, considerable resources toward improving and increasing productivity per individual in agriculture.

This is more easily said than done. In many developing countries the traditional sector has typically been the one where resistances to change are most deeply rooted and hardest to eliminate. For instance, focussing attention on India and Pakistan, this failure to realize greater agricultural potential is no accident. Productivity in agriculture can be increased only by vast expenditure of resources with many arguing that at least initially these will have to be financed by the governmental sector. So far, most governmental investments in these countries has been in import-substituting industries. An effective mechanism would include provision for moving such inputs as fertilizers and insecticides to the right spot at the right time; establishments of large extension services to teach the peasantry more modern methods (not capital intensive) and to <u>break down cultural resistances to their adoption.</u>

Crucial to the development of agriculture and industry in the initial phase of growth is the appropriate provision of credit. This provision may be related to the generation of the appropriate type of credit facilities and the formation and growth of institutions which will enable the transfer of savings into investment. In many cases the non-existence of these facilities and the lack of an institutional framework for encouraging savings have been retarding forces.

In most countries lack of knowledge of technical opportunities and scarcity of entrepreneurial skills by farm proprietors have operated against any development of private accommodation to medium and long-term capital financing for agriculture. Money lenders often operate at high interest rates in performing the short-term financing functions. Although in many cases, with the extension on a more or less continuous annual basis of short-term loans the money lenders are actually giving medium or long-term credit, it is at such high interest rates that it discourages anything but short-term use. The uncertainty of land tenure compounds the difficulties by preventing peasants from offering collateral. However, since credit institutions cannot expect to be allowed to carry out widespread foreclosures, the relative improbability of productively employed loan funds and not the lack of collateral is a prime deterrent to private loans.

The concept of supervision of credit in agriculture has been gaining in application. The essence of this technique is the inclusion of provision for technical assistance so that borrowers can develop the power to repay the loans that they contract. If funds that are being made available are to serve as lubricants in the growth process, programs of supervised credit need careful administration from technically qualified groups. These groups must administer on a large scale such services as: technical guidance, provision of necessary supplies, and operation of marketing and storage outlets. The latter is held to be necessitated as much by the peculiar tendency of farmers to regard public loans as grants as from the need of protection from an unregulated market. There is a question as to whether there is a sufficient supply of manpower with skills and the specialized know-how needed for effective administration of the program.

Foreign supplied credits, sometimes founded by the Export-Import Bank, as in Brazil and Argentina, are one of the major sources of credit for industrial development. In recent years a new form of credit has combined private domestic, private foreign and government funds. This is the International Industrial Development Bank or Corporation which has played an increasingly important role. Development corporations without the aid of international organizations, generally in South America, are publicly administrated.

Whenever the World Bank has assisted in a development corporation, it has insisted on its being privately controlled in order to minimize the danger that politics will influence decisions. Private ownership is supposed to insure the freedom necessary to develop a permanent career staff. In considering a loan, the International Bank looks at: the local demand for industrial financing, the local capitalists willing to finance the project, capable and objective personnel to be a nucleus staff. Since it lends in maturities in excess of five years, its backers can expect real profits only after a significant time.

International Development Corporations start out as retailers of credit, but typically look to the day when they can sell their own securities on the world or local market. In order to achieve eventual ability to have its credit accepted more readily, it may concentrate too carefully upon compiling a record of profitability so that it concentrates on leading entrepreneurs that have proven themselves. This tends to compound the already existent danger of monopoly in given developing economies. To avoid this, Pakistan has blocked out the field of development in which the bank must operate.

The banks that have actively explored investment opportunities have had considerable success. An important role of banks in this connection are their activities designed to develop capital markets. By selling participation in their loans to successful enterprises, they have helped to develop debt markets as well. Development of security markets relates to and depends upon the establishment of public confidence in the management of business enterprise. To create such confidence is the functions of the management, and it is also a result of entrepreneurial responsibility toward stockholders, and of the reasonableness, extent, and timing of regulations of stock and bond markets by the government.

Discussion (based on a question dealing with banks in the United States).

In the United States all of the banks are private. Loans to agriculture, however, may be guaranteed by the government. The government also provides technical assistance to the farmers.

Mr. Onfray: In Chile the privately owned banks make loans to the large landowners but do not provide the kinds of credit needed by the small farms. The government provides various loans that can be used by the small farmers, such as chattel loans. There are also organizations of credit cooperatives.

Mr. Fonseca: In Brazil the banking units are national in scope. The banks belong to various families. Some loans are provided to the small farms. The pattern of investment, however, is unbalanced with the majority of the capital going into Sao Paulo. There are credit institutions designed to give credit to particular industries.

Mr. Habed: Nicaragua has three kinds of banking institutions. The National Bank which is financed by the government, the Bancos Particulares, which are privately owned, and the National Development Institute which has international financing. The private banks require guarantees for their loans and specialize in short-term industrial and commercial loans. The National Bank deals in both agricultural and industrial loans. There has been in the last six years an increasing desire on the part of the people to save. They have started banking accounts but have restricted them generally to the National Bank.

Mr. Martinez Gomez: The Dominican Republic has private banks and foreign banks which lend only to merchants and never to beginners in industry. The borrower must have guarantees and collateral. There are also Reserve Banks and Agriculture Banks. The Agriculture Banks make low interest loans to farmers and also loan certain agricultural materials. In order to guarantee

that the farms will benefit from the loans, they must be repaid in the particular agricultural product for which the loan was made.

Mr. Carvajal: Ecuador has both public and private banks. The private banks,with only a few exceptions, give short-term loans for investment in industry, agriculture, and cattle. The Development Bank belongs to the government. It is not effective in giving service to the people because it demands guarantees that people wishing to initiate industry cannot give.

7. INFLATION AND THE COST OF LIVING: In discussions related to the theories of balanced or specialized (unbalanced) economic growth, and the lectures dealing with foreign trade, the problem of inflation was repeatedly discussed by participants. The following summary is a digest of their remarks and the Seminar Leader's observations.

Mr. Onfray: Chile has always had inflationary tendencies. But after World War II inflation became so alarming that the government had to take measures against its causes. These cost of living figures show how serious the problem is.

COST OF LIVING INDEX

1928=100

1950	1074.5	
1951	1314.0	
1952	1605.5	
1953	2012.2	
1954	3465.8	(almost 80%)
1955	6071.8	(almost 80%)
1956	9469.9	
1957	12612.2	

The country has had difficulties in its balance of payments and instability in the income of its basic products, copper and nitrates. There has been fast industrial development without parallel improvements in agriculture and transportation. There has been an increase in the population because of declines in the death rate. The government has extended social services without providing for adequate revenue to pay for this, thus causing large increases in the money supply through deficit financing.

Economic growth in Chile has been lower than the average in Latin America and somewhat less than that of Columbia and Venezuela,which have a greater monetary stability. From 1945 to 1955 the average increase in per capita income in Latin America was 3.4%; in Chile it was 2%; in Colombia 4.5%; and in Venezuela, 4%. Also, industrial growth on the Continent between 1950 and 1955 shows a median increase of 28%, but still it was 28% in Colombia and it was only 16% in Chile. The percentage of real increase in government investment per capita between 1947 and 1954 in Chile was 16%; in Honduras 253%; in Peru 233%; and in Costa Rica, 294%. Likewise, Chile's economic growth does not compare favorably with that of the industrial countries. Between 1948 and 1955 the United States improved its per capita investment by 32% with only a 10% rise in the cost of living; Switzerland improved by 22% with

a 7% rise; Germany improved by 295% with a 10% rise.

The Government of Chile has moved to take measures against inflation. The figures show that it has been successful up to a point. The stabilization program used German, French, Greek, and Philippine experience. Chilean anti-inflationary programs consist of wage and price controls combined with a restrictive credit and monetary policy.

Mr. Mendizabal: Up to the time of the Chaco War in 1932 Bolivia had relative stability. The Chaco War, however, caused almost a total crisis which was very difficult to counteract. The situation has become even more acute since World War II. The nationalization of the tin mines in 1942 caused the problem to snowball. Inflation was a great problem until 1956, caused by the necessity for the government to compensate the miners who had been discharged from the mines and to maintain surplus workers and replace old machinery. In 1956 the crisis reached its peak and the government took steps for monetary reorganization.

In Bolivia vital wages are established by the National Commission of Planning based on studies of the Ministry of Labor. The deficit between the workers' wages and the sum needed for survival is made up by bonuses. Government employees earn even less than the other workers.

Mr. Tijerino: In Nicaragua the cost of living index declined between 1955 and 1961 by approximately 9.4%. The money remained stable. The minimum wages are established by Labor Courts and by Commissions of Minimum Wages in the provinces. They are readjusted according to contracts.

Mr. Sobel: Cost of living indices have limitations. The use of 1928 as the index year in Chile presents problems in measuring the amount of inflation. The relative importance or weight factor of the different items consumed in Chile should have changed since 1928. The distribution of income should now be different so that the old weights are not valid any more. There should now be more products available to consumers.

If people are rational and try to get the most from their income, they will substitute cheaper for more expensive alternatives for obtaining essentially the same services. They will change their consumption patterns as new products emerge or as some products become cheaper. If the change in consumption patterns is in the direction indicated by the rational desire to get as much service utility out of a given income as possible, the index tends to overstate the real increase in the cost of living. This type bias can be of great significance over a period of time, especially when rapid development has taken place. Israel is a good example of this type of bias. The base year for its cost of living index was established as of 1951-52. At that time Israel was in the beginning stage of economic development and was characterized by a great degree of austerity resulting from its rapid admission of new immigrants. There was at best a limited supply and choice of products. In the period between 1952 and 1960, because of the removal of many import restrictions and the significant increase in output, nearly all products have become readily available to Israel. The cost of living based on the 1952 consumer mix shows a rise of 245%; however, other economists using

a new consumer mix have estimated that the real cost of living has actually been reduced. Because the minimum wages in Israel have been adjusted according to the index, the wage earners have received the benefit of a great rise in their real income. The effect of not adjusting the salaries of the while collar workers in a like manner has been to narrow significantly the wage differentials in Israel to the point of removing incentives for advancement above the semi-skilled labor level. Granting wage increases because of changes in the cost of living gives workers over a period of time a subsidy because of the inherent bias in the index.

Mr. Gaibor: In Ecuador there is no standard minimum wage for workers outside of the agricultural sector. In the last two years, Ecuador has had a 20% rise in the cost of living. Although there has been a lag in the increase in the level of wages so that the standard of living has declined, specific worker groups, such as laborers, have had wage increases. The professional and government workers, however, receive almost the same salaries they received eight years ago.

Wage earners through collective bargaining or changes in the minimum wage laws tend to get adjustments in their wages, as the cost of living rises, more quickly and readily (and in a higher proportion) than do salaried workers. As a result, the wage differential between workers, supervisors, and professional groups is narrowed. In many countries this has been of such magnitude that the wage structure offers no incentive for education or development of high level or medium level manpower necessary for economic development. It may interfere with the recruitment and development of adequate supplies of skilled laborers. For this reason minimum wages and their adjustment to changes in the cost of living are very important in manpower policy. Inflation leads to adverse manpower consequences in underdeveloped societies because the pressure from the workers tends to bring an adjustment in wages while there is no equal pressure to cause adjustments in salaries, so the desired transformation of the labor force from lower to higher activity levels is not encouraged.

Participants compared the price and gross national product movements in their countries and collectively compiled the table below:

Rates of Investment, Price Indices

and Average Rates of Change in Selected Participating Countries in GNP

Country	Rate of Investment	Base Year 100	Price Index in A Given Year	% of Annual Change in GNP
Turkey	18%	1953	232(1960) 237(1961)	6
Philippines		1955	137 (1960)	4
Thailand	15%	1953	126 (1961)	5
Pakistan	17%	1952	127	5
Formosa	14.4%	1952	196	8
Brazil		1948	750(1960) 1000 (1961)	
Sudan	30%	1952	155 (1960)	10
Viet-Nam		1949 (Unskilled)	230.7(1957) 235.8 (1961)	
		1949 (All Others)	258.2(1957) 257.6 (1961)	

Capital output ratio varied from two in Formosa to above three with the average level that of 2.5, as in Turkey.

8. TRADE UNIONS IN DEVELOPING COUNTRIES AND SOCIAL SECURITY:

Mr. Sobel: Virtually all societies have some form of organization called a trade union, but these organizations do not necessarily exhibit the same basic characteristics.

Organizations designated as trade unions in developing societies are mass political movements with worker membership base and a goal of restructuring society. Their focus is not upon particular conditions which relate to occupation. It is upon the entire society. This focus is both a natural and logical one.

As the worker moves from agriculture into the urban environment, certain forms of mutual protection and security tend to disappear. The village, tribe, or extended family afforded a mutual protection and social security system in which these entities provided means of caring for those who were unable to work. These systems disappear in the urban society. The worker has no security unless he can sell his services. The forms of protest arising from the loss of security tend to promote worker organizations as instrumentals of control in order to reduce the disruptions that give rise to protest. The Labor organizations feel impelled to emphasize political activities in order to obtain the passage of social security and social welfare legislation. Thus a political focus is necessary as a device to obtain from the society that social security that the village, tribe or family structure formerly gave.

Another basic source of protest trade unions serve arises out of changes in the individual's mode of existence which must take place with economic development. The new mode of existence is characterized by forms of living more structured than those prevailing in the agricultural society. It is necessary to commit the worker to the new society and this process results in the need for occupational ordering, worker discipline, and a lack of control by the individual worker over the particular circumstances of his work. He must be on time, work cooperatively with his fellow worker, and respond to the orders of his superiors. This resulting change in mode of existence and behavior in the work situation is likely to lead to protest.

Nationalism is still another form of protest expressed by trade unions. It appears either in colonial societies or in countries in which a significant share of industry is owned by foreigners. It is designed to either remove colonial control or in some cases, to achieve access to the better jobs for the nationals on an equal basis with foreigners.

In the United States the individual worker belongs to a local of an international union which is the basic unit of affiliation and identification. The locus of power is generally at the national level. The national union is a voluntary affiliate of the AFL-CIO, which is a confederation of autonomous unions and which generally has only the power which the constituent unions are willing to authorize. Since the focus is on the national union of the trade or industry, the political power of the confederation is very limited. For a political orientation to exist, the locus of power must be concentrated at the

top, at the movement level. This concentration of power at the top is typical in developing countries.

The difference in structure is partially due to the fact that workers in developing societies are not as occupationally differentiated. The labor force is generally not sufficiently cohesive or permanent in a particular industry to form a permanent organization through its own devices. The strategic skills necessary to organize a Western type of trade union are generally either lacking or are unduly diffused.

These movements are then mass ones, largely composed of occupationally unstructured workers with leadership coming from outside intellectuals whose concern is political power. All too frequently they are mass movements in the pockets of their leaders who have no trade union interests and who can be best described as "political entrepreneurs." These mass-instructed movements are powerful levels since they are concentrated in the urban centers where protest is at the seat of power.

In many developing societies there exists competition between different worker movements representing different political ideals.

Mr. Martinez-Gomez: In the Dominican Republic the goal of the emerging unions is to cooperate in the economic development of the country. The plan is to educate the workers in order to make them conscious of their rights and obligations. The worker is entitled to raises only if his production has equal value to the society as his wages.

Mr. Carvajal: The development of worker organizations was in two stages in Ecuador. In the first stage the employers were strongly opposed to unions, claiming that the workers were only looking for ways to press their demands. The organizations were led by intellectuals who were exploiting the workers in order to get rich. In the second stage the government, students, and other groups have been improving the training of the workers. They have been establishing reciprocal aid between the workers and the employers. Now the leaders are the most capable workers and do have a greater understanding of the rights and obligations of the labor movement. Progress is being made through the spread of the knowledge of the law among the workers.

Mr. Habed: In Nicaragua the union movement began effectively in 1954. In the new administration there was more freedom for the trade unions in educating workers. The movement began with the passage of Law 85, which is a part of our constitution. It granted protection to the mine workers who had previously suffered from illnesses contracted in their jobs without the benefit of medical assistance. In 1954 a social security program was enacted giving unemployment and disability insurance, maternity benefits, and payments to the family on the death of the worker. The program is financed by taking 3% of the workers' salaries, 6% from the employer, and from the government. In 1959 the National Institute of Housing was established, which provides housing exclusively to the poorer groups. There is also an Institute of Agrarian Reform. Since 1954 the leadership of the unions has not been by intellectuals from other social groups, but by people of the working class itself. They have been able to achieve social improvements by winning strikes. Most of the preparation of the leadership has been done outside of Nicaragua. They have had a good deal of success in obtaining

their goals and are creating a strong political force. The urban unions have been organizing peasant unions recently. This has led to a permanent invasion by the great mass of farmers upon the land of the large estates.

Mr. Rottenberg and Mr. Sobel: In considering the benefits to be gained from a social security program, it is necessary to remember that most of the cost is met by the worker himself by deferring the payment of a part of his wages. Even the "employer" contribution must be so regarded. Although virtually everyone assumes that social security is a good thing, it may at least be questioned whether it is better for the worker to receive part of his wages in the form of a service than to receive it all in money. By withholding part of the wage for social security, the society is placing a limit on the freedom of choice of the worker. In arguing against the merits of social security, certain assumptions must be made: the worker would spend the money more rationally; the alternative services are available in private form; it is possible to obtain the alternative services with installment payments; and unlimited freedom of choice for the individual is good. In reality the benefits of the general principle of social security are less questionable than the proportion of resources utilized for this purpose. This amount for collective consumption should be at a minimal level so that a large measure of freedom of individual choice remains. In determining the value of social security, it is necessary to see what the worker could buy with the money in the absence of this form of collective consumption. In many cases it would appear that the worker is able to get more services through the social security program than he could afford privately. Before social security and other forms of collective consumption, which greatly increased the demand for such services, the services either did not exist, or existed in forms which made them less visible for low income groups.

Mr. Fonseca: The history of the trade union (syndicate) movement in Brazil began in the late 19th Century. The first phase of the movement lasted until 1930. It consisted mainly of associations of mutual assistance with a limited amount of political participation. This phase was characterized by the participation of European immigrants with socialist, anarchist, and communist ideologies. In the era between 1930 and 1937, the trade union movement was spreading because of industrialization; 1937 brought the advent of the "New State" under President Getulio Vargas in which the government established a paternalistic program utilizing the unions as a mass base of support for the government. The government gave help to the unions on the condition that they grant it their support. The unions were kept politically immature by President Vargas. In 1954 the government was made more democratic. The labor movement gained more participants with more consciousness on the part of the workers.

The social benefits program of the unions is chiefly supported by a syndicate tax paid by all workers to the government. This is true because many workers who receive the benefits do not join the unions or pay union dues.

Only the government has the power to recognize a union. The government must have a representative present at union elections in order for them to be legal. The government approves the constitutions of the unions. This is a continuation of the paternalistic system.

The labor unions are fighting for wage and salary improvements for the professional classes and for a minimum wage for all laborers. They support the nationalization of business and maintain pressure upon the government to obtain vital reforms. These reforms are needed to forestall the threat of Communism.

The labor union movement is weakened by migration to the urban centers by rural workers who have low living standards. Labor laws themselves weaken the unions by granting benefits gained by the unions to all workers in a given occupation so that they feel they do not have to join the union. Many employers oppose unions fearing that they are Communistic. Others organize their employees into company unions to control and direct them.

Despite these impediments Brazilian unions have made considerable contributions. They work for fairer shares on the part of wage earners in the national income. They create and strengthen consciousness of class and individual rights. They make workers aware of the problems of underdevelopment. They help incorporate the needs of workers into the social and economic development plan. In the area of education Brazilian worker unions have, with the help of the manpower services in Sao Paulo, organized courses for educating and training wage earners.

9. <u>SOCIAL INSTITUTIONS AND ECONOMIC DEVELOPMENT - IMPACT OF RELIGION</u>: Discussed at various times during this Seminar have been certain basic forces--such as customs, values, modes of thought, attitudes and motivations--all of these grouped under the heading of "value elements". Institutions and values are so closely interrelated in affecting economic development that many people lump them together under one heading. Today's discussion attempts to analyze how institutional forces affect behavior and what the impact of this behavior is upon economic development.

The attempt to derive timeless and spaceless analyses without reference to particular institutions and values which affect economic behavior may result in analysis that is logically consistent but otherwise meaningless. For instance, one may well ask how relevant is Classical and other Western economic thought to the problems of contemporary, less developed countries where institutions and values differ so markedly from those in the West. Perhaps a more important reason for the inapplicability of Western thought and growth theory is that it does not treat changes in institutions and values as important, and even independent forces, in the growth process. Because in many cases we may even assume that since certain entities are titled similarly to some institutions in the West, they are, in fact, the same; and we, therefore, feel that the same titled institutions function similarly to those we all are familiar with when, in fact, many of these institutions function in a manner either inimicable or in proportion to growth. Many of these, therefore, may have to be revolutionized as a prerequisite of growth. What we basically need is to understand that institutions, or the setting itself, are subject to change as economic development proceeds.

Because agriculture weighs so heavily in many developing economies and as the initial thrust of economic development must generally, at least partially, be in this sector, we should first examine it to see how its growth is affected by institutional factors. It is universally argued that in many societies the agrarian structure is a hindrance to progress. Many societies are characterized by land patterns which concentrate ownership on large estates which are, in many cases, inadequately farmed by absentee landlords or rented out to peasants at high rent rates, these rates being so high that they constitute a barrier to the evolution of incentives which will improve agricultural output. This desire for increased output could lead to new methods and new techniques that would generate added production, but at the high rental rates that prevail the peasants would get so little of the benefits that it would not pay them to make the appropriate investments to improve agricultural output.

Similarly, it has been shown that in many economies inheritance systems, another aspect of institutional structure, resulted in undue division of the land into uneconomic small plots, sometimes widely separated. This institutional structure again retards economic development by making improvement in technology almost impossible. Agricultural reform is designed to change these particular institutions by either redistributing land or combining holdings so that larger, more economic, more easily reached holdings result. In general, in agriculture as it is presently constituted there is an unsatisfactory set of incentives for raising production which result from the generally prevailing institutional framework. Of equal importance in many societies, the institutional framework is not favorable to setting up incentives in the rural population to restrict population. It is obvious that dissolution of a feudal agrarian system is a prerequisite for sustained economic growth. We should, however, recognize that this is a necessary but not sufficient condition because the mere dissolution of the former agrarian system, without providing the additional capital credit and extension services to improve agricultural productivity, will not by itself raise output.

Economic growth requires a change from the traditional agricultural society to a modern industrial one. The degree of change required will vary from society to society with different resources patterns and different factor proportion endowments. But this change from the traditional agricultural society to a modern industrial society requires a transformation of motivations, social attitudes, responses to incentives, and institutions. It requires profound structural change in the industrial, geographic, and occupational structure of the population. One such obvious requirement is urbanization. This means that the so-called factors of production--land, capital, labor (especially the human factor), must be responsive to change in opportunities and incentives. These changes are encouraged in modern societies through such forces as wages, profits, and differences in money returns between alternatives. For these changes to come about people must respond to wages, prices, profits, and returns. If resource owners, including workers, do not respond to these incentives, then the transfer of resources which must accompany economic growth cannot take place. Such responsiveness seems either to be lacking or to be very weak in large segments of the population in underdeveloped economies. It may be that the most significant change that can be introduced is to evolve institutions which make people responsive to money inducements.

In fact, much of the task of the Manpower Manager will consist of devising institutions which will induce other human resources to respond to the needs of the economic development program. In many societies there are strong barriers to this sort of response. The main barriers seem to be those emanating from the extended family, tribal, or village societies which are literally self-contained units of self-sufficiency where material objectives and money gain are not the basis upon which people operate and make decisions. As long as a large proportion of a given population is subject to this so-called extended family system ethic, the response to economic incentives is either weak or lacking. All members in the tribal society have claim to support and share what output there is with the group. All members have some share in the decision-making, although the real decision-making may be concentrated in a few important leaders. This system, good or bad, provides at least a minimum subsistence type of security for all those who are willing to stay in it. These attitudes engendered by this system tend to offset market and opportunity incentives and thus to constitute a barrier to increasing mobility and the intensity of effort, as well as to the commercialization of agriculture which is the first indispensable step in economic development. Even where such institutions do not prevail, there may be esthetic factors which retard response to incentives. In many societies the value system involves subordination of material goals. Material goals in many societies are replaced by religious and philosophical ones. For a society to respond to the pulls and tugs of economic development, it must be responsive to material goals and objectives. It is the desire for such material improvements which induces economic development itself. If a society has a set of values, customs, and institutions which are antithetical to materialistic goals, then people cannot be motivated to perform by means of monetary incentives. In order for people to respond to the needs of economic development they must be acquisitive. Most religions emphasize non-acquisitive values. When religion operates as it did in Tibet (almost 50% of the national income went into the perpetuation of the priesthood), it retards growth. However, even in societies where these values are strong, the religious barriers tend to give way and become modified and interpreted in such a way as to coexist in the developed economy.

Mr. Tung (Viet-Nam): Christianity isn't against material values, but against material values at the expense of spiritual values.

Mr. Sobel: This type of conflict appears very early in the developmental process. The issue isn't whether religious bodies are against materialistic values, but whether they, in engendering non-materialistic values in the minds of the people, destroy or inhibit incentives to get more than they have, thereby hindering economic growth.

Mr. Farooki(Pakistan): Material values have led us into two world wars.

Mr. Siahaan (Indonesia): The example of India is this. Many people don't like to change their situation because they see in it their whole life. If you try to change it, you are against the philosophy.

Mr. Pombhejara: Economic development means structural changes in the society--so it means disorganization, breaking up existing value systems. With religious teaching you can soothe the minds of men.

Mr. Sobel: In traditional societies religion and the existing state of religious values may be a barrier, but if you introduce a change, religion can be reinterpreted. The fundamentalists will not change, but the more modern groups will follow the new interpretation. Under these conditions, if religion wants to survive and attract people, it finds it must reinterpret its doctrines. Part of the explanation of what happened in the West is that Catholicism would not adapt and the result was the Protestant Reformation.

Mr. Tung: There is no conflict between religion and economic development. What is in conflict is the interpretation of the religion. Some people interpret it fundamentally.

Mr. Sobel: Religion is one of the pillars of the traditional society and it is there that religion is interpreted most strictly.

Mr. Pangerapan: It also depends on the philisophy on which the country will base its policy for economic development. We have in Indonesia the philosophy of Unity in Diversity in which one of the fundamentals is belief in God. Based on this policy is the guided planning for the maintenance of unity.

Mr. Sobel: What we are saying is that in a traditional society religious interpretations are likely to be rigid and anti-materialistic to such an extent that they retard economic growth. These religious doctrines have given way or have been reinterpreted in all societies which have developed. One cannot argue that religion is a barrier to economic development in the long run. But at some levels of development religion may offer opposition to the change. Religion by incorporating certain acquisitive drives into its value system can favorably influence economic development at a later time.

Another factor affecting economic growth is the status symbols attached to certain types of activities. Certain activities, even though important to economic growth, may be considered inferior because the value system determining status may emanate in the traditional sector. Thus, in many societies, commercial activities as opposed to land owning have inferior status. This status influence is especially significant where a society has rigid class structure. If a given type of activity is associated with certain status symbols and the significant activities under the new industrial order have low status, these status symbols may retard economic growth.

Capital formation is basic in economic development. Capital formation requires savings and credit and transformation of savings and credit to investment in new physical capital. In any country this is facilitated by the existence of certain institutions, such as savings banks, bond and stock exchange, investment banks, and that structure produces dealers, brokers, and commercial bankers who comprise the money market and are vital to investment. The malfunctioning of these institutions may retard growth.

The extended family system, by limiting the rewards to the individual, even though he may bear the risk and cost of investment, also additionally retards growth because while the individual may bear the risk of a given undertaking under the extended family system, it is the entire family which has a lien on many potential returns.

As we study economic history, we frequently differentiate the levels of investment between developed and underdeveloped countries and relate them to the existence and vigor of the entrepreneurial class. The entrepreneurial class spurs investment through innovation and assumption of risk. Yet, why do vigorous and sizeable numbers of entrepreneurs appear in some societies rather than in others? A partial explanation may lie in the status symbols which reflect the nature of the values in a given society. The entrepreneur to succeed must be materialistic, bold, and adventuresome. These do not constitute ideal personality traits in every society. The types necessary for entrepreneurship are likely to appear in deviant or marginal groups outside the status and value system of the given society. Social attitudes which place high values on material acquisition and give social standing to people who possess material wealth rather than land is required to develop the entrepreneurial personality.

Population growth is a factor which must be dealt with if economic development is to materialize rapidly, since most of the increase in total output and a large part of investment may be necessary to keep up with the rate of population growth.

What emerges and what we can cite is the crucial role of values and institutions in economic growth. It has all too often been demonstrated, much to the chagrin of the so-called "experts", that it is hazardous to formulate policies for economic growth outside the context of the social and political forces in a given society which condition growth or are affected by it. As I have repeated frequently, there are values and institutions in all cultures, especially in traditional ones which are less developed economically which offer resistance to economic growth. The alteration or elimination of these constitutes a cost which must be borne in economic development. Failure to bear this cost may cause the foregoing of growth itself.

10. <u>A PREVIEW OF CONCEPTS AND SOME TYPES OF PLANNING WITH EXAMPLES FROM PUERTO RICO AND SEVERAL OTHER COUNTRIES</u>: As a result of previous discussions analyzing the significance of the institutional framework participants, faculty, and two guest speakers--Mr. Alvin Mayne and Mr. Evert Rimer, both from the staff of AID--took up selected aspects of economic planning. In substance, the discussions of these topics were reports on the status of development plans in several of the countries represented and some others. They also constitute a preview of the subject matter of a subsequent course on the relationships between manpower and economic planning. This is a digest of this preview.

Mr. Alvin Mayne, Agency for International Development (AID) -- Guest Lecturer: Mr. Mayne analyzed the experience gained in Puerto Rico since the inception of development planning during the governorship of Dr. Rexford G. Tugwell. He said:

"Puerto Rico has strong economic ties with the United States for it is within the tariff walls, within the monetary system, and able to receive the financial benefits available to the States. It is rather independent of the United States in that it has some of the characteristics that are foreign. It has a completely independent tax system. When the United States received Puerto Rico from Spain, it agreed to permit Puerto Rico to keep almost the entire revenue from taxes and to grant it freedom to make its own tax decisions. This has made it possible for Puerto Rico to provide tax exemptions for manufacturers.

"Puerto Rico developed rapidly after the Spanish-American War. Its economy was based on sugar production. During the depression in the United States there were serious complications: the economy was stagnant; 35-40 precent of the people were unemployed; economic development was needed. The United States sent several missions to investigate. They concluded that it would be best to expand agriculture. A work program was created called, "The Puerto Rican Reconstruction Corporation." Financed by funds from the United States, the Corporation brought together a group of young men from college who began to think of ideas to help. They developed the first development plan. They opened cooperatives in the rural areas and analyzed the characteristics of the Puerto Rican economy. The Plan of 1936-37 emphasized land reforms and enforced the old existing social legislation which had remained a dead letter on the statute books. The main result of the program was to bring together a small group of young Puerto Ricans that were to work within the government for twenty years.

"In 1942 Professor Tugwell became the Governor of Puerto Rico. Using his experience as the Chairman of the New York Planning Commission, he created an administrative machine which became the planning board for Puerto Rican industrial development. A Budget Bureau was created; the Puerto Rican Development Bank was instituted; various departments were organized using the young men with good training as a nucleus and the administrative element created by the experienced person.

"Puerto Rico still needed money to make its planning effective. World War II provided the solution to this problem. In 1941 when the United States went into the war, Puerto Rican rum replaced European whiskey. The tax from the rum became the development fund. The planners concentrated on infrastructure and incentives for private enterprise. An Economic Development Administration was created.

"Political leadership developed in 1948 when President Munoz of the Senate became the first elected governor. He was capable of making hard decisions, putting economic development ahead of social welfare. At that time Puerto Rico already had the elements necessary for development: administrative structure, financial sources, young technical leaders, and political leadership.

"The Puerto Rican plan was no single document with a careful handling of the pros and cons, but it was a pragmatic approach of trial and error. The rum industry gave rise to a national glass factory for bottles and a paper and box factory for cartons. The concept was to attract private enterprise by using the available funds as a catalyst. Factories were built and an office was set up in New York. The tax system gave new industries ten years of freedom from taxes. A six-year capital budget was set up.

"Adequate manpower was available for the program because the United States had expanded the educational system from the start, 65% of the population was literate, forming a base for the development program. In 1950 a more formal process of economic planning was initiated. The first Economic Planning Report gave a prospective analysis for 10 to 15 years."

Mr. Evert Rimer, Agency for International Development, also spoke about Puerto Rican planning experience but he addressed himself more particularly to manpower aspects. He said:

"Although Puerto Rico had a reasonably good base for manpower with a general education, the supply could not meet the needs at the rate of growth of the economy. There was a growing surplus of unskilled manpower so that there was a need to step up the educational system in the first four or five years of school. Because of the high dropout rate, the interest of the students had to be increased. There were too many vocational schools. The wrong kind of engineers were being produced while they needed mechanical and industrial engineers. To rectify this situation it was only necessary to publish the needs.

"In 1957 with the development proceeding, unemployment was still as high as it had been when the program began. It was discovered that the unemployed lived as well as the employed. There was a shift from underemployment in the subsistence economy to areas with higher wages but seasonal unemployment. The family made the shift possible by providing support during periods of unemployment. Analysis of the role of family support during temporary unemployment directed public policy to plan for higher productivity to absorb the unemployed rather than to concentrate on welfare programs to support them.

"Migration is still a problem or an advantage. Puerto Rico is losing important assets because the emigrants are those with better than average qualifications and education. The net migration was very small, however, in comparison with the total movement back and forth. Ten people travel for each migrant. Migration to the United States for a time is a source of good training and temporary income. It has developed consumer tastes to help the Puerto Rican market.

Mr. Siahaan: Puerto Rico has a great market for its products in the United States. A great part of its budget can be used for economic growth because the United States provides for several of its needs, such as defense. Why do people migrate?

Mr. Rimer: Although Puerto Rico does have free access to the United States market, we must not forget that it has to compete with the most efficient industries of the world, the American manufacturers. The rate of migration has dropped recently from that of the first years of development. In the 1950's Puerto Rico was at the height of the population growth. Wages on the mainland are higher so that workers have been attracted there.

The unemployment problem is still great in Puerto Rico, but the family supports those that are unemployed. If a survey were made in the Philippines, it might show that a number of people are unemployed while rising in status. Because they have family support, they are not in misery. The government could create projects to subsidize the use of unskilled labor by paying the cost of public works using the unemployed.

Mr. Mayne: The industries that developed in Puerto Rico had to be able to compete with the United States manufacturers. The policy to support the unemployed was through government taxes rather than by low productivity. To compete the industries could not pay more than the market wage.

Mr. Siahaan: Perhaps one of the causes of the migration is the over-emphasis on vocational schools. If the graduates cannot find jobs available in Puerto Rico, they may move to the mainland.

Mr. Rimer: That could be a reason for migration, but it is probably not. The main reason is the higher wages available on the mainland.

Mr. Farooki (Pakistan): In starting its first Five-Year Plan, the Pakistan Planning Commission recognized a politically dictated goal as the minimum acceptable per capita income growth. It was based on a political judgment as to that minimum rate of per capita betterment necessary to satisfy and motivate people, and to maintain policital and social stability. In general, the goals of an economic program are politically and socially not economically dictated. The amount and proportion of investment, as opposed to current consumption designed to yield a certain rate of growth, is a matter of political choice.

Once the choice has been made, the Planning Commission utilizes estimates of capital output ratios to determine the amounts of investment which would provide the given increase in output. The Commission provides plans to free the necessary resources by such measures as stimulating the volume of domestic savings, inducing forced savings via inflation and relying on private foreign capital or foreign aid.

The method of deciding which projects to choose is a problem of two-fold nature. The planners must first decide how much to allocate to each sector for growth and then decide which projects to finance within a given sector. Pakistan planners try, through cost-benefit analysis, to sift through the variety of proposals from the sectors. In the process they are constrained to make the sum of the individual demands add up to the total investments available.

Control of the response of the private sector can be described as the weakest element in planning. In the Pakistan economy the government can plan its investment directly and carry it out, but whether the private sector makes the required investment in accordance with the plan is a more difficult problem. Government policies consist of either exhorting the private sector to do its part or using measures of actively conditioning the business environment. In a free society the ostensible purpose of planning is not to replace the market mechanism but to make it more perfect. This is at times difficult. In Pakistan sixty percent of the investment is left to the private sector, but by a system of general controls, fiscal and monetary policies, and direct techniques of import and foreign exchange licensing, the government is able to exercise some substantial, but far from complete, influence.

Benjamin Higgins (University of Texas): Three principles have been enunciated by the Economic Commission for Latin America (ECLA) as the basis of its development policies: the long-range plan is a tentative approximation and it should be revised each year; sectoral plans should be put into effect by the appropriate agencies in the sector; and sectoral planning decisions should be reflected in the national budget decisions.

The Colombian Plan has been one of the more successful. It established a Central Planning Office to watch over the entire economic plan. The planning body was to choose, with cooperation from political leaders, a rate of economic growth and to check that rate against the emergence of obvious bottlenecks in the balance of payments, agricultural capabilities, domestic finance, extent of price stability and inflation, and in gross and key manpower supplies. Manpower supply has generally been one of the key factors overlooked in central planning.

After the Central Office indicates the rate of growth desired, the plan is turned over to the sectoral agencies which have their own projects and proposals. These agencies in turn may revise their project lists and then the sectoral agencies turn the individual proposals back to the Central Office to check for consistency and to be sure that the various demands are not greater than the resources available. The Ministry of Finance and the Central Office then work out a budget to support the Development Plan.

Colombian planning has had to deal with certain problems, some of a manpower nature which has made planning difficult. Colombia has lacked qualified personnel to make and then execute plans. There has been a need for organization of the sectoral agencies in such a fashion as to enable better coordination of rival sectoral bureaus and the division of functional responsibilities. Colombia needs trained personnel who have the technical capacity to institute effective proposals so that it can more optimally

utilize either available resources, or resources from external sources that could become available if the right projects were planned. The country's planning has suffered from the lack of economic information and the reluctance of private sources to explain either their methods or, in some cases, to furnish honest statistics. Government agencies have also withheld accurate data. The relationship between political measures and economic goals are not understood by the lower personnel in the planning program. The planning program needs to be tested against reality. The plan and the political decisions are not always consistent and coordinated.

Political measures, such as programs to train personnel with the emphasis on the improvement of the production of projects in the sectoral agencies, would help to overcome some of the problems which confront Colombian planners. Political measures could improve the program budget and national budget techniques by the establishment of priorities in investment and in the type of key manpower necessary for implementing the program.

Mr. Pombhejara (Thailand): Among the factors of production which are known to have decisive influences upon economic development, entrepreneurship is the most lacking in Thailand. So far, there has not been any research or study on this particular matter. However, from general observation, we may gather that the lack of entrepreneurship in Thailand is largely due to three main factors as follows:

1. In the first place, feudalism remained too long as an active force in the history of Thailand. Although our feudalism was somewhat different from its European counterpart in the sense that in Thailand there were no feudal lords who really owned the land and actually had supreme power over their tenants, the system has indeed retarded the growth of an entrepreneurial class. Under feudalism there were limited opportunities for trade and commerce to develop. The slow development of a modern communication system was one of the major factors which maintained the feudal system in Thailand until early in the 20th Century.

2. Secondly, according to the Thai value system with regard to social stratification, merchants and traders were considered to be lower classes. The social prestige of these people could not be compared with that of government officials, including the military officers. This value system as such still prevails even today. The reason for placing the merchant group at the bottom of the social stratification is the fact that those categories earn their living either by making profits, or by charging interest on the loans they make. The Thais regard such means of earning as something very disgraceful. Under these circumstances, an entrepreneurial class can hardly hope to form a sizeable segment in the society.

3. Thirdly, the characteristics of the educational system in its early stage also played a part in limiting the number of entrepreneurs in the later period. Basic or primary education was not sufficiently widespread, and higher education was completely geared towards the training of young people for the various types of governmental service. In the 19th Century Thailand went through a successful administrative and social reform--the processes which needed well-trained administrative and technical personnel.

Those young men who had education joined the public service and could hope to secure fast promotion and comparatively high income. There were still no incentives to drive people with talent into the business sector. The main source of supply of the potential entrepreneurs, that is, the state commercial college, has been in existence not longer than thirty years. At present, there are more than 6,000 students in all commercial colleges. Theoretically, these people are being prepared to become future entrepreneurs. Commerce, accounting, and economics were first taught in the universities about twenty-five years ago. Now, the total graduates in these fields of study are approximately 5,000.

It should be regarded as a blessing for Thailand to have her main development bottleneck removed by having attracted a good number of Chinese immigrants who came and formed an entrepreneurial class in the country. The Chinese were outsiders. They were given no rights to participate in the public affairs. They were not supposed to have any social prestige. Under those circumstances, they did not have to care about the techniques used to earn their living, and the Thais did not care about them either. The Chinese then started their business. Their community grew up very rapidly and spread throughout the country. The private sector of Thailand's economy was totally in Chinese hands.

This is just one way of developing an entrepreneurial group in the country where entrepreneurship is lacking. However, it must be remembered that this social development technique is applicable only in those societies where tolerance is given a very high value.

Mr. Sobel: Summary of the discussion on planning aspects.

Economic planning in one form or another has been taking place in most developing nations. Many developed countries also operate under a national plan.

The character and scope of planning differs from country to country. It varies from an almost solely hortatory type of plan which merely proclaims goals desired to a highly centralized type as found in the USSR. Soviet planning takes into account the total amount of resources, the productivity of each resource, and plans the utilization of each particular resource in terms of its over-all goals. It then tries to induce certain market processes so that the resources will flow in the direction of the plan. The Soviets use the pricing system in a fashion opposite to its role in our society. Here, price systems are allowed relatively free play, resources must be permitted to flow in accordance with price grades. Russia has reversed the process in which the price system is the result of unregulated market prices and operates to distribute resources. Planners in the USSR fix prices for resources and for final products. This will impel, they hope, resources to flow in the desired direction. The plans in other countries vary from the USSR type of planning to a system of planning through a central budget in which the government plans certain activities through its budget and then uses fiscal policies (subsidies in some cases) and a whole host of other devices to attempt to direct resources of the private sector in accordance with its general goals. This essentially is the French, Dutch and Norwegian system.

The impact of national budgetary planning and its relative success varies with the proportion of national income going through the governmental sector and the amount of direct government participation in utilizing resources through government ownership and control of industry. Other types of planning operate through a system of development projects. Planning may also involve sectoral breakdowns.

In general, economic planning may be defined as the forging of tools to produce an efficient and consistent policy set. It seeks to facilitate or hurry up market processes in line with general concepts of general welfare. This statement is somewhat contradictory because if market processes could be assumed to bring about the desired movements or flows of resources, in accordance with what is defined as general welfare, then one could argue planning is not needed. All planning involves varying degrees of suspicion of the market and some attempt to replace it. It is desired to wipe out differences between social and private costs and benefits. Planning is not limited to underdeveloped countries or to nations in the Sino-Soviet Bloc. Sweden's system of directing the economy through the Royal Labor Market Board is a form of highly developed planning. As an alternative definition, planning is any undertaking by the government which seeks to improve, under equity, the systems of reward and punishment for economic efficiency. Planning and market activity are not mutually exclusive. Some planning aims not at replacing, but at improving the functioning of markets. An illustration is the system of Yugoslavia. Despite formal Communism, the Yugoslavs rely upon the price system for a broad range of commodities. Whether public and private investment are complementary or competitive depends on the type of institutions which exist and the particular characteristics of the entrepreneurs in the economy, as well as its level of development.

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I. Problems of Labor Force Distribution

This segment of the Seminar was designed to analyze economic and social problems of transition which affect the labor force and traditional institutions. Professor Sumner Rosen was the Seminar Leader. He concentrated particularly upon policy analysis and the significance of fundamental concepts. In cooperation with Mr. Kemal Aybarsu, Mr. Rosen drew extensively upon the experience of Turkey (where Professor Rosen had worked as an expert advisor on manpower and labor-management relations).

Supplementing the presentations of the Seminar Leader, Mr. Lloyd Prochnow, Bureau of Labor Statistics, U. S. Department of Labor, provided a survey of techniques employed for measuring human resources potentials and manpower trends. His lectures presented a survey of methods and techniques applied in the United States, as well as in developing nations.

The significance of the problem of urbanization and its close relationship to housing and city planning made it desirable to invite Professor Robert Weinberg of the Graduate School for Public Service, New York University, as a guest lecturer to discuss problems of urban policy and administration on a corporative basis.

The main topics discussed by the Seminar Leader, faculty, participants, and guest lecturers were:

1. Unemployment and Underemployment.....p.36
2. The Concept of the Labor Market.....p.38
3. Some U. S. Methods of Labor Market Research.....p.44
4. Comments on the Status of Labor Market Research in Indonesia and Pakistan.....p.48
5. Developing an Industrial Labor Force.....p.49
6. Problems of Industrialization and Urbanization.....p.55
7. Urbanization and Some Technical Aspects of Urbanization.....p.59
8. Industrialization and Trade Unions.....p.64

In his introductory lectures the Seminar Leader called attention to the following over-all aspects:

The technology which is available to developing countries and the ways in which manpower and labor force are measured have been developed in industrial societies. They reflect the culture of these Western societies. There are differences between industrial and developing economies due to variations in culture and institutional patterns. These differences limit the applicability of Western techniques. In each developing country the applicability depends upon the amount of mobility in its culture; the intensity of distinction between population, manpower, and labor force; and the degree of categorization of people along occupational lines.

In industrialized societies there is a sharp distinction between population as a whole, manpower, and the labor force. In the course of economic development, manpower becomes increasingly less than the total population; and labor force becomes less than total (potential) manpower. The age groups that show the greatest change in the rate of participation are those below 20 and above 65, participation

in these areas being less in the industrialized countries than in developing countries.

In industrialized societies the occupations are defined by the industrial structure. In developing societies occupations are more man centered. Consequently, industrialized countries use job evaluation to determine the amount of work involved in a particular job, and they relate the scale of wages to the amount and character of work done, rather than to the needs or to the background of the individual doing the job as is generally the case in less-developed countries. Attempts to apply the approaches of industrialized societies too soon often lead to failure. Thus, Turkey has had no success in working out an American-type job evaluation program for its railroads because it has not reached the sociological stage corresponding to that of the U. S. In both developed and developing economies there is a mixture of job and man-centering, but it is more appropriate for occupations to be job-centered in industrialized countries because of their greater, more elaborate division of labor.

Developing societies which have little or no explicit class or racial discrimination make mobility easier to achieve. Cultural criteria for jobs are barriers to mobility. The smaller the number of criteria for a job and the lower the cost of meeting the criteria to obtaining the job, the greater the amount of mobility. But in a given case there is a question as to how much mobility is good for a society.

The history of the presently industrialized countries seems to indicate economic development has these effects on the structure of the population. In the first stage before industrialization gets under way, both the death and birth rates are at the biological maximum, with the births being just a little ahead of the death rate. With the start of the development process the death rate declines very sharply due to better health facilities and nutrition. The birth rate remains at the maximum, however. In the third period the birth rate declines to a level just above the death rate because of changes in the value system of the culture through materialism brought on by industrialization. In the final period both birth and death rates are low but each may be rising a little.

1. Unemployment and Underemployment

In an industrial society unemployment is the consequence of sharply drawn lines between participation and non-participation in the labor force. Underemployment also exists in industrial societies, for example, in the fishing industry in the Northeastern United States; but it is of lesser significance. Underemployment is a great problem in developing countries, however.

A fairly reliable way of finding visible underemployment is to discover whether people do not work the amount of time they would work if they could. This type of underemployment may be seasonal or chronic. The distinguishing feature of visible underemployment is the fact that when the workers are working, they make a full contribution to production.

A characteristic of visible underemployment is the fact that the distribution of labor tends to be diffused throughout the family. In periods of work the domestic chores are neglected, and in slack periods the family jobs are done. This represents the coexistence of a subsistence economy with market participation. There is a

systematic variance throughout the week or year from job to job. This gives stability to the social situation. Public policy should not aim at drastic change, but rather, at the establishment of conditions which promote a stable division of labor within the family into those permanently committed to the labor force and those permanently withdrawn into domestic work. This would provide for the beginning of a permanent labor force.

Disguised underemployment is chronic excess of labor supply over demand. Disguised underemployment takes place when there is a fixed and limited amount of work to be done and society has arranged that it be shared. At times - as in depression - industrial societies may deliberately encourage disguised underemployment rather than have unemployment. In developing societies it is a pattern of overcommitment of labor. To rationalize the system of production would result in a visible surplus of labor which would become unskilled labor or unemployed.

Analyzing underemployment from the "supply" side means attempting to estimate what would be the participation rate in the labor force if "normal," full-time work were available. Then there must be an estimate of the expected level of demand for labor, so that it will be possible to make labor-absorbing estimates. Experience in some countries has been that those investment budgets that have concentrated on large-scale investment have missed important areas of underemployment. With large-scale investment the level of employment is likely to be determined by techniques of production which will not permit a significant absorption of the underemployed. India's first five-year plan is an example of this type of planning. The strategy of development might well be directed to meeting the requirements of a higher level of income and commitment first for visible underemployment, then for disguised underemployment, and finally for potential underemployment.

The incidence of underemployment declines as total income in the society rises. Various public works programs may help solve underemployment in a developing society. Construction in particular may create opportunities to apply labor-absorbing techniques, impart skill, and provide social infrastructure without the use of foreign capital. Construction can be done on a local or a regional basis, as well as on a national basis.

Underemployment is a problem that becomes visible in the absence of a concept of a normal level of employment related to standardized hours and wages. These standards which change over time are established through the functioning of labor markets. The market mechanism brings together the supply of and the demand for labor and establishes standards which may be limited by law so that it cannot be below a level thought to be detrimental to the social welfare. The degree to which underemployment exists is related to the flexibility of the standard of hours and the standard of wages.

Although attempts to measure underemployment are relatively new and figures are rather sketchy, there is wide agreement that it is real. Underemployment is widespread because of cultural as well as economic factors. All aspects of underemployment are not bad, for it has been an historic device for keeping families together and for sharing the burdens of earning a living. It gives the society stability and continuity, and is preferable when there are no alternatives for labor. It is a real economic problem but not necessarily a pressing social problem.

Comments

Mr. Yeh: The Republic of China has a major problem in population growth having a great deal of migration from the rural areas to the city. In 1956 the government initiated a land reform program to redistribute the land to reduce the amount of migration to the cities. It is hoped that foreign and domestic capital can be used to create jobs so that the rural underemployed can be drawn into industry. They are developing primary industries and small-scale processing industries.

Mr. Siahaan: In Indonesia underemployment is regional. There are areas which are densely populated and areas which are thinly populated. The problem is to establish a more balanced distribution of the people. The government has plans to resettle some of the population on surplus land, to transfer migratory workers, and to make land reforms in Java. The government is faced with the problem of facilities for transportation and housing so that it needs technical aid to smooth this transfer.

Mr. Aybarsu: Turkey had surplus land at the end of World War II and set up a program to mechanize the use of this land which was not very successful. Today there are from 300,000 to 400,000 underemployed agricultural workers. The population is growing but the agricultural sector cannot absorb any more people. The increasing number of unemployed agricultural workers must find work in industry.

2. The Concept of the Labor Market

The classic economic purpose of a market is to compare and measure relative degrees of scarcity. For the labor market these will emerge in the wage structure, which indicates the relative degree of surplus and shortage among the various skills and occupations. Like any market the labor market should operate to correct both shortages and surpluses by providing the incentives and mechanisms for the people to change their occupations and, where appropriate, their locations. No labor market works perfectly however. Every labor market has important factors in it which limit or prevent the operations of these indicators and distort the apparent indices of surplus or shortages. These factors can be identified and deliberate policies adopted to mitigate or compensate for them.

In the United States a labor market is identified as a geographical area within which a man can change jobs without changing his residence. It consists of cities or geographical areas with transportation networks. The structure of the city is relatively stable and the limit of the market is set by transportation. A person regularly expects to do the same work in the same place within the physical limits of his ability to get work.

In developing countries this basic definition will not apply to the same degree. There are labor markets in which there is a regular movement over long distances. There is an unskilled floating supply of labor that has no residence. It moves in response to pressure or opportunities over long distances, so that it is more difficult to organize a labor market. The labor markets in underdeveloped countries are not sharply articulated by different groups and cities, and they change more rapidly. The problem of handling all aspects of the labor market by government institutions is more difficult and more costly. This requires the establishment of priorities for public policy, because the government cannot do all of the things that must be done. This means identifying those skills

and those groups who will play a strategic role in the industrial structure that is being established. Such groups can be identified theoretically as occupations whose supply is relatively inelastic, so that an increase in demand leads to a relatively greater increase in wages than in numbers. In unskilled jobs the supply responds quickly to demand, but higher up the hierarchy the elasticity is required so that an increase in demand is answered by increased income. The problem of labor market strategy is to identify these jobs in advance and to design policies to reduce the inelasticity. A second problem in labor market strategy is that of linkage. It is necessary to identify associated groups and to see that increases in supply for these groups take place in a balanced way. Associated jobs must be supplied in requisite proportions. Once a group achieves a high status, it may be necessary to prevent a key group or occupation from exercising its own control over the rate at which the supply increases, by licensing systems, etc.

There are examples of policies to serve each of these objectives. The simplest way to make the market work better is to provide information. This is the central responsibility of the employment service. It channels information to inform employers of the relative supplies of labor and to inform workers of the alternate opportunities of different kinds of work. Policy thus perfects the market through information. It may also perfect the market by actual movement. The government may provide physical or financial assistance for meeting the costs of moving.

It may be that specific kinds of labor are and will be in short supply, but society cannot primarily rely on the efforts of individuals themselves to provide the resources to furnish the necessary training and education to reduce the shortage. Rather, this is a collective responsibility to be met by society.

When the labor market fails to measure long-term costs and benefits, the state may want to impose taxes on earnings of some groups for which there is now a need, but which ought to be reduced in the future. The society may want to shift people to new occupations which will be more useful to the society as a whole. This policy would lower earnings and incentives in some occupations, and use subsidies to encourage occupations which have no demand at present but which will be needed in the future. The state pays people from tax revenues an equivalent of their present market value to induce them to prepare for a future industry.

For some groups geographical limits define a labor market, while for others one can visualize a national or even an international labor market. In the industrial countries the geographical scope of the market is wider in the occupations that are high in the occupational hierarchy. Employment opportunities for professional and technical occupations tend to have a wider geographical scope, and the job qualifications do not vary greatly within this wide area.

Markets for occupations more purely clerical or manual are more local in nature. Wage differentials induce less movement because mobility is lower. Wage differentials according to location will persist in these occupations, while the salaries of professional workers are nearly the same throughout the geographical scope. The subjective reason for this is that those with lower levels of skill have less education and access to knowledge of the opportunities. The objective reason is that the occupational hierarchy reflects the structure of earning power. The higher the earning power, the smaller proportionately is the cost of moving. Thus, the decline in geographical mobility corresponds to the decline in skill

and earning power. In any economy at any given moment labor markets for occupations have different scopes.

The government particularly must regulate the mechanisms by which the people can achieve upgrading from one occupation to another, because movement cannot be confined principally to the young as it is in the United States where the supply of higher jobs is filled by new entrants. This supply is not sufficient in underdeveloped countries. They must define qualifications so that upgrading can take place, for they need much greater reliance on this mechanism than on the formal education system to furnish the supply of high level manpower. The education system must serve as a channel for people in the labor force to upgrade themselves. The pattern in the United States is education first, then employment with the degree of a "once-for-all" education determining occupational achievement, at least as a normal limit. The developing countries need to provide a system for the people to obtain education after they are employed. They must give training to move the people up the occupational ladder at all levels, There must be an integrated linkage between the educational and working systems, so that people can alternate between them in a regular way which is not the case in developed countries where education is concentrated on higher occupations.

Automation has the immediate effect of reducing the need for semi-skilled industrial workers whose principal role is in machine tending and taking part in assembly operations. A secondary impact, delayed in time, is in the operation of the large service industries. The increases in jobs so far are relatively small and are largely in the electronics field. The greatest growth is in the semi-professional and technical jobs that require a great deal of education with training in mathematics and planning and design. There is a geographical effect in that the location of factories is more flexible. It can be located regardless of the labor supply because it needs fewer people and those used are on a higher level and are more mobile. There will be a relocation and decentralization of industry which will move closer to the supply of resources. Large cities may become obsolete. Industries become more capital intensive, so that labor requirements will decline as a whole, while high level requirements will increase.

For purposes of manpower planning, as in other areas of economic planning and administration, underdeveloped countries are presented with ways of thinking and techniques of administration which reflect the experience of developed countries. The data available to them thus may be couched in these terms of reference which may not always be the most relevant.

Under the Standard Classification System of the International Labour Organization, the occupational structure is broken into: professional and technical jobs; craftsmen and foremen jobs; and semi-skilled operators and service jobs. People are identified in terms of their functions respective of the sector of the economy in which they work. Abraham Jaffe 1/ has devised a new classification, based on Puerto Rican experience, more adequate to the needs of developing countries.

1/ Abraham Jaffe, People, Jobs, and Economic Development of Puerto Rico, supplemented by recent Mexican experience. Glencoe, Illinois: Free Press, 1959.

This system classifies occupations as: modern (determined by science and technology necessary for the operation of large-scale industry); traditional (identified with the pre-industrial level of development; and classic (found independent of the level of development). The older classifications of the ILO are less useful in identifying future shortages and in designing policies to handle them than this new approach. In the older system the same name was used to classify occupations which were entirely different levels of technology. A horse-drawn wagon driver and a truck driver would thus be placed in the same category, although one is traditional and the other is modern. The difference is in how the occupation is learned. If the worker uses his own tools, he is traditional; but if he uses the tools in an industrial working place, he is modern. The name of the occupation may be the same, but the content is different. By using the standards of the older classification, manpower policies may be lead astray.

Jaffe's People, Jobs and Economic Development presents his approach to the occupational classification problem in a changing - and modernizing or industrializing - society by way of the following chart. It applies only to non-agricultural occupations.

PUERTO RICAN JOB DISTRIBUTION

	1930	1950
MODERN		
Professional, technical, and kindred	1.6	2.2
Craftsmen, foremen and kindred	6.5	8.1
Service Workers	0.9	2.0
TOTAL.....	9.0	12.3
TRADITIONAL		
Professional, technical, and kindred	0.0	0.0
Craftsmen, foremen and kindred	15.1	8.0
Service Workers	6.0	5.4
TOTAL.....	21.1	13.4
CLASSICAL		
Professional, technical, and kindred	2.5	2.0
Craftsmen, foremen and kindred	0.0	0.0
Service Workers	0.8	1.8
TOTAL.....	3.3	3.8

He thus subdivides occupations into two classes--Modern and Traditional. This corresponds to the two coexisting segments of the economy and adds a third, so to speak, neutral category under the term, "Classical," which comprises occupations which will exist in a traditional as well as a modern economy.

Had one classified the same data according to the conventional ILO system which classifies by occupational activity and not by sector, the categories would have less meaning. The ILO classification would have yielded the following results: 4.1 (1930) and 4.2 (1955) for professional workers; 21.6 (1930) and 16.1 (1955 for foremen and kindred; and 7.7 (1930) and 9.2 (1955) for service

workers.

Discussion

Mr. Farooki: Would not use of Jaffe's classification system hamper international comparability?

Mr. Rosen: Yes, unless others can be persuaded to use this system also. I am not convinced that international comparisons should constitute the highest priority to economic planners.

Mr. Farooki: Won't the occupations be likely to shift from one classification to another with the passage of time? For example, from the classical to the traditional?

Mr. Rosen: Remember the definition. You must distinguish between a modern technology and a primitive technology. You can distinguish degrees of modernity, but I am troubled to think of a case in which an occupation which is created or structured by the industrial phase of development is rendered obsolete by further occupational change. It is true that the structure will change through industrialization. Is this change qualitative? Perhaps you have an example?

Mr. Farooki: Yes. The power loom weaver. This represents a change in technology because a power loom weaver is now a traditional occupation.

Mr. Qureshi: Changes in technology have made it possible for one weaver to look after more than one loom, making it a modern occupation.

Mr. Rosen: You disagree with your colleague then? The purpose of Jaffe's chart is to identify occupations. Take the case of a baker working in a variety of countries. In one country he may be classified as a pre-industrial worker whose productivity is based on his mastery of his skill. An American baker is in quite a different category. A tram driver may not change his category, having changed from driving a horse-drawn carriage to operating a trolley, but one occupation is traditional and the other modern.

Mr. Farooki: What are the merits of this system?

Mr. Rosen: You don't see any?

Mr. Bringas: Speaking of international comparability, what is modern in a certain country may not be so in a more advanced country. In the Philippines we import secondhand machinery from Germany. We do this because it is not as expensive as new, more modern machinery. In the second place, this secondhand machinery can serve a purpose in our country. In that case these comparisons would vary according to development in a certain country.

Mr. Rosen: I rather doubt that.

Mr. Bringas: What about automation and nuclear technology?

Mr. Rosen: Manpower people in the U. S. do not have the view that adapting the labor force to deal with automation on the qualitative side by equipping existing

factory workers for work in an automobile plant is in a different order of magnitude, as opposed to preparing illiterate workers for employment in a factory.

Mr. Bringas: In our country there is a certain sector which advocates demechanization in certain industries (construction) as much as possible, so as to create more jobs. Of course, this is limited to the extent that it be economical. When the switch to demechanization is economical, then it is believed to be a good thing.

Mr. Rosen: You have raised a question which in a way diverts us back to something discussed earlier. We should distinguish between the choice of technology at the beginning of the process. It is correct to make a careful comparison of the yields in comparison with the costs to the economy, but it is not good to reduce deliberately the level of productivity by increasing jobs. You are then giving up possible yields of earlier financial commitments.

Mr. Bringas: We are only applying this labor-intensive process where it would employ unemployed workers. We do not forego capital-intensive industries.

Mr. Rosen: I have argued in some of our earlier discussions that the fashion, which is now increasing, of advising underdeveloped countries to reduce their commitment to capital-intensive methods and to seek to economize on scarce capital can be carried too far.

Mr. Bringas: The private sector is not reluctant to invest, but they don't have the capital. What our government is doing is providing the capital to invest. The government is trying to develop a steel mill financed largely by the government, but with the remaining funds coming from the private sector. This will take years to develop. In the meantime we are developing related industries so that when the steel industry is fully developed, then the government will be ready to turn the industry over to the private sector. That is the policy of the government. It engages in industrial investments where the private sector is shy..

Mr. Rosen: This is the same as in Pakistan.

Mr. Farooki: Is Jaffe's classification only for the non-agricultural sector?

Mr. Rosen: Yes. These are non-agricultural occupations.

Mr. Farooki: What proportion of the total non-agricultural occupations are excluded?

Mr. Rosen: All of those remaining. The chart is confined only to men in occupations whose titles identify them as modern, traditional, or classical.

Mr. Qureshi: Economic history does not cover a non-agricultural sector?

Mr. Rosen: No. This is an attempt to bring out of obscurity occupations which are strategic for development. Their titles do not change; their characteristics do change.

Mr. Qureshi: How reliable are these conclusions?

Mr. Rosen: Jaffe says all occupations could be classified like this. Actually, this is a cross-classification system. Because it is experimental, because most

manpower authorities tend uncritically to live with the ILO Standard Classification System, I wanted to present an alternative system.

3. Some U. S. Methods of Labor Market Research

Mr. Prochnow: The Bureau of Labor Statistics of the U. S. Department of Labor has developed methods and techniques which rely heavily on economic analysis for projecting or forecasting U. S. future manpower resources and requirements. The Bureau's work in manpower forecasting developed only over the last 20 years, beginning with studies of employment outlook for selected occupations. A wide variety of industries and occupations has been studied and reported upon; a number of methods have been tried; and a body of experience has been developed. In addition to the forecasting work of the Bureau of Labor Statistics, the State Employment Services have made a number of studies covering the employment outlook for selected occupations in individual communities. The studies, termed "area skill surveys," have been designed to produce estimates in individual labor market areas of current and future labor requirements in selected occupations and to ascertain training needs to fulfill these requirements.

It is recognized that the manpower forecasts are not perfect, but they are meaningful in determining guidance for policy decisions, including training needs. It is necessary to review continually and revise the forecasts on the basis of new information. Because events of the future are dependent upon numerous unpredictable factors, it is necessary to limit the uncertainties for the purpose of social and economic events. These assumptions must be made to fit the situation in each country. In the United States it is assumed that: relatively high levels of economic activity will continue; the social and economic factors that currently affect growth will continue to affect it; there will be a continuation of scientific and technological advances; there will be no major catastrophic disasters or war.

In forecasting manpower requirements two techniques are most widely used:

1. The survey technique (Area Skill Survey)
2. The analytical method

Area Skill Survey

In the U. S. the area skill survey is carried out by State Employment Services and relates to a community. The scope of these surveys varies from one area to another. The main purposes of these studies are: to provide information on job opportunities in the area for use in employment counseling; to supplement information on area manpower resources for use in community employment development; to promote training programs in local schools and apprentice training, geared to the occupational labor requirements of the area; to stimulate local employers to evaluate their manpower needs and promote necessary in-plant training; and to provide a tool for local employment use in job developing activities.

A preliminary step in planning an area skill survey is to determine the occupations to be studied. Generally, consideration is given to shortage and surplus occupations in the area and significant occupations in the area which require more than casual on-the-job training. Also included are occupations which would be required for new expansion plans and occupations which are a particular problem or are of special interest in the area.

When the occupations to be studied are determined, a questionnaire is designed, listing the specified occupations. (To assure comparability of data, a description of each occupation is also necessary). The questionnaire generally provides for collecting data from the employers on total current employment, with detail by the specified occupations, and forecasts of manpower requirements for subsequent periods, such as two years and five years hence.

Information for the Area Skill Surveys has been collected in some areas by personal visits and in other areas by mail. Summaries of the data provide projections, or a basis for projections, of future manpower requirements. There is a survey of this type in progress currently for the metropolitan area of Washington, D. C.

In some of these studies, projections are based not only on employer forecasts, but also on projections of past trends in the area's industrial and occupational employment. In some studies replacement needs for each occupation were derived by the use of labor force life tables and information on age distribution by occupation collected in the survey.

Advantages of this survey technique are:

1. It is easy to administer.
2. It provides estimates of future manpower requirements quickly and at low cost.
3. It draws upon the employer's knowledge of activities and takes into account the company's plans for expansion and introduction of new processes.
4. It provides a good base for determining the occupational composition of individual economic activities.

Disadvantages of the technique are that very few employers devote any time to making extensive long-range projections of manpower requirements and tend to make hasty guesses. Frequently, employers are not fully aware of the country's development plans, nor their impact upon his establishment and his industry. In addition, development plans often provide for new activities. Since these activities are not currently in existence, their needs cannot be determined in a survey of existing employers. The result is that summaries of the employer reports often appear unreasonable. In some European countries they conduct similar type surveys but add one item. They ask the employer to supply projections of production levels. Therefore, it is possible to compare the employer's projections with an independent analysis of the industry's production trends.

Discussion

Mr. Pangerapan: Employers are not always aware how the development plan will operate or how it will affect them individually, so they sometimes make unreasonable guesses. In making such a survey in Indonesia, permission was received from the ILO to modify the ILO Job Classification System.

Mr. Tung: In Viet-Nam estimates of manpower requirements were requested for six months from the date of the inquiry. Few answers were obtained. Employers were asked to report the number of people who will be hired and also the number who will be separated. Replies were received in only 5% of the cases.

Col. Brotosewojo: Is it useful to standardize manpower requirements for certain industries by showing total manpower plus skills required?

Mr. Prochnow: In the U. S. we have what is called an occupational matrix--occupational composition patterns for all industries in the nation's economy. India has prepared a similar study for each industry, showing the number of employees in the different occupations or occupational groups by size of establighments. A useful project for an international agency would be to collect data on occupational composition patterns in developing countries.

Col. Brotosewojo: Recalling the organization of the army, is it possible to use occupational data by industry to determine manpower requirements for new plants?

Mr. Prochnow: Yes, but it should be noted that U. S. patterns are not necessarily applicable to other countries.

Mr. Pangerapan: There are projects now being carried out by foreign contractors in Indonesia, i.e., West Germany, Russia, and the U. S. (Morrison-Knudsen). It was surprising to find that M-K had no classification of manpower needs for their project. The West German and Russian firms both had such information, but it was based on their own countries' experiences and not necessarily applicable to Indonesia.

Analytical Technique

This technique is used by the Bureau of Labor Statistics in preparing long-range forecasts of U. S. manpower requirements. The method begins with the assumptions that an estimate of the labor force in the forecast year has been prepared and that some data are available on the structure of employment by economic activity at the present time or in the recent past. The first step is to make a first approximation of future total employment by economic activity, consistent with the anticipated increase in the labor force. A detailed analysis is then made of each important activity, taking into account anticipated changes in demand for its products or services, and anticipated changes in hours of work, arriving at an independent estimate of future total employment in the activity. The first approximations of employment are then modified in accordance with the results of the detailed analysis of each important activity. Finally, an occupational breakdown is derived of the future employment levels by applying appropriate occupational composition patterns with particular attention to occupations requiring specialized training or education.

Preparing the first approximation of future employment by economic activity begins with estimating total civilian labor force numbers in the forecast year. This estimate of the future civilian labor force is derived by deducting from the total labor force projection a judgment of the number of men and women who will be in the armed forces in the forecast year. In moving from the projection of civilian labor force to a projection of the number of workers who will be employed, it is also necessary to make an assumption as to the future level of unemployment. (For U. S. 1970 projections, it was assumed that 4% of the labor force would be unemployed; Italy estimated 3% of its labor force as being unemployed in preparing a 1964 projection). The estimated level of unemployment is then deducted from the total estimated civilian labor force to derive a projection of civilian employment.

Having derived an estimate of total civilian employment for the forecast year, the next step is to estimate the allocation of the employment to agricultural and non-agricultural economic activities. In the U. S. forecasts agricultural employment is projected on the basis of historical trends; projected agricultural employment is then deducted from the total civilian employment to derive a forecast of non-agricultural employment. This estimate of future employment, based on the detailed analysis, is then used to modify the first approximations of future employment: an upward adjustment in one activity must be balanced by a downward adjustment of another in order that the sum of future employment for all activities will be consistent with the forecast of future civilian employment.

Forecasts of employment by occupation or occupation group are obtained by applying occupational composition patterns for each industry to the industry employment projections. The Bureau of Labor Statistics has developed occupational patterns for the U. S. based on the most current data available. However, such occupational patterns must be examined when used for deriving forecasts to determine whether they require modification based on anticipated technological change.

Discussion

Mr. Rosen: The World Bank (International Bank for Reconstruction and Development) has done some work on occupational patterns on the capital side, but manpower requirements can also be derived as a by-product.

Mr. Pangerapan: All the participants in the Seminar are involved in the work of knowing how to forecast estimates of future manpower needs. It is difficult in Indonesia where no consideration is given to manpower planning. All that is given serious consideration is the capital and material needed. It is important for all participants to know how to make these forecasts.

Mr. Prochnow: If participants desire further information on this subject, I shall be pleased to meet with them. If I cannot provide answers to their questions, I shall try to arrange appointments for them with appropriate staff members of the Bureau of Labor Statistics. I should also like to emphasize that an economist must use the data he has, even though he may want more. He must be aware of conditions in his own country, its development plan, or at least what his govenment intends to do. He must consider these in reaching a final judgment as to what will happen. There is no mathematical or magic formula for arriving at this decision.

Mr. Tung: Forecasting manpower is also of utmost importance in Viet-Nam. More attention should be given to this subject in the Seminar.

Mr. Rosen: There is a tendency to believe that because you have a technique for doing something it will necessarily yield satisfactory results. This is not always the case. In every statistical enterprise in any country there are many cases in which very sophisticated techniques have led to wildly inaccurate results. Conversion of ideas into quantities is the crucial point. A person must be aware of the principles of the technique to make sure the technique is used correctly.

Mr. Rosen: Does anyone here have any ideas about IBM data-processing techniques in his country?

Mr. Pangerapan: Indonesia has one Remington computer used by the central statistics unit; other agencies also have access to it.

Mr. Prochnow: I should like to call attention to the fact that the use of data-processing equipment for statistical purposes must be related to costs. In many countries where labor is available at relatively low wage levels or where the equipment would not be fully utilized, it is cheaper to do the work manually.

4. Comments on the Status of Labor Market Research in Indonesia and Pakistan

Mr. Farooki: In Pakistan the National Planning Commission first found it necessary to have information on the human resources in 1954 when it was starting its first Five-Year Plan. The government applied for technical assistance from the International Labour Organization and received an advisor in manpower surveys from the United States and one from the United Kingdom.

The first survey (1954-1955) covered 5000 large establishments in the urban areas, asking for the present level of employment, intended level in the following six months, shortages of skilled labor, and intentions to expand employment. Later a manpower survey was made of the entire country because the information from the 1951 census had been made obsolete by in-migrations from India. A sample labor force survey was made to assess the extent of employment, unemployment, and underemployment in order to gain insights into the structure of the labor force and its employment status. The country was divided into three areas with independent samples taken from each: large urban areas (50,000+), small urban areas (5000-50,000), and rural areas. The survey covered 19,000 households.

Other surveys were made in 1957 and 1959. The latter improved the 1955 survey by including information on age, sex, educational level, and literacy. A new question was added: parents were asked what level of education they anticipated for their children, so that the government could estimate educational requirements for the future.

At six-month intervals the enumerator returned to the employers to check on the progress that had been made, and on future plans. The Planning Commission was apprehensive about the validity of the employers' employment plans for the six-month period. Employers had to be educated on the purpose of the survey. At first they had exaggerated their figures hoping to get credit and raw material concessions from the government. When they learned this would not happen, their estimates became more accurate.

The inquiry covered 9000 establishments employing 20 or more persons. To arrive at accurate occupational composition patterns specific jobs were carefully analyzed in each plant. The survey also covered technical, vocational, and professional institutions. Their "production" of graduates was compared with the demand schedule or requirements derived from the analysis of establishments. This comparison provides the basis for planning the educational programs of the educational institutions.

Mr. Pangerapan: Until 1955 Indonesia lacked basic data on manpower resources. Its most recent information was the 1930 census. In 1956 when Indonesia started its first Five-Year Plan, a picture of the pattern of employment was needed, and the National Manpower Survey was launched. Establishments with more than 100

employees were fully enumerated; those with 10 to 50 employees were taken on a sample basis.

In 1957 the government lacked information on the supply side that would give it insight into the labor force. It needed a labor force sample survey, so we set up a program to demonstrate and to train people in making the survey. We adopted and modified survey methods from the industrial countries in order to obtain results suitable to Indonesian needs. A survey was taken that was half rural and half urban.

In 1958 the government needed to know the pattern of unemployment which was serious in the urban areas. A survey of unemployment and of rural underemployment was made on the basis of a labor force sample in Java and Madura.

Inquiries of the employing establishments have not been too successful because there is a need to educate the employers to respond.. Since 1959 there have been inquiries of establishments employing 50 or more workers, but there has been a poor response. Only about 60% replied and their figures are not reliable. It is difficult for employers to make forecasts of future plans for additional employees because of the difficulty of getting the necessary raw materials. The economic pattern of Indonesia is one of rapid changes and great fluctuations in earnings.

Neither the Bureau of Central Statistics nor the Department of Labor has provision for obtaining labor statistics, so all such surveys are done by the Employment Service. The Employment Service, fortunately, is equipped with 80 agencies spread throughout the country, so that it can have an important role in trying to collect needed information. It has a labor market information program, but this cannot be carried out successfully because of the lack of equipment and funds. It does have officers trained in the methods of conducting surveys, but there is the problem of securing a continuous flow of information.

5. Developing an Industrial Labor Force

The Seminar Leader and participants discussed the publications of the Inter-University Study Group with particular emphasis on the book, Industrialism and Industrial Man by Harbison, Kerr, Dunlop, and Myers. The discussion covered several consecutive sessions. At the end of those sessions Mr. Rosen presented this summary of key concepts.

Recruitment is the essentially simple process of enrolling workers for employment. It may be "active" or "passive." The latter would describe the method used by many factories of simply posting a notice on the factory gate when openings exist. Active recruitment is a more elaborate process. It may be formal, through the employment service, or it may be informal, using existing channels to recruit workers. In some cases it may take the form of forced labor. Recruitment, unlike commitment, is not necessarily permanent. It may involve some cost to the employer for transportation, housing, etc. The more haphazard the process, however, the greater the costs are likely to be for both employers and workers.

Commitment represents the actual transference of the worker's self-identification from rural to non-rural employment. It can be visualized in four stages: (1) Temporary commitment takes place when a worker leaves

agriculture for a temporary period with the intention of returning to agriculture after raising enough money to meet a particular need. During this period he continues to identify himself with the village. If asked what his intentions are, he will say that he is doing the work in the industry merely as a sideline; that he needs the money. However, this process is to a degree irreversible because the skills cannot be unlearned. (2) Semi-commitment exists when people divide their time in a fairly stable way between agriculture and industry and depend on income from both. Industrial work often must be arranged to fit into the seasonal slack in agriculture. This can be a very important part of the total labor force, and it can continue for a long period of time. The costs may be high on the industrial side because of the turnover and absenteeism, but they may be reasonable from the point of view of the society as a whole. (3) In General Commitment, people become permanently members of the industrial and urban labor force. They identify themselves as members of the particular occupation or industry. There is a tendency to stay in one particular geographical area. They may send money home to the rural area, but they do not leave industry to work in agriculture. There is a permanent separation from the rural life. General Commitment is usually at low levels of skill, but it can be at relatively high levels also. (4) Specific Commitment is commitment to a particular firm. From the point of view of the employer this is the most desirable form. He wants to have stability in his labor force in order to reduce turnover and absenteeism. With Specific Commitment the employer is able to train his labor force for the particular occupation and for responsibility in his operations. It is possible to achieve this commitment early in development. Japan represents an extreme case, for once a worker is accepted by a firm, he stays for the rest of his life. When Specific Commitment becomes the case for large numbers of workers, it is necessary to develop rules that govern the relationship between the workers and the employer, in order to determine how the relationship will be severed and what the cost and obligation will be on both sides. These arrangements must be specified in some way. Every society has some degree of permanent commitment to a specific employer. In many societies government service is an example of this relationship.

Commitment can be too specific and specific commitment must be carefully timed so that it does not happen too soon. In a society in the process of change, it may impose costs on further development. In the United States over-commitment of people to a given firm or area represents high social costs in the case of declining industries. The immobility of the workers means a high cost in shifting them to another firm or area. This situation may also arise in economic development, as industries change location, character, or scale of production. The problem is to achieve the degree of commitment appropriate for the stage of economic development. It is necessary to avoid too much semi-commitment with high costs for the industrial sector, and too much specific commitment which makes it difficult for people to change their employment and residence. Manpower authorities may be under pressure from employers and others to achieve specific commitment too soon.

Advancement is the process of upgrading the level of skill and earning power of the industrial labor force. This comes fundamentally through training. In developing a program of advancement there is the problem of allocating the costs of training. Professor Harbison would shift as much as possible of the burden of training to the employing institutions. But in the early phases of development, the benefits from the training of specific people may not accrue to those who have borne the original costs. Policies which require employers to

perform specific training programs may have limited usefulness for the economy as a whole. When the labor force is still rising, and this is accompanied by substantial movement of the people, the skills acquired on one job may have only limited application to another, tending to limit the usefulness of the worker.

The process of Maintenance entails two kinds of costs. There are the direct costs to protect the industrial workers from accidents, sickness, unemployment, and poverty in old age. All countries must provide ways to meet these costs as the industry develops. The problem is to determine how elaborate the program should be. The question is whether it should be specified in advance of the need, or should it develop as the need arises with the pace of evolution. Countries should avoid excessive lag or lead, though if one must err, it is better for there to be a lead. If the program is too advanced, it may have limited flexibility in meeting the financial needs of the different phases of the program. These direct costs must be allocated in some way among workers, employers, and the society. When these programs benefit everyone, the costs may well be assessed on the whole society. When the employers profit most from industrialization, the costs can be assessed on them. In countries where the wages are high, the employee can share the cost. This is a matter of social philosophy.

Analysis of key aspects of development led to this discussion of measures, programs, and policies in participating countries.

Mr. Rosen: Countries often use the labor contract as a labor-committing device, but it is not well suited to this purpose. In the U. S. some highly specialized people, scientists for example, sign labor contracts. Even in these cases they do so only because the employer desires to commit them. However, if the scientist should decide to leave the employer, the only consequence to himself would be the loss of wages.

Mr. Ibrahim: The labor contract in my country (Sudan) quotes the number of years to be worked, indicates the rates of pay, etc. If, before the stipulated period ends, the employer runs out of work for the employee, he must compensate him for the remaining time in the contract. If the employee, on his part, fails to fulfill the terms of the contract, he stands to lose the benefits provided and may also lose the right to be repatriated to this country (in the case of a foreign national).

Mr. Rosen: Commitment represents a transfer from the subsistence life to the labor market. Its first stage may be said to be psychological. Will the contract deepen this commitment? For example, in Turkey the work contract was an extension to industry of a legal instrument developed in quite another context, namely, the commercial relationship between parties. It was a civil device to replace the religious courts. The work contract is a by-product badly designed for this purpose.

Mr. Siahaan: In our country we should make a differentiation between conditions in the colonial period and today. Before independence the government protected the entrepreneur, not the workers. At the time when the workers were needed, a contract was signed with them, binding them to their jobs for the full time. If they left before the completion date of the contract, they were put in jail. Now the government protects the workers so the process of recruitment is passive.

When a difference arises between the employer and the worker in private enterprise, the government will arbitrate. If it is the fault of the employer that a worker leaves his employ, the employer must pay him three months' wages. If it is the fault of the worker, then he leaves without compensation.

Mr. Rosen: Commitment may emphasize the "stick" approach, which assigns punishment for failure to abide by an agreement; or the "carrot" approach which provides a reward for fulfilling the terms of the contract.

Mr. Pangerapan: Mr. Siahaan pointed out that the situation in Indonesia during the colonial administration differed from the present situation. During that period manpower was handled by the stick approach (forced labor). Later this was changed into the labor contract, but with the stipulation that if workers left their jobs, they would be put in jail. This provision still applies in some cases, such as recruitment of labor for the plantations in the outer islands. Recruitment is handled by the Department of Labor. The plantations have to apply for workers through the Employment Service, and it arranges for the contract. Everything is outlined in the contract. This arrangement is growing more important, especially now when we are having to face mass recruitment for the plantations in order to increase their productivity. An eight-year program has been set up for the national plantations (government operated). The intention is to recruit 200,000 workers for two years in Sumatra. This recruitment will be accomplished according to standards established by the Department of Labor. The contract will be arranged between the employer and the workers and supervised by a labor inspector and the Employment Service. The contract will not be approved or enforceable if wages are set below the standard or if the housing is not adequate, etc. These things are determined by the labor inspector. He also selected the workers to be recruited to work under the supervision of the employment inspector. Workers have their foreman who is a labor recruiter. He is chosen by the Employment Service and represents both the workers and the Employment Service. The Department of Labor regulates and delegates to the foreman the task of finding suitable workers.

Mr. Rosen: Does the Employment Service have facilities to accomplish this?

Mr. Pangerapan: Yes. There are offices in all the provinces.

Mr. Rosen: The only way you can tell whether conditions negotiated in the contract meet the workers' standards is if the workers appear for work. Is there no other way for the workers to veto the terms in the contract negotiated by the labor boss and the plantation?

Mr. Pangerapan: The problem that we face in recruitment is to allocate suitable workers for the available employment. The only man who knows where workers are to be found is the one in the villages--the foreman or labor boss.

Mr. Rosen: You have delegated to him the decision as to what conditions are sufficient for the workers? What is the magnitude of recruitment for the plantations?

Mr. Pangerapan: Last year there were 2000. We are limited because of difficult transportation and housing. If they leave their work, they are put in jail. Now in all big economic activities collective bargaining agreements are concluded with employers. The government is encouraging collective bargaining agreements

in the American sense.

Mr. Rosen: To the extent that your development realizes ways of assuring minimum standards for workers, to what extent can you turn over this task of regularizing employment to the participants themselves? Does the government take steps to make sure these private negotiations meet some standard which the government thinks necessary? How can each side protect itself if the other side breaks the agreement?

Mr. Pangerapan: First, we have the labor law regulating all conditions of employment, including collective agreements. If there is a difference between the workers and the employer in a plant employing 100 or more workers, the workers may choose two representatives and use them as mediators. If a settlement is not reached, the case will be brought before a labor court. If no settlement results there, the issue is taken before an arbitration court whose decision is binding.

Mr. Rosen: That is like the Turkish system.

Mr. Bringas: The situation differs in the Philippines. Our Court of Industrial Relations deliberates on these matters, but it is not final. Final appeals can be made to the Supreme Court.

Mr. Rosen: This system is designed to handle industrial relations. Is it applied to the plantations? We must distinguish methods of regulating the settlement of disputes. One can imagine a variety of systems. The Indonesian conclusion is that for agriculture there is no substitute for the state. It must assume all responsibility and have all authorization to supervise, regulate, and enforce between agricultural workers and employers. In Turkey recruitment of migratory agricultural workers has traditionally been in private hands. Recently, the government has set up minimum wages in the agricultural field without directly supervising the recruitment process itself. It is also moving to bring the state to try to supervise recruitment of workers in the villages and the relationship between the state and private recruiters. To what extent would one want the state to do everything in this field?

Mr. Pangerapan: In Indonesia this program is going to be built up. The Agency for International Development (AID) is assisting in the provision of sufficient facilities (dormatories), and in the provision of direct transportation for migratory workers and their families.

Mr. Rosen: We can see that the work contract is not a very effective instrument for manpower planning purposes. The problem of recruiting agricultural workers is a difficult one and you may want to delay moving, or at least slow down permanent commitment of agricultural workers to industry. If families are not permitted to accompany the workers to the plantation, the government must provide for the families back in the villages.

Mr. Tung: The government is encouraging population in the cities to return to agriculture. We have resettlement centers and agrarian reform. The government for economic reasons doesn't encourage people to go to the cities. There is plenty of land but not enough industry to support the large numbers.

Mr. Rosen: This is a system which may work well for small numbers. If you have to move large numbers, would the system still work as well?

Mr. Pangerapan: Yes. The Department has it under good control. We have close cooperation between the Department of Labor and the Department of Transmigration, which is interested in the resettlement of workers. There are two types of transfer of workers--resettlement, handled by the Department of Transmigration and recruitment of workers, handled by the Department of Labor. Resettlement of workers is going to be a very important program in Indonesia.

Mr. Rosen: Achieving migration is costly. Is it only the state that has the responsibility for transmigration?

Mr. Pangerapan: The labor bosses still operate, but the Department of Labor is trying to change their function.

Mr. Rosen: It is perfectly possible to have every worker who moves from one sector to another pass through the channels of the Employment Service, but this may be simply a case of passive recruitment. The Employment Service may not affect in any way the conditions from what they would have been in its absence.. The same process could go on under private enterprise. The difference between public and private administration is not necessarily the difference between active and passive recruitment.

Mr. Siahaan: Another type of recruitment in Indonesia is the traditional type which is tied to the old customs. An example is the harvest in the villages. At these times all the villagers are permitted to take part and as a reward for their work they receive one-fifth of the produce they harvest during a working day. This is not controlled by law or contract on the part of the state. The farmer cannot prevent the people from doing the work. It is a tradition.

Mr. Bringas: In the Philippines we have an agency in the Department of Labor which regulates recruitment, but it doesn't directly recruit workers for employment. We have privately-licensed recruitment agencies which have recruiters throughout the country. They recruit all kinds of workers and send them where they are needed. Recruitment is governed by laws enforced by the Department of Labor.

Mr. Martinez Gomez: To promote skill acquisition the government of the Dominican Republic permitted business firms to employ trainees at a low salary with the provision that the salary would be raised if there was progress shown in the training and skill on the job. The government exempted the employers from the minimum wage requirement in order to encourage them to train workers. In reality this is a subsidy to the employers at the expense of the workers. If training is socially desirable, the cost of the training should be assessed the society as a whole. The employer should receive a subsidy from society and it should not be at the expense of the specific workers. Or, when the employer earns substantial profits from the improved output of a trained labor force, he can be required to absorb the training costs as a form of taxation.

Mr. Gaibor: In Ecuador employers are permitted to give trainees a wage below the minimum to compensate for the cost of training because the trainee does not produce as much as the trained employee. The fairness of this procedure depends on whether or not the minimum wage offers a margin above subsistence. This method can be depended upon only when the minimum wage is sufficiently above the subsistence level so that the reduced pay will not produce a level of life too low for good health and incentive to learn. Employers may seek to abuse

this system by artificially extending the training period although the worker is fully qualified and productive. There must be careful control to avoid abuse. As it is difficult to investigate this type of program, the direct subsidy for training paid by the society may be best.

6. Problems of Industrialization and Urbanization

In a series of meetings the group discussed the relationships between industrialization and rationalization of production and the growth of cities. The social tensions which accompany this cultural and economic process were analyzed according to a division of labor pattern. The Seminar Leader concentrated on the economic and social factors; participants contributed statements on characteristics of urbanization in their countries, and Professor Robert C. Weinberg of the Graduate School for Public Service, New York University, spoke about the city planning progress, urban policies, and municipal administration. This is an excerpt of all presentations related to the urbanization process:

Mr. Rosen: In every country there has been a decline in the relative portion of the labor force in agriculture, although the actual size of this sector has grown in the underdeveloped countries. There is an obvious variation, however, among the countries. Among the underdeveloped countries there seem to be three groups: those with high agricultural commitment; those with moderate agricultural commitment; and those with low agricultural commitment. Japan is an example of a country with a combination of low commitment with high stability in the pattern of distribution. India has high commitment and high stability. Mexico is a country that has experienced moderate change. Chile has low commitment and change in rate. The table below is indicative of the trend.

AGRICULTURAL WORKERS AS PERCENT OF LABOR FORCE FOR YEARS SHOWN

Country	Period	Percent		Average Annual Change (%)	
		1st Yr.	Last Yr.	Total Labor Force	Agricultural Labor Force
United States	1940-50	19	13	+1.56	-2.37
United Kingdom	1931-51	6	5	+0.37	-0.60
Sweden	1940-50	29	21	+0.39	-3.08
France	1936-54	36	27	-0.29	-1.71
Denmark	1940-50	29	25	+0.42	-0.08
Brazil	1940-50	64	58	+1.49	+0.45
Mexico	1940-50	67	61	+3.35	+2.33
Chile	1940-52	36	31	+1.49	+0.56
Egypt	1937-47	71	64	+0.99	+0.21
Thailand	1937-47	89	86	+2.80	+2.35
India	1941-51	75	74	+1.59	+1.49
Japan	1930-50	51	49	+0.94	+0.80
Philippines	1939-48	73	66	+2.18	+1.02

The rate of change in agricultural commitment is affected by factors which "push" people from the household sector, such as reduction of agricultural productivity and income, and by factors which "pull" people from the household sector, such as more attractive opportunities in the industrial sector. Handicraft industries may be destroyed not only by competition of imports from industrial countries, but also by domestic industrialization which may destroy the market for handicrafts. There is the problem that domestic investment

decisions may lead to more rapid decline of the handicrafts.

Some countries have experienced alternating movement in the agricultural sector. There is periodic movement from agriculture to another sector and back again existing at the same time with permanent commitment to industry because of the push and pull factors. In South Africa it is the government's policy to prevent commitment so that workers for the mines are always available. Turkey has an alternating commitment between the coal mines and agriculture. The Turkish Government would like to develop permanent commitment by mechanizing the mines and mobilizing a permanent labor force because of low productivity in mines caused by the alternating movement. This policy would destroy the alternating movement. This policy would destroy the alternating movement by which large numbers of people are able to preserve their agricultural basis of life. The mining complex is a part of a regional balance. The push factor in the agricultural sector is offset by the opportunity to supplement income by work in the mines. Mechanization of the mines will raise the productivity of the mines, but will remove the alternating movement and increase the permanent out-migration from the area of surplus household labor to urban areas. If, on the one hand, push factors are operating on the surplus underemployed household labor, alternatives that may appear to be of economically low yield, but which delay the rate of out-migration, may be better than mechanization which accelerates full-time rural migration. If, on the other hand, there is a stable household sector, but visible unemployment, this would provide labor force potential to rationalize the mines without disrupting the households.

One consequence of the migration of surplus labor to the city is the "proletarianization" of the worker. If disguised underemployment is converted into full-time, visible unemployment by the rationalization with capital which leads to exits to the city faster than the market can absorb, the basis is laid for coherent working class consciousness. This exit is accelerated by such push factors as the building of road systems or the conversion of the land-holding system to individual ownership.

The newly urbanized workers may possess considerable non-agricultural potential, or they may not. The potential exists when those who leave the land possess skills, literacy, and mobility; they leave the land because they are frustrated by the disparity between what they could do and the opportunities available to them. These are the visibly underemployed; their exit leaves the household sector basically unaffected or even improved. In contrast, when the push factors reflect disguised underemployment, the expulsion may be of the unskilled so that they do not provide an asset by a new social problem of visibly unemployed.

Added to the three standard sectors of the economy--extractive, industrial, and service--might be another: buffer sectors. The army may in underdeveloped societies be seen as an institution to absorb manpower and impart skill to the labor force. It is a method of regulating and controlling the degree of movement to the urban areas. The size of the army may thus be determined in part by economic opportunity as well as military need. There are certain difficulties connected with the use of the army in this way because of the political role that it has in many countries. If the army is a principal avenue of employment for educated groups, it is necessary to provide attractive alternative opportunities.

The construction industry is an important buffer sector. It has been ignored up to now in many developing countries. In the future construction should be treated as a strategic tool for skill acquisition.

Urbanization

The Seminar Leader and participants discussed aspects of the problem of migration to cities in participating countries. Mr. Rosen led off with this formulation:

The mechanization of agriculture has the effect of abruptly changing the stability of the countryside and increasing the expulsive force driving people into migratory work or into the cities. No matter what type of urbanization exists, there are very real problems of economic and political stability. In many countries it is easier to know conditions of employment and unemployment in the rural sectors than to acquire reliable data regarding the economic position of the sub-marginal urban population. It is an unstructured, undifferentiated mass as seen from the top. It resists measurement and stabilization. It is symbolic of development for which adequate policies have, thus far, been lacking. I am impressed by the urbanization problem in a relatively unstructured cultural and political society. I would raise two questions:

1. The degree of the problem of underemployment and unemployment in your countries; and

2. A strategy which seems to be a promising one for dealing with it.

It is a social problem of great urgency. Dissident urban groups have been known in the past to overthrow governments or to be available at the service of political elements seeking to alter the continuity of the government. I know of no model of economic planning which includes measures directly affecting this problem. I know from my own experience in the Middle East that this problem arouses anxiety. I think the problem is to convert the anxiety into concern and work it into economic planning.

The problem divides itself into two problems: the future rate of urban growth and coping with the present dimensions of the problem.

Regarding the sub-proletarian urban force (as we may call it), what is its stability, rate of growth, and what plans do your governments have for dealing with it?

Mr. Farooki: Population statistics in Pakistan show an annual increase of 3% to 4% in urban areas since 1951.

Mr. Rosen: Is this increase concentrated in the larger cities?

Mr. Farooki: It varies from city to city. In East Pakistan it is on a much larger scale than in West Pakistan.

Mr. Rosen: This is a pattern widely to be seen in Turkey, Latin America, and Indonesia as well. It is assuming the proportions of a world-wide phenomenon outside the developed countries.

Mr. Farooki: This is due to industrialization in our country. The government is trying to control it, but it cannot.

Mr. Rosen: Even if you are able to slow down the flow, you have the problem of what has happened in the last ten years. What problems can you suggest?

Mr. Siahaan: Urbanization in Indonesia occurred for security reasons at first. The other factor promoting this is the emphasis put on the development of big cities. Most development projects are located in the big cities, I, personally, advocate the distribution of projects so that the accent of development is on the rural areas so that new jobs can be created for the people who would like to stay in the rural areas if jobs were available.

Mr. Qureshi: Create new cities instead of old villages?

Mr. Siahaan: No. Create industries without creating new cities.

Mr. Qureshi: If you take industries to rural areas, that makes the rural area an urban area.

Col. Brotosewojo: Following this discussion, the question that occurs to me is what actually is meant by urbanization. Is it the movement of people from villages to cities or the movement of people from villages to industrial programs? I think the latter is correct.

Mr. Rosen: But the evidence is that the urban growth rate outdistances the rate of industrial employment.

Col. Brotosewojo: I think that what Mr. Qureshi says on the meaning of industries will lead to building and that will lead to industrialization.

Mr. Rosen: Once a city exists, it grows without regard to the existence of employment opportunities. This then is just gearing the rate of industrial growth to the rate of institutional growth. The city is an institution in itself.

Mr. Farooki: Even when you have strong, stable governments, there is urban pressure sometimes resulting in riots which cannot be predicted. We carried out a survey in Pakistan to find out the reason for people moving to the urban centers. The following questions were asked:

1. Did you come to the city seeking employment?
2. For better living conditions?
3. For better educational facilities for your children?

Of those questioned only 25% answered that they were looking for jobs. The remaining 75% were divided between the other two questions. It is not only the myth of employment which attracts people.

Mr. Rosen: No indeed. The city itself is an attractive force, irrespective of employment opportunities.

Mr. Onfray: In Chile the urban population increased 800,000 during a short

period of about six years. Santiago absorbed almost all of this increase. There was a great deal of unemployment and underemployment there. Unemployment among construction workers increased particularly. That seems to be a paradox because there is a lack of construction workers in the South, which is undergoing a period of reconstruction following the earthquakes.

Mr. Farooki: Why don't people move South?

Mr. Onfray: It has been tried to move workers to the South, but they don't go voluntarily very easily because, even though they are unemployed in Santiago, they believe their future employment opportunities are greater in the city.

Mr. Farooki: What is the distance between the two places?

Mr. Onfray: About 1000 kilometers. The climate there is also a factor, but it doesn't influence the workers' propensity to move a great deal.

Mr. Farooki: Is there a wage differential for construction workers in Santiago and those in the South?

Mr. Onfray: There is no difference fundamentally. The unions in Santiago are interfering with the normal working of the law of supply and demand. If this law were permitted to work, wages for construction workers in Santiago would be lower (high supply) than in the South where construction workers are in demand. This further discourages the workers from traveling to the South to work. The unions do not forbid the workers from moving, but through their manipulation of wage levels in the two areas, they succeed in discouraging it.

7. Urbanization and Some Technical Aspects of Urbanization

This topic was discussed by Mr. Weinberg of New York University, who appeared as a guest lecturer. Excerpts of his paper and of the discussion are presented below:

The job of a planner or urbanist is to create the healthiest and best environment for the people who live, work, and play in the urban region. American urbanists do not generally seek to create a name for themselves as individual, "career" planners. In Europe and Latin America much planning is done by individual technicians, usually architects, who are prima donnas in many ways and, like orchestra leaders, obtain one job after another on the basis of the favorable publicity given the previous one. Planning in this country is much more generally the product of a team of administrators and technicians, of whom the architect is, I might say, often unfortunately, one of the least effectual.

The Canadian and USAnian urbanist is always aware of the fact that it is the citizens who vote for the officials who appoint the local planning bodies who engage the professional planner and his colleagues to develop a plan, and who have the responsibility for putting the plan into action. The city planner and urbanist therefore try to win support from elected officials. Unless the urban planning team can win the approval of the local voter, all of the effects of large-scale governmental undertakings, whether they be public works or individual buildings, will be fruitless. Effective urban programs

benefit from a cross-fertilization and interchange of ideas among the various branches of public administration. One should avoid the habit of over-specialization. Each individual official and administrator should be encouraged to act as a complete man, rather than as a one-function cog in the bureaucratic machinery. I do not think this implies any conflict of purposes in the field of administration, whether the people who have the power to make decisions in the urbanization field are public officials or private operators. The majority of you are active in governments where private construction goes on side by side with public projects. In the United States, too--in spite of its image as a capitalistic, private enterprise economy--there are a great many governmental building operations, as well as urban developments and redevelopments, going on at the same time as private building. There is a program of public works in the U. S. of such widely different sorts as airports, play fields, houses of legislatures, and sewage disposal plants, to mention only a few types. Now, and this is most important, all of these various governmental undertakings that affect our environment, for better or for worse, are carried out by public agencies that are headed by and staffed by men who are seldom architects or planners. On the contrary, the administrative decisions as to whether or not given undertakings should be approved are made by men who do not always fully understand technical and esthetic values involved.

Imaginative administrators will often find ways to short-cut bureaucratic protocol in order to accomplish some simple objective without going through a long hierarchy of delaying tactics. This is particularly important with respect to administration at the local, neighborhood, and even at the community, town, and village level. Conditions in today's urban civilization vary so considerably from one place to another that regulations written and administered from a central governmental capital are often inapplicable in local situations. For an administrative official or employee, therefore, to apply without question and thought a regulation that has been written by someone else at a distance may be quite the wrong thing to do.

Human environment, as it may be affected by the urbanist, does not lend itself to mathematical analysis, even though there is a whole school of practitioners today who are trying to demonstrate the contrary for fear of trusting their own esthetic and emotional responses.

There are some problems which urbanists cannot directly influence. One of these, of course, is that of the "population explosion." Even if the medically accepted methods of birth control were to be freely adopted everywhere, population in parts of the world would continue to increase and would be economically unsupportable. The problems arising out of this situation must be met, as they arise, from place to place, by educators, health officials and administrators. The urbanists, in their design of the world's habitable areas, including the cities, the suburbs, and the agricultural hinterland, will then utilize the findings of those who are in a position to predict population trends even if they cannot wholly control them.

Another social problem confronting the urbanist today is the movement of people from the rural areas to the big metropolitan centers. This is most conspicuous in Britain, where, as I mentioned before, workers at every age and wage level are invading the larger urban regions--particularly that of London--leaving behind them healthy and attractive communities that often are much more suitable and hospitable to the skills and labor they have to offer. This problem

can be met, to some extent, by training programs which would strengthen and revive natural skills which will assure the would-be-migrant a chance to earn a living in his native community and thus discourage his usually illusory search for a job in the "big city." We must find ways to make the wage-earner self-sufficient in his home community. To the urbanist this is far preferable to a policy of providing more jobs in already over-crowded metropolitan centers. The United States, it must be admitted with regret, has thousands of able-bodied men moving to the big cities because they suffer racial discrimination at home. But they do so also because they are misinformed about the possibilities of better jobs; or, finally, because no one made a conscious effort to develop jobs for them in the area from which they come.

In the United States industry is accidentally and without any noticeable plan developing new plants in out-of-the-way areas. This may be done for a variety of reasons which we have not time to go into here. What is relevant is that no specific effort has been made to train workers for jobs already available in their underpopulated home communities, or for the new types of jobs that will open up for them as more factories relocate from urban to rural sites. This accidental, unplanned centrifugal flight of industry may be helping to counteract the centripetal trend of migration into the big centers. But it needs direction and plan. The population increase, as the urbanist sees it, cannot be coped with in the big cities, if uncontrolled in-migration from rural areas is added to it. A manpower policy directed to discourage such migrations would immeasurably simplify the land use and transportation problems confronting the urbanist.

Another specific question faced by the urbanist today is that of density of land use, that is to say, the number of people who should occupy a given area of land. In the urbanist's terms, this may be expressed either as the number of family dwellings per acre (or whatever unit of area is used), or as the number of persons occupying a structure or place used for work, recreation and entertainment, or other form of assembly. In the period we have just passed through, i.e. the early part of the 20th Century, when the movement for better housing as well as urbanism in general gained its momentum in Europe and North America, people were so appalled at congested slums and overcrowded working conditions that it was generally assumed that merely letting in air and spreading people out would cure this situation. We have now learned better. We know that modern technology permits people to live and work in close proximity to each other in the healthiest possible way provided that the planning and design is well thought out and the technical aspects of safety and health are properly observed. When people work and live close together, the social conditions conducive to good neighborhood relationships are facilitated and transportation problems automatically tend to solve themselves. Nevertheless, the flight from central urban congestion to the, as yet, unspoiled open country around it was so tempting a solution in the first half of our century that it has now run out of control. The planned "garden city" movement, sound in itself, led to an unplanned and wholly unguided rush to the suburbs, something quite different from strengthening established rural communities or building carefully located satellite towns with places to work balancing places to live.

The unplanned, chaotic suburban pattern soon became an established way of life--for those who could afford it, and for many who could not--in the first half of this century. Recently too, factories are springing up all

around the countryside that are apparent by-products of this unplanned decentralization. But the spreading out without plan of both living and working places on the fringes of the urban regions has been much overdone; it has become the root of many of the most serious imbalances and disorders which the urbanist is now called upon to correct. Our landscape has become despoiled, our water supply depleted, and, worst of all, our transportation system has broken down completely. The attempt to cure this by using more automobiles leads to the greatest evil of all, namely, the wastage of money and good land required for building more and more super highways which never catch up with the demand they themselves create.

Actually, people have in Europe, as well as in the Mediterranean countries, and probably in most of the countries from which you come, been accustomed to living close to each other for generations, if not for centuries. This is the meaning of the city--civis: civilization, as a concept derives from it. People throughout the ages have been accustomed to living in compact quarters, the rich in mansions, the poor in flats, and all gradations between. From a psychological and human viewpoint, this is the natural and proper way to live. This is what cities mean. But it does not follow that, because cities have in the course of the 19th Century, for various reasons become poorly arranged, unsanitary, unhealthy, and unsafe, the fact of living close together is in itself bad. On the contrary, urbanists are now beginning to rediscover the desirability, the great efficiency, and the general opportunity for better land use that can come from recentralizing our urban life in well-planned, compact, urban neighborhoods.

Discussion

Mr. Tijerino: I understand that the problem of the housing projects in Caracas, Venezuela, in which the people live so badly and refuse to pay rent, was caused by the failure to prepare the people to live in such modern developments. Is it true that this sort of thing happened in the housing developments of Puerto Rico also?

Mr. Weinberg: I cannot say for sure whether this has happened anywhere in Puerto Rico; but I feel that it was unlikely to have been true because of the Commonwealth's enlightened planning policies and well-trained staff. In San Juan, at least, I am sure it is not true; and I have seen housing developments there that are so well planned and managed that the families have even taken the trouble to have their own flower gardens on their balconies.

Mr. Tijerino: I understand that when the projects were new, the social workers had not instructed the people in how to care for their homes so that they brought their farm animals into the house. Later, the social workers taught the people how to live so that conditions have improved.

Mr. Hauser: I have been wondering about community organization among the people who live in the favelas or slum areas of Latin American cities. Is it not desirable to develop better housing from within a framework of a socially conscious community? In the favelas is there not a community organization worth preserving?

Mr. Fonseca: It would be dangerous to preserve what "social organization" may exist within the favelas because they are made up of a marginal society of

thieves and criminals. We are trying to eliminate the favelas and relocate these people.

Mr. Weinberg: It is all too easy to generalize. We should avoid, in modern urbanization procedures, the destruction of the neighborhood spirit where it exists; but that does not mean that we should go to the extreme of preserving something that is at the margin of society and which is unclean and unhealthy. With the aid of the architect and the urbanist as advisors, administrators and social workers must weigh each situation, with its human as well as its technical values, on its own merits.

Mr. Onfray: I have a question regarding the quantitative aspects of housing. The big cities were not known in ancient times, with a few exceptions such as Rome, which had one million inhabitants. The Industrial Revolution created the modern civilization. There was a force in the first Industrial Revolution, a centripetal force, caused by the use of coal, which concentrated a great number of people in a reduced space. The second Industrial Revolution has a centrifugal force because it is very easy to transport the energy from the point of consumption. Don't you think that in the future the trend will be away from the creation of large cities to a more rational distribution of the industry and people?

Mr. Weinberg: We must recognize that the unplanned "trends" of the future may be considered quite separately from what we can consciously influence through intelligence and understanding. This is different from what took place in the Industrial Revolutions in the 19th Century spirt of capitalism. I would like to demonstrate what we can and should do. In ancient times the cities were built up for defense and later for trade. The Industrial Revolution made them become more dense through the centripetal tendency of factories and centralized work opportunities. Later there was the centrifugal trend toward the suburbs, each with its own shopping facilities; but at the same time, people from the hinterland were moving to the cities so that there was a conflict between the centrifugal and the centripetal forces. What we now need is a planned relocation of industrial centers at selected locations, where they and the residential neighborhoods of those for whom they provide work can be surrounded by the proper agricultural and recreational green spaces to relieve the temptation to move to the over-congested cities or for those already there to move out to the suburbs, as a reaction against congestion. We have largely failed to accomplish this up to now in this country because of unplanned industrial expansion and because of unimaginative administrative policies.

Mr. Sangtong: If what you have been talking about is to some extent the disadvantage of a free enterprise system, how can we solve the problem unless we control the tastes and wishes of the people?

Mr. Weinberg: Controlling the tastes and wishes of the people will not be the solution because too many people who are in decision-making positions, whether in government or in private industry, make the wrong decisions. The right decision may depend on better education on the part of the decision-maker, and on his sympathy and understanding of the people affected, not by the power to control the tastes of others. Good taste, education, and understanding of human beings and human nature are not problems of technology, but of judgment. Even the most rigid systems of theoretically socialistic

governments can make stupid mistakes and have bad judgment if their officials and administrators lack these qualities. It is important that the people should have free choices, but we must help them learn what is good for themselves and not "tell them from above."

Mr. Branco: On our trip to New York I saw several groups of trailers along the road. I was concerned about the problem of these people who have no homes. They seem to form itinerant favelas.

Mr. Weinberg: The trailer problem may be handled on two different levels. The towns can protect themselves from the bad effects of "trailer colonies" by zoning laws that prohibit trailers from settling in the town or by providing planned, special locations for them with all the necessary utilities.. On the second level, the problem of one of manpower. As long as labor conditions remain uncertain, workers are tempted to live like nomads. They cannot afford to buy a house when their jobs in the town they happen to live in might disappear from one day to the next. The trailer is a device for moving freely from one place to another. On this level the trailer problem is a labor and manpower problem.

8. Industrialization and Trade Unions

Mr. Rosen: There are cases where it makes sense to choose capital-intensive methods. However, one must weigh the consequences in terms of the rural sector. When productivity is increased in urban industry in a product which used to be made by handicraft industry, this increases unemployment in the rural sector. One of the results of excess mechanization may destroy the stability formerly experienced by the household workers and push them into the industrial sector too soon.

Mr. Pombhejara: Using the theory of accounting prices, labor market prices seem to be higher than labor productivity, and the value of capital, expressed in terms of the market rate of interest, is higher than the legal maximum prices. This tends to increase the capital component, and to reduce the use of labor-intensive methods below what would be rational.

Mr. Rosen: If the market works, it should work without ambiguity. I would argue that legal controls which would require higher wages and limit interest rates for capital will only be effective in the absence of a well-developed market system. The market tells you that there are people ready to work for less than the prevailing wage; that interest rates are higher than the law allows; that if this is operating, the legal prescription will have little effect in a system of controls. If the legal prescription is effective, it is because the market is fragmented and inaccurate.

Mr. Pombhejara: Even if the market works, still the market price for capital is lower than its real value, thinking in terms of the scarcity of capital. If capital is valuable, the market will reflect it. It is possible to suppress market forces, but it is very difficult to do so. Economic reasoning will take you only a short way. It may be that if you withdraw a unit of labor from the land, the total productivity will not change. Does this mean that any wage overstates the value of labor relative to its productivity? Is this really the case? If so, the value of labor is really zero and might be used as a free good.

Mr. Rosen: There is a scarcity of capital on a world-wide basis. The volume of savings in the world is limited and distribution is distorted. No government in development is able to mobilize all the capital it wishes it could get. The World Bank charges low rates of interest, but their capital is of a special kind, fitting into some comprehensive national plan involving many other kinds of decisions. It is still true that governments may have to keep people hungry longer in order to acquire new capital. Costs to a country of acquiring capital are quite high.

The wage structure will be a mix of the relatively scarce, highly productive groups which can command a high wage as compared to the large, unstructured and unskilled population whose supply is relatively elastic and whose wages stay close to subsistence and below their productive potential. The cost of mobilizing people with small productivity is a social cost with both political and economic consequences.

Mr. Aybarsu: Of the 700,000 people in Ankara, about 200,000 are without employment and have low levels of skill. They are a real social and political problem. They are not supported by the government. This typifies the indirect effect of trying to make decisions on what the direct market prices tell you. Agglomeration brings about costs for political reasons.

Mr. Pombhejara: In Thailand we are trying to stop the outflow from agriculture. The government believes that rates of interest are too high, so that people cannot get savings for investment. When the bankers wanted to lower interest rates, the government refused, saying that people would take loans for consumption and there would be no incentive to invest. So, the government keeps the interest rates high to encourage savings.

Mr. Rosen: What is the alternative to high rates of interest? What would be the consequence of substantially increasing the availability of capital?

Mr. Pombhejara: This depends on the rates of interest. The potential investment volume is high, but if interest rates are high, people will calculate carefully and will not borrow for consumption. So we have maintained that rates of interest must be high to encourage careful investment.

Mr. Rosen: Does a high rate of interest actually insure rational use of existing savings and increase the flow of saving?

Mr. Pombhejara: Yes. High rates of interest induce people to save more.

Mr. Rosen: May not the government become the supplier of credit, supplying a large amount of credit at low rates of interest for rational use?

Mr. Pombhejara: In Thailand the government doesn't lend money. It doesn't have sufficient credit institutions, so everything is left to private lenders and commercial banks. If banks lend at lower rates, more people will borrow, but they don't make good use of the money.

Mr. Rosen: "Good use" from the point of view of the individual investor is not the same as "good use" from the point of view of the society. There is no reason to believe that private decisions on investment produce a rational pattern of investment. Where markets work, this is what they are supposed to

do. Does this work in Thailand? If you examine the results of ten years of raising and then allocating savings in response to high rates of interest, do results reflect rational use?

If a small number of people receive a high proportion of the total income, then it is rational for an institution to lend money at high rates of interest for their priorities. What is chosen may not help the country in its quest for economic development. Distribution of income is an important piece of the total strategy. The market does not change this. Social policy can (taxation, etc.). This is the reason why fundamentally market forces and accounting price systems are limited. They leave unexamined many things which are vitally important.

In a sense labor union movements represent a net benefit in the process of industrial manpower mobilization or a net cost. Do the costs present in the creation of a social movement, i.e. trade unionism, outweigh the benefits which can be expected from such an institution?

Every aspect of economic development involves cost. The question is not whether there is a cost, but whether the benefits outweigh the direct and indirect costs in the long run. When one tries to measure indirect benefits, the ratio may change for the better or worse. One must ask the same question when dealing with institutions.

Mr. Aybarsu: Our unions play a role especially in social aid to the workers. Unions help to oversee the employment service and workers' insurance organizations. The unions will have the responsibility for advancement, but in Turkey they are not strong or well organized enough to provide all social help that is needed. When the recently prepared law on strikes, now under study, is passed, the trade unions will more easily do their duties in the manpower field.

Mr. Ibrahim: In Sudan the trade unions are found either in government organizations or in private companies. Under the law they must look after their own interests, between themselves and the employers (terms of service, rates of pay); they may not interfere in politics. The biggest union is that of the Sudan Railways with 25,000 members. When communists interfered in that union and created conflicts between the members and the employer, the government suspended the union indefinitely. The other large union is that of the farmers (those in the irrigated area of the Gezira). They succeeded in raising their share of the receipts from 30% to 42%, but a communist body again interfered, so the government suspended the union's activities. The remaining unions are very small.

Mr. Carvajal: Unions in Ecuador are recognized by the state in the constitution. They are considered socially useful and have been integrated into the labor code. State institutions are requested to permit unionism. We have gone beyond the concepts of the liberal economy. The worker was formerly at a disadvantage in his relationship with the employer. Our goal has been to equalize both forces. Article 185-G of the constitution guarantees the right to form unions, but nobody can be obligated to join a union. There are no unions permitted among the public employees.

Mr. Rosen: Our purpose is not to summarize legal aspects of trade unionism.

We are interested in the union's role as an institution fragmenting or perfecting the labor market; as an institution affecting formulation of the priorities which the development plan seeks to serve; as an institution for establishing controls over the policies of public and private employers; an institution for expressing the grievances of industrial workers; as an institution increasing or decreasing the mobility of workers; as an institution expressing and meeting some of the social aspects of the labor force commitment. This should be the focus of the discussion. What we want from each other is an analysis of the role of what unions do play in these questions--whether that role is positive or negative.

Mr. Farooki: In developing countries unions are in their infancy and have very little positive part to play in functions of the labor force. In Pakistan they are only concerned with social measures for their members. These phases you have mentioned come only after maturation of the state. They can form the bases of the objectives you mention, but whether you can accomplish these things earlier is a question.

Mr. Gaibor: I should like to summarize the role of trade unions in Ecuador from the political and economic points of view. The role of the trade union movement is very important indeed. Not only the union itself, but in the unity of unions forming a federation. This federation sometimes forms a solidarity front which serves to bring pressure upon the employer or on the government. Sometimes, employers' investment decisions depend entirely on political concessions. As a very important example, some months ago the unions successfully opposed indirect taxes imposed against the working force.

Mr. Rosen: Most countries have the problem of raising the proportion of direct taxes and decreasing that of indirect taxes. In this instance, union pressure may have an effect in the right direction. Unions can affect allocation of some of the costs of development.

The preoccupation one finds in many underdeveloped countries with technical and economic strategy tends to assume that only those who have education, training, and a role in the centralized apparatus of government are really qualified to make judgments and have an effect on investment and related decisions, that deciding how development is to take place is the task of the central government and that others are not qualified to make reliable judgments. In many cases this is not correct. It tends to narrow the access of those who deal with problems of development. It also may tend to strengthen centralized administration which may already be too strong. Any state which has achieved its present form primarily through the actions of a military or para-military operation (anti-colonial revolution, or stabilization of chaos by imposition of a strong central government) is particularly subject to the tendency towards over-centralization. For purposes of development it may be important to achieve decentralization by involving the lower strata of the population in arriving at a consensus. Trade unions can in this respect play an important role.

Mr. Fonseca: I want first to point out some of the characteristics of the labor unions in Brazil. They have essential functions and the labor unions fight for better salaries. All the labor unions are controlled by law and must be recognized by the government. Elections must be presided over by a government official. The budgets must be approved by the government.

Nevertheless, the situation is changing and a few of the unions have a political role. These few unions can fight for natural resources; fight to preserve state monopolies; and as at the present time, the labor unions can give support to the government when it is trying to introduce reforms. I believe that the trade unions will have a role of professional representation, a role of defense of the workers and this defense is chiefly in the form of a fight for a greater participation, and for an equitable distribution of national income. We have many people that come from rural areas to the cities, and the trade unions are the first school that we have to acquaint these people with the problems of development. The labor unions believe that they should participate in social and economic development plans, and I believe that this is the only way by which we can integrate these people into development. In my State (Sao Paulo) we have had labor participation in the Second Four-Year Plan. They presented suggestions and have responsibilities to carry out this Plan.

We also have a new kind of union in the rural areas. A few years ago there appeared many peasant leagues. They were associations of people from rural areas fighting for land and better standards of living. Then the government saw that it would be best to organize and control the labor unions in rural areas. Now we have unions for rural areas, and they are very important. People from rural trade unions are working closely with the people of industrial trade unions, and it is becoming possible to have a greater participation of the workers in the important process of democratization of my country.

Mr. Siahaan: Regarding the trade unions in our country, it is necessary to present a short summary. In the colonial period trade unions played a very important role. They formed a sound basis for development of political leaders. The railway unions were particularly powerful. Unions formed the backbone of our revolution. When we gained our independence in 1950, the state took a rather important role in policy and economic growth. Many agricultural leaders and trade unionists are in parliament and on the National Planning Council. They have not only the right to improve wages, but the responsibility to raise the production of the country. The Ministry of Labor is always ready to listen to the labor leaders. They have played an important role in the advancement of the labor force and have set up a university. In maintenance of the labor force they have played a role by setting up recreation centers for the workers in the mountains.

Mr. Bringas: In the Philippines our constitution and laws encourage the free, democratic trade union movement. In the last ten years since the "Magna Carta" of Labor, the trade unions have played an important role in the development of economic programs. The Department of Labor organized labor-management conferences throughout the country for the purpose of discussion between labor and management of the socio-economic problems of the country. These conferences then make recommendations of projects for development. Aside from this, labor-management conferences are conducted in all regions and once every two years there is a labor-management congress in Manila where all representatives come to discuss mutual problems and formulate recommendations for implementation by the agencies which have to do with these problems. Most of these recommendations have been taken care of by the respective departments concerned. We are a small country of 30 million; the labor force is 9 to 10 millions. Membership in the trade unions

is one million.

Mr. Onfray: I would like to point out that the person who is doing research in a country should be more aware of what is actually happening on the street than in examining the institutions themselves. Of an economically active population of 2½ million, Chile has only 200,000 active trade unionists. In Chile there are only three kinds of unions permitted. The two most important are the industrial and professional unions with the agricultural unions being the least important of the three. These unions are faced with limitations as far as forming confederations. Professional and industrial unions may form confederations but agricultural unions cannot. Thus, some of the unions have organized illicit confederations outside the law. It is precisely these which played an important role in relation to the aspects mentioned here. I believe that they should be given an even more important role. We are fortunate to have the experience of the advanced countries in order to orient the activities of these unions. Even though the unions are instruments of the struggle, I agree with Mr. Fonseca that we must try to arrive at the stage at which the unions can collaborate with the general development planning of the government. Also, the element of struggle is within the union objectives; perhaps certain reforms and structures can make it into a more cooperative organization. Perhaps modification might lead to the industrial democracy and closer collaboration between industry groups.

Mr. Rosen: There is a good case for establishing social insurance programs in an early stage of development. The problem is how to cover only the committed groups, and those whose commitment should be accelerated. Taking unemployment insurance as an example, one hears the argument that this is both costly and premature for underdeveloped countries. There is rapid growth in the labor force, and high rates of turnover which means a fairly high rate of unemployment at times. Unemployment insurance discourages turnover because the worker has to be unemployed for a certain period of time to qualify, to be unemployed for a time before he receives any benefits; also, the benefits last only for a limited period. He doubts that unemployment insurance of itself makes the difference as to the degree of movement between agriculture and industry. There are two forces which affect the degree of return to agriculture, only one being the loss of income associated with the loss of employment. The other is the possibility of earning a high income in agriculture at a certain period of the year, harvest time, for example.

Mr. Pangerapan: This is characteristic of the labor market in developing countries. When they have enough earnings from industry, some workers go home to their villages for the harvest.

Mr. Rosen: The difficulty lies in examining the labor force existing at a given moment to find some way of identifying the various degrees of commitment. Unemployment insurance is a good policy for people whose commitment to the industrial labor force is relatively high. It may be less important for those whose occupational commitment is to industry, but whose psychological commitment is still to the agricultural sector. For permanent employees in an industry the case for unemployment insurance is clear. The problem is to draw the lines between these various groups. The best evidence is a man's work history.

Mr. Fonseca: I want to present the situation in Brazil where there are two different things. Social security is administered by seven institutes under the control of the Ministry of Labor with more than four million people receiving the benefits. They are maintained by the contributions of employees--8% of the wages to a limit of five times the minimum wage. There is no contribution out of general tax revenues. Six percent of race track receipts goes into the fund along with 5% of government receipts from corporate income taxes and 5% of the revenue from the sale of lottery tickets. The seven institutes handle the funds for various segments of the labor force--industrial workers, transportation and cargo workers; maritime workers, bank workers, etc. This is a vertical organization. The State of Sao Paulo has its own Institute of Pensions and Retirement for its employees.

The major financial problem is that the government sometimes takes the funds and invests in other things; for example, the construction of the new capital, Brasilia.

Mr. Rosen: It may well be that the funds withdrawn by the government for investment purposes come from those programs, as in Turkey, where there is a high level of contributions but a low level of payments from the fund.

Mr. Fonseca: A difficulty arises from the fact that in Brazil we have a depreciation of the currency of about 2.5% per month. Pensions are low for the needs of the workers and they complain against the institutes because the pensions are not sufficient. For example, during their working lives maritime workers receive very high wages, but when they retire, their pension is not adequate. We have no unemployment insurance, but require separation indemnities. For example, when a man works for more than 11 months for the same company, he must receive, as an indemnity, one month's wages if he leaves the company. If an employee, after more than nine years' service with a company, leaves that company's employ, he must receive double separation pay. This system is under the control of the labor unions. These two types of compensation make it difficult to establish a system of unemployment insurance. There are in our in our Congress at the present time two proposals to establish unemployment insurance that must be paid by the employers. Employers are against this, and employees are afraid to lose the stability and indemnity payments they now have.

Mr. Tung: There is a question of principle here on which I would like to hear some discussion. In the field of social security is it right for the government to favor some sectors and neglect others?

Mr. Rosen: Yes. This is a question of need, not of equality. Some programs are very necessary for the welfare of one group, but these might not be rational for another group. The degree of commitment to the labor force is the test.

Mr. Farooki: We have chosen the textile industry and will have unemployment insurance in that industry soon. We used annual earnings to measure the degree of commitment and found that the textile industry showed the greatest commitment. The largest industry in Pakistan is the railroad, but this is almost nationalized.

Mr. Bringas: In our country the social security coverage is general. All establishments with more than one employee have social security. Both the employers and the employees contribute.

Mr. Farooki: We have introduced the employment book which an employee must carry with him from job to job. After a time this will provide statistical information on labor force commitment.

Mr. Rosen: The experience of the Bombay textile industry which also used the pay book system would seem to show that the apparent turnover is often higher than the actual turnover, when commitment is to an industry where so many small employers are found.

You have raised many questions here. One is the reality of commitment, and measures appropriate to protect legitimate commitment from arbitrary action of employers and rigidity of the legal system. The second set of questions has to do with what one might call the rules which govern the relationship between those who are employed and those who employ them. The American experience has something useful to offer here. In our society direct negotiation settles a great variety of questions--wages, pensions, etc. Some argue that many of these problems are best settled in developing countries by rules which the laws establish and the state supervises, but even when it is not appropriate to leave some issues, e.g. wages, in the hands of the parties themselves; questions of the kinds that have been raised here are best settled when parties use instruments of confrontation like collective bargaining. I don't think it is possible for labor courts or government officials to attempt to police or settle every detail of these relationships. There is no substitute for confrontation. American experience illustrates the extent to which it is possible to put responsibility in the hands of the parties themselves.

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III. Problems of Skill Acquisition in the Rural Labor Force

This course was to analyze the significance of the agricultural sector in the developmental process. The scope of discussion and study was, therefore, somewhat wider and less focussed on training than the course title suggests. Dr. Frederic Shorter of Princeton University was the Seminar Leader.

Previous sessions had demonstrated that most participants were particularly concerned about the place of agriculture in economic development and social change. Sessions therefore were organized to give a high priority to country reports on Brazil, Chile, and Thailand by representatives from these nations and to an exchange of experience among all participants. In terms of time, the Seminar Leader consequently reduced his presentation to a few stage-setting lectures and an elaboration of some special aspects, such as rural public works programs. This pattern is reflected in the excerpts presented below.

The following are the main topics treated in this segment:

1. The Plan of Agriculture in Economic Development: An Over-all View.....p. 74

2. Social and Psychological Factors.....p. 77

3. The Modernization of Agriculture--Extension Services and Community Development.....p. 77

4. Agriculture and the Policy of Economic Development and Manpower in Chile.....p. 81

5. The Impact of Land Reform in Bolivia.....p. 84

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8. The Thailand Planning Board's Approach to Estimating Future Manpower Requirements of Agriculture.....p. 93

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12. Opportunities for the Rural Unemployed.....p. 105

1. The Place of Agriculture in Economic Development: An Over-all View

Mr. Shorter: Agricultural development is closely related to the entire process of economic development. However, it is difficult to place agricultural development in its proper perspective.

As development proceeds and the demand for food expands, increased supplies must be drawn either from the country's own agricultural sector or from abroad. The principle, that of comparative economic advantage, holds in this case that additional supplies should come from whichever source is cheaper.

To decide between policies maximizing agricultural productivity and relying on the importation of fibers and foodstuffs in turn requires ideas about the relative potentialities of agricultural and industrial developments. Here are five tentative hypotheses which should be considered:

a. There is great potential for agricultural development. Some of its aspects are visible in the performance of outstanding farmers and in the results of demonstrations and experiments. The extent of this potential is hinted at by spectacular increases in agricultural productivity in countries such as Taiwan, Japan and Israel. In the United States the rate of increase in output per man for the last two decades has been 2½ times as high in agriculture as in industry.

Potentiality for growth often has to be sought out and discovered in agriculture just as in such fields as oil and (other) mineral resource exploration. In India and Egypt, for example, the knowledge that large foreign exchange savings would be made by discovering further quantities of oil plus some indication of potential have led both countries to make large investments in oil exploration. The same logic or "faith" should be applied to the agricultural development problem.

b. The realization of agricultural potentials is seldom easy. Some countries apparently possessing large potentials, such as Argentina, Chile and Uruguay, have made little progress. The specific problems are cultural, political, physical, and economic.

c. Agriculture is not inherently primitive. In countries where agriculture has already progressed, it is technically complex, requires advanced skills, and may even be capital intensive.

d. Productivity levels differ greatly among farm enterprises within countries where the average is low. Consequently, considerable improvements can be made simply by using the knowledge and skill that already exists within the country. This source of knowledge is additional to the transfer of techniques from other countries.

One can sum up these four hypotheses by examining a dispute about Egyptian agricultural potential. One writer has said that one of Egypt's great strengths is in the possibility of increasing output (per acre) in cotton, rice, corn, etc. How should this promise affect the future role of agriculture in Egypt? Because output per acre is already high, the same author believes further increases in acre yields will be difficult to obtain. However, by expanding the number of acres that can be irrigated each year with the new Aswan High Dam, agricultural output can be raised. But this agricultural potential is limited; hydrologists can envisage very few additional possibilities. After Aswan is finished, agriculture will have reached its maximum potential. Further development will have to be achieved outside the agricultural sector. As food demand grows, foodstuffs will have to be imported and paid for by exporting manufactured commodities. This pattern of development would be costly, however, and its progress severely restricted to a limited range of opportunity.

It is very doubtful that such a pessimistic interpretation of Egypt's agricultural future is correct. It overlooks important sources of increased output that are characteristic of progressive agriculture elsewhere. Reflecting on the world-wide experience, rather than considering only the present situation in Egypt, the modern view is that modernization introduces a continuous process of rising agricultural yields regardless of the starting point. There is not merely one great leap forward, but continuous improvement over long periods. Once people become discoverers and innovators, there are hundreds of ways, small and large, of increasing productivity. Egyptians are now demonstrating this proposition in the agrarian reform areas where concentrated attention to technique and commercial inputs are raising already high yields even higher. The best hypothesis on which to base expectations and policy is that Egypt's agriculture will prove as capable of further increases in productivity as that of other countries.

e. It is an important fact that agricultural development depends on industrial development. In many discussions it is stressed that industrial development is dependent on agricultural development, but the point here is to look at this relationship from the other side. The dependence of agricultural development on development in other sectors arises because:

(1) Agricultural progress brings about increased use of inputs, such as fertilizers, which are produced by industries. Formerly, a ton of food was produced entirely by the agricultural sector, but this ceases to be true and it is partly the product of the fertilizer industry. This illustrates a general phenomenon of production processes drawing on inputs from a number of sectors to produce commodities which formerly were the exclusive output of a single sector.

(2) Agricultural development is also dependent upon growth in demand for its productive activity and expansion in the economy as a whole does, of course, enlarge the demand for food and for exportable agricultural commodities.

(3) Finally, the quality of agricultural manpower depends upon educational and cultural development in the society as a whole.

Another facet of the interdependence between agriculture and industry consists of the part agriculture plays in supplying increasing numbers of qualified personnel to the industrial sector. Once agricultural development breaks down rural traditions and promotes productivity in agricultural operations, it also creates an environment out of which may come manpower that is immediately more productive and skillful in industry. Other contributions of agricultural development to the rest of the economy are such things as providing growing markets for non-agricultural commodities, providing savings for capital formation and increasing supplies of raw materials and exports.

Mr. Pombhejara: The Six-Year Development Plan of Thailand gives first priority to the development of agriculture. There are three reasons for this decision: 85% of the active population is engaged in agriculture so that the best way to increase the income of the people as a whole is to increase the agricultural output. There is a great potential for development in the agricultural sector by using scientific methods to improve the land; it is an easy way to increase the foreign exchange income because most of the exports are from the agricultural sector. The methods used to improve agriculture have been: the construction of irrigation projects in order to increase the number of crops per year; the survey and classification of the land in order to improve its production; expansion of the extension services of the Ministry of Agriculture to help in educating the farmers; and the establishment of experimental stations to improve farming methods.

Before the Six-Year Program was launched, there were several debates on whether to concentrate on industry or agriculture. While some preferred to concentrate on industrialization, it was finally agreed that the government should promote agriculture because industrialization would continue anyway without needing special emphasis.

Mr. Qureshi: For two years after Pakistan's independence the government was content to allow development to take care of itself. In the first Five-Year Plan also the agricultural sector did not receive sufficient emphasis. It was felt then there was a greater need for industrial development. The inadequate attention to agriculture in the first Plan was corrected in the second. In that Plan the tools of action consisted of agricultural development corporations. Their purpose is to close gaps in the program of the Department of Agriculture by providing agencies to sell improved seeds and other products developed by or under the auspices of that Department.

Mr. Shorter: It is rarely true that the potential returns from development expenditure in agriculture are so great and obvious as to leave no question about giving agriculture a predominant role. Behind the decision to emphasize agriculture which you report, there must have been earnest debates and definite judgments about potentials. We should try to understand why agricultural development is valued highly and critically examine the underlying premises.

2. Social and Psychological Factors

Mr. Shorter: Attitudes of farmers have an important relationship to agricultural productivity. Whether they view their problems traditionally or not is very important. A farmer decides important things, even in traditional agriculture, but the framework in which he thinks consists of rules of thumb passed from one generation to another. The basis of decision-making is very different in modern agriculture because there is a larger range of choices and each alternative required knowledge to evaluate inherent risks. Each and every farmer must decide when to apply fertilizer, how much chemical fertilizer to apply, where to use it, and which type is best. Initially it is difficult to introduce the use of fertilizer because it requires so many detailed evaluations and decisions for which there is no traditional pattern.

In modern agriculture farmers must make their own decisions after learning as much about the particular alternatives applicable to their situation as they can. Soil scientists can tell farmers about certain principles of agriculture, and even help to establish scientific facts for each farm, but farmers must take responsibility for their failures as well as their successes. Consequently, there is a profound difference in a man's approach to his work between traditional and modern agriculture.

Agricultural productivity is greatly influenced by the social traditions and legal framework within which agriculture functions. Land tenure is a prominent example. Regarding the basic contrast between traditional and choice-making approaches, let us consider for a moment whether whole production sectors can be classified as "traditional" or "modern." Frequently agriculture is characterized as "traditional," whereas industry is considered a "modern" sector. This puts the contrast falsely, as if it were a contrast inherent in the nature of each sector. Actually, traditional and modern approaches to production exist within both sectors. It faces manufacturing as much as agriculture. For example, manufacturing is plagued in its early stages by absenteeism and low productivity, both caused by traditional attitudes towards work among employers, supervisors, and workers. It is not high capitalization and machinery that made production modern so much as it is the approach of the people in the labor force to production problems and combined with the availability of modern machinery which opened up the opportunities of modern technology.

3. The Modernization of Agriculture--Extension Services and Community Development

The status of villagers as producers and as citizens has been declining. At the same time, the status of city people has risen. This is one of the features of the socio-economic transition. Anthropologists have often commented on the fact that village people seem to have lost their nerve. There is a sense of helplessness among them. Even though fine things are said about their romantic and glorious past, there is in the general public a widespread notion that they are ineffective. As a solution, somebody, perhaps "government," must bring tractors, clean drinking water, knowledge, and political participation to the countryside. In other words, from the city must come programs and ideas to lift the rural people out of worsening conditions. I think this is also the image of themselves many farmers have.

An extension program should destroy the idea that villagers are passive victims of circumstances and prove that they can shape their destiny and make

progress. Extension programs must cut through the roadblock of inertia. (Isn't the same true of factory labor in industry? Poor living conditions, high turnover, inability to acquire new skills, and a general stalemate in attempts to raise manpower productivity? They, too, must replace utter submission to circumstances by a measure of control over production processes so that productivity is raised).

How can the extension service attack inertia? First of all, the villager's own image of himself and his problem cannot change much faster than his society's view of him. A large dose of social and political confidence is essential. Without such an "awakening," programs to raise rural productivity have been operative over long periods without much result. The belief that ordinary peasant people can and will raise productivity is essential. Given this favorable background, the extension program has a chance. Its function can be defined as education for farm people. It operates outside of the school system. Its subjects may be: literacy, animal husbandry, agronomy, fishing, health, home economics, maternity care, rural credit, rural engineering, sanitation, small-scale industry, etc., but the program never tries to cover all these things at once. Extension should attempt to make educational services available in whatever aspect of village life there is a good chance for improvement and for a contribution to agricultural productivity. The latter should always be an objective of extension. There are a number of things extension cannot do, and to name them will help isolate the particular functions extension can perform.

It cannot provide major public works.

It cannot directly promote greater political participation by village people.

It cannot bring to the farm all the fertilizer, seed, and credit; and it cannot establish and supervise cooperatives for other organizations.

It can equip peasant villagers to do their part in these things and thus enable other commercial and public services to succeed. There should be a nicely articulated division of function. This places on the villager the task of choosing and using various services.

The community development approach, unlike extension, provides all services through one organization and one worker at the village level. Community development often expresses the idea that villagers cannot select from a multiplicity of services and apply the adopted ones to their particular requirements without expert advice.

Col. Brotosewojo: We have workers in the villages in Indonesia who are villagers themselves. We almost never have people coming from other areas to work in villages other than their own. Please give me some elaboration.

Mr. Shorter: In most extension services the best extension workers are selected from among the people in the rural areas to be assisted. They know the dialect and the people, essential factors for a teacher. There have been attempts, but none too successful, to employ persons who have moved away from the village to attend school or college and to turn them around and send them back to the

village. Those who have left for higher training move more logically into the Specialist-Supervisor category. At the village level in Indonesia you say you have extension workers who are the same kind of people as the villagers, but they have different vocations and the villagers may take a while to understand this and to profit by appropriate division of function.

Mr. Ibrahim: This arrangement applies in the Gezira Plan of the Sudan. There is a scientist at the top, then the farmer (at the bottom) on the land, and in between there is the worker whom we call the inspector or officer. The farmer is responsible for doing the irrigation, sowing, etc., while the officer is responsible to see that these things are done--that the land has been cleared and that there is no disease in agriculture. He reports it to the scientist. This arrangement applies to a very modern organization of agriculture rather than to the village communities where each man is responsible for his own agriculture.

Mr. Shorter: The Gezira Project is a large-scale irrigation program in a cotton-growing area. It has been successful in raising output per acre and in obtaining a high quality of cotton. The cultivators have special plots, have certain responsibilities, and share the profits. There are supervisors who tell them what to do. The supervisor at the top determines the policy. This is a different agricultural situation than the individual cultivation situation about which I was talking. You are right. The organization you described also has three layers--scientist, worker, and villager. However, the man in the middle has an entirely different function. In the Gezira Plan the cultivator is a skilled farm laborer. He is not an independent cultivator who chooses his crop and takes risks. The number of decisions he has to make are few. That is one reason your system succeeds so well. It uses farmers without demanding much change in traditional ways of thinking. This is an interesting contrast. The function of the extension system is educational. The function of the Gezira system is managerial. I am talking about a structure of knowledge and function, not about a pyramid of administrative organization.

Mr. Bringas: In a situation where the villagers are illiterate, with long-established traditions and superstitions, I believe that science or technological advances in agriculture would be incompatible with their beliefs. No training will make them change long-established habits. Therefore, agricultural extension would fail unless one goes deeper into the underlying causes. If the supervisor is identified as a government agent, villagers won't believe what he says. If they have a good crop, they will think it is due to some superior being and they will celebrate by sacrificial killing of animals and inviting neighboring villages to celebrate with them. I think the approach should be different. The extension service people should live and do business like farmers and villagers. Then villagers may see that extension workers have good crops and they may want to know how this has been accomplished.

Mr. Onfray: I imagine conditions like those in the Philippines exist in other countries. To improve them is one of the basic goals of the Andean Indian Project of the International Labour Organization, which is operating in Peru, Ecuador and Bolivia.

Mr. Gaibor: The Andean Mission has carried out an important task in my country. The problem is that the Mission has not been able to reach enough people. The government should initiate projects of the type I will indicate. In Ecuador

rural people serve one year in the army. Enlistment should combine military with agricultural training. This may prevent rural people from going to the cities after discharge. Urban industries cannot absorb this part of the labor force, so the policy should be to try to get them to stay in their home communities.

Mr. Tijerino: The information of Mr. Bringas was very interesting. Nicaragua has an essentially agricultural population--67% of the active population. Problems are similar to those of the Philippines. There are additional problems. The population on the Atlantic Coast is of a different language and race; they are Mesquito Indians. Because of British influence in that area, they have a different religion also. Most Indians are Protestants. The agricultural extension service has done a good job on the Pacific Coast. On the Atlantic Coast success came through improving the educational level. The Nicaraguan program is very limited in its funds. It is hoped that during the implementation of the agricultural reform next year there will be more money. Since the program started in 1955 or 1956, there has been a visible increase in productivity.

Mr. Shorter: The returns from extension programs are only partially revealed by quantitative measurements. The knowledge that is grasped by one man may improve not only his own methods, but those of his neighbor as well. To measure results the program must be observed with great perception, allowing for both direct and indirect results in a realistic manner. When a program cannot produce readily identifiable quantitative results, planners sometimes tend to put their resources elsewhere. However, it is necessary to insist on giving value to essential objectives, whether they are quantifiable or not.

Mr. Habed: Nicaragua's program of fundamental education for Mesquito Indians on the Atlantic Coast began in 1956 with 84 teachers of which 22 had received training in Mexico. The main purpose of the program was to integrate this population of nomads, which had a very low educational and cultural level, into the nation. The main interest was in a higher cultural level, not higher productivity. The people were given training in many subjects such as Spanish, general science, and the art of better living. The results were very favorable. The program was concentrated on about 3,000 adults and children in three or four villages. It started as a pilot project and has now been extended to other areas so that there is one other similar project in which it is hoped there will be equal results. The people had been absolutely unproductive before, but now they are going into agriculture and they do well. Sometimes production is above the level of the other regions. The program was planned jointly by UNESCO and the Nicaraguan Government.

The program established health, education, and extension centers away from the villages and then tried to induce people to come and use the seeds and better methods in farming. It was hard to get them to come, but a few came and others followed when they saw the results. The system generally gave an elementary education up to the third grade, including agricultural training, health, hygiene, and civics. The teachers were trained to teach these subjects along the lines of the fundamental education scheme of the UNESCO program.

4. Agriculture and the Policy of Economic Development and Manpower in Chile

Mr. Onfray: The characteristics of Chilean agriculture are:

(1) The investment in agricultural production in Chile is for the most part domestic so that the income from agriculture remains in the country. There are no foreign plantations.

(2) Agricultural occupations employed 33% of the active population in 1948. Now the farm labor force has declined to 31%. The rural population has very limited purchasing power and is largely outside the market.

(3) Agriculture represents only 17% of the gross national income. Compared with the mining industry and commerce, its contribution is very low, especially if the number of people who work in agriculture is considered.

(4) In Chile the irregularity of the rainfall makes it hazardous to depend on natural sources of water. The government is obliged to create artificial sources. Another problem is that in some regions there is such an abundance of rain that it causes damage from erosion. However, Chile has fundamentally two parallel systems of mountains, the Andean and the Coastal Ranges, between which is the Central Valley which consists in the North of plains and in the South of a number of islands. In some parts of the North there are other chains of low mountains. This topographical characteristic permits the construction of dams, but it makes transportation and communication very difficult and it limits agricultural expansion. The Chilean land is characterized by its great variety, but its productivity is low because of ancient techniques used. The total extent of the country is 74,000,000 hectares of which approximately 25,000,000 can be used for farming. The population is at present 7,500,000. In 1948, 730,000 were in the agricultural labor force.

(5) The characteristics of agricultural production are:

(a) There is a variety of production. Due to the diversity of geographical distribution and variety of climate all kinds of products can be produced. The country extends from the tropical regions to the South Pole, so that it has all kinds of climate including sub-tropical, temperate, and polar.

(b) Production is stagnant. The irrigated area has only increased slightly. In 1900, one million hectares were irrigated; in 1950, 1,300,000. Actually, instead of an increment in production, there is displacement of certain products by others, for any increase in the production of some products means a reduction in the production of others due to the limitations imposed by the seasonal changes.

(c) Production in Chile is disorganized. The general rule has been to plant those products which in the preceding year brought high returns.

(d) Output is low. Costs are high. This is, in part, due to the expensiveness of irrigation and transportation, but the main cause is slight utilization of new techniques. Output per hectare in man-hours is very low compared to that of the United States. In the U. S. in 1909, 21.5 man-hours were required to work one hectare. In 1936, 3.5 man-hours were required. In Chile 160 man-hours are required per hectare in some regions.

According to Professor Francisco A. Pinto, the economic policy for agriculture that must be followed should have the following objectives:

It must provide food for the population and raw materials for industry.

Agriculture must constitute a consuming market for other industries.

Agriculture must represent an income source of foreign exchange from the export of various products in demand in foreign lands.

It must protect the natural resources through rational exploitation which will not terminate the resources.

Consequently, those who prepared the Ten-Year Plan took into account agricultural reality, and they made the economic development plan for 1960 to 1970 on the basis of addressing four separate tasks.

To forecast the domestic growth of demand, exports and agriculture and cattle raising and to balance production and demand in order to be able to estimate import requirements accurately.

To examine the availability of irrigated and non-irrigated land for production, and to establish a relationship between the available land and the development of required crops.

To estimate the needs of the future by analyzing the demand for the production factors of greatest importance for the sector, such as equipment, fertilizers, etc.

To set the framework in order to accelerate economic development which is the basic issue in the economic plan.

This program implies yearly growth in agriculture of 5.5%. If the total production grows by 5.5% annually and the population grows 2.5% without taking into account changes in exchange rates, this means that in general the available per capita production would increase about 3% per annum.

In order to carry out any development in agriculture, whether it be social or economic, it is necessary to have the manpower available in numbers and quality required. The relationship between output and employment is less close in agriculture than in industry where the effect on employment depends very closely on production programs. The evolution of employment in the agricultural sector cannot be easily deduced from projections of output or productivity. Technicians in programming of manpower in agriculture have a difficult task. Quantitatively speaking, it is known that when a country industrializes, the percentage of the agricultural labor force diminishes in relation to the total labor force. This trend can be seen in Chile. But, I would like to emphasize the aspect of quality of labor force and the training of the agricultural worker. The Economic and Social Council of the United Nations in its conference in March, 1962 found that the agricultural worker must meet the needs of trained personnel for the development of agricultural life and production as a fundamental part of the economic process of Latin America.

One of the principal problems of rural education in the Latin American countries is that it does not differ greatly in many of its essential characteristics from that of urban areas. Virtually the only difference is location. A program for rural education must be adapted to the environment. It should not be inferior to urban education, but it is necessary to analyze the needs and contents for education in agriculture. The levels of rural education should be: elementary, practical, technical, and university.

Mr. Farooki: What proportion of the land is in latifundias and what in minifundias?

Mr. Onfray: There are 1,340 latifundias which are owned by 0.74% of the total landowners in Chile but represent 75% of the arable land. There are 140,000 minifundias owned by 78.7% of the total landowners and representing only 8.5% of the total arable land. This means that a tremendous amount of the owners do not receive any advantage from their land. The majority do not play a role in active production. In general the latifundias and minifundias do not have a high level of productivity, but the minifundias generally seem to have a higher output per hectare than the latifundias because more labor is applied per hectare on the smaller farms than on the larger. Irrigation raises the productivity per hectare, but other forms of mechanization, such as tractors, raise the productivity per man without raising the productivity of the land.

Mr. Qureshi: As both latifundias and minifundias are undesirable, what size farm would be desirable in Chile?

Mr. Onfray: There is no exact size that would be best because the size depends on the geographical location and the climate. In the South the latifundias are larger. In the North the farms are not very large, for they are intensely cultivated and highly productive because of the climate. In the central region they are larger in order to be profitable, because the land is not very productive. In the North, 50 hectares can be considered a latifundia; whereas in the central region 2000 hectares can be considered a latifundia, and 100 hectares is an adequate farm. In the extreme South the farms must be at least 1000 hectares because the land is not for farming, but for grassing and husbandry of sheep and cattle.

Mr. Ibrahim: What are the important agricultural products?

Mr. Onfray: The main products are: wheat, cereals, beans, rice, sugar beets, corn, fruits, and grapes for wine.

Mr. Shorter: Do you expect that as improvements in agriculture are made, this will require more or less manpower? Can you name any particular projects in the agricultural sector that affect the number of workers and the size of production in agriculture?

Mr. Onfray: I believe that the downward trend in the proportion of agricultural workers will continue so that the active agricultural population will become smaller. This trend may be altered by a colonization program designed to integrate abandoned areas into the economy. This may make it possible for the absolute number of people in agriculture to rise.

There is a special plan related to training agronomists in order to increase production. In 1958 there was a meeting in Santiago, attended by representatives of the different Latin American universities. Besides making a study of the shortage of technical personnel in agriculture, they emphasized the training of agronomists on high levels of specialization. The university program and curriculum were changed and a new curriculum of engineer specializing in agricultural economics and administration has been added. Now agronomists will be better trained and will be able to contribute effectively to implementation of the development plans.

You asked whether an increasing demand for manpower would occur. Answering this question, I would say that certainly there will be a need for more manpower in the construction period, but this manpower does not belong actually to the agricultural sector and it will not remain in it after the first stages.

Mr. Shorter: You make a distinction between the construction period in which more manpower is needed for construction and the utilization period. In the utilization period, more agricultural manpower is usually needed, for irrigation usually increases the crop acreage.

Mr. Tijerino: Is the Colonization Institute part of a land reform program?

Mr. Onfray: Since 1928 the Institute has been carrying out investigations and working on colonization, but the problem has not yet been solved. No committee has been set up to work on land reform because there have been arguments over that issue.

5. The Impact of Land Reform in Bolivia

Bolivian rural conditions were analyzed and discussed by Dr. Castro Ferragut of the Inter-American Development Bank, who attended the August 1 meeting as a guest lecturer, and at a later date by Mr. Mendizabal, the participant representing Bolivia.

Dr. Ferragut said: For the last two years I have been in Bolivia on a United Nations Agricultural Mission making a study of agricultural colonization and the implementation of the agricultural land reform. Bolivia is one of the few Latin American countries to have carried out an agricultural reform. This was in 1953. Prior to the reform program - in the 1950 census year - 69% of the farmers owned farms of less than ten hectares, representing less than .4% of the total land area. Farms of more than 500 hectares, representing 95.1% of the land were owned by 8% of the farmers. When the agricultural reform was established, one of the articles of the law provided that all Bolivians over 18 years of age that wanted to go into agriculture would be given land according to the plans of the government. They must start agricultural work on the land within two years after receiving the grant. Political rather than economic motives prompted the reform program. This is typical perhaps of such programs. Every agricultural reform has the purpose of producing a more equitable distribution with the object of obtaining a higher standard of living. In reality, a higher standard of living is obtained by transferring people from non-productive activities to more productive activities. From the point of view of the economic development of Bolivia, to give land to those that want it does not constitute a plan for economic development. Also, there remains the serious problem of giving land to farmers who lack entrepreneurial initiative and are inadequately trained.

Between 1950 and 1958 estimates indicate that the area under cultivation has increased by 11.2%. But agricultural production dropped in the first two years of the agricultural reform. In 1954 it was equal to 66.1% of 1950 production and in 1955 it equaled 69.8%. Now production has increased to 85% of 1950.

Until April 30, 1962 the agricultural reform had benefited 132,000 household heads who received an area of 3,935,830 hectares. The technical department was in the last phases of processing a further distribution to benefit 40,000 additional households with an area of 548,000 hectares. On the other hand, 3800 Indian communities will remain unaffected by the reform. In these latter communities 170,000 hectares of cultivated land is available, but 13,000 Indian families have only 1½ hectares each.

If the objective is to raise the standard of living of the rural population, it is necessary to pull manpower out of agriculture and put it into other activities and then to stimulate the use of mechanical equipment. This is contrary to the government policy of colonization, however, because alternative sources of employment are lacking. Public policy has not increased agricultural production, and it has wasted time and money by moving people from the city to the farm who have not had previous agricultural experience. An increase of production could be obtained by giving greater amounts of technical know-how through training, selection of seeds, and inducing farmers to change their techniques.

Underemployment and unemployment are extremely high in the rural districts. The rural population is 2,184,000 or 66.1% of the total population. Of these 1,200,000 people are in age groups between 15 and 60. The potential capacity of these workers is 360 million man-days.

A study was made selecting 11 main crops in each department to determine the labor required for each. Cultivation of 727,000 hectares would need 42

million man-days or 12% of the total human potential. The study included man-hours for a four to five-hour day at low levels of production. The requirement of human labor for sheep and cattle raising averaging 55 head per flock is 100,-000 man-hours. This work is done by children and old people outside the 15-60 age limit, so that herding does not affect the potential labor force. The rural labor available is 2½ times the number of people required for the total agricultural potential. Consequently, 42% of the rural labor force are underemployed. This high rate is the direct cause of the rural poverty. But, if productivity were raised, unemployment would be greater. In order to improve the standard of living, therefore, there must be industrial development.

Mr. Mendizabal's Remarks

The Ministry of Agriculture is in charge of land reform and of solving the agrarian problem. Bolivia's land reform has two objectives: integrating the Indian population and colonizing the fertile tropical lands. In order to solve the agricultural problem, the government gives the farmer seeds and the necessary machinery.

Before the revolution the Indians did not have voice or a vote. They worked on little plots of land and were exploited by the white man. They have lived according to a communal system since the time of the Inca. The political situation caused by revolution led many landowners to finance a counter revolution because, at first, the land reform was like anarchy. The resulting confusion created certain maladjustments in the internal life of the country, and as a further result production declined. After three years a recovery began.

The Ministry of Education is in charge of the education of Indians. It has initiated a series of pilot projects. Farmers of a community may build a school and call in an engineer from the Ministry of Education to plan and supervise construction. Farmers keep him in the village until the job is done. After they have the school building, they request a teacher from the Ministry. Because of the great financial requirement of the program, Bolivia depends on the Alliance for Progress. Bolivia has great plans, but no economic means, and without them it can do nothing. The aid from the Alliance for Progress and from Germany and Great Britain will start with the infrastructure.

For planning on a long-range basis, we have the National Economic Planning Board, which works in cooperation with the Food and Agricultural Organization (FAO) and the Economic Commission for Latin America (ECLA). It is in charge of a ten-year plan which is reviewed every five years. In order to have cooperation in the collection of data, the National Economic Planning Board has an advisory function for all of the ministries.

The Bolivian economy is based essentially on the mining industry. There is a Ministry of Mines and Petroleum in charge. It deals especially with the Bolivian Corporation of Mines, owner of the largest mines. After the revolution, Bolivia nationalized the large mines. It left the medium-sized and small mining establishments to private owners.

6. Development Planning in Northeastern Brazil

Mr. Shorter and Mr. Branco (Brazil)

The political and regional development program which the Federal Government of Brazil is now executing includes the area of the States of Maranhao, Ceara, Piaui, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, and Bahia. The Northeast area included in the Plan covers 17.6% of the territory of Brazil, consisting of 1,548,646 square kilometers with a population of 22,427,000 (July 1960), or more than one-third of the entire nation.

The problem of Bolivia seems somewhat similar to that of Northeastern Brazil, but the area of the Northeast is 1.5 times greater than all of Bolivia and it has 6½ times the Bolivian population. The Northeast represents the most crowded region of the Western Hemisphere. The per capita income is $95 per year compared with $224 for the whole of Brazil.

The distribution of land is similar to that of Brazil in general. It is different in each State of the area, but Bahia is a typical example.

Size of Farms	Land Distribution in Bahia Owners as % of Total	% of Total Area
Under 100 hectares	90	27
100-200 hectares	5	11
Over 200 hectares	5	62

The Northeast has two types of climate. There is the semi-arid region in the center which has sufficient, but irregular, rainfall so that there are periods of drought. Cattle, cotton, and a subsistence agricultural production are the economic characteristics of the semi-dry region.

The two remaining regions--the coast and the interior--are moist. On the coast there is sugar cane agriculture combined with refining. Large amounts of cacao is also produced there. In the moist interior the lands are not cultivated because of a very poor system of transportation.

The population is growing and the structure of the economy is incapable of absorbing the increase. Demographic pressure is the cause of serious political and social problems. The seriousness of the problems is aggravated by the subsistence character of much of the agriculture, particularly in the semi-arid zone. Social tensions have created a general climate of dissatisfaction, a feeling of resentment toward the more developed areas of the nation, and claims from the peasant leagues for an immediate and drastic redistribution of land. These tensions represent a threat to the unity of Brazil and to the nation's internal security. The crisis is largely due to the absence of an overall policy for economic development in the past and the failure of the government to mount effective programs. Thus, the public organizations and National Department of Works Against Droughts and the San Francisco Valley Commission failed because their actions were not well coordinated. Likewise, the government, in 1952, created the Bank of the Northeast to institute a policy of economic development, but its programs were not broad enough.

In 1956 the government created a working group on the Northeast with the objective of supervising a program that would give greater development to the area. To create a policy for development, the working group prepared a diagnosis of the region, suggested directions, and drafted a basic document called: "A Policy for the Economic Development of the Northeast" (Sudene).

The Development Board of the Northeast made an analysis of the economic and social situation. Upon completion of this task, the Board became the Superintendent's Office of the Northeast. The Office prepared a five-year plan which has these main targets:

1. Creation of an economic infrastructure in the humid, virgin soil region through integration of the transportation system and expansion of the supply of electric power in order to provide better living conditions for resettled peasants.

2. Financial and technical aid to existing as well as new industries.

3. Rational utilization of the water resources.

There are 194 public dams in the region with a capacity of 6,425,000,000 cubic meters of water plus 487 private dams with a capacity of 1,008,000,000 so that the potential water-generating capacity is 7,433,000,000 cubic meters; the principal canals have 274 kilometers and the secondary canals have 424 kilometers for a total of 698 kilometers of canals in the region. Despite the potential generating power, only 10,000 hectares of land are irrigated. The beneficial effect of some dams is very limited because they were not initially built for irrigation and the major part does not permit access to the impounded water in a way that results in agricultural production. A great number of the existing canals are not being used.

The rational utilization of water resources will form an agricultural economy which is better able to utilize the dry lands. It will allow an economic reorganization of the semi-arid zone so that it will be less vulnerable to droughts. The plan will rationalize the food supply and strategically plan the stock for the emergency of drought. Mineral resources of the region will be utilized on the basis of geological surveys for the area is rich in rare ores. The humid areas are to be colonized through minimum infrastructure investment to make access to the areas possible. The plans call for the raising of the average level of health and education of the rural population.

The plan calls for an investment in 1962 equivalent to U. S.$66 million. Foreign aid from the United States and West Germany has generously increased the available funds for the program.

Dr. Benjamin Higgins had recently been called upon by the Brazilian Government to appraise the Sudene Plan. He was asked to speak about his impressions and made these comments:

It is impossible to exaggerate the magnitude and complexity of the problem of poverty in the Northeast. For example, Sao Paulo is 1000% above Piaui in the level of living, and the difference is increasing. For many

millions of people in the Northeast income is not rising at all. The increases in income are taking place only in industrial areas, such as Recife. On the coast in the sugar area, the population density is 350 people per square kilometer. With a rate of population growth of 3%, the population density in a decade will be higher than that of Java, but without the soil replenishment Java derives from volcanic lava. The Northeast has urban slums equal to those of Calcutta in India.

It is my feeling that the Sudene Plan is inadequate. The main targets of the plan are:

1. Transportation: Generally this type of investment is a safe development project, but in the Northeast it will have an ambivalent effect. At the present the high costs of transportation from other Brazilian regions to the area has helped to protect the few Northeast industries from the competition of the low-cost industries of the South. To reduce the transportation costs would be to further restrict the market for the established industries of the Northeast. Transportation improvements within the area would be beneficial however.

2. Irrigation: The effects of irrigation could only be beneficial, but there are limitations on the possibilities for increasing the water supply and the poor quality of the soil would still prevent high levels of agricultural production.

3. Textile industry: This is more of a holding operation than a development project. It calls for the modernization of the existing mills, but not for increased production. It can only prevent the reduction of production due to breakdowns and limited markets because of the high costs.

4. Sugar industry: The land reform program provides that land will be expropriated and taken out of sugar production and given to the peasants for subsistence farming. The government, in exchange for the land, will give higher-yielding seeds and technical assistance to the sugar growers to maintain the same volume of production on the remaining two-thirds of the land. Subsistence farming is better than starving, but it is not good enough to really improve living standards.

5. Resettlement: 525,000 people will be moved in five years from the coast to the interior where the land is better because there is more rain and more fertile soil; and it is expected that an additional 475,000 people will move voluntarily to other areas in Brazil. Projected is a total migration of one million over the next five years or 200,000 each year. This is not enough; the Plan is too small. To provide for a minimum income of $100 a year, it is necessary to move 7.5 million people. An effective plan ought to provide 500,000 jobs a year as productive as the Brazilian average. With a $3000 capital-job ratio, the investment should be $1.5 billion a year, but the Plan calls for only $200 million, one-seventh of the requirement.

The Plan counts heavily on private investment to fill the gap (of 1,300 million), but the general climate of opinion has been rather anti-private enterprise.

My main objection to the Plan is that it treats the Northeast as an isolated, closed economy with no relationship to the rest of the world or the rest of the country. There has been no analysis of trade, immigration, emigration, or capital movements. There has been no analysis of what kind of national fiscal policies and planning programs would be beneficial, nor has there been an analysis of the impact of the national balance of payments. The Plan treats the problems of the Northeast as though they will be solved by the Northeast, but this is not possible. A solution must grow out of a national policy.

Mr. Fonseca: The private sector is being encouraged to take part in the program. Not more than two months ago the National Congress approved a law by which the people who wish to invest in the Northeast are relieved of the obligation to pay income tax, if they apply the amount of the tax to investment in the Northeast along with an equal amount. The investments must be, however, in conformity with the priorities of the Plan.

The Sudene Plan is a first step. It is very new. The Brazilian States are trying many kinds of plans to develop a national consciousness for the need of having a plan for the entire country. The Northeast is no longer thought of as an island. A man from that area holds an office of Cabinet rank in the National Government, primarily to integrate the Northeast into the National economy. The Sudene Plan includes programs for other industries such as steel mills, synthetic rubber plants, etc. It is necessary to understand the Plan in the National context.

Mr. Branco: The size of the Plan was established on the basis of studies made by the Sudene in terms of the national resources. The initial work did not count on help from the United States, so that the Plan is an expression of efforts within the capabilities of Brazil. Now with the Alliance for Progress it is possible to think in terms of a larger plan.

7. Regional Planning and Its Application to Agricultural Problems in the State of Sao Paulo, Brazil

Mr. Fonseca: First of all, I might express the point of view I will take in this discussion. In Latin America there are big cities, universities, etc., but we are still underdeveloped. We have a very sophisticated elite, but there is a gap between high level thought and reality.

Brazil has 3,300,000 square miles of territory. It represents nearly one-half the total area of South America. If you consider only the continuous territory, we are bigger than the U. S., without Alaska and Hawaii. Brazil is rich in natural resources. The movement of exports--wood from the coast; sugar from the Northeast; gold from Minas Gerais; and cotton--initially, all went to Portugal. When coffee production started, Brazil was independent and exports were sold in the world market.

Coffee is grown in the region from Rio de Janeiro to Sao Paulo and to the West. It is the only product in our economy that has been able to maintain

its export capacity. Sao Paulo receives the benefits from coffee production. But in Sao Paulo there was another institution which I think is important; namely, free labor. Brazil had slavery until 1889, but Sao Paulo was receiving free immigrant workers from Europe. With their money, wages established a more diversified consumers' market (the people working in the sugar plantations were slaves and received no wages). In the Sao Paulo area capital was available which provided the social and historical foundations of the State and created an entrepreneurial class. Sao Paulo soon had railroads and banks. The City of Sao Paulo began to grow, first because it was situated on the railroad line to the seaport of Santos and afterwards, because of the availability of electrical power.

In 1959 the Government of the State of Sao Paulo approved a plan for four years called the Plan of Action. This Plan was silent about manpower. It was concerned only with: (1) investments for improving the human conditions; (2) infrastructure investments; and (3) investments for industrial and agricultural expansion. During the implementation of this Plan, the planning group began to learn about the importance of manpower problems. This may seem strange to you, but you must take our situation into account. It is completely different from that in the other countries represented here. In 1960 the Manpower State Service was created. For the next four years we had a four-year development plan for the State of Sao Paulo, and in that plan we had a manpower program. In this Seminar I represent my State and, specifically, its Manpower Service.

Mr. Pangerapan: Have you taken a census?

Mr. Fonseca: Ever since 1872 we have had a census in Brazil. At first it was every 20 years. Since 1940 it is every ten years. The last one was in 1960. The results are being tabulated now. As the Director of the Manpower Service, I am concerned with two aspects: (1) the manpower problem without regard to the development plan; and (2) the same problems within the framework of the development plan. The first aspect requires only research; the second one consists of how to provide the manpower needed to carry out the plan. I do not have any solution to present. I am just pointing out some problems and asking for your comments to solve them. Where can we get the manpower we need for the Sao Paulo State Development Plan? How can we shift labor from agriculture to industry? What are the skills needed by people to work in industry? Is it possible to control--to intensify or to slow down--the flow to cities and urban occupations? We know from the food situation that Brazil must improve its agricultural sector. A land reform bill was prepared by the plan for Sao Paulo. It has been approved. Its main provisions are:

1. Subdivision and settlement of the unutilized lands.
2. Classification of graduated land taxes to intensify land use.

Expropriation can be effected after one year's grace, if owners fail to cultivate their lands in accordance with certain criteria or to apply minimum standards to farm labor.

The land reform is not an "agrarian" reform. It is a land-holding revision designed to increase production through modernization. There will be repercussions from this program. It will take the form of outflows from the

agricultural sector to industry. We must know how many people will be affected. What are the probable effects of the intensification of agricultural production?

In the agricultural sector of Sao Paulo three fundamental problems stand out:

a. The rural population has a low standard of living. The people need sanitation facilities, healthful water sources, hospitals, better housing, and educational facilities. Although there have been provisions for minimum wages in agriculture on paper, the people do not in fact receive them. There is a need for social legislation in the rural areas. There is the problem of land tenure and the problem of a system made up of different kinds of remuneration. Inheritance laws have been a problem because they cause the holdings to become progressively smaller. The law provides that land be divided among heirs equally. This makes it easier for the large landowners to buy up small farms.

b. The second fundamental problem in agriculture is to increase productivity. The plan is to increase productivity in areas that are already being cultivated and to increase the total area cultivated.

c. The third problem involves the transportation, storage and distribution of the food and agricultural output. At times there have been food shortages because of the inadequacies of transportation, refrigeration and storage.

Inflation affects the structure of agriculture. With inflation and rapid changes in the relative prices, income is transferred from the agricultural sector to other economic sectors. There is no stimulus for investment in agriculture. Any increase in output in the agricultural sector depends on the transfer of economic factors from one crop to another.

In the implementation of the plan, many highways are built to link the parts of the country. If agriculture is not a good investment, the people will sell their property along the roads and land speculation takes place. Smaller landowners sell their property so that output decreases, causing food shortages.

The land reform has taken the form of forced distribution of State land and increased taxation on lands that are not being cultivated, with the possibility of expropriation later on. The division of land causes another problem. The big farms used a part of the land for commercial crops and the rest was left for subsistence farming to large numbers of underemployed people. Commercial crops require fewer people than can be used on the subsistence farms. When the land is divided among several people, all farming is commercialized so that there is not enough room for as many people as were supported on a subsistence level on the larger estates. People thus released from farms will go to the cities. It is necessary, therefore, to estimate the volume of redundant manpower over a given period of time.

To avoid creation of new subsistence farms, a minimum size for each farm after subdivision was established by the plan and the State and Federal Governments are promoting transportation, storage, refrigeration, and financing to

stimulate commercial production. Also, the Federal Government has recently initiated a guaranteed minimum price system.

There are two principal fields in Brazilian agriculture: production for domestic consumption and production for export. Most of the Government's efforts have gone to support the exports with only a few efforts aimed at farming for domestic consumption. The development of highways, railroads, ports, refrigeration, and storage has been linked to export crops. Brazil is almost totally self-supporting in its food needs, but it is deficient in refrigeration, storage, and transportation facilities for the domestically-consumed goods.

Recently a guaranteed price system has been established for agricultural products.. Its impact is mostly on livestock. Brazil is the third largest cattle grower in the world; there are 73 million head of cattle, as compared with 71 million people. Despite this, local shortages of meat are frequent due to excessive export or lack of refrigerated storage.

The agricultural development plan of Sao Paulo State could perhaps become a model for all of Brazil. But it is legitimate to think of the objectives of land reform in a broader social context. From the point of view of the Sao Paulo Plan the objective is to increase productivity and output. To increase the standard of living, it may be desirable to concentrate upon land distribution. It is necessary to think of all these objectives. Real income in Brazil has been declining; wages have not kept pace with (rising) prices.

8. The Thailand Planning Board's Approach to Estimating Future Manpower Requirements of Agriculture

Mr. Pombhejara: In 1961 the Planning Office gave me a new assignment. I had to direct a small group of people acting as the central coordinating body of the various economic sectors within the Planning Office itself. In this capacity I have to take care of the financial aspect of the plan, as well as of the over-all targets. I was primarily interested in finding a way to establish consistency between sectoral and over-all targets and also among the several sectoral targets themselves. To illustrate this task--Suppose the aggregate, over-all plan calls for a 6% annual increase of the national income; then what should be the rates of growth in the agricultural sector, the industrial sector, or the communications sector? In other words, one has to try to determine the sectoral rates of growth. These, in turn, will add up to the over-all growth rate. To do this one has to calculate sectoral growth rates which, under an input-output matrix criterion, would be consistent with one another. Input-output analysis requires a good deal of statistical data which was not available in Thailand. I discovered some five years earlier that the inter-relationships among the various sectors in the Thai economy are very small confronted with the problem of deficient data and knowing the size of inter-sectoral coefficients. I decided to disregard input-output consistency between the sectors. Instead I concentrated on consistency between over-all and sectoral growth rates.

My methodology was somehow like this. The Government would decide whether the target rate should be 4%, 5%, or 6%. The Government's decision as to the height of the rate would depend upon how much sacrifice the administration could force the people to make during a given period of time. With such a politically-determined rate of growth, the Thai Planning Board then works out the national

income figure which is expected to emerge at the end of the Plan period. Supposing the national income in the year 1960 is $50,000 and we allow a growth rate of 6% at compound interest, then the national income by the end of 1966 should be approximately $70,000. Once the over-all growth target has been calculated, one can start analyzing the sectoral distribution of the national income.

Suppose that the percentage sectoral distributions are as follows: 38% for agriculture; 20% for industry; and 42% for service. In this case one has to make a decision about the situation contemplated at the end of the plan. If one wants rapid industrialization, the percentage of the industrial sector's income in the total national income will have to be much larger than at the start of the plan and the rapid decline in the relative importance of the agricultural sector during the progress of the plan is a consequence of the expanded share of the industrial sector. If, on the other hand, one prefers to concentrate on agriculture, the situation at the end of the plan should be just the opposite. Finally, if one proceeds on the assumption that during 1960-1966, the industrial base will not be strong enough to sustain an industrial take-off. One should plan for a gradual decline in the share of agriculture and an equally slow increase of the industrial share. Supposing in the last case that the shares one wants to see by the end of 1966 are as follows: agriculture 34%; industry 22%; and tertiary or service 44%; we then know that by that year with a national income of $70,000, $23,800 will come from agriculture; $15,400 from industry; and $30,800 from services. Summarizing this last proposition in tabular form, the national income projection would be:

	Shares (%)		Rate of Growth in Absolute Income % of Income
	1960	1966	1960 - 1966
Agriculture	38	34	4.2 (% per annum)
Industry	20	22	8.2
Services	42	44	6.5
Total	100	100	6.0

In Thailand there is a labor force participation rate of 50%, calculated by including children 11 years of age and the military, and without subtracting older persons beyond an established limit. In 1960 there were 14 million persons in the labor force (based on an approximately-estimated population figure of 28 million). Of these 14 million, 12 million are in agriculture; one million in industry; and one million in service trades.

Outright unemployment is negligible in Thailand and it is difficult to measure the extent of disguised unemployment in agriculture because we have not made the necessary studies. But because of the presence of underemployment, it is unlikely that the manpower requirements in that particular sector will grow at a rate exceeding the manpower requirement rate corresponding to the 4.2% annual growth in output the plan contemplates.

In planning economic development we also have to think in terms of financial capabilities. After we work out growth rates, we can work out the capital requirements to support such growth rates. In the first place, we have to start with some assumptions about capital coefficients. The capital coefficient concept is not fitted to the over-all picture of a developing society. It was invented to explain the relationship between the amount of capital needed and the amount by which output will be increased. But in developing societies we are not concerned only with the problem of fixed capital to which this concept originally referred. Development expenditure takes many forms: fixed capital and other categories of expenditures in developing countries. I submit--the concept of capital coefficients may be replaced by one more adjusted to their economic situation. We might call this new concept a development coefficient.

Using development coefficients, one might calculate the amount of development expenditure of every kind required to sustain desired growth rates. In the course of such an analysis one has to determine to what extent the developing country in question can finance the required development expenditure. One may find in the course of analysis that the financial capabilities are not sufficient to finance the planned development projects. The reasons for not being able to carry out the plan may vary: the government may, for political reasons, not be able to levy sufficient taxes; or the government may not be able to borrow more money on the domestic market because people are too poor. In such cases one may have to work out new development coefficients. In this process of review and analysis one may have to shift emphasis in the area of production from capital-intensive to labor-intensive programs because there is not enough capital available. Making such substitutions would lead to raising the amount of labor required in each sector. This kind of review and analysis is not a substitute for a manpower survey. It is a methodology employed to see if the manpower initially contemplated is in step with the over-all economic development plan.

Mr. Shorter: You have shown us a problem in manpower analysis which is extremely important. Because capital is not an unlimited resource, you have to get along with less than you would like. You will look for ways of increasing productivity without increasing capital. Although your analysis at this point may raise the manpower requirement, it may still be possible to fulfill the demand for labor inputs, if ways are found of making the manpower pool more productive. We are led again to this critical question of manpower productivity.

Mr. Pombhejara made a projection of the expected change in the share of agriculture in the total national production and from this he derived a maximum likely increase in the labor requirement in agriculture in Thailand. His model showed the agricultural labor requirement rising at a rate of 4.2% per year; and the over-all rate of increase in the labor requirement was 6%. These percentage figures were also the rates of increase in national product. He specifically told us that these were maxima which he did not expect to emerge fully over the Six-Year Plan period. This projection suggests that we are correct in thinking of the agricultural labor force as growing in numbers, but because the model takes only a first analytical step, its results probably are, by themselves, not an adequate basis for policy.

Let us add to the model and see whether it leads toward conclusions that are plausible. On the labor demand side, the model shows a rate of increase of 6% over-all; on the supply side, we can expect that the labor force will grow at least as fast as the population. For example, assume a minimum rate of 3%. Then, from the growth rates of maximum demand (4.2%) and minimum supply (3%) we get a forecast of growing shortages of labor. If we stop the analysis at this point, what advice to development policy-makers would be implied? The manpower analyst would tell his government to think in terms of labor shortages, and to think of making interventions in the economy which would slow down the growth of employment opportunity without reducing the rate of growth in output.

I think Mr. Pombhejara's view of the problem is based on an incomplete analysis. It is more likely that Thailand, and many other countries as well, have at some time to face growing surpluses of manpower numbers rather than growing shortages. What has been left out of the analysis is that: first, the process of modernization will raise manpower productivity and this rate of increase in productivity constitutes a subraction from the rate of increase in labor requirements by Mr. Pombhejara's method. If the rate of productivity increase exceeds 1.2%, (continuing the example before us), there will be additional surpluses, not shortages to face. Secondly, expansion of the labor force participation rate is likely at this stage of development. Considering this prospect, the manpower expert must tell his government that it is not necessary to economize on human input so far as simple man-years of labor time are concerned.

Mr. Ibrahim: When we raise productivity, don't we expect more surpluses in labor? If you reduce the hours of work of labor, then you will expect more labor to work and you will need more labor to work. But if productivity is raised, will this not result in more unemployment?

Mr. Shorter: I am talking about increasing the output per man little by little over a period of time during which the rest of the situation is also changing and that makes the problem different from what you have illustrated. Mr. Pombhejara's technique can help to explain. The rate of growth in output is intended to be faster than the rate of growth in the number of people available to work. So it is absolutely essential to promote increases in productivity per man in order to achieve the intended rate of increase in output. Consequently, more work-spreading practices are not wanted. If the combination of rising productivity and more manpower resources coming available exceeds the intended rate of increase in labor input (expressed as 6.0% in the Thailand model), it is a sign of success. The real cost of applying still more labor to production will be low and the planners can consider raising their target rate of income growth still higher.

Mr. Pangerapan: Mr. Pombhejara indicated that there was a census in 1960 in Thailand and the results are coming out now. I wonder whether Mr. Pombhejara won't get more useful information from the census.

Mr. Shorter: Let us remember for a minute the technique he used. I would assert that the technique, prior to modification, inherently leads to the conclusion that labor will be short in most situations, even though there really may be surpluses in the future. The reason for this is that the rate of growth

in labor demand in his model is the rate of growth in output which is usually intended to grow faster than population. If it doesn't, the country is in serious trouble. So long as output is growing more rapidly than the rate of growth in population, the technique is bound to tell us that a shortage is in prospect (labor force participation rate, etc. assumed constant). We can add to this model a variable for the rates of growth in output per man are difficult to project. This is a variable concerning which historical data are urgently needed, as well as notions on which to base projections. A single census will not help much.

Mr. Bringas: In developing economies the tendency is for the number in the labor force in agriculture to decrease as we improve productivity.

Mr. Shorter: I want to put a problem before you. Every scientific investigator faces this. Regard your statement as an hypothesis rather than as something about which you are certain. You hypothesize that the number of people in agriculture goes down if that sector is modernized. Where would we look for information or experience that would check your hypothesis?

Mr. Bringas: If you go into the history of the American economy, years back, maybe the U. S. labor force in agriculture was 80%. Now it is only 12%.

Mr. Shorter: That refers to the share of the labor force in agriculture, not to the absolute number. Choose countries like yours, or Japan, or India.

Mr. Bringas: Let us use the Philippines. Years ago the labor force in agriculture was 70%. Now it is 50% or 60%. The number is larger with the present population. I am speaking proportionally.

Mr. Shorter: That is important. If you speak in proportions, your hypothesis agrees with the experience in many countries. If you speak in absolute numbers, it does not hold.

Mr. Onfray: I think that another thing must be taken into consideration when we make this calculation. It depends on the proportion of the land incorporated into production itself. In countries in which all the land is already in production, the diminution will be absolute and relative; whereas, in countries like many in Latin America where not all the land is in production, perhaps there will be an increase in absolute numbers, although the percentage will be reduced.

Mr. Shorter: You suggest that there would be a distinction between countries having unused land and others? Your hypothesis would be that the absolute number in agriculture would decline in those countries where there is great pressure on the land. In the record of the discussion of July 3 there is a list of countries. Look at India between 1941 and 1951. The number of people in agriculture went up 1.49% per annum. That is not quite as fast as the growth in population, so it corresponds with the model we have been discussing. The share of the population in agriculture went down from 75% to 74%. You get the same phenomenon in all the lower income countries whether land pressure was great or small. I don't think this list was drawn up selectively just to prove this point.

Mr. Qureshi: When considering this, we have to take notice of special factors. During the war there was a big campaign in India, particularly about growing more food, in order to make India able to feed her own population and also the armies of other nations stationed there. It was an effort to make the population of India as self-sufficient as possible. In view of this self-sufficiency effort the growth of food got a lot of emphasis. The consequence was more people were wanted on the land at that time.

Mr. Shorter: You have suggested that India's case might have a special explanation and might not be a good test of the hypothesis. We must give Mr. Onfray's hypothesis a fair test. You might be right that special factors were compelling people to stay in agriculture during the 1940's. I don't really know whether you are right or wrong on the basis of this discussion. The procedure to follow in testing an hypothesis is to look at many cases. Here and there a special factor may cause trouble, but if you look at all the countries listed, the same answer is found: none of the lower income countries show trends as Mr. Onfray hypothesizes. That strengthens my conviction that absolute numbers will rise and the share will go down. We have statisticians among us who know that the proper procedure is to look at a large number of cases to test the hypothesis.

Mr. Tung: In projecting agricultural manpower, it seems to me that we should know, in addition to the economic policies of the country, whether emphasis is being put on agriculture or industry. Take Viet-Nam as an example. Great emphasis is put on agriculture; absolute numbers, as well as the share of agricultural workers will rise owing to the agricultural development program. In the space of four years more than 200,000 were settled in the highlands, and due to the land-use program, at least 123 families were provided with land. I think that in my country the share of agricultural workers may rise.

Mr. Shorter: Yes. It would not surprise me if there were one or two brief periods in some countries where our general hypothesis regarding the share of agriculture would not be borne out. It may be that the pressures of government intervention or other unusual circumstances are so great towards agriculture that the share would rise for a brief period. But the broad sweep of economic change is so powerful that this is only a brief episode. In most countries the forces which determine trends in the share of agricultural and non-agricultural activity are much too powerful to be reversed by governmental actions. Government policies are capable of providing some guidance, but are not alone responsible for the trends we observe everywhere.

Mr. Bringas: You are saying that the government can redirect emphasis?

Mr. Shorter: I am saying that the sectoral relationships are so greatly determined by the development process itself that all the government can do is slow down or accelerate the relative shift from agriculture, or the growth in absolute numbers in agriculture; but the basic background against which the government planning organization and government intervention is operating is so powerful that the generalization will hold even in the face of opposite government intentions. It holds in countries like Brazil where government's intervention is not nearly so strong as, for example, it is in Egypt where the generalization also holds true.

Mr. Fonseca: What about the case of Israel?

Mr. Shorter: This may be an exception. We would have to find out. One of the remarkable things in Israel is that much of the direction of economic change is determined by the competition and jockeying of private parties which use government as a vehicle. A consequence is that planning in Israel is chaotic from one point of view. However, Israel has competent planning staff in the financial and fiscal fields; yet, the autonomous range of government control is limited.

Mr. Pombhejara: If the government during a given period of time emphasizes agriculture strongly and the absolute number of labor force in agriculture increases, I would like to draw your attention to one point. That is, the evolution in agriculture is accompanied by development of certain processing industries. Supposing you encouraged the growth of agriculture; in the meanwhile, you would have to encourage new processing industry. These require large numbers of workers. I don't think that the share of the agricultural labor force will increase.

Mr. Shorter: I think your point helps us because it says that expansion in either sector requires expansion in other sectors and the relationships may lead to a shift in shares even though absolute numbers are rising all around.

9. Rural Resettlement of Ex-Servicemen in Indonesia

Col. Brotosewojo: The resettlement of veterans in Indonesia is a new problem of the government. During the Dutch Colonial period, soldiers were sent back to their villages after a certain number of years in the service with a pension. At that time this pension was considered to be enough to sustain their livelihood. Veterans today are ex-servicemen who had been engaged in fighting for our independence, either as members of a combat unit or engaged in territorial activities, which were of particular importance in guerilla warfare. According to departmental statistics, they consisted of approximately 800,000 men.

By 1954 integrating ex-servicemen into civilian life became a serious problem. To cope with it General Nasution created a veterans' organization. In 1957 a law was passed which established the Department of Veterans' Affairs. Its functions are to register, resettle, and organize the veterans to serve as a potential component in the development of the nation. I am going to discuss particularly the employment of veterans in agriculture.

Based on the available statistical data, the amount of food produced in our country is below Indonesian consumption needs. Millions of tons of rice have been imported to supply the population. This shortage is due to the low output in rice. The government in the past did not take action to increase the output of rice to supply the increasing population.

I would say that the development of agriculture in our country is its dominant need. In Java the traditional characteristic of agriculture would be hard to change. In other parts of Indonesia modernization is primarily a problem of how to stimulate the use of fertilizers.

The resettlement of veterans in agriculture should be directed to the development of lands on islands other than Java. South Sumatra is perhaps the most promising area. Here the Army owns a big estate called Djalaloka, which comprises an area of 110,000 hectares. This land is available for the

ex-servicemen resettlement program. Since 1958, under the Djajaloka Project, each resettled family could get five hectares. A total of 22,000 families could be absorbed. At present only 900 families have settled there however. No additional migration has taken place during the last two years. The Djajaloka Project should be consolidated first before more people or veterans can be expected to move out of Java. Plans have been made to consolidate and exploit Djajaloka; however, the lack of capable administrators and financial support has slowed down execution of the plan. Development of the Project should proceed along these lines:

1. Set up an irrigation system to provide the area with sufficient water for the rice fields.

2. Improve the transportation system within the area and to other places. This includes improving roads and the Musi River waterway.

3. Provide resources and equipment required for mechanized agriculture.

10. Development Planning in Viet-Nam--The Accent on Agriculture

Mr. Tung: Viet-Nam is predominantly an agrarian nation and vital emphasis has been placed upon agricultural development.

During the war years Saigon experienced a great influx of farmers and their families, and there was no sufficient employment to occupy them all. On the coastal plains of Central Viet-Nam more than four million people live poorly on cultivation of about 264,500 hectares of rice land. Because of war and civil strife, around 1.3 million hectares of rice land has been withdrawn from cultivation. To export, Viet-Nam must restore agricultural production to pre-war levels. Nearly all of Viet-Nam's exports are made up of rubber and rice, 56% and 32%, respectively, of the total in 1960. In the future the nation should diversify agricultural production. Widely distributed individual ownership of land is a pre-condition for economic and political stability in the countryside and a prerequisite for social and economic stability. The government has initiated a program comprising refugee resettlement, agrarian reform and development. This reform program is implemented by an agricultural credit system, cooperatives, and community development schemes.

The table indicates the current distribution of Viet-Nam's labor force, demonstrating the predominance of the agricultural sector.

	NUMBER		PERCENT
Agriculture	4,171,500		74.49
Forestry	69,000	(incomplete)	1.23
Fishing	191,000		3.38
Plantations	55,480		0.99
Mining and Quarrying	1,020		0.02
Manufacturing	123,600		2.28
Construction	50,000		0.89
Electricity, Gas, Water	7,580		0.05
Commerce	206,200		3.65
Transport	145,330		2.59
Services	34,780		0.62
Domestic Workers	200,000		3.57
Public Service	109,500		1.96

Full employment is the major goal of the economic and social policy of the Republic of Viet-Nam.

At the present time no unemployment figures for the whole country are available. Seasonal unemployment is common among farm hands and workers employed in agriculture-related industries. In rice culture underemployment is a part of a traditional pattern.

In Viet-Nam's First Five-Year Plan (1956-1961), 17.1% of the total outlay was allocated to the agricultural sector. In addition, agricultural development shared in the 13.1%. A goal of this Plan of 1956 was to reduce the deficit in the balance of payments by increasing the national product. Because of the scarcity of private capital, public investment will cover 17.5 billion piasters out of a total of 20 billion which represent the monetary investment for implementing the Plan.

Successful integration of nearly one million refugees from the North constitutes the most important achievement of the period of consolidation following independence. Over a period of six years around 458,000 hectares of land have been distributed to 123,000 tenant families.

The aim of the land development program, under the 1956 Plan, is the increase of the cultivated area of land by large-scale migration of subsistence farmers from coastal plains to the highlands. Many of these people struggled before for a meager living out of a quarter or half an acre of land. Now they may have as much as five hectares of productive land.

So far more than 210,000 people have been settled in 147 agricultural development centers. But distribution and ownership of land is not enough. Another crucial need for agrarian reform and land development is to teach the peasant to make the land productive. Paralleling the expansion of cultivated areas, various measures have been taken to create more favorable conditions of work.

Steps must be taken to revise the general educational system. It is both economically necessary and socially desirable that education be given a high priority.

Curricula of schools in rural areas are poorly related to agricultural needs and virtually unrelated to rural development.

The Five-Year Plan of 1956 treated manpower development as an automatic by-product of economic policy. Though the 1956 Plan aimed at the creation of 400,000 new jobs within the Plan period, no inquiries or studies were made to determine where these new jobs would come into being and how they could be filled.

There is now a growing awareness, however, that investment in man and his training and development is as important as the building of roads, dams, and factories.

11. Measures of Rural Manpower Utilization

Mr. Shorter: I want to present two methods of measuring rural manpower utilization. The aggregative method can be used in almost any country because it requires population and agricultural data of types that are usually available. The micro method requires more data, but is very powerful. It reveals detailed dimensions of the underutilization of labor and leads, therefore, more easily to policy formation. It will be illustrated by a study done in India.

Aggregative Method

The supply of labor in agriculture is estimated as a number of man-units. The best available data is used, but at the very least, census estimates of the population primarily occupied in or dependent upon agriculture by age and sex are usually available. This information is converted to an aggregate of man-units by conversion factors appropriate to the country in question. In the following illustration, which refers to a group of Near East and North African countries, the conversion factors were:

Men	Ages 15-65	Coefficient 0.9
Women	15-65	0.36
Children	12-14	0.45

The calculation yields an estimate of total man-units of labor supply in agriculture for a particular year which could be chosen to be a census year. An estimate of future supply in a projection year would be worked out in the same way from projections of the basic demographic data by age, sex, and principal occupational attachment or dependence. If the conversion factors (which are actually participation rates) are expected to be different in the projection year, the new rates should be used.

The effective employment of labor in agriculture is the agricultural workload and is also estimated in terms of man-units. Data of two types are used. First, a list of all crops, livestock and other agricultural output is compiled, together with an estimate of the physical output or scale of activity of each. These data usually come from an agricultural census or annual agricultural reporting services. Second, estimates of labor required per unit of output, per crop acre, or in relation to some other dimension of the production activity are needed. This information is never available for all farms, but farm management studies can generate such data for more or less typical farm operations in

each crop and region. Such studies have already been made in many places and more will be made in the future.

For crops effective employment is usually estimated, for example, as X hectares of wheat multiplied by Y man-days of labor required per hectare of wheat in a year. For livestock it is usually easiest to work with head of stock. For forest products, volume of output will do. Fol owing is an example of the workload estimates used in the Mediterranean Study.1/

Notice that the labor requirement increases with the extension of irrigation. The workload, here termed "effective employment," depends, therefore, upon the types of agricultural products; the quantity of land devoted to each; and the technology employed. As development proceeds and these determinants change, the amount of effective employment will also change.

If workloads are stated in man-days per year, the aggregate must be divided by an estimate of the maximum number of workdays a typical man may be supposed to have available, allowing for holidays, etc. In this example 300 was used. And the result is an estimate of effective employment in agriculture in man-units. The difference between labor supply and effective employment is a measure of underutilization of labor.

From the Mediterranean Study we obtain the following estimates:

Near East and North Africa (excluding Turkey and Israel)

	1956	1975
Population (million)	61.3	97.6
Labor Supply (millions of man-units)		
Total	24.0	38.1
Agricultural	15.4	20.0
Non-agricultural	8.5	18.1
Effective Employment		
Total	15.8	28.6
Agricultural	9.2 (60%)	14.2 (71%)
Non-agricultural	6.6 (78%)	14.4 (80%)

Figures in parentheses show the extent to which the theoretically available labor supply is effectively employed. The projection year data show what would be the result if recent development and demographic trends were modified by programs which the Food and Agriculture Organization, in consultation with the respective governments, has laid down as feasible and desirable. Greater absolute numbers of people in agriculture in 1975 and more effective utilization of them reflects more agricultural output and changes in crop combinations, both of which lead to more labor utilization; and changes in technique such as those

1/ United Nations. Food and Agriculture Organization (FAO). FAO Mediterranean Development Project. Rome. 1959. (See entire study, but especially Table A/III on p. 43 and pp. 115-116).

illustrated earlier in the comparison of dry farming and irrigated farming. Development can improve the extent of utilization according to these data.

Mr. Pombhejara: In agriculture in 1956 you have to say that you are using 15.4 million man-units, but they are not all producing, because the requirement is only 9.. million.

Mr. Shorter: If we lined up these 15.4 million men (or equivalents) and asked, "How much work do you do?" the answers would run womething like this: "I work each day, all day;" "I don't work at all;" "I work three hours a day during the harvest season." Each one will have a different report on how much work he does in a year. The aggregate method doesn't tell us how the workload is distributed among the available men or over the seasons. Neither does it tell how productive any particular person or group is. For example, the workload coefficients show how much labor is used, not how much is necessary under some different set of customs or technology. How much of the unutilized supply is necessarily "wasted" by the seasonal nature of agricultural activity and how much is really available for alternative activity also is not clear.

Mr. Pombhejara: Can this method be used to determine the production techniques which should be used in the agricultural sector? If you want to use all of your agricultural labor force, you may change your technique of production to use more men. Effective employment would increase to 15 million!

Mr. Shorter: One has to be careful in doing this. The purpose of changing techniques of production which you have suggested is to bring more people into full-time work, but there will be costs in doing this. First, unless doing more work adds something to output, there will be nothing to compensate people for the effort this involves. Furthermore, to put additional hours of people's time to work may take some complementary factors, also involving costs. I would say that what the data reveal is that if you are clever enough to think of ways of saving on other scarce factors or of raising output by using this 40% gap, the cost of labor itself is probably not very high.

Mr. Pombhejara: This method gives us a result that we have no labor shortages in the agricultural sector, so if we have the information, we are happy. These techniques may not be applicable to the non-agricultural sector because in the non-agricultural sector you have differentials in skills required and we cannot have a common total because we may need people with certain types of skills.

Mr. Shorter: This becomes true in the agricultural sector also. When we leave traditional agriculture behind, we have skill differentials to worry about.

Micro Method

This method utilizes concepts first proposed by Rosenstein-Rodan 2/ and illustrated by an Indian field study. 3/

2/ P. N. Rosenstein-Rodan, "Disguised Unemployment and Underemployment in Agriculture," Monthly Bulletin of Agricultural Economics and Statistics, (FAO, Rome) July-August, 1957. pp. 1-7.
3/ J. P. Bhattacharjee, "Under-Employment Among Indian Farmers: An Analysis of Its Nature and Extent Based on Data for Bihar."

The underutilization of labor in agriculture takes the form of (1) unemployment which is open and applies to laborers who hire themselves to others; and (2) underemployment which is lack of utilization of workers on their own family farms. The micro method applies to the second only. It requires a field study of a sample of family farm households. It yields estimates of the composition of underemployment dividing it among seasonal, disguised removable, and disguised fractional.

The importance of the method is that it reveals more seasonal unemployment than do more aggregated methods. The "seasons" for individual farms are not all identical and hence, the extent of employment variation is obscured by the tendency of aggregation to smooth the seasonal curve. The distinction between removable and fractional is between the availability of whole male units for work elsewhere and parts of persons' time or female units available only to work within the village locality. The importance of this distinction is that the amount of whole-unit male manpower "removable" is much less than commonly supposed. In the rather poor area of the Indian study, one group of farms showed removable manpower of 20%, while a more aggregated treatment of the same data would have shown twice as much manpower as removable.

12. Opportunities for the Rural Underemployed

Mr. Shorter: When manpower is without employment seasonally for fractions or whole man-units of time throughout the year, the possibility exists of working more man-hours. To encourage the utilization of more man-hours, productivity is an objective of most governmental manpower programs. The actions which serve this objective usually contribute simultaneously to encouraging more initiative and fitting men with skills, organization, and capital to secure more output per man. However, today we shall concentrate attention on the problem of enlarging the quantity of effective labor input.

Basically, this is a problem of recognizing and creating an awareness of production opportunities, most of which already exist. Then individuals, as workers, local groups, and governments must each take action to implement their respective roles in exploiting those opportunities. For each there must also be a tangible and significantly large return in income, self-respect, or accumulation of personal capital. Otherwise, the production opportunity serves one part of the community, but is net taxation so far as the other is concerned and will fail to invoke vigorous implementation of the opportunity. This is a danger which proposals for creating a national labor corps raise (e.g. in Pakistan's Second Plan). We may discuss opportunities under the following headings:

1. Local capital construction
2. More intensive application of labor to agriculture
3. Rural industries
4. Social services, e.g. health, sanitation, school, etc.
5. Other means of adding value by additional effort in marketing, processing, etc.

Regarding local capital works, here is an example from Northeastern Brazil. A major irrigation project commands 160,000 hectares, but water was being drawn for only 5,000 hectares in 1959. Consequently, 97% of the capacity of this expensive installation was unutilized. If subsidiary canals were

constructed and farmers used the water, the inputs of local labor, extension services, and small amounts of material would yield a tremendous production return. Gross underutilization of scarce capital overheads is typical of many countries because attention has not been focussed on the end uses of these services, and the opportunities for local manpower to participate productively. Manpower programs often can be of great service by concentrating on the full implementation of existing development projects without having to invest major new projects of their own. The next example is one that illustrates successful seizure of an opportunity. In the early 1950's in Greece there was a great deal of underemployed manpower. Farm-to-market roads were particularly poor, as were most trunk roads. A program was organized on a national basis under which the government paid a small incentive payment per day to anyone who would work on the roads. It was left up to the local community to organize the system, find the labor, and provide organization. The payment was something like 70¢ a day which is below the daily wage available on ordinary work. This avoided drawing labor off other employment. A total of 5,300 kilometers of roads were built. Other construction carried out included flood control works for 50,000 acres, 100 water supply systems, and 34 sewer systems. All was done on the basis of local organization, local technical skills, and local labor. The total money cost per kilometer of road was only $79 which is certainly very cheap.

There are certain problems which one has to appreciate. First of all, the technical standard of the work was not as good as the technical standards of civil engineers, but to follow the latter would cost a great deal more than the increased value obtained. In Greece the village people built one road right across places that would wash out during rains. Technically, the road was inferior to public works department standards. But after the two or three washouts each year, it could be repaired with only three or four hours of the villagers' time. Such cheap annual maintenance was much more economical than constructing expensive bridges. In this case villagers would maintain their own investment. (A case was then cited from another country where government initiative was necessary both to start the project and then to maintain the earthworks in subsequent years. Community responsibility had not been sufficiently encouraged and may have been too weak in the first place).

In Korea at present there is a program of water development projects utilizing local labor which is paid a token, or incentive, wage. These projects pay both cash and commodities for labor. The benefits within the first five-year pay-off period are running about six times as much as the initial outlay in costs, which is very high. A calculation of particular interest to the participants is the ratio of benefitsto days of human labor, a "labor investment coefficient." The villagers themselves make the calculation in advance and at the end, thus experiencing the rational planning and evaluation and learning to assume responsibility. Their participation is extremely valuable in assessing the validity of the project. One can be fairly sure that erroneous projects are not carried out very often when the project depends on voluntary participation of village people, because if it is not likely to benefit them, they will not work on it. This is in contrast to the government's fully paying for or compelling a project. When the government pays for the project, it is possible that the control system may not be good. For instance, the officer in charge may have the project constructed in his own village or may let the contract to a relative of questionable competence.

Many things can go wrong. The dependence on voluntary labor incorporates a check against corruption.

The benefit-cost ratio depends not only on choosing technically promising projects, but also upon placing responsibility for each task where it can be best performed. Here is another irrigation example which put many farmers to work on second crops. The project was to use small diesel pumps to lift water from streams in the Ganges-Brahmaputra Delta and send it over small nearby acreages. Because of fragmentation of holdings, even a small pump requires the cooperation of many farms to fully utilize its services. At first the government set up a pumping service, buying the pumps, hiring the operators, and providing water under contracts with the farmers. On one side the farms used the water and agreed to pay. On the other side, the government agreed to deliver the water at the top of the river bank. The dividing line of responsibility was the water flowing down. The benefit-cost ratio was high enough that the government was willing to finance the project. However, in the last few years an alternative system has been developed. Now the cultivators themselves hire the pump for a season and supply their own operator to run and maintain it. The benefit-cost ratio is now very high because when the government supplied the water, the responsibility of the operator was too difficult to enforce and he did only the minimum of work, shifting the blame when the pump broke down. Now the villagers pay their own man one-third as much as the previous government operator. Furthermore, the village operator has been sent for training in the city and is now a much envied and skilled person. He must keep the pump operating because everybody in the village, including his own family, is depending on it. By putting the control and operation into the hands of the people who depend on the service it provides, its continuous operation is insured and the benefit-cost ratio is great. It is important to use the second system.

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IV. Problems of Skill Acquisition in the Urban Labor Force (Mr. J. F. Wellemeyer)

During proceedings in this segment principles and practices in on-the-job training and education in the United States and elsewhere were used by the Seminar Leader as an introduction and frame of reference for detailed accounts by participants of the relationships between the educational system and the need for middle and high level skills in the developing countries represented.

Recently developed methods of planning in the United States for highly trained personnel (University level and above) were explained by the Seminar Leader. He combined with this a presentation of methods and techniques for estimating supply requirements and methods of registering individuals in specialized fields. He, and two guest lecturers, joined in a discussion of technician training and potentialities of junior or community colleges for educating technicians. The discussion of technician training was combined with visits to technical schools training for the electronics industry in Washington, D. C.

In the course of this segment of the Seminar problems related to the training of skilled and semi-skilled craftsmen were discussed on a comparative basis. Two guest lecturers--Mr. Edward Hollander and Mr. Lukas Burckhardt, Labor and Cultural Counsellor of the Swiss Embassy in Washington--provided stimulation for the discussions. Their presentations contrasted the requirements in a developing country, such as Ghana, with the pattern and policies of a highly industrialized country, such as Switzerland.

Two other guest lecturers--Professor Fred Harbison of Princeton University, and Dr. Oliver Caldwell, Deputy Commissioner, Department of Health, Education, and Welfare--spoke on theories of over-all educational policy.

On the part of participants, substantial papers were prepared and read on the sociological background of the educational systems in Brazil, The Republic of China, Indonesia, and Turkey.

The following principal topics were discussed:

1. High Level Manpower in the United States.....p. 110

2. Estimating the Supply of Highly Trained Personnel.....p. 112

3. Training of Technicians.....p. 113

4. Junior or Community Colleges.....p. 114

5. Other Private Schools and Facilities for the Training of Technicians -- The Technical Institutes.....p. 115

6. Content of Technician Training in Intermediate Institutions.....p. 115

7. Training for Teachers of Technicians.....p. 116

8. International Aspects of Technical Institute Training.....p. 116

9. Vocational Training.....p. 116

10. Apprenticeship.....p. 118

11. American Secondary Education and U. S. Federal Educational Policy.....p. 118

12. Economic Significance of Education.....p. 120

13. Educational Policies--Alternative Proposals for Developing Countries.....p.

14. Ghana and Switzerland-- Two Case-Centered Lectures.....p.

15. Education in Selected Participating Countries-- Indonesia, Taiwan, Brazil, and Turkey.....p.

During the first sessions the Seminar Leader presented a review of the evaluation of U. S. policies and programs concerned with national needs per professing scientific and technical personnel. This is a resume of his presentation:

1. <u>High Level Manpower in the United States</u>

The United States began to make estimates of highly trained personnel only after World War II, except for one or two isolated earlier attempts. During World War II it became apparent that the nation was encountering very serious shortages of all kinds of personnel, and these were particularly acute in the case of scientific and engineering personnel. During the immediate post-war period the United States continued to suffer from shortages because the training of doctoral degree candidates and male undergraduate students was virtually closed down during the War. The Commission on Human Resources, a private organization financed by the Rockefeller Foundation, and directed by Dael Wolfle, produced a book entitled, AMERICA'S RESOURCES OF SPECIALIZED TALENT. This is the most comprehensive of all studies to date since it covers all occupations which normally require a college education or more. The Commission found in 1954 that the demand in all these fields may continue to rise. However, for the foreseeable future, the population as a whole may be expected to produce enough talented people to meet this rising demand. American society, however, will have to become more efficient in the use of native talents. Better vocational guidance is necessary, and in the highly trained fields increasing proportions of women should be used. Increased efforts to maximize the contribution of the Negro population, which accounts for about ten percent of the total United States population, should be made.

In other studies made after World War II that of Professor Seymour Harris of Harvard, published in 1949, expressed a different view. It concluded that colleges would, after the War, soon be turning out too many graduates. Such overproduction might create a serious political problem similar to that of the unemployed intelligentsia in Germany during the inter-war period who were successfully used by the Nazi Party to spread unrest and in the end bring on a Fascist revolution. This appraisal of Professor Harris turned out to be wrong. Economic growth proceeded at a more rapid pace than most observers anticipated.

In the scientific field the American Chemical Society made studies of the supply and demand for chemists, both before and after World War II. In the early 1950's the National Science Foundation began to attempt to develop a technique of estimating the demand for scientists and engineers. After some preliminary reports a book was written for the NSF by Blank and Stigler in 1957 entitled, THE SUPPLY AND DEMAND FOR ENGINEERING PERSONNEL. This report was based primarily on economic factors and particularly earnings analysis. The authors noted that the engineer's share of the total national income had, over the last 20 years, been declining and were inclined to discount the reports of shortages of engineers since their income had not risen relatively. This finding did not take into account the symptoms of intensifying demand noted by everyone involved in a practical way, such as increasingly active recruiting by employers, extensive newspaper advertisements, unfilled orders in the United States Employment Service, etc.

The type of approach used by the National Science Foundation in the 1957 report has been abandoned by the Foundation.

A new technique was then developed by the Bureau of Labor Statistics in the Department of Labor at the request of the Foundation. As a result, the Bureau in 1962 produced a report (which is the first of its kind) entitled, "The Long-Range Demand for Scientific and Technical Personnel." The technique used in this analysis begins by examining current employment for the economy as a whole. Estimates of the number of scientific and technical personnel employed in each sector of the economy follow. Projections of total employment in the national economy and each of the major sectors for a 13-year period (1957-1970) were then made. On the basis of these estimates the number of scientific and technical personnel likely by 1970 were calculated. This approach to forecasting was supplemented by detailed analyses of prospective events in selected industries.

The Bureau of Labor Statistics regards this report primarily as an experiment in methodology. The Bureau feels that considerably more work needs to be done. The conclusions of the study indicate that scientists and engineers in the United States during the 1959-1970 period will increase by 85 percent, from one million one hundred thousand to approximately two millions. The increase forecast for engineers was 90 percent, for scientists, 75 percent. In terms of total requirements per year during the forecast period, the figure for engineers is 85,000 to which must be added losses from death and retirement of about 21,000 bring the total requirement to 106,000. Not included are requirements for replacements of engineers moving to other fields.

The study shows that 23 percent of the engineers entering the field between 1950 and 1960 did not have engineering degrees. Should this pattern continue the annual requirement for engineering graduates could be 62,000. About 14 percent of the engineering graduating classes do not enter the profession. Consequently, about 72,000 graduates would be needed to furnish 62,000 employed engineers. In 1960, 54,000 degrees in engineering at the Bachelor, Master, and Doctor levels were awarded. If the proportion of engineering degrees to total degrees (as projected for the Sixties by the Office of Education) is maintained, an annual average of 58,000 graduating engineers can be expected. This means that the yearly quota of engineering graduates falls short of demand by some 14,000 individuals. A similar calculation shows that 83,000 scientists will be needed to meet demand and that an output of 80,000 may be expected. This number (80,000) would maintain the proportions in scientific fields as they existed in 1960. In a word, the output of scientists can be estimated as more or less adequate, but that of engineers is inadequate.

On the basis of the analysis of the figures for engineers one has also to ask the question whether it is realistic to assume that engineering graduates will maintain the same relationship to total baccalaureate degrees as in the past. An indication that this assumption is indeed questionable is provided by the figures on engineering enrollments for the past few years. These have been holding only about level, while enrollments in general have been rising rapidly.

2. Estimating the Supply of Highly Trained Personnel

In the studies cited above, data on the supply of scientists and engineers was obtained from the Censuses of 1950 and 1960 and from reports of the degrees granted by institutions of higher education. The latter reports are collected annually by the United States Office of Education and are quite complete and detailed. Thus, it is easy to estimate current output, and rather good forecasts of output are possible. On the other hand, census data are not very satisfactory even though they supply the only available comprehensive count. Census reports are collected by household enumeration. Information on all of the members of each household is usually given by a single person, in many cases the housewife. She frequently does not have detailed knowledge of exactly what the husband or other employed person actually does, and the occupation information thus collected is not as reliable as it should be. Other methods have been devised to provide information on the characteristics of individuals in detailed occupational categories. The methods usually rely on some form of registry. In the United States the National Science Foundation supports the maintenance of such registries by scientific professional associations. These registers are voluntary, but in scientific fields they are thought to be quite complete and the NSF is able to make detailed studies of the characteristics of these people. Engineers are registered only on a partial basis, however.

To illustrate the use of the registration method one may turn to another country--a developing one. Pakistan makes a biennial survey of its higher educational institutions obtaining information on faculty, enrollments, entrance requirements, graduations and related matters. In addition, there is an ordinance requiring the registration with the local employment service office of "essential personnel." This group was comprised of individuals in any of 42 categories according to a 1948 definition. Early experience was not successful. In 1958 the list was enlarged to 93 categories, and employers and educational institutions were made responsible for seeing to it that the specialists were registered. The lists are used for recruitment only. Registrants are not required to work in any particular place.

Another developing motion--Indonesia has, since 1961, had a law requiring registration of university graduates. These are required to serve with the government for three years. The Indonesian National Employment Service has queried the universities to determine the future supply of engineers in order to assist in planning projects currently under consideration.

In Thailand also, the National Commission of Education publishes a "Who's Who" of university graduates based on unversity records.

Many countries maintain registers of professional personnel through establishment of a licensing system. In the United States this is done by localities, state governments, or private professional associations (but not by the Federal Government). Such licensing registrations affect the fields of medicine, nursing, architecture and many others. Thailand and the Philippines require not only licenses for professionals, but require examinations to obtain them.

In the United States the system of licensing is supplemented by one for accreditation or educational institutions. Some professional associations, the American Chemical Society for instance, issue lists of educational institutions whose standards they deem adequate for the preparation of new professionals. Another system of accreditation is also operated in the United States. Under this system the institution is accredited as a whole by a regional accrediting association made up of accredited institutions in the region.

3. Training of Technicians

In the United States the technician is described as falling between the professional workers and the skilled craftsman or artisan. The professional worker is usually trained at the university and graduate school requiring at least four years beyond the secondary school, and frequently more. He has a baccalaureate degree (A.B. or B.S.) or a doctorate or a professional degree (M.D., LL.B.) The craftsman usually has no more than a high school diploma, sometimes less. The technician or semi-professional now most frequently has at least two years of post secondary schooling, but does not have the baccalaureate degree. He may be training in a variety of institutions, such as technical institutes

of different kinds, but the junior or community college is the most common one. Technicians are used as assistants in all the different engineering specialties in addition to functioning as nurses, medical technicians, draftsmen, and other fields.

In the United States the greatest need for technicians is in the engineering field. At the present, there are only about seven technicians employed for every ten engineers. Occupational analysts feel that the proper ratio should be between two to one and five to one. Because of the increasing shortage of engineers, the demand for technicians will certainly rise. Expert opinion indicates that approximately 200,000 technicians per year could profitably be employed in the coming few years. We are actually training only 16,000 per year at present, however. Studies of actual needs for technicians in specific fields in a number of states validate these gross figures.

4. Junior or Community Colleges

One of the most rapidly developing institutions in the United States is the Junior College, now frequently referred to as the Community College. These institutions provide post secondary schooling, most commonly of two year's duration, and prepare students either for attendance at a four-year college later, or for employment after the two-year course is completed. They give a degree called Associate in Arts. There is a number of privately controlled junior colleges, but the greatest number is publicly controlled. The publicly controlled institutions are community institutions in the strict sense of the term. Their management is part of the local government (city, county, or school board), and they are in this respect different from state operated institutions. Among these local government colleges the pressure to increase both the number of size of community colleges is greatest. These schools are intermediate between secondary and higher education, and they represent a training tool for technical level personnel.

The number of college and university students has been rising rapidly and the states and localities frequently turn to the establishment of junior colleges to help accommodate the demand for higher education. In two States in particular, California and Florida, this pressure has been augmented by extraordinary population increases resulting from migration from the Great Plains States and the Deep South. In these States, innovations in educational policy have been common, and the community college is an important factor in the plans of both. In Florida, the State plans to have junior colleges located within commuting range of 95 percent of the high school graduates throughout the State. A new university has just been opened which gives no instruction in the first two years and draws its student body strictly from the junior colleges. Similar developments are occurring in California. Events in other states are proceeding more slowly, but this kind of tendency is widespread. The American Association of Junior Colleges has been instrumental in organizing ten university centers to train needed junior college administrators. There are now 680 of these institutions throughout the United States. Although there are some junior colleges in rural areas, the recent growth is predominantly an urban phenomenon.

It will be readily apparent that the community colleges perform many functions other than the training of technicians. However, since they are located in communities and are readily accessible to employers, it is possible for them to develop training programs closely geared to the jobs available in the locality, and this has, in fact, been happening. The junior college was originally conceived as a local institution preparing students for transfer to a university. However, a large proportion of students do not go on to the university because after a year or two they discover that they do not want college work or are not fitted for it. Junior college planners have been giving more and more attention to the "terminal" student and to training for community needs as a result.

5. Other Private Schools and Facilities for the Training of Technicians -- The Technical Institutes

There is a wide variety of training establishments operating under private auspices. In addition to private junior colleges there are specialized institutes which give training in specific fields. One located in Washington was studied by the 1962 Seminar. This is the Capital Radio Engineering Institute. Its operations are financed solely by tuition payments. It specializes in training electronic technicians and concentrates on physics and mathematics. Resident students generally require three years to complete the course. The Institute has 800 students in residence and some 26,000 correspondence students throughout the world. It has several branches in Western Europe. The Institute gives a highly specialized course and, as noted below, writes its own textbooks.

6. Content of Technician Training in Intermediate Institutions

Community colleges have supplemented their original college preparation programs by discovering from local employers what material would enhance the employability of their graduates, and this includes much, frankly vocational, instruction. However, the community colleges are likely to continue to include a substantial amount of liberal arts material, even in quite technical curricula. Junior college spokesmen indicate that this kind of training is better because it produces a well-rounded individual who is better able to advance to increased responsibilities later than one whose education has been more purely technical. These colleges have had some success in reducing the length of technical training programs, even with this philosophy. They have prepared a program for training nurses that can be completed in two years, for example.

On the other hand, technical institute people disagree. The Capital Radio Engineering Institute requires 160 quarter-hour credits, of which only 18 are in the humanities. All of the subjects except these are taught in terms of their direct application to electronics. This organization does not believe that the proper degree of skill can be achieved if the amount of time devoted to the humanities were to be increased substantially. CREI emphasizes that this is more important than ever because engineering schools have de-emphasized laboratory work to concentrate on theory, and this leaves a gap the technical institutes must fill.

7. Training for Teachers of Technicians

In the American school system generally teachers are required to have a baccalaureate degree, and in a few states a Master's Degree is required. Technical institutes would like to recruit graduate engineers with industrial experience as teachers, but the demand for engineers is so great that these teaching jobs cannot compete with more attractive offers available to this group. Consequently, technical institutes actually have to employ teachers with B.A. degrees only, and sometimes with even lesser academic credentials. Sometimes persons can be recruited from industry. With some additional university training retired individuals can also be used as teachers in technical institute programs.

8. International Aspects of Technical Institute Training

As noted, CREI has branches abroad and many foreign correspondence students. In addition, it has a number of foreign students in residence, some of whom are sponsored by the Agency for International Development. The American Association of Junior Colleges is also beginning to be active internationally. They have initiated a program under which consultants will go to developing countries to advise on technician training and other possible functions.

It might be added that the American Association of Junior Colleges is a voluntary organization to which the great majority of junior and community colleges belong. It serves as a communications channel and stimulates research in education at the junior college level. The Association serves as a spokesman for the colleges with the Federal Government and raises money for various projects, such as the university centers for administration mentioned above.

9. Vocational Training [1/]

With respect to the development of skilled manpower there are a number of questions of direct concern to development planners.

1. Has an analysis been made of skill requirements related to the development plan?

2. Has responsibility for planning for needed skill training been fixed within the government organization?

Is this in a single agency or in several agencies?

If several agencies are involved, is there coordination among them and is there clear understanding of the responsibility of each?

1/ This summary is based upon the presentations of two guest lecturers from the U. S. Department of Labor.

3. Is training to be done through training centers, vocational schools, formal apprenticeship programs, or on-the-job training?

4. How much financing is made available for vocational schools, training centers and government promotion of internal training programs in industrial establishments? For the latter, are grants available to encourage establishments to provide training in excess of their own needs?

5. Is the staffing and administrative organization of the government's training effort adequate to give proper guidance and status to the effort?

6. Is there provision for labor and management representation in the planning of training systems?

A frequent problem in developing countries is the fact that internal training programs in industrial establishments seem fruitless to many employers because employees who are trained tend to leave very quickly. This also happens in developed countries. In the United States some employers do not provide any training and rely on hiring people trained by other companies.

The problem of obtaining adequate teachers for skilled training is often the most difficult part of establishing an effective program. Teachers without industrial experience are inclined to give school subjects to the exclusion of practical demonstrations. A highly developed technical school is one at Bandung, Indonesia. One problem with this school has been the enticing of teachers into industry by high wages.

In some developing countries laws have been passed requiring employers to set up training programs and imposing penalties for failure to train. It may be better, on the other hand, if more effort is put into promotion of voluntary actions on the part of employers. Thus, in the course of convincing employers of the importance of in-plant training, methods of improving the internal administration and operation of the establishment can be worked out.

One important factor in this area is the need to establish information about the occupations in the establishments. In order to do this properly, an occupational classification system is needed. This instrument is very helpful in persuading the employers to classify their jobs and to set up promotion ladders among the occupations in the plant. The International Labour Organization classification is a suitable base for the development of national occupational classifications. ILO has published a new procedure for making occupational analyses, starting with the job descriptions in the ILO Handbook, breaking them down, checking them in a number of plants, and then modifying them to form a new national description for each job. The method is much more efficient than former methods creating new occupational classification systems and makes it possible for a developing country to do this more quickly than

10. Apprenticeship 1/

Some of the elements of apprenticeship training, as it functions in the United States, may be of use to developing countries. The effort is centralized in the Bureau of Apprenticeship and Training of the U. S. Department of Labor, but operates through a program of voluntary cooperation between government, management, and labor and works through a field staff of some 250 members throughout the United States. The training itself is done by the industry and the planning for it is a joint effort. Instruction supplemental to training within the plants may be given in the public schools. National guides for various crafts have been prepared, again in cooperation with leading employers, associations, and the appropriate unions. The committee establishes guidelines concerning the number of apprentices to be trained, the length of training, what should be done on the job, and what in schools.

When a local apprenticeship program is set up, the whole problem is discussed among employer and union representatives with the assistance of the Bureau of Apprenticeship and Training staff. They decide what variation in the national standards may be applied, the number to be trained, and the amount of wages to be paid apprentices at different stages of training. In some situations in developing countries, expatriate personnel are brought in to operate certain machinery. After a reasonable length of time the local personnel who have been helping the skilled workers from abroad learn the techniques and are able to operate the machinery themselves. They are unable to obtain these jobs since the foreign personnel have been hired on a long-term contract.

It is pointed out that a planned approach to this problem should have anticipated this problem by employing the foreign personnel for a fixed period during which one of their responsibilities would be to train the local people.

Some methods of planning for training the number of workers needed have been developed. In the United States during World War II, the War Manpower Commission developed a "manning table" system which formed the basis for training replacements for individuals going into the armed forces. Employers would list all the jobs in the plant held by such men. These men were inducted into the armed forces in an orderly way, while a training program was set up to provide replacements. A similar table could be developed for an expanding plant or a new establishment. However, it will be important to develop adequate occupational information on the basis of a standard occupational classification system in order to do this effectively for a whole industry or a whole country.

11. American Secondary Education and U. S. Federal Educational Policy 2/

The Office of Education of the Department of Health, Education, and Welfare concerns itself with the public secondary schools of the nation. The Federal Government assists the States in vocational education which is defined by law as "the preparation of persons for useful employment." This approach is necessary since the public school system of this country is under State and local

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1/ Based on the presentations of Mr. Sam Justice and Mr. Archie Beaubien, supra pp.

2/ Based on a guest lecture by Mr. Lane C. Ash, U. S Office of Education.

government jurisdiction and management.

During the Industrial Revolution important groups organized themselves to seek out ways by which the U. S. could improve the character of its industry and agriculture. In those days many of the skilled workers who manned our industries came from other countries. American leaders visited those countries and examined ways by which we could produce our own skilled workers. It took us a long time to formulate plans acceptable to everyone for training people in industry and agriculture. In 1917 Congress enacted the Smith-Hughes Act, the first legislation by which financial assistance was given to schools below college grade in the U. S. A small amount of money by today's standards, $40 million was authorized for allotment to the States; funds that would have to be matched by the States for vocational education of three types:

1. Agricultural Education
2. Home Economics Education
3. Trade and Industrial Education

This program is an integral part of the school system. We have comprehensive secondary education where a student may elect a college preparatory curriculum, a business curriculum, or a vocational curriculum. Those who choose the latter receive training in one of the three programs mentioned above. They receive a diploma upon completion of their work just as do the students in the college preparatory or business curricula.

As times changed and the needs increased, legislation supplemental to the Smith-Hughes Act was enacted by the Congress and several new types of vocational education were authorized:

4. Distributive Education (marketing, merchandising, sales practices)
5. Practical Nurses' Education

(A practical nurse is one who aids as a member of a team in a hospital and who may be trained in one year. A professional or Registered Nurse usually studies a curriculum at a hospital or university which takes three to four years. With increasing emphasis on medical care in this country, we find a growing number of sub-professional people needed in the field).

6. Technician Training

(The National Defense Education Act of 1958, under one of its ten titles, provides for the training of technicians).

From the beginning (1917) it was recognized that there was no faculty for vocational education. The Congress therefore included in the law the requirement that no less than 20% of the funds, nor more than 60% would be spent for the training of teachers to staff these vocational schools. No one but a well trained teacher may prepare people under these programs. Each State requires teachers of trade and industrial training, for example, to have completed apprenticeship training and to have worked as journeymen for varying lengths of time, according to the regulations imposed by the particular State.

Provision for the training of teachers is of great interest to the Federal Government. Most of the States have named a particular institution of higher learning in that State to train faculties of trade and industrial subjects to guarantee that none but teachers, professionally and technically competent, are in charge of the shops and classrooms. The same is true of agricultural education. Each of the 67 Land Grant Colleges maintains a program for training agricultural teachers. All of these teachers were born on a farm and have pursued an agricultural education course in the Land Grant College. This is one of the standards maintained from the beginning to assure that instruction will be expert as well as genuine.

Agriculture in this country is no longer a family farm operation. Farms are fewer in number, but much larger. They are frequently corporate enterprises. This means that many fewer people are producing much more. But this also means that technology has come to the farm. Consequently, schools are endeavoring to incorporate into the curriculum knowledge from research--use of insecticides, business management practices, maintenance of farm equipment.

For financial assistance by the Federal Government to the State systems of secondary education, the law determines the entitlement of each of the States to receive funds. The formula is based on population. Trade and industrial programs, for example, receive a share of the total appropriation as their urban population is proportional to the urban population of the entire nation. At the end of the year when a local school district has paid its teachers, the Federal Government reimburses the State for the salaries of teachers in the programs to the limit of the Federal appropriation available to the State. The Congress appropriated $40 million for the program last year.

12. <u>The Economic Significance of Education</u>

Dr. Benjamin Higgins of the Seminar faculty presented an analysis of the economic planning problem connected with decision-making on educational budgets in developing countries. He pointed out that economists have always encouraged increased educational expenditures, but the economic rationale of the 18th Century schools of thought sounds dated or considered today. Adam Smith thought that increasing production by increased division of labor would produce stultifying effects on the worker and that this should be counteracted by more education. He also thought that educated workers were less likely to revolt. Malthus' primary interest was to increase the awareness in the population of the adverse effects of having numerous children. Alfred Marshall thought that education should be a national investment and, as such, it would have unlimited returns. Costs should be divided between the state and the parents. Karl Marx thought of education as producing more flexibility in labor skills.

In economics today education should be analyzed as both input and output. Education is a consumer's good and it is also an investment which will produce returns for the economy as a whole. The best theoretical approach would be to determine the ratio of investment to income and to estimate the amount of income from the present to the end of the planning period for various possible combinations of investment. The difficulty with this approach is the lack of a means of determining what the increased income is likely to be. Several methods

approximately like this have been attempted. Schultz compared differences of income with increased levels of education. This of course required the assumption that differences of income arose solely from differences in education. John Chipman developed an econometric model in which he took into account the number of years of schooling, time since leaving school, social privilege, native intelligence and some random factors.

The United Nations' method of determining investment in education is based on the assumption that it is impossible to invest too heavily in education if standards are maintained and improved by the use of new technical devices in the field of education. Some countries try to estimate their educational budgets by applying a norm such as the ratio of public educational expenditures to total public expenditures. A better norm would be the ratio of total expenditures in education to general investment. The best norm, however, is the ratio of total expenditures on education to gross national product. The Declaration of Santiago calls for all American countries to raise this ratio to four or five percent by 1970. The Declaration provided educational target budgets; UNESCO estimated their actual costs. Local budgets will need to be supplemented by foreign aid, but approximately enough aid will apparently be available during the period.

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V. The Manpower Problem in Planning

Designed to describe and analyze the interdependence between human capital formation and economic development, this course compared several characteristic types of plans, ranging from totalitarian models in which the government controls all means of production, to those consisting only of hoped-for goals lacking a realistic mechanism for achievement. Discussions were directed toward the need for programs capable of realization by the Seminar Leader, Professor Irvin Sobel, Washington University, St. Louis, Missouri. In connection with plan and analyses, participants from Chile, Indonesia, Pakistan, the Philippines, and Thailand presented papers on manpower and planning policies.

The main topics discussed were:

1. Manpower and Economic Planning.....p.124

2. USSR Planning History--Reverses and the Neglect of Manpower Aspects.....p.124

3. Priorities in Plan Formation.....p.125

4. The Status of Manpower Planning in Bolivia, Indonesia, Pakistan and the Philippines.....p.126

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1. Manpower and Economic Planning

Planning is the setting of a feasible set of objectives and the forging of a consistent set of policy instruments to reach the particular targets. The targets must conform to national goals. They are in this sense of political character and economic as well because they must be in keeping with resources available (or expected to be available) during the plan period. A key asset of any given society is the volume of knowledge, skills and productive motivation represented by its manpower. Human capital is scarce and a limiting factor in most developing countries. It perhaps is the major barrier to economic improvement. To their ultimate frustration, planners have neglected the human resource factor; even Professor Tinbergen in his book, THE DESIGN OF DEVELOPMENT, barely mentions manpower and the need to make manpower plans consistent with economic plans. At no point does he allude to problems and programs of human capital formation and for skill organization and educational institutions. Yet, Tinbergen continuously mentions the need for consistency and balance of all resources and aspects in a plan. Perhaps this neglect reflects assumptions based on Western experience with a development process evolving over a long period of time. In less developed societies the stock of human capital and the institutions for forming and allocating it must develop rapidly and not over centuries of time, as in the developed nations. What is all too often taken for granted is the fact that these industrial societies gradually, over many decades, developed educational systems, housing programs, and urban, social and recreational services, as well as a labor market structure of great occupational diversity and most of all, differentiation. Planners who assume easy adjustment of the labor force in developing countries forget these institutions and channelling devices do not exist and have to be created. They include employment services, wage and hour regulation, urban development programs, factory legislation, and the vast number of rules inherent in collective bargaining agreements, organizations implementing labor mobility, area development programs, public education, vocational guidance, all of which are instruments which make a manpower structuring system. Creating such an institutional framework must, in developing societies, be related to an over-all program of economic planning designed to accomplish in a few years what developed informally, unplanned, and in a much more haphazard fashion in the Western world.

2. USSR Planning History--Reverses and the Neglect of Manpower Aspects

Manpower is one of the limiting factors in economic planning. Russian experience has shown this. In the 1930's Russian planning involved a rate of industrialization and capital formation which was beyond the trained capacity of the available human capital of the Russian society. Capital which was formed with great sacrifice in the 1930's and 1940's was partially wasted and ruined because trained human resources were inadequate. The level of skill and technological achievement of Russian manpower was incompatible with the plans for non-human capital formation. An equal or greater rate of economic growth could have been attained with less sacrifice, perhaps by better coordination between manpower planning, manpower development, and the whole economic program.

Currently, while the supply of human capital problems have been largely taken care of in the Russian economy by appropriate investment in human capital, economic planning is somehow made more difficult. It sometimes is frustrated by the overlooking of spatial aspects of the program. The Russians have had difficulty in moving economic resources to areas where they are needed. Here, another basic aspect of manpower planning becomes manifest. It consists of planning and providing our institutional framework within the geographic areas in which development should get under way. Manpower planning must be balanced with economic planning in terms of location also. To effectuate regional development, manpower planning must provide the framework for mobilizing the right amount of human resources, motivating these human resources and moving them to the areas in question.

All too often economic planning and manpower planning accommodate the need for economic development only. Rarely does manpower planning coordinate the broad aggregates with devices for insuring that these are properly allocated spatially. Mr. Fonseca has talked of this problem in terms of moving people to certain areas in Brazil. All other participants have alluded to allocation and distributional problems which go with the economic problem. Mr. Aybarsu has dealt with this problem in Turkey and the difficulty of moving human resources, especially skilled teachers, from urban areas to rural or developing ones seems to be a problem in each nation represented here. The human resource, all factors being equal, tends to be highly immobile. The more educated the human resource is, the more it seems to want certain urban amenities. Areas lacking these frequently find it difficult to attract people of the necessary caliber. The conclusion is that neglect in building pertinent institutions may create bottlenecks and distortions in any economic planning system. Manpower plans must be as balanced as economic plans. On the other hand, the over-all economic plan and its objectives determine manpower objectives. In this sense manpower planning is a subsidiary aspect of economic planning.

3. Priorities in Plan Formulation

Manpower employment objectives may be decisive in determining the economic plan. Where this is the case, labor-intensive activities may be given priority over capital-intensive projects. Stating the goals of economic planning in manpower terms, one could define economic development as the provision of set levels of employment at given rates of increases in per capita income for the labor force. Looking at economic development from this angle would focus attention upon some basic economic problems and yield insights as to the nature of both economic and manpower planning processes. Regardless of this consideration it is desirable to state economic plans in manpower terms to determine their feasibility. For instance, if one translates the economic plan for Northeastern Brazil in employment terms, one sees that the plan is rather limited, given the employment needs of that particular area and the employment objectives of the Sudene Plan.

A particular plan may pose the question whether employment objectives can be growth objectives. This was the problem in the initial plan for the Cassa di Mezzo Giorno in Italy. The investment was designated to create a

volume of jobs. The volume of the plan proved to be about 50% of the employment actually needed for the region. Italians were faced with either revising the employment objectives of their plan downward, or increasing the rate of investment.

Manpower planning should provide employment, transfer labor force from the traditional to the modern sectors, wipe out underemployment and create additional jobs to meet the expected increase in manpower supply as a result of demographic, economic, and social changes. The manpower planner is not responsible for determining the increase in the number of jobs. This to him is a given function of the economic plan, but he must inform the over-all planning body of the broad demand for employment. The economic planner must, in turn, understand the full implications of economic, social, and demographic changes and his plan must allow for the appropriate human capital formation and allocation cost attributed to each of these three types of change. These may consist of: a net increase in population of working age allowing for mortality; change in school attendance and retiring ages; quickening of the pace of development which, while creating more employment opportunity, may be changing expectations and may induce a more rapid increase of certain types of labor in the cities; and technical progress which may destroy existing jobs in the traditional sector, but which will create new occupations which require training, placement, and even high-level educational resources.

Development tends to be human-capital intensive. For instance, a 2% increase in per capita gross national product through new methods will lead to a more than a 2% increase in demand for engineers, managers, and placement services. Manpower planners must allow for changing tastes and expectations. For instance, at some times status symbols will confer low status to engineers. At a later stage of development engineering and the sciences become attractive to the talented segments of the population. The manpower planner must be able to anticipate these changes in preferences which come with development. The economic planner must understand and provide for urbanization and the need for the urban infrastructure.

4. The Status of Manpower Planning in Bolivia, Indonesia, Pakistan and the Philippines

Mr. Pangerapan: In 1956 when Indonesia started to carry out its first Five-Year Plan, an important position statement was made on manpower resources, but the policies of that statement could at the time not be implemented because of lack of information on manpower supply and demand. Some of the projects of the Five-Year Plan are being carried out. Our concern has been mainly to try to identify the manpower requirements for these projects. To this end a joint committee has been set up by the Departments of Labor and Basic Industries. This committee tries to work out manpower schedules for the projects now under way. The joint committee has not been able to collect this information. The data it collected is being summarized to serve in the formulation of a program by the Manpower Directorate. In addition, a Committee on Projections was established by and for the Public Works Department. In Indonesia public works include electricity, irrigation, and roads. The Committee on Projections has been

able to complete its work, collected some information on how many engineers and how many skilled workers are needed for the projects which are to be carried out in the next five years. The situation is such that each department has to carry out its projects. Some projects have higher priorities. Because of the serious shortage of manpower needed to carry out projects under way, the government has tried to coordinate the work of all departments and to establish departmental committees on human resources planning. Each department has sent two members to the manpower seminar which is being conducted in our country at the present time by the ILO. Departmental delegates in the ILO seminar are given some training in how to plan manpower for the tasks of their departments.

Mr. Qureshi: I would like to know if in Indonesia all the departments are required to work out only the manpower requirements for their own activities, or whether they have to work out how the manpower is to be procured, trained, moved, etc. Is the department responsible for the entire process of manpower development of the staffs it will need?

Mr. Pangerapan: Many departments have set up manpower committees. Their main concern is to find out their needs for manpower in order to provide training for instruction. The Department of Labor has vocational training services which maintain some training centers in three big cities in Indonesia. Primarily, the need is for instructors to train skilled workers. The vocational training centers try to work closely with other departments in training.

Mr. Qureshi: In Pakistan the different departments have been organizing training for their own needs. The railways were first to organize regular training for their own employees. The railways confined their efforts only to the extent of their own requirements. Later on they have been training for certain others. During recent years the graduates of the schools and universities have been too few in number to fill the need. Arrangements have been made to give short-term courses. Two years ago it was considered that their arrangements would only be engineering. An agricultural university has been set up in West Pakistan only. From that, with the setting up of water power, development work in this sector has been coordinated in West and East Pakistan and they have coordinated independent arrangements for their own needs. They are not doing this by themselves. The Department of Manpower organizes training only in the sectors in which they feel the existing resources cannot supply their needs. There was a meeting of high level people which assessed the possible output of existing resources and the total future demand. The plan for meeting the shortage was worked out.

Mr. Sobel: As a result of participation in this Seminar, participants might be inclined to look at the over-all economic plan and relate this to the output of your educational system.

Mr. Qureshi: This in Pakistan is being taken into account and different existing agencies may be required to train teachers. The Planning Board has had a manpower section for many years, but the manpower section has not been able to take full charge required in the manpower side of planning. The National Manpower Council is being set up which will work on the organization of the manpower resources and demand for distribution and it will work in

coordination with other resources and be the chief adviser to the Planning Board.

Mr. Farooki: Mr. Sobel, if you start economic planning with an employment objective, there must first be a compromise between manpower and economic planning. Do you believe achievement of such a compromise is feasible?

Mr. Sobel: I think both have to be taken into account. I am saying that you have to compromise in your economic plan the manpower objectives of that plan and then relate this to over-all employment objectives as well.

Mr. Farooki: Has any country tried this?

Mr. Sobel: The Bolivian plan results from the first dealing with the employment objectives and then devising an economic plan. The Bolivian approach may neglect growth objectives by concentrating on a type of activity that maximizes employment, but not necessarily growth. The manpower planner must also consider the employment possibilities of the plan in relation to the over-all labor supply. Manpower planning, therefore, represents a compromise between all these objectives.

Col. Brotosewojo: You said that manpower can be a limiting factor in economic development. I think that the most decisive factor in economic development is the natural resources of a country.

Mr. Sobel: I would consider manpower decisive because if we take a look at many developed countries and contrast them with nations that are less well developed, we will see that different endowments of natural resources cannot explain the development and wealth differentials between them.

Mr. Farooki: Should not labor be regulated?

Mr. Sobel: The manpower planner must plan human resources within the over-all social and political framework. If you have a free society, you must provide incentives rather than rely upon regimentation. There is no easy solution. What the manpower planner in a democracy is really saying is that the cost in certain types of resources would be cheaper if he regimented labor, but the political costs are so high that he chooses to provide other incentives.

Mr. Farooki: The democracies have smaller growth rates in comparison with dictatorships.

Mr. Sobel: Russia has found that despite all regimentation, failure to provide wage and pay incentives had adverse results. The labor force either melted away or did not perform well. Regimentation cannot solve the mobility problem in the long run.

Mr. Qureshi: During my short army service it was discovered that when you tried to get the soldiers to do work for which they were not trained, they refused.

Mr. Bringas: The tendency of human resources is to concentrate in the urban

areas. In my country there was a move to disperse industries because the concentration of manufacturing is such that about 40% is located in the Manila suburbs. It was considered desirable to disperse this heavy concentration on industries. They couldn't do it because of the high cost of power and lack of manpower in the areas where the industries were to move. Why don't we encourage capital to establish industries in the areas where they are needed?

Mr. Sobel: To move power and other amenities to rural areas is costly.

Mr. Bringas: Our government has offered tax incentives to industrialists who agree to move away from the urban areas.

5. What Constitutes a Plan

The term "plan," as applied to the entire economy of nations, consists of many different types of goals, activities, policy instruments, and degrees of control. To say that an economy is planned or has a plan may conceal the fact that what is called a plan may be merely an assembly of uncoordinated, sometimes lone, inconsistent targets. Plans are in many cases overly optimistic in regard to the resources available or becoming available. At the other extremity is the type of plan characterized by the Russian model in which all resources in the economy are specifically planned. This latter type of plan is possible because every resource is nominally under the control of the state.

The social, political, and economic factors which affect the type and rigidity of a given plan are:

a. The extent of political and economic freedom in the society;

b. The degree of private ownership and management of resources from use;

c. The volume of scientific, technological and administrative skills existing in a given society;

d. The statistical knowledge available to the government;

e. The character of the national community--whether it is a homogeneous or heterogeneous society and whether features affect national aspirations and goals;

f. The natural governmental resources needed to carry out a given plan, particularly whether they are of domestic or foreign, private or public origin.

The statistical base obviously entails knowledge of the productivity of resources in given sectors and in the entire economy. For manpower planning it implies knowledge of the size of the labor force, its composition, and the availability of training resources to change its composition. For effective manpower planning, data on labor mobility, wages and hours, and on other factors which induce the movement of the human resources from activity to activity are required. Without these data, planning is unrealisitc. The statistical knowledge available to developing nations determines whether they can plan and how specific planning programs and objectives can be; in other words, planning should not be in greater detail than the available knowledge permits. If the statistical data are not available at all, or the available details are insufficient, then the assumptions upon which certain parts of the plan are based must be stated as assumptions, the accuracy of which can be checked over time. It is quite true that there are limits to the statistical detail available, but the planner should explicitly state the assumptions which underlie his planning and the extent to which his planning is based on these assumptions, rather than on the data available to him. He should attempt to induce the ultimate collection of the appropriate statistical detail.

6. Key Patterns of Plans and Planning

A belief held by many economists inside and outside the so-called conservative fringe is that planning and freedom are irreconcilable and incompatible. Those that hold this view imply that planning and a price system are incompatible. In actuality, many planned systems utilize the price system; and many unplanned economies operate with a degree of government intervention great enough to be labeled piecemeal planning. Some totalitarian societies had no planning. Some democratic societies have been characterized by substantial amounts of planning while maintaining complete political and social freedom. Therefore, the dichotomy introduced by Von Hayek and Von Mises is somewhat misleading. Nevertheless, the question raised by the two gentlemen from Pakistan, namely whether a manpower plan can be consummated without regimentation, is valid. The degree of regimentation depends upon planning; if it is one in which literally every resource is allocated, this may involve the imposition of rigid controls upon political, social, or economic activities of individuals or private organizations.

It is possible to set up any number of planning classifications and I make no claim that my system of classification is either universally accepted or is the best system for all purposes. Nevertheless, the following classificatory system reveals some differential and distinguishing characteristics of the various types of plans:

a. Totalitarian or Complete - A type planning characteristic of the Soviet and Eastern European Zone countries which attempts to account for every resource in the economy. In this type of planning the resources are balanced, the sum of the resources add up, the total amount of investment resources are totally allocated by the state, at least in theory, and the ability to pursue legitimate economic activities outside the plan is extremely limited.

b. National Flow Type - This is the type of planning utilized by Pakistan which was discussed in some detail in the final discussion session for the first part of the course. This type is characterized by a system of national accounts balanced by sectors with specific plan or project magnitudes for each of the basic sectors. Although there are specific projects in each sectoral plan, the basic planning is in terms of broad economic magnitudes and does not plan the resources flows in detail. Nevertheless, there is some guidance to the resources flows through the specific projects being carried out by the government or through the controls inherent in certain types of measures (tariffs, quotas, and similar restrictions). The private flows are not directly controlled although subsidies, tax incentives and loans in some cases are given to induce the aggregative and to a lesser extent, the specific flow of private resources in accord with the over-all view of the plan.

c. National Budget Plan (characteristic of France, Norway, Holland) - The national budget is relatively specific for the governmental sector; less specific for the private sector.

As in the Pakistan-type planning it does not provi public policy with some methods to direct the movement of resources into the private sector in general conformity with the plan. While it does not provide for industry-by-industry accounting, it does allow for exercizing influence upon certain broad magnitudes (amount of investment, amount of employment by various sectors) and it may provide some subsidies, tax remissions, and imports quotas in order to channel investment resources in accordance with the plan's priorities. It may create certain types of import licenses to benefit sectors of the economy it is desired to build up. Dutch planning, while characterized by few direct controls, did, when the government wanted to develop the area around the City of Groningen, provide certain incentives for industries to locate there. The government also announced at one time that after a certain time, if certain industries didn't plan to locate in the Groningen area, it would form governmental pilot plants in the reluctant sectors of production. This is the type of national planning that uses the potential of government as a lever. It usually prefers not to plan the private sector, but plans the governmental sector in great detail to move resources in accordance with the particular national goals. Public policy implements plans through a combination of enunciated employment goals, gross aggregative goals for growth, and tolerated limits of unemployment and government instrumentalities for intervention applied when and if necessary.

d. The Swedish Labor Market Board Pattern 1/

The differentiating factor which characterizes the National Budget-Type Plan from the Swedish one is that in countries such as France, Holland, or Norway the national budget is in terms of certain levels of growth, whereas the Swedish is based on labor market and employment needs. The Swedish plan is much less detailed. It provides in the national budget for devices to affect investment directly or indirectly. Their purpose is to create desired levels of employment. Manpower planning is used as an additional device designed to assure optimum levels of human resources utilization and a high degree of response to technological change. The amount of investment under this system becomes a level of employment. The Swedes adjust their manpower institutions and development, such as training, employment services, regional development plans, subsidization of labor mobility, to this level. In other

1/ A detailed relationship between Swedish over-all planning and the manpower devices inherent in the nation's labor market system was the subject of a guest lecture by Mr. Thorbjorn Carlsson, Labor Attache of the Royal Swedish Embassy in Washington. See p. 161.

words the employment goals determine the plan for the Swedish economy. This kind of plan illustrates very well the interaction between the manpower sector, economic planning, and the sectoral manifestations of manpower planning in a specific context. It is an example for a planning policy which uses the character of the over-all plan as well as the direction of investment.

e. Project Planning - Under this system the over-all economy is not planned, but certain key projects are planned. Detailed manpower breakdowns may be provided for such projects; and other broader manpower aggregates may be deducted from the data. Human resources are, under project planning completely free, and they can only be manipulated in the general context of broad manpower goals. The manpower plan only provides motivating devices to conform. Under this system the planning knowledge required may have to be greater and more subtle than in the over-all types of planning.

7. The Manpower Expert's Relationship to the Economic Plan

Each general planning model either conveys or implies a particular form of manpower planning. In fact, there may be many facets of economic policy which do not seem to involve a plan, but which may involve various aspects of a manpower program. These various aspects, for instance, may involve in actuality at least the outline of manpower plan. In the U.S. economy we have no enunciated formal manpower plan. Nevertheless, various entities of policy, such as the school systems, attempt to accelerate training or to increase the numbers of various categories of workers constituting the beginning of a manpower program. These and other measures indicate that while the U.S. has no over-all manpower plan, certain priorities which involve assumptions about a plan have been adopted.

The importance of the type of a basic economic plan to those in the manpower field is that it will affect manpower policies. A highly comprehensive plan, such as the Russian one which contains a program for every economic unit, necessarily provides for manpower planning in considerable detail. Such a system will assign specific manpower quotas to each economic unit just as it assigns investment quotas and financial quotas. It should be said that the more precise the plan may be, the more rigid it is likely to be and the more likely it is to prompt management of individual plants to hoard manpower, especially skilled labor. Under a highly comprehensive plan some economic units may have excess manpower allotments whereas other firms able to expand may find that the manpower they would need to do so is unavailable because it has not been assigned to their plant. Particularly, the Russian type of planning tends to result in the hoarding of many types of manpower by particular firms who find that manpower quotas can be linked with investment credit and financial quotas. Therefore, for a firm to utilize less manpower than has been assigned to it means that it will in the future not only face the loss of that manpower, but the loss of all other resources with which the human resource is complementary.

The national flow type of planning involves broad aggregates while the specific amounts of scarce skills required can be evaluated for the major impact or project areas, as Mr. Pombhejara indicated for Thailand. The major employment objective and the changes in the aggregate level of employment can be ascertained by sector so that gross manpower requirements can be estimated. With some qualifying assumptions specific high level, technical, and skilled labor targets can be established. What generally ensues is an aggregated sector by sector analysis with anticipated gross flows from one sector to another. Estimates of what might be termed the scarce skilled, professional, technical, and administrative personnel are estimated much more closely than unskilled or semi-skilled manpower requirements because the economic plan is influenced by the availability or non-availability of these high level human resources. In decentralized planning the problem is that the objectives of the decentralized units and their particular goals might not add up to the broad, over-all objectives as established and, therefore, at all levels there must be some coordination to see that the decentralized plans add up. The more decentralized planning may become, the higher the risk that the particularistic interest of the decentralized planning group may take precedence over the more central goals.

If labor, land and capital are all under complete control of the state, different patterns of planning are conceivable. The degrees of centralization and decentralization may vary. The Russians have to a certain extent moved towards more decentralized types of planning because they presumably found that the inherent rigidities create a tendency for mistakes, when made, to be much larger, and that a centralized plan is less able to correct itself as rapidly as a decentralized one. On the other hand, Yugoslavia, which is another example of a country where a large percentage of the total resources is controlled by the state, is characterized by a more decentralized planning.

In regard to the degree of public ownership there are differences in the various countries identified with the Soviet system. Czechoslovakia is about 75% nationalized, while the Eastern Zone of Germany is about 60% nationalized. Even in the Soviet system there are some groups, generally professional groups, who are in one context or another self-employed and, therefore, who are outside the planning system. In actual fact these are planned for and should their private activities diverge from the over-all plan to any great extent, it is obvious that their independent existence would terminate.

Irrespective of the economic system or plan, skilled personnel must be planned for in terms of fundamental investment in the educational system. These estimates and manpower requirements, occupation by occupation, must be made in order to provide for the appropriate investment in education and educational resources. This is why most countries begin their manpower planning with two types of planning: one involving broad employment objectives (disaggregated by sector) and the other involving the key manpower resources in economic development required to consummate the plan. These key personnel require additional planning through both the educational system and through the industrial training system.

8. Skills and Productivity as Items of Planning

More and more economies are realizing the need to plan their higher level manpower needs. The need to plan what might be termed "middle manpower" is also being recognized. Middle manpower would include the supply of technicians, middle management, teachers at the elementary and lower secondary levels, village agricultural advisors, and mechanical technicians. These occupations are beginning to appear on the manpower plan of many particular countries because it is recognized that middle manpower is a strategic resource.

Training of semi-skilled and unskilled labor is a neglected area of manpower planning. It is amazing how in many underdeveloped economies the investment assignment is minutely planned and expensive and modern machinery is made available through this investment program, but little or no planning is devoted to the training of the individuals who are going to man this often complex and usually expensive equipment. This is particularly true of semi-skilled workers. Little or no provision is being made for training semi-skilled and unskilled workers. The reason for this attitude may be the result of a misconception. In most developing economies excess agricultural labor is prematurely flocking into the cities. Managers seeing that a much larger number of people are available for employment in the sector than will ever be needed (or are contemplated by the industrializing absorption plan) feel there is little need for developing the capacities of this type of labor supply. As a result, employees of plants in developing countries working on modern machines may not have a lower productivity than their American or European counterparts, but they lack understanding of machinery and equipment and this leads to much more down time. If one were to analyze the operations of a plant in an underdeveloped society, one would probably see a large part of the equipment down because of the absence of training; for the same reason coordination between workers is wanting and its importance is not generally recognized or understood. Materials flow failures and lack of the availability of spare parts consequently reduce productivity. Machines may be ordered without sufficient spare parts for maintenance because experience in the proper upkeep of the equipment is lacking or defective.

Little planning is being done because of the unlimited supplies of labor in unskilled and semi-skilled jobs. Investment in on-the-job training facilities for these workers could provide as high a rate of return. It would also increase the success of investment in high and middle level manpower. Conceivably, such training programs might be initiated by an arrangement whereby the costs of on-the-job training are shared by government and the industries doing the training. The reason many firms are unwilling to cooperate in such programs is that often the investment in on-the-job training is not borne by their competitors. Training costs vary industry by industry. In the U. S. the training costs for semi-skilled operatives range from $300 to $2000. In a developing society private, government-owned firms have been unwilling to make investments of this sort in the human resource because of the unlimited supplies of such labor.

9. The Russian Gosplan - Some Specific Aspects

Returning to the planning system of the USSR, some details might be worth elaborating. The three basic economic units or levels in the Russian planning system are:

a. Gosplan (equivalent to the National Planning Council)
b. Administration (sub-division of a ministry)
c. Firms

The Gosplan starts with the following data: the amount of resources available during a particular period; the existing productivity of these resources; the over-all capital output ratios by broad sectors of the economy; and the need to maintain these ratios. Known too is the occupational structure of that labor force, and the productivity of labor in the various branches of the economy. Obviously, there are serious constraints upon planning which limit the amount of change in a given period. Even the Russian economy with all its control over resources cannot change direction in any given period. The planners cannot decide for instance to cut down medical services 90% and divert the thus freed human resources to Asiatic development regions or to agricultural improvements. This means that for some substantial sectors of the economy the output is reasonably fixed. What degree of flexibility is there under the Gosplan? Some major part of your labor force is "unstructured." Most of these are semi-skilled and unskilled workers. Also, many skilled groups can work in one industry or another. On the capital resources side equipment depreciates over time and the depreciation funds do not have to be utilized to purchase machines for the same industries. On the other hand, the Gosplan has certain priorities which are fixed on it by political exigencies. Among these priorities are: amount of resources the state needs for administration and for carrying out its programs, especially defense-connected activities. The fulfillment of these priorities requires certain investments which, in turn, create related or second-line priorities. Additional investment might have to go into developing power plants, railway systems, and capital equipment in various industries whose productivity needs augmentation to advance. The third type of items given relatively high priority are those of collective consumption--health, sanitation, and housing. The Russians have found that appeals to patriotism to induce workers to move to a new location will not work. They are now using wage incentives, but even these won't induce high level resources to move. High level resources can be supplied with high wage differentials and they will still choose to remain in the urban centers. High level resources want desirable housing; they want cultural surroundings; they want well developed educational institutions. All of these are items of collective consumption.

Why does the Gosplan give collective consumption a higher priority than private consumption? The planning groups have certain national goals in mind and these national goals are more easily attainable in terms of certain items of collective consumption. Regardless of his level of income, it is felt that an individual is entitled to a certain minimal level of needs. The purposes which collective consumption attains can be more easily related to the state's priorities than can those through individual consumption.

10. A Synthesis of Discussions

Mr. Bringas: What about distributing work on an equal basis?

Mr. Sobel: The Russians have been moving in both directions. They have given everyone the minimum, but they have been distributing income less and less equally over time. The fourth priority then becomes consumption. This system of priorities is reflected in the way the Russians plan because the activities planned nationally are the investment goods industries embodied in national trusts, while consumer goods industries are planned at either the state or the local level. Most consumer goods industries are planned at the republic level. Most local service activities are planned at the local level. The Russian priority system is thus reflected in the level of the planning body as well. By the time you get to services, locally-produced consumption goods, the other aspects of the Russian priority system have already taken most of the resources, leaving a limited amount of resources (generally the less skilled manpower) for the services industries. Most of the investment has gone elsewhere. This accounts for the unique polarization in the Russian economy. On the one hand, it is characterized by highly advanced scientific operations; but at the level of providing services and taking care of local consumption activities, the technical coefficients are those of 50 to 60 years ago. The Russian economy is a dual one in a different sense--one part is like riding in an automobile of the future, while the other part is like riding in a horse-drawn carriage.

The Gosplan allocates these resources by ministries, administrations, state and local units. Obviously as you go further and further away from the central planning body, the planning bodies are less efficient and have fewer resources, and this too creates problems of planning and execution. What does this mean? Each sector of the economy is given a certain amount of manpower, certain production targets, and a certain amount of investment (new equipment). In actual fact there are two budgets: one is the physical budget which provides quantities of resources; and the other is the financial budget which prices and costs each one of these. To illustrate how these are linked, consider the following:

A firm is allocated 3,000 workers with a production quota of 200,000 units. Each of these units will sell at one ruble. This was the old production quota. Now an increase in productivity is planned for at 10%. It must now produce 220,000 units of production. The price per unit remains the same. These workers were going to be paid a certain amount. Thus, the amount of raw material has to be increased 10%, depreciation considered, etc., so the Russians make all these add up to 220,000. These two types of budget balance out for each firm. That means that the administration is finally given a budget--physical and financial. The physical budget consists of an amount of output that is scheduled, and the amount of inputs consists of an amount of output that is scheduled and the amount of inputs allotted. At the same time, this output is priced so this firm is given so much of an allowance for labor, for equipment, for maintenance. Depending upon the importance of the industry, it is given a priority which will enable it to get the needed raw materials. In many cases these priorities are broken down because a given firm may produce different products, only part of which may be important enough to be given a priority. Russia has to use this priority system because many times

their plans cannot be consummated. The Gosplan assigns the administration certain quotas and the administration breaks them down for assignment to the firm. The firm then renegotiates its quota with the administration. The result of all this bargaining on quotas is that the firm winds up with two specific budgets--production quotas for each type of output; and certain allocations of manpower, broken down by type of raw material and equipment. It generally attempts to squeeze out some reserve. If you sum up all these all over the economy, they must equal the total amount of resources available. Thus you see how manpower planning ultimately results in Russia's manpower requirements being related to its production goals. This planning is only possible when all the resources are owned by the state which can then plan minutely. The accumulation of inventories in certain fields somewhat eases the planning and administrative problems.

Mr. Pangerapan: Planning would not emerge from the bottom. It comes from the top.

Mr. Sobel: It emerges from all levels. While the Gosplan is getting its plan, the firms are saying what they would like to do, with the administration acting as a bargaining agent between the two. Finally, for example, you get manpower requirements which become quite specific for the economy. For other manpower purposes long-run planning is needed. Obviously, if you are going to have enough engineers at all times, you are going to have to know what the need for engineers will be ten years from now. High level manpower involves a 10 to 15-year planning horizon. Therefore, you must use project supplies as a beginning basis for manpower forecasting. One of the types of data often found wanting with regard to manpower planning is turnover. For instance, you may have to train three engineers to get one, because many frequently go into administrative jobs or to other non-engineering activities. In developing societies where the life span is not as long, more people have to be trained.

One device for solving this problem is periodically to survey samples of various professional graduates from universities. For instance, a sample of 200 graduate mechanical engineers who graduated ten years ago can be surveyed to find out what they are doing now. Unless this is done, estimates of training needs are going to prove erroneous. The Russians, despite their detailed planning, need a long-run general plan in order to determine their needs; so, industries are also submitting, not only their detailed planning for a year, but a ten-year planning horizon period which could provide enough detail for future manpower planning. It should be recognized that the people hired as engineers this year had to be put into the pipeline many years previously.

Although this is not related to the question at hand, let me demonstrate some other aspects of Russian planning. The Gosplan provides for physical and financial flows. A given firm is given a budget. What is budgeted is the amount it is going to produce and how much it is going to take in. We have shown how it gets its labor budget. The Russian firm is given credit in a state bank in the amount of its budget. If it plans for this amount, the Russian firm may have to buy its equipment at the beginning of the year. It may be producing for a seasonal inventory; therefore, during that period no revenue is coming in, so it has to plan the money flows accordingly. The Russians use the state bank as a checking device to determine whether a certain firm is actually staying within its stipulated budget

and producing according to quota.

The Russians do not use the price system to determine what to produce. They use it in reverse. They use the price system to adjust demand to what they want to produce. For example, if one uses the price system in the traditional way, then if people want more shoes, they will be willing to pay more for them; thus, shoe manufacturers will be able to get more for their shoes and will try to produce more of them. Therefore, high prices perform a given functions, or putting it slightly differently, a change in price performs a signaling function. In the Russian system, if the planners don't want to produce a large amount of shoes, they set a very high price on shoes and at such a high price people will buy only the amount of shoes which the plan contemplates producing.

Mr. Branco: In that case the planners adjust to the coefficient of the price and they have some idea of a demand schedule. But they want only to produce a certain amount.

Mr. Sobel: A great deal of Russian revenue comes from turnover taxes and profit. In many cases the price is high enough to allow a high profit. This means that profit cannot perform the function of allocating investment. In our society if a firm has a high profit, it wants to produce more and it wants more machinery. The Russian Government creates artificial profits. It takes the turnover tax and invests it in the sectors it desires. The pricing system and profits cannot perform the function of determining the priorities. The price system does perform some functions, however. For instance, despite the high planned prices on consumer goods, people have been demanding more consumption goods than the state has planned to produce at high prices. The state, therefore, has had to modify some of its priorities in favor of more consumption goods. It has had to cut back on collective consumption projects.

Mr. Farooki: You stated it would be impossible to plan without statistical information. I think "impossible" is too strong a word. Some countries are planning without it.

Mr. Sobel: What sort of plans are these? I can gather together a large number of hopes and string them together to make a kind of economic plan. Let me talk about the genesis of this. It happened in Pakistan. The first plan was just a stringing together of hopes. I am talking about the over-all plan. In most developing societies plans are initially based upon meager statistical information and ambitious social and political goals. These are strung together in a "plan." In breaking down this plan, it is found that statistics are needed. Thus an effective plan involves a consistent set of goals and policy instruments and for these adequate statistics are mandatory.

Mr. Farooki: What I am worried about is the type of scientific statisticians that we need. They are hard to find in underdeveloped countries.

Mr. Sobel: Nobody argues that statisticians are in unlimited supply. Given the limited available data and trained resources, priorities have to be set for statistics. I would argue that basic statistical data can give you enough data for that type of planning which is feasible in developing societies. In this sense the plan is a flexible instrument, valid at best within broad limits.

Mr. Branco: It must be kept in mind that the indirect manpower requirements are more difficult to estimate. I don't see here any treatment of that problem. I think that this is also a problem, even for Pakistan.

Mr. Farooki: Assessment of manpower requirements is not difficult.

Mr. Branco: Supposing you have in the economic plan three projects: A, B, and C. You can calculate the manpower needed for these projects because you know that a certain number of engineers will be needed, etc. However, for each of these projects there are corresponding indirect requirements. For example, in Project A, perhaps a prerequisite to satisfactory completion of that project is development of a copper mining operation. For that operation there will be needed certain amounts of manpower which must be taken into consideration in planning for Project A. I would like to know how Pakistan calculates its requirements.

Mr. Sobel: There are various techniques and I indicated when I spoke about project planning that you cannot estimate the amount of indirect manpower as accurately. These must be roughly calculated. The manpower planner can do one of two things. In some economies the over-all technical coefficients are given by input and output tables. These are at best rough and approximative, but are the best available. The other way of doing this is to try to estimate the backward and forward results of the project; certain changes in over-all estimated manpower needs will come about over time. I would try to estimate the backward or forward effects of the entire project over time.

Spatial factors, where one has to plan the location of industries or economic activities, must be related to the existing manpower supplies; and appropriate measures should be designed to move, especially key resources, into certain areas. The manpower plan should not neglect this. This means that the planner must have substantial data on labor mobility, especially by occupation and skill level. In turn, the manpower planner will be in a position to indicate to the over-all planner that certain spatial aspects of the plan are not rational in terms of current patterns of labor mobility.

In order to estimate changes in productivity, one must know something about changes in supplies of resources which affect productivity. All of these factors of productivity are involved in changing productivity. Not only must plans be broken down in terms of broad aggregates, they must be broken down regionally. The planner must understand the international trade aspects of the particular plan. These affect manpower and manpower requirements, especially as they involve the growth of certain types of import-substituting industries which have their own manpower requirements. The goals of the manpower plan should be to provide the necessary flexibility and investment in manpower to get the desired human resources.

A misplaced concentration on the numbers leads to a rigidity that is uneconomical. We are going to emphasize the policy instruments necessary to adjust the supply to economic development effectively, rather than to get only the necessary numbers. The numbers are needed to get broad targets for planning. One of the more important data neglected in manpower planning is the turnover factor. Frequently two engineers must be trained in order to eventually have one. This is because engineers move on to administrative positions and other sectors of the economy. What is frequently lacking are

data on occupational mobility of certain types of personnel.

Mr. Onfray: The process of industrialization in Chile was accelerated after World War II. The economic policy of Chile has emphasized the various financial resources necessary for increasing production. Before 1960 several economic plans were devised. All of them were partial plans like the transportation plan. In the year mentioned the first plan was devised for the period 1961-1971 which contemplates a growth of 5.5% annually, measured by gross production. Chile has no elaborate coordination program for human resources. We already notice the symptoms that will take us to such planning. Emphasis has unfortunately been put on financial policy, not taking into consideration demographic demands. That is to say, the governmental responsibility of improving production, both in quantity and quality, has been neglected. In other words, what has been done is to have made development plans without having paid enough attention to human resources planning which, in my opinion, is due to the fact that development plans have had in mind only financial resources goals. This philosophy of the policy-makers is changing gradually and lately some attention is being given to planning for human resources. This change of philosophy or outlook on the part of the planners has been due to the changes in the environment itself and also to some natural catastrophes. After the earthquakes it was necessary to make some reconstruction plans. As a consequence of this, they had to pay more attention to human resources. I have this plan in detail and I will put it in the library. In summary, I would like to say that people in my country are gradually becoming more aware of the need for planning human resources at the national level. The University of Chile is acting as a coordinator to establish coordination between the economic plan and the human resources plan.

11. Excerpts of Papers on Manpower and Economic Planning in Chile, Indonesia, Pakistan (West), the Philippines and Thailand

A series of research papers relating to the subject matter of this segment of the Seminar were written by participants. Portions of these papers were presented during this course by their authors, and in discussions on specific aspects of this course and previous ones, the authors presented some of the findings and ideas which subsequently went into their papers. Abstracts of these papers are presented below. Each abstract, combined with remarks relating to the discussion, brought out important aspects of the research papers.

"Economic and Manpower Planning in Chile" - Mr. Onfray - 4 pages

This highly concentrated paper was read in its entirety to the Seminar on September 5. The author traces Chilean programs on economic and manpower planning back to the 1939 law creating government corporation for the development of production, and he asserts that planning in the modern sense was born in Chile in 1939. He then traces the progress of the development plan through programs designed for specific industries, such as steel, petroleum, and transportation. These programs were consolidated in 1960 into a ten-year economic development plan which coordinates industries, agriculture, construction, public works, electricity, and roads. The basic objective of the 1960 ten-year plan is to achieve a growth rate of 5.5% per

year. Turning to the manpower aspects of planning, Mr. Onfray ably outlines the magnitude of the problem of general education and skill acquisition which has to be paced by Chilean policy-makers and planners. His presentation in this connection has been quoted in previous sections of this report.

"A Brief Outline of Economic Growth of Taiwan"- Mr. Yeh

In a condensed, four-page paper Mr. Yeh summarizes main achievements of the Second Four-Year Plan of the Republic of China. He then turns to the major goals of the Third Four-Year Plan, stating that its objectives are to achieve an annual rate of increase of real national income of 8%; real per capita income of 4.8%; an annual increase of industrial production of 13.8%; and an annual increase in agricultural production of 5.3%. The Plan hopes by 1964 to raise the total employed labor force to four million wage earners and self-employed persons. It might be added that Mr. Yeh's substantial paper on education and skill acquisition has been referred to in the report on skill acquisition.

"Manpower Problems and Policies in Indonesia" - Mr. Pangerapan - 22 pages

This comprehensive, well documented paper is an historical treatment of labor force structure and labor mobility starting with the Colonial Period. On the basis of this presentation the author analyzes the present manpower situation and its problems. Text, as well as tables, provide a condensed, informative view of programs now under way in Indonesia.

"Manpower and Manpower Planning in Indonesia" - Col. Brotosewojo - 6 pages

In this paper the author concentrates on analyzing the national overall development plan. It supplements the more comprehensive paper by Mr. Pangerapan discussed above. It should be added that Mr. Siahaan also contributed a paper on skill acquisition to this segment of the Seminar which is, however, only a digest of his comprehensive paper presented on that subject and referred to previously in this connection.

"Specifics of Manpower Planning with Respect to Pakistan's Economic Development Plan" - Mr. Farooki - 10 pages

In this well documented report the author analyzes the Second Five-Year Economic Plan of Pakistan. He combines this with an evaluation of the planning organization of the government and the work of the civil service planners.

"Agriculture in West Pakistan" - Mr. Qureshi - 14 pages

The author traces the problem of agricultural economic development in Pakistan back to the changes the British Colonial Administration made in the military feudal system of land ownership established by the Moguls. Based on this historic analysis, the author evaluates the significance of the agricultural sector for the economic as well as the manpower aspect of his country and then reports on and evaluates critically the various programs which are under way today. The paper is very well documented.

"The Integrated Five-Year Socio-Economic Program of the Philippines, FY 1963-1967" - Mr. Bringas - 10 pages

The author's paper presents a condensed analysis of the basic ideas underlying the development plan of the Philippines. It concentrates on several specific aspects, such as education, labor force structure, and the impact of foreign trade upon the Philippine economy. Mr. Sobel, Mr. Bringas, and other participants discussed the educational problem of achieving a satisfactory degree of school attendance in the rural areas of the Philippines. The problem of the educated unemployed was also discussed.

"An Analysis of the Supply and Requirements of Scientific and Technical Personnel in Thailand During the First Six-Year Economic Development Plan, 1961-1966"- Mr. Pombhejara and Mr. Sangtong - 47 pages

One of the authors has participated actively in formulating planning policy in regard to the training of high level personnel. It is an interesting, very well documented report of his work in Thailand. It contains very detailed figures of educational programs and of the present disposition of available high level manpower and its composition. The report recommendations by the authors are attached to the analytical presentation. These recommendations deal with organization, staffing, and the shape of future action programs. The paper should be highly recommended to persons interested in the policies of Thailand, its accomplishments, and policy objectives.

Much of this paper, as well as other aspects of economic and manpower planning, had been presented orally by both authors in this segment of the Seminar. The discussion indicated considerable interest on the part of participants in the approach of the present Thailand Administration. Mr. Pombhejara and Mr. Sangtong stressed that the approach of the Thailand Government was to develop the productivity of agriculture without paying much attention to problems of underemployment at the present time in the sense that they create hardships for rural wage earners and farmers. Instead, the Government concentrated on the development of professional and technical personnel as well as upon increasing the number of middle level personnel and technicians in order to promote and expand urban industries and services. The policy of Thailand in planning provoked some skepticism among other participants and the discussion brought out two basically different attitudes--the approach of the Thailand participants that social problems should be attacked only after they had become acute, and the views propounded by the participants from Pakistan, the Philippines, and Indonesia, that it was a task of economic and manpower planners to anticipate a problem and to act to prevent its consequences.

"The Sudan" - Mr. Ibrahim - 8 pages

This paper is a resume of oral presentations on manpower policies and economic development policies the author had made in this and previous segments of the Seminar. It is prefaced by a condensed history of the Sudan and a brief analysis of its public administration and civil service.

A series of short papers were also presented by the participants from Turkey and Viet-Nam. They were summaries of existing planning programs on which the authors had commented during discussions in this and other segments of the Seminar.

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VI. Manpower Administration

This section of the Seminar provided an organized approach to manpower administration in general, combined with case studies of problems confronting Brazil, Indonesia, Pakistan, Ecuador, and Thailand.

Mr. Donald Roney of the California State Employment Service and Professor Sumner M. Rosen acted as Seminar Leaders. In their presentations they concentrated on the need for organizing manpower information. They elaborated in some detail upon the categories of information needed and upon techniques which could be employed for its collection, pointing out that the basis of decision on policy objectives requires data collection as well as critical analysis of the manpower potential. In this connection particular examples of American manpower planning and programming, such as the area skill survey, were described and discussed. Contrasting American practice with that of another, more intensively planned industrialized country, the Labor Attache of the Swedish Embassy, Mr. Torbjorn Carlsson, spoke as a guest lecturer about the Swedish Royal Labor Market Board and its work. He pointed out how in Sweden the relationship between manpower planning and economic planning has been handled by subordinating the latter to the former.

Other important aspects were elaborated upon by additional guest lecturers. Mr. William B. Grogan, Assistant to the Administrator, Wage and Hour and Public Contracts Divisions, U. S. Department of Labor, spoke about minimum wage legislation in the United States. Mr. Robert C. Goodwin, Administrator of the Department of Labor's Bureau of Employment Security, spoke on the United Kingdom and other European manpower administration patterns. Administrative Assistant Secretary of Labor Leo R. Werts spoke about the place of administration in manpower planning as did Mr. Howard Rosen of the Office of Manpower, Automation, and Training, and Mr. Robert Thomas of the Bureau of Employment Security.

There follows a listing of specific topics presented and discussed:

1. Data Collection - Key Categories and Administrative Aspects (Informational Data and the Degree of Centralization Appropriate in a Particular Country) - Mr. Roney.....p. 147

2. The Area Skill Survey Technique - Mr. Roney.....p. 150

3. Manpower Planning in the United States:

   Administration as a Factor in Manpower Planning - Mr. Werts.....p. 154
   National Manpower Goals in the U. S. - Mr. Rosen.....p. 156
   The Public Employment Service in Manpower Planning - Mr. Thomas.....p. 159

4. Manpower and Economic Planning in Sweden - Mr. Carlsson.....p. 161

5. Manpower Administration in Western Europe - Mr. Goodwin.....p. 169

6. Industrial Personnel Policies - Mr. Rosen.....p. 174

7. Abstracts of Papers Presented by Participants.....p. 178

1. Data Collection - Key Categories and Administrative Aspects (Mr. Roney)

a. Informational Data - These are the basic series of data which can be expressed statistically and collected on a continuing, orderly basis. They, together with other data (both statistical and otherwise), constitute the background information against which manpower planning must be done. Among the important data series are:

(1) Population and Vital Statistics - This includes the periodic census and the continuing registry of births and deaths which indicate the direction and rate in which the population and work force are moving.

(2) Employment Data - These data need to be broken down by industry, occupation, and area. They are the key series of data for all manpower planning.

(3) Unemployment Data - A breakdown by occupation and area is essential. In many countries a useable definition of underemployment needs to be developed, and the employment and unemployment series modified or interpreted accordingly.

(4) Work Stoppages - The measurement of man-hours lost through strikes and lockouts is useful, not only for its own purposes, but to interpret other series such as employment and unemployment; and to judge the impact of work stoppages upon other industries and upon the economy in general.

(5) Industrial Accidents and Occupational Illnesses - Man-days lost through these sources can erect a barrier to progress and development in important industrial segments of the economy.

(6) Wage Rates - Wage levels and the changes therein constitute one of the most important measures of the extent to which a development plan is raising the gross income of the country and of the individual members of the work force.

(7) Consumer Price Index - The cost of necessities for which wages are spent is the factor needed to translate gross wages into meaningful real wages. Much of the unplanned movement of workers from rural to urban areas is generated by an inadequate understanding of the true relationship between apparent and real wages.

(8) Labor Turnover - Labor turnover is a measure of the stability of the work force. Usually it is collected by industry group, but where unusual situations are disclosed, more detail by occupation may be necessary.

(9) Hours of Work - In a highly developed industrial economy, average hours of work are a very sensitive indicator of economic trends. In a developing economy it is a less sharp measure, but still useful, particularly in the industrial sector.

(10) Production Indexes - These give a measure of productivity in various sectors of the economy when related to employment trends and to capital outlay.

(11) National Accounts - These are the series showing the trends in gross national product, the distribution of the national income, the rate of capital investment, and in the balance of trade.

(12) Education and Training - Good data on the output of the educational and training system is crucial to manpower planning. It is an indicator of the extent to which the future skill needs of the country will be met.

(13) Housing - Under some conditions the availability of housing may be a critical factor in achieving manpower plans. Reasonably reliable information on housing (and other social facilities) can avoid costly mistakes in planning.

(14) Job Openings and Placements - This is a basic measurement of the extent to which a manpower program is being translated into the reality of jobs and economic change.

(15) Emigration and Immigration - Trends in the volume and nature of the inflow and outflow of the labor force are important to manpower planning and management. Movement within the country is often even more important, but few techniques for accurate measurement have yet been found.

b. The Degree of Centralization Appropriate in a Particular Country - A centralized system is one which vests the responsibility for data collection in a central statistical agency which does not have the operating responsibility for the programs to which those data relate.

A decentralized system is one which vests the collection of the data in the administrative agencies which have the responsibility for the program to which those data relate.

Institutional arrangements may often reflect historical rather than rational patterns, and major reorientation of the system is seldom practicable. However, where a system is still in a developing stage, some guidance may be exercised.

Some of the factors which may influence the degree of centralization are:

Small countries may find it more feasible and economical to centralize data collection in a central statistical agency. Large, complex countries may find centralization very difficult.

A centralized system usually makes best use of limited funds of data processing resources.

If there is a severe shortage of competent statistical technicians, it may be unwise to disperse them too widely into a decentralized system.

The degree of development of administrative agencies (e.g., a Ministry of Labor) is important. If the agency lacks adequate field resources, decentralization may be unwise.

No unequivocal recommendations can be made as to which course a country should follow, prior to an analysis of these factors. The decision should be responsive to the particular conditions of the country in question.

When standing alone, most of the foregoing series will have a limited meaning for manpower planning and programming. Each must be related to others to reach a meaningful picture. There are certain criteria of consistency which should be applied to any series of data before it is fully acceptable for this purpose, assuming of course, that the data are themselves accurate and reliable.

(1) Avoidance of Duplication - Although occasionally necessary and sometimes desirable, duplication of series of data within a country is often a waste of scarce resources and should be avoided.

(2) Comparability in Time - Selection of index bases must be done with care. Use of different bases in time for different series can lead to strange conclusions when series are compared.

(3) Timeliness - A series is of limited use if there is too long a lag period between data collection and its use, and projections of it into the future will be hazardous.

(4) Avoidance of Gaps - A series that has breaks in its continuity, or gaps in its content (such as omission of an important segment) cannot be effectively connected with or related to other data.

(5) Accessibility - Planners often have been troubled by the difficulty of getting information out of the agencies that have custody of it. Information has no value unless it is accessible.

(6) Geographic Coverage - Difficulties are often encountered because there are areas within a country that cannot be covered effectively. There are cases where full geographic coverage is

not necessary; but if areas are left out, this should be planned and should not be accidental.

(7) Specific Understanding of the Particular Problem - Any series of data should be pointed carefully at the problem it proposes to measure. For example, in some cases the use of averages or other statistical measures can cover up information which is important to the planning.

A particular series of data will seldom meet all these criteria. It is important, however, that shortcomings be recognized and evaluated, rather than to accept a series with implicit faith.

There are many variables which influence the organizational structure of and the assignment of responsibilities in an administrative system to produce the data needed. No clear, unequivocal rules can be stated; but some of the elements which may influence choices can be delineated.

Keeping in mind these reservations, the table below can be quite useful as a "rule of thumb" gained from experience with categories of data explained in Table 1 below:

Table 1

Criterion	Probably best met by Central Location	Decentral Location	Either
Avoidance of duplication	X		
Comparability in time	X		
Timeliness		X	
Avoidance of gaps			X
Accessibility			X
Geographic Coverage		X	
Specific Understanding		X	

2. The Area Skill Survey Technique

The area manpower skill survey is a particular kind of labor market analysis developed in the United States. It is a key technique which can be adapted to serve the needs of developing countries.

a. The History of Labor Market Studies in the United States

The first study of this kind was made in 1940 when the United States was supplying a good proportion of military equipment to the Allies. Because of the volume of military production, there were shortages of skilled manpower in some production areas. The first study was made in Wichita, Kansas, which was a rising aircraft center. There were no guidelines and no predetermined

data to be sought. Several matters had to be examined: files of unemployment, judgments as to what people might be useful with training, problems of housing for the people that were brought in from other areas, production schedules, and the like. The general format developed in this study was used for several years without basic modification. After the United States entered World War II, the number of production centers with labor shortages multiplied. It was necessary to find for each the labor resources needed to meet production goals. The purpose of the studies was to prevent the over-commitment of production in an area. There had been cases in whicl an area was committed beyond its resources, and manpower bottlenecks had developed. The studies made during the war all had the same purpose and developed certain standard techniques, processes, and outlines.

After World War II the studies had a new purpose. At that time there were widespread cutbacks in employment in these war production areas causing severe changes in the pattern of the labor market. But the same tool of area labor market analysis was used to try to measure the impact of cutbacks. After the end of the war, a system of classifying labor markets according to the degree of severity of unemployment was developed. Government contracts were directed to the areas with large or chronic unemployment in order to relieve the situation.

Within the last five years a tool has been developed for the purpose of planning and projecting manpower needs two to five years hence and of relating those needs to training programs and requirements. This tool is called the Area Skill Survey. It differs from the area labor market analyses reports, discussed previously, in two ways. The regular labor market report is prepared every sixty days and is geared to short-range predictions of thirty, sixty, or ninety days. The area skill survey is an inventory of the skills of an area and a projection of requirements two to five years ahead. It balances the known labor supply and the new labor supply against the future needs, identified by occupation. A second difference is that the labor market survey report rests on the existence of continuing data. The area skill survey needs relatively little background data or continuing series, just population data and lists of firms by industry. For that reason it may be a useful tool in developing economies and relatively easy to create.

The area skill survey is a technique which grew out of the labor market survey, but is today a separate method for which a step-by-step procedure has been worked out. These are the main stages in this procedure: First there must be a discreet description of the labor market area. It is usually best to cover an entire homogeneous labor market area, which is defined as an area within which workers may reside and seek work without the necessity of changing their residence. It is usually best to define the area in terms of political subdivisions because the census data is normally on that basis. If there is a conflict in definition

between the labor market area and political subdivisions, the first choice is to stay with the concept of a labor market area.

It is necessary to decide what industries, occupations, and levels of skill are to be studied. It is not necessary in most cases to cover all of the industries, occupations, and levels of skill in the area.

Certain economic assumptions must be made as guidelines for any such survey. There are two reasons for making them: the employer will need them in order to make a prediction of his needs; and the analyst will need to know the basis on which the employer projected his data in order to interpret them. The assumptions that were made in a typical survey were:

(1) Continued growth of the labor supply.
(2) No major depressions would take place during the forecast period.
(3) No "hot" wars would take place.
(4) Continuance of the level of defense contracts.
(5) Continuance of technological advance.

Another preliminary step is the creation of broad and deep public support for the project. Usually there should be a Manpower Advisory Committee as a communications channel into the various elements of the community that are concerned with the results of the study. There should also be a Technical Advisory Committee consisting of technicians within the community to advise the survey-makers on methodology and interpretation. Publicity must be directed two ways: to the community as a whole so that people are aware of what you are doing and why; and also to the employers so that they will know that the project is important and has the support of the business community and will give reliable and responsible forecasts. You must give the employer a professional assurance that the material he gives to you will be kept in confidence.

After choosing the occupations and industries to be studied, it is necessary to determine the depth of coverage--the universe or a sample. The decision depends on the size of the area, the size of the staff, and the amount of money in the budget. The normal pattern in the United States is to stratify the sample. Usually the larger establishments employ most of the people. It may be necessary to first make an analysis of the size of firms in the area in order to cover the firms that employ the greatest proportion of the population. A common pattern is:

100 or more	=	all establishments
50 - 99	=	50% random sample
20 - 49	=	20% random sample
less than 20	=	5% random sample

If the universe or total is not known, you may have to canvas the area to make a judgment as to what the employment represents. If your resources are severely limited, limit the number and kinds of industries to be covered, but get good coverage of the ones that you use.

The basic document is a schedule from each employer showing what his employment is by occupation, by age of employee and by sex, and what his future requirements for expansion and replacement are. You are going to make a judgment as to what the supply schedule will be, from training, migration, and other sources. There is a common error of overlooking needs for replacement. That is an important reason for getting the age pattern of the employed labor force.

The schedules are sent to the employers with a letter urging them to provide the data, but usually it is also necessary to send an interviewer to the employer to check the content of the data and to make sure that he understands the definition of the occupations. You cannot rely exclusively on the questionnaire being mailed back to you.

Staffing a survey is possibly the most troublesome problem. The survey interviewer requires the same skill as in normally needed in the employment service program. The easiest way to staff a survey crew is with experienced employment service interviewers; but if this resource is not available, students from the universities and technical schools can be trained quickly. Deeply trained personnel are not necessary for the collection job, but for the analysis job at least one person who is well trained in statistics is essential.

There is another important element of demand to be considered. Developing countries frequently have the problem of repatriation. In many countries emerging from European colonialism, there is a big problem of replacing the repatriated colonial staffs with nationals.

The area skill survey is intended to find out what the supply of workers is by occupation, what the needs are by occupation two to five years in advance, what the shortages and surpluses are, and what corrections should be made in training programs. The supply is the number of employed and unemployed that make up the currently active labor force plus the expected new entrants. Getting the shortages and surpluses is not a simple arithmetic problem because of the different rates of replacement requirements and different rates of input from schools and in-plant training.

If the survey shows that the schools are not training the right number of the right kinds of people, educators must be urged to change their courses. Above all, the final report must be presented in such a way that it can be understood readily by the public, and

used as a basis for planning and action. The Manpower Advisory Committee is created to serve as a continuing body to keep the report in the minds of the public.

3. Manpower Planning and Administration in the United States

Mr. Leo Werts, Mr. Howard Rosen, and Mr. Robert Thomas, all of the U. S. Department of Labor, were asked by the Seminar Leaders to talk about administrative aspects of manpower programs and the programs of research, training, and retraining recently initiated by the United States.

Administration as a Factor in Manpower Planning - Mr. Werts

On the national level, the President has a Council of Economic Advisors on the broad guidelines for economic growth for government and private enterprise. Its function is to develop and publish an annual economic report in which their planning and thinking is reflected. An annual manpower report supplements this broad economic report. It describes the manpower program for that period, evaluates the effect of the manpower programs, and proposes broad programs which should be followed to deal with the problems that are foreseen. This report is a guide to government agencies, educational institutions, private enterprises, and the general public on manpower action. To this extent there is manpower planning in the United States.

Every country has parts of a manpower organization and administration. One must start with what one has. In the United States there has been experience with central planning and organization in wartime, but it left only fragments of manpower statistics and organization for times of peace. There are general statistics from the census containing basic manpower facts. The United States has a highly developed employment and vocational education system plus a very highly developed management of private enterprises. All of these are important manpower organizations. The United States has highly developed professional associations which are in the manpower business. There are technical schools and professional schools. Public policy now has the problem of fitting these together into an administration to deal with the manpower problems and objectives of today and of the years to come.

We have not solved the problem, but we have created a framework. Only experience will determine whether the pattern of organization and administration will work. In the Department of Labor the Office of Manpower, Automation, and Training has the broad leadership and coordinating functions of all of the program of the Department of Labor. The Manpower Program Agencies of the Department of Health, Education, and Welfare have a less clearly formulated responsibility for guiding schools and assisting private firms and local communities.

Out of all this planning for administration came the set-up of an Office of Manpower Training with three broad units within the Department of Labor. It is in charge of manpower research. It is responsible for the development of techniques and methods for identifying the processes by which people acquire skill and the processes of the labor market. It uses the resources of the employment service, the employment security agency, and the Bureau of Labor

Statistics in identifying, describing the labor market processes and the process by which people develop skills and find jobs, as well as the process of creating new jobs.

We in the United States have become fragmented in our ideas. It is very difficult for us to see things in their total perspective. In some cases we don't want to because it would detract from the importance of our own fragment.

The Manpower Development and Training Act provides all the authority and integrates all the ideas of the most comprehensive manpower program that any country needs or can use.

Because of my experience in India, I participated fully in the process of developing an integrated manpower administration for the United States.

The first step was to identify the real nature of the manpower problems in the United States (in any administration the first thing to do is identify the problem and make sure that you know what it is). Manpower planning comes logically after analyzing the broad economic process. One has to come up with a statement of the problems with which the program is to deal. Regardless of the country and its circumstances, the process of identification should be the same.

Secondly, it is necessary to determine the objectives of a program for dealing with the problems identified. The general objectives for most countries are similar. Specific objectives in the United States may be different from those of other countries because of the difference in problems.

For purposes of getting a good administration it is desirable to identify the major operating procedures. The jobs available must be identified and the qualified people interviewed for them. Training programs for the jobs must be developed. In the United States one of the major operating procedures was the decision that all such projects would be approved for financing in Washington, D. C. As there are those that favor state or local action over Federal action, this operating procedure is very important in terms of administration. It is important to set up operation procedure in deciding the type of program needed to achieve the objectives.

In addition to the functions of the Office of Manpower, Automation, and Training (OMAT), I mentioned that Federal legislation provides for this new office in the Department of Labor to deal with the problems arising from automation. The office should see what other agencies are doing with training methods and what are the operations of manpower program agencies in order to develop new arrangements.

In addition the Department and OMAT are engaged in a broad appraisal operation in which employees attached to the Department of Labor will move into communities to talk with local leaders to see how well the manpower program is operating. The continuing analyses resulting from social contacts will be the basis of correcting and changing policies and techniques.

The Act provides another function for the Office of Manpower, Automation, and Training--the establishment of a National Manpower Advisory Committee representing management, labor, the public, agriculture, training and educational institutions. The Committee will advise on the broad manpower program and will have the responsibility of advising, stimulating, and developing community committees so that through this device those establishments that do more manpower planning and activity than the government will be brought into the administrative program.

National Manpower Goals and Trends in the United States - Mr. Rosen

In the next few years the American people will face one of their most serious challenges: the national goal of full employment expressly spelled out by the National Full Employment Act of 1956. A change is expected in the labor force in the next ten years. The question is whether or not the economy will supply enough jobs for the young entrants in the labor force in the 1960's. In 1964, 2.8 million will be eighteen years of age. They will either go to school or enter the labor force. By 1965, the number will 3.8 million. The sudden increase is due to the return of the American veterans of World War II in 1947. It is expected that 2.6 million young people will be in the labor force in the 1960's, a 40% increase over the number in the 1950's.

There have been changes in the occupational structure in the last 15 years. The United States is the only major nation with more people in service industries than in goods industries. The United States is one of the few nations with more people in white collar jobs than in blue collar jobs. In 1949 for the first time the number of people in the service industry (transportation, utilities, and trade) was greater than the number of people in the goods industry. Since 1949 the differences in the numbers has been widening. By 1961, 34.4 million were in the services and 25.2 million were in goods industries. The fastest growing area of the economy is an area in which the pay rates are not as high as in the goods-producing industries. This is a difference in manpower area and a difference in where people will work in the next ten years.

There has been a change in the kinds of jobs. In 1956 for the first time in history, more people were in white collar jobs (teaching, law, medicine, clerical jobs) than in blue collar jobs. The difference is widening between the employment opportunities for the white collar workers as compared with the blue collar workers. In 1961 there were 29 million white collar workers and 23.9 million blue collar workers. The most rapid increase in the last ten years has occurred in the technical and professional jobs which have had a 50% increase. For example, although the total labor force rose by 15% between 1950 and 1960, the number of persons working as engineers increased 64%. In 1950 there were a half a million engineers and in 1960 there were 804 thousand. The needs will be especially critical in the technical and professional jobs in the next ten years. The anticipated lunar project will have an impact on the number of scientists and engineers needed. Annually $5-6 billion will be spent. This project alone would require 100,000 scientists and engineers and 70,000 technicians by 1970.

In the 1950's the number of American workers in crafts rose by

900,000. There are 8.6 million American craftsmen. The largest increase is in the crafts industry. We still anticipate an increase among the crafts in the next decade. In the semi-skilled group,the operatives doing the routine repetitive jobs, there will be practically no increase whatsoever because the jobs are being done mechanically without workers at the machines. In manufacturing there has been no increase in the semi-skilled workers and we foresee a slight decline in the decade ahead because they are particularly hit by the process of automation and technical change.

Among the unskilled jobs there has been an interesting change in the last ten years. The number of jobs in 1960 was equal to the level of 1950, but the labor force had increased so that more were applying for the same number of jobs. The day of the strong back and weak mind for the worker is ending. People are not needed because of the increase in the use of mechanical equipment.

In this country we have a large number of young people that never finish their education. In the next ten years approximately 7.2 million will not complete their education so that they will be equipped only for unskilled jobs. There will be a very difficult training and retraining job to prepare them for the areas with increasing employment opportunities.

The story in American agriculture is an old one. In 1910, one in three people worked in agriculture. Now one in eighteen workers earns his living on the farm. The greatest decline in agricultural occupations occurred between 1950 and 1960. In all probability there has been a far greater technical revolution in agriculture than in the manufacturing sector of the economy. This has had a great impact on the need for manpower in agriculture. Between 1950 and 1960 the number of farmers dropped from 4.4 million to 2.7 million, and the number of farm hands from 2.6 million to 1.6 million.

It is obvious that those occupations requiring the most education and training will increase the most rapidly in the next ten years. Throughout the last ten years there has been a persistent problem of unemployment in the economy, and a problem of long-term unemployment among a significant number of workers. As a result of the problem and of an awareness of the impact of technical change on the type and number of job opportunities, Congress passed on March 15, the Manpower Development and Training Act. Because of their prior experience with the Area Redevelopment Act, the legislators had the attitude that every worker could be trained or retrained so that people without much education and training could be brought back into the labor force. We must conclude that because of the pace of the technological change and the use of machines, we should have the attitude that training and retraining is something that all should look forward to and expect in their career in spite of their education. Because of the shifts of industry throughout the United States, training and retraining should be spread out throughout the United States. We need a better type of training for workers in the labor force.

When Congress passed the Manpower Development and Training Act, it included a whole section devoted to research. Title I of the Act specifically charged the Secretary of Labor to appraise the manpower requirements and resources of the United States. From the point of view of information on resources, the

United States has been rather weak. We are strong in our knowledge of how many doctors, scientists, and engineers we have, but we do not know where the skilled workers come from: from on-the-job training, the armed forces, or apprenticeship programs. We do not know how many there will be. There are big gaps in our knowledge and the Secretary has been ordered to fill in those gaps.

In the United States we have done fairly well on occupational projections. They were prepared in 1957 when we did not have access to the census of 1960. We are now comparing what we said would happen with what has happened and we are happy with the results. We have done well in some of the industrial projections for a number of reasons. There was a major error in the number of workers to be working in state and local governments. We did not project the population increase with the need for teachers.

The Secretary of Labor is especially charged in Title I to evaluate the impact of automation on job content and skill requirements in addition to finding the demand for and the supply of manpower in the United States. He is to study the mobility of the U. S. economy, geographically, occupationally, and industrially and the things that help and retard mobility. He is to examine the utilization of the American labor force to see that it is utilized in the best possible way. The Secretary is to evaluate the adequacy of the manpower efforts and he and the President should prepare a manpower report including the assessment of where the United States stands every year.

In the operational acts and in the results of the research, there are no compulsory devices in the Manpower Act. The Secretary of Labor can tell Americans where the best opportunities lie and offer training, but they have the right to make the selection as to where they will go.

Mr. Bringas: What do you mean when you say that 7½ million youngsters never finished their education?

Mr. Rosen: I mean that they never finished high school.

Mr. Bringas: What does your office do with those that don't finish?

Mr. Rosen: Our office cannot do anything but point out the disadvantages of not finishing. We urge them to stay in school, but we cannot force them to stay after a certain age.

Mr. Ibrahim: Do you recommend that underdeveloped countries follow the same steps for automation that the United States has followed?

Mr. Rosen: Any nation that does not take full advantage of technological change, being aware of its advantages and disadvantages, in order to decrease its negative effects, is making a mistake. Just because there are unemployed is no reason to stop technological change but to help the unemployed get a job.

Mr. Siahaan: Do you think that the working hours should be reduced from 40 to 35 hours to give more people a chance to work?

Mr. Rosen: That is not the solution to our economic problems. Where it has been done, it has not meant that more people got jobs, but what happened was that the people got two jobs instead of one. Employers worry about rising health and pension costs if they have to hire more people so that they give the workers already employed overtime. There are economic devices that increase the level of economic activity which are better than shorter hours.

Mr. Branco: Have there been any investigations to discover why the 7½ million students drop out of school?

Mr. Rosen: Yes. There have been investigations that have uncovered a number of reasons, not all of them being economic. There are a complex set of reasons: lack of motivation, family and personal matters, social and psychological reasons.

Mr. Bringas: Do you have any ratio of the rates of dropouts of white to non-whites?

Mr. Rosen: Yes. The non-whites have a much higher rate.

Mr. Werts, in his presentation on manpower administration, referred to the significant part played by employment services. Another senior staff member of the U. S. Department of Labor, Mr. Robert Thomas, was asked to elaborate on the work of these services.

The Public Employment Service in Manpower Planning - Mr. Thomas

The underlying purpose of the national employment service in developing countries is to forward economic development through its effect on, and contribution to, manpower production. Relating less attention to administrative instructions to put plans into action, it must be an agency with organized people able to carry out their functions, development of techniques, and organization of the labor market. The national employment service provides the machinery to get things done and to take many manpower actions itself. It is a permanent administrative organization with operating offices in all important communities, staffed with competence in all facets of operation and detailed knowledge of the labor markets served by the offices.

There are five basic services provided by national employment services. The most expensive service is the placement service because it requires the most staff. This labor exchange function of providing the right worker for the right job saves the time and effort of the worker and the employer. The greatest contribution of the service is to maximize the coordination of the man's ability with the requirements of the job. This is not a simple task for it is very complex. The placement process involves the development and application of precise interview techniques for determining the abilities of the worker and the requirements of the employer. This is not easy, but there is a technique. Placement involves the development of expert knowledge of all occupations and industrial processes found in the economy. The placement service must maintain a close contact with the managers and hiring officers in all of the business establishments in the area, as well as a close contact with the worker organizations. Finally, placement involves the development of a special apparatus for moving workers from one

part of the country to another. The placement service must train its own personnel to carry out the program well.

The second service of a national employment office is the research function of occupational analysis to develop a wide range of tools used by enterprises, schools, and the employment service itself. Occupational analysis has two general phases: job analysis which is the scientific study of occupations themselves and worker analysis which is the study of the worker himself to measure aptitudes and potentials.

The third function is industrial services. The national employment service helps employers by identifying the hiring and employment problems in order to resolve them. The labor market information function involves the collection of employment information on levels, trends, forecasts, and national summaries in order to give a guide to training institutions on the types of courses that will be needed. The service specializes in area analysis and industrial and labor market information.

The final service of the national employment office is employment counseling, involving the development of methods and techniques as well as a body of labor market information to help the worker make a choice or to overcome an obstacle in getting a job. This service is useful when people are forced to change jobs.

Besides the fundamental tasks that should be carried out by the national employment service, there are some things that it should not be expected to do. It cannot be expected to directly create new jobs. In the United States the legislators vote money with the impression that it will create jobs. The service contributes in an indirect way to economic development, helping productivity, but it does not create jobs.

There are several countries in which a public employment service would be a waste of money; countries that have no program of development, for example. A country of no great complexity may not need an established service, but could use some of the services provided by other means. Small, simple countries need no placement service, but with development they may need labor market information that can be provided more cheaply without a physical labor exchange office to the public. There is no point in establishing an employment service unless the country is ready to invest enough money to make it work. Unless the service has a minimum basic staff and resources, it will not work. It must be able to cope with the influx of unemployed. If it cannot cope with them, the country should save the money.

The creation of an employment service is not easy. It is a major administrative achievement. The service should stick to the five basic functions, for if it does them well, it will have enough work to keep busy.

Mr. Martinez Gomez: You explained that you used technical personnel to determine the truth of the claims of the workers in giving their qualifications. What is the technique?

Mr. Thomas: The job analysis method attempts to identify what is done on a job; how it is done; and why it is done. If this method is properly employed,

it will enable the interviewer to talk to anyone and to determine what he did on his job, and how accurately. It is a very interesting technique.

Mr. Ibrahim: I presume that a representative of the company will be present when the interviewing is being done.

Mr. Thomas: Normally this is not true. The ideal situation is to first interview the worker and classify him; then get the job and classify it so that you can relate the two classifications.

Mr. Ibrahim: Who sets the wage?

Mr. Thomas: The employer tells what he is willing to pay and the worker says what he will take. They work out the bargain. The unions and employers have set most of the pay rates.

Mr. Bringas: Are U. S. employers sold 100% on the U. S. National Employment Service?

Mr. Thomas: No. As a matter of fact, the quality of the Service varies widely throughout the country because of the State set-ups. They participate in approximately 15% of the hirings in time of peace.

Mr. Roney: There are two philosophies in the world as to what the relationship of the Service should be. According to one, all of the hiring should be done through the Service. The employers should be prohibited from other methods of hiring. In the U. S. and other countries there is the philosophy of the free labor market. The employee and employer are free to make their own choice as to the method of getting a job or filling a vacancy respectively. In the United States 60% of those hired are people who are already working, but who are changing their jobs. The Employment Service should not participate in a transaction just because it is there; but it should aid the process. If we tried to impose the compulsory use of the Employment Service on employers, we would slow down the process of private improvement.

Mr. Thomas: An employment service that operates through compulsory means is under no pressure to improve its methods. In a free system the method must be better than the others. At times, however, it may be desirable to handle a particular sector of the economy in that way. Public works might be cited as an example.

4. Manpower and Economic Planning in Sweden - Mr. Carlsson

After the beginning of the 1930's many people in Sweden looked on unemployment as a plague that could not be avoided. It was like a disease that had no cure. They feared unemployment and thought it inevitable. They thought that it came more or less periodically. Today unemployment is not accepted in Sweden. When the unemployment rates are approaching 3%, everyone cries that there is a real danger. No government could stay in power if it were not successful in maintaining a high level of employment. Thus the people of Sweden know that unemployment can be avoided to a large extent, but they also know that full employment does not come by itself and that it can be maintained only if it is a main goal of the entire economic policy. The

policy must be geared to full employment in order to avoid periods of considerable unemployment. For many years full employment has been a main goal of the Swedish economic policy. This is as important or more so than avoiding inflation which is another main goal of the economic policy.

The Social-Democratic Party has been in power for about thirty years, but the Swedish economy is not a socialized one because the government constantly stimulates private enterprise which represents 90% of the gross national product and 88% of the labor force. Both management and labor in Sweden are highly organized and very powerful, but fortunately, they look on each other with a high degree of mutual respect and confidence. They have created joint organs to deal with important problems of the labor market, such as maintaining full employment.

Unemployment since World War II has rarely been more than 3%. The population is 3.4 million. Even in periods of high employment there are areas with setbacks in employment and areas with labor shortages. Sweden now has under 2% unemployment.

Long-term structural changes are taking place in several branches of industry because of changes in the consumption pattern or because of competition from abroad as Sweden has no protective tariff and has accepted the resulting unemployment by making adjustments. Increasing the supply of labor by labor saving, rationalization, and organization is rapidly being accepted in Sweden because it has increased production, provided a higher standard of living, and made Swedish industry more competitive in the world markets.

Declines in economic activity and greater unemployment have been met by special employment policy measures rather than by general measures. These special measures are not new steps because economists have been recommending their use since 1930. What is unique in the Swedish policy is that more than one has been used at the same time. The two main types of measures used are those to increase the mobility of the labor market and to maintain the level of investment.

Mobility of labor is important because despite the decline in certain areas in certain periods of time, there has been demand for labor in certain branches in other areas; so that measures to direct the labor from declining to demanding areas are useful. The Employment Exchange System has been expanded to promote the mobility of the workers. The traveling expenses and family allowances are given to those who move. This includes not only an amount equal to the rent that was paid in the previous home, but also purchasing power equal to $55 for the wife and $20 for every child under sixteen. All of this is paid for a period of six months. Initially, every unemployed worker who moves from a declining area to a new jobs receives a lump sum of $125. If he stays on the new job for three months, he will not have to repay the money. These measures are always taken in a situation where demand for labor still exists on the open market because it is a relatively cheap measure. The cost of moving 1000 workers with their families to permanent jobs is $200,000 which is equal to 51 days of unemployment insurance or five days of public work for the same number. The assistance of the employment service in 1958 moved 45,000 persons every month to locations other than their home towns. These measures have been most important because they have been applied to

particular areas of unemployment and have helped to solve the problems there.

At times the measures for worker mobility have not been sufficient to cope with the problems of unemployment so that specific measures for maintaining the level of investment, particularly in construction and building, have been advisable. These measures provide the basis for increased productivity and a future higher standard of living. To be used to bring about a rapid increase, this stimulus to investment has not been confined to housing and public works. It has also been attempted in industry. Under a system of investment funds a business firm can set aside a part of its profits in special investment funds on which taxes need not be paid if these are reserved for investment during periods when increased investment is desirable. The principal value of the fund is to stimulate investment at the appropriate time. Thanks to the fund, private investment increased in the recession of 1958.

These labor market measures have a more moderate effect than more general measures in the long range, but they have a more rapid effect in the short run. They can be applied at the point where they are most needed, and they can be put into force and withdrawn more quickly than the general measures. Public investment projects in specific areas get started more quickly than those projects arisirg from general investment. The knowledge that the tax concessions through the investment funds are available at certain times has convinced companies to invest immediately when there was a need rather than waiting until later. The prerequisite for the investment measures is always having project plans in readiness in both the private and public sectors.

It is difficult to convince both sectors to make investment plans, but it is necessary in order to have practical measures. The supervision of this part of the program is done through the Royal Labor Market Board, which was created by Parliament as an independent agency under the Ministry of Labor and Social Affairs in 1940. The Board is a tripartite entity. The Executive Board has representatives from government, management, and labor. There are a Director General who is the Chairman of the Board, a Deputy Director General, a Chief Engineer and seven other members representing various groups in the economy. There are county Labor Market Boards set up in the tripartite manner, with representatives from the local government, unions, and employers.

The Royal Labor Market Board has many functions. It is responsible for carrying out the actual labor market policy. It sees to it that both the public authorities and private enterprises at all levels are stimulated to work out the investment plans to have in readiness. With the Board, the active labor market policy takes shape through close cooperation of all parties concerned, so that it is not just the government giving orders. The Board is given a budget by the Parliament each year plus an emergency budget in case of a downturn in the economy and employment.

In Sweden full employment is one of the primary goals of the economic policy. The rate of employment generally measures 96% of the labor force. Through specific means of mobility, industrial relocation, and investment stimulation, the government takes care of the other 4%. This is done through an effective labor market policy and close cooperation between government,

management, and labor. If only general measures were used, there would be a high risk of inflation so that selective measures are a necessary compliment to the general measures because their effect can be limited in time and area. By using selective measures it is possible to obtain or to approach the desirable twin goals of full employment and avoidance of inflation.

Mr. Onfray: I understand that the Scandinavian countries have a common labor market with a committee in charge of the measures for the common market. Please tell us about it.

Mr. Carlsson: Sweden is not a member of the European Common Market. There have been negotiations between Sweden and the Common Market to see whether it will be possible for Sweden to become a member. There would be no economic difficulties for Sweden as a result of joining the Market. The problem is a political one because Sweden is not a member of any military alliance. It has avoided war for 150 years. This spirit of neutrality is deeply rooted in the Swedish nature. It would like to join the Common Market without giving up its neutrality. The Nordic Countries--Denmark, Norway, Finland, and Sweden--do have a common labor market which allows any citizen of any of those countries to take employment in any one of them without a passport or labor permit. There is close cooperation between the countries on all levels, government, management, and labor. There are meetings constantly to work out Nordic approaches which have not always been successful.

Mr. Ibrahim: How do you define the term, "labor?" Do your employment insurance and mobility programs include professional and clerical workers, as well as blue collar workers?

Mr. Carlsson: In Sweden the labor force means all of the gainfully employed plus the self-employed.

Mr. Tung: May we have an explanation of Sweden's manpower budget?

Mr. Carlsson: Sweden does not have a manpower budget as such, except the budget of the Royal Labor Market Board which varies from year to year according to what the future is considered to be. When prospects are good, the budget is small. When prospects are not so good, the budget is increased. There has been a fight in Sweden about the variations in the budget. The unions have argued that the Royal Board always needs a big budget to be able to carry out a continuous program.

The budget is geared to the whole economic policy. There is no such thing as a manpower budget because the entire economic policy is very sensitive to development in the employment sector.

Mr. Tung: Does the Royal Labor Market Board have a free hand in the public works program?

Mr. Carlsson: Yes, within the framework of the budget and Parliamentary control, it is largely responsible for public works programming.

Mr. Pangerapan: To what authority is the Labor Market Board responsible? What does this responsibility include?

Mr. Carlsson: It is responsible to the Minister of Labor and Social Affairs and to Parliament for its budget. It advises the Minister of Labor and through him influences the Parliament.

Mr. Pangerapan: Does the employment service play an important role in the determination of policy and manpower planning because of the system of employment control?

Mr. Carlsson: The Employment Service is under the direction of the Royal Labor Market Board.

Mr. Pangerapan: Is it true that the employment exchanges are the instruments for carrying out policy?

Mr. Carlsson: Yes. It is instrumental in carrying out policy. It is important to remember that it is tripartite in structure so that it could not function unless there were good relations between the government, labor, and management. In Sweden the new wages are determined by the direct negotiations of labor and management organizations without interference from the government. The negotiations are usually peaceful, but there is the right to strike or to have lockouts. A basic procedure was set up in 1938 that the two groups were to follow to avoid open conflict. If direct negotiation fails, there is a government mediation service with the power to call the two sides together. They must go to the mediation, but they are not obliged to accept the mediators suggestions. If he fails, the workers need only give notice and can then take steps for a strike. Once an agreement is signed between management and labor, however, there is no possibility of conflict in its interpretation and in differences of opinion. First, the parties negotiate on the local level to settle the question. If this fails, it goes to the national union, then to the confederations which have a special board for handling differences. This is the last instrument of the parties themselves to solve the problem. If they cannot solve a problem of the interpretation of the agreements in force, it goes to the labor court and is settled by experienced judges and a number of representatives of management and labor without appeal.

Mr. Fonseca: Does the Royal Labor Market Board have any kind of relationship to the educational and training program?

Mr. Carlsson: Yes, very much so, because most of the retraining of the unemployed is taken care of mainly through its services in cooperation with the Royal Board of Vocational Training.

Mr. Ibrahim: If an agreement is reached between the workers and management for raising wages, does it affect the wages of the government workers?

Mr. Carlsson: Yes, We have economy-wide agreements that cover all of the workers in private industry through agreements signed by the confederations. They send the agreements to their affiliates to be accepted. These agreements have a direct effect on other sectors of the economy that are not formally

covered by them, such as the cooperatives and the government agencies. The agreements are patterns for the rest of the workers.

Mr. Hauser: Could you tell us the proportion of salaried white collar workers to blue collar workers?

Mr. Carlsson: There are approximately three blue collar workers to every white collar worker.

Mr. Ibrahim: Does a man moving from his home to a new job elsewhere receive compensation regardless of his profession?

Mr. Carlsson: Yes. However, a worker that is unemployed must register with the employment service to be eligible for benefits. He must prove that it is not his fault that he is unemployed. After he has been registered for six days, he is eligible to receive benefits. The employment service office tries to find a suitable job for him anywhere in Sweden. If there are none in his area, they try to stimulate him to go to another region to investigate job openings there. He is given a ticket for the trip free of obligation. If he refuses to take a suitable job, he will not be given unemployment insurance for three weeks. The judgment as to the suitability of a job is made by the board. There is pressure on the worker to accept the new job. Mobility is easier in Sweden because there are few seniority rules. All of the social benefits in Sweden are given through legislation so that they are tied to the individual and not to the industry.

On the other hand, people with their own homes are reluctant to sell them when they live in a depressed area and prices are low. We now have a trial system in which the Labor Market Board buys the houses of the migrating family at its real value.

Mr. Bringas: Do you practice compulsory arbitration in Sweden?

Mr. Carlsson: There is no compulsory arbitration in the establishment of a new contract, but when a contract is in effect, it cannot be broken. If any grievances cannot be settled by peaceful negotiation, then any decision as to how to interpret or apply an agreement that is in force is made by the labor court.

Mr. Bringas: What about jurisdictional disputes?

Mr. Carlsson: There are no rival labor unions in Sweden, for we have industrial unions. There can be no strikes when the contract is in effect. Any conflicts that labor and management cannot settle must be turned over to the labor court. There have been cases of wildcat strikes caused by the spontaneous reactions of the workers, but the national confederations have had to settle these and bring the workers back on the job. This arrangement has been beneficial in that it discourages strikes of this kind. When an agreement is concluded, industry knows the cost of labor and also that production will not be interrupted, so that it is possible for management to look favorably on the labor union and to want the workers to be organized.

The basic agreement was worked out in 1938 because there were so many conflicts that the Parliament became interested in regulating them. Because of the threat of government intervention, management and labor were able to work out the agreement. If they had not worked it out, the Parliament would have stepped in.

Mr. Charles Stewart: 1/ The avoidance of inflation is an important objective of your economic policy. I presume that the government has a wage policy. If so, how is that wage policy enforced by the government in private collective bargaining negotiations?

Mr. Carlsson: The government does not try to indicate what it thinks would be correct behavior for the negotiators. The government is much interested in the negotiations, but it is generally agreed that there would be irritation if the government tried to exercise influence. The government has an economic institution made up of independent economists that publishes investigations on what will happen in the economy. Reports are vital factors in the wage negotiations, but the negotiators are not taking orders from the government, for the reports are by independent scientists. The parties in the negotiations know that if they don't show some responsibility for the country, they could ruin the country because it is tied to the international market and must stay competitive within it. If they did not take responsibility for the long run, it would be inevitable for the government to try to give them an indication of policy, and they would lose their independence.

Mr. Stewart: In the United States there is an Advisory Council to the President on Labor-Management Policy. This Council will have a meeting with the Swedish Council in October in order to learn from the Swedish experience.

Mr. Buingas: The incidence of work stoppage in your country is negligible?

Mr. Carlsson: Yes.

Mr. Sangtong: In your opinion will there be a shortage in the supply of scientific and technical manpower in Sweden in the next five to ten years?

Mr. Carlsson: We have a committee of economists who are charged with the duty of trying to forecast the development of manpower in the Swedish economy. They have estimated that Sweden will need 10,000 workers a year, which will be supplied. This may be too optimistic.

We have had a shortage of manpower since World War II so that we that we have had to import 113,000 foreign workers plus a number of others who have become citizens. Our policy has been to stimulate immigrations only to the extent that we can keep the immigrants occupied in the future. We are now short between 50,000 and 60,000 workers, but we have sources of domestic manpower that have not been used. Among this unused manpower are the older workers. The retirement age is 67, but many workers would like to work longer.

1/ Deputy Assistant Secretary, U. S. Department of Labor.

Parliament has made it possible for them to work until they are 70 and to receive a higher pension. Those who are not well can retire at 63 with a smaller pension. Mothers with grown children are a source of unused manpower. We have a great number of retraining courses for them. There has been a big drive by confederations of employers and workers to make it clear that handicapped workers with the right kind of training can be as efficient as able-bodied workers. Parliament allocates the funds for training the handicapped through governmental training institutions.

We have a shortage of engineers, especially on the university level. We also have a shortage of natural scientists and doctors, although the number has increased. We are never short of people majoring in liberal arts and humanitarian studies. We now have a drive to make it clear to the businessmen that they can use the graduates in these fields.

Mr. Fonseca: Is there some relationship between the Royal Labor Market Board and the universities in order to avoid shortages? Can the Royal Labor Market Board establish programs for the universities?

Mr. Carlsson: This has not been done. The university programs are handled by the Ministry of Education in close cooperation with the economists that work out the economic forecasts.

Mr. Onfray: Isn't the severe climate a problem for the construction industry so that there is seasonal unemployment in that line of work?

Mr. Carlsson: We do have severe climate in the North. It has been true that the building trade was seasonally unemployed in the winter in the past, but they have learned how to build houses in the winter by careful planning. The Royal Labor Market Board decides when to start a building. They do the jobs that are affected by the weather in the summer. It is even possible to do the groundwork in the hard winter with special equipment which increases the cost by 2%. The important thing is planning. There is a house shortage so that there has been a need for more building for a long time. This is a measure to maintain full employment. The construction work is done by private contractors with low-interest government loans or by cooperative housing societies.

Mr. Fonseca: Are the training and vocational institutions undertaken by the government or by private enterprise?

Mr. Carlsson: They are undertaken by both, but most of the teachers are employed by the municipalities so the government pays their salaries. They are independent of the government in political matters.

Mr. Hauser: Is training provided by the government or in the plant?

Mr. Carlsson: Training is done by both. The Royal Labor Market Board, in cooperation with industry and the local authority, at times will retrain and will stimulate other industries to move into an area to replace defunct business. It will, however, never have industry go into an area just because there is unemployment. It stimulates industry to go into an area only if this

will be good for the industry.

5. Manpower Administration in Western Europe - Mr. Goodwin

One of the most significant things that has happened in government has been the development of the manpower field. Twenty-five years from today historians might conclude that this has been one of the most significant periods in terms of our awareness of manpower problems and the relationship of this to the welfare of the people of the country. This is not just a movement that is going on in the U. S. It is world-wide.

I decided to take a look at what is going on in Sweden, Belgium, and England. I was accompanied by Professor Bakke of Yale, a Labor economist, who has done a great deal of work in this field.

Our principal purpose was to take a look at the total manpower machinery and see what lessons we could learn from their experience. I think all observers of the Swedish system would agree that you cannot understand the role of the Employment Service there without considering the setting in which it operates. I do not want to go into detail about the broad economic program in Sweden, but I think a few observations are necessary to give a clear picture of the operation of the Employment Service. The main instrument in Sweden is the government budget. As far back as 1937 they initiated a system of balancing the budget over the course of the economic cycle. They have instituted a number of programs to influence the flow of private business investment. One of the most important economic measures is the system of investment reserves which has been operating fully since 1955. Through this system any firm can deposit 40% of its profits before taxes. These reserves can be released by the Labor Market Board. This is done to relieve the unemployment situation and it appears to have worked very well. The only problem they seem to have had with it is in anticipating economic downturns early enough. Their system of reporting on the economic health of the country is still not highly enough developed. Their problem lies in detecting economic trouble early enough to head off the unemployment which results. There is plenty of evidence that the system is working quite well.

We wanted to see how much progress had been made in the development of the employment service machinery to serve the Common Market. Labor now moves freely between Common Market countries and there are programs for moving more labor. I had the impression before going over that we were on the verge of creating an international employment service. That does not appear to be the case. The movement of labor from one country to another has taken place on an ad hoc basis. Commissions have been appointed to supervise the individual arrangements. Some labor has moved independently on its own. I could discover nothing indicating they were ready to establish an international employment service. We had an opportunity to talk with one official from the Department of Labor in Belgium. He had a few observations on the Employment Service there. For one thing, he felt that the Employment Service was not an effective instrument in Belgium. He felt that this had been brought about largely because of the role that the Employment Service had been called upon to play in unemployment insurance and welfare programs. Administering the unemployment insurance program requires the beneficiaries to report twice

a day to the Employment Service. Because of this, unemployment insurance has lost much of its insurance aspect and has taken on a welfare aspect. They have a great many people drawing unemployment insurance who are marginal. Public criticism of "loafers," etc. had led them to install this reporting system. The employer has gotten the impression that the Employment Service refers no one but marginal, unqualified people for employment. There is some indication of change in the system however. They have segregated out the older groups and are not requiring them to report. There seems to be some awareness that they must improve the Employment Service to make it an effective instrument.

We had hoped to talk to some of the top labor and management people in England, but unfortunately, that did not work out. In London we talked to administrative officials in the Ministry of Labor instead. Many people were on vacation when we were there. The Employment Service in England has had a long and honorable history. In 1950 they announced that the Employment Service had placed 100 million people. They furnished leadership to the world in developing employment services, and they have been first in many of the innovations that have taken place. They did a very outstanding job during World War II when they began to create manpower agencies for mobilizing the total resources of the country. After the war in the demobilization they did a good job in meeting problems of the extreme labor shortages which developed. In 1948 they passed the Employee and Training Act. It brought the system up to date. At the present time they have about 900 local offices in England and 150 sub-offices. At any one time they have registered about one-half million. They do not operate most of the programs for youth. The Act gives the schools the option as to whether they will operate youth employment services. Most schools exercise this option. People in the Employment Service were quite critical of this, feeling that this made both the schools and the Employment Service less effective in dealing with the total problem. I had the feeling that the Employment Service in England, at least in the last few years, has gone down hill a little. They are critical of developments in the last few years. For example, they feel they are financially starved and also that they are required to carry on a number of activities that are unrelated to employment service work. They are now carrying out a whole series of functions--taking initial applications for public assistance; doing work for the immigration service; for the Post Office, etc. These things have been added to save money. The Employment Service also administers the work test for the insurance program which is in a different ministry, administered on the local level by the Employment Service. In England it hasn't gone as far. The public image of the Service in England was very high following the war and it is only in the last few years that there has been some decline. There has been no expansion and no significant development in the use of the Employment Service in the manpower machinery. The government has not extended itself into this area in the last four or five years. There is some evidence that they are now considering programs that would bring the Employment Service into the picture more.

You may be interested in a few observations on professional and technical placement. They have only one office in London separate from the Employment Service. They have three offices where they do professional and technical work. They are doing a fairly good job in this area although they

say they have been losing ground as far as the fee-charging agencies are concerned. The universities have their own placement offices and there is some relationship between the Employment Service and the universities, but not a great deal.

On the unemployment insurance program we ran into some dissatisfaction with the set-up. They have all their insurance programs in the Ministry of Pensions and Insurance. One of the criticisms that has been made is that all insurance programs must function in a similar manner. This way it is difficult to get changes. When proposals are made for changes, these have to be related to all other insurance programs with the result that they can get no changes. There is some criticism for flat-rate basis for paying for insurance. We felt that on the whole we learned a great deal that would be useful here in carrying through improvement in our programs.

Mr. Higgins: I have two questions relating to Sweden. This business of the cyclical budget. My recollection is that the budget that is to be balanced over the business cycle is the operating or current budget and it is a below-the-line capital budget in addition which is considered to be balanced by definition. When the system was first introduced, I think some fraction (20%) in addition to the capital budget, was carried into the operating budget of the next year. I don't know whether they are still restricting themselves to this. When the government introduced this concept, it seemed rev lutionary. Now it is rather old-fashioned to tie yourself to over a period. There is a lot of difference between balance and operating over the cycle and being able to balance capital budget. Did you learn what they are doing in this regard?

Mr. Goodwin: I didn't go into this in detail. I was trying to get enough to see how it operates in relation to the manpower machinery. We were there for only nine days and I got only the highlights. One important factor is that they are much concerned about inflation. This is why they developed selective measures. Nevertheless, they have been only moderately successful in that regard. They have had about twice as much inflation as we have. The value of their money has dropped with half as much unemployment.

Mr. Hauser: I have a brief question. We discussed this with Mr. Carlsson yesterday because it worried us. The capital budget you refer to is not really related to the measures of the Labor Market Board. The capital budget provides for public works and infrastructure projects over a period of five years which is reviewed annually. This is called the regular public works program. The Labor Market Board has authority according to the movements in the cycle to do, in addition, two things: initiate construction and public works projects or in the case of a downturn, authorize the use of the money in blocked accounts in the National Banks.

Mr. Higgins: The answer generally is that the government is not really held to cyclical balancing of its over-all budget, but has other avenues for flexibility. I think the really interesting problem that has appeared since World War II is the simultaneous appearance of inflation and unemployment. I was interested in your report that the Swedes have made a kind of rough division of labor with respect to the amount of unemployment that can be eliminated by

aggregative and fiscal policies up to 4% and then to do something else through comparative mobility of workers, etc. to integrate industries with different seasonal patterns to get it down to something about 2%. Sweden is a small country without marked regional differences or a regional dualism. I seem to remember that somebody presented evidence to the International Monetary Fund that the level of unemployment at which inflationary pressure begins is 12%. If that is true, it means that this problem of maintaining reasonably full employment without unemployment is more serious in regional, unintegrated countries.

Mr. Goodwin: I certainly would agree with your point on the Swedish economy. What they are able to do there is not a program we can necessarily carry out in any other place--small country, highly integrated economy, different sets of problems, etc. I think that some of the principles that have been involved in their program are being applied elsewhere. Take for instance our trade bill. This is related to our labor market services in terms of where unemployment exists. Preferences were given to those areas. This is similar to what they have done in Sweden. One of the selective measures in Sweden has been a public works program.

Mr. Farooki: You mentioned the introduction of aptitude testing. Was that because of high labor turnover?

Mr. Goodwin: I should make it clear that they do not use aptitude tests in the Employment Service or in the schools in Sweden. They are now doing something about it. Some industries have started to use these tests. The Employment Service has now shown some interest in using them.

Mr. Farooki: Was it because of labor turnover that they started to take an interest?

Mr. Goodwin: No. Their turnover rates would not be large in comparison to ours.

Mr. Wellemeyer: Generally speaking, the administration of aptitude tests in the schools and in the Employment Service should contribute to a lower turnover. They are particularly useful among young people in which group turnover is very high. The ordinary young man or woman is likely to have several jobs in the first year or two of his working life. If you can better place these young people a little earlier in a job that they remain in, you have reduced turnover. I can't quote you any statistics.

Col. Brotosewojo: Would you give us the explanation about people in group insurance and what the organization is and what is the administration in Sweden?

Mr. Goodwin: A large percentage of the workers are covered by unemployment insurance. My recollection is that it is about 60% of all employed workers.

Mr. Hauser: In Sweden unemployment insurance was started prior to World War I as a private action of the trade unions. Subsidiaries of the trade unions, largely of production workers creating private insurance groups. It was then

not sufficient and the government began to subsidize those insurance funds. Through subsidies and the Labor Market Board, it exercises considerable control. In addition then came the white collar unions which didn't exist before World War I and they also created insurance companies within the collective agreement. The problem is the Swedes now have women in the labor market. Some of these women are not members of the unions which have created this insurance system. The women, when they look for jobs, dor t get unemployment insurance and the Board is now working on a program to cover them. If you are a member of a union, you get unemployment insurance. The money comes partly from your own contribution, but largely from the government.

Mr. Bringas: In Sweden you mentioned that in depressed areas it is the policy of the government to move the workers to industries in other areas of the country.

Mr. Goodwin: I should have said that there is an effort made sometimes to move industries into depressed areas, but emphasis is on moving the workers into prosperous, labor-short areas.

Mr. Bringas: May we know if this plan has been successful and to what extent? This would be useful in the Philippines.

Mr. Goodwin: They have had their problems. People don't like to move, leave their friends, etc. It has become in Sweden much more a socially acceptable thing now and, of course, the government does subsidize it by paying the moving costs, paying allowances in the initial period which takes care of additional costs involved. All things considered, they have been quite successful.

Mr. Bringas: There is another point. The unemployment insurance is being administered by the trade unions and subsidized by athe government. I wonder if that is a success--with the organization managed by the trade union?

Mr. Goodwin: It seems to work quite well. They have their problems. Coverage is one problem. They don't cover as many people as we do, or if so, then only as many.

6. Industrial Personnel Policies - Mr. Rosen

Personnel administration is a subject of special importance in the American industrial system. It differs from public administration because it has a different history and developed largely in the private sector. In the American society and economy the private sector generally has a greater role than the public sector. There is relatively little government ownership of industry. Even the military establishments largely belong to private industry working on government contracts. Personnel administration thus has been developed mainly in the private sector.

Personnel administration has had a short but intensive history in the United States. It is a transition in the concept of thinking of management as dealing with people, their relationship to each other, their morale, and their reward.

Scientific management originated in the 1880's and 90's with the work of Frederick Taylor. Taylorism, the efficient use of manpower, began in 1883 and continued through World War I until the 1920's. Taylor was devoted to the application of engineering principles to the work of human beings. He emphasized the scientific design of jobs to fit the capacities of people in a scientific way to increase their efficiency and productivity. There was enormous enthusiasm for this kind of human engineering, some of which still continues today. The result was to implant scientific management as an idea in universities and industry to bring about widespread adoption.

The principal expression was the development of incentive payment for the workers. Some systems were simple and others complex, but all were based on the assumption that the workers were individuals with the economic incentive as their primary motivation. This was a translation of the liberal mode of economic man to apply to the worker. These methods had some success, but they implanted hostility and resentment in the minds of the workers because they lacked the guarantees that are present in an ideal system. They lacked the guarantee that the rates would be objectively calculated, and that the worker would not be penalized if he responded to the incentives. These guarantees were not supplied; most industries used incentive methods to exploit the workers. As a result, workers banded together to control output and to conceal their methods for the industrial managers.

Because of the reaction of the workers resentment and violent resistance after World War I, management ideas became more sophisticated. In the late 1920's and the early 1930's "employee representation" plans brought the appearance of democracy to industry. This was the system under which the workers chose representatives to express their problems to management, and to recommend constructive policies of roganization and personnel. The system was hailed as having solved the problem of class conflict, and many such organizations of the workers were established. Some of their structures were very complicated, almost parliamentary. They were, however, founded on a shaky foundation because they existed only at the pleasure of management and could be abolished unilaterally. There was no guarantee of their permanence. It was really an illusion of achievement, though there were some accomplishments.

From the hard times of the Depression and the policies of President Franklin Roosevelt, came the transformation of most company unions into independent organizations with the protection of the Federal Government. Many of today's unions represent the transition of company unions into unions set up by the workers themselves, with no veto power on the part of management. The Government sets the stage and regulates the relations between management and labor, who work out their differences through independent collective bargaining.

Today's practices reflect the work done by Elton Mayo of Harvard University. As he defined it, it is the task of management to achieve an organization that will produce and guarantee cooperation between those who lead and those who follow. Management must foster, encourage, and reward the development of the employees. It must establish effective two-way communication between those who lead and those who follow. It must establish a system that guarantees justice to the worker.

Unionism also has a role. The union helps to establish two-way communication, and assures the administration of justice. Management tends to administer the establishment of cooperation and the development of the employee unilaterally. The most progressive system of personnel administration is one in which the union has a part in all of the tasks.

Mr. Onfray: Have the American unions fought, as in the case of some European countries, for co-administration?

Mr. Rosen: No, the idea of co-determination is completely absent for the ideology of the American unions except for the extreme left-wing unions. In the garment and coal unions a kind of co-determination exists in fact but is not explicitly recognized as such. The AFL-CIO unions accept the capitalistic system and work through it rather than try to displace it, and they accept the management role. There is a division of labor between the labor and management side.

The personnel administration or staff in American enterprise has three principal functions: to formulate personnel policies; to undertake the training function of both management and the workers; to diagnose, to evaluate the performance and to measure the results.

There are seven major areas in which personnel policies must be made. (1) The administration must design policies for recruitment and training. These must be uniform in a large establishment. The trick is to formulate a policy that will be accepted and will operate. (2) There must be policies regarding promotion, transfer and layoff. There must be clear-cut standards for promotion, and the workers must be able to know of their possibilities so that they can compete for them. The policy regarding transfer must allow effective management without destroying the morale of the worker. (3) Personnel administration has been careful to detail the principles of discipline and discharge to get away from the past when industry was notorious for arbitrary discharge. In the absence of standards the right to discipline and discharge is in the hands of individuals who may use it in an arbitrary way which invites corruption. There may not be uniformity between the departments of a company. With personnel administration

the pretexts for discharge are carefully standardized and defined. The penalty for violating plant rules increases with the frequency of violation. Personnel administration must formulate the policies and provide the system of appeal for the worker. (4) Policies on wages determine the structure and the level. There are two philosophies concerning policies on wage structure. Management favors a steep wage scale with substantial differences between the levels in order to increase the incentive to produce. The unions favor a flat structure to reduce the difference and to achieve more social justice. Personnel must recommend the system and level. The company may pay wages just below the prevailing level as an economy making up the deficit in the non-wage benefits to the worker. It may match the prevailing wage level, or it may pay slightly above the prevailing level in order to get a superior level of workers and to have less turnover. Each policy has its advantages and drawbacks. (5) There must be policy on the development of welfare service for the employees. Such benefits as meals, work clothing, safety shoes, counselling, and medical care are not established in the United States by rigid legislation, but left to the discretion of management. (6) Personnel must make decisions regarding work assignments and shift work. It makes policies on the frequency of shift changes and the priority given to workers in choosing their shifts. (7) The final policy concerns involving workers in the discussions for resolving production problems. This new policy makes the workers part of the task of raising production. A bad system is posting a suggestion box on the wall and paying a given price for all suggestions. It is better to have a system or reward in proportion to the savings resulting from the suggestion. The best system allows employees to make suggestions as to the industry as a whole, and the group is rewarded as a whole.

Policy-making involves a principle and a procedure. Policies must be guaranteed to be uniform and permanent, not subject to arbitrary change. They must be subject to change if they do not work, but the procedure for changing the must be spelled out. Policies must be in writing.

Col. Brotosewojo: The problem of the labor union is almost universal, but not all countries have the same principles for the relations between the union and the government. It would be interesting to know how the unions in the United States operate in solving their differences with management.

Mr. Rosen: The achievement of enlightened standards of personnel administration is due principally to the pressure of unions on industrial managers to develop more efficient systems of meeting the complaints of workers. Strikes are the failure of management to respond to the complaints or to respond adequately to them.

Labor-management conflicts arise from their having different versions for solving the same problem because of the different priorities that they give to them. According to management wages are costs of doing business that they must keep as low as possible. To labor, wages are

income and the means of life which must be raised as high as possible. The two points of view confront each other during bargaining negotiations on level and structure. Management wants a steep structure so that it can pay low wages to the lower groups that represent the biggest total cost. Labor wants a flat structure because most of the union members are in the lower groups and they have the same needs as the higher workers.

In the case of discipline, the interest of management is effective authority over the producers. Without the right to enforce discipline they cannot control the level of performance. The workers feel that the supervisor is fallible, prejudiced, and likely to "scapegoat". They must be protected from arbitrary treatment.

The achievement of collective bargaining is to provide a mechanism for resolving conflicts without the total suspension of production and class strife. A strike is a failure of the system to work. Historically, the United States has a good record in regard to the settlement of conflicts.

Mr. Fonseca: I am interested in the relation of personnel administration to public service. Is it possible to use some of the techniques of private enterprise in the public service? Sometimes the public service is rigid and does not have the possibility of rewarding the best man because of the rules. In private enterprise there is the chance of rewarding the best man, but the manager is faced with the problem of profits and cost.

Mr. Rosen: In principle there is no reason why the principles of the private sector cannot be transferred to the public service, but there are problems of acceptance. They would have to be elevated in prestige in order to be accepted by the public sector. Since the beginning of the Kennedy Administration, the principle that government agencies must recognize and deal with unions has been applied. Unions of government workers cannot strike as a pressure for the acceptance of their demands, but they can develop different methods.

Mr. Pangerapan: When I was on my trip, I saw how the management of the Tennessee Valley Authority worked with its personnel. Some of them belonged to the union, and others did not, but the management would deal only with the unionized workers. I am interested in the impact of automation on the psychology of the unions.

Mr. Rosen: The character of the relations between management and unions is nearly a function of their historical relations. Their way of looking at problems is historically determined to the degree that those that lead the unions have lived through the period of violent conflict. This experience colors their attitudes. The younger men who are coming into leadership on both sides have a more professional view of one another for they often have similar backgrounds. This is a sign of evolution in their relationships. A second type of evolution is the history of success or failure of each side in achieving its objectives in terms of the other. Each successful negotiation lays the groundwork

for another, more successful negotiation; success is an accumulative experience. Success breeds success and failure breeds failure. A change in the personnel on either side changes the relationship between them.

7. Abstracts from Papers Presented by Participants

In addition to participating actively in the discussion of problems, Messrs. Fonseca (Brazil), Gaibor (Ecuador), Pangerapan (Indonesia), and Pombhejara (Thailand) wrote substantial papers on the administrative systems of their countries. They also presented these orally to the group which discussed and analyzed the presentations in considerable detail. Abstracts of these papers are presented below:

a. "Manpower Administration in Brazil" - Mr. Fonseca
(9 pages, mimeographed)

After providing an historical review of developments in his country, the author analyzes the federal system of Brazil. Using his home State, Sao Paulo, as an example, he goes on to describe the functions of manpower administration and the character of the employment service in his State.

b. "Manpower Administration in Ecuador" - Mr. Gaibor
(10 pages, mimeographed)

After a review of the administrative structure of Ecuador, the paper concentrates upon the plans for the newly established Division of Manpower and Labor Statistics in the Ministry of Labor of Ecuador.

c. "Manpower Problems and Policies in Indonesia" - Mr. Pangerapan
(22 pages, mimeographed)

This well documented paper rounds out and supplements contributions the author made in the course of Seminar sessions on demographic and migratory problems of Indonesia by providing a systematic summary of the administrative programs and techniques accomplished.

d. "Public Administration in Thailand" - Mr. Pombhejara
(7 pages, mimeographed)

In this paper the author provides an analysis of civil service structure and principles in his country.

At the request of many participants Mr. William Grogan of the Wage and Hour and Public Contracts Division, U. S. Department of Labor, was invited to read a paper on U. S. Labor Legislation dealing with minimum wages. A stimulating discussion clarified the difference in concept and approach in the several countries represented in the Seminar and the system established in the United States.

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Fifty high school dropouts between 1962 and 1965 were referred for Division of Vocational Rehabilitation (DVR) services to test the results of providing such services. Of the 50, 14 were not accepted or would not accept DVR services, 14 cases were closed with the individuals still unemployed, 19 individuals were employed, and three were receiving continued DVR services when the study ended. The largest group, about 68 percent of the 36 accepted cases, was diagnosed as having personality or behavior disorders of such severity that successful employment was impossible without rehabilitative services. Services included diagnostics, surgery and treatment, prosthetic appliances, training and training materials, tools, licenses and equipment, and other purchased services. All but one of the 19 clients who were employed at closure received vocational training, mostly from public vocational schools. The total program cost was $6,313, or $322.45 per rehabilitated client. Average monthly income for each of the 19 employed clients was $51.00 before services and $182.00 after services. This study pointed to the need for development and extension of cooperative arrangements between the DVR and the public schools. (ET)

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VOCATIONAL REHABILITATION SERVICES

FOR

HIGH SCHOOL DROPOUTS

Prepared under supervision of the Research Office of
The Department of Public Instruction

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Research Report 10-01
June, 1966

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VOCATIONAL REHABILITATION SERVICES

FOR

HIGH SCHOOL DROPOUTS

A report on the referral of 50 dropouts
from the Tacoma Public Schools
to the Division of Vocational Rehabilitation

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Research Report 10-01
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FOREWORD

This report is descriptive of a caseload of 50 high school dropouts, and the nature, costs, and results of vocational rehabilitation services they received from the Division of Vocational Rehabilitation.

When a DVR Counselor in Tacoma was given a caseload of 50 high school dropouts over a period of three years ending in June, 1965, the assignment came to be known as a "dropout study". Actually, the arrangement did not constitute an experimental-design research effort. The intention was to test pragmatically the results of providing Vocational Rehabilitation services to a group of young people who had quit or were leaving school. Unemployed, or at best working in unsatisfactory job situations, these young people were part of the total caseload of the Vocational Rehabilitation Counselor.

The services received by this group of 50 individuals were provided through the use of Federally matched funds, as part of its program for disabled persons. Those who received these services were disabled and vocationally handicapped. However, "disability" has many diagnosable forms, and the caseload involved here is undoubtedly representative of a large proportion of those who leave high school before graduation.

E. M. OLIVER
ASSISTANT SUPERINTENDENT FOR
VOCATIONAL REHABILITATION

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INTRODUCTION AND RESUME'

The Problem

The problem of high school dropouts is not unknown to parents, educators, and agencies such as public assistance and the courts. Considerable publicity has been given the new and disturbing implications of a sub-secondary education in today's technologically oriented labor market.

What a high school diploma means to a young person's future is relative to what the job market and homemaking require in the way of knowledge and skills one can acquire in high school. A high school education is generally the sine qua non -- the thing without which -- a young person cannot expect to achieve a reasonable standard of getting and giving in today's world.

Yet a high school diploma is exactly the thing without which a number of young people are entering adult life as secondary school dropouts. Through the course of the 1964-65 school year, 8,137 pupils were reported by Washington schools as having left during the year.(1) This includes those who dropped from the 9th through the 12th grades; it does not include pupils who failed to re-enroll in high school classes at the beginning of the school year. During the 1963-64 school year, 7,641 dropouts were similarly reported.

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(1) "Dropout Statistics", State Superintendent of Public Instruction Research Report 02-05A, April 1966

The figure was 7,445 for the 1962-63 school year. Thus within three years, more than 23,000 young people, enough to populate a fair-sized city, stood at the gates but could not enter as competent workmen or effective homemakers according to current standards for such roles in adult living.

A few, in the normal course of events, will sooner or later be enabled to use the hidden talents they have. Some will never receive the opportunity to develop their latent and innate abilities, and will therefore function throughout life at half throttle.

The Probe

The possibility of preventive and remedial measures was probed, somewhat tentatively, by the assignment of a Vocational Rehabilitation Counselor to a caseload of dropouts from Tacoma Public Schools. In addition to his other duties, the counselor was asked to undertake the vocational rehabilitation of a group of dropouts so as to assess the effect of the rehabilitation process upon individuals whose first characteristic was their status as a dropout.

Tacoma Public Schools was the locale of the exploratory effort for several reasons. Over a period of years this school district has been keenly aware of the needs of its highschoolers for whom the Special Education program ended in the elementary grades. The TPS has been innovative in their efforts to meet these needs; the "Community Laboratory" it has established is evidence of such concern. The cooperation of school leaders, and a mutual desire with the Division of Vocational Rehabilitation to test the potentials of the rehabilitation process for this special-problem group led to the location of the experimental effort at TPS.

The presence in Tacoma of a VR Counselor experienced in vocational rehabilitation services to special-problem individuals was also a decisive factor.

The VR services received by the dropout caseload were the same as provided to any disabled client with a resultant vocational handicap. Such adaptation of the basic process as occurred was on a casework basis. Clients in the dropout caseload met the standards of eligibility for Federally-matched vocational rehabilitation services.

Fifty young people who had terminated their high school careers short of graduation were referred to the Division of Vocational Rehabilitation. The Division received them and made the total range of its services available as appropriate to each individual.

50 dropouts were referred originally.
-14 were not accepted for DVR services.
36 were accepted for services; a VR plan was made.
-5 were closed before the plan was initiated.
-9 were closed before the initiated plan was completed.
-14 were closed unemployed.
-19 were closed employed, after VR plan was completed.
- 3 were receiving continued VR services when the study ended.

Of the 14 who were not accepted, three were ineligible because their "disabling condition" was so minimal they did not qualify under existing rules at that time. The remaining 11 of the non-accepted 14 created, in a sense, their own disability. In one way or another, they did not accept the proposition of VR services.

Of the 36 who were accepted for VR services, and for whom a rehabilitation plan was formulated, 14 were closed unemployed. At one time or another during the implementation of the VR plan, each of the 14 decided not to go on with it.

Nineteen followed through with the VR plan they and the VR Counselor had decided upon together, and were closed in appropriate employment. Three were receiving continued VR services, according to plan, when the special caseload program as such was terminated June 30, 1965.

Fourteen of the 50 school dropouts dropped out of the VR program too.(1) Their reasons for not accepting vocational rehabilitation services are not part of the data available for this study; however, they represent a group whose problems of motivation and self-confidence had obviously developed beyond the influence of the services provided through the usual VR process. These include those closed from Referred, as well as from Accepted status.

In spite of the ratio of 19 employed closures out of 50 referrals, the experiment demonstrated the economic feasibility of vocational rehabilitation services for these high school dropouts. In addition, there is a reasonable expectation that the three remaining clients in the caseload will become successfully employed.

The cost of services to the 50 individuals (including expenditures for the three still under care on June 30, 1965) was more than offset by the decreased dependency and the acquired earning power of the 19 closed as employed. The total cost of purchased services was $6,313.63. Even if this amount were doubled to allow for costs of administration and counseling, it is far exceeded by the annual earning rate of $41,496 established by the 19 employed closures.(2)

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(1) From lines 1, 6, and 7 of Table 8.

(2) From Tables 9 and 15.

On the basis of logical analysis one may conclude that the services offered to these 50 dropouts came too late for many of them. Considering their needs, too little was available through the schools, community, and the DVR. But out of this experience certain insights and convictions emerged.

Failure in school, and subsequent dropping out of school, are the manifestation of a problem. The problem may have its roots in organic retardation. More commonly, one sees the reaction of an adolescent against family and society. The behavior through which it expresses itself may be psychiatrically identifiable.

Not sympathy, but empathy is the basis of the helping effort. To those who see themselves as school failures even at an early age, the need for identification with significant persons and values is paramount. The skilled counselor is able to provide this need, without judgmental bias, without fault-finding or blame.

The exploratory offer of vocational rehabilitation services to 50 dropouts points beyond them to their fellows, the potential dropouts who are still enrolled in school. The experience of the caseload reported herein indicates not only that some of the dropouts may be enabled to achieve more acceptable standards of personal, economic, and social adjustment; it points also to ways in which they may be so aided.

By inference, the study emphasizes that both the secondary school and the vocational rehabilitation agency have a responsibility for the pupil who is failing and may soon join the ranks of dropouts. The close-working relationship maintained between the Tacoma Public Schools and the Division of Vocational Rehabilitation in this experimental approach to services points to the necessity for the development and extension of cooperative arrangements wherever vocational rehabilitation becomes a realistic goal for school dropouts.

The Probability

The probability is that the typical high school dropout will profit from vocational rehabilitation services even in a program which is not especially adapted to his youth, his lack of work experience, and his educational deficiencies. But it is a task of more than ordinary difficulty for counselor and client to gain a job objective which is at once within the client's limitations and the requirements of the jobs whose rewards are more than minimal.

This analysis of "probability" is based in part upon the fact that of 47 clients whose VR services were concluded (by closure from referred status or later), 19 or 40 percent were closed employed. These represent an undifferentiated group of typical dropouts as referred to DVR by the school counselor, prior to formal evaluation of eligibility for DVR services.

By way of further analysis, it should be noted that of the 33 cases accepted for VR services after diagnostic evaluation, (whose vocational rehabilitation services had been concluded by June 30, 1965) 19 or about 58 percent were successfully rehabilitated. These represent the "probability" of success for those accepted for services, according to the experience of the caseload reported herein.

The balance of this report describes the clients, the services they received, costs, and results.

PART I SELECTION & CHARACTERISTICS OF CLIENTS

Referrals, by Age and Sex

An individual is referred to DVR, and consideration is given to his eligibility for services. He is eligible if he has a professionally diagnosed physical-mental-emotional disability which constitutes a vocational handicap, and if there is a reasonable expectation that VR services will enable him to engage in remunerative employment.(1)

Fifty "dropouts" were referred to DVR. Their distribution by age and sex is tabulated below.

TABLE 1

REFERRALS, BY AGE AND SEX

	Males			Females			Totals		
Age Years	No.	%	Acc. %	No.	%	Acc. %	No.	%	Acc. %
15	2	06.06	06.06	2	12.50	12.50	4	08.16	08.16
16	7	21.21	27.27	5	31.25	43.75	12	24.48	32.64
17	7	21.21	48.48	6	37.50	81.25	13	26.53	59.17
18	8	24.24	72.70	2	12.50	93.75	10	20.40	79.57
19	4	12.12	84.82	1	06.25	100.00	5	10.20	89.77
20	3	09.09	93.91	0	0	0	3	06.12	95.89
21	2	06.06	99.97	0	0	0	2	04.08	99.97
Totals	33		100.00(*)	16		100.00(*)	49		100.00(*)
No data	0			1			1		
Totals	33			17			50		

(*) Rounded totals

Males outnumbered females by two to one. The average age of males was 17.66 years; for females, it was 16.68 years. Average age for the total caseload was 17.34 years. The range was from 15 to 21 years inclusive.

(1) The reference here is to services for disabled persons, and not to DVR's program for nondisabled individuals.

Source of Referrals

The great majority of referrals (86 percent) to the caseload was made by the schools. Other sources of referral are listed in Table 2, below.

TABLE 2

SOURCES OF REFERRAL TO DVR

Source of Referral	Cases No.	%
Public School	43	86
Public Assistance	2	4
Employment Security	1	2
Other Government Agency	1	2
Friend	1	2
Self-referred	1	2
Not Classified	1	2
	50	100.00

Age at Referral, and Acceptance for Services

TABLE 3

ACCEPTED AND NON-ACCEPTED REFERRALS BY AGE AT REFERRAL

Age at Referral	Not Accepted		Accepted for Services		Totals		Totals
	No.	%	No.	%	No.	%	Acc. %
15	1	07.69	3	08.33	4	08.16	08.16
16	3	23.07	9	25.00	12	24.49	32.65
17	3	23.07	11	30.55	14	28.57	61.22
18	4	30.76	5	13.88	9	18.36	79.58
19	1	07.69	4	11.11	5	10.20	89.78
20	1	07.69	2	05.55	3	06.12	95.90
21	0		2	05.55	2	04.08	99.98
	13	100.00(*)	36	100.00(*)	49	100.00(*)	100.00(*)
No data	1						
	14						

(*) Rounded totals

About three-fourths (73 percent) of the referred persons were accepted for DVR services; i.e., they were eligible in terms of disability, vocational handicap, and potential for successful utilization of VR services. The largest age group of accepted cases was the 11 who were 17 years old. These accounted for about 31 percent of total acceptances.

Of 13 non-accepted cases, the largest group -- 4 cases -- was 18 years old, and accounted for about 31 percent of total ineligible referrals.

About 54 percent of the accepted cases were age 17 or under, while about 64 percent of those not accepted were 17 years of age or less.

The accepted and non-accepted referrals were grouped as "below 18" and "18 and over" in order to test the possibility that age influenced the eligibility of individuals for DVR services. There is no statistical evidence that age (in terms of "below 18" and "18 and over") was a factor in acceptance or non-acceptance of referrals.(1)

In the same manner, the possibility that sex was a determinant in the acceptance or non-acceptance of referrals for services was tested by use of the data in Table 4, below.

TABLE 4

ACCEPTED AND NON-ACCEPTED REFERRALS, BY SEX

	Non-Accepted		Accepted		Totals	
	No.	%(*)	No.	%(*)	No.	%(*)
Male	11	33.00	22	67.00	33	100.00
Female	3	18.00	14	82.00	17	100.00
Totals	14	28.00	36	72.00	50	100.00

(*) Line percent

While 67 percent of the males were accepted, and a higher proportion (82 percent) of the females were accepted, the difference is not statistically significant. The data does not establish sex as a probable factor in acceptance or non-acceptance of an individual for services.(2)

(1) The obtained Chi-square was .473, which does not meet the requirements of $X^2 = 3.841$ with 1 df, when $p = .05$. When $X^2 = .455$ (1 df), $p = .50$.

(2) The obtained Chi-square was 1.368. At $p = .05$, $X^2 = 3.841$ with 1 df. At $p = .30$, $X^2 = 1.074$ with 1 df.

Marital Status

Marital status of the 50 referrals is tabulated below.

TABLE 5

MARITAL STATUS AT REFERRAL, 50 REFERRALS

	No.	%
Married	6	12.00
Single	44	88.00
Totals	50	100.00

There were none who were widowed, separated, or divorced.

Last School Year Completed

All of the 36 cases accepted for services were high school drop-outs. None had attended school for as long as 12 years. The number who quit after attending grades 8 through 11 is shown in Table 6.

TABLE 6

LAST SCHOOL YEAR COMPLETED BY CASES ACCEPTED FOR SERVICES, BY SEX(*)

Last School Year	Males			Females			Totals		
	No.	%	Acc.%	No.	%	Acc.%	No.	%	Acc.%
8	1	04.54	04.54	0	0	0	1	02.77	02.77
9	13	59.09	63.63	10	71.42	71.42	23	63.88	66.65
10	5	22.72	86.35	2	14.28	85.70	7	19.44	86.09
11	3	13.63	99.98	2	14.28	99.98	5	13.88	99.97
12	0	0	0	0	0	0	0	0	0
Totals	22		100.00(*)	14		100.00(*)	36		100.00(*)

(*) Last school year was not reported for 14 cases who were not accepted for services, i.e., closed from referred status.

(*) Rounded totals

Two-thirds of the accepted cases had not gone beyond the 9th grade; those who completed not more than 10 years of school accounted for 86 percent of the total. This proportion (of those who completed 10 years of school or less) is nearly identical for males and females.

Major Disabling Condition

The nature of the disabling condition which creates a vocational handicap is determined by medical and related examinations and evaluations. Multiple disabling conditions are the rule rather than the exception; however, the VR counselor, with the aid of the Medical Consultant, determined the "major disabling condition" as reported in Table 7 for the 36 accepted cases.

TABLE 7

MAJOR DISABLING CONDITION, ACCEPTED CASES

	Cases(*)	
	No.	%
Both lower extremities affected with partial paralysis, spasticity, etc.	2	07.14
Cardiac disability	1	03.57
Diabetes	1	03.57
Mental retardation	3	10.71
Personality, character, behavior disorders	19	67.85
Psychoneurosis	1	03.57
Psychosis	1	03.57
Totals	28	100.00(**)
Data unavailable	8 / 36(*)	

(*) 36 cases were accepted

(**) Rounded totals

Except for two individuals whose disability was related to paralysis or spasticity of both lower limbs, plus one case of cardiac disability and one of diabetes, all of the cases for whom the major disabling condition was reported were disabled in terms of mental-emotional functioning. The largest group -- about 68 percent -- was diagnosed as having personality or behavior disorders of such severity that successful employment in the competitive labor market was precluded unless VR services were provided.

Work History and Onset of Disability

Among the data gathered through DVR statistical and case study procedures is information about the client's disability, including the onset date. This is related to information about his work history, with a comparison of employment experience before and after the onset of disability. The vocational effects of disability and the results of Vocational Rehabilitation services may be inferred from such data.

For disabilities such as "personality disorder", and mental retardation, the concept of "date of onset" is at best most elusive. And for the caseload under study here, there is no significant work record. However, a young person's school record is his equivalent of an adult's work record. For a young person, a "disability" is as disabling, and vocationally as handicapping for him in school and later, as an adult's disability.

The fact that a preponderance of the major disabling conditions professionally diagnosed for 36 young persons was "personality disorder" suggests the need for a closer look at the etiology and developmental characteristics of this type of disability among the high school population. "Is it possible", an educator-counselor asked recently, "that a kid gets tagged as a 'problem' early in his school career, and the name sticks with him until he drops out of school somewhere along the line?"

The Typical Client

The typical client had completed his ninth year of school and was approaching his 18th birthday. With respect both to age and school grade completed, he was beyond compulsory school attendance. He did not enroll for the junior year, and was referred to DVR by his school sometime between January and June of 1963.

After medical and other evaluation, he was diagnosed as being disabled due to "personality or character disorder". He had no significant work history in competitive employment. He was one of 36 clients accepted for services, out of 50 originally referred, and was sufficiently motivated to be able to cooperate with the VR Counselor in arriving at a rehabilitation plan.

The Unsuccessful Clients

As noted previously, 14 referred clients were not accepted for services, and another 14, although accepted for services, were later closed as unemployed. The latter 14 unemployed closures includes 5 who did not embark upon a rehabilitation plan, plus 9 who failed to complete successfully the vocational rehabilitation plan which had been initiated.

Why were the 14 referrals not accepted, and why were the 14 accepted cases closed short of employment? Table 8, following, provides the data.

TABLE 8

REASONS FOR CLOSURE, 28 CASES CLOSED UNEMPLOYED

REASONS FOR CLOSURE	TYPE OF CLOSURE							
	From Referred Status		Before Plan Initiated		After Plan Initiated		Totals	
	No.	%	No.	%	No.	%	No.	%
1. Client not vocationally handicapped; ineligible for services	3	21.42	2	40.00	0		5	17.85
2. Client uncooperative; unable to plan	1	07.14	3	60.00	2	22.22	6	21.42
3. Disability too severe; not feasible	0		0		3	33.33	3	10.71
4. Client returned to school	0		0		1	11.11	1	03.57
5. Client receiving VR services from another agency	0		0		1	11.11	1	03.57
6. Did not desire VR services; withdrew	4	28.57	0		0		4	14.28
7. Unable to locate; lost contact	3	21.42	0		2	22.22	5	17.85
8. Client moved out of state	3	21.42	0		0		3	10.71
Totals (col. %)	14	100.00(*)	5	100.00(*)	9	100.00(*)	28	100.00
Totals (line %)	14	50.00	5	17.85	9	32.14	28	100.00

(*) Rounded Totals

The 28 cases who were unemployed when DVR services were terminated are grouped in Table 8 in three classes: 14 closed from referred status (not accepted for DVR services), 5 accepted cases whose vocational rehabilitation plan was not begun, and 9 accepted cases whose plan, although initiated, was not completed at time of closure.

The 14 cases closed from referred status, comprising 50 percent of the unemployed closures, did not receive VR services except such diagnostic procedures as were necessary to establish eligibility -- or ineligibility -- for the program. If the client removed himself from consideration, diagnostic procedures were minimal if provided at all.

Three clients were found not to be vocationally handicapped and were therefore ineligible for services under this program. Another client was uncooperative and was ineligible on the basis of feasibility; i.e., it was not felt that his potential for successful rehabilitation warranted the expenditure of staff time and funds -- both of which were limited -- in a further effort to prepare him for employment and to place him in a job.

The remaining ten of the 14 closures from referred status removed themselves from consideration for DVR services. Their withdrawal was in a descending order of specificity, in the sense that four declared they did not desire VR services, three became "lost", and three moved out of the state. Thus four cases were actually ineligible, while ten may be said to have created their own ineligibility.

The five cases closed "before plan initiated" had been accepted for DVR services; i.e., they had been found to be disabled, vocationally handicapped, and it was believed they had sufficient potential for rehabilitation to justify the effort and expense involved. Two of the five, however, were found not to be vocationally handicapped to the extent indicated by the first evaluation procedures, and their cases were closed. Three of the five, when faced with the realities of planning for a vocation and entering training, became uncooperative and further efforts were necessarily discontinued.

Among the nine clients whose cases were closed after the rehabilitation plan was initiated but before they became employed, two were unable or unwilling to continue with the plan, three were found to be so severely disabled they could not complete the rehabilitation planned for them, one client returned to school, one accepted the services of another rehabilitation agency, and two became "lost" -- contact with them was lost, which may be regarded as tantamount to withdrawal from the program.

Viewing the 28 closures (of whom 14 were not accepted for services beyond diagnostic procedures) as a total group, the single greatest reason for closure (six cases) was client's lack of cooperation and his or her inability to plan with the VR Counselor or to continue with an agreed-upon plan.

Those who removed themselves from consideration for DVR services, or from a continuation of planned services, accounted for about 43 percent of the total closures. These comprise the four cases on line 6, the five cases on line 7, and the three cases on line 8 of Table 9, totalling 12 cases.

In contrast, there are the 14 cases from lines 1, 2, and 3 of Table 9, whose removal from the program, or original ineligibility for it, was less a matter of choice than a matter of program limitation.

PART II SERVICES PROVIDED

An "instance of purchased service", shown in Table 9, next page as "No. of Cases", means the provision of a certain type of purchased service, such as diagnostics, to an individual client, regardless of the number of times a particular individual receives that service. A client may have received a general medical examination plus a consultative examination plus another specialty examination; however, the three purchased examinations are counted as one instance of "diagnostic service". In the same manner, the "No. of Cases" of training service, for instance, represents the number of individuals who received such service regardless of how many times (or in how many training agencies) this service was provided for the individual.

Diagnostics

Diagnostic services were purchased for 40 of the 50 individuals referred for services. Diagnostic services constituted 44 percent of all instances of purchased services, and accounted for 27 percent of the total costs of purchased services.

Surgery and Medical Treatment

There were two instances of this service. The nature of treatment is not known, but it may be inferred from the $4 cost of this service, provided to one client who was closed employed, that this instance of service was minor. One of the clients still receiving services at the close of the study received more costly medical services, in the amount of $255. The total cost of surgery and treatment for all clients was 2 percent of all instances of services, and accounted for 4 percent of total costs of services.

TABLE 9

COST OF PURCHASED SERVICES, BY TYPE OF SERVICE AND CLIENT STATUS AT TERMINATION OF STUDY

TYPE OF PURCHASED SERVICE		STATUS AT TERMINATION 0	13	15	12	UNDER CARE	TOTALS No.	%
A. DIAGNOSTICS	No. of Cases	7	5	8	17	3	40	44.44
	$ Cost	276.00	82.50	677.67	375.00	290.00	1,701.17	26.93
	Av. per Case	39.42	16.50	84.70	22.06	96.66	42.53	
B. SURGERY AND TREATMENT	No. of Cases				1	1	2	02.22
	$ Cost				4.00	255.00	259.00	04.10
	Av. per Case				4.00	255.00	129.50	
C. PROSTHETIC APPLIANCES	No. of Cases			3	2		5	05.55
	$ Cost			245.12	29.32		274.44	04.34
	Av. per Case			81.70	14.66		54.89	
D. HOSPITAL AND CONVALESCENT CARE	No. of Cases	0	0	0	0	0	0	0
	$ Cost						0	0
	Av. per Case						0	0
E. TRAINING AND TRAINING MATERIALS	No. of Cases			8	15	3	26	28.88
	$ Cost			445.90	1,409.73	808.10	2,663.73	42.17
	Av. per Case			55.73	93.98	269.36	102.45	
F. MAINTENANCE AND TRANSPORTATION	No. of Cases			5	9	2	16	17.77
	$ Cost			152.50	1,178.19	80.30	1,410.99	22.33
	Av. per Case			30.50	130.90	40.15	88.18	
G. TOOLS, LICENSES AND EQUIPMENT	No. of Cases				1		1	01.11
	$ Cost				7.30		7.30	00.11
	Av. per Case				7.30		7.30	
H. OTHER PURCHASED SERVICES	No. of Cases	0	0	0	0	0	0	0
	$ Cost							
	Av. per Case							
TOTALS	No. of Cases	7	5	24	45	9	90	100.00
	$ Cost	276.00	82.50	1,521.19	3,003.54	1,433.40	6,316.63	100.00
	Av. per Case	39.42	16.50	63.68	66.74	159.26	70.18	
	% of Cost	04.36	01.30	24.08	47.54	22.69	100.00	
	% of Services	07.77	05.55	26.66	50.00	10.00	100.00	

Status 0 = Referred only.
Status 13 = Before plan was initiated.
Status 15 = Plan initiated, not completed prior to closure.
Status 12 = Plan completed, client employed at closure.

Graph 1, based on Table 9, indicates that the greatest proportion of instances of purchased services provided was diagnostics, followed by training services.

Graph 2, based on Table 9, shows the proportion (percent) of total service expenditures attributed to each type of purchased service. The greatest amount was spent for training; the next greatest, for diagnostics.

Major Source of Vocational Training

All but one of the 19 clients who were employed at closure received vocational training. Public vocational schools were used almost exclusively for this purpose. In addition, five clients whose rehabilitation plan was initiated but not completed received some training in a public vocational school. These are not included in Table 10, next.

TABLE 10

MAJOR SOURCE OF VOCATIONAL TRAINING FOR 19 EMPLOYED CLOSURES

Source	No.	%
Public Vocational School	15	78.94
Other	3	15.78
No Training	1	05.26
Totals	19	100.00

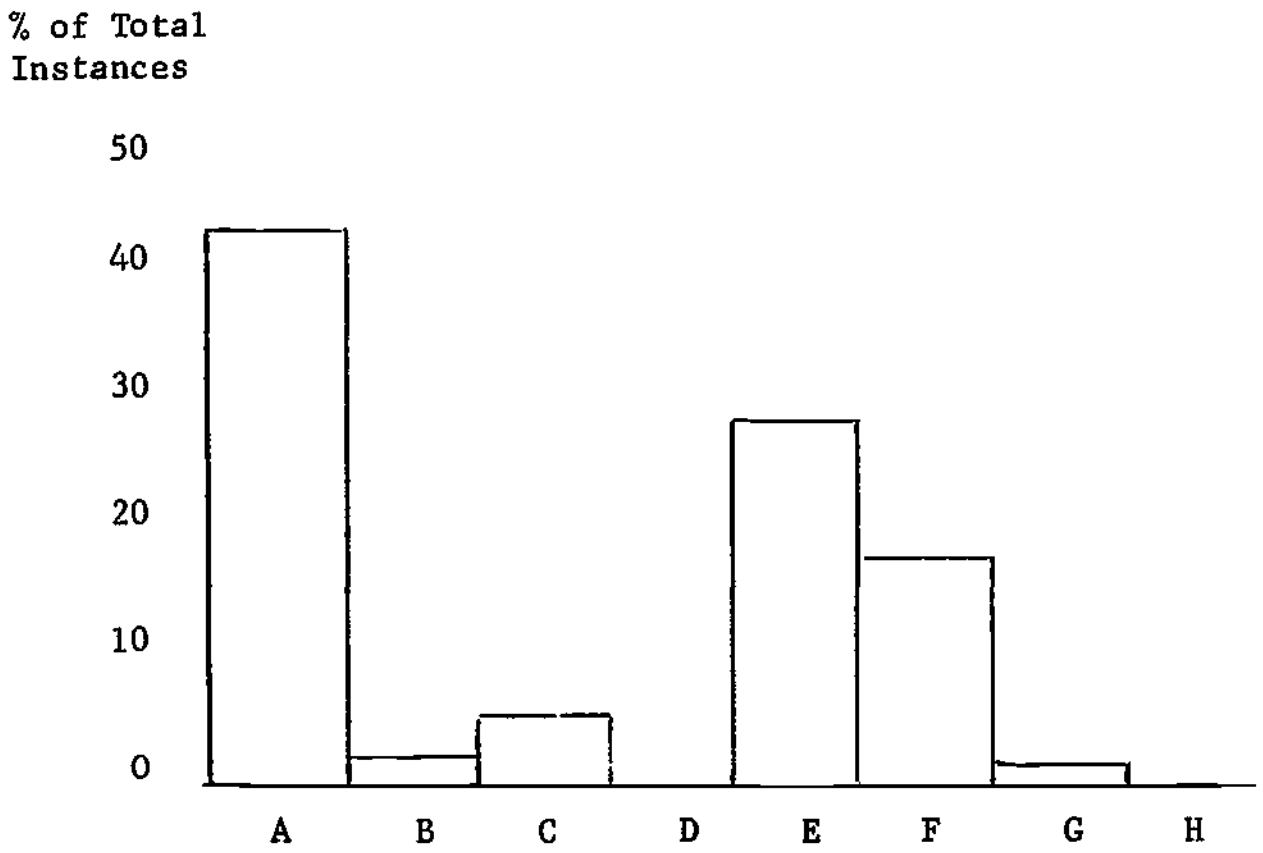
Elapsed Time, from Acceptance to Closure

Of the 50 clients involved in the study, 33 were accepted for services and subsequently closed, three were receiving services at termination of the study, and 14 were closed from referred status -- i.e., not accepted for services.

As shown in Table 11, following, the distribution of the 33 cases accepted and subsequently closed is bimodal. About a third (30.3 percent) were accepted and closed within 6 to 11 months. The next largest group, 24 percent, was accepted and closed within 24 to 29 months. For the 33 cases, the mean time from acceptance to closure was 17.07 months, and the median was 17.4.

GRAPH 1

PROPORTION OF TOTAL CASES RECEIVING
EACH TYPE OF PURCHASED SERVICES

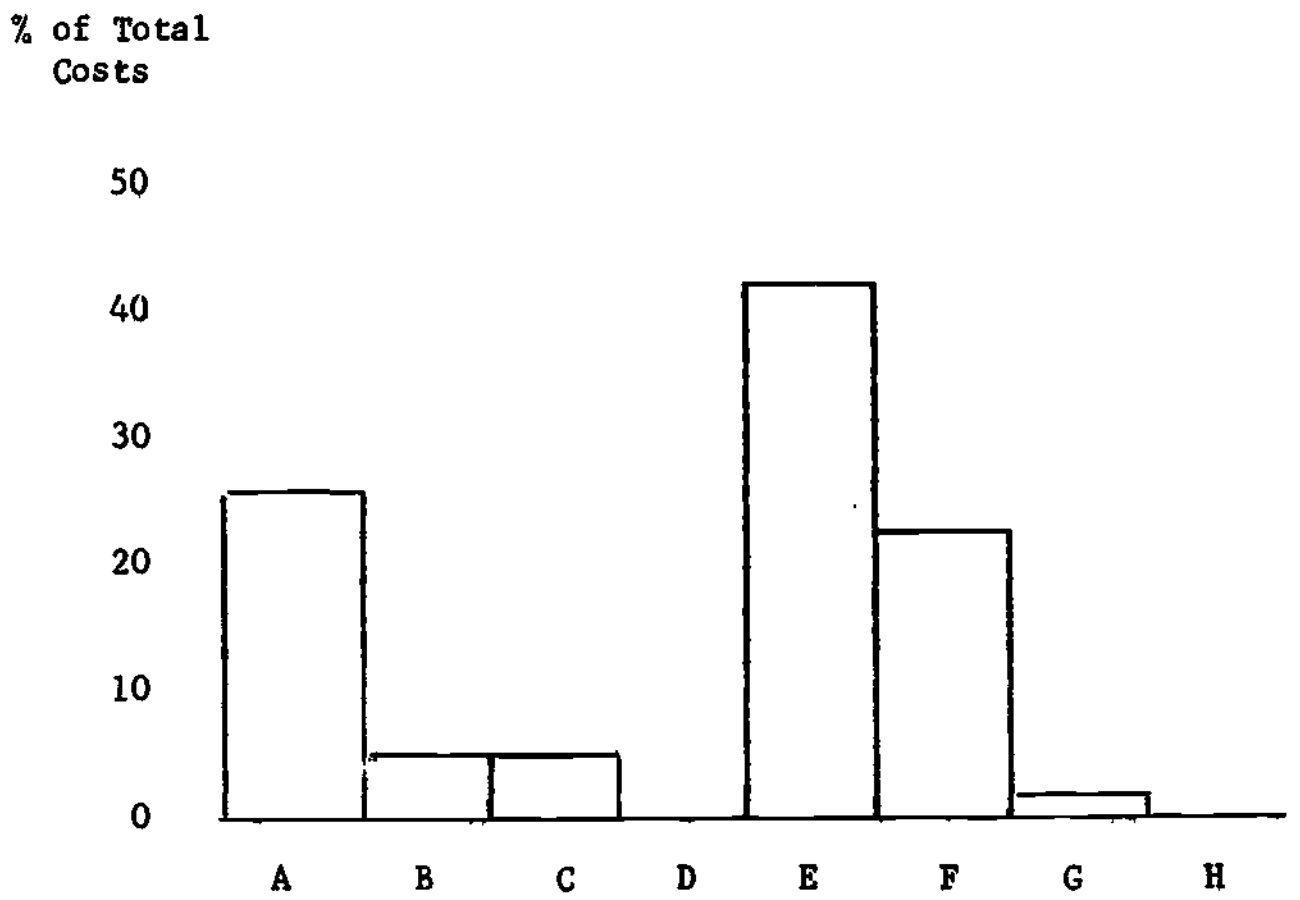


TYPE OF SERVICE

A-Diagnostics
B-Surgery And Treatment
C-Prosthetic Appliances
D-Hospital And Convalescence
E-Training And Materials
F-Maintenance And Transportation
G-Tools, Etc.
H-Other

GRAPH 2

PROPORTION OF TOTAL COST OF PURCHASED SERVICES
ATTRIBUTED TO EACH TYPE OF PURCHASED SERVICE



TYPE OF SERVICE

A-Diagnostics
B-Surgery And Treatment
C-Prosthetic Appliances
D-Hospital And Convalescence
E-Training And Materials
F-Maintenance And Transportation
G-Tools, Etc.
H-Other

The group of cases closed from referred status received 7.77 percent of the total instances of purchased services, at a cost of 4.36 percent of total expenditures for purchased services. Those closed in Status 13, after acceptance but prior to initiation of a rehabilitation plan, received 5.55 percent of instances of purchased services and absorbed 1.3 percent of total costs of purchased services. The group in Status 15, closed after acceptance but prior to completion of the plan which had been initiated, accounted for 26.66 percent of total purchased services, and 24.08 percent of expenditures. Those who were closed in Status 12, employed after completion of plan, received an even 50 percent of instances of services provided, and 47.54 percent of total expenditures for purchased services. The three clients remaining under care at the end of the study received 10 percent of the instances of service provided, at a cost of 22.69 percent of total expenditures.

Thus about half of the expenditures for purchased services, and half of the incidence of services, were provided to the clients who were successfully employed following rehabilitation services. A fifth of the expenditures, and a tenth of total services provided had been absorbed by the three clients still under care at the end of the study.

At the same time, about 40 percent of total purchased services provided, and about 30 percent of expenditures for purchased services, went to clients who proved to be ineligible or who, if eligible and accepted for services, proved to be non-feasible of vocational rehabilitation.

Prosthetic Appliances

Prostheses were purchased for three of the clients who were closed unemployed after the rehabilitation plan was begun, and for two clients who were closed employed. Prostheses accounted for about 6 percent of services provided, and about 4 percent of the total cost of all purchased services.

Hospital and Convalescent Care

None of the clients involved in the study received this type of purchased service.

Training and Training Materials

Job training and related materials were purchased for 8 clients who were closed unemployed after initiation of a rehabilitation plan, for 15 clients who were closed employed, and for three clients who were still under care at termination of the study. This type of purchased service amounted to about 29 percent of all instances of purchased services, and absorbed 42 percent of total expenditures for purchased services. In relation to the number of clients for whom it was provided, job training and related services were the most expensive type of purchased service.

Maintenance and Transportation

This purchased service was provided for five of the cases closed unemployed after initiation of a rehabilitation plan, for 9 cases closed employed, and for two clients still under care at the close of the study. This type of purchased service accounted for about 18 percent of all purchased services, and represented 22 percent of the total cost of all purchased services.

Tools, Equipment, and Licenses

This purchased service was provided for one client who was closed employed. It accounted for 1 percent of total purchased services, and less than 1 percent of total cost of all purchased services.

Other

There were no instances of other purchased services, such as child care, etc.

Average Costs, by Status at Termination

Due perhaps in part to the small number of cases involved, there is a wide variation in the average (mean) cost per type of purchased service between the clients who were closed from referred status, or prior to initiation of a rehabilitation plan, or at other stages in the rehabilitation process.

TABLE 11

ELAPSED TIME: ACCEPTANCE TO CLOSURE;
33 CASES ACCEPTED FOR SERVICES

Months	No.	%	Acc. No.	Acc. %
1-5	2	06.06	02	06.06
6-11	10	30.30	12	36.36
12-17	5	15.15	17	51.51
18-23	6	18.18	23	69.69
24-29	8	24.24	31	93.93
30-35	2	06.06	33	99.99
TOTALS	33	100.00	33	100.00

Mean = 17.07 months
Median = 17.4 months

For the five cases closed after acceptance but before initiation of plan, the median time from acceptance to closure was 7.5 months. For the nine cases closed unemployed and prior to completion of the rehabilitation plan, the mean time from acceptance to closure was 15.83 months.

Total elapsed time for the 19 cases closed employed, from acceptance to closure, is detailed below in Table 12.

TABLE 12

ELAPSED TIME: ACCEPTANCE TO CLOSURE
19 CASES CLOSED EMPLOYED

Months	No.	%	Acc. No.	Acc. %
1-5	0	0	0	0
6-11	4	21.05	4	21.05
12-17	3	15.78	7	36.83
18-23	4	21.05	11	57.88
24-29	6	31.57	17	89.45
30-35	2	10.52	19	99.97
TOTALS	19	100.00	19	100.00

Mean = 20.1 months
Median = 20.7 months

While the mean and median elapsed time between acceptance and closure are 20.1 and 20.7 months, respectively, for the 19 clients closed employed, the distribution is not particularly even. About a third were under care between 24 and 29 months, and there were two groups each representing 21 percent of the total, one of which received services from 6 to 11 months and the other of which received services for 18 to 23 months.

Time in Referred Status

Seventy percent of the total caseload was either accepted or closed from referred status in less than six months after referral. Three (6 percent) of the cases were in referred status between 18 and 23 months. The complete tabulations are shown below:

TABLE 13

ELAPSED TIME IN REFERRED STATUS

Months	No.	%	Acc. %
Less than 1	1	02	02
1-5	34	68	70
6-11	6	12	82
12-17	6	12	94
18-23	3	06	100
TOTALS	50	100	100

Time from Employment to Closure

When preparation for employment has been completed, the next step is placement of the client in an actual job. Such placement, however, is not the end of the vocational rehabilitation process. There must be reasonable assurance that the job in which the client is employed is suitable for him, and that, from the employer's point of view, the client, his new employee, is suited to the job. The "follow up" period during which the client is observed on the job varies in length of time, according to the client's adaptation to employment. Table 14 presents the data for the 19 employed closures.

TABLE 14

ELAPSED TIME: EMPLOYMENT TO CLOSURE, 19 CASES CLOSED EMPLOYED

Months	No. of Cases	% of Total	Accum. %
1	0	0	0
2	3	15.78	15.78
3	4	21.05	36.83
4	6	31.57	68.40
5	4	21.05	89.45
6	1	05.26	94.71
7	1	05.26	99.97
TOTALS	19	100.00	100.00

The average period of time from employment to closure of the case was 3.94 months. The median was 3.21 months.

In other words, the average client who was closed employed had been under observation for more than three months before he was regarded as being satisfactorily employed, or vocationally rehabilitated. It may be noted also from Table 14 that more than two-thirds of the cases (68.4 percent) had been closed after four months or less of observation or "follow-up" services subsequent to placement on a job. One client required six months, and another seven months, of follow-up services before closure as vocationally rehabilitated.

The tabulation of instances and costs of purchased services may obscure the basic service without which all of the dollar expenditures would be haphazard and ineffective. Counseling and guidance, or vocational counseling, is the common denominator of all services.

Beginning with the first contact between counselor and client at the time of referral, the counselor provides information and advice about vocational objectives, and opportunities for remedial care, vocational training, placement on a job, and other services and supplies related to a vocational goal which is realistic for the client. Not the least of the counselor's functions is motivation, the process of encouraging and inspiring the client in the direction of achieving his own maximum potential in employment, self-help, and self-realization.

The Typical Successful Case

The typical successful client received a general medical examination. Additional medical or related evaluations were also provided. Since he was one of the 19 eventually closed employed, the cost of these examinations was about $22; others whose eligibility and potential were less certain became involved in more extensive -- and expensive -- diagnostic procedures. The "average" client did not require surgery or other medical treatment, and was not one of the two employed closures for whom a prosthesis was necessary.

He received vocational training at a public vocational school and was in a training program for about nine months, which incidentally is comparable to one year in school. The average cost of training and training materials was about $94 (Table 9). He may or may not have required help with transportation and maintenance during the course of training. Nine of his fellows who were closed employed received such aid, at an average cost of $130. If he was one of these, the provision of such funds overcame an obstacle which otherwise could have negated the rehabilitation plan.

As one of the 19 employed closures, he received his share of 45 instances of purchased services provided to him and 18 others, the average cost of which was about $67 (Table 9).

The nine months he was in job training status constituted only a part of the elapsed time from acceptance to closure. For about 17 months he and his counselor were involved in the total process of rehabilitation which ended, for him, in a decision that he was actually on a job which was satisfactory to him and to his employer. In addition, he was a "referred" client for about three months, while the necessary determination of eligibility was being made. After he was placed on a job, following completion of job training, three months of the 17 elapsed while the suitability of the job placement was being assessed.

PART III RESULTS OF VOCATIONAL REHABILITATION SERVICES

The results of vocational rehabilitation services are most immediately tested in terms of jobs and income. The first objective is often seen as being economic in nature: has the client progressed from dependency to a reasonable degree of self-support?

Table 15, below, details the major sources and amounts of income of the 19 clients closed employed, before and after VR services.

TABLE 15

MAJOR SOURCES OF SUPPORT, AND MONTHLY AMOUNTS OF INCOME, BEFORE AND AFTER VR SERVICES; 19 CASES CLOSED EMPLOYED

Major Source of Support	Before Services	After Services	Occupation at Closure
Family	$ 40.00	$ 50.00	Shipping Clerk
Family	40.00	100.00	Homemaker, own home
Family	50.00	350.00	Service Station Attendant
Family	40.00	100.00	Homemaker, own home
Family	35.00	50.00	Homemaker, own home
Family	40.00	364.00	Shipyard Laborer
Family	45.00	173.00	Garment Examiner
Public Assistance	39.00	416.00	Painter
Family	60.00	75.00	Homemaker, own home
Public Assistance	45.00	230.00	Office Clerk
Family	70.00	50.00	Homemaker, own home
Family	40.00	87.00	Child Monitor
Not Reported	(51.00)*	152.00	Soldier
Family	50.00	100.00	Homemaker, own home
Family	75.00	100.00	Homemaker, own home
Family	75.00	248.00	Asylum Attendant
Family	80.00	350.00	Draftsman
Family	30.00	156.00	Soldier
Family	70.00	307.00	Draftsman
	$975.00	$3,458.00	

* Not reported; interpolated as $924/18 of actual sums reported.

Before services, the client's family was the major source of income for 16 (about 84 percent) of the 19 employed closures. Public Assistance was the major source for two cases. The major source of income for one client was not reported.

The major source of support, after services, was paid employment. Included in this are seven clients whose employment objective was homemaking in their own homes, which constitutes an unusually high proportion (36.84 percent) of rehabilitants so employed.(1)

Since "homemaking" as a job objective is not available to male clients, it is not possible to make a direct comparison of the proportion of males who were placed in relatively low-paying jobs. The monthly wages reported as remuneration for homemakers obviously depress the average income for the 19 clients closed employed.

The combined monthly income of the 19 employed closures was $975 before vocational rehabilitation services were provided; none of the major sources of income of clients was own earnings. At the termination of services, the combined monthly income of the 19 rehabilitants was $3,458, all from own earnings. Mean and median amounts are:

	Before Services	After Services
Mean, per month	$51.31	$182.00
Median, per month	47.80	119.00

(1) Of 1,478 employed closures during the 1965 fiscal year, in the three programs of the Division, 4.33 percent or 64 cases were employed as homemakers in own home.

The average income per month increased by a factor of 3.54X. See also, Graph No. 3. If the seven clients employed as homemakers are removed from the totals, the mean average income per month of the twelve clients employed in jobs other than homemaking is $243.58 per month or $2,932 per year equivalent. It is evident that these clients progressed from dependency to a reasonable degree of self-support.

Another item in the assessment of vocational rehabilitation results is the cost factor: what was expended in order to obtain the economic results demonstrated?

If the total expenditures ($6,316.63) are attributed to the 19 employed closures, representing the "marketable" product of services provided to 50 individuals, the "average" cost per client is $322.45 per client rehabilitated. If the total expenditures are distributed evenly among the 50 cases, the mean average cost per case is $126.33. On the basis of actual costs of services purchased for the 19 employed closures, the average per case is $158.08. None of these costs, it should be noted, includes staff time (VR counselor, clerical, and supervisory) and facilities.

The average cost of $322.45 expended for purchased services per employed client (based on assessing the total cost of services against the 19 employed closures) enabled an average income of $182 per month, or $2,184 per year. This income replaces a condition of dependency in which the average client received, from family, friends, public assistance or other major sources of his income, an average of $51 per month prior to receipt of VR services.

GRAPH 3

AVERAGE AMOUNT OF INCOME PER MONTH FROM MAJOR SOURCE OF INCOME, BEFORE AND AFTER VOCATIONAL REHABILITATION SERVICES, FOR 19 CASES CLOSED EMPLOYED

It is evident that, for the rehabilitated clients in this caseload, the cost of rehabilitation services was quickly offset by earnings. In other words, the program was on a sound economic foundation.

Results Other Than Economic

The social and personal results of VR services are not to be ignored. For many, these are the major criteria by which the results of VR services are to be measured: regardless of the cost of services in relation to subsequent earnings, what does vocational rehabilitation mean to society, and to the individual who received the services?

In the broad terms of gross national product, VR services added from these 50 dropouts 19 contributors to the national total, when there was little or no expectation that the normal course of events would place them in that role. On the contrary, it is reasonable to believe that they would have remained as non-contributors in an increasing degree of dependency and delinquency.

What the vocational rehabilitation experience means to the individual client varies from person to person. There is no data, and the client is usually less than articulate about it. One may recall, however, his own high school days, and his own sources of motivation and opportunity. Subtract these, and the meaning of vocational rehabilitation, as it fills the void, can be understood.

VT 002 756
Follow-Up Study of Selected Vocational Programs, Foothill College.

Foothill Coll., Los Altos Hills, Calif.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Oct66 49p.

*FOLLOWUP STUDIES; *JUNIOR COLLEGES; *VOCATIONAL EDUCATION; *CURRICULUM EVALUATION; EMPLOYMENT POTENTIAL; JOB TRAINING

Seven vocational programs were evaluated to obtain information for revision and updating the curriculum and to insure that instruction would approximate actual conditions in the working world. They were: accounting, dental assisting, design drafting, law enforcement, nursing, secretarial, and tool design. Questionnaires were sent to 629 former students and follow-up post cards to non-respondents. Two hundred-one or 31.9 percent were usable and all statistics for the report are based on these returns. Some of the results were: (1) 75 percent were employed full time, 10.9 percent part time, and 1.5 percent were unemployed, (2) 91.5 percent were satisfied with their major and the level of instruction in their major, (3) The main reason for incompletion of the Associate in Arts degree was that major courses were sufficient for employment, (4) Most vocational students did not have time for extra-curricular activities, (5) The top three general education courses that should receive more emphasis were English, Speech, and Psychology, and (6) Respondents felt their present positions were about what was expected or better. The follow-up study is intended to be continued yearly to include 20 percent of the vocational offerings. (MM)

VT 002 756

ED039370

FOLLOW-UP STUDY

OF SELECTED VOCATIONAL PROGRAMS

FOOTHILL COLLEGE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Office of the Dean of Students
and
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October 1966

VT002756

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INTRODUCTION

The project was designed to enable Foothill College to conduct a follow-up study of its vocational graduates. The purpose of the evaluation was to obtain the information necessary to revise and update the curriculum and to insure that instruction will be given in a situation that approximates actual conditions in the working world.

The College hopes to continue such a study indefinitely with a thorough analysis being made each year of twenty per cent of the vocational offerings of the school. In this manner a complete updating and revising of curriculum would occur in every vocational field at least once in every five years.

The vocational programs included in the study were: Accounting, Dental Assisting, Design Drafting, Law Enforcement, Nursing, Secretarial (general, legal, technical), Tool Design. In addition, employers of the Nursing, Dental Assisting, and Medical Assisting graduates were involved in an evaluating role.

The project was supported by funds granted under the Vocational Education Act of 1963, Public Law 88-210 .

METHOD

The objectives of the design are: (1) to organize the collection and analysis of the data in such a way as to insure the purposes of the study, and (2) to make it possible to suggest refinements for future studies.

General Procedure

A questionnaire was sent to 629 students who had graduated with an Associate in Arts Degree, received a Certificate of Proficiency, completed the sequence in the major, completed one year of the sequence in the major; finished less than one year of the sequence in the major. All of the students received a general questionnaire, and in addition all but the Law Enforcement and Tool Design majors received an evaluation sheet regarding the duties and responsibilities of their specific occupations.

One month after the forms were mailed, a follow-up post card was sent to those students who had not returned the questionnaire.

Subjects

The subjects of the survey were 201 former students enrolled in Foothill College vocational programs. The students who were non-graduates and non-

certificated were included in the study on the basis of having completed a key course, usually the third in the sequence of a major, which in the consideration of the faculty, made these students employable in that particular vocational field.

Class records of the key courses were surveyed for the four-year period from 1961 to 1965, and all students who completed these courses were included in the mailing list.

Response

The number of questionnaires mailed out was 629 (440 also received a specific job evaluation), and 229 or 36.4% were returned. Of the 229 only 201 or 31.9% were usable, and it is on the basis of these returns which the statistics for this report are based. Shown below is a breakdown of the returns by vocational programs.

Program	Number Mailed	Usable Returns	Per Cent
Accounting	84	22	26.19
Dental Assisting	35	16	45.71
Design Drafting	99	36	36.36
Law Enforcement	172	12	7.00
Nursing	49	36	73.47
Secretary	173	69	39.88
Tool Design	17	10	58.82
	629	201	31.9

Instruments

The general questionnaire comprised 28 items derived from two principal sources: first, from an examination of the literature in the field that treats with follow-up studies, surveys, etc.; second, from requesting staff members involved in the study to compile a list of items that they felt should be included in the questionnaire. The most frequent appearing items were then pooled with the items obtained from examining the literature, and the final selection was made by the staff members working on the study.

An evaluation sheet pertaining to the duties and responsibilities in the several vocations was included in the envelope with the questionnaire. The subjects were asked to rate various tasks according to the frequency with which they are performed on the job, and to rate the tasks according to importance. Law Enforcement majors did not receive the evaluation because there is no specific course requirement necessary to become a police officer. A further explanation is in order. Police forces, if

they require college training, will hire men with two years of college, regardless of the courses taken. Where the baccalaureate degree is required, it may be in any field. Therefore, there is no key course in the major sequence. This fact also accounts for the large number of questionnaires mailed to the Law Enforcement students. Every student enrolled in any of the L.E. courses was included in the study. The Tool Design majors were inadvertantly sent a Design Drafting evaluation, and this was not discovered until it was too late to rectify the error.

The evaluation sheet basically stated the aims and purposes of a vocational major described in operational terms. The instructors in the various vocational programs were asked to explain the objectives of their programs, and when this was accomplished, to convert these goals into operational tasks. An unanticipated but desirable result was that some instructors were compelled to evaluate their courses meaningfully where previously the objectives were loosely defined.

Although the Medical Assisting program was not included in the general questionnaire portion of the study, the employers of the former Medical Assisting students were asked to carry out an evaluation of these students. Also as part of the study, Dental Assisting and Nursing subjects were evaluated by their respective employers.

One staff member interviewed supervising nurses at Palo Alto-Stanford, El Camino, and Agnew State Hospitals regarding evaluation of former Foothill students. When attempting to contact dentists and doctors for the same purpose, he found them too busy to give the necessary time. We, therefore, left evaluation forms with them to be completed and returned to Foothill College.

The 629 subjects involved in the study received form letters, questionnaires, stamped return envelopes, and in most cases, the evaluation sheet.

PRESENTATION OF THE DATA

This section presents a summary of the student responses. The responses were converted to percentages, and these percentages are based on the number of usable returns as previously indicated.

Age Distribution of Vocational Study Students

Age Range	Number	Per Cent
18-20	45	22.6
21-24	98	49.3
25-28	27	13.6
29-32	11	5.5
33-36	2	1.0
37-above	16	8.0
TOTAL	201	100.0

Mean = 24.5

Age Range and Mean by Vocational Programs

Program	Low	High	Mean
Accounting	20	51	27.6
Men	20	39	24.6
Women	20	51	32.0
Dental Assisting	20	23	21.2
Design Drafting	19	53	25.8
Law Enforcement	18	28	23.2
Nursing	20	52	26.8
Secretary	19	37	21.5
Tool Design	24	44	31.9

Percentage Breakdown of Student Responses
to Vocational Questionnaire

	Composite	Accounting	Dental Assisting	Design Drafting	Law Enforcement	Nursing	Secretary	Tool Design
3. Sex and Marital Status								
a. Male	35.3	59.1	0	94.5	91.7	8.3	0	100
b. Female	64.7	40.9	100	5.5	8.3	91.7	100	0
c. Single	46.3	40.9	56.3	38.9	33.3	33.3	65.2	0
d. Married	52.7	59.1	43.7	61.1	66.7	63.9	34.8	90.0
6. Category of courses taken at Foothill								
a. Received A.A. Degree	45.8	40.9	81.3	11.1	0	100	40.6	20.0
b. Received Certificate of Proficiency	5.0	4.5	6.2	0	0	0	11.6	0
c. Finished sequence in major	15.4	27.3	12.5	22.2	8.3	0	18.8	10.0
d. Finished one year of sequence in major	17.4	9.1	0	33.3	50.0	0	18.8	20.0
e. Less than one year of sequence in major	10.9	18.2	0	13.9	41.7	0	7.2	30.0
7. Present occupation or activity								
a. Working full time	75.1	68.2	100	72.2	83.3	72.2	69.6	100
b. Working part time	10.9	18.2	0	11.1	16.7	13.9	10.1	0
c. Out of work	1.5	4.5	0	0	0	5.5	0	0
d. Going to school	11.9	18.2	0	25.0	0	2.8	14.5	0
e. Housekeeping	7.5	4.5	0	0	0	16.7	11.6	0
f. Night school	12.4	4.5	0	27.8	33.3	2.8	5.8	40.0
8. Method of obtaining first position after leaving Foothill								
a. Foothill Placement Office	8.5	4.5	0	16.7	0	0	14.5	0
b. Through an instructor	6.5	4.5	43.7	2.8	0	0	4.3	10.0
c. Outside employment agency	10.9	13.6	0	8.3	0	0	23.2	0
d. Friend or relative	8.5	9.1	12.5	13.9	0	0	11.6	0
e. Application on own	44.3	31.8	37.5	22.2	83.3	91.7	33.3	20.0
f. Want ads	6.0	4.5	0	11.1	8.3	0	8.7	0
g. Other	8.9	18.2	6.3	16.7	0	5.5	2.9	30.0

	Composite	Accounting	Dental Assisting	Design Drafting	Law Enforcement	Nursing	Secretary	Tool Design
9. Attendance at Foothill or any other college or training program since obtaining present position								
a. Yes	38.8	59.1	31.3	44.4	50.0	27.8	34.8	40.0
b. No	52.7	31.8	68.7	38.9	41.7	72.2	55.1	50.0
10. Relationship of present employment to the Foothill major								
a. To a very large extent	54.2	36.4	75.0	36.1	58.3	80.5	53.6	30.0
b. To a fairly large degree	14.4	18.2	18.7	11.1	0	0	20.3	40.0
c. Moderately associated	7.0	13.6	0	11.1	8.3	2.8	5.8	10.0
d. Minimally associated	3.5	9.1	0	5.5	8.3	0	1.5	10.0
e. Not at all	6.5	13.6	6.3	16.7	16.7	0	1.5	0
13. Satisfaction with major taken at Foothill								
a. Yes	91.5	90.9	100	72.2	100	91.7	98.6	90.0
b. No	5.0	4.5	0	19.4	0	5.5	1.4	0
14. Major influence in determining Foothill College major								
a. College counselor	9.0	4.5	18.7	11.1	25.0	5.5	5.8	10.0
b. High school counselor	8.0	4.5	0	5.5	0	5.5	14.5	10.0
c. Friend	10.4	9.1	6.3	8.3	33.3	13.9	7.2	10.0
d. Parent	11.4	9.1	18.7	5.5	25.0	13.9	11.6	0
e. High school teacher	9.4	9.1	0	19.4	-	2.8	13.0	0
f. College instructor	7.0	9.1	6.3	11.1	0	5.5	8.2	0
g. Other	53.8	50.0	50.0	41.7	33.3	69.4	56.5	70.0
15. Rating of the general level of instruction received in major area								
a. Outstandir$_5$	36.8	68.2	37.5	27.8	25.0	50.0	29.0	20.0
b. Good	54.7	27.3	62.5	58.3	75.0	44.4	62.3	50.0
c. Fair	6.5	4.5	0	13.9	0	5.6	5.8	10.0
d. Unsatisfactory	0	0	0	0	0	0	0	0
e. Totally unsatisfactory	.5	0	0	0	0	0	1.4	0
16. Extent to which Foothill College provided vocational information which permitted an intelligent vocational choice								
a. Highly satisfactory	11.4	4.5	12.5	8.3	16.7	13.9	13.0	10.0
b. Very satisfactory	26.4	13.6	43.7	30.6	41.7	16.7	29.0	10.0
c. Satisfactory	36.3	40.9	25.0	36.1	16.7	27.8	47.8	20.0
d. Unsatisfactory	6.0	13.6	6.2	8.3	8.3	0	5.8	0
e. Totally unsatisfactory	1.5	4.5	0	0	0	2.8	1.4	0

	Composite	Accounting	Dental Assisting	Design Drafting	Law Enforcement	Nursing	Secretary	Tool Design
17. Level of ease or difficulty of transition from college to work								
a. Very easy	32.8	27.3	43.7	27.8	33.3	27.8	39.1	20.0
b. Easy	25.9	4.5	43.7	16.7	16.7	16.7	31.9	20.0
c. Relatively easy	20.0	18.2	12.5	19.4	0	44.4	16.0	0
d. Difficult	3.5	9.1	0	5.5	0	5.5	1.4	0
e. Very difficult	.5	4.5	0	0	0	0	0	0
18. Factor or factors attributing to the incompletion of the A.A. Degree								
a. Low grade point average or disqualified	6.5	9.1	0	11.1	8.3	0	8.7	0
b. Marriage	5.0	4.5	0	0	16.7	0	10.1	0
c. Major courses sufficient for employment	12.0	9.1	0	2.8	0	0	26.1	0
d. Work conflict	8.0	4.5	0	16.7	33.3	0	5.8	10.0
e. Enrolled at another college	7.0	9.1	0	11.1	33.3	0	5.8	30.0
f. Personal problems	3.5	0	0	11.1	8.3	0	2.9	0
g. Lack of study time	6.5	4.5	0	8.3	0	0	7.2	40.0
h. Inadequate academic background	2.0	0	6.2	5.5	0	0	1.4	0
i. Health (illness, accident, pregnancy)	1.0	0	0	5.5	0	0	0	0
j. Military service	1.0	0	0	2.8	8.3	0	0	0
k. Attractive job offer	6.5	0	6.2	0	25.0	0	11.6	10.0
l. Difficulty with course	1.0	4.5	0	2.8	0	0	0	0
m. Discontent with course	2.0	0	6.2	5.5	0	0	1.4	0
n. Discontent with instructor	1.0	0	0	2.8	0	0	1.4	0
o. Change of major	3.5	4.5	0	11.1	8.3	0	0	10.0
p. Leaving area	3.0	0	0	2.8	33.3	0	1.4	0
q. Other	10.4	18.2	6.2	22.2	0	0	8.7	20.0
19. Importance of A.A. Degree from present vantage point of job experience								
a. Very important	20.4	9.1	12.5	25.0	50.0	13.9	20.3	30.0
b. Relatively important	28.9	9.1	62.5	30.6	16.7	30.5	26.1	40.0
c. Moderately important	18.4	27.3	18.7	19.4	8.3	5.5	23.2	20.0
d. Slightly helpful	12.9	18.2	6.3	0	16.7	19.4	17.4	0
e. Of no value	6.5	9.1	0	0	0	19.4	5.8	0
20. Adequacy of college experience in the area of interpersonal relationships and self-acceptance								
a. Very adequately	26.9	13.6	12.5	27.8	16.7	36.1	33.3	10.0
b. Adequately	53.7	59.1	75.0	47.2	8.3	55.5	55.1	70.0
c. Inadequately	5.5	4.5	6.2	2.8	50.0	0	2.9	0
d. Totally inadequately	.5	0	0	0	8.3	0	1.4	0

	Composite	Accounting	Dental Assisting	Design Drafting	Law Enforcement	Nursing	Secretary	Tool Design
21. Extra-curricular activities participated in while at Foothill								
a. Sports	7.0	13.6	12.5	11.1	0	0	5.8	0
b. Dramatics	.5	0	0	0	0	2.8	1.4	0
c. Choir	2.5	4.5	6.2	0	0	0	2.9	0
d. Band or orchestra	2.5	0	6.2	0	8.3	0	2.9	0
e. Student government	5.0	18.1	12.5	5.5	0	2.8	1.4	0
f. College service clubs	7.5	4.5	0	13.9	8.3	0	11.6	0
g. College publications	1.0	4.5	0	0	0	0	1.4	0
h. Special interest clubs	14.4	27.3	12.5	8.3	16.7	8.3	20.3	0
22. Rating of the general level of instruction received in general education courses								
a. Outstanding	17.9	31.8	12.5	11.1	8.3	11.1	23.2	20.0
b. Good	57.2	31.8	75.0	47.2	75.0	75.0	56.5	40.0
c. Fair	13.4	13.6	6.2	27.8	0	13.9	8.7	20.0
d. Poor	0	0	0	0	0	0	0	0
e. Totally inadequate	0	0	0	0	0	0	0	0
23. General education courses that should receive more emphasis in the student's training								
a. Art	6.5	9.1	6.2	8.3	0	5.6	7.2	0
b. Music	6.5	13.6	6.2	0	0	2.8	11.6	0
c. Drama	1.0	0	0	0	0	0	2.9	0
d. Philosophy	14.4	9.1	6.2	16.7	16.7	16.7	15.9	10.0
e. Literature	15.9	9.1	18.8	11.1	8.3	11.1	24.6	10.0
f. English	51.2	45.4	18.8	38.9	58.3	38.9	62.3	40.0
g. Speech	37.8	31.8	43.8	38.9	25.0	19.4	49.3	40.0
h. Economics	13.9	22.7	25.0	27.8	8.3	2.8	30.4	10.0
i. Geography	4.5	4.6	0	2.8	0	0	10.0	0
j. History	9.4	4.6	6.2	5.6	16.7	2.8	17.4	0
k. Political Science	25.4	31.8	31.2	22.2	33.3	27.8	24.6	0
l. Sociology	29.3	22.7	37.5	16.7	58.3	41.7	29.0	0
m. Anthropology	3.0	0	6.2	5.6	0	8.3	1.4	0
n. Psychology	43.8	31.8	62.5	27.8	41.7	63.9	44.9	20.0
o. Astronomy	.5	4.6	0	0	0	0	0	0
p. Physics	3.5	4.6	6.2	13.9	0	0	0	0
q. Chemistry	5.0	4.6	12.5	5.6	0	8.3	2.9	0
r. Mathematics	28.9	31.8	12.5	47.2	25.0	11.1	29.0	50.0
s. Zoology	2.5	4.6	6.2	0	0	5.6	1.4	0
t. Geology	0	0	0	0	0	0	0	0
u. Botany	.5	0	0	0	0	0	1.4	0
v. Health	16.9	9.1	18.8	19.4	25.0	19.4	15.9	10.0
w. Physical Education	8.0	9.1	6.2	8.3	16.7	11.1	5.8	0

	Composite	Accounting	Dental Assisting	Design Drafting	Law Enforcement	Nursing	Secretary	Tool Design
24. Were there courses not taken that would help in present job?								
a. Yes	36.8	40.9	37.5	25.0	58.3	50.0	31.9	30.0
b. No	39.3	31.8	50.0	41.7	25.0	33.3	42.0	50.0
25. In the major at Foothill, should some courses have been offered that were not?								
a. Yes	26.9	22.7	12.5	41.7	33.3	36.1	17.4	30.0
b. No	49.2	31.8	68.8	30.6	50.0	55.6	66.7	50.0
26. In the major at Foothill were some areas over emphasized as compared to their actual importance on the job?								
a. Yes	22.4	13.6	50.0	27.8	8.3	30.6	17.4	0
b. No	60.7	50.0	31.2	52.8	83.3	61.1	68.1	80.0
27. Are you satisfied with your current job?								
a. Yes	66.7	54.5	87.5	58.3	58.3	80.6	60.8	90.0
b. No	19.9	27.3	12.5	16.7	33.3	11.1	26.1	0
Reasons for job dissatisfaction								
a. No sense of involvement in job	4.0	0	6.2	2.8	0	2.8	7.2	0
b. Ineffective interpersonal relationships with fellow workers	.5	0	6.2	0	0	0	0	0
c. Lack of interest	4.0	0	18.8	0	8.3	2.8	4.4	0
d. No chance for advancement	6 5	9.1	0	5.6	8.3	0	11.6	0
e. Low salary	6.5	9.1	6.2	2.8	16.7	2.8	8.7	0
f. Not challenging	12.9	18.2	6.2	11.1	25.0	0	20.3	0
g. Other	6.0	4.6	0	8.3	0	8.3	7.2	0
28. Comparison of present position (if employed in area of college major) with expectations at the time of receiving A.A. degree								
a. Far better	11.4	13.6	0	2.8	8.3	22.2	13.0	10.0
b. Somewhat better	9.4	0	18.8	5.6	16.7	27.8	2.9	0
c. About what expected	28.7	13.6	62.5	22.2	25.0	36.1	29.0	10.0
d. Less than expected	2.5	0	0	0	0	2.8	5.8	0
e. A marked disappointment	.5	0	0	0	0	2.8	0	0

Monthly Salary Range by Vocational Program

Salaries	Low	Average	High
Accounting			
Women	220	323	408
Men	240	486	600
Dental Assisting	275	319	350
Design Drafting	256	435	675
Law Enforcement	344	521	575
Nursing	290	415	560
Secretary	240	355	530
Tool Design	368	557	750

The above salaries were based on the number of returns listed by major below:

Accounting
- Women = 6
- Men = 8

Dental Assisting = 14
Design Drafting = 20
Law Enforcement = 7
Nursing = 32
Secretary = 26
Tool Design = 9

DISCUSSION OF THE DATA

This section deals with a discussion of the statistics and written responses taken from the questionnaires.

1. Breakdown by sex revealed that two-thirds of the subjects were women. This was to be expected considering the nature of the programs included in the study.

3. An age breakdown by sex was included under accounting because it was the only program where sex distribution was almost equal.

   Tool Design majors possessed the highest mean age of the several programs, and this can probably be accounted for by the fact that these men usually do not go into Tool Design until they have gone through a tool and die apprenticeship program.

   The Dental Assisting students display the smallest deviation in age range, 20-23. Most dentists request young women for this position, and apparently their request is met.

8. The written responses to this item were almost all the same; the students were working at the job before attending Foothill College.

9. Responses were extremely varied, although several patterns could be discerned: fulfilling A.A. Degree requirements; fulfilling baccalaureate requirements; company in-service courses; correspondence and extension courses; adult education courses; courses for self-enhancement.

11. Of the subjects presently employed, 71.6% work in the local area surrounding Foothill College.

12. Twenty-six people responded to this item but only one response indicated a lack of employment. The other responses, not really applicable to the item, fell into two categories: one, attending school; two, performing duties as a homemaker.

13 Responses indicated no particular pattern of dissatisfaction. Listed below are some of the responses:

   "In between. I am really not that crazy about secretarial work. Secretarial studies can become dull."

   "To get employment in my major, I would have to start as if I had absolutely no experience."

   "You go out for work and no one will have you because you have no experience."

   "Because of pre-requisite requirements I was not able to take desired courses without several semesters of part time schooling."

14. Fifty-nine of the 82 written responses, 71.9%, indicated self interest in determining the major at Foothill. Others were: State Rehabilitation Counselors, High School Career Day, Orthodontist, curiosity about the field; fastest way to obtain a job.

18. Students answering this item indicated the following factors:

"Tired of school."
"Wanted a break from school routine and then found I enjoyed working more than attending school."
"Completely incompetent counseling."
"Classes too impersonal."
"Lack of funds to continue in college."
"Slow start grade-wise."
"Wanted to work."

20. Adequacy of college experience in area of interpersonal relationships and self-acceptance.

"Actual on-the-job experience is the best teacher."

"I learned more the first semester than I ever thought I could."

"It helped me develop more of a mature insight about people and myself."

"Informal class discussions helped greatly."

"Four years of military service before college helped me quite adequately."

"Foothill has already broadened my horizons and enriched my life."

"Certain classes such as art and political science really get people working together and better relations.

"More should be said of what to expect on the job."

"My ways of getting along with people were learned long before I got to college level so I didn't think college helped a great deal."

"Business 56 very helpful."

"In college I came in contact with a great variety of people and ideas as I have done in the working world."

"Much broader outlook on life - can look deeper into human behavior."

"Junior college seemed just a continuation of high school."

"I owe a lot to the way I was brought up also.

Generally, the responses fitted into two categories. One, that experiences helped a great deal. Two, self-acceptance and relations with others were well established before attending Foothill.

21. This item regarding extra-curricular activities was not designed to elicit student statements, but the following were written in:

"NONE!! I don't believe in them. Emphasis should be placed on education alone as far as I am concerned."

"Was not able to spend time with these - would liked to have been in the choir."

"The nursing curriculum and schedule was very heavy and a lot of time was spent off campus."

"I didn't have time for a damn thing."

This item received the lowest percentage of student response of all the items in the questionnaire. That the vocational majors do not participate in extra-curricular activities is clearly indicated, and the major reason appears in the statements mentioned above.

24. Courses mentioned are listed according to vocational major:

Accounting: advanced administrative courses, shorthand, corporate tax law, data processing, business economics.

Dental Assisting: chemistry, physics, anatomy, applied psychology.

Design Drafting: slide rule, trigonometry, electronics, electronic drafting, machine shop, printed circuit board design, art.

Law Enforcement: report writing, patrol procedures, narcotics and vice, speech.

Nursing: Philosophy, mathematics, chemistry, Spanish, interpersonal relationships, abnormal and child psychology.

Secretary: office manners, electronics, drafting, accounting 1A, English 1A, economics, business machines, data processing, principles of insurance, business correspondence.

Tool Design: slide rule.

25. Courses mentioned are listed according to vocational major:

Accounting: general home economics course, tax accounting, corporation accounting, customer relations.

Dental Assisting: anatomy.

Design Drafting: welding, speed drafting, strength of materials, architectural drafting, technical illustration.

Law Enforcement: report writing, judo, narcotics and vice, federal law.

Nursing. Anatomy and physiology for nurses, nutrition and special diets, team leadership, more experience in surgery, chemistry, child and abnormal psychology, medical terminology.

Secretary. Letter writing, practical experience in office procedures, statistics, vocabulary (legal, medical, general), legal courses.

Tool Design. Computer programming for numerical control machines, materials courses.

26. Areas indicated as overemphasized are listed by vocational major.

Accounting. Practice sets in first and second semester of accounting, typing and business correspondence.

Dental Assisting. Laboratory procedures. Most D.A. jobs (except orthodontics) require little if any lab work on the job. Dental prothestics, dental anatomy.

Design Drafting. Machine shop, advanced design drafting, mechanical drawing, descriptive geometry.

Nursing. Anatomy and physiology was much too detailed for our needs. Basic needs: microbiology, psychological aspects and communications.

Secretary. Letter writing - actual business letters are not written in any way like the way they are taught to us in class. Personal development, speed in shorthand, accuracy more necessary. In office procedures, offset machine is rarely used by secretary today. Business machine courses unnecessary.

27. Written responses specifying reasons for current job dissatisfaction were as follows:

"Not as busy as I would like to be."

"I feel I could do better."

"Over qualified for job."

"Not my true interest."

"Used in area not specifically trained for because of lack of available personnel."

"I have gone about as far in my field as is possible for a woman unless I become a certified public accountant which would not be feasible."

EVALUATION SHEET DISCUSSION

This section includes a list of duties not mentioned on the evaluation sheets, but which are being performed on the job. Also included is the evaluation sheet data. The figures appearing in the frequency of involvement indicate the number of subjects responding. Adding the four responses of each item reveals the number of students answering each item. Rank was determined by multiplying each response in the rank column by the appropriate value.

No rank is included in the Dental Assisting evaluation sheet because for some unexplained reason the information for ranking was omitted from the instructions.

The Nursing evaluation sheet requests more fill-in information than the other evaluation sheets but to maintain consistency within the study, only that portion will be presented that is consistent with the other programs.

The Secretary evaluations were compiled on the basis of those returns indicating that the responders were employed in a secretarial position. A number of students were working in non-secretarial positions, and therefore excluded from the evaluation.

Comments from employers of the Dental Assisting, Medical Assisting, and Nursing students are included in this section.

The percentage statistics presented in this section are based on the number of usable returns.

Accounting. Preparing balance sheets concerning cost of individual insurance claims; credit supervision; audit and pay all invoices; prepare monthly progress payment requests and invoices; cost accounting records of costs on all construction jobs; manually rating phone messages, maintain standard cost system; determine monthly cost of sales.

Design Drafting. Printed circuit boards; tape up; schematics; layouts; checking conformance to military specifications; free hand lettering; casting drawings; electronic drafting; drawing performance curves.

Nursing. Taking orders and calling doctors; supervising team and working students; directing team and team conference; bladder irrigation; I.V. rate and regulation; testing vision and hearing; suction; starting I.V. fluids; drawing blood for lead levels; ward administration; evaluation of emergencies; colostomy care; IPPB therapy; taking electrocardiograms; reading and transcribing orders; monitoring peritoneal dialysis; teaching auxiliary personnel; instructing personnel.

Secretary. Billing; use photo-copying machine; machine dictation; proofreading instruction manuals; check on claim drafts paid daily; make graphs and charts for advertising costs; key punch; run printing press.

Tool Design. Correct interpretation of complex tool drawings.

DUTIES AND RESPONSIBILITIES IN ACCOUNTING

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties according to their importance: 1 = minor; 2 = important; 3 = very important.

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A. Complete payroll and payroll records (government).	21	4	1	1	2
B. Maintain small set of books.	17	4	-	1	3
C. Work as a junior accountant under supervision of a senior accountant.	12	3	-	-	2
D. Do or assist with income tax preparation.	10	-	3	3	1
E. Establish a small set of books.	11	-	1	2	4

If you are performing functions in your present job that are not mentioned above, please list these functions below:

DUTIES AND RESPONSIBILITIES OF THE DESIGN DRAFTSMAN

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties according to their importance: 1 = minor; 2 = important; 3 = very important.

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
Utilization of:					
A. Elements of Orthographic projection and descriptive geometry.	42	5	3	9	2
B. Basic elements of sheetmetal layout and development.	39	5	4	4	4
C. Principles of shading.	23	1	1	2	14
D. Tolerance dimensioning.	58	14	4	1	-
E. Geometric dimensioning and toleranc-ing (true position).	45	9	6	3	1
F. Machine drawing and freehand sketching.	39	4	6	6	2
G. Perspective applied to machine parts.	33	3	3	9	4
H. Calculator and slide rule.	40	4	6	3	5
I. Gear design—spur and bevel.	26	1	1	6	10
J. Dimensioning as applied to drills, reamers, taper pins and dowel pins.	42	9	3	3	3
K. Inking procedures in line work and printing.	32	6	1	3	8
L. Metals and their finishes and alloys.	46	8	6	3	2
M. Design characteristics of springs, cams, and various type bearings.	33	1	6	7	5
N. Structural drafting of "I" beams and rivet values.	24	1	3	2	11
O. Piping and flow of liquids and piping symbols.	22	1	1	3	11
P. Timber roofing for pre-fab homes.	17	-	-	1	15
Q. Roadwork and mapping.	16	-	1	1	13
R. Precision measurements of machine parts with machine tools.	39	6	5	3	4
S. Welding symbols and drawing.	38	7	3	4	4
T. Vector forces-tension and compression.	28	1	1	6	10
U. String polygon and Mawell diagram.	18	-	-	2	14
V. Concrete and cement as applied to founda.	17	-	-	1	15

If you are performing functions in your present job that are not mentioned above, please list these functions: _____

DUTIES AND RESPONSIBILITIES OF THE DENTAL ASSISTANT

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties numerically according to their importance on the job. Please indicate the type of dentist you work for: ☐ general dentist ☐ Specialist: type_____

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A. Sterilization of set-ups and supplies.	___	10	2	-	-
B. Preparation of patient for surgical and operative procedures.	___	9	1	-	1
C. Charting of teeth.	___	3	1	3	3
D. Selection and set-up of armamentarium for surgical and operative procedures.	___	10	2	-	-
E. Dispense and mix dental cements and amalgam.	___	9	-	1	-
F. Prepare impression materials and load trays.	___	9	-	2	-
G. Pass and receive instruments and materials for various chairside procedures.	___	10	-	1	-
H. Clean and prepare operatory for next patient.	___	12	-	-	-
I. Expose dental roentgenograms.	___	6	3	2	1
J. Develop and mount dental roentgenograms.	___	10	2	-	-
K. Keep records of and file dental roentgenograms.	___	7	3	-	2
L. Care and adjustment of dental chair and unit.	___	11	-	1	-
M. Sharpening of instruments.	___	-	2	1	8
N. Perform minor prosthetic lab procedures.	___	4	2	1	4
O. Make appointments.	___	5	5	2	-
P. Receive patients and visitors.	___	8	3	-	-
Q. Obtain case history records.	___	2	4	5	1
R. Maintain record of treatment planning & estimates.	___	4	1	2	6
S. Maintain financial record of office.	___	2	1	-	8
T. Billing and collection of accounts.	___	4	1	2	4
U. Place, receive and route telephone calls.	___	4	2	5	1
V. Maintain effective recall system.	___	5	2	1	3
W. General office typing.	___	4	-	4	3
X. Order and maintain balance of supplies.	___	9	2	-	1
Y. Fill out insurance forms.	___	1	1	-	7

If you are performing functions in your present job that are not mentioned above, please list these functions below:

_____

_____

_____

DUTIES AND RESPONSIBILITIES OF THE REGISTERED NURSE

Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties according to their importance:
1 = minor; 2 = important; 3 = very important.

	Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A.	Injections	82	25	7	1	-
B.	Medication, general	84	28	3	2	-
C.	Enemas	42	2	6	13	9
D.	Blood pressure readings	71	18	12	1	2
E.	Temperature, pulse and respiratory readings	65	13	12	7	-
F.	Apply and change dressings	65	8	10	12	2
G.	Catheterization	69	-	14	11	7
H.	Patient bathing	45	8	5	5	14
I.	Tracheotomy care	68	-	6	9	17
J.	Naso-gastric tube irrigation	52	1	12	11	8
K.	Turn patient in stryker frame	49	-	-	5	25
L.	Care for patients in traction	57	4	6	9	13
M.	Patient chart maintenance	66	29	2	1	-
N.	Directing work of auxiliary personnel	73	21	5	2	4
O.	Explanations to patients	81	24	8	-	1
P.	Explanations to family	80	15	12	5	1
	Other duties not listed:					
	_____	___	___	___	___	___
	_____	___	___	___	___	___
	_____	___	___	___	___	___

Please list any of your duties for which you did not receive training at Foothill College:

_____

_____

_____

Please list any areas which you believe were over-emphasized in your training at Foothill College:

_____

_____

_____

_____

DUTIES AND RESPONSIBILITIES OF THE SECRETARY

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties according to their importance: 1 = minor; 2 = important; 3 = very important.

	Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A.	Take dictation and transcribe.	82	11	9	12	11
B.	File (general and personal).	98	25	10	9	5
C.	Read and sort mail.	87	24	10	2	10
D.	Place outgoing and receive and route incoming telephone calls.	103	28	10	3	5
E.	Make and keep records of appointments.	80	13	6	12	14
F.	Compose written communications on own initiative, from oral instruction, or from longhand notes.	77	8	10	15	13
G.	Receive customers and meet public.	96	22	6	7	11
H.	Requisition supplies.	76	13	12	8	11
I.	Copy from employer's longhand notes.	94	20	10	5	7
J.	Make hotel reservations and transportation reservations.	64	6	3	8	25
K.	Operate adding or calculating machines.	68	8	7	12	19
L.	Organize and type reports from rough data.	92	19	6	11	10
M.	Gather material for reports.	59	8	5	9	25
N.	Assist with preparation of written reports, etc.	62	8	5	13	19
O.	Keep office or company financial records.	58	8	3	4	32
P.	Type and index minutes.	46	2	2	8	28
Q.	Type copy for publication.	66	6	9	2	23
R.	Keep employer's personal, financial, and other records.	58	4	4	5	26
S.	Prepare payrolls and budgets.	50	-	2	4	31
T.	Supervise clerical and stenographic employees.	48	4	2	4	30
U.	Do mimeographing and hectographing.	61	9	8	5	21
V.	Take speeches as dictated.	44	3	1	5	30
W.	Act as office manager.	50	2	-	6	25
X.	Take notes at meetings.	45	3	-	9	27
Y.	Take direct dictation to typewriter.	62	3	6	14	21

If you are performing functions in your present job that are not mentioned above, please list these functions below:

_____

_____

_____

COMMENTS FROM EMPLOYERS

Listed below are comments from dentists, physicians, and related personnel concerning Foothill's vocational programs in Dental Assisting, Medical Assisting, and Nursing.

Comments by Dentists about Dental Assisting Program

	Frequency
Excellent program; outstanding graduates.	4
Your program gives a professional touch missing in many dental assistants. This is necessary if professional status with licensing is to be obtained.	1
Roentgenographic results are excellent.	1
Training has almost no preparation for orthodontics. There should be more lab procedures and other mechanical procedures for orthodontics—not just a brief description of the three types of mal-occlusions.	3
Graduate is too sensitive to direction and criticism.	1
One-year program with second semester "in office" training would be more honest appraisal of the time needed. Two years is just too long for the product produced. I couldn't care less about accreditation of the graduates.	1

Comments by Physicians about Medical Assisting Program

Overall first rate training	1
Excellent in assisting and very pleasant with the patients.	3
So poorly trained in "A through E," that I can't allow them to even try "G through P."	1
Starting salaries suggested are too high for their limited capabilities.	1
Very weak in telephone manner and technique.	1
Lack of promptness on the job.	1
Too much use of phone for personal reasons.	1
Girls tend to develop favorites who get preferential treatment.	1
Spelling improvement needed.	1

	Frequency
Need help in filing.	1
Shorthand would be valuable, but is not necessary.	2
Although difficult to teach, psychological techniques are very important in meeting and handling patients.	2
With increasing medical insurance (and in larger offices), the medical assistant needs to be more of a secretary (fast, accurate typist) and less of a medical assistant.	3
Need more training in reception skills than in medical techniques.	1

Comments by Employers of Nursing Program (R.N. Graduates)

Excellent; very good; well prepared	7
Interested in self-progress; responds to instructions and suggestions.	3
Especially observant of patient conditions.	3
Good patient relations.	1
Organizes work plan especially well.	2
Leadership lacking; not enough team-leading experience.	4
More stress on organization of duties (self or delegated).	2
Some difficulty reporting patient conditions reliably.	1
Resents authority.	1
Not always dependable for physical care of patient.	1

How does this nurse compare with others who have worked as graduate nurses for approximately the same length of time?

Better than average.	6
Very well.	5
Lacks extra year of experience for self-confidence.	1
Growth not as rapid as average.	2

How long has this nurse worked under your supervision?

1 month = 1 graduate	6 months = 3 graduates
2 months = 2 graduates	12 months = 3 graduates
3 months = 1 graduate	15 months = 1 graduate
4 months = 1 graduate	30 months = 1 graduate
5 months = 2 graduates	

DUTIES AND RESPONSIBILITIES OF THE DENTAL ASSISTANT

(Employer)

Below are various duties and responsibilities of the Dental Assistant. Please rate the approximate level of proficiency of the Foothill College graduate(s) in your employ, past or present. If a given activity does not apply, merely write "N.A." after it. Please rank each item from 1 to 3 according to its level of importance, 3 being the highest.

	Duties and Responsibilities	Rank	Poor	Fair	Good	Excellent
A.	Sterilization of set-ups and supplies.	22	-	-	2	8
B.	Preparation of patient for surgical and operative procedures.	15	-	2	4	3
C.	Charting of teeth.	4	-	1	2	-
D.	Selection and set-up of armamentarium for surgical and operative procedures.	16	-	1	4	5
E.	Dispense and mix dental cements and amalgam.	19	-	1	4	4
F.	Prepare impression materials and load trays.	14	-	2	3	3
G.	Pass and receive instruments and materials for various chairside procedures.	19	-	1	1	7
H	Clean and prepare operatory for next patient.	20	-	2	4	4
I.	Expose dental roentgenograms.	17	-	2	5	3
J.	Develop and mount dental roentgenograms.	14	-	1	5	4
K.	Keep records of and file dental roentgenograms.	13	-	-	6	3
L.	Care and adjustment of dental chair and unit.	16	-	2	5	2
M.	Sharpening of instruments.	2	1	-	3	1.
N.	Perform minor prosthetic lab procedures.	9	-	1	4	2
O.	Make appointments.	21	-	2	5	2
P.	Receive patients and visitors.	22	-	1	6	4
Q.	Obtain case history records.	10	-	2	3	2
R.	Maintain record of treatment planning and estimates.	3	1	-	2	-
S.	Maintain financial record of office.	12	-	2	3	-
T.	Billing and collection of accounts.	14	-	3	2	-
U	Place, receive and route telephone calls.	19	-	3	4	1
V.	Maintain effective recall system.	12	-	2	4	1
W.	General office typing	11	1	2	3	1
X.	Order and maintain balance of supplies.	18	1	1	5	4
Y.	Fill out insurance forms	5	-	1	2	-
Z.	Other:					
	_____	___	___	___	___	___
	_____	___	___	___	___	___

DUTIES AND RESPONSIBILITIES OF THE MEDICAL ASSISTANT (Employer)

Below are various duties and responsibilities of the Medical Assistant. Please rate the approximate level of proficiency of the Foothill College graduate(s) in your employ, past or present. If a given activity does not apply, merely write "N.A." after it. Please rank each item from 1 to 3 according to its level of importance, 3 being the highest.

	Duties and Responsibilities	Rank	Poor	Fair	Good	Excellent
A.	Reception work.	32	1	3	6	3
B.	Answering the telephone and handling the mail.	33	1	2	3	4
C.	Make appointments.	27	1	3	5	4
D.	Typing and shorthand.	22	2	2	7	-
E.	Dictating machine.	20	3	1	3	3
F.	Filing.	22	3	-	4	5
G.	Complete insurance forms.	20	3	2	3	2
H.	Industrial reports.	14	3	-	5	1
I.	Banking.	13	3	1	2	3
J.	Bookkeeping and Accounting.	18	2	1	1	5
K.	Reconcile bank statement.	8	3	1	-	2
L.	Close books for the month.	7	2	2	-	2
M.	Quarterly tax return.	5	3	1	-	1
N.	Write checks.	6	2	1	2	2
O.	Statements.	17	-	-	6	3
P.	Handle collections.	13	2	3	3	1
Q.	Sterilization.	19	-	-	7	4
R.	Order supplies.	17	-	5	3	4
S.	Assist in examinations.	14	-	4	1	5
T.	Take blood pressure.	5	3	2	2	1
U.	Bandaging and dressing.	5	3	-	1	2
V.	Prepare and give hypodermic injections.	12	-	3	1	4
W.	Prepare surgical tray.	10	-	3	2	2
X.	Assist in minor surgery.	6	-	3	2	2
Y.	Draw intravenous blood.	3	3	-	-	1
Z.	Allergy tests.	1	3	-	-	1
	Other					
	_____	___	___	___	___	___
	_____	___	___	___	___	___
	_____	___	___	___	___	___
	_____	___	___	___	___	___

EVALUATION OF FOOTHILL COLLEGE NURSING GRADUATES (R.N.) (Employer)

Foothill College would like to know how its Registered Nurse graduates are performing on the job. Any information you can give us regarding strengths and weaknesses will help us to better prepare our students for your needs. Please be completely frank in your responses. Also rank these duties according to their importance: 1 = minor; 2 = important; 3 = very important.

Duties and Responsibilities	Rank	Poor	Fair	Good	Excellent
A. Plans nursing care for patient as an individual; is not task oriented.	29	1	2	9	3
B. Contributes to patient's comfort; has skill in turning, lifting, positioning, getting out of bed, etc.	32	-	2	9	4
C. Carries out nursing techniques satisfactorily. (Bath, enemas, medications, etc.)	30	-	4	5	6
D. Is able to operate special equipment; suction, oxygen, etc.	29	-	3	7	5
E. Seeks guidance and assistance when unsure of techniques.	32	-	3	4	8
F. Observes and reports observations to head nurse or team leader. (Changes in patient's condition, signs, symptoms, etc.)	31	1	1	8	5
G. Records pertinent information accurately on patient's chart.	30	1	2	7	5
H. Uses opportunities to talk with patients.	27	-	1	10	3
I. Is aware of and courteous to patient's family.	26	-	2	7	5
J. Explains procedures and treatments to patient and his family in terms they can understand.	29	1	1	7	5
K. Utilizes suggestions and constructive criticism to improve her patient care.	26	1	2	5	7
L. Assumes responsibility for increasing her knowledge; asks questions, uses source materials, seeks guidance.	27	-	2	7	5
M. Talks easily with doctors and others involved in care of patients.	27	-	3	8	3
N. Is courteous to and considerate of co-workers.	27	-	1	9	5
O. Organizes her activities appropriately; care and treatments on time, etc.	26	1	3	7	3
P. Plans with auxiliary personnel in such a way that patients receive nursing care in accord with their illness and needs.	28	-	5	6	4
Q. Demonstrates an awareness of total nursing unit; responds to patients other than those assigned to her, assists others, is aware of organization and housekeeping of entire unit.	25	2	2	7	4
R. Presents a good personal appearance.	26	-	2	7	6
S. Prefers giving direct care to patients rather than directing others.	24	-	3	8	3
T. Gives thorough nursing care to her patients.	31	1	3	6	5
U. Organizes effectively to give good nursing care to a group of patients.	29	1	5	5	4

PROBLEMS AND RECOMMENDATIONS

A number of problems were encountered. Some of these were inherent in the design, and some were due to other factors. Alleviation of these problems would allow for sharper, more precise future studies.

The most disappointing aspect of the study was the low percentage of returns. Almost every survey conducted by mail encounters a similar problem. The two causes for this appear to be a failure by former students to maintain current address information through the post office and at Foothill College, and lethargy on the part of former students to return questionnaires. Perhaps in orientation classes and in the vocational classes, both day and night, students should be advised of the problems and their aid and cooperation could be elicited for future surveys.

Another major problem was that a student's major field could not be determined by the pattern of courses a student completed. An illustration of this was encountered when questionnaires were sent to all students who had completed Business 65 (Intermediate Accounting). A number of questionnaires returned indicated that instead of being accounting majors as anticipated, the students were Data Processing majors. A glance at the D.P. curriculum revealed that Business 65 was a requirement in that major. Similar problems were encountered in other areas where several majors required the key courses. This problem can be solved by checking the program sheets in the student file. The programs will list the major.

The questionnaire was primarily constructed for students who were permanently employed for the first time upon completing their education at Foothill College. As a result, some items were not appropriate for students who were only enrolled in a course or two, either day or night. Many of these students wrote N/A (Not applicable) to the items instead of answering them. Some returns were untouched except for the first few items. A few responders enclosed notes indicating they had only taken one course at Foothill, and therefore felt that the questionnaire was not meant for them.

Too frequently the students are not working in fields related to their majors, thus rendering items 24, 25, 26, and 27 meaningless. This situation would also affect the evaluation sheets.

Still another problem was encountered when questionnaires were sent to students still attending school. Here again the students left many of the items unanswered even when these items did not relate to a job and could have been answered. Assuming that the conductors of a study would wish to exclude these individuals in the future, the question would arise as to how to determine whether they are in school or not.

Though this study did not discriminate between day students and night students or between part-time and full-time students, future studies may be set up along these dividing lines, and some thought should be given as to how these students could be identified. During one semester a student

may attend full time during the day, and then in some later semester that student attends part time in the day or just in the evening. In what category would the student be placed?

Recommendations and refinements for future surveys appear as solutions to the problems posed above. A few refinements should be made in the general questionnaire. It might be of value to know if subjects continue on to colleges or universitie, after leaving Foothill. Item 9 covers this but it is not satisfactory. A suggested item follows:

a. completed one year at a college
b. completed two or more years at a college
c. earned B.A. or B.S. degree
d. Master's Degree

More specific information could be requested under item 11 with regard to salary. Under present job information, there should be a heading for "current salary." Students currently employed can only indicate starting salary, and current salary data is an important part of a follow-up study.

Item 14 should include the category "self interest."

APPENDIX A

FOOTHILL COLLEGE

12345 EL MONTE ROAD • LOS ALTOS HILLS, CALIFORNIA

TELEPHONE 948-8590

1965-1966

DEAR FORMER STUDENT:

A major purpose of Foothill College is to provide an educational program that prepares its graduates to gain and hold satisfying positions in the world of work.

The determination of whether this goal is being fully realized can be made only by thorough and coutinuing surveys of Foothill alumni. Your complete and frank responses to the accompanying questionnaire will be of great help in the evaluation and upgrading of the College's Curriculum. Please be assured that your responses will be most carefully studied and evaluated while at the same time being held in the utmost confidence. Your full cooperation in this effort will be of great value.

For your convenience, we have enclosed a self-addressed envelope, and your prompt reply will be appreciated.

Sincerely,

Gibb R. Madsen

GIBB R. MADSEN
Dean of Students

Nathan H. Boortz

NATHAN H. BOORTZ
Director of Technical Education

GRM/NHB:mj

Enclosures

FOOTHILL COLLEGE
Los Altos Hills, California

VOCATIONAL QUESTIONNAIRE

1. Name_____ (Mr., Miss, Mrs) _____
   Last First Middle — If married, give maiden name

2. Address_____ Phone_____
   Number Street City State

3. Age____ Birthdate_____Marital Status ☐ Single ☐ Married or previously married

4. Date of last attendance at Foothill _____ Did you graduate? ☐ Yes ☐ No

5. Your major while at Foothill _____

6. Please indicate which of the following categories of courses taken at Foothill is applicable to you:

   a. ___ Received the Associate in Arts Degree
   b. ___ Received a Certificate of Proficiency
   c. ___ Finished the sequence in the major
   d. ___ Finished one year of the sequence in the major
   e. ___ Less than one year of the sequence in the major

7. At the present time, I am:

   a. ___ Working full time
   b. ___ Working part time
   c. ___ Out of work
   d. ___ Going to school
   e. ___ Housekeeping
   f. ___ Night school

8. How did you obtain your first position after leaving Foothill?

   a. ___ Foothill Placement Office
   b. ___ Through an instructor
   c. ___ Outside employment agency
   d. ___ Friend or relative
   e. ___ Application on own
   f ___ Want ads
   g. ___ Other (specify)_____

9. Have you attended Foothill or any other college or training program since obtaining your present position? ☐ Yes ☐ no. If yes, please indicate the nature of the program and degree or certificate: _____

_____

10. If you are presently employed, is it in an area related to the major which you took while at Foothill College?

    a. ___ To a very large degree
    b. ___ To a fairly large degree
    c. ___ Moderately associated
    d. ___ Minimally associated
    e. ___ Not at all

11. List jobs you have held since leaving Foothill (begin with present job, if working, and work back. Please leave present job space blank if not currently employed.)

	Name of Employer and City of Employment	Job Title	Dates of Employment		Salary		Reason for Leaving
			From	To	Starting	Leaving	
Present							
2							
3							
4							
5							
6							

12. If not currently employed, please state reason why.

_____

_____

13. Are you satisfied with the major you took while at Foothill? ☐ Yes ☐ No.
If not, why? _____

_____

14. What was the major influence in determining your major while at Foothill College?

a. ___ College counselor
b. ___ High school counselor
c. ___ Friend
d. ___ Parent
e. ___ High school teacher
f. ___ College instructor
g. ___ Other (specify) _____

15. Please characterize the general level of instruction you received in your major area:

a. ___ Outstanding
b. ___ Good
c. ___ Fair
d. ___ Poor
e. ___ Totally inadequate

16. To what extent do you feel that Foothill College gave you vocational information which permitted you to make an intelligent vocational choice?

a. ___ Highly satisfactory
b. ___ Very satisfactory
c. ___ Satisfactory
d. ___ Unsatisfactory
e. ___ Totally unsatisfactory

17. Please indicate the transition from college to work:

a. ___ Very easy
b. ___ Easy
c. ___ Relatively easy
d. ___ Difficult
e. ___ Very difficult

18. If you did not receive an A.A. degree, what factor or factors do you attribute your incompletion of the degree:

a. ___ Low grade point average or disqualified
b. ___ Marriage
c. ___ Felt major courses sufficient for employment
d. ___ Work conflict
e. ___ Enrolled at another college
f. ___ Personal problems
g. ___ Lack of study time
h. ___ Inadequate academic background
i. ___ Health (illness, accident, pregnancy)
j. ___ Military service
k. ___ Attractive job offer
l. ___ Difficulty with course
m. ___ Discontent with course
n. ___ Discontent with instructor
o. ___ Change of major
p. ___ Leaving area
q. ___ Other (specify) _____

19. From your present vantage point of job experience, how do you view the A.A. degree?

a. ___ Very important
b. ___ Relatively important
c. ___ Moderately important
d. ___ Slightly helpful
e. ___ Of no value

20. How adequately did your college experiences prepare you for getting along with people, knowing and accepting yourself, tolerating the opinions and feelings of others?

a. ___ Very adequately
b. ___ Adequately
c. Inadequately
d. Totally inadequately

Comments: _____

_____

21. In what extra-curricular activities did you actively participate while at Foothill?

a. ___ Sports
b. ___ Dramatics
c. ___ Choir
d. ___ Band or orchestra
e. ___ Student government
f. ___ College service clubs
g. ___ College publications
h. ___ Special interest clubs

22. Characterize the general level of instruction you received in the required general education program:

a. ___ Outstanding
b. ___ Good
c. ___ Fair
d. ___ Poor
e. ___ Totally inadequate

23. What courses from the general education program do you feel should receive more emphasis in the student's training to better prepare him for the vocational world?

a. ___	Art	g. ___	Speech	m. ___	Anthropology	s. ___	Zoology
b. ___	Music	h. ___	Economics	n. ___	Psychology	t. ___	Geology
c. ___	Drama	i. ___	Geography	o. ___	Astronomy	u. ___	Botany
d. ___	Philosophy	j. ___	History	p. ___	Physics	v. ___	Health
e. ___	Literature	k. ___	Political Science	q. ___	Chemistry	w. ___	Physical Education
f. ___	English	l. ___	Sociology	r. ___	Mathematics		

24. Are there any courses that you did not take that you think would help you on your present job? ☐ Yes ☐ No. If yes, please list courses _____

_____

25. In your major field at Foothill, are there courses that you think should be offered that are not? ☐ Yes ☐ No. If yes, please list courses _____

_____

26. In your major field at Foothill, do you think that some areas are over emphasized as compared to their actual importance on the job? ☐ Yes ☐ No. If yes, please list:

_____

27. Are you satisfied with your current job? ☐ Yes ☐ No. If not, please specify reasons for your dissatisfaction:

a. ___ Do not have a sense of involvement in the job

b. ___ Failure to establish effective interpersonal relationships with fellow workers

c. ___ Lack of interest

d. ___ No chance for advancement

e. ___ Low salary

f. ___ Not sufficiently challenging

g. ___ Other (specify) _____

28. If you are now working in the area of your college major, how does your present position compare with your expectations at the time of receiving the A.A. degree?

a. ___ Far better

b. ___ Somewhat better

c. ___ About what I expected

d. ___ Less than expected

e. ___ A marked disappointment

DUTIES AND RESPONSIBILITIES IN ACCOUNTING

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties according to their importance: 1 = minor; 2 = important; 3 = very important.

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A. Complete payroll and payroll records (government).	___	___	___	___	___
B. Maintain small set of books.	___	___	___	___	___
C. Work as a junior accountant under supervision of a senior accountant.	___	___	___	___	___
D. Do or assist with income tax preparation.	___	___	___	___	___
E. Establish a small set of books.	___	___	___	___	___

If you are performing functions in your present job that are not mentioned above, please list these functions below:

_____

_____

_____

DUTIES AND RESPONSIBILITIES OF THE DENTAL ASSISTANT

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties numerically according to their importance on the job. Please indicate the type of dentist you work for: ☐ general dentist ☐ Specialist: type_____

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A. Sterilization of set-ups and supplies.					
B. Preparation of patient for surgical and operative procedures.					
C. Charting of teeth.					
D. Selection and set-up of armamentarium for surgical and operative procedures.					
E. Dispense and mix dental cements and amalgam.					
F. Prepare impression materials and load trays.					
G. Pass and receive instruments and materials for various chairside procedures.					
H. Clean and prepare operatory for next patient.					
I. Expose dental roentgenograms.					
J. Develop and mount dental roentgenograms.					
K. Keep records of and file dental roentgenograms.					
L. Care and adjustment of dental chair and unit.					
M. Sharpening of instruments.					
N. Perform minor prosthetic lab procedures.					
O. Make appointments.					
P. Receive patients and visitors.					
Q. Obtain case history records.					
R. Maintain record of treatment planning & estimates.					
S. Maintain financial record of office.					
T. Billing and collection of accounts.					
U. Place, receive and route telephone calls.					
V. Maintain effective recall system.					
W. General office typing.					
X. Order and maintain balance of supplies.					
Y. Fill out insurance forms.					

If you are performing functions in your present job that are not mentioned above, please list these functions below:

_____

_____

_____

DUTIES AND RESPONSIBILITIES OF THE DESIGN DRAFTSMAN

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties according to their importance. 1 = minor; 2 = important; 3 = very important.

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
Utilization of:					
A. Elements of Orthographic projection and descriptive geometry.	____	____	____	____	____
B. Basic elements of sheetmetal layout and development.	____	____	____	____	____
C. Principles of shading.	____	____	____	____	____
D. Tolerance dimensioning.	____	____	____	____	____
E. Geometric dimensioning and toleranc-ing (true position).	____	____	____	____	____
F. Machine drawing and freehand sketching.	____	____	____	____	____
G. Perspective applied to machine parts.	____	____	____	____	____
H. Calculator and slide rule.	____	____	____	____	____
I. Gear design--spur and bevel.	____	____	____	____	____
J. Dimensioning as applied to drills, reamers, taper pins and dowel pins.	____	____	____	____	____
K. Inking procedures in line work and printing.	____	____	____	____	____
L. Metals and their finishes and alloys.	____	____	____	____	____
M. Design characteristics of springs, cams, and various type bearings.	____	____	____	____	____
N. Structural drafting of "I" beams and rivet values.	____	____	____	____	____
O. Piping and flow of liquids and piping symbols.	____	____	____	____	____
P. Timber roofing for pre-fab homes.	____	____	____	____	____
Q. Roadwork and mapping.	____	____	____	____	____
R. Precision measurements of machine parts with machine tools.	____	____	____	____	____
S. Welding symbols and drawing.	____	____	____	____	____
T. Vector forces-tension and compression.	____	____	____	____	____
U. String polygon and Mawell diagram.	____	____	____	____	____
V. Concrete and cement as applied to founda.	____	____	____	____	____

If you are performing functions in your present job that are not mentioned above, please list these functions: _____

DUTIES AND RESPONSIBILITIES OF THE REGISTERED NURSE

Please indicate by a check in the appropriate column the frequency with which you are involved in the following activities. Also rank these duties according to their importance:
1 = minor; 2 = important; 3 = very important

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A. Injections	___	___	___	___	___
B. Medication, general	___	___	___	___	___
C. Enemas	___	___	___	___	___
D. Blood pressure readings	___	___	___	___	___
E. Temperature, pulse and respiratory readings	___	___	___	___	___
F. Apply and change dressings	___	___	___	___	___
G. Catheterization	___	___	___	___	___
H. Patient bathing	___	___	___	___	___
I Tracheotomy care	___	___	___	___	___
J. Naso-gastric tube irrigation	___	___	___	___	___
K. Turn patient in stryker frame	___	___	___	___	___
L. Care for patients in traction	___	___	___	___	___
M. Patient chart maintenance	___	___	___	___	___
N. Directing work of auxiliary personnel	___	___	___	___	___
O. Explanations to patients	___	___	___	___	___
P. Explanations to family	___	___	___	___	___
Other duties not listed:					
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___

Please list any of your duties for which you did not receive training at Foothill College.

_____

_____

_____

Please list any areas which you believe were over-emphasized in your training at Foothill College.

_____

_____

_____

_____

Additional responses desired:

1. Describe any strengths and weaknesses of the nurse which will be helpful to us in evaluating the effectiveness of the nursing program.

_____

_____

_____

2. How does this nurse compare with others who have worked as graduate nurses for approximately the same length of time?

_____

_____

_____

3. How long has this nurse worked under your supervision?

_____

DUTIES AND RESPONSIBILITIES OF THE SECRETARY

Below are questions concerning your duties and responsibilities on the job. Please indicate by a check in the appropriate column the frequency with which you are involved in the follow ing activities Also rank these duties numerically according to their importance on the job.

Duties and Responsibilities	Rank	Continually	Frequently	Occasionally	Rarely
A. Take dictation and transcribe					
B. File (general and personal).					
C. Read and sort mail					
D. Place outgoing and receive and route incoming telephone calls					
E. Make and keep records of appointments.					
F. Compose written communications on own initiative, from oral instruction, or from longhand notes.					
G. Receive customers and meet public.					
H. Requisition supplies					
I. Copy from employer's longhand notes					
J. Make hotel reservations and transportation reservations.					
K. Operate adding or calculating machines.					
L. Organize and type reports from rough data.					
M. Gather material for reports.					
N. Assist with preparation of written reports, etc					
O Keep office or company financial records.					
P. Type and index minutes					
Q. Type copy for publication.					
R. Keep employer's personal, financial, and other records.					
S. Prepare payrolls and budgets.					
T. Supervise clerical and stenographic employees.					
U. Do mimeographing and hectographing.					
V. Take speeches as dictated.					
W. Act as office manager.					
X. Take notes at meetings.					
Y. Take direct dictation to typewriter.					

If you are performing functions in your present job that are not mentioned above, please list these functions below:

_____

_____

_____

FOOTHILL COLLEGE

12345 EL MONTE ROAD • LOS ALTOS HILLS, CALIFORNIA 94022

TELEPHONE 948-8590

1965-66

Foothill College establishes specific two-year vocational training programs in an attempt to serve the needs of its community.

After operating a program for a period of time, we want to know how our graduates are performing on the job. Hence, we are asking your help in evaluating the results of our program so we can serve you better in the future, if possible.

Please respond with complete frankness. Your information will be anonymous since we are, in this case, interested in patterns rather than a single individual performance.

We sincerely appreciate your cooperation in assisting us in this important process.

Yours truly,

Malcolm D. Maxwell

Malcolm D. Maxwell
Health Science Counselor

MDM: jd

Enclosures

DUTIES AND RESPONSIBILITIES OF THE DENTAL ASSISTANT (Employer)

Below are various duties and responsibilities of the Dental Assistant. Please rate the approximate level of proficiency of the Foothill College graduate(s) in your employ, past or present. If a given activity does not apply, merely write "N.A." after it. Please rank each item from 1 to 3 according to its level of importance, 3 being the highest.

	Duties and Responsibilities	Rank	Poor	Fair	Good	Excellent
A.	Sterilization of set-ups and supplies.	___	___	___	___	___
B.	Preparation of patient for surgical and operative procedures.	___	___	___	___	___
C.	Charting of teeth.	___	___	___	___	___
D.	Selection and set-up of armamentarium for surgical and operative procedures.	___	___	___	___	___
E.	Dispense and mix dental cements and amalgam.	___	___	___	___	___
F.	Prepare impression materials and load trays.	___	___	___	___	___
G.	Pass and receive instruments and materials for various chairside procedures.	___	___	___	___	___
H.	Clean and prepare operatory for next patient.	___	___	___	___	___
I.	Expose dental roentgenograms.	___	___	___	___	___
J.	Develop and mount dental roentgenograms.	___	___	___	___	___
K.	Keep records of and file dental roentgenograms.	___	___	___	___	___
L.	Care and adjustment of dental chair and unit.	___	___	___	___	___
M.	Sharpening of instruments.	___	___	___	___	___
N.	Perform minor prosthetic lab procedures.	___	___	___	___	___
O.	Make appointments.	___	___	___	___	___
P.	Receive patients and visitors.	___	___	___	___	___
Q.	Obtain case history records.	___	___	___	___	___
R.	Maintain record of treatment planning and estimates.	___	___	___	___	___
S.	Maintain financial record of office.	___	___	___	___	___
T.	Billing and collection of accounts.	___	___	___	___	___
U.	Place, receive and route telephone calls.	___	___	___	___	___
V.	Maintain effective recall system.	___	___	___	___	___
W.	General office typing.	___	___	___	___	___
X.	Order and maintain balance of supplies.	___	___	___	___	___
Y.	Fill out insurance forms.	___	___	___	___	___
Z.	Other:					
	_____	___	___	___	___	___
	_____	___	___	___	___	___
	_____	___	___	___	___	___

Please give us any additional information you think we should know about strengths or weaknesses in our Dental Assisting program at Foothill College:

_____

_____

_____

_____

_____

DUTIES AND RESPONSIBILITIES OF THE MEDICAL ASSISTANT

(Employer)

Below are various duties and responsibilities of the Medical Assistant. Please rate the approximate level of proficiency of the Foothill College graduate(s) in your employ, past or present. If a given activity does <u>not</u> <u>apply</u>, merely write "N.A." after it. Please rank each item from 1 to 3 according to its level of importance, 3 being the highest.

	Duties and Responsibilities	Rank	Poor	Fair	Good	Excellent
A.	Reception work.	___	___	___	___	___
B.	Answering the telephone and handling the mail.	___	___	___	___	___
C.	Make appointments.	___	___	___	___	___
D.	Typing and shorthand.	___	___	___	___	___
E.	Dictating machine.	___	___	___	___	___
F.	Filing.	___	___	___	___	___
G.	Complete insurance forms.	___	___	___	___	___
H.	Industrial reports.	___	___	___	___	___
I.	Banking.	___	___	___	___	___
J.	Bookkeeping and Accounting.	___	___	___	___	___
K.	Reconcile bank statement.	___	___	___	___	___
L.	Close books for the month.	___	___	___	___	___
M.	Quarterly tax return.	___	___	___	___	___
N.	Write checks.	___	___	___	___	___
O.	Statements.	___	___	___	___	___
P.	Handle collections.	___	___	___	___	___
Q.	Sterilization.	___	___	___	___	___
R.	Order supplies.	___	___	___	___	___
S.	Assist in examinations.	___	___	___	___	___
T.	Take blood pressure.	___	___	___	___	___
U.	Bandaging and dressing.	___	___	___	___	___
V.	Prepare and give hypodermic injections.	___	___	___	___	___
W.	Prepare surgical tray.	___	___	___	___	___
X.	Assist in minor surgery.	___	___	___	___	___
Y.	Draw intravenous blood.	___	___	___	___	___
Z.	Allergy tests.	___	___	___	___	___
	Other:					
	_____	___	___	___	___	___
	_____	___	___	___	___	___
	_____	___	___	___	___	___

Please give us any additional information you think we should know about strengths or weaknesses in our Medical Assisting program at Foothill College:

_____

_____

_____

_____

_____

EVALUATION OF FOOTHILL COLLEGE NURSING GRADUATES (R.N.) (Employer)

Foothill College would like to know how its Registered Nurse graduates are performing on the job. Any information you can give us regarding strengths and weaknesses will help us to better prepare our students for your needs Please be completely frank in your responses Also rank these duties according to their importance: 1 = minor; 2 = important; 3 = very important.

	Duties and Responsibilities	Rank	Poor	Fair	Good	Excellent
A	Plans nursing care for patient as an individual; is not task oriented	____	____	____	____	____
B.	Contributes to patient's comfort; has skill in turning, lifting, positioning, getting out of bed, etc	____	____	____	____	____
C	Carries out nursing techniques satisfactorily. (Bath, enemas, medications, etc.)	____	____	____	____	____
D	Is able to operate special equipment; suction, oxygen, etc.	____	____	____	____	____
E.	Seeks guidance and assistance when unsure of techniques	____	____	____	____	____
F.	Observes and reports observations to head nurse or team leader (Changes in patient's condition, signs, symptoms, etc)	____	____	____	____	____
G	Records pertinent information accurately on patient's chart.	____	____	____	____	____
H.	Uses opportunities to talk with patients	____	____	____	____	____
I	Is aware of and courteous to patient's family	____	____	____	____	____
J	Explains procedures and treatments to patient and his family in terms they can understand.	____	____	____	____	____
K	Utilizes suggestions and constructive criticism to improve her patient care	____	____	____	____	____
L	Assumes responsibility for increasing her knowledge; asks questions, uses source materials, seeks guidance	____	____	____	____	____
M	Talks easily with doctors and others involved in care of patients.	____	____	____	____	____
N.	Is courteous to and considerate of co-workers.	____	____	____	____	____
O.	Organizes her activities appropriately; care and treatments on time, etc.	____	____	____	____	____
P.	Plans with auxiliary personnel in such a way that patients receive nursing care in accord with their illness and needs.	____	____	____	____	____
Q.	Demonstrates an awareness of total nursing unit; responds to patients other than those assigned to her, assists others, is aware of organization and housekeeping of entire unit.	____	____	____	____	____
R.	Presents a good personal appearance.	____	____	____	____	____
S.	Prefers giving direct care to patients rather than directing others.	____	____	____	____	____
T.	Gives thorough nursing care to her patients.	____	____	____	____	____
U.	Organizes effectively to give good nursing care to a group of patients.	____	____	____	____	____

VT 002 802
Hirst, Wilma E.
Occupational Needs of the Socio-Economic, Disadvantaged, and Other Handicapped Youth of Laramie County School District Number One, Phase One.

Laramie County School District No. 1, Cheyenne, Wyo.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 1Jun67 147p.

*EMPLOYMENT OPPORTUNITIES; EMPLOYMENT PRACTICES; EMPLOYER ATTITUDES; *DROPOUT RESEARCH; DROPOUT PREVENTION; *DISADVANTAGED YOUTH; *DROPOUT IDENTIFICATION; *SCHOOL HOLDING POWER; CASE RECORDS
LARAMIE COUNTY; WYOMING

The report includes the results of four surveys conducted in the area to: (1) locate and make job analysis of available jobs in the community for the socioeconomic disadvantaged and other handicapped youth, (2) better understand dropouts by study of 20 academic and family histories of enrollees in the Out-Of-School Neighborhood Youth Corps, (3) identify disadvantaged youth, potential dropouts, and the holding power of the Cheyenne Public Schools, (4) make specific recommendations to the school district on meeting the occupational needs of handicapped youth. Also included is a consultant's report containing the method of study, findings, school offerings, and recommendations. (MM)

VT 002 802

ED039370

C1

OCCUPATIONAL NEEDS OF THE SOCIO-ECONOMIC, DISADVANTAGED, AND OTHER HANDICAPPED YOUTH OF LARAMIE COUNTY SCHOOL DISTRICT NUMBER ONE PHASE ONE.

Project Director:

Wilma E. Hirst

Superintendent of Schools:

Loyd D. Crane

Final Report To:

Bruce C. Perryman, Director
Research Coordinatoing Unit for Vocational-Technical Education

Charles A. Kline, Director
Department of Vocational-Technical Education

Harry A. Roberts
Wyoming State Superintendent of Public Instruction

June 1, 1967

VT 02802

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Jobs in the Community for the Disadvantaged

Job Availability and Preliminary Job Analysis for the Socio-Economic, Disadvantaged, and Other Handicapped Youth of Laramie County School District Number One. Compiled by Johnson, Larry L., Bundy James, and Snyder, Kenneth L. April 1967

JOB AVAILABILITY AND PRELIMINARY JOB ANALYSIS FOR THE SOCIO-ECONOMIC, DISADVANTAGED AND OTHER HANDICAPPED YOUTH OF LARAMIE COUNTY SCHOOL DISTRICT NUMBER ONE

Compiled By:

Larry L. Johnson
James Bundy
Kenneth L. Snyder

Submitted To:

Dr. Wilma E. Hirst

For use in the study "Occupational Needs of the Socio-Economic, Disadvantaged, and Other Handicapped Youth of Laramie County School District Number One"

April 8, 1967

PROBLEM

To determine to what extent jobs exist for socio-economic, disadvantaged youth of Laramie County and to determine what types of training should be given to prepare these students to enter into these jobs and others in today's complex society.

OBJECTIVES

1. To determine what types of jobs are available in the community.

2. To make a preliminary job analysis of each job to determine occupational needs of the handicapped youth to best help them meet this need and enable them to make a greater contribution to society.

3. To make a reliable sampling of out-of-school Neighborhood Youth Corps enrollees to determine if these enrollees dropped out of school because of handicaps and what was the nature of these handicaps.

PROCEDURES

The surveyors contacted government, business, and manufacturing firms in the Cheyenne area. For each job the surveyor felt suited for the subject youth, a preliminary job analysis form was completed (see attached form).

Employers were asked,"What jobs would you have available under average economic conditions?" The surveyors found that most of the jobs, however, are jobs which are present at all times.

The surveyors found employers were very cooperative and interested in this project and I would like to express my gratitude to all individuals involved.

A total of 200 employers were contacted. Approximately 150 of these employers employee 20 or more personnel.

ESTIMATED LARAMIE COUNTY EMPLOYMENT

March 1967

*12,200	Covered employment (unemployment compensation coverage)
2,100	Federal employment
1,500	Railroad employment
1,250	Schools
1,400	State government
150	County (other than Memorial Hospital)
300	Memorial Hospital
300	City
200	Other - non-profit
290	DeFaul Hospital
19,690	TOTAL

*Average covered employment by quarters fiscal 1966.

ECONOMIC CONDITIONS OF CHEYENNE

During the past year there has been a drop in building and highway construction in this area. Retail trade has been slow causing some concern. Hopes are high for a good tourist season. This along with the Centennial celebration should keep the hotel-motel and service occupations active. Modification of the missile system has increased activity somewhat in the construction fields.

The building permits in 1965 numbered 164 new residential permits for $1,934,350.00. In 1965 total building permits were valued at $3,845,976. During 1966 new resident permits dropped to 57 for a cost of $683,350.00. Total permits in 1966 were $3,371.824.15. During the first three months of 1967 permits were at or near an all-time low. At this time,there is very little planning for any large public or commercial projects.

Amounts to be expended on highway construction during the coming year will about equal that of 1966.

Manufacturing industries are expecting some expansion. Railroads, transportation, utilities, and wholesale trade do not anticipate any major changes.

Government agencies,including Federal, state, and local,anticipate little change for the coming year. Present budgets allow for only a slight expansion.

Service occupations which include restaurants, hotels, and motels, should offer a number of openings with the increase in tourist trade.

Farming and ranching demands may make some jobs available if sufficient moisture is received.

A monthly summary for February 1967 appeared in Vol. 1, No. 2 of Wyoming Economic Indicators reads as follows:

"Value of authorized construction shows a decrease for February, offsetting January's gains. Personal income has decreased for the second month. Average weekly hours in manufacturing show a very high level for this time of year . . . . Individual general welfare claims and initial unemployment insurance claims show an improvement in this sector of the economy. Ordinary life insurance sales are still showing a strong gain for the fourth month. The indicators would seem to reflect the stabilization of the economy with very little change since January . . . . "

ADJUSTMENTS TO PRELIMINARY JOB ANALYSIS

Questions 11, 19, 20, 23, 29, and 30 were omitted on the final report because of the following reasons:

11. Wyoming has a Right to Work Law.

19. Individual judgment and consideration must be given to both the employee and employer to give an accurate answer to the amount of adjustment to change needed.

20. How much pressure on the job again is determined by the capabilities of the persons involved.

23. It was very difficult for the interviewers to determine the extent of memory required. All jobs seem to require a reasonable amount of memory.

29. Most employers said the amount of strength required was only that adequate to do the job and individual judgment would have to be used.

30. No jobs were found that required tools. However, special requirements are listed.

OCCUPATIONAL BREAKDOWN

Sixty-two (62) different occupations which are suitable for socio-economic, disadvantaged, and other handicapped youth were found during the course of the survey.

NUMBER OF POSSIBLE JOBS AVAILABLE

The surveyors found that approximately 1,240 individual jobs are in existence among the 200 business and industries contacted.

PRELIMINARY JOB ANALYSIS

On the following pages are a listing of jobs found available in the community, a short statement of duties, and the frequency that each item appears on the individual job analysis.

Only those items applicable to the job appear on the final job analysis sheet.

PRELIMINARY JOB ANALYSIS

1. Job title_____

2. Duties of employee_____
_____

3. What kind of job is it?
____clerical
____service
____agriculture
____sales
____factory
____other_____

4. Job level
____unskilled
____semi-skilled
____skilled

5. Experience
____required
____training desired
____will train

6. Employment
____full-time
____part-time
____seasonal

7. How many employed?
____men
____women

8. Are tests given?
____employment service test
____company made test
____other
____none

9. Is a license required?
____drivers
____health certificate

10. Must the employee fill out a written application?
____yes
____no

11. Must the employee join a union?
____yes
____no

12. How are employees found?
____employment service
____newspaper ads
____union halls
____walk-in applications
____other_____

13. Do you have plenty of workers available?
____shortage
____steady supply
____more than enough

14. How are employees paid?
____hourly
____weekly
____monthly
____piece work

15. Does the employee
____work alone
____with others

16. What are working conditions?

____inside	____outside
____noisy	____quiet
____wet	____dry
____dirty	____clean
____day work	____night work
____low places	____high places

17. How much education is required?
____no formal education
____little formal education
____elementary school completion
____high school completion

18. How much training is given?
____none
____apprenticeship
____number of weeks

19. How much adjustment to change is required?
____ none
____some
____frequent

20. Is there much pressure on the job?
____ none
____some
____great

21. Does the employee handle money?
____yes
____no

22. How much supervision is the employee given?
____none
____little
____some
____much

23. How much memory is required?
____little
____memory for oral directions
____much

24. Does the employee meet the public?
____ none
____seen by public
____talks to public
____works with the public all the time

25. How much reading is required?
____none
____little
____addresses
____sales orders
____patterns or blue prints
____directions
____bulletins
____letters

26. How much arithmetic is required?
____none
____little
____counting
____adding
____subtracting
____multiplying
____dividing
____fractions
____measurements
____sales slips
____invoices
____other_____

Comments:

27. How much wiriting is required?
____none
____listing
____sales orders
____productions records
____information to be read by others

28. What kind of speaking is required?
____little
____giving messages
____answering telephone
____asking for tools and materials
____giving directions
____other_____

29. How much strength is required?
Hands:
__none __little __some - __great

Arms:
__none __little __some __great

Legs:
__none __little __some __great

Back:
__none __little __some __great

30. Is the employee required to have tools or special equipment?
__yes
__no

If yes, what kind_____
_____

Businesses, Manufacturing, and Services Contacted

Laundry and Dry Cleaning - 7

Janitorial services - 2

Theaters - 2

Bowling - 3

Golf Course - 2

Hospital and Nursing Homes - 3

Government - 18 (major depts.)

Lumber Yards - 3

Hardware, retail - 3

Paint, retail - 2

Non-Profit Organizations - 3

Music Sales - 2

Bakery - 3

Nursery, Child - 2

Repair Shops, misc. - 3

Florist and Nursery - 3

Construction - 5

Plumbing and Heating - 3

Sheet Metal - 2

Electrical - 3

Dairies - 2

Bottling Companies - 3

Printing - 3

Manufacturing - 8

Transportation and Communications - 9

Auto Dealers and Service - 17

Moving and Storage - 4

Service Air - 2

Utilities - 1

Wholesale and Misc. Retail Establishments - 8

Equipment Sales and Service - 4

Retail Food - 7

Clothing, retail - 6

Furniture - 5

Restaurant, Motel - 18

Department Stores - 6

Drugs - 3

Banks, Finance, and Insurance - 12

JOB ANALYSIS

1. Job title
   LAUNDRY CHECKERS & MARKERS

2. Duties of employee
   checks and marks clothes

3. What kind of job is it?
   3 service

4. Job level
   3 semi-skilled

5. Experience
   2 training desired
   3 will train

6. Employment
   3 full-time

7. How many employed?
   12 women

8. Are tests given?
   3 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    3 yes

12. How are employeed found?
    3 employment service
    1 walk-in applications
    2 word of mouth

13. Do you have plenty of workers available?
    3 steady supply

14. How are employees paid?
    3 hourly

15. Does the employee?
    3 work with others

16. What are working conditions?
    3 inside
    3 day work

17. How much education is required?
    3 little formal

18. How much training is given?
    3 number of weeks

21. Does the employee handle money?
    3 no

22. How much supervision is the employee given?
    3 some

24. Does the employee meet the public?
    3 none

25. How much reading is required?
    1 little
    1 sales orders
    1 directions

26. How much arithmetic is required?
    3 counting

27. How much writing is required?
    2 sales orders
    2 information to be read by others

28. What kind of speaking is required?
    3 little

JOB ANALYSIS

1. Job Title
   SHIPPING CLERK

2. Duties of employee
   Prepares merchandise for shipment or delivery

3. What kind of job is it?
   1 service
   4 factory

4. Job level
   4 unskilled
   2 semi-skilled

5. Experience
   2 training desired
   6 will train

6. Employment
   6 full-time

7. How many employed?
   19 men
   8 women

8. Are tests given?
   5 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    6 yes

12. How are employees found?
    3 employment service
    2 newspaper ads
    4 walk-in applications

13. Do you have plenty of workers available?
    6 steady supply

14. How are employees paid?
    5 hourly

15. Does the employee
    5 work with others

16. What are working conditions?
    6 inside 3 outside
    5 day 3 night

17. How much education is required?
    2 no formal education
    4 high school complete

18. How much training is given?
    5 number of weeks

21. Does the employee handle money?
    5 no

22. How much supervision is the employee given?
    6 some

24. Does the employee meet the public?
    2 none
    3 talks to public

26. How much reading is required?
    4 addresses
    5 sales orders
    6 directions

26. How much arithmetic is required?
    2 little
    3 invoices

27. How much writing is required?
    3 sales orders
    4 information to be read by others

28. What kind of speaking is required?
    2 giving messages
    2 asking for materials

JOB ANALYSIS

1. Job title
   SALAD GIRLS

2. Duties of employee
   Fix salads

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   2 women

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the mployee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee
    1 work with others

16. What are working conditions
    1 inside
    1 day work
    1 night work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 seen by public

25. How much reading is required?
    1 sales orders

26. How much arithmetic is required?
    1 none

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   PRODUCEMAN

2. Duties of employee
   Clean, sort, and take care of produce

3. What kind of job is it?
   3 service

4. Job level
   2 semi-skilled
   1 skilled

5. Experience
   2 training desired
   3 will train

6. Employment
   3 full-time

7. How many employed?
   7 men

8. Are tests given?
   3 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    3 yes

12. How are employees found?
    3 walk-in applications

13. Do you have plenty of workers available?
    3 steady supply

14. How are employees paid?
    3 hourly

15. Does the employee?
    2 work with others

16. What are working conditions
    3 inside
    3 wet
    3 day
    2 night

17. How much education is required?
    3 little formal

18. How much training is given?
    3 number of weeks

21. Does the employee handle money?
    3 no

22. How much supervision is the employee given?
    2 some

24. Does the employee meet the public?
    2 works with public

25. How much reading is required?
    2 sales orders
    3 directions

26. How much arithmetic is required?
    3 much
    2 sales slips

27. How much writing is required?
    3 information to be read by others

28. What kind of speaking is required?
    3 giving directions

JOB ANALYSIS

1. Job title
   STOCKMAN

2. Duties of employee
   Receives goods, marks and keeps merchandise in order

3. What kind of job is it?
   2 clerical
   2 service
   3 factory
   4 other

4. Job level
   2 unskilled
   7 semi-skilled

5. Experience
   9 will train

6. Employment
   9 full-time

7. How many employed?
   30 men

8. Are tests given?
   8 none

9. Is a license required?
   8 drivers

10. Must the employee fill out a written application?
    9 yes

12. How are employees found?
    8 employment service
    6 walk-in applications

13. Do you have plenty of workers available?
    5 steady supply
    3 more than enough

14. How are employees paid?
    7 hourly

15. Does the employee?
    1 work alone
    3 work with others

16. What are working conditions?
    9 inside
    3 dirty
    6 day work

17. How much education is required?
    2 elementary school
    7 high school complete

18. How much training is given?
    8 number of weeks

21. Does the employee handle money?
    9 no

22. How much supervision is the employee given?
    9 some

24. Does the employee meet the public?
    4 none
    3 seen by public
    2 talks to public

25. How much reading is required?
    7 sales orders
    4 directions

26. How much arithmetic is required?
    7 counting
    2 some
    4 sales slips
    9 invoices

27. How much writing is required?
    4 listing
    2 sales orders
    5 information to be read by others

28. What kind of speaking is required?
    7 answering telephone
    3 asking for material
    2 answering questions

JOB ANALYSIS

1. Job title
   BUNDLE TIER

2. Duties of employee
   Puts clothes in bundles and ties them

3. What kind of job is it?
   1 service

4. Job level
   1 semi-skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   1 women

8. Are tests given
   1 none

9. Is a license required?
   1 no

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 day work

17. How much education is required?
    1 little formal

18. How much training is given
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 sales orders

26. How much arithmetic is required?
    1 counting
    1 some

27. How much writing is required?
    1 listing
    1 sales orders
    1 information to be read by others

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   SPOTTER

2. Duties of employee
   Dry clean and spot stains on clothing

3. What kind of job is it?
   1 service

4. Job level
   1 semi-skilled

5. Experience
   1 training desired
   1 will train

6. Employment
   1 full-time

7. How many employed?
   2 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 word of mouth

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 day work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 sales orders
    1 directions

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 information to be read by others

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   USED CAR RECONDITIONER

2. Duties of employee
   Clean cars, replace parts, touch-up painting, seat covers, etc.

3. What kind of job is it?
   1 service

4. Job level
   1 semi-skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   1 men

8. Are tests given?
   1 none

9. Is a license required?
   1 drivers

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work alone

16. What are working conditions?
    1 inside
    1 outside
    1 dirty
    1 day work

17. How much education is required?
    1 prefers high school

18. How much training is given?
    1 apprenticeship (27 weeks)

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 talks to public

25. How much reading is required?
    1 directions

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 listing

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   TRUCK DRIVER

2. Duties of employee
   Driving truck to make deliveries

3. What kind of job is it?
   9 service
   2 sales
   2 construction

4. Job level
   3 unskilled
   8 semi-skilled

5. Experience
   2 training desired
   11 will train

6. Employment
   10 full-time

7. How many employed?
   55 men (varies)

8. Are tests given?
   2 company-made test
   10 none

9. Is a license required?
   9 drivers
   3 chaffeurs

10. Must the employee fill out a written application?
    10 yes
    2 no

12. How are employees found?
    6 employment service
    3 newspaper ads
    10 walk-in applications
    5 word of mouth

13. Do you have plenty fo workers available?
    8 steady supply
    4 more than enough

14. How are employees paid?
    8 hourly
    2 monthly

15. Does the employee?
    3 work alone
    10 work with others

16. What are working conditions
    6 inside
    12 outside
    8 day work

17. How much education is required?
    4 little formal
    4 elementary school
    2 high school

18. How much training is given?
    5 none
    6 number of weeks

21. Does the employee handle money?
    4 yes
    8 no

22. How much supervision is the employee given?
    3 little
    8 some

24. Does the employee meet the public?
    3 seen by public
    5 talks to public
    6 works with public

25. How much reading is required?
    10 addresses
    10 sales orders
    5 directions

26. How much arithmetic is required?
    5 little
    5 adding and subtracting
    4 sales slips
    4 invoices

27. How much writing is required?
    8 sales orders
    5 information to be rea . by others

28. What kind of speaking is required?
    6 giving directions

JOB ANALYSIS

1. Job title
   MOVERS

2. Duties of employee
   Moving of household goods
   local and long distance

3. What kind of job is it?
   1 service

4. Job level
   1 semi-skilled

5. Experience
   1 training desired

6. Employment
   1 full-time

7. How many employed?
   5 men

8. Are tests given?
   1 company-made test

9. Is a license required?
   1 drivers

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 outside
    1 dirty
    1 day work
    1 low places
    1 high places

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 yes

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 addresses
    1 directions
    1 letters

26. How much arithmetic is required?
    much

27. How much writing is required?
    1 sales orders
    1 information to be read by others

28. What kind of speaking is required?
    1 giving messages
    1 giving directions

29. How much strength is required?
    1 great

JOB ANALYSIS

1. Job title
   HEAVY HAULING

2. Duties of employee
   Driving truck, loading tractor, steel, etc.

3. What kind of job is it?
   1 service

4. Job level
   1 semi-skilled

5. Experience
   1 training desired
   1 will train

6. Employment
   1 full-time
   1 part-time

7. How many employed?
   3 men

8. Are tests given?
   1 company-made test

9. Is a license required?
   1 chauffeur

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly
    1 monthly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 outside
    1 dirty
    1 day work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 sometimes

22. How much supervision is the employee given?
    1 little

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 addresses
    1 sales orders
    1 directions

26. How much arithmetic is required?
    1 none

27. How much writing is required?
    1 information to be read by others

28. What kind of speaking is required?
    1 giving messages
    1 giving directions

29. How much strength is required?
    Hands: 1 great
    Arms: 1 great
    Legs: 1 great
    Back: 1 great

JOB ANALYSIS

1. Job title
   COOK

2. Duties of employee
   Cook food, clean, and take orders

3. What kind of job is it?
   1 service

4. Job level
   1 skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   2 women

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 newspaper ads

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid
    1 bi-weekly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 day work
    1 night work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 some

21. Does the employee handle money?
    1 yes

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 seen by public
    1 talks to public

25. How much reading is required?
    1 none

26. How much airthmetic is required?
    1 some

27. How much writing is required?
    1 sales orders

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   REPAIRMAN

2. Duties of employees
   Check gas lines, fixes brakes, etc.

3. What kind of job is it?
   1 service

4. Job level
   1 skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   50 men

8. Are tests given?
   1 company-made test

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 referrals

13. Do you have plenty of workers available?
    1 steady supply

14. How employees paid?
    1 semi-weekly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 outside
    1 dirty
    1 day work
    1 night work

17. How much education is required?
    1 apprenticeship (6 months)

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 addresses
    1 sales orders
    1 patterns or blue prints
    1 directions

26. How much arithmetic is required?
    ___ some

27. How much writing is required?
    1 listing
    1 sales orders
    1 production records
    1 information to be used by others

28. What kind of speaking is required?
    1 telephone
    ___ giving directions

JOB ANALYSIS

1. Job title
   PRINTER'S HELPER

2. Duties of employee
   Carries paper, sorts printed material, and may operate press

3. What kind of job is it?
   1 service

4. Job level
   1 semi-skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   1 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 dirty

17. How much education is required?
    1 elementary school (prefer high school)

18. How much training is given?
    6 twelve weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 sales orders

26. How much arithmetic is required?
    1 much

27. How much writing is required?
    1 listing
    1 sales orders

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   SILK FINISHER

2. Duties of employee
   Pressing silk clothes

3. What kind of job is it?
   2 service

4. Job level
   2 semi-skilled

5. Experience
   1 training desired
   3 will train

6. Employment
   2 full-time

7. How many employed?
   2 women

8. Are tests given?
   2 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    2 yes

12. How are employees found?
    2 employment service
    1 walk-in application
    1 word of mouth

13. Do you have plenty of workers available?
    2 steady supply

14. How are employees paid?
    2 hourly

15. Does the employee?
    2 work with others

16. What are working conditions?
    2 inside
    2 day work

17. How much education is required?
    2 little formal

18. How much training is given?
    2 number of weeks

21. Does the employee handle money?
    2 no

22. How much supervision is the employee given?
    2 some

24. Does the employee meet the public?
    2 none

25. How much reading is required?
    2 none

26. How much arithmetic is required?
    1 none
    1 counting

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   LINEMAN

2. Duties of employee
   Service aircraft with gas and oil

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed
   7 men
   2 women

8. Are tests given?
   1 none

9. Is a license required?
   1 drivers
   1 bondable

10. Must the employee fill out a written application?
    1 yes

12. How are employees found
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work alone

16. What are working conditions?
    1 outside
    1 day work
    1 night work

17. How much education is required?
    ___ high school complete

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 yes

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 directions

26. How much arithmetic is required?
    1 counting
    1 making change

27. How much writing is required?
    1 sales orders

28. What kind of speaking is required?
    1 giving directions

JOB ANALYSIS

1. Job title
   GREASEMAN

2. Duties of employee
   Greases and changes oil in cars and trucks

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 training desired
   1 will train

6. Employment
   1 full-time

7. How many employed?
   4 men

8. Are tests given?
   1 company-made test

9. Is a license required?
   1 drivers

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 newspaper ads
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 dirty
    1 day work

17. How much education is required?
    1 little formal
    1 high school desired

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 seen by public

25. How much reading is required?
    1 little
    1 addresses

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 information to be read by others

28. What kind of speaking is required?
    1 asking for tools and materials

JOB ANALYSIS

1. Job title
   CAMERAMAN

2. Duties of employee
   Moves camera, puts up the set

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   3 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 trade journal

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 bi-weekly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 day work
    1 night work

17. How much education is required?
    1 high school preferred

18. How much training is given?
    3 weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 little

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 little

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    1 little

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JOB ANALYSIS

1. Job title
   PLANT WORKER

2. Duties of employee
   Keep plant clean,
   sterilize bottles,
   bottle milk

3. What kind of job is it?
   2 service

4. Job level
   2 semi-skilled

5. Experience
   1 training desired
   2 will train

6. Employment
   2 full-time

7. How many employed?
   16 men

8. Are tests given?
   1 company-made test

9. Is a license required?
   2 health certificate

10. Must the employee fill out a written application?
    2 yes

12. How are employees found?
    1 employment service
    1 newspaper ads
    2 walk-in applications
    2 referrals

13. Do you have plenty of workers available?
    2 steady supply

14. How are employees paid?
    1 weekly

15. Does the employee?
    2 work with others

16. What are working conditions?
    2 inside
    2 wet
    2 day work

17. How much education is required?
    1 little formal
    1 high school complete

18. How much training is given?
    2 three-four months

21. Does the employee handle money?
    2 no

22. How much supervision is the employee given?
    2 some

24. Does the employee meet the public?
    2 seen by public

25. How much reading is required?
    1 sales orders
    2 directions

26. How much arithmetic is required?
    1 counting
    2 adding and subtracting
    1 multiplying
    1 algebra

27. How much writing is required?
    1 sales orders
    1 production records
    2 information to be read by others

28. What kind of speaking is required?
    2 asking for tools and materials

JOB ANALYSIS

1. Job title
   PORTER

2. Duties of employee
   Carry luggage

3. What kind of job is it?
   2 service

4. Job level
   2 unskilled

5. Experience
   2 will train

6. Employment
   2 full-time

7. How many employed?
   6 men

8. Are tests given?
   2 none

9. Is a license required?
   1 drivers
   1 other (bondable)

10. Must the employee fill out a written application?
    2 yes

12. How are employees found?
    1 employment service
    2 walk-in applications

13. Do you have plenty of workers available?
    2 more than enough

14. How are employees paid?
    1 hourly
    1 weekly

15. Does the employee?
    2 work with others

16. What are working conditions?
    2 inside
    1 outside
    2 day
    2 night

17. How much education is required?
    2 elementary school

18. How much training is given?
    2 number of weeks

21. Does the employee handle money?
    2 yes

22. How much supervision is the employee given?
    1 little
    1 some

24. Does the employee meet the public?
    2 works with the public

25. How much reading is required?
    2 addresses

26. How much arithmetic is required?
    1 little
    1 counting

27. How much writing is required?
    1 listing
    1 information to be read by others

28. What kind of speaking is required?
    1 giving messages
    1 giving directions

JOB ANALYSIS

1. Job title
   LABORER

2. Duties of employee
   Doing unskilled jobs around construction

3. What kind of job is it?
   3 service
   4 carry material

4. Job level
   7 unskilled

5. Experience
   7 will train

6. Employment
   4 full-time
   7 seasonal

7. How many employed?
   164 men (varies)

8. Are tests given?
   7 none

9. Is a license required?
   4 drivers

10. Must the employee fill out a written application?
    2 yes
    5 no

12. How are employees found?
    3 employment service
    5 union halls
    7 walk-in applications

13. Do you have plenty of workers available?
    2 steady supply
    4 more than enough

14. How are employees paid?
    7 hourly

15. Does the employee?
    3 work alone
    7 work with others

16. What are working conditions?
    2 inside
    7 outside
    7 dirty
    5 day work
    3 low places
    3 high places

17. How much education is required?
    2 no formal
    2 little formal
    1 elementary school
    2 high school

18. How much training is given?
    7 none

21. Does the employee handle money?
    7 no

22. How much supervision is the employee given?
    6 some
    1 much

24. Does the employee meet the public?
    4 none
    3 seen by public

25. How much reading is required?
    2 none
    4 little
    2 directions

26. How much arithmetic is required?
    3 none
    2 little

27. How much writing is required?
    5 none
    2 information to be read by others

28. What kind of speaking is required?
    5 little
    2 giving directions

29. How much strength is required?
    Arms: 7 great Hands: 7 great
    Legs: 7 great Back: 7 great

30. Is the employee required to have special equipment?
    5 hard hat and special shoes

JOB ANALYSIS

1. Job title
   CEMENT FINISHERS

2. Duties of employee
   Finish cement

3. What kind of job is it?
   1 service

4. Job level
   1 skilled

5. Experience
   1 required

6. Employment
   1 seasonal

7. How many employed?
   5 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 no

12. How are employees found?
    1 union halls
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work alone
    1 work with others

16. What are working conditions?
    1 outside
    1 dirty
    1 day work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 apprenticeship

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 talks to public

25. How much reading is required?
    1 addresses
    1 directions

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 sales orders
    1 information to be read by others

28. What kind of speaking is required?
    1 asking for tools and materials
    1 giving directions

29. How much strength is required?
    1 great

30. Is the employee required to have tools or special equipment?
    1 yes - tools required for finishing cement

JOB ANALYSIS

1. Job title
   MATERIALS HANDLER

2. Duties of employee
   Keep production line supplied with proper material

3. What kind of job is it?
   1 factory

4. Job level
   1 semi-skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   2 men

8. Are tests given?
   1 none

9. Is a license required?
   1 drivers

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 noisy
    1 dirty

17. How much education is required?
    1 high school complete

18. How much training is given?
    as needed

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 sales orders
    1 directions

26. How much arithmetic is required?
    1 some

27. How much writing is required?
    1 production records
    1 information to be read by others

28. What kind of speaking is required?
    1 asking for tools and materials

JOB ANALYSIS

1. Job title
   LINE BOYS

2. Duties of employee
   Keep food in line at a cafeteria

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   2 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 day work
    1 night work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 yes

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 directions

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   JANITOR

2. Duties of employee
   Cleans and does minor maintenance tasks

3. What kind of job is it?
   23 service

4. Job level
   23 unskilled

5. Expereince
   3 training desired
   23 will train

6. Employment
   20 full-time
   4 part-time

7. How many employed?
   64 men
   8 women

8. Are tests given?
   1 company-made test
   22 none

9. Is a license required?
   12 drivers
   3 other (bondable)

10. Must the employee fill out a written application?
    23 yes

12. How are employees found?
    12 employment service
    2 newspaper ads
    21 walk-in applications

13. Do you have plenty of workers available?
    16 steady supply
    7 more than enough

14. How are employees paid?
    16 hourly
    5 weekly

15. Does the employee?
    10 work alone
    14 with others

16. What are working conditions?
    18 inside 6 outside
    14 dirty 17 night
    17 low places

17. How much education is required?
    3 no formal education
    10 little formal education
    7 elementary school

18. How much training is given?
    4 none
    18 number of weeks

21. Does the employee handle money?
    1 yes
    21 no

22. How much supervision is the employee given?
    4 none
    3 little
    13 some

24. Does the employee meet the public?
    10 none
    12 seen by public

25. How much reading is required?
    11 little
    8 directions

26. How much arithmetic is required?
    3 none
    19 little

27. How much writing is required?
    11 none
    6 information to be read by others

28. What kind of speaking is required?
    15 little
    5 asking for materials

29. How much strength is required?
    Arms: 19 some Legs: 19 some
    Hands: 19 some Back 19 some

JOB ANALYSIS

1. Job title
   BABY SITTER

2. Duties of employee
   Help take care of children

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 part-time

7. How many employed?
   4 women

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 no

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 noisy
    1 day work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 some

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 much

24. Does the employee meet the public?
    1 seen by public

25. How much reading is required?
    1 little

26. How much arithmetic is required?
    1 none

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    1 talking with children

JOB ANALYSIS

1. Job title
   SERVICE STATION ATTENDANT

2. Duties of employee
   Fill autos with gas, check oil, etc.

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   5 men

8. Are tests given?
   1 none

9. Is a license required?
   1 drivers
   1 bondable

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 outside
    1 dirty
    1 day work

17. How much education is required?
    1 elementary school

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 yes

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 sales orders

26. How much arithmetic is required?
    1 much

27. How much writing is required?
    1 sales orders

28. What kind of speaking is required?
    1 answering telephone
    1 giving directions

JOB ANALYSIS

1. Job title
   FOUNTAIN CLERK

2. Duties of employee
   Making soft drinks, ice cream, and coffee, etc.

3. What kind of job is it?
   3 service

4. Job level
   4 unskilled

5. Experience
   1 training desired
   3 will train

6. Employment
   3 full-time
   2 part-time

7. How many employed?
   7 women

8. Are tests given?
   1 company-made test
   2 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    3 yes

12. How are employees found?
    2 employment service
    3 newspaper ads
    2 walk-in applications

13. Do you have plenty of workers available?
    1 shortage
    2 steady supply

14. How are employees paid?
    2 hourly

15. Does the employee?
    2 work with others

16. What are working conditions?
    3 inside
    3 clean
    2 day work

17. How much education is required?
    3 little formal

18. How much training is given?
    3 number of weeks

21. Does the employee handle money?
    3 yes

22. How much supervision is the employee given?
    3 some

24. Does the employee meet the public?
    1 seen by public
    3 talks to public
    1 works with public

25. How much reading is required?
    2 sales orders
    2 directions

26. How much arithmetic is required?
    1 counting
    2 some

27. How much writing is required?
    3 sales orders
    2 information to be read by others

28. What kind of speaking is required?
    1 giving messages
    1 telephone
    2 giving directions

JOB ANALYSIS

1. Job title
   MEAT WRAPPER

2. Duties of employee
   Price and wrap meat

3. What kind of job is it?
   2 service

4. Job level
   2 unskilled

5. Experience
   2 will train

6. Employment
   2 full-time

7. How many employed?
   5 women

8. Are tests given?
   2 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    2 yes

12. How are employees found?
    2 walk-in applications

13. Do you have plenty of workers available?
    2 steady supply

14. How are employees paid?
    2 hourly

15. Does the employee?
    2 work with others

16. What are working conditions?
    2 inside
    2 day work
    2 night work

17. How much education is required?
    2 little formal

18. How much training is given?
    2 number of weeks

21. Does the employee handle money?
    2 no

22. How much supervision is the employee given?
    2 some

24. Does the employee meet the public?
    2 talks to public
    2 works with public

25. How much reading is required?
    2 sales orders
    2 directions

26. How much arithmetic is required?
    2 much

27. How much writing is required?
    1 listing
    1 sales orders
    2 information to be read by others

28. What kind of speaking is required?
    ___ none

JOB ANALYSIS

1. Job title
   BOX BOY

2. Duties of employee
   Sack and carry groceries
   to cars

3. What kind of job is it?
   4 service

4. Job level
   4 unskilled

5. Experience
   4 will train

6. Employment
   3 full-time
   5 part-time

7. How many employed?
   28 men

8. Are tests given?
   ___ none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    4 yes
    1 no

12. How are employees found?
    5 walk-in applications

13. Do you have plenty of workers available?
    4 steady supply
    1 more than enough

14. How are employees paid?
    4 hourly
    1 tips only

15. Does the employee?
    5 work with others

16. What are working conditions?
    5 inside
    5 outside
    5 day work
    4 night

17. How much education is required?
    5 little formal
    1 high school prefer

18. How much training is given?
    1 none
    3 number of weeks

21. Does the employee handle money?
    5 no

22. How much supervision is the employee given?
    1 little
    3 some
    1 much

24. Does the employee meet the public?
    4 talks to public
    5 works with public

25. How much reading is required?
    1 none
    4 little

26. How much arithmetic is required?
    1 none
    4 little

27. How much writing is required?
    3 none
    2 information to be read by others

28. What kind of speaking is required?
    1 little
    1 giving directions

JOB ANALYSIS

1. Job title
   MACHINE OPERATOR

2. Duties of employee
   Operate forming and
   punching machines

3. What kind of job is it?
   1 factory

4. Job level
   1 semi-skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   10 men
   6 women

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 noisy

17. How much education is required?
    1 elementary school

18. How much training is given?
    ___ as needed

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 patterns or blue prints

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    1 asking for tools and
      materials

JOB ANALYSIS

1. Job title
   DISHWASHER

2. Duties of employee
   Washing dishes

3. What kind of job is it?
   15 service

4. Job level
   15 unskilled

5. Experience
   15 will train

6. Employment
   14 full-time
   2 part-time

7. How many employed?
   44 men
   1 women

8. Are tests given?
   15 none

9. Is a license required?
   1 drivers
   1 health certificate

10. Must the employee fill out a written application?
    7 yes
    8 no

12. How are employees found?
    2 employment service
    2 newspaper ads
    14 walk-in applications

13. Do you have plenty of workers available?
    12 steady supply
    3 more than enough

14. How are employees paid?
    15 hourly

15. Does the employee?
    19 work with others

16. What are working conditions?
    17 inside
    10 dirty
    13 day work
    13 night

17. How much education is required?
    6 no formal education
    7 little formal education
    2 elementary completion

18. How much training is given?
    2 none
    4 number of weeks
    9 some

21. Does the employee handle money?
    15 no

22. How much supervision is the employee given?
    15 some

24. Does the employee meet the public?
    6 none
    6 seen by public

25. How much reading is required?
    13 none
    2 little
    2 addresses and sales orders

26. How much arithmetic is required?
    12 none
    2 little
    1 counting

27. How much writing is required?
    15 none
    1 listing

28. What kind of speaking is required?
    15 little

JOB ANALYSIS

1. Job title
   TRADES HELPER

2. Duties of employee
   Helps trademen with various jobs

3. What kind of job is it?
   2 service
   1 factory

4. Job level
   1 unskilled
   2 semi-skilled

5. Experience
   3 will train

6. Employment
   2 full-time
   1 seasonal

7. How many employed?
   6 men (varies)

8. Are tests given?
   1 employment service
   1 other
   1 none

9. Is a license required?
   1 drivers

10. Must the employee fill out a written application?
    2 yes
    1 no

12. How are employees found?
    2 employment service
    1 union halls
    2 walk-in applications

13. Do you have plenty of workers available?
    3 steady supply

14. How are employees paid?
    3 hourly

15. Does the employee?
    3 work with others

16. What are working conditions?
    2 inside
    3 dirty

17. How much education is required?
    1 elementary school
    2 high school

18. How much training is given?
    1 none
    1 number of weeks
    1 Twenty-six weeks

21. Does the employee handle money?
    3 no

22. How much supervision is the employee given?
    2 much

24. Does the employee meet the public?
    2 none
    1 seen by public

25. How much reading is required?
    1 addresses
    2 patterns or blue prints
    2 directions

26. How much arithmetic is required?
    2 some
    2 measurements

27. How much writing is required?
    1 none
    1 listing
    2 information to be read by others

JOB ANALYSIS

1. Job title
   STORE CLERK

2. Duties of employee
   Waiting on customers

3. What kind of job is it?
   2 service
   3 sales

4. Job level
   2 unskilled
   3 semi-skilled

5. Experience
   3 training desired
   4 will train

6. Employment
   5 full -time

7. How many employed?
   21 women

8. Are tests given?
   5 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    5 yes

12. How are employees found?
    2 employment service
    4 walk-in applications

13. Do you have plenty of workers available?
    5 steady supply

14. How are employees paid?
    5 hourly

15. Does the employee?
    5 work with others

16. What are working conditions?
    5 inside
    5 day work
    4 night

17. How much education is required?
    1 no formal
    4 little formal

18. How much training is given?
    5 number of weeks

21. Does the employee handle money?
___ 1 yes
    4 no

22. How much supervision is the employee given?
    5 some

24. Does the employee meet the public?
    4 talks to public
    5 works with public

25. How much reading is required?
    5 sales orders
    3 directions

26. How much arithmetic is required?
    5 much
    5 sales slips

27. How much writing is required?
    3 sales orders
    5 information to be read by others

28. What kind of speaking required?
    2 telephone

JOB ANALYSIS

1. Job title
   DELIVERY BOY

2. Duties of employee
   Pick-up and deliver merchandise

3. What kind of job is it?
   4 service

4. Job level
   4 unskilled

5. Experience
   1 training desired
   4 will train

6. Employment
   4 full-time

7. How many employed?
   9 men

8. Are tests given?
   1 company-made test
   3 none

9. Is a license required?
   4 drivers
   1 other (bondable)

10. Must the employee fill out a written application?
    3 yes
    1 no

12. How are employees found?
    4 employment service
    2 newspaper ads
    1 union halls
    3 walk-in applications

13. Do you have plenty of workers available?
    2 steady supply
    2 more than enough

14. How are employees paid?
    4 hourly

15. Does the employee?
    2 work alone
    2 with others

16. What are working conditions?
    3 inside 2 dirty
    4 outside 1 quiet
    2 day and night

17. How much education is required?
    2 little formal
    2 elementary school completion

18. How much training is given?
    1 none
    3 number of weeks

21. Does the employee handle money?
    2 yes
    2 no

22. How much supervision is the employee given?
    2 none
    2 some

24. Does the employee meet the public?
    2 talks to public
    2 works with public

25. How much reading is required?
    4 addresses
    4 sales orders
    3 directions

26. How much arithmetic is required?
    3 counting
    2 adding and subtracting
    1 multiply, divide, fractions, and measure
    3 sales slips, invoice

27. How much writing is required?
    1 listing
    4 sales orders
    3 information read by others

28. What kind of speaking is required?
    2 giving messages
    2 asking for material
    1 telephone
    1 giving directions

JOB ANALYSIS

1. Job title
   YARD CLERK

2. Duties of employee
   Record railroad car numbers

3. What kind of job is it?
   1 clerical

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   2 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work alone

16. What are working conditions?
    1 outside
    1 noisy
    1 dirty
    1 day
    1 night

17. How much education is required?
    1 high school complete

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 little

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 bulletins
    1 R.R. car numbers

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 listing
    1 information to be read by others

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   SALESMAN

2. Duties of employee
   Selling merchandise to the public

3. What kind of job is it?
   4 sales

4. Job level
   1 semi-skilled
   3 skilled

5. Experience
   1 training desired
   4 will train

6. Employment
   4 full-time

7. How many employed?
   19 men
   1 women

8. Are tests given?
   4 none

9. Is a license required?
   3 drivers
   1 insurance

10. Must the employee fill out a written application?
    4 yes

12. How are employees found?
    2 employment service
    1 newspaper ads
    2 walk-in applications
    1 trade journal

13. Do you have plenty of workers available?
    4 steady supply

14. How are employees paid?
    3 hourly
    1 weekly
    1 monthly

15. Does the employee?
    1 work alone
    3 work with others

16. What are working conditions?
    4 inside
    1 outside
    4 day work
    2 clean and quiet

17. How much education is required?
    1 no formal
    3 high school complete

18. How much training is given?
    4 number of weeks

21. Does the employee handle money?
    1 yes
    3 no

22. How much supervision is the employee given?
    1 none
    2 some

24. Does the employee meet the public?
    4 works with the public

25. How much reading is required?
    4 addresses
    4 sales orders

26. How much arithmetic is required?
    4 much

27. How much writing is required?
    3 listing
    4 sales orders

28. What kind of speaking is required?
    4 much

JOB ANALYSIS

1. Job title
   GROUNDSKEEPER

2. Duties of employee
   Mow and water lawns, trim edges, etc.

3. What kind of job is it?
   2 service

4. Job level
   2 unskilled

5. Experience
   2 will train

6. Employment
   1 full-time
   2 seasonal

7. How many employed?
   6 men

8. Are tests given?
   2 none

9. Is a license required?
   2 drivers

10. Must the employee fill out a written application?
    1 yes
    1 no

12. How are employees found?
    2 employment service
    2 walk-in applications

13. Do you have plenty of workers available?
    2 more than enough

14. How are employees paid?
    2 hourly

15. Does the employee?
    1 work alone
    1 work with others

16. What are working conditions?
    1 wet
    1 outside
    2 dirty
    1 day work

17. How much education is required?
    1 little formal
    1 elementary school

18. How much training is given?
    2 number of weeks

21. Does the employee handle money?
    2 no

22. How much supervision is the employee given?
    2 some

24. Does the employee meet the public?
    2 seen by public

25. How much reading is required?
    2 little

26. How much arithmetic is required?
    2 little

27. How much writing is required?
    2 none

28. What kind of speaking is required?
    1 little
    1 asking for tools

JOB ANALYSIS

1. Job title
   MAID

2. Duties of employee
   Making beds, keeping rooms clean

3. What kind of job is it?
   2 service

4. Job level
   2 unskilled

5. Experience
   1 training desired
   2 will train

6. Employment
   2 full-time
   1 part-time
   1 seasonal

7. How many employed?
   13 women

8. Are tests given?
   2 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    2 yes

12. How are employees found?
    2 walk-in applications

13. Do you have plenty of workers available?
    1 shortage
    1 steady supply

14. How are employees paid?
    2 hourly

15. Does the employee?
    2 work with others

16. What are working conditions?
    2 inside
    1 dirty
    2 day work

17. How much education is required?
    1 no formal
    1 little formal

18. How much training is given?
    1 none
    1 number of weeks

21. Does the employee handle money?
    2 no

22. How much supervision is the employee given?
    1 little
    1 some

24. Does the employee meet the public?
    1 seen by public

25. How much reading is required?
    1 little
    1 directions

26. How much arithmetic is required?
    2 little

27. How much writing is required?
    1 none
    1 information to be read by others

28. What kind of speaking is required?
    1 little
    1 asking for tools and materials

JOB ANALYSIS

1. Job title
   KITCHEN HELPER

2. Duties of employee
   Do assigned duties in kitchen, peal potatoes, clean up and assist cook

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   3 men

8. Are tests given?
   1 none

9. Is a license required?
   1 health certificate

10. Must the employee fill out a written application?
    1 no

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 clean
    1 day work
    1 night work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 none

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 much

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 little

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    ____ little

JOB ANALYSIS

1. Job title
   NURSING AIDS

2. Duties of employee
   Duties around hospital as assigned by nurses staff

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   5 men
   7 women

8. Are tests given?
   1 none

9. Is a license required?
   ____ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications
    1 N.Y.C. civil service

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 quiet
    1 day
    1 night

17. How much education is required?
    1 elementary school

18. How much training is given?
    5 weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 much

24. Does the employee meet the public?
    1 work with public

25. How much reading is required?
    1 bulletins

26. How much arithmetic is required?
    1 much

27. How much writing is required?
    1 listing
    1 information to be read by others

28. What kind of speaking is required?
    1 giving messages
    1 answering telephone

JOB ANALYSIS

1. Job title
   BUS BOY

2. Duties of employee
   Cleaning and setting-up tables

3. What kind of job is it?
   12 service

4. Job level
   12 unskilled

5. Experience
   1 training desired
   12 will train

6. Employment
   11 full-time
   5 part-time
   1 seasonal

7. How many employed?
   38 men

8. Are tests given?
   12 none

9. Is a license required?
   2 health certificate

10. Must the employee fill out a written application?
    7 yes
    5 no

12. How are employees found?
    4 employment service
    12 walk-in applications

13. Do you have plenty of workers available?
    7 steady supply
    5 more than enough

14. How are employees paid?
    11 hourly

15. Does the employee?
    12 work with others

16. What are working conditions?
    12 inside
    12 day work
    11 night work

17. How much education is required?
    2 no formal
    8 little formal
    1 elementary school

18. How much training is given?
    1 none
    11 number of weeks

21. Does the employee handle money?
    12 no

22. How much supervision is the employee given?
    12 some

24. Does the employee meet the public?
    3 seen by public
    5 talks to public
    8 works with public

25. How much reading is required?
    4 none
    7 little

26. How much arithmetic is required?
    4 none
    7 little

27. How much writing is required?
    9 none
    2 information to be read by others

28. What kind of speaking is required?
    6 little

JOB ANALYSIS

1. Job title
   BOTTLING LINE WORKER

2. Duties of employee
   Clean and inspect bottles before filling

3. What kind of job is it?
   1 factory

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   2 men
   3 women

8. Are tests given?
   1 none

9. Is a license required?
   1 health certificate

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 wet

17. How much education is required?
    1 high school complete

18. How much training is given?
    1 none

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 seen by public

25. How much reading is required?
    1 little

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    ___ little

JOB ANALYSIS

1. Job title
   MAINTENANCE MAN

2. Duties of employee
   Takes care of equipment

3. What kind of job is it?
   2 service

4. Job level
   2 semi-skilled

5. Experience
   2 will train

6. Employment
   2 full-time

7. How many employed?
   2 men

8. Are tests given?
   2 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    2 yes

12. How are employees found?
    1 employment service
    2 walk-in applications

13. Do you have plenty of workers available?
    2 steady supply

14. How are employees paid?
    2 hourly

15. Does the employee?
    1 work alone
    1 work with others

16. What are working conditions?
    2 inside
    1 outside
    2 dirty
    2 day work
    1 night work

17. How much education is required?
    2 little formal

18. How much training is given?
    1 none
    1 number of weeks

21. Does the employeehandle money?
    2 no

22. How much supervision is the employee given?
    1 none
    1 some

24. Does the employee meet the public?
    1 none
    1 seen by public

25. How much reading is required?
    1 patterns or blue prints
    1 directions

26. How much arithmetic is required?
    1 some

27. How much writing is required?
    1 listing
    1 information to be read by others

28. What kind of speaking is required?
    1 little
    1 asking for tools and materials

JOB ANALYSIS

1. Job title
   PAINTER AND HELPER

2. Duties of employee
   Paints base coats, large areas, no finishing, etc.

3. What kind of job is it?
   2 service
   1 construction

4. Job level
   2 unskilled
   1 semi-skilled

5. Experience
   3 will train

6. Employment
   2 full-time
   1 seasonal

7. How many employed?
   5 men (varies)

8. Are tests given?
   1 employment service test
   1 other

9. Is a license required?
   1 drivers

10. Must the employee fill out a written application?
    2 yes
    1 no

12. How are employees found?
    2 employment service
    1 union halls
    2 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply
    2 more than enough

14. How are employees paid?
    3 hourly

15. Does the employee?
    2 work alone
    1 work with others

16. What are working conditions?
    3 inside
    2 outside
    1 day work
    1 noisy
    2 dirty
    1 low
    2 high

17. How much education is required?
    1 little formal
    2 elementary school

18. How much training is given?
    2 none
    27 weeks

21. Does the employee handle money?
    3 no

22. How much supervision is the employee given?
    3 some

24. Does the employee meet the public?
    3 none

25. How much reading is required?
    1 little
    2 directions

26. How much arithmetic is required?
    2 none
    1 little

27. How much writing is required?
    3 none

28. What kind of speaking is required?
    3 little

JOB ANALYSIS

1. Job title
   PARTSMAN

2. Duties of employee
   Stock and supply parts

3. What kind of job is it?
   4 service

4. Job level
   4 semi-skilled

5. Experience
   4 training desired
   3 will train

6. Employment
   4 full-time

7. How many employed?
   9 men

8. Are tests given?
   1 company-made test
   3 none

9. Is a license required?
   3 drivers

10. Must the employee fill out a written application?
    4 yes

12. How are employees found?
    2 employment service
    4 walk-in applications

13. Do you have plenty of workers available?
    4 steady supply

14. How are employees paid?
    4 hourly

15. Does the employee?
    4 work with others

16. What are working conditions?
    4 inside
    3 dirty
    4 day work

17. How much education is required?
    3 little formal
    3 high school desired

18. How much training is given?
    4 number of weeks

21. Does the employee handle money?
    3 yes
    1 no

22. How much supervision is the employee given?
    3 some

24. Does the employee meet the public?
    3 works with public

25. How much reading is required?
    3 addresses
    4 sales orders
    4 directions
    2 bulletins

26. How much arithmetic is required?
    4 much
    3 sales slips
    3 invoices

27. How much writing is required?
    3 listing
    4 sales orders
    4 information to be read by others

28. What kind of speaking is required?
    3 giving messages
    4 teltphone
    4 asking for materials
    4 giving directions

JOB ANALYSIS

1. Job title
   METAL POLISHERS

2. Duties of employee
   Buffs finished metal products

3. What kind of job is it?
   1 factory

4. Job level
   1 semi-skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   6 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work alone

16. What are working conditions?
    1 inside
    1 noisy
    1 dirty

17. How much education is required?
    1 elementary school

18. How much training is given?
    ___ as needed

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 little

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 none

26. How much arithmetic is required?
    1 none

27. How much writing is required?
    1 production records

28. What kind of speaking is required?
    1 little

29. How much strength is required?
    Hands: 1 great
    Arms: 1 great

JOB ANALYSIS

1. Job title
   BAKERS

2. Duties of employee
   Baking goods

3. What kind of job is it?
   1 service

4. Job level
   1 skilled

5. Experience
   1 training desired
   1 will train

6. Employment
   1 full-time

7. How many employed?
   4 women

8. Are tests given?
   1 none

9. Is a license required?
   1 no

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 day work
    1 night work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 seen by public

25. How much reading is required?
    1 directions

26. How much arithmetic is required?
    1 much

27. How much writing is required?
    1 sales orders
    1 information to be read by others

28. What kind of speaking is required?
    1 giving directions

JOB ANALYSIS

1. Job title
   SWITCHMAN

2. Duties of employee
   Help switch and uncouple railroad cars

3. What kind of job is it?
   1 R.R. yards

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 seasonal

7. How many employed?
   10 men

8. Are tests given?
   ___ none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work alone

16. What are working conditions?
    1 outside
    1 day
    1 night

17. How much education is required?
    1 elementary school

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 little

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 none

26. How much arithmetic is required?
    1 none

27. How much writing is required?
    1 none

28. What kind of speaking is required?
    1 little

JOB ANALYSIS

1. Job title
   GARMENT PRESSER

2. Duties of employee
   Pressing clothes

3. What kind of job is it?
   9 service

4. Job level
   9 semi-skilled

5. Experience
   5 training desired
   9 will train

6. Employment
   9 full-time

7. How many employed?
   2 men
   35 women

8. Are tests given?
   9 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    9 yes

12. How are employees found?
    9 employment service
    4 walk-in applications
    5 word of mouth

13. Do you have plenty of workers available?
    9 steady supply

14. How are employees paid?
    9 hourly

15. Does the employee?
    9 work with others

16. What are working conditions?
    9 inside
    9 day work

17. How much education is required?
    9 little formal

18. How much training is given?
    9 number of weeks

21. Does the employee handle money?
    9 no

22. How much supervision is the employee given?
    9 some

24. Does the employee meet the public?
    8 none
    1 talks to public

25. How much reading is required?
    3 none
    5 little

26. How much arithmetic is required?
    2 none
    2 little
    5 counting

27. How much writing is required?
    7 none
    2 information to be read by others

28. What kind of speaking is required?
    9 little

JOB ANALYSIS

1. Job title
   WASHMAN

2. Duties of employee
   Washing clothes and
   extracting them

3. What kind of job is it?
   4 service

4. Job level
   4 semi-skilled

5. Experience
   1 training desired
   4 will train

6. Employment
   4 full-time

7. How many employed?
   5 men
   2 women

8. Are tests given?
   4 none

9. Is a license required?
   4 none

10. Must the employee fill out a written application?
    4 yes

12. How are employees found?
    4 employment service
    3 walk-in applications
    1 word of mouth

13. Do you have plenty of workers available?
    4 steady supply

14. How are employees paid?
    4 hourly

15. Does the employee?
    4 work with others

16. What are working conditions?
    1 wet
    4 inside
    4 day work

17. How much education is required?
    4 little formal

18. How much training is given?
    4 number of weeks

21. Does the employee handle money?
    4 no

22. How much supervision is the employee given?
    4 some

24. Does the employee meet the public?
    4 none

25. How much reading is required?
    1 none
    3 little

26. How much arithmetic is required?
    1 none
    2 little
    1 measurements

27. How much writing is required?
    3 none
    1 information to be read by others

28. What kind of speaking is required?
    4 little

JOB ANALYSIS

1. Job title
   TIRE REPAIRMAN

2. Duties of employee
   Mount and repair tires on autos and trucks

3. What kind of job is it?
   2 service

4. Job level
   1 unskilled
   1 semi-skilled

5. Experience
   2 will train

6. Employment
   2 full-time

7. How many employed?
   4 men

8. Are tests given?
   2 none

9. Is a license required?
   2 drivers

10. Must the employee fill out a written application?
   ___ yes

12. How are employees found?
   2 employment service
   2 walk-in applications

13. Do you have plenty of workers available?
   2 more than enough

14. How are employees paid?
   2 hourly

15. Does the employee?
   1 work alone
   1 with others

16. What are working conditions?
   2 inside
   2 dirty
   2 noisy

17. How much education is required?
   2 elementary school

18. How much training is given?
   2 number of weeks

21. Does the employee handle money?
   2 no

22. How much supervision is the employee given?
   2 some

24. Does the employee meet the public?
   2 talks to public

25. How much reading is required?
   2 sales orders

26. How much arithmetic is required?
   1 none
   1 little

7. How much writing is required?
   2 none

28. What kind of speaking is required?
   2 little

29. How much strength is required?
   Hands: 2 great
   Arms: 2 great

JOB ANALYSIS

1. Job title
   OFFICE CLERK

2. Duties of employee
   Do general office work

3. What kind of job is it?
   21 clerical
   8 service
   6 sales

4. Job level
   13 semi-skilled
   11 skilled

5. Experience
   16 training desired
   22 will train

6. Employment
   22 full-time

7. How many employed?
   166 women

8. Are tests given?
   10 company-made test
   12 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    21 yes

12. How are employees found?
    10 employment service
    9 newspaper ads
    17 walk-in applications
    10 other

13. Do you have plenty of workers available?
    21 steady supply

14. How are employees paid?
    7 hourly
    10 semi-weekly

15. Does the employee?
    18 work with others

16. What are working conditions?
    20 inside
    11 day work

17. How much education is required?
    8 little or none
    9 high school complete

18. How much training is given?
    18 number of weeks

21. Does the employee handle money?
    19 yes

22. How much supervision is the employee given?
    19 some

24. Does the employee meet the public?
    6 talks to public
    16 works with public

25. How much reading is required?
    18 addresses
    19 sales orders
    14 directions
    19 letters

26. How much arithmetic is required?
    12 much
    12 use machines

27. How much writing is required?
    12 listing
    19 sales orders
    10 production records
    18 information to be read by others

28. What kind of speaking is required?
    18 giving messages
    20 telephone
    8 giving directions

JOB ANALYSIS

1. Job title
   SEAMSTRESS

2. Duties of employee
   Sew and repair torn articles

3. What kind of job is it?
   3 service

4. Job level
   3 semi-skilled

5. Experience
   3 training desired
   3 will train

6. Employment
   3 full-time
   1 part-time

7. How many employed?
   9 women

8. Are tests given?
   3 none

9. Is a license required?
   __ none

10. Must the employee fill out a written application?
    3 yes

12. How are employees found?
    2 employment service
    2 walk-in applications

13. Do you have plenty of workers available?
    3 steady supply

14. How are employees paid?
    3 hourly

15. Does the employee?
    3 work with others

16. What are working conditions?
    3 inside
    3 day work

17. How much education is required?
    3 little formal

18. How much training is given?
    3 number of weeks

21. Does the employee handle money?
    3 no

22. How much supervision is the employee given?
    3 some

24. Does he meet the public?
    2 none
    1 seen by public

25. How much reading is required?
    2 little
    1 sales orders

26. How much arithmetic is required?
    1 little
    2 measurement

27. How much writing is required?
    1 none
    2 information to be read by others

28. What kind of speaking is required?
    3 little

JOB ANALYSIS

1. Job title
   ROOFER

2. Duties of employee
   Repairs to roof of building

3. What kind of job is it?
   1 service

4. Job level
   1 skilled

5. Experience
   1 required

6. Employment
   1 part-time

7. How many employed?
   6 men

8. Are tests given?
   1 none

9. Is a license required?
   ___ drivers

10. Must the employee fill out a written application?
    1 no

12. How are employees found?
    1 union halls
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 outside
    1 dirty
    1 day work
    1 high places

17. How much education is required?
    1 high school complete

18. How much training is given?
    1 apprenticeship

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 patterns or blue prints
    1 directions
    1 bulletins

26. How much arithmetic is required?
    1 much

27. How much writing is required?
    1 information to be read by others

28. What kind of speaking is required?
    1 asking for tools and materials

JOB ANALYSIS

1. Job title
   ASSEMBLER

2. Duties of employee
   Assemble products using screws, rivets, small parts

3. What kind of job is it?
   1 factory

4. Job level
   1 semi-skilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   5 men
   8 women

8. Are tests given?
   1 employment service test

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 employment service
    1 walk-in applications

13. Do you have plenty of workers available?
    1 more than enough

14. How are employees paid
    1 hourly

15. Does the employee?
    1 work alone

16. What are working conditions?
    1 inside
    1 noisy

17. How much education is required?
    1 elementary school

18. How much training is given?
    ___ little

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 none

25. How much reading is required?
    1 patterns or blue prints

26. How much arithmetic is required?
    1 little

27. How much writing is required?
    1 productions records

28. What kind of speaking is required?
    1 asking for tools and material

JOB ANALYSIS

1. Job title
   CHECKERS

2. Duties of employee
   Checking groceries on cash register

3. What kind of job is it?
   3 service
   3 sales

4. Job level
   4 semi-skilled

5. Experience
   2 training desired
   6 will train

6. Employment
   6 full-time
   2 part-time

7. How many employed?
   38 men
   57 women

8. Are tests given?
   5 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?
    6 yes

12. How are employees found?
    6 walk-in applications

13. Do you have plenty of workers available?
    6 steady supply

14. How are employees paid?
    5 hourly

15. Does the employee?
    6 work with others

16. What are working conditions?
    5 inside
    5 day
    6 night

17. How much education is required?
    5 little formal

18. How much training is given?
    6 number of weeks

21. Does the employee handle money?
    6 yes

22. How much supervision is the employee given?
    4 some
    2 much

24. Does the employee meet the public?
    6 works with the public all the time

25. How much reading is required?
    5 sales orders
    3 directions
    2 prices

26. How much arithmetic is required?
    6 much
    6 sales slips
    3 invoices

27. How much writing is required?
    3 sales orders
    6 information to be read by others

28. What kind of speaking is required?
    3 giving directions

JOB ANALYSIS

1. Job title
   WAITRESS

2. Duties of employees
   Waits on tables, serves food

3. What kind of job is it?
   8 service

4. Job level
   5 unskilled
   3 semi-skilled

5. Experience
   2 training desired
   8 will train

6. Employment
   8 full-time
   5 part-time
   2 seasonal

7. How many employed?
   39 men
   39 women

8. Are tests given?
   1 company-made test
   6 none

9. Is a license required?
   ___ none

10. Must the employee fill out a written application?

12. How are employees found?
   3 newspaper ads
   6 walk-in applications
   2 other (referrals)

13. Do you have plenty of workers available?
   1 shortage
   7 steady supply

14. How are employees paid?
   8 hourly

15. Does the employee?
   8 work with others

16. What are working conditions?
   8 inside 7 days
   2 outside 7 night

17. How much education is required?
   3 no formal
   2 little formal
   3 elementary school

18. How much training is given?
   8 number of weeks

21. Does the employee handle money?
   5 yes
   3 no

22. How much supervision is the employee given?
   7 some
   1 much

24. Does the employee meet the public?
   1 seen by public
   8 talks to public
   8 works with public

25. How much reading is required?
   1 little
   5 sales orders
   2 directions

26. How much arithmetic is required?
   4 counting
   8 much

27. How much writing is required?
   2 listing
   5 sales orders
   6 information to be read by others

28. What kind of speaking is required?
   1 giving messages
   1 giving directions
   8 taking food orders

JOB ANALYSIS

1. Job title
   LOT BOYS

2. Duties of employee
   Pick up and deliver cars, parts, and wash cars

3. What kind of job is it?
   6 service

4. Job level
   6 unskilled

5. Experience
   1 training desired
   6 will train

6. Employment
   6 full-time
   2 part-time

7. How many employed?
   11 men

8. Are tests given?
   2 company-made test
   4 none

9. Is a license required?
   6 drivers

10. Must the employee fill out a written application?
    4 yes
    2 no

12. How are employees found?
    5 employment service
    2 newspaper ads
    6 walk-in applications

13. Do you have plenty of workers available?
    3 steady supply
    2 more than enough

14. How are employees paid?
    6 hourly

15. Does the employee?
    2 work alone
    3 work with others

16. What are working conditions?
    6 inside
    2 wet
    4 dirty
    5 days

17. How much education is required?
    5 little formal
    3 high school desired

18. How much training is given?
    1 none
    5 number of weeks

21. Does the employee handle money?
    1 yes
    5 no

22. How much supervision is the employee given?
    1 little
    4 some

24. Does the employee meet the public?
    6 seen by public
    2 works with public

25. How much reading is required?
    2 none
    3 little
    3 addresses

26. How much arithmetic is required?
    4 little

27. How much writing is required?
    5 information to be read by others

28. What kind of speaking is required?
    2 little
    3 giving directions

JOB ANALYSIS

1. Job title
   DELICATESSEN MAKER

2. Duties of employee
   Make salads, sandwiches, etc.
   for sale in store

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 will train

6. Employment
   1 full-time

7. How many employed?
   4 women

8. Are tests given?
   1 none

9. Is a license required?
   1 no

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others

16. What are working conditions?
    1 inside
    1 day work
    1 night work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 no

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 works with the public

25. How much reading is required?
    1 sales orders
    1 directions

26. How much arithmetic is required?
    1 much

27. How much writing is required?
    1 information to be read by others

28. What kind of speaking is required?
    1 talking to customers

JOB ANALYSIS

1. Job title
   MESSENGER BOY

2. Duties of employee
   Deliver telegrams

3. What kind of job is it?
   1 service

4. Job level
   1 unskilled

5. Experience
   1 training desired
   1 will train

6. Employment
   1 full-time

7. How many employed?
   1 men

8. Are tests given?
   1 none

9. Is a license required?
   1 none

10. Must the employee fill out a written application?
    1 yes

12. How are employees found?
    1 walk-in applications

13. Do you have plenty of workers available?
    1 steady supply

14. How are employees paid?
    1 hourly

15. Does the employee?
    1 work with others?

16. What are working conditions?
    1 inside
    1 outside
    1 wet
    1 dry
    1 day work
    1 night work

17. How much education is required?
    1 little formal

18. How much training is given?
    1 number of weeks

21. Does the employee handle money?
    1 yes

22. How much supervision is the employee given?
    1 some

24. Does the employee meet the public?
    1 works with public

25. How much reading is required?
    1 addresses

26. How much arithmetic is required?
    1 little
    1 counting

27. How much writing is required?
    1 information to be read by others

28. What kind of speaking is required?
    1 giving messages

Part II
Youth in the Community Who Have Dropped Out of School

Academic and Familial Histories of Twenty (20) Enrollees in the Out-of-School Neighborhood Youth Corps. Compiled by Marian J. Allison. April 1967

Community Action Program Educational Opinion Survey January to March 1968 by interviewers from the poverty program. Compilation and Implications by Wilma E. Hirst. April 1967

ACADEMIC AND FAMILIAL HISTORIES
OF TWENTY (20) ENROLLEES IN THE
OUT-OF-SCHOOL NEIGHBORHOOD YOUTH CORPS

Researched and Compiled By:

Marian J. Allison

Submitted To:

Dr. Wilma E. Hirst

For use in the study, "Occupational Needs of the Socio-Economic, Disadvantaged, and Other Handicapped Youth of Laramie County School District Number One"

April 20, 1967

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INTRODUCTION

Counseling With Out-Of-School Neighborhood Youth Corps Enrollees

As a part of the war on poverty, the Neighborhood Youth Corps was established by the Economic Opportunity Act. The NYC projects make jobs and income available for young women and men from low-income families and help alleviate serious shortages in community services.

The program is administered by the federal government but each individual community project is initiated and directed by local sponsors who are aware of the community needs.

The NYC provides enrollees with the opportunity to perform urgent public service needs in state, county, municipal government, or in private non-profit organizations. Many of these public services are not being met or are greatly neglected. NYC work experience may, also, contribute to the development, conservation of natural resources, or recreation areas.

The federal government is authorized to pay up to 90 percent of the cost of a project. The local sponsor contributes ten percent in cash, training facilities, services, or equipment. Out-of-school youth enrolled in this program are paid $1.25 per hour and may work up to 32 hours a week. Duration of the projects generally average about six months.

As a part of the recruitment process, potential enrollees receive pre-enrollment counseling. Professional personnel from the State Employment Service, who are capable of determining their potentialities and interests, provide the counseling services. Special emphasis is placed on encouraging dropouts to resume their schooling but where this is not realistic, work experience is gained that should increase their employability. Attitudes, behavior, and habits that are necessary for regular employment are stressed during the counseling interviews.

After the young people were screened and selected for employment, they were placed on various job sites. These included the golf course, cemetery, parks, street and alley department, police department, two hospitals, schools, and federal offices.

Counseling with the present fifty enrollees was conducted individually and in groups. Groups were utilized to an extensive degree, principally because of the unique benefits a group contributes to the growth of an individual, and because of the lack of counseling staff. Groups consisting of six to ten enrollees were held once a week for one hour for five months. The sessions were held near the job sites and were taped for further reference. The sessions were group-centered and unstructured for the most part. In these situations of acceptance and therapeutic support the members were able to examine personal and cultural values as they explored their attitudes about themselves and the outside society.

School life was normally an emotionally charged subject for most of the enrollees. They brought up academic themes repreatedly and seemed to want to retaliate in some way against an experience in which they had been forced to fail. This introduction is followed by twenty (20) academic and familial case histories of these young dropouts. The histories have been the result of several months of counseling and recent interviews specifically designed for detailed scholastic information. Cumulative school records have been carefully examined and any obvious trends of similarities have been recorded.

TABULATION OF SIMILARITIES IN ACADEMIC AND FAMILIAL
HISTORIES OF TWENTY (20) ENROLLEES IN THE OUT-OF-SCHOOL NEIGHBORHOOD YOUTH CORPS

1. Number of enrolless who lived with natural parents while attending school 15

2. Average number of children per family 6.3

3. Number of enrollees:

   who attended total school years in Cheyenne 13

   from a minority race 15

   whose families received welfare aid 4

   with physical handicaps 1

   with recognized emotional problems 2

   who attended school for slow learners 4

   who caused disciplinary problems 5

   who had at least one social promotion 7

   who were sent to reformatories 2

   who have been charged for misdemeanors 13

   who have relatives that have been in prison 3

   who are now married 4

   who have siblings who finished high school or are getting good grades now 12

   who stated that fathers were unrealistically strict 6

4. Average age at time of in-depth study 18.3

5. Average age when school was dropped 16.2

6. Average grade when dropping out of school 9.2

7. Average IQ 87.4

8. Average grade when noticeable decline in grades began grade three

9. Average basic skill grade level at beginning of grade seven in:

Reading 5.6 Arithmetic 6.0 Spelling 5.8 English 5.4

10. Average of final grades received by enrollees during total school years in:

Reading 4.0 Arithmetic 3.9 English 4.1 Social St. 3.7

11. Average days missed per year by grade:

Grade one 12 days Grade two 13 days Grade three 12 days
Grade four 11 days Grade five 15 days Grade six 11 days

12. The enrollees read the following materials at the present time:

Newspaper 8 No reading 5 Comic books 4 Magazines 3

Paperback novels 2 Love stories (low morality) 2

History books 1

13. Number of enrollees who gave subjects that they liked in school:

P.E. and health 10 Woodshop 9 Science 4 Arithmetic 4

Metal shop 4 Homemaking 4 Art 4 Typing 3

English 3 Social St. 2 Music 2 Drafting 2

Spelling 1 Leathercraft 1 Reading 0

14. Number of enrollees who gave subjects that they disliked in school:

English 10 Reading 3 Social St. 3

Metal shop 3 Arithmetic 2 P.E. and health 2

15. Number of enrollees who disliked attending school 10. Reasons given:
Work too hard to understand.
Wanted to be with other kids who were ditching.
Coordination low in P.E. classes.
Received no extra help -- teachers didn't care.
Noisy classrooms.
Physical punishment made students meaner.
Ditching was exciting.
No stimulation was given to learn.
Studies were too slow at Chaplin.
Definite boundaries and limits were not set in regard to assignments -- confusion followed.
Didn't like diagramming sentences.
Slow students were embarrassed in class.
Teachers should grade papers instead of other classmates.
Expulsion from school made slow student get further behind than ever when he returned.
Being expelled was a relief many times from tension resulting from having to attend school.

Coordination in writing and thought processes was too slow to finish in-class assignments in essays.
Didn't like homework and carrying books home.
Grammar is confusing.

16. Number of enrollees who disliked teachers 13. Reasons given:
Had no respect for students' feelings.
Teachers too impersonal -- should share personal experiences that are not taught from books, teach about life as it is.
Superior attitude of teachers --"think they're God"
Accused of things he didn't do -- got tired of being chewed out.
Physical discipline by hitting students with metal ruler.
Individual appearance is the concern of the individual only.
Never sure of what teachers wanted.
Some teachers don't like anybody.
Work redone still merits a flunk.
Unduly harsh discipline.

SCHOLASTIC AND FAMILIAL CASE HISTORIES

CASE #1

Personal and Family Background

This seventeen-year-old Spanish-American boy now lives with his grandmother in Cheyenne. He lived with his natural parents, who are now separated, for several years in Colorado. He has five younger siblings who reside with his mother in Colorado. His father is a tank mechanic at a depot in Denver. He attended a country school for the first three years of school and then transferred for the next three years to a city school. He came to Cheyenne to live with his grandmother and attended the seventh grade at Johnson Junior High School. He wanted to attend school in Cheyenne because he was quite upset over the fights between his parents over alleged adultery. The boy states that his father was so very strict that the boy could never spend any time with other young people or stay out very late. This caused him to rebel and refute authority. He has been drinking since he was about twelve and when he is inebriated he always seems to get into trouble. He spent eight months in reform school for car theft in Colorado. He states that he is the type of person who goes along with any suggestions that are made by his current crowd and he does not think-out possible consequences to delinquent acts. Even so, he now works around a young boy who does not like to drink or smoke, so this boy goes along with his friend's thoughts about these things for the present.

Academic Progress

There are no complete records for this boy. However, for grade six he did average work in reading, writing, spelling, language, and social studies while his arithmetic grades were extremely poor. The teacher states that he tried very hard, was attentive, and no discipline problem but that the work was very hard for him. His P.E., art, and music grades were satisfactory.

He finished grade seven in Cheyenne with poor grades. He flunked mathematics the whole year, barely passed English, shop, and social studies. His health and P.E. and reading grades were average. The one achievement score on basic skills that is recorded shows that he was 2½ years behind his seventh grade level. His IQ is reported to be 67. He was classified as mentally retarded and probably could have benefitted from a special school.

Attitudes Toward School

He liked English, woodshop, P.E., and mathematics. He especially liked the math teacher because the teacher took a special interest in him and helped him over the rough spots. He said that some of the teachers helped the slower students and others did not. He feels that he was no troublemaker but he was expelled from school for fighting in the showers after P.E. class. He says that many of the kids who are expelled for various reasons from school for a period of time are actually relieved and glad because the pressure is off about attending classes regularly. He says that actually this is a very bad way to discipline a slow student because he gets further behind and upon returning faces an impossible task of trying to catch up with the others. Another practice that is humiliating

and demoralizaing to a slow student is letting other students grade his papers. He feels that the teacher should make some other arrangements so that slow students do not become the brunt of jokes by other students. He hardly reads anything now.

Expectations in the Future

This boy is working as a busboy until October, when he wants to return to Colorado to work in the sugar plants. He is thinking in terms of only months ahead and has made no plans for long-range success. He definitely does not think of returning to school. Success to him is money for material things and making a marriage work for both partners.

Counselor Comments

This boy seems to have some insight into his own problems and the problems of others like him. He has a good deal of self-respect and pride, even though he has had a tremendous share of difficulties trying to struggle through his first seventeen years. He accepts the responsibility for things that he has done, like stealing cars but has no particular desire to make any tremendous changes in his life to become a "good and better" person.

CASE #2

Personal and Family Background

This eighteen-year-old Spanish-American boy lives with his mother and stepfather. They have just recently married and the boy's real father has also remarried. His mother works in a hospital as a housekeeper and his stepfather works as a laborer at the railroad. He has two older sisters who are married and apparently well adjusted. He is the oldest one at home now, has a brother one year younger, two little sisters, and a small niece, also, living at home. His first six years were spent in Greeley, Colorado.

A move was made back to Cheyenne were the boy attended three years of school. Two years were spent at the Worland Industrial Institute for breaking, entering, and vandalism. He finally realized at this school that he had to cooperate if he ever hoped to be released, so he finished two years of high school.

He stated that the cause of his imprisonment was that he was all bad, had no conscience, and cared for no one. He used to skin kittens and beat up little kids without remorse. However, he readily volunteer that he used to pick flowers for his mother and likes beautiful flowers very much.

Academic Progress

The comments from this boy's teachers indicate that from the second half of first grade his attitude was one of indifference and irresponsibility. He had excessive absences for the first two years but all of his grades were average except reading and language arts, which were just passing. He was retained in first grade which upset him quite a bit and in the third grade all of his grades were just passing except health and music which were average.

Throughout nearly every year after that, with some exceptions, he had very poor grades in English, reading, and social studies. He did fair work

in mathematics, P.E., science, art, and shop. His achievement levels in basic skills were very sporadic. His arithmetic level was about even with the grade levels for each grade. His reading, spelling, and English levels prove to be from 1-1½ years behind the grade level. His intelligence is low average.

Attitudes Toward School

While attending Johnson Junior High this boy stated that he had no feelings about anyone there. Nothing seemed to matter one way or another. He felt that ditching was exciting and wanted to see how much he could get away with. He feels that he was lazy and did not study like he could have but that the teachers did not teach like he would have liked.

He mentioned that he liked to know of the teacher's personal feelings and special experiences that were not mentioned in any of the books but that most of the teachers did not teach this way. The discipline that was used on him made him hate school and teachers more than ever. He received swats and trips to the dean many times during a week.

He brightened up when he talked about sports in school. These he really liked and got fair grades in P.E. classes when he went to school. He reads the sports page in the newspapers everyday but that is about all.

This boy feels that he had to follow along with a rough crowd of peers so he would not be called a chicken. Now that he is older, he seems to realize that an "anything goes" attitude may not be the thing that will get him any place that is worthwhile. Mathematics and algebra at Worland seemed to be challenge to him and he feels that he did well in these subjects and, also, in drafting which appealed to him.

Expectations in the Future

He has no real goals and his stepfather gives him material things. He is waiting for the draft to take him, then he might take some more schooling but he isn't sure. A secure job seems to be desirable to him but he admits that he is lazy and probably would not work too hard right now.

Counselor's Comments

This boy does seem to be rather apathetic about most of the things that interest other people. He can be friendly but not in a sincere way. His true feelings are so deeply hidden that he has convinced himself he really doesn't care about anything or anyone.

CASE #3

Personal and Family Background

This seventeen-year-old Spanish-American boy lives with his natural parents and ten brothers and sisters. His father has been a cook's helper but is now unemployed. He attended school for welfare recipients to learn this skill but it did not work out well. His mother is a housewife. The parents neither speak nor write English and only finished sixth grade. The family was living in Cheyenne almost constantly during the school years of this boy.

Several of the older siblings are leading satisfactory lives. One brother is a mess attendant at WAFB, one is a mechanic, and a sister has married a serviceman and lives in Germany with her family. One fifteen-year-old brother has been placed in an industrial institute for truancy. This brother is said to have a "mean temper" and got mad when all the teachers picked on him.

Academic Progress

School grades were average during most of the primary subjects and he had some language difficulty. Arithmetic and language arts started dropping to just passing in the third grade and followed this trend throughout the sixth grade. His grades showed a drop in English, social studies, and reading. Grade nine produced all 4's and F's.

Elementary teachers reported that he tried hard but had some sort of difficulties at home. By ninth grade they report that he was lazy and truant too much. His achievement tests show that he was average to below average for his age and grade and that his IQ is just slightly below average.

Attitudes Toward School

The boy stated that most of the teachers liked him pretty well. One music teacher seemed to dislike him but he said that she didn't like anybody anyway. He especially liked woodshop, P.E., and art. He liked to draw cartoons and said that the teacher was older and seemed to understand him. He disliked English and said that he was just confused by grammar. His teacher didn't take time to help him, even though she kept him after school to redo work. Even though he repeated his work, she still gave him flunks on the papers. He feels that he was not a troublemaker and tried to cooperate as much as he could. He felt that after his grades got so bad, it would do him no good to continue in school so he joined the Job Corps. He has a good record of several months of training but still cannot get a job with the type of skill he received (baker's helper). He reads magazines now but not regularly.

Expectations in the Future

Success to him means training or schooling of some sort so he can earn money to buy material things and travel some. He would like to return to night school someday but is involved right now with moving out of his parent's home. He feels that during the last five years of his father's unemployment the father has gotten very strict with the children since he does not have enough concerns to fill up his time outside the home.

Counselor Comments

The boy has grown very resentful of his father's narrow attitude and just wants to get away from home. He seems to have some qualities that might help him "pull himself up by his bootstraps". He mentions patience and perseverance as qualities for success. He stands up for his own rights but he is not an instigator of trouble. He fondly talks about his younger brothers and sisters and hopes for a family and home of how own someday.

CASE #4

Personal and Family Background

This nineteen-year-old, Caucasian girl has recently remarried and is expecting her second child. She finished eleventh grade in Cheyenne and had to drop out of grade twelve because she was married and pregnant at the first of the year.

She has had a stepfather since she was five years old and shuttled back and forth between Washington and California during her first five years between her parents until her mother remarried. Her natural father is an alcoholic and has married seven times. She kept in touch with him until just the last few months and has now lost contact. She could not talk intimately with her mother but has had a very close relationship with her stepfather. She has a younger half-sister of whom she has always been jealous. When she was still attending school she thought that her mother didn't love her and that her sister got all the attention. There have been no prison records in this family.

Academic Progress

This girl attended school during elementary years in Colorado. Her record in Cheyenne begins in grade six at Fairview. Here she received average and above average grades. During the next year she did about the same gradewise and the teachers wrote that she was a hard worker and dependable.

The next year her grades dropped, she became very interested in boys, and very jittery. She did improve during her next year, dropped quite a bit the next, and then again went up.

Her last English grades were above average, social studies and history were below average for the most part. She could have been an excellent student with her above average learning ability.

Attitudes Toward School

She has felt that all of her teachers have liked her through school, except for her Spanish teacher. She had difficulty with this subject and did not do homework as she might have. She was kicked out of Glee Club for talking but this is rather a natural habit for her. She didn't feel that this was much of a problem. She loved English because it seemed to be a naturally easy subject for her. She has been taking stenoscript in night school trying to finish up her high school work. She is now pregnant and not attending classes.

Expectations in the Future

Making a successful second marriage is of primary concern to her now. She has a two year old son by her first marriage and seems to love him very much. She will move to Pennsylvania soon with her new husband and is learning much about what it takes to make a good home.

Counselor's Comments

This girl has not been concerned with school grades since she has above average intelligence and does well academically for the most part. Her main concern, according to this counselor, is her need for love. She has been fairly popular with her peers and able to communicate with older people but she still has a fierce need to prove that she is a lovable person. Twice she has become pregnant and forced herself into marriages. She did have a good relationship with a school counselor but academic things will be neglected until she resolves her other needs.

CASE #5

Personal and Family Background

This Spanish-American boy is eighteen and lives with both of his natural

parents. The father has been a junkyard laborer for several years and is now receiving welfare aid. He will attend training soon under the OEO Program. His mother has been very ill with successive strokes. He has six siblings, two older and four younger. His two older brothers both have been in prison for breaking, entering, and stealing cars. Five of the children in this family have attended special schools for slow learners and two are considered normal learners.

The family has not been mobile since the children started attending school in Cheyenne. The boy himself has been held in city jail for reckless driving and disturbing the peace.

Academic Progress

This boy entered Chaplin Special School after first grade. His IQ level is about 55 to 65. He seemed to do well at Chaplin and tried hard in all classes, according to his teachers. He did very well according to the Chaplin standards and tried to please his teachers and cooperated with his classmates.

By the time he ended his time at this school his reading, arithmetic, and study skills were equivalent to about a fourth grade level at the average school. His spelling and social studies were just over the second grade level.

Attitudes Toward School

Most of the teachers liked this boy, according to him. He stated that while he was attending Chaplin School he liked all the teachers and they liked him and were very nice to him. He graduated from this school but seems to have no skill that he can use in obtaining employment. He fought classmates a few times and was given a chance to box it out with gloves when these differences arose. He felt that this was a good way to resolve his difficulties with others. He said that he liked the metal shop, woodshop, and typing. In fact, he wishes he was back in school now. He reads very little and when he does read, picks newspapers and comic books.

Expectations in the Future

Success to this boy is a vague thing. He just knows that he would like to help out at home by working in the NYC Program. He is thinking about joining the Job Corps after he works awhile and puts away some money. He was once terminated from NYC because of lack of cooperation and unreliability but he has been rehired and seems to be doing very well. He is, also, worried that the draft might get him.

Counselor Comments

This person is very vague about anything that he thinks would be helpful in school. He isn't sure about what to expect in school and he has simply gone to school and studied because he was told to. While he was there, he stated that he didn't question authorities or curriculum. He liked everything about school. Success to him seems to be being comfortable in a simple work situation and having people like him.

CASE #6

Personal and Family Background

This seventeen-year-old Spanish-American boy's natural parents are living

together and have three children. An eighteen-year-old girl has just graduated from high school, an eleven-year-old girl is the youngest, and the middle child, which is this boy under study, has dropped out of tenth grade. This family has not been mobile at all. There is no prison record of any kind. The father is a railroad laborer and the mother a housewife. The boy deeply resents the success of his older sister in school and readily admits this resentment. The boy feels his father has never once backed him up on anything but favors the more intelligent sister and the little sister.

The counselors at his school have had sessions with the father to discuss the boy's ditching problem and the father promised to help in any way. The boy says that they were not sincere because after the parents left, they treated him worse than ever. He feels he was belittled and derided to excess and tried to escape by ditching school. The boy's mother does take his part on occassion.

Academic Progress

All through school this boy has reports from the teachers of willingness, hard work, and dependability but his mentality will not permit him to become a really good student.

After grade three his achievement levels in nearly all subjects started to fall behind until in grade ninehis reading skill was three years behind the ninth grade level. His intelligence is low average and his last year of school produced one failing grade in mathematics and four just passing grades in the other subjects.

He has attempted night school English but was extremely embarrassed when asked to recite or read, so he dropped out of this class about halfway through it.

Attitudes Toward School

This boy states that generally the teachers liked him and he liked most of them but that very little in school stimulated him enough to like school. He ditched a lot during the classes he hated, such as English and history. He nearly always went to Band in the morning and to science in the late afternoon. He said that subjects could be learned by touch and experiment easily, even though they were hard subjects that required reading and had no definite time and study boundaries were despised.

P.E. was liked when individual sports were undertaken like swimming, weightlifting, and wrestling but sports involving good coordination such as ball games were disliked. This could be because of his very low manual dexterity and the embarrassment that followed poor performance in class.

This boy started an adult evening class in English to try to make up a credit so he might possibly begin school again in the fall. He gave it a valiant try but said that the humility and embarrassment he felt in class when he was called upon to read aloud or explain what he had read and could not understand was too much to bear. So again he failed in school and dropped out. He says now that he does no reading of any kind except cartoons or comics.

Expectations in the Future

This boy deeply wants to finish school. He resents being called a dropout and knows that an education is essential for success. He has become very attached to a religious brotherhood he was exposed to at St. Mary's Catholic School. He wants to become a religious brother. This wish has stemmed from the fact that this religious order has taken an individual interest and concern in his welfare and future. He possibly will finish school through them, attend school in New Mexico, or Texas next year.

Counselor Comments

With this boy's limited general learning ability and his lack of verbal ability, the present school subjects are almost impossible for him to master. He has done a reliable, dependable job as a kitchen helper at DePaul Hospital and thoroughly enjoys the people he works with and the success he has experienced since working there. He seems to be confused more than anything else about his inability to grasp academic concepts. He feels that if he works very hard, he should be able to make it through high school.

CASE #7

Personal and Family Background

This Spanish-American boy is eighteen years old and lives with his natural parents. His father is a railroad laborer and his mother a housewife. He is the oldest of seven children. This family has been in Cheyenne for many years so the boy attended Cheyenne Public Schools through the tenth grade. He has a sister who is one year younger than he and seems to be doing very well in eleventh grade. He says she studies a lot and attends school regularly. He states that she probably is smarter than he is but she still studies, too. One brother who is younger than this sister is doing very poorly gradewise and in citizenship but the other children are doing average to good work.

No one in this family has been sentenced to a correctional insititute but this young man has been fined and imprisoned for several days for disorderly conduct and drinking under age. He was always questioned by the police while he was in school when a rumble was about to occur or if they needed some more information during an investigation. He disliked always being accused of being an accomplice to crimes. He did admit that he generally always knew what was about to happen and to whom but that he never "ratted anybody off". He was once picked up for car theft with another boy but stated that he didn't know that the car was stolen and was released for lack of evidence. The other boy confessed to a murder when he was questioned.

Academic Progress

He had difficulty in the lower grades learning good work habits. His achievement tests in basic skills were about even with the norm for his grade until grades five, six, and seven when he seemed to fall about one to two grades behind level. He liked to recite orally in the lower grades and seemed to have an interest in reading at first. English grades in seventh and eighth grades were about average. In art and social studies he did well in seventh grade but other than these he barely passed the next two years. He flunked history and metal shop in tenth grade and all subjects before he withdrew in eleventh grade.

His aloofness and hostility in the later years probably caused him to score poorly in his IQ tests which show that he is below average by many points.

Attitudes Toward School

He has always liked his shop courses and the work with his hands. He said that he especially liked two male teachers that he had for social studies during grades seven and nine. They seemed to explain things very well and helped him when he was having difficulty with the subject.

He liked P.E. for the most part. He liked trampoline, swimming, tennis, and rope climbing but he hated the exercises. His P.E. teacher for physical fitness

disbelieved him when he had a pain in his side and wouldn't let him sit out the class, so he just didn't participate.

He said that he disliked the teachers and subject of English very much. Some of the stories were okay but diagramming sentences was just "too much".

He did say he disliked carrying books home at night and didn't study very much. He described his home as being a place where one could study, however, if he wanted to.

When he entered grade ten, concepts really started going over his head in most subjects and he got very little help from the teachers. He said that all the slower kids were too embarrassed to admit that they did not understand what was being taught so they said nothing and got further behind than ever.

He says that one day he started down the aisle and a girl put her foot out so that he tripped. He hit her on the arm, causing a large bruise,and was consequently kicked out of school. Swats that were administered on him for disciplinary reasons only made him meaner and more vengeful than ever. He reads only newspapers now, mostly the sports page. He feels that most teachers want everyone to conform to their standards in appearance and actions and that most kids like to conform to what is expected by their peers.

Expectations in the Future

Success to this boy is having money to buy material things. He thinks that if you have money you don't need much else. He plans to be married in the near future and live with his parents for awhile. He has no long-range plans for his future beyond this and says that he just lives each day as it comes along. You can't plan too far into the future because things can change. He feels that having a wife will settle him down and change him. His future wife is now in the ninth grade.

Counselor Comments

This boy talks very fast and seemed very impatient and hostile when he first talked with the counselor. In his own way, he was eager to help with the school project, possibly because, for a change, the school needed him in a way. He is not motivated toward middle class standards and he sees schooling and learning as something he can't handle successfully.

He has had to become aggressive to try to compensate for his mental and social lack in school and to let others know that he does exist and must be reckoned with. He is another youngster who seeks early marriage, probably so he can feel he is close to and that he belongs to another human being who thinks he is important.

CASE #8

Personal and Family Background

This young girl lived with her natural parents, who were of Philippino and Indian descent, until the death of her father in 1960. This family has lived in the Cheyenne area since all of the children were very young. This girl has six siblings, three older and three younger. There have been no prison records in this family and several of the children have seemed to have acquired a certain amount of success in their lives. One older brother is attending trade school in Laramie under the GI Bill, another older brother is a cook and apartment house manager in Alaska, and an older sister is a sales clerk at a local

ready-to-wear shop and has three children.

All of these children graduated from high school. The three younger children seem to be doing well, also.

This girl started getting bad grades in tenth grade, finished this grade and dropped out of grade eleven. The mother has always drank excessively and after the death of her husband the drinking problem was aggravated.

The family has been on ADC for seven years and the mother and younger children, one of whom is illegitimate, gets additional help from some of the older members of the family.

During her early teen years this girl helped with family finances by working after school as a waitress. She was constantly nagged by her mother about having to help at home. This left little time for studies, had the girl been interested enough to do them.

Academic Progress

The teachers report that she tended to be spasmodic in her work habits and that her environment had a tremendous effect on her school performance. She started falling behind in basic skills about third grade and steadily declined since then. She did average work in social studies and reading for several years but eventually failed all subjects in tenth grade. Her IQ is low average and her achievement scores for every subject in seventh grade, except arithmetic which was slightly behind seventh grade, were about 1½ years behind grade level.

Attitudes Toward School

This girl was quiet in school and was either liked or tolerated by her teachers because she gave them no trouble. She liked P.E., especially swimming and home economics, except for the tests. She says that she was never sure about what her teachers expected on paper-and-pencil tests. She didn't like English, history, or general business. She especially didn't like the attitude of the teacher in general business because she was exasperated when the girl "couldn't catch on" or didn't try. She now reads comic books and True Story magazines.

Expectations in the Future

The girl has recently been married to a nineteen-year-old boy who has graduated from high school. They plan to buy a car, plan for a house, and have a few material things that they have never had. The boy, too, comes from a poverty background but has been motivated to become responsible for himself and his wife. The girl feels that a successful person does what must be done at the moment. She feels that holding a job steadily and having money for basic needs is success.

Counselor Comments

Probably this girl could have finished high school given the time and motivation to try. For several months she was holding the household together with her salary by buying necessities for the smaller children and seeing them off to school in clean clothes. She was required to do all the housework and cooking that was done after she finished at her job as a waitress. This to her was more important than trying to study and go to school.

CASE # 9

Personal and Family Background

This Spanish-American boy lives with his natural parents. His father is a retired railroad laborer and his mother a housewife who barely understands English. He has one sister who recently dropped out of school after eighth grade, a brother who turned 21 recently and who has a record of juvenile offenses, and another brother who is serving a prison term for assault and burglary. This family has been in Cheyenne for many years. All of the brothers have been known to "look for trouble" and have been in many fights and drinking disturbances. Their idea of a good time is to drive to Colorado and drink and beat up the local boys there. This boy, who is 18, seems to be a little more mature than his brothers but he always gets involved when his brothers start trouble.

Academic Progress

He received all average grades through third grade and then started progressively going downhill gradewise. He did average work in music and art after this but every other grade was "4" or "F". He was socially promoted the last two years and had to repeat seventh grade. Reading and spelling were nearly always an "F" grade every semester. Achievement scores show that every subject was behind the grade level after third grade and the reading skill in seventh grade was three years behind this level. His IQ score is about 20-30 points below average.

Attitudes Toward School

This boy has no real feelings about school one way or another. He says that most of the teachers liked him and he liked most of his teachers. He didn't really expect much from school except an eighth grade education. All of his family has only received an eighth grade education and they seem to think that is all a person should have to get a job and money. This boy had a very difficult time in school trying to turn in acceptable work. His understanding of English usage is extremely limited and his low general learning ability has hampered his achievement in school. He said he enjoyed sports and science very much but has nothing to say about the other areas of school.

Expectations in the Future

Success to this boy has been to get out of school as soon as possible, have enough money to have a party on Saturday night and have a car that will run. This seems to have been changing during the last few months. He has come to realize that a steady job is highly desirable and that much can be accomlished when a set amount of money is received every month. He would like training or a higher-paying job than the one he now holds so he can be married in the near future.

Counselor Comments

This boy responds to interest and respect from people in authority. If he is reprimanded or belittled, he becomes very distant. He has different moral expectations than the average middle-class person. Some of these include loyalty to relatives and friends to the exclusion of self-preservation, hatred for a single girl who gives up an illegitimate child for adoption, and women should be "straightened out" by physical punishment.

CASE # 10

Personal and Family Background

This eighteen-year-old boy is of Hawaiian and Spanish American descent. He has a married sister, two brothers, 17 and 14, and a little sister enrolled in kindergarten. The older brother is failing in school but the younger brother is doing average work. The father is a truck driver for the National Guard and the mother a housewife. This couple is his natural parents.

He now lives with his grandparents and an adopted girl. He has stayed with them for several years on and off because of conflicts at home. He has spent most of his school years in Cheyenne. His junior high school years were fairly normal with average grades.

He was picked up by the police for petty theft of a recording during the summer after ninth grade. He was not allowed to leave the house or yard all summer for this act. This made the boy very bitter and spiteful toward his father. The next year he started having trouble with school authorities about where he was going to school and what he was going to take. He disliked P.E. and ROTC, both of which he was required to take. Heated squabbles and hostilities developed.

Academic Progress

This boy's work habits during elementary school have been slow in growth. The teachers report that he likes to talk but he is immature and inattentive. Most of his grades were average with the exception of reading and language arts, which were just passing throughout grade school. He continued to have difficulty with reading and English in junior high school but with improved work habits in eleventh grade when he received average grades in all subjects except American history, which he flunked.

His achievement tests reveal that he was about even with the expected score for each grade in each subject. Reading fell far behind in fourth grade but the score was subsequently raised. His IQ score falls in the low average group.

Attitudes Toward School

Most of the teachers liked this boy and he seemed to like most of them, especially a male English teacher. This subject was enjoyed but probably the most important thing was the personal regard and friendship that they enjoyed together. He liked drafting and woodshop but he thought metal shop was boring and uninteresting. He felt that the assistant principal was unduly harsh and unkind in meting out discipline and started ditching class. He finally dropped out and has been taking night school with good results.

He thinks he might return to school in the fall and try to finish. He reads newspapers mostly. He likes the Dear Abbey column, which he feels helps him with many of his own problems. He has always liked art and draws much of the time.

Expectations in the Future

He hopes to finish high school somehow and then possibly attend art school. He feels that an enjoyable, lucrative job is desirable but isn't just sure how he wants to accomplish this end.

Counselor Comments

This boy seems immature in his dealings with authorities and personal problems. His very strict upbringing has led him into rebelling and his frustration level seems quite low. He has a tendency to exaggerate somewhat, also. He is always very flighty and extremely talkative.

CASE #11

Personal and Family Background

This Spanish-American boy lives with his natural parents. His father is a railroad laborer and his mother a housewife. He is the oldest of four children. One sister, one year younger, has won a scholarship for her good grades and the other two children seem to be doing well in school, also. This family has always lived in Cheyenne and there are no police records.

Academic Progress

This boy did unsatisfactory work in kindergarten, first, and second grades. He repeated second grade, still unsatisfactorily and was suggested for Chaplin Special School. The teachers reported that he was most cooperative, quiet, and that he tried hard to learn. He still had some difficulty with his reading and English but for the most part, he had successful years at Chaplin.

Upon his leaving school he had attained about a fourth grade level in most skills. His total IQ was around 60 to 70. He still learned no special skill that would equip him for a job of some kind.

Attitudes Toward School

According to his account of his school days, the boy went through ninth grade at Johnson Junior High and through one-half of tenth grade at Central. He tried very hard to study and keep up with the other students but had great difficulty staying with the rest of the class. He especially liked woodshop and swimming. He did not become fond of any one teacher but tried to do well, caused no trouble, and took the assignments as they were taught. The teachers liked him but were concerned with his lack of general learning ability.

A conference was held with his parents and it was decided that he should transfer to Chaplin Special School. He attended this school for one year and states that here he lost all interest in school. The subjects were too slow and uninteresting for him and stated that he would never come back. He did seem to enjoy the typing course at Chaplin, however.

He now likes to read history books and newspapers. He entered the Job Corps for several months to learn a skill. He learned some about printing and a little about camera repair but has not been able to obtain employment in these areas. He is now utilizing his janitorial training that was learned through Goodwill Industries by cleaning one of the schools.

Expectations in the Future

He recently applied for Job Corps training again but was denied, probably because they felt he could not be taught anything more advanced than what he had already taken. He desperately wants training in any field so he can be assured of a permanent income and steady job. He feels that a successful person is reliable, conscientious, and can take care of himself.

Counselor Comments

This boy seems to be quite concerned about what his future will hold. He does not think only of short-term jobs but would like to learn a skill that he can utilize here in Cheyenne. The counselor feels that his test scores are quite misleading and that this fellow could profit from additional training.

He lied to the counselor about where he attended school. It has been proven that he spent all of his time in school after second grade at Chaplin Special School, which entailed nine years. It is suspected by the boy that he lost a job after he told his employer that he attended school at Chaplin. He has learned the various reactions of people when they hear of Chaplin boys and is reacting accordingly by trying to deny that he had to go there.

CASE #12

Personal and Family Background

This boy is Caucasian and was the firstborn of a middleclass family. When he was born he suffered hydroencephalitis which has impaired his mental ability considerably. He is very tall, big boy but he is severely retarded. His parents both work, his mother is a chief operator for the Telephone Company and his father works for the railroad. He has two sisters and one brother who seem to be average in school work.

Academic Progress

He attended regular school through the third grade but had great difficulty keeping up with the others in several of his subjects. He was tested individually for IQ and then recommended for special school. He attended Chaplin Special School for seven years and apparently adjusted fairly well.

Teachers state that he seemed lazy at times and had poor self-control. His attention span was very short and directions were hard for him to follow. English, woodshop, and social studies grades were extremely poor. He seemed to like helping others when he finished his last year at this school.

Attitudes Toward School

This boy felt that all the teachers liked him all the time. He liked all of them, too. He disliked social studies because it was too hard but enjoyed homemaking and metal shop. He liked English and was at ease with the tests in this class because the questions were all written out (objective tests) and were easy to do. He didn't like to have to write essay-type papers, probably because of his coordination and the length of time that they took. He enjoyed P.E. and got good grades in this. He stated that he really liked school but that he did not learn anything that would help him get a job in Cheyenne

Expectations in the Future

He ways he has no plans for the futur at all and hasn't thought about it much but would like to hold a pretty good job.

Counselor Comments

This boy was very lonely and bored after quitting school, with nothing to

do. He delivered papers one day a week and was very reliable. He feels that this is for kids and that he can do better. He has always been grateful for any spot labor work that has been offered him and has tried to do well in any employment. He was employed for the NYC Program for several months and was exposed to a "rough" bunch of boys. He seemed to learn how to handle himself with them socially, which this counselor feels will be invaluable to him in his later life out in society. He is very dependent upon his parents but would like to feel worthwhile within himself. He has recently been placed as a dishwasher in a reputable establishment and it is hoped that he can become somewhat independent.

CASE #13

Personal and Family Life

This eighteen-year-old Spanish-American boy now lives with his brother-in-law of about his same age. His parents are divorced and his father is remarried. The father works as a janitor. About a year ago the father accused his wife of adultery and excessive drinking and filed for divorce. The couple had eleven children and they now live with the mother. This boy is the oldest of the children and will not live with his mother. He stayed with friends for several months after the divorce. He misses his father very much but the mother will not allow him on her premises, so the boy has not visited with his father for months.

This boy finished tenth grade and one brother is now in tenth grade and should finish school. One sister became pregnant and dropped out of school to be married. The other children are attending school in the lower grades. The family lived in Cheyenne during all of this boy's school years. There is no record of prison in the family but the boy has been sent to the police station for misdemeanors. He did not get into serious trouble but did ditch school quite often and rode around in cars or played pool.

Academic Progress

This boy dropped out of school during a repeat of grade ten. All of his first quarter grades were F's. The teachers reported that he was slow, shy, but willing. He has been very cooperative throughout school and has been socially promoted five times. His grades were satisfactory until grade two, when arithmetic and reading dropped to just passing. Subject by subject during the next eight years his grades declined, except for music, health, art, and shop. He finally gave in during a repeat of tenth grade.

His IQ is low average. He has a gradual decline in achievement levels since about the third grade. Arithmetic levels were about average for each grade but by the beginning of grade seven was two years behind in reading and English and about 1½ years behind in spelling. In the Reading Achievement Test given during grade nine, he was reading at the seventh grade level.

Attitudes Toward School

He feels that most of the teachers liked him and he was no troublemaker in school. He liked all of the teachers except one in metal shop, who had no respect for students' rights. He liked leathercraft and woodshop because he seemed to do well in these subjects. He didn't like math at all because he seemed to get no help when he so desperately needed it when trying to catch up. Math, he felt, was too hard. He ditched school sometimes because others did and he wanted to be part of the gang. While not attending school the gang would ride in cars and play pool. This boy reads nothing at all at the present time.

Expectations in the Future

He states that he has no long-range plans for his future but if the military service drafts him that will be okay with him.

Counselor Comments

The counselor feels that this boy is now rather angry inside and confused. He seems to have no goals and lives day by day. He doesn't admit readily that things are not as they should be and is embarrassed about his parent's marital troubles. He seems to be rather troubled about not being able to see his father more. He is quiet and unassuming and a very likeable boy.

CASE #14

Personal and Family Background

This Spanish-American girl is twenty years old and lives with her natural parents. Her mother is a housewife and her father a custodian at the State Capitol Building. She has seven siblings who are all older except one brother. They are all married and raising families except the youngest brother. One of these finished high school and her mother and father finished grade eight. The girl dropped out of school after the eighth grade and has been working since then as a waitress mostly. She is now a clerical aid in the City and County Building.

There have been no prison records in this family but the girl has a juvenile record of predominately driving mishaps and drinking under age. Her personality is appealing and she has many friends and seems to get along well with most of her peers. Her parents have always demanded honesty and obedience from their children, according to this girl. She still has to keep early hours and can't lie without detection.

She doesn't like to be accused of incidents that she is not involved in but many times she is implicated in situations because she happens to be with others. This happened in junior high school and she was accused of stealing a Barbie doll. She does not, however, blindly follow others. She especially mentioned riding around in cars when a group cannot decide what to do for fun--she doesn't go along with joyriding.

Academic Progress

She moved a lot during her elementary years in school. She attended first and second grades in Wheatland, third and fourth grades in Laramie, and sixth, seventh, and eighth grades in Cheyenne. Her scholastic record begins in sixth grade at Corlett School. She had just passing grades in everything except music, art, and health, which were average grades. In seventh grade nearly all subjects except art, music, and home economics were failing. She repeated seventh grade with little improvement. Eighth grade produced only two 3's in art and home economics.

Her basic skills for seventh and eighth grades show that she was from 1-2 years behind her grade level for reading, arithmetic, and English. Her IQ is 77. The teachers write that she was no discipline problem, missed a lot of school, and didn't try especially hard when she was there.

Attitudes Toward School

She felt that most teachers liked her. She was rather quiet in school. She liked home economics, English, and spelling. Her grades were not good in English but the teacher treated her very well, so she liked being in this class. She felt that one of her social studies classes was, also, very interesting because the teacher included humanistic ideas from his own experiences instead of textbook theory only. She liked it when he discussed right and wrong and interpreted religious ideas in different cultures. She disliked P.E. because she was always too slow to catch on to new concepts.

She feels that most of the teachers did not help her with her studies and after several years of failing grades, she just gave up scholastically. The teachers didn't care and kept reminding her that if you are sixteen or past the eighth grade you can quit school. She finally took the hint and quit to go to work. She has worked ever since. She reads True Story Magazines in her liesure time.

Expectations in the Future

She has done no long-range planning. She takes each day as it comes and says that she is happy the way she is and in the life that she leads. She enjoys work and someday wishes to find a husband.

Counselor Comments

This girl is an example of a student who needed special attention at an earlier age before she flunked seventh grade. She has a lot of natural ability and poise with other people. She is very friendly and sincere for the most part. She seems to distrust people in authority and they must prove to her that they really like her before she lets herself become close to them. She is fairly well-adjusted to her capabilities and accepts her limitations in a realistic manner. With her limited aptitudes she has molded a place for herself that makes the most of her assets.

CASE #15

Personal and Family Background

This seventeen-year-old Spanish-American boy lives with his mother who receives welfare aid. His father is a carpenter who travels much of the time. They have been separated for ten years. He has two brothers and one sister. His sister who finished the eighth grade is married with children and his younger brother attends school yet, is in the ninth grade, and apparently doing quite well gradewise. He doesn't like his brother and fights with him over who has the most authority at home. He says that the brother won't do anything around the house and talks back to him and his mother. His older brother works as a mechanic at Conrad's, is married, and finished high school. The boy used to fight with this brother, also, but he likes him very much now. There have been no prison records in this family but the boy has been picked up for minor things such as drinking under age and bike theft. None of these things could be proven so he was not sent to reform school.

Academic Progress

No scholastic records were available.

Attitudes Toward School

While the boy attended Chaplin School he liked most of the teachers and they seemed to like him. He still goes to the school and visits them during his leisure time. He felt that he couldn't learn mathematics and English even though he tried. These classes were too hard. He didn't like P.E. because he had to wear those "stupid"gym clothes. He liked metal shop but stated that he probably would not succeed at anything where he had to measure materials. He took a class at Central for job training but felt that it was boring and didn't like learning how to be a busboy.

He didn't like to be sent out of class because it embarrassed him and he hated to become embarrassed in front of others. He liked science when they were studying about the ancient civilizations and dinosaurs. He liked typing because it was fun and liked to try to be perfect in it. He would have liked to have taken homemaking and learned cooking or baking. He now reads very little except comic books and newspapers.

Expectations in the Future

He would like to have a car one day and wants to make enough money to buy one. He says he might like to be married after he gets a good job. He plans, at the present time, to enter the Job Corps and try to learn automobile mechanics or body repair.

Counselor Comments

The boy doesn't seem to be quite realistic about his future occupational plans. His dexterity and coordination are poor for mechanical jobs. He wants a job for the name more than he wants something in which he might be successful. He seems to have an "onery" streak when someone counters his wishes. He did seem to have a good degree of success when he worked at Warren Air Force Base as a janitor during the summer of 1966.

CASE #16

Personal and Family Background

This nineteen-year-old Caucasian boy lives with a family in Cheyenne which has eleven children. His natural parents live in Jackson, Wyoming. His father is a construction worker and his mother a waitress. He has one brother who is one year younger than he who lives with his grandmother in Denver, Colorado. This brother is now a senior in high school. The boy dislikes his father very much because he borrows money from him and never pays it back. He feels his dad is unreliable and has no respect for others.

This boy finished ninth grade in Cheyenne. His first four years of school were spent in Nebraska and the last nine years has lived in Cheyenne. His parents recently moved to Jackson. He seems to have cared a lot for his little brother and to defend him many times in school. There have been no prison records in this family.

Academic Progress

There are no school records from grade one through grade four. He attended grades five through nine in Cheyenne and seemed to be in trouble since the time

he started. The teachers report that his homelife was bad. He was a problem child in every grade. He was very anti-social and displayed outbursts of temper at the littliest upset. He repeated fifth grade with little improvement. His grades show no real pattern but he did have difficulty with English, reading, and social studies. He had above average grades in health and P.E, By ninth grade he had failed every subject. His reading, English, and spelling levels stayed approximately one year behind his grade from fifth grade through seventh grade. His arithmetic level did not change from fifth through seventh but it was not far behind the grade level.

His intelligence is average. He was psychologically tested in fifth grade and it was determined that he had no sense of belonging socially in a group. He had ambivalent reaction patterns. Sometimes he withdrew and other times he was anti-socially aggressive. His frustration test showed that he was rather intolerant of children and men.

Attitudes Toward School

He states that he tried to get along with most of the teachers in school. He didn't like the dean of boys and principal, however. He felt that many times he was accused of things that he didn't do. He got tired of being chewed out everyday by somebody. He would have liked to have gone to school to learn things. He mentioned fighting several times, yet felt that he was no troublmaker. He beat up a bully everyday for picking on his little brother who was of small build. If he was late or sick he was accused of ditching, given warnings, and was eventually kicked out of school. He hated the metal shop teacher because he hit the pupils with a metal ruler on the backs of the legs in class. Also, metal shop was too costly to participate in. The tools that were made were stolen from class and he would have rather have had woodshop.

He enjoyed mathematics very much because the concepts were not hard for him to grasp. In many other classes, such as English, the teachers covered so much ground in such a short time that he had trouble trying to keep up and then just gave up. English concepts were almost impossible for him to assimilate. He felt, also, that individual dress differences were not the business of the principal. He states that all boys had to wear belts and get haircuts, even though many of the boys' pants didn't even have belt loops.

Expectations in the Future

This fellow would like to have enough training to be able to get a steady job that pays well so that he can buy a good home one day and have a family. He realizes that he needs some money in the bank and a good future before he should think about marriage. He would like to learn meat cutting at a local packing plant as soon as the opening occurs.

Counselor Comments

This boy has drifted from one short-term job to another trying to find his place in the job world. He seems, at times, rather surly but a bit confused underneath. He basically seems to have good values but feels that when things go wrong the best way to fix them is to become aggressive. He seems to have no feelings toward his family but speaks affectionately about his "adopted brother" his own age in the family that he lives with. He has now been placed on a job where he can learn tile setting and general floor work. If he works out well, he should have a full-time job with this company.

CASE #17

Personal and Family Background

This nineteen-year-old Spanish-American boy lives with his natural parents. His mother is a housewife and his father works as a janitor and night watchman for a State Building. He is the youngest of eight brothers and sisters. His parents are older now and not as strict with this boy as they have been with their other children. It has been mentioned by others of the NYC counseling group that this boy has illegitimate children in Cheyenne. He doesn't deny or affirm this but seems quite unconcerned about it. He has been jailed for drinking under age and has been questioned about criminal acts by the police. He quit school during ninth grade and had been working at odd jobs for several months prior to joining the NYC. Only one of his siblings finished high school and the others are married and raising families.

Academic Progress

Teachers report that this boy was a very slow learner who didn't try when he did attend school. These reports were from fifth grade on. He attended school in Wheatland and Laramie prior to this and there were no reports on his progress.

Art was average in school and the other grades just passing. Art, music, and health were his best grades and were average to failing. The other subjects were 4's or F's. By the time his last achievement tests were given, he was approximately 1-1½ years behind his grade level in all subjects. He repeated seventh grade and given a social promotion to eighth grade. His IQ score is very much below average.

Attitudes Toward School

He stated that he had no real feelings toward school one way or another. He didn't like it or dislike it. He finally said that he liked the school work all right but that he hated most of the teachers. He feels that most of them have a superior attitude toward their students. When he started liking a class or a teacher, other students would ruin it by being noisy and rowdy. He feels that he had no help to stay in school and none of the counselors showed an interest. No one cared about the students when he was in school but now the counselors call the dropouts on a later day to see if they still don't want to come back to school. He would have liked this interest taken with him. He didn't cause too much trouble but he was moody much of the time when he didn't get his way. He says that swats make students even meaner than before they were disciplined. He liked woodshop, metal shop, and P.E.

After he dropped school he joined the Job Corps and stayed only four weeks, then his mother called to have him come home. He originally went to learn a skill and finish his education but he couldn't seem to adjust to it. He now reads little or not at all.

Expectations in the Future

He thinks that he probably will wait around until he is drafted and in the meantime wants to work at something that is not too hard and where he gets paid every two weeks or sooner. He is more interested in getting money than succeeding in an occupation. He thinks he would like auto body repair for a trade.

Counselor Comments

This boy gives the impression that he is sincere and willing at first but he reveals his spoiled nature in later conversations. He seems to have been pampered by his parents and older siblings to an unhealthy degree. He has material things that the older children did not receive, such as a car and he seems to think that he is entitled to anything that his heart desires. He wants things and opportunities given to him without too much work and has a very low frustration tolerance. He is immature for his age.

CASE #18

Personal and Family Background

This boy's natural parents are married at the present time and have had eight children. This is a Caucasian family and the parents seem to have been quite successful. The mother works as a sales clerk in a ladies' ready-to-wear shop and the father is the chief of the food section of the Food and Drug Office. One of his older brothers has his own company, another one is in the military service, one sister dropped out of school, and the rest of the family is doing quite well in school. There have been no prison records but this boy has been picked up for many misdemeanors and accessory charges. He is currently out on bond for a disturbance in which he was involved in Colorado that revealed possession of a gun. He was generally discharged from the military service for his attitude.

This family lived in Laramie for several years and has moved to Cheyenne during the last six months.

Academic Progress

No records were available for study.

Attitudes Toward School

He states that most of the teachers didn't like him right before he dropped out of school. He feels that they were against most of the family because his father was strict with others in the performance of his duties. He didn't like most of the teachers and seemed to have a running squabble with them. He liked his English teacher and class in his last year because the teacher talked with him a lot and tried to help him with difficult homework. Art and shop courses were, also, enjoyed in school. He reads quite a lot now, especially books about hotrods, gangs, and dope.

He stated that he has tried such drugs as goofballs, glue, and marijuana but no "hard stuff". He has felt like a failure not only with his parents but with peers of his own race. Many of the difficulties in school have resulted from his desire to not be "chicken" about so-called daring escapades with others.

Expectations in the Future

Uppermost in his mind is getting out of debt by working. He owes several hundred dollars for an accident that he caused and this worries him very much. He thinks that getting a car and some material things are next. He, also, seems to begin realizing that an education is something that will help him gain success. He started night school classes but did not finish because he was jailed

for one month in Colorado. He has, also, mentioned that he would like to prove to his parents that he can be a good son and make a good life for himself in a grown-up fashion.

Counselor Comments

This boy seems to have a very deep sensitivity that he tries to keep covered with a facade of sorts. He doesn't realize how he can be the type of person that he would like to be. He has never been popular with others of the Caucasian race but seems quite popular with Spanish-American youngsters. He says that he"fits in" better with dropouts and rowdies. This inferiority feeling is heightened by his parents who call him the black sheep of the family and expects him to be rotten. He is, also, rather ashamed of his foul language that he uses in lieu of good English.

He has mentioned many times that he is "destined" to have trouble and long periods of time cannot pass before he gets into trouble. He uses this as an excuse for irresponsibility.

CASE #19

Personal and Family Background

This twenty-year-old Caucasian young man finished the ninth grade, dropped out of tenth grade, joined the Navy for two years, and recently has gotten married. While he was in school he lived with his natural parents. His father worked for Civil Service and his Mother was a typist. He had an older brother who is now attending college for crop dusting techniques. This brother is not married and seems quite successful. The relationship between the brothers has been a normal one and now they are rather close. He stated that he felt his parents were an ideal couple who were well-suited to each other while he was growing up as a youngster. His father was unusually strict, however, and this made the boy rebellious. He could never go to state tournaments, stay overnight with friends, or keep late hours. He hated his father for this and was "out to spite" him whenever he could. His father tried for a father-son relationship many times but the boy remembers that he would pout through any attempts at this so that they both had a miserable time.

When the boy dropped out of school to join the Navy, his father started drinking. He used to be an alcoholic and is now divorced from his wife and taking the "cure" in Evanston. When the boy came back from the Navy on leave and upon hearing about the pending divorce, joined his father on binges thinking that they were great and that his father was human being for a change. He was, at this time, unaware that his father was a former alcoholic.

There is a record of misdemeanors for this boy and he did go AWOL from the Navy after 1½ years of excellent conduct, after a very complex set of circumstances.

He moved to California and is at the present involved in court proceedings accusing him of transporting narcotics. He feels that this serious charge, like many in school, occurred because he did not think about consequences and blindly rushed into things.

Academic Progress

All through this boy's school years he was said to be troublesome, inclined toward mischief, rather lazy, resentful of correction, and inconsistent in work and behavior. He had difficulty with most of his teachers and as he

got older it seemed to get worse. He was dismissed from several classes and was called one of the most irksome students the teachers had ever tried to teach. He did average, below average, and failing work in all subjects. His intelligence quotient shows that he is average to above average in mentality.

Attitudes Toward School

Even though the boy has matured somewhat, he still cannot explain a lot of his attitudes toward school and teachers. He does state that he did like most of the subjects and that he could have done well but he hated most of the teachers. He remembers that most of them had no respect for their students but demanded respect for themselves from all the students. He said that right from first grade all teachers "though they were God". He tried to retaliate when he was corrected by "getting back at them anyway he could". He was expelled for knocking a teacher down the stairs but later the teacher admitted that he believed the boy was a troublemaker and treated him accordingly before good cause was established. The two are now the best of friends.

He has always wanted military service since he was small and could think of no other career. He liked English and math and now reads paperback books and newspapers. He is a slow reader.

Expectations in the Future

He has a lot of regrets about his scholastic records and his military discharge. He feels that he could have done so much better and much more to improve his present lot. He is now taking his GED examinations and eventually would like to have a good home, material things, and happiness. He, also, wants to enter barber training under MDTA if he is not imprisoned for the federal offense that he now faces.

Counselor Comments

At the present time this young man is dejected and disillusioned about his life. He has a lot of natural vitality and a good personality. He has a young, intelligent wife who gives him moral support and a reason to do some long-range planning. He has stated that he was part of a group in school that was delinquent and participated in their sport before he thought of consequences. This had been a trait all through school and through his military service and now this trait might contribute to his imprisonment.

CASE #20

Personal and Family Background

This nineteen-year-old Spanish-American girl lives with her natural parents and is the oldest of eight siblings. The family has not been mobile. The father is now disabled and draws Social Security and VA pensions. Both parents completed the seventh grade. The girl stated that the two brothers next in line are doing extremely well in school and will probably graduate. Her brother, who is 18, is quiet, studies, and seems quite stable. He, also, reprimands the girl when she stays out late. She likes this because it makes her feel "cared for". Her attitude seems to have changed from earlier school days. She tells of her atrocious temper and her problems in adjusting to school and discipline. She tried to show every other student in school that she was "tough". The girl was

employed as a nurse's aid in Denver and got accused of theft of wig while she was there. She is now awaiting trial. She was raised by a grandmother until she was six years old and admits that she possibly stretches the truth.

Academic Progress

The teacher's comments indicate that this girl talked with her classmates to excess and did not complete much of her work. She was more interested in the social graces than school studies. She attended all of her grades in Cheyenne. She did satisfactory work through second grade. In the third grade she shows a distinct drop in reading, arithmetic, and the language arts. Her other grades were average. Music, art, and health were average through several grades, but reading, language arts, and mathematics declined to 4's and F's throughout eighth grade. She repeated eighth grade and brought up her home economics, music, and health grades. Her basic skills showed a gradual decline from third grade on and during her last year she was 1-2 years behind grade level. Her learning ability is low average.

Attitudes Toward School

This girl liked some of the teachers but she felt that many did not like her because of her troublesome conduct. She feels now that maybe they were trying to help in their own way. She attempted eighth grade three times and eventually finished it. By then she said that she was so old that she was too self-conscious to try going ahead with ninth grade.

She was never close to any teacher or counselor but thoroughly enjoyed home economics, especially sewing. She came to school early and stayed late to do her clothing construction. She feels that at that time no one could have changed her behavior. She reads various things now, like newspaper want ads and especially enjoys reading about diseases of the human body.

Expectations in the Future

Success to this girl is not a short-term thing. She wants a steady job doing something "respectable". This means no domestic work or service work. She feels that she was foolish to not have done better in school. She has chosen to join the Job Corps to try finishing high school and learn a skill.

After her trial is over she will be a prospect for this camp. She wants to buy a car as soon as possible and have pretty clothes and an apartment. She is, also, interested in cosmotology but needs advanced schooling to enter training.

Counselor Comments

The counselor feels this girl has a lot of natural friendliness to help her adjust to most social situations. Her inability to succeed in school studies has caused her to lash out at other students and teachers so she would be recognized in some way.

CAP EDUCATIONAL OPINION SURVEY

Compilation and Implications

By Wilma E. Hirst
April 17, 1967

The following information was obtained through the cooperation of the CAP Board. The Community Action Program Educational Opinion Survey was completed January to March 1967 by interviewers from the Poverty Program. All subjects interviewed met the poverty level requirements. There were 13 females and 16 males interviewed. The data were compiled and showed the following results:

Females

The 13 females ranged in age from 16 to 27. They were all school dropouts having completed the eighth to the eleventh grades. The number of family members ranged from 2 to 15. Not only were the girls dropouts but so were their family members. Four of the 13 females had both parents with less than an eighth grade education. One girl had one parent with less than an eighth grade education. Eight females had no family member who earned a high school diploma. Four females had one family member as a high school graduate. One female had four family members with high school diplomas.

At the time of each female's entrance into school, English was spoken in the home.

Of the 13 females, five stated they quit school because of pregnancy or to get married. Eleven of the 13 listed bad grades, one of the other two listed not liking school and the other listed to get married.

Nine females stated that quitting school had caused them trouble in finding jobs. Four said no, but none of these four are now working.

These females had been out of school from 3 months to 12 years. Six had not worked at all, one for one month, and 3 "off and on". At the time of the survey 11 were not working, one had worked for two days, and

one was in the Neighborhood Youth Corps.

Ten said if they went back to school they would stay, 3 said they would quit. Nine said they would like adult education, one didn't know, and two said no. Nine girls had been in no training or work expereince programs though all but one had knowledge of many of the programs.

Males

The 16 males ranged in age from 15 to 19. They were all school dropouts having completed the eighth to the eleventh grade. One was retarded and had never attended school. The number of family members ranged from 3 to 17. Not only were the boys dropouts but so were their family members.

Seven of the 16 had both parents with less than an eighth grade education. Two had one parent with less than an eighth grade education. Twelve had no one in the family who graduated from high school, 3 had one person, and one had 3.

At the time of each male's entrance into school, English was spoken in 15 of the homes and not in one.

Of the 16 males, 11 stated they quit school because of bad grades, 2 that they didn't like school, one was expelled for fighting, one was retarded and not in school, and one went back to school.

Nine males stated that quitting school had caused them trouble in finding a job, 3 said no, 3 gave no response, and one stated he hadn't tried hard to get a job.

These males had been out of school from four months to four years. Two stated they had worked full-time since quitting school and 4 had not worked at all. At the time of the survey, 8 were not working, 3 were working (1 part-time),and 5 were in the Neighborhood Youth Corps.

Eight replied that if they could go back to school they would stay, 4 said no, 2 didn't know, and 2 gave no response. Eleven stated they

wanted to attend adult education classes, 3 said no, one gave no response, and one didn't know. Ten males had not been in any training or work experience program though all but one (excluding the retarded one) had knowledge of a number of the programs.

Implications

1. Lack of successful school experiences was a common factor among these dropouts.
2. The dropouts came predominately from a family of dropouts.
3. The state complusory education requirement is reflected in the minimum eighth grade completion. All of the boys and all but two of the girls attended Cheyenne schools. It appears this group is a product of our local environment, not imports.
4. Unemployment is a common experience for these dropouts. At the time of the survey, only one female and 3 males were employed in other than the Neighborhood Youth Corps. All met the poverty test.
5. Though all but 3 of the total group were aware of many of the available training and work experience programs, only 6 listed current enrollment. They were in the Neighborhood Youth Corps.
6. Though 20 of the total group stated they would like adult education, their present participation as well as over the last few years might question the reality of this statement.

Unless we are willing to accept a continuation of these patterns, basic changes must be sought. Lack of school success appears a primary factor. Perhaps our present adult education programs may carry the same lack of success for these dropouts. It appears that the occupational needs of this group have not and are not being met.

Part III
Surveys: Identification of Disadvantaged Youth

Identification of Potential Dropouts, April 1967.

1966-67 Enrollment Third Quarter Progressive Report, May 1967.

Holding Power of Cheyenne Public Schools, October 1966.

IDENTIFICATION OF POTENTIAL DROPOUTS

Cheyenne Public Schools
Research Department
April 17, 1967

Factors Considered Negative Points

1. I.Q. below 95.
2. Reading test score 1.5 years below grade placement.
3. Low socio-economic status. (Derived from combination of occupation of parents, number in family, racial, or national background.)
4. Retained any full year.
5. Handicap listed by nurse.
6. Failure of two subjects in the current year.
7. Negative comments by teachers.
8. Listed as discipline problem by deans.
9. Excessive absences and tradies.
10. "Broken"home.

If a pupil had only one negative point, he was not listed if there was other evidence he was not a potential dropout. For instance, if his only point was a step-parent but test scores, teacher comments, and other factors were positive, he was not listed. The same thing was true for some physical handicaps listed by the nurse such as "heart murmer". If he had only one low IQ score but was passing and reading tests were satisfactory, he was not listed.

Chaplin-Miller (Age 14 and Over)

	Number of Disadvantages						No. of Pupils	Average Points
	1	2	3	4	5	6		
Total boys and girls		10	9	6	6		31	3.3

I assume this is the entire Chaplin-Miller enrollment age 14 and over. We noticed these persons were not given negative points for retention after entering the special school, were not listed as failing in subjects this year, and the teacher comments were positive. If these pupils were in the regular classroom, they would probably have received more negative points.

Junior High School

	Number of Negative Points									No. of Pupils	Average Points
	1	2	3	4	5	6	7	8	9		
7th Gr. Girls	1	22	11	10		1	2			47	2.9
8th Gr. Girls	2	18	14	6	2		1			43	2.8
9th Gr. Girls	4	23	13	9	1	3				53	2.8
TOTAL Girls										143	2.8
7th Gr. Boys	4	25	22	9	4	2	1			67	2.9
8th Gr. Boys	5	35	10	7	2	2	1			62	2.6
9th Gr. Boys	5	34	29	9	9					86	2.8
TOTAL Boys										215	2.8
TOTAL GROUP						27.44% Identified				358	2.8
7th Gr. Girls	1	21	10	8	4	1	3			48	3.2
8th Gr. Girls	2	29	20	5	4	4	3	1		68	3.1
9th Gr. Girls	2	12	8	13	10	7	2	1		55	3.9
TOTAL Girls										171	.4
7th Gr. Boys	2	15	13	12	4	2				48	3.1
8th Gr. Boys	2	6	17	11	12	2	3	1		54	3.9
9th Gr. Boys	2	15	11	11	12	9		2		62	3.9
TOTAL Boys										164	3.7
TOTAL GROUP						44.90% Identified				335	3.5
7th Gr. Girls	3	11	7	5	6	5	1	1		39	3.6
8th Gr. Girls	3	19	11	3	5					41	2.7
9th Gr. Girls	3	17	7	11	5	2				45	3.1
TOTAL Girls										125	3.1

	Number of Negative Points									No. of Pupils	Average Points
	1	2	3	4	5	6	7	8	9		
7th Gr. Boys	6	11	9	3	8	1				38	3.0
8th Gr. Boys	4	13	7	7	3					34	2.8
9th Gr. Boys		20	7	14	7	3	1		1	53	3.5
TOTAL Boys										125	3.1
TOTAL GROUP					24.78% Identified					250	3.1

Senior High School

10th Gr. Girls	4	15	18	6	4	1				48	2.9
11th Gr. Girls	4	16	10	6	2	1	1			40	2.8
12th Gr. Girls	2	17	14	9	1					43	2.8
TOTAL Girls	10	48	42	21	7	2	1			131	2.8
10th Gr. Boys		19	23	10	4					56	3.0
11th Gr. Boys		15	17	8	3	1				44	2.9
12th Gr. Boys	3	12	14	6	2	1				38	2.9
TOTAL Boys	3	46	54	24	9	2				138	2.9
TOTAL GROUP						21.7% Identified				269	2.9
TOTAL 10th Gr.						23.1% Identified				104	2.9
TOTAL 11th Gr.						20.9% Identified				84	2.9
TOTAL 12th Gr.						21.4% Identified				81	2.8
10th Gr. Girls	12	16	16	14	9	3	1	1		72	3.1
11th Gr. Girls	6	13	18	15	7	4				63	2.6
12th Gr. Girls	8	16	12	13	5	5	3	1		63	3.4
Spec. Girls				6	2					8	5.3
TOTAL Girls	26	45	46	44	24	14	4	2		205	3.1

	Number of Negative Points									No. of Pupils	Average Points
	1	2	3	4	5	6	7	8	9		
10th Gr. Boys	5	14	15	12	10	5	2	2		65	3.6
11th Gr. Boys	8	14	13	19	2	2	2			60	3.1
12th Gr. Boys	8	28	17	9	7	3				72	2.8
Spec. Boys					6	2				8	5.3
TOTAL Boys	21	56	45	40	25	12	4	2		205	3.3
TOTAL GROUP						34.28% Identified				410	3.2
TOTAL 10th Gr.						32.23% Identified				137	3.4
TOTAL 11th Gr.						32.70% Identified				123	2.9
TOTAL 12th Gr.						36.48% Identified				135	3.1
TOTAL Spec.										15	5.1

1966-67 THIRD QUARTER PROGRESSIVE ENROLLMENT REPORT

Cheyenne Public Schools
Research Department
May 15, 1967

	Dropped		Entered		
Elem.	886	Moved out of the Dist.	846	Moved into the Dist.	
	15	Entered St.M. or Luth.	14	From St.M. or Luth.	
	2	Dropped out (kdgn)			
	8	Illness			
	911		860		-51
Miller-Chaplin	7	Moved out of the Dist.	9	Moved into the Dist.	
	3	Dropped out			
	10				- 1
Jr. H.S.	203	Moved out of the Dist.	215	Moved into the Dist.	
	4	Entered St.M.	3	From St.M.	
	38	Dropped out			
	245		218		-27
Sr. H.S.	104	Moved out of the Dist.	135	Moved into the Dist.	
	7	Entered St.M.	3	From St.M.	
	4	Illness (3 died)			
	126	Dropped out			
	241		138		-103
System	1,200	Moved out of the Dist.	1,205	Moved into the Dist.	
	26	Entered St.M. or Luth.	20	From St.M. or Luth.	
	12	Illness (6 died)			
	169	Dropped out			
	1,407	TOTAL DROPPED OUT	1,225	TOTAL ENTERED	-182

HOLDING POWER OF CHEYENNE PUBLIC SCHOOLS

Research Department
October 3, 1966

1960-61 Seventh grade enrollment	=	1,102		
Out migration (out of town)	=	436	=	39.5644%
Died	=	3	=	.2722%
Transferred to St. Mary's	=	9	=	.8166%
Dropouts	=	140	=	12.7041%
1966 graduates	=	466	=	42.2867%
Still in school end of 1966	=	48	=	4.3557%

1966 graduates	=	734	
7th grade enrollments	=	466	
In migration	=	268	= 36.5122%

Holding power possibility of 7th graders = 663

7th grade enrollment	=	1,102
Moved away and died	=	439
		663

Graduated in 1966	=	466
Still in school	=	48
	514	= 77.5263% HOLDING POWER

Part IV
Specific Recommendations for School District Number One

A Survey of the Facilities and Materials Being Used in the Schools of Laramie County School District Number One to Meet the Occupational Need of Their Handicapped Youth Hadden, Helen. May 1967

Curricular Content by Cegelka, Walter, Jr.

Consultant's Summary Report by Kolstoe, Oliver P., Chairman, Cegekla, Walter, Jr., and Hadden, Helen. May 1967

A SURVEY OF THE FACILITIES AND MATERIALS BEING USED IN THE SCHOOLS OF LARAMIE COUNTY SCHOOL DISTRICT NUMBER ONE TO MEET THE OCCUPATIONAL NEED OF THEIR HANDICAPPED YOUTH

Researched and Compiled By:

Helen Jean Hadden, Ed.D.

Submitted to:

Dr. Oliver P. Kolstoe, Chairman
Evaluating and Planning Team

For use in the Study, "Occupational Needs of the Socio-Economic, Disadvantaged, and Other Handicapped Youth of Laramie County School District Number One"

May 5, 1967

To obtain the information relative to the existing facilities and materials being used in the education of the socio-economic, disadvantaged, and other handicapped youth in the Laramie County School District Number One, a period of time was spent in each school that provides services for these youth. Classes were visited and facilities toured and examined. Conferences were held with various school personnel, which included principals, assistant principals, girl's deans, boy's deans, counselors, nurses, teachers, and office personnel.

An effort was made to get answers to specific questions relative to the facilities and materials being used. They were:

1. How would you describe your school population (number, types of homes, etc.)?
2. Is your facility large enough and adequate for the size of the school population?
3. What will be needed building-wise to accomodate for projected enrollment patterns?
4. What will be needed in the way of personnel and materials according to the projected enrollment patterns?
5. What type of instructional program is being taught?
6. What is the selection criteria for pupil placement?
7. What materials are being used to implement the instructional program?
8. What are the educational goals?
9. What is the philosophy of the school?
10. What special services does the school offer, if any? How is this determined?
11. Is in-service education offered to the faculty?
12. What are the strongest points of your school and its program?
13. What are the weaknesses?

14. If you could change your facilities, what changes would you make?

15. If you could change the curriculum, what changes would you make?

16. If you could have other materials to use, what kind would you get?

17. What is the relationship between the school district administration and the individual schools?

18. What is the relationship between the administrator in your building and the staff?

19. What is the relationship between staff members in your building?

20. What is the relationship of the faculty from your school with those of the other schools?

21. In relationship to the kinds of children your school serves, what kind of things should the school be providing for them and possibly their families?

22. In view of your school's population, what kind of services should the school system provide for the staff?

23. Is the education of the staff adequate and appropriate for the education of these youth?

24. What kind of skills and vocational education should your school provide for these youth?

FINDINGS

Facilities:

The Johnson Junior High School facility is an old building but it is well maintained. It is presently near the maximum of the number of students it should have. It cannot, as it presently stands, house its projected enrollment. The classes are large and the classrooms are crowded. The cafeteria is nice and well maintained. The stair wells are much too narrow for safe and effective movement of students. This school has a reasonable shop for industrial art classes as they are presently taught. It has a home economics department too. It has a reasonably well trained staff for its present operation. There is some space for physical education. This facility has not been modified to facilitate the educational services for the non-college bound student. This facility does serve the attendance area for which it was designed. They do have a special room here devoted to teaching reading improvement skills.

The Central High School facility is old but has reasonable maintenance. It presently has the maximum size of student body which it can handle. There is no available space for students to feed in from the junior high schools which are feeders for it. They have a shop facility and a home economics unit. There are facilities for physical education. The classrooms are overcrowded. The education and experience background of the staff is rather varied. It appears that special services for the non-college bound in their population is limited. They do have one pilot class in operation for "On the Job Training".

The facility in which the prevocational group of mentally retarded are provided instruction is very old and probably is not considered to be worth renovating and remodeling. There is space on the grounds for temporary units. The classrooms are good-sized but it appears that the total space could be more

effectively used. The professional preparation of the staff is quite varied for this type of program. The safety of this building is questioned, not only if it were to have a maximum number of students but for the limited number of students who do attend there. The facility does not necessarily serve the attendance area for which it was designed.

The community facility which houses the instructional program for the trainable mentally retarded is an old building, which is inadequate for vocationa education. The safety of the use of this building for these educational purpose: is questionable. The location of the unit is poor.

The elementary-intermediate facility for the mentally retarded youngsters is a new building. The enrollment is the maximum that this building can serve. The classrooms are too crowded and the rooms are far too small for adequate instruction for these children. The building was not constructed so there would be adequate space for physical education or home living and pre-vocational skill: training. The location is in a rather industrial locale. Rather than serving the attendance area in which it is located, the youngsters have to be transporte from many other attendance areas. It is much too small and limited to serve the elementary-intermediate, mentally retarded school population for this school district. The staff in this facility have a varied background of experience and preparation for teaching the retarded.

Materials:

Without exception, the schools all are traditionally oriented toward academic pursuits in the skill areas using standard series of textbooks commonly used in instructional programs for the college bound student. In a few isolated instances, textbooks considered to be easier are being used for their basic groups, which are the lowest academically. There was no apparent planning for materials to be made or modified to assist the student to develop skills to

meet life persisting situations or prepare for a vocation. The one noticeable characteristic of uniformity of materials from one school to the other was that they were standard types with relatively little or no direction for functional application. The facilities, materials, goals, and their usage are so traditionally oriented that freedom for learning concepts and processes are considerably inhibited.

Recommendations:

1. Establish a school philosophy.

2. Define and establish educational goals appropriate for each segment of the school population.

3. Examine the availability of classroom space in the attendance areas to be served for the feasability of housing classes for the mentally retarded and other handicapped youth within their respective school attendance areas.

4. From the data obtained, determine the number of handicapped youth in each attendance area and decide how many classes will be needed to provide appropriate instruction for them.

5. Establish and define uniform selection criteria for placing the students in these classes and/or their movement from them to other classes deemed more appropriate.

6. From the philosophy established and the goals determined as being essential to develop effective occupational skills, establish uniform curriculum guidelines for K-12 for these students.

7. After establishing the first six recommendations, assess the materials already available and select the appropriate materials and those that can be modified and adapted for a curriculum directed toward vocational education for the non-college bound student.

8. Define other materials needed to implement such a program and purchase

them for each level of the program.

9. Assess the qualifications desired for the necessary faculty to initiate and continue such an educational program.

10. For those faculty and staff members who need additional training, experience, and education, "In-Service" education should be provided.

11. Establish selection criteria for personnel and hire additional well-qualified staff members as needed.

12. Provide transportation for only those students where it is an absolute essential.

13. Expand the services provided by the Diagnostic Center.

14. Develop a public awareness program.

15. Develop an overall look at program planning from school to school and within schools, so that all the staff understand the direction of this new program.

16. Decide on how it's to be financed.

17. Establish coordination and direction services.

18. Define specialized instruction and services.

19. Define who is responsible for the specialized instruction and services.

20. Establish criteria for continued evaluation.

Alternatives:

1. Explore possibility of moving all trainable youngsters to Miller School.

2. Move EMR's from Miller School to special classes housed in their respective attendance areas.

3. Establish pre-vocational classes at both Johnson and McCormick Junior High Schools for the non-college bound students.

4. Condemn Chaplin. Build a new facility for sheltered workshop or open-end workshop training centered.

5. Use Miller for the "half-way" classes and the Diagnostic Center.

6. Use Miller for classes for the emotionally disturbed and/or classes for children with learning difficulties.

CURRICULAR CONTENT

Walter J. Cegelka, Jr.

Present Curricular Sequence

This section of the report will present an overview of the current curricular sequence being offered to the students of Miller and Chaplin Schools.

There are six classes in Miller School at the present time, one pre-primary, two primary, and three intermediate. Chaplin School houses an additional three advanced classes.

Miller School could accommodate ten classes and Chaplin could accomodate five classes comfortably as further expansion of the program is indicated.

I. Miller School

a. The pre-primary and primary classes are essentially self-contained, with the exception of a forty-five minute a day music period which is taught by Mrs. Nolan to the three combined classes. The school day begins at 8:45 a.m. Ten to twenty minute recesses are held at mid-morning. Lunch runs from 11:30 to 12:30 and school is dismissed at 2:45 p.m.

The morning is devoted mainly to arithmetic, reading, and language arts. Afternoons are spent with social studies or science, health, physical education, art, and music.

b. The three intermediate classes are completely departmentalized, i.e. the students report to homeroom in the morning and then go to different classrooms for instruction in specific subjects. A composite schedule of the intermediate program is presented below:

8:45 - 9:00	Homeroom
9:00 - 9:40	Arithmetic (Traditional Approach)
9:40 - 10:20	Reading
10:20 - 11:00	Social Studies (M,W,F), Health (T,TH)

11:00	- 11:40	Penmanship
11:40	- 12:30	Lunch period
12:30	- 1:15	Physical Education (M,W,F), Health (T,TH)
1:15	- 2:00	Music
2:00	- 2:40	Arts and crafts
2:45		Dismissal

II. Chaplin School

A. The advanced classes in Chaplin School are, also, completely departmentalized. A composite schedule is presented below:

8:45	- 9:00	Homeroom
9:00	- 9:40	Reading and Language Arts
9:40	- 10:20	Social Studies (M,W,F), Science (T,TH)
10:20	- 11:00	Arithmetic (Modern Math approach)
11:00	- 12:00	Lunch period
12:00	- 1:00	Typing (M,W,F), Health (T,TH)
1:00	- 2:00	Physical Education (girls), Shop (boys)
2:00	- 2:45	physical Education (boys), Homemaking (girls)
2:45		Dismissal

B. Promotion, according to the principal, is based primarily on chronological age, size, etc., i.e., it is essentially social promotion.

Curricular and Programming Recommendations

I. Miller School

A. Both the primary and intermediate classes should be essentially self-contained. Presently the primary classes are but the intermediate are departmentalized.

B. Making all classes self-contained for instructional purposes would allow the teachers to teach the tool subjects in the mornings and to utilize units of experience in the afternoons to reinforce the concepts taught in the morning.

C. The three primary classes could be combined in the afternoons and divided into boys and girls groups for physical education. The three intermediate classes could be handled in a similar fashion.

D. Chart stories should be utilized at the primary level to develop the vocabulary the children will encounter in their basal readers. This will assure the children of success experiences in their basal readers.

E. The children should be grouped for reading instruction according to mental age and reading ability. It is extremely unlikely that all children, in any given classroom, would be reading at the same level at the same point in time. Thus, for effective and efficient instruction reading groups should be formed, the number of reading groups being determined by how many levels the children in any given classroom are reading at and how many groups the teacher can handle effectively. Most teachers should be able to handle three reading groups.

F. The <u>teaching</u> of the mechanics of reading should be continued through the intermediate classes. S.R.A. series and the Reader's Digest Skill Builders could be used most effectively to reinforce the above.

G. Both the primary and intermediate children should be given a fifteen minute recess in the mid-morning. This recess period should be at the same time for all classes. In this way two teachers a day could supervise all classes on a rotational basis giving the other teachers an opportunity to briefly check over plans for the day or run off materials, or simply take a break themselves.

What is needed most at both the primary and intermediate levels is the development of a skills or outcomes chart for each class and/or level. A skills chart should be developed for each of the tool subjects and for socialization and pre-vocational skills. Units that would be taught at each level of the curriculum should, also, be spelled out. All units should be functionally related to the attainment of the skills required and should reinforce the tool subjects.

Once skills are identified for each classroom unit, many major problems can be fairly easily resolved. Each classroom teacher now has a goal to strive for. Likewise, each child now has a goal to strive for. Promotion should be based on the attainment of the skills required at each level. Once a child has attained the skills required, he should be promoted to the next highest level. Marking and reporting, also, become simplified. The degree to which a child has attained a particular skill is reported to him and to his parents. Thus, if the parents wish to assist him or give him further instruction at home, they may do so. For example, let us assume for a moment that one of the requirements to be promoted or one of the skills in arithmetic at the upper primary level is knowing the multiplication tables through 5 and further, that a particular student knows them through 3. The goal for the teacher, student, and parent is quite obvious. Learn the 4's and 5's. The setting and attainment of goals will be rewarding to all concerned. The identification of skills for each classroom unit should, also, be continued throughout the next level and through the entire curricular sequence.

II. Chaplin School

A. Chaplin School should be essentially pre-vocationally and vocationally oriented. Currently, the graduates of this school are placed in Mr. Bundy's class in the high school. The children are then placed on jobs as they are available and as they are able to handle them. Two preliminary steps, however, are necessary before successful job placement can be made efficiently and effectively, namely:

1. Sheltered work experience, and
2. Job tryouts.

Sheltered work experiences can be provided within the school itself. The children can be taught to sort by form, color, etc. Subcontract work or work samples can be acquired from local industries.

Job tryouts should be done in the community. After doing a thorough analysis of jobs in the community and an extensive analysis of an individual student, the student can be placed on-the-job. The student should be given three to four job tryouts the year prior to job placement. Three to four is an arbitrary number. Some students may need only one or two. The reader is referred to a more extensive discussion of sheltered work experiences, job tryouts, job placements, and job and self analysis, etc., in Kolstoe, O.P. and Frey, R., A Work Study Program for Mentally Subnormal Students.

B. The teaching of "Modern Mathematics" at this level should be abandoned. Instruction in mathematics and other tool subjects should be directly related to making the student an independent adult.

Topics or units of study that should be covered in the first (freshman), second (sophomore), and third (junior) years of study follow:

Freshman Year

36 weeks instruction for each year. Units 3 weeks in length.

Job analysis group. One week in length.

1. Orientation to school
2. Travel
3. Grooming
4. Common measurement for practical use
5. Getting along
6. Banking
7. Practical home ec, boys and girls
8. Dating
9. Installment buying
10. Planning summer activities

Unit	Week of School		Unit	Week of School	
1	1	Orientation to school	6	19	Banking
	2	Orientation to school		20	Banking
	3	Orientation to school		21	Banking
	4	Job analysis			
	5	Travel	7	22	Practical home ec, boys and girls
2	6	Travel		23	Same as above
	7	Travel		24	Same as above
	8	Grooming			
			8	25	Job analysis
3	9	Grooming		26	Dating
	10	Grooming		27	Dating
	11	Job Analysis		28	Dating
	12	Common Measurement for practical use	9	29	Installment buying
	13	Same as above		30	Installment buying
	14	Same as above		31	Installment buying
	15	Getting along with others		32	Job analysis
4	16	Same as above	10	33	Planning summer activities
	17	Same as above		34	Planning summer activities
	18	Job analysis		35	Planning summer activities
				36	Planning summer activities

Possible Job Analysis - First Year

Book binding	Gas station
Hospital	Laundry
Greenhouse	Grocery store
Industry-Tech Tape	Clerking
Restaurant	Domestic help

Sophomore Year

36 Weeks.
11 units -- 3 weeks in length.
3 job analysis and job searching one week in length.
- a. newspaper
- b. employment agencies
- c. friends and neighbors

5 10-18 driver training 9 weeks in length correlated with this unit.
- a. car care
- b. installment buying
- c. insurance

Unit	Week of School	Title
1	1-3	History of area
2	4-5	Holding a job a. You and your boss b. Behavior on the job c. Getting along on the job
3	6	Job analysis and search
4	7-9	Etiquette
6	19-21	Citizenship and responsibilities (Gov't.)
7	22-24	Our world of science
8	25	Job analysis and search
9	26-28	Practical home ec for boys and girls
10	29-31	Community services
11	32	Job analysis and search
12	33-35	Planning summer activities

Ideally, driver training would be offered at this time. However, this would certainly be dictated by each school and would have to be offered accordingly.

Junior Year

36 weeks instruction for each year
11 units -- 3 weeks in length
3 lab analysis and interview skills -- one week each
14 units

Unit	Week of School	Title
1	1-3	Home and family living, division of labor
2	4-6	Installment buying, household, credit cards
3	7-9	Marriage and parenthood, child care, diet, medical and dental attention, attitudes toward children-psychological
4	10	Job analysis and interview skills
5	11-13	Adult finances I, family savings, record keeping, family receipts, checking.
6	14-16	Sex education, hygiene

Unit	Week of School	Title
7	17-19	Holding a job, job failure -- analysis and recourse, unemployment compensation, disability insurance, benefits
8	20	Job analysis and interview skills
9	21-23	Adult finances II, income tax, social security, insurance, house maintenance costs, utilities, renting-buying a home
10	24-26	Citizen's behavior from legal aspect, parking tickets, traffic violation, arrest, responsibilities with neighbors
11	27-29	
12	30	Job analysis and interview skills
13	31-33	Leisure time, esthetic emphasis -- concerts, dancing, art, plays, hobbies
14	34-36	Planning summer activities

The above units were developed by Smith, Rainey, and Kolstoe.

The mechanics of reading, writing, and arithmetic that are necessary to implement the above units and that would further the development of the students toward the goal of a social, vocational and economic independence should be taught at this level.

C. While physical education facilities are somewhat limited, there is enough space available to develop a program of physical fitness for both girls and boys. Activities which stress the development of strength, endurance, and coordination should be included. Consideration should be given to a weight training program to develop the strength of both boys and girls.

D. Home economics, which is currently being offered to only the girls, should be expanded to include the boys, also, as is indicated in the units above.

While this report has stressed what should be done, it should be pointed out that the teachers throughout the program are doing many fine things. So many, that space does not permit their enumeration. The writer throughout has stressed some further improvements that could be made to the curriculum.

CONSULTANTS' SUMMARY REPORT

I. INTRODUCTION

This report reflects the attempt of the investigating committee to assess the current efforts of Laramie County School District One of Cheyenne, Wyoming, to meet the occupational needs of handicapped youth in the District and recommendations which stem from identified limitations of current efforts.

II. METHOD OF STUDY

It was felt that an adequate assessment of the current provisions would have to answer questions pertaining to:

A. The number of children who probably need or will need services.

B. The number and nature of suitable jobs in the community.

C. The current school programs.

1. Administrative provisions.

2. Curriculum provisions.

3. Facilities, materials, and equipment.

III. FINDINGS

A. Criteria for Identifying Potential Dropouts.

To identify children who seem to indicate a potential for becoming dropouts, ten factors were selected from the literature which have been found to be related to unsuccessful school performance. These are:

1. IQ below 95.

2. Reading achievement 1.5 years below grade placement.

3. Low socio-economic status.

4. Grade retention of at least one full year.

5. Handicap listed by nurse.

6. Failure in two subjects during the current year.

7. Comments of a negative nature by teachers.

8. Discipline problem as indicated by deans.

9. Excessive absences and tardies (more than one per week).

10. "Broken" home.

Only students identified by two or more factors were listed.

(See full report in III.)

B. Number of potential dropouts.

1. Carey Junior High School listed 358 students out of 1,304 or 27.4%.

2. Johnson Junior High School listed 335 students out of 746 or 44.9%.

3. McCormick Junior High School listed 250 students out of 1,008 or 24.8%.

Out of 3,058 students in the junior high schools, 943 or 30.8% can be considered potential dropouts. These figures would be higher if the students in Chaplin were counted but since they are in a special program it can be assumed that efforts are already being made to keep them from becoming dropouts.

Of the students in the three junior high schools, the ones in Johnson appear to be the most serious problem, not only because there are so many (nearly 45%), but,also, because they have a higher average number of negative factors: 3.5 compared with 3.1 in McCormick and 2.8 in Carey.

The situation in the junior high schools in Cheyenne appears to be that:

a. fully 30% of the students currently enrolled can be considered potential dropouts,

b. nearly as many girls as boys appear on the list,and

c. the problem is serious.

At the senior high school level, the number of students identified were 269 from East High and 410 from Central. Again, they are about equally divided between boys and girls but the situation seems somewhat more serious in Central High, not only because of the larger number (410 versus 269) but, also, because of the larger number of problems identified (3.2 for Central and 2.9 for East).

Roughly 28% of the students at the high school level appear to be potential dropouts. When this is compared with holding power study done in October of 1966, it appears that the actual dropout rate of 22.5% is very close to the potential rate of 28% revealed by the identification survey.

C. Suitable jobs in the community.

The businesses of Cheyenne were canvassed by Mr. Larry Johnson, Mr. James Bundy, and Mr. Kenneth Snyder to identify potential jobs and to analyze the skills required for the successful performance of the jobs. Their full report can be found in Part I.

In the 200 businesses and industries contacted by these investigators, they found sixty-two different occupations which were suitable for the youths represented in the study and among these sixty-two occupations 1,240 individual jobs suitable for this population.

Although many employers indicated they would prefer high school graduates, these were mostly jobs in which the employee had direct contact with customers. Reference to the skills required for being successful , however, indicates that no job requires academic skills beyond about seventh grade level in either reading, writing, or arithmetic and most require considerably less, some requiring none.

The situation appears to be that even though Cheyenne is economically restricted, many jobs suitable to handicapped youth are represented in the community and most require minimal academic skills but adequate work skills, e.g. dependability, persistence, pacing, getting along well, for successful performance.

IV. SCHOOL OFFERINGS

Twenty-nine dropouts (former Cheyenne school students) were interviewed by personnel of the Community Action Program (CAP) to determine their perceptions of the suitability of school provisions for them. Sixteen were male and thirteen female. The full report can be found in Part II. Mrs. Allison did extensive interviews with twenty enrollees of the Neighborhood Youth Corp. These interviews are presented in Part II.

It is evident from the interviews that these dropouts generally came from families where dropping out of school was common. However, they are not transients, they are products of the local school system and as such reflect the apparent lack of impact made upon them by their school experiences.

Their experiences, since leaving school, are consistently discouraging. They share unemployment as a common state, are aware of their educational handicap and regret not having a better education but nearly all did not like school very much, considered the programs a waste of time, and would not return if given the opportunity. Most would consider adult education programs if they would lead to good jobs.

It would be easy to dismiss the information from the interviews as the mutterings of chronic malcontents if these dropouts were transients, uniquely different than the 30% of the school population identified as being potentially similar to them, or successful citizens in their post school experiences. They are not. Since they were given little help at home and since

school apparently was not very effective, the community is faced with the prospect of trying to accommodate people of little skill, inferior education, and defeated self concepts, who do not give any indication that they are going to go away. Instead, there is every reason to believe they will be joined by a large number of youngsters who are currently in the schools of Cheyenne.

If the citizens of Cheyenne are willing to accept a continuation of the patterns indicated, it would seem only prudent that the community be prepared to, also, accept the economic and social consequences which these patterns precipitate. An alternative is to provide avenues of experience specifically designed to alter the patterns. To accomplish this it is necessary to carefully examine existing school offerings in order to determine what alterations may seem most promising.

A. Current provisions.

Drs. Helen Hadden, Walter J. Cegelka, Jr., and Oliver P. Kolstoe visited the schools and staff personnel to examine the present program in terms of administration, curriculum facilities, and materials. Full reports are included in Part IV.

1. Administration

At the present time Mr. Leo Breeden, Assistant Superintendent for Curriculum is responsible for programs in the schools. The program for handicapped students centers in Miller School, extends to Chaplin Junior High, and terminates with one class in Central High. In practice, the principals of the schools assume the major administrative responsibility for each program. To the degree that there is communication and unity of purpose between principals, there is continuity of experience. Unfortunately, each principal has a significant number of duties which

are demanded by the management of the buildings each represents so the job of program coordination is difficult to attend to.

Although eligibility for inclusion in the program is generally determined by staff consensus with the Educational Diagnostic and Planning Center, recommendation for possible placement depends upon referral by individual teachers in the various schools. No systematic screening procedures are operative and no uniform procedures coordinated by a school administrative official are apparent.

A major deterrent to effective programming is the present range of age eligibility. Children may be provided special services if they are between the ages of six and nineteen. Thus, there is no possibility of a preschool program. Alternatively, when a student reaches his nineteenth birthday the program is terminated. This is especially restricting to Mr. Bundy's high school program. Since his students generally do not transfer from Chaplin School until they are sixteen or seventeen, the consequence of the upper age limitation leaves no choice but to try to find jobs for the students (an activity in which Mr. Bundy has been eminently successful). This results, however, in no training program. Usually this type of high school program provides at least two to three years of work training prior to placement. The age restriction makes it impossible to provide this training. In essence, Mr. Bundy's function is one of job hunting, not job training.

Two other programs operate independently and, therefore, under severe restrictions. Mr. Stansbury has proposed a step-block program which has excellent possibilities for occupation training for many disadvantaged youth but as yet has not been

implemented. Mr. Dowler has a very extensive work program but does not have an accompanying training program to supplement the work experience.

Effective coordination could certainly make all these programs a vital part of the total school services so badly needed by disadvantaged youth.

2. Curriculum

At the present time there is no consistent curriculum which permeates the entire program. In some areas the program is departmentalized while in others it is not. Likewise, different approaches to providing skill training in different academic areas are quite apparent. While individual teachers have been doing excellent work with the children, there is little evidence that each teacher is aware of the part he or she is expected to play in a total training program.

Furthermore, the program at the elementary level does not lead naturally into the junior high school program and the junior high school program is essentially terminal. Thus, a consistent sequence of experiences starting at the elementary level and leading to the goals of independent living and competitive employability has not been established.

3. Facilities, materials, and equipment.

Although the present buildings are not as adequate as may be wished, they certainly are useable and could well be used while additional or new facilities are being explored. This is especially true of Chaplin School. Although the building is old, the rooms are very large, the equipment is very good, and the building could accomodate about seventy-five students in an occupational preparation program. This would require careful

study of needs.

V. RECOMMENDATIONS

A. Administrative

1. The age limits for the special education students should be eliminated. This probably requires action by the School Board but retention of the age restrictions simply makes an occupational program impossible. If the Board feels the need for some upper limit they might consider twenty-one. However, this will be somewhat restricting and will allow no opportunity for post-high school short-term programs. The most feasible method would be to simply abolish the age restriction. Should one become necessary at some future time, Board action could impose whatever limit seems most reasonable.

2. A coordinator of special services should be appointed. This recommendation may smack of the old bromide "the way to solve a problem is to appoint another administrator", but many of the problems exist because many individuals are responsible for different parts of the total services. Futhermore, fully 30% of the school population is potentially in need of special services. The immensity of this number argues for adequate programming and supervision. In addition, many community and state agencies,as well as some 200 businessmen in Cheyenne, may eventually become participants in the program. Decentralized authority could well precipitate chaos in such circumstances.

   a. Major duties of the coordinator.

      1) Establish and supervise uniform screening referral, and placement procedures as the professional

responsibility of the educator.

2) Coordinate classification, diagnosis and placement with the Educational Diagnostic and Planning Center staff and interpret the findings to parents.

3) Initiate curricular modifications.

4) Establish criteria for pupil promotion and reporting.

5) Secure and evaluate staff personnel.

6) Coordinate programs with building principals.

7) Serve as liaison with community services and agencies.

It is recommended that Mr. Barry Cowing be given serious consideration for the position of Coordinator of Special Services.

3. It is recommended that a prevocational program be initiated at the junior high school level. This program should be planned to include both Special Education students and also other non-academically inclined students identified by the survey. This program should lead to a very flexible work-study program at the senior high school level.

One method of achieving this would be to designate Chaplin School as an occupational preparation center. Programming could center on occupational information and exploration, practical academics, shop, home economics and related areas. Since the building can accommodate approximately seventy-five students, a principal would need to be appointed to develop the program.

Since no more than two or three students will be eligible to transfer to the High School special education program next year, and since no more than one or two students from the present

group currently in the high school program will probably return, it would appear that next year's high school special program may serve only about five students. Given this circumstance, it might be advisable to appoint Mr. Bundy to be in charge of Chaplin School. This would allow him to develop an occupational preparation program and still serve the few students in the high school program. As more students become eligible for a high school level program, the step-block program proposed by Mr. Stansbury might well be considered. This program not only has great flexibility but can be easily implemented at the high school level.

An alternative suggestion could be the establishment of occupational preparation "tracks" in the three junior high schools of Cheyenne. These could be designed to lead students into the step-block high school program suggested by Mr. Stansbury.

A third alternative would be to start with Chaplin as a center, while programs for the three junior high schools are being planned and the step-block work-study program is being prepared for implementation. In a year or two, Chaplin might be phased out as the junior high schools put their programs into operation.

4. Mrs. Winkler has developed a smooth running program at Miller and is making very good use of the facility and staff. If Miller is to continue as the center for educable students, she should certainly be urged to continue as principal. However, if a decision to house the program for the trainable in Miller School should be made and the elementary classes were to operate in the various schools in the attendance areas, her considerable knowledge and experience could be of invaluable help in the coordination of these programs. Every effort should be made to make use

of her talents in a constructive manner.

b. Curriculum--Special Education

1) Develop a skills or outcomes chart for each class and each level. The chart should include each of the tool subject areas and also socialization and motor areas. This should extend from the pre-primary through the high school levels.

2) Primary & Elementary Special Education Program

a) Both the primary and the intermediate class should be self contained.

b) Tool subjects should be taught in the morning reinforced by units in the afternoon.

c) Children should be grouped for reading by mental age and reading ability within classes.

d) All the children should be given fifteen minutes of recess both morning and afternoon.

3) Junior High Special Education Program

a) The program should be occupational preparation in nature. This should include:

1) Sheltered work - either on the school campus or in the Goodwill evaluation department.

2) Job tryouts in local businesses.

b) The "modern" math approach should be abandoned in favor of a consistent math approach which is an extension of the system used in the intermediate level.

c) A program of physical fitness for both boys and girls should be initiated.

d) Home economics should be taught both boys and girls.

c. Facilities, Materials and Equipment

1) Consider the possibility of moving the educable children from Miller School to special classes housed in their respective attendance areas.

2) Explore the possibility of housing all trainable youngsters in Miller School.

3) Establish pre-vocational classes at Johnson, Carey and McCormick Junior High Schools.

Alternatives:

1) Condemn Chaplin after building a new facility for a program for sheltered work or open end work training program. Explore the availability of federal funds to build a new facility for the retarded.

2) Use Miller for the half-way classes and diagnostic center or for classes for the emotionally disturbed and/or classes for children with learning disabilities.

VI. SUMMARY

Over the years Cheyenne has demonstrated leadership in efforts to individualize programs and care for handicapped pupils. Chaplin Special School established August 1956 was one of the pioneering efforts of the region. The "three track program" (basic, regular, and major) which was instituted ten years ago was a major breakthrough. Unfortunately the primary purpose and functioning of the basic classes may now be losing emphasis. The need for providing basic classes at the elementary level should be explored. The curriculum guide developed by the District, "The Methods and Psychology of Teaching the Slow Learner", has been widely sought.

Once again Cheyenne is showing leadership in requesting a careful examination of existing programs and guidelines for assistance in improving

services offered to pupils.

Professional respect for the work already accomplished in Cheyenne, demands that the request be answered honestly and to the point.

The situation in Cheyenne clearly is one which needs immediate attention. In view of the fact that nearly the same percentage of youngsters drop out as were identified as having difficulty in school, it seems that nearly one-fourth of the youngsters do not receive the educational benefits for which they are eligible. If only the youngsters were affected, the problem may not be so serious. However, it is apparent that the community is receiving these youngsters and they are not much of an asset as citizens.

In order to provide adequate programs it seems most advisable to begin to plan for the slow learners and non-college bound students as well as those who are special education students. Apparently there are a large number of jobs in the community which could be done by these youngsters if the youngsters are given appropriate training in the schools. Futhermore, consideration should be given to offering adult continuing education programs.

For implementing programs, a coordinator is needed now. It is a distinct possibility that a good screening program would discover many more students eligible for special education than the small percentage currently enrolled. In line with this, the upper age limit should be eliminated and a consistent curricular experience from pre-school through high school which culminates in work-training and placement should be initiated.

Although the present facilities are useable, consideration should be given to providing special classes in the children's attendance areas and using Miller School for trainable children. Chaplin may be used as an occupational preparation center until the building can be replaced. Federal funds can be solicited to build a facility for this purpose.

Planning should begin as soon as possible for implementing occupational preparation programs in both the junior high schools and high schools in Cheyenne. These can be followed by adult continuing education programs.

The Cheyenne Board of Trustees, staff, and administration are to be complimented upon their professional accomplishments and dedicated desire to improve educational opportunities for all children of the District.

VT 002 820
Lisack, J.P.
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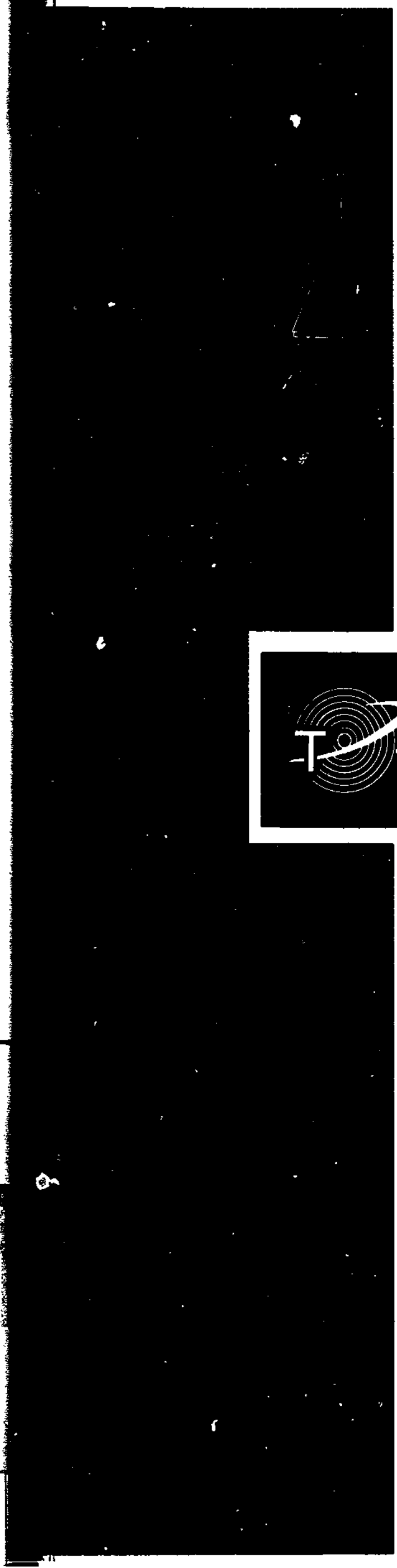
OCCUPATIONAL SURVEYS; *DRAFTSMEN; *ILLUSTRATORS; SUBPROFESSIONALS; *TECHNICAL EDUCATION; *PROGRAM PLANNING
INDIANAPOLIS; INDIANA

In order to assess the employment situation and provide information for educational planning, questionnaires were completed by 149 firms which employed 122,600 persons, or 68.5 percent of the employed population. The job titles of concern were: (1) beginning tracer, (2) junior draftsman, (3) senior draftsman, (4) drafting checker, and (5) design draftsman. This survey data plus other employment and educational information were synthesized into recommendations, such as: (1) A course in Production Illustration should be available, (2) Adult evening courses should be offered, (3) A special advisory committee should be formed, (4) Co-op and summer-experience should be developed, and (5) Despite a need for 34 illustrators, resources should be applied to meeting the larger need for draftsmen. (EM)

VT 002 820



MANPOWER REQUIREMENTS
for
INDUSTRIAL ILLUSTRATORS
and
DRAFTSMEN
in the
Indianapolis, Indiana Area

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
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MANPOWER REPORT 67-1

10 APRIL 1967

PROF. J. P. LISACK, DIRECTOR
OFFICE OF MANPOWER STUDIES
SCHOOL OF TECHNOLOGY
PURDUE UNIVERSITY
LAFAYETTE, INDIANA 47907

Manpower Requirements for Industrial Illustrators and Draftsmen in the Indianapolis Area

This report contains:

1. Background data concerning needs, employment, and salaries of technicians and draftsmen;

2. Occupational descriptions, salary, education and training information for industrial illustrators and draftsmen;

3. Results of a survey of Indianapolis firms designed to 1) determine the number of industrial illustrators and draftsmen (at five occupational levels) who are now employed in each major industry group, 2) ascertain the number of existing job vacancies, and 3) compute the projected manpower requirements to fill vacancies (job turnover) and to fill new jobs (expansion);

4. Discussion of the impact of future technological changes on the drafting processes - and effects on draftsmen qualifications;

5. Conclusions and recommendations concerning related technical training and educational programs.

* * * *

Acknowledgements

Appreciation is gratefully expressed for the advice and assistance of Ronald Frank, Assistant Professor of Mechanical Engineering Technology, Indianapolis Regional Campus, Purdue University and Deloss Bowers, Instructor in Engineering Graphics, Civil Engineering, Purdue University, Lafayette.

* * * *

Note: Copies of this report - and those listed on page 56, are available at $1.25 per copy (Indiana government and educational offices exempted). Please make checks payable to Purdue University.

J. P. Lisack, Associate Professor
of Industrial Education and
Director, Office of Manpower Studies

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CHAPTER I

PURPOSE AND DESCRIPTION OF THE REPORT

1. Purpose

This report is designed to provide the bases and justification for deciding on the types and nature of technical educational programs for industrial illustrators and draftsmen that may be needed in the Indianapolis area. It contains current and future manpower requirements, occupational descriptions and other data useful in the planning for related programs. Valuable background information concerning technician manpower requirements and salary and education comparisons are also included.

2. Identifying and Meeting Manpower Needs

The shortage of skilled manpower is being reported in growing numbers in many occupations throughout Indiana and the Nation. Lack of trained personnel is impairing the efficiency, growth, or expansion of business and industries in many locales -- this factor has become a key criterion in selecting the site for a new plant or business. Further, the rate of job obsolescense is accelerating, and new skills, and understandings are required continuously. Young persons must have the necessary education and training to qualify for entry into their choice of occupation - and also have the necessary bases for their continuing development. Further, those now employed must keep abreast of changes in order to remain productive. The kinds and adequacy of training and educational programs offered within or near a community therefore, have become important economic and social considerations.

This report provides manpower and economic data pertinent to industrial illustrators and draftsmen in Indianapolis. Hopefully, it will help to identify related needs and help justify actions to meet those needs. The specific objectives of this report are presented in the next section.

3. Objectives

The principal objectives of this study are to:

1) Determine the number of persons now employed as industrial illustrators and draftsmen; the latter at the five occupational levels of:

a. Tracer (Beginner or Trainee),
b. Junior Draftsman (or Detailer),
c. Senior Draftsman (Layout Draftsman),
d. Drafting Checker, and
e. Design Draftsman.

Note: Requirements for draftsmen are identified in the various specialized fields, (e.g. architectural, civil, mechanical, electrical/electronic and others).

2) Compare the distribution of draftsmen in Indiana with those nationally in the separate industry groups.

3) Determine the current number of job vacancies (if any) that exist in each occupation.

4) Determine how many new persons from sources outside each firm are needed on the average for each year for the next five years. Identify future manpower requirements as to those who are needed to fill job vacancies (turnover), and those needed to fill new jobs (expansion).

5) Obtain comments and suggestions from Indianapolis business and industry representatives concerning the nature and adequacy of a proposed two year associate degree program for industrial illustrators.

6) Determine nature and impact of technological changes upon the drafting/design processes and draftsmen qualifications.

7) Identify the industries that may experience the most significant effects of technological change upon draftsmen, apply findings to Indianapolis situation.

8) Obtain education and salary information pertinent to technicians and draftsmen for comparative purposes.

9) Examine selected education and training programs of draftsmen and report on numbers of Draftsmen being trained in the Indianapolis area.

10) Develop conclusions and recommendations which can be used as bases for planning related technical educational programs.

Secondary objectives include:

1) Reiterate the policy of the School of Technology, Purdue University, to meet the technical educational needs of Indiana citizens and industries.

2) Advise local industries of the nature and potential of the industrial illustrator in the technical communications field.

3) Standardization of terminology of the five occupational levels of draftsmen.

4) Methods Used

The data in this study were acquired primarily through results of a mailed survey questionnaire. A pilot survey instrument and necessary definitions were developed with the assistance of appropriate representatives from industry and selected faculty members concerned with engineering drawing and graphics.

The definitions of all Standard Industry Classification[1] (SIC) major groups were reviewed, and those groups were identified in which Industrial Illustrators and/or Draftsmen were most probably employed or their services needed. This listing was compared with the findings of a late Manpower Research Study conducted for the Manpower Administration, U. S. Department of Labor; necessary adjustments were then made to the listings. to assure inclusion of all appropriate industry groups.

[1]Refers to reference number in Selected Bibliography on page 53.

A list of addresses was extracted from the latest Indiana Industrial Directory[2] which were in the appropriate SIC groups. All firms in the pertinent industry groups with 100 or more employees were listed; selected firms specializing in or utilizing industrial illustration or drafting functions were added regardless of number of employees. Next, names and addresses were requested of local business and faculty representatives which they deemed apropos.

Surveys were sent to members of the Indiana Society of Architects who were either incorporated or associated regardless of size; there were 26 firms included in this group. Also, 44 additional engineering firms were selected from the Indianapolis telephone directory Yellow Pages that were believed to be the most likely to employ the services of Industrial Illustrators or Draftsmen. These included civil, mechanical, electrical and structural engineering firms; all of the local area members of the Consulting Engineers of Indiana, Inc. were surveyed.

All firms listed in the Yellow Pages Indianapolis Telephone Directory under Artists, Commercial Artists, and Photo-Engravers, plus all Commercial-Industrial Photographers were included in the survey, again - regardless of size of employment.

A review was made of the classified section of the Indianapolis telephone directory to ascertain if any appropriate firms had been missed. Also, previous manpower survey respondents were checked against the list to insure the inclusion of any that had somehow escaped the above identification processes.

The list was then reviewed by staff representatives from Purdue University's Regional Campus and this office; final adjustments were made as necessary.

The above techniques assured that all the essential, applicable industries and offices in the Indianapolis area were included in the survey. There was no need for applying sample design or sample stratification techniques. However, a model inflation procedure was applied to provide for non-response.

5. Format of the Report

This first chapter explains the purpose and objectives of the report, the methods used to acquire data, and the format of the study.

Chapter Two includes a summary and analysis of the survey returns: important tables are presented which show the average annual recurring requirements for Draftsmen and Industrial Illustrators. These tables are the keys to needs for related education and training programs. Chapter Three contains pertinent information concerning draftsmen occupations, and the employment and education of technicians and draftsmen: also, salary comparisons are made of engineers, technicians and draftsmen. Chapter IV discusses the effects of advancing technology on the drafting processes and related Draftsmen qualifications. Chapter V contains some relevant educational program data. Conclusions and recommendations are listed in the last chapter.

Appendices are attached which contain copies of the survey instruments used with tabulations of the returns, tables of distribution for Draftsmen and Industrial Illustrators by industrial groups, effects of technological change, and a selected bibliography.

CHAPTER II

SURVEY RESPONSES AND ANALYSIS

6. Description of Survey

The survey used had four parts:

1) A letter of transmittal which explained the aim of Purdue University School of Technology to present the technical educational programs needed by Indiana industries. The letter solicited the help of each firm by asking for certain manpower needs and educational information.

2) Description of the industrial illustration field and definitions for the

a. Industrial Illustrator (also called Technical Illustrator, Engineering Illustrator or Production Illustrator); and for -

b. Draftsmen, at the five most common occupational levels of

1. Tracer (Beginner),
2. Junior Draftsman (or Detailer),
3. Senior Draftsman (or Layout Draftsman),
4. Drafting Checker, and
5. Design Draftsman.

3) The questionnaire - a one page instrument which identified the firm and person responding; numbers of people employed - (total and for each occupation); number of vacancies; and estimated future needs to fill vacancies (e.g. turnover) and to fill new jobs (e.g. expansion). The specialized fields in which draftsmen were employed were also identified (e.g. architectural, civil, mechanical, electrical/electronic, and others). Finally, comments were solicited concerning the adequacy of a proposed 2 year industrial illustrator technology educational program.

4) Industrial Illustration Program - a description of the proposed curriculum and specific courses.

Note: Copies of the survey package, and a summary of the questionnaire responses are attached as Appendix 1.

7. Survey Distribution and Responses

Survey packages were mailed to 285 carefully selected firms in the Indianapolis area, as described earlier in Section 4 of this report. 149 usable returns were received, representing a 53% response. Firms in all relevant industrial group classifications were included. The employment of firms responding totaled over 122,600 people: this represents 68.5% of the total number of people employed in Indianapolis in the industry groups surveyed. The relative sizes of the employment in firms surveyed in the major industry groups, are essentially the same rank order as total employment in those industry groups.

Please see Table I on the next page for a recap of the firms responding to the survey by industry groups.

TABLE I

SURVEY RETURNS BY INDUSTRY GROUPS

Industry Group	Number Employed in Firms Responding		% of Universe Represented	Number of Firms Responding
Mfg. of Transportation Equipment	35,905		96.4%	12
Mfg. of Elec. Mach. Equip. & Supplies	23,937		96.8	15
Miscellaneous Manufacturing (Selected)	18,835		90.3	17
Government; State & Federal	11,226		27.5	10
Miscellaneous, Non-Mfg. (Selected)	10,903		78.5	15
Mfg. Machinery (less electrical)	9,965		62.1	13
Mfg. of Fabricated Metals	4.969		50.5	10
Mfg. of Primary Metals	1,895		46.5	7
Eng'g. and Architectural Services	965		63.5	33
Other (Paper, Chemical, Utility)	4,000		35.1	7
Commercial Artists, Illustrators, Photographers	68		66.6	10
	122,668	Aver.	68.5%	149

The 149 firms responding reported 1,500 draftsmen jobs and 58 industrial illustrator jobs. These firms reported 262 current job vacancies for draftsmen and 9 job vacancies for industrial illustrators. Future manpower requirements were also reported and are discussed later in this chapter.

In view of the fact that 68.5% of the total employment in the selected industry groups was represented in the firms responding to the questionnaire, the 31.5% differential will be reflected by expanding the survey return in each industry group (from the percentage shown in Table I) in order to include the universe of all firms in the selected industry groups.

8. Employment and Manpower Requirements for Draftsmen

The largest numbers of jobs for draftsmen in Indianapolis were at the Senior Draftsman (Layout) level - viz. 490: there were 77 job vacancies reported at this level. The second largest numbers of jobs were at the Junior Draftsman (Detailer) level - viz. 432: however, it is at this level that the largest number of current job vacancies exist (84), as well as being the largest average in numbers ($\bar{x}$ 141) needed annually to fill future vacancies (turnover) and the largest annual average number ($\bar{x}$ 101) of future new jobs (growth). The third largest number of jobs (324) was reported at the Design/Drafting level: this was also third largest in reported existing job vacancies (54). It is not surprising to see the larger numbers of vacancies at the higher skill levels in a tight labor market.

Running fourth with a total of 138 jobs - was the Tracer (beginner) level: this represents only about 9% of all draftsmen. Also, the new jobs (growth) at this level were reported at only half the number as for Junior or Senior Draftsmen. (Please see Appendix I for more details.)

Hypothesis

These data support the hypothesis that advances in blueprint and graphics storage and reproduction technology, and the increasing applications of improved

drafting devices and equipments, have made the utilization of Tracers less profitable. The projected lower numbers of new jobs for Tracers vis-a-vis Junior or Senior Draftsmen indicate a continuation of this downward trend. Inasmuch as the Tracer has been the first rung of the Draftsman occupational ladder - provisions must now be provided to leap-frog this traditional first step. The Junior Draftsman (Detailer) is becoming the entry level in many firms; the turnover rate is high as these Detailers move up to Senior Draftsmen, Checkers and other positions. Many of the needed skills and understandings acquired in the past on-the-job, must now be provided for in a formal training situation.

Employment Summary

Table II below presents a summary of the number of current jobs at each occupational level and the average annual recurring* requirements as reported in the survey response.

TABLE II SUMMARY

NUMBER OF JOBS AND ANNUAL RECURRING REQUIREMENTS FOR DRAFTSMEN

Occupational Level	Number of Current Jobs**	$\bar{x}$ Annual Recurring Req.*
Tracer (Beginner or Trainee)	138	119
Junior Draftsman (Detailer)	432	270
Senior Draftsman (Layout Draftsman)	490	209
Drafting Checker	113	42
Design Draftsman	324	108
Total	1,497	748

*The formula applied in Table II is:

Total annual recurring requirement = RV + RE

where $RV = \frac{V + NV}{3}$ and $RE = \frac{NE}{3}$

Defined by:

RV = Total annual Requirement to fill Vacaacies for that occupation
RE = Total annual Requirement to fill Expansion for that occupation
V = Current job Vacancies
NV = Numbers of reported job Vacancies over three years
NE = Number of reported new jobs due to Expansion over three years.

**(Summation) $\sum$ No. employed plus current vacancies.

Expanded Requirements to Represent Universe of Selected Firms

The average annual requirements shown in Table II were reported by firms representing 68.5% of the total employment in the selected industry groups. When appropriate expansion for each industry group is accomplished, the average annual recurring requirements become for:

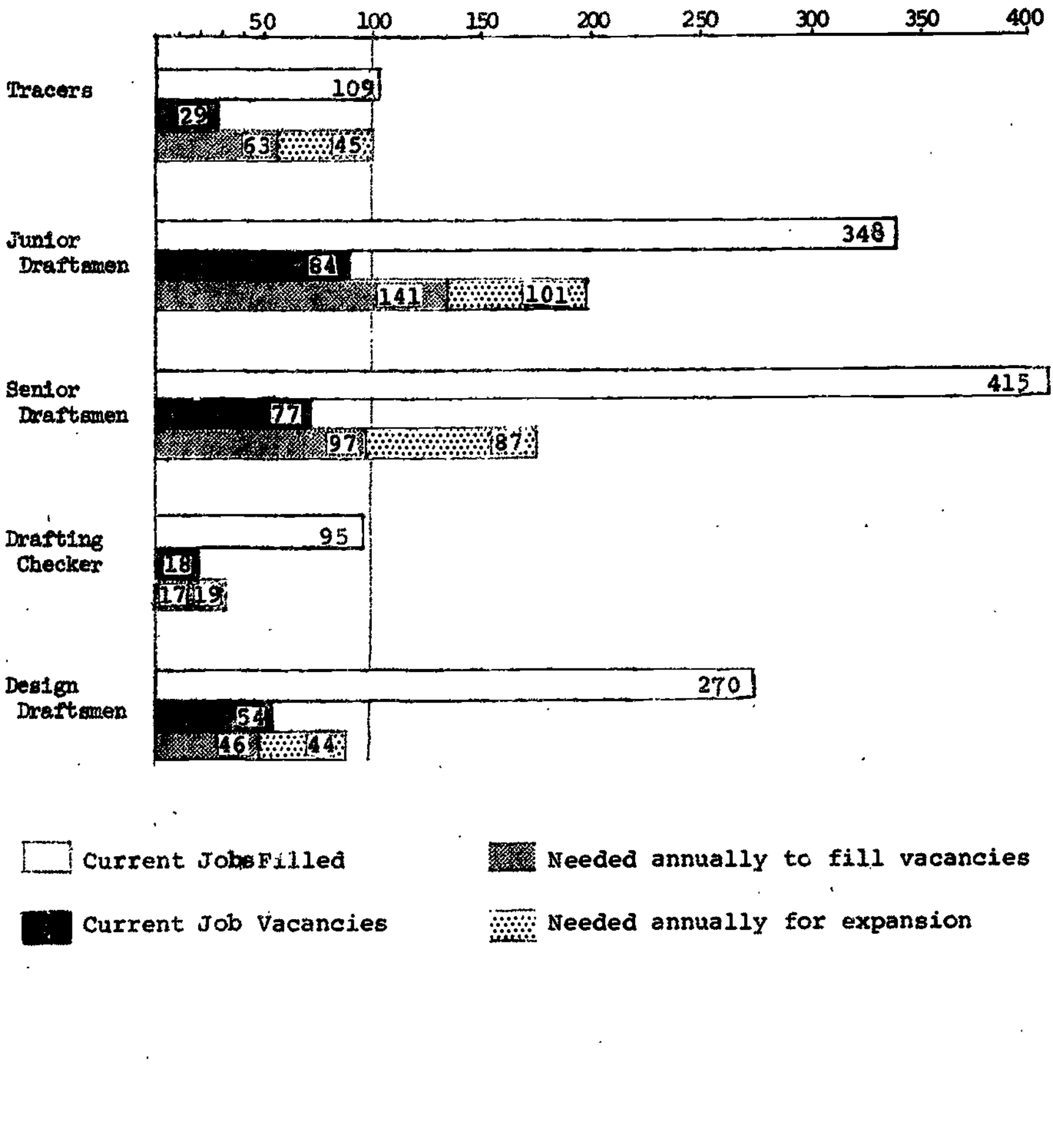
Tracers	156	Drafting Checkers	55	
Junior Draftsmen	355	Design Draftsmen	142	
Senior Draftsmen	275	Total	983	needed annually.

Relative Distribution by Occupational Level

The relative distribution of draftsmen (shown by employment at each occupational level), the numbers of current job vacancies, and the average annual recurring requirements to fill vacancies (turnover) and to meet new job needs (expansion), as reported in the survey responses, are illustrated in Table III below:

TABLE III

RELATIVE DISTRIBUTION OF EMPLOYMENT, JOB VACANCIES AND FUTURE REQUIREMENTS



Drafting Jobs in 1968

The data in Table III on the previous page, reflect the current (e.g. April 1967) distribution of draftsmen by occupational level as reported in the survey. The expected situation in 1968 is depicted below in Table IV. The numbers represent the current employment and current job vacancies, plus the new jobs due to planned expansion in 1968.

TABLE IV

DRAFTING JOBS IN 1968 (INDIANAPOLIS AREA)

Level	No. of Jobs	Percentage Distribution
Tracer (Beginner)	177	9.5%
Jr. Draftsman (Detailer)	528	30.1
Sr. Draftsman (Layout)	586	33.6
Drafting Checker	128	7.4
Design Draftsman	374	19.4
	1,793	100.0%

A comparison of Tables II and IV will indicate a total growth of 300 new draftsman jobs in 1968; (this is part of a total of 748 annual recurring requirements shown in Table II). It is also significant to note that although there are more Senior Draftsmen than there are Junior Draftsmen, there are more job vacancies and a greater recurring annual requirement for the Junior Draftsman. These data reinforce the hypothesis presented earlier in Section 8 - and reflect the inadequate existing base of beginners moving up the occupational ladder. These data also make a good case for the need to train directly to the Jr. Draftsman level and to prepare draftsmen with an educational base and potential adequate to advance to the higher occupational levels in a minimum of time and on-the-job experience.

Relative Distribution by Major Industrial Groups

Most Draftsmen jobs (387) in Indianapolis were in firms classified in the Transportation Equipment Manufacturing Group; 126 of these jobs were at the Senior Draftsman level. The large majority of Checkers and Design/Draftsman jobs were also in this industry group - which is not unexpected considering the continuous model changes and modifications normally experienced in Transportation Equipments production. The next largest number of jobs (322) were in Engineering and Architectural Services, here again there were a large number of Senior Draftsmen, but the second largest number of jobs were at the Junior Draftsman level in this group, followed closely by Design Draftsmen (there were relatively few Checkers in this industry group). The largest number (94) of Junior Draftsman jobs were in State and Federal Government: (in this group there were only 4 Tracer jobs;) considering that 39 Junior Draftsmen are needed annually - there is a need to train Draftsmen for initial employment at this second occupational level. The same situation exists in Fabricated Metal Products Manufacturing firms where there are 44 Draftsman jobs, but none at the Tracer level: in the Miscellaneous Manufacturing Group, there are 47 Draftsman jobs, but only 1 at the Tracer level. Table V presents a summary of Draftsman employment by occupational level within each industry group. (See Appendix II for a more detailed graphic presentation of these data.)

TABLE V

DRAFTSMEN EMPLOYMENT IN MAJOR INDUSTRIAL GROUPS

(Σ Numbers Employed + Current Job Vacancies)

Industry	Tracers	Juniors	Seniors	Checkers	Design Draftsmen
Primary Metals	5	2	6	1	1
Fabricated Mtl. Products	0	15	17	6	6
Machinery(ex. electrical)	16	37	31	6	28
Electrical Machinery	17	78	117	22	35
Transport Equipment	40	71	126	47	104
Misc. Manufacturing	1	18	20	0	8
Misc. Non-Manufacturing	12	21	12	2	13
Eng'g. & Arch. Services	35	87	114	7	86
Government	4	94	38	0	33
TOTAL	138	432	490	113	324

The inadequate base of Tracers (Beginners or Trainees) is apparent in all cases aoove with the exception of the Primary Metals group.

Distribution by Specialized Fields of Work

The largest total number (568) of draftsmen (for each occupational level) were reported in the Mechanical Area (includes castings, fixtures, machines, tools, parts, etc.). This area was followed by Civil, then Electrical/Electronic, and Architectural. A large number (308) were reported as "Other" - or a combination of specialized fields. Table VI presents the numbers of Indianapolis draftsmen now working in the various specialized areas.

TABLE VI

DISTRIBUTION OF DRAFTSMEN BY SPECIALIZED FIELDS

	Civil	Mech.	EE	Arch.	Other*
Tracers	11	52	5	10	31
Junior Draftsmen	89	119	29	12	100
Senior Draftsmen	60	199	47	34	74
Drafting Checker	10	62	2	4	17
Design Draftsmen	15	136	14	18	86
Total	185	568	97	78	308

*Were not designated on survey return or were inter-area.

Some Typical Comments of Survey Respondents Concerning Draftsmen

ALLISON DIVISION - GM 16,000 employees

We at Allison would like our better Draftsmen to have at least two years (post-high school) of schooling in Engineering Graphics and other fields which help them better understand the products they are working on. For our type of work, we would like to see emphasis placed in the following areas:

1. Familiarization with simple computer programs resulting in the knowledge to make full use of quick means of calculations.
2. Familiarization with the latest and most popular techniques of manufacturing, that is, such items as specialized joining techniques, tape control machining, electrical discharge machining, explosive forming and other machine shop practices.

DIAMOND CHAIN COMPANY - 1,600 employees

In regard to future tool designers: We try to start with new men (tracers) and upgrade as trained. As part of training, these people take eight selected technical subjects at Purdue Regional Campus at Indianapolis.

DUNLAP AND COMPANY - 375 employees

We have no present interest in industrial illustrators. We do have interest in draftsmen and other technicians in our general mechanical division.

ELI LILLY AND COMPANY - 8,795 employees

I realize it is most difficult, but from my own experience and background, I feel that all courses (including non-technical) should be pointed at the ultimate in practical use and application. This is especially true in this area.

FT. BENJAMIN HARRISON - 594 employees

There would be occasional need for a technician with industrial illustrator capabilities; more urgent needs exist now for "A" and "B" type draftsmen (e.g. Senior and Junior Draftsmen). Will those who complete the 2 year course receive a degree?

HUGH J. BAKER AND COMPANY - 600 employees

Structural steel and miscellaneous iron detailers we need. There are enough schools that teach architectural drafting but none teach structural detailing. It takes fabricators an average of 5 years to train a good detailer.

INDIANAPOLIS POWER AND LIGHT COMPANY - 1,768 employees

There is not only a shortage of qualified Draftsmen in the utility industry, but in other industries as well. If you could, through the Regional Campus, develop these people, I am sure it would be of help to all employers in our area.

MERCURY ENGINEERING COMPANY - 35 employees

We need tool designers and machine designers far more desperately than we do mechanical draftsmen.

PREMIER MANUFACTURING COMPANY - 80 employees

Very good - should have been started 7 or 8 years ago. Please keep us "posted".

UNION CARBIDE CORPORATION - 750 employees

We also have need for Design Technicians or Engineering Aides. Men with AAS in Mechanical Technology provide good solid background for both Technicians and Draftsmen. Curriculum should not be too heavy in tool and die design. We have no need for Industrial Illustrators.

WESTERN ELECTRIC COMPANY - 5000+ employees

...the proposed program (Industrial Illustrators) will not fulfill the greatest portion of our needs - which are drafting requirements.

9. Employment and Manpower Requirements for Industrial Illustrators

There were 58 Industrial Illustrator jobs reported by the 149 Indianapolis firms who completed and returned the questionnaire: total employment in these firms exceeded 122,600 people. 9 industrial illustrator jobs were vacant at the time of the survey. The average annual recurring need to fill job vacancies was 13 and the average annual recurring need for new jobs (expansion) is 9; considering these needs and filling existing job vacancies (spread over a 3 year period), the total annual requirements of industrial illustrators averages 25 per year. When these figures are expanded to reflect 100% of the employees in the industries and selected groups considered appropriate, it is determined there are approximately 76 industrial illustrator jobs and 12 existing job vacancies; also there is an annual turnover of approximately 16, plus up to 15 new jobs due to growth or expansion.

There are a hidden number of additional illustrators who work on a part-time job, or free-lance basis. For example, survey returns indicated 14 part-time or free-lance artists or illustrators were utilized: these people are not included in the totals shown inasmuch as they were not reported as regular employees.

Distribution by Major Industrial Groups (Industrial Illustrators)

Most industrial illustrators (17) were employed in the Transportation Equipment Mfg. Industry - there were no vacancies reported. Six industrial illustrators were employed in Machinery Manufacturing - again, no vacancies were reported. There were 8 vacancies reported in "Engineering and Architecuural Services"; seven of these were within one engineering services firm having a total employment of 31 people!

Please see Appendix III for a detailed graphical presentation of the distribution of Industrial Illustrators within major industrial groups.

Some Typical Comments of Survey Respondents Concerning Industrial Illustrators

ALLISON DIVISION OF G.M. - 16,000 employees

...It has a good balance between direct learning illustration courses and the indirect, or contributing sciences such as mathematics, physics, etc.

...As might be the case in other industrial plants as well as in ours, certain basic needs will become manifest. There is a feeling here at Allison that perhaps an hour per semester could be added to extend the commercial

art training during the Sophomore year - possibly as an elective.

Similarly, we would suggest that artistic aptitude should be explored during the student entrance and orientation tests.

BRYANT MANUFACTURING COMPANY - 2,100 employees

Program for Industrial Illustrators looks very good.

CHEVROLET MOTOR DIVISION - 4,000 employees

Although your proposed program looks good, we have no specific need at this plant for an Industrial Illustrator.

CUMMINS ENGINE COMPANY - 7,500 employees

...each Part Book Editor and Tech Writer must possess some ability to render orthographic blueprints into three-dimensional perspectives and exploded view drawings...

We require our artists to be able to hand retouch or air-touch photographs in addition to their other duties.

HAMILTON COSCO, INC. - 944 employees

Program seems to be adequate.

JARRETT ENGINEERING COMPANY, INC. - 75 employees

It appears to offer complete coverage of the needs: along with illustrator training, there is a serious lack of technical writers.

KELLY SERVICE - 100 employees

Since we are temporary help service our requirements for draftsmen and other technical people fluctuates greatly within a relative short time.

We have very few calls for Industrial Illustrators.

LE TOURNEAU-WESTINGHOUSE COMPANY - 750 employees

The course appears to be well conceived for its purpose. There is an increasing trend to using this type drawing for shop instruction prints.

RCA VICTOR HOME INSTRUMENTS DIVISION - 13,096 employees

The curriculum proposed for training Industrial Illustrators appears quite satisfactory. The individual courses cover all the requirements for this occupation, and the individuals who successfully complete the work should have no problem with meeting the requirements of industry.

LARRY ROESLER DESIGN COMPANY - 18 employees

I have 14 part-time, free-lance artists or illustrators. I am now, and will be for 2 years or more, very well supplied by free-lance people. If my needs change, perhaps the /industrial illustrator/ program can be of help.

10. Summary of Manpower Requirements: Draftsmen and Industrial Illustrators

Draftsmen

There were 1,497 Draftsman jobs at the five occupational levels reported by the 149 firms responding to the questionnaire. Most of the jobs were for Senior Draftsmen (490) and Junior Draftsmen (432). The largest average annual requirement by far was for Junior Draftsmen (270), indicating this level to be the greatest input requirement. The number of current jobs for Tracers and the relatively small projected growth rate indicate this traditional first-step in the drafting occupational ladder is being by-passed more and more. The Indianapolis firms responding to the questionnaire represented 68.5% of the total employment in the industry groups surveyed, the expansion of drafting jobs to represent total employment in each group (computed on the basis of percentage of draftsmen in each particular industry), resulted in the finding that 983 new draftsmen are needed annually as follows: 156 Tracers, 355 Junior Draftsmen, 275 Senior Draftsmen, 55 Drafting Checkers, and 142 Design Draftsmen. Most draftsmen were employed in industries manufacturing Transportation Equipment; then in Electrical Machinery, Equipment and Supplies; third largest employment was in Engineering and Architectural Services.

Industrial Illustrators

There were 58 Industrial Illustrator jobs reported by the 149 firms responding to the survey; 9 of these jobs were currently vacant. Inasmuch as firms responding represented 68.5% of the total employment of the appropriate industries and specialized groups, it was necessary to expand the returns according to the percentage return in each group. The expanded computation results in reporting these needs are probably closer to 76 industrial illustrator jobs with 12 existing vacancies. The expanded average annual recurring need to fill job vacancies becomes 16 and the more probable annual recurring need to fill new jobs due to expansion is 15. It follows that approximately 34 industrial illustrators may be needed annually to fill existing vacancies and meet future needs in the Indianapolis area.

CHAPTER III

OCCUPATIONAL INFORMATION

11. Current National Technical Employment Market*

There is a growing tightness in the nationwide job market for engineers, draftsmen and technicians. Job openings far exceeded applicants in related occupations according to a recent survey of supply-demand conditions. Trained applicants available dropped to lowest levels on record, while openings listed reached new highs according to local employment service offices. Reports from 30 major employment centers, which included Indianapolis, indicated that the trend first noted in 1964 toward dwindling applicant supply and rising demand in these occupations had accelerated. Marked increases in the out-of-area search for qualified manpower (finding jobseekers to fill job openings) demonstrated a growing tightness in the technical manpower job market.[3]

A serious shortage of draftsmen prevails in many of the Nation's industrial centers. By the end of March, 1966 for example, unfilled openings were more than double the number of applicants. This situation is reflected in the Indianapolis survey returns where respondents reported that there were over 260 actual existing draftsman job vacancies at the time of the survey.

The rising trend in needs for draftsmen - and difficulty in recruiting them - is reported in a wide variety of industries. Additional draftsmen were being sought for industrial construction oriented activities -- from the erection of physical plant to the installation of machinery and equipment. Employers required draftsmen to convert engineering concepts and sketches into detailed working drawings. Functional adaptations of design, ranging from an entire plant layout to a product process or to the design of a single component part of machinery, illustrate some of the basic work assignments.[4]

Demand was also strong from consulting engineering and architectural and contract construction firms. In addition to large numbers of mechanical and architectural draftsmer, these firms sought applicants versed in heating, ventilating, and air conditioning, those experienced in the design of piping systems and pressure vessels, and detailers and other specialists.[4]

Metal fabricating firms sought draftsmen familiar with the stress of metals and reinforced concrete structures, as well as with the design of fabricated metal equipment - such as marine boilers and tanks. Other industries had significant job opportunities for draftsmen also.[5]

12. Occupational Outlook Handbook[6] Information About Draftsmen

Nature of Work

Draftsmen translate the ideas, rough sketches, specifications, and calculations of engineers, architects, and designers into working plans which are used by skilled craftsmen in making a product. Draftsmen may calculate the strength, reliability and cost of materials. In their drawings and specifications, they describe exactly what materials and processes workers are to use on a particular job.

*Taken largely from the Current Employment Market, U. S. Department of Labor. See Reference 3.

Draftsmen are often classified according to the type of work they do or their level of responsibility. Senior draftsmen use the preliminary information provided by engineers and architects to prepare design "layouts" (drawings made to scale of the object to be built). Detailers (Junior Draftsmen) make drawings of each part shown on the layout, giving dimensions, materials, and any other information necessary to make the detailed drawing clear and complete. Checkers carefully examine drawings for errors in computing or in recording dimensions and specifications. Under the supervision of draftsmen, tracers make minor corrections and prepare drawings for reproduction by tracing them on transparent cloth, paper, or plastic film.

Draftsmen may also specialize in a particular field or area of work, such as mechanical, electrical, electronic, aeronautical, structural, and architectural drafting.

Where Employed

An estimated 260,000 draftsmen were employed in mid-1964; about 6 percent were women. The manufacturing industries that employ the largest numbers of draftsmen are the machinery, electrical equipment, fabricated metal products, and transportation equipment industries. Nonmanufacturing industries employing large numbers of draftsmen are engineering and architectural consulting firms, construction companies, and public utilities (electric, gas, and sanitary services). Note: the Indianapolis situation is quite similar to this National picture.

Training, Other Qualifications, and Advancement

The necessary training can be acquired from a number of sources, including technical institutes, junior and community colleges, extension divisions of universities, and vocational and technical high schools. Other persons may qualify for draftsmen jobs through on-the-job programs combined with part-time schooling or through 3 or 4-year apprenticeship programs.

The prospective draftsman's training should include courses in mathematics and physical sciences, as well as in mechanical drawing and drafting. The study of shop practices and the learning of some shop skills are also helpful, since many higher level drafting jobs require a knowledge of manufacturing or construction methods. Many technical schools offer courses in structural design, strength of materials and physical metallurgy.

Young people with only high school drafting training are at a disadvantage and usually start out as Tracers. Those with some formal post-high school technical training can often qualify as Junior Draftsmen. As draftsmen gain skill and experience, they may advance to higher level positions as Detailers, Senior Draftsmen, Checkers, Design Draftsmen, or supervisors of other draftsmen. Some draftsmen who take courses in engineering and mathematics are able to transfer to assistant engineer positions.

Special Note on Technological Changes: The applications in design/drafting of recent developments in data processing, graphics communication, and reproduction will have significant manpower qualification implications. The kinds and scope of training and education of new draftsmen will have a great

deal of sway over the effectiveness and advancement of these draftsmen in the future. Many present curricula are inadequate. (Please see Chapter IV Advancing Technology and Drafting and Chapter V Education and Training of Draftsmen for more information.)

Employment Outlook

Employment opportunities for draftsmen are expected to be favorable through the mid-1970's. Prospects will be best for those with post-high school drafting training.

Employment of draftsmen is expected to rise rapidly as a result of the increasingly complex design problems of modern products and processes. More draftsmen will be needed due to continued expansion of industries requiring them. Also, as the engineering and scientific occupations grow, more draftsmen will be needed as supporting personnel. On the other hand, drawing-assist devices, photo-reproduction of drawings and expanding use of newly developed electronic drafting equipment are eliminating some routine tasks done by draftsmen and will probably bring about a proportional reduction in the need for Tracers.

In addition to draftsmen needed to fill new positions, many will be required each year to replace those who retire, die, or move into other fields of work. The number needed to fill such vacancies, estimated to be about 10,000 in 1964, will probably rise slowly through the mid-1970's.

Earnings

In private industry, persons in beginning drafting positions earned an average of about $360 a month in early 1964, according to a Bureau of Labor Statistics survey. As they gain experience, draftsmen may move up to higher level positions with a substantial increase in earnings. For example, the earnings of Senior Draftsmen averaged about $575 a month in early 1964.

13. Salaries: Industrial Illustrators, and Comparisons of Engineers, Engineering Technicians and Draftsmen.

Industrial Illustrators

There is very little published information concerning the salaries of industrial illustrators. An idea of the range and average first salaries of Purdue students just completing related two-year Associate Degree Programs in June of 1966 follows:

Program	First Salaries (Monthly) Low	High	Average
Industrial Illustration	$360	$550	$455
Architectural Technology	320	550	435
Electrical Engineering Technology	438	700	556
Mechanical Engineering Technology	320	785	540

It was reported to the author by good authority that top salaries for experienced captive illustrators range up to $8,500 per annum, with rare cases to $9,500.

Draftsmen, Engineers, and Engineering Technicians

Every year, the Bureau of Labor Statistics provides a bulletin with the results of nationwide surveys of compensation for selected occupations.[7] The salary data are obtained by personal visits of the Bureau's field economists. Table VII on the next page presents the salaries of Engineers, Engineering Technicians and Draftsmen.

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TABLE VII

EMPLOYMENT and AVERAGE SALARIES for ENGINEERS, ENGINEERING TECHNICIANS and DRAFTSMEN in PRIVATE INDUSTRY (METROPOLITAN AREAS) FEBRUARY-MARCH 1966)

Occupation and Class	Number of Employees	Monthly Salary[1] Mean*	Annual Salary[1] Mean*
Engineers**			
Engineers I	8,858	$ 646	$7,752
Engineers II	26,656	710	8,520
Engineers III	69,867	819	9,828
Engineers IV	95,688	987	11,844
Engineers V	58,168	1,156	13,872
Engineers VI	30,608	1,323	15,876
Engineers VII	10,172	1,562	18,744
Engineers VIII	2,864	1,799	21,588
Engineering Technicians**			
Engineering Tech. I	4,029	$ 428	$5,136
Engineering Tech. II	11,425	501	6,012
Engineering Tech. III	21,159	584	7,008
Engineering Tech. IV	24,434	661	7,932
Engineering Tech. V	12,660	746	8,952
Draftsmen**			
Draftsmen-tracers	5,588	$ 371	$4,454
Draftsmen I	19,927	469	5,622
Draftsmen II	33,523	588	7,052
Draftsmen III	21,242	695	8,341

[1]Employee's normal work schedule excluding overtime hours.
*The Median salaries were generally only one or two percent lower.
**These three classifications are discussed in following paragraphs. JPL

Engineers were surveyed in eight levels. Each started with a professional trainee level, typically requiring a B.S. Degree. The highest level surveyed involved either full responsibility over a very broad, and highly complex and diversified engineering program, with several subordinates each directing large and important segments of the program; or individual research and consultation in difficult problem areas where the engineer was a recognized authority and where solutions would represent a major scientific or technological advance. Average monthly salaries means ranged from $646 for Engineers I to $1,799 for Engineers VIII. Level IV, the largest group, included professional employees who were fully competent in all technical aspects of their assignments, worked with considerable independence, and in some cases, supervised a few professional and technical workers. Manufacturing industries accounted for 80 percent of all engineers; public utilities, 9 percent, and the surveyed engineering and scientific services employed virtually all the others.

In Table VII on the preceeding page, the five-level series for engineering technicians was limited by definition, to employees providing semiprofessional technical support to engineers engaged in such areas as research, design, development, testing, or manufacturing process improvement, and whose work pertained to electrical, electronic, or mechanical components or equipment. Technicians engaged primarily in production or maintenance work were excluded. Engineering Technicians I, who performed simple, routine tasks under close supervision, or from detailed procedures, were paid monthly salaries means averaging $428. Engineering Technicians V, the highest level surveyed, averaged $746 a month. That level included fully experienced technicians performing more complex assignments involving responsibility for planning and conducting a complete project of relatively limited scope, or a portion of a larger and more diverse project in accordance with objectives, requirements, and design approaches as outlined by the supervisor or a professional engineer. Averages for intermediate levels III and IV, at which a majority of the technicians surveyed were classified, were $584 and $661 respectively. As might be expected, nearly all of the technicians as defined were employed in manufacturing (79 percent) and in the scientific services industries studied (16 percent). Although the ratio of such technicians to engineers studied was about 1 to 4, respectively, in all manufacturing industries, higher ratios of almost 1 to 3 were found in establishments manufacturing mechanical and electrical equipment, and 1 to 2 in research, development, and testing laboratories.

In the drafting field, (as depicted in Table VII), the definitions used in the survey covered four levels of work - Draftsmen-Tracers, and Draftsmen I, II, and III. Monthly salaries means averaged $371 for Draftsmen-Tracers and ranged from $469 to $695 among the three levels of draftsmen. Draftsmen-Tracers copy plans and drawings prepared by others or prepare simple or repetitive drawings of easily visualized items. The three draftsmen levels as defined ranged from employees preparing detail drawings of single units or parts (level I) to those who, working in close support with the designer, plan the graphic presentation of complex items having distinctive design features, and either prepare or direct the preparation of the drawings (level III). The drafting employees were distributed by industry in about the same proportion as engineers, with 77 percent in manufacturing, 7 percent in public utilities, and nearly all the remainder in the selected engineering and scientific services industries.

It can be seen in Table VII, that the monthly salary mean of $588.00 for Draftsmen II (the middle level and the largest group), compared very favorably with the $584.00 monthly salary of Engineering Technician III (the middle level and one of the largest groups). Both of these salaries are only about 10 or 12 percent lower than the Engineers I (baccalaureate level), but are about 30 percent lower than Engineers III and IV (the largest engineer groups).

14. Confirmation of the Needs for Draftsmen

Manpower Incorporated

It is of value to confirm the employment situation for any given occupation by comparing data from different and independent sources. Inasmuch as the preceding section reported the U. S. Department of Labor findings, this section reports the findings of The Manpower Research Council, a non-

profit research organization, sponsored and operated as a public service by Manpower, Inc.

The Manpower Research Council reported[8] in July, 1966, on a national survey of job availability -- a brief summary follows:

773 companies participated, representing nearly 875,000 employees,

A total of over 35,000 jobs were unfilled (e.g. average of 45 per company or 4%),

Job vacancies occurred most frequently in the following --

	Number of Openings	Number of companies responding
Machinists	2,445	205
Salesmen, Typists, Secretaries and General Office followed, then		
Mechanical Engineers	1,364	288
Draftsmen	1,346	234
Electrical Engineers	1,304	184
Engineering Technicians	785	119
Maintenance Mechanics	783	173

Interestingly, the survey respondents also assigned reasons for the existence of unfilled jobs (author takes responsibility for interpreting data to order degrees of importance of top three):

1st - Competition from other firms creating shortage,

2nd - Applicants lack skill required,

3rd - Applicants lack educational background.

Manifestly, educators can but note the first, but this should reinforce their efforts to do more about the second and third.

Nationwide Shortage Develops for Draftsmen (U. S. Employment Service)

Another confirmation of the needs for draftsmen was reported in a recent article in the Employment Service Review magazine[9] which reviewed an 8 year span. The following is a direct quote:

"A serious shortage of draftsmen currently prevails in many of the Nation's industrial centers...The current intensification of employer needs and diminished supply of draftsmen job seekers rivals previous peak periods of shortage in this occupation during the economic upturn of 1956-57 and the Korean conflict. The rising trend in needs for draftsmen and difficulty in recruiting them has been underway since the last quarter of 1964."[9]

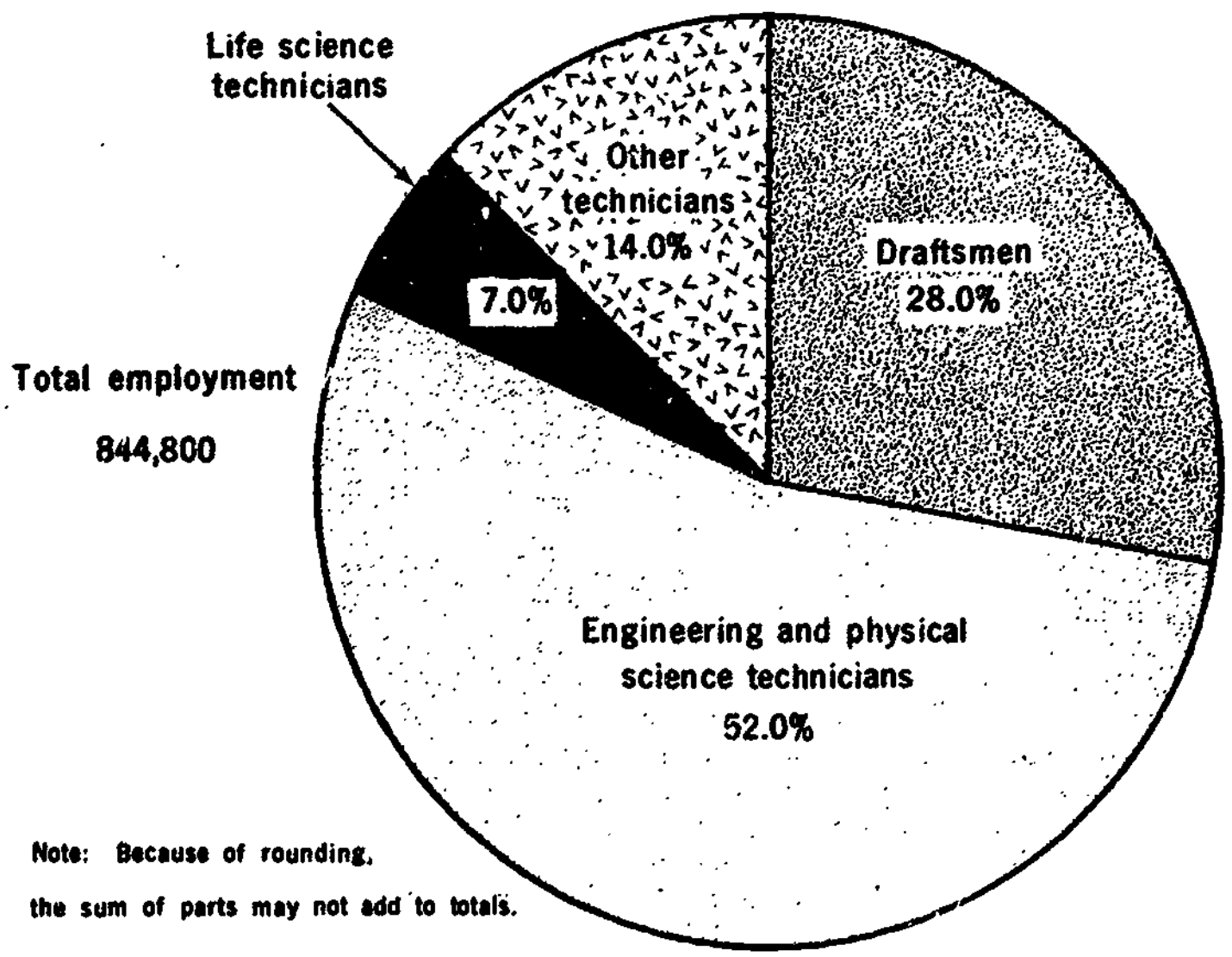
The shortage of draftsmen is reflected in the certified requests by Indiana employers for importation of alien workers. The Indiana Employment Service advised that between 1 December 1965 thru 22 November 1966, 39 draftsmen were requested. The specialties included Architectural Chief, Tool Designer, Detailer, and Technical Illustrator: areas were Bedford, Columbus, Elkhart, Indianapolis, Lake County, and South Bend.

15. Technician Manpower: Requirements, Resources and Training Needs,

U. S. Department of Labor. The Bureau of Labor Statistics, with the support of the National Science Foundation, recently reported the results of a comprehensive study of current and future technician manpower.[10] Technicians were defined as workers who directly or indirectly support scientists and engineers in designing, developing, producing, and maintaining the Nation's machines and materials. Their work was reported as "technical in nature, but more limited in scope than the work of scientists and engineers, with a practical rather than a theoretical orientation." Technicians in the report were classified into the four occupational groups of 1) Draftsmen, 2) Engineering and Physical Science Technicians, 3) Life Science Technicians, and 4) "Other Technicians" - which includes computer programers, surveyors, and miscellaneous. (Please see Figure 1 below for the percentage distribution of these technicians.)

FIGURE 1

ESTIMATED EMPLOYMENT OF TECHNICIANS, BY OCCUPATION, 1963



Manufacturing industries employed about 45 percent of all technicians. The machinery, electrical equipment, transportation equipment, and fabricated metals firms accounted for two-thirds of the nearly 400,000 employed in manufacturing. In nonmanufacturing industries, large numbers are employed in engineering and architectural services, construction, communications, and government. It is interesting to note the variations in the following table.

TABLE VIII

EMPLOYMENT OF TECHNICIANS

BY OCCUPATION AND SELECTED INDUSTRIES, 1963

Industry	Total Technicians	Draftsmen	Engineering Technicians	Other* Technicians
All	844,800	232,000	439,000	173,800
Construction	29,500	13,700	11,000	4,800
Manufacturing	389,700	122,800	207,500	59,400
Engr. & Arch. Serv.	68,200	43,300	11,500	13,400
Government	169,800	22,300	105,700	41,800
Trans. Comm. & Util.	55,200	7,900	37,200	10,100

*Includes Life Science technicians, computer programers and surveyors - Excludes Medical and Dental Technicians.

16. Projections of Technician Requirements to 1975, (BLS[10])

This section presents the highlights of the projections of technician requirements to 1975, and estimates of the number of technicians needed to replace those who will die, retire, or transfer to other occupations during the 1963-75 period.

Summary of Projections.

The projections developed for this report indicate that requirements for technicians may increase by about 650,000 over the 1963-75 period, rising from the 845,000 employed in 1963 to about 1,495,000 needed in 1975. This projected growth represents about a 77 percent increase over the 12 year period, an average rate of increase of about 6.4 percent a year, a rate of growth similar to that which has occurred in recent past. Increased requirements for technicians are expected to result from continued economic growth, especially in the technical fields where growing complexities of new products and processes will stimulate demand for highly trained technical personnel. Growth will also stem from factors such as increasing utilization of technicians, expanding research and development activities, and exploitation of the resulting discoveries especially in the field of medical science, and further slight expansion of the space program.

The most rapid increase in requirements is expected to be for Life Science Technicians. (See Table IX.) Demand for these workers is projected to increase from the less than 60,000 in 1963 to 139,000 needed for 1975, a 139 percent increase over the 1963-75 period. Requirements for Engineering Technicians, the largest technician specialty, are expected to grow from about 309,000 in 1963 to 533,000 in 1975, or by about 73 percent, a rate of increase similar to the rate for all technicians. Because of the relative size of the field, however, more people will be needed to fill openings arising from growing requirements in the Engineering Technician specialty than in any other specialty. Requirements for Draftsmen are expected to increase 62 percent by 1975.

TABLE IX

TECHNICIANS, BY OCCUPATIONAL SPECIALTY,

1963 EMPLOYMENT AND PROJECTED 1975 REQUIREMENTS

Occupation	1963 Employment	Projected 1975 Requirements	Percent Increase, 1963-75
Technicians, all occupations	844,800	1,495,000	77%
Draftsmen	232,000	375,000	62%
Engineering & Physical Science Technicians	439,000	765,000	74%
Engineering Technicians	308,500	533,000	73%
Chemical Technicians	64,600	122,000	89%
Physics Technicians	10,800	22,000	104%
Mathematics Technicians	6,100	12,000	97%
Other Physical Science Techns.	49,000	81,000	65%
Life Science Technicians	58,100	139,000	139%
Other Technicians	115,700	210,000	82%

Note: Because of rounding the items may not add to totals.

The projections indicate that, between 1963 and 1975, requirements for technicians in several broad industry divisions will increase more rapidly than the 77 percent anticipated for the economy as a whole. These are Government, construction, and a miscellaneous group of industries that includes nonprofit organizations, engineering and architectural services, miscellaneous business services, and colleges and universities. (The growth in colleges and universities is expected to be mostly in research centers.) In manufacturing, rapid growth of requirements are expected in the chemicals and allied products, rubber products, and professional and scientific instruments industries.

Summary of Technician Demands

The projected requirements in Table IX indicate the numbers of active technicians needed on the job. About 650,000 more technicians will be needed in 1975 than were on board in 1963. However, in addition to meeting these growth needs, there will be losses due to retirements and deaths

which will average about 10,000 per year. Further, there will be losses owing to transfers which will average about 22,000 a year (based on application of a transfer rate of 3 percent per year). Broadly speaking, these replacement needs necessitate adding 50% to the numbers shown in Table IX. Therefore, for instance, in order to meet new personnel needs resulting from growth in requirements, and from losses due to deaths, retirements, and transfers, a total of some 1,025,000 additional technicians would be needed during the 1963-75 period, an annual average of about 86,000 per year. For draftsmen, about 143,000 will be needed due to growth, about 40,000 more as a result of transfers and 20,000 more as a result of deaths and retirements: a total of more than 200,000 draftsmen from 1963 to 1975 or more than 16,500 per year!

CHAPTER IV

ADVANCING TECHNOLOGY AND DRAFTING

17. Technological Changes:

Impact on the Labor Force[11]

Technological changes have an impact on the labor force. Some occupations are eliminated, some increase - others decline in importance, new ones come into existence, job content changes, new skills and qualifications are required. However, the need for information lies at the core of each related problem.

Fortunately, a study has been completed recently for the U. S. Department of Labor, Manpower Administration[11] which identifies the major technological changes in the United States which will affect the design and drafting processes in the next 10 years, and the effects of these changes on manpower needs. Some educational implications are drawn from this study by the author in Chapter V - Education and Training of Draftsmen.

Technological Changes: Which will Affect the Design/Drafting Processes

Although technological change is not new to design/drafting, recent developments in data processing, graphics communication and reproduction are expanding both the number and the range of applications of advanced technology being introduced into the process. The equipments which will be used to implement technological changes in the next ten years include the electronic computer, manually and automatically controlled drafting machines, cathode ray tube scanners and recorders, microfilm devices, and graphic man-machine consoles.

The major technological changes expected before 1975 will utilize computer-based systems to perform design computations, process design information, and assist in carrying out the steps in the design itself - including the preparation of necessary drawings. Many systems that utilize presently available equipment and techniques to process applications similar to these, are already in operation today in a variety of industries. Systems and applications will continue to diffuse over the next ten years.

In addition, major new developments in time-shared computer systems which include graphic input-out capabilities are expected to move from experimental to operational use in design/drafting within 10 years. By 1975, only a few large firms and possibly some service bureaus will have these systems installed and performing extensive production operations. However, the use of these systems is expected to diffuse rapidly between 1975 and 1985. (See the Glossary of Technological Advances presented at the end of this chapter.)

Industries active in introducing technological change into design/drafting today are expected to continue in the forefront to 1975. Within manufacturing, these industries are electrical equipment, nonelectrical machinery, transportation equipment, ordnance, petroleum refining, chemicals, primary metals, fabricated metals and instruments. Outside of

manufacturing, significant activity is found in contract construction and engineering services. Small firms will continue to lag considerably behind larger ones in the introduction of major technological changes.

Wherever engineering designers express the needed information in computer/machine-sensible form, it can be readily extended to produce drawings automatically as well as to tie into the requirements for information storage and retrieval, and with other informational systems such as parts lists, tooling requirements, purchasing requirements, and scheduling. Manpower requirements determinations can also be facilitated.[12]

Technological Changes: Impact on Numbers of Draftsmen

The effects of technological changes on the total requirements for draftsmen during the 1965-75 period are expected to be moderate. The growth rate for the occupation in the next 10 years will be slowed somewhat but because of economic growth the absolute number of draftsmen will continue to rise.[11] However, there will be a proportionately lesser requirement for Tracers (beginners), as some of their services will be replaced by new devices, equipments, innovations, and drafting techniques.

The technological impact upon numbers of draftsmen required will vary among industries - the greatest effects will occur in two industry groups - the first includes medium (100-999 total employees) and large (1000 or more) establishments in industry classifications where technological change will have a perceptable, but not extensive effect. The second includes medium and large establishments in industries where changes are expected to be significant. The former group employs 28.2 percent of all draftsment, the latter, 29.1 percent. Draftsmen in small establishments (having total employment under 100) are unlikely to be affected in any serious way for the next ten years, with the exception of some special cases such as engineering and architectural services, or in some contract construction.[11] Please see Appendix IV - Numbers of Draftsmen, by Size of Establishment and Industry, 1963, and the Effects of Technological Change Upon Them, by 1975, for the National picture.

Technological Changes: Effects on Future Employment

Technological innovations are predicted to limit to some extent the large needs for draftsmen generated by increasing demand for drafting services. This is due to:

a. Laborsaving technological innovations in drafting which will be on routine work such as tracing, rather than in the more complex work,

b. Draftsmen's time will be saved on some time-consuming routine work by using some laborsaving technical innovations such as

1. New equipment for photoreproduction of drawings and electronic drafting,

2. Increasing use of drawing assist devices and new type of drafting paper that can be erased a number of times, thereby reducing the need to redraw an entire plan when design changes are made, and

3. Increasing use of computers in drawings.

The use of laborsaving technological innovations is not expected to seriously limit growth in employment requirements for draftsmen over the next decade because:

1. Automatic drafting equipment is not yet available for wide use in the development of complicated drawings, and

2. Computers and electronic plotting machines are very expensive, conversion costs are high, and integration of new machines with existing systems are difficult. Smaller firms will be limited in their acquisitions of these expensive items.

Technological Changes: Effects on Draftsmen in Indianapolis Industries

The predicted technological impact will vary on draftsmen - dependent upon both the type and size of industry. (See Appendix IV - Effects of Technological Change by 1975 on Draftsmen.) An application of these National data variants to the firms in Indianapolis indicate that about 30 percent of the draftsmen will be affected to a significant degree, nearly 30 percent perceptably but not extensively, and the remainder little if at all. The 60 percent of jobs affected will require newcomers to be trained better initially - and 30 to 60 percent of practicing draftsmen will have to continue their efforts to remain up-dated.

18. Glossary of Technological Advances[11]

Time-shared computer systems: Allow the man with the problem to communicate directly with the computer. Services more than one man at a time and uses free time to process other jobs.

Equipment to reproduce and store drawings: Accurately records the content of drawings and stores them conveniently and compactly.

Numerically-controlled plotters and drafting machines: Produce drawings using instructions and data from previously prepared tape or directly from the computer.

Cathode ray tube recorders: Interpret instructions and assemble the required picture on the face of the cathode ray tube. Then the information is photographed and printed.

Photo-composition devices: An operator composes the drawing by mechanically selecting the proper symbols. When the symbols are properly positioned on the viewing screen, they are photographed.

Cathode ray tube scanners: Scan information contained in a microfilm frame and convert it to a form the computer can use.

Digitizing machine: A finished drawing is traced under manual control and the required coordinate positions are recorded on magnetic tape or punched on cards or paper tape. The type or cards can then be processed by a computer.

Man-machine consoles: Permit the man with the problem to communicate directly with the machine. Handle alphabetic, numeric, or graphic information depending on the particular devices used.

CHAPTER V

EDUCATION AND TRAINING OF DRAFTSMEN

19. Educational Attainment of Technicians[10]

A comparison (Nationally) of the level of educational attainment of the individual technician specialties reveals some marked differences. (See Table X.) For example, nearly 3 out of 4 draftsmen had some college, as compared with about 3 out of 5 of those in each of the other technician occupational groups. 7.2 percent of all draftsmen had bachelor's degree or higher. Only 6.7 percent of all draftsmen had less than a high school education whereas 12.2 percent of all technicians taken as a group failed to complete high school.

The growing educational attainment of technicians is illustrated by the fact that younger technicians have completed more schooling than older technicians. About two-thirds (65 percent) of those 24 years of age or less had completed at least some college work, as contrasted with only about 45 percent of those age 55 or older. Less than 6 percent under 25 years of age reported that they had not completed high school, as compared with about 43 percent 55 years of age or older. Although educational attainment differs among the various technician occupational groups, the greater differences are attributable more to age than occupational specialty.

TABLE X

LEVEL OF EDUCATION OF TECHNICIANS, BY OCCUPATION, 1963 (percent distribution)

Educational Level	All Technicians n = 844,000	Draftsmen n= 232,000	Engineering Technicians n = 439,000	Others[2] Technicians n = 173,800
Less than High School	12.2%	6.7%	14.5%	13.5%
High School Graduate	24.6%	21.6%	25.8%	26.5%
Some College[1]	53.1%	64.5%	51.0%	42.0%
Bachelor and Bachelor plus	10.0%	7.2%	8.7%	18.0%
	100.0%	100.0%	100.0%	100.0%

[1]Includes technicians without any degree and those with an associate degree, but no bachelor's degree.

[2]Includes life science technicians, programers, and surveyors, excludes medical and dental technicians.

This finding concerning the higher educational attainments of younger technicians is consistent with the education of big business executives. In a recent study[18] published in the Scientific American it is stated, "A significant index of the professionalization of the big business executive (industrial management) is the doubling of the percentage with some higher education between 1900 (just under 40 percent) and 1964 (more than 90 percent). The percentages with college degrees and graduate training among younger executives consistently exceeded the corresponding percentages among older executives in each year studied after 1900." In another finding in this same study it was stated "The professionalization of the big business executive is increasingly correlated with qualification in science and technology."[18]

20. Suggested Educational Programs for Design/Drafting -

The American Institute for Design and Drafting (A.I.D.D.)

The Educational Activities Committee of the A.I.D.D. has prepared a brochure[14] containing suggested programs for Junior Draftsmen (Senior High School, two semesters), Draftsmen (Post High School, two years - 60 semester credits - e.g. about 3,000 curriculum hours*); Design Draftsmen (Junior College or Technical Institute level - 4 semesters of 70 semester credits, e.g. 3,500 curriculum hours*); and Engineer Designer (Four year degree program) - The middle two programs are considered relevant to this study and are described more fully below.

The A.I.D.D. upon approval after visitation by a representative, issues a document of certification in the appropriate classification (s) to the schools qualifying. A certificate in drafting, with the appropriate designation, is given to each student completing the approved program.

Post High School Program (Draftsman)

Two-years - 56 semester credits or 2800 curriculum hours*

Semester Credits	Subjects
5	Basic Technical Drawing
3	Descriptive Geometry
8	Drawing Electives[a/]
4	Intermediate Algebra and Trig.
4	Plane and Solid Geometry
8	Machine Shop and Mfg. Processes
3	Prop. of Matl. & Lab Testing
8	Applied Physics and Mechanics
6	English, Economics, Humanities
7	Electives
Total 56 Semester Credits	

[a/] Drawing electives: Architectural, Electrical, Mapping, Machine, Piping, Structural, Production Illustration, Technical Sketching, Developments (sheet metal), Nomography, Advanced Descriptive Geometry, Tool Detailing.

*A "Curriculum hour" is a summation of laboratory, drawing, or shop hours plus 3 times theory or lecture class hours for a semester of at least 16 2/3 weeks, thus

L = Laboratory, etc., contact hours
T = Theory, Lecture, or Recitation class hours
C = Curriculum hours,

or $C = L + 3T$

A "semester credit" is therefore equivalent to 50 curriculum hours.

Junior College or Technical Institute (Design Draftsman)

4 Semesters = 70 semester credits

Semester Credits	Subjects
5	Basic Technical Drawing
3	Descriptive Geometry
4	Drafting Electives
8	Advanced Physics
4	Advanced Chemistry
4	Advanced Algebra and Trig.
6	Analytic Geometry and Calculus
2	Elements of Surveying and Mfg. Proc.
3	Engineering Statics
3	Strength of Materials
4	Properties of Materials
6	Machine Shop
2	Laboratory Testing
3	Elementary Machine Design
4	Electric Circuits and Machinery
6	English (Reports & Oral)
3	Economics
Total 70 Semester Credits	

Four Year Degree Program (Engineering Designer)

The four-year program (Engineering Designer) is assumed to meet all requirements shown under the Junior College outline. In addition, inclusion would be expected of such subjects as Advanced Machine Design, Dynamics, Fluid Mechanics, Special Departmental Design Courses and other subjects required for the degree. The design courses must include not only computation, but a finished drawing board product.

21. Drafting and Design Technology Program, Pennsylvania State University

Pennsylvania State University's objectives in drafting and design technology are to prepare technicians as Detail or Layout Draftsmen and as engineer's assistants in design work for manufacturing industries and companies engaged in installation, construction, or erection work.[15] Their two-year associate degree program is quite similar to the suggestion of the American Institute for Design and Drafting Design Draftsman Program described earlier.

Some differences are that "technical mathematics" and "technical calculus" are shown by Penn University and "Advanced Algebra" and "Trigonometry" and "Analytic Geometry and Calculus" are suggested by A.I.D.D. Likewise, a social science elective, humanities elective, and Industrial Organization and Administration are required at Pennsylvania State University, but are not shown in the A.I.D.D. suggestions.

22. Suggested Mechanical Drafting and Design Technology Subject Matter Areas, Office of Education, Department of Health, Education, and Welfare.

The Office of Education has a series of publications designed to help organize and operate selected technical education programs. The Mechanical Drafting and Design[16] publication included a training requirement analysis. In this analysis, 15 design/drafting occupations were listed together with the subject matter areas considered as "Essential." The following table was derived from the analysis of 2 occupations in the Engines Manufacturing area (Engine Development Technician /internal combustion/ and Steam Turbine Design Technician): and 4 occupations in the Machine Tool Manufacturing area (Design Draftsman, Machinery; Layout Man and Checker; Design Checker; and Die Designer). This listing may be a valuable guide in curriculum development.

TABLE XI

ESSENTIAL TRAINING REQUIREMENT ANALYSIS

FOR SIX DRAFTING OCCUPATIONS

Subject Matter	Essential	Comments
A. Mathematics		
Algebra	6	e.g. Essential to All 6 Occupations
Trigonometry	6	
Plane Geometry	5	Essential to 5 Occupations, etc.
Solid Geometry	4	
Analytic Geometry	5	-
Descriptive Geometry	5	-
Calculus	0	None reported
Slide Rule	3	
B. Physics		
Noise and Vibration	2	Unique to Engines
Solid State	2	-
Mechanics	5	-
Heat	4	-
Electricity and Magnetism	3	-
Elec. Meas. & Instruments	2	Unique to Engines
C. Mechanical Technology		
Machine Design	4	-
Tool & Gage Design	2	-
Mechanical Drafting	6	-
Thermodynamics	3	-
Strength of Materials	5	-
Physical Metallurgy	3	-
Machine Shop Operations[1]	6	-
Precision Meas. Inst.	5	-
Technical Writing	2	1

[1]This does not mean skill in operation of machine tools: it does mean familiarity with machine shop operations and practices.

23. A Program Design to Assure Future Competence of Design/Draftsmen

It is essential that the program not be viewed as a terminal program or be overwhelmingly concerned with training for specific skills or specialized fields as relate to given draftsmen jobs - or even a narrow cluster of jobs. The short life expectancy of specific skills and the increasing rate of change (e.g. computer-aided drafting and design) require a broader education base initially - and continuing education thereafter. The "product" of the desirable program should become effective on the job in a reasonable time - but he must also be able to take advantage of future knowledge, skills and equipments and thusly grow in occupational competence as time goes by. In effect, the program should be a blend of "academic" education and "vocational" education.

Therefore, in addition to the type programs and courses described in earlier sections of this chapter, it is necessary to consider the oncoming importance of the electronic computer to the design/drafting process. It appears necessary to include courses such as the following, in the 2-year Associate Degree Program:

CPT 100, Computer Utilization, Class 2, Lab 3; Credit 3
CPT 198, Data Processing Practice I Credit 1
CPT 200, Computer Programing Fundamentals Class 2, Lab 2; Credit 3
CPT 298, Data Processing Practice II Credit 1

Further, applied laboratory-type courses with concurrent theory are needed which are designed to familiarize students with drafting-machines, graphic devices, recorders, scanners, and other latest developments in the design/drafting process.

A course in production illustration - either included in the basic program, or offered as an elective - would enhance the qualifications of the graduate in many job settings.

24. Draftsmen and the Manpower Development Training Act (MDTA)

The latest MDTA report[17] as of December 1966, reported the following situation for Indianapolis:

Course	Program Start Date	Program End Date	Status of Trainees: Enrollments Total	Left Trn'ng: Less Transfers	Left Trn'ng: To Take Job	Left Trn'ng: Other	In Training	Completed
Draftsman, Architectural	8-9-65	7-8-66	46	5	3	21	0	17
Draftsman, Tool Design	1-17-66	12-30-66	62	24	1	17	0	20

Considering the fact that in the survey there were 262 current job vacancies for draftsmen, and a recurring requirement for approximately 748 annually, it can be seen these MDTA programs are sorely needed. (Please see Chapter IV, Advancing Technology and Drafting, which describes the higher level qualifications needed of most draftsmen in the future.)

25. Other Programs

The Herron School of Art in Indianapolis offers a post high-school course of study in illustration. Upon careful examination of the subjects required, it was found that they do not meet industry's requirements of Industrial Technical Illustrators or Draftsmen. Herron does not offer (or require) any technical courses for a degree.

The Mallory Technical program currently being conducted is by special co-op arrangement with Western Electric. This is a 12-week program for High School graduates, paid by Western Electric; there are 14 enrollees. Mallory plans to return to a 2-year drafting program for High School graduates later this summer under contract arrangements with the Indiana Vocational Technical College. They hope to establish 3 options; Machine (die design), Product Design, and Architectural. If plans materialize, after two years, some 18 graduates per quarter will receive a certificate of completion...Up to 63 graduates per year may be realized if full program implementation is achieved. Mallory Technical Institute is a Public School.

The Lain Technical Institute also offers an educational program for draftsmen. This is a 2 year Associate in Applied Science degree (90 weeks) program having three options: (1) Tool and Gage, (2) Industrial Technology, and (3) Architectural Drafting. It is expected that a minimum of approximately 75 students per year will graduate from this program.

The Sams Technical Institute conducts programs in Tool Engineering Technology (Tool and Die Design), Industrial Engineering Technology, and Architectural Engineering Technology. These are two-year Associate Degree programs which include drafting and engineering drawing courses and experiences. The graduates each year will approximate 100 in Tool, 20 in industrial, and 100 in Architectural Engineering Technology.

Purdue University's Indianapolis Regional Campus also presents programs in Technology. An approximation of the number of graduates from each follows:

Architectural Technology	25
Civil Engineering Technology	15
Electrical Engineering Technology	50
Industrial Engineering Technology	12
Mechanical Engineering Technology	50

If MDTA provides about 37 draftsmen beginners per year, Mallory Tech 63 draftsmen, and Lain Tech another 75 draftsmen, this will be a total of 175 in the face of an annual recurring need of about 975. A portion of the remainder will undoubtedly be met by graduates of engineering technician and industrial technician programs. However, the need is so great for these graduates as technicians, their input into the essentially drafting occupations will not be great.

Special Note: Engineering Education and Engineering Graphics

This study has addressed the problem of drafting, or engineering drawing, or graphics essentially at the Draftsman or Technician Level. The recent trend toward "engineering science" at the academic level, has tended to minimize the position of disciplines such as engineering graphics in the engineering education spectrum. In a recent study*, a case was made for reorganization of courses in engineering graphics to include an introduction into significant new areas of graphics and to provide engineering students and faculty with a motivating preparation for studying and teaching engineering design.

*The Engineering Graphics Course Content Development Study (NSF). Refer to article of like title by Steve M. Slaby, (Chairman, Department of Graphics and Engineering Drawing, Princeton University and Editor, ASEE Engineering Graphics Division) in Journal of Engineering Education, ASEE, Volume 57, #7, March, 1967.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

26. Conclusions

re Draftsmen

1) There is an existing shortage and a growing National need for many new technicians (includes draftsmen) in the next decade; a rate of growth of about 6.4 percent per year is indicated. This mean about 541,700 more technicians must be added to the 1965 totals in order to meet the projected growth requirements by 1975. In addition to meeting growth manpower needs, losses must be covered due to retirements, deaths and transfers. The growth and attrition requirements amount to an annual average of approximately 86,000 technicians; viz. 54,000 growth, 10,000 deaths and retirements and 22,000 transfer losses.

In the United States, about 143,000 draftsmen will be needed due to projected growth from 1964 to 1975; another 40,000 will be needed as a result of transfer losses, and 20,000 more as a result of deaths and retirements: thusly a total of more than 200,000 newly trained draftsmen will have to be added to the National work force by 1975. Put another way, more than 16,500 draftsmen - on the average - will be needed Nationally each year.

2) In a survey of Indianapolis firms, 149 responses representing over 122,600 employees indicated they had 1,500 draftsmen positions, 262 of which were vacant. Most draftsmen were employed in industries manufacturing Transportation Equipments; then came Electrical Equipment and Supplies Manufacturing; followed by Engineering and Architectural Services.

3) There were fewer draftsmen jobs (total of 138) reported in the Indianapolis survey at the Tracer (beginner) level than there were Junior Draftsmen (detailers) (total of 432 jobs), Senior (layout) Draftsmen (492 jobs), or Design Draftsmen (324 jobs). This occupational level distribution in Indianapolis parallels the National picture. There are indications that new graphic reproduction equipments and drawing-assist devices are further reducing the proportion of Tracers: this is verified by the decreasing annual future new jobs projected for Tracers by the survey respondents. It is concluded that training and education must be provided to leap-frog over this traditional beginners' first rung in the draftsman occupational ladder-directly into the Detailer (Junior Draftsman) level.

4) There are a significant number of current job vacancies for Draftsmen in Indianapolis. Of the firms responding to the survey, (which represent some 122,600 employees) the following numbers of current Draftsmen job vacancies were reported:

Tracers (beginners)	29	Checkers	18
Jr. Draftsmen (Detailers)	84	Design Draftsmen	54
Sr. Draftsmen (layout)	77	Total	262

Note large number of Junior and Senior Draftsmen job vacancies.

5) There is a continuing annual average recurring need in the future for 748 newly trained draftsmen each year in Indianapolis as reported by 149 firms representing 68.5% of the total employment in selected industry groups. When expanded to reflect the universe (total employment of all relevant firms), the annual average recurring need becomes 983 draftsmen, distributed by occupational level as follows:

Tracers (beginners)	156	Checkers	55
Jr. Draftsmen *detailers)	355	Design Draftsmen	142
Sr. Draftsmen (layout)	275	Total	983

Note that largest recurring needs are for Junior and Senior Draftsmen.

6) In the face of an annual average recurring need in Indianapolis for 983 new draftsmen, the following annual supply situation is known:

Program	No. of Grads	Comment
MDTA*	37	These are essentially Tracers
Mallory Tech**	63	Graduates produced 2 years from now
Lain Tech**	75	On-going programs
	175	

*One year program
**Two year programs

An additional annual need for about 800 draftsmen at all levels is indicated: Some of these needs will be met by graduates from engineering technology and industrial technician programs. However, the needs for these technicians - as such - are so great, there is little hope many will go into prime drafting occupations. If most (or even all) newly trained engineering technicians in Indianapolis did go into draftsman jobs, the requirements would still not be fulfilled.

7) Most of the draftsmen jobs in Indianapolis were in the Mechanical area: this was followed by General Engineering, Architectural and Other Services, and then the Civil Area. A large number (84 jobs) of combination areas were indicated on the survey returns (viz. Mechanical/Electrical, or Engineering/Architectural).

8) The large numbers of current vacancies (84) at the Junior Draftsman (detailer) level - and the large annual recurring requirement (355) indicate this as the key initial occupational level for educational program objectives. The large number of current job vacancies (77), and large annual recurring requirements (275) for Senior Draftsmen (layout) indicate the need for educational programs to prepare draftsmen who have the knowledge and potential to qualify at this higher level in a minimum of time and job experience.

Further, the comments of the survey respondents indicated the need for educated, well-trained draftsmen - mostly above the Tracer (beginner) level.

The foregoing should not be interpreted to mean there is no longer a requirement for Draftsmen/Beginners at the Tracer level; or for vocational-technical education programs in drafting at the high school level. There are needs for both, but it must be recognized that successful drafting career prospects are best for those with post high-school education.

9) The numbers and distribution of draftsmen vary at different occupational levels between industries. For example, Transportation Equipment manufacturing firms employ proportionately more checkers and design/draftsmen than do others. In Government, a disproportionately large number of Junior Draftsmen are needed. In Fabricated Metal Products firms, no Tracers/Beginners were employed or job vacancies reported. These data (and item 7 above) indicate the need for a broadly, technically trained draftsman with a good educational base, who can transfer to the industry and position having progressively greater opportunities.

10) Recent developments in computer applications and processing, graphics communication, reproduction and drafting aids are expanding both the number and the range of applications being introduced into design/drafting functions. These have significant educational and training implications for about 60% of new draftsmen entering the field. In order to be capable of applying these technological changes, new draftsmen will need a broader technical education base and be much better prepared than many trained in the past. The evidence indicates that Draftsmen above the Tracer/Beginner level require college-level courses,or technical institute level courses, in order to remain qualified in the face of these technological changes.

11) The anticipated impact of technological changes by 1975 on the drafting processes (which will raise the needed qualifications of most new draftsmen) will also affect over 30% of practicing draftsmen in Indianapolis to a significant degree. Many of these draftsmen will have to become competent in areas such as computer applications, utilization of numerically controlled plotters and drafting machines, microfilm and other graphic storage and reproduction equipments and techniques, use of new drafting-assist devices, and graphic man-machine consoles and equipments. Knowledge of cathode ray tube recorders and scanners, photographic and other devices will also be needed by some draftsmen by 1975. Another 30 percent of the draftsmen in Indianapolis will be affected perceptably - but not extensively - by these and other technological advances during the next ten years; and the remaining 40 percent will be affected probably very little or none. In view of the foregoing, continuing adult education programs will be needed for 30 to 60 percent of the 1,500 draftsmen who are now employed in Indianapolis firms!

12) The monthly salary mean of $371.00 for draftsmen Tracers (Beginners) is quite low. However, salaries of draftsmen at the middle occupational levels ($588.00) compare very favorably with the salary of engineering technicians at the middle level ($584.00).

13) The level of education of draftsmen Nationally is generally higher than that of all technicians taken as a group. Specifically, in 1963, 64.5% of all draftsmen (Nationally) had some college educatior including Associate Degrees and 7.2% had a Bachelor or higher degree (total of 71.7%). For all technicians, 53.1% had some college education and 10% had a Bachelor or higher degree (total of 63.1%).

14) The data indicate younger technicians and draftsmen are at consistently higher educational levels - the large majority have some college education - than are older ones. This indicates a growing disadvantage for initiates having only a High School level of education.

15) The evidence indicates that employers are not seeking beginner draftsmen applicants with minimum entry skills and educational backgrounds; in fact, they attribute many job vacancies to the fact applicants lack necessary skills and educational background. Employers are desirous of having draftsmen with sound educational backgrounds in order to be able to adapt to technological changes and apply more effective and advanced design/drafting equipments and processes. The data also indicate the need for newly prepared draftsmen to have the potential to move up the occupational ladder.

re Industrial Illustrators

16) There were 58 industrial illustrator jobs reported by the 149 firms responding to the Indianapolis survey questionnaire; 9 of these were currently vacant. The returns represented 68.5% of total employment of the selected industries and specialized groups; when the data were expanded to reflect total employment, it was determined that probably there were 76 illustrator jobs with 12 existing vacancies. The expanded average annual recurring need to fill job vacancies (turnover) is 16, and the annual recurring need to fill new jobs (expansion) is 15. It follows that about 34 industrial illustrators are needed annually to fill existing vacancies and meet projected needs in the Indianapolis area.

17) Salary data for industrial illustrators is quite sparse: the average first salaries for students completing Purdue University's two-year Associate Degree Program was $455.00 per month. This is roughly midway between the monthly mean salary of draftsmen Tracers (viz. $371.00) and Draftsmen II (viz. $588.00). Top salaries for experienced illustrators was reported in the area of $8,500 per annum.

For Recommendations see pages 37 and 38.

27. Recommendations

1) That the Industrial/Mechanical Engineering Technology Department, School of Technology (which now administers the Industrial Illustrators Technology program through the Engineering Graphics Department of the Schools of Engineering), work toward the establishment of an Associate Degree Program in Drafting/Design Technology at the Purdue University Indianapolis Campus. The objectives of this program should include meeting initial job requirements at the Junior Draftsman (detailer) level. The technical educational base should be sufficient to provide the potential to advance to Senior Draftsman (layout) in a minimum of time and experience. The program must include consideration of technological changes expected in the design/drafting processes and computer applications as described in Chapters IV and V of this study. The knowledge and understandings needed are quite comparable with two-year, college level technology program objectives.

2) Certification requirements of the "Design Draftsman" classification of the American Institute for Design and Drafting, should be used as a guide in the formulation of the recommended Drafting Design Associate Degree programs. Further, the Engineers' Council for Professional Development (ECPD) accreditation requirements should also be considered.

3) In view of the fact that draftsmen who have some skills and understandings in the technical illustration field are more versatile (and are needed), it is recommended that consideration be given to either including a course in Production Illustration in the Drafting/Design Program, or making such a course available as an elective.

4) That adult "continuing education" type drafting/design courses be presented in the evenings at the Indianapolis Regional Campus to help update practicing draftsmen in particular, but also to help prepare qualified new draftsmen hopefuls.

5) Consideration be given to the establishment of a concentrated drafting program during the summer session to prepare beginner draftsmen. This program could be a practical, post-high school certificate type program. No college credits would be earned, college-matriculation prerequisites would not be applied.

6) A special Drafting/Design Advisory Committee be formed with membership comprised of representatives from Indianapolis area industry and businesses where draftsmen are employed, and representatives from the Purdue faculty concerned. The committee should provide advice and support in matters such as designing program objectives and curriculum, determining equipment and facility requirements, assisting in public relations and promotional activities, helping to obtain prospective students, and hopefully - provide scholarships and underwrite some of the student expenses. This committee should coordinate efforts with comparable committees in Calumet - or wherever other drafting/design programs are being planned or conducted.

7) That co-op and summer-experience programs be developed and encouraged. (Advisory Committee members described above can help here.)

8) That this manpower report be used by school counselors, teachers, students and parents, in the formulation of decisions about choices of vocation or career development. The possibilities of success for girls in the industrial illustration and drafting fields should be presented.

9) That this manpower report be used as the basis of justification for furthering efforts to plan, obtain approval of - and resources for - the programs recommended. Also, that this report be used as a guide in the development of such programs.

10) That the data in this report be used to reinforce the vocational-technical course offerings in drafting (e.g. mechanical drawing) in high schools as a first step in motivating and preparing future draftsmen.

11) Despite the fact a requirement for approximately 34 new industrial illustrators are needed each year in Indianapolis, that the resources be applied instead to help meet the larger continuing need for Draftsmen.

12) That the names and addresses of firms in Indianapolis which reported needs for Industrial Illustrators be used by the Engineering Graphics Department for counseling purposes and for the information of students completing the Industrial Illustration Technology Program at the Lafayette Campus for employment assistance.

PURDUE UNIVERSITY
INDIANAPOLIS REGIONAL CAMPUS
1201 EAST 38TH STREET
INDIANAPOLIS, INDIANA 46205

APPENDIX I (contains)

Letter of Transmittal
Description of Industrial Illustration Technology
Occupational Descriptions of Draftsmen
Survey Questionnaire
Industrial Illustration Technology Curriculum

The staff and faculty of Purdue University Indianapolis Regional Campus are desirous of helping to meet the technical educational needs for people in Indiana industries. We are therefore conducting a series of surveys to help determine what kinds of programs are needed in your area. This particular survey concerns your needs for draftsmen and industrial (technical) illustrators.

We are aware of the growing problems in achieving effective visual communications throughout industry, business and the public. In order to plan programs for training people in related occupations, certain manpower and educational needs information is necessary. We believe we can serve you better if we get the answers to a few short questions.

This survey provides the definition of the industrial (technical) illustrator and describes the two-year college level educational program being considered for your Purdue Regional Campus. Will you please help us by letting us know what you think of this program and if you need its graduates? The survey also asks for your needs for draftsmen at various levels of responsibility.

With your help, we may be able to design and present programs which will help meet your needs for new employees or in upgrading present ones. Please cooperate.

Sincerely yours,

Jack M. Ryder
Dean and Director

JMR:omc
Survey and Brochure attached

1816-1966

INDUSTRIAL ILLUSTRATION TECHNOLOGY

Industrial illustration is a field which has developed to meet the needs of modern industry in the area of visual communication. An industrial illustrator (or technical illustrator) is a specialist who utilizes many of the skills and tools of both the draftsman and the commercial artist. However, additional knowledge, skills and tools are required by the industrial illustrator for the preparation of instruction books, catalogs, technical brochures or manuals, teaching or training aides, field service bulletins, manufacturing process drawings, presentation materials and displays. Thus, the industrial illustrator's qualifications to meet job requirements are quite different from those of the draftsman or commercial artist.

The industrial illustrator must possess both mechanical and artistic ability and must cultivate the habits of neatness and precision. He should be willing to work under pressure, meet deadlines, and work long hours. Proficiency in the use of tools of the industrial illustrator must be acquired through continuing effort both during formal training and on the job experience. Well trained industrial illustrators should be prepared to accept a wide range of jobs in the field of visual communication in industry, business, services, and government.

Alternate Titles: Technical Illustrator
Engineering Illustrator
Production Illustrator

28 Oct. 1966

OCCUPATIONAL DESCRIPTION
for
DRAFTSMAN

The draftsman is designated according to the level of responsibility or complexity of the work he does. The five more commonly used levels are:

1. The tracer, who performs work of a simple nature, usually consisting of tracing or redrawing worn drawings. Most large firms use some type of blueprint duplicating machines which have in general replaced the large-scale needs for tracers. However, these firms may also employ tracers as trainees for more highly skilled drafting jobs. In other firms, where there are no trainee positions of this nature, hiring is restricted to applicants who have either advanced training or additional applicable experience which qualifies them for work above the level of tracing.

2. In firms not using a tracer, the beginning job may be designated as junior draftsman, or draftsman "B". This is also the usual step up for those who start as a tracer. His job varies from firm to firm, but usually involves the making of minor to complex changes on existing drawings and drawing of simpler to more complex original plans, working from rough sketches, oral instructions, and/or engineering specifications. At this level, he usually does little creative work but must be able to make mathematical calculations and prepare charts, and do fairly complex detailing.

3. The senior draftsman, or draftsman "A", does layout, assembly and detail drawings of a more complex nature, and is capable of independent work with a minimum of supervision. He may even make some minor changes and assist in checking work of other draftsmen.

4. The drafting checker checks drawings for accuracy and clarity in a firm employing large numbers of draftsmen. This position requires a high degree of competency in the profession as well as familiarity with the particular firm in which he works.

5. The design draftsman must be highly skilled technically as well as thoroughly experienced in the industry in which he works. He does product or other design work under the supervision of the engineering department. Additional courses in designing and higher mathematics are usually required.

Sources: Indiana Employment Security Division
Dictionary of Occupational Titles

28 October 1966

DRAFTSMAN and
INDUSTRIAL ILLUSTRATOR
MANPOWER SURVEY

Please return to: Prof. J. P. Lisack
Purdue University, School of Technolog
Office of Manpower Studies
South Campus Courts, Building A
Lafayette, Indiana 47907

Name _____

Title _____

No. of people employed locally in your firm TOTAL 122,668

Firm 149 RESPONSES

Address INDIANAPOLIS AREA

	Number now Employed	Present number of Vacancies	Number you estimate will be needed annually, from sources outside your firm, to fill vacancies (turnover) in 1968	1970	1972	new jobs (expansion) in 1968	1970	1972	Specialized Field*
INDUSTRIAL ILLUSTRATOR (Technical, Engineering, or Production Illustrator)	49	9	12	13	12	13	7	6	
Responsibility Level			**DRAFTSMEN**						
TRACER (Beginner or Trainee)	109	29	59	68	68	41	47	47	
JUNIOR DRAFTSMAN (Detailer or Draftsman "B")	348	84	130	154	141	95	96	112	
SENIOR DRAFTSMAN (Draftsman I, or Draftsman "A")	415	77	97	102	100	91	85	82	
DRAFTING CHECKER	95	18	13	17	21	15	22	20	
DESIGN DRAFTSMAN	270	54	41	49	47	52	42	39	

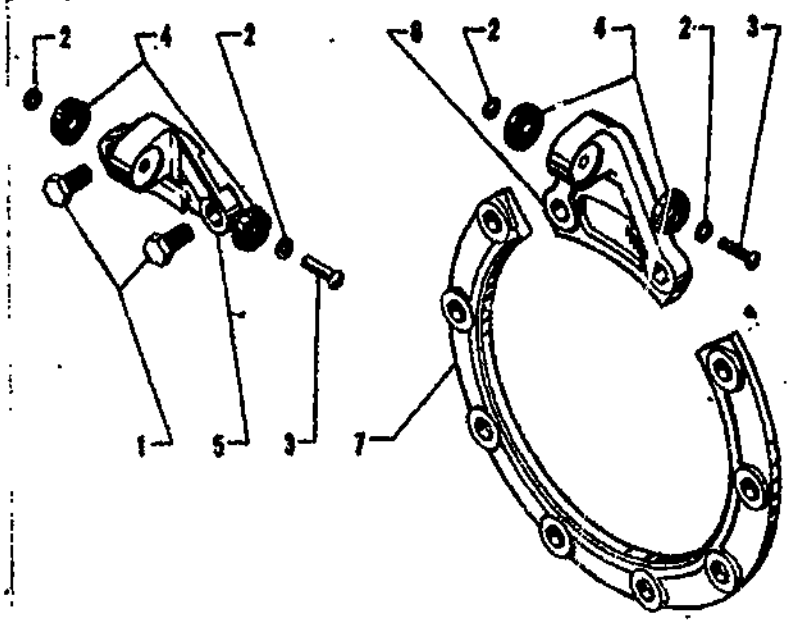
*Indicate specialized field wherein most of your Draftsmen work:
Civil, includes highway, civil and structural.
Mechanical, (Mech), includes castings, patents, machines, tools, parts
Electrical/Electronic (EE), or Other.

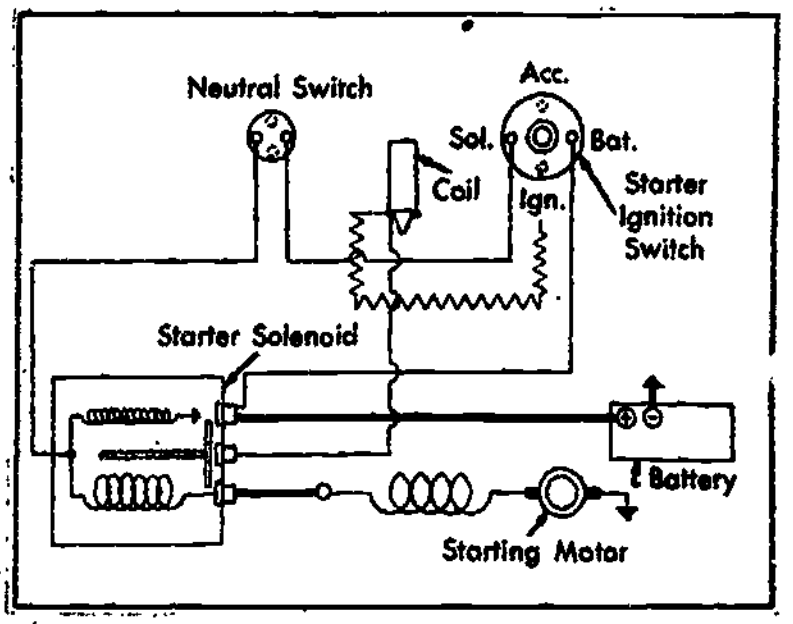
Optional: Your comments and opinions would be appreciated concerning the adequacy of the enclosed program for Industrial Illustrators:

Comments were favorable toward Indus. Illustrator curriculum.

Many comments emphasized needs for well-trained Draftsmen

Please mark "None" and return even if you have no requirements. Dec. 16/1966





INDUSTRIAL ILLUSTRATION TECHNOLOGY CURRICULUM

Freshman Year
First Semester

Course No.	Course	Class Hours	Lab Hours	Credit Hours
ENGL 101	English Composition I	3		3
MA 111	Algebra	3		3
IED 115	General Metals	1	4	2
EG 110	Drafting Fundamentals	1	6	3
EG 112	Layout, Lettering and Typography	1	6	3
EG 213	Freehand Drawing		6	2
	TOTALS	9	22	16

Second Semester

MA 112	Trigonometry	3		3
PHYS 205	Outline of Physics	3	2	4
SOC 100	Introductory Sociology	3		3
EG 111	Advanced Drafting	1	6	3
EG 210	Industrial Sketching		6	2
EG 212	Descriptive Geometry	1	6	3
	TOTALS	11	20	18

Sophomore Year
Third Semester

ENGL 102	English Composition II	3		3
MET 201	Product-Process Relationships in Manufacturing	2	2	2
ECON 210	Principles of Economics	3		3
EG 311	Industrial Arts Design	1	6	3
EG 312	Shades, Shadows and Perspective	1	6	3
EG 317	Production Illustration	1	6	3
	TOTALS	11	20	17

Fourth Semester

PSY 370	Psychology in Business and Industry	3		3
IED 324	Offset Lithography		6	2
IE 366	Elements of Production Management	3		3
EG 315	Graphical Presentation of Data		6	2
EG 318	Projects in Technical Illustration	1	6	3
EG 319	Basic Product Design or A&D 375 Sculpture	1	5	3
	TOTALS	8	23	16

EG 110 - DRAFTING FUNDAMENTSLS. Class 1, Lab. 6, cr. 3.

A basic course in drawing; orthographic projection, pictorial drawing, print reading, and reproduction of drawings. Problems designed to require practical reasoning and develop good techniques.

EG 112 - LAYOUT, LETTERING, AND TYPOGRAPHY. Class 1, Lab. 6, cr. 3.

History and forms of principal alphabets. Practice in hand lettering to include the engineering alphabet and main display alphabets. Practice in use of mechanical lettering devices. Layout of simple pages and posters including illustrations and type.

EG 213 - FREEHAND SKETCHING. Lab. 6, cr. 2.

Line sketching and shading in pencil and charcoal of objects as they appear to the eye.

EG 111 - ADVANCED DRAFTING. Class 1, Lab. 6, cr. 3. Prerequisite:EG 110.

Preparation of assembly and detail drawings, including fasteners, limit dimensioning, and shop notes. Intersections and developments with sheet metal applications. Symbols and construction details used in architectural drafting.

EG 210 - INDUSTRIAL SKETCHING. Lab 6, cr. 2. Prerequisite: EG 110.

The application of freehand sketching on paper and the blackboard to industrial problems in representation and design using axonometric, oblique, perspective, and multiview drawings. Laboratory problems include drawing from the object, layout from notes, and simple design problems. Introduction to shade and shadow and artist's perspective.

EG 212 - DESCRIPTIVE GEOMETRY, cr. 2 or cr. 3. Prerequisites: EG 110 & 111, or 118.

Relations of points, lines, and surfaces and their graphical representation. Intersections and developments of plane and curved surfaces. Graphical synthesis as applied to layout, delineation, and solution of spatial problems. Warped and double-curved surfaces.

EG 311 - INDUSTRIAL ARTS DESIGN. Lab 6 to 9, cr. 2 or 3; or Class 1, Lab 6, cr. 3. Prerequisite: EG 111.

A basic course in design applied to shop projects. Laboratory problems include instruction in various mediums and crafts used in designing utilitarian objects for improved appearance and use.

EG 312 - SHADES, SHADOWS AND PERSPECTIVE. Class 1, Lab. 6, cr 3.
Prerequisites EG 110, 118.

Graphic representation of shades and shadows on buildings and geometric forms. Parallel and angular perspective. Use of color in rendering.

EG 317 - PRODUCTION ILLUSTRATION. Class 1, Lab. 6, cr. 2 or 3.
Prerequisite: EG 118 or 111.

To give the student a good knowledge of and some experience in graphical construction and some rendering techniques necessary to produce accurate pictorial drawings suitable for catalogs.

EG 315 - GRAPHICAL PRESENTATION OF DATA. Lab. 6, cr. 2.

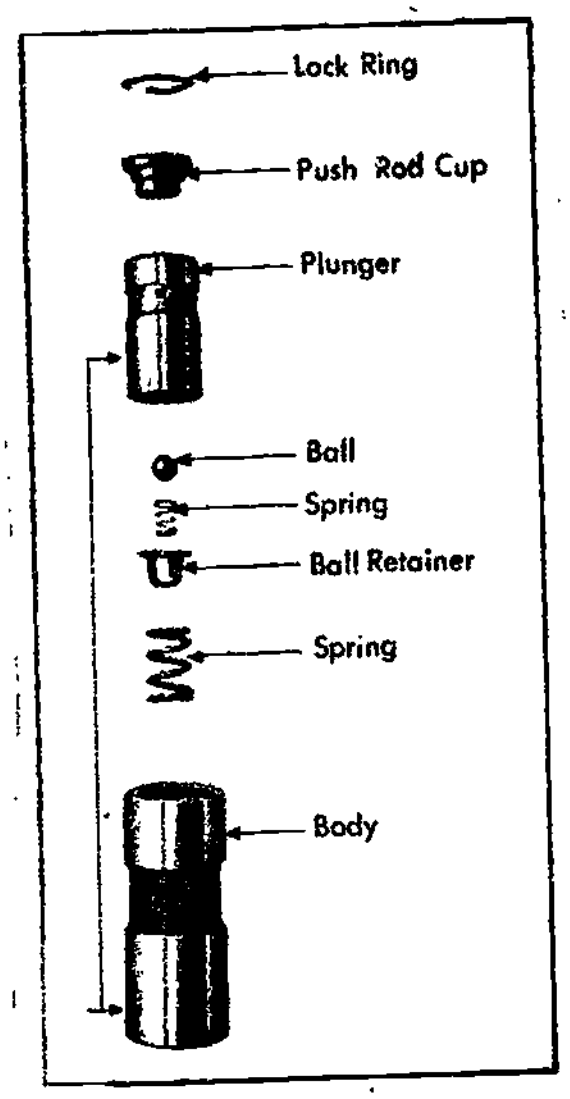
Different kinds and types of charts, graphs, and diagrams. Considerations in plotting scientific data. Preparation of finished art for reproduction.

EG 318 - PROJECTS IN TECHNICAL ILLUSTRATION.
Class 1, Lab. 6, cr. 3.
Prerequisite: EG 311

Directed work in initial planning, production, and completion of finished art for industrial brochures, catalogs, and other industrial publications. Additional instruction in keylining, color separation, and other techniques used in industrial publication.

EG 319 - DESIGN or A & D 375.
Class 1, Lab. 6, cr. 3.
Prerequisite: EG 311.

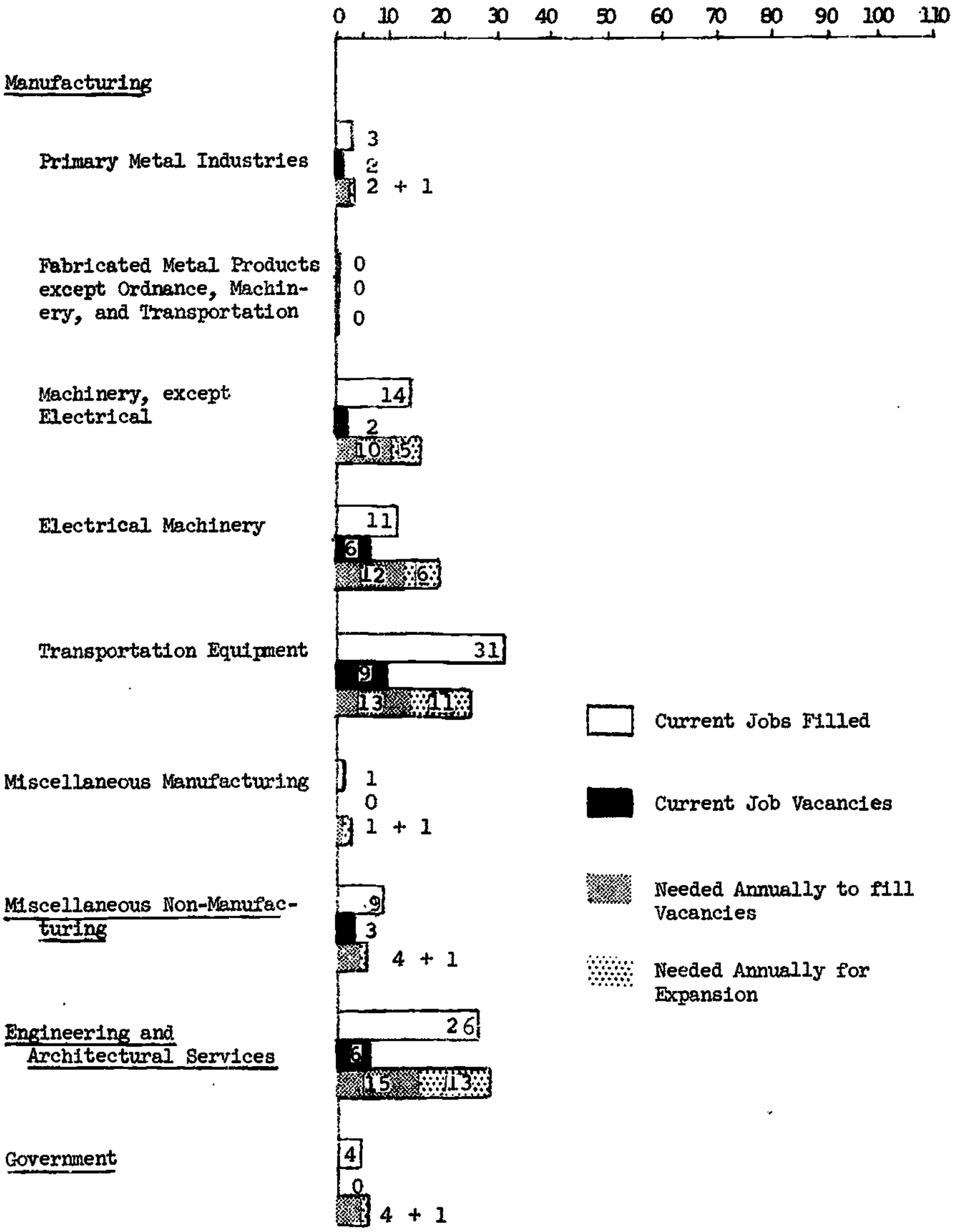
Introduction to creative design for consumer products. Practice and techniques of depicting form, material, and finish with colored pictorial and modelled representation. Technique of problem analysis followed by problem synthesis.



APPENDIX II

TABLES OF DISTRIBUTION FOR DRAFTSMEN BY OCCUPATIONAL LEVEL AND MAJOR INDUSTRIAL GROUPS

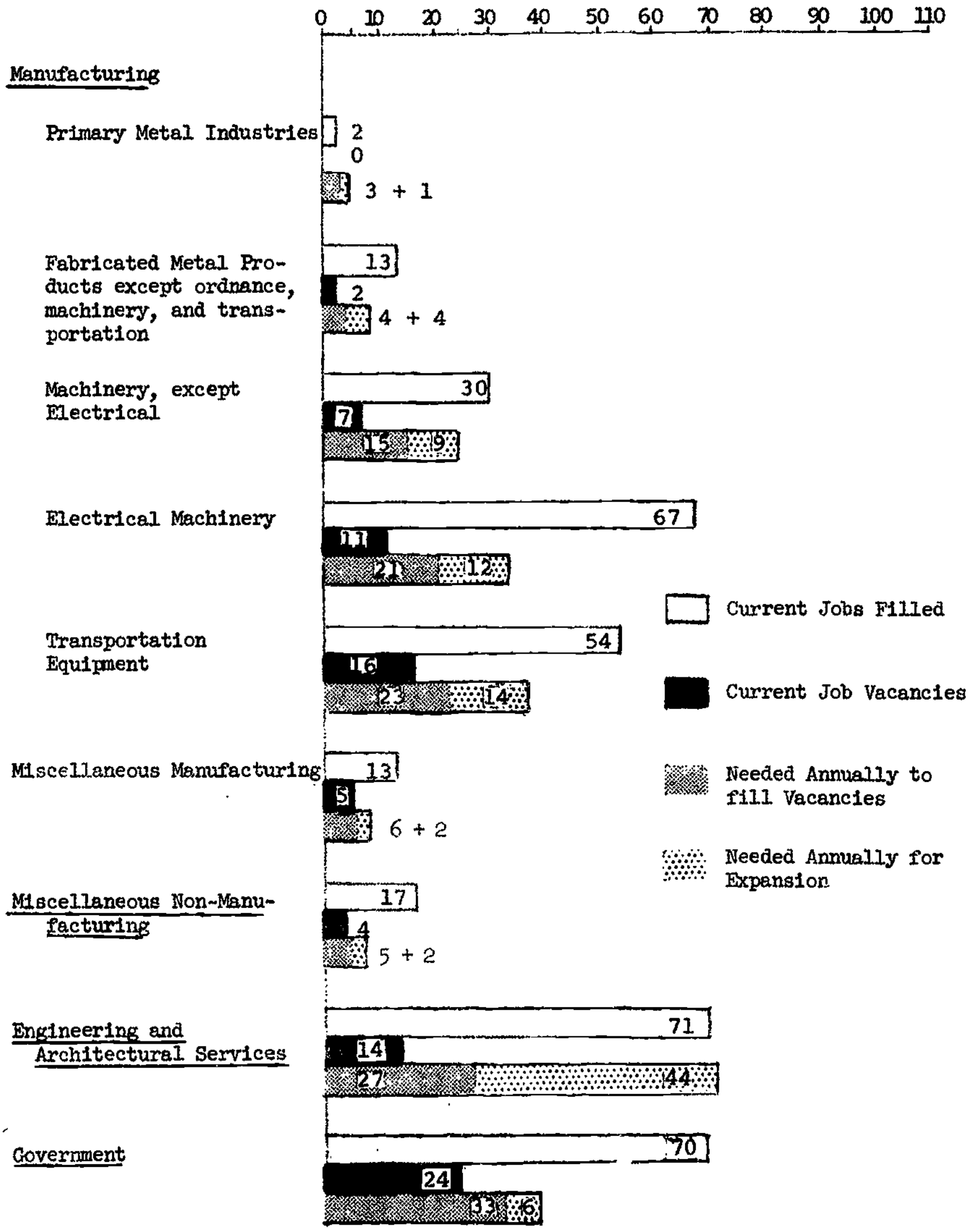
Tracers



APPENDIX II (Continued)

TABLES OF DISTRIBUTION FOR DRAFTSMEN BY OCCUPATIONAL LEVEL AND MAJOR INDUSTRIAL GROUPS

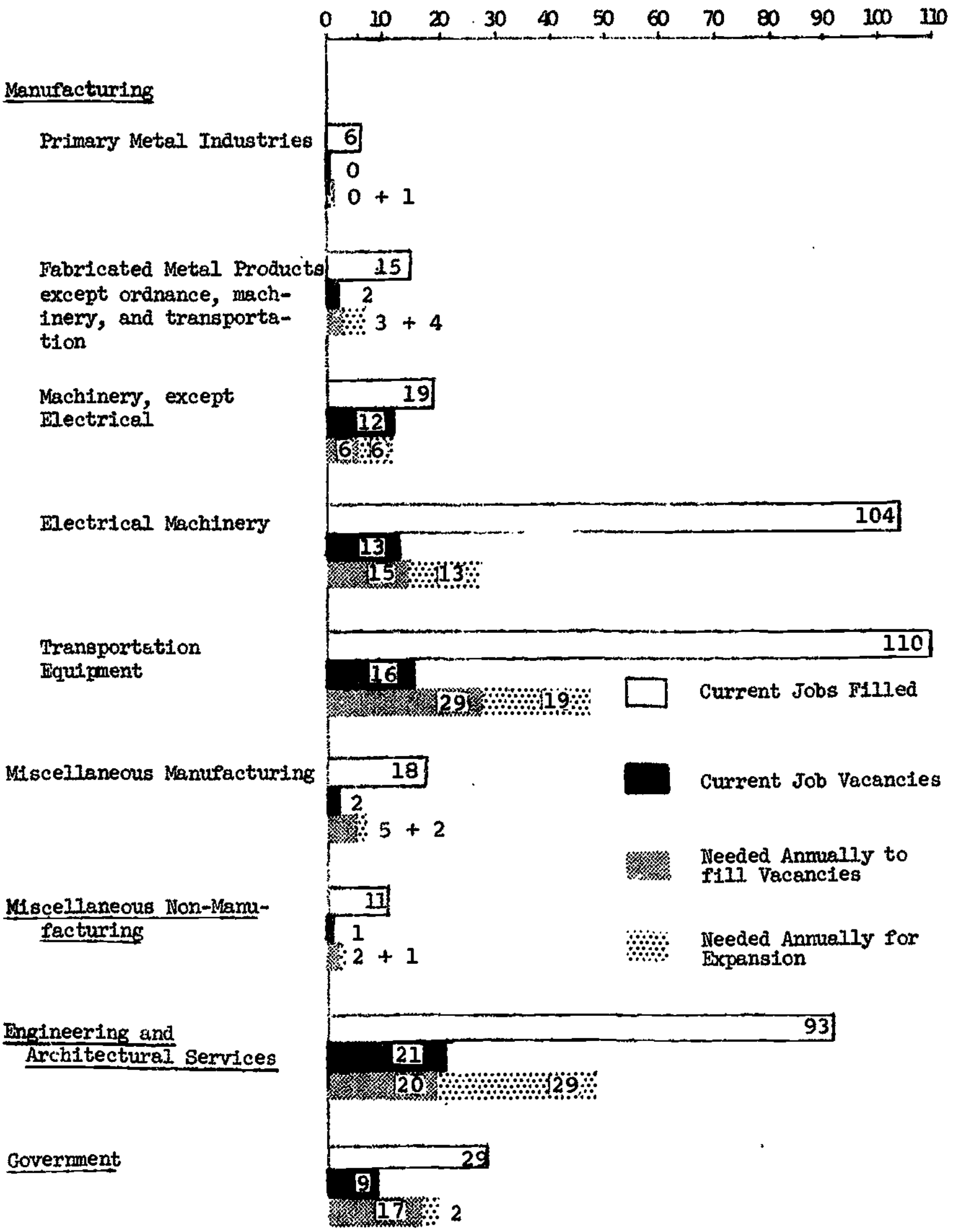
Junior Draftsmen



APPENDIX II (Continued)

TABLES OF DISTRIBUTION FOR DRAFTSMEN BY OCCUPATIONAL LEVEL AND MAJOR INDUSTRIAL GROUPS

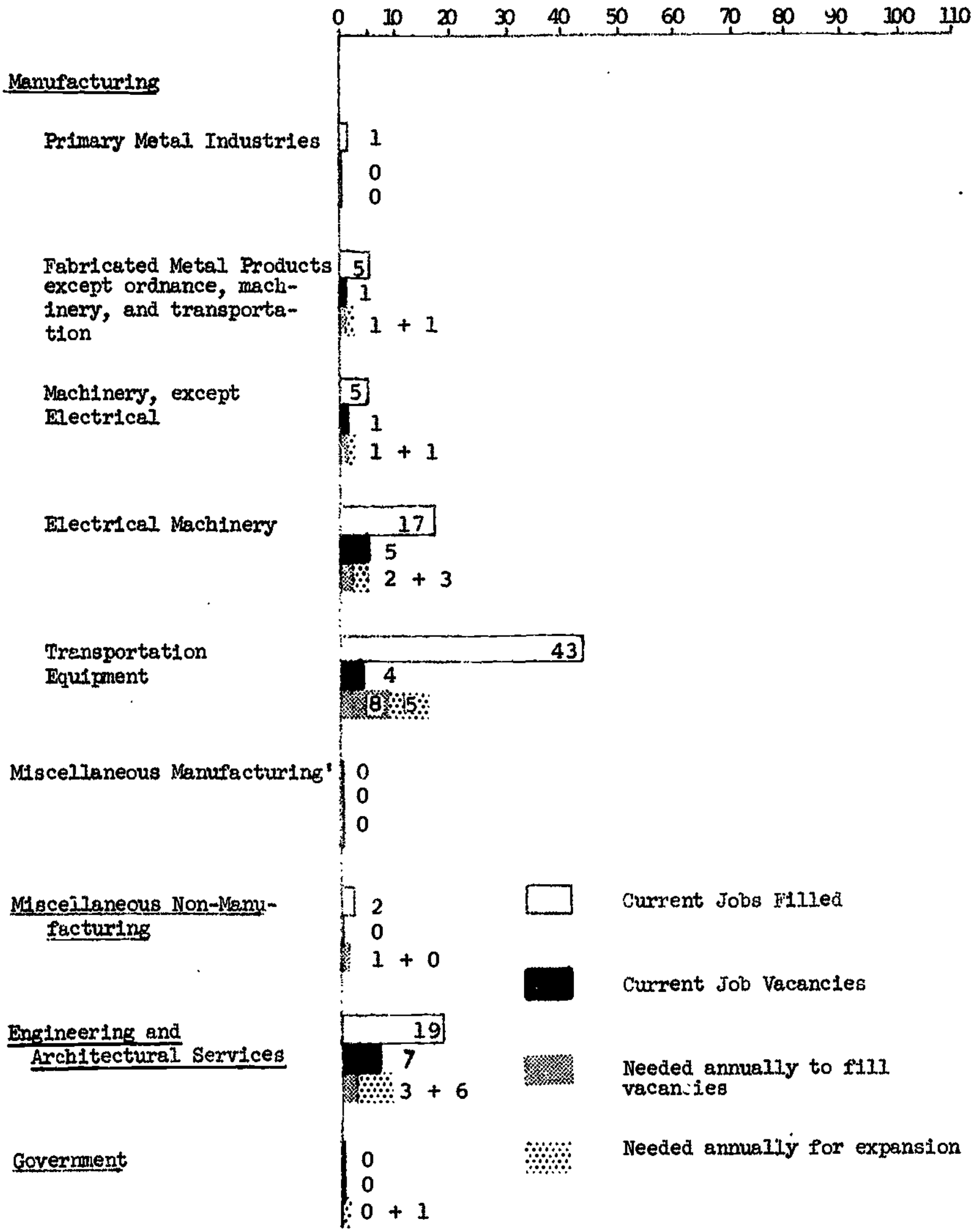
Senior Draftsmen



APPENDIX II (Continued)

TABLES OF DISTRIBUTION FOR DRAFTSMEN BY OCCUPATIONAL LEVEL AND MAJOR INDUSTRIAL GROUPS

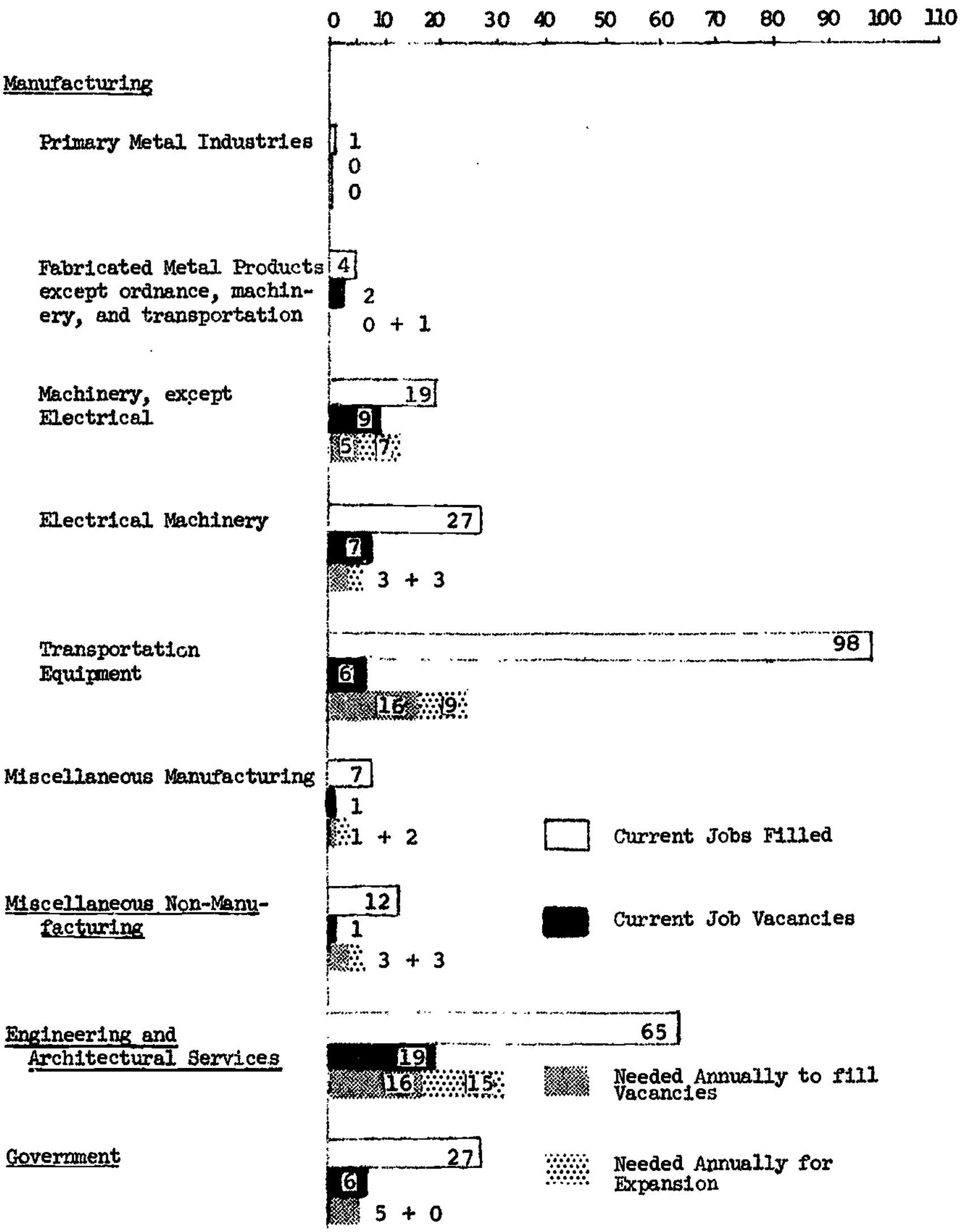
Drafting Checkers



APPENDIX II (Continued)

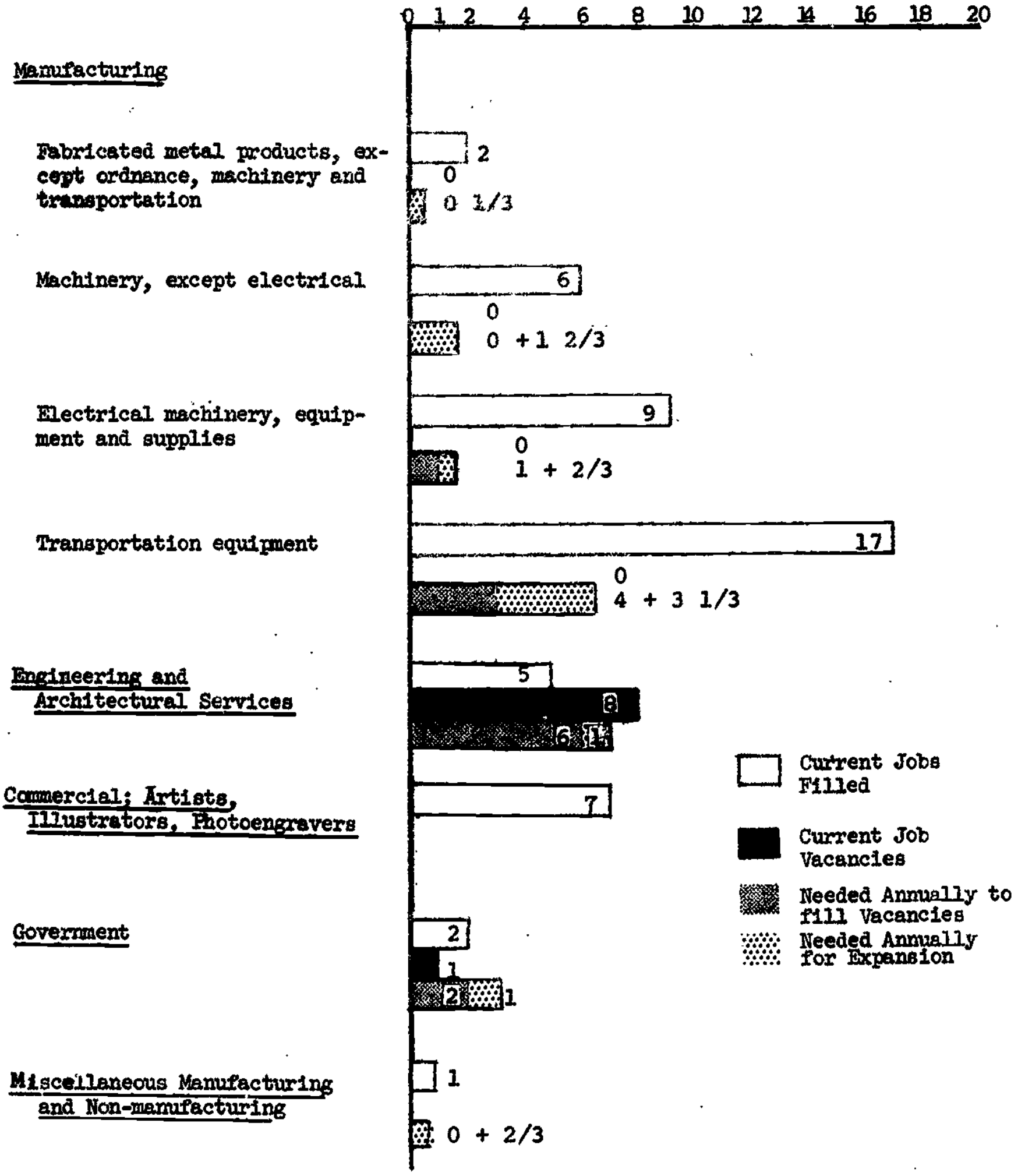
TABLES OF DISTRIBUTION FOR DRAFTSMEN BY OCCUPATIONAL LEVEL AND MAJOR INDUSTRIAL GROUPS

Design Draftsmen



APPENDIX III

TABLE OF DISTRIBUTION FOR INDUSTRIAL ILLUSTRATORS by MAJOR INDUSTRIAL GROUPS



APPENDIX IV

NUMBER OF DRAFTSMEN, BY SIZE OF ESTABLISHMENT AND INDUSTRY, 1963 AND THE EFFECTS OF TECHNOLOGICAL CHANGE UPON THEM[11] by 1975

Industry	Draftsmen in all establishments	Draftsmen in establishments with total employment of 100 - 999	1,000 or more
ALL INDUSTRIES	199,100	67,400	71,700
MANUFACTURING	120,100	44,200	60,200
Ordnance & accessories	4,500	800(c)	3,800(c)
Food and kindred products	700	500(b)	200(b)
Paper and allied products	1,900	400(b)	400(b)
Printing and publishing	500	300(b)	200(b)
Chemicals and allied products	3,300	900(c)	2,200(c)
Petroleum refining	1,100	300(c)	700(c)
Rubber & misc. plastic prod.	1,400	600(d)	600(d)
Stone, clay & glass products	1,500	700(b)	400(b)
Primary metal industries	4,100	1,400	2,400
Blast furnace & basic steel products	2,500	600(d)	1,900(d)
Other primary metal industries	1,600	800(b)	500(b)
Fabricated metal products	16,700	9,100(d)	3,700(d)
Machinery, except electrical	28,300	13,100	10,700
Engines and turbines	2,100	200(c)	1,800(c)
Office Computing & accounting machines	2,500	500(c)	1,800(c)
Farm machinery & equipment	2,400	1,100(d)	600(d)
Other machinery	21,300	11,300(d)	6,400(d)
Electric equipment & supplies	27,400	9,600	16,000
Electric distribution equipment & indus. apparatus	8,900	4,000(c)	3,900(c)
Household applicances	1,500	400(b)	1,000(b)
Communication equipment	10,700	2,100(c)	8,400(c)
Electric lighting & wiring equipment	1,300	900(d)	400(d)
Electronic components & acces.	2,500	1,600(d)	700(d)
Radio & TV receiving sets	1,300	300(d)	900(d)
Misc. electrical equip. & sup.	1,100	400(d)	700(d)
Transportation equipment	19,600	3,500	15,500
Motor vehicles & equipment	6,100	1,300(c)	4,700(d)
Aircraft and parts	9,000	1,200(c)	7,500(c)
Other transportation equip.	4,500	1,000(d)	3,400(d)
Instruments & related products	5,200	1,800(c)	2,900(c)
Other manufacturing industries	2,900	500(b)	500(b)
NONMANUFACTURING	79,000	23,300	11,800
Contract construction	10,600	4,800(e)	1,100(c)
Transportation	2,000	200(b)	1,400(b)
Communication	800	200(b)	400(b)
Electric, gas & sanitary services	5,000	1,400(d)	3,200(d)
Wholesale & retail trade	1,900	800(b)	600(b)
Services	54,700	14,600	3,700
Engineering & arch. services	43,100	12,200(e)	300(c)
Other services	11,400	2,200(d)	3,300(d)

(a) Less than 50 (b) Unlikely to be affected. (c) Likely to be affected moderately (d) Likely to be affected slightly (e) Special cases

*Draftsmen in small establishments (total employment under 100) are unlikely to be affected in any serious way for the next ten years, with the exception of special cases in engineering and architectural services - or in some specialized contract construction firms.

SELECTED BIBLIOGRAPHY AND NOTES

Reference Number	Title
1	Standard Industrial Classification Manual, Executive Office of the President, Bureau of the Budget, 1957 and as amended.
2	The Indiana Industrial Directory, Twelfth Edition, 1966-1967, published by the Indiana State Chamber of Commerce, Board of Trade Building, Indianapolis, Indiana.
3	The Current Employment Market for Engineers, Scientists, and Technicians, July 1966; Manpower Administration; U. S. Department of Labor. pg. 1.
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5	Ibid. pg. 12.
6	Occupational Outlook Handbook, 1966-67 Edition, Bulletin 1450; Bureau of Labor Statistics, U. S. Department of Labor. pp. 228-230.
7	National Survey of Professional, Administrative, Technical, and Clerical Pay, Bulletin Number 1535, February-March, 1966; Bureau of Labor Statistics, U. S. Department of Labor.
8	National Job Availability, Research Report No. Three, July 1966; The Manpower Research Council, Manpower, Inc., Milwaukee, Wisconsin.
9	Alvin Saile and Norma Ausmus; "Nationwide Shortage Develops for Draftsmen", Employment Service Review, May, 1966. pp. 73-74.
10	Technician Manpower: Requirements, Resources and Training Needs, Bulletin Number 1512, June 1966; Bureau of Labor Statistics, U. S. Department of Labor.
11	Technology and Manpower in Design and Drafting, Manpower Research Bulletin Number 12, October 1966; Manpower Administration, U. S. Department of Labor.
12	John O. Conaway; "Computer-Aided Drafting", The Journal of Industrial Arts Education, May-June, 1966, American Industrial Arts Association.
13	America's Industrial and Occupational Manpower Requirements 1964-75. U. S. Department of Labor. pp. 132-133.
14	Engineering Designers and Draftsmen, The Need and the Plan (Undated), The American Institute for Design and Drafting, Birmingham, Michigan.

Reference Number	Title
15	The Pennsylvania State University Bulletin, Associate Degree Programs, General Catalog Issue, December, 1966, Vol. LX Number 4, The Pennsylvania State University, University Park, Pennsylvania
16	Mechanical Drafting and Design Technology OE-80000, 1964, Superintendent of Documents Catalog No. FS 5.280:80000; U. S. Department of Health, Education, and Welfare, Office of Education, Division of Vocational Education, Washington, D. C.
17	Summary of MDTA Institutional Projects in Indiana, December 1966; Indiana Employment Security Division, Indianapolis, Indiana.
18	The Big Business Executive/1964, A Study of His Social and Educational Background. Scientific American, Inc., 1965.

THE OFFICE OF MANPOWER STUDIES
and the
POLICY GUIDANCE COMMITTEE

On April 15, 1964, the BOARD OF TRUSTEES created The School of Technology and authorized the Dean to establish "...an administrative organization to conduct educational research and manpower studies to provide the necessary basic data and information concerning the growing and changing needs and demands for technologically oriented education and programs." The Office of Manpower Studies was activated in response and was assigned two functions:

(1) to establish and operate a continuing survey of manpower requirements and trends in Indiana in order that educational and training agencies can better prepare people for employment opportunities; and

(2) to encourage research activity, in the University, aimed at solving problems and developing understandings of a more fundamental nature in the manpower and training field.

With the concurrence of the Vice President for Research, an Interdisciplinary Policy Guidance Committee of the Office of Man-Power Studies was formed to further develop the concept of the office and to help identify the broad avenues of research that should be pursued. Membership of this committee includes:

G. W. McNelly, Chairman (Dean of the School of Technology)

J. P. Lisack, Secretary (Director, Office of Manpower Studies)

J. S. Day (Industrial Management)

E. M. Eddy (Industrial Education)

C. E. French (Agricultural Economics)

R. J. Grosh (Engineering)

B. R. Keenan (Political Science)

E. J. McCormick (Psychology)

E. W. Noland (Sociology)

D. Sams (Technology)

MANPOWER STUDIES, REPORTS AND SURVEYS

THE SCHOOL OF TECHNOLOGY
PURDUE UNIVERSITY

Number	Title	Date
65-1	Industrial Survey 201, Specifications for the Baccalaureate Graduate	January 65
65-2	Engineering Technicians - Production and Requirements	15 June 65
65-3	Technician-Level Educational Planning Concerning the Chemical Technology	20 Oct. 65
	* * * * *	
66-1	Technician-Level Educational Planning Concerning the Electrical-Electronic Technology in the Greater Lafayette Area (Tippecanoe County, Indiana)	January 66
66-2	Employment Trends in Five Indiana Counties (Allen, Lake, LaPorte, Marion, and Porter)	1 Feb. 66
66-3	Occupations, Worker Traits and Qualifications, and Areas of Work in Architectural, Construction and Related Fields for Jobs Above the Skilled Craftsman Level	10 March 66
66-4	Foundry Technicians and the Foundry Industry in Indiana	30 March 66
66-5	Employment Trends and Technician Needs in Wayne County, Indiana (and Four Contiguous Counties) "The Richmond Study"	4 April 66
66-6	Methods and Rationale for Determining Technician-Level Manpower Requirements by Locale, and For a Specific Industry	20 July 66
66-7	Selected Technical Education Needs in Howard County, Indiana "The Kokomo Study"	1 August 66
66-8	Selected Manpower and Employment Data for Delaware County, Indiana (and the Six Contiguous Counties) "The Muncie Study"	15 August 66
66-9	Region One Manpower Study, (Northwest Corner of Indiana)	18 Oct. 66
66-10	Manpower and Training Needs in Fluid Power for Indiana Industries	30 Nov. 66

VT 002 824
Manpower Projections--An Appraisal and A Plan of Action. Report Of the Working Group on Manpower Projections to The President's Committee on Manpower.

Office of Manpower Policy, Evaluation, and Research (DOL), Washington, D.C.
MF AVAILABLE IN VT-ERIC SET.
Publications Office, Manpower Administration, U.S. Department of Labor, Washington, D.C. 20202.
Pub Date - Aug67 58p.

*EMPLOYMENT PROJECTIONS; LABOR ECONOMICS; NATIONAL SURVEYS; STATISTICAL SURVEYS; ECONOMIC RESEARCH; EMPLOYMENT PATTERNS; LABOR FORCE; MANPOWER DEVELOPMENT; METHODOLOGY; RESEARCH NEEDS; *EMPLOYMENT STATISTICS; FEDERAL GOVERNMENT; *FEDERAL PROGRAMS; PROGRAM IMPROVEMENT; *PROGRAM EVALUATION; *EVALUATION CRITERIA

The Working Group was asked to assess the current work of the Federal Government in developing Manpower projections and to make recommendations for improvement. Manpower projections are combinations of certain economic and demographic variables which have shown consistent past relationships and a further set of assumptions pertaining to future developments. A characteristic weakness of most of the projections reviewed was the failure to relate assumptions to the final projection in a way which would permit the users to introduce additional assumptions or modify those used. Technical problems relating to quality and quantity of personnel, standardization of measurement, and definitions of terms and in preparing projections were evident. Nine recommendations were directed toward the clarification of projection assumptions and the improvement of technical resources for making projections. Three detailed recommendations spell out a plan of action for implementing the other recommended changes within the appropriate federal agencies. (ET)

VT 002 824

ED039370

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& WELFARE
OFFICE OF EDUCATION
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VT 002 824

MANPOWER PROJECTIONS:
AN APPRAISAL AND A PLAN OF ACTION

Report of the Working Group on Manpower Projections to the President's Committee on Manpower

AUGUST 1967

U.S. DEPARTMENT OF LABOR
Willard Wirtz, Secretary

MANPOWER ADMINISTRATION
Stanley H. Ruttenberg, Manpower Administrator

PREFACE

This report on manpower projections was prepared for the use of the President's Committee on Manpower, which was established to assist in carrying out Federal functions under the Manpower Development and Training Act of 1962.

A major responsibility of the Committee is to evaluate and, where appropriate, recommend improvement in methods and programs for assessing present and anticipated manpower resources and requirements of the Nation. It was also instructed to make recommendations to appropriate Federal officials on procedures for obtaining consistency among projections of national manpower resources and requirements.

The President's Committee on Manpower is composed of the heads of various Federal agencies whose programs and activities have a significant impact on the demand, supply, development, and utilization of manpower for the Nation. The Chairman is the Secretary of Labor and Thayne Robson is the Executive Director.

This report is published for the President's Committee on Manpower by the Office of Manpower Policy, Evaluation, and Research, of the Department's Manpower Administration. That office has overall responsibility for coordinating and providing leadership in all aspects of manpower research in the Department of Labor.

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INTRODUCTION

This Report has been prepared by the Working Group on Manpower Projections for the use of the President's Committee on Manpower. The Working Group was established by the Bureau of the Budget as a special unit under the interagency Committee on Labor Supply, Employment and Unemployment Statistics. It was formed at the specific request of the Executive Director, President's Committee on Manpower to assist in the work of the PCOM's Subcommittee on Manpower Assessment, which had been given the assignment of evaluating the Federal Government's work in making manpower projections. The PCOM's Subcommittee on Manpower Assessment concentrated on reviewing the projections made for specific agency programs. This Working Group on Manpower Projections, on the other hand, was asked to evaluate the "general-purpose" projections made by Government agencies.

Since projections related to an agency's mission may also frequently serve as integral parts of a broader national projection, the assignment of the two groups overlapped. Provision to guard against unprofitable duplication of energies was made by including some of the members of the Subcommittee on Manpower Assessment as members of the Working Group.

Organization and Membership of Working Group

A small group of technical people was appointed who could be expected to devote a significant part of their time over several months to this assignment. Persons actually engaged in making projections were not included in the group, except that the Bureau of Labor Statistics, because of its considerable interest in projections of labor supply and manpower requirements, was requested to provide a staff secretary. No effort was made to represent the interest of all major users of manpower projections.

This Report represents the individual and collective contribution of the members of the Working Group, all of whom have devoted substantial time and energy to this effort in spite of pressing demands of their regular responsibilities. The members of the Working Group are:

Margaret Martin, Chairman *	Bureau of the Budget
Gladys Bowles	Department of Agriculture
John Dorsey (from August 1965)	Council of Economic Advisers
Louis J. Ducoff (until January 1965)	Department of Agriculture
Stuart Garfinkle	Office of Manpower Policy, Evaluation, and Research
Lee Hansen (until January 1965) *	Council of Economic Advisers
Hyman Kaitz *	Business and Defense Services Administration
Moses Lukaczer	Social Security Administration, later U. S. Commission on Civil Rights
Howard Stambler, Secretary	Bureau of Labor Statistics
Robert Steffes	Department of Defense, later Bureau of Labor Statistics
Lester Thurow (January-August 1965)*	Council of Economic Advisers
Murray Wernick	Federal Reserve System

At various times, Garth Mangum, Arnold Nemore, Gary Comstock and Thayne Robson attended Working Group sessions as ex-officio members from the staff of the President's Committee on Manpower.

Method of Operation

The Working Group first attempted to construct a list of relevant questions or issues for use in evaluating the adequacy of general-purpose manpower projections. It then determined which projections it should review. Since manpower projections are seldom constructed without some reference to projections of other relevant variables (population, productivity, economic growth, etc.) it was necessary to decide on the bounds of our review.

The group decided to concentrate on projections of manpower requirements but also to review the methods used in projecting labor supply. Because of their immediate relevance, the group also gave attention to projections of school enrollment and informed itself on the economic growth project, to which many of the occupational projections may later be tied. Although of fundamental importance to projections of labor supply, this group did not review any population projections, taking them as given.

The Working Group planned to hear from as many of the major producers of projections as possible. To indicate the lines to be followed in the discussion, a list of questions was provided to the forecasters prior to their appearance before the group. The questions were:

*Also a member of the Subcommittee on Manpower Assessment

1. What determines the time horizon of the projections? What determines the level of disaggregation?

2. What explicit assumptions are made about the general economic-social environment? What other explicit assumptions are made?

3. To what extent do you provide alternate projections? Why, or why not?

4. What technique is used in arriving at the projected figures?

5. What implicit assumptions stem from the use of this technique?

6. What data inputs are used to establish the relationships used in applying a particular technique?

7. What policy recommendations, if any, flow from the projections? What other specific uses are made of these projections by your agency? By others?

8. Do you have experience which you can report on the reliability of past estimates using these procedures?

9. What do you consider the major shortcomings of the projections? Do you have any suggestions for the use of other techniques? For the development of additional or more appropriate data inputs? On the frequency of revision?

The forecasters were invited also to prepare written statements either preceding or following the discussion commenting on any further points, and in particular outlining major uses of the projections, and proposals for improvement.

Specific types of projections examined by the Working Group included projections of:

Occupational requirements
Labor supply
School enrollments
Local area manpower requirements
Economic growth
Agricultural manpower
Health manpower

The Working Group is indebted to the staff people of the different agencies who prepared materials for our use, and in particular to those who took time from busy schedules to discuss these matters with us. They were Harold Goldstein, Bureau of Labor Statistics; Sol Swerdloff and staff, Bureau of Labor Statistics; Sophia Cooper and staff, Bureau of Labor Statistics; Kenneth Simon, Office of Education; V. D. Chavrid and staff, Bureau of Employment Security; Jack Alterman, Bureau of Labor Statistics; Alvin Egbert and Reuben Hecht, Department of Agriculture; Ruth Johnson, Public Health Service; and Herbert Rosenberg, National Institutes of Health.

Plan of this Report

The Working Group was asked to assess the work now going on in the Federal Government in developing manpower projections in order that recommendations for improvement might be made. We might have made a detailed inquiry into the concepts, methods and data employed in a wide number of individual projections, hoping to find areas in which the group could point to sins of commission or omission. Such a review would have been inordinately time consuming and would have taxed the competence and knowledge of the members. Furthermore, the Working Group viewed its assignment as one of pointing out in what way manpower projections might be strengthened, rather than providing a detailed blue-print for execution.

This Report, therefore, makes general recommendations, does not provide an evaluation of individual series and points to defects to illustrate a point rather than to assess relative quality. The Report is organized along the following lines: First, the principal findings and major recommendations are summarized in Chapter I. The essence of the Report is contained in this Chapter - later chapters provide supporting and illustrative material. This is followed by a review of the significant uses of manpower projections, of the "demand" for projections, against which the adequacy of the supply might be assessed (see Chapter II). Next, there is a brief summary of the more important work on general-purpose manpower projections within the Federal Government, indicating what is now made available for policy use (see Chapter III). In the following section there is a description of the major elements of a system of projections and the group's general assessment of how well such elements are currently being provided (see Chapter IV). There are a number of conceptual, methodological and data problems which seemed particularly important to the Working Group, and these are discussed further in Chapter V. Finally, the difficult problem of evaluating projections is discussed in Chapter VI.

As a result of concentrating on needed improvements rather than evaluating present work with due regard to the paucity of data and resources available, this Report may sound unreasonably critical to some persons. Much good work is going on of which the Working Group takes little note. Better work in many cases is limited, not by the competence of the forecasters, but by the availability of information on past trends or current levels, the lack of sufficient resources to do the job, or the policy or political constraints imposed. Much pioneering work has been accomplished for which little credit has been given to date. This Report will not fill that lack. Rather, we are here presenting our collective views on essential next steps in order that the projections of manpower requirements and supply may be made more useful within the councils of Government and for the members of the public.

CHAPTER I

SUMMARY AND RECOMMENDATIONS

In its examination of the current state of manpower projections in the U. S. Government, the Working Group was greatly impressed with the rapid growth in the number of requests for accurate and reliable local, regional and national manpower projections. These demands come from many sources, and they differ significantly in respect to detail, form and degree of sophistication required.

Among the varied uses for projections, the Working Group found the most critical to be the accelerating need within Government for quantitative measures of future manpower supply-demand developments--short and long run--for use in major policy decisions. As detailed in the body of the Report, projections for basic decision-making are wanted for many specialized areas of manpower requirements, such as the need for engineers, teachers and nurses, as well as more broadly in the development of the whole gamut of major economic, fiscal and monetary policies. Competition among different uses for relatively scarce manpower resources is one reason for this emphasis on projections. Another is the increasing attention given to the maximum utilization of manpower resources as one of our national goals. Thus, the importance of accurate and useful manpower projections to Government policy formulation cannot be overstressed. Inadequate, inconsistent or erroneous projections may lead to mistaken decisions.

The term manpower projections has been used in this Report to include: (a) broad projections of manpower supply, which are basically related to population estimates by age and sex; (b) projections of manpower "requirements" or demand, based on projections of economic activity, and (c) detailed projections of supply or demand for specific occupations, which may be fitted into the overall models or may be developed quite independently. For some immediate program purposes, such as planning training needs or estimating the constraints which manpower shortages may impose on a specific program, the projections may be short run, for two or three years. For most purposes, the projections are longer, usually ten years or so. Projections longer than a decade are seldom attempted except in very broad terms.

Any projection is an attempt to outline the future - thus, uncertainty is inherent. Nevertheless, the Working Group believes that errors in projections are only in part due to the uncertainty of future developments; ill-chosen assumptions, haphazard techniques, untrained staff, poor data and lack of communication among Government agencies may be major sources of error. Too frequently manpower projections have been developed on an ad hoc basis using ad hoc methods. Among

our most important findings is that few agencies have put sufficient stress on the quality of manpower projections. Many have only limited technical capabilities and are operating with inadequate standards. Even in the Bureau of Labor Statistics, where the responsibility for national manpower projections is freely acknowledged, the staff is hampered by inadequate resources, limited research support and an almost unlimited demand for ad hoc specific as well as general-purpose projections.

One purpose of this Report is to make the user and the policy maker aware of some of the limitations of current projections. An even more important aim, however, is to recommend specific procedures and programs which, if adopted, should significantly increase the reliability and usefulness of Government manpower projections and hopefully provide results more in line with the requirements of policy makers. In making the following recommendations, the Working Group is well aware that the development of serious and systematic manpower projections is of relatively recent origin. It is not trying to lay the blame for today's problems, but point the way toward tomorrow's improvements.

The Working Group has not made specific recommendations on what manpower projections should be made, nor in what detail. The need for national projections of manpower supply and requirements is well documented (see Chapter II). Detailed occupational projections appear particularly important for scientific, professional and skilled occupations which require long training periods. Yet occupations are not fixed either on the supply or the demand side. Both the development of new skills on the part of workers and the changing technological requirements of jobs limit the detail and the time periods for which reasonably valid projections can be made. Under these circumstances, the Working Group has not specified a desirable matrix of occupational detail toward which we should aim. Rather, it recommends improvements in methods and information useful in all types of projections and warns, at the same time, against the use of such methods and information for unjustifiably detailed occupations or unduly long time periods.

The recommendations which follow have been rather arbitrarily separated into three groupings: Clarification of Assumptions; Improving Technical Capabilities; and a Plan of Action. We would first stress, however, that substantial advances are unlikely in any of these areas unless there is a determination to provide the resources necessary to prepare high-quality projections.

Clarification of Assumptions

Manpower projections are an attempt to combine quantitatively certain economic and demographic variables which have shown consistent past relationships and a further set of assumptions pertaining to future

developments. Knowledge of the underlying assumptions, whether stated explicitly or implied, is basic to the formulation and evaluation of any set of projections.

We found that in most of the projections we examined insufficient recognition was given to the critical role of the assumptions. Often they were not stated or else were presented in such broad general terms that they had little relevance to the user. Furthermore, we found a general lack of consistency in assumptions among different groups projecting future manpower estimates for essentially the same categories. Frequently, ad hoc projections are developed hastily to guide immediate policy determinations, and no attempt is made to take advantage of the more extensive and systematic overall models available within Government.

Oversimplified assumptions, such as the assumption of a direct continuation of current trends (straight line extrapolation), were frequent. Trends are caused by many variables subject to substantial changes over time, any of which could affect future activity. Consequently, use of such simple assumptions is not necessarily the conservative approach. Sometimes an assumption of simple continuity may appear justified, for example, where an attempt is made to indicate developments which would flow from maintaining current programs. Even then, alternate projections based on varying assumptions would be required to show the probable impact of new or expanded programs.

A characteristic weakness of almost all the projections we reviewed was the failure to relate assumptions to the final projection in a way which would permit the users to introduce additional assumptions or modify those used. Unless presented in a fashion which permits the user to introduce alternative assumptions, evaluation of the implications of alternative policy actions is almost impossible. The choice of publishing either one projection based on most likely developments, or a series of projections derived from a number of alternative assumptions was carefully considered by the Working Group.

The Working Group recommends that:

1. Considerable attention should be devoted to the selection and description of the assumptions on which projections are based. At a minimum:

   - All published projections should include a clear, concise statement of major assumptions;

   - If at all possible, assumptions should be put in arithmetic terms. The number of implicit assumptions should be kept to a minimum, since they are often vague and difficult to evaluate, while explicit assumptions can in most cases be quantified;

- Projections which are only simple extensions of general and complex trends should be avoided, or carefully qualified as to their limited significance;

- Broad elements of consistency should be explicitly built into projections and the consistent assumptions clearly specified for the users.

2. Alternative assumptions should be provided whenever reasonable so that relevant alternative policies can be evaluated. In particular, projections which are designed to throw light on the need for changes in programs should first be based on the explicit assumption that current policies will continue unchanged. Other projections based on suggested changes in programs, policies or assumptions can then be introduced for comparative purposes.

3. Assumptions to be used for specific local area demand-supply relations or detailed occupational requirements should be tied into overall economic models whenever feasible. This would be a long and desirable step toward more closely relating local and specific occupational needs into a national structure of manpower supply and requirements.

4. Systematic research should be undertaken concerning the characteristics of assumptions, the methods used to quantify assumptions and the interrelation and interdependence of assumptions used in national economic models.

Improving Technical Capabilities

Unquestionably, the technical resources now being devoted to manpower projections are inadequate. Within the Government the Working Group found a wide range of procedures being used, with standards varying considerably. The effort now being devoted to training professional personnel and extending advanced techniques is limited. Methodological research is meager. The recent increase in demand for projections and the practical problems it creates are stimulating some additional research, testing of methods, and better measures of accuracy. However, more progress will be made if initiative for research is not left to chance. Research should be considered an essential element in a broad program for developing reliable projections.

While problems of poor data and data gaps are less urgent than they once were in the manpower field, we nevertheless found many shortcomings. The preparation of projections usually requires special kinds of manpower information and in considerable detail -- for example, information on training, occupational structure and job mobility --

information which is largely unavailable at present.

In order to improve the technical capabilities for making manpower projections, the Working Group recommends that:

5. A concerted effort should be made to improve the methodology of making projections. Work should proceed along three lines as outlined in the next 3 recommendations.

6. The development of guidelines incorporating recommended standards should be initiated. These guidelines should include at least:

   - a discussion of the appropriate uses for various kinds of manpower projections, and of the advantages and disadvantages of the basic techniques and of the conditions under which each is suitable;

   - a glossary of standard terms and definitions;

   - consideration of methods for determining the minimum necessary quality of manpower projections for internal and external users;

   - recommended methods for measuring errors in projections and procedures for publishing such estimates.

   Although considerable work would be required to develop definitive guidelines on some of these issues, the Working Group sees some advantage to preparing interim guides immediately to assist in bringing all work up to current "best practice" standards.

7. Continuous research should be undertaken which would evaluate current methods, devise new techniques and support the efforts of those directly engaged in making projections. Such a research effort could be expected to introduce standardized formulae and prepare programs for processing and calculating models. Both short- and long-run formal quantitative models of overall manpower requirements should be developed under alternative assumptions of growth, including projections of occupational structures, productivity, hours of work and unemployment. Questions such as the interrelationship between trend and cycle, and the problem of "feedback" should be investigated. Research findings should be published promptly.

8. All groups making projections should be concerned with methods for appraising their accuracy. Estimates of error should be developed and published with each projection to alert users to the range of uncertainty which surrounds projections, as well as to aid in promoting improvements. A discussion of the technical procedures used should also accompany all published projections, although not necessarily in a single publication. Projections should be revised on a regular basis and whenever changes in variables, demand and supply conditions or in basic assumptions warrant new projections.

9. The data base for manpower projections should be strengthened. Current data needs for projection purposes should be re-examined and recommendations made listing specific data gaps and areas requiring improvement and establishing priorities. Even without such a review, three obvious areas of deficiency can now be specified:

   - Current occupational information is inadequate and expansion is essential. These data are urgently required as a base for projections relating to local and State, as well as national, vocational and other training programs;

   - Information on the relationship of school enrollments, degrees, and job requirements is also inadequate and requires strengthening;

   - Information on occupational mobility and related factors is almost completely lacking. Such information is essential for meaningful projections of specific occupations.

A Plan of Action

The recommendations in the preceding two sections are paths which should lead to the improvement of manpower projections. Nevertheless, they do not lay out a concerted plan of action. For such a plan, we need a clearer conception of our goals, a consensus on priorities, and an acceptance of specific functions and responsibilities by specific agencies of Government. In this section, the Working Group recommends such a plan of action.

The Goal

The Working Group discussed and discarded the idea that all projections should be made by a single agency. Such a plan would not permit the flexibility and diversity required for projections needed

for program planning and evaluation; it overlooks the considerable amount of interplay between the comprehensive general projections provided by the statistical agencies and the specific projections made in connection with important Federal programs (the impact of defense and space; the requirements for scientists; the growing demand for vocational counsellors to support a number of Great Society programs, to name but a few); it assumes a general agreement, not in fact yet reached, on the general methods to be pursued. In effect, the Working Group finds divided responsibility and a certain amount of healthy competition a useful condition in the present state of the art.

The Working Group views the most desirable goal as one in which each agency with a major concern in manpower projections will provide sufficient staff, supported by adequate resources, to prepare those manpower projections required for its own program purposes. At the same time, major effort should be devoted to improving and extending the basic, general purpose, projections prepared for public use and as a general framework for the specific projections. These general purpose projections should extend sufficiently far into the future and be sufficiently detailed to meet major uses. They may well contain specific projections for significant occupations of particular interest (scientists, skilled workers, counsellors, for example), but they would not substitute for the more parochial projections required to meet program objectives. It is impossible to specify in advance the amount of occupational detail which should be routinely provided. Detail is limited not only by lack of information but also by the inherent nature of occupational skills and occupational requirements which, for many areas of the occupational spectrum, appear to remain fixed for only short periods of time.

The general purpose projections should be published, should be prepared on a regular periodic basis, and should absorb, where relevant, the specific projections made in detail for special purposes. On the one hand, they would provide the framework of assumptions and methods used for many of the specific agency projections. On the other hand, they should be relatable in well-defined ways to other economic and demographic projections - estimates of the future population, of GNP, of the impact of technological change, fiscal policy, and so on.

The Working Group considers that a plan for improving manpower projections should encompass:

The development of specific guides and standards (specified in more detail than in this Report);

- The establishment of coordinating machinery whereby technicians engaged in making projections will review and evaluate each other's work, report on new developments, stimulate and spread innovations;

- The specification of need for, and the collection of, additional basic data;

- The establishment of a research unit to provide methodological support;

- Provision for meshing in with national economic and demographic models at critical points;

- The periodic publication of manpower projections.

Recommended Steps

Implementing and facilitating the recommendations made by the Working Group will largely hinge on the interested agencies assuming new leadership. The Working Group found that current institutional arrangements were inadequate. Much of the duplication and inconsistencies of projections stemmed from lack of communication and coordination within and among agencies. The Labor Department conducts the bulk of the work on projections in the manpower field and has the major responsibility, with the advice and cooperation of the other agencies, for implementing the recommendations of the Working Group.

However, there is also an important coordinating role for the Bureau of the Budget. Manpower projections are only a part of a much larger effort. The assumptions, time periods, techniques and professional skills used in making broad systematic economic projections or forecasts are all closely related to those necessary for manpower projections. Exchange of information and technical know-how, consultation and guidance should not be constrained by artificial areas of specialization.

Lack of communication and coordination mainly reflects the *ad hoc* nature of so many of our current manpower projections. Greater centralized effort thus is necessary to increase the reliability and usefulness of the projections. Nevertheless, the Working Group reiterates that some variety of assumptions and methods are desirable.

There also is much that can be accomplished outside the Federal Government. Often academic and business groups have facilities and

professional resources to research, prepare and publish comprehensive economic and econometric models. Such groups can introduce and test a wide variety of alternatives. Government agencies are frequently inhibited from publishing results, either because of uncertainty or errors inherent in the projections, or because they do not wish to focus attention on problem areas. Proposals to advance the art of projecting and to improve the results should recognize the potentially important contributions which can be made by nongovernment sources. In order to implement the recommendations of this Working Group, leadership must be exercised effectively, and in an orderly fashion. The Working Group recommends that:

10. The President's Committee on Manpower and the Bureau of the Budget should jointly spearhead a Government-wide drive for improvements in manpower projections:

    a. The Bureau of the Budget, in connection with promoting improvements in all types of economic and social projections, by establishing an interagency technical working group to review projections generally, exchange views on methods, and stimulate improvements. At a minimum, economic and demographic projections should be considered in addition to those for manpower. Possibly specific program projections with significant economic impact should also be considered. Such an interagency group should emphasize the use of professional techniques and objective standards to guard against arbitrary pressures to control results;

    b. The President's Committee on Manpower, in furtherance of its responsibilities for assessing the manpower situation as a basis for program coordination, by maintaining surveillance over how well the system of manpower projections is meeting the manpower planning needs of the Federal Government; by emphasizing to policy-making officials the importance of high-quality projection work, as necessary; and by participating in the plans for expansion and for additional research. In particular, it is suggested that the President's Committee on Manpower

undertake to keep the general-purpose projections staffs informed of emerging needs for projections of new types - for additional occupations, new missions, or re-oriented programs. Furthermore, from time to time the President's Committee on Manpower might well review the progress of manpower projection work in meeting established goals and examine whether or not new goals need to be specified.

11. The Labor Department should accept and assign a larger responsibility than at present for the basic program of general-purpose manpower projections and provide sufficient staff resources. Although the Working Group discussed possible locations for this function within the Labor Department, recognizing in particular the responsibilities of the BLS for national estimates, the BES program-planning activities for State and local estimates, and the OMPER's interests in research and coordination aspects, the Working Group prefers not to make specific recommendations with regard to organizational arrangements. It should be clear, however, that the Group is recommending far more than a modest expansion in one or more of the listed activities. For example, in implementing the Working Group's recommendations, the Labor Department should:

- Establish a manpower projections research unit to perform the research outlined in Recommendations 4 and 7, seeking the advice of the President's Committee on Manpower and the technical interagency working group established by the Bureau of the Budget under Recommendation 10. The unit should be staffed with full-time professionals and be free of operating responsibilities. It should be available to <u>all</u> agencies making manpower projections;

- Assume the responsibility for assembling all published Government projections in the manpower and related areas and republishing them periodically as a single document. This would provide easier access to current projections, stimulate comparison and improvement, and promote periodic revisions;

- Provide a mechanism for informal interagency consultation and coordination on specific manpower

projections as support to the interagency working group established in Recommendation 10. Staff reviews of current work should be encouraged as a useful self-training device;

- Prepare guidelines for manpower projections, as described in Recommendation 6, and contribute significantly to the development of plans and procedures useful to groups interested in projections on a more narrow occupational, geographic or program basis;

- Develop procedures for obtaining advice from and exchanging experience with groups outside the Government who are engaged in producing manpower projections;

- Recommend a Government-wide program for training staff engaged in manpower projections and for improving the supply of professionally competent persons, in cooperation with the Civil Service Commission.

12. Each agency participating in the President's Committee on Manpower should implement all relevant recommendations of this Working Group. In particular, a determination of agency needs for projections should be made and adequate staff and other resources assigned. Each agency should participate constructively with the President's Committee on Manpower, the Labor Department and the Bureau of the Budget in the implementation of the preceding recommendations.

CHAPTER II

MANPOWER PROJECTIONS: THEIR PURPOSES AND USES

The decision to devote a separate chapter to the purposes and uses of manpower projections stems from the conviction of the Working Group that explicit consideration of these needs will enhance insight into the problems confronting the forecaster. The purposes and uses of a projection must always be kept clearly in view because they influence significantly the kind of projection developed. The nature of the projection, the standard of accuracy, the amount of detail, the time span to be covered are all determined, at least in part, by the purposes the projection is expected to serve.

During the two decades which have passed since the termination of World War II we have seen the governments of major countries take many steps which clearly indicate that they are accepting increased responsibility for economic stability and progress. In some instances this acceptance of responsibility extends to the adoption of formal economic "planning," while in the United States and many other nations it has been characterized not by centralized planning but by efforts to deal with emerging economic and social problems through legislative action. The rapidly growing proportion of the gross national product affected directly by public fiscal actions has increased the concern of governments about the economic and social future. In the United States this concern was expressed most forcefully in the Employment Act of 1946 which requires the Federal Government to analyze the current state and future prospects of the economy, as reflected in employment, prices and productivity. And when we look at the objects of public expenditures we see increasing attention being given to the manpower element of the national economies.

In the United States, not unlike many other countries, there is an increasing involvement in the problems of utilizing the population of working age in useful and remunerative pursuits and the concomitant problems of education and training people for the activities which are likely to be crucial to our national growth. We observe shortages develop in certain occupations alongside substantial unemployment and we wonder what kinds of education and training will be needed to fit the educational and skill requirements of future jobs. How fast will the economy have to grow to create these jobs? Are occupational requirements outstripping educational attainment? Today's formulation of policies in the education and training field is now recognized as one determinant of tomorrow's manpower balance sheet.

The essential element which the above questions have in common--and many more could be asked which also contain it--is their dependence upon the shape of things yet to come. As Kuznets says, "Action is directed toward the future, and the choice of action can be assisted by some specification of the future." 1/ Hence, manpower projections

become increasingly important. And because of the long lead time in preparing a man for his life work, the projections are long term, as projections go. Since they are long term, it is inevitable that the conditions assumed when they were made will be quite different than the conditions found to exist when the reference period of the projection is reached. Because the conditions will have changed, the validity of the projections can rarely be established. But Kuznets goes on to say: "The fact that it may be difficult ... to establish the validity of the projections or to follow through fully on their implications does not deny their usefulness. The major use of these intellectually hazardous undertakings is naturally for policy-making... The need for action may be motivated by some desirable goals, actively pursued--in which case the projections are often made to demonstrate that the desirable goals can be attained. Or the need for action may arise from some overriding necessity, not always pleasant or desirable--in which case the projection is made to see how the unpleasant necessity can be met without more cost or unpleasantness than need be..." 2/

We can deny all possibility of projections, manpower and others, merely by denying that past events have a bearing upon the future. But if they have some bearing, and if there is some order in past events, then projections are possible. With regard to manpower, both elements are present. For example, the number of children entering first grade this year does have some bearing on the number who will be graduating from high school 12 years hence. And there is order in the past with respect to entrants and graduates, by age, color, and sex, from which can be derived a pattern for the future.

The Employment Act of 1946 and the Manpower Development and Training Act of 1962 recognized by law the crucial importance of manpower in the health of the economy. We see the increasing responsibilities of governments with respect to manpower utilization and growth as the cause of increasing demand for more and better manpower projections. And the handwriting may already be on the wall as a result of the spreading of this responsibility among the 50 States--we have reason to expect that the demand for manpower projections for States and areas will grow by leaps and bounds. The planning required to administer Government programs has contributed to the explosion in demand for general long-term economic (including manpower) projections in the United States. 3/

More specifically, the purposes and uses which manpower projections serve are:

1. <u>To alert Government (and other interested parties) to emerging manpower problems</u>; commonly, an imbalance between the demand for and supply of workers in the labor force. 4/ For some purposes, the

relation between the overall demand and supply functions may be instructive. For other purposes, the relation between demand and supply for particular kinds of work is required. An imbalance of a significant magnitude may imply wastage from a social as well as an individual standpoint, whether a surplus or a scarcity is indicated; or it may imply substitution of trained workers into different areas of work than those for which they were trained.

In the case of a projected surplus, men with the skill in question might be idle, or might be absorbed into other activities. At the least, there would be readjustments and retraining required. At worst, individual human deprivation and suffering could be involved. A projected scarcity would imply that the allocation of manpower resources was not in the most desirable posture, for total product could be increased by an appropriate redirection of these resources. A projected surplus for a particular occupation would have implications with respect to the jobs for which Government would not sponsor or encourage training. A projected scarcity would suggest the opposite conclusion.

An imbalance may also be derived for a selected population group not distinguished by occupation or skill. The projected rate of growth of young people who would seek to enter the labor force may suggest a possible problem for this group in the future. In the same way, a projected continued downtrend in the percentage of older males in the labor force may suggest the increasing seriousness of the problem of finding employment for these workers. An imbalance may also be projected in the demand for and supply of labor for a given industry.

Thus, a basic purpose in alerting Government to manpower problems that lie ahead is to avoid or minimize the costly consequences of imbalances. 5/

The concept of stabilization policy with its focus on mitigating the ups and downs of the business cycle has been superseded by or, perhaps it would be better to say, absorbed into the more extensive concept of economic growth. This development has helped to broaden the kinds of manpower problems to which, it is believed, Government should be alert. If the view is held that growth of the economy rests upon an expansion of scientific knowledge and technological progress, then the presence of trained and capable scientific and technical manpower is called for. 6/ This leads to exploring the conditions under which this resource would provide maximum support for the expansion of the economy. In this context, Government needs to be concerned with the steps which would bring about the appropriate development of scientific and technical manpower. We move from merely seeking to prevent an undesirable situation from arising to striving in a positive and systematic fashion to help create the desirable

situation. The Government also has an important ancillary interest in this matter because it employs, directly or through its contractors, a substantial segment of the available scientific and technical manpower. Governmental decisions with respect to salary levels, expenditures, training fellowships and research grants, for example, have an important influence in determining the total volume of this manpower over time and the segment of it which would be available for nongovernmental purposes.

The sort of "activist" governmental interest just described need not be confined solely to scientific and technical manpower. The governmental function of working for a better utilization of manpower skill rests, to some extent, upon the notion that individuals should be assisted to realize their potentialities as fully as possible and that the Nation should, through its instrumentalities, deliberately seek to achieve this result. This objective is desirable not only for scientific and technical manpower but for manpower generally in the economy. We are thus brought around to the national goal of investing in human beings. Manpower projections may, thus, represent a useful tool for developing what has been referred to as a "theory of manpower policy" which the appropriate development of the expanded objective would appear to require. 1/

2. To help choose between alternative proposed policies. The policies referred to need not be manpower policies. Investigation might suggest that one proposed policy could lead to difficulties on the manpower side, whereas another would not. In choosing between the alternatives, this finding would be taken into account. The National Aeronautics and Space Administration requested the Bureau of Labor Statistics to project the supply of scientists and engineers to 1970, by year. The former agency then determined how much of the supply would be utilized in the planned space program, especially the moon landing in 1970, and was therefore in a better position to judge whether this demand would be inordinate in view of other claims upon the same resource.

3. To assist in administering specific Government programs. Many of these uses are prescribed by Congress in particular statutes. The Bureau of Employment Security and the Federal-State Employment Service are required to provide information on current and long-range manpower needs by industry and occupation in local areas for purposes which include the following: for assessing prospective job opportunities under the "reasonable expectation of employment" clause in the Manpower Development and Training Act of 1962 and as amended; for curriculum planning under the Vocational Education Act of 1963; for youth counseling and guidance under the Economic Opportunity Act of 1964; and for providing manpower information useful for community economic development and planning under the Economic Development Act and other

programs. Manpower projections are also used by a number of Federal agencies, although not necessarily legislatively prescribed by Congress, in preparing agency budgets, in estimating work load and the like.

4. To provide an essential element for developing other general types of projections by Government and private organizations. In the United States the gross national product is commonly, although not exclusively, projected on the basis of projected trends in the labor force and in average output per manhour. General labor force projections are also used as a framework for projecting labor force by State and locality and consumption uses and patterns. Manpower projections by industry may be used to project raw material and power requirements.

5. To provide information for vocational guidance of young people interested in choosing a field of work. Information on the long-term future employment trends and opportunities in a large number of occupations and occupational fields is useful to students, parents, teachers, and counselors, by providing young people with the best possible economic information as one factor in making a career choice.

6. Lastly, to encourage an informed and responsible public concern for manpower problems and to help provide the ordinary citizen with information which would be of use to him in his role as a citizen, and apart from that of an economic producer. [8] Estimates of manpower requirements for local areas, in addition to their program orientation, are also intended to heighten the awareness of local organizations of employers, workers and others that manpower development is a concern of the community as a whole, not only a problem for individual employers or unions, and to arouse community awareness of impending labor shortages and surpluses so that affirmative community action for better organization of the labor market may be encouraged.

More generally, manpower projections in a variety of ways assist in carrying out commitments which our society holds to be values. If it is a value to us that all our citizens be literate, and if we mean to be serious about its achievement, then we ought to know some years in advance the number of teachers who need to be made available at the proper time. This matter might be looked at from the standpoint of the roles of the formal educational system, exclusive of vocational training. [9] One of the roles of this formal system is to provide the labor force with the general educational attainments needed for productive activity. In this sense, the educational system has to be geared to an economy's production requirements. Because a long lead time is required for the development of many kinds of qualified manpower, long-term manpower projections are needed. The educational system has other roles also: to promote (a) good citizenship, (b) individual fulfillment, (c) equality of opportunity, (d) political and social stability, among others. A number of these are regarded in democratic societies as values.

In implementing the determinations socially made as to how much education and what kinds of education are necessary to promote these values, manpower projections of one sort or another may be required.

Footnotes

1/ Simon Kuznets. Paper presented at the 1951 Conference on Research in Income and Wealth.

2/ [illegible]

3/ Gerhard Colm, "Economic Planning in the United States," Weltwirtschaftliches Archiv, 1964, Band 92, Heft 1, Hamburg, pp. 31-33, 45-46, 49 and 54.

4/ National Manpower Council, Manpower Policies for a Democratic Society, by Henry David, Columbia University Press, New York and London, 1965, pp. 84, 91-92.

5/ Ibid, pp. 91 and 93.

6/ Manpower for Research and Development, Select Committee on Government Research, United States House of Representatives, 88th Congress, 2nd Session, committee print, Study No. II, September 29, 1964, Washington, United States Government Printing Office, 1964, pp. 56-57.

7/ National Manpower Council, op. cit., pp. VIII-IX, XI.

8/ Ibid, p. IX.

9/ James L. Blum, "Educational Investment Strategy--an O.E.C.D. Approach to Determining National Educational and Training Needs," Training Directors Journal, December 1964, p. 9 and passim.

CHAPTER III

FEDERAL MANPOWER PROJECTIONS

In reviewing the work of the Federal Government in making manpower projections, the Working Group was impressed with the number of Federal agencies which are engaged in making such projections in the course of carrying out their assigned functions. This situation flows naturally from the variety of purposes for which manpower projections are wanted, as described in the preceding Chapter, and from the universality of the "manpower problem" when manpower is considered as a critical resource in planning future programs.

This is not to say that duplicate projections are made in a large number of places. Rather, elements of what could be conceived of as a system of manpower projections have been developed by a variety of agencies because of agency needs for estimates on which to base policies and to plan future programs. Many of such projections are ad hoc, prepared to illuminate a specific issue and frequently remain unpublished (although running the risk of public announcement through the speech of some policy official). Other projections are prepared for publication with considerable care and issued with suitable technical notes, explanations of assumptions and cautions against misuse.

In what follows, the major Government projections will be described briefly, primarily those prepared for publication.

The bulk of the Federal Government's current work on projections of the labor force, employment by occupation or industry, and other aspects of the future manpower situation is conducted by the Department of Labor, chiefly in the Bureau of Labor Statistics and the Bureau of Employment Security.

Long-range projections of the labor force have been a part of the program of the Bureau of Labor Statistics since the early 1940's when estimates were made of the size of the labor force to 1950. In the following two decades, both the Bureau of the Census and the Bureau of Labor Statistics made independent projections of the labor force. In 1959 labor force projections work was centralized in the BLS.

At about the same time that the labor force program was initiated, another program was established in the BLS to provide information on employment opportunities. The Bureau's interest in these fields stemmed directly from a recommendation of the President's Advisory Committee on Education in 1938 that an occupational outlook service be set up to conduct studies of employment trends and outlook in various occupations, both for the guidance of persons in the choice of a career and those responsible for educational and training programs. In more recent years, the U. S. Employment Service of the Bureau of Employment Security has

initiated a program, in cooperation with the State employment security agencies, to assess the future supply and demand for labor in local areas or States.

Another important program which involves assessment of problems of manpower utilization is the Interagency Growth Studies Program. The Department of Labor, in cooperation with other Government agencies and private research organizations, has undertaken an extensive program of economic growth studies aimed at providing a more comprehensive and integrated framework than has previously been available for analyzing the problems of long-run economic growth in relation to employment opportunities.

Because this program has important implications for many agencies of the Government, an interagency planning and coordinating committee has been established to provide the guidelines for the program. The chairman of the committee is from the Council of Economic Advisers; other members come from the Departments of Labor, Commerce and the Bureau of the Budget. Many elements of the projections will be developed by other agencies of the Government, as well as private research groups. The integration of these separate projects into a consistent set of projections will be undertaken by the Labor Department, operating under the guidelines of the interagency coordinating committee.

A primary objective of the program is to develop projections, under alternative assumptions, of the rate and patterns of growth in the economy. These would then provide a framework for assessing a number of important economic problems, including problems of manpower utilization over the next decade.

The demand for labor will be based on projections, under alternative assumptions, of total income and output of the economy and how this output may be distributed among the various categories and detailed components of final demand for consumption, investment, government expenditures, and foreign trade. Through the use of an input-output matrix projected output and employment will be distributed by industry.

In the final stage of the program, the industry employment estimates will be distributed into occupational requirements based on projections of occupational patterns, by industry. This can be used to evaluate potential areas of substantial surplus or shortage, and provide the basis for occupational guidance and development of longer run training programs.

From time to time, other Federal agencies make projections of employment, generally for specific occupations or industries. These projections frequently are not a part of a continuing program of projection work, but may be prepared at the specific request of agency

or Congressional officials in response to program needs or appraisals. Examples of these programs are the projections of the U. S. Civil Service Commission of employment in the Federal Government; projections of the Department of Health, Education, and Welfare of professional workers in medical research and in the medical and health care professions, and of employment and replacement needs in the teaching profession; and farm employment projections of the U. S. Department of Agriculture. There are growing pressures to prepare a number of these projections on a regular, periodic basis.

The nature and extent of the current major programs of projections relating to manpower carried on by the Federal Government are briefly summarized at the end of this Chapter. In most instances the amount of professional time devoted to projection work is relatively small in relation to the importance and detail of the final product. In many cases, the projection work is subsidiary to the principal functions of the units engaged in the work.

Generally, projections are made for the Nation as a whole by selected population or labor force characteristics of workers. Some projections have been made or are in process for all States, and local area studies have been made in 45 States. Most of the continuing programs provide for periodic revisions of projections when basic population or other projections to which they are closely related become available, or when the political, social or economic climate has changed sufficiently that different assumptions about labor force participation need to be incorporated. The one-time projections may or may not be revised, as the projecting agency sees fit.

In general, ten to fifteen years in the future is the maximum period for which Federal Government projections are made. Shorter term projections are often encompassed in the longer term projections. Certain projections, such as those for local areas, are for relatively short periods, two to five years in the future, and in some instances for periods as short as six months ahead.

Many of the separate sets of labor force projections are interrelated. One may utilize as input the output from another. For example, various projections of the labor force, whether by color, educational attainment, or some other characteristics, are an interrelated series, and these are closely related to projections of the population. Projected labor force participation rates, derived from school enrollment data, and data on the labor force, are applied to population projections to obtain projections of the labor force at some future date. The major occupation and industry projections are another example of closely interrelated series of projections, and these, in turn, are basic to projections of labor needs in detailed industries and occupations.

On the other hand, certain projections are relatively independent of other manpower projections, although most are in some degree dependent upon projections of the total population, or upon characteristics of the population. For example, research and development expenditure data are used to project manpower requirements for scientists and engineers.

Not previously referred to in this Report, or in the summary of major types of projections made by the Federal Government, is work carried on by private agencies, supported in part by funds of Federal agencies. For instance, in connection with its project of estimating expenditures for the achievement of national goals, the National Planning Association, with some support from the Office of Manpower Policy, Evaluation, and Research of the Department of Labor, is developing projections of manpower requirements subsumed under the expenditure projections. OMPER also supported a project relating to the prediction of manpower requirements for technical support functions recently completed by the Auerbach Corporation in Philadelphia. The National Institutes of Health has similarly supported private research on projections of supply and manpower requirements for various types of "health-related" manpower.

Major Activities in Manpower Projections in the Federal Government

BUREAU OF LABOR STATISTICS, LABOR DEPARTMENT

Division of Population and Labor Force Studies

Carries out a continuous program of national and State projections of the labor force 14 years old and over, by selected characteristics of workers, for quinquennial dates 15 to 20 years into the future. Recent national projections have included: Labor force 14 years old and over, by age and sex, 1970, 1975, and 1980 (1)*; labor force 25 years old and over, by educational attainment, age, and sex, 1975 (2); labor force 14 years old and over, by full-time and part-time status, age, and sex, 1960, 1965, 1970, and 1975 (3). Projections have been made of the labor force 14 years old and over for all States, by sex and age, and by color for States with 100,000 or more nonwhites (4). Work is in process on national projections of the labor force by age, sex, and by color.

> These projections utilize population projections prepared by the Bureau of the Census. They describe characteristics of the labor force of the future under stated assumptions and are used for many general and policy purposes. They often provide an "early warning" of problems which may arise relating to the supply and demand for labor.

Division of Manpower and Occupational Outlook and Division of Occupational Employment Statistics

These two divisions carry out a continuing program of projections of

* Underlined items in parentheses refer to References Cited at end of Chapter.

industry and occupational requirements. Projections have been made of employment of wage and salary workers in the eight major nonagricultural industries for periods 10 to 15 years in the future. The latest published projections relate to the year 1975 (5). In addition to projections at the national level of employment and replacement needs in the nine major occupation groups, outlook statements are made for nearly 700 specific occupations, thirty industries. Special studies are also made relating to projected employment in selected occupations, and industries, and of supply and replacement needs. Latest projections of occupational employment and needs were done for 1970 and 1975 (5). The occupation projections are dependent in large measure on the industry projections indicated above. Information on the outlook for the 700 specific occupations is published biennially (6). The special studies of selected occupations and industries are focused on either 1970 or 1975. Recent studies have dealt with: Scientists, engineers, and technicians (7); elementary and secondary school teachers (8); electricians (4); tool and die makers (4); skilled workers (9); technicians (10); banking (11); electronics manufacturing (12); civil aviation (13); retail trade (14); and scientific and technical personnel in atomic energy (15).

The projections are used for a wide variety of purposes. The detailed projections for specific industries and occupations are used primarily for planning education and training programs and to provide high school students with information on outlook for employment in particular occupations. The projections of selected occupations have some relationship with other sets of projections. For instance, those of scientists and engineers are based in part on ratios of these occupational groups to total employment by industry; teacher-pupil ratios are applied to projected school enrollment, etc.

Division of Economic Growth (and OBE, Dept. of Comm.)

Under the guidance of an interagency committee, integrates the work of the several Government and private research organizations participating in the Interagency Growth Studies Program. This program will project rates and patterns of growth for the economy, as a framework for analyzing important economic problems, including problems of manpower utilization, over the next decade. Projections of total output of the economy will be distributed among detailed components of final demand, by product, and these converted into output requirements by industry. Along with projections of the workweek and unit labor requirements, projections of output by industry will provide the basis for projections of employment for detailed industries. The supply of labor will also be estimated from projections of the population, school enrollment, household and family formation, and labor force participation rates (16).

One of the principal objectives of the program is to study the relationship between economic growth and manpower supply and demand in the future. The Division of Occupational Employment Statistics will work with the employment projections in deriving projections of employment by occupation within each industry. It is expected that the Economic Growth project will strengthen the projection work of the BLS by adding new techniques and systematic development of aspects of the economic analysis underlying the projections.

BUREAU OF EMPLOYMENT SECURITY, LABOR DEPARTMENT

U. S. Employment Service

In conjunction with State Employment Security agencies, plans a series of Area Skill Surveys, including projections of employment by occupation and manpower needs and supply. Details vary for each study, but in general, information on total labor force, selected occupations, and selected industries for local areas or for the State are included. Studies are conducted when a State expresses a need for a study and it can be financed by the U. S. Employment Service. Usually projections are for periods two to five years in the future. Projections are developed by the State agencies, based on surveys of employers in local areas regarding their intention to hire and train workers for specified occupations, utilizing guidelines established by the U. S. Employment Service.

Surveys of training needs and of supply and demand in specific occupations are also done for local areas, usually for short-run periods, six months to three years ahead. These Training Needs Surveys are an abbreviated form of the Area Skill Surveys, conducted to furnish information to justify establishment of training programs under the Manpower Development and Training Act.

The Area Skill Surveys are utilized by the U. S. Employment Service and by local organizations in planning education and training programs in local communities. State Employment Security agencies publish the results. A sample of these publications include those for Wisconsin (17), the San Francisco-Oakland Bay Area (18), and Cleveland (19).

U. S. CIVIL SERVICE COMMISSION

Program Planning Division

Has recently completed the second of a series of four-year projections, to be prepared annually, of employment in the Federal Government, by

detailed professional, administrative, and clerical occupations, and of total blue-collar and postal employment for the years 1966-69 (20). Occupations characteristics of only a few agencies are projected on the basis of expected employment in those agencies. Occupations found in many agencies are projected on the basis of current occupational trends.

> The projections are prepared as a planning aid for Federal administrators, personnel specialists, and as a service to educational institutions.

PUBLIC HEALTH SERVICE, DHEW

National Institutes of Health, Office of Program Planning

At the request of the House Committee on Appropriations, U. S. Congress, 1963, prepared national projections of professional workers in medical research and also of replacement needs and supply, for 1970. Includes details by sector (Government, industry, universities and research institutes), level of training required, and scientific field (21). Projections are based on estimated expenditures for medical research and research expenditures per professional worker.

Division of Public Health Methods; Division of Dental Health; Division of Nursing

Have made projections of demand and supply of new graduates of physicians (22), dentists (23), and nurses (24), for quinquennial dates between 1960 and 1975, with needs estimated mainly by applying projected ratios of the specified-group-to-population to projections of the total population in the specified year.

National Center for Health Statistics, Health Manpower Statistics Branch

In the future, will make short-run projections of health manpower supply.

OFFICE OF EDUCATION, DHEW

National Center for Educational Statistics, Division of Educational Statistics, Reference, Estimates, and Projections Branch

Carries out a continuing program of national projections of employment and replacement needs for elementary and secondary school teachers in public and private schools and of instructional staff in colleges and universities. The former are based on pupil-to-teacher ratios applied to projected school enrollment figures and the latter on student-to-staff ratios applied to projections of enrollment in colleges and universities. The most recent projections relate to 1974-75. Those of instructional staff of institutions of higher education include details for all teachers

of science courses, for full-time or part-time instructors and for the junior instructional staff, and also by field of science and other fields (25).

Projections are used in determining educational policy and proposed legislation, and for other purposes.

SOCIAL SECURITY ADMINISTRATION, DHEW

Projects labor force and covered population periodically for calculating the income, outgo, and balance of the social security trust funds in the short and medium term.

U. S. DEPARTMENT OF AGRICULTURE

Various Units in the Economic Research Service

Occasionally projections of national farm employment ten or fifteen years in the future (26) are made in the Farm Population Branch, Economic and Statistical Analysis Division. Periodically, estimates are made of potential labor force supply and replacement, in the absence of migration, of rural-farm or all rural males for decades succeeding decennial censuses (27), (28). The Outlook and Projections Branch, of the same Division, occasionally makes projections of farm labor as a part of a comprehensive system of economic projections pertaining to agriculture. The Production Resources Branch, Farm Production Economics Division, at times develops projections of agricultural employment, by hired and family components, for type of farming areas and economic class of farm (usually not published) which are incidental to other work relating to trends in farm production.

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CHAPTER IV

PROJECTION METHODOLOGY

Projections and Forecasts

Official sources of projections frequently warn the user that the projections presented are not "forecasts". When the word "forecast" is used in this manner, the writer usually means an unconditional prophecy or prediction, and since he is well aware of the numerous unforeseen events which could upset his projection, he hastens to warn the user of this danger. The word "projection" is commonly used to distinguish the conditional prediction from the unconditional prediction. We use the word in this sense in this Report.* "Economic life is much too complicated to permit of unconditional forecasts. The best that can be achieved is to form a judgment as to the most probable course of certain variables based upon certain assumptions, both explicit and implicit, concerning their relationships to other determining or explanatory variables. The probable future course of these explanatory variables, however, can also be known only with some margin of uncertainty. All projections, therefore, inevitably include a large element of judgment and--also inevitably--all are subject to some margin of error..."[1/]

In what sense are projections conditional? To answer this question it is useful to distinguish two kinds of conditions. The first relates to a situation which exists at the time the projection is made and is assumed to continue indefinitely or at least to the period of reference of the projection. Thus, this first condition is an assumption implying continuity. It is made in order to avoid the introduction of elements which would necessarily be purely conjectural. For example, the Nation is at peace when the projection is made so we assume peace in the future period to which the projection relates. The assumption is a way of disposing of factors exogenous to the observed system.

The second type of condition, in contrast to the assumption made in the first type, implies discontinuity. This type of condition may be called a specifying condition. For every different condition specified we introduce the possibility of a different projection. When we talk of making projections on the basis of various assumptions, we usually mean changing the specifying conditions. Some users of

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*Note: Despite this distinction, we have called persons who develop projections "forecasters" throughout this Report because of the entirely different common meaning of the word "projector."

projections prefer that there be specified several alternative conditions so that they may observe how each of them would affect the projection, and then choose among them in terms of their own proposed use of the projection. The maker of projections may find the burden of doing this very onerous since specifying many conditions at each stage in a projection process can have an annoying multiplicative effect.

There is no reason for expecting a relationship which is apparent for some past period to hold in the future unless there is some degree of interdependency between the variables. If our projections are to be reasonably accurate the observed relationships of the past must be bolstered by sound theoretical considerations. The art of successful projection requires identification of the framework of relationships among relevant variables, and the drawing of clear distinctions between these on the one hand and of matters of judgment on the other. With respect to observable relationships, it may be said that the efforts and resources devoted to establishing these patterns for the past are precisely what would be needed for projections if we had no interest, per se, in the past. This is because the only scientific basis for making a projection at all is the stability we have observed in a relationship between two or more variables in the past. This same stability enables us to specify the qualifications and assumptions which distinguish the projection from an unconditional forecast of the future.

Projections are always subject to implicit assumptions which are not and cannot be clearly articulated by the author nor fully recognized by the reader. In one report[2] it is assumed "that economic and social patterns will be about the same in 1970 as today." The expression of this assumption in a sentence does not clarify or explicate in detail just what is meant. However, it is unavoidable. Since we cannot fully detail or explain the past, but past data are used in developing projections in one way or another, there is an assumption present of continuity of the past into the future. IT IS DESIRABLE TO WORK TOWARD A REDUCTION IN THE SCOPE OF VAGUE OR IMPLICIT ASSUMPTIONS AND TO THEIR REPLACEMENT BY A STRUCTURE OF EXPLICIT ASSUMPTIONS (see Chapter I, Recommendation # 1).

Explicit assumptions are usually quantitative or quantifiable. The same report assumes that GNP in constant dollars will increase 50 percent from 1960 to 1970, and that national security expenditures will rise somewhat above 1962 levels. These statements actually summarize a number of explicit assumptions which bear a fairly straightforward relationship to the projections, although there may be a great many computations in between. It should be possible then to show the relationship between the projections and a range of growth rates in GNP between say, 45 and 60 percent from 1960 to 1970. In turn, the other explicit assumption on national defense expenditures may be varied and its relationship to the projected number of scientists and

engineers exhibited.

At this point a further classification of explicit assumptions may be attempted. The rate of growth in the entire economy may well be affectedby government policy, but the level of national defense expenditures is much more directly subject to decision making. In fact this assumption may most readily be called a program or policy assumption. Policies are easily altered, and in fact often have been. Future patterns in these policy assumptions are then subject to a degree of uncertainty. Under such circumstances, the policy maker is best served by being given a range of values of the policy assumption and of the related projections.

Obviously, projections of manpower requirements for different occupations may require many complex assumptions concerning how the economic system works and how it will react to variations in the supply of and demand for manpower with specific skills. Nevertheless, some projections are so dominated by one or two considerations that the method used in the projection may be very simple indeed. For example, school enrollment rates for youngsters in grade school are now so close to one hundred percent that projections of grade school enrollments depend almost exclusively on projections of the population of the appropriate age groups. For high school enrollments, the relationship is less direct, although currently projections of the high school population are made by relatively simple extensions of the enrollment rates into the future, applied to population projections. 3/ College enrollments are still more difficult to project, depending as they do so much more heavily on economic as well as demographic considerations.

Clearly, the projection methodology must fit the type of problem at hand. The method used will be related to the assumptions which it seems reasonable to make, the data on past relationships which are available, and the amount of detail and the level of accuracy demanded by the problem at hand. After reviewing a number of projections now being made for various purposes, the Working Group was convinced that no single method is so much to be preferred that it could be recommended as <u>the</u> method by which projections should be constructed.

There are four basic elements of the projection process. Any projection must contain these elements, although sometimes very little attention may be explicitly paid to one or more of them. The Working Group believes that making these elements more explicit and considering improvements which may be made in each will serve to improve the quality of many of the projections now being made. The four elements are:

1) Specifying the conceptual framework

2) Identifying changing relationships

3) Assuming the movement of independent variables in the future

4) Developing the relevant data or proxy variables.

Specifying the Conceptual Framework

Every projection must have a conceptual framework, no matter how simple. Broadly speaking, the model is a theory or concept of the relevant factors affecting the variable to be projected and how such relevant factors work. More sophisticated (mathematically speaking) models may be stated in the form of equations which express how the system works, which therefore form the mechanism by which the projection is produced once the appropriate conditions are specified. But less mathematically developed projections also rely on models, whether these are explicitly stated or not.

Formal mathematical models have the advantage of requiring complete specification of the system. Rigorous detailing of assumptions is essential; inconsistencies and omissions are more likely to be evident. On the other hand, the real-life situation may be so complex that the building of a mathematical model with sufficient variables may be deemed to be too onerous an undertaking in view of the anticipated uses of the projection. Furthermore, formal models are severely limited by the lack of suitable data. They frequently, therefore, must rely on gross data and neglect relevant variables for which information is lacking.

Without spending the time to develop a complete mathematical model, it is possible to make projections on a more largely "judgmental" basis which take account of the available data and state of knowledge, and possibly to develop one part of the system to a much more elaborate extent than other parts. The quality of the resulting projections will nevertheless depend on the quality and relevancy of the underlying conceptual framework. The more "judgmental" models frequently risk over-simplified or inconsistent assumptions.

All of the techniques used in projection work represent a mixture of judgment and quantitative methods. Quantitative methods as such are rarely used exclusively since the end results are always examined critically, and altered if deemed advisable, usually by changing some aspect of the quantitative method used. For example, if a time trend is used, a linear trend may be replaced by a curvilinear one, if the change over time appears to be too rapid (or too slow).

Most projection methods are quite simple and rely heavily upon assumptions of stability in certain ratios. This is particularly true when these projections are tied to available projections of the population by age and sex, as in the school enrollment projections already described. When certain levels of expenditures are assumed, say for particular

government programs, the ratios projected may be manpower per dollar. It is usually assumed that ratios of this kind are stable enough, or change slowly and smoothly, so that they may be extrapolated into the future with some degree of confidence.

As far as this Working Group can discover, more elaborate mathematical occupational projections than those discussed above have been developed to only a limited extent. It is too early to evaluate the results of such techniques, but this work needs to be pursued much more than it has been in the past. This is consistent with the development of projection models, rather than of projections as such, and relies heavily upon the programing of such models for computers, so that specific projections may be developed quickly as needed.

In these circumstances, the Working Group has not recommended wholesale adoption of one or another projection technique. IT DOES HOWEVER, RECOMMEND THAT MORE ATTENTION BE PAID TO THE CONCEPTUAL FRAMEWORK AND THE BASIC ASSUMPTIONS ON WHICH IT IS FORMED (see Chapter I, Recommendations # 1-4). IT FURTHERMORE BELIEVES THAT WORK ON MORE FORMAL MATHEMATICAL MODELS SHOULD BE EXPANDED TO ASSIST IN ASSESSING THE CONCEPTUAL FRAMEWORKS USED IN THE MORE LARGELY "JUDGMENTAL" MODELS, AND TO POINT THE WAY TO GAPS IN THEORY OR INFORMATION (see Chapter I, Recommendations # 5, 7).

Significant Variables.

In any projection, the validity of the projection will depend on being able to isolate the major variables which are strongly associated, if not causally linked with the subject being forecast. Empirically determined associations should be supported by theoretical relationships, where possible, since variables can easily seem to have effects that are in reality caused by other factors. If significant variables are omitted, or if the model is not designed to test the real policy issues, erroneous conclusions are likely.

Manpower demand projections can be developed for many different categories. They can reflect requirements on the basis of current utilization patterns of employers; they can forecast what employment will actually be in the target year; or, they can illustrate the number of persons needed to meet a particular goal. Even when the objective of the projection is clearly defined, such as to provide information for the development of education and training programs, there are many alternatives open. For example, projections prepared for those developing education and training programs could be in terms of the level of education of persons currently working in the occupation, the minimum level of education that employers would accept, or the education level the employer would like to have. In the same way, estimates of future training needs could be made for specific detailed occupations such as turret lathe operator, for a job family such as machining occupations, or for an even broader group such as factory workers. Similarly, estimates could be made in terms of the worker's entry job, or his ultimate occupational goal, or might even

eliminate the occupational classification entirely and be made for the educational level needed to equip an individual for the beginning job in a job family.

The conceptual framework for a projection, it is evident, must be directed toward the policy issue or problem to be solved. This prescription is most difficult to follow in the case of widely used, general purpose projections. But whether the issue is broad or narrow, immediate or distant, the design of an appropriate conceptual framework for the projection requires considerable and continuing communication between those making projections and the users, whether these are policy-making officials within the Government or members of the public.

Incomplete Models.

The risk of not completely specifying a model can be seen in the projections of the number of M.D.s needed in medical research. In the past few years the supply of Ph.D.s going into the field of medical research has been large and growing in proportion to the number of M.D.s. In the projections this change has been treated as a result of changes in demand. With limited supplies of M.D.s, the changes could just as easily, and perhaps with more justification, have been treated as a supply constraint problem. A forecast of the number of doctors who will go into this field should consider these two possibilities and try to determine if either is dominant or if some mixture of the two has to be used.

Positive vs. Normative Projections.

Manpower projections generally are intended to show what the world is likely to be like under given conditions in a future period. Occasionally, manpower projections are intended to show what the world ought to look like in this respect in the same period. The former may be called a positive projection and the latter a normative one.

An illustration of a normative manpower projection is contained in Physicians for a Growing America. [4] The Surgeon General put this question to the Consultant Group: How shall the Nation be supplied with adequate numbers of well-qualified physicians? The Group chose the 1959 ratio of physicians to population as representing a minimum ratio essential for protecting the health of the American people. The Group did not find that this ratio would continue to 1975 but rather that it should. To maintain this ratio in 1975, the Group calculated that an output of 11,000 graduates was necessary in that year. To provide this number in 1975 would require 12,000 admissions in 1971. The Group then made recommendations regarding the facilities needed to support the required number of physicians. The projected number of physicians represents a goal, a result to be sought, rather than a necessary consequence that would flow from developments in the projection period.

There would appear to be no substantial reason for denying to a normative projection the use of the term "projection" because, after all, its purpose is to illuminate the future. However, these are different kinds of projections and, consequently, proper precautions should be taken by the forecaster to make clear to the user which of these projections he is dealing with. If both positive and normative projections are put in the same document, there should be no ambiguity in the user's ability to recognize when he has moved from one kind of projection to the other.

Other Model-Building Problems.

Models which serve some purposes reasonably well may be inappropriate for other purposes. A model based on the continuation of past trends may include in the model itself certain presumptions about the future which may not be explicitly recognized. For example, labor force participation rates may be affected by the state of the job market. Rates calculated for periods when the labor supply was ample may require some adjustment if they are to be projected on a full-employment hypothesis.

Projections which are significantly affected by Government policy are difficult to use. It is frequently assumed that projections can be made on the assumption that no change in policy will be made, and then such projections can be compared with those based on a variety of program changes. In many cases, the "no-change" projection is in reality based on past relationships which reflect a succession of policy changes.

The problems of specifying the model or the conceptual framework are ostensibly avoided when the forecaster does not attempt to make his own projection, but instead summarizes individual forecasts made by a large group. This system has been employed only for relatively short-range projections as far as the Working Group is aware. It is the method underlying local area estimates of manpower requirements prepared by the State Employment Security agencies following guidelines established by the Bureau of Employment Security. The Working Group noted the difficulties in combining forecasts made by a large number of employers, possibly deriving from inconsistent assumptions, and probably not completely covering the local economy (in the sense that no present employer is forecasting for new employers who may start operating in the future). In fact, there is an implicit conceptual framework underlying such projections which requires continual examination and evaluation as in any other type of projection. The danger is to presume the quality of the summary projection because of the intimate knowledge of the persons responsible for contributing the individual pieces. THE WORKING GROUP BELIEVES SUCH DETAILED PROJECTIONS SHOULD BE TIED IN WITH OVERALL ECONOMIC MODELS, WHERE POSSIBLE (see Chapter I, Recommendation # 3).

In the manpower area, models are usually prepared either of labor supply or of manpower requirements. For some purposes, projections which take into account the interactions between supply and demand would be most desirable. Such projections are most difficult and have seldom been attempted. Furthermore, the interactions of supply and demand are frequently neglected in interpreting the separate supply and demand projections for policy use.

This point is illustrated by the statement by some forecasters that a projected surplus or shortage will never, in fact, materialize because accommodations to the projected imbalance would be made. For example, in the case of a projected surplus of secondary school teachers, the surplus would not emerge because the persons concerned would turn to primary schools to meet a projected shortage there. In the case of a projected shortage of primary school teachers, the shortage would be frustrated by an increase in uncertificated personnel, in the ratio of students to teachers, etc. Or, in case of a projection of engineers which indicated a probable deficiency of supply to meet demand, accommodations might be made by employers in utilizing their work force differently (e.g., by using more technicians) or more people might be attracted to the profession as a result of favorable opportunities. Ideally, the methodology of a projected result should have built into it the interactions between demand and supply that are likely to occur as the emerging situation develops over the course of the projection period. The projected result would thus include rather than exclude these interactions.

Problems such as these have no easy answers. THE WORKING GROUP FELT THAT AT A MINIMUM, USERS SHOULD BE PROVIDED WITH AS MUCH INFORMATION AS POSSIBLE ON THE ASSUMPTIONS EMPLOYED IN THE MODEL AND THE IMPLICATIONS FOR USERS OF THE PROJECTIONS (see Chapter I, Recommendation # 1).

Identifying Changing Relationships

In mathematical terms, the equations which comprise the model describe the functional relationships of the variables, and the parameters of the equations establish the specific relationships, generally based on past experience. In this sense, the model itself establishes the relationships. Nevertheless, looking forward means that errors may develop since the relationships originally specified can change with time in unanticipated ways. For this reason, identifying changing relationships is listed as a separate consideration in the art of making projections.

Ideally, dynamic models would provide for changing relationships. In practice, most projections in the manpower area are based on many assumptions of simple stable relationships. Errors are especially likely to occur when the projection is made using simple trend factors without

trying to go back to more basic variables. Obviously, a forecaster cannot prove that relationships which have been stable in the past will remain so in the future. He should, however, indicate the basis for his judgment that the relationship will hold.

In developing such an argument, the Working Group felt that more effort should be devoted to showing that the relationships on which the model is based have in fact been stable in the past. If the relationships have not been stable in the past, there is little reason to assume that they will become stable in the future. Models which appear to be unstable in their relationships may have ignored relevant variables, or have specified inappropriate relationships among the variables present. If no improvements may be thought of in these models, they should be used with particular caution because of this instability. In our review of projections, we found that little attention had been paid to formal demonstrations that the method used would have given good predictions using past data. In part, this is the result of the sporadic, usually brief, experience in making projections; in part, it derives from inadequate staff and resources to make such demonstrations. SUCH REVIEWS SHOULD BE A REGULAR PART OF ANY PROGRAM FOR PERIODICALLY UPDATING PROJECTIONS (see Chapter I, Recommendation # 8).

Assuming the Movement of Independent Variables

Assuming the future course of independent variables is a critical part of any projection. The assumptions must be reasonable and must relate to the issues at hand, to the purposes for which the projections are being made. Because these assumptions are so intimately related to the model being used, the type of projection, and the problems to be solved, the Working Group has not listed specific recommendations on this point.

One issue did occupy some attention, however. That was the difficult problem of protecting the forecasters from undue pressures from without, whether from policy-making officials within the agency, or indirect pressures from users or other members of the public. This is a difficult issue. In order to make imaginative and useful projections, the forecasters must maintain close communication with policy officials and be responsive to policy problems. On the other hand, if their projections are dominated too much by policy considerations, if they are forced into a strait-jacket contrary to the best judgment of the projectors, less than adequate work will result. Such pressures are likely to operate in relation to the assumptions for extending independent variables into the future (for example, specifying an unemployment rate or a productivity rate which must be assumed over the succeeding decade). DEVELOPMENT OF ALTERNATIVE PROJECTIONS PROVIDES ONE SOLUTION AND THE DEVELOPMENT OF MINIMUM STANDARDS ANOTHER. BEYOND THAT, THE WORKING GROUP RECOMMENDS TECHNICAL INTERAGENCY REVIEW AS A MEANS OF ENCOURAGING OBJECTIVE STANDARDS (see Chapter I, Recommendation # 10a).

Developing the Relevant Data

Availability of information is a limiting factor in the development of projections. Information may not exist in sufficient detail, for sufficiently long time periods, or with sufficient accuracy, to meet the demands of the model. Or the series required for the model may not exist at all. In these circumstances, the forecaster is forced to develop some type of "proxy" variable which can substitute for the more desirable series; or to develop his projection on a more aggregative basis; or to revise his model. Since projections of occupational manpower are fairly recent developments, pressures for the provision of suitable statistical series are not of long standing and many gaps are apparent.

Less obvious, but perhaps equally important, the lack of information affects the general type of models developed in more subtle ways. For example, many micro-models depend on estimates of rates of change. There is an almost complete lack of information on flows of manpower, as opposed to cross-sectional categorizations, and this situation has important effects on the kinds of models which it is feasible to construct. The Working Group found that the development of additional appropriate information was one of the most significant methods whereby manpower projections might be improved in the long run. The kinds of information needed are described more particularly in the next Chapter.

Footnotes

1/ United Nations Economic and Social Council. World Economic Situation: Evaluation of long-term economic projections. A preliminary report by the Secretary-General, Thirtieth Session. 23 June 1960. Page 1.

2/ Scientists, Engineers and Technicians in the 1960's, NSF, 1963.

3/ Projections of Educational Statistics to 1973-74, 1964 edition, Office of Education, OE 10030, Chapter I.

4/ Report of the Surgeon General's Consultant Group on Medical Education, Physicians for a Growing America, Public Health Service, Public Health Service Publication No. 709, October 1959, U. S. Department of Health, Education, and Welfare, Washington, United States Government Printing Office, 1959, p. 12.

CHAPTER V

SOME SPECIFIC PROBLEMS

Some general considerations in the development of projections were discussed in the preceding Chapter. Little of this discussion was new; rather, the Working Group felt that these considerations required restatement as background for a discussion of a number of specific problems which appeared of the most immediate importance in any general attempt to upgrade the quality of the manpower projection work now going on in the various agencies of the Federal Government. In this Chapter, these specific problems will be briefly enumerated.

Specifying the Model

Enough has been said in Chapter IV to underline the importance of specifying the model and its implications for the benefit of the variety of users who will make use of the projections. The Working Group returned to this point again and again, frequently in the guise of recommendations for stating as explicitly as possible the "assumptions on which the projection is based." In this connection, it was observed that if the model is specified and presented in enough detail the user himself can change the assumptions and see what difference this makes. Such a procedure is especially important because most of our projections are not regularly revised at periodic intervals. As time passes, the user may very well want to change the assumptions about the time path of the independent variables. Furthermore, there is no reason to assume that all users want to use the most likely assumptions; some may want to minimize risk in particular directions.

The Working Group noted that it is not only the unwary "man in the street" who may misuse a projection because he does not comprehend the implicit assumptions on which it is based. Under pressures of time and limited facilities to prepare more appropriate estimates, projections prepared for one purpose may be applied to another in order to provide policymakers with urgently needed guidance, or may be combined with other projections based on inconsistent assumptions in order to fill in gaps. Explicit specification of the model will help in guarding against misuses arising from such circumstances.

Alternate Projections

A fully developed projection model, programed for the computer, provides a means whereby specific projections on a variety of assumptions can be developed quickly as needed. There is no such model now in existence for occupational manpower projections of which the Working Group is aware, although the Economic Growth Study at the Bureau of Labor Statistics may form the basis for such a model at some time in the future.

As an interim goal, short of having a convenient projection mechanism at hand, we might well seek the development of sets of alternate projections. Apart from the Census Bureau work in this area (population, households, educational attainment) other Government agencies do not, as a rule, prepare and present alternate projections to reflect either different assumptions, or an element of uncertainty associated with a single set of assumptions. The development of multiple projections does not preclude the selection of one of them as the most reasonable in the judgment of those concerned.

One point which has been made by a number of forecasters is that if there are several explicit assumptions, and alternate versions of each are considered, the number of possible combinations of assumptions and of projections builds up quickly to an unmanageable level. In part, this argument assumes that assumptions are independent of each other and that the development of alternate versions of each assumption somehow makes them equally important or likely. Upon some reflection, it will be readily seen that not all assumptions are independent of each other and that they are not equally likely within the context of historical and analytical perspective.

By selecting a few alternative sets of consistent assumptions, the forecaster can provide the user with a choice of projections from which he may select the most appropriate for his purpose. By presenting alternative projections based on somewhat different assumptions about the variables in the model, the forecaster is also able to give some indication of the sensitivity of the final estimate to changes in the assumptions about the independent variables. THE WORKING GROUP CONCLUDES THAT THE LACK OF ALTERNATE PROJECTIONS IS A SHORTCOMING OF MOST WORK IN MANPOWER FORECASTING (see Chapter I, Recommendation # 2).

Estimates of Error

All projections are subject to error. The forecaster should make every effort to minimize the mistaken decisions that will occur because of these errors. Users (and too many forecasters) evidently do not like to be reminded that errors occur, but they should be forced to recognize that they are operating in a world of risk if not uncertainty. To operate in a realm of risk where probable errors are known is not always pleasant, but to operate in a realm of uncertainty where neither the magnitude nor the probability of errors is known is far worse. Unfortunately, many projections are presented with little reference to the range of error.

The Working Group grants that the estimation of errors for complicated projections using statistics, many of which have not had errors of estimate calculated even for past periods, is a difficult task. Nevertheless, we believe a start should be made, and at least rough orders of magnitude calculated. The forecaster should be under a strong compulsion to provide all of the information about errors that it is possible to give.

One method of doing this is to provide a range of estimates for a single set of assumptions. It is undoubtedly difficult for some economists, sociologists and demographers to understand that a range of projections (rather than single values) can arise from a single set of assumptions. This range is a consequence of the fact that the historical basis for the projections is usually one of imperfect statistical associations among a limited number of variables. The imperfections of historical relationships are reflected to some extent in the measured standard errors. When these historical relationships are projected into the future, it is reasonable to expect these basic measures of uncertainty (standard errors) to increase in size, thus generating the range of values of the projections. However, there appears to be some opposition to the development and presentation of such measures of uncertainty, possibly because few projections are entirely statistical, but incorporate various elements of judgment. Nevertheless economists have developed judgmental estimates of standard errors of such judgment-based estimates as national income and product account components. ESTIMATES OF ERROR SHOULD ALSO BE ATTEMPTED FOR MANPOWER PROJECTIONS (see Chapter I, Recommendations # 6, 8).

Conservative Bias

Forecasters rarely go out on a limb, i.e., they rarely project marked changes from present patterns (except, of course, in levels of activity) unless there is virtually no uncertainty at all in the projections. Thus, sharp increases in the 18-year old population group were projected for the mid-sixties as a consequence of the known sharp increases in births after World War II. Since age specific mortality rates are quite stable, these projections were subject to very little uncertainty. This is the exception. In general practice, rapid changes experienced in the past in certain ratios are not extrapolated into the future at the same pace but are leveled off to some extent. There is a conservative bias to many projections as a result and consequent under- or over-estimate of future trends. Conservative trends are more readily accepted and defended at the time they are made and represent the easier course of action. A superior basis and defense for projections might be developed if manpower projections were made at regular intervals and checked against experience. The literature is almost completely lacking in analyses of this kind. THE WORKING GROUP BELIEVES THAT SYSTEMATIC CHECKS OF ESTIMATES AGAINST EXPERIENCE SHOULD BE UNDERTAKEN AS PART OF ANY SIGNIFICANT PROGRAM OF PROJECTIONS (see Chapter I, Recommendations # 4, 7).

Cyclical Influences

Manpower projections are trend projections, and business cycle and seasonal influences are ignored. This requires that these influences be removed from historical data before the latter can be used for projection purposes. This aspect of historical analysis needs further

exploration in projection work. Better understanding of the inter-relationships between trend and cycle in the past will lead to improved trend projections.

Data Needs

Perhaps the greatest and most urgent data need is for continuing information on current employment in individual occupations. The lack of such data has been recognized for some time. The report of the President's Committee to Appraise Employment and Unemployment Statistics (Gordon Committee) for example, said:

> "Except in a general way, we know relatively little about current changes in the number of workers employed in each important occupation and in the occupational structure of industry as a whole....
>
> "Data on the numbers employed and trends in employment for specific occupations can provide a basis for estimating future occupational requirements and job opportunities and thus greatly aid in planning educational and training programs and in vocational counseling."

Another major need is for data on the occupational mobility of workers. Very little information is available on the number of workers who leave particular occupations each year and the occupations to which they move. For many occupations, the number of separations resulting from occupational mobility may be as important in estimating total training needs as job openings created by growth of an occupation, or by retirements and deaths. To understand fully the significance of the effects of occupational mobility for estimating future manpower requirements and supply, information is needed on the reasons why persons change occupations; on transferability between occupations; on the hierarchy of the job structure of various groups; and on the level and types of withdrawals from and returns to the labor force of experienced workers in particular occupations.

Additional information is also needed on death and retirement losses. The work which has been done in developing techniques for measuring these losses utilizes tables of working life for men and women separately, and applies these rates to age distributions of a particular occupation to provide an indication of the number of persons who will be leaving because of attrition. However, information is lacking on death and retirement rates by occupation. Recent social security information has shown that individual occupational groups apparently have different retirement patterns and data on these retirement patterns are needed to help in estimating attrition.

Although some information is currently available on institutional training activities for specific fields under some types of programs, little or no data are available for many others. Information needs include the number of persons who are completing training by type of training; the characteristics of those entering and completing training; and the length and quality of training. Similar information on the amount of training being done in industry is also of utmost importance.

Additional information is also needed concerning the effectiveness of these education and training programs, including data on the proportion of persons completing particular educational or training programs who actually enter the occupations for which they receive training. For those who do not enter the field for which they are trained, information is lacking on the factors which prevent them from entering and on the fields in which they actually do find employment. For those who enter a field after long periods of training, little data are available on the number who leave after employment of relatively short duration. Despite the fact that a number of follow-up studies of graduates of training programs are available--for example, for graduates of trade and industrial programs in public vocational and technical high schools in some geographic areas, and for recent college graduates--other follow-up studies need to be undertaken to provide reliable and comprehensive information on the effectiveness of education and training programs as a source of supply in individual occupational fields.

Similarly, more research is needed on the many persons who enter an occupation without specific training for that occupation, including information on how these workers actually acquired their skills. With the exception of those fields requiring a college education or other formal training, data on how workers in the United States qualify for their jobs are fragmentary. Even in the fields where recognized methods of entry exist, large numbers of persons are able to qualify through other avenues.

Perhaps two of the most important factors to be considered in developing manpower projections are the impact of defense spending and of automation and other technological developments on manpower requirements. More information is particularly needed on the effect on manpower requirements of specific technological developments, the rapidity with which these are introduced, or the speed with which they spread throughout an industry. In developing projections of employment by industry, considerably more data are also needed on trends in output per man hour in individual industries.

In analyzing labor force participation rates, and projecting the size of the labor force, additional information needs to be obtained about the large number of persons who have marginal attachment to the labor force, that is, who move in and out of the labor force frequently. For example, in a recent year 6 million more persons were in the civilian labor force sometime during the year than in any single month. More

information should be obtained on the characteristics and occupations of these people and on the nature of their job market participation. Similarly, more needs to be known about the significance of multiple job holders in assessing future manpower supply. Another information gap in developing estimates of supply is the whole problem of the effect of wage rates on occupational choice and job changing.

This illustrative listing of gaps in data needed to improve manpower projections provides only an indication of the scale of the work needed. These informational shortcomings prevent the fullest and most effective utilization of the remaining data, since they represent important links in the chain of projection inputs. A PROGRAM SHOULD BE DEVELOPED FOR OBTAINING ADDITIONAL STATISTICS COVERING THESE AND OTHER PROBLEM AREAS WHICH WOULD AID MATERIALLY IN IMPROVING MANPOWER PROJECTIONS (see Chapter I, Recommendation # 9).

Problems of Publication

PUBLICATION OF PROJECTIONS WITH TABLES AND ATTENDING EXPLANATORY TEXT DESERVE CLOSER SCRUTINY (see Chapter I, Recommendations # 1, 6, 8). As government documents in general circulation, they are serious efforts. Consequently in order not to mislead, they should be as specific as possible in the statement of the assumptions and the method of projection. Each projection should be accompanied by a statement of the forecaster's views of the purposes and proper uses of the projection and some indication of those he believes would be improper. Projections are frequently used for purposes other than those for which they were intended, and sometimes this results in a projection being criticized for not being responsive to a policy question or for providing misleading information. The producers of projections cannot always anticipate the purposes for which they will be used, but they have a responsibility to clarify the nature of the projections and the assumptions on which they are based, so that users will be warned against inappropriate use.

There may be a publication intended for a wide nontechnical audience which presents tables, charts and some explanation. Publication of the associated technical material and explanation need not be within the same document. There should always be another document which presents sufficiently comprehensive detail for the technicians to follow. This approach has rarely been followed in the past.

As a part of such a technical document there should be ample discussion of the possible errors present, measures of uncertainty both for historical data and for the projected period. Effects of variations in the assumptions upon the projections should be presented. There should, in particular, be some discussion about missing basic data such as inter-occupational mobility measures, since these have such a crucial impact upon training requirements. In this case, there are only imperfect or fragmentary estimates available, which cannot be used as good and

reliable estimates, but which introduce, instead, a large measure of uncertainty into subsequent estimates. Attempts should be made to quantify this uncertainty in terms of a range of estimates, so that their effect on the projections may be gauged. Suppressing these measures of uncertainty and making projections look more definite than they really are can only mislead the policy maker and perhaps the technician himself.

CHAPTER VI

EVALUATION OF PROJECTIONS

Evaluation of manpower projections by objective standards is difficult. Unexpected events which the forecaster could not be expected to anticipate are likely to occur. Furthermore, the projections themselves may influence events to such an extent that the forecast becomes "self-defeating", as when a projection of a shortage of qualified workers leads to the establishment of more adequate training facilities, additional workers are trained and no shortage develops.

THE WORKING GROUP CONSIDERED SOME OF THESE DIFFICULTIES IN EVALUATING PROJECTIONS, BUT NEVERTHELESS CONCLUDED THAT FOR ANY SERIOUS AND CONTINUING ATTEMPT TO PREPARE MANPOWER PROJECTIONS A PROGRAM OF EVALUATION OF THE PROJECTIONS IS AN ESSENTIAL ELEMENT (SEE CHAPTER I, RECOMMENDATION #7). Such a continuing study, incorporated as an integral part of the projection program, would be far more helpful in suggesting ways for improving methodology, than the occasional review by outside committees.

An evaluation program would also give explicit recognition to the question of the degree of reliability which is needed in the projections in comparison with the cost and difficulty of obtaining such reliability. For different purposes, very different levels of reliability are acceptable. In some cases, merely the most likely direction of change may suffice. For others, fairly exact estimates of requirements or supply may be required. Some projections must be made for much longer periods than others. All such considerations must be kept clearly in mind in a program of evaluation.

It is, of course, possible simply to evaluate the internal consistency of a projection and the reasonableness of the assumptions used. In addition, evaluation of manpower projections should include statistical tests of the reasonableness and the reliability of the data. In some cases it is possible to project backward and to compare with actual data in order to determine how accurate the projections might have been if they had been made using the relationships projected for future periods. The projection method can be tested for stability by applying it to separate subperiods of the past, and deriving projections from each of these subperiods. In other cases, projections can be evaluated by comparison with experience that has occurred since the time of the projection. If a projection has been made for a considerable period in the future, it is possible to evaluate the data for short-run periods based on a comparison of projected long-term trends and the actual short-term variation in the subject under study.

A severe limitation is placed upon the ability to evaluate projections because unexpected events occur, which may change the direction of the projections. Even if it were possible to anticipate the immediate effects of these unexpected events, it would almost certainly be impossible to anticipate their secondary effects. As an illustration of this problem, population projections prior to the mid-1940's almost invariably were based upon an assumption that the birth rate would continue its long-term decline and that the population would reach a peak level at about 1970 or 2000 and would remain at that level or perhaps even decline. World War II and its after effects could not have been foreseen by persons preparing such projections in the late 1930's.

Projections of manpower needs have been evaluated from time to time but seldom systematically. It is always easy to find reasons for differences between actual data and earlier projections. Of course, some of the discrepancies may result from errors in the basic data, either past or present, and errors in the projection method. It would be highly desirable to evaluate the specific reasons for such discrepancies when assessments are made of projected trends.

Other problems that exist in the evaluation of manpower projections are the result of changing composition of the duties and functions which are summarized under an occupational title, which may be far too broad for any meaningful assessment of trends. The duties and requirements of some occupations may change so rapidly within a short period of time that it is meaningless to prepare projections for these occupations. In such cases, a more desirable approach, if possible, would be to project requirements for a family of related occupations. An evaluation program could point up such cases, possibly recommending discontinuance of series too weak or erratic to be useful.

One difficulty is the lack of understanding of the dynamics of manpower supply-demand relationships. For example, what is the significance of a projection of requirements which indicates that demand for a particular occupation or occupational group will exceed the supply expected to be available? Will information regarding the apparent short supply result in more people entering the field or being trained? Or will it result in a change in occupational duties and requirements? A realistic evaluation of the accuracy and validity of the original projection is extremely difficult, since the very purpose of the projection is to point out the possible future imbalances in order to remedy them. A projection which clearly pinpoints a potential supply-demand problem may hopefully be said to be a "self-defeating" forecast in that it will result in an adjustment of this "undesirable" situation.

The specific needs for projections of occupational trends often determine the required degree of accuracy. For example, projections of manpower needs required under the Manpower Development and Training Act and under the Vocational Education Act must necessarily be based on short-term projections since the training period is usually very short and the estimate of need for trained persons in the given occupation is relevant only for a short period of time. The difficulties of all short-term manpower projections are compounded in this case because requirements must be determined for the geographic area in which training will take place, and errors in judgment will not be balanced out by compensating variations in other areas of the country.

Manpower projections, if possible, should include a procedure for systematically assessing whether, and to what extent, they are being utilized for the purposes for which they were designed. For projections which are published for a wide audience, efforts should be made from time to time to solicit user reaction in order to judge whether these projections appear to serve the needs of this wider audience. Such evaluations of projections should be pursued even though admittedly difficult. For example, the occupational outlook research program of the Department of Labor is intended to guide the career decisions of young people. It would be desirable to determine the extent to which this program is being used for this purpose, to estimate the number of persons attracted into given occupations and industries as a result. In practice, of course, this is hardly feasible since this program is only one of the factors present which may influence decisions on the part of people seeking a vocation. Short of this goal, the Bureau of Labor Statistics investigates the extent the Handbook is used by guidance counsellors and others, how many copies are sold or distributed, and occasionally solicits user reaction to see in what way this Handbook serves their needs and in what way it falls short.

A fundamental requirement in the art of projection is the study of internal consistency with other current and projected data on occupational requirements. Frequently, more than one agency will prepare similar projections in order to provide a framework for an authorized program. At the present time, no formal and very little informal examination for consistency is undertaken. Both the Office of Education and the Bureau of the Census have prepared projections of school enrollment, for example, but for different purposes and using different methodology and different concepts. The Office of Education and the Bureau of Labor Statistics both project requirements for school teachers, each using definitions to fit its own program needs. Similarly, the Social Security Administration and the Bureau of the Census prepare projections of the population. Labor force projections are prepared by the Social Security Administration as well as the Bureau of Labor Statistics but each projection is designed for specific purposes within each agency.

Discussion of the reasons for inconsistencies between projections of various kinds clearly calls for the creation of a group of persons with at least advisory authority to evaluate critically the various types of projections which can and have been made. This purpose could be achieved by a continuing small committee, by a centrally located staff or possibly by informal interbureau or interdepartmental exchanges. THE WORKING GROUP RECOGNIZES THE NEED FOR ORGANIZATIONAL ARRANGEMENTS TO EVALUATE AND COORDINATE AND PROMOTE THE CONSISTENCY OF PROJECTIONS IN THE MANPOWER FIELD (see Chapter I, Recommendations #10-12). SUCH A COORDINATING REVIEW AND GUIDANCE PROCEDURE SHOULD BE IN ADDITION TO, RATHER THAN IN PLACE OF, EVALUATION ACTIVITIES CARRIED ON BY EACH GROUP OF ITS OWN WORK.

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WHERE TO GET MORE INFORMATION

Copies of this publication or additional information on manpower programs and activities may be obtained from the U.S. Department of Labor's Manpower Administration in Washington, D. C. Publications on manpower are also available from the Department's Regional Information Offices at the addresses listed below.

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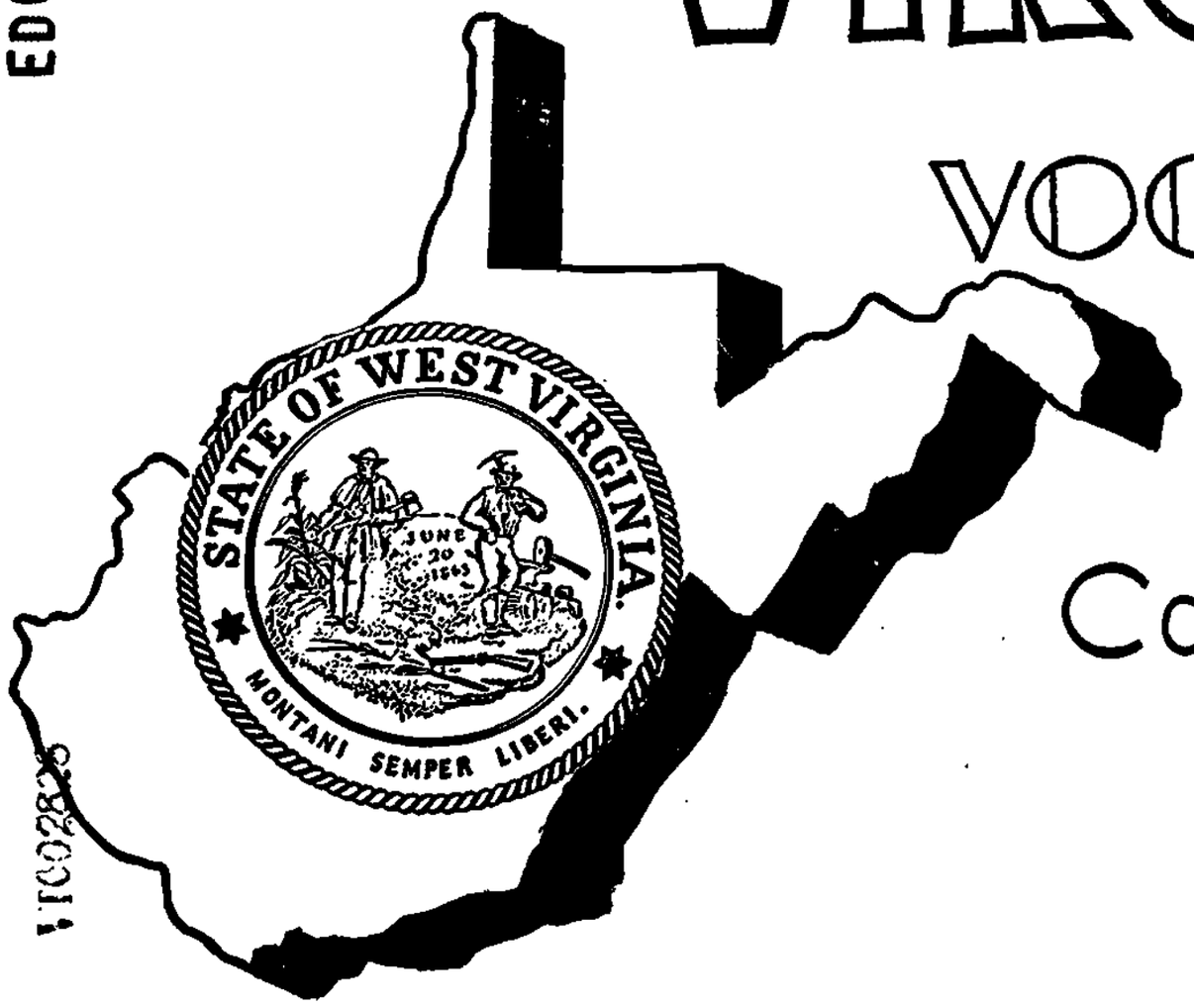

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U.S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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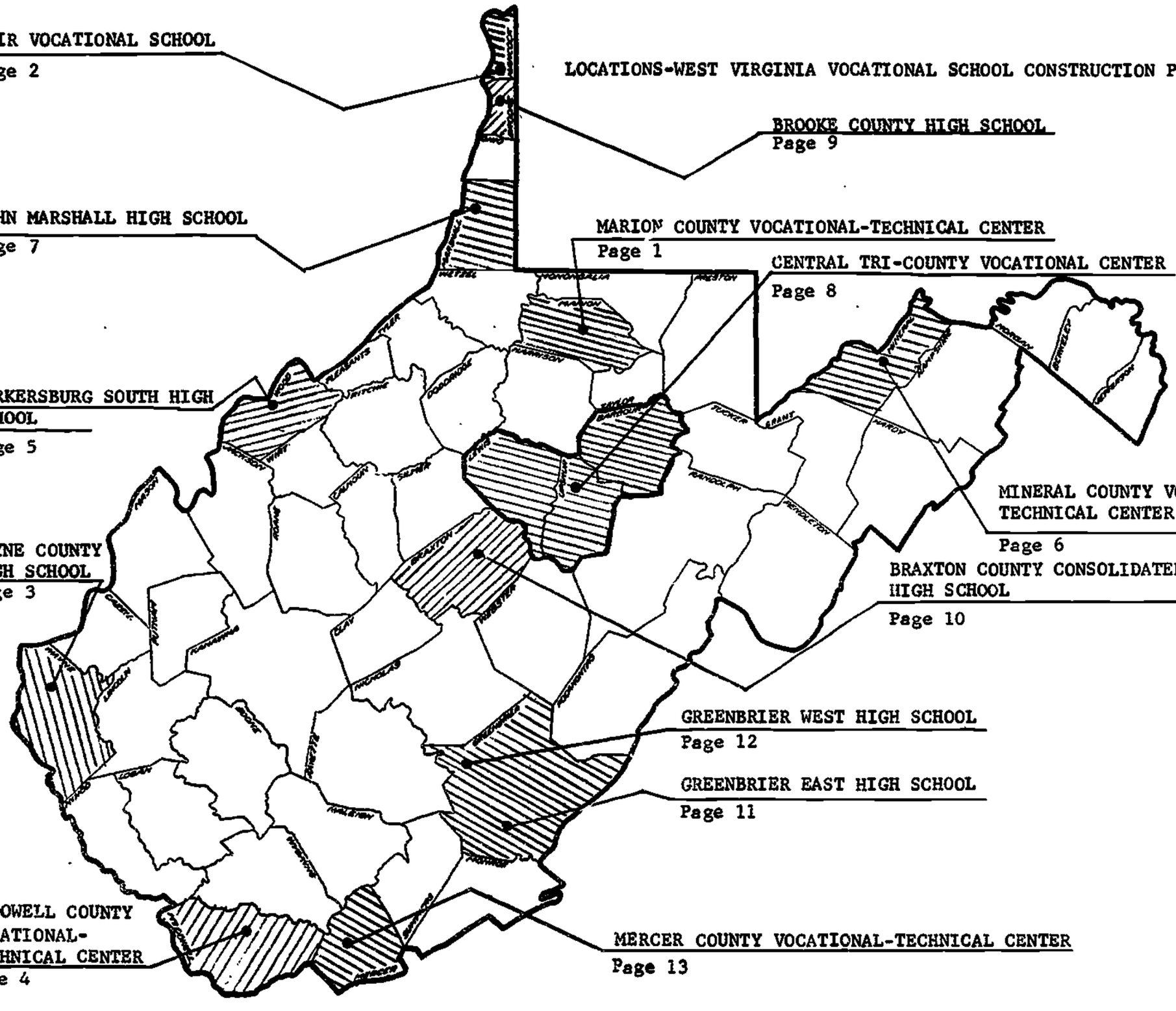
OCTOBER 1967

LOCATIONS-WEST VIRGINIA VOCATIONAL SCHOOL CONSTRUCTION PROGRAM



WEIR VOCATIONAL SCHOOL
Page 2

BROOKE COUNTY HIGH SCHOOL
Page 9

JOHN MARSHALL HIGH SCHOOL
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MARION COUNTY VOCATIONAL-TECHNICAL CENTER
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CENTRAL TRI-COUNTY VOCATIONAL CENTER
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PARKERSBURG SOUTH HIGH SCHOOL
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MINERAL COUNTY VOCATIONAL-TECHNICAL CENTER
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WAYNE COUNTY HIGH SCHOOL
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BRAXTON COUNTY CONSOLIDATED HIGH SCHOOL
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GREENBRIER WEST HIGH SCHOOL
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GREENBRIER EAST HIGH SCHOOL
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McDOWELL COUNTY VOCATIONAL-TECHNICAL CENTER
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MERCER COUNTY VOCATIONAL-TECHNICAL CENTER
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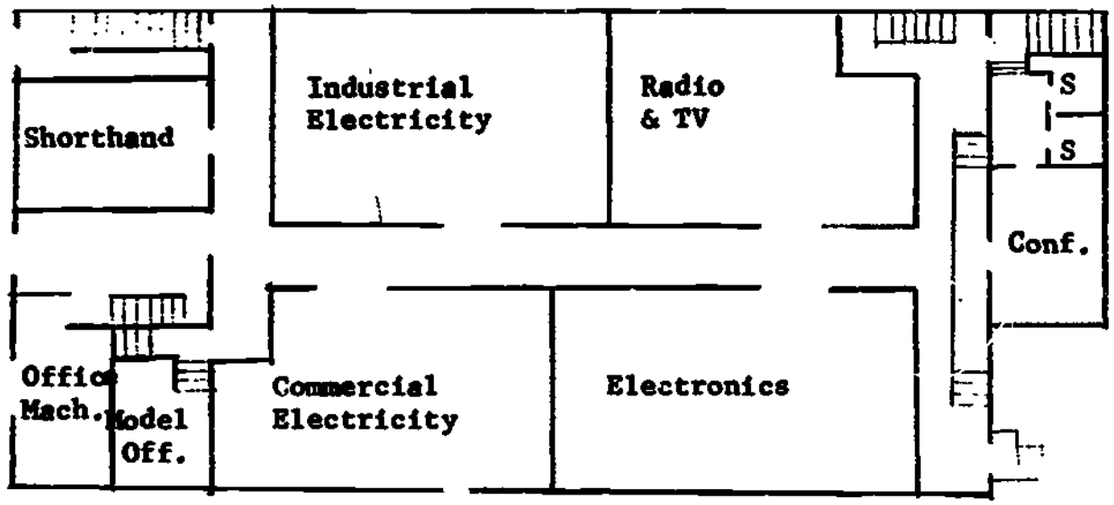
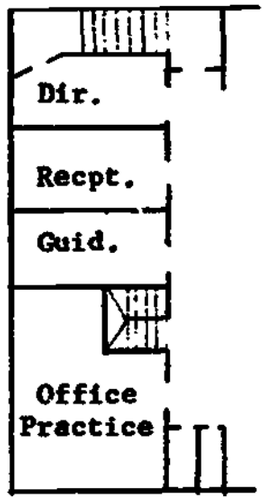
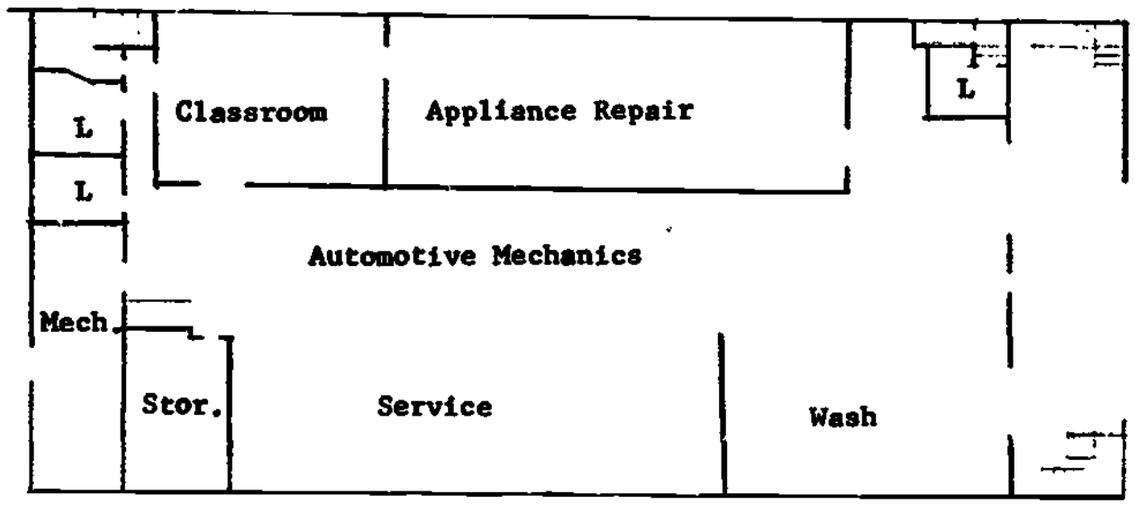
MARION COUNTY VOCATIONAL CENTER



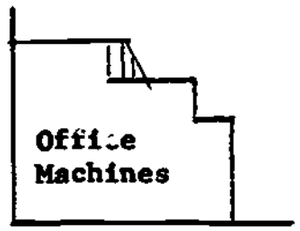
Main Floor



Balcony Floor



Basement



Intermediate Floor

MARION COUNTY VOCATIONAL-TECHNICAL CENTER
414 Jackson Street
Fairmont, West Virginia
Harold B. Lawson, Director

Marion County
William E. Hinzman, Superintendent
Fairmont, West Virginia

Conversion & Remodel (Former National Guard Armory Building)

VOCATIONAL INDUSTRIAL AND TECHNICAL

Electrical-Electronic Cluster

- Electronics
- Radio & Television
- Commercial Electricity
- Industrial Electricity

Auto Mechanics

Special Needs Area

VOCATIONAL BUSINESS AND OFFICE EDUCATION

- Shorthand Laboratory
- Typing Laboratory
- Office Machines Laboratory
- Model Office

Administrative Areas

Classrooms

Storage Areas

Lavatories

Building Capacity: 160

Enrollments: Full time 320 - Part time 440

Started June 1965

Completion Summer 1966

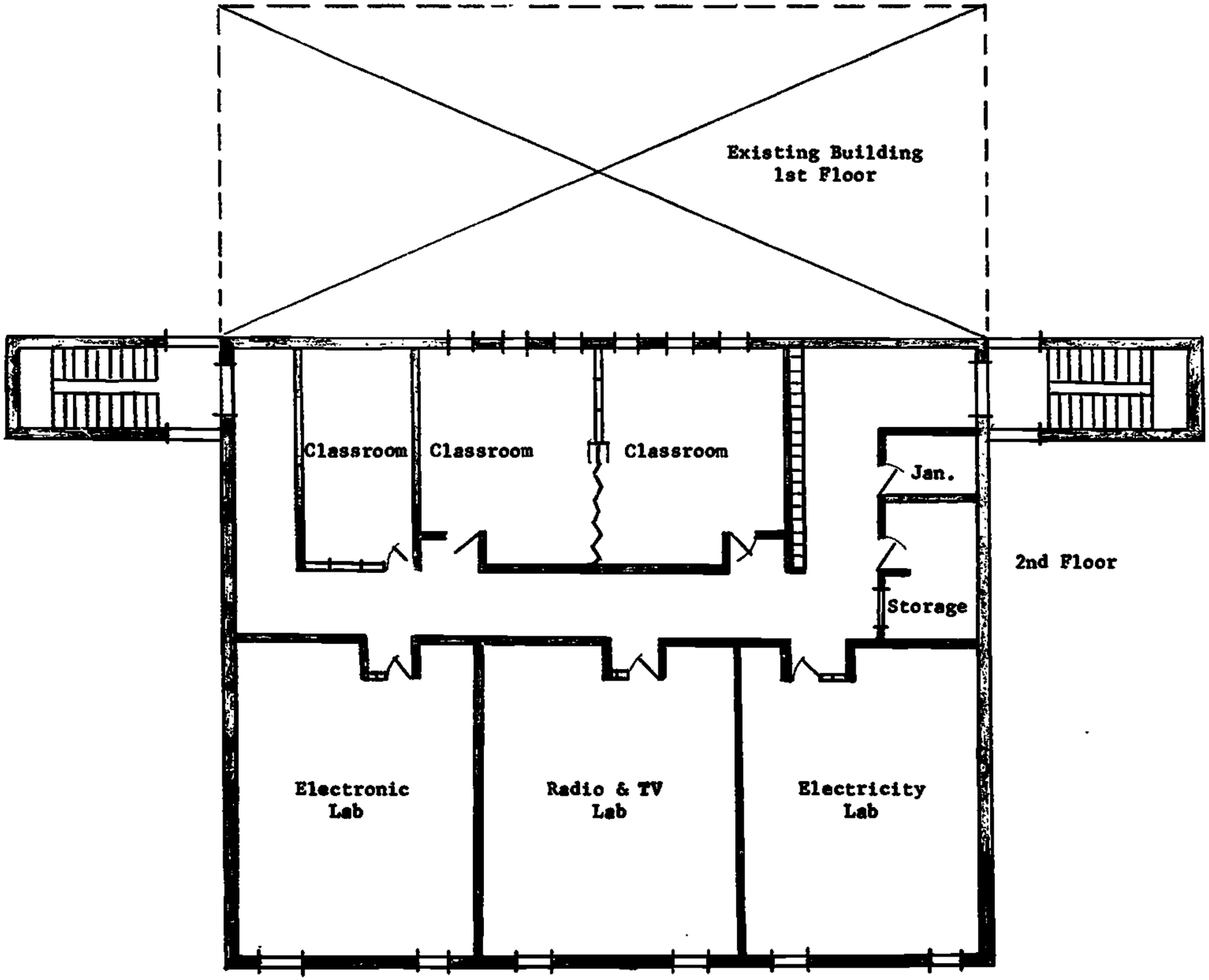
Contract Price $151,000

Total Area 23,450 Square Feet

Per Cent Complete 100

ARCHITECTS: L. D. Schmidt & Son - Fairmont, West Virginia

ADDITION TO WEIR VOCATIONAL SCHOOL



WEIR VOCATIONAL SCHOOL
Weirton, West Virginia

Hancock County
Robert Hall, Superintendent
New Cumberland, West Virginia

Addition of New Facilities (2nd Floor)

TECHNICAL EDUCATION

Electrical Technician Laboratory
Radio & Television Service Laboratory
Electrical Laboratory

3 Classrooms

Storage Areas

New Building Capacity 60 - Enrollment: Full time 120 - Part time 120

Started Spring 1966

Completed January 1967

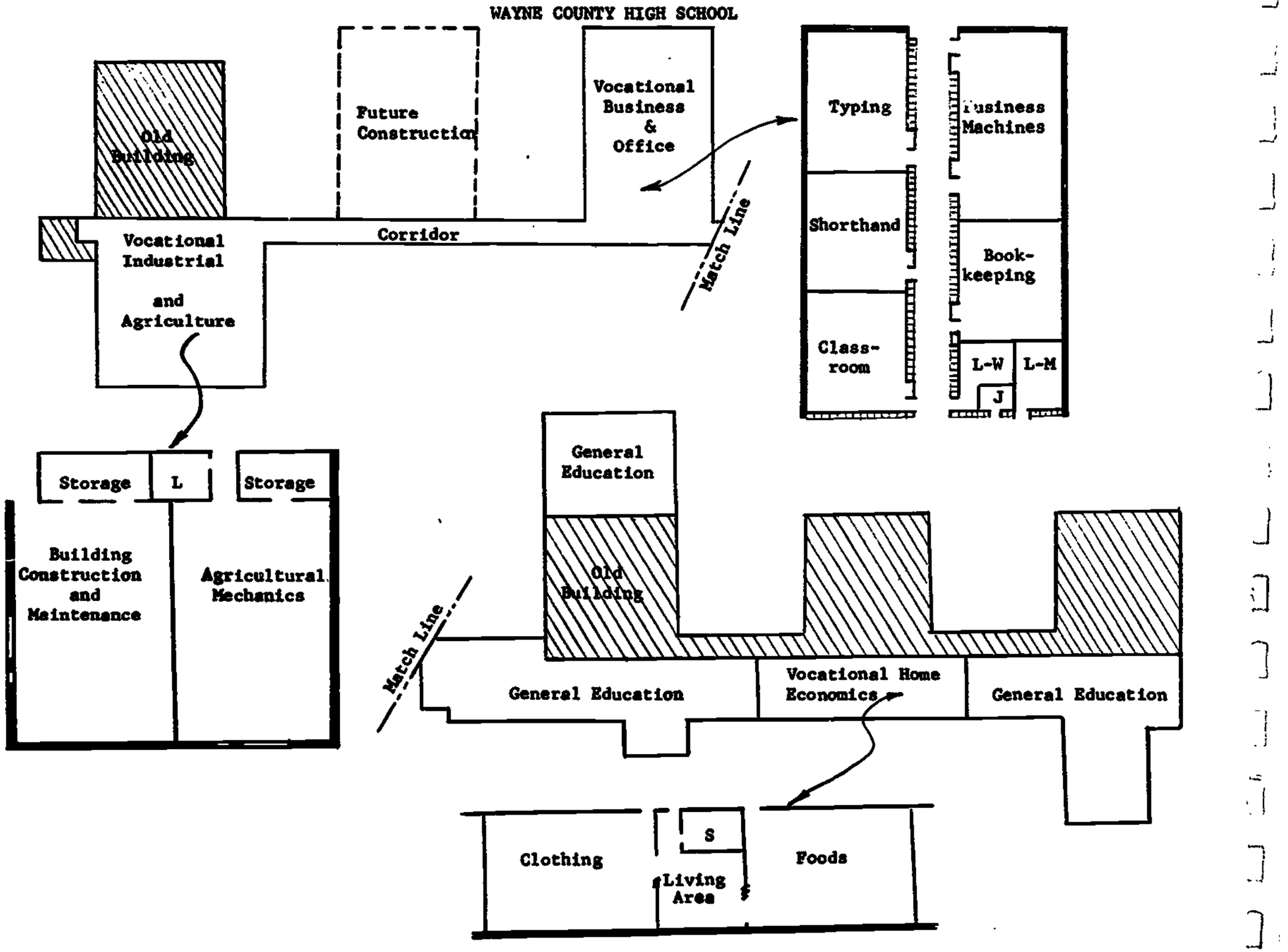
Contract Price $175,000

Total Area 7,564 Square Feet

Per Cent Complete 100

ARCHITECTS: Kellam & Foley - Columbus, Ohio

WAYNE COUNTY HIGH SCHOOL



WAYNE COUNTY HIGH SCHOOL
Wayne, West Virginia
H. Glenn Fogle, Supervisor

WAYNE COUNTY
Samuel D. Hubbard, Superintendent
Wayne, West Virginia

Remodel - Addition - New Facilities

VOCATIONAL INDUSTRIAL

Building Construction & Maintenance Shop

TECHNICAL EDUCATION

Civil Technology

VOCATIONAL AGRICULTURE

Agricultural Mechanics

VOCATIONAL BUSINESS AND OFFICE EDUCATION

Shorthand Laboratory
Typing Laboratory
Business Machines Laboratory
Bookkeeping Laboratory
Classroom

VOCATIONAL HOME ECONOMICS

Clothing Laboratory
Foods Laboratory
Office and Living Area

Vocational Building Capacity 220 - Enrollment: Full time 900 - Part time 420

Started April 1966

Completion July 1967

Contract Price $488,528

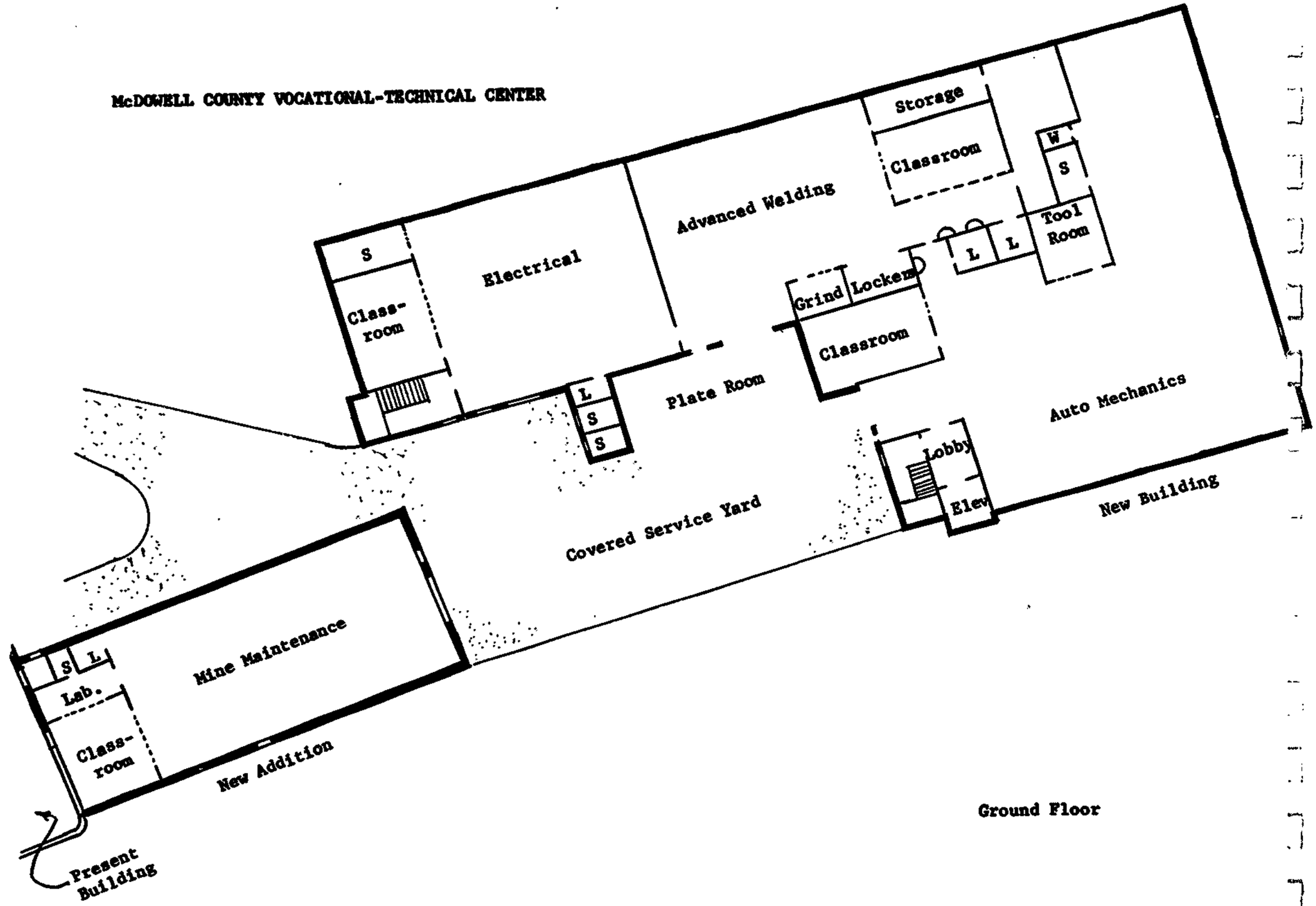
Total Area 33,500 Square Feet

Vocational Area 13,000 Square Feet

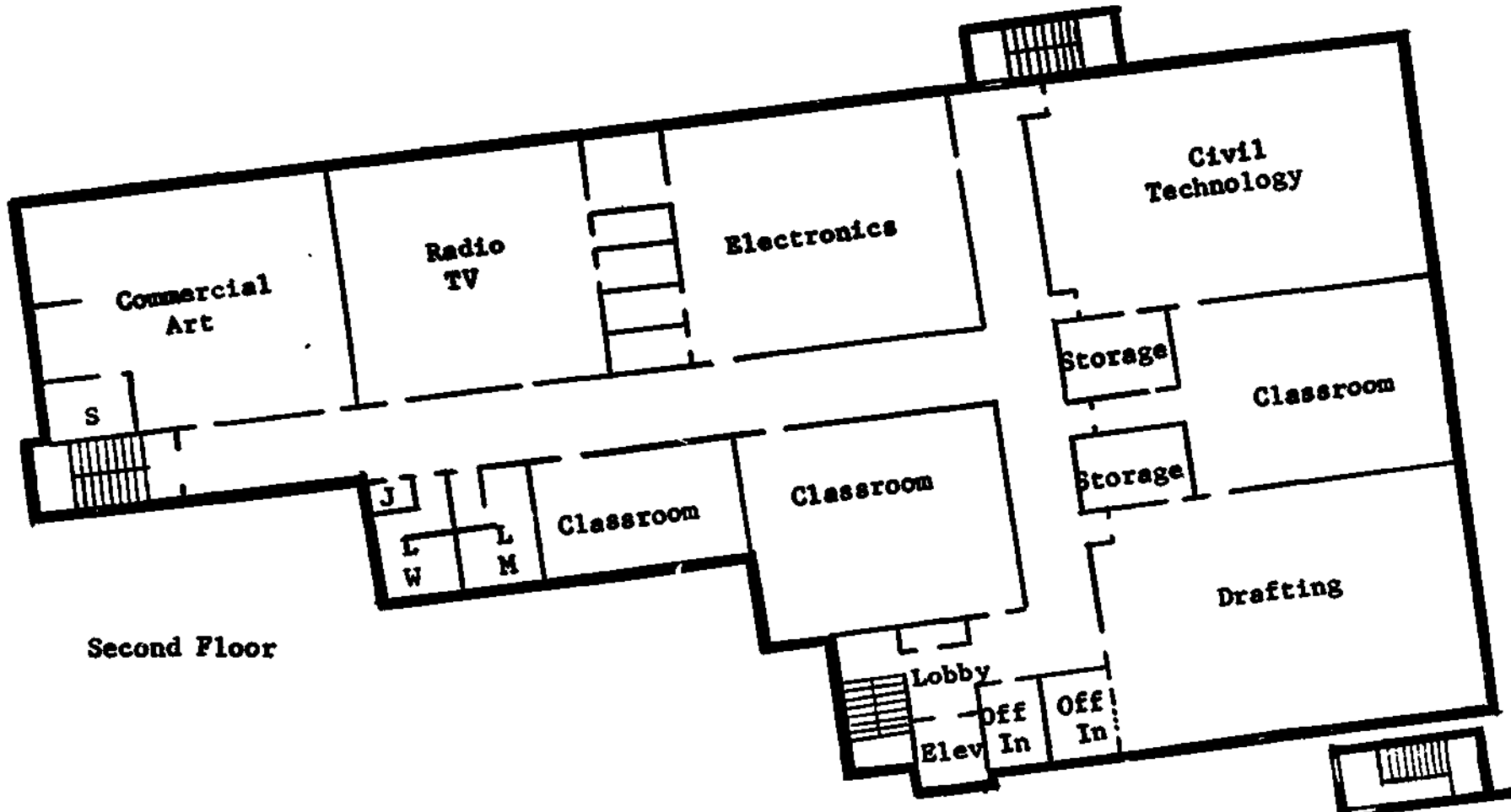
Per Cent Complete 100

ARCHITECTS: Dean & Dean - Huntington, West Virginia

McDOWELL COUNTY VOCATIONAL-TECHNICAL CENTER

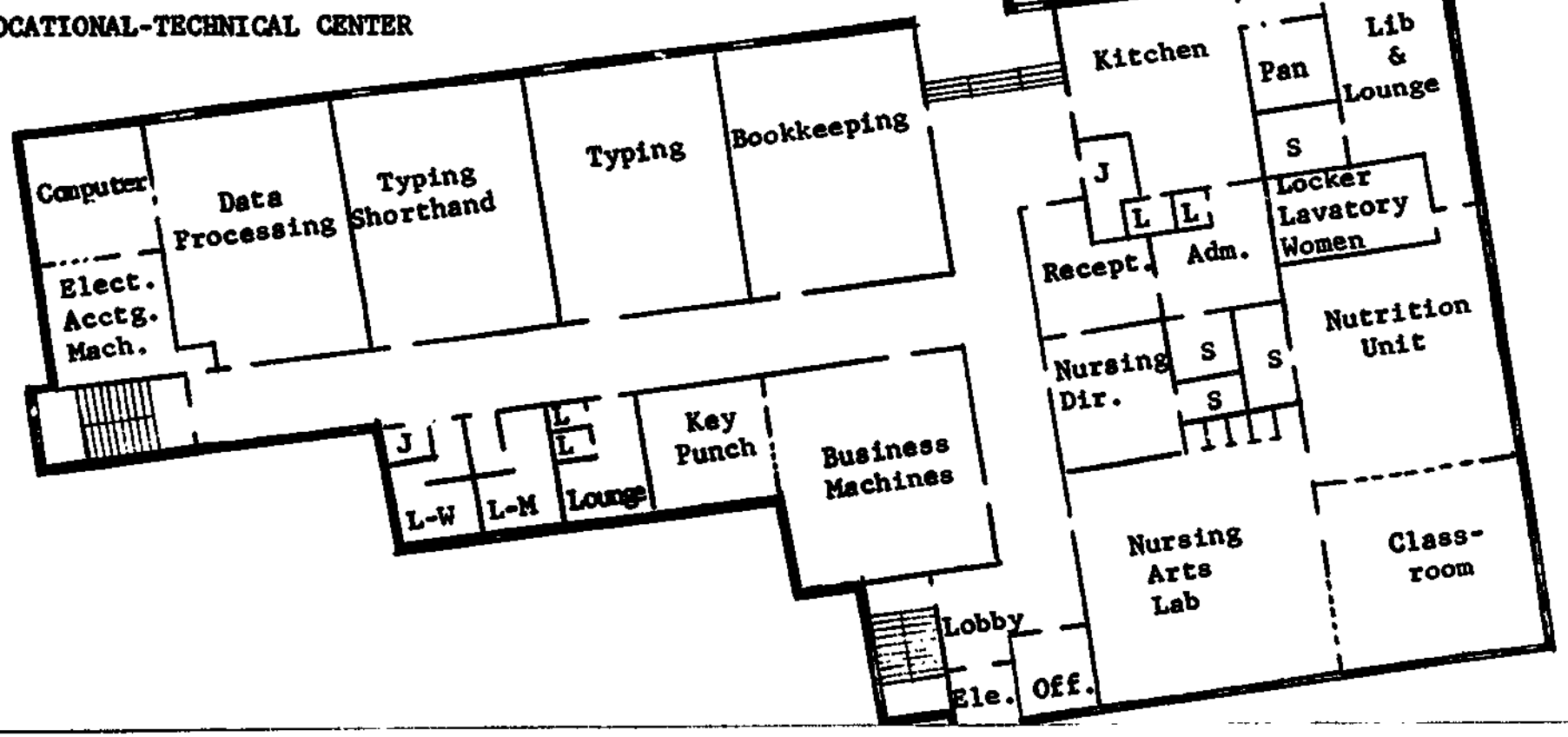


Ground Floor



Second Floor

McDOWELL COUNTY VOCATIONAL-TECHNICAL CENTER



First Floor

McDOWELL COUNTY VOCATIONAL-TECHNICAL CENTER
Drawer V, Welch, West Virginia
J. Beno Howell, Director

McDOWELL COUNTY
G. W. Bryson, Superintendent
Welch, West Virginia

Remodel - Addition - New Facilities
* In old building

VOCATIONAL INDUSTRIAL EDUCATION

- Auto Mechanics Shop
- Auto Body Shop *
- Mine Maintenance Shop
- Advanced Welding Shop
- Refrigeration & Air Conditioning *
- Drafting
- Radio & Television
- Business Machines Repair *
- Office Reproduction *

TECHNICAL EDUCATION

- Electronics
- Civil Technology
- Unit Record Laboratory
- Computer Programming

VOCATIONAL BUSINESS AND OFFICE EDUCATION

- Bookkeeping Laboratory
- Typing Laboratory
- Shorthand and Typing Laboratory
- Business Machines Laboratory
- Electric Accounting Machines
- Key Punch

PRACTICAL NURSING

- Nutrition Unit
- Nursing Arts Laboratory

- Library-Lounge-Offices
- Locker and Storage Areas
- Food Service

New Building Capacity 392 - Enrollment: Full time 1180 - Part time 784

Started January 1966

Completion August 1967

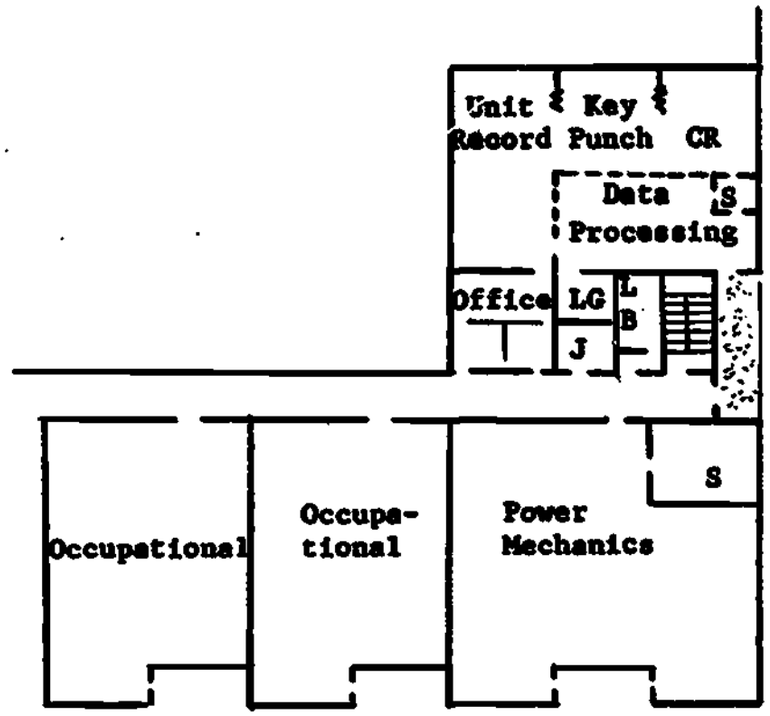
Contract Price $1,248,800

Total Area 69,120 Square Feet

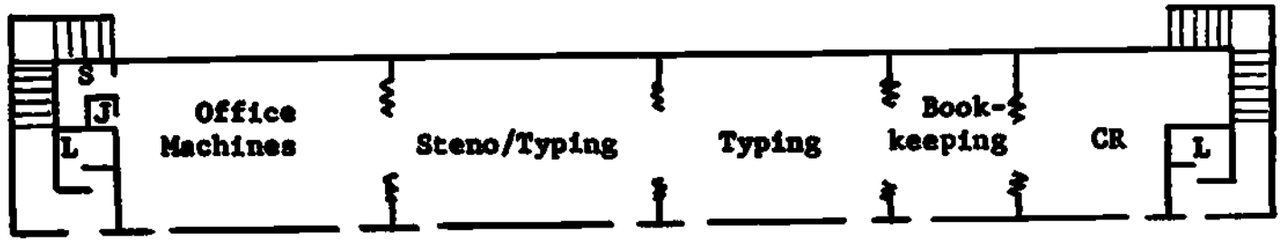
Per Cent Complete 100

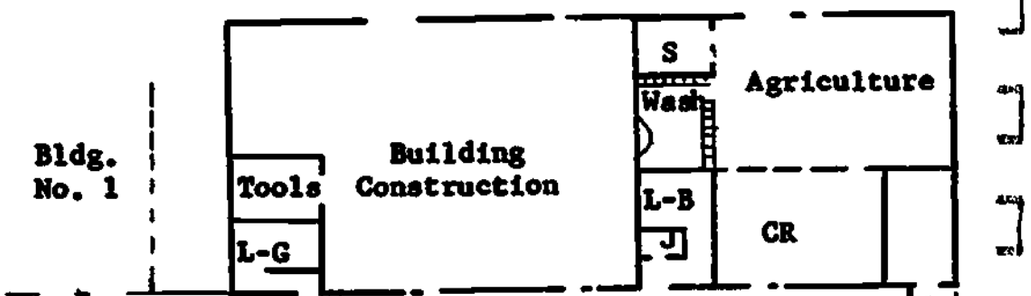
ARCHITECTS: Zando - Martin - Milstead - Charleston, West Virginia

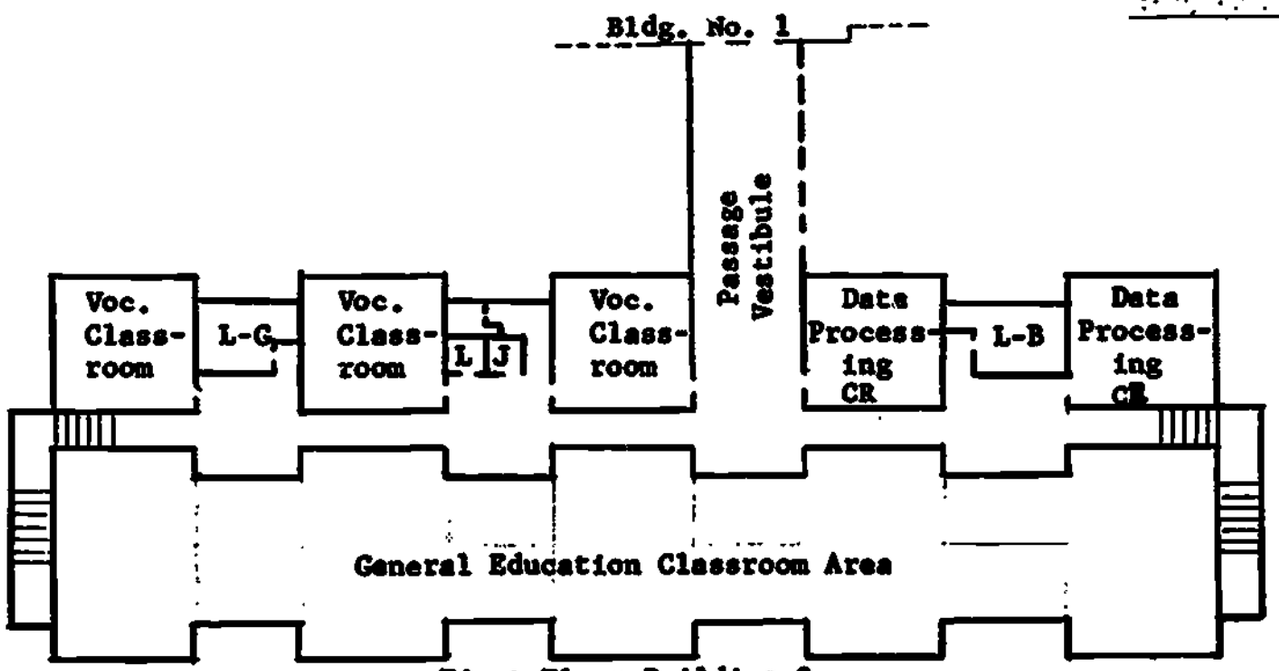
PARKERSBURG SOUTH HIGH SCHOOL
Vocational Buildings 1 and 2



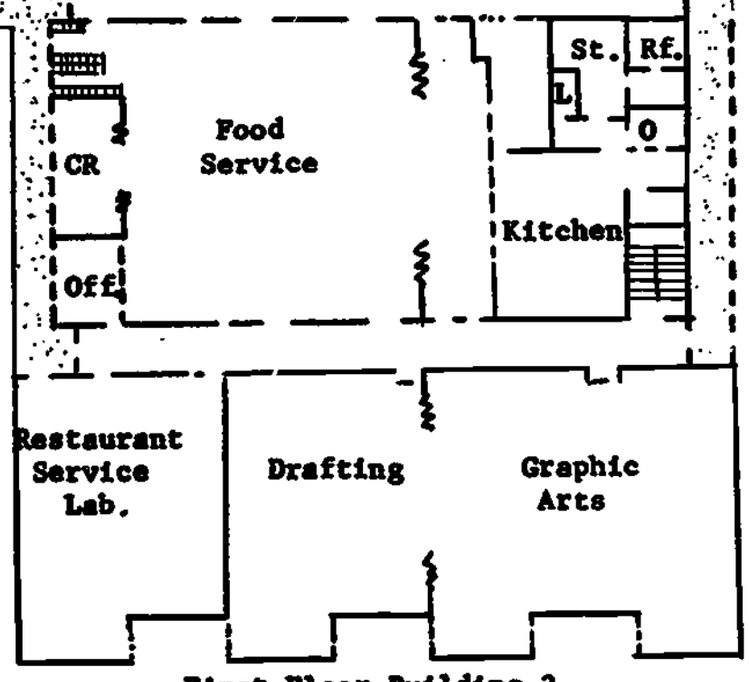
Ground Floor Building 3







First Floor Building 2



First Floor Building 3

PARKERSBURG SOUTH HIGH SCHOOL
South Parkersburg
Parkersburg, West Virginia
Jesse F. Thorpe, Director

WOOD COUNTY
Dr. Daniel B. Taylor, Superintendent
Parkersburg, West Virginia

Building Addition - Remodel
(Former Franklin Junior High School Building)

VOCATIONAL INDUSTRIAL EDUCATION

Building Construction Shop
Drafting
Graphic Arts & Dark Room
Power Mechanics

TECHNICAL EDUCATION

Computer Programming
Unit Records

OCCUPATIONAL

2 Occupational Shops

Classrooms - Offices
Storage Areas - Lavatories

VOCATIONAL BUSINESS AND OFFICE EDUCATION

Typing Laboratory
Stenographic/Typing Laboratory
Bookkeeping Laboratory
Office Machines Laboratory
Key Punch

VOCATIONAL AGRICULTURE

Agricultural Mechanics

FOOD SERVICE

Instructional Food Service Laboratory
Restaurant Service Laboratory

Vocational Capacity 290 - Enrollment: 1030 - Part time 640

Started June 1966

Completion August 1967

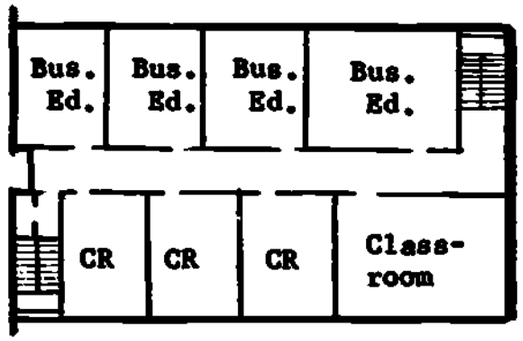
Contract Price $1,113,000

Vocational Area 46,175 Square Feet

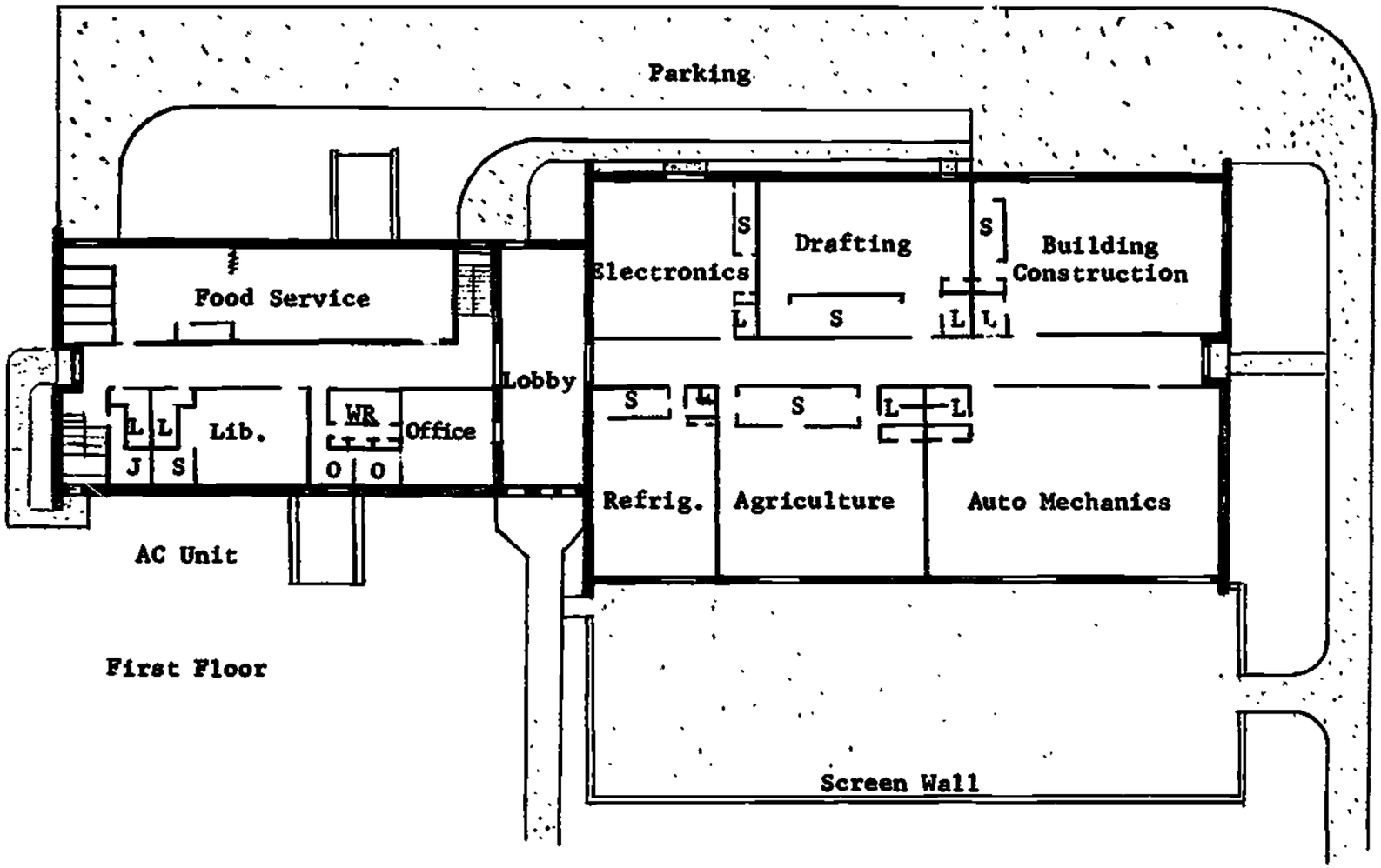
Per Cent Complete 100

ARCHITECTS: Caudill - Rowlett - Scott - Texas - New York
Charles J. Ross - Parkersburg, West Virginia

Second Floor



MINERAL COUNTY VOCATIONAL CENTER



First Floor

MINERAL COUNTY VOCATIONAL CENTER
James R. Campbell, Director
Keyser, West Virginia

MINERAL COUNTY
M. T. McGee, Superintendent
Keyser, West Virginia

Area Vocational School

VOCATIONAL INDUSTRIAL EDUCATION

- Electronic Laboratory
- Refrigeration Laboratory
- Building Construction
- Auto Mechanics
- Drafting

VOCATIONAL AGRICULTURE

- Agricultural Mechanics

VOCATIONAL BUSINESS AND OFFICE EDUCATION

- Typing Laboratory
- Shorthand Laboratory
- Bookkeeping Laboratory
- Business Machines Laboratory

VOCATIONAL HOME ECONOMICS

- Food Preparation & Food Service

4 Classrooms, Library, Lounge, Workrooms, Administration, Storage Areas

Building Capacity 226 - Enrollment: Full time 522 - Part time 452

Started June 1966

Completion Spring 1967

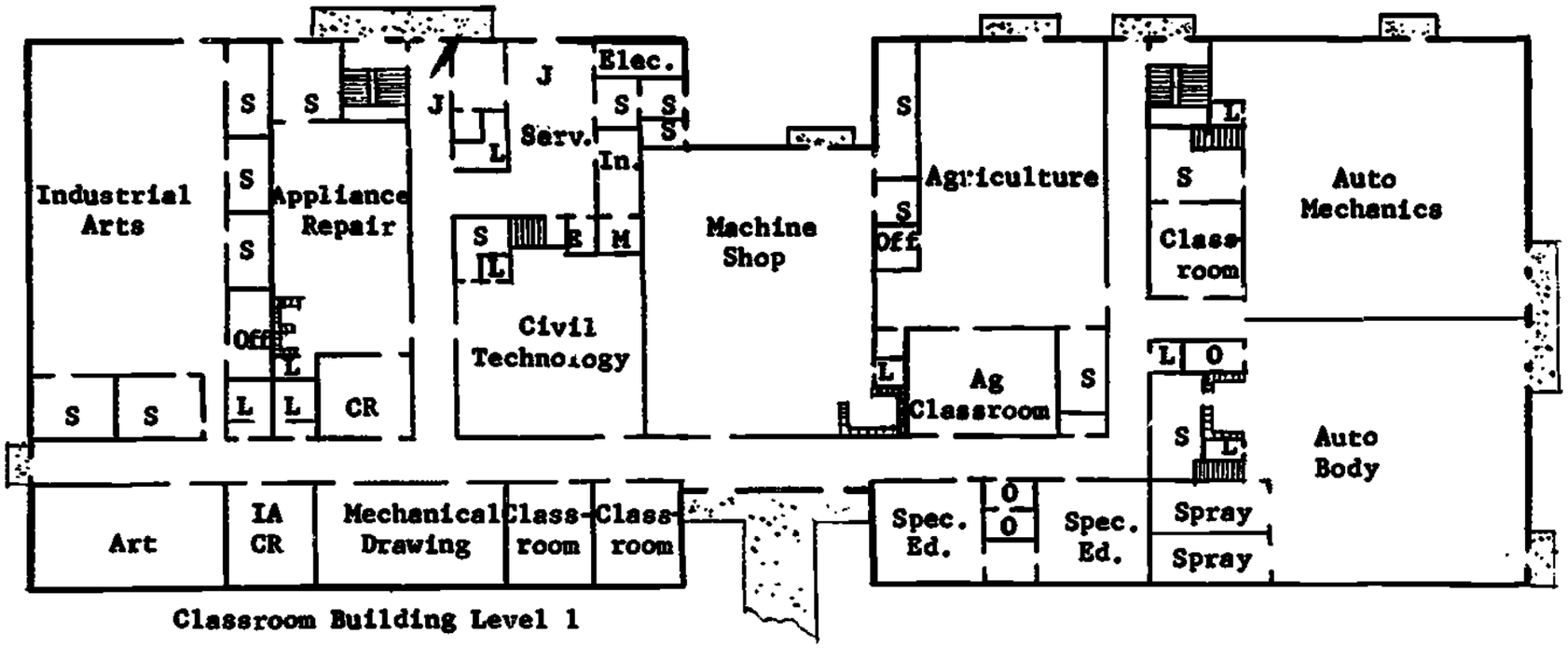
Contract Price $836,600

Total Area 43,250 Square Feet

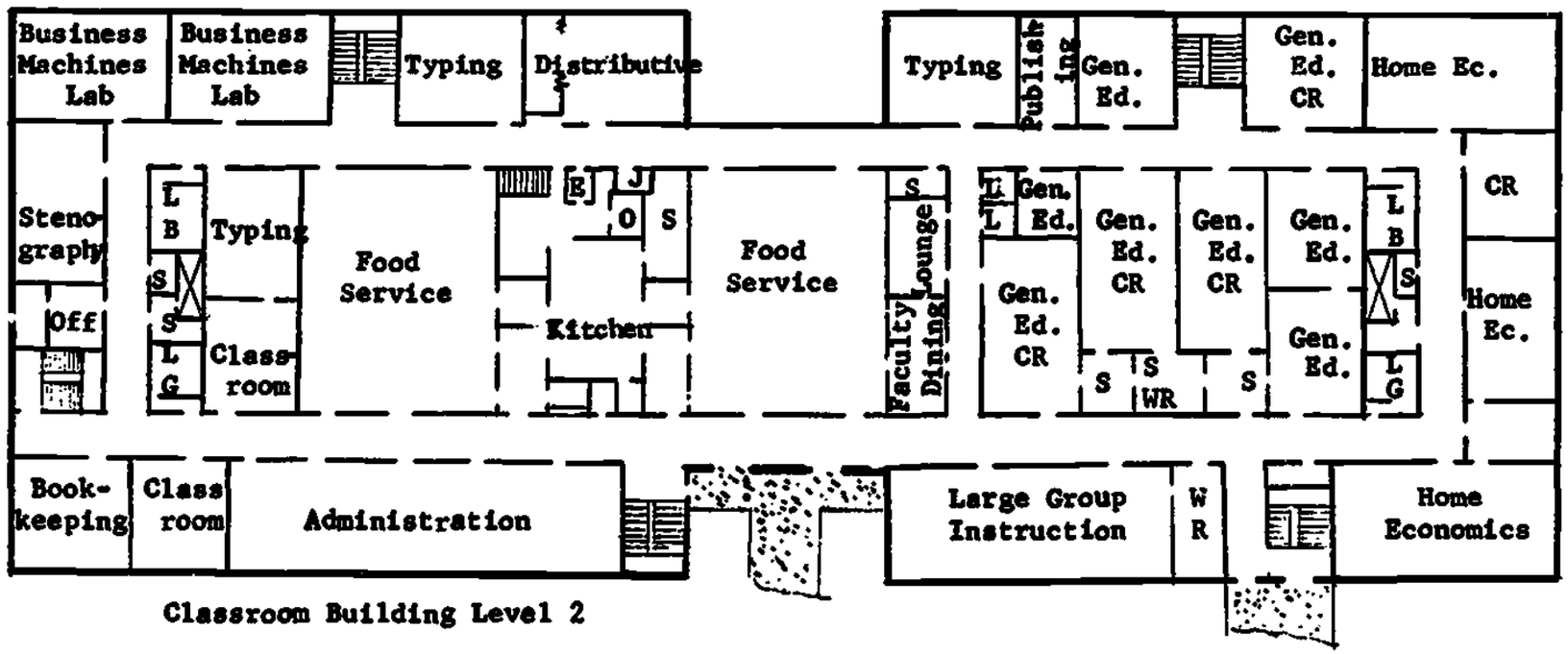
Per Cent Complete 100

ARCHITECT: Henry Elden & Associates - Charleston, West Virginia

JOHN MARSHALL HIGH SCHOOL - VOCATIONAL LEVELS



Classroom Building Level 1



Classroom Building Level 2

JOHN MARSHALL HIGH SCHOOL
Glen Dale, West Virginia

MARSHALL COUNTY
Ernest D. McNinch, Superintendent
Moundsville, West Virginia

Comprehensive High School With Vocational Department

VOCATIONAL INDUSTRIAL EDUCATION

Appliance Repair Shop
Auto Body Shop
Machine Shop
2 Classrooms

TECHNICAL EDUCATION

Civil Technology
Classroom

VOCATIONAL AGRICULTURE

Agricultural Mechanics
Greenhouse
Classroom

VOCATIONAL BUSINESS AND OFFICE EDUCATION

Bookkeeping Laboratory
Stenographic Laboratory
2 Office Machines Laboratories
2 Typing Laboratories
Conference Room & Model Office
Distributive Education

VOCATIONAL HOME ECONOMICS

2 Multiple Purpose Laboratories
2 Classrooms

Office Areas, Storage Areas, Lavatories

Vocational Building Capacity 360 - Enrollment: Full time 1410 - Part time 640

Started August 1966

Completion August 1968

Contract Price $4,669,500

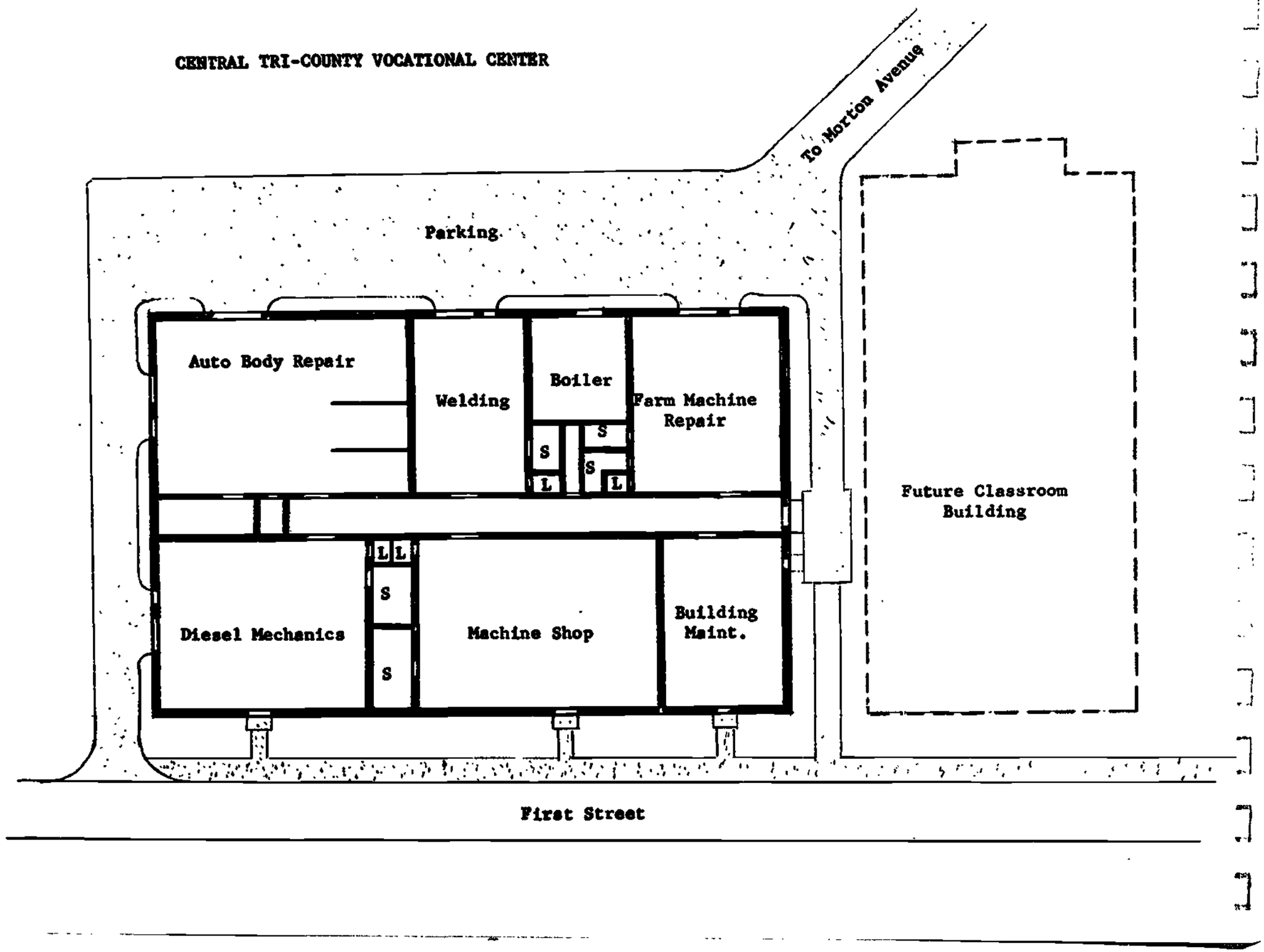
Total Area 252,380 Square Feet

Vocational Area 51,250 Square Feet

Per Cent Complete _____

ARCHITECT: Joseph Baker & Associates - Newark, Ohio

CENTRAL TRI-COUNTY VOCATIONAL CENTER



CENTRAL
TRI-COUNTY VOCATIONAL CENTER
Buckhannon, West Virginia
H. W. Calendine, Director

UPSHUR COUNTY
Paul Mearns, Superintendent
BARBOUR COUNTY
LEWIS COUNTY

Area Vocational School

VOCATIONAL INDUSTRIAL EDUCATION

Auto Body Repair
Welding
Machine Shop
Diesel Mechanics
Building Maintenance

VOCATIONAL AGRICULTURE

Agricultural Mechanics

Storage Areas, Lavatories

Building Capacity 120 - Enrollment: Full time 240 - Part time 240

Started April 1967

Completion Spring 1968

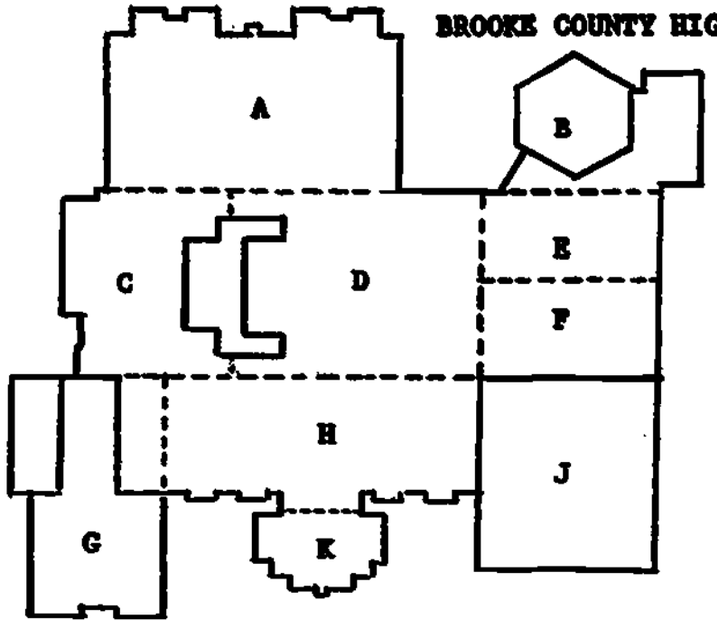
Contract Price $437,000

Total Area 27,470 Square Feet

Per Cent Complete

ARCHITECT: W. H. Grant, Jr. - Clarksburg, West Virginia

BROOKE COUNTY HIGH SCHOOL

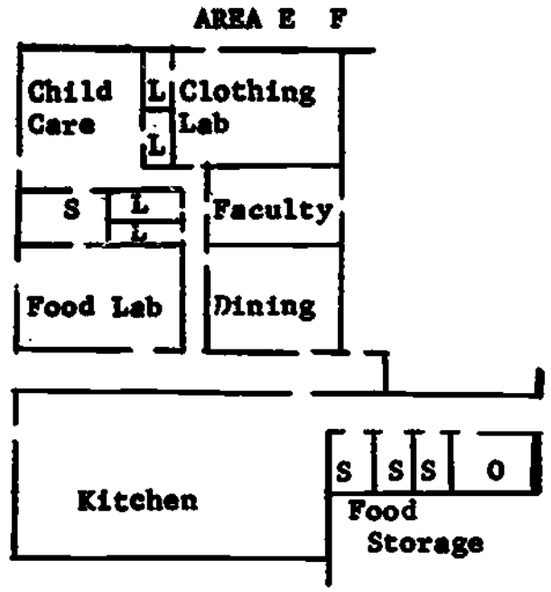


E & F - Vocational Home Economics

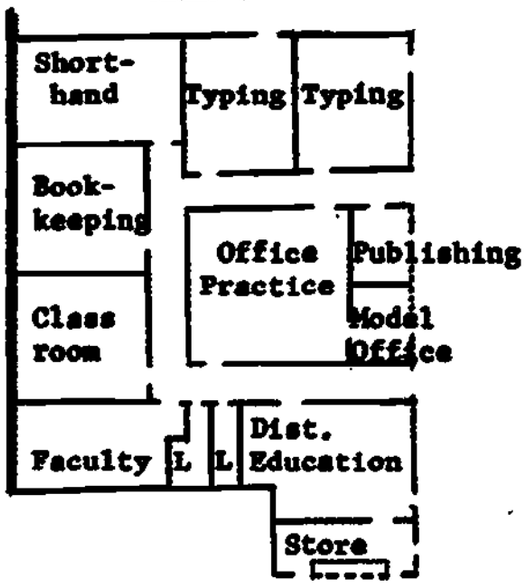
J - Technical and Industrial

C - Vocational Business and Office

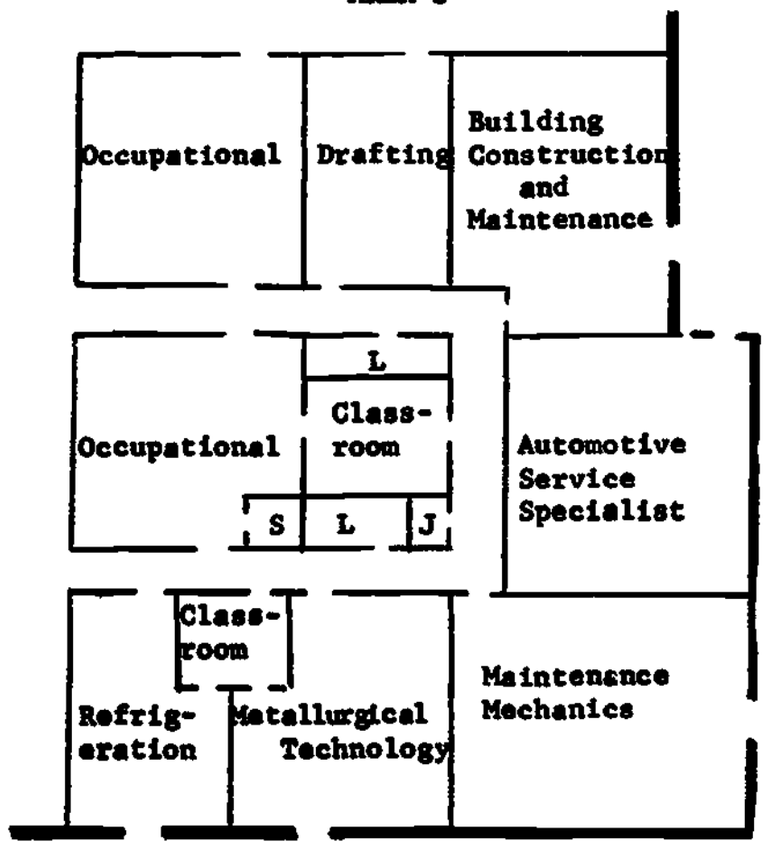
AREA E F



AREA C



AREA J



BROOKE COUNTY HIGH SCHOOL
Wellsburg, West Virginia

BROOKE COUNTY
Robert Lindsey, Superintendent
Wellsburg, West Virginia

Comprehensive High School With Vocational Department

VOCATIONAL INDUSTRIAL EDUCATION

Refrigeration
Maintenance Mechanics
Auto Service Specialist
Building Construction and Maintenance
Drafting
Occupational Shops (2)

TECHNICAL EDUCATION

Metallurgical Technology

Classrooms, Storage Areas
Lavatories, Office and Work Areas

VOCATIONAL BUSINESS AND OFFICE EDUCATION

Typing Laboratories (2)
Shorthand Laboratory
Bookkeeping Laboratory
Office Practice Laboratory

DISTRIBUTIVE EDUCATION

Demonstration Unit
Model Store

VOCATIONAL HOME ECONOMICS

Foods Laboratory
Clothing Laboratory
Living Area
Foods Preparation

Vocational Building Capacity 400 - Enrollment: Full time 1460 - Part time 740

Started April 1967

Completion Fall 1969

Contract Price $4,697,684.

Total Area 240,000 Square Feet

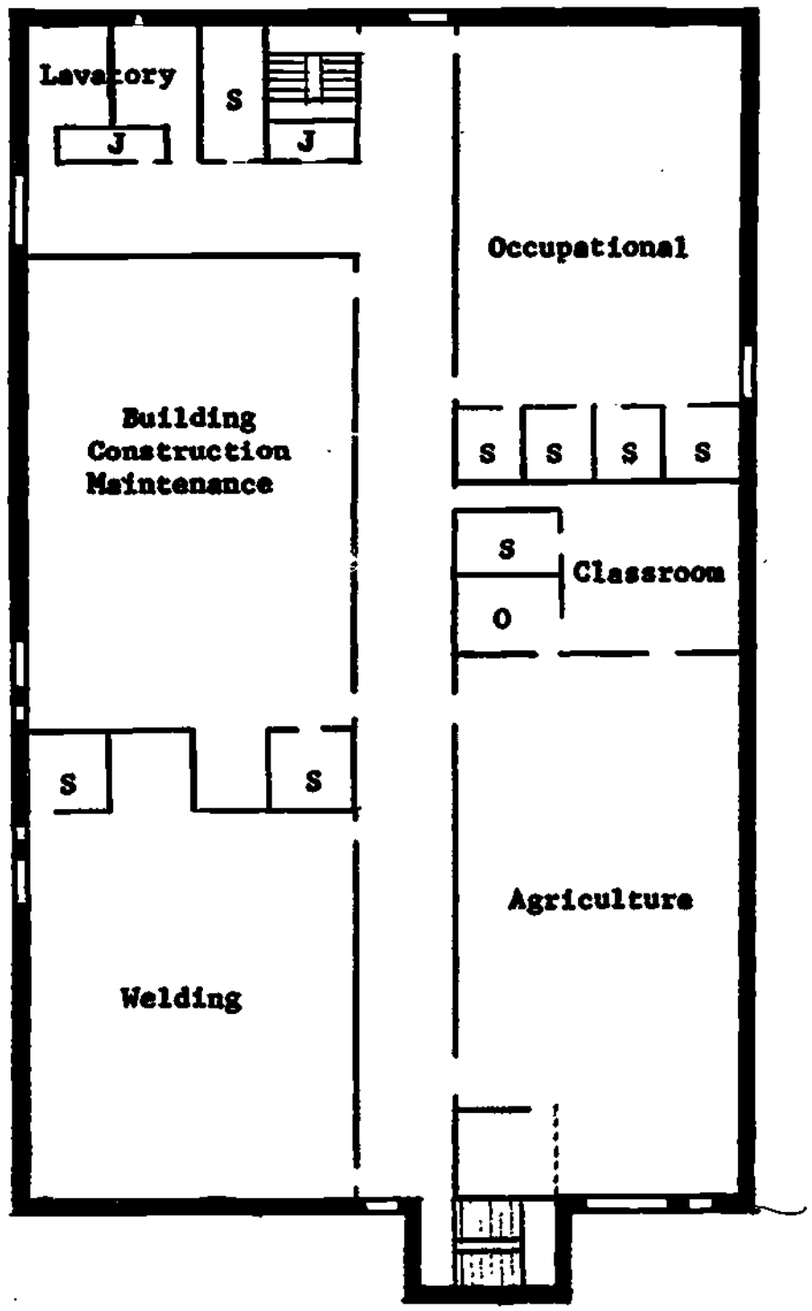
Vocational Area 55,000 Square Feet

Per Cent Complete

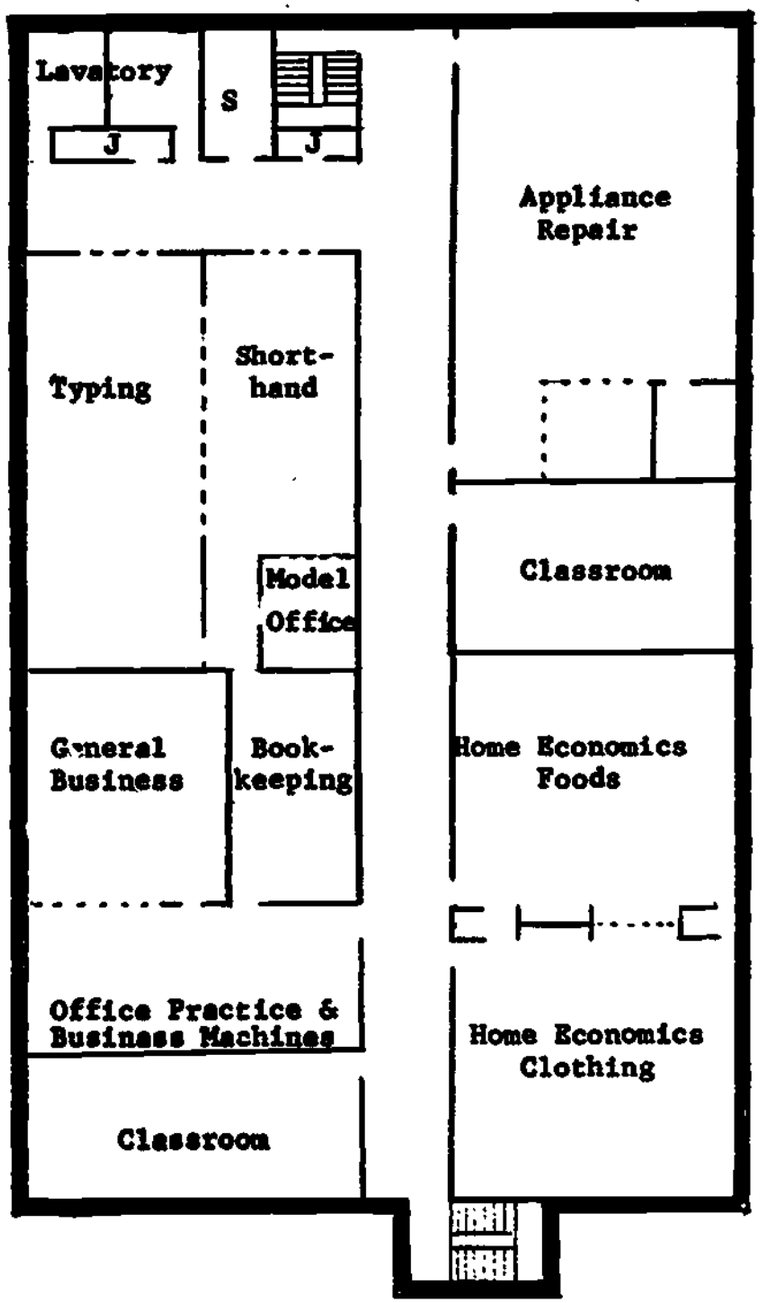
ARCHITECTS: Thayer - Menges - New Castle, Pennsylvania

BRAXTON COUNTY CONSOLIDATED HIGH SCHOOL
Vocational Unit

First Floor



Second Floor



BRAXTON COUNTY CONSOLIDATED HIGH SCHOOL
Flatwoods, West Virginia

BRAXTON COUNTY
M. Holmes Skidmore, Superintendent
Sutton, West Virginia

Comprehensive High School With Vocational Department

VOCATIONAL INDUSTRIAL EDUCATION

Welding
Building Construction & Maintenance
Appliance Repair

VOCATIONAL AGRICULTURE

Agricultural Mechanics

Classrooms, Storage and
Office Spaces, Lavatories

VOCATIONAL BUSINESS AND OFFICE EDUCATION

Typing Laboratory
Office Practice
Shorthand Laboratory
Bookkeeping Laboratory

VOCATIONAL HOME ECONOMICS

Foods-Clothing Laboratory

OCCUPATIONAL

Occupational Shop

Vocational Building Capacity 250 - Enrollment: Full time 1060 - Part time 460

Started May 1967

Completion Spring 1969

Contract Price $1,750,000

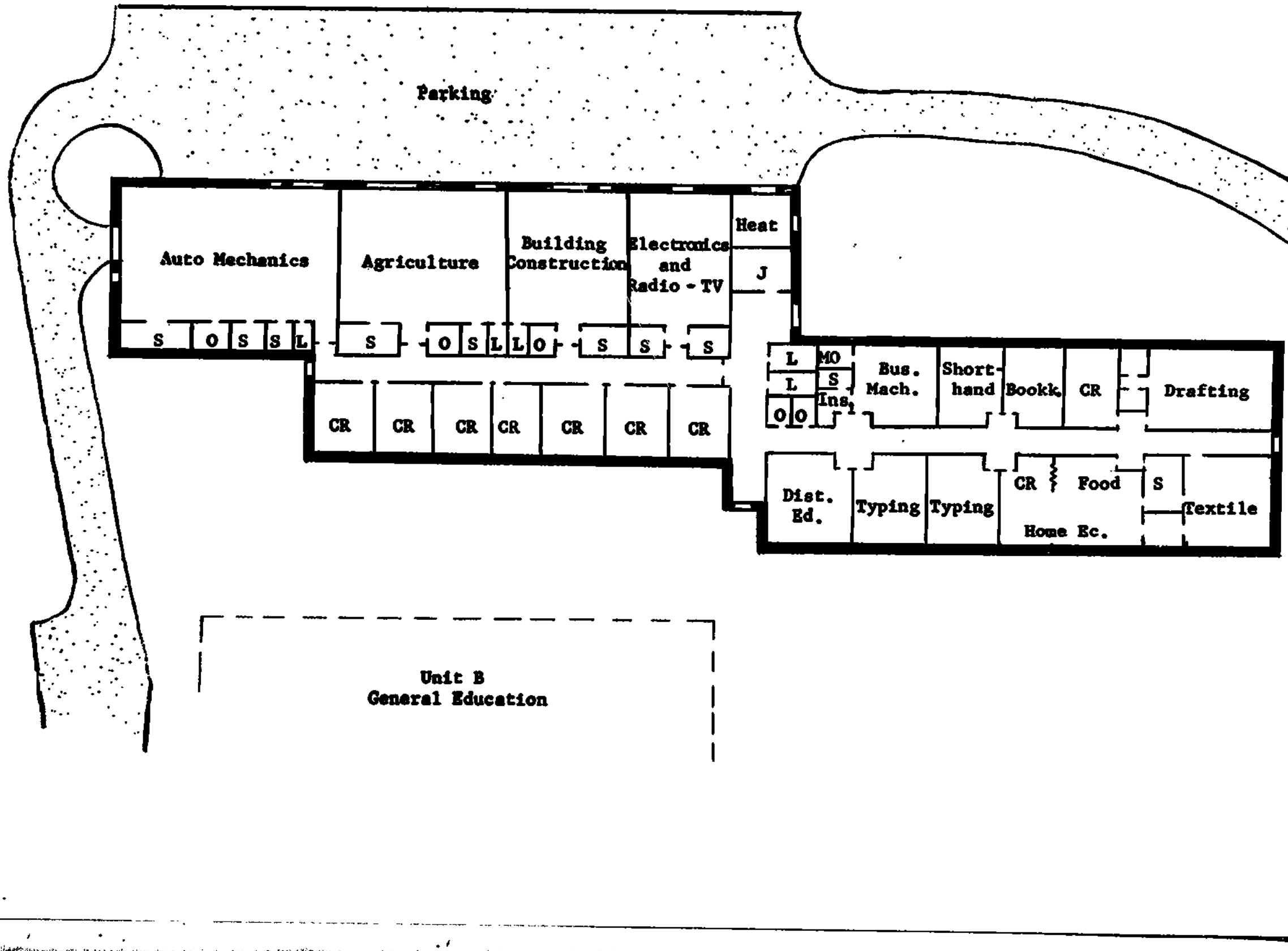
Total Area 89,000 Square Feet

Vocational Area 35,840 Square Feet

Per Cent Completion

ARCHITECTS: Campbell - Green - Cunzolo - Charleston, West Virginia

GREENBRIER
EAST HIGH SCHOOL
Vocational Unit C



GREENBRIER
EAST HIGH SCHOOL
Fairlea, West Virginia

GREENBRIER COUNTY
Clarence Hinkle, Superintendent
Lewisburg, West Virginia

Comprehensive High School With Vocational Department

VOCATIONAL INDUSTRIAL EDUCATION

- Drafting
- Auto Mechanics
- Building Construction
- TV Repair

TECHNICAL EDUCATION

- Electronics

VOCATIONAL AGRICULTURE

- Agricultural Mechanics

Classrooms, Storage Areas, Lavatories

VOCATIONAL BUSINESS AND OFFICE EDUCATION

- Typing (2 units)
- Shorthand
- Bookkeeping
- Business Machines

DISTRIBUTIVE EDUCATION

- Demonstration Unit Classroom

VOCATIONAL HOME ECONOMICS

- Foods Laboratory
- Clothing Laboratory

Vocational Building Capacity 290 - Enrollment: Full time 1100 - Part time 360

Started April 1967

Completion Fall 1968

Contract Price $1,783,000

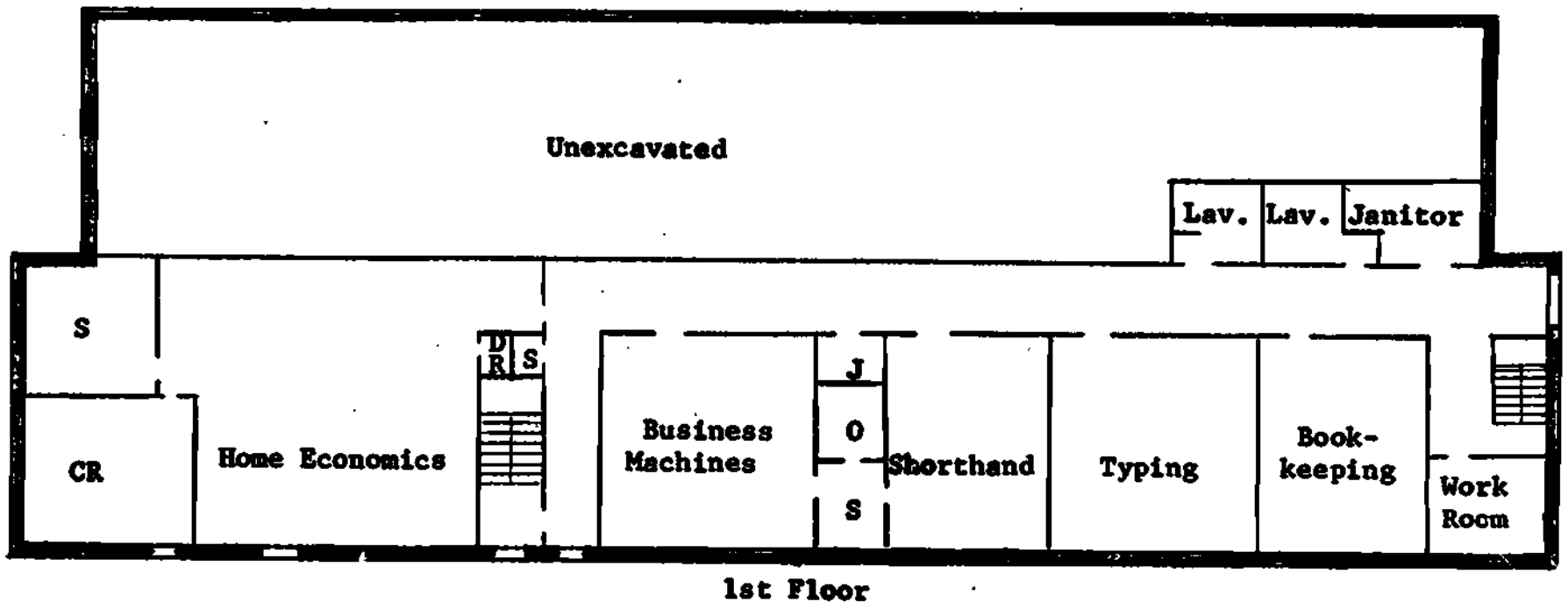
Total Area 126,280 Square Feet

Vocational Area 29,500 Square Feet

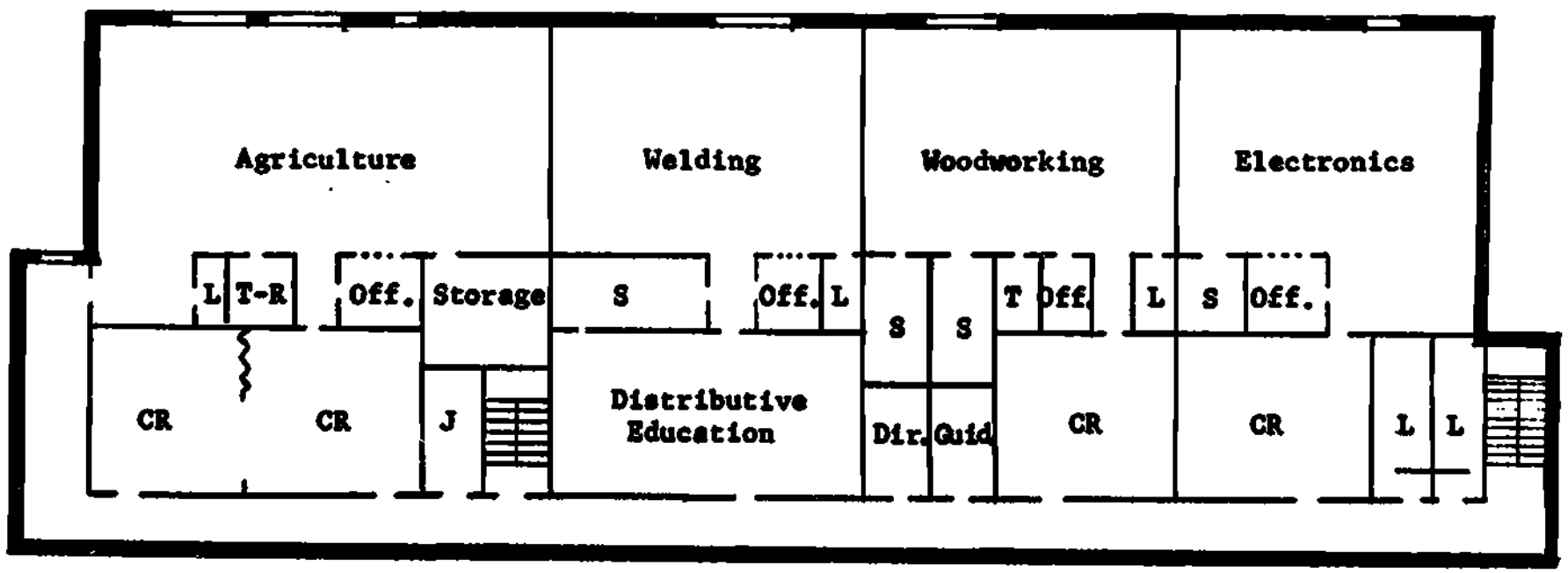
Per Cent Complete

ARCHITECT: Zando, Martin, Milstead - Charleston, West Virginia

GREENBRIER
WEST HIGH SCHOOL
Vocational Unit "C"



1st Floor



2nd Floor

GREENBRIER
WEST HIGH SCHOOL
Charmco, West Virginia

GREENBRIER COUNTY
Clarence Hinkle, Superintendent
Lewisburg, West Virginia

Comprehensive High School With Vocational Department

VOCATIONAL INDUSTRIAL EDUCATION

Woodworking
Welding

TECHNICAL EDUCATION

Electronics

VOCATIONAL AGRICULTURE

Agricultural Mechanics

VOCATIONAL BUSINESS AND OFFICE EDUCATION

Typing
Shorthand
Bookkeeping
Business Machines

VOCATIONAL HOME ECONOMICS

Foods Laboratory
Clothing Laboratory

Classrooms, Storage Areas, Lavatories

Vocational Building Capacity 200: Full time 820 - Part time 290

Started April 1967

Completion Fall 1968

Contract Price $1,445,000

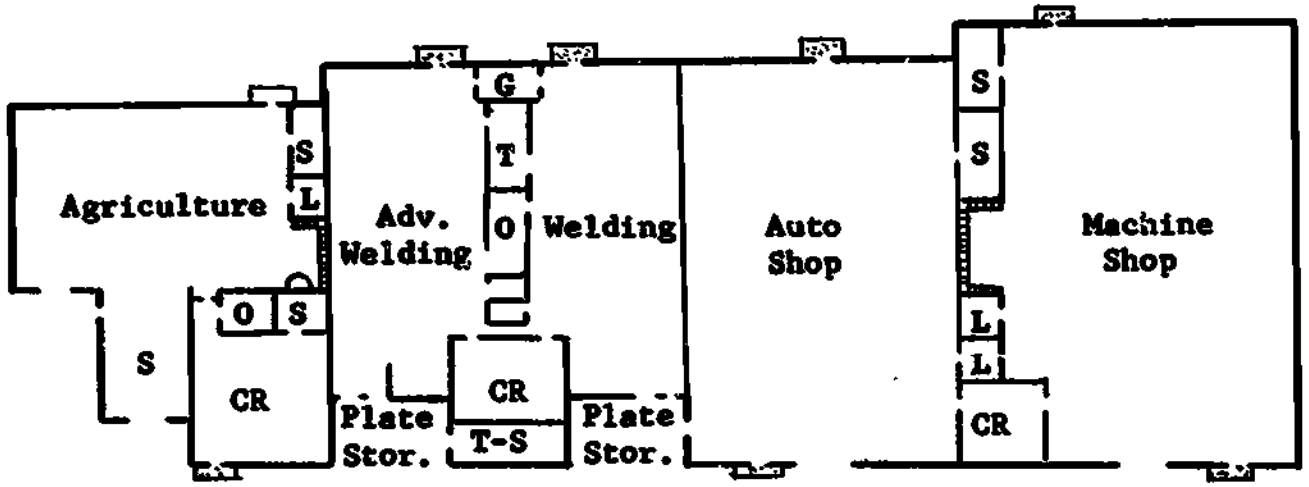
Total Area 83,000 Square Feet

Vocational Area 22,850 Square Feet

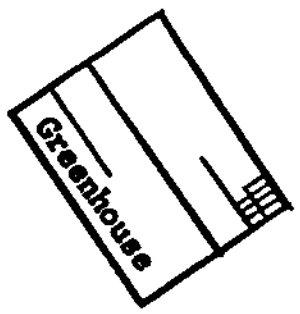
Per Cent Complete

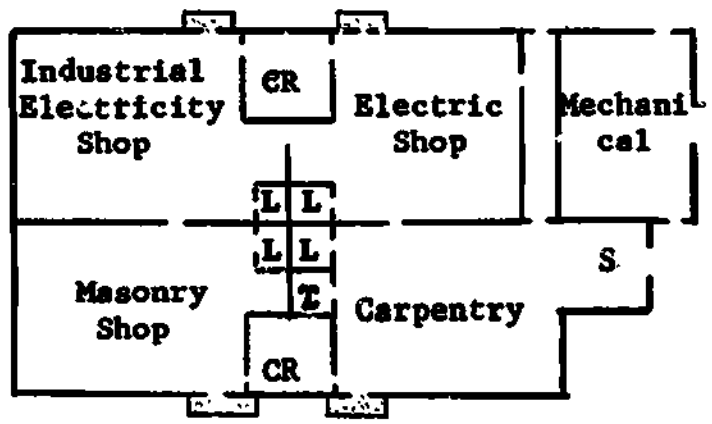
ARCHITECT: Zando, Martin, Milstead - Charleston, West Virginia

MERCER COUNTY VOCATIONAL-TECHNICAL CENTER

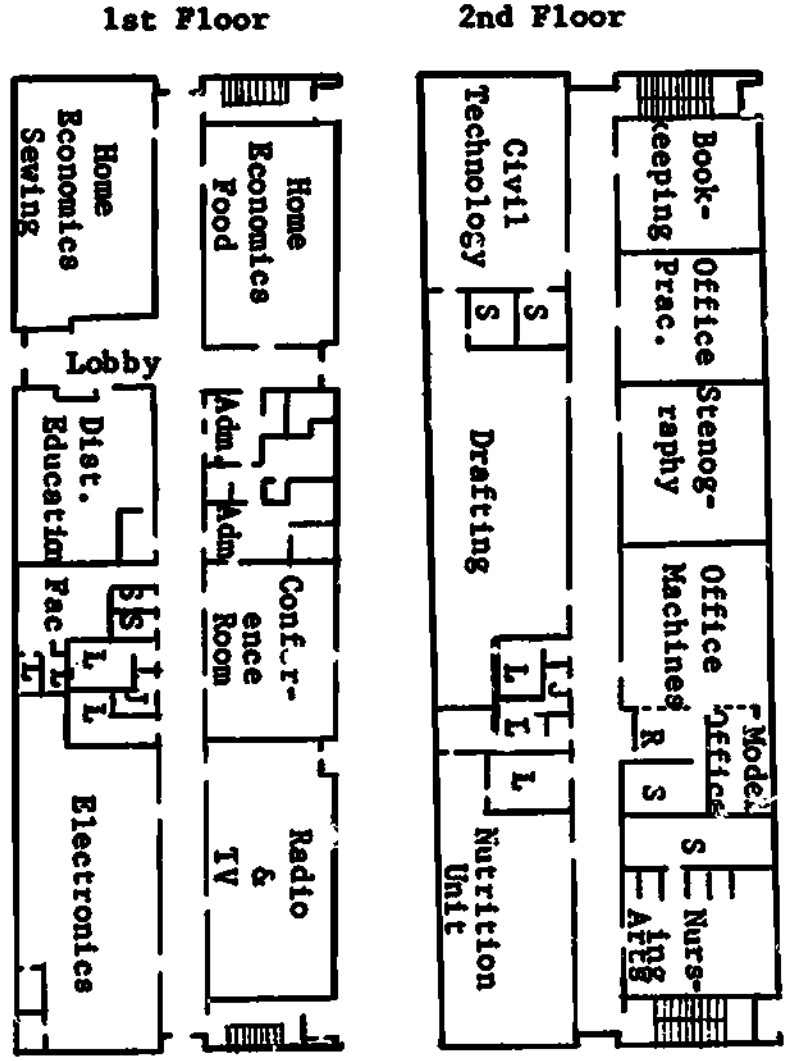


Unit B





Unit C



Unit A

MERCER COUNTY VOCATIONAL-TECHNICAL CENTER
Charles T. Brooks, Director
Princeton, West Virginia

MERCER COUNTY
W. R. Cooke, Superintendent
Princeton, West Virginia

Area Vocational School

VOCATIONAL INDUSTRIAL EDUCATION

- Radio & TV
- Electrical
- Industrial Electricity
- Drafting
- Machine Shop
- Welding
- Advanced Welding
- Masonry
- Carpentry
- Auto Mechanics

TECHNICAL EDUCATION

- Electronics
- Civil Technology

VOCATIONAL AGRICULTURE

- Agricultural Mechanics
- Greenhouse

VOCATIONAL BUSINESS AND OFFICE EDUCATION

- Office Machines
- Office Practice
- Bookkeeping
- Stenography

DISTRIBUTIVE EDUCATION

- Lab Classroom

PRACTICAL NURSING

- Nursing Arts
- Nutrition Unit

HOME ECONOMICS

- Foods Service
- Clothing

Classrooms, Lavatories, Offices, Storage, and Administration Areas

Building Capacity 475 - Enrollment: Full time 920 - Night 900

Started August 1967

Total Area 64,000 Square feet

Contract Price $1,408,700

Per Cent Complete

Completion Spring 1969

ARCHITECTS: Zando, Martin, Milstead, and Hunter - Charleston, West Virginia

West Virginia Department of Education
Bureau of Vocational, Technical, and Adult Education
Fred W. Eberle, Director
Capitol Building
Charleston, West Virginia 25305

Vocational Industrial & Technical

J. Jackson, Townsend, State Supervisor
Alton Pritt, Program Specialist
Clifton C. Detamore, Program Specialist
Michael M. Murphy, Program Specialist

Vocational Home Economics

, State Supervisor
Edna Hall, Program Specialist
Genevieve Williams, Program Specialist
Nancy Matthews, Program Specialist

Manpower Development and Training

John W. Cole, State Supervisor
Ralph B. Currey, Program Specialist
Homer H. Hogue, Program Specialist

Adult Basic Education

James B. Deck, State Supervisor
B. F. McConnell, Program Specialist

Curriculum

Ruth A. Edwards, Program Specialist

Vocational Agriculture

W. H. Wayman, State Supervisor
Carl S. Thomas, Program Specialist
Guy E. Cain, Program Specialist
Raymon Cunningham, Program Specialist

Business and Office Education

, State Supervisor
Arthur J. Maynard, Program Specialist
Louis H. Loudermilk, Program Specialist

Area Vocational Construction

John Nuzum, State Supervisor

Distributive Education

, State Supervisor
Arthur J. Maynard, Program Specialist
Louis H. Loudermilk, Program Specialist

VT 002 861
Face, Wesley L.; Flug, Eugene R. F.
The Establishment of American Industry as a Transitional Subject between General and Vocational Education, Developmental and Pilot Program Proposal.

Stout State Univ., Menomonie, Wis.
MF AVAILABLE IN VT-ERIC SET. OEC-5-85-060
Pub Date - 26Feb65 45p.

*INDUSTRY; CONCEPT TEACHING; *RESEARCH PROPOSALS; *CURRICULUM DEVELOPMENT; PILOT PROJECTS; INSTRUCTIONAL MATERIALS; *PROGRAM DEVELOPMENT; INSERVICE TEACHER EDUCATION; PROGRAM EVALUATION; *INDUSTRIAL ARTS; *EXPERIMENTAL PROGRAMS
*AMERICAN INDUSTRY PROJECT

The articulation between general education and vocational education has been a major problem in the secondary schools. A recent curriculum innovation, "American Industry," is aimed at replacing industrial arts in the secondary schools and providing this transition between general and vocational education. American Industry is based on the approach that concentrating upon acquiring concepts, rather than emphasizing specifics, enhances the possibility of retention, transfer, and application of knowledge to new and different situations. A U.S. Office of Education grant financed the program through the initial planning stages. Concurrently, 10 selected industrial arts teachers were trained to field test the program and the Ford Foundation supported the field study. The specific objectives of this proposal are to (1) complete the development of the American Industry curriculum at three levels leading into vocational preparation, (2) establish at Stout State University a resource center for the curriculum, (3) complete the preparation of teaching materials for the curriculum, (4) continue a series of institutes for preparing inservice teachers, (5) conduct a pilot teacher education program, and (6) promote research on related problems. A bibliography and a diagram of the curriculum developmental plan are included. (HC)

VT 002 861

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(1)
45p

AMERICAN INDUSTRY PROJECT

USOE Contract No. OE-5-85-060
June 1, 1965 - June 1, 1970

Stout State University
Menomonie, Wisconsin 54751

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& WELFARE
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VT02861

DEVELOPMENTAL & PILOT PROGRAM PROPOSAL

PROJECT TITLE: The Establishment of American Industry as a Transitional Subject Between General and Vocational Education.

APPLICANT: Stout State University

ADDRESS: Menomonie, Wisconsin 54751

TELEPHONE: 715/235-5541 Extention 316 & 312

INITIATED BY: Wesley L. Face
Eugene R. F. Flug
Stout State University
Menomonie, Wisconsin 54751

SUBMITTED BY: Dr. William J. Micheels
President, Stout State University

FEDERAL FUNDS REQUESTED: $ 732,965

DURATION: Beginning July 1, 1965 Ending June 30, 1970

Total Number of Months Required: 48 months

DATE TRANSMITTED: February 26, 1965

ABSTRACT

(A) SUBMITTED BY: Dr. William J. Micheels
President, Stout State University

(B) PRINCIPAL INVESTIGATORS: Wesley L. Face
Eugene R. F. Flug

(C) TITLE: The Establishment Of American Industry As A Transitional Subject Between General and Vocational Education.

(D) OBJECTIVES:

1. To complete the development of the American industry curriculum leading into vocational preparation.

2. To establish at Stout State University a resource center for the American industry curriculum.

3. To complete the preparation of teaching materials for the American industry curriculum.

4. To continue a series of institutes for the preparation of in-service teachers.

5. To conduct a pilot teacher education program parallel to the developing secondary curriculum, as a basis for a recommended teacher education curriculum.

6. To promote research on related problems.

(E) PROCEDURE:

1. Identify and select additional participating teachers in schools representative of varying socio-economic levels.

2. Develop curriculum materials for a three level curriculum of American Industry in a series of summer workshops made up of project staff, consultants, and participating teachers.

3. Implement a three level sequence of American Industry courses in 20 participating schools under the direction and supervision of the project staff.

4. Initiate a pilot teacher education program to parallel the development and demonstration of the secondary curriculum.

5. Concurrently, evaluation instruments will be designed and validated.

6. Apply evaluation instruments and institute follow-up study.

7. Prepare final reports of findings and recommendations for disseminations.

(F) TIME: Beginning July 1, 1965 - Ending June 30, 1970.

(G) BUDGET: 1965 - $202,786
1966 -
1967 -
1968 -
1969 - } To be negotiated

1. PROBLEM: A major problem of long standing in the secondary schools in this country has been that of articulation between general education and vocational education. Too often a false dichotomy has been constructed which forces students (and curriculum builders) to choose one or another path to the future. Because of this orientation, flexibility of application to changing demands and aspirations has been lacking.

A recent curriculum innovation undertaken at Stout State University bears promise in providing some answers to questions raised by this problem. The new program, called American Industry, is aimed at replacing industrial arts in the secondary schools, and is based upon an analysis of the conceptual framework of industry in the United States.

The basic questions growing out of the problem of articulating general and vocational education are seen as follows:

1. Can a curriculum be designed to provide a firm foundational base for vocational education and still possess general educational value?
2. Is there a curriculum pattern which would provide for a smooth transition from general education to vocational education?
3. Must the secondary school make a choice between developing pre-vocational skills and general knowledge as a base for vocational selection and preparation?
4. Can a curriculum be developed which will prepare young people to adapt for change?

An attack upon these questions has already been initiated in the developing program of American industry. Its contribution to the solution of bridging the gap between vocational and general education may be observed in the description which follows. The immediate problem with which this proposal is concerned involves the extension of the developmental efforts of the

program including teaching institutes, a developmental teacher education program, establishment of a teaching materials resource center, and the identification of related research problems.

2. DESCRIPTION:

Introduction

During the school year 1962-63, a group of professors and administrators at Stout State University decided that it was time to do more than talk theoretically about changes which ought to be made in the traditional program of industrial arts education. They agreed that there was need to experiment with a radical restructuring of the theoretical orientation of industrial arts, but that this must be accompanied by field testing as a necessary means of accepting, discarding, or revising new ideas.

Small group discussions soon grew into an organized faculty seminar. A faculty member was given released time to begin developing a procedure for the further study and implementation of a new program, called American industry,[1] firmly based in a theory of education which was logical in structure, cognizant of current psychological findings, and guided by a consistent philosophy of education. American industry, a curriculum area, is conceived as a discipline in that it has an identifiable structure.

A proposal was submitted to the U. S. Office of Education for financial support. The ensuing grant (Cooperative Research Project No. S-068) was used primarily to carry the program through the initial planning stages. Concurrently, a plan of implementation was formulated

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[1] Throughout this section American industry will be used to refer to the title given to this curriculum area, and the term industry will refer to the institution which exists in American society.

to train ten selected industrial arts teachers to field test the program. A one-year program for the implementation of the field study was approved by the Ford Foundation, resulting in an additional grant of monies.

During the summer of 1964, an eight week workshop was held with ten teachers representing eight secondary schools in Wisconsin and Minnesota. At the time of this writing, the experiment is well under way in eight schools with offerings by these ten teachers, varying in length from six weeks to a full year at grade levels from seven through twelve.

The first year was looked upon as a developmental year and it must be reported that while there was enthusiasm among those faculty members who have been most closely involved in the initial stages of the project, there was, at first, a measure of honest skepticism on the part of others. This was seen as a healthy challenge to be answered by the results of the field tests in the classrooms and laboratories.

The experimental nature of the program of implementation should be kept in mind as the reader reviews the following statements of rationale.

OBJECTIVES CHOSEN FOR THE STUDY OF AMERICAN INDUSTRY

The objectives derived for the program in American industry have grown from a careful study of existing statements of the purposes of American secondary schools.

An early statement of objectives by the Commission on the Reorganization of Secondary Education proposed a set of seven cardinal principles including: health; command of fundamental processes; worthy home membership; vocational competence; effective citizenship; worthy use of leisure; and ethical character. In 1938, these seven cardinal principles were reduced by the Educational Policies Commission to include: self realization; human relationship; economic efficiency; and civic responsibility.

Acceptance of these broad goals, dipping into every facet of human life, had led the schools to assume many responsibilities which were formerly considered the domain of other institutions in our society. While it was recognized that the schools must consider all these factors, there had been a growing concern that the primary mission of the schools had become obscured. As a result of this concern, the Educational Policies Commission, in 1961, isolated the central purpose of education as the development of the rational powers of man. The Commission clearly stated that this was not necessarily a unique contribution of education, nor was it the sole purpose. It represented rather, an attempt to convey the idea that the rational powers are central to all other qualities of the human spirit. This position was clarified in the following statement made by the Commission:

> A person with developed rational powers has the means to be aware of all facets of his existence. In this sense he can live to the fullest. He can escape captivity to his emotions and irrational states. He can enrich his emotional life and direct it toward ever higher standards of taste and enjoyment. He can enjoy the political and economic freedoms of the democratic society. He can free himself from the bondage of ignorance and unawareness. He can make of himself a free man. (Educational Policies Commission, 1961).

A corollary of the central purpose of developing the rational powers of man lies in the responsibility of the schools to acquire, preserve, and disseminate those knowledges which have been developed and refined by the human intellect, and which interact with man's environment.

The broad objectives of the American industry program were derived directly from an acceptance of this clarified purpose of education. They are:

1. To develop an understanding of those concepts which directly apply to industry.
2. To develop the ability to solve problems related to industry.

Justification for the inclusion of a study of industry in the public schools was seen in the emergence of technology as an ever more potent force in the molding of society. The problems of the future are inseparable from increasing industrialization and young people must be led to an adequate understanding of these forces which impinge upon their daily lives.

THE STRUCTURE OF AMERICAN INDUSTRY

Bruner, as well as Burton (1963), Kimball, and Wing (1960) implies that any body of knowledge to be considered an intellectual discipline possesses a framework or structure that can be identified and expressed in terms of the concepts involved.

Nelson, in a review of the supporting literature, indicates that an understanding of the structure of a subject improves the quality of learning by:

1. Providing simplicity,
2. Making details meaningful and easily remembered,
3. Revealing relationships,
4. Providing unity of knowledge,
5. Enabling individuals to organize learning for transfer,
6. Enabling students to experience discovery,
7. Providing meaningful learning to students of all abilities, and
8. Developing in students the ability to think (Nelson, 1964,2).

Sommers, in commenting on the lack of unity in industrial arts, stated, ". . . we are failing to fulfill our mission for lack of a vigorously derived set of underlying principles that realistically gives structure to our product - our industrial arts offerings." (Sommers, 1962, 20).

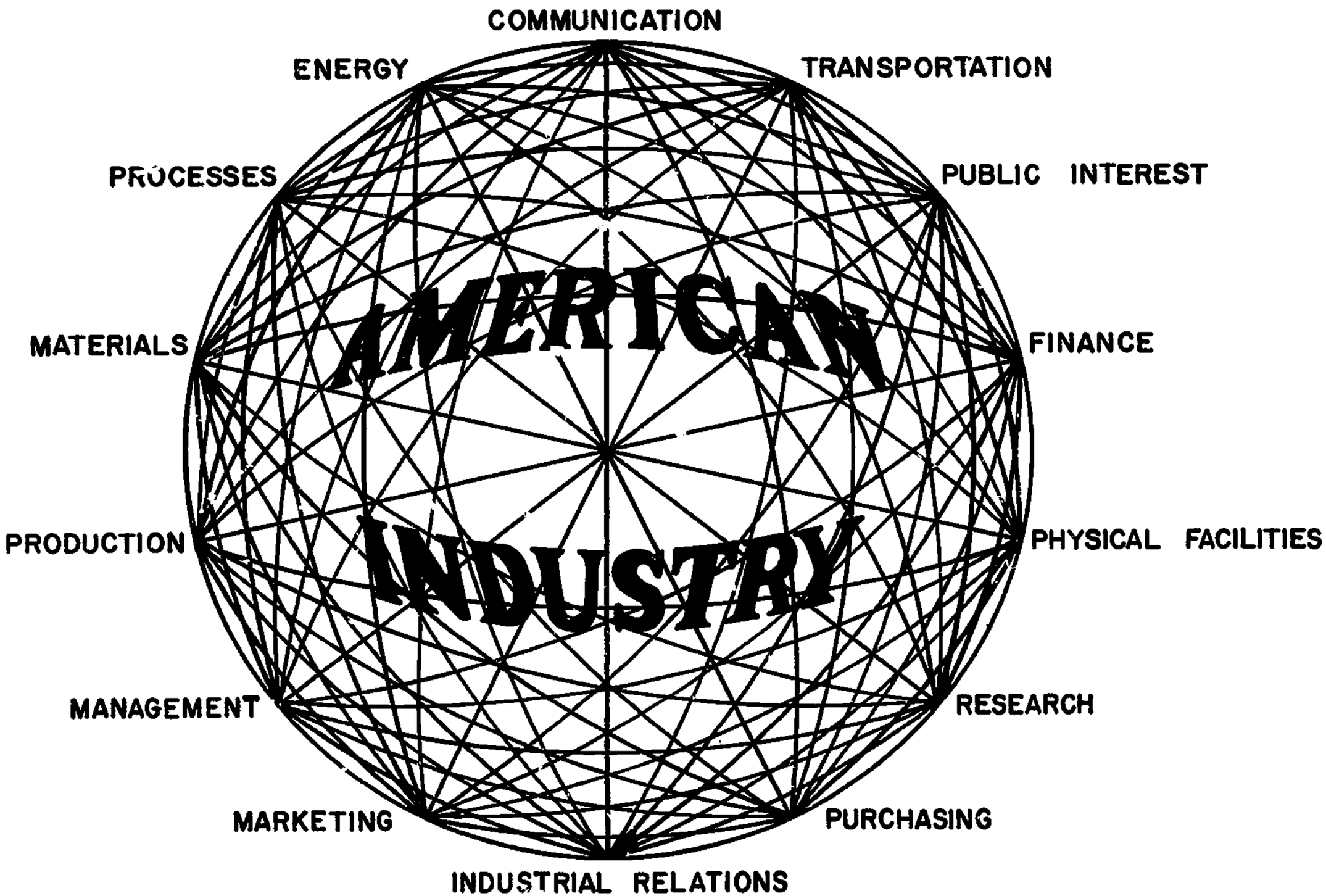
The recognition of this basic lack of coherent structure, represented in the content taught in the typical industrial arts shop, led directly to what was felt to be one of the primary strengths of the program of <u>American industry</u>. Whereas, the typical industrial arts offerings have been based upon an analysis of selected trades in order to identify specific

manipulative operations and related information, the approach upon which the program of American industry is based aims at identifying basic concepts common to a variety of industries.

For example, all forms of fastening can be categorized under three major concepts: Fastening by adhesion, by cohesion, or by mechanical linkage. In the program of American industry, a student would be concerned with attempting to develop an understanding of the basic attributes of, say, fastening by mechanical linkage, rather than learning how to fasten by the use of wood screws. The student possessing the knowledge of the basic attributes of fastening by mechanical linkage stands in a better position to make a reasoned choice of fasteners when dealing with a variety of materials other than wood.

Structure, as used here, simply refers to a unified, basic description of the several facets of industry as found in contemporary American society. Industry is conceived in this structure as consisting of several major areas, each of which is further subdivided into still smaller units. Industry, for the purpose of this project, is defined as a complex of organizations that utilizes the basic resources of men, materials, machines, and money to produce goods or provide services to meet the needs of man. The figure "Structure of Industry Showing Major Concepts" graphically represents this process of analysis. The breakdown does not stop here, as it continues to still smaller units, until the ultimate goal is reached--a minor concept. It should be emphasized that each level, division, and subdivision, represents a concept--something to be studied for understanding.

It must be stressed that this structure, unlike those of many other proposals, attempts to categorize understandings rather than categorizing specific industries, materials, or occupations. Thus, understandings of concepts derived from this structure would be universally applicable in any specific industry which encompasses it.



A CONCEPTUAL STRUCTURE OF THE KNOWLEDGES OF INDUSTRY

THE CONCEPTU^L APPROACH TO AMERICAN INDUSTRY

The increasing complexity of this technological age, leading to massive accumulations of knowledge, has made untenable the atomistic approach to the development of teaching content. It must be recognized that the dynamic nature of knowledge makes continuous demands for change on the part of man. While specific knowledge tends to change rapidly, broader concepts are more stable, although it must be admitted that even concepts may change in time. The concentration upon the acquisition of concepts, rather than emphasis on specifics, should however, enhance the possibility of retention, transfer, and application of knowledge to new and different situations.

DEFINITION OF A CONCEPT

In the literature there seemed to be almost as many definitions of a concept as there were writers on the subject. Concepts are inextricably bound up in the t:inking behaviors of man and while a body of research on the matter is emerging, the term concept remains extremely difficult t• define to complete satisfaction. In the attempt to evolve an acceptable definition of a concept for use as a tool in analyzing the conceptual structure of industry it appeared necessary to draw upon the contributions of a number of writers, each of whom provided an added dimension of understanding.

The difficult nature of concept definition was indicated by Brownell and Hendrickson (1950) who stated:

> A concept is far more than a "word", far more than an arbitrary association . . . A concept is an abstraction.
>
> As a matter of fact, concepts as abstractions may relate to nothing which is immediately and directly available to sense. (Brownell and Hendrickson, 1950, p. 106).

The problem is not a new one as recognized by Russell (1956).

> Aristotle and Plato were both concerned with the character of "universals," and their relation to "particulars." For Plato,

> the idea was the reality and the world; to be real, an idea must be universal, necessary, and changeless. The discovery of such ideas (or concepts) should be the object of study. In contrast, Aristotle was much more concerned with sense data for their own sake and as the source of all cognition. He believed that thought was true, if incomplete, reproduction of reality--incomplete because the object as it exists in nature can never be directly known in human understanding. In Aristotle's philosophy, the essence of concrete reality exists, in thinking, in the form of an abstraction, or concept, as we use the term. (Russell, 1956, p. 119).

Although the task appeared difficult, the value of a continuing search was affirmed by Phenix (1956).

> By a careful analysis of the structure of knowledge it is possible to discover certain key concepts distinguished by their power to epitomize important common features of a large number of more particular ideas. Such concepts are basic central ideas, and understanding of which opens the door to an effective grasp of an entire field of knowledge. (Phenix, 1956, p. 137).

One aspect of an acceptable definition emerged from a statement by McDonald (1959) who describes a concept as ". . . a classification or systematic organization of stimuli, characteristics, or events which have common characteristics." (McDonald, 1959, p. 134). The concept was seen as ". . . not the event itself, nor even the stimulus experience itself. . ." but as a classification system.

Although McDonald pointed to the classification characteristic of a concept, Russell (1956) identified another aspect in the interlocking and interactive nature of concepts themselves in his descriptive statement: "Concepts are not single stalks of wheat in separate rows, but a wheat field waving as one in the breeze." (Russell, 1956, p. 124).

A concept was seen by Keith (1907) as a functional process rooted in reality.

> Hence, a concept is a mental activity symbolizing the essential relations of a group of actual or possible experiences which are thought of originally in image terms.
>
> The concept is not cut off from concrete reality--it is simply the mind's way of "thinking the many into one," or, as philosophers say, "finding unity in variety."
>
> All concept forming is a synthesis; all definition is an analysis. (Keith, 1907, p. 128).

Keith's view was supported by Dewey (1933).

> Conceptions are the intellectual instrumentalities that are brought to bear upon the material of sense perception and of recollection in order to clarify the obscure, to bring order into seeming conflict, and unity into fragmentary. (Dewey, 1933, p. 179).

Carner and Sheldon (1954-55) summarizing their own reviews of the literature on the subject, stated that:

> Although the term may be defined in many ways there is general agreement that a "concept" is a construct which is the result of experience, may be fixed by a word or an idea, and has a functional value to the individual in his thinking or behavior. (Carner and Sheldon, 1954-55, p. 226).

Burton, Kimball, and Wing (1960) agreed in substance with Carner and Sheldon but added that "A concept is a suggested meaning which has been detached from the many specific situations giving rise to it. . . ." (Burton, et al. 1960, p. 154).

Consideration of the numerous aspects of a concept revealed in the literature led to the construction of an eclectic definition of a concept which served as a tool in the refinement of the conceptual structure of industry. This definition for the purpose of this study, describes a concept as a psychological construct resulting from a variety of experiences (detached from the many situations giving rise to it), fixed by a word or idea, and having functional value to the individual in his thinking and behavior.

Concepts may be grasped at all levels of understanding from concrete to abstract; from vague to clear; from inexact to definite. Due to the wide range of understanding which is possible when developing concepts, this program, more than any other, is cognizant of the variance of individual differences in students. One student may have a very low level of understanding of a given concept and another a much higher level. The important consideration, however, is that they both have an understanding.

CONCEPT FORMATION

As with the definition of a concept, there was a considerable amount of information available in the literature regarding the formation of a concept. While there existed considerable agreement upon certain aspects of concept formation, again, each writer added a dimension of me. .ing to what was known about this elusive subject.

In the following treatment of the review of literature on concept formation, areas of general agreement are presented as working generalizations considered to be of paramount importance to the curriculum planner. Where appropriate, implications are drawn to the extent they add meaning to the generalization.

Generalization 1. Many of our most often used concepts are achieved incidentally, or accidentally, while in the pursuit of an interest, in solving a personal problem, or during the conscious and purposive effort to understand some segment of the envirement. Burton, Kimball, and Wing (1960), Russell (1956).

Implication: It must be recognized that those concepts used most frequently in our daily lives have developed because of a need or interest. The curriculum planner must endeavor to organize learning activities based upon an awareness of these needs.

Generalization 2. Concepts may be learned through formal (organized) as well as informal (accidental) experiences, although little is known about the best method of organizing formal experiences. Garrison and Gray (1955), McDonald (1959), Sutton (1963).

Implication: Recognition of the lack of an accepted methodology should not divert the educator from his aim of concept formation but suggests a variety of approaches should be used.

Generalization 3. The student brings with him an existing system of concepts which the school must recognize in its attempts to organize formal learning experiences. Sutton (1963), Thomson (1959).

Generalization 4 In learning a concept, the experiences required, the circumstances under which the concept may develop, and the level of understanding attained will vary for each individual. Lee and Lee, (1960).

Implication: In accepting the fact that various levels of understanding of a given concept may exist, the educator may well find the teaching of a concept more appropriate to individual differences than if he were to demand equal levels of achievement in the mastery of a given body of content.

Generalization 5. Concepts are formed through a variety of experiences. Brownell and Hendrickson (1950), Landreth and Reed (1942), Lee and Lee (1960), Morse and Wingo (1962), Townsend and Burke (1962).

Implication: The educator must keep both the definition of a concept and this generalization constantly in mind, for concepts are not formed through the repeated exposure to identical experiences but rather through a variety of experiences, each of which will aid the learner in his development of a given concept.

Generalization 6. The formation of a concept is rooted in perception. Broudy (1962), Russell (1956).

Implication: The student who approaches problems conceptually is able to perceive the similarities and commonalities that exist in seemingly different events.

Generalization 7. To acquire a concept a person must abstract, or infer from the sensory data, those elements which add meaning to his understanding. McDonald (1959).

Implication: It is not enough for the learner to simply observe the event. He must interact with the information in his thinking or behavior.

Generalization 8. Greater clarity will result if but one attribute of the concept is studied at a time. McDonald (1959), Townsend and Burke (1962).

Implication: Activities designed to develop a given concept should each introduce a limited number of characteristics of the concept to facilitate comparisons by the learner with what he already knows.

Generalization 9. Continued positive reinforcement enhances concept learning although negative examples help sharpen concept delimitations. McDonald (1959).

Implication: Positive examples of attributes of a given concept should be the primary means of developing understandings since use situations will call for a grasp of the positive relationships the learner holds in his understanding of the concept.

Generalization 10. In the beginning stages of concept formation direct and personal experience leads to more rapid learning of the concept. Garrison and Gray (1953).

Generalization 11. Individuals of maturity and wide experience may not need direct personal experiences, but are capable of developing an understanding of a concept through vivid vicarious experiences. Burton, et al. (1960), Kolesnik (1963).

Generalization 12. New concepts are formed when a person finds his present system of concepts are inadequate in a new situation, when he encounters different concepts, and when someone challenges his concepts. Burton, et al. (1960).

Implication: The curriculum planner should structure activities which call upon the learner to re-evaluate his sytem of concepts.

Generalization 13. An understanding of a concept is clarified and broadened through analysis, reflection, generalization, and discrimination. Burton, et al. (1960) Morse and Wingo (1962).

Generalization 14. Repetition of the opportunity to use a concept enhances learning and broadens the understanding of the concept. McDonald (1959).

Implication: A planned sequence of activities introducing new situations should be provided to insure the learner will have the opportunity to re-examine his concepts in new contexts at different stages in his developing maturity.

Generalization 15. Concepts have dimensions and exist at varying levels of complexity, therefore, formation of a concept cannot be regarded as being final or fixed. Discrimination and generalization go on continuously. Burton, et al. (1960), Brownell and Hendrickson (1950), Kolesnik (1963), Serra (1952).

Generalization 16. Concepts are not achieved quickly but rather through a slow developmental process. Bradfield and Moredock (1957), Burton, et al. (1960), Brownell and Hendrickson (1950), Lee and Lee (1958) (1960), McDonald (1959), Morse and Wingo (1962), Stratemeyer, et al. (1947).

Generalization 17. Concepts are expressed in words or other symbols although it must not be assumed that the word is the concept, but rather, merely an expression of the concept. Kolesnik (1963), McDonald (1959), Morse and Wingo (1962), Russell (1956), Sutton (1963).

Implication: Mere verbalization should not be accepted as evidence of understanding of a given concept. The test of understanding lies in the ability to apply that concept to different use situations.

Generalization 18. It is possible for a given word or symbol to represent more than one concept among different individuals. Serra (1952).

Implication: Care must be exercised in choosing words or other symbols to represent a given concept. Communication problems may arise through dependence upon isolated word symbols.

Townsend and Burke (1962) recognizing many of the generalizations drawn above offer the following suggestion to curriculum planners:

> For building concepts, whether based on real or vicarious experiences, breadth of training in diverse meanings and the ability to concentrate on one aspect of the situation at a time are paramount. The well-developed use of concepts provides a wealth of vicarious experiences to enrich life and to give their user control over the self and the environment. (Townsend and Burke, 1962, p. 252).

Some Concepts--Example

Several selected examples of the many concepts which have been identified within the total structure of American industry are as follows:

Management - The task of planning, coordinating, motivating, and controlling the efforts of others toward a specific goal.

Industrial Relations - The determination and co-ordination of relations with employees and the public to promote the best interests of man and the organization.

Purchasing - The function of the liaison agency operating between the plant organization and the outside vendors on all matters of procurement.

Relief Printing - The transferring of ink from a raised surface directly onto a sheet of material receptive to ink, usually paper of some kind.

Open-pit Mining - A method of extracting ore deposits located at or near the earth's surface.

Hardness - The ability of a material to resist crushing, denting, or piercing.

Air Traffic Control - The control of aircraft with respect to speed, direction, elevation, departure, and arrival.

Destructive Testing - A check on mechanical and physical properties by destroying the test specimen under controlled conditions.

Shearing - The removal of a continuous chip through the movement of a sharpened edge along a straight line path.

Extruding - The forming of materials by forcing a material through a die of the desired shape.

These sample concepts are representative of the great variety of concepts which are being identified in the attempts to refine the structure of industry. The immensity of the task of bringing unity out of the complex variety of knowledge to be found in industry requires continuing efforts in this direction.

THE STUDY OF AMERICAN INDUSTRY AS A REPLACEMENT FOR THE TRADITIONAL INDUSTRIAL ARTS PROGRAM

The evolving program of American industry is not envisioned as merely a new approach, or addition, to present industrial arts offerings, but rather as displacing the traditional program in the secondary schools. The thinking of leaders in the field as expressed in professional publications and convention proceedings, in addition to personal observations of the writers over the last ten years, have brought a full realization of the need for a drastic re-orientation. The traditional industrial arts programs in evidence reflect a lack of logical consistency growing out of a variety of educational philosophies.

In summary comparison of some of the essential characteristics of American industry and industrial arts may be seen in the following:

	TRADITIONAL INDUSTRIAL ARTS	AMERICAN INDUSTRY
1.	Composed of a detailed study of knowledges concerned with production in specific industries for pre-vocational or avocational purposes.	Composed of a study of the knowledges contributing to the understanding of the total institution of industry for general educational purposes and to provide a firm foundation for future technical training.
2.	The selection of specific industries from among the many possible choices has led to a multiplicity of laboratory and curriculum patterns, making a coherent, unified, national program most difficult to achieve.	The identification of a structure composed of underlying concepts should make possible the development of a coherent, unified, national curriculum and the standardization of laboratory facilities.
3.	Pre-selected skills, representative of the industry under study, are identified and serve as the orientation for the course of study.	Concepts serve as the orientation for the course of study. Specific skills are introduced as they become necessary in the activities designed for the development of the concept.
4.	Attempts to duplicate the tools and machines of industry necessary to develop pre-selected skills and specific knowledges	Makes no attempt to duplicate the tools and machines of industry, but utilizes what facilities are needed to develop understandings of concepts.

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THE STATE OF WISCONSIN

DEPARTMENT OF PUBLIC INSTRUCTION

Room 148 North Capitol

Madison 53702

February 26, 1965

Dr. Wesley L. Pace &
Mr. Eugene R. F. Flug
Stout State University
Menomonie, Wisconsin

Gentlemen:

I have read with interest your research proposal entitled, "The Establishment of American Industry as a Transitional Subject Between General and Vocational Education." This is a program which has significant implication for us as we begin to implement the high school portion of the 1963 Vocational Education Act, and I hope that it will be possible for us to work together in one or more pilot schools. There are many important questions which must be answered in terms of helping high school students to make career choices and to prepare for entrance into entry occupations--by working together I feel that we have the best opportunity of coming up with answers that are realistic and sound.

I am looking forward to further opportunities to meet with you concerning this research project involving the American Industry Program.

Best wishes to you.

Sincerely,

(signed)

Robert A. Ristau
Coordinator--Vocational Education

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CONTRIBUTIONS OF AMERICAN INDUSTRY TO VOCATIONAL EDUCATION

It is felt by the American industry staff that the program offers a means of providing for a smooth transition from general education to vocational education in its recognition of the need for all youth to have an understanding of American industry. This program is looked upon as providing a solid foundation for all students, whether their future choice of vocations leads them into further technical study or into the professions. The particular advantages of this base for further preparation for industry lies in the emphasis upon basic concepts of the industrial complex. These understandings, if properly developed, should make it possible for the student to comprehend, accept, and adapt to change as it manifests itself in life.

3. OBJECTIVES: The specific objectives for which this proposal is being submitted are:

A. To complete the development of an articulated program of American industry at three levels leading into vocational preparation. An attempt will be made to identify and select additional participating schools repre ıtative of varying socio-economic levels.

B. To establish, at Stout State University, a resource center for the program of American industry.

C. To complete the preparation of teaching materials for the upper two levels of American industry and refinement of the first years materials.

D. To carry on a series of institutes for the preparation of in-service teachers who will introduce the program of American industry into their schools.

E. To carry on a pilot teacher education program culminating in a recommended curriculum for the undergraduate preparation of teachers of American industry.

F. To identify research problems associated with the development and the implementation of the articulated levels of American industry, and to encourage research action seeking answers to these problems.

4. ADMINISTRATION: The co-directors of the project will assume responsibilities for planning and coordinating the efforts of the following staff:

--Supervisor of participating teachers

The major responsibility of this position will include conducting observation visits to participating schools and assisting in planning workshops.

--Curriculum specialist

This person will be responsible for the development of instructional materials for the three curriculum levels in the secondary schools.

--Director of pilot teacher education program

His major responsibility will be the planning and coordinating, with affected departments, experimental teacher education experiences and maintaining liaison with the professional education staff. In addition, he will work closely with the curriculum specialist in developing curriculum materials.

--Research specialist

He will be concerned with identifying research problems associated with the project, encouraging related research efforts, and maintaining liaison with the graduate school.

--Instructional media specialist

This person will consult with the curriculum specialist and maintain liaison with the printing department and the audio-visual center.

--Three full time clerk-stenos

--Eight graduate research assistants

Since this project is seen as a staff project of Stout State University, the seminar group composed of department heads and other selected staff members, will continue as a major advisory group.

5. PROCEDURES: To introduce the developing program of American Industry into the secondary schools at three levels involves a four step approach as follows:

Step 1	Step 2	Step 3	Step 4
Preliminary planning during Summer Session	Developmental year during Academic year 1	Refining of materials during Summer Session	Demonstration year during Academic year 2

During the first stage, content is revised and preliminary teaching materials are preapred in preparation for the developmental year. During the developmental year, problems associated with the methodology and teaching materials are identified. These problems serve as the basis for the revision of materials which are then utilized in a demonstration year. In the interest of expediency in introducing the curriculum at three levels, an overlapping process reducing the total time involved to four years, is seen in the diagram on page 21.

It should be noted that a pilot teacher education program will be introduced to parallel the development of the secondary curriculum.

A. General Design: The sequential process of development illustrated in the diagram shown, contributes directly to the achievement of the first four objectives stated. Members of the group of teachers who have already begun the developmental introduction of American industry will serve as a continuing nucleus throughout the project. An additional group of twelve

DEVELOPMENTAL PLAN of AMERICAN INDUSTRY

WORK ACCOMPLISHED PRIOR TO PROPOSAL

GROUP I DEVELOPMENTAL YEAR 1st LEVEL

GROUP I: PLANNED 1st LEVEL DEVELOPMENTAL YEAR.

1964 SUMMER WORKSHOP

1964-1965 ACADEMIC YEAR

GROUP I DEMONSTRATE 1st. LEVEL DEVELOP 2nd. LEVEL

GROUP I: REFINE 1st. LEVEL MATERIALS & PLAN 2nd. LEVEL.
GROUP II: ORIENTATION & PREPARATION FOR 1st. LEVEL DEMONSTRATION.

GROUP II DEMONSTRATE 1st. LEVEL

PILOT TEACHER EDUCATION GROUP

1965 SUMMER WORKSHOP

1965-1966 ACADEMIC YEAR

GROUP I DEMONSTRATE 2nd. LEVEL DEVELOP 3rd. LEVEL

GROUP I: REFINE 2nd. LEVEL MATERIALS & PLAN 3rd. LEVEL DEVELOPMENTAL YEAR.
GROUP II: ASSIST IN REFINING & PREPARE FOR 2nd. LEVEL DEMONSTRATION.

GROUP II DEMONSTRATE 2nd. LEVEL

PILOT TEACHER EDUCATION GROUP

1966 SUMMER WORKSHOP

1966-1967 ACADEMIC YEAR

GROUP I DEMONSTRATE 3rd. LEVEL

GROUP I: REFINE 3rd. LEVEL MATERIALS.
GROUP II: ASSIST IN REFINING 3rd. LEVEL MATERIALS & PREPARE FOR 3rd. LEVEL DEMONSTRATION.

GROUP II DEMONSTRATE 3rd. LEVEL

PILOT TEACHER EDUCATION GROUP

1967 SUMMER WORKSHOP

1967-1968 ACADEMIC YEAR

GROUP I DEMONSTRATE TOTAL PROGRAM

FINAL REVISION of MATERIALS IN PREPARATION for DEMONSTRATION of FULLY ARTICULATED PROGRAM

GROUP II DEMONSTRATE TOTAL PROGRAM

PILOT TEACHER EDUCATION GROUP

1968 SUMMER WORKSHOP

1968-1969 ACADEMIC YEAR

AMERICAN INDUSTRY PROJECT -- STOUT STATE UNIVERSITY

teachers will be brought into the program to broaden the representation of socio-economic levels, and also to gain experience in the structuring of continuing summer institutes.

During the summer of 1965, those eight teachers who are already involved in the project will return to the Stout campus to refine their first level teaching materials and do preliminary planning for second level courses. Concurrently the second group of teachers new to the program will familiarize themselves with the content and aid in the refinement of first level materials. Eight hour daily work sessions for the eight week summer term will be utilized for this purpose.

During the following academic year, staff observations of demonstration and developmental programs will be made monthly. In addition, all participants will return to the campus each month to review problems, exchange information, and receive needed in-service training.

In the summer of 1966 the twenty teachers will again take part in an eight week workshop. Group one will refine level two materials and do preliminary preparation work for the development of third level materials. Group two will assist in refining materials and prepare to demonstrate second level courses. This pattern will continue throughout the total developmental sequence and will culminate in a final demonstration year of a fully articulated three level program.

Each summer, beginning in 1965, a graduate seminar will be offered for other persons interested in the program. The experiences gained will add to the basis for the design of institutes continuing beyond the project for the in-service education of teachers wishing to introduce the study of American industry into their own schools.

As the teaching materials are refined they will become part of the growing library of resource materials which has already been started. Contacts have been made with over 1,500 industries, trade associations, and

labor groups, requesting materials pertinent to the project. This represents about one-half of the initial contacts of this kind to be made. This library of materials will be made available to the project participants and to other interested parties. The audio-visual center at Stout will also be utilized for the purpose of developing teaching aids to become part of the resource materials library.

The first step in the development of a teacher education program will involve the selection of twenty-five freshmen students to comprise a pilot group. This group will be one of approximately twenty-five sections expected to enroll in industrial education in the fall of 1965. Selection will be based upon standardized tests, high school records, and willingness to participate in such a program. During their four years at Stout, experiences will be aimed at developing a teacher capable of meeting the problems identified in the field program. At the end of the total developmental period, recommendations will be made for the introduction of a teacher education program for American industry.

It seems imperative that attempts to evolve a design for teacher educations parallel the development of the secondary school program. Interest of the present student body has been stirred as well as that of teachers on our staff who are examining their own teachings with new questions. While it may seem presumptuous to plan a program for teachers of a secondary curriculum which is still under study, we must ask, "Can we do otherwise?" During the four years of the secondary developmental program, Stout will graduate close to 600 technical teachers whose influence will long affect the field. At the end of this four year program we must stand ready to offer a curriculum design for teachers of American industry.

As research problems related to the teaching of the concepts of American industry are identified, a staff member will assume responsibility for structuring appropriate research studies. Several master's papers and one Ph.D.

thesis on problems related to the project have already been undertaken and encouragement will be given to others interested in those research problems related to the articulation of vocational and general education.

A factor of prime importance in the valid development of content, and in fact, the total operation of the program, is the continuing use of consultants. A number of the faculty possessing special competencies, have served as members of a faculty seminar providing guidance throughout the initial phase of the program and will continue to do so.

Ten faculty members, representative of the academic areas as well as the technical areas, focussed concentrated attention upon specific aspects of our content over the past Christmas holidays. It must be emphasized that this is a total University project.

The Board of Visitors, made up of representatives from industry, was organized as an advisory board to Stout State University three years ago. This board has also agreed to cooperate with the project directors.

A relationship has been established with the University of Wisconsin Vocational Research Center, with President Micheels of Stout serving on its advisory board.

B. Schools: An attempt will be made to maintain a broad representation of various socio-economic levels in the schools. The problems of the poorly equipped rural and urban schools are of special interest. The schools so identified will be contacted and their cooperation sought through the school's superintendent. The advice of the State Department of Vocational Education, as well as the Department of Public Instruction, will be an important factor in the selection of schools.

Wisconsin has just identified 28 secondary schools that will serve as pilot schools to implement the Vocational Education Act of 1963. An attempt

will be made to identify one or more of these pilot schools and develop an American industry program at the junior high level which will lead to the vocational program in the senior high.

C. Participants: A participating teacher will be selected on the basis of his willingness to submit to the discipline of additional demands upon his time, cooperation in accepting the dislocations of introducing three levels of American industry into his program, and availability for participation in summer and monthly workshops. Our primary selection factor will be the school situation.

D. Methods and Materials: Much emphasis will be made upon the use of a variety of methods with considerable use of audio-visual aids.

E. Evaluation: As curriculum content and materials are developed they will be submitted for critical analysis to the groups of consultants identified for that purpose. The consultants will be asked specifically to respond to the questions, "Are these knowledges truly representative of industry?" and "Do these concepts provide adequate coverage within the concept area concerned?" Teaching materials will be refined in the light of experiences of the participating teachers.

Tape recordings of interviews with the participating teachers and their students will be used as a basis for evaluating the classroom procedures being used in each teaching situation. This technique has proved to be of particular value in this first year of operation. A specific checklist, based upon observations made in the past year, will be developed. Interviews with randomly selected students will be aimed at discovering not merely their reactions to the program but also determining their understanding of the concept under consideration.

A more refined evaluation of the effects of the American industry program will be made by seeking answers to the questions:

1. Does the American industry student, at the completion of his

sequence of American industry courses, possess those knowledges commonly found in successful industrial personnel?

2. Does the American industry student solve industrially related problems in a manner similar to successful industrial employees?

As presently envisioned, a number of steps are seen necessary to answer these questions and also to provide a further check on our content.

Step 1: A trained interviewer will visit selected industries for the purpose of identifying the basic concepts possessed, and the kinds of problems faced by workers at various levels. (industries represented by the Stout State University Board of Visitors are readily available for this purpose. These include: Josten's, Owatonna, Minnesota; United States Rubber Company, Eau Claire, Wisconsin; Giddings and Lewis Machine Tool Company, Fond du Lac, Wisconsin; Northwest Plastics, Inc., St. Paul, Minnesota; R. C. Hitchcock and Sons, Inc., Minneapolis, Minnesota; S. C. Johnson and Son, Racine, Wisconsin; Western Printing and Lithographing Company, Racine, Wisconsin; A. C. Spark Plug Division of General Motors, Milwaukee, Wisconsin; Industrial Management Consultants, Madison, Wisconsin.

Step 2: Based upon these interviews, an instrument will be developed to measure the knowledges which are commonly found among successful workers employed in industry, and also to measure the ability to solve industrially related problems.

Step 3: A pilot validation study will be made in one large diversified industry by administering the test instrument to workers who have been identified as to degree of success.

Step 4: Revisions of the instrument will be made as indicated by the results of the pilot validation study.

Step 5: Validation will then be accomplished on a national basis by randomly selecting successful workers at different levels in industries which have been randomly chosen by geographical location. The successful worker will be identified by his supervisors.

Step 6: The validated instrument will then be administered to two groups of students, those who have had American industry, and those who have not.

Step 7: Appropriate statistical techniques will be applied to the data to determine if differences do exist.

Several staff members at Stout possess competencies which will be drawn upon for the preparation of the interview questionnaire, the training of the interviewer, the detailed design of the evaluation procedure, and the computer analysis of data. As the planning for evaluation is undertaken the resources of the University of Wisconsin Vocational Education Research Project will be used and their personnel consulted.

The implementation of a follow-up study is also seen as important to and adequate evaluation of the American industry program, as well as providing information which may be of help in refining the program. The follow-up study will be designed to subject to test the following hypotheses:

H_1: The student of the American industry curriculum will effect a better transition into future industrial training, as measured by achievement, than the student who has not taken American industry.

H_2: The students of the American industry curriculum will exhibit greater variety in their occupational choices than the student who has not taken American industry.

H_3: The student of the American industry curriculum will persist in his chosen occupation to a greater degree than the student who has not taken American industry.

H_4: The student of the American industry curriculum will effect a better transition into his first full-time employment position, as reported by his supervisors, than the student who has not taken American industry.

H_5: The student of the American industry curriculum will be more flexible and adaptable in training and in his job than the student who has not taken American industry.

Instruments will be developed and applied in accordance with appropriate statistical procedures to test the above hypotheses.

F. Time Schedule: The development of curriculum materials accompanied by demonstrations and the design of a teacher education program are seen as requiring a four-year period as shown in the general design. The follow-up study would be initiated during the 1968-69 academic year.

6. DISSEMINATION: A yearly progress report will be prepared and distributed to those interested. A mailing list has already been started for this purpose. Presentations will continue to be made to interested groups and articles will be submitted for publication in the professional journals. Visits by interested parties to the participating schools will be encouraged. Upon completion of the project, reports will be sent to the heads of all industrial arts teacher education departments, state departments of public instruction,

and state departments of vocational education in the United States. Abstracts will be furnished to interested industrial associations and individuals.

7. PERSONNEL:

Co-Directors

Wesley L. Face

Position - Chairman, Metals Department

Rank - Associate Professor

Education - B.S. Northern State College, Aberdeen, South Dakota.

M.S. Stout State University, Menomonie, Wisconsin.

Ed.D. University of Illinois, Urbana, Illinois.

Experience - 3 years in Air Force Technical Schools.

2 years in Secondary schools in Illinois and Wisconsin.

2 years as a graduate teaching assistant.

8 years as a college teacher at Stout

Eugene R. F. Flug

Position - Supervisor, on-campus student teaching.

Foreign Student Advisor.

Rank - Assistant Professor

Education - B.B.A. University of Minnesota.

B.S. Education - University of Minnesota.

M.A. Education - University of Minnesota.

All but thesis completed for doctorate at University of Minnesota.

Experience - 4 years of corporation accounting.

2 tours (4 years) of duty as a pilot in the Air Force.

9 years college teaching. (Including 2 years high school teaching concurrently.)

Additional Personnel Required

Supervisor of participating teachers

Curriculum Specialist

Director of pilot teacher education program

Research specialist

Instructional media specialist

Existing Faculty Seminar

Dr. William J. Micheels, President, Stout State University, former chairman, Department of Industrial Education, University of Minnesota, past president, American Industrial Arts Association, Consultant on Vocational Education to the Ford Foundation. University of Wisconsin Vocational Research Center Advisory Panel.

Dr. John A. Jarvis, Dean of Instruction, Stout State University. B.S. Mechanical Engineering, University of Wisconsin; Ph.D., University of Minnesota, Past President, American Vocational Association.

Dr. Robert Swanson, Dean, School of Applied Science and Technology. Ph.D., University of Minnesota. Current President, American Industrial Arts Association.

Dr. Wesley S. Sommers, Chairman, Department of Industrial Technology. B.S. in Engineering, University of Michigan. Ph.D., University of Minnesota.

Dr. John Furlong, Assistant to the President. Ph.D., University of Minnesota. Former Superintendent of Schools, Coleraine, Minnesota.

Dr. Phillip W. Ruehl, Chairman, Electricity and Mechanics Department, Ph.D., University of Minnesota.

Dr. David P. Barnard, Chairman, Audio-Visual Center. Ed.D., Indiana University.

Dr. Herbert A. Anderson, Chairman of Industrial Graphics Department. Ed.D., University of Missouri.

Mr. Lloyd F. Whydotski, Chairman, Printing Department. M.S., Colorado State, Greeley, Colorado.

Mr. Earl Gierke, Chairman of Mathematics Department. M.S., University of Minnesota. Completing work for Ph.D., at University of Minnesota.

Mr. Harold Halfin, Metals Department. Graduate work at Pennsylvania State University and Doctoral Candidate at West Virginia University.

Dr. Louis Klitzke, Psychology Department, Ed.D., Colorado State College, Greeley, Colorado.

Dr. Arnold Piersall, Chairman, Wood Technics Department, Ed.D., Colorado State College, Greeley, Colorado.

Dr. Robert Rudiger, Chairman, Industrial Teacher Education Department. Ed.D., University of Missouri.

Existing Board of Visitors
Stout State University

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J. L. Wiggins, Executive Vice President	Automotive Service Industry 168 N. Mich. Avenue Chicago 1, Illinois
Dr. John R. Wrage	Industrial Management Consultants 25 W. Main Street Madison, Wisconsin 53702

8. FACILITIES: Stout State University has been preparing teachers for vocational, industrial, and home economics education since 1893, and for many years has led all other colleges in the number of students enrolled with a major in industrial education. In the school year 1963-64 alone, 113 men graduated with the B.S. degree in industrial education and 45 in industrial technology. In addition 48 men earned M.S. degrees in industrial education and 20 earned M.S. degrees in vocational education.

A measure of the impact of Stout upon the field is seen in the fact that our graduates hold positions in every state in the United States and in many countries of the world. Of those who have earned master's degrees from Stout, 136 are supervisors, directors, and coordinators, 139 are employed by colleges and universities, and 765 are teaching in high schools and vocational schools.

Over 500 men enrolled as freshmen this past year and two-thirds of these will enter industrial education programs. Our present total male student enrollment exceed 1300.

No institution in the country has better facilities than Stout State University for the training of industrial arts teachers. There are 27 well-equipped laboratories and shops for the study of industry. Closed circuit television experiments are being conducted as part of the college research program. Experimentation with team teaching, independent study, advanced placement, and open laboratories are also being undertaken.

Stout has long enjoyed a strong reputation for leadership in technical education and the recent addition of fine arts and art education majors indicate growing strength in the liberal education fields as well.

The Robert Pierce Library contains 70,000 volumes with a concentration of reference materials in industrial education. Each of the laboratories also maintains a file of the latest materials and developments in industry.

The participating schools will be expected to make their industrial arts facilities available for this study. Each industrial arts department must be willing to change their sequence of courses for the duration of this project and purchase supplies and materials needed for classroom activities. Each school will be asked to furnish clerical help where needed, and pay transportation costs to each workshop as well as the cost of a substitute teacher needed to replace the participant. These conditions have been met by the eight schools already taking part in the project.

9. OTHER INFORMATION: This proposal is an outgrowth of a small initial grant from the U. S. Office of Education, which made possible the development of the underlying rationale. The Ford Foundation subsequently supplied funds

which enabled us to introduce an initial year's experience into the schools. The promise resulting from this first year's experience has aroused a determination on the part of all of us that this project must continue, although without adequate support our efforts must be greatly curtailed.

In our experience with participating schools and teachers we have found a great willingness to innovate, but since school boards are charged with the responsibility of maximizing the educational return on the dollar, local systems are reluctant to expend funds needed for experimentation. This conservatism adds to the educational lag. Only through financial support from outside agencies can significant breakthroughs be accomplished.

10. CONSIDERATION BY STATE BOARD FOR VOCATIONAL EDUCATION: Representatives of the state board have already been contacted and have taken part in several of our workshops with participating teachers. Continued consultation is planned. Copies of supporting letters are attached.

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*These references having the asterisk were used for the preparation of this report.

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THE STATE OF WISCONSIN
STATE BOARD
OF
VOCATIONAL AND ADULT EDUCATION
Room 720, 1 West Wilson Street
Madison 53702

February 26, 1965

Dr. William J. Micheels
President
Stout State University
Menomonie, Wisconsin

Dear President Micheels:

We have reviewed the developmental and pilot proposal for the establishment of American Industries as a transitional subject between general and vocational education with much interest.

We in vocational, technical and adult education have long been concerned with educational sequence in which the high school has not provided suitable orientation or foundation for success in vocational and technical fields. This difficulty has been well analyzed in the proposal which, if accepted, will result in an articulated foundational experience for vocational and technical education.

We firmly believe that vocational and technical education must be based upon a sound general education program which encompasses the economic and physical realities of our society as a part of the whole rather than as a track for the disenfranchised.

To be productive, vocational education must concern itself with people who have potential for employment. The American Industries program acknowledges this in the development of a concept which relates American Industries closely to the other aspects of the high school curriculum.

In view of advancing technology, increasing educational minimums, and the increasing requirements of job entry, these will be the foundational experiences upon which future experiences may be built--vocational and technical as well as scientific, academic, and social.

We believe that the vocational education which will be most meaningful in the high school will be that which is continuous with the post high school efforts. It should not infringe upon the tools of learning, but give emphasis to enlightened career choice rather than premature commitment.

The American Industries program expresses a movement to attack these problems and will provide the reorientation of secondary education demanded by modern society.

We wish to give you every encouragement as you pursue this program.

Sincerely yours,

(Signed)

C. L. Greiber
State Director
Vocational and Adult Education

DMB/lp

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THE UNIVERSITY OF WISCONSIN
THE SCHOOL OF EDUCATION
Department of Educational Psychology
Education Building
Madison 6, Wisconsin

February 26, 1965

Mr. David Bushnell
Division of Vocational-Technical
Education
U.S. Office of Education--Department
of Health, Education and Welfare
Washington, D. C. 20202

Dear Dr. Bushnell:

Professors Wesley L. Face and Eugene K. F. Flug, Stout State University, have discussed with me their desire for consultative and possible other cooperative relationships with the University of Wisconsin's Research Center for Vocational-Technical Education in connection with their pioneering achievements and projected follow-up activities in the field of curriculum studies in the Industrial Arts.

Stout State University, as you know, is one of the strongest institutions in the Nation in this field. Because of its potential, we at the University of Wisconsin, early in our plans and program, sought the participation of Stout's interested faculty members in the program of our Center. Its President, Dr. William J. Micheels, himself an authority in trade and technical education, is a member of our Center's Advisory Committee. We consider these resources an important element of strength in our Center's organization and program.

We have told Professors Face and Flug that the University of Wisconsin's Center will be pleased to advise and consult with them on any aspect of their project for which our Center's services would be helpful to them. We feel strongly that such cooperative action and mutual assistance between institutions and research workers builds strength into the total national effort in this important field.

Sincerely yours,

(signed)

J. Kenneth Little, Co-Director
Center for Studies in Vocational
Technical Education

JKL/mlh

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Information from the 1950 and 1960 Census of population is used to derive estimates of the number and proportion of farm and nonfarm youths who dropped out before finishing high school. The analysis focused on dropout rate for males, differences between major regions, and on comparisons of white-nonwhite differences within the farm and nonfarm school age populations. Data also were presented which may be used to derive dropout rates for females and to make detailed comparisons between the South and the rest of the United States. Dropout rates by age and residence for the entire United States and for the South are shown. The prevalence of droupouts among 19 year olds is shown for each of the 50 states by residence and by color for the southern states. Detailed analysis is limited to youths 16-24 years of age and describes school dropouts in 1950 and 1960. Estimates are made of the number of actual dropouts 14-24 years of age. (CH)

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34 p.

SCHOOL DROPOUT RATES AMONG FARM AND NONFARM YOUTH: 1950 and 1960

Economic and Statistical Analysis Division
Economic Research Service
U. S. DEPARTMENT OF AGRICULTURE

VT002870

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This report was prepared under the general supervision of Louis J. Ducoff, Chief, Farm Population Branch. Calvin L. Beale of the Farm Population Branch and Charles B. Nam of the Bureau of the Census made a number of helpful suggestions.

September 1963

HIGHLIGHTS

Information from the 1950 and 1960 Censuses of Population is used to derive estimates of the number and proportion of farm and nonfarm youths who dropped out of school before finishing high school. The analysis is focused on dropout rates for males, on differences between major regions, and on comparisons of white-nonwhite differences within the farm and nonfarm school-age populations. Data also are presented which may be used to derive dropout rates for females and to make detailed comparisons between the South and the rest of the United States.

The estimated total number of school dropouts includes youths who had completed fewer than 12 years of school and were not enrolled in school--referred to as actual dropouts--plus the number of youths enrolled in grades (other than the 12th grade) two or more grades below the level of most youths of the same age--referred to as probable dropouts. Because 16 is the age when most State provisions for compulsory school attendance no longer apply, detailed analysis is limited to youths 16-24 years of age. To provide an overall description of the number of actual school dropouts in 1950 and 1960, estimates are made of the number of actual dropouts 14-24 years of age.

Dropout rates are shown by age and residence for the entire United States, and for the South separately, and the prevalence of dropouts among 19-year-olds is shown for each of the 50 States by residence, and by color for the Southern States.

White-nonwhite comparisons are limited to the South because census data by color and residence were published only for that area and such comparisons for other regions are not possible. In additon, the nonwhite farm population is concentrated in the South.

Highlights of the analysis include:

Persons 14-24 Years Old

1. Between 1950 and 1960 both the number and proportion of actual school dropouts among 14-24-year-olds declined from 7.8 million (32 percent) in 1950 to 6.1 million (23 percent) in 1960.

2. In 1950, 40 percent of farm youth and 28 percent of urban youth 14-24 years old had dropped out of school. By 1960, dropout rates were about the same for urban youth (21 percent) as for farm youth (23 percent).

3. In both years, nonwhites had substantially higher dropout rates than did whites--in 1960, nonwhite dropout rates (36 percent) were higher than those of whites (30 percent) a decade earlier.

Persons 16-24 Years Old

1. In 1960, 27 percent of all persons 16-24 years old had dropped out of school and an additional 3 percent were retarded two or more grades in school and are considered probable dropouts. Comparable percentages for 1950 were 38 percent and 4 percent, respectively.

2. Among male farm residents 16-24 years old, the estimated total (actual and probable) dropout rate for whites declined from 54 percent in 1950 to 32 percent in 1960; for nonwhites, the decline was from 89 percent to 70 percent.

3. Contrary to the situation in 1950, total dropout rates for farm males were slightly lower than those for rural-nonfarm males in 1960. This reversal may have been due, in part, to the change in definition of farm residence between 1950 and 1960. In both years, the highest dropout rates of any group were those of nonwhite farm males.

Prevalence of Dropouts Among 19-Year Olds

1. A State-by-State comparison of the number of school dropouts 19 years of age showed that West North Central States had the lowest rates (23 percent) and that East South Central States had the highest (45 percent).

2. In Nebraska, Minnesota, Iowa, and Utah dropout rates for 19-year-olds did not exceed 20 percent, whereas in Georgia, Kentucky, Mississippi, and South Carolina dropout rates were 45 percent or more.

3. In six States (Kansas, Illinois, Indiana, Michigan, Nebraska, and Ohio)dropout rates for 19-year-old farm youth were lower than those for rural-nonfarm or urban 19-year-olds.

4. The estimated percentage of 19-year-old high school graduates was moderately correlated with the proportion of the State adult population with at least a high school education (r= .647) and with the average State per pupil expenditure for education (r= .447).

* * * * * *

SCHOOL DROPOUT RATES AMONG FARM AND NONFARM YOUTH: 1950 AND 1960

James D. Cowhig
Farm Population Branch
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To judge by the tenor and scope of current discussion, two of the more important tasks of U. S. education are those of assuring qualified students an opportunity to attend college and of reducing the number of persons who fail to complete high school. High school graduates seeking college admission and school dropouts seeking employment are in quite different circumstances, but in both instances the goal of education is similar--to provide a larger proportion of youths with more, and better, education. Where high school completion has become the norm, failure to complete school often places the individual at a serious disadvantage. The failure of able students to complete high school or to attend college results in a loss of talent and inadequate use of what some have termed "human resources," and represents an important social and economic loss.

Some of the personal and social consequences of dropping out of high school are reported in previous studies. It is shown, for example, "... that additional schooling is associated with a very substantial increase in lifetime income." (3); 1/ that unemployment rates of school dropouts are substantially higher than those of graduates (8, 9, 10) and that jobs obtained by dropouts are generally of lower status than those obtained by high school graduates (7, 10). Another study reports substantial differences among nonfarm males in the occupations held by dropouts compared with high school graduates, and also shows that a higher proportion of farm than nonfarm males in the labor force and not enrolled in school had failed to graduate from high school (2). There is good reason to believe that continued technological development will result in even greater emphasis on education or skilled training as a prerequisite for employment in an increasing proportion of occupations.

In addition to studies of the economic and occupational differences associated with varying levels of educational attainment, there has been considerable concern with the relationships between the social and psychological characteristics of school dropouts (4, 5, 6, 11) and with some of the social problems which may result from high dropout rates (1).

In view of the fact that rural youth have had lower levels of educational attainment than urban youth, the proportion of school dropouts is generally assumed to be higher in rural than in urban areas. Since many rural youths must seek jobs in urban areas--only a small minority of farm youths can expect to follow careers as farm operators--questions regarding rural dropout rates are of particular importance. 2/

The major purpose of this report is to present current (1960) and comparative (1950) data on the number and proportion of youths in the United States who have dropped out of school short of high school graduation, and to determine variations in dropout rates between farm and nonfarm youths.

1/ Underscored figures in parentheses refer to items in Literature Cited, p. 30.
2/ For example, the subject of school dropouts was one of the major topics discussed at the 1963 National Conference on Problems of Rural Youth in a Changing Environment, held at the Oklahoma State University, Stillwater, Okla., September 22-25, as it was at a previous conference on urban youth.

SOURCES OF DATA AND POPULATION COVERED

The estimates of school dropouts in this report are based on data from the 1950 and 1960 Censuses of Population. There are two considerations of particular importance in comparisons of farm and nonfarm dropout rates: (1) The definition of "farm residence" was more restrictive in 1960 than in 1950. There is some evidence that among the persons removed from the farm population and added to the rural-nonfarm population in 1960 by the change in definition the dropout rates were probably higher than in the rural-nonfarm population but lower than in the remaining farm population. Comparisons of farm-nonfarm dropout rates between 1950 and 1960 undoubtedly reflect the effect of the change in definition, as well as other factors, but the precise effect of the change in definition cannot be determined from the information presently available. (2) High rates of farm to nonfarm migration characteristic of younger persons also affect the results, particularly if there were significant differences in the educational attainment of migrants and nonmigrants.

In both Censuses, questions regarding school enrollment and educational attainment were asked for a sample of the school-age population, and are subject to sampling variability and errors of reporting and processing. (For a description of the source and limitations of the data, see Definitions and Explanations, pages28-29.)

To provide information on the total number of school dropouts, data are presented for persons 14 to 24 years old, but the discussion is concerned primarily with the dropout rates of young men 16 to 24 years old and with comparisons of farm-nonfarm and white-nonwhite dropout rates. In part, this emphasis is due to the age detail in which census data on education are available. More important reasons for the emphasis upon males, and on the age group 16-24 years old, include the fact that the educational attainment of young men has important implications for the quality of the labor force and for the future of the young men and their families, and that most States have provisions for compulsory school attendance up to age 16. For these reasons, and because dropout rates for 14- and 15-year-olds are low, the analysis is focused on the experience of youths most of whom are under no legal requirement to remain in school. Comparable estimates of dropout rates for young women can be derived from the information presented in the tables.

At present, census data are not available to answer questions concerning other variables related to withdrawal from school, e.g., the socioeconomic status of the dropout's family; the educational background of his parents; or the occupational status of dropouts. 3/ Furthermore, no information is available regarding qualitative differences in the amount of schooling received or the significance of withdrawal from school to the individual concerned.

METHODS OF ESTIMATING DROPOUTS

Two estimates of school dropouts are shown in this report. The first is an estimate of actual dropouts, and considers as dropouts all persons 14-24 years old who were not enrolled in school and who had completed fewer than four years of high school. This estimate is conservative in that all those enrolled in the fourth year of high school are counted as high school graduates and no estimate is made of the number of youths enrolled in other grades who will fail to graduate. Even though some of the actual dropouts may have returned to school and may have completed their secondary education, all of them had dropped out of school.

3/ Information on these and related topics is to be published in a Volume II Report of the 1960 Census, and in a Census monograph tentatively titled Education of the American Population by John K. Folger and Charles B. Nam.

The second estimate adds to the number of actual dropouts the number of probable dropouts, defined as persons 16-24 years old and enrolled in grades two or more grades below those expected for their age, except those enrolled in the fourth year of high school. 4/

It would have been desirable to base the estimate of probable dropouts on information regarding the dropout rates of persons retarded in school, but such information is not available in the required detail. Although there is evidence that a substantial number of dropouts were retarded in school, there is no satisfactory information on the proportion of scholastically retarded youths who fail to graduate. It is reasonable to assume that a high proportion of youths 16 and 17 years old and enrolled at a level of two or more grades below that of most youths the same age will drop out of school rather than continue in school to graduate at age 20 or older. For those 18-24 years old, a contrary assumption would be difficult to justify. Any upward bias in the estimate of probable dropouts is compensated for by the fact that a proportion of youths not retarded in school will fail to graduate.

These estimates refer only to enrollment in regular schools, whether public or private. No estimate is made of the number of dropouts from regular school who may be enrolled in special schools, such as secretarial schools. (See Definitions and Explanations, pages 28-29.)

SCHOOL DROPOUTS AMONG 14-24-YEAR-OLDS: 1950 AND 1960 5/

Between 1950 and 1960, the actual dropout rate among youths 14-24 years old declined 29 percent (table 1). In 1950, 7.8 million youths (32 percent of all persons 14-24) had withdrawn from school before completing high school; in 1960, 6.1 million persons (23 percent of the total) had dropped out of school. In 1950, there was a substantial difference between urban and farm dropout rates (28 percent and 40 percent, respectively), but by 1960 the difference had been reduced to 21 and 23 percent, respectively. Within the rural population, however, the minor difference between nonfarm and farm dropout rates in 1950 had widened to the point where, in 1960, dropout rates were higher for rural-nonfarm youths in each sex-color category. As mentioned earlier, the effect of farm to nonfarm migration on these data is unknown.

The greatest differences in dropout rates are those between whites and nonwhites, and are substantially greater than differences between farm and nonfarm youths. In fact, nonwhite dropout rates in 1960 were higher than those for whites in 1950. In 1960, white-nonwhite differences were greatest for farm youth. Within the farm population, the decline in the drop out rate was greater for white than for nonwhites. For example, if the decline in dropout rates is measured as a percentage of the maximum decline possible, (a decline to zero) then dropout rates for nonfarm (urban and rural) youth declined 26 percent for whites and 28 percent for nonwhites. Among farm youth, however, white dropout rates declined 44 percent of the maximum possible compared with 31 percent for nonwhites. 6/ Insofar as this conservative measure of

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4/ For an analysis of school retardation, see: James D. Cowhig, "Age-Grade School Progress of Farm and Nonfarm Youth: 1960." Agr. Econ. Rpt. No. 40, U. S. Dept. Agr. 1963.

5/ The discussion in this section refers only to estimates of actual dropouts--persons 14-24 years old with less than 12 years of school completed and not enrolled in school.

6/ The presistence of white-nonwhite differences within the farm population at about the same level in 1960 as in 1950 is similar to the pattern for a number of other socioeconomic differences between whites and nonwhites. See: James D. Cowhig and Calvin L. Beale, "Socioeconomic Differences Between White and Nonwhite Farm Populations in the South" in a forthcoming issue of Social Forces.

Table 1.--Total number of persons 14 to 24 years old and number and percent with less than 12 years of school completed and not enrolled in school, urban and rural, by color and sex, United States, 1950 and 1960

(Numbers in thousands and rounded without adjustment to totals. Percents independently rounded.)

Year, color, and sex	United States		Urban		Rural nonfarm		Rural farm	
	Total number	Percent dropouts	Total number	Percent dropouts	Total number	Percent dropouts	Total number	Percent dropouts
1950								
Total, 14-24 years	24,220	32.2	15,032	27.9	5,174	39.1	4,015	39.8
White	21,368	29.8	13,382	25.7	4,649	37.0	3,336	36.5
Nonwhite	2,852	50.8	1,649	46.4	525	57.7	679	56.1
Male	11,973	33.7	7,165	28.3	2,649	41.0	2,159	42.9
White	10,619	31.4	6,420	26.2	2,381	38.9	1,817	39.9
Nonwhite	1,354	51.9	745	46.2	268	58.9	342	58.9
Female	12,247	30.9	7,867	27.6	2,525	37.2	1,855	36.2
White	10,749	28.2	6,962	25.1	2,267	35.0	1,519	32.4
Nonwhite	1,498	49.8	905	46.6	257	56.5	336	53.2
1960								
Total, 14-24 years	26,838	22.8	18,274	21.0	6,420	27.8	2,144	23.0
White	23,542	21.0	16,031	19.3	5,684	26.2	1,826	20.3
Nonwhite	3,297	35.6	2,243	33.6	736	40.1	318	38.5
Male	13,385	23.1	8,815	20.8	3,404	28.3	1,165	24.8
White	11,777	21.3	7,770	19.1	3,000	26.6	999	22.1
Nonwhite	1,607	36.3	1,046	33.6	396	41.3	166	41.2
Female	13,454	22.5	9,459	21.2	3,016	27.2	979	20.8
White	11,764	20.8	8,262	19.4	2,676	25.7	827	18.1
Nonwhite	1,689	34.8	1,197	33.5	340	38.7	152	35.6

U. S. Bureau of the Census. U. S. Census of Population: 1950. Vol. II, Characteristics of the Population, Part 1, United States Summary, Chapter C. 1953. Tables 112 and 114; and U. S. Bureau of the Census. U. S. Census of Population: 1960. Detailed Characteristics. United States Summary. Final Report PC(1)-1D. 1963. Tables 168 and 172.

school dropouts is concerned, it is clear that the prevalence of dropouts is much greater among nonwhites than whites. In both 1950 and 1960, nonwhite youths accounted for about 1 in 8 of all youths 14 to 24 years old, but accounted for almost 1 in 5 of all dropouts.

Sex differences in dropout rates were negligible in nonfarm areas, but in both 1950 and 1960 farm males, particularly nonwhites, had higher dropout rates than farm females. The comparatively higher male dropout rates for farm males may be due in part to the greater availability of employment for them than for females.

There was considerable variation in the amount of schooling received by dropouts prior to leaving school (table 2). Among the 6.1 million persons 14 to 24 years old who had not completed high school and were not enrolled in school in 1960, 23 percent had completed 10 grades and 17 percent has completed 11 grades of school. On the other hand, 6 percent (about 385,000 persons) had completed fewer than 5 years of school and would be considered "functional illiterates." 7/ For the U. S. as a whole, the modal grade completed by school dropouts was the tenth. This was true of each age group except that of 14-and 15-years-old, where the greatest proportion left school after completing the 8th grade--the equivalent of an elementary or grammar school education.

The data in table 2 raise some important questions concerning the relationship between retardation in school and failure to complete school, e.g., what proportion of those retarded in school fail to complete school. But data are not sufficient to answer questions raised, since information would also be required on the age at which the person left school. It is clear, however, that 13 percent of 16-and 17-year-old dropouts had completed 11 years of school and thus had made normal progress in school until they withdrew from school.

The low level of educational attainment of rural dropouts also is apparent, particularly among nonwhite males. About 7 percent of urban nonwhite dropouts, compared with 17 percent of rural-nonfarm and 24 percent of rural-farm nonwhite dropouts, had completed less than 5 years of school. In contrast, about 41 percent of all urban male dropouts, compared with 31 percent of rural-nonfarm and 21 percent of rural-farm male dropouts, had completed 10 or 11 years of school.

Within each residence-color category, male dropout rates increased with age. This probably reflected the cumulative effects of retardation in school and a longer exposure to the risk of dropping out once the legal requirements for school attendance no longer applied. In each residence category, dropout rates for nonwhite males were substantially higher than those for whites, and even at ages 14-15 the dropout rate for nonwhite farm males (13 percent) was double the rate for white farm boys. Among farm males 20-24 years old, about 40 percent of whites and 75 percent of nonwhites had dropped out of school. These high dropout rates for males 20-24 are affected by the heavy off-farm migration of persons in this age group. Information is not at hand to determine the degree to which migration varies with education, but the remaining farm population 20-24 years old may differ from the migrant population in many respects. This consideration should be kept in mind in all comparisons of farm-nonfarm dropout rates for the older age groups.

In 1960 about equal proportions of urban male dropouts aged 14-24 (one-fifth) had withdrawn from school after completing fewer than 8, 9, or 10 years of school. About 1 in 4 completed the 10th grade and 17 percent dropped out within a year of high school graduation. Among white farm male dropouts, 32 percent completed less than 8 years

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7/ For a discussion of the origin and early use of the term "functional illiterate," see: James D. Cowhig, Education, Skill Level, and Earnings of the Hired Farm Working Force of 1961, Agr. Econ. Rpt. No. 26, U. S. Dept. Agr., March 1963, p. 20.

Table 2.--Highest grade of school completed by school dropouts 1/ 14 to 24 years old by residence, age, sex, and color, United States, 1960

(Numbers in thousands and rounded without adjustment to totals. Percents independently rounded and do not always equal 100.0)

Residence, age, sex, and color	Total		Highest grade of school completed						
	Number	Percent dropouts	Total	0-4	5-7	8	9	10	11
	Thou.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
United States									
Total, 14-24 years	26,838	22.8	100.0	6.3	15.2	18.9	19.6	23.2	16.8
14-15	5,550	5.8	100.0	15.5	27.3	25.9	20.0	9.4	1.9
16-17	5,711	16.3	100.0	6.1	16.8	19.7	21.7	22.6	13.0
18-19	4,775	26.8	100.0	5.0	13.3	17.3	20.0	24.8	19.4
20-24	10,803	33.2	100.0	6.0	14.4	18.7	18.9	24.0	18.2
Male, 14-24	13,385	23.1	100.0	7.4	17.4	20.2	19.2	20.9	14.9
14-15	2,838	5.7	100.0	18.1	29.6	24.7	17.6	8.3	1.6
16-17	2,906	16.4	100.0	7.0	20.0	21.4	21.1	19.3	11.1
18-19	2,357	27.4	100.0	5.7	15.6	18.9	22.0	22.6	17.2
20-24	5,283	34.2	100.0	7.1	16.2	20.0	18.6	21.8	16.3
White, 14-24	11,777	21.3	100.0	6.3	15.8	21.1	20.0	21.6	15.2
14-15	2,482	5.1	100.0	16.4	27.7	26.4	19.0	8.8	1.6
16-17	2,563	15.4	100.0	5.9	18.1	22.1	21.9	20.3	11.7
18-19	2,074	25.4	100.0	4.8	14.0	19.3	20.6	23.4	17.9
20-24	4,657	31.3	100.0	6.0	14.7	21.0	19.4	22.4	16.4
Nonwhite, 14-24	1,607	36.3	100.0	12.1	24.3	16.6	15.8	17.8	13.4
14-15	355	9.5	100.0	24.3	36.8	18.4	12.2	6.6	1.7
16-17	343	24.0	100.0	12.4	29.1	18.1	17.5	14.8	8.1
18-19	283	42.4	100.0	9.8	22.8	16.7	17.3	19.3	14.2
20-24	626	55.5	100.0	11.7	22.5	16.0	15.1	19.1	15.5
Female, 14-24	13,454	22.5	100.0	5.2	13.0	17.6	20.0	25.5	18.8
14-15	2,712	5.9	100.0	13.0	25.0	27.1	22.3	10.5	2.1
16-17	2,804	16.2	100.0	5.0	13.4	18.0	22.3	26.1	15.1
18-19	2,417	26.1	100.0	4.4	10.9	15.8	20.1	27.1	21.7
20-24	5,520	32.3	100.0	4.8	12.5	17.2	19.2	26.1	20.1
White, 14-24	11,764	20.8	100.0	4.7	11.5	17.8	20.6	26.4	19.0
14-15	2,360	5.3	100.0	12.4	22.8	28.2	23.6	11.0	2.0
16-17	2,466	15.1	100.0	4.6	12.0	17.9	22.7	27.2	15.7
18-19	2,116	24.2	100.0	4.0	9.7	15.9	20.5	27.8	22.2
20-24	4,822	29.7	100.0	4.3	11.1	17.6	19.8	27.0	20.2

Continued-

Table 2.--Highest grade of school completed by school dropouts 1/ 14 to 24 years old by residence, age, sex, and color, United States, 1960 (Continued)

(Numbers in thousands and rounded without adjustment to totals. Percents independently rounded and do not always equal 100.0)

Residence, age, sex, and color	Total		Highest grade of school completed						
	Number	Percent dropouts	Total	0-4	5-7	8	9	10	11
	Thou.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Nonwhite, 14-24	1,689	34.8	100.0	7.2	18.9	16.5	17.7	21.9	17.8
14-15	352	9.6	100.0	15.1	33.0	23.1	17.6	8.5	2.7
16-17	339	23.6	100.0	7.0	20.3	18.5	20.7	21.1	12.4
18-19	301	39.6	100.0	6.3	16.3	15.3	18.2	24.1	19.9
20-24	698	50.8	100.0	6.8	18.1	15.9	16.9	22.7	19.7
Urban									
Total, 14-24 years	3,842	21.0	100.0	4.9	12.6	17.8	20.4	25.4	18.9
14-15	177	5.0	100.0	12.5	23.6	26.7	23.2	11.5	2.5
16-17	550	14.9	100.0	4.5	13.2	18.5	23.1	25.4	15.2
18-19	785	23.8	100.0	3.9	10.7	16.6	20.7	27.0	21.6
20-24	2,329	30.1	100.0	4.7	12.2	17.6	19.5	25.9	20.1
Nonwhite, 14-24	2,243	33.6	100.0	5.9	16.7	16.6	18.4	23.4	19.0
14-15	447	8.1	100.0	12.4	30.0	24.9	19.1	10.4	3.2
16-17	434	21.8	100.0	5.6	18.2	18.7	21.9	22.4	13.2
18-19	389	38.0	100.0	4.7	14.4	15.6	19.5	25.4	20.5
20-24	973	48.8	100.0	5.8	16.1	15.9	17.3	24.0	20.9
Male, 14-24	1,837	20.8	100.0	5.4	14.3	19.2	20.4	23.5	17.2
14-15	84	4.7	100.0	14.4	25.5	26.0	21.4	10.5	2.2
16-17	262	14.3	100.0	5.1	15.7	20.3	23.1	22.3	13.4
18-19	366	23.8	100.0	4.2	12.6	17.6	21.0	25.0	19.5
20-24	1,125	30.9	100.0	5.3	13.6	18.9	19.5	24.2	18.4
White, 14-24	1,485	19.1	100.0	5.0	13.1	19.7	21.0	23.9	17.3
14-15	68	4.3	100.0	14.1	23.9	26.7	22.4	10.7	2.1
16-17	218	13.4	100.0	4.7	14.5	20.6	23.4	22.8	13.9
18-19	298	21.9	100.0	4.0	11.6	17.8	21.3	25.4	20.0
20-24	902	28.1	100.0	4.7	12.5	19.5	20.2	24.6	18.3
Nonwhite, 14-24	352	33.6	100.0	7.3	19.1	17.0	17.9	21.8	16.9
14-15	16	7.4	100.0	15.6	32.0	22.8	17.0	9.9	2.7
16-17	44	20.8	100.0	7.0	21.7	18.9	21.5	19.8	11.1
18-19	68	38.5	100.0	5.4	17.2	16.8	19.7	23.3	17.7
20-24	223	51.2	100.0	7.3	18.2	16.3	16.7	22.6	18.9

Continued-

Table 2.--Highest grade of school completed by school dropouts 1/ 14 to 24 years old by residence, age, sex, and color, United States, 1960 (Continued)

(Numbers in thousands and rounded without adjustment to totals. Percents independently rounded and do not always equal 100.0)

Residence, age, sex, and color	Total		Highest grade of school completed						
	Number	Percent dropouts	Total	0-4	5-7	8	9	10	11
	Thou.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Rural nonfarm									
Total, 14-24 years	1,784	27.8	100.0	7.9	18.6	20.1	18.9	20.5	14.0
14-15	102	7.3	100.0	19.8	32.0	24.3	16.1	6.6	1.2
16-17	283	19.9	100.0	7.9	21.2	20.8	20.6	19.4	10.2
18-19	385	34.6	100.0	6.3	16.1	18.6	19.7	22.6	16.7
20-24	1,015	40.8	100.0	7.3	17.4	20.1	18.5	21.3	15.4
Nonwhite, 14-24	736	40.1	100.0	14.9	28.5	16.6	14.6	14.8	10.5
14-15	172	12.1	100.0	26.6	40.4	17.1	10.6	4.3	1.0
16-17	164	27.6	100.0	14.2	31.6	18.7	16.3	12.6	6.7
18-19	136	46.9	100.0	11.9	25.8	16.7	15.9	17.1	12.7
20-24	264	62.6	100.0	14.8	27.2	16.0	14.1	15.9	12.0
Male, 14-24	965	28.3	100.0	9.2	20.9	21.1	18.2	18.2	12.4
14-15	54	7.4	100.0	23.0	34.5	22.3	13.4	5.8	1.0
16-17	156	20.9	100.0	8.9	24.6	22.0	19.6	16.5	8.5
18-19	216	35.2	100.0	6.9	18.1	19.5	19.4	20.9	15.2
20-24	540	40.9	100.0	8.8	19.5	21.3	17.8	18.9	13.6
White, 14-24	801	26.6	100.0	7.5	19.0	22.1	19.2	19.2	13.1
14-15	42	6.6	100.0	20.8	32.6	24.3	14.8	6.4	1.1
16-17	130	19.8	100.0	7.3	22.6	22.6	20.6	17.7	9.2
18-19	179	33.3	100.0	5.6	16.2	20.1	20.3	21.9	15.9
20-24	449	38.2	100.0	7.0	17.7	22.5	18.8	19.8	14.2
Nonwhite, 14-24	164	41.3	100.0	17.4	30.2	16.2	13.4	13.4	9.4
14-15	12	13.0	100.0	30.8	41.6	15.2	8.1	3.5	0.8
16-17	25	29.0	100.0	16.9	35.0	18.5	14.2	10.0	5.3
18-19	36	48.5	100.0	13.4	27.5	16.6	15.1	15.9	11.6
20-24	90	62.3	100.0	17.5	28.4	15.6	13.2	14.6	10.7

Continued-

Table 2.--Highest grade of school completed by school dropouts 1/ 14 to 24 years old by residence, age, sex, and color, United States, 1960 - Continued

(Numbers in thousands and rounded without adjustment to totals. Percents independently rounded and do not always equal 100.0.)

Residence, age, sex, and color	Total		Highest grade of school completed						
	Number	Percent dropouts	Total	0-4	5-7	8	9	10	11
	Thou.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Rural farm									
Total, 14-24 years	493	23.0	100.0	11.7	23.3	23.4	15.7	15.5	10.4
14-15	41	6.9	100.0	17.9	31.8	26.8	15.6	7.0	1.0
16-17	97	16.1	100.0	9.6	24.2	23.8	17.1	16.4	8.9
18-19	108	29.8	100.0	9.3	21.9	22.5	16.5	16.7	13.1
20-24	247	42.3	100.0	12.7	22.2	23.0	14.8	16.0	11.3
Nonwhite, 14-24	318	38.5	100.0	20.3	34.8	15.9	11.7	10.4	6.8
14-15	89	11.9	100.0	30.8	40.7	14.1	9.3	4.2	0.9
16-17	83	26.8	100.0	18.4	38.6	16.0	12.7	9.6	4.7
18-19	59	46.7	100.0	17.0	33.0	16.6	12.8	12.4	8.3
20-24	87	71.5	100.0	20.8	33.1	16.0	11.3	10.9	7.9
Male, 14-24	289	24.8	100.0	13.6	25.4	24.3	15.1	13.2	8.3
14-15	23	7.3	100.0	20.0	33.5	26.0	13.8	6.1	0.7
16-17	59	18.2	100.0	10.8	26.9	24.8	16.5	13.8	7.2
18-19	65	31.2	100.0	10.3	24.2	23.6	16.5	14.7	10.7
20-24	142	44.6	100.0	15.3	24.0	24.1	14.1	13.5	9.0
White, 14-24	221	22.1	100.0	10.3	21.8	27.1	16.6	14.8	9.4
14-15	17	6.4	100.0	14.6	31.1	30.5	16.1	6.9	0.8
16-17	46	16.5	100.0	7.8	22.5	27.6	18.1	15.7	8.3
18-19	49	27.9	100.0	7.1	20.4	25.9	17.9	16.4	12.3
20-24	108	39.5	100.0	12.2	20.6	26.9	15.4	14.9	9.1
Nonwhite, 14-24	68	41.2	100.0	24.4	37.2	15.1	10.3	8.1	4.9
14-15	6	12.6	100.0	36.1	40.7	12.5	6.9	3.4	0.4
16-17	13	29.4	100.0	22.0	43.1	14.7	10.4	6.7	3.1
18-19	16	50.2	100.0	20.5	36.0	16.5	11.9	9.5	5.5
20-24	34	74.9	100.0	25.0	34.9	15.1	10.0	8.8	6.1

1/ "School dropouts" refers to persons 14 to 24 years old with fewer than 12 years of school completed and not enrolled in school.

U. S. Bureau of the Census. U. S. Census of Population: 1960. Detailed Characteristics. United States Summary. Final Report PC(1)-1D. 1963. Tables 165 and 172.

of school, and 41 percent had completed 9 or more years. In contrast, 62 percent of nonwhite farm dropouts did not complete grammar school; 23 percent completed 9 or more grades of school.

SCHOOL DROPOUTS AMONG 16-24-YEAR-OLDS: 1950 AND 1960

Actual dropouts among the population 14-24 years old provide an estimate of the total number of persons in the age group who had failed to complete high school and who were not enrolled in school. Because the majority of 14-15 year olds are subject to State laws covering compulsory school attendance and therefore could not drop out, a more realistic estimate of dropout rates is that based on the experience of persons at an age when school attendance is no longer legally required--16 years old and over in most States -- and one that also takes into account the effect of retardation in school on eventual failure to complete high school.

This section contains estimates of the numbers and proportions of actual and probable dropouts. Data are shown for youths aged 16-24 years in 1950 and in 1960 (fig. 1). This inclusion in the estimated total number of school dropouts of the number of youths retarded two or more grades in school (except those enrolled in the fourth year of high school) increases the percentage of dropouts by about 4 percentage points for youths 16-24 years old (table 3). Since retardation rates are highest for 16-and 17-year-olds, the effect of including those retarded in school in the estimated total number of dropouts is most marked for 16-17 year olds. Even the inclusion of probable

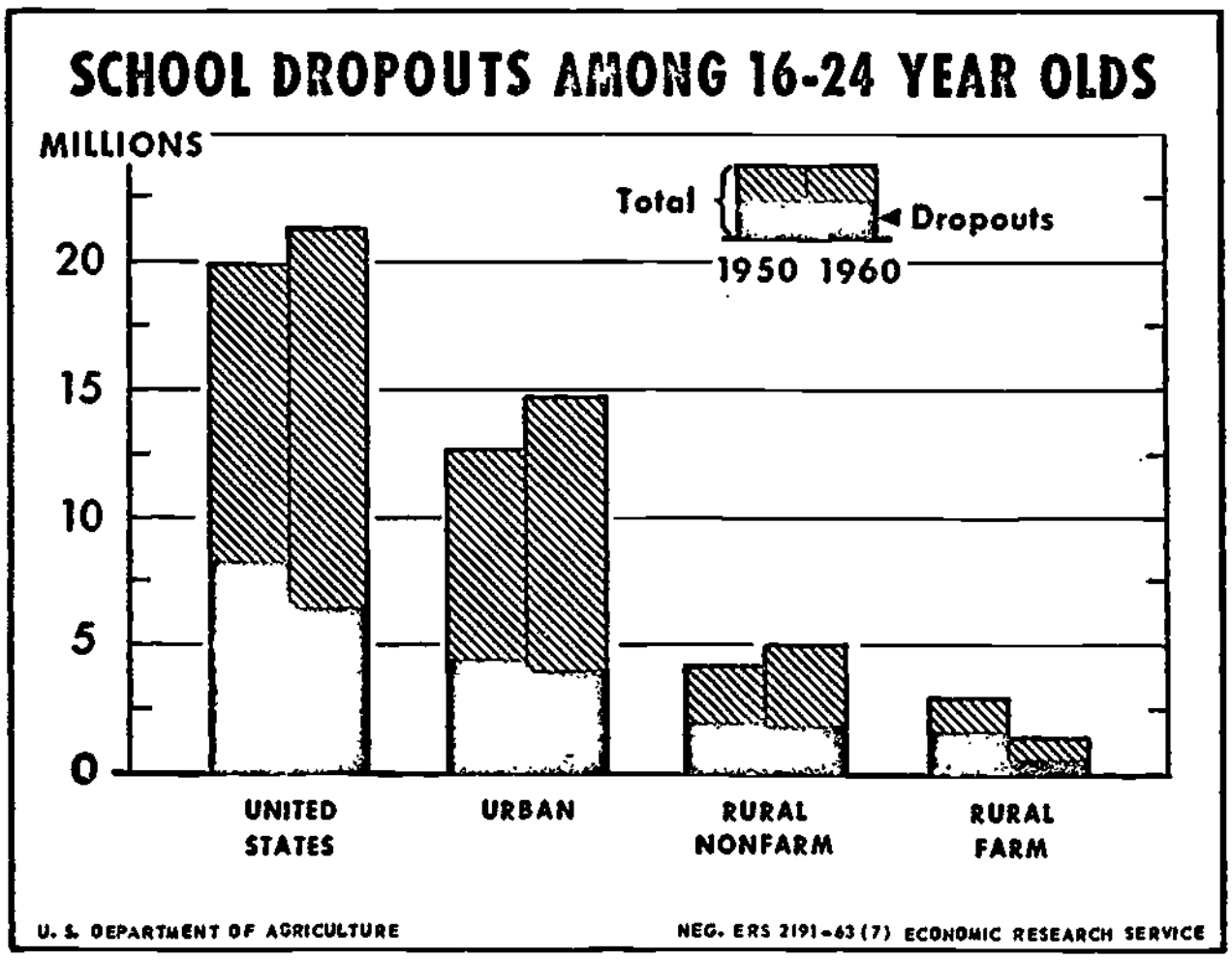


Figure 1

Table 3.—Estimates of school dropouts among persons 16-24 years old by residence, age, sex, and color, United States, 1950 and 1960

(Numbers in thousands and rounded without adjustment to group totals. Percents independently rounded.)

Residence, age, sex, and color	1950						1960					
	Total in age group		Dropouts				Total in age group		Dropouts			
			Actual 1/	Probable 2/	Estimated total				Actual 1/	Probable 2/	Estimated total	
	No.	Pct.	Pct.	Pct.	No.	Pct.	No.	Pct.	Pct.	Pct.	No.	Pct.
United States												
Total, 16-24 years	19,953	100.0	37.7	3.7	8,260	41.4	21,288	100.0	27.2	3.2	6,477	30.4
16-17	4,174	100.0	22.0	8.9	1,287	30.8	5,711	100.0	16.3	5.3	1,231	21.6
18-19	4,341	100.0	36.6	3.6	1,748	40.3	4,775	100.0	26.8	4.4	1,490	31.2
20-24	11,437	100.0	43.9	1.8	5,225	45.7	10,803	100.0	33.2	1.5	3,756	34.8
Male, 16-24	9,804	100.0	39.7	4.7	4,353	44.4	10,547	100.0	27.8	3.9	3,345	31.7
16-17	2,109	100.0	23.1	10.7	711	33.7	2,906	100.0	16.4	6.4	664	22.8
18-19	2,136	100.0	39.0	4.5	927	43.4	2,357	100.0	27.4	5.4	773	32.8
20-24	5,559	100.0	46.3	2.5	2,714	48.8	5,283	100.0	34.2	1.9	1,908	36.1
White, 16-24	8,711	100.0	36.9	3.9	3,557	40.8	9,295	100.0	25.6	3.0	2,661	28.6
16-17	1,855	100.0	21.4	8.6	557	30.0	2,563	100.0	15.4	5.2	527	20.6
18-19	1,896	100.0	35.9	3.6	749	39.5	2,074	100.0	25.4	4.3	617	29.7
20-24	4,960	100.0	43.1	2.3	2,252	45.4	4,657	100.0	31.3	1.3	1,517	32.6
Nonwhite, 16-24	1,094	100.0	61.6	11.2	1,511	72.8	1,252	100.0	43.9	9.1	663	53.0
16-17	254	100.0	34.8	25.8	261	60.7	343	100.0	24.0	15.9	137	39.9
18-19	240	100.0	63.2	11.4	336	74.6	283	100.0	42.4	12.8	156	55.2
20-24	600	100.0	72.3	4.9	886	77.2	626	100.0	55.5	3.7	370	59.2
Female, 16-24	10,148	100.0	35.9	2.6	3,907	38.5	10,741	100.0	26.7	1.9	3,076	28.6
16-17	2,065	100.0	20.9	7.0	576	27.9	2,804	100.0	16.2	2.1	511	18.2
18-19	2,206	100.0	34.3	2.9	821	37.2	2,417	100.0	26.1	3.6	717	29.7
20-24	5,878	100.0	41.7	1.0	2,511	42.7	5,520	100.0	32.3	1.2	1,848	33.5
White, 16-24	8,919	100.0	32.8	2.1	3,106	34.8	9,404	100.0	24.6	2.0	2,501	26.6
16-17	1,800	100.0	19.2	5.3	442	24.5	2,466	100.0	15.1	3.3	453	18.4
18-19	1,940	100.0	31.1	2.1	645	33.2	2,116	100.0	24.2	2.8	571	27.0
20-24	5,178	100.0	38.1	0.9	2,019	39.0	4,822	100.0	29.7	0.9	1,477	30.6
Nonwhite, 16-24	1,230	100.0	58.4	6.8	802	65.2	1,337	100.0	41.4	5.8	631	47.2
16-17	265	100.0	32.5	18.4	135	50.9	339	100.0	23.6	10.1	114	33.7
18-19	265	100.0	58.2	8.1	176	66.3	301	100.0	39.6	8.9	146	48.5
20-24	700	100.0	68.2	2.0	491	70.2	698	100.0	50.8	2.4	371	53.2
Urban												
Total, 16-24 years	12,697	100.0	32.2	2.9	4,450	35.0	14,718	100.0	24.9	2.7	4,056	27.6
16-17	2,333	100.0	17.1	6.9	559	24.0	3,687	100.0	14.9	4.3	708	19.2
18-19	2,685	100.0	29.4	2.9	866	32.3	3,302	100.0	23.8	3.7	908	27.5
20-24	7,679	100.0	37.7	1.7	3,025	39.4	7,730	100.0	30.1	1.4	2,439	31.6

Continued-

Table 3 .--Estimates of school dropouts among persons 16-24 years old by residence, age, sex, and color, United States, 1950 and 1960 - Continued

(Numbers in thousands and rounded without adjustment to group totals. Percents independently rounded.)

Residence, age, sex, and color	1950						1960					
	Total in age group		Dropouts				Total in age group		Dropouts			
			Actual 1/	Probable 2/	Estimated Total				Actual 1/	Probable 2/	Estimated total	
	No.	Pct.	Pct.	Pct.	No.	Pct.	No.	Pct.	Pct.	Pct.	No.	Pct.
Urban												
Nonwhite, 16-24	1,382	100.0	54.0	6.3	833	60.3	1,796	100.0	39.9	5.3	813	45.3
16-17	269	100.0	27.0	15.0	113	42.0	434	100.0	21.8	9.2	135	31.1
18-19	278	100.0	52.7	7.3	167	60.0	389	100.0	38.0	8.3	180	46.3
20-24	835	100.0	63.1	3.2	553	66.3	973	100.0	48.8	2.4	498	51.2
Male, 16-24	5,994	100.0	33.0	3.9	2,209	36.8	7,018	100.0	25.0	3.3	1,988	28.3
16-17	1,144	100.0	16.2	8.5	283	24.7	1,837	100.0	14.3	5.2	358	19.5
18-19	1,235	100.0	30.3	3.8	421	34.1	1,537	100.0	23.8	4.6	437	28.4
20-24	3,615	100.0	39.2	2.5	1,505	41.6	3,644	100.0	30.9	1.9	1,192	32.7
White, 16-24	5,379	100.0	30.5	3.3	1,817	33.8	6,193	100.0	22.9	2.9	1,597	25.8
16-17	1,018	100.0	15.1	7.2	226	22.2	1,624	100.0	13.4	4.4	289	17.8
18-19	1,112	100.0	27.7	3.0	342	30.8	1,360	100.0	21.9	3.9	351	25.8
20-24	3,249	100.0	36.2	2.2	1,249	38.4	3,209	100.0	28.1	1.7	956	29.8
Nonwhite, 16-24	615	100.0	54.6	9.0	391	63.6	825	100.0	40.6	6.8	391	47.4
16-17	127	100.0	25.5	19.1	56	44.6	213	100.0	20.8	11.5	69	32.3
18-19	123	100.0	53.5	10.2	78	63.7	177	100.0	38.5	10.2	86	48.7
20-24	366	100.0	65.0	5.1	265	70.1	435	100.0	51.2	3.0	23	54.3
Rural nonfarm												
Total, 16-24 years	4,211	100.0	46.3	4.0	2,121	50.4	5,022	100.0	33.5	4.1	1,887	37.6
16-17	925	100.0	26.7	9.9	339	36.6	1,422	100.0	19.9	7.0	383	26.9
18-19	932	100.0	46.7	3.9	472	50.6	1,111	100.0	34.6	5.6	447	40.3
20-24	2,354	100.0	53.9	1.8	1,311	55.7	2,489	100.0	40.8	1.7	1,057	42.5
Nonwhite, 16-24	427	100.0	67.9	9.4	330	77.3	564	100.0	48.6	10.5	334	59.1
16-17	96	100.0	39.1	24.7	61	63.8	164	100.0	27.6	17.8	75	45.4
18-19	98	100.0	68.4	9.4	76	77.7	136	100.0	46.9	14.0	83	60.9
20-24	234	100.0	79.4	3.2	193	82.6	264	100.0	62.6	4.1	176	66.7
Male, 16-24	2,159	100.0	48.6	5.1	1,159	53.7	2,677	100.0	34.0	4.8	1,039	38.8
16-17	472	100.0	28.0	12.0	189	40.1	745	100.0	20.9	8.2	219	29.1
18-19	497	100.0	48.5	4.6	264	53.1	613	100.0	35.2	6.3	255	41.5
20-24	1,190	100.0	56.8	2.5	705	59.3	1,320	100.0	40.9	2.0	565	42.8
White, 16-24	1,940	100.0	46.3	4.4	984	50.7	2,370	100.0	32.0	3.9	851	35.9
16-17	425	100.0	26.6	10.2	157	36.8	658	100.0	19.8	6.9	176	26.7
18-19	447	100.0	46.1	4.0	224	50.1	538	100.0	33.3	5.1	207	38.5
20-24	1,068	100.0	54.2	2.3	604	56.5	1,175	100.0	38.2	1.6	468	39.9

Continued-

Table 3.--Estimates of school dropouts among persons 16-24 years old by residence, age, sex, and color, United States, 1950 and 1960 - Continued

(Numbers in thousands and rounded without adjustment to group totals. Percents independently rounded.)

Residence, age, sex, and color	1950						1960					
	Total in age group		Dropouts				Total in age group		Dropouts			
			Actual 1/	Probable 2/	Estimated total				Actual 1/	Probable 2/	Estimated total	
	No.	Pct.	Pct.	Pct.	No.	Pct.	No.	Pct.	Pct.	Pct.	No.	Pct.
Nonwhite, 16-24	219	100.0	69.0	10.8	175	79.7	307	100.0	49.5	11.8	188	61.3
16-17	47	100.0	40.6	28.5	33	69.1	87	100.0	29.0	21.1	43	50.1
18-19	50	100.0	70.2	10.0	40	80.2	75	100.0	48.5	15.2	48	63.6
20-24	122	100.0	79.5	4.2	102	83.7	145	100.0	62.3	4.5	97	66.8
Rural farm												
Total, 16-24 years	3,044	100.0	49.1	6.4	1,689	55.5	1,548	100.0	29.2	5.3	535	34.5
16-17	916	100.0	29.7	12.9	390	42.6	602	100.0	16.1	7.2	140	23.3
18-19	724	100.0	50.3	6.2	410	56.6	362	100.0	29.8	7.3	134	37.1
20-24	1,404	100.0	61.1	2.3	890	63.4	584	100.0	42.3	2.2	260	44.5
Nonwhite, 16-24	514	100.0	69.1	15.3	434	84.4	229	100.0	48.8	15.7	148	64.5
16-17	155	100.0	41.8	32.6	115	74.4	83	100.0	26.8	23.2	42	50.0
18-19	129	100.0	71.4	15.0	112	86.4	59	100.0	46.7	19.9	39	66.6
20-24	230	100.0	86.1	3.9	207	90.0	87	100.0	71.5	5.6	67	77.1
Male, 16-24	1,651	100.0	52.5	7.2	985	59.7	852	100.0	31.3	6.1	318	37.4
16-17	492	100.0	34.1	14.4	239	48.6	325	100.0	18.2	8.4	87	26.7
18-19	404	100.0	53.7	6.4	243	60.1	207	100.0	31.2	7.9	81	39.2
20-24	755	100.0	63.8	2.9	504	66.7	320	100.0	44.6	2.5	150	47.1
White, 16-24	1,391	100.0	48.8	5.5	756	54.3	731	100.0	27.9	4.2	234	32.0
16-17	412	100.0	31.8	10.5	174	42.2	281	100.0	16.5	5.5	62	22.0
18-19	337	100.0	49.3	4.8	182	54.1	176	100.0	27.9	5.6	59	33.5
20-24	643	100.0	59.5	2.6	399	62.1	274	100.0	39.5	1.9	113	41.4
Nonwhite, 16-24	259	100.0	72.0	16.6	230	88.6	120	100.0	52.0	17.8	84	69.9
16-17	80	100.0	46.1	34.9	65	81.1	43	100.0	29.4	27.4	25	56.8
18-19	67	100.0	75.7	14.5	61	90.2	31	100.0	50.2	21.3	22	71.5
20-24	112	100.0	88.3	4.8	104	93.1	46	100.0	74.9	6.4	37	81.3

1/ Persons with less than 12 years of school completed and not enrolled in school.
2/ Persons two or more years retarded in school, except those enrolled in fourth year of high school.

See note to table 1.

dropouts, however, probably results in an underestimate of the dropout rates of 16-and-17-year-olds. This suggestion is consistent with the fact that, with minor exceptions, total dropout rates for 16-17-year-olds in both years were substantially lower than rates for 18-19-year-olds. It seems likely that the marked difference between the experience of persons 16-17 in 1960 and those 18-19 in 1960 -- who were 16-17 in 1958 -- is more the result of an underestimate of dropout rates for the younger age group than of a marked improvement over the short 2-year period.

Unless otherwise specified, the dropout rates discussed below are the estimated total rates. The estimated total number of school dropouts declined from 8.3 million persons 16-24 years old in 1950 (41 percent of all persons in the age group) to about 6.5 million in 1960 (30 percent of the total). For all youths 16-17 years old, dropout rates were reduced by about 30 percent of the maximum possible decline (a decline to zero), but because of population growth, the estimated number of 16-17-year-old dropouts was only about 56,000 less in 1960 than in 1950. In the two other age groups, both the number and proportion of school dropouts were substantially smaller in 1960 than in 1950.

There was a consistent relationship between age and dropout rates, due in part to the effect of retardation resulting in withdrawal from school and simply to the longer exposure to the risk of dropping out of school for persons 18-19 and 20-24 years old. Dropout rates were greater for males than for females in both years. Between 1950 and 1960, sex differences in dropout rates narrowed for white youths, but remained about the same for nonwhite.

As in the case of retardation in school, and the experience of all persons 14-24 years old, dropout rates for all rural-farm youth were lower than those for all rural-nonfarm youth in 1960, a reversal of the situation in 1950. The differences between rural youth (farm and nonfarm) were least at ages 20-24 where about 4 out of 10 had withdrawn from school. The more favorable position of farm youth in 1960 than in 1950 was due solely to the reduction in white farm dropout rates -- among nonwhites, farm youth had higher dropout rates than rural-nonfarm youths. In every age group, except urban males 16-17 years old, nonwhite dropout rates were higher than those for any age-residence category of white males in 1960. In 1960, nonwhite farm male dropout rates ranged from 57 percent for 16-17 year olds to 81 percent for those 20-24 years old. In contrast, the rates for nonwhite urban males ranged from 32 percent to 54 percent, respectively.

DROPOUT RATES FOR 19 YEAR OLDS: 1950 AND 1960

One source of confusion in discussions of school dropout rates is the failure to specify the age group and time period to which a given rate refers. For example, one recent estimate is that ". . . some 61 percent of farm boys do not finish high school." (13) If interpreted as referring to all farm boys 16-24 years old, this statement considerably overstates the seriousness of the situation.

For many purposes, it would be desirable to know age-specific rates of the incidence of withdrawal from school. But incidence rates require information on the year of withdrawal from school. Such information is not available from the decennial census, and it is not possible to determine from census data how many persons of a given age dropped out of school during 1960.

Although information on the incidence of dropouts in the farm and nonfarm school-age population is not available, it is possible to estimate the prevalence of dropouts. The estimate is based on the experience of youths old enough to have completed high school on the one hand, and young enough, on the other, to cause the possibility of migration away from the population group studies to be minimized. Normally, 19-year-olds are recent high school graduates and comparisons of dropout rates for 19-year-olds minimize the effect of migration in interpreting farm-nonfarm differences.

The decline in total dropout rates for 19-year-olds from 41 percent in 1950 to 33 percent in 1960 was accompanied by an increase in the proportion of 19-year-olds remaining in school, even though enrolled in grades two or more years below the level expected for the age. In each of the categories shown in table 4, the percentage of 19-year-olds retarded in school was higher in 1960 than in 1950. As with other ages, dropout rates for all farm youth in 1960 were lower than those for all rural-nonfarm youth -- a reversal of the situation a decade earlier, owing entirely to the lower dropout rates of white farm youths. In urban areas dropout rates for nonwhite males declined 21 percent of the maximum possible decline, compared with a 16-percent reduction for white males. Among rural youth, however, the rate of reduction in dropouts for nonwhites was lower than that for whites, particularly among farm males. For instance, dropout rates for white farm males 19 years old declined 34 percent of the maximum decline possible compared with an 18 percent reduction for nonwhite males, and the percentage-point difference between white-nonwhite rates was greater in 1960 than in 1950.

Although there were substantial reductions in nonwhite male dropout rates between 1950 and 1960, dropping out of school was the statistical norm for farm and nonfarm 19-year-old nonwhite males in both years.

REGIONAL AND STATE VARIATIONS: 1960

In 1960 almost half (48 percent) of all farm youths 16-24 years old and 94 percent of all farm nonwhite youths 16-24 years old were living in the South. Because of the concentration of nonwhite farm population in the South a separate treatment of school dropout rates for Southern youth is undertaken. White-nonwhite comparisons are limited to the South because census data on education by color and residence were not published for any region other than the South.

About 2.8 million (39 percent) of all Southern youths 16-24 years old in 1960 are estimated to be school dropouts (table 5). Dropout rates were highest for nonwhite males in the South, ranging from 46 percent of those 16-17 to 66 percent of those 20-24 years old. Among farm nonwhite males rates were 58 percent and 82 percent, respectively, in the indicated age brackets.

Dropout rates for white males 16-17 and 18-19 years old were lower for farm than for rural-nonfarm youths, but substantially higher than urban rates in the South in 1960. Nonwhite farm males had the highest dropout rates in each age group, and over 80 percent of those 20-24 years old were estimated to have dropped out of school.

As in the United States as a whole, dropout rates in the South increased with age, whereas retardation rates (as indicated by the estimate of probable dropouts) declined with age. These results are consistent with the assumption that a substantial proportion of persons retarded in school eventually drop out.

Dropout rates for 19-year-old males are shown in figure 2 and in table 6 by color and residence for the United States, the South, and the North and West combined. For both whites and nonwhites, dropout rates in the South were higher than in the North and West. There was little difference between actual dropout rates of urban whites, but the estimated total dropout rates were higher in the South because of the higher retardation rates of the Southern youth. Dropout rates for rural whites were substantially higher in the South than in the North and West. In the North and West, but not in the South, farm dropout rates were lower than those for rural-nonfarm youth.

In each broad region, dropout rates among nonwhite males 19 years old were substantially higher than those for whites. Although Southern nonwhite dropout rates were higher than those in the North and West, the gap between white and nonwhite

Table 4.--Estimates of school dropouts among persons 19 years old by sex, color and residence, United States, 1950 and 1960

(Numbers in thousands and rounded without adjustment to group totals.)

Sex, color, and residence	1950					
	Total persons 19 years old	Dropouts				
		Actual 1/		Probable 2/	Estimated total	
	Number	Percent		Percent	Number	Percent
Total, 19 years	2,159	38.2		3.1	891	41.3
White	1,918	34.9		2.6	719	37.5
Urban	1,233	27.9		2.2	371	30.1
Rural nonfarm	413	46.4		2.8	203	49.2
Rural farm	272	49.4		3.9	145	53.3
Nonwhite	241	63.9		7.6	172	71.5
Urban	137	55.5		6.0	84	61.5
Rural nonfarm	48	71.9		7.5	38	79.4
Rural farm	56	77.4		11.6	50	89.0
Male	1,054	40.6		3.9	469	44.5
White	941	37.5		3.2	383	40.7
Urban	564	29.3		2.9	182	32.2
Rural nonfarm	222	47.9		3.4	114	51.3
Rural farm	155	52.1		4.4	88	56.5
Nonwhite	113	67.1		8.9	86	76.0
Urban	59	57.4		8.2	39	65.6
Rural nonfarm	25	73.6		8.1	20	81.7
Rural farm	29	81.3		10.9	27	92.2
	1960					
	Total persons 19 years old	Dropouts				
		Actual 1/		Probable 2/	Estimated total	
	Number	Percent		Percent	Number	Percent
Total, 19 years	2,276	28.6		4.3	749	32.9
White	1,994	26.4		3.5	595	29.9
Urban	1,405	23.2		3.1	369	26.3
Rural nonfarm	461	35.2		4.0	181	39.2
Rural farm	129	30.6		4.9	46	35.5
Nonwhite	282	44.3		10.2	153	54.5
Urban	192	40.8		8.1	94	48.9
Rural nonfarm	64	51.2		12.9	41	64.1
Rural farm	26	52.9		19.1	19	72.0
Male	1,108	29.4		5.1	382	34.5
White	975	27.1		4.2	305	31.3
Urban	645	23.3		3.9	176	27.2
Rural nonfarm	255	35.1		4.6	101	39.7
Rural farm	75	31.8		5.6	28	37.4
Nonwhite	133	46.6		11.6	77	58.2
Urban	84	42.4		9.4	43	51.8
Rural nonfarm	36	53.0		13.6	24	66.6
Rural farm	14	55.3		20.0	10	75.3

1/ Persons with less than 12 years of school completed and not enrolled in school.
2/ Persons two or more years retarded in school, except those enrolled in fourth year of high school.

See note to table 1.

Table 5.--Estimates of school dropouts among persons 16-24 years old by age, sex, color, and residence, South, 1960

(Numbers in thousands and rounded without adjustment to group totals.)

Age, sex, color, and residence	Total in age group		Dropouts			
			Actual 1/	Probable 2/	Estimated total	
	No.	Pct.	Pct.	Pct.	No.	Pct.
South						
Total, 16-24 years	7,089	100.0	34.2	4.8	2,764	39.0
16-17	1,895	100.0	21.8	8.7	579	30.5
18-19	1,642	100.0	33.8	6.5	662	40.3
20-24	3,552	100.0	41.0	1.9	1,524	42.9
Male, 16-24	3,583	100.0	34.4	5.8	1,442	40.2
16-17	970	100.0	22.1	10.7	318	32.8
18-19	836	100.0	34.1	7.7	350	41.8
20-24	1,777	100.0	41.3	2.3	774	43.6
White, 16-24	2,845	100.0	31.0	4.4	1,008	35.4
16-17	753	100.0	21.0	8.1	219	29.1
18-19	659	100.0	31.3	5.7	244	37.0
20-24	1,432	100.0	36.2	1.9	545	38.1
Nonwhite, 16-24	738	100.0	47.4	11.3	434	58.7
16-17	217	100.0	26.0	19.8	99	45.8
18-19	177	100.0	44.8	15.1	106	59.9
20-24	345	100.0	62.1	4.1	228	66.2
Female, 16-24	3,506	100.0	34.0	3.7	1,323	37.7
16-17	925	100.0	21.6	6.5	260	28.1
18-19	806	100.0	33.5	5.2	312	38.7
20-24	1,775	100.0	40.8	1.5	750	42.3
White, 16-24	2,743	100.0	31.1	2.7	928	33.8
16-17	715	100.0	20.5	4.9	181	25.4
18-19	626	100.0	31.1	3.7	218	34.8
20-24	1,403	100.0	36.5	1.2	529	37.7
Nonwhite, 16-24	763	100.0	44.4	7.3	395	51.7
16-17	211	100.0	25.1	12.4	79	37.5
18-19	180	100.0	41.6	10.7	94	52.3
20-24	372	100.0	56.7	2.8	221	59.5
Urban						
Total, 16-24 years	4,067	100.0	29.9	3.7	1,366	33.6
16-17	976	100.0	19.3	6.9	256	26.2
18-19	933	100.0	28.9	5.1	317	34.0
20-24	2,159	100.0	35.1	1.7	793	36.8
Nonwhite, 16-24	834	100.0	42.9	6.7	413	49.6
16-17	212	100.0	23.6	11.9	75	35.5
18-19	191	100.0	39.5	9.8	94	49.3
20-24	432	100.0	53.8	2.7	244	56.5
Male, 16-24	1,946	100.0	29.2	4.7	659	33.9
16-17	484	100.0	17.9	8.6	128	26.5
18-19	438	100.0	28.0	6.4	151	34.4
20-24	1,023	100.0	35.0	2.1	380	37.1
White, 16-24	1,558	100.0	25.6	3.8	457	29.4
16-17	380	100.0	16.7	6.8	89	23.5
18-19	350	100.0	25.0	5.0	105	30.0
20-24	828	100.0	30.0	1.7	263	31.7
Nonwhite, 16-24	388	100.0	43.4	8.6	201	52.0
16-17	104	100.0	22.2	15.1	39	37.3
18-19	88	100.0	39.7	12.2	46	51.9
20-24	195	100.0	56.4	3.4	117	59.8

Continued-

Table 5.--Estimates of school dropouts among persons 16-24 years old by age, sex, color, and residence, South, 1960 (Continued)

(Numbers in thousands and rounded without adjustment to group totals.)

Age, sex, color, and residence	Total in age group		Dropouts			
			Actual 1/	Probable 2/	Estimated total	
	No.	Pct.	Pct.	Pct.	No.	Pct.
Rural nonfarm						
Total, 16-24 years	2,281	100.0	40.5	5.6	1,05[illegible]	46.1
16-17	636	100.0	25.6	10.1	227	35.7
18-19	527	100.0	41.0	7.4	255	48.4
20-24	1,118	100.0	48.6	2.2	568	50.8
Nonwhite, 16-24	452	100.0	49.8	11.0	275	60.8
16-17	137	100.0	27.7	18.4	63	46.1
18-19	110	100.0	47.6	14.6	69	62.2
20-24	205	100.0	65.7	4.2	143	69.9
Male, 16-24	1,233	100.0	40.5	6.4	579	46.9
16-17	334	100.0	27.0	12.3	131	39.3
18-19	295	100.0	41.0	8.2	145	49.2
20-24	604	100.0	47.6	2.4	302	50.0
White, 16-24	995	100.0	37.9	5.0	427	42.9
16-17	263	100.0	26.5	9.6	95	36.1
18-19	236	100.0	38.9	6.2	106	45.1
20-24	497	100.0	43.5	1.9	225	45.4
Nonwhite, 16-24	238	100.0	51.3	12.7	152	64.0
16-17	71	100.0	29.2	22.1	37	51.3
18-19	59	100.0	49.4	16.2	39	65.6
20-24	108	100.0	66.9	4.6	77	71.5
Rural farm						
Total, 16-24 years	742	100.0	38.7	8.3	348	47.0
16-17	283	100.0	22.0	11.7	96	33.7
18-19	183	100.0	38.7	10.6	90	49.3
20-24	275	100.0	55.9	3.2	163	59.1
Nonwhite, 16-24	215	100.0	49.3	15.9	140	65.2
16-17	79	100.0	27.1	23.6	40	50.7
18-19	56	100.0	47.3	19.9	37	67.2
20-24	81	100.0	72.3	5.6	63	77.9
Male, 16-24	404	100.0	41.1	9.5	204	50.6
16-17	152	100.0	24.7	13.8	59	38.5
18-19	102	100.0	40.9	11.6	54	52.5
20-24	149	100.0	57.9	3.6	92	61.5
White, 16-24	291	100.0	36.6	6.1	124	42.7
16-17	111	100.0	22.7	8.6	35	31.3
18-19	73	100.0	36.9	7.6	32	44.5
20-24	107	100.0	50.7	2.6	57	53.3
Nonwhite, 16-24	113	100.0	52.8	18.1	80	70.9
16-17	41	100.0	30.1	27.9	24	58.[illegible]
18-19	29	100.0	51.0	21.4	21	72.4
20-24	42	100.0	76.1	6.4	35	82.5

1/ Persons with less than 12 years of school completed and not enrolled in school.

2/ Persons two or more years retarded in school, except those enrolled in fourth year of high school.

Unpublished census data and source cited in note to table 1.

Table 6.--Estimated percent of school dropouts among 19 year-old males, South and North and West, by color and residence, 1960

Color and residence	Total		South		North and West	
	Actual 1/	Total 2/	Actual 1/	Total 2/	Actual 1/	Total 2/
Total males, 19 years	29.4	34.5	36.0	42.9	25.7	29.8
Urban	25.5	30.0	29.6	35.4	23.9	27.9
Rural nonfarm	37.3	43.0	42.6	49.7	32.3	36.7
Rural farm	35.4	42.3	45.6	56.9	25.3	29.7
White	27.1	31.3	32.4	37.5	24.5	28.3
Urban	23.4	27.2	23.6	30.4	22.4	26.1
Rural nonfarm	35.1	39.7	39.8	45.1	31.4	35.4
Rural farm	31.8	37.4	41.3	48.9	25.0	29.2
Nonwhite	46.5	58.2	49.8	63.4	41.4	49.8
Urban	42.3	51.8	44.6	55.6	40.1	48.0
Rural nonfarm	53.0	66.6	54.6	69.0	47.8	58.2
Rural farm	55.4	75.3	56.1	76.2	43.6	60.9

1/ Persons with less than 12 years of school completed and not enrolled in school.
2/ Actual dropouts plus persons two or more years retarded in school, except those enrolled in fourth year of high school.
Unpublished Census data and source cited in note to table 1.

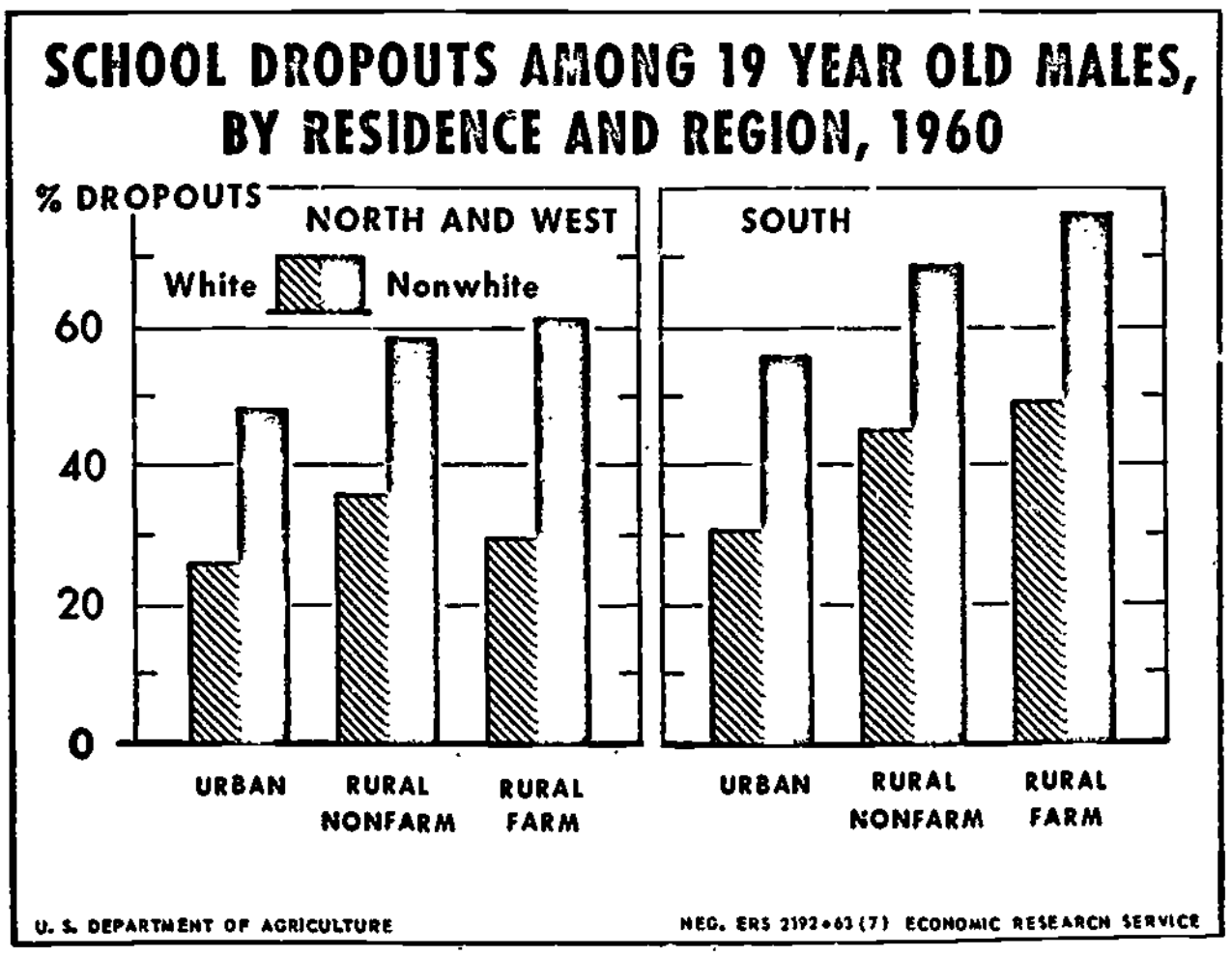


Figure 2

rates was about the same in these regions. For example, to lower nonwhite farm dropout rates to the level of those for whites would require a reduction of about 32 percentage points in the North and West and 27 percentage points in the South. This should not obscure differences between regions -- for instance, the dropout rate for urban nonwhites in the North and West was about the same as that of white rural-farm youths in the South -- 48 and 49 percent, respectively.

The data show that the prevalence of school dropouts is higher in the South than in the rest of the United States, particularly among rural youths and especially among rural nonwhites.

State Dropout Rates

To provide a summary of the prevalence of school dropouts in each State, dropout rates were computed for farm and nonfarm 19 years olds (table 7 and fig. 3). Time and cost considerations precluded the computation of dropout rates by other age groups for each State. Data for such computations are published by the Bureau of the Census for each State. 8/

States in the West North Central Division had lowest dropout rates for all 19-year-olds (23 percent) and States in the East South Central had the highest proportion of school dropouts among 19-year-olds (45 percent). Wide variations among States is shown by the range of dropout rates from a low of 18 percent in Nebraska to a high of 48 percent in South Carolina.

For the 46 States for which farm-nonfarm comparisons are possible, the most frequent pattern (in 23 States) was one in which farm rates were lower than rural-nonfarm but higher than urban dropout rates. In 17 States, farm dropout rates were higher than rural-nonfarm, which in turn were higher than urban rates. In six States (Kansas, Illinois, Indiana, Michigan, Nebraska, and Ohio) farm dropout rates were lower than either rural-nonfarm or urban.

The lowest dropout rate for 19-year-olds was that for urban youths in North Dakota (14 percent). In contrast, the dropout rates for farm nonwhites were 75 percent in South Carolina and 76 percent in Arizona, both of which have high proportions of nonwhites in the farm population.

Significant influences on high school completion are (1) the level of education received by parents of children and (2) the amount of money spent on education. To determine the relationship between these two factors and State dropout rates, two independent sets of data were used as approxiamte measures: (1) The proportion of the State population 25 years old and over in 1960 with at least a high school education, and (2) the average annual State expenditure per pupil for education in elemantary and secondary schools in the school year 1959-60. 9/

The Pearsonian correlation between the complement of the dropout rate for 19-year-olds and the proportion of the adult population with at least a high school education was .647; between the complement of the dropout rate and average annual school expenditures, .447.

These statistical measures -- crude as they are -- lend additional support to the idea that rates of high school completion are associated with the general level of educational attainment and also with the amount of funds devoted to education.

8/ U. S. Bureau of the Census. U. S. Census of Population: 1960 Detailed Characteristics, Final Report PC (1)-(Each State) D. 1962. Tables 101 and 102.

9/ Contained in: Digest of Educational Statistics. Office of Education, U. S. Department of Health, Education, and Welfare. 1962. Table 38.

Table 7.--Estimates of school dropouts among persons 19 years old by residence, and color for the South, each State, 1960

(Numbers in thousands and rounded without adjustment to group totals.)

Division and State	Total 19 years old		Total		Urban		Rural nonfarm		Rural farm	
			Actual 1/ dropouts	Estimated total dropouts	Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
United States	2,275	100.0	28.6	32.9	25.3	29.0	37.1	42.3	34.3	41.6
New England	129	100.0	23.8	27.4	22.2	25.7	29.9	33.9	34.8	40.4
Maine	12	100.0	30.3	34.7	25.3	28.7	35.9	41.3	42.5	49.9
New Hampshire	8	100.0	23.2	26.3	21.4	24.6	26.0	28.9	31.0	32.9
Vermont	6	100.0	22.3	26.5	14.1	18.1	27.1	31.0	37.4	44.0
Massachusetts	63	100.0	21.1	24.7	20.1	23.7	27.6	31.2	25.0	29.5
Rhode Island	13	100.0	29.6	33.0	29.3	32.9	31.7	33.8	NA	NA
Connecticut	27	100.0	25.1	28.6	23.8	27.1	30.9	35.6	32.8	38.7
Middle Atlantic	375	100.0	26.0	29.7	24.8	28.4	31.0	34.9	32.7	36.8
New York	183	100.0	26.5	30.4	25.7	29.5	31.1	35.6	32.7	38.4
New Jersey	62	100.0	27.0	31.2	26.4	30.6	33.2	37.9	22.7	27.2
Pennsylvania	130	100.0	24.7	27.8	22.3	25.3	30.5	33.9	33.6	36.5
East North Central	427	100.0	25.6	28.9	24.4	27.8	31.8	34.9	22.1	25.8
Ohio	115	100.0	27.3	30.8	25.6	29.2	34.5	37.5	22.7	26.9
Indiana	60	100.0	26.8	30.1	26.1	29.2	29.6	33.0	23.7	27.7
Illinois	116	100.0	26.7	30.2	26.3	29.9	31.8	34.8	21.4	24.7
Michigan	90	100.0	24.8	28.1	23.0	26.3	33.0	36.2	19.6	23.5
Wisconsin	46	100.0	18.6	21.0	16.5	18.7	24.3	26.6	22.7	25.8
West North Central	191	100.0	20.2	23.0	17.8	20.2	27.0	30.4	22.1	25.7
Minnesota	42	100.0	16.4	18.6	13.5	15.4	24.9	27.6	23.0	26.2
Iowa	34	100.0	16.7	19.1	15.0	17.0	24.1	27.2	16.3	19.6
Missouri	54	100.0	26.9	30.2	24.4	27.4	33.7	37.1	30.1	35.0
North Dakota	9	100.0	19.8	23.8	10.3	13.8	29.2	33.6	32.0	37.0
South Dakota	8	100.0	20.0	23.5	13.4	15.6	28.8	35.0	27.3	31.1
Nebraska	17	100.0	15.6	17.8	14.3	16.1	21.6	25.4	12.9	15.2
Kansas	28	100.0	20.1	22.8	20.1	22.8	21.8	24.5	14.9	17.8

Continued-

Table 7.--Estimates of school dropouts among persons 19 years old by residence, and color for the South, each State, 1960 (Continued)

(Numbers in thousands and rounded without adjustment to group totals.)

Division and State	Total 19 years old		Total		Urban		Rural nonfarm		Rural farm	
			Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
South Atlantic	366	100.0	37.1	42.5	31.1	35.7	43.5	49.1	45.8	55.1
White	283	100.0	33.2	37.1	27.2	30.7	NA	NA	NA	NA
Nonwhite	83	100.0	50.3	60.9	45.4	54.0	NA	NA	NA	NA
Delaware	5	100.0	30.1	33.0	23.8	26.2	42.0	45.4	33.9	39.8
White	4	100.0	25.4	28.0	18.6	20.8	NA	NA	NA	NA
Nonwhite	1	100.0	56.4	60.8	59.5	62.9	NA	NA	NA	NA
Maryland	39	100.0	33.3	36.8	32.4	36.2	34.7	37.1	38.7	43.4
White	32	100.0	29.9	32.3	28.6	31.2	32.0	33.7	NA	NA
Nonwhite	7	100.0	48.7	56.9	48.4	57.3	49.1	55.1	NA	NA
District of Columbia	12	100.0	26.5	30.2	26.5	30.2	NA	NA	NA	NA
White	6	100.0	15.3	16.3	15.3	16.8	NA	NA	NA	NA
Nonwhite	5	100.0	39.9	47.1	39.9	47.1	NA	NA	NA	NA
Virginia	63	100.0	38.2	42.9	31.9	35.7	47.1	52.6	48.6	56.6
White	52	100.0	35.3	39.2	29.8	32.9	43.9	48.6	44.7	52.2
Nonwhite	12	100.0	50.8	59.2	42.9	50.8	58.7	67.4	59.3	68.6
West Virginia	24	100.0	35.3	40.8	22.0	26.2	44.6	51.2	40.9	46.0
White	23	100.0	35.4	40.7	21.9	26.1	44.6	50.8	NA	NA
Nonwhite	1	100.0	33.2	42.7	22.4	26.6	44.7	60.0	NA	NA
North Carolina	74	100.0	37.2	42.5	27.8	31.9	42.7	47.8	44.2	52.6
White	56	100.0	34.3	37.9	24.7	27.8	40.8	44.5	38.3	43.3
Nonwhite	18	100.0	46.2	56.4	37.2	44.3	50.3	61.4	53.5	67.1
South Carolina	41	100.0	40.8	47.9	34.4	39.8	43.1	50.3	52.1	63.9
White	27	100.0	34.6	38.8	29.3	33.6	38.1	42.0	42.9	48.3
Nonwhite	13	100.0	53.4	66.5	49.0	57.6	53.8	68.3	58.5	74.8
Georgia	58	100.0	38.9	45.8	32.6	38.4	45.9	52.7	46.4	59.6
White	41	100.0	33.5	37.9	27.3	31.3	41.4	45.6	35.4	43.2
Nonwhite	17	100.0	51.6	64.4	44.9	54.9	58.7	73.0	61.0	81.3

Continued-

Table 7.--Estimates of school dropouts among persons 19 years old by residence, and color for the South, each State, 1960 (Continued)

(Numbers in thousands and rounded without adjustment to group totals.)

Division and State	Total 19 years old		Total		Urban		Rural nonfarm		Rural farm	
			Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2	Actual 1/ dropouts	Estimated total dropouts 2/
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
South Atlantic (cont'd)										
Florida	61	100.0	35.3	40.5	32.1	37.3	43.7	48.9	38.2	45.1
White	48	100.0	30.7	34.9	26.6	30.7	40.5	44.6	NA	NA
Nonwhite	13	100.0	52.6	61.8	50.9	59.8	58.4	68.6	NA	NA
East South Central	176	100.0	37.4	44.9	29.0	34.6	45.4	53.5	45.1	57.0
White	136	100.0	34.8	39.8	25.4	29.1	44.1	50.0	NA	NA
Nonwhite	40	100.0	46.1	62.3	41.1	53.2	51.0	68.2	NA	NA
Kentucky	45	100.0	41.7	47.3	30.3	34.7	50.9	57.1	49.0	56.0
White	42	100.0	41.3	46.7	29.0	32.8	50.8	57.2	NA	NA
Nonwhite	3	100.0	46.2	54.2	42.0	51.7	51.9	55.7	NA	NA
Tennessee	52	100.0	36.0	41.5	28.2	33.7	43.8	48.4	45.2	52.3
White	44	100.0	34.6	38.8	25.3	28.9	43.0	47.3	43.3	49.3
Nonwhite	8	100.0	44.0	56.1	39.1	51.7	53.5	62.1	57.7	71.9
Alabama	46	100.0	37.2	44.3	30.5	35.8	47.1	56.6	42.8	52.6
White	32	100.0	33.3	38.2	26.1	29.6	44.4	51.6	38.7	44.3
Nonwhite	15	100.0	45.7	57.6	40.4	49.6	53.2	67.7	50.3	67.7
Mississippi	34	100.0	34.1	47.8	25.8	33.9	37.6	51.5	43.2	66.0
White	20	100.0	24.2	29.9	17.4	21.1	30.1	36.8	32.0	41.6
Nonwhite	14	100.0	47.8	72.5	44.7	62.8	48.1	72.2	50.1	81.1
West South Central	235	100.0	32.8	38.3	29.9	34.4	40.7	48.2	37.0	47.1
White	195	100.0	30.4	34.7	27.8	31.5	38.5	44.1	NA	NA
Nonwhite	41	100.0	43.9	55.3	41.4	50.4	48.3	62.2	NA	NA
Arkansas	24	100.0	35.0	41.8	27.5	31.5	43.1	51.9	41.0	51.8
White	18	100.0	31.2	35.9	23.5	25.8	39.3	46.6	38.3	45.3
Nonwhite	5	100.0	48.9	63.0	43.6	54.4	55.7	69.8	48.6	70.0

Continued-

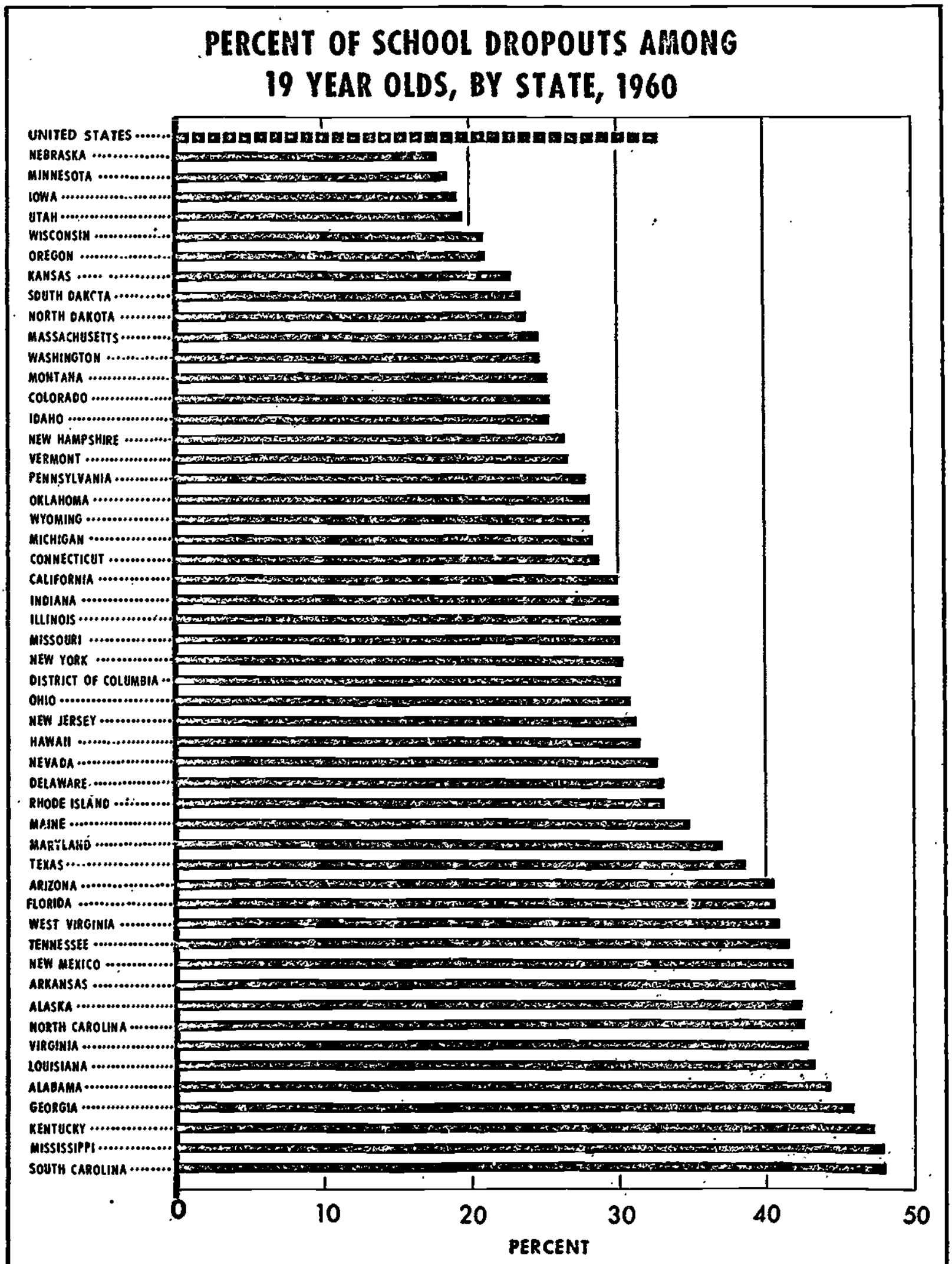
Table 7.--Estimates of school dropouts among persons 19 years old by residence, and color for the South, each State, 1960 (Continued)

(Numbers in thousands and rounded without adjustment to group totals.)

Division and State	Total 19 years old		Urban				Rural nonfarm		Rural farm	
			Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/	Actual 1/ dropouts	Estimated total dropouts 2/
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Louisiana	45	100.0	35.3	43.3	30.0	36.3	45.8	56.2	43.3	57.5
White	30	100.0	29.5	34.2	24.6	28.6	41.4	47.2	34.5	42.0
Nonwhite	16	100.0	46.2	60.4	41.7	52.8	53.1	71.1	52.3	73.4
Oklahoma	32	100.0	24.1	28.0	21.1	23.6	31.9	37.9	22.5	30.6
White	29	100.0	22.9	26.3	19.8	22.1	31.5	36.4	NA	NA
Nonwhite	3	100.0	35.5	44.9	36.6	42.6	34.0	46.9	NA	NA
Texas	135	100.0	33.6	38.5	31.9	36.3	40.3	46.2	37.2	45.7
White	118	100.0	32.4	36.8	30.6	34.6	39.8	45.1	36.9	44.2
Nonwhite	17	100.0	41.6	50.0	41.4	49.0	42.9	51.7	39.2	55.8
Mountain	92	100.0	25.3	30.0	22.3	25.7	33.8	41.5	28.5	36.6
Montana	8	100.0	21.1	25.1	16.8	19.6	29.2	34.4	23.7	30.9
Idaho	9	100.0	21.1	25.3	17.7	20.8	29.9	35.7	18.2	23.9
Wyoming	4	100.0	23.9	28.0	21.0	23.5	29.0	36.7	26.7	30.7
Colorado	24	100.0	21.7	25.3	19.1	22.4	31.9	36.7	22.3	25.4
New Mexico	13	100.0	34.5	41.7	30.8	35.4	41.4	53.1	37.5	49.1
Arizona	18	100.0	33.7	40.5	30.6	35.0	40.8	52.6	52.7	76.4
Utah	14	100.0	16.8	19.6	15.2	17.8	23.0	27.2	26.3	29.3
Nevada	3	100.0	29.2	32.6	27.1	29.4	32.4	37.9	NA	NA
Pacific	272	100.0	25.8	28.9	23.6	26.7	34.4	37.7	26.8	29.9
Washington	35	100.0	21.7	24.7	18.3	21.0	30.0	33.9	22.0	25.6
Oregon	21	100.0	19.0	21.1	14.7	16.6	30.1	32.8	19.9	22.5
California	200	100.0	26.8	30.0	25.0	28.2	35.6	38.7	31.1	34.2
Alaska	5	100.0	37.6	42.2	34.6	39.4	38.4	43.0	NA	NA
Hawaii	12	100.0	28.1	31.4	23.3	26.6	38.1	41.4	NA	NA

NA Not computed where color detail not shown or base is less than 200. District of Columbia completely urban in 1960.
1/ Persons with less than 12 years of school completed and not enrolled in school.
2/ Includes persons two or more years retarded in school, except those enrolled in fourth year of high school, plus actual dropouts.
U. S. Bureau of Census. U. S. Census of Population: 1960. Detailed Characteristics. (Each State). Final Report Pc (1)-D. Tables 101 and 102.

PERCENT OF SCHOOL DROPOUTS AMONG 19 YEAR OLDS, BY STATE, 1960



U.S. DEPARTMENT OF AGRICULTURE

NEG. ERS 2193-63(7) ECONOMIC RESEARCH SERVICE

Figure 3

SOME IMPLICATIONS

In assessing the implications of this report, the limitations of the data should be kept in mind.

It was not possible to consider systematically factors such as the quality, course content, adequacy of staff and facilities, and school policies which influence a young person's educational career. These vary widely throughout the United States. Neither was it possible to consider factors such as the social and economic position of the youth's family or other influences on educational attainment.

Included among school dropouts are some youths who will return to school to complete their education; some who lack the ability to complete a high school education; and some whose abilities may not be developed in a traditional school environment, e.g., the exceptionally talented pupil who can benefit little from the usual high school curriculum. Also included are youths who have never attended school, those who left school after only a few years, and those who completed 11 years of school. Many of the latter are as able as those who completed an additional year of high school. In short, school dropouts form a heterogeneous category and make hazardous any unqualified generalizations.

These comments are not meant to deny the importance to most youths of a level of education equal to that of most persons their own age -- or at least the possession of a diploma attesting to their educational attainment. They are intended only to call attention to some of the factors which a statistical description cannot reveal, but which may be of considerable importance to the individual student. These limitations should be kept in mind when considering the following implications.

1. The growth in the size of the school-age population has important implications for the future number of school dropouts. By 1970, there will be about 56.4 million persons 14-24 years old in the United States. If the dropout rate for 14-24-year-olds remains at the 1960 level, about 12.9 million of these persons will fail to complete high school -- and this estimate does not include the number retarded in school who will fail to complete high school. If the 14-24-year-old dropout rate declines as much between 1960 and 1970 as between 1950 and 1960 (29 percent), then the number of actual dropouts would be about 9 million. The total number of young adults in the Nation is growing rapidly. As a result, if the number of dropouts is not to increase over the 1960 level, the dropout rate would have to be reduced to 10.8 percent -- a reduction of more than 50 percent.

2. The implications of high nonwhite dropout rates assume added significance when the relationship between educational attainment and income is considered. Census data show that nonwhite incomes are consistently lower than white incomes within each educational category. 10/ For example, incomes of nonwhite males with a year or more of college were about equal to those of white males with a grade school education -- about $4,000 in 1959. Among persons with some college education, nonwhite incomes were about two-thirds as high as those of whites. In the farm population, the median income of nonwhite males who had completed 1-3 years of college was about the same ($2,000) as whites who had completed

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10/ U. S. Bureau of the Census. U. S. Census of Population: 1960. Detailed Characteristics. United States Summary. Final Report PC (1)-1D. Table 223.

between 5-7 years of school. Thus, even nonwhites with a college background receive comparatively low incomes. It would appear then that lack of education is a greater handicap to the nonwhite dropout than to the white dropout.

3. Most discussions of school dropout rates emphasize the economic loss resulting from the failure of young persons to complete their secondary education. To provide dropouts with additional years of school would require a substantial expenditure. To illustrate: A conservative estimate of the cost of providing a high school education to school dropouts is one that assumes that only those dropouts 14-19 years old and with at least one year of high school completed are to be provided with the additional schooling required for high school graduation. Presumably, these youths have demonstrated some ability to do high school level work and are at an age when return to school is a realistic possibility. In 1960, there were about 1.5 million youths in this category. At the average annual per pupil expenditure in the United States in 1960 (about $472), about $1.4 billion would be required to provide such additional schooling; about 55,000 additional classrooms would be required if the average size of class in the United States (28.2 pupils per room) were to be maintained. 11/

Even though the assumption that the average cost of a year's schooling would be spent for each student may be unrealistic (due to economies of scale, for example), the illustration is suggestive of the resources required to provide additional schooling for the dropouts. The cost of providing additional schooling may be more than offset by the benefits of education to the individual and society in the form of higher incomes, increased knowledge and skill of the labor force, and reductions in rates of unemployment and dependency.

4. The high nonwhite dropout rates of 1950--and probably of earlier years as well--have had an important effect on the employment situation of nonwhite workers today. Almost all of the 2.7 million nonwhite male dropouts who were 20-24 in 1950 are now in the labor force. The comparatively high rates of unemployment among nonwhites may be due, in part, to the fact that such a high proportion of nonwhites failed to complete high school and thus are at a competitive disadvantage in a labor market where the number of unskilled jobs is declining.

If the goal of education in the United States is to assure that youths capable of benefiting from high school experience actually receive it, then much remains to be accomplished. Despite substantial reductions in dropout rates, rates remain high in the rural and nonwhite segments of the population. Education in the United States represents a substantial enterprise requiring a physical plant, adequate facilities, trained and competent staff, efficient administration, and a program for continued improvement. The costs of providing these resources to a large population are substantial; costs of failure to provide them may be much greater.

11/ For data on school expenditures, see Digest of Educational Statistics, op. cit., table 38. Average number of pupils per room estimated from tables 17 and 29.

DEFINITIONS AND EXPLANATIONS

Age of person is age on his last birthday.

Color refers to white and nonwhite groups. Persons designated as nonwhite include Negroes, Indians, Japanese, Chinese, Filipino and other nonwhite races. In 1960, 92 percent of all nonwhites were Negroes.

Residence is designated as urban, rural-farm, or rural-nonfarm. In general, the urban population comprises all persons living in urbanized areas and in places of 2,500 inhabitants or more outside urbanized areas. In the 1960 Census, the urban population comprised all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages, and towns (except towns in New England, New York, and Wisconsin); (b) the densely settled urban fringe, whether incorporated or unincorporated, of urbanized areas; (c) towns in New England and townships in New Jersey and Pennsylvania which contained no incorporated municipalities as subdivisions and had either 25,000 inhabitants or more or a population of 2,500 to 25,000 and a density of 1,500 persons or more per square mile; (d) counties in States other than the New England States, New Jersey, and Pennsylvania that had no incorporated municipalities within their boundaries and had a density of 1,500 persons or more per square mile; and (e) unincorporated places of 2,500 inhabitants or more.

This definition of urban is substantially the same as that used in 1950; the major difference is the designation in 1960 of urban towns in New England and of urban townships in New Jersey and Pennsylvania.

The rural population is divided into the rural-farm and the rural-nonfarm. In 1960, places of 10 or more acres were counted as farms if sales of farm products amounted to $50 or more in 1959. Places of less than 10 acres were counted as farms if sales of farm products amounted to at least $250 in 1959. In 1950, the respondent's answer to the question "Is this house on a farm or ranch?" determined whether the residents would be classified as rural-farm or rural-nonfarm.

In both 1950 and 1960 persons living in group quarters on institutional grounds, in summer camps or motels were classified as nonfarm residents; persons in households paying cash rent for a house and yard only which did not include land used for farming were counted as nonfarm. In 1960, contrary to the practice in 1950, no effort was made to identify farm population in urban areas.

The more restrictive definition of farm residence was adopted in 1960 to make it more consistent with the definition used in the 1959 Census of Agriculture. It excludes persons living on places considered farms by the occupants but from which agricultural products are not sold or the sales are below the specified minimum.

It was not possible to assess the effects on educational data which may have resulted from the use of a more restrictive definition of farm residence in 1960 than in 1950. In general, the people removed from the farm population by the change in definition had little or no dependence on agriculture.

Region refers to the South (Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas and the District of Columbia) and North and West (all other States). In 1960, but not in 1950, Alaska and Hawaii were included in the North and West.

Educational attainment and school enrollment. Information on highest grade of school completed and on school enrollment was obtained for a 25 percent sample of the population 5-34 years old in 1960 and for a 20 percent sample of persons 5-29 years old in 1950. In both censuses, the questions referred to progress or enrollment in regular schools, defined as those public, private, or parochial schools which offer

formal education that may advance a persons toward an elementary school certificate or a high school diploma. Nursery schools, specialized vocational, trade, or business schools were not regarded as regular schools.

The number of persons in each category of highest grade of school completed for 1950 and 1960 is the total of persons who reported that they had attended and finished the indicated grade and those who had attended the next higher grade but had not finished the grade.

Persons were counted as enrolled in school in 1960 if they were reported as attending or as being enrolled in a regular school at any time between February 1, 1960, and the time of the enumeration in April, 1960. Persons who had enrolled but had not actually attended were counted as enrolled in school. The same definition applied in 1950.

Actual dropouts are persons not enrolled in school who had completed less than 12 years of school or its equivalent.

Probable dropouts are persons enrolled in school in a grade two or more years below the level expected for their age. Estimates of probable dropouts were computed only for persons 16-24 years old and exclude persons enrolled in the 12th year of school even though they were scholastically retarded two or more years. Included among the probable dropouts are 16-year-olds in grades 1-8; 17-year-olds in grades 1-9; 18-year-olds in grades 1-10; and 19-24-year-olds in grades 1-11.

Estimated total dropouts is the total of actual dropouts and probable dropouts. Thus, all persons not enrolled in school and not high school graduates and persons enrolled in a grade (other than the 12th grade in high school) which was two or more grades below the level expected for their age are considered as school dropouts.

Numbers shown in this report were rounded to the nearest thousand without adjustment to group totals. Percentages were rounded independently and do not always add to 100.0 percent.

Comparability with other estimates. Estimates of school dropouts most nearly comparable to the estimates in this report are those based on the October, 1960, Current Population Survey (CPS) in which estimates of actual dropouts (persons who had not completed high school and were not enrolled in school) are limited to males 16-24 and 20-24 years old. According to the CPS (12) about 32 percent of males in each age group were school dropouts. Data in this report show that 28 percent of males 16-24 and 34 percent of males 20-24 years old were actual dropouts. Differences between estimates based on the CPS and those based on the decennial census are due, in part, to sampling variability, to the exclusion from the CPS of military and institutional populations (included in the decennial census), and to differences in the reference period of the CPS (October, 1960) and the Census (April, 1960). Although the two estimates are at about the same level, census data consistently show higher dropout rates for persons 20-24 than for persons 16-24, whereas the CPS estimate is about the same for both age groups. It is not known whether this discrepancy arises from differences in concepts and methods cited above or from other sources.

Estimates of school retention rates published by the Office of Education comprise the major source of related but not strictly comparable data. These estimates are based on the number of persons enrolled in successive grades in successive years beginning with enrollment in the ninth grade. The information is reported by public school systems and is adjusted by the U. S. Office of Education to include estimates of enrollment in nonpublic schools.

Because of differences in concepts and reporting, estimates of school retention rates are not comparable with estimates of dropouts shown in this report. The Office of Education estimates do provide, however, an approximation of the proportion of persons in the ninth grade graduating from high school in the year expected.

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Report of the Annual Conference on Industrial Education (27th, Monterey, California, March 9-11, 1965).

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ANNUAL CONFERENCE ON INDUSTRIAL EDUCATION, MONTEREY, CALIFORNIA, MARCH 9-11, 1965

A total of 241 persons from California schools and colleges participated in the conference, with the theme "Education's Leading Edge." Proceedings include: (1) the keynote address, by Kimball Wiles, (2) highlights of six group discussions of Dr. Wiles speech, (3) "Industrial Arts and Technical Electronics," a program description by Nicholas Saba, (4) "Transition-Perils and Promise," by Wesley Smith, (5) "Looking Ahead--Curriculum Development and the Instruction Process," by J. Graham Sullivan, (6) "Trade and Technical Education--Program Evaluation," a panel discussion, (7) "Articulation--High School, Junior College, Adult Education," by Robert Swenson, (8) "Work Experience and Diversified Occupations," by Rod Clendenen and Billy Allgood, (9) "Relations of Public Education and Other Government Sponsored Programs," a panel discussion, (10) "Industrial Arts and Technology--A New Industrial Arts for a New Culture," by Delmar Olson, (11) "The Interdependence of Business and Education," a speech by Dwayne Orton, and (12) "Looking Ahead--New Challenges in Tomorrow's Society," a speech by Arthur Corey. (EM)

VT 002 874

REPORT OF THE

TWENTY-SEVENTH ANNUAL CONFERENCE ON INDUSTRIAL EDUCATION

MONTEREY, CALIFORNIA

March 9-11, 1965

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
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VT 002 874

CALIFORNIA STATE DEPARTMENT OF EDUCATION

MAX RAFFERTY

Superintendent of Public Instruction

Sacramento, 1965

FOREWORD

California's public schools as well as its colleges and universities have a wealth of resources; well-qualified administrators, supervisors, and teachers; strong public support; up-to-date instructional material; and enrollments of children, youth, and adults whose potentials are great. In the past we made good use of these resources, at present we are making better use of them, and in the future we must make even better use of them.

Obviously, our primary objective is to help children, youth, and adults to have the educational opportunities they need to fulfill the requirements of good American citizenship. In providing this help, we are fully aware that good citizenship requires the ability to think and act intelligently; and we know that if they are to think and act intelligently, our children, youth, and adults must (1) have command of the basic skills required; (2) know how to make reasoned judgments; (3) be prepared to produce enough to enjoy a reasonable measure of economic security; and (4) have the desire to be contributing members as well as receiving members of our society.

Our schools, colleges, and universities must provide a large share of the help children, youth, and adults need to acquire these abilities. I, therefore, commend the participants in the 27th Annual Conference on Industrial Education for seeking ways to reemphasize ideas which have contributed to the quality of the educational program and to implement new ideas which will further the program. These ideas form the leading edge of education, an essential edge in building and maintaining a program of education that is geared to meet our current and future needs.

Max Rafferty

Superintendent of Public Instruction

INTRODUCTION

These are the proceedings of the Twenty-Seventh Annual Conference on Industrial Education. They document the formal activities which took place, which were the culmination of months of planning. Many presentations represented the philosophies, the policies, and the techniques which have been developed over the years through educational leadership. This was the background so essential for the Conference to project its theme, "Education's Leading Edge."

Many were the references, the assurances, and the best guesses about what is in store for industrial education, together with information about what is happening now. These events and prognostications represent education's leading edge; but there was still more that concerned this Conference. To carry the analogy between aerodynamics and education one step further, what happens at the leading edge is no more important, and in many ways is less important, than that which happens within the slipstream; and the slipstream of vocational education was not overlooked. As new programs are being planned, whether they be novel or more traditional, industrial educators increasingly are incorporating measures for objective evaluation of their educational effectiveness. It has truly been said that, "By their works, ye shall know them." And these works embrace both the leading edge and the slipstream. Of this truth, the Conference took cognizance.

To those who planned and to those who participated go well-deserved congratulations. Theirs were the contributions, and to them are these proceedings dedicated.

Ernest G. Kramer

Chief, Bureau of Industrial Education

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Wiens, Jacob	College of San Mateo	San Mateo
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Wissler, Dale M.	Orange Coast College	Costa Mesa
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Wormley, Lorentz E.	State Department of Corrections	Sacramento

Proceedings

Twenty-Seventh Annual Conference on Industrial Education

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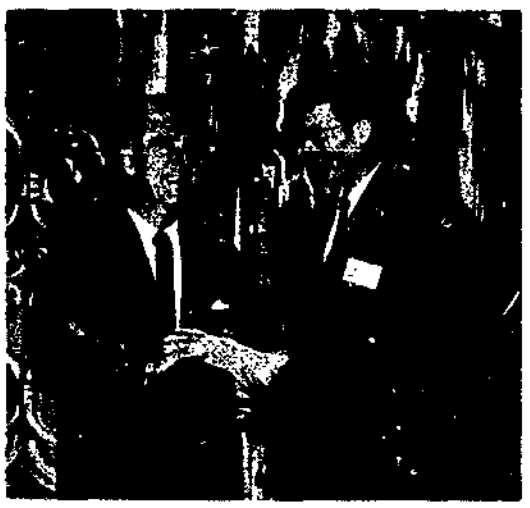
Tuesday, March 9, 1965

FIRST GENERAL SESSION



Woodward - Champion

Chairman: Robert L. Woodward
Bureau of Industrial Education

Recorder: George Champion
San Francisco State College

Opening Ceremonies:

Music - Russian Student Choir
Defense Language Institute
Presidio of Monterey
Nicholas Vorobiov, Director

Presentation of Colors -

Fort Ord Color Guard

Pledge of Allegiance -

General Session Chairman, Leader

Invocation -

Captain John M. Young, Chaplain
Fort Ord

Greetings -

Edwin C. Coffin
Monterey County Superintendent of Schools

Ernest G. Kramer
Chief, Bureau of Industrial Education

Edwin C. Coffin

* * *

Presentation: EDUCATION'S LEADING EDGE

Kimball Wiles
Dean, College of Education
University of Florida
Gainesville

Dean Wiles

The people of this country expect many things from education. From the President on down, they see education as a tool for the creation of the Great Society. Whether it is dealing with production or with the problems of juvenile delinquency, or divorce, or desegregation, or whatever the problem, education is the tool for the realization of our dreams.

Education has many leading edges. I will talk about six of them: the explosion of knowledge; the education of the culturally disadvantaged; mental health; automation; commitment; and the new instruction.

Explosion of knowledge. Many people have attempted to describe the explosion of knowledge. The most dramatic description I have heard is that all the knowledge that has been developed by mankind from the beginning of time up to 1900 was doubled from 1900 to 1950, and from 1950 to 1960 it doubled again. At the current rate, knowledge is doubling every seven years. By the year 2000 there will be 2000 times as many facts to be known as there are now.

This is our world. In light of this vast increase in knowledge, we have made attempts to reconstruct the disciplines. The new physics, chemistry, and biology curriculum studies are typical efforts. Schwab and Glass, describing the biology revision, illustrated the impact of the explosion of knowledge. They said that in spite of the millions we have spent in develo ing the new biology program, it will be 30 per cent obsolete by 1968, and by 1975 it will be completely obsolete. We are no longer able to think of a curriculum that will remain static and continue to be of service to the people of this country.

There have been other attempts to deal with the explosion of knowledge. One of these is moving away from dealing with specific facts, as such, to the attempt to develop concepts. In Chicago last week I heard them talking about developing interlocking concepts. As I understand it, since we can't deal with all the facts that are at present available, the development of an educated person means deciding upon the important generalizations and concepts, and then using the necessary facts to help people attain these concepts. There are two kinds of emphases with regard to concepts. One is concept attainment, and the other is concept formation.

If you read Bruner's little book, THE PROCESS OF EDUCATION, you see he is really saying all the way through this book that there are two important functions of an education. One is bringing the student into contact

with experiences at an appropriate level which will help him develop certain generalizations that are important in our culture; and the second is the development of the skill of inquiry which will enable him to develop new facts and new concepts. If we accept Bruner's proposal seriously we forget the goal of coverage and trying to bring youngsters into contact with all the facts and skills of a given field. We put the focus on deciding what are the important concepts in our field and how we can bring students into contact with these in a way that is sufficient and at an appropriate level.

Suchman's work in inquiry training is an attempt to help students look at specific facts and then draw the concept or the generalization that the teacher already has.

There has been little or no experimentation with concept formation. This process involves helping students work in such a way that they form concepts that the teacher doesn't have.

Paul Brandwein described the process best when someone asked him how he developed so many merit scholars when he was a science teacher at the Forest Hills High School in Long Island. He said, "I find a student who wants to work and I help him find a way of attacking the problem. Then he moves ahead to the formation of his own conclusion - a conclusion I didn't necessarily know." Let me dwell for just a moment on this, because I feel it has important implications for what you folks want to do.

Two years ago when I was in San Francisco, I picked up the CHRONICLE and found on the front page a story about ten inches by ten inches. It was a report about a conference at the University of California, in which Crutchfield presented his research. He told about an experiment that he had been carrying on with regard to creativity. The study involved 600 subjects. They were put, five at a time, in isolation booths. In each isolation booth there was a place for a question that was flashed to the place on the desk that supposedly gave the answers of the other four people in the other booths. Each person was told separately not to give his answer until he saw the consensus represented by the answers of the other people. The experimenter did not flash the consensus of the other four answers. Instead he flashed a nonsense answer.

Most people tended to conform to what they thought the other people said, even though it was a nonsense answer that they could not explain. The longer each stayed in the isolation booth, the more he tended to conform to the nonsense answers. Many of the people attempted to resist conforming by putting their hands over the supposed answer of the other four people in order to maintain their own integrity in giving answers. The people who conformed least were research scientists. The people who conformed next least were school children, and then - this is the kicker - the older the school children were, the more they tended to conform. It was concluded that creativity, at least concept formation, is a very tender plant and has to be nourished and supported.

I went from reading that research to reading Torrance's research in which he found that the I.Q. index and the creativity index are not the same thing; though practically all teachers want a youngster with a high I.Q., many teachers do not want a youngster with a high creativity index because they question, they challenge, and they add other interpretations that the teacher does not necessarily accept.

I am trying to say that in a world in which knowledge is exploding at the rate it is now, we need people who are creative. We need people who can engage in concept formation - not merely people who can attain the concepts that were current this year, or five years ago, or ten years ago.

Education and the Culturally Disadvantaged. If you were to look hard at American education you would have to say the major expenditure of money and the major emphasis have been on education of the gifted. The major focus of most programs has been on education of the upper half.

I chaired a conference of the twenty-five major curriculum project directors of Chicago a year ago in October, and the thing that struck me most was that out of the twenty-five major projects, only one said that they were attempting to develop the programs for anyone except the upper half. Yet, I go into school system after school system over this country and find that the programs being developed by these curriculum projects are provided for everybody. The money that has come to the National Science Foundation has been directed, up until the last couple of years, to education for the gifted and the upper half. The money that is spent for our universities and colleges is money spent for the education of the gifted, money that has come from the taxpayers of all the population.

So it is time - high time - that we say it is important to put money into the education of the culturally disadvantaged.

I heard Sam Proctor, formerly associate director of the Peace Corps, speak on "breaking the futility cycle." I think his phrase puts this problem neatly. The only way we can break the futility cycle is through education that gives special attention to those people who are disadvantaged.

Martin Dentsh, in his research in New York State, took three- and four-year-olds and placed them in situations where they received two kinds of experience. One was learning to work in a number of mediums - prereading material, papier-mache, wood, and other kinds of mediums - and the second was asking questions. These experiences decreased the probability that these pupils will become dropouts as they proceed through school.

We hear of a lot of people creating intelligence, and I think this is one of the real frontiers. We have stopped thinking about intelligence tests as being a true indication of a person's ability. We have recognized that intelligence tests indicate where a person was at the time he took the test. We are finding that if you give youngsters experiences that open situations, that make it possible for them to explore and probe and question, that decrease the emphasis on conformity, on carrying out routine, on doing as they are told, on limiting the answers that may be

examined, you raise the intelligence. You create intelligence. This whole question of mental retardation that we are talking about is really a question of the kind of environment that has been provided. I think the question that you folks have to face in this conference, if you're really looking at Education's Leading Edge, is what you in your field plan to do to create intelligence.

Education and Mental Health. If we walked down the streets of this town this afternoon and asked ten people what the purpose of education is, nine out of ten would say it is to develop the intellect. It would be very unusual to find three out of ten who would say it's to promote good mental health. But, in terms of the evidence that I know, the development and fostering of mental health is a part of basic citizenship education. One out of every ten Americans spends some time in an institution for the treatment of emotional or mental disorders. Many youngsters are emotionally disturbed, so much so that the national government now is underwriting a program for the training of teachers for the emotionally disturbed.

However, the emotionally disturbed do not constitute the only phase of the mental health problem. One that is hitting us in the face day by day in our big cities is the alienated youth - youths who as they look at our society, see nothing that they can accept; youths who see no future for themselves in this society; youths without a role, as they see it; youths without a sense of belonging. The only way they see to move is to hit back and attempt to destroy. Go back and read Conant's book, SLUMS AND SUBURBS, and you will see what he is talking about as he talks about youths who only increase their chances of getting a job by 25 per cent by graduating from high school, and millions of youths between the ages of 18 and 21 who can find nothing to do.

On the plane coming out I looked at the unemployment statistics. We have an unemployment rate of 5 per cent, but if you look at the teenage unemployment rate, it's around 18 per cent. These are all teenagers, not just the disadvantaged or minority groups. What is this cutting edge? It's what do we do with youngsters who have lost a sense of identity or role? What do we do for youngsters who have lost a sense of belonging, who think no one knows or cares? Youths who live in an impersonal community, who get much of their contact with the ideas of our culture through the mass media? Youths who are anonymously moving by rapid transit from one part of the city to another?

We are talking about putting counselors in elementary schools. The questions we need to raise very seriously are what have counselors in high schools done? How have they dealt with the kind of questions that I'm raising now? How have high school teachers dealt with them? I sit in my office and young people come to me and they say, "I have gone to a large high school, and I was nothing more than an IBM card. The only students that the school staff really knew were the bright scholars, the athletes, the troublemakers, and somebody who folded his IBM card." Who gets close to these youngsters in the school where you work? Do you? Do you vocational teachers become the persons to whom students - all kinds - may go to talk out their problems?

Fortunately the research now is saying to us that motivation is not something we do to people by getting them to listen to us for awhile. Motivation is from within. Motivation is what happens when I engage in an activity because I see it can further my chances for getting where or what I want. It is not chance that the Higher Horizons programs have been an attempt to help youngsters see possibilities that they didn't see before. The only way that you're going to have youngsters do anything that is significant in industrial arts or in vocational education is to have them see these as something that has personal meaning, and see that participation furthers some of their purposes.

Education and Automation. Seventy per cent of the jobs in which people earned their living in 1900 are gone. Three-fourths of the workers in 1975 will be working on products that are not yet developed. They also tell us that by 1975, if automation continues at its present rate, 20 per cent of the population will be unable to find work. How do I develop a sense of worth, a sense of value, if I can't find anything to do? How does the person who is working value me more than machines if I'm not working? It seems to me this is one of the cruxes of the problem that we have to look at when we're talking about industrial education. The people who are unemployed are the people who are least able. Only 6 per cent of our jobs now are unskilled manual labor. We can no longer afford the luxury of an educational system that does not develop the potential of our people.

In spite of all we have been saying, we still have an educational system that is a sorting process. Nationwide 40 per cent of the youngsters who start high school drop out before they finish. I do not know of any state that has a dropout rate of less than 25 per cent. Where do they go when they drop out? The armed services don't want them unelss they have a high enough I.Q. to operate the equipment. For many there's no second chance in the army. What do we do with those with limited potential?

A friend of mine received his degree in engineering three years ago. He and one other engineer are the two primary engineers with a paper company. They operate the computers that program the operation. This paper company has 2600 employees. This friend told me the company could eliminate all but 200 of the employees tomorrow, but it is only decreasing the work force 200 a year so there won't be too much of a readjustment. He said the company didn't need any middle management. The computers can send the directions to the operators of each machine with no need for middle management. When we're talking about the technical problems we're facing, we're not just talking about the people who can't develop technical skills; we need to take another look at the whole area of management.

Another friend operates a paint shop for one of the big paint companies in North Carolina. He no longer sends in any orders for new supplies. The records of the sales in his shop go to the plant and a computer scans them over and sends out the next shipment. What does this do in terms of thinking about industrial education? We need a reinterpretation of vocational education. If you listened to a description of the kind of emphasis the government is putting on work in your field, I'm sure you know that from those to whom much is given, much is expected. Some vocational education

people aren't willing to think much about vocational education for the disadvantaged. They are willing to think with us about trade and industrial, and distributive education, and about other facets which are familiar and comfortable, but when it comes to talking about vocational education across the board, and serving the total population, they aren't able to face this problem realistically.

Another effect of automation is fairly clear - the national government is no longer going to be willing for us not to have continuous vocational retraining either in school or out. The question as to whether or not it stays within the realm of public education depends upon our creativity in facing the total fact of the development of industrial and technical skills for society. Right now in our College of Education we are dealing with nonschool agencies too. With them we have classes for training people who are going to be the employment counselors out-of-school. We are working with the job training program. Personally, I don't like to see this done. However, unless we can really think about a curriculum that covers the total need, agencies outside the public schools will step in to take over with national support for education.

Last year at Miami Beach I happened to be living in the hotel in which the Beatles lived when they were there. A friend of mine and his wife happened to have the room in which the Beatles had lived. One night about 5:00 o'clock there was a knock on the door, and about five or six teenage girls, 13-14, stood there. They said, "Is this the Beatles' room?" My friend answered in the affirmative. The teenagers asked to come in. My friends, being gentle people, said yes. The girls entered, kissed the doorknob, kissed the mirrors, put their heads on the chairs where they thought the Beatles had sat, kissed the pillows laying on the sofa. My friend said, "It was the most revolting experience I have ever had in my whole life." Those teenagers weren't born that way. They are a part of our culture in which we are teaching a set of values through our mass media.

In LOOK Magazine three or four years ago there was an article entitled, "The Age of Payola." In this article the author reported that twelve reporters had gone throughout the country and talked to three hundred teenagers. The general conclusion they reached was that there was no set moral code as to what was right or wrong that the teenagers accepted. They decided, apparently, that anything was right as long as they could get by with it and it didn't hurt anyone. Last July there was an article in ESQUIRE entitled, "The New Morality." This article stated that as far as the author could see, the important core of the set of values that we have is the enhancement of self; that there is no longer a willingness to be committed to any larger cause than gratification of one's own desires. In fact, such commitment is considered square and corny.

It isn't that easy, however. It's not because all of us know people who have deep commitments. We are living in a plural culture in which there are many things to which we may be committed. There are different sets of values that bombard us from all sides. There are some people who are hollow people, who seem to have no set of commitments; and other people who are

stuffed people, who have so many commitments that they don't have any sense of direction; and then there are other people with commitments that we wish they didn't have.

Sunday night, as I sat here in the hotel, I saw by T.V. the movie, "Judgment in Nuremberg," a very dramatic and very moving production. The next morning when I awoke I turned on the program "Today" and saw the film of the march at Selma. I can't help but wonder how many people saw both of these programs and asked themselves what is the difference bewteen the men who were on trial in Nuremberg and what they had done, and what we were seeing on the T.V. news reports on Monday morning.

These people in Selma who marched had a set of values. The people who used the nightsticks had a set of values to which they were committed, too. What is the role of the school, and what are we doing about it? Dan Dodson, when he finished his study of suburban youth, concluded that suburban youth is calm, cool, and uncommitted, and refuses to take a stand for any cause that may interfere with its mobility. I think you and I have to ask ourselves where do we take our stand, and what do we do. As you listen to the "Judgment at Nuremberg," you hear person after person testify and say, yes, I knew about it, but there was nothing I could do. And as we look at our teenagers in school we have to ask ourselves what portion of our school program really deals with helping youngsters examine values they hold.

The research into the development of commitment and values says that most teachers, for the most part, don't affect youngsters' values, but that those teachers who do affect youngsters' values - the significant "others"- have two qualities. First, they have a commitment which the youngsters can see. The youngsters may not adopt the same values at all, but they know that this teacher is committed to something. Second, they give support to and value the youngster. How do we look at the teachers with whom we work, and how do we communicate to them our concern and our commitment and our support so that we are significant "others" to the teachers with whom we work?

Education and the New Instruction. We have had much research into instruction in the past three or four years. One of the things at which we have arrived is the questioning of the model of teaching. As we look at most of the method books there is a description of how we should teach. We have become convinced in our research that there is not just one way that is good, but that there are many ways to teach. Teaching consists of at least two stages. First, there is a diagnostic stage in which the teacher looks at a youngster just as a doctor looks at a patient. Then from the range of alternative ways of teaching the teacher has, he chooses the alternative that seems most appropriate for that youngster. Subsequently, he may modify this diagnosis, and he may modify his choice in the teaching method.

I hope you were thinking through how different this is from preparing a lesson plan with a purpose, a step by step procedure that is used year after year with class after class. How should we move with teachers so

that they see themselves as diagnosticians developing a prescription for individual youngsters rather than following a recipe book that was developed five years ago and that takes students through the same process and by the same procedure year after year after year?

I'd like to close by talking about the strategy of change as a leading edge. If you read some of the things that were written in supervision and curriculum development in the late 1940's and early 1950's, you know there has been what some of us call a pragmatic approach to curriculum development. Under this approach, the belief has existed that if there is support by the administrators and by the supervisors, and encouragement for teachers to experiment and share their results, there will be curriculum development on a broken-front basis where each teacher will choose and select appropriate procedures for the group with which he works, and that each teacher will be a professional person growing through his interaction and through the development of a new program for his class. Supervisors and administrators will be the facilitating and supporting agents that help individual teachers or groups of teachers to do their job better.

In 1957, when the Russians launched their first Sputnik, something new entered curriculum development. Many people became distrustful of moving ahead by the pragmatic approach. Many people began to have a distrust of the kind of program we had developed and wanted faster action. We have seen many of the nonpublic foundations deliberately attempt to influence the programs in schools without a public mandate. We have come to the place where many people believe there is a need for a direct approach to the curriculum from outside the schools. The argument goes something like this: With the explosion of knowledge and with the current crises, it is necessary to pull together the best brains we can get in the various fields, pay them what it takes, and get them to redefine their disciplines. People who are skilled in instructional materials should then be called in to define instructional procedures and materials that will enable the student to come into contact with what the best scholars in the field have defined as important. This should be followed by field try-out procedures so that materials and procedures can be tested and refined to be sure we have an instructional system that is good and will stand up.

The public schools individually can't afford to do this, so this activity by outside groups is necessary. After these steps have been taken, the contact should be made through the school administration. You don't approach the teachers. You approach the school administration. They are at the decision-making level. The proponents of this process say it doesn't matter whether the teachers believe in it or not. If this procedure has been followed and the administrator decides it's going to be done, and he will make a point of visiting the classrooms where it is being undertaken and give recognition to the teachers who are carrying on the program, in six to eight months their resistance will disappear. They will become strong advocates of the system.

If you, as administrators, want others to attempt a program, the best strategy is to take them to a school where they can see it in operation. They will come back ready to try it out themselves.

This procedure is being advocated by many people and is believed by many people. However, I'd like to ask a few questions: What happens to the role of a professional teacher as this happens? What happens to the sense of integrity of the teacher? What happens to the role of the supervisor? Do teachers become technicians without professional integrity? Do supervisors become manipulators and checkers and inspectors to see if the program is being carried on as indicated? This is another one of our cutting edges.

You and I have to think about where we stand and what we're doing and whether what we're doing is enough to keep the directive approach from the outside from being necessary. I'm not trying to paint a cheerful picture because I don't think we are in a cheerful situation. I think that as you folks deliberate in this conference, you're not dealing with education alone - you're dealing with the cutting edges of America. You're helping to decide the society that we will have, and you're deciding what people with your range of problems, with your vision, with your knowledge and skills, and with your opportunity can do to remake the curriculum of the American public schools.

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Panel Discussion

Panelists: Kimball Wiles
Karl A. Thomte
Melvin L. Barlow - Chairman
Gail J. Phares
John R. Toothaker
Glenn D. Warrick

BARLOW: Our task is to suggest points or make comments on Dean Wiles' talk, and perhaps he will take off from there in comments or other additional material.

To start the ball rolling - on the point of Education and the Culturally Disadvantaged, about three weeks ago I had the opportunity of visiting a high school in Fort Lauderdale, Florida, where some marvelous things are happening. It seemed to me that we could see there just good teaching being demonstrated in many, many different ways. Dean Wiles' talk leads me to the point of view that if the student can find his way into the classroom all by himself, about every day, and no one has to lead him there, then we can't really permit him to fail. He can learn something. Now, the point that I would suggest is that maybe in the discussion this morning we have an appeal to return to doing real well what we already know can be done. How would you react to that, Dean Wiles?

WILES: I'm not sure I would agree with it. I think we're faced, actually, with providing a kind of education that we have never provided for the lower third of the population as far as intellectual abilities are concerned. As I see it, we have been perfectly willing for people to drop out of school without achieving. We have been perfectly willing for teaching

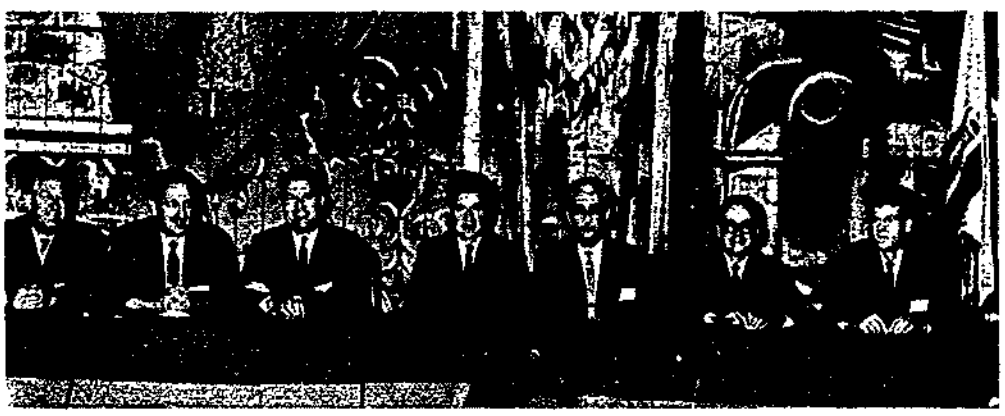
to go on without being sure that everybody learned. I think we have not done very well in having the teachers accept all kinds of children - children that were apparently different from the teachers - children that were not upwardly mobile in the sense that they thought children should be. I don't think we should simply return to what we have already done.

BARLOW: Thank you. Now, let's go down to the end of the table and pick up Gail Phares and see what he has in the line of a thesis to discuss.

PHARES: First, I think we all agree that we look forward to freeing ourselves from this static curriculum that was referred to earlier in the program. I think most of us will agree, at least in part - I find myself agreeing with this need for teaching of concepts, and I like the term "interlocking concepts". You also alluded to the value system of the student, and probably the value system of a teacher is a little bit different in many instances. I'm thinking of the 10 high - 50 high that's the top group, perhaps. In concern for the value of the student, it seems to me that the curriculum of secondary schools means to be specific enough for this student to see an immediate use, and perhaps the specificity of it requires the value system that does not include concepts. I don't know if I make myself clear, but I think that for these youngsters we have to have a curriculum that is immediately applicable - that they can use. Now, I'd like a reaction on that.

WILES: I would agree with that. I think one of the questions that all the fields now face is deciding what are the major concepts in their field. If you go to some social studies classes you see activity after activity after activity that the teacher hopes will be understood and immediately applicable. However, the response is difficult when you ask some of the teachers who are engaging in some of these to define what they feel are the three or four or five or ten major concepts that they're seeking to develop.

I think any field has to see what the major concerns are in terms of concepts that we want as outcomes. You don't teach directly for these, necessarily, but you're working through all of the intermediate activities to develop them. What are the major ones you're after in technical education?



Panel

BARLOW: I think it's probably a good time to discuss another area. I wonder, Glenn, do you want to continue about major concepts?

WARRICK: I was going to move in that direction. It's been said that the underlying purpose of industrial arts at the secondary school level is to enable boys and girls to become intelligent concerning their environment. Dr. Wiles, as you know industrial arts in the junior and senior high schools, do you think we're moving in this direction?

WILES: I will be as candid as I can about this in terms of industrial arts as I know it in Florida, and not California. You folks can sit there as I talk about Florida, and if I'm far away from what you're doing, you can say, "That's a backward statement, and we charge it up to unfortunate experience."

I have found too many industrial arts teachers in Florida who see their curriculum as consisting of a series of projects that they take the youngsters through - making waste paper baskets, making racks, and so on. Many of them, if you really look hard at them, are not engaging in developing creative activities. They are engaged in the process of helping people follow directions and develop the technical skills to carry out directions. One of the questions I would ask people about this is: "What are you attempting to do in industrial arts?" And you get different kinds of answers when you ask different kinds of questions. One is that we are engaging in exploratory activities so that people may develop their potential or decide what their potentials are. When we give this answer it always should be followed with: "What are the range of potentials that we're giving them a chance to analyze?" In looking at today's world in 1965, as opposed to 1930 or 1935 when I started teaching, the range of potential activities that you give people a chance to explore should be a lot different. And as you go into the technical world today, which is a computerized world, it is a different one than going through skills in working with wood, skills in working with metals, and working with arts and crafts that many of my colleagues were taking youngsters through as exploratory activities in the 1930's.

Now, another kind of answer that you get when you ask the question is that we're getting people to understand the industrial and technical world to develop appreciation of the process from an ideal through a completed project. I have a hard time, sometimes, seeing the relationship between what I see going on in some of our Florida industrial arts rooms and the complexity of the technical and commercial world in which we live. I don't see much relationship between what I see going on there and the kind of thing I was sketching very briefly, with orders being developed by computers, and the kind of interdependency that we have in our world now. As I look at some of the industrial arts rooms in Florida I get the feeling that the world these classes are helping youngsters understand is the technical world of the 1920's or the 1910's; as though it were being developed in terms of understanding the simple processes that went on in the small towns of the 1920's.

BARLOW: In terms of your concepts, then, we're not developing as well as we should the concepts of technology, but are spending too much

time, perhaps, on the minute things in our program?

WILES: I'm asking you this question. It is certainly surprising that the things that are most important for us to deal with today are the hardest to get us to pin ourselves down to and really attack. As we get on something we can fight about on defensible ground, the harder things become to deal with.

BARLOW: Now let's hear from the Dean of Laney, here, and see what's happening from his point of view.

THOMTE: Well, I'd like to refer to a point Dean Wiles made concerning education and mental health. When he outlined his problems about alienated youth he pointed out the tremendous loss of these individuals, this loss of sense of identity, and the loss of a sense of role. It seems to me in examining the culture in which we are a part, there is evidence in the adult world of a massive wave of individualized apathy. It probably takes its most exact expression in witnesses to crimes of violence. They are withdrawn as observers, making no effort to uphold the values that we have acquired for over a generation, and my question is: How can the schools generally, and specifically, how can industrial education seek to attack the problems of alienated youth in the presence of this apathy on the part of the adult public?

BARLOW: Which member of the panel is going to answer that?

WILES: I think you are getting at the kind of thing I was trying to hint at in my varied concluding comments a moment ago. What is the concept that we're attempting to deal with in the relationship between the individual and this technical society? As you are deciding on the concepts that you are going to work on in technical education, what's the relationship of these concepts to the individual or the small group? For example, as I look at the research that is coming out of industry with regard to morale and production, it seems to me that it says over and over and over again that there must be a small psychological group with which an individual identifies if his morale is going to be high. You don't have higher morale because you belong to a big organization or a big company. You have high morale when you have the company organized in such a way that there are psychological work groups with which a person identifies. Now, I will turn the question right back to you. Isn't this a major concept of technical education? I guess I'm really raising the question: Where does technical education begin and mental health leave off? Where do they overlap? What responsibility are you folks in your field going to assume for helping youngsters gain understanding of this kind of concept as opposed to gaining understanding of interdependency in the use and organization of resources? Let me say this in another way. Somebody at the break came back and said, "Look, you were talking about the increase in unemployment that would come from automation, but you did not say anything about the increased opportunities for other kinds of activities that would result as the result of increased automation." Well, I just happen to have in my pocket a copy of a Kiplinger Letter I was going to use, but didn't, in which the editor is talking to his son about the

kind of world in which he is going to live. This is the kind of a world in which the boy's teachers are going to live. And one of the things he said - just one general steer on a career - he said to give thought to services as distinguished from manufacturing and production, for service lines will expand job opportunities most. Also think of social services and the various professions that go with it.

One of the questions I think you ought to be raising with yourselves as you think about vocational education is how you should interpret it and think about the kind of service vocations that perhaps in the past have been left to other portions of the high school curriculum. Let me just illustrate this. One of the proposals that we have in now is for the development of child care centers in which we will be dealing with some models of day care in which there will be one professional person to each eight three- and four-year-olds. Frankly, I don't think communities are going to provide one professional person for each eight. Some of the models that are being proposed provide one professional person to work with with seven or eight people who have graduated from high school or had some training in the first years of community college. This team of seven or eight people will be able to work with 75 to 80 three- and four-year-olds in preschool experience. Should consideration of this kind of service activity be included in your vocational education? How broad are you going to dream and interpret the use of the funds that are being provided for vocational education? This is the kind of point I was trying to make.

BARLOW: I'd like to comment very briefly on this before I call on Jack Toothaker. This, I think, is the key, Dean Wiles, to one of our major problems right now. The trouble is that we don't use an idea properly - and this reminds me of the Frenchman who came to this country in the 1920's - a person by the name of Coué - who expressed his philosophy as, "Every day in every way I'm getting better and better." And this was fine. He was off to a good start. But about half way across the country he quit in disgust and went back to France. He found Americans were changing this, and instead of saying, "Every day in every way I'm getting better and better," they just said, "Hell, I'm well." And this didn't work out.

TOOTHAKER: I think that each of us, as we listened to the stimulating presentation we have just heard, attach ourselves to portions of it that have immediate meaning and concern to us. Certainly in industrial education we have a great opportunity for flexibility. We know this, and if we don't have a platform to launch creativity from, no other discipline does. Many communities such as Pasadena have experienced a large influx of people who do come from culturally deprived areas. I have a great concern in this area, also. In talking with groups of people in this circumstance, it seems that they appear to be susceptible to curriculums of vocational offerings for their children, and yet right down at the very bottom they want it for someone else's child, and they, too, want their child to go to college. Now we can do a fine job in industrial arts and technical courses, but to present a vocational program in any depth, with the number of hours it requires, seems to keep us from doing this if they're college bound.

Is there a way we can raise our image to parents, to help them understand that we have a contribution to make to their children?

BARLOW: Are you asking this in regard to industrial arts, or vocational education?

TOOTHAKER: Vocational education across the board.

BARLOW: I proposed at one time that each student program be individually planned, and that it include three aspects: one, the general education which deals with those things essential for performing effectively as a citizen and as a family member; second, a vocational portion; and third, an avocational or special interest portion. Under the vocational portion I proposed that all of those things that were seen as being planned to lead to a vocation be recognized as vocational for that person, so that each student then would have a vocational portion of the program. For a person going into engineering, this would mean that the advanced math courses would be vocational for him. For a person going to work as an interpreter, his advanced foreign language courses would be vocational. I did this deliberately because it seems to me that we have gotten ourselves into a kind of social bind by attempting to classify courses as vocational or nonvocational on some basis other than the individual purpose of a given student. We have created a social chasm between portions of the curriculum that should be open and accessible and usable by all portions of the population.

Perhaps we've gotten into this because of the different kinds of financial support. Special support has been for certain courses that are labeled vocational as opposed to the others. I think with what's happening in 1965 there is going to be a possibility of changing this division of the house, if we want to. What I'm really trying to say is that if we see the provision of a range of offerings accessible to each individual in terms of individual level of achievement and purpose, and we begin to interpret the vocational in terms of a given youngster's purpose, then many of the problems implicit in the issues you are raising disappear. But if I have to be classified as a vocational student, and all people are not classified as having a vocational portion in their program, then you get into the upper mobility syndrome of the parents and community, particularly in a suburban community.

I certainly enjoyed hearing those remarks about values. I'd like to carry it on just another little bit. We have, as you say, been in the habit of assigning value to a subject by its name rather than having a look at the student in relation to the subject. I think maybe we could get some agreement on this, but how are we going to change the attitude that created this unrealistic system of values about subject matter? I think you can use the same rationale for the college-bound that you use for the non-college-bound youth. This is a silly thing to talk about. This is not a common issue. It doesn't make any difference whether he goes to college or not. How are we going to change people's minds, Dean?

WILES: I don't know how we could change people's minds. I think the culture is going to change in certain ways that will make this easier. I think with the kind of additional emphasis on education as a tool for transformation of society, with the kind of emphasis that we now have on education as a life-long process, there will be some modifications in the attitudes that you are talking about. If you see people continuing to be educated and re-educated, then the division of a college-educated group and a noncollege-educated group will become less, because there will be a continuous possibility of the person who has chosen the noncollege group to get intellectually and socially where other people have gone because the door has not been closed - because the additional opportunities have been opened up for vocational development.

BARLOW: Gail, do you want to take over again?

PHARES: I'd like to refer again to this desire for a nonstatic curriculum. I also think that you completed the cycle in your presentation in that at the end you were concerned with the nonstatic curriculum and with the nonstatic teacher or teaching. For example, I know that Mike Fuller, over here, is building a new facility. This apparently has implications for better facilities. Mr. Kramer has given us a lot of direction in inservice training. All of these things are in the offing, but I think what we would like to address ourselves to tomorrow would be how do we initiate or how do we accelerate some of the changes that we are now trying to realize within our existing staff and within our existing facilities. I think most of us are convinced of the need to instill in our teachers the desire to be creative and to change from the static curriculum. Maybe we need just one launching point that we can take off on tomorrow.

WILES: I have been talking with our vocational education department about what they would like to see as experimentation. I have been saying, if you could have a school program in which you had the opportunity to realize your dreams in terms of vocational education, what would you have there? I say this because there is money now to get support for demonstrations. I think the first thing I would do is to find somebody who has an idea he wants to try out, and to support him as he puts into practice some new idea in some new course or some new method of operation. One of the things I would want to work with in a given department is to remove threats when some other members of the department try something new.

THOMTE: It has been said that innovators are those who dare to try something different. The influentials are those people who, when they try something, make it all right for anybody else to try it. The more heterogeneous your community, the more likelihood that the innovators and the influentials will be the same people. In other words, if you have a vocational department or an industrial department in which almost everybody has come from one school where they've received their training, or if they tend to have the same background in vocational education or industrial education, then it's hard to bring about innovation. If you get a heterogeneous group you have a better chance of getting innovations. Second, it has been found that the innovators were those people who belonged to some outside group that gave them support and with which they identified so that

they had the courage to be different from their fellows. I think there are several things implicit in what I have been saying here. First, to look for some people who belong to some professional associations that are encouraging them to have a different program than the one that exists in a given school. Second, that you look for permissiveness so that not only you, but other members of the staff are encouraged to try new things. And, third, that you seek as you replace members of the staff, to get people who are not like people who are already there, but people who have some different ideas and different beliefs.

WILES: I'm sure that this point of view you have just read is somewhat like the story that has been going around for a good many years about two industrial educators who were talking - obviously administrators - and a teacher came in and said to one of them, his boss, "I want to do so and so and so and so," and the fellow said, "That's fine. It sounds good to me. Why don't you go ahead and do it?" And after the teacher left the other man turned to him and said, "Why did you tell him to go ahead and do it? You know it won't work." He said, "Jim, that fellow won't work if it doesn't."

BARLOW: I just happened to pick this up in Los Angeles - of all places. It gives seven reasons for doing nothing when something needs to be done: 1) It's a good idea, but the time isn't right; 2) It would establish a precedent; 3) It's not workable (and that's the one you were just talking about); 4) The situation is hopeless already, so why waste time? 5) It would be too drastic a change; 6) The old way is good enough, so why struggle with something new? 7) It's controversial.

WARRICK: I was just thinking, Dr. Wiles, of your point on education and automation. If the information that has reached me is correct, they say there's little place in the industrial world for the youngsters who have finished programs of vocational education - the 18, 19 and 20-year olds. What do you see to be the role of this person?

WILES: Describe the person a little bit more. I'm not sure which person you're talking about.

WARRICK: I'm thinking of an individual who completes our vocational education program in the area of machine shop. He's skilled in the use of machines, and so forth, but as he goes to the world of work many employers are not interested in a person in this age group. He has the skills, but he may have insecurity, and he has a very difficult time trying to find placement.

WILES: There are a lot of factors that enter into this. One, of course all of us are aware of, is this relative insecurity on the part of this person who may, after you've gotten him into the operation, be drafted, taken into the service; so there's a strike against such a person. I haven't any idea of the answer to what we're going to do about the 18- and 19-year-olds, but I think there is something implicit in what you say.

You can take seriously the statistics that I gave you about three-quarters of the workers in '75 working on products that are not yet developed. The developing of people for a specific job and with rather specific skills has a lot of danger in it. Instead, it seems to me we are faced with looking at the generalized skills - if there are such things - looking at the general concepts that can be adapted and will be flexible and will help the individual become flexible. These are important considerations in developing vocational education programs for any kind of person. I think another part of this is the fact they say 80 per cent of the people who lose jobs after they get them lose them not because of lack of technical skills, but because of their inability to get along with other people. This certainly raises some questions about what portions of vocational education deal with human relations and getting along with other people.

WOODWARD: The reason for this panel is two-fold. First, it is to introduce you to the discussion interest tomorrow morning, and to fortify some of the ideas that you will discuss in these meetings. I think y u will see that there are a lot of ideas that can be discussed.

We sincerely thank Dr. Wiles for his presentation and, of course, for taking the role on this panel.

Tomorrow there will be group meetings at 9:00 a.m. Thank you very much.

* * *

GROUP MEETINGS

Wednesday Morning, March 10, 1965

Group 1.

Leader: Melvin L. Barlow
Recorder: Alfred Bloch

Group 2.

Leader: George Champion
Recorder: Jack E. Reynolds

Group 3.

Leader: Gail J. Phares
Recorder: Chester Gromacki

Group 4.

Leader: Karl A. Thomte
Recorder: Kermit A. Seefeld

Group 5.

Leader: John R. Toothaker
Recorder: J. Lyman Goldsmith

Group 6.

Leader: Glenn D. Warrick
Recorder: Robert R. Gonzalez

Kermit Seefeld

Topic: A FURTHER DISCUSSION OF THE PRINCIPLES ENUNCIATED BY DR. WILES WITH SPECIFIC APPLICATION TO INDUSTRIAL EDUCATION

Summary: Kermit A. Seefeld

It is interesting to note that much of the discussion centered about Dr. Wiles' sixth point, "Education and the New Instruction". Abundant evidence exists to prove that the lecture served as a base for enthusiastic and enlightened discussion.

The report sets forth the important points noted by the recorders. Many of the ideas listed were mentioned by one or more recorders. Obviously this report does not include all points discussed in the six group meetings.

Group 2

Group 1

- Vocational programs are doing a commendable job - proved by the success of young people who receive jobs in industry and succeed once employed.

- Evaluation reports and research information should be made available to industrial educators through a clearing house organization at the state level.

- The State Department of Education should select outstanding industrial educators to evaluate action research and report to the profession.

- There is need for research - cooperative research on the part of both industrial education and industry.

- Greater articulation should be achieved among the different levels in industrial education and also among the different disciplines in the educational program.

- Educational advisory committees should be established to give advice and counsel to both industrial arts and vocational education programs.

- The public should be involved in and/or told about industrial education programs.

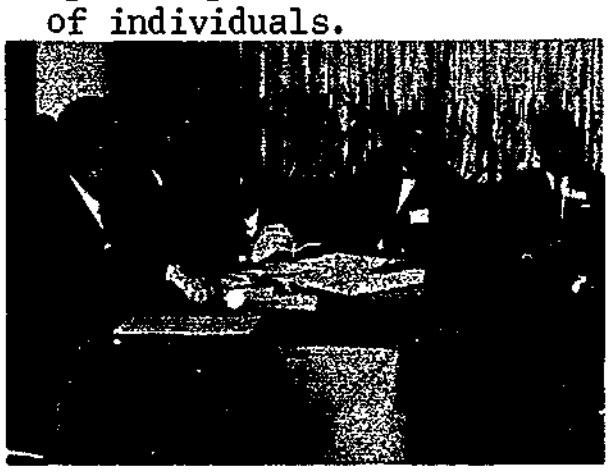
- Flexibility must be built into facilities, programs and plans.

- We recognize that one of our major responsibilities is "retraining." This knowledge should influence initial industrial education programs.

- Vocational education is lifelong education. Rapid advances in industry and the explosion of knowledge dictate the necessity for continued (adult) education.

- Emphasis should be given to the service occupations and to areas in which new jobs are being developed.

- The industrial arts and vocational programs do reach the person with special problems. Both programs are flexible and can meet the needs of individuals.



Group 3

Group 4

- Vocational education must become broader in scope because of the technological changes and the explosion of knowledge.

- There is need to upgrade industrial educators and teacher educators, particularly in the psychological, sociological and anthropological disciplines.

- Inservice training of teachers is needed to keep abreast of rapid changes occurring in industry and new achievements in the art and science of teaching.

- Fewer job opportunities for young people will necessitate their remaining in school longer. What type of education should be provided?

- Industrial education must meet the needs of youth now and for their future.

- Industrial education must seek greater commitment, both from the student and the teacher.

- Creativity and problem solving must become an important part of industrial education. Creative activity will provide "failure experience" which, if properly oriented, will be valuable.

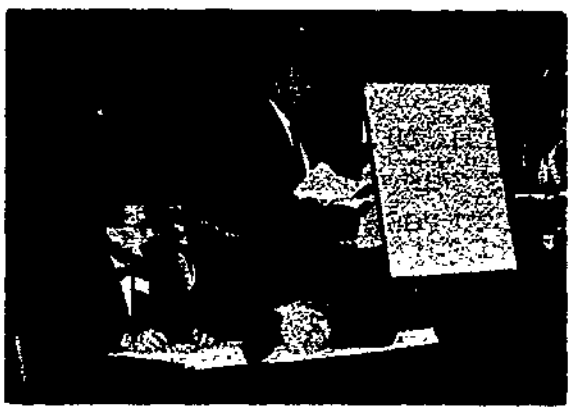
- Industrial education programs should be expanded to accomodate all levels of student ability.

- Industrial education is a process which takes students where we find them, moves them along at an individual rate, and continues after formal schooling.

- Many potential dropouts are culturally advantaged but disenchanted and bored with school. Industrial education must meet the challenge.

- Students pursuing industrial education need counseling and guidance from people who qualify as industrial educators, guidance experts, and humanitarian individuals.

- There are many kinds of intelligence. We must create an environment to develop each individual's inherent potential.



Group 5

Group 6

SECOND GENERAL SESSION

Wednesday Morning, March 10, 1965

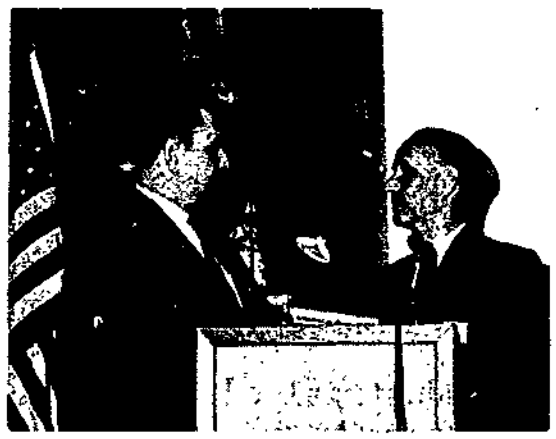
Chairman: Wallace Theilmann
Bureau of Industrial Education

Recorder: R. Jack Stinson
Monterey Union High School

* * *

Presentation: INDUSTRIAL ARTS AND TECHNICAL ELECTRONICS

Nicholas Saba
Skyline High School
Oakland



Stinson - Theilmann

Introduction. This is a documentary of an occupational and academically acceptable industrial education program. It is a program that challenges and competes for students of all abilities and all scholastic levels.

Historically, this program has been operating since 1956. The program has operated in three high schools. The student candidates, in addition to other accomplishments, can boast of the following:

Nicholas Saba

1. Seven valedictorians in succession
2. Four first-place science fair winners
3. Six outstanding industrial arts awards
4. Four scholarship awards

Also, many average and below-average students achieve an occupational competency through this program. A conservative estimate indicates a job placement of about 85 per cent.

Implementation. Technical problems may be identified in abundance. However, the task of solving these problems is the real challenge. In this program several educational features are stressed, as follows:

1. The shop plant is worth about $20,000, and must be used accordingly.
2. Any student can make a "C" grade if he gives his best effort.

3. All standards are expected to equal the high school level of achievement in the academic and industrial areas.

4. Assignments, testing, textbooks and notebooks are an important part of this program.

5. This program is given California Scholarship Federation credit, and follows the demands for evaluation of this accreditation.

6. This program involves an individual term project and also an experimental approach in the subject matter used in the class activities.

7. The approach to the instructional program involves the various electronics systems as units.

8. The course is occupationally oriented by virtue of the requirements made of the students.

The experimental approach (involving what is normally called a class project) demands a specific conditional response. This project is developed and presented in the following manner.

1. Title

2. Objectives (purpose)

3. Requirements

    a. Technical knowledge of the system involved
    b. Equipment to be used and/or developed
    c. Materials required (including cost)

4. Procedure

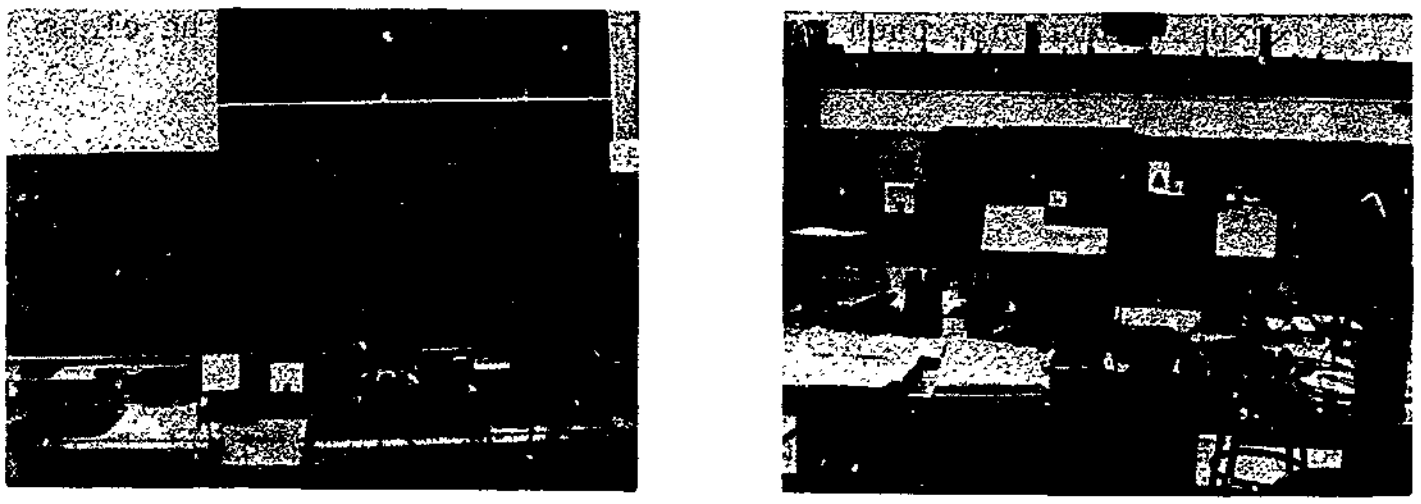
    a. Draw diagrams
    b. Draw sketches
    c. Assemble project or system
    d. Carry out operational tests
    e. Report measurements and functional evaluations made

The term project is a creative endeavor that allows the student to express himself. These projects are judged by the teacher to be about the best educational experience that the program offers.

In general the student reacts to his project because of its verifiable challenge to his knowledge and skill. However, once the project is completed and the final achievements are at hand, the transition from the learner to the master of the project is self-evident and the rewards to the student and teacher are tremendous.

Conclusion. We all know that industrial education can be extremely profitable to students of all levels of ability. Further, I am sure that we are certain the dedicated industrial educator does his utmost for all students. Therefore, may I charge you, the industrial administrators, with the task of selling our programs to the higher ability students so that all students may have the opportunity to benefit from industrial education according to their needs.

* * * * *



Two Views of the Electronics Laboratory

One Outstanding Student's Projects

SECOND GENERAL SESSION
(Continued)

Presentation: TRANSITION - PERILS AND PROMISE

Wesley P. Smith
Director of Vocational Education
California State Department
of Education

Wesley P. Smith

Wally, Ernie, Graham, and members of the 27th Annual Conference, leaders in industrial education in California:

My theme today is quite simple - transition, and the perils and the promises in transition. Not only is it simple, it's very fundamental, based on the presumption that in any time of change we're bound to face certain alternatives, choices that can bring us good or can bring us harm, and greatly dependent upon these decisions and these choices is the answer as to whether or not our program will prosper or will ultimately fail.

Almost a year ago I was asked to contribute a guest editorial to the CIEA News, and I accepted. When the moment of truth arrived - as it always does between the time you accept and the time for production - I submitted this editorial. I was troubled by this responsibility. It was a difficult thing to write. Those of you who have been asked to write an editorial for possibly thousands to read, especially in times like these, I'm sure would share my feeling of discomfort and concern. This wasn't a time for a routine, perfunctory statement. The stakes were too big, it seemed to me, to just put together some drivel. The importance was too crucial. In fact, my greatest problem at that time, as it is today in performing this task before you, is that I wasn't, nor am I now, an industrial educator. As long as I live I will not be an industrial educator, and to presume to tell you people who are industrial educators - to presume to suggest what is your future, or even to contemplate upon your future - was, at least in a sense, both impertinent and presumptuous. But I was stuck, and so I thought, and I tried, and I wrote this editorial. I'm going to read it, and I'll tell you why. I said this at that time: This is the most important year in the entire history of industrial education. Out of the experiences of 1964-65 will emerge the shape and character of industrial education for generations to come. We are at that unique moment of history in our profession where almost every decision, every action will dictate the patterns of philosophy and operation that will endure long after our services have ended.

The surge of interest in and concern for industrial education is without question. Never before has there been so much potential for progress. Never before has this vital segment of the school program been more in the

limelight. Never before has the visibility of the industrial educator been greater. And industrial educators stand out in bold profile on the horizon of public interest. And every movement and every action is under scrutiny by parents, by students, by fellow professionals, by board members, by legislators, and by the public at large. A transition point has been reached in the history of industrial education, and industrial educators must immediately quicken the process of moving their respective contributions from the past into the future, as none before in the profession have been called upon to do. The total program and each of its segments must be transformed so that they will directly match the changing needs of our society. This is a perilous venture. That it's an essential task, there can be no doubt.

If the challenge is accepted, the faith is kept. If the challenge is not accepted, the torch will be transferred to others. Industrial education is on the move. The surge of interest in its potential will keep it so. Those who take advantage of its potential to instigate constructive change will bring further glory to the entire program. Those who choose to conform solely to practices of the past will be swept aside. Forward is the direction. Swift is the pace. Proud is the destiny.

This, for the most part, was the editorial. So far, so good. That was in December.

In January I received the one and only letter in response to this guest editorial - a letter that I have never answered. Because I valued it so much, I have kept it for so long. It was one of those kinds of letters you want to give special treatment to and then finally keep. I'll read parts of it.

"I was particularly interested in your statement, 'A transition point has been reached in the history of industrial education, and industrial educators must immediately quicken the process of moving forward their respective contributions from the past into the future.'" And then this gentleman asks, "I'm confident that you must have had some very specific events and suggestions in mind. In the spirit of looking forward to any adjustment which we may need to make in our program, I'm going to ask your suggestions to the following questions:

1. What event is it that makes the transition point to which you refer?

2. What aspect of the industrial program is there that, in your judgment, needs to be transformed?

3. It will be helpful to have your analysis of the particular changes needed."

I'm going to respond briefly this morning to those questions. The first one, when I said in the editorial that the transition point had been reached, what was I thinking of? Well, I was thinking of this:

The Vocational Education Act of 1963 comprised the transition point. The Vocational Education Act of 1963 made all of vocational education, in all of its aspects, honest for the first time in a generation. For the first time it required industrial education, as a part of vocational education, to likewise become honest in all of its aspects. No longer would we or do we have to force industrial arts education to operate under false pretenses. No longer do we have to force industrial arts education to bear responsibility for the bulk of vocational education in the industrial occupations. The moment of truth has arrived when industrial arts can be industrial arts, and vocational education can be vocational education. No more rationalization is necessary. No more fooling each other. For the first time in the history of industrial education, and especially in the history of federally aided industrial education, where the guidelines and the dimensions and the characteristics of vocational education can be determined on the basis of what vocational education really needs rather than by some artificial statutory definitions created by the "Great White Father."

For the first time we were confronted with the situation where the determination of what is vocational education could be truly accepted by the practitioners who operated programs and not made on the basis of political and other expedients. This, then, was my reference to the transition point in industrial education - when we were given the opportunity to become truly honest in our purposes, in our philosophies, in our claims, and in our operations.

Now, another question addressed the point, what aspects of the industrial education program need to be transformed? My thinking then and now, dangerous as it may be, is that I'm thinking of all aspects. Certainly the industrial arts, because no longer will the industrial arts have to carry the double or triple burden; and certainly the trade and technical part, because no longer will these programs have to conform to antiquated prototypes. The very text of the new Act determines the transformation - vocational education for all persons; for the most able, for the least able; for boys and girls and men and women; for the disadvantaged and for the advantaged; for the forgotten; for <u>all</u> persons; vocational education in all places, not just in the metropolitan areas, not just in the large high schools, not just in the junior colleges or adult classes in high schools, but in <u>all</u> places.

I would think that this would raise the following questions: Would our methods need to be transformed? our purposes need to be transformed? our facilities need to be transformed? our clientel need to be transformed? our procedures need to be transformed? our philosophies need to be transformed? our teachers and our supervision need to be transformed? our relationship with employers, among other things, need to be transformed?

This is the answer to this question, "What aspect of industrial education, in your judgment, needs to be transformed?" My thought here is that there is no aspect of industrial education that is not in need of some transformation.

The third question was, "What changes in society are most in need of our attention?" Well, I think one of the changes most in need of our attention would be rather obvious to you. The extent of the complexities of the job requirements of the future must be one of these changes in society that has great significance for us. The changing structure of employment opportunities in our society has great significance for us. The bulge of individuals in unprecedented numbers who are seeking employment opportunities must have significance for us. The entire complex of retraining is one of the significant changes in our society that is in much need of attention by us. Well, I could go on and talk about these things, as you know. So much for the letter - so much for the editorial.

I'd like to return a little bit more specifically to the theme I presented earlier - transition - and the perils and promise of transition. I'm going to suggest a few areas of transition, and then I'm going to indicate a little bit of the shape of the perils and promises that feed those areas. That transition is taking place, I think is emphasized so much. As I was looking over my notes I couldn't help but glance at the paper I saw this morning that announced the resignation of Clark Kerr from the University of California Presidency. The transition that must be taking place in our education is beyond my comprehension, and there is no question that peril and promise are there. Maybe some of the things which I mention this morning will not compare with some of these others in size or importance, but they're with us. I imagine if you haven't a copy of the Interim California Plan for Vocational Education, you soon will. This interim plan for vocational education is now in the process of being revised. I'm not going to take your time to indicate all of the ramifications here. It was hastily put together for the purpose of making California in compliance with the Federal Act so we could benefit from the funds made available by Congress under the Perkins Bill. The State Board of Education, at our recommendation, accepted it as an interim plan until such time as we had time to devise a more comprehensive, more democratically developed State Plan for Vocational Education.

What we do in revising that plan during the next nine months without question will shape our program of vocational education for generations. Now, the perils are obvious. If we don't give it the attention it deserves, it may well be that the standards that emerge from this enterprise will be so shallow, and so inappropriate, that they will bring ruination to the program we operate, we defend, and we feel has a future. If we permit unrealistic standards, not shallow standards, but unrealistic standards to be entered into this document, we likewise will produce a vacuum of effort in our program of vocational education. There are many perils to nonattention to the task, or faulty attention to the task of revising this California Plan for Vocational Education, because it is in transition. Of course, the promise is a solid basis for the establishment of effective vocational education programs for the rest of our lives. That's the promise.

We in the Department of Education are being looked at and are being affected by some changes in the organizational structure of the staffs. Some of this has already been accomplished. There is more to come. This

is part of transition - transition from the past into the future. It has been determined that the staff structure we have, and have had for a long time, cannot successfully cope with the challenges that are upon us today. These will increase, and we must adjust our organizational structure before it crumbles under the load. This is not unique to our level. Organizational changes are taking place at county levels and at district levels. Every time consideration is given to this transition from the past to the future, and every time one of these changes takes place, there are perils and promises. We risk, for example, in every one of these operations in the area of vocational education we risk losing our identity, and we risk having our custodianship of vocational education extracted from our purview and placed in other hands. These are perils, of course, but there is a promise that at long last we just might be able to have enough people properly employed to perform the job that needs to be performed. This is the promise.

I can't help, as I think of transitions, perils, and promises, looking at this Annual Conference itself, because this conference of industrial education leaders is in transition. Your attendance must approach 250; and if I understand rightly, this is the first time you have ever been over 200. The reasons are obvious to many people. Your rolls have been swollen by new directors of vocational education who are joining you - some, for the first time. Now you have a peril in this kind of transition. The peril, of course, is that you might well lose the purpose of this Conference - the purpose to be a front runner in industrial education - by the absorption of these people who have responsibilities other than leadership in industrial education. You run the risk and the peril of being submerged, or at least your purpose submerged, by these local directors of vocational education and their points of view. Of course, the promise might be realized that handled correctly, you might strengthen your leadership in industrial education if you blend all of these new people in the purposes that you have by indoctrination, by education, and by demonstration.

The vocational education aspects of industrial education are in transition, and there are many perils in this transition. With the anxiety for more vocational education on an overnight, crash basis it's easy to forget about the basic benchmarks that have produced respect for vocational education over generations. And with this anxiety, and with this forced-draft method of operation these days, where we are asked to produce overnight what it takes a generation to do normally, we may forget about those equally important benchmarks that have created respect for the industrial arts, and produce a dual purpose industrial arts monstrosity that no one will respect. However, under pressure we may seize the opportunity to realize in each of these two great phases of industrial education the true role for which they were created.

Financial support for vocational education is in transition. At this time last year California could expect two million dollars of federal aid for vocational education. That figure today is ten million. I don't know whether we really can comprehend these figures. One year ago today

the anticipation was two million for vocational education in the state, and today it is ten million. In the programs of industrial education in your area of responsibility there are at least three to four times as many dollars supporting vocational education and industrial programs today as there were one year ago at this time. This is transition with a certain amount of explosiveness that creates perils of considerable magnitude. We adopted the project system for disbursements this year and next year solely on an expediency basis to get the dollars out into the schools as fast and as efficiently as we could. We did not have time to design a comprehensive program for this disbursement of these millions of dollars.

Now, the peril here is the temptation to cement too fast a system that was conceived out of expediency, a system which has demonstrated that it cannot ever accomplish the maximum potential or the maximum promise in vocational education. We will have the opportunity - you will have the opportunity to assist in the design of a system of distribution of these federal funds that will approach 13 to 15 million dollars a year, and there is peril as well as promise in that.

There is a transition going on, too, ladies and gentlemen, in the whole area of the precepts, and the philosophies, and the concepts of vocational education. I'm going to identify only a couple of spots which I feel will prove my point of view that there are some transitions in the overall spectrum of vocational education. I call to your attention the existence of the Economic Opportunity Act, and all of its implications for vocational education. I call to your attention the perils that exist as this massive program begins to find its purpose in operations up and down this state. Certainly we know that there are perils, and there are some promises too. By transition, of course. The MDTA has had its influence and will continue to have its influence on us. It's still in transition. This whole concept of training is in transition. Certainly the new education acts and the federal support for education that are on their way through Congress have tremendous importance for us, and certainly will bring some transition, some change in our purview. There are perils here, too many to mention, and that cannot yet be identified.

I have exhausted my time in talking about transition and the perils and promises, but I want to do something in addition today. I'm filled with tremendous pride and satisfaction because of the work that you people in this room have been accomplishing. You people have accepted the challenge and absorbed the shock of the MDTA program. You have implemented it to its maximum in a manner not accomplished by any other state in the United States. You have done this in both a quantity and a quality manner that defies comparison. Furthermore, you people have accepted the challenge of the Vocational Education Act of 1963. You are in the process of absorbing this task and your success is already evident. Now, these are only two examples of the massive challenges you have been called upon to serve. You have done this well. You have done this in your districts with almost insignificant added manpower. You have done it out of your hides. I must pause here and pay tribute to the kind of job you people are doing, and to express appreciation for the manner in

which you have cooperated with our staff - who, likewise, has performed this task so well.

Furthermore, I want to pay some respectful tribute to a few individuals. I know there is a risk, but again, I must. I want to pay my respects to Tom Ward, who is Mr. Fire Fighter in this whole United States. He is a real gentleman, a pioneer in vocational education, who probably is attending his last meeting at this time as a member of the Department of Education. I know that commendation of this kind is difficult to put into words, and I do not choose to attempt to say more than what I have said. I join you in paying respect to this gentleman who has served us so well for so long.

I cannot leave this rostrum without paying respect to your leader in industrial education, Ernie Kramer - Ernie, who, in his quiet, unobtrusive way keeps the faith day by day. And if we emerge from these transitions with our shirts, if our program emerges intact, he will be as much responsible as any single person.

I have to stop here to address Graham Sullivan, whom you will meet in a little while. This isn't a commendation, it's just sharing the point of view that I know we all hold. Graham Sullivan, in whose hands rests so much of our salvation, can and will do more in Sacramento to turn perils into promises than any other single person.

Finally, I must mention Bob Woodward. He is the person to whom credit is paid too few times for taking care of his many responsibilities, including the staffing of this conference.

Now I read again the last time of my editorial:

"Forward is the direction.

Swift is the pace.

Proud is the destiny."

* * * * *

LUNCHEON

Wednesday, March 10, 1965

C. Thomas Dean

Host: C. Thomas Dean
President Elect
California Industrial
Education Association

* * *

Presentation: LOOKING AHEAD - CURRICULUM DEVELOPMENT AND THE INSTRUCTION PROCESS

J. Graham Sullivan

J. Graham Sullivan
Associate Superintendent of Public Instruction
and Chief, Division of Instruction
California State Department of Education

I'm going to make some significant adjustments in what I had planned to say to you. Wes and I did not have an opportunity to get together, and Wes has already referred so well to some of the items that I planned to devote some of my time to specifically - the new resources which are available to us, the challenge which is ahead of us, and some of the perils that we have. I refer to them as opportunities, dangers, and threats. With reference to those items, I'll just hit a few of the highlights to emphasize that which Wes has said.

I have been, as Tom indicated, in public education for some 28 years. The majority of these 28 years have been spent in vocational education and practical arts. Therefore, it's a real pleasure for me to meet with you at this Annual Conference. I remember much about past conferences. I think I attended the first Conference, and believe me, we did not have 250 in attendance at that one.

I, too, want to pay tribute to the people that Wes paid tribute to this morning, and express my thanks to them. I refer to Tom Ward and Ernie Kramer and Bob Woodward, and at the same time pay tribute to Wes

for the fine leadership which he has given to California. You and I know that California for many years, long before it became the No. 1 state in the nation, was the No. 1 state in nature and quality of its vocational, technical, and practical arts programs. It has been recognized throughout the entire nation, and if you doubt this, you have only to ask the leaders in other states, the U. S. Office of Education, members of Congress, or whomever you may wish to approach on this matter. California has been the leader in vocational education.

In addition to Wes and his staff, I do commend you at the local district level for the tremendous job which you have done. However, as Wes has indicated this morning, even though what you have done is good, it's not good enough. You are going to do better, and I know that this is what this conference is about. This is what Wes and his staff have been about for the past year as they have worked with you, with advisory committees, in conferences, and so on, in order to develop a program for vocational education in California that will meet the changing times such as we have now.

May I pay one other tribute to you, and to Wes and his staff? I refer to the Interim State Plan. I think that you should know that even as of this date there are many states in the nation that do not have an approved state plan for vocational education under the new Vocational Education Act of 1963. Not having such a state plan, they will not be able to participate to any major degree in a program this year. This means, then, that local districts in many states will not have the additional funds that you have for your programs during this fiscal year.

There is a national concern and a recognition of the role of education in a modern, free, democratic society; a recognition which education has never had before; and a recognition that the economic, political and social structure of our nation all depend on high-quality, universal education for all. This is evidenced by existing legislation at the federal level, the Perkins Bill, the EOA, the extension of the MDTA, and so on. And then there is the President's new bill, H.R. 2362, and Senate Bill 370 that will be passed without much question this year. This could mean ten million dollars in vocational education, then up to thirteen and finally to fifteen million. This could mean to California as much as another eighty to ninety million dollars a year for the strengthening of education. As we listen to our own legislators, and as we look at the hundreds of bills which are now being introduced in the Legislature, we know that there is a strong interest in education and a recognition of the role that education plays. There is not a night that I do not take three or four clippings out of the newspapers where statements are made with reference to education - its importance, its role, and sometimes its weaknesses. Dr. Conant refers to it as a worldwide revolution, and this is true. It's certainly a revolution - worldwide, nationwide, statewide, and in our local school districts.

Wes indicated that this new interest also has some threats. There are those who are charging public education with not doing its job. For example, they refer to juvenile delinquency, dropouts, poor readers, and so on. They

are critical of what we are doing in education. The questions which are being raised give us a challenge to do a better job than that which we have been doing. And again, as Wes indicated, if we do not do this better kind of a job the torch may be passed to others, and we do have some evidence of this. We have some concern as we look at the EOA, at the Youth Corps, and some of the other developments which are under way, presently and on the planning board, that some of these responsibilities - if we do not take the initiative and if we are not aggressive - may go into other hands, and others than the regularly recognized educational agencies. So it is a threat, and a peril which we must recognize and face.

There is a great national concern in instruction itself - what happens and how it happens in the classrooms. There is interest in subject matter. For example, we know that on the national level we are beginning to develop national curricula in such fields as chemistry, physics, and mathematics. We know that there are certain legislative mandates which are being placed on the schools in California. We know that there is federal legislation providing the resources for such material improvement. We know the interest which our own State Board is taking in instruction and curriculum development. The NEA has been working for two years now on a curriculum development and instruction improvement program. Just yesterday a group from California under the leadership of CASSA adjourned after meeting three days to study and review and make recommendations for action with reference to this NEA study in the improvement of instruction and curriculum development. We know that there is interest in terms of instruction in methods using new media. We're going to have to begin to answer some questions with reference to the use of these new media - how to keep our content up to date, and what should be the role of the textbook. This role is going to be quite different in the days ahead. What is the need for supplementary material in addition to the textbook? What is the role of TV? of teaching machines? And finally, what's the role of the teacher in the classroom? Give some thought to these as we think of the new media available to us and the new approach we are taking, such as data processing, and so on.

There is a growing demand from those responsible for education at all levels to develop effective tools and instruments to determine how well that which we are doing meets the demands of our constantly changing society. We haven't done a very good job of this. We have feelings about what we are doing, and that's about all. We have no objective measurements, hence when we are attacked by the public, the Legislature, or by Congress, we are at their mercy. We do not have the facts to support our feelings, and we are, therefore, often accused of simply defending established practices. Wes and I and others are very conscious of this as we appear before legislative committees to support our budget requests this year. We are attempting to do the best we can to get facts and figures for them, but it's a difficult job. Hence, we have a responsibility to do a better job of education.

Finally, there is a growing demand for greater cooperative effort at

all levels of education in the matter of curriculum development and instructional improvement. In the past, and even today, more often than not, the universities and state colleges, the State Department of Education, county officials, and the local school districts are moving out in different directions - often plowing the same ground many times with only limited exchange and dissemination of information. When we do this there is a duplication, waste of resources, and limited progress. That's why a conference such as this is so valuable. If time were to permit I would give you some details with reference to a conference we held about six weeks ago, where the Superintendent invited the representatives from all of these levels of education to which I have referred, to meet for two days and develop a plan whereby we could work cooperatively in curriculum development and improvement of instruction. I think one significant thing that came from that conference was their recommendation that we not attempt to develop any master plan because a master plan developed today or tomorrow would be outdated the following day. As an alternative they recommended that we develop a structure with a continuing process in order that we could meet the changing needs as they were developing.

Now, I'm going to make just a brief reference to the Arthur D. Little study. As you know, the Board and the Superintendent employed the Arthur D. Little people to make a study of the State Department of Education. They contacted many of you. This was not a study of the internal organization. It was really an opinion survey from you as to what the services of the State Department of Education should be. As a result, we are making some significant changes within the Department of Education. I want to refer to what we are doing in the Division of Instruction because I think this will be of interest to you. By July 1st we hope to have completed recommendations for a major reorganization of the Division itself - not just a perfunctory change of personnel from one spot to another, but a major revision of the organization. As we do this, I want to bring to your attention what our goals are. These are as follows:

1. To provide more staff time for creative innovating and planning activities;

2. To provide greater flexibility in our organization to meet changing demands, conditions and problems;

3. To provide for improved articulation and coordination in curriculum development at all levels;

4. To provide for a more sophisticated and fluid approach to program evaluation;

5. To provide a structure that will enable the Division of Instruction to use more effectively leadership talent wherever it may be, whether it be from industry, from the universities, from colleges, or from local school districts;

6. To provide an organization that will give the Division of Instruction assurance we're using these vast new resources wisely.

7. To provide for a program to make available to all school districts information about promising practices, new test programs, the findings of research that are significant, and so forth.

Now, I'm going to skip some here, and conclude with some crystal ball gazing - looking ahead to some of the things that I see may happen in the years ahead of us. Some of them refer to vocational education specifically, and some do not.

I see a highly structured yet flexible cooperative system of curriculum development, able to respond immediately to changing needs and demands, such a structure to include research, experimentation, field testing, dissemination and evaluation, with no more fragmented efforts developed upon hunches, guesses and feelings. Such a structure will provide a variety of curriculum offerings giving school districts a real chance to make choices as to what is best for their particular student population. I see a much greater relationship between curriculum development for vocational and technical education, and curriculum development for other areas of learning within the total framework of the public school program. I see a more effective process of articulation in all subject areas from kindergarten into the colleges and universities. Much of the new curriculum is broadened in concept and principle, which prevails through all grade levels. No longer will we be teaching math, for example, in segmented, independent units. Already the new math, as implemented in California, has developed a strong rapport which carries many of the basic concepts of geometry, algebra, and trigonometry throughout all grades. I see use of data processing, microfilming, aperture cards, TV, in information receiving and storage and distribution centers that can make available to every classroom in the state daily current materials within ourselves from any part of the world. And again I have some illustrations that I'm going to have to skip.

I see a changing role for the teacher and for the teacher training institution a much more exciting and interesting and challenging role. The teacher will have less responsibility for giving information, per se, and more for managing the transmission of information, for developing learning skills, developing the inquiring minds, the desire to create, to evaluate, to reach conclusions; finally, to train students not to be afraid of ideas but to learn to master them.

I see an expansion of team teaching concepts and more independent study for students. I see new media and new materials permitting greater flexibility in scheduling to meet more adequately the students' needs; greater variety in grouping students for learning; learning on the basis of rationale and the capacities and needs for learning. No one of these new media is a panacea, but together they can prove extremely valuable.

I see a network of pipelines, with a classroom at one end and new knowledge from the research in industry, from the research in the military, and so on, at the other end, with no shutoff valve. And I mean this seriously. I can see in California a series of seven or eight such pipelines and networks where you will have a direct line leading from the source of new

knowledge directly into the classroom. We can no longer wait the ten years or more that it takes to get a textbook prepared and published and into the classroom. It logically follows that there will be less emphasis on textbooks, more on supplementary materials, and more on current information from the other sources referred to above. Publishers are beginning to recognize this.

Finally, I see a new role for the State Department of Education, with greater efforts devoted to leadership, research, and service, and less of its efforts devoted to control, regulation, and housekeeping.

We truly are in the beginning of a revolution in education. The tasks ahead are going to be exciting and interesting. We do have new resources which are far better than we had ever hoped for. Our need now is for imaginative leadership and the willingness to try new practices, not merely as piecemeal experimental projects, but as bold changes on broad fronts, affecting the lives of all pupils in all schools at all grade levels. We are hopeful this revolution will be a fruitful one, leading to a better education for all people, and in turn, a better America. With the kind of leadership represented at this conference, I know that this will come true.

Thank you.

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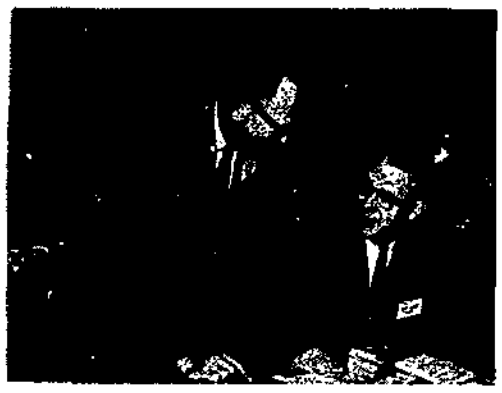
THIRD GENERAL SESSION

Wednesday, March 10, 1965



Bodkin - Bratset

EMPHASIS: TRADE AND TECHNICAL EDUCATION

Chairman: Lee D. Bodkin, Supervisor
Teacher Training
Bureau of Industrial Education

Recorder: Edward Bratset, Assistant Dean
Trade and Technical Education
Laney College, Oakland

* * *

PROGRAM EVALUATION

Panelists: Nathan H. Boortz, Chairman and Moderator
Elston T. Barnett
Franklin R. Johnson
Joseph Berruezo

BOORTZ: I'm glad to be here and to share with you some of the concerns that we have in vocational education. I have the copy of Time Magazine that was referred to. I am an inveterate reader of Time as of the March 5th issue. Time starts out speaking about college in the education section: "Any high school student in doubt about whether to seek higher education," says the Secretary of Labor, Willard Wirtz, "faces an unflattering position. The machine now has a high school education in that it can now do most jobs that a high school graduate can do, so machines will get the jobs because they work for less than a living wage. A person needs fourteen years of education just to compete with the machines."

Then, in concluding, the article says, "Now in a big lurch the nation is raising its sights for what the NEA calls universal education for two years beyond high school."

Just during this past week I received the Bay Section CTA Report, in which a professor at Stanford University has an article. It states that they are thinking that an education ideal should emphasize goals, accomplishments, and behaviors that the typical curriculum merely describes as a course of study in which accomplishment is measured by the passage of time. In a performance curriculum we would define precisely what we

Panel

want to happen rather than think solely in terms of hours and units and credits. We must think in terms of the performance criteria rather than in terms of time criteria. I think we, in vocational education, speak with justifiable pride when we say that for years we have been the forerunners in thinking and evaluating in terms of performance. But maybe we have to sit back and re-evaluate or re-think our thinking lest we become too cocksure. Maybe, as Graham Sullivan said, we may have based too many of our judgments and the evaluation of our programs on hunches, guesses, or feelings. Those of us who attended a meeting in Fresno not so many days ago were again reminded that we should be doing our evaluating in terms of objectives. But our objectives are often nebulous and meaningless. The degree of attainment of objectives is difficult to measure, even when these are properly stated and defined in terms of performance or behavior or operational terms.

Benjamin Bloom is the editor of a book called TAXONOMY OF EDUCATIONAL OBJECTIVES. In the literature these have been defined, and we find general agreement that there are three categories of behavior with which we deal in education. There is psychomotive behavior, those objectives which deal with manual or manipulative skills; affective behavior, those objectives which deal with interest and attitudes and appreciations and values; and, finally, cognitive behavior, those objectives which deal with knowledge, understanding, intellectual skills and abilities.

Paul Dressel, in EVALUATION OF HIGHER EDUCATION, says that there are six levels of cognitive behavior, starting as at the roots of a tree, and at the bottom or base of this whole business is knowledge, the recall or recollection which students demonstrate simply by so-called bringing to mind. Then on top of this is comprehension, the ability to make use of materials and ideas, and on top of this, application, the use of abstraction in particular concrete situations. Then there is analysis, making clear the relative hierarchy of ideas in a communication. On top of analysis, synthesis, a putting together of elements and parts so as to form a whole. And at the very top, the apex of this tree, tree of cognitive recognition, we have evaluation, judgment about the values of materials and methods for a given purpose. We have the most complex of intellectual skill being brought to bear on the evaluation of a vocational education program.

Now, the Conference Committee has assigned three persons - I'll introduce them to you - and they have been given special assignments. They represent all kinds of industrial education. I guess the committee, at this point, felt like the person whose doctor told him he had less than a week to live. This unnerved the fellow a little bit, and he said, "Gee, Doc, what do you think I should do?" The doctor said, "Well, I don't know, but if I were you I'd go see my minister." So he went to see his minister and told him what the doctor had said, and he asked, "Pastor, what do you recommend?" The minister said, "Well, it's very easy. I think you should ask to have your sins forgiven and renounce the devil and all his works." The fellow thought for some time, and the minister said, "What's the matter? That's really not very difficult, is it?" To which the fellow replied,

"Well, Reverend, it's like this. I can ask to have my sins forgiven all right, but as to renouncing the devil and all his works, I don't know. At this point in life I don't think that I'm in a position to antagonize anybody."

So we are covering the waterfront in industrial education.

In talking with Frank Johnson last night, in a little pre-conference discussion, we found out that he was a member of the State Committee on Evaluating Techniques, so in his presentation we thought he would mention something about techniques. Also, he is going to represent a big system - is there a bigger one than Los Angeles? - and in that system the highly skilled technicians and the semi-professional occupations. Then, Barney Barnett will view a little smaller operation, an agricultural and industrial community, emphasizing the skilled workers. Then Joe Berruezo pinch-hits for Walt Miller on the adult and trade extension programs, including apprenticeship. Now, have we missed anything?

By the way, we had conniption fits - all four of us - when we found out that we were going to follow Graham Sullivan this afternoon, and were going to be scheduled for an hour and a half, addressing the entire group. We thought it would be a small, informal, intimate group in one of the hotel rooms, about eight or ten people. So we had to change our plans. Each of these gentlemen will give about a ten-minute introduction in a rather broad concept. In deliberating on the problem of program evaluation, we decided to deliberate rather broadly, I guess because programs are made up of curriculums; curriculums are made up of courses; students enroll in courses and they complete curriculums, and so forth. They may be full-time students, or they may be part-time students and part-time workers, or they may be full-time employees and part-time students. So, therefore, student selection and work placement, and student performance and job placement and job follow-up and curriculum all are involved if you're talking about program evaluation.

After the individual presentations, the panel will have a discussion, and we invite each of you, as the spirit moves, to interrupt, to participate, to give us your views and reactions, because we would like to bring out today something new, or innovated by you that possibly hasn't been tried, at least hasn't been tried extensively before. So that much for the introduction.

I'd like to turn the next few minutes over to the panel, and the lead-off man for discussion is Frank Johnson.

JOHNSON: I was told by Lee to step up to this mike, because apparently our words are to become immortal on a tape recording.

It was a little disconcerting to find that we were going to be talking to the whole group, because a few days ago I got a little note from Nate Boortz, and it said, "Please remember that you are going to be talking to a sophisticated audience." I already knew that, and I was concerned about the discussion anyway, because when you stand before a group of educators

of the caliber of you people, and talk about matters relating to evaluation, it's almost a certainty that everything you say will already have been thought of or said by somebody in the audience, and this is disconcerting. But it's also possible that some of us here have been so busy developing new curriculums and getting new programs rolling, that we haven't even thought about evaluation at all. So it's probably good for us to talk about all the basic involvements in evaluation.

I'm going to clarify my frame of this reference. The frame of reference in which I'm going to talk about evaluation relates to evaluation within a school, by school people, rather than evaluation by, say the Association of Western Schools and Colleges, as an institution. Now maybe what I'll talk about here would be used by such an evaluating committee, but I'm referring to evaluation within the school.

I think that we ought to talk about some of the misleading criteria that we use. I think we all tend to use them. I think we tend to use them very rapidly and we draw conclusions that might be wrong and might cause us problems. I think one delusion we have is that we tend to say if the class is full, this is a great program. Now you know darned well it may not be a great program even if the class is full. It might have a lot of glamor in the title. Conversely, we tend to say that if the class is low, it's not good, and that might not be true either. It just might be that this program hasn't reached the great American public yet and the potential students don't realize what opportunities lie ahead for them in graduating from this new program. So here are two criteria that might not be good, but we commonly use them. Another criterion we use is do we have really very good placement in this program? We say, "yes we do, and therefore it must be great." Well, that may not be true at all. Let me call your attention to the electronics field. You get total placement - or at least you did some time back - in electronics. But that doesn't prove that the program is necessarily good. All it proves is that there were more jobs than there were people. So that's not a very good criterion. Conversely, we might not have any placement and that might be because, although we're doing a real good training job, at the moment there are no jobs available. Well, these are the kinds of criteria that I think are dangerous, that we do use.

I think generally speaking, evaluation normally falls into five basic categories. We talk about evaluation of the program before we offer it. When it's offered, we talk about evaluation of the curriculum offering which might include what it covers, is it current with today's practices? what is the method of covering it? is the sequence of instruction appropriate and meaningful? These are some of the things we might talk about under the general heading of evaluating a curriculum offering. Another thing we might do routinely - and this would be a major heading - is "Evaluation of Instruction." This means evaluation of instructors. Another major heading might be an evaluation of the appropriateness of the facilities and equipment. We might have a great teacher and a great program, but no equipment. We might have great equipment, and nothing else. And last, perhaps, we might have an evaluation of the results of training. And I think these might be five of the general categories when we go into the subject of evaluation.

But just for the record, so that we can list most of them, I think the commonly used technique - we have not yet discussed it - also includes observation of the instructor by the administrators as a routine approach; evaluation of students' achievements by instructors; tests, grades, and so forth; evaluation of job performance by the student in the classroom as well as on the job; evaluation by formal accreditation where an organized group comes in and tells you whether you're doing the job the way you say you're doing it; evaluation for licensing requirements - your vocational nurses must meet specific requirements, your aircraft students must meet specific requirements- these are a form of evaluation; and evaluation by your coordinators and department chairmen - what do they say about the programs under their supervision?

I think evaluation by advisory committee members may be a very dangerous criterion. I am going to suggest one or two reasons. It is conceivable, for example, that in a given program - machine shop - is there a machine shop man around here? Let me see his hand. All right, I'm bigger than you, so I'm going to say it anyway. I have seen this happen this past year: An advisory committee, a good, strong, large advisory committee for our machine shop field told us we did not need, at this time, to concern ourselves with the tape machine. Now, we all know the tape machine is here. Why do they tell us this? There were more union members than there were management members on that committee, and obviously this might have been their recommendation. They did say, "Well, you'd better go along and train machinists as you do now." They might be saying this simply because they don't want to see progress toward tape machines, and they may feel that if there isn't a ready supply of people who can operate these tape machines, maybe that will hold them back. That's one of the possibilities that you might run into by listening too carefully to a committee like this advisory group.

I had a painter tell me once not to spray my house with paint because this would cause termites to attack. Think about that a minute. The fact that you get paint on a house the fast, easy, quick, economic way doesn't necessarily mean it's a bad way. Yet I can see where an advisory committee might tell us, "You have got to paint these places with a brush, back and forth." So, you can't always listen to what an advisory committee says.

Another method of evaluation is to ask ourselves if we are using all the new available material, all the new ways, all the things that are available to us. And I think another evaluation criterion might be, are we tying our instructional program in with other kinds of education? Are we planning our program as a transfer? Are we tying our program into an advanced level of technical training at perhaps the university or state college? I think these are factors.

Certainly because we have successful programs, lots of students, and lots of placement doesn't necessarily prove that we're doing the best we can. It's possible there is a better way. One of the things we have to be careful about is that we don't sit back on this "lots of students and lots of placement" and say we're doing the greatest job in the world. It

just could be that by doing it in a different way, we could do a better job. Maybe we should take the same program and get a new set of people and a new set of conditions and teach the same subject matter from an entirely different approach, and then compare the control group with an experimental group and see if we're doing better. I think this is one of the things we are lacking.

Maybe it's possible to use advisory groups in another way. Maybe instead of letting them answer questions for us, things we want to know, or even things that we want them to tell us we want to know, maybe it's possible to give these people a set of criteria for measuring a class, and instead of having a meeting where they answer the questions, just turn them loose in a classroom without warning to the teacher, without warning to the students, and let these people measure the program by what they see and hear from the students. Maybe this is the way to evaluate. Maybe it's possible to offer a common core - the nuts and bolts idea. They might be a little bit pleased, say for a semester, with tools, with basic electronics, anything related to the skilled trades without any specific direction to it, and then follow this up with a highly specialized area in the final year.

Well, these are some of the things that we might do to evaluate, and the only way we can find out is to try some of these things.

Now, I have started the ball rolling. These are some of the questions I have. Thank you.

BARNETT: I'll present a question simply to get the thing started. What does your community think of your program? I approach the school situation from a little different point of view than Frank would, because as Nate said to you in the beginning, we represent two different kinds of communities. Our junior college district is pretty much an agricultural area. We're in a little different situation than Nate is at Foothill.

We were called on by the teamsters to assist them in developing a program for training truck drivers. This was a little new. It seemed to me that there were problems involved here that we had not been faced with before. So, to begin with, we established an advisory committee representing the management people and the union. In developing the material for a course outline, curriculum and so forth, we enlisted the assistance of the State Department of Education, and identified men to assist the committee in drawing up the course outline. As we proceeded, we got into some other aspects of the program - how would we handle the teaching? The industry indicated the real need for some kind of on-the-job experience because they wanted the men who were taking the training to have some experience behind the wheel.

In further discussions with the advisory committee, we decided the training program should consist of three parts. The first unit is twelve hours of classroom instruction in technical information related to heavy equipment operation prior to the trainee operating the equipment which represents his objective. The second unit is the standard Red Cross

ten-hour first aid course. The third unit is eight to sixteen hours or more of behind-the-wheel observation and/or operation, accompanied by a trained on-the-job instructor. This unit is provided by the employer and is under his direction.

In preparation to do a good teaching job, the instructors for the three different units receive teacher training tailored to their needs. The behind-the-wheel instructors are provided a ten-hour teacher training program slanted toward manipulative operations. The instructor for the first aid unit has special preparation under the auspices of the Red Cross. The instructors for the classroom related instruction, which will be provided by the College, will be drawn from the teamsters who have completed the training for the behind-the-wheel instruction. In addition, the classroom teachers will receive additional teacher training preparatory to their taking on the responsibilities of classroom instruction. All instructors will be required to go through all three units required of the trainees so that they know the total program intimately before they begin instructing.

Each of the participating employers has designated two or more of their employees to participate in the on-the-job teacher training. The Bureau of Industrial Education has provided this instruction, with George Rosecrans doing the teacher training.

The first trainees, other than the instructors, will be workers already employed as teamsters, but individuals who wish to increase their ability to operate additional classes of equipment. The program only covers the transportation of construction materials, but this involves fifteen or more quite varied types of equipment. Where present workers wish to register for the operation of a type of equipment which is new to them, or if new workers come into this field, they will be required to take the training in the first two units and then the behind-the-wheel instruction.

This program can be evaluated by the success of the product which can be measured in a number of ways. Some of the yardsticks are increased production, decreased accidents, steadier employment, less turnover in the work force, decreased equipment maintenance, better employer-employee relationships, and more flexibility in dispatching and in work assignments.

BERRUEZO: As I look at the problem we have here of evaluation, it takes many, many forms. In Berkeley, back in about 1961, the East Bay merchants were having problems in getting good clerk-checkers. There were a few private schools that were charging a beautiful premium, and for one reason or another the recruits were either too old, too young, too thin, and so on. They were not filling the bill. Working very closely with the Department of Employment and the East Bay Food Dealers Association, we developed a food clerk-checker program, recruiting from the high school level for baggers, and up into the adult level for other classifications. The screening was done by the Department of Employment. The class has been very well accepted, and has met many needs. It's met the

needs of the high school students for part time work; it's met the needs of the students going on to college; and it also has met the needs for preparation for full time employment for many. So here we have the immediate evaluation, which is successful placement in work.

If we go a step further we have a different kind of evaluation for high school programs. This type of evaluation has to work in conjunction with the junior college level. You have to have good articulation, as the result of good planning, between your junior college and the high school for certain programs. I might give you two examples we are working very closely with now. One is the sheet metal class, which will be a two-hour vocational offering at the high school level, leading to a program on the Laney Campus. Another program we're thinking about at this time is graphic arts. The intent is not duplication. The intent is preparation for further training. Here, again, it means a very close working relationship to make sure that what you are offering is meaningful and will lead directly into the next exposure.

We have another program which is a pre-technical program. Most of you have read about it. The initial experimental program was offered at the De Anza and Harry Ells Schools in Richmond, first under the auspices of the Roosevelt Foundation, and later under a Ford Foundation grant. This particular program has expanded to seven districts, including Berkeley, and at the present time is expanding further. I think there are approximately twelve different districts involved in this program at the present time. The evaluation involves the interrelationship of four teachers and one block of students. The evaluation is on a continuing basis, since there are compromises that have to be made from day to day as far as the coordination of the program is concerned. The teachers are from four different disciplines, so there have had to be many adjustments involving the English, math, science and lab teachers. This program in Berkeley at the present time is being articulated with the Merritt Campus, and also with Dr. George Champion's program with DAI at San Francisco State.

The apprenticeship program lends itself to another form of evaluation, and here are the ingredients: An up-to-date facility, a competent teacher, and a darned good active joint apprenticeship committee. If any of these ingredients are missing, you have problems. If the joint apprenticeship committee is an active group, and they make their periodic study trips to your program, you can rest assured that everyone is kept on their toes. Your program will be up-to-date, the students will feel that they belong to something, and everyone will be working in unison.

There's another point that I feel I should stress, and this is where the coordinators of a greater area meet collectively in developing the school program for a joint apprenticeship committee. You must have this particular type of communication. We have worked very closely recently in developing and operating the by-laws for the automotive apprenticeship program. Mr. Wixon of Contra Costa, Mr. Carter of Diablo, Mr. Mark Marlais of Laney, Mr. Carl Johnson of Hayward, and myself. We have been quite successful in bringing it up to date. You will notice when you go to these joint apprenticeship meetings, management is complimenting the quality of

apprentices they are getting at the present time. We must also keep in mind that the labor market is other than what it was a few years ago, so they can be more selective.

On the trade extension level, evaluation depends primarily on the subject matter that is presented. By and large these people are skilled in their trade, but want to come to school to learn something new. Good attendance is one measure of excellence of a trade extension program. In Berkeley the steamfitters have been updating their program. They have been bringing in their old hands to learn the latest there is in instrumentation, in heliarc welding, and the use of automatic equipment.

This, I believe, pretty much covers my part at the present time.

BOORTZ: As to the panel's questions, one that I think Frank mentioned that disturbs me a little bit is about evaluation by virtue of accreditation teams and reviews for licensing. This hit home. I had the American Dental Association out of Chicago, who accredits our Dental Assistant program, and we get through with that and another group comes through and evaluates the Dental Hygienist program. The American Medical Association out of Chicago accredits our X-Ray Technology training program. We are inaugurating a new Physiotherapist program, and they will want to accredit or evaluate it. Whether it's vocational or registered nursing, we have the California Licensing Board to deal with, this we know. We have to write and request evaluation and then, under the nurse training act, if we want to be eligible for funds we have to pay out $1000 and have the NLN come in and evaluate, and if they approve, we may be eligible for funds.

What do you see here, Frank, by way of value or inference as far as these formal accreditation bodies are concerned?

JOHNSON: I think that one of the pitfalls that might accrue to us is that we might make a titanic effort just prior to the accreditation visit. I think this has happened to everybody here, and it makes us look pretty good, and we might later on look for pretty smooth sailing for ourselves when the team arrives. Now, there is nothing wrong with preparing for accreditation. I think that might be one of the major values in the formal accreditation. Obviously, if we are going to prepare ourselves for formal accreditation we are going to gain something in the process.

One disadvantage that I can see would be that accreditation could become so decimated and so fragmented that we might have an accreditation team come in for carpentry, an accreditation team for machine shop, and specialized teams for this and that and the other thing. It's just conceivable that unless we create a set of standards for ourselves, so that we really have a valuable internal accreditation procedure, we might overdo the accreditating process to the point that every other day we have a team on our campus.

BERRUEZO: The accreditation team may give you more accurate information with regard to the industry on a nationwide basis than you would have

just from the local point of view. Too, it would seem that if representatives of the industry are accrediting your program, the accuracy of their deliberations might be greater than we might have from another group, such as the Western Colleges Association, or what have you.

BOORTZ: We realize that we often benefit from evaluation by these specialized groups, but do we benefit so much that we don't have time for anything else than to be benefitted?

Does anyone in the audience have any experience or feelings concerning this, who would like to express his views?

(A digest of the discussion b the panel members and from the floor, which concluded this topic, follows:)

We may let organizations outside of education get such a foothold that we may have to kowtow to them or else! We should develop our own standards and stand on our own feet as far as evaluation is concerned. Evaluation and/or accreditation of the nursing program, of the technician program, and of the cosmetology program are examples which represent some of the hazards.

Evaluation by the Western Colleges Association, which is quite flexible, might forestall some of this encroachment. Evaluation by outside agencies may establish unrealistic standards not applicable in a local situation. There are forty-eight nationally approved accrediting agencies, all specialized, and more are being formed.

Letting outside groups evaluate our programs robs the local community of the privilege of local participation in evaluation.

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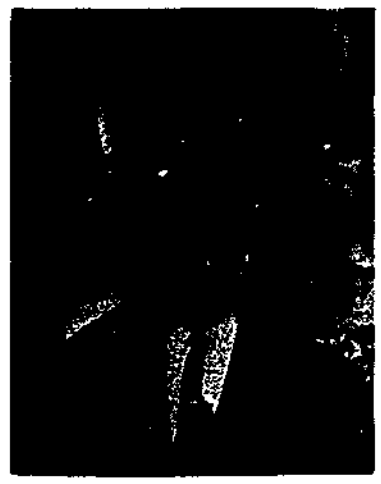
THIRD GENERAL SESSION

(Continued)

Presentation: ARTICULATION - HIGH SCHOOL, JUNIOR COLLEGE, ADULT EDUCATION

Robert E. Swenson, President
Cabrillo College; and President
California Junior College Association


Robert E. Swenson

* * *

This is a tough assignment I have been given, to talk on a subject as deadly as articulation at 3:20 in the afternoon, when you have been in session for two days, and some of you are probably getting a little paralyzed in certain spots, but I'm going to talk quite briefly. I've only two pages here, so you know I can't go on too long. I'm going to try to say some things that are rather pointed, and then perhaps let you do the rest of the thinking, because I can't go too far.

Articulation is one of those words which we educators use a great deal. We have our own jargon in the profession. I suppose the two most overused words in education are articulation and coordination. We use them in very general ways to apply to a lot of different kinds of things. As a matter of fact, we use them rather carelessly at times. Maybe we should stop and take stock of what we are really talking about when we talk about articulation. Now, something that's articulated is systematically interrelated. It means it properly joins together, like your knee joins the two parts of your leg together so your leg will function properly.

In education I think we need to remind ourselves that when we talk about articulation, the objective is to be sure that a student's education

Third General Session

develops in proper sequence. In other words, that it's properly joined together - not disjointed. This is a concern of all segments of education, but it's particularly a problem for the junior college, which is a transition institution with very diversified curricula. I've been asked to talk about articulation in relation to the high school, junior college and adult education. I suppose the reason I've been asked is because junior colleges can claim a substantial amount of experience in working with articulation problems, particularly in our transfer curricula, which must be properly related for many majors, and for several different types of institutions, where a student takes his first two years in junior college and then transfers to a senior institution. I'd like to go beyond that and talk more specifically about articulation problems in the field of vocational and technical education.

Let's try to put this in context very briefly. What are some of the things that cause our articulation difficulties? Well, I think probably the most important one is that our educational system is basically organized with pluralistic control rather than with a centralized, unitary type of control. We could have a highly centralized federal system of education, and our articulation problems would probably be much less complex because you'd lay out a standard pattern for everybody that's involved. Of course, we get into difficulties on this all the time. I'm sure Wes' office gets accused at times of trying to exercise too much control, and to infringe upon local autonomy, because that office is trying to bring a little order into our system of planning curricula. Essentially it's because we have chosen to decentralize our educational controls, put them at state and local levels, and as a result we have these very complicated problems of articulation. Sometimes, because of the frustration of these problems, people are led to argue for more control at the state level, with the resulting loss of local independence, and perhaps less opportunity for diversity and experimentation. Also, with the federal government entering increasingly into the financing of education, I'm sure we're going to face the same kind of problems of what controls may come along with the financing. This is what we've worried about over the years when we've talked about federal aid to education, and we're beginning to see the potential danger. Nate referred to the problem we're encountering in our nursing program, because there's a feeling that if you're going to get the federal money, then you have to meet the standards that are set up by a national agency which is selected by the federal government. So this, I think, is the context within which we work when we're wrestling with articulation problems. Do we want highly centralized unitary type of controls in our educational system, or do we want to continue the kind of local control and local autonomy that we have enjoyed as a part of our democratic system? Well, under our local district governments with a substantial amount of control delegated to local boards, we have a jurisdiction that is often not coordinated.

One of the big arguments for the unified school district type of organization is that you could have an orderly system from kindergarten through the 14th grade. Instead of having all these component parts, often times not even fitting together in a relating whole, you could organize

and structure it so articulation of programs could be accomplished. We don't have this in many areas, and the junior colleges have increasingly gone for separate districts and are breaking away from the unified district. This will complicate our problems of articulation.

I think the third problem or factor that we need to see in relation to articulation problems is that the very rapid expansion of knowledge that we talked about the first day inevitably must lead to curriculum change, new developments, new types of experimentation which result in changes of grade placement, for example, of various subjects. It wasn't too many years ago that most algebra and geometry was found in the colleges, and now we're bringing a lot of it down into the 7th and 8th grades because the pressures of new developments and new knowledge mean that people have to have more education in sequenced programs at an earlier point in their education. We could use foreign languages as another example, but we're very happy for the moment with the grade placement in relation to these problems. These are part of our articulation difficulties which result because we have to continually change and modernize curricula to keep abreast of the new knowledge.

I think the fourth factor that often causes our difficulties is that we face the problem of controls by outside agencies, controls which are exercised over our educational programs. I heard some reference to this at earlier sessions. Often these controls make it impossible or very difficult for us to properly interrelate our curricula, so that the student can achieve an orderly progression from grade to grade or from program to program. Let me cite an example. I think this is one of the classics. Take the field of nursing. If you decide to become a vocational nurse, it's a one-year program. If you finish that program and decide you want to become a registered nurse, which is a two-year AA registered nurse program, you start all over again at the beginning. You have separate licensing boards controlling the curricula of these programs and you don't make orderly progression from one to the other. You double back and start all over again if you decide to change your objective. Now these are controls that are oftentimes maintained by outside agencies. Sometimes, of course, we create these problems ourselves.

Another factor is that we find great variations among our high schools within a junior college district, and maybe there are a number of component high school districts. Some are small and some are large. Some have very limited programs, primarily of a college preparatory type to fit a small school that doesn't offer a large, comprehensive curriculum. Another high school may have a very complete vocational program along with its college preparatory program. How does a junior college, then, work out articulation problems with the high schools with different kinds of programs within that district so the student coming from a high school and going to the junior college can follow an orderly progression of education? Also, we find variations in the pattern of administration of adult education, and this introduces complexities into our articulation efforts. Some of our adult programs are maintained and operated by high school districts; traditionally and historically, this is the way they began. The junior colleges are increasingly

getting into the adult education field, offering classes for adults. Sometimes the programs become competitive within the same local area. I suppose now that we have funding for the permissive tax for adult education, there's even more danger that they'll become competitive.

What can we do within this context to try and achieve better articulation between the high school, the junior college, and adult education? First of all, I'd like to suggest that this just doesn't happen. It's nice to say that all you've got to do is get on the ball and call your colleagues over in the other institutions and work these things out. But this does not happen if that's the way it's left. I think we have certainly learned this in the junior colleges. Unless we have organized machinery for working out articulation problems with the four-year institutions to which our students transfer, we are in difficulty all the time. But if we have organized machinery, at least we have a way of going about it to solve the problems. Over the last several decades we've had articulation conferences with the universities, state colleges, high schools, and junior colleges all participating. This group usually meets once a year, but within this articulation conference and within the overall structure there are articulation committees for practically every subject field - business administration, engineering, foreign languages, right down the line. They work continually to try to resolve the problems of students who are moving from one level to the next within our educational system, and seeing that it's an orderly progression, and seeing that the student doesn't suffer because of lack of good articulation.

Maybe we can apply some of this same type of procedure to the kind of articulation problems we face in vocational education. It's being done within many of our counties now, on a countywide basis. I suppose with the motivation of the new countywide vocational pacts, this has helped to encourage cooperative effort on the part of the high schools, junior colleges, and the adult programs to do a better job of planning and articulating. We need to establish organized committees in order to accomplish this, if it's going to be done.

Also, we need to establish within each local area local area committees to work on problems of articulation between the junior colleges and the adult programs. Let me cite an example from our own experience, where a new junior college moved into an area that for years had no program of junior college education. One of the first questions we faced was, who's going to do the adult education job? The high school districts within that area were already doing it. I thought our job was to sit down with representatives of the high school districts who were administering adult programs and establish a committee and determine who's going to do what job. We met at least twice a year to review the problem. This is not particularly novel, but this is the kind of thing I think we have to do if we're going to maintain the kind of local autonomy that we think is important in American education.

Possibly we could use advisory committees organized by occupational fields and serving all of the segments that we are talking about today -

high schools, junior colleges, and adult education. Instead of each district or each school having an advisory committee within a local area, maybe there could be an advisory committee to help articulate the program between the high school and the junior college. I don't know whether this would work out or not. It seems to me we could experiment.

Junior colleges are attempting to do some regional planning that we feel would broaden our programs and get less duplication in highly specialized fields. Here in the Monterey Bay area the four junior colleges meet at least twice a year to review our planning, to talk about interchange of students, and to get out a joint publication that goes to all the high schools. This publication lists the programs in specialized fields available in all four junior colleges and indicates that a student in this area may go to any one of those junior colleges to get the specialized program he needs.

In addition to some organized committees, I think we must have strong cooperative counseling services to assist the student in his educational planning, and perhaps what's more important at times, to continually remind our teaching faculties of the importance of articulation. If we don't have good articulation the students get caught in the middle. The counselor is the one who probably is most apt to be aware of it, and to continually remind us to get busy and do something about articulation because the students are suffering. Most of the junior colleges have done this by sending their counselors to the four-year institutions to talk with the students after they transfer, to see how well it went. Was there an orderly progression? Were things properly interrelated in that major field to meet the requirements of Letters and Sciences or whatever? Maybe we need to do more of this sort of thing between high schools and junior colleges. I got to thinking the other day that we have never had high school counselors come on our campus to interview their former students to see how they were making the transition from high school to junior college, although we've had them there for other purposes.

Well, my conclusions are these: Let's not lose sight of the fact that articulation has as its purpose more effective services to students. Too often our articulation machinery bogs down because it's become primarily a mediation device to resolve disputes between institutions, or agencies, or faculty members. And, second, we have to remind ourselves that the job of articulation is never done. The job is never done because the curriculum has to be continually changing, so we have to keep working on articulation problems constantly. It's a lot of hard work, but unless it's done, the students are the ones who suffer.

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THIRD GENERAL SESSION

(Continued)

Rod Clendenen

Presentation: WORK EXPERIENCE AND DIVERSIFIED OCCUPATIONS

Rod Clendenen, Coordinator of Industrial Education; and
Billy K. Allgood, Instructor
San Jose Unified School District

Mr. Clendenen:

We have been asked to report to you this afternoon on a program offered in the San Jose Unified School District, designed specifically to do something about the high school dropout. We don't claim to have the answer to the dropout problem in your school, or even a permanent solution to our own, but we do have some evidence that we are on the right track, and we are anxious to share these ideas with you.

A few years ago, about the time of the President's Panel, Joseph C. Bellenger, Director of Vocational Education, was meeting with high school administrators and other key persons of the San Jose Unified School District to see just how well we were meeting student needs, when the idea of a special program for potential student dropouts originated.

Dr. Kennedy and other administrators on the staff of Lincoln High School returned to their campus to consider such a program, because they were experiencing an increase in dropout rate along with a general shift in student interest away from the college prep program. Lincoln High School participates extensively in our Vocational Center, but still there was a growing group of uninterested students.

When the faculty was advised of the possibility of a special program the Industrial Arts Department surveyed their classes and compiled a list of sophomores that, in their judgment, would not make it through the junior year. The entire faculty was also polled and they produced even more names so that students from all classes were gathered and questioned as to the kind of schooling they desired. We did not use a carefully designated test to identify these students, and I am sure you won't have to either. Simply ask your teachers for students with failing grades and poor attitudes and they will give you a long list.

With the entire educational team composed of school personnel concentrating on the solution, it was decided that a two-year work experience program in diversified occupations would have the best opportunity for success, if a teacher could be located with a broad occupational background and a genuine desire to help unwanted, disappointed, and sometimes almost

disgusting students. We were extremely fortunate in locating Mr. Allgood, because as Dr. Bohn pointed out to us, he had graduated at the top of his class in the Industrial Arts Department at San Jose State, had the occupational experience needed for this assignment, and originally entered school to prepare for a career in youth correction institutions. He had changed to industrial education only because he felt he could do more for youngsters in a regular school environment.

With the instructor participating as part of the educational team, the details of the program were discussed and agreed upon. A two-hour shop situation was to be the core of the students' curriculum. General shop skills were to be developed with specific skills related to the students' jobs as they became employed. A strong occupational information program was planned with specific instruction in personal improvement, human relations, and other areas depicted in the pictures that will follow.

The third hour of the student's program was to be outside the school, though he would receive a unit of credit because he would spend from ten to fifteen hours each week employed in a local firm, learning to live under conditions applicable to any paid worker. Those waiting for employment would work unpaid on campus doing odd jobs.

Faculty members who were to teach the required subjects were enthusiastic about the program and agreed to use the occupational core as assignment material for their courses where these students were involved, and in every way to cooperate in encouraging these students to learn.

Although there were several objectives to this program, such as occupational guidance, development of entry skills, and personal improvement; it is important to remember that there was one single main objective: <u>To change the student's attitude to the degree that he would remain in school and graduate</u>.

That's enough background information. Now it is my pleasure to introduce the instructor, Bill Allgood. He is the one who really deserves the credit. He will tell you how the program is operating, and will supplement his presentation with some pictures showing some of the students on jobs.

Bill Allgood

Mr. Allgood:

To begin with, I'd like to describe the type of school and students that we have in the program. The enrollment in Abraham Lincoln School is predominantly Mexican. There are 21 students in the program at this time; 80 per cent of them are Mexican with an average I.Q. of around 80. We thought that by the time these students were juniors the counselors would pretty well know which ones were going to go ahead and finish school, and which ones were not. So the counselors recommended these particular students to me, and I interviewed each one of them myself before we

accepted them into the new program. Once they were in the program they were expected to take English, math, P.E., and social studies, and this two-hour shop program that I teach. In this two-hour shop program we try to cover as much occupational guidance as we can, and, of course, the use of hand tools and as many of the machine tools as we have in the shop. We use the State Employment Service to give the GATB test to these boys to try to determine some of their aptitudes and see what they are best suited for. I might comment here that I'm not as much concerned with the I.Q. now as I was in the beginning, because I found that when we did find something that a student was interested in, the I.Q. didn't particularly mean a whole lot.

We take these boys on two field trips a month out into the community to the various factories and industries, for them to see the types of jobs that are available. This has been very inspirational to them. It stimulates thinking on their part, and many of them who even after coming into this program indicated that they did not intend to finish school have now begun to change their minds.

My first concern in teaching this program was how we were going to test this type of pupil. Many of them do not write very well, and their spelling is very poor. I have two in the program that are classified as nonvisual. I have tried all sorts of ways to evaluate what we are teaching. We tried oral testing, true and false questions, multiple-choice questions, and essay questions. I have come back to the essay-type test. The first time I gave an essay-type test I had at least one-third of the papers come to me with nothing but a name on them. Now, after over half the year has elapsed, I gave a test just last week, complete essay, and there was only one paper submitted with no writing on it. Of course, some of them were pretty hard to decipher, but some of them were very good. These students are beginning to express themselves, and I feel they are learning something through attempting to write answers out.

I have been trying to cooperate as closely and as much as possible with the academic courses in the school. One teacher in particular, who teaches English, has several of my students in his class. We met together several times and decided that we would work out a paper in which we could give credit in both classes. We had them write a term paper on some particular occupation. The English teacher allowed them to work in his class. He corrected the papers and handed them back. He gave them a grade in English on this paper. Then it was handed to me to be graded for content. Then they had an opportunity to give an oral report on the same subject. They received three grades. This stirred quite a bit of interest with the students. Their grades have come up in the English class considerably in five or six weeks. This close cooperation with the English and Social Science departments helps these students to become more interested in the academic courses.

As these students are dismissed from school at approximately 1:15 in the afternoon, I'm supposed to find them employment somewhere, and coordinate their training. Our first thought was that this would be quite simple because we have the backing of several service clubs. However, we

found out that the service clubs did not give a whole lot of assistance. Out of the 21 students, I think that only two or three of them have been placed by the service clubs. Most of the placement responsibility falls on the coordinator. In our first attempt to place these students we decided we would try and find an area large enough to absorb all of them as they were trained. However, we have been placing them in any field we can find. We are particularly interested in any type of work in the junior year, as long as it gives work experience. In the senior year we try to channel them into something which they are capable of doing and something they will stick with.

Now, as Rod flashes a couple of pictures on the screen here, you will see the type of work that some of these boys are doing. As Rod indicated, we had intended to place some of these boys in janitorial work, gardening, cleaning swimming pools, this type of thing. As the program began, it was our intention, after the two-hour class to retain the students after school for one hour in some kind of work experience in the district. We found it was consuming all of my time trying to create jobs in the district to employ these boys for one hour a day. So this has not been too successful, but we are spending more time now trying to find jobs in the community where the boys can get experience on the job. This particular boy (see Figure 1) is working for a large manufacturing company. Two of the boys went to work in this factory. The supervisor put them to work running duplicating machines, filing catalogs, and this sort of thing. They tried drafting - mechanical drawing - in which they did very poorly. However, on this job they put them to work tracing drawings and that worked out quite well.

Figure 1.

Several of the boys are working on power presses. This is not something a person would want to devote his life to, certainly, but it seems this group of students isn't particular about the kind of job they have, just as long as it is a job. This boy here in the picture (see Figure 2) is a nonvisual student, and I was told when he came into the class that he could neither read nor write. The first time I gave him a test he asked what it was. He did put his name on it, and that was it. I somewhat ignored him as if I thought he was putting me on, that he really knew more that he was letting on, and to my surprise I think he was. He has improved very much, and he is writing now and turning in his tests to me. In fact, I don't think he has failed a test

Figure 2.

since that first one was given.

One of my boys is a very nice looking young man, but he could not get along. He was failing in English, and had withdrawn from social science. I got him a job in a department store. He has been doing very well. The owner of the store has charge of him, and I drop in every so often to check on him, and it seems he is doing a wonderful job there.

Another boy is working as a vacuum cleaner repairman. When I came across this job, the man who owned the vacuum cleaner repair shop had lost his repairman some months before and had been doing the work himself. He said he would give it a try and to bring the boy in and he would see if he could train him. When the boy had been there about two weeks he was opening and closing the shop himself. He has been there several months now, is doing very well, and when he graduates from high school he will probably continue on in this shop.

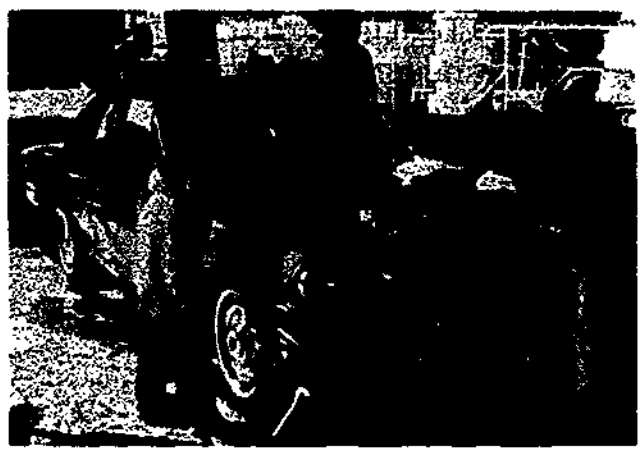

Figure 3.

Of course, this is only a sampling of the kinds of jobs involved, and we have not overlooked the automotive field (see Figure 3.)

That will give you some idea as to the kinds of jobs that we are placing these boys in. As to how successful the program is, I do feel it has been a success so far. It has not cured all the problems, certainly, but I think it has changed the attitude of these boys and enlightened them as to the types of jobs that are available for them, and certainly as to what lies ahead if they do not continue their schooling.

* * *

Following is the gist of the question, answer and discussion period which followed:

The students are paid by the employer for the time they spend on the job. This time may vary from one to four hours, depending on the job. The boys are coached on how to find a job, and several of them have been successful in finding their own jobs. At the present time eleven of the boys have jobs. Probably almost all of the boys will have jobs by the end of the year, even though the placement of 16- and 17-year-old boys is difficult.

Field trips form a very important part of the program. On these trips the host-guide is asked the employment educational requirements at the place visited. Usually one of the requirements is high school graduation, and this fact is beginning to sink in as far as these potential school dropouts are concerned. Their attitude is changing, and there is less thought given to escaping from school.

The GATB tests have been of little use. There has been too much delay in obtaining the results, consequently they have not been used to indicate probable success in job placement. Also, the Employment Service at present is too engrossed in trying to find employment for breadwinners to be involved in giving much assistance in placing 16- and 17-year-old boys. Because of the current 6 per cent unemployment rate, this is understandable.

There is an advisory committee for this program, but it does not function as well as is desired. In establishing such a committee, it was recommended that members be appointed who are sympathetic and who have some opportunity to employ this kind of boy.

While the program is not fully developed, and much is still to be accomplished, some success has already been achieved and there is good reason for enthusiasm.

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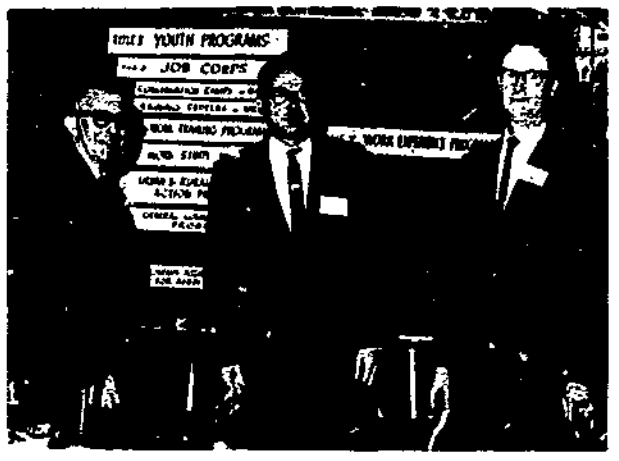
THIRD GENERAL SESSION

(Continued)

Presentation: RELATIONSHIPS OF PUBLIC EDUCATION AND OTHER GOVERNMENT SPONSORED PROGRAMS

Richard A. Williams
Chairman and Moderator
Karl F. Jacobson
Robert Tobi
Bureau of Industrial Education



Williams - Tobi - Jacobson

Mr. Williams.

In our brief segment of this afternoon's program, we intend, rather ambitiously, to alleviate some fears, capsulize progress to date, and make a projection into the future. It is my hope that what is left unsaid during the presentations will be revealed in the questions to follow. Since the title of our section of this afternoon's program gives us such leeway, I've arbitrarily decided to stress those facets which seem to cause concern and to touch on the new aspects which have brought the Bureau such a deluge of questions recently.

If our discussions seem slanted toward the Manpower Development and Training Act, it is for good reason. The three of us have been intimately and almost totally involved in this program since our arrival in the Bureau, as our titles of Assistant Supervisor, MDTA, indicate. This, then, provides a springboard or point of reference for what you are to hear today.

First, to give a meaningful report on progress to date would be lengthy and repetitive to most of you. However, I can describe MDTA very briefly as the program which, since its beginning in 1962, in California has developed occupational training projects numbering over 500, which have provided, are now providing, or will provide for training in excess of 30,000 persons at a cost of $20,000,000. This amount is for training costs alone, and when training allowances are added, the figure if more than doubled.

The training I have mentioned has not been restricted to industrial education. However, about 200 of the projects developed to date are for industrial occupations. The great majority of courses offered have been offered in public schools by you people who are in attendance here today. This program has become a vitally important part of many schools' operation.

Needless to say, some report on the progress of such a massive program needs to be written, and it has. As a matter of fact, more than one is now available. There have been annual reports to the Secretaries of Labor, and Health, Education and Welfare, and many others with less scope. A recent publication is: "Two Years of Progress under MDTA." Two reports will reach all of you soon, which will report progress in California much better than we can with our limited time today. One of these reports will describe the activities of the Bureau of Industrial Education, while the other will cover all the MDTA activities in California. This second report was prepared jointly by the Vocational Section and the Department of Employment.

My mention of the Department of Employment at this time is deliberate, for the aspect of a multi-agency approach to an educational problem is a new concept to many of us, and a disquieting one as well. I doubt that more than a few of you are aware of the lengths to which this trend has gone. Bob Tobi, Assistant Supervisor, MDTA, from the Los Angeles office, is able to expand this more fully in the comments he has to offer concerning that strange new organization in our midst, the Youth Opportunities Board.

Mr. Tobi.

In any community, if action is to be taken to combat youth problems such as dropouts, juvenile delinquency, and unemployment, it is necessary to hire personnel to plan, operate, and coordinate the activities. In Los Angeles the Youth Opportunity Board of Greater Los Angeles has provided personnel and assumed responsibilities for these activities. The Youth Opportunity Board was designed to solve problems faced by youth. A goal was to develop new approaches to the solution of youth problems.

The Board was proposed in May of 1961. In June of 1962 it received a planning grant from the President's Committee on Juvenile Delinquency and Youth Crime. Under terms of the grant, five agencies designated high-level executives to serve on the Board. The five agencies and present Board members are: Los Angeles City Schools, Sam Hamerman, Chairman; County of Los Angeles, Leland Carter; City of Los Angeles, Robert L. Goe; Los Angeles County Schools, Robert C. McCaughin; and State of California, Samuel Leask. In addition to the five Board members, each agency has assigned a full-time representative to serve on a Joint Power Committee. The Board has also hired staff members.

Since the start, services that have been provided include counseling, testing, remedial education, occupational training, referrals to on-the-job training, and job placement. To finance these services the Youth Opportunity Board obtained additional funds from the President's Committee on Juvenile Delinquency and Youth Crime; it has obtained MDTA money through the Office of Manpower, Automation and Training; and it has been able to initiate training for youths by means of regular MDTA programs. The Youth Opportunity Board also applies for grants from private foundations.

It is significant that not all of the services are offered directly by the Youth Opportunity Board. They interview and counsel applicants, they make job studies and they provide placement services. Remedial and vocational instruction is being provided by the public schools. Contracts have been made with private organizations for special studies and activities. This method of operation makes it possible for the Youth Opportunity Board to obtain the services of professionals to develop projects, and also makes it possible to obtain the use of facilities that might not otherwise be available to them.

There is no rule that states there should be only one community action group in a given area. In Los Angeles the Youth Opportunity Board has been the most active group. Other agencies have made plans but have not developed programs involving industrial education.

When the Economic Opportunity Act of 1964 became effective, numerous action groups were formed, and for a while it appeared that many proposals would be submitted by many groups. Actually, most of these were not of direct concern to our agency, as this Act is not administered through existing channels. In the meantime, mergers of action groups may designate the Youth Opportunity Board as the local organization through which E.O.A. applications will be submitted. When proposals are approved, public and private agencies may be contacted directly, without the State educational agencies becoming involved.

The Youth Opportunity Board of Greater Los Angeles is probably typical of the larger community action groups. It initiates projects, prepares proposals, and operates programs. It makes use of whatever funds are available, and can be used to accomplish their goals.

In summary, a Youth Opportunity Board is an organization designed to help solve problems faced by youth. Its function is to propose projects and get them into operation to eliminate or reduce the problems of youth.

(See Organizational Chart Page 62)

Mr. Williams.

This leads into Karl Jacobson's presentation on the Economic Opportunity Act, and its implications for public education. You will see a rather obvious parallel to the Youth Opportunity Board as he speaks of the Community Action Program concept contained in Title II of the Act.

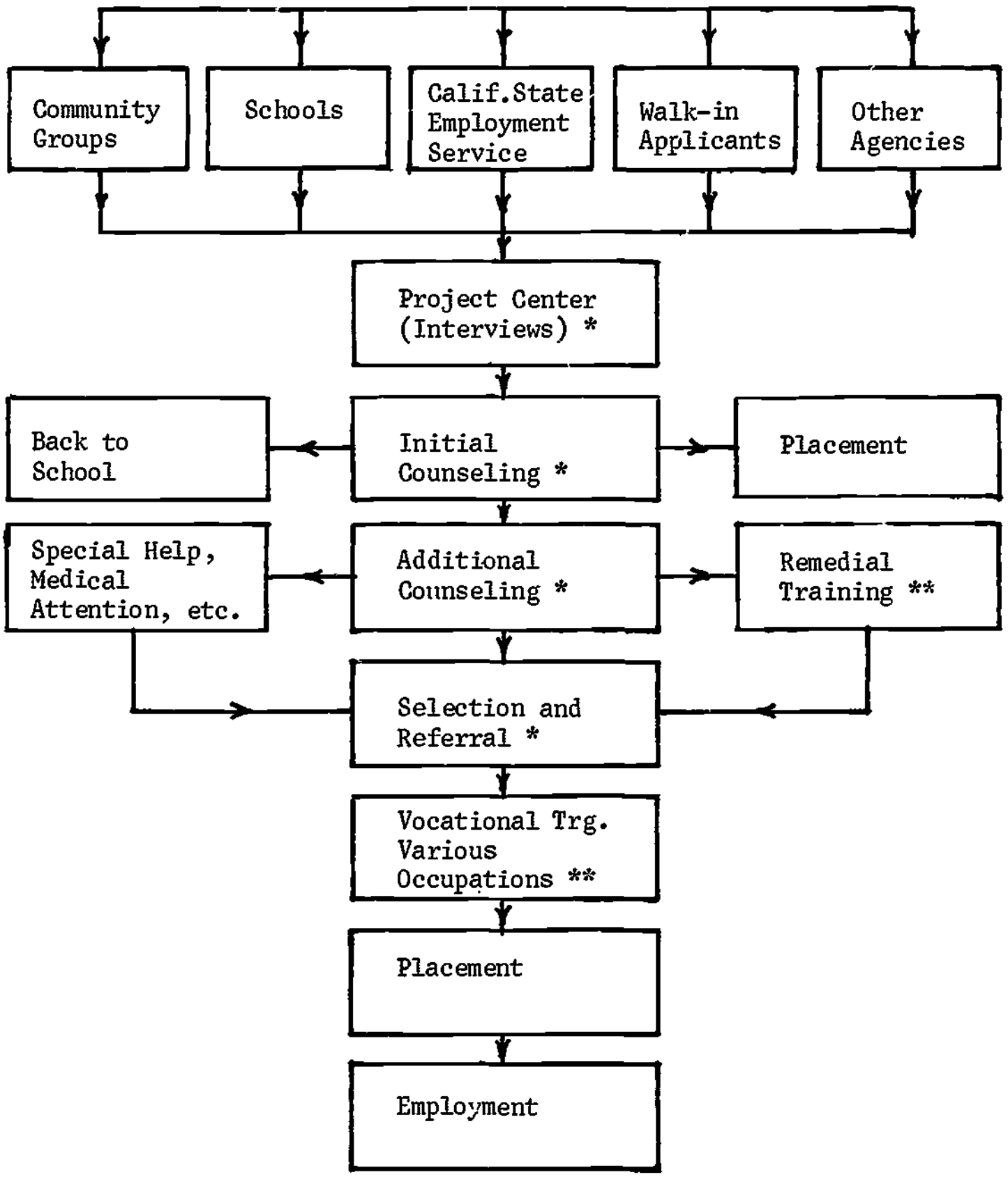
Mr. Jacobson.

My colleagues mentioned education's possible involvement in the Anti-Poverty Bill, or, as it is more properly titled, the Economic Opportunity Act of 1964 - Public Law 88-452.

It is the purpose of my presentation to provide you with more information as to what you, in public industrial education, can actually expect

A SUGGESTED SCREENING AND FLOW CHART FOR A YOUTH PROJECT
OR COMMUNITY ACTION PROGRAM

SOURCES OF REFERRALS



* Action Group responsibilities.
Includes all records, follow-up studies, etc.

** Contracted to public school or private school or other agency depending upon regulations affecting the use of funds.

to be doing under the Economic Opportunity Act; and more specifically, what such involvement will mean in terms of inter-agency action and relationships.

I would first like to outline for you the major provisions of the Economic Opportunity Act to establish a foundation for this discussion. When the entire bill is outlined, we can determine which portions of the Act indicate involvement of education, and what this involvement might be.

The Economic Opportunity Act of 1964 consists of seven Titles.

Title I - Youth Programs

A. Job Corps
B. Work Training Programs
C. Work Study Programs

Title II - Urban and Rural Community Action Programs

A. General Community Action Programs
B. Adult Basic Education Programs
C. Voluntary Assistance Programs for Needy Children

Title III - Special Programs to Combat Poverty in Rural Areas

Title IV - Employment and Investment Incentives

Title V - Work Experience Programs

Title VI - Administration and Coordination (including Volunteers in Service to America - VISTA - Section 603)

Title VII - Treatment of Income for Certain Public Assistance Purposes.

Titles I, II and V refer specifically to education, including vocational training and work experience. Therefore, these titles obviously indicate the involvement of educational agencies. Any implication for education in any of the other titles is so remote that they can be disregarded for the present.

Education, on the state level, has received its first, and thus far only specific responsibility under Title II-B of the Act. A state plan for conducting Adult Basic Education Programs has been developed by the Bureau of Adult Education, State Department of Education, and this plan is now in Washington, awaiting approval. This plan is for Adult Basic Education only, and, therefore, we in industrial education are not involved.

Let's skip next to Title V, Work Experience Programs. Section 501 of the Act reads: "It is the purpose of this title to expand the opportunities for constructive work experience and other needed training

available to persons who are unable to support or care for themselves or their families. In carrying out this purpose, the Director shall make maximum use of the training programs available under the Manpower Development and Training Act of 1962, as amended, and the Vocational Education Act of 1963."

Section 502 of the Act authorized the transfer of funds allocated for Title V to conduct Experimental and Demonstration projects under Section 1115 of the Social Security Act.

Programs conducted under this Title of the Act are intended primarily for jobless heads of families in which there are dependent children. This is the only place in the Act where MDTA or VEA '63 are specifically mentioned. It is interesting to note, however, that on the Federal level the administration of Title V has been assigned to the Welfare Division of the U. S. Department of Health, Education and Welfare. For you on the local level, this means that in addition to the inter-agency involvement you are already committed to, under MDTA and VEA '63 you will have to add involvements with Public Welfare agencies, and the County, State and Federal offices of Economic Opportunity.

Going back, let's look at Title I. Part A, Section 102, states that the Director (EOA) is authorized: ". . . to enter into agreements with any federal, state or local agency or private organization for the establishment and operation, in rural and urban areas, of conservation camps and training centers." You will note that this statement does not exclude public education from involvement in this part of the Act, and, by the same token, private agencies are very definitely included.

Many persons in public education have expressed varying degrees of alarm at the direction the implementation of this portion of the Act is going. Our keynote speaker, Dr. Wiles, expressed some concern. If you have not already done so, I would recommend that all of you read the "From Washington" columns in the January '65 and February '65 issues of SCHOOL SHOP. A very definite concern and some serious implications are expressed in these articles.

Most of you have either read about or heard about the Litton Industries program to be conducted at Camp Parks in eastern Alameda County under Title I-A of the Act. Did you also know that some of the public educational agencies in the area have been contacted and asked if they were interested in subcontracting some of the services to be performed in this program? I mention this only to illustrate another possible inter-agency involvement public education may experience under E.O.A.

Title I-B will very definitely involve public schools. Some of you have probably already been involved in making applications under this part of the Act. Private, non-profit agencies will also be involved. Section 113 (a, 2) states: "The program will increase the employability of the enrollees by providing work experience and training in occupation skills. ."

The U. S. Department of Labor has been assigned the administrative responsibilities for I-B programs. A local school, working on I-B programs, would find itself involved with the U. S. Department of Labor, the State Employment Service, local, state and federal offices of Economic Opportunity, and possibly private and state welfare and social agencies.

Title II has been referred to as the "mainstream" of the EOA. This Title seeks to gather and organize all community resources into one coordinated effective operating unit. Programs operating under other parts of this Act, and other acts, could become part of a master program developed by a community under this Title of the Act. Education will obviously be involved here, then. MDTA and the Vocational Education Act, while not mentioned specifically in this Title of the Act, are very often referred to in the descriptive and explanatory literature regarding this Title. Regulations and policies have not been issued for this Title in an attempt to prevent the structuring of programs to be developed under it. It appears that the main limits placed on this Title are the limits of one's imagination.

There is emphasis within the Act itself, as well as in the explanatory literature concerning the Act, that top priority will be given programs which involve the entire community. This is another way of saying that programs proposed by and involving only one or two agencies will be looked upon with less favor than programs involving many agencies. What I am saying, then, is that under Title II-A, public education can certainly expect to be involved, and that any such involvement will mean possible relationships with any one or all of the other agencies I have previously mentioned, plus many more. Sound like fun?

At this point, there are many of you who are undoubtedly thinking or saying, "Include me out." Do you really mean it? What would be the results of such action? Here we have an opportunity to do so many things and perform so many services which we have longed to do, but have been unable to do due to lack of funds, legislative restrictions, and so forth.

There is no denying that operations under the EOA will be relatively complicated, and loaded with frustrations. There obviously will be hard work and long hours involved. If another agency comes to us with a request for our services, it would be very easy to say, "Sorry, we have no room - no money - no time." I caution you at this time to take a longer look before giving such an answer. Re-examine the situation. Consult with other authorities and agencies. Bend a little.

We in public education have been given a leading role in this great drama which is about to unfold. If we hesitate, "muff our lines," or just plain refuse, I can assure you there is an understudy waiting in the wings, ready and willing to take over.

* * *

FOURTH GENERAL SESSION

Thursday, March 11, 1965

Phillips - Meran

Chairman: Kenneth Phillips
San Bernardino State College
San Bernardino

Recorder: Robert D. Meran
Chico State College
Chico

* * *

Delmar W. Olson

Presentation: INDUSTRIAL ARTS AND TECHNOLOGY:
A NEW INDUSTRIAL ARTS FOR A
NEW CULTURE

Delmar W. Olson, Chairman
Department of Industrial Arts
Kent State University
Kent, Ohio

Where is the beginning of industrial arts? What are its origins? These questions persist as one attempts to rethink curriculum. The deeper he penetrates the subject, the more he is forced to search out the point of origin. How deeply can one probe? There seemingly must be a bottom, a solid base built on the rocks of rationalism which can withstand the pressures of conflicting philosophies and the erosion of time, and even gain in strength and substance through experiment, application, test and refinement.

Original Origins. There are three origins for industrial arts which may be accepted as primary. If each were cultivated and encouraged to develop freely and purely, it would produce a unique species. In actuality, all have been influencing the nature of industrial arts for a half century or more. The first origin is the concept of work as education. This concept appears in primitive history as apprenticeship in which rituals, customs, beliefs, skills, and knowledge were transmitted by the adult to the young, upon mastery of which the young became adults. This process has been essential to the survival and perpetuation of cultures. In modern history, apprenticeship became the accepted method for the transmission of technical knowledge.

Manual training in its later days drew directly on work in the form of skilled trades for its substance using them as sources of exercises.

Industrial arts adopted the project as the unit or center of work experience. But basing an industrial arts curriculum for today on work as education is like floating a skyscraper on quicksand. It could be done, but knowledge and experience recommend a bed of rock. One of man's consuming goals for thousands of years has been to minimize or to eliminate work. Even making work holy and spiritually uplifting, as early religious groups did, had found little continuing support. The shrinking work week and the national push for earlier retirements of workers undermines the basis of work as the primary origin of the industrial arts curriculum for today. One of the basic characteristics and purposes of technology at any one time has always been to liberate man from existing levels of enslavement; and one category of enslavement is work. In the process of the minimization and elimination of work by technology, the nature of work itself changes. Once muscular, it is now intellectual employing machines with the skills built in.

The second origin for industrial arts is that of the individual, his nature, needs, and behavior. The sophistication of this origin is easily apparent when it is compared with that of work. It suggests enlightment, maturation, science, research, and, of course, humanization. The concern for needs of the individual is historically of significance in industrial arts. But the identification of his needs is still in process. The sciences of psychology, physiology, and sociology through continuing research keep discovering new dimensions of the human. When we project from such bases as the commonly accepted blocks of human needs: the personal, physiological, social, economic, cultural, and spiritual, we are still probing in fog. These do suggest directions for the probe, but experience here shows that each actually aims in a circle. Manual training in its original and pure form was concerned with a relatively specific purpose - to facilitate the learning of abstract principles. This was in answer to a student need sensed by the teacher, which suggests that manual training was conceived as teaching method rather than as a body of subject matter. From such a beginning, it became a program of exercises for the development of tool skills which assumedly served the economic needs of the student.

Whatever man's needs are, as an individual or as a member of society, they are entirely within the context of technology. They originate within and are shaped by the technological culture. Manual arts in its original form presumed to serve esthetic needs through materials and tools and to preserve a vanishing craftsmanship.

Bonser's industrial arts was intended to satisfy four basic "impulses to expression or action": manipulative, investigative, esthetic, and social. Whether he conceived of his curriculum as originating in these particular needs, or whether he saw these as values emanating from it, is a moot point. But all of today's schooling is supposedly directed toward individual needs. These needs, of course, are individual in a social or general sense. Industrial arts serves best in reaching needs when it individualizes instruction with the goal of developing individual potential.

Industrial arts as a study of the socio-economic-industrial environment, the third primary origin, has received greatest support from the

William E. Warner school. Influenced by Bonserian philosophy, the Warner concept extended the curriculum far beyond the original manufacturing industries to include such blocks as power, transportation, communication, construction, and management. In its original exposition in the OHIO PROSPECTUS of 1934, the Warner plan identified "forces in the social-economic order which call for a reappraisal of the industrial arts program." These included changing industrial processes, increased quantity and variety of goods, changing nature of industrial occupations, growing appreciation of the esthetic elements in industrial products, unemployment and leisure, and increased school population. There was, in addition, the concern for recognition of the material heritage. This would show itself as understandings and appreciations of material products and crafts.

In the idealism of Woodward, there were visions of socio-economic goodness. They appeared as readjustments of social standards of manliness, and of the worker, the correction of views of professional people on "social and national conditions and problems," and "in the future homes of pupils where evidences of good selection and taste in appliances will be apparent."

Bennett saw in his manual arts a social efficiency which included "first-hand knowledge of the material accessories of modern life." The need for a wider knowledge of the materials and processes of industry by workmen reflected his economic concern. Bennett insisted that the manual arts curriculum be drawn from a survey of "the whole field of the manual arts as applied to industry."

History tells us that these three "pure" concepts as origins for industrial arts did not develop separately. They were pure only in concept. In practice, they have been cross-pollenated. Although this may have produced stronger offspring, the net result has been to mix us up. Confusion in purpose, conflict in philosophy, contest in direction, and controversy in implementation have marked the development of industrial arts in American education.

Is There a New Origin? One means out of such a situation is the finding of a new, a different origin from which a curriculum can be drawn. This is the challenge which has moved us to search and then to propose a new industrial arts. Any newness this proposal possesses derives from its origin, the technology, and from its mission which sees the human within the context of technology. To find the meaning of technology, one searches history and pre-history as well as this day. One consults sociology, economics, history, anthropology, archaeology, philosophy, and industry - not industry alone. In such sources one sees the origin, nature, role, and power of the technology in its relation to culture and civilization, and as he does he can see it as a body of accumulating subject matter centering about man, materials, and energies. As an origin for industrial arts, this can be classed as the socio-economic-cultural or, for that matter, cultural.

Culture and a New Industrial Arts. The past two decades have seen the rising of a new culture in our country, which is largely unrecognized.

There are great national problems now challenging us which we seem ill equipped to solve. The solutions being advanced reflect pre-1945 rationale, by people who are products of that period. The irrationality of the proposed solutions for today's problems suggests a grappling in the dark, solutions becoming as much of a problem to find as the problems are to identify. We are at the point of national panic as we have never known it. And when a national candidate promises the good life for all, we flock to his side in the hope that he will produce painless solutions at reduced cost.

We can draw a picture of this new culture as we plot change against time. Since 1945 the curve of the rate of cultural change has zoomed skyward. Included in this curve are such measures as the speed of travel, technological innovation, the growth of knowledge, the increase in mechanization, the change in the nature of work, the amount of leisure, the power to destroy, and many others. All of these elements have their origin in technology. We see them individually, but it is their collective impact which is causing the condition of social confusion and cultural change. We cannot figure out how to achieve this good life in an environment of material abundance. We are the affluent people of the world, but as inexpert in handling our wealth as a child with his first quarter in a dime store. We are shocked by the rebellion of youth and look for comfort in blaming someone or something. We spend our leisure unleisurely racing against time to get there and back and in fighting boredom, traffic, calories, crabgrass, and leisure itself. All fingers point to the schools and colleges when we attempt to face up to the great problems of the day. These institutions have come up with no stronger defense than that they need more money. Without attempting to straighten out the great mess here, it is my firm conviction that as a people we must study the technology if we will use it to liberate ourselves from the enslavement of the tim .

The new industrial arts cannot do the entire job, but it does accept a share of the responsibility and in doing so may spark a concern among other disciplines. The new origin for industrial arts here is a product of this post 1945 period. Perhaps then it has a chance of making real contributions in the orientation of people to the new culture.

* * *

Dr. Olson then presented an outline titled, "A New Industrial Arts for Today's Schools." Although the outline is not being included, the opening paragraph and a guiding definition of industrial arts are quoted.

"A 'new' industrial arts presumes an old one. The following proposal outlines a concept of industrial arts education which draws on contemporary technology for subject matter. In this position it stands on bases so solid that no dependence on its antecedents is needed. It is seen as that phase of general education devoted to a study of the material culture."

"Industrial Arts is a study of the technology: its origins, development, and advance; its technical, economic, occupational, cultural, and recreational nature and influences; through study, research, experiment,

design, invention, construction, and operation with industrial materials, processes, products, and energies; for purposes of acquainting the student with the technological culture and aiding him in the discovery and development of his own native potential therein."

* * *

Presentation: JUNIOR HIGH SCHOOL INDUSTRIAL ARTS

Fred A. Baer
Los Angeles City Schools

Fred A. Baer

Following a few introductory remarks of explanation, a strip film, with an accompanying recording, was presented. This depicted some of the outstanding features of the industrial arts program at the junior high school level, as carried on in the Los Angeles Public Schools.

A copy of the film and recording is available on a loan basis from Robert L. Woodward, Bureau of Industrial Education, Sacramento.

* * *

Presentation: CREATIVE, KINESTHETIC AND ACADEMIC TALENT - SOME MAJOR CONSIDERATIONS

Joseph P. Rice, Jr.
Paul D. Plowman
State Department of Education

Mr. Rice:

When I think of talent, I sometimes think of a turtle - at least in American society - and I think of the poet, Ogden Nash, whom some of you may have read. He described the turtle:

"The turtle lives 'twixt plated decks
Which practically conceal his sex.
I think it clever of the turtle
In such a fix, to be so fertile."

Talent, like the turtle, sometimes remains hidden between some plated decks. The decks are sometimes conformity, the decks are sometimes our inability or unwillingness to recognize it and let it develop. But in spite of us, talent of all sorts does emerge, and talent helps to perpetuate western civilization.

We want to talk to you about four general kinds of talent. These are the academic talent - the one that we are most familiar with; the creative talent; the kinesthetic talent - the kind of talent that shows up in craftsmanship, athletics, musicianship and artistic pursuits; and the very important type of talent that's frequently overlooked, called psycho-social, or leadership talent - the kind of talent that culminates in the ability to understand other people well and to lead them well.

In the first presentation I'm going to deal mostly with characteristics of talent and some of the main problems of assessing talent. Dr. Plowman will deal more with the problem of what you do about talent after you assess it and look at it. What are the kinds of programs that are logical in view of what the talent is like?

I'd like to bring to your attention a document called "Schools for the '60's" which the NEA put out in 1963. I want to quote directly from that document because I think it's very appropriate to what we are considering now. They say: "The instructional program should include opportunities for developing the individual potentialities represented in the wide range of differences among people." That's at the heart of what we want to emphasize today. They go on to say: "To achieve this objective, the instructional program cannot be the same for all. Provision for individual differences should be made by qualified teaching personnel through the diagnosis of learning needs, through an appropriate variety of content, through resources for learning, and through various instructional methods." In short, the by-line here is diversity, or what we sometimes call in our work, differential education, an education that neglects nobody and helps each individual develop his unique potentialities to the fullest. I'd like to quote from one of John F. Kennedy's speeches, because I think it underscores the notion that we are not here to talk about a small, separate group of people, but about general pools of talent. President Kennedy said, "One man can make a difference, and every man should try." I think that's an eminently fine philosophy to develop. I'd like to elaborate on that by saying, "Every man should have the right and the opportunity to develop the unique kinds of talent that he possesses."

Talent is a very broad concept. We sometimes overdefine it because in some ways defining a very small segment of the population as mentally gifted is overdefining if the children are part of that broader pool of talent that I'm going to refer to as academic talent. In some ways they vary only in degree from those kids just a little lower down the I.Q. ladder. Now our notions about the spreads of different kinds of talent have changed drastically since 1938, when Thurston asked, "How do I assess talent? Particularly craft kinds of talents - mechanical talents?" He listed approximately eight talents - talents such as spatial relationships, perceptual speed, reasoning and deduction, memory span, and so forth. At the present time, Dr. Gilford of Southern California has listed well over fifty separate kinds of measurable talents, dividing spatial talent down into different sorts of right-left discrimination, perceptual skills, breaking memory down into pair associates, visual memory, word memory, and so forth and so on. We now have a much more technical view

of talent. We know now that talent is highly differentiated, and we need to keep this in mind as we talk about it.

I'm going to generalize by indicating that we may think of talent in terms of the four major categories which I mentioned earlier. I have taken these four categories from a U. S. Office of Education publication called "Education for the Gifted - April, 1964". You can get this from the U. S. Government Printing Office.

The consultant in Washington, Dr. Bryan, indicated that, in his opinion, most talent could be viewed in four broad categories - academic, creative, kinesthetic, and psycho-social. In the rest of the article he emphasizes academic talent because - and I think we need to be quite frank about this - we know more about this talent than we know about other kinds of talents, therefore it is logical to begin with this kind of talent in a talent development program.

I want to briefly describe what these four kinds of talents are like, and to emphasize how they may be assessed or evaluated. Also, I want to indicate how these kinds of talents manifest themselves, and how they become recognized in our society.

To begin with, it stands to reason that many young people may possess more than one kind, or a mixture of these talents. In fact, that's quite likely. Also, there are many individuals in our society who may have high kinesthetic, or leadership potentials, that aren't being developed adequately by the current educational programs that we offer. At the end of my talk, I will emphasize what we should be doing at the state and national level to really develop the broad spectrum of talent to its fullest extent.

I'm not going to spend too much time on academic talent except to say that it's specialty tends to be skills such as memorizing and retaining, exhibiting a wide vocabulary, displaying an abstract capability for thinking through to logical conclusions, generalizing and applying knowledge. Academic talent is characterized by the ability to focus attention for problem-solving for longer periods of time than normal people. In its purest manifestation, this kind of talent we usually call giftedness. We are doing things in California, and in the nation generally, about this talent. Perhaps we could be doing more. I think most of us are acquainted with the way to assess this talent. Mental ability tests, achievement tests, and so forth. This kind of talent manifests itself in accomplishments such as professional attainment, research, and scholarly achievement. These are the kinds of boys and girls who will usually go on to graduate schools, and therefore there are many studies concerning this widely understood kind of talent.

I think this might be an appropriate place for me to stop for just a minute and talk a little bit about psychological tests, because psychological tests are instruments by which we try to assess some of these kinds of talents. I think psychological tests have been misunderstood in the last ten years, largely because they have been misused. I suggest

you read The American Psychologist, February, 1965. In this issue there are three articles devoted to American attitudes toward intelligence tests and different kinds of tests. This article, by Grimm of New York, points out that the criticisms of tests can be boiled down into about five major categories. First, there is the accusation that people find test data or test scores inaccessible. They go through all this groping and all this moaning during the test episode for nothing. They then get no feedback.

Second, people object to their invasion of privacy in forced testing. Third, there is objection to the rigidity of some test scores and the inability of people who give the tests to interpret them. Test scores were never meant to be rigid. Every test has a built-in standard error. Some people even present test scores as if they were rigid things.

The biggest mistake we make, of course, is the fixating of the I.Q., which, from a professional standpoint, I think is quite silly. I think you know that some I.Q. tests have a ceiling up here of 180 or 190, and some have a ceiling of 140, so freezing scores is really silly. We shouldn't do it. I'm trying to defend tests as I go along. Remember, the by-word here is that if we use them for purposes they were never meant to serve, then it's our fault, not the tests'.

Fourth, most standardized tests select narrow kinds of talent - for instance, academic talent. However, there are some new tests being developed, and some older ones on the market already, that are not of this sort. Lastly, many of the tests are unfair to certain sub-groups in the population, particularly minority groups. Again, this is true up to a point, particularly where a person doesn't have the necessary vocabulary for attacking the test in the way a test should be attacked.

Now, these criticisms notwithstanding, I am going to mention some tests, because all the kinds of talents can be indicated with different kinds of testing. However, testing is really just one form of assessment. The observations of a good teacher and a well-trained teacher can be another form of assessment.

Creative talent tends to have the same kind of characteristics that academic talent has, but maybe not to the same degree. When you take a group of kids with I.Q. achievement skills, their respective ranks on I.Q. and creativity tests will not necessarily correlate one to one. There is some indication that some of the kids that will take a chance may not achieve at the highest scoring levels of the intelligence test because most of the tests have a scoring formula, right minus wrong. Therefore, sometimes if you look back at the formula by which you interpreted the test, you will be able to pick out some of the more creative kids, the ones that took the chance. Kids classified as academically talented tend to be more cautious, a little more conforming. This makes them get along with the academic teachers a little better. The creative talent tends to be a little more competitive, a little more autonomous than the other. Its interests tend to be a little more varied. Its thinking processes tend to be a little more flexible. Creative

persons wouldn't make very good college professors. They tend to be curious, questioning, critical.

Innovation is the by-word for creative talent. There aren't many good standardized tests on the market to measure it, but there are a lot of good objective rating sheets. Dr. Torrance and Dr. Gilford have developed some forms that are helpful in assessing talent. However, most of all you can check up on creative talent in terms of what it does. There is an article in the JOURNAL OF EDUCATIONAL PSYCHOLOGY of February, 1965, by Skager and Schultz, called "Quantity and Quality of Accomplishments as Measures of Creativity." The point of the article is that you can assess creative talent by taking a good look at the products that talent has created. It found that the quality of the creative output was related to measures of intelligence. The quantity also related to the home environment more than any other single factor, particularly when the home environment tended to be more intellectual and more inquiring.

Kinesthetic talent is one of the talents that perhaps is overlooked in some ways and overemphasized in others. We group together such people as musicians, artists, athletes and craftsmen; people who, we say, have highly developed psychomotor skills - people who can translate their thoughts into action. These people have very similar qualities in terms of what they are capable of doing. I thought of some of the remarks that I made in my undergraduate days to an old professor at Springfield College. I was emphasizing kinesthetic talent and its importance. The characteristics of the kinesthetic talent tend to be such psychomotor things as good coordination, balance, good metabolic adaptivity. Athletes and musicians have such characteristics as rhythm, proportion and form, harmony, usually physiological excellence, stamina, endurance in energy reserves, capability (and this is important) of redirecting their motion and physiological expressions whether the expression is artistic or athletic. These people have the capability to redirect their feelings. Psychologically, these people tend to be doers, practical people, and different from the other groups I've described. I think it is obvious there are many ways you can assess kinesthetic talent. For musicians, there are tests like the Shore test. Generally speaking, these individuals need training, and often they don't get this training early enough.

A kind of talent that has been overlooked is leadership. Leadership is the exercising of influence over other people for almost anything you can think of, even though this kind of talent usually is associated with politics and business. However, this kind of capability can lead to any number of fields such as religion, science, and the military. Leaders everywhere share common characteristics, characteristics indicative of a kind of talent that we pay little attention to in schools these days. As a result, this kind of talent often remains undeveloped, raw and primitive because the potential leader doesn't have proper values, and the crux of leadership is the soundness of the leader's purposes and aims.

The Encyclopedia Brittanica points out that there is extensive experience to prove that those who can direct can be trained to direct

better, and to manifest a true leadership. However, we pay no attention to it in today's schools. We sometimes set up student governments and make other similar gestures, but make no substantial effort to allow this kind of talent to develop, to mature. Greatness in leadership is closely connected with greatness of purpose. If we want to develop this kind of talent, then it's encumbant upon us educators to expose the potential leader, irrespective of what trade or vocation or profession he is going into - to expose him to well-substantiated, broadly-based values as his heritage. This is the best we can do for the leaders.

I'd like to summarize by indicating that if we really want to help the individual develop the very most of his potentials, if we really want greatness in a plural society, then we would do well to pay lots of attention to the broad spectrum of talent, and not just one main talent. Perhaps we need to set up a unified agency for talent that would emphasize a broad spectrum of talent. If we want to develop talent to its fullest, this agency might be developed along three main lines. It would have a unit for experimental formulation. 1. Before even setting up the other parts of the agency, it would need to discuss and identify and survey the whole broad spectrum of talent, and then begin to experiment with learning theory. 2. It would develop a professional consultant service, develop promotion, and set up specific programs for specific areas, such as the fine arts, the literary arts, mathemetics, manual arts and crafts, industrial education, and so forth. The whole broad spectrum of talent would be included. 3. Get out into the community and emphasize utilization of talent.

If we really want to turn out - if you'll excuse the high falutin' word - a renaissance in American society, then we must turn out craftsmen who do a little bit better than violin makers of yesterday, and do a little bit better than the craftsmen furniture makers of yesterday. Furthermore, there must be a market for these skills.

My final word would be: If we truly wish to have a society emphasizing talent development, then we need to look at the whole wide spectrum of talent, and emphasize to every man that he <u>should</u> try to develop his unique talents to the ultimate.

* * *

<u>Mr. Plowman</u>.

Dr. Rice touched upon the fundamentals of identification, and helped to spell out some of the various kinds of talent. I think we could say that in a sense I am hitchhiking on his closing remarks.

We could say that those things that are prized by most of the people are considered gifts or talents in our society. In a sense, we have had many talent development programs for many years. We have talked about our football teams and musical talent. Some of us have sat in front of the T.V. and watched the Miss Universe show. We do prize certain kinds of talent in our society. So maybe it's a matter of being acquainted

with many kinds of talent and many kinds of opportunities for developing talent within our school system.

I was very presumptuous yesterday here in Monterey in talking to superintendents and board members about six traits of a truly professional person. I think the truly professional educator uses meaningful terms which describe programs. He tells students to become active thinkers rather than passive receptors of knowledge. He formulates specific objectives in dealing with different groups of children with specific learning needs. He fosters specific intellectual skills ard specific factors of creativity. He helps students generalize ideas and oversome obstacles to their thinking and doing.

We should be very much concerned about the fact that the professional person evaluates teachers, programs, teaching guides, and learning experiences on the basis of their contribution to developing these very specific intellectual factors of creativity, and other kinds of objectives that we wish to spell out in industrial arts, vocational, or other kinds of programs, because this fact does affect the nature of our educational progress over the years and really the extent of progress that we can make.

There is a film that we have that's booked through April, but I hope you have a chance to look at it. It is a film that depicts four basic characteristics of gifted children. It's called, "Understanding the Gifted." If you are interested in getting a copy of this, you might check with your county office about ordering a copy through the State Department of Education, Bureau of Audio-Visual Education. This points out in a very fine manner the creative children, and what kinds of things we can do about different kinds of creativity. It deals with the ones who are able to abstract and generalize, the ones who have wide-reaching interest, and then those who have a real sense of dedication to mankind.

We have to define creativity when we talk about creative talent, or psycho-social talent, or kinesthetic talent. I like to think that creativity is both an attitude and a process by which people overcome obstacles to their thinking and doing. This has direct application to industrial education because we tend to think that certain tools have certain uses and certain materials are only used in certain ways. This might be referred to as functional fixedness, and if time permitted, we could quote some interesting research on this particular problem.

We are concerned with excellence, and we might define excellence as an abstract, culturally defined goal; a reflection of certain traits, and a quality of mind and behavior. It is fostered through careful identification, cultivation, and application of ability to conceptualize and to overcome obstacles to thinking and doing. It may be fostered through artistic, efficient, and prudent deployment of academic, creative, and kinesthetic talent. Those of us who would develop qualities of excellence soon find ourselves enmeshed in efforts to improve the affective as well as the cognitive goals. And we value ethics as internal gyroscopes predisposing "how" and "for what purpose" talent will be used.

I think the statement in the gifted minor program and the California Project Talent has had some very real spreading effects, as have certain other special programs. One of the strong points contributing to this positive thought improvement has been the fact that we have identified a specific typology. It's arbitrary. We call this group gifted. After we have characterized it, the unique goals are defined for educating these children. First, we get a group and determine their special abilities, their special needs - and this can certainly be done in industrial arts and other programs - and then we tailor-make a program for these children. We are trying to match age-old precepts with practices. What do you mean by individualizing instruction? What do you mean by developing people to their full potentialities? We do have the requirement of a written plan, and this is important because it encourages people to spell out what their objectives are for fostering the specific intellectual skills that we will refer to a little bit more. This requirement also helps to establish priorities and made decisions regarding the acquisition and appropriateness of special facilities and materials. We are also concerned with formulating strategies for engaging children in an active thinking process.

We have had several speeches here indicating the great growth in technology. I'm sure that you are acquainted with the readings, the statements made to the effect that in not too many years we can look forward to a society in which 20 per cent of the adult population will make all the goods necessary. This will have an impact upon our industrial arts and vocational programs. Curriculum provisions in the mentally gifted minor program and in the California Project Talent tend to entrap pupils in an active thinking process. We are concerned with such things as the specific knowledge as well as the particular skills. The growth of knowledge has been phenomenal. It is estimated that between the birth of Christ and 1750, knowledge doubled. Again, between 1750 and 1850 it doubled, and again between 1850 and 1900. The last projection I heard was between 1960 and 1967. I think this suggests some real challenge to those people who write text books and who decide what shall be the educational content for children.

So we are concerned with specific intellectual functions and specific aspects of creativity. I think we need to foster skills of interpreting, translating what we find, analyzing, synthesizing, and evaluating knowledge. We are building lesson plans at the high school and elementary school levels with people throughout the State. We are building lesson plans which will contain the significant content and that will also develop aspects of creativity and very specific intellectual skills.

We would encourage forceful, convergent thinking - a fancy name, perhaps, for problem solving. We are also concerned with productive divergent thinking. As an example of this, there may be some of you who have not heard the barometer story that was circulating a few months ago.

A high school student was asked the following question on a National Merit Examination: "How do you find the height of a five-story building with a barometer?" So he wrote on the text, "I'd take the barometer to

the top of the building, I'd tie a string around it, lower it to the ground, and measure the string." A simple measurement problem. Well, they didn't really want to mark him wrong, as some of us as teachers might have been tempted to do, so they said, "Well, we'll give the boy another chance." He said, "Well, I could find out how many barometers high one story is - I know the height of a barometer - multiply the number of barometers high by the height of the barometer, times 5. . . ." Then he said, "Well, no, I suppose there are other ways. On a summer day I know the shadow of the building, I know the shadow that the barometer casts, I know the length of the barometer. . ." "No," he said, "If I wanted to find out the height of the building, another thing I might do is just take this barometer up to the top of the building and throw it over the side and clock it by seconds, using the old formula $S=\frac{1}{2}GT^2$, where G is 32 feet per second, and T is seconds. . ." After he gave a couple other solutions, he finally said, "You know what? If I really wanted to find out the height of that building, I'd take that barometer to the head custodian and say, 'here, you can have it, just tell me how high the building is!'".

I wish to stress that we have an obligation to encourage this divergency - encourage people to think of alternate ways of solving problems. We should aid their constructive discontent, and not stand in the way of their creativity. Unfortunately, we find this in only a small number of teachers and administrators throughout the state, and in other parts of the country.

We would just like to point out that in talking about creativity, we can develop sensitivity to problems, and we can think about different kinds of flexibilities such as originality, expressional fluency, and ideational fluency.

I remember something my old woodcarving teacher once taught me a number of years ago. He said, "When you're working with striped or figured wood, and you are trying to carve a face or something else into it, let the wood talk to you."

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FOURTH GENERAL SESSION

(Continued)

Thursday, March 11, 1965

Report: STATEWIDE INDUSTRIAL ARTS ACTIVITIES

Robert L. Woodward
Consultant in Industrial Arts
Bureau of Industrial Education

Robert L. Woodward

You will recall that at our 1964 Conference it was reported that copies of the experimental edition of Industrial Arts Automotive Mechanics, An Introductory Course of Instruction, along with questionnaires were mailed to all automotive mechanics teachers in the high schools of California. The initial printing was 650 copies. Because of a demand for copies by administrators, curriculum directors, new teachers, and teacher educators, a second printing of 1,000 copies was made. This second printing was distributed in August, 1964. And the reprinted publication contains the names of all those who completed and returned the questionnaires as well as certain corrections and changes. The publication is again out of print. However, it is assumed that all California high school automotive mechanics teachers have at least one personal copy and that the teacher education departments in the colleges have a two-year supply.

During January of this year sufficient copies of the new publication Industrial Arts Course Outlines; Grades Seven, Eight, and Nine were sent to all California junior high schools, high schools, and senior high schools, as well as most seventh and eighth grade schools in elementary school districts so that each industrial arts teacher would have a personal copy. Copies were also sent to principals, supervisors, and teacher educators. The initial distribution was 8,000 copies.

Also during January, brochures and posters providing information concerning the fifth annual Industrial Arts Exposition and Award Program sponsored by the California State Fair and Exposition were distributed to all junior high schools, high schools, and senior high schools. The Exposition will take place during the State Spring Fair, March 27 through April 3, 1965, at the State Fairgrounds in Sacramento.

In February, one copy of "A Recommended Guide for the Evaluation of a Program of Industrial Education: Industrial Arts Education" prepared by the California State Department of Education and the California Industrial Education Association and a cover letter were sent to all California junior high schools, high schools, and senior high schools. In the cover letter information was provided for the way additional copies could be obtained. To date, over 2,000 additional copies have been mailed upon request.

Seven of the state publications in the field of industrial arts education have been translated into Spanish by the Agency for International Development, Technical Aids Center, American Embassy, Mexico City, for use in Mexico, Central America, and South America.

During the past weekend, in news releases, Dr. Joel H. Hildebrand, a national director of the Council for Basic Education and professor emeritus of chemistry at the University of California, Berkeley, was sharply critical of Superintendent Rafferty's stand on teacher competence. Reprints of a newspaper article concerning Dr. Rafferty's views were made available to the Conference participants. In the article, Dr. Rafferty favored the Milius Bill, recommended the eliminating of the distinction between academic and nonacademic in the credential law, and considered "woodworking as important as physics."

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FIFTH GENERAL SESSION

Thursday, March 11, 1965

Chairman: Richard S. Nelson
Assistant Chief
Bureau of Industrial Education

Recorder: Leo A. Meyer
Assistant Dean of Instruction
Chabot College, San Leandro

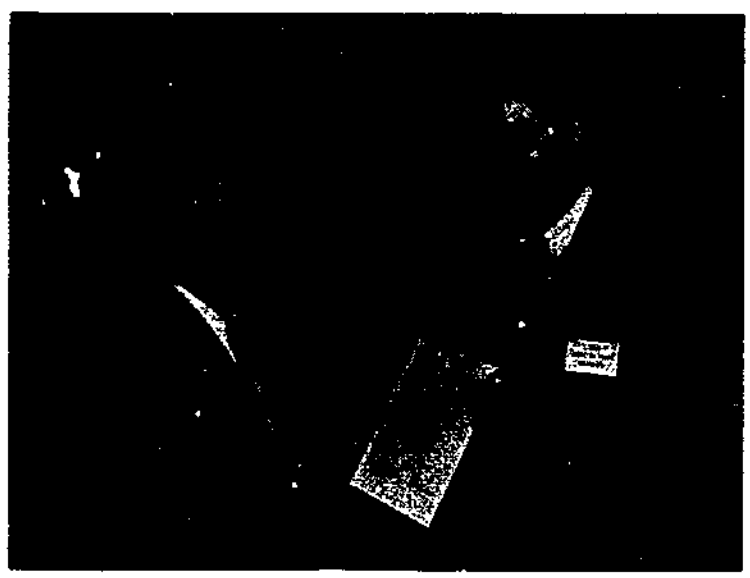
Meyer - Nelson

Chairman Nelson: "As you know, during general sessions we have the able assistance of a recorder. I think all of you know Leo Meyer, who is Director of Technical Education at Chabot College, and is the recorder for our afternoon session. I think we should also mention that our friend McLaughlin is again tape-recording for us at this session.

"Your program indicates that there are several housekeeping chores, plus some interesting highlights of our Twenty-Seventh Annual Conference, which will take place this afternoon. But first I would call your attention to the item on the program entitled 'Recognition of Retiring Personnel.' Mr. Kramer has been asked to make these presentations."

Mr. Kramer: "Thank you, Dick. It's traditional each year during the Annual Conference to recognize those who are planning retirement. We have two such recognitions that come somewhat under the category of the quotation, "Parting is such sweet sorrow." First of all, I'd like to ask that Robert McNeill come forward, please.

"Bob has been in vocational education activities for a good long time; he has been a landmark in Santa Barbara; and now he plans to take his retirement. Next year we hope he'll be with us, but in the capacity of a retired educator. Then he can be even more objective about the activities than he can be now.



Bob McNeill - Ernie Kramer

"Bob, it is a pleasure to present to you on behalf of this 27th Annual Conference, and for the Department of Education, this recognition of the contributions you've made to industrial education. May I read from this scroll?

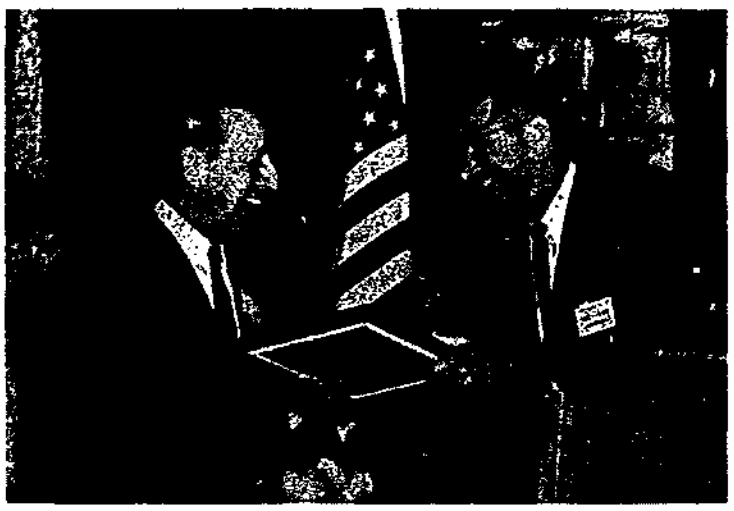
"'The California State Department of Education, Bureau of Industrial Education, with participants of the 27th Annual Conference on Industrial Education, recognize Robert C. McNeill for his meritorious service to the educational profession, this Eleventh Day of March, the Year of 1965, at Monterey, California.'

"Bob, the best of everything to you, and congratulations."

Mr. Kramer then continued.

"The second of the retirees is somewhat closer in the day-to-day scheme of things in the Bureau of Industrial Education. He has already been referred to by one of the previous speakers, so I'm sure you have an idea whom we are talking about. Tom Ward, would you come front and center, please?

"There is much that I am sure all of you could say. There is much I am sure, that everyone in this room, Tom, could say to you by way of thanking you for the contributions you have made, specifically to this long and excellent period of conferences that you and your Fire-Training staff have made, but beyond that, the most significant contribution to the Bureau of Industrial Education generally. I have tried to think of something appropriate, Tom, to reflect all this, and the only thing that came to mind was a story I heard recently about the distress of a circus manager when he heard that the human cannonball was retiring and would no longer be with the circus. A fellow asked him, 'Well, why are you so sad?' and he replied, 'Well, where in the world will we ever get another fellow of that caliber?'"



Tom Ward - Ernie Kramer

Chairman Nelson then referred to the 28th Annual Conference:

"About this time our Conference proceedings must project some of our thinking to the 28th Annual Conference on Industrial Education, which will be held in Bakersfield on March 1, 2 and 3, 1966. We also would like to take this opportunity to have the individual who will be planning for our Conference and also for the CIEA Convention that will take place on the 4th and 5th of March speak to us. John Van Osdel, whom I'm sure you all know, has been working diligently for some months in the planning of this activity, and we have asked John to share with us. Where are we in the planning for the 1966 Conference and Convention, John?"

John Van Osdel: "Thank you, Dick. I just want to assure all of you that we will have the Convention at Bakersfield one year from this week.

I might say it was arranged several years ago when your recorder here worked so diligently in Anaheim to have the Convention in Bakersfield in '66, and then he chickened out and left Bakersfield. I inherited the chairmanship for '66.

"The groundwork has been laid. We have the facilities - auditorium, civic center, hotels, convention center - all of these things. I don't know where we are going to get - like Ernie's story - the equivalent caliber of this convention. We hope that it will be as good as this one. The objective of every convention city is to have a better convention than the previous one, and we are planning to have a better one than was put on here. Consequently, we hope to see you all in Bakersfield a year from this week."

Chairman Nelson: "Thank you, John. We are looking forward to being in Bakersfield next year.

"You will recall that when we started our Conference a couple of days ago, all of you noticed on the program the theme, EDUCATION'S LEADING EDGE. We have had the opportunity of listening to Dr. Kimball Wiles stimulate our thinking on some of these leading edges as he interpreted them to us from his background. You will recall you then had the opportunity of a panel discussion, trying to put further into focus how this leading edge of education might have implications to those of us who are working in the field of industrial education. You will recall, then, the third phase - perhaps what we might call the 'clincher'- a series of group meetings where each of us had the opportunity to share and to discuss further some of these implications and meanings of what Education's Leading Edge means to us in industrial education. In planning for these group sessions, one person was assigned to correlate and summarize the discussions in all six groups, Dr. Kermit Seefeld."

(At this point Dr. Seefeld gave his report on the group meetings. His report will be found under Group Meetings, Wednesday, March 10, 1965, on Page 19.)

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FIFTH GENERAL SESSION

(Continued)

Dr. Dwayne Orton

Presentation: THE INTERDEPENDENCE OF BUSINESS AND EDUCATION*

Dr. Dwayne Orton
Chairman, Editorial Board, THINK
Educational Consultant
IBM Corporation, New York

Mr. Chairman, members of the Conference:

It is indeed a pleasure for me to return and associate with California school people. Seldom does a quarter of a year go by that I do not have a similar opportunity. But to have the privilege of dealing on this occasion with this particular group is particularly worthwhile for me. I hope it will turn out to be that way for you also.

When I left Stockton, after thirteen years at University of the Pacific and Stockton College (now San Joaquin Delta College), I was invited by Thomas T. Watson, the founder of IBM, to "Find out what education can do for this business and put it in." There was much talk in my faculty about leaving college education for industry, and one of them said, "What! You're going to teach people how to use a screwdriver?"

Well, to teach a person to use a screwdriver, one whose livelihood depends on using a screwdriver, is a worthwhile thing to do. But little did we realize then what education within industry would become in two decades.

Ten years ago our IBM Department of Education, that I had been developing since '42, had grown so large it had to be decentralized in order to manage schools and educational projects all over the world. This year the budget for education is 300 times what it was in 1943. I say these things because I speak to you today from the point of view of one who has been for over a quarter of a century concerned with the interrelations of education and business.

Your thesis, or topic, for the Conference intrigues me very much - The Cutting Edge of Education, or the Leading Edge of Education. For when I saw it I said, "The cutting edge has broken through." We are in the midst; we are operative in; we are observers of; we are inevitably involved in a breakthrough, the like of which has not been witnessed in the history of western man.

*An edited transcription of an extemporaneous address

First, I want to try and delineate roughly that great breakthrough. In the second place, I want to try to indicate the social circumstances in which it is taking place. And, finally, I want to illustrate it as it is taking place within industry and to apply it in a few illustrations.

The industry manager today is affected by this educational breakthrough. I want to call your attention to an advertisement that appeared in a number of the national magazines about a year and a half ago. It's an advertisement of a public utility that operates in five middle Atlantic states. They want you to establish a plant in their territory so that they can sell you power. Ordinarily when we think of establishing a plant in a territory there are certain fundamental physical things involved. This advertisement gives two and a half short lines to the traditional base for establishing an economic operation in a particular geographical area. "One reason covers the physical facts. These are the decisive data you and your staff need, such as raw materials, markets, workers, transportation, water power, fuels and plant sites." Then they turn to the other basic category of reasons. The advertisement sets up a great white "A" - for Allegheny Power - and alongside it they stand a young man. Around the base of the "A" they put the pennants of the colleges and universities in the territory served by Allegheny Power. Then they say, "The other involves the intangible climate of growth - the homes, the schools, the colleges and research centers. They determine whether or not your organization can attract and hold engineers, scientists, and men of top management caliber. Look at the academic facilities in this area and the firms locating their research and development centers here. The intangible climate of growth makes the great difference."

It is submitted to you, and this is my thesis, that the intellectual climate of growth makes the great difference in the development of economic institutions and activities of our times. This single illustration - of which there are legion - testifying to the educational breakthrough taking place - indicates that the leading edge of education is moving out into a territory of responsibility, a territory of activity, a commitment to society that education has not had in any other era of western civilization. To unroll this thesis will be the task of these few minutes together.

I am paying only passing attention now to one of the significant arguments for this thesis, not because I consider it unimportant, but because I'm sure you know more about it than I do. I just want to engage our collective attention with it for a moment. In any local community the interdependence of business and education is one of the fundamental characteristics of our times. You've seen many studies - no doubt you have made them in your own communities - of the value of education to the economic life of the community. I think of one study, for example, made a number of years ago, that's even more true today than it was then. Cornell studied 78 of our metropolitan communities in the country in terms of economic health and in terms of educational

health. When his data were listed in frequency tables the metropolitan communities ran parallel from top to bottom with almost no variations. Educational health and business health go hand in hand.

I have never seen this truth more dramatically illustrated than in Kilpatrick's 1962 report to the Department of Defense, which he was making as Under Secretary of Defense. Kilpatrick called attention to the fact that the preponderance of research and development contracts of the Defense Department have gone to certain very particular areas of the country. Forty-one per cent went to the State of California, 12 per cent to the State of New York, and 6 per cent to the State of Massachusetts. This involved 59 per cent of the research and development contracts of the Department of Defense going to these three areas of the country. He stated that this is no accident, that these are important areas of significant educational excellence. Education in the local community is an investment.

The first Industrial Revolution was a shift from muscle power to mechanical power. We are now undergoing an Industrial Revolution in which we are moving from mechanical power to brain power. This is a very significant change taking place in our midst, and we realize it if we think in terms of a whole new classification of industry. It may have been done before 1958, I don't know, but at least in 1958 Fritz Machlup of Princeton University classified parts of American industry into a new category. He was particularly concerned with what he called the "Knowledge Industry." In this he listed education, publishing, research, broadcasting, theater, music, information machines, the informational activities of governmental departments, and private organizations. This is broadly what he called the Knowledge Industry.

He gave us significant data in 1958, so significant that when Kenneth Boulding, one of our leading economists, read it he said, "There is enough dynamite in this concept of the Knowledge Industry to blow traditional economics into orbit." Recently the data on it were brought up to date. The 1958 data are now expressed by Fortune Magazine in terms of 1963, and we find that out of 584 billion dollars (GNP) Gross National Product for 1963, 195 billion of that is in the Knowledge Industry. 195 billion out of 584 billion are in these industries I listed a moment ago. These are completely dependent on education. In fact, education is the largest single industry within it. But look! The knowledge industries of the United States grew 45 per cent in the five years between 1958, the date of the original work, and 1963. 24 million of our 77 million employees work in it. These are 36 per cent of the nonfarm workers in the country. You educators represent two million of these workers. You have 51 million of the population within your sphere of responsibility.

Business and industry spend 24 billion dollars on what can legitimately be classified as information, training, and education. This has a lot of very interesting ramifications. Being intrigued with all this, I called the office of the Harvard Library - the largest in the country, probably in the world. I asked how many new books were

accessioned each working day. The librarian in this office said that's not a very significant figure, but I really wanted to know. They gave me an annual figure for new books and discards which, when divided among 255 working days, indicated that 945 new books were going into the Harvard Library and 253 were being discarded each working day.

Robert Kaselmeyer, summing up the volume of publishing being done today, took the average of publishing in the last ten years and extended that figure to the year 2050. He found that the weight of literature would by that time equal the weight of the world. Then I began to wonder who is going to spin off what. Of course, he didn't reckon with all the new devices of electronic storage, and the marvelous ways in which the micro-micro-micro-reduction of pages puts millions of pages into canisters a few inches around. This technology makes possible electronic read-out, anywhere in the world.

Now, with that general background of the Knowledge Industry, let's observe for a moment how this begins to affect economic enterprises. A very significant fact of our times is just now being understood concerning the numbers of workers in various occupations in 1960. We are learning that for the first time in our history, and I presume in the history of any people on the globe, the body of blue collar workers - the skilled and semi-skilled workers with respect to whom we have been so custodial in these last 50-60 years of our great economic development - are no longer the largest body in the working force of our country.

The census of 1960 reveals that the managerial, professional and scientific-technical now are a larger body of workers than the semi-skilled and skilled in the work force. I think it's extremely important and so very meaningful to us, for the managerial, professional, and scientific-technical are knowledge workers - a different breed, so to speak - than what we have considered the core of the working force of our country in the years and decades past.

Now we begin to understand a little bit of what Clark Kerr meant in his Harvard lectures two years ago when he said that education will be to the growth and development of the economy during the next 50 years what the automobile has been to the growth and development of the economy of the last 50 years, and what the railroads were to our growth and development during the period before that. Consider this unusual phenomenon of the development of the knowledge industry. Within it we see the change that is taking place in the character of the working force. Lay alongside of it this idea that the coming sparkplug - so to speak - the critical influence in our growth and development - is not going to be some new device of electronics, atomics, or biochemicals or petrochemicals. This thing which makes us different from every other beast of God's creation, this intangible something that causes man to strive to be a better man, this is the sparkplug that is the leading edge of the growth and development of our economy for the coming 50 years or so. This is why Boulding said there is enough dynamite in this thing to blow

traditional economics into orbit. And I believe that it also blows a lot of traditional education completely into orbit.

Let's see it a little more closely. I propose each one of us consider it in relationship to himself. They tell me that I know only about one half of what I ought to know, and they tell me that within the next ten years we're going to lose about half of what we know. Then I wonder which half I've got. It's a very sobering thing. I listened this morning to Dr. Olson's presentation, and I was watching you almost as much as I was listening to him - in a way - because I knew there were some tenure-tired people in this group, as there would be in any cross section of any educator group. There were some who probably were moaning a little about change that is going to take place and were wishing they might say with Wordsworth, "My hopes no more must change their name. I long for repose that is ever the same." This isn't possible. "We must go spinning down the ringing grooves of change."

It was the head of the Carnegie Institute of Technology Department of Civil Engineering, Dr. Steelman, who pointed out that ten years ago they had the very finest curriculum in civil engineering that they could get, and he said ten years later that they had lost 25 per cent of it. The acceleration of that loss and gain of new material is increasing, and we may expect to turn over about 10 per cent every year. What does that mean to you and to me? Well, the same thing has happened in other professions. In the Harvard Medical School there are three post-doctoral students to every one pre-doctoral student. The American Bar Association has been urged recently by a committee to establish curricula for the training of judges.

We in industry spent 24 billion dollars in 1963 in the promulgation of ideas and the re-training and the development of our people. The rash of advanced management courses that has appeared in the universities in these last ten years is like measles breaking out all over. About fifteen years ago I attempted to study these for our own company's use, and I found twenty-five. Someone said the other day - I don't know how accurate this is - that there are today 372 university programs in advanced management for business.

Chamberlain of Yale got headlines all over the country when he said the businessman of today must go back to college or university every fourth or fifth year just to keep abreast. That suggests to you something real. I'm sure that in your lifetime and mine we are going to see that the working day for a large body of our people will contain a regular class hour; that it will be just as much a part of the vocation of the controller as of the foreman to spend an hour three or five days a week going to class.

I worked out a program in 1950 with Syracuse University for advanced study in IBM laboratories at Poughkeepsie and Endicott, New York. They arranged to come to our laboratories and give their courses for the master's degree in electrical and mechanical engineering. We had to get an enabling act through the New York Legislature in order to

permit this to be done - to give a master's degree with more than six units of it off campus. I recall so very well the reactions of some other university administrators to doing this for us. One that I went to proposed that we bus the men from the laboratories to their campus because there was something sacred about mixing scholars and students together on the campus. Syracuse leaders had the foresight to bring education to the people who wanted it - where they needed it. One large technical institution didn't see why we wanted it on our "campus". Another wouldn't admit our engineers to part-time work on campus. This was only fourteen years ago.

Well, Syracuse had the vision, and they had the commitment to educational service to do this job. We had to do it, because the demands of technical development made it necessary for us to provide these services for our people.

Let's look at it from a negative point of view for a moment. You are as familiar as I am with the data on the great shortages in certain classes of work. The American Physical Society, studying the numbers of students taking physics and allied areas of science in our schools and colleges, came up with the conclusion that by 1970 America would be 20,000 physicists short. One electronic firm here in your state laid out a program of getting 500 people in a very specific field of competency in a period of three years. They selected 125 institutions from which they expected to get them. They discovered that there were only to be about 500 available for all of us; and during that three-year period of time they turned away 32,000 applicants who could not meet the requirements.

Together with Tilford Dudley of the CIO, I made a picture on automation called "Tomorrow". It was made by the United Church of Christ and distributed by them. In the process we went into one of the larger of New York State's unemployment centers, the State Employment Office, and interviewed people in the line. And while I knew the data, I had never before realized the high correlation between low education and high unemployment.

To summarize this profile, when I went to IBM in 1942 to develop the educational work of our corporation, I had a study made of the educational status of the company personnel. There was one Ph.D. The same study was made a year ago last October. There were 729. Here in your state one employer of 33,000 people in a sophisticated industry revealed a study of their employment which showed that 63 per cent were in this managerial, professional, technical, scientific category.

I came in from the Orient one day when I had been out there for a few weeks trying to drum up money and people for a program to bring young, promising businessmen to the United States to take a class or course in management under free enterprise auspices. On my arrival in San Francisco I picked up the Chronicle, and on the front page of the second section was the report of a convention of grocers. The president of a large grocery chain had addressed them, and the copywriters

saw fit to head the article reporting the speech, "Mathematicians Needed in the Grocery Business." I thought about the cracker barrel and hot-spot stove - the traditional American image of the grocery store. Ah, but here's the great industry that has made significant contributions to us in the vast distribution of the greatest variety of grocery goods the world has ever known. It must bring thousands of items from thousands of suppliers to your basket, stopping those goods as little as possible in any warehouse, keeping them on the shelf in the store, spending the shortest possible time in getting them to you by air, by boat, by truck, by rail, in those great webs of transportation that bring the stuff to our baskets. They need mathematicians in highly scientific systems of computation in order to do that and make out on a 1.5 per cent margin of profit.

There's no area of our economy in which we cannot illustrate the deep and abiding significance of education in business. I have selected one illustration which I hope will be in your general realm of activity and interest. From the turn of the century we have always measured work in units of objects processed - a tangible measure. One of the great principles of America's development of technology, and, of course, production, has been our ability to simplify work and to analyze and provide a function or produce a certain effect with as little labor as possible. We have called it work simplification. We built standards of work, and these standards have been measures of productivity ever since. They have been averages. It had to be that way. Some men who reached the average and went above got bonuses. Others had to be jacked up to reach the average. And, of course, these methods have contributed greatly to our affluence and the miracle of our productivity. However, for a larger body of our people such quantitative measures have no application whatever. The knowledge worker can't be measured in this way. What we need for him are optimums, not averages - optimums with no ceilings - and we know so little about the motivation of this creative, worthwhile productivity. Therefore, basic concepts of industrial engineering change.

I was talking one day with the manager of one of our laboratories. We were talking about educational plans, and he called in one of his senior men. After talking to him for a few minutes, and getting out of him what we needed, the man said, "Well, it appears as though you are through with me. I think I'd better go. My wife is waiting for me down town to help me buy a suit of clothes." At eleven in the morning of the working day! But probably at eleven at night, or at 2:00 a. m. or 3:00 a. m., with that note pad beside his bed, he would wake up with an idea about something which had been bugging his laboratory for a year or more. How do you measure this kind of work? What marvelous opportunities there are for us to build, to learn, to know, and to put into effect the kind of motivation that really generates creativity in people! The lifting of the level of work all about us is demanding the lifting of the very understandings and techniques of cultivating, generating, stimulating people to realize the creative and worthwhile status of their world of work.

There are many other illustrations of why this is impinging upon us. In the 1957-58 recession that we are just now beginning to understand, we have discovered something that had never before affected us in this fashion. We always said to ourselves, in any specific economic crisis, that when it was necessary to reduce production because the sales just weren't coming in, the quickest way we could bring expenses and revenue into balance was by reducing the labor force. This has been part and parcel of the economics of the Western World. But in 1957-58 it did not work this way. In consumer durables such as refrigerators, automobiles, and so forth, production dropped off about 50 per cent, but labor dropped off only about 20 per cent. We are just now beginning to understand why. In the first place, we are putting so much into the training of people today, at whatever the level of labor or work in the institution, that they become a capital account rather than an expense account. I was going through our Lexington plant with the general manager, who said, "I want to show you a new operation, a great new integrated machining process in which we have 110 operations going on on the frame of a typewriter." We came to the machine, and it was tended by two operators. We stood there looking at it, marveling at it, not a hand touching that frame as it came off the conveyor into the machine, and around out the other side, turned, buffed, burred, milled, all the rest of it. So I said to the general manager, "What did these fellows do before this job?" He said they were both multiple spindle drill operators. I asked what were their principal values on that job, and he said, "Well, of course, a typewriter frame requires pretty heavy fixtures, and you have got to move them, so it took a good back and good arm to move them across the bed of the drill. You also have to be sensitive to the condition of your drills." "Well," I said, "What is the significant quality you need on a job like this, a machine that costs $450,000 that's doing 110 operations?" He replied, "Responsibility."

So it's responsibility, a far higher level of quality of vocational competency than strength or manipulative skills. We discovered in that discussion that you can't lay off an investment like this, as my next question showed. I said, "What do you estimate you have put into training and development of these men specifically?" He said, "During their employment, we have put $6000 into each one of these men." Now this is a capital investment. Here again, if you laid off in recession the new kinds of professional and scientific personnel which are a part and parcel of today's operations, you would cut your life line to the future. The great new areas of vocational activities which are part and parcel of management operations - research, systems, accountants and others - are, like scientists, a capital investment, not an expense.

Talk about guaranteed annual wage! It's not going to come by collective bargaining. It's not going to come by legislation or by judicial decision. It will come when the economy demands it, and the economy gradually is demanding it now.

I want to engage your attention for just one moment in another area of this thesis. Think with me of America's place in the economy of the

world, and what our significant contribution is in that great conflict in the economic war going on between the communist side and the free world side for the economic development of the evolving nations and people.

We are people who have been in reality a chosen people. The Hebrew-Christian tradition that has been bequeathed to us throughout the past centuries is the greatest heritage not only in our economic life but in our political and social life as well. The idea that human personality is the greatest value on earth; that its development, its integrity and its dignity are the most significant aims of any human activity, this is the essential of the great tradition that is ours in trust. It is the secret of our great know-how, this significant know-why.

We haven't articulated it perfectly, and never will. It's too great an ideal. There's always room for improvement, but the rest of the world wants it so badly, we must share it. Our destiny is to share that with which we have been endowed so generously in God's great plan. It's the one thing we have ahead of the communist, for in every development, in every effort he makes, the state must be paramount and man is made for the state. In contrast, we are trying to say that the state was made for man. Therefore, our destiny is to make that ideal practical and usable in the growth and development of the world people. The people of the world are crying for it.

What I am suggesting is that there is a great mission of business to the rest of the world. What I am going to illustrate is not sentimental pious pap or philanthropy. Within the body of our economic life it is possible for us to carry the finest ideals in practical form on a profit basis in the practice of free enterprise. I sat for a long noon hour with twenty Brazilian businessmen one day. We had been talking about the idea that management is something for which you can educate, and it came to a time when I could ask them some questions.

There's one question that I always ask wherever I go - behind the iron curtain or in front of it. On this occasion I asked what enterprise from the United States now working in Brazil would they like to see multiplied. The first four answers were the same. They named one of the great American retail mail-order houses that has penetrated throughout the whole of Latin America. They said this is the kind of business they would like to see multiplied in Brazil. I asked them why, and this was the reason - very simple: That business came to Latin America with the policy of having in five years 92 per cent of their goods purchased from Brazilian producers. And in order to do that they brought teachers and consultants with them who went out into the industry of Brazil and taught the producer how to do a better job. They were taught how to produce better textiles, more of them, at less cost, while paying the workers more; how to finance the businss better; how to provide better for the training and development of people so that they could get quality goods at moderate prices to put into the outlets of their moderate price range merchandising system. My Brazilian friends said, "This is the kind of thing we want repeated here."

The key to it was teaching. Education is that great, beneficent leaven in the loaf of modern society without which modern society will collapse, but with which it will go on to be a greater society. The opportunities that are ours as educators were never before paralleled in the history of our world, for today we live in an educative society. It's the central core, the nucleus in the cell, out of which springs the energy and the new growth. We are the custodians.

The interdependence of business and education is beautifully illustrated in eight lines by Edwin Markham:

"We are blind until we see

That in the human plan

Nothing is worth the making

If it does not make the man.

Why build the cities glorious

If man unbuilded goes?

In vain we build the world, unless

The builder also grows."

-- Charles Edwin Markham.

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FIFTH GENERAL SESSION

(Continued)

Presentation: INDUSTRIAL EDUCATION AND THE RUBICON

Ernest G. Kramer, Chief
Bureau of Industrial Education

Ernest G. Kramer

Before the start of his address, Mr. Kramer greeted and introduced Mr. Samuel L. Fick, Chief Emeritus, Bureau of Industrial Education, and a long-time participant in the Industrial Education Annual Conferences.

Mr. Kramer also recognized and paid tribute to those members of the Bureau of Industrial Education staff who had special assignments in planning and arranging for the Conference, and to all the members of the Conference group, who participate willingly and generously.

* * *

Well, now to the business that seems to be my privilege, to try and capsulate, if possible, and at least give you some sort of a parting shot. I think it was Bob who said the first day that it would be my job to sort of tie things up. And at this particular point, thinking of the wonderful presentation of Dr. Orton, and all the complexities and temper of the times, the involvement of our total program, and my trying to be equal to all this, I can't help but recall a story that used to be a favorite of my Dad's. It has to do with a fellow out in the rural area. He had a son of whom he was not particularly proud. This fellow was a farmer, and on this particular day he decided to hitch up the horse and wagon and load it with potatoes and go into town and strike up a sale for them. He needed to have someone with him, if for no other reason than to watch the load while he went in to dicker. He had this son, and the son's facial features were not the best. He sort of gave himself away with a kind of far-away look in his eyes. But the father gave him specific instructions. He said, "Now, we're going into town and try to sell these potatoes. You're going to sit up there on the seat in the wagon, and I just want you to watch out for everything, and don't you open your mouth and let them know what a damn fool you are." So the kid got up in the wagon and off they went. They got into town and the old man parked out in front of the store and went in to strike up a sale for the potatoes. While he was in there, a fellow came down the street and saw the wagon parked there and the young boy up in the seat. They were pretty good looking potatoes, and maybe they were for sale, so he said, "Say, are you selling the potatoes?" The boy

didn't say a word, he just looked at him. The fellow thought, well, maybe he's hard of hearing, so he tried again. He said, "Say, do you want to sell the potatoes?" The boy didn't say a word; he just grinned a little bit. The fellow thought this was kind of queer, but he tried once more. Raising his voice a little higher, he said, "I say, do you want to sell the potatoes?" The boy just looked at him and grinned a little wider, so the fellow scratched his head and said, "If you aren't about the damnedest fool I ever saw!"

About this time the father came out of the store, and the kid got up in the wagon and started waving his hands, and said, "Pa, Pa, I never said a word, but he found out anyway."

I'm not going to attempt to review for you the events of the last three days, but I'm going to include them in what I have here as sort of a summary of our activities. Much has happened since our 26th Annual Conference a year ago at the Disneyland Hotel. And equally significant, much has not happened. In assessing the events of the past twelve months it would appear to many thoughtful persons that industrial education is indeed in transition. Up until the time when the work of the President's Panel of Consultants first began to raise basic questions about vocational education traditions, our procedural patterns were pretty well worn, and our basic philosophies secure - at least in a sort of repetition by rote hypnosis.

This is not to say that there were no thoughtful probes into our educational roles in industrial education, no restless inquiry, searching out the optimum, no philosophical gremlins badgering us with questions, "How do you know?" Inquiry and willingness to move into new vistas, I think has always been the hallmark of industrial education, and no greater testimony of this fact can be found than to review the conference proceedings for these annual meetings of ours, and for the annual conventions of the CIEA. Industrial educators have, in my judgment, stood out in the family of educators by their dissatisfaction with the status quo and by their ceaseless quest for better and better programs. But I think it would be fair to say that if one were to describe our gains in baseball parlance, we might say that oftentimes we approach our gains more conservatively, almost like a baserunner stealing second base with one foot firmly planted on first. But since we have entered the decade of the 1960's our environment has begun to change, and change rapidly.

The prolonged debates that led to the legislative adoption of a new credential structure in California were perhaps the first major development that started this. The credential hassle had its predecessors such as the increase in mandated instructional requirements, the overemphasis on things academic, and the perennial problem of status parity within the professional family. But these have been with us for a long time, and now and then we could see, or at least thought we could see, that we were making some real potential gains. The credential restructuring activity, however, was and still is an event of sizable proportions and for a time threatened us with family quarreling. More than

that, however, it is implied in this credential restructuring, or in the credential considerations, that there are degrees of status within the educational family, and that industrial education is not in the first status position in this connection as witnessed by the academic major aspects of the determination of who can be a school administrator and who cannot. Also, these judgments were made largely by non-educators who were in a sense rising up and saying in effect that the school program has been too long in the hands of the educationalists. Now, let me say in passing, that as a result of all this we must determine precisely where we are credential-wise, and once we know the real nature of our problem, then we must take appropriate steps to make adjustments. In this connection our Bureau is asking now for an interpretation from the legal counsel in the department as to what are the legal authorizations of existing credentials in the industrial education field. Knowing what these are, it shall then be our plan to proceed to take whatever action is indicated so that we may work toward the concept to which we are committed; and may I remind you that this concept is that in industrial education's best interests, the personnel in both teaching and supervisory capacities should be permitted to function in the broad spectrum of industrial education. The only qualification we would make to the statement would be that we would insist that such personnel working in this broad frame of reference be appropriately prepared in both fields, industrial arts and trade and technical education. I think that we are involved in working toward this goal, and that we have only begun to see definite gains in this connection.

Additional elements have come forward from time to time to give the industrial educator the feeling that more and more educational judgments are being made in the political arena. Also, within the school family there is a tendency toward the "halo" effect insofar as some disciplines are concerned, to the degree that these favored disciplines have undue influence upon the total educational program.

As the impact of the President's Panel of Consultants began to be more and more identifiable, and as there was an anticipation of new and greater monies from vocational education legislation, particularly with an emphasis on the high school area, it became apparent to us that many school administrators conceived of their industrial arts programs as vocational, at least in the sense that they began to anticipate federal monies for the support of it. Indeed, there was even some evidence amongst our own family of industrial educators that discrete identity for the two parts of industrial education was not always clear. As you will recall at our last Annual Conference, this dilemma led us to recommend the development of what might be called a position paper in the interest of clarifying our own position, and thereby being better able to communicate with our colleagues in education as well as with the lay public and with industry. Accordingly, the Bureau has, during the past year, sponsored an activity in the direction of such a position paper. It's appropriate at this time to give you a very brief report as to where we are now, although we touched on this briefly yesterday afternoon. You will recall we appointed a 15-man ad hoc committee. This committee has had several meetings, a draft statement was prepared and

circulated to the field. We have had a series of area meetings to acquaint everybody with the activity, and give everybody an opportunity to participate in it and contribute to it, because if this is going to be a position statement that will be directly representative of industrial education, then we must all have a part in it.

But while in the process we have discovered that first of all we might have undertaken too much. We also discovered that our time schedule is too brief. We thought it would be reported to you in finished fashion at this Annual Conference, but we find now that this is not possible. We also found that there is considerable value in holding these meetings, and that it is most appropriate at this time and place for us to be asking ourselves, "Who are we, and why are we?" We also feel now that we need to concentrate on some specific areas rather than to try to take the whole continuum of industrial education at one fell swoop. Probably the most critical of these areas is the high school.

Where do we go from here? Well, we intend to reconvene our committee at the end of the month, and to review and assess what we have accomplished as the result of the past year's activities, and as a result of this we will prepare an action plan that will focus immediately on the high school area. Then we will go about the business of preparing another draft. We will make sure it's broadly circulated. We will again have a series of area meetings. All of this, hopefully, to establish some real bench marks by the time of the 28th Annual Conference.

During the time to which we have been referring the Vocational Education Act came along and was implemented, and the family of participants in vocational education expanded. It has grown considerably more than maybe we realized. The numbers in attendance here at this Conference is evidence of this. This increases the need to refine and to strengthen our vocational education criteria and to reinforce our basic purposes.

Along with this development during the past year, we have seen a concerted movement across the country to reorganize the structure of vocational education on the national level, on the state level, and on the local level. We now see a structure in the U. S. Office of Education that has completely removed the identity of the individual branches. There is no longer a Trade and Industrial Branch in the U. S. Office of Education. In fact, at the moment there is only one specific place in their structure where the identity of Trade and Industrial Education is preserved, and this is in the person of only one specialist. You also have been informed of a movement in this direction here in California. I do not choose at this time to go into elaborate detail about the inner workings, or my particular point of view relative to these structures, but I would suggest to you a careful analysis of these events on your part. I think we need to take cognizance of some basic issues at stake here. There is no question about the fact that we need to be more effective, that we need to avoid unnecessary duplication of effort, and that sort of thing. But I think it's also important that we preserve the strength of the past as we build for the future, and let the building

be upon the strengths of the past rather than what might be a tendency in some quarters to destroy everything in the name of change for change's sake. I think it's important, for example, to preserve the identity of industrial education. I think it's important to do this for good solid educational reasons, not just simply to preserve an empire. And I think for those of us here today it appears that this is a concern of the highest priority for us. Let us not get ourselves into the position of being so preoccupied with the internal workings of industrial education that we fail to preserve the totality of industrial education. You know, to divide and conquer is an ancient truism, but it's still a tactic in modern use. It's still a danger against which we should be protecting ourselves. We're making gains in this regard, and the fact that we are working more closely together as an industrial education family than has ever been the case is most heartening. Certainly this Annual Conference and the CIEA Convention are documentation of this, and these are good bellwethers of the future.

It's in this frame of reference that things are occuring that convince me industrial education faces the crossing of the Rubicon - if you will - an action that will have much to do with our future. You know the Rubicon has come to symbolize a far-reaching decision from which there is no return. In Plutarch's Lives there is this statement: "When he arrived at the banks of the Rubicon, which divides Cisalpine Gaul from the rest of Italy. . .he stopped to deliberate. . .At last he cried out, 'The die is cast', and immediately passed the river." It now appears that in many respects industrial education has reached the banks of the Rubicon, that we are now on its banks deliberating, and like Caesar, searching for the decision that will lead us on to greater and brighter horizons. There's no doubt about industrial education crossing this symbolic river. The force of change, the impact of public pressure, the educational needs of ever-increasing numbers of students, all these and other events indicate that our future is on the other side of the symbolic river. But it's still our decision to determine when and where and how we shall cross, providing we are equal to it. But time will not be forever on our side, and if we choose not to move with dispatch, then there are those who, no longer willing to wait for us, will dictate the point of crossing and the landing place on the other side. Who are these who watch and wait to see if we are equal to the challenge? Some of them are our colleagues in education who wait impatiently for us to come up with better answers for high school youth, for example, but more significantly there are those outside of the educational family who watch with interest, who, if we stumble, will be only too happy to take over the responsibility. To see these outlines more clearly one has only to study carefully the developments that are characteristic of the MDTA, the ARA, and the more recent EOA.

What, then, are the principal issues involved in our Rubicon? One of the most pressing - and one of the most significant - has to do with our new horizon of flexibility which has come by reason of the VEA of '63. No longer can we say that vocational education programs can be identified by reason of ear-marked funds, by reason of stereotyped class formulas, by reason of other stereotyped criteria. As a result, never have we

needed standards of quality more than we do at this moment. Nor should we confuse standards of quality as being synonomous with past tradition. Let us remember, for example, that Franklin Delano Roosevelt said at one time, "New ideas can be good or bad, just the same as old ones."

In some quarters there appears to be a tendency to break completely with the past - as though to say that everything done before today is bad. It has become popular, particularly in the political arena, to condemn education totally, in broad, sweeping generalizations, oftentimes such criticism coming from the mouths of those who owe much to public education for their success and their supposed high place. The pages of our education's history are generally interspersed with notable achievements, and industrial education is included in this. Most of our space scientists, our political leaders, our moral philosophers, are products of our public schools. But somehow, sometimes our critics seem to be obsessed with the willingness to throw the baby out with the bath water.

We in industrial education are not without some of these same symptoms. In this connection it is interesting to note the tendency oftentimes to substitute the concept of vocationally oriented for the concept of a direct relationship to successful, gainful employment. Likewise, it is of significance that there are those enamored of federal funds who would compromise almost everything in sight, including a compromise of the principal purpose of industrial arts.

I would submit to you that industrial arts has a most significant role in the total program of education - a role in education that is general in nature, a role that should be preserved in the best interests of the students regardless of their ultimate occupational goal, because of the very nature of our culture. To abandon this principal role is to deny our youth. So, therefore, let us be certain that the program has had our best efforts before we move away from this principal purpose.

The same may be said for trade and technical programs. While we now have opportunities for new applications of basic vocational principles, application, I think, in more meaningful ways, the basic principles still pertain and should be identified through the application of realistic criteria identifying vocational education programs.

Another facet of this problem has to do with research, which is on everybody's lips nowadays, I think largely by reason of the handsome funding that is possible through this Public Law 88-210. Indeed, with so many people across the country searching, one would think they would find something pretty soon.

The new Vocational Education Act, as you know, sets up research monies on a national scale. These are the 4C activities. There are other monies too, but the 4C activities represent 10 per cent of the total appropriation for the Vocational Education Act. This year that appropriation approaches twelve million dollars. Can you remember back a few years when the total appropriation under the Smith-Hughes

Act was significant? Do you realize that now we have one and a half times, plus, the total Smith-Hughes appropriation earmarked for research? It's fantastic! I'm not meaning to suggest that this is utterly ridiculous, because we all know that not to inquire into our nature, not to seek the best answer, not to move forward is to retrogress and ultimately disappear.

It would appear that there are many things being proposed now in the name of research that have questionable validity insofar as the real needs of the total program are concerned. Further, there are many who seek research sinecures who have never before been interested in vocational education but who suddenly find the availability of funds quite enticing. Vocational education must function appropriately as a partner in the total program of education, and in so doing must have appropriate interlockings with other disciplines. However, I think there is danger in becoming so enamored with the other disciplines that we forget our principal mission. I see some little trouble, for example, in emphasizing too strongly the concept that vocational purpose is determined by the student's objective rather than the purpose of the course. While there is much merit in this concept, if not otherwise determined, it could very easily become a justification for general, unrealistic approaches that are inconsistent with the real function of vocational education.

Closely associated with this researching aspect is the challenge of automation. While it is true that as each year goes by we shall find more and more of our people working in new occupations, and more and more of our unskilled unable to find secure employment because of the lack of adequate competence, it still seems hard for me to accept an economy where 20 per cent of our people will be without employment because of automation. It does not seem possible to me that we can perpetuate our way of life with that large a portion of our total population riding on the backs of the rest of the working population.

The financial drain posed by an unemployment figure of almost one-fourth of the total work force places some severe drains on our economy, to say nothing about our political arena. Rather than continuing to accept extremely high unemployment as a natural turn of events, it appears that educators, particularly industrial educators, along with other sectors of our society, must pay increasing attention to developing new training programs in areas of several classifications and other fields. Through this attention, and perhaps a cooperative approach with industry, we can do much to help create new jobs, which in my judgment can be the only real long-term answer to the problem of unemployment.

Related to this need is the important factor of status parity for the world's work. You know, much has been said about the need to be more realistic in this connection. But actually very little has been done significantly to change our mores. Mel Barlow, in his chapter in the NSSE Year Book of a future platform for vocational education, says, "We still find people who measure a man by the kind of work he does rather than by the quality of performance, whatever his work may be." Even

those of us in the practical field of industrial education oftentimes set more store in seeking status in the classical tradition, which is a belittling of the very purpose that is our "raison d'etre". Florence Nightingale said of things medical, and of hospitals specifically, that whatever else a hospital does, it should not spread disease. So should it be with our educational program, and of industrial education in particular, that whatever else is done, we should not contribute to an already aggravated problem of occupationally oriented snobbery.

In the matter of the scope of our program, it would seem that despite significant data regarding high school leaders, we still tend to act as though the great majority of individuals will have their vocational educational needs met in a post-high school frame of reference. However, it still appears that much of the future wellbeing of our nation rests with the kind of an educational job we will do in the high school.

Now, this is not to take away in any sense from the very fine job now being done in our junior colleges and adult education, and the even greater potential that the junior colleges and adult education have for the future. It is to say, however, that as difficult as the explosion of knowledge has made the high school responsibility, we must not fall back on a rationalization that there is no time for vocational education in the high school. Dr. Wiles spoke of the dilemma of the static educational program and the educators' tendency to continue to attack the problems of learning in stereotyped patterns that in some instances are as old as the high school itself. We must find better answers for our high school youth and the difficulties that beset the path to these answers should only serve to make us redouble our efforts.

Well, these are not the only issues we shall have to face tomorrow, and tomorrow, and tomorrow - but they will serve our purpose here. We said that we must exercise great care to make certain our new found flexibility is not misused in watered down educational programs instead of the real advances this flexibility makes possible. We have said that it's important that we remember our significant roles and purposes and that we do not prostitute these because of the availability of new and greater financial potentials. We have said that research, while of great importance, should be realistic and meaningful and translate into better educational programs for our students. We have said that in cooperation with other aspects of our societal activities education could well contribute significantly to the creation of new jobs to enable our citizens to remain productively employed. We have said that education has a responsibility to do its part to correct the status imbalance in the world of work, although admittedly this problem cannot be solved within the schools alone. We have said that we must bend every effort of which we are capable to make the high schools contribute to the total education and toward the optimum preparation of every student.

This is a sobering list of challenges, but sobering as they may be, they should not make us down-hearted. While at times we seem to be beset and harassed with criticisms from the uninformed, and even from

our colleagues in the educational family, and while education at present appears to be unduly influenced by the political arena, and while significant decisions affecting the organizational structure and ability to offer meaningful programs to the students too often seem to be snap judgments made from some little distance from real understanding of the problems, let us remember this fable of the oriental monarch. He directed his wise men to prepare for him a sentence that would be true no matter what the time, no matter where the place, no matter what the subject. After long and careful deliberation the wise men presented the oriental monarch with such a sentence, and the sentence read, "And this, too, shall pass."

It has been said that the man who looks to the future will indeed have a past, but the poor unfortunate who looks to the past will indeed have no future. The challenge, then, of the 27th Annual Conference is to work throughout the coming year with renewed energies and dedication so that when we convene the 28th Annual Conference in Bakersfield we can identify real and significant gains across the broad front of industrial education.

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SAMUEL LEONARD FICK LECTURE

Friday, March 12, 1965

Co-Chairmen: Howard J. Warren, President
California Industrial Education Association

Ernest G. Kramer, Chief
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Presentation: LOOKING AHEAD - NEW CHALLENGES IN TOMORROW'S SOCIETY

Arthur F. Corey
Executive Secretary, Emeritus
California Teachers Association

Arthur F. Corey

In the lobby of the Commerce Department in Washington, there is an instrument which records the running total of the population of the United States. About every ten seconds it adds one more to the total. During this short address the population of the United States will increase about two hundred, and during the present year the increase is expected to be more than three million.

During the ten years, 1950 to 1960, we added to the population of the United States about twenty-eight million persons which is about what the total population of the country was at the time of the Civil War. This is the largest growth in any decade of our Nation's history and the percentage rate of growth was the highest since the first decade of the century when immigration was an important factor in growth. It is significant to note that one fifth of this tremendous national growth during the fifties was in the State of California. The temptation is great to think of these facts merely as statistics - figures in neat tables in government documents. However, these figures represent people. Each time the indicator clicks in Washington, it is another human being. He will live and love, have a family, move about in search of jobs, go to school, be sick at times and finally die. In short each of these people is really a working unit in the "great society" of the future.

As the population grows it also moves. Following the general direction of increased economic opportunity there is consistent movement of our people toward the North and West and from the rural areas toward the cities. Although the population within the core cities is changing - with a general lowering of the economic and cultural levels of the people - there has been little recent growth in these areas and no significant expansion is expected in the immediate future. The dramatic

growth has occurred and will continue in the suburban areas surrounding the cities. This is just as true in California as in the rest of the country.

Although the total population in California is expected to increase about fifty percent between now and 1980, the areas immediately surrounding the big cities will grow much more rapidly. By 1980 four counties which touch on San Francisco Bay will be more populous than San Francisco, and the growth in Orange, San Bernardino and Ventura counties will be far more spectacular than in Los Angeles County.

Assuming no great change in the birth rate, some small improvement in mortality rates and no large increase in immigration, the total population of the United States in 1980 should be 260,000,000. If this estimate is accurate, the increase in the population during the next fifteen years will approximate the total population of the country when your speaker was born. Of this population, 28,000,000 will be in California. This means that one American in nine will be a resident of the Golden State in 1980. Predictions over a relatively short period of fifteen years are not as hazardous as they might at first seem, and these estimates are apt to be too low rather than too high.

As the total population increases there is also a significant change in the age distribution of the people. It is common knowledge that the young and the old are increasing in number more rapidly than the middle-age groups. The rate of increase for the young is so much larger than for the old that the average age of our people has been declining rapidly and will probably continue to do so for some time. When President Kennedy was elected in 1960, the average age of the American people was 33 and by 1968 this figure will have dropped to 25. This is the most rapid change in the average age of the population in American history. It may seem a paradox, but while we all personally get older the nation collectively gets younger each year. During the next fifteen years the most rapidly expanding age group will be the young adults who are reaching voting age and entering the labor market. It seems obvious that this fact has tremendous implications in politics, economics, and education.

The age shift of the population is even more dramatic in its effect when one remembers that this group of young adults possesses more educational preparation and hence higher expectation of success and security than ever before. This group expects professional, technical or managerial opportunity and will not be satisfied to be machine operators or sales girls. It is this relatively well-educated group of young people who now emerge as a dominant factor in the struggle to forge social and educational goals for America.

In America we have clung piously to the work ethic. To work hard in America is good, moral and rewarding. Not to work hard is lazy, immoral and disgraceful. Anthropologists have been pointing out that a work ethic society which does not provide work for all is building up social dynamite and drifting toward an ultimate explosion. That there is a wide divergence

between our employment ethic and our employment practice is obvious. There is now an average unemployment rate of 5% and among teen-agers in the Negro ghettos the unemployment rate is about 60%. Although the experience is unpleasant, one must inevitably conclude that in the absence of revolutionary changes in American education and economy, this disturbing disparity between what we profess and practice will rapidly get worse in the years ahead.

Labor's historic role in the economy - production - is now being handled without the aid of more manpower. There are about a million new workers entering the labor force each year, but the number of man-hours worked in the economy as a whole has virtually ceased expanding. The United States now produces about 2.5 times as many goods and services as it did in 1929 with only 20% more man-hours worked. By 1970, due to automation, the U. S. will be able to produce what it did in 1960 with 22 million fewer workers.

For those who look to private industry for new jobs, the outlook is not encouraging. It is rather portentous that of every eight new jobs added to the U. S. economy in the decade 1950-1960, only one was provided by the profit sector. The other seven came from local, state and federal government, including education, and from non-profit organizations. It is sharp irony that this is happening when there is a steadily increasing demand for educated workers. A cursory look at these economic trends is indeed discouraging. One might naturally conclude that a rapidly expanding population will face decreasing job opportunities, and mass unemployment is therefore unavoidable. Even though the most certain aspect of life is change, it is within limits manageable. Indications are already clear that a new revolution is already under way which offers some possible solutions to the apparently insoluable problems inherent in automation and high population density.

For two centuries the Industrial Revolution has been the dominant economic factor in the world. Now it is being challenged by another - the Knowledge Revolution - and in this new movement we may find some of the answers to our mounting economic dilemma. The Industrial Revolution which began with the invention of the steam engine in 1769 has been geared to one overriding objective - production. Its important ingredients have been land, power, metals and capital equipment. This concept which has been dominant in our economic life for two centuries is in contemporary climax. Production is no longer the central problem. The problems of distribution are now of paramount interest. In contrast the new Knowledge Revolution seeks new business through technological advances and improved distribution rather than volume production as an end in itself. Its most important ingredient is "ideas" and its leading institutions will be schools and universities rather than factories. Even professional economists have been slow to recognize how far the U. S. has already gone in the transition from the production-oriented system to an idea-oriented economy.

Education now generates at least one fifth of the U. S. growth rate. The knowledge industry is growing more than twice as fast as the rest of

the economy and amounts to more than a fourth of the total. More than one fourth of the total population is now engaged directly in education (51 million students and 2 million teachers) and within a few years this group will comprise one third of the total. What the railroads did for the second half of the last century and what the automobile industry did for the first half of this century may be matched by the knowledge industry in the not too distant future. George W. James, an economist at the Battelle Institute, states this idea when he says, "Let us advance the hypothesis that in recent years the U. S. has shifted from a society based on natural resources to one based on human resources."

For some time economists have been asking quizzically why the traditional relationship between capital (plant, equipment, and inventories) and economic growth seemed to be denied in recent national experience. The Gross National Product has been growing much faster than it had any right to do with the amount of invested capital at hand. Only recently have economists begun to recognize the important factor of human investment. A trained man or woman has a capital value in the economy which must be considered along with plant, equipment, and inventories. Economist Theodore Schultz has calculated the money value of the "educational capital" in the United States. He asserts that this kind of capital has more than twice the value of all the capital assets of all United States corporations.

Without question, ideas have already become a most important national resource, as important as our land and mineral wealth. The force of intellect is rapidly becoming the dominant force in economics, politics, and world affairs. It becomes evident that the rise and fall of nations will largely depend on their resources in the production and utilization of knowledge. The new revolution is already changing the economic geography of our country. The growth institutions of the future will not be our factories but our intellectual institutions. Schools, colleges, universities, research corporations, industrial laboratories and experimental stations will expand beyond anything now thought possible, and such centers of thought production will be surrounded by clusters of industrial development. The rapidly expanding segments of industry tend to seek out intellectual concentrations and to settle around them. In the Industrial Revolution factories tended to cluster around coal and iron deposits. The newer industries of the future will settle in the area around centers of learning and research.

Three states, California, New York, and Massachusetts, have been given nearly two thirds of all the important research contracts for the defense department. Such contracts must go where the brains are available to do such work. In the new economy centers of learning thus become the key to industrial success. This is borne out by the fact that these same three states have received nearly half of the prime production contracts for the military.

The basic concept of the Knowledge Revolution is new. Dr. Fritz Machlup of Princeton University has analyzed it in detail in his book, THE PRODUCTION AND DISTRIBUTION OF KNOWLEDGE. He maintains that in 1958

The U. S. was already spending 26% of the Gross National Product for the production and distribution of all kinds of knowledge. He also points out that spending for this intangible commodity is increasing nearly two and a half times faster than the rest of the economy, and employment in this sector is growing twice as fast. Kenneth Boulding, an economist at the University of Michigan, has commented that Machlup's concept of a knowledge industry contains enough dynamite to blow traditional theories of economics into orbit.

It was to be expected that the early writing of the Knowledge Revolution should emphasize the spots in society where intellectual capacity fructified in its most dramatic form. The immediate implication, in the popular mind, centers on the importance of higher education. Because we still tend to think in terms of the value structure of the Industrial Revolution the assumption is easily made that the success of the Knowledge Revolution depends almost exclusively on scientific and technical higher education. The validity of such an assumption deserves some examination.

The development of intellectual power does not begin in college or university. It begins with the earliest educational experiences. Undoubtedly many brilliant minds are restricted in development and never reach their potential because they never learned to read with pleasure in the primary grades. There must be growing conviction that good education at all levels is absolutely prerequisite to success of the knowledge economy. The importance of technology should not be underestimated, but on the other hand technology is only one aspect of the new Revolution. New value structures must be built, and this is in the realm of the humanities. Full employment will in the future require more and more of the work force to deal with people rather than things. The accelerating pace of science and technology has been largely directed toward changing man's environment and has been so successful in doing so that the new environment forces man to change himself. As science changes man's relation to his environment, survival demands that man change his relationship to man. This is to say that there is an inescapable interdependence between technological and humanistic education.

Henry Adams was one of the very few historians who has probed deeply into the effect of science on the history of society. He ended his life in deep despair, because he concluded that under democratic institutions man could never learn to change himself to parallel the environmental changes produced by the acceleration of scientific discovery. As early as 1905 he wrote:

> "Yet it is quite sure, . . . that at the accelerated rate of progression (in science) since 1600, it will not require another century or half century to turn thought upside down. Law, in that case would disappear . . . . and give place to force. Morality would become police. Explosives would reach cosmic violence. Disintegration would overcome integration."

Henry Adams was saying that he had lost faith in man's ability to change himself as science changed the world. In his embittered later years he succumbed to despair, largely because he saw no evidence that twentieth century education in America could change fast enough to avert catastrophe.

The Knowledge Revolution demands a mass-education program which recognizes the importance of technical competence but develops a much more compelling and functional social responsibility. The imperative for mass education in a free society is found in the fact that these objectives are just as important for those who never get to college or university as they are for those who study in our graduate schools and research institutes. The educational program for the bottom 50 per cent in what we have been pleased to call "ability" must be our grave concern if we are to prosecute the Knowledge Revolution.

America is faced with an economic phenomenon virtually unknown in history. The age-old law of scarcity has always demanded that if the condition of one segment of soceity was to be improved, it could only be done by taking something away from the rest of society. The age-old tenet that one man's well-being could be improved only at the expense of his brother's is now supplanted by the very hard fact that one man's well-being can increase only with the increase in the well-being of all men. What was until recently self-sacrificing idealism has now become self-serving necessity.

The acceptance of the new conditions dictated by the Knowledge Revolution will not be easy. The U. S. is probably entering a period of political unrest or turbulence more acute than any time in this century. Grave political issues will emerge. They will probably not be economic but will have to do with philosophical, moral, and esthetic objectives and values. There is emerging a new center of gravity in political power. The old power groups - big business, labor and agriculture - are being displaced by the rapidly increasing professional, managerial and technical middle class who live in our suburbs. This is the young, affluent, and well-educated group which will be the swing vote controlling American politics while we forge a new enunciation of the values and purposes of our society. Traditional power groups never give up easily, and the old cliches will continue to be heard as the country struggles to adapt its politics to the Knowledge State. Phenomenal growth will thrust education even more into national politics. Education is certain to become an important focus for political conflict. We have in America a great commitment to education. A great deal of education for everyone - but so far we have not even begun to get any generally accepted policy on educational values and purposes.

The importance of the transfer of political power to the middle-class suburbs is difficult to overestimate. This group is relatively secure and hence free of driving fear. If they identify at all in terms of economic interest and social position, it is with management. They are employees and hence not obsessed with the sanctity of property rights. Most important of all they care very much about education for themselves

and for their children. Above all they are young and generally idealistic and fearless regarding change.

It seems fairly certain that tomorrow's society will definitely be school-centered and some of the most burning and significant issues to be faced will have to do with what kind of schools we will have. It is almost certain that the cost of education will soon exceed the present cost of defense. If this be true, large scale federal aid for education will be necessary. This conclusion is rapidly finding political support in Washington.

It is not rational to assume that change is not manageable, but if change is to be made rational, education is the only process which can be effective for this purpose in a free society. This is indeed the most challenging place and time in all history to be a teacher. There is no attempt here to be didactic or to interpret what the implications are for education in our emerging society. This is tomorrow's America as I see it. It is for each of us to think through, and for all of us as Americans to work out, what the implications are for education.

* * *

VT 003 501

Criteria for Quality, Part I, Proceedings of the Annual General Meeting of the Council of Member Agencies of the Dept. of Associate Degree Programs (2nd, San Francisco, March 2, 1967).

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*SECOND ANNUAL GENERAL MEETING OF THE COUNCIL OF MEMBR AGENCIES OF THE NATIONAL LEAGUE FOR NURSING, SAN FRANCISCO, CALIFORNIA, MARCH 2, 1967

Sixty-seven representatives of member agencies, 31 representatives of state boards of nursing, and 98 guests and National League for Nursing staff attended the meeting. At the business session, the president reviewed the development of the Department of Associate Degree Programs and discussed the growth of these programs. The second draft of program evaluation criteria was adopted. The director of the Department of Associate Degree Programs reported for the staff and urged the proper utilization of qualified staff from nursing programs which are closing. Speeches presented at the general session and included in the document are: (1) "Educational Criteria and Social Change" by Ellen Fahy, (2) "Problems and Issues in Accreditation by Specialized Agencies of Vocational-Technical Curricula in Post-Secondary Institutions" by Lloyd E. Messersmith, (3) "Teacher Preparation" by Mildred L. Montag, (4) "Teacher Preparation" by Martha E. Rogers, and (5) "The Junior College District Teaching Internship Program" by C.R. Hill. "Criteria for Quality, Part II, Proceedings of the National Conference for Associate Degree Programs in Nursing" (VT 001 078, in this issue) is a related document. (JK)

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P R O C E E D I N G S

Papers Presented at the Second Annual General Meeting

COUNCIL OF MEMBER AGENCIES

March 2, 1967
San Francisco, California

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SUMMARY OF MEETING

The second annual meeting of the Council of Member Agencies, Department of Associate Degree Programs, was held at the Sir Francis Drake Hotel in San Francisco. Total registration numbered 190: 67 of the participants were representatives of 51 member agencies; 31 were representatives of state boards of nursing; and 98 were guests, including members of the NLN staff.

The chairman of the Council of Member Agencies, Dr. Dorothy T. White, convened the meeting at 9:00 a.m., March 2nd and opened the Business Meeting from 9:00 a.m. to 12:00 p.m.

Dr. Lois M. Austin, President of the NLN, presented greetings and a birthday cake representing one year's growth. Dr. Austin reviewed briefly the development of the Department of Associate Degree Programs and pointed out statistics that indicate a constant growth of programs in this area of nursing education.

Greetings were extended to the participants by Dr. Margaret Harty, President of California SLN, who welcomed the group to California. Dr. Sidney E. McGaw, president-elect of the California League, brought a welcome to San Francisco. Miss Grace Gould extended greetings and the services of the staff and facilities of the Western Office of NLN.

The minutes of the Council meeting of March 3, 1966 were approved.

Miss Eleanor Tourtillott, chairman of the DADP, gave an interim report on the activities of the Steering Committee.

The second draft of "Criteria for the Evaluation of Educational Programs in Nursing Leading to an Associate Degree" was presented to the Council by Miss Virginia Allen, chairman of the Committee on Philosophy, Criteria, and Procedure, who then moved adoption of the document. Following discussion, the definition of "technical nurse" was referred back to the Committee on Philosophy, Criteria and Procedure for further study and resubmission to the Council at the May 1967 meeting. Thereupon, the "Criteria for the Evaluation of Educational Programs in Nursing Leading to an Associate Degree" was adopted by the Council.

Dr. White, chairman, reported on the activities of the Council.

Mr. Gerald J. Griffin, Director, Department of Associate Degree Programs, reported for the staff. Mr. Griffin reviewed the growth of the programs and the impact on the department. At this time, he urged the proper utilization of qualified personnel from closing programs, including those in religious orders. He presented statistics that indicate the growth of the Council in relationship to the growth of associate degree nursing programs throughout the country.

The morning session was concluded with a discussion by Lt. Col. Margaret E. Hughes concerning the Warrant Officer Program.

The meeting adjourned at 12:05 p.m.

The General Meeting of the Council of Member Agencies of the Department of Associate Degree Programs was called to order at 2:00 p.m. by the Chairman of the Council, Dr. Dorothy T. White, who acted as chairman of the General Meeting.

Dr. White introduced Dr. Ellen Fahy who presented the Keynote Address: "Educational Criteria and Social Change". Four speakers in turn presented their topics: "Problems and Issues in Accreditation by Specialized Agencies of Vocational-Technical Curricula in Post-Secondary Institutions", Lloyd E. Messersmith, Me.D.; "Teacher Preparation", Mildred L. Montag, Ed.D; Martha E. Rogers, Sc.D.; and "The JCD Teaching Internship Program, C.R. Hill, Ed.D.

A discussion period followed the presentations. The content of the meeting was summarized by Dr. Fahy.

The General Meeting was adjourned at 5:00 p.m. by Dr. White.

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EDUCATIONAL CRITERIA AND SOCIAL CHANGE

Ellen T. Fahy, Ed.D., R.N.

Last year I saw a play on Broadway which made an indelible impression upon me. Its title was MARAT/SADE, and its author is a German born playwright by the name of Peter Weiss. I was struck with many things about the play -- its content, its social message (need for social changes of a revolutionary nature,) but better still, the need for redefinition of man's relationship to man. One of his main protagonists, Jean Paul Marat, of the title, says, "The important thing is to pull yourself up by your hair, to turn yourself inside out, and see the world with fresh eyes." /1 I was equally impressed by its form, a bold new approach to theater, very exciting to me, confusing, abrasive, jarring, but nevertheless exciting. According to Tom Prideaux, theatre editor of Life, "there is a revolution going on in serious drama . . . a swing toward more jolting and imaginative forms that are often hard to take, harder to understand, and seem at times to be deliberately planned for the public obfuscation." /2 It would appear that revolutionary change is all around us, -- in the arts, in the nature of the student group, in our educational system and in health care. Change is a part of the human condition. There is only one known law of history, and that is that nothing stays the same.

The title of this discussion should have been, "Some Problems in Establishing Criteria for Excellence in Education in a Period of Breathtaking Social Change." That seemed a bit long, so I foreshortened it to read "Educational Criteria and Social Change," but it is with the problems I shall be dealing primarily. I will merely present some, I do not have the answers. It is my purpose rather to fit Peter Brooks' description of Peter Weiss:

> "He forces us to relate opposites and contradictions. He leaves us raw. He searches for meaning instead of defining one and puts the responsibility of finding the answers back where it belongs. Off the dramatist, and onto ourselves." /3

In this case, on to the educators concerned with establishing criteria for excellence in Associate Degree Nursing Programs.

/1 Weiss, Peter. Marat/Sade, p. 46, Pocket Books, New York, 1966.
/2 Prideaux, Tom. "The Adventurous Play - Strangers to Broadway," Life March 3, 1967.
/3 Brook, Peter. "Introduction" in Peter Weiss' Marat/Sade, P.8, Pocket Books, New York.

When I ask my graduate students to pursue the nature of the social changes going on in American society in regard to the provision of health services and the role that nursing should play in it, they usually end up by paraphrasing Lincoln about the quiet dogmas of the past being unsuitable, that American nursing must disenthrall itself, or quoting something from Robert Frost to the effect that nursing has promises to keep, and miles to go before it sleeps. Ah yes, but what promises and how many miles? My students are usually somewhat cautious in their predictions about nursing. Social changes are somewhat less timid.

In 1950, Robert E. Doherty, former president of the Carnegie Institute of Technology, wrote:

> "Our civilization is characterized by rapid, undirected change. We are living in a kaleidoscopic, technological world in which we are being whisked at an ever increasing tempo, from a simple to a complex society, from an aggregate of social units which formerly were comparatively immobile, isolate, and self-sufficient, to a highly mechanized system of interdependent ones." /4

Let's move into the latter part of the sixties. According to Marshall McLuhan and George B. Leonard, in a recent article in Look magazine:

> "More swiftly than we can realize, we are moving into an era dazzingly different. Fragmentation, specialization and sameness will be replaced by wholeness, diversity, and above all, deep involvement.
>
> "Already mechanized production lines are yielding to electronically controlled computerized devices that are quite capable of producing any number of varying things out of the same material.
>
> "Even today, most United States automobiles are, in a sense, custom produced. Figuring all possible combinations of style, options, and colors available on a certain new family sports car, for example, a computer expert came up with 25 million different versions of it for a buyer. That is only the beginning. When automated electronic production reaches full potential, it will be just about as cheap to turn out a million different objects as a million exact duplicates. The only limit on production and consumption will be the human imagination." /5

/4 Doherty, Robert E. The Development of Professional Education. Carnegie Press, 1950.

/5 McLuhan, Marshall, and Leonard, George B. "The Future of Education: The Class of 1989." Look, Feb. 21, 1967.

Do you know that your future as citizens of the United States is being planned? Arthur Kopkind, in a recent article in The New Republic, talks about a collection of vaguely related political and intellectual "happenings" that have to do with new ways to analyze, anticipate, and control the social environment. (That is for all America). Included in the planning are elements of old-fashioned central planning and "new-fangled" futurism. The participants are more than planners, less than Utopians. They are a new breed of social actors somewhere between politician and technician. They do not want to push the button of the computerized society themselves. They want to tell those in charge of the buttons, which button to push. They are called, for the moment, "technopols."

Kopkind cites supersonic transport as a case in point. Size, money needed, telescoping of time, complex government and corporate interests involved, have forced planners to think on the future. What will life be like 10 or 12 years hence when people start hurtling around the world?" /6

When I first flew to London on a BOAC aircraft in 1956, it took 15 hours with two stopovers, in 1965, it took about six hours by jet. In the supersonic age, it will take approximately 1½ hours to fly to London. It's reassuring, in a way, to know that some group is trying to keep its fingers on the pounding pulse of our advanced technology. Again I return to McLuhan to give you an idea about the nature of what he envisions as possible in the not too distant future. According to Richard Kastelanetz:

> "Among McLuhan's greatest desires, is establishing the center for Culture and Technology in its own building -- with sufficient funds to support a reference library of the sensory experience of man. That is, he envisions methods of measuring all the 'sensory modalities' (system of sensory organization) in all cultures, and of recording the knowledge on coded tape. One of his assistants foresees a machine that will, following taped instructions, artificially create a sensory environment similar to that of any other culture. Once the subject stepped into the capsule the machine could be programmed to simulate what and how, say, a Tahitian hears, feels, sees, smells, and tastes." /7

To say that we're living in an age of revolutionary changes, is to state the obvious. But let me move to something more specific. We're living in an age where health care and education lead the list of priorities of the Great Society. Let's briefly take a look at the revolution going on in health care alone.

/6 Kopkind, Andrew. "The Future - Planners." The New Republic, pp. 19-22, February 25, 1967.

/7 Kostelanetz, Richard. "Understanding McLuhan." (In Part) New York Times, January 29, 1967

According to Harry Becker, a prominent medical care economist on the national scene, a revolution in health care has been generated by a convergence of social forces. He identifies the forces thusly:

1. An informed public which will demand quality.

2. Computer technology which is going to affect health policy because information regarding diagnosis and treatment will be recorded by computers and stored for scrutinizing quality of care. Quality of health care rendered will come under national evaluation for the first time in the history of the country.

3. Medical technology which provides devices which can restore, maintain, and probably produce life -- to say nothing of preventing illness.

4. Medical care costs which have become the fastest rising element in the cost of living index. Historically, cost of medical care was an extension of philanthropy. This is no longer true; cost has become prohibitive. Ergo, over the past 20 years there has developed what is known as the 'third-party payer", i.e., health insurance schemes and payments by Federal and local government and labor unions. When any social service is supported by tax money or through individual or group payments to insurance companies, those paying have a right and will demand some say in the distribution and quality of that service. Thus health is now believed to be a right. Health care has moved into the realm of the public domain and health personnel are public commodities.

5. A gap exists between what medical science knows, and what medical care is actually delivering at the present time. A great deal more is known about prevention and cure than is being done about it. This is always a problem in any scientifically advanced society, but an informed society will demand movement toward closure.

6. Finally, a changing political climate with an expanding attitude about what society can do for its members. /8

Added to those defined by Becker, might very well be another revolutionary ingredient: the now chronic and much-touted shortage of workers in hospitals and health agencies, which has given rise to the preparation of thousands of health workers under the Manpower Development Training Act and the Economic Opportunity Act. The content and context of the occupational group giving care to the ill has greatly changed, and will continue to be changed by the entry of greater and greater numbers of workers with short-term skill, training, or vocational education.

/8 Becker, Harry. Lectures Delivered at Teachers College, Columbia University, March 18 and 25, 1966.

Without a doubt, the foregoing are indeed the ingredients of a social revolution. For nursing, what is the answer? How are we going to meet the challenge of these social forces? For meet them we must, or stand the chance of possible extinction. Robert Doherty, with his gift for clarity provides a simple, yet complex answer:

> "The hope lies in education. It lies in the possibility that our oncoming generation will be given the opportunity to prepare themselves adequately for the responsibilities ahead of them. It lies in the possibility that those who are responsible in education will be disposed to readjust their thinking about objectives, and develop programs that will cultivate minds equal to the future -- education is not a static thing." /9

In an attempt to apply Doherty's thesis to the problems of nursing education in its attempts to grapple with the challenge of an ever-changing and dynamic society, I was immediately confronted with serious problems to which a group attempting to develop adaptable criteria must give its attention. In the past few years I've heard and read much about the role and function of the nurse, and how he/she should be prepared. I've learned that our educational products are confused about their role and function in the social context of health agencies.

I've further learned that as a group, nursing has done little in its research efforts to look at the organization and classification of knowledge which might be gleaned from the many facts at our disposal to explain the phenomenon of nursing. Such explanation might constitute a beginning body of nursing knowledge which could be taught to our beginning students, subjected to critical analysis by graduate students, and altered and/or extended by doctoral students.

In a recent, and I believe most important study, I learned that students of nursing in a sample of diploma schools and baccalaureate programs overwhelmingly loved patient care, regardless of type or complexity of diagnosis, the hour of the day or night, but did not seem to see any real significance to the academic portion of their program. /10 In still another study, I found that baccalaureate graduates did not perceive of themselves as being different from diploma graduates. They also felt that the academic portion of their program was so much "frills"; they could exercise no personal leadership in the practice situation and felt completely inadequate in handling the informal structure of the organization in which they were employed. /11

/9 Doherty, Robert. op. cit., p.2.

/10 Fox, David and Diamond, Lorraine K. Satisfying and Stressful Situation in Basic Programs in Nursing Education. New York Bureau of Publications, Teachers College, Columbia University, 1964.

/11 Simms, Laura L. The Hospital Staff Nurse Position as Viewed by Baccalaureate Graduates in Nursing. New York Hospital/ Cornell University School of Nursing, 1965.

Questions are constantly arising concerning what knowledge, skills, and competencies should be provided in a basic nursing program. Much energy is dissipated in trying to defend and/or preserve forms of nursing education which are thought to have stood us in good stead throughout the years. This brings to mind an advertisement I saw on the Broadway bus recently:

> When a circuit learns your job, what are you going to do?
> You won't get tomorrow's job with yesterday's skills.
> Train now for tomorrow's job.

Some nurse educators when questioned feel that they are left breathless educating for the here and now. Still, others can be heard to the effect that all nursing education must be geared toward th. future. When pressed this group has some difficulty in articulating what is meant precisely by the future. Who among us, in view of the social forces earlier described, would dare to predict? In regard to automatized hospitals, Sidney M. Jourard in The Transparent Self, projects a chilling, but not unrealistic picture:

> "Each patient lies in his own cubicle, and there is attached to him all kinds of wires connected to his brain, his muscles, his viscira. Every time these wires which are actually electronic pickups transmit signals to a computer indicating that a bladder is too full, a bowel stuffed, the patient hungry or in pain, before you could blink an eye, the computer sends signals to different kinds of apparatus which empty the bladder and bowels, fill the stomach, scratch the itch, massage the back, and so on. We could even mount each bed on a slowly moving belt. The patient gets in at one end, and four to six days later, his bed reaches the exit and the patient is healed." /12 - (We Hope!)

It is the contention here that nursing education must strike a balance between the changing present and an unknown future. Although Peter Weiss is definitely on the side of revolutionary changes, he is painfully aware of all the elements in the human situation. Jean Paul Marat says:

> "However hard we try to bring in the new, it comes into being only in the midst of clumsy deals. We're all so clogged with dead ideas passed from generation to generation, that even the best of us don't know the way out." /13

/12 Jourard, Sidney M. The Transparent Self. D. Van Nostrand Co., Inc. 1964

/13 Weiss, Peter. Marat/Sade, p.55, Pocket Books, New York, September 1966.

Why do I feel a delicate balance is necessary? Because where do practitioners of nursing practice - not in a vacuum. They must function within the structure of existing institutions providing health care. Speaking of dead ideas passed from generation to generation, what are the prevailing conditions in these agencies? What are they likely to be in the future? Remember Sidney Jourard's admonition. Let's briefly examine a specific health agency, the hospital, because that is where the bulk of nurse practitioners practice. This is changing with changing patterns of health care, but for the present, the hospital is the agency in which most students prepared in associate degree programs will be seeking employment. (If not a hospital, then some form of adjunct to it).

According to George Rosen, medical historian from Columbia University of Public Health and Administrative Medicine, hospitals have within his lifetime, moved from shelters for the sick-poor into complex social structures which engage in patient care, education for a variety of health workers, and research. He tells us that as hospitals have had to accommodate to more complex functions, additional personnel, facilities and equipment, their organization has grown increasingly complex and the whole operation more costly. Traditionally, the chief groups in hospitals were doctors and nurses, but now the complex therapeutic aspects of care combined with education and research, have brought to the hospital structure, a host of necessary adjunct services. So, at the present time he tells us in one of the greatest understatements of the Sixties: ". . . . . the organizational relationships within the hospital have been disturbed and have become unstable." /14 It can easily be predicted that the organizational structure of health agencies will become more unstable as the consumer demands a say in how hospitals will be managed, and as computerized technology becomes part and parcel of hospital life.

As a nurse educator my concern is this: What do the products of our education know about the changing organizational relationships in hospitals? Are they alert to how intimately they are affected by such changes? In what ways are they participating in these changes? Finally, what in their educational programs prepare them for participation in a complex and changing bureaucratic structure? Other than a brief flirtation with team nursing, what do they know of their role in patient care with an enlarging group of workers with shorter and/or longer preparation? What meaningful interdisciplinary experience do they have? What is the nature of their exposure to computer technology?

In looking at nursing programs there appears to be some evidence of preparation for the future (at least stated preparation.) The associate degree program purports to teach via the use of principles of practice which are applicable in a myriad of situations. The baccalaureate program, in addition to teaching principles of practice, provides exposure to other disciplines in the hope that the practitioner will utilize such knowledge in critically analyzing nursing problems. The success of such transfer at this point in our development is highly questionable, primarily because of the aforementioned lack of an ordered way of utilizing such knowledge in nursing practice. However, the fundamentals of critical analysis are taught.

/14 Rosen, George. "The Hospital: Historical Sociology." Eliot Friedson (ed.) The Hospital in Modern Society, p.31, The Free Press of Glencoe, MacMillan Co., London, 1963.

Where is the evidence of preparation for work as paid employees in a tight, unyielding social system that is a health agency today? A young associate degree graduate who completed her Bachelor's degree and is now proceeding on to the master's, told me last Tuesday that trying to work and maintain standards within"the system" of the hospital, was the most traumatizing experience she had ever sustained. She is not alone. At the present time, studies seem to point to the fact that nurses of all manner of preparation find themselves floundering and somewhat helpless in the face of a grinding hierarchial structure. Nurses are pressured on one side by a host of managerial duties or the "care function" of the hospital, as defined by Hans Mauksch. On the other side, they are junior engineers and should probably be licensed as such. On a third side, they are involved in the "cure" process, again, á la Mauksch, in direct-line responsibility to physicians.

They find themselves parceling out jobs to be done to an impressive variety of people, overseeing the completion of the jobs, placating the medical staff and anyone else who happens by on the medical team. The remainder of the time seems to be spent in "paper work." When talking about our present position in the social structure of hospitals, Hans Mauksch refers to us as ". . . . neutral processing agents." /15 The above in no way takes into consideration the inherent intradisciplinary stresses of the nursing team as presently organized, with auxiliaries of varying short-term preparation combined with two-year, three-year, and four-year graduates, none of whom seem to be really communicating with each other.

The question at this point would appear to be: Is it a lack of willingness or commitment on the part of our graduates to practice in the manner of their preparation? Or, is the problem a lack of sophistication concerning the nature and complexity of the beast wherein they will be practicing? In looking at the magnitude of the problems, one wonders what, if anything, can be done? Should nurse educators, students, and service people alike throw up their hands in desperation and continue on in the way they have? It's easier! Or, should nursing education take a look at what is available to it from completed studies in the social sciences and begin to look at what kinds of learning experiences could be structured for the student to assist him/her in obtaining a grasp of the reality world -- one which is in a constant state of change? Certainly there are available data.

For example, Rose Laub Coser, a prominent sociologist, studying a group of nurses and doctors in a rehabilitation center in California, where there were many health workers employed in addition to nurses and doctors, found that when opportunity was provided by the social structure for conflicts to be freely expressed in a legitimate way, such confrontation gave a professional definition to personal involvement. She found that when antagonisms were recognized and given expression, instead of being a sign of social disorganization, they were expressions of, as well as a means for, social control among various professional, sub-professional groups, and individuals/16 Is there anything nursing educators could use from these findings? Coser's study is but one among many.

/15 Mauksch, Hans. O. "The Organizational Context of Nursing Practice", p.122. Fred Davis' The Nursing Profession. John Wiley & Sons, Inc.

/16 Coser, Rose Laub. "Alienation and the Social Structure." The Hospital in Modern Society, Eliot Friedson (ed.), The Free Press of Glencoe, MacMillan Co., London, 1963.

I know what educators are going to say here. What should be the nature of the responsibility of the employing agency with regard to educating employed professionals and sub-professionals in the manipulation of the social system? It's their responsibility - not ours! This sort of circular argument goes nowhere and serves no purpose. My answer to this is: Can nursing educators through clinical instruction and through participation in some way in nursing service, exert influence within health agencies to assist in the development of the environment where our educational products can practice? Remember, I'm just asking questions.

Again let me say, that I believe that nursing education must strike a delicate balance between preparation for the changing realities of the present and the unknowns of the future. One might ask, is it possible to produce such a product; one who, when provided with knowledge, will be willing to grapple with the harsh realities of bureaucratic life? Bennis, Benne, and Chin, provide what seems to be a useful answer to that question.

> "The answer to the question depends in part upon the type of 'realism' men embrace in confronting their condition. We are voting here for the brand of 'realism' that accepts the uncertainties and ambivalences of the contemporary situation while trying to maximize the hopes inherent in it." /17

In speaking of complex social structures, Solon Kimball and James McClellan tell us that, although unyielding and difficult, the bureaucracy is not totally immutable:

> ". . . . part of the price of being an American is 'being' an organization man. . . .the important question is not whether, but what kind of organization man. One who simply occupies the niche on an organization chart? Or one who strives to extend the bounds of his own freedom to act with initiative and resourcefulness at whatever level he finds himself." /18

I cannot close without a word or two about the nature of the student group we are now and will be seeing in higher education, whom I believe are quite capable of extending their bounds if the educational environment provides them with freedom combined with guidelines for action to do so. In talking to a student group in Berkeley, in October, 1966, Senator Robert Kennedy of New York, seemed to capture the mood of this generation of students when he said: "For it is not enough to allow dissent, we must demand it, for there is much to dissent from." Stephen Schneck, himself a student, in a recent article in Ramparts would appear to support the Senator on "dissenting from." In an open letter to the Russian poet, Yevtushenko, he says:

> "The simple fact is, in America today, our fathers do not support us. With a few exceptions they are entirely out of touch with our reality. I am not referring to the normal gulf between every generation, but a rift far deeper, far more significant, and apparently irreconcilable." /19

/17 Bennis, Warren G., Benne, Kenneth D., Chin, Robert. The Planning of New New York, p.187. Holt, Rinehart and Winston, 1961.

/18 Kimball, Solon T., McClellan, James E. Education and the New America, p.315 Random House, New York, 1962.

/19 Schneck, Stephen. "Dear Yevgeny Aleksandrovich," p.23. Ramparts February 1967.

To give you an additional idea about the thinking going on in university circles, Otto Butz, author of The Unsilent Generation, edited a series of ten essays written by students at San Francisco State College. The essays are now published under the title: To Make a Difference, and the thematic line running through these essays should be of interest to educators: Opposition to the war in Vietnam, alienation from the "system which binds America," hatred of labels, strong belief in the individual, personal involvement in everything, and, since God seems to be dead to them, a need for restoration of man's faith in man. These essays ask such questions as:

> "But can I tell my children that the killers of Viola Luizzo, Michael Schwerner, or Reverend James Reeb, never came to justice because, under Federal law it did not become a violation of a person's civil rights to murder him until 1966?" /20

It is the search for answers to such questions that seems to provide the real motivation for young Americans. As educators it is our responsibility to assist them in the search for these answers. There is also a different breed of cat in health science education. Let me refer you to the Student Health Organization founded in 1964 in Los Angeles by a group of students at the University of Southern California Medical School. This group conceived a change in the nature of their curriculum which dealt with the concept of biosocial medicine and its dynamic role in society. The Los Angeles group first devised a forum for themselves into which they brought a wide range of speakers from the paramedical health field. Secondly, they became involved in social action projects (public health and community organization) in the Central Valley of California, in Los Angeles, Mississippi, and Alabama. From this there has arisen a student movement in the health sciences around the country.

Following the example of Los Angeles, organizations have been formed in Chicago, Boston, San Francisco, and now New York. Membership includes students of medicine, nursing, and dentistry. About three weeks ago a meeting was held by the student group from Albert Einstein College of Medicine, Yeshiva University in New York City, to which representatives from 50 medical schools and 30 nursing schools came. This group discussed in most exciting and sophisticated terms, ways in which students in the health sciences can play an active and productive role in community health services, and in what ways they could influence curriculum change. About this student movement, Doctor Howard A. Rusk has this to say:

> "The student health movement is an example of the kind of 'campus revolt' held for the participants, their schools, and the communities. It demonstrates an awareness and seeking out of essential responsibility. . . ." /21

/20 Butz, Otto (ed.) To Make a Difference. Harper & Row, New York 1967.
/21 Rusk, Howard A., M.D. "Ferment on Campus." The New York Times, February 12, 1967.

Thus, you have in capsule form the nature of coming generations of doctors, nurses, and other members of the health sciences. Students are on the move in this country, and it delights my soul to know that our students are "involved." Should it bode ill for us as educators, or will we pull ourselves up by our hair and experiment with new ways to involve them in the teaching-learning process? Teaching can be likened to a therapeutic relationship -- the teacher gives, the student gives and both gain in the process. It is my belief that what young American students want most to do, is to "make a difference." Our charge is to see that they will be given the opportunity to <u>try</u> to do so.

Let me close with a quotation attributed to Marshall McLuhan, which I think has significance for us in our attempts to grapple with the problem of changing educational patterns to meet a changing social order as far as health care is concerned, as well as a changing student complement:

> "Most people are alive in an earlier time, but you must be alive in your own time. The artist is the man in any field -- scientific or humanistic -- who grasps the implication of his action and of new knowledge in his own time. He is the man of integral awareness." <u>/22</u>

<u>/22</u> McLuhan, Marshall. As quoted in Richard Kostelanetz' "<u>Understanding McLuhan</u>", (In Part), p.50. <u>New York Times Magazine</u>. January 29, 1967.

PROBLEMS AND ISSUES IN ACCREDITATION BY SPECIALIZED AGENCIES OF VOCATIONAL-TECHNICAL CURRICULA IN POST-SECONDARY INSTITUTIONS

Lloyd E. Messersmith, Me.D

I feel somewhat akin to Tommy Jones' Jug Band following the Jefferson airplane. The presentation preceding this was, I think, a very volatile and dynamic one. I must say that I followed most of it with only some awareness.

I think that the dynamics of society as we see it at this point, are in such a gross state of flux that some of the things that we're doing probably do not make sense. I do not mean this as an introduction to a discussion on accreditation, but you can establish any lineage there that you feel is appropriate.

I would like to thank you for inviting me here today to discuss with you an area of concern which I'm sure you and people concerned with junior colleges and junior college problems have discussed many times in many situations. I am referring, of course, to accreditation, a special type of accreditation which, although separate from that known as regional, or regional accreditation, is nevertheless of the same stripe and structure, that is to say, voluntary.

The United States, when it sought to qualify those things with which the Federal government should be concerned, bypassed education for various reasons. A variety of authentic techniques, as you know, have been devised to do that which over the years, various people and various groups have felt needed to be done. As higher education began to become a vital force in the United States in the late eighteen hundreds, it soon became apparent that some mechanism for articulation was needed to facilitate the flow of students from the common schools to the colleges. As a result of this concern, the first of six regional associations was formed in the New England area in 1885. The remaining five regions which followed, performed an articulation rather than an accreditation function for many years.

It was not until 1922 that the North Central Region began to formally accredit institutions of higher learning. Shortly after the turn of the century, contrary to the regional tone, it became obvious that, in addition to the problem of articulation, several areas of the higher education community or higher education family were, indeed, in need of review. The area which is credited with beginning to do something about this problem, of course, is medicine. Medical schools were growing like Topsy and the standards of training were atrocious. The concern on the part of the schools themselves and the various professional alliances led to the publishing in 1910 of the now famous Flexner Report. This report and its immediate acceptance by the profession and by the universities, put into motion the greatest move toward professional upgrading that this country or any country in the world has ever seen in the area of education.

This report set the stage for that other arm of voluntary accreditation known as professional or specialized accreditation. It is this accreditation style which brings you to listen to my presentation today, and as a consequence, I hope gives me a vehicle to reach out to you about this rather important topic.

The Center for Research and Development in Higher Education at the University of California at Berkeley, is presently involved in a study which is, in essence, attempting to establish some of the parameters surrounding the problem of specialized accreditation activity, especially as it relates to the vocational technical programs in the post-high school, pre-baccalaureate arena. This means, in essence, that we are attempting to have a look at the role which professional or specialized accreditation is playing at the present time at the two-year college and technical institute level. We see the study as one of attempting to define some of the problems and issues, and, as a consequence of this definition, to make an effort toward outlining some areas of future investigation.

The two-year college is a relative newcomer to higher education. I'm sure there are some in the room -- if not in the room, at least in the city -- who would be willing to debate that the two-year college still might not be a part of higher education, but this is at this point merely academic. Because of their strong lineage to the public school sector, the junior college did not enter into the accreditation controversy in the early years. As the two-year college has attempted, as a part of higher education, to become accepted, its problems, including the problem of accreditation, have become the problems of the two-year college. The technical institute and the area vocational institute have an even greater problem. In addition, in many instances they are not eligible for membership in the regional association, so the vehicle for accreditation or qualification of their product is even more nebulous. Access for them at this point to any method of quality control is only through the professional associations.

The concern which led to this project I am here to discuss did not develop overnight. You might be interested in some of the events which led to this particular area of interest in education research. In 1961, the American Association of Junior Colleges requested that the National Commission on Accrediting study the extent of, and the factors related to, accreditation of community colleges by specialized agencies. In 1962, the American Vocational Association sponsored a meeting of representatives of many occupational fields to discuss the possibility of an accrediting agency for all vocational-technical education at the post-high school level. In addition, they requested that the American Council of Education study the factors bearing on the development of an approach to accreditation for all vocational-technical education, post-high school or secondary level.

Of course, the impact of the Nurse Training Act needs no amplification for this group, but it probably has focussed more attention on the problem of accreditation than any other single event, and I'm sorry to say this.

It was with background of concern that the Center was approached by several organizations and asked to entertain the possibility of undertaking a research effort, this in the general area of professional accreditation and its relationship to the pre-baccalaureate institution. The research project was designed as one attempting to explore some of the problems and issues and at the same time to establish a frame of reference for investigation, as I mentioned earlier. The project visualized as exploratory, has attempted to establish a gross sociological frame of reference which will allow for some assumptions to be made about the research direction in this and other areas, and hopefully, to give some relief to the anxiety which now prevails in the minds of many about the relationship which does or should exist in this total area.

The project does not negate the role of nor the prcblems associated with regional accreditation, since both the philosophy and mechanics of this accreditation style are of great concern to the two-year college and to the technical institute. Of more immediate concern at this time, however, is the relationship of the institution to that other nongovernmental accrediting force, the professional accrediting agency. Specialized accreditation has developed outside of the institution as an outgrowth of the desire on the part of professional association to participate in quality control. I think this is one of the biggest problems in the area of accreditation, and one that you people should understand.

When you talk about voluntary accreditation, you talk about two basic styles. They are grossly different. The regional accreditation style is intrinsic, is within the institution made up of institutional parts, looking at the institution as a concept. Professional accreditation or specialized accreditation is an accreditation style growing out of a professional association and growing out of their concern to participate in quality control. The professional accrediting body and the role that it plays in the community college is, of course, a matter of much discussion. The junior college establishment is, in effect, asking that the role of the professional agency be reduced, and that the accreditation function be performed by the regional accrediting association and only by that association.

As the two-year colleges continue to grow, especially in the area of vocational-technical education, the two-year college presently is saying, "look, if something isn't done we're going to reach the point in the very near future where we're going to be visited by 15 to 25 different associations seeking to accredit our programs. I do not have the manpower, the time, the energy or the money to support this kind of an effort. Something must be done." We are, of course, concerned with the product, especially that product of the vocational-technical program which finds an immediate employment arena. The need to qualify this product is, of course, rather great.

It is with this set, then, that the present design was constructed and is concerned. As the technological revolution continues, the community college will be called upon to assume an even larger role in training the pre-professional work force. I think this was eloquently pointed out for you earlier in the afternoon. As these workers gain stature in the vocational arena and band together for their mutual benefit, there is reason to believe that they will follow closely the pattern of other work groups. One can predict an increased concern on the part of national associations in regard to quality control within the institution, and at the same time, an increase in requests to assist the institution in establishing standards of training.

All of these factors form a composite which creates a legitimate focus for concern. What is the relationship of the activity of these organizations and accrediting agencies, as it is perceived by the institution? Is this relationship in need of review or modification? If so, what positive changes can be effected to support the institution while allowing the professional organization a legitimacy of its own? The Center proposed to survey, and is surveying and assessing, some of the basic issues which relate to the general problem of specialized accreditation in the institution. These issues are reflected in such questions as those asked above and some of the following. For instance, to what extent is accreditation by specialized agency an issue in the community college? What seems to be the common element of the problem? How is it related to accreditation of two-year institutions by regional accrediting associations? How is it related to the activities and responsibilities of the National Commission on Accrediting, and should it be?

To be specific, it was proposed that answers should be sought to the following questions: (1) To what extent are specialized agencies now approving curricula in two-year colleges? (2) Is there an effort on the part of these institutions and agencies to increase effort to accredit these curricula? What is the experience of these colleges with regard to this general practice? Is there evidence that specialized accreditation either inhibits or promotes the development of occupational programs? We're getting some interesting answers. What is the impact of specialized accreditation on the general education content of vocational or semiprofessional curricula? I think this relates to some of the conversation held a little earlier, in which we have great concern as we talk with managers and, I'm sure, as you talk with hospital administrators, those of you who are seeking to fill this fantastic manpower void. We get two stories. As we're talking in an academic sense about training, employers say to us -- not as much in the health field as much as in some of the industrial fields -- "You give us an individual who can think, who can articulate, who can assume some responsibility for the ongoing needs of the organization, and we will see that the necessary day to day skills, the rudiments are given." Yet this very individual, when he comes to the campus to seek students, takes that student which is the most skill-oriented, and leaves that which is more oriented to the things which he told you he was originally interested in pursuing. So we have some educating to do.

Does accreditation by specialized agencies tend to make students more employable? This is an old dodge, and I'm sure some of you at some time or other -- I know I have -- have been guilty of using it, and it "ain't" so. At least industry tells us that it's not so.

Are professional organizations interested only in high-level or semiprofessional and technical programs, or is there a tendency for them to extend their interest to the accreditation of lower-level courses in the trades, and to the preparation of skilled workers of various kinds? In other words, is the junior college president who has articulated his position telling you "where it is?" Is he telling you something that we haven't accepted? We don't think so, but maybe he is.

To what extent are regional accrediting associations assessing vocational programs in their evaluation of the total institution? What are the criteria used by these regional associations in evaluating two-year colleges and in evaluating occupational programs within the college? In other words, if you are presently employed in a junior college and your president says to you, "We feel that regional accreditation is sufficient," is it sufficient in its present form? We don't think it is.

(3) To what extent do the activities of the National Commission on accreditation have relevance to the general problem? In addition to this involvement, what relationship should exist between the specialized agencies and the institution? And what is the relationship between specialized accreditation and licensure? As an outsider this is of concern to me. I'm sorry, but some of you who represent state boards who are here, maybe afterwards we can have a discussion about this. I'm going to talk about this a little bit later, but for an outside observer who is trying to objectively qualify a position, I find that I am subjected to some of the greatest subjective thinking I have ever experienced.

Is there legislation which makes accreditation mandatory prior to participation in funding of various kinds? If this is necessary, what is the magnitude of it and what is its direction?

These are the kinds of questions to which we are attempting to seek answers. A variety of activities and procedures have been employed to attempt an assessment to the above questions. Some of these are as follows: an analysis of the most relevent Federal and State laws pertaining to vocational education and the findings in support thereof; a study by the use of questionnaire and interview in a sample of junior colleges known to have experienced specialized accreditation, and a sample of junior colleges selected at random without regard to specialized accreditation; interviews with representatives of various professional agencies involved with specialized accreditation, and, of course, the collection and analysis of materials from regional associations; and interviews with the individuals in each of the six regional associations. You might be interested in knowing that the National Commission on Accrediting at the present time authorizes accreditation activity on the part of 28 organizations. We took from this list the 24 which seemed most appropriate to be operating at the pre-baccalaureate level. For instance, we saw no reason to assess law, and a couple of the others. We're finding some very interesting things as we talk with these people.

The study was funded late in the fall of 1966, and we began officially in October of that year. At the present time, to bring you a status report, we have completed the literature search relating to professional accreditation, which is interesting in itself. We have recently completed an initial survey of all of the professional accrediting agencies which are recognized by the National Commission and which have indicated an interest in accrediting programs at the two-year college level. In addition, we have been in rather constant contact with the primary professional groups concerned with the problem. I'm sure that, for instance, Gerry Griffin is getting tired of my writing and calling the New York Office for supplementary information about the League. We have recently drawn a random sample of 53 institutes, and have made initial contact with them asking for their support. This is supplemented with a subjective sample of technical institutes which are concerned with the general problem.

The questionnaire phase of the study has been pretested and is now in the process of going to the field for the final survey phase. We are preparing for one last series of interviews with members of the professional accrediting agencies and the regional associations, as well as a selected random sample of site visits to two-year colleges.

We would anticipate that we'll be in a position to talk intelligently about all our findings by the first of May, and we hope to have published a major report prior to the end of the fiscal year. It's very difficult to discuss partial findings at this point, because we are, by and large, talking about reactions to situations as much as reactions concerning a problem at hand. We're in a position, however, to make some assumptions about the nature of the problem.

We know, for instance, that the concern on the part of the associations is not as gross as we had once expected, and that, in fact, concern about accrediting pre-baccalaureate programs is limited to a small number of professional associations and their companion accrediting agencies, i.e., the allied health professions and engineering technology.

We are also finding that pressure from within the institution is not as great in behalf of professional accreditation as we had once assumed. We would be comfortable in saying that the pressure for professional accreditation at the two-year college level is not nearly as gross as it is at the senior college level, for a variety of reasons, some of which I would like to explore with you in a moment.

In addition to the foregoing, we have the feeling that the six regional associations would be most cooperative in modifying their procedures to accommodate some of the things which we with the study and others who are investigating the problem feel need to be done.

It is this kind of a reaction that we are beginning to put together, and I might state that we feel at this time rather comfortable with the progress that has been made.

On one of the areas we have been most concerned with and about, is the relationship which should exist between an organization which seeks to undertake a training sequence, i.e., the junior college, and an organization composed of the products of that training, i.e., the National League for Nursing, American Nurses' Association, Engineering Council for Professional Development, the National Association of Landscape Architects, or what have you. The desire of organizations to participate in quality control is not new. As organizations grow, they become concerned about standards of training for their own membership, and seek methods of enforcing and quantifying these standards. As Seldon has said -- and pardon the paraphrase -- professional accreditation is intimately related to the desire on the part of the individuals to attain a high vocational and monetary standard.

I feel it is important for people concerned with accreditation to be able to differentiate the intrinsic from the extrinsic needs, perhaps as we see it, and be able to separate the real from the perceived. I do not mean to deny the value of the accreditation function on the part of the associations. I only ask that an effort be made to understand it. We're doing a little think piece, separate from the study, in which we're seeking answers in a sociological context about the ability of an institution, (assuming an organizational structure can modify itself to become an institution,) we're doing a think piece on what kind of force has to be applied against this organization or instituion in order for it to modify its behavior, and under what conditions this is healthy and under what conditions it is not so healthy. We're specifically looking at the ability of the institution to tolerate what we call external press or an external force as it relates to the maintenance of its own integrity. This presumes on the part of an organization that it (1) has institutionalized itself and (2) in the institutional process has developed an integrity. Assuming that these two conditions are met, what kind of force is brought to bear on it to modify its behavior, and by what kind of organization? We have identified some of these organizational styles -- the Federal Government, for instance, state governments, legislatures, community action groups and professional associations.

We feel, then, any institution is susceptible. It is especially susceptible to pressure when it has what Burton Clark calls "precarious value." I think all of those of you here who have fought the battle of associate degree programs, (and I came from an institution which went through the battle of trying to establish an associate degree program,) vocational programs in general, new programs in particular, are indeed precarious values. But what you find in your ongoing battle -- and I know it's giving away the essence of the think piece -- but what you find, basically, is the junior college which, as a force, is attempting to legitimize its own behavior and institutionalize its own behavior, is at the same time being confronted by a series of pressures which are in essence attempting to do exactly the same thing.

I think it's for you people to differentiate between that part of accreditation activity which is for health care and for patient care and that which is for the nurse or for the medical technician. I think you have to make this differentiation.

It is interesting to those of us who are evaluating this in what is, hopefully, an objective manner, to see what seems to me and to other laymen to be an obvious discrepancy, that is to say, those associations most concerned with accreditation activity on the part of their associations are the very groups which have access to their skill areas limited by licensure. It does not satisfy me, as one interested in research, to say that licensure gives a legitimate basis or a behavior to the individual and accreditation to the program. This doesn't do it for me, because if service is to be performed by members who are registered, licensed or certificated, then this is control. If it is not accreditation then it is licensure. If one of the two works, you don't need the other, and I can see, at this point, no rational basis for the two.

We have many concerns about the association accrediting bodies and the impact they have, or could have, on the two-year college. As institutionalization takes place we immediately get into the concept of integrity and the ability to withstand pressures. Does the accrediting agency act as a national agent which does or could cause the institution to deviate from its commitment to accommodate a program? What about the specialized accreditation as a stultifying force in curriculum innovation and change? This is a gross area, as we look at it. I have read some accreditation reports, and I have had some interesting reactions, because the very things that I was listening to half an hour ago are some of the very reasons why at least some of the institutions have been denied accreditation. Their curriculum did not meet what was to the evaluators a meaningful and legitimate educational endeavor, and I don't see how we can train for the new technology when we beat the ploughshares out with a hammer. It can't be done.

One of the other things that bothers us, as people involved in trying to untangle some of this, is that each association which is recognized by the National Commission to accredit programs says it fills a social need. I buy it, and I think it sounds very nice, and I think that if you quantify social need as protection of the health and welfare of the public, I think this is fine. but to me this doesn't answer the question. I think we have to rethink the whole concept of social need as a criterion for recognition by various groups.

Once again, I would like to emphasize that the project was undertaken as an exploratory to attempt some identification of the parameters of the general problem. We feel that the project will be a success in this regard. We're very hopeful that we will be in a position to make some meaningful suggestions for further study, and in addition, we would hope that a tenative guideline for accreditation activity at this level of educational opportunity will be developed for review by interested parties.

We are convinced of several things: (1) That there is room for both voluntary accreditation styles; (2) We are convinced that both voluntary accreditation styles are in need of some serious review and, in some cases, modification. We are also convinced that everyone who has undertaken to participate with us in this endeavor has done so in the good spirit of academic investigation, and we're very pleased to have this kind of cooperation among all of the member agencies and the institutions at large.

Thank you for allowing me the opportunity to be with you today. I hope the information that we have to share now and the information we will have in the future, is of some value to you in your deliberations.

TEACHER PREPARATION

Mildred L. Montag, Ed.D., R.N.

The need for faculty members for all kinds of educational programs is a well documented fact. Educational programs in nursing are no exception. Another point of agreement, I'm sure, is that a well-qualified faculty is important, and the quality of the program is directly related to the quality of the faculty. Here the agreement ends. This is indeed an old argument, as to whether the teacher should know what to teach, or how to teach.

To me, it's a specious argument. Surely we are agreed that nursing programs need faculty, and quality faculty. How they should be prepared is what we're going to discuss. What follows, then, in my comments, is what I believe about faculty preparation. If there is some overlap and some repetition between what you may or may not have read in a recent "Nursing Outlook", this is not entirely coincidental.

I shall approach what I'm about to say in three parts: what I believe constitutes faculty preparation; how preparation for associate degree programs compares or differs, and then some of the problems we face in teacher preparation. First of all, what constitutes preparation?

The first requisite for any preparation of teaching is command of subject matter or content area. For us in nursing this means nursing. And I mean to include in my statement "command of the subject matter or content area" skill in the practice of nursing. How can a teacher teach the practice of nursing unless she herself is able to practice nursing? What is meant by the term "expert practitioner" is not always clear, and it obviously doesn't mean the same thing to everyone. At the present time it is almost a fetish or a cliche, with very little meaning attached to the term. When I say "command of the subject matter" I mean "command of the subject matter", which includes the practice of nursing. I don't think one has to do it eight hours a week in order to accomplish this goal.

Within the past week I've heard that there's been an almost complete reversal in the master's programs in the United States, that is, a change from preparing teachers or administrators or whatever you might wish to call the functional area, to preparing the clinical specialist, whatever that is. The person making the statement quickly added that this was a distinctly favorable movement, and as quickly said that they would make better teachers, that they would be better prepared for teaching because they were "clinical specialists".

It's the last statement which is disturbing to me. To prepare a clinical specialist, which no one has yet defined, and declare her to be a teacher, is puzzling. Is this another evidence of the bandwagon technique of building curricula for master's programs. If one does it everybody has to do it. The importance of being well grounded in the areas to be taught cannot be over-emphasized, but it should be remembered that this is but a beginning of knowledge, to be added to and strengthened as the days, months and years go on. No master's program, no doctoral program, no program prepares for all time.

A second requisite might be called professional education knowledge. In this area I would include educational psychology, knowledge about the learner and how he behaves, teaching methodology, principles of curriculum development, knowledge of the nature of education and institutions that are developed to achieve the purposes of education. Practice in teaching, by whatever term that is called, should also be included.

A third requisite, it seems to me, is a continuation of the general education begun in baccalaureate programs. Studies have shown that the teachers of nursing rate their preparation in this respect inadequate. The enrichment of the personal life of any individual is highly desirable. For those whose mission is to guide youth it becomes imperative.

In quantitative terms, what does this mean? Well, it can scarcely mean less than a master's degree, for specialized preparation at the baccalaureate level is a thing of the past. Increasingly it is going to demand more than that, that is, more than master's preparation. Doctoral preparation for college faculty appointments is becoming essential. The failure of nurse educators to recognize this and to cope with the problem has led to two different practices, neither desirable. On the one hand, nursing programs have a disproportionate number of nurses or persons at the instructor or assistant professor level, because of the inability of the individuals to meet the standards set for the higher ranks, and by virtue of this they are ineligible for many of the benefits of faculty appointment, including such things as sabbaticals, tenure and the like.

Or, on the other hand, faculty members hold academic rank for which their preparation and their qualifications do not entitle them. In either event, the situation is difficult. It is obvious, however, that we need more nurses preparing for and receiving the doctoral degree. In this area I am including the associate degree programs.

Then how does preparation compare or differ in the associate degree program? There are obviously more similarities than differences in the preparation of teachers, no matter what the subject matter or the level of the institution for which they are preparing. Just as obviously, teachers in associate degree nursing programs need as much and as good preparation as any other teacher. First I would like to dispel some impressions about teaching in associate degree programs and the preparation that the teachers need.

There are those who think that the teacher needs less command of the content area, for they will be teaching less content, both in amount and in kind. I would suggest that this teacher, that is, the one in the associate degree program, needs as much or more, in order to select that which is appropriate for the associate degree level and that which is pertinent for nursing technicians.

Schlotfeldt, in her article in "Nursing Outlook", suggests that, and I quote, "Some," that is, teachers in associate degree programs, "will have completed graduate preparation at the doctoral or master's level. Others would be experienced generalists." She describes the graduate of the baccalaureate, that is, the professional program, as a generalist, prepared to practice in a variety of settings. This person, she suggests, will be the teacher, or at least among the teachers, in the associate degree program. This person would not meet my criteria, or any of my criteria, for teaching in the associate degree program.

While community junior colleges tend to be quite specific about the kind and amount of academic preparation required for those who teach in the academic or general area, they are more lenient in the requirements for those teaching in what are commonly called the occupational or technical areas. In the latter they are inclined to place much more emphasis on experience and less on formal education. One college administrator reported at a conference I attended in October that in one of the new health-related occupational curricula in his institution he had employed a Navy corpsman who had been a technician for 20 years, and he was responsible for that particular program in his institution. If one interprets teaching as the telling of the student how to do something in the manner in which the practitioner has done it for 20 years, then this person might suffice. This is hardly the person that Miss Fahy was describing as necessary for the world of the future, however.

This definition of teaching is not one to which I would subscribe. It is not infrequently necessary, then, to explain the need for academically qualified instructors for the nursing programs to the college administration, for they are inclined to use this kind of statement for the nurse faculty, that they need not have as much academic preparation as in the academic areas. In short, the need for excellent teachers in the associate degree nursing programs needs no defense. Their preparation may be slightly different, but no less good. Gardner reminds us, in his book on Excellence, that there are many kinds of excellence, and this is one of the "absurdly obvious truths of which we must constantly remind ourselves," and he goes on to say, "But excellence implies more than competence. It implies a striving for the highest standard in every phase of life. We need individual excellence in all its forms, in every kind of creative endeavor, in political life, in education, in industry — in short, universally."

It should, then, come as no surprise that I believe the preparation of teachers for the associate degree programs differs somewhat from the preparation of other programs. Here are some of the ways in which I see them differing. First, in the area of subject matter, since the associate degree programs generally, although not universally, follow the broad

field approach to curriculum planning, the teacher needs broader preparation in the areas to be taught. A specialist in cardiovascular nursing would find her preparation for the associate degree program inadequate, and that is what the clinical specialist would be, if I understand what is meant by the clinical specialist, and I make no claim to understand it. The teacher would need far broader preparation in the area of physical illness, certainly, and probably also a firm grounding in the area of mental illness, for they are not unrelated. Sheer economic necessity would force the college to require teaching in a broader area than, for example, cardiovascular nursing.

More important, however, is the fact that this preparation simply doesn't fit the associate degree nursing curriculum. Graduate programs, as well as accrediting groups, need to define differently what constitutes preparation of a teacher in the content area for the associate degree program. Should she be a specialist in generalization, that is, in the field of nursing?

Second, in the professional education area certain differences are obvious. Perhaps the most obvious is the understanding and being able to cope with the heterogeneity of the student body. Associate degree programs continue to attract a wider age range than is commonly found in other nursing programs. The range of abilities among the students is also wider than found in other kinds of programs. Understanding the older student, and how to deal with those of different abilities, is important.

In the area of the new technologies there is a need for a much wider preparation, much better preparation, than is now given, I think, in any program. Certainly we can no longer continue to talk about one teacher to six students if we're going to ever cope with the problems that we have. The newer technologies, if we're going to move into the twentieth century, had better be known by the associate degree faculty members.

It's obvious that the community junior college is a different institution. Whether you consider it unique or not, I think all would accept the differences. There are those who argue that it is not unique, but I'm sure we would say that it's different. Some introduction to the philosophy and programs in the community junior college will help the new instructor find her place in the whole enterprise.

The field experiences, that is, practice teaching, should be in an associate degree nursing program. An opportunity to consider the philosophy, objectives and operation of the associate degree nursing curriculum is important.

There are, then, in the professional education area, significant differences.

Thus far, we've been talking about preparation of the new instructor, one who has indicated the goal of teaching in the associate degree program. For this instructor the program can be different from the

beginning. What about the instructor who changes goals? It's desirable that she have some orientation to the associate degree program. Workshops, or a return to the university for additional study specifically related to the associate degree nursing programs may suffice for this instructor. These are important for the person who has been in a diploma program or, if you will, a baccalaureate program who moves into the associate degree program. Let me hasten to say, however, there is no shortcut to good preparation. What might be expedient, and what we might do in short-term ways, might well prove to be short-changing the instructor and the program itself. For some time to come, however, most instructors in the associate degree programs will be prepared at the master's level, and many of them will not have had specific preparation in the associate degree curriculum. However, whatever one says about it, it should be sound preparation.

There are a number of problems facing those who need an adequate supply of teachers, and those who prepare such teachers: in other words, the graduate programs. Until such problems are recognized and some measures taken to solve them, the possibilities of associate degree nursing programs graduating either the quantity or the quality of nursing technicians is greatly limited. It is perhaps only wishful thinking to believe that we will ever have the right number of the right kind of teachers, but it is imperative for us to at least aim in that direction. These are some of the problems, as I see them.

First of all, the recruitment of potential teachers to graduate programs. This problem is increased by the fact that baccalaureate programs from which graduate students must come are graduateing too few each year. I wonder if you realize that the average number graduating from baccalaureate programs, per program each year, is 25. And this number has not changed materially in the last few years. This throws some responsibility for the teacher shortage directly upon the baccalaureate program, and I'm talking here about generic programs. The backlog of potential graduate students has disappeared. We had a substantial number at the beginning of the traineeship program, but with the continuation of that program the great backlog has disappeared. Last year in the State of New York -- and I think I'm not exaggerating when I say two of the largest programs in the United States are located in New York City -- we graduated only 212 with master's degrees, and many of these people were not going to remain in that particular state. This was a decline, by the way in graduate degrees, master's degrees, offered last year over the year preceding.

It's interesting to note in this connection, that is, the shortage of graduates with baccalaureate degrees from which we must attract graduate students, that in the Simms study most of the graduates of baccalaureate programs in that study indicated teaching as an ultimate goal. What are we doing to interest young graduates of baccalaureate programs in preparing for teaching? More specifically, the recruitment problem is increased for the associate degree program by the commonly felt, but not necessarily overtly expressed, idea that there is somehow more prestige involved in teaching in a baccalaureate program than in an associate degree program. And so, in the institution from which I come, we have

considerably more preparing for the baccalaureate, contrary to popular opinion, than we have for associate degree programs. There are probably four, five or six times as many people preparing for baccalaureate programs as for associate degree programs. This, incidentally, is not peculiar to the teachers of nursing. There is many a community college instructor, and in some instances entire community colleges, trying their level best to make the course they teach or the college itself into a duplicate of the traditional four-year college. This appears to me to be particularly unfortunate, because again I'm not speaking of not only the nursing problem but of the generalized college problem. By sheer quantitative measures the need for instructors in associate degree programs is today, and will continue to be, much greater than for baccalaureate programs. So the opportunities, from a sheer numerical point of view, are much greater in the associate degree programs. The remuneration for teachers in the associate degree programs is fully as good and sometimes better than in baccalaureate programs.

Another aspect of the recruitment problem is what might be identified as lack of acceptance, in spite of what we see here, of the associate degree program, and hence a rejection of the idea of preparing to work in one. One has only to note recent events, and I go back no farther than two weeks, to realize that the position paper of the ANA, though officially adopted in policy, does not have the full support of those in nursing education, and this complicates, I think, the recruitment problem.

A second problem is the lack of availability of programs preparing teachers for associate degree programs. This has been to a degree alleviated by recent grants to a few universities to develop such programs. But by attempting to solve one problem, to make these programs more available, another problem, already known but now increased, is one of shortage of nurse educators qualified to prepare the teachers of associate degree programs. We need many more educators eligible for appointment to graduate faculties, and a doctoral degree is the usual requisite. Again exceptions are sometimes made where other kinds of qualifications are accepted. Nevertheless, we cannot increase the number or the size of the programs preparing teachers until we have people qualified to teach teachers. If you think the problem is great at the baccalaureate and associate degree level, you should face it at the graduate level. I know one junior college which anticipates, and it is in for a rude awakening, only those who hold doctoral degrees. I spent the afternoon trying to convince the dean that the 300 doctoral degree holders there were, were already placed. He has not yet accepted that fact, I think.

A third problem is, that there is some question as to whether or not the programs preparing teachers for associate degree programs are in fact offering what is most needed by potential teachers. I refer here to the content area in particular, although not necessarily exclusively, the clinical area which the teacher needs in her preparation. Most programs --and, I hasten to add, my own -- include courses in the traditional pattern, the big five: medicine, surgery, maternity, pediatrics and psychiatry. Since this kind of specialization leads to this kind of

pattern in the program to which the graduate goes, is this the best preparation for the associate degree program teacher? I think not, but where does the change start? Will you employ someone who doesn't have a medical nursing specialization? Are you looking for teachers in maternity nursing? If you are, and we do not prepare them -- where do we begin to solve these problems? Maybe it's the graduate program's responsibility to make this change. I suspect it is, but then you have to take this new person we put out, and an accrediting agency can't say, "You've had no course in -- , and therefore you are unqualified." There has to be some changes in the preparation of, and then subsequently in the programs themselves.

The fourth problem in recruitment, in the area of preparation of teachers, is that there seems to be some tendency for nurses to get master's degrees in whatever area happens to be offered in the college nearest them, whether or not that prepares for teaching in any kind of a nursing program. One of the studies shows that nurses are most reluctant to go for further preparation, and when asked how far it is logical to expect a person to go for that preparation, one person, I hope not seriously, answered, "Fifteen minutes". It takes longer than that to go across a large campus.

I think we've got to appreciate, on both sides of the fence, the teacher being prepared and the employing agency, that if a teacher can get the job teaching maternity nursing when her major was guidance, why should she get other preparation? The potential teacher needs to identify the area in which she wishes to teach, and then seek the preparation, wherever it is offered. This also means that administrators, college and nursing, must look behind the degree label in order to determine preparation.

There may be other problems but these should show we have no easy time ahead.

We have a challenge to produce enough nurses to meet society's need. We have an opportunity to do this in a way never accomplished before. The question is -- Have we the wisdom, the courage to do it? I hope we have!

TEACHER PREPARATION

Martha E. Rogers, Sc.D., R.N.

Now, you'll get the other half of the circuit. There is one problem, you know. We have disappointed several audiences because we don't disagree often enough. About the only thing we have is an opportunity to see if we can get the last word. I thought I might give you a little example before I moved into the serious part of my discussion. There were two young boys who were quite competitive as they went through school. They were always trying to see who could outdo the other. Periodically they took time out to put one another in his place. In time they grew up and went their separate ways. One of them became a very eminent bishop, a bit round in front, you know, and the other a very fine admiral, decked out with much gold braid. The other day the bishop was down in Grand Central Station. He looked across the way, and whom should he see but the admiral, in his finest uniform. He went across, tapped the admiral on the shoulder, and asked, "Conductor, when does the next train leave for Boston?" The admiral turned around, looked the bishop up and down, and said, "Madam, in your condition you shouldn't be traveling."

It should be a truism at this point to note that the education of nursing's practitioners will not exceed the quality of nursing's faculty members. It ought to be equally well known that nursing quality will not surpass the nursing education that underlies it. Nursing continues to labor under a shortage of qualified nursing personnel to teach its students, despite a decade of federal support. Recent monies from the Kellogg Foundation give evidence that this continues to be a pressing problem. Exponential increases in science and technology have made explicit the essentiality of learning in today's world. Long overdue replacement of hospital schools by educational institutions has taken on a new urgency. Experience is no longer a substitute for learning. As a matter of fact, it has been noted that experience today can be a handicap.

As we talk about the education of nursing teachers we must take cognizance of these new dimensions. Forty-five states require four years of college to teach in elementary school, and all states require a full college education as the minimum for teaching in secondary schools. Many secondary schools require a master's degree for faculty appointment. Bernard Barrelson has noted, "The master's degree cannot be recovered as the acceptable degree for college teachers." Full colleges and universities expect that their faculty will hold doctoral degrees. Certainly a master's degree represents minimal

preparation for teaching beyond the high school. At this point in time I would propose that for many of those who will teach in associate degree nursing programs the master's degree as acceptable preparation is perhaps a reasonable goal. This is not to suggest that we do not also need people who will complete doctoral study, but this is not true for all.

Concomitantly 4.2 per cent of those teaching in associate degree nursing programs do not possess an undergraduate college degree. By what alchemy they can then purport to be teaching at a post-high school or college level is incomprehensible. To appoint or to keep such persons on a faculty is untenable. An additional 27.8 per cent of associate degree faculty hold only a baccalaureate degree. Specifically, nearly one-third of those teaching in ADN programs are unprepared to do the job they've been appointed to do. (ANA Facts About Nursing - 1966 Edition).

That the education of nurses belongs squarely in educational institutions is beyond argument (devotees of hierarchical control and antiquated methods notwithstanding). It is equally true that associate degree programs provide a sounder means for preparing registered nurses than do hospital schools. But regardless of control, sound preparation will not take place in the absence of competent nurse faculty. The imperative need to replace hospital schools with ADN programs as rapidly as possible must be limited by the availability of qualified nurse personnel to teach the students.

Baccalaureate degree education is the cornerstone of nursing educational system. Baccalaureate degree graduates are the nation's professional practitioners of nursing. They provide the source from which nursing's graduate students must come: the potential specialists, practitioners, teachers, supervisors, administrators, etc.. I would carry Mildred's point a little further. I don't know just why we should need cardiovascular nursing specialists, unless we're going to relegate nursing to an assembly-line approach, taking care of bits and pieces but never taking care of human beings.

In the educational spectrum there is a critical point that identifies those who educate the educators. The quality of this last group, or its lack of quality, is felt throughout the entire spectrum of nursing educational system. Here the shortage of qualified nurse faculty is most acute, because its implications are so far-reaching. Interestingly enough, ANA "Facts About Nursing", while carefully recording general information about faculty qualifications, does not mention the levels of preparation of those teaching in graduate programs. I would suspect there might be good reason for this omission, because some of us who are in nursing education are well aware that there are many graduate programs in nursing which do not have faculty qualified to teach in graduate programs (meaning of course, holding a doctoral degree, considered a grave deficiency in other areas of academia).

This problem is further aggravated by the irresponsible opening of additional graduate programs either without qualified faculty or by

further diluting the numbers of qualified persons who do exist. A great deal has been said about the shortage in numbers of qualified persons in all of our educational programs, but considerably less has been noted concerning the quality of the graduate programs themselves. Excuses abound to justify perpetuation of weak programs and the initiation of new ones. But the reality that we face is that though the shortage in numbers of those who possess paper qualifications is large, the actual shortage of those who possess the knowledge and skill necessary to teach the teachers of nursing is even greater.

Preparation of teachers for associate degree nursing programs builds upon the same basic principles fundamental to sound preparation for teaching in other programs. This does not negate associate degree nursing faculty criticisms that graduate programs in nursing frequently do not prepare persons adequately to teach in such programs. Rather, it points up the need for major revisions and substantive changes in teacher preparation in general.

First, nursing's teachers must possess a clear and unequivocal understanding of the structure of nursing's educational system consistent with today's educational world. They must value human differences and respect human dignity. Incorporation of such values involves gigantic re-learning for a large proportion of nursing's graduate students. But without such understanding the philosophy and purposes of educational programs geared to identifiably different career goals will not be comprehended.

Technical education is complete in itself. It prepares for a career worthy of honor and one having strong social significance. It is not the first part of professional education, and those who would recruit the professionally oriented and professionally educable into technical programs, whether hospital school or associate degree, deny the reality of individual differences in abilities and goals. United States Public Health Service's General Stewart's "ladder proposal" is a good example of how to sow intellectual wastelands. It is a derogation of human differences. It is an effort to maintain an outdated hierarchical control. Most serious is its negation of safe nursing services to people. Professional and technical education are clearly different. Professional and technical practitioners are not interchangeable. Moreover, such practitioners are good or poor according to the career for which they are prepared. They are not comparable to one another.

Nursing offers two major careers: the professional and the technical. Chatter about "types of programs" is one of the "games nurses play". The philosophy and purposes of technical education provide the frame of reference within which ADN curricula are developed. They are determining factors in the selection of knowledge and skills to be taught. Too often and for too long nurse faculties have thought they had to give a student everything they knew.

How ridiculous would we deem it if a fifth grade teacher, presumably a college graduate, undertook such a task. At the same time, faculty members must possess graduate education that is substantial if they are

to be able to select out learnings appropriate for technical students and participate in creative curriculum development. Both areas of learning must be incorporated into the education of graduate students preparing to teach.

Second, the philosophy and purposes of technical education in nursing must be understood within the dimensions of community college education for technical careers. Faculty must learn to identify with educational institutions, not with service agencies. The community college movement must be comprehended. A concept of higher education must replace the tortuous modifications that often define today's parodies of apprentice learning in nursing. University resources in community college education: its history, philosophy, purposes, administration, and implementation, must be utilized in the education of potential teachers.

Next, and central to the preparation of any person who expects to teach, is the inclusion of a hard core of "something to teach". No amount of methodology, communication skills and fine interpersonal relationships will serve as a substitute for theoretical content in nursing. Nor is there any valid reason for proposing that a person expecting to teach in an associate degree program will need any less substantial content in nursing in her master's program than the nurse who hopes to teach in a baccalaureate program or one who plans to pursue any of the number of other careers in nursing which require graduate preparation.

Concomitantly associate degree nurse faculties have questioned the dichotomies that currently identify nursing's clinical (or content) majors as appropriate areas of selection for the teaching responsibilities that associate degree nurse faculties must assume. I would add, these areas are equally irrelevant for those who would provide valid professional education in nursing to baccalaureate degree candidates. The hard core of nursing content is properly nursing science: the descriptive, explanatory and predictive principles about man which underlie and guide nursing practice. A superficial overview of selected learnings taken from the various clinical majors does not suffice. Nor does the regrouping of traditional clinical majors serve any justifiable purpose. The system of concepts which provide the framework for nursing's theoretical basis is identifiable, although the science of nursing is still embryonic in its elaboration. It is in the area of theoretical content in nursing science that we face perhaps our greatest problem. This is the body of knowledge, the "something to teach," that is central to every nursing curriculum. We can not teach or acquire or utilize what we don't have.

I'm not unaware of the problems inherent in what I believe has to be done. We do expect in New York University this September to initiate some first steps in this process. All master's degree candidates will be introduced to basic principles of nursing science, prerequisite to the clinical major of their choice. We view this as a transitional period. To provide such instruction requires faculty who themselves possess doctoral level knowledge in the science of nursing. Nurses whose doctoral studies have prepared them to be psychologists or

sociologists, physicists or physiologists, etc., are severely handicapped by the narrowness, inadequacy, and inappropriateness of their preparation for such instruction in nursing.

They must undertake substantial additional learning and relearning if they are to develop scholarship in nursing. Nor is this the only problem. Devotion to a clinical major sometimes seems to verge on the fanatic, and if you will forgive the irreverence, there are moments when one wonders if one of our theme songs should be "It was good enough for our fathers---."

On the positive side, however, there is a deep-seated vitality stirring among nurses from coast to coast that bodes well for the future.

A fourth area that needs to be incorporated is the ability to transmit knowledge effectively. The born teacher is, at best, a rarity, if she exists at all. Laws of learning, methods of instruction, tools of evaluation, and a range of other knowledges must be provided. Innovations appearing on the educational scene must take on practical significance. A university is responsible for the students it graduates. It must be assured that its graduates have the ability to translate theory into overt, observable behavior. Whether in the clinical laboratory or in the teaching practicum, students provide evidence of beginning skill in the art of their occupation, an art that should continue to grow throughout their professional careers.

A further dimension in graduate education includes the strengthening and enhancement of investigatory skills. Education for scholarly research is at the doctoral level. However, master's degree graduates should be able to read research literature critically. They should be able to initiate and implement significant studies, and to understand and use tools of research with identifiably greater sophistication than is properly expected of baccalaureate degree graduates. This is not research as this term is understood by scientists, but that does not make it less important. Rather it emphasizes the need for continuing imaginative curiosity that finds expression in meaningful study and publication.

Opportunity for creative development in associate degree nursing programs is open ended. So, too, are opportunities for a wide range of other relevant areas. The selection of courses by which students will be provided with the necessary learning to prepare them for ADN teaching will vary from university to university. Some courses are properly required for all master's degree candidates. The student's selection of a clinical major will determine certain content and related courses.

A minor in teaching identifies additional courses. The person who is planning to teach in an associate degree program will need course oriented to understanding the community college movement and its multiple ramifications. The principles of curriculum development do not differ, but the student's utilization of these in thinking through the development of an ADN program do differ. The student's teaching

practicum properly utilizes the community college setting. Specifically, preparation for teaching in ADN programs is not an isolated curriculum but rather achieves its meaning by course choices in selected areas of higher education. Emphasis needs to be on basic principles having broad relevance, on development of imaginative and critical thinking, on logic and reason, and on substantial theoretical knowledge in nursing.

One might properly ask next, "How long does it take to prepare a person properly to teach in an associate degree program?"

Historically, master's degree programs have represented one academic year of study. More recently, professional fields have tended toward a two-year master's degree. There are a number of reasons why, at least for the present, a two-year master's degree in nursing seems to be on the books. First, the not uncommon impoverishment in baccalaureate degree programs is reflected in incorporation of material in graduate programs that should have been included earlier. Second, students must be introduced to graduate level content in nursing and to graduate level knowledge in education. Third, general education deficiencies have to be shored up and extended. It seems reasonable to believe that as baccalaureate programs are rebuilt to provide true professional education, master's degree programs may be reduced in length.

A word of caution seems appropriate. The master's degree is only a step on the way. It is not the peak of nursing knowledge. Instruction of master's degree candidates must be geared to master's degree level education. It is as ridiculous to attempt to teach everything in a master's degree program as it is to attempt to teach everything in an associate degree program, and simply extending the length of the program accomplishes nothing. Instruction in principles must replace the multiplicity of finite details.

It is the responsibility of college faculty to provide students with the knowledges and beginning skills that will enable them to secure gainful employment. It is not the responsibility of educational institutions to turn out experienced practitioners. This is as true for teachers as it is for the products of ADN programs.

That associate degree programs in nursing are producing graduates quite able to perform in the work world is demonstrable. In spite of almost unbelievable hurdles, these graduates have made a significant place for themselves. Continuing proposals to require internships of these graduates can only be attributed to vested interests concerned with control of nursing education and a source of cheap labor. It is amazing that profit-making industries find it economical and profitable to hire people who are educated but not experienced. What a strange contradiction that an agency which at least claims to be nonprofit should be so inept. It is an equally interesting aside that medical educators are seeking to dispense with medical internships, calling them exploitation.

Certainly employing agencies should not be expected to make up educational deficiencies. It is up to the faculty to see that this is unnecessary, whether this is the faculty preparing the ADN students or the faculty preparing the teachers to teach in them. But without qualified nurse faculty in either instance, one is in a poor position to deal with obviously unsound proposals. There can be no excuse for retaining any person on a college nursing faculty who does not possess a full college education. Faculty members who hold only a baccalaureate degree must seek preparation for their job as quickly as possible, and the same principle holds true for graduate programs. If they do not, their retention on a faculty is a derogation of responsibility to students and to society. There are ample and adequate scholarships available. No group has ever had so much money to help them get ready to assume their social responsibilities as nurses. We cannot afford to ignore it.

The job is large, but by no means impossible. The education of teachers for associate degree programs in nursing must be stepped up, not only in numbers but in quality. Potential teachers must be helped to select graduate programs that will provide them with a philosophy of community college education and a clear understanding of the purposes of technical education, they must have respect for technical programs and a respect for the individuals who select technical careers. They must be sure they will receive a sound foundation in nursing theory or, if you prefer, clinical content. They must be certain that their program will include educational theory and methodology. They should verify that there will be opportunity for qualified directed practice. And I will close by pointing out that workshops and institutes can not be used as a substitute for the formal learning that we must undertake, even though we may worry about the length of time and the dollars.

THE JCD TEACHING INTERNSHIP PROGRAM*

C. R. Hill, Ed.D.

NEED

We would all agree with the need for making education relevant. Certainly, it is well documented nationally that the need for highly trained and skilled personnel is continually increasing. Knowledge is becoming more and more important for employment in our complex technological society--just plain hard work is not enough.

The immediate need for semi-professional manpower is critical and indications are that it will become even more critical in the future. Not only is the number of professionals increasing who require the services of theory oriented semi-professionals to assist them, but there are other factors. Technological developments are continually "opening up" new opportunities for employment that require more education than the typical high school graduate can bring to bear on the job. They include a wide gamut of occupations related to agriculture, business, engineering and industry, health, and the public service fields.

The ratios of semi-professionals ("support help") to professionals are increasing for existing fields which also contributes to the increased demand. In certain engineering fields, for example, a relatively short time ago, the ratio was less than one technician for each engineer. Surveys now show that the proportion of technicians is increasing. Some forecasters project a ratio in the near future of three or four for every engineer.

Unemployment statistics reveal dramatically the importance of education. This not only has a direct bearing on every young person's educational plans, but also institutions of higher learning. According to national leaders, the number of junior college students will double in the next four or five years and the number of public junior colleges will double by 1975 or 1980.

In St. Louis, for example, the rapidly developing Junior College District has grown, since its inception in 1962, to an enrollment of over 8,000 for the fall of 1966. By 1970, it expects to have a staff of more than 700 professional educators and an enrollment of some 16,000 students.

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*A Joint Project of the Junior College District of St. Louis and St. Louis County and Southern Illinois University

In two-year post-high school programs throughout the country, faculty growth has not kept pace with the rapid increase of student enrollments. The teaching talent that could become available tends to be either well established in job careers or not attuned to the need for career program teachers. Even by attracting competent professionals from non-teaching fields, and through informal in-service programs helping them become competent as teachers, the growth of school faculties has not kept pace with increased enrollments. If the responsibility for educating well-qualified semi-professionals is to be effectively met, well-qualified teachers must be available. Hence the reason for this special project.

THE PROGRAM

The Ford Foundation recently awarded The Junior College District of St. Louis a grant of $500,000 to assist in developing a program to help overcome current, as well as future shortages of teachers in semi-professional career programs in comprehensive two-year post-high school programs over a four-year period. The purpose is two fold--one is long range and the other is short range.

The long-range program is a joint project with Southern Illinois University and The Junior College District. It includes a number of different Master's degree programs, each of which involves an internship in The Junior College District. Participants for these programs are selected from recent graduates and persons employed in business, industry, and the professions. Provisions for stipends are included for both the graduate work and the internship-core. A unique feature is the granting of University credit for the internship-core.

In the short-range program, persons are recruited directly into the internship program. Previous teaching experience is not a requirement. Candidates for academic fields should have Master's degrees in their disciplines. For "technical" fields, Master's degrees are also preferred. Appropriate professional experience is considered to be of major importance for teachers in any of the technical disciplines.

The Internship Program is full time for one semester. It is sufficiently flexible to meet the needs of individual participants with varying backgrounds and degrees of technical competency. It includes:

Intern Teaching
Student Personnel Services Orientation
Organizational Orientation
Independent R & D Studies
Field Experiences
Course Work
Seminars

BENEFITS TO INTERNS

Opportunity to intern under master teachers.

Opportunity to become acquainted with the modus operandi of the rapidly developing new Junior College District of St. Louis.

Opportunity to gain knowledge to become more effective as teachers in two-year post-high school Career Programs.

Opportunity to gain recommendations of professionals which will assist in obtaining better positions in post-high school programs across the country.

Opportunity to gain experience that will assist in professional advancement.

Opportunity to gain financial assistance in obtaining a Master's degree.

SUPERVISORS OF INTERNS

A master teacher in the intern's area of specialty is selected from The Junior College District to work with each intern. Their functions include the following:

Provide proposal and schedule designed to develop the intern's competencies as a teacher.

Counsel intern regarding teaching assignments and problems associated with the internship.

Facilitate intern in establishing the contacts necessary for service and faculty assistance needed during the internship period.

Evaluate intern performance and potential.

Coordinate intern JCD Organizational Orientation.

Coordinate intern JCD Student Personnel Services Orientation.

Coordinate intern Field Assignments.

TEACHING

In classes taught by interns, the Supervisors have the final responsibility for the quality and completeness of instruction as well as the accuracy of grades assigned students enrolled in the classes. The intern is responsible to his Supervisor for the preparation, presentation, and evaluation of the classes he is assigned. Because of the scope of the Internship

Program, these teaching assignments are two-fifths the normal teaching load and include courses in which Career Program students enroll.

As a means for providing a better understanding of the inter-relationships of the various disciplines in the Career Program, interns are scheduled to observe a number of different types of classes. They are selected by the intern, and coordinated by the Supervisor. The various types of classes and minimum number of visitations follow:

Developmental Classes	3 sessions
Transfer Classes	3 sessions
Career Classes - in each of the four or five major curricula of the intern's discipline	1 session for each related curricula.
Academic Classes - Interns in technical subjects would observe academic subject matter classes basic to his discipline.	1 session for each academic subject basic to intern's discipline.

STUDENT PERSONNEL SERVICES ORIENTATION

Arrangements for the intern to gain a better understanding of the philosophy, organization and functions of Student Personnel Services are made by the Supervisor working through the Campus Dean of Student Personnel Services. The time allocation for this activity is the equivalent of one-half day each week. Interns may use part of this time for research activities in the Student Personnel Services area that are necessary for internship Independent Studies. Opportunities are included for gaining knowledge of the following functions:

Registrar and Admissions.

Counseling - includes experience in advising students in Career Programs and working with counselors and faculty advisors.

Placement and financial aid.

Public relations work with the schools and community.

Activities - includes experience in assisting the advisor of one student activity in which career students participate during the semester.

ORGANIZATIONAL ORIENTATION

Necessary arrangements for the intern to attend and observe the following to the extent indicated are coordinated by the Supervisor:

	Minimum
Board of Trustees Meetings	1
Divisional Chairmen Meetings	2
Faculty Meetings	All
Professional Standards Committee Meetings	1
Divisional Faculty Meetings of Major Discipline	All
Career Curriculum Advisory Committee Meetings	1

INDEPENDENT R & D STUDIES

These studies are coordinated by the leader of the internship Seminars and may grow out of or be in addition to any phase of the internship program. They are included as a means for gaining a better understanding of the over-all aspects of Career Programs, and are not intended to be in-depth studies. The intern may consider the JCD a laboratory in which he has the opportunity to avail himself of the material and human resources required for the studies.

Independent R & D Studies are voluntary. The intern makes the decision as to his involvement. Any or all of the following suggestions, or any similar type studies the intern may wish to pursue, may be undertaken:

Case study of a student discipline problem arising out of intern's teaching assignments - involves obtaining background information, analyzing the problem, developing a solution, and evaluation. Requires the guidance of the intern's Supervisor and a counselor.

Case study, based on student personnel records for classes the intern has observed, showing the similarities and differences of students enrolled in Developmental, Career, and Transfer programs.

Case study showing the JCD Career curricula and the involvement of the intern's discipline.

Chart showing the JCD instructional organization and the involvement of academic disciplines in Career curricula.

Case study of the internship-core Field Assignments that show how the intern's discipline is used on the job by recent graduates of Career curricula.

Case study of JCD Career curricula costs.

Case study of starting salaries of recent JCD Career curricula graduates.

Case study of a student learning problem arising out of intern teaching assignments: involves obtaining background information, analyzing the problem, and an evaluation of the solution used in attempting to solve the problem. (Requires the guidance of the intern's Supervisor and a counselor.)

Case study of the effective techniques for teaching that the intern learned during the internship-core.

Critique by a person employed in a technical occupation, in which the intern's discipline is significant, of a unit of instruction prepared by the intern and used during the internship-core.

Case study of JCD A-V equipment and facilities.

Prepare an annotated list based on JCD faculty recommendations of sources for information of value to teachers of students in Career Programs.

Enroll in a JCD Technical Career course of choice other than those participant may be involved in as an intern. (No tuition charged for interns.)

FIELD ASSIGNMENTS

Teacher effectiveness in Career Programs is contingent upon knowing how specific disciplines apply to specific occupations. Field Assignments are intended to give the intern first-hand knowledge of job requirements by providing opportunities to observe and discuss applications of his specific discipline with persons employed in the occupation.

The equivalent of one-half day a week is allocated for this type of activity. Assignments are customized to meet the needs of individual interns. They include a number of different organizations and a variety of assignments ranging from one-half day to several days in duration. Emphasis is placed on the fact that these assignments are not "extended tours," but rather a means for interns to gain an understanding of the types of problems Career Program graduates face. It should also be understood by interns that they will not be paid by the business or organization for the time devoted to Field Assignments.

Contacts will be established and the necessary coordination provided to develop a list of cooperating organizations for the various Career curricula and the types and duration of assignments available. Actual scheduling of individual interns and the liaison between the JCD and the business organization is coordinated by the intern's Supervisor.

COURSES

All participants in the program shallhave compleged two courses relating to post-high school technical programs. The courses include the Comprehensive Community Junior College and the principles and philosophy of Industrial, Vocational, and Technical Education.

SEMINARS

Seminars are scheduled once a week in the evening. The objective is to provide an opportunity for informal discussions of issues concerning post-high school Career Programs. Decisions regarding the specific topics for discussion evolve out of the intern group under the direction of the Seminar leader. A number of the Seminars may center on the internship activities. Others may center on a dialog with leaders in fields affecting post-high school Career curricula.

EVALUATION

Intern performance and potential is evaluated for the purpose of assisting interns in their professional development and also to provide data for improving the Internship Program. Evaluators may include:

Supervisor of intern
Dean of Instruction
Students taught by intern
Dean of Student Personnel Services
Field Assignment Supervisors
Seminar leaders
Associate Director, Ford Project - SIU
Selection Committee (Independent R & D Studies Program)

Interns are requested to contribute to the evaluation of the Internship Program by providing a summary and critique of their experiences relating to the following:

Teaching Internship
Student Personnel Services Orientation
Organizational Orientation
Independent R & D Studies
Field Experience
Seminars
Ford Project Coordination
Courses - (Community College and Technical Education)

Persons completing the Ford Foundation program for preparing teachers of students in post-high school semi-professional career programs can have the satisfaction of knowing that upon successfully completing the program they will have many opportunities to become members of faculties of two-year post-high school programs across the country in addition to those with the Junior College District of St. Louis and St. Louis County.

ANNUAL MEETING
COUNCIL OF MEMBER AGENCIES

EMPIRE ROOM
THE SIR FRANCIS DRAKE HOTEL
San Francisco, California

THURSDAY,
MARCH 2, 1967

Chairman: DOROTHY T. WHITE

* *

B U S I N E S S M E E T I N G

Morning Session:
9:00 a.m.-12:00 p.m.

AGENDA

GREETINGS!

LOIS M. AUSTIN, President, NLN
MARGARET HARTY, President, California SLN
SIDNEY E. MCGAW, President-elect, California SLN
GRACE T. GOULD, NLN Western Office

OLD BUSINESS: Introduction of CMA Officers
Acceptance of Minutes, March 1966 Meeting

REPORTS: Interim Steering Committee, DADP
..... ELEANOR A. TOURTILLOTT, Chairman
Committee on Philosophy, Criteria and Procedure
..... VIRGINIA O. ALLEN, Chairman
Council of Member Agencies
..... DOROTHY T. WHITE, Chairman
Department of Associate Degree Programs
..... GERALD J. GRIFFIN, Director
Resolutions Committee
..... RITA J. MCGINNIS, Chairman

NEW BUSINESS: .....

Summary of Warrant Officer Program
..... LTC MARGARET E. HUGHES, Chief
ANC, Nursing Division
Office of the Surgeon

ANNUAL MEETING
COUNCIL OF MEMBER AGENCIES

THURSDAY,
MARCH 2, 1967

Chairman: DOROTHY T. WHITE

* *

G E N E R A L M E E T I N G

Afternoon Session:
2:00 p.m. - 5:00 p.m.

"EDUCATIONAL CRITERIA AND SOCIAL CHANGE" — Keynote Speaker
.....ELLEN FAHY
Teachers College

"PROBLEMS AND ISSUES IN ACCREDITATION BY SPECIALIZED AGENCIES OF VOCATIONAL-TECHNICAL CURRICULA IN POST-SECONDARY INSTITUTIONS" .....LLOYD E. MESSERSMITH
U. of California,
Berkeley

"TEACHER PREPARATION"

.....MILDRED L. MONTAG
Teachers College

.....MARTHA E. ROGERS
New York University

"THE JUNIOR COLLEGE DISTRICT OF ST. LOUIS AND ST. LOUIS COUNTY TEACHING INTERNSHIP-CORE PROGRAM" .....C. R. HILL
Ford Project

DISCUSSION PERIOD

SUMMARY .....ELLEN FAHY

VT 003 615
Health Services Research Centers. Purposes and Organization.

Public Health Service (DHEW), Washington, D.C. Office of Research and Development
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Aug67 12p.

*FEDERAL PROGRAMS; *RESEARCH AND DEVELOPMENT CENTERS; *HEALTH SERVICES; HEALTH FACILITIES; PROGRAM DESCRIPTIONS; GRANTS; *ADMINISTRATIVE POLICY
*HEALTH SERVICES RESEARCH CENTERS

To assist new research and development efforts addressed to (1) planning and administering large scale health programs, (2) improving procedures and regimens for patient care, (3) designing and utilizing health service facilities, (4) analyzing costs and benefits of services, and (5) utilizing services under varying urban and rural conditions, the Bureau of Health Services is offering financial support to a limited number of Health Services Research Centers. Centers will be based in, or involve, a medical or health service institution already engaged in extensive patient care or health service operations. Applications will be considered under the general procedures of the Public Health Service extramural research grant program and proposals will be reviewed for scientific merit by an appropriate study section and for program relevance by the National Advisory Health Services Council and/or the Federal Hospital Council. (JK)

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HEALTH SERVICES RESEARCH CENTERS

purposes & organization

VT003615

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • PUBLIC HEALTH SERVICE

DISCRIMINATION PROHIBITED--Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Therefore, the Health Services Research Centers program, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

FOREWORD

The Bureau of Health Services has the primary responsibility in the Public Health Service, U.S. Department of Health, Education, and Welfare, for research in the organization and delivery of health services. To contribute to the fulfillment of this responsibility, the Bureau announces the establishment of a new grant program in support of a limited number of Health Services Research Centers. This brochure provides a description of the purposes and organization of the Centers.

The many complex problems central to the development, administration, and evaluation of health services require the establishment of environments in which experimentation, research, and development can be conducted. The introduction of program support for such environments can do much to retain and expand the tradition and spirit in the American health services system of thoughtful innovation and change, based on critical evaluation of experiments and demonstrations in new ways to deliver health services.

Originating Office:

Office of Research and Development
Bureau of Health Services, Public Health Service
U.S. Department of Health, Education, and Welfare

August 1967

HEALTH SERVICES RESEARCH CENTERS

Description of Purposes and Organization and
Announcement of Public Health Service Support

1. INTRODUCTION

Improvement of health services depends increasingly upon special research and development efforts addressed to selected problems and areas of unusual complexity. These include: (a) Planning and administration of large-scale health programs; (b) evaluation and improvement of procedures and regimens for patient care; (c) design and utilization of health service facilities of all types; (d) economic analysis of costs and benefits of services; and (e) utilization of services by special groups and the general population under varying urban and rural conditions. (See Appendix.)

To assist new research and development efforts of this type, the Bureau of Health Services of the Public Health Service, U.S. Department of Health, Education, and Welfare, is offering financial support for a limited number of Health Services Research Centers. These centers are intended to establish environments in which experimentation and other forms of patient-oriented research and controlled demonstration of either a non-categorical or multi-categorical nature can be pursued on larger and more intensive scales than is feasible under the usual research project grant mechanism.

2. PURPOSES OF CENTERS

Health Services Research Centers are intended to encompass highly organized, long-term programs which apply research, development, and demonstration to selected areas of health services for the purpose of producing marked improvements in their effectiveness and efficiency. Centers will also provide training in research and development methods and will be active in communicating results to other health service institutions. The basic characteristic of the centers is purposeful experimentation -- setting up new services, operating them under control, and evaluating results against appropriate criteria. Each center will have a major problem or operational area in health services as a field for concerted innovative efforts over a period of years. The problems, or areas, should be chosen with primary regard to: (a) Priority of the medical, economic, and social problems and opportunities involved; (b) potentials favoring definitive research in the problem, or area; (c) opportunities for se-

quential development and demonstration of new or improved health services based upon the results of research stages or upon other dynamic factors present or potential in the operational area; and (d) interest in the area on the part of the parent institution.

A principal objective of the centers is to increase the use of research and scientific method in the improvement of health services. Particular attention will be given to designing and conducting experimental research, and to maximizing the use of experimentation in the service area. Other research methods would be used where appropriate. It is anticipated that the various mathematical modeling and decision-oriented techniques of operations research and systems analysis will be essential to such large-scale programs; and it is expected that all sciences and disciplines which may contribute will be brought freely into the research program.

Another principal objective of the centers is to provide stimuli, in the form of research activities and results, to a course of developmental, demonstration, and training activities in the parent institution which will produce, or lead toward the production of, well-defined improvements in specific services and service components.

In order to capitalize on constructive results obtained, each center will actively communicate its findings and developments to a wide group of similar agencies and programs in this country and other countries. Since Health Services Research Centers will be of a pioneering nature, an annual conference will be held by the Public Health Service to provide a communicating link between the Centers and the Service, and to acquaint PHS staff with progress and achievements that can be duplicated elsewhere.

3. STRUCTURE AND ORGANIZATION

A. Institutional Setting

A Health Services Research Center will be based in, or involve, a medical or health service institution already engaged in extensive patient care or health service operations. The center will be directed by a person of recognized scientific standing in the general area selected for the research program who will devote a major portion of his time to the planning and direction of the Center and its research activities. It is expected that

a core staff of scientists, committed to investigation in the program area, will serve as directors of specific research activities. The available working environment of the center may include the staff, facilities, and operations of other health or health-related institutions in the community whose cooperation is adequately assured. Such location in, or involvement of, service organizations is seen as essential for several reasons: (a) to assure first-hand availability of valid data and realistic research contexts; (b) to involve both the professional services and the managerial structure of the sponsoring institution in the process of purposeful change based on scientific research and development; and (c) to provide opportunities for demonstration and training phases of the program.

The parent institution would become the grantee for the Health Services Research Center Grant. It is expected that it would have the resources to create a comprehensive strategy for testing research findings of the center or of other sources and for carrying innovative efforts through necessary developmental and demonstration stages. Programs for training in research and development and in demonstration methods are expected to emerge as the consequence of a continuum of effective research, development, and demonstration. Training in research and demonstration methods and training of practitioners in the operation of new services would also be desirable.

Thus, activities of the center and the parent institution would be conducted in a common base problem or area and would have the same institutional sponsorship. Activities would be related to each other in progressive time sequences, with demonstration and training logically following research.

B. Financial Support of Components

Successful competition under the terms of this announcement would result in a grant for the support of an appropriate portion of the costs of a Health Services Research Center. The scope of work to be conducted under the grant would cover research and closely related developmental activities essential to carrying the results of research through preliminary testing and validation stages. The level of the first-year grant ordinarily would reflect a planning and organizational stage, with future-year levels reflecting full-scale operations.

A grant for the Center would support the salaries and fringe benefits for the director, senior investigators, and other

scientific, technical, and administrative personnel required to carry out the research program. Other costs allowable under regular research grants would be supportable. A grant may also support an appropriate share of the salary of a principal administrator of the parent institution for time spent in planning and coordinating the activities of the center with the development, demonstration, and training components of the total program.

Further developmental activities, demonstrations, and training activities would be supportable by separate grant and contract awards for which the parent institution would make appropriate applications or enter into appropriate negotiations. These activities would usually be carried on by a separate staff.

When the area selected for research depends on the construction of experimental facilities, the proposal for construction would be prepared as a separate document within the overall application for the center grant. Requests for grants for experimental hospital or health facility construction would be considered under appropriate provisions of the Public Health Service Act.

Because of the major commitments required of the grantee institutions and of the staffs of the centers, support would be offered for an initial period of up to seven years. Renewal applications from successful programs would be considered for an additional period.

4. MISCELLANEOUS

Public and private nonprofit institutions interested in undertaking the type of broad program outlined in this announcement are eligible to apply.

Applications for the support of Health Services Research Centers will be considered under the general procedures of the Public Health Service extramural research grant program. Proposals will be reviewed for scientific merit by an appropriate study section and for program relevance by the National Advisory Health Services Council and/or the Federal Hospital Council.

Application documents will necessarily be complex and will usually require a careful drafting process. Discussions among officers of potential applicant institutions and staff members of the Bureau of Health Services may be desirable before filing an

application. Such discussion and consultation will be for purposes of clarifying the presentation of the application and will in no way convey any assurance of favorable review or approval of the final application.

Applications should be made on Public Health Service Standard Form No. 398, "Application for Research Grant." The project should be entitled "Health Services Research Center."

The completed form should be sent to:

Grant Application and Document Control Office
Public Health Service
9000 Rockville Pike
Bethesda, Maryland 20014

APPENDIX

The following is an illustrative list of the fields in which Health Services Reseorch Center programs might concentrote. This list is not complete, and is not intended to preclude the applicant's selection of another orea.

1. The Process of Health Service Planning:

Research and development of methods and institutions for planning and guiding the expansion, improvement, and coordination of comprehensive health service facilities and operations in a large community or other geographic area.

Such research in plonning would involve multiple facilities and services, including organizations, agencies, and health promotion influences which would require broader social action than can be provided by the health professions alone. It would include development of data bases and identification and/or establishment of decision-making institutions, finding ways of more effectively involving the consumers, providers, arrangers, and payers of health services in the planning and policy-forming functions. It would encompass research related to development ond testing of performance specifications for facilities and services, to questions connected with preparation of specific plans, and to problems in the execution of plans and evaluation of performance.

A center focusing on research in the pionning of health services would give special attention to such issues as: (a) Integration of fragmented services of total health resources of the community, with one agency or institution identified and accepted as the pivotal coordinator of all services; (b) coordination of health team functioning, enabling a primary physician to form the core of the group, with public health nurses and social aides fully integrated into the team function, and necessary services that precede and follow the dramatic episode of hospitalizotion forming an essential element of the health care plan; (c) regional coordination of hospitols and other medical focilities so that the complex of specialized resources in the metropolitan hub can be shared with smaller community hospitals ond with outlying rural units and affiliated long-term facilities within the natural service area; and (d) identification of disadvantaged population groups to whom health services are not equally avoilable or accessible, and finding woys to correct imbalances.

2. Community or Areawide Organization of Health Services:

Research in the formulation of conceptual tools and models for characterizing the operation of health services in their present state and in potential future states; identification of institutions and processes (such as formal planning) which produce "organization"; experimentation with component services or processes to develop performance criteria defining "better" organization, and to create and test new and more effective communication, functional unity, and general guidance and direction of community services as a whole.

3. Health Economics and Cost-Benefit Analysis:

Research into and analysis of the structure of costs and prices in a defined health services system; factors influencing changes in costs and prices; development of criteria and methods for making cost-benefit analyses of specific programs and services within the defined system; and related investigations designed to explain and permit better evaluation and more informed decision-making in economic aspects of health services.

4. Methods of Institutional Management and Innovation:

Analysis, explanation, and improvement of formal and informal methods which determine the effective structure and operation of health service institutions, including methods of leadership and communication, factors determining the capacity of the institution to train and utilize employees, connections between the institution and external sources of stimulation or inhibition, methods for the use of research, developmental activities, and demonstration within the institution, and methods by which the institution communicates with others in the health services system or in the larger community.

5. Design and Utilization of Hospitals and Other Medical Facilities:

Research, development, and evaluation of considerations and performance criteria relevant to the optimum functioning of facilities and equipment; development and evaluation of performance criteria and development of methods of design based upon performance criteria; experimentation and demonstration with new designs of facilities and equipment; and experimentation and demonstrations in the utilization of facilities and their components. Such research might involve an experimental hospital ward, an outpatient department, a community health

center, and/or a group practice clinic. It would include systematic analysis of the 90% of patient care which is given outside the hospital, and would be followed by indicated experimental changes. It would explore: experimental functioning of a hospital as an institution providing total community health services; development, use, and evaluation of new types ot personnel or use of existing health personnel in new ways; experimentation with new methods of record keeping and information retrieval; and/or experimentation with new methods of communication among private physicians, satellite community health centers, and hospital medical centers with respect to the needs and care ot individual patients.

6. Quality of Medical and Other Health Services:

Analytical and experimental research to develop criteria to measure outcomes of selected practices, methods, regimens, and systems of medical and other services; research, development, and demonstration with potentially better services; and study and better definition of the fine structure of facilities and organization, communication, and other factors affecting outcomes of service.

7. The Process of Communicating Health Knowledge:

Testing ways of more effectively communicating the findings of laboratory and clinical research to the general public and the practicing health professions, of communicating to the public information regarding available health resources and services, and of communicating to the public, and particularly the decision-makers of a community, information regarding health problems and gaps in resources and services necessary to meet them; experimenting with new techniques, based on modern behavioral science theories, to achieve greater acceptance and utilization of health services and better motivation for following recommended health practices.

PUBLIC HEALTH SERVICE PUBLICATION No. 1708

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VT 003 972
Manpower Trends in Selected Paramedical Occupations,

Arizona State Employment Service, Phoenix
MF AVAILABLE IN VT-ERIC SET,
Pub Date - Jun65 16p.

*HEALTH OCCUPATIONS; *MANPOWER NEEDS; *HEALTH OCCUPATIONS EDUCATION; PROFESSIONAL EDUCATION; EMPLOYMENT STATISTICS; *EMPLOYMENT PROJECTIONS; *PARAMEDICAL OCCUPATIONS; EMPLOYMENT TRENDS; OCCUPATIONAL SURVEYS
ARIZONA

The study aimed at collecting data to answer the questions: (1) What are the general employment trends in the health services field? (2) What will be the projected need for specific paramedical occupations by 1970? (3) What can existing training facilities produce to supply the projected demand? and (4) What deficits will exist between projected demand and supply? Studies utilized were the Arizona State Employment Service's "Manpower Requirements and Training Needs Study," a Manpower Development and Training Act study of sources of health services training in Arizona, and the "Western Management Consultants Study of the Economy of Maricopa County." Information was also obtained from the State Department of Public Health, the State Board of Nurses Registry, physicians, and hospital personnel. A continuing pattern of employment growth throughout the state was found. At the time of the survey, 14,200 persons were employed in 16 health service occupations and it was projected that an additional 5,633 workers would be needed by 1970. Existing education facilities will not be able to supply this demand and a net deficit of 2,321 was projected. In order to correct the imbalance, the state will have to increase its supply of personnel from its own education facilities by a minimum of 50 percent. (JK)

VT 003 972

Employment Security Commission of Arizona
ARIZONA STATE EMPLOYMENT SERVICE
Affiliated with
United States Employment Service

MANPOWER TRENDS IN SELECTED PARAMEDICAL OCCUPATIONS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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VT 003 972

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ARIZONA STATE EMPLOYMENT SERVICE
Charles A. Boyle, Administrator

June 1965

PLANNING FOR IMPENDING CHANGE is one of the most challenging endeavors known to man. In the United States the change due to new social legislation is yet an unknown quantity. Coupled with this change on a national base Arizona also contends with the change inherent to a growing population and the resultant expanding economy.

We in the Employment Service have been keenly aware of this change and its subsequent effects on manpower. Hopefully, this report on occupations in the health services field will contribute to the knowledge needed by the planners.

Charles A. Boyle, Administrator
ARIZONA STATE EMPLOYMENT SERVICE

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1. INTRODUCTION

This report on selected health service occupations, those identified as paramedical occupations, has been prepared at the request of the Phoenix Planning Board for a Health Services Education Center. The manpower data contained in this report has been compiled and analyzed for the specific purpose of providing reasonable and realistic answers to the following questions:

What are the general employment trends that are taking place in the health services field?

For specific paramedical occupations, what will be the projected need (demand) for these occupations in the next five years (by 1970)?

What can existing training facilities produce to supply the projected demand?

What deficits, if any, will exist between projected demand and projected supply?

The paramedical occupations which this report covers have been selected by the Phoenix Planning Board for a Health Services Education Center. These occupational fields include:

Dietitian
Registered Nurse
Medical Record Librarian
Medical Technologist
Occupational Therapist
Physical Therapist
X-ray Technologist
Dental Hygienist
Licensed Practical Nurse
Inhalation Therapist
Laboratory Technician and Assistant
Dental Assistant
Medical Assistant
Medical Record Secretary
Medical Record Clerk
Nurse Aide and Orderly

Manpower studies and other reference sources used to compile, analyze, and project employment trends, demand, and supply in the selected paramedical occupations include the Arizona State Employment Service's Occupational-Industry Study, Manpower Requirements and Training Needs Study, and a MDTA Study of Sources of Health Services Training in Arizona; Western Management Consultants Study on the Economy of Maricopa County; Arizona State Department of Public Health; Arizona State Board of Nurses Registry; and informal discussions with various physicians and hospital personnel.

II. TRENDS IN EMPLOYMENT IN THE HEALTH SERVICES FIELD

A. Factors Influencing Employment Trends.

A combination of factors support a continuation of the pattern of employment growth in the health services field, both public and private. These factors include population growth, shifts in consumer spending, changing age structure of the population, and pending Federal legislation on medical and health services to the aged.

In recent years, the population of Arizona has more than doubled, growing from 749,587 in 1950 to approximately 1.6 million in 1964. Maricopa County's population growth during this same period of time increased by over 250 percent, from 331,770 to 850,000. By 1970, 2.2 million people will reside in Arizona with 1.2 million in Maricopa County. As a general trend, the number of people employed in all health service occupations increased proportionately with population growth from approximately 6,000 in 1950 to 14,000 in 1964. The prospects for population growth alone will support a substantial increase in health services employment to supply minimum demand.

There is evidence, within the Nation's, State's, and Maricopa County's economy, of a shift in consumer spending towards more and improved health services. In 1947, approximately 4.1 percent of the consumer dollar was spent for health and medical care. This increased to 6.2 percent in 1962, and will probably increase to around 7.0 percent by 1970.

The number of persons in advanced age groups, 60 years old and older, has been growing and at a rate greater than total population growth. In 1950, approximately 68,200 Arizona residents were 60 years of age and older. By 1960, this age group expanded to 131,705 or an increase of 93.1 percent. During this same ten year period, Arizona's total population increased by 73.7 percent. This age group now accounts for approximately 14.5 percent of the population and by 1970 will comprise over 15 percent or over 330,000 of the anticipated 2.2 million population. A significant economic impact of an increase in the aged population is that this age group requires higher than average medical attention.

Another factor affecting demand for health services is the opposite end of the age spectrum. The major group of children born in the years following 1945 is approaching the 18-year mark. The children of Arizona's inmigrant population which arrived during these postwar years are concentrated within this large under-20 population. In another two to four years, these young people will be contributing heavily to an increasing

annual number of births requiring increased health services for themselves and their progeny.

By the end of the current calendar year, Federal legislation for health and medical care will be a reality. The impact of the Kerr-Mills Act and the pending legislation can only be conjectured at the present time, but it is reasonable to predict that because of this legislation, growth patterns in health services employment will be accelerated in the next five years.

Taking all of these factors into consideration plus the fact that local hospitals and private practitioners are already serving a much larger population than that which is resident within either Maricopa County or the State and that growth of the whole southwestern region should increase such opportunities, the next five years will offer both the opportunity and demand for the expansion of Arizona and Maricopa County health services beyond local minimal needs. Not to be overlooked are the effects of scientific advances in medicine that lead to a rapid growth in jobs that require increased technical skills.

B. Trends in Health Service Occupations.

Employment in the professional occupations has lagged slightly behind the rate of population expansion. These occupations include Physician, Pharmacist, Medical Record Librarian, Registered Nurse, Dietician, and Occupational and Physical Therapists.

Employment in the semi-professional health services occupations has kept pace with population growth. These occupational fields, which include Medical Technologist and Technician, X-Ray Technician and Technologist, Inhalation Therapist, and Licensed Practical Nurse, should experience a more rapid expansion in the next five years than in previous years.

The rate of growth in the field of clerical personnel such as Medical Record Secretary and Stenographer has been steady but at a rate that is over half of the rate of population growth. This pattern should continue but at a steadily increasing rate.

Auxiliary assistants such as Nurse Aide and Orderly have nearly doubled. However, there is a trend towards lesser utilization of these skills as more Licensed Practical Nurses become available. In the next five years this occupational field will continue to increase but at a slightly diminishing rate.

III. EMPLOYMENT PROJECTIONS IN SELECTED PARAMEDICAL OCCUPATIONS

Covered in this section will be the specific detailed manpower data on projected demand, supply, and deficits for selected paramedical occupations.

The data on projected demand will include information both on estimates of expansion based on anticipated growth and estimates of replacement needs resulting from death, retirement, and workers leaving the occupational field. Because sufficient information is not available on replacement needs for these health service occupational fields in Arizona, the estimates of replacement needs have been made by utilizing a factor comprised of the projected rate of growth of population reaching retirement age, mortality rate, and an allowance for female workers of childbearing age leaving the occupation to raise their families. The replacement estimates provided are very conservative and probably understate rather than overstate the projected replacement needs.

The data on supply is based purely on the projected output of existing Arizona and Maricopa County health service education facilities. The supply data does not include estimates of workers imported from other states to meet local needs since this importation varies directly with the availability of locally trained health service workers produced by local education centers.

A. Professional, Semi-Professional, and Technical Paramedical Occupations

1. Dietitian

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	20	10
2) Replacement needs	6	3
3) Total estimated demand	26	13
b. Completing Training in Next Five Years:	50	10

c. Based on a total anticipated demand for 26 Dietitians in the State during the next five years, with a probable output of 50 graduates from Arizona schools, there should be no shortage of Dietitians during the next five years.

2. Medical Record Librarian

Sufficient information was not available from existing manpower research upon which to project employment of Medical Record Librarians either in the State as a whole or for Maricopa County. However, an informal survey of professionals employed in the field resulted in advice from which a conservative estimate of growth was made. This growth is based primarily on expansion of hospital facilities in the State.

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of Employment	10	6
2) Replacement needs	5	4
3) Total Estimated Demand	15	10

b. Completing Training in Next Five Years:

There are no educational centers identified as training Medical Record Librarians. It appears that a trained Librarian can learn the skills of a Medical Record Librarian through on-job training.

c. Deficit During Next Five Years:	15	10

3. Occupational Therapist

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of Employment	25	10
2) Replacement needs	4	2
3) Total estimated demand	29	12

b. Completing Training in Next Five Years:

There are no facilities in Arizona training Occupational Therapists.

c. Deficit During Next Five Years:	29	12

4. Registered Nurse

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	1,500	600
2) Replacement needs	600	320
3) Total estimated demand	2,100	920
b. Completing Training in Next Five Years:	930	700
c. Deficit During Next Five Years:	1,170	220

5. Medical Technologist

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	220	200
2) Replacement needs	40	25
3) Total estimated demand	260	225
b. Completing Training in Next Five Years:	200	170
c. Deficit During Next Five Years:	60	55

6. X-Ray Technologist and Technician

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	110	90
2) Replacement needs	30	20
3) Total estimated demand	140	110
b. Completing Training in Next Five Years:	90	90
c. Deficit During Next Five Years:	50	20

7. Physical Therapist

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	30	20
2) Replacement needs	4	2
3) Total estimated demand	34	22

b. Completing Training in Next Five Years:

There are no schools in Arizona training Physical Therapists.

c. Deficit During Next Five Years:	34	22

8. Dental Hygienist

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	15	10
2) Replacement needs	4	2
3) Total estimated demand	19	12

b. Completing Training During Next Five Years:

There are no facilities in Arizona that are identified to be training Dental Hygienists.

c. Deficit During Next Five Years:	19	12

9. Licensed Practical Nurse

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	700	400
2) Replacement needs	140	100
3) Total estimated demand	840	500

b. Completing Training During Next Five Years:	550	380
c. Deficit During Next Five Years:	290	120

10. Medical Laboratory Technician and Assistant

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	35	25
2) Replacement needs	15	10
3) Total estimated demand	50	35

b. Completing Training During Next Five Years:

All training that could be identified appears to be on-job training.

c. Deficit During Next Five Years:	50	35

11. Inhalation Therapist

In the manpower research that has been conducted, the occupation of Inhalation Therapist was not listed by any hospitals. In order to obtain an estimate of the probable utilization of this occupation, an informal survey was conducted among selected hospitals, as well as some discussions with physicians specializing in diseases of the thoracic area. An estimate of employment has been made based upon the advice of the physicians and hospital personnel contacted. This occupation definitely appears to be one that will be growing.

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	30	20
2) Replacement needs	5	3
3) Total estimated demand	35	23

b. Completing Training During Next Five Years:	17	10
c. Deficit During Next Five Years:	18	13

B. Clerical Paramedical Occupations

1. Dental Assistant

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	150	100
2) Replacement needs	65	45
3) Total estimated demand	215	145
b. Completing Training During Next Five Years:	125	125
c. Deficit During Next Five Years:	90	20

Note: Most Dental Assistants employed in Arizona gain their skills on-the-job. The deficit represented is the anticipated gap between demand for Dental Assistants and those graduating from a formal academic facility.

2. Medical Assistants

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	130	110
2) Replacement needs	40	25
3) Total estimated demand	170	135
b. Completing Training During Next Five Years:	50	50
c. Deficit During Next Five Years:	120	85

Note: Many Medical Assistants are trained by their employer on-the-job.

3. Medical Record Clerical Personnel

Problems were encountered in relating the job titles used by health service employees with the job titles and descriptions contained in the Dictionary of Occupational Titles. Sufficient information, therefore, was not available to make a valid projection to 1970. However, in the interest of providing an indicator of future demand, the occupational classifications that apply to medical record clerical work have been grouped, and by a statistical method, a projection has been derived.

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	500	280
2) Replacement needs	200	120
3) Total estimated demand	700	400
b. Completing Training Ouring Next Five Years:	300	225
c. Deficit Ouring Next Five Years:	400	175

C. Auxiliary Paramedical Occupations

1. Nurse Aide and Orderly

a. Demand in Next Five Years:

	Arizona	Maricopa County
1) Expansion of employment	200	150
2) Replacement needs	800	480
3) Total estimated demand:	1,000	600
b. Completing Training During Next Five Years:	1,000	590
c. Deficit During Next Five Years:	None	None

IV. SUMMARY AND CONCLUSIONS

Throughout the State of Arizona and Maricopa County, there is a continuing pattern of employment growth in all fields of health services. In the past, population growth has been the major influence in the expansion of health services employment. Expected population growth for the balance of this decade will require substantial increases in employment to supply the minimum health services needs.

Shifts in consumer spending, shifts in the structure of the population towards a greater proportion of those of advanced age as well as those of much younger ages, and the Kerr-Mills Act and pending Federal health and medical care legislation will provide greater impetus to the future growth of health services employment. The net result will be a more rapid expansion of health services in the next five to ten years than has been experienced in the last fifteen years.

At the present time, over 14,200 persons are employed in sixteen health service occupations in the State of Arizona. Over 7,800 are employed in these 16 occupations in Maricopa County. By 1970, Arizona will require an additional 5,633 workers in these 16 occupations due to expansion of employment and replacement needs. Maricopa County, by 1970, will need 3,162 workers in these same occupations. Arizona's and Maricopa County's existing health services education facilities will not be able to supply this demand, thus creating a net deficit or shortage of workers by 1970 totalling 2,321 in the State and 812 in Maricopa County.

Deficits can be expected during the next five years for Medical Record Librarians, Occupational Therapists, Registered Nurses, Medical Technologists, X-Ray Technologists, Physical Therapists, Dental Hygienists, Licensed Practical Nurses, Medical Laboratory Technicians and Assistants, Inhalation Therapists, Dental Assistants, Medical Assistants, and Medical Record Clerical Personnel.

There exists today throughout the State, job vacancies in almost all paramedical occupations. Arizona's health services employers are not able to meet their needs for trained paramedical personnel today from either Arizona educational facilities or from out-of-state recruitment. This problem will be greatly magnified in the future. In order to correct this imbalance, Arizona must increase its supply of trained paramedical personnel from its own educational facilities by a minimum of 50 percent.

ESTIMATED EMPLOYMENT (1965) AND PROJECTED EMPLOYMENT (1970)

OF WORKERS IN HEALTH SERVICES OCCUPATIONS

ARIZONA AND MARICOPA COUNTY

	ARIZONA		MARICOPA COUNTY	
	Estimated 1965	Projected 1970	Estimated 1965	Projected 1970
PROFESSIONAL & SEMIPROFESSIONAL OCCUPATIONS				
Dental Hygienist	70	85	40	50
Dietitians	110	130	60	70
Laboratory Technicians & Assistants (Medical)	220	255	120	145
Librarians (Medical)	80	90	50	56
Licensed Practical Nurse	1,600	2,300	800	1,200
Medical Technologist	860	1,080	380	580
Occupational Therapist	40	65	20	30
Physical Therapist	70	100	30	50
Registered Nurse	6,000	7,500	3,400	4,000
X-Ray Technologists and Technicians	490	600	240	330
CLERICAL OCCUPATIONS				
Dental Assistants	280	430	100	200
Medical Assistants	150	280	50	160
Medical Record Clerical Personnel	1,110	1,610	660	940
SERVICE WORKERS				
Nurse Aides & Orderlies	3,200	3,400	1,850	2,000

Prepared by:

Arizona State Employment Service

July 1965

VT 004 085
A List of Nursing Schools Awarded Construction Grants Under the Nurse Training Act of 1964. December 1965 to June 1967.

Public Health Service (DHEW), Washington, D.C. Div. of Nursing
MF AVAILABLE IN VT-ERIC SET.
Supplement to PHS Pub-1154-5.
Pub Date - Sep67 16p.

SCHOOL IMPROVEMENT; *HEALTH OCCUPATIONS EDUCATION; PROFESSIONAL EDUCATION; *NURSING; *GRANTS; *SCHOOL CONSTRUCTION; *FEDERAL AID; FEDERAL PROGRAMS
*NURSE TRAINING ACT OF 1964; HEALTH PROFESSIONS EDUCATION ASSISTANCE ACT OF 1963

The Nurse Training Act of 1964 authorized funds to construct or renovate and equip teaching facilities for new or existing masters, baccalaureate, diploma, and associate degree nursing programs, while the Health Professions Education Assistance Act of 1963 made construction grants available to baccalaureate and higher degree nursing programs. This resume contains a listing of schools awarded grants and indicates for each the amount of the grant, the type of construction, and the type of nursing program. The listing will be revised and issued annually. (JK)

VT 004 085

ED039370

A LIST OF NURSING SCHOOLS AWARDED CONSTRUCTION GRANTS

under the Nurse Training Act of 1964

December 1965 ■ June 1967

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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VT004085

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE □ Public Health Service

SUPPLEMENT

to Public Health Service Publication No. 1154-5

"Construction Grants Program for Schools of Nursing"

SEPTEMBER 1967

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service - Bureau of Health Manpower - Division of Nursing
800 North Quincy Street, Arlington, Virginia 22203

Introduction

The construction grants provision of the Nurse Training Act authorized funds to construct or renovate and to equip teaching facilities for new or existing schools of nursing. A resumé of this provision is contained in the booklet Construction Grants Program for schools of Nursing, Public Health Service Publication Number 1154-5 (Revised June 1965).

This supplement will be revised and issued annually. It contains a listing of the schools awarded construction grants since the beginning of the program in September 1965. The amount of the grant, the type of construction, and the type of nursing program is indicated. Further information about the facilities provided by these grants may be obtained by writing to the schools.

Consultation on planning nursing education facilities and information about making application for a construction grant are available from the Division of Nursing of the U.S. Public Health Service.

Prior to the Nurse Training Act, construction grants were available to baccalaureate and higher degree nursing programs under the Health Professions Education Assistance Act of 1963, Public Law 88-129. Sixteen construction grants were awarded to nursing schools between October 1964 and June 1965. These are listed on pages 14 and 15.

DISCRIMINATION PROHIBITED -- Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance." Therefore, the Construction Grants Program for Schools of Nursing, like every program or activity receiving Federal assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

Construction Grants Awarded
December 1965 □ June 1967

State and School	Grant	Construction	Program
ALABAMA			
Tuskeegee Institute Tuskeegee	$ 402,155	New facility	Baccalaureate
University of Alabama Birmingham	1,144,296	New facility	Baccalaureate and Master's
ARIZONA			
University of Arizona Tucson	718,014	New facility	Baccalaureate
CALIFORNIA			
California State College Long Beach	164,177	New facility	Baccalaureate
*College of the Desert Palm Desert	438,260	New facility	Associate Degree
Highland-Alameda County Hospital Oakland	82,644	Phase I: teaching space in new hospital	Diploma
Orange Coast Junior College District Huntington Beach Campus	262,700	New facility	Associate Degree

*New school of nursing

State and School	Grant	Construction	Program
CALIFORNIA (continued)			
University of California Medical Center San Francisco	$1,832,863	New facility	Baccalaureate and Master's
University of San Francisco San Francisco	628,208	New facility	Baccalaureate
FLORIDA			
Barry College Miami	106,940	Renovation and addition	Baccalaureate
Orange Memorial Hospital Orlando	235,198	Renovation and addition	Diploma
GEORGIA			
Emory University Atlanta	895,970	New facility	Baccalaureate and Master's
INDIANA			
*Indiana State University Terre Haute	366,685	Phase I: New facility, Clinical Education Building	Baccalaureate
ILLINOIS			
Decatur and Macon Caunty Haspital Decatur	295,993	New canstruction and renovatian	Diploma
Little Company of Mary Hospital Evergreen Park	603,901	New facility	Diploma

State and School	Grant	Construction	Program
ILLINOIS (continued)			
Lutheran Hospital Moline	$ 30,972	Renovation	Diploma
Northern Illinois University DeKalb	429,872	New facility	Baccalaureate
University of Illinois Chicago Campus	2,988,842	New facility	Baccalaureate and Master's
KENTUCKY			
Berea College Berea	286,448	New facility	Baccalaureate
Western Kentucky State University Bowling Green	223,579	New facility	Associate Degree
LOUISIANA			
Northwestern State College Shreveport Campus	264,941	New facility	Baccalaureate
University of Southwestern Louisiana Lafayette	824,417	New facility	Baccalaureate
MAINE			
*Westbrook Seminary and Junior College Portland	134,917	New facility	Associate Degree

State and School	Grant	Construction	Program
MARYLAND			
Provident Hospital Baltimore	$ 335,923	Teaching space in new hospital	Diploma
University of Maryland Baltimore Campus	1,093,049	New facility	Baccalaureate and Master's
MASSACHUSETTS			
Boston University Boston	1,533,699	Renovation and addition	Baccalaureate and Master's
Lawrence Memorial Hospital Medford	147,250	New facility	Diploma
*Northeastern University Boston	450,947	New facility	Associate Degree
St. Vincent Hospital Worcester	241,700	Addition	Diploma
MINNESOTA			
Lutheran Deaconess Home and Hospital Minneapolis	160,839	Renovation and addition	Diploma
MISSISSIPPI			
*Mississippi Valley State College Itta Bena	227,751	New facility	Associate Degree

State and School	Grant	Construction	Program
MISSOURI			
Lutheran Hospital St. Louis	$ 212,613	New facility	Diploma
Research Hospital and Medical Center Kansas City	99,923	Renovation	Diploma
NEBRASKA			
Nebraska Methodist Hospital Omaha	619,911	Teaching space in new hospital	Diploma
NEW HAMPSHIRE			
St. Anselm's College Manchester	353,949	New facility	Baccalaureate
NEW JERSEY			
Holy Name Hospital Teaneck	22,279	Equipment	Diploma
Monmouth Medical Center Long Branch	232,900	New facility	Diploma
Newark Beth Israel Hospital Nework	445,782	New facility	Diploma
St. Francis Hospital Jersey City	150,677	Addition	Diploma

State and School	Grant	Construction	Program
NEW YORK			
Beth Israel Medical Center New York	$2,000,592	New facility	Diploma
Buffalo General Hospital Buffalo	321,469	New facility	Diplomo
Hartwick College Oneonta	31,628	Renovation	Baccalaureate
St. Elizabeth Hospital Utica	721,601	New facility	Diploma
St. James Mercy Hospital Hornell	116,875	Renovation	Diplomo
NORTH CAROLINA			
North Carolina Baptist Hospitals Winston-Salem	592,219	New facility	Diploma
University of North Carolina Chapel Hill	1,113,519	New facility	Baccalaureate and Master's
OHIO			
Lutheran Hospital Cleveland	496,537	New facility	Diploma
Ohio State University Columbus	1,165,574	New facility	Baccalaureate and Master's

State and School	Grant	Construction	Program
OHIO (continued)			
Riverside Hospital Toledo	$ 237,059	New facility	Diploma
St. Elizabeth Hospital Youngstown	127,000	Addition	Diploma
Timken Mercy Hospital Canton	482,468	New facility	Diplama
OREGON			
Good Samaritan Hospital Portland	506,118	New facility	Diploma
University of Portland Portland	264,042	New facility	Baccolaureate
PENNSYLVANIA			
Conemaugh Valley Memorial Hospital Johnstown	463,727	New facility	Diploma
Mercy Hospital Pittsburgh	65,053	Renovation	Diploma
Mt. Mercy College Pittsburgh	521,523	Renovation	Baccalaureate
Philadelphia General Hospital Philadelphia	2,887,598	New facility 1/	Diploma

1/ An education building shared by the schools of nursing of the Philadelphia General Hospital and the Hospital of the University of Pennsylvania, and by the pediatric nursing programs of the Children's Hospital.

State and School	Grant	Construction	Program
PENNSYLVANIA (continued)			
Robert Packer Hospital Sayre	$ 557,923	New facility	Diploma
St. Francis Hospital New Castle	198,280	Renovation and oddition	Diploma
Sharon General Hospital Sharon	422,458	New facility	Diploma
PUERTO RICO			
Puerto Rico Medical Center Rio Piedras	854,550	New facility	Diploma
RHODE ISLAND			
Rhode Island Hospitol Providence	207,900	Renovation	Diploma
SOUTH DAKOTA			
*Augustana College Sioux Falls	129,333	New facility	Baccalaureate
*Presentation College Aberdeen	411,353	New facility	Associate Degree
St. John's McNamara Hospital Rapid City	232,392	New facility	Diploma
South Dakota State University Brookings	548,331	New facility	Baccalaureate

State and School	Grant	Construction	Program
TEXAS			
Hotel Dieu El Paso	$ 33,988	Equipment	Diploma
UTAH			
University of Utah Salt Lake City	1,503,100	New facility	Baccalaureate and Master's
VIRGIN ISLANDS			
*College of the Virgin Islands St. Thomas	204,010	New facility	Associate Degree
WEST VIRGINIA			
Wheeling Hospital Wheeling	50,000	Renovation	Diploma
W' .CONSIN			
*Wisconsin State University Eau Claire	574,470	New facility	Baccalaureate

*Construction Grants Awarded ** under the Health Professions Educational Assistance Act of 1963*

PUBLIC LAW 88-129 - FISCAL YEAR 1965

State and School	Grant	Construction
ARIZONA		
Arizona State University Tempe	$ 440,92[illegible]	New facility
COLORADO		
University of Colorado Denver Campus	293,367	Renovation
CONNECTICUT		
University of Bridgeport Bridgeport	330,833	New facility
ILLINOIS		
Illinois Wesleyan University Bloomington	158,278	Renovation
Loyola University Chicago	684,922	New facility
St. Xavier College Chicago	100,500	Renovation
INDIANA		
*Ball State University Muncie	804,671	New facility

** Baccalaureate and higher degree nursing programs

U.S. GOVERNMENT PRINTING OFFICE : 1967 O—279-779

State and School	Grant	Construction
KENTUCKY		
*Murray State College Murray	$ 576,748	New facility
LOUISIANA		
Dillard University New Orleans	199,622	Addition
NEVADA		
University of Nevada Reno	389,118	New facility
NEW YORK		
D'Youville College Buffalo	612,783	New facility
NORTH CAROLINA		
East Carolina College Greenville	506,252	New facility
OHIO		
University of Cincinnati Cincinnati	1,586,103	New facility
Western Reserve University Cleveland	1,124,931	New facility
TEXAS		
Texas Waman's University Denton	458,135	New facility
WISCONSIN		
Alverno College Milwaukee	563,460	New facility

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The career guidance program utilizes specialized and intensive guidance and a curriculum centered around the world of work to accomplish its objectives, namely, an increased level of educational and vocational aspiration within junior high school students. This specially designed teaching guide in guidance and job placement is one of a series designed for use with junior high school pupils who are in general overage, frustrated, retarded in most school subjects, and indifferent to education. The guide is organized in two parts. Part I, Organization and Implementation of the Program, includes scope of the program, criteria for the selection of pupils, the testing program, high school placement, job placement services, and working with the individual pupil. Part II, Suggested Group Guidance Units, includes: What can the career guidance program do for me? What can school do for me? What is the job for me? How do I get the job? The bibliography lists resources in the areas of occupational information, testing, and counseling information. (CH)

VT 004 657

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CAREER
GUIDANCE
SERIES

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Guidance and Job Placement

VT 004 657

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FOREWORD

The goal of our educational system is to prepare young people to meet the social, economic, and political challenges ahead of them. However, some youngsters for one reason or another, have not achieved the required minimal skills nor have they adjusted sufficiently to prepare themselves to serve as useful and productive members of society. It is the purpose of the Career Guidance Program to meet the special needs of such youngsters.

The saddest and potentially most dangerous waste products of our advanced technology are the undereducated unskilled young men and women who are released annually into a world of work which has no place for them. The Career Guidance Program has been organized to select, to motivate, and to train young people who have failed in the regular school situation, and to redirect them toward continuing their education.

This manual contains the aims and techniques of guidance within the Career Guidance Program. This aspect of the program cannot be overestimated. The Career Guidance advisor is the person who makes the program work — who performs the "magic" along with skilled and understanding teachers and supervisors who hopefully will channel the direction of the youngsters' lives toward success and well-being.

The results of this program have been outstanding. It is with great pleasure that I look forward to its continued success so that youngsters who are truly being given a second chance will find a place of honor for themselves in our "great society".

JOSEPH O. LORETAN
Deputy Superintendent of Schools

July, 1966

THE CAREER GUIDANCE PROGRAM

The Career Guidance Program grew out of a deep concern on the part of the Junior High School Division for the many pupils who were overage, frustrated, retarded in most school subjects, and indifferent to education. The typical pupil in this group has a poor self-image, few or no aspirations either academic or vocational, and is biding his time until he can drop out of school.

During the school year 1957-1958, Joseph O. Loretan*, Deputy Superintendent of Instruction and Curriculum; Morris Krugman†, Associate Superintendent of the Division of Child Welfare; and five junior high school principals worked out a plan and structure to create a program for these potential dropouts. In September 1958, six classes were organized in the 7th, 8th, and 9th grades of five junior high schools. It was hoped that with specialized and intensive guidance and a curriculum centered around the world of work these pupils would remain in school and be infused with a desire to set higher educational goals for themselves.

In each of these schools, a teacher was designated curriculum coordinator to prepare special materials with the help of the teachers of these experimental classes. Most of the schools used the core approach. A job area was chosen as the center of learning, e.g., Garment Trades, Food Handling, etc. All instruction in the various subject areas served to develop and to extend the learnings connected with the particular job area chosen. In September 1960, the Junior High School Division appointed a Job-Placement Supervisor to provide part-time employment for youngsters who wanted to earn money while in school.

This experiment was expanded to include a total of twenty-four junior high schools in September 1962 and thirty junior high schools in February 1963. The program was organized for the 9th grade, since this was the terminal year of the junior high school and it was at this time that young people had to make a serious decision: Should they go on to high school or should they go to work? Therefore, a concentrated effort had to be made at this point to raise their educational and vocational aspirations if these pupils were to be motivated to seek higher learning.

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*Formerly Associate Supt. JHS Div.
†Retired

The program was introduced in the junior high schools that requested it. It comprised a unit of three classes, each with a maximum register of fifteen pupils. A full-time advisor was assigned to each school to meet with each class for group guidance twice a week and with every pupil, individually, at least once a week. An industrial arts teacher was also assigned full-time to instruct the pupils in prevocational and avocational skills.

Three years of experimentation and a study of similar programs throughout the nation showed that a new teaching approach was essential in every subject area, if these youngsters were to be rehabilitated and redirected. Adaptations or "watered-down" versions of the traditional curriculum without a modified approach presented learning situations which were only too familiar and were filled with the failures and frustrations of the past. It was also evident that once these pupils had spent some time in a Career Guidance class they began indicating that they no longer wanted to leave school to go to work; they now wanted to prepare themselves for high school.

Thus, in February 1963, a team of specialists in each of the curriculum areas began to work on specially-designed teaching guides in Guidance and Job Placement, Language Arts, Speech, Social Studies, Science, Mathematics and Industrial Arts. To prepare these guides the curriculum specialists visited each of the schools that had been in the Career Guidance Program from two to five years and studied the teacher-prepared materials in use, observed and conferred with the pupils in the classes, and interviewed the teachers and supervisors to become oriented with the pupils' backgrounds, aspirations, cultures, interests, and needs. Workshop committees composed of teachers, advisors, and assistant principals were organized to work with each curriculum specialist. As the teaching material was developed it was tried out experimentally in selected schools and evaluated.

By September 1963, teaching guides in seven subject areas were made available in mimeograph form to all the schools in the program. The subject matter developed departed largely from the job-centered themes and concentrated on the skills and subject matter necessary for further study in high school; less on theory and more on the functional and

manipulative aspects of each subject area so as to present the pupils with true-to-life problems and situations. Beginning September 1963, the area of Office Practice was included to prepare the pupils with immediate saleable skills for obtaining part-time jobs and to instill a desire for further vocational work in high school.

Through a continuous program of evaluation by teachers, supervisors, and curriculum consultants, the teaching guides were revised and extended and the present series evolved: Guidance and Job Placement, Language Arts, Mathematics, Social Studies 1, Social Studies 2, Social Studies 3, Speech, Science, Industrial Arts, and Office Practice (Pupil Material, Teacher's Manual).

In September 1965, with the reorganization of the schools in New York City, the 8th grade became the terminal grade in some junior high schools. Thus, the Career Guidance Program was placed in the 8th grade of seventeen of these schools. At present there is a total of fifty-two schools in the Career Guidance Program.

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Gida Cavicchia, Coordinator of the Career Guidance Program, served as project director with the cooperation of Willia Peace, Coordinator of Pupil Personnel of the Career Guidance Program.

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Willia Peace, Coordinator of Pupil Personnel of the Career Guidance Program was the principal writer.

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Marvin Cohen, J265K, and Sylvia Jacobs, J33K, assisted with the editing of the revised material.

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Manhattan - - J3, J13, J22, J43, J44, J88, J99, J115, J118, J120, J139, J164

Bronx — J22, J55, J98, J118, J133, J136, J142

Brooklyn — J33, J49, J50, J64, J126, J136, J166, J210, J263

Queens — J16, J142

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*Now Dist. Supt., Dist. #29, Q
†Retired

The following members of the Bureau of Educational and Vocational Guidance served as consultants: Daisy K. Shaw, Director; Clara Blackman, Assistant Director; Donald Kaplan, Supervisor of Guidance; Myron Unger, Supervisor of Guidance.

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Elena Lucchini, Assistant Editor, Bureau of Curriculum Development, designed the cover and assisted with production; Aaron N. Slotkin, Editor.

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Introduction

Over one hundred years ago, educators concerned themselves with the imparting of verbal and numerical skills. Individual differences appeared not to matter. Perhaps this was due to the fact that the population was much smaller, that more people lived on farms and in rural areas, that only the well-to-do, for the most part, went to college, that child labor laws were practically non-existent, and that the legal age for leaving school was a much earlier one.

All this has changed. Today, because of the numerous and extensive changes in our way of life, we are constantly searching for better methods and materials with which to prepare our young people to meet and to adjust to these changes. Research and experimentation in education have helped to provide different and new curricula for the "lame, the halt and the blind".

Throughout our nation the present concern is for the dropout. They, too, are a combination of the "lame, the halt and the blind". They are unable to function adequately in the home, the school, and the community. They have not mastered the basic academic and vocational skills which will enable them to approach adulthood with some feeling of security and confidence in their abilities. They, too, are blind for they need to be helped to envision the many wonderful opportunities lying ahead. These young people must be prepared to make worthwhile contributions and to participate positively in our American way of life. The Career Guidance Program is desigued to achieve these goals.

This resource guide presents an overview of the Career Guidance Program and guidelines for the teacher-advisors in the program.

Part 1 of the manual explains the organization and implementation of the program and describes the role of the teacher-advisor as he relates to the pupils, school personnel, parents, community, and outside agencies. Part 2 consists of eleven units of work, which are desigued to provide a format and frame of reference to help the advisor offer a sound and valuable series of Group Guidance lessons to the pupils in the program. Each unit includes a series of key questions which may be used for the development of one or more lessons, at the discretion of the advisor. It is suggested that the advisor introduce activities and lessons pertaining to pertinent situations or problems in the school or community which merit group discussion and which may not be included in the eleven units of this guide.

Part 1
Organization and Implementation of the Program

Scope of Program

Who Are the Pupils in the Career Guidance Classes?

The pupils in Career Guidance classes are youngsters who have not adjusted academically and personally for various reasons. A study of current available literature throughout the nation and teacher observation of the several thousands of youngsters who have participated in the Career Guidance Program have shown that the most common characteristics found among potential dropouts are:

1. a lack of high ideals and ambitions
2. record of failure in academic work
3. poor records in personal and social adjustment
4. inadequate work and study habits
5. irregular school attendance
6. negative or hostile attitudes
7. held over either in the elementary school or in the junior high school or in both
8. products of broken homes
9. lonely and retiring
10. over-aggressive
11. desirous of curtailing schooling

What Are the Aims of the Program?

1. To help the pupils in their physical, ethical and moral development, in order to help them become worthwhile, law-abiding, contributing members of society.
   a. care of the physical body (good health habits, proper diet, and good grooming)
   b. development of sound minds in sound bodies.
   c. practice in social amenities and good behavior in the home, the school and the community
   d. development of self-respect and respect for others, for property, and for the underlying principles of good citizenship
   e. appreciation of art, music, and nature
   f. development of a desire to live by moral codes that are based upon accepted principles
   g. developing an understanding of the meaning of civil rights, laws of the land, and laws of the home, school and community
   h. developing a personal code of ethics
2. To develop in the pupils a positive attitude toward education, to inspire them to complete high school, and to prepare them for their place in a knowledgeable, literate society.
   a. developing the ability to make self-appraisals (abilities, aptitudes, and interests)
   b. providing the motivation and the tools for improving scholastic abilities.
   c. explaining the meaning and value of the testing program
   d. providing information about the various high schools and the special courses available
3. To help the pupils understand the dignity and importance of work and to learn how to adjust to their first job.
   a. explaining the social aspects of work and the interdependence of workers
      (1) in the home with the family
      (2) in the school with teachers, with parents, and with other pupils
      (3) in industry with workers, with employers, and with consumers
      (4) in the community with neighbors, with landlords, with workers, with representatives from agencies, and with members of the church, etc.

b. explaining the moral aspects of work and the responsibilities of workers
   (1) code of ethics for employees
   (2) relationship with employers and with fellow employees
c. orienting the pupils to the various aspects of the world of work
   (1) meaning of a career or job
   (2) requirements for work (physical, education etc.)
   (3) opportunities for succeeding vocationally
   (4) opportunities for advancement on the job
   (5) need for continued effort
d. helping the pupils in the selection of proper vocational training and/or selection of a job
   (1) advice and help given by teacher-advisor, parents, relatives and friends
   (2) use of the want ads in the newspapers
   (3) role of employment agencies
   (4) role of job placement service at the Board of Education of the City of New York

4. To give pupils continued guidance and moral support through follow-up contacts with them after graduation
   a. helping pupils when they are in high school
   b. providing assistance in personal, social and vocational matters for as long a period as the pupils may need it

5. To provide the pupils with information on the wholesome use of leisure time. (Statistics indicate that the proper use of leisure time reduces the rate of delinquency significantly.)
   a. explaining the differences between a vocation and an avocation
   b. instructing the pupils in the profitable use of leisure time
   c. encouraging the pupils to engage in and to enjoy hobbies
   d. informing the pupils about the various community organizations which offer opportunities for leisure-time activities
   e. explaining the meaning and value of "volunteer" services, and providing volunteer activities in which they can participate

6. To provide the pupils with any and all available aid which can be of service to them in the school, in the home, and in the community
   a. conferring with school guidance personnel
   b. working with parents, guardians, and parent-teacher groups
   c. articulation with secondary schools
   d. consulting with private and public clinical personnel

e. conferring with welfare and social agencies of the community
f. working with individuals in the community who can vitalize the program
g. enlisting the cooperation of industries of the community

Who Are the "Advisors" in the Career Guidance Program?

The pupils in Career Guidance classes are in need of more personal, social, academic, and vocational guidance than the average pupil. Therefore, a full-time teacher-advisor is assigued to attend to the needs of the pupils in the three Career Guidance classes of each school. The advisor, who is a teacher selected by the principal from among those of his staff who volunteer, meets with each of the pupils in the program at least once a week for individual guidance and with each class twice a week for group guidance. The teacher chosen must have the following qualifications:

1. A genuine desire to work with, and for, these atypical pupils
2. An understanding of the basic principles for improving human relations
3. An ability to work with pupils, teachers, and parents from all economic, social, and cultural levels
4. A sympathetic, but not sentimental, understanding that elicits the pupil's confidence and encourages him to seek advice and assistance
5. An ability to inspire pupils to learn to analyze their own strengths and weaknesses
6. A maturity, not just in age, but resulting from a variety of experiences
7. An ability to analyze and interpret situations which will help pupils solve their problems wisely
8. A demonstrated teaching ability
9. A knowledge of guidance techniques based on minimum course requirements for part-time guidance personnel. (See General Circular #3, December 27, 1962.)
10. A desire to initiate a program of professional self-improvement

What Are the Functions and Duties of the Career Guidance Advisor?

The many functions and duties of the Career Guidance advisor are consistent with the objectives of the program. The general aims of the

Career Guidance program, therefore, serve as guidelines for outlining the role of the advisor in achieving these goals.

1. GUIDANCE ACTIVITIES WITH INDIVIDUAL PUPILS:
   a. selecting pupils for Career Guidance classes and orienting them to the program
   b. conferring with each pupil at least once a week
   c. checking progress through record cards, testing, report cards, etc.
   d. interpreting progress to pupils and their parents
   e. working with pupils referred by teachers, parents, guardians and outside agencies
   f. counseling pupils who voluntarily seek aid concerning personal and social problems
   g. directing pupils who seek part-time or full-time working papers
   h. assisting pupils who transfer to and from other schools and institutions
   i. assisting pupils with their educational and vocational plans
   j. aiding pupils in their choice of high schools
   k. keeping records, data and reports concerning pupils (see Sample Forms)
   l. conducting follow-up studies

2. GUIDANCE ACTIVITIES WITH GROUPS OF PUPILS:
   a. meeting each career guidance class for group guidance two periods a week
      (1) planning units of work based on problems common to the group
      (2) conducting and carrying on activities, such as those suggested in Part 2 of this manual
      (3) conducting discussions on current events that are relevant to the problems of young people
   b. assisting with arranging trips planned for the pupils
   c. helping to plan career conferences, workshops and assembly programs relating to the work in these classes

3. GUIDANCE ACTIVITIES WITH PARENTS:
   a. interpreting the Career Guidance program to parents
   b. conducting parent workshops and conferences

c. addressing parent-teacher groups
d. involving parents in school-community activities

4. LIAISON WITH THE SCHOOL:
   a. working with other school people concerned with pupil personnel (counselor, attendance coordinator, health coordinator, etc.)
   b. interpreting the program to the school staff (at faculty conferences, subject conferences, grade conferences, etc.)
   c. encouraging the pupils to participate in school-wide activities (G.O., honors programs, audio-visual squad, clubs, etc.)

5. LIAISON WITH THE COMMUNITY:
   a. seeking community cooperation
   b. using community facilities and agencies
   c. involving industry, chambers of commerce, etc.
   d. placing young people in part-time or full-time jobs in the community
   e. conferring with the employers of the pupils who are working at part-time jobs and with prospective employers
   f. addressing community groups
   g. inviting representatives from a variety of professions and occupations for all-day career conferences or for career talks to the pupils

Note: It is suggested that the Career Guidance advisor confer with the guidance personnel of his school and district when such consultation will serve the best interests of the pupils.

How Can the Advisor Organize His Work?

Since guidance is the most significant feature of the Career Guidance program the effectiveness of the advisor is most important. He is charged with so many duties and responsibilities that it is necessary for him to organize and schedule his work for optimum results. It is obvious that it will not always be possible to adhere to any fixed schedule because of the many unforeseen circumstances which may arise. The following Weekly Program is suggested and has been included to serve as a guide for each advisor.

A SUGGESTED WEEKLY PROGRAM

PERIOD	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	Conference with Parents	Group Guidance 9 CG1	Group Guidance 9 CG2	Home Visits	Canvassing for Jobs
2	Indiv. Guidance	Records and Reports	Records and Reports	Indiv. Guidance	Canvassing for Jobs
3	Conference with Teachers	Indiv. Guidance	Indiv. Guidance	Conferences with Parents	Canvassing for Jobs
4	Conference with Teachers	Work with Agencies	Conference with Teachers	Records and Reports	Group Guidance 9 CG3
5	Records and Reports	Conference with Teachers	Indiv. Guidance	Indiv. Guidance	Records and Reports
6	Group Guidance 9 CG1	Group Guidance 9 CG2	Work with Agencies	Group Guidance 9 CG3	Indiv. Guidance
7	Indiv. Guidance	Indiv. Guidance	Records and Reports	Indiv. Guidance	Team Conference

	Periods per week
Individual Guidance	8
Group Guidance	6
Records and Reports	4
Conferences with Teachers	5
Conferences with Parents	3
Work with Agencies	3
Home Visits	2
Canvassing for Jobs	3
Team Conference	1
Total	35 periods per week

What Is the Role of the Assistant Principal?

The Assistant Principal in charge of the Career Guidance unit is virtually the "principal" of this "school within a school."

Generally, his administrative and supervisory responsibilities toward the teachers and pupils are the same as for the other pupils and teachers of the school.

Specifically, his duties are as follows:

1. He acts as liaison between the Career Guidance unit and the principal.
2. He prepares the organization, the program, and schedule of both teachers and pupils, with the approval of the principal.
3. He helps the advisor organize his program.
4. He plans a weekly or bi-weekly conference of the Career Guidance team (three academic teachers, industrial art teacher, and advisor) for the purpose of:
   a. planning integration of subject matter
   b. discussion of common guidance problems and possible solutions
   c. planning of trips
   d. discussion of school-wide activities as they concern the Career Guidance pupils, e.g., testing, graduation, high school applications, and other school-wide programs, etc.
5. He confers with the teachers of the team for the ordering of books and teaching materials.
6. He assists the advisors with specific educational, social or personal pupil problems, when necessary.

Criteria for the Selection of Pupils

Pupils in the Career Guidance classes have sometimes been characterized as "slow learners." This is a mistaken idea, as has been demonstrated by the rapid progress some of these pupils have made in reading, arithmetic, and other areas once the teachers in the program have succeeded in "reaching" them. If anything, they may be described as "reluctant learners." In general these pupils have few, if any, academic or vocational aspirations. They may be retarded in basic skills; they have a history of school failure and frustration; they feel defeated and resentful; and they are desirous of leaving school as soon as they can.

The aim of this program is to rehabilitate and to redirect these pupils and to equip them with the information and training they need to assure some measure of academic success which will lead to vocational adjustment later in life. Thus, the pupils placed in these classes should be chosen carefully and with this aim in mind. Pupils who can benefit more from placement in other special classes or special programs offered in the New York City junior high schools should *not* be placed in the Career Guidance classes. Some of these other services and classes are as follows:

1. Classes for the physically, visually and mentally handicapped.
2. Classes for the emotionally disturbed (special schools).
3. Classes for corrective work in reading and mathematics.
4. Special guidance classes.
5. N. E. Program

How Are the Pupils Selected?

In selecting pupils for placement in Career Guidance classes full cooperation of all school personnel is necessary. The suggestions given below have been found helpful.

1. The First Screening
   a. The principal orients the entire faculty on the aims and organization of the program. He also describes the kind of pupil who will benefit from placement (see "Who Are the Pupils In Career Guidance Classes?").
   b. He requests the teachers, guidance counselors, and assistant principals to submit to the advisor the names and records of pupils who, in their opinion, will benefit from placement in these classes. These referrals should be made in the month of

April, in preparation for the start of the new school year in September.

(1) Recommendations should be based on personal observation and judgment, the cumulative record card, anecdotal records, health records, standardized test results, guidance folder, and confidential records available.

(2) In junior high schools where the eighth year is the terminal year, pupils must be at least fourteen years of age when placed in the Career Guidance classes in September; in junior high schools where the ninth year is the terminal year, the pupils must be at least fifteen years of age.

(3) Pupils placed in an eighth-year Career Guidance class may be selected from the 6th or 7th years, providing they will be fourteen years of age by September 30th of the year they are placed; pupils placed in the ninth-year Career Guidance class may be selected from the 7th or 8th years, providing they are fifteen years of age by September 30th of the year they are placed.

Note: Pupils spend just *one* year in a Career Guidance class. They may not be held over. The advisor should be familiar with current circulars on promotional policies so that all Career Guidance pupils will qualify for high school admission.

c. At this first screening the advisor usually receives the names of approximately 60 to 70 pupils who are recommended. He is now ready to examine each candidate further.

2. THE SECOND SCREENING

a. The advisor reviews the records of each recommended pupil and confers with members of the staff, if necessary.

b. He now rates each pupil with the aid of the Pupil Selection Scale, designed by the Bureau of Educational Research for the identification of Career Guidance pupils. This scale consists of fourteen items, which represent the most common characteristics found among school dropouts throughout the nation. Each item has been weighted according to the frequency of incidence. The scale is divided into thirds. If a pupil's rating falls within the first third, he is not a likely candidate for a Career Guidance class; if his rating falls within the second

PUPIL SELECTION SCALE

Form III

Name _____ _____ Place of birth _____ School _____
Last First (City, state, country)

Sex M ☐ F ☐ Date filled out ___/___/___ Date of birth ___/___/___ Class _____

No. of major subjects failed previous yr.	0	-	-	-	1	-	2	-	3	-	4+
No. of minor subjects failed previous yr.	0	-	-	1	-	2	3	4	-	-	5+
No. of yrs RETARDED in reading (ABOVE grade. No. of yrs_____)	-	-	-	0	.1-.5	.6-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-4.0	4.1-5
No. of schools attended since first grade	-	-	-	2	3	-	4	5	-	6	7+
No. of WHOLE days absent in previous yr.	0	1-3	4-6	7-9	10-12	13-18	19-25	26-30	31-35	36-50	51+
No. of HALF days absent in previous yr.	0	1-2	3-4	5-6	7-11	12-18	19-25	26-30	31-35	36-50	51+
No. of times LATE in previous yr.	0	1-2	3-4	5-6	7-10	11-14	15-18	19-22	23-26	27-30	31+
No. of times held over since first grade	0	-	-	-	-	-	1	-	2	-	3+
Extra-curricular activity in previous yr.	Yes	-	-	-	-	-	-	-	-	-	No
Does student live with both natural parents?	Yes	-	-	-	-	-	-	-	-	-	No
Highest school grade attended by father	13+	12	-	-	11	-	10	9	7-8	5-6	4-
Highest school grade attended by mother	13+	12	-	-	11	-	10	9	7-8	5-6	4-
Level of father's occupation	Prof.	White collar	-	Skilled	-	-	-	Semi-skilled	-	-	Un-skilled
Behavior (as shown on pupil record card)	Excel.	-	-	Good	-	Fair	-	Poor	-	-	Very poor

third, there is some doubt; if he falls within the last third, he should be considered as a candidate, provided he meets all other criteria.

c. Once the advisor has selected pupils for placement, his choices must be approved by the principal.

What Are the Follow-Up Activities?

1. PUPILS

   The principal, assistant principal, guidance counselor, advisor and other interested school personnel meet with the pupils to orient them to the program. The pupils are told about the special features of the program, e.g., small classes, individual guidance, corrective work in basic skills, intensive preparation for high school, opportunities for part-time employment, etc.

2. PARENTS

   a. The advisor, in collaboration with the assistant principal, plans and schedules an orientation meeting with the parents of the pupils selected.

   b. Letters explaining the new program may be mailed to parents who are unable to attend this first meeting.

3. COMMUNITY

   It is suggested that every effort be made by the school to inform the community about the work in these special classes, and to solicit community cooperation and good-will. (See "Working with the Community.")

How Are Classes Organized?

1. Of the sixty or more pupils who are usually qualified for placement, forty-five of them are placed in *three* classes, each with a maximum register of fifteen. The remaining pupils should be placed on a "waiting list" for placement when the opportunity arises.
2. The classes may be organized according to age, reading grade, or other criteria set by the school.

The Testing Program

Why Test Career Guidance Pupils?

Every effort should be made to help the Career Guidance pupils understand the value of tests: Test results can help them understand their academic strengths and weaknesses better, and can help them make realistic vocational plans.

Who Should Plan the Testing Program?

The testing program should be planned by the Career Guidance personnel with the help of the licensed guidance counselor of the school. It should include the following:

1. SELECTION OF APPROPRIATE TESTS
   a. Tests that have standard norms based upon the results achieved by groups similar to the group being tested should be selected.
   b. Tests that depend primarily on reading and writing should be avoided, whenever possible, since many of the Career Guidance pupils may not be up to par in these skills.
   c. Tests that have been proven valid and reliable in testing situations similar to the one in which the Career Guidance pupils are being tested should be selected.
   d. Tests which most nearly meet the specific purpose for testing should be selected.
2. USE OF NON-STANDARDIZED TESTS
   Questionnaires, teacher-made tests, rating scales, interest inventories, students' work-folders, and observational techniques are considered non-standardized tests in that the results are not usually compared with nationwide norms. The results of these tests can help the advisor gain a better understanding of and deeper insight into the abilities, needs, backgrounds and personalities of his pupils.
3. ADMINISTRATION OF TESTS
   a. The directions for administering tests should be studied carefully.
   b. Tests should be administered under optimum conditions.
   c. An orientation meeting should be arranged for the purpose of explaining directions for the administering of tests with the people who will administer them.

4. SCORING OF TESTS

If the tests are to be hand-scored, the scoring should be checked by two people.

5. INTERPRETATION OF TEST RESULTS

Even with the greatest precautions in test construction and standardization, test scores may reveal only approximate measures of ability. This is especially so for the pupils in a Career Guidance class, since they are usually test shy due to past failures in school work or because of their inability to cope with the content and language of tests. Their feelings of fear, restlessness, disinterest, and hostility may motivate against using a test situation to evaluate their ability.

Other factors which may prevent a pupil from performing at his fullest capacity on a test are:

a. his physical and emotional condition at the time of the test
b. his understanding of the requirements of the test
c. his interest in the test
d. his ability to follow directions
e. his cultural background
f. his training and experiential background
g. his understanding of test-taking procedures
h. his reaction to the person administering the test
i. his reaction to the physical conditions under which the test is given

6. EVALUATION OF TEST RESULTS

The test results will help:

a. identify the special needs of the pupils
b. reveal pupils' interests and aptitudes
c. develop realistic goals for these students, both educational and vocational
d. discover pupils in need of special help, e.g., remedial work, enrichment work, correction of physical and/or emotional disabilities, etc.
e. improve instructional methods and materials
f. evaluate progress made by students and teachers
g. evaluate achievement level

7. RECOMMENDATIONS

a. Pupils

(1) The Career Guidance pupils should be given information concerning how to take tests. Practice should be given in answering specific types of questions (True-False, Completion, etc.)

(2) They should understand the purpose of taking tests:

(a) to offer opportunities to achieve and to progress

(b) to discover any weaknesses for the purpose of offering corrective work

(c) to discover aptitudes

(d) for admission to high school

(e) for admission to special courses in high school

a. Advisor

(1) The advisor should become familiar with the school's testing program (Standardized Tests, Uniform Mid-Year Tests, school tests) so that he can supplement it and extend it for the pupils in the program. Frequent evaluation of pupil progress in various areas, especially reading, will help both the teachers and the pupils evaluate progress.

(2) The advisor should prepare a pupil profile card for each pupil in the Career Guidance Program. The data for this card should be obtained from the cumulative record card, anecdotal reports, health cards, test cards, outside agencies, and records of interviews.

Note: If test data are missing or if outdated, the advisor should arrange for testing as soon as possible.

(3) The advisor should analyze all test results and be prepared to interpret them to the pupils, their parents, and their teachers. (Does the pupil need corrective work? Is he an under-achiever?)

High School Placement

Do Career Guidance Pupils Go to High School?

The Career Guidance pupil is in his "terminal" year of education in the junior high school. This is the time when he makes an important decision: Should he go to high school or should he leave school and go to work? The aim of the program is, of course, to encourage the pupils to continue with their education in high school. Pupils in the Career Guidance classes are admitted to the senior high schools as all other pupils, providing they meet the requirements established in promotional policies set by the Board of Education. (See latest Circulars on promotional policies; and general and special high school admission requirements.)

What Are Some Suggestions to Advisors?

1. Learn the school's high school placement procedures by consulting with the principal, assistant principal, guidance counselors, teacher-counselors, and nurse.
2. Familiarize yourself with the current edition of the "Directory of the Public High Schools of the City of New York."
3. Keep abreast of the latest Board of Education Circulars and Directives.
4. Supply the Career Guidance teachers with vital information, e.g., the timetable for high school applications, requirements for entrance to the various high schools, schools requiring qualifying entrance examinations, special courses offered, etc.
5. Motivate the pupils to continue with their education.
   a. Show films, e.g., "When I'm Old Enough, Goodbye."
   b. Provide the pupils with graphs on unemployment and the earnings available to high school graduates, which are published by the United States Bureau of Labor Statistics.
   c. Have pupils read booklets, e.g., "Why Stay in School?", published by Science Research Associates, Inc., Chicago, Illinois.
6. Build up an Occupational Information Library. Consult the Dictionary of Occupational Titles and Occupational Outlook Handbook, and note the education and skills needed for various occupations, e.g., typist, mechanic, electrician, dental technician.
7. Help each pupil make tentative choice of high school and discuss choices with each pupil, his parents, and his teachers.

8. Assist pupils who are planning to take entrance examinations for special high schools or for special courses.
9. Check with the nurse to see that all pupils have completed the necessary medical forms.
10. Have the students practice filling in sample high school applications.
11. Administer standardized tests to pupils whose records are incomplete.
12. Visit places of industry and invite speakers from industry to discuss various occupations with the pupils.
13. Help each pupil to make a wise choice of high school or special courses.
    a. Arrange individual interviews with each student and his parents.
    b. Plan trips to various high schools.
    c. Invite speakers (staff and students) from various high schools to discuss the outstanding features of their high schools with the Career Guidance pupils.
    d. Discuss the pupils' post-school plans with them and with their parents.
    e. Provide each student with a "Directory of Public High Schools of the City of New York."
    f. Conduct group guidance lessons to familiarize the pupils with:
        (1) the format and content of the "Directory of the Public High Schools of the City of New York"
        (2) the various types of high schools
        (3) the courses offered in the various high schools
        (4) the requirements necessary for admission to the various high schools
        (5) the schools requiring examinations for admission and the schools requiring qualifying examinations for certain courses
        (6) the various types of diplomas offered in the high schools
14. Work with the high school personnel, through the district guidance supervisor, in developing an adequate articulation program for the Career Guidance pupils.

Job Placement Services

Today, few pupils must drop out of school because of financial need. The government has organized many programs which are designed to aid the training and education of all who desire it, e.g., Anti-Poverty Program. Nevertheless, the Board of Education is aware that, despite every effort made, there are some young people who leave school without completing high school. It, therefore, becomes imperative to prepare these pupils for all eventualities: how to get the first job, how to succeed in it, and how to plan for a career. For some of these pupils a part-time job is a good way for them to learn the discipline that the home, the school, and the community have been unable to teach them.

Why Are the Pupils Allowed to Work?

1. Sometimes a pupil is encouraged to remain in school and to complete his studies if he can earn some extra money while learning.
2. The associations these pupils make in the world of work sometimes help change their work habits and attitudes.
3. A job and earnings are a status symbol.
4. These youngsters may meet meaningful competition for the first time.
5. The work experience gained outside of school provides an initial experience in training for work which will make the eventual transition from school to the world of work easier.
6. Pupils become aware that very few job openings are available to people without training or saleable skills.
7. The fact that a pupil can obtain and hold a job such as messenger boy, delivery boy or stock clerk, gives him an opportunity to experience success.
8. A modest first job may often lead to better-paying jobs that require some amount of work experience.

How Are Part-Time Jobs Obtained?

These pupils may obtain jobs:

1. on their own
2. with the help of parents, relatives, friends and neighbors
3. with the help of the advisor
4. with the help of the Job Placement Supervisor

What Can the Teacher Do to Prepare the Student for the First Job?

The teacher can prepare the pupils for jobs by training him in the following:

1. FILLING OUT FORMS
   a. Job application forms
   b. Pledge of employment forms
   c. Social security forms
      Note: Most of the major business concerns provide sample job application forms.

2. DEVELOPING NECESSARY SKILLS
   a. Reading directions on forms
   b. Writing neatly and spelling correctly
   c. Practicing speaking clearly and correctly
   d. Learning simple office skills
      (1) answering a phone and taking messages
      (2) filing
      (3) using a mimeograph machine
      (4) using a telephone switchboard
   e. Reading a subway map and learning how to travel in all the boroughs

3. PRACTICING INTERVIEWS (role playing)
   It is advisable to arrange for several practice interviews before applicants are sent to actual job openings. This helps to stimulate interest and to build confidence.
   a. Pupils should be trained to do the following:
      (1) Remove his hat when he enters the place of employment
      (2) Wait to be spoken to
      (3) Speak clearly and slowly
      (4) Refrain from smoking or chewing gum
      (5) Be poised, stand and sit properly
   b. Pupils should be cautioned to prepare for an interview:
      (1) Dress conservatively. Avoid extremes in dress or grooming, e.g., tight clothing, high pants, black leather jacket, extreme hairdo, etc.

(2) Be well-groomed.

(3) Be prepared to answer questions intelligently, e.g., Why do you want this job? Where have you worked? What skills do you have?

(4) Bring letters of reference or bring the names and addresses of people who will recommend him.

How Can the Advisor Help Pupils Find Employment?

1. He canvasses the local neighborhood for jobs. In his visits to the local merchants, the advisor explains the Career Guidance Program briefly, points out that the pupils who wish jobs receive job-training in school, are screened carefully for each job opening, and may leave school for work early in the afternoon.
   Note: Legally, a pupil must spend four hours at academic work every day before he is permitted to leave for work.
2. He trains the pupils to canvass the local area for jobs.
3. He encourages parents, and religious, civic and professional organizations to act as resource people for obtaining jobs.
4. He familiarizes the faculty with the program and enlists their aid.
5. He develops a form letter for canvassing by mail.
6. He uses the Yellow Pages for soliciting jobs either by phone or by letter.
7. He obtains the booklet entitled, "Employment of Minors in New York State" from the Department of Labor, 80 Centre Street, New York, N.Y. 10013, to acquaint himself with the laws governing the employment of youngsters.

What Are the Responsibilities of the Job Placement Supervisors?

1. The Job Placement Supervisor canvasses for jobs on a City-wide basis by mail, phone, and personal visits.
2. He refers prospective job openings to the advisor whose school is near the prospective job. (The Supervisor supplies the advisor with all the pertinent information, e. g., name, address, telephone number of the employer, the hours of work, the salary, and the duties to be performed.)
3. The Supervisor makes follow-up calls or visits to employers to inquire about each pupil's adjustment and to give the pupil a feeling of security.

4. Through contacts with employers, the Supervisor can make suggestions about what job skills and training should be taught and what areas offer job opportunities for young people.
5. The Supervisor plans and organizes on-the-job training programs, e.g., Beekman Downtown Hospital.
6. He holds workshop conferences with Career Guidance advisors and teachers.

How Does an Advisor Handle a Job Opening?

1. When the Job Placement Supervisor refers a job opening to him, the advisor should take the information given and act promptly.
   Note: The advisor is *not* to call the prospective employer, unless he is advised to do so.
2. The advisor should send a pupil who is best suited for the job available. (If an employer asks for a messenger who is physically strong and the advisor sends a frail youngster, the image of the Career Guidance Program is destroyed.)
3. Before a pupil is sent out for a job, the advisor should:
   a. Check the applicant's appearance.
   b. Give the applicant a letter of introduction for the employer.
   c. Give the applicant a card with the following information on it: the name of the firm, the name of the person who will interview him, the address, and the exact traveling directions.
      Note: The pupil should go for the interview *alone*.
   d. Instruct the applicant to report as soon as he returns to school after the interview.
      Note: If the applicant fails to return after the interview, the advisor should send for him, since if he was not hired it will be necessary to send another applicant to the prospective employer immediately.
   e. Once the pupil has been hired, send a Job Disposition Card, properly filled out, to the Job Placement Supervisor. (See Sample Forms).
   f. See the new employee daily for a few days to be sure that he is getting along at work.
   g. Visit the new employee at work after a few days to be sure that the employer is satisfied with the youngster's work.

h. About a week after the pupil has been working, send an "Employer's Report" form with a covering letter to the employer for a written evaluation of the pupil's progress. (See Sample Forms.) If the employer notes any weakness, help the pupil correct the shortcoming noted, whenever possible.

Note: A copy of this written evaluation should be sent to the Job Placement Supervisor for his records.

What Organizations Help Young People Find Employment?

The following organizations and agencies offer service to young people who are seeking employment:

1. Children's Aid Society
   105 East 22nd Street, N.Y.C.
   GR-5-3640

2. Archdiocesan Vocational Services of Catholic Charities
   122 East 22nd Street, N.Y.C.
   OR-7-5000

3. Mobilization for Youth, Inc.
   214 East 2nd Street, N.Y.C.
   OR-7-0400

4. Samuel Huntington Community Center, Inc.
   109-04 160th Street, Jamaica, Queens
   OL-7-2447

5. Mallon Employment Service of Brooklyn Catholic Charities
   191 Joralemon Street (between Court & Clinton), Brooklyn, New York
   MA-4-4776

6. Salvation Army Employment Bureau
   546 Avenue of the Americas at 15th St., Manhattan
   CH-3-8700 — Mr. John F. Dockendorf

7. Vocational Advisory Service
   23 East 26th Street, Manhattan
   LE-2-2110

8. Vocational Foundation Inc.
   242 West 41st Street, Manhattan (Vocational Testing & Placement)
   WI-7-1630

9. Youth Placement Service
   500 Eighth Avenue, New York, N.Y. 10018
   LO-3-7660

10. Federation Employment and Guidance Service, of the Federation of Jewish Philanthropies
    215 Park Avenue South at 17th Street, Manhattan
    SP-7-4900

11. Jobs For Youth
    400 East 83rd Street at 1st Ave., Manhattan
    RE-4-5771 — Mr. Kall

Should Career Guidance Pupils Engage in Volunteer Work?

"It is agreed that work experience is integral to the development of youth. But in these times, youths seeking paid employment find jobs hard to obtain. Volunteer youth work projects can do much to relieve the transitional problems of youths . . . and can serve as a valuable adjunct to the efforts of adults working toward a better community and country. Further, the majority of our young people have been on the receiving end of society for too long. Many need to experience the joy of giving and contributing."

Although the above excerpt comes from a pamphlet entitled, "Bridges Between the School and the Community", which was published in June 1949, the many suggested activities listed therein can still be used with a great deal of success for building better relations between the school and the community.

For the Career Guidance pupil, especially, volunteer work can be a very valuable experience. When he helps someone else, he is really helping himself. He feels needed. He is successful. He has something to contribute. Someone thanks or praises him for his work.

Many Career Guidance pupils have engaged in volunteer work in various communities. This work has helped them learn that many of the wonderful values in our American heritage resulted from the labor and creative services of men and women who were willing to contribute their efforts without the receipt of financial rewards.

Their volunteer activities which were planned and organized cooperatively by the school and the community took them into public libraries, hospitals, churches, youth organizations, play centers, community centers, and pre-kindergarten centers. Through these activities, the pupils learned:

1. to work with others in harmony
2. to listen carefully and to follow orders cheerfully
3. to be interested in the welfare of others
4. to be patient with the mistakes of others
5. to set an example of conduct, appearance, and manners

How Can the Advisor Help with Volunteer Work?

If a volunteer project is to be successful the following points should be kept in mind:

1. careful planning and organization
2. close and continued supervision
3. opportunities for the pupils to participate in the planning
4. maintaining high standards of work

Note: In March 1962, "The American Child," published by the National Committee on Employment of Youth, 419 Park Avenue South, New York, N.Y. 10016, carried an article entitled: "Volunteer Work Experiences for Youth." This pamphlet contains many suggestions for helping young people embark upon volunteer work activities in communities.

Working with the Individual Pupil

Many Career Guidance pupils feel the need for adult help, advice and guidance, but for many reasons, they do not seek it in the home, at school, or in the community. For many years, various communities have established "Big Brother" and "Big Sister" organizations, but, often, even these groups have failed to "reach" our young people. The reason for this is that these young people are skeptical of structured organizations, whether they are conducted by religious leaders, the police, or private groups.

The Career Guidance advisor, then, has a wonderful opportunity to establish a personal relationship with these pupils which may enable him to become a kind of confidant, an adult figure to whom the youngsters can relate. The school has the advantage of working closely with these pupils five or more hours a day for five days per week. The school need not search out the student in order to provide assistance and support. The advisor has many opportunities to work with, advise, and guide each individual pupil during school hours and sometimes after school hours.

What Are Some of the Personal and Social Problems of These Youths?

The problems of these young people are the common problems of most adolescents. The advisor will frequently encounter some of the following:

1. He has problems at home.
   "No one understands me."
2. He has financial problems.
   "I can't date my girl, because I have no money."
   "My mother won't let me work, because we're on welfare."
   "I want to earn my own money."
3. He has little interest in school and school progress.
   "I'm sick of school."
   "I don't like these teachers."
   "Can't I leave when I'm fifteen?"
4. He may have health problems.
   "My eyes bother me, and I have headaches all the time. What can I do?"
5. He has many fears about high school.
   "What high school can I go to?"

"What courses can I take?"
"I can't make it anyhow."

6. He may belong to a gang and can't break away.
"How can I break away?"
"I'll be beaten up if I quit."
"They won't let me quit."
7. He has a poor self-image.
"Why was I picked for this program?"
"Why am I different from other students in my grade?"

How Can the Advisor Help Each Pupil?

The advisor meets each pupil for an individual interview once a week if possible. The weekly individual interview may be regarded as one of the most vital features of the Career Guidance program.

Some of the techniques for conducting individual interviews which have been found both practical and effective are listed below.

Every individual interview may be divided into three parts:

1. Preparation for the interview
2. The actual interview
3. The follow-up

1. PREPARATION FOR THE INTERVIEW:
   a. Obtain pertinent information about the pupil's background and problems from his cumulative record card (attendance, achievement, behavior, standardized test scores, etc.); health card; confidential file, if available; teachers; guidance counselors; parents; agencies; etc.
   b. Arrange to interview the pupil in a private office. All interviews should be conducted in an atmosphere that is relaxed, informal and non-threatening so that the pupil will feel completely at ease.
   c. Plan the interview in advance. What topics will you discuss? What questions will you ask? What recommendations will you make?
2. THE ACTUAL INTERVIEW:
   a. Establish rapport at the beginning of the interview. Put the student at ease. Try to praise him for his appearance or for some service he has rendered. Only after some rapport has been established, will the pupil begin to talk freely and release some of his feelings.

b. Be definite, clear, and direct in your questioning.

c. Make your suggestions direct and specific. Your suggestions may elicit information you seek.

d. Use tact and ingenuity when discussing the pupil's problems with him. Show interest in everything that the pupil says. Do not give him the impression, however, that you are prying.

e. Avoid comparing your strong points with the pupil's weak points so that he will not become hostile.

f. Do not take notes during the interview.

g. End the interview tactfully and pleasantly when you feel that the purpose of the interview has been accomplished.

h. Inform the pupil that you will speak to him again soon to see how he is getting along.

i. After the student leaves, write a concise summary of the relevant information.

3. THE FOLLOW-UP:

a. Evaluate what you have accomplished at the interview and decide what action you will take to help the pupil.

(1) Plan a pupil-parent-teacher-advisor conference, if indicated.

(2) Make referrals to outside agencies, if necessary, after consultation with the school guidance department.

b. Be prepared to share the information gained with the other members of the Career Guidance unit if they can help with the solution of the problem.

Note: Use discretion with any confidential information you may have obtained from the pupil.

Referrals to Agencies

The potential dropout in our junior high schools is a youngster in need of a great deal of individual attention. At times he may need the professional services of agencies outside of the school. It is suggested that in all cases of agency referral, the advisor first consult with the educational and vocational counselor of the school.

In New York City there are many resources for providing assistance to those in need of health, social, or welfare services. The Career Guidance advisor can obtain assistance from the following sources:

1. "The Directory of Social and Health Agencies in New York City", published by Columbia University Press, 2960 Broadway, New York, N. Y. 10027.
   This booklet lists and describes approximately 1,200 social and health agencies available in New York City.
2. Community Council of Greater New York, Inc., Information Bureau, 345 East 45th Street, New York, N. Y.
   This bureau publishes a pamphlet entitled, "How to Secure Help for Those Who Need It." The bureau will also assist in the matter of deciding what agency should be used for a particular problem.
3. The Board of Education of the City of New York, 110 Livingston Street, Brooklyn, New York 10012.
   There are various bureaus which can be consulted for assistance, e.g. Bureau of Attendance, Bureau of Child Guidance, Bureau of Educational and Vocational Guidance, etc.

How Is a Case Referred?

1. The advisor must first decide which agency will be of most help for a particular problem.
   Note: Whenever the advisor is referring a case to an outside agency, he must always consult with the educational and vocational counselor of the school to avoid any duplication of effort.
2. He will then call the Intake Worker of the particular agency, who is usually trained as a social worker. The Intake Worker will evaluate the situation and will decide whether the agency he represents will accept the referral.
3. Once the initial screening has been completed and the case has been accepted it is referred to the appropriate professional personnel of the agency.

4. Once the agency has accepted a case, every effort should be made by the advisor to cooperate. He should be sure that the pupil referred keeps his appointments and is punctual. He should arrange to confer with personnel from the agency, whenever necessary, etc.

Working with Parents

What Is the Need?

"The changing role of parents in the modern school is a promising development in public education. Parents have long been coming to school, but only recently have they sought a closer relationship with the school in the education of their children. Once they sent children to get the fundamentals — the three R's. Parents still want the schools to teach subjects, but in addition another "R" has been added — relationships. Increasingly, they are more aware that the climate in which learning takes place, and the people who guide children in their educational experiences, determine the *quality* of education children will receive."*

Today, the educational system has become a center of controversy over the role that the school should play in meeting the new social and economic challenges of the community. Leading the attack are interested and informed parents who are demanding that the school meet these new challenges in an effective and realistic manner. The Career Guidance program has been designed to facilitate the greatest possible involvement of parents in the education of their children. Parents serve in many capacities: advisers, aides, friends.

How Can We Involve Parents in the Career Guidance Program?

1. If the school is to succeed in involving the parent in the education of his child, it is necessary to encourage the parent to come to the school. A "Get Acquainted" tea can prove of great value — especially if this meeting is held early enough in the term:
   a. It gives the parent a chance to meet the teachers socially and before any problems have arisen which might place the parent on the defensive.
   b. It provides a perfect opportunity for the organizing of an executive committee of parents to help the teachers with such activities as:
      (1) helping to plan career conferences
      (2) locating part-time employment for students in the program
      (3) helping to set up exhibits

**Working With Parents*, U.S. Department of Health, Education and Welfare, 1960

(4) accompanying and assisting teachers and pupils on trips
(5) planning sales to raise money for various projects
(6) assisting in the planning and production of talent shows

c. It gives parents a chance to learn about the program and to support the teachers in their work with the youngsters. The parents should know and understand the following:
(1) the reason for placement in a Career Guidance class
(2) what they can do specifically to help their children
(3) the promotional policies
(4) the various high schools available and the entrance requirements.

2. The advisor should make some home visits, if possible. He must remember that a youngster is, to a great extent, the product of all the influences that surround him daily. Thus, there is much value in walking in the negihborhood where a pupil spends most of his time after school. It is a known fact that a visit to the home can go a long way in bringing the parent, the pupil, and the school closer together.

Note: Be sure you arrange for your visit in advance. Do not "drop in" unexpectedly.

Evaluate each home visit by asking yourself the following questions:

a. Did I put the parent at ease?
b. Did I give him an opportunity to express himself freely?
c. Do I understand the parent-child problems and do I understand the parent's point of view?
d. Did I conduct myself in such a manner that the parent will cooperate with me or did I fail to secure his confidence?
e. Did I succeed in learning the parent's attitudes, opinion, defenses and/or rationalizations? Did the parent speak frankly?
f. Did I secure important data which will enable me to understand the problems involved?
g. Did I learn any of the underlying causes of the problems involved?
h. Did I impose my views and plans upon the parent, or did I create sufficient opportunity for him to exercise his own judgment and his own will so that he could make and follow his own plans?

3. Most parents are quite anxious for their children to succeed in school. A rewarding experience for both parent and advisor is the parent-teacher conference when information and ideas about the youngster's progress or problems are exchanged. A parent-advisor conference is generally subject to the guidelines for conducting any successful interview. There are, however, some important points that an advisor should keep in mind:

   a. Successful guidance depends upon the relationship between the advisor and the parent. A parent will express himself freely if he feels that the person to whom he is speaking is sympathetic and accepting. Therefore, guard against showing disdain, bias, prejudice, or snobbery.

   b. To understand a youngster's behavior it is sometimes important to know his parent's attitude toward him.

   c. If a parent says he is worried about his child's behavior, find out why he is worried. Do not assume that you know the reason. The parent's appraisal may be different from yours.

   d. If a parent suggests a plan of action, help him to evaluate it. It is better for the parent to try his own plan than for the advisor to insist upon one of his own. One of the goals of working with parents is to try to get them to take the initiative. If the parent's plan fails, it is always possible to suggest other plans that may strike nearer to the root of the difficulty.

   e. If the parent cannot suggest reasons for his child's behavior, or a plan of action to deal with it, make suggestions for joint consideration. You may say, "This might be a possibility." "What do you think?" "You know all of the facts of the situation better than I do." Or he might say, "We can try this and see what happens." "It may take us a while to find the source of the difficulty." Such an approach makes the parent a participant in any decisions or plans to be followed.

   f. Never argue with a parent. Arguing will arouse resentment and resistance.

   g. It is better not to assume that a parent wants help or advice. Such an assumption usually brings resistance, because it implies a form of criticism.

   h. Most parents cannot be objective about their children. Therefore, do not criticize, either directly or indirectly. Criticism can be fatal to the building up of a cooperative relationship.

i. Do not try to force your thinking upon a parent before the parent is ready to gain insight into a problem. Rather discuss the situation thoroughly so that there is mutual understanding.

j. Be ready to recognize problems which are beyond your professional experience. When a parent seems to have a complex emotional problem, it is best to refer him to an appropriate agency. The names of these agencies may be obtained from the guidance counselor of the school or from the Bureau of Child Guidance Consultation Service. When referring a parent to an agency, it is good practice to say, "I wish I could help you, but I feel that you need more help than I am qualified to give you. I have the names of two agencies where you could go for advice. Would you like the names of these agencies?"

k. A written summary of each advisor-parent conference should be kept with the pupil's records.

Working with the Community

John Dewey, in *The Educational Frontier*, wrote: "American education needs an enlarged educational program in order that there may be brought into existence a society all of whose operations shall be more genuinely educative and conducive to the development of desire, judgment and character. The desired education cannot occur within the four walls of a school shut off from life. Education must itself assume an increasing responsibility for participation in projecting ideas of social changes and for taking part in their execution."

There is a growing tendency in the communities and neighborhoods of our large cities for relationships to become more and more impersonal. The schools cannot educate their students in a vacuum, however, and if the Career Guidance Program or, in fact, any program, is to succeed, everyone must work for improved community-school understandings and cooperation. There is a great deal of unrest in many of our communities at the present time. Lines of communication between the school and the community appear to have broken down in some instances, resulting in confusion and misunderstanding about the education and training of children.

How Can Lines of Communication Be Improved?

The first step in improving communications between the school and the community is the development of mutual respect and understanding. It is essential for the advisor and the teachers to have a thorough knowledge and understanding of the character of the community they serve. This cannot be emphasized too strongly. Much information can be obtained by thorough observation and study of the community:

1. ethnic groups
2. culture and art
3. economic conditions
4. housing facilities
5. recreational facilities
6. sympathies and aspirations
7. languages spoken
8. hopes and goals
9. civic organizations
10. social agencies

11. religious groups
12. local publications
13. private and parochial school facilities
14. law enforcement agencies
15. leaders
16. chamber of commerce
17. unions and industries
18. government-sponsored projects (New York State Employment Service, Mobilization for Youth, Haryou Act, etc.)

Being well informed about the community helps to establish a basis for plans and projects that can be shared with the community and can be of great value to the young people involved in the Career Guidance Program. There can be an exchange of hopes, ideas, and aspirations that will benefit all. This will help give the community a feeling that the school is sincerely interested in community problems. Teachers and advisors in the program can take the lead in bringing the school and the community into a closer working relationship for it is in the community that education truly becomes alive.

What Can Be Accomplished Through Working with the Community?

Since the environment outside of the school is of the utmost importance in shaping and molding the lives and personality of our Career Guidance pupils, it is urgent that the school work as closely as possible with members of the community. The goals of such interaction should be:

1. To help the people in the community
   a. The people of the community should become aware of what the school is aiming to do for their children, so that they can help.
   b. They should share in the education and training of their youth by helping to improve community facilities through better housing, cleaner streets, the eradication of vice and crime, and improved recreational facilities.
2. To help the young people of the community
   a. The young people should be encouraged to take an interest in

the appearance of the community and plan drives for bringing about improvements.

b. They should learn about the various agencies and projects of the community that can be of help to them.

c. They should learn about, and take pride in, the history of their community.

d. They should be encouraged to attend local cultural events, e.g., free concerts.

3. To work with the community as a team

a. Members from the neighborhood youth organizations may be invited to the school to talk about the recreational facilities in the community.

b. Fraternity and sorority members can be encouraged to become Big Brothers and Big Sisters to some of the pupils.

c. Religious organizations that provide after-school remedial and academic programs may be asked to invite the Career Guidance pupils to attend.

d. The school should work with the local hospitals and other health centers to obtain the services required by the pupils.

Recordkeeping

What Special Purpose Does Recordkeeping Serve in the Program?

Because of the special nature of the Career Guidance Program, it is especially important that careful and extensive records be kept by the teachers and advisors:

1. Frequent reporting to pupils, parents and teachers encourages pupil improvement.
2. A continuum of evaluation provides realistic evolution of the program.

What Records Should Be Kept?

1. PERSONAL DEVELOPMENT
   a. health (physical and mental)
   b. character development
   c. social growth
2. ACADEMIC PROGRESS
   a. performance
   b. potential
3. VOCATIONAL INFORMATION
   a. plans for the future
   b. job experiences
   c. vocational aptitudes

   Note: The items suggested for recordkeeping should be considered a first step in the preparation of student folders that will prove to be both functional and valuable in recording all areas of pupil performance.

How Is Information for Records Obtained?

1. Teacher observations
2. Interviews (principal, parents, teacher, etc.)
3. Questionnaires
4. School records (cumulative record card, health card, etc.)
5. Standardized tests
6. Informal tests

SAMPLE OF A PUPIL'S PROFILE

Name: John X

Born 2/15/49 (16 yrs. 4 mos. as of 6/65)

Entered Kindergarten 9/13/54—upper west side of Manhattan

Holdover in Grade 4

Reading Grade before Career Guidance 4.4

Reading Grade as of 6/65 ..... 4.6

Iowa Test Basic Skills 11/64

- Language 3.0
- Work & Study 3.3
- Arithmetic 4.6

Lived at three addresses:

- West 169 Street, Manhattan ..... 5 years
- 310 West 101 Street, Manhattan ..... 5 years
- 448 West 151 Street, Manhattan ..... 6 years

Father and mother are separated—father partially supports mother—boy sees father occasionally.

Siblings:

- 1 brother ..... 15 years
- 1 stepsister ..... 12 years (different father)
- 1 stepbrother ..... 5 years (different father)
- 1 stepbrother ..... 3 years (different father)

Present School Record:

Passed all subjects (65's and 70's)
Fair in effort
This year absent 37 4/2 days (mostly dental appointments)
Last year absent 52 15/2 days
This year late 2 times
Last year late 17 times

Work Experiences:

Delivers papers on Sundays
Works ten hours a week for the Neighborhood Youth Corps at $1.25 an hour as a junior clerical aide in the late-room at school.

Personality:

Sociable, cooperative, generally amenable, sometimes sulky.
Interests: basketball (good player)

Anecdotal Record:

John X entered the Career Guidance Program 9/64. All his teeth were completely decayed. He had never had dental care because his mother had too many other problems with which to contend. In several individual conferences with him he confided that he was afraid to go to the dentist, even though he was in almost constant pain. After much coaxing by the advisor who stressed the importance of taking care of his teeth before entrance to high school, he agreed to go to a dentist if the school could arrange it.

The advisor referred John X to the teacher in charge of dental health. An appointment at Columbia Presbyterian Hospital Dental Clinic was arranged for John and his mother. John was told that all his upper teeth had to be removed. There would be a charge of 50¢ for each extraction and $200.00 for an upper plate. In addition, there would be a charge for the fillings required in his lower teeth. The mother and stepfather were willing to pay, so arrangements were made for them to pay on installment.

Many more interviews were needed to convince John that he should go through with the work. John finally had all of the extractions taken care of. He bore the trial well and has been coming to school regularly, even without upper teeth. His upper plate will be ready by the end of the school year, so that he will enter high school with teeth.

During this traumatic period, John has been visiting the advisor daily and has been able to function well.

He had continued with his job in the Neighborhood Youth Corps and he even offered to sing a solo in a musical play presented by the Career Guidance pupils in the assembly.

Trips

Trips are valuable experiences for all pupils. For the Career Guidance pupil, trips have particular significance.

There is no "right" time to take a trip. It may be taken to motivate a unit, to culminate a unit or as an enrichment which will highlight a particular class learning. However, the trip must serve a purpose and must be well-planned.

Why Is Trip-Taking Important to the Career Guidance Pupils?

1. To introduce the pupil to a world outside his immediate neighborhood.
2. To help the pupil learn about the world of work.
3. To have the pupil meet with people whose ideas are different.
4. To provide opportunities for social experiences.
5. To transform school learnings from subject matter to actual experiences.
6. To provide opportunities which will help broaden the pupil's range of interests, raise his occupational and cultural sights and suggest new areas for leisure time activities.
7. To offer opportunities for helping the pupil interpret, enrich, and supplement what he has learned in the classroom.
8. Trips provide important group experiences which can be used to motivate classroom discussions and create expression.

How Should the Class Prepare for a Trip?

When preparing for a class trip, special attention should be given to planning for the trip, to the actual trip, and to the follow-up activities.

1. The teacher-pupil planning before the actual trip involves consideration of the following:

Note: Additional information about planning trips can be found in the following:

1. *A Guide to Some Educational Resources in the City of New York.* Board of Education of the City of New York, Curriculum Bulletin, 1965-66 Series, No. 4.
2. *The New York Convention and Visitors Bureau,* 90 East 42nd Street, New York, N.Y. 10017.

a. The purpose of the trip
   (1) Why are the pupils going on this trip?
   (2) What should they look for?
   (3) What questions should they ask?
   (4) What are the possible outcomes?

b. Arrangements for the trip
   (1) Pupils
      (a) What is the date of the trip?
      (b) What will the expense be?
      (carfare, lunch, admission cost, etc.)
   (2) Teacher
      (a) Arrangements should be made with the person in charge of such activities at the place to be visited. (Time of arrival; tour, if any; lecture, if any; things to see; things to do; luncheon arrangements; time of departure)
      (b) Official permission must be obtained
      (c) Free transportation should be requested, if desired

c. Travel plans
   (1) How are we traveling? (bus, train)
   (2) Are we going to have free transportation?
   (3) What time will we leave?
   (4) What time will we return?
   (5) What route will we take? (street and subway map study)

d. Appearance and behavior
   (1) How shall we dress?
   (2) What safety precautions should we take on the street? In the subway?
   (3) What do we consider good behavior on the street? On the subway? At the place visited?

2. While the pupils are visiting they should be carefully guided and controlled.
   a. The pupils should be instructed to take notes on what they see or do.
   b. If permitted, they may collect specimen and other materials of interest.
   c. If a lecture is given, they should listen carefully.

d. They should be given an opportunity to ask questions.
e. Good manners must prevail throughout the visit.

3. Every trip should include follow-up activities. Some suggested activities are as follows:
   a. An evaluation of the trip shoul be made by the teacher and the pupils. (Did the trip have value? Did we accomplish what we set out to do? How did we behave? What did we learn? Can we improve any feature of the trip when we visit another place?)
   b. Letters of thanks should be written to the company or establishment visited.
   c. The pupils may make individual booklets illustrating what they have seen and learned.
   d. A written report on the trip may be prepared for the school newspaper.
   e. Photographs taken on the trip or original drawings of items of interest may be displayed on the bulletin board.
   f. An exhibit to illustrate the various things the pupils saw and learned may be set up in the classroom for other classes or parents to view.
   g. The pupils may make oral reports on what they learned from the trip.

A Suggested Guide for a Visit to the United Nations

1. Where is the United Nations located?
2. How tall is the Secretariat Building?
3. What is interesting about the Post Office at the U. N.?
4. Why are there earphones attached to the seats in the U. N.?
5. What five languages can you hear with these earphones?
6. How many nations are members of the United Nations?
7. What transportation do you use to reach the United Nations?
8. What are the various jobs available at the U. N.?
9. Can you trace the route to the U. N. on a subway map?

A Suggested Guide for a Visit to a Place of Business

1. What kind of work is carried on?
2. How many people are employed?

3. What are the jobs that you see people working at?
4. How are the people at work dressed?
5. Are there any special working conditions provided?
6. What services and benefits are offered to the employees?
7. What facilities are provided in the building? (rest rooms, cafeterias, etc.)
8. How would you apply for a position?
9. Would you like a job in this place of business when you graduate? Why?

SUGGESTED TRIPS

Trips Related to Business

Abraham & Straus (department store)	Fulton & Hoyt Sts., Brooklyn
Alexander's (department store)	Fordham Rd. & Grand Concourse, Bronx
American Can Company	Second Ave. & 125th St., Manhattan
A & P (supermarket)	Local neighborhood store
Bush Terminal & the Docks	36th St. & 3rd Ave., Brooklyn
Chock Full O'Nuts	509 Baltic Street, Brooklyn
General Post Office	8th Ave. & 33rd St., Manhattan
Gertz (department store)	Jamaica Ave., Jamaica
Grace Lines	Piers 57 & 58—W. 15th St., Manhattan
Grand Central Station	42nd Street, Manhattan
Harlem Hospital	Lenox Ave. & 136th St., Manhattan
Kennedy International Airport	Queens
Jamaica Hospital	89th Ave. & Van Wyck Expressway, Jamaica
International Ladies Garment Workers Union (ILGWU)	1710 Broadway, Manhattan

Lincoln Hospital	Concord Ave. & 141st St., Bronx
La Prensa (newspaper)	245 Canal St., Manhattan
Manhattan Center	8th Ave. & 44th St., Manhattan
Medical Center	Broadway & 168 St., Manhattan
Morrisania Hospital	168 St. & Gerard Ave., Bronx
New York State Employment Service	Neighborhood offices
New York Stock Exchange	18 Broad St., Manhattan
The New York Times	229 W. 43rd St., Manhattan
Social Security Office	Local neighborhood
Statler-Hilton Hotel	7th Ave. & 33rd St., Manhattan
Stern Bros. (department store)	42nd St. & Ave. of the Americas
Traffic Court	100 Center Street, Manhattan

Trips to High Schools

Automotive High School	Bedford & Nassau Aves., Brooklyn
High School of Fashion Industries	225 W. 24th St., New York
Wm. E. Grady Voc. & Tech. High School	25 Brighton 4th Rd., Brooklyn
Sarah J. Hale Voc. High School	345 Dean St., Brooklyn
Woodrow Wilson Voc. High School	156-10 Baisley Blvd., Jamaica

Trips of General Interest

The Cloisters	Fort Tryon Park, Manhattan
Museum of the City of New York	5th Ave. & 104th St., New York
Dyckman House	Broadway & 20th St., New York
Firehouse	Local neighborhood
Historical Landmarks	Wall Street, New York
Jumel Mansion	160th St. & Edgecombe Ave., N.Y.

Metropolitan Museum of Art	5th Ave. & 82nd St., N.Y.
Poe's Cottage	Poe Park, Kingsbridge Rd., Bronx
Public Library	Local neighborhood
Rockefeller Center	49th St. & 5th Ave., New York
United Nations	46th St. & 1st Ave., New York
Van Cortlandt Park Mansion	242nd St. & Broadway, Bronx

Sample Forms

On the following pages are examples of forms which have been suggested in Part 1:

1. Organization of Classes
2. Register and Attendance Report (*front*) (*back*)
3. Pupil Profile
4. Pupil Profile Summary
5. Letter Soliciting Part-Time Jobs
6. Job Disposition
7. Letter Requesting Employer's Report
8. Employer's Report
9. Employment Report Summary (*front*) (*back*)
10. H. S. Placement Report

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N.Y. 11201

ORGANIZATION OF CLASSES

Form 101

JHS # _____ Boro _____

September 19_____

(Note: Mail one week following opening of school)

CLASS	REG	B	G	AGE RANGE yrs. & mos. B	AGE RANGE yrs. & mos. G	NO. IN EACH AGE GROUP	B	G	TEACHER'S SIGNATURE
						14 yrs			
						15 yrs			
						16 yrs or over			
						14 yrs			
						15 yrs			
						16 yrs or over			
						14 yrs			
						15 yrs			
						16 yrs or over			
TOTALS						14 yrs			
						15 yrs			
						16 yrs or over			

Advisor _____ Principal _____

REGISTER & ATTENDANCE REPORT *Form 102*

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N.Y. 11201
(Note: Mail at end of each att. period.)

JHS #_____ **Boro**_____
Att. Per. Ending_____ **19**_____

CLASS	AGE RANGE yrs. & mos.		REG. Current		AV. ATT. Do not use %		NO. DISCH.		NO. ADM.		TEACHER'S SIGNATURE
	B	G	B	G	B	G	B	G	B	G	
1											
2											
3											
Totals											

No. on waiting list_____

Advisor_____ **Principal**_____

(over)

TRANSFERS & DISCHARGES

	Name	Sex M	Sex F	Birth Date	Discharged to: School / Boro	Grade	Work	Other	Additional Information
1									
2									
3									
4									
5									

ADMISSIONS

	Name	Sex M	Sex F	Birth Date	Admitted from: School / Boro	Grade	Other	Explanation
1								
2								
3								
4								
5								

(over)

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N. Y. 11201

JHS #_____ Boro_____ School Year 19__ / 19__

Father's name_____

Employed Yes ☐ No ☐

Mother's name_____

Employed Yes ☐ No ☐

Lives w/: both parents ☐ father ☐ mother ☐ other ☐

Brothers: older_____ younger_____

Sisters: older_____ younger_____

Physical disabilities (specify) _____

_____

Agencies (welfare, BCG, etc. & date)_____

_____

Ex. curricular activities (hobbies, volunteer work, etc.)_____

_____

PUPIL PROFILE *Form 103*

Name _____

Address _____

Birth date_____ place _____

Yrs. held over in Elem_____ in JHS_____

	SEPT.	JUNE
Abs.	last yr.	this yr.
Late	last yr.	this yr.
Read. Gr.		
Arith. Gr.		

Indicate →	*Good*	*Fair*	*Poor*	*Good*	*Fair*	*Poor*
Dependability						
Sociability						
Cooperation						
Self-control						
Work-study habits						

Goal: Diploma		
HS		
Work		
Other		

Advisor_____

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N. Y. 11201

PUPIL PROFILE SUMMARY

Form 109

JHS # _____ Boro _____ School Year 19__ / 19__

REG (T) ☐ B ☐ G ☐

Note:

1. *All pupils to be included in totals/averages.*
2. **(T)** = *totals,* **(A)** = *averages.*
3. *Give all information requested (except June column) and mail by Sept. 30.*
4. *Complete June column when card is returned to you in May and mail by June 1.*

(A) Yrs. held over in Elem _____ in JHS _____

	SEPT.	JUNE
(A) Abs.	last yr.	this yr.
(A) Late	last yr.	this yr.
(A) Read. Gr.		
(A) Arith. Gr.		

Indicate →	*Good*	*Fair*	*Poor*	*Good*	*Fair*	*Poor*
(T) Dependability						
(T) Sociability						
(T) Cooperation						
(T) Self-control						
(T) Work-study habits						

GOAL			
	Diploma	(T)	
	H.S.	(T)	
	Work	(T)	
	Other	(T)	

(T) Father employed Yes ☐ No ☐
(T) Mother employed Yes ☐ No ☐
(T) Live w/both parents ☐
father ☐
mother ☐
other ☐

Advisor _____

Principal _____

CAREER GUIDANCE PROGRAM
BOARD OF EDUCATION
131 Livingston Street
Brooklyn, N.Y. 11201
Telephone: 596-4964,5

_____
(date)

Dear Employer:

We wish to call your attention to our City-Wide Job Placement Service which can supply you with local, part-time help after 1 PM.

Only screened, reliable young men and women are recommended for jobs. We maintain an on-the-job follow-up program for all young people whom we place.

Our free Placement Service has been most helpful to many employers. If you need part-time help, please telephone or write and we shall do our utmost to be of service to you.

Very truly yours,

Job Placement Supervisor

Form 105

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N. Y. 11201

JOB DISPOSITION

Form 107

Name of applicant_____

has been approved for job placement from JHS #_____Boro_____

Hired: Yes ☐ No ☐ Date_____

Name of firm:_____

Address_____

Boro_____Zip Code _____

Please return within 2 days after interview to Job Placement Supervisor.

53

66

_____
(school)

_____
(address)

_____
(boro & zip code)

_____
(date)

Dear Employer:

One of the aims of the Career Guidance Program of the Board of Education is to encourage youngsters to remain in school by supplying them with part-time jobs, such as the one you have given to:

Name _____ JHS# _____ Boro _____

In order to assist us to improve our service to you, it is important that you fill in the enclosed check list and return it in the self-addressed, stamped evelope. If there is anything you would like to discuss, please feel free to call me

_____ .
(school telephone)

Your cooperation in this matter will be greatly appreciated.

Very truly yours,

Encs.

Career Guidance Advisor

Form 110

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N.Y. 11201

EMPLOYER'S REPORT

Form 106

Pupil's name _____

JHS # _____ Boro _____ Date _____

Job held _____

Please check	*Excellent*	*Good*	*Fair*	*Poor*	Comments
1. Arrives promptly					
2. Attends regularly					
3. Phones to report absence					
4. Likes the job					
5. Accepts correction willingly					
6. Gets along with fellow-workers					
7. Needs little supervision					
8. Follows instructions					
9. Works with speed					
10. Is accurate					
11. Is neat in appearance					
12. Dresses appropriately					

For further comments, use reverse side.

Name of firm _____ Employer's name _____

Address _____ Boro _____ Zip code _____ Phone _____

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N. Y. 11201

EMPLOYMENT REPORT

JHS #_____ Boro _____

Note: Turn page to complete data.

Dates due:
January 5, 19___
and June 1, 19___

	NAME Last	First	SEX M	F	DATE Empld.	JOB OBTAINED Bd. Ed.	Advsr.	Other	EMPLOYER Name	Address	TYPE OF JOB
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
TOTALS											

Advisor _____ Principal _____

P.S. 104

	RATE per hr.	HRS. WORKED DAILY M	T	W	Th	F	Sa	Su	TOTAL Hours	DATE Disch.	WHY Disch.	NO. JOBS Held	REMARKS
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
	(Range)								(Total)			(Total)	

Career Guidance Program
Board of Education
131 Livingston Street
Brooklyn, N. Y. 11201
(Note: Mail by May 31)

H.S. PLACEMENT REPORT

JHS #_____ Boro_____
CLASS _____ Reg._____ June 19____
TEACHER_____

	NAME Last	First	SEX M	F	READ. GRADE	SCHOOL (Name)	Voc.	Ac.	Sp.	SPECIAL COURSE*	DIPL.	CERT.	TRANS.
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
TOTALS													

Total number of dropouts — Sept. to present. ☐

Number passing exam for special courses (Voc. H.S.) ☐

*Printing,
Aviation Mechanics
Machine Shop,
Art,
Cosmetology,
Etc.

Form 108

Advisor_____ Principal_____

Part 2
Suggested Group Guidance Units

Group Guidance

Group guidance is one of the techniques used to help the pupil adjust to himself, to others, and to his environment. It is designed to help each pupil gain greater insight into his behavior and the forces which influence his life. From the cradle to the grave, individuals are almost constantly involved in group situations: families, schools, and urban or rural societies. In presenting guidance through group situations, the value of instruction is heightened both in terms of individual development and interpersonal relationships. In studying group procedures as a means of attaining the goals of the Career Guidance Program, several factors must be kept in mind:

1. Group procedures are a vital part of the program
2. Group procedures are considered a complement to, not a substitute for, individual guidance
3. Group study, discussion and activity sometimes help the participants make personal adjustments.

Group guidance offers the pupils a wonderful opportunity to air their problems, to discuss mutual topics of interest, and to improve their ability to work, study, plan and play together. The following techniques have been found most useful in group situations:

1. Group Discussions
   a. Panel
   b. Town Meeting
   c. Debate

2. Quiz Contests
3. Role Playing
4. Question Box
5. Scrapbooks and Notebooks
6. Visits and Excursions
7. Films and T.V. Programs
8. Special Assemblies
9. Questionnaires, Sociograms
10. Reporting

Unit 1. WHAT CAN THE CAREER GUIDANCE PROGRAM DO FOR ME?

Purpose

This unit is designed to help the pupils understand the purpose of the Career Guidance Program and the effort being made to aid them with their problems in school and out of school. Discussion should focus upon the academic, social and vocational aspects of the program as they relate to each pupil.

Motivation

Show movie entitled: "When I'm Old Enough, Goodbye."
(See list of audio-visual aids)

Key Questions

1. Why is the program called "Career Guidance?"
2. What does this program have to offer me?
3. What makes this program different from other programs?
4. Will there be someone to help me with my personal problems?
5. How will this program keep me from becoming a dropout?
6. If I remain in school, can I get a part-time job? How?
7. What subjects will I study in this program?
8. How will I get help if I have trouble with my school work?

Suggested Activities

1. Conduct a discussion of the movie shown and how it relates to the pupils' problems.
2. Discuss the role of the principal, assistant principal, advisor,

teachers, guidance counselors, etc. in the Career Guidance Program.

3. Ask each pupil to start an occupational handbook.
4. Discuss the reasons for remaining in school.
5. Prepare a bulletin board for displays and announcements.
6. Plan a tea for the pupils' parents to discuss the various aspects of the program.

Teacher References

1. Articles from newspapers, magazines and school bulletins re: dropouts
2. *The Manpower Outlook in New York City, 1960-1970.* The City of New York, Dept. of Labor, Division of Labor Research.

Pupil References

1. Pamphlets from Science Research Associates, Chicago, Illinois
   a. *How to Increase Your Self-Confidence*
   b. *What Are Your Problems?*
   c. *School Subjects and Jobs*
2. School library

Unit 2. WHAT CAN THE SCHOOL DO FOR ME?

Purpose

This unit is designed to change the pupil's attitude toward education. The advisor will clarify the role of the school and will explain all aspects of the school program. He will understand his own position in the school structure, and the importance of daily effort and participation as the common goals for self-development.

Motivation

1. Invite a speaker from the Mayor's Budget Committee to discuss "How the city pays its bills." (Prepare students for question and answer period.)
2. Discuss how a city budget is prepared.

Key Questions

1. What does the term, "public school" mean?
2. Who pays for the maintenance of public schools? What is a city budget?

3. What are the opportunities offered by the junior high school?
   a. academic b. vocational c. extra-curricular
4. How will my records be used in the future?
5. What is a cumulative record card?
6. What is the value of a report card?
7. What do we mean by "references?"
8. How will my school record influence my choice of a vocation?
9. How will my school activities influence the use I make of my leisure time?

Suggested Activities

1. Elicit from the pupils a list of items and services that are paid for by the government.
2. Ask the pupils to discuss the value of an education with their parents, relatives or friends and to report their findings to the class.
3. Invite various members of the school faculty to explain their functions and duties in the school.
4. Have the pupil list the names of some of the school personnel (principal, guidance counselor, dean, custodian, etc.) in his Occupational Handbook and to write a short description of the work they perform.
5. Make a tour of the school building with the pupils and let them take note of: the number of classrooms, shops, offices, stockrooms, etc.; where they are located; and what they are used for.

Teacher Reference

Wrenn, C. G., Hein, R. S., Pratt S., *Aids for Group Guidance, Orientation to School*, Minneapolis, Educational Publishers.

Pupil Reference

Junior Citizen Series, *Getting Acquainted With Your School*, by Trow, Zapf, McKown.

Unit 3. WHAT CAN I DO FOR MY SCHOOL, MY HOME, MY COMMUNITY?

Purpose

The aim of this unit is to make the pupil aware of his responsibility to the school. He has learned what the school can do for him. Now he

must realize his obligations toward the school. Inherent in the development of the unit will be the clarification of such words as *responsibility*, *obligation* and *duty* — to the school and to the community.

Motivation

Read and discuss, "The Junior High School Code of Behavior."

Key Questions

1. What is the meaning of the word, "behavior?"
2. Where does the original code of behavior come from?
3. Why are rules, regulations, and codes necessary and important in the home?
4. Why are rules concerning punctuality, attendance, and behavior in class, in the assembly, in halls, and on stairways important?
5. What are some of the rules and regulations that should govern a good home?
6. Can your neighborhood be improved? What can you do to help?
7. What can you and your classmates do to improve your school?
8. Do we need to add anything to the Junior High School Code of Behavior to make our school better?
9. What opinion do you think people have of a community where young people hang around stoops and corners?
10. What is meant by "pride" in my school? In my home? In my community? Am I proud of my school? Of my home? Of my community? Why?

Suggested Activities

1. Ask the pupils to write a class code of behavior.
2. Have the pupils make up slogans to be posted in the classroom, e.g., "Your school is as good as you make it."
3. Select a pupil to work with the principal for one morning and to make an oral report on his activities.
4. Instruct the pupils to survey their neighborhood and to report what they liked and what they thought could be improved.

Teacher Reference

Endicott, Frank, S. *One Hundred Guidance Lessons*, International Textbook Co., Scranton, Pa.

Pupil References

Pamphlets from Science Research Associates, Chicago, Illinois.

a. *Getting Along with Others*
b. *Getting Along with Family*
c. *Improve Your Learning Ability*

Unit 4. WHY MUST I BE TESTED?

Purpose

The aim of this unit is to allay the pupil's fear of taking tests. If the pupil understands the purpose of tests, how to prepare for them and what test results are used for, he will be able to accept them with less anxiety.

Motivation

Conduct a class discussion on the topic, "Why I Dislike Tests."

Key Questions

1. How do tests help me? The teacher? The school? My parents?
2. When and how do I prepare for a test?
3. What will help me to develop a better attitude toward tests?
4. What are some valuable hints for taking a test?
5. Is handwriting important on a test?
6. If I'm not sure of the answer, should I guess?
7. What is a good way for answering each of the following types of questions?
   a. true-false
   b. multiple choice
   c. completion questions
   d. classification and rearrangement questions
   e. matching questions
8. When my tests are scored, what is done with the results?
9. Are tests necessary to help me obtain a job?
10. How is filling out an application blank like taking a test?

Suggested Activities

1. Prepare a chart with the pupils on ways to improve study habits.
2. Have the pupils play listening games and memory games to practice the skill of remembering what they see and what they hear.

3. Let the pupils keep box-scores of ball games.
4. Make a list of common test words and let the pupils practice reading them, e.g., answer, select, question, multiple choice.
5. Review this unit by giving a test. Include various types of questions; i. e., true-false, completion, multiple choice, etc.

Teacher References

1. Rothney, Danielson, Heiman, *Measurement for Guidance,* Harper & Row Inc., New York, N.Y.
2. Goldman, Lee, *Using Tests in Counseling,* Appleton-Century-Crofts.

Pupil References

Pamphlets from Science Research Associates, Chicago, Illinois.

a. *Make the Most of Your Intelligence*
b. *How to Take a Test*
c. *Understanding Yourself*

Unit 5. HOW DO I RATE?

Purpose

This unit is designed to encourage self-study and self-discovery. Once a pupil understands himself, he can work toward self-improvement.

Motivation

Ask each student to think about a person he admires a great deal, and ask him to list the traits which make this person outstanding.

Key Questions

1. How can I study and analyze myself?
2. What should I know about myself?
3. Who can help me discover and understand my strengths and my weaknesses?
4. Of what value are my school records?
5. Do these records give an accurate picture of me as I see myself?
6. How do I rate myself on appearance? Can I improve it?
7. How are my speech, my manners, and my self-control?
8. How can I improve myself?
9. Have I got what it takes to succeed?

Suggested Activities

1. At the beginning of the year list each pupil's choice of career.
2. Have each check the requirements for the career he has chosen.
3. Let each pupil list what skills he should acquire to embark upon the career he has chosen.
4. Have the pupils select and collect information on heroes in different fields and list the characteristics that made these people successful.
5. Have the pupils list characteristics of their own that are similar.
6. Have the pupils list traits of their own that need improvement. Have them check off these traits as they improve.

Teacher References

1. Riessman, Frank, *The Culturally Deprived Child,* Harper and Row Inc., New York, N.Y.
2. Bennett and Hand, *Designs for Personality*, McGraw Hill Book Co., Inc., New York, N.Y.

Pupil References

Pamphlets from Science Research Associates, Chicago, Illinois.

a. *Exploring Your Personality*
b. *Your Behavior Problems*
c. *Understanding Yourself*

Unit 6. WHAT NEXT? HIGH SCHOOL?

Purpose

In this unit a great emphasis is placed on encouraging the pupils to remain in school by introducing them to the various programs available in the high schools. The pupil should be introduced to the importance of educational and vocational planning.

Motivation

1. Take the pupils to visit various academic and vocational high schools.
2. Show films about what happens to school drop-outs.

Key Questions

1. What does "educational planning" mean?
2. What does "vocational planning" mean?
3. What high school course should I choose?

4. What are the requirements? Do I meet them?
5. Why is planning for future education important?
6. What is the purpose of high school?
7. What are some of the rules and regulations in the high schools?
8. How does junior high school differ from senior high school?
9. How can I best maintain myself in senior high school?
10. How can I get the most out of high school?

Suggested Activities

1. Have each pupil begin making up a notebook entitled, "My Life Plan."
2. Invite high school personnel and/or students to give talks on their schools.
3. After a visit to one of the high schools, have the pupils make oral reports on what impressed them in the high school.
4. Have each pupil make a list of the traits which he thinks will help him succeed in high school.
5. Conduct a class discussion on the importance of good study habits in high school.
6. Plan meetings with the pupils' parents to discuss their children's high school plans.
7. Ask individual pupils to discuss their high school plans in class.

Teacher References

1. *The High School Directory,* Board of Education of the City of New Yo[illegible].
2. *Occupational Outlook Handbook,* U.S. Dept. of Labor, Washington, D.C.
3. *The Manpower Outlook in New York City,* City of New York, Dept. of Labor.

Pupil References

1. Flesch, Witty, et al., *How You Can Be a Better Student,* Sterling Pub. Co.
2. Clark Robinson, *Making the Most of School and Life,* Macmillan, Co., New York, N.Y.
3. *If You're Not Going to College,* Science Research Associates, Chicago, Ill.

Unit 7. HOW DO I GET ALONG WITH PEOPLE?

Purpose

The aim of this unit is to assist the pupil improve his interpersonal relationships. Discussions should focus upon "The Golden Rule" as it applies to school, social and vocational situations.

Motivation

Introduce the unit with a class discussion on the topic, "What Kind of a World Would This Be if Everyone Were Just Like Me?"

Key Questions

1. What problems may come up in my dealings with the people in my home? In school? At play? At work?
3. How will it help me to be cooperative, courteous and respectful?
4. What are my social responsibilities in business places? In theatres?
5. How should I behave on buses and trains? On the street?
6. When I get a job, what must I do to get along with my fellow workers?
7. Am I building toward success when I get along well with other people? How do I know?
8. How can I develop true and lasting friendships among my classmates? With my co-workers at work? With the people in my community? How do I know?
9. How will my boss feel about me if I am cooperative, courteous and respectful with my co-workers? How will I know?
10. How does my speech, dress, etc., affect how I get along with people?

Suggested Activities

1. Elicit from the class a list of rules of etiquette which should be followed in public places. On the job. In the home.
2. Discuss various rules and regulations which should be obeyed in public places; e. g., "No Smoking" signs.
3. Have the pupils make up similar signs; e. g., "Loitering is Forbidden", "No Dumping."

Teacher References

Pamphlets from Science Research Associates, Chicago, Illinois.

a. *Why Children Misbehave*
b. *Helping Children Solve Problems*
c. *Overcoming Prejudice*

Pupil References

1. Crawford, Cooley, Trillingham, *Living Your Life*, Heath & Co.
2. *The Fun of Making Friends* (Film: Coronet Films, Chicago)

Unit 8. WHAT IS THE JOB FOR ME?

Purpose

This unit introduces the pupil to the world of work. The pupil learns what jobs are available and what the qualifications for the various occupations and professions are. He learns about job lists and job areas and where he can find information about jobs. He finds out that special skills are needed for the better jobs.

Motivation

Take the class on trips to hospitals, the New York State Employment Service, the New York Central Railroad, airports, department stores, the New York Telephone Company, etc.

Key Questions

1. Why is it important to explore career possibilities as early in life as possible?
2. What do you want to do when you finish your education?
3. Is your interest in a career based on your individual likes and dislikes? How important is this?
4. What are the effects of a wise choice of career?
5. What are the effects of an unwise choice of career?
6. Where can you get help in choosing a job or a career?
7. How can you check your abilities against the requirements needed for a job?
8. How can you prepare for a career?

Suggested Activities

1. Plan a number of trips to various places of industry where pupils may obtain first-hand knowledge about job opportunities they are not familiar with; e.g., local bank, post office, etc.
2. Show the film, "Benefits of Looking Ahead."
3. Prepare a list of the various occupations the pupils know of in their own neighborhood. Discuss the services performed by each of these occupations.

4. Have the pupils list new jobs they learn about on the bulletin board.
5. Invite parents to discuss their occupations with the pupils.
6. Prepare with the pupils a list of occupational groups with a description of the jobs in each group.

Teacher References

1. Hoppock, Robert. *Occupational Information, Where to Get it, How to Use it in Counseling and in Teaching,* (2nd ed.). New York: McGraw-Hill, 1963.
2. *Trends in Industry,* U.S. Department of Labor, Washington, D.C.
3. *Careers in Fact and Fiction,* Bureau of Guidance, N.Y. State Department of Education.

Pupil References

1. Smith and Baron. *Choosing Your Course.* New York: Holt.
2. *Directory of Public High Schools,* Board of Education of the City of New York.

Unit 9. HOW DO I GET THE JOB?

Purpose

In this unit the pupil learns the fundamentals of job hunting from the want-ad to the job interview. He is made aware of the competitive nature of the world of work and the necessity of preparing to meet the challenge.

Motivation

Discuss the job trends and automation with the class, using current magazines, articles, newspaper clippings and/or films.

Key Questions

1. How do I look for a job?
2. What skills can I offer an employer?
3. How does character affect my chances of obtaining employment?
4. What should my personal folder contain?
5. What do employment trends mean to me?
6. Who can help me find a job?
7. How do I get an interview?
8. How can I prepare for the interview?

9. Do I know how to fill out a job application form?
10. What are "Want-Ads?" Where can I find them?
11. Do I know my way around the city? Can I read a street, or a subway map?
12. What are unions? Do I have to join them?

Suggested Activities

1. Elicit from the pupils the various ways of looking for job openings and list these on the board or on a chart.
2. Have each pupil prepare a personal folder for himself with the information he should have available when he goes for a job interview.
3. Have the pupils cut want-ads out of the newspaper, for study and interpretations. Then have them work out traveling directions to the places advertised with the help of a street and subway map.
4. Review a job interview via role playing.
5. Have the pupils make a chart or graph showing the growth or decline of jobs in various job areas.
6. Have the pupils make posters showing, "How to Dress for an Interview."
7. Prepare a list of rules with the pupils on such areas as: "How to Behave on the Street,: "How to Behave on the Bus," "How to Behave at Work," etc.
8. Encourage the pupils to bring to class newspaper clippings about employment trends, problems of industry, union activities, etc.

Teacher References

1. *Dictionary of Occupational Titles*—U.S. Department of Labor, Wash., D. C.
2. *Practice for the Armed Forces Tests*, Arco Publishing Company, New York, N.Y.

Pupil References

1. *How to Get and Hold the Right Job,* N.Y. State Employment Service, New York, N.Y.
2. *Just a Minute*, National Committee on Employment of Youth, New York, N.Y.

Unit 10. HOW DO I SUCCEED ON MY JOB?

Purpose

This unit is intended to make the pupil aware of the problems involved in keeping a job and succeeding in his work. This unit uses every opportunity to reinforce many of the previous learnings. The pupil will realize that good interpersonal relationships, a sense of responsibility, and a positive attitude toward work will go a long way in assuring him success and happiness in his work.

Motivation

1. Invite recent graduates to discuss their job experiences with the pupils.
2. Invite local businessmen to discuss what they expect from their employees.

Key Questions

1. Do I get along with people?
2. What are the qualities that the employer looks for in an employee?
3. How can I develop good work habits?
4. How does my health affect my ability to work? Work habits?
5. Why is good attendance so important?
6. How do I figure out my "take-home pay?"
7. If I'm not doing well on my job, where can I go for help?

Suggested Activities

1. Plan and conduct a career conference.
2. Ask the pupils to write about the career conference for the class log.
3. Review with the class the information that appears on the Social Security application.
4. Have discussed the reasons for an employer's making the following remarks:
   a. "Sorry, but we'll have to let you go."
   b. "John, do you think you would like to learn how to use this machine?"

Teacher and Pupil References

Use references suggested in former units.

Unit 11. HOW DO I USE MY SPARE TIME?

Purpose

The aim of this unit is to guide the pupil in developing worthwhile recreational habits in order to provide experiences which will help him to avoid the many temptations for engaging in delinquent behavior that confront him daily. It is not enough for the advisor to encourage the pupil to abandon wayward patterns of behavior. A positive and practical program, which makes specific use of every available community resource must be developed.

Motivation

Discuss the many extra-curricular activities available in the school and in the community.

Key Questions

1. What is meant by spare time?
2. What is leisure time?
3. What are the major interests for which you should allow time?
4. How can your community help you plan activities for your spare time?
5. What is meant by a "well-rounded" life?
6. Can you improve the use of your leisure time?
7. What further opportunities for extra-curricular activities will be open to you in high school?
8. What can you do in your spare time at home?
9. What is meant by the expression, "making your avocation your vocation?"

Suggested Activities

1. List leisure-time activities
   a. in the home
   b. in the community
   c. in the school
2. Form a hobby club.
3. Interview people who engage in many leisure-time activities.
4. Set up hobby exhibits in your school.

Teacher References

1. Jones, *Leisure-Time Education,* New York City Board of Education Textbook List.

2. Magazines: *Popular Mechanics, The American Home,* etc.

Teacher References

Fun with Collecting Stamps, Fun with Tools, Back Yard Games, Fun with Magic, Elementary and J.H.S. Library Textbook List.

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NVGA Bibliography of Current Occupational Literature. (1963 revision) American Personnel and Guidance Association, Washington, D.C.

FORRESTER, GERTRUDE. *Occupational Literature: An Annotated Bibliography*. (1964 edition). Bronx, New York: H. W. Wilson Co.

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AHMANN, J. STANLEY AND GLOCK, MARVIN D. *Evaluating Pupil Growth*. (2nd ed.) Rockleigh, N.J.: Allyn and Bacon, 1959.

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ROSS, CLAY C. AND STANLEY, JULIAN C. *Measurement in Today's Schools*. (4th ed.) Englewood Cliffs, N.J.: Prentice-Hall, 1954.

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Education and the Disadvantaged American. Educational Policies Commission. Washington: National Education Assn., 1962.

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LORETAN, JOSEPH O., AND UMANS, SHELLEY. *Teaching the Disadvantaged*. New York: Teachers College Press, Columbia University, 1966.

The Negro in American History. Board of Education, City of New York: Curriculum Bulletin 1964-1965 Series, No. 4.

PASSOW, H., EDITOR. *Education in Depressed Areas*. New York: Teachers College, Columbia University, 1963.

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———————. "The Culturally Deprived Child: A New View", *School Life*, 1963, 45, 5-7.

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———————. *Client-Centered Therapy*. Boston, Mass.: Houghton Mifflin, 1959.

SEXTON, PATRICIA. *Education and Income*. New York: Harper, 1962.

SUPER, D.E. & CURTIS, J.O. *Appraising Vocational Fitness*.

TYLER, LEONA. *Work of the Counselor*. (2nd edition) New York: Appleton-Century-Crofts.

WRENN, C. GILBERT. *The Counselor in a Changing World*. Washington, D.C.: American Personnel & Guidance Association, 1962.

VT 004 683
Kentucky Program of Rehabilitation Services.

Kentucky Dept. of Education, Frankfort. Bureau of Rehabilitation Services
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 67 7p.

*VOCATIONAL REHABILITATION; BLIND; PROGRAM COSTS; *REHABILITATION PROGRAMS; *STATE PROGRAMS; PARTICIPANT CHARACTERISTICS
KENTUCKY

During 1967, the Bureau of Rehabilitation Services assisted in restoring 4,810 disabled persons to remunerative employment, Services were extended to a total of 11,616; 943 were provided with college training and 481 were sent to vocational schools. Information regarding the Bureau is organized under the headings: (1) Purpose, (2) Eligibility, (3) Results of 1967, (4) General Statistics, (5) Disability Determinations Program, (6) Vending Stand Programs, and (7) Rehabilitation Is a Program That More Than Pays for Itself. (JK)

VT 004 683

c.1

KENTUCKY

PROGRAM

OF

REHABILITATION

SERVICES

ED039370

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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DEPARTMENT OF EDUCATION
Dr. Harry M. Sparks
Superintendent of Public Instruction

BUREAU OF REHABILITATION SERVICES
Ben F. Coffman
State Director

VT004683

FRANKFORT, KENTUCKY

1967

GREAT PROGRESS IN REHABILITATION
SERVICES PROVIDED AND FUNDS AVAILABLE

Fiscal Year	State Funds Appropriated	Other Local Funds	Federal Funds	Total Funds	Persons Served	Persons Rehabilitated	Per Cent Increase
1956	151,000	---	288,996	439,996	2,441	551	---
1957	192,350	---	384,948	577,298	3,127	871	58.1
1958	223,250	---	455,529	678,779	3,481	1,010	83.3
1959	240,000	---	483,673	723,673	3,954	1,240	125.0
1960	250,000	---	516,811	766,811	3,907	1,313	138.3
1961	306,160	---	651,649	957,809	4,072	1,475	167.7
1962	320,485	---	802,201	1,122,686	4,371	1,776	222.3
1963	346,510	130,315	1,044,771	1,521,596	4,585	1,881	241.4
1964	403,334	202,473	1,473,123	2,078,930	7,259	2,975	439.9
1965	413,283	331,456	2,047,774	2,792,513	9,574	4,144	652.1
1966	430,802	413,216	2,304,517	3,148,535	10,176	4,367	692.6
1967	480,000	571,328	2,784,823	3,836,151	11,616	4,810	773.0

RECORD NUMBER REHABILITATED 4810

Kentucky advanced to a rank of 9th among the 50 states, rehabilitating 151 per 100,000 population, as compared to a ranking of 38th in 1958 and 21st in 1963.

BUREAU OF REHABILITATION SERVICES
DIVISION OF REHABILITATION SERVICES
AND
DIVISION OF SERVICES FOR THE BLIND

PURPOSE

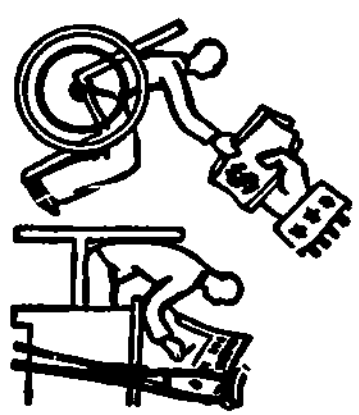
The chief purpose of the Vocational Rehabilitation program is to provide the services necessary to render disabled persons fit to engage in remunerative employment. The program recognizes the right to such services of any individual who has a physical or mental disability which constitutes a substantial handicap to employment. A combination of services are provided, as needed, to develop or improve the skills and abilities of the handicapped to become self-supporting workers.

ELIGIBILITY

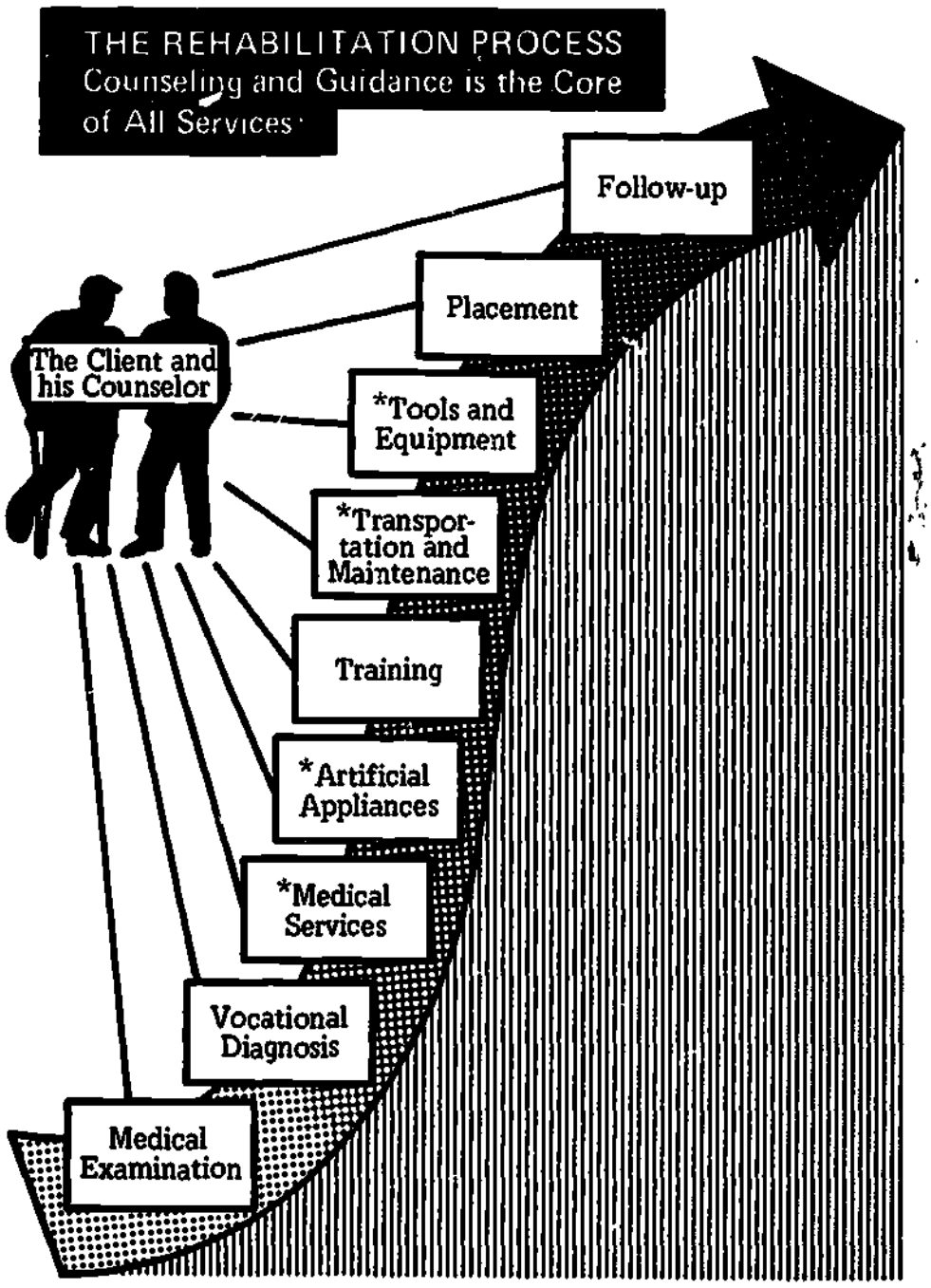
Individuals served by this Bureau must possess these eligibility criteria:

a. Be of employable age.
b. Have the presence of a physical or mental disability and resulting functional limitation or limitations in activity.
c. A reasonable expectation that Vocational Rehabilitation Services may render the person fit to engage in a remunerative occupation.

VOCATIONAL REHABILITATION IS A GOOD INVESTMENT FOR KENTUCKY — — TAX CONSUMERS BECOME TAX PAYERS.



ABILITY—NOT DISABILITY COUNTS



The services listed with a star (*) are provided on the basis of economic need. Any one or all of these services may be provided to rehabilitate a client.

RESULTS OF 1967

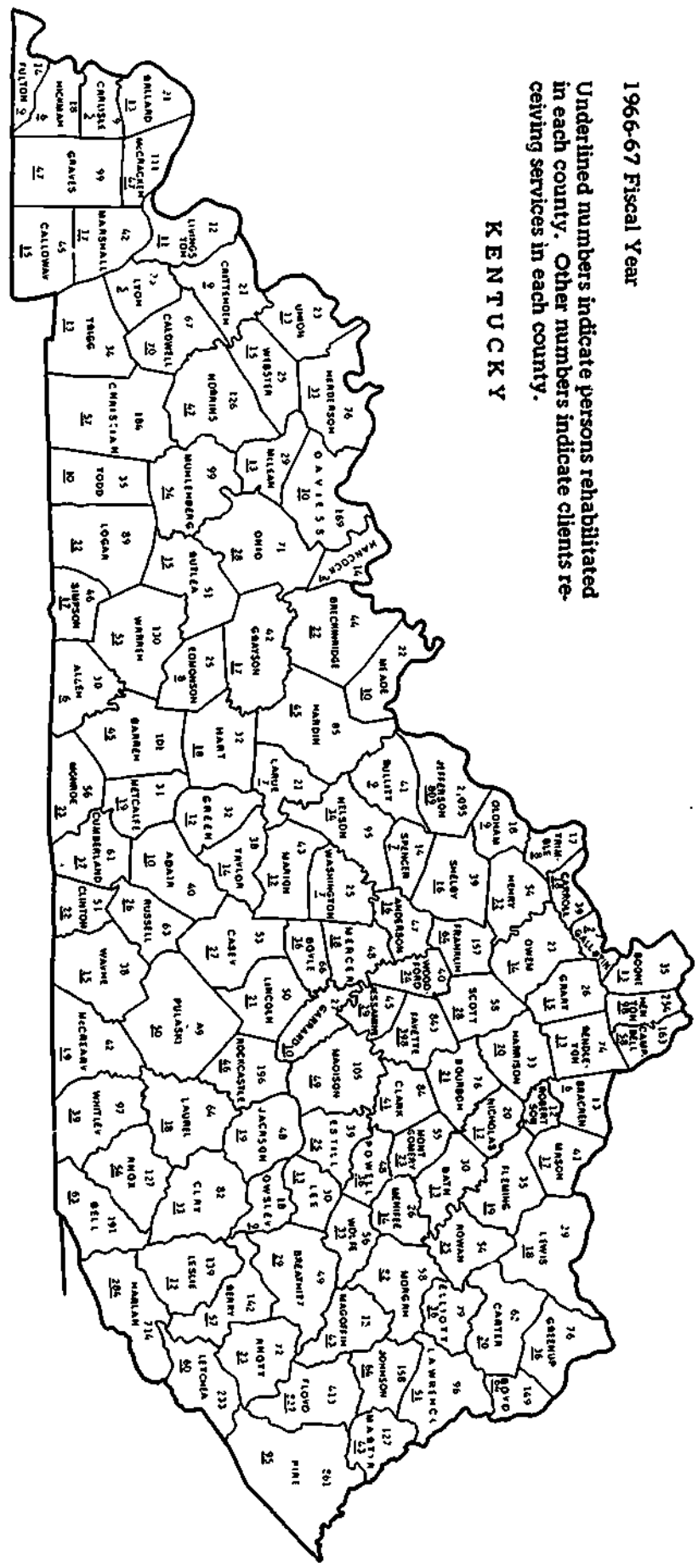
The Bureau of Rehabilitation Services was successful in reaching another new high during the 1967 fiscal year by restoring 4,810 disabled persons to remunerative employment. During 1967 rehabilitation services were provided to 11,616 persons residing in all counties of the State. Many of these persons were completely removed from public and private assistance programs.

During the year 943 were provided college training and 481 were sent to vocational schools.

1966-67 Fiscal Year

Underlined numbers indicate persons rehabilitated in each county. Other numbers indicate clients receiving services in each county.

KENTUCKY



GENERAL STATISTICS – – –

PERSONS REHABILITATED IN FISCAL YEAR ENDING JUNE 30, 1967

Age at referral	No. of Persons
Less than 20	416
20 - 34	1922
35 - 44	1033
45 - 64	1393
65 and older	26
Not reported	20
TOTAL	4810

Source of Referral	
Educational Institutions	422
Hospitals and sanatoriums	2030
Other health agencies	192
Physicians	559
Social Security Administration	68
Welfare agencies	427
State Employment Service	181
Artificial appliance company	80
Individual, except client himself	274
Self-referred person	369
Other sources	153
Correctional institutions	2
Not reported	53
TOTAL	4810

Source of support	
Current earnings, interest, dividends, rent	3124
Family and friends	1332
Private relief agency	1
PA-at least partly with Federal funds	239
PA-without Federal funds	3
Public institution tax supported	1
Workmen's compensation	1
Social Security Disability Insurance benefits	44
Other disability, sickness, surv. or age benefits, etc.	56
Disability or sickness benefits, savings, other	3
Not reported	6
TOTAL	4810

Length of time from referral to acceptance	No. of Persons
Less than 1 month	2495
1 - 3 months	2265
4 - 6 months	0
7 - 12 months	0
13 months of more	2
Not reported	48
TOTAL	4810

Occupations	
Professional, technical, managerial	277
Clerical and sales	503
Service	899
Farming, fishing, etc.	361
Industrial occupations	
Skilled	385
Semi-skilled	136
Unskilled	611
Homemakers	1403
Sheltered workshop operators	21
Unpaid family worker	206
Vending stand clerk	1
Vending stand operator	7
TOTAL	4810

Weekly earnings at acceptance	
None	4374
$1 to 19	61
$20 to 39	115
$40 to 59	128
$60 to 79	62
$80 to 99	29
$100 and over	41
TOTAL	4810

Weekly earnings at closure	
None	1526
$1 to 19	309
$20 to 39	581
$40 to 59	1034
$60 to 79	746
$80 to 99	301
$100 and over	313
TOTAL	4810

Education at acceptance	No. of Persons
No grades completed	83
1 - 7 grades	1350
8 grades	895
9 - 11 grades	1017
12 grades	1136
13 - 15 grades	189
16 grades and over	76
Not reported	64
TOTAL	4810

Work status at acceptance	
Wage or salaried worker (Competitive labor market)	454
Wage or salaried worker (Sheltered workshop)	6
Self-employed (except BEP)	56
State agency managed (BEP)	1
Homemaker	399
Unpaid family worker	55
Not working student	479
Not working - other	3360
TOTAL	4810

Disabilities	
Amputations	248
Orthopedic disabilities	718
Blind and visually impaired	268
Deaf and hard of hearing	232
Impaired speech	43
Emotionally disabled	1297
Mentally retarded	380
Cardiac impairments and circulatory conditions	216
Epilepsy	67
Respiratory diseases	125
Miscellaneous (not classified)	1216
TOTAL	4810

No. of dependents	
No dependents	3156
1 dependent	472
2 or 3 dependents	591
4 dependents	540
Not reported	51
TOTAL	4810

DISABILITY DETERMINATIONS PROGRAM RELATIONSHIP WITH SOCIAL SECURITY ADMINISTRATION

Rehabilitation program is now available to Social Security early referrals and recipients of Social Security disability payments. The Division of Disability Determinations determined 14,179 disability claims during the year. The average time to determine a claim and furnish the decision to Social Security was two days for claims having adequate information when received by the Bureau, and thirty-five days for claims needing additional evidence. (Or, you may say "a decision was reached and furnished to Social Security in less than thirty days in most claims.") As a result of this program 61,000 disabled Kentucky workers, their spouses, and dependent children, receive $3,500,000 in disability benefits monthly.

VENDING STAND PROGRAM

The State Agency operates a vending stand program for the blind and serves as the state licensing agency for vending stand operators, under the provisions of the Randolph-Sheppard Act. During fiscal 1967, the 31 vending stands in operation over the state employed 34 blind operators. Gross receipts from the operation were $650,111.00, with a net profit of $138,422.00. The average monthly earnings for the 34 operators were $400.00. The Agency maintains a training facility for all vending stand operators, and all operators must be licensed by the Agency before being placed in the vending stand program.

Blind persons are provided the same broad rehabilitation services as other disabled persons. Specialized services designed specifically for blind individuals are also available.

The Bureau operates in full compliance with Title VI of the Civil Rights Act. Services are granted all eligible persons without regard to race, color, creed, or National origin.

District Offices	Address	Telephone No.
Ashland	411 19th St.	324-6343
Bowling Green	811 Fairview Ave.	842-0389
Covington	208 Greenup St.	291-1116
Frankfort	State Office Bldg.	564-5769
Harlan	107 S. Cumberland	573-3890
Harlan	A R H	573-3321
Lexington	122 West High	252-0851
Lexington	400 Lafayette Pkwy.	252-2478
Lexington	108 Walnut St.	254-3844
Lexington	650 Kennedy Road	254-0576
Lexington	UKMC, Room N-1	233-5000
Louisville	600 West Cedar	585-5911
Louisville	Third & Oak	584-7720
LaGrange	Box 188	241-8486
Lyndon	8310 Westport Road	425-2573
Madisonville	113 East Center	821-51.4
Mt. Vernon	Rockcastle County Board of Education	256-2171
Owensboro	920 Frederica St.	684-4874
Paducah	112 So. 24th St.	442-0282
Paintsville	Mayo State Voc. School	789-3843
Paintsville	403 Broadway	789-5662
Paintsville	A R H	789-3217
Prestonsburg	29 First Avenue	886-3557
Somerset	124 Security Bldg.	678-8922
Whitesburg	Letcher Co. Board of Education	633-7560

Division of Disability Determination

Frankfort	415 W. Main	564-3710

Rehabilitation Facilities for Mentally Retarded

Frankfort	Frankfort State Hospital and School	564-4530
Dawson Springs	Outwood State Hospital and School	789-3771

Rehabilitation Facilities in Mental Hospitals

Louisville	Central Hospital	245-4121
Lexington	Eastern State Hospital	254-6740
Danville	Kentucky State Hospital	236-2200
Hopkinsville	Western State Hospital	886-4431

Rehabilitation Facilities for the Blind and Deaf

Kentucky School for the Blind

Louisville	1867 Frankfort Ave.	897-1583

Kentucky School for the Deaf

Danville		236-5132

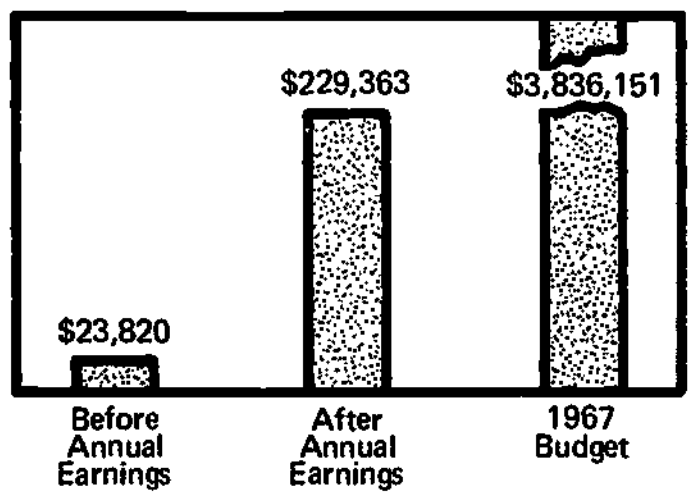
Kentucky Industries for the Blind

Louisville	2001 Frankfort Ave.	896-8557

REHABILITATION IS A PROGRAM THAT MORE THAN PAYS FOR ITSELF

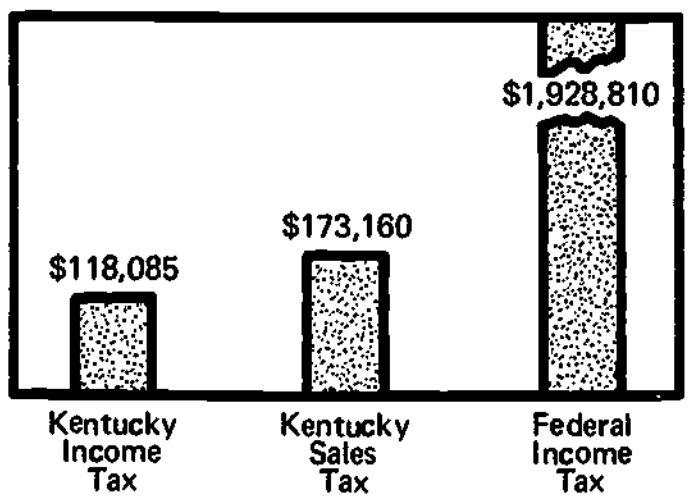
INCREASED EARNINGS

Dividing the total budget by 4810 rehabilitated in 1967 sets the cost of rehabilitation at approximately $800.00 per person. After rehabilitation, however, each person averaged an 863% increase in his earnings.



INCREASED TAX REVENUE

Based on these figures, the 4810 rehabilitants will pay back in State and Federal taxes the full cost of their rehabilitation in 1.73 years. *



*Calculated on the basis of combined weekly earnings of the 4810 rehabilitants.

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Training of Technicians in Ireland.

Organisation for Economic Co-Operation and Development, Paris (France)
MF AVAILABLE IN VT-ERIC SET.
OECD Publication Center, Suite 1305, 1750 Pennsylvania Avenue, Washington, D.C. 20006 ($2.00).
Pub Date - Dec64 107p.

*TECHNICAL EDUCATION; *NATIONAL SURVEYS; *MANPOWER NEEDS; LABOR SUPPLY; PROGRAM EVALUATION; RECRUITMENT; TECHNICAL OCCUPATIONS; *EDUCATIONAL PRACTICE; MANPOWER UTILIZATION; FOREIGN COUNTRIES; MANPOWER DEVELOPMENT; EDUCATIONAL OPPORTUNITIES; TECHNICAL INSTITUTES; JOB TRAINING; EMPLOYEE RESPONSIBILITY; EMPLOYMENT; HIGHER EDUCATION; SECONDARY EDUCATION; ELEMENTARY EDUCATION; *PROGRAM DESCRIPTIONS
*IRELAND

For purposes of this review, a survey was conducted to stimulate interest in the technician problem among the Irish and to collect original information to be added to existing knowledge of the supply and training of technicians. The survey was carried out by means of a questionnaire and was supplemented by personal visits to many industrial firms. Points covered in the survey were the tasks, responsibilities, recruitment, and training of technicians. A second review, devoted to technical education in the light of economic development, focused on the demand and supply of technicians. A meeting was then held to discuss the findings of the two reviews. Recommendations were made based on the findings of the surveys and the interaction conference. (CH)

VT 005 270

ED039370

OECD

REVIEWS OF NATIONAL POLICIES FOR SCIENCE AND EDUCATION

TRAINING OF TECHNICIANS IN IRELAND

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

PARIS DECEMBER 1964

The Organisation for Economic Co-operation and Development was set up under a Convention signed in Paris on 14th December 1960 by the Member countries of the Organisation for European Economic Co-operation and by Canada and the United States. This convention provides that the O.E.C.D. shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The legal personality possessed by the Organisation for European Economic Co-operation continues in the O.E.C.D., which came into being on 30th September 1961.

The Members of O.E.C.D. are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

The Directorate for Scientific Affairs, which is responsible for the publication of the present report, has been established within O.E.C.D. to take charge of the activities of the Organisation relating to scientific research and to the expansion and rational utilisation of the scientific and technical personnel available to meet the needs arising from economic growth.

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PREFATORY NOTE

Reviews of National Policies for Science and Education are conducted by the O.E.C.D. to assist Member countries in reassessing their programmes in two areas of public policy that have an increasingly important bearing on economic growth and social well-being: the development of human resources and the stimulation of scientific and technological progress. Each review can, of course, deal only with some specific aspects of these broad topics but it is hoped that the series will cumulatively make a significant contribution to the evolution of national policies affecting science and education.

The individual reviews are intended to serve the interests not only of the country under review but also of other Member countries and, indeed, of non-member countries as well. The role of science and education in national development, the way in which science and education can — or should — be linked to economic policy and social demand, the competing needs of research and teaching and similar questions are matters that concern people everywhere. They present problems which every national government must face. There is, in these matters, much to be gained from an exchange of views and from an examination of the experiences — the success and the mistakes — of others.

The procedure for the reviews is for a small team of experts to visit the country under review for extensive discussions with government officials, members of the academic and scientific communities, representatives of industry and other appropriate individuals and institutions. The observations and conclusions of the examiners are included in a report which becomes the basis for a 'confrontation' meeting at the O.E.C.D. headquarters in Paris in which the examining team, a special delegation from the country under review and delegates from each of the other Member countries participate. The examiners' report is designed to raise questions, rather than to answer them, and the 'confrontation' meeting, therefore, takes the form not of a cross-examination of a particular delegation but of a round-table discussion, for the mutual benefit of all the participants, of a particular country's problems and policies.

The present review of Ireland is primarily concerned with the supply and training of technicians[1]. An unusual feature of this review is that in preparation for the examiners' visit, the O.E.C.D. and the

1. For the general economic framework in which Ireland's technical manpower needs should be viewed, see the reports for Ireland in the series of Economic Surveys published annually by O.E.C.D.

Irish Department of Education undertook a joint survey of the tasks, responsibilities, recruitment and training of technicians in a cross-section of Irish industrial firms. The results of the survey are published for the first time in this brochure.

The examiners and the O.E.C.D. secretariat are most grateful for the co-operation given by the firms included in the survey and for the constant help they received from government officials and others whom they interviewed in Ireland. Special thanks are due to Prof. J.P. O'Donnell and Mr. T. O'Brien for their work in preparing the background material and to Dr. C.A. Smith for his participation in the review. The opinions expressed in the various parts of this brochure are, of course, those of their authors.

PART I

BACKGROUND REPORT
FOR THE COUNTRY REVIEW OF IRELAND[1]

The problem of educating and training technicians is of vital importance to the technical manpower structure if the target of a 50 per cent increase in G.N.P. is to be achieved during the period 1960-1970 by Member countries. A survey of the technician situation in Ireland should therefore provide very useful knowledge not only for the Irish authorities but for other Member countries where a shortage of technicians and the inadequacy of their education and training is said to put a brake on economic expansion.

A survey was accordingly undertaken jointly by O.E.C.D. and the Irish authorities in selected firms to stimulate interest in the technician problem among Irish industrialists, and to collect original information to be added to existing knowledge for the purposes of this review. The survey was carried out by means of a questionnaire and was supplemented by personal visits to many of the firms concerned in order to check and amplify the answers.

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1. This background information was prepared by Professor J.P. O'Donnell, Chemical Engineering Department, University College, Dublin, at the request of O.E.C.D.

1. TECHNICIANS IN IRISH INDUSTRY

STATEMENT OF THE PROBLEM

1. The establishment of a manufacturing industry involves the co-operation of experts in finance, marketing, management, engineering and the other applied sciences. Many questions have to be posed and answered if the project is to succeed. Of these none is more important than the question of adequate personnel at all levels.

2. If industry is to be established at all it is essential that an adequate labour force be available. There is at present in Ireland no dearth of entrepreneurs; neither is there a lack of advisers on economic, marketing and technical problems. Perhaps a serious obstacle to industrial expansion is the lack of a reserve of personnel suitably educated and trained so that they can play their parts in the development, management and operation of different kinds of industry.

Definitions

3. It is now generally accepted that the principal grades of skill and education required in industry are: the operative, the craftsman, the technician and the technologist. Definitions in the fields of activity and of the education and training requirements of some or all these grades have appeared in many reports[1]. The definitions given here are from an Irish source[2], but are broadly in agreement with those originating in other European countries:

> *The Operative* is a man who after a limited period of training which may be short or long, depending upon the complexity of the operation, is capable of performing a single operation with skill. Even in this, the lowest industrial grade, we have the necessity for a man who is capable of adapting himself to the changing industrial needs and the changing techniques.
>
> *The Craftsman* is a man capable, through more extensive and general training, of performing more complex functions which require a certain amount of thinking and mental definition, i.e. to interpret a drawing and to comply with its requirements and any other written specification which may be given to him. This

1. *Better opportunities in Technical Education* (Cmnd. 1254 (H.M.S.O., London, 1961); *Ministry of Labour Gazette*, December 1960, pages 464-467 (H.M.S.O.); *Report on Education and Training of Professional Engineers*, EUSEC, Brussels, 1960.
2. *Vocational Schools, Science and the Future*, J. Kinsella, Congress of Irish Vocational Education Association, 1960.

grade corresponds roughly with the traditional skilled craftsman. It must, however, be realised that he may not still be so skilled in a particular or limited field as the skilled operative defined above. In the industrial countries what we understand as the Section Leader, Charge-hand or Foreman is usually drawn from this grade. The difference between the above two grades can be best related to the quality of the decision that has to be made. In the case of the Operative the decision is usually simple, based on the requirements of a known action or the observation of a pre-determined result. In the case of the Craftsman, however, the decision is usually more involved and demands a certain amount of reasoning to determine an action based on a number of observations often through different senses.

The Technician indicates the particular grade which has become so necessary to accommodate the changing pattern of industrial development. In addition to general skilled training in the workshop he is also qualified, by specialist technical education, to supervise craftsmen; to initiate and plan work; to perform development and research work which does not require fundamental analysis and reasoning. He is further capable, under adequate supervision, of doing design work on plant, equipment and new products within a limited sphere, usually known techniques and processes, without having recourse to fundamental or original thought.

The Technologist is a university graduate or otherwise trained in fundamentals, with the ability to apply scientific reasoning to the solution of engineering and technological problems. This man is capable of reading and analysing the work of others and applying the results to his own immediate field. Because of this, he should be capable of producing original work in his own particular field of experience.

4. The role of the engineering technician is fairly clearly defined, and the EUSEC definition[1] is widely accepted. Difficulties arise when an attempt is made to extend this definition to other industrial fields. The British Ministry of Labour, in an explanatory memorandum issued to employers with its questionnaire on technicians[2] attempted to resolve this difficulty of definition. The relevant section of the memorandum is worth quoting:

> " In industrial fields other than engineering the technician needs qualities, abilities and education similar to those possessed by the engineering technician though with a different technological background, e.g. applied physics, applied chemistry, metallurgy, or some branch of the biological sciences. In these fields the technician may be assisting professionally qualified scientists or technologists in such activities as physical measurements, evaluation of experimental observations, the devising and setting up of experimental apparatus, the preparation of chemical or biological cultures,

1. *Report on Education and Training of Professional Engineers,* EUSEC, Brussels, 1960.
2. *Ministry of Labour Gazette,* December 1960, pages 464-467 (H.M.S.O.).

photographic work, the taking and routine testing of product samples, chemical analysis, etc. Such work often calls for the exercise of a high degree of specialised skill and ability to recognise the significance of the unusual or abnormal event when it occurs, whether in the laboratory or in the production plant.

"The qualifications of technicians include Higher National Diploma, Higher National Certificate, Ordinary National Diploma, Ordinary National Certificate, the City and Guilds Certificates and the General Certificate of Education at advanced level, but the possession of one of these qualifications does not automatically lead to inclusion in the survey, and there will be many men employed as technicians who should be included who hold some other qualification or no qualification at all. It will be necessary to identify technicians by looking at the job done rather than at the worker's qualifications.

"It is believed that most categories of technician will be readily identifiable by employers, but it is possible that some uncertainties may arise on the borderline of the groups in determining whether the responsible duties are technical or technological in character or, on the other hand, whether administrative and managerial duties outweigh the technical. In the technological fringe area persons who hold university degrees, or who have satisfied the educational qualifying requirements of the major engineering or scientific institutions should be excluded, and so should persons whose work is entirely managerial, but those carrying some degree of managerial responsibility or engaged in administrative and supervisory duties should be included if they are carrying out the functions of a technician in the course of supervising others. Notwithstanding the difficulties of segregating these borderline cases, it is believed that reference to the definition given at the beginning of this memorandum will materially assist in deciding whether a particular person should be designated as a technician.

"For the purposes of this enquiry persons under training as technicians should be counted as technicians. Such persons, if they have not served a recognised apprenticeship, will usually have been required to possess a minimum educational qualification."

Levels of Education

5. The present provision of education and training for the levels below the technologist is as follows:

Operatives. A small number of courses for operatives have been provided up to the present and reference is made to them in the second part of this report.

Craftsmen. Up to the present the only necessary qualification for a craftsman in Ireland has been the serving of a specified period of apprenticeship — usually five years. Formal education for the craft has rarely been required, nor have there been compulsory tests of proficiency. Craft education is provided on a large scale, as described in the second part of this report. While most large

firms insist that their craft apprentices attend these courses (and release them from work in order to do so), the number of apprentices who take the examinations for the *Junior* and *Senior Trade Certificates* is not very large.

6. There are at present about ten thousand craft apprentices in Ireland; this represents a yearly intake of about two thousand. Table 24 shows that, in 1960, approximately 900 Junior and 524 Senior Trade Certificates were awarded; thus only about a quarter of all apprentices obtain the Senior Certificate. Junior Certificates are awarded after about half the period of apprenticeship is completed, and Senior Certificates at the termination.

7. The situation in regard to apprenticeship is now being actively reformed, thanks to the passing of the Apprenticeship Act, 1959. The main effect of this Act was the setting up of a National Apprenticeship Board, a body representative of employers, workers and educational interests. The Board is charged with the task of improving the present arrangements for the recruitment and training of apprentices. One of its first proposals was that the minimum educational requirement for entry to apprenticeship should be the possession of either the Secondary Schools' Intermediate Certificate or the Day Vocational School Certificate in specified subjects. This requirement operates as from September 1963. Further, the Board unanimously adopted a " Statement of Basic Conditions for Sound Apprenticeship ". This Statement is reproduced in the Appendix. The implementation of the principles of the Apprenticeship Board's Statement will undoubtedly lead to an increase in the number of trade certificate awards in due course.

8. In the second part of this report the principal courses for technicians are set out. As explained there, most of the courses prepare for the " Technological Certificate " examinations of the Department of Education. The present system suffers from the following weaknesses as a basis for the provision of technicians:

The " Technological Certificate " examinations are written tests only (except in applied chemistry);

The subjects in each group tend to cover too wide a range of applied sciences and do not give the student the specialised training in one branch of technology which is essential if he is to be a technician in industry;

Nearly all the candidates for these certificates are craftsmen or apprentices. Many of them study in their spare time (a small number enjoy part-time day release). Of the craftsmen and apprentices who obtain these certificates the majority continue to work at their crafts, with little tangible reward for their studies. It is certain that only a small fraction of " Technological Certificate " holders find employment as technicians; the main use of the certificates at present is as an additional qualification of limited value. The use of the word " technological " in the title of these certificates is therefore quite misleading and should be discontinued.

9. Some of these weaknesses stem from the fact that technical

education in Ireland has derived largely from the English system. One of the main characteristics of that system, a survival from the 19th century, was the principle whereby training for industry is based almost completely on craft apprenticeship[1]. The pattern of English technical education was set by the combination of this principle with an insistence that industry alone should provide practical instruction for craftsmen, the technical schools being confined to teaching them the principles of science. The result of these forces was that the apprenticeship and technical school training of craftsmen drew further apart, and few craftsmen could apply in the workshop what had been taught in the classroom. School courses became more academic and the inadequate education of many of those who attended led to very high failure rates.

10. The emphasis on apprenticeship as the main avenue for industrial training has been evident in Ireland also, and the situation already described (wherein apprentices form the majority of candidates for "Technological Certificates") means that these certificate examinations serve at best as a means of selecting *potential* technicians, very few of whom obtain employment as such. Selection is, of course, essential, but is should be made at entry to courses as well as at the end. Furthermore, entry to courses should be possible for boys having different educational backgrounds.

11. Concerning the use of technicians, many employers are unable to decide on the proper category to which their employees belong; this is especially true in respect of the boderline between technicians and craftsmen.

12. If the technician's work involves supervision of the work of craftsmen he will need to have adequate experience and knowledge of a particular branch of applied science. On the other hand, if he is to be able to carry out design and development work he must have an education which will enable him to understand the scientific principles behind the operations which he performs.

13. In addition to the variety of functions and abilities of technicians within one industry, there is the further wide variation from one industry to another. In one case the technician may need to have a thorough mastery of a craft supplemented by a more knowledge of the techniques of one special industry. For such a man a craft course followed by a relatively short technician course may be suitable. In the more highly developed industries the technician's work may demand an education of almost degree standard in the special branch of technology in which he works. To cater for this type of case a specially designed longer course is essential, to be entered on at age 16 to 18 after a good general education. In the process industries a technician on production may require a good knowledge of chemistry or automatic control, but have no need of craft training.

14. It is clear that no simple pattern of technician courses can be

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1. S.F. Cotgrove, *Technical Education and Social Change*, Chapters 1-4, Allen and Unwin, London, 1958.

suitable for all industries. This is especially true in Ireland because of the many small firms which cannot justify the full-time employment of a technologist and in which the technician consequently carries added responsibility. The provision of a scheme of suitable courses is a problem which requires the attention and co-operation of educationalists and industrialists.

15. It seems therefore that the education of a technician must be *different* from that of either the craftsman or the technologist. It is much more difficult to reach agreement on what the nature of this education should be.

Improvement of Educational Facilities for Technicians

16. The problem of improving the provision of education for technicians may be posed in the following terms:

What kinds of training, and in what volume, does industry require?
How might existing courses and examinations be modified to meet the requirements of industry?
How can training be provided for the more specialised types of technician in view of the small numbers required and the dispersion and small size of firms.

THE O.E.C.D. AND DEPARTMENT OF EDUCATION JOINT SURVEY OF TECHNICIANS IN IRISH INDUSTRY

17. It was decided that an attempt should be made to answer these questions in the background report for the Irish Country Review, and to this end a survey was undertaken of the tasks, responsibilities, recruitment and training of technicians in a number of Irish firms.

18. In view of the difficulty of suitably defining "technician", it was decided to send a questionnaire to a number of firms and to follow up the return of completed questionnaires by a visit to each firm to check and amplify the answers where possible. The choice of suitable interviewers was restricted by the specialised nature of the enquiry, which precluded the employment of non-technical personnel for this task and the possibility of firms objecting to being interviewed by technologists from other firms or from government services.

19. It was decided to employ technical school inspectors from the Department of Education as interviewers. These men were already conversant with the published definitions of technical personnel, they were acceptable to industry, and they had the further advantage of being able to establish contact with firms through the Chief Executive Officers of the various Vocational Education Committees.

20. The definitions were chosen bearing in mind that engineering forms only a small part of Irish industry and therefore the EUSEC definitions would be of limited value, and that a definition including examples of typical qualifications makes it easier for firms to decide on the correct categories.

Firms

21. The choice of the firms to be investigated proved to be a fundamental problem. Because of the limited time available for the work, it was agreed at the outset that the survey should be limited to not more than forty. It was felt that it would not prove possible to arrange interviews at, and analyse the results from, a greater number.

22. With so limited a sample the problem of coverage immediately arose. Should the enquiry be confined to one sector of industry in an endeavour to make it possible to draw valid conclusions for at least that sector? Alternatively, should the firms be chosen from the whole of industry in order to obtain a view of the technician situation? This latter method should indicate some of the problems that arise in relation to technical training in general. Further, from the experience of investigating different kinds of industry, some useful guidance might be gleaned on the conduct of more extensive and/or more detailed surveys later.

23. Since problems of technical education are not confined to any one industry, and that no one industry or sector has yet indicated specific requirements with regard to technicians, it was decided not to confine the survey to a particular field of activity. The firms would be chosen on a broad basis.

24. The next question which arose was: since only a few firms will be surveyed in each field of industry, how should these firms be chosen? Should they be large or small, old or new, progressive or static? The most important requirement here seemed to be that of deriving the maximum amount of information from the limited scope of the survey. Consequently, it was argued that it would be best to choose relatively progressive firms. On the basis of the utilisation of technicians in such firms, some references, albeit negative ones, could be drawn concerning less well-organised companies, whereas an investigation of bad firms would not yield any corresponding conclusions regarding good ones. The question of size was not considered to be a vital one.

25. On the basis of these decisions regarding the size and scope of the survey and the kind of firm to be selected, a list of firms was drawn up by Professor J.P. O'Donnell, Mr. M.J. O'Flanagan, Chief Inspector, and Mr. J.P. Sheeban, Inspector (both of the Technical Instruction Branch, Department of Education). The activities of the firms were known in general terms to the three selectors, and in many cases a personal contact existed with some official of the firm. This latter point was considered important as an aid towards ensuring co-operation in the survey.

26. Copies of the questionnaire were sent to 37 firms. Most of the firms agreed to co-operate, some wrote to say that they were willing to be interviewed but not to complete the questionnaire themselves.

Results of the Survey

27. The results for the 24 firms in which the enquiry was completed are summarised in seven tables:

Table 1: Output, Exports and Employment Structure.
Table 2: Technicians by Function.
Table 3: Technicians by Qualification.
Table 4: Recruitment and Training of Technicians.
Table 5: Duties on Imports and Exports.
Table 6: Wage Rates and Shortages.
Table 7: Technician Grades.

28. Some firms were reluctant to answer questions about the value of their output and in most cases the answers summarised in Table 1 cannot be considered as more than guesses. Classification by firms of their employees by level had in a number of cases to be altered by the interviewers following a critical review of the duties.

29. In Table 2 an attempt has been made (on the basis of the replies and interviewers' notes) to distinguish between higher (H) and lower (L) technician functions. Where the level seemed doubtful the relevant number has been placed in the middle of the column. Where a doubt exists as to whether the persons in a column are really doing work of technician standard, the number is given in brackets ().

30. In their check on the answers interviewers found that in nearly all cases persons had been included who were, according to definitions, either craftsmen or operatives. In discussion, representatives of the firms frequently defended their classification, their criterion being that any man who had a knowledge of special features of the equipment or processes was a technician. The fact that his work was of a routine nature calling for little personal decision was of secondary importance. In the same way foremen fitters or mechanics were often described as technicians. Categories *ii*) and *iii*) of Table 2 include such men. Especially in process industries, the controllers or foremen of production units had often started as operatives or unskilled men and had been trained in the factory to assume their present duties. Some of these men were members of trade unions, and managements explained that, if they were replacing these men without pressure from the trade unions to promote from within the firm, they would seek properly educated and trained technicians. As a consequence, therefore, they described the men concerned as technicians. These have been described in category *vii*) of Table 2 as lower technicians.

31. Draftsmen also presented a problem in that the level of their function was often doubtful, and this is reflected in category *i*) of Table 2.

32. Laboratory assistants were often described as technicians, even though their work was largely routine and they were not in every case taking evening courses or being otherwise trained for work of a higher standard. Category *iv*) of Table 2 shows how numerous were the doubtful cases.

33. Table 3 shows the qualifications of the technicians in the survey. A significant feature here was the ignorance of managements regarding the qualification held by each technician; in many cases they were not

willing to enquire. The table therefore does not convey much information, other than that: the most common qualification reported was the Irish Secondary Schools Leaving Certificate; a significant number of technicians possessed University degrees, and a number are described as " studying for " University degrees. These are all pursuing evening courses which require great tenacity for their successful completion. Few persevere to the end, and managements are not always certain that the persons concerned are still engaged in study.

34. Table 4 is largely self-explanatory. The intake of technicians is small and Secondary School Leaving Certificate seems to be more popular as an entry qualification than Technical School examinations. This is not surprising in view of the small numbers of non-craft students who take these examinations to any considerable level of attainment.

35. Training of technicians within the firm consists mainly of " learning by doing " supposedly under the guidance of supervisors or craftsmen.

36. Technical School courses are mainly in the evening — there is little part-time day release. Sometimes managements appear to dislike this latter system. They argue that they cannot afford it, though this often seems unlikely, considering the small number of students in relation to the value of the firm's output. Others say that day release means that either the man is not really necessary or must be replaced at the times when he is at school.

37. Some views were expressed in favour of block release or Sandwich Courses but the suggestion of such courses organised by groups of firms in one industry met with little real support. Among the reasons given for this were:

most industries in Ireland are too small to organise special courses to suit their needs;
personnel released for special courses will leave to seek better remuneration in Britain;
the state should provide scholarships to enable technical personnel to attend courses in Britain and other countries.

38. Table 5 presents the answers to a question put to find out whether any relationship existed between the number of technicians employed and either *a*) the assistance towards expansion which firms obtain from protective tariffs, or *b*) the stimulus provided by competition on foreign markets.

39. The table shows that most commodities can be exported to the United Kingdom and the Commonwealth without duty being exacted at entry. For most other countries import duties exist.

40. The firms which export a large fraction of their output deal mostly with the United Kingdom, though there are one or two notable exceptions which sell their foods largely in the United States and Canada.

TABLE 1. OUTPUT, EXPORTS

ACTIVITY	FIRM NO.	OUTPUT						
		GROSS (£ 000)			NETT	NETT AS % GROSS	FORECAST GROSS	
		1959	1960	1961	1961	1961	1964	1967
Knitwear	1 2	314	353	365	181		750	1,000
Paper	3 4	—		(1,800) (7)	—	(44)	—	—
Shoes	5	1,316	1,546	1,885	866		2,600	3,200
Shoes	6	No information available						
Cement	7 8 9	3,599	3,818	3,756	2,059		5,046	5,046
Domestic Electrical Equipment	10	940	1,275	1,800	720		2,400 (for 1963)	—
Transformers, Wire, Cable, Pumps, Castings.	11	1,297	1,758	2,116	196 (1)		4,200	5,000
Radio and T.V. Equipment (not Domestic).	12 13	59	121	168	70		—	
Glass Containers	14	1,171		1,410	796		—	
Glassware	15	No data						
Tweeds, Worsteds, Yarn	16	280 (3)	323 (3)	323 (3)	—		—	
Cotton, Rayon Cloth: Yarns	17 18	1,048	1,020	1,202	521		1,322	1,442
Cigarettes, Tobacco	19	8,326	9,452	11,326	10,704		—	
Cocoa, Chocolate, Sugar Confectionery	20	1,253	1,565	1,586	639		2,200	2,600
Butter, Cheese, Dried Milk	21 22	1,142	1,414	1,464	1,303		1,650	1,730
Food Canning, Beverage Bottling	23	894	956	1,127	449		1,630	2,150
Confectionery, Food Canning	24	1,113	1,268	1,392	643		1,700	2,000
General Engineering, Rolling Stock Repair.	25		312	391	207		—	'61 turnover to be doubled
Structural Steelwork, Ornamental Metalwork	26	244	294	378		(50)	450	550
Bolts, Nuts, Screws, etc.	27	241	260	272	265		—	—
Cranes	28 29 30	—	220	450	—		—	—
Weedkillers, Insecticides, Import of Veterinary Medicines	31		59	116	87		140 (2)	175 (2)
Lime, Limestone, Polystyrene Products	32 33 34	123	154	179	113			
Furniture, mainly Chairs	35 36 37	54 (3)	62 (3)	43 (3)	—		60	100

AND EMPLOYMENT STRUCTURE

EXPORTS					EMPLOYEES						
GROSS (£ 000)			FORECAST GROSS		A	B	C	D	E	F	
1959	1960	1961	1964	1967	TECHNOLOGISTS	MANAGERIAL EXCL. A	TECHNICIANS	CRAFTSMEN	OPERATIVES	OTHERS	TOTAL
31	38	50	270	300	1	30	4	9	148	18	210
—	—	300	—	—	16	55	(31) (6)	156	280	50	588
641	805	1,098	1,500	1,800	5	92	(61)	14	833	9	1,014
635	812	864	1,195	1,195	20	133	(18)	188	417	256	1,032
100	120	300	700 (for 1963)	—	3	80	32	20	600	—	735
729	993	1,060	1,700	2,250	22	153	(74)	110	537 (5)	617	1,513
(40)	(90)	(110)	—	—	2	13	(17)	10	42	—	84
Circa 12 % to N. Ireland only					5	60	(43)	61	294	223	686
No data					5	47	(20)	302	76	308	758
42	48	28	—	—	3	8	(12)	9	166	6	204
22	22	108	119	130	4	52	(16)	31	740	—	843
58	50	74	—	—	2	150	5	19	288	200	664
639	791	854	1,000	1,250	4	59	(10)	33	200	215	521
194	170	244	320	370	2	18	(26)	21	296	—	363
nil	nil	nil	nil	nil	2	49	(19)	19	344	—	433
94	116	151	—	—	6	60	(25)	30	60	621	802
—	43		—	—	1	27	(31)	212	116	97	484
—	—	8	16	30	5	21	9	76	46	21	178
18	27	52	—	—	—	23	2	24	66	63	178
—	220	450	—	—	3	28	14	105	77	—	227
—	—	—	—	—	3	Grades confused — no technicians					31
—	2.6	6.0			2	5	(4)	5	10	76	102
—	—	—	48	80	1	5	1 (4)	3	27	6	43

TABLE 2. TECHNICIANS BY FUNCTION

ACTIVITY	FIRM NO.	DESIGN DRAUGHTSMANSHIP i		INSTALLATION AND ERECTION OF PLANT ii		OPERATION AND MAINTAINANCE OF PLANT iii		INSPECTION ANALYSIS AND TESTING iv		PURCHASING AND SALES v		ESTIMATING RATE-FIXING vi		PROCESS CONTROL vii		LABORATORY SUPERVISION viii		OTHER ix		TOTAL TECHNICIANS
		H[1]	L[2]	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	
Knitwear	1											1		2					1	4
	2																			
Paper	3	1	5			1	5		(7)			2		9					1	31
	4																			
Shoes	5		4				3		(14)			4		(36)						61
Shoes - Boots	6	No information available																		
Cement	7	4	2		(2)		6		(4)											18
	8																			
	9																			
Domestic Electrical Equipment	10		4		1				3			1	3		(20)					32
Transformers, Wire Cable, Pumps, Castings	11		11		5		6		14			1	5	15			3	4	(10)	74
Radio, T.V. (not Domestic)	12	4	2	1	(2)		1	1	(4)					2						17
	13																			
Glass Containers	14		4		1		(11)		4				3		20					43
Glassware	15		1	2					5				(2)		(10)					20
Tweeds, Worsteds, Yarn	16						3		(1)						(8)					12
Cotton, Rayon Cloth; Yarns	17	—	—	—	—	—	(5)		(1)	—	—		(2)		3 (5)	—	—	—	—	16
	18																			
Cigarettes, Tobacco	19					1	1						1				2			5
Cocoa, Chocolate, Sugar Confectionery	20		2		1		1	1					1 1	3						10
Butter, Cheese, Dried Milk	21								20						4		2			26
	22																			
Food Canning, Beverage Bottling	23						(2)	3	2					3	8 1					16
Confectionery, Food Canning	24				2		2		6				2 3		(10)					25
General Engineering, Rolling Stock Repair	25	1	6	1			1		1						4				(15)	31
Structural Steelwork, Ornamental Metalwork	26		8										1							9
Bolts, Nuts, Screws, etc.	27		1											1						2
Cranes	28		2		(1)		(1)		(1)		(2)		(3)		(4)					14
	29																			
	30																			
Weedkillers, Insecticides, Import of Veterinary Medicines	31	None																		
Lime, Limestone, Polystyrene Products	32	—	—	1	—	—	—	1	—	—	—	—	—		(2)					4
	33																			
	34																			
Furniture, mainly Chairs	35																			
	36																			
	37																			

1. H = Higher.
2. L = Lower.

41. Nearly all the firms are protected on the Irish market by import duties. Generally there is a preferential rate of duty for goods from the United Kingdom or the Commonwealth but for industries which depend on the home market even this rate is high.

42. No analysis of the destination of exports was available from firms but in the official trade statistics overall figures for different products are given.

43. In Table 6 the hours worked are not consistent. In some cases the basic hours (usually 40-45), in others the average actual hours, including overtime, are given.

44. Wage rates for technicians are generally not much higher than the maximum earnings of craftsmen. In firms where technicians are recruited from the craftsman level this fact sometimes leads to unwillingness to accept the additional responsibility in view of the very slight financial gain.

45. In some process industries where technicians have been promoted from the operative level, their function is to some extent that of a foreman or supervisor on a production unit of the plant, and their wages may then be only marginally higher than those of some of the senior operatives.

46. There is no clear pattern concerning shortages. A number of firms complained of the lack of a pool of trained technicians, but their demands are very spasmodic and there is no steady demand for even a small number of technicians in any one industry. Few firms seem disposed to co-operate with Vocational Education Committees to organise training which would help to remedy the absence of such a pool.

47. Trade union activity with regard to training within firms is either non-existent or strictly limited to the craft level. Lack of such activity seems to be due either to discouragement by management of union " intrusion " in such matters, or to overconcern on the part of the unions to enforce the principles of " promotion from within the firm " and " last in, first out ".

48. Improvements in productivity have been most readily accepted by unions in firms which are actively engaged in export business.

Other Surveys conducted in Ireland

49. Because of the limited extent of the present survey it is worthwhile to refer to earlier enquiries which, though carried out by means of questionnaires only, had a much wider coverage. These were:

a) Professor O'Donnell's survey of technologists and technicians in 1961;
b) The Central Statistics' Office enquiry into professional engineering manpower in 1961.

TABLE 3. TECHNICIANS

ACTIVITY	FIRM NO.	IRISH SECONDARY SCHOOLS LEAVING CERTIFICATE	BRITISH GENERAL CERTIFICATE OF EDUCATION G.C.E.	TECHNOLOGICAL CERTIFICATE DEPARTMENT OF EDUCATION		CITY AND GUILDS TECHNOLOGICAL CERTIFICATE	
				INTER.	ADVANCD.	INTER.	FINAL
Knitwear	1	1 (Hons Maths)	—	—	—	—	—
	2						
Paper	3	4 (Sc)	—	No data for remainder			
	4						
Shoes	5	1 (Sc)	—	—	—	2 (5)	5 (2)
Shoes	6			No information available			
Cement	7			No data available			
	8						
	9						
Domestic Electrical Equipment	10						
Transformers, Wire, Cable, Pumps, Castings	11	See note 4 35 (Sc) + 5	1 (17)	5 (5)	2 (1)	1 (1)	2 (2)
Radio, T.V. (not Domestic)	12	—	—	—	—	—	—
	13						
Glass Containers	14	4	(1)	—	—	—	—
Glassware	15			No data available			
Tweeds, Worsteds, Yarns	16	—	—	—	—	2 (3)	—
Cotton, Rayon Cloth, Yarns	17	2	—	—	—	3	2
	18						
Cigarettes, Tobacco	19						
Cocoa, Chocolate, Sugar Confectionery	20						
Butter, Cheese, Dried Milk	21						
	22						
Food Canning, Beverage Bottling	23	5	—	—	—	—	—
Confectionery, Food Canning	24	—	2 (1)	(3)	3	—	1
General Engineering, Rolling Stock Repair	25			No data for remainder			
Structural Steelwork, Ornamental Metalwork	26	—	6 (Equiv)	—	—	—	—
Bolts, Nuts, Screws, etc.	27	—	—	—	—	—	—
Cranes	28			No details — mainly trade			
	29						
	30						
Weedkillers, Insecticides, Import of Veterinary Medicines	31	—	—	None	—	—	—
Lime, Limestone, Polystrene Prod.	32	—	—	2	—	—	—
	33						
	34						
Furniture (mainly Chairs)	35	—	—	—	—	—	—
	36						
	37						

BY QUALIFICATION

BRITISH NATIONAL CERTIFICATE			MEMBERSHIP OF PROFESSIONAL BODY		UNIVERSITY DEGREE	OTHER, WITH QUALIFICATION	
FULL TECHNOL.	ORD.	HIGHER	GRADUATE	CORPORATE			
—	—	—	—	—	1 (B. Comm.)	2	1, ACWA; 1 Diploma in Dress Design
	—	—	—	—	1 (B. E.)	—	
(1)	—	—	—	—	1 (B. A.)	—	
	2		1	1		1	Wireless Operator (2nd Class)
		1			(1) (B. Sc. Lond.)	4	Radio Officer's Certs.: Other Diplomas
8	1	1	—	—	—	—	
—	—	—	—	—	1 (B. Comm.) (1) (B. Sc. Lond.)	1	Grad. Inst. Eng. Designers
—	—	—	—	—	—	—	
—	—	—	—	—	—	—	
					1 (B. Sc.) 3 (B. Dairy Sc.)	1	Work Study Diploma
					5 (B. Dairy Sc.)	21	Diploma in Dairy Science
—	—	—	—	—	3 (B. Sc.) 2 (B. Dairy Sc.) (4) (2) (B. Sc. Lond.) (2) (B. Comm.)	(1)	Diploma, Public Administration
—	—	—	—	—	(2) (B. Sc. Lond.)	2 (1)	Certificate in Industrial Bacteriology
					1 (B. E.)	—	
—	—	1	—	—	—		
—	1	—	—	—	—	—	
qualifications							
—	—	—	—	—	—		
—	—	—	—	—	—	—	
—	—	—	—	—	—	1	Member of Society of Industrial Artists

TABLE 4. RECRUITMENT AND

ACTIVITY	FIRM NO.	TECHNICAL RECRUITMENT 1959-61 WITH SOURCES					
		SCHOOLS			UPGRADED FROM CRAFTSMAN	FROM OTHER FIRMS	OTHER SOURCES
		SECONDARY	TECHNICAL	OTHER			
Knitwear	1	3	—	—	—	—	—
	2						
Paper	3	—	—	—	—	—	—
	4						
Shoes	5	1 (L.C.) 6 (I.C.)	—	—	1	—	—
Shoes	6	No information available					
Cement	7	4 (L.C.)	—	—	2	—	—
	8						
	9						
Domestic Electrical Equipment	10				3	1	—
Transformers, Wire, Cable, Pumps, Castings.	11	5 (L.C.)	2 (GCE "O" (Level)	—	10	5	—
Radio T.V. (not Domestic)	12	—	—	—	—	—	—
	13						
Glass Containers	14	—	1	—	—	2	4 upgraded from Operatives
Glassware (Crystal and Soda Lime)	15	No figures given			Several	—	—
Tweeds, Worsteds, Yarn	16	—	2	—	—	—	—
Cotton, Rayon Cloth: Yarns	17	1					
	18						
Cigarettes, Tobacco	19	2	—	—	—	1	—
Cocoa, Chocolate, Sugar Confectionery	20	—	2	—	—	—	—
Butter, Cheese, Dried Milk	21	—	—	2 Dairy Sc. Dept. Univ. Coll. Cork	—	—	—
	22						
Food Canning, Beverage Bottling	23	4 (L.C.)	—	—	—	—	—
Confectionery, Food Canning	24	3 (L.C.)	—	—	1	2	—
General Engineering, Rolling Stock Repair	25	—	—	—	(21)	(10)	—
Structural Steelwork, Ornamental Metalwork.	26	(I.C.)	(Day Voc.) (Cert.)	—	—	—	—
Bolts, Nuts, Screws, etc.	27	None recruited					
Cranes	28	—	—	—	8	Some from German Associate firm	
	29						
	30						
Weedkillers, Insecticides, Imports of Veterinary Medicines	31	—	—	—	—	—	—
Lime, Limestone, Polystyrene Products	32	—	—	—	—	—	—
	33						
	34						
Furniture (mainly Chairs)	35						
	36						
	37						

L.C. = Lower certificate.
I.C. = Intermediate certificate.

TRAINING OF TECHNICIANS

TECHNICAL TRAINING IN THE FIRM					
NUMBER ATTENDING COURSE			COURSE AND INSTRUCTORS		
WITHIN FIRM	TECHNICAL SCHOOL	OTHER	WITHIN FIRM	TECHNICAL SCHOOL	OTHER
—	3	2	—	Evening course in costs and works accounting	1. Prod. Eng. (Corres. Course) 2. Dress Design
6	—	—	Training by Supervisors	—	—
4	7	4	Time Study Trainees. Full time instructor	Evening courses	Sandwich course in U.K. firm
2	—	—	Training by Supervisors	—	—
2	—	—	Training by Supervisors	—	—
40		—	5 year course in works by supervisors	Evening courses (Compulsory) Tech. Cert. (Dept.) Grad. IEE	—
—	—	—	—	—	—
25	(5)	13	Courses by Technologists and Supervisors	Part Time and Evening	At Plant Suppliers, short outside courses
—	—	1	—	—	1. Prod. Eng. (Corres. Course)
—	4	—	—	Evening course in Textile Technology	—
6	—	—	Training by Supervisors	—	—
2	—	—	Training by Supervisors	—	—
—	2	—	—	Part Time, Work Study	—
—	—	—	—	—	—
8	Very few		Trained by Technologists	Evening courses B. Sc. (Lond.) B. Comm.	
—	5	—	—	Evening Courses Cost Accounting Technol. Certs. (Dept.) B. Sc. Lond.	—
—	—	—	—	—	—
—	—	—	Draftsman trained in shops and D.O.	Evening courses GCE Technol. Certs. (Dept)	
			Craft Apprentice Training in Firm and Technical School		
—	—	—	—	—	—
2	1		Learning from older workers	Part-time (no details)	

Table 5. DUTIES ON IMPORTS AND EXPORTS

	FIRM NO.	EXPORTS 1961	DUTIES	
		EXPORTS/OUTPUT £ 000/£ 000 GROSS = %	EXPORT TO FOREIGN MARKETS	IMPORT TO IRELAND
Knitwear	1	30/365 = 13.7 %	20-30 %	40-75 %
	2			
Paper	3	10 %	None	Yes, some
	4			
Shoes	5	1,098/1,885 = 58 %	Yes in U.S.A., Germany, Netherlands No in U.K.	No: Quota
	6	No information	As No. 5	As No. 5
Cement	7	864/3,756 = 23 %	No to U.K. Commonwealth. Yes to others	20 %-30 %
	8			
	9			
Domestic Electrical Equipment	10	300/1,800 = 17 %	No to U.K. Commonwealth. Yes in Europe	25 %-40 %
Transformers, Wire, Cable, Pumps Castings	11	1,060/2,116 = 50 %	No to U.K. Commonwealth. Yes to Europe	25 %-50 %
Radio, T.V., Equipment (not Domestic)	12	110/168 = 65 %	No in U.K. Yes to Europe	Yes
	13			
Glass Containers	14	4,6/35.8 = 12.8 %	No to U.K. Yes to others	50 %-90 %
Glassware	15	No data but exports large	No to U.K. Yes to others	Yes, 50 %-90 %
Tweeds, Worsteds, Yarn	16	No data	No to U.K. Yes to others	Yes
Cotton, Rayon Cloth; Yarns	17	108/1,202 =	U.K.: None (Cotton), 17 1/2 % (Rayon) Others; Yes	No; Quotas
	18			
Cigarettes, Tobacco	19	74/11.326 (?)	Yes	Yes
Sugar Confectionery	20	854/1,586 = 54 %	Yes to all. Quotas to some	Yes
Butter, Cheese, Dried Milk	21	244/1,465 = 17 %	Yes to U.S.A.	Yes
	22			
Food Canning, Beverage Bootling	23	None	Yes except U.K.	Yes
Confectionery, Food Canning	24	151/1,392 = 11 %	Yes. 10 % (U.S.A.), 35 % (Germany)	Yes. Heavy
General Engineering, Rolling Stock Repair	25	43/312 (1960) = 14 %	No	No
Structural Steel, Ornamental Metalwork	26	8/377 = 2.1 %	Yes tos some	Yes, mainly
Bolts, Nuts, Screws, etc.	27	32/272 =	All to U.K. or Commonwealth Small Tariffs	75 % (Bolts, Nuts)
Cranes	28	450/450 = 100 %		No data
	29			
	30			
Weedkillers, Insecticides, Import of Veterinary Medicine.	31	None	Yes, except U.K.	Yes 33 %-50 %
Lime, Limestone, Polystyrene Products	32	6/113 = 5.3 %	No	Yes
	33			
	34			
Furniture, mainly Chairs	35	1964 Forecast — 80 %	No to U.K.	Yes 50 %-75 %
	36			
	37			

a) *Professor O'Donnell's Survey*

50. This was undertaken privately as an attempt to find the proportion of technologists and technicians in a number of firms in a wide variety of sectors. The extent of the survey was as follows:

	TRADE AND MANUFACTURE	PUBLIC[1] UTILITIES
No. of firms questioned	196	11
No. of firms replying	120	6
No. of employees represented in replies	36,872	38,438

1. Including Turf Production.

51. The problem of deciding on suitable definitions was a difficult one in this survey. Since ma.; of the firms being questioned were small organisations with little experience of definitions of Technologist and Technician, it was decided to define these grades by giving a brief statement of competence accompanied by a list of the most usual qualifications encountered in Ireland. The limitations of the chosen definitions are appreciated. In particular, the brevity of the statement on the technologist's competence, together with his definition by qualification rather than by activity, leads to the suppression of the fact that many university graduates and holders of professional qualifications are not engaged whole time in technologists' work. With regard to technicians, almost any definition, unless followed up by a check on the replies, will lead to many foremen and supervisors being listed by their firms as technicians.

52. The results of the survey are set ou.:n Table 8. By comparison with the British manpower survey of 1959[1] the proportion of technologists in most sectors in Ireland seems high (compare columns *vii* and *xi*). Notable exceptions are chemicals, paints; vehicles, electrical machinery; gas supply; and postal and telegraph services. The figures in column *xi* are those of the nearest corresponding sectors in British industry, in some cases there are averages for a number of sub-sectors weighted to account for the distribution of employees in the corresponding Irish activities.

53. Estimates of technologists and technicians for transportable goods industries, and public utilities and building may be made, very approximately, as follows:

	TRANSPORTABLE GOODS	BUILDING PUBLIC UTILITIES
Employees in sample	42,201	33,109
Technologists in sample	454	618
Technicians in sample	1,201	715
Total employed in section (av. 1959)	153,300	60,300
Estimated technologists in section	1,650	1,140
Estimated technicians in section	4,370	1,310

1. *Scientific and Engineering Manpower in Great Britain* (Cmnd. 902), H.M.S.O., London, 1959.

TABLE 6. WAGE RATES

ACTIVITY	FIRM NO.	WEEKLY WAGES		
		TECHNICIANS		
		BASIC £	AVERAGE £	HOURS
Knitwear	1		12-20	43 1/2
	2			
Paper	3	15-18	17-20	45
	4			
Shoes	5	15	15	42 1/2
	6	No information		
Cement	7	16	18	44
	8			
	9			
	10	17	17	44
Transformers, Wire, Cable, Pumps, Castings	11		14	40
Radio, T.V. Equipment (not Domestic)	12	16		40
	13			
Glass Containers	14	15 2/3	16 3/4	35-42 1/2
Glassware	15	15-20		45
Tweeds, Worsteds, Yarn	16		10-20	45 (Basic)
Cotton, Rayon Cloth; Yarns	17		15	39
	18			
Cigarettes, Tobacco	19	20	22	44
	20	16	16	42 1/2
Butter, Cheese, Dried Milk	21	12	13	48
	22			
Food Canning, Beverage Bottling	23		No figures	
Confectionery, Food Canning	24	13-18		42 1/2
General Engineering, Rolling Stock Repair	25	12-25	15	44 (Basic)
Structural Steel, Ornamental Metalwork	26	17.3		
Bolts, Nuts, Screws, etc.	27		No data	
Cranes	28	—	—	45
	29			
	30			
Weedkillers, Insecticides, Import of Veterinary Medicines	31	—	—	—
Lime, Limestone, Polystyrene Products	32	12 1/2	17	45
	33			
	34			
Furniture (mainly Chairs)	35			
	36			
	37			

AND SHORTAGES

AND HOURS WORKED						SHORTAGES SEE Q. 13
CRAFTSMEN			OPERATIVES			
BASIC £	AVERAGE £	HOURS	BASIC £	AVERAGE £	HOURS	
12-13	15-16		5	6		Trained Technicians
12-13	13-14	50	10-11	12-13	50	Trained Operatives
13	13	45 (Basic)	10 (men) 6 2/3 (women)	13 1/2	42 1/2	None
13 1/2	15	44 (Basic)	11	8 1/3 11 1/2	44	Good Craftsmen
12 1/2	16	44 (Basic)	9 3/4	12	44	Technicians & Junior Management
13 1/4	15 3/4	48 1/2	11 1/4	12 1/3	48 1/2	Craftsmen, Technicians
	12 1/2	40 1/2 (Basic)	10 1/2	10 1/2	40 1/2	None (occasionally technicians)
13-15 1/2	15 1/2-19	47	10 1/5 14 2/3	11 2/5 16 2/3	42 1/2	None
10-25		45 (Basic)	10-25		45	None
	10-16	45 (Basic)		8 1/2 (men) 6 1/2 (women)	45 (Basic)	None
	11	45		10	40-45	Craftsmen, Office Staff
12	15	50	9 1/2	11 1/2	45	None
14	14	42 1/2 (Basic)	10	12	42 1/2	None
9 1/2	9 1/2	48	7 1/2	7 1/2	48	None
	14	47		10 (men) 5 (women)	47	None
12-13	12-15	42 1/2 (Basic)	9 1/2-12 1/2		42 1/2	Unskilled
12	15	44 (Basic)	9	10	44 (Basic)	Technicians, Craftsmen
12	15	50	9.8	11.8	50	Craftsmen
12 3/4	14	45	10 1/4	12	45	None
9 1/2	11 1/2	45	—	—	45	None
—	—		9 1/2	10	45	None
11 3/4	14 1/2	45 (Basic)	9.3	13	45	None
12	13	48	11	12	48	Technicians or Technologists

TABLE 7. TECHNICIAN GRADES

Grade.

FUNCTION	HIGHER	MIDDLE	LOWER
i) Design, draughtmanship	10	34	20
ii) Installation, erection, etc., of plant	3	4	11
iii) Operation, maintenance, repair of plant	2	1	47
iv) Inspection, analysis and testing	6	39	48
v) Purchasing and sales of equipment	—	—	2
vi) Estimating, rate-fixing, work-study	2	17	19
vii) Operation and control of manufacturing processes	7	36	127
viii) Laboratory supervision	—	4	3
ix) Other functions	4	1	27
Totals	34	136	304
Of which doubtful cases	—	—	185
Totals (excluding doubtful cases)	34	136	119

TABLE 8. TECHNOLOGISTS — TECHNICIANS SURVEY, 1961

INDUSTRIAL GROUP	NO. OF FIRMS	TOTAL EMPLOYED	TECHNOLOGISTS	TECHNICIANS	CRAFTSMEN	TOTAL EMPLOYEES: TECHNOLOGISTS	TOTAL EMPLOYEES: (TECHNOLOGISTS + TECHNICIANS)	TECHNICIANS: TECHNOLOGISTS	CRAFTSMEN: TECHNOLOGISTS	AS COL. 7 FOR U.K. SURVEY 1959[1]
i	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	*xi*
Food, drink, tobacco	31	9,776	114	142	969	86	38	1.3	8.5	250
Textiles	22	6,228	30	157	600	208	33	5.2	20	250
Leather Goods	3	1,519	7	7	43	217	109	1.0	6.1	250
Chemicals, Paints, etc.	10	4,743	101	202	295	47	15.7	2.0	2.9	27
Cement, Bricks, Pottery, Glass	7	3,065	28	98	495	109	24.3	3.5	17.7	200
Metals (exc. machinery)	18	3,388	29	114	446	121	23.7	3.9	15.4	weighted 150
Vehicles	5	1,415	6	20	100	236	54.4	3.3	16.6	200
Electrical	6	1,961	13	36	100	151	40.0	2.8	7.7	46
Paper Printing	7	1,876	19	43	424	99	30.3	2.3	22.3	500
Mining, Quarrying	3	1,221	29	43	216	42	17.0	1.5	7.5	200
Wood, Cork, Furniture	4	409	2	9	81	205	37.1	4.5	40.5	weighted 270
Building	4	1,271	14	55	418	91	18.4	3.9	29.8	166
Gas Supply	2	1,782	16	32	268	111	37.1	2.0	16.8	63
Electricity Supply	1	7,968	456	317	1,139	17.5	10.3	0.7	2.5	33
Air Transport	1	3,350	23	72	432	146	35.2	3.1	18.8	400
Turf Production	1	6,600	76	330	440	87	16.3	4.4	5.8	—
Posts and Telegraphs	1	18,738	109	239	989	172	53.8	2.2	9.1	33

54. The estimate of 1,650 technologists in the transportable goods industries is certainly too high. The enquiry carried out by the Central Statistics Office on professional engineers shows only 356 engineers (out of a total response of 2,097) engaged in manufacturing and turf production and distribution and commerce. Taking into account the incompleteness of the response to this survey, the number of engineers in the transportable goods industries is unlikely to exceed 500. It is certain that there are more engineers than scientists in the total of technologists. It must be concluded, therefore, that either in the replies to the survey many persons were wrongly described as technologists or the extrapolation from the survey sample is invalid because the sample

includes many of the larger firms which employ proportionally more technical personnel than the firms omitted.

55. The estimate of 4,370 technicians in the transportable goods industries is almost certainly too large also. This is due to the loose interpretation of the term technician in Irish industry. If the estimate of technologists is too high because of wrong description of personnel, correction of this would tend to increase the number of technicians; but this would almost certainly be outweighed by the deduction which should be made from the technician total to account for 'upgraded' craftsmen.

b) *Enquiry into Professional Engineering Manpower*

56. A survey was conducted in 1961 by the Central Statistics Office of the Irish Government. The proposal to make such a survey originated from the Central Council of the Engineers' Association *(Cumann na nInnealtoiri)*. This Association is representative of a large proportion of the engineers in Ireland and is concerned with the welfare of the engineering profession. It publishes a monthly journal containing articles of a general and technical nature, and excluding material which is more suitable for the learned journals of the professional engineering institutions.

57. Copies of the questionnaire, were sent to all engineers on a mailing list which was drawn up by the Engineers' Association. It comprised about 2,400 persons. Replies were obtained from 2,097 engineers and the results have been analysed by the Central Statistics Office in a number of tables.

58. It is known that the total of 2,097 is too low: in two sectors alone (Electricity Supply Board, Posts and Telegraphs Department) the response is short by at least 150 engineers. It is estimated on the basis of the survey that the total number of engineers in the country is over 2,500 and it is proposed to have a check made in as many sectors of employment as possible.

59. Despite the incomplete response the survey, as the questionnaire and draft analysis show, will provide useful information on the role and status of engineers in Ireland.

GENERAL DISCUSSION OF THE O.E.C.D. AND DEPARTMENT OF EDUCATION SURVEY

60. The 23[1] firms which gave written and verbal information have the following employment structure:

Technologists	117
Technicians (including doubtful cases)	474
— (excluding doubtful cases).....	289
Total number employed	11,693

1. Twenty-four firms, of which one gave no significant information, were surveyed by both questionnaire and interview.

From these figures we get:

Technician/technologist ratio (including doubtful technicians)	4.0
Technician/technologist ratio (excluding doubtful technicians)	2.5
Technologists as a percentage of total employed	1.0 %

61. The corresponding figures for the transportable goods industries covered in Professor O'Donnell's survey in 1962 were:

Technician/technologist ratio	2.7
Technologists/total employed	1.08 %

62. These figures show that Professor O'Donnell's survey succeeded in obtaining a good estimate of the number of " certain " technicians. A total of 17 firms gave written replies to both surveys. On the basis of the 13 interviewed in the present survey, a comparison of the two surveys shows that: 3 firms showed considerably more technicians in the 1961 survey; 5 firms showed considerably more in the present survey, and 5 firms gave approximately the same figures in both. In no case was there a comparable discrepancy in the figures given for technologists. The conclusion from these observations is that it is extremely difficult to obtain reliable figures for the number of technicians in a firm, even when a questionnaire is supported by interviews. Part of the difficulty in the present survey arose from the fact that a number of interviewers were employed. Despite the fact that the interviewers (technical school inspectors) were familiar with the EUSEC definition of a technician and with the international reports on the subject, and that a briefing session was held for the purpose of agreeing on definitions and concepts, it became clear during the analysis of the questionnaires and interviewers' notes that there was a certain lack of uniformity in the interviewers assessments. This inconsistency accounts largely for the " doubtful " technicians in Table 2. The results of a survey of this kind would prove more reliable (or at least more consistent) if one interviewer or team visited all the firms involved, but this procedure raised practical difficulties.

Grades of Technician

63. A summary of the data of Table 2 (Technicians by Function) is given in Table 7 (Technician Grades). It is emphasized that the sub-division into higher, middle and lower technician grades has been made on the basis of the completed questionnaires and interviewers' notes. It is, therefore, a subjective analysis, the criteria being Professor O'Donnell's notion of the level of technical education and the kind of responsibility required in each particular job described.

64. Table 7 shows that 304 (of the total of 474) are " lower " technicians, i.e. about 64 per cent. Of these 304, over 61 per cent, are in the " doubtful " category; the middle and higher grades do not, naturally, contain any doubtful cases. The functions in which most of the doubtful cases are engaged are:

iv) inspection, analysis and testing ..... 32 out of 93;

vii) operation and control of manufacturing processes ..... 95 out of 170;
ix) other functions..... 25 out of 32.

65. Doubt concerning the validity of the title "technician" is bound to arise frequently in the present stage of Irish industrialisation. This is due to such factors as: the absence of a nationally accepted technician diploma; the preponderance of consumer and intermediate goods industries whose scientific and technical functions are less clearly defined than in the capital goods industries, and the fact that management is often not conversant with technical and scientific issues.

CONCLUSIONS

66. *The requirements of industry.* It is felt by those concerned with technical education in Ireland that one of the major problems at present lies in obtaining the support of industry for the establishment of courses. Few demands have, so far, been made by industry for formally trained technicians, and estimates of future requirements have not been specific. The Study Committee on Technicians in Irish Industry, set up by the Minister for Education in September 1961, has spent much of its time discussing this problem and its possible solution. The Committee proposes to make surveys of the technician needs of particular sectors of industry (e.g. food processing, textiles, furniture, paper manufacture) but this work has not yet begun.

67. *Modification of existing courses.* In his address to the first meeting of the Study Committee referred to above, the Chairman, Mr. P. Mac Eoin (Assistant, Department of Education) referred to the existing scheme of State examinations in various branches of technology and to the possibility of modifying this scheme to meet the requirements of particular technician groups.

68. It has been suggested by the Technical Instruction Branch (hereafter referred to as the T.I.B.), Department of Education, that the present "Technological Certificate" Examinations should be modified and expanded as follows in order to convert them into tests for the award of Technician Certificates:

Elementary Stage: this provides a scientific background and might remain unchanged as a basis for a wide range of technician courses;
Intermediate Stage: it is proposed that a wider choice of technical subjects be provided at this level; that English, Mathematics and Physics be made compulsory; and that, for candidates who already possess the Senior Trade Certificate, this stage should lead to the award of an Ordinary Technician certificate;
Advanced Stage: the proposal is that this stage should be suitable for a Higher Technician Certificate award provided that *i*) a wider choice of technical subjects be made available; *ii*) more emphasis be placed on specialisation than is done for the proposed Ordinary Certificate; and *iii*) some suitable industrial experience be required of candidates.

69. The following is a list of fields in which Technician Certificates might be awarded on the basis of the modifications and amplifications suggested above:

PROPOSED TECHNICIAN CERTIFICATES

Mechanical and motor engineering

Machine Shop Technology.
Machine Design.
Heating, Ventilating, Refrigeration and Air-conditioning.
Power Plant Practice.
Aircraft Practice.
Marine Engineering.
Locomotive Diesel Practice.
Automobile Engineering.
Automobile Diesel Practice.
Agricultural Machinery.

Electrical engineering

Generating Plant.
Transmission Equipment.
Distribution and Installation.
Industrial Utilisation (Power).
Industrial Instrumentation and Control.
Aircraft Electrical Practice.

Telecommunications

Telephone (line and radio).
Telegraphy (line and radio).
Telemetry (line and radio).
Studio and Transmission Equipment (Television).
Studio and Transmission Equipment (Radio).
Mobile and Portable Radio Equipment.

Building and civil engineering

Structural Design (Steel).
Structural Design Concrete.
Land Surveying.
Quantity Surveying.

Applied chemistry

Food Production and Processing.
Petroleum Products.
Fuel Technology.
Textile Technology.
Building and Allied Materials.
Paper Technology.

70. It is not suggested that both Ordinary and Higher Certificates should be awarded in all these fields. The subjects for inclusion and other details of the courses would be decided by special sub-committees of the Study Committee.

71. These proposals of the T.I.B. form a valuable basis for discussion, and it should prove possible to implement them in some of the fields listed above.

72. There are, however, serious limitations which have been noted by the T.I.B. The most serious is the fact, already mentioned, that candidates for the existing Technological Certificates are almost exclusively craftsmen or apprentices, and it is unlikely that this situation will be altered until some other avenue of entry to the proposed technician courses *is* provided. A ready supply of suitable candidates is likely to be available for craft-based technician courses from the 430-500 who take Inter*mediate* Technological Certificates each year under the present system. But it will clearly be necessary to provide alternative modes of entry so as to attract students from the secondary school stream at ages 16-18, some of whom will have the ability to reach the standards required for higher technicians in the more advanced industries. Towards this end it is suggested that a closer liaison should be established between the secondary and technical systems of the Department of Education, and that more flexible regulations should be introduced with regard to the Secondary School Intermediate and Leaving Certificates whereby these might be awarded in smaller groups of subjects for those students who wish to pursue technician courses.

73. A further difficulty in the proposals of the T.I.B. is that, while a number of programmes suitable for modification to technician courses already exists in the fields of building and of mechanical and electrical engineering, there exist few courses of any kind in the techniques of process industry or of production. Furthermore, it is in these very fields that the needs of Irish industry are still obscure.

74. *More specialised training.* In certain fields (e.g. glass, textiles, paper, confectionery) there is need of a small number of technicians with training in specific aspects of their industry. It is impossible in a country as small as Ireland to justify the establishment of training centres for such personnel, because of the large expense of providing the necessary teaching staff and equipment.

75. Where the industry concerned is large enough to warrant the training of a group of students, it should be possible, through the co-operation of the relevant industrial association (or subgroup of the Federation of Irish Industries) with the T.I.B. of the Department of Education, to arrange a block release (or sandwich) course with training in the techniques of the industry being given to the whole group of students in one or more factories. It is understood that this system of training in the factory is operated by the textile industry in parts of France.

76. Where the number of technicians required in a particular field is too small to justify the operation of a course, there seems no alternative to sending individual students abroad, if not for the whole of their training at least for that part of it concerned with the specialised techniques of their industry.

Required Output of Technicians

77. An indication of the order of magnitude of the educational and training provision for technicians may be obtained from the surveys already described.

78. From the O.E.C.D. and Department of Education survey and Professor O'Donnell's survey it seems reasonable to take a value of 2.6 for the present technician/technologist ratio in the transportable goods industries. For building, contracting and public utilities Professor O'Donnell's survey indicates that the ratio has a value of about 1.15.

79. A lower limit to the number of technologists in Ireland is given by a method based on the 1959 United Kingdom Manpower Survey[1], the higher limit can hardly exceed the figures derived from Professor O'Donnell's survey (see Table 9).

80. In order to estimate the required number of graduates at each level per year it is necessary to make allowance for replacement for retirements and deaths, and for economic expansion.

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1. *Scientific and Engineering Manpower in Great Britain* (Cmnd. 902), H.M.S.O., London, 1959.

TABLE 9. NUMBER OF TECHNOLOGISTS AND TECHNICIANS : LOWER AND UPPER LIMITS

	ESTIMATE FROM 1959 U.K. MANPOWER SURVEY *Lower limit*	PROF. O'DONNELL'S SURVEY *Upper limit*
i) Technologists in Transportable Goods Industries...	740	1,650
ii) Technologists in Building, Public Utilities, etc.	860	1,140
	1,600	2,790
Applying the ratios 2.6 and 1.15 to the sectors *i*) and *ii*) above we get the following limits for the present number of technicians:		
i) Technicians in Transportable Goods Industries....	1.930	4.370
ii) Technicians in Building, Public Utilities, etc.	990	1,310
Total Technicians	2,920	5,680

81. An average working life of 35 years may be taken. On this basis $\frac{1}{35}$ of the above totals should be replaced each year. This simple method takes no account of the age distributions in the different groups, but it is not easy to make allowance for this factor.

82. In forecasting for economic expansion, it is necessary to find " meaningful and stable relationships which have existed in the past between the total number of engineers, on the one hand, and any reasonable indicators of economic activity on the other "[1]. Possible " activity indicators " include: the value of the gross national product; the value of production per employee (in the case of industry), and the value of expenditure per employee (in the case of government services).

83. In Sweden a linear relationship appears to exist between the density of engineers (i.e. engineers as a fraction of total employees) and the indicators of the value of production and expenditure per employee, this relationship forms the basis of very detailed forecasts of engineer requirements made recently in that country. Use of these indicators, however, requires (in addition to proof of their validity for Ireland) assumptions in regard to increase in industrial production, labour force, gross national product, and the share of government expenditure in the gross national product.

84. In Ireland there are not at present enough data to permit use of the Swedish forecasting methods, and the value of the gross national product is the most convenient indicator. The Swedish data indicate the following relationship between productivity and number of technical personnel (total of professional engineers and higher and lower technicians):

1. *Forecasting Manpower Needs for the Age of Science*, O.E.E.C.

RELATIONSHIP FOUND IN SWEDEN BETWEEN "DENSITY" OF TECHNICAL PERSONNEL AND INCREASE IN OUTPUT

SECTORS	INCREASE IN PRODUCT % PER ANNUM	INCREASE IN NO. OF TECHNICAL PERSONNEL % PER ANNUM
Industry	3 % (industrial production)	4.6 %
Government services	3 % (G.N.P.)	3.5 %

85. The figures indicate that the number of technical personnel required grows more rapidly than output. The annual rate of increase of the G.N.P. of Ireland for the past three years has been about 5 per cent. For the industrial sector the rate of increase has been over 8 per cent. It seems conservative, therefore, to take a mean rate of increase of 5 per cent for technologists and technicians in Ireland.

86. To allow for replacement and growth, the numbers required per year may be expected to lie within the following limits: technologists 130-220; technicians 230-450.

87. The total number of students who obtain certificates which can be clearly recognised as technician qualifications is not at present known. It is hoped, however, that in the near future the three technical institutes concerned will provide details of the number of successful candidates in 1961 in each of the technician courses set out in the second part of this report.

88. In the meantime, one may make the assumption that the Intermediate and Advanced Technological Certificates require a level of intelligence suited to technician training. The results of the "Technological Certificate" examinations in 1960 (excluding mathematics) were as follows:

	ENTERED	PASSED
Elementary	1,774	935
Intermediate	995	435
Advanced	330	213

The number of Intermediate level passes should be increased to include awards of certificates of the City and Guilds of London Institute. It is estimated that about 400 of these are awarded to Irish citizens each year, of which about 100-120 are at Intermediate level; however, a number of candidates take both Department of Education and City and Guilds Certificates, so that the annual total of Intermedia' Level Certificates is probably 430-500. The holders of these may b considered as potential technicians.

Establishment of a Technician Council

89. The O.E.C.D. and Department of Education survey shows that in many Irish firms, even those whose outlook is progressive, there are no clear concepts of the kinds of manpower that are required for highest efficiency, the educational opportunities that should be offered to employees in order to improve their value to the firm, and the best method of utilising well-trained personnel, especially at the technician and technologist level.

90. This weakness makes it very difficult for educational authorities to provide courses that will be of value to industry. Because of the small demand for any one specialised kind of technician, it is necessary to organise courses so that the principles common to a range of industries are covered in the earlier part of the course. The provision of specialised training for each industry must be the responsibility of the firms which need technicians. This training is most likely to be provided by means of industry based on sandwich courses. Firms are reluctant to allow students to be trained in their plants unless these students are already employees. At the same time, a reluctance to release employees for the school layer of the " sandwich " is evident in many firms, especially at the technician level.

91. A further serious difficulty in the task of raising the standards of technicians in Ireland is the lack of nationally recognised technician diploma. The absence of such a diploma deters many parents from considering sub-professional technical careers for their children. This in turn leads to the presence of unsuitable students in university engineering and science classes. Many of these young people would be more suited to the role of higher technician than to that of technologist. Such a re-organisation would have the additional advantage of permitting a higher standard of work in university courses.

92. The uncertainties of industry and the lack of information for parents might be removed by the establishment of a council charged with national responsibility for the training and qualifications of technicians. Such a body should be responsible for such activities as:

i) effective provision of information on technical employment for schools and parents;
ii) establishment of minimum standards of education for entry to technician courses;
iii) classification of grades of technician for different industries;
iv) award of national technician diplomas to suitable candidates;
v) recognition of appropriate technical school courses for technicians, and
vi) establishment of minimum standards (both of type and duration) of training in industry.

The exact nature of the council will have to be worked out in detail; included in the membership should be representatives of industry, education (secondary, technical and university) and trade unions. Close liaison with similar bodies elsewhere would be desirable.

2. OUTLINE OF THE EDUCATION SYSTEM OF IRELAND

Organisation

93. As in most other countries, education in Ireland falls into three parts:

first level or primary education;
second level, which is divided into:
a) secondary (i.e. grammar) education;
b) vocational education.
third level or higher education which is provided mainly in the universities, and to a limited extent in technical institutes in Dublin and Cork.

94. The administration of education in Ireland, insofar as the State is concerned, is vested in the Department of Education, under the Minister of Education, who is a member of the Government and responsible to *Dail Eireann* (i.e. the National Parliament).

95. The organisation of the Department consists of a Permanent Secretary with an administrative staff in central offices in Dublin, and a school inspectorate whose members are located throughout the country. The Department has under its survey, in varying degree, the education provided in primary, secondary and technical institutes. The universities and their colleges are autonomous, but the Department of Education is the channel through which they receive their annual state subsidies. The National Museum of Ireland, the National Library of Ireland and the National College of Art, each of which is in the immediate charge of a Director, come within the administrative control of the Department of Education. Educational expenditure from public funds is borne in very large part by the State.

Compulsory Attendance at School

96. Parents are required by law to cause all children between the ages of six and fourteen years (who are not excused on grounds of illness, etc.) to be in regular whole-time attendance at a National or other suitable school (see under primary education below). The period of whole-time attendance at a national school is four to five hours each day on five days each week for 190 days each year.

97. Provision is also made for compulsory continuation education, on a part-time basis. This provision has been applied in three urban

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areas where part-time attendance at specially provided post-primary courses in vocational schools (see under vocational education below) is compulsory for young persons up to the age of 16 years who are not already in attendance at approved schools.

FIRST LEVEL OR PRIMARY EDUCATION

98. The vast majority of children of primary school age attend the national schools, that is, the primary schools which are state aided. Education at these schools is free. Enrolment is permissive at four years of age and pupils may continue to attend up to the age of eighteen years. The national schools, in which the teachers' salaries are paid in full by the Department, are under the control of local managers, who are charged with the direct government of the schools. These managers, who are usually clergymen, appoint the teachers, subject to Departmental approval of the teachers' qualifications. State grants of at least two thirds of the total cost are made towards the erection of new national schools or the enlargement or improvement of existing national schools. Children whose parents do not wish them to attend national schools may attend private primary schools. These latter receive no state aid, but are subject to inspection by the Department.

99. Table 10 shows the numbers of national schools, teachers and pupils with the enrolment ratio of the 5-14 year age group for each of the years 1954 to 1961 inclusive.

TABLE 10. NATIONAL SCHOOLS, TEACHERS AND PUPILS

YEAR	NO. OF SCHOOLS	NO. OF TEACHERS	NO. OF PUPILS (AVERAGE ENROLMENT)	ESTIMATION OF POPULATION FROM 5-14 YEARS OF AGE	ENROLMENT RATIO
1953-54	4,874	13,144	472,536	564,000	84
1954-55	4,872	13,231	479,487	567,000	85
1955-56	4,871	13,262	486,634	573,000	85
1956-57	4,869	13,402	488,197	573,000	85
1957-58	4,869	13,554	490,700	574,000	86
1958-59	4,878	13,753	492,315	574,000	86
1959-60	4,882	13,864	491,851	574,000	86
1960-61	4,880	14,032	490,016	572,000	86

100. Information on the numbers of pupils in each grade in the national schools is given in Table 11.

PROGRAMME OF INSTRUCTION IN NATIONAL SCHOOLS

101. The education given in these schools is of a general nature and forms the basis of the more advanced education given in the secondary and vocational schools. Instruction is in the usual primary school

TABLE 11. NATIONAL SCHOOLS: NUMBER OF PUPILS ON ROLLS, ARRANGED ACCORDING TO STANDARDS

YEAR	INFANT CLASSES	1st STANDARD	2nd STANDARD	3rd STANDARD	4th STANDARD	5th STANDARD	6th STANDARD	7th STANDARD	8th STANDARD	TOTAL ENROLMENT ON 30th JUNE
1953-54	143,442	63,988	62,215	59,272	57,327	51,909	36,144	11,571	4,289	490,157
1954-55	141,435	64,572	62,843	61,557	57,511	53,574	37,726	12,320	3,625	495,163
1955-56	143,986	63,297	63,234	62,599	59,201	54,163	38,829	11,775	3,810	500,894
1956-57	142,069	63,348	62,946	62,801	60,725	55,679	39,751	12,194	3,868	503,381
1957-58	142,236	62,403	63,173	62,043	60,646	56,734	41,287	11,769	4,110	504,401
1958-59	143,233	61,532	62,164	62,318	60,144	57,668	41,838	12,319	4,147	505,363
1959-60	144,962	61,972	61,399	61,192	60,434	57,037	42,699	12,083	4,430	506,208
1960-61	144,420	61,181	61,428	60,809	59,823	56,906	42,565	11,881	4,205	503,218

curriculum and the courses of instruction in the various subjects are prescribed by the Minister for Education after consultation with representative educational bodies and educationalists. Special emphasis is laid on the Irish language, both as a subject and as a medium of instruction. During the school year 1960-61, in 375 out of 4,880 national schools, subjects of the programme were taught through the medium of Irish, while the teaching was partly through the medium of Irish in 2,055 schools. On completion of the sixth standard, the pupils are required to sit for the Primary School Certificate examination, which consists of a written test in Irish, English and arithmetic, the pass mark in each subject being 40 per cent. The Primary School Certificate qualifies the holder for admission to a secondary or vocational school. In some national schools which are attended by pupils over the normal primary school age, instruction in the secondary schools' programme is provided for the senior pupils. Such pupils are admitted to the state examinations for Secondary School Certificates on the same conditions as pupils from secondary schools.

RECRUITMENT AND TRAINING OF TEACHERS IN NATIONAL SCHOOLS

102. Teachers in national schools are required to complete a prescribed course of training of two years' duration at one of the recognised training colleges. The standard of entrance to these colleges is that of the Secondary School Leaving Certificate.

TEACHERS' SALARIES

103. The cost of the salaries of the teaching staffs of national schools (4,335 men; 9,067 women) is borne entirely by the State. Standard salaries are prescribed and there is a non-contributory state-guaranteed pension scheme. There is a common salary scale for women and unmarried men teachers ranging from £430 per annum to £810 per annum; for married men teachers the scale is £505 per annum to £1,020 per annum. In addition, bonuses are payable in respect of special educational qualifications, and annual allowances, varying with the type of the school, are paid to principal and vice-principal teachers. Allowances in respect of dependent children and for house-rent are payable, subject to certain conditions, to married men teachers and to

widow-teachers. The cost to the State of national school teachers' salaries for the financial year 1959-60 was £ 8,563,000 (not including superannuation).

Expenditure on Primary Education

104. Current and capital expenditure for primary education is provided from the annual sum voted by parliament for the Department of Education. Table 12 gives figures for current and capital expenditure for each of the years 1954 to 1961 inclusive.

Table 12. EXPENDITURE ON PRIMARY EDUCATION

YEAR	CURRENT	CAPITAL
1954	8,091,530	1,237,000
1955	8,352,000	1,750,000
1956	8,386,000	1,544,000
1957	9,081,000	1,043,000
1957	9,110,000	1,096,000
1959	9,394,000	1,250,000
1960	11,814,000	1,600,000
1961	11,790,000	1,600,000

Private Primary Schools

105. In addition to the national schools there is a small number of privately operated primary schools largely conducted by religious communities, they are not under the control of the Department of Education, and do not receive any state aid.

SECOND LEVEL EDUCATION

a) Secondary *(Grammar)* Education

106. Secondary (grammar) school education is essentially of the academic or classical type. The secondary schools are all private institutions, owned and conducted mainly by religious bodies; about one-sixth of schools are operated by lay boards of governors or by private individuals.

107. The great majority of secondary schools follow a programme which is prescribed by the Department of Education, and these schools receive state aid in the form of grants per capita, incremental salaries of teachers and laboratory grants. A very small number of private Secondary Schools do not follow the programme of the Department of Education, and do not receive state aid.

Educational Programme

108. The programme followed by state-aided secondary schools is prescribed by the Department of Education after consultation with the

recognised secondary school associations. It is divided into two courses which prepare pupils for two state examinations: a three- or four-year course for the Intermediate Certificate Examination which is taken at age 15-16; and a further two-year course for the Leaving Certificate Examination, taken at age 17-18.

109. Honours may be awarded at both examinations for the Leaving Certificate, separate pass and honours papers are offered at the examination. The Leaving Certificate exempts from Matriculation (University Entrance requirement), except for engineering, where honours in leaving certificate in mathematics or the equivalent is required by the universities.

110. For both the Intermediate and Leaving Certificates the courses

TABLE 13. WEEKLY ALLOCATION OF TEACHING TIME TO THE VARIOUS SUBJECTS IN SCHOOLS OF DIFFERENT TYPES

School 1. A Dublin City Convent School (about 350 pupils).
School 2. A Dublin City Catholic Boys' School (about 260 pupils).
School 3. A Dublin City Protestant Girls' School (about 80 pupils).
School 4. A Dublin City Protestant Boys' School (about 90 pupils).
School 5. A Catholic Boys' Diocesan College (about 220 pupils).
School 6. A Provincial Convent School (about 120 pupils).
School 7. A Provincial Mixed School under Catholic lay management (about 80 pupils).
School 8. A Provincial Mixed School under Protestant management (about 80 pupils).

SUBJECT	SCHOOL 1		SCHOOL 2		SCHOOL 3		SCHOOL 4	
	4th YR. HOURS MINUTES	6th YR. HOURS MINUTES	4th YR. HOURS MINUTES	6th YR. HOURS MINUTES	4th YR. HOURS MINUTES	6th YR. HOURS MINUTES	4th YR. HOURS MINUTES	6th YR. HOURS MINUTES
Irish	3.35	4.10	4.0	4.10	3.5	3.40	4.5	4.10
English	3.30	3.10	3.15	3.30	2.25	3.5	3.30	3.30
History	3.50	4.5	3.15	3.15	2.0	2.25	2.45	2.40
Geography			3.15	3.15	1.45	2.20	2.50	2.40
Greek								
Latin	3.15	3.40	3.25	3.15		2.40	2.45	2.40
French	3.45	3.15	3.15	3.15	3.20	3.20	2.40	3.25
Mathematics	5.35	5.10	4.20	4.0	3.50	3.10	4.45	4.45
Music & Singing	2.0	2.0			1.0			
Art, Drawing	1.25	1.30			1.55	3.45		
Commerce		3.40	3.0				2.45	
Domestic Science	3.5				3.20			
Science			3.0	3.5	3.10	3.10	3.20	3.10
Applied Maths								2.0

SUBJECT	SCHOOL 5		SCHOOL 6		SCHOOL 7		SCHOOL 8	
Irish	3.0	3.45	3.45	3.45	.30	4.45	3.45	3.0
English	3.0	3.0	3.45	3.45	3.0	3.0	3.0	3.45
History	3.0	2.15	3.45	3.0	3.0	3.0	2.15	3.0
Geography		2.15		2.15		2.15	2.15	3.0
Greek	4.30	3.45						
Latin	4.30	3.45	3.45	3.45	3.0	4.0	3.45	3.45
French			3.45	3.45	3.0	3.30	3.45	3.45
Mathematics	5.15	5.15	3.45	3.45	4.30	5.0	5.15	6.0
Music & Singing		0.45	2.0	2.0	0.30	0.30		
Art, Drawing			1.30	1.30	1.30	1.30	1.0	
Commerce								
Domestic Science			3.0					
Science	3.0	3.10	3.0	3.0	2.30			
Applied Maths								

of instruction are broadly based. At the Intermediate Certificate Examination a minimum of five subjects is required of which Irish and (for boys) mathematics are compulsory. The Honours Intermediate Certificate is awarded to candidates who obtain a mark of 60 per cent in at least three subjects and reach the pass level (40 per cent) in at least two others.

111. For the award of the Leaving Certificate examination a pass in Irish is required. The Pass Certificate requires either: a pass in at least five subjects, or honours in three subjects and a pass in at least one other.

The Honours Certificate requires either: honours in three subjects and a pass in at least two others; or honours in four subjects.

112. The length of the Secondary School week is normally 27 hours and a typical distribution of time is as shown in Table 13.

113. Instruction is given either wholly or partly through the medium of the Irish language, e.g. in the year 1960-61 the number of schools was respectively:

instruction wholly through Irish	81
instruction partly through Irish	445
total number of secondary schools	526

Schools, Pupils and Examination Results

114. Enrolment in secondary schools doubled between 1930 and 1955 and has continued to increase by about 5 per cent each year since. Over the 28-year period 1930-1957 inclusive, the proportion of girl pupils increased steadily from 41 to 48 per cent of the total. Table 14 shows the number of state-aided schools, together with numbers of teachers and pupils for the years 1955-1961 inclusive.

Table 14. SECONDARY SCHOOLS, TEACHERS AND PUPILS

YEAR	NO. OF SCHOOLS	TEACHERS (INCLUDING PART-TIME)	JUNIOR PUPILS	SENIOR PUPILS	TOTAL
1954-55	458	4,417	42,743	13,668	56,411
1955-56	474	4,564	44,998	14,308	59,306
1956-57	480	4,739	47,727	14,702	62,429
1957-58	489	4,957	50,832	15,389	66,221
1958-59	494	5,032	53,097	16,471	69,568
1959-60	511	5,178	55,411	18,020	73,431
1960-61	526	5,282	57,878	18,965	76,843

115. The number of Intermediate Certificates awarded annually increased by 36 per cent between 1955 and 1961, the proportion of girls obtaining these certificates remained constant at 56 per cent. The total number of Leaving Certificate awarded rose by 49 per cent in the same time interval, while the proportion of girls passing this examination remained at 48 per cent of the total. Table 15 shows the numbers

(of boys and girls) who obtained (pass or honours) Intermediate or Leaving Certificate over this period.

TABLE 15. NUMBERS WHO PASSED (A) INTERMEDIATE CERTIFICATE AND (B) LEAVING CERTIFICATE IN EACH OF THE YEARS 1955-1961

YEAR	INTERMEDIATE CERTIFICATE	LEAVING CERTIFICATE
1955	10,389	5,266
1956	10,534	5,442
1957	11,045	5,711
1958	11,706	5 961
1959	12,908	6,240
1960	13,665	7,181
1961	14,150	7,846

SCIENCE IN SECONDARY SCHOOLS

i) *Intermediate Certificate*

116. Science may be studied for the Intermediate Certificate in any one of the following syllabuses:

Syllabus A. Physics and Chemistry.
— B. Physics, Chemistry, Botany, Hygiene.
— C. (For girls only) Domestic Science.
— D. (For girls only) General Physics, Chemistry, Hygiene.

Syllabuses A and B may be taken by girls or boys.

117. In the period 1940-1950 the number of boys taking science as a subject at the examination rose by 28 per cent, while for girls the increase was 59 per cent. In the period 1950-1960 the corresponding increases were: boys 99 per cent; girls 46 per cent.

118. Over the whole period 1940-1960, the proportion of passes in science at this examination rose from 74 per cent to 82 per cent for boys, while it remained constant at 82 per cent for girls.

TABLE 16. SCIENCE (INTERMEDIATE CERTIFICATE)

YEAR	BOYS			GIRLS		
	TOTAL EXAMINED	PASSED WITH HONS.	TOTAL NO. PASSED	TOTAL EXAMINED	PASSED WITH HONS.	TOTAL NO. PASSED
1940	2,237	716	1,646	722	350	590
1945	2,404	659	1,625	1,004	455	842
1950	2,870	941	1,937	1,151	422	815
1955	3,645	1,258	2,692	1,246	488	1,036
1960	5,083	2,224	4,160	1,684	790	1,389

119. Table 16 gives details of these passes. It should be noted that the majority of girls taking science follow the "domestic" science course, the pure science content of which is low.

ii) *Leaving Certificate*

120. Science at this examination may be taken, with certain limitations, in one or more of the following groups: 1. Physics; 2. Chemistry; 3. General Science; 4. Physics and Chemistry; 5. Botany; 6. Physiology and Hygiene; 7. Agricultural Science.

More boys take groups 1 and 2 than any of the others, and group 6 is least popular. For girls group 6 is by far the most popular, while group 1 is taken by very few.

TABLE 17. SCIENCE AT LEAVING CERTIFICATE EXAMINATION

YEAR	LEAVING CERTIFICATES AWARDED	TOTAL PASSES IN SCIENCE GROUP (PROPORTION WITH HONOURS IN PER CENT)						
		I	II	III	IV	V	VI	VII
1950.....	3,832	298 (25 %)	400 (17 %)	291 (29 %)	110 (14 %)	138	429	25
1956.....	5,266	514 (25 %)	541 (23 %)	333 (35 %)	115 (32 %)	286	1,210	114
1960.....	7,181	787 (23 %)	949 (29 %)	429 (37 %)	297 (36 %)	450	1,751	212

121. Table 17 gives the total number of passes (and the proportion of these at honours level) in each of the science groups for the three years 1950, 1955 and 1960. Some of these passes refer to pupils who did not pass the whole examination and, therefore, were not awarded the Leaving Certificate.

HONOURS MATHEMATICS AT LEAVING CERTIFICATE

122. Separate pass and honours examination papers in mathematics are offered. For entry to university engineering faculties, a boy is required to obtain honours in mathematics at this examination or alternatively to pass a special entrance examination of equivalent standard. In Table 18 are given statistics for this subject over the period 1940-1960. The table refers to boys only, a small number of

TABLE 18. LEAVING CERTIFICATE HONOURS MATHEMATICS

YEAR	BOYS		
	TOTAL EXAMINED	PROPORTION OBTAINING	
		HONOURS	PASS
1940.....	418	65 %	30 %
1945.....	404	41 %	50 %
1950.....	493	66 %	33 %
1955.....	735	68 %	30 %
1960.....	1,115	54 %	43 %

girls (28 in 1955) also take the honours mathematics examination each year. Nearly all candidates take mathematics at the examination, the larger proportion taking the pass papers.

Fees and Scholarships

123. The fees charged by the secondary schools vary according to circumstances and are fixed at the discretion of the schools concerned. The majority of pupils attend day secondary schools, where the fees charged are within the competence of the average parent. These day schools are enabled to provide secondary education at relatively low fees by reason of the capitation grants payable in respect of recognised pupils of 11 to 20 years of age and by reason of the State's bearing a high proportion of the teachers' emoluments by way of incremental salary.

124. Competitive scholarships tenable at secondary and at vocational schools are awarded annually by the County and County Borough Councils to children of the lower income group. These scholarships vary in value up to £85 per annum and are awarded annually for a period of four to five years on the results of an examination held by the Department of Education. In addition, a limited number of scholarships and prizes are awarded annually by the Department of Education on merit, without regard to income, to pupils of secondary schools on the results of the Intermediate Certificate examination. The number of scholarship holders at secondary schools rose from 2,170 in 1955-56 to 2,699 in 1960-61.

125. Competitive scholarships tenable at university institutions are likewise awarded annually to children of the lower income group by County and Borough Councils on the results of the Leaving Certificate examination. The Department of Education also awards, without regard to income, a number of university scholarships on the results of the Leaving Certificate examination to students who wish to pursue their University courses through the medium of the Irish language[1]. A limited number of scholarships is offered for competition by the Department of Agriculture among students who propose to follow University degree courses in general agriculture, horticulture and dairy science.

126. The Local Authorities (Scholarships) Amendment Act, 1961, provides for greatly increased funds for scholarships both for secondary and university education. The Act continues the present system of local authority control of scholarships but supplements by means of state grants the amounts awarded.

Secondary Teachers

127. The appointment of teachers in Secondary Schools rests entirely with the school authorities. The Department's regulations require that schools in receipt of state grants employ a certain minimum number

1. This is possible in certain Arts and Commerce Faculties only.

of registered secondary teachers, and pay each of these teachers, if a lay teacher, a fixed minimum basic salary. The Register of Secondary Teachers is administered by the Department of Education under Regulations made by a representative Registration Council. The qualifications required of all teacher-applicants for registration include *i*) a degree of a recognised university; *ii*) a recognised university post-graduate qualification of training in the theory and practice of education; *iii*) one year's satisfactory teaching experience in a recognised secondary school, and *iv*) oral competency in the Irish language. There were in all 5,282 secondary teachers employed in recognised secondary schools during the school year 1960-61, of whom about two-thirds were registered teachers, the rest being only part-time teachers, mostly fully qualified.

Salaries

128. The minimum scale of incremental salary payable by the State for registered secondary teachers is laid down by official regulation and is uniform throughout the country. The minimum basic salary, payable by the school, is £200 per annum, but in fact higher basic salaries, especially for headmasters and headmistresses, are paid by the great majority of schools. Incremental salary, that is salary additional to the basic salary, is paid by the Department of Education at the following rates (exclusive of special increments for an honours degree and for teaching through Irish): married men, £607 per annum to £1,215 per annum; women and unmarried men: £522 to £959 per annum. A state-controlled superannuation scheme, membership of which is voluntary, is in operation for men and women.

State Expenditure on Secondary Education

129. The secondary schools receive financial aid from the State mainly as follows:

a capitation grant is paid in respect of each pupil who fulfils the required conditions as to age, attendance, fitness to benefit and course of study. This grant is at the rate of £11 for each such pupil following the Intermediate Certificate course and at the rate of £16 for each pupil following the Leaving Certificate course;
special grants in respect of the teaching of science, domestic economy and manual instruction;
the incremental salaries of the recognised secondary teachers. Recognised teachers are registered teachers who teach for not fewer than 18 hours per week.

Table 19. EXPENDITURE ON SECONDARY EDUCATION IN YEARS ENDED 31st MARCH

	1956	1957	1958	1959	1960
Expenditure (£ 000)	1,776	1,847	2,340	2,272	2,519

b) Vocational Education

130. The normal age at which pupils transfer from primary to secondary (grammar) school is 12 or 13 years of age. Two-thirds of those in the 14-15 age group and almost half of those in the 15-16 age group continue full-time education at some school. In a small number of National Schools the secondary school programme is provided; these schools are described as having a 'secondary top'.

131. For children whose parents wish to continue their education beyond age 14 another stream of second-level education is provided in addition to the secondary (grammar) stream. This is called vocational education.

132. Vocational education comprises two main sections: continuation education and technical education. *Continuation education* is defined as "education to continue and supplement education provided in elementary schools and includes general and practical training in preparation for employment in trades, manufactures, agriculture, commerce, and other industrial pursuits, and also general and practical training for the improvement of young persons in the early stages of such employment". *Technical education* means "education pertaining to trades, manufactures, commerce, and other industrial pursuits (including the occupations of girls and women connected with the household)", and includes education in science, art, music and physical training.

Vocational Education Committee

133. Continuation and technical schools in Ireland are controlled by 38 Vocational Education Committees under powers derived from the Vocational Education Act, 1930, and subsequent amending Acts. The committees can frame their programmes within the general powers given them under the Act, but these programmes and the committee's expenditure thereon are subject to the approval of the Minister for Education. The funds of committees are derived from state grants and local rates in the proportion of about 2:1. The members of each committee are appointed by the local rating authority and hold office for

Table 20. VOCATIONAL AND TECHNICAL SCHOOLS

	1955-56	1956-57	1957-58	1958-59	1959-60
Permanent Schools	252	260	267	272	279
Non-permanent Centres	598	537	475	503	490
Number of Students on rolls (including day and evening, whole and part-time courses)	94,506	88,624	85,744	88,659	92,287
Teachers:					
Full-time	1,427	1,487	1,537	1,574	1,606
Part-time	1,192	1,119	1,121	1,228	1,446
Total	2,6 9	2,606	2,658	2,802	3,052

the same period as that authority. A committee consists of 14 members of whom not fewer than 5 and not more than 8 are members of the local authority. In practice every committee contains 8 members of the local authority. The remaining members comprise representatives of trade unions, employers, and various educational interests in the area. Each committee has as its secretary a chief executive officer who is responsible for the organisation and administration of the scheme under its control. All Vocational Education Committees are me' bers of the Irish Vocational Education Association.

Schools, Students and Teachers

134. Table 20 gives the numbers of permanent vocational and technical schools and the numbers of teachers and students for the years 1955-56 to 1959-60.

Continuation Education

135. Entry to continuation courses is normally at the age of 14 years; no special academic attainment is required, except for entry below the age of 14.

136. There is no single programme of continuation education; courses are organised to suit local requirements, the most typical being:

Junior Technical Course (Boys);
Junior Domestic Science Course (Girls);
Junior Commercial Course (Boys);
Junior Commercial Course (Girls);
Junior Rural Course (Boys).

137. These are full-time courses consisting of 25-30 hours of tuition per week, approximately half of this time being spent on practical work or appropriate subjects such as woodwork, metalwork, industrial design, domestic economy or agricultural techniques. Over the age of 14 attendance at these courses is optional. Religious instruction is given in agreement with the ecclesiastical authorities.

138. Typical timetables of continuation courses are given below:

Table 21. JUNIOR TECHNICAL COURSE

SUBJECT		SUBJECT	
Metalwork	4 hours	Irish	3 hours
Woodwork	4 —	English	2 —
Mechanical Drawing	4 —	Physical Training	1 —
Science	4 —	Religious Knowledge	2 —
Mathematics	4 —		

Total: 28 hours per week

TABLE 22. JUNIOR RURAL COURSE

BOYS		GIRLS	
Manual Instruction and Drawing	8 hours	Domestic Economy	10 hours
Rural Science and Surveying	5 —	Household Science and Gardening	3 —
Practical Mathematics	4 —	Commercial Arithmetic and Business Training	4 —
Religious Instruction, Irish, Other Subjects	8 —	Religious Instruction, Irish, Other Subjects	8 —
Total	25 hours	Total	25 hours

139. The duration of these full-time courses is two to three years, at the end of which time most pupils take the Day Vocational Certificate Examination conducted by the Department of Education. The certificate is intended to show competence in a small group (2 to 4) of practical and semi-practical subjects, other subjects may be added as options. This qualification is of value for employment in a number of fields. Under the recently adopted Apprenticeship Act, candidates for entry to draft apprenticeship will be required to have either the Secondary Schools Intermediate Certificate or the Vocational Certificate in specified subjects.

TABLE 23. NUMBER OF TRADE CERTIFICATES AWARDED IN 1960

ESTIMATED RESULTS	JUNIOR		SENIOR	
	ENTERED	PASSED	ENTERED	PASSED
Mechanical Engineering:				
Fitting	369	211	210	132
Turning (normally do fitting also)	167	122	105	62
Sheet Metal	17	6	7	5
Brass Finishing	8	5	—	—
Boilermaking (theory only)	3	3	4	4
Electrical Engineering	76	49	77	54
Building (Estimate: 1/3 senior, 2/3 junior)	549	337	275	168
Motor Car Engineering	380	239	240	130
Radio	50	25	24	13
Printing Trade:				
Compositors	17	12	18	12
Letterpress machinists	16	13	8	6
Totals	1,485	900	863	524

NOTE: Figures are estimates based on numbers *entering and passing* examinations in single subjects in different years.

140. Table 23 gives statistics for entries and passes at the Day Vocational Group Certificate Examination for the years 1955-61. Five separate Group Certificates are offered, their titles being as shown in the table.

Compulsory Continuation Courses

141. Attendance at continuation courses has been made compulsory in three areas for young persons between the ages of 14 and 16 years who are not already in attendance at approved schools. In these three areas, namely, the County Boroughs of Cork, Limerick and Waterford, all young persons who do not attend a whole-time school are obliged to attend a specified compulsory day continuation course for one day of 5 hours each week for a session of 36 weeks. The course is of the ordinary continuation type, with manual instruction included for the boys and domestic economy for the girls. No exceptions are permitted and young persons must attend even if they are in employment.

Technical Education

142. In addition to the provision of continuation courses the Vocational Education Committees have a second important function— that of providing technical education. In the terminology which is now generally accepted, this can be classified as follows:

Course for Operatives	2nd level
Craft Courses (or Trade Courses)	
Technician Courses	2nd and 3rd level
Technological Courses	3rd level
Special Courses.	

143. In the official literature of technical education in Ireland the word " technological " has been used to describe all technical courses above the craft level; this is a survival of the period when the term " technician " was loosely used and did not have the specific meaning which is nowadays assigned to it. Consequently, reference to courses for technicians will be found only in the more recent publications of the Department of Education and of technical schools and institutes. It is important to take account of this fact in any study of the courses available.

Organisation of Courses

144. *Day Courses* may be sub-divided into: whole time courses of 6-7 hours per day, five days per week; part time courses of 6-7 hours per day, one or two days per week.

These courses are often supplemented by one or two evenings (of two hours) per week;

Evening Courses consist of classes held between 7 p.m. and 10 p.m. on weekdays; they provide 4-10 hours of tuition per week;

Sandwich Courses consist of periods of some months spent alternatively in practical training in industry and in academic study in school;

Day Release Courses are merely part-time day courses for which employees are released by their firms on one or two days per week;

Block Release Courses are whole-time day courses operated for part of an academic year. Employees are fully released by their firms for the necessary period in order to attend.

Courses for Operatives

145. Courses for employees in this category are few and have hitherto been organised almost entirely on an *ad hoc* basis to meet local labour demands occasioned by the establishment of new industries or major expansion of existing concerns. Where such situations arise, the usual procedure is that Local Vocational Education Committees, in consultation with the Department of Education and with the employers concerned, arrange to provide classes and pay the cost of part-time instruction by specialists in the industries. Courses of this type provided in recent years were at Ennis (carpets, diamond polishing), Tralee (knitwear factory), Monaghan (fibre glass automobile bodies).

146. It is not generally feasible to provide operatives' courses of a predominantly practical nature at vocational schools for individual industries because of the costs of specialised equipment, difficulties of accommodation, the obsolescence of plant, and the comparatively short-term demands for training. Operational training is largely the function of industry itself, and the vocational system naturally concerns itself mainly with the provision of background education to supplement training, or to provide a suitable basis for training on the job.

147. There are isolated instances of longer term courses of practical instruction for operatives, but these are usually pre-employment courses rather than in-service training. Evening courses for young persons seeking employment in ready-made clothing factories and the footwear industry in Drogheda are examples of this type. Until about three years ago, a pre-employment course in hosiery manufacture was provided at Blackrock Technical School, Co. Dublin, but it was discontinued in favour of the provision of commercial courses leading to the Day Group Certificate Examinations.

148. Occasionally, too, continuation-type courses are provided for local factory operatives, for example in the Vocational School at Crumlin, Dublin, where a day-release course in general domestic and craft subjects for girls is provided. Such courses are not intended to contribute directly to job proficiency but can be beneficial to the general educational formation of young workers, with consequent effects on job performance.

Craft (or Trade) Courses

149. These courses are mainly provided on a part-time day-release basis, usually on one or two days per week, and prepare students for written and practical trade examinations of the Department of Education. These are two in number, the Junior Trade Certificate usually taken at the end of the second year of a five-year apprenticeship, and the Senior Trade Certificate taken at the end of the fourth year. Examinations are provided for the following trades:

> Fitting, Turning, Metal Plate Work, Brass-finishing, Boiler-making, Carpentry and Joinery, Cabinet-making, Plumbing, Plastering, Brickwork, Painting and Decorating, Woodcutting Machinists Work, Motor Car Engineering, Electrical Installation, Radio Service Work, Printing.

Evening courses, of 4-6 hours per week, extending over four years are also provided in certain trades in some of the larger technical schools.

150. A number of major schemes for the recruitment and training of trade apprentices are in operation as follows:

i)	Electricity Supply Board	—	Electricians, Fitters and Turners.
ii)	Irish Sugar Company	—	Electricians, Fitters and Turners, Motor Mechanics.
iii)	Bord na Mona (Turf Production Board)	—	Electricians, Fitters and Turners.
iv)	National Joint Industrial Council for Electrical Contracting Industries	—	Electricians.
v)	Society of Irish Motor Traders	—	Motor Mechanics.
vi)	Coras Iompair Eireann (Irish Transport Authority)	—	Motor Mechanics, Fitters and Turners, Sheet-metal Workers, Boilermakers, Blacksmiths, Coppersmiths, Brass-finishers, Pattern-makers, Iron-moulders, Brass-moulders, Coach Builders, Coach Trimmers, Coach Painters Carpenters, Plumbers, Electricians.
vii)	Printing Trades (Dublin)	—	Compositors, Letter Press Machinists, Bookbinders, Lithographers.
viii)	Furniture Trades (Dublin)	—	Cabinet Making.
ix)	Building Trades (Cork Area)	—	All attached trades.
x)	Army Air Corps	—	Aircraft Mechanics.
xi)	Army Apprentice School, Naas	—	Fitters and Turners, Motor Mechanics, Armourers, Electricians, Woodworkers.
xii)	Aer Lingus	—	Aircraft fitters, Electricians.

The Department of Education is usually consulted regarding appropriate entrance standards and course arrangements. Assistance is also given in the selection of apprentices by interview.

151. Army apprentice courses are on a whole-time basis, and extend over two or three years. The Aer Lingus scheme inaugurated in 1962 provides for "sandwich" course training consisting of whole-time instruction at the College of Technology, Bolton Street, Dublin, over four academic sessions, with practical training at Dublin Airport during the summer months each year. The Electricity Supply Board releases apprentices to attend "block-release" courses at the College of Technology, Kevin Street, Dublin, or the Crawford Technical Institute, Cork (electrical apprentices), and the College of Technology, Bolton Street (mechanical apprentices), for one term in each of the first four years of apprenticeship. Bord na Mona and the Irish Sugar Company operate a joint "block-release" scheme whereby apprentices

attend a five-week summer course at Kevin Street (electrical) or at one of the technical schools in the midlands (mechanical) over four years, as well as day-release courses at schools near their place of employment during the normal school year. Otherwise the above schemes operate on a day-release basis.

152. The full range of trade apprentice courses is available in Dublin only. Elsewhere courses are almost entirely confined to mechanical engineering and motor car engineering trades, though limited facilities for other trades are available at Cork (electrical, building), Drogheda (electrical, building), Waterford (building, glass cutting), Limerick (electrical, building), and a few other centres, where evening classes only are provided.

153. Trade courses in fitting and turning, and in motor car engineering are provided at a very large number of provincial centres on a day-release and/or evening basis, and in most schools it is possible to cater for local demand in these trades to some extent. Day-release courses in the school year 1960-61 were provided at the following centres:

Mechanical Engineering (Fitting and Turning): Cork, Dublin, Limerick, Waterford, Drogheda, Carlow, Ennis, Cobh, Mallow, Passage West, Letterkenny, Donegal, Tuam, Athy, Newbridge, Naas, Portarlington, Portaloise, Longford, Dundalk, Belmullet, Monaghan, Tullamore, Roscommon, Thurles, Clonmel, Athlone, Mullingar, Arklow.

Motor Car Engineering: Cork, Dublin, Limerick, Waterford, Drogheda, Dun Laoire, Galway, Sligo, Tralee, Mitchelstown, Mallow, Fermoy, Rath Luirc, Kilkenny, Longford, Ardee, Dundalk.

154. Building trade apprentices employed in rural areas are catered for, where possible, by block-release courses, usually of one month's

TABLE 24. DAY VOCATIONAL GROUP CERTIFICATES NUMBER OF CANDIDATES, AND CERTIFICATES AWARDED, BY GROUPS

GROUP YEAR	*i)* MANUAL INSTRUCTION		*ii)* RURAL SCIENCE		*iii)* DOMESTIC SCIENCE		*iv)* COMMERCE (GENERAL)		COMMERCE (SECRETARIAL)	
	E	P	E	P	E	P	E	P	E	P
1955	2,154	1,770	396	395	6,600	498	1,236	730	382	221
1956	2,358	1,584	508	390	672	555	1,260	791	413	194
1957	2,557	1,655	688	426	787	678	1,347	868	377	186
1958	2,749	1,832	863	488	912	745	1,580	986	459	211
1959	2,965	2,003	947	437	992	822	1,702	960	469	330
1960	3,038	2,251	804	533	1,042	782	1,631	992	452	226
1961	3,370	2,379	982	682	1,085	913	1,778	1,148	529	289

E = Entries. P = Passes.

NOTES: Average number of subjects taken at examination is 5/6.
Average number of subjects passed at examination is 4/5.
For list of subjects in each group see "Rules and Syllabuses relating to Certificate Examinations for Day (Vocational) Courses" (Memo V50).

TABLE 25. TECHNOLOGICAL CERTIFICATE EXAMINATIONS

GROUP / STAGE	MECHANICAL ENGINEERING	ELECTRICAL ENGINEERING	AUTOMOBILE ENGINEERING	BUILDING TECHNOLOGY	APPLIED CHEMISTRY	FLOUR MILLING
Elementary	*Mechanics* Heat *Machine Drawing*	*Electrical Engineering (D.C.)* *Electrical Engineering (A.C.)*	*Motor Car Engineering* Engineering Science Automobile Electricity	*Building Construction* Mathematics and Geometry	*Inorganic Chemistry* *Experimental Physics* *Biology* Mathematics	
Intermediate	*Applied Mechanics* *Heat and Heat Engines* *Machine Drawing and Construction*	*Electrical Engineering (D.C.)* *Electrical Engineering (A.C.)*	*Motor Car Engineering* Engineering Science Automobile Electricity	*Building Construction* Structural Engineering Builders' Quantities Plane and Solid Geometry	*Inorganic Chemistry* *Organic Chemistry* *Physical Chemistry* *Experimental Physics* *Mathematics*	*Flour Milling* (Elements) *Flour Milling* (Principles & Processes) *Physics for Flour Milling*
Advanced	*Applied Mechanics* *Heat Engines* *Machine Construction and Design*	*Electro-Technology* Electrical Engineering Practice (Section A - Generation and Transmission) (Section B - Distribution and Utilisation)	*Motor Car Engineering* Heat Engines and Applied Mechanics Automobile Electricity Garage Organisation and Management	*Building Construction* Structural Engineering Builders' Quantities Plane and Solid Geometry	*Inorganic Chemistry* *Organic Chemistry* *Physical Chemistry*	*Flour Milling Technology* *Flour Milling Organisation* *Cereal* Science
Higher Technological or Diploma Stage	*Mathematics* *Strength of Materials* *Theory of Machines* Machine Design Heat Engines — Steam Heat Engines — Internal combustion Hydraulics				*Group I* *Organic Chemistry* *Physical Chemistry* *or* *Group II* *Industrial Chemistry*	

1. Certificates may be awarded to candidates who pass (*a*) the compulsory subjects (in italics) of a particular stage (*b*) one optional subject of the stage, where options are provided.

2. Though mathematics are not compulsory in general, students of engineering subjects are advised to follow courses for Department of Education Certificates in mathematics appropriate to the particular stage concerned.

duration, which incorporate both theoretical and practical instruction. In some cases, these courses take the form of a practical building project, such as the construction of extensions to rural vocational schools.

Technician Courses

155. As already pointed out, few courses have up to now been provided which are specifically aimed at technician training.

156. At a level higher than the Junior and Senior Trade Certificates, the Department of Education conducts "Technological Certificate" examinations in certain groups of subjects. There are three stages: Elementary, Intermediate and Advanced, with a fourth Diploma stage for two groups only. Table 25 shows the groups and stages for these certificates.

157. The Technological Certificate examinations are tests of theoretical knowledge only, except for applied chemistry, where practical examinations are set, since no corresponding trade is associated with this particular group of subjects. Many of the candidates for these certificates are craftsmen or apprentices, and continue to work at their trades after obtaining the certificates.

158. The Elementary, or lower, stage of these examinations provides a basic scientific background to trade knowledge. Many apprentices pass these examinations at about the same time as the Junior Trade Certificate. Apprentices who have adequate facilities for part-time study should reach at least this standard of theoretical knowledge before the end of apprenticeship. This is a reasonable requirement for students who obtained a Day Vocational or an Intermediate Certificate before entering the trade. All new entrants to apprenticeship will soon be required to hold one or other of these School Certificates, or an equivalent in specified subjects in accordance with the terms of the Apprenticeship Act, 1959.

159. The *Intermediate* Stage of the Technological programme in general demands a much higher degree of achievement in theoretical

Table 26. TECHNOLOGICAL CERTIFICATE EXAMINATION 1960 ENTRIES AND PASSES

GROUP	ELEMENTARY		INTERMEDIATE		ADVANCED		TOTAL	
	ENTRIES	PASSES	ENTRIES	PASSES	ENTRIES	PASSES	ENTRIES	PASSES
Applied Chemistry	150	57	276	120	18	10	444	187
Building	192	106	115	83	124	99	431	288
Electrical Engineering ...	255	97	81	33	11	3	347	133
Flour Milling.....			21	18	10	8	31	26
Mathematics	526	309	156	52	68	29	750	390
Mechanical Engineering .	685	392	320	104	81	44	1,086	540
Motor Car Engineering..	388	225	136	54	64	37	588	316
Telecommunications	104	58	46	23	22	12	172	93
Total	2,300	1,244	1,151	487	398	242	3,849	1,973

TABLE 27. GENERAL LIST

COURSE	CENTRE	TYPE
Radio Engineering	Kevin Street	Wholetime day
Marine Radio Officers	"	Wholetime or evening
Marine Radar Maintenance	"	Wholetime day
Post Office Telecommunications	Kevin Street & Crawford M.T.I., Cork	Block Release (1 term per year)
Electrical Technicians	Kevin Street	"
Electrical Engineering	"	Day Release
E.S.B. Apprentices' Special Course	"	Block Release
Laboratory Technicians	"	Day Release (1 day & 2 evenings per week)
Micro-biology	Kevin Street	Evening
Building Technology	Bolton Street	Wholetime day or evening
Motor Engineering	"	Wholetime day
Mechanical Engineering	"	Day Release (2 days per week)
Structural Steelwork	"	Day Release (2 days per week)
Marine Engineering	Crawford M.T.I., Cork	Wholetime day
Industrial Science	Crawford M.T.I., Cork	Wholetime day
Flour Milling Technology	Kevin Street	Evening

OF COURSES PROVIDED

DURATION	TYPE OF STUDENT ENROLLED	STANDARD REACHED
1 year	Army Signal Corps Officers	
2 years (day) 3 years (eng.)	School-leavers (Group Cert. or Inter. Cert. Standard)	Dept. of Posts and Telegraphs Certificate of Proficiency in Radiotelegraphy (1st and 2nd Class)
3 months	Radio Officers seeking radar training	
3 years	Post Office Technician Trainees	Post Office Technician Certificate (Class A or Class B)
4 years	E.S.B. Apprentices	Advanced Electrical Engineering (Dept. of Education) Electrical Technicians Certificate (City & Guilds of London)
	Electrical Apprentices (3rd year)	Advanced Electrical Engineering (Dept. of Education)
6 weeks	E.S.B. Apprentices (5th year)	Special topics (refrigeration, switchgear, metering, etc.)
3 years	Chemical Laboratory Assistants	Laboratory Technicians Certificate (City & Guilds of London)
2 years	Laboratory Assistants	
3 years (day) 6 years (evening)	School Leavers (Leaving Cert. Standard) & employees of building firms	Advanced Building Construction (Dept. of Education)
3 years	School Leavers (Group Cert. or Inter. Cert. Standard)	Advanced Motor Car Engineering (Dept. of Education). Final Examination (Inst. of the Motor Industry)
4 years	Mechanical Engineering Apprentices (3rd year) & Draughtsmen (engineering design offices)	Advanced Mechanical Engineering (Dept. of Education), Part I (Institution of Mechanical Engineers)
1 year	Trainee Draughtsmen	
3 years	Mechanical Engineering Apprentices (Irish Shipping Ltd.)	Advanced Mechanical Engineering (Dept. of Education)
2 years	School Leavers (Leaving Cert. Standard)	Applied Chemistry (Diploma Stage, Dept. of Education)
4 years	Flour Milling Employees	Advanced Flour Milling Technology (Dept. of Education)

studies and the number of apprentices qualifying at this level is naturally much smaller than at the Elementary Stage (see Table 26).

160. The *Advanced* Stage syllabuses are of a high technical standard, though still somewhat below graduate professional level.

161. It will be noted from Table 25 that a still higher stage is provided in mechanical engineering and in applied chemistry. The examinations at this stage are of graduate standard.

162. In a later section the merits of the Technological Certificate examinations as qualifying tests for technicians will be discussed, and some modifications suggested.

163. Courses in technical schools are designed to meet the requirements of the Technological Certificate examinations of the Department of Education, and certain similar examinations of external bodies in mechanical engineering, electrical engineering, applied chemistry, telecommunications, motor car engineering, building and flour milling.

164. These courses are provided mainly at the two colleges of technology in Dublin, and at the Crawford Municipal Technical Institute in Cork, but students are prepared for the Elementary, and in some cases the Intermediate Technological Examinations in one or more of the branches of applied science listed above (most commonly in mechanical engineering or motor car engineering) at the majority of urban schools.

165. Many of the courses are broadly based, i.e. syllabuses followed do not cater for the specialised interests of particular industries. There are a number of economic reasons for this, namely: numbers attending from individual industries are usually too low to justify a separate class; purchase of costly specialised equipment, which would have a low utilisation factor in many cases, is avoided, and the broader technical education aids flexibility in employment of technical personnel, often an important factor in Irish industrial conditions.

166. Courses are organised on a whole-time day, part-time day-release, block-release, or evening basis depending on circumstance. Table 27 gives a general list of the courses provided.

167. Mention should also be made here of courses and examinations provided in commercial subjects. As for " Technological Certificates ", examinations are in three stages (Elementary, Intermediate and Advanced). These examinations cover general commercial subjects (shorthand, typewriting, commerce, book-keeping, commercial arithmetic, economics, geography), retail practice (commodities, commercial procedure), and languages (Irish, English, French, German, Spanish, Italian). Courses at the higher levels are mainly provided at the College of Commerce in Dublin and Cork, but more limited facilities are available at a number of provincial centres.

168. During the past four years intensive whole-time courses in work study, of ten weeks duration, have been provided regularly at the School of Management Studies, College of Commerce, Rathmines.

These are attended mainly by middle and senior management personnel in industry concerned with the operation of work study schemes within their own firms, or with general management in firms having work study schemes.

Technological Courses

169. Courses leading to professional qualifications in a number of fields are provided in two colleges of technology in Dublin. These colleges are administered by the Dublin Vocational Education Committee and come within the scope of the Technical Instruction Branch of the Department of Education. The courses will be described under the heading of third level education.

Expenditure on Vocational Education

170. The annual income of Vocational Education Committees is derived from three main sources: grants from the Department of Education; contributions from the local Rating Authority, and tuition fees and other sources (these provide only a small amount).

171. Fees range from about: £1 to £3 per year for whole-time continuation courses, evening technical courses; £3 to £5 for part-time day courses, and £8 to £15 for whole-time day courses. A small number of scholarships covering tuition fees and course materials are offered by vocational education committees, local industries and public utility bodies.

172. The biggest item of current expenditure is payment of teachers' salaries. In 1959 the salary scale for women and unmarried men ranged from £450 to £750 per annum and for married men from £526 to £961 per annum[1], with special bonuses, as for secondary teachers, for certain additional qualifications. Additional emoluments, varying with the type of school, are paid to headmasters of vocational schools. Higher salary scales are payable in respect of higher grade posts, technological and other. Allowances in respect of dependent children and in aid of house rent are payable to married men and to widows. Permanent whole-time vocational teachers are pensionable under legislation governing the superannuation of officers in the employment of local authorities generally.

Table 28. ANNUAL EXPENDITURE ON VOCATIONAL EDUCATION
31 March 1956 to 31 March 1960

YEAR	1956	1957	1958	1959	1960
State Funds (£ 000)	1,099	1,135	1,158	1,293	1,394
Local Rates (£ 000)	577	616	639	665	707
Total	1,676	1,751	1,797	1,958	2,101

1. Salaries at Novembre, 1961:
   Women and single men: £541 to £933.
   Married men : £630 to £1,180.

173. Buildings and equipment are financed by the vocational education committees either by borrowing on the security of their own funds or by grants from the local rating authorities.

Vocational School Teachers

174. *Manual Instructors* (in woodwork and metalwork) are selected from craftsmen and undergo a two-year training course conducted by the Department of Education in one of the larger technical schools.

175. *Domestic Science Teachers* are selected from girls of Secondary School Leaving Certificate standard and are trained for three years in two special Colleges of Domestic Science.

176. Teachers of commerce, science, rural science and mathematics must hold a university degree or equivalent as a minimum qualification.

177. Teachers of courses for higher technological certificates and for professional qualifications must hold a university degree or its equivalent. These will be mentioned in the section on third level education also.

THIRD LEVEL EDUCATION

178. Third level education in Ireland is provided in (*a*) universities and (*b*) technical colleges.

a) Universities

There are two universities in Ireland:
the National University of Ireland, which is organised on a federal basis, with three constituent colleges (at Dublin, Cork and Galway) and a recognised college (at Maynooth);
the University of Dublin, comprising one constituent college, Trinity College, Dublin.

The four university colleges each provide the usual range of courses for degrees. Training for the profession of medicine is given in the Royal College of Surgeons, Dublin.

179. The three colleges of the National University have separate staffs and conduct their courses independently. The approval of courses of study, conduct of examinations, appointment of extern examiners and award of degrees are powers which are vested in the Senate of the National University. The Senate is composed of: representatives of the colleges; representatives of the graduates; and members nominated by the Government.

Students, Professors and Lecturers

Table 29. FULL-TIME STUDENTS IN THE VARIOUS FACULTIES IN THE ACADEMIC YEAR, 1959-1960

Faculty	National University[1]			University of Dublin[4]		
	Males	Fe-males	Total	Males	Fe-males	Total
Architecture	79	13	92	—	—	—
Agriculture and Forestry	357	4	361	34	1	35
Veterinary Medicine[2]	294	3	297	43	5	48
Arts[3],[4]	1,346	920	2,266	856	404	1,260
Commerce	463	165	628	50	5	55
Dairy Science	86	1	87	—	—	—
Social Science	10	76	86	3	44	47
Dentistry	166	25	191	24	3	27
Divinity	—	—	—	45	—	45
Engineering	580	—	580	119	—	119
Law	83	11	94	47	3	50
Medicine	485	200	685	246	121	367
Pre-Medical and pre-Dental	251	62	313	76	10	86
Science	768	264	1,032	241	63	304
Total	4,968	1,744	6,712	1,784	659	2,443

1. Excluding St. Patrick's College, Maynooth.
2. Only Veterinary students who attended University Lectures are included.
3. Includes students of Music, Celtic Studies and Philosophy and also those studying for the Higher Diploma in Education.
4. In the University of Dublin a course in Arts is obligatory for all students.

Tableau 30. STUDENTS, PROFESSORS AND LECTURERS (FULL AND PART-TIME) IN THE UNIVERSITIES[1] IN THE ACADEMIC YEAR

	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60		
							National Univ.	Univ. of Dublin	Total
Students:									
Male	5,744	5,865	5,898	6,230	6,545	6,953	5,375	2,020	7,395
Female	1,985	2,112	2,173	2,163	2,287	2,446	1,874	728	2,602
Matriculated	7,477	7,713	7,784	7,884	8,131	8,799	6,934	2,423	9,375
Non-Matriculated	252	264	282	509	651	600	315	325	640
Total	7,729	7,977	8,066	8,393	8,782	9,399	7,249	2,748	9,997
Professors and Fellows	193	201	199	199	198	199	141	62	203
Lecturers, Assistants and Demonstrators	384	430	478	497	513	530	425	154	579

1. Excluding St. Patrick's College, Maynooth.

Degrees Conferred

180. Table 31 gives the numbers of degrees conferred in each faculty in the National University (excluding St. Patrick's College, Maynooth)

and in the University of Dublin in the year 1959-60 with comparative totals for the years 1954-55 to 1958-59.

TABLE 31. DEGREES CONFERRED IN EACH FACULTY IN THE UNIVERSITIES IN THE ACADEMIC YEAR 1959-60, WITH COMPARATIVE TOTALS FOR 1954-55 TO 1958-59

FACULTY	FIRST DEGREES				HIGHER DEGREES		TOTAL
	HONOURS		ORDINARY				
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
NATIONAL UNIVERSITY[1]							
Agriculture	2	1	9	1	—	—	13
Agriculture, Forestry and Horticulture	23	—	55	—	5	—	83
Veterinary Medicine	—	—	30	—	—	—	30
Arts[2]	105	86	182	133	24	13	543
Commerce	30	18	88	22	5	—	163
Dairy Science	2	—	3	—	2	—	7
Social Science	—	—	3	10	—	—	13
Dentistry	1	—	35	7	—	—	43
Engineering	46	—	75	—	2	—	123
Medicine	4	2	104	25	12	1	148
Science	62	20	49	24	21	8	184
Law	8	—	14	—	3	—	25
Total Degrees 1959-60	283	127	647	222	74	22	1,375
— — 1958-59	263	110	686	232	74	22	1,387
— — 1957-58	230	134	602	230	85	19	1,300
— — 1956-57	216	121	613	200	85	19	1,254
— — 1955-56	228	118	509	220	82	19	1,176
— — 1954-55	195	73	514	193	94	17	1,086
UNIVERSITY OF DUBLIN							
Agriculture and Forestry	—	—	—	—	—	—	—
Veterinary Medicine	—	—	6	1	—	—	7
Arts[2]	44	29	132	43	16	3	267
Commerce[3]	—	—	26	5	—	—	31
Dairy Science	—	—	—	—	—	—	—
Dentistry	—	—	1	—	—	—	1
Engineering	8	—	14	—	—	—	22
Medicine	—	—	43	20	7	2	72
Science	—	—	4	2	3	2	11
Law	—	—	7	—	1	—	8
Divinity	—	—	3	—	—	—	3
Total Degrees 1959-60[4]	52	29	236	71	27	7	422
— — 1958-59[4]	69	47	247	67	20	4	454
— — 1957-58[4]	66	37	260	80	26	3	472
— — 1956-57[4]	63	52	231	51	28	1	426
— — 1955-56[4]	71	45	293	58	20	3	490
— — 1954-55[4]	100	38	287	93	23	4	545

1. Excluding St. Patrick's College, Maynooth.
2. Including Music, Celtic Studies, Education and Philosophy.
3. Including Public Administration.
4. Excluding higher degrees granted without further studies.

Science and Engineering in the Universities

181. Faculties of natural sciences and engineering exist in four university colleges in Ireland, viz:

University College, Dublin *University College*, Cork *University College*, Galway	*National University of Ireland*
Trinity College, Dublin	*University of Dublin*

182. Departments of the sciences in Trinity College, Dublin, date from the 18th century. Those in the Cork and Galway colleges of the National University have their origins in the Queen's Colleges in the mid-19th century. In University College, Dublin, the chair of chemistry has descended from that founded in the (Royal) Dublin Society in 1796, while the professorship of physics originated in Newman's Catholic University in 1856.

183. Engineering in Irish universities goes back to the foundation in Trinity College in 1841 of what is the second oldest chair of engineering in Great Britain and Ireland. The chairs in the University Colleges of Cork and Galway originated in the Queen's Colleges about 1849, while those in University College, Dublin, have links with a chair established in the Royal College of Science for Ireland in 1867.

184. In the period since 1922, the pattern of development in Ireland has led to changes in and additions to university courses in science and engineering. Thus in engineering the first alternative to civil engineering was the combined mechanical and electrical courses in the Royal College of Science which developed rapidly after its transfer to University College in 1926. No further extension of engineering courses was made until, in 1956, the first graduates in the field of chemical engineering appeared from University College, Dublin, and in the same year Cork for the first time produced electrical engineering graduates. It became evident, too, that a combined course could no longer bring graduates to professional level in both mechanical and electrical engineering, and graduates in the separate branches have come from University College, Dublin, since 1959. Recent developments have been the introduction of an option in production engineering in Trinity College, Dublin, and of a course in agricultural engineering in University College, Dublin.

185. In science, too, the pattern of university work has been influenced by developments in agriculture and industry. Examples of this are the establishments (in both cases by endowment from Irish industry) of departments of plant genetics in Trinity College and of industrial microbiology in University College, Dublin.

186. Absorption of engineers and scientists in Irish industry has become significant only since about 1930, when the work of extending basic public utilities and of setting up industries based on national resources was undertaken by the State. An indication of the growth of engineering in the universities in this period is given in Table 32.

TABLE 32. NUMBERS OF ENGINEERS GRADUATING IN IRISH UNIVERSITIES

YEAR	1930	1940	1950	1956	1960
Civil	32	90	105	101	57[1]
Mechanical and Electrical	4	9	28	49	3
Mechanical	—	—	—	—	28
Electrical	—	—	—	14	48
Chemical	—	—	—	3	11
Totals	40	99	133	167	147

1. Affected by changes to 4-year courses.

187. In the 31 years from 1930 to 1960, inclusive, a total of 3,654 engineers graduated from Irish universities. The distribution among specialisations and the total from each university are given in Table 33.

TABLE 33. ENGINEERING GRADUATES 1930 TO 1960 INCLUSIVE

SPECIALISATION		UNIVERSITY	
Civil	2,709	N.U.I.	2,946
Mechanical	49	T.C.D.	708
Mechanical and Electrical	714		
Electrical	153		
Chemical	29		
Totals	3,654		3,654

188. An indication of the size of science and technology departments in Irish universities is given by the figures in Table 34.

TABLE 34. FULL-TIME STUDENTS IN DIFFERENT FACULTIES IN IRISH UNIVERSITIES 1959-60

FACULTY	CONSTITUENT COLLEGES OF THE NATIONAL UNIVERSITY			TRINITY COLLEGE DUBLIN	TOTALS
	DUBLIN	CORK	GALWAY		
Science	553	270	209	304	1,336
Engineering	374	135	71	119	699
Agriculture, Dairy Science, Forestry	308	101	39	35	483

189. The pattern of courses in science and engineering in Ireland is broadly similar to that in British universities. However, honours courses in Ireland are of four years' duration, compared with three in English universities; the higher entrance requirements in science and

mathematics in Britain, with consequent specialisation in the higher forms at school, have made it possible to eliminate the equivalent of the Irish first university year. The standards of honours degrees in the two countries are comparable, the practice of having extern examiners from Britain helps to ensure parity.

Foreign Students in Irish Universities

190. As the country of origin of foreign students in Irish universities Britain outnumbers all other countries combined. This is due to the fact that, since the war, competition for places in British universities has been extremely keen. Consequently, increasing numbers of British students have come to study in Ireland.

Table 35. ORIGIN OF STUDENTS IN IRISH UNIVERSITIES
1959-60

Location of students' homes	Constituent colleges of the National University			Trinity College Dublin	Totals
	Dublin	Cork	Galway		
Republic of Ireland	4,088	1,228	873	1,071	7,260
Northern Ireland	81	6	8	276	371
Britain	53	22	6	741	822
Other countries outside Republic of Ireland	241	48	58	355	702
Total Students	4,463	1,304	945	2,443	9,155

191. The large number of British students in Trinity College, Dublin, as compared with the colleges of the National University, is due among other reasons to the attraction which the ancient foundation of Trinity College has for many British students and its traditional links with the Commonwealth. The increasing numbers of home applicants for places in the colleges of the National University of Ireland together with lack of funds for adequate expansion of facilities have forced a limitation of overseas entrants.

Engineering Courses in the Universities

192. Details of methods of selection of students, courses of study, conduct of examinations, methods of teaching, fees, scholarships, etc. are presented in the EUSEC " Report on Education and Training of Professional Engineers ", 1960, Volumes 1, 2 and 3.

Income and Expenditure of the Universities

Table 36. INCOME AND EXPENDITURE OF THE UNIVERSITIES 1953-54 TO 1958-59

	1953-54 £	1954-55 £	1955-56 £	1956-57 £	1957-58 £	1958-59 £
Income:						
Investment Income:						
Endowments, etc.	123,217	133,112	130,751	151,301	139,607	145,693
Grants:						
Local Authority	1,987	1,741	1,745	5,219	3,727	2,794
Parliamentary	851,508	625,378	624,749	712,506	711,658	739,389
Tuition fees, etc.	310,983	335,414	372,197	415,100	487,457	552,676
Income for services rendered	17,566	16,306	15,483	21,924	17,931	25,800
Transferred from Subsidiary Accounts:						
Restaurants, Hostels, etc.	333	837	174	—	—	8,652
Other Income	5,490	7,877	7,652	17,505	24,656	20,647
Total	1,311,084	1,120,665	1,152,751	1,323,555	1,385,036	1,495,651
Expenditure:						
Administration	97,675	106,902	107,317	102,566	110,123	127,935
Departmental Maintenance:						
Salaries of teaching staff (including Superannuation payments)	482,774	509,699	576,577	624,884	657,701	724,444
Other Departmental Maintenance	135,187	147,592	153,475	162,534	179,765	188,931
Maintenance of premises	162,492	162,729	191,959	186,265	194,556	217,873
Miscellaneous Expenditure	116,574	129,295	134,863	151,478	175,755	198,317
Capital Expenditure met from income	185,585	85,624	63,015	42,453	19,643	93,058
Total	1,180,237	1,141,841	1,228,206	1,270,180	1,337,543	1,550,558

b) Technical Colleges

193. In addition to the university courses, another path of entry to certain professions exists by way of courses provided at certain colleges of the Dublin Vocational Education Committee. Whole-time courses leading to professional qualifications in science, electrical engineering, mechanical engineering, quantity surveying and architecture are provided by the City of Dublin Vocational Education Committee at the Colleges of Technology in Kevin Street and Bolton Street. Part-time day and evening courses leading to the same qualifications are also provided at these centres. The duration of courses varies from a minimum of four years (whole-time day) to a maximum of seven years (part-time day and evening). A course, in architecture only, is available at the School of Art in Cork.

194. The examinations taken by students attending these courses are those of the following professional institutions:

Royal Institution of Chartered Surveyors (Intermediate and Final).
Institution of Mechanical Engineers (Graduate Membership, Parts I & II).
Institution of Electrical Engineers (Graduate Membership, Parts I and II).
Royal Institute of Chemistry (Associateship).
Royal Institute of the Architects of Ireland (Intermediate and Final).
Institution of Civil Engineers of Ireland (Associate Membership).
London University B.Sc. Degree (External):
Part I (Physics, Chemistry, Mathematics).
Part II (Chemistry and Mathematics).

195. Corporate membership of professional bodies requires, in addition to the necessary academic qualifications, suitable practical training plus a specified period in a responsible post in the relevant field of activity.

196. The number of students who reach professional level by routes other than a university degree is not large. The following figures give an indication:

INSTITUTION	EXAMINATION	PERIOD	TOTAL NO. PASSING
Inst. of Mech. Engineers.	Graduate, Part II	1922-60	60 (from Republic of Ireland)
Inst. of Elec. Engineers.	Graduate, Part II	1945-60	Abont 25 (from College of Technology Kevin St.)
Inst. of Civil Engineers of Ireland	Associate Membership	1920-60	40

Teachers of Professional Courses in Technical Colleges

197. These teachers are in a different category from the vocational school teachers already mentioned. They are styled " whole-time technological teachers " and are employed by Dublin Vocational Education Committee only. There are three grades:

Grade III — the standard grade for teaching duties;
Grade II) higher posts justified on the basis of administrative
Grade I) duties, but not of higher level teaching.

Table 37. HIGHER TECHNOLOGICAL TEACHERS, 1962

	GRADE				
	III	II	I	ASST. PRINCIPAL	PRINCIPAL
Mechanical Engineering	5	1	1	1	
Electrical Engineering	4	1			1
Architecture	1	1	1		1
Quantity Surveying	1				
Science or Mathematics.....	3			1	
Ophthalmic Opticians Course.....	1				

APPENDIX

AN CHEARD CHOMHAIRLE
(NATIONAL APPRENTICESHIP BOARD)

BASIC CONDITIONS FOR SOUND APPRENTICESHIP

It is the intention of *An Chomhairle* that these conditions should, in the first instance, be applied in trades :

a) which are associated with manufacturing, maintenance or constructional activities,

and

b) where workers' and employees' organisations jointly agree that apprenticeship is the appropriate way of recruiting and training future craftsmen.

***

1. General Aim

It is the aim of An Chomhairle to develop in co-operation with the parents and the appropriate authorities an apprenticeship programme which will provide not only for adequate trade training, but also for the religious, cultural and moral development of the apprentices.

2. Control

a) In respect of each trade or groups of trades there should be a National Apprenticeship Committee composed of an independent Chairman, representatives of employers and workers (in equal numbers) and educational representatives. Each such Committee should, in co-operation with An Chomhairle, regulate apprenticeship in the trade or trades with which it is concerned.

b) There should also be local advisory Committees for each trade or group of trades to advise An Chomhairle and the National Committees on local conditions and to assist in implementing national apprenticeship regulations on a local basis.

3. Minimum Age

The minimum age for entry into apprenticeship in each trade should not be less than 15 years.

4. Educational Qualification

The minimum educational qualification for entry into apprenticeship in each trade should be:

a) a pass in specific subjects in the Day Group Certificate Examination of the Department of Education (Technical Instruction Branch),

b) a pass in specific subjects in the Intermediate Certificate Examination of the Department of Education (Secondary Branch)

or

c) some educational qualification regarded by An Chomhairle as equivalent to *a*) or *b*).

An Chomhairle will insist that this qualification should be brought into operation not later than 1st September 1963, in respect of any trade examined by it before that date.

An Chomhairle would prefer that the majority of future entrants to apprenticeship should have the qualification at *a*) above, as it considers that, as a general rule, full-time attendance at the Junior Day Course in a Technical School is the appropriate educational preparation for apprenticeship.

5. Registration and Selection

a) Candidates for apprenticeship in the various trades who meet the requirements regarding minimum age and educational qualifications should have their names entered in an appropriate Register (or Registers) of Candidates from which apprentices will be recruited by employers for vacancies as they become available.

b) Candidates who have succeeded in securing employment as apprentices should have their names entered in an appropriate Register as Apprentices.

c) The employment of an apprentice by an employer should be subject to appropriate National Apprenticeship Committees with the object of ensuring *i*) that the apprentice is suitably qualified, *ii*) that the employer has the facilities to train the apprentice and *iii*) that there is control of the number of apprentices employed by the employer.

6. Practical and Theoretical Training

a) Each trade should be analysed to determine the basic processes or types of work and allied theoretical technical knowledge to be taught to the apprentice and training schedules covering such matters should be prepared.

b) It should be the responsibility of each employer in co-operation with the Vocational Education Authorities to ensure that his apprentices are fully instructed in accordance with the training schedules. Where necessary employers should co-operate by forming groups to ensure adequate training for their apprentices.

c) Each employer should designate a suitable person to oversee the training of his apprentices.

d) Training on the job and instruction in the Technical Schools should be closely harmonised one with the other.

7. Technical School Instruction

In order to ensure that the full schedule of practical training and theoretical instruction is carried our effectively:

a) each employer should be required to afford his apprentice time off during normal working hours (without loss of pay) to attend Technical School classes;

b) Each apprentice should, wherever possible and where deemed necessary by the National Apprenticeship Committee, be required to undertake to attend additional Technical School classes in his own time;

c) An Chomhairle will determine the minimum amount of time to be spent by apprentices at Technical School classes under (*a*) and (*b*) above.

8. Progress Reports

a) Each Employer should submit to the appropriate National Apprenticeship Committee at regular intervals reports showing the progress of each apprentice in practical training. The Technical School should also submit progress reports to both the employer and the Committee.

b) Each apprentice should be required to keep a record of his training on the job.

9. Examinations

There should be regular practical and written examinations to test the progress of the apprentices. There should be at least two such examinations, one approximately half-way during apprenticeship and the other towards the end of apprenticeship.

It is the intention of An Chomhairle that these examinations should form the

basis of National Apprenticeship Competitions for junior and senior apprentices in the various trades.

10. Incentives

There should be incentives in the form of prizes, scholarships, etc., to stimulate the interest of apprentices in their practical training and theoretical instruction.

11. Certificates

Certificates of successful completion of apprenticeship should be issued to persons who have satisfactorily completed their training and passed their final examinations. These certificates might be endorsed to show any distinctions secured by the apprentices in their examinations.

12. Period of Apprenticeship

a) The period of apprenticeship in each trade should be closely related to the time it takes adequately to train an apprentice and should not exceed five years actual training.

b) There should be included in the total period of apprenticeship a probationary period not exceeding 3 months.

13. Apprenticeship Agreements

There should be a simple form of written agreement to which the apprentice, the employer, the parent of the apprentice and the appropriate National Apprenticeship Committee should be parties.

14. Dismissals and Transfers

a) There will be for each trade rules relating to the circumstances in which the employment of an apprentice may be terminated. These rules will, of course, permit the dismissal of an apprentice for grave misconduct.

It is the intention of An Chomhairle that they should, subject to an appropriate appeals procedure, also permit the dismissal of an apprentice who persistently fails to make satisfactory progress in his practical training and/or theoretical instruction.

b) There should be adequate arrangements for the transfer of apprentices from one employer to another in the interests of proper training.

c) There should be adequate arrangements for the continued training of apprentices whose training is interrupted through no fault of their own, e.g., business recession in the firm in which they are employed.

15. Intake of Apprentices

The yearly intake of a trade as a whole should be determined in the light of present requirements, normal wastage and the likelihood of expansion or contraction. Employment of apprentices by an individual employer should not be related solely to the number of tradesmen he employs but also to the training facilities he has available, to his future requirements of tradesmen and the overall future requirements of the trade.

16. Enforcement

There should be adequate machinery for supervising and enforcing, where necessary, the requirements specified at 2-15 above.

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Additional copies of this statement may be had, on application, from An Cheard Chomhairle at the Department of Industry and Commerce, Kildare Street, Dublin 2.

December, 1960.

PART II

REPORT OF THE EXAMINERS

78/79

REPORT OF THE EXAMINERS

Professor Alan T. PEACOCK and Dr. Werner RASMUSSEN

At the suggestion of the Irish authorities, the second review of education in Ireland was devoted to technical education in the light of economic development, with special emphasis on the position of the technician.

The examiners received in advance of their visit a Background Report divided into three parts dealing with the educational system, the position of technicians in Irish industry and the manpower situation in the Irish economy.

The examiners, together with Dr. Ter-Davtian of O.E.C.D. Directorate of Scientific Affaires, visited Ireland for the week beginning 23rd September, 1962. They had meetings with the Irish educational authorities, with professional and technical bodies and with representatives of management and labour, and visited several schools concerned with technical and vocational training. Special mention deserves to be made of a meeting with representatives of technical education in Cork but which had to be held in Dublin because the shortness of the visit made it impossible to study conditions outside the capital.

In the course of the visit the examiners received a great deal of additional written material from official and other sources and took note of the many and diverse opinions on technical education. They appreciate very much the time devoted to their assistance by those individuals and bodies who gave evidence and the the full and frank replies to often difficult questions.

The examiners wish to place on record their gratitude for the guidance and help received from Dr. Ter-Davtian.

PLAN OF THE REPORT

The terms of reference required us to review the " adequacy " of technical education in Ireland in the light of economic development. We therefore consider, in the first place, the *demand* for technicians and how it might be related to the growth of the Irish economy. In the second place we examine the factors governing the *supply* of technicians.

In places we have made reference to the Background Report[1]. Nevertheless, judging from the Background Report and other sources, the statistical data so far available are so limited that a full and satisfactory appraisal of the system is simply not possible. Indeed, some of

1. For convenience in reading, brief resumés of paragraphs referred to are given in the footnotes.

our main recommendations are concerned with improvements in the statistical information without which educational policy will be severely hampered.

The current literature dealing with technical education contains a wide variety of descriptions purporting to be definitions of the term " technician ". Few of these qualify as definitions in the strict logical sense — *per genus et differentiam.* Nearly all of them enumerate the functions of the skilled worker intermediate between the technologist and, at the other extreme, the craftsman. In our report it is necessary to adopt the most flexible interpretation of these definitions to ensure a full coverage on both the demand and the supply side. We shall therefore accept the fact that in practice these grades overlap. Consequently we include both the higher technician who may have certain knowledge or skills superior to those of the average technologist, and the lower technician hardly distinguishable from the craftsman.

Demand for technical personnel

In order to review the present demand position for technical personnel, a fair amount of statistical information is necessary. Ideally, a classification of employees fitting in with the sectoral classification used in national accounts is called for to show the relative proportions of technical personnel in different economic sectors and also, if possible, their relative rates of remuneration. The national accounts classification, even if only in broad sectors, is necessary to compare present and future demand, for projections of future economic trends must inevitably be made in terms of movements in the G.N.P. and its components. This information should be supplemented by statistics of the geographical distribution of technical personnel and of the numbers employed abroad who are Irish-trained. If possible, these statistics should be available for a series of years. Finally, it would be useful to have a job analysis in different occupations which would reveal the discrepancies, if any, between educational attainment for different grades and types of jobs requiring technical skills and the educational attainment of those actually employed in them.

No country in the world provides comprehensive information of this kind, and, although we point to important gaps in the Irish statistics, we do not suggest that the position in Ireland is worse than in many other countries. Furthermore, although we offer comment on the existing surveys discussed in the first part the Background Report, we have been influenced to a significant extent by some of our impressions of the attitude of industry to technical training and employment revealed in these surveys.

The four main sources of information on the existing demand for technical personnel are the O.E.C.D. Survey made for the examiners[1],

1. Background Report, paragraphs 17-48. A survey of technicians was held in May 1962; questionnaires were sent to 37 firms, of which 24 replied. The information requested covered 1) output, exports and employment structure; 2) technicians by function; 3) technicians by qualification; 4) recruitment and training of technicians; 5) duties on imports and exports; 6) wage rates and shortages; 7) technician grades.

the O'Donnell survey of technicians and technologists made in 1961[1], the Irish Government's Central Statistics Office enquiry into professional engineering manpower made in 1961[2], and the Leahy Survey of Engineering Educational Establishments and the Employment of Engineers in Ireland published in April-May 1962, in *The Engineer*. We confine our comments to three of these sources.

The O.E.C.D. Survey throws more light on the importance of the size of firm to the demand for technical personnel, and on the attitude of employers to technical training, than on the total employment position. Its results would have been more significant if it had been possible to employ a better sampling frame and if its coverage had been wider. Some idea of the limitations of coverage can be gleaned from two facts. The manufacturing sector of the Irish economy contributed only about one quarter of the net national product of Ireland in 1961. According to Professor Leahy's survey, in 1960, two-thirds of Ireland's professional engineers were employed by the government or by public utilities and only 27.5 per cent by private industry.

The survey by Professor O'Donnell in 1961, although of wider coverage than the O.E.C.D. survey, is subject to similar limitations but gives a careful and useful explanation of the pitfalls to be avoided in survey work of this kind. It does something to supplement the very sparse information on labour distribution based on the very broad classifications of the official occupational classification and 1951 census[3].

It was obvious to us that we should have to investigate the relation between emigration and technical training and therefore the demand for Irish-trained technicians and technologists abroad. It is clearly impossible to conduct a survey of Irish-trained personnel in other countries, and the only method available would be to examine the size of the gap between the " output " of technical personnel and the domestic " intake " over a series of years. So far as we are aware there are only scattered impressions of the size of the gap, except for the very careful survey of professional engineers by Professor Leahy. Of those who graduated from University College, Dublin, between 1919 and 1960, and were still living at the time of the survey, approximately one-quarter held jobs abroad, and of the emigrants something like one-half were working in the United States or United Kingdom. This percentage of emigrants has increased somewhat over the past five years, though it may well be possible that a substantial proportion of recent emigrants are seeking experience abroad and will eventually return to Ireland. The extent to which there is an obligation on behalf of the Irish authorities to subsidise the education of those who will exercise their skills

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1. Background Report, paragraphs 49-55. For this survey, which was undertaken privately, questionnaires were sent to 196 firms and 11 public utilities, of which 120 and 6 respectively replied, representing 38,438 employees. Its objective was to find the proportion of technologists and technicians to employees.

2. Background Report, paragraph 56. This survey was replied to by 2,097 engineers.

3. Labour distribution data for 1959 shows that 15 per cent of the workers were salaried and 85 per cent wage earners; 73 per cent were men and 27 per cent women; 10 per cent were under 18 years of age. The 1951 census simply classified the working population into " skilled ", " semi-skilled " and " unskilled ", the use of the term " technician " being rare.

abroad is a problem of major importance and we deal with it at a later stage.

One final point concerning the existing demand position is in what sense, if any, there is a " shortage " of technical personnel. Several employers and others argued that there was a shortage at the technician level which was made good either by employing less-skilled men than they would otherwise have done or even by employing men with higher educational qualifications than were really necessary. It was represented to us, for example, that one-third of the professional engineers employed in public utilities (i.e. over 15 per cent of all professional engineers employed in Ireland) were doing the work of technicians. They appeared unwilling to accept the argument that an excess demand for technicians might be relieved by raising rates of remuneration for qualified staff, which suggests that those industries purporting to require technicians were either inefficient or did not really require the specialised qualifications necessary for technicians' work. A further possibility would be that technicians with the required qualifications were simply not available. The question of the degree of substitution between the technician *per se* and other forms of manpower and even machinery, both in the short and long run, is obviously important but we did not have time to investigate it fully. However, the lack of clear conception of the meaning of a " shortage " serves to underscore the emphasis placed on the Background Report and other evidence on job analysis. We would add only the further point that a " shortage " or " surplus " of technical personnel cannot be defined without reference both to the required quality of technicians and to their rates of remuneration. It is a striking fact that the differential in earnings between craftsmen and technicians in Irish industry appears to be remarkably narrow (see Table 6). This might be compensated in some instances by larger fringe benefits (although we understand that these are of small account in Irish industry) and by greater job security. Nevertheless, we are forced to conclude that, if there exists a shortage of technicians as normally defined, part of the remedy must lie in higher rates of remuneration for those who are best qualified. Whether an attempt to increase the differential would be acceptable to craft unions is not a matter on which we feel competent to express an opinion.

The second aspect of the demand position relates to the future. In estimating future manpower needs, as we suggest above, attempts are made to project the growth of G.N.P. in aggregate and by sectors and to relate changes in the demand for various types of manpower, including technicians, to the projected changes in the value of net output in each sector, after allowing for " replacement " demand for the relevant type of manpower. There may be an " income " effect and a " substitution " effect, although in practice it is difficult to separate them. The " income effect " may be observed in a strong positive correlation between changes in the growth of net output in individual sectors and changes in the demand for technicians. However, the " income effect " may be supplemented or offset by the " substitution effect ", i.e. the possibility of employing an increasing (or even decreasing) number of technical personnel at the expense of other factors of production even if there were no growth in net output in the relevant

sector. It seems to us probable that in Ireland the substitution effect would, if anything, reinforce the income effect because, even if the Irish economy were to grow in modest fashion over the next few years, this modest growth could be maintained, especially under threat of foreign competition at home and abroad, only by the substitution of trained and skilled manpower for unskilled labour.

The possible growth in demand for technical personnel is discussed in the Background Report where an attempt is made[1] to use the O.E.C.D. and O'Donnell surveys to project demand for technicians and technologists for an unspecified number of years.

This projection, which acknowledges the importance of lack of data on present manpower structure, assumes a 1:1 relationship between the growth in total G.N.P. and the growth in demand for technicians and technologists, both growing at 5 per cent. The 5 per cent growth rate is simply an extrapolation of the G.N.P. growth rate of the past three years but the 5 per cent growth in demand for technologists and technicians is regarded as a "conservative" estimate[2]. Allowing for replacement demand, this could mean a doubling in the required number of technicians and technologists over ten years.

Some comments appear to be in order as the sectoral breakdown is unavoidably very crude. It is not clear how far the projection has relied to any extent upon the answers to the questionnaire which included forecasts by individual firms of demand for technicians up to 1967, but it might be worth making the point that they cannot be independent of each other. This arises because the output of one industry may be the input of another, and if manpower requirements are related to changes in output, a whole complicated series of inter-relationships between industries has to be investigated.

It must be clear from the above discussion that any manpower survey for Ireland designed to reveal the future demand for technicians and technologists, and which would give an approximate quide to education authorities, requires a fuller consideration not only of the statistical but also of the methodological problems of estimation. The study referred to above is perfectly frank about the difficulties encountered in projections of this kind and implicitly stresses the importance of the new investigation conducted for O.E.C.D. into investment in education in Ireland which will require a thorough and comprehensive study of manpower budgeting. This investigation should afford an opportunity for bringing together the various bodies interested in manpower problems and it would be a matter for regret if these bodies pursued independent investigations involving duplication of effort and

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1. Background Report, paragraphs 77-88. Reference is made to the Swedish method in which the value of production per industrial employee and of expenditure per government employee, as well as the value of G.N.P. are used as a basis for calculating manpower requirements. The former data being inadequate in Ireland, reference is made to the value of the gross national product.

2. Background Report, paragraph 84. The Swedish relationship between the increase in G.N.P. and the number of technical personnel is 3 per cent: 4.6 per cent for industry, and 3 per cent: 3.5 per cent for government services. The Irish rate of increase for G.N.P. was 5 per cent per annum for the past three years (8 per cent for industry) from which it is presumed that the annual requirements for technologists will be between 130-220, and for technicians 230-450.

unnecessary paperwork for busy industrial and commercial executives.

It goes without saying that there can be no possibility of preparing estimates of overseas demand for Irish technical personnel over the same period, although the importance of this source of employment must not be forgotten.

Supply of techniciens — Quantitative

The two important questions relating to the supply side of our enquiry are *a*) what are the expected numbers of technicians and technologists forthcoming over the next few years and *b*) will their training suit the needs of the various sectors of the economy?

As far as *a*) is concerned, we require to have information regarding the numbers of those who, given the existing system of technical and technological training and planned changes in this system, would be expected to attend courses. From this information it would be possible to take a forward look at the training facilities and to compare those likely to be available with those which would best match the expected demand for technicians and technologists.

The answer to *b*) will depend partly upon the answer to *a*) and partly on the assessment made of the amount and composition of demand for personnel discussed above. Such " forward looks " may have to take account of the choices of those who wish to undergo training which may not conform to the choices considered desirable from the point of view of economic planning. Thus a student may wish to become a civil engineer regardless of the future income prospects in the Irish economy and may eventually be content with a job which could be undertaken by someone with less training, or may wish to emigrate. This problem of freedom of choice raises a major issue in regard to the finance of training by the State.

So far as we are aware, detailed " forward looks " of this kind are not undertaken by the education authorities, although individual colleges make rough calculations of the numbers of students expected to attend courses. In consequence, our later remarks about the need for an expansion in technical training, as well as changes in its form, are not based on any firm projections but on informed " guesses " from experts in the field. We cannot emphasize too strongly that " forward looks " are an essential part of any consistent programming of educational needs, and it is to be hoped that the supply situation will be fully investigated by the forthcoming O.E.C.D. study of investment in education in Ireland.

Because of the lack of information, our report on the supply of technicians must concentrate on quality rather than quantity.

Supply of technicians — Qualitative

Criteria for technical training under Irish conditions

Before discussing the training of technicians, it is necessary to consider briefly the training of apprentices and other sections of the labour force. Such training not only has a direct bearing on labour

productivity but also in most cases lays the foundation of the practical training of a technician student.

Craft apprentices in Ireland have a long apprenticeship period, 5-7 years. In only a few trades have they hitherto had to pass an examination or test at the end of apprenticeship. In some trades, e.g. motor car engineering, there is the requirement to pass an examination for the Junior Trade Certificate after a certain number of years of apprenticeship, while at the end of apprenticeship a Senior Trade Certificate is obtainable. Before entering apprenticeship many young people will have spent some years in a vocational school and, during the apprenticeship, attendance at courses in a technical school is required.

Consequent upon the Irish Apprentice Act of 1959, major changes in the apprentice training schemes may be expected in the coming years. The National Apprenticeship Board, in co-operation with educational authorities and institutions, will draw up geographical plans for the supply of apprentice training through technical schools, either day or residential. These new technical schools, given the proper conditions, may be expected to lead to a considerable rise in the levels of skill and productivity among apprentices and newly-trained skilled workers. As a consequence, it may be presumed that the adult workers will be offered supplementary courses — mostly in trade theory and in mathematics and science but also, where required, in practical workshop or laboratory training.

It is felt by many spokesmen for Irish management and labour that supplementary courses for adult workers are the most urgent training need. Such courses, when properly prepared, introduced and carried out, can give fairly immediate results, whereas the apprentice training schemes can give measurable results only after some years. But the greater part of apprentice training depends on instruction on the job, and progress by this method would obviously be accelerated if quality and productivity in plants could be improved in the near future. This observation is prompted by the large number of small firms, many of which must find it difficult or impossible to instal up-to-date equipment and avail themselves of the latest advances in the techniques of their industry.

A similar but perhaps more serious situation exists in Irish agriculture, where some hesitation to implement an apprentice training scheme arose from shortage of farms suitable for such training.

If it be decided to enter into a large-scale effort of supplementary training of the adult labour force in industry, there will obviously be a need for more instructors and technical teachers. These could be recruited from among technicians who should then undergo special courses for instructors. Furthermore, courses would be needed for foremen and other supervisory grades.

A large-scale programme of such a nature would require considerable expenditure and could not be implemented without thorough preparation. The responsibility for such a programme might be delegated to a committee having much the same composition as the National Apprentice Board. On the administrative level there should be close co-operation between the interested Ministries, notably those of Education and of Industry and Commerce.

Any curriculum of advanced technical education must be based on mathematics and the physical sciences. Therefore entrants to the Colleges of Technology should have reached a fixed minimum standard in these subjects, serving as a general introduction to more specialised courses. To ensure that they shall reach this level they should first have followed a course specially devised for this purpose and delivered at a vocational or (preferably) technical school, whether day or residential. The suggested age of entry would be 14-15 years of age, and the course should consist preponderantly of mathematics, physics and chemistry with emphasis on the practical application of these disciplines. It is most desirable that the teachers should be trained technical teachers with an industrial or scientific background. The opportunity should be created for adults to take the same course — if necessary in a more condensed form and possibly in the evenings. On the successful completion of such a course, the students should be awarded a technical school-leaving certificate recognised nationally. It will be necessary in these courses to concentrate on the basic subjects listed above. If any language other then the students' mother tongue is taught, it should be a modern continental language.

For entry to the Colleges of Technology the theoretical qualification should be the technical school-leaving certificate referred to in the preceding paragraph or an agreed equivalent qualification. The practical qualification should be a period of employment with a firm approved for this purpose; where such a period of employment has not been possible, an alternative practical qualification could be gained by an additional fixed period of instruction in the technical school. For those entering the College of Technology to be trained for such technician-grades as do not require extensive practical skill, the theoretical qualification alone would be sufficient to qualify for entry: for these the course should be shorter.

Courses whether long or short might be organised as continuous or sandwich courses, according to the requirements of the industry. To enable the students to take full advantage of such a course it is essential that they shall not be distracted by financial stringency.

Respects in which these criteria are not satisfied by the existing conditions in Ireland

The course outlined above as preparatory for entrants to the Colleges of Technology does not as yet exist; we were informed, however, that somewhat similar proposals have been worked out within the Ministry of Education.

The secondary schools have a strong classical and linguistic bias, and in their curricula mathematics and science hold a position which leaves many students inadequately prepared for courses in engineering and science (pure or applied). The secondary school-leaving certificate could, therefore, be accepted as an equivalent to the proposed technical school certificate only with the proviso that Honours papers in Mathematics and one or more specified science subjects are passed at the examination.

The intelligence requisite to technicians and technologists is not

lower than that required for the liheral studies; yet the secondary schools cream off the brightest scholars, leaving to the vocational schools in general (though with hrilliant exceptions) those pupils whose scholastic attainments have been lower. While it is true that the qualities required for Grammar School courses are not identical with those required for technical proficiency, it is also true that, *ceteris paribus*, those who have shown themselves to be the brighter pupils before the age of 11 ½ or 13 will profit most from the technical course. We cannot therefore feel entirely satisfied with a method of selection for technical training which is largely by elimination of those whose scholastic attainments have been higher.

With existing curricula the vocational schools (and the secondary schools to a lesser extent, since they provide fewer entrants) fail to provide adequate preparation for the Colleges of Technology. In consequence of this failure the Colleges have to devote their first year of tuition to instruction which should have been given at an earlier stage.

The educational system as at present constituted suffers from a general lack of flexibility — e.g. the lack of a ladder from vocational school to university, and also a lack of inter-institutional mobility.

We note that a considerable amount of time is devoted to the study of the Irish language in primary and secondary schools. This represents National Policy, which we accept as a premise. It is to be noted, however, that Science and engineering textbooks in Irish are few, with the result that the knowledge of the language acquired at the lower level cannot be generally applied to the study of these subjects at the higher technical level.

Recommendations

A determined attempt should be made to improve the coverage of manpower surveys of existing demand for technical personnel, giving full recognition of the necessity for the adoption of classification of grades and types of technicians and technologists which will aid projections. A start might be made with the Electrical Supply Industry which is a major employer of technicians and engineers.

In the study of existing and future demand for technical personnel, close co-operation is required between educationists, economists and engineers so that duplication is avoided and questionnaires can be streamlined. In particular, it is essential to increase understanding of some of the methodological problems of manpower surveys, the more important of which may be more readily apparent to the statistician and economist.

Given the importance of the use of good projection methods and the need for continual revision of them, it is clear from our observations that the assembly and collation of statistical data should not be a matter for *ad hoc* investigation but should be a permanent part of the work of the education authorities. The need for some such arrangement will, in our view, become increasingly apparent once the full implications of the O.E.C.D. study of investment in education are realised.

The desire for further technical education should be stimulated by means of vocational guidance to children at school and by an informa-

tion programme directed to the parents and to the adult labour force. It would be advantageous if the television system as well as the Irish press were to supply regular information on industrial development and on training and education for industry.

The supply of different types of higher- or lower-level technician education should be carefully investigated in the light of projections of the demand in the different sectors of the Irish economy.

Full advantage should be taken of the opportunity to save cost on the technician courses by the introduction of courses for the proposed Technical School Leaving Certificate. By this means there could be created opportunities for more young people in all parts of Ireland to undergo technician education. It would also enable adult workers to get such an education. The advantage for the Colleges of Technology would be not ouly the saving of time on the fundamental subjects but also more time available for technological subjects as well as the practical application of technology.

More emphasis should be put on full-time day courses as these can lead to higher levels of achievement. Such courses may appear to involve higher costs than evening courses, but thorough investigation might lead to a different conclusion. One consideration is that the removal by bursaries of economic handicaps would undoubtedly enable a larger number of students to take full advantage of the course and thereby complete their studies. Another is that day courses in the long run result in a higher degree of utilisation of expensive teaching equipment, laboratories and classrooms.

For each line of study we strongly recommend careful consideration of the real requirements of practical skill or experience. Ouly in very rare cases should it be necessary to demand completion of five to seven years of apprenticeship before entry into a course.

As mentioned above, page 88, there may be cases where practical experience before entry into the study should not be required. In such cases, however, it might be necessary either to give sandwich courses with shorter periods (6-12 months) in industry or to give the necessary training in workshops or laboratories in the College.

Policy decisions on structure of the courses, entry requirements and other industrial experience as well as other principles of the curriculum design should be delegated to a national committee with representatives from the Ministry of Education, the colleges and industry (management and labour). Such a committee should in particular be consulted on the level of attainment required at the end of study and on the methods by which the certificate examination should be carried out. There may be reasons to consider very seriously whether requirements in Ireland should be the same as in England. In the interest of the Irish economy there may be good reasons to require from the Irish technician a higher level of attainment. If this were done, it would be necessary to take precautionary measures against an intensification of the emigration problem by constitutive safeguards in the system of scholarships and bursaries.

It should be made the responsibility of the Irish Government to maintain the appropriate standards both of the quality of the courses and of the requirements for the certificate. In making these and other

decisions on educational policy, the Irish authorities would find of value the series of studies of technician education in O.E.C.D. Member countries.

The responsibility for the certificate examination should be shared between a government committee and the Colleges according to rules laid down by the Department of Education.

Consideration should be given to the establishment of closer co-operation than now exists between the Colleges of Technology and the Universities. In the field of technical and scientific education they have a common interest in many sections of the curriculum as the technological subjects are the same. They also should co-operate on the supply of further education to technologists and technicians who have worked some time in industry or elsewhere after completion of studies. This co-operation might lead to the institution by the National University of external degrees in engineering and science if the need for engineers and scientists outstrips the facilities for internal degrees.

The ultimate (though not necessarily the proximate) responsibility for the financing of technical and technological training must lie with the State. We prefer not to lay down a precise formula for the discharge of this responsibility but to list the considerations relevant to the determination of a policy.

The first stage would be a thorough analysis of the costs of technical training, including the " opportunity costs " arising from withdrawing a greater proportion of those of working age than hitherto from the labour force in order to educate them. O.E.C.D. has considerable experience in the preparation of cost estimates, and guidance might be sought from them. Such an investigation should reveal the proportions of the cost of technical education borne by the student (or his parents) and by the State, and also the average and " marginal cost " of educating different kinds of trainee or student.

The second stage is concerned with the determination of the proportion of future costs which should be borne by the State. This will depend on the view taken by the Irish authorities of the community as distinct from individual economic benefits derived from such training. If the Irish authorities feel committed to the O.E.C.D. economic growth objective, then it seems highly likely that economic incentives alone will not ensure the necessary supply of recruits, given the present extent and form of State finance.

The third stage concerns the form in which financial help by the State should be offered. Should it be grants or loans to students? Should there be subsidies to the current and/or capital budgets of technical schools and Colleges of Technology which would allow for the charging of fees below cost? It is not possible for us to be dogmatic about these matters because decisions on methods of finance involve questions of values as well as facts and logic. If the Irish authorities consider that poverty is a bar to educational opportunities they may prefer generous maintenance grants to subsidised loans, or remission of fees, even if the individual economic benefit from education is considerable. Two matters seem to us to be of special interest in the Irish setting. The first is the possibility of regional inequalities in financial burdens. The second is the emigration issue — to what extent does

the State receive a " return ", economic or social, from a subsidy to the technical education of a potential émigré? This is a major question. We hope that with the current efforts being made to develop the Irish economy it will soon become a less relevant one.

We recommend that this whole complex problem of the financing of technical education be made the subject of early investigation and action.

PART III

ACCOUNT OF THE CONFRONTATION MEETING

ACCOUNT OF THE CONFRONTATION MEETING

PARTICIPANTS AND QUESTIONS FOR DISCUSSION

The confrontation meeting for the country review of Ireland was held in Paris on Tuesday, January 29th, 1963, at a regular meeting of the O.E.C.D.'s Committee for Scientific and Technical Personnel under the chairmanship of Mr. Henning Friis (Denmark).

The members of the Irish delegation were:

Dr. P.J. HILLERY	Minister for Education.
Dr. T. O'RAFFERTY	Permanent Secretary of the Irish Department of Education.
Professor J.P. O'DONNELL ...	Head, Chemical Engineering Dept., University College, Dublin.
Mr. Patrick LYNCH	Lecturer in Economics, University College, Dublin.
Mr. Michael J. O'FLANAGAN.	Chief Inspector, Technical Instruction Branch, Department of Education.

The examiners were:

Professor Alan T. PEACOCK ..	Professor of Economics, University of York.
Dr. Werner RASMUSSEN	Director and Commissioner of Technical Education in Denmark.

On the basis of their report, the examiners posed the following questions which were discussed during the course of the confrontation meeting:

1. Would the Delegation consider it useful to have a permanent committee on technical manpower in Ireland which would be concerned with the employment prospects of technicians and technologists as well as with training and education?
2. What priority, if any, would the Delegation give to the setting up of a permanent statistical unit in the Department of Education which would assist in costing educational projects and preparing long-term education budgets?
3. In the light of projected trends in the regional distribution of population and industrial and agricultural activity, how would the Delegation view the possibility of improving facilities for higher technical education in the western and southern regions of Ireland?
4. To facilitate the training of technicians and technologists, does the Delegation view with favour the proposal for new technical courses in which, if any language other than the student's

mother tongue be taught, it shall be a modern continental language?

5. Assuming that the Irish Delegation were willing to support State expenditure on technical education, what order of priority would they consider appropriate?
6. If such financial support were forthcoming, would the Delegation wish to make it available only to those willing to remain — or spend the greater part of their working life — in Ireland?
7. What form should the additional State expenditure on technical training take — e.g. subsidised fees, capital grants for buildings and equipment, loans or grants to students? (It would be helpful if the Delegation were to offer reasons for choosing one form of support as against another.)

OPENING STATEMENTS

As background for the discussion of technical education in Ireland, Professor Peacock discussed the Irish economy and technical development and described the framework within which the examiners had considered the subject and the methodology they had adopted in assessing Ireland's need for technicians.

The total real output of the Irish economy rose from £ 583.2 million in 1957 to £ 750.0 million in 1962 — an increase of 28.6 per cent in five years which is equivalent to an average rate of over 5 per cent a year. This rate of growth, which might have been expected to produce an acute shortage of technicians and technologists, was achieved with very little change in the working population largely because Ireland had a substantial margin of unused productive capacity.

Economic forecasts to 1970 envisage a continued rise in the gross national product at an average rate of 4.2 per cent a year with an even faster rate of growth — 5 ½ per cent a year — for industrial output. As there is no longer an appreciable amount of unused capacity in the Irish economy, these projections underline the important role which technical education must play in the years ahead to meet the inevitable demand for technically trained personnel created not only by the high growth rate but by the changing structure of the economy. Ireland is clearly in process of shifting from a predominantly agricultural to a predominantly industrial economy. In fact, the output statistics show that the cross-over point was reached in 1958 when, for the first time, the value of industrial production exceeded (by the relatively small margin of £ 8 million or 6.7 per cent) the value of agricultural production. By 1962, industrial output was almost 30 per cent (£ 40 million) greater than agricnltural output and it is expected that by 1970 industry will run 42 per cent (or £ 76 million) ahead of agriculture.

While the relative rate of growth of industry is an important influence on the demand for technical personnel, it must not be forgotten that the service sector, and particularly the public utilities such as electrical supply, are major employers of technical staff, and that mechanisation of agriculture is likely to increase. Indeed, the examiners feel that they were not able to give as much attention to the place of technical education in the agricultural sector as it deserved.

Determining the Optimum Level of Technical Education

Over the past five years the analysis of the economics of education has made some great strides forward. Attention has been concentrated

on the economic contribution made by education, and to this end there have been four main approaches. These have been identified by Bowen, in an O.E.C.D. publication[1], as the simple correlation approach, the residual approach, the rate-of-return approach and the manpower needs approach. These approaches are in some respects complementary rather than competitive. The fact that we have accepted the last-named as the appropriate one is not to say that the other methods might not be fruitfully investigated in Ireland. (The residual approach is omitted in the following discussion.)

Simple Correlation Approach

The first method has the appeal of simplicity. One could make an inter-country comparison of relative expenditures on technical education and ponder over the differences. These comparisons might be based on expenditure on technical education as a proportion of G.N.P. or simply as expenditure per capita. Similarly, enrolment in various forms of technical education could be compared with G.N.P. per capita and so on. One could also make an inter-temporal comparison by looking at the growth in technical education in relation to the growth in G.N.P. or in particular segments of G.N.P. perhaps classified on an industry basis.

The practical problems of this approach are well known. In the case of Ireland, it is difficult enough to get figures for government expenditure on technical education classified in a meaningful form, i.e. showing resource-use. Moreover, any comparison between countries, however similar in economic structure, would have to take account of the different roles played by various forms of technical training, and this presents further complications. It is, for example, a formidable task to attempt to make estimates of the resources devoted to 'on-the-job' training, which is a particularly significant factor in Ireland.

Several other important problems would arise even if computations of reasonable accuracy could be made. When we compute expenditure on resources used for technical education, we are not measuring outputs but inputs, so in comparing the expenditure of different countries we have to make further assumptions about efficiency. Measuring the efficiency of education is, in the end, an insoluble problem. Secondly, even assuming a positive correlation between technical education and economic growth, we have to be very cautious in drawing conclusions about the yield of technical education as an investment. We have to recognise the opportunity-cost problem: technical education absorbs physical and human resources which might have been used for other productive purposes.

Despite these difficulties, what might be called the social accounting aspects of technical education expenditure deserve looking into in Ireland, and international comparisons, especially with countries of similar structure and prosperity, might aid perspective It will be clear from the Background Report, however, that existing statistics are not comprehensive enough.

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1. *Economic Aspects of Higher Education*, O.E.C.D., March, 1964.

Rate-of-Return Approach

The method of this approach is to measure the rate of return from investment in technical education, broadly speaking, by comparing life-time earnings of those with and those without some given input of education. This rate of return may then be compared with rates of return on other forms of investment. There are formidable conceptual and practical problems which cannot be dealt with here. An important feature of the situation in Ireland illustrates these problems. Only under certain well-defined assumptions would it be true that the rate of return to the student also reflects his productivity from a national point of view. Some of the benefits of investment in his education may accrue to the community at large as well as in the form of higher earnings to himself. In Ireland, however, the result of investment in education may be a job abroad where the rate of return to the individual is higher than at home. In that case Ireland loses not only a productive resource but also the external benefits. It has been pointed out to us that many emigrants eventually return after having had valuable on-the-job training and wider experience abroad so that Ireland benefits from their temporary emigration. It would be well worthwhile, however, to make some calculations, when policy action is contemplated, to determine to what extent the subsidisation of technicians' and technologists' education represents a subsidy to other countries. In such a calculation the conceptual framework of the rate-of-return approach can be very useful.

Manpower Budget Approach

This approach seeks to determine the future status of the demand-supply relationship for technological manpower by assuming some rate of growth for the economy, trying to analyse the demand for technicians and technologists which that growth will create and then comparing this demand with the supply that is likely to be produced as the result of whatever plans the educational authorities may have. The validity of the calculations depend, of course, on the validity of the assumptions. The Irish authorities believe that it is fairly safe to assume an expansion rate of over 4 per cent a year in real output and the Background Report therefore uses the manpower-budgeting approach. The investigations of future demand referred to in the Examiners' Report (page 85) are quite helpful but we think that a good deal more work needs to be done in order to refine calculations of this kind.

Predictions of future needs and future resources are hazardous at best, no matter what statistical approach is used to arrive at or justify them. Obviously the closest cooperation between educational authorities, technological management and economists is necessary in order to draw up rational programmes for technical education.

Dr. Rasmussen opened the discussion by giving the examiners' impressions of some general attitudes they had found in Ireland that had a direct bearing on the technical education problem.

First, we found in Ireland a widespread interest in the technician problem, but no general agreement on or understanding of the technician's precise role and function. On this subject there seemed to be no common language among the people we interviewed, even though they spoke English. We therefore strongly support this Committee's decision to organise further study of the function of the technician, of his training and of the exploitation of his capabilities in different sectors of the economy.

Secondly, there was general agreement that more should be done to improve technical education, but diverse opinions as to the methods that should be adopted. Underlying the uncertainties and divergencies on both these points there seemed to be a general feeling of uncertainty about the future of the Irish economy, and uncertainty about the consequences of better training for technicians and others. One of the questions facing Ireland seems to be whether better training will stimulate the Irish economy, or whether it will simply facilitate emigration, thus draining away Ireland's best qualified human resources to stimulate industry in other countries — not only other English-speaking countries but also developing countries round the world. Only the Irish Government can remove these doubts and misgivings through foresighted planning and the development of integrated economic and educational policies.

Thirdly, there seemed to be a lack of awareness of the general need for scientific and technical education. We live in a rapidly-changing world in which new equipment and automatic machinery are being introduced everywhere — not only in industry, but also in agriculture, in the office and in the home. Today, for the first time in human history since industrial development brought about specialisation of labour, everybody must be something of a technician — and therefore everybody should have at least a minimum technical education merely to enable him (and her) to cope with the new environment. But this is only the utilitarian facet of the more general truth that — again, perhaps, for the first time in human history — no person can be regarded as truly 'educated' unless he has some knowledge both of scientific method and of the basic achievements of science in the New Age. This is a plea, not for *narrowing* education to mere technics, but for *widening* it so that the student's horizon is enlarged, his insight deepened and his imagination quickened. If the schools do not shoulder

this task, it will be taken over — less responsibly — by that most popular genre of contemporary schoolboy literature: ' Science-Fiction '.

We therefore strongly recommend that educational measures should be treated as a fundamental and essential part of economic development policies, that expenditure on education should be regarded as one of the most fruitful forms of long-term national investment, and that technical education should be broadly designed to cater not only to the manufacturing industries but to all other modern economic activities, especially agriculture.

In reply, Dr. Hillery outlined the Government's general attitude towards educational planning.

I am not surprised that the Examiners found a certain amount of uncertainty about the future during their visit to Ireland — it probably exists everywhere. Like responsible people everywhere, we in Ireland are trying to look ahead, in so far as that is ever humanly possible, to see what the future will be like so that we may determine what we must do now to meet our needs five, ten, twenty years from now. We are very conscious, in Ireland, of living in rapidly changing times. We intend to make whatever changes we think necessary and feasible to meet our present and probable needs. Unfortunately, but inevitably, our position is rather like that of someone who is making an immense effort to create something with the materials at hand without being quite able to calculate what the final effect of his efforts should be — or to what extent it will be influenced by events not under his control.

One thing, however, is perfectly clear: it is our Government's policy to make a substantial investment in education. We view education broadly — as encompassing not only vocational but cultural, humanistic and moral matters. While the present discussion is, of course, concerned with technical education, we must bear in mind that it is not possible to separate this particular type of education from our conception of what a complete education should be. I should like to assure the Committee that we are not dealing with a static system or with a people wedded to a particular system of education. We intend to make changes, we shall welcome changes, and we are not only willing but eager to have advice on the form some of these changes might take.

Perhaps our greatest help in making adequate provision for the training of technical manpower will come from the studies at present being carried out by the Committee and Team, under the direction of Mr. Lynch, set up in cooperation with O.E.C.D. We are grateful to O.E.C.D. for participating with us in a study of our probable manpower requirements and our future educational needs. Our planning will, I think, rely very heavily on the investigations and recommendations of that Committee and Team.

Dr. Lynch commented on the emigration problem.

Ireland is a very old country and I do not think any other country has such a long experience of emigration and migration. " Migration ", as we might call it, has always been partly a feature of economic conditions in Ireland and in recent years the outward flow has been diminishing — especially during the past four years.

There seems to be no reason why the rate of economic growth over the past five years should not be maintained to the end of the decade — why we should not be able to increase our G.N.P. by 50 per cent, which is the target that we, along with the other O.E.C.D. countries, set ourselves. If that happens, there is every reason to believe that " migration " will reach manageable proportions by the end of the decade.

The fact that so many of our migrants do return — and will increasingly return if economic expansion continues — suggests to me that this problem of investing in people who emigrate is not so great as some people think.

In any case, close economic relations between Britain and Ireland have had the effect of converting them into a common labour market. This being so, it follows that investment in technical education in Ireland for people who may go to Britain to work does not perhaps present as much of a problem as it might if these people were to become permanent emigrants.

As for the question of individual income versus national benefit, it has always been the policy in Ireland to regard the individual, rather than the nation, as the unit of welfare. We give priority to the needs of the individual and consider it a matter of public policy to provide him with a quantum of education.

DISCUSSION OF EXAMINERS' QUESTIONS

1. *" Would the Delegation consider it useful to have a permanent committee on technical manpower in Ireland which would be concerned with the employment prospects of technicians and technologists as well as with training and education? "*

In introducing this question, Mr. Rasmussen noted that various steps taken to improve technical training included recent legislation covering apprenticeship. This was important because apprenticeship so often provides the basis for technician training. However, while there was general agreement in Ireland that the length of apprenticeship (which in many cases is as long as 5-7 years) should be reduced, a drastic reduction could not be expected in the near future since changes would require a new training policy in each industry or craft. In any case, apprenticeship should not be the only channel for technician training. The examiners were impressed by the need for flexibility in the routes by which a boy or girl might become a technician. As a step in this direction, the necessary preparatory courses should be made part of the school system or be made available to those who have already left school. To coordinate the different measures that might be taken to produce technicians for many different tasks, the Government should, perhaps, establish a Committee which would co-operate with existing bodies, such as the National Apprenticeship Board, and would also concern itself with general technical manpower requirements, training policy, and employment prospects.

Mr. O'Flanagan explained that the Act under which the National Apprenticeship Board operates gives it the right to designate a trade as one to which the Act applies and to set the qualifications necessary to enter that trade — i.e. to prescribe the years of schooling and the subjects to be passed, at the age of about 16, for admission. There is a test of competence about half-way through the apprenticeship training period which averages about five years. Boys normally enter about the age of 15 plus and finish at about 21. At the end, of course, there is an examination both on the theoretical and practical aspects of the trade and a certificate is awarded. The Act has thus far been applied with legal force to three separate trades: motor-mechanics, electricians, and furniture trade workers. In addition, there are voluntary schemes which cover other groups, including one for building trades generally. Both industry and the unions are cooperating in setting up Trade Committees to regularise apprenticeship training in the various trades.

Professor O'Donnell agreed that it would be most useful to have

a permanent committee on technical manpower whose main purpose would be to gather information, on manpower demand, from industrial employers, and on the output of technicians, technologists, craftsmen, etc. and also to attempt some sort of coordination between output and demand. He suggested that, while such a body would need the co-operation of the government departments concerned, it should not be a sub-committee of a government department. It should, perhaps, include representatives of the Department of Education, of the Department of Industry and Commerce and of all the levels of education: technical schools, colleges of technology, universities and also, of course, representatives of industry. The formation of a committee along these lines is very important and should have a high priority among the steps to be taken to olve the technical manpower problem.

Dr. Stoke (United States) enquired who, if anyone, in Ireland would be opposed to the creation of a permanent committee and the changes in the apprenticeship system which it would imply. Who, for example, controls admission to the technical trades? Are there guilds that reserve for themselves certain exclusive privileges and wish to keep training periods long in order to control the labour market? Is there a difference in the attitude of the trade unions in the traditional crafts (such as carpentry and bricklaying) and those in the newer industry (such as electronics) for which technical education is less likely to be available outside the schools?

The Delegation replied that the trade unions in Ireland — like those in Britain but unlike those in the United States — have traditionally been afraid of any major expansion in the number of skilled workers. Some unions therefore do restrict entry and prescribe periods of apprenticeship that are unnecessarily long. In a few cases one actually has to be born into the trade — this is generally true of bricklayers and, in some cities, also of other building trades such as plastering. The attitude reflected in these restrictions is clearly out-of-date but is difficult to change. The Chairman noted that this attitude — which is, of course, closely related to apprehension about employment prospects — is a major impediment to industrial expansion that also exists to a greater or less extent in other European countries.

2. *" What priority, if any, would the Delegation give to the setting up of a permanent statistical unit in the Department of Education which would assist in costing educational projects and preparing long-term education budgets? "*

If, as seems likely, Ireland is going to engage in economic planning in order to achieve a higher rate of economic growth, it will be necessary to match economic forecasting with an adequate system of educational forecasting. It will be particularly important not only to appraise educational projects but to see what can be done to ensure the maximum return from a given educational budget. Professor Peacock felt that this could be done with fairly modest resources but stressed the importance of having, and using effectively, personnel with competence in economic and social statistics.

Mr. Lynch said that the Irish team, of which he is the director, now working on the O.E.C.D.-sponsored educational investment project would probably recommend the creation of such a unit to continue the work that the team has been doing. This work has already been found extremely useful by the Department of Education and by the Minister for Finance. Dr. Hillery said that his department would give a high priority to such a recommendation.

3. *" In the light of projected trends in the regional distribution of population and of industrial and agricultural activity, how would the Delegation view the possibility of improving facilities for higher technical education in the western and southern regions of Ireland? "*

The examiners strongly recommended that steps should be taken to give people in western and southern Ireland access to technical education such as is now enjoyed (in Ireland as in many other countries) only by those living in or near the capital. To this end, the examiners' report suggested establishing a short-cut to technician education through a general preparatory course which would be very concise and limited to mathematics, physics and a minimum of other subjects.

Mr. O'Flanagan agreed that such a course could make an important contribution to meeting the need for technicians during the next decade. Plans were, in fact, in process of development for courses in the larger urban areas in western and southern Ireland to bring pupils at age 16 to the same level as those in Dublin and Cork and with an educational background that would make it readily possible to turn them into technicians. Professor O'Donnell, however, urged caution in proliferating regional institutions with limited national resources for education. He suggested that it might be more sensible to expand existing institutions, especially at the higher level, than to build inadequately equipped new ones to satisfy very small local needs far from the capital. Ireland, with a population of 2.8 million, already has four professional schools of engineering which is probably more, per million of population, than in any other European country. Each lacks adequate facilities and equipment and it might, in the long-run, be more effective to strengthen these schools rather than to spread resources too thinly on new institutions.

Dr. Rasmussen explained that the examiners sought to distinguish between a complete system of technical education (which it would be too expensive to set up in thinly-populated regions) and adequate regional provisions for the first steps of the ladder leading to higher technical education. To meet the demands of a changing world, it might be desirable to keep children together in one educational stream for 8 or 9 years so as to give all of them a better grasp of scientific and technical subjects — though not with the intent of turning them all into technicians. On the one hand, it would give them a better understanding of technical and industrial developments and, thus, a clearer view of employment opportunities. On the other hand, it would provide a sound basis for further technical education if they should decide

to follow a technical career. A wider dissemination of technical education is particularly important for an agricultural country because modern agricultural development depends increasingly on scientific management and machine operation.

The Soviet Union had already accomplished much by keeping children together for eight years of compulsory education, and Sweden had recently decided to reorganise its school system to keep children together for nine years. The Delegate for Sweden observed that the most important condition for the success of decentralisation was that the regional units must be large enough to make it feasible to provide facilities for a higher standard of education than previously existed outside the large cities. Regional centralisation is thus a consequence of national de-centralisation.

Mr. Gass (Secretariat) drew attention to the fact that regional distribution of educational investment is becoming a dominant issue in the Mediterranean Regional Project. In several of the countries participating in this project, national economic and social life is over concentrated round the capital. In Greece, for example, young economists concerned with future economic development see the school, rather than the technical university, as the means not only for responding to a social demand but for stimulating the process of development. Experiments along the same lines are being undertaken in Italy. There is a growing body of experience on this subject which is now a common problem of educational policy.

In connection with the question of geographic inequality, the Delegate for Norway inquired about the reason for the inequality of the sexes that was reflected in Irish educational statistics. While the preponderance of men in engineering schools is a world-wide phenomenon, Ireland seemed to be unique in having no women engineering students at all. He asked whether the Irish Delegation thought this unfortunate and, if so, whether anything was being done about it?

The Delegation replied that there is no ban against women engineering students but that most girls leaving school probably think that they would not be accepted by an engineering school, if the idea occurred to them at all. In fact, most girls are not prepared for engineering because girls' schools do not stress mathematics to the same extent as boys' schools. Very few girls take Mathematics Honours in the Leaving Certificate Examinations as required for entrance to an engineering school. Many girls do go into the science faculties and into architecture for which the mathematics requirements are lower. In any case, there is little incentive for girls to become engineers in a country where there is no shortage of manpower and, consequently, no demand for women to join the ranks. Furthermore, the proportion of women in professional fields is probably lower in Ireland than in most other western countries and, since women seem, for one reason or another, to be less attracted to engineering than to other professional fields, the social climate is not conducive to a girl's choosing engineering as a career.

The relatively high concentration of women in 'social studies' at university level (about which the Delegate from Norway also enquired) is largely due to the recent tendency of married women with grown-up children to enroll in two-year social science diploma courses which

qualify them for part-time social service posts, especially in the care of handicapped children.

4. " *To facilitate the training of technicians and technologists, does the Delegation view with favour the proposal for new technical courses in which, if any language other than the student's mother tongue be taught, it shall be a modern continental language?* "

Dr. Rasmussen explained that this question referred to the examiners' recommendation[1] for a condensed special preparatory course, leading to a nationally recognised certificate, as the basis for advanced technical education. The examiners envisaged this course as part of a 'crash' programme to enable more people — especially adults — to pursue the further technical training they will need if they are to help Ireland achieve the high rate of growth implicit in its economic development targets. Such a course must concentrate on mathematics and the physical sciences and should, for the time being, omit liberal studies. However, it might be desirable to include a modern continental language if this is regarded as helpful for the technical studies.

The Delegation agreed readily with this proposal since one of the weaknesses of present technological education in Ireland is that it includes very little teaching of modern continental languages. Dr. O'Rafferty emphasised that technical students should not merely learn to read instructions on French or German machines but should be able to read foreign journals reporting technical developments in the great industrial countries of the continent.

The only reservation which the Delegation had about the examiners' proposal for a special preparatory programme concerned the suggested age of entry. Dr. O'Rafferty pointed out that in a semi-rural country there is a tendency to leave primary school a year or two later than is usual in highly urbanized countries. The transition from primary to a preparatory (or secondary) school would thus take place at 12 or 13 — instead of 11. Since at least three years of general course work should be done before entering upon a concentrated preparatory technical course, the entry-age for the latter would be 15 or 16 — instead of 14 or 15 as the examiners' report suggested.

In reply to a question by Professor O'Donnell, Mr. Rasmussen said that the examiners had in mind a two-year course for full-time day students and that adults, because of their greater maturity, could probably complete the same course in two years of evening classes.

In reply to a question about the status of Gaelic in the technical schools and a request from the Chairman for a brief statement on the Government's policy concerning the teaching of Gaelic, Dr. O'Rafferty outlined the present practice.

In the State-assisted primary schools (which include nearly all primary schools) the Irish language is compulsory for all pupils. Except in the Irish-speaking areas, however, there is no official insistence on its

1. See the Examiners' Report, p. 88.

use as a medium of instruction. The policy, recently announced by the Minister, is to leave it to the teachers of infants and first classes to determine to what extent it might be desirable to use Irish in any of their classes. This policy is based on the assumption that the teacher will know best how speedily the pupil is capable of achieving the desired oral fluency. In the higher classes of the primary schools Irish is rarely used as a medium of instruction. In the Irish-speaking areas, Irish is, of course, the normal medium of instruction in all classes. In these areas children must, however, also learn English. Dr. O'Rafferty said that he wanted to emphasise the use made of Irish as a medium of instruction because it is frequently believed that all or a very large part of the instruction in the National (that is, State-assisted) primary schools must be given through the medium of Irish.

In the secondary schools (that is, the academic type of post-primary schools), pupils must be taught the Irish language for an approximate minimum of three hours in, say, a 30/32-hour week if they are to be recognised for the purpose of State assistance to the school. To qualify for the Intermediate Certificate (half-way through the secondary course) or the Leaving Certificate (at the end of the secondary course) pupils must, *inter alia*, obtain a pass in Irish at the public examinations for these Certificates. In any case, the National University of Ireland, which is autonomous, requires Irish-born students to pass in Irish in the University Matriculation Examination, or its equivalent, for admission to any of its courses. The State's Leaving Certificate Examination is the usual equivalent offered.

Secondary schools having teachers competent in Irish are encouraged, by means of special State grants, to use Irish as a medium of instruction in classes where pupils have a sufficient knowledge of Irish to benefit from such teaching. Such teachers are given a special annual increment. In certain circumstances, therefore, the State does encourage the use of Irish as a medium of instruction in secondary schools but, outside the Irish-speaking areas, there is no compulsion to do so.

In the vocational schools, Irish, as a general cultural subject, is an essential part of the programme for full-time pupils during the normal continuation course — that is, for the two or three years up to 15-16 years of age. However, Dr. O'Rafferty knew of no instance of any subject being taught through the medium of Irish in a vocational school in other than a Gaeltacht (Irish-speaking) area.

In the purely technical spheres — that is, in the technical training of the post-15/16 age group — pupils need not, and for the most part do not, study Irish at all. In fact, at that particular level of technical training, English is usually the only language taught or used to any important extent. It was Dr. O'Rafferty's view that at this stage of technical training young Irish people should also learn a Continental language to enhance not only their technical competence but also their liberal education.

Except at University College, Galway, where certain courses are available only in Irish, students in the four University Colleges are not required to take or use Irish.

Dr. O'Rafferty emphasised that, while it was desired to make the factual position clear, the Delegation certainly did not make any

apology for the teaching and fostering or Ireland's ancient language. It would, in fact, be a national disgrace to leave untaught or uncultivated the great cultural heritage which is the Irish language.

5. "*Assuming that the Irish Delegation were willing to support additional State expenditure on technical education, what order of priority (in the form of technical education) would they consider appropriate?*

6. "*If such financial support were forthcoming, would the Delegation wish to make it available only to those willing to remain — or spend the greater part of their working life — in Ireland?*

7. "*What form would the additional State expenditure on technical training take — e.g., subsidised fees, capital grants for buildings and equipment, or loans or grants to students?*"

These three questions were grouped together, and the Delegation singled out the second question (No. 6) for immediate answer with a resounding "No!". Dr. Hillery said firmly, "We would not differentiate between those who go abroad and those who stay at home" and later in the discussion reiterated that, as far as he was concerned, the question simply did not arise. Mr. Lynch added that there was no question of discrimination in the training of technicians for home consumption of for export because, as he said, "We regard the individual as the unit of welfare". In fact, the entire Delegation appeared to be slightly shocked by the question.

On the subject of priorities (Question No. 5), Mr. O'Flanagan said that the most urgent need was for teachers of technical subjects. In his view, there would sometime have to be established an institute of technical education which might well start off as a training centre for technical teachers. Such a centre would, of course, be state financed since the state is responsible for the training of teachers (except those who come through the university channel).

Second on the priority list would be better accommodation and equipment for which there is also an urgent need that will have to be met. If the Government decided on an appropriate programme, this could be set in motion by direct grants to local authorities, as in Great Britain, or by other means.

His third priority would be the expansion of technical education which might be brought about by a more rapid increase in expenditure on technical education than on primary and secondary (grammar) schools. (It was assumed by all members of the delegation that the Government was committed to increased expenditure on education.)

Professor Peacock asked whether, if the teacher problem is so urgent, it would not be quicker to import teachers. Mr. Rasmussen, however, disagreed with this approach on the ground that Ireland had more to gain by up-grading the large number of teachers it already has through up-to-date courses on technical subjects and on training

methods — especially as new methods are needed, for example, to shorten apprenticeship training.

Mr. Lynch said that the difficulty in importing teachers was to find them, since similar shortages exist in most other countries. He expected, however, that with continued economic expansion Ireland would again attract people who had been educated in Ireland but were now working abroad. This was already happening with technologists — the shortage in Ireland was attracting many Irish technologists from overseas. As the demand for teachers increases, Irish teachers will also return. However, he rejected Professor Peacock's suggestion that Ireland offer higher teachers' salaries. The wage structures in Ireland and Britain, for example, are so different that it would be very difficult for Irish authorities to change the pattern even though the shortage of teachers is acute.

Professor O'Donnell observed that a gradual build-up of teaching staff, leading to a gradual increase in the output of technicians, might, in fact, be the most practical course. If one could suddeuly produce 300 well-qualified technicians in Ireland, he doubted that one could get them employed. Although the need for technicians clearly existed, actual demand for them would also have to grow.

This led M. Choisy (Switzerland) to ask whether he was right in thinking that some employers were not greatly concerned about the quality of their technicians; they seemed content with rule-of-thumb standards when they should be seeking a labour-force with an ever-broader basis of theoretical knowledge. He therefore wondered whether the Irish Government would regard it as one of the functions of a permanent committee on technical manpower (proposed in Question No. 1) to convince employers that it is to their advantage constantly to raise the standard of their technician force. The result would be that industrialists would offer more posts to highly-trained personnel; they would give practical assistance in the formation of cadres of technicians; they would also (as is done in many countries, notably Switzerland) help in financing training schemes, and help the government to overcome the lack of teachers by releasing some of their engineers for part-time teaching.

Mr. O'Flanagan agreed that one of Ireland's main problems is to cultivate among employers, particularly the smaller firms, a greater awareness of the need for better technical staff. Many of the larger employers are aware of the importance of technicians and lend some of their own key staff to assist in the training. Training under the new scheme for the food industry, for example, is done chiefly by the companies' staff. Many part-time evening classes are also taught by people in industry. Direct financial contribution by employers towards the training of teachers, however, has not yet developed.

Some of the technical institutes have awarded scholarships and are prepared to organise special courses for workers. If a few of the more imaginative and forward-looking employers would give a lead in this field, Mr. O'Flanagan was sure that their example would be followed more readily than anyone now expects.

Reverting, in proper sequence, to the question of migration (No. 6), Professor O'Donnell confirmed what Mr. Lynch had already pointed

out in connection with the discussion of the teacher shortage: that in recent years the return of emigrants has been quite extraordinary. He cited the case of chemical engineers for whom the level of employment in Ireland had been so low that it had seemed doubtful whether the maintenance of a school of chemical engineering could be justified. Yet a recent study has shown that of the 60-add graduates of the chemical engineering school in Dublin during the years 1956-62 about 50 per cent are now employed in Ireland. Although there is this inward as well as an outward flow, the migration situation is not completely satisfactory but the Delegation, in any event, rejected the suggestion that educational opportunities should on that account be in any way restricted.

In connection with Question No. 7, Professor Peacock said that the examiners' recognised that " decisions on methods of finance involve questions of values as well as of facts and logic[1] " but wanted to raise the question whether some sort of repayment should not be extracted from a student who obtains a particular economic benefit from state-supported education.

Mr. Lynch replied that he foresaw that the stage might be reached at which some sort of loan system might have to be introduced. He, personally, did not like such a system and it certainly had not been considered at this stage by the Ministry of Education. The difficulty, at the present time, would be to persuade people to accept loans when they cannot see a definite prospect of employment — at a compensatory salary — when the period of education is completed. When the economy has progressed to the point at which parents can see definite openings for their children when their courses are completed, there may be a greater willingness to accept loans.

Vocational and technical education would have to be subsidized for the foreseeable future. However, as the demand for technical education grows, a limit may have to be set on the extent of the subsidy. This might possibly result in a combination of subsidies and fees, plus grants for certain students selected, perhaps on the basis of ability, perhaps on the basis of need.

Funds for building and equipment will almost certainly continue to be provided by the State.

***

In closing the meeting, the Chairman said that he had been much impressed by the dynamic spirit of the Minister of Education and his colleagues and that the discussion had had an encouragingly optimistic tone — in contrast to the slightly depressing picture presented at the first examination of the educational system in Ireland in 1959. Obviously, much had happened during the intervening years. He hoped that the work of the educational investment planning team, which had been set up in Ireland in collaboration with O.E.C.D., would be of real assistance during the next couple of years in developing new approaches and new ideas which would be of benefit not only to Ireland but to the other Member countries.

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1. Examiners' Report, p. 91.

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R E P O R T
November 1968

The Center for Studies in Vocational and Technical Education was established at The University of Wisconsin in the fall of 1964 under a five-year grant from the Ford Foundation.

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PREFACE

The legislative activity at the federal, state, and local levels in 1968 attest to the continuing national interest in our system of vocational and technical education. The increased federal appropriations contained in this year's legislative proposals add significantly to those already established in the landmark legislation of 1963. Thus, the system initiated with the Smith-Hughes Act of 1917 continues to grow in size and quality.

In spite of this legislative support and expansion, however, there have been persistent calls for a re-examination and reappraisal of the basic structure and objectives of the system of education established by the Smith-Hughes Act. The President's Advisory Commission of 1963 made far-reaching recommendations, some of which were embodied in the Vocational Education Act of the same year. The Report of the Advisory Council issued in 1968 indicates that a number of the important objectives set forth by the earlier report are still to be attained.

The Center for Studies in Vocational and Technical Education was established at The University of Wisconsin in the fall of 1964 under a five-year grant from The Ford Foundation. Its functions are to examine, evaluate, and further the development of the nation's system of occupational education by means of interdisciplinary research, graduate study, conferences, the establishment of a national depository of reference materials, and the dissemination of publications resulting from research and conferences.

In 1968, as in the preceding three years, the Center has continued to pursue these objectives. In this fourth year, the value of five-year institutional committments becomes more apparent. A series of planned and coordinated

research projects are coming to fruition. Carried on by an interdisciplinary faculty, with the assistance of graduate students drawn from a number of University departments, the findings have been reported in articles and monographs, and a number of additional papers and research reports are expected to be published in early 1969. Based on the analysis of a wide range of vocational education policies and processes from the initiation of new programs to the follow-up of vocational school graduates and dropouts, the published studies should contribute significantly to the national appraisal and understanding of vocational and technical education in the United States at the present time. This report contains summaries of the publications and of the research in progress.

As is indicated in the Report, a large number of graduate students have been assisted in their studies relating to vocational education, and they, in turn, have assisted significantly in carrying out the research of the Center. Thei research efforts are embodied in Master's theses and Ph.D. disserations, and it is hoped that many of these students will continue their interest in the field of vocational education as their careers unfold. At the same time, financial assistance provided by the Center has permitted students to gain practical experience in vocational education institutions, and it has provided an opportunity for vocational education personnel to return to the University for completion of their graduate study leading to advanced degrees.

A series of conferences, planned and supported by the Center during 1968, add notably to those held in previous years. Others are now in the planning stage for 1969. As is noted in the Report, the growing number of conference proceedings is adding significantly to the nation's store of knowledge concerning vocational and technical education. In addition to the con-

ference proceedings and the research monographs, the Center has continued to sponsor a series of periodical publications, especially the Journal of Human Resources, which is rapidly gaining in reputation as a major outlet for research articles in this field.

In the past year the Center's Reference Unit has continued to grow from the standpoint of its library holdings and from the standpoint of its widespread use by vocational educators and research personnel throughout the country.

As is noted in the final section of the Report, the Center has been successful in attracting substantial funds from government agencies in support of its research and conference programs. These funds have substantially exceeded the annual allocation of funds from the original Ford Foundation grant, and they bode well for the continuing national acceptance and future growth of the Center.

J. Kenneth Little and
Gerald G. Somers,
Co-Directors

Madison, Wisconsin
October, 1968

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Shirley Rabideau, Bookkeeper

THE ADVISORY COMMITTEE

The Advisory Committee of the Center for Studies in Vocational and Technical Education gives guidance and direction to the Center staff in its programs of data-gathering and dissemination, research, and instruction. The members of the Advisory Committee are:

Chairman

Edwin Young, Vice-President, Chancellor, The University of Wisconsin

On-Campus Members

Lorentz H. Adolfson, Chancellor, University of Wisconsin Centers
Erwin A. Gaumnitz, Dean, School of Business
Donald J. McCarty, Dean, School of Education
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Melvin L. Barlow, Director, Division of Vocational Education, University of California, Los Angeles
Marvin J. Feldman, Program Associate, The Ford Foundation, New York
Jacob F. Friedrick, President, Milwaukee Labor Council, Milwaukee
Clarence L. Greiber, Director, State Board of Vocational and Technical Education, Madison
George Howden, Division Engineer, Wisconsin Telephone Company, Appleton
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William Shannon, Associate Executive Director, American Association of Junior Colleges, Washington
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Lindley J. Stiles, Professor of Interdisciplinary Education, Northwestern University
Theodore J. Shannon, Professor of Education, Extension Division, University of Wisconsin

Advisory Committee Meetings

Previous Annual Reports of the Center have covered the first four meetings of the Advisory Committee--February 23, 1965; December 1, 1965; May 23, 1966; and December 15, 1966.

The fifth meeting of the Committee was opened by Edwin Young, Chairman, in Madison on November 16, 1967. Kenneth Little reported progress in the retrieval system (Reference Unit), noting that, as of that date, over 9,000 entries had been placed into the system; the Reference Unit had acquired 7,300 articles; and 500 more items were being processed for inclusion in the system. It was pointed out the the original plan of the Center--that a central collection of vocational education materials could be made available for national use--was being achieved, but that this goal was put in question by the establishment of similar ERIC Centers by the U.S. Office of Education. The view was expressed that the Center might reappraise its position, and stress its abstract service system making overviews of current materials available to researchers and educators.

The conferences which the Center had planned for the coming year were discussed. Some suggestions on format and content were made.

Charles Perrow reported on his research on the industrial employers of vocational graduates in the Milwaukee area. Leroy Peterson gave a synopsis

of his project, "A Cost-Benefit Analysis of Vocational-Technical Programs," which is serving as a pilot study to further the goals of the Office of Education project which the Center is conducting (see section of this Report on RESEARCH).

Recent Center publications were presented and discussed. It was suggested that a publication similar to the Encyclopedia of the Social Sciences be made a Center project and to invite scholars from all areas of vocational education to contribute chapters.

The Committee held its sixth meeting on May 9, 1968. Recent publications were discussed and each member was presented with copies of them. Gerald Somers commented on the forthcoming supplement to the Journal of Human Resources which will discuss Vocational Education (proceedings of a conference held at the Brookings Institution on April 17 and 18, 1967).

The projected volume on "The Current Status of Vocational Education" was discussed, with suggested topics and authors as the main point of concentration. It is hoped that this volume will be ready for editing by January 1, 1969 and published by the end of 1969.

Kenneth Little detailed the progress of the nation-wide follow-up of graduates of vocational education institutions (see section of this Report on RESEARCH), noting that the Office of Education has requested that this study be expanded to include "dropouts."

Jeffrey Gibbs, a graduate student in the Industrial Relations Research Institute, discussed his research on teachers in vocational schools in Wisconsin, in which he is studying the current supply as well as attempting to determine the effects of the Vocational Education Act of 1963. Dean Bowles, Assistant Professor of Educational Administration, reported on his study of Vocational School Administration and Policy Formulation.

Upcoming conferences were discussed, with mention made of the conferences on "Education and Training in Correctional Institut'...s" (June 5-6, 1968) and "A Cost-Benefit Analysis of Manpower Programs" (May 14-16, 1969). It was announced that the Ford Foundation has requested the Center to conduct a series of regional conferences to discuss the Report of the National Advisory Council on Vocational Education (see section of this Report on CONFERENCES).

The continuation of the Center, after the expiration of the Ford Foundation grant, was discussed. This will be explored further at future meetings.

THE REFERENCE UNIT

The reference unit has continued to expand in response to the demand for an information resource center in vocational and technical education.

The retrieval system saw an increase of more than 2,000 references over the past year giving it a present total of 7,500 documents. Since August, 1967, the Center has processed over 400 personal requests for information searches. Any specific topic can be retrieved by cross-combining the unit's 1,200 word vocabulary.

A revision of the mailing list was one of the Center's projects last year. Each of the addressees was given an opportunity to specify new or additional interests which could be met by Center services. Approximately 250 individuals, most of whom worked at the secondary education level, indicated they wished to be removed from the mailing list. The most common response was that they valued the services of the Center, but that schedules, and the absence of adequate library facilities made the meaningful utilization of these services doubtful.

Despite this reduction, the total mailing list has grown to about 2,000 persons, of whom 1,400 receive quarterly at least one of 18 free bibliographies, i.e., administration, curriculum, instruction, guidance, teaching staff, educational policy, job analysis, job placement, work experience, apprenticeship, legislation, manpower, technological change, finance, job cluster concept, disadvantaged groups, retraining, and cost-benefit analysis. This represents an increase of 350 new users of the bibliography service since September, 1967.

TABLE I

Bibliographies, Geographical Distribution
August 1968

	1967	1968		1967	1968
Alabama	5	6	Oregon	25	26
Alaska	2	2	Pennsylvania	41	55
Arizona	4	8	Rhode Island	2	6
Arkansas	3	4	South Carolina	3	19
California	70	78	South Dakota	0	1
Colorado	9	11	Tennessee	12	10
Connecticut	8	14	Texas	13	19
Delaware	1	3	Utah	15	16
Dist. of Columbia	98	87	Vermont	6	6
Florida	14	21	Virginia	8	9
Georgia	6	8	Washington	12	14
Idaho	13	5	West Virginia	8	11
Illinois	56	64	Wisconsin	276	310
Indiana	24	28	Wyoming	5	5
Iowa	18	22	Hawaii	8	8
Kansas	2	5	Puerto Rico	5	5
Kentucky	9	8	Guam	1	1
Louisiana	1	1	Samoa	0	1
Maine	8	4			
Maryland	15	17			
Massachusetts	35	38	FOREIGN		
Michigan	60	69			
Minnesota	27	28	Australia	5	6
Mississippi	5	4	Canada	28	39
Missouri	10	13	Chile	1	2
Montana	3	2	England	2	2
Nebraska	6	10	Israel	0	4
Nevada	6	5	Malaysia	1	1
New Hampshire	3	5	Philippines	1	2
New Jersey	32	32	Switzerland	4	3
New Mexico	5	8	Yugoslavia	1	2
New York	101	127	Mexico	0	2
North Carolina	12	16	Netherlands	0	1
North Dakota	6	4	Japan	0	4
Ohio	26	31	Korea	0	1
Oklahoma	9	17			

Table I shows the wide geographic base that the Center's clientele possesses. The Center primarily serves persons from post-secondary or collegiate institutions and public agencies involved in vocational education. An increasing number of private industries, aware of the need for educationally stable training programs, have made use of our facilities.

The Center has been pleased with the past four years of growth it has experienced, and it realizes the value such expansion has had on the flow of information in vocational and technical education. Because the Center's repository of past and on-going studies serves as a vital preliminary information source for the researcher, greater numbers of researchers in the vocational field have utilized these sources for bibliographies. Since a great deal of time is devoted to a single research project, these individuals may require only periodical revisions of their initial bibliographies.

Time, therefore, can be allotted to emphasizing quality, not quantity. No restrictions on the availability of information are planned, but the value of a document has been receiving closer scrutiny before its inclusion into the reference system.

Annotations are stressed as necessary tools for those who use this system. Whenever a title is not self-explanatory the indexers are directed to prepare an annotation. Already they have aided the users of the information in better judging the pertinency of the references listed in the bibliographies.

Recommendations that will streamline and accelerate the proficiency of the library are expected to be implemented soon. One means of improving the availability of documents is already in use. The price and publication source of each document is now included in all bibliographic citations. It is hoped that this will assist those who cannot locate a reference in their local library. A four week loan policy has also been instituted for some references. Smaller treatises and periodical references can be photocopied at a cost of five cents per page.

TABLE II

Bibliography Use and Growth
1966 - 1968

BIBLIOGRAPHY	AUGUST 1966	MARCH 1967	AUGUST 1967	AUGUST 1968
I. Administration	252	653	850	904
II. Curriculum	246	652	850	905
III. Instructional Materials	249	616	800	881
IV. Guidance	263	634	815	812
V. Teaching Staff	212	545	700	676
VI. Job Analysis	272	650	830	790
VII. Job Placement	262	630	815	813
VIII. Work Experience	261	596	775	770
IX. Legislation	6	329	475	712
X. Apprenticeship	244	552	700	714
XI. Technological Change	293	651	850	911
XII. Cost-Benefit Analysis	249	540	700	678
XIII. Job Cluster Concepts	280	625	800	817
XIV. Disadvantaged Groups	298	620	800	853
XV. Educational Policy	17	363	520	737
XVI. Manpower	18	341	550	747
XVII. Finance	15	294	425	530
XVIII. Retraining	20	345	525	764

Several changes in staff organization have improved the operation of the reference unit. A full-time coordinator, Paul Kedinger, has been appointed to oversee the acquisition, indexing, coding, and retrieval of the references stored in the system. Four graduate students hired as indexers

now work in the Center's library rather than out of the various school libraries located on this campus. Additional quality checks can thus be made on the suitability of the materials they review.

This Center acquires the material vocational educators need from many disciplines. Federal and state government publication notices, newsletters, and foreign and domestic journals and magazines are among the more constant sources of information scanned.

The evaluative questionnaire used by a Master's degree candidate two years ago has been continued. It has helped us attack many of the weaknesses and inadequacies in our store of information. About 85 percent of those who reply have been satisfied; a few remarks have prompted both administrative and policy questions. Most of the faults have been rectified; other revisions are still pending.

During the current year, the staff will concentrate on the following measures:

a) removing outdated or marginal documents;
b) incorporating additional projects-in-progress reports, experimental and demonstration studies, and final research reports;
c) re-evaluating the list of information sources that is periodically scanned;
d) coordinating this Center's store of information with other information centers, particularly the ERIC system of the U.S. Office of Education; and
e) reviewing the uniterm vocabularly file.

IV. RESEARCH ACTIVITIES

The research activities of the Center have continued to expand. Many of the projects have been completed and final reports are being prepared for publication. The following research, by topic area, has been conducted in 1968.

LABOR MARKET INFORMATION AND VOCATIONAL EDUCATION

A series of studies have been conducted by faculty members and graduate students on the relationship between labor market information and labor market changes on the one hand and the response of vocational education on the other.

A. A number of studies have been designed to determine the availability of information on private manpower planning, local manpower needs, and national manpower projections which may be used for planning vocational and technical education courses:

1. LONG RANGE OCCUPATIONAL PROJECTIONS

   Investigator: W. Lee Hansen, Professor of Economics and Educational Policy Studies

   This study is directed at evaluating current efforts to make long-range projects of occupational trends in the United States. The first report was in the form of a paper presented at the December 1965 meeting of the Industrial Relations Research Association, entitled "Labor Force and Occupational Projections;" it also appeared in the Vocational Education Reprint Series (see section of this Report on PUBLICATIONS: Reprint Series).

Two other papers on projections are now in draft form. One of these analyzes engineering projections over the 1950-60 and 1960-70 periods. The second examines a set of labor force projections made in 1950 for the year 1965. It is expected that these papers will be revised, completed, and submitted for publication by the end of this year.

2. THE RESPONSE OF VOCATIONAL EDUCATION TO LABOR MARKET CHANGES, Gerald G. Somers, reprinted from The Journal of Human Resources, Vol. 3 (Supplement, 1968), pp. 32-58 (see section of this Report on PUBLICATIONS: Reprint Series).

3. ASSESSING THE EXTENT OF MANPOWER FORECASTING AMONG MILWAUKEE FIRMS

Investigator: Richard Perlman, Professor of Economics, UW-Milwaukee

This research study reports a survey of 159 Milwaukee employers, drawn from a sample of 574 employers in the city. These employers were asked questions concerning the extent of their manpower forecasting and planning, and the relationship of these policies to their programs of on-the-job training. Unfortunately, the study results were very negative on the extent or quality of manpower forecasting. While most firms reported that they engage in manpower forecasting to some degree, by the criteria established they do not tend to forecast seriously, even though they claim that poor forecasts would harm their operations. Further, the extent of forecasting does not appear closely related to training programs which the respondents undertake.

4. ON THE JOB TRAINING IN MILWAUKEE--NATURE, EXTENT, AND RELATIONSHIP TO VOCATIONAL EDUCATION

Investigator: Richard Perlman, Professor Economics, UW-Milwaukee

In this study, Professor Perlman relates his findings on employer forecasting to their training programs. The purpose of this study was to evaluate the degree of complimentarity and, perhaps, redundancy of training in vocational schools and training on the job. Most of the firms interviewed reported that they were satisfied with the vocational education received by workers trained for advanced positions. However, an important minority of the responding firms, those which tried to fit workers previously trained in vocational schools into specific jobs, usually found that these workers required additional training and even a review and re-education of the techniques they learned in the schools. Very few firms reported that they had formal on-the-job training programs. Findings on the relationship between vocational education in the schools and training on the job point to a future evolution in which the vocational schools will provide instruction in basic educational tasks related to industry, and the business firms will provide instruction in particular skills as well as practice in utilizing these skills.

Both of Professor Perlman's final reports are now being prepared for publication, and they will appear early in 1969.

B. Five projects in this field have been designed to determine the process by which vocational education courses and programs are initiated, and, especially the extent to which labor market information is utilized in the initiation of new courses:

1. PROGRAM INITIATION IN TECHNICAL INSTITUTES, Norman F. Dufty, reprinted from The Journal of Human Resources, Vol.3 (Summer, 1968), pp. 346-62 (see section of this Report on PUBLICATIONS: Reprint Series).

2. A STUDY OF THE EFFECTIVENESS OF PROCEDURES FOR ESTABLISHING VOCATIONAL AND TECHNICAL PROGRAMS IN WISCONSIN

Investigators: Gerald G. Somers, Professor of Economics; Richard W. Whinfield, Administrative Associate

Graduate Assistant: Morley Gunderson

Rapid changes in the labor force require vocational education to re-examine the techniques and procedures used to initiate new training programs. The first step in this process is to review the present and past practices, and to evaluate their effectiveness. We are especially interested in the use of labor market information in initiating new vocational courses.

This study is a pilot study to devise techniques which can be used to make such an evaluation. Using a loosely structured interview form, personal interviews were conducted with all vocational directors in Wisconsin high schools and technical schools. Randomly selected advisory committee members, representing all schools with vocational programs, were also interviewed. A mail questionnaire was sent to a random selection of vocational teachers. The results of these activities have been coded, keypunched, and analyzed. The findings will be published in the near future. Should the findings demonstrate that the procedures for starting new programs can be evaluated using this technique, the instruments will be revised and used in a national study.

3. AN EVALUATION OF AREA SKILL SURVEYS AS A BASIS FOR VOCATIONAL EDUCATION AND MANPOWER POLICY

Investigator: Collette Moser, Assistant Professor of Economics, Rutgers University

Under the direction of: Gerald G. Somers, Professor of Economics

The purpose of this research is to evaluate Area Skill Surveys in terms of their accuracy and implementation. Area Skill Surveys are local labor market studies which project detailed occupational supply and demand for two to five years hence. They are conducted, in a variety of ways, by the majority of state public employment agencies.

The methods of evaluation employed in this project include the following: (1) examining and analyzing the form and content of the approximately 150 surveys presently in existence; (2) conducting follow-up surveys in various areas of the country, in order to validate the employer projections; and (3) administering questionnaires to vocational educators in several states designed to assess the use of this information on local occupational projections in curriculum planning and administration.

The data are now being analyzed and it is anticipated that a report will be available in 1969. Funds have been provided by the Office of Manpower Policy, Evaluation and Research, U.S. Department of Labor (Manpower Administration).

4. SURVEY OF NEED FOR VOCATIONAL-TECHNICAL EDUCATION PROGRAM IN AN INDUSTRIAL METROPOLITAN SUBURBIA

Investigators: John Helling and J. Kenneth Little, Professors of Educational Administration

Graduate Assistants: Joseph H. McGivney; John Houle

In cooperation with a group of high schools in South Milwaukee County, and with the assistance of the State Board of Vocational

Education, the Center undertook a study of the needs for and feasibility of establishing improved vocational-technical programs in that rapidly developing suburban complex. The surburban communities studied were: Cudahy, Franklin, Greendale, Greenfield, Oak Creek, St. Francis, South Milwaukee, and Whitnall.

The study included investigations of demographic characteristics and the educational needs among four separate groups: 1) former high school students from the survey area; 2) present area high school seniors; 3) South Milwaukee County residents; and 4) employers of South Milwaukee County residents. Several visits were made to examine existing post-high school educational facilities in and near the survey area.

Conclusions generally supported the following premises: 1) a majority of present and former high school students planned for some college training; 2) among those persons surveyed, most felt that some post-high school training was necessary for successful occupational placement; 3) although many survey respondents indentified a college education as the one sought by the greatest number of students, all four groups perceived the most urgent post-high school need in South Milwaukee County was vocational-technical programs; 4) present facilities for vocational-technical education in and around the study area are either stringently limited in scope or are filled to capacity and cosequently not meeting the rising demand to accommodate more students.

The final report listed onemajor recommendation: Post-high school educational facilities of a vocational-technical nature should be developed to serve the people of South Milwaukee County.

Alternative plans for the actualization of the recommendation were suggested.

The study used a procedure of interviewing residents of 1,000 households selected at random from property tax rolls of the assesor of real estate in each community. This method enabled the study to reflect the attitudes, occupations, and characteristics of residents of the community regardless of the location of their jobs--one-third of the residents were found to be commuting more than nine miles to work. This procedure contrasts with a frequent practice of interviewing persons employed in local business or industry.

The final report is now being prepared for publication.

5. A PILOT STUDY OF CURRICULUM NEEDS IN WELDING TECHNOLOGY

Investigator: Duane Kasten, Instructor in Mechanical Engineering

A study of the need for welding technologists in Wisconsin was made by using a survey of employers and educators in the state. It was found that the need and desire for such a program existed. Employers would like to be able to hire skilled people who have been trained in post-high school institutions. A shortage of adequately trained instructors in the technology was discovered. No attempt was made to draw up a curriculum, but desired skills and knowledge were identified. Copies of this report are available from the Center upon request.

C. Research has also been conducted on the use of labor market information and school data in counseling and guidance of high school students, with a comparison between those enrolled in academic high schools and those enrolled in vocational schools:

1. SURVEY OF THE USE OF OCCUPATIONAL DATA IN THE VOCATIONAL COUNSELING OF HIGH SCHOOL STUDENTS

Investigators: Philip A. Perrone, Professor of Counseling and Behavioral Studies; Gerald G. Somers; Murray A. Tucker

Research Assistant: Lola Gross

This survey was prompted by an awareness that little was known about the materials which school personnel use, how they use these materials, and whether more use would be made of outlook and description materials if new formats were made available.

Questionnaires were sent to every identifiable high school in the United States, based on the United States Office of Education list which had not been updated since 1962. A sample of the schools established since 1962 was also contacted. The response rate was about 34 percent. A sampling of nonrespondents was made to determine the representativeness of the sample. The questionnaires sent included one for counselors, one for librarians, and one for vocational instructors.

Counselors cited the noncollege going students as the group for which available information is the poorest. Counselors, librarians, and vocational instructors all noted a small percentage of these students seeking information. From these and other significant findings, Dr. Perrone concludes that thousands of hours are spent by individual counselors in establishing and maintaining information systems. He suggests that a better approach would be to establish state or regional centers where all schools would have rapid and inexpensive access to current information, and that greater attention should be given to the use of a job cluster format, with the basic elements of work depicted in films or filmstrips. A more detailed

report on this research is available through the Publications Office of the Center.

The initial findings of this project are now being elaborated upon by an economist. Findings relating differences in use of literature to differences in school locale are explained in terms of the existing labor market. A final report with an additional statement relating the current study to the early findings will be available in 1969.

2. PREDICTING JOB SATISFACTION AND JOB PERFORMANCE OF RECENT GRADUATES OF HIGH SCHOOL VOCATIONAL PROGRAMS

Investigator: Philip A. Perrone, Professor of Counseling and Behavioral Studies

Graduate Assistant: Bernard Neinhaus

The State of Wisconsin initiated 30 pilot programs in vocational education at the high school level in 1964-65. These schools were selected by the State Department of Education as a representative sample of Wisconsin high schools. Included were schools from Milwaukee, smaller cities, suburbs, and rural areas.

During the students' senior year, their vocational instructors were asked to identify the five pupils having the best "worker potential" and the five with the poorest "worker potential." Additional information including teacher ratings, pupil self ratings, scholastic performance, parents' educational and vocational backgrounds, achievement test scores, educational and vocational plans including career objectives, expected entry jobs, wage aspirations, work models, work value orientations, job involvement, achievement value orientation, and major life satisfactions were obtained.

After two years, an attempt was made to contact all the members of this group to determine whether they were working, going to school, had entered the military, or were married and not working in the case of girls. After five follow-up attempts nearly all the graduates except some from the Milwaukee inner-core had been located.

Those students who were now working (n=236) were asked to complete a questionnaire seeking to ascertain the relationship between high school experiences and aspects of their present job. They were also asked to complete a job satisfaction questionnaire. In addition, for those workers who gave their permission (n=165), the immediate job supervisor was contacted and asked to complete a survey instrument rating the employees regarding knowledge and skills, work habits, cooperation, and communication with supervisors and peers.

At the present time analysis of the data has begun to answer the following questions: (1) What information available in high school can successfully predict job satisfaction and job performance two years after graduation? (2) What is the relationship of job satisfaction and job performance two years after high school graduation?

The portion of the analysis dealing with the above questions has been completed. The final report should appear in the spring of 1969.

3. LONGITUDINAL STUDIES OF THE VOCATIONAL AND EDUCATIONAL DEVELOPMENT OF TWO JUNIOR HIGH SCHOOL CLASSES IN MONONA GROVE, WISCONSIN

Investigator: Philip A. Perrone, Professor of Counseling and Behavioral Studies

Graduate Assistant: James Jacobs

This is a continuation of a study entitled "The Role of Values in Vocational Aspirations and Expectations of a Selected Group of Students from Early Adolescence through Young Adulthood" (see Annual

Report, 1966). The first class graduated from high school in 1968 and a study focusing on differential characteristics of students making minimal use of guidance services and those students making fuller use of these services is underway. In addition, the characteristics of these two groups after completion of high school are being studied. James Jacobs will use the data from this research in the execution of his dissertation.

A study focusing on "value formation" has been completed utilizing information gathered from members of the 1968 graduating class and will be cross-validated with similar information from next year's graduating class. A report on this study will be available in 1969.

VOCATIONAL TRAINING OF THE UNEMPLOYED AND THE DISADVANTAGED

A. A series of studies has been conducted on vocational education and retraining programs for unemployed and disadvantaged workers. The following publications have resulted from this research:

1. Gerald G. Somers (ed.), Retraining the Unemployed (Madison: The University of Wisconsin Press, 1968).

The case studies in this volume evaluate the effectiveness of recent and current retraining programs for unemployed workers under federal, state, municipal, and union-management auspices, judging them by their success in placing workers in useful employment in distressed economic areas. Data on various aspects of retraining programs in a wide variety of environmental circumstances have been assembled, and workers being retrained are compared with such control groups as rejected applicants, workers who did not report after acceptance, trainees who dropped out before completing their courses,

and unemployed workers who did not apply for retraining. Through cost-benefit analyses and other evaluations of specific programs in different states, where such factors as the personal characteristics of trainees, labor market situations, institutional placement, and procedural arrangements varied widely, the authors have drawn significant conclusions about the value of retraining programs in general.

2. Glen Cain and Gerald Somers, "Retraining the Disadvantaged Worker," reprinted from Research in Vocational and Technical Education (Madison: The Center for Studies in Vocational and Technical Education, 1967) (see section of this Report on PUBLICATIONS: Reprint Series).

3. Gerald Somers and Graeme McKechnie, "Vocational Retraining Programs for the Unemployed," reprinted from the Twentieth Annual Proceedings of the Industrial Relations Research Association (Madison: IRRA, 1968) (see section of this Report on PUBLICATIONS: Reprint Series).

4. Retraining and Migration as Factors in Regional Development, prepared for the Office of Regional Economic Development, U.S. Department of Commerce, 1966, by Murray Tucker, Gerald Somers, and Graeme McKechnie.

This report provides a review of research on retraining and migration as independent and interacting factors in regional economic development, an extensive bibliography, and abstracts of relevant publications. The research findings have been related to current legislative policies in these fields both in the U.S. and in Western Europe in order to draw lessons for the improvement and coordination of policies and research designed to further regional economic growth.

5. The Training and Placement of Older Workers: An Evaluation of Four Community Projects, Gerald G. Somers, Principal Investigator, prepared for the National Council on the Aging and the Manpower Administration, U. S. Department of Labor, 1967.

This report evaluates four community programs (Baltimore, Boston, Milwaukee, and Buncombe County, North Carolina) designed to obtain employment for hard-core unemployed workers over 50 years of age. The community projects differed in approach and techniques, and frequently the approach and techniques actually adopted differed from those initially planned. However, the projects taken as a whole provide a basis for an evaluation of testing, counseling, training, and placement services for older workers, along the lines espoused by the President and in the M.D.T.A. amendments of 1966.

6. Gerald G. Somers, Evaluation of Work Experience and Training of Older Workers (Madison: Industrial Relations Research Institute, 1967).

In the broad spectrum of completed and possible studies of the Work Experience and Training Program, this report, prepared for the National Council on the Aging and the Welfare Administration, U. S. Department of Health, Education, and Welfare, has a limited scope. It focuses on older workers, with primary emphasis on retraining. It seeks not to carry out a full-scale cost-benefit evaluation of the training programs for this specific age group, but only to provide the methodological underpinnings of a model which could be utilized to carry out such a full-scale evaluation. The available data on costs and benefits of the work experience program for older workers are not utilized to derive concrete estimates in this report, but these data are appraised in order to reach some conclusions with regard to their adequacy in the application of cost-benefit analysis.

7. Graeme H. McKechnie, Retraining and Geographic Mobility: An Evaluation, Ph.D. dissertation, The University of Wisconsin, August 1966 (see section of this Report on GRADUATE STUDY for abstract).

8. Gerald G. Somers, "Our Experience with Retraining and Relocation," reprinted from Toward a Manpower Policy, Robert Aaron Gordon (ed.) (New York: John Wiley & Sons, Inc., 1967) (see section of this Report on PUBLICATIONS: Reprint Series).

B. Research has been completed and publications are pending on the following studies in this area:

1. RETRAINING AND AREA DEVELOPMENT POLICIES

Investigators: Gerald G. Somers, Professor of Economics; Murray A. Tucker, Lecturer, Industrial Relations

Project Associate: Graeme H. McKechnie

This project, financed by the Economic Development Administration of the U.S. Department of Commerce, compares the character and employment and earnings experiences of three groups of workers in the somewhat depressed counties of Northern Michigan, Northern Wisconsin, and Northern Minnesota. The three groups are: (1) workers who have been employed in industrial plants which were given assistance by the Department of Commerce, (2) workers who were employed in public works financed by the Department of Commerce, and (3) a group of workers selected from the Employment Service files in the same areas. Since a number of the workers in each of these groups had received government subsidized retraining, the study evaluated the relationship of retraining to other forms of government assistance in economically depressed areas. This research has been completed and a final report will be issued in 1969.

2. RETRAINING AND RELOCATION: AN EVALUATION OF THE LABOR MOBILITY PROJECTS IN NORTHERN MICHIGAN AND NORTHERN WISCONSIN

Investigator: Gerald G. Somers, Professor of Economics

With the Assistance of: Graeme McKechnie; Susan Fernbach

This study follows up the employment and earnings experience of workers relocated under the pilot assistance projects of the U. S. Department of Labor in Michigan and Wisconsin and compares the experience of the relocatees with that of a control group of Nonmovers. Since a large percentage of relocatees (including those who returned to their home area) and the Nonmovers took MDTA retraining prior to the mobility date, the study also provides an evaluation of the relationship between vocational training and geographic labor mobility. This research was financed by the Special Projects Division, Manpower Administration, U. S. Department of Labor. The research is complete, and a final report is to be issued early in 1969.

3. BARRIERS TO EMPLOYABILITY OF NONWHITE WORKERS

Investigator: Kirk Petschek, Professor of Urban Affairs, UW-Milwaukee

Data on training, schools, employment, job-search, and personal experiences were collected from 250 respondents, primarily Negro, in white-collar occupations, randomly selected from (1) the active files of the Employment Service and Youth Opportunity Center of registered workers in the clerical and sales fields; (2) on-the-job trainees selected by the Urban League; (3) MDTA graduates; (4) direct applicants to selected Milwaukee Voluntary Equal Employment Opportunity Council; and (5) January 1966 graduates of selected high schools. The various phases of employment preparation were expected to show some impact on the labor market; a series of relationships should have identified employment barriers and suggested remedies.

The most important conclusion was that no statistically significant correlation was found between any of the activities generally assumed to lead to success in the labor market. Although isolated relationships appeared to exist, the over-all findings were negative.

Secondly, expected differences between white and Negro workers often did not exist or were much smaller than anticipated. Discrimination (or belief that it would constitute a problem) lowered Negro expectations, but the realism and openness of white workers about their own qualifications often led to similar behavior when confronted with an actual job.

The research has been completed, and a final report is being prepared.

4. HIGH SCHOOL DROPOUTS AND VOCATIONAL EDUCATION IN WISCONSIN

Investigator: Myron Roomkin, Graduate Student in Industrial Relations

Under the Direction of: Gerald G. Somers, Professor of Economics

Consultant: Roland Krogstad, State Board of Vocationa, Technical, and Adult Education

The objectives of this study are to determine: (1) the characteristics of high school dropouts who are presently enrolled in vocational education institutions; (2) what type of dropout attends what type of vocational institution and for what reasons; and (3) the extent to which these differences in attendance do exist. An effort has been completed to categorize the various types of vocational institutions in Wisconsin that offer instruction to high school dropouts. From these categories, a sample of schools was chosen, within which a sample of high school dropouts of mixed racial identities was selected. Questionnaires were administered to these dropouts with the cooperation of the various vocational schools to insure a high response rate. At

the present time, the survey results have been analyzed and the termination report is being concluded. It is hoped that this effort will serve as a pilot study in this area and will present analyses of the data which the participating institutions and other interested parties can use in the decision- and policy-making functions.

This study will appear as a Master's thesis in January 1969.

EVALUATION OF THE EFFECTIVENESS OF VOCATIONAL AND TECHNICAL EDUCATION

This area of vocational education research has become increasingly important since the passage of the Vocational Education Act of 1963. A number of evaluative studies are being conducted under the auspices of the Center.

1. AN EVALUATION OF THE EFFECTIVENESS OF VOCATIONAL AND TECHNICAL EDUCATION IN THE UNITED STATES

Investigators: J. Kenneth Little, Professor of Educational Administration; Gerald G. Somers; Richard W. Whinfield

Graduate Assistant: Susan Fernbach

Under a grant from the United States Office of Education and in collaboration with the Bureau of Social Science Research, Washington, D. C., the Center is conducting a study to evaluate the employment experience of graduates and dropouts of high school vocational and technical programs, post-secondary programs (noncollege), and two-year college programs in 1966.

Approximately 350 randomly selected high schools, 100 post-secondary institutions, and 100 two-year colleges were invited to participate in the study. The samples were stratified to provide representation from major geographical regions of the United States. About 5000 graduates of high school programs and 2500 graduates each of post-secondary programs and of two-year college programs are being asked to

provide information about their job placement and job history since the completion of their course in 1966. The study will also seek similar information from students who left school before completing their programs, or transferred from a vocational course to a different program. The number of such students in this part of the study will be about 2500.

This study covers graduates of agricultural, business, distributive education, health, trade, and technical programs. It will provide extensive analysis of the relationship of training to subsequent job placement, earnings, and advancement; the influence of military service (if any) and other job related experience; the extent of job mobility; the attitudes toward and evaluation of the vocational course; and personal and family background factors.

The study should yield useful base-line data on the experience of students in the occupational world two years after leaving their program of preparation for work at several different ages and stages of preparation.

During the summer of 1968, the participating schools were identified. During the 1968-69 academic year, the work of surveying the graduates of these schools will get underway, and it is anticipated that the study will be completed in the summer of 1969.

2. FOLLOW-UP OF 1965 GRADUATES OF WISCONSIN VOCATIONAL SCHOOLS

Investigator: J. Kenneth Little, Professor of Educational Administration

Assisted by: Richard W. Whinfield, Administrative Associate; Lola Gross

Graduates of one- and two-year programs in 29 vocational and technical schools in Wisconsin have reported their job histories since completion of training in 1965. The [illegible]

and 658 women, or 81.3 percent of the total number of graduates reported by the participating schools. The information will provide a picture of the mobility, job placement, and occupational advancement of the men and women who have completed a specific program of occupational education. In addition, studies will be made of (1) school or regional differences, if any, among students graduating from the same program; (2) differences in job placement and history by the type of program completed; (3) job mobility of graduates as related to the program of training completed; and (4) background characteristics of the graduates.

Wisconsin schools of vocational and technical education typically enroll persons who have graduated from high school and who wish to prepare for a specific occupational field--trade, business, health, or engineering-related. Forty-two such schools now are operating in Wisconsin. This study is confined to those schools which offer one- or two-year programs that culminate in a certificate or associate degree. A report on this research will be available in February 1969.

3. DETERMINANTS OF POST-HIGH SCHOOL EDUCATION

Investigator: John Melder (deceased)

Under the Direction of: Burton A. Weisbrod, Professor of Economics

This study attempted to develop an empirical model for forecasting the probability that a high school graduate would go on to college or to some other form of post-high school education. In particular, the influence of family income was being investigated, utilizing data from Wisconsin state income-tax returns.

The research was terminated at the time of Mr. Melder's death, but it is hoped that a report will be forthcoming on this research.

4. A COST-EFFECTIVENESS STUDY OF IN-SCHOOL AND SUMMER PROGRAMS OF THE NEIGHBORHOOD YOUTH CORPS

Project Director: Gerald G. Somers, Professor of Economics

Principal Investigator: Ernst Stromsdorfer, Visiting Associate Professor of Industrial Relations

Project Specialist: Janie Haugh

The objective of this study is to measure the effectiveness of the Neighborhood Youth Corps (NYC) in relation to its costs. Earnings, wage rates, and employment rates will constitute economic indexes of program performance, school attendance, scholarship, deportment, and attitudinal measures will constitute noneconomic indexes. Economic measures of marginal and average costs of the program to federal and local governments, to society, and to individuals will be computed. Noneconomic costs will be treated in a taxonomic fashion but will not enter directly into the cost-effectiveness analysis. From the data, and subsequent conclusions drawn, recommendations will be made concerning the efficient allocation of NYC funds. Data are being obtained by personally interviewing 600 each of the control and experimental groups chosen on a nationwide basis. The major emphasis of this study will be on a comparison of the graduates of the NYC programs as against non-NYC graduates. A second major emphasis will be to compare NYC graduates against non-NYC dropouts. The study is being financed by the Cost-Benefit Analysis Division, Manpower Administration, U.S. Department of Labor. The expected completion date is August 30, 1969.

5. EMPLOYERS OF VOCATIONAL SCHOOL GRADUATES

Investigator: Charles B. Perrow, Associate Professor of Sociology

Graduate Assistants: Karl Magnusen; Kenneth Bryson; Roy Gesley

The problem of "manpower for industry" has typically been approached from the "output" side--number entering the labor force, job training

programs, vocational education, etc.--rather than from the "consumer" side--the needs of specific firms. This study seeks to identify the characteristics of Milwaukee area firms which "consume" one output source (vocational schools) and the firms' attitudes towards this and other sources. One tentative hypothesis was that the technology of the firm (routine versus nonroutine) would affect the visability of sources to the consuming firm and their efforts to influence the nature of the product turned out by vocational schools. Therefore, an elaborate effort to operationalize and quantify the concept of technology was undertaken. Several firms were studied in detail in this connection and a survey was made of manufacturing firms with over 500 employees in the Milwaukee area. The results are now being analyzed. The final report on this project should appear in the early summer of 1969.

6. APPLICATION OF COST-BENEFIT ANALYSIS TO VOCATIONAL AND TECHNICAL EDUCATION IN WISCONSIN: A PILOT STUDY

Investigator: Leroy J. Peterson, Professor of Educational Administration

Assisted by: Rolland W. Graf, Supervisor of Research, Kenosha Technical Institute

Graduate Assistant: Joseph Fratianni

The study is a preliminary exploration of the application of cost-benefit analysis to vocational and technical education in Wisconsin. Its signficance is found in its specificity to a particular area of education. While several studies have identified costs and benefits for education as a whole, only a limited number of studies have attempted to assess costs and identify benefits in specific areas; the area of vocational and technical education has been singularly neglected. Studies are needed to complement the findings of general

studies and to assist in the development of improved procedures and instruments for analysis of cost-benefit relationships in this expanding area.

A major purpose of this preliminary, exploratory analysis of the application of the cost-benefit theory to vocational and technical education was the development of procedures and instruments which would be applicable in a nationwide study. It was directed at a more accurate determination of public educational costs in six programs and of private costs (measured in earnings foregone). Instruments were developed and applied to assess the financial benefits in relation to costs, both public and private.

The procedures and instruments developed were piloted in the Kenosha Technical Institute. To ascertain earnings foregone and benefits received, Kenosha high school graduates comparable in academic ability and achievement were compared with students completing the selected programs in the Kenosha Technical Institute. Based on experience in the pilot study, instruments have been revised and suggested procedures modified.

The study is nearing completion and should be ready for publication later this fall.

7. VOCATIONAL CHOICES OF EMPLOYEES TERMINATED IN A PLANT CLOSURE
Investigator: James L. Stern, Professor of Economics
Graduate Assistant: James Marketti

The object of this study is to ascertain the relative earnings advantage gained by workers of a multi-plant corporation terminated in a plant closing who choose one vocational option over another. The three options considered are transfer, retraining, and immediate job

search. Transfer consists of geographic relocation to another plant of the same corporation. Retraining is defined to include completion of an MDTA retraining course. Immediate job search includes all terminated employees who sought employment in the labor market in which the closed plant was located and who did not enter training or take a transfer.

Upon completion, the study will show the ratio of post- to pre-shutdown earnings of various groups of employees exercising each of these options. Counselors in future plant closings should find the results of this study useful in advising employees about the advantages and disadvantages of these three options. It is anticipated that the advantage of the internal labor market (nationwide movement within the firm) over retraining and immediate job search will be greater for workers disadvantaged by age, race, sex, and lack of education and skill than for young skilled white males. To the degree that workers with similar characteristics (that is workers whose age, sex, skill, and education are the same) fare better in the internal than the external labor market, public policy questions about the efficiency of retraining and job development programs are raised. Most studies of retraining tend to compare people with and without training and conclude that one group (usually the trainees) has done better than the other. If one regards the internal labor market transfer as a somewhat imperfect proxy for no loss of job, the degree to which the ratio of post- to pre-shutdown earnings of the trainee falls short of the ratio achieved by the transferee, is a measure by which to judge the efficiency of training. If the ratio of post- to pre-shutdown earnings of the trainee exceeds that of the transferee we have the interesting situation in

which the plant closing has forced a worker into a situation in which his earnings have improved over what they might have been if the plant did not close and there had been no loss of job.

The study is based on company and social security records of the production workers affected by the closing of the Armour & Company Kansas City meat packing plant. During the past year, data have been collected from the Company and pre-shutdown earnings for individuals have been obtained, grouped, coded, and tabulated. Meetings have been held with the Social Security Administration (SSA) officials and informal agreement about the form in which data will be submitted and returned has been reached. 1967 earnings data will be furnished by the SSA in the fall of 1968. Calculations will be completed early in 1969 and the final project report will be submitted prior to November 1969.

8. SURVEY OF FULL-TIME STUDENTS IN WISCONSIN POST-HIGH SCHOOL VOCATIONAL PROGRAMS

Investigator: Merle E. Strong, Professor of Educational Administration

This study was initiated by Norman F. Dufty, Perth Technical Institute, Australia, during the academic year 1966-67 when he was a Visiting Lecturer in Industrial Relations and assisting with Center-sponsored research projects at The University of Wisconsin. Murray Tucker worked on this project during the 1967-68 academic year.

Preliminary tables were composed from the results of a survey of students in four post-high school vocational programs and one vocational high school program in Wisconsin. The survey was designed to illicit information about the students' plans for the future, how they decided on their occupation, and how they evaluate the programs. The tables indicated a high degree of similarity in the aims and prospects

of students coming from predominantly urban areas, while significant differences occured between this group of students and those from rural areas. Research and a final report on this study should be available by early fall of 1969.

9. A COMPARATIVE STUDY OF SELECTED CHARACTERISTICS OF STUDENTS WHO WERE ENROLLED IN POST-HIGH SCHOOL TERMINAL PROGRAMS; AND STUDENTS WHO WERE ENROLLED AND COMPLETED NO MORE THAN TWO YEARS OF A POST-HIGH SCHOOL TRANSFER PROGRAM

Investigator: Richard W. Whinfield, Administrative Associate

Students choose different educational programs for various reasons. These educational programs presumably are related to occupational achievement. The goal of this research is to discover what differences in relatedness exist when different educational programs are pursued.

In this study two groups of students--one representing two Wisconsin Schools of Vocational, Technical, and Adult Education, and the other representing two University of Wisconsin Centers offering the first two years of a Bachelor's degree program--were studied and compared 1) upon entrance into the programs, 2) upon leaving the programs, and 3) two and five years after leaving the programs. All attributes found at each point in the student's history were analyzed to determine the relationship of each variable to occupational achievement after leaving the programs. Information was obtained through school records and a follow-up random sampling of the groups. The statistical treatment includes cross tabulations, analysis of variance, and regression analysis. These are presently being interpreted. This study will appear as a Ph.D. dissertation in January 1969.

COMPARATIVE STUDIES OF VOCATIONAL TRAINING AND LABOR MARKET BEHAVIOR

Under partial support of the International Studies Program of the University of Wisconsin, research has been conducted on education, including vocational education and training, as it relates to labor market behavior of industrial workers in India, Japan, Singapore, the Philippines, and Thailand. Approximately 3,000 workers in major industrial cities of these countries have been interviewed on the basis of a common questionnaire, translated into the relevant national languages and dialects, and administered by indigenous personnel. The following reports have emerged from this comparative survey, and others are pending:

1. JOB VACANCIES AND STRUCTURAL CHANGE IN JAPANESE LABOR MARKETS, Gerald G. Somers and Masumi Tsuda, reprinted from The Measurement and Interpretation of Job Vacancies (New York: National Bureau of Economic Research, 1966)--Reprint No. 76 of the Industrial Relations Research Institute Reprint Series.

2. SELECTED CASE STUDIES OF VOCATIONAL TRAINING IN JAPANESE MANUFACTURING FIRMS, Shunichiro Umetani, Master's thesis, University of Wisconsin, 1968 (see section of this Report on GRADUATE STUDY: Master's theses).

3. A CASE STUDY IN THE EMERGING INDUSTRIAL LABOR FORCE IN FOUR FACTORIES IN BOMBAY, Bhal J. Bhatt (Assistant Professor of Industrial Relations, State University of New York at Buffalo), Ph.D. dissertation, University of Wisconsin, 1966 (see section of this Report on GRADUATE STUDY: Ph.D. Dissertations).

4. DETERMINANTS OF INCOME IN MADRAS LABOR MARKET, S. P. Muthuchidambaram (Assistant Professor in Administration, University of Saskatchewan), Ph.D. dissertation, University of Wisconsin, 1968 (see section of this Report on GRADUATE STUDY: Ph.D. Dissertations).

COMMUNITY AND POLITICAL FACTORS AFFECTING VOCATIONAL EDUCATION

The following research is being conducted by faculty members and graduate students in an effort to determine the community and political factors which influence the formation of policy in vocational education.

1. AN INVESTIGATION OF COMMUNITY VARIATIONS IN THE ESTABLISHMENT OF VOCATIONAL TRAINING AND RETRAINING PROGRAMS

Investigators: Robert R. Alford, Professor of Sociology; Michael T. Aiken, Associate Professor of Sociology

A major redirection of this project was necessary this year, because of a discoverty that states, not cities, were the only important decision-making unit with respect to those vocational education programs which had comparable data from state to state. Considerable effort was put into an attempt to gather comparable data from several hundred cities, and in fact a substantial body of data from a number of cities is available. But it was decided that the more important political unit was the state, at least with respect to vocational education programs, and activities shifted toward gathering available data from State Boards of Vocational Education for 1961 and 1965. Also, a number of political, social, and economic characteristics of states were taken from the 1960 census and more recent publications on state politics. These data are now being analyzed. The data will be deposited in the Data and Program Library Service in the Social Science Building, The University of Wisconsin, for public use.

The data include enrollment in and expenditures on a wide variety of vocational education activities, separately by federal, state, and local contributions. State characteristics which will be correlated with vocational education enrollment and expenditures include the party control of the legislature, the importance of a wide range of political issues in recent sessions of their legislatures, the strength of pressure groups, the degree of party competitiveness, the ratio of taxes to personal income, per pupil school expenditures, state welfare expenditures, the formal powers of the governor, the poverty level in the state, and many others. A final report on this study is expected to be published in June 1969.

2. POLITICS AND POLICY FORMULATION IN VOCATIONAL EDUCATION IN WISCONSIN, 1900-1968

Investigators: B. Dean Bowles and Donald N. McIsaac, Assistant Professors of Educational Administration

Graduate Assistants: Eugene C. Craven; Jacob O. Stampen

This research into the politics and policy formulation processes of vocational and technical education in Wisconsin from 1900-68 aims to (1) identify the political influences which are involved in the policy processes; (2) determine the role of the Legislature, Governor's Office, the Coordinating Committee for Higher Education, the State Board of Vocational, Technical, and Adult Education, the Vocational Directors' Association, other educational interest groups, and noneducational pressure groups in the policy formulation process; (3) study decision-making on the State Board of Vocational, Technical, and Adult Education before and after the impact of the Vocational Education Act of 1963; (4) demonstrate State Assembly and Senate voting patterns from 1900-68 as they relate to all issues, appropriations-tax issues, education issues, and vocational-technical-adult education issues (or any

combination thereof); (5) identify factors of gross social, economic, and political change which precede and correlate with major changes in public policy, particularly vocational-technical-adult education policy, as evidenced by legislative voting behavior changes from 1900-68; (6) determine those social, economic, and political indicators which have demonstrated value in predicting conditions amenable to legislative policy change (or status quo) relative to educational policy; and finally (7) develop those methods and identify those variable factors which readily lend themselves to the study of public policy formulation in vocational, technical, and adult education (or any public policy arena for that matter) in other political systems, particularly to a comparative state study of the politics of education.

Identification of the political influences, determination of the policy roles, and study of the decision-making process of the State Board of had been completed between February 1967 and June 1968 by utilizing standard anthropological participant-observer field techniques and the sociological open-end focused interview. Wisconsin Senate and Assembly voting pattern data from 1900-68 had been recorded, key punched, and corrected between March. 1968, and September 1968, and are now ready for data processing by computer factor analytic programs. The several social and economic variables have been selected and recorded for each legislative constituency from 1900-68. In addition, legislative district popular voting data for the same period as well as "in-house" Senate and Assembly political factors have been recorded, key-punched, and await data processing. Each of these social, economic, and political factors will be processed by computer using factor analytic methods, multiple regression techniques, and trend surface analysis

between October 1968 and February 1969. At present the project awaits only the final "de-bugging" of the trend surface analysis program. It is anticipated that analyses and conclusions regarding the social, economic, and political data can proceed from February through June 1969, with final field study closure and reporting completed by October 1, 1969.

THE STAFFING OF VOCATIONAL EDUCATION

As a final area of research interest in the vocational education field, the Center is engaged in a study of the source and supply of teachers for vocational and technical education. The following study is pilot research in Wisconsin which may be extended to other sections of the country.

RECENT TRENDS IN WISCONSIN VOCATIONAL TEACHER EDUCATION, SOURCES, AND RECRUITMENT

Investigator: Jeffrey Gibbs, Graduate Student in Industrial Relations

Under the Direction of: Gerald G. Somers, Professor of Economics

Consultants: Richard Whinfield, Administrative Associate; Roland Krogstand, State Board of Vocational, Technical, and Adult Education

Enrollment in the Wisconsin vocational system has tripled--to approximately 200,000 full-time enrollees--since the passage of the Vocational Education Act of 1963. The result has been a tremendous increase in demand for vocational teachers in the state.

The main goal of this study is to examine how teacher sources, recruitment, education level, and mobility have change in recent years. In particular, an attempt is being made to discover significant differences in these variables before and after 1963.

The major hypothesis is that passage of the Vocational Education Act has necessitated the use of different sources and different recruit-

ment techniques for vocational teachers. Characteristics of vocational teachers and teacher utilization will be examined also. In addition, a comparison of the characteristics of different types of vocational teachers will be made. It is hoped that the findings can be used to facilitate the recruitment of new teachers.

The study, conducted in cooperation with the Wisconsin State Board of Vocational, Technical, and Adult Education, was started in March 1968. A survey questionnaire was distributed to all full-time vocational teachers, supervisors, and directors in Wisconsin. The final count shows a return of 1,079 (70 percent) teacher-supervisor questionnaires and 24 (83 percent) full-time director questionnaires.

All data has been transferred to computer cards; a set of these cards will be given to the State Board of Vocational Education so that they can discover the prevalent characteristics of any type of vocational teacher they are trying to recruit. The relevant recruitment characteristics included in this survey are: 1) subject or curriculum area taught; 2) average age at recruitment; 3) sex; 4) educational level; 5) state post-high school education was received in; 6) position before joining vocational system; 7) state residence before joining system; and 8) methods used by teachers to find job.

A Master's thesis, resulting from this research, will appear in January 1969.

V. GRADUATE STUDY

Graduate Study in Vocational and Technical Education

The encouragement and promotion of graduate study in the field of vocational and technical education is one of the major objectives of the Center. Research assistantships are available for activities in connection with the University-wide program of research on problems in this area, including studies of: the job market and occupational trends; job requirements and skills; worker mobility; human aptitudes, skills, and knowledge required by occupational groups; developments in instructional materials; curriculum plans; teaching practices; instructor qualifications; and other subjects related to the general goals of strengthening programs of education, training, or counseling for youth and adults for employment or re-employment.

Research assistants may work toward graduate degrees in agriculture, economics, education, engineering, commerce, industrial relations, political science, psychology, sociology, or other fields which have a pertinent relationship to important aspects of vocational and technical education. It is anticipated that their work on vocational education as graduate students will encourage them to continue their interest in this field during their post-graduate careers.

Following is a list of the graduate students who have received financial aid from the Center. Each student has assisted the research being carried on by a faculty member associated with the Center. Many of these people have graduated and their current positions are noted.

Lachman Advani, now with the Department of Labor in Ottawa, Canada, assisted Robert Alford, Professor of Sociology and Michael Aiken, Associate Professor of Sociology while he was a graduate student in Industrial Relations. He also worked as an indexer in the Reference Unit of the Center.

John Bowman, who assisted Professors Somers and Cain of Economics while he was a graduate student in Economics, is now with the Battelle Institute in Columbus, Ohio.

Kenneth Bryson, Sociology, is assisting Charles Perrow, Associate Professor of Sociology in his current study.

Robert Fenske, Research Director for the Illinois State Board of Education, worked with Professor J. Kenneth Little, Educational Administration, while earning his graduate degree.

Susan Fernbach, Industrial Relations, is assisting Professors Somers and Little on the Office of Education, VO-ED Project.

Joseph Fratianni has assisted Leroy Peterson, Professor of Educational Administration while working for a graduate degree in Education.

Lucian Gatewood, Industrial Relations, is working with Professor Somers on the "Retraining the Disadvantaged" project.

Roy Gesley, Sociology, is also assisting Charles Perrow in his current study.

Morley Gunderson, Industrial Relations, is working with Professor Somers and Richard Whinfield on a current project.

Len Hausman, now at North Carolina State University at Raleigh, assisted Professors Somers and Cain of Economics while he was a graduate student in Economics.

Edith Healt, a graduate student in Economics, has been working with Professor Somers.

Brian Heath, who worked with Professor Little, is now at the Counseling Center at the University of Pittsburgh.

Charles Hegji, University of Wisconsin--Milwaukee, assisted Richard Perlman, Professor of Economics, with his study.

John Houle, now at Stout State University, Menomonie, Wisconsin, worked with Professors Little and Helling on their study of South Milwaukee County.

James Jacobs, Education, has been working with Philip Perrone, Professor of Counseling and Behavioral Studies.

Donald Johnson, who worked with Professor Perrone, is now at the State University of New York at Brockport, New York.

Henry Kao, who worked with Professor Harland Sampson and Professor Gerald Somers, is now with the Highway Safety Research Institute at the University of Michigan.

Gershon Konditi, who has returned to Nairobi, East Africa, worked with Professors Alford and Aiken on their research.

Karl Magnusen, a current student in Industrial Relations, has worked with Professor Alan Filley, Business; and is currently working with Professor Charles Perrow.

Gerald Matteson, now an Assistant Professor of Agriculture at River Falls State University, worked with Professor Walter Bjoraker while a graduate student in Agriculture.

James Marketti, Industrial Relations, is working with Professor James Stern of Economics, on a current project.

Joseph McGivney, who is currently with the Ohio State University Center for Vocational/Technical Education, worked with Professors Little and Helling on one research project, and with Professor B. Dean Bowles on another project.

Colette Moser, Assistant Professor of Economics at Rutgers University, worked with Professor Somers while she was a graduate student in Economics.

S. Muthuchidambaram, now at the University of Saskatchewan in Regina, Canada, worked with Professors Somers and Hansen.

Bernard Neinhaus, Education, is working with Philip Perrone, Professor of Counseling and Behavioral Studies, on a current study.

Arthur Noonan, University of Wisconsin--Milwaukee, assisted Professor Kirk P tschek, Department of Urban Affairs, with his research.

Lance Oswald, Counseling and Behavioral Studies, assisted Professor Perrone.

William Peyton, a graduate student in Economics, worked with Professor Somers.

Michael Rich, Economics, worked with Professors Somers and Cain.

Myron Roomkin, Industrial Relations, is currently assisting Professor Somers.

Wayne Schwartzman, Industrial Relations, who worked with Professors Alford and Aiken, is now a law student at the University of Chicago.

Wilbur Smith, now at West Virginia University, worked with Professors Somers and Cain.

Jacob Stampen, Education, is assisting Professor Bowles in his current study.

R. Calvert Stewart, who worked with Professor Little and Richard Whinfield, is now with a consulting firm in Maryland.

Winston Tillery, who is now located in Maryland, worked with Professors Somers and Cain, while he was working on his degree in Industrial Relations.

Barbara Klees Thoen, Industrial Relations, who worked with Professor Perrone, is now in Santa Cruz, California.

Shuni Umetani, Industrial Relations, is currently assisting Professor Somers.

Arlayne Weston, University of Wisconsin--Milwaukee, worked with Professor Petschek on his project.

Joan Zitzer, Counseling and Behavioral Studies, worked with Professor Philip Perrone.

GRADUATE DEGREES

Since the establishment of the Center, a number of Master's theses and Ph.D. dissertations have come out of research sponsored by the Center. Abstracts of these theses and dissertations are given below.

Master's theses

THE DIRECTOR'S ASSOCIATION AND THE POLITICS OF VOCATIONAL EDUCATION, 1948-1967

Eugene Cravens, 1967

Under the Direction of B. Dean Bowles, Assistant Professor of Educational Administration

The purpose of Cravens' study was to explore, develop, and refine a conceptual framework developed by Bowles who, in an earlier study, attempted to describe and understand the decision-making and influence structure relative to education in California. Cravens was concerned with the politics of education in Wisconsin. He made several suggestions for improving the technique to provide more adequate treatment of such data. Using an open-end questionnaire, he interviewed 38 of the 40 Association Directors, the State Director of Vocational, Technical, and Adult Education, State Board members, legislators, and others. In the interview process, he was able to identify

issues and, subsequently, to define the role of the Wisconsin Vocational Directors' Association in influencing political decisions. This information was supplemented by a review of the minutes of the Association and of the State Board, enabling him to define shifts of power and influence.

A STUDY OF REGISTERED JOINT APPRENTICESHIP COMMITTEES IN WISCONSIN BUILDING TRADES

Karl O. Magnusen, January 1967

Under the direction of Alan Filley, Professor of Business

Summarized in Essays on Apprenticeship (see section of this report on PUBLICATIONS)

This study focuses on the characteristics of joint apprenticeship committees, their perceptions of their committee functions, their activities in influencing related instruction and in supervising apprentices, and their viewpoints on issues affecting apprenticeship programs. It also develops data on procedures for selecting apprentices and on apprentice-journeyman ratios. Magnusen concludes that joint apprenticeship committees should have legislative recognition; that better information should be provided to committee members on nationwide apprenticeship practices, and on labor market conditions. He recommends that an accreditation plan be developed for persons who have learned a trade without formal training, and suggests consideration of such creative new programs as tax credits for employers, apprenticeship training for emerging occupations, and referesher courses for journeymen. The study includes much statistical information about joint apprenticeship committees in Wisconsin and their activities as of 1966.

AN EXPLANATION AND EVALUATION OF THE REFERENCE UNIT AT THE CENTER FOR STUDIES IN VOCATIONAL AND TECHNICAL EDUCATION AT THE UNIVERSITY OF WISCONSIN

Dennis L. Radtke, June 1967

Under the direction of Marshall Sanborn, Associate Professor of Counseling and Behavioral Studies

This paper deals with an explanation of the Reference Unit of the Center. contains a review of related literature, describes the method used for eval-

uating the unit, summarizes the results, and draws conclusions. The evaluation consisted of a questionnaire sent out to two types of users--those who receive regularly published or general bibliographies, and those who request specially prepared bibliographies. The respondents were broken down into ten categories according to their occupation, e.g., teachers, administrators, government employers, etc. The evaluation of the general bibliographies, based upon 252 responses, showed that 92 percent were satisfied, and, of the special bibliographical requests, based upon 129 responses, 68 percent were satisfied. Mr. Radtke summarized by saying, "The results of the evaluation show that the information acquired, processed, and disseminated is meeting the needs of the majority of the requesters. It was also found that the information service, though adequate, needs much improvement before it can be termed excellent."

SELECTED CASE STUDIES OF VOCATIONAL TRAINING IN JAPANESE MANUFACTURING FIRMS
Shunichiro Umetani, January 1968
Under the direction of Gerald G. Somers, Professor of Economics

The effects of the changing patterns and process of Japanese vocational training on the operation of the labor market was one aspect of this study. Five hundred workers, randomly selected from three firms in the iron and steel manufacturing industry in Tokyo were interviewed in 1965. The training histories and other personal data collected in these interviews were used in this study. Findings suggest a change in skill acquisition patterns from unorganized on-the-job training to more formalized training; training occured at both the high school and post-high school levels. However, in comparison with the United States and Western Europe, Japan still relies very little on formal training for skill acquisition. The study also investigated the skill mix of the labor force and the wage and promotion advantages of further training to the worker in Japan.

Ph.D. Dissertations

A CASE STUDY IN THE EMERGING INDUSTRIAL LABOR FORCE IN FOUR FACTORIES IN BOMBAY
Bhal J. Bhatt, 1966
Under the direction of Gerald G. Somers, Professor of Economics

This dissertation, analyzing patterns of training and labor market behavior in Bombay, is part of a larger research project on comparative international labor market behavior.

The analysis includes the relationship between personal characteristics, education, and training of Indian industrial workers to their work history. A discussion of the attitude of Indian industrial workers to their union and union leaders is also included.

THE STRUCTURE OF RELATED INSTRUCTION IN WISCONSIN APPRENTICESHIP PROGRAMS
James S. Crabtree, August 1967
Under the direction of Alan C. Filley, Professor of Business
Summarized in Essays on Apprenticeship (see section of this Report on PUBLICATIONS)

This study reporting a survey of apprenticeship-related instruction programs in Wisconsin vocational schools describes: administrative relationships; trade programs; enrollment patterns; structure of curriculum; and instructional staff and cost of instruction. Crabtree concludes that the present structure of related instruction is not likely to be changed in the immediate future although there are definite needs for improvement of its administration. He recommends including representatives of vocational schools on advisory committees; scheduling apprenticeship training to coincide with regular school terms of vocational schools; developing a standardized core curriculum; and the improved use of tests. The study includes much descriptive statistical data about related instruction programs in Wisconsin in 1966.

EFFECTS OF LOCAL OPPORTUNITIES FOR POST-HIGH SCHOOL EDUCATION UPON PLANS OF HIGH SCHOOL GRADUATES

Robert H. Fenske, 1965

Under the direction of J. Kenneth Little, Professor of Educational Administration

This study compared the rate of college-going students in 10 Wisconsin communities that had different opportunities for post-high school education; two communities had state universities, four communities had two-year university campuses, and four communities had neither. His findings indicated that for large numbers of students the presence of a college opportunity in the community is not a decisive influence on their plans for attending a degree-granting college. Communities with no college in their boundaries had higher rates of college-going youth than communities in which such opportunities are present. Community differences in scholastic ability of graduates, educational and occupational attainment of the parents, and other social-cultural factors, were more strongly associated with decisions about college-going than presence or absence of a college. The communities were much more alike in the proportion of graduates who attended vocational schools, these students tending to be a cross section of the graduating class.

THE PREDICTION OF OCCUPATIONAL STATUS FOR NON-COLLEGE-GOING HIGH SCHOOL GRADUATES

Brian Heath, 1965

Under the direction of J. Kenneth Little, Professor of Educational Administration

This research considered the predictive relationship of measures of high school achievement and of the level of occupational attainment by a probability sample (4, 185) of the male graduates of Wisconsin high schools in 1957. Very low positive relationships were found. The knowledge level of high school achievement was of negligible significance in predicting

the level of occupational status of the graduate eight years after his high school graduation. Occupational attainment was measured by an adaptation of the occupational prestige scale developed by the National Opinion Research Center.

THE RELATIONSHIP OF SELECTED SOCIOECONOMIC VARIABLES TO EXPECTATIONS HELD BY CITIZENS FOR POST-HIGH SCHOOL EDUCATIONAL OPPORTUNITIES

John Houle, August 1967

Under the direction of Professor John Helling, Educational Administration

This dissertation investigates the relationship of attitudes of residents toward the need for post-high school education to such variables as age, length of residence, tenure in job, educational attainment, and availability of post-high school educational facilities in their communities. The general conclusion was that older, less-educated citizens who had long tenure in satisfying jobs and are conservative in political outlook are less likely to perceive that more and/or improved post-hgih school programs are needed, than the younger, better educated, citizens who perceive themselves as needing to find their niche in the occupational world. This dissertation developed out of the South Milwaukee County Study.

PSYCHO-SOCIAL CHARACTERISTICS OF SECONDARY SCHOOL VOCATIONAL TRAINEES RATED BY THEIR TEACHERS AS HAVING POOR WORKER POTENTIAL

Donald Johnson, 1966

Under the direction of Philip Perrone, Professor of Counseling and Behavioral Studies

This study compared vocational students in 27 Wisconsin high schools who were rated by their instructors on a criterion of projected on-the-job performance as being in the upper and lower quarters of their classes. There were 136 boys and 200 girls rated in the upper quarter and 133 boys and 188 girls rated in the bottom quarter. The findings suggest that students who are rated low in projected on-the-job performance are lower in

both scholastic ability and performance, have different values, identify with workers in lower socio-economic levels, have lower level job expectations and aspirations, and place less value on achievement than students who are rated as potentially good on-the-job performers.

EMPLOYER VIEWS AND EVALUATIONS OF FEDERAL RETRAINING PROGRAMS
Edward C. Koziara, August 1965
Under the direction of Gerald G. Somers, Professor of Economics

The major objectives of the study were (1) to determine whether or not employers generally support government retraining, (2) to determine if employers prefer institutionalized vocational training over on-the-job training, (3) to find out if employers would hire retrained workers, (4) to determine employers' evaluation of federal trainees whom they have hired, (5) to determine employers' views concerning the effects of retraining and tax reduction on unemployment, (6) to determine if employers support relocation allowances for retrained workers who are unable to obtain jobs in their home areas, and (7) to compare the results of this study with the results of a study conducted by Harold A. Gibbard and Gerald G. Somers directed towards employers in depressed areas. The members of the American Society of Training Directors was asked to participate in the survey. The results of the survey showed that 53 percent of the respondents favored some kind of government-supported retraining for the unemployed; 35 percent of the employers wanted no government-aided retraining for the unemployed. A preference was expressed for government-supported retraining through vocational schools as compared with subsidized on-the-job retraining.

AN EVALUATION OF RETRAINING PROGRAMS FOR UNEMPLOYED WORKERS IN THE UNITED STATES

Marvin J. Levine, January 1964

Under the direction of Gerald G. Somers, Professor of Economics

This dissertation sought to determine the extent and effectiveness of public and private retraining programs in furnishing the unemployed worker with the necessary skills to enable him to re-enter the labor force and become a productive member of society. It was based on an examination of existing literature, reports, and records, and correspondence with government, management, and union officials. Included was a case study of trainees and nontrainees in a midwestern redevelopment area which sought to determine the significance of personal characteristics on propensity for retraining. The case study demonstrated that although unskilled, the trainee group was able to qualify for retraining because of a higher educational level and showed a greater willingness to relocate if necessary. The equally unskilled nontrainees in many cases, were underemployed, and their prospects for future socioeconomic improvement were bleak because of family and financial obligations. He concluded that retraining is only a partial solution for the long-term unemployed. Just as essential is expanded economic growth to create jobs and stimulate labor demand.

POLITICS OF VOCATIONAL EDUCATION IN WISCONSIN 1909-1967

Joseph H. McGivney, 1967

Under the direction of B. Dean Bowles, Assistant Professor of Educational Administration

This study describes the development of vocational education in the state of Wisconsin with particular reference to the structure of political influences shaping specific basic legislative action affecting the state's vocational education system. The study employed the methodology of identifying key issues and persons, followed by structured interviews with the

participants found to be influential in the development of legislative proposals, their debate, and their enactment. Twenty-seven such issues are identified and 55 interviews ensued. The testing of hypotheses about the decision-making process form a substantial part of the study's contribution; but the total yields interesting, useful insights of the history of the vocational education movement in Wisconsin and how signficant changes took place.

RETRAINING AND GEOGRAPHIC MOBILITY: AN EVALUATION
Graeme H. McKechnie, August 1966
Under the direction of Gerald G. Somers, Professor of Economics

Various programs have been established to alleviate unemployment attributable to inadequate aggregate demand and structural changes in the economy. This disseration focused on two of these programs--retraining and relocation. The sample was selected from the unemployment roles and training course enrollments in West Virginia in 1962. The hypotheses treated were: there will be some substitution of retraining for geographic movement; the workers who have been retrained and who relocated will have the most success in the labor market in terms of increased earnings compared to workers who did not retrain or relocate; the benefits of retraining and relocation will outweigh the costs; and finally, age will vary inversely with labor market success, whereas education will vary directly.

VOCATIONAL EDUCATION COMPLETED BY EAST CENTRAL WISCONSIN GRADUATES AND SELECTED EMPLOYMENT FACTORS
Gerald Matteson, June 1966
Under the direction of Walter Bjoraker, Professor of Agriculture Extension Education

This dissertation was a study of the occupations of male graduates of 10 high schools, mostly rural, in northeast Wisconsin, who had not attended

college nor served in the Armed Forces more than six months, and had been out of high school for five years when surveyed. The research compared job attainment and job satisfaction of those who had differing amounts of vocational education in high school, and found little association between type and level of occupation and number of vocational studies pursued in high school. A sizable majority had entered occupations different from those of their fathers but had remained in their communities. The youths, as a group, were below average in scholastic ability. The study supports the idea that vocational subjects were elected in preference to academic studies, probably for reasons other than to achieve definite occupational objectives. Many of the youths expressed the desire to have additional vocational training, but few were so engaged at the time of the study.

DETERMINANTS OF INCOME IN MADRAS LABOR MARKET
S. P. Muthuchidambaram, 1968
Under the direction of Gerald G. Somers, Professor of Economics

This thesis is a case study of 501 male, nonsupervisory, blue-collar workers, randomly selected from two medium sized manufacturing firms in Madras City, India. A comparison of income determinants found in this study is made with the results of a similar study conducted in Japan and with United States figures. The thesis was concluded:

> "It should be recognized that the application of investment-return concepts to labor market studies do not tell us directly and exactly whether education, training, etc., are 'a sufficient condition of growth.' But it is perfectly possible to believe that earnings differentials are largely attributable to such factors and even that these factors contribute to economic growth; they are necessary conditions, though not sufficient for economic growth."

VALUES AND OCCUPATIONAL PREFERENCES OF JUNIOR HIGH SCHOOL BOYS

Elwyn H. Nagel, 1964

Under the direction of Philip Perrone, Professor of Counseling and Behavioral Studies

The purpose of the study was to learn how junior high school boys and their parents rate the importance of certain values that may be related to occupational preference and other variables that may be relevant to career planning. Previous research, using college and high school students, suggested that occupational values and occupational preferences might be related at an earlier age. The subjects studied by means of a 16-item occupational values scale were 177 junior high school boys and their parents. Measures of school achievement and intelligence were obtained. Roe's classification was used to place the occupational preferences of boys and the occupations of parents in six occupational levels and eight occupational groups. Certain values were found to be correlated signficantly and to be grouped in clusters for both boys and parents. Parents rated the occupational values somewhat differently than boys, and more significant inter-correlations were found between parent's ratings than boys' ratings of occupational values.

A STUDY OF THE REGISTERED APPRENTICESHIP PROGRAM IN WISCONSIN

G. Soundara Rajan, August 1965

Under the direction of Jack Barbash, Professor of Economics

Published: $2.00 from the Center

The objectives of this research were: (a) to prepare a comprehensive document on the Wisconsin Apprenticeship Program, (b) to examine the trend of apprenticeship transactions, and (c) to develop information on the major factors affecting apprenticeship transactions in Wisconsin. The first objective was realized by bringing together relevant information about insti-

tutions participating in the program. Trends in apprenticeship transactions between 1911 and 1962 were ascertained by analyzing statistical data collected from the Apprenticeship Division of the Industrial Commission of Wisconsin. Information on the factors affecting apprenticeship activities in Wisconsin was obtained through surveys of current apprentices, dropouts, and employers. The following major factors were found to influence apprenticeship transactions in Wisconsin: (a) current apprentices are dissatisfied with related instruction and shop training; (b) this dissatisfaction causes apprentices to drop out of the program before completion; (c) employers limit the number of apprentices they hire because of unfavorable business conditions and the high cost of apprentice training; and (d) institutional rigidities tend to discourage employers from hiring more apprentices. The following recommendations are made: the objectives of the apprenticeship program must be restated in terms of the labor market needs; the Apprenticeship Division of the Industrial Commission should play a more active role, not only as a supervisory and promotional agency, but also as an agency for the planning and development of skills needed in the changing economy; and, finally, tax incentives should be provided for employers in order to encourage them to hire more apprentices.

THE EFFECT OF DIFFERENTIAL CURRICULA UPON THE INTELLIGENCE, ACHIEVEMENT, AND CAREER VALUES OF GIRLS

Joan Zitzer, 1967

Under the direction of Philip Perrone, Professor of Counseling and Behavioral Studies

A selected sample of junior girls at Monona Grove High School was interviewed to determine differences in career goals between those in college and noncollege preparatory curricula. Changes in scholastic achievement and values since eighth grade which might be attributed to pursuit of different curricula were also studied.

Although there were no differences in socio-economic status and ordinal position between the two groups, girls enrolled in a college preparatory curriculum had fewer siblings and higher intelligence and achievement test scores. It was found that there were no differences in voc tional values between the two groups in eighth grade but after three years in different curricula the college preparatory girls had come to value using their special abilities and aptitudes in their work while the noncollege preparatory girls stressed the money and the opportunity to work with people.

In interviewing the girls, the investigator found the two groups of girls differed in their view of the job supervisor. For the girls planning to go to college, he was an experienced person one turns to for assistance and advice. For the other group of girls, the supervisor was viewed as an authority who is responsible for what occurs on the job, which frees them from having to assume responsibility for their work behavior.

INTERNSHIPS AND FELLOWSHIPS

In addition to assistantships which are available to students interested in vocational education-oriented fields, the Center has established internship and fellowship programs. To date, the Center has awarded one internship, to Leo R. Nevala, a former teacher of Industrial Arts at Whitefish Bay, Wisconsin. He was placed as an intern at the Kenosha Technical Institute for the second semester of 1966-1967. He has now completed his doctoral studies in Adult Education.

Two fellowships were granted in the spring of 1968. William Horvath and Spiro Mehail, both from the Milwaukee Institute of Technology of the Milwaukee School of Adult, Vocational, and Technical Education, enrolled in January, 1968, to complete their doctoral work in Education Policy Studies at the University of Wisconsin. They will have completed their work in January 1969.

CONFERENCES

An important function of the Center is the sponsorship and conduct of conferences and workshops designed to bring together vocational and technical educators, university faculty members, and local, state, and federal government officials interested in and active in the field. Two such conferences were held in 1968 and one is being planned for early 1969; eight conferences were held prior to 1968.

CONFERENCE ON OCCUPATIONAL DATA REQUIREMENTS FOR EDUCATIONAL PLANNING
June 15-16, 1965
Madison, Wisconsin
Proceedings: Out-of-print

The United States Office of Education co-sponsored this conference on labor market information as it relates to the successful functioning of the vocational education system and to intelligent planning of programs under the Area Redevelopment Act, the Manpower Development and Training Act, and other similar legislative measures. It became evident as the conference progressed that a need existed for more complete surveys of the extent of utilization of already available occupational data. Five position papers were presented to a group of 30 academic and government specialists in education and manpower analysis fields. Panel discussions followed each presentation.

CONFERENCE ON FOLLOW-UP STUDIES IN EDUCATION RESEARCH
November 18-19, 1965
Madison, Wisconsin
Proceedings: Out-of-Print

The purpose of this conference was to determine the objectives and methodology of research surveys already in progress in educational areas

and to explore the possibilities of coordination and cooperation in the conduct of future research. Seventeen reports on current projects were given by well known researchers in education; a discussion of objectives followed the research presentations. The ideas discussed at this conference led to the study being conducted in cooperation with the United States Office of Education, "An Evaluation of the Effectiveness of Vocational and Technical Education in the United States" (see section of this *Report on* RESEARCH).

CONFERENCE ON RESEARCH IN VOCATIONAL AND TECHNICAL EDUCATION
June 10-11, 1966
Madison, Wisconsin
Proceedings: $3.00; x + 285 pp.

A group of 120 academicians, practitioners, and government officials exchanged information of current research findings at this two-day conference. Topics covered in the 17 papers included: job counseling, occupational choice, job cluster concepts, curriculum innovations, cost-benefit analysis, and problems of disadvantaged groups.

CONFERENCE ON RESEARCH IN APPRENTICESHIP TRAINING
September 8-9, 1966
Madison, Wisconsin
Proceedings: $3.00; x + 192 pp.

Representatives of federal, state, and local apprenticeship agencies, as well as academic research investigators, met to present and discuss recent research in apprenticeship training. The papers presented at this conference, co-sponsored by the Office of Manpower Policy, Evaluation, and Research, covered such topics as: identification of forces controlling the supply of and demand for apprentices; problems of related instruction; the role of joint apprenticeship advisory committees; use of pre-apprentice-

ship training; and minority group experiences in apprenticeship. The 120 participants in the conference heard arguments on the validity and usefulness of apprenticeship programs and discussed their own experiences with such programs.

CONFERENCE ON RESEARCH APPROACHES TO THE INITIATION OF NEW PROGRAMS IN VOCATIONAL AND TECHNICAL EDUCATION

October 3-7, 1966

Madison, Wisconsin

Proceedings: Out-of-Print

The need for new vocational education programs to meet the demands of new technology and changes in the labor market was the central discussion point of this invitational seminar. Local school representatives from Wisconsin, Illinois, Indiana, Iowa, Minnesota, and Michigan were addressed by educators, economists, and businessmen who have been studying and working with the problems arising from the changing labor market. A workshop, in which participants discussed the extent of and solution to the emerging problems, followed the formal presentations.

CONFERENCE ON CURRICULUM PROGRAMS IN ACTION: THEIR ADMINISTRATION AND EVALUATION

February 15-17, 1967

San Francisco, California

Proceedings: $2.00; available from Communications Service Corporation, 1629 K Street, N.W., Washington, D. C. 20006); ii + 127 pp.

The University of Wisconsin Center joined the Center for Technological Education at San Francisco State College in planning and directing this conference devoted to description and discussion of imaginative curriculum projects in Newton, Massachusetts; Pittsburgh, Pennsylvania; the San Francisco Bay area; the Partnership Educational Project of Central Michigan University; the American Industry Project of Stout State University; and the Visual

Communication Education Project at Western Washington State College, Bellingham. The conference attracted over 150 registrants from 17 states, representing all major regions of the nation.

CONFERENCE ON THE ENCOURAGEMENT OF RESEARCH IN PREDOMINANTLY NEGRO UNIVERSITIES
February 23, 1967
Durham, North Carolina
Proceedings: gratis; iii + 25 pp.

The purpose of this meeting was to encourage cooperation between predominantly Negro and predominantly white institutions in the same or neighboring communities in the preparation and submission of research proposals on manpower and education topics. The participants, meeting at North Carolina College, were addressed by Sylvia McCollum, Office of Education, United States Department of Health, Education, and Welfare, and Howard Rosen, Office of Manpower Policy, Evaluation, and Research, United States Department of Labor. Conference participants included faculty members from Texas Southern University; Prairie View A & M Texas; Rice University; The University of Houston; North Corlina College; A & T University of North Carolina; North Carolina State University; Duke University; Virginia Polytechnic Institute; Massachusetts Institute of Technology; and The University of Wisconsin. Two cooperative inter-racial committees emerged from the meeting, one in Durham and the other in Houston. These committees worked on a proposal for cooperative research on "The Causes of Negro Teenage Unemployment," with funding for the projects being made available by the United States Department of Labor.

CONFERENCE ON THE EDUCATION AND TRAINING OF RACIAL MINORITIES
May 11-12, 1967
Madison, Wisconsin
Proceedings: $3.00 plus postage; x + 211 pp.

Government officials and educators involved in research on job education for racial minoritess met to discuss recent findings and demonstration projects in this area. The topics discussed included: apprenticeship opportunities; public education's role in developing manpower; self-help projects; problems of minority groups other than Negroes; statistical studies of job and educational levels; and means of providing job mobility for these minority groups. The 125 participants were addressed by James Farmer, former director of the Congress of Racial Equality (CORE), at a banquet meeting.

CONFERENCE ON EDUCATION AND TRAINING IN CORRECTIONAL INSTITUTIONS
June 5-6, 1968
Madison, Wisconsin
Proceedings: $3.00 plus postage

Some evidence exists that the opportunities for employment and advancement of former inmates of correctional institutions are greatly enhanced through training programs conducted in these institutions. In order to bring together research on this topic, the Center held a conference on Educatonn and Training in Correctional Institutions with co-sponsorship provided by the Bureau of Prisons, United States Department of Justice. The conference was attended by academicians, government officials, penal institution directors, and vocational educators who have been involved in educational programs offered by correctional institutions. As in pr[illegible]r conferences, the emphasis of the meeting was placed on analytical reports, research findings, and project evaluations rather than on general descriptive statements of issues and programs.

Speakers and discussants for this conference were selected from all areas of the United States. The position papers and authors were: EMPLOYMENT PROBLEMS OF RELEASED PRISONERS, George Pownall, Department of Sociology, Kent State University; CHANGING INMATES THROUGH EDUCATION, Calvin Michael, Director, Center for Correctional Education; LESSONS LEARNED FROM VOCATIONAL TRAINING PROGRAMS GIVEN IN A PRISON SETTING, Curtis Aller, Associate Manpower Administrator, United States Department of Labor; and MANAGEMENT OF TRANSFER FROM JAIL TO COMMUNITY, Clyde Sullivan, Director, Social Restoration Research Center, Staten Island Mental Health Society.

Discussants were: Allen Harbort, Superintendent, Correctional Education, Division of Corrections, State of Wisconsin; Jacob Kaufman, Director, Institute for Research on Human Resources, The Pennsylvania State University; James Jacks, Specialist, Rehabilitation Services Administration, United States Department of Health, Education, and Welfare; Robert Carter, Associate Research Criminologist, University of California, Berkeley; John Galvin, Joint Commission on Correctional Manpower and Training; John McKee, Director, Rehabilitation Research Foundation, Draper Correctional Center; Wallace Mandell, Director of Research, Staten Island Mental Health Society; Harold Starr, Specialist, The Center for Vocational and Technical Education, The Ohio State University; Marshall Colston, Specialist, The University of Wisconsin Extension; Sidney Fine, Senior Staff, The W. E. Upjohn Institute for Employment Research; Sylvia McCollum, Education Research Specialist, Bureau of Prisons, United States Departmentof Justice; and Leon Leiberg, Director, Project Challenge, National Committee for Children and Youth.

The banquest session was addressed by Sanger Powers who, using experience and knowledge garnered from his position as Director of Corrections for the State of Wisconsin, described some of the experimental programs in vocational

and remedial education that are being carried on in correctional institutions in Wisconsin.

CONFERENCE TO DISCUSS THE REPORT OF THE ADVISORY COUNCIL ON VOCATIONAL EDUCATION

A Series of Conferences held During October, 1968

Proceedings: In process

The Vocational Education Act of 1963 advised that a National Advisory Council on Vocational Education be established to work as a liaison unit between the federal government and administrators responsible for vocational education in the nation. This council's first report, "Vocational Education: A Bridge Between Man and His Work," appeared in the spring of 1968. Congress subsequently enacted important legislation affecting vocational-technical education. The Ford Foundation asked the Center, with the assistance of the American Vocational Association, to sponsor a series of regional conferences of key citizens to discuss the implications of the recommendations of this report and the new legislation. Six regional conferences were held, followed by a national summation conference in Madison on October 17-18, 1968.

Participants at each regional conference were, in general, representatives from business, labor, government, and education who would be qualified to serve, if appointed, on state advisory councils for vocational education as provided in the new federal legislation. Discussions of the report and legislation were presented at each conference by a member of the National Advisory Council, a vocational educator, and an informed person not directly engaged in vocational education or training.

The six regional conferences were held in Atlanta; Dallas, Fort Collins, Colorado; Chicago; New Brunswick, New Jersey; and San Francisco. The arrangements for these conferences were accomplished through local directors chosen from nearby educational institutions. These directors were:

Aleene Cross -- Atlanta Conference
James R. D. Eddy -- Dallas Conference
Milton E. Larson -- Colorado Conference (Fort Collins)
Albert J. Pautler -- New Jersey Conference (New Brunswick)
Jacob Stern -- Chicago Conference
J. Chester Swanson -- San Francisco Conference

The meeting in Madison was attended by prominent national leaders representing a wide range of interests. National council members gave summary reports of their findings, and a representative of each regional conference reported on the actions of their participants at each conference.

The recommendations and findings of the regional and national meetings will be published in a summary report to become available in the early spring of 1969 at a cost of $3.00 plus postage.

SEMINAR ON COST-BENEFIT ANALYSIS OF MANPOWER PROGRAMS
May 14-16, 1969
Madison, Wisconsin

This seminar will be directed primarily at the conceptual, analytical, and methodological problems of cost-benefit analysis of manpower programs, including vocational training and other investments in human capital. Although the papers and discussion will include reports on cost-benefit studies which have been conducted, the sessions will emphasize the handling of methodological and analytical problems encountered in research.

This conference, sponsored jointly by the United States Department of Labor and the Canadian Department of Manpower and Immigration, will be held on the Madison campus of the University of Wisconsin. Queen's University in Kingston, Ontario, has been awarded financial aid from the Canadian sponsor. The topics for discussion will include: "The Role of Cost-Benefit Analysis in Manpower Policy," "Methodological and Conceptual Problems,"

"Cost-Benefit Studies of Occupational Training," "Cost-Benefit Studies of Manpower Programs for the Disadvantaged," "Cost-Benefit Studies of Employment Service Operations," and "Cost-Benefit Studies of Mobility Programs."

Speakers and discussants from the United States and Canada are being invited to prepare papers fn these topics. The Proceedings of this conference will appear in both English and French versions and should be available in the fall of 1969.

PUBLICATIONS

A principal objective of the Center's program is the dissemination of research findings in the field of vocational and technical education. The Center has initiated a series of publications, including a professional journal, a newsletter, a more detailed periodic report of Center activities, a reprint series, conference proceedings, research reports, and an assortment of publications describing in detail the acquisitions, bibliographies, and services of the Reference Unit.

THE JOURNAL OF HUMAN RESOURCES

Robert J. Lampman, Professor of Economics at The University of Wisconsin and a member of the Board of Editors of the Journal of Human Resources since 1966, assumed the position of Editor in July 1968, replacing Gerald G. Somers, under whose direction the Journal was established and who had been Editor since that time. Mr. Somers remains on the Editorial Board. Associate Editors are Glen G. Cain and Philip A. Perrone; the editorial associate is Barbara D. Dennis.

As the Journal begins its fourth year of publication in the fields of education, manpower, and welfare policies, its primary emphasis continues on the role of education and training in enhancing productive skills, employment opportunities, and income. The contents also include articles on more general manpower, health, and welfare policies as they relate to the labor market and to economic and social development. In addition to the funds provided for the support of the Journal by the Center, it has received substantial financial support from The University of Wisconsin,

through the Industrial Relations Research Institute, and from the Institute for Research on Poverty which was established at the University in 1966 under a grant from the United States Office of Economic Opportunity.

A special feature of the Journal's Volume III in 1968 was the publication of a supplement, Vocational Education, Report of a Conference Sponsored by the Brookings Institution, which was mailed to subscribers in July along with the regular Summer issue. The supplement contained papers presented at conference held in April 1967 as part of the Brookings research program on the economics of education, which is supported by funds from the Carnegie Corporation of New York. Brookings made the papers available to the Journal.

Contents of the Supplement are:

"INTRODUCTION," Rashi Fein, The Brookings Institution; "IMPLICATIONS OF TWO VIEWS OF VOCATIONAL GUIDANCE," Morgan V. Lewis, Pennsylvania State University; "THE RESPONSE OF VOCATIONAL EDUCATION TO LABOR MARKET CHANGES," Gerald G. Somers, University of Wisconsin; "AN ECONOMIC ANALYSIS OF VOCATIONAL EDUCATION IN THE NEW YORK CITY HIGH SCHOOLS," Michael K. Taussig, Rutgers University; "THE DECISION TO INVEST IN VOCATIONAL EDUCATION: AN ANALYSIS OF COSTS AND BENEFITS," Arthur J. Corazzini, Dartmouth College; "OCCUPATIONAL TRAINING NEEDS FOR YOUTH," Jacob J. Kaufman, Pennsylvania State University.

Contents of the four issues in Volume III are:

Volume III, Number 1: "THE DETERMINANTS OF SCHOLASTIC ACHIEVEMENT--AN APPRAISAL OF SOME RECENT EVIDENCE," Samuel Bowles, Harvard University and Henry M. Levin, The Brookings Institution; "LITERACY TRAINING AND JOB PLACEMENT OF HARD-CORE UNEMPLOYED NEGROES IN DETROIT," Thomas H. Patten, Jr., Michigan State University, and Gerald E. Clark, Jr., Wayne State University; "ATTRITION AMONG PH.D. CANDIDATES: AN ANALYSIS OF A COHORT OF RECENT WOODROW WILSON FELLOWS," Joseph D. Mooney, Princeton University; "UNION INTERESTS IN APPRENTICESHIP AND OTHER FORMS OF TRAINING," Jack Barbash, University of Wisconsin; "WELFARE PAYMENTS AND WORK INCENTIVE: SOME DETERMINANTS OF THE RATES OF GENERAL ASSISTANCE PAYMENTS," Hirschel Kasper, Oberlin College; "THE HEALTH ECONOMICS OF CIGARETTE CONSUMPTION," Julian L. Simon, University of Illinois.

Volume III, Number 2: "DETERMINANTS OF ECONOMIC SUCCESS IN RETRAINING THE UNEMPLOYED: THE WEST VIRGINIA EXPERIENCE," Ernst W. Stromsdorfer, Pennsylvania State University; "A NATIONWIDE EVALUATION OF M.D.T.A. INSTITUTIONAL JOB TRAINING," Earl D. Main, University of Chicago; "SCHOOL RETENTION BY RACE, RELIGION, AND SOCIOECONOMIC STATUS," Charles B. Nam, A. Lewis Rhodes, and Robert E. Herriott, Florida State University; "SEX DIFFERENCES IN ACADEMIC RANK AND SALARY AMONG SCIENCE DOCTORATES IN TEACHING," Alan E. Bayer, American Institutes for Research, and Helen S. Astin, Stanford University; THE LABOR MARKET AND PAROLE SUCCESS," Robert Evans, Jr., Brandeis University; "APPRENTICE-RELATED INSTRUCTION: SOME BASIC ISSUES," George Strauss, University of California; "EQUALITY OF EDUCATIONAL OPPORTUNITY: REPLY TO BOWLES AND LEVIN," James S. Coleman, Johns Hopkins University; "THE ECONOMICS OF ENGINEERING AND SCIENTIFIC MANPOWER," Lester O. Bumas, Polytechnic Institute of Brooklyn.

Volume III, Number 3: INCOME REDISTRIBUTION AND THE LABOR SUPPLY: A SYMPOSIUM--"INTRODUCTION," Harold W. Watts, University of Wisconsin; "NEGATIVE TAXES AND MONETARY INCENTIVES TO WORK: THE STATIC THEORY," Christopher Green, North Carolina State University at Raleigh; "A NEGATIVE INCOME TAX PLAN FOR MAINTAINING WORK INCENTIVES," Richard Perlman, University of Wisconsin, Milwaukee; "THE CONSTRAINED DEMAND FOR PUBLIC ASSISTANCE," Peter S. Albin and Bruno Stein, New York University; "AN EMPIRICAL STUDY OF FORMULA INCOME TRANSFERS AND THE WORK DECISION OF THE POOR," Jane H. Leuthold, University of Illinois; "SIMPLE DYNAMIC EFFECTS OF WORK-LEISURE CHOICE: A SKEPTICAL COMMENT ON THE STATIC THEORY," John Conlisk, University of Wisconsin. Also "INTERPERSONAL ATTITUDES OF TEACHERS AND ADVANTAGED AND DISADVANTAGED PUPILS," Albert H. Yee, University of Wisconsin; "PROGRAM INITIATION IN TECHNICAL INSTITUTES," Norman F. Dufty, Western Australia Institute of Technology; "THE USE OF THE DICTIONARY OF OCCUPATIONAL TITLES AS A SOURCE OF ESTIMATES OF EDUCATIONAL AND TRAINING REQUIREMENTS," Sidney A. Fine, The W. E. Upjohn Institute for Employment Research; "THE NEGRO AND APPRENTICESHIP: A REVIEW ARTICLE," George Strauss, University of California; "EQUALITY OF EDUCATIONAL OPPORTUNITY: COMMENTS ON BOWLES AND LEVIN," Marshall S. Smith, Harvard University; "THE CONTROVERSY ABOUT THE COLEMAN REPORT: COMMENT," Glen G. Cain and Harold W. Watts, University of Wisconsin; "MORE ON MULTICOLLINEARITY AND THE EFFECTIVENESS OF SCHOOLS," Samuel S. Bowles, Harvard University, and Henry M. Levin, The Brookings Institution.

Volume III, Number 4: "SOCIAL CHANGE AND SOCIAL SECURITY IN GERMANY," Gaston V. Rimlinger, Rice University; "ECONOMIES OF SCALE IN IOWA HIGH SCHOOL OPERATIONS," Elchanan Cohn, Pennsylvania State University; "ON-THE-JOB TRAINING AND ADJUSTMENT TO TECHNOLOGICAL CHANGE," Michael J. Piore, Massachusetts Institute of Technology; "DETERMINANTS OF THE QUALITY OF PRIMARY AND SECONDARY PUBLIC EDUCATION IN WEST VIRGINIA," Richard Raymond, West Virginia University; "THE MARGINAL WORKER: PROJECTIONS OF HIGH SCHOOL VOCATIONAL TEACHERS," Donald H. Johnson, Rochester (N.Y.) City School District, and Philip A. Perrone, University of Wisconsin; "A LONGITUDINAL STUDY OF MIGRATION EXPECTATIONS AND PERFORMANCES OF YOUNG ADULTS," Dean R. Yoesting and Joe M. Bohlen,

Iowa State University; "APPORTIONMENT OF FUNDS UNDER THE MANPOWER DEVELOPMENT AND TRAINING ACT OF 1962," Ralph E. Smith, Georgetown University; "UNEMPLOYMENT CLASSIFICATION OF MAJOR LABOR AREAS, 1950-65: A COMMENT," Gene Labor, University of Vermont.

Each issue of the Journal also includes a section of Book Reviews and a list of Books Received. The Journal circulation, as of September 1968, is approximately 1,800, an increase of 200 over the total at the same time a year ago.

NEWSLETTER

The Center publishes a quarterly newsletter in order to keep interested people advised of its activities. The Newsletter includes conference summaries; graduate study reports; research abstracts; and reference and retrieval system reports. It is distributed to approximately 1220 persons.

THE IRRI REPORT

The Institute and the Center are continuing to publish this periodic bulletin, which reports their current activities. The report includes six major sections, covering (1) news from the Institute, (2) news from the Center, (3) a feature article, (4) research in progress in both the Center and the Institute, (5) abstracts of new publications, including conference proceedings, monographs, additions to the Center and Institute reprint series, and various other bulletins and reports, and (6) recent publications of faculty affiliated with the Center and the Institute.

The issues, published in the autumn and spring, are currently sent to nearly 1,000 individuals and institutions. To date six Reports have been published: October 1965, April 1966, December 1966, June 1967, December 1967, and June 1968. The seventh issue is in press and is schedule to appear in December.

REPRINT SERIES

The reprint series of the Center was initiated in 1965. Below are abstracts of the reprints appearing in this series to date. Reprints prior to 1965 were included in the reprint series of the Industrial Relations Research Institute.

JACK BARBASH. "Union Interests in Apprenticeship and Other Training Forms," The Journal of Human Resources, Vol. 3 (Winter, 1968), pp. 63-85.

The major focus of this exploratory formulation of union interest in apprenticeship and other forms of training is on three main environments: craft union apprenticeship; the concern of industrial unions with training concurrent with employment; and the labor movement's social policy interests in training. For craft unions, the apprenticeship system is primarily but not exclusively a method of exercising control over wages by regulating the supply of labor for the craft. The industrial union seeks primarily to fix the price of labor and approaches training as a problem affecting that price, not as a mechanism for the control of the labor supply. Problems of structural unemployment, poverty, civil rights, and economic growth, combined with the availability of public funds for training, have contributed to the expansion of union interests in training.

GLEN CAIN, W. LEE HANSEN, AND BURTON A. WEISBROD. "Occupational Classification: An Economic Approach," Monthly Labor Review, February 1967.

The fundamental position expressed in this paper is that occupational classifications can serve economists as part of a larger information system--a system designed to reveal more about the current and prospective labor-resource flexibility of the economy. The authors' remarks are organized in two parts. In the first part, they focus on the meaning of the

term "occupational data classification," and the uses of such a classification system. In the second part they discuss the attributes of an "ideal" system of occupational data classification. Considerable emphasis is placed on resource substitution issues.

GLEN CAIN AND GERALD SOMERS. "Retraining the Disadvantaged Worker," Research in Vocational and Technical Education (Madison: The University of Wisconsin, 1967).

Government sponsored retraining programs for the disadvantaged are relatively new, and little effort has been made, as yet, to evaluate them in terms of costs and economic benefits. One of the major questions concerning the evaluation of these new programs aimed at the hard-core, disadvantaged groups is whether they may be analyzed with the same benefit-cost procedures as those applied to the regular MDTA programs. The authors proceed from the assumption that such an analysis is feasible but only with some important qualifications. In the first section of their paper they make some over-all comments about the techniques of evaluating the newer training programs, and in the second section they apply these ideas to two case studies. The first study focuses on the retraining of unemployed Negroes in West Virginia, and the second study concerns a group of welfare recipients in Milwaukee who received various types of training, ranging from literacy courses to auto mechanics.

NORMAN F. DUFTY. "Program Initiation in Technical Institutes," The Journal of Human Resources, Vol. 3 (Summer, 1968), pp. 346-62.

The role of the communication process in the initiation of new programs in a technical institute in a middle western state is examined in this study. Communications linkages between the Institute and the local labor market

were well developed, and there was ample evidence of the growth of specialized communications channels and their continued usuage. Advisory committees were the most important institutions in initiating new Institute programs, and the heads of departments within the Institute were the most frequently used contact points between the organization and its environment. The State Board's role was largely facilitating, and the State Employment Service played only a minor part in program initiation. Careful checks were made of the demand side of the labor market before new programs were begun, but not a great deal of attention was given to the supply side, largely because of difficulties of estimation.

W. LEE HANSEN. "Human Capital Requirements for Educational Expansion: Teacher Shortage and Teacher Supply," Education and Economic Development, 1965.

This paper, the first to be included in the Institute's Vocational Studies series, analyzes the problem of teacher shortages and teacher supply from a primarily economic point of view. Mr. Hansen first discusses the various methods of estimating projected shortages of teachers; he then considers the shortage problem in terms of teacher supply and demand, describes the African and Asian educational plans, and presents brief case studies of how several countries have managed to cope with rapid increases in the demand for education. The conclusions reached are somewhat tentative: our knowledge of the determinants of teacher supply and demand is "woefully inadequate"; educational development programs cannot efficiently proceed much further without this knowledge. "At the moment," says Mr. Hansen, "there is a great opportunity to learn more about the operation of the teacher labor market, the demand for education, and the production function for both teachers and education itself."

W. LEE HANSFN. "Labor Force and Occupational Projections," The Proceedings of the Eighteenth Annual Meeting, Industrial Relations Research Association, December 1965.

Mr. Hansen's article is concerned with the growing interest in and dissatisfaction with labor force and occupational projections. He defines five types of projections and discusses their wide variety of uses. In addition, he examines current projection practices. He concludes that the present chaotic state of the art and science of projections derives from the "substantial gaps in our notions about what projections are intended to accomplish, how they are to be made, how they are to be used, and how they a are to be evaluated."

J. KENNETH LITTLE. "The Occupations of Non-College Youth," American Educational Research Journal, Vol. IV, No. 22, March 1967.

In the United States the world of work continues to place importance on advanced levels of education and specialized types of training. Yet 75 to 80 percent of American youth are not completing college degrees. In this article Mr. Little reports the results of a state-wide survey taken in the spring of 1957 which gathered information from over 35,000 graduating seniors of Wisconsin's public and private high schools. In 1964 and early 1965 follow-up inquiries were directed to the parents of about one-third of the male 1957 graduates. In his analysis of these two surveys, the author considers the relation between plans and action, occupational attainment, background factors in occupational attainment, occupational aspiration, and the relation of occupational attainment to high school achievement.

GERALD G. SOMERS. "Government-Subsidized On-the-Job Training: Surveys of Employers' Attitudes," Hearings before the Subcommittee on Employment and Manpower, 98th Congress, September 1965; February 1966.

Based on questionnaire surveys directed to managers and employers, this article reaches the conclusion that the on-the-job t aining provision of the Manpower Development and Training Act has considerably greater potential than one might infer from the small numbers enrolled in such projects to date. A decided majority of the surveyed employers who have hired MDTA trainees, as well as a cross section of managerial personnel engaged in the training field, favor government-sponsored training; and of these, the number who prefer on-the-job training projects is only slightly smaller than those who prefer the more traditional area of government aid through vocational schools.

GERALD G. SOMERS. "Our Experience with Retraining and Relocation," Toward a Manpower Policy, 1967.

While some may deplore the continued lack of a comprehensive, coordinated manpower policy in the United States, other rejoice in the multitude of piece-meal programs that have been initiated in the past few years. The retraining and relocation programs represent significant recent departures in American manpower legislation; but our initial experience indicates the crucial need for their coordination with each other and with other educational and labor-market policies. It is the principal premise of this paper that the establishment of the appropriate relationship between these manpower policies requires a detailed research evaluation of each; and this discussion is focused primarily on the present status and future prospects of such evaluations.

GERALD G. SOMERS. "The Response of Vocational Education to Labor Market Changes," The Journal of Human Resources, Vol. 3 (Supplement, 1968), pp. 32-58.

The traditional vocational education system in the United States has been criticized for its lack of responsiveness to the needs of a changing labor market. The Vocational Education Act of 1963 resulted from these criticisms, but it has not satistied the critics. This paper evaluates the relationship of vocational education to the labor market from the standpoints of the changing composition of vocational school enrollment, job placement results, cost-benefit evaluation, and the accommodation of the needs of the disadvantaged. Attention is given to the procedures used in initiating new vocational prgorams, the adequacy of labor market data available for vocational education planning, and the utilization of these data by vocational educators.

GERALD G. SOMERS. "Retraining the Unemployed Older Worker," Technology, Manpower and Retirement Policy, edited by Juanita Kreps (The World Publishing Co., 1966).

Even though the need for alleviating unemployment among older workers is clear, it is apparent that older unemployed workers, as well as employers and training officials, are not convinced that retraining programs for older workers are a sound investment. This article evaluates the performance of older workers in government-sponsored training programs from the standpoints of post-training employment, income, reduction of dependency, and returns on the retraining investment. It also considers the difference in performance between older workers and younger trainees and between the older workers and nontrainees in their age and education group. In light of these post-training performances, the author concludes that government-sponsored

retraining for the unemployed provides a significant offset for labor market disadvantages in age and education.

GERALD G. SOMERS AND GRAEME H. MCKECHNIE. "Vocational Retraining Programs for the Unemployed," Twentieth Annual Proceedings of the IRRA, 1967.

Starting from a position of near zero at the beginning of this decade, the Federal government has now colled upon retraining to help solve the problems of depressed areas, unemployment, foreign trade expansion, poverty, and the growing relief rolls. It is the purpose of this paper to review the present state of knowledge of the value of vocational training for the unemployed. In their analysis, the authors review many of the recent evaluative studies in this area and present some of the questions which still remain unanswered.

WILLIAM J. SWIFT AND BURTON A. WEISBROD. "On the Monetary Value of Education's Intergeneration Effect," The Journal of Political Economy, Vol. 73, December 1965.

Two hypotheses are examined in this study: (1) the educational level of parents is an incentive which "causes their children to obtain more schooling than they would have obtained if their parents had less education;" and (2) "the additional schooling brings financial returns in excess of those available on alternative investments." To test these assertions, the authors present an empirical method for placing a monetary value on the influence which education in one generation has on the attitudes and educational attainments of the next generation. The data presented are in the form of internal rates of return, considered from the social as well as monetary points of view. The additional yearly income earned by the child

is measured against the interest foregone on the cost of additional education. The significance of the study lies in the determination of "the concept of a measurable intergeneration return from investment in education, and recognition that this return is relevant for efficient resource-allocation decision."

BURTON A. WESIBROD. "Conceptual Issues in Evaluating Training Programs," Monthly Labor Review, October 1966.

Training programs, like other objects of public or private spending, ordinarily involve both benefits and costs. This article discusses the forms of such effects in the manpower training area, and presents some suggestions regarding measurement methods. The need to evaluate training programs in terms of their effects on efficiency of resource allocation and on the distribution of income is undersocred, along with the problems confronted in such analyses.

BURTON A. WEISBROD. "Investing in Human Capital," The Journal of Human Resources, Vol. 1 (Summer, 1966).

Investment in human resources is now recognized as a principal stimulant to economic growth. But it appears that, as a society, we are paying too little attention to our valuable stock of human capital, while we focus on conventional investment. This article discusses some of the reasons why we should refocus our attention. It also describes the role of government in such programs.

CONFERENCE PROCEEDINGS

Proceedings of all conferences sponsored by the Center are published. The first such publication was Proceedings of the Conference on Occupational

Data Requirements for Education Planning which appeared in the spring of 1966. This is now out-of-print.

The Proceedings of the Conference on Research in Vocational and Technical Education appeared in the spring of 1967 and the Proceedings of the Conference on Research in Apprenticeship Training appeared in the summer of 1967. Both are available from the Center at $3.00 per copy.

The Proceedings of the Conference on Curriculum Programs in Action: Their Administration and Evaluation is available from the Communications Service Corporation, 1929 K Street, N.W., Washington, D. C., 20006 at a cost of $2.00 per copy.

The Proceedings of the Conference on Research Approaches to the Initiation of New Vocational Programs and the Conference on the Encouragement of Research in Predominantly Negro Universities became available in the summer of 1967. The first of these publications is out-of-print; the second is available without charge.

The Proceedings of the Conference on the Education and Training of Racial Minorities became available in January 1968 at $3.00 plus postage.

The Proceedings of the Conference on Education and Training in Correctional Institutions will be available in the late fall of 1968 at a cost of $3.00 plus postage, and the Proceedings of the Discussion of the Report of the Advisory Council on Vocational Education should be available in the spring of 1969 at the same cost.

For a short summary of each of these conferences see the section of this Report on CONFERENCES.

RCU REPORTS

Under a federal grant, many state departments of education have developed Research Coordinating Units. The purpose of these "RCU's" is to help develop, promote, and coordinate research related to vocational education in each state.

The Center collects the RCU research reports and summarizes them by state and subject area. Four such reports have been distributed. It is the aim of these reports to help the RCU's identify similar current research in other states, thereby enabling them to exchange information on these projects; and to provide information on vocational education research in progress as an aid to other investigators.

OTHER CENTER PUBLICATIONS

Monographs

In addition to regular publications, the Center publishes related works by members of the staff. Two such publications are:

G. Soundar Rajan, A Study of the Registered Apprenticeship Program in Wisconsin, $2.00 (see section of this Report: GRADUATE STUDY).

Norman F. Dufty (ed.), Essays on Apprenticeship, $3.00. This collection of papers appears as a supplement to the Proceedings of the Conference on Research in Apprenticeship Training. Subjects and authors included are: "Apprenticeship: An Evaluation of the Need," George Strauss, University of California, Berkeley; "Union Interests in Apprenticeship and Other Training Forms," Jack Barbash, University of Wisconsin; "A Survey of Wisconsin Building Trades Joint Apprenticeship Committees," Karl Magnusen, University of Wisconsin; "The Structure of Related Instruction in Wisconsin Apprentice Programs," James Crabtree, University of Wisconsin; "Apprenticeship--A Theoretical Model,"

"Recruitment to the Skilled Trades: A Study of a Segment of a Skilled Labor Market," and "A Model of Choice in Labor Markets," Norman F. Dufty, Visiting Professor (1966-67), University of Wisconsin.

National Directory of Vocational-Technical Education--1966

The Center has prepared the first national directory of vocational-technical programs in high schools and post-high school institutions. The directory is limited to schools offering programs which are reimbursable under federal government programs. The information was compiled from information furnished by the state directors of vocational-technical education, and includes full-time enrollment data, by school, for the seven program fields--agriculture, distributive, home economics, health, office, trade and industry, and technical education. The Center was encouraged to undertake this compilation by the United States Office of Education and it is hoped that the directory will provide a model for a periodic publication of this type. The supply of this publication has now been exhausted.

PENDING PUBLICATIONS

Final reports on the research described in Section IV will be published upon completion of the research. A number of these reports will appear this fall; the majority of them will be availalbe in 1969. (See section of this report on RESEARCH for specific dates).

VOCATIONAL EDUCATION--TODAY AND TOMORROW

The Center has in preparation a definitive volume on the present status and changing character of vocational and technical education in the United States. Outstanding national experts in this field have agreed to write chapters on the important problems and issues facing occupational education today.

It is anticipated that the volume will be published by the end of 1969.

Following is a list of chapter titles and authors:

INTRODUCTION.	Gerald G. Somers University of Wisconsin
CHANGING GOALS.	Melvin Barlow University of California Los Angeles
CHANGES IN THE LABOR MARKET AND VOCATIONAL EDUCATION.	Otto Pragan AFL-CIO
OCCUPATIONAL INFORMATION AND ITS USE. . . .	David Tiedman Harvard University
CURRICULUM CHANGES AND INNOVATIONS.	William S. Micheels Stout State University
CHANGES IN ADMINISTRATIVE ORGANIZATION. . .	Chester Swanson University of California Berkeley
CHANGES IN RELATIONS BETWEEN SCHOOL AND INDUSTRY	Samuel M. Burt W. E. Upjohn Institute for Employment Research
STAFFING VOCATIONAL-TECHNICAL PROGRAMS. . .	Rupert Evans University of Illinois
EVALUATING VOCATIONAL-TECHNICAL EDUCATION .	Jerome Moss University of Minnesota and Ernst Stromsdorfer Pennsylvania State University
VOCATIONAL EDUCATION FOR DISADVANTAGED GROUPS.	Laure Sharp Bureau of Social Science Research
LESSONS FROM OTHER COUNTRIES.	Norman Dufty Institute of Technology Perth, Western Australia
A LOOK AT THE FUTURE.	Marvin J. Feldman The Ford Foundation
SUMMARY AND CONCLUSIONS	J. Kenneth Little University of Wisconsin

FACULTY PUBLICATIONS

Bjoraker, Walter and Gerald Matteson, "Employment Experiences of Graduates from High School Vocational Education Programs," Agricultural Education Magazine, Vol. 39, No. 7, January 1967, pp. 159-60.

Hansen, W. Lee and Burton A. Weisbrod, "Determinants of Earnings: Does Schooling Really Count?" submitted for publication, 1967.

Perrone, Philip, "A National School Counselor Evaluation of Occupational Information," mimeo, Center for Studies in Vocational and Technical Education (ore complete report being prepared.)

_____, "Values and Occupational Preferences of Junior High School Girls," Personnel Guidance Journal, Vol 44 (1965), pp. 253-57.

_____, "Stability of Junior High School Pupils' and Parents' Vocational Values after Two Years," Personnel Guidance Journal, Vol 46, No. 3 (November 1967), pp. 268-74.

_____, "The Counseling Function as Seen by Students, Parents, and Teachers," Journal of Counseling Psychology, Vol. 12, No. 2 (Summer 1965), pp. 148-52.

_____, "Junior High School Students and Their Parents Look Ahead," Guidelines, Vol. 4, No. 1 (October 1965), pp. 19-22.

_____ and Donald Johnson, "The Marginal Worker: Projections of High School Vocational Teachers," Journal of Human Resources, Vol. 3, No. 3 (Fall, 1968).

Petschek, Kirk, "Barriers to Employing of Negroes in White-Collar Jobs," Proceedings of the 20th Annual Meeting of the IRRA Madison: Industrial Relations Research Association, 1968).

Somers, Gerald G., "Evaluation of Manpower Development Programs," Human Resources Development, edited by E. B. Jakubauskas and C. P. Baumel (Iowa State University Press, 1967).

_____, "Migration and Training as Factors in Economic Development," Proceedings of the Summer Institute on Regional Economic Development, July-August, 1966 (Clearinghouse for Federal Scientific and Technical Information, 1967).

_____, "The Evaluation of Manpower Policies," prepared for the Joint Economic Committee, U.S. Congress, Compendium on Human Resources, to be published 1968.

SOURCES OF FINANCIAL SUPPORT, 1968-69

FORD FOUNDATION	
1. Grant for operation of Center (part of five year grant)	$164,000
2. Grant for support of Conference to discuss the Report of the National Advisory Council on Vocational Education	36,350
UNITED STATES OFFICE OF EDUCATION grant for research on the effectiveness of vocational education in the United states (graduates)	198,000
(dropouts)	40,000
UNITED STATES DEPARTMENT OF LABOR	
1. Grant for research on Neighborhood Youth Corps	180,000
2. Grant for support of Seminar on Cost-Benefit Analysis of Manpower Programs	23,500
3. Grant for research on plant closures	12,000
UNITED STATES DEPARTMENT OF JUSTICE grant for support of conference on Education and Training in Correctional Institutions	6,000
DEPARTMENT OF INTERNATIONAL STUDIES, University of Wisconsin grant for research on comparative labor market studies	5,500
WISCONSIN STATE BOARD OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION	
1. Released time of staff	5,000
2. For research on high school dropouts in vocational education programs	450
	$670,800

These funds are from outside sources and are in addition to funds provided by the University of Wisconsin for salaries and computer costs.

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As a basis for a future plan to meet the nursing needs of the people of Michigan, data were obtained about present and projected nursing needs and resources. Some conclusions were: (1) The amount of registered nurse service time has decreased in the past decade in relation to the population of the state, despite an increase in the number of registered nurses, (2) Most of the nursing fields have a short supply of nurses and their needs are growing, (3) Michigan has educated too few nurses and is retraining too few of those it educates, (4) The proportion of college age youth entering nursing has decreased, (5) There is a large percentage of inactive registered nurses approaching the age of 40, but there is a risk in relying too heavily upon these nurses, (6) There is increasing demand for registered nurses in supervision, teaching, and administration, and a large proportion of nurses in these fields as well as in public health are not academically prepared for their positions, and (7) The present enrollment capacity of practical nursing schools appears adequate. Recommendations are presented under the topics: (1) expansion of education facilities, (2) alleviation of critical faculty shortage, (3) development of nurses for leadership positions, (4) improvements in availability and utilization of nurses, (5) improvement of efforts to increase the supply of nurses, and (6) study of specific problems. (JK)

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NURSING NEEDS AND RESOURCES IN MICHIGAN TODAY AND TOMORROW

A Report to the People of Michigan
from the
Michigan League for Nursing
and
Michigan Nurses Association

Study Administered by
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The Executive Committees of the Michigan League for Nursing and the Michigan Nurses Association, provided overall direction for this study. The Joint Study Committee comprised of representatives from the Michigan Board of Nursing as well as from the sponsoring organizations, gave direction for the study design, the collection and evaluation of data, the assumptions on which future estimates were based and the preparation of this report. Members of that committee devoted many hours of volunteer service to this study in addition to twelve full days of group study and deliberation.

Essential data were drawn from official publications or were received directly from the Michigan Board of Nursing, Michigan Nurses Association, Michigan League for Nursing, Michigan Department of Public Health, Michigan Department of Mental Health, Michigan Hospital Association, Michigan Department of Social Welfare, Michigan Association of Osteopathic Hospitals, Michigan Health Council, University of Michigan Population Studies Center, Michigan Employment Security Commission, National League for Nursing, American Nurses Association and the Division of Nursing, Public Health Service of the U. S. Department of Health, Education, and Welfare. Surveys of Michigan schools of nursing, hospitals, and community colleges were conducted to gather specific information not otherwise available. The high response to those surveys was gratifying.

Consultants from the Michigan Health Facilities Planning Council and from the Michigan Department of Public Health, Division of Hospital and Medical Facilities advised on trends in construction of hospitals and related facilities. Other planning information and advice were sought and received from individuals who are knowledgeable in the hospital field, in the nursing home field, in public health, in occupational health and from the Research Department of the United Community Services of Metropolitan Detroit.

This study was one of a number of projects undertaken by the Michigan League for Nursing in the year 1965. Financial support came from League membership dues and from voluntary contributions of Michigan citizens, received by the League through the Michigan United Fund and the United Community Services of Metropolitan Detroit.

The Joint Study Committee wishes to acknowledge staff assistance provided by the League in the tremendous task of collecting data from many sources and to commend Mrs. Marguerite Murray, Executive Director, for the skillful way in which she prepared pertinent tables and compiled the report for committee deliberation.

Gratitude of the two organizations that sponsored this study goes also to the Cunningham Drug Company Foundation for the generous contribution which financed the publication and distribution of complimentary copies of this report.

FOREWORD

This study, commissioned in 1964 by the governing boards of the Michigan League for Nursing and the Michigan Nurses Association, is Michigan's first survey of nursing needs since the Cunningham Drug Company Foundation Report of 1954. A joint committee comprised of four members from each of the sponsoring organizations and two representatives from the Michigan Board of Nursing, was authorized to conduct the study. Administrative responsibility was delegated to the Michigan League for Nursing.

The Joint Study Committee was charged to conduct "... a study of present and projected nursing needs and resources to serve as a basis of a future plan to meet nursing needs of the people of Michigan." A major objective was the development of a guide for expansion of nursing education facilities in Michigan. The plan is designed to produce a flow of new graduates that will not only increase Michigan's supply of nurses but will increase the number of nurses who are fully prepared for responsibilities of the positions they hold.

The four dimensions of planning were considered when the scope of this study was defined: what kind, how many, when, and where. The task delegated to the Joint Study Committee was limited to the first three of these dimensions. Statewide planning for hospitals and related health facilities had not progressed sufficiently to make reliable predictions relative to clinical facilities for nursing education in all areas of Michigan.

Goals for expansion of nursing education facilities at the baccalaureate and higher degree levels reflect upward trends that will take us from where we are today to where we believe we can be in 1975. For the level of nursing education offered either by hospital diploma programs or associate degree programs in junior colleges, goals are designed to reach the desired maximum enrollment not later than 1970. Goals for educating nurses in all programs, including practical nursing programs, are planned to minimize the need for nursing personnel at all levels to function beyond their preparation. It is recognized that change is occurring rapidly in the field of health and that long range goals in this report may fall short of actual demand.

Unprecedented amounts of public education funds will be required to realize the goals set forth in this report. To prepare increasing numbers of registered nurses for general patient care, demands are being made on community colleges to establish or expand associate degree programs of nursing education. To prepare the desired number of practical nurses for nursing homes and other long term patient care facilities, there can be no let-down in budgets of practical nursing programs in public school systems in the next few years. To prepare increasing numbers of nurses for teaching, supervision, administration, clinical specialties, public health nursing, and occupational health nursing, budgets of State universities will be highly vulnerable to increased demands. To provide salaries that will attract and retain qualified faculty, the budgets of all tax supported nursing education programs will be subject to strain. To provide financial aid for student nurses in

all programs, new demands can be expected on State and Federal aid programs administered by the Michigan Higher Education Assistance Authority and on federal funds administered by schools of nursing, colleges and universities.

This is not to say that the voluntary effort can be relaxed. Indeed, the goals set forth in this report will make equally pressing demands on resources of private schools and colleges with nursing education programs and on voluntary sources of nursing scholarships, grants and loans.

Important as statewide goals are in planning to meet growing demands for nursing services and nursing education programs, they are of little avail without subsequent regional and community planning. Establishment of a new school of nursing, the closing of a school and the expansion of a school — any one of these is of broader concern than to one institution alone or even to one city or county. This report offers a framework of qualitative and quantitative goals and a time schedule to guide further planning in local communities.

ISABELLE RYER
Chairman
JOINT STUDY COMMITTEE

PART I

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations presented in this report resulted from detailed study of nursing needs and resources in Michigan that was conducted in three phases:

1. *Status Study* — what Michigan has now and what is needed.
2. *Trends Study* — what has happened in recent years and what is happening today.
3. *Projections Study* — what Michigan can expect to need and expect to have in future years.

The major portion of the study was completed prior to publication of the position papers on nursing education of the American Nurses Association *(American Journal of Nursing,* December 1965) and the Michigan Nurses Association *(The Michigan Nurse,* January - February 1966). Further direction is expected at a later date as a result of other studies (See Part VII).

In this report the plan for educating nurses reflects present and emerging demands for nursing services and trends in nursing education. It is assumed that there will be frequent review of this plan and that modifications will be made from time to time based on what is happening in society.

CONCLUSIONS

I. The amount of registered nurse service time has decreased in the past decade in relation to the population of Michigan, despite an increase in the number of registered nurses. (Part II, A)

II. Most of the fields of nursing have a short supply of nurses and their needs are growing. (Part II, A and B)

III. Michigan has educated too few nurses in the past decade and is retaining fewer of those it educates. (Part II, A)

IV. Although there was a marked increase in the number of college age youth in the past decade, the proportion that entered nursing decreased. (Part V, A)

V. The large pool of inactive registered nurses who are now approaching forty years of age indicates that there is more than usual recruitment potential among inactive nurses. (Part V, B)

VI. There is risk in relying too heavily on the inactive nurse as a major source of registered nurse supply. (Part V, B)

VII. There is increasing demand for and placement of registered nurses in supervisory, teaching and administrative positions. (Part VI)

VIII. A large proportion of registered nurses in supervision, education and administration and in fields of public health and occupational health are not academically prepared for responsibilities inherent in the positions which they hold. (Part VI and Part VIII)

IX. Although the number of licensed practical nurses has increased rapidly in the past decade and while more are needed, the present enrollment capacity of schools of practical nursing appears to be adequate. (Part V)

X. The number of unlicensed nursing personnel employed in hospitals and nursing homes has been increasing rapidly. (Part II, D, and Part VIII, A)

XI. In relation to the number of patients in hospitals, there has been a glaring decrease in the available time of registered nurses for patient care. (Part II, D and Part VIII, A)

XII. If the number of students are available as projected, the supply of qualified nurse faculty would be inadequate. (Part VI and Part VIII, D)

XIII. An increasing number of nurses must be prepared in junior and senior colleges and State universities in future years. (Part VII)

PREFACE TO THE RECOMMENDATIONS

Recommendations are based on study findings and on goals that are believed to be feasible if the recommendations can be implemented fully. The recommendations call for action from many segments of the community including the two organizations that sponsored this study.

The Michigan Nurses Association will have a responsibility to follow through on recommendations that relate to the economic welfare and educational advancement of registered nurses and to matters that call for action by the State Legislature. The Michigan League for Nursing will have a responsibility to stimulate the implementation of recommendations pertaining to community and regional planning for nursing education facilities, public information, and measures relating to the nurse supply. Study of specific problems and appropriate methods of implementation should be pursued by both organizations.

At least every five years a comprehensive study should be made to evaluate the nurse supply in Michigan and to modify projections and plans in accord with changing needs.

Recommendations of this study are presented under six topics of major concern:

I. Expansion of nursing education facilities.

II. Alleviation of the critical shortage of qualified nurse faculty.

III. Development of an adequate supply of qualified nurses for leadership positions.

IV. Improvements in availability, utilization and skills of nurses.

V. Improvement of efforts to increase the supply of nurses.

VI. Study of specific problems.

RECOMMENDATIONS

I. Expansion of nursing education facilities. (Refer to Part VII)

A. Based on projected nursing needs and/or feasible goals for recruiting students, the following figures were reached for the expansion of basic nursing education facilities in Michigan:

1. Existing hospital diploma programs should make maximum use of their facilities until associate degree programs in community colleges can expand and new associate degree programs can be developed. The goal is 2,300 admissions in both programs for the academic year 1969-70, and approximately the same number of admissions annually thereafter through the academic year 1974-75. This goal represents 41% more freshmen admissions than were reported to the Michigan Board of Nursing for the year ending October 15, 1965.

2. Basic baccalaureate degree programs should expand steadily to provide facilities for 750 sophomore admissions in the academic year 1969-70. This goal represents 44% more sophomore students than were enrolled in the year ending October 15, 1965. During the interval 1970 through 1975, these programs should expand further to accommodate a total of 1,800 sophomore admissions in the academic year 1976-77 and approximately the same number of admissions annually thereafter through the academic year 1979-80. By 1975 new baccalaureate degree programs should be established in strategic locations throughout the State.

3. The present capacity of practical nursing programs should not be increased. Existing facilities can accommodate 2,150 admissions annually and this is considered to be adequate. However, distribution of facilities should be investigated in relation to regional needs.

B. There should be community and regional planning for orderly expansion and sound development of nursing education facilities.

1. Planning should be initiated by nurses who should seek the leadership of a local or regional planning body that has an interest in the problem, such as an educational body, hospital association or community health and welfare agency.

2. All interests in the community should be brought together to participate in this planning. Such a group should include representatives of the consumer public, employers of nurses, schools of nursing in the community and/or neighboring communities, the nursing organizations and regional bodies responsible for planning health and education facilities.

3. Planning should be based on information such as contained in this report along with information gathered by the planning group. Data collected that relates to the local and/or

regional area should include the availability of qualified nurse faculty, the educational, clinical, and financial resources, and the potential for student recruitment.

4. Planners should seek guidance from a qualified nursing education consultant when contemplating change or evaluating the educational and clinical resources for a new program.

II. Alleviation of the critical shortage of qualified faculty for schools of nursing. (Refer to Part VIII, D)

A. Immediate steps should be taken to provide Michigan schools of nursing with 350 additional faculty in the next five years — an increase of 50%. By 1977 another 400 suitably prepared faculty will be needed for a total increase of 100% over the present day supply.

B. Facts and figures in this report indicating that the future supply of nurses in all fields of nursing is contingent upon the availability of qualified faculty, should be published and distributed widely to the citizens of Michigan, the Governor's Committee on Human Resources, public officials, employers of nurses and members of the medical and osteopathic professions.

C. The State legislators should be bombarded with evidence of the gap between what Michigan is now doing and what it needs to do to educate the nurses it needs. Legislators should be asked to enact legislation appropriating scholarship funds to prepare nurse faculty.

D. All possible sources of voluntary funds should be investigated in this emergency to help prepare nurse faculty. Such awards should be sufficient to enable a nurse to complete the required preparation without excessive indebtedness.

E. Employing agencies, schools of nursing and their alumni associations, and the nursing organizations should all make a conscious effort to identify nurses with potential for teaching and counsel them to prepare for faculty positions. Employers in all fields of nursing should adopt policies that will support this action.

F. Salaries for nurse faculty should reflect the special preparation required and should be comparable to salaries for positions with like responsibilities in other fields of education in institutions of higher learning. Salaries for nurse faculty in Michigan should be sufficiently competitive with those in other states to attract and retain teachers for Michigan's schools of nursing.

G. Funds should be provided to enable directors of nursing education programs to acquire modern teaching aids and to utilize new educational media, thus making more effective use of their available nurse faculty.

III. Deve'opment of an adequate supply of nurses for leadership positions. (Refer to Part VI)

A. In the interval from 1966 through 1970, at least 800 registered nurses without baccalaureate degree preparation should be recruited for full time study and helped to secure this education in nursing. The true need is far greater. At least 1,200 additional Michigan nurses who have not been prepared at the baccalaureate degree level should achieve this preparation in the ten year period 1970 to 1980.

B. In the interval from 1966 through 1970, at least 500 Michigan nurses with baccalaureate degrees should be recruited for full time graduate study to earn masters degrees in nursing. The true need is far greater. In the decade 1970 to 1980, at least 2,375 additional Michigan nurses should achieve this preparation.

C. State scholarships should be available to registered nurses seeking baccalaureate degree education. Michigan legislators should enact the necessary enabling legislation.

D. Junior and senior colleges and universities throughout the State should devise means whereby registered nurses and prospective student nurses can be counseled about the baccalaureate degree nursing curriculum and enrolled in courses that will apply credit by transfer to a program leading to a Bachelor of Science in Nursing.

E. Universities with masters degree programs in nursing should offer scholarships and financial incentives to baccalaureate degree nursing graduates with outstanding potential for the clinical specialties and teaching.

F. Nurses in all fields of nursing who are prepared for and functioning in leadership positions should be paid salaries commensurate with their education and responsibilities.

G. As a means of attracting, retaining and aiding in the development of leaders in nursing, employers should provide in their personnel policies for educational and sabbatical leaves.

IV. Improvements in availability, utilization and skills of nurses. (Refer to Part V, B and D, and Part VI)

A. Employers should devise various means to encourage part time nurses to work more days per week. These might be in the form of economic incentives.

B. Employers should offer significant differential in pay for nurses who work the less desirable hours in a twenty-four hour day and for those who work week ends and holidays.

C. Employers should continue to study and implement ways to relieve nurses of duties that can be delegated to others.

D. Employers should use every possible means to strengthen their inservice education programs for nurses.

1. Educational institutions with nursing education faculty who normally are not teaching during the summer months,

should be asked to offer suitable short term courses for nurses. Employers should find it advantageous to ask community colleges to do this since they are located within easy access to many employing agencies and their faculties are usually employed only ten months of the year.

2. If a qualified nurse is not available to direct the inservice education program, the employing agency should assist a promising staff member either to acquire this preparation or to attend short term traineeship programs.

3. Nursing service and nursing education administrators in local communities should bring their colleagues together to explore and develop ways to make use of new educational media such as television, and to share educational programs for their nursing service or instructional staffs.

E. Employers should provide financial resources so that directors of nursing services and nursing education programs may secure the services of qualified nurse consultants to assist with analysis of problems and with plans for improvements or change.

V. Improvement of recruitment efforts to increase the supply of nurses. (Refer to Part V)

A. Nursing careers information programs should keep pace with the increasing student body in junior and senior high schools.

B. Mass communications media, local health organizations and district nurses associations should all help to disseminate information that will be effective in recruiting married women for schools of nursing and in encouraging inactive nurses to return to nursing.

C. Men nurses should help develop effective ways to interpret nursing careers to boys and men.

D. Employers should use various means and incentives that will attract or enable inactive nurses to return to nursing.

VI. Study of specific problems.

A. In view of statistics indicating that Michigan has been losing more young registered nurses than it receives in return from other states and countries, investigation should be made to determine the reasons and ways to correct this. (Refer to Part V, C)

B. Trends in the use of part time nurses and new sources of students for nursing, seem to indicate that the population ratios used nationally as goals for the supply of nurses and for the recruitment of students cannot be expected to stand up in the future. Therefore premises upon which these ratios are based should be studied. (Refer to Part II and Part V, A)

PART II

PRESENT NURSING SUPPLY

A. REGISTERED NURSE SUPPLY

In July of 1964, Michigan's registered nurse (R.N.) population totaled 34,977[10]* but only 22,000 of these nurses (63%) were actively engaged in nursing and related fields. Having long been a profession comprised largely of women, nursing has many members who are "inactive" for reasons attributed to home making and rearing of families.

Reports from employers indicated that 4,700 additional registered nurses were needed in 1964. The supply was 18% short of adequate numbers to meet nursing service needs and to fill vacant faculty positions in schools of nursing. Equally as serious as the numerical deficit, was the high proportion of nurses that lacked preparation for specialized and highly responsible positions. Among 7,450 R.N.'s in supervision, education, administration, public health and occupational health, two out of three were not fully prepared. This type of education is offered only in senior colleges and universities.

Ratio to Population[2]

There were 8,166,000 people living in Michigan in 1964 and the 22,000 full time and part time registered nurses represented a ratio of 269 R.N.'s for each 100,000 population. The available service time, however, was only equal to 18,500 full time nurses and a full time equivalency ratio of 226 per 100,000 population. In the past ten years this full time equivalency ratio has declined. The decline is attributed to the fact that 30% of the nurses worked part time in 1964 for an average of two days of work per week, per nurse, whereas ten years ago 12% worked part time and averaged three days of work per week, per nurse.

Judging from the survey, Michigan needed approximately 327 registered nurses in 1964 for every 100,000 population and a full time equivalency ratio of 270 R.N.'s:

Registered Nurses per 100,000 population in Michigan

	Head Count	Full Time Equivalent
Needed in 1964	327	270
Available in 1964	269	226
Available in 1953	242	232

Studies published by the National League for Nursing and by the United States Public Health Service indicate that it is desirable for a state to have 350 registered nurses available for every 100,000 people to be served. The nation had 306 R.N.'s per 100,000 population in 1964 and one-third of the fifty states rated above that average.

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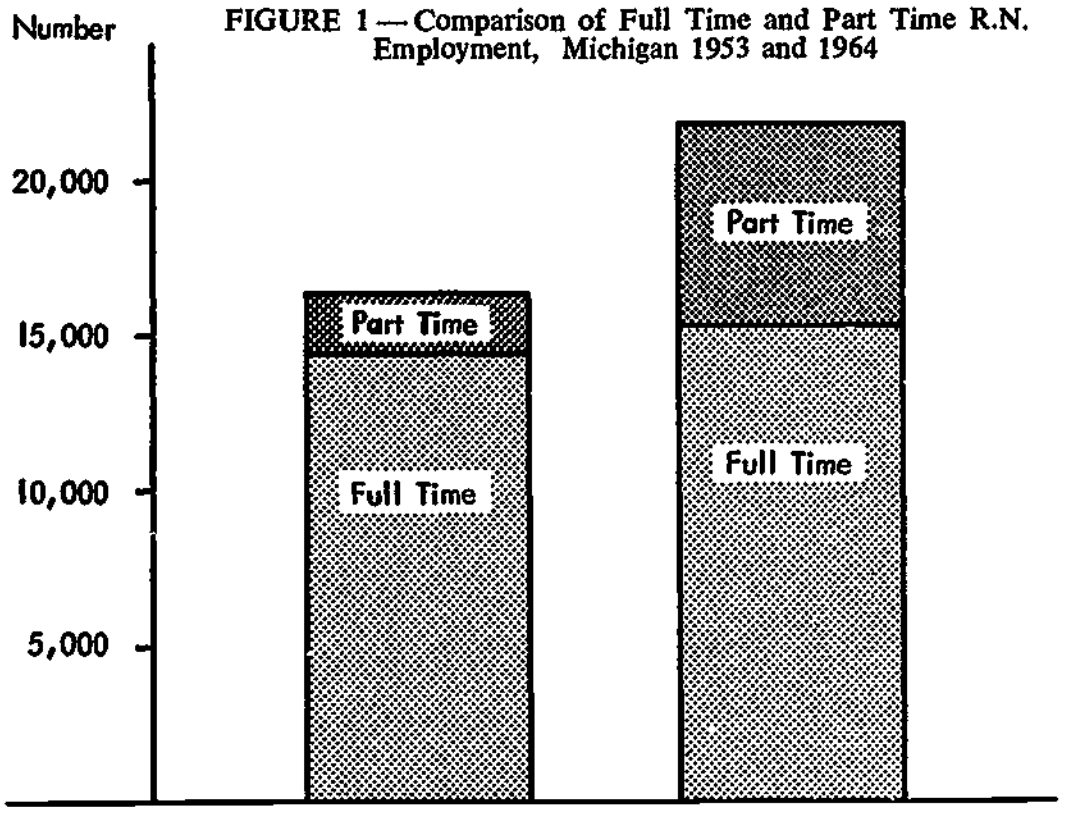
*Refers to Appendix A, References and Sources of Data. Throughout report, "footnote numerals" refer to Appendix A.

FIGURE 1 — Comparison of Full Time and Part Time R.N. Employment, Michigan 1953 and 1964

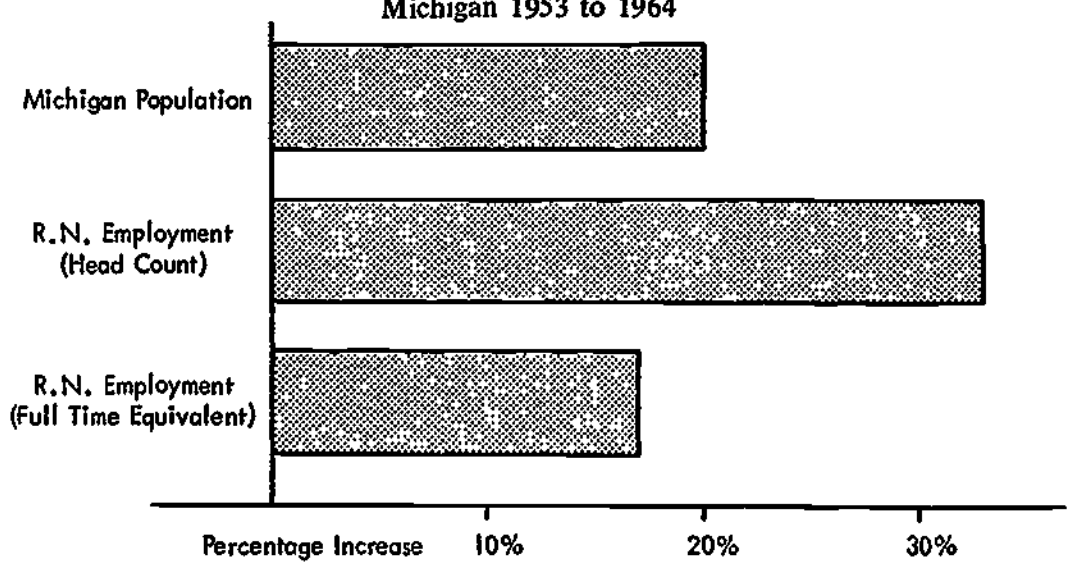


Trends in Supply

At the time of Michigan's last survey of nursing needs (The Cunningham Report of 1954) there were 16,500 registered nurses employed in nursing and related fields and the supply was reported to have been 2,800 R.N.'s short of adequate — a deficit of 15%.

In the interval between 1953 and 1964, Michigan realized a total gain of 5,500 registered nurses (33%). However, the greatest gain occurred among part time nurses. The increase in service time did not exceed the equivalent of 2,700 full time registered nurses, or 17%. Contrast this with concurrent gains of 38% in short term general hospital beds, 100% in nursing home beds, and 20% in the population of this State during the eleven year period.

FIGURE 2 — Comparison of Growth of Population and R.N. Employment, Michigan 1953 to 1964



In recent years the flow of new graduates from Michigan's schools that prepare their graduates to become registered nurses was not even sufficient to replace nurses who left the field temporarily or retired permanently, and the deaths. Attrition from the employed group averages 6% annually. Only with the help of inactive nurses returning to the field and nurses coming from other states, was Michigan able to make any gains since 1960. Many of the inactive nurses that return to nursing are available only part time.

Of concern to the profession, is the fact that the annual number of graduates from Michigan schools of nursing increased only 10% in the ten years prior to 1965, while the college age population grew more than 50%. Adding to this, is the fact that Michigan is losing more young nurses to other states than come here in return. Over an eight year period this loss averaged 100 nurses per year. (See Appendix C, Table VII.)

Of further concern is the low percentage of all new graduates in the nation that are educated in Michigan. This may well be the reason for a ten year decline in Michigan's proportion of the nation's registered nurse supply:

	Michigan's Percentage of National Totals		
Class of Data	*1954*	*1962*	*1964*
Registered Nurse Supply.....	4.1%	3.8%	3.7%
New R.N. Graduates	3.4%	3.3%	3.6%
General Population	4.3%	4.3%	4.3%
College Age Population	4.1%	4.2%	4.2%

Educational Deficit

Compounding the problem of inadequate nurse supply is the growing complexity resulting from the lack of qualified teachers, supervisors, administrators, clinical specialists, public health nurses and occupational health nurses. Preparation for these positions is acquired in baccalaureate or higher degree nursing education in colleges and universities — not in hospital diploma programs or in junior college associate degree programs.

Of the 22,000 registered nurses employed at the time of this survey, 1,630 (7.4%) were in highly responsible positions for which education at the masters level is essential. At least 5,820 (26.5%) were in positions requiring baccalaureate degree education. Relatively few of these 7,450 nurses worked part time and in terms of full time equivalency, they represented 40% of all registered nurse services available. Despite the fact that 33.9% of the registered nurses were in positions calling for college education, only 10.7% were college graduates.

Educational Level	No. of Nurses	Percent
Masters or higher degree	530	2.5%
Baccalaureate degree	1,820	8.2%
Diploma or Associate degree....	19,650	89.3%
Total	22,000	100%

(See Part VI for details on Educational Preparation in Relation to Nursing Needs.)

Supply in Hospitals and Related Facilities

Of the 22,000 registered nurses actively engaged in nursing in 1964, 15,356 (70%) were employed in Michigan's hospitals and nursing homes. Thirty-five percent of these nurses worked part time and some hospitals employed as high as 60% of their R.N.'s on a part time basis. Including private duty nurses, Michigan needed *3,950 more R.N's for nursing services in these facilities:*

Type of Hospital or Service	1964 R.N. Supply	UNMET NEEDS Nurses	UNMET NEEDS Full Time Equiv.
Short Term, General & Special....	13,500	2,200	1,600
Long Term, General & TB	694	190	160
Psychiatric	511	520	510
Mentally Handicapped	151	100	90
Nursing Home	500	500	425
Subtotal	15,356	3,510	2,785
Private Duty	1,234	440	350
Total	16,590	3,950	3,135

Supply in Public Health and Occupational Health

In 1964 Michigan had 1,140 registered nurses engaged in public health nursing of which 189 were employed by local Boards of Education. In addition, 27 public health nurses were employed in nursing education and fields related to nursing. To meet the minimum standard for the field of public health, which is one full time nurse per 5,000 population, *650 additional R.N.'s were needed in 1964.*

There were approximately 1,000 R.N's in the field of occupational health. While inquiry revealed no gross shortage, there was evidence of increased demand at this time of high industrial employment.

Supply in Nursing Education

Most alarming of all deficits in the registered nurse supply were those in the field of nursing education. Schools of nursing cannot expand and new schools cannot be established to educate more nurses unless qualified faculty are available.

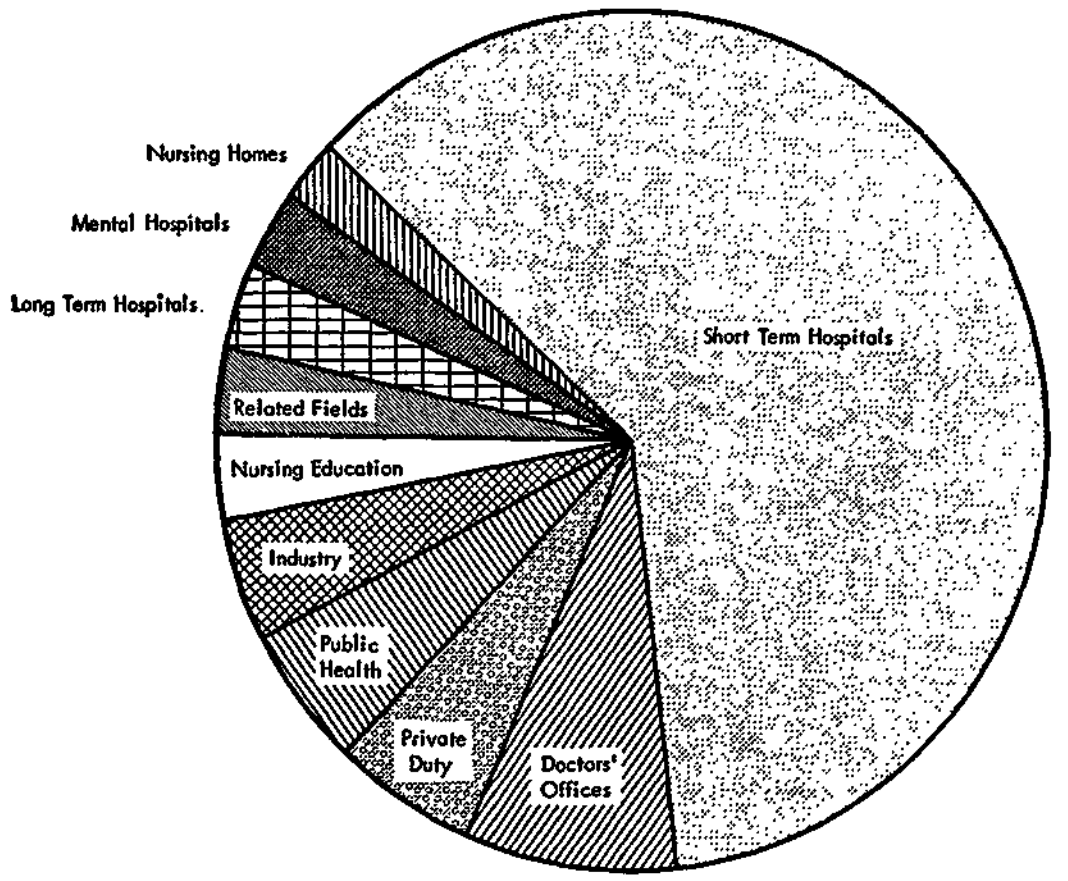
At the start of the school year 1964-65, there were approximately 700 registered nurses on the faculties of Michigan schools and colleges that offer nursing education programs and 57 budgeted positions (7.5%) were unfilled. In April 1965, those schools of nursing still had 55 unfilled positions and four new community college programs had openings for 26 additional faculty.

Two more community colleges and one senior college have announced plans to open new nursing programs in 1966 and still other colleges have such plans under study. New programs and new buildings will be of little avail without qualified faculty.

Supply in Doctors' Offices and Fields Related to Nursing

In 1964, there were 1,870 registered nurses employed by physicians as office assistants. Another 700 R.N's were employed in fields related to nursing, e.g. physical therapy, anesthesia, medical social work, administration of a hospital or nursing home, nursing organizations and the American Red Cross. No attempt was made to determine unmet needs in these fields since nursing is not always a prerequisite. Nevertheless, it must be assumed that all of these fields will continue to draw candidates from the registered nurse supply.

FIGURE 3 — Distribution of Employed R.N.'s by Field of Service



B. LICENSED PRACTICAL NURSE SUPPLY

In July of 1964 Michigan's licensed practical nurse (L.P.N.) population totaled 11,782[10] and 8,759 of these nurses (74%) were actively engaged in nursing or related fields. Reports from employers indicated need for 3,000 additional practical nurses of which two out of three were needed in facilities that care for the chronically ill, the mentally ill and the aged.

Ratio to Population

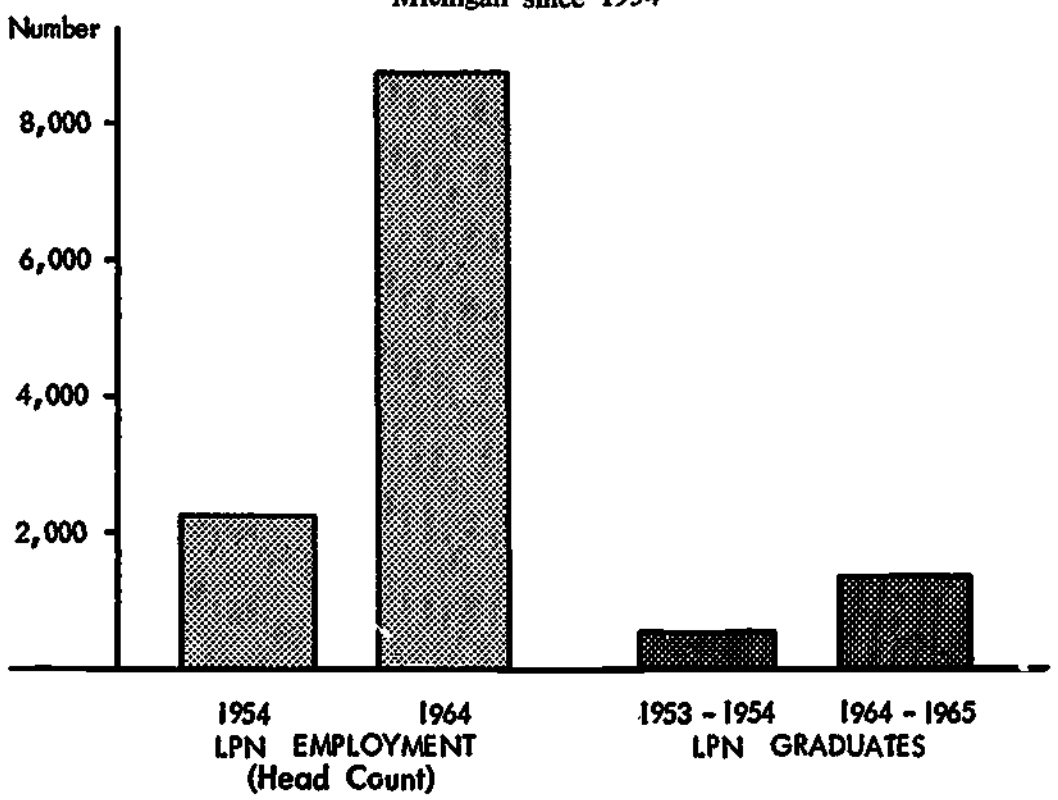
For every 100,000 of Michigan's population in 1964, there were 107 licensed practical nurses available. Total service time of full time and part time L.P.N.'s equaled 8,120 full time nurses and a full time equivalency ratio of 100 L.P.N.'s per 100,000 population. A national goal proposed several years ago by the U.S. Surgeon General's Con-

sultant Group on Nursing, calls for 155 L.P.N.'s for every 100,000 of the population by 1970. The national ratio was 115 L.P.N.'s per 100,000 population in 1962.

Trends in Supply

The growth of Michigan's supply of licensed practical nurses in the past decade indicates that recommendations of *The Cunningham Report of 1954*, pertaining to practical nursing, have indeed been fulfilled. These were, to expand the use of practical nurses in hospitals and to expand nursing education facilities in order to prepare more of these nurses. In the interval between 1954-1964, the number of L.P.N.'s that were employed in Michigan quadrupled, from 2,200 to 8,759. The annual flow of new graduates doubled and today Michigan has school facilities to graduate at least 1,600 students per year.

FIGURE 4 — Growth of L.P.N. Employment and annual number of Graduates, Michigan since 1954



Like registered nurses, most of the practical nurses are women and many are "inactive" for reasons of home making and rearing of families. Even so, the proportion of L.P.N.'s who were actively engaged in nursing increased from 72% to 74% in recent years. In part this increase is attributed to an upward trend in employment of practical nurses on a part time basis. It is estimated that one out of every five L.P.N.'s now works part time for an average of three days of work per week, per nurse.

Supply in the Fields of Nursing

Of the 8,759 licensed practical nurses actively engaged in nursing in 1964, 7,600 (87%) were employed in hospitals and nursing homes. Another 350 L.P.N.'s were private duty nurses who were available to hospitals that had need for their services. Including private duty nurses, 3,000 additional L.P.N.'s were needed:

Type of Hospital or Service	1964 Supply	UNMET NEEDS Nurses Full Time Equiv.
Short Term, General & Special....	6,000	900
Long Term, General & TB	580	300
Psychiatric	220	105
Mentally Handicapped		95
Nursing Homes	800	1,500
Subtotal	7,600	2,900
Private Duty	350	100
Total	7,950	3,000

	UNMET NEEDS Full Time Equiv.
Short Term, General & Special....	800
Long Term, General & TB	250
Psychiatric	100
Mentally Handicapped	90
Nursing Homes	1,300
Subtotal	2,540
Private Duty	90
Total	2,630

Of the 809 L.P.N.'s employed in other fields, 420 were in doctors' offices, 314 in fields relating to nursing, 45 in public health agencies and 30 in the medical departments of industrial plants. There was no evidence of shortage in those fields at the time of the survey.

C. LICENSED PSYCHIATRIC ATTENDANT NURSE SUPPLY

In Michigan there is still another type of licensed nurse — the licensed psychiatric attendant nurse (L.P.A.N.). In 1964 Michigan had 1,880[10] of these nurses and 1,750 (93%) were actively engaged in nursing. Five out of six worked in State institutions and most of the others worked in private psychiatric hospitals or in general hospitals with psychiatric units. Only two schools were ever established to prepare this type of nurse and both have now been discontinued.

In the 1964 survey, only 90 vacant jobs were reported for this category of worker, but the absence of pre-service training programs may have led to fewer budgeted positions. Psychiatric hospitals now look to practical nursing schools as their source of supply for this level of nurse practitioner.

D. SUPPLY OF DIRECT PATIENT CARE PERSONNEL

During the interval between 1953 and 1964 hospitals throughout Michigan increased their non-professional nursing personnel in far greater proportion than the increase of patients. At the same time there was a glaring decrease in the proportion of direct patient care provided by registered nurses. In 1953 Michigan hospitals had one R.N. available for direct patient care, to two non-professionals. In 1964, this ratio was one R.N. to four non-professionals.

In Hospitals of All Types	1953[1]	1964
Daily average number of patients.....	56,513	73,500[19, 26]
Direct care personnel (full time and full time equivalent of part time)	20,185	32,663
—registered nurses	6,598 (33%)	6,633 (20%)
—licensed practical nurses	1,300 (6%)	6,184 (19%)
—nurses aides, attendants.....	12,287 (61%)	19,846 (61%)

Based on a study of patient satisfaction,[37] the Surgeon General's Consultant Group on Nursing advised in its report of 1962, that 50% of direct patient care should be provided by professional nurses, 30% by licensed practical nurses and 20% by nursing aides.[9] This distribution has already been met by many hospitals in one state—Connecticut.

PART III

NURSING NEEDS IN 1970

By 1970, Michigan will need 7,000 more registered nurses and 7,000 more licensed practical nurses than were available in 1964. These additional numbers are required to fill unmet needs that existed at the time of this survey and to maintain that level of supply in relation to growing demands of the population.

On all fronts there is evidence of growing demand for preventive, therapeutic and rehabilitative health services and nursing needs cut across the entire spectrum. More personnel are required for nursing than for any other health field because nursing represents by far, the greatest volume of services that patients need twenty-four hours a day and seven days a week.

Population Trends

By 1970, there will be 8,891,000 people living in Michigan — 725,000 (8.8%) more than in 1964.[2] There will be 90,000 (13%) more residents sixty-five years of age and over who will be highly vulnerable to chronic illness and disability. The labor force age group will increase 10% in the six year interval, and if high employment continues, demand for occupational health services will grow.

By 1970, the school and college age population will reach an all time high and nationwide emphasis on physical fitness is creating great awareness of their health needs. There will be increasing numbers of young people approaching marriageable age in the six year period, giving rise to the prediction that the infant and preschool age population will continue high, even if the birth rate (births per 1,000 population) should decline.

Social Trends

People will be better educated in future years, more will have health insurance and more of the population can be expected to know about and seek medical and health services. In 1966, labor-management contracts in the auto industry will add mental health services to insurance benefits of thousands of Michigan workers and their families. Federal social legislation holds promise that the mentally ill, the mentally handicapped, the aged, the chronically ill and the poor will have more and better health services in the immediate future.

State of Michigan legislation has added further impetus to expansion of health services. State appropriations are enabling many communities to add mental health services. Counties without public health services are now legally charged with responsibility to provide this protection for citizens. State subsidy for operating county and city health departments has increased.

Voluntary and governmental research programs are expanding rapidly to discover causes and cures for disease and new measures for preventing illness and accidents. The more successful the medical teams become in achieving their objectives, the greater becomes the determina-

tion of the American people to have the new discoveries available and the greater becomes the potential for medical services as these miracles add years to the life of man.

Trends in Patient Care Facilities

The number of short-term general hospital beds in Michigan is expected to increase at the rate of 1,000 each year in the interval between 1964 and 1970. Nursing home beds are also expected to increase by 1,000 beds per year. Long-term general hospitals can be expected to expand at least in proportion to the population, which would add several hundred more hospital beds per year.

Emerging trends in third party payment (health insurance) for co-ordinated home care and for nursing home care, point toward earlier discharge of convalescent and chronically ill patients from short-term general hospitals. As this occurs more hospital beds will be available for the acutely ill. Agencies providing long-term care will have to expand to care for more patients.

Upward trends in outpatient care for the mentally ill and the addition of psychiatric units in short-term general hospitals are expected to lower the inpatient population of State psychiatric hospitals, but it is anticipated that a higher proportion of beds in State institutions will be occupied by patients with severe mental illness. At the same time public health and occupational health services can expect to become more involved in preventive and rehabilitative mental health services.

Establishment of community centers and workshops for the mentally handicapped is increasing the number of these patients under health supervision in local communities. This trend is expected to make more of the beds in State institutions available for severely handicapped patients.

Trends in Nursing Needs

Public demand is creating need for more and better prepared nursing personnel. Modern health care demands participation of patients in a plan for their own recovery and nurses must have professional skills to accomplish this. As modern science makes more highly technical treatments and new drugs available, increasing numbers of nurses will be needed with the knowledge and ability to administer them with safety for the patient. If short-term general hospitals, psychiatric hospitals and institutions caring for the mentally handicapped, have more of their beds occupied by severely ill and disabled patients, increased nursing time will be required per patient. If nursing homes and home care services are to be available for people who will be eligible for medicare benefits, increasing numbers of registered nurses and licensed practical nurses will be needed.

Knowledgeable hospital administrators and directors of nursing fail to see a fast trend in the use of electronic devices that would make more of each nurse's time available for direct patient care in the immediate future. Neither do they see a definite trend at this time, toward use of nonprofessional ward managers that would make an impact on spreading the time of head nurses and supervisors to care for more patients.

The need for public health nurses for supervision and consultation is increasing. Agencies providing nursing care in the home are expected to make greater use of licensed practical nurses and home health aides for care of the chronically ill and aged. An upward trend in use of personnel from other disciplines for health education and for some types of home visits is evident in official public health agencies. Highly qualified public health nurses will be needed to evaluate and plan patient care and other services that can be delegated with safety to ancillary personnel, and to train and supervise these workers.

Demand for qualified nurse teachers is increasing rapidly. Schools of nursing need more faculty in order to expand and prepare more nurses. Hospitals, nursing homes and public health agencies need more instructional staff for inservice nursing education.

Need for Registered Nurses

To meet nursing needs of the people of Michigan in 1970, at the level of need reported for the year 1964, a minimum of 29,000 registered nurses will be required — 7,000 more than were available in 1964. (See Appendix C, Table VIII.)

Study of potential resources for nursing (see Part V) suggests that, at best, Michigan can expect to have only 27,300 registered nurses available in 1970 — 5,300 more than the 1964 supply. This represents an increase of 24% in the six year period, but 32% more registered nurses will be needed. If current trends are allowed to continue, the six year gain will equal only one-half of the additional numbers required:

Registered Nurse Supply Projection	6 Year Gain		R.N.'s in 1970
	Number	Percent	
Present Trend	3,500	16	25,500
Feasible Goal	5,300	24	27,300
To Meet the Need	7,000	32	29,000

(See Part VI for Educational Preparation in Relation to Nursing Needs.)

Need for Licensed Practical Nurses

Michigan can anticipate demand for 15,800 licensed practical nurses in 1970 — 7,000 more than were available in 1964. Of the 7,000 additional L.P.N.'s, two out of three will be needed in facilities that care for the convalescent and chronically ill, the mentally ill and the mentally handicapped. Present day trends indicate that the desired increase of L.P.N.'s is feasible.

PART IV

NURSING NEEDS FROM 1970 TO 1980

In 1980, Michigan can expect to need a minimum of 39,300 registered nurses and may need as many as 24,000 licensed practical nurses. These predictions call for 12,000 more R.N.'s and 8,000 more L.P.N.'s than are expected in the year 1970.

A long-range forecast of nursing needs in Michigan is highly speculative and subject to modifications from time to time. When this study was made, the mechanism for planning health facilities throughout Michigan had been created but a long-range plan was not yet available. New patterns of patient care are emerging on a continuum from hospital to nursing home, and/or to the patient's home. Only experience will tell the full extent of demand for each type of service.

Population Trends

Between 1970 and 1980, Michigan's population is expected to grow almost 15% — from 8,891,000 to 10,204,000.[2] The number of residents 65 years of age and over is expected to increase 19%. The labor force age group will also increase 19%. The school age population in 1980 is expected to exceed the 1970 total by 2%. The number of infants and preschool age children is expected to increase 31% in the ten year period.

Projected Michigan Population in Thousands[2]

Age Group	1970	1975	1980
0-4 yrs.	867	1,002	1,143
5-14 yrs.	1,847	1,746	1,891
15-19 yrs.	873	961	879
20-64 yrs.	4,525	4,938	5,393
65 yrs. and over	779	847	928
Total	8,891	9,494	10,204

In the five year period 1975 to 1980, Michigan can expect a decline in the teenage potential for nurse recruitment while population groups that are the largest consumers of nursing services, the very young and the aged, will grow at a record pace.

Unpredictable Trends

Looking fifteen years into the future, social change could greatly influence the number of nurses that Michigan will need. Organized labor has announced plans to seek a shorter work week in the auto industry in order to create more jobs as the labor force grows. Should this occur and spread to other occupations, the implications for nursing would be appalling.

Economic trends influence the number of married nurses who seek gainful employment and the proportion who work on a part-time basis. These trends are unpredictable for 1975 and 1980.

Technological and scientific advancements continue to make changing demands on the knowledge and skills required of workers in many occupations, including those in the field of nursing. Physicians continue to delegate additional responsibilities to nurses as medical discoveries make new treatments available to patients. Building design and elec-

tronic devices could revolutionize the organization of nursing units in hospitals of the future. No one really knows how rapidly nursing responsibilities will change and the education that may become mandatory for the practice of nursing.

Bases for Predictions and Goals

Despite uncertainties in long-range projections, there are some reasonably reliable bases for estimating future nursing needs. Specifically these are: social trends; population projections; and trends in utilization of health facilities. The projected nursing needs beyond 1970 are broadly based estimates that reflect increasing demand for nursing services per population.

Goals for the nurse supply in the decade 1970 to 1980, are based on what appears to be the recruitment potential, and are designed to:

—Enlarge the supply of nurses with baccalaureate and higher degree education and minimize the need for nurses in supervision, education and administration, and in fields of public health and occupational health, to function beyond their preparation.

—Enlarge the supply of registered nurses for general patient care and eliminate the need for licensed practical nurses to function beyond their preparation.

—Enlarge the supply of licensed practical nurses to the extent that it will be realistic to limit the use of nurses' aides and attendants to auxiliary tasks.

Registered Nurses in 1975 and 1980

To meet foreseeable nursing needs in the year 1975, Michigan should plan to have a minimum of 35,600 registered nurses available. This represents a head count of 375 R.N.'s for every 100,000 of the projected population and a full time equivalency ratio of 325 per 100,000 population.

Judging from the projected number of new graduates and the projected numbers of nurses by age groups, it is unlikely that Michigan will have more than 33,400 R.N.'s available in 1975 — 2,200 short of the need. Even this feasible goal represents a reasonably good supply of nurses — 350 R.N.'s by head count per 100,000 population, with a full time equivalency ratio of 300 R.N.'s per 100,00 people to be served.

The higher ratio may be attained by 1980 when it appears feasible for Michigan to have 38,700 registered nurses available. However, the committee directing this study was reluctant to say that this would be an adequate supply for that year. Unpredictable factors could alter the need for nurses beyond present day comprehension.

Supply Projection	Available R.N.'s per 100,000 Population		
	1970	1975	1980
Feasible goal	307	350	379
To meet the need	326	375	??

Licensed Practical Nurses in 1975 and 1980

In projecting the need for licensed practical nurses beyond the year 1970 the committee that conducted this study was cognizant of limitations predicted for the registered nurse supply and the obligation of communities to provide skilled nursing for increasing numbers of

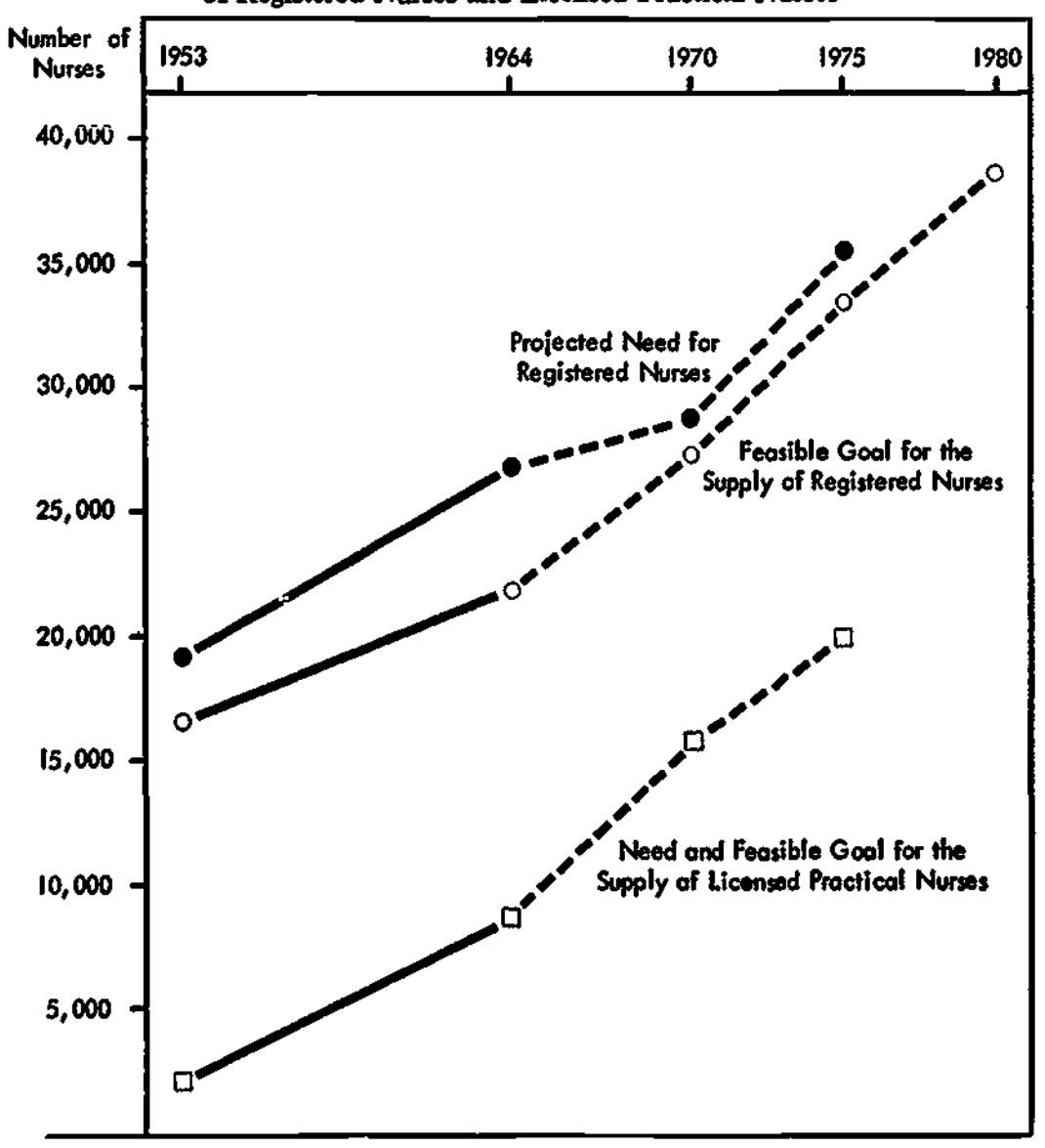
medicare beneficiaries. Judging from present day information, demand for 20,000 L.P.N.'s in the year 1975 and 24,000 by 1980, is anticipated. It appears feasible to have those nurses available in Michigan.

The projected increase should enable hospitals and nursing homes to hold the number of nurses aides at levels they reach in 1970. Thereafter, these facilities should be able to meet the *growing* need for non-professionals with better prepared personnel — licensed practical nurses. Projected ratios to the population reflect the degree of increase that would result:

Supply Projection	Number of L.P.N.'s per 100,000 Pop.		
	1970	1975	1980
Head Count	177	210	235
Full Time Equivalent	155	190	209

At least half of the projected need for licensed practical nurses in 1975 and 1980 is expected to occur in facilities that care for chronically ill, convalescent and mentally ill patients.

FIGURE 5 — Projected Nursing Needs and Feasible Goals for Michigan's Supply of Registered Nurses and Licensed Practical Nurses



PART V

SOURCES OF SUPPLY

Each year new nurses are added to Michigan's existing supply from three sources. The major source is the flow of new graduates from schools of nursing. The pool of inactive nurses is the next largest source. A third source is migration — nurses coming to Michigan from other states and other countries. At best, these three sources cannot produce the numbers of registered nurses that will be needed in the foreseeable future. Still another source is proposed in this report to improve the supply of nurses for Michigan.

A. NEW GRADUATES

Registered Nurses

Studies of recruitment trends and potential indicate that Michigan's need for registered nurses cannot be met in 1970 and probably cannot be fully met by 1980. The projected number of available students will not produce a sufficient number of new graduates:

New Graduate Projections (R.N.'s)	Projected Totals for 5 year periods 1966-70	1971-75	1976-1980
Present Trend	6,400	8,500	8,500
Feasible Goals	7,690	11,005	11,350
To Meet the Need	10,500	11,800	?

Recruitment has become a difficult and serious problem in Michigan. In the academic year 1964-65, schools that prepare their graduates for licensure as registered nurses, admitted only 2.6 students per 100 girls in the State who reached their 18th birthday during the calendar year 1965. In 1955, Michigan schools admitted 4.8 student nurses per 100 girls in this age group:

Michigan Data	1955	1965
Girls reaching 18 yrs. of age[33]	41,575	82,850
Admissions to schools of nursing	1,812[10]	2,175 (acad. yr. '64-65[36])
Admissions per 100 girls	4.8	2.6

As the number of teenagers increased in the 1960's, schools of nursing reported a marked increase of interested applicants but there was not a proportionate increase of qualified candidates. Interest alone is not sufficient to become a registered nurse. Nursing responsibilities have become increasingly complex and the student today must assimilate more knowledge and must evidence higher academic ability than was the case ten years ago. At the same time, there has been growing competition from college programs leading to other careers. Today's high school graduate with potential for higher education has a wide choice of attractive careers.

Despite experiences of recent years, there is hope that increasing numbers can be recruited for careers as registered nurses from sources that heretofore have not been fully tapped. Nursing programs in junior and senior colleges and in State universities are attracting young men

and married women as well as girls graduating from high school. A number of hospital diploma programs now admit men and married women and some offer programs on an academic year rather than a calendar year which is attractive to students. College bound teenagers, their parents and counselors are becoming increasingly aware that students can have "nursing and college too." All of these trends led to the prediction that the recruitment potential will be enlarged in future years, although all needs cannot be met:

Freshman Admission Projections	Actual 1964-65	Academic Year Projections 1969-70	1974-75	Annually 1975 to 1980
Present Trend	2,175	2,300	2,600	2,400
Feasible Goals	xx	3,450	4,100	4,200
To Meet the Need	xx	4,100	4,800	??

Judging from experience in recent years it is unlikely that Michigan can exceed the number of admissions represented in feasible goals for schools and colleges that prepare their graduates to become registered nurses:

Feasible Goals	Actual 1960-61	Actual 1964-65	Goal 1969-70	Goal 1974-75	Goal 1979-80
Freshmen Admissions	1,878	2,175	3,450	4,100	4,200
Ratio per 100 girls, 17 to 18 years	2.9	2.6	4.0	4.3	4.7
Ratio per 100,000 general population	24.0	26.6	38.8	43.1	41.1

A national goal established in 1962 by the Surgeon General's Consultant Group on Nursing calls for approximately 26 new graduates (R.N.s) in 1969 per 100,000 population. Michigan cannot expect to reach that goal in 1969 or in 1979.

New Graduate Projections (R.N.s)	Actual 1962	Goals 1969	1979
National — number of graduates	31,000	53,000	xx
— ratio per 100,000 pop.	17	26	xx
Michigan — number of graduates	1,041	1,650	2,400
— ratio per 100,000 pop.	13	19	23

Licensed Practical Nurses

Rapid growth in the capacity of Michigan schools that prepare their students to become licensed practical nurses indicates that the supply of new graduates should be adequate. On the other hand there can be no let-down of recruitment or facilities for practical nursing education in the next few years. Close to 2,000 admissions will be required annually to produce a yearly average of 1,575 new graduates prior to 1970:

New Graduate Projections (L.P.N.'s)	Projected Totals for 5 Year Periods 1966-1970	1971-1975	1976-1979
With present facilities	8,000	8,000	8,000
To meet the need	7,900	7,100	??

B. INACTIVE NURSES

Registered Nurses

In 1964, approximately 12,977 of Michigan's registered nurses were not actively engaged in nursing but maintained their license to practice. Many were married women with young children who can be expected to return to nursing when family responsibilities become less pressing.

Economic factors have great influence on the return of inactive married nurses. Available information indicates that many married nurses returned to work in 1961 and 1962 during a recession, but when industrial employment picked up the number dropped sharply:

Estimate of returning nurses	Year	1960	1961	1962	1963
		450	1,100	1,040	530

Judging from an unusually high inactive nurse population between 30 and 40 years of age,[5] an upward trend is expected in the number of married nurses returning to the field. The large corps of students recruited for nursing during World War II has swelled the number of nurses now approaching 40 years of age — the age at which the married woman is likely to be available for employment. The potential in that age group is expected to decline by 1970, reflecting a drop in numbers recruited for nursing at the close of World War II and in succeeding years when the low birth rate of the 1930's was felt. On the other hand, the U. S. Department of Labor predicts that increasing numbers of married women will enter the labor force and at a younger age than in former years.

These predictions are promising, providing opportunities in nursing can compete with those offered by other fields that are recruiting and preparing older women for "new careers." With favorable conditions, Michigan can expect increasing numbers of inactive nurses to return to nursing:

Projected Return of Inactive Nurses	Annual Average 1965-1969	Annual Average 1970-1974	Annual Average 1975-1979
	800 R.N.'s	700 R.N.'s	1,000 R.N.'s

Important as the returning nurse is in helping to meet nursing needs, this group alone cannot solve the problem of shortage. Normally many more nurses join the ranks of the inactive each year, than return from that pool. By 1970 the outflow of R.N.'s may reach 1,600 annually, estimated at 6% of the employed group. Moreover, the inactive nurse that returns for employment is likely to work part-time and today it takes five part-time nurses to replace two full-time retirees.

Licensed Practical Nurses

In the year 1964, there were 3,023 licensed practical nurses who were not actively engaged in nursing. Available information indicates that approximately 325 inactive L.P.N.'s returned to nursing in the year 1963 — more than one out of ten who were inactive. This record is not expected to hold up in future years.

Study made in Metropolitan Detroit in 1962 suggests that each year 4.5% of the L.P.N.'s leave the field temporarily or permanently.

C. MIGRATION

Registered Nurses

The Cunningham Report of 1954 indicated for the early 1950's, that the number of registered nurses migrating to Michigan from other states and countries, and the number moving from Michigan to other states, was reasonably well balanced. In recent years, Michigan has gained registered nurses through migration:

Migration[10]	1963	1964
R.N.'s left Michigan	633	737
R.N.'s came to Michigan	755	861

Study of the age groups of Michigan R.N.'s in relation to the number of nurses educated in Michigan since 1945, suggests that migration gains have occurred among older nurses only. Substantial outmigration appears to be occurring among young nurses under 30 years of age. (See Appendix, Table VII.)

Licensed Practical Nurses

Michigan is losing more licensed practical nurses to other states than it receives in return:

Migration[10]	1962	1963	1964
L.P.N.'s left Michigan	228	238	313
L.P.N.'s came to Michigan	77	100	121

D. ANOTHER RESOURCE

This report purposes still another resource that would not increase the number of nurses but would increase nursing time available. Maximum use of the existing supply of registered nurses conld bring early gains for nursing services. Such measures would call for: use of nurses for nursing only, relieving them of non-nursing responsibilities including those of other hospital departments that are closed at night and on weekends; and, inducements to encourage more nurses to work full time and more part-time nurses to average higher full-time equivalency. Today, if Michigan's part-time registered nurses averaged three days of work each week per nurse, instead of two days, this State would have the equivalent of 1,200 additional full-time registered nurses.

PART VI

EDUCATIONAL PREPARATION IN RELATION TO NURSING NEEDS

Of growing concern to the profession and to employers is the problem of insufficient numbers of qualified nurse faculty, administrators, public health and occupational health nurses, and clinical specialists. Of approximately 7,450 registered nurses who were in these positions in the year 1964, fewer than one nurse in three was academically prepared for responsibilities he/she carried.

Educational Programs

Today there are three types of basic education programs that meet minimum requirements established by State law for the graduate to become a registered nurse. Curriculums of all basic programs include both theory and clinical experience in the care of the sick. They differ in depth and scope of preparation according to the responsibilities for which their graduates are prepared:

1. Junior or community college programs (two years) lead to an associate degree in arts or science. The curriculum includes general education and nursing education and the graduate is prepared for general patient care.

2. Hospital programs or hospital related programs (ranging from two to three years in length) lead to a diploma in nursing. Instruction that combines theory and experience, continues throughout the program. Traditionally diploma programs have offered a broad scope of student experience in hospital nursing. The graduate is prepared for general patient care.

3. College and university programs (four years) lead to a bachelor of science degree in nursing. The curriculum includes courses in the liberal arts, in the biological, physical and behavorial sciences and an upper division major in nursing. These programs offer more than the minimum education required to become a registered nurse. The graduate is prepared for staff positions in fields of public health and occupational health as well as for general patient care in hospitals and has the academic background for advancement to first level supervision.

In addition, some colleges and universities offer other higher education programs in nursing:

1. Post R.N. — baccalaureate degree programs were designed primarily to enable graduates of hospital diploma programs to pursue higher education and this opportunity is also available to associate degree graduates today. The student's former education is evaluated by the degree granting institution and class standing is determined on an individual basis. All of the academic requirements must be met in the liberal arts, sciences and upper division nursing courses leading to a bachelor of science degree in nursing.

2. Graduate education programs lead to a master of science degree in nursing and graduates of these programs may continue on to a doctoral program. The masters graduate has acquired great depth of knowledge and preparation in a functional area of nursing (education, supervision or administration), in a clinical field (e.g. psychiatric nursing, maternal and child health or public health nursing), or both. The nurse with a doctoral degree is prepared for research and for education and adminstration that requires a high order of specialization.

Practical nursing education programs (one year) in public education systems or in hospitals, prepare their graduates to become licensed practical nurses. These programs follow the pattern of vocational education, with a high proportion of time devoted to supervised practice. The graduate is prepared to give patient care not requiring a background of highly technical and scientific knowledge. This section of the report (Part VI) refers to practical nursing programs only as nursing education relates to the preparation of their faculty — not as it relates to responsibilities of licensed practical nurses.

Preparation for Positions

The American Nurses Association defines the qualifications for registered nurse practice in all fields of nursing and at all levels of responsibility. Those standards were used by the Surgeon General's Consultant Group on Nursing in 1962, when recommending national goals for the preparation of nurses for leadership positions.[9]

NATIONAL GOALS

Positions	*Preparation*
Group A[8]	
Registered nurses who give direct patient care as general staff nurses in hospitals, clinics and nursing homes where supervision is available; private duty nurses; nurses in doctors' offices.	Hospital Diploma Program or Junior College Associate Degree Program
Group B[9]	
Registered nurses who give direct patient care requiring specialized clinical competence; staff level public health nurses; directors of nursing in nursing homes that provide skilled nursing care; nurses in hospital positions ranging from team leader through head nurse.	Baccalaureate Degree Program

Group C[9]	
Faculty in all nursing education programs; clinical specialists, supervisors and consultants in all types of institutions and health agencies; administrators, assistant administrators and inservice education directors in hospitals and health agencies.	Masters Degree Program
Group D[9]	
Deans of college nursing programs; faculty of graduate education programs; research investigators; nursing service directors of large hospital systems or large public health agency systems.	Doctoral Program

Most of the nurses that hold positions in the Group A category are employed in hospitals and related facilities. As defined by the American Nurses Association, these positions involve "technical nursing practice . . . unlimited in depth but limited in scope."[38]

Nurses that hold positions in the Group B category have a broader scope of responsibility and need more education than nurses in Group A positions. They must have a background of knowledge and skills in the technical aspects of nursing but this alone is not sufficient. They must have a depth of knowledge in the social, biological and physical sciences in order to make independent nursing judgments relating to patient needs. They must know basic principles and techniques of teaching and supervision in order to direct patient care given by less prepared personnel. They must have an understanding of family and community health problems and must have skills for teaching and promoting health. As defined by the profession, "Such practice requires knowledge and skill of a high order, theory oriented rather than technically oriented. It requires education which can only be obtained through a vigorous course of study in colleges and universities."[38]

The nurses in Group C and Group D positions need even more preparation. They are required to master a complex body of clinical knowledge in order to make critical judgments about patients and their care. They must have a wealth of knowledge and specialized skill to assume responsibility for educating nurses or for administering a nursing service. They must be prepared in the techniques of decision making. They must understand changing needs of society and economic problems entailed in providing nursing services and nursing education. They must engage in study and research to find more effective ways to deal with nursing problems.

Educational Needs

In assessing educational needs of Michigan's registered nurses, the study committee was guided by the national goals and modifications reflected in the Michigan Nurses Association's *Recommended Qualifications and Employment Standards for Professional Nurse Positions, 1964*. Study of the positions and educational preparation of 10,598

registered nurses in Michigan revealed that many nurses were not fully prepared. The 10,598 nurses represented: all registered nurses in the field of public health; all nurses in nursing education; 53% of the registered nurses in hospitals and related facilities; and 58% of those in the occupational health field. (See Appendix, Table XII.)

Educational Preparation	Numbers of R.N.'s Reported	
	Held the Degree	Needed the Degree
Masters Degree or Higher	447	1,530
Baccalaureate Degree	1,313	3,179
Diploma or Associate Degree	8,838	5,889
Total	10,598	10,598

Seventy-five percent of the R.N.'s not included in these reports were in positions that required the minimum level of nursing education to become a registered nurse. It is unlikely that those nurses and others not included, would be better prepared than nurses in like positions whose educational preparation was known. Based on that assumption, it was estimated that 10.7% of Michigan's registered nurses in 1964 were college graduates, whereas 33.9% were in positions calling for college preparation:

Educational Preparation	Estimates for the 1964 R.N. Supply			
	Held the Degree		Needed the Degree	
	Number	Percent	Number	Percent
Masters Degree or Higher	530	2.5	1,630	7.4
Baccalaureate Degree	1,820	8.2	5,820	26.5
Diploma or Associate Degree	19,650	89.3	14,550	66.1
Total	22,000	100.0	22,000	100.0

Had there been nurses available and fully qualified for the level of staffing that employers considered essential in 1964, a higher proportion of nurses would have needed masters preparation:

Educational Preparation	Estimates of Need in 1964	
	Number	Percent
Masters Degree or Higher	2,175	8.1
Baccalaureate Degree	6,900	25.9
Diploma or Associate Degree	17,625	66.0
Total	26,700	100.0

Goals for the Future

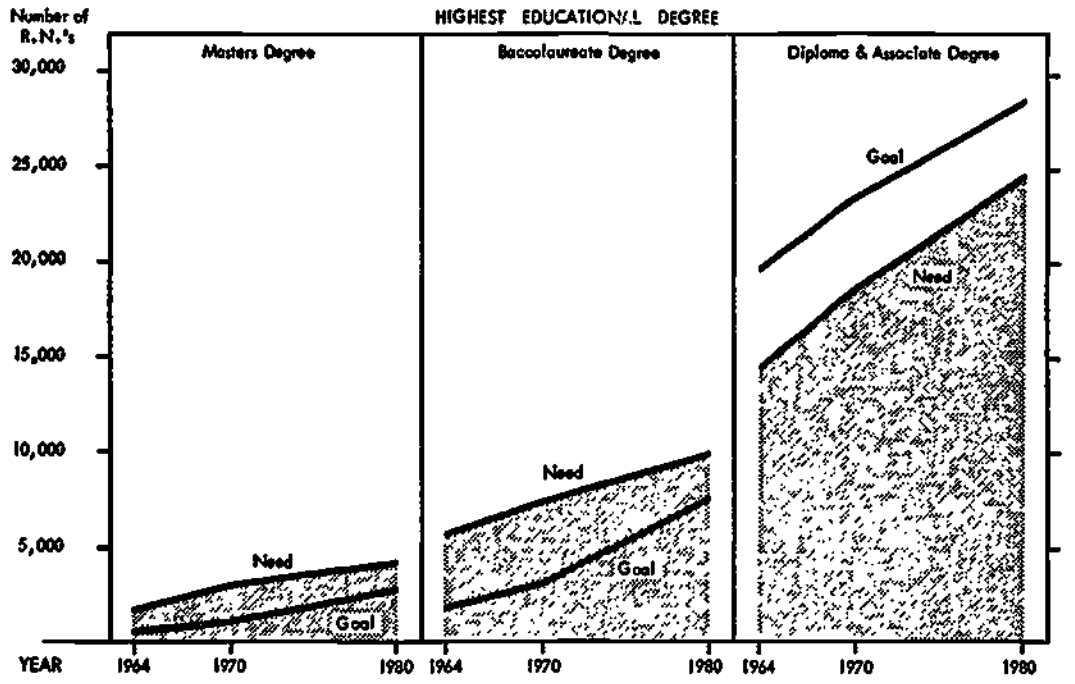
A goal to enlarge the nation's pool of registered nurses with baccalaureate and higher degree education, from 10% of all R.N.'s in 1962, to 17.7% in the year 1970, was recommended by the Surgeon General's Consultant Group on Nursing.[9] Iu terms of actual people who are expected to be available, the national goal is out of reach for Michigan. The committee making this study recommends a more realistic goal for this State. It is to have 14.7% of the R.N.'s in 1970 with college preparation — an increase from 10.7% in 1964. To meet the need in 1970, at least 36.3% of Michigan's R.N.'s should have baccalaureate or higher degree preparation.

Eduactional Preparation	1970 Goal		1970 Need	
	Number of R.N.'s	Percent	Number of R.N.'s	Percent
Masters Degree or Higher	1,000	3.7	3,100	10.8
Baccalaureate Degree	3,000	11.0	7,400	25.5
Diploma or Associate Degree	23,300	85.3	18,500	63.7
Total	27,300	100.00	29,000	100.0

If the educational needs of nurses in 1980 are proportionately the same as those projected for the year 1970, Michigan should have 4,200 nurses available who are graduates of masters or doctoral programs. Another 9,800 nurses should be baccalaureate degree graduates. These numbers appear unrealistic today. A more feasible goal to have 26.5% of the R.N.'s with baccalaureate or higher degree education in 1980 is recommended:

Educational Preparation	1970 Goal		1980 Goal	
	Number of R.N.'s	Percent	Number of R.N.'s	Percent
Masters Degree or Higher	1,000	3.7	2,850	7.4
Baccalaureate Degree	3,000	11.0	7,400	19.1
Diploma or Associate Degree	23,300	85.3	28,450	73.5
Total	27,300	100.0	38,700	100.0

FIGURE 6 — Educational Preparation of Registered Nurses



Basic Education Goals

Rationale: Goals for the preparation of new nurses were designed (a) to meet the immediate and pressing need for R.N.'s who give general patient care, and (b) to move as rapidly as feasible to a pattern that reflects trends in the proportion of R.N.'s that need college preparation:

New Graduates, Basic Programs	Actual 1965	Goal 1970	Goal 1975	Goal 1980
Baccalaureate Degree	20%	20%	36%	50%
Diploma or Associate Degree	80%	80%	64%	50%

Using the maximum number of students that Michigan can reasonably expect to recruit for careers as registered nurses, goals were reached for the numbers to be prepared at two basic education levels:

	Baccalaureate Degree Program		Diploma or Associate Degree Program	
Academic Year	Freshmen	Graduates	Freshmen	Graduates
1964-65 (Actual)	682	245	1,493	931
1969-70	1,150	425	2,300	1,450
1974-75	1,900	800	2,200	1,450
1975-76	2,400	850	1,800	1,350
1979-80	2,400	1,200	1,800	1,200

Reaching Goals for 1970

To reach the 1970 goal for available nurses with masters preparation, 550 candidates must complete study at the masters level in the six year interval, 1964-1970. To reach the goal for available nurses with baccalaureate degree education, 800 nurses from the pool of diploma and associate degree graduates must continue their education and complete baccalaureate degree requirements in the six year interval; this number is required in addition to graduates from basic programs. Present day expansion of junior college programs, along with predictions relating to the return of inactive nurses, seem to indicate that the projected increase of diploma and associate degree graduates may be realized. Most of the married nurses who return to the field will be diploma school graduates.

		Projected Six Year Totals				
		Gains		Losses		
Educational Preparation	1964 R.N. Supply	Basic Graduates	Other Graduates	Net Attrition	Progression	1970 Goal
Masters Degree and Higher	530	xx	550	80	xx	1,000
Baccalaureate Degree	1,820	1,900	800	1,020	500	3,000
Diploma and Assoc. Degree	19,650	6,950	xx	2,500	800	23,300
TOTAL	22,000	8,850	1,350	3,600	1,300	27,300

To realize the planned increase of nurses with masters degrees, one out of five baccalaureate degree graduates now and in future years must advance to the masters level. If nursing should follow trends occurring in other fields, one out of ten masters degree graduates can be expected to progress to the doctoral level. This is a desirable goal for Michigan since a doctoral degree may become a requirement for faculty of graduate education programs in the future.

Reaching Goals for 1980

The following table indicates what will be required for Michigan to realize goals for 1980:

Educational Preparation	1970 Goal	Projected Ten Year Totals: Gains: Basic Graduates	Gains: Other Graduates	Losses: Net Attrition	Losses: Progression	1980 Goal
Masters Degree and Higher	1,000	xx	2,375	525	xx	2,850
Baccalaureate Degree	3,000	8,075	1,200	2,500	2,375	7,400
Diploma and Assoc. Degree	23,300	14,280	xx	7,930	1,200	28,450
TOTAL	27,300	22,355	3,575	10,955	3,575	38,700

The committee making this study felt that the greatest hope for having nurses prepared for their responsibilities in the future, lies in the increasing numbers of high school graduates who are selecting baccalaureate degree nursing education. Freshman enrollment in these programs in Michigan increased 60% in the past seven years. To reach goals set for 1980, it will be necessary to increase admissions to these basic programs by 250% between 1964 and 1975. In addition, 1,200 Michigan nurses who are graduates of diploma and associate degree programs should complete baccalaureate degree requirements in the ten years, 1970 to 1980.

To reach Michigan's goal for nurses with masters degrees, 2,375 nurses who are baccalaureate degree graduates should progress educationally in the decade from 1970 to 1980. From this day forward, one out of five baccalaureate degree graduates should be counseled and helped to secure masters preparation.

Obstacles in Reaching Goals

A sample of Michigan nurses in a survey conducted by the U. S. Public Health Service in 1963, suggests that 5% of the diploma and associate degree graduates who were employed, had firm plans to pursue higher education, but less than 1% planned to enroll for full time study[15]. Michigan's goal calls for 4% of these Michigan nurses to engage in full time study and to earn a baccalaureate degree by 1970.

The same survey suggested that 12% of the baccalaureate degree graduates had plans to continue their education, at least on a part-time basis. Michigan's goal for 1970 calls for 20% of the R.N.'s with baccalaureate degrees to pursue full-time study and earn a masters degree. The limited pool of nurses from which to draw candidates for masters preparation is a major problem today.

A problem in recruiting nurses throughout Michigan to continue their education, is the fact that the masters programs and the post-R.N. baccalaureate degree programs are all in the southern part of the State —Ann Arbor, Detroit and East Lansing. Many potential candidates are married women who cannot leave their homes to attend college in another part of the State.

Economic problems are serious obstacles. Nurses who are self supporting are unable to give up a full-time salary for possibly three years of study at the baccalaureate level. Federal assistance that includes a stipend, is available for only one year of study in the post-R.N. baccalaureate degree program. Scholarship funds administered by the Michigan Higher Education Assistance Authority are not available to these students. Loans are available and are used, but the limited economic rewards upon earning the baccalaureate degree, offer little incentive for the nurse to take on a debt of several thousand dollars.

PART VII

EDUCATIONAL FACILITIES IN RELATION TO NURSING NEEDS

Present Facilities

At the time this study was completed, Michigan had thirty-six nursing education programs that prepare the graduate to become a registered nurse and twenty-nine programs that prepare the graduate to become a licensed practical nurse. Some of the programs are tax supported and some are private schools and colleges.

Type of Program	Number of Programs by Type of Support	
	Tax Support	Voluntary Support
Baccalaureate Degree	3 universities	2 colleges
Diploma	2 hospitals	19 hospitals
Associate Degree	10 community colleges[a]	xx
Total	15	21
Practical Nursing	10 community colleges[a] 1 university 4 local education systems 9 Federal MDTA	5 hospitals
Total	24	5
Grand Total	39	26

[a]Five community colleges had both an associate degree program and a practical nursing program.

There are five baccalaureate and higher degree nursing programs for registered nurses. All are in State universities:

Facility	Type of Program	
	Post R.N. Baccalaureate Degree	Masters Degree
Wayne State University College of Nursing	1	1
University of Michigan School of Public Health	0	1
University of Michigan School of Nursing	0	1
Michigan State University School of Nursing	1	0
Totals	2	3

Emerging Trends

Based on social trends and nursing responsibilities of today, the American Nurses Association has taken a firm stand that education for all who are licensed to practice nursing should take place in institutions of higher learning and that there should be two levels of basic preparation:[38]

- Technical nursing education in community colleges, leading to an associate degree.
- Professional nursing education in senior colleges and universities, leading to a baccalaureate degree.

The Michigan Nurses Association has recommended a plan for transition from the present four program system of nursing education to this two program system.[40] The plan calls for phasing hospital diploma schools and practical nursing schools into the two program system as baccalaureate degree and associate degree programs are able to expand, and phasing out those programs that foresee no such alignment. The profession's plan also calls for preservice preparation of nursing assistants in the vocational education system, which is the setting for many of the practical nursing programs today.

The joint committee conducting this Michigan study acknowledged the desirability of moving in the direction that the profession recommends but was reminded that social change occurs slowly, particularly in the field of education. Moreover, the unmet nursing needs of today, the impending demands of the medicare program and limitations of the projected supply of registered nurses, all seemed to indicate that all possible resources for nursing education will be needed for some time to come.

A national study commissioned in 1964 by the American Nurses Association and the National League for Nursing is expected to give further direction in this regard. Recommended by the Surgeon General's Consultant Group on Nursing,[9] that study shows promise of documenting the educational needs of nursing personnel and identifying a pattern of education that will adequately prepare nurses and at the same time allow them to advance professionally.

A Blueprint for Expansion

From examination of trends relating to nursing needs and the recruitment potential, a blueprint was designed to guide expansion of nursing education facilities in Michigan. The design utilizes all programs in the present day system of nursing education. It presents a schedule for school expansion and offers clues to a timetable for transition recommended by the profession.

The plan for facilities for basic preparation of registered nurses is based on the maximum number of students that it appears feasible to recruit and reflects the growing need for college prepared nurses. The plan for facilities to prepare practical nurses is based on what appears to be the maximum flow of new graduates required.

Plans for facilities that offer post - R.N. baccalaureate degree education and for facilities that offer masters degree programs are based on the flow of new graduates required to reach designated supply goals. In terms of the numbers of nurses that must be recruited for education at those levels, these are ambitious plans. In terms of the projected need for nurses with baccalaureate and higher degree preparation, the proposed flow of new graduates is far short of numbers required.

Basic Baccalaureate Degree Programs

Facilities that offer basic baccalaureate degree nursing education should expand to accommodate 750 *sophomore* admissions in the academic year 1969-70, which represents an increase of 44% over sophomore enrollments in 1965. Thereafter these programs should expand further and new facilities will be needed to accommodate a total of 1,800 sophomore admissions in the academic year 1976-77. (There is a trend toward admitting these students to the nursing education facility in the sophomore year rather than in the freshman year.)

Basic Baccalaureate Program Sophomore Admission Projections	Sophomores October 1965	Projected No. of Sophomore Students Academic Year 1969-70	1974-75	1976-77	1979-80
Reported by Schools	520 actual				
Planned by Schools	560	700	830	850	880
Admissions in Blueprint	xx	750	1,200	1,800	1,800
Planned, under Blueprint	xx	50	370	950	920

Basic Baccalaureate Program Graduation Projections	Graduates 1964-65	Projected Number of Graduates Academic Year 1969-70	1974-75	1976-77	1979-80
Planned by Schools	245 actual	445	680	695	710
Graduates in Blueprint[a]	xx	425	800	850	1,200
Planned, under (over) Blueprint	xx	(20)	120	155	490

[a]Projections in the Blueprint were computed at the average completion rate for classes admitted as freshmen in the years 1956 through 1960, which was 49.8%.

The five existing baccalaureate degree nursing programs and a new one opening in the fall of 1966, are not planning sufficient expansion to accommodate the number of students expected. New programs may be needed as early as 1970. By 1975, new baccalaureate degree programs should be established in strategic locations throughout Michigan. Enrollment data indicates that young people who live in a region where a baccalaureate degree nursing program is located, are more likely to enroll in such programs than are students who live some distance away. (See Appendix C, Table XIII B.)

A report from the Michigan Higher Education Assistance Authority gives striking evidence of need for better distribution of baccalaureate degree programs. Nursing has been losing at least 50 outstanding students each year who were granted State of Michigan scholarships. These students had elected nursing but changed to another course of study in order to attend a college or university near their homes.

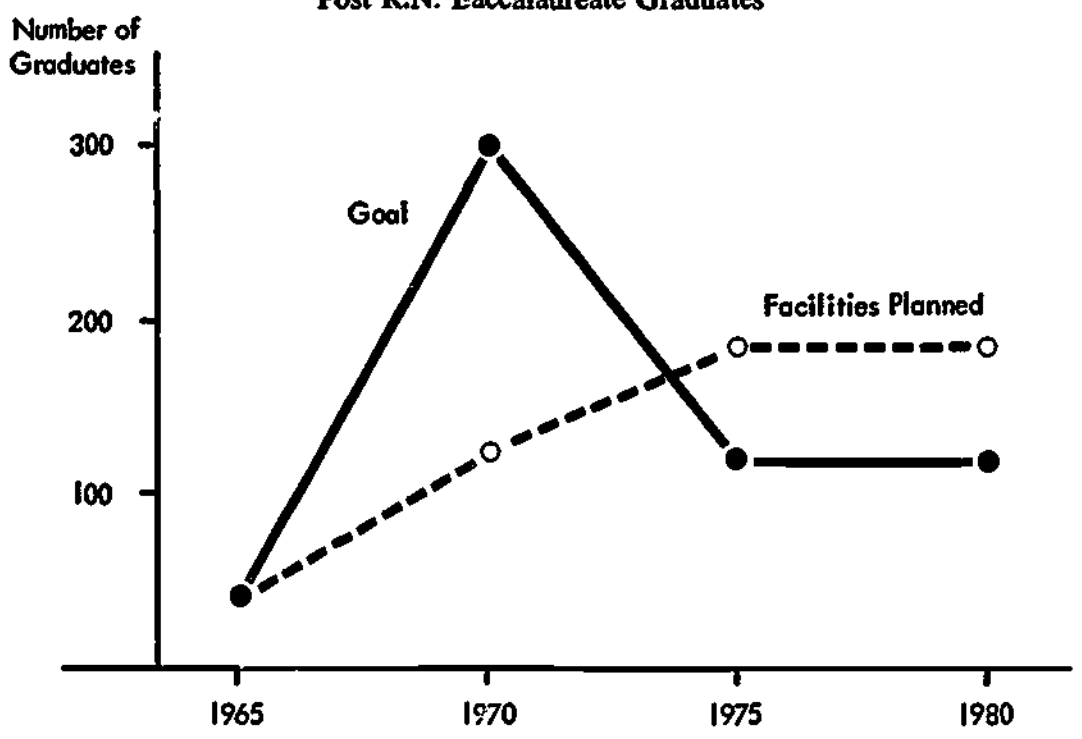
Post - R.N. Baccalaureate Degree Programs

Nursing education facilities with policies for granting college credit for education acquired in diploma programs and associate degree programs, should prepare for expansion. At least 800 registered nurses should be graduated from these programs in the six years 1965 through 1970, and a total of 1,200 should be graduated in the following decade. Michigan's facilities of this type are planning gradual expansion that could produce the total of 2,000 graduates over the next fifteen years. However, the critical need for nurses with baccalaureate and higher degree education demands a forceful and immediate increase of nurses with this preparation.

Post-R.N. Baccalaureate Degree Graduation Projections	Graduates 1964-65	Projected Number of Graduates Academic Year 1969-70	1974-75	1979-80
Reported by schools	31			
— planned	xx	125	185	150
— plans undetermined	xx	xx	xx	35
Graduates in Blueprint	xx	300	120	120
Possible plans under (over) Blueprint	xx	175	(65)	(65)

While Michigan has only two facilities that offer this type of nursing education, there are many colleges and universities throughout the State where nurses can enroll on a full time basis and earn general academic credits that are transferable to a nursing program. A massive campaign of recruitment, counseling and financial aid will be necessary to get a large number of Michigan nurses started in that direction.

FIGURE 7 — Nursing Education Facilities — Needed and Planned Post R.N. Baccalaureate Graduates



Diploma and Associate Degree Programs

Facilities should be available for hospital diploma programs and junior college associate degree programs to accommodate a combined total of 2,300 freshman admissions not later than the academic year 1969-70. This represents an increase of 41% over admissions to these programs in the year ending October 15, 1965. Facilities should be maintained at approximately that level through the academic year 1974-75.

If these goals are realized, Michigan's supply of registered nurses for general patient care in the year 1976 should reach at least 50% above the supply available in 1964. Between 1975 and 1980, the teenage potential is expected to decline and it appears that the combined capacity of diploma and associate degree programs could be reduced and give way to maintenance of high enrollment in baccalaureate degree programs.

Diploma & Associate Degree Program Admission Projections	Freshman Admissions 1964-65	Projected Number of Freshmen — Academic Year 1969-70	1974-75	1979-80
Reported by Schools	1,627 actual			
— planned admissions	1,777	2,333	1,276	1,246
— plans undetermined	xx	128+	1,326+	1,326+
Admissions in Blueprint	xx	2,300	2,200	1,800
Possible plans (over) Blueprint	xx	(161+)	(402+)	(802+)

Michigan's diploma schools report that they can increase their capacity by 10% and accommodate 1,450 admissions in the year 1969, if faculty are available. The ten existing junior college programs report capability to expand from their 1965 admission capacity, which was 445 students, to admit 850 in 1969 — an increase of almost 100%. This expansion also depends on the availability of qualified faculty.

Five additional community colleges are in various stages of planning new associate degree nursing programs which may add facilities for 160 more freshman students by 1969. Four other community colleges have such plans under study (not included in the table above).

In 1965, admissions to schools in this group fell 150 students short of their combined capacity. At the same time some of these schools turned students away. Two out of three schools reported that plans were undetermined beyond the year 1970 and there was evidence of need for local planning that would involve all schools of nursing in a given community.

Practical Nursing Programs

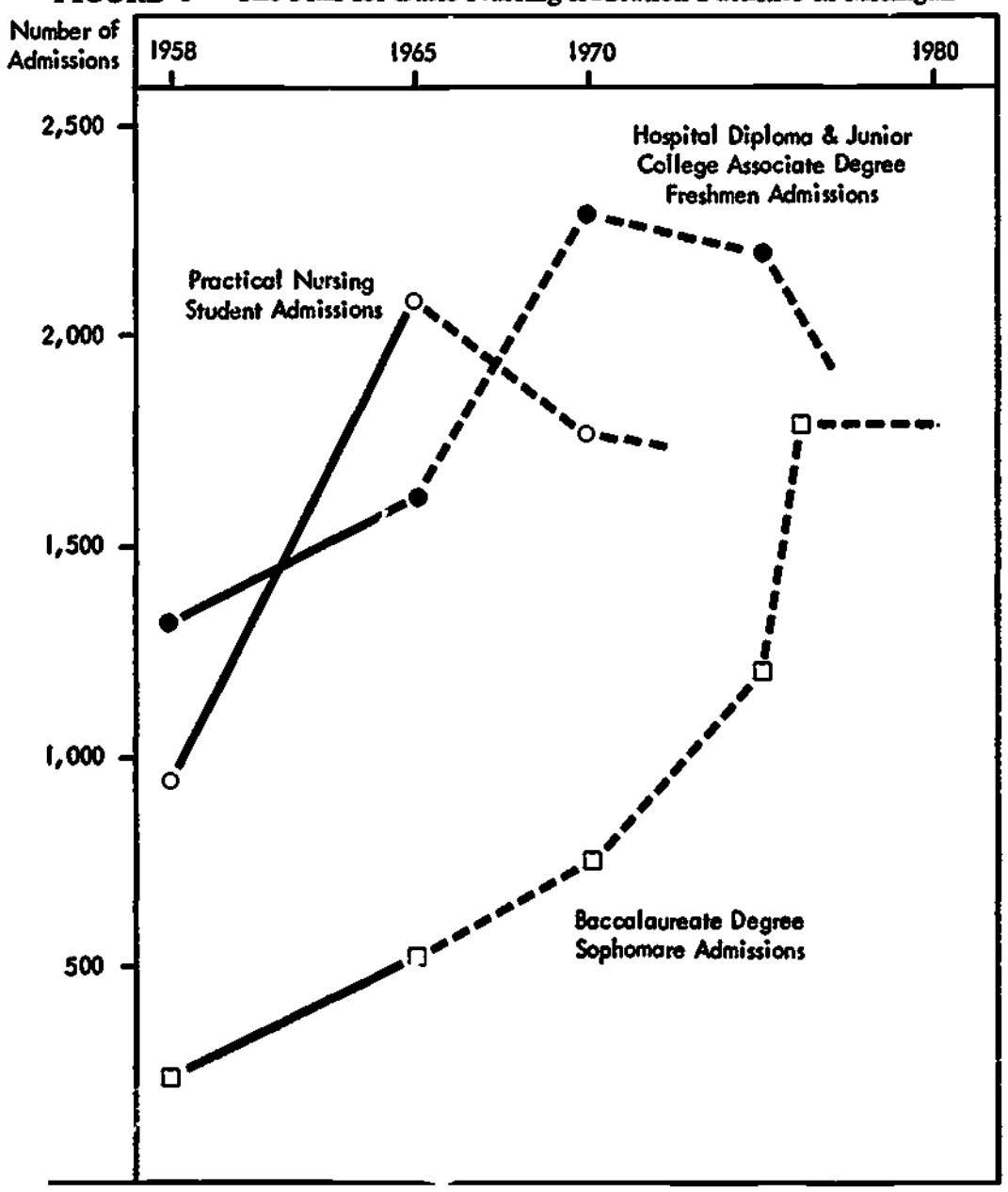
Present facilities for practical nursing education have capacity to admit 2,154 students annually and this appears ample for Michigan. By 1970 it is anticipated that the supply of practical nurses will be enlarged sufficiently for these educational facilities to be reduced and still provide enough new nurses to keep pace with growing demands. (See Appendix C, Tables X and XI.)

Practical Nursing Program Admission Projections	Admissions 1965	Projected Number of Admissions Academic Year 1969-70	1974-75	1979-80
Reported by Schools	2,053			
— planned admissions	2,154	1,757	1,280	1,220
— plans undetermined	xx	397	874	934
Admissions in Blueprint	1,970	1,775	1,775	1,500
Possible plans under (over) Blueprint	xx	(379)	(379)	(654)

Nine of the twenty-nine practical nursing programs, with capacity to enroll 725 students, are now financed by Federal Manpower Development and Training Act funds. These funds are appropriated on a year to year basis, but MDTA programs with capacity to enroll 330 students reported enrollment plans for the year 1970.

The plan for practical nursing education facilities should be reviewed at frequent intervals. Review should take into consideration the geographic distribution of these programs in relation to regional needs.

FIGURE 8 — The Plan for Basic Nursing Education Facilities in Michigan



Masters Degree Programs

To realize goals set forth in this report, Michigan has the obligation to expand facilities that prepare nurses at the masters level. In the interval 1965 through 1970, at least 500 Michigan nurses should complete this education. In the decade 1971 through 1980, an additional 2,375 Michigan nurses should earn masters degrees.

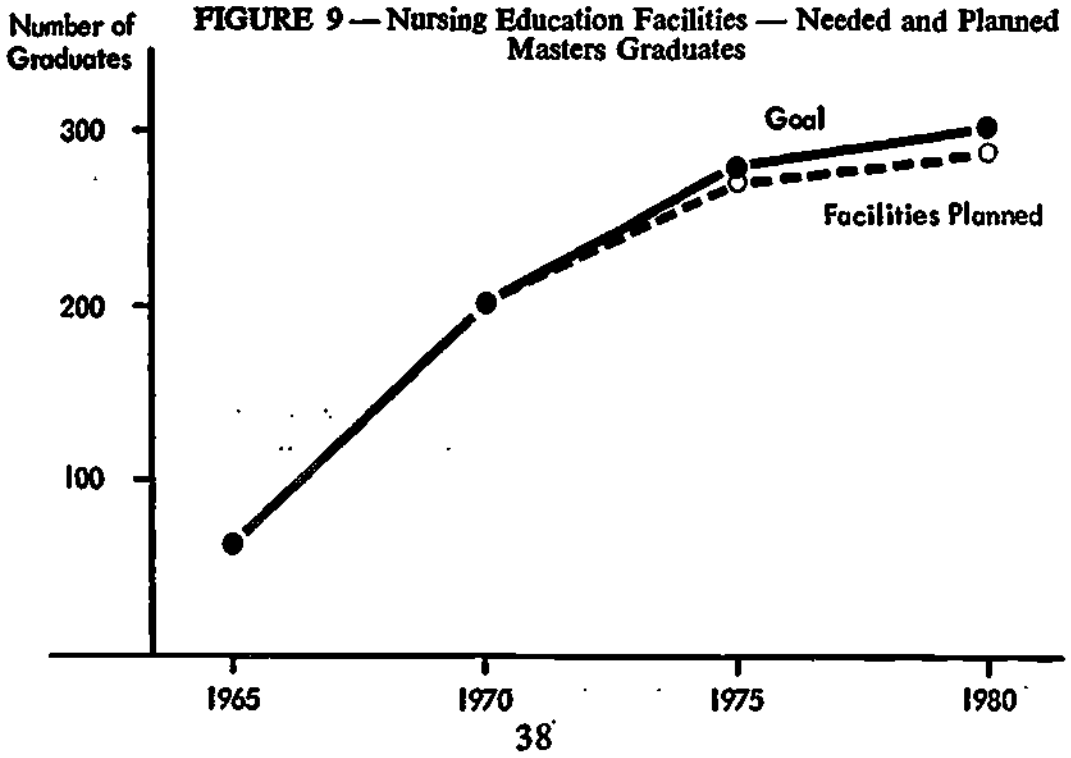
In the past there was a dirth of masters degree nursing programs and Michigan has prepared many graduates for other states and other countries. Today new facilities are being developed throughout the nation and Michigan's obligation in the future should be more nearly related to Michigan's need for nurses with masters preparation:

Goals for Masters Graduates	1964-65	1969-70	1974-75	1979-80
Numbers for Michigan to educate.....	65 actual	225	275	300
Numbers for Michigan to gain.....	30 estimate	175	225	300

Michigan's three existing graduate programs for nurses are planning expansion that should be adequate to reach goals proposed in this report. Two of these programs are at the University of Michigan: one offers a masters degree in public health, and is planning to double the flow of graduates from 25 in 1965, to 50 in 1970; the other program offers masters preparation in a clinical specialty and is planning for an increase of graduates from 10 in 1965, to 100 in 1970. At Wayne State University, the masters student may specialize in a clinical area of nursing or a functional area, or both. This program is planning to increase its flow of graduates from 35 in 1965 to 75 in 1970.

Masters Program Graduation Projections	Graduates 1964-65	Projected Number of Graduates Academic Year 1969-70	1974-75	1979-80
Reported by Schools	65			
— planned	70	225	270	240
— plans undetermined	xx	xx	xx	50
Graduates in Blueprint	xx	225	275	300
Possible plans under Blueprint	xx	000	5	10

FIGURE 9 — Nursing Education Facilities — Needed and Planned Masters Graduates



PART VIII

NURSING NEEDS BY FIELDS OF NURSING

A. HOSPITALS AND RELATED FACILITIES

Short - Term General and Special Hospitals

In 1964 there were 256 short-term general and special hospitals in Michigan with 35,618 beds. This represented 38% more beds than were available in 1953 when Michigan's nursing needs and resources were last evaluated.[1] The available service time of registered nurses increased only 21% in the eleven year interval, 1953 to 1964:

In Short-Term General and Special Hospitals	1953[1]	1964	% of Increase
Number of beds	25,773	35,618[19, 26]	38%
R.N.'s by head count	9,200 est.	13,500	46%
R.N.'s by full-time equivalent	8,800	10,700	21%
— ratio per beds	1:2.9 beds	1:3.4 beds	

The low increase of service time is attributed to increased numbers of part-time nurses and decreased time that part-time nurses were available:

In Short-Terms Hospitals	1953	1964
Percentage of R.N.'s employed part-time	15% est.	37%
Average number of days per week, per part-time nurse	3 days	2 days

At the time of the 1964 survey these hospitals employed 13,600 nurses aides, attendants and orderlies, 6,000 licensed practical nurses and 1,700 ward clerks, which was more than double the number of non-professionals employed in 1953. For the State as a whole, the total of all nursing personnel showed a marked increase in the eleven year period in proportion to the number of hospital beds, but there was a glaring decrease in the ratio of R.N.'s to nonprofessionals:

Full-Time Equivalency Ratios	1953	1964
All nursing personnel, per beds	5:9 beds	5:6 beds
R.N.'s per nonprofessionals	5:4 nonprof.	1:2 nonprof.

Had these hospitals had the number of registered nurses and licensed practical nurses that directors of nursing considered essential many more nurses should have been available:

Unmet Need in 1964	R.N.'s	L.P.N.'s
Full-Time Equivalent	1,600	800
Head Count Estimate	2,200	900

Reports that identified the positions where unmet needs existed revealed relatively few vacancies in head nurse positions, but need for one additional supervisor or assistant director of nursing for every two that were then available. These reports were interpreted to mean that nurses are placed in head nurse positions whether qualified or not, which may be contributing to greater need for higher level supervision. Furthermore

the increase of part-time nurses and the increase of nonprofessional nursing personnel has added administrative and inservice education responsibilities.

Using the figures supplied by employers, a formnla of need for nurses in the year 1964, was reached for the short-term care hospitals in the State as a whole:

1 full-time R.N. (or equivalent) for 2.9 hospital beds
1 full-time L.P.N. (or equivalent) for 5.6 hospital beds

* * *

Judging from trends in recent years, Michigan can expect 1,000 additional short-term hospital beds to be added annually for a total of 41,600 beds in 1970. If the proportion of part-time nurses and the nursing needs per hospital beds remain the same as reported for the year 1964, Michigan's hospitals of this type can anticipate demand in 1970 for:

— 16,800 R.N.'s (full time and part-time) to fill 14,300 positions, an increase of 24% over the number available in 1964.

— 8,100 L.P.N.'s (full time and part-time) to fill 7,450 positions, an increase of 30% over the nu.nber available in 1964.

Study of potential resources suggests that the overall supply of registered nurses in Michigan may increase 24% in the interval between 1964 and 1970, but short-term general hospitals cannot be assured of that rate of gain. Fields of nursing that will be most affected by demands of the medicare program will need 70% to 100% more registered nurses. For this type of personnel, competition will be keen.

Short-term hospitals employ two-thirds of all registered nurses and four-fifths of all practical nurses. They should investigate the possibility of meeting part of their increased need through better use of the nurses they now have. It is a known fact that nurses are responsible for activities that could be delegated to others, e.g. inventory and maintenance of supplies, and activities of other departments at night, on weekends and holidays. These hospi.als may also find that more of their nurses would work full time and part-time nurses would be available more days per week if they devise economic incentives on the basis of a nurse's availability. Hospitals that have a problem of coverage for evenings, nights, weekends and holidays may find more nurses available if the pay differential were more attractive.

* * *

Shortage is only part of the problem of inadequate nurse supply in hospitals. Four out of five nurses in positions ranging from head nurse through director of nursing are not academically prepared for their jobs today. To have suitably prepared nurses in all positions in 1970, Michigan's short-term hospitals would need 6,000 of their registered nurses (36%) prepared at the baccalaureate or higher degree levels. In 1964 only 9% of their R.N.'s were college graduates.[11]

It should be of concern to hospital administrators in Michigan that 45% of their directors of nursing and assistant directors are of an age

to retire in the next ten years. On the other hand, 58% of the head nurses are under 40 years of age, representing a promising pool from which to draw successors to the retirees — but they should first be prepared. Only one in fourteen head nurses holds even a baccalaureate degree and masters preparation is essential for nurses to function effectively as administrators.

* * *

There is rightful concern both in Michigan and nationally over the increase of hospital beds without adequate measures to recruit and educate a proportionate increase of nurses. State and regional planning is exerting some control over hospital construction but such plans call for high bed occupancy. With high bed occupancy more nursing time is required per beds available.

Today there is a trend toward earlier discharge of convalescent and chronically ill patients from the short-term general hospital in order to make more of these beds available for the acutely ill. With greater patient turnover and more beds occupied by acutely ill patients, even more nursing time will be required in relation to the number of beds available.

Long Term Care Hospitals and Nursing Homes

In 1964, Michigan had 498 long-term patient care facilities (excluding mental health facilities) with a total of 26,627 beds:

Nursing Homes: There were 443 licensed nursing homes caring for convalescent and chronically ill patients, with a total of 16,694 beds. Homes for the aged were not included in this study except for the designated number of beds that were licensed as nursing home beds[24].

Long-Term General and Special Hospitals: There were 18 facilities classified as hospitals for the chronically ill, tuberculosis hospitals and rehabilitation facilities, with a total of 4,954 beds.

County Medical Care Facilities and Infirmaries: Thirty-seven counties had medical care facilities for the chronically ill, with a total of 4,979 beds.

Almost 11,000 people were employed for nursing care of patients in all of these facilities:

Long-Term Care Facilities	Personnel in the Year 1964			
	Total	R.N.'s	L.P.N.'s	Aides, Attendants
Nursing Homes	6,300	500	800	5,000
Hospitals	2,150	400	400	1,350
County Facilities	2,430	250	180	2,000
Total	10,880	1,150	1,380	8,350

No standards were available for evaluating the nursing needs of these long-term patient care facilities. Many factors influence the numbers and kinds of personnel required. The Michigan Department of Health regulations for licensing nursing homes and the Michigan Department of Social Welfare regulations governing county facilities that care for welfare clients are minimum requirements and not qualitative stand-

ards. This was clearly evident in the 1964 report from the Michigan Department of Health, indicating that 195 licensed nursing homes had no registered nurse and 55 had neither a registered nurse nor a licensed practical nurse.

At the time of this survey the Michigan Nursing Home Association reported that nursing homes in this State needed 2,000 more licensed nurses. It was the judgement of the committee making this study that 500 R.N.'s and 1,500 L.P.N.'s would be the minimum required to meet this need. This meant 100% more R.N.'s and almost 200% more L.P.N.'s than were available. Other facilities in this group reported a 20% deficit of registered nurses and a 40% deficit of L.P.N.'s.

Using staffing levels that employers considered necessary in 1964, the study committee devised a planning formula for projecting nursing needs of the long-term care facilities in the State as a whole:

- Nursing Homes, 6 R.N.'s and 14 L.P.N.'s per 100 beds.
- Long-Term Care Hospitals, 10 R.N.'s and 14 L.P.N.'s per 100 beds.
- County Medical Care Facilities, 6 R.N.'s and 6 L.P.N.'s per 100 beds.

- Planning Formula.....7 R.N.'s and 14 L.P.N.'s per 100 beds.

Judging from trends in recent years, Michigan can expect 1,000 nursing home beds to be added annually for an increase of 32% in the interval between 1964 and 1970. Other long-term care facilities are expected to expand at a rate no less than the six year increase of Michigan's elderly citizens which is projected as 13%. In all facilities providing inpatient care for the convalescent and chronically ill, it is realistic to anticipate that Michigan will have 34,000 beds available in 1970. Based on the 1964 formula of need, 2,400 R.N.'s and 4,800 L.P.N.'s will be required to staff these facilities. Contrast this with the 1964 supply of 1,150 R.N.'s and 1,380 L.P.N.'s.

The U.S. Public Health Service regulations that govern Federal aid for construction of long-term general hospitals and skilled nursing homes provide for programming up to 5 beds for each 1,000 of a state's population. If building funds are available, Michigan might have as many as 44,000 beds in these facilities in 1970 and 51,000 beds by 1980.

Hospitals Caring for the Mentally Ill and the Mentally Handicapped:

In 1964, Michigan had 29 facilities specializing in care for the mentally ill and the mentally handicapped:

Psychiatric Hospitals: There were 18 hospitals for treatment of the mentally ill, with a total of 24,586 beds. Eleven were governmental hospitals and seven were private hospitals. (Psychiatric units in general hospitals are not included here.)

Hospitals and Homes for the Mentally Handicapped: There were eight State institutions for care of the mentally deficient and maladjusted, with a total of 12,173 beds.

70

Since Michigan's last study of nursing needs in 1953, the number of beds in these facilities increased only 12%. In the meantime bed occupancy increased from 90% to 95% and there were 18% more patients to be served in 1964:

Mental Care Facilities	Beds		Average Patient Census	
	1953	1964	1953	1964
Total beds and patients	32,811[1]	36,759[19]	29,524[1]	34,900[19]
Increase of beds and patients	3,948		5,376	
Percent of Increase	12%		18%	

In all of these facilities with a total of 36,759 beds, only 7,300 people were employed for nursing services — registered nurses, licensed practical nurses, licensed psychiatric attendant nurses and unlicensed attendants:

Mental Care Facilities	Supply Reported in the Year 1964			
	Total	R.N.'s	L.P.N.'s & L.P.A.N.'s	Unlicensed Attendants
Psychiatric Hospitals	4,251	511	1,750	2,000
Hospitals and Homes for the Mentally Handicapped	3,044	151	143	2,750
Total	7,295	662	1,883	4,750

Reports from employing agencies were used as the basis for estimating the nursing needs of these institutions:

Mental Care Facilities	Need Reported in the Year 1964			
	Total	R.N.'s	L.P.N.'s & L.P.A.N.'s	Unlicensed Attendants
Psychiatric Hospitals	4,887	1,031	1,850	2,006
Hospitals and Homes for the Mentally Handicapped	3,244	251	243	2,750
Total	8,131	1,282	2,093	4,756

Two observations were made relative to staffing that employers considered essential:

— These institutions needed 100% more registered nurses and five out of seven were needed for supervision or teaching.

— Psychiatric hospitals needed almost a 1 to 1 ratio of licensed and unlicensed nonprofessionals which is a much higher ratio of need for licensed nonprofessionals than other types of hospitals reported.

There is strong support for both of these requests:

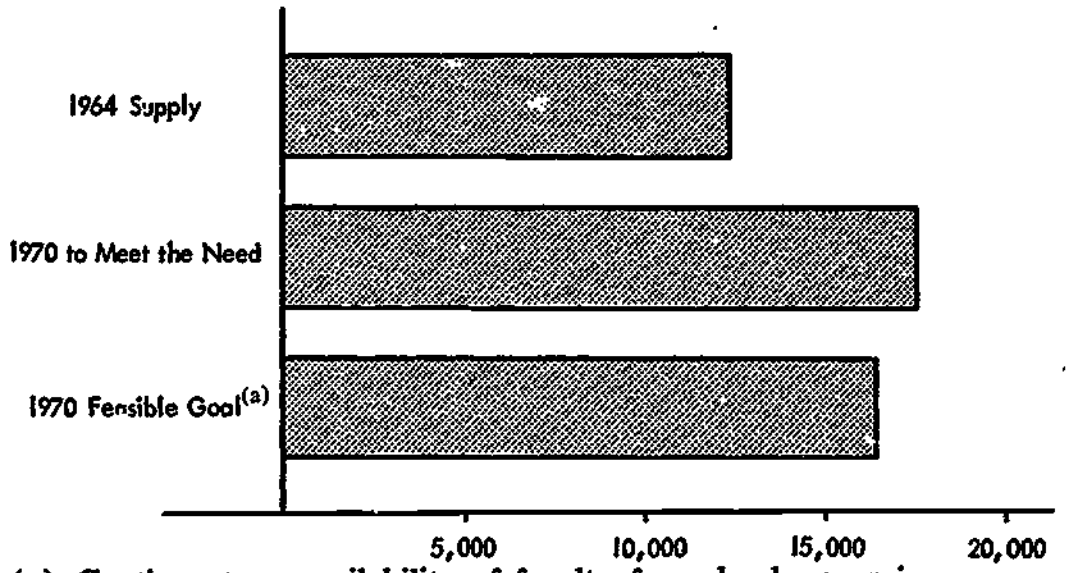
— The Surgeon General's Consultant Group on Nursing recommended in its report of 1962, that the number of professional nurses with advanced preparation for psychiatric nursing should be doubled.

— If psychiatric hospitals are required to manage with a limited supply of professional nurses they will need better prepared nonprofessionals. Time of professionals will be better used if nonprofessionals come for employment with basic training on which to build specialized training.

In future years facilities for care of the mentally ill and the mentally handicapped may differ remarkably from what we have known in the past. Development of community mental health centers, psychiatric units in general hospitals, early return of psychiatric patients to the community, establishment of community centers for the mentally handicapped — all of these trends are creating change. State hospitals may have fewer inpatients but a higher proportion who are severly ill or handicapped, requiring increased nursing time per patient.

Lacking more reliable bases for projecting nursing needs of hospitals in this category, future estimates were based on staffing levels desired in 1964 and general population trends. It was the judgment of the study committee that the resulting estimate of 1,400 R.N.'s and 2,225 licensed practical nurses and licensed psychiatric attendants would be minimal for these facilities in 1970. Approximately 150 new R.N.'s will be needed annually to replace retirees and reach the 1970 supply goal.

FIGURE 10 — Registered Nurses in Hospitals and Related Facilities Full Time Nurses and Full Time Equivalent of Part Time Nurses



(a) Contingent on availability of faculty for school expansion.

B. PRIVATE DUTY NURSING

At the time of survey, approximately 1,234 of Michigan's registered nurses and 350 licensed practical nurses were in private practice and it is estimated that two out of three were available on a full-time basis. Private duty registries throughout the State reported 36% of the calls for registered nurses and 27% of the calls for licensed practical nurses were unfilled in 1964. By and large the unfilled calls occurred during hours of the day and days of the week when relatively few nurses were available.

Practitioners in this field today can properly be called "special duty nurses." They are needed for patients who must have highly skilled and/or constant care. It is assumed that demand for this type of care will grow in proportion to the population and that 1,700 registered nurses and 500 licensed practical nurses may be needed in 1970.

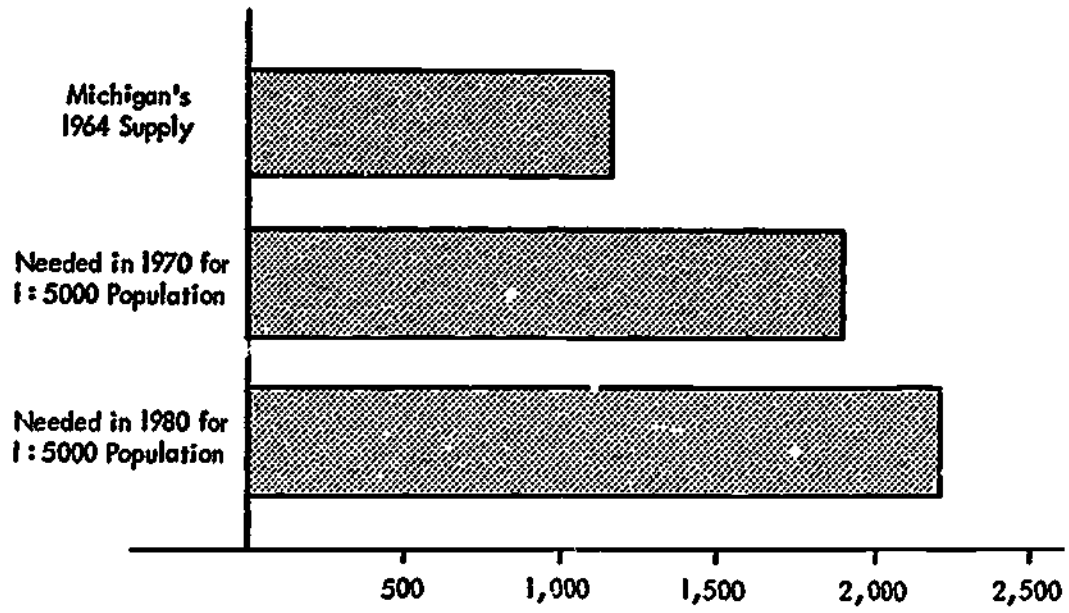
Establishment of intensive care units in short term general hospitals could lessen the demand for registered nurses in the private duty field. Should this occur, hospitals would be expected to absorb those numbers since their needs would increase beyond the 1964 formula of staffing needs.

C. PUBLIC HEALTH NURSING

At the time of survey approximately 1,140 registered nurses were engaged in public health nursing on a full-time or part-time basis. At least 650 more were needed to meet the minimum standard of the American Public Health Association which is the equivalent of one full-time public health nurse for every 5,000 of the population. To meet that standard in 1970, Michigan should have 70% more registered nurses in this field than were available in 1964.

Class of Data	Available Goal	Goal Available
	1964	1970
R.N.'s in Public Health Nursing.....	1,140	1,900
Ratio, Full Time or Equivalent Nurse to Population.....	1:7,600 Pop.	1:5,000 Pop.

FIGURE 11 — Registered Nurses in Public Health



Since enactment of medicare legislation there has been much speculation that the demand for nursing care in the home will create far greater need than one public health nurse per 5,000 population. However, the projected supply of registered nurses for the year 1970 makes it unrealistic to set higher goals. A gain of only 24% is forecast for Michigan's total supply of registered nurses in the six year interval 1964 to 1970.

Many factors will contribute to Michigan's nursing needs in the field of public health:

— At the time of survey, 46 of Michigan's 83 counties were without an organized service for nursing care in the home. Such

services will be required in all counties to make "medicare" a reality for Michigan's elderly citizens.

— Increasing numbers of public health nurses are being employed by local Boards of Education in Michigan — a gain of 25% in the past five years. Emphasis on physical fitness of youth suggests that this trend will continue.

— Many public health nurses are not fully prepared today. For staff level positions the nurse needs the academic foundation acquired in a baccalaureate degree nursing program and only 31% of these Michigan nurses have that education today. Administrators, supervisors, and consultants should have masters preparation and only 32% of Michigan's nurses in those positions are fully prepared.

— If more nurses are to be educated and available for public health nursing services, more faculty with public health preparation must be available to colleges and universities.

— The demand for public health nursing supervisors is growing. To fulfill legal obligations, official public health agencies are adding personnel from other disciplines for health education and for home visits that are investigative in nature. Agencies that provide care for the sick at home are adding licensed practical nurses and home health aides to assist with care of the chronically ill and aged. Qualified public health nurses will be needed to plan services that can be delegated to others with safety, and to train and supervise ancillary workers.

— Expanding community health and welfare programs are creating increased demand for public health nurse consultants who are prepared in the clinical specialties, e.g. maternal and child health, mental health and care of the chronically ill.

— High attrition is expected in this field because 47% of Michigan's public health nurses will reach retirement age by 1975. Approximately half of the 57 fully qualified administrators, supervisors and consultants will have reached retirement age by 1970. Qualified public health nurses should be ready to succeed retirees.

To meet the need, the flow of new public health nurses should average 200 annually in the six year interval from 1964 to 1970. A gain of 125 R.N.'s will be needed each year to reach the ratio of 1 public health nurse per 5,000 of Michigan's population and between 60 and 90 will be needed annually to replace nurses retiring temporarily or permanently.

D. OCCUPATIONAL HEALTH NURSING

During the past decade the demand for nurses in the field of occupational health has fluctuated in relation to the number of people employed in industry. Technological change in production methods, decentralization in the auto industry and economic recessions contributed to a labor market decline in the 1950's.[80] The number of registered

nurses in occupational health services dropped from 1,162 in the mid 1950's to 956 in the early 1960's. When industrial employment improved in 1963 and 1964, there were 1,000 registered nurses and 30 licensed practical nurses employed in the medical services of Michigan's industrial and business firms. The labor force is expected to grow 10% in the interval from 1964 to 1970 and 19% in the decade 1970 to 1980. At the rate nurses work part-time, 1,170 R.N.'s and 50 L.P.N.'s may be needed in this field by 1970.

The most comprehensive data ever assembled for the field of occupational health nursing, resulted from a survey conducted in the spring of 1964 by the Division of Occupational Health of the U.S. Public Health Service. Significant aid in evaluating the educational needs of nurses was drawn from the Michigan sample of registered nurses that responded to that survey. While the data permit only generalizations, it appears that a large majority of occupational health nurses should have college preparation. A sizeable proportion either work in places where there is no supervision or they are supervisors but few are academically prepared for such responsibility:

Position Descriptions, National Sample[34]	Percent
Only Nurse	39.8
Staff Nurse Supervised	26.3
Staff Nurse Unsupervised	15.9
Nurse Consultant	2.3
Nurse Supervisor	14.2
Visiting Nurse	1.5
Total	100%

Medical Supervision, Michigan Sample[27]	Percent
Full-Time Medical Director	37.0
Part-Time Medical Director	29.9
No Medical Director	33.1
Total	100%

Highest Degree of Nursing Education, Michigan Sample[27]	Percent
Diploma (Hospital Program)	90.8
Associate Degree (Junior College Program)	3.6
Bachelors Degree	3.6
Masters Degree	0.3
No Answer	1.7
Total	100%

Today 40% of Michigan's occupational health nurses are of an age to retire in the next ten years; 75 new R.N.'s will be required annually to succeed retirees and to meet growing demands. Qualified nurses should be available for these positions.

E. NURSING IN DOCTORS' OFFICES

In 1964 there were 1,870 registered nurses and 420 licensed practical nurses employed by physicians as office assistants. For registered nurses, the 1964 supply represented an increase of 48% since Mich-

igan's last evaluation of nursing needs in 1953. Study revealed that the increased use of R.N.'s occurred in proportion to the increase of medical and osteopathic physicians in the State of Michigan. The increased use of licensed practical nurses exceeded the rate of increase of physicians.

	1953	1963
Doctors of Medicine	6,600[1]	9,322[14]
Doctors of Osteopathy	1,000[11]	1,833[14]
Total — M.D.'s and D.O.'s	7,600	11,155
R.N.'s employed by M.D.'s and D.O.'s	1,280	1,870
— ratio to M.D.'s and D.O.'s	1:5.9	1:5.9
L.P.N.'s employed by M.D.'s and D.O.'s	112	451
— ratio to M.D.'s and D.O.'s	1:68.0	1:24.0

Projections relating to the supply of physicians were not available. Therefore, future estimates of demand in this field were based on general population trends. Approximately 2,020 R.N.'s and 460 L.P.N.'s are expected to be employed by physicians in the year 1970.

F. NURSING EDUCATION

Looking into the future the most pressing and far reaching problem of nurse supply is that associated with the need for qualified nurse faculty. This is a twofold problem:

— Instructional programs will not be improved now or in future years unless the supply of suitably prepared nurse faculty is increased. The minimum requirement for faculty in educational institutions is a masters degree, yet two out of every three nurse faculty in Michigan lack this preparation today.

— The future supply of nurses in all fields is contingent upon increasing the pool of qualified faculty. In the academic year 1964-65 there were 57 vacant faculty positions and 26 new positions were established that year by community colleges with plans to open new associate degree programs. New schools cannot be opened and enrollments cannot be increased unless steps are taken immediately to recruit and prepare nurses for faculty positions.

Based on the ratio of faculty to students that was represented in projected plans of Michigan schools of nursing, this State must have a net gain of 70 nurse faculty each of the next ten years:

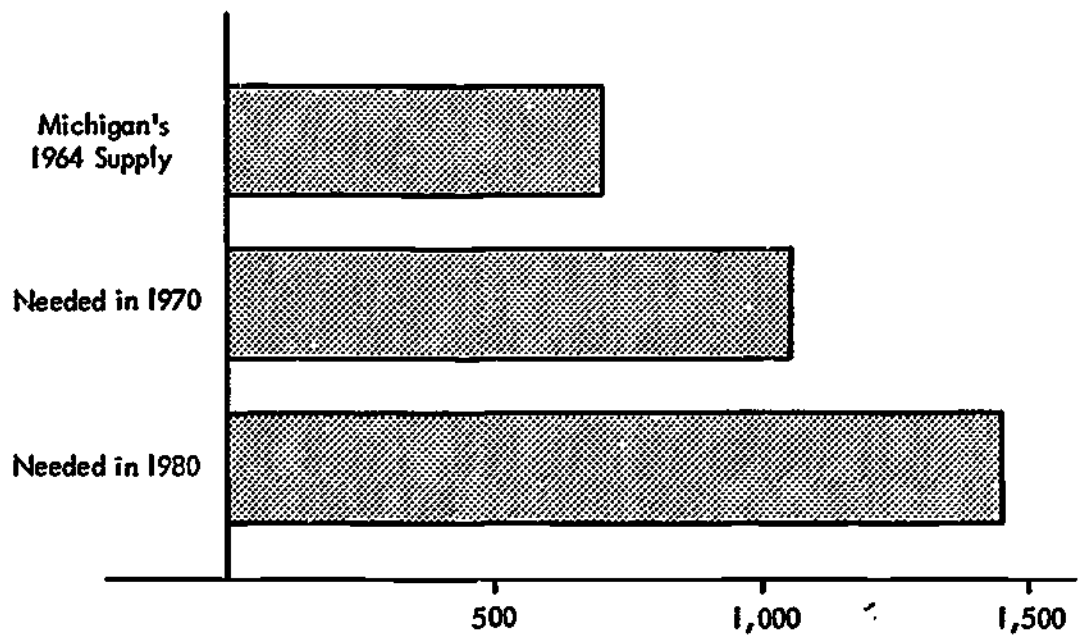
Faculty Need Projections	1964-65	1969-70	1974-75	1979-80
Head Count	700	1,050	1,380	1,450
Full Time Equivalent	684	1,025	1,300	1,350

At least 90 faculty will have to be added annually, to realize the required net gain. The new supply will also have to replace faculty who retire and those who take educational leaves of absence.

Fewer than 10% of the R.N.'s in education are employed on a part-time basis. In future years schools of nursing may use more part-time faculty. Nurses who are earning masters degrees today are young

nurses who are likely to interrupt their careers temporarily for marriage and rearing of families. Experience today indicates that these nurses are interested in teaching on a part-time basis until their family responsibilities permit them to return to a full-time teaching schedule.

FIGURE 12 — Nurse Faculty for Schools of Nursing



APPENDIX A

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APPENDIX B

REGIONAL RECRUITMENT QUOTAS

Source of Students by Michigan League for Nursing Geographic Areas	FRESHMAN STUDENT RECRUITS FOR R.N. PREPARATION					
	Actual 1964-65		Quotas 1970		Quotas 1975	
	Baccalaureate Degree	Diploma & Associate Degree	Baccalaureate Degree	Diploma & Associate Degree	Baccalaureate Degree	Diploma & Associate Degree
Area I, South Western	68	192	170	350	300	300
Area II, South Eastern	385	534	600	1,200	1,100	1,100
Area III, West Central	35	214	135	265	230	230
Area IV, East Central	50	313	168	332	305	305
Area V, North Central	11	73	34	66	50	50
Area VI, Upper Peninsula	9	80	43	87	65	65
Out of State	124	87	xx	xx	xx	xx
Number by Program	682	1,493	1,150	2,300	2,050	2,050
Percent by Program	31.4%	68.6%	33⅓%	66⅔%	50%	50%
Grand Total	2,175		3,450		4,100	
— number per 100 girls 17 to 18 years of age	2.6		4.0		4.3	
— number per 100,000 of general population	26.6		38.8		43.1	

Quotas assume increase in out of state baccalaureate degree recruits and decrease of others from out of state.

APPENDIX C

This section of the appendix offers selected tables of data supporting study findings and projections. Data reported by geographic areas refer to the Michigan League for Nursing planning areas outlined on the map, Appendix B. *Sources of data indicated by footnote "numerals" refer to the listing in Appendix A.*

TABLE I

TRENDS IN REGISTERED NURSE SUPPLY IN MICHIGAN AND IN THE NATION IN RELATION TO POPULATION

Class of Data	Michigan Estimates 1953	Michigan Estimates 1964	National Estimates 1950	National Estimates 1964
Population (thousands)	6,803[2]	8,166[2]	150,697[30]	191,700
R.N.s Employed Full Time or Part-Time (head count)	16,500[1]	22,000	375,000[3]	582,000[6]
Ratio, Employed R.N.s per 100,000 population	242	269	249	306
R.N.s Employed Part-Time	2,000	6,600	40,000[3]	132,000
Percent Employed Part-Time	12%	30%[a]	10%	23%
Ratio Filled Positions, per 100,000 population (Full-time and full-time equivalent of part-time)	232	226	xx	xx

[a]In short-term general hospitals 37% of all R.N.s were employed part-time; 46% of general duty R.N.s were employed part-time.

TABLE II, A

DISTRIBUTION OF REGISTERED NURSES BY FIELDS OF NURSING IN MICHIGAN AND IN THE NATION

Fields of Nursing	In Michigan 1964[a] Numbers	In Michigan 1964[a] Percent	In the Nation 1962[6] Numbers	In the Nation 1962[6] Percent
Hospitals and Related Facilities	15,356	70.0	367,250	67.0
Private Practice	1,234	5.6	69,500	13.0
Nursing Education	700	3.2	19,550	4.0
Public Health	1,140	5.0	34,700	6.0
Occupational Health	1,000	4.5	17,000	3.0
Doctors' Offices	1,870	8.5	40,000	7.0
Related Fields	700	3.2	2,000	Less Than 0.5
Total Employed	22,000	100.0	550,000	100.0

[a]Estimates for mid year 1964 reached in the present study.

TABLE II, B

DISTRIBUTION OF LICENSED PRACTICAL NURSES BY FIELDS OF NURSING AND TRENDS IN SUPPLY IN MICHIGAN

Field of Nursing	1954[a] Numbers	1954[a] Percent	1964[b] Numbers	1964[b] Percent
Hospitals and Related Facilities	1,746	78.3	7,600	86.8
Private Practice	250	11.1	350	4.0
Public Health Agencies	25	1.1	45	0.5
Doctors' Offices	118	5.3	420	4.8
Industry	18	0.8	30	0.3
Other, Related Fields	76	3.4	314	3.6
Total Employed	2,233	100.0	8,759	100.0
L.P.N.s **not** employed (inactive)	331		3,023	
Percent not employed	12.9		25.7	

[a]Unpublished Report Michigan Board of Nursing, October 1954.
[b]Estimates in 1964 survey and Michigan Board of Nursing Report, June 30, 1964.

TABLE III

DISTRIBUTION OF MICHIGAN'S SUPPLY OF [redacted] NURSES IN RELATION TO POPULATION OF GEOGRAPHIC AREAS

CLASS OF DATA	1964 Totals	AREAS I S.W.	II S.E.	III W.C.	IV E.C.	V N.C.	VI U.P.
A. **General Population** (thousands)	8166	1278	4285	920	1170	218	295
% of total population[2]	100%	15.6%	52.5%	11.2%	14.4%	2.7%	3.6%
B. **Registered Nurses**[10]							
Total No. Renewed Licenses	32795	5315	16168	4235	4748	1038	1291
% of total	100%	16.2%	49.3%	12.9%	14.5%	3.2%	3.9%
Number active (employed)	20323	3378	10084	2489	2901	625	846
% of all active	100%	16.6%	49.7%	12.3%	14.2%	3.1%	4.1%
Number inactive (not working)	12472	1937	6084	1746	1847	413	445
% of all inactive	100%	15.5%	48.8%	14.0%	14.8%	3.3%	3.6%
C. **Licensed Practical Nurses**[10]							
Total No. Renewed Licenses	10570	1632	4790	1336	1816	484	512
% of total	100%	15.4%	45.3%	12.6%	17.1%	4.6%	5.0%
Number active (employed)	7502	1063	3657	877	1242	327	336
% of all active	100%	14.1%	48.8%	11.7%	16.6%	4.3%	4.5%
Number inactive (not working)	3068	569	1133	459	574	157	176
% of all inactive	100%	18.5%	37.0%	15.0%	18.7%	5.1%	5.7%

TABLE IV, A

FULL-TIME AND PART-TIME REGISTERED NURSES EMPLOYED BY 163 OF MICHIGAN'S 256 SHORT-TERM GENERAL HOSPITALS[1,2]

CLASS OF DATA	1964 Totals	AREAS I S.W.	II S.E.	III W.C.	IV E.C.	V N.C.	VI U.P.
Number of Hospitals	163	36	59	18	21	11	18
Number of Beds	26536	4299	13929	2104	3646	764	~~1784~~ 1794
Registered Nurses Employed	10281	1978	5075	988	1382	242	616
Number full-time R.N.s	6475	1068	3502	543	815	140	407
% of all employed	63%	54%	69%	55%	59%	58%	66%
Number part-time R.N.s	3806	910	1573	445	567	102	209
% of all employed	37%	46%	31%	45%	41%	42%	34%

Source: Michigan Nurse Association survey, 117 hospitals; Michigan League for Nursing supplemental survey, 46 hospitals.

TABLE IV, B

FULL-TIME AND FULL-TIME EQUIVALENT OF PART-TIME NURSING PERSONNEL ON PATIENT CARE UNITS OF 163 OF MICHIGAN'S SHORT-TERM GENERAL HOSPITALS

CLASS OF DATA	1964 Totals	AREAS I S.W.	II S.E.	III W.C.	IV E.C.	V N.C.	VI U.P.
Number of Hospitals	163	36	59	18	21	11	18
Number of Beds	26536	4299	13929	2104	3646	~~1210~~ 764	~~2054~~ 1794
Patient Care Unit Personnel	21127	4087	10652	1829	2882	561	1116
R.N.s (includes head nurses)	7038	1240	3708	630	967	143	350
% of all personnel	33.3%	30.4%	34.8%	34.4%	33.7%	25.5%	31.4%
L.P.N.s	4375	821	2010	414	705	194	231
% of all personnel	20.7%	20.1%	18.9%	22.7%	24.4%	34.5%	20.7%
Aides and Attendants	9714	2026	4934	785	1210	224	535
% of all personnel	46.0%	49.5%	46.3%	42.9%	41.9%	40.0%	47.9%

TABLE V

NURSING HOMES IN MICHIGAN WITH AND WITHOUT LICENSED NURSES IN 1964

NURSING HOMES IN MICHIGAN	1964 Totals	AREAS I S.W.	II S.E.	III W.C.	IV E.C.	V N.C.	VI U.P.
No. of Nursing Homes	443	99	178	74	58	13	21
No. of Beds	16694	2460	9[illegible]5	2222	1979	348	630
Had at least 1 R.N.	248	33	144	35	27	4	5
Had L.P.N.(s), no R.N.	140	43	26	28	24	5	14
Had no R.N. or L.P.N.	55	23	8	11	7	4	2

Source: Michigan Department of Health.

TABLE VI

WORK STATUS OF REGISTERED NURSES IN MICHIGAN BY AGE GROUPS[5]

Ages of Michigan R.N.s	Totals in 1963	Active in Nursing		Inactive in Status		Status Unknown	
		Number	Percent	Number	Percent	Number	Percent
Under 30 years	7962	5267	66.2	2471	31.0	224	2.8
30-39 years	9687	5001	51.7	4375[a]	45.1	311	3.2
40-49 years	7537	4655	61.8	2535	33.6	347	4.6
50-59 years	5767	3846	66.7	1648	28.5	273	4.8
60 years and over	2811	1419	50.5	1228	43.6	164	5.9
Age Unknonw	762	245	32.1	176	23.2	341	44.7
Totals	34526	20433	59.2	12433	36.0	1660	4.8

[a]Represents high potential for recruiting inactive nurses to return to the field.

TABLE VII

MIGRATION GAINS AND LOSSES IN RELATION TO NUMBERS OF REGISTERED NURSES EDUCATED IN MICHIGAN DURING THE INTERVAL 1945-1962

Registered Nurses Residing in Michigan in 1963 Who Were 39 Years of Age and Under[5]						No. of R.N.s Educated in Michigan	Migration Gains and Losses	
Graduation Years[a]	Age in 1963	Active	Inartive	No Answer	Total	Total	Gains	Losses
1945-1954 (10 years)	30-39 years	5001	4375	311	9687	7760	1927	xx
1955-1962 (8 years)	29 years & under	5267	2471	224	7962	8766	xx	804
Totals					17649	16526	1123	xx

[a]This study assumes the average age at graduation was 21 years.
Source: Reports from Michigan Board of Nursing.

TABLE VIII

1970 GOALS — MICHIGAN'S SUPPLY OF REGISTERED NURSES AND LICENSED PRACTICAL NURSES

CLASS OF DATA	Supply[a] 1964		Goals for 1970			
			Desirable		Feasible	
	R.N.s	L.P.N.s	R.N.s	L.P.N.s	R.N.s	L.P.N.s
Head Count Employed	22,000	8,759	29,000	15,800	27,300	15,800
Ratio per 100,000 Pop.	269	107	326	177	307	177
% Working part time	30%	20%	25%	20%	30%	20%
Filled Position Count[b]	18,500	8,100	25,500	14,500	22,800	14,500
Ratio per 100,000 Pop.	226	100	285	163	256	163

[a]In addition to these licensed nurses in 1964, Michigan had 1880 licensed psychiatric attendant nurses; an unknown number hold both L.P.N. and L.P.A.N. licenses.
[b]Positions filled by full time nurses and the full time equivalent of part time nurses.

TABLE IX, A

HOW MICHIGAN REACHED ITS SUPPLY OF REGISTERED NURSES EMPLOYED IN 1964

Starting Mid Year	R.N.s Employed[10, 16]	Net Attrition[a] Numbers	Rate	Gross Gains New Graduates	Net Gains	
1958	18,523[b]	844	4.5%	1,196	352	average
1959	xx	828	4.4%	1,180	352	
1960	19,227	790	4.1%	1,186	396	
1961	19,623	68[b]	0.3%	989	921	average
1962	xx	119[b]	0.9%	1,041	922	
1963	21,466	638	3.2%	1,222	584	
1964	22,000	xx	xx	xx	xx	
Annual Averages		548	2.9%	1,136	588	

[a]"Net attrition" refers to the balance between 1.) **gains** from inactive nurses returning to the field and inmigration, and 2.) **losses** from nurses leaving the field and outmigration. In recent years inmigration exceeded outmigration by about 100 R.N.s per year. About 6% of the employed R.N.s leave the field temporarily or permanently each year.

[b]An economic recession in 1961 brought many inactive nurses back for employment.

TABLE IX, B

SCHEDULE FOR MICHIGAN TO REACH GOALS FOR REGISTERED NURSE SUPPLY IN 1970, 1975, 1980

Starting Mid Year	Goals R.N. Supply	Ratio Per 100,000 Population	Net Attrition[c] Numbers	Rate	Gross Gains New Graduates	Net Gains
1964	22,000	269	660	3.0	1,176	516
1965	22,516		670	2.8	1,265	595
1966	23,111		600	2.6	1,400	800
1967	23,911		573	2.4	1,500	927
1968	24,838		546	2.2	1,650	1,104
1969	25,942		519	2.0	1,875	1,357
1970	**27,299**	307	819	3.0	2,000	1,181
1971	28,480		910	3.2	2.250	1,340
1972	29,820		1,015	3.4	2,190	1,175
1973	30,995		1,053	3.4	2,315	1,262
1974	32,257		1,097	3.4	2,250	1,153
1975	**33,410**[a]	350	1,136	3.4	2,200	1,064
1976	34,474		1,103	3.2	2,200	1,097
1977	35,571		1,068	3.0	2,150	1,082
1978	36,653		1,026	2.8	2,400	1,374
1979	38,027		986	2.6	2,400	1,414
1980	**39,441**[b]	385	xx	xx	xx	xx

[a]Feasibility check by age group study suggests this goal **can** be realized.

[b]Feasibility check by age group study suggests that 38,700 is more realistic.

[c]Trends in net attrition are based on age group data in Table VI and the belief that increasing numbers of students in the 1970 decade will be married women who have had their families before entering a school of nursing.

TABLE X, A

HOW MICHIGAN REACHED ITS SUPPLY OF LICENSED PRACTICAL NURSES IN 1964

Starting Mid Year	L.P.N.s Employed[10]	Net Attrition[a] Numbers	Net Attrition[a] Rate	Gross Gains New Graduates[10]	Net Gains
1958	4,500[b]	373	8.3%	910	537
1959	5,037	523	10.3%	1,061	538
1960	5,575	328	5.8%	953	625
1961	6,113	300[c]	4.9%	990	690
1962	6,890	233[c]	3.3%	1,068	835
1963	7,725[b]	268[c]	3.3%	1,293	1,025
1964	8,750	XX	XX	XX	XX
Annual Averages for years 1958-1964		338	5.9%	1,046	708

[a]"Net attrition" refers to the balance between 1.) gains from inactive nurses returning to the field and from inmigration, and 2.) losses from nurses leaving the field and outmigration.

[b]Estimates.

[c]For three years 1961 through 1963, the net loss from migration alone averaged 160 annually.

TABLE X, B

SCHEDULE FOR MICHIGAN TO REACH GOALS FOR LICENSED PRACTICAL NURSE SUPPLY IN 1970, 1975 AND 1980

Starting Mid Year	Goals L.P.N. Supply	Ratio to 100,000 Population	Net Attrition Number	Net Attrition Rate	Gross Gains New Graduates	Net Gains
1964	**8,750**	107	306	3.5%	1,512	1,206
1965	9,956		338	3.4%	1,562	1,224
1966	11,180		369	3.3%	1,575	1,206
1967	12,386		396	3.2%	1,575	1,179
1968	13,565		420	3.1%	1,575	1,155
1969	14,720		441	3.0%	1,575	1,134
1970	**15,850**	177	476	3.0%	1,420	944
1971	16,794		503	3.0%	1,420	917
1972	17,711		531	3.0%	1,420	889
1973	18,600		558	3.0%	1,420	862
1974	19,462		584	3.0%	1,420	836
1975	**20,298**	213	608	3.0%	1,420	812
1976	21,110		633	3.0%	1,420	787
1977	21,897		657	3.0%	1,420	763
1978	22,660		678	3.0%	1,420	742
1979	23,402		702	3.0%	1,200	498
1980	**23,900**	236	XX	XX	XX	XX

TABLE XI

RECRUITMENT GOALS DESIGNED TO ACHIEVE QUANTITATIVE AND QUALITATIVE GOALS FOR MICHIGAN'S SUPPLY OF NURSES IN 1970, 1975, 1980

Academic Year	Recruits for R.N. Preparation: Total	Diploma & Associate Degree[a]	Baccalaureate Degree[b]	Recruits for Practical Nurse Preparation
1961-62	1,899	1,516	383	1,345
1962-63	1,967	1,503	464	1,391
1963-64	2,084	1,599	585	1,891
1964-65	2,175	1,493	682	1,971[c]
		GOALS		GOALS
1965-66	2,500	1,750	750	1,970
1966-67	2,850	2,000	850	1,970
1967-68	3,075	2,175	900	1,970
1968-69	3,300	2,300	1,000	1,970
1969-70	3,450	2,300	1,150	1,775
1970-71	3,600	2,200	1,400	1,775
1971-72	3,800	2,200	1,600	1,775
1972-73	3,900	2,200	1,700	1,775
1973-74	3,900	2,200	1,700	1,775
1974-75	4,100	2,200[a]	1,900[a]	1,775
1975-76	4,200	1,800[a, b]	2,400[a]	1,775
1976-77	4,200	1,800	2,400	1,775
1977-78	4,200	1,800	2,400	1,775
1978-79	4,200	1,800	2,400	1,500
1979-80	4,200	1,800	2,400	1,500

[a]More gradual transition is desirable and expected.

[b]If goals for the interval 1965 to 1975 are realized, the supply of diploma and associate degree nurses should be improved substantially by 1975.

[c]For calendar year 1965, admissions 2053.

TABLE XII

EDUCATIONAL DEFICIT AMONG REGISTERED NURSES IN MICHIGAN

Fields of Nursing	R.N.s In the Sample	Academic Preparation					
		Masters or Higher Degree		Baccalaureate Degree		Diploma or Associate Degree	
		Need	Have	Need	Have	Need	Have
Hosp. and Related Facilities[a] (53% of field)							
Directors, Asst. Dir., Inserv. Inst...	218	150	?	68	150		?
Supervisors and Assistants	739	369	?	370	140		?
Head Nurses and Assistants	1442		?	1442	106		?
Staff Nurses	5730		?		222	5730	?
Sub Totals	8129	519	95	1880	618	5730	7416
Public Health[b] (100% of field)							
Administ., Supvr., Consultants	180	180	57		96		27
Staff Nurses	921		24	921	264		633
Sub Totals	1101	180	81	921	360	xxxx	660
Nursing Education[c] (100% of field)							
Practical Nursing Programs	200	200	18		68		114
Diploma Programs	351	351	78		184		89
Associate Degree Programs	40	40	24		15		1
Baccalaureate Degree Programs ...	153	153	124		29		0
Masters Degree Programs	14	14	14		0		0
Affiliating Agency Programs	33	33	11		18		4
Sub Totals	791	791	269	xxxx	314	xxxx	208
Occupational Health[d] (58% of field)							
Administr., Supvr., Consultants	95	40	?	55	?		?
Staff Nurses, Without Nurse Supv.	322		?	322	?		?
Staff Nurses, With Nurse Supvr.....	159		?		?	159	?
Visiting Nurses	1		?	1	?		?
Sub Totals	577	40	2	378	21	159	554
TOTAL SAMPLE	10598	1530	447	3179	1313	5889	8838

[a]Source: Michigan Nurses Association 1964.

[b]Source: Division of Nursing Resources, Public Health Service, U. S. Dept. of Health, Education, and Welfare, Jan. 1964.

[c]Source: Michigan Board of Nursing, 1964, except faculty in Master's Degree programs which data were secured directly. In one university, some of the faculty listed for the baccalaureate program, teach also in the Master's program. For basic programs the report included faculty that resigned during the year, and faculty holding dual positions as clinical supervisors.

[d]Source: Division of Occupational Health, Public Health Service, U. S. Dept. of Health, Education, and Welfare 1964.

TABLE XIII, A

RECRUITMENT TRENDS STUDY — CALENDAR YEARS 1958 - 1964

	1958	1964[a]	UP	DOWN
I. Number of Schools in Michigan				
Diploma Programs	22	21		1
Baccalaureate Degree Programs	4	5	1	
Associate Degree Programs	3	6	3	
Totals	29	32	3 (net)	

	1958	1964	UP	DOWN
II. Number of Admissions				
Diploma Programs	1,214	1,257	3.5%	
Baccalaureate Degree Programs	431	676	56.8%	
Associate Degree Programs	105	236	124.8%	
Totals	1,750	2,169	23.9%	

	1958	1964	UP	DOWN
III. Source of Recruits				
Area I, Southwestern Michigan	215	260	20.9%	
Area II, Southeestern Michigan	673	913	35.7%	
Area III, West Central Michigan	259	249		3.8%
Area IV, East Central Michigan	313	363	15.9%	
Area V, North Central Michigan	60	84	40.0%	
Area VI, Upper Peninsula Michigan	74	89	20.3%	
Out of State	156	211	35.2%	
Totals	1,750	2,169	23.9%	

[a]The 1958 report was for the calendar year, so this 1964 report is for the calendar year.

TABLE XIII, B

SOURCE OF RECRUITS IN THE ACADEMIC YEAR 1964-65, BY THE TYPE OF NURSING EDUCATION PROGRAM TO WHICH THEY WERE ADMITTED

TYPE OF PROGRAM	TOTAL ADMISSIONS	SOURCE OF FRESHMAN STUDENTS						
		AREA I S.W.	AREA II S.E.	AREA III W.C.	AREA IV E.C.	AREA V N.C.	AREA VI U.P.	OUT OF STATE
College, Baccalaureate Degree	682	68	385	35	50	11	9	124
Hospital Diploma	1,257	162	455	209	235	55	75	66
Jr. College, Associate Degree	236	30	79	5	78	18	5	21
TOTALS	2,175	260	919	249	363	84	89	211

TABLE XIII, C

SOURCES OF RECRUITS IN THE ACADEMIC YEAR 1964-65, BY GEOGRAPHIC LOCATION OF SCHOOLS TO WHICH THEY WERE ADMITTED

LOCATION OF SCHOOLS OF NURSING	TOTAL ADMISSIONS	SOURCE OF FRESHMAN STUDENTS						
		AREA I S.W.	AREA II S.E.	AREA III W.C.	AREA IV E.C.	AREA V N.C.	AREA VI U.P.	OUT OF STATE
Area I, S.W.	395	**168**	90	51	34	13	9	30
Area II, S.E.	1,098	63	**774**	26	67	16	11	141
Area III, W.C.	229	18	12	**156**	8	9	4	22
Area IV, E.C.	365	11	40	11	**253**	32	7	11
Area V, N.C.	27	0	3	5	1	**13**	2	3
Area VI, U.P.	61	0	0	0	0	1	**56**	4
TOTALS	2,175	260	919	249	363	84	89	211

AMERICAN NURSES ASSOCIATION
NATIONAL LEAGUE FOR NURSING

Joint Statement on Community Planning for Nursing Education

In recognition of the many changes taking place in the health field and the need for appropriate education for nursing personnel to meet present and future requirements, both in quantity and quality of nursing services, the American Nurses' Association and the National League for Nursing believe that sound community planning for nursing education is essential and should be begun or accelerated promptly.

The overriding concern of both organizations is that the nation receive the best possible nursing care. This will require increasing numbers of nursing personnel with quality preparation to meet the changing health care needs of the community and to fill the needs of institutions and agencies providing nursing services.

Both organizations have recently taken official positions on the future of nursing education. The American Nurses' Association in December 1965 issued a position paper stating that all nursing personnel should be prepared within the general system of education The statement advocates baccalaureate preparation as the minimum education for professional nursing practice, associate degree preparation as the minimum for technical nursing practice, and vocational school preparation for nursing assistants. The National League for Nursing in May 1965 passed a resolution advocating community planning to implement the orderly transition of nursing education into institutions of higher education in such a way that the flow of nurses into the community will not be interrupted.

As was pointed out in the Report of the Surgeon General's Consultant Group on Nursing, "If new and expanded programs of nursing education are to be established in places where they are needed and in educational setting where they will thrive, it is essential that they be intelligently planned. Such planning must consider needs for cooperation among adjoining geographic areas. Cooperation within and among states in the planning of nursing education programs is desirable both to prevent needless duplication of effort and as a basis for pooling of . . . resources."

Today when major changes are taking place in the type and placement of nursing education programs, it cannot be left to chance that the right number of nurses with the appropriate level of education can or will be produced.

The ANA and the NLN both believe that guaranteeing the continuity and character of the nursing supply transcends the nursing profession itself. Educational, health, and welfare authorities, professional and volunteer groups in the health field and community planning bodies must plan and work cooperatively with nursing to insure an adequate nursing supply. Careful planning on the community level should precede any action to transfer or to develop new or different programs. Depending upon the social and demographic complexion of the area, planning may be undertaken for a local community, for several communities together, for a state, or for a region.

Communities are urged to base their decision as to the types of nursing education programs to be retained, revised, or newly developed taking into account:

1. What are the nursing care needs of the community? What kinds of nursing personnel are required to meet these needs?
2. What are the physical resources now available or planned in the community for educating nursing personnel? What junior and senior colleges, universities and clinical laboratory facilities are available for educational excellence?
3. Are qualified faculty available?
4. What financial resources are available which can be utilized for nursing education?
5. How can available resources be channelled into a new design of education for nursing personnel to meet the current and anticipated needs of the community?

Only through such planning and studying of the total situation is it possible to assure that nurses will be prepared in accordance with the needs of society and to assure the most effective use of available resources. (June 9, 1966)

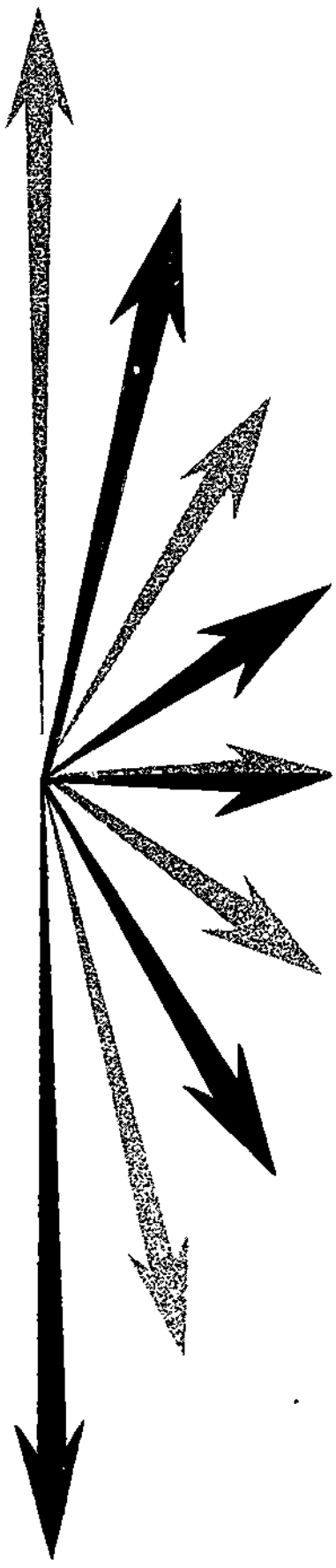
VT 005 841
Shaw, Edith S.
Utah Women, Opportunities, Responsibilities.

Governor's Committee on the Status of Women in Utah, Salt Lake City
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 15Jun66 68p.

*WORKING WOMEN; WOMENS EDUCATION; COMMUNITY SERVICES; *LEGAL PROBLEMS; DEMOGRAPHY; HOUSEWIVES; *STATUS; ANNUAL REPORTS; EMPLOYMENT OPPORTUNITIES; LABOR LAWS; STATE PROGRAMS; *EMPLOYMENT; POLITICAL ATTITUDES; SOCIAL ATTITUDES
UTAH

The committee was organized to (1) compile collected data on the status of women in Utah for constructive action, (2) remove barriers against women, and (3) draft implementing legislation to carry out committee objectives. The investigation centered around employment, legal status, political and civic responsibilities, and the needs and responsibilities of women in community and family services. Committee recommendations are included throughout, and an introductory section provides a demographic and economic profile of Utah. Appended are an abstract of juvenile delinquency in Utah, a list of cooperating organizations, and a bibliography. (CD)

VT 005 841



Utah Women

Opportunities

Responsibilities

Report of the Governor's Committee on the Status of Women in Utah June 15, 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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STATE OF UTAH
OFFICE OF THE GOVERNOR
SALT LAKE CITY

GEORGE D. CLYDE
GOVERNOR

January 21, 1964

Mrs. Edith S. Shaw, Chairman
Commission on the Status of Women
in Utah
785 Juniper Drive
Logan, Utah

Dear Mrs. Shaw:

Pursuant to our previous correspondence and conversation, I am appointing an informal committee on the Status of Women in Utah.

I would appreciate it if you would serve as member-at-large and chairman of the committee. I am requesting that six other ladies, a list of whom was contained in my letter to you of December 17, 1963, accept membership on the Committee and be particularly responsible for specific areas of Committee concern. I am sending letters of invitation to serve to these ladies today.

The Committee should function throughout 1964. A report on the Committee's recommendations and determinations should be made to the Governor by December 1, 1964. A review of the Committee's accomplishments can be made at that time, as well as determinations as to its future course of activity.

I expect, then, that you will contact the other members of the Committee and make necessary arrangements for carrying out its purposes. I appreciate your cooperation and interest in this matter.

Should my consultation be necessary for any purpose, do not hesitate to contact me.

Yours sincerely,

George D. Clyde
G o v e r n o r

GDC: mb

STATE OF UTAH

OFFICE OF THE GOVERNOR

SALT LAKE CITY

CALVIN L. RAMPTON
GOVERNOR

January 18, 1965

Mrs. Edith S. Shaw
785 Juniper Drive
Logan, Utah

Dear Mrs. Shaw:

I have decided that it is in the interest of this State that the Governor's Committee on the Status of Women established by Governor George D. Clyde be continued until July 1, 1966.

I hereby reappoint the present Committee composed of the following members: Mrs. Edith S. Shaw, Chairman, Mrs. Alison C. Thorne, Mrs. Irene N. Parson, Miss Judith F. Whitmer, Mrs. Virginia P. Forbes, Mrs. Virginia Roberts, and Mrs. Evelyn Lomax. Any vacancies occurring on the Committee will be filled by the Office of the Governor, and the Committee may be enlarged to nine members.

The Committee will submit its first annual report on or before July 1, 1965, and its second annual report on or before July 1, 1966.

Very truly yours,

Governor

GOVERNOR'S COMMITTEE
ON THE
STATUS OF WOMEN IN UTAH

MRS EDITH S. SHAW
CHAIRMAN
785 JUNIPER DRIVE
LOGAN, UTAH
MRS. VIRGINIA P. FROBES
UNIVERSITY OF UTAH
SALT LAKE CITY
MRS. EVELYN S. LOMAX
145 EAST SECOND NORTH
NEPHI
MRS. IRENE N. PARSON
680 SOUTH STATE STREET
SALT LAKE CITY
MRS. VIRGINIA D. ROBERTS
1389 MILITARY WAY
SALT LAKE CITY
MRS. ALISON THORNE
226 WEST FIRST SOUTH
LOGAN
JUDITH F. WHITMER
512 EAST SECOND SOUTH
SALT LAKE CITY

June 15, 1966

The Honorable Calvin L. Rampton
Governor, State of Utah
State Capitol Building
Salt Lake City, Utah

Dear Governor Rampton:

The Committee on the Status of Women in Utah, originally appointed by former Governor George D. Clyde on January 21, 1964, and reappointed by you on January 18, 1965, has brought together a summary of its study made during this period of time.

We recognize your foresight in extending the service of this committee, thereby making it possible for us to compile and bring before the people of the State research data sources pertaining to the problems and conditions affecting women in Utah. We are also gratified to know that Utah has taken her place in leadership with forty-six other states of the Union in examining present conditions, and attempting to improve the status of women in Utah and the nation.

In January, 1963, following the establishment of the President's Commission on the Status of Women, The Utah Federation of Business and Professional Women's Clubs, in keeping with the plan of the National Federation of Business and Professional Women's Clubs, contacted other Utah women's groups to determine the need for a Commission in Utah. With this support, a statement of the needs, goals, and general structure of a Utah committee was outlined. The Utah Federation of Business and Professional Women, with the help of other women's groups, has supported the committee with substantial financial aid for the expenses incurred in the publication of this report. The University of Utah and Utah State University have provided welcome assistance.

The objectives of the Committee were to:

A. Bring together information regarding the status of women in Utah, and compile the accumulated data for constructive action.

B. Remove the remaining barriers which prevent women from sharing fully in the fruits and responsibilities of a democratic society and permit them to make their proper contribution toward family, state, and national welfare.

C. Draft implementing legislation to carry out committee objectives.

The committee investigation has been organized around four major divisions of study and analysis:

A. Employment of Women

B. Legal Status of Women

C. Political and Civic Responsibilities of Women

D. Needs and Responsibilities of Women in Community and Family Services.

Because of Utah's unique geographic pattern in relation to the population, and Utah's early colonization, a foreword has been included as a "Profile of Utah."

Each committee chairman had the assistance of competent subcommittee members who helped to gather and evaluate information. Their names are appended to this Report.

The seven committee members whom you reappointed have given unstintingly of their time and effort as well as personal finances to carry out this assignment. They have traveled across the state as needed to secure data and to study working conditions.

Three public hearings were held:

Logan on October 8, 1964
Cedar City on October 21, 1964
Price on October 29, 1964

These hearings were conducted with the cooperation and the participation of Commissioner C. F. Gronning of the State Industrial Commission and Mrs. Lena Bartlett, Supervisor, Women's and Minor's Division.

It has been our effort to coordinate the large amount of information collected and to relate the data to an understanding of the status of women in Utah. Included in the Report are recommendations in each area of study, some of which are for legislative changes. On behalf of the Committee I am honored to present to you this Report on the Status of Women in Utah, with our recommendations for action.

Respectfully yours,

Edith S. Shaw

Edith S. Shaw, Chairman

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Profile of Utah

When Brigham Young's wagon train emerged from Emigration Canyon into Salt Lake Valley on Saturday, July 24, 1847, there were nine women in the company. Three of the nine had made the long trip which began at Winter Quarters in Missouri on April 16, the other six having joined the company at Fort Laramie. From the time of that first wagon train of some 150 Mormon pioneers, until Utah's population approached the one million mark in 1965, Utah has undergone many changes, not the least startling of which has been the shift from the traditional role of women in a frontier religious society to their present day position.

The social and economic changes in Utah are similar to those in the nation in most aspects. However, there are characteristics reflecting the unique religious and geographical resources of the state. Utah, one of the Rocky Mountain States, includes a vast arid plateau of 85,000 square miles, crossed east, west, north and south by high ranges of mountains. On the western slope of the Wasatch Mountain range, running north and south and continuing the length of the state, is a narrow ribbon of irrigable land, averaging only a few miles in width and dissolving into the desert at the west.

The population concentration and industrial growth of Utah is largely located along this "Wasatch Front." In 1960, approximately seventy-five percent of the state's population lived in the urbanized areas along the Wasatch Mountains. In 1965 ninety percent of the state's population was in six of the twenty-nine counties. (See Figure 1.) As of 1963, there was a ten percent increase in population for Utah as compared with twelve percent for other mountain states, eleven percent for the western states and five percent for the nation as a whole.[1]

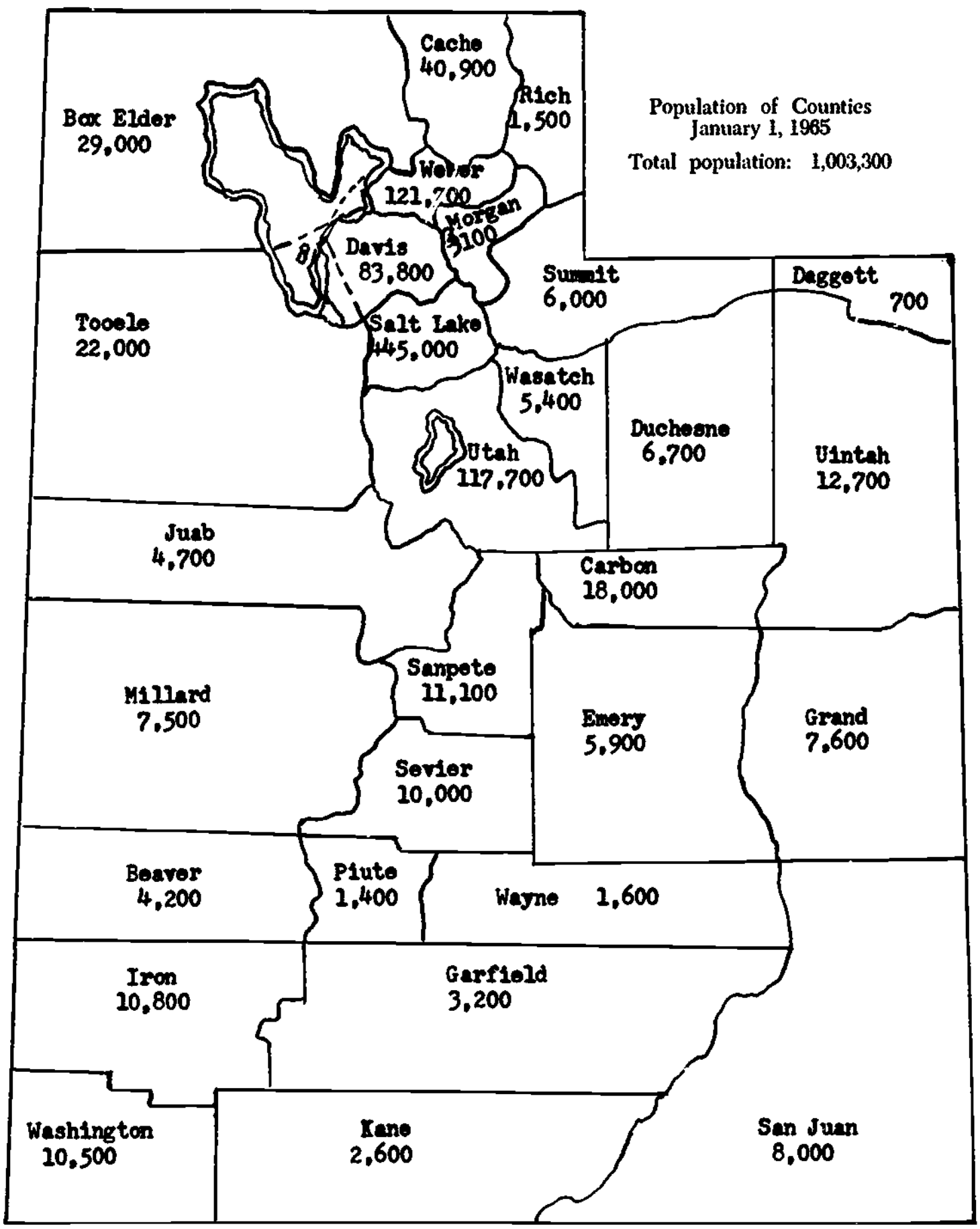
It is estimated that by 1975 there will be at least 1,300,000 people in Utah. Although there is major growth along the Wasatch Front, in eleven counties there has been a population decrease for more than forty years. In the past ten years, for instance, Summit County has had a sixteen percent decrease in its population. Juab has had a decrease of twenty-three percent, Millard sixteen percent, Beaver eleven percent, Garfield fourteen percent, Piute twenty-five percent, Wayne twenty-two percent, Sevier thirteen percent, Sanpete twenty percent, Emery and Duchesne twelve percent each.

Commenting on population trends in Utah, Edward O. Moe says

> Some of our communities on the Wasatch Front are growing so fast that there is a serious strain on public services and facilities, and we are not doing a very good job of absorbing people into the community and making them feel at home.
>
> Increases in size and diversity have made it difficult to arrive at consensus and difficult to get concerted action on community problems.

[1] *A Statistical Abstract of Utah's Economy*, 1964, Bureau of Economic and Business Research, College of Business, University of Utah.

FIGURE 1



Source: Sherrill W. Neville, "Utah Passes 1,000,000 Mark in 1964." Utah Economic and Business Review. Bureau of Economics and Business Research, University of Utah, Vol. 25, No. 4, April 1965.

> At the same time, other communities are declining in population and economy and they face serious problems of maintaining what they have had, let alone providing the expanding array of human services desired by people today. . . . .
> Conflicts have arisen over demands for public services and how we are going to pay for them. . . .
>
> As our population has become more diverse, serious conflicts in attitudes and values are present and smolder under some of our discussions of various public issues.[2]

In 1960, 1.9 percent of Utah's population was non-white. This represented an increase of 40.5 percent since 1950. The few Negroes in the state are located principally in urban areas. Many rural communities in the state have never had a Negro resident.

Indians, a minority group in Utah, live in the less populated areas, principally in the Uintah Mountains and in the desert areas of southeast Utah. Numbering approximately 6500, there are 1600 Ute, 4500 Navajo, 300 Southern Piute, and 150 Goshute Indians. Over a million acres of land are included in the Uintah and Ouray Reservations alone.

Indian children in Utah attend public schools. Indians are eligible to vote although most are legally defined as domestic dependent nations and as such retain legal autonomy except when specific powers have been taken away from them by an act of Congress. Indian tribes, therefore, are free to formulate their own civil laws and codes and the legal status of Indian women is somewhat different from that of other Utah women.

Although Indian women occupy a subordinate status in their own culture, they are an important acculturating and stabilizing influence. Any efforts of planned change in the Indian groups must take women into account because they are exerting pressure for change. Indian women are not only sensitive to the social and economic problems in their ethnic group but are also making a determined effort to modify the situation.

The four bands of southern Piutes (Koosharem, Kanosh, Indian Peaks, and Shivwits) were terminated from federal supervision in 1956 and no longer receive special services from the federal government. These groups are now entirely dependent on state and local services, a fact which puts special pressure on the established communities in which they reside as a minority group.

Indians represent an important economic factor in Utah. This has been particularly true in the Uintah Basin in the past fifteen years. Indians, Mexican-Americans and Negroes experience the usual forms of discrimination against minority people such as discrimination in housing and employment. Although there are no segregated schools in Utah, housing patterns especially in the urban areas tend to cause minority concentration in a few schools.

The participation of minority women in community life varies with the group. Until recently it has fallen upon a very few educated women in Salt Lake City and Ogden to represent their entire group. Mexican-American women have not participated to any extent in community life. Oriental women, many of whom were interned in relocation camps in Utah and elsewhere during World War II, have taken their place in industry and the professions and have provided leadership in general community activities.

With the advent of the Community Action Program of the Office of Economic Opportunity, the picture is changing rapidly as minority women are encouraged

[2] Edward O. Moe, "The Utah community and community action," *Proceedings of Third Annual Women's Conference*, University of Utah, March 19-20, 1965, p. 29.

and assisted to learn how to participate. They are now taking their place in neighborhood councils, in PTAs and other general groups. Negro and Mexican-American women especially are prominent in the Community Action Program in the urban areas; however, Indian women are still largely denied opportunity for wider participation in the towns near the reservations.

Economic Characteristics of Utah

Agriculture

Although the Indians of Middle America had a long history of irrigation, the Mormon pioneers are credited with being the first Anglo-Saxons to develop irrigated agriculture in the United States. The principles and practices they evolved became the pattern for extensive irrigation agriculture throughout the world.

Where there are irrigated farms there are few open country dwellers. Farmers live in towns or villages, go out to work their farms, and return in the evening. The major trends have been for farms to become larger and for many of the operators of small farms to seek part time employment in industry or other occupations. In 1960, sixty percent of all Utah farmers worked to some extent away from their farms for pay. Forty-seven percent worked away 100 days or more during the year. And nearly half of all farm families received less than half of their total income from sale of farm produce.[2]

In 1965 it was estimated that there were 15,000 farms. Median farm size is between 70 and 99 acres. This means there are as many farms smaller than this as there are farms larger than this. Average gross income per farm was $12,092 in 1964 and net income was $2,889.[4]

Irrigated farmland is surrounded by large expanses of public lands whose feed resources can be harvested only by grazing sheep and cattle. Utah has been exporting beef cattle, lambs, mutton and wool. It is anticipated that by 1980, Utah's consumption of beef will catch up with production, but the state will continue to export lamb, mutton, wool, and turkeys. Currently about 6000 dairymen milk 100,000 cows to produce over 750 million pounds of milk per year, but by 1980 Utah will need a third more milk than is now being produced.

Total acres of farmland have more than doubled since 1920 and today there are 13,500,000 acres of farmland in Utah. Only one out of every 12 acres is irrigated. Irrigation projects currently planned and under construction will not increase the number of acres farmed, but will bring a more adequate water supply to land already irrigated. Utah has an additional three million acres of arable land, mostly in the western part of the state. If a transcontinental water diversion project is built much of this land could be developed for irrigation.

Other Employment

Total employment in Utah since 1943 has increased at a faster rate than has population. From 1940 to 1964 population increased by eighty-one percent, the labor force by one hundred percent, and employment by one hundred thirty percent. In 1964 it was estimated that 350,000 persons were employed in Utah.

The total annual payroll of all nonagricultural employment was nearly one and a half billion dollars in 1964.[5] The most jobs were in government (73,655) and in wholesale and retail trade (66,286). Table 1 shows the various industry groups and what proportion of all nonagricultural jobs

[2] *Farm and Home Science*, Vol. 21, December 1960, Utah Agricultural Experiment Station, Logan.

[4] *Statistical Reporting Service*, U. S. Department of Agriculture, January 14, 1965.

[5] *Utah Annual Report Supplement*, Utah Department of Employment Security, 1964, p. S-38.

TABLE 1

Proportion of Nonagricultural Jobs by Industry Group, Utah, 1964

Government	26.5%	Transportation	7.3%
Wholesale and retail trade	22.4	Construction	4.6
Manufacturing	16.6	Finance, insurance, real estate	4.3
Service and miscellaneous	14.2	Mining	4.1

Source: *Utah Annual Report Supplement*, 1964, Department of Employment Security, p. S-39.

they contained. Government payrolls were 28 percent of all nonagricultural salaries and wages. Although manufacturing ranked third in total number of jobs, it ranked second in payrolls, providing 21 percent.

The average monthly wage in mining was the highest of any industry, $588; for manufacturing it was $521; for government employment $444; and the lowest was in service and miscellaneous employment, $266. The average monthly wage varied from $543 in North Davis to $263 in Sanpete County (Table 2).

TABLE 2

Average Monthly Wage of Nonagricultural Employment by County in Utah, 1964

Beaver	$355	Morgan	$432
Box Elder	$520	Piute	$334
Cache	$326	Rich	$393
Carbon	$392	Salt Lake	$426
Daggett	$466	San Juan	$436
Davis (North)	$543	Sanpete	$263
Davis (South)	$404	Sevier	$323
Duchesne	$296	Summit	$314
Emery	$448	Tooele	$485
Garfied	$283	Uintah	$413
Grand	$482	Utah	$393
Iron	$346	Wasatch	$367
Juab	$332	Washington	$324
Kane	$291	Wayne	$316
Millard	$295	Weber	$399

Source: *Utah Annual Report Supplement*, 1964, Department of Employment Security, p. S-39.

Mining contributed greatly to the early economic development of the state. The decision of the first leaders of the Mormon Church not to exploit the mineral wealth of the state led to the first influx of outsiders, including financiers, professional mine operators, and miners. It was this group of "Gentiles" (non-Mormons) who first developed the mining industry in Utah. A third of the nation's copper production comes from Utah today.

Utah is the largest coal producing state west of the Mississippi, and the markets for Utah coal are principally in the western

states. However, because of decreasing demand and because of technological improvement, there is unemployment in the coal industry in Carbon and Emery Counties. The ups and downs of uranium mining have left their mark on other counties.

Manufacturing centralizes primarily along the Wasatch Front. World War II led to the establishment of a large steel plant on the shores of Utah Lake, near Provo. Steel now ranks with copper as a vital part of the state's economy. Small metal fabrication plants have sprung up near the larger plants. Fencing is a good example.

Because of Utah's natural resources and geographical location, missiles and explosives have been developed. Defense industries are especially important. The construction industry is also strong along the Wasatch Front.

As a consequence of agriculture, the meat packing business flourishes, and so also does dairy manufacturing. There are also extensive canning operations of fruit and vegetables. Sugar is manufactured from sugar beets grown in the state.

Because of location, Utah is a central distribution point for the intermountain region. Besides railroads, truck, and bus facilities, there are thirty-six commercial airlines serving Utah. Nine of these are certified transportation carriers; four are major airlines. In addition there are many private services. Many communities have municipally owned airports.

Telephone service is an important utility in the state. In 1964 there were 42 telephones per hundred persons in Utah. Nelson and Harline report that:

> Based on relatively recent data, the average number of calls in the United States per year is just over 556 and in Utah about 867 per person. The number of calls exceeds two and one-half per person per day. This greater use in Utah must be associated, in part, with the high interest in community affairs, recreational, social, and religious activities, and family ties.[4]

Radio and television utilities are also important in Utah. There are three commercial television stations and thirty radio stations. The University of Utah, Brigham Young University, and Utah State University have educational television. Daily newspapers are published in Salt Lake City, Provo, Ogden and Logan. In 1963, forty-six weekly newspapers were serving the state in addition to the larger daily papers.

Water resources are extremely vital to Utah. The Colorado River Project, authorized by Congress in 1956, initiated a twenty year program of water storage, power and irrigation projects, totaling in excess of $742 million. By 1964 a number of large projects were completed in the Upper Colorado River Basin. Flaming Gorge and Glen Canyon Dams have harnessed the Colorado and the Green Rivers. In the near future, these two water storage units will represent greatly expanded municipal and industrial power. Already the Glen Canyon Dam – Lake Powell area has attracted thousands of tourists. Both federal and state governments are in the process of developing multiple recreational facilities around Lake Powell. A major thermal power source may also be established in this area.

In Salt Lake and Utah Valleys are two major lakes which are tourist attractions. Utah Lake is a fresh water lake but Great Salt Lake has no outlet and is oversaturated with salt. Recently there has been a high industrial interest in experimenting with extraction of minerals, potassium chloride and magnesium chloride from the waters of the lake and in developing a market for the

[4] Elroy Nelson and Osmond L. Harline, *Utah's Changing Economic Patterns*, University of Utah Press, 1964.

common salt which is left as a residue of the evaporation process.

The federal government owns almost three-fourths of the land in Utah. There are many national forests, national monuments, and national parks. Two well established national parks, Bryce National Park and Zion National Park, attract thousands of tourists every year from every state in the Union. The newest national park is Canyonlands.

Social Characteristics of Utah

Educational achievement has always had high priority in the Church of Jesus Christ of Latter-day Saints (commonly called LDS or Mormon). The Mormon people believe that "a man is saved no faster than he gains knowledge" and indeed that "if he gains more knowledge in this life through his diligence and obedience, he will have so much more the advantage in the world to come." Consequently, Utah has one of the highest population percentages in the nation in school and also in higher education. In 1964, nearly 95 percent of the school-age population was enrolled in school. Utahns, spending 9.3 percent of their personal income in 1964 for education, continued to lead all states in rankings published by the National Education Association.[1]

One of the first acts of the Mormon leaders was to provide for higher education. In 1850 the General Assembly established in Salt Lake Valley the University of Deseret, later known as the University of Utah. This institution was to be free from sectarian teaching and control. A land grant agricultural college was established at Logan in 1888. This institution is now known as Utah State University. The LDS Church university, Brigham Young University, was founded in Utah Valley in 1875. More recently four-year colleges have been established at Ogden (Weber State College) and at Cedar City (College of Southern Utah). There are three junior colleges, the College of Eastern Utah at Price, Snow College at Ephraim, and Dixie College at St. George. The 1965 enrollment in these schools is shown in Table 3.

[1] *NEA Journal*, November 1965.

TABLE 3

Enrollment of Students in Higher Education in Utah, 1965

Name of Institution	Total Enrollment (1965)	Number Women Enrolled
Brigham Young University (private)	18,725	8,390
University of Utah	13,367	4,509
Utah State University	7,821	2,624
Weber State College	5,651	1,979
College of Southern Utah	1,625	590
College of Eastern Utah	633	188
Snow College	771	255
Dixie College	872	299
Westminster College (private)	573	257
Totals	50,038	19,091

Source: Utah Coordinating Council of Higher Education.

Although topography, water, and mineral resources helped shape the early and present population distribution in Utah, the specific pattern of colonization was determined by decisions of the state's early settlers. Utah was orginally settled in 1847 by members of the Church of Jesus Christ of Latter-day Saints. Members of this church, escaping from religious conflict in the Middle West, were looking for a place to live where they could practice their religion with freedom.

The church leaders divided the land on which they settled into relatively small city lots. Each man was given his share on the basis of need and the ability of each to till and produce from the land. The average share was ten acres. Public ownership of natural resources, including water, was established.

Cooperative centers in community living resulted from church policies. Social, business, religious, educational, and governmental leadership was invested in church authorities. A unique singleness of interest, work, and service characterized life in Utah. In many rural communities today this character has not changed.

Utah grew slowly in population. The LDS church sent out missionaries to the eastern states, England, and the Scandinavian countries, and encouraged their religious converts to come to Utah. These people have contributed to an unusual combination of "cosmopolitan provincialism" in the social environment of the state. In 1869 an influx of population outside the LDS Church was brought about by the completion of the transcontinental railroad.[8] The famous golden spike was driven at Promontory Point on May 10, 1869. The great and general migration west in search for land and minerals then brought "outsiders" to Utah. The cooperative living patterns established by the church were disrupted by non-Mormon influences. A doctrine of the church endorsing polygamy was challenged at this time and later the Supreme Court of the United States declared that laws permitting polygamy were unconstitutional. Federal officials were sent into the state to enforce this ruling. Bitter times followed between Mormons and "Gentiles." In 1890 the President of the LDS Church issued the famous manifesto that barred the practice of polygamy in the state. Following the settlement of this controversy, Congress gave statehood to Utah in 1896.

Among provisions of the constitution of Utah, drafted in convention in 1895, were (1) the right of citizens over 21 to vote and hold office; (2) an eight-hour law on public works; (3) legislation for the health and safety of workers in factories, smelters, and mines; (4) $1500 homestead exemption for the head of the family; (5) real and personal property of the female acquired before or after marriage remained her property and was not liable to debts or obligations of husband and could be conveyed by her in any way, as though she were unmarried.

The attitudes about the status of women and their equality with men as suggested hy the state constitution persist in Utah today. There may have been only nine women in the first group coming to the Salt Lake Valley, but the second group of pioneers contained more women than men, and this pattern continued during colonization. Although all the people in a community shared an intimate life of religion, work, recreation, and education, the women provided the cultural and educational resources. Community buildings were used for education, government, and religion. There was no separation of government, religion, and recreation. Women were a vital and inspirational part of family and community life.

[8] Bernice Gibbs Anderson, "The Gentile City of Corinne," *Utah Historical Quarterly*, Vol. 9, 1941, p. 151.

Even now, as in early days, Utahns are family-centered people. Since 1940 the birthrate per 1000 for Utah was 27.4, for the nation 22.4; the deathrate was 6.6 for Utah, 9.5 for the nation.[9] There are proportionately more intact families in Utah than in any other state.

The pioneer pattern of eating, playing, working and praying together as a group of people dedicated to mutual responsibility is maintained as a central part of the social life of Utah's people. The LDS Church has developed a system of welfare, community service, and education that brings to even remote communities the feeling of belonging to an active and responsible larger community. In the heavily populated areas, the percentage of LDS Church members in relation to the total population ranges between fifty and sixty-five percent. In many rural areas, over ninety percent of the population maintains membership in the LDS Church and in these areas there has been very little change in the socio-religious and economic patterns of life established by early pioneer leaders.

The very organization which brings such strength to these communities also creates areas of isolation and conflict for those members of the community who do not belong to the LDS Church. Traditions and attitudes are perpetuated which generate serious problems when the broader society of the state, nation, and world moves in directions quite different from those of the dominant religious society. The social transition resulting in part from the influences outside the religious subculture today presents many Utah men, women, employers, educators, and families with conflicts in values and attitudes which in many ways are unique to Utah. Because of the basic conflict in attitudes about the appropriate role of women in relationship to their families, women have been affected to a greater extent than almost any other segment of the population.

Despite the emphasis upon family life and belief in woman's primary role as wife and mother, present-day Utah has approximately one-third of its women in the labor force. They work in almost every occupation from teaching and nursing to bus driving and production-line assembling. The proportion of employed women in the state lags only slightly behind that of the rest of the nation. In Utah, as in the nation, married women over 45 are entering employment faster than married men of all ages. Approximately fifty percent of married women over 45 years of age are presently employed. There are serious disparities in employment practices affecting male and female workers.

Again, despite the emphasis upon family life and the deep sense of mutual responsibility for each other's welfare characteristic of the LDS Church, there are real problems of child neglect, juvenile delinquency, unwed mothers, broken homes, and lonely old age.

On the other hand, there are few, if any totally isolated or impoverished communities or families. In those areas where the LDS Church is dominant, the strong sense of responsibility to its members in all phases of their lives has resulted in a cohesiveness of human beings in their achievements, their happiness, and their troubles. The LDS Church policy of bringing together its total membership in local, regional, and statewide meetings at least twice a year assures a high degree of communication and sharing of cultural and educational advantages among its members. Any analysis of social, economic, welfare, recreational or educational problems within the state of Utah must be developed in relationship to the role of the LDS Church.

[9] *A Statistical Abstract of Utah's Economy*, 1964. Bureau of Economic and Business Research, College of Business, University of Utah.

Employment of Women

In 1940, one out of six women in Utah was in the labor force.

In 1950, one out of four women in Utah was in the labor force.

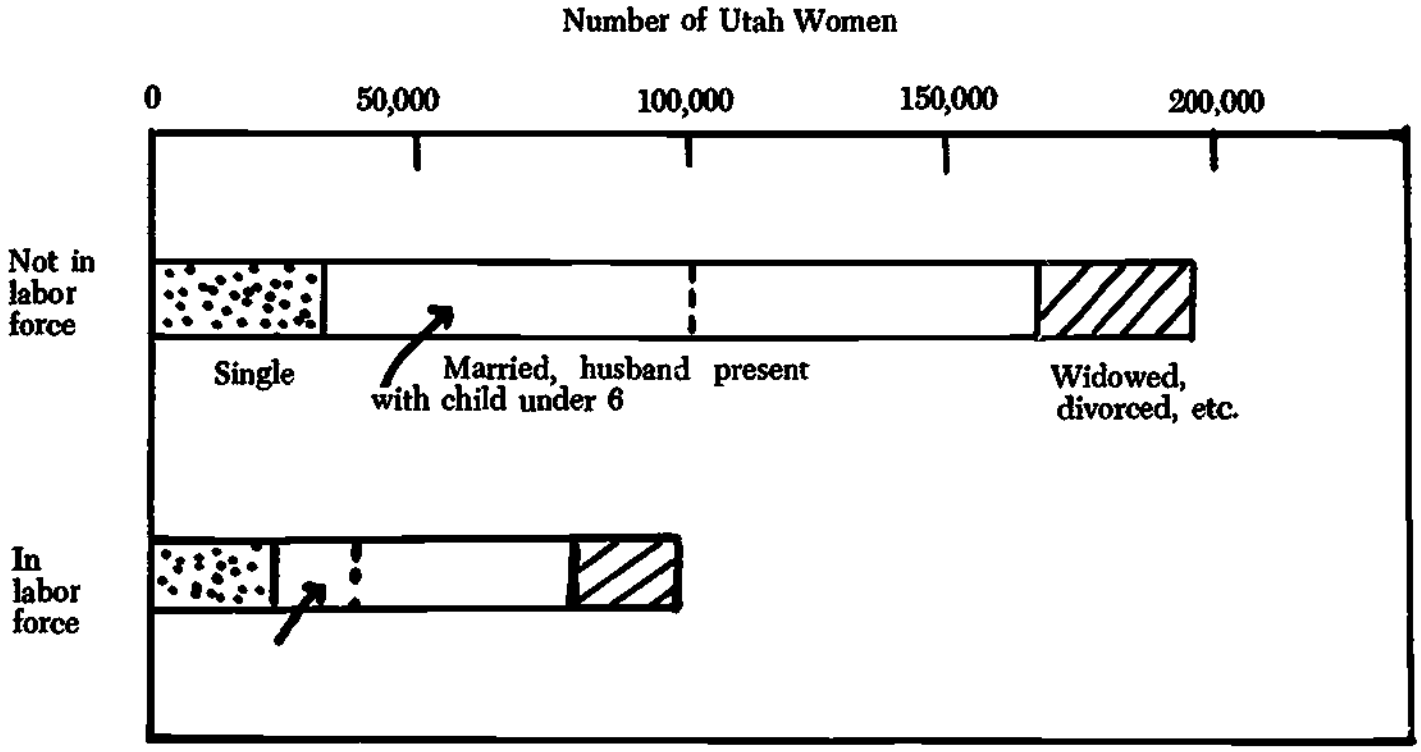
In 1960, one out of three women in Utah was in the labor force.

These were employed women over 14 years old, working part-time and full-time. Today among Utah women 18 to 65 years old, nearly 43 percent are employed, a proportion only two percent below the national average.

Women with young families are least likely to be in the labor force (Figures 2 and 3) and earning mothers with young children usually hold part-time jobs. In 1963 there were 112,750 women employed in Utah. Most of these were married women with a husband but there were also earning women who were single, widowed, and divorced.

FIGURE 2

Utah women over 14 years old; those not in the labor force and those who are in the labor force, 1960, by marital status.

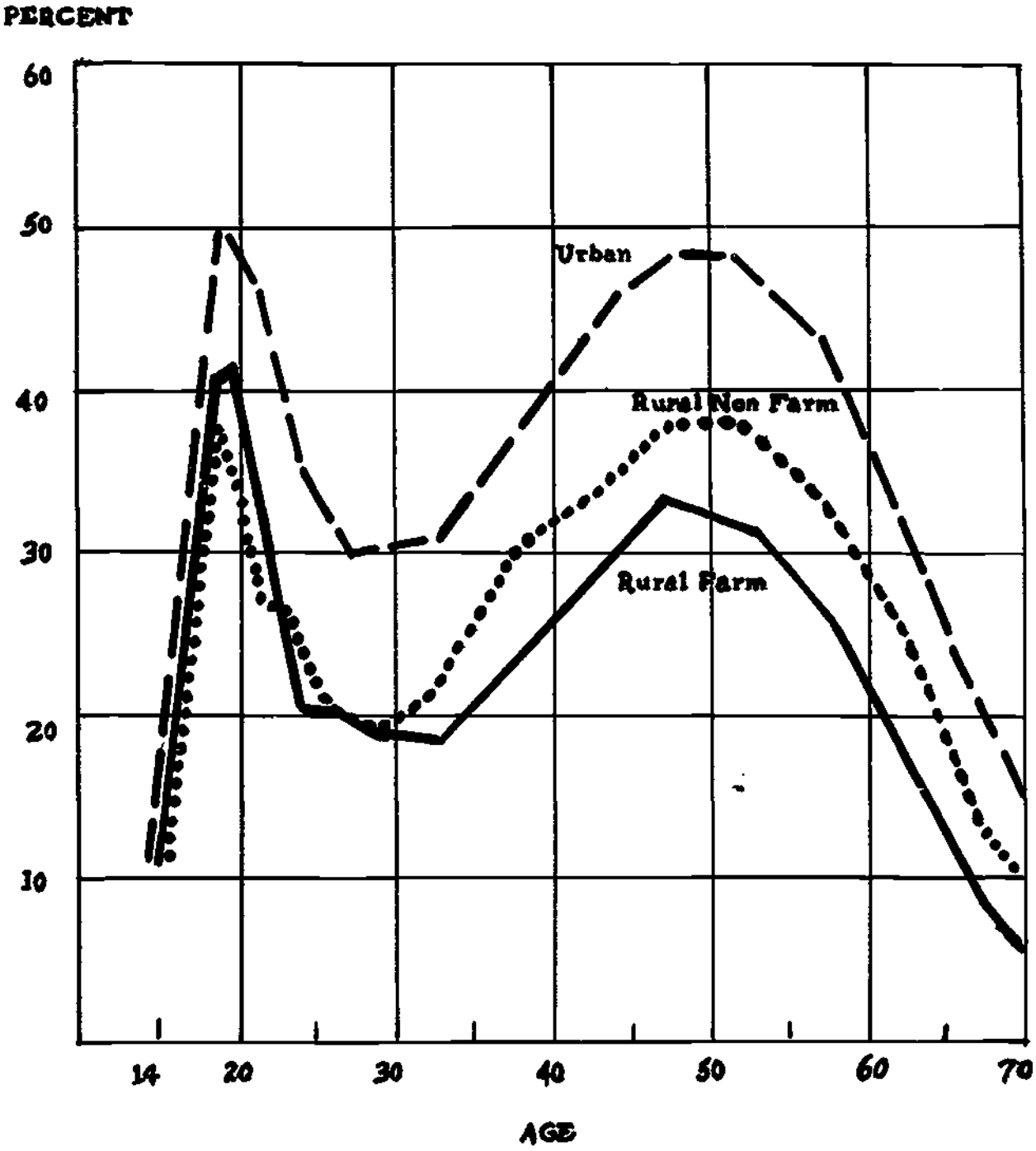


Source: Table 116, U.S. Census, 1960.

Jobs are scarce in rural areas of Utah, but even so, one in five women aged 26 has a job, and among rural women aged 45 to 50 one in three has a job. A study of graduates of thirteen high schools in six rural counties shows that nine percent of the girls found employment in their home county, while nearly 29 percent of the men found jobs there. A young woman formerly of the Sevier River Basin said, "After graduation from high school, a boy can get a local job in a service station or on a farm or as a laborer in construction, but what is there for a girl? – Nothing!" Proportionately more girls than boys are leaving the home county. The boys are tending toward college training and the girls toward trade schools. In employment the girls concen-

FIGURE 3

Percent of women, by age, in the labor force in urban and rural areas in Utah, 1960.



Source: Department of Employment Security, from U. S. Census, 1960.

trate markedly in clerical and related white collar jobs and as service workers.[1]

In April, 1963, girls 20 to 24 could find employment more readily in Salt Lake City than young men of that age. Women over 50 had a lower unemployment rate in Salt Lake City than men over 50. However, considering all married women who are employed, the rate of unemployment runs higher than for married men and they are more likely than married men to exhaust their unemployment insurance benefits.[2]

Working wives frequently make a real contribution to the family money income. In Utah more than half of the families with $7,000 to $15,000 annual income have both an earning husband and an earning wife.[3] The national trend is similar.

The main occupations in which women are found are clerical, services, professional and technical, and sales work, in that order. Figure 4 shows numbers of men and women in various occupations in Utah in 1963. The nation as a whole has propor-

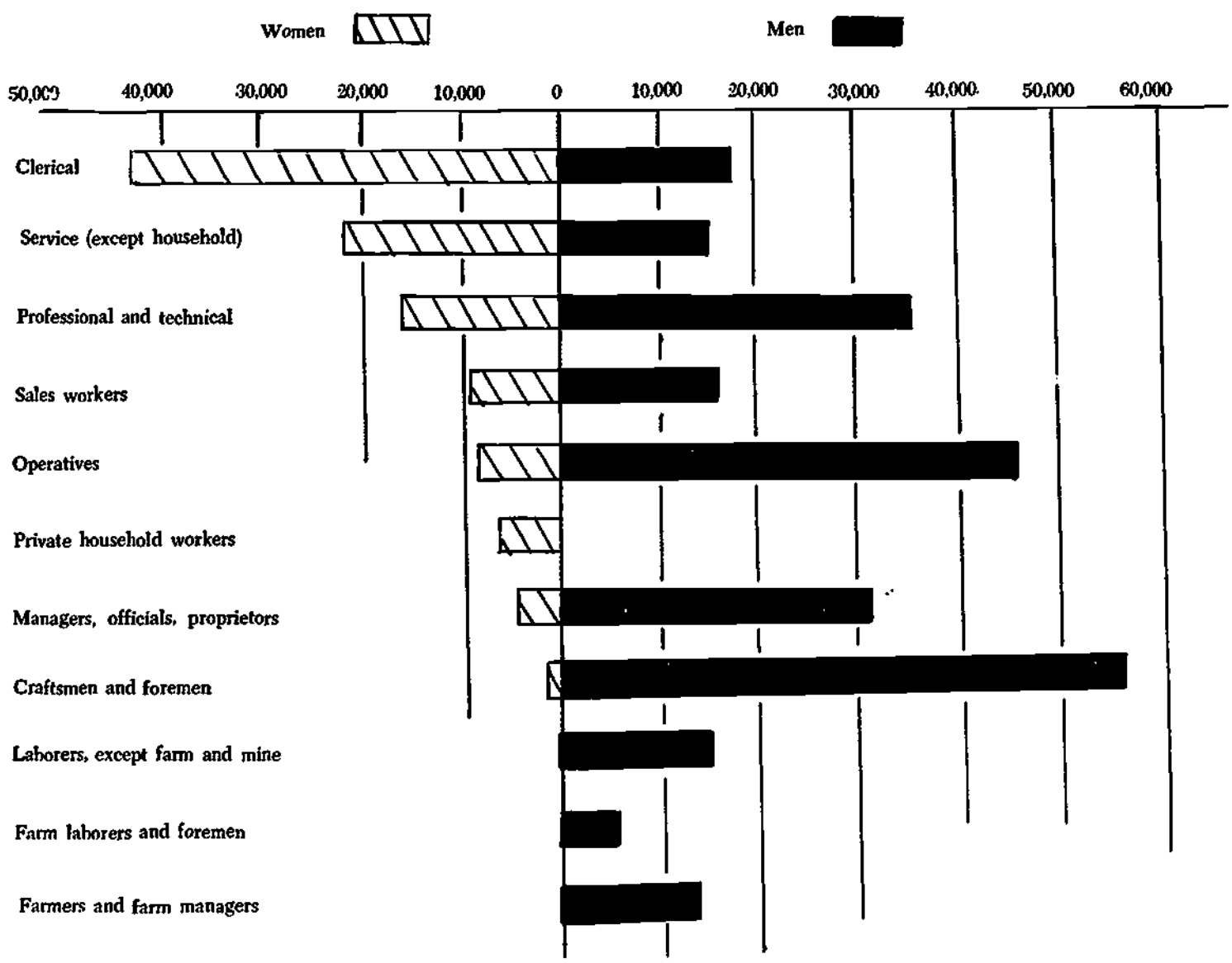
[1]Therel R. Black, "A Comparison of Male and Female Graduates of Thirteen Utah High Schools."

[2]*Workers Who Exhaust Their Unemployment Benefits.* Utah Department of Employment Security, September, 1965.

[3]U.S. Census 1960, Table 144.

FIGURE 4

Number of Employed Women and Men, by Occupational Groups, Utah, 1963



tionately more women operatives and private household workers than Utah does.[4]

It is predicted that between 1960 and 1970 the following number of new job openings for women in Utah will become available:[5]

Service	17,000
Clerical, other than secretaries, stenographers, typists	17,000
Secretaries, stenographers, and typists	11,000
Professional and technical	9,000
Semi-skilled (operatives)	3,000
Sales	2,000
Skilled (craftsmen)	1,000

The best paying jobs for women are in the professional and technical fields (teachers, nurses, accountants, medical technicians). Next in rank of pay are the managers, officials and proprietors, but it is difficult for women to enter these fields. Less well paid, though much in demand, are clerical workers. Women operatives (laundry workers, manufacturing) and sales workers usually receive less than clerical workers. Most poorly paid but much in demand are the service workers (waitresses, cooks, hairdressers, attendants).[6] Pay along the Wasatch Front is better than away from it. Federal employment pays better than state employment.

In 1959, the latest year for which we have complete data, for full year workers, the median income of Utah male workers was $5,538 and ranked fifth in the eleven contiguous western states. The median income of Utah female workers was $3,045 and ranked ninth in the western states, with only Montana and Idaho being lower. Considering only full year men and women

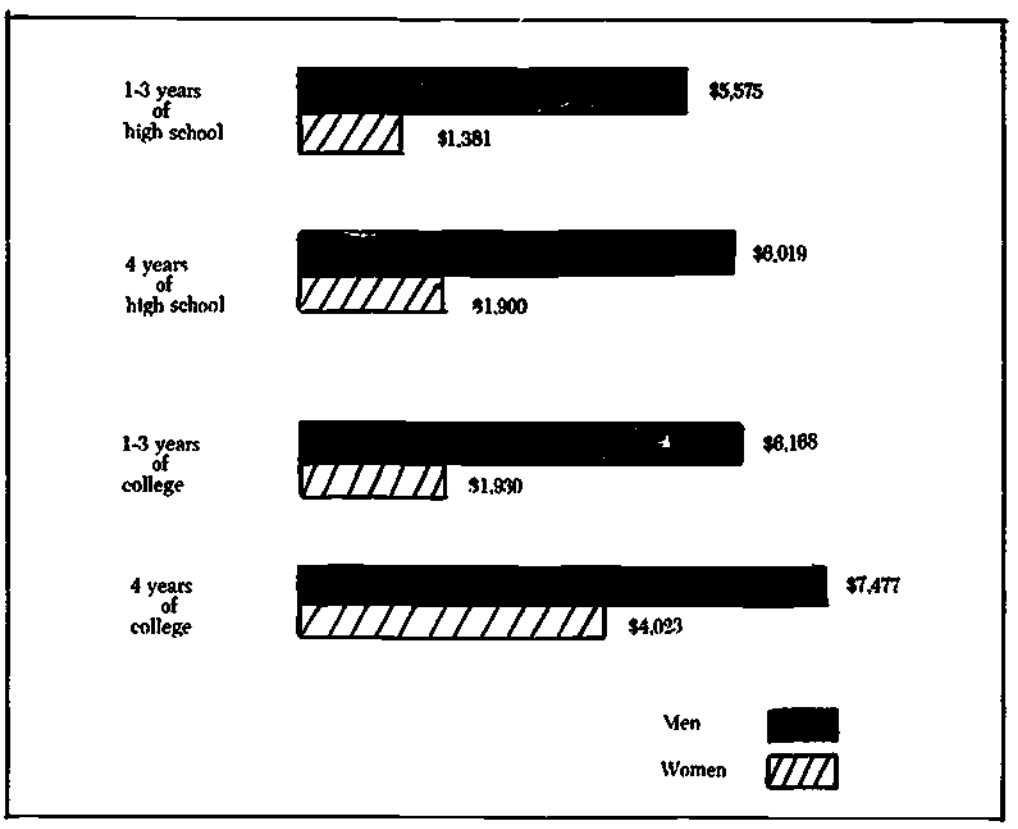
[4]Esther Peterson, "Working Women," *Daedalus*, Spring 1964, p. 681.

[5]Utah Department of Employment Security.

[6]U.S. Bureau of the Census. Current Population Reports. Series P-60. No. 39. "Income of Families and Persons in the United States: 1961."

FIGURE 5

Years of school completed and median income of men and women workers, Utah, 1963.



Source: Department of Employment Security, based on U. S. Census, 1960.

workers in Utah, the median income of women was 55 percent of the median income of men. This is a lower proportion than in the nation as a whole and lower than any other western state.[1]

California	62.7
Nevada	62.5
Washington	61.8
Colorado	60.9
New Mexico	60.7
Arizona	59.2
Oregon	58.3
Wyoming	56.7
Montana	56
Idaho	55.3
Utah	55

It is commonplace to say that a man's earning power increases markedly with each year of schooling but this is not true for Utah women. In fact, a woman in Utah cannot earn a good income without having graduated from college. See Figure 5 comparing years of school completed and median income.

The proportion of women entering college is increasing, but in 1963 there were twice as many men seniors as women. A study of degrees awarded in the summer of 1962 and spring of 1963 shows that most women prefer education and home economics to other majors. (See Table 4.)

[1]Derived from Table 136, U.S. Census 1960, for each state.

TABLE 4

Number of degrees awarded to women by Utah higher institutions for the school year 1962-63, and the percent that degrees in each subject field is of the total.

Subject Field	Bachelor's Degree Number	Bachelor's Degree Percent	All Levels Combined Number	All Levels Combined Percent
Education	586	40.3	619	40.0
Home Economics	219	15.1	226	14.6
Social Sciences	128	8.8	139	9.0
English	128	8.8	147	9.5
Fine Arts	107	7.4	112	7.2
Business	82	5.6	84	5.4
Health	81	5.6	87	5.6
Foreigu Language	48	3.3	48	3.1
Biological Sciences	19	1.3	21	1.4
Psychology	19	1.3	21	1.4
Physical Sciences	16	1.1	17	1.1
Mathematics	13	.9	13	.8
Law	3		3	
Philosophy	3		3	
Library Science	2	.8	2	.8
Agriculture	1		1	
Geography	1		1	

Source: Utah Coordinating Council of Higher Education, "Sex Differences in Enrollment Trends in Higher Education," p. 5.

Utah has a low number of women in advanced study. The Governor's Committee on the Status of Women recognizes that gifted women should continue their education beyond the master's degree.

Do women and men receive equal pay for comparable work? Even when a job description is the same, men and women may be performing different duties and men often have longer term service. Even so, it appears that women in Utah are not receiving equal pay for comparable work in the clerical fields. The 1960 Census has the following information:*

Bookkeepers In Utah

	Number of bookkeepers	Percent working 50-52 weeks	Median earnings in 1959
Women	3254	63.1	$2620
Men	920	76.8	$4743

The Bureau of Labor Statistics makes occupational wage surveys in Salt Lake City and usually classifies men and women together, but one learns that in December 1962, for a 40 hour week, Class A accounting clerks if they were men received $113 a week; if they were women they received $87.50 a week. Men order clerks earned $93.50 a week. Women order clerks earned $58.50.*

Salary schedules for public school teachers in Utah usually do not discriminate between men and women. In earlier years when teachers' pay was low, women composed 75 percent of all teachers. Today, however, Utah has a higher proportion (41 percent) of men teachers in its public schools than any other state. In Utah col-

*U.S. Census 1960. Table 124.
*U.S. Department of Labor, *Occupational Wage Survey in Salt Lake City*, December 1962, Bureau of Labor Statistics Bull. 1345-25, p. 5.

TABLE 5
Extent of Union Membership of Women in Utah, 1964

Kind of Employment	Unions		Number of Women Members*
Government	American Federation of Government Employees	1,069	
	State, County, Municipal Employees	200	1,269
Utilities	International Brotherhood of Electrical Workers	850	
	Communications Workers of America	1,045	1,895
Food Handlers	Meat Cutters, Packinghouse Workers, Grocery Clerks	705	
	Bakery and Confectioners Workers	178	883
Clothing/Garment	Amalgamated Clothing Workers (includes 60 laundry workers)		620
	International Ladies' Garment Workers		
Clerical	Those in Clerical Unions, *per se*, not Utilities, Government, etc.		150
	Office Employees International		
Miscellaneous	Teamsters, Electrical Workers, International Association of Machinists, Building Services, Typographical, Steel workers, Hotel and Restaurant International		183
			5,000

*Building Trades Unions are almost 100 percent male, and the Teamsters Union is less than one percent female, while Clothing Workers are predominantly female; Utilities and Food Handlers Unions are about half female; Government Workers Unions are about one third female and Clerical Workers Unions are less than 25 per cent female.
Source of table: Patricia Woodruff. Report to Governor's Committee on Status of Women, by the subcommittee on extent of union membership of women in Utah and the attitudes of unions toward opportunities for women workers, 1964.

leges and universities one out of six faculty members is a woman. The national average is one out four.[10]

There has been a five year decline in the number of women principals and supervisors in the public schools, and women are rarely superintendents. There is only one woman high school principal in the state at the present time, no junior high principal, and only 50 out of 393 elementary principals are women. Only one woman has ever been state superintendent. Of the 68 presidents to date in the Utah Education Association only five have been women.

In other occupations, studies of the employment of women are few, but there is a recent survey of extent of unionization of Utah women workers and attitudes toward women workers on the part of employers. This survey found that approximately 5000 women belong to labor unions in Utah. Table 5 shows the unions to which they belong.

Many women said they looked to the union to overcome bad toilet facilities, dirty rest rooms, faulty wiring and other unsafe and unsanitary conditions, as well as discrimination by fellow workers and supervisors.

Women are bound by "defacto discrimination." It is not always deliberate but there is an established distinction as to type of work performed by men and that performed by women, although it is a matter of practice rather than of contractural provision.

Some women do not assume the responsibility of their job. Some women workers need to be educated to their responsibilities as earners, but also needed is more extensive vocational counseling to aid girls and women in their choice of jobs. Girls and boys in Utah have unrealistic expectations about the occupations they will pursue. A 1959 report shows that of the women high school graduates who went into the labor force, two-thirds of them had professional and managerial goals, yet only seven percent of them actually held these kinds of jobs.

One-fourth of the girls hoped for clerical jobs, but actually nearly two-thirds ended up in clerical work. Very few intended to work in sales, but seven percent became sales clerks. Service occupations were the intention of 6.5 percent but nearly one-fifth were so employed (Table 6).

[10] "Faculties of the Utah Institutions of Higher Education," Utah Coordinating Council of Higher Education, October 1963, p. 7.

TABLE 6

A Comparison of the Occupational Goals of High School Graduates and Employment Obtained Following Graduation from High School.

	Occupational goals of high school graduates			Description of jobs held since graduation from high school		
	Total	Percent		Total	Percent	
Occupation	Percent	Men	Women	Percent	Men	Women
Professional and Managerial	78.2	86.2	68.0	6.0	4.9	7.1
Clerical	11.9	0.8	25.4	36.2	10.3	63.3
Sales	0.5	0.8	0.1	7.6	7.9	7.1
Service	3.4	1.2	6.5	16.1	13.5	18.8
Agriculture	1.3	2.4		2.7	5.0	0.1
Skilled	4.7	8.6		4.3	8.3	0.2
Semiskilled				11.2	20.9	0.1
Unskilled				15.9	29.2	2.3

Source: Utah Department of Employment Security, "Utah Entry Occupations Survey of High School Graduates 1953, 1955, 1957," April 1959.

Job Opportunities

Girls and women will find increasing job opportunities as librarians, counselors, social workers, and psychologists in the schools. Good teachers will always be needed. As a result of Medicare there will be more nursing homes which will require trained personnel. Registered nurses are in short supply. Nurses aides are needed throughout the state. However, salaries need to be increased in the nursing profession if it is going to attract the number of students needed.

A recent study shows the critical need for day care centers.[11] There is need for more adequate supervision, licensing procedures and trained workers. This could be done by training girls in secondary schools as well as women in adult programs.

Visiting Homemaker Services should be established, with possible centers in Logan, Ogden, Provo, Cedar City, St. George, Richfield, and Price. Until recently Utah was one of six states without visiting Homemaker Service.

Establishment of visiting Homemaker Service in Salt Lake City resulted from many meetings among the Community Nursing Service, Salt Lake County Welfare Department, Utah State Employment Service, LDS Relief Society Office, Utah State Department of Public Instruction, and the Salt Lake Community Services Council. The State Department of Public Instruction was responsible for setting up the course and arranging for the training facility. The State Employment Service took applications, counseled and accepted trainees, and participated in their training, graduation, and placement. The first class was a two week course during February 1964 and included 14 trainees. The second class was in October 1964 with 12 trainees. The better graduates were employed at once and the others found jobs later. A third training program included 10 women who completed the prescribed course. Because Medicare has brought change in emphasis in this training, the services in Salt Lake City will change its name to "Homemaker-Health Aide." At present the State Welfare Commission is studying need for expansion of these services.

Also as a result of Medicare, training for upgrading employment of cooks and new employees in nursing homes has been introduced and carried out cooperatively between the State Department of Public Instruction, Vocational and Technical Division, Home Economics Section, and the State Department of Health, Nursing Home Division Nutritionist. This will be an expanding service and training programs have been held in Ogden, Salt Lake, and Provo.

A new area of employment of women, aid to the elderly, is having its first training program in Salt Lake City. Women as "Companions for the Elderly" will be trained in a new program developed cooperatively by the Salt Lake County Welfare Department and the Home Economics Section of the Utah State Department of Public Instruction.

There is also need for registry centers for baby-sitting service. There is a large opportunity for retired women wanting part-time work, as well as for young women, to be trained in this activity. This is a definite part of the homemaking program in the public schools, and training can be expanded to include adult women.[12]

The highly skilled typists and stenographers will always be in demand if well

[11] Frank Q. Sessions, *et al. Day Care: The Utah Study (Wasatch Front Counties)*. June 1965. Prepared by Community Services Council, Salt Lake Area, in cooperation with the Utah State Department of Public Welfare.

[12] An excellent report on homemaking and home economics was prepared for the Governor's Committee on the Status of Women by C. Aileen Erickson, State Specialist in Home Economics Education, in the State Department of Public Instruction. Both she and Elaine Blakeley, Utah State Employment Service, prepared a description of the origin of Visiting Homemaker Service in the Salt Lake Area.

qualified. There are opportunities for women in accounting, real estate sales, in chemistry as lab technicians, and in technical positions as electronic assemblers. Data processing requires employees. For example, the Internal Revenue Service Center in Ogden is expanding employment. In new industries such as data processing, women and men start out on equal footing with regard to pay.

Little is known of the status of women who work in their homes, or other homes, at such tasks as sewing draperies, bookkeeping, housecleaning, ironing, tending children, typing, dress-making, music lessons, etc. Perhaps facts should be gathered concerning their working conditions, hours, and pay.

Distribution of opportunities for work are faulty within the state. Rural areas are seeking to increase employment, sometimes through inauguration of new industries, such as the garment industry. Throughout the state there are 38 apparel plants with modern power machines designed for specific jobs. There are opportunities for sewing machine operators, inspectors, pressers, folders, and floor girls. The Utah Needlecraft Association sponsors a training program in cooperation with the State Department of Public Instruction.

The foregoing list of jobs is only suggestive. A thorough listing of occupational opportunities for girls and women is needed, together with adequate vocational counseling and training. Especially lacking in Utah is counseling for mature women whose families are grown and who want to return to school and then find employment.

The Employment Service Offices throughout the state list job openings, offer counseling, and cooperate with other agencies in setting up training programs. These offices are a good start and should be more widely used.

Any discussion of the employment of women is incomplete without mentioning the accusation that the employment of mothers has a detrimental effect on their families. Studies in various parts of the nation give no clear cut indications of such a relationship.[13] It appears that both earning and nonearning mothers are committed to care of their families and many earning mothers have ingenious arrangements to meet this responsibility.

A study of 500 employed and nonemployed mothers of junior and senior high school students in Cache and Box Elder counties found that where mothers work outside the home "no area stood out which might point to difficulty; on the contrary, work frequently was associated with strengths in family integration and good family feeling."[14]

Labor Laws

Federal

The Federal Fair Labor Standards Act provides for $1.25 an hour minimum wage and covers people (men as well as women) working in interstate commerce or producing goods that go into interstate commerce. For example, it covers communications, transportation, processing, manufacturing, and most employees in large retail enterprises. Time and a half must be paid after 40 hours. Among jobs exempt from the federal law are those in government, hotels, motels, restaurants, taxi companies, motion picture theaters, hospitals, nursing homes, laundries and dry cleaners. Many kinds of jobs held by women in Utah are not covered by the federal law.

The equal pay amendment to the Federal Fair Labor Standards Act prohibits discrim-

[13] F. Ivan Nye and Lois Wladis Hoffman. *The Employed Mother in America*, 1963. See also Lois Meek Stolz, "Effects of Maternal Employment on Children: Evidence from Research," *Child Development*, Vol. 31, 1960. pp. 749-782.

[14] Carmen Fredrickson. "Mothers Employment and Problem Young Children as These Relate to Family Variants," Utah State University.

ination in pay on the basis of sex where jobs in interstate commerce require equal skill, effort and responsibility, and are performed under similar working conditions. It does not apply where the differences are based on any factor other than sex.

State

Minimum wage regulations. The state of Utah has minimum wage regulations but they differ from the federal in that (1) they apply only to women and minors and not to men, (2) they apply to only four industries, (3) the minimum rates are lower than the federal, and (4) rates are set according to population zones.

Minimum wage orders cover women's and minors' employment (but not men's) in restaurants, dry cleaning and laundries, public housekeeping, and retail trade. Orders have not been issued to cover other kinds of employment.

The Utah Industrial Commission administers the state labor laws. The actual wage rate minimums are set after public hearings attended by employers and employees. The Industrial Commission has authority to extend the minimum wage regulations to more occupations than at present. Hair dressers, for example, are not covered in Utah but they are covered in other states.

The state minimum wage is $1.15 an hour in Zone 1, which includes Salt Lake, Weber, Utah, and Davis counties. It is $1.10 an hour in Zone 2, which includes cities over 5000 in other counties, and $1.00 an hour in Zone 3, which includes all other areas in the state. High school and college students are permitted to work for twenty cents an hour less than the minimum.[15]

Of course any prospective employee can refuse to work for this minimum but some persons need jobs desperately and are willing to accept it. It is hoped that employers will pay more than the minimum, especially to capable workers.

These minimum rates are too low. In order to maintain a standard of health and decency, workers need at least $55 to $60 a week, according to many minimum-wage boards in other states.[16] Our Utah law stipulates that rates shall be "adequate to supply the necessary costs of living and to maintain health and welfare." A woman who works 44 hours a week at $1.15 an hour earns $50.60 a week. At a rate of $1.00 an hour she earns $44. Women who receive only the legal minimum and are supporting themselves, and especially if they must support families, are living in poverty. There are men working for even lower rates than these because the law does not apply to men.

We recommend a uniform, state-wide minimum wage rate covering men and women. It should extend to more occupations than at present and zoning should be eliminated. The present minimum rates should be raised.

Supreme Court Chief Justice Hughes, in his historic 1937 opinion upholding minimum wage laws said

> The exploitation of a class of workers who are in an unequal position with respect to bargaining power and are thus relatively defenseless against the denial of a living wage is not only detrimental to their health and well-being but casts a direct burden for their support upon the community. What these workers lose in wages the taxpayers are called upon to pay. . . .[17]

Fears of dire consequences to business and industry and to employment as a result of the enactment of minimum-wage legislation have proved groundless. Minimum-wage legislation by enlarging purchasing power has contributed to the general expansion of the economy and has helped

[15] Effective January 1, 1966.

[16] *Report of the Committee on Protective Labor Legislation*, President's Commission on the Status of Women, October 1963, p. 5.

[17] *West Coast Hotel Co. vs. Parrish*, 300 U.S. 379.

remove unfair competition otherwise engaged in by unscrupulous employers. A series of studies by the U.S. Department of Labor on the long term effects of increasing the minimum wage under the Fair Labor Standards Act show that the demand for a product has a greater effect on employment than wage rates have.[18]

Wage collection. Sometimes an employee fails to receive the wages he or she has earned because the employer died, the business failed, or a "fly-by-night" employer decamped. Sometimes there are just misunderstandings, or the worker is continually asked to wait until next week. Most wage collection problems appear to be employers' exploitation of the worker. Wages should be paid regularly and in full. Under the Utah wage collection law, the Industrial Commission is empowered to collect up to $400 in back wages for an employee, without cost to the employee, and as many as a hundred cases a month are being handled. In some wage collection cases, the Industrial Commission also uncovers violations of the minimum wage regulations and other labor laws.

Maximum hour regulations. There are no state regulations of hours worked by men, but women are not permitted to work more than eight hours in any one day or 48 hours in any one week. There are some exceptions. Executives and domestics are exempt, as are workers packing or canning perishable fruits and vegetables or processing and packing fowl. There is no provision for overtime pay.

Because of the nature of executive, administrative, and professional work, women in these positions should not be limited by maximum hour regulations. But for other kinds of work maximum hour regulations should apply to both men and women. Required payment of time and a half the regular rate of pay for all hours in excess of eight a day or 40 or 44 a week would discourage excessive hours for all workers.

Regulations of working conditions. These are listed on the "white sheet" which is supposed to be posted in a conspicuous place in every establishment employing women and minors. These regulations apply to lighting, ventilation, rest rooms, rest and meal periods, etc. Chairs shall be provided where women may rest when not employed in the discharge of their respective duties. No woman shall lift a burden in excess of 30 pounds or carry a burden in excess of 15 pounds.

Utah Anti-Discrimination Act of 1965. This act is also known as the Equal Employment Opportunity Act. The Utah act, as in Maryland, Nebraska, Vermont and Wisconsin, includes the word "sex." It prohibits discrimination in employment matters solely on grounds of race, color, sex, religion, ancestry, or national origin. Employment matters include hiring, discharge, promotion, and competition. The act applies to nearly all employment in the state including schools, but does exempt employment by religious organizations and bona fide private membership clubs. Also exempt are employers who hire fewer than 25 persons. This latter exemption should be studied with a view of reducing the number 25.

An Anti-Discrimination Division was created under the Utah Industrial Commission, with a chairman and one inspector. On October 1, 1965, Governor Calvin Rampton issued an Executive Order, Governor's Code of Fair Practices, promulgating nondiscriminatory policies in all state agencies and urging cooperation of other governmental bodies in this endeavor. The preamble states

[18] *Report of the Committee on Protective Labor Legislation*, President's Commission on the Status of Women, October 1963, p. 4-5.

> Among the basic rights of all the people of this nation are the rights to seek a livelihood, opportunity for advancement and the respect of our society based solely on the individual's ability and capacity. . . It is the duty of every American citizen to protect and promote the right of all persons to find employment where their individual capacities lead them. For, when freedom of any kind is lost for one citizen, all freedom will soon be lost for all citizens.

However, a recent appraisal of the situation in state employment indicates that:

> As of June 1, 1966 there were 7400 state employees, of whom approximately 3300 were women. The lowest, full-time salary at which women start is $210 a month and many of these women have children to support. The lowest men's starting salary is $279. There are cases of men and women doing the same kind of work, but with men receiving substantially more pay. For example, a woman hired for a state position at $494 a month resigned after several months to take a better paying position elsewhere. She was replaced by a man who was paid $599 to do the same work she had been doing for $494."

Opinion is divided on whether the Anti-Discrimination Act assures the same justice to women workers that an Equal Pay Law would. On January 7, 1966, the Attorney General of the State of Utah gave the opinion that the Utah Anti-Discrimination Act "adequately guarantees fair employment practices to women and no additional legislation is necessary."

Utah does not now have an Equal Pay Law. The following western states are among the 25 that have enacted equal pay legislation: Washington, Oregon, California, Montana, Wyoming, Colorado, Hawaii and Alaska. In Washington, Montana and Colorado the state Equal Pay Law applies not only to specified private employment but also to employees of state government.

Enforcement of State Labor Laws. While the federal labor laws are enforced by a sizeable staff in Utah, the number of inspectors for state labor law enforcement is inadequate. Under the Industrial Commission there is a Women's Supervisor and one inspector, with an additional inspector in the Anti-Discrimination Division. There is excellent cooperation between the federal and state inspectors, but additional state funds for state labor law enforcement are needed.

Many women employees in industries covered by state labor laws do not know they have protection under the law, and even when they know of hearings to change wage orders they are reluctant to attend for fear they will lose their jobs. The inspector in the Anti-Discrimination Division reports that she had not realized how many frightened women workers there are in Utah until she traveled across the state talking to employers and employees in an effort to educate them regarding the provisions of the Anti-Discrimination Act.

Closer coordination in enforcement of all state labor laws is needed as well as a larger appropriation from the Legislature to strengthen enforcement. Continued education of employers and employees and the public regarding state labor laws is important.

Employment of Women Recommendations

1. A uniform state-wide minimum wage rate covering men and women that is "adequate to supply the necessary costs of living and to maintain health and welfare" which is stipulated by Utah law as the purpose of minimum wage regulation.
2. A study by the State Industrial Commission of the possibility of extending to a broad range of occupations the state labor laws regarding hours and pay.

[ii]"Statement by Elizabeth Vance, Anti-Discrimination Inspector, Utah Industrial Commission, June 14, 1966.

3. Effective enforcement of state labor laws by the State Industrial Commission, including a program of education of employers, employees, and the public regarding these laws.

4. Coordination and implementation of current studies of future job opportunities. Encouragement of educational programs to channel workers into such occupations, men as well as women. Adequate counseling and education of mature women who have reared their families and want employment.

5. Study of employers' evaluations of women workers and continued education of women regarding their responsibilities as workers.

6. Expansion of day care centers and other facilities needed by working mothers.

7. Enactment of a provision providing for equal pay for equal work.

8. The number of hours that both men and women can work for one employer should be limited to 48 hours a week with overtime paid at the rate of time and a half over 40 hours. (The above two provisions would exempt executives, administrative and professional personnel.)

9. A system of regulation of working conditions of both men and women should be established to apply to all employers. Adequate inspection should be provided.

Legal Status of Women

In the following discussion no attempt has been made to note in detail every provision of Utah law relating to women. However, we have tried to outline the major areas which affect them most frequently. All references made are to the Utah Code Annotated, 1953, as amended.

A woman's right to her separate property is guaranteed by statute and the Utah Constitution and the common law disabilities of married women have been abrogated. She can sue, be sued, engage in business, select and declare the homestead and she may be held equally responsible with her husband for the expenses of the family and education of the children. Although a husband usually controls the family property, it is not unusual for a wife to assume this responsibility. Civil rights legislation adopted in 1965 prohibits discrimination in employment on basis of sex (34-17-1 et seq).

This section has been divided into four broad areas: Home and Family; The Working Woman; Protection under the Criminal Law; and Women as Citizens and Taxpayers.

Home and Family

A discussion of the legal rights and duties arising from the marriage contract must be preceded by a statement regarding the right to marry in the first instance. A marriage involving a male under sixteen or a female under fourteen is prohibited and void (30-1-2). Consent of the parent or guardian is required when the boy is under twenty-one or the girl is under eighteen. The 1963 Legislature repealed Utah's miscegenation law and the 1965 Legislature validated mixed marriages entered into prior to such appeal.

Divorce

The statutory grounds for divorce are available to either husband or wife (30-3-1). There is, however, an inequity in the case of willful desertion. A husband has the right to establish or change the family domicile, and the wife must follow him if he requests her to do so and supplies her with the necessary means. If she refuses, he may use willful desertion as a ground for divorce (Speak vs. Speak, 81 U. 432, 19 P2d 386). Willful neglect of the defendant to provide for the plaintiff the common necessaries of life is a ground for divorce. This may apply to a dependent husband; however, it is usually a wife's remedy. A husband's duty to support his wife does not end with divorce (Openshaw vs. Openshaw, 80 U. 9, 12 P2d 364).

Although Utah is not a community property state, frequently property acquired

through the joint efforts of the parties during the marriage is divided equally between them. The court is given wide discretion in this area and jurisdiction continues after the divorce (30-3-5). Any abuse of discretion would probably be in the wife's favor.

Custody of children is also an area in which the court has great discretion and in which the jurisdiction is continuing (30-3-5). If a child is ten years old and of sound mind, he may select the parent with whom he will live (30-3-5). In the case of separation, the mother receives custody unless she is an immoral, incompetent, or otherwise improper person (30-3-10). Here, too, a child of ten years or older has a choice. Custody is ordinarily given to the mother even though the divorce is awarded to the husband (Holm vs. Holm, 44 U. 242, 139 P2d 939). It would take a great deal of evidence to convince a court that the mother is not a proper person to be awarded custody.

The award of alimony is discretionary with the court (30-3-5) and each case is decided on the basis of its facts. The factors considered in determining an award of alimony or property settlement were laid down in Pinion vs. Pinion, 92 U. 255, 67 P2d 265, and are still generally followed. They are: (1) amount and kind of property owned by each of the parties; (2) whether the property was his before coverture or accumulated jointly; (3) the ability and opportunity of each to earn money; (4) the financial condition and necessities of each party; (5) the health of the parties; (6) the standard of living of the parties; (7) the duration of the marriage; (8) what did the wife give up by the marriage; and (9) at what age were they married. These factors are considered in addition to the relative guilt or innocence of the parties. The trial court is given considerable latitude, but since divorce is an action in equity, the Supreme Court may review the evidence and substitute its judgment for that of the trial court if there is such a serious inequity as to manifest a clear abuse of discretion. Generally, the wife is a privileged suitor in divorce cases.

Separate Maintenance

An action for separate maintenance may be brought by a married woman without fault against a husband who deserts her or fails to provide for her (30-4-1). Disposition of children and the award of alimony and suit money is discretionary with the court. Separate maintenance is available also to a dependent husband (30-4-5).

Support

In 1957 Utah adopted the Uniform Civil Liability for Support Act (78-45-1 et seq.). This act imposes a duty upon a man to support his wife and child and upon a woman to support her child and her husband when he is in need. The obligation may be enforced by the obligee, regardless of his or her state of residence, in the state in which the obligator is present. Utah has also adopted the Uniform Reciprocal Enforcement of Support Act (77-61-1 et seq.) which establishes a quasi-criminal procedure for the enforcement of the duty to support.

Guardianship

A father may appoint a guardian for his children in his will with the written consent of the mother (75-13-2). A minor 14 years or older may choose his guardian subject to court approval. If the child is under 14, the court appoints the guardian with consideration to the wishes of the child. Parents are preferred, but if there is a conflict of interest between the parents, a child of tender age is given to the mother. If the child is at an age where he requires education and preparation for business or labor, guardianship is given to the father

(75-13-13). Parents living together are joint guardians with equal rights. Neither has a paramount right with respect to custody or control (75-13-18).

If a wife remains incompetent to convey property for two years or is shown to the court to be permanently incompetent, her inchoate interest in her husband's real property is relinquished and cut off (75-13-22). A guardian for her may be appointed on the petition of the husband or anyone interested in the real property (75-13-23). She is given notice, and she may appear in person or by counsel to represent her interests. The court finds on the issues of competency, necessity of sale and the cash value of the property (75-13-25). A special guardian (other than the husband) is appointed to handle the proceeds of the sale, and he may convey the property (75-13-26). He also administers the money received from the sale (75-13-27).

Wills, Succession and Probate

Every person over 18 years of age and of sound mind may make a will, "provided, that a married man shall not devise away from his wife more than two-thirds in value of his legal or equitable estates in real property without her consent in writing" (74-1-1). If a man marries after he has made a will and his wife survives him, the will is presumed to be revoked, unless provision has been made for her by marriage contract or other written agreement (74-1-25). A surviving wife may elect to take her statutory one-third, or she may take under her husband's will (74-4-4). Succession in the absence of a will is as follows: spouse and one issue – one-half to spouse, one-half to child or its issue; spouse and more than one issue – one-third to spouse, rest divided among the children or their children by representation; spouse and no issue – $100,000 to surviving spouse, excess goes one-half to spouse, one-half to father and mother or survivor or brothers and sisters or their children or grandchildren if the mother and father are dead; spouse and no relatives as set forth immediately above – to spouse.

There are limitations upon the right of a married woman to serve as an administratrix or executrix. If an unmarried woman is appointed an executrix in a will and subsequently marries, anyone interested in the estate may object to her serving as such when the will is admitted to probate (75-3-17). Objection may also be made to the appointment of a married woman as an administratrix of an estate where there is no will (75-4-5).

A wife, husband or minor children have possession of the homestead and exempt property during the administration of an estate (75-8-1). 75-3-2 provides for summary administration and distribution of estates not over $1,500 and applies to the wife, husband, and minor children.

The Working Woman

It is unlawful to employ a woman in a mine or smelter (34-4-1). Stores, shops, hotels, restaurants, or other places where women or girls are employed as clerks, or help, must provide a place for them to sit down when not performing their duties (34-4-2). A forty-eight hour week (8 hour day) has been established for women with the exception of domestics, executives and in emergency situations. This does not apply to packing perishable fruit or vegetables during the season or to manufacturing containers thereof; or, to picking, cleaning, etc., of fowl (34-4-3). There is a wage board set up to report on labor conditions, a minimum wage to supply a proper cost of living rate, and hours and working conditions of women and minors (34-4-6). The Industrial Commission can fix wages, hours and conditions in any trade or industry (34-4-9).

It may fix wages in special circumstances — handicapped, aged and apprentices (34-4-10). An employee may sue to recover any deficiency under a minimum wage and costs of suit regardless of an agreement to work for less (34-4-17). The provisions relating to the payment of wages do not apply to domestics (34-10-1).

Protection Under the Criminal Law

76-15-1 makes refusal to provide for a wife or minor child a felony. Privilege of communication between husband and wife does not apply in an action brought under this section. Generally, however, a wife shall not be compelled to testify against her husband, nor a husband against his wife (77-1-10). Neither husband nor wife shall be a competent witness for or against the other in a criminal action or proceeding to which one or both are parties, without the consent of the other, except in cases of criminal violence upon one by the other, in cases of crimes defined in the chapter of the Penal Code relating to pandering, and in cases of the crime of deserting or neglecting to support a wife or minor child, or in cases where it is otherwise specifically provided by law (74-44-4).

When paternity in a bastardy proceeding has been established, the father must pay a reasonable sum for support, maintenance, and education of the child until its 18th birthday, together with actual hospital and medical expense incurred by the mother in prenatal care and delivery. The adjudged father may be required to give bond to secure these payments (77-60-7). Default under the bond may subject the defendant and his sureties to court process to enforce payment of an unpaid installment (77-60-10). If the default is willful, the defendant may be adjudged in contempt of court and committed to jail until payment is made (77-60-11). If the mother and father of a child born out of wedlock intermarry, the child shall be legitimate in all respects, and any bond for his support becomes void (77-60-14). The father of a child born out of wedlock does not have a right to the custody and control until after the child is ten years of age, unless it appears that the mother is not a suitable person to have control and custody. (77-60-12).

Women as Citizens and Taxpayers

A woman in Utah enjoys all civil, political and religious rights and privileges (Article LV, Sec. 1, Utah Constitution). Whether or not she takes advantage of them is covered elsewhere in this report.

The provisions of the Tax Code apply to both men and women. The term "taxpayer" means any person, trust, or estate required to file an individual income tax return (59-14-1). By filing separate income tax returns, a husband and wife may avail themselves of lower tax rates and a resulting tax benefit.

The first $40,000 of a decedent's estate is exempt from inheritance tax if the estate goes to the husband, wife, and/or children of the decedent (59-12-2). There is no specific marital exemption for a wife.

Legal Status of Women Recommendations

The recommendations relating to the legal and tax status of women have been divided into two groups. The first is made up of recommendations for changes in existing legislation and the enactment of new laws. The second is composed of questions that should form the basis of studies to be conducted by the Utah State Bar or the Utah Legislative Council.

Legislative Action

Repeal of 75-3-17 and 75-4-5, Utah Code Annotated, 1953, which limit the right of

a married woman to serve as an executrix and administratrix respectively.

Amendment of 78-46-10, Utah Code Annotated, 1953, to remove the exemption from jury service afforded to women who have the care of minor children.

Amendment of 30-2-9, Utah Code Annotated, 1953, which provides that the expenses of a family are the joint responsibility of both the husband and wife or either of them to include a provision defining when the family relationship terminates in the case of divorce.

Amendment of 59-14-5, Utah Code Annotated, 1953, (Tax Code) to include deductions for child care, personal education expenses and payments to retirement funds.

We join the subcommittee on employment in recommending the following:

1. Enactment of a provision providing for equal pay for equal work.
2. Establishment of a uniform minimum wage applicable to both men and women.
3. The number of hours that both men and women can work for one employer should be limited to 48 hours a week with overtime paid at the rate of time and a half over 40 hours.

The preceding provisions would exempt executives, administrative and professional personnel. The exemption of agricultural workers and domestics should be studied.

4. A system of regulation of working conditions of both men and women should be established to apply to all employers. Adequate inspection should be provided.

Questions Raised

1. 74-4-3 provides that one-third in value of all the legal or equitable estates real property possessed by a husband at any time during the marriage shall be set apart as the wife's separate property if she survives him. Is this equitable at a time when an individual can accumulate a fortune without owning any real property?
2. Should Utah become a community property state?
3. Should a wife's right to sue her husband or his estate in an action relating to contract or property be extended to include the right to sue in an action in tort? The Utah Supreme Court held in August 1963 in Bubalcava vs. Gisseman, 384 P2d 389, that such an action was not permitted. The Court's reasoning was based largely on the possibility of a husband and wife colluding to defraud an insurance company.
4. Should the husband have the right to change the family domicile without his wife's consent and then use desertion as a ground for divorce in the event she fails to follow him? Should women be able to establish separate domicile for all purposes?
5. Should the right to garnish wages be limited when the use of this remedy often discourages the debtor from seeking employment?

Political and Civic Responsibilities

Utah's political history is a study in contrast with the political history of much of the United States. From 1847 until 1852, Utah women voted on all religious and secular matters. This privilege was withdrawn when Utah became a territory.

On February 5, 1870, a bill known as H. F. 16 was introduced into the House. Entitled "An act granting to women the elective franchise," it was passed unanimously. Although Acting Governor S. A. Mann had "very grave and serious doubts" concerning the wisdom of such a bill, he sigued it into law on February 12, 1870. Sometime between then and 1888 this law apparently was "annulled." However, in April 1895 the Utah Constitutional Convention voted in favor of reinstating women's suffrage.[1]

> The women of Utah were early interested in suffrage and intermittently had the franchise even in territorial days. Utah's Constitution permanently gave them the power to vote. Because of their political privileges Utah women became active participators and conspicuous figures in the National Woman's Suffrage Movement. To support this cause they sent delegates regularly to the National Suffrage Convention.[2]

The following facts serve as evidence that women were active in early political life. The first woman state senator in the nation served in 1897 in Utah. She was Dr. Martha Hughes Cannon, a Democrat who defeated her husband, a Republican, for the seat. Dr. Cannon was one of the first licensed medical doctors in Utah. She sponsored legislation dealing with health and sanitation. At the same session two Utah women sat in the Utah House of Representatives, Sarah E. Anderson of Ogden and Eurithe K. LaBarthe of Salt Lake City. Seraph Young, a niece of Brigham Young, is said to have been the first woman to cast a municipal vote in Utah. This was in the Salt Lake City election of August 1870.[3]

Women's influence on early state legislation is siguificant. In 1911, although no women served in this legislature, three bills supported by women were drafted and passed. They were a Nine-Hour Law for women workers; the Child Labor Law; and Compulsory Notification of venereal diseases. Three other bills sponsored by women were considered and subsequently passed: Wife-Desertion Act; Anti-Cigarette Law; and Anti-Gainbling Law. The 1913 session had four women in the House of Representatives. Their sponsorship resulted in the passage of the following laws: Minimum Wage Law for Women; Woman Deputy Commissioner of Labor; Joint Guardianship of Children; and a Mother's Pension Act.[4]

[1] *Journal of the Legislative Assembly of the Territory of Utah*, 1870. pp 63, 95, 122.
Compiled Laws of Utah, Vol. 1. 1888, p. 121.
Utah Historical Quarterly, Vol. 25, 1957, p. 106.
[2] Max Binheim, *Women of the West*, pp. 167-180.
[3] Everett L. Cooley. "Women in Utah in Politics," p. 15.
[4] Lily M. Ritchie, "What Utah Women Have Done With Their Vote." *Utah Survey*, Vol. 1, No. 8, 1914. pp.8-13.

Women in Public Office

The 14th Amendment to the Constitution of the United States removed the legal barriers to women's participation in political and civic life, but centuries of tradition with a pattern of exclusion of women from these activities does not change overnight.

Our committee surveyed the number of Utah women who have held elective office, both federal and state. In appointive offices, Utah has had several distinguished women serve on the federal level. Mrs. Jeanette Acord Hyde, Utah's first national committee woman, served as Collector of Customs in Hawaii for eight years, having been appointed April 21, 1925 by President Coolidge and reappointed by President Hoover. Mrs. Florence E. Allen was appointed Judge of the Circuit Court of Appeals of the Sixth Circuit in 1934 by President Roosevelt. Mrs. Ivy Baker Priest was appointed Treasurer of the United States by President Eisenhower. Mrs. Esther E. Peterson, Assistant Secretary of Labor, is the highest woman appointee in the administrations of President Kennedy and President Johnson. Mrs. Peterson also served as the Executive Vice-Chairman of the President's Commission on the Status of Women.

On the state level women have served as appointees to various commissions throughout the history of the state. However, the number serving and the scope of service have never been as large as at the present time. Table 7 gives information supplied by Governor Calvin L. Rampton's office regarding the number of women currently serving on state committees and boards.

It is apparent from the survey of offices held by women that while they can and have been elected to public offices, such as state representatives in siguificant numbers, still they have not been as effective in seeking many public offices as they might be. In fact, there exists in the women of Utah a large reservoir of untapped talent which could be put to use in public offices. It is also worthy of note here that while many of the state committees upon which women are now serving deal with the traditional areas of "women's interests," i. e. health, education and welfare, many do not. Thus at least in this area of service, some of the latent potential of women is not being recognized and put to use for society's benefit.

Political Participation

The Women's Democratic Club was organized by 18 women in 1895 and the Republican Women's Club of Salt Lake City was founded in 1899. Their records show that it is the oldest Republican Women's Club in the United States which has met continuously.

Mrs. Emmeline B. Wells, an ardent Republican and woman suffragist, edited **The Woman's Exponent** in Salt Lake City for nearly forty years, August 1, 1877 to 1914, when the magazine was discontinued. This publication crusaded for suffrage and carried the cause to every community and hamlet in Utah. The Woman's Suffrage Association was formed before Utah became a state. Through the efforts of its members, a women's suffrage plank was written into the platforms of both political parties in 1895. It was endorsed by both parties for adoption by the Constitutional Convention which began meeting on March 4, 1895. It was thus written in the state constitution that women should have the right to vote. Although Wyoming passed its woman suffrage law two months earlier than Utah, a municipal election in August 1870 provided Utah women with the first opportunity to vote. National woman's

TABLE 7

Total Membership and Number of Women Appointees on State Committees and Boards. 1966

Committees and Boards	Total Membership	Women Appointees
Aging, Council on	11	2
Athletic Commission	3	0
Building Board	5	1
Children and Youth, Committee on	12	3
Civil Rights Commission	15	3
College of Southern Utah, Board of Trustees	12	2
Corrections, Board of	7	1
Criminal Justice Administration, Council on	15	2
Deaf and Blind, Advisory Board for School of	5	2
Fair Association	12	3
Fish and Game Commission	5	0
Forestry and Fire Control	10	0
Fulbright-Hayes Scholarship Committee	5	1
Great Salt Lake Authority	5	0
Golden Spike Centennial Commission	9	2
Handicapped Children, Advisory Committee for	9	4
Health, State Board of	7	2
Higher Education, Coordinating Council of	9	2
Historical Society, Board of Trustees	11	3
Hospital Council	10	4
Indian Affairs, Commission	3	0
Institute of Fine Arts	13	4
Library Commission	9	2
Little Hoover Commission	12	0
Land Board	6	0
Mental Health, Advisory Council of	11	1
Merit System Council	3	1
Nursing Homes, Advisory Council of	7	3
Park and Recreation Board	12	0
Retirement Board	7	1
Road Commission	5	0
State Course of Study Committee	11	3
Tax Commission	4	0
Tourist and Publicity Council	7	0
University of Utah, Board of Regents	12	0
Utah State University, Board of Trustees	12	2
Water and Power Board	14	0
Weber College, Board of Trustees	14	1
Welfare Commission	3	1
Women, Governor's Committee on Status of	7	7

Note: This table lists all committees and boards which have women appointees. Only a few of the better known committees which have all men are listed. The total number of all committees and boards in state government is unbelievably large. See Figure 6, page 40.

suffrage was not accomplished until 1920, some fifty years later.

Mrs. Wells was a friend of such national suffrage leaders as Susan B. Anthony, Carrie Chapman Catt, and Elizabeth Cady Stanton, all of whom are said to have visited her in her Salt Lake City home.

Women's Organizations and Civic Responsibilities

From the very beginning of the settlement of Utah, the participation and acceptance of women as volunteers in the communities has been excellent. A brief historical review will serve to illustrate this. Even before the Mormons came to Utah, the Relief Society, a women's group of the Latter-day Saints Church, was organized not only to help the poor and needy but also to instruct and inform the membership. Also, early in the state's history, other churches and religious groups came to Utah and each of these has a comparable record of valued service to humanity. Religion, however, did not reach into all lives nor into all facets of any one life. A real need for other outlets existed. Before the turn of the century, culturally minded women had joined together in many clubs for study and personal growth. Then in 1911 the Association of City Clubs was organized; its main purpose was to improve citizenship. Two delegates from each existing woman's club formed the Association[5]. The first projects included extension and improvement of playgrounds, appointment of a woman as Pure Food Inspector, establishment of a public market, and consideration of smoke nuisance.

From this beginning women's groups have grown and been influential in many areas. Ontside of the political parties, there are several state-wide organizations which concern themselves with legislative processes, legislation, voters, voting registration, and various other political and civic questions. An insight into their membership and activities can be gained by a thumbnail sketch of a few groups.

One of the oldest women's organizations is the Utah Federation of Women's Clubs, which is older than the state. A member of the General Federation of Women's Clubs, it has a long record of service for its five thousand members in eleven districts covering the entire state with one hundred fifty clubs.

Another nationally affiliated organization is the Utah Federation of Business and Professional Women's Clubs, established in 1918, which has an impressive record of service and education. It was this organization which first approached Governor George Dewey Clyde in 1963 about possible creation of a Governor's Committee on the Status of Women in Utah.

The Women's State Legislative Council of Utah, formed in 1920, was once nationally affiliated but is now one of a few such groups left functioning in the United States. The 150 organization members send two or three delegates to meetings in Salt Lake City to represent them. These delegates represent and can reach about 20,000 women in Utah. The object of this group is to investigate and study subjects of state and national interest for the purpose of influencing and bringing to fruition beneficial legislation for the State of Utah. Their theme is "Better government through wider participation."

The American Association of University Women, organized in Utah in 1942 has taken leadership in urging women to make themselves available for public office and has suggested the names of qualified women for appointive office. They have supported important pieces of legislation.

[5]Ritchie, *op. cit.*

The League of Women Voters, established in Utah, has studied social and political problems in depth. For example, in 1957 the League began a study of welfare programs in Utah and later concentrated on the problems of juveniles. In October 1959, its report, **The Juvenile Courts and Detention Facilities of Utah,** was published and proved influential in securing a new Juvenile Court Act in 1965.

In addition to the organizations mentioned above, on a county and city level across the state there are many women's groups concerned with various phases of life.[1] To attempt to mention all voluntary groups and to chart their projects and accomplishments would be an endless task. Suffice it to say there is probably not a community service that some women's group has not accomplished in some community. It is apparent that the women of Utah have indeed met the communities' needs for volunteer groups.

Political and Civic Responsibilities

Recommendations

Legally the women of Utah have every right to full participation in political life. As a matter of fact, however, women still do not function as effectively in this area as they could.

Since human resources are the greatest resource in the world today and much of the potential of women is going unused, we recommend the following:

1. That all educational institutions and communications media use their facilities to inform and educate women as to the elective and appointive offices available.
2. That qualified women be encouraged to seek election to public office and that voters be urged to support candidates on the basis of qualification.
3. That a roster of women qualified for policy-making positions at all governmental levels be maintained.
4. That public officials consider such qualified women for appointment to appropriate commissions and advisory committees.
5. That every effort be made to educate all citizens, whether they are employed or not, to the unlimited number of ways in which they can serve their community as volunteers.

[1]See Appendix for names of women's organizations cooperating in the establishment of the Governor's Committee on the Status of Women.

Community and Family Services

The Progress Report of the Governor's Committee on the Status of Women, December 1964, included a list of unmet needs in community and family services in Utah. The report pointed out that these needs vary with different regions of the state, and with the organized efforts being made to meet them. The report recommended that public and private agencies increase their own efforts and take full advantage of the Economic Opportunity Act of 1964 to help alleviate unsatisfactory conditions in the areas of neglect and delinquency, child welfare services, diaguostic and mental health services, day care centers, detention and foster home facilities, and Homemaker Services.

The Thirty-sixth State Legislature, meeting in January 1965, passed the following legislation:

1. A Child Abuse Act which requires reporting of such abuse cases to local police or county sheriff's offices, and provides that protective social services be made available for affected children.

2. Human Rights legislation, including a Public Accommodations Act and an Equal Employment Opportunity Act, prohibiting discrimination because of race, color, religion, sex or national origin.

3. Reapportionment legislation which apportioned both houses of the state legislature on the "One-Man One-Vote" principle, and redistricted the state's two congressional districts in the same manner.

4. Urban renewal enabling legislation. (Within six months the voters of Provo and Salt Lake City had refused to establish urban renewal agencies.)

5. A proposed constitutional amendment allowing the formation of metropolitan governments.

6. A resolution providing for a constitutional convention to be voted on at the 1966 election.

7. Legislation creating a Little Hoover Commission to study the executive branch of government and make recommendations.

The recommendations of the Little Hoover Commission, January 1966, if adopted could materially affect the quality and quantity of community and family services in Utah. The present structure of Utah government is shown in Figure 6 and the proposed reorganization is shown in Figure 7. At present there are more than 150 agencies in the executive branch and more than a hundred special funds. Each time a new state service has been undertaken a new agency is created.

The chairman of the Little Hoover Commission, in releasing the report stated:

FIGURE 6

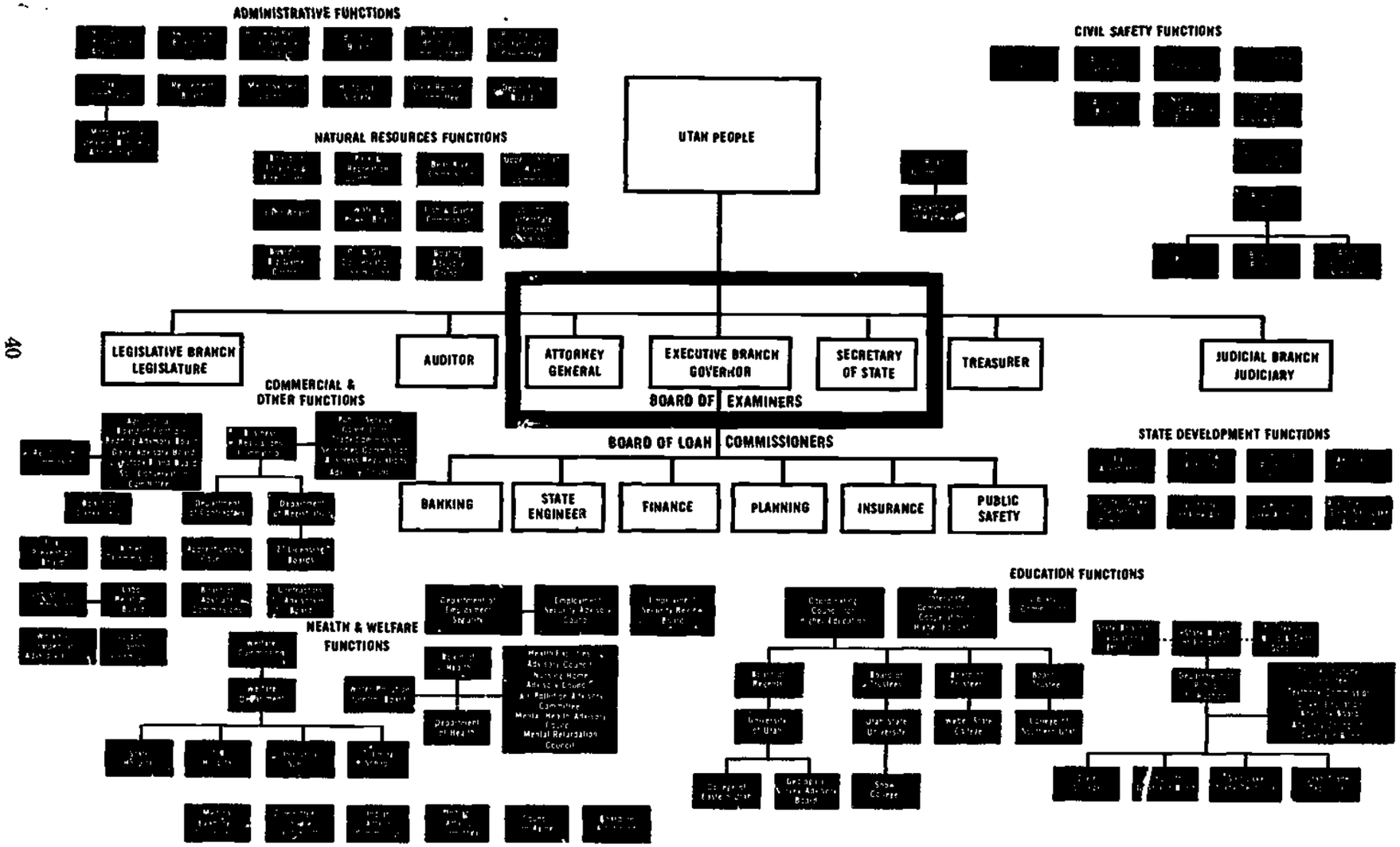


EXHIBIT I
STATE OF UTAH
EXECUTIVE BRANCH OF GOVERNMENT
PRESENT PLAN OF ORGANIZATION
ADMINISTRATIVE FUNCTIONS
NATURAL RESOURCES FUNCTIONS
CIVIL SAFETY FUNCTIONS
UTAH PEOPLE
LEGISLATIVE BRANCH
LEGISLATURE
AUDITOR
ATTORNEY GENERAL
EXECUTIVE BRANCH
GOVERNOR
SECRETARY OF STATE
TREASURER
JUDICIAL BRANCH
JUDICIARY
BOARD OF EXAMINERS
COMMERCIAL & OTHER FUNCTIONS
BOARD OF LOAN COMMISSIONERS
BANKING
STATE ENGINEER
FINANCE
PLANNING
INSURANCE
PUBLIC SAFETY
STATE DEVELOPMENT FUNCTIONS
HEALTH & WELFARE FUNCTIONS
EDUCATION FUNCTIONS

FIGURE 7

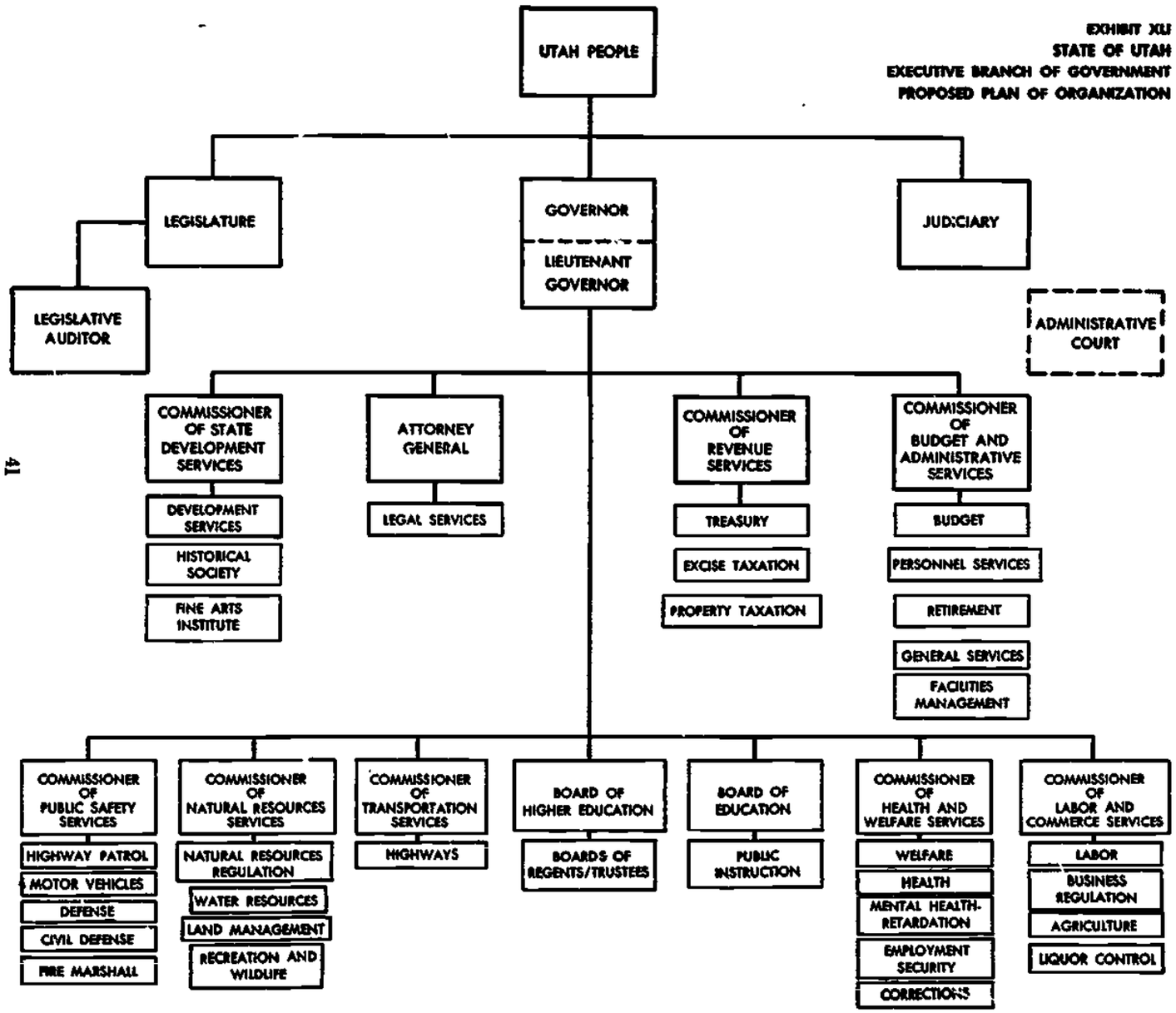


EXHIBIT XLI
STATE OF UTAH
EXECUTIVE BRANCH OF GOVERNMENT
PROPOSED PLAN OF ORGANIZATION
UTAH PEOPLE
LEGISLATURE
LEGISLATIVE AUDITOR
GOVERNOR
LIEUTENANT GOVERNOR
JUDICIARY
ADMINISTRATIVE COURT
COMMISSIONER OF STATE DEVELOPMENT SERVICES
DEVELOPMENT SERVICES
HISTORICAL SOCIETY
FINE ARTS INSTITUTE
ATTORNEY GENERAL
LEGAL SERVICES
COMMISSIONER OF REVENUE SERVICES
TREASURY
EXCISE TAXATION
PROPERTY TAXATION
COMMISSIONER OF BUDGET AND ADMINISTRATIVE SERVICES
BUDGET
PERSONNEL SERVICES
RETIREMENT
GENERAL SERVICES
FACILITIES MANAGEMENT
COMMISSIONER OF PUBLIC SAFETY SERVICES
HIGHWAY PATROL
MOTOR VEHICLES
DEFENSE
CIVIL DEFENSE
FIRE MARSHALL
COMMISSIONER OF NATURAL RESOURCES SERVICES
NATURAL RESOURCES REGULATION
WATER RESOURCES
LAND MANAGEMENT
RECREATION AND WILDLIFE
COMMISSIONER OF TRANSPORTATION SERVICES
HIGHWAYS
BOARD OF HIGHER EDUCATION
BOARDS OF REGENTS/TRUSTEES
BOARD OF EDUCATION
PUBLIC INSTRUCTION
COMMISSIONER OF HEALTH AND WELFARE SERVICES
WELFARE
HEALTH
MENTAL HEALTH-RETARDATION
EMPLOYMENT SECURITY
CORRECTIONS
COMMISSIONER OF LABOR AND COMMERCE SERVICES
LABOR
BUSINESS REGULATION
AGRICULTURE
LIQUOR CONTROL

History is really, in the main, the story of man's efforts to obtain the best he can imagine life will hold for him — and to maintain law and order so that enrichment of living may proceed generation after generation. It must be the obligation, the purpose of government, to provide the environment in which this advancement will be possible.[1]

Poverty Programs

On a national level, concern over poverty had led to the proposal of a federal Economic Opportunity Act. Anticipating its passage, the Salt Lake Area Community Services Council, in May 1964, established the Exploratory Committee on Anti-Poverty to assemble information concerning poverty, its causes, extent and effect in the Salt Lake area and throughout Utah, and to make recommendations for implementing the anti-poverty program at both state and local levels.

According to the national poverty index, any family with less than $2000 annual income is poor. The poverty line is drawn at $3000 for an urban family of four, and 70 percent of that for a rural family of four.[2] The following Utah counties have the highest percentage of families in poverty: Duchesne, Emery, Juab, Millard, Piute, Rich, San Juan, Sanpete, Washington and Wayne. (See Figure 8.) However, the largest number of poor families is found in the heavily populated counties of Salt Lake and Weber. A total of 17,211 families, or 8.3 percent of all Utah families, have less than $2000 income annually. Drawing the line at $3000 income there are 30,768 families in poverty or 14.7 percent of all the families in Utah.[3]

Title I of the federal Elementary and Secondary Education Act of 1965 provided money to school districts for improving education of children from families of less than $2000 income and also from large families receiving public assistance. In Utah, according to the State Department of Public Instruction, there are 11,680 of these children, ages 5 to 17; they are 4.8 percent of all children in this age grouping.

By formal action in 1964 both the Salt Lake City and County Commissions delegated to the Community Services Council the responsibility of developing a Community Action Program for the Salt Lake area. This program is designed to mobilize and coordinate community resources to combat poverty or the causes of economic and cultural deprivation. Interestingly enough, women have been appointed to the two top positions of executive director and assistant director. Approval and funding for the administration of the program and for the establishment of four Neighborhood Action Centers was obtained in 1965 and the centers are now in operation. The largest geographical neighboorhood (Granger-Kearns) comprises 300 square miles with 11,830 people involved. The smallest (Central City) is one square mile and has 20,629 people involved.

Weber and Davis Counties also have Community Action Agencies and extensive Economic Opportunity programs. In the northern part of the state, Box Elder. Cache and Rich Counties have formed a three-county agency. Further south, six rural counties have formed a Community Action Agency for administering Economic Opportunity projects: Sevier, Sanpete, Millard, Juab, Piute and Wayne. Other counties are in the process of such organization.

The Utah Office of Economic Opportunity coordinates the poverty programs in the state. Three Job Corps camps have

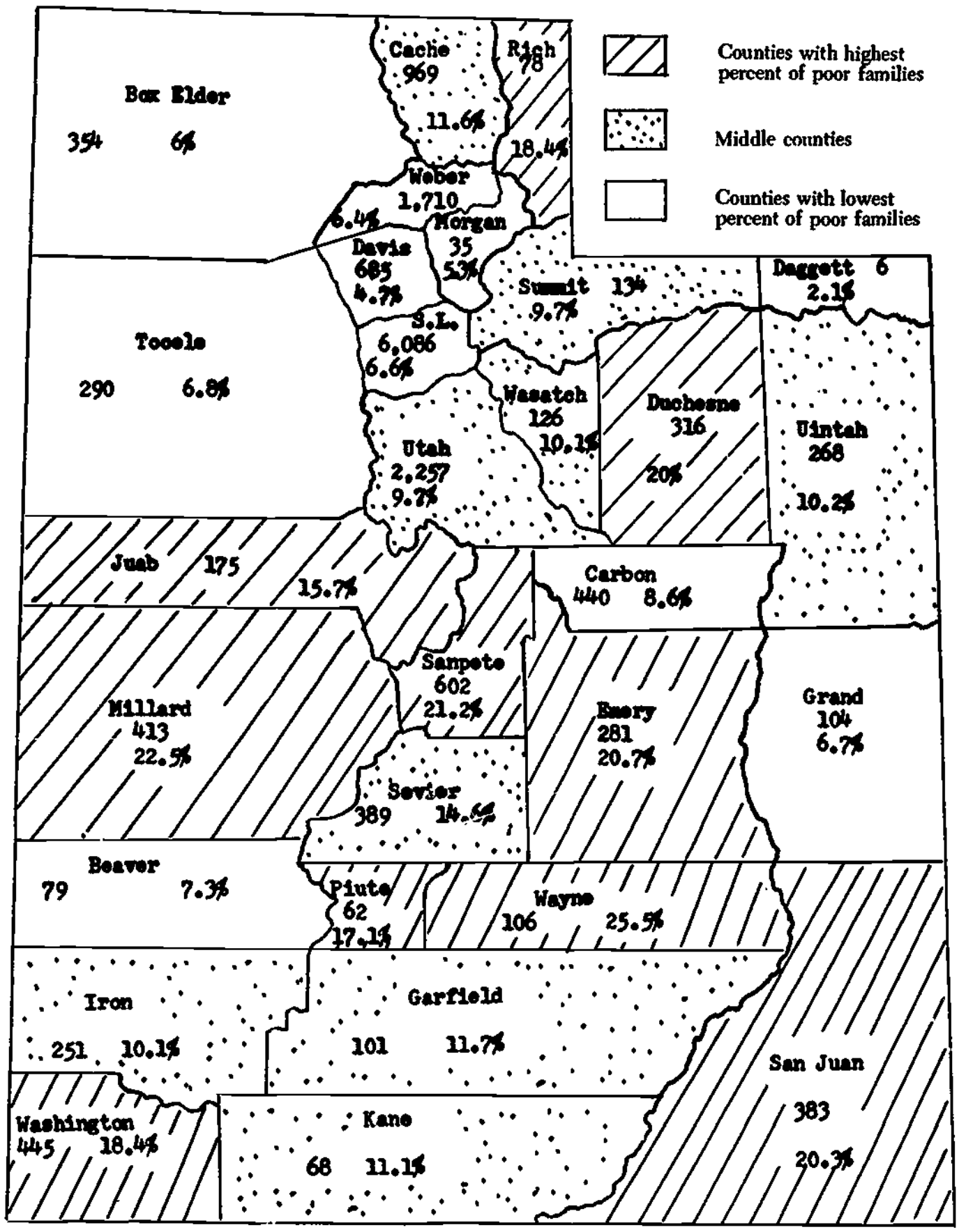
[1] Joseph Rosenblatt, Interim statement on the work of the "Commission on the Organization of Executive Branch of the Government," September 24, 1965, p. 19.

[2] *Social Security Bulletin*, July 1965, p. 3-27.

[3] U.S. *Census*, 1960. See also George Blanch, *Family Incomes by Counties in Utah*. Utah Resources Series 23. Agricultural Exeriment Station and Cooperative Extension Service, 1964.

FIGURE 8

Number of families with less than $2000 annual income and percent these families are of all families in the county.



Source: U.S. Census, 1960.

been established in Utah and 21 Neighborhood Youth Corps projects have been operated. Project Headstart, a crash program for preschool children, was operated in seven school districts for about 900 children during the summer of 1965, and will operate in thirteen districts for more than 1500 children in the summer of 1966. Table 8 is a summary of Economic Opportunity projects in Utah.

Even though the heaviest concentration of poverty is in the urban areas along the Wasatch Front, it is these areas which have the most resources to attack the problem. There is a high economic level with more jobs than in rural areas, higher pay, flexihility of employment opportunities and resources for vocational training.

On the other hand, in the rural areas of the state where the economic level is lower, job opportunities are fewer and in some places almost nonexistent. Young people leave the community to seek work. Some rural communities have made an effort to attract industry, but where such industry has located, stresses and strains have been created even though the economy has been aided. Women of the community are sometimes torn between the economic necessity of working and the oft-repeated tradition that a woman must remain at home as wife and mother. The L D S Church is now heginning to adapt somewhat to these changes, for example, by scheduling Relief Society meetings at night to accommodate working women. Women are also traveling

TABLE 8

Summary of Office of Economic Opportunity Projects in Utah, June 15, 1966.

Project	Grant
State Technical Assistance Grant	$ 49,586.
Job Corps 1504 enrollees	15,652,401.
Neighborhood Youth Corps 3884 enrollees	2,817,089
College Work Study 1368 enrollees	997,180.
Adult Basic Education 1102 participants	120,000.
Rural Loans 118 grants	224,110.
Work Experience	763,963.
Operation Headstart 1500 participants	403,464.
Community Action Agencies (Conduct and Administration)	256,171.
Community Action Agencies (Program Development)	103,305.
Migrant Workers' Projects	32,498.
Programs for Indians	205,454.
Day Care Projects	91,250.
Project Enable	43,137.
Project Medicare Alert	51,688.
Project Upward Bound	184,014.
Project Foster Grandparents	137,336.
Utah State University Family Development Center	36,870.
Total Federal Funds	$22,169,516.

Source: State Office of Economic Opportunity.

extensively in connection with their duties on general boards of the Church.

In many of the rural communities the population is almost totally LDS, and as such, their lives are involved in a mutually supportive system of religion, education, recreation, social life, and welfare. Little time is left for a recognition of community-wide problems and for the type of planning which involves all citizens. It has been observed that in some areas, however, those women who have leadership roles in the Church are beginning to recognize the need for inclusive community action.

The depressed economic level of many of Utah's counties has created a disproportionate load for the public welfare system, with members of the minority groups claiming much of its attention since they do not come under the LDS Church welfare program. The attitude of a small rural community toward public welfare recipients and toward youngsters in trouble with the law is far different from the attitude in metropolitan areas.

Where concepts of community development and coordinated planning have been introduced into communities, one notes a beginning of group interrelationships which may some day break down some of the conventional barriers to communication among all segments of the population. This seems the only way in which local efforts can be mobilized to meet total human needs. Complete dedication to the notion of full utilization of Church programs as the solution to all problems sometimes prevents the community-wide planning necessary to obtain grants and funds for assistance in meeting total community needs.

Neglect and Delinquency

The alarming rise in child neglect and abuse and in juvenile delinquency is a local as well as a national problem. The umbrella agency which eventually handles all or most neglected, dependent, and delinquent children is the Juvenile Court.

Utah made history in 1913 by establishing the first state-wide juvenile court system. From 1941 to 1965 the Court was under the State Department of Welfare, and hence was in the executive branch of government. The constitutionality of such an arrangement was not questioned until 1963, but the matter of freedom and independence of the judges had been of concern to many people for many years.

In 1957 the League of Women Voters of Utah began a study of welfare programs in Utah and later concentrated on the problems of juveniles. In October 1959 the Leagne published its report, The Juvenile Courts and Detention Facilities of Utah.

In 1959 the Legislature asked the Utah State Bar to study juvenile court laws and to make recommendations. After a three-year study the Bar Committee drafted a proposed Juvenile Court Act based on the 1959 Standard Juvenile Court Act and certain provisions of California and Oregon juvenile court laws. This bill was passed by the House in 1963 but was defeated in the Senate. Later in 1963 the Utah Supreme Court declared unconstitutional Utah's law placing the Juvenile Court under the Welfare Department.

A continued study was made from 1963 to 1965 by a subcommittee of the Utah Legislative Council composed of people from all walks of life. They approved the main provisions of the 1963 bill which the 1965 Legislature then passed with few revisions. This new Juvenile Court Act established independent juvenile courts on the same level as the courts of general jurisdiction in Utah. According to Glenn R. Winters, Executive Director of the American Judicature Society, Utah now has one of the finest juvenile court laws in the nation.[4]

[4] *Utah Law Review*, Vol. 9, Summer 1965.

Both the State Bar Committee and the subcommittee of the Legislative Council found that there was a general lack of understanding of the jurisdiction, procedures, operation and administration of the juvenile courts. Many in the state were concerned about delinquency, neglect and abuse of children, but no one seemed concerned with the rights of children, parents, and the public or with the policies or philosophy of the courts. The intense efforts of the two committees in formulating the new law and the complete debate in the Legislature helped arouse public interest and created better understanding of the problem.

The consensus was that the qualifications required for a juvenile court judge as set forth in the law were so important that provisions should be made for appointment of the judge. Accordingly, the Juvenile Court Act of 1965 set up a Juvenile Court Commission, composed of the Chief Justice of the Supreme Court or a Justice of that Court designated by the Chief Justice, the Chairman of the Public Welfare Department or a Commissioner designated by the Chairman, the President of the Utah State Bar Association or a member of the State Bar Commission designated by the President, the State Superintendent of Public Instruction and the State Director of Public Health. When a vacancy occurs, the Govenor shall appoint a judge from the list of at least two candidates nominated by the Commission. The judges are appointed for terms of six years and until successors are appointed and have qualified.

The 1965 law sets up the Board of Juvenile Court Judges, consisting of all juvenile court judges of the state, to consider and deal with problems arising in connection with the operation of courts in any or all districts and to establish general policies and formulate uniform rules governing practices and procedures. The law provides that all employees of the court and board who receive a salary, except the administrator and referees serving the court in no other capacity, shall be selected, promoted and discharged through a merit system.

The law provides that the judges or judge of any juvenile court may appoint a juvenile court advisory committee, with broad representation of citizens of the district, such individuals to serve as citizens and not as representatives of a professional group, agency or unit of government. The Board of Juvenile Court Judges may appoint a state juvenile court advisory committee including representatives from district advisory committees to the extent feasible. Such committees may study and make recommendations concerning the operation of the juvenile courts, including facilities and services used or needed, such as detention and shelter facilities. They may also study and make recommendations for community programs and services designed to prevent or correct juvenile delinquency and other problems which may come before the juvenile court. This is regarded as a pioneer step by authorities in the field since it will help bridge the gap between the community and the juvenile courts.

Another major agency in the state is the Utah Training Center for the Prevention and Control of Juvenile Delinquency. The Center was established at the University of Utah as one of eleven pilot projects by the federal government to bring a new approach to the problems of delinquency. The agency is now supported wholly by University funds.

The Center held community conferences with leaders fro · most of the counties of Utah to compare and evaluate programs for youth involvement. They also con-

ferred with the PTA, school principals and teachers. The Center held a workshop with juvenile court judges, probation officers, lawyers, and Children's Bureau personnel on training programs for court personnel. The Center has also assisted the State Department of Public Welfare in implementing the 1965 Child Abuse Act. In 1964 the Utah Training Center was appointed as a subcommittee of the Legislative Council's committee on Education and Welfare. It conducted a survey, held hearings and interviews and made a report of its findings and recommendations to the 1965 Legislature. A summary of these recommendations is in the Appendix to this report. One recommendation is for a statewide comparable system of record-keeping by law enforcement agencies of arrests of juveniles, coded for anonymity for recall and evaluation by a professional on basic research and program evaluation. The Director of the Center is conferring with the Governor on the need for a Youth Authority to coordinate the various services, programs, and needs of juveniles.

Detention

Under Utah law (55-10-49 Utah Code Annotated, 1953) children under age 16 shall not be confined in jails, lock-ups or police cells used for ordinary criminals or persons charged with a crime.

A lack of a feeling of urgency resulted in poor and inadequate or nonexistent detention centers which the counties by law had to provide. As a result of the study by the League of Women Voters of Utah on detention facilities and an investigation by aroused citizenry in Salt Lake County of the inadequacy of the Salt Lake Detention Home, the State Department of Public Welfare presented a Detention Bill to the 1961 Legislature making the state responsible for detention centers. There was argument that the state was pre-empting county rights and a compromise act was passed (55-10-supra). This act gave primary responsibility for detention to Utah's 29 counties with financial, professional, directive and supportive assistance to be provided by the State Department of Public Welfare. A State Detention Advisory Committee was appointed to draw up statewide standards for detention.[3] A State Director of Detention was appointed to implement the program and the Legislature appropriated $250,000 for the first biennium. Additional appropriations have been made since that time. Counties may share up to 50 percent in state support if they meet minimum standards. Counties are allowed to provide joint facilities if they so desire.

Only two counties, Salt Lake and Utah, have fully availed themselves of these funds. Iron and Washington counties are developing new facilities; Sanpete is remodeling a section of its Court House; Carbon has contracted with the state for building purposes, and Uintah is preparing to build a center in the county building.

There is still dissension and disagreement in some counties. The size of the state and the distances between county seats have kept counties from joining to provide Detention Centers. The state Department of Public Welfare is permitted by law to work with the counties in resolving difficulties and is attempting to initiate the formation of centers in needed areas. In some of the rural counties where there are plans for enlarging hospitals with Hill-Burton Funds, the counties are requesting space in these buildings for detention purposes.

Day Care

Provisions for day care service began in 1883 with the Orphan's Home and Day

[3] *Minimum Standards of Care for the Detention of Children*, Utah State Department of Public Welfare, Pamphlet.

Nursery, which later became the Children's Service Society at which time it dropped the day care program. In 1894, the Neighborhood House began operation in the west side of Salt Lake City, including day care services which have continued to the present. This is the only nonproprietary day care center in Utah. In 1942, child care centers for mothers working in war industries were set up in the school districts with Lanham Act funds. These operated effectively until funds were withdrawn in 1945. Standards and procedures for the operation of day care programs in Utah were established by the Department of Public Welfare in 1942.

Utah law (Title 55, Chap. 9, Utah Code Annotated 1953) provides that

> no day nursery, person, association, corporation, institution or agency, shall provide care and supervision for three or more children under 4 years of age, in lieu of care and supervision provided by parents in their homes, for periods of more than four hours but less than 24 hours in any one day, without having a license issued by the Welfare Commission.

Excluded from the licensing provisions is care given to children in homes of parents, legal guardians, grandparents and other first degree relatives, or in centers provided by Boards of Education or parochial educational institutions. For the purpose of the study, day care centers are those defined as requiring a license by the State. By such licensing, Utah assures that at least minimal standards will be maintained.

In 1963 the Community Services Council of the Salt Lake area in cooperation with the Department of Public Welfare conducted a study of the day care of children with funds allocated by the U.S. Children's Bureau.

The study was composed of four parts: (1) a survey of working, nonworking, and Aid to Families with Dependent Children mothers; (2) a survey of existing day care centers; (3) responses from selected community service agencies; (4) evaluation of the feasibility of day care centers based upon geographic area-population density data. The study showed a siguificant need for more day care centers.[6]

The Utah Study showed that concern for children and their development has replaced the former emphasis of charity to the mother and custodial care of the child. The 1962 amendment to the Federal Aid to Dependent Children programs begun in 1935, contributed to this shift in emphasis. The 1962 amendment established Aid to Families with Dependent Children with emphasis on rehabilitation of the family unit. If in these cases it is not beneficial to the child or mother for the mother to remain in the home, she is encouraged to find work, and expenses for day care are provided. Thirty-eight percent of all mothers with young children on the Wasatch Front are in the labor force.

At the time of the Utah Study, there were 68 known day care centers in the five county area along the Wasatch Front. These included six nonprofit centers for the physically and mentally handicapped. At least 15 percent were not licensed. The existence of unlicensed and substandard centers is of major concern and of major irritation to those operators complying with the law. Parents and operators favor regulation and maintenance of standards by the state, some favoring considerable supervision by the Department of Public Welfare. The study did not indicate community support for state-operated day care facilities.

Even though day care services in the past have concentrated on service to working mothers, many children have a serious

[6] Frank Q. Sessions, *et al.*, *Day Care: The Utah Study (Wasatch Front Counties)*, June 1965.

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need for day care which has nothing to do with the employment of the mother. To quote the study:

> The handicapped child needs special training. The mother is ill or deceased. The child has been deserted by mother or father. The child lives in a slum neighborhood and has no place to play. There are poor family relationships. The child has too many brothers and sisters with whom to share parental love and support. Proper day care gives the child strength he needs to withstand the pressures of a home where negative family relationships exist and often helps to improve the home situation. Day care is one of the best available services to help families provide the essentials for emotional and physical growth necessary for young children. It has been established that there is no validity in the notion that children must be taken care of by their own mothers in order to assure their well-being. What counts is the quality of care. The opinion that the availability of day care services makes more women leave their children and enter the labor market has been used often as an argument against adequate service. The presence of day care services affects only the child; women work for other reasons. Therefore, in the absence of good day care service, women seek more and more second rate, often hazardous, alternate choices.

There has been no implementation of the recommendations made in the Utah Study.

Since the completion of the day care study, there has been an increase in the number of day care centers for the handicapped for which the Department of Public Welfare provides funds. Funds for other day care centers are allowed under AFDC and child welfare cases, per each child attending, at the rate charged by the day care center.

The Mental Retardation Study[1] states that the Utah day care program should be re-evaluated and strengthened. It does not state whether the centers should be private, nonprofit, or state-operated, but does say that the Health and Welfare departments should support the centers financially and that all educational and vocational, transportation, and supervision costs should be met by the State Board of Education.

Homemaker Services

Homemaker Services should safeguard, protect, stablize and unify the family. They should be available to the aged, the chronically ill, the physically handicapped, the emotionally disturbed, and families facing other crises. Homemaker Services are not domestic help; their primary objective is to preserve home values and strengthen family life. Although the worth of these services has been recognized since 1920 in the United States, little was done in Utah to develop either the services or philosophy. Recent changes in social conditions have forced a re-evaluation of Homemaker Services as a total community service.

In 1959 the Department of Public Welfare and the Salt Lake Community Services Council jointly sponsored a study of the need for Homemaker Services on a state-wide basis. The study revealed that the the family is no longer the stable unit of prior years, nor are relatives always able or willing to help families in difficulty. Many families need help only in major crises, but others seem unprepared to cope with even daily problems. It was recommended that this service be established state-wide, beginning with the most populous areas. Both public and private agencies are receiving requests for Homemaker Services. Table 9 analyses 314 requests for services during a six month period, showing that the welfare client is not the only one who needs them. Table 10 shows that in approximately forty percent of all cases, some type of payment would be forthcoming.

[1] *Mental Retardation, A Comprehensive Plan for Utah*, Utah State Department of Health, February 1966.

TABLE 9

Requests for Homemaker Services According to Type of Need*

Reason	Public Welfare Requests	Public Welfare Percent	Other Sources Requests	Other Sources Percent	Total Requests	Total Percent
Family with children	41	20.9	44	37.2	85	27.0
Expectant and new mothers	12	6.1	11	9.3	23	7.3
Chronically ill and disabled	51	26.01	37	31.3	88	28.0
Acute hospitalization	20	10.2	10	8.4	30	9.5
Aging	72	36.7	16	13.3	88	28.0
Total	196	99.9	118	99.5	314	99.8

*For a six month period.

Source: *Homemaker Services Study*, Salt Lake Community Services Council,1960.

TABLE 10

Requests for Homemaker Services According to Payment Plan*

Payment Plans	Public Welfare Requests	Public Welfare Percent	Other Sources Requests	Other Sources Percent	Total Requests	Total Percent
No pay	152	77.5	25	21.1	177	56.3
Part pay	30	15.3	32	27.1	62	19.7
Full pay	12	6.0	47	39.8	59	18.7
Other (church)	2	1.0	10	8.4	12	3.8
Not indicated	0	0.0	4	3.3	4	1.2
Total	196	99.9	188	99.7	314	99.7

*For a six month period

Source: *Homemaker Services Study*, Salt Lake Community Services Council, 1960.

In 1962 three possibilities in the Salt Lake area were considered: (1) placing Homemaker Services in an existing public agency such as the County Child Welfare Department; (2) placing them in an existing voluntary agency such as the Family Service Society or Community Nursing Service; and (3) creating an independent agency. Experience elsewhere indicated the desirability of locating the services in an agency offering other types of services.

The Community Nursing Service agreed to establish the Homemaker Services in its agency. The United Fund provided funds to draft a proposal to the U.S. Public Health Service for a Community Health Services Project. In April 1964 the project was approved as a three year demonstration. At the end of this period it will be the obligation of the community to continue the program.

The Homemaker Service has five full-time and three part-time Homemakers with a professionally trained Director. To qualify as Homemakers these women must complete a course conducted by the State Board of Education and the State Department of Employment Security. They then

complete a Red Cross course on the care of the sick and injured, and receive in-service training from professional persons. Before a Homemaker receives an assignment, the Director determines the extent of service needed. Referrals are made by physicians, public welfare agencies, clergymen, hospitals, social workers, families and friends. The charge for the service is two dollars per hour, but adjustments are made according to ability to pay.

The Visiting Homemaker Service is under the jurisdiction of the Chronic Disease Division of the Public Health Service. Services for the most part are limited to the long-term or chronically ill. During February of 1966 Homemakers made a total of 369 visits to 48 cases, spending 791 hours in service. Thirty-four of the cases were persons ranging from 66 to 92 years old.

Mental Health

Women want diagnostic and mental health services, not in quantity but in quality, when they need such services for themselves and their families. The realization that such services are not readily available to individuals unless offered on a community basis has led to women's concern that such services be available regardless of sex, economic status, race or religion.

The Utah Association for Mental Health, organized in 1925, has had a leadership role in every mental health effort in legislation in Utah. In 1956, the Association prepared legislation to establish an Advisory Council to recommend programs. The legislation was not passed, but the Governor appointed two committees, a Coordinating and Advisory Committee on Mental Health, and a Committee on Defective Delinquents and Aggressive Sex Offenders. These committees had different charges and responsibilities, but both recommended legislation establishing community mental health centers over the state.

Nothing was done to implement these recommendations, and subsequently in 1958, the Utah Association for Mental Health appointed a committee to draft legislation. The final draft was based on the New York legislation, except it attached the mental health program to the State Department of Health, rather than creating a separate department. All groups interested in mental health had been contacted and worked with the Association in drafting the proposed legislation. Among these groups were the Utah State Medical Society, the University College of Medicine, the Joint Mental Health Advisory Committee, the Salt Lake Community Services Council, and the county health departments.

The bill embodied four basic concepts: (1) permissive legislation, (2) local community planning to satisfy local needs, (3) local responsibility for programs, (4) provision of funds by the State on a matching hasis. It was not until 1961 that the legislature passed mental health legislation, in the main, as drafted by the committee of the Utah Association for Mental Health (26-17-20 Utah Code Annotated).

Since passage of the Community Mental Health Centers Act (1961) the state appropriations have never been large enough to match local funds up to the limit of 40 percent provided by law. At the present time there are thirteen Community Mental Health Clinics:

Northern Utah Clinic, comprised of Cache, Rich, and Box Elder counties.

Southern Utah Clinic, comprised of Beaver, Garfield, Iron, Kane and Washington counties.

Tri-County Clinic, comprised of Piute, Sevier, and Wayne counties.

Single Clinics are in Carbon, Davis, Duchesne, Grand, Salt Lake, San Juan, Sanpete, Uintah, Utah, and Weber counties.

Institutions serving the mentally ill are:

The Utah State Hospital, founded in 1885 at Provo for patients suffering from mental illnesses. (Utah Code Annotated 1957, Ch. 7, Title 64-7-2).

The Training School, founded in 1929 at American Fork to care for the mentally retarded. (Utah Code Annotated 1957, Ch. 8, Title 64-701).

These two institutions are governed and controlled by the Utah State Department of Public Welfare. The report of the Little Hoover Commission recommends that they be transferred to a Mental Health-Mental Retardation department.

There is no institution in the state exclusively for mentally ill children. There is a Youth Services Program organized within the Utah State Hospital. It presently serves between fifty and seventy children, a fraction of those who apply. There is a day care center in Salt Lake County, the Holladay Children's Center, which is a private center for emotionally disturbed children.

The State Board of Education has authorized a pilot program to serve children of school age with normal learning ability, but who have learning problems based on serious emotional disturbances. With the special services provided through these programs the children can be maintained in their home communities. Because of a shortage of trained personnel only six units have been established, two in Logan and one each in Ogden, Granite, Tooele, and Nebo. The two in Logan are at the Utah State University Teacher Education Laboratory School.

A Mental Health Planning Grant was authorized by Congress in 1962 to support mental health planning in the states (4.2 billion dollars). In November 1963 the Utah State Board of Health and its Mental Health Advisory Council appointed committees to submit an application for a federal planning grant for 1963-64. The application was approved and funds became available July 1, 1963. Fifteen agencies having state-wide administrative structure were invited to select a representative to serve on the planning body. This group was known as the Utah State Coordinating Committee. Contracts were approved between the Utah State Department of Health and counties representing nine regional mental health planning committees. These contracts purchased completed studies known as the Mental Health Section of the American Public Health Association **Guide to a Community Health Study** from 23 counties in the state. The report **Utah Comprehensive Mental Health Plan, 1965**, represents the consensus of the group in planning for mental health in the state of Utah.

The 1963 Congress provided funds to the U.S. Public Health to be used as grants to the states for studying mental retardation needs and developing a program in each state to meet these needs on a comprehensive basis. The Governor designated the Utah State Department of Health as the state agency to administer these funds with the grant being approved on August 11, 1964. In accordance with the Health Department application for the federal grant, the Governor appointed the Advisory Committee on Mental Retardation to the State Department of Health, whose report, **Mental Retardation — A Comprehensive Plan of Utah**, was issued in February 1966.

The federal laws allowing participation in federal funds by states in the mental health and mental retardation fields are identical. The Report of the Little Hoover Commission states:

> Although this (Hoover) Commission consists of laymen, so far as the mental health – mental retardation field is concerned, we have been impressed with the inability of experts in these fields to define the essential differences, as well as the similarities . . . . It is concluded, however, that there are differences in origin, evaluation and treatment. Therefore, until additional light . . . is shed on the subject, separate divisions of mental health and mental retardation are recommended.[8]

The two divisions would be under a Director of Mental Health-Retardation, with a Mental Health-Retardation Council.

Community Health

Just before the turn of the century the Salt Lake City Health Department was established, and in 1898 a State Board of Health was organized.

The major responsibilities of the State Department of Health are to safeguard public health through prevention and control of disease (including, but not limited to, communicable disease), to promote sanitation, physical and mental health, and to disseminate general health education information. Funds are derived from three sources: legislative appropriations, federal grants-in-aid, received under several different health programs usually on a matching fund basis with the state, and departmental collections from fees charged for certificates, pamphlets, etc.

The Department, administered by a Director of Public Health, is responsible for carrying out policies established by the State Board of Health and the Water Pollution Control Board. Others determining policies are the Health Facilities Council, Nursing Home Advisory Council, Mental Health Advisory Council, Air Pollution Advisory Committee, Coordinating Committee, Comprehensive Mental Health Planning Committee, Dairy Industry Committee, Medical Self-Help Training Committee, Plumbing Advisory Committee, Wastach Regional Hospital Planning Commission.

The State Health Department's activities are state-wide. Programs are made available through organized local health departments. Three types are permissible: municipal part-time, county part-time, and full-time city. There may be full-time county, full-time city-county, or full-time multi-county. There are only five local health departments qualifying as full time: Weber County, Davis County, Salt Lake City, Salt Lake County, and Utah County's City-County Health Department. Responsibilities and functions of all local health departments include enforcement of state public health laws and regulations, administering of local ordinances pertaining to public health, administration of immunization and other disease control programs, jurisdiction over those attending school, and general promotion of health.

In 1964 Salt Lake County was selected as one of twenty-one communities to cooperate on health self-studies as part of a national effort of the National Commission on Community Health Services. This organization provided consultative services and a study guide; the community provided the funds. The Health Study consists of three parts:

I. A Community Profile completed and published in May 1965. This profile covered the historical, physical, and environmental characteristics of the community and state, with projections from 10 to 20 years. It reveals significant characteristics of the people in Salt Lake and covers population breakdown as well as social, economic, educational, cultural, religious and other factors.[9]

[8] *Report of the Commission on the Organization of the Executive Branch of the Government*, Thirty-sixth Legislature, January 1966, p. 138.

[9] *Profile of Salt Lake County, Utah: Community Health Study*, Salt Lake Community Services Council, Report No. 1, May 1965.

II. A Study concerned with fact finding and assessment of the many facets of environmental and personal health. Task committees were appointed to cover specific areas: environmental health, water supplies and systems, sewage and waste water disposal, solid waste, vector and nuisance control, food and milk sanitation, housing, transient housing, schools and institutions, swimming pools and bathing water, radiological and occupational health, air pollution and noise control, communicable disease, chronic and handicapping conditions, dental diseases, mental health, personal health from infancy by age groups to over 64, hospitals and nursing.

These findings will be published during 1966.

III. An Analysis and Priority Setting: This will be the analysis of the recommendations of the task committees and the establishment of priorities to give greatest value to the community.

Women as Volunteers

There is no need to review in this report women's contributions as volunteer workers in churches, schools, PTA's etc. Programs have been developed because women recognized dangers to family, children, community and life itself, and were willing to work without remuneration. No matter what their motivation, women are acting as good citizens when they work toward making their community a better and safer place in which to live.

Voluntary organizations in a community provide a structure for many women who wish to and have the time to aid in solving community problems. These organizations have not always reached all women on all economic or social levels to stimulate and give each an opportunity to help. Many potential volunteers, if given an opportunity, could furnish firsthand knowledge of problems facing a community. Untapped sources have been the youth, the aged, minority groups, working women, and those on the low economic levels. The anti-poverty programs have proved the value of these groups in recognizing problems and working toward solutions through community action. In the larger urban areas, volunteer organizations have been established to solve local social problems.

As the result of a study made by the Junior League of Salt Lake, a Volunteer Bureau was established in 1964 within the structure of the Community Services Council. Contacts were made with local health, welfare and leisure-time agencies, and with women's church groups, women's civic clubs and professional auxiliary organizations, and government agencies. The Volunteer Bureau is a three year demonstration project jointly financed by the Junior League and the Community Services Council.

Currently, there are 43 agencies being served by the Bureau. During the fall, winter and spring of 1965-66, 228 volunteers were reported needed by the agencies. Recruitment of volunteers is the job on which the Volunteer Bureau is currently focused. The volunteer job openings include routine clerical and health assistance in medical and dental clinics; teaching special skills to young people, children and adults; volunteer service in nursing homes; assistance to teachers in centers for handicapped children; assistance to employment counselors for youth employment; case aides in family service societies, welfare and mental health centers; volunteer librarians; automobile drivers for the Red Cross; assistance in nursery schools for deaf and blind children; filing and cataloging in the Historical Society; friendly visiting to shut-ins and elderly; travel consultants for the Traveler's Aid Society; work with children and young people in groups in such agencies as YMCA, the YWCA, the Neigh-

borhood House, and the Jewish Community Center.[10]

Again it bears repeating that a community is only as strong, as well developed and as good a place to live in as its citizens are willing for it to be.

Community and Family Services Recommendations

1. Adequate financing of the Juvenile Court.
2. Appointment of citizens' advisory committees for juvenile courts.
3. The Utah Training Center for the Prevention and Control of Juvenile Delinquency to be maintained as a research and coordinating agency on juvenile and youth problems for the state.
4. State-wide uniform system of record keeping by law enforcement agencies of juvenile arrests, coded for anonymity, for recall and evaluation.
5. Adequate detention facilities and especially in areas of the state not yet covered.
6. Improved standards and supervision of detention centers.
7. Encouragement of studies and surveys by communities to provide day care centers based on need in the whole community.
8. Encouragement of studies and surveys by communities to provide Homemaker Services in the communities based on needs of the families in the communities and not limited to the chronically ill.
9. Implementation of the recommendation of the Little Hoover Commission Report in regard to welfare, health, mental health — mental retardation, and corrections departments grouped under a Health-Welfare Commissioner.

[10] *Annual Report of Volunteer Bureau*, Salt Lake Community Services Council, 1966.

Appendix I

Juvenile Delinquency in Utah: Problems and Resources
An Abstract

Contents

I. Summary of Recommendations for reducing delinquency drawn from testimony given at public hearings conducted by the subcommittee.

II. Priority of legislative action recommended by the subcommittee.

Prepared by the Subcommittee on Juvenile Delinquency under the authorization of the Utah State Legislative Council with the cooperation of the Utah Training Center for the Prevention and Control of Juvenile Delinquency, University of Utah.

Submitted November 28, 1964

I. Summary of Recommendations by Major Topics Covered in the Hearings.

(These recommendations are extracted from the body of the report for convenience of examination. They will be found in context at the pages indicated opposite the titles.)

Juvenile delinquency is a pattern of behavior which manifests itself during adolescence, but its causes may be found deeply imbedded in every one of our social institutions. In order to reduce delinquency and to promote improvements in social life which will benefit all citizens, the recommendations are made which appear below.

It should be emphasized that the implementation of the changes embodied in the recommendations cannot be the work of any single legislative session. Instead, the over-all import, direction and probable effect of the recommendations should be discussed and beginnings undertaken consistent with the reliability of presently obtainable data, the ability to obtain consensus, and the capacity of the State to carry the tax burden which will be necessary. For that reason, the second part of this abstract contains a priority of recommendations for immediate action by the legislature which will constitute a beginning to the most important social reforms and provide the foundation for further appropriate action.

A. Improved Services to Families and Children 9

1. Greater attention should be given in the schools to preparation for family life, problems of family living, problems of community life including social organization and physical and mental health.

2. Periodic medical check-ups should be made available through public health clinics and the public health nursing staff to insure that expectant mothers and children from birth through the years of public schooling receive adequate physical, mental and emotional care.

3. Public supported mental health clinics should be increased. Family services, including marriage counseling, should be made readily available, the timely use of such facilities should be encouraged.

4. Great need exists for day care centers which also serve as nursery schools; these are especially important in culturally and economically deprived environments.

B. Adjustment and Improvement of Public Education 21

1. There is need for a general reduction of class loads, but particularly in elementary schools, so that teachers may give adequate individual attention to student needs.

2. The problem of teacher certification should be examined and greater stress should be placed on courses offering insight into student behavior; in-service courses for elementary teachers for certificate renewal should require instruction in meeting the emotional needs of children.

3. There is a desperate need for more child specialists in the public school system. Such specialists should be freed from the hiring limitations imposed by the 9:1 ratio; they should be assigned at the district level; their services should be concentrated to meet the needs of elementary school youngsters.

4. Courses and programs beginning at the elementary school should be organized for slow learners (IQ 75-90) who presently experience defeat and frustration in academic curricula designed primarily for college bound students. Present special education programs for handicapped students (IQ 50-75) should be strengthened.

5. Group living situations under professional direction are necessary for a substantial number of students with extremely adverse home environments.

C. Better Vocational Preparation 28

1. Counselors assigned to secondary schools should have vocational guidance courses added to their present training. Loads for such counselors should be reduced from present levels (1:400) to recommended professional levels (1:250).

2. House Bill 63, 1963 Legislative Session (providing additional distribution units for vocational education) should be amended on the basis of experience in its implementation, which shows at least these deficiencies:

   a. A single distribution unit does not provide adequate support for operating a work-training program.

   b. There is a lack of qualified personnel to direct work-training programs.

   c. Services are needed beyond those provided by the school, particularly for attitudinal and emotional conditioning and individual and group psychotherapy.

3. Vocational education courses with real skill development involved should be added to the regular school curriculum beginning in junior high school. Students unable to master the academic curriculum at any grade level should be furnished vocation oriented courses including technical training at his ability level leading toward realistic vocational placement.

4. Community centered programs for youth employment, as well as residential programs away from the community, should be stimulated by encouraging community organization and providing matching funds where necessary to make such programs possible under the recently passed Economic Opportunities Act. (Public Law 88-452, 88th Congress).

D. Improved Handling of Juvenile Offenders 32

1. Records on juvenile offenders are wholly inadequate for any conceivable purpose. Two types of records should be available.

   a. Central identification system capable of instant recall for use by law enforcement officials to cope with mobility of juvenile population.

   b. Adequate data collection on juvenile offenders, collected by law enforcement officials, coded for anonymity and centrally collected to enable professionals to do basic research, program evaluation, and to ioform enforcement and corrections officials accurately.

2. Proper detention facilities as provided by law have not been established. This matter should be investigated and appropriate steps taken.

3. Present treatment facilities are wholly inadequate. Probation services are overloaded, psychiatric, psychological, counseling and social work services in short supply, residential treatment almost wholly missing.

4. There is a need for "half-way houses" to give services to delinquents returning to their home communities.

5. No facility now exists in the State for "hard core" older delinquents or young adult offenders. This problem should be investigated.

6. Present case loads and salary schedules make it almost impossible to retain competent personnel or to build adequate service morale among professionals engaged in servicing juvenile delinquents. This problem needs immediate attention.

II. **Specific Recommendations for Legislation:** needed studies; pilot experimental programs; greater support for programs already validated by experimenation.

A. Acutely needed studies and investigations

1. The Legislature should appropriate funds to the University of Utah to enable the Utah Training Center to investigate record systems and to experimentally test such systems for their utility in:
   a. Serving the needs of enforcement officers.
   b. Providing information necessary for research in treatment of offenders, needs of youth workers, incidence of and causes of delinquency.
2. The Legislature should establish the Subcommittee on Juvenile Delinquency as part of the Legislative Council's organization for the next biennium and include on its agenda the following study:
   a. The need for a complete treatment service for juvenile offenders such as exists in the California Youth Authority, including treatment programs, maximum security facilities, half-way houses, and other services, together with a recommendation as to budget staff and organization appropriate to Utah.
3. The Legislature should investigate the reason why various counties have not provided adequate detention facilities according to law.
4. The Legislature should appropriate funds to the Department of Public Instruction specifically to make recommendations on:
   a. Behavioral science courses to be included in revised teacher certification and re-certification requirements.
   b. Ratios for assignment of child specialists to public schools.
   c. Curricula appropriate to slow learners (IQ 75-90) including vocational courses.
   d. Curricula appropriate to marriage and family life education at various grade levels to be required at those grade levels and for graduation.

B. Badly needed pilot experimental projects anticipating basic institutional changes.

1. The Legislature should appropriate pilot funds to the Department of Public Welfare to encourage child care-nursery centers under private operation. Funds should allow half of costs per child not on welfare and full costs for children of welfare recipients who wish to take training or seek employment. Health services should be provided by public authority; curriculum should be supervised by school personnel; standards should be prescribed by Department of Public Welfare.
2. The Legislature should appropriate pilot funds to school districts for elementary school programs in areas identified as culturally deprived to pay expenses of enriched programs including:
   a. Summer pay for education of teachers in child needs.
   b. Reduction of class loads.
   c. Provision for adequate counseling services.
   d. Provision for adequate medical services.
   e. Provision of adequate social work services.
   f. Employment of part-time community coordinator to enlist the efforts of the community in its own behalf; to recruit and organize volunteers for the schools; to identify problem families and seek help for them.

C. Increased budgets for established agencies in support of necessary programs.

1. The Legislature should increase the budget of the Department of Health to allow prenatal examination of expectant mothers and semi-annual examination of children of school age; thereafter annual examinations including immunizations until age 18.

2. The Legislature should establish mental health clinics with appropriate staff on a population: staff ratio according to a plan which will provide an appropriate number of clinics for the State within a reasonable span of years.

3. The Legislature should provide funds to the Juvenile Courts to allow increases in staff salaries to levels which will hold competent professionals, increase probation staff to allow recommended case load standards, provide funds for one group-therapy center in each juvenile court district.

4. The Legislature should provide funds to the Department of Public Welfare specifically to encourage the establishment of group-living facilities for juveniles under professional direction but privately operated.

Appendix II

Organizations Which Cooperated in the Establishment of the Governor's Committee on the Status of Women in Utah

American Association of University Women
American Legion Auxiliary
American Mothers Association of Utah
American National Red Cross
Bureau of Community Development
Disabled American Veteran's Auxiliary
Industrial Commission of Utah Women's Division
Salt Lake Legislative Council
Service Star Legion
U. S. Department of Agriculture – Forest Service Women's Division
Utah AFL-CIO Auxiliaries
Utah Delta Kappa Gamma Society
Utah Dietetic Association
Utah Eastern Star
Utah Federation of Business and Professional Women's Clubs
Utah Federation of Women's Clubs
Utah Federation of Women's Democratic Clubs
Utah Federation of Women's Republican Clubs
Utah Girls Scout Council
Utah Press Women
Utah State Home Economics Association
Utah State Ladies of Elks
Women's State Legislative Council
Young Women's Christian Association

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Guidelines for Developing Associate Degree Nursing Programs in Tennessee.

Tennessee Nurses' Association, Nashville. Committee on Education
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*TECHNICAL EDUCATION; *NURSING; *PROGRAM PLANNING; *GUIDELINES; *HEALTH OCCUPATIONS EDUCATION; ASSOCIATE DEGREES; COMMUNITY COLLEGES
TENNESSEE

An associate degree nursing program should be established only where goals can be achieved by the particular community under consideration. The guidelines cover: (1) elements essential in the community and the college, (2) qualifications of the program administrator, faculty, and students, (3) belief of the Tennessee Nurses' Association about nursing education, (4) the need for nurses in Tennessee, (5) description of technical education in nursing, (6) related references, and (7) sources of additional information. (JK)

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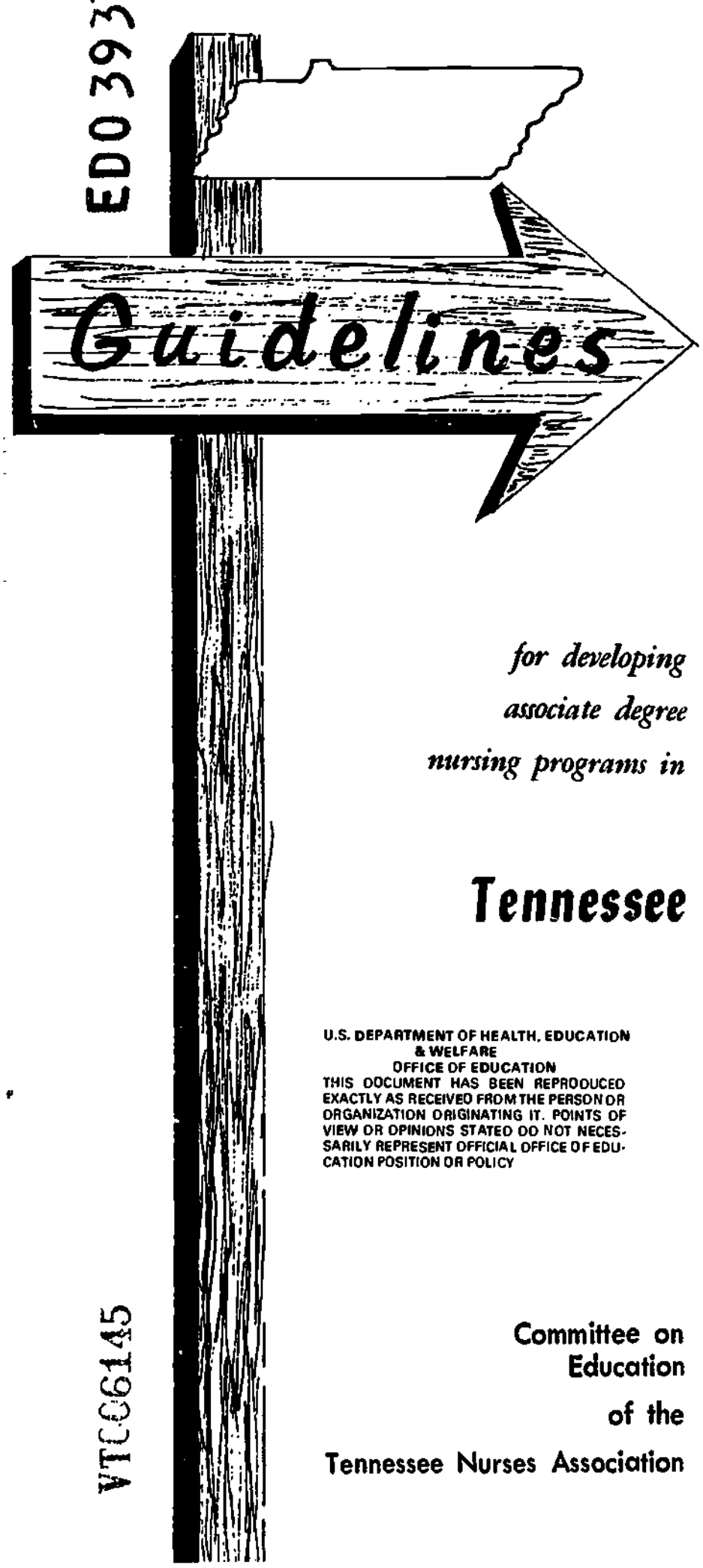

for developing
associate degree
nursing programs in

Tennessee

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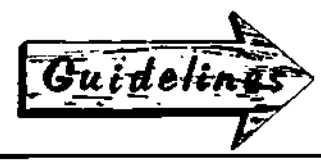


GUIDELINES FOR DEVELOPING ASSOCIATE DEGREE NURSING PROGRAMS IN TENNESSEE

PROGRAM PLANNING

Associate Degree Programs attract students by offering sound preparation in a collegiate setting. The program should be established only where the goals can be achieved by the particular community under consideration.

The following elements are essential for initial planning in:

THE COMMUNITY

1. A college which grants the Associate Degree.
2. A sufficient number of students interested in nursing as a career.
3. Clinical agencies able to provide learning experiences adequate to meet the objectives of the program. It is generally conceded that a general hospital of at least 200 beds is necessary for adequate experience.
4. Reasonable assurance of employment for graduates in the types of positions for which they will be prepared.

THE COLLEGE

1. Accreditation by the appropriate agencies in the state and region.
2. Program responsibility and control vested in the college and nursing department.
3. Faculty qualified to teach in the college. A minimum of five qualified nurse faculty are necessary for conducting an associate degree nursing program.
4. General and supporting courses needed in addition to the nursing major. These courses are usually offered in colleges having an enrollment of 500 or more students.

nursing education if there is to be the most efficient use of the resources available, both financial and human.

THE NEED IN TENNESSEE

The supply of nurses across the nation is inadequate to meet the health needs of our people. The need in Tennessee is critical. Our state approximates only a bit above half of the proposed national ratio of 350 nurses per 100,000 population. For several years, Tennessee has lost more nurses to other states than it has attracted.

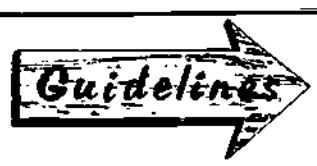
Quantity alone is not the total problem. Quality of care available to the public must be improved to safeguard the health of Tennessee's citizenry.

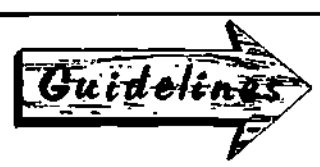
Tennessee Nurses' Association is committed to exploring and actively promoting all appropriate avenues which can lead to increased quality and quantity of nursing. The technical program in nursing offers one realistic means of achieving a portion of our goal.

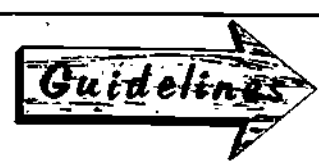
TECHNICAL EDUCATION IN NURSING

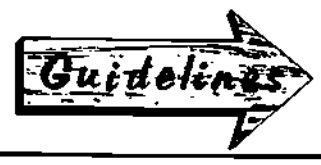
Nursing practice involves many kinds of activities, ranging from simple to complex, and requiring preparation at varying levels for efficient performance of these. Technical education purports to prepare a nurse at a semi-professional level. The educational program includes the basic and nursing sciences which enable the graduate to practice nursing at a level requiring skill and technical competence. The technical nurse is expected to exercise considerable judgment based on knowledge and understanding. Graduates of these programs are eligible to write the state licensing examination to become a Registered Nurse.

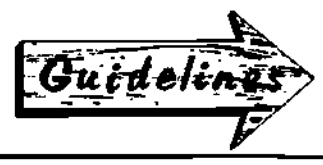
Programs preparing technical nurses include liberal arts and general education offerings which promote the personal and cultural development of the nurse. Technical nursing programs fit well into the concept











of terminal and semi-professional programs found in junior community colleges and some senior colleges. These programs lead to the granting of an associate degree.

It is believed that well prepared technical nurses can complement and supplement the supply and efforts of professional nurses. The American Nurses' Association endorses the preparation of both technical and professional nurses toward the end of better nursing care for our citizenry.

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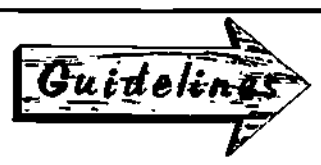
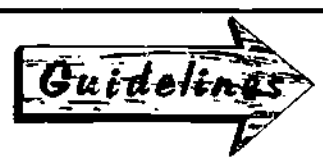
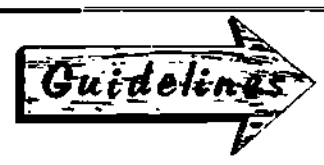
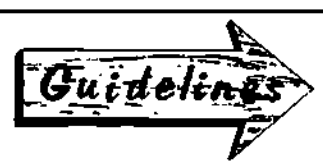
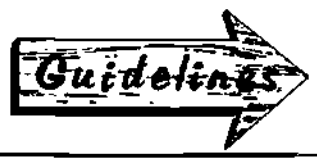
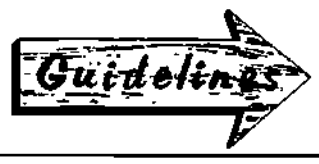


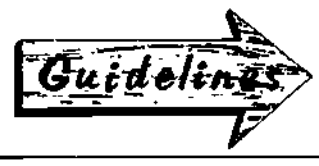












4. Interpreting program, goals, objectives, and functional level of graduates clearly.
5. Planning program evaluation as an on-going process.

THE STUDENTS

1. Meet standards for admission and graduation as required by college.
2. Meet any additional standards set by the nursing department.
3. Eligible to participate in regular college activities.
4. Eligible to take state licensing examination upon graduation.

The Tennessee Nurses' Association is grateful to the Western Council for Higher Education in Nursing (WCHEN) for granting permission for Tennessee Nurses' Association to incorporate into this publication some materials prepared by the Council for its brochure *Guidelines for Developing Associate Degree Programs in the West.*

THE TNA'S BELIEFS ABOUT NURSING EDUCATION

The Tennessee Nurses' Association, the professional organization for registered nurses in Tennessee, is a constituent of the American Nurses' Association. The Association is committed to activities which will elevate the standards of nursing education, as well as nursing practice.

The Association helieves that the education of registered nurses should be recognized as a proper and vital function of the institutions of higher learning in Tennessee, both public and private. The Association also believes that primary responsibility for nursing education, both basic and graduate, should be recognized as an obligation of tax-supported institutions of higher learning in Tennessee. We further believe that there is a distinct need for statewide planning for

5. Finances sufficient to cover the cost of the program which would include provision for adequate educational facilities and secretarial assistance.

THE ADMINISTRATOR OF THE NURSING PROGRAM

Qualifications

1. A master's degree in nursing as minimum academic preparation.
2. Adequate educational and practical experience in nursing and administration.
3. Well-versed, either through academic preparation or experience, in the philosophy and objectives of education for an associate degree.

Responsibilities

1. Planning period approximately one year prior to admission of students.
2. Initiating contractural agreements with community agencies.
3. Providing leadership in development of the nursing curriculum.
4. Coordinating program with college administration, clinical agencies, and the Tennessee Board of Nursing.

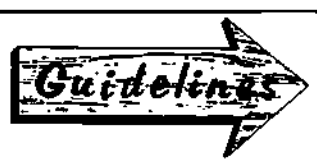
THE FACULTY

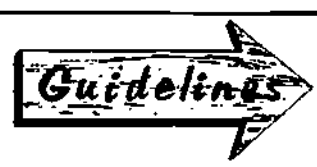
Qualifications

1. A master's degree in nursing as minimum academic preparation.
2. Adequate experience in nursing practice.

Responsibilities

1. Curriculum planning with appropriate consultation from community groups.
2. Selecting clinical experiences in cooperation with designated agencies.
3. Teaching in the classroom and clinical areas of the designated agencies.





VT 006 150
Shoobs, Dorothy
Residence and Migration of Students in Professional Nursing Programs in New York State.

New York State Education Dept., Albany. Div. of Professional Education
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 68 47p.

*MIGRATION; *STUDENTS; *NURSING; *EDUCATIONAL PROGRAMS
NEW YORK

To provide data for regional planning for nursing education, questionnaires were mailed in 1965 to all schools of nursing registered by the New York State Education Department. Data were returned by all of the 136 schools contacted. Some of the findings regarding interstate migration were: (1) Of 18,830 students enrolled in registered nurse programs, 2,749 came from out of state, (2) Of the out-of-state students, 2,287 were enrolled in basic programs and 362 in programs for graduate nurses, (3) Of the out-of-state students 1,705 migrated to New York City, and (4) Out-of-state students comprised 11 perdent of the enrollment in hospital diploma programs, 29 percent in baccalaureate programs, 3 percent in associate degree programs, and 31 percent in masters and doctoral programs. Some of the findings regarding intrastate migration were: (1) One-third of all students migrate from their own geographical areas to other areas in the state, (2) New York City had the greatest in-migration--2,165, as compared to an out-migration of 362, (3) The Long Island area had the greatest out-migration--1,824, as compared to an in-migration of 160, and (4) The largest percentage of intrastate migration occurred in baccalaureate programs--56 percent of 2,496 students, the second largest in hospital diploma programs--34 percent of 9,274 students, and the lowest in associate degree programs--14 percent of 2,303 students, (JK)

VT 006 150

RESIDENCE AND MIGRATION OF STUDENTS IN PROFESSIONAL NURSING PROGRAMS

IN

NEW YORK STATE

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
DIVISION OF PROFESSIONAL EDUCATION

SPRING 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
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FOREWORD

This report is one of a series prepared by the nurse education staff, Division of Professional Education in cooperation with the Bureau of Statistical Services, State Education Department, to provide information about nurse education in New York State.

The present report deals specifically with the migration of New York State students enrolled in registered professional nurse preparing programs in the several geographic areas of the State. Students coming into the State are included in the study; students leaving the State are not.

It is anticipated that health professionals, as well as laymen concerned with meeting the health needs of the community will find this report useful in their planning activities.

Dorothy Shoobs, Instructor and Research Assistant, Division of Nursing Education, Teachers College, Columbia University, was employed by the State Education Department to write the report. Members of the study committee concerned in the development and preparation of the report are listed here.

Emily I. Gardner

Doris T. Geiss

Ruth C. Johnson

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INTRODUCTION

The New York State Education Department, Division of Professional Education, conducted a study of the migration of students of professional nursing in New York State in the fall of 1965. Migration studies of college students in general had been carried out in 1963 by the United States Office of Education and by the New York State Education Department's Office of Planning in Higher Education and Bureau of Statistical Services.[1,2]

The Federal study is concerned mainly with baccalaureate degree students, while the New York State study includes baccalaureate and associate degree students. The migration characteristics of nursing students were not identified in either of these studies. The current study concerns students enrolled for associate, baccalaureate, and higher degrees in nursing, and also those in hospital diploma programs. An effort was made to parallel previous State Education Department studies in nursing with data reported according to geographic area.[3]

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[1] U.S. Department of Health, Education, and Welfare, Office of Education. Bureau of Educational Research and Development. Residence and Migration of College Students, Fall 1963. Washington, D.C.

[2] The University of the State of New York. The State Education Department. Bureau of Statistical Services. Bureau of Research in Higher and Professional Education. Residence and Migration of College Students in New York State, Fall 1963. Albany, N.Y., 1965

[3] See Appendix I for map of geographic areas.

PURPOSE

The purpose of the study was to provide data for schools and regional planning groups on the migration of students in nursing programs. It is anticipated that this will facilitate regional planning for nursing education.

The study was designed to answer the following questions:

1. How many New York State residents were attending nursing schools in New York State in 1965?
2. Of the total enrollment in New York State schools of nursing, what percents of all students and of entering freshmen were New York State residents?
3. What geographic areas within New York State experienced greatest amounts of migration?
4. What were the debtor and creditor geographic areas in the preparation of nurses?
5. Did migration differ in the presence or absence of specific types of nursing programs?
6. What type of program caused the migration of New York State residents from their area of residence?
7. How many out-of-State residents attended schools of nursing in New York State in 1965?
8. How many students were enrolled in public and private institutions in 1965?

DESCRIPTION OF NURSING PROGRAMS

There are three types of programs which prepare students for beginning practice as registered professional nurses: baccalaureate degree, associate degree, and diploma programs. Baccalaureate programs are usually four academic years in length and are offered by senior colleges or universities. Associate degree programs, usually two academic years

in length, are offered by two-year colleges. Diploma programs, two to three years in length, are conducted by hospitals.

Graduate preparation through masters and doctoral programs prepare nurses for teaching, supervision, administration, and research in nursing.

Registered professional nurses who have graduated from associate degree or diploma programs may be enrolled in baccalaureate nursing programs.[4]

METHODOLOGY

In March 1965, a sample of the questionnaire[5] developed by the nurse education staff, Division of Professional Education, was mailed to directors of all schools of nursing registered by the State Education Department. This was intended to alert the schools to the proposed study. Data were actually collected in October 1965 when a second copy of the questionnaire[6] was mailed to all the schools. Follow-up telephone calls were made when necessary to verify the returns. Data were returned by all of the 136 schools contacted for this study.

---

[4] In 1965, RN students were enrolled in baccalaureate degree programs at Adelphi University, D'Youville College, Hunter College, Long Island University, New York University, Russell Sage College, SUNY at Buffalo and Plattsburgh, Syracuse University, Teachers College, Columbia University, and the University of Rochester.

[5] See Appendix II

[6] See Appendix II

FINDINGS

New York State Residents in Schools of Nursing

Of the 18,830 full and part-time students enrolled in all New York State professional nursing programs in 1965, 85 percent (16,081) were New York State residents, and 15 percent (2,749) came from areas outside of the State. (See Table 1, page 5)

The highest percentage of State residents was found in the associate degree programs where 97 percent (2,303) of the 2,377 students lived in New York State. Eighty-nine percent (9,274) of the 10,459 students in diploma programs were residents of the State.

Seventy-one percent (2,496) of the 3,524 students in basic baccalaureate programs resided in New York State. State residents accounted for 70 percent (584) of the 830 masters degree students. Only 58 percent (82) of the 141 doctoral degree candidates in nursing lived in New York State. Eighty-nine percent (1,342) of the registered nurses enrolled in baccalaureate nursing programs in 1965 were residents of New York State.

Full-Time Students

Eighty-five percent of the 17,362 students enrolled full-time in New York State nursing education programs in 1965 were residents of New York State, and 15 percent (2,575) came from other states, territories, and foreign countries.

As shown in Table 2, page 7, the three private and 22 public associate degree programs in nursing attracted 97 percent (2,238) of their 2,307 full-time students from the State.

TABLE 1

MIGRATION PATTERNS OF ALL STUDENTS
ENROLLED IN NEW YORK STATE PROFESSIONAL NURSING PROGRAMS
BY TYPE OF PROGRAM AND CONTROL
1965

Type of Program and Control	Number of Programs	Number of Students in New York State Schools	Students Who Came From			
			New York State		Out of State	
			N	Percent [a]	N	Percent [a]
Basic Nursing Programs						
Diploma						
Public	26	2,986	2,616	25	370	3
Private	63	7,473	6,658	64	815	8
Total	89	10,459	9,274	89	1,185	11
Associate Degree						
Public	22	2,248	2,183	92	65	3
Private	3	129	120	5	9	-
Total	25	2,377	2,303	97	74	3
Baccalaureate Degree						
Public	3	882	871	25	11	-
Private [b]	18	2,642	1,625	46	1,017	29
Total	21	3,524	2,496	71	1,028	29
Total Basic Programs	135	16,360	14,073	86	2,287	14
Baccalaureate Nursing Programs with RN Students						
Public	3	309	308	21	1	-
Private	8	1,190	1,034	68	156	11
Total	11	1,499	1,342	89	157	11
Total Baccalaureate Nursing Programs with RN Students	11	1,499	1,342	89	157	11
Graduate Nursing Programs						
Masters Degree						
Public	3	125	120	14	5	1
Private	8	705	464	56	241	29
Total	11	830	584	70	246	30
Doctoral Degree						
Public	0	-	-	-	-	-
Private	2	141	82	58	59	42
Total	2	141	82	58	59	42
Total Graduate Programs	13	971	666	69	305	31
Total Enrollment in All Nursing Programs		18,830	16,081	85	2,749	15

[a] Rounded to 100 Percent
[b] Includes one masters degree program in basic nursing

Diploma programs drew 89 percent (9,274) of their 10,458 full-time students from New York State. In the basic baccalaureate programs, it was found that 71 percent (2,476) of the 3,498 full-time students lived in New York State. Sixty percent (266) of the 440 people working full-time towards a masters degree in nursing were from New York State.

The only two doctoral programs in the State specifically designed for nurses are located in private universities in New York City. They show the lowest percentage of State residents; 50 percent (38) of their 75 full-time students come from within the State.

Thus, while 86 percent (13,988)of full-time basic students were New York State residents, only 59 percent (304)of full-time graduate students resided in New York State.

In the baccalaureate programs which admit students who are registered professional nurses, 84 percent (495) of the 584 full-time students were New York State residents.

Part-Time Students

There were relatively few part-time students in those basic nursing programs which provide initial preparation for the beginning practitioner. Diploma programs reported only one part-time student. Two-thirds of the part-time students were freshmen in the associate degree and baccalaureate programs. This may be due to the fact that students in these programs are permitted to enroll for part-time study while taking their liberal arts foundation courses prior to their nursing subjects. Only eight percent of the 18,830 students in nursing programs attended school part-time.

Eighty-eight percent (1,294) of the 1,468 part-time students lived

TABLE 2

MIGRATION PATTERNS OF FULL-TIME STUDENTS
ENROLLED IN NEW YORK STATE NURSING PROGRAMS
BY TYPE OF PROGRAM AND CONTROL
1965

Type of Program and Control	Number of Programs	Number of Full-Time Students in New York State Schools	Students Who Came From			
			New York State		Out of State	
			N	Percent [a]	N	Percent [a]
Basic Nursing Programs						
Diploma						
Public	26	2,985	2,616	25	369	3
Private	63	7,473	6,658	64	815	8
Total	89	10,458	9,274	89	1,184	11
Associate Degree						
Public	22	2,182	2,121	92	61	2
Private	3	125	117	5	8	1 [b]
Total	25	2,307	2,238	97	69	3
Baccalaureate Degree						
Public	3	1,015	897	26	118	3
Private [c]	18	2,483	1,579	45	904	26
Total [c]	21	3,498	2,476	71	1,022	29
Total Basic Programs	135	16,263	13,988	86	2,275	14
Baccalaureate Nursing Programs with RN Students						
Public	3	145	144	24	1	1
Private	8	439	351	60	88	15
Total	11	584	495	84	89	16
Total Baccalaureate Nursing Programs with RN Students	11	584	495	84	89	16
Graduate Nursing Programs						
Masters Degree						
Public	3	53	51	11	2	1
Private	8	387	215	49	172	39
Total	11	440	266	60	174	40
Doctoral Degree						
Public	0	-	-	-	-	-
Private	2	75	38	50	37	50
Total	2	75	38	50	37	50
Total Graduate Programs	13	515	304	59	211	41
Total Full-Time Enrollment in All Nursing Programs		17,362	14,787	85	2,575	15

[a] Rounded to 100 Percent
[b] Actual number is .003
[c] Includes one masters degree program in basic nursing

in New York State. (See Table 3, page 9) The highest percentage of New York State residents among part-time nursing students (93 percent) was enrolled in associate and baccalaureate degree programs. In basic baccalaureate programs, 77 percent (20) of the students were from New York State. Eighty-two percent (318) of the masters degree candidates on part-time study were residents of New York State and 67 percent (44) of the doctoral candidates in nursing programs in New York State were residents of the State.[7]

Eighty-nine percent (85) of the 97 part-time students in basic nursing programs resided in New York State. Among the 456 graduate part-time students who are engaged in masters and doctoral study, the percentage of students from New York State was 79 percent (362).

Freshmen Students -- Full-Time and Part-Time

Eighty-eight percent (5,414) of the 6,146 freshmen students full- and part-time entering nursing schools in 1965 were New York State residents. (See Table 4, page 10) This was two percent above the percentage (86) of all State residents enrolled in basic nursing programs at that time.

New York State residents accounted for 96 percent (1,322) of the full-time freshmen students in associate degree nursing programs, and for 91 percent (40) of the part-time freshmen in such programs.

Eighty-eight percent (3,125) of freshmen in diploma programs lived in New York State. Seventy-nine percent (918) of full-time baccalaureate

[7]Only doctoral candidates registered in universities in the Fall of 1965 are included. Omitted are an almost equal number who have finished their course requirements, but may be engaged in their doctoral research although not in attendance at the university.

TABLE 3

MIGRATION PATTERNS OF PART-TIME STUDENTS
ENROLLED IN NEW YORK STATE NURSING PROGRAMS
BY TYPE OF PROGRAM AND CONTROL
1965

Type of Program and Control	Number of Part-Time Students in New York State Schools	Students Who Came From			
		New York State		Out of State	
		N	Percent [a]	N	Percent [a]
Basic Nursing Programs					
Diploma	1	-	-	1	-
Associate Degree					
Public	66	62	89	4	6
Private	4	3	4	1	1
Total	70	65	93	5	7
Baccalaureate Degree					
Public	3	3	12	-	-
Private	23	17	65	6	23
Total	26	20	77	6	23
Total Basic Programs	97	85	89	12	11
Baccalaureate Nursing Programs with RN Students					
Public	164	164	18	-	-
Private	751	683	75	68	7
Total	915	847	93	68	7
Total Baccalaureate Nursing Programs with RN Students	915	847	93	68	7
Graduate Nursing Programs					
Masters Degree					
Public	72	69	18	3	1
Private	318	249	64	69	17
Total	390	318	82	72	18
Doctoral Degree					
Public	-	-	-	-	-
Private	66	44	67	22	33
Total	66	44	67	22	33
Total Graduate Programs	456	362	79	94	21
Total Part-Time Enrollment in All Nursing Programs	1,468	1,294	88	174	12

[a]Rounded to 100 Percent

TABLE 4

MIGRATION PATTERNS OF FRESHMEN STUDENTS ENROLLED
IN NEW YORK STATE NURSING PROGRAMS
BY TYPE OF PROGRAM AND CONTROL, 1965

Type of Basic Nursing Program and Control	Number of Freshmen in New York State Schools	Students Who Came From			
		New York State		Out of State	
		N	Percent [a]	N	Percent [a]
Full-Time Attendance					
Diploma					
Public	1,146	987	28	159	5
Private	2,400	2,138	60	262	7
Total	3,546	3,125	88	421	12
Associate Degree					
Public	1,266	1,224	89	42	3
Private	104	98	7	6	1
Total	1,370	1,322	96	48	4
Baccalaureate Degree[b,c]					
Public	399	397	34	2	1
Private[b,c]	767	521	45	246	20
Total[b,c]	1,166	918	79	248	21
Total Full-Time Freshmen	6,082	5,365	88	717	12
Part-Time Attendance					
Diploma					
Public	-	-	-	-	-
Private	-	-	-	-	-
Total	-	-	-	-	-
Associate					
Public	40	37	84	3	7
Private	4	3	7	1	2
Total	44	40	91	4	9
Baccalaureate Degree					
Public	-	-	-	-	-
Private	20	9	46	11	54
Total	20	9	46	11	54
Total Part-Time Freshmen	64	49	70	15	30
Total All Freshmen	6,146	5,414	88	732	12

[a]Rounded to 100 Percent
[b]Students entering in the junior year are omitted
[c]Includes one masters degree program in basic nursing

freshmen[8] resided in New York but only 46 percent (9) of the part-time baccalaureate freshmen in nursing programs were State residents.

When all freshmen attending nursing programs were considered, it was found that 88 percent of the full-time students and 70 percent of the part-time students were residents of New York State.

Intrastate Migration of Students

There is a considerable amount of migration among New York State residents in search of nursing education facilities. Table 5, page 12 shows the migration patterns of New York State students in each area by type of program.

In 1965, 5,361 State residents attended schools of nursing in geographic areas other than their own. That was 33 percent of the 16,081 nursing students studying in New York State who were State residents.

New York City showed the greatest amount of migration with 2,165 students from other areas of New York State coming into its nursing programs, and 362 residents attending nursing schools elsewhere in the State. (This study did not include those students who entered programs in other States.) Long Island is next in order of migration but for reasons quite the converse. It lost 1,824 nursing students to other areas in New York State, and gained only 160 people from within the State. In third place is the Buffalo Area where 494 students migrated in from other areas and 307 left to study in other areas of New York State.

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[8]Columbia University, Cornell University, and the University of Rochester admit students to nursing programs in their junior year. These students have completed most of their liberal arts course requirements.

TABLE 5

INTRASTATE MIGRATION OF STUDENTS
IN ALL TYPES OF NURSING PROGRAMS BY
GEOGRAPHIC AREA IN NEW YORK STATE, 1965

Geographic Area	In-Migration "Out of Area" Students in Program in "This Area"					Out-Migration "This Area" Students in Program "Out of Area"					Net Migration In-Migration minus Out-Migration					Total In-Migration plus Out-Migration
	Diploma	AAS	BS	RN[a]	Total	Diploma	AAS	BS	RN[a]	Total	Diploma	AAS	BS	RN[a]	Total	
Binghamton	73	-	79	-	152	171	29	66	2	268	-98	-29	+13	-2	-116	420
Buffalo	88	5	371	30	494	169	33	93	12	307	-81	-28	+278	+18	+187	801
Capital District	286	26	116	11	439	147	18	109	15	289	+139	+8	+7	-4	+150	728
Elmira	126	60	68	-	254	146	8	66	10	230	-20	+52	+2	-10	+24	484
Long Island	31	32	39	58	160	1364	32	300	128	1824	-1333	-	-261	-70	-1664	1984
Lower Hudson	194	11	-	-	205	213	38	171	124	546	-19	-27	-171	-124	-341	751
Mid-Hudson	208	53	-	-	261	183	10	105	48	346	+25	+43	-105	-48	-85	607
Mohawk Valley	151	23	-	-	174	172	27	63	5	267	-21	-4	-63	-5	-93	441
New York City	1552	41	240	332	2165	143	44	118	57	362	+1409	-3	+122	+275	+1803	2527
Northern	57	-	294	1	352	114	34	37	13	198	-57	-34	+257	-12	+154	550
Rochester	198	13	115	7	333	197	32	174	23	426	+1	-19	-59	-16	-93	759
Syracuse	232	54	77	9	372	177	13	97	11	298	+55	+41	-20	-2	+74	670
Total	3196	318	1399	448	5361	3196	318	1399	448	5361	0	0	0	0	0	10722

[a]RN in baccalaureate, masters, and doctoral programs

Three hundred thirty-three students of nursing from other areas of New York State entered programs in Rochester in 1965, while 426 students left to attend programs in other New York State schools of nursing. The Lower Hudson area gained 205 nursing students from New York State although it lost 546 such students. The majority left to attend various collegiate nursing programs within the State. Nursing students coming to the Capital District from outside the area, but from within New York State, numbered 439, but 289 other students of nursing left to attend nursing schools elsewhere within the State.

All other areas show decreasing amounts of total migration.

Debtor and Creditor Areas

The geographic areas which lose and gain students through intrastate migration have been labeled debtor and creditor areas. These gains and losses are presented in Table 6, page 14.

Long Island sustains the greatest net loss with a deficit of 1,664 students of nursing. The percentage loss of students from the area is shown in Table 7, page 15. Sixty-two percent of 2,927 nursing students who are residents of the Long Island Area, migrated to nursing programs in other areas of the State. These findings are consistent with those of the State Education Department's study, Residence and Migration of College Students in New York State, Fall, 1963.[9] That study explains the loss by comparing the number of students desiring educational facilities from the area with the number of places available there. A great lack in the number of college facilities was found. While the present study does not include the number of places available in nursing programs,

[9] Op. cit.

a look at Table 8, page 16 indicates that there may be insufficient educational facilities to fulfill the needs of those from the Long Island area who wish to study nursing within their own geographic area.

TABLE 6

DEBTOR AND CREDITOR AREAS BY INTRASTATE GAIN OR LOSS OF STUDENTS IN ALL TYPES OF NURSING PROGRAMS IN NEW YORK STATE, 1965

Rank Order	Debtor Area	Net Loss	Rank Order	Creditor Area	Net Gain
1	Long Island	-1664	1	New York City	+1803
2	Lower Hudson	- 341	2	Buffalo	+ 187
3	Binghamton	- 116	3	Northern	+ 154
4.5	Mohawk Valley	- 93	4	Capital District	+ 150
4.5	Rochester	- 93	5	Syracuse	+ 74
6	Mid-Hudson	- 85	6	Elmira	+ 24

The Lower Hudson area which has no baccalaureate or higher degree nursing programs showed a net loss of 341 students of nursing. The out-migration from this area was 63 percent of the total (865).

Binghamton ranked in third place among debtor areas. Although it attracted 152 students from other areas of New York State to its diploma and baccalaureate programs in nursing, the migration into the area was not enough to offset the losses. This resulted in a deficit of 116. The out-migration from the area was 61 percent.

Mohawk Valley and Rochester both sustained net losses of 93, although Rochester had attracted 333 students while Mohawk Valley attracted 174. The Mid-Hudson area had a net loss of 85 students.

New York City placed first in rank order of the five areas which gain the most nursing students with a net gain of 1,803 persons from other areas in New York State. It is significant here that only 8 percent migrated from the area. The Buffalo Area was next with a net gain from within the State of 187 despite a loss of 307. Fifteen percent of students migrated from the area. The Northern Area and the Capital District gained 154 and 150 nursing students respectively, while Syracuse, which lost 298 students, had a net gain of 74. In the Elmira Area the greatest net gain occurred in associate degree nursing programs.

TABLE 7

PERCENT OF NURSING STUDENTS MIGRATING
FROM AREA OF RESIDENCE TO PROGRAMS IN OTHER GEOGRAPHIC
AREAS OF NEW YORK STATE, 1965

Geographic Area of Residence	Nursing Students from Geographic Area		
	Total Number	Out-Migration	
		Number	Percent
Lower Hudson	865	546	63
Long Island	2927	1824	62
Binghamton	436	268	61
Elmira	448	230	51
Mohawk Valley	549	267	48
Rochester	978	426	44
Syracuse	683	298	44
Mid-Hudson	802	346	43
Northern	510	198	39
Capital District	1043	289	28
Buffalo	2046	307	15
New York	4794	362	8

TABLE 8

NURSING EDUCATION PROGRAMS IN NEW YORK STATE
BY GEOGRAPHIC LOCATION AND CONTROL
WITH TOTAL ENROLLMENT, 1965

Geographic Location of School	Total Enrollment by Area	Diploma Program		Associate Degree Program		Baccalaureate Degree Program[a]		Admit students already licensed as RNs[a]					
								Baccalaureate Degree		Masters Degree		Doctoral Degree	
		Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Binghamton	395	2	1	-	-	-	1	-	-	-	-	-	-
Buffalo	2,376	2	6	2	1	1	2	1	1	1	-	-	-
Capital District	1,478	-	5	2	1	-	2	-	1	-	1	-	-
Elmira	582	-	3	2	-	-	1	-	-	-	-	-	-
Long Island	1,317	3	1	3	-	-	2	-	1	-	1	-	-
Lower Hudson	599	2	5	1	-	-	-	-	-	-	-	-	-
Mid-Hudson	778	3	5	2	1	-	-	-	-	-	-	-	-
Mohawk Valley	464	2	5[d]	1	-	-	-	-	-	-	-	-	-
New York City	8,302	7	21	6	-	1	6[b,c]	1	3[e]	1	4	-	2
Northern	670	1	4	-	-	1	-	1	-	1	-	-	-
Rochester	1,005	4	3	1	-	-	3[d]	-	1	-	1	-	-
Syracuse	864	-	4	2	-	-	1	-	1	-	1	-	-
Total	18,830	26	63	22	3	3	18	3	8	3	8	-	2

[a]An institution may have more than one type of nursing program.

[b]Includes one masters program in basic nursing.

[c]Includes two programs admitting students in this junior year.

[d]Includes one program admitting students in their junior year.

[e]Includes one program which is closing.

Migration and Nursing Programs

The data were inspected to see whether or not migration differed in the presence or absence of specific types of nursing programs.[10] Tables 9 and 10, page 18 illustrate the difference in the number of educational facilities between those areas of the State which attract students of nursing, and those areas which lose students to other localities.

The six geographic areas which attract the most students contain 33 public and 71 private educational programs in nursing. In contrast to this, the six areas which lose the most students of nursing contain only 24 public and 31 private programs in nursing. The out-migration appears to be related to the number of nursing programs in the geographic area. There was greater out-migration in those areas with the fewest number of programs.

Migration into Specific Programs

Tables 11 through 14, pages 19-22 show the migration of New York State residents who are students of nursing in relation to specific types of educational programs.

Fifty-six percent (1,399) of the 2,496 students who are residents of New York State and are enrolled in baccalaureate programs have migrated to their schools from other geographic areas of the State. This percentage compares with 40 percent of all full-time students who migrate to study in all types of baccalaureate programs in New York State.[11]

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[10] See Table 8, page 16

[11] The University of the State of New York, the State Education Department, Bureau of Statistical Services, Bureau of Research in Higher Education. Residence and Migration of College Students in New York State, Fall 1963. Albany, New York, 1965. Table 6

TABLE 9

EDUCATIONAL FACILITIES IN NEW YORK STATE
IN CREDITOR AREAS, BY TYPE AND CONTROL
1965

Creditor Area	Educational Facilities[a] by Type and Control													
	Diploma		AAS		BS		Masters		Doctoral		BS for RN		Total	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
New York	7	21	6	-	1	6	1	4	-	2	1	3	16	36
Capital District	-	5	2	1	-	2	-	1	-	-	-	1	2	10
Buffalo	2	6	2	1	1	2	1	-	-	-	1	1	7	10
Syracuse	-	4	2	-	-	1	-	1	-	-	-	1	2	7
Northern	1	4	-	-	1	-	1	-	-	-	1	-	4	4
Elmira	-	3	2	-	-	1	-	-	-	-	-	-	2	4
Total	10	43	14	2	3	12	3	6	-	2	3	6	33	71

TABLE 10

EDUCATIONAL FACILITIES IN NEW YORK STATE
IN DEBTOR AREAS, BY TYPE AND CONTROL
1965

Debtor Area	Educational Facilities[a] by Type and Control													
	Diploma		AAS		BS		Masters		Doctoral		BS for RN		Total	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Long Island	3	1	3	-	-	2	-	1	-	-	-	1	6	5
Lower Hudson	2	5	1	-	-	-	-	-	-	-	-	-	3	5
Mohawk Valley	2	5	1	-	-	-	-	-	-	-	-	-	3	5
Binghamton	2	1	-	-	-	1	-	-	-	-	-	-	2	2
Mid-Hudson	3	5	2	1	-	-	-	-	-	-	-	-	5	6
Rochester	4	3	1	-	-	3	-	1	-	-	-	1	5	8
Total	16	20	8	1	-	6	-	2	-	-	-	2	24	31

[a] An institution may have more than one type of nursing program.

TABLE 11

NET MIGRATION BY GEOGRAPHIC AREA OF
STUDENTS IN NEW YORK STATE
BACCALAUREATE DEGREE NURSING PROGRAMS
LEADING TO LICENSE AS REGISTERED NURSE
FALL 1965

Geographic Area	In-Migration "Out of Area" Residents Attending Program in "This Area" (1)	Out-Migration Residents of "This Area" Attending Program "Out of Area" (2)	Net Migration Column (1) minus Column (2)
Binghamton	79	66	+ 13
Buffalo	371	93	+278
Capital District	116	109	+ 7
Elmira	68	66	+ 2
Long Island	39	300	-261
Lower Hudson	--	171	-171
Mid-Hudson	--	105	-105
Mohawk Valley	--	63	- 63
New York City	240	118	+122
Northern	294	37	+257
Rochester	115	174	- 59
Syracuse	77	97	- 20
Total	1,399	1,399	0

TABLE 12

NET MIGRATION BY GEOGRAPHIC AREA OF
STUDENTS IN NEW YORK STATE
HOSPITAL DIPLOMA PROGRAMS
FALL 1965

Geographic Area	In-Migration "Out of Area" Residents Attending Program In "This Area" (1)	Out-Migration Residents of "This Area" Attending Program "Out of Area" (2)	Net Migration Column (1) minus Column (2)
Binghamton	73	171	- 98
Buffalo	88	169	- 81
Capital District	286	147	+ 139
Elmira	126	146	- 20
Long Island	31	1,364	-1,333
Lower Hudson	194	213	- 19
Mid Hudson	208	183	+ 25
Mohawk Valley	151	172	- 21
New York City	1,552	143	+1,409
Northern	57	114	- 57
Rochester	198	197	+ 1
Syracuse	232	177	+ 55
Total	3,196	3,196	0

TABLE 13

NET MIGRATION BY GEOGRAPHIC AREA OF
STUDENTS IN NEW YORK STATE
ASSOCIATE DEGREE NURSING PROGRAMS
FALL 1965

Geographic Area	In-Migration "Out of Area" Residents Attending Program In "This Area" (1)	Out-Migration Residents of "This Area" Attending Program "Out of Area" (2)	Net Migration Column (1) minus Column (2)
Binghamton	--	29	-29
Buffalo	5	33	-28
Capital District	26	18	+ 8
Elmira	60	8	+52
Long Island	32	32	0
Lower Hudson	11	38	-27
Mid-Hudson	53	10	+43
Mohawk Valley	23	27	- 4
New York City	41	44	- 3
Northern	--	34	-34
Rochester	13	32	-19
Syracuse	54	13	+41
Total	318	318	0

TABLE 14

NET MIGRATION BY GEOGRAPHIC AREA OF
STUDENTS IN NEW YORK STATE NURSING PROGRAMS LEADING TO
BACCALAUREATE, MASTERS, DOCTORAL DEGREES
FOR STUDENTS ALREADY LICENSED AS REGISTERED NURSES
FALL 1965

Geographic Area	In-Migration "Out of Area" Residents Attending Program In "This Area" (1)	Out-Migration Residents of "This Area" Attending Program "Out of Area" (2)	Net Migration Column (1) minus Column (2)
Binghamton	--	2	- 2
Buffalo	30	12	+ 18
Capital District	11	15	- 4
Elmira	--	10	- 10
Long Island	58	128	- 70
Lower Hudson	--	124	-124
Mid-Hudson	--	48	- 48
Mohawk Valley	--	5	- 5
New York City	332	57	+275
Northern	1	13	- 12
Rochester	7	23	- 16
Syracuse	9	11	- 2
Total	448	448	0

In the diploma programs, 34 percent (3,196) of the 9,274 State residents enrolled have migrated from one geographic area of the State to another.

In general, two-year colleges tend to draw their student population from the home locality. This tendency was also noted for nursing students in associate degree nursing programs. Only 14 percent (318) of the 2,303 student nurses who reside within New York State and are attending associate degree programs have migrated from another geographic area of the State.

Twenty-two percent (448) of the 2,008 New York State residents who are studying for degrees in programs which admit persons already licensed as registered nurses have migrated within the State.

The number of out-of-State residents migrating into New York State will be discussed in the section on out-of-State residents.

Table 15, page 24 illustrates the number of students who did not migrate. As we have seen above, the associate degree students show little migration. Eighty-six percent of these nursing students chose to obtain their education in their local geographic areas. Seventy-eight percent of the students attending programs for students already licensed as registered nurses are attending schools in their home location. In interpreting this last figure, consideration should be given to the possibility that graduate nurses have changed their residences to areas where educational opportunities exist.

Two-thirds (66 percent) of the diploma school students in New York State are studying in hospital schools in their own geographic location.

TABLE 15

NEW YORK STATE RESIDENTS
ENROLLED IN NURSING PROGRAMS
IN THEIR HOME GEOGRAPHIC AREAS
FALL 1965

Geographic Area	Number of Students by Type of Program				
	Diploma	Associate Degree	Baccalaureate Degree	Baccalaureate and graduate Degree for RN	Total
Binghamton	154	--	14	--	168
Buffalo	882	172	387	298	1,739
Capital District	487	183	40	44	754
Elmira	129	82	7	--	218
Long Island	341	363	105	294	1,103
Lower Hudson	249	70	--	--	319
Mid-Hudson	292	164	--	--	456
Mohawk Valley	235	47	--	--	282
New York City	2,388	740	421	883	4,432
Northern	258	--	42	12	312
Rochester	386	104	55	7	552
Syracuse	277	60	26	22	385
Total	6,078	1,985	1,097	1,560	10,720

The basic baccalaureate programs for nurses in New York State contain the smallest number of students who remained in their home communities. Forty-four percent of these students attended programs in their own geographic areas.

Out-of-State Residents

In the fall of 1965, there were 2,749 students from outside of New York State registered within the State's nursing programs. The states bordering New York[12] sent 2,101 students into New York State schools of nursing. Four hundred and ninety-two students came from other states and territories; 156 students came here from other countries. Tables 16 and 17, pages 26 and 27 show the migration of out-of-State residents.

Of the twelve geographic areas in the State, the largest in-migration from other states occurred in New York City. Over 60 percent (1,705) of out-of-State students were enrolled in New York City institutions. The largest numbers came from the following states: New Jersey (675), Pennsylvania (265), and Connecticut (162). These 1,705 students comprised 21 percent of the total enrolled in New York City programs.

Forty-three percent of the out-of-State students who came to study in New York State attended diploma schools of nursing, three percent enrolled in associate degree programs, and 37 percent came to basic baccalaureate programs. The remaining 17 percent enrolled in baccalaureate and higher degree programs for students already licensed as registered nurses.

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[12] Connecticut, New Hampshire, New Jersey, Massachusetts, Ohio, Pennsylvania and Vermont

TABLE 16

MIGRATION OF OUT-OF-STATE STUDENTS
INTO NEW YORK STATE NURSING PROGRAMS
BY TYPE OF PROGRAM
1965

Location of Nursing School	Type of Nursing Program									
	Diploma		Associate Degree		Baccalaureate Degree		Baccalaureate and Graduate Degree for RN		Total	
	N	Percent	N	Percent [b]	N	Percent [b]	N	Percent [b]	N	Percent
Binghamton	48	4	--	--	27	3	--	--	75	3
Buffalo	70	6	5	7	64	6	4	1	143	5
Capital District	72	6	2	3	206	20	5	1	285	11
Elmira	46	4	5	7	59	6	--	--	110	4
Long Island	18	2	--	--	36	3	--	--	54	2
Mid-Hudson	41	3	20	27	--	--	--	--	61	2
Lower Hudson	52	4	23	31	--	--	--	--	75	3
Mohawk Valley	8	1	--	--	--	--	--	--	8	0
New York City	794	67	16	21	455	44	440	95	1,705	62
Northern	4	--	--	--	2	--	--	--	6	0
Rochester	9	1	--	--	108	11	3	1	120	4
Syracuse	23	2	3	4	71	7	10	2	107	4
Total	1,185	100	74	100	1,028	100	462	100	2,749	100

[a] Rounded to the nearest whole number.

[b] Rounded to make 100 Percent.

TABLE 17

MIGRATION OF OUT-OF-STATE STUDENTS
INTO NEW YORK STATE NURSING PROGRAMS
BY RESIDENCE OF STUDENTS
1965

Location of Nursing School	Permanent Residence of Students									
	Connecticut	New Hampshire	New Jersey	Massachusetts	Ohio	Pennsylvania	Vermont	Other States and Territories of United States	Foreign Countries	Total
Binghamton	2	--	14	5	--	47	--	6	1	75
Buffalo	8	1	30	7	4	71	1	16	5	143
Capital District	64	3	38	63	4	22	31	55	5	285
Elmira	5	1	27	7	1	60	--	6	3	110
Long Island	7	--	20	3	1	11	1	11	--	54
Lower Hudson	19	--	41	2	--	11	--	2	--	75
Mid-Hudson	9	1	24	5	--	10	--	11	1	61
Mohawk Valley	--	--	2	1	1	1	1	2	--	8
New York City	162	7	675	77	37	265	13	339	130	1,705
Northern	--	--	1	--	--	--	1	2	2	6
Rochester	6	2	26	14	2	38	4	25	3	120
Syracuse	5	--	35	13	2	25	4	17	6	107
Total	287	15	933	197	52	561	56	492	156	2,749

TABLE 18

DISTRIBUTION OF IN-STATE AND OUT-OF-STATE STUDENTS IN NEW YORK STATE NURSING PROGRAMS
BY TYPE OF PROGRAM AND CONTROL
1965

Type of Programs	Number of Students in New York State Nursing Programs	Residence of Students											
		New York State				Out-of-State				Total			
		Public		Private		Public		Private		Public		Private	
		N	%	N	%	N	%	N	%	N	%	N	%
Basic Nursing Programs													
Diploma	10,459	2,616	25	6,658	64	370	3	815	8	2,986	28	7,473	72
Associate Degree	2,377	2,183	92	120	5	65	3	9	-	2,248	95	129	5
Baccalaureate Degree	3,524	900	26	1,596	45	11	-	1,017	29	911	26	2,613	74
Total Basic Programs	16,360	5,699	35	8,374	51	446	3	1,841	11	6,145	38	10,215	62
Baccalaureate Nursing Programs with RN Students	1,499	308	21	1,034	69	1	-	156	10	309	21	1,190	79
Graduate Nursing Programs													
Masters Degree	830	120	14	464	56	5	1	241	29	125	15	705	85
Doctoral Degree	141	-	-	82	58	-	-	59	42	-	-	141	100
Total Graduate Programs	971	120	12	546	56	5	1	300	31	125	13	846	87
Total Enrollment in All Nursing Programs	18,830	6,127	32	9,954	53	452	3	2,297	12	6,579	36	12,251	64

Eighty-four percent (2,297) of the out-of-State students in New York State nursing programs were studying in institutions which were under private control and 16 percent (452) selected those under public control. (Table 18, page 28) In programs under private sponsorship, the largest number of out-of-State students (1,017) was found in the basic baccalaureate programs. In agencies with public sponsorship, the largest number of out-of-State students (370) was in diploma programs.

Enrollment in Public and Private[13] Institutions

Educational institutions and hospitals may be under the control of public (governmental)or private sponsors. Those under public control generally have lower or no tuition fees as compared with those under private sponsorship.

In 1965, 64 percent (12,251) of the students of nursing who were enrolled in New York State schools, were in schools which were under private control and 36 percent (6,579) attended schools under public control. Table 18, page 28, shows the distribution of these students.

Sixty-two percent (10,215) of the 16,360 nursing students in basic programs in New York State were located in privately controlled institutions, and 38 percent (6,145) were in publicly sponsored institutions.

Among students in agencies under public sponsorship the largest proportion (95 percent) was found in the associate degree programs; 88 percent of these were publicly supported. The diploma programs came next and enrolled 28 percent of the students in agencies under public sponsorship. Thirty percent of diploma programs were publicly supported.

[13]This term refers to voluntary, nonprofit agencies.

Twenty-six percent of the students on the basic baccalaureate level were enrolled in publicly supported programs. These programs comprised 14 percent of all basic baccalaureate programs.

On the graduate level, by far the largest majority of students were enrolled in privately sponsored nursing programs in New York State. Fifteen percent (125) of the 830 masters degree students were in the three programs under public control; this represents 27 percent of the masters degree programs in nursing. Since there were no publicly supported doctoral programs in New York State, all doctoral degree candidates (141) were enrolled in the two privately sponsored nursing programs.

Twenty-seven percent of the baccalaureate programs that admit students licensed as registered professional nurses are publicly supported. Twenty-one percent (309) of these students were located in publicly supported programs.

Among all 159 professional nursing programs in the State, 57 programs (or 36 percent) are publicly supported. Thirty-eight percent of all New York State residents enrolled in the 159 nursing programs are in the publicly supported programs.

SUMMARY

A study of the migration of students in professional nursing programs in New York State was carried out in Fall of 1965 to provide data for regional planning groups and individual schools of nursing for the purpose of facilitating planning for nursing education. Major findings are summarized here.

Statewide Enrollment in Programs

As of October 1, 1965 a total of 18,830 students were enrolled in all types of professional nursing programs in New York State.

Of the 159 professional nursing programs in New York State, 57 were under public control. The 57 publicly controlled programs were distributed by type as follows: 22 associate degree, 26 hospital diploma, 3 baccalaureate degree, 3 baccalaureate degree for registered nurses, 3 masters degree. There are no publicly controlled doctoral level nursing programs.

Programs under private control enrolled 64 percent of the students of professional nursing.

Interstate Migration

Of all students (18,830) enrolled in professional nursing programs in New York State, 15 percent (2749) came from out-of-State.

Of the 2749 students from out-of-State, 2101 came from bordering States, i.e., Connecticut, Massachusetts, New Hampshire, New Jersey, Ohio, Pennsylvania, Vermont.

Of the 2749 students from out-of-State, 2287 were enrolled in basic nursing programs preparing for license, and 462 in programs for graduate nurses.

Of the 2749 students from out-of-State, 1705 or 62 percent migrated to New York City.

Out-of-State students comprised varying percents of the enrollment in the different types of basic preparing programs: 11 percent in hospital diploma programs, 29 percent in basic baccalaureate programs, but only 3 percent in associate degree programs.

Out-of-State students comprised 31 percent of the enrollment in masters and doctoral programs.

Intrastate Migration

A considerable amount of migration was found among New York State residents enrolled in nursing programs, with approximately one-third of all students migrating from their geographic areas to other areas in the State.[14]

The New York City area had the greatest in-migration of students (2165). The out-migration in this area was only 362 students.

The Long Island area had the greatest out-migration (1824). The in-migration was only 160 students.

In basic nursing programs, the largest percent of intrastate migration occurred in baccalaureate programs with 56 percent or 1399 of the 2496 enrolled students migrating within the State. The intrastate migration of students enrolled in hospital diploma programs was 34 percent, or 3196 of 9274 enrolled students. The lowest amount of intrastate migration occurred in associate degree programs with a migration of only 14 percent, or 318 of the 2303 enrolled students. In other words, associate degree nursing programs attract students mainly from the home locality.

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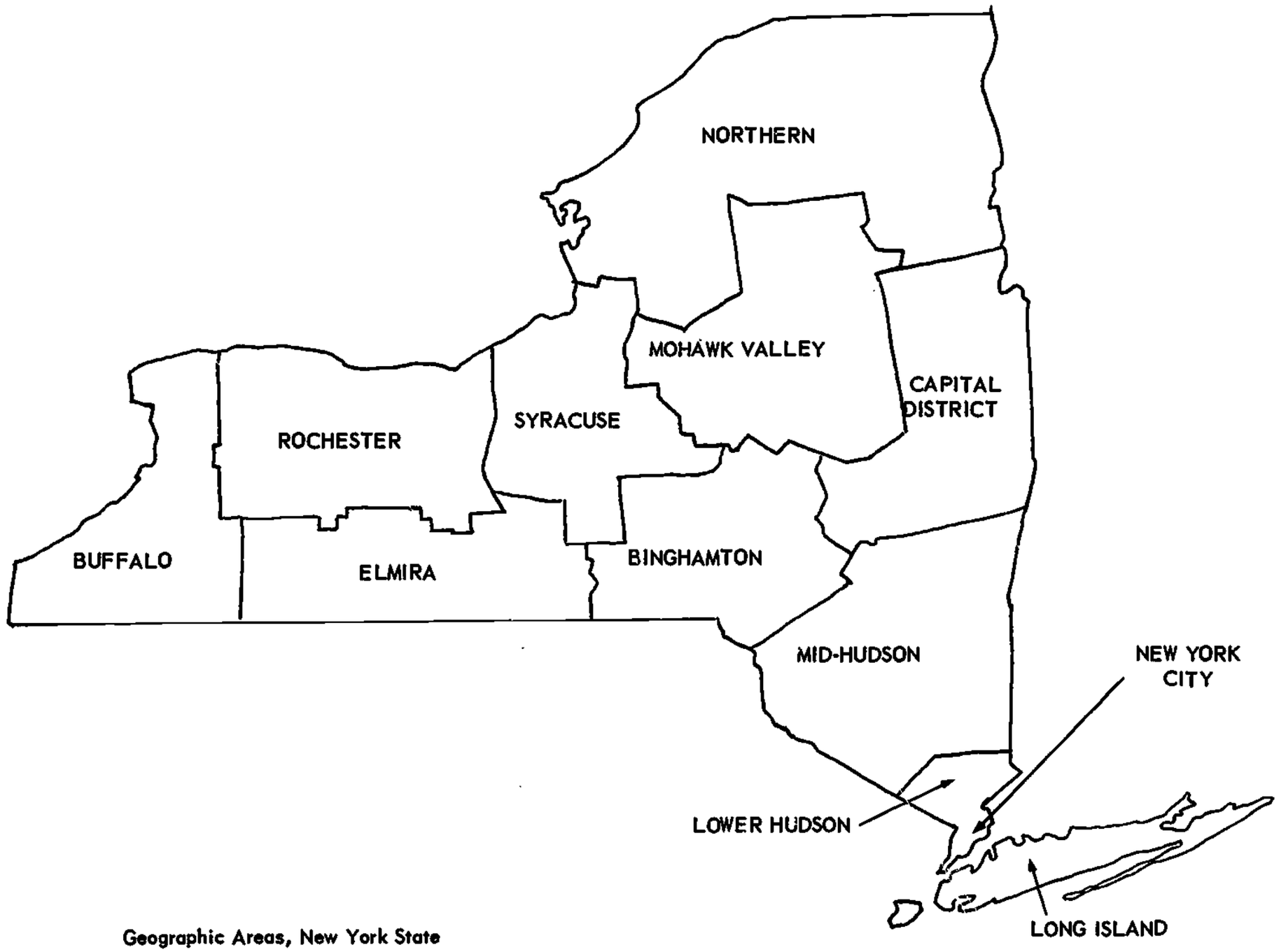
[14]To repeat, this study does not include figures for New York State students migrating to nursing programs in other states or countries.

Intrastate migration appeared to be related to the availability of nursing programs within a geographic area. The six geographic areas which gained the most students had over twice as many programs in nursing as the six geographic areas which lost the most students.

APPENDIX I

Map of Geographic Areas
New York State



Geographic Areas, New York State

APPENDIX II

Questionnaire and Accompanying
Letters and Directions

Appendix 2

THE UNIVERSITY OF THE STATE OF NEW YORK
The State Education Department
Division of Professional Education
Albany, New York 12224
Student Migration in Nursing Programs as of October 1, 1965

Name of Institution_____ Reporting Official Name_____

Address_____ County_____ Title_____

Directions: For all columns below record numbers of students by place of permanent residence.

	Area of Permanent Residence*	Undergraduates not Licensed as R. N.		Programs for Nurses with R. N.						Total		First Time First Year Freshmen	
				Baccalaureate		Masters		Doctorate					
		Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time
	Binghamton												
	Buffalo Area												
	Capital District												
	Elmira												
	Long Island												
	Lower Hudson												
	Mid Hudson												
	Mohawk Valley												
	New York City												
	Northern Area												
	Rochester												
	Syracuse												
A	TOTAL N. Y. STATE												
	Connecticut												
	New Hampshire												
	New Jersey												
	Massachusetts												
	Ohio												
	Pennsylvania												
	Vermont												
	Other States and Territories of the U. S.												
	Foreign Countries												
B	TOTAL OUTSIDE NEW YORK STATE												
	GRAND TOTAL A + B												

* See attached sheet for listing of counties included in each New York State Geographic Area.

The University of the State of New York
The State Education Department
Division of Professional Education

INSTRUCTIONS FOR COMPLETING QUESTIONNAIRE -- STUDENT MIGRATION IN NURSING PROGRAMS

On the attached form you are asked to tabulate full and part-time students separately according to level of attainment and place of permanent residence.

The levels of attainment specified on the form are:

1) Undergraduates not licensed as R.N. - include in this category all students who are not registered nurses.

2) Programs for registered nurses - include in this category only registered nurses matriculating for a degree. Students in this category are to be tabulated according to the degree for which they are currently matriculating (e.g. Baccalaureate, Masters or Doctorate).

3) Total - these columns will contain horizontal summations of part-time and full-time students.

4) First time, first year Freshmen - include in this category only those students listed under (1) above who are freshmen.

The places of permanent residence of the students are grouped according to New York State Geographic Areas (as defined on the back of this page), bordering states, other states and territories of the United States and foreign countries. Lines are provided for three totals, total New York State residents, total outside New York State residents and grand total. The entries on the grand total line should equal the total school enrollment for each of the categories.

COUNTIES INCLUDED IN EACH NEW YORK STATE GEOGRAPHIC AREA

Binghamton
- Broome
- Chenango
- Delaware
- Otsego

Buffalo Area
- Cattaraugus
- Chautauqua
- Erie
- Niagara

Capital District
- Albany
- Rensselaer
- Saratoga
- Schenectady
- Schoharie
- Warren
- Washington

Elmira
- Allegany
- Chemung
- Schuyler
- Steuben
- Tioga
- Tompkins

Long Island
- Nassau
- Suffolk

Lower Hudson
- Rockland
- Westchester

Mid-Hudson
- Columbia
- Dutchess
- Greene
- Orange
- Putnam
- Sullivan
- Ulster

Mohawk Valley
- Fulton
- Hamilton
- Herkimer
- Oneida
- Montgomery

New York City
- Bronx
- Kings
- Manhattan
- Queens
- Richmond

Northern Area
- Clinton
- Essex
- Franklin
- Jefferson
- Lewis
- St. Lawrence

Rochester
- Genesee
- Livingston
- Monroe
- Ontario
- Orleans
- Seneca
- Wayne
- Wyoming
- Yates

Syracuse
- Cayuga
- Cortland
- Madison
- Onondaga
- Oswego

The University of the State of New York
The State Education Department
Division of Professional Education
Albany, New York 12224

To: Directors, Programs in Nursing Date: March 8, 1965

From: Emily L. Creevey, Secretary, Board of Examiners of Nurses

Re: Study of student migration in schools of nursing

The Division of Professional Education, State Education Department, is planning to make a study of student migration in schools of nursing in New York State as of October 1, 1965. This study is similar to a recent statewide survey conducted in colleges and universities to determine all student migration (not differentiated by field of study). Your assistance is earnestly requested so that accurate figures on migration of students of nursing may be collected.

The results of the study will be made available to schools and regional planning groups concerned with nursing education.

We are enclosing a worksheet and instructions so the school can plan the collection of information for October 1965. Prior to that date a duplicate set of forms will be sent to the school, to be completed and returned to this office.

If you have questions about the worksheet, be sure to let us know.

The University of the State of New York
The State Education Department
Division of Professional Education
Albany, New York 12224

To: Directors, Programs in Nursing Date: September 15, 1965

From: Emily L. Creevey, Secretary, Board of Examiners of Nurses

Re: Study of student migration in schools of nursing

This follows our memorandum and enclosure on March 8, 1965. The worksheet and instructions sent then were identical with the present forms. We ask that you complete the migration questionnaire and return it in the enclosed envelope.

As you know, the Division of Professional Education, State Education Department is making a study of student migration in schools of nursing in New York State as of October 1, 1965. This study is similar to a recent statewide survey conducted in colleges and universities to determine all student migration (not differentiated by field of study). Your assistance is earnestly requested so that accurate figures on migration of students of nursing may be collected.

The results of the study will be made available to schools and regional planning groups concerned with nursing education.

If you have questions about the forms, be sure to let us know.

May we have this returned by October 15, 1965.

VT 006 349
Guide for Development and Administration of Coordinated Home Care Programs. PHS Pub; 1579.

Public Health Service (DHEW), Washington, D.C. Div. of Medical Care Administration
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Dec66 25p.

*COMMUNITY HEALTH SERVICES; ORGANIZATION; PROGRAM PLANNING; *PROGRAM ADMINISTRATION; PROGRAM COORDINATION; *PROGRAM DEVELOPMENT; *PROGRAM GUIDES; COMMUNITY PROGRAMS; *HOME PROGRAMS; HEALTH PROGRAMS

Home care is one part of a broad-spectrum services program--an added dimension of care. Administration of a home care program should provide services in a way which preserves traditional physician-patient relationships, and must be flexible to provide individual or multiple services for both short- and long-term care. Programs servicing home health services may be classified in the broad categories of (1) single-service, (2) multiple-service, and (3) coordinated. Coordinated home care provides for greater flexibility and comprehensiveness; however, the development of a community pattern for a program is dependent on community needs and resources, on the acceptance of the program and the feasible growth for that community. This guide was developed by representatives of eight national organizations concerned with the methods of providing health care and personal service in the home, and is intended to serve not as a policy manual, but as a reference useful in the development and administration of home care programs. (JK)

VT 006 349

ED039370

guide for

DEVELOPMENT AND ADMINISTRATION OF

Coordinated Home Care Programs

Prepared by:
American Medical Association
American Hospital Association
American Public Health Association
American Public Welfare Association
Blue Cross Association
National Association of Blue Shield Plans
National League for Nursing
Public Health Service

U S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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NATIONAL COUNCIL
FOR
HOMEMAKER SERVICES, INC.
1740 BROADWAY
NEW YORK, N. Y. 10019

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service

VT006349

Public Health Service Publication No. 1579

December 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Division of Medical Care Administration
Washington, D.C. 20201

Preface

This guide provides information to enable a group to organize and administer a coordinated home care program. It has been developed by representatives of eight national organizations concerned with the methods of providing health care and personal service in the home: American Hospital Association, American Medical Association, American Public Health Association, American Public Welfare Association, Blue Cross Association, National Association of Blue Shield Plans, National League for Nursing, and U.S. Public Health Service. Through joint efforts, these representatives of national organizations most concerned have delineated the steps involved in developing a coordinated home care program, identified the problems faced in its administration and described ways in which a program may be operated.

The guide is not a policy statement of these organizations but is being produced by them in the hope that it will serve as a useful reference to those who are interested in the development and administration of home care programs throughout the United States.

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Introduction

Over a period of years, the term "home care" has come to mean many different things in many different settings. Because of the diversity of developing programs and the several definitions used, confusion has arisen and there is need for clarification of terms in order to identify the coordinated home care program within the total framework of care of the sick at home.

In its broadest sense, home care is the provision of health care and supportive services to a sick or disabled person in his place of residence. This definition is descriptive ouly and program planners in any community will need to determine what kinds of home care services should be offered and what kinds of patients should receive them.

Home care, in the context of this publication, is one part of a broad-spectrum services program, which also includes ambulatory services in a physician's office, clinic, or hospital outpatient department and inpatient services in a hospital, nursing home, or other institution. It is an added dimension of care which is often the most appropriate method of providing services for selected patients. As a home care program is developed it should be planned to eventually provide service to all patients residing in the area who would benefit from the program. To be effective, a home care program should be operated in a manner that preserves traditional physician-patient relationships.

A home care patient, in general, is one whose needs and home and family situation are such that the care he requires can be provided most appropriately in his place of residence. Visits to a physician's office, clinic, or hospital outpatient department are not feasible or cannot meet all his medical care needs. He does not need professional observation and treatment 24 hours a day and the nursing and other therapeutic services his doctor prescribes may be brought to him on an intermittent basis, with good results.

Effective home care requires selection of patients in accordance with their needs and with the services available in the community. The earlier concept that coordinated home care programs should admit ouly patients with long-term illness requiring multiple services is changing as programs extend their services to include other types of patients. Patients who are convalescing from an illness, those who previously received treatment on an outpatient basis but are temporarily unable to do so, and certain patients with terminal illnesses are being successfully

cared for through coordinated home care programs. The home is not appropriate for all chronically ill patients in all stages of their illness. It can, however, be the most desirable setting for many more patients than are currently served.

Individuals receiving care in their homes differ and their needs vary in nature and degrees of intensity, just as they do in hospitals or other care settings. Thus, home care programs must be flexible to provide individual or multiple services for both short- and long-term care. In addition, the personnel who provide home care services must be sensitive and adaptable to the differing and changing medical care needs of each patient and must have evaluation machinery to perceive these changing needs periodically and as needed.

Many services may be provided to the patient receiving home care. These services are listed in Part II, Program Organization, page 9.

Programs providing home health services may be classified in three broad categories:

1. **A single-service home care program.** Such a program provides one health care or supportive service to patients at home. A common example of this type of program is the provision of home nursing care by a voluntary or official agency such as a visiting nurse association or public health department nursing service. Another example of a single-service agency would be a community homemaker-home health aide service or a home-delivered meals ("meals-on-wheels") program. It is quite possible for a given patient to be receiving a number of different home health services from many different single-service agencies, without coordination.

2. **A multiple-service home care program.** A number of organizations provide or arrange for two or more types of home health services to better meet the varied needs of patients they serve. For example, a visiting nurse association, health department nursing service, or hospital-based home care program, in addition to home nursing care, might provide physical therapy and homemaker-home health aide services.

3. **A coordinated home care program.** The multiplicity of needs demonstrated by many patients being cared for at home—particularly those with long-term chronic disease or disability—has provided impetus to the development of what are termed "coordinated home care programs." A coordinated home care program has been defined as "one that is *centrally administered*, and that through *coordinated planning*, *evaluation*, and *followup procedures* provides for *physician-directed* medical, nursing, social, and related services to *selected patients* at home." [1] Essentially, these programs are mechanisms for coordinat-

[1] Definition developed by the American Hospital Association, American Medical Association, Blue Cross Association, Inc., National Association of Blue Shield Plans, and U.S. Public Health Service—*Survey of Coordinated Home Care Programs*, P.H.S. Publication No. 1062, July 1963.

ing needed home health services directed to the patient's individual and changing needs.

These variations in the organizational structure of home health service programs in each community may stem from factors such as the type of patients provided for, the availability of personnel trained to render recommended services and the health and welfare resources of the community. The density of population, prevalence of chronic disease, and sources of financial support are other influencing factors.

Development of a community pattern for a program to provide home health services is dependent upon community needs and resources and on the program's acceptance and the feasible growth for that community.

If development of a coordinated home care program is the community goal, even though not immediately achievable, the most practical approach may be to begin with existing community resources and build on these as acceptance and support grow. In this fashion, a program providing home nursing services may add other services from time to time and finally complete the picture by centralizing the responsibility for service activities in a coordinated home care program.

The coordinated home care program provides for greater flexibility and comprehensiveness than is likely in other categories of home care programs. Coordinated home care provides each patient with an initial evaluation and periodic reevaluations, so that the services he receives, whether single or multiple, reach him in an orderly, systematic fashion as his requirements expand, diminish, or change. Thus, the coordinated home care program can serve as a resource to other community agencies for information and consultation on planning for continuity of patient care. Coordinated home care should be a goal for many communities. It is, in the long run, a practical structure for the delivery of essential services in an effective and efficient manner. This guide which deals with the development of coordinated home care programs recognizes the existence of other guides for the development of home care services. It does not, in any manner, attempt to standardize or stereotype home care programs.

Part I

COMMUNITY ORGANIZATION AND PUBLIC INFORMATION

A coordinated home care program may be initiated by any individual, groups of individuals, agency, institution, or association in a community recognizing the need for this service and willing to give the necessary leadership to its establishment and maintenance.

Communities, like individuals, are distinct and different from each other. Each has its own special characteristics and unique ways of meeting its needs. Solutions to problems encountered in establishing and operating a coordinated home care program must take cognizance of these local characteristics and be adapted to them.

The use of the community organization process and a good public information program can insure appropriate participation in the planning and development of a coordinated home care program by all agencies, organizations, and community groups concerned with it. These may include hospitals, local medical societies, visiting nurse associations, public health and welfare departments, voluntary health and social agencies, prepayment agencies, and various lay groups. In some communities existing broadly based planning groups such as an areawide health facility planning agency or a health and welfare council may act to focus the organization process. In others, one or more organizations such as a hospital, medical society, public health department, or visiting nurse association might do so.

To enhance good community planning, early advice and active participation should be sought from the local medical society, hospital planning council, areawide planning agency for health facilities, nursing association, health department, welfare department, and other existing professional groups. Operating reports of other communities' home care programs should also be reviewed.

In accordance with the principles of community organization, the following steps should be taken to insure the involvement and commitment of the community:

A. *Assessment of Need, Interest, and Existing Resources*

1. In determining the size and scope of the projected coordinated home care program a formal assessment is not usually necessary.

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Hospitals, health and welfare departments, physicians, visiting nurse associations, and voluntary agencies often have information which needs only to be collected and analyzed. Examples of such information include morbidity data, estimates of patients in hospitals and nursing homes who might be eligible for home health services but must now remain in the institution for lack of a more suitable alternative; reports from physicians as to patients still in their own homes who might benefit from home health services; and estimates of unmet needs received from existing agencies serving the sick at home.

2. There should be a preliminary exploration of the interest and potential support of the agencies, organizations, and community groups which would be involved in a coordinated home care program.
3. Existing agencies should be assessed as to the home health services they currently provide and their capacity to enlarge the scope of such services. Hospital councils could be asked to determine in their member institutions the availability of specific health disciplines to either provide certain services at home or serve as supervisors or consultants or as instructors in training programs. The existence of qualified but currently inactive health personnel who might be willing to participate in such programs on a full- or part-time basis should be ascertained.

B. *Planning of Program*

In order to provide the widest possible participation in, and acceptance of, the coordinated home care program, a planning committee of representatives of those agencies and groups in the community that will be involved in the program should be appointed. Based on the initial assessments of need, interest, and existing resources, this committee should develop a plan of organization and administration for the program for approval by the parent organizations. Identification of initial and continuing financial support is an essential part of this plan.

C. *Implementation of Program*

1. The final plan should set forth the scope of the program, administrative agency, base of operations, and financing, as well as health care and personnel policies.
2. An advisory committee broadly representative of the community should be appointed to provide ongoing guidance and evaluation. This committee should be composed of medical, nursing, and other appropriate health disciplines as well as interested, knowledgeable lay persons from the community.
3. A brochure explaining the coordinated home care program should be widely distributed. Additional pertinent information

about it should be given to physicians and related professions and a method of continuing public information established.

4. The coordinated home care program then should be formally launched.

D. *Reappraisal of Program*

The coordinated home care program should provide mechanisms for reviewing the overall management aspects of its service, the appropriateness with which its services are being used, and the quantitative and qualitative sufficiency of the services it provides. Such review should be performed at least every 2 years.

Part II

PROGRAM ORGANIZATION

Coordination

A coordinated home care program should be centrally administered to provide a focal point of responsibility for coordinated medical, nursing, social, and related services. Such administration may be provided by a new agency or an existing community agency such as a health department, hospital, special home care agency, or visiting nurse association. The administering agency should have bylaws or their equivalent indicating the purposes of the coordinated home care program.

The central administration should assure both internal as well as external coordination. The central administration should establish and maintain working relationships with other health care resources and agencies in the community concerned with the patient. Cooperation with these other resources will facilitate patient referrals, discharge planning, and a free flow of information regarding the patient, as well as adequate interpretation of the program to the community and the professions so as to gain their acceptance of the home care program's coordinating function.

The agency responsible for administering the program may provide home health services directly or arrange with other community agencies to do so. It is advisable for the administering agency to formalize agreements with other providers of services. Written agreements with a hospital or hospitals are also advisable to assure that inpatient hospital services are readily available when needed and authorized by the physician.

Coordination of services requires periodic evaluation and planning. Regular staff conferences should be held to: (1) evaluate the admission of patients referred to the program in terms of the suitability of the patient and his home environment; (2) develop a written plan of treatment and assign responsibility for execution of the plan to members of the home care team; (3) periodically assess the progress of the patient with a view to modifying the treatment plan; and (4) plan for the discharge of patients from the program. The attending physician should participate in such conferences where possible and supply written instructions.

Physicians' Participation

Participation by physicians in all stages of development of the program is highly desirable, since the home health services provided under a coordinated home care program are physician directed. The patient's physician continues to provide medical care. In addition, he serves to direct the home care service team, which functions under his orders and, in turn, reports back to him. The advice and approval of the attending physician is essential before the patient is admitted to, or discharged from, the coordinated home care program.

In addition to the services of the attending physician, a coordinated home care program should make use of the services of a physician or physicians to provide necessary medical direction to the program as a whole. Such a physician should provide effective liaison between the program staff and the attending physicians. Depending on the program, he may provide his services on a full- or part-time basis and may have a variety of responsibilities. In a hospital-administered program, a physician or physicians in the organized medical staff of the hospital can provide medical direction for the program.

Whatever the auspices, medical direction offers the opportunity for cooperation, supervision, and accountability for the medical care of home care patients.

Hospital Participation [2]

"Whether the hospital or another community organization is the administrative agent, the hospital has a definite responsibility in stimulating the development of a patient-centered home care program, in the factfinding essential to determine the extent of need, in identifying the desired and appropriate scope of service, and in helping to obtain stable financing for the program.

"The hospital is responsible also for developing and maintaining an efficient system of identifying, in its inpatient and outpatient services, patients potentially suitable for home care and for arranging for their prompt transfer when indicated. This could be done with assured effectiveness if discharge policies and procedures were adequately defined and were followed for all hospital patients.

"It is essential that the hospital assure the prompt admission or readmission of the home care patient to the hospital when the need arises. The fear of both patient and family that inhospital care will not be available if needed promptly is an important psychological barrier to their acceptance of home care. Technical services and equipment usually available only in hospitals—such as portable sterile or sanitized treatment equipment and supplies for given diagnostic, treatment, or nursing care procedures, and selected diagnostic laboratory service—

[2] Excerpts quoted from "Hospitals and Coordinated Home Care Programs," American Hospital Association, August 1966.

should be made available to the home care program patients, either by taking the patient to the hospital for the services or by delivering the services to the home.

"When the hospital is also the administrative agency for the home care program, its role expands to include direct provision of professional and related services to the patient at home * * *."

Participation of Other Community Agencies

In addition to the active participation and support of the medical profession and the hospitals in the community, other community agencies should be actively involved in a program of coordinated home care. Some of these agencies, for example, welfare agencies, family agencies, and information-referral and counseling services, will serve as sources of patient referrals; in other instances, as in the case of visiting nurse associations, health departments, and rehabilitation centers, they may provide direct services. Further, to build a firm financial support, the organizations that represent third-party payments, including both official and voluntary agencies, need to be active in program planning from its onset. Essentially, the coordinated home care program, regardless of its administrative auspice, will need to be broadly representative of the total community. In turn, the acceptance and participation of all agencies that may contribute to its operation and continued support are essential if the program is to remain vital and responsive to community needs.

Advisory Group

An advisory group should be established to provide support and guidance to the administering agency from the health-interested organizations in the community. A committee that already exists for some other function in the community or administering agency may appropriately serve in whole or in part as the advisory committee to the coordinated home care program.

Policies relating to the service aspects of the program should be developed with the assistance and approval of a group of professional personnel including representation from medicine, dentistry, nursing, and social service.

The administrative agency should keep the advisory group informed about program operations and needs and actively involve them in the planning and evaluation of the program.

Staffing

Personnel must be sufficient in number, kinds, and quality to achieve the objectives of the home care program. The staffing pattern will vary in accordance with the number of patients being served by the program and the kinds of services these patients need. All medical and other health personnel should meet accepted standards of competence prescribed by the appropriate profession and should possess any

additional specialized skill considered necessary for practice of a particular profession in the home. There should be written personnel policies governing the qualifications, duties, and responsibilities of the program staff. Where a home care program arranges with other providers for professional or technical services, the administration should insure that the personnel providing these services meet the same high standards. Nonprofessional personnel should be appropriately trained and adequately supervised.

Kinds of Services

The number and variety of services provided by coordinated home care programs will vary from community to community and from time to time. The services provided for the individual patient will also vary according to his needs. Basic to a home care program are:

Medical services
Nursing services
Social services

In addition to these basic services, coordinated home care programs should assure immediate availability of hospital inpatient services when needed, and, where appropriate, the availability of some or all of the following:

dental care
homemaker-home health aide services
home delivered meal service
laboratory and radiology service
medical suplies and equipment
nutritional services
occupational therapy
pharmaceutical services
physical therapy
podiatric care
psychological service
prosthetic appliances
recreational service
school service
speech therapy
transportation of patient and/or equipment
vocational service

The home care program should have an active liaison with all the health care providers available in the community and should coordinate them in the patient's interest and according to his needs.

Utilization

Coordinated home care programs should be designed to serve patients who:

1. Require physician-directed medical, nursing, social, and other related services.
2. Do not, or no longer, require hospitalization and yet cannot have all their needs met appropriately on an ambulatory or outpatient basis.
3. Live in a home environment that is physically and psychologically conducive to care.

Financing

A program just getting underway may seek initial financing on a grant basis from private or public sources. Examples of such sources include foundations which have an interest in health, voluntary health agencies, and State and Federal governmental units.[3] However, while it may be helpful to use short-term subsidies in the formation of a program, it is not realistic to structure services for which there is little likelihood of ongoing financial support. It is desirable that a fee schedule be established and that written commitments be obtained from public and private agencies and other third-party payers prior to the organization of a coordinated home care program as to what services will be underwritten, in what quantity, at what cost, for whom and for how long.

The health insurance for the aged program will be a continuing source of support for coordinated home care programs.[4] Certification as a home health agency will make possible recovery of full costs of covered services for patients 65 and over who receive care following hospitalization and for a substantial portion of the costs of such patients admitted to care without prior hospitalization. Since usually half or more of a home care program's patients are 65 and over, this source of payment will help stabilize the financial base of the program. In addition, depending on the State plan adopted under title XIX of Public Law 89–97, the costs of home care for medically indigent persons may be met.

Development of a coordinated home care program cannot be justified primarily as an inexpensive means of providing health care. There is considerable reason to doubt that the cost to the community or the patient will be significantly less in the long run than the cost of care in the hospital or nursing home. The patient does benefit, however, in being provided appropriate care, thus eliminating unnecessary hospital or nursing home care. It is probable, in addition, that the community may be saved the expense of constructing additional institutional facilities that would be needed were the home care service not available.

Charging

Whether patients are to pay directly for their care, or the program is to be reimbursed by third-party payers, charges should be equitably determined and structured to secure sufficient income to cover the costs of the direct and indirect services provided. Financial records should support the cost determinations and should be available for audit.

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[3] Federal grant-in-aid funds, administered through State health departments, are available to initiate programs, expand services, and recruit and train personnel.

[4] See *Conditions of Participation for Home Health Agencies,* U.S. Department of Health, Education, and Welfare, Social Security Administration HIM–2 (3–66).

Charges may be based on a schedule of fees for individual units of service, on a weekly or monthly rate, or on a combination of both these approaches.

Program Review and Evaluation

A coordinated home care program should provide for sufficient review and evaluation of its total program (at least every 2 years) to assure that the program and its services are adequately meeting the needs of the community and the patients accepted for care. To assist in such review and evaluation, it is essential that the program have a planned record system and that it collect and compile data on all aspects of its services. In addition, special studies of effectiveness and adequacy of services, costs of services, etc., may be undertaken when appropriate or needed.

Part III

PROGRAM ADMINISTRATION

Administrative Functions

The program administration must be centralized and responsible for coordination of the overall program. This central authority should be responsible for:

1. Receiving and processing applications for admission of patients to the program.
2. Assuring that appropriate services are provided, that the needs of the patient are periodically evaluated, and that patients are discharged when appropriate and timely.
3. Coordinating the visit schedules of the personnel providing services.
4. Establishing and maintaining working relationships with other health and social resources and agencies, including formalized agreements where necessary.
5. Maintaining accurate and up-to-date fiscal, administrative, medical, and social records.
6. Providing interpretation and information about the program to appropriate disciplines and the community.
7. Insuring the effectiveness of the overall program by periodic review and evaluation and by planning and instituting modifications as warranted.
8. Developing continuing educational programs for personnel providing services.

Administrative Structure

The administrative structure of the program should provide for a central coordinating group (administrative team) headed by a physician or a professional nurse. This coordinating group should be available for consultation to all of the professional people who are in direct contact with the patient. It is essential that a physician carry responsibility for the medical direction of the program. The day-to-day administration of the program may be assigned to the professional nurse member of the administrative team.

Referral Policy

The home care program should promote appropriate referrals by creating sound and definitive policies to aid in developing an understanding of its goals and the effective use of its services. All professional health personel in its geographic service area should be informed as to the kinds of patients which are eligible for home care and the scope of services offered by the program.

Programs not administered by a hospital should maintain close liaison with hospitals, medical, nursing, and administrative staffs to promote referrals and to facilitate readmissions to hospitals when necessary. A participating hospital may assign the function of promoting referrals to a member of its nursing or social work staff.

Admission Policy

No patient should be admitted without approval of his attending physician. An initial evaluation of the patient should be made prior to admission.

The administrative staff of the home care program, with the attending physician, will determine if the program is the most appropriate service in the community for meeting the patient's needs. Where the program is the ouly agency in the community providing home health services, individual services requested by a physician to supplement a treatment regime he has already established may be provided.

The decision to admit the patient to the program should be made according to the amount of professional and supportive care needed and the capacity of the program to furnish it. For each patient for whom home care is not appropriate, the home care program should refer him to the program appropriate to his needs.

In some instances home care is suitable for the patient but the program, because of some gap in its available services cannot rightfully accept the patient. When the needed service is not available anywhere else in the community, records should be kept by the home care program identifying such unmet need. The information thus collected should be used to develop community awareness of this need and encourage community development of the services thus identified.

Developing Coordinated Plan of Treatment

Once the patient has been admitted to the coordinated home care program, a plan of treatment should be developed by the attending physician and the administrative home care team. Such plan of treatment should be in writing and approved by the attending physician.

Individual services prescribed by the physician should be scheduled to meet the patient needs and coordinated to insure efficient and economic use of the services within the home care program. To the degree feasible, individual patients should be served continually by the

same service personnel. This will assure evaluation of a patient by persons familiar with his needs.

According to the agency's policy, in an emergency and by agreement between the attending physician and the administrator, a patient may be given home care services prior to evaluation. In such instances, the initial evaluation will take place after the patient begins receiving services.

Periodic Reevaluation

The attending physician and appropriate members of the agency staff, including those professionals providing service, should confer at regular intervals and at least every 2 months to determine whether the plan of treatment for a patient should be continued, revised, or discontinued.

If the patient's physician or any other member of the service team is unable to attend an evaluation conference, his or her evaluation of the patient's condition should be obtained and made available at the time of the conference.

Reports of all conferences on the care of a patient should be written and forwarded promptly to the patient's physician. Conference recommendations should be implemented only with his approval.

Physician Visits

Each patient should be seen by the attending physician at such intervals as is medically indicated. A patient should not be retained on a program without periodic contacts with his physician. The attending physician should be alerted whenever his patient's condition seems to indicate a need for a visit by him. The physician should also receive periodic reports of the patient's progress.

Hospitalization

There should be a written agreement between the home care program and a hospital or hospitals to facilitate appropriate admissions of patients when necessary for diagnosis and/or treatment. When a patient is hospitalized, effective program-hospital liaison should be maintained, so that there will be no disruption in services if and when the patient returns to the home care program.

Discharge Evaluation

A patient should be discharged from the program when it is determined that the program is no longer appropriate to his needs. The physician will be guided by the patient's progress reports and the recommendations of the administrative and service teams. Furthermore, notification of the discharge and the reasons therefor should be provided to the patient and his family well in advance of the discharge date.

Records and Reports

It is essential to have a planned record system that will facilitate:

1. Continuity and appropriateness of services to the individual patient;
2. Evaluation of quality of care;
3. Statistical analysis of services provided; and
4. Cost accounting.

Records System and Data Collecting

Records provide the basis for reimbursement, fee schedules, patient identification and evaluation, program evaluation, administrative management, budgetary planning, research, professional education, and public relations. The professional staff, the central coordinating team, the researcher, the community, and third-party payers must be provided with information compiled in ways appropriate to the pursuit of their particular needs. The records permit analysis of patients and services by the professional staff, and make available to the central coordinating team and advisory committees data for program evaluation and planning. An important value is the development of data that permit interested third parties to appraise the services and costs for broader participation in reimbursement arrangements.

There is need for standardization of the reporting systems used by agencies providing home health services. Such standardization would facilitate analysis of individual plans and comparative studies of the various plans.

The following appear to be the essential components of any multipurpose recordkeeping system:

1. Patient clinical or therapeutic records developed for each patient by the professional personnel providing direct patient care in the program. The medical records in the possession of the attending physician may be presented in summary form only.
2. Patient administrative records which succinctly summarize the salient facts about each patient and document the pattern, volume, and cost of care. These include:
   - A. A patient identity record designed to include the sociodemographic data as well as the periodic reports of medical status and functional profile of the patient.
   - B. A patient service and cost record to provide information on service and cost aspects of each patient's care, who provides it, and who pays for it. This record would be supplemented by the following:
     - (1) A staff activity record containing the descriptions of direct and indirect patient services provided by members of the home care salaried staff.

(2) A supplier service and cost statement containing information on services and goods supplied by agencies other than the home care unit and from individuals other than salaried home care staff. This same supplier statement may also be used by suppliers for billing the home care program.

(3) For some programs, additional sources of information may be needed: for example, duplicate copies of pharmacy, supply room, and radiology orders.

3. Accounting records concerning expenses and revenues which are compiled by those responsible for the accounting and financial management of the program.

Summation

In the continuum of medical care, coordinated home care programs provide flexible, comprehensive patient-centered care for those who do not require continuous institutional care and who are unable to reach services regularly on an ambulatory basis. Coordinated home care programs perform the function of assuring that patients' needs are met with the greatest possible effectiveness and efficiency, thus facilitating continuity of care.

Successful coordinated home care programs have common characteristics. Initially, these programs have had a broad base of community support, adequate financial mechanisms, continuous educational and public information activity, and realistic program objectives. Their ongoing activities have included maintaining the interest and support of private practitioners, patient-service agencies, consumer groups, and third-party payers; engaging in program review and evaluation; and planning for the future.

The administrative and operating specifics of coordinated home care programs will vary according to the availability of community resources, the nature and scale of the program, the time and talents of program administrators, local customs, and particular community objectives. This guide presents only the essentials for establishing and maintaining a coordinated home care program. These principles are adaptable both to communities who have not yet developed home care programs, as well as those communities who desire to expand or solidify existing programs.

Coordinated home care programs may not be appropriate for every community. In some instances, community resources may best be mobilized through less-complicated mechanisms of single or multiple home health services. Each form of home care can help to fill the need to provide for patient care outside the institutional setting. Yet, coordinated home care programs offer the best means of sustaining a flexible, comprehensive, high-quality organization for providing patient-centered, physician-directed care in the place of residence.

Coordinated home-care programs may involve higher overhead costs than simpler mechanisms for providing home health services. Yet, these costs are justified by the ability of coordinated home care programs to assure high-quality patient care at the proper time, at the proper place, and to the required degree for every participant. Further, a single

administrative mechanism is likely to be less expensive to the community than a multitude of such mechanisms. Coordinated mobilization of available health care resources and avoidance of unnecessary duplication of patient-service systems are additional economic advantages of coordinated home care.

The eight co-sponsors of this guide are aware of the immediate need for expansion of home health services and other care facilities to assist the physician in achieving a total continuum of care for his patients and to complement the hospital in meeting the needs of the sick. Rising utilization and costs of hospital facilities dramatically emphasize this need. However, economics are by no means the only consideration. Many patient needs may be most effectively cared for in the home environment, and provision for this system of services will improve the community's ability to assure optimum patient care.

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How to Plan a Community Homemaker Service.

Women's Auxiliary to the American Medical Association, Chicago, Ill.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - nd 32p.

*COMMUNITY SERVICE PROGRAMS; *PROGRAM ADMINISTRATION; *VISITING HOMEMAKERS; *HOMEMAKING EDUCATION; PROGRAM DEVELOPMENT; PROGRAM PLANNING; *PROGRAM GUIDES

The result of composite experience of many services and of studies made throughout the nation, this manual is intended for adaptation to the needs of individual communities. The introduction defines the terms homemaker service and homemaker, outlines the purposes of the service, and discusses the handling of requests for service. Chapters cover: (1) project initiation, (2) models for a constitution and by-laws, (3) the desired qualifications and functions of staff members, (4) how to finance the service, (5) how to recruit and train homemakers, and (6) the operation of the service, including integration with other community services. The appendix presents 16 sample forms. (JK)

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COMMUNITY HOMEMAKER SERVICE

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PRESENTATION

The Committee on Community Service, Woman's Auxiliary to the American Medical Association has prepared this Community Homemaker Service Manual with the hope that it will lend practical assistance to interested groups.

The Committee is indebted to Mrs. Asher Yaguda, Eastern Regional Community Service Chairman, for her help in selecting the information contained in this manual, and to the following organizations which gave permission for their basic materials to be used:

Division of Chronic Illness Control
New Jersey State Department of Health
Visiting Homemaker Association
of New Jersey, Inc.
Rutgers — The State University
Extension Division

FOREWORD

This manual suggests plans and procedures for establishing a community homemaker service. These suggestions are the result of the composite experience of many services and of some of the studies made throughout the nation. They should, of course, be adapted to meet the needs of the individual community.

Homemaker service in the United States is usually considered to be of comparatively recent origin, starting in the 1920's. Actually, services with similar objectives were started earlier than that. More important is the fact that this supportive service has had slow growth up to the present. According to a 1958 study, only 150 of the nation's 3,100 counties have such a service available.*

There is a need for expansion and extension of this service in new and imaginative ways. The A.M.A. and the Woman's Auxiliary have undertaken a number of activities to promote further development of homemaker services.

The American Medical Association was a major contributor, both financially and promotionally, to the most representative conference on homemaker service held in this country. In 1959, the Association joined with 25 other national voluntary agencies and 8 units of the Department of Health, Education and Welfare to stimulate development of this program.

The Journal of the A.M.A. has described homemaker service as "one prescription for today's troubled family". Says the Journal article "in days past, the help of mothers, sisters and neighbors was often enlisted by families faced with difficulties. But the mobility of the modern family frequently left it isolated from relatives and with only a nodding acquaintance with neighbors. It is this social vacuum which the homemaker capably fills, to help keep family unity until crisis passes".

The "Homemaker Services Bulletin" is published by the A.M.A. Council on Medical Service in cooperation with the Executive Committee of the National Conference on Homemaker Services, to report on local activities in developing this much needed family service.

The homemaker service expansion project is a stated responsibility of the Woman's Auxiliary Committee on Community Service.

The Committee on Community Service of the Woman's Auxiliary to the American Medical Association is prepared to help state or county auxiliary groups in exploring the need for homemaker services, and to offer consultation on the organizational and technical aspects of the project.

**"A Nationwide Study"*
Public Health Service Publication #644.

INTRODUCTION

Definition of Homemaker Service

A generally accepted definition of the service is "A community service sponsored by a public or voluntary health or welfare agency that employs personnel to furnish home help services to families with children, convalescent, aged, acutely or chronically ill, and disabled persons. Its primary function is the maintenance of household routine and the preservation or creation of wholesome family living in times of stress".

Description of a Homemaker

The homemaker is described as "a mature specially trained woman with skills in homemaking. A pleasant personality, physical and mental well-being, experience and training enable her to contribute to the patient's care, keep the household on an even keel and maintain a wholesome atmosphere in the home".

*Major Purposes**

The primary goals of homemaker service are:

1. To hold the family together while the natural homemaker (usually the mother) is incapacitated, whether she is in or out of the home; and to prevent family breakdown for any other reason, thus avoiding the shock of separating children from their parents, their brothers and sisters, their schools, and their friends.

2. To enable the ill or disabled individual to remain in his own home among familiar surroundings whenever possible.

3. To lessen the burden of chronic illness physically, mentally, emotionally and economically.

4. To hasten convalescence and to reduce the length of stay in an institution by permitting the patient to remain at home or to return home sooner than he otherwise could. This will free hospital and nursing home beds for those who most need them. For the family, the individual, and the community, it will also help to offset the cost of expensive institutional care.

5. To keep on his job the employed adult who now so often must take time off to care for children, an elderly parent, or an ill relative.

6. To help assess family and individual strengths and weaknesses so that a plan may be developed to serve the best interests of the family and the community.

7. To help teach more efficient methods of household management, day-to-day living, and better methods of self-care.

Requests for Service

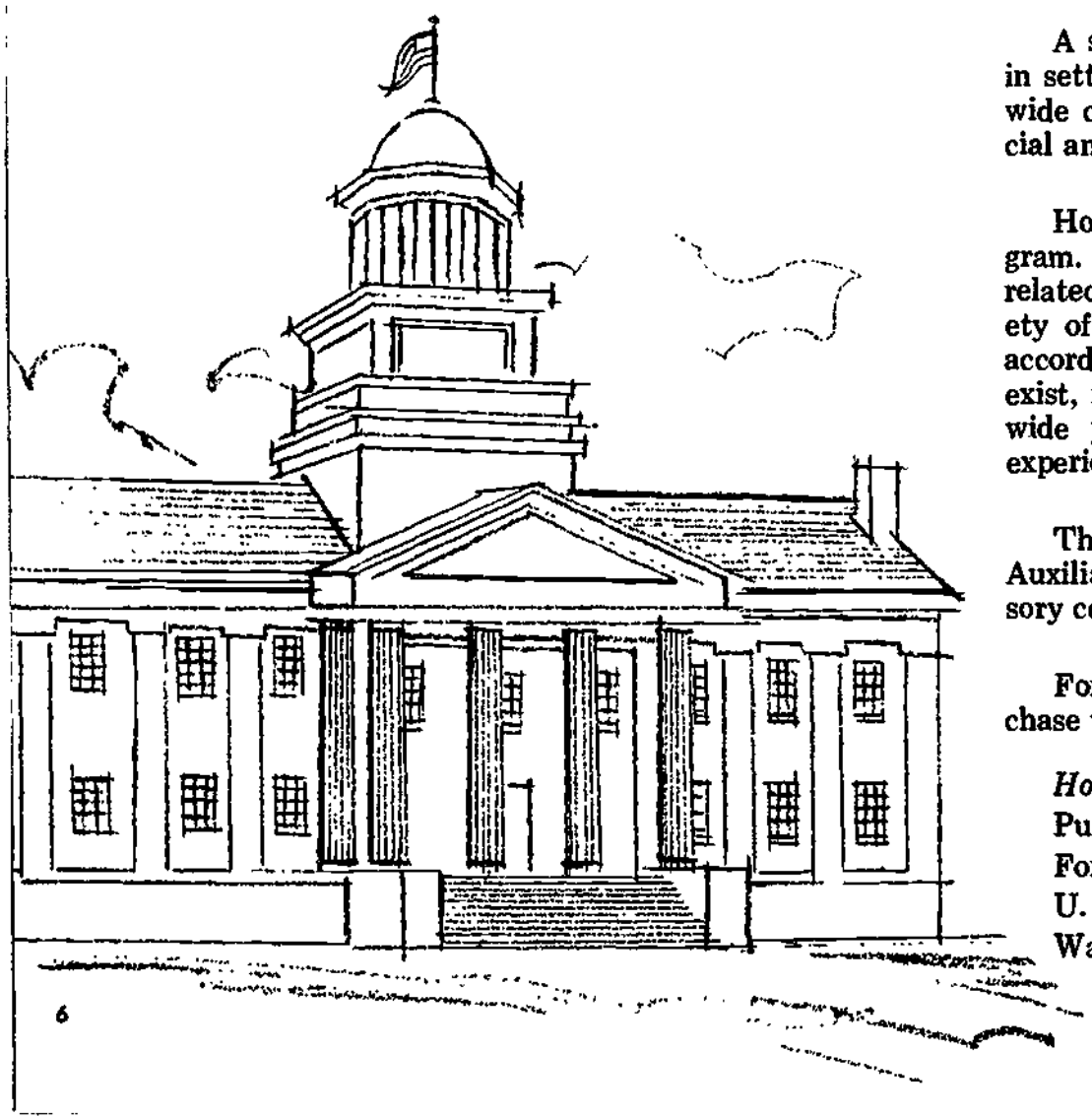
Requests for homemaker services are received and evaluated in a central homemaker office. These requests may come from the family physician, public health nurse agency, casework agency, hospital, the patient and/or the family.

In the medically oriented homemaker service, as discussed in this book, all cases should be cleared with the family physician before the service is initiated. He should also be consulted before the service is altered or withdrawn.

In determining whether homemaker service is likely to be the most constructive plan for an individual or family, it is important to have knowledge of the family make-up, its strengths and weaknesses, its individual and other resources. Such knowledge is needed to determine the type and amount of services which may vary as family needs change, and will facilitate the selection of the homemaker best equipped to serve the family.

**"Pre-conference Study Group Reports" 1958*
Public Health Service, Department of Health, Education and Welfare

STATE-WIDE HOMEMAKER SERVICE PROJECT



A state woman's auxiliary may serve as the catalyst in setting up a homemaker service with a goal of state-wide coverage. This will entail working with many official and voluntary agencies and leading citizens.

Homemaker service is basically a "grass roots" program. Experience shows the advantages inherent in a related group of autonomous local services under a variety of sponsors. These can be established individually according to a state plan. Where local services already exist, it is hoped that they will participate in the state wide project and thus lend strength based on their experience.

This is a challenge worthy of the attention of State Auxiliary Boards of Directors and their medical advisory committees.

For help in setting up a state-wide program, purchase the following:

Homemaker Services: Report of the 1959 Conference
Public Health Service Publication No. 746
For sale by the Superintendent of Documents
U. S. Government Printing Office
Washington 25, D. C. $1.25

The First Step

Any organization or group at the state, county or local community level may initiate a homemaker service.

As a first step, a steering committee should be formed, consisting of representatives of health and welfare agencies both public and voluntary, the medical society and its woman's auxiliary, labor and industry, churches and lay leaders. If there is a social planning council in the area, contact should be made with its members prior to the formation of the steering committee. Broad community representation is basic to success.

Function of a Steering Committee

The steering committee should make a survey of existing agencies, including hospitals, to determine the extent of the need for a homemaker service. It should arrange for one or more general meetings to present a tentative plan, and gain expression of opinions in relation to the proposed program. It may wish to consult individual board and staff members of the agencies to enlist their interest in the development of a program.

In the event a homemaker service is already operating in the area, the initiating group should first consult with its board of directors. Duplication should be avoided as it adds to overall administrative costs. It may be preferable to consider expansion of the existing agency rather than to start an additional service.

The steering committee should then decide the service area. There are advantages in setting up homemaker service on the state level. Coordinated governmental

support and volunteer action can result in a network of autonomous local agencies, providing state-wide coverage. A county homemaker service should establish its headquarters in the hub of county activity. This provides easy access and reduces transportation difficulties. A municipal or small service area will soon have to be extended to serve those who need the service and who live in out-lying neighborhoods.

The steering committee should decide the types of patients to be served. Experience shows that any plan for less than complete coverage (long and short-term patients, aged, convalescent, post-partum and accident cases) will usually require further extension of the service in the future. New agencies will find it necessary to tighten in-take practices in the beginning, however, in order to avoid case loads that are too large. This can be too expensive for a young service. However, the understanding should be that all cases will be served as soon as feasible. Full-pay, part-pay and free cases should be considered in the same manner as the case load size. The ideal procedure is to open the service to the local community.

Auspices

The program may be placed as a part of an on-going public or voluntary health or welfare organization, or a new agency may be started.

The town's visiting nurse association may be interested in sponsoring a new service to complement the work of their home nursing personnel. The community's family service association might want to enlarge their spectrum of services by sponsoring a homemaker program. The local heart association, cancer society or other voluntary health agency might see sponsorship of homemaker service as a logical extension of their activities for the homebound patient. The local public health or welfare department might assume sponsorship, as many have.

The nature of the sponsoring agency may be too restrictive unless it is stated that the service will be broad in coverage. If attached to an existing agency, the homemaker service will require its own committee, with representation on the parent board of directors. If a new agency, it will have its own board of directors.

PUBLIC INFORMATION:

Publicity should be started early and maintained on a continuing basis. An important part of starting a homemaker service is to gain the interest and support of the community as a whole. The public should be informed as to the needs for the service and the benefits to be derived. Wisely selected members of the press, radio and television might well be included on the steering committee as actual members rather than as press observers.

Newspapers. The publicity chairman should cultivate good relationships with the press. This might include a discussion with the editor or reporter about the project and the best means of getting it before the public. It may include a series of news articles or a picture story. The press should be invited to all meetings. Plans for long term publicity are essential.

Material to be released to the press should be typed and double-spaced and should include release date, name, address and telephone number of the sending organization.

Radio and Television. These are important media. Call on the local station program director. Know what you have to offer. Time is usually available for public service programs.

Speakers Bureau. All members of the Board of Directors should eventually be available for speaking engagements to interpret the service to the public. Preparation for speakers might include a trip to an existing homemaker service to get first-hand information for use in promoting the service. Speech outlines should be set up, one for short and one for long talks.

Contact should be made with local organizations—many are looking for programs to present to their members. It is advisable to confirm telephone appointments by letter. All speaking engagements should be publicized.

List of Helpful Materials

Woman's Auxiliary pamphlet "Visiting Homemaker Service".

Black and white film with sound, starring Martha Scott, "Home Again". Produced by the Mental Health Film Board. Available through Woman's Auxiliary to A.M.A., 535 North Dearborn Street, Chicago 10, Illinois.

AMA Homemaker Services Bulletin—a periodical.

AMA "Homemaker Services"—a pamphlet.

AMA Homemaker Service Exhibit for large meetings.

The above through:
American Medical Association
535 North Dearborn Street
Chicago 10, Illinois

HOW TO ORGANIZE A HOMEMAKER SERVICE

When the steering committee has firmly established the need, the area to be covered and the type of patients who will receive service, the group initiating the plan is then ready to consider organization and structure.

The first step in organization is the adoption of a Constitution and By-Laws. This is essential for purposes of incorporation. If the new service is to be under an already incorporated organization, the Constitution and By-Laws of the parent organization will prevail. Constitution and rules of procedure similar to the models outlined below should be adopted.

CONSTITUTION

Article I

NAME

The Name of this organization shall be the .....

Article II

PURPOSE

The Purpose of this organization shall be to assist families where illness threatens to disrupt the household by providing them with a homemaker, trained and supervised, to do light housework, run errands, plan, prepare and serve meals, care for children, and the like. Service is rendered on a pay basis.

Article III

OFFICERS AND BOARD OF DIRECTORS OR TRUSTEES

Section 1. The officers shall be a President, a Vice-President, a Secretary and a Treasurer, each of whom shall be elected for a term of two years except that in the first year, the Vice-President and Secretary shall be elected for one year.

Section 2. The Board of Directors shall consist of the officers and the chairmen of standing committees and (a limited number of) members at large. They shall serve for three years, except that in the first year, one-third of the members shall be elected for one year, one-third for two years, and one-third for three years.

Article IV

MEETINGS

Section 1. There shall be not less than eight Board of Directors meetings a year.

Section 2. The annual meeting shall take place on.....

Section 3. A special meeting may be called by the President or shall be called at the request of one-third of the members of the Board of Directors.

Article V

ADVISORY COMMITTEE

An Advisory Committee, representative of medical, health and welfare groups of the community, shall be appointed by the Board.

Article VI

AMENDMENTS

This Constitution may be amended at any meeting of the organization by a two-thirds vote of the members present and voting, provided the proposed amendments were submitted to the membership in writing at least one month in advance of the meeting.

BY-LAWS

Article I

DUTIES OF OFFICERS

Section 1. The President shall preside at all meetings; shall appoint all chairmen of standing and special committees with the approval of the Board of Directors; shall render a written report annually to the Board of Directors; shall be an ex-officio member of all committees except the Nominating Committee.

Section 2. The Vice-President shall assist the President; shall assume the duties of the President in the latter's absence; shall accept chairmanship of a committee.

Section 3. The Secretary shall take the minutes at all meetings; shall keep official records for reference, such as the Constitution, decisions on policy, and legal matters; shall be responsible for notifying members of meetings.

Section 4. The Treasurer shall keep the financial records; shall pay all bills on authorization of the Board of Directors, including payments to homemakers; shall present regular financial reports; shall serve on the Budget Committee.

Article II

STANDING COMMITTEES

Section 1. The Nominating and Personnel Committee shall consist of five members. The chairman and one other shall be members of the Board of Directors. They shall be appointed by the President with the approval of the Board of Directors. Their term of office shall coincide with that of the President. Not more nor less than two shall succeed themselves. They shall serve as a year-round nominating and placement committee. Names of prospective volunteers should be submitted to this committee and vacancies should be reported so that a complete slate of officers, directors, staff and volunteer workers can be maintained.

Section 2. Committee on Volunteers. The chairman, in consultation with the committee members and the agency director shall be responsible for the training, scheduling and supervising of all volunteer workers.

Section 3. Homemaker Personnel Committee. The chairman, in consultation with committee members shall be responsible for recruiting, receiving applications from, interviewing, screening and employing homemakers; shall arrange for their pre-employment training and for their subsequent regular meetings and in-service training; shall arrange for supervising visits in the homes of patients served; shall interpret policies regarding "no nursing", financial arrangements and other practices established by the Board of Directors. This committee shall be responsible for billing clients, keeping records of homemaker services and authorizing payment for same. The work of this committee may be delegated to the paid staff.

Section 4. Finance Committee. This committee shall prepare a budget which shall be submitted to the Board of Directors for approval; shall be responsible for raising the necessary funds; shall have the books audited annually by a person authorized by the Board of Directors.

Section 5. Public Relations Committee. This committee shall keep the public informed of homemaker services through newspaper articles, radio and television spot announcements and feature programs; through the preparation and distribution of pamphlets; and through the use of other mass media. The chairman and committee shall contact community organizations and arrange for speaking engagements.

Section 6. Development and Expansion Committee. This committee shall study the procedures and operation of the agency and recommend to the Board of Directors such improvements as will serve the best interests of the community.

Article III

BOARD OF DIRECTORS

Section 1. A majority of the Board of Directors shall constitute a quorum.

Section 2. All committees shall submit matters of policy to the Board of Directors for approval before taking action.

Article IV

AMENDMENTS

These By-Laws may be amended in the same manner as the Constitution.

BOARD OF DIRECTORS

Experience of existing homemaker services and similar organizations demonstrates the importance of broad represeniation from the community on the Board of Directors. Overlapping terms provide that there shall always be members with experience on the Board. Many organizations have found it wise to limit the terms of both officers and members to one or two years. A year off between terms prevents anyone from becoming a "permanent" member.

The work of the Board of Directors is described in the By-Laws. A good rule is for every member to have a specific assignment, also for a member's resignation to be requested if there are more than a given number of unexcused absences from the Board meetings.

HOW TO SELECT A STAFF

Director

It is essential that a homemaker service have a salaried part or full-time Director. If part-time, the Board of Directors should be prepared to move her to full-time within a brief period. Rapid growth is one of the characteristics of homemaker service. Ultimately she will need the assistance of one or more homemaker supervisors.

The Director may be a public health nurse, a social worker, or other qualified person who has had some experience in a health or welfare agency. She will be responsible, on delegation from the various committees, for administering the agency, hiring and supervising of all employees and directing the work of the volunteers.

She will be responsible to the Board of Directors and will make regular reports at each Board meeting.

She may participate to the extent of time limitations in obtaining financial support and in public relations activities.

Supervisor

The Supervisor's training and experience should be similar to that required for the Director. The Supervisor assists with or carries responsibility for the recruitment, screening, training, placement and on-the-job supervision of homemakers in the field as delegated by the Homemaker Personnel Committee, or these function may be included under the Director's duties.

Homemakers

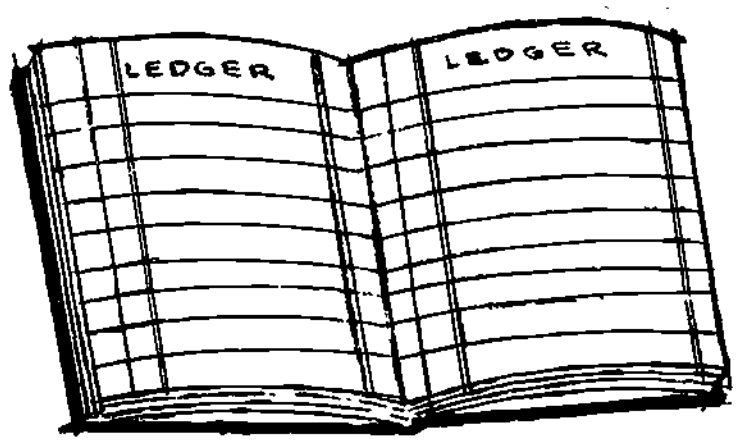
Homemakers should be mature women with previous experience in housekeeping. They should have completed the standard orientation course. They should have good physical and mental health, stability, a desire to serve, and the ability to accept direction. They should be able to appraise a family situation and report their observations in writing at regular intervals.

Office Staff

This staff performs general secretarial duties, including bookkeeping, the maintenance of records, billing, etc.

Volunteers

Volunteers should be assigned to duties which fit well with their previous training or experience. They may assume many of the agency procedures such as the clerical work, case aids and/or "Friendly Visitors". The extent of their participations should be determined by the Board of Directors. Professional standards should be maintained at all times.



HOW TO FINANCE THE SERVICE

EXPENSES will include:

Salaries. *Director, Supervisor*(s), *Office Staff* (these should be commensurate with qualifications and experience and in line with local scale) *Homemakers* — the weekly salary for homemakers employed full-time ranges from a minimum of $15.00 to a maximum of $91.15.* One state-wide program and other individual agencies have shown the economy which results when homemakers are employed on a part-time basis and paid only for hours they work. For this group, the hourly rate ranges from $.50 to $1.65.** The state-wide program mentioned above pays $1.25 per hour — this is paid by direct charges to the patient or responsible agency—the rate now being charged varies from $1.30 to $1.50 per hour plus transportation.

Employee Benefits. To be determined by the Board of Directors.

Transportation. For Director, Supervisor(s), Homemakers if not on a part-time basis.

Overhead. Rent
Heat, Light
Telephone and Answering Service
Supplies
Printing and Postage
Fire Insurance

Equipment. Furniture, Files, Typewriter.

Public Relations. Pamphlets, etc.

Insurance. For Director, Supervisor(s), office staff, homemakers. This may vary from State to State. Explore the following: Workmen's Compensation, Public Liability, and Automobile.

FEDERAL TAXES AND SOCIAL SECURITY

Income tax withheld from Employee's Wages. Consult your local office of Internal Revenue Service.

Social Security. Consult your local Social Security Office for details of the law.

* *"A Nationwide Study" Public Health Service Publication 644*
** *Ibid*

INCOME

Initial contributions may come through grants and donations from individuals and organizations such as voluntary and official agencies, s · ·e and women's clubs, industry and philanthropic foundations. Several services have received contributions in the form of office space, equipment, telephone answering service and public relations materials.

Eventually, income must come from regular sources such as:

1. *Fees from families and individuals served.* All age groups and all economic levels should be considered eligible for the service. The family who can afford to pay needs homemaker service in time of stress just as much as the family known to the assistance bureau. This is the greatest potential source for increased support of the service.
2. *Community Chests, United Givers Funds and similar agencies.* In 1958, about 55% of the money spent by all homemaker agencies in the country came from Community Chests, United Funds and similar groups.
3. *Public Child Welfare and Assistance Funds.* These accounted for 20% of total expenditures for homemaker services during this same period.
4. *Foundations, gifts, local government revenue and other sources.*
5. *Management and Labor.* These groups represent a source of support as yet relatively untouched. Both have a stake in homemaker services when such services can keep needed employees on the job with less financial loss to both the worker and employer.
6. *Voluntary health insurance and prepayment organizations.* These organizations are being urged to study the possibility of including homemaker services in insurance benefits for those cases involving illness.

SUGGESTIONS

It is wise to consult an auditor with experience in non-profit organizations for help in setting up an appropriate bookkeeping system.

The Board of Directors should establish a rule governing pay periods and make this rule part of the employment agreement between homemaker and agency. If there is no state law covering this matter, the rule of the agency will be recognized in case of disputes. Adherence to an established rule for payment of wages is thus a safeguard in avoiding litigation. It is suggested that the homemakers be paid weekly or at least every two weeks and that a revolving fund of not less than $500. be made available for this purpose. This will cover the lag between billing and collecting fees for service. Billing should be made on a regular basis, preferably once a week.

HOW TO RECRUIT HOMEMAKERS

Recruiting

There are several ways to recruit homemaker candidates: through newspaper releases, paid advertisements, talks to organizations, etc. Human interest appeal in press releases is helpful. Requests for homemaker candidates should stress opportunity to serve others rather than monetary returns. Physicians, clergymen, lawyers and nurses frequently know of women who might be interested in this work.

Screening

Candidates should be carefully screened by persons with knowledge in this field. (See appendix for Reference Forms). Requisites for homemakers should include good physical and mental health, a warm and friendly personality, stability and tact, and previous experience in housekeeping. Age is relatively unimportant. Homemaker service provides particularly appealing work opportunities for many middle-aged and older women who have difficulty finding employment at a period in their lives when they would feel needed and useful. If the homemaker is to be employed on a part-time basis, it should be clearly stated by the screening group that the salary will probably not meet total financial needs. The part-time homemaker should have some income source which the salary will supplement.

Physical Examinations

It is necessary for homemakers to have pre-employment and annual complete physical examinations including chest x-rays and blood tests. Health cards should be issued to each homemaker by the local health officer or other qualified individual, on satisfactory test reports. (See appendix for Health Form)

Uniforms

Regulation uniforms, supplied by the homemaker, are recommended. Agency insignia or other identification may be used.

HOW TO TRAIN HOMEMAKERS

Training

Homemakers are not rated as professionals and should have a comprehensive training course, in order to indoctrinate them in the philosophy and nature of their duties. Instructors should be qualified professionals in each instance. If there is no formal homemaker training course available, the instructors may be drawn from the local community. Many professionals will contribute their time in order to help get the program underway.

Past experience shows that it is desirable to have not less than 12 or more than 25 trainees in a class. They should be admitted to the class only upon recommendation of the sponsoring homemaker service. Only those who have been screened and accepted as prospective employees of the service should be admitted to the class.

It has been demonstrated that the training course is more productive if given within a short period of time, rather than over a period of weeks. A suggested plan is to present the course in single or double sessions on consecutive days.

Following is an excellent example of a practical training course of ten lessons.*

1. ***Introduction to Homemaker Service.***
   Describes the history of homemaker service with

* *As taught at Rutgers—The State University Extension Division*

emphasis on the development of the local homemaker service conducting the course, and its relation to the services of the medical and allied professions in the continuity of care.

2. ***Working With People.***

An orientation to community homemaker service as one of many supportive community services for the strengthening of family life; a presentation of individual differences among people; and the role of the homemaker as a member of the health team in the community.

Homemaker and Family Relationships.

Stresses the importance of maintaining the family unit in health and in illness. Interprets the effects of illness on individual members of the family group, how new social or emotional problems may arise; methods of relieving tensions, and how to meet the special needs of children of different age levels.

3. ***Accident Prevention and Safety in the Home.***

Orientation to practical problems of safety in the home; recognition of existing hazards; techniques of prevention of home accidents. The homemaker's role in safety education.

4. ***Family Life in Relation to Food and Home Care.***

Sections A and B, which will be taught by a nutritionist, emphasize the concepts of good nutrition in health and illness; the psychological meaning of food to various age group; cultural and individual food patterns and special diets. Section C deals with planning, purchasing, preparation and storage of food. Menu planning, serving, and tray arrangement will be taught by a home economist or nutritionist with emphasis on the family meal as a central function of family life. Section D reviews labor-saving methods of cleaning and care of the home, taught by a home economist. Included are every-day household tasks, such as dishwashing, laundry, and care of clothing. Use and adaptation of existing facilities and patterns of home management are stressed.

5. ***Understanding Children.***

Reviews practical methods of working with and caring for children in the home. The need for love, acceptance, and security for children in a home where illness exists is stressed. Individual differences in physical and emotional behavior at different age levels are emphasized.

6. ***Understanding the Elderly.***

Interprets the socio-medical phenomenon of the aging population and its relationship to chronic illness and rehabilitation. Gives the need for an understanding of emotional problems and specific characteristics of the aging and the important contribution of homemaker service.

7. ***The Homemaker and the Sick Patient.***

Reviews the growth of the service from voluntary or neighborly to an established community service; basic concepts of community service to the sick in the home; extent and limitations in homemaker service; attitudes and sick-room techniques for children and adults; relationship to functions of other members of health team. This session includes practical demonstrations.

8. Understanding Mental Illness.

Aids the homemaker in understanding mental illness in order to prepare her for situations which may arise during debilitating illness. This session assists the homemaker to work with the professional team in helping the patient improve his family and social relationships. Attitudes and limitations are stressed.

9. Orientation to Occupational Therapy.

Gives an understanding of the basic philosophy of occupational therapy; the psychological and physical need of certain individuals for occupational therapy by a trained occupational therapist; the limitations and extent of help to the patient.

10. Agency Procedures and Final Review.

Explains supervision policies of the agency and describes required records, reviews homemaker responsibilities in relation to the home care team, in-service training and general review.

Reference Material—at each session a list of reference material is provided, including visual aid and illustrative material.

For a complete teaching plan use:

Visiting Homemaker Service Training Course Manual
Price $1.00

For Sale by: The New Jersey Dept. of Health
Chronic Illness Control Division
Trenton 25, New Jersey

Upon completion of the course, the homemaker service or the teaching group may present a certificate to the homemaker.

Ultimately, basic training should be available locally on a twice-a-year basis, either through a coordinated team, a vocational school, a college extension division or other educational facility.

In-service training should be established and continued on a regular basis. Homemakers should be called in for regular conferences and the homemaker procedures reviewed. In addition to these, they should have the opportunity of hearing speakers on subjects related to their work, such as: occupational therapy, strokes, care of the heart patient, mental health, nutrition, etc.

HOW SERVICES ARE PROVIDED

After requests have been studied and evaluated by the Director of the homemaker service, the family physician and the referring agency, the homemaker is assigned to the case. She receives a special assignment sheet with proper directives. (See appendix for form)

The physician is notified by letter that a homemaker has been assigned to the home of his patient. The family also receives a letter which contains necessary information such as: duties of the homemaker, hours, cost, etc. (See appendix—"Can and Cannot Do" leaflet, letter).

The homemaker service is designed to help the family help itself. Duties of the homemaker include marketing, errands, planning, preparing and serving meals, (also special diets and baby formula) to patient and family, light household cleaning, light laundry for patient, dishwashing and similar tasks. No heavy chores are permitted. The homemaker will care for the children during the absence or incapacity of the mother.

The homemaker's working hours may vary, but adherence to an agreed schedule is most important to family and agency. Flexibility is important to meet unusual situations.

Homemakers should be required to make weekly reports on each assignment, giving hours spent, carfare (if employed on part-time) and her personal observations of the situation in the patient's home. (See appendix for forms).

Integration With Other Community Services

Homemaker service is only one of many community services designed to help families work out their problems. At times, the homemaker may be the only community worker active in a given situation. More often, however, she may be one of several such persons. Physician, public health nurse and social caseworker are a few of the people who may be simultaneously involved with the same family. Members of the "team" will need to coordinate their efforts by sharing information with each other and by planning together, with real respect for each other's area of competence. The homemaker service should join forces with other community agencies in providing a mechanism through which this integration and coordination can take place.

HOW TO PREPARE FORMS

The use of standard forms will facilitate the work of all concerned with homemaker service operations.

The sample forms which are included in the appendix have been prepared and successfully used by the Chi-Ili Homemaker Service, Essex County, New Jersey. Inquiries concerning forms should be sent to:

Woman's Auxiliary to A.M.A.,
535 North Dearborn Street,
Chicago 10, Illinois

Forms used for recruitment

Application for Orientation Course	A, A-2
Reference Forms	B, C
Health Forms	D
Letter to Homemaker on Acceptance to Course	E

Forms used for supplying services

Request for Service	F, F-2
Can and Cannot Do Leaflet	G, G-2, G-3
Letter to M.D. when Homemaker is Assigned	H
Letter to Family when Homemaker is Assigned	I
Homemaker Assignment Sheet	J
Homemaker Progress Report	K
Work Record Sheet for Billing	L
Billing Form	M

DATE COURSE COMPLETED . . . . .

APPLICATION FOR HOMEMAKER ORIENTATION COURSE

Date . . . .

NAME . . . . . .

ADDRESS . . . . . .

AGE . . . TELEPHONE NUMBER . . . . .

FAMILY. . . . . .

PERSON TO BE CONTACTED IN EMERGENCY: NAME . . .

ADDRESS:.. .

PHONE . . .

REFERENCES: WITH ADDRESSES:

Personal Physician . . . . . .

Minister. . . . . .

Former Employer . . . . . .

Business Acquaintance . . . . . .

DO YOU HAVE A HEALTH CARD if not, will you be willing to get one including X-Ray, Wasserman and mouth swab from your private physician, or from the local health dept.? Will you be willing to wear a uniform as suggested by this service and purchase this? . . . . .

Have you had any advanced education, special courses or training beyond high school?

. . . . . .

. . . . . .

. . . . . .

FRONT

REVERSE SIDE OF APPLICATION FORM

TO BE FILLED IN BY SUPERVISOR

Clothes

Hair

Skin

Height

Weight

Posture

Manner

Voice

Work Hours Desired

Morning

Afternoon

Evening

Weekend

Car Yes No...

Insurance Yes No

Coverage

Work Experience

Home Life

Physical Condition

Source

Comments

BACK

APPENDIX A

REFERENCE requested by Homemaker Service
Address

Reference for Mrs.....

(You may not be able to answer all of these questions based on your experience with the applicant. Please answer as many as you can.)

Date of employment: From:..... To:.....

Type of employment:

Was she punctual and regular in attendance?

Performance on the job:

Is she absolutely honest and reliable?

Does she do good cleaning?

Is she a good cook?

Would you trust her with your marketing?

Does she get along well with children?

Has she had experience with adults who are ill?

Is she courteous and considerate of all members of the family?

Is she cheerful? Is her health good?

Is she always neat in appearance?

Does she have initiative and is she willing to accept responsibility with a minimum of daily supervision?

Would you be satisfied to leave her in charge of your household, if sickness necessitated your absence from home?

Further comments:

Signed:.....

Address.....

Date.....

APPENDIX B

LETTER SENT WITH REFERENCE FORM

Mr. or Mrs. --
Address
City, State

Dear Mr. - -

Mrs. - - address - - city - - has applied to us for a position as a Homemaker and given you as a reference. She has signified her willingness to take our Homemaker Training Course.

From the brief description of the responsibilities carried by our Homemakers, given in the enclosed leaflet, and on the basis of your knowledge of her, do you feel that she has the personal qualifications necessary for success as a Homemaker?

We will greatly appreciate the help you can give us in considering her application and will hold your comments in strictest confidence. Please give us your evaluation of her on the enclosed form.

Sincerely yours,

Signed_____
Director, Homemaker Service

MBR/djtcls
enc.

APPENDIX C

HOMEMAKER SERVICE

HOMEMAKER SERVICE MEDICAL EXAMINATION

Name of Homemaker Date

Address

Date of Birth Children Race

MEDICAL HISTORY

CHILDHOOD DISEASES	OTHER DISEASES	OTHER DISEASES (Cont'd)
Measles	Kidney Trouble	Arthritis
Mumps	Operations	Asthma, hay fever, hives
Whooping Cough	Heart Trouble	Epilepsy (fits)
Scarlet Fever	Stomach Trouble	Accidents — injuries
Chicken Pox	Rheumatism	

Any present complaints:

I consider that my present health is good and that the above history is correct.

Signature .. ..
Homemaker

PHYSICAL EXAMINATION
(To be filled in and signed by physician)

Height: Weight: Build: Obese Heavy Medium Slender

General appearance:

Head: Eyes Ears Nose
Mouth: Chest:
Neck: Heart:
Breasts: Lungs:
Abdomen: Pulse: B. P.

Extremities (Deformities: Blood vessels) Limitation of Motion: Edema:

Skin (Rashes) Urinalysis: S. G.: Albumin: Sugars

Chest X-Ray and Blood Wasserman:

Signature of Examining Physician. .....

Address .....

Date of Examination.....

APPENDIX D

LETTER TO HOMEMAKER UPON ACCEPTANCE

Mrs. - - -
Address
City, State

Dear Mrs. - - -

You have beeen selected to take the Homemakers Training Course because of your homemaking skills and personal qualifications. Your references have been carefully checked and all your credentials are in order.

The course is scheduled for - -. Enclosed is a copy of the schédule for your use as a guide during the various sessions. Also enclosed is a Homemaker Service Medical Examination form. Please have this filled out and signed by your physician and return it to us before completion of the Orientation Course.

We will be looking forward to seeing you on - - - at Headquarters Office.

Good luck to you in this new and important venture.

Sincerely yours,

Signed
Director, Homemaker Service

MBR/djtcls
enc.

APPENDIX E

REQUEST FOR HOMEMAKER SERVICE*

INTAKE
ASSIGNED
APPROVED

Fund Assign.
Date of Request
Approved Fee
Change of Fee
Date of Changed Fee

Person or Agency
Address

Patient's Name
Address

Telephone
Relation to Patient
Referred by

Telephone
Patient's Age Sex
Type of Dwelling (Apt., 1 family house, other)

Sends BILLS to

Diagnosis (As given by Applicant)

Physician
Address Telephone
Physician's Instructions:

Requested Opening Date Requested Hours Days

Date of Letter to Physician
Date of letter to Patient and/or Family

Date Visited Visitor

Requested Duties:

Special Instructions from the Family:

Case not serviced: Reason

*Make out new form for reopening cases or second request.

FRONT

APPENDIX F

REVERSE OF REQUEST FORM

TRANSPORTATION DIRECTIONS

CONDITION OF PATIENT

Physical:

Mental or Emotional:

FAMILY OF PATIENT

Members of Household:

(ages and health)

No. of Children: Sex: Age:

Will HOMEMAKER SERVICE prevent absenteeism?

Yes.. .... No.....

RESPONSIBLE PERSON

Occupation

Address

Telephone

INFORMATION TO ASSIST IN FEE DETERMINATION

COMMENTS

Hospital.....When.....Institution .. . .

When.....

BACK

APPENDIX F

TO THE FAMILY—PLEASE READ CAREFULLY

The HOMEMAKER assigned to you is a semi-professional worker trained to work WITH you to help you through a critical period of illness She is an important member of the Home Care Team working for you on an hourly basis—but *is not to* take the place of the usual "domestic worker". She will do everything possible to create a happy cheerful home environment, being careful not to change the standards set up by the members of the family.

HOMEMAKERS *CAN* DO THIS WORK:

ROUTINE LIGHT HOUSEKEEPING such as making and changing beds, dusting, dishes, keeping kitchen and bathroom clean and tidy, vacuuming, listing of needed supplies, counting laundry to be sent out.

LIGHT LAUNDRY for patient and family such as hosiery, undergarments, night clothes, bed jackets, infant's clothing and *light* baby washing. In emergencies the Homemaker can launder a few clothes for children and a few household articles, while waiting for outside laundry service to take effect.

PREPARE AND SERVE MEALS—such as hot food for children, tray meals for the patient, package lunches for working members and for school children, as well as food to be served after the Homemaker leaves for the day. Where required, she can plan meals, giving special attention to nutritional value, special diets and budgeting.

MARKETING AND SIMPLE ERRANDS such as going to the drug store, taking shoes to the repairman and clothing to dry cleaners or the tailor shop.

TEACH HOUSEHOLD ROUTINES AND SKILLS to well members of the family, both young and adult, in order that they may carry on normal living during the illness of the mother and when the Homemaker is not present.

SUPERVISION OF CHILDREN to insure adequate rest for a convalescent mother.

PREPARATION OF FORMULA for a new baby so that the mother may assume the physical care of the infant.

APPENDIX G-1

LIST OF WHAT HOMEMAKERS *CANNOT* DO:

Homemakers must observe these rules:

NO NURSING CARE or medication to be given the patient by the homemaker because professional liability insurance is not available at this time.

NO HEAVY HOUSEWORK—such as the regular family laundry, spring or fall house cleaning, laundry of curtains, shaking of rugs or draperies, carrying or lifting filled garbage cans, ash cans or containers of wood or coal for fuel and moving heavy furniture.

NO TRANSPORTATION of patients or members of the family by driving her own or the family car. Homemaker Service *does not* carry insurance to cover such activity.

NO WORK WHICH IS NOT ASSIGNED BY HOMEMAKER SERVICE—This means she cannot return to the patient or go to friends or neighbors of the patient to do occasional days work. Violating of this ruling means suspension of the Homemaker.

NO SELLING OF—food or homemade articles to patients that are made or prepared by Homemaker or her friends.

NO ACCEPTING OF GIFTS—money, articles of clothing. If the patient or the family wish to present such things to the Homemaker, arrangements should be made with the Supervisor of Homemakers to accept such gifts for the Homemaker. Acknowledgment of such gifts will be made directly to the donor by Homemaker Service.

NO VISITING OF FORMER PATIENTS without permission from the Executive Director of Homemaker Service.

NO GIVING OF HOMEMAKER TELEPHONE NUMBER OR ADDRESS to patients. Discussion of *emergencies* pertaining to service or *change in schedule* must be held with members of the STAFF by telephoning the office between 9 A.M. and 5 P.M., Monday through Friday. *Emergency* calls from clients who have service or have contracted for future service will be accepted by the Answering Service between the hours of:

8 - 9 A.M. Monday through Friday

5 - 8 P.M. Monday through Friday

9 - 5 P.M. Saturday, Sunday and Holidays.

APPENDIX G-2

All changes in *hours* of Homemaker Service or date of termination of case, MUST be arranged with staff and NOT with Homemaker. Such changes should be discussed by patient, a member of the family, or other responsible members of the household directly with the STAFF.

HOMEMAKERS CANNOT be responsible for property damage while in the home.

PRESENT POLICY ON HOLIDAYS — There will be no Homemaker Service extended on holidays unless specifically requestd through the office by the Patient or family.

Signed . . . . . .
Director of Homemaker Service

APPENDIX G-3

LETTER TO THE DOCTOR

Dear Doctor --:

This is to advise you that we have placed a Homemaker with your patient, Mrs. --.

The Homemaker assigned is an excellent worker and we hope her services on this case will be satisfactory to you. If you have any comments or suggestions for us, we will be happy to have them.

Sincerely yours,

Signed_____
Director of Homemaker Service

Enclosures
Can and Cannot Leaflet

APPENDIX H

LETTER TO PATIENT OR FAMILY MEMBER

Dear Patient (or family member):

This will confirm our telephone conversation in reference to your request for a Homemaker at the agreed rate of $ - - - per hour plus carfare. You will be billed weekly for the amount of service you have received. If service is extended for less than 5 days there will be an additional $5.00 service charge. Because our fees are minimal, all charges must be paid weekly on receipt of bill unless other arrangements are made through this office. Bills are sent out every Monday.

The Homemaker assigned to you is
She will start her work with you on from to
If there is to be any change in this schedule, please telephone our office promptly. Homemakers are not permitted to vary their hours or the length of service without authorization from this office.

The Homemaker assigned to you is an excellent worker and will endeavor to give you the best possible service. If you have any suggestions on how she could be more helpful or if you would prefer a change of Homemakers for any reason, please call us. This service is designed to fill the needs of the patient as prescribed by the physician rather than the convenience of the Homemaker of this Agency.

For your guidance, I am enclosing an information sheet telling what the Homemaker can and cannot do. Please call us on the telephone if you have any questions.

Very sincerely yours,

Signed
Director of Homemaker Service

Enclosures

Can and Cannot
Leaflet

APPENDIX I

ASSIGNMENT DATA

Patient's Name Telephone

Address

Date Opened

Date Terminated Reason

Hours Requested Hours Assigned

Days Requested Days Assigned

HOMEMAKER Assigned

CHANGE in Assigned Hours Date of Change

CHANGE in Assigned Days Date of Change

HOMEMAKER Assigned

* * * * *

CHANGE in Assigned Hours Date of Change

CHANGE in Assigned Days Date of Change

HOMEMAKER Assigned

* * * * *

CHANGE in Assigned Hours Date of Change

CHANGE in Assigned Days Date of Change

HOMEMAKER Assigned

* * * * *

CHANGE in Assigned Hours Date of Change

CHANGE in Assigned Days Date of Change.

HOMEMAKER Assigned

APPENDIX J

HOMEMAKER SERVICE DIVISION

PROGRESS REPORT

Name of Patient.....

Address.....

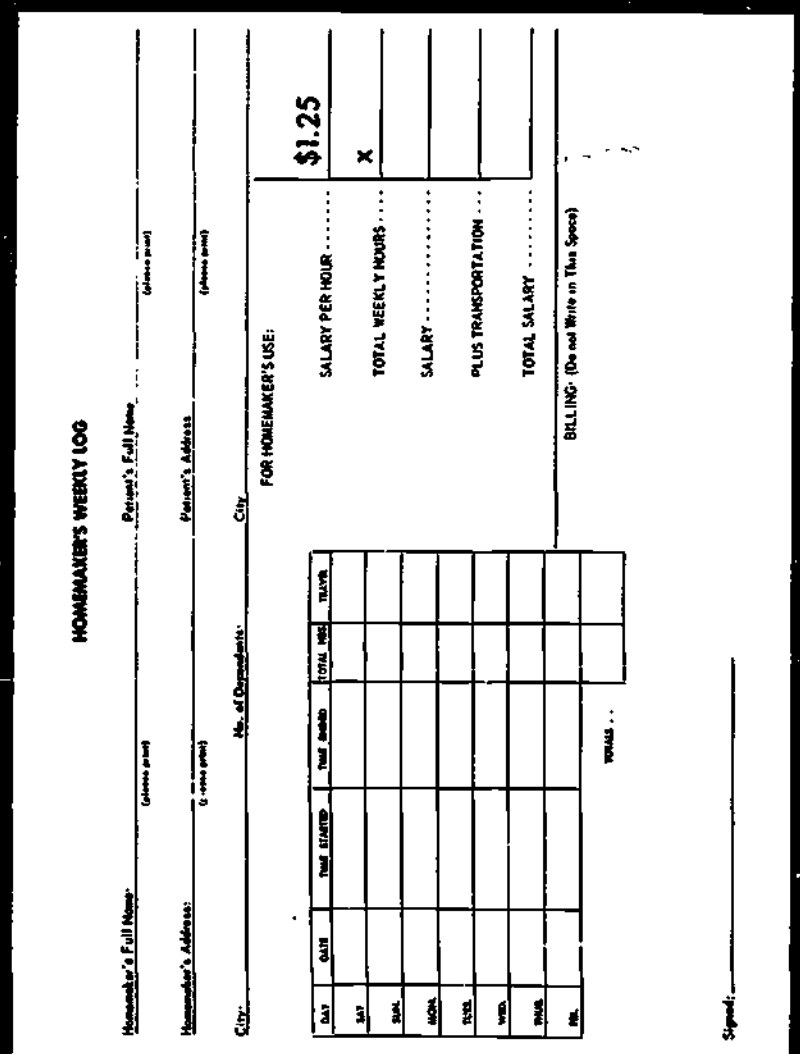
1. Special Orders:

2. Requests made by patient or family:

3. Homemaker's opinion of patient's progress, or failure to progress and any helpful suggestions:

Date:.....Signature of Homemaker.....

APPENDIX K



HOMEMAKER'S WEEKLY LOG

Homemaker's Full Name _____ (please print)

Homemaker's Address _____ (please print)

City _____ No. of Dependents _____

FOR HOMEMAKER'S USE:

SALARY PER HOUR	$1.25
TOTAL WEEKLY HOURS	x
SALARY	
PLUS TRANSPORTATION	
TOTAL SALARY	

BILLING: (Do not Write in This Space)

DAY	DATE	TIME STARTED	TIME ENDED	TOTAL HRS.	TRAVEL
SAT.					
SUN.					
MON.					
TUES.					
WED.					
THUR.					
FRI.					
			TOTALS		

Signed: _____

APPENDIX L

BILLING FORM

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APPENDIX M

VT 006 364
Klaassen, Leo H.
Area Economic and Social Redevelopment; Guidelines for Programmes. Developing Job Opportunities 1.

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ECONOMIC COOPERATION AND DEVELOPMENT ORGANIZATION

Methods of organizing national and local agencies, research programs, and policy for redeveloping job opportunities in distressed areas were investigated to identify the major problems and indicate possible approaches to their solution. Content of this report discusses: (1) introduction and statement of the problem, (2) distressed areas as a relative concept, (3) comparative studies as a necessary basis for area development policy, (4) government policy on area redevelopment, (5) local development, (6) basic research, (7) conditions which must be fulfilled in the problem area, (8) general aspects of area redevelopment, (9) special features of redevelopment policy for different distressed areas, (10) hidden potentialities, and (11) area redevelopment policy and physical planning. Some basic conditions necessary to solve current problems were described as training, retraining, other educational programs, an infrastructure, housing programs, and other amenities. Countries represented in the development of this report were Austria, Belgium, Canada, Germany, France, Italy, Norway, United Kingdom, and the United States. (DM)

VT 006 364

This is a publication of the Manpower and Social Affairs Directorate, Social Affairs Division. It is the first of a series devoted to the study of Methods of Developing Job Opportunities. It is particularly focused on area redevelopment techniques.

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area economic and social redevelopment

guidelines for programmes

LEO H. KLAASSEN
Netherlands Economic Institute

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
PARIS 1965

VT006364

The Organisation for Economic Co-operation and Development was set up under a Convention signed in Paris on 14th December 1960 by the Member countries of the Organisation for European Economic Co-operation and by Canada and the United States. This Convention provides that the O.E.C.D. shall promote policies designed :

- *to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the world economy;*
- *to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;*
- *to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.*

The legal personality possessed by the Organisation for European Economic Co-operation continues in the O.E.C.D. which came into being on 30th September 1961.

The members of O.E.C.D. are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

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FOREWORD

An active manpower policy has been recommended for adoption by O.E.C.D. Member countries by the Council of the Organisation. Its fundamental purpose is to promote the optimum utilization of the manpower resources of a country to increase "the productive capacity of the economy ... (and) its utilization." To this end programmes are required to ensure the availability, mobility and appropriate quality of human resources to meet the manpower needs of the economy. Many different institutions are providing a variety of services and funds to enable people to be recruited and prepared for employment and to adjust to the changing requirements of industry resulting from economic, managerial and technical developments.

An essential part of this programme is the coordination of manpower and economic policies to bring a close harmony between the two. The Manpower and Social Affairs Committee has indicated that "the Manpower authorities should strive to ensure that the manpower objectives are fully recognised by all relevant sectors of government and that the employment objectives everywhere are given the high priority they deserve from the point of view of economic, political and human interests".

One particularly important area for coordination between economic and manpower policies relates to the development of jobs for unemployed or underemployed persons as well as groups who are intermittently employed in the economy. The Manpower and Social Affairs Committee has sponsored the preparation of a number of studies to define viable programmes for these purposes, including the redevelopment of industrially depressed areas.

The high rate of economic, managerial methods and technical change has altered the relative job opportunities in existing industries. Those which have been shrinking in size have often been clustered in given areas and have brought large-scale unemployment in these places. At times the communities have been able to attract compensatory growth industries which have provided alternative employments; but in other instances it has not been immediately possible. Moreover, the volume of outmigration has not always been sufficiently high to assure adequate employment for those remaining. In some areas it has not been economically sound to promote undue outmigration and in other places people have not responded to incentives and aids and have remained, even though unemployed or partially employed.

These industrially distressed areas have attracted increasing attention and many governments have examined them to determine the economic feasibility of promoting industrial redevelopment in them. The resultant programmes have in some instances been part of a distressed areas redevelopment programme and in other cases part of a larger programme for regional planning and development. In either case they have sought to develop job opportunities in these distressed areas.

The present study is the first of a series initiated by the Manpower and Social Affairs Committee to promote the programmes for redeveloping job opportunities in distressed areas. Its purpose is to outline the methods of organising national and local agencies for such area redevelopment and the types of research programmes and policy problems which such efforts require. It deals both with the research conducted by central and local governments and the functions of the expert in developing local government policies. The proposals may have to be referred to central government agencies to help coordinate local and national efforts. Particular stress is placed upon the importance of "hidden potentialities" of each area, for they can often transform its economic prospects.

Wholly or partially successful programmes for area redevelopment can do much to realise the fundamental objectives of an active manpower policy, thereby promoting the nation's economic growth and increasing the confidence of the people in national programmes for economic development.

Social Affairs Division
Manpower and Social Affairs
Directorate

PREFACE

This study is intended to serve as an introduction to the methodology underlying the formulation of area redevelopment policy. It is neither the first nor the last word on the subject. It is just, as any study on any subject must be, a comment on conventional viewpoints and a proposal to go on, in a way that may differ ouly slightly from the traditional approach.

In order to emphasise the practical aspects of the study, an attempt has been made to provide as many examples as possible from various developed countries and from a number of underdeveloped countries as well. It is hoped that, as a result, the text will be more readable and that the meaning of specific statements will be made clearer.

During the preparation of the draft of this study the author was assisted by Mr. W.C. Kroft, Head of the Division of Regional Economics at the Netherlands Economic Institute, and Mr. H. Molendijk former Burgomaster of Amersfoort (The Netherlands), now adviser to the same Institute and an expert on practical development policy. Substantial help was also given by Mr. S. Barkin and Mr. E. Kempf of O.E.C.D., Directorate of Manpower and Social Affairs. The extremely stimulating discussions with Mr. Barkin, whose vast knowledge of the subject impressed me time and again, contributed considerably to this report. I thank him and Mr. Kempf for their support and encouragement.

Thanks are also extended to Mr. B.K. Tjioe, project leader, and Mr. A.E. Vis, research assistant, both of the Netherlands Economic Institute, who assisted in the preparation of many of the quantitative parts of the work. Mr. Tjioe offered valuable criticisms on the first part of the paper.

Further improvements resulted from discussions with Mr. S. Bhatia (India), a guest at the Netherlands Economic Institute.

In April 1964, a discussion of the draft of the report took place in Paris at a meeting of distinguished experts from ten countries. I feel deeply grateful for their constructive criticism which made it possible to improve many parts of the report considerably. The names of the experts present at the meeting are listed below :

COUNTRY	NAME OF PARTICIPANT	POSITION HELD
Austria	Professor W. WEBER ...	Professor for Economic Policy, University of Vienna
Belgium	Jean H.P. PAELINCK....	Former Head, Service for General and Regional Econometrics, Bureau of Economic Programming

COUNTRY	NAME OF PARTICIPANT	POSITION HELD
Canada	Arthur C. PARKS	Economist, Atlantic Provinces Economic Council, and University of New Brunswick
Federal Republic of Germany	W. GIEL	Head, Regional Economic Policy Division, Ministry for Economic Affairs
France[1]	Pierre VIOT	Head, Regional Services, Commissariat Général du Plan
Italy	Ettore MASSACESI	Director, Institute for Economic Development and Technical Progress
Norway	Ole WEG	Head, Division for General Manpower Policy and Area Development Policy, Ministry of Labour
United Kingdom	Alan ODBER	Director, Business Research Unit, University of Durham
	Wilfred BURNS	City Planning Officer, City Planning Dept. City and County of Newcastle-upon-Tyne
United States	Professor Edgar M. HOOVER	Director, Center for Regional Economic Studies, University of Pittsburgh

1. Professor Pierre Bauchet, Director of Studies, Ecole Nationale d'Administration, Paris, read and commented on the manuscript before the experts' meeting took place.

Through these experts the fields of theoretical regional economics, local area redevelopment-planning, and central government policy-making were represented.

Mrs. S. van Willigenburg did the typing of the early drafts. I am grateful to her for the cheerfulness, patience and precision with which she carried out her often tiresome task. The editorial review was made by Mr. R. Bussière of Paris who contributed substantially to the readability of the document.

L.H. KLAASSEN.

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INTRODUCTION. STATEMENT OF THE PROBLEM

WHAT IS NOT IN THE STUDY

This study is concerned with the redevelopment of industrially distressed areas. The subject is potentially very broad in scope. At the outset, therefore, we shall attempt to indicate what the present study is *not* about.

In 1963, the Area Redevelopment Administration of the United States Department of Commerce asked Frederic Meyers of the Institute of Industrial Relations at U.C.L.A. (the University of California, Los Angeles), to undertake a study on area redevelopment policies in Britain and the countries of the Common Market. This study was carried out in co-operation with Yves Delamotte of the Institut des Sciences Sociales du Travail at the Université de Paris. The French report was written by Pierre Bauchet, Director of Studies at the École Nationale d'Administration. Erika Georges collaborated with Yves Delamotte on the roles of the European Coal and Steel Community and the European Economic Community; she is Assistant Professor of Economics at San Fernando Valley State College. Dr. Ettore Massacesi, former manager of the Labour Affairs Division of the Coal and Steel Community and now directing his own research organisation "ISVET" in Rome, wrote the report on Italy. Professor A.J. Odber, who did the study on Britain, is Director of the Business Research Unit at the University of Durham. Dr. Dietrich Storbeck who wrote the study on Germany, is a member of the staff of the Sozialforschungsstelle Dortmund, associated with the University of Münster. The author wrote the reports on the Benelux countries.

The Meyers study, including the national reports, will be published in 1965; it will outline the most recent ideas and developments in the field of regional policy in the seven countries mentioned. It would have been somewhat redundant, therefore, to treat at length the subject of regional policy, its principles and applications, in the present work. This is not to say that the present study will not frequently touch upon matters of regional policy; when this is done, however, the above-mentioned volume will often be cited. The reader whose prime interest is regional policy in its general aspects, or, in the case of the seven countries studied, in its national aspects, will find the information he seeks in the Frederic Meyers report. The present study is limited to one particular aspect of regional policy : the redevelopment of industrially distressed areas.

Area redevelopment is only one phase of a planning programme. It must ultimately become part of a broader planning effort. Its purpose should be to focus on the conditions and methods of economic growth in distressed areas. It is to be expected that many studies on area redevelopment (and much of the basic data) will be integrated, eventually, into a comprehensive planning scheme; this broad scheme may then be supplemented, as required, by detailed project planning.

Regional plans may also have to be co-ordinated among themselves, to ensure that they fall within the framework of established national programmes. This study is not concerned with the economic development of prosperous areas; it considers neither the methods of identifying areas that have become economically over-extended nor the problem of redevelopment in such areas. Similarly, many other problems of national economic and social programming procedure are considered outside the scope of this report.

General

Many opinions have been advanced as to what constitutes the "best" solution to the problem facing the government and people of a distressed area. Recommendations range from purely econometric solutions to the use of "brainstorming" sessions; from propaganda in favour of emigration to the complete renovation of an area's infrastructure and industry.

Many different techniques have been used in area redevelopment, and policy recommendations have covered a wide range of possibilities. The reason for this may well be found in the peculiar requirements of each region. For example, two areas currently on a par as to economic structure and position may have very different potentials for future development. The same recommendations regarding development should clearly not be made to the governments and business communities of both areas.

However, we shall not attempt, in this study, to relate differences in area redevelopment policies to the specific differences in social and economic structure that exist between areas. We shall rather be concerned with finding a general method that might be applied to any area in order to identify its main problems and indicate possible approaches to solving them. The method should make it possible, considering as many aspects of an area's difficulties and potentialities as possible, to arrive, in a systematically consistent manner, at a sound plan for future development.

Before discussing the proposed method in detail, it would be helpful to consider briefly the *action-oriented research* that should be undertaken. This is especially true since there are some aspects of the programming of this research that have been neglected until now.

Timing of the research

The timing of the research is the first and, perhaps, the most important point to be considered in the whole development and redevelopment programme. Some examples may serve to show why this is so.

Curaçao, in the Antilles, has an economy which is based mainly on one activity : refining Venezuelan oil. Most other activities, including the repair and maintenance of installations, transportation, finance and tertiary (service) activities, depend directly or indirectly upon the one central activity; refining foreign oil.

As a result of this basic feature of Curaçao's economy, there has been an abundant supply of foreign currency and a flourishing import trade in consumer goods for the local population. No local manufacturing industry of any importance was established—the import business seemed easier, and at least as profitable as manufacturing.

However, the present economic outlook for Curaçao is anything but bright. The government of Venezuela has decided to bring about a gradual

shift from the mere export of crude oil to the local refining of crude and the export of refined products. This decision, which seems perfectly rational and wise on the part of Venezuela, threatens, when carried out, to verge on the catastrophic for Curaçao. The shift, of course, is likely to be gradual, although rapid mechanisation of local refineries does worsen the present situation.

For some years to come, Curaçao's economic position, its income and employment levels will not however be too seriously jeopardized in spite of its current process of demographic explosion.

It is clear, however, that it would not be very wise for the government of Curaçao to wait for stagnation and economic distress to set in before undertaking research into the best programmes for the reconstruction of the economy. In fact, it is clear that such research should be undertaken early enough to permit the first corrective measures to be taken well in advance of the occurrence of economic decline. Under the circumstances, one can well understand that the government had recourse to the services of a number of research institutes, charging them with studying the various aspects of the problem of the eventual reconstruction of the economy. The research that is going on is aimed at the *prevention* of future economic distress.

A similar, though slightly different case is to be found in a study of the Eastern Mining District in the Dutch province of Limburg, close to both the German and Belgian borders. Research on future development carried out by the Netherlands Economic Institute at Rotterdam, resulted in the expectation that this area would be faced with a gradually increasing labour surplus as a consequence both of a sharply rising population and of a decreasing rate of growth of the economy. Although at the time the research was carried out, this area could be considered a high income area, it became clear that it was not at all unlikely that its position would weaken considerably in future years. It was necessary to carry out further research, directed at improving the economic structure of the area.

In the case of Curaçao, a political decision on the part of a foreign government as well as rapid mechanisation of existing industry made it apparent that future corrective action would be necessary, and that research was needed in order to make this action as effective as possible. In the case of the Eastern Mining District, research revealed that the declining importance of coal in the world's economic structure would lead to future local difficulties and therefore that action-oriented research was required to prevent economic decline.

In both cases, however, research was initiated (in the case of Curaçao it is still in progress) long before there could really be any question of actually distressed areas. It was assumed that satisfactory solutions could be found to all the problems likely to arise during the period of transition of the economy. It was also assumed that the research could and would result in the formulation of policies that would be effective in preventing these areas from becoming "distressed".

It might be said that when an industrial area has become actually distressed there is every reason to believe that research and policy decisions aimed at improving the situation came too late, or were inadequate. In most of the cases studied by the author, no research was carried out and no action was taken until it became apparent that the area concerned was already definitely distressed.

"Announcement that an established industrial firm is closing its doors for good or is moving elsewhere frequently comes as a profound shock to a

community. When a delegation of local government officials and economic development leaders attempts to persuade the firm to reconsider, the response usually is : 'it's too late'.

"Any of a number of actions might have helped prevent the shutdown—for example, fund-raising to modernise the firm's plant and equipment; construction or improvement of traffic facilities between the plant and main transportation routes; enlargement of the local water supply and treatment facilities; or vocational courses to train plant workers for more technical jobs[1]."

Research into a region's process of social and economic development, then, may reveal that, whether in the near or the distant future, certain economic problems may arise. Furthermore, this may be so even when the current economic situation of the region seems perfectly satisfactory : present prosperity may not last. This fact was painfully impressed on the Belgian and German coal-mining industries when the optimistic forecasts of the demand for coal made by the Coal and Steel Community in 1958 failed to materialise. As a result of the decline experienced by these industries from the relatively favourable position they had once held, the areas in which they were located became, in a few years, seriously distressed.

We are of the opinion that continuous development research should be carried out in *all* areas; this would make possible the early detection of favourable and unfavourable economic trends as well as the early evaluation of their possible ultimate consequences.

The mere existence of distressed areas, of course, amply justifies research on redevelopment. But this approach is inefficient in comparison to continuous development research. *Redevelopment research must cure; continuous development research can prevent serious economic ills.*

It is reasonable to conclude that a permanent economic *area monitoring agency* should be charged with the responsibility of carrying out a programme of continuous development research. The responsibilities of such an agency will be discussed in detail later in this study. For the moment, we wish to emphasise the need for an agency of this kind, if the regular and balanced growth of any area is to be assured. It is all the better if the agency maintains close relations with a university : this may contribute substantially to the quality of its research, as well as to its scientific objectivity.

The importance of continuous research and the role of the monitoring agency are brought out with remarkable clarity in Bill C-80 of the House of Commons of Canada (An Act to Amend the Atlantic Development Board). Section 9 of this Act reads :

" The objects of the board are to inquire into and report to the Minister upon resources and projects for fostering the economic growth and development of the Atlantic region of Canada, and, without limiting the generality of the foregoing, the Board may, in furtherance of its objects :

a) prepare on a sytematic and comprehensive basis, and revise as required in the light of changing circumstances, an assessment of factors relevant to economic growth in the Atlantic region;

b) keep under constant review appropriate methods of furthering the sound economic development of the Atlantic region, whether such methods involve new measures and projects or the removal or mitiga-

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1. Redevelopment, March 1964. Vol. I, No. 2, U.S. Department of Commerce, Area Redevelopment Administration, page 5. "A Stitch in Time".

tion of existing factors that may be considered to inhibit such development;

c) with respect to particular measures or projects that may be referred to it by the Minister, inquire into, assess and report to the Minister upon the feasibility of such measures or projects and the effect thereof in relation to the economy of the Atlantic region, and make recommendations to the Minister with respect to any such measures or projects that in the opinion of the Board would significantly contribute to the growth and development of the economy of the Atlantic region; and

d) consider and report to the Minister upon any other matters that in the opinion of the Board may usefully be considered by it having regard to the need for a continuing sound economic development of the Atlantic region.

The Board shall, to the greatest possible extent consistent with the performance of its duties under this Act, co-operate with the National Economic Development Board, the National Productivity Council and all departments, branches and other agencies of the Government of Canada having duties related to, or having aims or objects related to those of the Board."

AREA SELECTION

Before going into the techniques of development research, we must turn our attention to another important question : the relative shares of responsibility for area redevelopment that ought to be assumed by the central and regional authorities.

In following the centralised approach to development, the national government determines and considers the development potential of all areas in the country. On this basis, the government then reaches pertinent decisions regarding the distribution among regions of public and private investments, the facilities to be extended to industries in the various areas, training and retraining programmes, the creation of industrial estates, investments in the local infrastructure, etc. The development potential of some areas will be found to be very high, of others, perhaps, almost nil. Referring to a fictitious example, one might suppose that there existed a central government for all of Africa. The government might find that the development potential of Nigeria was very promising; its findings on the Niger Republic, on the other hand, might be much less favourable. Geographic and climatic conditions, natural resources, management and human resources in general would determine the process of selection.

If such a procedure were adopted (and there are logical arguments to defend it) it is likely that some regions would be slated for maximum future development; others might be the object of a smaller effort; and some regions might well receive nothing at all.

The regions to be developed might be distressed or they might not; they might be agricultural, mining or industrial areas. The cost of development would be an important consideration, as would be the present state of the infrastructure of the region. The main feature of the centralised development approach, however, is that decisions are made by a centrally located agency and that these decisions are based on the principle of maximising the growth of the total national product. This is the approach that ensures the highest possible total return on total public and private investments.

Is it established, therefore, that centralised area development planning is to be the preferred method of bringing about area redevelopment within a particular country? Offhand, one might be tempted to answer in the affirmative —but it is probable that the real complexity of the problem would soon become apparent and make it necessary to reconsider the whole question.

The first complication springs from the fact that the various areas / regions of a country are not *merely* the geographical and economic units making up the total national economy; human populations are involved and, therefore, human and sociological factors come into play. Thus, the centralised approach —selecting areas to be developed solely on the basis of their economic potential —necessarily assumes a high degree of geographical mobility on the part of the population : the required number of workers would always be willing and able to move from areas which, according to plan, were slated for little or no future development, to areas under active development.

Experience in many countries, however, has shown that the less developed and more depressed an area, the more must one expect its population to be reluctant to migrate. This reluctance, of course, may be overcome by dint of financial incentives (including compensation for the costs of moving workers and their households), and a desired degree of mobility may thus be achieved —at a cost. But, then, it is also possible—at a cost—to influence the mobility of capital. And, in certain cases, influencing the mobility of capital (e.g. by providing incentives for industries to move into a selected area) may prove cheaper than the exercise of a corresponding influence on the mobility of labour. One way or the other, the rank of an area may be biased if it is determined, in the first place, only by considerations of development potential in the narrow economic sense.

A second complicating factor is that, in practice, it may not be feasible to implement a heavily centralised area-development policy. Whether or not such a policy is possible depends, to a large extent, upon the structure of the government and its overall political orientation. We shall now turn our attention to these two important aspects of the problem.

The degree of centralisation of the Government and the tax system

There is no question that a highly centralised form of government facilitates both the formulation and the implementation of unified and far-reaching policy decisions. Even completely centralised governments, however, may have to accept certain limits, geographical and other, to the exercise of their authority and influence. In very large countries, like the Soviet Union, geographically remote areas are inclined to adopt a more "independent" style in the conduct of their affairs than areas close to the seat of government. This is illustrated, in the case of the U.S.S.R., by the Caucasian Republic and by the remote Asiatic parts of the country. The phenomenon may be observed in much smaller countries as well, Eastern Moravia in Czechoslovakia being a case in point.

In many countries, of course, constitutional and geographical factors both tend to favour decentralisation.

"In Canada the federal and the ten provincial governments are sovereign within certain rather well-defined areas. Both jurisdictions however have constitutional responsibilities for industrial development. This implies a substantial degree of decentralisation which is almost inevitable in a country with vast distances, different backgrounds and only a century of experience in living

together. In Canada it is not only a matter of the desirability of introducing regional differences in economic planning, but also of the virtual necessity of doing so on constitutional and other grounds[1]."

Geographical distance, of course, is not the only factor favouring the assumption of a degree of independence by the different regions of a country : there are also such factors as local "mentality", racial structure and others, to be considered. The eastern part of the Republic of Niger may serve to illustrate this point. The haoussa and Béri-Béri-tribes living in this part of the country feel much closer to their tribesmen in Northern Nigeria than to the Zermas in the Western Part of the country. This attitude is even more striking since the economic structure of the Eastern part of the Niger Republic is much more similar to that of Northern Nigeria than to that of the Western part of the Niger Republic.

The above considerations point to the desirability of allowing regional differentiation to play a role in the overall planning process. This seems to be true even in the case of countries with highly centralised governments. In Czechoslovakia, for instance, the promotion of regional initiative by the peoples of different areas has become a normal element of regional policy. The centralised regional policy is directed primarily to achieve minimum requirements in economic, social and cultural infrastructure, to serve as a basis for further regional initiative; only secondarily is it aimed at promoting directly the development of chosen privileged areas.

Since the feasibility of applying a centralised policy, in the strictest sense, seems to be in doubt, it becomes a matter of interest to estimate the limits within which such a policy does remain possible.

In this context, the regional policy of Holland may provide an instructive example. It is a centralised policy, in principle. Applying a number of quantitatively defined criteria, certain regions have been selected as objects of regional-development policy. Financial facilities are made available to improve the social, cultural and economic structure of the selected regions, and a system of subsidies has been established to attract industries to those regions. The policy has had a measure of success.

In Holland, the principal tax is the income tax, which is paid directly to the central government. A part of this income is retained by the government to meet its own expenses, including the cost of its regional policy. Another goodly part, however, is redistributed to the municipalities in accordance with a formula that is heavily weighted by population : in general, the larger the population of a municipality, the larger the per capita contribution of the central government to that municipality's income. Furthermore, subject to the rather liberal conditions of approval by provincial governments, municipalities enjoy a considerable degree of autonomy in the control of their own budgets. As a result, individual municipalities are often in a position to offer financial incentives to industries that are comparable to those offered by the government in implementing its centralised regional policy. This has proved to be of the utmost importance in enabling local authorities to exercise initiative in the development of their own areas, whether or not such areas are considered to be "problem areas" by the central government. Indeed, a test case (Franeker) has indicated that provincial governments would not approve municipal schemes that merely duplicate the pattern of incentives

1. Arthur C. Parks, Canada, during the O.E.C.D. meeting on Area Redevelopment, Paris, 1964.

offered by the central government; nevertheless, municipalities and regions not favoured by central area-development policy are left considerable freedom of action in formulating and implementing their own local policies.

It is easily seen that effective limits to local initiative are set by the income of the local government, and that this is closely related to the prevailing system of taxation. Clearly local initiative can be limited by legal and constitutional considerations. Within these bounds, however, history has shown (as in Southeastern France and Holland) that local authorities will not hesitate to take the initiative in developing their regions.

In view of the major role played by the income of local governments in determining the degree of initiative they may exercise in developing their own areas, it may be helpful to make some distinctions between highly centralised taxation systems, as in France, and decentralised systems, as in the United States. In general, it may be said that decentralisation in the tax system has the effect of placing greater financial means in the hands of local authorities, enabling them to show more initiative in local development. With a decentralised system, for example, local governments contribute a part of their income to the central government but keep control over the remainder. There is always the possibility of increasing this "remainder" by raising local taxes. In the United States property taxes are the major source of local income, supplemented by federal grants to the states and state grants to local communities. The property-tax burden varies enormously from one country to another, following variations both in the tax rates and in the assessed land values. With such decentralised systems of taxation, local governments enjoy more freedom in arriving at and effectively carrying out development policies than when their income is determined by the central government formula. One must remember, on the other hand, that a centralised tax system generally helps the central government in carrying out an effective overall regional policy.

Social elements in area redevelopment policy

A second factor limiting the validity of centralised regional planning is the very strong and politically inspired tendency in many economies (even those of underdeveloped countries) to introduce considerations of social welfare into the treatment of regional problems.

In all but a few countries the criteria used in choosing areas to be developed include "persistent unemployment", "low income", "unfavourable economic structure", etc. Oddly enough, development policy in many areas is based *solely* upon such negative criteria. Even if, at times, certain boundary conditions are set up, such as cost of development or, more generally, feasibility of the development programme, the fact remains that, in principle, the criteria used are negative ones.

From the purely economic point of view, the development of a country should take place selectively in regions endowed with a high development potential. In line with this point of view, an economist would generally prefer to go directly to the root of the trouble, rather than attempt to treat local difficulties. Still, there are three considerations, all of them short-range, that would make it difficult for him to adhere rigidly to this approach.

The first consideration is that maximum well-being for the whole nation can only be reached if there is a reasonably equitable distribution of income between persons and areas. In some cases a certain national income, properly

distributed, may be clearly preferable to a higher income, poorly distributed. This argument, of course, is somewhat weakened by the fact that it cannot be stated in quantitative terms. As a working criterion however, one might say that regional development policy must at least seek to prevent any increase in existing maldistribution of income. This does not prove, of course, that it is precisely in underdeveloped or undeveloped areas that investments should be made. Yet, consideration of political realities will, most often, prevent granting subsidies to one region if the intent is to improve the economy of another region. The regional representatives of the latter region will always insist that they themselves should receive the subsidies. (As an exception, the State Government of West Virginia has recognised the need for emigration. It would not be too easy to find other examples of this basically reasonable attitude).[1]

The second consideration is purely sociological. It is concerned with justifying the migration of a large number of people from an area where they have their roots to another area where they have none—where the local population and its mentality, religion, race or tribe and even language may be "alien". The difficulties raised by such factors have often been observed in the case of international migrations; they should not be underestimated in the case of inter-regional migration. It is considerations of this sort, together with other short-range concerns such as the preservation of local culture, that constitute a second set of factors influencing governments to concentrate their redevelopment effort in the most backward areas of their country.

The third consideration is the responsibility that must be assumed by the host area to integrate culturally and to train unskilled or semi-skilled immigrant labour. It must be said that this argument is not usually a very strong one, since it is patently in the interest of the area itself to receive and to absorb immigrants who will contribute to further development and without whom the area's rate of growth would necessarily be inhibited.

There may be more such considerations. The fact remains that a centralised area development policy is seldom carried out as one would expect. On occasion, the approach taken may even be opposite to that which might be thought theoretically correct. Furthermore, regional initiative, although dependent on the financial means of each region, has an important influence upon the area redevelopment programme of the country as a whole. We have seen that this is so even in countries with highly centralised governments.

We are convinced that it is most important that local governments conduct studies of development policy for their own areas. The orientation of such studies is such that they are bound to benefit the areas concerned. Furthermore, there is always the chance that studies centered on local areas might reveal hitherto unknown local resources. In this event, the central government may well be brought to re-examine its rating of the particular areas concerned; it may review the set of criteria employed in its area (re)development policy; it may even find sufficient cause to revise the policy itself.

The promotion of the pine industry in the southern states of the United States provides a good illustration of this mechanism at work. Before it was realised that the pine industry has assumed importance and was rapidly growing, there was little national concern for the creation of a pine industry;

1. Edgar M. Hoover, during the O.E.C.D. meeting on Area Redevelopment, Paris, April 1964.

after all, timber could easily be imported from Canada. The regional authorities in the South, however, considered the promotion of this particular industry very important for their *region*. They were so successful that, by now, the pine industry is of prime importance not only to the South, but to the entire nation.

Co-ordination of local plans and integration into a national plan

A fundamental requirement of a local plan is, of course, that it be consistent with other local plans. Such mutual consistency may impose restrictions on the freedom of local authorities to formulate their plans, but at the same time makes realisation of these plans more likely and enhances the probability of financial support from the central government.

One might cite any number of instances in which local authorities failed to achieve consistency : for example, "Prognos" in Basle forecast the future population of Munich and concluded that it would grow from the present level of one million to about 1.6 million in 1975, partly as a result of emigration from the rest of Bavaria. However, in other parts of Bavaria, the aim was to reduce emigration to Munich by encouraging local development; the regional plans assumed a reduced rate of emigration. As a result, infrastructure is being provided for the people concerned *both* in Munich and other parts of Bavaria.

Two conditions must be met in order to avoid such inconsistencies. First, local plans should be formulated in co-operation with the authorities of other localities and in co-ordination with other local plans. Secondly, the resources required to execute all local plans should not exceed the total sum available; this means that all local plans must be integrated into one national plan, at least insofar as central government funds for local areas are concerned.

Co-ordination of local plans is becoming more usual in both Italy and the United States (in the latter case, under the supervision of the Area Redevelopment Administration). In Poland, national and regional planning have been completely integrated. In France, it is the central government that makes the actual decisions as to what regions are to be developed and how much money is to be made available for local development plans. The new Norwegian national plan will be based upon integrated regional plans.

Whatever the actual organisation of planning on the national and regional levels, it is essential, if local planning is to be successful, that the plans be mutually consistent and that they be integrated into a national plan. This is not to say that regional decisions should never be made on the basis of purely local issues merely because a national plan exists. In fact, considerable development may be done without much recourse to national aid.

Therefore, it must be recognised that, although local governments should carry out a substantial portion of any area redevelopment programme, the central government may wish to appraise the results independently in the framework of the national programme, and to offer guidance to local areas in these terms. Moreover, decisions concerning specific grants and aids to local areas may be governed by these overall national considerations and by a system of priorities derived from the national programme. The decisions may, therefore, involve independent studies of regional problems by the national government. Furthermore, decisions concerning the relative desirability and feasibility of regional proposals for national aid will require study by the national government and the development of policy and criteria for their selection.

THE PROCEDURE TO BE FOLLOWED. NATIONAL AND REGIONAL MODELS

In the author's opinion, the best approach to the problem of national planning consists in an optimal combination of econometric or macro-economic, and regional or sectoral (micro-economic) studies. The micro-studies can help particularly in formulating the objectives of the government in finer detail, in refining estimates, and in adding to the store of required statistical data. The author firmly believes that the same procedure can be applied advantageously to area-development plans.[1]

Of course, the analogy between regional and national economies should not be exaggerated. It is obvious that a regional economy is more limited in scope than a national one. The difference can be traced to four basic factors :

i) Because of its smaller size the economy of an area is usually further removed from being a "closed economy" than that of the whole country. This has direct bearing on the effectiveness of regional instruments, contrasted with the effectiveness of the same instruments used at the national level. In a situation of underemployment, for example, an increase in local government expenditures will usually bring about a much more modest increase in local income than a corresponding increase in expenditures on the part of the central government would cause in the national income. This is another way of saying that a regional income multiplier is lower than a national income multiplier because of the higher marginal import quota of smaller regions. Similar reasoning would apply, for example, to a change in the level of taxes. It follows that as far as the *same* instruments are concerned, a regional economic policy will be less effective, in general, than a national one. The smaller the region under consideration compared to the nation, the greater the importance of this factor.

ii) The set of instruments used regionally is not the same as that used for national policy. The local or regional government might fix land rents at a level competitive with that of other areas; but it is not able to raise import duties or to grant export subsidies. In general one might say that it is not within the competence of local governments to use the national instruments. Important elements of a national policy are measures concerned with international trade (duties, quantitative restrictions, etc.), wage and price levels, unemployment compensation, the national infrastructure (national highways, railways, high tension electricity lines), etc.

Still, the local government has at its disposal numerous effective instruments. These include financial backing in the establishment of industrial estates and the construction of plants, improvements in local infrastructure, stimulation of cultural and social activities, etc. In the course of this study, we shall see that there are so many instrument variables and that knowledge of their effectiveness is so limited, that they constitute one of the main fields of investigation in area (re)development policy.

iii) Apart from the large number of instrument variables, there are also many exogenous variables, some influenced by the central government, others not. The wage level in many industries is an instrument variable for the central government but an exogenous variable for the area. The same is true of prices, import duties, etc. In practice, the expected values of all these variables, which

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1. Compare P. Massé, *Le Choix des Investissements*. Paris, 1959.

effect both the national and regional economies, should influence the formulation of regional policy. Finally, initiatives taken within the private sector may exert an influence comparable to that of the local government. This is a very important factor, especially at the regional level, and it must be taken into account.

iv) In comparison with national statistics, regional data are usually very sketchy. Unfortunate and dangerous though this may seem from an economic standpoint, it is a fact. The reason is that, most often, regional and administrative boundaries do not coincide, and that, as a rule, statistics are gathered for administrative units. Normally, for example, import duties are only levied at the national border. As a result statistics on imports would be available for Eire, a sovereign nation, but not for California which is "only" a state within the United States.

Statistical data for the nation are often inferred from the study of samples designed to be properly "representative" for the whole country, samples which may lack validity in particular areas. Even when the sampling process has "covered" a given area, it may not be possible to make any reliable inference regarding the relevant statistics for the area. One might cite as an example the United States census of 1960 : the samples from which many data were obtained were, too small to permit statistically sound estimates to be made for some of the areas concerned. True, in the United States, an effort is now being made to improve regional statistics. The Bureau of the Budget is compiling useful data, and the Government is making an attempt to provide finer regional breakdowns. In general, however, it remains true that statistics for areas are more limited and less reliable than those pertaining to the nation.

A comparative study of the regional data available in different countries would be most useful, especially if, in each case, it were determined whether or not the data met minimum requirements. There can be little doubt that, at present, many countries would fail to pass the test.

We may state, in summary :

a) Regional models must handle more variables than national models;
b) the effectiveness of instrument variables is less well known at the regional than at the national level;
c) available regional statistics are fewer and less reliable than national statistics.

Under these conditions, it is easy to understand that, in formulating regional policy, econometric models are likely to prove less useful than in the case of national policy. Inadequacy of the statistical data, insufficient understanding of the effectiveness of the instruments of policy, a requirement for more numerous instrument and exogenous variables—all these factors contribute to diminishing the role models can play in regional policy.

As a result, the knowledge and judgment of sectoral and regional experts assume greater importance in (re)development planning for distressed industrial areas. In this study, therefore, we have tried to incorporate into the methods proposed several elements commonly found in French and American practice. In doing so, of course, we have been careful to avoid tipping the balance all the way from analytical methods to methods depending on the exercise of intuition and judgment based on experience. It is hoped, in fact, that the area redeveloper, in the free exercise of his speciality, will gradually acquire such

knowledge and information as will enable him to construct satisfactory models of the regional economy. In doing this, he will find it helpful to use the results of studies conducted by local experts. At the same time through experience and special investigations, he will gain insight into the effectiveness of the various instruments of regional policy. It will then become possible to select more judiciously the instruments to be incorporated into the regional models. Furthermore, with better knowledge of the local economy and more complete statistical data, regional models will tend to become more reliable, and their use more significant. It would be rash, however, to expect that econometric models will ever be developed to such a point that they alone will provide all the solutions to the many and complex problems facing even the smaller units of human society.

Chapter 1

DISTRESSED AREAS : A RELATIVE CONCEPT

Definitions

Area

When in this and subsequent chapters the concept *area* is used, this concept should not be considered as a very precise one. In fact, many economists are of the opinion that it is a mere waste of time to discuss what precisely the definition of an area should be. While we do not entirely share this opinion, we recognise that it contains elements of truth. The reason for this is that the concept "area" presupposes the possibility of drawing the boundaries of an area's activities. By definition, however, such boundaries are a function of the nature of the activities we have in mind. In other words the *radius* of one activity is not necessarily equal to that of another. A shop providing daily necessities will have a radius hardly exceeding its immediate neighbourhood. The same holds for a kindergarten or a primary school. Their markets are only *local*.

A regional shopping centre, however, will have a considerably greater radius as will a technical school, while a university will have an even larger one. They have *regional* markets. Other activities such as automobile production, oil refining and the activities of national museums or government offices have *national* markets covering the whole country, while airline companies provide an example of activities with *international* markets.

It follows that in attempting to assign definite geographical boundaries to an area, one must necessarily include several local markets as well as parts, at least, of regional, national and international markets. Consequently, any definition of an area is more or less arbitrary as far as the markets for the products and services of the area are concerned. We shall only dwell, therefore, on some of the broad features that are characteristic of an "area" as we conceive it.

First of all, a given area might be considered too small, if, in view of its size, too narrow an approach were taken to questions of local investment. The size and indivisibility of many investments in the fields of education, infrastructure, etc. require that a minimum of "consumers" be on hand to justify them. If such investments are made within too small an area, they cannot be exploited efficiently. Furthermore, if all areas were to make similar investments, overcapacity would result in the region as a whole. Clearly this criterion is not very precise since, for example, the size of a secondary school is quite different from that of a higher technical school. Even among large areas, therefore, close co-ordination is essential.

An area may also be considered too small if it can only meet in part the

demands of the labour market of one of the employment centres of the area. In that case the area considered should be enlarged so that, broadly speaking, there is no gap between the geographical area's product and its income. This usually implies that the largest part of the total labour market demand can be met within the area itself. Under these conditions, no large-scale commuting is required across the area's boundaries.

The economic structure of an area provides another criterion of proper size. This structure should be regionally homogeneous. The area, therefore, should not overlap neighbouring areas having different structures.

A fourth criterion is that an area should be of sufficient size to ensure its containing at least one growth point. We will return later to this important concept.

A common appreciation of local problems and a common approach to their solution constitute a fifth and final criterion. If this kind of awareness is lacking or inadequate, if there is no spirit of co-operation in solving common problems, the area must be considered too large. "Rural districts fight urban districts, county boroughs plot against counties, plans are conceived in rivalry and solved by unhappy compromise. Tynesiders speak with hauteur of Tees-side; but Gateshead fears the 'dictatorship' of Newcastle. Durham-city grumbles at Durham county's scheme for an indispensable road".[1]

Despite these difficulties, the complex of local governments must be capable of concerted action, making it possible to think in terms of "the" local government. A good example of such co-operation is to be found in the north-east of Great Britain where the local authorities have set up a regional "North-East Development Council".

Distressed Area

A *distressed area* is usually defined as an area that, at a given moment in time and in one respect or more, is economically at a disadvantage in comparison with other regions, or, especially, with the country as a whole.

Certain areas in Pennsylvania, for example, are said to be distressed because their level of economic well-being is low compared to that of the Eastern United States, or to that of the entire United States. But these areas would certainly not be called distressed if their income or employment level were being compared, say, to those of India or Egypt, or even of Southern Italy.

Scotland is called a distressed area since the unemployment level there is well above the British national average. This is also true of the Bavarian woods, compared to the average of the Federal Republic of Germany.

We may note that, in practice, two main variables enter into the definition of a distressed area; the level of unemployment and the level of income. Although, in many cases, these two factors are closely related, some attention might be given at this point to the conditions that would tend to make the use of one or the other preferable.

It is a well-known fact that unemployment in agriculture is very hard to measure. Since there is no registration of disguised unemployment, employment statistics generally tell only a small part of the story about unemployment in many agricultural areas. In such areas, income is usually a much better measure of the economic situation than the rate of unemployment. In industrial

1. *The Economist.* 7th December, 1963, page 1069, "Towards Northumbria".

areas the two usually go together. Only in exceptional cases might income levels be relatively high and employment relatively low. For this reason it is the income factor that will most often be emphasised in this study. But, of course, as occasion may require, due attention will also be given to the employment side of the problem.

The above definition of a distressed area has two important implications : these are that the concept "distressed area" is relative, on the one hand, and static on the other. The latter characteristic follows from the fact that it is explicitly stated in the definition that the economic situation of the area is considered at a *given moment in time.*

It seems unfortunate that this definition which, implicitly or explicitly, is widely used in economic literature, should not involve the element of time. An area may, at a particular time, enjoy a per capita income equal to the national average. At the same time, the area's rate of increase in per capita income may be a mere 1 per cent per year, while the national rate of increase is, say, 4 per cent. Should such an area be considered "distressed"? According to the definition which only gives weight to actual income levels, the answer is no. Yet, looking to the future, all will agree that if the present gap in the rate of increase continues, the area is bound to become a distressed area.

An even more interesting case presents itself if we assume that the per capita income of the area is, say, 40 per cent lower than the national average but that the rate of increase is 5 per cent compared to 2 per cent for the nation as a whole. Again, according to our definition, the area should be considered heavily distressed; but it is evident that, if the development continues, in 17 years its income level will be equal to that of the nation and after that might even exceed it.

Discussing recent changes in the United States economy that brought prosperity to the nation but distress to areas such as Lawrence (Mass.), Amsterdam (New York), Scranton (Penn.), Durham (North Carolina), Detroit (Michigan), Portland (Oregon) and Southern Illinois, Solomon Barkin[1] remarks: "The fate which has befallen these communities might well become the destiny of many other areas now enjoying the peak of their economic growth. Economic and technical changes are continuing : they will, in the future, alter the position of many areas. No group is protected from the ravages of this highly turbulent and dynamic economy. The prosperous ones of today, tomorrow might be flat on their backs."

Application of our definition to the two theoretical cases mentioned above would indicate that the first area is not distressed although an analysis over time clearly indicates that the future outlook is very unfavourable; in the second case we would be led to consider the area "distressed" although its prospects for the future are very favourable compared to those of the nation. Clearly the static definition of a "distressed area" takes no account of the areas' economic situation and development trends; aspects which definitely should be considered when planning development activities.

We shall try, therefore, to formulate a modified definition of "distressed area", one not quite so open to valid criticism. In this definition, it is clear that the time element must be incorporated. What is not immediately apparent is how this can best be accomplished.

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1. "Principles for Area Redevelopment Legislation", *Labor Law Journal*, August 1959.

Classification of Areas

Let us again take per capita income as the variable to be considered. This, of course, does not mean that we do not realise that other variables also play their role. It is only for the sake of simplicity and to arrive at a correct definition as easily as possible, that income level is here treated separately as a single variable.

The definition we seek, then should take into account:

a) income level during the year under consideration, compared to the national level in the same year;

b) the expected rate of growth of this income in future years, compared to the expected national rate.

In practice these forecasts will usually consist in extrapolations based on the development record of recent years. These two reference variables may serve to define four types of area, as shown in the following diagram.

TABLE 1. CLASSIFICATION OF AREAS

INCOME LEVEL COMPARED TO THE NATIONAL LEVEL / RATE OF INCREASE COMPARED TO THE NATIONAL RATE OF INCREASE	HIGH (≥ 1)	LOW (< 1)
High ≥ 1)	Prosperity area	Developing distressed area (in process of development)
Low (< 1)	Potential distressed area (declining prosperity area)	Distressed area

It seems useful to restrict application of the term *distressed area* to areas whose income levels *and* rates of increase of income are below the corresponding national levels. Where *both* variables attain or exceed the national levels, we might well speak of a *prosperity area.* The two other cases might be referred to as *distressed areas in process of development* if income is relatively low while the rate of increase is high, and *potential distressed area* if the reverse is the case.

Clearly the classification given above might be refined in several ways. A distressed area in process of development might enjoy such a high rate of development that hardly any assistance from the central government is needed. Another might reach the national average only in the very distant future. A similar distinction could be made by considering how large is the difference between area per-capita income and national per-capita income. Here, too, further refinements could be made. For the sake of the argument, however, we will now consider only the fourfold classification given above.

Some Belgian statistics may help to demonstrate the use that can be made of the above classification. Tabulated below, one may find the classification for 8 Belgian provinces and the arrondissements Louvain, Nivelles and Brussels of the ninth province of Brabant.

1. In the left-hand column the annual rates of increase of the shares of real per capita Gross Regional Product (GRP) for the period 1953-59.
2. In the right-hand column, the apportionment of the per capita GRP of Belgium, on the basis of a datum of 100 for the year 1959.

TABLE 2. ANNUAL RATE OF INCREASE OF GRP AND LEVEL OF PER CAPITA GRP IN BELGIUM

AREA	ANNUAL RATE OF INCREASE OF REAL PER CAPITA GRP (1953-59)	PER CAPITA GRP BELGIUM (1959) = 100
Antwerp	2.4	104
West Flanders	2.4	79
East Flanders	2.3	83
Louvain	2.3	83
Nivelles	2.3	92
Brussels	2.1	145
Namur	2.1	89
National average	1.9	100
Liège	1.6	113
Luxembourg	1.6	72
Hainaut	1.5	96
Limburg	0.3	73

These data can be used to re-arrange the areas into the four categories suggested by the table on page 30. We obtain:

TABLE 3. CLASSIFICATION OF BELGIAN AREAS

RATE OF INCREASE \ LEVEL OF INCOME	HIGH	LOW
High	Antwerp Brussels	West Flanders East Flanders Louvain Nivelles Namur
Low	Liège	Luxembourg Hainaut Limburg

From this table, we see that:

a) Antwerp and Brussels are prosperity areas;
b) West and East Flanders, Louvain, Nivelles and Namur are distressed areas in process of development;
c) Liège is a potential distressed area;
d) Luxembourg, Hainaut and Limburg are distressed areas.

It appears that even in a small country like Belgium all four categories of areas are represented very clearly. The position of each region follows immediately from the arrangement of the data. It now becomes possible to indicate more clearly the types of areas in which we are particularly interested in this study. First, however, we want to stress that the study is concerned primarily with *industrial* areas. Agricultural areas will be considered on occasion; but in general they will be left out of the discussion. An exception will be found in the next chapter, which is concerned with cross-sectional studies of all

the regions of a country, including, necessarily, the agricultural areas. Except for this, the present study will be concerned with:

a) distressed areas,
b) potential distressed areas,
c) distressed areas in process of development.

The reason why distressed areas are included is obvious.

Declining prosperity areas also have to be considered, as was explained in the introduction, since it is in these very areas that timely action may result in the *prevention* of future distress. In the opinion of the author, the study of development plans intended to stop the economic and social decline of such areas is, perhaps, even more important than the study of distressed areas. For in these areas, still "prosperous" but threatened with decline, an effective policy may more readily be adopted and bear fruit than in actually "distressed" areas. The reason for this is the tendency that exists, in a distressed area, for the unfavourable situation to subside to a certain degree of "stability", for the labour resource to release its best elements to the outside, and for a general feeling of uneasiness and helplessness to develop in the population.

"Distressed economic areas tend to become less and less capable of self-assertion and initiative as their condition is prolonged. It is for this reason that early assistance in redevelopment is essential. The lowered capacity for economic growth is due not only to the spirit of resignation which ultimately suffuses a community that continually fails, but also to the out-migration of the young and ambitious, leaving behind the older and less mobile persons. As the distress continues, the graduates of the school system move out, making for a more unbalanced popnlation. Community income drops and the quality and quantity of public services deteriorate so that the services and inducements necessary for attracting modern industry become fewer in number."[1]

The third category to be included is that of distressed areas in process of development. This group is important because, evidently, new opportunities are being created and any additional positive action on the part of the government or other bodies is likely to accentuate existing favourable economic trends.

Grouping these three categories together, we shall call them *problem areas.*

For the reasons given above, prosperity areas are the only ones that will not be considered in detail. This, of course, does not mean that no problems are encountered in the development of prosperity areas. One such problem is the tendency of the population to concentrate too heavily in these areas. This had led many countries to adopt measures designed to inhibit further unnecessary growth. Such measures also help to limit the size of urban agglomerations which. beyond a certain point may tend to become uneconomical in themselves and a drain on the country as a whole. These problems, however, will not concern us in the present context.

Consequences of the choice of the definition

The problem areas defined in the first part of this chapter show basic differences in their economic and social structure and, consequently, in their economic and social development. A policy oriented towards improvement or

1. Solomon Barkin, *op. cit.*

acceleration of future development will be quite different in the case of a distressed area in process of development than in the case of a potential distressed area.

In the first case it will be a policy of *stimulation* of development already taking place in a given and usually clearly defined direction. The measures to be taken can be of a specific nature and directed towards a well-defined goal.

In the second case the policy will be one not only of *reconstruction* or searching for new opportunities but also one of *retardation* of the decline of old activities, for it is quite natural for producers as well as workers in these branches to seek to attenuate the rate of decline of their activities. "... coal miners have shown often enough that they will fight so ruthless a shrinking of their industry and the rate of contraction that they and their employer ... have mutually agreed is in any case very rapid, and has been for five years—an accomplishment, it ought to be recorded, worthy of high praise. It is doubtful if anybody would really wish to increase the rate, anyway; it would mean a sharp increase in redundancies and the throwing of thousands more men into the pool of unemployed; that, to say the least, would be undesirable."[1]

Actions taken in a potential distressed area will often be of a general nature, since a clearly and narrowly defined objective is lacking. The preservation of old activities is one possibility; the stimulation of new activities is another. But even if a choice is made of groups of new activities that might be successful, it is seldom that this will be accomplished with enough precision to permit measures of a specific nature to be taken. In addition, in such an area, development is hampered by the relatively high level of wages that still prevails. This factor places large groups of industries at a relative disadvantage for long periods of time; as a result certain measures which could be taken to favour the establishment of new industries may require much more time to become effective than they would in a distressed area in process of development.

Policy for a distressed area is different again. Its difficulties have been discussed in the first part of this chapter; they stem from the fact that both the present situation *and* the outlook for the future are unfavourable. The policy will be one of *reconstruction* of the whole economy; it will be even more general in character than in the case of declining prosperity areas.

The following table shows the three cases:

TABLE 4. AREA AND POLICY CHARACTERISTICS

KIND OF AREA	MAIN CHARACTERISTIC OF POLICY
Distressed areas in process of development	Stimulation
Distressed area	Reconstruction
Potential distressed area	Reconstruction and Retardation

This very broad and rough sketch of characteristic policies suited to different kinds of areas will have to be worked out in more detail in subsequent chapters. It is not meant to suggest that there are no potential distressed areas

1. *The Economist*, 7th December, 1963, page 1047 in discussing development policy in Durham.

with obsolete infrastructures nor that there are no distressed areas in process of development in which, for some sectors, a policy of retardation might not be useful. The classification is only given to present the main characteristic of a region and the main characteristic of policy suitable for that region. In this chapter it serves only one purpose : to show that the character of the area must be known. This in turn, will require that studies be made :

a) comparing the economic situation of the area with those of other areas and of the nation as a whole in a given year *(regional cross-section) ;*

b) comparing the rate of development of the area with those of other areas and of the nation as a whole *(regional time-series analyses)*.

It would be extremely inefficient and uneconomical to let these studies, essentially of national interest, be performed independently by each area. Centralisation of effort for this kind of study is most desirable.

One could even argue that it is one of the basic responsibilities of the central government to undertake research in this field.

In the next chapter we will discuss both kinds of studies : the so-called regional cross-section studies, comparing at a given time the situations in different regions and areas of a country; and the time-series studies.

Additional criteria

The classification of "areas" given above was intended to demonstrate the importance of considering dynamic characteristics in forming policy. One must not conclude that other criteria are unimportant. A detailed study of an area should not, of course, focus its attention only on income data. It must also take into consideration the employment situation, the economic structure of employment (heavy industry, basic chemical industry, etc.), the sensitivity of the area's activities to the business cycle and the changes in all these characteristics over time. For the central government, the size of the populations of distressed areas is also of prime importance. For it is this that largely determines how much assistance should be given to the areas concerned.

These criteria may be significant in setting up an order of priority in the granting of specific forms and amounts of aid to the individual areas. It may mean, for example, the granting of some types of benefits such as financial aid for planning and technical assistance of a modest type to all areas and a more selective policy for other measures which grant aids to capital or labour.

Chapter 2

COMPARATIVE STUDIES : A NECESSARY BASIS FOR AREA (RE)DEVELOPMENT POLICY

INTRODUCTION. THE ROLE OF ECONOMETRIC MODELS

In solving problems of national economic planning and many other problems, purely or partly economic in nature, econometric models have come into frequent use. Equally frequent, it must be said, have been expressions of doubt as to the effectiveness of such models and the reliability of conclusions drawn from them. In the field of area economic research then, the question must also be raised as to which is the better approach : the design and application of econometric models, or the use of other, more intuitively oriented methods. A preliminary discussion of this point may serve to place some of the methods described below in their proper perspective. It should also help to explain why some of these methods have been treated in such detail.

An econometric model is a simplified quantitative description of the real world insofar as economic relations and interdependencies are concerned. Such a model involves several kinds of variables. First to be considered are the interdependent or *endogenous variables*. These are the variables mutually influencing one another. Secondly, there are predetermined or *exogenous variables* which influence the endogenous variables but are themselves not influenced by any other variable in the system. In this same group we might include the *endogenous-lagged variables* which, since they have been determined one or more periods earlier, are "given" at the moment or in the period for which the model is being used.

Goal variables, also called *target variables*, constitute a special kind of exogenous variable. They are the objects of economic policy. Typical examples would be a given level of unemployment, a given surplus or deficit in the balance of payments, etc. A first operation in the use of an econometric model may well consist in the insertion into the model of certain desired values of the *target variables*—an unemployment rate of 2.5 per cent, a surplus of 5 per cent in the balance of payments, etc.

A second operation is to find the set of values of the *instrument* or *tool variables* (which form a part of the group of exogenous variables) leading to the desired values of the target-variables. We shall not, at this point, go into the conditions that must be satisfied for a solution of the problem to exist. Neither shall we discuss the extent to which different objectives of economic policy might be contradictory. We shall consider only one approach to the solution of the problem and the formulation of policy.

The econometric model is subject to serious limitations. As we have

already said, it gives but a simplified picture of the real world which may, in fact, be immensely more complex than the model suggests. If, for example, the model is a macro-economic model, and investments are treated as one variable, it is clear that an infinite number of combinations of investments in different regions and sectors may lead to the same total investment level: legitimately, nothing may be inferred from this other than the probability that, in a given year, the sum of all individual investments will lie between certain limits.

A more detailed model might, however, give better insight into the micro-structure of the real world. Much attention has been given in recent years to the construction of input-output models in which inter-sectoral relations are the object of study. The econometricians have made a contribution of unquestionable importance with their input-output models, as we will be able to show in chapter 5; but it is not generally recognised that, in many cases, forecasts made with the help of these models are no more reliable than those obtained from macro-models. As the number of inter-relations increases, so does the complexity of the model; identification problems tend to become more serious, and the range of the standard errors increases.

The limits within which model builders must operate are very narrow. (In several cases, the author has felt himself seriously hampered by them.) It is not surprising, therefore, that hardly a country can be found in which economic policy is based upon econometric models alone, and where due weight is not given to the intuition of policy makers and to the counsel of expert critics of government policy.

Many committees in many countries are working steadily on the study of micro-problems; their efforts in some cases have been decisive in establishing the principles of economic policy.

Some examples might elucidate this point. Let us suppose that a country has a housing shortage and that government action is taken to promote the construction of houses. A model is constructed in which the relation describing the level of construction as a function of the profit level plays a very important role. On the basis of this model a decision is reached to achieve the desired objective within a given period, and means are made available for the implementation of this decision. A committee consisting of regional representatives, however, comes to the conclusion that the national supply of houses minus national demand does not accurately represent the total housing shortage in the country, but something considerably less than that. They reason that there exists, in many regions, an excess supply of houses which may not be deducted from the total demand, since in the regions concerned, the demand for these houses is nil. A recommendation is made to the government that a study of commuting distances throughout the country be undertaken in order to determine the *real* housing shortage. The committee's conclusion is of the greatest importance to the central government: the real objective to be attained is now known, and the regions with the most acute shortages are identified. Not only has it become clear that more has to be done; information has also been provided as to where the effort must be applied.

A second example may be found in the work of the sector committees in France.[1] In very detailed sector reports, all problems concerning the development of relevant sectors are discussed. In the report of the iron and steel

1. C.J. van Eyk. Econometrische Modellen en Georganiseerd Overleg in de Economische Planning. Haarlem, 1963.

industry, for example, there can be found a discussion of the investment plans of all the firms, broken down by category of investment goods, and by their potential usefulness in helping to introduce new techniques of production. This procedure makes it possible to co-ordinate the development of production with the macro-economic target. Expected capacity is compared with the market potential. The need for raw materials, semi-finished products and labour is studied, not only for the branch as a whole but for all its sub-branches. Furthermore, recommendations are made as to how to prevent bottlenecks and/or excess capacity. In actual fact, then, investment plans constructed in this way are based on much more information than could be gathered from the combined production and investment functions alone.

A third example may be found in the French planning method. French planners, perhaps, tend to exert more influence on economic development than those of any other western country. For this purpose, they have at their disposal a number of selective instruments, chiefly their ability to make financial contributions to private and public projects that fit into the national plan. The effect of these cannot be quantitatively evaluated merely by means of econometric techniques. For this reason, representatives of industry are asked to draw up a coherent development scheme and to provide quantitative information about the means to be used in attaining the targets.

In general, the French planning method relies heavily on psychological influences exerted by the plan itself and by the very process of its preparation. The plan is being accepted by entrepreneurs as an important element in economic life. This is because they realise that important decisions are made within the framework of the plan, and that it is important to co-operate. The method involves a feeling of common responsibility on the part of those who have thus systematically and collectively pondered the problems and prospects of the national economy.

After considering these three examples, we must conclude that econometric models are inherently so limited in the information they can provide, that even highly trained econometricians must have recourse to the knowledge of experts on sectors and regions. Only thus can they render their models suitably realistic and applicable. An additional advantage of this procedure is that it encourages the establishment of contacts between quantitative economists on the one hand and sectoral and regional experts on the other; as well as between these experts among themselves. Often, moreover, the detailed studies made by expert groups constitute valuable contributions to available statistics. In many cases they even provide new estimates of macro-economic variables.

Conditions for the model

The aim of a comparative study is to determine the relative position of a particular area compared with other areas and with the nation as a whole. In some cases, comparison with areas outside the national boundaries is also advisable. This is particularly true if the outside areas are adjacent to the area under study, and if they have a structure similar to its own. In this study, however, we will limit ourselves to a comparison within national boundaries.

The conditions which have to be met by the method of comparison are few but stringent.

First, the comparison must necessarily be limited to statistical data available for *all* the areas. In practice this means that population censuses are the major source of information for this kind of study. In only a few countries are regional data available on wages, prices, consumption, investment, etc. Generally speaking, therefore, comparisons between areas can only be made on the basis of population, employment and structure of employment, total income and other data gathered by the census.

Secondly, the model used must be simple. As a matter of fact, the limited range of the available data and the consequent restrictions in scope imposed upon the matters subject to investigation would make it most difficult to construct a model of high complexity. But even within this narrow framework, further restrictions are imposed upon the model by the simple fact that it must be complete and self-consistent. Only rarely can all of the available statistical data be used. In most cases, only part of the available data, limited though these be, can be made to fit into a complete model.

THE STEP-BY-STEP CONSTRUCTION OF A COMPARATIVE MODEL

A comparison of the structure of areas

The first step in the study we propose to undertake is to make a simple comparison of the economic structures of the areas to be considered. Even at this early stage, the insufficiency of statistical data becomes troublesome. We might design very elegant methods of making a comparison, only to find it impossible to apply them for lack of sufficient information on regions. In this case, therefore, as in many others, we find it impossible *first* to design an optimum method and *then* to apply it to the available data. The sequence must be reversed. We are of the opinion that the "best" method is the one which, applied to the existing data, yields a maximum of useful information.

It may be assumed that the censuses in many countries provide information about the structure of employment for a number of areas. In this event, for a given year (unfortunately the "given year" seldom recurs more than once a decade), the distribution of employed workers among a certain number of branches of industry and agriculture would be known.

Clearly such a structure of employment might be favourable or unfavourable, depending on the distribution of employment over growing, stagnating, or declining industries. By a *growing* industry, in this context, we mean a branch of industry in which employment is growing faster than total industrial employment in the nation; by a *stagnating* industry, a branch in which employment is still growing but at a slower rate than total employment. Evidently, a *declining* industry is a branch in which employment is declining.

The level of production of a given branch of industry is a concept that we must now introduce and define. At the national level, data are available on the volume of production, based either upon quantity produced or total value added. Data are also available on the level of employment. At the regional level, in practically all cases, the only data at our disposal will be the number of people employed.

In normal cases there is good correlation between employment and the level of production, but this is not always the case. In the textile industry, for example, a rapid mechanisation has taken place in recent years in most developed countries. This has resulted in increased production but declining

employment. Since textile areas are often distressed areas, or at least potential distressed areas, we will do well to take this point into consideration.

Using both sets of available data and proceeding in the manner outlined below, we can now undertake to construct a *structure index* for an area under consideration:

1. Express employment in branches of industry and agriculture as percentages of total employment for the nation and for the area under consideration. Let us take a simple example and suppose that there are only two branches: industry and agriculture. Denote by p_a^n and p_i^n respectively, the percentage of employment in agriculture and industry in the nation

   $$(p_a^n + p_i^n = 1), \text{ and by } p_a^a \text{ and } p_i^a,$$

   these variables for the area.
2. Since "industry", in this context, may be considered as a growing industry and agriculture as stagnating or declining, the structure index to be calculated should be the weighted average of the growth potentials of both industries. Supposing that these growth potentials can be obtained, and denoting them by g_a and g_i respectively, the weighted average for the nation equals $g_a p_a^n + g_i p_i^n$ and, for the area,

   $$g_a p_a^a + g_i p_i^a$$
3. The economic structure index may then be defined as

   $$I_s = \frac{g_a p_a^a + g_i p_i^a}{g_a p_a^n + g^i p_i^n} \cdot 100$$

   or more generally as (1)

   $$I_s^j = \frac{\sum_i g_i p_i^j}{\sum_i g_i p_i^n} \cdot 100$$

In (1), I_s^j is the economic structure index for the j^{th} area, g_i the growth potential for the i^{th} branch of industry, and p_i^j the percentage employment in branch i in area j.

Although this method is, in fact, very simple, it provides an indication of the growth potential of the area under consideration, and it has the advantage that it can easily be applied with the data at hand.

Before applying the method, by way of example, to a specified country, it may be useful to make one preliminary remark: in practice, the use of growth potential indices for an industry implies that information is available concerning the probable future growth of the various branches of industry. Such forecasts, both for production and employment, are available in some countries, France and Holland among them. In most countries, however, information of this kind is not to be had. Under these conditions, one might well extrapolate from growth statistics pertaining to the recent past, provided that the past is not so "recent" as to permit short-run disturbances to have too large an influence. A period of five to ten years seems advisable.

The following example applies to Belgium and the nine provinces of which it is made up. Data are available at the provincial level, giving total employment and the distribution of G.N.P. among different sectors of the economy. Under the assumption that the distribution of employment in a particular branch among the provinces is proportional to the distribution of G.N.P. in that same branch, it is possible to arrive at a fair estimate of the employment

per branch per province for 1959. Data are also given on the national rate of increase of employment in each branch. With these two sets of data, the methods outlined above may readily be used to compute, for each province, its individual rate of increase in employment. The results are tabulated below.[1]

TABLE 5. AUTONOMOUS EMPLOYMENT GROWTH AND ECONOMIC STRUCTURE OF BELGIAN PROVINCES

PROVINCE	AUTONOMOUS INCREASE (%)	ECONOMIC STRUCTURE INDEX
Antwerp	6.2	106.2
Brabant	7.7	107.7
West Flanders	4.0	104.0
East Flanders	3.0	103.0
Hainaut	— 1.0	99.0
Liège	1.7	101.7
Limburg	2.4	102.4
Luxembourg	0.4	100.4
Namur	2.6	102.6

It is evident that the wide differences between the economic structures of individual provinces are strongly reflected in the respective provinces' expected rates of increase in employment. Hainaut, with an actual expectation of *decreased* employment, is the least favoured province.

The introduction of population growth

The economic structure index just defined represents the growth potential of an area. In terms of employment, the growth potential refers only to the probable future growth in the *demand* for labour; nothing has been said of the complementary variable, the *supply* of labour. Yet, both labour demand and supply are important factors determining the equilibrium level of wages, i.e. the per capita income of the population. We shall next turn our attention, therefore, to a consideration of the supply of labour.

Any investigation into the economic health of an area must involve the supply of labour and the demand for it. We shall return to this question later, and treat it in greater detail. For the time being, however, a simple comparison of the rates of growth of autonomous[2] supply of, and autonomous demand for, labour may be of help in obtaining some insight into the actual causes of economic developments within the area studied.

Two factors deserve our particular attention: the *level* of the rate of growth of demand for labour, and the *difference* between this rate and the rate of growth of autonomous labour supply.

To understand this point, let us look at the following table.

In this table, for convenience, the rate of growth of autonomous demand for labour is assumed to correspond to the "rate of expansion of industry", and the rate of growth of autonomous supply of labour is assumed to correspond to "natural population growth".

1. It should be noted that, in the computation, *two* growth rates were used for the mining industry; one for the "old" mines (Wallonia) and one for the "new" mines (Flanders).
2. The exact definition of this term will be given later.

TABLE 6. AUTONOMOUS INFLUENCE ON THE STRUCTURE OF THE LABOUR MARKET

	RATE OF GROWTH OF AUTONOMOUS DEMAND FOR LABOUR *rate of expansion of industry*			
		low	average	high
RATE OF GROWTH OF AUTONOMOUS SUPPLY OF LABOUR	low	Equilibrium	Labour *shortage*	Labour *shortage*
	average	Labour *surplus*	Equilibrium	Labour *shortage*
Natural population growth	high	Labour *surplus*	Labour *surplus*	Equilibrium

Equilibrium on the labour market exists as long as both growth rates are equal; this may occur at a "low", an "average" or a "high" level. Labour shortage results from a *comparatively* high level of the rate of expansion in industry; labour surplus from a *comparatively* high level of population growth.

We should note at this point that the situation is determined by the *comparative* levels of the two rates of growth. Thus, even in the presence of an "average" rate of industrial expansion, a "high" rate of increase of the active population might well bring about a labour surplus.

This relationship is very important in our present context because it can provide some guidelines to the establishment of policy in certain areas.

Thus let us assume that the rate of industrial expansion in a particular area is satisfactory, being above the national average. The area in question might still be a distressed area if its population were growing even faster than industry. Under these conditions, one could expect income to remain relatively low and unemployment to persist, in spite of healthy and growing industrial activity. It would probably be very difficult to stimulate industrial growth beyond the high rate already achieved. The alternative solution, outmigration of a part of the increase in labour supply, would appear more reasonable. In such areas, research into the size and structure of emigration would be most useful. To the knowledge of the author, however, the Toothill report on the Scottish economy is the only study to have been made on this subject.

In a qualitative way, the problem is relatively easy to state. The more rapid the population growth of an area, the younger the composition of that very population. The emigration from such an area of a part of its populous younger age groups has little serious adverse effect upon the social structure of the population as a whole. The situation is very different, of course, when emigration is necessary in spite of a slow rate of population growth. In the latter case, the harmful effects of emigration tend to become dominant : serious deterioration takes place in the social structure of the population and the potential for renewed economic growth is correspondingly reduced.

There is no doubt that this problem deserves much more attention than it has, thus far, received. Particularly important would be a study of the magnitude and structure of the emigration that different situations might call for.

The development of Schleswig-Holstein in the Federal Republic of

Germany illustrates the role emigration may play in the redevelopment of an area. From May 1939 to September 1950, the total population of this area rose from 1.6 to 2.6 million, as a result both of natural growth and of heavy immigration from Eastern Germany. Unemployment rose to 22.2 per cent of the active population. Thereupon, an emergency plan (the "Sofortprogramm"), was put into action, involving an investment of some $75 million in public works. Additional measures were taken, including financial assistance to industry, subsidies for the creation of industrial zones, for public utilities and land reform, retraining programmes, etc. It was, however, the policy of encouraging extensive emigration to other, more developed areas that mostly helped to solve the problem. About 400,000 persons moved to other areas by 1950. At the same time, unemployment decreased from 178,000 to 7,000. This was accomplished both by the creation of new industrial jobs *and by emigration to other areas.*

In another instance, the employment situation in the North of France was considerably improved by emigration. "The Northern region includes declining industries such as mines and textiles, and mature industries such as steel and heavy metals. The assistance available has not permitted this area, industrialised since the nineteenth century, to attract new industries in sufficient number to change its character significantly". "Only the factor of the number of job seekers seems to have substantially improved. Emigration *has wiped out manpower surplus*".[1]

Data on the natural increase of population in the Belgian provinces are given in the table below. These figures are based on a period of eleven years, as are those pertaining to employment increase.

TABLE 7. NATURAL POPULATION INCREASE AND AUTONOMOUS EMPLOYMENT INCREASE IN BELGIAN PROVINCES

PROVINCE	RATE OF NATURAL INCREASE IN POPULATION (%)	RATE OF AUTONOMOUS INCREASE IN EMPLOYMENT (%)
Antwerp	7.6	6.2
Brabant	3.2	7.7
West Flanders	7.6	4.0
East Flanders	5.3	3.0
Hainaut	1.9	— 1.0
Liège	1.4	1.7
Limburg	15.8	2.4
Luxembourg	5.4	0.4
Namur	3.7	2.6

It may be seen that, in the rich province of Brabant, a low rate of natural increase in population is accompanied by a very righ rate of increase in employment. Exactly the opposite is true in Limburg, where the rate of population increase is extremely high while the economic structure index is relatively unfavourable. We thus note the existence of some extreme cases in Belgium.

1. *Area Redevelopment Policies in Britain and the Countries of the Common Market.* Frederic Meyers, Los Angeles, 1963 (to be published in 1965). Part III. *Regional Development Possibilities in France.* Pierre Bauchet, Paris 1963, page 121.

Considering that both the rate of natural population increase and the rate of autonomous increase in employment are factors contributing to an uneven distribution of per capita income between provinces, one is tempted to go on to a somewhat more comprehensive, yet simple, method of investigating the distribution of income levels among provinces as well as the causative factors involved. This will be done in the next section.

The construction of a somewhat more complete model

Introduction

The more complete model that we shall now consider still gives but a simplified picture of reality. It cannot, of course, explain the many differences between all the variables in every region. It is discussed merely to demonstrate that, in spite of their simplicity, certain models can help considerably to understand why and how differences in income level arise between areas and regions.

Theoretical considerations

Let us state that the size of the working population (P) at time 0 equals the working population (P_{-1}) at time — 1, plus the natural growth of this population (Δ^n P) during period zero, plus the net migration (M) during the same period. M, the *net* migration, is a *positive* quantity if immigration has occurred; it is *negative* in the case of emigration. This statement may be expressed as follows:

$$P = P_{-1} + \Delta^n P + M \qquad (1)$$

M, as it is defined above, includes the net change in the number of workers commuting across the area's boundaries during the period in question. Among the variables considered in regional research, few, if any, are the object of as much discussion as this variable, M. This is because differences in income levels between regions can be attributed to the low mobility of the factors of production, among which labour is very important.

Migration may be motivated by various non-economic considerations, such as family ties, environment, climate, etc. In our model, however, we shall assume that one single factor accounts for all migration, including changes in commutation. This factor we will identify as the wage (or income) differential between the region under study and the outside world.

Letting ω represent the wage level within the area studied, and $\bar{\omega}$ the mean wage level outside the area, we may state:

$$M = \alpha (\omega - \bar{\omega}) \qquad (2)$$

In this equation, the coefficient α is a function of the mobility of labour which will be discussed later.

Since the total labour supply (L_s) is made up of migrants and of the "naturally" increased working population, we may say, using the "P" of equation (1), that

$$L_s = P \qquad (3)$$

We shall now turn to the *demand* for labour, distinguishing between labour in "basic" and in "non-basic" activities. This subject still gives rise to some disagreement. On one point, however, there exists some common ground: that the total number of workers employed in non-basic activities is a function of the total population, approximating proportionality within a relatively

wide range of per capita income. The basic activities (consisting of export activities plus activities replacing imports) are not related to the size of the population. They are determined by factors of a very different kind, factors which influence the location of industry and among which the wage level in a given area plays a prominent role.

The assumption that demand for labour in non-basic activities (L_{DN}) is proportional to the working population (P) is expressed by:

$$L_{DN} = \gamma P \tag{4}$$

in which the coefficient γ is a constant of proportionality. The use of P in the above equation also implies the assumption that the working population is directly proportional to the total population.

In deriving an equation for the demand for labour in basic industries (L_{DB}), we shall choose to distinguish between the following two independent variables:

a) the wage or income differential ($\omega - \bar{\omega}$) between the area under study and the "outside world";

b) a variable (Z) grouping all the other (exogenous) variables which, independently of wages, influence the level of basic industrial activity in the given area. Z is non-regional in character; it follows the general ups and downs of individual branches of industry, weighted in accordance with their relative importance in the area.

We shall express the demand for labour in basic industries as follows:

$$L_{DB} = -\beta(\omega - \bar{\omega}) + Z \tag{5}$$

Equation (5) has been formulated in such a way that, in the absence of any wage differences between the area studied and the outside world ($\omega - \bar{\omega}$) $= 0$, Z alone represents the area's demand for workers in basic activities. It should be noted that the coefficient β is a function of the mobility of demand for labour. This coefficient β, as well as α and γ, will be the subject of further discussion.

The total demand for labour (L_D) is equal to the sum of the demands for labour in basic and non-basic activities. This equation :

$$L_D = L_{DB} + L_{DN} \tag{6}$$

is an identity and requires no further discussion.

The final equation required for our model states that the total labour demand is just met by, or is equal to, the total labour supply. That is to say:

$$L_D = L_S \tag{7}$$

This clearly implies that conditions of full employment prevail in the area. Equation (7) therefore, may not appear very accurate if applied to the short-range economic situation existing in many countries. We are primarily concerned, however, with long-range developments as exemplified in Belgium, a country enjoying overall conditions of low unemployment. We will therefore accept the limitations implicit in equation (7). Furthermore, as we shall see, it is possible, even under conditions of prolonged full-employment, to experience large differences in income level between areas. In any event, our immediate purpose is merely to demonstrate how a serviceable model can be set up. We shall therefore restrict the model to the seven equations derived above.

From the "structural" equations (1) through (7), two important "reduced-form" equations, one for population, the other for income, may be derived:

$$P = \frac{\beta}{\beta + \alpha(1-\gamma)}(P_{-1} + \Delta^n P) + \frac{\alpha}{\beta + \alpha(1-\gamma)} Z \tag{8}$$

$$\omega - \bar{\omega} = -\frac{1-\gamma}{\beta+\alpha(1-\gamma)}(P_{-1} + \Delta^n P) + \frac{1}{\beta+\alpha(1-\gamma)} Z \qquad (9)$$

Equation (8) shows that the present total population is determined by the total population one period earlier, the natural population growth that has taken place since then, and the growth potential of industry. Equation (9) shows the influence of the same variable on the difference in wage level between the area under consideration and the "outside world".

Inspection of equations (8) and (9), in turn, enables us to draw two important conclusions:

1. Total population varies in the same sense as do natural population growth and the growth potential of industry. (Its partial derivatives with respect to *both* variables are positive.)
2. Per capita income varies in the same sense as the growth potential of industry, but in the sense opposite to that of natural population growth. (The partial derivative of per capita income with respect to industrial growth potential is positive, but it is negative with respect to natural population growth.)

The three coefficients, α, β and γ, determine the sensitivity of both P and $\omega - \bar{\omega}$ to each one of the two variables: "natural population growth", and "growth potential of industry". We shall now briefly consider the significance of these coefficients.

The coefficient α

α, we might say, represents the mobility of labour. The larger the value of α, the stronger will be the influence of wage differentials on migration. In classical economic theory, with "perfect" mobility of labour, α would have been assumed infinite. We need but substitute infinity for α in equations (8) and (9) to appreciate the significance of the assumption that the mobility of labour is perfect. We then obtain:

$$\alpha = \infty, \quad P = \frac{1}{1-\gamma} Z \qquad (10)$$

and

$$\alpha = \infty, \quad \omega - \bar{\omega} = 0 \qquad (11)$$

Clearly, in this case, the growth of the working population is no longer affected by natural population growth : it ouly responds to the growth potential of industry. Workers shift immediately to areas where wages are higher. This results in complete equalisation of per capita income among regions ω becomes equal to $\bar{\omega}$.

In another extreme case, α is assumed to be zero. This means that workers will not move, whatever might be the wage differential incentive. Equations (8) and (9) then reduce to:

$$\alpha = 0, \quad P = P_{-1} + \Delta^n P \qquad (12)$$

and

$$\alpha = 0, \quad \omega - \bar{\omega} = -\frac{1-\gamma}{\beta}(P_{-1} + \Delta^n P) + \frac{1}{\beta} Z \qquad (13)$$

In thi- case, it is evident that the growth of the working population has become a function of a single variable: natural population growth. It is under these conditions, too, that income differential is most sensitive to the

negative influence of the growth in the working population and to the positive influence of the rate of expansion of industry.

The coefficient β

β represents the mobility of the *demand* for labour; it is thus closely related to the mobility of capital, that is to say, of industry itself. If β is large, and if the wage differential becomes unfavourable to entrepreneurs, it is to be expected that a quick shift in the demand for labour will occur, from the area under study to the "outside world", and conversely. A low value of β would indicate a low mobility of the demand for labour: under these conditions, the localisation of industry will be little influenced, even by appreciable differences in wage levels.

We shall again consider two extreme cases: $\beta = \infty$ and $\beta = 0$. Substituting these values into (8) and (9), we obtain, respectively,

$$\beta = \infty \quad P = P_{-1} + \Delta^n P \tag{14}$$

and

$$\beta = \infty, \quad \omega - \bar{\omega} = 0 \tag{15}$$

As in the case of the coefficient α, the assumption that $\beta = \infty$ corresponds to classical economic theory. Again, in accordance with the viewpoint of the classicists, income differences disappear. But now—in contrast with what happens when $\alpha = \infty$,—increase in the total active population depends solely upon natural population growth. It is clear that this must be so, for, under these conditions, industry immediately moves to regions where lower wage levels prevail; this results in the disappearance of income differentiais, and workers have no incentive to migrate.

Letting $\beta = 0$, equations (8) and (9) become, respectively,

$$\beta = 0, \quad P = \frac{1}{1-\gamma} Z \tag{16}$$

and

$$\beta = 0 \quad \omega - \bar{\omega} = \frac{1}{\alpha} (P_{-1} + \Delta^n P) + \frac{1}{\alpha (1-\gamma)} Z \tag{17}$$

In this case, therefore, growth in the working population is determined solely by the expansion of industry. The wage differential is under the influence of natural increases in working population, and also of the expansion of industry.

The coefficient γ

The value of γ helps to evaluate the ratio of the rate of natural increase of the population to the rate of expansion of industry. From equation (17), it is clear that this ratio equals $(1 - \gamma)$. According to empirical studies carried out in the Netherlands and the United States, it appears that 0.5[1] is a good approximation to the value of γ. It follows that in equation (17), the (negative) influence of the growth of the working population is about half that of the rate of expansion of industry.

Statistical testing

We shall now proceed to a statistical test of the model, as applied to Belgium.[2] Our basis will again be the nine provinces of the country. Further-

1. Estimated by means of the "minimum requirement method".
2. The test is only valid for the "reduced-form" equations. The individual structural equations may not be tested in this manner.

more, we will limit ourselves to testing the "income" equation. First, however, it will help to modify this equation to some degree.

In order to compare relative increases only, we may let both

$$P_{-1} \text{ and } Z_{-1}$$

equal unity, in equation (9), noting that, just as

$$P = P_{-1} + \Delta^n P, \quad Z = Z_{-1} + \Delta Z$$

Equation (9) then becomes

$$\omega - \bar{\omega} = \frac{1-\gamma}{\beta + \alpha(1-\gamma)} \Delta^n P + \frac{1}{\beta + \alpha(1-\gamma)} \Delta Z + \frac{\gamma}{\beta + \alpha(1-\gamma)} \qquad (18)$$

Since P_{-1} and Z_{-1} are both equal to unity, ΔP, $\Delta^n P$ and ΔZ are fractions and may be expressed as percent increases.

ΔZ is directly related to the economic-structure index. This index is the weighted average of the national growth potentials of *all* industries. If we call $\Delta Z'$ the corresponding rate of increase in total employment, and if we accept a value of 0.5 as a fair estimate for γ, then we may say that ΔZ will be equal to about half $\Delta Z'$; ΔZ will, then, be of the same order of magnitude as the coefficient of the natural increase of population.

It is somewhat more difficult to estimate $\Delta^n P$ and ΔP, which relate to the working, rather than to the total population. In the absence of reliable data on the natural increase of the working population, it is the natural rate of increase of total population that must be used, as an approximation.

The following table lists per capita income levels for the nine provinces of Belgium, based on a national index of 100 for the year 1959.

TABLE 8. PER CAPITA INCOME IN BELGIAN PROVINCES

PROVINCE	PER CAPITA INCOME (w)
Antwerp	104
Brabant	128
West Flanders	83
East Flanders	79
Hainaut	96
Liège	113
Limburg	73
Luxembourg	72
Namur	89

The weighted average of the income levels listed above is 100, a level which represents, for any one of the nine provinces, the mean income level prevailing outside the area. Thus, letting $\bar{\omega} = 100$, we can correlate corresponding values of $(\omega - \bar{\omega})$, the autonomous increase in employment[1] and the natural population increase[1] for the nine Belgian provinces.

We then obtain, with a correlation coefficient of 0.85, the following fit :

$$\omega - 100 = -2.75\,\Delta^n P + 2.27\,\Delta Z - 4.3 \qquad (19)$$

1. From Table 7, page 42.

the standard error for the coefficient of $\Delta^n P$ being 1.02 while that for the coefficient of ΔZ is 0.85. Equation (19) may be used to obtain calculated values of ω (ω^x) for the provinces, by substituting the values of $\Delta^n P$ and ΔZ pertaining o each province

$$\omega^x = -2.75\,\Delta^n P + 2.27\,\Delta Z + 95.7 \qquad (20)$$

This relationship is illustrated graphically on page 49.

The coefficients of equations (19) and (20) fall within the range of expected values. It is apparent that differences in income between provinces can be roughly explained by the two factors selected.

Table 9 will help to appreciate the quantitative influences of each of the two variables.

TABLE 9. ACTUAL AND THEORETICAL DEVIATIONS FROM AVERAGE INCOME IN BELGIAN PROVINCES

PROVINCE	ACTUAL DEVIATION FROM AVERAGE INCOME	THEORETICAL DEVIATION FROM AVERAGE INCOME	INFLUENCE OF POPULATION GROWTH	INFLUENCE OF INDUSTRIAL GROWTH
	1	2	3	4
Antwerp	+ 11	+ 9.2	— 4.9	+ 14.1
Brabant	+ 35	+ 27.8	+ 7.1	+ 20.7
West Flanders	— 10	— 0.6	— 4.9	+ 4.3
East Flanders	— 14	+ 0.9	+ 1.4	— 0.5
Hainaut	+ 3	— 6.8	+ 10.7	— 17.5
Liège	+ 20	+ 6.4	+ 12.1	— 5.7
Limburg	— 20	— 30.2	— 27.5	— 2.7
Luxembourg	— 21	— 10.3	+ 1.1	— 11.4
Namur	— 4	+ 4.0	+ 5.8	— 1.8

1. Due to rounding, the figures do not add up exactly to zero.

Column 1 is a list of the actual deviations between each province's income level and the unweighted average of the provinces. Column 2 is a corresponding list of the calculated or "theoretical" deviations. It is clear that the two sets of deviations follow roughly parallel trends. Columns 3 and 4 show to what extent the deviations may be attributed to population growth and industrial growth. The following interesting observations may be made:

a) The fact that Antwerp's income is above the average is due to a very favourable economic structure which dominates the negative influence of population increase.

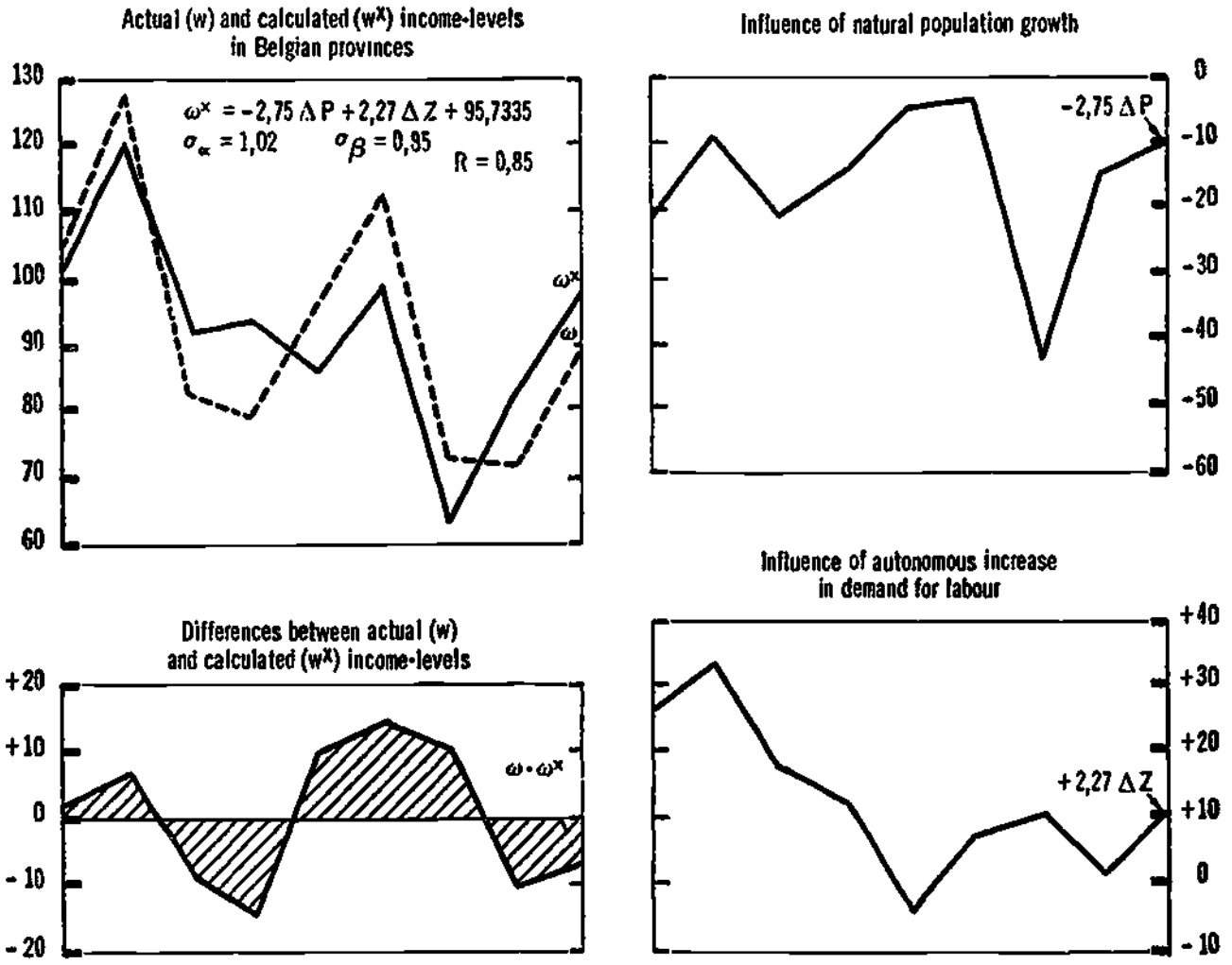
b) Brabant's high income is due to a very low population growth combined with a very favourable industrial structure.

c) The income of Hainaut is about average. The very unfavourable structure is, to a large extent, compensated by a very low natural population growth.

d) In Limburg the unfavourable economic structure and the very high natural increase in population both contribute to a very low income level.

e) In the province of Luxembourg the negative influence of the unfavourable structure is the cause of the low income.

Figure 1. ACTUAL (ω) AND CALCULATED (ω^x) INCOME-LEVELS IN BELGIAN PROVINCES



f) The case of Liège is particularly interesting. In spite of a rather unfavourable economic structure this province, in virtue of its extremely low natural population growth, enjoys a relatively high level of income.

If it had been possible to introduce the capital intensity of industry into the model, it is likely that a considerably better fit would have been obtained. Unfortunately, however, the data concerning this factor in the different provinces were inadequate. Consideration of this factor would no doubt help to explain the higher than predicted income levels of Liège and Hainaut, and the correspondingly lower levels prevailing in West and East Flanders. It is to be expected, of course, that the introduction of this factor would present some theoretical difficulties, since capital intensity, although partly autonomous, is also undoubtedly affected by existing wage level differences.

COMPARATIVE HISTORICAL STUDIES[1]

Another approach to the study of labour supply and demand consists in the application of techniques of comparative historical analysis. Such

1. Applied also by the Dutch Planning Bureau in "*Een verkenning der economische toekomstmogelijkheden van Nederland, 1950-1970*", The Hague, November 1955.

methods, compared with the use of cross-sectional models, tend to place more emphasis on the long-term regional development of industry (usually with regard to employment) and on the long-term evolution of the labour supply. In conducting a study of this kind, one might proceed as follows:

1. By means of regression analysis relate the development of employment within an area, by branch of industry, to total employment in the nation over as long a period of time as possible. Censuses are the main source of data for studies of this kind. The required statistics are usually available, therefore, at intervals of ten years, going back, say to 1890 or 1900.
2. On the basis of national forecasts, estimate future employment in every area, by branch of industry for, say, 1970 or 1980.
3. Estimate the future natural growth of the working population, in each area, until 1970 or 1980.
4. By combining the estimates made in 2. and 3. above, obtain estimates of the net surplus or shortage of labour in each area.

Such forecasts of labour shortages or surpluses in different areas provide a valuable indication of the population migrations that may be required to minimise unemployment in the nation. It is not enough, however, merely to know how much migration there *should* be. It would be equally important to be able to estimate what future migrations actually *will* be, so as to permit comparisons to be made with the desirable migration movements.

Good insight into this latter problem must be based upon a sound understanding of the economic, social and psychological factors affecting migration. Unfortunately, knowledge in this field is, at present, very limited.

In spite of this, the quantitative analysis described above should be considered as a powerful tool for analysing the probable future development of the areas of a nation. Combined with more detailed migration analysis it can give us an insight into future labour surpluses and shortages in selected areas.

The graphs on pages 51 and 52 provide an example of the kind of consistent trend that can be observed over a period of time, relating employment in a given area and in a particular branch of industry to total employment in the nation. The metal industry is the branch concerned, and the areas are provinces of the Netherlands. The period covered is 1900 to 1960.

It is apparent, from the graphs, that the development of the metal industries in all areas has been marked by a high degree of regularity. One should not expect the trends to be so regular, of course, in all areas and in all branches of industry. Still, the method described above will usually make it possible to estimate future total regional employment with fair accuracy. In view of this, we may consider that the method has added to our understanding of the processes of the economic development of areas. We believe this to be true not only in the case of long-term analysis, but also in the case of medium and short-term analysis.

Figure 2. PROVINCES OF HOLLAND

EMPLOYMENT IN METAL INDUSTRIES

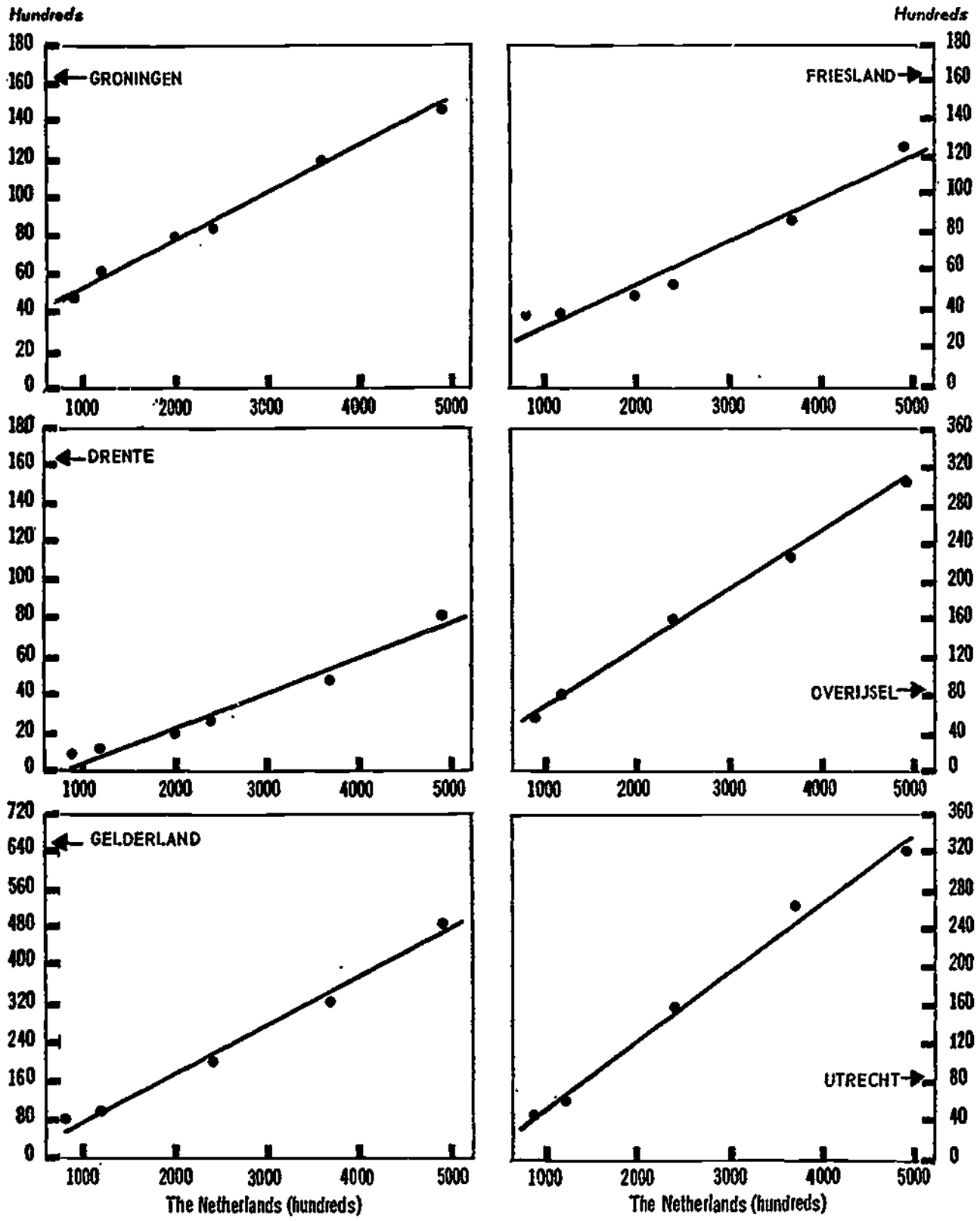
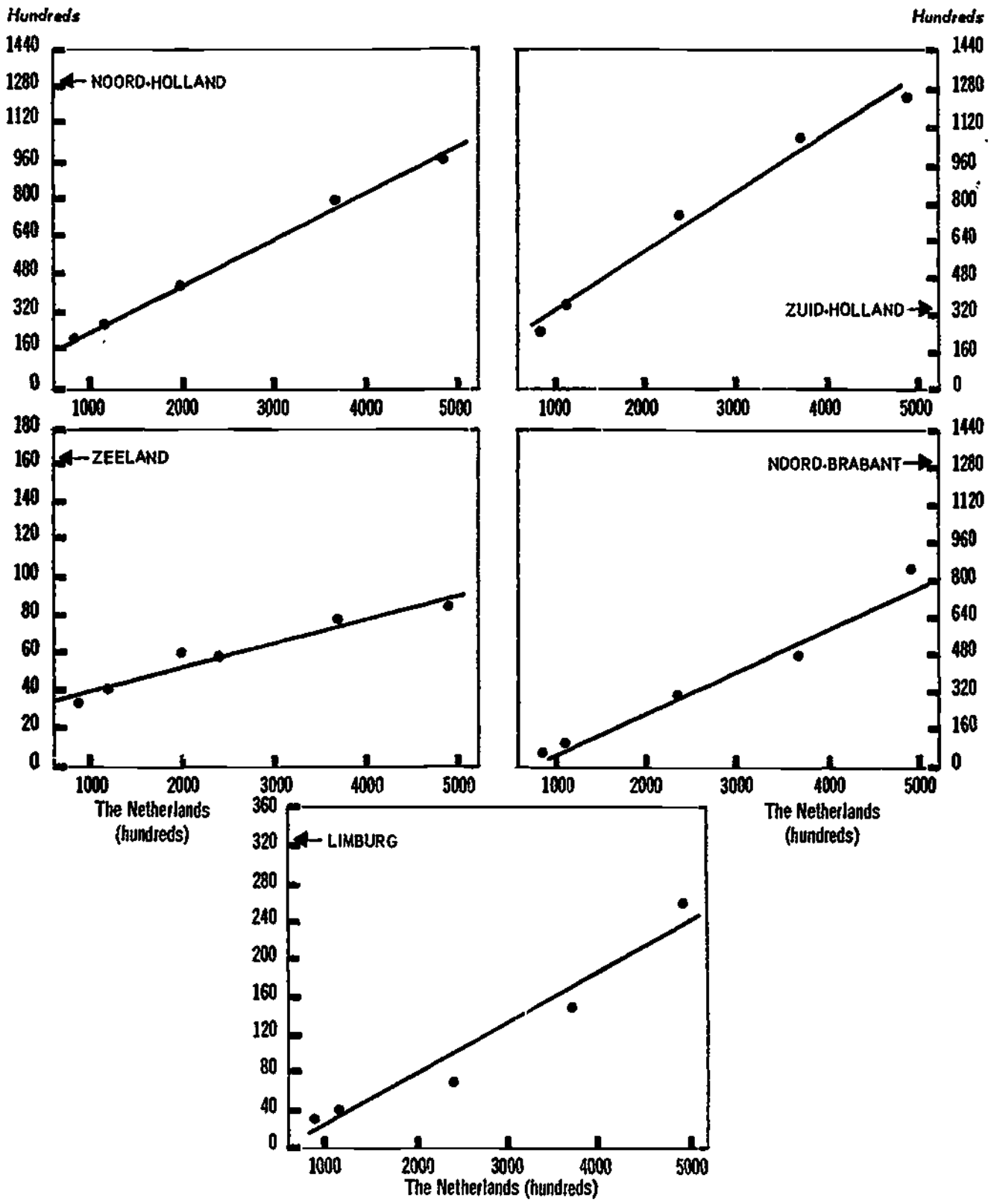


Figure 3. PROVINCES OF HOLLAND

EMPLOYMENT IN METAL INDUSTRIES



Chapter 3

CENTRAL GOVERNMENT POLICY ON AREA REDEVELOPMENT

Introduction. Development criteria

The comparative area studies described above exemplify some of the methods that may be used to determine the relative economic situations of the areas making up a country. Given the results of such studies *and* the criteria on which central government policy is based, it becomes possible to make a rational choice of the areas to be considered "development" areas. It is very important to us how this choice is made. We shall pause, therefore, to consider the criteria used in some countries to designate development areas.

Austria

Criteria for special area assistance are :

1. Unemployment rates 25 per cent or more above national average,
2. Per capita taxes of less than 50 per cent of the average Federal yield,
3. Rateable values of properties, agriculture and forestry, below the Federal average.

Belgium[1]

a) Considerable, persistent unemployment or permanent lack of employment.
b) Heavy migration causing such reduction in population as may endanger the normal functioning of existing public and social services.
c) Seasonal, weekly or daily commuting by an important part of the active population under unfavourable conditions.
d) The existence or the expectation of stagnation in important segments of economic activity, with the possibility of further unfavourable consequences.

Development areas are, in principle, designated for a period of three years. Among these the Borinage Centre and the Zuiderkempen are specifically given priority. The combined populations of these areas may not exceed 15 per cent of the national population.

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1. *Area redevelopment policies in Britain and the countries of the Common Market.* Frederic Meyers. Los Angeles (to be published in 1965).
Part II. Leo Klaassen : "Regional Policy in the Benelux Countries", Rotterdam, p. 76.

CANADA[1]

The criteria for the selection of areas have been based on employment and unemployment records for summer months, rather than on the annual average, in order to avoid undue emphasis on winter unemployment in areas where the main problem is seasonal in character. A number of other measures may be taken by the government to combat the problems of seasonal unemployment.

Under the established criteria, a National Employment Service area qualifies as a designated area provided:

a) it has been classified by the Department of Labour as a Labour Surplus Area for one-half or more of the summer months (May to October) during the past eight years *and* it has experienced an employment increase of less than one-half the national average over the same period; or,

b) it has been classified by the Department of Labour as a Labour Surplus Area for one-third or more of the summer months (May to October) during the past eight years *and* it has experienced an employment decrease over the same period; or,

c) it has been classified by the Department of Labour as a Labour Surplus Area for one-half or more of the summer months (May to October) during the past three years *and* it has experienced an employment decrease in each one of the past three years.

However, an area shall not be designated if the average monthly National Employment Service Registrations for the three months of May, June and July, expressed as a percentage of the total number of paid workers in the area,

i) is less in the current year than in the preceding year and less in the preceding year than in the year preceding that year, and

ii) is less in the current year than in the year preceding the preceding year by at least 45 per cent; *and*

the area would not, if the three months of May, June and July in the current year were considered to be a single month, have been classified by the Department of Labour as a Substantial Labour Surplus Area for that month.

Provision is made for flexibility in extending boundaries of designated areas and for adding new National Employment Service areas to the list of designated areas as soon as they fulfil the criteria for eligibility.

In this regard, the Ministers announced that a contiguous locality may be added to a designated area and thus be eligible for special federal assistance, if the undertaking of a development project or projects in such a locality would contribute appreciably to the employment of persons residing in the originally designated area. Proposals by industry for projects for consideration of the government are to be encouraged respecting both designated and contiguous areas.

All National Employment Service areas will be reviewed annually by the Department of Labour and those new areas which qualify, along with those areas which no longer qualify, will be announced by that Department.

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1. Press Release. Department of Industry, Ottawa, 6th September, 1963.

Denmark

In Denmark, no precise criteria have been set up to designate development areas. However, development measures may be taken in areas where:

a) unemployment is higher than average;
b) there is a net movement of emigration;
c) the degree of industrialisation is low; and
d) the economic structure is in disequilibrium

Four major regions with 27 per cent of the national population have in practice received special attention.

Federal Republic of Germany[1]

The criteria in Germany are:

a) Gross per capita product approximately 50 per cent of Federal average.
b) Industrial employment rate (number of industrial jobs per 1,000) approximately $^1/_3$ of Federal average.
c) Migration in excess of 10 departures out of 1,000 inhabitants yearly.

These values were determined so that development areas would not exceed 10 per cent of total population.

The designated areas on the basis of these criteria are the most thinly populated areas with small agricultural enterprises.

France[2]

Regional policy covers the whole country. Under the IVth Plan (1962-1965), the National Plan was regionalized particularly as concerns public investments. Seven of the 10 western regions are economically relatively stagnant. Certain regions in the East are encountering economic difficulties. The main determining factors used for classifying regions are :

— changes in total population
— equilibrium between the rural and urban population
— potential population pressure - rural exodus
— indices of global per capita income
— indices of agricultural income
— wage levels
— levels of savings

A local or development area within a region may be designated if one of the following criteria apply:

a) Exceptionally high total or partial unemployment, or a very large number of job seekers,
b) The likelihood that such a situation will arise, as a result of.
  i) Expected shut-downs or cut-backs on the part of business or.
  ii) The number of young people finishing their school careers being disproportionately high in relation to the number of new openings expected to be created within existing or new businesse nterprises.

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1. Informationen Institut für Raumforschung, Bad Godesberg, 13. Jahrgang No. 16/63.
2. Meyers, op. cit. Part III. "Regional Development Possibilities in France", Pierre Bauchet, Paris 1963, pages 47-48.

iii) A continuing excess of rural manpower, taking into account the foreseeable growth in production and improvement in agricultural methods.

Great Britain[1]

The prior technique of selecting development districts consisted of listing as a "district" any local employment exchange area or group of areas within which the rate of unemployment had reached or was likely to reach 4.5 per cent. The "district" was struck off the list as soon as enough new jobs were in prospect to bring the unemployment rate down to a reasonable level unless there was some *immediate* reason to expect unemployment to rise again. A new policy calls for eight growth areas in Scotland and one larger one in North-East England. No part of the latter zone "will be recalled from the list until there is strong evidence of a general and sustained improvement in employment in the region as a whole".

The percentage of all employees covered by development districts has from time to time varied between 11 and 15 percent of the national population.

Greece

a) Pronounced underemployment.
b) Low income per capita.
c) Inadequate economic and social infrastructure (roads, communications, land improvement works, centres of higher learning, etc.).
d) Fragmented agricultural holdings sometimes called "postage stamp farms".

Italy[2]

a) Measures are taken to develop the economically and socially backward areas rather than to assist in the reconversion of declining industrial areas.
b) Policy is implemented predominantly by measures of a sectoral nature, with the very important exception of the Mezzogiorno, where the regional concept of development has prevailed.
c) Some pressures are being applied, favouring greater differentiation of the economic policy in the future, and favouring its conception and implementation on a regional level. In terms of operations, however, these tendencies have not yet found any significant material expression.

Netherlands[3]

a) The problem of structural unemployment is acute.
b) A solution by means of migration cannot reasonably be found.

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1. Meyers, op. cit., Part VI, "Regional Policy in Great Britain", Alan J. Odber, Durham 1963, page 54.
2. Meyers, op. cit., Part V, "Regional Development Policies in Italy", Ettore Massacesi, Rome 1963, pages 9-10.
3. Meyers, op. cit., Part II. "Regional Policy in the Benelux Countries", Rotterdam 1963, page 30.

c) A solution by means of industrialisation of the area seems possible.
d) The total costs of the development plan can be kept within reasonable limits.

Within the designated "stimulation areas" 20 primary and 27 secondary "development nuclei" have been designated.
Central Government Redevelopment activities concentrate on the .

NORWAY

a) High unemployment rate.
b) Low income level.
c) Excessive outmigration from rural areas.

SWEDEN

Sweden's industrial location policy is directed to the support of economic activity aimed at supporting life in regions where total costs tend to be minimum. It is not only costs to the enterprise that are taken into account in this assessment, but also costs to be met at public expense, such as the construction of housing and the provision of various services. The industrial location policy is co-ordinated with a policy of full employment. Special attention is therefore given to regions with a considerable degree of unemployment.

A modification in this programme will be introduced by a bill currently being considered by Parliament which would declare the Northern section of the country as a "problem area". The National Labour Market Board on the basis of its research and planning activities will have power to direct and advise on the use of financial support for establishing or enlarging private industrial plants in the selected growth centres in these areas. Public investment in community services will also be coordinated to ensure support for these centres.

TURKEY

For the purpose of the first national five-year plan, regions have been divided into four categories:

i) those having a high economic development potential,
ii) those which are socially and economically under-developed,
iii) urban areas with population and industrial problems,
iv) regions whose problems derive from rapid industrialisation.

The criteria for geographic establishment of programme *regions* are based on data collected from inventory studies of current information and statistics concerning:

a) estimated agricultural income,
b) estimated income from non-agricultural sources,
c) the capacity of communications networks,
d) domestic and industrial consumption of electricity,
e) the capacity of various social services, such as the number of hospital beds, school classrooms, etc.

United States

In the United States, the eligibility of an area to be considered a development area is based on a sliding scale of excess unemployment above the national average. Two criteria are applied:

a) unemployment in the area has to average at least 6 per cent during the qualifying period,

b) unemployment has to average;

- *i*) 50 per cent above the national average for three of the preceding four calendar years, or
- *ii*) 75 per cent above the national average for the three preceding calendar years, or
- *iii*) 100 per cent above the national average for one of the preceding two calendar years.

Urban-industrial redevelopment areas include almost 20 percent of the national labour force.

In fact, there is little essential difference between the various criteria listed above. Practically all are negative criteria: evidently, the governments give priority in their thinking to really distressed, rather than merely developmental areas.

Prior to the recent changes, Alan J. Odber indicates this very pointedly, speaking about existing policies in Great Britain: "The question has still not been answered as to whether the British Government will take a step, roughly equivalent to the breakthrough of 1934-36 when industrial estates and official subsidies were launched. The new breakthrough would be the reversal of policy in the way advocated above, the adaptation of a long term coherent policy of concentrating development in the economically most suitable parts of the problem regions and of thinking more in terms of economic growth than unemployment. If they are brave enough to do this, they may find that if they look after the growth some of the employment will look after itself".[1] The new programme for growth areas adapts this approach.

From an economic point of view, one would expect that the factor having the greatest weight in selecting an area would be the area's development potential; in practice, it is usually such factors as the area's level of employment, standard of living, and the like, that prevail.[2] The lower these standards, the larger the probability that a given area will be designated as a "development area".

It is obvious that this sort of policy is subject to severe criticism. "The case for not helping to survive many upland mining villages whose communications are hopeless, whose industry has gone with the mines, and whose social amenities are non-existent, is all too evident. But there are other large, old and respectable places, now within Lord Hailsham's growth zone, that it would in the long run be wasteful to help to a spurious health".[3]

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1. Meyers, op. cit., Alan J. Odber, "Regional Policy in Great Britain", page 120.
2. An interesting approach to the problem of optimum allocation of resources between the regions of a nation is to be found in *Cahiers de l'Institut de Science Économique Appliquée* Paris octobre 1963. J. Paelinck : "Croissance régionale et mise en valeur des ressources en Amérique Latine". Annexe : "Note sur l'allocation optimale des ressources entre les diverses régions d'un territoire". In this article, a simple linear programme is used.
3. *The Economist*, "The cases of conscience", 7th December, 1963, p. 1052.

Benjamin Ward's "Problem of Greek Regional Development"[1] might also be quoted in this context: "Is it not possible that the regional development effort is being oriented in the wrong directions; that there may exist areas in which search for and development of regional projects will yield far greater returns to national objectives than those currently undertaken? To put the question another way: To what extent is the commitment of resources to regional development based on a careful consideration of the alternative available uses? The answer is a matter of the search for alternative regions and the exploration of their development possibilities".

The real issues, of course, are less clearly defined than we have indicated above. For example, lack of mobility on the part of the population can seriously impede the implementation of a "rational" regional policy; this factor alone compels many governments to direct a substantial part of their efforts to underdeveloped areas *as such*, as well as to areas that are, economically speaking, a better choice. Still, one may question the wisdom of making special investments in areas where the cost of (re)development would be disproportionately high. Regional policy should preclude wasting investments in areas of minimal development potential. The above argument has been presented in order to help clarify the issues at stake; it is also intended to show that the usual approach to the problem is neither the only possible approach, nor, in the author's opinion, the most interesting one.

In any event, it is a matter of record that central government policy tends, generally, to designate areas with a relatively unfavourable economy as "development areas". In other words, central government policy, in *all* countries, is concerned primarily with "distressed areas" as defined in Chapter I; in France,[2] it is true, potential distressed areas (declining prosperity areas) are also given consideration.

In subsequent chapters, various areas will be considered with respect to which the central and local government policies are in basic agreement on one point at least; the objective must be to bring about a higher standard of living *within* the areas concerned. Ireland may represent the only exception, at least among European countries. In the study which preceded publication of the First Programme for Economic Development,[3] the following statement is made:

"In our present circumstances, with virtually the whole country undeveloped, it seems wasteful to subsidise remote areas specially by providing more extensive grants. Special subsidisation of this kind entails additional burdens on the community as a whole and retards progress in the most suitable areas where concentrated effort could give better results".

A FINANCIAL PARADOX IN DEVELOPMENT POLICY

Under these conditions, we would do well to consider, first, the optimal division of responsibility between the local and the central governments, in matters of (re)development policy.

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1. Center of Economic Research, Athens, Greece, op. cit., page 152.
2. The regional policy of the European Coal and Steel Community is also concerned with potential distressed areas. "... the Authority has not only considered the actual, but also the future employment..." Meyers, op. cit. Part VII, page 22, "The role of the European Coal and Steel Community, and the Common Market in Regional Policy".
3. Dublin 1958.

One must not forget, of course, that regardless of the stated policies of each government, it is the financial means made available for development that set one of the actual limits to what can be accomplished. Another important fact to be remembered is that, especially under conditions of full employment, the total increase in employment in a country is more or less limited for some time to come.

It would seem, then, that the problem of redevelopment can best be formulated as the problem of ensuring that a total fund available for investment shall be optimally distributed among the areas of a country; this to be accomplished through a suitable system of financial supports, due regard being given to the areas' development potential, expressed in terms of natural resources, human capital, etc.

The fact that it is the total fund available for investment that determines the limits of what can be accomplished constitutes the major stumbling block in implementing an effective redevelopment policy. For the more progressive a given area, the higher, usually, is the income of the local government, which finds itself, ipso facto, in a position to boost local development still further.

This particular point is expressed very clearly by Dr. Dietrich Storbeck in his "Area Redevelopment in the Federal Republic of Germany" [1]:

"A much stronger influence on the actual realisation of regional economic policies are the communities, which, again, formulate regional economic policy through their local activities, though these are oriented towards completely different objectives. This orientation derives not only from the constitutional autonomy of the communities, but also from their peculiar position within the German financial system. Business taxes, whose level depends on either capital or payroll, are the predominant, but at the same time the variable portion of community revenues.

"Consequently, community budgets are determined mainly by the extent of industrialisation, so that the major goal of local economic policy is industrial development. The communities attempt, therefore, by the most varied methods, to attract new and to enlarge existing industries. However, in general only the communities that are financially well situated, due to their high degree of industrialisation, can afford to carry out such a policy. The advantages offered to the companies they want to attract often surpass the stimulus to investment provided by the federal development policy. The financially weak communities, on the other hand, need their revenues in full for current expenditures. Finally, the communities can attract industry also by means of general economic and social policy (e.g. "aid to the middle class").

"In general, the financially weak communities, who lack the opportunities for industrial development, belong to the redevelopment areas. Inasmuch as the financially strong communities (large cities) with their urban facilities are already attractive to industry, the economic policy of the communities undermines the development measures of the federal government and of the Laender and increases the divergencies between the rural and the industrial communities. Thus an active redevelopment policy for the redevelopment areas becomes even more urgent. At the same time, however, this situation explains also the regional economic policies of the Laender, with which the latter attempt to decrease their internal differences in development".

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1. Meyers, op. cit., Part IV, Dortmund 1963.

A similar remark is made by Ettore Massacesi,[1] quoting Corna-Pellegrini[2] : "However, particularly in most recent years, local, regional, provincial or 'greater-communal' administrations have increased their efforts to analyse the socio-economic structure as such, and it may be said that today there is no region in Italy which does not have voluminous documentation on local economic and social conditions. However, these studies rarely result in action because the local entities do not normally possess the administrative and financial instruments conducive to effective support of local economic activities".

Evidently, here there enters into play the difference between developing distressed areas and distressed areas on the one hand, and prosperity areas as well as potential distressed areas on the other. The latter two are (still) rich and thus are able to spend much more on the development of the area than are the distressed and developing distressed areas. Their capabilities for self-help are considerably greater than those of the low-income distressed areas.

The main difficulty then, lies in the fact that any policy aiming at the development of distressed areas is hampered by the powerful support that prosperity areas and even potential distressed areas can lend their development policies, in virtue of their relatively important financial resources.

The main task of the central government therefore is to assist developing distressed areas and distressed areas to such an extent that these areas are enabled to compete with the prosperity areas in implementing their development policy.

Certainly, it is not necessary that this support be given only to the local government, and only in the form of money. It could also consist (as is usually the case) in the improvement of roads, railways and canals linking the (re)development area or areas with the rest of the country, financial aid to enterprises located in the area, planning, technical assistance, feasibility studies, community facilities, training, etc. It is obviously of the utmost importance, in such cases, that both policies be closely co-ordinated.

Measures taken by the central government

National governments have at their disposal several kinds of measures that they may take to stimulate development in selected areas. Before discussing these measures, however, we should like to point out that even within *one* distressed area, it is only rarely that financial support is provided for indiscriminate distribution to *any* (or all) parts of the area; usually, the assistance is directed mostly, and at times entirely, to "growth points" (pôles de croissance) within the area concerned. This approach seems to be rational, even on the sole basis of the costs of the additional infrastructure required for the proposed increases in economic activity. Beyond this, however, considerations of economies of scale in production and transportation, the provision of a suitable industrial "atmosphere" and the need for a varied social and cultural environment, are all factors favouring, for reasons of efficiency, the development of a limited number of "nuclei". The Netherlands, the Federal Republic of Germany, France and Italy, all follow such policies of nuclei; it is likely that Great Britain is beginning to do likewise.

1. Area redevelopment policies in Britain and the countries of the Common Market. Frederic Meyers, Los Angeles. To be published in Los Angeles 1965. Part V, Ettore Massacesi, "Regional Economic Development Policies in Italy". p. 9.
2. Giacomo Corna-Pellegrini, "Esperienze di studi e pianificazione regionale in Italia". Milano 1962.

Clearly, the concept of a nucleus is closely connected with that of the optimum size of a city; and, in many European countries, regional policy with respect to the prosperity regions is in fact directly related to the nuclei policy in distressed regions. An illustration of this point might be found in the Netherlands. The concentration of activities in the western part of the country has led to the growth of three larger cities there : Amsterdam, Rotterdam and The Hague. Generally it is felt that further growth of these cities will, due to the steeply increasing per capita costs of the infrastructure, give rise to a lower contribution to national income than would the growth of smaller cities in other parts of the country—cities which are much further from their optimal size than the three cities mentioned. A shift of activities from the large cities to selected smaller cities, therefore, seems to be desirable from the national economic point of view. The total *net* contribution to national income (defined as total contribution minus operating costs) would be considerably larger if such a shift were effected.

However, since *below* the optimum size, the per capita contribution of a small town is smaller than that of a larger one, it seems rational not to spread out the diverted activities over too many nuclei but to concentrate them in a few large ones. Also, since regional policy (as for example in France and the Federal Republic of Germany) aims at meeting simultaneously the demands of *both* prosperity areas *and* depressed areas in this respect, the nuclei to be stimulated are usually chosen in the distressed areas. The policy usually consists, then, of granting minimum benefits to all distressed areas, with special advantages to growth points.

As described above, this important problem is based on static comparisons. The problem, however, has equally important dynamic aspects. It is the large concentrations of population in a country that tend to develop most rapidly. It is a fact that, in many western European countries, a shortage of labour exists in the larger agglomerations, while less developed, less congested regions have a surplus of labour. In other words, there are inflationary tendencies in some parts of the country, deflationary tendencies in others. Such a situation is undesirable in itself; but it is aggravated by the fact that the national business-cycle policy, based as it is on national averages, cannot discriminate between regions : depressed areas, therefore, may find themselves further depressed by restrictive measures which, for their part, may prove inadequate when applied to the labour-shortage areas.

It is clear that, to be efficient, the central government policy should be capable of differentiating between regions in accordance with their economic situation. Further study on this subject seems to be of utmost importance, not only from the point of view of the distressed areas, but for the whole balanced development of nations.

A good insight into what is being done by the central governments of six western European countries is given by the following (somewhat adjusted) table.[1]

It is clear from the above table that policies, in most of the countries mentioned, fall into three categories :

a) measures of a general nature, involving improvements in the regional infrastructure;

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1. Taken from *Urban Development Policy and Planning*, United Nations, Geneva, 1962. F.J.J.H.M. van Os, "Methods of influencing the distribution and the provision of industry and other economic activities", page 81.

TABLE 10. CENTRAL GOVERNMENT MEASURES IN SOME WESTERN EUROPEAN COUNTRIES

GENERAL	INDUSTRY	LABOUR	TYPE OF MEASURE	BELGIUM	FEDERAL REPUBLIC GERMANY	GREAT BRITAIN	FRANCE	ITALY	NETHERLANDS
A			Regional funds, societies for regional developments	X[1]	X	X	X	X	
B			Improvement of regional infrastructure (roads, etc.)	X	X	X	X	X	X
C			Accompanying social measures						X
D			Decentralisation of public institutions				X		
E			Decentralisation into new towns			X			
F			Government orders		X			X	
G			Establishment licence or prohibition			X			
	H		Subsidies on land and/or buildings	X		X	X	X	X
	J		Subsidies on industrial equipment	X	X[2]	X	X	X	
	K		Loans, if necessary, at a low rate of interest	X	X	X	X	X	X
	L		State guarantees	X	X		X	X	X
	M		State participation				X	X	
	N		Reduction on transport rates		X[3]			X	
	O		Tax facilities	X	X[3]		X	X	
	P		Exemption from import duty					X	
		Q	Subsidies on the cost of training or retraining	X	X	X	X	X	X
		R	Subsidies on the cost of moving	X	X	X	X	X	X

1. Not yet effective.
2. In the form of interest-subsidies in eastern frontier zones.
3. Only in eastern frontier zones.

b) measures directed at industry, involving:
   i) subsidies on land and/or buildings,
   ii) loans at low interest rates,
   iii) state guarantees,
   iv) tax facilities;

c) measures affecting the workers, primarily, and involving:
   i) subsidies to cover the cost of training or retraining,
   ii) subsidies to cover the cost of moving.

THE EFFECTIVENESS AND EFFICIENCY OF GOVERNMENT POLICY

The measures listed above can be grouped:

A. measures to further the mobility of labour (categories *a* and *c*);
B. measures to further the mobility of capital by reducing cost levels in the area (categories *a* and *b*).

The fact that central government financial support goes mostly to industry lends a special interest to the measures of group B. As stated, these measures

are intended to reduce industrial production and transportation costs in selected areas. In principle it is possible to calculate the effect of the facilities offered on the cost levels of each branch of industry. Unfortunately, however, it does not seem that such a study has been carried out in any of the countries investigated. The most that can be said is that facilities are offered on the basis of rather vague notions of the effect they may have on industry. Furthermore, as many different facilities as possible are given; as a result, it is impossible to evaluate the individual effectiveness of the various instruments.

There is a marked tendency, in some countries, to apply different eligibility criteria and different degrees of liberality for different types of assistance. Thus, technical assistance for research and planning, investments in infrastructure and assistance given to increase the mobility of capital and labour tend to be viewed in a different light, one from another. This is done, of course, without prejudice to the provision to all areas of minimum requirements in terms of facilities, amenities, infrastructure and economic base. The more selective policy may concentrate either on areas and centres of high chronic unemployment or underemployment or areas of greatest growth potential. On the other hand, one should not overlook the fact that the actual responses of private capital and of labour to such differentiated incentives still remain the decisive factor in the economic and social (re)development of such areas and centres. It is important to evaluate to what extent different types of benefits and different volumes of a specific benefit have a bearing on decision making in respect of investment of private capital and the mobility of labour.

Measures taken to promote the creation of new industries or the expansion of existing industries are often of greater psychological than financial consequence. It is always difficult to estimate accurately just what will be the response of industry to such measures. It remains true, however, that the incentives an industry may be given for locating or remaining in a given area consist in costs being lower there than elsewhere. This cost differential can be calculated; it provides an indication of the order of magnitude, at least, of the response that may be expected.

An example will serve to illustrate this point. As we have mentioned before, almost all countries grant building subsidies. Let us suppose that the subsidy amounts to 20 per cent of the costs of new buildings. A new industry may estimate that its "costs of buildings" (interest and depreciation) represent 1 per cent of its total production costs.[1] For this industry, the 20 per cent subsidy will bring about a reduction of 0.2 per cent in total costs. We may consider another industry, however, whose "costs of buildings" account for 10 per cent of total production costs.

To this latter industry, the building subsidy will mean a saving of 2 per cent of total costs. If we assume, now, that both industries were operating at a profit margin of 10 per cent, it is clear that, by locating in the favoured area, the first industry stands to increase its profits by 2 per cent only, while the second industry may expect its profits to be higher by about 20 per cent. Under such conditions, clearly, the response of the second industry is likely to be much more positive than that of the first one.

It should be possible, theoretically, to calculate separately the influence of each one of the government measures on the costs of industries located in the development area. This also applies to industries *not yet* located in the

1. The Dutch manufacturing industry average is 3 per cent.

area; it should be possible, therefore, to estimate the influence that different measures may have upon the willingness of industries to settle there.

In the case of investments in the infrastructure, the calculation might take the form of a cost-benefit analysis, benefits meaning, in this case, contribution to national income.

"Contribution to national income can be estimated by means of methods that are fairly well-known to traffic research workers; but estimates made with the help of such traditional methods tend to fall short of the actual contribution. In particular, the traditional methods do not, as a rule, take into account the fact that investments in a road are likely to induce an increase in the volume of traffic over and beyond the increase estimated by extrapolating from past trends; such an approach, therefore, results in the indirect effects of this phenomenon on the economy being neglected. An additional increase of this type is likely to be higher in less developed than in highly developed areas; thus, the tendency, to underestimate the rentability of agricultural roads may well be more pronounced than in the case of urban roads.

"It now seems desirable, while making full use of existing theory, to initiate intensified quantitative research, particularly with respect to the above mentioned 'indirect' economic effects of road building."[1]

The distinction between direct and indirect effects, or "savings" and "development" effects of infrastructural improvements is closely related to the distinction between short-run and long-run effects. In the short-run a new road may result in substantial savings to existing traffic between the area and the outside world. These savings begin immediately as soon as the road is opened. In the longer run however, entrepreneurs will respond to the lower transportation costs and adjust their geographical pattern of investments to the new situation. This, of course, will not he fully accomplished until a considerable amount of time has elapsed. But it represents the development of the economy of the area resulting from the new infrastructure.

We should do well therefore to distinguish clearly between the long- and short-run effects and to take them *both* into account in making any estimates of the rentability of infrastructural projects.

The amount of capital that may be invested in infrastructural and other projects is necessarily limited. Hence the desirability of evaluating every proposed project, in terms of both *effectiveness* and *efficiency*. A project should be considered *effective* if its execution will have the desired influence on the development of the economy; the *efficiency* of the project, by definition, is its rentability or cost-benefit ratio. This having been done, a priority list of projects in the area could be drawn up, to serve as a guide to future investments in infrastructure and other facilities. Such a list should incorporate corrections, at least of a tentative nature, in the extent of the direct support to be granted to industries, considering that the desired psychological effect might not be achieved if long-term concessions were too numerous, and that such concessions might become heavy financial burdens for the local and/or central government to carry.

"Fears, myths, and short-run costs together provide a strong case for location subsidies, so long as these are clearly seen as once-for-all improvements grants, to overcome an initial cost and difficulty, and not as continuing pay-

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1. L.H. Klaassen and J. Koopman, XI Congress, Permanent International Association of Road Congresses, Rio de Janeiro 1959. Section 2.

ments. I remember being impressed in case studies, away back in the forties by the firmness of the Treasury in refusing Development Area aid unless there was a reasonable chance that a firm could stand on its own feet in the long run."[1]

Estimating these effects before taking a decision will no doubt contribute substantially to the effectiveness and efficiency of government spending on (re)development.

We should consider, finally, item "D" of Table 10 (page 64). This item concerns the decentralisation of public institutions. It would seem that completely new possibilities of development can be created in an area as a result of government activities being moved from crowded larger cities to new locations, often distant from the original seat of government. This has been demonstrated by several specific examples, including the removal of government functions from Sydney, Australia, to Canberra; from Istanbul, Turkey, to Ankara; from Rio de Janiero, Brazil to Brasilia. In many ways, Washington, D.C., United States, may also be considered a case in point. Government institutions in a new location act as a "propulsive" firm,[2] being large enough to have important secondary repercussions on the economy, to the point of enabling other firms to settle in the region. Considering such examples as the natural gas-based industry in Lacq, the automotive industry in Turin and the Philips Works in Eindhoven, it is clear that propulsive firms are of the greatest importance and that they can bring about a radical change in the whole development of a region. The utmost care should be taken, therefore, in locating such firms. This applies to government as well as to private institutions or enterprises such as research institutions, educational centres, government-owned and private automobile manufacturing firms, steel works, engineering firms, etc., any of which may be potential propulsive firms.

Efficiency can be increased further if the central government's (re)development policy makes it possible to differentiate areas on the basis of their economic structure and characteristics. Infrastructural investments should be made selectively, in areas where they are likely to be most effective. The same thing holds for measures of any other kind. It follows that, in principle, central government policy should be adopted to the economic structure and geographical position of the area.

Politically speaking, however, it is very difficult (even when economically justifiable) to extend a particular aid to one area, and something else, or less, to another. It is still more difficult to invest in one area (A) in order to help another area (B) indirectly, even when, from an objective point of view, this is the "best" way to help area B.[3] If this were done, all areas would feel discriminated against. As a result, it is an aspect of practical policy that all available measures are taken simultaneously in all problem areas, regardless of the economic wisdom such a solution may or may not represent.

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1. "Employment Location Policy and the conditions for growth". Michael P. Fogarty. National Conference 1963 of the Town and Country Planning Association.

2. Term of Fr. Perroux.

3. "It would be very interesting to stand on the side lines and watch a British President of the Board of Trade try to persuade Scottish M.P.'s that financial help should be given to certain firms in prosperous areas because this would indirectly help Scotland's unemployed". *Area redevelopment policies in Britain and the Countries of the Common Market*, Frederic Meyers, Los Angeles (to be published in 1965). Part VI. Alan J. Odber, "Regional Policy in Great Britain", page 52.

The undifferentiated aspects of central government policy are very important to the local government in determining its redevelopment policy. For, since the same instruments are used by the central government in all problem areas, the local government will tend to render its supplementary policy as effective as possible by adapting it to the particular economic structure and geographic situation of the region. *In fact, the main justification of a supplementary development policy giving full weight to pertinent local factors is to be found in the fact that central government policy, being general in character, rarely discriminates between areas on the basis of their structure and location.*

"The real point is that the dominance of location policy by the State in the late forties and fifties has proved to be a classic case of the problem of over-government and undergovernment. The State has been fiddling with details of development and marketing work which could have been left to regional or local agencies; with running trading estates or deciding what share each of two burghs shall have in the development aid available for Scotland. At the same time, because so much of the attention of Ministers and Civil Servants has been concentrated on details, they have had too little attention to spare for the hig issues which are their proper and necessary concern. Because their own activities have filled so large a part of the field, they have also had too little stimulation from competition and debate in the country at large. The goals of location policy have changed and become more varied in the last few years, and the State's policy has in the end adjusted to this. But the change has been slow, far too slow, even where (as with the decentralisation of Government establishments from London) it is wholly within the Government's own control. It would, I am sure, have come faster if regional and local authorities and private or joint groups had had more freedom, means, and encouragement to pioneer new policies for themselves, and if the State itself had given more attention to the broad issues of location policy and wasted less time on details.

"The Government today can contribute most effectively to reshaping the location of industry and offices by encouraging and from time to time summing up the national debate on location; by laying down broad lines of policy and backing them with equally broad measures, such as a location tax, a higher general exchequer grant to local authorities in regions with special development problems, or an overall allocation to each region of square feet of permitted new factory development; and, for the rest, by thrusting on lower-level authorities all the location functions which they are or can be made fit to carry, and encouraging their initiative in every way. Functions such as research or regional development, the detailed allocation of industrial development certificates, the selection and development of growth points or areas (including the operation of trading estates), and the advertising and selling of sites and facilities should be left to, and indeed pressed on, agencies at or below the regional level, not as an alternative to Government action but in order to make it more effective. The Government's own action is likely to be all the more effective, and above all dynamic in the long run, if it rests on and sums up a high level of local and regional initiative, pressure and competition".[1]

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1. "Employment Location Policy and the Conditions for Growth", Michael P. Fogarty. 1963 National Conference of the Town and Country Planning Association.

Another very important point is that the participation of local people in local development programmes provides the best guarantee that adequate action will be taken in the area itself. If these people are involved from the beginning with the establishment and implementation of the local development plan, they will also be more willing to participate in the action that has to be taken under the plan.

"ARA has found that it is most important that the local leaders and authorities actively participate at least in the analysis of findings and in the programme formulation. It is significant that where the local O.E.D.P. (Overall Economic Development Programme) was done by an outside group—such as a state agency or a consulting firm—that not much development activity has followed. The O.E.D.P. process, when community leadership actively participates, is apparently more than analytical—it carries with it important education, promotional, and action-stimulating effects".[1]

NATIONAL AGENCIES RESPONSIBLE FOR CENTRAL GOVERNMENT POLICY ON AREA REDEVELOPMENT

COUNTRY	*NATIONAL AGENCY*
Austria	Interministerial Commitee chaired by the the Federal Chancellery.
Belgium	Ministry of Economic Affairs and of Energy.
Canada	Department of Industry.
Denmark	Regional Development Board.
France	National Commission for Area Redevelopment.
Federal Republic of Germany	Interministerial Committee for Regional Policy.
Italy	Committee of Ministers for the Mezzogiorno.
The Netherlands	Directorate for Regional Industrial Affairs in the Ministry of Economic Affairs.
Norway	Ministry of Municipal affairs and Labour.
Sweden	National Labour Market Board.
United Kingdom	Ministry of Economic Affairs.
United States	Area Redevelopment Administration within the Department of Commerce.

1. *Area Analysis and Economic Development : The ARA Experience.* Victor Roterus, Southern Illinois University, 1964.

Chapter 4

THE LOCAL DEVELOPMENT PLAN

Introduction

The previous two chapters were dedicated to central government policy on area redevelopment. The next step will be to study local government policy in this field in greater detail, particularly the basic conditions that should be fulfilled in order to enable the local government to carry out an effective (re)development policy.

The organisational scheme for an area (re)development policy described in this chapter is not used in every country, of course, nor in all areas of developed countries. Many countries do not even have a national economic development plan; and many areas, in many countries, do not have a local development plan. The measures taken in these countries are often unrelated to either previous or expected future events, and they are taken independently of whatever activity there may be in neighbouring areas. No systematic research is carried out and consequently there can be no systematic programme for future policy and action.

In this chapter we will try to give a bird's-eye view of what a local development plan should contain and how it may contribute to the development of an area.

The reader familiar with the United States "Overall Economic Development Programme" (O.E.D.P.) will recognise some of its principles in this chapter. It seems useful, therefore, to describe briefly the procedure followed in the United States with regard to the O.E.D.P.s'. This description[1] will be given in a few points:

1. The O.E.D.P. must first be submitted to the State for approval.
2. The State Office will review the plan and forward it, with attachments, to the Administrator, Area Redevelopment Administration in Washington.
3. The Area Redevelopment Administrator will review the long-range programme and inform the State and local organisations of the action that is to be taken. He will notify other Federal Agencies co-operating in the programme, so that their resources can be brought to bear on the problems of unemployment and under-employment.
4. To get the area redevelopment programme under way with minimum delay, ARA may give provisional approval to an O.E.D.P. This will make it possible for the local group to submit requests for assistance

1. *Planning for New Growth* — New Jobs. United States Department of Commerce, Area Redevelopment Administration.

on specific projects. Approval of an O.E.D.P. does not mean automatic acceptance of each project listed in the programme. Projects will be judged on their individual merits.

5. If provisional approval has been given, the more comprehensive economic programme should be prepared and submitted within one year, although, under unusual circumstances, the Administrator may extend this period.
6. The overall economic programme should contain clear statements of background facts, problems and potentials, and a reasonable action with priorities clearly defined.

The last point indicates broadly what is supposed to be in the programme. A more elaborate statement of the contents of an O.E.D.P. is given in the report of the "House Banking and Currency Committee", reporting the Area Redevelopment Act to the House of Representatives. The Committee's report says:

> "The requirement for such a programme will assure that the community has reviewed carefully the various economic solutions open to it, before any request is made for such assistance; that the projects submitted are in their proper priority with respect to the community's programme; that the community is embarking on a programme which is within the available financial, manpower, and technical resources; and that the programme contributes toward a permanent solution of local problems.
>
> This requirement for careful studies and advance planning should assure, first, a real knowledge of the economic potentials of the area—whether they lie in the commercial or industrial field. It should point out the strong and weak points of the area, in both the skills of its manpower and its resources in materials, location, and facilities. Such planning should take into account all the potentials of the area. They may be in recreation or tourism, not heavy industry; they may lie in the promotion of parks and the restoration of forests, with the construction of necessary access roads; they may be in research or in light industry employing large numbers of clerical or scientifically trained workers.
>
> It is, moreover, essential that each programme be appraised realistically ... in order to make the wisest use of limited public funds and to give maximum help to the area. This is "seed money", to help give impetus to a broad programme which, if the unemployed are to be re-employed, will call for private and local public efforts many times the size of the Federal programme.
>
> If each economic development programme is appraised in a broad way, for the long future, and suitable retraining is undertaken, the benefits of this legislation will be far greater than can be measured by the financial loans or grants."

A feature of United States legislation on area redevelopment pertaining to industry is that the O.E.D.P. is considered by the Federal Government as a "conditio sine qua non" for federal financing of development projects. This forces the area authorities to make a plan if they are interested in developing their area (which is not always the case). It may be that the way in which the O.E.D.P. is treated in publications of the United States Department of Commerce tends to give the impression that an O.E.D.P. should be prepared primarily in order to obtain federal money. This certainly is important but one should not forget that, in fact, a development plan comprises much more

than just a few projects. It describes in detail the probable future development of the area (industrial development, commerce, tourism, need for housing, roads, schools, training, etc.) and sets targets for the future. Although these targets may be attained in part with federal financial help, the fact remains that the programme is designed for the *area* and that what must be done first within the framework of the plan should come first, whether or not the federal government assists with its money.

THE ELEMENTS OF A LOCAL DEVELOPMENT PLAN

Some indications have been given, in the introduction, of what should be included in a local development plan. In this chapter, we shall review the elements of such a plan somewhat more systematically. An economic and social study of the future development of the area constitutes a first essential element. This study should cover, at least, the following:

1. *Physical environment* (including site availability for residential, industrial, recreational and public uses.)

2. *Population*

   Size and rate of growth,
   Age structure,
   Working population.

3. *Human resources*

   Managerial capacities,
   Other labour skills,
   Labour market constraints,
   Labour — management relations.

4. *Infrastructure*

   Roads,
   Railroads,
   Waterways,
   Energy supply and supply of raw materials,
   Water supply,
   Police and fire protection, sewerage,
   Site availability,
   Land use allocation,
   Other public services.

5. *Industrial Development*

   Economic structure,
   Development possibilities per sector,
   Structure of labour demand,
   Wage levels and productivity,
   Labour-market constraints.

6. *Commerce*

   Structure and level of wholesale and retail trade,
   Geographical distribution of retail trade and probable developments in this distribution.

7. *Other Services*

8. *Agriculture*

   Development of employment,
   Development of structure of agriculture.

9. *Housing*

   Number of houses available per rent class,
   Future demand for housing with special attention to low rent housing,
   Tendencies in geographical distribution of residential districts.

10. *Other amenities*

    Future demand for social, community and cultural institutions and government agencies,
    The school system and the need for new schools by groups. Vocational training and retraining possibilities.

These are the most important topics to be covered by the economic and social study. Clearly the study should be a co-operative effort, with economists, sociologists, psychologists and engineers participating.

The study completed, its implications for the plan should be drawn. Two approaches are possible. The first consists in estimating future needs by extrapolating from past developments, and then providing a plan to meet these needs. This constitutes a passive policy of meeting the demands of the area as they are felt—a satisfactory policy in rapidly growing areas where the effort required merely to keep up with the demands is such that additional programmes do not seem appropriate.

The second approach is more suitable for distressed areas. In this case, the local government sets targets for the rate of growth of income, of employment, etc.; a policy is then decided upon to make good the set objectives. This approach has one great advantage: it tends to stimulate both the government and the business community to take such action as may be required to meet the targets; a greater overall effort is the result.

On the basis of a study such as the one described above, it is possible to draw up a number of detailed plans covering special subjects. These plans constitute a second element of the local development plan, and should include:

A. *Economic Plan*

This plan, derived from the results of the study, covers the overall economic development of the area. It contains estimates of desirable rates of increase of income and employment and it outlines methods of achieving these objectives. Estimates are also given of required investments in both the private and the public sectors, with special emphasis on roads, industrial sites and energy.

The economic plan is to be considered only as a guide in making specific decisions.

B. *Social Plan*

In the social plan, detailed targets are set for education, training and retraining, low rent housing, etc. Necessary current expenditures and future investments and expenditures on these items are estimated on the basis of the expected development, as well as of independent social considerations.

C. *Physical Plan*

In the physical plan, the economic and social plans are integrated into a master plan for the whole area. The task of the physical planner is to unite all necessary future land uses into a harmonious, attractive and efficient physical pattern. Transportation must be, urban renewal might be, an important part of a physical plan.

D. *Financial Plan*

There are important financial implications to all three plans mentioned above. The plans, perforce, can only be realised to the extent that the financial means available will permit. It is thus absolutely necessary that future expenditures be balanced against the income flow of the area, derived from local sources as well as from central government subsidies. It follows that the time-schedule of the plans must conform with the area's estimated flow of income.

THE TIME-SCHEDULE OF THE PLAN

The final time-schedule of any plan is always a compromise between the schedule that appears optimum from the economic and social points of view and the limits set by the locally available means. As we have pointed out earlier, financial aid from the central government, or loans contracted by the local government, either inside or outside the area, may help to improve the situation. In any event, an attempt must be made to establish an optimum schedule of expenditures. This will require close co-operation between the authors of the different plans as well as close co-ordination of the activities of the local authorities in various sectors.

In the course of time, deviations will occur between the actual and the expected economic situation and rate of development of the area. The plans, including the time-schedule and the financial plan, are therefore subject to repeated revisions. The time between any two successive revisions should never be too long; it is advisable therefore, to set a fixed period for the thorough revision of all plans and the basic study. Barring spectacular events, a ten-year period might seem appropriate. Updating and minor revision are, of course, a continuing process.

Chapter 5

BASIC RESEARCH IN THE PROBLEM AREA

Introduction. Local research

In this chapter, we shall consider a problem area in greater detail. It will be assumed that the area is kept continuously informed of its current and projected position in relation to other areas and the country as a whole. The local research unit, then, has a permanent "monitoring" responsibility; any change in economic conditions that might affect the area policy is immediately reported to the local authorities.

It is assumed, also, that the local authorities have access to all information generated by the central comparative studies. They know whether their area is a potential distressed area, a developing distressed area, or a distressed area. On the basis of this information, therefore, they know what kind of policy to follow.

The area contains several municipalities. They are assumed to co-operate so closely as to constitute, in effect, a unified local authority. Considering the prevalence of rivalries and shortsightedness, this assumption may seem somewhat unrealistic. We shall retain it, however, as the most rational working hypothesis. In fact, there are known examples of a spirit of co-operation having arisen *following* the elaboration of a local development plan.

As a mayor of a town in Utah stated,[1] "For the first time in our history, we have been able to talk joint programmes with a neighbouring county. If nothing else results from ARA, this alone will have made it worthwhile!"

We shall return, in subsequent chapters, to a discussion of the importance of co-operation between areas. This chapter is devoted to some important aspects of the research that should be carried out in distressed areas.

Economic base studies

Economic base studies constitute a first approach to the analysis of the economic structure of an area. An attempt is made in such studies, to distinguish between industries whose growth may be attributed to increased demand on the part of the local population and industries that grow independently of such internal demand. The latter are called basic industries. As they provide the main stimulus for an area to grow, they take precedence, in our context, over the non-basic industries, including many of the "tertiary" or "service" industries.

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1. "Area Analysis and Economic Development"; The ARA Experience, Address by Victor Roterus, adviser to the ARA Administrator, Southern Illinois University, Carbondale, Illinois, 1964.

Originally, basic industries were identified with exporting industries. Industries selling products outside the area were considered basic, in so far as they exported. Other activities were considered non-basic.

These definitions, however, did not apply to one very important group of activities, the so-called import-replacing activities. These activities evidently are not nonbasic since they are not *required* in the area. And, as far as the balance of payments of the area is concerned, their position is quite analogous to that of the exporting industries.

A better definition would be obtained by grouping together export and import-replacing activities and calling them "basic"; all other activities are then grouped in the category "non-basic activities".

This definition, as such, would serve our purpose. Unfortunately, the statistical procedure of each group of activities becomes rather more complicated than when basic activities are equated with exporting activities. An approximation may be obtained by using the so-called *minimum-requirement method.*[1] The statistical procedure, using this method, is outlined below:

a) Determine, for a number of areas that are comparable in size, the percentage of the total population working in the different branches of industry.

b) Define the lowest percentage found for each branch as the "minimum-requirement" in that particular branch.

c) Add all minimum percentages. The sum obtained represents non-basic activities required in any area, expressed as a percentage of total population.

d) Subtracting the minimum percentages in different branches from the total percentages in the same branches gives a set of percentages which represent the basic activities of the area.

Because of its attractive simplicity, this method has been widely applied, especially in the United States and in the Netherlands. Yet, one could often object to the use of the method. A question may be raised, for example, about the relationship between income level and the demand for non-basic activities; or again, about the relationship between employment in both basic and non-basic activities and labour productivity. Furthermore, the method provides no insight into the interrelations between the industries of the area. Every basic activity is defined independently, without regard to the other basic activities there may be in the area. Thus, the method neglects a very important factor in development policy: the possibility that close bonds may exist between industries and that the localisation of one industry in the area may indice that of another, whether the latter be "forward-linked" or "backward-linked"[2] with the first.

In Walter Isard's industrial complex analysis, some account—direct or indirect—is taken of relationships between industries. Starting with one very basic industry, a study is made of the whole complex of industries having technical or economic ties with that industry. It is thus possible to determine what part of the total activity of a given area derives from the original basic industry.

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1. L.H. Klaassen, D.H. van Dongen Torman and L.M. Koyck. Hoofdlijnen van de sociaal-economische ontwikkling der gemeente Amersfoort van 1900-1970. Leiden 1949 page 69 ff.
2. Terms of A.O. Hirschman, *The Strategy of Economic Development*, London, 1958.

One might say that the industrial complex analysis constitutes an intermediate step between economic-base studies and regional input-output models.[1] An input-output model provides a complete description of all the relations between all branches of industry in an area. In principle, therefore, such a model is much more refined than other models, including those obtained by industrial complex analysis.

We shall first consider such an input-output model, based on all existing inter-industry relations. These relations may be expressed in terms of money flows from one industry to another, or perhaps in terms of value added, or even of employment figures; in all cases, however, the model is based on the principle that the industries of an area are not independent of one another, but that on the contrary, the level of activity of any one industry affects, to some extent, the levels of activity of all the other industries. There may be much interdependence between certain industries. There may be much interdependence between certain industries, little between others; in all cases, however, an increase of activity in one industry will affect other industries and, eventually, will have a feed-back effect on the original industry itself.

It will not be necessary for us to discuss in detail the techniques involved in the use of input-output models. We shall rather be concerned, in this paper, with the applicability of such models to problems of regional development policy.

Normally, the model is applied as follows. An increase is assumed in the demand for the products of one industry. The response of the industry to this increase in demand has secondary, tertiary and other effects on all the other industries, which effects can be, and are, calculated. For example, the ratio of total employment increase to initial employment increase (employment multiplier) might be computed. Or, again, if the ratio of total to initial value added were calculated, an income multiplier would be obtained. These figures indicate how the industry under consideration can influence the level of production or employment in all branches in the whole area.

Two important conditions, however, must be fulfilled if such results are to be considered meaningful.

The first condition is that the coefficients in the model be constant over time. Clearly this restriction would not be very serious if a set of input-output tables existed for the area and for consecutive years. Then some insight could be gained into the structural changes of the technical coefficients over time, and into the causes of these changes. If, however, the tables do not exist (and in fact they do not), the possibility of accurate extrapolation on the basis of existing inter-industry relations must be looked upon as strictly limited.

The second condition that must be fulfilled is more basic in character. It is that the actual economic structure should be uniquely determined by the applicable set of inter-industry relations. Unless this condition holds, there is no logical justification for the use of input-output tables.

This point may be illustrated by a simple example. Let us assume that there occurs an increase in the demand for steel, and that it has been found that a given part, say 50 per cent of the steel consumed, is produced by local

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1. Another technique, the "propulsive firm analysis" might also prove useful. In this type of industrial complex analysis, which is also intermediate between economic-base studies and input-output analysis, an attempt is made to define the impact of an actual or potential "propulsive firm" on the economy of a region.

industry. May we assume that additional demand for steel will be met in the same ratio by local production? It is evident that this need not be so. In fact, an additional demand might be met fully by imports, in which case there would be no increase at all in local production. The observed ratio may be assumed to apply to new demand levels *only* if it was dictated in the first place, by technological or economic *necessity*. In the chosen example, 50 per cent of the steel consumed was imported, but this percentage might well have been different and yet another ratio might prevail under conditions of increased demand.

The authors, W.C. Kroft and J.W. Meyer have carried out a study[1] on relative employment in a number of pairs of industries in various areas of Western Germany. It was found extremely difficult to detect *any* consistent relationships in employment in a number of "either economically or technically connected branches of industry". It is only when very large areas like the Ruhr or Belgium are under study that such relationships become significant. One must conclude that although input-output models may be helpful when applied to wide continental regions, they may *not* be used for our purpose: area (re)development policy.

The effective use of input-output tables

We have just seen that certain applications of input-output tables were valid only when very large continental regions were involved. This does not mean that, properly used, they cannot contribute to the solution of our problem. An input-output model can be of help in gaining an insight into the detailed structure of industry in the area. It also identifies those activities which are likely to grow without any specific stimnlus, and the activities which are not likely to grow in that region. And, what is even more important, the model is useful in understanding the area's relations with the outside world. We have pointed out, earlier, that exports and import-replacing activities are of equal importance to an area. Net imports, clearly, may be expressed as the difference between an area's needs for certain products and the local production of those products. Research, therefore, should first be directed to identifying those net import products which could be competitively produced within the area.

The branches of industry listed in input-output tables do not generally coincide with specific products, except incidentally. For our purpose, then, a more detailed analysis is made of the net imports of a given branch, yielding information on the net imports of specific products in that branch.

The results of such an analysis, concerning the region of Liège (Belgium), may be cited as an example. It was found that some products were being imported from Germany, and even from Austria, although they could very well have been produced locally.[2] The overall plan of this study, published in 1963, is very interesting in the present context. As a matter of fact, investigations of three different types were carried out:

a) a poll of local industrialists with regard to production potential;
b) a study of the available import statistics for Belgium;
c) a study of Common Market import statistics.

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1. "Eerste resultaten van het voor West-Duitsland verrichte agglomeratieonderzoek". Netherlands Economic Institute, 1961.
2. J. Paelinck, at a meeting of the Dutch and Flemish section of the Regional Science Association in Breda (Holland), 20th November, 1963.

It was considered that an important market for a certain product existed if all three investigations yielded positive results, that is to say, if it was found that:

a) industrialists thought local production to be possible and desirable;
b) a market was to be found in Belgium; and,
c) the E.E.C. as a whole also provided a market for the product concerned.

The information obtained from a study of this kind makes it possible to identify with precision those branches of industry that are to be promoted; very specific corrective measures may therefore be taken.

The counterpart of such an import analysis is an analysis of the exports of the area.

The Liège study, based as it was on Belgian and Common Market import statistics, could be regarded as constituting a part of the export analyses (to other regions of Belgium and to other countries), since the expert potential of the area was implicit in the import figures of other areas. Exports to other countries of products having no appreciable market within the area and its immediate surroundings were not, of course, included in the study.[1]

Whose responsibility should it be to carry out research of this kind? One might claim that any given industry should bear the responsibility for promoting the export of its own products and that this is particularly true when there is question of the economic feasibility of processing, locally, materials previously exported in the raw state. It is true that the whole region might benefit from such export promotion; still, it is the industry concerned that stands to profit most, and it would, offhand, seem only fair that the said industry should bear the cost of the study. In fact, however, the situation is not quite so simple.

There are two kinds of export promotion. The first is the promotion of exports of existing industries. The second consists in promoting the establishment, in an area, of new industries that might contribute eventually to exports from that area. The first kind of promotion, at least, might seem to be the distinct responsibility of industry itself; as a matter of fact, however, the two kinds of promotion overlap to such an extent that a co-ordinated effort is required.

One may conclude that the studies that have been discussed above should be undertaken with the full co-operation of the local government *and* local industry; under these conditions there will be little likelihood of measures being taken to encourage the establishment of new industries without the knowledge of existing industries—and the quality of the analysis itself is likely to be improved, in virtue of the know-how of the larger industries.

Promotion of export activities

Any study of the possibility of promoting the growth of exporting industries in an area is essentially an inter-regional comparative study. In such a study it is the relative position of the area with respect to other areas that is considered, in order to determine what basic industries might find that the area offers an advantageous location. In this respect, it might be argued that

1. L.E. Davin, L. Degeer and J. Paelinck, "Dynamique Économique de la Région Liégeoise."

studies of this kind are similar to those that were discussed in Chapter 2, and should therefore be the responsibility of the central government.

We are convinced, nevertheless, that this study should be undertaken by the local government. It is relatively easy, at the outset, to eliminate a whole range of industries requiring conditions that the area cannot meet. Thus, frequently, many heavy industries may be excluded such as shipbuilding, petro-chemicals, mining, and others. A limited range of industries then remains to be considered by the local government.

This, however, is not the only reason why we think that this study should be carried out by the local government. The labour market is one of the most important factors to be considered in such an investigation. The overall quality of the labour supply and the proportion of skilled, semi-skilled and unskilled labour, the management material to be found in the area, the suitability of the population for certain kinds of work, and even the preferences of the local government as to what industries should be attracted to the area—all these factors are of such great importance that it would seem foolhardy to depend on the judgment of the central government to decide what industries should or should not be located in the area under consideration.

It would be well to introduce the further consideration that management, in its choice of a location, does not always explore the full range of possibilities. Thus the availability of government information services can be very helpful to industry itself.

It has been established that the area itself, independently of any possible action on the part of the central government, should undertake a study on the promotion of export activities. We shall now examine in some detail the contents of such a study.

There can be little doubt that, in such a study, estimates of primary costs of production (labour, transportation, raw materials, energy, etc.) play a very important role. Given the structure of the industry to be studied as well as data on selected prices and wages, the study might well begin with an estimation of profit ratios for a range of industries that could locate in the area. The outcome of these calculations will be a priority list of industries, starting with the activities that would be most profitable and ending with those that probably could merely operate without loss.

The priority list is a good starting point and a necessary basis for further research. Its intrinsic utility, however, should not be over-emphasized. The list can never be complete, nor can it suffice in itself as a basis for a (re)development policy, New industries, new activities of every kind, not covered by the list, are being created every day, all over the world. The area cannot, with impunity, neglect these possibilities.

Moreover, industry covers an enormous range of activities, finely differentiated one from another. Economists are accustomed to very broad categories and are inclined to make abstraction of the fact that these categories include thousands of individual activities, with specialisation extending down to small-scale and large-scale production of component parts. Still, the fact remains that no study can cover all the existing possibilities, nor explore all the possible programmes of action.

Finally, one must remember that many industrial activities enjoy a high degree of geographical mobility, so much so that the location of such activities is often based on accident or on non-economic or even irrational factors: family relations, the place of birth or home-town of the entrepreneur, or the

recreational facilities of an area might well exert the decisive influence in locating these footloose industries. Research on the factors influencing the location of such industries has shown that, in fact, the choice of a location often becomes a matter of indifference. Such mobility on the part of a segment of industry must be given all due consideration in area (re)development policy.

Finally, there is a large group of activities, including the liberal professions, administration, banking, experimental research, insurance and others, the needs of which are hardly known at all. There is no information as to how the costs of these activities are to be shared between labour, capital, communications, etc. Because of this, it is very difficult to conclude, on the basis of statistical data about wages, building costs, etc., that certain activities are or are not suitable for a given area. Such activities, therefore, are rarely considered. The studies are usually oriented towards activities for which production statistics are available.

W.F. Luttrell[1] estimates that something like two thirds of British manufacturing industry can operate successfully in any main region of the country. His detailed studies of firms which have moved confirm that, with skilful planning, a branch plant in an unfamiliar area may well be operating within two or three years at or below the cost of the parent firm.

It appears, then, that there are new and specialised activities which still escape scientific investigation for lack of adequate techniques. It is not even possible, at this time, to list these activities in all the branches of industry. Many of them will inevitably remain outside the scope of research; as a result, it is to be expected that no special action will be taken to promote these activities. Yet, such activities are worthy of further consideration. They will be discussed in a later chapter as "hidden potentialities".

From the foregoing, it follows that a comparative study must necessarily be restricted to broad groups of industries. The findings of such a study, therefore are of limited importance. Any objective study, however, is bound to come up with at least one important finding. This is that there is a whole range of activities which must be excluded as devoid of any interest to the area. Conversely, this means, of course, that the area is of no interest to those particular industries. But the research should always be action-oriented and it would be a waste of local government money to try to get these industries to settle in the area.

The results of the study should be carefully pondered. Experience has shown, in many western European countries, that even when it can be clearly demonstrated that a certain industry would find lower costs of production by locating in a given area than in another, it does not necessarily follow that the industry will select that area. There are many factors, other than those we have discussed, that play an important role in industrial location. We shall call these factors *secondary factors of location;* they fall into two different groups.

The first group might be called "economic". It consists in part of factors pertaining to *communication channels* with other firms that may be either upstream or downstream in the process of production. This group also includes contacts with service firms, with sub-contractors and with consumers—consumers being found, usually, in much greater numbers in developed than in distressed areas. Good communication channels are a necessity for many

1. W.F. Luttrell, Factory Location and Industrial Movement, National Institute of Economic and Social Research.

industries. Many other industries will accept unfavourable cost differentials in the primary factors of production, on the condition that adequate communication facilities be available. These facilities are, as a rule, easier to come by in large agglomerations than in small towns: the otherwise "objective" decisions of entrepreneurs are thereby subject to a biasing effect which we shall call the *agglomeration effect*. We shall return to this subject in Chapter 12.

The second group of secondary factors of location is non-economic in character. These factors derive from the whole social, cultural and recreational "climate" of the area; they are extremely difficult to measure. It is evident that, as a rule, the social and cultural atmosphere of a large city is better than that of a small town. In this respect also, large agglomerations have the advantage, especially over small towns located far from large cities. As to recreational facilities, especially in the case of indoor recreation, the large agglomerations are again favoured.

We can but conclude that both groups of secondary factors of location are bound to influence entrepreneurial decision in favour of large cities.

The selection of the most appropriate export activities for a specific area's problem would be made much easier if models of the locational requirements of growth industries were developed. It may be assumed that the redevelopment of labour-surplus areas would be less difficult if employment problems were solved by the establishment of labour-intensive growth-industries; the establishment of these industries being based in part on the available manpower both from the quantitative and qualitative points of view. Cases in point might be certain branches of tool-making, research institutions, tourism and the like. If a sufficient number of such locational profiles were at the disposal of local developers, their otherwise difficult task would be reduced to collecting and inserting into the model a prescribed set of data, part of which would already have been generated by the aforementioned studies.

Labour market studies

Among the elements of the economic and social study discussed in Chapter 4, the labour market merits special attention. All too often one is inclined to consider labour demand and labour supply as mere numbers, which may be subtracted one from the other to determine the labour surplus or shortage in an area. In fact, both the demand for and the supply of labour are very complex variables, which may differ widely in composition with respect to the educational and vocational training of the workers. Surpluses in some groups of specially skilled workers might exist simultaneously with shortages in other groups. Such surpluses and shortages can be corrected in part by migrations of workers to and from other areas, or again by commutation, as is done in Belgium for example. But the fact remains that these movements of workers are caused by disequilibria on the regional labour market. Since it is a responsibility of the local government not only to adjust total supply of and total demand for labour but also, and more importantly, to bring about conditions of equilibrium between supply and demand for each category of workers, it is of the utmost importance that the local authorities have precise information about the structure of these labour shortages and surpluses.

The means that the local government may use to influence the structure of the demand for labour will be discussed in a later chapter. Training and

retraining, considered as means of influencing the structure of the supply of labour, will also be discussed. For the time being, we only propose to describe three kinds of study, which are of importance both to the area's labour market and to its entire programme of industrialisation.

Studies of the first kind are carried out in order to estimate future migration. As we have stated earlier, an estimate of labour supply and demand will be required, from which a forecast may be made of labour surplus or shortage. Such estimates, and especially those of the demand for labour, tend to involve a considerable margin of error. It seems desirable, therefore, to introduce this margin of error *explicitly* when forecasting migration. An active policy of emigration should then be pursued only if, using the maximum estimated increase in demand, there still results a forecast of a labour surplus.

In a second kind of study, an inventory is made of the skills available in the area. This requires that an overall picture be drawn up of the psychological and sociological characteristics of the population. Such a picture is not, of course, independent of the occupational structure, as such, of the area. Mining districts will have populations with different sociological patterns and different abilities from those of towns engaged, for example, in watchmaking. The characteristic social structure and profile of skills in an agricultural area will be different from those in a textile district. And even within the group of agricultural areas, differences will exist between cattle-raising and farming districts.

Any inventory of the skills available in an area should include, of course, an analysis of the management potential to be found within the area. One may assume that, at the management level, geographical and occupational mobility are much higher than average. The proposed analysis, therefore, is not likely to produce results very favourable to distressed areas. Even so the study should be carried out, if only for the purpose of indicating what managerial talent should be imported into the area along with new industries. The same consideration is valid in the case of the key men in any line of work. Here too, a surplus in one category might accompany shortages in other categories—shortages that might constitute major obstacles to the redevelopment of the area.

The third kind of study to be conducted concerns commutation. Workers having special skills, for which a demand exists in towns other than their own, often find that commuting provides them with an extremely valuable outlet. But, commuting distances and commuting times must not be excessive. It is very difficult to define a threshold above which commuting time becomes excessive. Still, frequency distributions of commuting times may be obtained; they provide local authorities with valuable information concerning insufficiencies in the demand for certain skills, and concerning the effect on the workers involved, of this inadequate demand. Such effects must be weighted differently for different social groups. The study, therefore, should extend beyond occupational groups; it should also be concerned with the age groups of workers, their marital status, etc.

Concluding remarks

As we have already observed, it is only possible to deal, at this time, with a limited sample of the set of possible topics to be studied. A general outline of relevant topics was given in the previous chapter. In this chapter, special

topics were discussed because of their particular importance to the area. In the overall development study, however, these topics should be treated as an integral part of the general economic and social study; inconsistencies may thus be avoided between the conclusions of the different individual studies.

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Chapter 6

BASIC CONDITIONS TO BE FULFILLED IN THE PROBLEM AREA

Introduction

Supposing that the studies mentioned in chapters 4 and 5 have been carried out and the possible development of manufacturing and other industrial activities outlined; the local government is then faced with the problem of ascertaining which conditions must be satisfied in order for actual development to approach as closely as possible desired development. In this chapter we shall try to outline broadly the basic conditions for any successful (re)development policy. Once again this chapter is concerned with all *sorts* of distressed areas.

Training and retraining programmes

From the basic studies local governments are able to derive the proportion of skilled, semi-skilled and unskilled workers that will be required in the labour force and also the distribution of skilled workers among the various skills required. It will be necessary to make a quantitative estimate, for a given year in the future, of the needs for different categories of workers.

In the absence of special measures it seems unlikely that the future needs of industry will be exactly met: therefore educational policy will have to be directed towards equilibrating demand for and supply of various kinds of workers. New educational possibilities will have to be opened up and training in certain desired directions stimulated; workers in stagnating or declining industries will have to be retrained for different jobs requiring new skills. In many European countries and in the United States training and retraining programmes form an essential part of area (re)development policy. Special attention in these programmes is given to training for technical jobs in expanding industries.

Experience, especially in agricultural areas, has shown that regional mobility of workers tends to increase with the degree of skill possessed. This means that some of the money invested in training should be considered as a loss for the area. Local governments should, however, keep in mind that their own area stands to gain from the training given workers in other areas as well as vice versa.

As long as the migratory flow is not definitely directed towards the prosperity areas (such, unfortunately, is the case in certain countries, e.g. France and the United Kingdom) emigration does not necessarily work to the

disadvantage of the distressed area. Migratory movements, moreover, help to correct local shortages or surpluses of certain types of workers.

One might well ask how a local government can influence the enrolment of students in its various technical schools. One answer is that in many areas the number of schools in existence is far below any reasonable standard and thus the mere building of schools enables the number of students to increase. Decisions regarding the number and size of the various departments are also an effective means of influencing the distribution of students among the various disciplines.

"One should not forget in this context that training and retraining programmes should not be too specifically pinpointed toward minutely-defined jobs or skills. Not only is it impossible to prescribe in that detail just what possibilities will be available, but it is reasonably certain that most very narrowly defined jobs will themselves become obsolete in a fairly short time. What the trainee needs is a broad enough basis of training to give him flexibility within an area of skills, where specific opportunities are bound to change somewhat from time to time. His *adaptability* should be enhanced, for future changes as well as immediate ones."[1]

Influence might also be exerted by subsidies of different kinds to students in those departments that seem of particular importance to the area. In various countries such subsidies are given, either directly or in the form of compensation for lost wages, board and lodging, etc. Clearly wage compensation is of great importance in potential distressed areas because it enables workers who have not yet been dismissed to train themselves for other activities.

A limit to the policy of retraining is set by the difficulties of retraining older workers. Although from a strictly economic point of view it is more profitable to invest retraining funds in younger people than in older ones, it is clear that social factors should also count heavily in this matter. Therefore, in the opinion of the author, everything possible should be done in the way of retraining older workers to prevent them from remaining unemployed for the rest of their lives. A more severe limitation may be set by the older workers themselves, by their lack of willingness to be retrained. Older workers often feel reluctant to go "back to school" and not infrequently prefer to do unskilled work or to draw on their unemployment compensation than to prepare for another and, viewed objectively, more promising job.

The importance of this matter is felt in many distressed areas. One may hope that if the policy of (re)development is successful, the problem will become of minor importance. This does not mean, however, that present unhappiness is prevented. For this reason everything possible should be done to convince the older workers of the usefulness of retraining and of the personal profit they can derive from it.

"For the older unemployed, for whom it is hardly less important to make some forward-looking provision as an alternative to southward migration, there are conversion courses to transform the brawny skills of the basic industries to the more precise crafts of new industries, and retraining courses for those whose crafts have died on them or who have never possessed any useful industrial skill other than the ability to wield a pick."[2]

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1. Edgar M. Hoover, Pittsburgh, United States, at the O.E.C.D. meeting of experts in Paris, April 1964.
2. *The Economist*, 7th December, 1963, "Labour Force, The Biggest Asset", page 1057.

Vera Lutz, in a book entitled *Italy, A Study in Economic Development*,[1] has described the experience of Italy in the following terms:

"Although retraining is of fundamental importance for the success of a policy of industrialisation, it should be remembered that it acts only on the occupational structure of the supply of labour and not on demand for labour.

"It would doubtless be mistaken to assume that if all the unemployed and underemployed were already skilled, jobs would at once open up for them. Significant in this respect are the series of surveys made by the Ministry of Labour of unfilled vacancies, in all sectors of the economy, for operatives in the two highest skill grades. The first such survey, made in June 1957, showed that over the whole of Italy the total number might be put at a maximum of 28,000. Similar surveys repeated in February 1958, June 1958, and February 1959 gave figures of 16,700, 14,800 and 11,700 respectively. It is possible that they understate the true extent of the shortage of skilled labour, that in some instances vacancies fail to get registered. But even if we double or triple the figures, they still look very small in proportion to the magnitude of the whole unemployment and underemployment problem, running as it does into several millions.

"The Cassa del Mezzogiorno examining the problem of the especially acute shortage of skilled labour in the South, regarded it as having several causes, not all of which could be removed by the provision of training facilities alone. The need for members of poor families to seek the quickest road towards adding something, however small, to the family income was one such cause. The uncertain prospect of obtaining immediate and regular employment after training was another. But a factor which was much emphasized by the employers (contractors) from whom information was sought was the narrowness of skill differentials. The differences in wages as between the two upper and the two lower grades were said to be too small to induce workers to make the sacrifice involved in acquiring a skill.

"The restoration of what were considered normal skill differentials was given a major place in the early post-war wage negotiations. The differentials officially recognized in the ensuing collective contracts were, however, probably inadequate to meet Italy's special situation of a paucity of skilled labour amidst a superfluity of unskilled ... In practice, the need for a further widening of the differentials has partly been taken care of by the market, which, especially in the North, has bid up the rate for scarce types of labour above the minimum rates set by the collective contracts.

"While the provision of better general education and of more labour training facilities is an indispensable condition for that large expansion in industrial employment on which the closing of the income gap between the two labour groups in the dual system depends, it is obviously not a sufficient condition. The big question mark which still remains is: will job vacancies open up in sufficient numbers?"

Additional educational programmes

The observations made in the previous section refer primarily to technical schools. But, obviously, the "educational climate" of an area depends on a much wider range of educational facilities.

1. Oxford University Press, 1962, pages 241-2.

Assuming that kindergartens and primary education are adequate in any developed country, we shall turn our attention to secondary and higher education which are more likely to present a problem for distressed areas. In many such areas secondary education is not sufficiently diversified, in others it does not exist at all. Such a situation makes it necessary for young people who attend secondary school to go outside the area. At the same time it causes resistance on the part of outsiders to moving in. This is especially true for entrepreneurs not only because of the needs of their own families but because they have to recruit secondary school graduates for their industries.

One must add that creation of secondary schools, like the creation of technical schools, tends to "create" students, at least in Western Europe. Their mere existence tends to attract people who, without them would have had no secondary education at all. Thus the creation of secondary schools raises the educational and cultural level of an area, at least in the long run; and this is a necessary condition for further development.

As to universities, the considerations are quite different. Distance plays a relatively small role in a student's decision of whether to study or not and therefore the establishment of a new university does not necessarily mean an important influx of students. What is decisive is the type of instruction offered: the location of various specialised departments will determine the regional distribution of the students in these disciplines. Since the number of such specialised students is an important factor in national planning, it would seem wise to leave the decision on regional distribution of teaching in these specialised disciplines to the national government. This does not mean that regional authorities or private enterprise within a region cannot take the initiative and make valuable contributions. (The Netherlands School of Economics in Rotterdam, officially a private school, is one example of valuable regional initiative). Nor does it mean that various areas or regions should avoid competing with each other in offering for a future university. It does mean that if individual regions were to establish a large number of necessarily second-rate institutions for higher learning, there would be the danger of a great waste of money.

As to the importance of a university for the "human capital" of the area, opinions differ. In the opinion of some, for instance, the presence of the University of Grenoble in France accounts for such an impressive concentration of human capital as to explain much of the improvement in conditions in the South-Eastern Mountain region of France.

"So far as educational facilities are concerned, the Southern half of France has been greatly favoured with respect to the northern portion, with the exception of the Parisian region and of the East, both of which are well equipped. But, since modern industries require more and more skilled manpower the recent development of the South-East of France and of the Mediterranean regions has been greatly encouraged by the existence of good educational facilities, particularly in the Maritime Alps, one of the departments with the highest educational achievement. On the other hand, the difficulties of the northern regions are in large part related to under-education".[1]

Other examples, e.g. Edinburgh, in Scotland and Münster in the Federal Republic of Germany show, however, that the presence of a university does not necessarily guarantee a favourable development of the area or region.

1. Pierre Bauchet, *Regional Development Policies in France*, to be published in Los Angeles, 1965.

The fact remains that it is better to have a university than to have none, for a university is a force which helps to create an industrial environment that is congenial, particularly to the intellectuals who are becoming more and more important to industry. (Boston and Pittsburgh are examples of cities whose universities attract the kind of people needed by industry).

The importance of the university as a source of employment, however, and of "human capital" for the region should not, in the opinion of the author, be exaggerated.

Infrastructure

It has become fashionable in economic theory to devote a great deal of attention to the so-called infrastructure. The word is used both in a very broad sense (sometimes so broad that virtually nothing is left out) and in a narrow sense. Since many things comprised in the broader definition are treated separately in this chapter, it seems more precise in the present context to use the narrow definition which includes only communication facilities both within an area, and between the area and the outside world. Since the latter, as we have already seen, are a fundamental part of almost any central government policy on (re)development, we may confine ourselves in this chapter to the communications system within the area.

The most important part of this system is its roads. Usually an extensive research programme must be carried out before one gains insight into what might be the perfect road system. Unfortunately many studies in this field are of a narrow nature and pay little or no attention to the economic aspects of the problems, e.g. competition between the private automobile and the public transit system. Yet these considerations are as important as the technical ones, and much could be gained if there were an economic evaluation of the various possible solutions to problems of transport and traffic.[1]

An essential part of any area's road system is the network that lies within the boundaries of its cities. Industrially depressed areas often have old, inadequate and inefficient urban road networks. In such areas, therefore, it is particularly important that considerable attention be devoted to the modernisation of the urban road network, if possible in connection with broader urban renewal plans.

Within an area road links between the main arteries and industrial areas or industrial parks are of utmost importance, not only for the transportation of goods but also for workers travelling to and from their work.

Whether or not railroad-connections and links with the canal and river systems of the country are necessary depends very much on the structure of industry—the quantities of raw material used and of finished products turned out. In many countries in Europe and elsewhere, the competition between the truck on the one hand, and the railroads and river-going vessels on the other, has led to a situation in which trucking accounts for a considerable portion of short-haul transport as well as an increasing part of long-distance transportation. Expensive plans for the development or redevelopment of railroad and/or canal systems should therefore be considered with considerable caution. Economic evaluation of projected projects is certainly justified in such cases.

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1. Compare J.F. Kain, *A Multiple Equation Model of Households Location and Trip-making Behaviour*, The Rand Corporation California, 1962.

HOUSING PROGRAMMES

We have already touched in the previous section on the problem of urban renewal. Reconstruction of urban areas is of utmost importance, especially in old industrial areas. Many of these areas have a dirty, gloomy look with their old residential and commercial quarters.

"The problems of North-East England are the problems of its own past triumphs. Here industrial history is written, giant sized. The man-made mountains and valleys of the mines, the spreading smear of Victorian slums, and the dim paucity of small-time shops, proclaim that this is the birth place of an old industrial pattern that is, blessedly, staggering to its death."[1]

It is very difficult to weigh the importance of a sound housing programme, one that aims at making dwellings light and healthy, providing enough green space, opportunities for shopping, for children's recreation and for cultural and social contacts among the population. But it is certain that the existence of such quarters and the experience of living in them stimulates the development of well-balanced human beings, which in the end is important not only from a social but also from an economic point of view.

To consider the social aspect of housing: one should realise that in area as well as in national development, due attention should be given not only to the lower income classes but to all social groups.

"Housing policy might also be directed toward other special groups. These might be composed of persons who occupy positions of strategic importance in a nation's social structure. We have already suggested that certain occupational groups, such as workers in strategic industries, might enjoy favour for economic reasons, but policy might also favour certain elements in the social strata, such as middle-income groups. Embracing intellectuals, managers of medium-sized firms, government employees and higher technical and administrative personnel, these groups may be singled out for special consideration in housing policy because of their substantial contribution to social stability and economic progress. Improved performance may well be just as important for white as for blue-collar workers. Usually, the financial position of the middle-income worker is such that he does not require substantial subsidy for minimum or above-minimum housing, but this does not preclude the need to make housing available to him. This suggests that not all housing resources should be channelled into units for low-income groups to the exclusion of housing for those in other income classes. Policy should be framed in such fashion that middle as well as low-income families enjoy equal opportunity for at least minimum housing.

"Thus, a second social advantage of housing becomes apparent: that housing, and perhaps more particularly home-ownership, is a factor promoting social stability and social progress. Apart from their desirability as social goals, stability and progress contribute positively to any nation's economy."[2]

We shall see later that a housing policy might also serve the purpose of optimum distribution of population over the area. In such a case the economic impact of such a policy is at least as important as the social one.

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1. *The Economist*, "The North East", 7th December, 1963. Page 1035.
2. Walter D. Harris and James Gillies, *Capital Formation for Housing in Latin America*, Washington, 1963 : chapter 2, "The Position of Housing in National Economic and Social Policy", Leo H. Klaassen and Leland S. Burns, pp. 115/6.

"The concentration of new housing for farm workers in regional centres is only one of the possible uses of housing as an instrument of policy, as well as a target. In a broader sense, housing policy may be used also as a tool for influencing regional development or, particularly, for the distribution of economic activity and the redistribution of income among various regions of a nation. The provision of adequate shelter is a powerful inducement for migration, an inducement which can be marshalled to suit the development needs of a region needing more rapid economic growth."[1]

Other amenities

Clearly the points mentioned briefly in this chapter cover only a part of all the basic amenities that should be present in the area. Medical institutions,

Table 11. CLASSIFICATION OF REGIONAL CENTRES BY AMENITIES

Category of amenity	Centre of first order 1	Centre of second order 2	Centre of third order 3
1. *Education*	University with one or more faculties	More than one secondary school with at least one Latin School	One secondary school
2. *Medical care*	Hospital or hospitals with more than 700 beds	Hospital or hospitals with a total of 300-700 beds	Hospital or hospitals with a total of 50-300 beds
3. *Social and cultural amenities*	1. Sports stadium 2. Indoor swimming pool 3. Three cinemas with at least 25 performances a week 4. Theatre 5. Daily newspaper	Three or four of the five amenities listed.	One or two of the five amenities listed.
4. *Regional government office*	1. Employment office 2. District attorney 3. Tax-inspection 4. Chamber of commerce 5. Office of federal police. Four or five of these offices present	Two or three of the offices present	One of the offices present
5. *Trade and traffic* .	1. Market or markets 2. Department stores 3. Banks 4. Regional bus centre 5. Specialised shops	Ranks according to a system of points attributed to the different institutions.	

1. Walter D. Harris and James Gillies op cit page 117.

social and cultural amenities are perhaps as important as those mentioned in preceding sections.

An interesting attempt to classify towns according to the amenities present has been carried out for the central Benelux area. Although this analysis refers primarily to nuclei rather than entire areas, it seems relevant enough in the present context.[1]

The criteria used for the different categories are given below. The nucleus is considered to be at level 1 if all amenities mentioned in column 1 are present; it is then referred to as a first order centre. The centres of second and third order possess the amenities listed in columns 2 and 3 respectively.

It seems that the above method could usefully be applied to areas as well as nuclei, although some adjustment would have to be made in view of the different purpose for which it was to be used. With the help of the criteria listed, it would seem possible to compare one area with another in order to determine in which of them the "infrastructure" (in the broadest sense of the term) is to be considered defective. Important conclusions might be drawn from such a comparison as to what kind of improvements are necessary in order to put the area on a "competitive" footing with other areas.

Conclusions

In this chapter we have had the opportunity to consider some of the basic conditions that must be met in order to remedy the situation of a distressed area. Meeting the conditions also provides the basis for a (re)development policy.

The distinction between the policy to be carried out and the provision of a basis for that policy seems a useful one. In practice it is not always easy to distinguish clearly between the two. Generally speaking, however, the provision of conditions for development e.g. the construction of a basic infrastructure, does not entail an appeal to the outside world. The *policy* of (re)development, on the other hand, is active, even aggressive, with regard to the outside world. It means trying to interest businessmen from outside in locating their industries within the areas, it means demonstrating to them the economic and other advantages of doing so.

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1. *Tweede bijdrage tot de opbouw van een structuurbeeld van het Benelux middengebied*, Studiegroep Benelux Middengebied, Vlaams Economisch Verbond, Antwerp, Belgium, 1963, pages 5 and 6.

Chapter 7

SOME GENERAL ASPECTS OF AN AREA (RE)DEVELOPMENT POLICY

Introduction

The foregoing two chapters were concerned with three topics:

a) Central government research and policy on area (re)development;
b) Local government research;
c) The conditions to be met in the area as a basis for further action.

We now come to the question of what an active policy for area (re)development means in concrete terms. What should a local government, or several such governments acting together, do in order to reduce unemployment, to achieve a higher and more stable level of income? We have already pointed out that it is very difficult to give policy directives that will apply to any area. Each one has too much that is unique or that is only rarely to be found elsewhere. There are differences in the mentality of the population; in economic conditions (even between two neighbouring areas); in recreational possibilities; and last but not least in the degree of energy and ability possessed by government officials.

We cannot hope to produce a formula that will fit all these differing circumstances. The most we can hope for is to give certain general directives, always bearing in mind that one redevelopment programme might produce vastly different results even in two comparable areas because secondary factors work positively in one of them and negatively in the other.

The policy which should be pursued might be formulated in very simple and logical terms. How well it is executed, however, depends on the efficiency and capacity of the people in the area who are responsible for the programme.

"The ability and continuity of local leadership appear to have been decisive factors in successful economic development. Where local leaders were able to enlist the continuous support of broad segments of the community, as in Reading and Utica, success was greater than in areas where key members of local development groups or their professional staffs served for short periods and were replaced by others."[1]

The organisational aspects of a (re)development programme

Before examining in detail the various approaches to the implementation of a (re)development programme, it seems wise to consider, first, the organisa-

1. *Local Economic Programs. A Case Book*, United States Department of Commerce, page 1.

tional aspects of such a programme. In fact, four groups of people should be iuvolved in the execution of a programme.

a) An economic and social *research unit* should be concerned with the development potential of the area. This unit, carrying out continuous research, would also have the function of a permanent economic *moritoring agency* for the area. To operate efficiently, the unit must be neither too small nor too large and cumbersome.

b) *Temporary and permanent groups of experts* specialising in the other areas of competence such as natural resources, labour problems, forestry, roads, etc.

c) *Policy makers*

d) *Professional promoters* of contacts with industries outside the area.

The tasks of the research unit have already been described in Chapter 5. The work of this unit should result in a number of recommendations with regard to the development possibilities of various industries in the area. Ideally, the research should result in a priority list of activities starting with the most profitable and ending with those just capable of being carried out without loss. Given the rate of growth of all these activities in the nation this list indicates where action should begin : the first efforts should be applide to the most viable and fastest growing activities on the list.

Such a list may also provide some initial guidance in establishing policy. Important conclusions may be drawn from it as to what improvements are needed in infrastructure, whether the building of an industrial estate is desirable or not, whether accommodation should be improved for higher echelon personnel (as would be the case for instance, if research laboratories are to be installed), etc.

These tentative conclusions should be submitted to the groups of experts representing the different branches of industry. At this point a problem arises which may assume important dimensions. For the members of these groups may often feel a threat to their own security in any proposal to establish new industries in their own branch. New industries might attract their better workers with higher wages or better fringe benefits; they might reduce their share of the local market, etc. There is always a chance that such considerations may lead the experts to place their own short run interests above those of the area and to lose objectivity in their judgment of future possibilities.

"Unfortunately there always are vested interests of one type or another which resist such goals. Some are afraid that new industry will increase the demand for employees and force higher wages. Others fear that growth will expand the local buying power and induce larger national corporations to seek sites for business. Still others resist any change in pattern simply because they are accustomed to the existing one. Finally some leading citizens resist because they fear that their own position might be endangered in the distant future."[1]

For these reasons, the groups of experts should include both local businessmen and experts from other areas. The local experts are needed because of their knowledge of the area as well as of their branch. Experts from other areas are needed to ensure that conclusions reached about the possibilities of new activities will be reasonably objective. In the case of branches not yet represented in the area, of course, the need for outside experts is self-evident.

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1. Solomon Barkin, "Economic Problems of Expanding and Declining Communities", *Social Action*, Vol. XXVII, No. 6, February 1961.

The groups of experts have two major responsibilities. The first is to critique the research and its results. Although the research units have carried out their studies with the utmost care and precision, experience teaches that branch experts are always able to improve the results; they may accomplish this, for example, by applying the results to more specialised br nches and by making allowances for the particular circumstances of the a . involved.

The second responsibility of the groups of experts, is to make additional recommendations on the measures required to attract selected industries to the area. These experts are businessmen and their outlook is that of a business man. They know what is important and what is not, and their co-operation can be obtained by pointing out to them the fact that their own firms also stand to benefit in the long run from the recommended measures.

Whenever the research unit and the groups of experts come to the same positive conclusion, action should be undertaken by the government. In practice, it is never a single local government that is involved in a given area's development policy. This poses a problem that we have already touched upon. In fact, good, effective co-operation between local governments is rare. We find it necessary, therefore, to repeat once more that, at least insofar as (re)development policy is concerned, there must be concerted action between the various local governments if the policy is to be a success.

The "area government" will then have to decide what action to take in order to attract the industries expected to be viable in the area. The research unit and groups of experts have made their recommendations.

It is the responsibility of the local government to translate the recommendations into action, in co-ordination with the central government.

The final step is to take action. This consists in communicating to all interested parties the information obtained during the phases of research and consultation. The communication should be direct; its message should be honest and objective; it should be couched in terms that can appeal to businessmen.

The organisational structure described above is represented schematically in the following diagram. As co-ordination with central government policy is necessary, a co-ordination committee is shown in the diagram.

It is the duty of this committee to act upon local government policy modifications resulting from central government action.

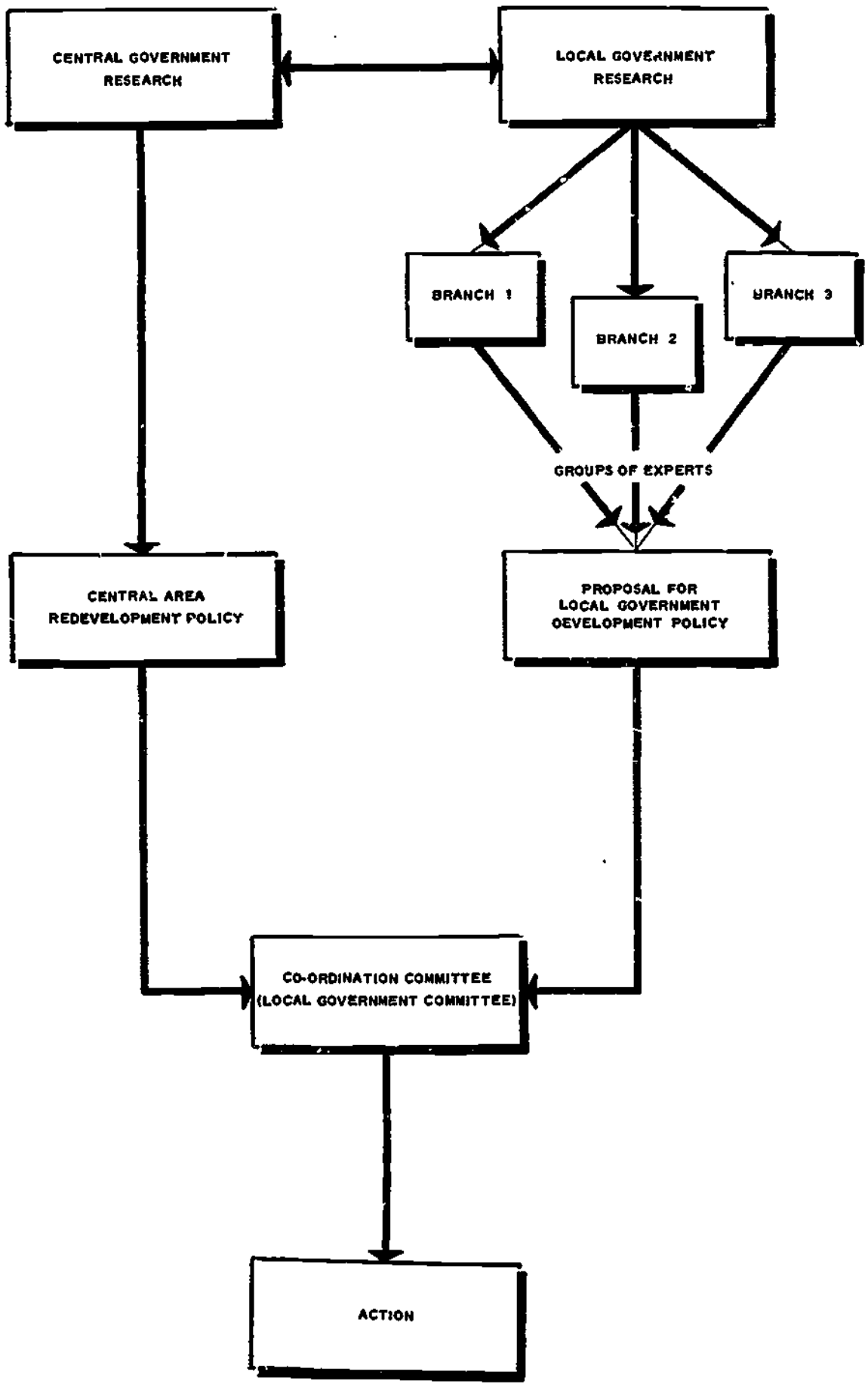
THE ACTION TO BE UNDERTAKEN

The action to be undertaken by the "promotors" is the communication of relevant, objective information about the area to interested industries. A considerable amount of attention is given, especially in the United States to this aspect of the whole problem of redevelopment. A description of the ways in which areas could approach interested businessmen is given in the brochure: "Attracting New Industry", edited by the United States Department of Commerce, Area Redevelopment Administration, 1962.

We shall here reproduce a few striking and, in the author's opinion, important points from this brochure.

"INFORMATION. Unfortunately, industrial site seekers almost never ask the easy questions: 'Is this a nice place to live?' 'Do people work hard?' Instead, they want to know about such undramatic matters as chemical analysis of industrial water, tax assessment ratios, foundation subsoil qualities. These kinds of questions deserve—and demand—heavy digging."

ORGANISATION DIAGRAM FOR REGIONAL POLICY



The importance of prompt, factual and honest question-answering was summed up by the Industrial Development Committee of the California State Chamber of Commerce in this fashion:

> A business man seeking information on which to base an important investment wants facts ... He will be influenced favourably by the certainties in the picture, and unfavourably by the "loose ends" of uncertainty which delay and drag out his negotiations in a community. He is most certain to be unfavourably impressed by information which is indefinite, inadequate, or proves unreliable.

"The same State chamber also came up with an interesting list of the subjects most often raised by serious industrial inquirers. In order of relative frequency and importance, the are:

— Description of industrial sites and buildings.
— Labour supply and living conditions.
— Transportation facilities.
— Power, fuel and water.
— Raw materials.
— Business climate.

"To be able to answer detailed questions on each of these topics, a community needs a central fact book—and, if the basic organising work of the local committee has been done properly, the Overall Economic Development Programme submitted to the Area Re-development Administration will form the nucleus for such a collection of relevant data.

"PRINTED MATERIALS. The community's general brochure may be helpful in stirring up initial interest, but it's almost worthless to the veteran investment sleuth who wants authenticated fact materials to bring back to his bosses at the home office.

"The development organisation might collect all of this research data on its own, provided it has a large budget and unlimited time. A more practical course would be to lean on other organisations and specialists, both inside and outside the community. Thus the re-development committee's office becomes a sort of 'one-stop shopping centre' of materials from other sources on site location. Here are kinds of data that site selectors and their advisors like to look at, along with some likely places to get them:

MATERIALS	A FEW SOURCES
Site descriptions, photos and specifications .	Railroad, private utility, electrical co-operative, industrial realtor.
Aerial maps, industrial zoning data	Planning board, mayor's office, local realtor.
Labour supply and characteristics	State Department of Employment Security, local union central body.
Transportation facilities and services	All carriers.
Power, fuel and water rates, and supply ..	Various utilities.
Local and regional marketing information and supplier services	State and local chambers of commerce.
Business climate data	Local chamber of commerce, manufacturers' association.
Basic economic data	Area Redevelopment Administration. State Development Agency, State Department of Commerce.

"LOCAL CONTACTS. Visiting industry representatives will talk to the local redevelopment committee, but they'll talk to other people, too. Through expert sleuthing, they'll be particularly interested in learning if a pro-industry feeling permeates a community, or if the development organisation is merely a false front behind which seethes all kinds of local fighting and feuding.

How fast they get appointments, what kind of a welcome they get, and most of all whether the answers they get seem to show a consistent pattern or a crazy-quilt of diverse opinion—all these will be tip-offs toward local attitudes for which industry officials will be watching.

"ACCOMMODATIONS. Industrial site-seekers are people, too. They like a comfortable bed, a good breakfast, and a clean hotel room. Very possibly they also enjoy a game of golf, a visit to a museum, a swim, or a little fishing. This means that whether or not tourism figures prominently in the local economic development plan, a certain amount of it may be very important to the long-term future of a community's industrial development effort.

Here's a case in point : when Lebanon, Pa., launched its own little bootstrap effort a few years ago, it started by forming a hotel corporation, raising $750,000 from 1,600 local investors, and establishing an 80 room, air-conditioned inn.

An investment of three-quarters of a million dollars may be beyond the capacity of most redevelopment groups, but all of them should make certain that they have at least one good hotel and a couple of recreational diversions for visiting site-seekers."

The question of who should receive what information about the area is also treated in a general way in the above-mentioned brochure. The procedure suggested is to send pamphlets containing general information about the area to a relatively large number of potentially interested businessmen; other information touching more directly on each man's specific interests would be provided later and on the spot.

One might conceive of a slightly different approach, one more directly connected with the extensive research programmes described above. These programmes (and the results of meetings between the research unit and groups of experts) should yield a considerable amount of information about the possibilities in the area for specific types of industry.

W have already pointed out that the most we can hope for is a priority list of the activities which could profitably be carried out within the area. Since this list is based upon calculations of the various cost components in the area as compared with those of other areas, one can determine with its help what are the advantages of the area, insofar as the specific activities listed are concerned.

In areas with such resources at hand, it might be wise to prepare a number of brochures containing not only general information about the area but also information of particular relevance for the man receiving it. This method has the advantage over the more general advertising approach of using all the information obtained by research.

A second way of increasing the efficiency of communication, obviously, is to concentrate attention on rapidly growing industries which are likely to be looking for new sites rather than industries with a slow growth rate.

Chapter 8

SOME SPECIAL FEATURES OF REDEVELOPMENT POLICY FOR DIFFERENT CLASSES OF DISTRESSED AREAS

Introduction

We have had several previous occasions to emphasize that the distinction made in Chapter 1 between three types of distressed areas—*developing distressed areas, potential distressed areas* and *distressed areas* is not only a formal one but has a bearing on the policy to be followed. We have said that in a distressed area the area development policy should be one of reconstruction, in the potential distressed areas one of reconstruction and retardation, and in the developing distressed areas one of stimulation.

In this and the two subsequent chapters we shall direct our attention to the specific features that characterise each of these policies. We shall start with "distressed areas".

The special situation of a distressed area

A distressed area has been defined as one in which not only the prevailing level but also the rate of growth of income and employment are lower than the national average. As we have already seen, such an area is not necessarily one whose economic structure is unfavourable : the rate of population increase also has a decisive influence upon incomes and employment. The experience of the region of Limburg in Belgium shows that an exorbitant population increase may create difficulties despite the existence of a relatively favourable economic structure. Nor is a distressed area necessarily one in which *all* industries are less promising than those in a prosperity area, but they are not represented in adequate proportions to guarantee a desirable rate of growth for the area as a whole.

Although there is little doubt in the mind of the author that attempts to accelerate economic development in such areas by creating new industries should be as intensive as in other regions, such efforts should at least be accompanied by a complementary policy to encourage emigration of some portion of the increase in active population.

Since in areas with a large population increase the average age is relatively low, there is little danger that such a policy would result in the most active part of the population emigrating and leaving behind the older and less active part.

Such unbalanced emigration is however, likely, if unfavourable change in the economic structure rather than excessive population growth is at the root of the area's problems. Examples to prove this point can be drawn from the experience of almost any developed country.

"Consider just what happened in just a few industries in the post-war years;

- — Coal has been hard-pressed by the competition of other fuels.
- — Textiles have been revolutionised by fabric changes and squeezed by substitute products made of plastics and paper.
- — Auto and electrical manufacturing have been dispersed from traditional centres.
- — Military aircraft are giving way to missiles.
- — Railroad repair shops have been obliterated as diesel power replaced steam and as rival forms of transport have cut into railroad traffic volume.
- — Meat packing jobs have been slashed by new processing methods.
- — Shoe manufacturing has migrated from traditional centres.
- — Gloves, leather goods, watches and clocks, silverware, plumbing supplies, wool knit-goods and rope are among the products most drastically affected by foreign competition; such raw materials as fluorspar, lead, zinc, antimony, copper and iron are similarly hit.

In this and other industries, intensified mechanisation, automation, rising man-hour productivity—the elements of industrial progress—have also played a large part in cutting employment even when plants remained in operation."[1]

Such changes may have a sudden adverse effect on the prospects of an entire area and at the same time improve the outlook for other areas. As substitution of oil for coal hits the European coal mines, the coastal districts and ports, where oil is imported and processed, will profit. Old textile regions may suffer from the competition offered by synthetic products; the chemical industry in other regions will profit. The skilled workers who are left behind in the region which loses out are faced with unemployment: their skills are no longer in demand and there is little chance that any other skills which they could acquire by retraining would find a market in the same area.

New job opportunities are to be found elsewhere, just as new opportunities for capital investment are to be found outside the traditional centres. The result is a migration of labour (usually the younger and more active workers) of capital and of managerial ability from the depressed area to other, more promising places. After ten or twenty years of this process of "anti-selection" of ability, an area is left with a relatively old, often inactive labour force, with obsolete capital—not only economic but social—a lack of managerial ability and other human capital which is in many cases extremely difficult to overcome.

"If opportunities are lacking, people leave. The Hailsham report reckoned that there has been a net emigration from the region (Northumberland) of 80,000 people over the past ten years. Those who leave are often the bright, the ambitious, the skilled or the educated on whom the region's future should depend. Most of these people have moved into the booming urban areas of Southern and Midland England,[2] just where congestion and land shortages

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1. *America's Real New Frontier*, Area Employment Expansion Committee. New York, 1960.
2. There is no clear evidence to support this claim.

are most serious and getting more so. The northeast, under the burden of its past successes, is not contributing what it could to the prosperity of the nation. Its best and brightest people, unable to exercise their talents at home, increase the economic and social cost of providing congestion elsewhere in Britain".[1]

"Distressed economic areas tend to become less and less capable of self-assertion and initiative as their condition is prolonged. It is for this reason that early assistance in redevelopment is essential. The lowered capacity for economic growth is due not only to the spirit of resignation which ultimately suffuses a community that continually fails, but also to the out migration of the young and ambitious, leaving behind the older and less mobile persons. As the distress continues, the graduates of the school system move out, making for a more unbalanced population. Community income drops, and the quality and quantity of public services deteriorate so that the services and inducements necessary for attracting modern industry become fewer in number".[2]

Clearly one cannot be extremely optimistic about the possibilities for redeveloping a distressed area. The state of distress itself is a result of the fact that for a long time nothing was done to avoid the foreseeable decline. There was no research to determine what might be the consequences of future events; there was no policy for avoiding adverse developments. The one-sided structure of the local economy was permitted to persist; no attempt was made to stop the decline by attracting healthy new industries. And during the painful period of steady decline the most capable workers left the area; capital equipment became obsolete; the infrastructure—in the widest sense of the term—depreciated; and housing conditions deteriorated. In short, the area became distressed.

The question of whether failure to act helped to bring about the decline may be somewhat academic for areas already in a state of distress. But for potential distressed areas it is of the utmost importance and therefore will be emphasized in considering these regions.

Special features of redevelopment policy in distressed areas

Infrastructure

Before a development programme is drawn up or action embarked upon, several questious must be answered. First, should the development proceed from the area's conventional nuclei? This question, of primary importance, is closely linked with another: should an attempt be made to utilise (wholly or in part) the existing infrastructure or should a new one be created?

The answer to this question depends on two factors : the amount of capital represented by the old infrastructure and the physical and financial possibilities for creating a new infrastructure (in the broad sense of the term). If the economic decline resulted in "the physical decay of many older industrial areas which grew up in an age of coal, smoke, dirt and overcrowded housing conditions";[3] if the area "is so congested, so cluttered with old, run-down structures, so devoid of new construction, and generally so dreary looking, that it appears to the outsider to be a poor environment in which to live, to

1. *The Economist*, 7th December, 1963. "The First Region", page 1043/4.
2. Solomon Barkin, "Principles for Area Redevelopment Legislation", Labor Law Journal, Chicago, August 1959.
3. The Times, 15th November, 1963, quoting The White Paper on Development of Central Scotland.

stimulate industrial growth, and to attract outside investment",[1] it is clear that the use of the old infrastructure is hardly possible. One might even raise the question whether in many areas where the conditions described prevail, it would not be much better to start afresh by creating new towns and villages in entirely new locations.

"A Newcastle University study group, led by Professor Daysh, has proposed that there should be developed a string of heavily motorised new communities stretching in a series of contiguous circles right up the arterial spine of the region. Why not? It would be no more expensive, and should earn a considerably higher return in the long term, than a programme of patching and repairing where patches and repairs are most expensive, in the heart of the old industrial belt".[2]

In other cases existing cities may be so large and so densely populated that the most that can be done with the financial means available is the gradual execution of an urban renewal programme together with the creation of new communities.

In general, the particular conditions of the area should, of course, be considered in detail before any definite decision is taken. Alternative projects will have to be considered, the return on capital being the decisive criterion. In any case the existing infrastructure should either be replaced by a new one or reconstructed in such a way that it will be able to "compete" with those of more developed areas. The attractiveness of the area as a whole is largely determined by the quality of its economic, social and cultural infrastructure.

Human capital

Another question to be considered is how to attract industry if sufficient human capital is not available in the area. From the foregoing it will be clear that the problem of "reconstruction of human capital" is particularly important in distressed areas; it is less important in potential distressed areas and developing distressed areas.

One can, of course, offer a solution to this problem: if the human capital in the area is insufficient, it should be imported along with industry. Simultaneous import of both new capital and the key workers required is the ouly solution.

It is hardly necessary to add that these key workers (including managers) should be remunerated according to scales that are competitive with those of other areas and that the social and cultural "liveability" of the region should be such as to encourage these workers to move in.

Enlightenment

A final point : in a distressed area not ouly should there be a great deal of activity; in addition the outside world should be informed about what is being done so that the public may become aware that things are going to change in the area. Public interest in the development of a specific area can be a very important element in the development process itself. The new towns in

1. "Suggestions for a More Effective Development Program for Belmont County, Ohio". United States Department of Commerce, February 1964, page 8.
2. *The Economist*, 7th December, 1963. "The First Region : the North East", page 1044.

England, the new polders in the Netherlands and developments in Italy's Mezzogiorno are all cases in point. Public interest has been aroused first because the development has been unusual, even spectacular; secondly because articles, brochures, books, films and other media have devoted considerable attention to the obstacles faced in execution of development plans, and to the development itself.

Such attention should also be given to the redevelopment of distressed areas. Their heritage of dark distress will highlight the new initiatives of the new public works, and will enable such actions to be presented with even more force than in more developed parts of the nation.

The special situation of a potential distressed area

A potential distressed area has been defined as one which has a relatively high level of income but a rate of growth that is inferior to the national average. This implies that even though the area has not as yet been designated as a distressed area, it can reasonably be expected to become one if present trends continue.

If a potential distressed area has a development policy, this means of course that measures can be taken long before distress actually sets in, and results are to be expected at the moment that a decline in the conventional branches of industry becomes evident.

This point was explicitly expressed at the 1961 Intergovernmental Redevelopment Conference organised by the High Authority of the European Coal and Steel Community. The first conclusion of this conference was formulated as follows:

"Reconversion projects should preferably be carried out during boom periods. In general, reconversion is much easier if started before decline has actually begun; thus reconversion projects may be long-run or short-run".[1]

When, therefore, we concern ourselves in this chapter with the special features of redevelopment policy in potential distressed areas, we shall pay special attention to this point.

The special situation of a potential distressed area might best be illustrated by two examples from the Federal Republic of Germany.

The first example relates to the area of Barsinghausen (Kreis Hannover) where coal-mining used to be the main economic activity. Owing to unfavourable local circumstances having to do with the geological characteristics of the mine as well as to the generally unfavourable situation of German coal-mining, the mine's existence was severely threatened and with it the jobs of 1,900 workers and other employees.

The local government, aware of what was about to happen, became active and succeeded in attracting two larger industries to the area—a factory making spare parts for cars and a coke factory. The first obtained a loan of $4 million; the second got its site without charge.

The second example is a copper-mine in Sontra (Northern Hessen) where 1,300 people were employed. This mine found itself in difficulty because of imports of cheaper and richer foreign copper ore. A subsidy of $1,600 per

1. Frederic Meyers, *Area Redevelopment Policies in Britain and the Countries of the Common Market*, Los Angeles (to be published in 1965). Part VII. "The role of the European Coal and Steel Community and the Common Market in Regional Policy", Yves Delamotte and Erika Georges, page 20.

worker per year was granted to the mine by the Federal Government. In addition the Federal Government granted $5 million in development loans for new industries and the "Land" Hessen $3 million for the same purpose. As a result of these aids a large factory for the manufacture of agricultural machinery at some distance from Sontra was enlarged thus making possible the tapering off of production in the copper-mine.

From these two experiences the following main conclusions can be drawn:

1. There should not be too great a time lapse between the closing down of old industries and the starting of new ones. The greater the degree of co-ordination between the two changes, the less likely is it that the disadvantages of emigration will be felt.
2. Since, in the final analysis, it is the entrepreneur who bears the risks of his new activities, one should not tell him too precisely where to locate. This is particularly true since the influence exerted by a factory some 15 or 20 miles distant from a particular centre might be as favourable as that of a factory nearer by.
3. Point 2 implies that it is the entrepreneur who will decide whether to use the buildings of the older industries or not.

In practice, it is not *always* possible to combine successfully a policy of "retardation" (implicit in the above examples) and one of reconstruction *within* the area itself. This is evident from the experience of Oberfranken in the Federal Republic of Germany on the border between Czechoslovakia and Eastern Germany. Before World War II, the two main activities of this region were cotton spinning and weaving and production of chinaware. After the war the cotton industry ran into trouble because of its loss of contact with the cotton dyeing and printing industries of Eastern Germany and as a result of competition from overseas. Chinaware production suffered from a loss of cheap lignite sources.

In addition to the aid given to all its eastern regions, the Federal Republic of Germany granted transport subsidies for both raw materials and finished products in those areas where transport costs had increased because of the new frontier.

In 1954, when this subsidy had proved insufficient, the government decided to allow accelerated depreciation of investment and gave subsidies on interest payments to existing firms which wanted to rationalise their operations. Such were the measures of "retardation". Although they were not completely unsuccessful, still the town of Hof lost 8 per cent of its population between 1950 and 1960. Although these measures did help to retard the decline of the region, enabling workers as well as entrepreneurs to shift gradually to other regions without too much disturbance to the economic balance of the region, actual reconstruction failed.

We should, of course, realise that although the economic structure of a *potential distressed area* must be considered as unfavourable *on the average*, the description does not apply equally to all industries in the area. There will ordinarily be a sprinkling of growth industries, and—it goes without saying—local government will do its utmost to promote further growth of these industries (if the central government has not already taken account of the situation). Although a policy that supports flourishing industries *more* than stagnant or declining ones might seem unjust to those industries which are in a state of decline, such a policy is of such basic importance for the area's future that

long-run considerations must prevail over the short-run interests of industries no longer able to maintain themselves.

The examples given above show that the great advantage potential distressed areas have over actually distressed areas, is that developments may be foreseen and measures taken in time to prevent a disastrous decline in employment and income. This matter of timing merits special attention.

Special features of area development policy in potential distressed areas

Infrastructure

In general the infrastructure of the potential distressed area is not as yet obsolete and therefore requires less reconstruction than is the case in actually distressed areas. Nevertheless, it seems unlikely that the requirements of the new industries will completely match those of the older ones.: the sources of raw material will change as will the outlets for finished products, and the resulting changes may require a re-orientation of the road and railroad systems. Still, a much smaller investment in infrastructure will be required in potential distressed areas than in actually distressed areas. Needless to say this means that a much larger portion of local resources will be left for other more direct uses.

Human capital

As to human capital, measures of retardation, however successful, are insufficient. They must be followed by measures to encourage reconstruction. New opportunities must be offered to workers who are dismissed from the old, traditional industries. Otherwise the human capital of the region will gradually emigrate and the potential distressed area will become one of actual distress. In this light, a policy of retardation must be seen as a means to gain time for the execution of a positive policy of reconstruction. In this case too, timing of the two policies is of the utmost importance.

Enlightenment

The need for enlightenment in the case of potential distressed areas deserves special attention. For these areas the threat of distress is usually not imminent and is, therefore, not usually adequately recognised. The great danger is that people will remain complacent too long. In other respects the guidelines for enlightenment are the same as those noted in the chapter on distressed areas. In this case too the results of basic research concerning the area should be communicated to industries that might desire to move in.

Developing distressed areas

A developing distressed area must be distinguished from a distressed area which has a successful redevelopment policy: in the former the renaissance is due to "natural" economic events which give rise to new industries. An illustration of a developing distressed area is to be found in northern Holland, more particularly in the province of Groningen: the recent discovery in that area of an enormous natural gas reservoir, second only to that of Texas, makes it possible to foresee the development of new industries based on natural gas

as a raw material and as fuel. Other examples of such areas are the rapidly developing tourist regions of Yugoslavia and Spain and the Flanders region of Belgium which is rapidly becoming industrialised.

To some extent these areas are the counterparts of potential distressed areas. As existing activities change location (e.g. the shift of steel production from inland, where the coal mines are, to the coast) or change in nature as well as location (e.g. the shift from cotton to artificial fibres) they leave behind them areas of distress but create new centres of development.

Clearly the policy required for a developing distressed area is one of stimulation. Such regions have the advantage that the direction of their future development is clear and therefore the measures required to promote that development are well-known. This does not mean, of course, that no action should be taken to broaden the base of the economy or to diversify the industrial structure; but the main concern should be promotion of activities which have already shown themselves capable of flourishing in the area.

Another advantage enjoyed by such regions is that they may anticipate increasing revenue and thus can afford to invest much more than other regions. In addition, they usually get financial support from the central government; a support which in the opinion of the author they deserve more than any other areas.

The guidelines for policies other than that of stimulation have been discussed in earlier chapters and do not need further treatment here.

Chapter 9

HIDDEN POTENTIALITIES

In chapter 5 we touched on the matter of hidden potentialities.[1] These are extremely difficult to discover even on the part of the most intelligent entrepreneurs; they are also difficult to describe, since they are by definition "hidden" and not subject to conventional economic analysis or even to the insights given by expert groups.

First among the hidden potentialities as yet undiscovered natural resources should be mentioned—not only raw materials but natural beauty as well.

It may, at first, seem strange to mention undiscovered natural resources in this context. But raw materials like oil and gas have been discovered in the most unexpected places, even in recent years, and there is no reason to believe that there will not be other such occurences in the future. The discovery of natural gas in Groningen and on the island of Ameland in the Netherlands are examples of what may happen even in the most developed countries. It is not sufficient, however, to consider only well-known and widely-used raw materials; for others, heretofore virtually unused in industry, may suddenly rise to a position of importance. Therefore it is very important to undertake a complete geological survey of the area; to describe fully the available resources so that the local government is fully prepared for any eventuality. Such a survey is also important for any general economic survey since it facilitates the calculation of raw material costs.

Other natural resources, although of a different nature, might be treated analogously. Even in crowded Europe, many areas have a natural beauty that is barely known outside the region or even inside it. In many countries so-called touristic routes have been created, along existing roads or through areas not previously accessible. Systematic exploration of almost any area will reveal places of potential touristic interest that have not as yet been used as touristic attractions. This is especially true in view of the fact that nowadays many tourists, rather than staying in one spot, drive from place to place in order to see as much natural beauty as possible. The propagation of information about the area, combined with the creation of touristic facilities, may contribute considerably to the growth of the tourist industry and thus to the economic development of the area. Businessmen who have learned to know an area during vacation may become interested in it for business purposes. In the frontier areas of Western Europe systematic

1. Compare this with the concept of "existence d'interdépendances potentielles non exploitées" in "Dynamique Économique de la Région Liégeoise", Louis R. Davin, Léon Degeer et Jean Paelinck, Liège, 1959. Also compare "Industries d'Avenir, Marché Commun et Province de Liège", Louis R. Davin, J. Lepar, Liège, G. Thorne, 1962.

research plus the creation of international touristic routes seems to be of great importance for further development.

Closely connected with natural beauty is the question of climate. One might say that for a relatively long time the pleasant climates of California, Arizona and Florida were "undiscovered". But suddenly these states started to develop, to a very large extent due to climatic conditions. It is to be expected that a similar pattern will sooner or later be followed in Europe. Climatic conditions in Italy, Spain, Southern France, Greece, etc. are much more pleasant than in the conventional industrial areas of Europe with their heavy rainfall, summer and winter, spring and autumn. Once the difference in climatic conditions between these traditional areas and the sub-tropical ones is fully realised, it is to be expected that considerable development in the latter countries will take place. Further economic integration in Europe may contribute substantially to such a shift.

As for hidden industrial potential, the question is more complex. In Chapter 4 we discussed possible developments in an area not usually covered by research. In principle there are three sorts of unused potentials:

a) new markets and/or new uses for products already produced within an area;
b) production of new products;
c) effective use of waste materials and by products of existing industries.

The basic difficulty of economic research concentrated on an area is, as already noted, that it must of necessity be based on a classification of industries which does not take into account each individual activity. Since within any one industrial class, some activities may be more profitable than others, it is inevitable that some potentially promising activities will not be considered if the growth potential of the class as a whole is below average. In all probability the activities left out will not be the big, important industries. Yet the number of smaller industries ignored might be considerable. It seems likely that such oversights may be minimised (though not entirely eliminated) by the work of a group of experts.

The best examples to illustrate the concept of hidden potentialities are to be found in an improbable source—a document entitled "Suggestions for the Advancement of the Overall Economic Development Programme of the Camden Area, Arkansas (United States Department of Commerce, Area Redevelopment Administration, 1963):

"It would appear that the portable motel units now being mannfactured by the Holiday Inns subsidiary just outside Camden may have important possibilities with respect to the critical shortage of low-price housing in Latin America. It is not certain that these units could be handled by the present barge facilities on the river, but if it cannot be done now, it should certainly be possible after the channel is deepened and warehousing and docking facilities are improved".

In this example a new market is proposed for a product which has been produced in the area for a considerable time. It might seem that the suggestion put forth is unrealistic: the same units might, for example, be produced much more cheaply in Latin America itself, but this could only be determined after careful investigation; the suggestion itself is of great value.

The second example of hidden potential given in the above-mentioned document is that of a new garbage-disposal system:

"A local sheet-metal plant has developed a metal container which will

hold a 50-gallon paper bag (manufactured locally by the International Paper Company Bag Division) that can be substituted for ordinary household outside-garbage containers. The paper bags, which will sell for a few cents, would be picked up and disposed of with their contents during each collection, and a new bag supplied to the householder by the collection agency. Preliminary investigation reveals that the speed and convenience of using this system might actually make it cheaper to operate than the present methods of collection".[1]

These two examples may serve to illustrate, better than any lengthy explanation, what is really meant by hidden potentialities in the industrial sector. The discovery of such hidden potentialities may result from the efforts of many people, all of whom are concerned with the way in which the region might develop: industrial experts; experts in economic and market research; and ordinary residents who are interested in the development of their own community and area. In the total picture some of these sources might seem to be of limited importance, but a few of their ideas might change the whole future of the area. For this reason local authorities would do well to make whatever resources are available—a local research unit, a group of experts—accessible to the entire community. In this way the most can be made of intelligent ideas put forward by members of the community.

1. *Ibid.*, pages 4 and 5.

Chapter 10

AREA REDEVELOPMENT POLICY AND PHYSICAL PLANNING

So far we have touched only upon economic and social problems related to area redevelopment policy. Although the title of this study indicates nothing about the physical aspects of the problem, these are so closely connected with the economic as well as with the social aspects that it is hardly possible to ignore them completely.

Physical planning deals with the use of land in the area and the distribution of land-use between larger and smaller nuclei.

We have already expressed the view that in some areas it may not be worthwhile to use existing towns and villages as nuclei of future growth; more efficient use of the area's land can be made by developing new communities at a greater or lesser distance from existing centres. As yet we have not gone into much detail about the "best" way of distributing activities and population over the area. This question, however, is important and merits some attention.

One requirement, if there is to be consistent physical planning in an area, is that there be complete co-operation between the authorities of the various municipalities. Such co-operation may not be easy to achieve in practice. The author's experience in the Netherlands seems to indicate that the obstacles to co-operation cannot always be overcome with ease. Rivalries exist between municipal and county authorities. A municipality which seems destined to serve as a residential area cannot understand why it should not have an industrial estate, while the municipality that should logically be an industrial centre claims that its workers should live within its boundaries.

There seems to be only one solution : every municipality should subordinate its own interests to those of the area, whatever the consequences. If the more rational course is to concentrate industrial activities in one or a few centres of growth or along a line of growth, this should be done. If it is judged rational to reserve some areas for recreation, they should be saved from invasion by industry or home building. A harmonious and consistent plan for development of the entire area is a necessary condition for further growth.

A degree of specialisation of function on the part of the various localities of a region should guarantee that the different aspects of human life receive due attention; it also ensures that the area will have a logical attractive structure.

It may be that some countries go too far in physical planning; the Netherlands may be one such country. On the other hand, it is certain that many countries do not go far enough.

A physical plan should be based in part on economic principles, of which

one is the optimum distribution of population over nuclei of different sizes. This means that two points should receive special attention:

a) The number of development nuclei chosen should not be too large for two reasons: the first is that the required infrastructure should not make (re)development excessively expensive; the second reason is that larger nuclei are more attractive to entrepreneurs. They create growth points which may stimulate further development. Agglomeration effects result from the proximity of a large market; from ease of contact with other industries which may be upstream or downstream in the production process; from the more specialised and diversified labour market; from social and cultural benefits and so on. In practice, these secondary factors often prove to be decisive in an entrepreneur's choice of location for his industry, even when such choice results in somewhat higher direct costs.

b) The development of larger nuclei should not be excessive. Western Europe provides many examples of areas handicapped by all the economic and other disadvantages of congestion—lack of outdoor recreation facilities, air pollution, etc.

If such concentrations already exist, the authorities should try to avoid further unnecessary growth. Clearly a policy that tries to divert activities from larger agglomerations could at the same time serve the purpose of creating in other places new, efficient and attractive nuclei of reasonable size : large enough to enjoy agglomeration effects, but small enough to avoid the most glaring drawbacks of the large agglomeration.

Odber in his "Regional Policy in Great Britain"[1] refers to this problem, as developed before recent changes in the following terms:

"To concentrate industrial expansion in a few selected areas would be a complete reversal of present (British) policy, but it would have a number of obvious advantages. If good industrial sites were carefully selected, so that expansion were possible without creating new congested conurbations, then the difficulties of operating local employment policy would be reduced and various economies would be achieved, as compared with the present system of encouraging industry in a large number of areas".

Clearly in the United Kingdom, as in many other European countries, there has been a drive to develop everything everywhere. A sound physical plan could avoid undesirable development and should, therefore, be considered as one of the very foundations of area redevelopment policy.

The physical plan must be derived from the economic considerations described in Chapter 4. For the physical planner the capacity of the road system, the number of houses to be constructed, their rent levels, the number and size of shops, the demand for industrial sites, etc. are data on which his plan must be based.

However, the construction of a physical plan entails more than the mere fitting together of elements drawn from the studies of other disciplines. The planner must arrange all the elements in an optimum[2] way, one that will best meet the needs for transportation for economic efficiency and for "liveability".

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1. *Area Redevelopment Policies in Britain and the Countries of the Common Market*, Frederic Meyers, Los Angeles (to be published in 1965), page 56.
2. Linear programming techniques are very useful in finding optimum solutions in physical (spatial) planning.

Co-operation between the physical planner and representatives of other disciplines during the construction of the plan is, therefore, indispensable. In this connection, the British approach, in which physical planning is given as a post-graduate course to representatives of other disciplines, merits the attention of anyone seriously concerned with development and redevelopment.

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A comparative study was initiated into the working hours and time schedules women workers with family responsibilities in twenty-one countries to discover what desirable and practical adjustments would enable women to perform their dual functions with a minimum of stress. Part I of this report outlines the current position of women on the labor market in member countries, surveys the most important changes between 1950-1960 and defines the nature of the problems. Part II describes the working hours and time tables of various sectors of the economy for different types of employees; it sets forth the use made of part-time workers in industrial and service occupations, and the extent to which special facilities exist for women workers. Part III deals with services provided by local authorities, public welfare agencies and voluntary organizations which may assist women workers in the discharge of their family responsibilities. Part IV illustrates the effect of the number of children and their age on the total work load of working mothers. Part V considers the extent to which services and businesses cater to the needs of working women. The document is illustrated with charts and graphs. The bibliography is organized according to country. (FP)

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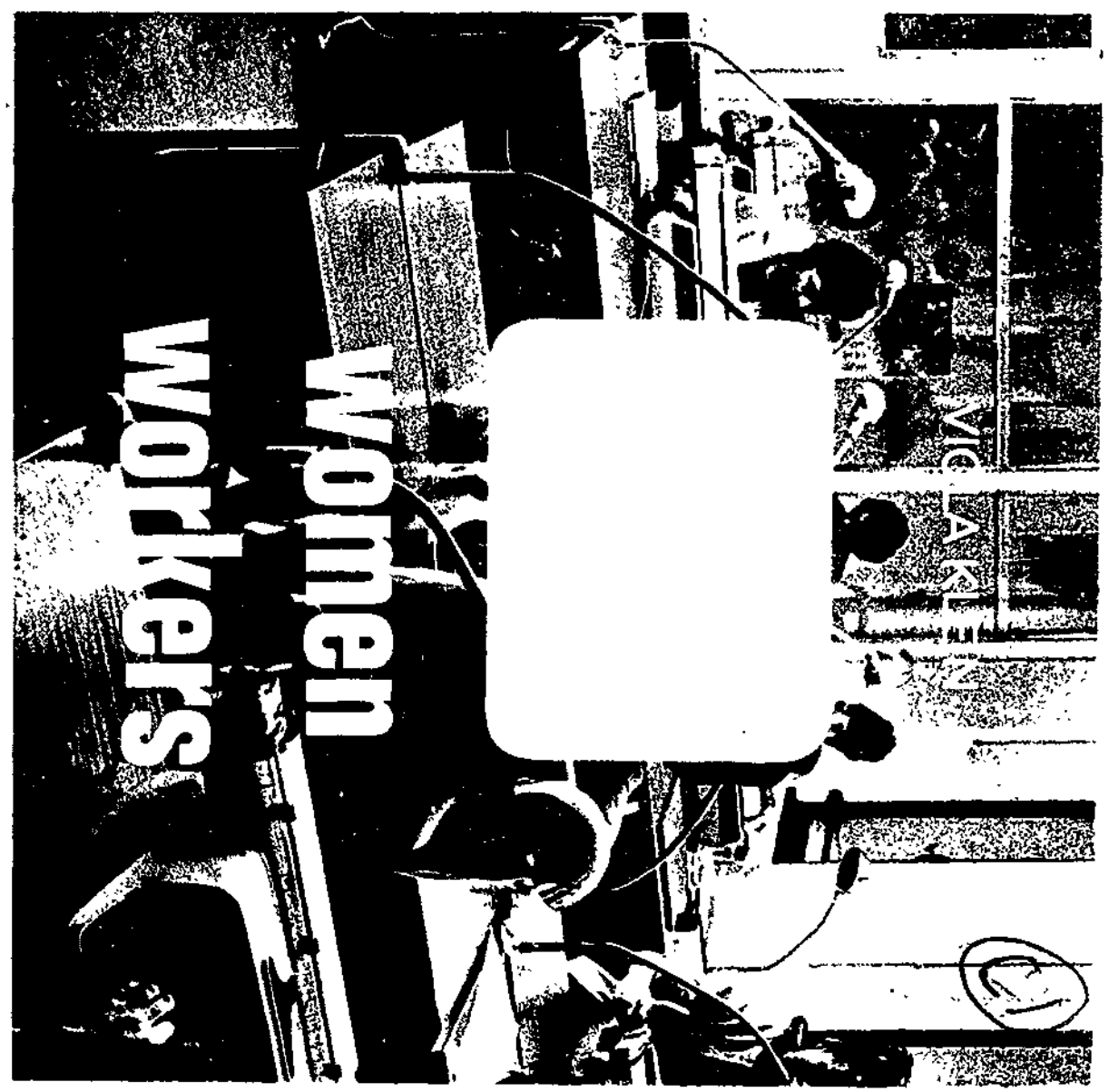
EMPLOYMENT OF SPECIAL GROUPS



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A Survey in 21 Countries
by
Viola Klein

women workers

WORKING HOURS AND SERVICES

ORGANISATION FOR ECONOMIC
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FOREWORD

An active manpower policy envisages the provision of aids to "groups intermittently or permanently outside the labour force (to enable them) to participate in useful employment through such aids... as special job arrangements and efforts to reduce prejudice against their employment. Such measures can be particularly efficient when shortages of labour exist or are impending".

The present programme of the Manpower and Social Affairs Committee provides for the consideration of the problems of a number of such categories particularly emphasizing those of non-competitive labour groups; older workers and long-term unemployed and women with family responsibilities. It is hoped that the consideration of the problems of these categories will provide a guide for the development of policies respecting the employment problems of all special groups.

In several countries women with family responsibilities are now providing a growing proportion of the labour force and their further recruitment is often considered essential to the expansion of the economy. The tenure of this group in the labour market has however been rendered uncertain by the absence of facilities and special arrangements to enable them to carry their joint responsibilities without undue stress, and their employment has often encountered specific difficulties where individual employers have been unwilling to adapt to their special needs.

In some areas, however, arrangements have been made for working hours facilitating such employment without creating a distinctive group. New services have been organized and the operating schedules of existing ones have been reorganized to serve these women better. In this way, a synchronization has been effected between the demands of household, family and job to minimize the strain placed on working women with family responsibilities.

The present report is the writer's summary of the replies of O.E.C.D. Member countries to a questionnaire on existing conditions distributed by the Manpower and Social Affairs Committee. The recommendations are presented on the author's own responsibility. The objective information in her report can provide guides to individual countries in the development of their own policies and measures to implement general active manpower policy.

O.E.C.D.
Manpower and Social Affairs Directorate
Social Affairs Division - 2, rue André-Pascal - Paris 16e

PREFACE

The upward trend in the employment of women has been one of the more striking social developments in virtually all industrial countries since the end of World War II. In the last twenty years the female labour force of these countries has not only grown in number but has also undergone far-reaching structural changes. Its age and class composition have altered and its centre of gravity has shifted from industrial and domestic employment to white-collar occupations.

Dwindling reserves of labour, particularly in skilled and service trades, have made it imperative for most Member countries to investigate the means of making full and effective use of all their manpower resources.

Recognising that women represent an important potential of manpower—although one which can only become available if their domestic commitments are given their due—the Manpower and Social Affairs Committee of the O.E.C.D. initiated the present inquiry into the working hours and time-schedules of women workers with family responsibilities. Its aim was to discover, by a comparative study of prevailing conditions in twenty-one countries, what adjustments are most desirable and most practicable to enable women to perform their dual functions efficiently and with a minimum of stress. Although a number of investigations have been carried out on a local or national scale into various facets and implications of female employment, the present survey is a first attempt at an international analysis of specific and practical aspects of the problem.

Part I of this report outlines the current position of women on the labour market in Member countries, surveys the most important changes between 1950 and 1960, and defines the nature of the problems.

Part II describes the working hours and time-tables at present obtaining in various sectors of the economy for different types of employees; it sets forth the use made of part-time workers in industrial and service occupations, and the extent to which special facilities exist—either by statutory or private arrangements—for some categories of women workers.

Part III deals with services provided by local authorities, public welfare agencies and voluntary organisations, which may assist women workers, either directly or indirectly, in the discharge of their family responsibilities.

An illustration of the effect of the number of children and their age on the total work load of working mothers is provided in Part IV, which summarises the findings of two investigations into the average working week of employed women with families of different size and age composition.

Part V considers the extent to which services are organised to cater for the large proportion of women who are at work during office and shopping hours.

In this, as in various other respects, the problem is seen as one to be solved by synchronisation of schedules rather than by creating a host of new services or initiating revolutionary changes.

The lessons which can be drawn from this survey are summarised in the concluding chapter and embodied in a final list of recommendations.

Throughout the work on the present study I have had the benefit of Mr. Solomon Barkin's constructive criticism and Mademoiselle Denise Lecoultre's active interest and support. I am greatly indebted to both for the help they have given me.

Viola KLEIN

Reading, A[illegible] 1965.

I

INTRODUCTION

a) The changing social position of women

The position of women workers on the labour market has changed profoundly in recent years. Under the impact of economic, technological and social developments, sharp increases have taken place both on the supply and the demand side of the scales.

Economic expansion has led to manpower shortages, particularly in skilled occupations. Society has, therefore, had to make the best possible use of all the resources available, irrespective of sex.

The Manpower and Social Affairs Committee, which is concerned with the human aspects of the policy of economic growth, (adopted as their programme by the Member countries of O.E.C.D.), has therefore decided to investigate existing arrangements, and the adjustments most needed to avoid unnecessary waste of the limited national resources of womanpower.

In many of the industrially advanced countries women now constitute the major labour reserve. Economic growth thus depends in a considerable measure on the ability and willingness of employers to enlist more women and to employ them in a greater variety of occupations—including those not traditionally considered as "feminine".

Technological advances have brought a growing range of occupations within the scope of women workers. Mechanisation, improved working conditions, better transport facilities and shorter working hours have enabled women to work in many fields of employment previously beyond their physical capacity. In addition, a multitude of new jobs have been and are almost daily being created, many of them depending on particularly feminine aptitudes.

Society's need for well-trained female personnel in many skilled and professional occupations has lent support to a public opinion which, in nearly all industrial countries, is prepared to accept the equal status of women in most, if not all, spheres. Ideological change and practical necessity have led to an expansion of educational opportunities which, in turn, are opening an ever wider variety of occupations to the young women of today.

Greater opportunities for employment are matched by increasing numbers of women seeking work. They are not merely responding

to the current conditions of the labour market—although these undoubtedly play a major part—but are acting from personal motivations in which economic, social and psychological elements intermingle. In other words, women have become available for employment not only because they are needed, but for potent reasons of their own, which include the desire to raise their living standards, the wish to use their abilitites and to widen their mental horizon, and natural human gregariousness. Relatively small families and the progressive simplification of housework in industrial countries are additional factors.

Thus women of all social classes are now gainfully employed, unless prevented by family commitments; many others, furthermore, might be helped to do so if the task of combining home and work were made easier for them[1].

b) Growing number of women in the labour force

No economy, at whatever stage of development, can dispense with the participation of substantial numbers of women in its labour force. The female population has, at all times and in all countries, taken part in the economic activities of their society, However, the proportion has grown almost everywhere during the last fifteen years or so.

This is especially true of highly industrialised countries but also applies, to a lesser extent, to societies on the threshold of industrialisation. As standards of living rise and the "business of the nation" gets more and more complex, the need for the participation of women grows, not only in industry and commerce but also in the expanding governmental administrative agencies and in a multiplicity of educational, health, welfare and other services.

In the 21 countries[2] covered by this survey, there has been a steady and sometimes steep growth of female employment everywhere, except in France, Portugal and Turkey. Graph 1 on page 4a[3] illustrates this development during the decade 1951 to 1961. In nearly nine cases out of ten the proportion of women workers in relation to the total labour force of their country has increased during the ten-year period in question. However, in order to be fully understood, this overall picture needs to be qualified.

---

1. In a sample survey carried out in Britain in 1957 nearly one-half (47 per cent) of all the housewives not currently employed stated that they would like to have a job outside their homes; but 84 per cent specified that they wanted to do part-time work. Viola Klein, *Working Wives*, Institute of Personnel Management, London, 1960 (p. 32).

2. The twenty Member countries of O.E.C.D. and Yugoslavia, an Associate Member. (Japan was not a Member of O.E.C.D. at this time.)

3. The data which form this graph and the following passages have been culled from various sources; among them are O.E.C.D. *Manpower Statistics* 1950-1962, the British Ministry of Labour, the United States Department of Labor and the President's Commission on the Status of Women, the joint publication by the Institut National d'Etudes Demographiques and the Commissariat général du Plan

c) Variations in national patterns

Firstly, the economic development in the 21 countries included in this study varies widely, and so do their statistical methods. Employment figures, therefore, are not strictly comparable. In some countries, for instance, a very high proportion of the working population is engaged in agriculture. Many persons counted as "economically active" are, in fact, "unpaid family workers", a very high percentage being women.

While the active participation of women in agricultural communities is, of course, always very high, the method of reporting members of peasant families as part of the labour force has a somewhat "inflationary" effect on employment statistics, especially as some countries (among them Denmark, Luxemburg, the Netherlands and the United Kingdom) do not include unpaid family workers in their statistics on the working population.

These circumstances may explain, for example, why a relatively high proportion of women are returned as economically active in a country, such as Turkey, where three-quarters of the labour force work on the land. (Incidentally, the declining agricultural population accounts for the recent reduction of the female labour force in Turkey). In Greece, too, more than half (55 per cent) of all working women are unpaid family workers, nearly all (97 per cent) in the agricultural sector.

d) Unpaid family workers

The following table shows, as far as possible, the percentages of women workers in the different countries who are unpaid members of the family. Apart from the two above-mentioned countries (Turkey and Greece), substantial proportions of the female working population in Austria, Germany, Italy, Portugal and Yugoslavia are also unpaid family workers.

Agriculture is the most obvious, but not the only, sector making widespread use of unpaid female labour. Shops, restaurants and petrol stations are other examples of small-scale enterprises in which wives and daughters often help without remuneration.

It goes without saying that women who work on the family farm, in their parents' inn, or their husband's business, belong to a different

---

d'équipment et de la productivité (*le Travail des Femmes en France* by Françoise Guelaud-Léridon, Paris, 1964), and others, as well as information provided by respondents to this survey. The figures used here are of more recent date and are therefore, to some extent, supplementary to information on female employment presented, e.g., in *Women Workers in a changing world* [I.L.O., Report VI (1), Geneva, 1963], the *Yearbook of labour statistics* (I.L.O., Geneva, 1962) and the O.E.C.D. (restricted) report *the Employment of Women workers* [Manpower Committee, MO (61) 8, Paris, 1961].

TABLE 1. WOMEN AS A PERCENTAGE OF THE CIVIL LABOUR FORCE[1] OF O.E.C.D. MEMBER COUNTRIES, AND PROPORTION OF WORKING WOMEN WHO ARE UNPAID FAMILY WORKERS

COUNTRY	YEAR	WOMEN AS % CIVIL LABOUR FORCE	UNPAID FAMILY MEMBERS AS % WORKING WOMEN
		1	2
Austria	1961	41.3	24.2
Belgium	1962	31.6	15.1
Canada	1962	27.1	5.1
Denmark	1962	35.3	
Eire*	1961	26.7	
France	1962	34.9	18.9
Germany (F.R.)	1962	36.9	22.3
Greece	1961	32.8	55.1
Italy	1962	29.0	24.3
Luxemburg	1962	20.0	
Netherlands*	1957	24.9	
Norway	1961	22.9	
Portugal	1960	18.4	28.2
Spain	1961	18.5	16.5
Sweden	1962	36.5	8.0
Switzerland*	1960	30.1	
Turkey*	1960	40.9	
United Kingdom	1961	34.4	
United States	1962	34.1	4.2
Yugoslavia	1961	33.4	25.7

(Iceland has been omitted because the latest available data were for 1950, when women represented 28.6 per cent of persons in civilian employment.)

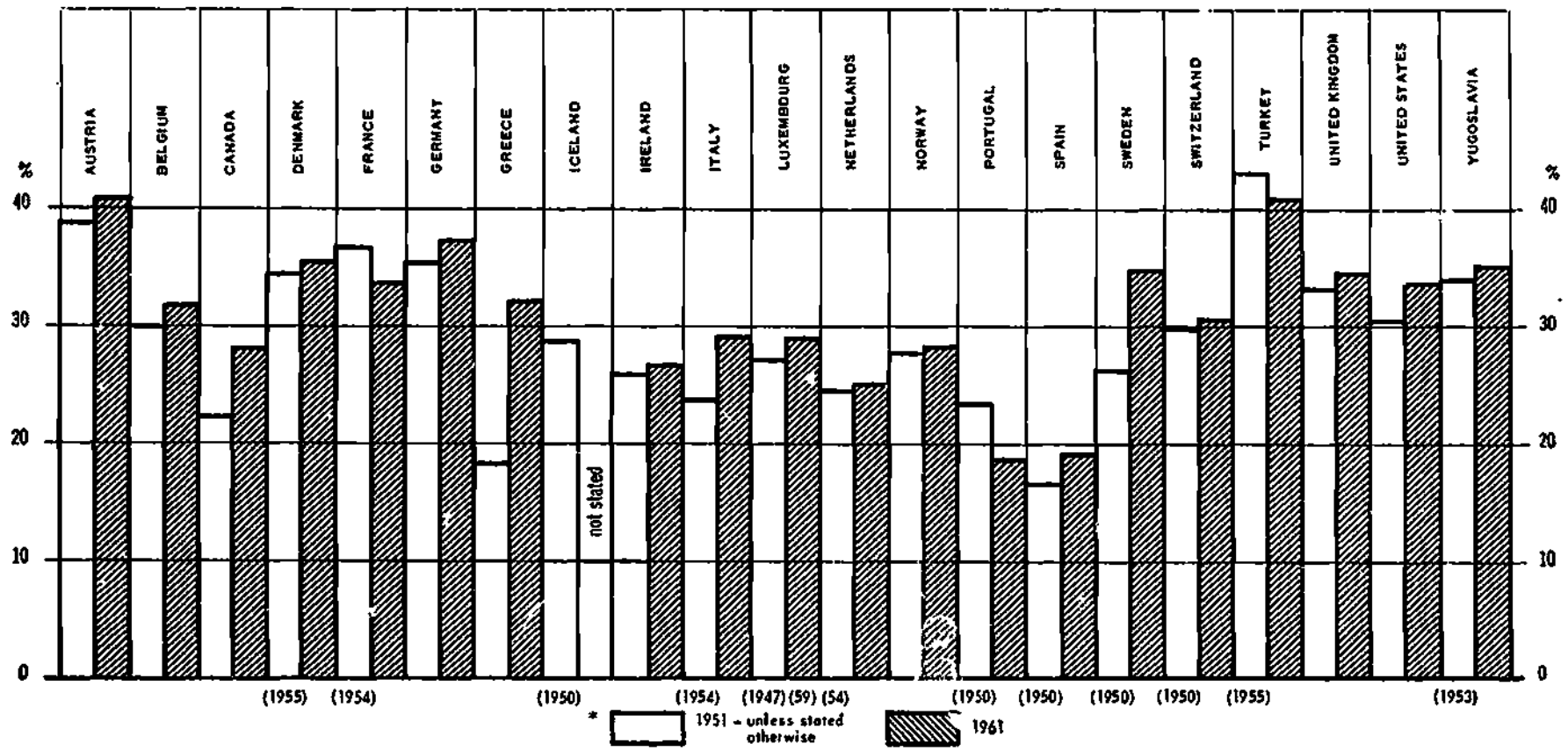
1. In all countries except those marked* the percentages refer to persons in the *Civil Labour Force*, i.e. including men and women registered as "unemployed"; in the countries marked by an* the figures refer to persons "*in civilian employment*", excluding the unemployed. Differences between these two categories are, in fact, small but have to be mentioned to explain some discrepancies between percentages given here and published elsewhere. The "Civil Labour Force" is the more appropriate reference group, but corresponding data were not available for all countries.

category from those who are in regular, paid employment on a contractual basis—either full-time or part-time—and away from home. Although their work may be as important for the economy or, in some instances, even more so, they are subject neither to labour regulations nor to collective bargaining. The natural inclination of women to settle conflicts of loyalty between their work and their family in favour of the latter will not be put to too hard a test since the interests of employer and family generally coincide.

e) INCREASING EMPLOYMENT OF MIDDLE-AGED WOMEN

A second qualification to the overall increase in the number of women working concerns the age structure of the female labour force. More education, earlier marriages, steadily improving standards of health and living, and greater longevity, have raised the average age

Graph 1. WOMEN AS PERCENTAGE OF PERSONS IN CIVILIAN EMPLOYMENT, 1951*-1961



of the working population and the growth in the number of women employed in the "middle" period of life. In most countries, the increases have been particularly marked in the age group between 35 and 50. The same factors have influenced the declining activity rates of women in the younger age groups.

The development shown in Graphs 2 and 2a (pp. 20 and 21) for the United Kingdom and the United States, also applies, *mutatis mutandis*, to a number of other countries. The main feature is the heightening and broadening of the second peak in the two-humped curve which is becoming increasingly characteristic of the employment pattern of women[1]. There is a growing tendency for women to re-enter the labour market once their most pressing family responsibilities are over.

This fairly recent development offers new opportunities and presents special problems. The *opportunities* are the opening up of a large reserve of more mature female labour usually with some previous work experience and, to an increasing extent, with special knowledge or qualifications. These women in their middle years are, moreover, generally judged by employers to be more reliable workers than younger women and, as a result of their reduced family commitments and their maturity, are less prone to absenteeism[2].

The *special problems* affect, in particular, women in the more highly qualified occupations who, during the years at home, may have forgotten some of their training and lost confidence in their abilities. Training and refresher courses may soon restore these assets. Such courses, run by professional organisations, public authorities, technical colleges, adult education centres and universities, are now on the increase in many countries. Notable among them are the various "continuing education schemes" in the United States[3]. The supply of such schemes is, however, outstripped by the demand for skilled personnel and will therefore have to be greatly expanded.

f) Employment of married women

As already indicated, the increasing employment of married women represents a significant social change. Married women form a large, untapped reservoir of labour at a time when the number of single women is dwindling. A growing proportion of them have been trained and employed before marriage, making them desirable recruits for re-enlistment in the labour force.

---

1. « Le Travail des Femmes en France » (*op. cit.*, p. 17) includes a graph showing the development of femal activity rates in France between 1906 and 1962. Although not broken down by marital status as in the above illustration, it shows clearly the same tendency towards an increasingly high second employment peak of women in their forties.
2. Viola Klein, *Employing married Women*, Institute of Personnel Management, London, 1961.
3. The *Saturday Review* of May 18, 1963, listed 38 « College Programmes for Mature Women » in many parts of the U.S.A.

For this and other reasons married women represent an increasing proportion of the rising female working population. In a number of countries—France, Sweden, the United Kingdom and the United States—they now form the majority of women workers. Graph 3 (p. 22) illustrates this development in rough outline, and may be supplemented by the following percentages showing the increase of married women employed in the total female labour force:

In Canada, 37.9 per cent in 1951; 58.3 per cent in 1962*;
In France, 49 per cent in 1954; 53.2 per cent in 1962;
In Norway, 12 per cent in 1950; 24.6 per cent in 1960;
In Sweden, 30 per cent in 1950; now more than 50 per cent;
In Switzerland, 16.3 per cent in 1950; 25.1 per cent in 1960;
In the United Kingdom, 41 per cent in 1950; 52 per cent in 1960;
In the United States, 52 per cent in 1950; 60 per cent in 1960.

* The Canadian figures include women "married or once married".

g) Other women with family responsibilities

The growing practice of employing married women has drawn attention to the effects which the dual responsibilities of home and employment may have both on women and their families. In this connection it should be recalled that not only married women have home responsibilities, nor are children the only members of a family in need of care.

Traditionally, aged parents and sick relatives are the charge of women, usually of spinsters. The time has now passed when unmarried daughters stayed at home for this purpose. Unmarried women today generally go out to work, and many of them also look after old or ailing parents. Since families have, on the whole, become smaller, this responsibility is shared by a smaller number of children and usually devolves on the daughter rather than the son, the unmarried rather than the married.

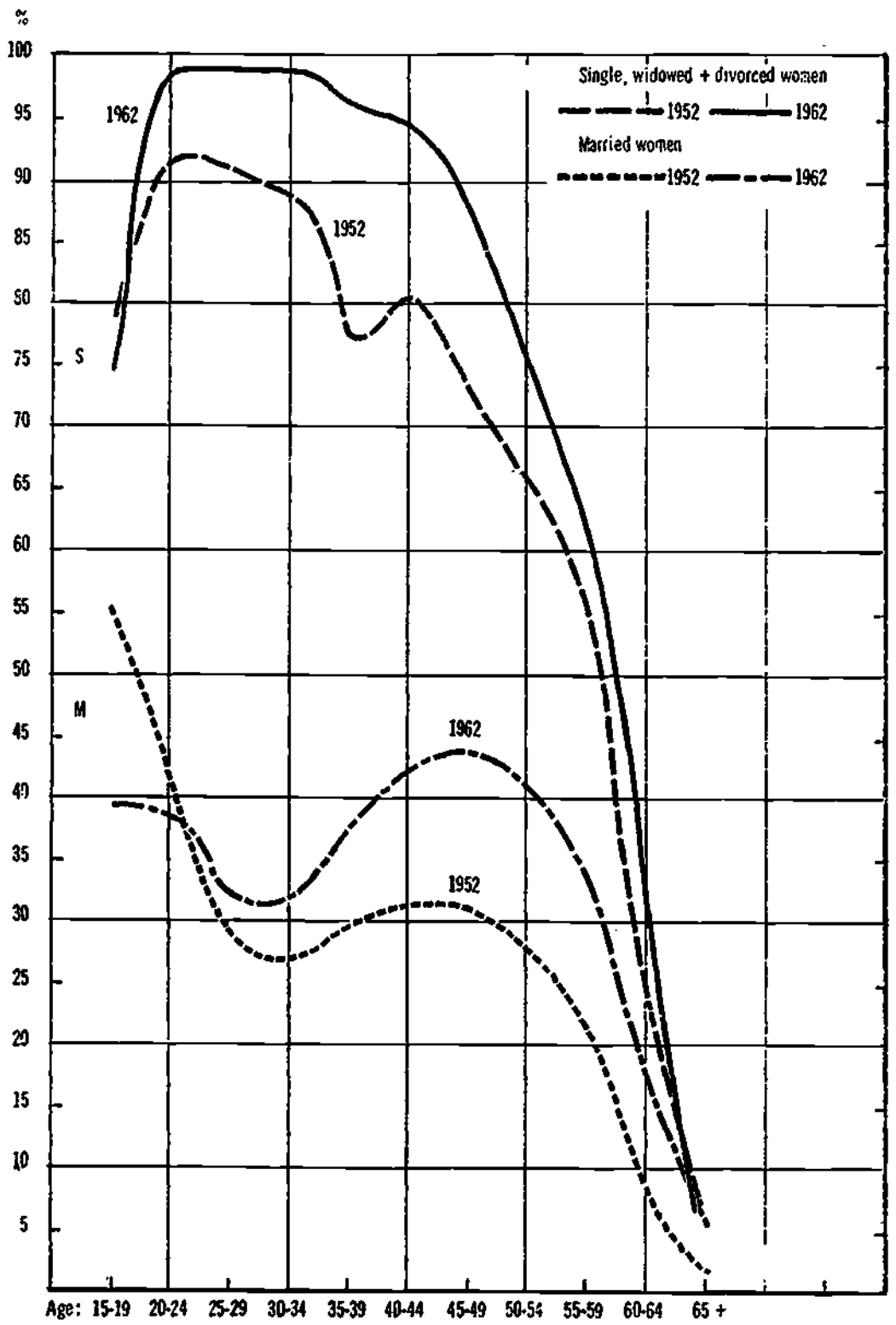
Many spinsters, therefore, as well as widows and divorcees, combine full-time employment with family responsibilities.

h) Different types of domestic responsibilities

Apart from the care of helpless or disabled members of their families, there are domestic duties of a more general kind, which are traditionally considered a normal part of a woman's life, irrespective of her marital status and regardless of whether she is employed or not.

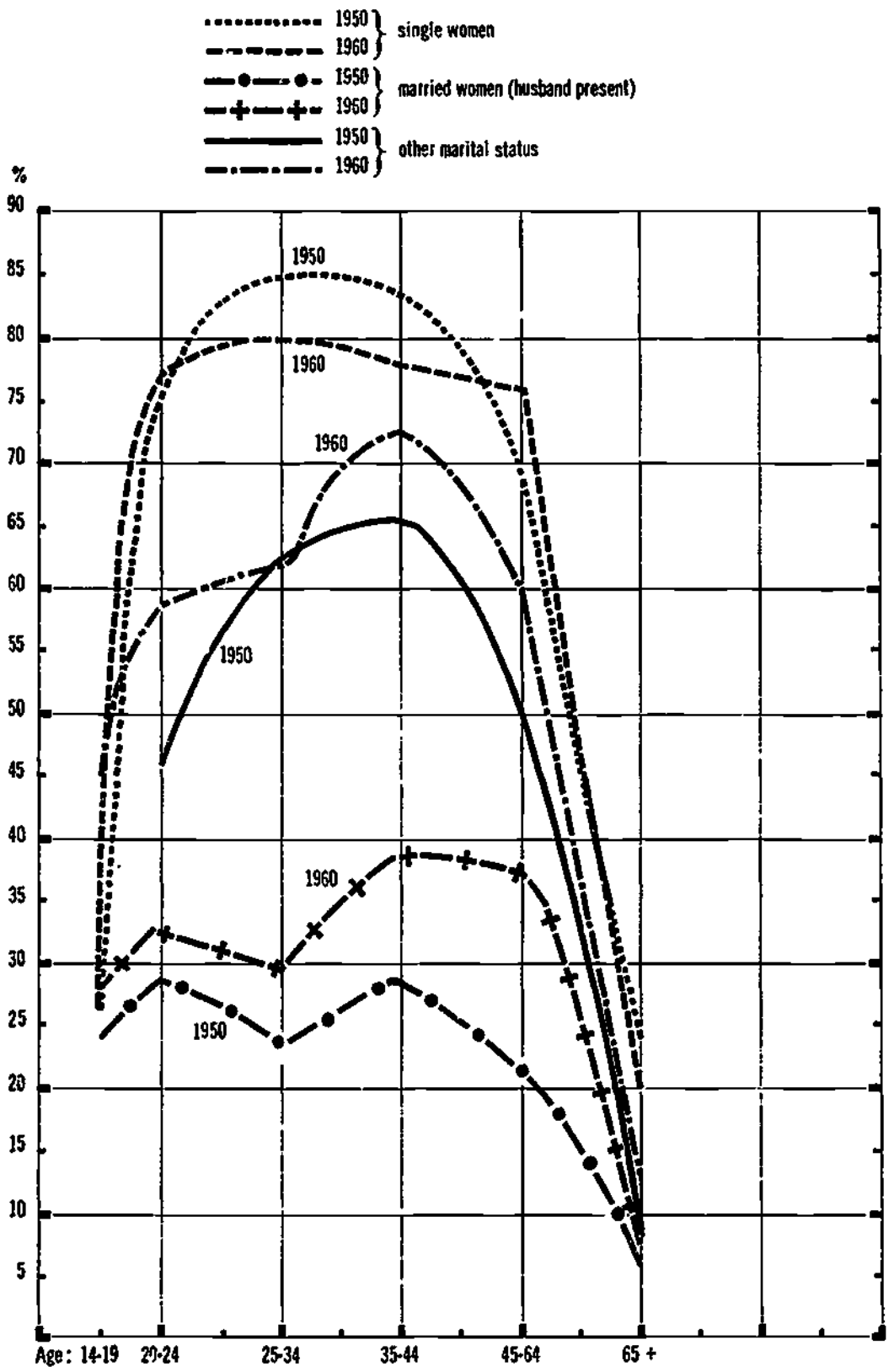
The woman who goes out to work, whether she be single, married, widowed or divorced, bears a domestic burden which—even if considerably lighter than in the past—is unevenly distributed between the sexes The working man, irrespective of whether he is married or a bachelor, almost invariably has female help for the domestic chores. The working woman, on the other hand, usually has to do

Graph 2. ACTIVITY RATES IN GREAT BRITAIN BY AGE



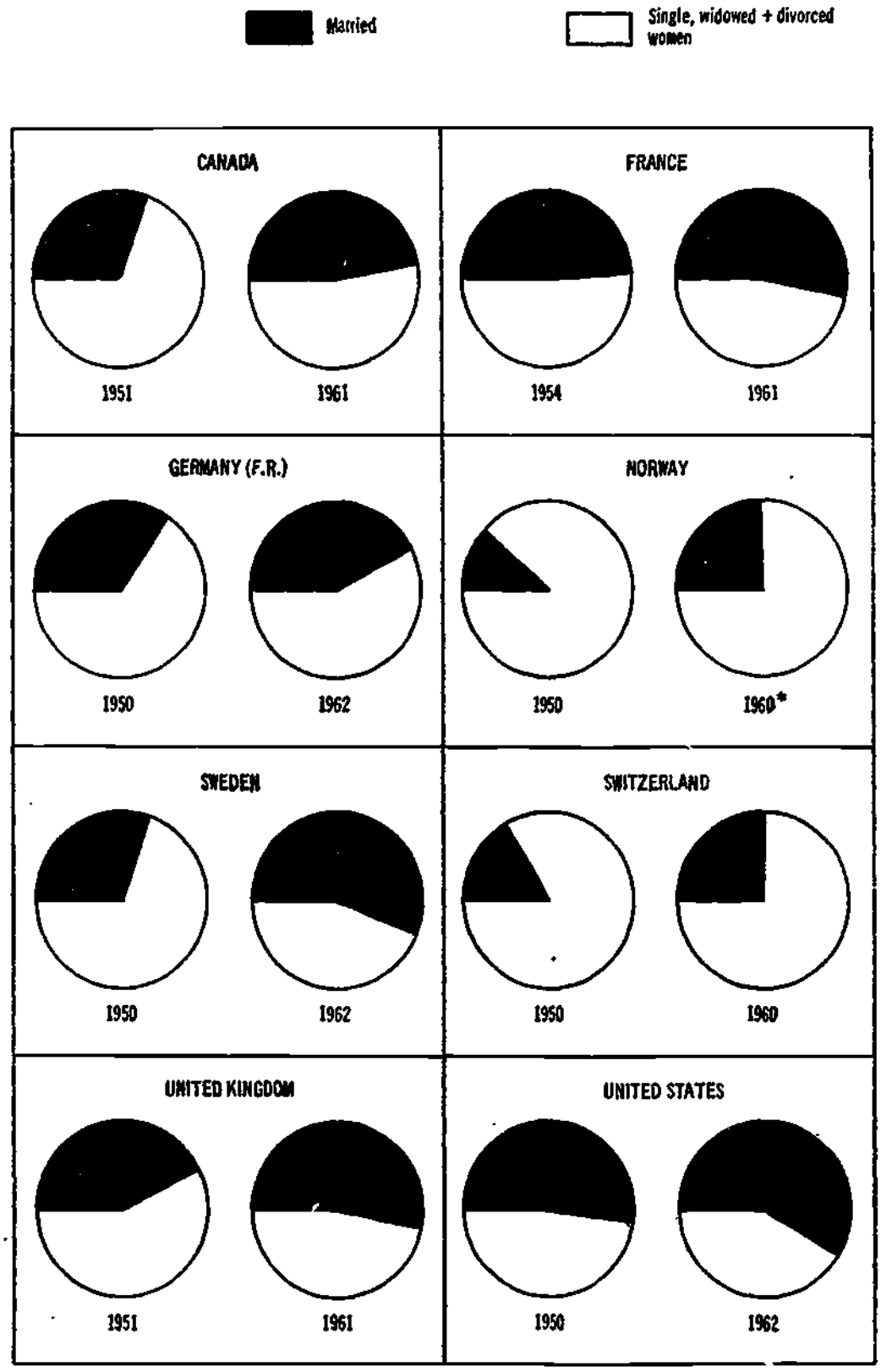
Source : Ministry of Labour Gazette, October, 1963.

Graph 2a. ACTIVITY RATES IN THE U.S.A. BY AGE, 1950-1960



Sources : (1950) Current Population Reports, Labor Force, May 2, 1951.
(1960) Statistical Abstract of the U.S., 1962.

Graph 3. PROPORTION OF MARRIED WOMEN IN THE FEMALE WORKING POPULATION



* Excluding married women in "secondary employment".

these things not only for herself but also for one or more other persons.

"Family responsibilities" therefore fall roughly into three categories:

1. husband and home,
2. children,
3. aged parents and relatives.

Group 2 should then be sub-divided into three separate categories (infants, school age, adolescents), as obviously responsibilities vary according to age. The Manpower and Social Affairs Committee was aware of these variations when it decided to authorise this survey. The questionnaire therefore started with the following definition:

> "Working women with family responsibilities include married or unmarried women, as well as widows, with family responsibilities who are contractually employed on a full-time or part-time basis as wage-earners, salaried employees, managers or supervisors and professional women. Excluded are those working in agriculture and establishments where only members of the employer's family are working."

Most respondents, however, interpreted the term "family responsibilities" as applying only to the care of young children. This can perhaps be explained by the fact that, as will be seen later, "institutionalised" support, including legal protection, is on the whole confined to pregnant women and to mothers of very young children. Apart from these two instances, the relief of individual cases of hardship is usually left to the discretion of employers and managements, and will, normally, be made according to the merits of each case, whether a single woman with a sick mother, the wife of an invalid husband or the mother of an infant is involved. In a survey carried out among British employers of female labour[1] many respondents stressed the fact that they did not discriminate between married and single women in giving special consideration[2] to deserving cases wherever possible, and made the unprompted comment that single women also often have family commitments. But such special concessions will, of course, only be made and asked for in particularly difficult circumstances, and must be regarded as the exception rather than the rule.

i) Purpose and scope of the present enquiry

In initiating the present survey the Manpower and Social Affairs Committee had a twofold aim:

Firstly, to discover current practices in the Member countries

1. Viola Klein, « Employing Married Women », *op. cit.*
2. « Special consideration » does not apply to part-time employment, which is almost exclusively the province of married women workers.

of O.E.C.D. concerning working hours, time-tables and special facilities for women workers with family responsibilities, and the measures, if any, taken by employers, the State or the community to reduce their workload or lighten their dual task in other ways; Secondly, on the basis of the information brought to light by this investigation, to suggest ways and means which might assist Member countries in the pursuit of an active manpower policy, i.e. help them to eliminate some obstacles in the way of making better use of an important pool of ability.

The data on which this report is based were, primarily, provided by the governments of the twenty Member Countries and Yugoslavia in reply to a questionnaire[1] distributed by O.E.C.D. in the winter of 1963/64. Supplementary information has been gathered from published sources (indicated in footnote references and in the bibliography at the end of this report).

It is a token of the lively interest provoked by the subject of this survey that not only has every single questionnaire been returned completed, but many respondents have provided additional relevant information. The Manpower and Social Affairs Committee has every reason to be grateful to Member Governments for their generous co-operation.

The limitations of this enquiry should, however, be indicated. Firstly, it is not a sociological study carried out with a scientifically selected sample. Recourse has been made, as far as possible, to the relevant literature; but on the whole this report is mainly based on information derived from a single source in each country. These sources being official, their main emphasis tends to be on existing regulations and provisions rather than on the degree to which they are enforced and their manifold practical effects on peoples' lives. In some countries, for instance, private practice may be far in advance of existing legislative standards, and may be most liberal as compared with prevailing conditions in other countries.

Secondly, the terms of reference of the investigation were to carry out "a special study aiming at analysing the adjustments in working hours and the special facilities and arrangements for housewives to enable them to combine more efficiently and with less strain their wage-earning, housework and family responsibilities"[2]. The survey is not, therefore, a study of the working conditions of women in general but has a much more modest scope. Problems of health and general welfare, such as the ban on certain types of employment for women enforced in many countries, questions of pay, training, promotion prospects, status, marriage bar, etc., are not taken into account.

Nor was the aim of the survey to discover the average number of hours which working women with family responsibilities spend in different countries in their dual capacity of workers and homemakers

1. See Appendix I.
2. See O.E.C.D. document C (63) 60, Annex VII, paragraph 46.

(although such information as became available on this topic in the course of the study is summarised in Chapter IV). We are concerned here mainly with the more limited but more definite problem of hours worked in their place of employment by women holding either full-time or part-time jobs. This is part of two wider questions, namely:

1. Is there any elasticity of working hours to meet the needs of a specific type of worker whose availability is "conditional"?
2. Are some, at least, of these needs being met, or can they be met, by agencies other than employers, for instance by providing public or private services, by an adaptation of local practices, or by a change in social attitudes?

The topics under consideration therefore fall into four main groups:

1. Working hours and time-tables (full-time and part-time) in force in four occupational categories broadly classified under the headings of *a*) industry; *b*) administration (civil service, local government and other office work); *c*) distributive trades and *d*) services[1].
2. Community services to help working women with family responsibilities.
3. Special arrangements and facilities for expectant mothers and those with young infants.
4. Opening and closing times of shops, post offices, local administrative offices, etc.. in relation to working hours.

Although, for reasons of convenience, these four topics will be dealt with under separate headings, one of the most important questions is the co-ordination between them, since many problems concerning the employment of women workers with family responsibilities result from the lack of synchronisation between the different "compartments" of their lives. Serious shortcomings, for instance. arise from the discrepancies between parents' working hours and children's school hours, and from the lack of co-ordination between various essential services and the times working people can use them.

However, it is hoped that this report will serve a useful purpose by disclosing the different methods used by countries to integrate into their respective labour forces a large, and in general, growing, proportion of women workers, whose contribution is essential to national prosperity, yet whose responsibilities towards their families are of vital importance to the community.

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1. For reasons stated earlier (p. 15) certain occupations have been excluded; this applies to agriculture, domestic service, handicrafts and home industries, and to « unpaid family workers ».

II

WORKING HOURS AND TIME SCHEDULES

The extent to which working women can cope with their family responsibilities under existing conditions of employment will depend considerably on the number of hours they spend away from home, and also, of course, on the nature of their home responsibilities: whether families are large or small; whether they include infants or invalids; whether other relations are available to take over a share of household duties; what domestic equipment is available. Furthermore, rural-urban differences and climatic conditions play important parts.

Time "away from home" includes the journey to and from work, which is sometimes long and strenuous. Many respondents mentioned this factor and gave examples of typical travel times between home and work: forty to sixty minutes each way are by no means uncommon. The long distance from home and the strain of rush-hour travel are among the reasons why women do not like to take small children to crèches and nurseries at, or near, their place of work. More will be said about this in another context, but we mention this fact here as one of the complications of life for working mothers of young children.

Working hours vary widely, not only between one country and another and between different occupations in the same country, but also within the same sector or industry in a given country, according to local practice or the needs of particular employers. The difficulties of presenting an overall picture of working hours, or of other practices, are particularly great in countries with a large measure of regional or provincial autonomy or a federal constitution. American States, Canadian Provinces and Swiss Cantons each have their own legislation in matters of labour regulations and social welfare which sometimes differ considerably.

Table 2, therefore, only gives approximations as to the numbers of hours worked and time schedules in operation. When replying to our questionnaire, several respondents pointed out that they could only give some fairly typical examples chosen from a variety of work schedules practised. Some others confined themselves to stating the legal maximum working hours in force, without specifying how they are distributed over the day or week.

TABLE 2*i*. TYPICAL WORKING

COUNTRY	*a)* INDUSTRY		
	WORKING HOURS PER WEEK	WORKING DAYS PER WEEK	DAILY SCHEDULES
Austria	45	5 or 5 ½	9 hours 7-17 h. with 1 hour for lunch.
Belgium	45	5	9 hours, with 1 hour or less for lunch.
Canada	40	5	8 hours, 1 hour for lunch varying time-tables, e.g. 8-12; 13-17.
Denmark	45	5 ½	7-16 h. Monday-Friday, with 1 hour for lunch. 7-12 h. Saturday.
Eire	42 ½	5	8 ½ hours, 8-17.30 h.; 1 hour for lunch.
France	40 (plus maximum overtime up to 20 hours p.w.)	5, 5 ½ or 6	Vary according to local circumstances; lunch 1-1 ½ hours, longer in Centre and South of country.
Federal Republic of Germany	40-48**	5	Varying.
Greece	48	5 ½	Starting time varies between 6 and 8 a.m. Lunch break: 2 hours in winter, 3 hours in summer.
Iceland	45 (5-10 hours overtime usual)	5 ½	8-12 h.; 13-17.30 Monday-Friday, 8-12 h. Saturday.
Italy	48 (max.) (Collective agreements provide shorter working hours)	5 ½-6	8 hours per day exc. on special duties
Luxemburg	48 (max.) (but 80 per cent of workers subject to collective agreement providing working week of 42-45 hours)	6	8-12 h.; 14-18 h. 8 hours, 2 hour lunch-break.

* The working hours and schedules in this table are approximations based on statutory regulations and collective agreements. For comment on the actual hours worked see p. 37.

** As a result of various collective agreements the prevalent norm is now a 44-hour week.

HOURS AND SCHEDULES*

b) CIVIL SERVICE AND OFFICES

WORKING HOURS PER WEEK	WORKING DAYS PER WEEK	DAILY SCHEDULES
40 (?)	5	8-17 h.; no fixed lunch-time.
41 ½	5	Lunch-break either 45 minutes or 1 hour and 45 minutes.
37 ½	5	Time-tables set at discretion of Dept. Heads; earlier closing in summer; variations in noonbreak; staggered starting and finishing times to facilitate transport.
42	5 or 5 ½	9-17 h., incl. interval for meals, Monday-Friday; 9-12 h. on alternate Saturdays.
35 (circa.)	5 ½	9.30-17 h. Monday-Friday; 1 ½ hours for lunch, 9.30-13 h. Saturdays.
45	5 ½ or 6	Schedule (a) 8.30-12; 14-18.45 Monday-Friday (2 hours for lunch); 8.30-12.15 Saturdays; *b)* 9-18.15 with 1 hour for lunch Monday-Friday, 8.30-12.15 Saturdays; *c)* 9-12; 14-18.30 daily (incl. Saturday).
44	5 or 5 ½	Varying time-tables; start at 7.30 or 8 a.m. Some have lunch breaks, others work throughout the day, particularly in big cities.
36	6	8-14.30 daily.
38	5 ½	9-12 h.; 13-17 h. Monday-Friday, 9-12 h. Saturday.
40 or 44	5 or 5 ½	8-12 h.; 14-18 h. Monday-Friday, 2 hours for lunch; 8-12 h. Saturdays (excl. banks, insurance companies, etc.).

TABLE 2*ii*. TYPICAL WORKING

COUNTRY	WORKING HOURS PER WEEK	WORKING DAYS PER WEEK	DAILY SCHEDULES
	a) INDUSTRY		
Netherlands	45	5	7-or 7.30-17.30 h.; lunch-break ½-1 hour, mostly coffee or tea breaks of 10-15 minutes each.
Norway	45	5 or 5 ½	9 hours, 1/2-3/4 hours for lunch, 7-16 h. (or 16.15) Monday-Friday, 7-13 h. on Saturday with 1/2 h. break (fairly common practice to have alternate Saturdays off).
Portugal	48	6	8 hours, 1 hour lunch break 8-17 h.
Spain	48	6	8 hours, 1 hour lunch break time-table varies; latest finishing hour 19 h.
Sweden	44-45	5 or 5 ½	Varying arrangements, e.g. 1 shift: 7-16 or 17 h.; 2 shifts: 5 (or 6)-22 h. (or 23 h.); 3 continuous shifts: 6-14 h.; 14-22 h.; 22-6 h. (in steel works: 4-12; 12-20 h.; 20-4 h.); 1 hour break, either in toto or split.
Switzerland	44-46	5 or 6*	8 or 9 hours, according to whether 5 or 6-day week; varying time-tables, e.g. 7-12 h.; 13.30-17.30 Monday-Friday plus Saturday mornings.
Turkey	48	6	8 hours, 1 hour lunch break, usual start at 8 a.m. (8-17 h.).
United Kingdom	cca 42 ½	5 or 5 ½	Varying time-tables, e.g. 7.30-17 h. or 8-17.30 h.; 1 hour lunch break.
United States	tendency towards 40 hour week (no general ruling)	5	8 hours; time-tables vary; ½-1 hour lunch break usual.
Yugoslavia	42** (max.)	5 ½ or 6	8 hours, 1 hour lunch break if work not done in shifts; if in shift work 30 mins. break. Working schedule: 6-14; 14-22; 22-6 h.

* The 5-day week now affects 80 % of all workers in Switzerland.
** The new Constitution of 1963 provides for a general reduction of working hours to 42 hours per week; the Federal Law implementing this provision has not yet been promulgated, however.

b) CIVIL SERVICE AND OFFICES

WORKING HOURS PER WEEK	WORKING DAYS	DAILY SCHEDULES
41 ½	5	8-15-17.15 or 17.30; lunch-break 3/4-1 hour (12.30-13.30).
38 3/4 (Sept.-May) 35 (May-Sep.) Civil Service 37-40 other offices	5 ½ (winter) 5 (summer) 5-5 ½	8.45-15.30 winter. 8.30-15.00 summer. 8.30 (9)-16 h.
36	5 ½	9-17.30 Monday-Friday with 2 hours for lunch, 9-12.30 Saturdays.
39	5 ½	7 hours Monday-Friday, 2 ½-3 hours for lunch, 4 hours Saturday.
39-42	5-5 ½	8-17 h.; 8-13 h.
44 in alternative weeks of 42.05 and 44.55	5 or 5 ½	7.40-11.45; 13.40-18 h. Monday-Friday; 7.40-11.30 Saturday every other week. (Some cantonal administrations and private firms have 5-day week with shortened lunch break of 1-1.30 hours.)
36 ½	5 ½	9-17 h. Monday-Friday, 1 ½ hours for lunch, 9-13 h. Saturday.
37 ½	5	7 ½ hours staggered between 9-17.30, 9.30-18.00, 1 hour for lunch.
40	5	8 hours staggered: 7.45-16.15; 8.15-16.45; 8.30-17 h.; 9-17.30; ½ hour lunch break.
42**	6	7-14 h.; some local authorities also work afternoons. Hours vary in different parts of country according to climatic and other conditions.

TABLE 2*iii*. TYPICAL WORKING

c) DISTRIBUTIVE TRADES			
COUNTRY	WORKING HOURS PER WEEK	WORKING DAYS PER WEEK	DAILY SCHEDULES
Austria	45	6 (in retail trade) (5-day week spreading in wholesale trade)	No general rules; shop hours 8-18 h., food shops 6.30-18.30.
Belgium	40-45	5 (spread over 6)	Department stores open 9-21. Special shifts: 9-13; 17-21 h. Six days per week.
Canada	40-44 (sometimes longer)	5 (spread over 6)	Varying time-tables, e.g. 9-18 h. (or 17.30) 1 hour break for lunch. Shifts to meet peak demand. Shops open 6 days per week.
Denmark	45	5 ½	8-17.30 Monday-Thursday; 8-20.00 Friday; 8-14.00 Saturday. Incl. ½ hour for meals. Special shifts to relieve peak load.
Eire	37 ½-41 ½	5-5 ½	9-17.30; 9-13.00 either Wednesday or Saturday, 1 hour for lunch (usually 13-14 h.).
France			
Federal Republic of Germany			Many variations within legally prescribed working hours, depending on starting time and shift work. One or half day off during week usual.
Greece	45	5 ½	8-13.00; 17.00-20.00, either Wednesday or Saturday afternoon free.
Iceland	43	5 ½	9-12 h.; 13-18 h. Monday-Friday, 9-12 h. Saturday.
Italy	48	5 ½	Some collective agreements provide an extra ½ day off in rotation for sales personnel.

d) SERVICES

WORKING HOURS PER WEEK	WORKING DAYS	DAILY SCHEDULES
Varying according to service and contract. e.g. *transport workers*, 45 hours per week in rotation (shifts).		
40-44 (or more)	5 ½-6	Hours according to consumer's needs; 8-hour day most frequent; arrangements for 1 week-day off increasing.
42-45		
37 ½-41 ½	5-5 ½ (utilities)	*Nurses:* 90 hours per fortnight, rostering arrangements, at least 1 ½ days off per week. 1 hour off for lunch. *Teachers:* 5-day week, 27 ½ hours per week, Midday break 12.30-2 in towns, 12.30-13 h. in rural areas (closing time 15.00).
Utilities: 44 (usually worked in shifts)		*Hotels/restaurants:* subject to seasonal changes—adjustments to domestic requirements difficult, but good chances for part-time employment. *Nursing:* single women only, as system allows few adjustments in hours.
45	5 ½	8-13.00; 17-20.00.
43	5 ½	9-12.00; 13.00-18.00 Monday-Friday, 9-12.00 Saturday.
48 (statutory)	5 ½	Local regulations allow restaurants, canteens, etc., one afternoon closing, but Saturday afternoon work as week-day.

TABLE 2*iv*. TYPICAL WORKING

COUNTRY	*c)* DISTRIBUTIVE TRADES		
	WORKING HOURS PER WEEK	WORKING DAYS PER WEEK	DAILY SCHEDULES
Luxemburg	48	5 ½	Shops open until 18.30 or 19.00, open on Saturday afternoon, closed on Monday mornings.
Netherlands	45 (cca.)	6 (retail) 5 (wholesale trade)	8-(9.30)-18 h. with 1-1 ½ hours for lunch, sometimes starting at 7 a.m. Some shops close at 21.00 once a week.
Norway	45	5-6	Distribution of working hours varies, e.g. 8.30-17 h. with ½ hour for lunch. Arrangements of alternate Saturdays off are common.
Portugal	48	6	9-19.00 h. with 2 hours midday break.
Spain	48	6	Varying time-tables. Midday break of 2 ½-3 hours.
Sweden	45	5 ½	8-18 h.
Switzerland	45	5*	9 hours' work in shifts; shops open 8-18.30 or 19 h. Monday-Friday and 8-16 or 17 h. Saturdays (60 hours per week during tourist season). Sales staff often have Monday morning and another half day off during week. Shift work frequent.
Turkey	48	6	Varying time-tables, with 1 hour for lunch.
United Kingdom	42 (cca.)	5 or 5 ½	9-17.30 with 1 hour for lunch, one afternoon off, either Saturday or week-day.
United States	40	5	8-hour day, staggered hours: 9.00-17.00; 9.30-17.30; 9.45-18.00. When stores remain open until 21 h. the 8-hour schedules are adjusted and part-time workers are often used for additional hours.
Yugoslavia	42**	5 ½-6	8 hour day.

* The 5-day week now affects 80% of all workers in Switzerland.
** The new Constitution of 1963 provides for a general reduction of working hours to 42 hours per week; the Federal Law implementing this provision has not yet been promulgated, however.

d) SERVICES

WORKING HOURS PER WEEK	WORKING DAYS PER WEEK	DAILY SCHEDULES
48	5 ½	Until 18.30 or 19.00 daily, incl. Saturday; Monday morning free.
45 (varying 24-53 hours)	5 or 6	Starting time between 5 and 9 a.m., end often between 17.30/18.00 and 21.00. Lunch break between ½ and 1 hour, usually the latter.

Depending on type of service. Examples: *Telephone/telegraph:* 6 ½ hours per day, 39 hours per week throughout the year; Sundays normally free; work in 2 shifts: 8-14.30; 14.30-21.00, 20 minutes break. *Radio services:* continuous shifts, working week 42 hours. *Postal services:* mostly as in government service, or 45 hours per week in two shifts 6-21 h. *Nurses:* 45 hours per week, 8-hour day: 7-15 h.; 11-19 h. *Night nurses:* 42 hours per week, 22-7 h.

42	6	7 hours per day: 9-18 h. with 2 hours break.
48	6	(Same as in industry) 8 hour day; where a shift system is worked, 8 hours for men, 7 ½ hours for women.
42-45	5-5 ½	Shifts.

Too many to generalise. *Nurses:* 50 hours per week, 5-day week (day or night); can be asked to work up to 54 hours per week. These time-tables are more or less respected in large hospitals but impossible to keep in small ones owing to staff shortages.

48	6	8 hours per day. (These are the most usual hours, but variations depending on agreement).
44-45	5-5 ½	Various shift systems.
40	5	Variations according to type of establishment. *Nurses* generally in 3 shifts: 7-15 h.; 15-23 h.; 23-7 h. (Married women given choice of shift.)
42**	5 ½-6	Shifts: 6-14 h.; 14-22 h.; 22-6h., 32 consecutive hours off every week; when changing shifts, only 24 hours off.

The hours and schedules given refer to workers and employees in each of the chosen occupational groups regardless of sex. Exemptions which exist for certain categories of women will be summarised in part (C) of this chapter.

A. FULL-TIME EMPLOYMENT

1. INDUSTRY

a) *Working hours*

i) *Working hours per week*

The classical 48-hour week in industry only applies today to a minority of countries. Even where 48 working hours represent the legal maximum per week, collective agreements have often reduced this number quite substantially.

Countries with a legal maximum of 48 hours per week are: Germany, Greece, Italy, Luxemburg, Portugal, Spain and Turkey. However, as a result of collective agreements, the hours worked in German industry in fact vary between 40 and 44, the average in 1963 being 43. In Italy, collective agreements nearly always provide a reduction of working hours to less than 8 per day or 48 per week; in Luxemburg, over 80 per cent of industrial workers benefit from a collective agreement reducing the working week to 42-45 hours.

The shortest working week, namely 40 hours, is operative in Canada, France and the United States. Industrial workers in Yugoslavia will work a maximum of 42 hours when the 1963 Constitution is fully implemented; in Eire the working week is 42½ hours; in all other countries 44-45 hours.

ii) *Working days per week*

Working hours are spread over six days in Greece, Italy, Luxemburg, Portugal, Spain, Turkey and Yugoslavia. In France and Switzerland some industries work six days a week, others five and a half or five days. The five-and-a-half day week is operative in Austria, Denmark, Iceland, Norway, Sweden, the United Kingdom and Yugoslavia; in some instances it takes the form of work on alternative Saturday mornings (e.g. Denmark and Norway). The five-day week is current in Belgium, Canada, Eire, Germany, the Netherlands, the United States of America and increasingly also in Austria, France, Norway, Sweden, Switzerland and the United Kingdom.

The introduction of the five-day week has generally tended to lead to a shortening of the midday break. Whereas 48 hours of work, spread over six days, allowed interruptions of 1 ½ or 2 hours (sometimes more) (e.g. 8-12 h.; 14-18 h.), the extension of the weekend to two full days has resulted in longer daily working hours from Monday to Friday (i.e. 5 × 9 hours) with correspondingly shorter breaks for meals.

iii) *Overtime*

The contractually agreed maximum working week does not necessarily correspond to the number of hours worked in actual fact, but only to the number of hours paid at a basic wage. Overtime is often worked in addition, at a higher rate of pay. The extent to which, in some countries at least, this is part of the normal work pattern, can be gauged by the fact that "over-time bans" have become an effective instrument of industrial action and when practised, usually cause a considerable amount of dislocation.

In France, where the law[1] allows a maximum of 20 hours overtime beyond the statutory working week of 40 hours, the average number of hours actually worked in manufacturing industries in 1963 was roughly 46[2]. The report from Iceland mentions 5-10 hours overtime, at a rate of 50-100 per cent above the basic wage, as being usual. The normal working week in British industry in 1963 was 44-45 hours, but the average number of hours actually worked during the third quarter of 1963 was 47.6[3].

The higher rates of pay for overtime act as a discouragement against working hours becoming excessively long. The United States President's Commission on the Status of Women was emphatic about the value of this deterrent. Its Committee on Protective Labour Legislation "agreed that the method of establishing reasonable work schedules through premium pay requirements for work beyond a basic workweek is effective and desirable. The extra cost of wages tends to encourage better planning, discourage overtime work, and establish a better standard than can practically be accomplished by laws merely setting absolute limitations on hours at a given time."[4]

b) *Time Schedules*

Time schedules in industry differ even more widely than overall working hours; they depend on the requirements of individual employers as well as on local customs and on whether a factory works in one, two or three continuous shifts.[5]

Countries are more or less evenly divided between those starting work at 7 a.m. or even earlier, and those starting at 8 a.m. The working day begins at 7 in a majority of industries in Austria, Denmark, Germany, Greece, Netherlands, Norway, Sweden, Switzerland and some industries in the United States. It begins and ends rather earlier in Yugoslavia, Belgium, Canada, Eire, Iceland, Luxemburg, Portugal, Spain and

1. Of 20th February, 1946.
2. For details see Statistical Supplement, *International Labour Review*, Vol. LXXXIX, No. 3, March, 1964.
3. *Ibid.*
4. Report of the Committee on Productive Labor Legislation, The President's Commission on the Status of Women, Washington, October, 1963 (p. 9).
5. Graph 4 illustrates the prevailing patterns in industries working one daily shift.

Turkey. The United Kingdom, and some American industries, normally start work at 8 a.m.

In France, time-tables are so individual that it is impossible to characterise one schedule as typical. Generally speaking, work begins earlier in eastern than in western regions (corresponding to the earlier sunrise), and the lunch break, which for the majority of industrial workers is between 1 and 1 ½ hours, tends to be longer in central and southern France than in the northern half of the country. The majority of salaried employees in industry have a midday break of 2 hours.

Within the limits of statutory or agreed working hours, employers and workers' representatives have a fairly wide margin for adjusting their time schedules to the needs of a particular enterprise and its workers, depending, for example, on the location of the firm and whether the majority of its workers have to travel long distances to and from work. Climatic conditions may be another factor. In Norway, for instance, the law provides that (with certain reservations as to maximum hours) the working week may be fairly widely varied between the summer and winter months by agreement between employers and workers, so long as the total number of hours worked during the year comes to a weekly average of 45.

i) *Midday break*

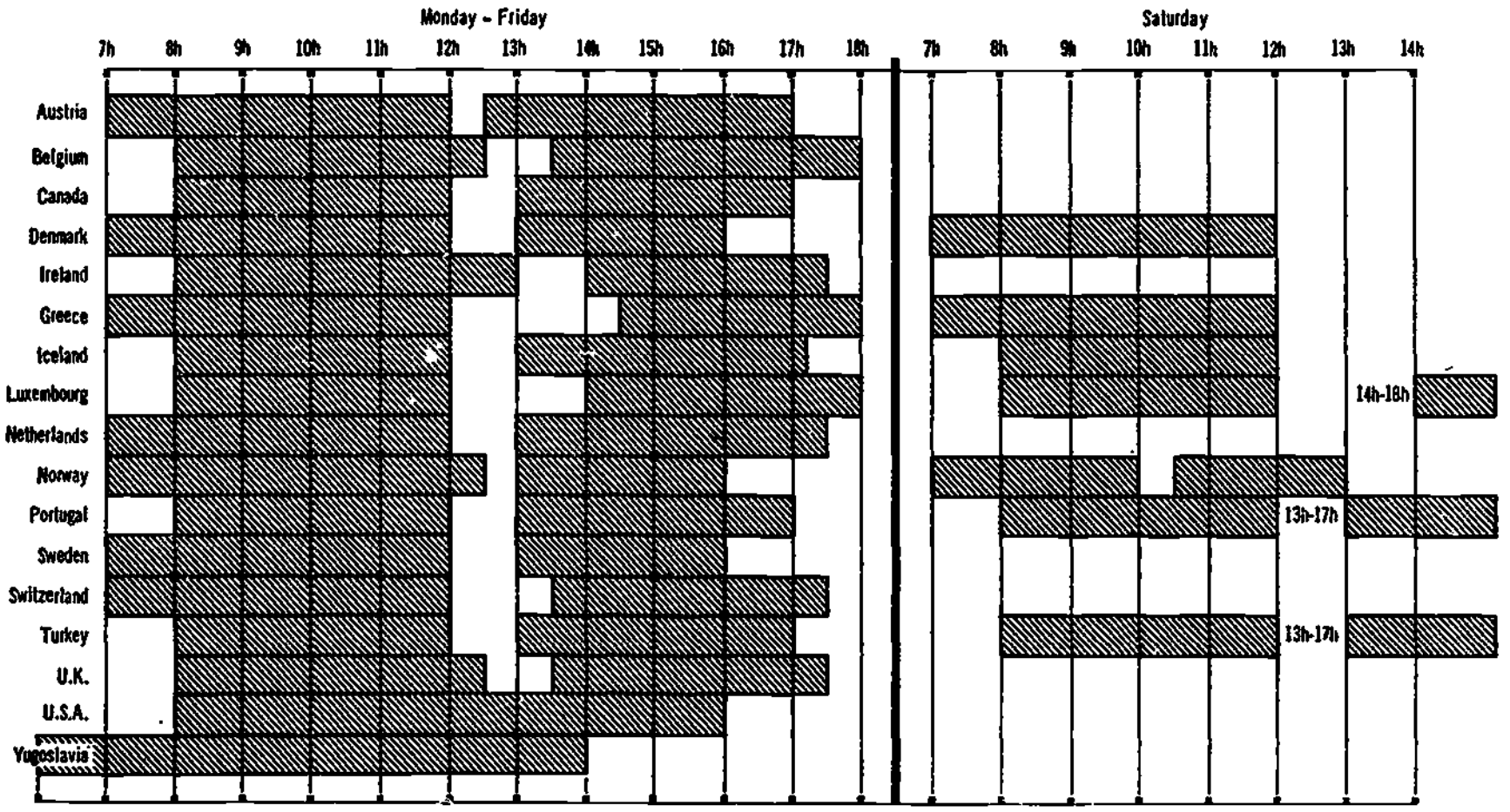
National, or regional, variations may be expressed (see the French example above) in the length of time accorded for the midday meal. In Greece, a maximum lunch break of 2 hours in winter and 3 hours in summer is allowed in industry, with a statutory minimum interval of one hour. In some factories in Germany, Luxemburg and Switzerland, two hours are allowed for lunch; other Swiss factories give their workers 1 ½ hours off at midday.

In most countries, however, the "lunch-hour" is one hour or less. There may be, as in Austria, a statutory minimum break of half-an-hour, although the "effective" break is longer as a rule. One full hour may be required either by law or collective agreement (e.g. in Canada, Denmark, Eire, Iceland, Portugal, Spain, Turkey, the United Kingdom), or the meal period may be split into half-an-hour for lunch and two breaks of 15-20 minutes each for tea or coffee (e.g. the Netherlands and Sweden). In Yugoslavia, continuous shift workers are allowed half-an-hour for lunch, and those working in two separate shifts at least one hour.

The customary length of midday intervals is of considerable importance for women workers with family responsibilities. If there is a fairly long break and the distance, between home and factory not too far, husbands may go home for lunch, which then becomes the main meal of the day.

Our Swiss correspondent informs us that in the Swiss clock and watch industry, it has become part of the accepted *mores* that working wives are allowed to leave the factories at 11 to 11.15 a.m. or 11.30 at

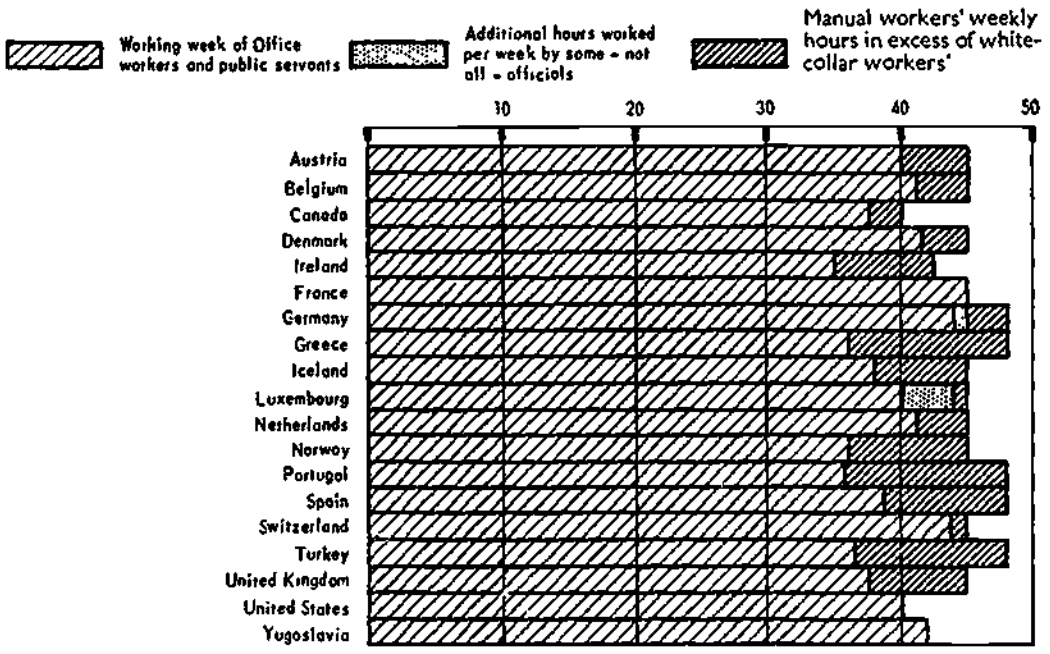
Graph 4. THE MOST USUAL TIME SCHEDULES*



* France, Germany, Italy and Spain are omitted from this graph either because their time schedules vary too much to allow graphical representation or else because no sufficiently detailed information was made available.

Source: Information provided by Government Departments of participating countries.

Graph 5. THE WORKING WEEK OF OFFICE AND MANUAL WORKERS



Italy and Sweden have not provided the necessary details for inclusion in this graph.

the latest, to go home and cook lunch. This is also to some extent the custom in the Swiss machine-tool industry, but is less general, mainly because this industry employs fewer women.

In Germany, factories with a small catchment area sometimes allow married women workers a two-hour midday interval to enable them to look after their homes and children; this is more likely to occur in smaller than in large enterprises. But our respondent states: "the further the distance between workplace and workers' homes, the more the women themselves wish to work in one continuous spell; so much so that it is often difficult to persuade them to make even the statutory [minimum] breaks".

ii) *Shift work*

The above, as said earlier, applies to industrial work done in one shift. In case of continuous shift work, not only do the times of starting and finishing work and the break periods differ, but the total number of working hours is sometimes shorter. In Norway, for example, the average number of weekly working hours is reduced from 45 to 42 during shift work[1]. In Spain, the 8-hour working day is reduced to 7 ½ hours for women workers on shift work. In Sweden, workers on a two-shift system work half-an-hour less per day (i.e. 7 ½ instead of 8 hours), those on a three-shift system, one hour less per day (7 hours).

1. Section 23 (3) of the Workers' Protection Act, 1956.

2. Administration

In most, but not all, countries employees in civil and local government services work shorter hours than industrial workers[1] although the reverse is the case in some countries, e.g. France. In general, office workers, including non-manual employees in industrial enterprises, work a shorter day, mainly because of a later start in the morning; they also have a longer break at lunch time, this break being less rigid and allowing for easier adjustment to the personal needs of employees than in industry.

The five-day week

Among the "white-collar" occupations grouped here under one heading, the five-day week has been established in six out of the nineteen countries for which data are available, and has been adopted in a substantial number of offices in four other countries, making ten altogether. A working week of five-and-a-half days is the general rule for clerical workers in six countries and is practised in a large proportion of offices in another five. Due to motor transport and "suburbanisation", this pattern is gradually giving way to the five-day week and the longer weekend.

3. Distributive trades

The pattern of working hours and time schedules is far less clear-cut or uniform in the commercial sector. There are wide variations in each country, depending on the size of establishments, the type of goods they sell, their location in urban or rural areas or holiday centres, whether they cater for the tourist industry or are otherwise subject to seasonal fluctuations, etc.

This sector mainly employs two types of workers, namely, sales and clerical staff (in addition to "auxiliaries" such as office and shop cleaners, packers and other manual workers), who differ from each other in working hours, pay and status.

Among sales personnel, the most widespread work schedule is a 45-hour week, spread over 5 ½ days. The free half-day may either be a Saturday afternoon or—as is widely practised in Belgium and France, and occasionally in Switzerland—a Monday morning; elsewhere, if shops keep open all day on Saturday, employees are often given an afternoon off in the middle of the week.

Among office staff, working hours tend to be shorter (a 42-hour week appears to be the most frequent practice) and the five-day week is spreading. This is true of clerical staff both in the wholesale and retail trade. As this type of employee has already been referred to in a preceding section of this chapter, attention will now be focussed on the working hours of sales personnel.

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1. For details of working hours and daily schedules see Table 2, section *b*). The overall difference between the working week of office and manual workers is illustrated in Graph 5 (p. 40).

Flexibility of time-table

Opening and closing hours of shops, which are usually laid down by law, provide a fixed framework within which a great deal of flexibility is possible. This is, indeed, dictated by the fact that the opening times of shops often exceed the statutory (or collectively agreed) working hours of their employees, and also by the fluctuating nature of the work with daily peak hours and weekly peak days. In addition, there are seasonal variations involving heavy workloads during brief periods, e.g. a few weeks before Christmas, clearance sales and the like.

Retailers have, for these reasons, found it expedient to employ part-time labour, often on a large scale, to relieve their full-time staff during the lunch hour or holiday periods, or to supplement it during rush hours. In this way, some department stores are able to stay open from 9 h. to 21 h. using part-time sales staff either for work in excess of the normal week (e.g. in the United States where many stores have late shopping hours several nights a week and where food stores, in particular, remain open until 21 h. or later every night except Sunday), or else on rotation in a two-shift system (some large department stores in Belgium operate one shift from 9 h.-13 h., another from 17 h.-21 h.).

A working week of 48 hours for sales employees is operative in Italy, Luxemburg, Portugal, Spain and Turkey, a 45-hour week in Austria, Denmark, Greece, Netherlands, Norway and Switzerland and varying shorter weekly hours in some of the other countries (40-44 hours or more in Canada, 37 ½ or 41 ½ in Eire, 43 in Iceland, 41 ½ in the United Kingdom, 40 in the United States of America, 42 in Yugoslavia).

There is, however, no uniformity in the way a given number of hours is distributed, even where an agreed maximum working week exists. The arrangement of working hours depends on the needs of a particular shop, on the nature of the trade, on local custom and on the size of the establishment, among other factors. The following examples are quoted more to illustrate the existing variety than to give an exhaustive picture:

— In Austria, shops are generally open from 8-18 h., and food stores from 6.30-18.30. Work extends over six days, both in the retail and wholesale trade, although the 5-day week has made an appreciable advance in the wholesale trade. Some shops are experimenting with a time schedule in which 5 and 6 (or 5 and 5 ½ days) days per week are worked in turn.

— In Canada, time-tables vary, but in larger establishments they are usually 9-18 or 9-17.30, with one hour for lunch; a minority open at 9.30 and close at 18.30. Employees usually have one day off each week, making a five-day week even if the establishment is open for six days. Part-time schedules are often worked out to cope with peak loads of business, e.g. between 11 and 15 h.

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— Sales staff in Denmark work from 8-17.30 from Monday to Thursday, from 8-20 h. on Fridays and from 8-2 on Saturdays, with a daily meal-break of 30 minutes. Part-time workers are frequently employed as extra staff during particularly busy periods, for example Fridays and Saturdays, the Christmas season, etc.
— In Switzerland, working hours average a five-day week of 45 hours over the year, but seasonal variations are so great that shops are open up to 60 hours per week during the tourist and holiday period.

Late shopping hours

The practice of keeping stores open, particularly in the bigger cities, on at least one evening a week has become customary also in the Netherlands, Sweden and the United Kingdom, late opening hours being even more frequent in the United States of America and in Yugoslavia.

In some countries, where the midday breaks are very long, shops stay open late every night. Greece is a case in point: normal business hours are from 8 to 13 and from 17-20 h. (giving sales staff one afternoon free on either Wednesday or Saturday). Similarly in Yugoslavia, some shops stay open from 7-11 and from 17-20 h. during the summer and from 8-12 and from 16-19 h. during the winter, while others have introduced a "non-stop" system of continuous work late into the evenings. Portugal and Spain are two other countries interposing a break of 2-2 ½ hours in the middle of a working day of 8 hours.

These are some of the more general patterns, but many deviations exist in this sector of the economy which embraces innumerable small firms as well as big businesses. The small shopkeeper, who works closely with his sales staff and is familiar with their personal circumstances, may be readier to give consideration to their individual needs, but he will, for the same reason, rely on their loyalty to work longer hours whenever necessary. In this instance, flexibility is a two-edged sword which may not necessarily be to the advantage of the worker with domestic responsibilities.

4. Services

"Services" include a multiplicity of occupations which cannot be reduced to a common denominator. They include such widely divergent activities as health, welfare and education services, transport, communications (postal services, telephone, telegraph, radio, press, television), catering (hotels, restaurants, canteens) and miscellaneous other occupations such as entertainment (cinema, theatre, sport and other recreations), laundries, dry cleaners, motor repairs, garages, etc. In this survey, the term is used as a residual category, i.e. an "umbrella" to cover those types of employment which escaped classification under

the headings "Industry", "Administration and Office Work" and "Distributive Trades".

These occupations have, however, some features in common which, to some extent, also characterise employment in the commercial sector. Ranging from retail trade to nursing, from transport to catering or hairdressing, they provide services to the public which are less amenable to clear-cut time-tables or a reduction in working hours than are most types of office or factory work. It is for this very reason that part-time work schedules have been more readily accepted in these sectors.

The service trades, like the retail trade, are expanding industries, which suffer acutely from shortages of personnel, and are attracting large and increasing numbers of women into their ranks. To some extent, the last two factors are related to each other, as occupations in which the demand for manpower exceeds the supply offer natural openings for women. This is not however, the whole story.

Services depending on women

Many service occupations are traditionally feminine domains, irrespective of whether or not there is full employment. The present staff shortages in these fields are the result of the expansion of the services concerned, aggravated by the high marriage rate of women at early ages. Transport is an example of a service industry drawing on female labour because of a shortage of men; nursing, on the other hand, has always been a predominantly female occupation whose scope has increased with the expansion of health services and the growing complexities of medical science.

Whatever the cause, the fact is that growing numbers of women are employed in the occupations in which longer hours prevail and the six-day week is still widespread.

Miscellany of services

In order partly to cover as wide a field of occupations as possible, and partly to keep the number of questions asked to a minimum, our questionnaire left the term "service occupations" open. Respondents thus either gave one or two specific examples of their own choice or else replied in very general terms.

It is difficult, therefore, to summarise the miscellaneous selection of service occupations or to offer general comments on the basis of the information obtained, beyond saying that shift-work systems are operative in all industries offering a more or less continuous service, the duration of each shift being in line with the working week prevailing in the country concerned, and that domestic service (mentioned in this context by a number of respondents) has no regulated time-table anywhere.

Two occupations, however, are of special interest and have been specifically mentioned by many respondents: nursing and catering, which both employ large numbers of women. The catering industry can make use of a vast reservoir of unskilled and semi-skilled labour, and has little difficulty in organising work on a shift or part-time basis, but the nursing services largely depend on highly skilled, well-trained personnel who are in short supply everywhere.

Catering

The catering services (i.e. restaurants, hotels, canteens) are characterised by irregular working hours, sometimes lasting late into the night, with relatively short but often hectic peak periods each day and seasonal fluctuations. Employees are usually given one day off a week, which is not necessarily a Sunday. This, together with the difficulties of complying with employees' individual needs (meals must be served at given hours regardless of personal or domestic crises among the staff) would not, on the face of it, appear to make employment in the catering service very suitable for women with family responsibilities.

But the contrary is in fact the case. The industry has managed to make a virtue out of necessity and overcome these difficulties by the extensive use of part-time personnel, particularly as relief during peak periods. Among the examples given by respondents, Austria reports part-time schemes for weekend work; Canda mentions part-time schedules to cope with daily rush hours from 11 h.-15 h. and 17 h.-21 h. There are similar arrangements elsewhere. In many parts of the world which are centres of tourism there are periods of intensive work for several weeks during one or two holiday seasons when additional staff, both full and part-time, are engaged on a short-term basis. Thus, while the working hours of the full-time staff are long, irregular, and rigid, the widespread employment of part time workers provides an element of flexibility which offers opportunities for work to women with home ties.

Nursing

Nursing, in contrast, must be a regular 24-hour service throughout the year. Moreover, it is traditionally based on the employment of dedicated spinsters, living and working in inflexible conditions. In some countries it has been found difficult to adjust this system to the new conditions of, on the one hand, a dwindling supply of unmarried nurses and, on the other, a reserve of trained married women, willing to relieve the prevailing shortage on condition that they can fulfil their family responsibilities.

The shortage of nurses is general, but many different schemes have been adopted to cope with the problem:

— In the Federal Republic of Germany, special provisions for nurses with family responsibilities have been difficult to arrange.

Our respondent writes that the organisation of work "is generally tuned to the employment of single nurses. Placement of married nurses frequently becomes difficult if they are required to stay on duty until 20 h.".

— In Ireland, nurses work a 90-hour fortnight. Starting and finishing times vary in accordance with the rostering arrangements, but at least 1 ½ days'free time is allowed each week. A main meal break of about one hour is allowed to staff on day shifts.
— In Norway, nurses normally work an 8-hour day and a 45-hour week. Work is arranged in shifts, lasting, for instance, from 7 h.-15 h. or from 11 h.-19 h. for day staff, and from 22 h.-7 h. for night staff. The latter work exclusively at night (there is no rotation between day and night duties) and work a 42-hour week. X-ray staff work a 40-hour week and are granted six weeks' annual leave.
— In Switzerland, nurses work a 50-hour week, spread over five days, regardless of whether their work involves day or night duties. Until 1964, however, they could be asked to work 54 hours a week, and until 1966 can be asked to work 52 hours. Our Swiss respondent states that these working hours are "more or less respected" in the large hospitals, but that in smaller establishments time-tables are "absolutely flexible" owing to the acute shortage of nursing staff.
— In the U. K., the shortage of nursing staff has prompted hospitals to work out most elaborate plans to enable the employment of married nurses on various part-time schemes, rotas and special duties. The authorities have devised new schedules, reorganised nursing duties and made other adjustments. In addition to introducing special time-tables, some hospitals provide day nurseries for their nurses' children; some drive nurses home by car if their duties end at a time when no public transport is available; others invite husbands to social occasions, and by these and other means try to enlist their goodwill and cooperation. Examples of the manifold schemes in operation have been given in some detail by Mrs. B.A. Bennett in an article on "Part-Time Nursing Employment in Great Britain"[1]. In 1960 nearly one-quarter of the nursing staff employed in National Health Service hospitals in England and Wales worked on a part-time basis and the number has continued to increase.

In the United States of America, too, extensive use is made of part-time nurses. In 1962, they formed 18 per cent of all nurses employed. American hospitals, in general, work in three shifts round the clock: 7 h.-15 h., 15 h.-23 h. and 23 h.-7 h. Due to the shortage of trained personnel, efforts are made to allow married nurses with family responsibilities a choice of shifts.

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1. *International Labour Review*, Vol. LXXXV, No. 4, April, 1962, pp. 347-356.

Special concessions of this kind are not, of course, made without meeting some initial resistance on the part of the regular full-time staff. However, the very real relief provided by the introduction of additional trained personnel, and the realisation that even half a nurse is better than none, have, as a rule, won the day.

B. PART-TIME EMPLOYMENT

Many women with family responsibilities would like to work part-time, as this would enable them to divide their time between gainful employment and housekeeping duties without undue strain. Part-time work is, therefore, very popular with women who wish to supplement their family income without being entirely dependent on their earnings. However, apart from a substantially lower income, a number of disadvantages are entailed.

One drawback is that the amount of time and money spent on the journey to and from work is the same for a half-day as for a full day's work (unless the worker lives near the place of work and the midday break is long enough to allow going home for lunch). Expenditure on travel, both in terms of time and money, may therefore be disproportionally high for part-time work if long distances are involved.

Secondly, social insurance contributions may take a relatively large slice out of part-time earnings. This is particularly the case where there are flat-rate insurance contributions (for instance in the United Kingdom). It also applies in countries where wage-related contributions are levied up to a certain ceiling income (e.g. in Austria, Belgium, Germany (F.R.) and the United States), or where (as in France) the wages earned in a part-time job may not compensate for the loss of the family benefit payable if there is only one bread-winner and the wife is not gainfully employed. Moreover, the part-time worker may not be covered by all types of social security provisions, for instance, in a number of Member countries he would not be entitled to unemployment insurance.

Other disadvantages, such as insecurity of employment or diminished prospects of promotion, need not be discussed in this context[1]. They are relatively minor in comparison with the main drawback, namely, that there are not enough part-time jobs available for the many women who want them.

Two categories of part-time work

There are, basically, two types of part-time employment: firstly, occupations which by their very nature are carried out during a limited

1. For a full discussion of all aspects of the problem see, "An International, Survey of Part-time Employment", *International Labour Review*, Vol. LXXXVIII Nos. 4 and 5, October and November 1963, pp. 382-407 and 490-517. Also François Bruntz, "The Part-time Employment of Women in Industrialised Countries", *International Labour Review*, Vol. LXXXVI, No. 5, November, 1962, pp. 425-442.

number of hours, such as office or shop cleaning, work in factory or school canteens, in theatre or cinema cloakrooms, as usherettes, school traffic wardens, etc. Relief work during peak workloads in shops, restaurants, etc., may also be included under this heading, as beir "naturally" available in small units of time.

Secondly, due to the pressure of manpower shortage, part-time arrangements have been made in a wide range of occupations which are normally carried out on a full-time basis. In these cases, two part-time workers usually take the place of one full-time worker, unless they are employed on an additional evening shift. This practice has in recent years spread in many countries although employers are reluctant to introduce it, partly because it is contrary to traditional management policies, and partly because it involves additional administrative costs and complicates the organisation of work. It is also unpopular with many trade unions which regard it with distrust as potentially undermining the pay and position of full-time workers, especially women, and being outside the existing collective agreements.

Nevertheless, the employment of part-time workers (most of whom are married women) has increased rapidly during the last few years, primarily in service occupations. Nurses, already mentioned, are a case in point. Shortages of trained personnel in many other professions, such as teaching, medicine, social work, research, computer programming, have led to the creation of many part-time openings.

Part-time work is also spreading in offices: shorthand-typists, telephonists, bookkeepers, etc., are now employed for half-days only, either in alternating rotas, or to supplement existing full-time staff. Some smaller firms may find arrangements of this kind convenient for their own purposes ,but they have also become accepted in large establishments and even in the civil service, albeit only in a limited range of occupations.

Reports from France, the Federal Republic of Germany, Norway, Spain and the United Kingdom mention the employment of part-time workers in public administration. The United States President's Commission on the Status of Women found that "at present, Federal systems of manpower utilisation discourage part-time employment" and recommended that the Civil Service Commission and the Bureau of the Budget should facilitate its use throughout government service in order to offer opportunities to "able women, including highly trained professionals, who are not free for full-time employment"[1].

In most countries, the postal, telephone and telegraph services now make quite extensive use of part-time workers. Otherwise, the main field of part-time employment for clerical workers is shorthand-typing. In several countries there are private secretarial agencies which place typists and stenographers on a part-time or temporary basis. In the Federal Republic of Germany some of the official labour

1. *American Women*, Report of the President's Commission on the Status of Women, Washington, 1963 (p. 32).

exchanges have introduced an "express service" for short-term placements, recruiting women as holiday or emergency relief, for example.

In Greece, our respondent reports, partial employment of bookkeepers is regarded as being "in the nature of the occupation": accountants do not usually work under a contract with an employer but do piece-work. This may, or may not, involve part-time work, as one person may be engaged by several firms; but it certainly lends itself to a limitation of working hours at the worker's convenience.

Domestic work in private households is now largely done on a part-time basis since full-time servants have become increasingly scarce in all industrialised countries.

Industry has found it difficult to fit part-time workers into the established schedules of factories. It has, nevertheless, found them useful either where full-time workers are not available or during seasonal rush periods (for example, in canning factories during the fruit and vegetable season, in biscuit or toy factories before Christmas, etc.). Some firms have been able to relegate particular processes—packing, finishing, etc.—to part-time workers on special shifts[1].

Part-time work in industry

While the first category of part-time employment (i.e. work which by its nature is done in short spells) is available more or less everywhere, the second category is clearly related to full employment. It is most widespread in countries and sectors of the economy where manpower shortages are acute. Special local conditions may also contribute to the need for accommodating large numbers of part-time workers and adjusting employment policies accordingly. A few years ago, a research team of the London School of Economics carried out a detailed study on a biscuit factory in Bermondsey (East London)[2] which was obliged, owing to a shortage of single women, to reorganise its production completely. Three-quarters of its workers are now employed in part-time shifts of various lengths (three day shifts and one evening shift from 17 h. 45 to 21 h. 30), adjusted to the domestic needs of married women workers.

In Industry, perhaps more than in other branches of the economy, it is difficult to strike the necessary balance between the needs of the worker and the continuity of the work process. Part-time schemes in industry, at least on a small scale, are, nevertheless, reported from Denmark, Eire, France, the Federal Republic of Germany, Iceland, the Netherlands, Sweden, the United Kingdom, the United States and Yugoslavia. They are rare in Norway and Switzerland, although the report from the latter country describes a factory in Geneva whose work is organised in two half-day shifts to the satisfaction of employers

1. See also Viola Klein, "Employing Married Women", *op. cit.*
2. Pearl Jephcott, with Nancy Seear and John J. Smith, under the direction of Professor Richard Titmuss, *Married Women Working*, Allen & Unwin, London, 1962.

and women workers alike; it also mentions the practice of working at home for the watch and clock industry. A small number of employers in Northern Italy have experimented with the use of part-time workers; but, apart from the difficulties arising from social security legislation and collective agreements, our respondent points out that the Italian labour market does not present the necessary preconditions for the development of part-time work which "meets the special needs of other countries which have already achieved full employment and find it necessary to engage the services of persons (including housewives) who would not otherwise be available for work on normal conditions of employment".

Since 1958, collective agreements in Portugal have recommended the use of part-time work in industry, commercial and service occupations "if the family interest of women workers demand it, and provided it does not result in an intolerable sacrifice on the part of the employing firm".[1] In Yugoslavia, married women workers have the "right" to be put on part-time work for six months after the birth of a baby (or up to eight months on doctor's orders), and the "possibility" of working for four hours a day until the child is three, if there is no-one else to take charge of the infant. There are similar arrangements in other countries, e.g. in Austria, and under some collective agreements in France. Here, too, it is a question of personal concessions to the needs of particular workers, rather than of the introduction of part-time schemes on a larger scale.

In trade and the service occupations (particularly the catering services), as we have seen, part-time employment is a common practice, which is on the increase in most countries.

Part-time schedules

In view of the very different uses made of part-time employment, and because it is very frequently settled by private arrangement as a compromise between the employer's and the worker's interests, it is hardly possible to speak of "typical" part-time schedules. Work is defined as "part-time" if it is less than 35 hours a week in the United States, or less than 30 hours in some other countries, including the United Kingdom. It is most frequently from 20 to 30 hours per week, sometimes less. This may be worked either in continuous half-days (mornings or afternoons) or in special daily shifts (midday or evening); or on a limited number of full days each week, e.g. on Fridays and Saturdays in shops or hairdressing establishments; during week-ends in hotels and restaurants; or in two or three full-time sessions in some of the professions (e.g. in the medical and dental services, teaching, psychiatric and social work, etc.). Sometimes part-time schedules consist of a combination of both types (full and half-days).

1. Regulation of 6th January, 1958.

For obvious reasons, most women with family responsibilities find a daily routine of 4-5 hours more convenient than a scheme which involves full-time work on several days each week; but this is not the general rule, and depends on whether they are able to make substitute arrangements at home during their absence.

Conclusion

Speaking generally, part-time employment is, in present conditions, the adjustment *par excellence* of working hours to the domestic needs of working women with family responsibilities. For this reason it is very much sought after by married women, whether trained or untrained, who wish to work outside their homes. Part-time jobs may therefore fulfil an urgent social need, as well as providing employers with an expedient for increasing their labour force at a time of full employment, or enlisting the services of particular kinds of trained personnel in short supply. (See also, pages 85-86).

C. SPECIAL WORKING HOURS FOR WOMEN WORKERS WITH FAMILY RESPONSIBILITIES

a) TIME-TABLES

So far, we have reviewed the work schedules generally observed in different countries, and the extent to which various time-tables are adaptable to the exigencies of women workers with home responsibilities has been discussed in various contexts. Now, we shall look more closely at what adjustments are in fact being made to meet the needs of this particular category of workers. Are their domestic commitments taken into consideration either in terms of working hours, special leave, or other facilities—and, if so, in what way?

Bearing in mind that there are many kinds of domestic commitments besides the care of infants, what is being done to attract women workers who might be willing to come forward if employment conditions were such that they could work and look after their homes and families at the same time? The fact that part-time jobs are so much sought after is an indication that many women with family responsibilities would be eager to work outside their homes if this were made compatible with their home duties.

i) *Women with young children*

Apart from the protection of women during pregnancy (which is a special case and will be dealt with separately), neither the law nor collective agreements usually discriminate between women workers with and without family responsibilities.

However, some collective agreements, for instance, in the French fashion and clothing industry, stipulate that women workers with small children should be allowed to leave work five minutes earlier each day without loss of wages.

Mothers of young children in Yugoslavia may, under certain conditions, demand to be put on part-time work. The same is true under some collective agreements in France. In Austria, any industrial worker, whether male or female, may ask to be transferred to part-time work or, if the work is done in shifts, may choose the shift most suitable to his or her requirements. Although this is not an arrangement specially made for the benefit of women with family responsibilities, it may be assumed that they are the ones most frequently taking advantage of it.

Finally, stretching the point a little, mention may be made of a Greek regulation which exempts mothers of children under two (as well as pregnant women) from attending the labour exchange three times a week during a period of unemployment, which is otherwise obligatory to qualify for unemployment benefit.

ii) *Women with other family responsibilities*

Although there are some statutory concessions for mothers of very young children, there are none with regard to other types of family responsibilities.

In many, if not most, countries there are some regulations affecting the working hours of women generally. Women are, for instance, excused from working overtime (this was specifically mentioned in the reports from Austria, Portugal and the United Kingdom); in most, but not all, countries they are prohibited from performing night work, except in certain special occupations (e.g. nursing, catering, entertainment, communications and managerial or welfare work). The Austrian labour legislation, moreover, forbids the employment of women after 17 h. on days preceding Sundays and holidays (again exempting certain occupations).

We have seen earlier that in Spain women on shift work, whether in industry or the service occupations, work a 7 ½-hour day, as opposed to 8 hours for men, and that in some parts of Switzerland married women, by local tradition rather than regulation, are allowed a longer midday break to enable them to go home and cook lunch.

iii) *Should general regulations be made?*

Opinions differ as to the desirability of a general adjustment of work schedules to help women workers with family responsibilities. It is widely felt, not least among women trade unionists, that special time-tables for substantial numbers of women workers would present grave difficulties from the management point of view, and that they might make it more difficult for women to find employment, and jeopardise the position of women workers generally. They would certainly be a serious obstacle in the struggle for Equal Pay. Both trade unions and women's organisations are therefore, as a rule, against "special favours for the girls" except for reasons of health. Furthermore, as our Italian respondent points out, "at the very moment when one is trying to eliminate the differences in working conditions between

the sexes, a discrimination in working hours to the advantage of women—even though aimed at facilitating their domestic tasks—would complicate the attempts to achieve the Equality of Rights which Article 37 of our Constitution has solemnly laid down". Many other constitutions have similar provisions, including the United Nations Charter.

Finally, it is also a moot question whether, from the purely practical point of view, general regulations would not create more troubles and unfairness than they are likely to avoid. *Ad hoc* arrangements, as already practised in many places where female labour is scarce, might be preferable. It would, in any case, seem desirable that the family obligations of all workers, irrespective of sex, should be given due consideration—even if, in actual practice, this would affect women workers more often than men.

iv) *Regard for workers' family circumstances*

At present, while there is no code for reducing the workload of women who carry heavy responsibilities at home in addition to their job, some employers and managements do nevertheless make adjustments to meet the domestic needs of their workers. The nature and extent of such special considerations depend on the individual circumstances of the worker, on the organisation of work and on the attitude of a particular employer. There are, therefore, very wide differences in management policies and actual practice.

Concessions may take the form of allowing women with family commitments to start later in the morning, to finish work earlier on some days, or to give them an occasional day off, e.g. during school holidays or before Christmas.

If a husband is on shift work in the same or a different enterprise, care is usually taken to co-ordinate a wife's working time with her husband's. There are numerous collective agreements in Austria, and in other countries, providing that workers—male or female—may take one or two day's leave in the event of sickness or accident in their family. "It must be emphasized", the Austrian report states, "that in the views of workers' representatives special arrangements in favour of working women must not be made in a way which might be detrimental to the position of women on the labour market."

The report from Norway mentions a special arrangement for married couples where both husband and wife are nurses and can share a position as night nursing staff, each taking one week in turn; a provision of the Telegraph Authority is also mentioned, whereby permanent staff, in certain circumstances, can be given leave of absence of up to three weeks a year at about one-third of their regular salary. "This provision", the report says, "is open to both male and female staff so that women with family responsibilities will have the possibility of some extra time, with a certain income, for their family affairs." This, again, is not a special facility for women workers and the Norwegian report states specifically that "in principle, the view is held that

there should not be special protective regulations for women in employment and the legislation contains no provisions in this respect", although it may, if necessary, be used to their advantage.

These are minor examples and it has been emphasized in each case that they do not, in fact, amount to a differential treatment of the two sexes.

Several respondents have pointed out that the need for special arrangements has been greatly reduced by the trend towards the 8-hour day and the 5-day week. The report from Denmark even mentions that "the interests of married women have played a major role in the decision of many employers to introduce a five-day working week". The 5-day week is, indeed, a very important factor in enabling workers to combine full-time employment with the discharge of ordinary household duties, especially if the latter can be performed with the help of modern equipment. It is not, however, a complete answer and, in particular, does not solve the problems of workers with a responsibility for old, infirm, or very young members of their family, i.e. with functions which cannot be limited to long week-ends.

v) *Actual working hours of women in industry*

Although specific examples may be few, there is some evidence that, by and large, many women are in practice given time-off to look after their families or to go about their domestic tasks.

In Federal Germany there was the following difference between the average weekly "hours paid for" and the "hours actually worked" by women workers overs a six-year-period, from 1957 to 1962:

FEDERAL REPUBLIC[1], EXCLUDING BERLIN, 1957-1962

ANNUAL AVERAGE[2]	WEEKLY WORKING HOURS OF FEMALE WORKERS IN INDUSTRY	
	HOURS ACTUALLY WORKED	HOURS PAID FOR
1957	41.1	44.3
1958	39.1	43.1
1959	38.9	43.3
1960	39.5	43.2
1961	38.0	42.7
1962	38.3	42.4

1. As from 1960, Saar included.
2. Calculated on the basis of quarterly figures.

In the United Kingdom, the Ministry of Labour carried out a survey in October, 1960, to determine the weekly earnings and working hours of manual workers employed in manufacturing industries generally, and in a number of the principal non-manufacturing industries. In its report[1] it stated:

1. Ministry of Labour Gazette, Vol. LXIX, No. 4, April 1961, p. 138.

"It became clear during the course of the enquiry that substantial numbers of women wage-earners in industry, regularly and by agreement with their establishments, work fewer hours each week than those beyond which overtime rates are payable by industrial agreement or Wages Regulation Order. For example, in a particular factory, married women workers and other women with domestic responsibilities, by agreement with the management, may start work at 9 a.m. each day, instead of 8 a.m. customary for other workers, and thus work a normal week which is five hours less than that for other women operatives. Numbers of employers, partly because of the shortage of labour, are prepared to accept the services of many of their women on such terms. These arrangements help to explain why the average weekly hours worked by all full-time women in all industries covered by the earnings enquiries are consistently about 7 hours below those for men: in October, 1960, for example, all full-time women covered averaged only 40-45 hours in the pay-week as against a corresponding figure of 48.0 for men."

It would appear, therefore, that women with family responsibilities *de facto* receive more special consideration than the *de jure* situation would lead one to believe[1]. Although precise data are not available for countries other than the United Kingdom, there is no reason to doubt that similar private arrangements also exist elsewhere. (See also below).

b) SPECIAL LEAVE

The above statements concerning special time-tables for women workers with family responsibilities apply with equal force to special leave arrangements. With very few exceptions, there is no differentiation between women and men, or workers with and without family responsibilities, as to the amount of leave they are entitled to.

i) *Legislative provisions*

To begin with the exceptions, French legislation provides that working mothers who are under the age of 21 are allowed two extra days annually per child living at home under the mother's care. (This right to special leave is reduced to one day per child if the mother's normal leave is six days or less). Although, legally, this special right only applies to women under 21, it is extended by some agreements to cover all working mothers, irrespective of age, in which case there is sometimes a ceiling on the total amount of leave for which a person may be eligible under the various headings of "basic annual holiday", "seniority" and "maternity".

There are, moreover, various collective agreements in France allowing women employees special (unpaid) leave to look after a sick

1. For the attitude of British managements on the question of differential treatment see also "Employing Married Women", *op. cit.*

member of their family. The maximum leave allowed under this title may be anything between two and twelve months a year, usually depending on the length of service of the employee concerned. There is a provision for leave at half-pay of up to a fortnight per year in only one (local) agreement. Most collective agreements which contain special provisions for women, allow mothers of babies to take unpaid leave of between six months to one year after the birth of a child or after the 14 weeks' maternity leave they are entitled to under State legislation. In the French civil service, women employees with a child under the age of five can take two years (unpaid) leave renewable with each child, so that, for instance, a mother of four children may, in certain circumstances, have eight years' consecutive leave.

Apart from the above examples there are no regulations in favour of women with family responsibilities.

ii) *Personal concessions*

Parents are allowed, as far as possible, to take their annual leave during school holidays. Arrangements are sometimes made between employers and individual workers so that mothers can take an unpaid holiday during the vacations, and is, in special cases, extended over the whole period of the school holidays. (This has been reported from several countries, e.g. Canada, Netherlands, Switzerland, United States of America). The special provision under which the Norwegian Telegraph Authority grants an additional leave of up to 3 weeks to its employees at roughly one-third of their normal salary has already been mentioned.

Workers of either sex may, by arrangement, take time off (unpaid) for specific reasons. This is done on an individual basis and not, normally, subject to regulations. In Portugal, however, it is reported that women workers are allowed up to two days' unpaid leave per month; and in Switzerland various employers who have not introduced the five-day week allow their female personnel either one morning or one afternoon free per month.

D. SPECIAL ARRANGEMENTS AND FACILITIES FOR EXPECTANT MOTHERS AND WOMEN WITH YOUNG INFANTS

Although primarily a problem of social health, the question of maternity protection cannot be omitted from a discussion of special provisions for working women with family responsibilities as it is a particular instance of the wider issue. It does, however, contrast in a number of respects with other cases of "family responsibilities". There is, for instance, general agreement on the need for measures to protect working women and their offspring during a period of particular vulnerability.

The protection of working women during pregnancy and shortly after childbirth is indeed among the most widespread and least controversial measures of social welfare legislation. In some countries provisions of this kind have a history going back to the last century.

I.L.O. STANDARDS OF MATERNITY PROTECTION

In two I.L.O. Conventions (1919 and 1952), followed by two sets of Recommendations (1921 and 1952), minimum standards of maternity protection were laid down. These include: six weeks' compulsory leave after confinement and the right to six weeks' leave beforehand; daily breaks during working hours to allow nursing mothers to breast-feed their infants; medical care, cash benefits and security of employment during the period of pregnancy or absence from work for health reasons.

These minimum standards have not been universally accepted, but some measure of protection is granted to pregnant women almost everywhere. Only seven out of the 21 countries under review are signatories of the international Maternity Protection Conventions[1]. Ten are signatories of the Social Security (Minimum Standards) Convention of 1952, which provides, among other benefits, for maternity cash payments and medical care. However, with the exception of Iceland, all respondents report varying periods of ante-and/or post-natal leave and other provisions more or less along the lines of the I.L.O. minimum requirements.

OTHER PROTECTIVE LEGISLATION

In Eire, Greece, Luxemburg, Sweden and Spain, women are given six weeks'leave of absence before and after confinement. In France, the total rest period is 14 weeks. Women workers in Austria are granted several months' leave of absence after confinement ("Karenzurlaub") during which period they receive full unemployment benefit if they are the sole supporters of their family, half the benefit (or a minimum of Sch. 400 per month) if they are not. In Denmark, non-manual workers are entitled to 3-5 months' maternity leave on half-pay and manual workers to 4 weeks' leave following childbirth. In Italy, periods of absence prior to confinement are compulsory and vary according to the sector; three months in industry, eight weeks in agriculture, and six weeks in all other sectors of the economy. After confinement all women workers are entitled to eight weeks' maternity leave. In the Netherlands, women are prohibited from work for eight weeks after confinement, six weeks if the woman has ceased working two weeks preceding confinement. Under the Norwegian Workers' Protection Act, women have four weeks' leave following childbirth; the period of absence can be extended by an additional six weeks (in

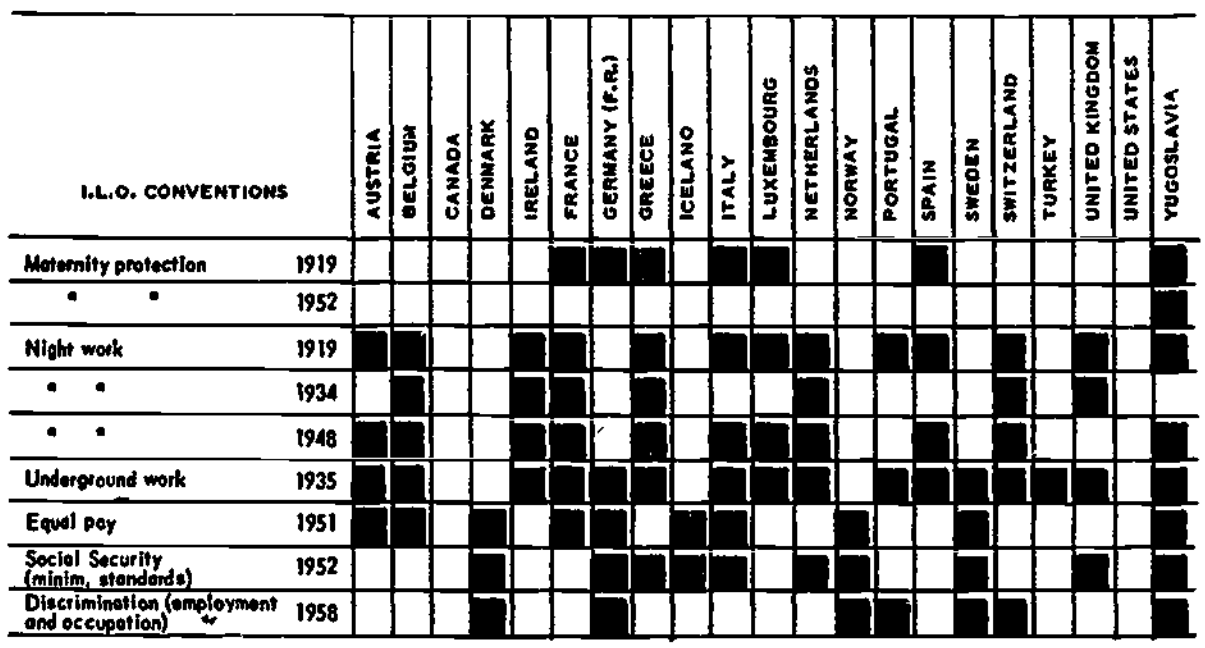
1. See Graph 6 (p. 58).

some instances 12 weeks) taken either before or after confinement. Swiss factory legislation provides a rest period of six to eight weeks after confinement. A pregnant woman may leave her job at any time without giving notice and still keep her post. In Turkey, three to six weeks' paid leave can be taken either before or after childbirth. Women workers in Yugoslavia are entitled to 105 days' maternity leave, with social benefit in lieu of wages, starting 45 days before confinement. Canadian legislation and practice in regard to maternity protection varies from Province to Province[1]. In the United States and in the United Kingdom there are no general regulations with regard to the employment of expectant mothers.

Payments to women workers who take maternity leave during the specified periods mentioned above are normally made through Social Security Schemes. In some countries there are provisions by which pregnant women may be transferred to lighter work at the same pay or may be prohibited from doing night-work and overtime.

In spite of many differences in practice, there is a wide consensus of opinion on the need to protect the working woman at a time when her employment may involve a maximum risk to herself and her child. Public reluctance to offer any inducement to women in this condition to go out to work is very great and general. Authorities, however, grant protection to those women who for one reason or another have to take the risk.

Graph 6. MEMBERSHIP OF I.L.O. CONVENTIONS AFFECTING WORKING WOMEN



1. For details, see *Women's Bureau Bulletin* No VIII of June, 1963, Canadian Department of Labour, Ottawa.

This attitude is in marked contrast to that taken towards women workers with other types of family responsibilities—for example, mothers of pre-school children. In this case, the absence of facilities to help to carry on their jobs is usually defended with the argument that the employment of such women should not be encouraged. Thus, while in the one instance the decision as to whether or not they should work is left to the women concerned, in the other instance a kind of moral censorship is imposed, intervening between a social need and its remedy.

III

COMMUNITY SERVICES

The type and value of public services provided by a community for its citizens depends on prevailing attitudes. Individual employers may be obliged, through manpower shortages, to attract female labour by making special arrangements for women workers with family responsibilities. Commercial interests may provide some adjustments to changing conditions by the introduction of extended shopping hours, automatic laundries, etc. But public authorities, whether central or local, can only act if they are supported by public opinion.

A. ATTITUDES CONDITIONING THE DEVELOPMENT OF COMMUNITY SERVICES

There is no universal agreement on the attitude which should be taken towards the employment of women with family responsibilities. Differences stem from variations in the stage of economic development, shortages of labour, availability of alternative resources and traditional objections to women working.

The most influential factor towards adopting a new viewpoint on this subject has probably been the increasing employment of female workers, particularly those with family responsibilities. Contrary to the widespread assumption, only a small minority[1] are mothers of young children (and these are normally women who have no other choice).

Moreover, in countries with full employment women are, in most instances, no longer motivated to work by poverty, nor are their families neglected despite their employment in ever larger numbers. They are more likely to be women in their thirties or forties whose children

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1. Of all married women working in the United States of America in 1960, 20 per cent had children aged five years or less, and 33 per cent had children aged 6-17. Two British sample surveys, covering limited areas, produced data resembling each other closely, namely 9 per cent of married women workers had children under five years of age and 32 per cent had children aged 5-15.

Sources: "Current Population Reports, Labor Force", U.S. Department of Commerce, Bureau of the Census; Viola Klein, "Employing Married Women", *op. cit.*, and Pearl Jephcott and others, "Married Women Working", *op. cit.*

are grown up or in their late teens and in need of financial support during a period of apprenticeship or extended education; they may be widows obliged to supplement a small pension; they may be women with special qualifications, for example nurses or teachers, responding to shortages and public appeals for their return to work.

Government policies on womanpower

Our Norwegian respondent writes, "the question of drawing women with family responsibilities into the manpower market has been given considerable thought and attention in recent years. *Inter alia*, a working group has been established in the Labour Directorate which will discuss measures designed to achieve the greater participation of women—particularly married women—in the labour force. Conditions will, presumably, be gradually improved to make it easier for women with family responsibilities to take outside employment. It is, therefore, anticipated that there will continue to be an increase in the working percentage of both married as well as non-married women with family responsibilities."

Much serious and dispassionate thought has been given in official quarters to the question of womanpower and its implications both in the United States and in France. The United States President's Commission on the Status of Women is the culmination of a series of other studies, notably the research carried out by the National Manpower Council which led to the publication of two informative volumes[1]. The French Commissariat du Plan and the Institut National d'Etudes Démographiques are both currently engaged in large research programmes concerning womanpower of which the recently published volume[2] is but a first step.

The Irish respondent writes: "Except in cases of financial necessity, it is not usual for Irish women with family responsibilities to engage in full-time or part-time employment, and their number represents a very small proportion of the employed population. Accordingly, there are no special arrangements regarding work schedules or facilities on a national basis for women so circumstanced, apart from what is provided by some voluntary organisations. Furthermore, the Government feels that social and economic policy should primarily be designed to ensure that women with family responsibilities will not be obliged to engage in employment to the detriment of their duties and responsibilities in the home."

The Minister of Labour and Social Affairs in the Federal German Republic concludes his contribution with the following general observations: "I deem it necessary in connection with the promotion of the employment of women with family responsibilities to have regard not

1. *Womanpower*, Columbia University Press, New York, 1957, and *Work in the lives of Married Women*, (Proceedings of a Conference on Womanpower), Columbia University Press, New York, 1958.
2. Françoise Guelaud-Leridon, "Le Travail des Femmes en France", *op. cit.*

only to the needs of the national and private economy but also to the social aspects of the problem. In the case of mothers who have children of school age or below, family duties should, as far as possible, take precedence over remunerative employment. We should hesitate therefore to promote measures which might serve the expansion of maternal employment. This does not, however, exclude attempts to create facilities for such mothers as cannot escape the double burden...

"Women with family responsibilities are an important, but not the only reserve of manpower. There are other remedies for labour shortages, e.g. the employment of foreign workers and measures to increase productivity. This applies, in part, also to typically feminine occupations.

"If adverse social effects of the employment of mothers are to be avoided, more recourse will have to be taken to these possibilities of meeting manpower requirements instead of expanding the employment of mothers."

In contrast, manpower shortages and a high rate of immigration have led to a change of attitude towards the employment of married women in Switzerland. "Does the price of economic expansion and better standards of living become too high", asked the Swiss Federal Office of Industry, Arts and Crafts in a Report published in 1962, "when these goals are achieved with the help of foreign workers in such numbers as to threaten the individual character of the country?" The answer to this rhetorical question can be seen in recent legislation restricting the influx of foreign workers. At the same time, official views on the use of the country's resources of womanpower have been expressed in the Swiss Government's reply to a recent I.L.O. enquiry[1]: "The Government considers that, for women whose children no longer need constant attention, participation in economic activity is not only a personal right but, in certain circumstances, also a social duty."

B. TYPES OF COMMUNITY SERVICES

There are national differences in attitudes. But where women are performing a useful function both for the community and for their families, there is a need for the adaptation and improvement of some existing services and the introduction of new ones, thus making their lives a good deal easier. This would also contribute to ensuring greater co-operation on the part of the working woman's own family and neighbours.

The needs of working women with home responsibilities are as diverse as their economic situation, their family circumstances and their personalities. Commercial services and technical innovations of various kinds do, indeed, take care of many of them and notably of

1. *Women Workers in a changing World*, Report VI (2), I.L.O., Geneva, 1964 p. 18.

the need to save time and physical energy. Such services have increased rapidly in recent years and can be relied on to expand even further. Neighbours and relatives are sometimes available[1] and willing to assist in taking over some domestic functions and mutual arrangements among women for "self-help" are increasing. Society is slowly and gradually adjusting itself to the phenomenon of women working away from home.

Some needs, however, can only be satisfied by the community. There are, of course, among the public services which the State, local authorities, trade unions, and voluntary or charitable organisations now provide, a number which, although not specifically designed for this purpose, also help working women with family responsibilities. But their expansion meets with a number of obstacles, such as shortages of qualified personnel and money.

Existing community services in O.E.C.D. Member countries, organised either by public authorities or by voluntary organisations, which may be of assistance to working women with family responsibilities, are summarised under four headings, according to the type of need they serve:

1. Home help;
2. Care of young children ("Day Care");
3. Care of school children and
4. Other communal help.

1. Home help

Only a few countries have "Home Aid Services" whose task is to help families in crises by taking over some essential domestic tasks. These services, more often run by voluntary organisations than by public authorities, provide short-term emergency relief in cases of sickness or childbirth and assist old people living alone. Working women with family responsibilities do not normally come within the terms of reference of these services: there are, however, occasions when they, too, can use them.

In Britain, such domestic help may be provided by the Local Health Authorities under the National Health Service Act (1946) in cases of ill-health. A modest charge is made for the service according to the user's means. Some emergency help of a similar kind is provided by either public or private agencies in the United States, France, Austria, Switzerland, Belgium, Luxemburg and the Netherlands.

On the whole, this type of aid is rare. Reliance is normally placed on neighbours or relatives to come to a family's assistance in case of emergency, and on a working women's resourcefulness to find help privately.

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1. According to an investigation by the Federal German Statistical Office (*Wirtschaft & Statistik*, No. 8, 1964) more than half of all pre-school children (age 0-6) of mothers in full-time employment in the Federal Republic are looked after by their grandparents; 81.7 per cent of all children aged 2-6 whose mothers are in full-time employment are under the care of relatives or other private persons.

Communal help for women workers of a more long-term nature is reported from Yugoslavia where the development programmes of communes and local authorities include, among other measures to assist the families of working women, laundry and dry-cleaning services, dress-making and clothes repairs. In France, similar services are organised by workers' co-operatives, which also provide a wide range of other measures to help women workers with family responsibilities in their household tasks, such as courses in housecraft and child care, home help, temporary care of children of all ages, libraries, and some medico-social services.

Using the term "Home help" in its wider sense, one might mention a report by the Swiss Factory Inspectorate which refers to the case of an employer who has put an automatic washing machine at the disposal of his workers during working hours. As our Swiss respondent points out, instances of this kind are not likely to be widespread. Moreover, private households in Switzerland are so mechanised[1] that public support is usually only needed when machines are no substitute for human effort.

Such circumstances are by no means rare. The ability of a working woman to carry on in her job may, indeed, often depend on the availability of human, as opposed to mechanical, aids. Mothers, relations, and occasionally neighbours, are sometimes but not always at hand and willing to help out in case of need. But an organised home-aid service, at a reasonable cost, would be invaluable to a working woman.

Organisations providing these services exist on a small scale, e.g. in Sweden, Switzerland and the United States, but they are so far quite inadequate in number. The major difficulty in operating such services is that in industrial countries, where they are most needed, it proves hardest to recruit women for domestic work. On the other hand, a well-run and officially sponsored service of this kind might well give domestic workers a status they lack in private employment (and possibly, as in Sweden, a title, such as "household assistants") and would provide part-time openings for mature women with household experience, i.e. an opportunity which many of them may welcome.

2. Care of young children

The service which is relatively most widespread although still inadequate in all countries is that of crèches, day nurseries, nursery schools and other provisions for the day care of pre-schoc[1] age children of working mothers.

Child care facilities may either be provided by the public authorities (municipalities of the bigger urban or industrial centres), or by private organisations (e.g. religious bodies, family or child welfare organisations and the like) which sometimes receive grants from central or local governments, sometimes from employers.

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1. See below (p. 73).

In some countries (e.g. Italy and Turkey) there is a statutory obligation for employers of more than a certain number of married women to provide day care facilities for their children (30 married women under the age of 50 in Italy; more than 300 women workers in Turkey). Italian arrangements provide that day nurseries or crèches can be shared, if convenient, by a number of enterprises in the same area, and a firm may be relieved of its obligation if it provides a subsidy to an "inter-enterprise" day care institution.

Nevertheless, our Italian respondent reports, there are not many child care facilities provided (especially when compared with the great number of women workers with children under the age of three) and the existing ones are unpopular with mothers of young children, because of the dangers of infection, the long journey by public transport during rush hours, and sometimes because the atmospheric conditions in the proximity of factories are unfavourable. The same conclusion is also reported from a number of other countries.

In France, an official enquiry, carried out in 1954, revealed that 41 per cent of enterprises employing between 500 and 1,000 workers, and 59 per cent of enterprises with more thant 1,000 workers have their own child care services, although here, too, the works committees in charge of social affairs sometimes prefer to subsidise centres nearer the working mothers' homes. Certain French ministries have also set up crèches or day nurseries for their employees' infants; but the view is held fairly generally that such institutions should, preferably, be near the home rather than the workplace.

In England and Wales about 50 day nurseries have been provided by employers—most of them in the textile centres of Lancashire—and are under the supervision of the public authorities. The Local Health Authorities, too, are empowered, although not obliged, to provide day nurseries and as these are in short supply they are only accessible to those with the most urgent need, in a strict order of "priorities". A reasonable charge is levied for these services in accordance with the means of the persons using them. Some Local Health Authorities also keep a list of so-called "child-minders", i.e. persons authorised to accept a limited number of children for day care against payment.

Great efforts are being made in the Scandinavian countries to provide a variety of day care centres either on communal level or run by private organisations with financial support from the central or local government; these are not necessarily only to help working women with family responsibilities. They include kindergartens, day nurseries, play-centres for pre-school children and spare-time centres (or "hobby homes") for school children after school hours. Sweden also has "family day nurseries", i.e. private homes, approved by the Child Welfare Committee, on the same principle as the British "child-minders". Norway, too, is experimenting with this type of arrangement. In Norway, about 8,000 children are looked after in 280 day care institutions of various kinds. In 1962, there were 10,296 places in Sweden in 304 day nurseries, 43,659 places in 1,054 nursery schools, and 2,226

places in 129 spare-time centres, approved by the National Social Welfare Board. Of these, six day nurseries and eight nursery schools were organised by industry. Reports from Norway and Sweden, as from most other countries, repeat with depressing uniformity that existing facilities are insufficient.

The United States Government has in recent years taken several measures to step up the provision of day care services. The 1962 Amendments to the Social Security Act included provisions for Federal grants-in-aid to States specifically for this purpose, and the Public Welfare Amendments, also of 1962, authorised appropriations of Federal funds up to 10 million dollars per year[1]. The Act recognises the need to make adequate facilities available for all children, irrespective of the economic conditions of their parents. It provides for payment of reasonable fees in cases where the family is able to pay all or part of the costs, the amount being determined by the individual State. This provision, while acknowledging the basic responsibility of parents for their children, enables those children whose parents cannot pay to have the same services and facilities as others in a more favoured social position. To ensure adequate standards, the Act provides that the earmarked funds may be used only in "facilities which are licenced by the State" or approved by the State agency responsible.

Many communities have a Health and Welfare Council whose function it is to plan the basic services needed by the community as a whole. Employers' and workers' organisations usually participate in the work of this Council and help in the support of programmes to meet day care needs. Some American low-cost public housing developments include day care centres, and private enterprise is experimenting by constructing flats designed for working mothers which include a separate day care building. Finally, the United States President's Commission on the Status of Women has included in its recommendations that child care services should be provided at reasonable cost for children at all economic levels, and proposed that tax deductions for child care expenses should be made in proportion to the median income of couples when both husband and wife are earning.

The main difficulties in providing an adequate number of child care facilities, whether by employers or communities, are of two kinds. Firstly, these centres are expensive to run, and costly in space. Secondly, they require a substantial number of trained personnel which is not readily available anywhere. It is only when the shortage of women workers is almost desperate, and in establishments mainly staffed by women, that special efforts are made to overcome these difficulties (for example, hospitals providing day nurseries for their nurses' infants, as mentioned above). In the United States, experimental training programmes have been organised for nursery school staff.

Although in too short supply, day care centres have one advantage

1. Four million dollars were, in fact, appropriated for 1964, and the same amount again for the fiscal year 1965.

over all the other services considered here: they are tailored to the needs of working women. Wherever they exist, they are therefore adjusted, or flexible enough to allow adjustment, to the working hours of mothers.

3. Care of school children

a) *School hours*

In contrast, school hours are never synchronised with the working hours of adults (excepting, of course, school teachers). Schools are autonomous institutions, following their own internal logic, irrespective of the convenience of parents. Although the customary number of school hours varies widely between one country and another, they often start later, and practically always end earlier, than normal adult working hours. In some countries (Austria, Germany) children leave school at 1 p.m., in some (e.g. Denmark) at 2 p.m., in Switzerland and Britain mostly at 4 p.m., with variations according to age of pupils and type of school. Depending on age and grade, children of one family may come home at different times of the day and have vacations of different lengths.

Education authorities usually argue that school time-tables must be guided by scholastic requirements alone and should not be subject to extra-curricula considerations. Local traditions play an important part in the arrangement of time-tables, and there should be a possibility of adjusting school hours to changed living conditions.

b) *School meals*

Meals are sometimes provided for children who attend school all day long. School meals at a nominal price are the general rule in the United Kingdom, where the Education Act of 1944 made their provision a statutory duty of the Local Education Authorities, and in France, which has a much older tradition in this respect. In Sweden, a hot meal at midday is provided free to every school child. In the United States, under the National School Lunch Act of 1946, States receive a Federal grant towards the cost of food, facilities and servicing of school-lunch programmes covering all school-children. Yugoslav schools serve hot midday meals, paid for by the social services or social organisations if the parents have a small income.

Our respondent states that in the Netherlands, "in so far as schools provide facilities for children to have lunch at school under supervision, this is mostly done taking into account the distance between school and home. One single case is known of a foundation, called 'Between Twelve and Two', which has been established in order to take care of children of working mothers during lunch time". In Switzerland, school canteens are widespread, although not general.

These provisions, instituted for the sake of the children's health, are, nevertheless, a great help to mothers, whether working or not, who are thereby exempted from the duty of cooking lunch, unless they

have younger children or a husband coming home at midday. The latter is becoming less customary, partly because of the long distances between home and workplace, and partly because (as we have seen earlier) the five-day week tends to shorten the lunch hours of workers and employees alike.

c) *After-school care*

After-school hours and vacation periods are the biggest problems for working mothers. There is a word for "latchkey children" in every modern language, and public concern for what it stands for in every country. This concern is more often expressed in emotional reactions against working mothers than in constructive suggestions for remedies. However, measures are being taken in some countries, if not to tackle the problem, at least to reduce its dimensions.

The difficulties are particularly great in countries where children attend school for only part of the day. Reports both from the Federal Republic of Germany and Yugoslavia mention that shortages of school buildings or teachers (or both) make teaching in shifts a necessity in many schools. The same shortages presumably present obstacles to the institution of the so-called "Tagesschulen" (Day Schools) which some of the German women's organisations have been demanding for some years, namely,. places where children can do their homework, and play games, under the supervision of teachers. A few "day schools" of this kind exist in the Federal Republic of Germany but they are exceptions rather than the rule. They are felt to be desirable not only as a help to working mothers but also for many other women who find the supervision of their children's homework a task taxing their capacities. Some provisions for school-children during their free periods do, however, exist in the shape of the so-called "Kinderhorte" (mostly run by denominational bodies) whose opening hours largely coincide with the working hours of employed mothers. A local branch of the Austrian Trade Union Federation has recently started in its own youth centre at Salzburg a "day home" for school-children under teachers' guidance as a measure specially desigued to assist working mothers.

Similar institutions ("classes gardiennes") exist in most big towns in Switzerland where children are kept under qualified adult supervision after school hours—usually in their own schools—until their parents come to collect them.

In Sweden, some local authorities have set up spare-time centres for school-children before or after school hours or during other free periods,

There are supervised playgrounds in a number of countries, at least in the larger cities (reported from Luxemburg, Norway, Sweden and United States of America, but no doubt in other countries too); there are also, of course, youth organisations and sports clubs, especially for the older children.

The great need for these and similar leisure facilities for children of school age, particularly in urban centres, is now generally recognised and is receiving public attention. For the time being, however, there is a dearth of all these services which it will take years, and active public opinion, to overcome.

d) *Vacations*

Better provisions are made for school holidays (at least for a part of the long vacations). Vacation colonies, holiday camps, "summer schools" and the like are organised in many countries, in some of them on a large scale. A stay in the countryside, at least for a week or two, is today thought to be essential, both on health and educational grounds, in most parts of the world and is treated as the natural birthright of every child. Many public and private institutions make it their aim to bring this also within reach of those children whose parents are unable to provide it.

Trade unions, religious bodies, social security institutions, schools or private organisations either supplement provisions made by local authorities or replace them where they do not exist. Holiday colonies in the mountains or at the seaside are run by all these types of organisation in Italy, either on a residential or daily basis. In Luxemburg, holiday courses for children of working mothers are run by religious and trade union organisations. A very large number of French children spend their holidays in vacation colonies organised by their municipalities. In Belgium, open-air colonies are "general in the industrial agglomerations". In the Netherlands, "holiday schools" supervised by teachers are organised in co-operation between schools and youth organisations for a few weeks during the summer vacations for children of certain social classes. In Portugal, holiday colonies, also under teachers' supervision, are organised by industrial enterprises or by the Social Insurance Federation. From Spain, such colonies, as well as short excursions and coach trips with a teacher, and vacation "residences" for working women with their young children, are reported. The Swiss respondent states that "every child, even from a modest family background, can go on holidays to the country, the mountains or the seaside under the aegis of one of the many organisations existing for the purpose". In Yugoslavia, a variety of social institutions, including communes and tenants' associations, send large numbers of children to seaside or mountain resorts, and sports and youth clubs, the Red Cross, and various other organisations run holiday courses. In the United States of America, many supervised school facilities, such as swimming pools, gymnasia and playgrounds, are open to children during the summer months; most American communities provide supervised park and recreational facilities for children throughout the year and all-day programmes during the summer months. Many voluntary organisations do the same.

It seems that although many, if not most, children can now spend part of their holiday away from home, with or without their parents, public provisions for those who stay behind are scant. The scarcity of playgrounds and other recreation centres in big towns has already been referred to; and only two countries (Netherlands and Switzerland) report that some midday meals are served to a limited number of children staying at home at a "summer school" or school canteen.

Thus, despite the widespread acceptance of vacation needs for children, many a working mother has to take unpaid leave, or relinquish her job altogether, during the summer months, in order to fulfil her family responsibilities.

4. Other communal help

Apart from the care of children, the ability of a working woman to perform without undue strain both her domestic and professional duties will largely depend on the degree to which she can rationalise her household tasks.

This may not always be within her power. Housing conditions in many parts of the world, including Member countries of O.E.C.D., are such that considerable sections of the population still live in dwellings built before labour-saving notions occurred to those responsible for domestic architecture, and where cheapness was a more important consideration than convenience to their users. The revolution in building methods and design which is now transforming so many cities has only so far made an impact on a minority of private households.

It is well to keep in mind, too, that—as said at the beginning of this study—the degree of industrialisation, and consequently the standards of living of the populations, differ widely between the 21 countries under review. Mechanical devices in more or less general use in some Member countries may still be practically unknown to all but a handful of people in another.

Despite these factors, the satisfactory management of her household within her given means demands a high degree of organisation on the part of a working woman. Whether or not she achieves this is largely a matter of personal temperament and ability, but good household management can also be learned.

For this reason, a question was included in the survey on the availability of training in home economics.

a) *Housecraft training*

Courses in housecraft of one sort or another exist practically everywhere, particularly in the towns. They sometimes form part of the curriculum in girls' schools, and are sometimes provided at nominal cost in adult education classes for all those interested in them, often both.

It is not, of course, possible to judge the quality of these courses, nor to say whether they are confined to teaching the elements of cooking and needlework or offer a training in "home economics" proper, i.e. in rational methods of organising a household, budgeting, discriminating between the great variety of consumer goods on sale, etc.

However, courses of the latter kind are provided, for instance, in the 570 household training centres set up and sponsored in France by the "Caisses d'allocations familiales"; these centres teach housewives to organise their work so as to reduce their domestic burden, instruct them in the use of household equipment, etc.

Courses of this kind are sometimes provided at the women's workplace, e.g., in Portugal where they are organised by female missions of the "Junte d'Action Sociale"; besides home economics, courses in cookery, dressmaking, child care, home health, child psychology, and first aid are given. In the Netherlands, domestic guidance is often provided by or in co-operation with the enterprises concerned and includes individual advice and sometimes evening classes for groups of working women.

In Switzerland, there are private Family Aid institutions in all urban and industrial cantons, offering budget advice to housewives and teaching them rational methods of organising housework. In Federal Germany, consumers' organisations have set up some household advice centres. In Norway, there is a State Advisory Service in Home Economics and a Home Management and Economics Information Office—both run by the Norwegian Ministry of Family and Consumer Affairs. In Yugoslavia, advice and practical assistance—individually and in classes—are offered by the Institutes of Home Economics, which also encourage the food industry to produce more semicooked or quickly prepared articles.

These are some examples to illustrate various types of administrative arrangements, but by no means an exhaustive list of the provisions available nearly everywhere.

b) *Home loans*

On the contrary, financial assistance by public bodies towards the purchase of household equipment is relatively rare.

The French "Caisses d'allocations familiales" advance loans for the purchase of washing or sewing machines, vacuum cleaners, refrigerators, water heaters, cookers, and other household equipment. Repayments are arranged in monthly instalments which do not exceed 10-15 per cent of the family allowances provided by the same institution as part of the State welfare scheme.

In Italy, local authorities and employers (either individually or in association) often help in securing equitable prices and long-term re-payment conditions for household equipment. "Although" our Italian respondent writes "the use of household machinery is not yet general, there is a tendency towards its increase owing to its attractions for large strata of the population".

In Yugoslavia, there is a credit system for this purpose, and there are also some arrangements for the loan of the equipment itself. There is also a practice of collective purchase of such items by tenants' councils.

c) *Mechanisation of the home*

The practice of buying "consumer durables" on a hire-purchase basis is very widespread in a number of countries and, as several respondents have pointed out, has superseded the need for loans of another kind. A Swiss investigation—on working women in particular—revealed the following distribution of domestic appliances among women workers and employees:

MAIN ITEMS OF HOUSEHOLD MACHINERY IN THE HOMES OF SWISS WORKING WOMEN

APPLIANCES	OWNED BY WOMEN	
	WAGE EARNERS	SALARIED EMPLOYEES
	%	%
Boiler	58	80
Sewing or knitting machine	75	74
Vacuum cleaner	72	83
Washing machine	78	86

The level of mechanisation is, of course, generally high in Switzerland, but it is fair to assume that here, as elsewhere, there is a correlation between the degree of household mechanisation and the employment of women, partly because working women are more dependent on labour-saving machinery and partly because they are usually better able to afford it than are families of the same class living on one income.

d) *Mass-production reduces housework*

The introduction of electrically-operated machinery into the home is only a part of the "Domestic Revolution" now in progress; it is debatable whether it is its most important aspect. The invention and mass-production of consumer goods of a more perishable kind also have far-reaching consequences.

It would, therefore, seem appropriate, as a postscript to the above section, to say a word about the multitude of other labour-saving devices which have appeared on the market in recent years and which, because of their low cost, are within reach of most households.

Some of the most obvious items from a list of innovations too long to enumerate are: the invention of synthetic fibres and plastic materials for a practically unlimited variety of domestic uses; the development of techniques for making textiles "drip-dry", shrink and crease-resisting,

colourfast or showerproof; the production of detergents and various other cleaning and polishing substances easy to apply; new methods of food preservation by deep-freeze, dehydration, air-tight packaging. These all serve to simplify household routine and reduce the amount of domestic labour. A large sector of modern industry is, in fact, devoted to the production of goods serving this end.

This is an economic development of fairly recent origin. It only started within the last twenty years but has already changed the pattern of normal housework beyond recognition. This movement is bound to continue and increase by its own momentum.

IV

THE WORKING DAY OF EMPLOYED WOMEN WITH FAMILY RESPONSIBILITIES

As a result of this household revolution the hours of work spent on domestic chores—as opposed to the care of people—have become more elastic; that is to say, they could be, even if in fact they are not always, reduced.

In the absence of precise information, a number of our respondents have offered estimates as to the daily working hours of employed women with domestic responsibilities, based on personal impressions without any claim to accuracy. They are usually arrived at by adding up a full working day at a factory or office (eight hours), plus the average travel time of workers from home to workplace and back (two-three hours), plus the number of hours spent by a housewife on domestic tasks—the figures for the latter varying widely between one respondent's estimate and another.

Such estimates seem unrealistic not only because they are purely impressionistic statements but also because they do not discriminate between different types of family, e.g. according to the number and ages of children, the presence of older family members—who might be an asset or a liability, or of an invalid. Important factors influencing the length of working time are therefore left out of account.

Only two tables are at hand offering more accurate data, although in both instances reservations were made as to the validity of the findings. The first is based on a survey carried out in Zurich among 649 married women in full-time employment. The results, our respondent writes, would be more or less applicable in the rest of Switzerland. The weekly number of hours worked by these women, including Sundays, but excluding the time spent on their journey to and from work, is as follows, broken down by the number of children:

THE WORKING WEEK OF MARRIED WOMEN IN FULL-TIME EMPLOYMENT IN ZURICH

NUMBER OF CHILDREN[1]	NUMBER OF WOMEN	WEEKLY NO. OF HOURS WORKED:		TOTAL
		IN EMPLOYMENT	AT HOME	
0	96	48 h. 40 mins.	24	72 h. 40 mins.
1	334	46 h. 30 mins.	38	74 h. 30 mins.
2	168	46 h. 10 mins.	33	79 h. 10 mins.
3 or more	51	46 h. 45 mins.	34	80 h. 10 mins.
Total	649	46 h. 45 mins.	29	75 h. 45 mins.

1. The children's ages are not specified.
The number of working hours of housewives without employment, but with a corresponding number of children, is, unfortunately, not available for comparison.

The latter figures are, however, given in the following table concerning the average daily working hours of women in French cities[1]; this table has the further advantage of breaking down the total working hours according to the type of work.

THE AVERAGE WORKING DAY[1] OF MARRIED WOMEN WITH AND WITHOUT EMPLOYMENT IN FRENCH CITIES

	WOMEN IN EMPLOYMENT				WOMEN WITHOUT EMPLOYMENT			
	0 CH.	1 CH.	2 CH.	3+CH.	0 CH.	1 CH.	2 CH.	3+ CH.
Housework	3.9	4.5	5.2	5.5	7.8	7.6	8.0	8.8
Care of children	—	1.1	1.5	1.6	—	2.4	2.7	3.3
Employment and journey to and from work	7.2	6.4	5.3	4.9	—	—	—	—
Total hours	11.1	12.0	12.0	12.0	7.8	10.0	10.7	11.1

1. Time is given in hours and tenths of hours.
2. Ages unspecified. The longer hours spent on child care by women without employment may, at least partly, reflect the lower ages of their children.

In contrast to the previous table, the above includes women working part-time as well as full-time (17 per cent of childless women and 36 per cent of women having two or more children work less than six hours per day; on the other hand, 71 per cent of childless women, 67 per cent of those having one child, 50 per cent of those having two children and 43 per cent of those having three or more children, work

1. A. Girard, "Le budget-temps de la femme mariée dans les agglomérations urbaines", *Population*, 1958, No. 4, (quoted from Françoise Guelaud-Leridon, "Le travail des femmes en France," *op. cit.*)

more than eight hours per day). The average working day of the full-time workers is as follows:

0 *child*	1 *child*	2 *children*	3 *or more children*
12 hours	13 h. 30	14 h. 45	15 hours

The survey included women in all types of occupations, thus actual working hours differ considerably. Marked differences also occur according to the ages of children. The report from which the above data are taken points out that the presence of a child under the age of three means an addition of about 2 ½ hours to a woman's working day.

The above daily working hours amount to a working week in excess of the one arrived at in the Swiss survey; however, as the journey to work is included in the French sample but not in the Zurich sample, the averages appear to come roughly to the same totals.

V

SHOPPING HOURS, ETC.

The question whether the closing hours of shops, post offices, local administrations and other essential services are adapted to the needs of working women can be answered fairly briefly.

As far as daily necessities are concerned, especially food, facilities usually exist for working women to buy provisions after their working hours or during their lunch break.

Food

In some countries, such as Greece and Turkey, shops keep open in any case until late in the evening; similarly, in Spain, markets are open both before and after normal factory hours; the same is true of Yugoslavia where, as we have seen in an earlier chapter, working hours allow workers and employees free time during a large part of the afternoon for shopping and other private matters. These countries are special cases which, from the point of view of adjusting essential services to working hours, present relatively few difficulties.

In other countries, there are normally some local food shops open for an extra hour or two in the evenings, at least once or twice a week. Supermarkets in big cities often have one late closing day - usually on Friday. In Belgium and the United States, they remain open until 21 h. every night except Sunday, and in some American towns even on Sundays. Conditions in this respect are, as a rule, easier in big cities than in rural areas. The reverse is reported only from the Netherlands. However, for working women living in the dormitory suburbs of big cities, shopping, even for household necessities, presents difficulties and has to be left until Saturday to avoid carrying heavy shopping bags home from factory or office at the end of the day, sometimes over long distances.

Other commodities

Shopping for other commodities presents greater problems. The practice is now spreading in many countries of keeping department stores in big cities open late on one or more evenings a week; this is

reported from Belgium, Canada, Denmark, Netherlands, Sweden, the United Kingdom and the United States. Some big stores in Paris are open until 22 h. on three nights a week (with misgivings on the part of the trade unions because no guarantees were given to sales personnel about their working hours); an attempt to do likewise in Geneva failed.

Where shops are open until 21 h. or 22 h. on two or three evenings a week, the purchase of clothes or major household items may not be too difficult, so far as timing is concerned. On the other hand, one additional hour on one evening a week, as is customary in some Dutch and Danish towns and in the United Kingdom, although it is of some help, is barely sufficient for people in full-time employment; they lose time in travel from factory or office to the shopping centre and the stores are very crowded during that limited period.

Does the five-day week solve shopping problems?

Several respondents pointed out that the five-day week allows most working women to make their purchases on Saturday mornings. However, the same comments apply to Saturday mornings as to the one-hour evening extension. Moreover, Saturday morning is also the time when the weekly provisions have to be bought; time and energy are therefore limited and nerves often frayed. Buying major articles which entail a careful choice, for instance, a piece of furniture, a new suit, or children's shoes, is fraught with difficulties and involves problems of long-term strategy. The same is true of visits to the hairdresser or the dentist.

Within the limits of officially regulated shop closing hours (this is usually decided by the local authorities), tradesmen try to do their best for the convenience of their clientele. Although they may not be particularly concerned with working women with family responsibilities, it is in their own interests to introduce a certain flexibility in reponse to the demands of their customers.

Community services

This does not apply to other essential services. Banks, employment exchanges, local administrations, etc., usually close at the same time or earlier than factories and offices. This presents difficulties to working men and women alike. Adaptations are being considered in some countries to solve this problem.

Post offices provide at least a limited night service in most countries. In Denmark, the Federal Republic of Germany, Norway and Sweden, banks, health insurance and employment offices and some other administrations operate a late afternoon service at least once a week. Elsewhere, workers who have to attend any of these offices must take time off during their working hours which, even if sympathetically considered by their employers, may either be difficult to arrange or involve a loss of earnings.

This problem, of course, affects both sexes. It is more difficult for working women only in the sense that many working men have wives at home who can do some of the errands for them, whilst working women generally have no-one to relieve them of the additional chores.

VI

CONCLUSIONS AND RECOMMENDATIONS

The fact that one-third of a country's working population fails to be fully integrated into its labour force[1] is of a magnitude which presents a challenge to action.

This problem demands—and is now beginning to receive—the most urgent consideration, since it is becoming increasingly evident that a nation's economic growth and prosperity depend to a considerable extent on the greater and better use it makes of its womanpower.

The matter is claiming attention from the social, as well as the economic, point of view, for a large and growing number of women with family responsibilities is actually engaged in gainful employment and faced with difficulties many of which could be avoided.

Female labour, as M. Fourastie pointed out[2], presents a special problem not only because women represent one-third of the total labour force and nearly one-half of all persons employed in the tertiary sector, but because in terms of working hours they alone do as much work in a "non-professional" capacity—in home and family—as all the men and women in the labour force put together. Nevertheless, the evidence indicates that, in addition to the large proportion of women actually combining family and employment, many women not economically active at present would like to work outside their homes if some of the hurdles now preventing them could be overcome.

FREE CHOICE

It may be necessary to mention here that, despite even desperate needs for women workers, most governments recognise that no woman with family responsibilities should be forced, either by economic necessity or moral pressure, to go out to work against her better judgment

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1. Although only a fraction of the women in employment may currently have family commitments presenting major problems, the prospect of having to face such responsibilities sometime in the future severely limits the educational and career opportunities of most women and colours their own outlook as well as the attitude of most employers. Family responsibilities, actual or potential, are therefore a handicap on the labour market for most women.
2. In his preface to "le Travail des Femmes," *op. cit.*

or inclinations. No such pressure will, however, be necessary to increase the female labour force. Abundant incentives already exist and can be relied upon to act. All that is needed to produce volunteers in large numbers is the removal of some obstacles now holding them back. As long as these impediments exist, women do not really have a free choice.

Bridging two worlds

To some extent, the working life and private life of most workers are in two different worlds, each with its own rules and rhythm, with few bridges across the gulf that separates them; but this is no longer true to the same degree as it was during the earlier phases of industrialisation. The present stage of industrial development, characterised by shorter working hours, the spread of the five-day week, guaranteed holidays with pay, improved working conditions and better labour relations, is creating a situation in which workers of both sexes have more time to devote to their homes and families. This state of affairs has been described, among others, by Professor Zweig[1] and has been spoken of as "the home-centred society" by Mark Abrabams.

In tbe following analysis of measures needed to co-ordinate the working and family aspects of women's lives, thereby enabling them to fulfil both functions without undue strain to themselves or loss to their families, the main emphasis will, with one major exception, be laid on adjustments whicb affect their home rather tban their working lives.

Adaptations in the field of employment

With regard to their working lives, it seems doubtful whether it would be in women's own interests to plead for special working conditions whicb might seriously affect their employment prospects. Contrary to the accepted maxim of Equal Rigbts, it would thwart all efforts to achieve equal opportunities and equal pay.

It is, however, widely recognised today tbat the private commitments and personal loyalties of both men and women workers must be respected by their employers. Social welfare machinery allows the provision of amenities for special groups of workers, as well as individual consideration for both personal and family needs of employees. Large factories, office and sales establishments often employ medical and social welfare personnel to take care of the interests of their staff. It is thus possible under the heading of "social service" or individual need to offer relief where it is most needed, without giving special treatment to whole categories of workers and thereby creating, as it were, a privileged class among them.

1. F. Zweig, *The Worker in an Affluent Society*, Heinemann, London, 1961.

Shorter working hours

As far as a reduction of working hours is concerned therefore, the most equitable solution would be increased leisure for both men and women. This solution would not only help to assure women an equal status at their workplace but would also contribute to giving men a more equal status in the home.

Part-time work

The problem of part-time employment is a different proposition, and it is in this field that adjustments would seem to promise the most fruitful results.

Part-time work has in recent years appeared to be a possible solution to manpower shortages in countries with full employment. Problems do arise in fitting part-time workers into an enterprise which must make full use of its space and machinery, but the organisational problems are not insurmountable. There are, indeed some special functions to which part-time employment is best suited. This applies to: supplementary labour during peak periods and in occupations providing service in excess of ordinary working hours; various kinds of auxiliary employment; and to some scarcity occupations where part-time work may be an effective means of mobilising a reserve of labour not otherwise available, and where two skilled part-time workers may be preferable to one unskilled, or semi-skilled, full-time worker.

The part-time employment of married women with special qualifications may also have the advantage of keeping up their skills until such time as they become available again on a full-time basis.

There are numerous married women, not entirely dependent on their own earnings, to whom part-time employment has a strong appeal. It enables them to get through their normal household routine, to look after their families and supplement the family income, and at the same time to keep in touch with the world outside and with the occupation for which they have been trained.

From the community point of view, the benefits of employing more part-time workers in "strategically" important positions would be out of proportion to the number employed. One woman taking care of a group of six to eight children during five afternoons a week might set an equivalent number of qualified women free to take on either full-time or part-time employment. A small group of part-time home helpers could help a sizeable community of working women in domestic emergencies. The extension of shopping hours by employing part-time sales assistants would relieve an indefinite number of working women of some pressing household chores, and so on.

It would seem, therefore, that part-time employment fulfils a definite social need. The present system, however, has a number of drawbacks. For the women, the amounts earned may not be big enough to outweigh the additional expenses incurred. Prospects of promotion are nil; pension rights and other social benefits are reduced. Employers

object to the increased costs of administration, overheads and social insurance, and to the technical difficulties of organisation.

Trade union attitude

The attitude of trade unions varies. While some of them see part-time work as an opportunity for women workers to adjust their working hours to the needs of their families and as a means of improving their living standards, others point to the marginal character of part-time employment, its insecurity, the fact that it is not covered by collective agreements, and the danger that it may lead to the devaluation of women's work generally. They do not wish women to be treated on a par with handicapped groups in need of special "favours", who would be easily dispensed with when the labour market situation no longer demands concessions on the part of employers.

Whatever the merits of this case, there can be little doubt that under prevailing conditions the number of part-time jobs will go on increasing, particularly in fields of employment where labour shortages are most acute. It would be highly desirable, therefore, to regularise the position of part-time workers. "Decasualisation" was achieved for dock labour and should not prove impossible for part-time workers.

Many of the dangers referred to result from the fact that these workers are regarded as "outsiders" both by management and unions. If workers' organisations extended the protective cover of their bargaining powers to part-time workers, some at least of these risks could be attenuated, and with the present strong competitive position of women on the labour market, the moment to do this would appear to be most opportune.

Adjustments in the domestic sector

In a socio-medical study of textile workers in Lodz[1] the Polish author maintained that the health hazards to which women workers are exposed, and which are reflected in the greater incidence of sick-leave, are due to risks incurred at home rather than at their workplace. Remedies should, therefore, be applied in the family milieu. It is this sphere, however, which for practical as well as emotional reasons is the least accessible to reform, and certainly to interference from outside.

Some relief of the domestic work-load is gradually taking place, not only by the mechanisation and modernisation of households but also by the greater participation of husbands and fathers in domestic functions.

Synchronisation of home and work spheres

The field most in need of, and also most open to, improvement is not the home as such, but rather the area in which occupational and

1. Magdalena Sokolowska, *Kobieta Pracujaca*, Warsaw, 1963.

domestic tasks converge, although not at present geared to each other. The problem is therefore mainly one of synchronising these two spheres and also of providing some services which would, without removing the responsibility for their family from women's shoulders, make the double load easier to carry.

The services most urgently needed are set out in the following list of recommendations which summarise various points already raised. Some of these services will have to be provided by private and some by public agencies, some by both. The authorities would, for instance, have to sanction the extension of shopping hours in private business and also fix the standards of privately-run day nurseries, apart from providing publicly supported day care centres; legislative action would be required to "decasualise" part-time work. There is also scope for action by voluntary, non-profitmaking organisations in such services as youth centres, visiting old people, etc.

The prerequisite for all these measures is a change of public attitudes which would give the woman worker with family responsibilities moral as well as practical support in what she is trying to do.

RECOMMENDATIONS

1. Home help

Home aid services should be created, with qualified part-time helpers, to take over some of the most urgent domestic duties of working wives, especially during emergencies or periods of stress. This service should be available at a nominal cost and may therefore require a subsidy to pay a fair wage to the "helpers".

2. Child care

a) The number of day care centres, in short supply everywhere, should be substantially increased, and jointly financed by local authorities and employers plus a government subsidy. This spreading of costs might help to ensure the provision of a more adequate number of such facilities. Each enterprise employing more than a minimum number of working mothers should share in the provision of a conveniently located child care centre; the charges should be scaled to the mother's earnings. More private day care facilities, including "child minders", should be available, standards being controlled by the public authorities.

b) Consideration should be given to the problem of co-ordinating school hours, as far as possible, with normal working hours.

Provisions should be made for after-school care. This might include various kinds of facilities, all under expert supervision, such as part-time centres ("hobby homes"), play-grounds, youth clubs, and extended school classes enabling children to do their homework.

All these services will rely to a large extent on part-time staff and should be able to draw on a considerable reserve of appropriately qualified women of mature years.

3. Part-time work

The position of part-time workers should be regularised. In particular, measures should be taken to ensure fair rates of pay, pension rights, paid holidays, opportunities for training, the same period of notice as full-time workers, and inclusion in collective agreements.

Social insurance contributions and benefits should be in proportion to the earnings of part-time workers; this would remove one obstacle to the employment of workers on less than a full-time basis.

4. Adjustment of shopping hours, etc.

More use could be made of part-time staff to extend service hours in shops, hairdressing establishments, post offices, banks, local administrations, etc., beyond the usual working hours in offices and factories, including Saturday afternoons. Public transport schedules should be arranged to meet the needs of this group of workers.

5. Odd days-off

The practice of allowing employees to take a limited number of odd days (or half-days) off at their own convenience—either as part of, or in addition to, their annual leave—should become more widely accepted. This would enable working men and women to have an occasional weekday free for major purchases, for spring-cleaning, house repairs, school visiting, holiday preparations, or the thousand-and-one other jobs that need attention and can best be done when the other members of the family are out of the way. The chance of taking an occasional day-off might be a useful safety-valve for *all* workers.

6. Adult training

Many women in their thirties and forties, well suited by maturity and past experience for responsible posts in business, industry and the professions, would become available for employment if more training schemes for late entrants and refresher courses for those wishing to return to work after a long break were provided. The function of such courses should not only be to fit women in the prime of their lives for particular occupations but to help them psychologically in their transition from domestic duties to broader fields of activity.

APPENDICES

Appendix I

WORKING HOURS AND TIME-TABLES OF WOMEN WITH FAMILY RESPONSIBILITIES

QUESTIONNAIRE

A. *Definition*[1]*:* Working women with family responsibilities include married or unmarried women, as well as widows, with family responsibilities who are contractually employed on full-time or part-time basis as wage-earners, salaried employees, managers or supervisors and professional women. Excluded are those working in agriculture and establishments where only members of the employer's family are working.

B. *Name of the country.*

Part I. WORKING HOURS AND TIME-TABLES

1. What is in your country the typical *daily* and *weekly* time-table for workers (starting-ending, intervals for meals):
   a) In industry;
   b) In the government service (office work);
   c) Commerce;
   d) Services.
2. What is in your country the *typical part-time* schedule for:
   a) Industry;
   b) Government service;
   c) Commerce;
   d) Services.

1. The definition in the I.L.O. report "Women Workers in a Changing World" states: while the main and most numerous problems arising in connection with the employment of women with family responsibilities centre on the employment of married, widowed or divorced women with dependent children, it must not be forgotten that there are other categories of women with family responsibilities, such as women with dependent elderly parents, who are confronted with a good many similar problems and will benefit from similar social consideration and measures aimed at facilitating the performance of home, family and work responsibilities.

3. Enumerate *special arrangements* of *hours* and *time-tables* for women workers with family responsibilities as to full-time, part-time, shift arrangements, time off for shopping and household duties.

4[1]. Are *special arrangements* for *leave* provided for women workers with family responsibilities:
— monthly day-leave (is it paid or unpaid?);
— annual leave (does it coincide with school holidays?).

Part II. FACILITIES FOR HELPING WORKING WOMEN TO ASSUME THEIR FAMILY RESPONSIBILITIES

5. Are facilities provided by the *communities* such as:
House-keeping help (cleaning), family help (care of children), financial help for use of modern household equipment, home economics type of training, etc.?

6. Are mothers' working hours arranged to *coincide* with the opening and closing time hours of the following *institutions:* day nurseries and crèches for pre-school age children, primary schools and secondary schools, community and school canteens, supervised play grounds?

7. During *holiday periods* are school facilities and meals provided for children of working mothers?

8. Are there any special hours arrangements and facilities allowed:
a) For *expectant* working mothers?
b) For those who have a child under the age of *12 months?*

9. Are these facilities sufficient in number?
Are new arrangements and measures foreseen?

10. Are facilities such as day nurseries, crèches, canteens, etc., provided by *employers?* How widely are they available?

11[1]. Are the usual opening and closing times of *shops,* post-offices and local administrations adapted to the needs of working women? Are arrangements such as late-shopping hours made for them?

Part III. GENERAL QUESTIONS

Optional

This part of the questionnaire is *optional,* for the recent report of the International Labour Office for the forty-eighth session of the

1. Should the answers to questions 4 to 11 be negative, please indicate the reasons for such replies.

International Labour Conference: Women Workers in a Changing World contains data on statistics, regulations and other problems faced by women workers with family responsibilities.

Member countries of the O.E.C.D. can, in answering the following questions, draw the attention to new and particular aspects of the question in their country and thereby enable the author of the final report to deal with these particular problems in a more general nationai context.

1. General statement on the recent (since 1950) and prospective *statistical trends* in your country as to the employment of women with family responsibilities, on full and part-time basis.
2. Describe social or fiscal *legislation* or *regulations* which might have consequences on the entrance and utilisation of women with family responsibilities in the labour force.
3. General statement on the *typical spread-over of a working day* for a working woman with family responsibilities in: large cities, suburbs, rural areas; including transportation time, shopping and unpaid house-keeping activities.
4. Do you have in your country special social services or co-ordination agencies which plan the adjustment of school schedules, of different facilities and services to the needs of working women with family responsibilities?
5. List of the publications and documentation concerning studies on special working hours arrangements for working women with family responsibilities.

Appendix II

TAXATION OF A WIFE'S EARNINGS

Seven Member countries have provided some information on the tax legislation applicable to the incomes of married women (Austria, Canada, Denmark, the Federal Republic of Germany, Netherlands, Norway and the United States). The data vary in comprehensiveness and were considered inadequate for inclusion in the main body of the report. It was thought, however, that as this subject is of interest, the details available should be summarised and—supplemented by comparable information from the United Kingdom—presented separately in this appendix.

All countries replying indicate a special tax position for married women.

The United States of America is apparently the most favourable country for couples with unequal incomes—wives earning a little, or husbands with rich wives; Federal income tax law allows married couples to file a joint tax return, splitting their income into two equal parts (regardless of the wife's income, if any), to which a progressive rate of tax is applied. In addition, both State and Federal income tax laws allow deductions for certain expenses incurred for the care of children under twelve.

In the United Kingdom, preference is given to working married women: they get a single person's tax-free allowance for earnings, in addition to the husband benefiting from the married man's allowance which is nearly double the single person's. On the other hand, rich couples are worse off if married, particularly if the wife has a substantial unearned income, as incomes are aggregated for surtax regardless of whether the couple have opted for separate assessments.

Whilst it is impossible, in the United Kingdom, to alter the tax liability (whether favourable or not) which results from the status of being married, except by factual separation or divorce, in Norway, since 1959, working married women can make a separate income tax return and be assessed independently from their husbands. This concession does not apply, however, where the spouses carry on a joint business.

In the Netherlands, a married woman's earnings are taxed 15 per cent if she is not the breadwinner (after a tax-free deduction of 50 guilders per month); this appears to be intended to discourage the wives of all but the neediest of husbands from employment.

In Austria, the married person's allowance is granted to both husband and wife if both are working. In certain Swiss cantons, special tax scales have been adopted for households in which both spouses work.

In the Federal Republic of Germany, since January 1963, there are special provisions allowing working women to claim tax exemption for extraordinary expenses, inter alia for actual expenditure for domestic help, up to a maximum of DM. 1,200 per calendar year, if there are at least two children under the age of 18 living in the household and provided that either both parents are gainfully employed, or the working parent is unmarried or lives permanently separated from her marital partner and is classified for taxation on scale II (of the wages tax). Special regulations regarding tax deductions for temporary and part-time workers benefit women workers who are employed either for only a few hours or at a low wage; they seem to affect particularly charwomen and women working in the catering trade.

In Canada, married men whose wives do not work receive a tax benefit of $1,000 p.a., plus up to $250 earnings; but both are treated as single persons if the wife earns more than $1,000, the first $1,000 being tax-free for everyone.

In Denmark, taxes are levied on the joint incomes of spouses, a fact which is thought to act as a disincentive for married women to work. This seems to be the case in various other countries.

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*NATIONAL SEMINAR AND WORKSHOP FOR HOME ECONOMICS RESEARCH ADMINISTRATORS, LINCOLN, NEBRASKA, APRIL 5-7, 1967

Seventy-five participants met to identify home economics responsibilities and contributions in the implementation of the long-range research program resulting from the State Agriculture Experiment Station--United States Department of Agriculture study. In work groups, conference participants considered the goals and projections in relation to problem areas, personnel, and other resources. The appended report to the Experiment Station Committee on Organization and Policy was synthesized from the work group deliberations by the Home Economics Research Sub-Committee. Proceedings topics are: (1) Implementation of the Long-Range Research Programs, (2) Home Economics in the National Scientific Effort, (3) The Department Station Partnership, (4) Current Home Economics Research--An Inventory Report, (5) Responsibilities of Home Economists in Implementing the Long-Range Study, and (6) reports of workshop group discussions, and directors' reactor panel. Potential contributions to family life, decision making, housing and the environment, human nutrition, food consumption and quality, consumer economy, the disadvantaged, and international aid were cited as justification for home economics involvement. (FP)

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Proceedings:

NATIONAL SEMINAR AND WORKSHOP for HOME ECONOMICS RESEARCH ADMINISTRATORS

April 5-7, 1967

Nebraska Center for Continuing Education

University of Nebraska

Lincoln, Nebraska

COOPERATIVE STATE RESEARCH SERVICE, U.S. DEPARTMENT OF AGRICULTURE
IN COOPERATION WITH THE STATE AGRICULTURAL EXPERIMENT STATIONS

VT006384

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FOREWORD

This publication is a record of the papers presented at the National Seminar and Workshop for Home Economics Research Administrators held April 5, 6 and 7, 1967, at the University of Nebraska. It also summarizes the discussions of the work groups and sets forth recommendations arising from the conference.

The seminar-workshop was co-sponsored by the Experiment Station Committee on Organization and Policy (ESCOP) and the Cooperative State Research Service for the purpose of identifying home economics responsibilities in the implementation of the long-range research program resulting from the State Agricultural Experiment Station--United States Department of Agriculture study. The feasibility of a home economics contribution to each of the study goals was presented in a series of talks given by nationally-known scientists. In the work groups, conference participants further considered the goals and projections in relation to problem areas, personnel, and other resources. The appended report to ESCOP was synthesized from the work group deliberations by the Home Economics Research Sub-Committee.

The conference drew an attendance of 75, including 42 home economics participants, 10 experiment station directors, 10 from USDA agencies (Cooperative State Research Service, Current Research Information Service, Agricultural Research Service, Economic Research Service), 8 speakers not in the above categories, and 5 invited guests.

It is hoped that this conference will provide the guidelines for long-range program planning of home economics research and graduate training at the regional and State levels.

The following members of the Home Economics Research Sub-Committee were responsible for planning the national seminar-workshop:

Blair Williams (Vermont) Northeastern Region representative
Lura Mae Odland (Tennessee) Southern Region representative
Virginia Trotter (Nebraska) North Central Region representative
Margaret Hard (Washington) Western Region representative; Chairman
Mary Beth Minden, CSRS representative
Mary Speirs (Georgia) Home Economics Member on the ESCOP Marketing Sub-Committee
Clara Storvick (Oregon) Home Economics Member on the Committee of Nine
Doretta Hoffman (Kansas) Home Economics Member on the USDA-SAES (State Agricultural Experiment Stations) Long-Range Study Committee

For their willingness to host the conference and their assistance with local arrangements, thanks are due the University of Nebraska and its Center for Continuing Education, whose representatives helped so agreeably throughout the planning and execution of the conference.

Margaret Hard
Washington State University
Chairman, Planning Committee

December 1967

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STATEMENTS OF WELCOME

DEAN E. F. FROLIK:

We are proud to have the National Seminar for Home Economics Research Administrators here on the University of Nebraska campus. All of you are most welcome.

The University of Nebraska is the only State university in Nebraska. It is governed by a Board of Regents of six members, elected by districts. Our chief administrative officer is a man whom many of you know, Chancellor Clifford M. Hardin.

The University of Nebraska consists of 10 colleges on three campuses. On this, the East Campus, we have the College of Agriculture and Home Economics. Our College of Medicine is located in Omaha. The other eight colleges are on what we call the main or City Campus here in Lincoln.

In the fall of 1967 the Dental College, presently located on the City Campus, will move to new quarters now under construction on the East Campus. Most of our livestock have been moved from this Campus to the new University Field Laboratory near Mead. According to planning for future development, the College of Law will eventually be moved to this campus.

Expansion of our City Campus is somewhat restricted by Lincoln business and industrial districts. This is the reason for some of the relocation I have mentioned.

Our enrollment in the University of Nebraska last fall was 17,054 students. Undergraduate enrollment in the College of Agriculture and Home Economics was 1,805. Of these, 652 (a little more than one third) were in home economics. In addition, we have 296 graduate students with majors in either agriculture or home economics.

The enrollment in the University of Nebraska, as in many universities, is growing rapidly. In the past five years, undergraduate enrollment in agriculture and in home economics has grown more rapidly percentagewise than in the University as a whole.

We hope that while you are here you will have some opportunity to see our campuses, at least the two here in Lincoln. Even Director Kramer, who left here in December, may wish to look around because there have been some developments since he left.

Our Department of Animal Science has a new building under construction. We are proud of our beautiful new C. Y. Thompson Library, and our our recently completed Home Management Laboratories.

The new facilities for the Dental College that I mentioned earlier are just east of the Library.

I am sure that I speak for Chancellor Hardin and the entire University when I say that we are very happy to have you here. If there is anything we can do to make your stay more profitable and more pleasant, please let me know.

Director H. W. Ottoson:

My situation is somewhat unique this morning. In welcoming you on behalf of the Nebraska Experiment Station, I have before me my immediate predecessor, Director Kramer, who, I am sure, still knows more about the Nebraska Experiment Station than I do. Despite this, I would like to tell you something about the Experiment Station program here at Nebraska.

I found shortly after I became Director in December, that we had somewhat over 100 full-time equivalent scientists on permanent appointment in the Experiment Station. Besides these we have about 75 other scientists on contract, grants or directly employed by the United States Department of Agriculture. Our Experiment Station is organized into 18 departments of which 5 are in home economics. Besides the central station, which includes the Mead Field Laboratory, we also have three regional stations in the State: one at North Platte for central Nebraska, one at Scottsbluff for western Nebraska and the panhandle part of the State, and one at Concord serving the northeast section of the State. In addition to this, of course, we have developing at the present time the U.S. Department of Agriculture Meat Animal Research Center at Clay Center; this will have a relationship with the Experiment Station, too.

Our home economics component in the Experiment Station is organized, as you know, as a school. This recognition suggests the importance of home economics in our research program. We do regard research work in home economics at the University of Nebraska as important. We feel that it is a developing activity and one to which we are going to give continuing emphasis in the program of the Experiment Station.

Interesting work has been done here in home economics in the past. For example, the amino acid requirements study, addressed to the amino acid requirements of the women--carried on by Dr. Leverton--represented an important contribution to science in home economics. Our work on the quality of cereal proteins is another most important kind of research. We would expect this program to develop in both breadth and depth as time goes on. It seems to me that this kind of research has a key role to play not only in meeting nutritional requirements and in providing interesting choices to American consumers whose income levels are rising steadily, but also in serving the needs of people in other countries where economic opportunities are much more limited than ours. I've been thinking, too, that our nutritionists and home economists have a unique opportunity for cooperative work with the research workers in the animal sciences and the plant sciences as we look ahead toward new kinds of programs.

Nebraska was one of the first experiment stations to work on family and family life, I believe, and our studies on early marriage are well known. We have also carried on significant work in rural housing, a topic which certainly represents a complex of unsolved problems. Our developing work in family economics has demonstrated many opportunities for further research of importance to all families and particularly those on low incomes.

Let me join Dean Frolik in expressing to you my personal pleasure in your decision to come here and to meet at the Nebraska Center. Your agenda is most impressive, and I certainly hope that your sessions will be as productive as the quality of the agenda might imply.

CHALLENGES TO HOME ECONOMICS ADMINISTRATORS

T. C. Byerly
Cooperative State Research Service
U.S. Department of Agriculture

Home economics--what is it? I looked in the Long-Range Study and couldn't find it. This was no oversight. Poultry husbandry, in which I did research for 20 years, isn't there either. But poultry is; so are people--individuals, families, communities, consumers all. I've read the basic document defining home economics when it emerged so bravely 60 years ago. Has it changed? Have the questions remained the same but with different answers? Or still unanswered?

The Commission on Home Economics of the National Association of State Universities and Land-Grant Colleges on November 13, 1966, identified the two fundamental needs of home economics as:

1. To enlarge the scope and strengthen the base of research in home economics and
2. To more effectively integrate the research, resident instruction, and extension functions of home economics.

Where are we? Where are we going? Is the family as our basic unit of our society being weakened by urbanization, working mothers, welfare checks and illegitimacy and the pill?

Or are some things traditional, including the family, which have existed since man lived in caves, basic to the biological, social, and economic well-being of man still essential? Men go everywhere. They are highly adaptable. What do they want? Is it enough to be free of pain, hunger, cold? Food, shelter, and health are, of course, basic. Does it matter how they are provided or acquired?

While I didn't find home economics in the Long-Range Study, I did find its components. Not only are they there, but some of them are recognized as among the highest priority items requiring more intensive and extensive research. Consider: The Long-Range Study found need for 38 percent more scientists in publicly supported research in agriculture in 1972 as compared to 1965 and 76 percent more in 1977. How about the component in which home economists have special interest and competence? Let's look at them.

With the usual disclaimer that the data cited include relevant areas, but do not exclude others not named which may be of equal or greater importance to home economists, let's take a few examples. We will begin with Area IX-8, Human Nutritional Well-being. In 1965 there were 98 scientist man-years in the aggregate in the U.S. Department of Agriculture and the State agricultural experiment stations. The report recommended at least 210 in 1972 and 250 in 1977. This is an increase of 114 percent in 1972 as compared to 1965 and 155 percent by 1977. This recommended increase is twice the aggregate increase of 76 percent recommended in the Long-Range Study. Most of it is recommended for the next 5 years. I support the Long-Range Study recommendation. I also support the essential role of those people we affectionately call "home economists" in meeting those goals.

The goal itself is stoutly supported by the Directors of the State agricultural experiment

In the absence of the author, this paper was read by T. S. Ronningen, Cooperative State Research Service, U.S. Department of Agriculture.

stations--but with no commitment as to the role of home economists in achieving it. Of course, the question immediately arises: Who is a "home economist?" If the term refers to people with degrees in the art, or holding jobs and titles including the designation, or of the female sex, then I don't qualify. I even hope my disqualifications as a home economist within these constraints are obvious. But if it be admitted that sex is not a barrier and that understanding of food in relation to nutritional well being is, then I will confidently assert competence as a home economist. I not only can cook, but I prefer my own cooking to most of the meals served in United States eateries and most of the exquisite dishes prepared by my occasional hostesses.

But what has this to do with home economics? Must home economists all qualify as biochemists or physiologists or all acquire Ph. D.'s in order to achieve or maintain their status as useful and innovative people?

Land-Grant Tradition

I hold firmly to the basic land-grant tradition of association of research, teaching, and extension. To every generalization, there are exceptions and they are numerous. There are good teachers who are duds in research, and probably a higher frequency of competent research workers who are miserable teachers. But generally, participation in research helps the teacher keep abreast with what's new and teaching gives the research worker an opportunity to communicate his ideas, if any, and his findings, too often in dull detail, to young folks. Students are often more capable than their teachers, thank goodness.

Judging from the very large number of students enrolled in home economics in the colleges in the United States, there is no immediate prospect of home economics disappearing. And there are special needs. The war on poverty will not be won unless we provide more people trained to help poor families. It is true today as it always has been, that a mother will do all she can to improve the lot of her children. Home economists trained to work with poor families are in short supply. People are needed who can find and earn the confidence of such families. People are needed who can revive their faith or establish faith that through their own efforts they can use their small resources to improve their level of living and prepare their children for better opportunities.

Research is an essential adjunct, or better, is essential to provide a base of information and methods which workers with the poor can use.

Basic to the family is the child: How many, when, and finally, why?

Pragmatically, how many people can the world support? At what level of living? These are important problems. Will the family generally consist of a mother, a father, both working, with pre-school children in a creche during working hours? Why are children born? I know of none who ever asked to be. As a bioliogist, I believe that children are the most important parameter in the whole area of human ecology. Those born have a right to expect an opportunity to grow, to develop within their capacity. We, all of us, owe them an opportunity. We have an obligation. Home economists have a very special role to play. Freedom of choice: "To be or not to be."

What of family economics? Sam Johnson said: "Income 20 pounds, expenditure 20 and 6 pence--poverty; income 20 pounds, expenditure 19 and 6--prosperity" or words to that effect. In this era of Keynesean economics and worship of the exponential growth of the gross national product, is thrift dead? How the family uses its resources, what it gets for the money it spends is surely as important as the amount of available resources, within very wide limits. The problem is aggravated by the fact that the poor pay more. How do families on welfare establish credit? How can they take advantage of quantity discounts? How can they use the fact that cheap is not necessarily economical? Are these problems researchable or only copybook maxims? What responsibilities have home economists? Are they so middle class that these questions are considered trivial or insoluble? Are they researchable?

How can women who know no simple arithmetic learn that two for 99 cents may be cheaper than a single item purchased twice? Or is this the way we teach the simple math she needs to get along?

The Secretary spoke at Cornell on March 23 on "Knowledge for Living." He predicted a median family income in year 2000 in terms of 1967 dollars of $11,000 a year compared to $6,880 today. But he said:

> "But some things will still be the same: Expenditures will still rise to meet available income in the average family; the cry of the harassed husband--'where does all the money go?'--will still be heard in the land."

Functional, durable, useful clothing has always concerned the home economist. Has she, or he, a role as a couturier? Is "high fashion" a part of home economics? Where did the miniskirt come from--and why?

And what does being well-dressed mean to the poor? It is said that one reason we do not see the extent of poverty is that acceptable clothing shrouds the hungry tummy, the dilapidated home, and the illiterate teenager. The poor manage to dress to fade into the accepted social milieu.

I recently visited a village school in Southern India. People and children were proud of their school--simple benches under a roof. They

told me that 80 percent of their boys were in school but only 60 percent of their girls. Little sister had to have a dress that was clean and whole, or otherwise her mother--and perhaps she, too--would be ashamed to have her go.

There are few homelier tasks than washing clothes. Every detergent manufacturer proclaims the virtue of his wares. They have caused our streams to foam. But Ethel McNeil, applying her skill and research competence in microbiology produced sound, solid research results of real importance to families and individuals--and to laundries, I hope. Her results have been widely publicized, as they should be, but sometimes with inferences unsupported by her findings.

Four Problem Areas

Goal VII of the Long-Range Study is consumer health, nutrition and well-being. Four of the eight problem areas within this goal are directly relevant to home economics (Table 1).

Table 1.--Current and recommended research effort of SAES and USDA in selected areas

Problem area	Scientist man-years		
	1965	1972	1977
Food choices, habits, and consumption.....	27	30	35
Home and commercial preparation of food.....	40	40	40
Selection and care of clothing and household textiles.....	23	30	40
Human nutritional well-being.....	98	210	250

Most of the recommended increase is in the area of human nutrition and well-being. Each of the areas is of obvious importance not only to people as consumers but to agriculture too. Food habits may reflect food availability or perhaps affect price and finally supply. Lamb is a case in point--so are broilers. For years we ate fewer and fewer potatoes per capita. Convenience flakes, chips, and other processed potato products have apparently turned the tide.

Or, perhaps the group that developed the Long-Range Study concluded that we now know what people want and should place research emphasis on modifying food products to meet those desires. The fourth goal of the Long-Range Study, "Product Development and Quality," contains one problem area of very high priority. It is "Production of Animals and Animal Products with Improved Consumer Acceptability." This area had 96 scientific man-years in 1965, and shows a recommendation of 200 scientific man-years for 1972 and 250 for 1977. The 1977 target is identical with that for human nutritional well-being, which is also 250. This surely indicates the impact of the attention given to obesity and animal fat as factors in human health.

Interestingly, Secretary Freeman's speech on "Knowledge for Living" states:

> "We have already discovered, for instance, that the amount and kinds of fat in the diet may not be as important to the cholesterol level as the types of carbohydrate combined with the fat we eat."

Much of the so-called human nutrition research is done in test tubes, or with bacteria, cell cultures, or laboratory animals, especially the rat. It is right that we should gain all the information we can from these sources. But they are not human nutrition. I refuse to associate myself with "brother rat." And here back to the family. Mothers do feed their children. Hopefully, home economists have a special role in making sure that the meager information mothers use in feeding their children will lead to good diets for them. Increasingly, it is apparent that infant and childhood nutrition, or malnutrition, can limit the growing child's future physical and mental development--not just in "Darkest Africa" but in affluent USA, too.

There is increasing evidence of the interrelationship of genetics, nutrition and performance. I am assuming in this statement that the metabolism of nutrients is a part of nutrition. Rats clearly differ genetically in their response to saturated fat in their diet as measured by blood cholesterol. People probably do, too.

We have known for several years that chickens differ genetically, as well as hormonally, in their tendency to fight or run when provoked. Science for March 31, 1967, includes an article by Seeg Miller, et. al, of the National Institute of Arthritis and Metabolic Diseases, on an "enzyme defect associated with a sex-linked human neurological disorder and excessive purine syntheses." The paper is based on the study of a familial, sex-linked neurological disease. Among the very severe effects of the disease is compulsive aggressive behavior. There is loss of an enzyme that participates in purine metabolism. Uric acid production is 3 to 6 times normal. You are all familiar with the increasing weight of evidence that malnutrition in early childhood may limit mental development.

Not By Bread Alone

So let us talk a little of children. To me, Operation Headstart was one of the most inspiring concepts ever developed. If man is

responsible, even in the most selfish way, surely research and action which will enable children to develop mentally to their full genetic capacity should be high on any priority list. If the genetically less fortunate ones are to earn their way, we must find out how to provide suitable nutrition for their development. Obviously, suitable nutrition for the genetically gifted is at least equally important.

But the biblical dictum that man does not live by bread alone is still valid. Performance and behavior may be limited by genetic capacity and nutrition, nature and nurture, but within these limitations they are determined environmentally.

I mentioned the item from Science on compulsive aggressive behavior. Behavioral science is developing rapidly. How much adult behavior is conditioned by environment in infancy and early childhood remains to be determined. But imprinting, for example, is a fact. Its importance is yet to be assessed. Back to last week's Science again, to an article entitled "Prenatal Auditory Imprinting in Chickens" by Grier, et al, from Northern Illinois University. A batch of eggs was exposed to a patterned sound continuously from 12 to 18 days incubation. In a post-hatching test, chicks from these treated eggs and their untreated controls all tended to creep toward a stationary sound source but chicks from the treated eggs preferred the sound to which they were exposed during incubation. Were the many pregnant mothers who have listened to Brahms so that their yet unborn children might love good music wrong after all? Probably they were; but are you sure?

And how does one go about studying human behavior, or human nutrition for that matter? There are developing rules of the game. The doctrine of informed consent is one. Even this easy one is subject to continuing debate on several grounds. Does the informed individual respond in the same manner as the uninformed? What degree of information is necessary for informed consent? Can a child give informed consent? Can his parents or guardian consent for him?

These are difficult questions not readily answerable. Yet all who do research with people--nutritional, behavioral, genetic--must answer these questions implicitly or explicitly or accept the guidelines provided by others. Among such guidelines are those provided by research institutions for their employees. Does your institution have such guidelines? Do you know what they are?

You, as home economists, must not avoid research with people. Perhaps 90 percent of all research relevant to people can be done with microbes, experimental animals, cell cultures, or with defined chemicals. But not all; rats are not people.

The World Health Organization has considered the problem; granting agencies have considered it. There is broad public interest and public concern. All recognize the necessity for and value of research with people after the necessary preliminary work has been done to establish probable risk and determination made that benefits from research with people will grossly exceed risks. But even here remains the issue of invasion of privacy. Pragmatically, does the response of the informed, consenting, even eager respondent to questions of personal behavior reflect the behavior of the reticent, or even his own?

Work With Human Subjects

But let's be specific at last. The field of human nutrition requires work with human subjects. Surely, in addition to informed consent, no matter how defined, there should be:

1. A nutritional assessment of each individual prior to, at the close of, and generally at a post experimental date.
2. Information on prior nutritional history as to amounts and kinds of food eaten.
3. An examination of the health of each subject by a physician.

But such questions as food habits of rural and urban communities, of ethnic groups, of acceptability of foods in new form and of new foods may not require these safeguards?

Goal VIII, "Raise the level of living of rural people," is also largely relevant to home economics (Table 2).

Table 2.--Current and recommended research effort of SAES and USDA in selected areas

Problem area	Scientist man-years		
	1965	1972	1977
Housing needs of rural families.....	24	50	60
Family decision making and financial management.....	26	55	70
Individual and family adjustment to change.....	20	50	60

Will we live in suburbia? Bedroom-half-acre estates or high rises? In comfortable cages? Like well-fed rats? Or will we seek to enjoy--and appreciate--new cities--with convenience, of course, but with opportunity and occasion for communication--in surroundings enhanced by natural beauty, flowers that bloom in the spring, and in the patio and window box, too. And with carpools optional, reserved for those who enjoy an hour's ride to and from work. I guess there are some who do.

Houses--or apartments--that are clean, convenient, comfortable should be available for every rural, as well as every urban family. Rural houses should be attractive inside and out. Flowers, trees, grass are natural adornments of rural living. They ought not to be displaced by weeds, trash and bare dirt. Clean water and sanitary waste disposal are necessities, not luxuries. What has home economics to do with these things?

You are neither architects nor engineers; nor are you carpenters, brick layers, or plumbers. What, then, has home economics to do with housing? Have you determined the optimal space per person for comfort, convenience, gracious living? Work space you have studied--time, motion, energy for kitchen work. Furniture, equipment, floor coverings, decorations--do you design and devise or describe and test?

Generalists

The history and the continuing need for home economists implies that home economics is either a very general discipline or a bundle of disciplines. I suppose it is both and must be. In this time of so many specialties, each with its jargon and concepts, the generalist fills a very necessary and difficult role. While interdisciplinary teams are often required to conduct effective research on important problems, others may yield to the generalist who studies aggregative problems without breaking them into small bits suited to the tools and processes of the separate disciplines.

Conclusions

The broad area of home economics brings together now, as it always has, the many problems and many disciplines relevant to better living for the family, the individual and the community. Surely, at this time, when the great need is for systems analysis of interdisciplinary problems, the role of the home economist--whether as generalist or specialist--can and should be an important, contributing, and rewarding one.

PROGRESS IN IMPLEMENTING THE LONG RANGE STUDY AT THE NATIONAL LEVEL

George M. Browning

Regional Director
North Central Agricultural Experiment Stations

Your workshop program committee assigned me the task of bringing you up to date on progress being made in implementation of ten recommendations of the Long-Range Study for Agriculture Research.

Before doing this, ESCOP, who joined with CSRS in sponsoring this meeting, asked that I extend to you their best wishes for a successful and meaningful workshop. This conference can, should and hopefully will identify and consider in detail the important research problem areas in which home economics research can and should contribute. Home economics has the leadership role in several of the research problem areas and a strong supporting role in many of the other problem areas. Someone said that this is the first opportunity that all administrators of home economics research programs have had to meet together with the specific purpose of reviewing and evaluating home economics research as the basis of planning and developing more effective programs for the future. If true, it is all the more reason for making this meeting a home economics landmark. My evaluation of many meetings that I attend is that too much time was spent in "talking to ourselves" and not nearly enough time boring into the key issues and in the development of specific proposals for action. The program committee has structured this meeting to allow maximum opportunity for full participation by everyone. What is accomplished here depends on how well each of us takes advantage of the opportunity of making this meeting a meaningful and rewarding experience. It is possible to lay the foundation for a stronger, more effective home economics program at this meeting. But unless you go home and build on the foundation, the time here will have been largely wasted. Speaking on behalf of ESCOP and indirectly for the station directors, we stand ready to help wherever we can.

First, let's refresh our memories by listing the ten recommendations of the Long-Range Research Study.

1. Appointment of an Assistant Secretary of Agriculture for Science and Education
2. A better mechanism for joint USDA-SAES research planning

3. Continuing research inventory
4. Broaden USDA grant and contract programs
5. Concentration and specialization of research programs by locations
6. Research-Extension collaboration
7. Joint planning of major USDA laboratories
8. Joint SAES-USDA advisory committees
9. In depth study of SAES-USDA program balance
10. Research support for ACTION programs

I will make brief reference to some of the recommendations. The ones that are particularly relevant to the discussions at this conference will be covered in some detail.

Assistant Secretary of Agriculture for Science and Education

In 1962, the agricultural panel of the President's Science Advisory Committee studied USDA research activities and recommended, among other things, that an Assistant Secretary position be set up for all scientific matters in the Department. In 1963, the Secretary of Agriculture supported legislation before the Congress to establish an additional secretary position to be used for this purpose. Congress failed to act on the proposal. The State agriculture experiment station directors are on record favoring the establishment of an Assistant Secretary of Agriculture for Science and Education.

In 1964, the Department established a position of Director of Science and Education with duties similar to those visualized by the Advisory Committee for an Assistant Secretary. Dr. Nyle Brady served in this position until November, 1965, when he returned to Cornell University as Director of the Agriculture Experiment Station. Since then Dr. George Mehren has served in the dual capacity as Assistant Secretary of Agriculture and Director of Science and Education.

The continued and growing importance of agriculture, forestry, and home economics research and education and the need to assure adequate leadership in coordination of research with that performed by other government agencies, the states, colleges and universities, industry and others reaffirm the desirability of an Assistant Secretary of Agriculture for Science and Education.

Better Mechanism for Joint Planning

Agriculture research is conducted and financed by Federal, State and private groups. The need for better balance and coordination among the various research efforts is evident. The best means by which the varied interests can be brought together and how the many different needs can be met is less clear. A number of arrangements have been tried in the past, but none have been completely satisfactory.

In July, 1966, the Agricultural Research Planning Committee designated 33 research subject matter areas for detailed study and evaluation. Studies of twelve subject matter areas are to be activated in 1967. Joint USDA-SAES-industry ad hoc interdisciplinary committees of scientists, with appropriate representation of agricultural extension specialists and Federal action agencies, have or will soon be appointed to carry out this assignment. The ad hoc committees are appointed jointly by the Chairman of ESCOP and the Department's Director of Science and Education. The charge to the committees is to enumerate questions that need to be answered, evaluate the quality and quantity of present research effort, determine the adequacy of present facilities, and recommend changes in research programs to meet present and future needs more adequately.

The recommendations of the ad hoc committees will be reviewed by ARPC and forwarded to the Secretary of Agriculture for appropriate consideration in planning and budgeting.

Currently, the forestry, swine and cotton task forces are at work and final reports are expected in the near future. The other nine task forces are in the process of being organized and reports are expected to be available in July. Information from these reports will be used as back-up material in support of the 1969 and future budgets. Plans are to activate additional task forces in 1968 and for complete coverage of all subject matter areas not later than 1969.

In addition to the subject matter task forces, steps have been taken to improve the joint USDA-SAES planning and development of budget requests to support agriculture research. In fact, I will be leaving this meeting one day earlier than I had expected to attend a meeting of the USDA-SAES representatives where for the first time budget requests by all groups will be reviewed and evaluated in terms of overall research needs and to conform with the projections of the Long-Range Study. Later, but as an integral part of the budget requests, similar review and evaluation will be made of the requests for facilities to house the program being requested.

Continuing Research Inventory

I'll be brief here, because Mr. James Turnbull, your next speaker, will tell you about plans for the Current Research Information System (CRIS). Past and current information on research including both expenditures and progress reports of research are essential and integral parts of effective planning and development of future research programs. The 1966 inventory will be coming

from the computers in the very near future. Summaries of the 1966 inventory will be somewhat different than the 1965 inventory. Experience with the 1965 inventory suggested improvements that are being made to make the information more meaningful in program planning. There will be need and opportunity for improvement of the inventory in the future. Each of you can help by suggesting changes which you think will make the inventory more useful.

Broaden USDA Grant and Contract Programs

There is general agreement that grants and contracts have been and can continue to be an effective source of financial support of agriculture research programs. Most of the sizable increase in grant and contract funds to SAES have been from HEW, NSF, and other agencies of Federal government. Grants and contracts now represent a small fraction of the USDA research program. In recent years, there has been growing concern by the grantors, grantees, and Congress as to the distribution of funds between the short-term project grant system and the longer-term institutional grant arrangement. Opinions vary widely as to the desirable distribution between grant and contract funds and regular funds. This requires further review and evaluation to determine the balance for most effective use under different conditions. Administration of grants and contracts is a complex problem that can't be solved with a simple formula. Some types of research can make more effective use of grant and contract funds than others. The SAES Directors are on record favoring the use of grant funds when provided in addition to and not in lieu of regular funds. In spite of the fact that there are real problems in effective administration of grant and contract programs, they can be used to strengthen future research programs. The need is to develop ways to use grants and contracts more effectively rather than to be used by them as sometimes has been the case in the past.

Concentration of Specialization by Location

Agriculture is a series of complex biological, physical, chemical, economic and social systems. No single research approach or organizational arrangement can provide the information necessary to answer the many questions that grow out of such diverse and complex systems. Some problems can be investigated best within highly organized, specially designed facilities. Others can be attacked best by the coordinated efforts of scientists working in independent laboratories. Still others can be studied most effectively by the wholly independent investigator outside the framework of an organized regional or national effort. Today's USDA-SAES cooperative research system is a combination of all these arrangements and it likely will continue this way. But there is growing recognition that many of today's complex problems can be solved best by concentrated interdisciplinary approach. Each of you can cite examples where a team effort has resulted in an earlier and more effective solution of a problem with mutual benefits to all concerned. We have had almost twenty years of experience in improving the effectiveness of regional research programs. Considerable progress has already been made in concentration of research effort. We can point with pride to past accomplishments. But further improvement in the use of limited resources to meet future needs will require the cooperative and coordinated effort of every state and every USDA agency. The opportunities ahead are limited only by our vision of willingness to plan and work together.

Research-Extension Collaboration

This sounds like "old hat" and it is, because as all of you know research and extension traditionally have had close working relations. There are several reasons why there is a growing recognition of the need to evaluate present research and extension relationships to better meet the needs of a rapidly changing agriculture industry. The questions being asked today by all segments of the industry are far different than even a decade ago. Significant changes have already been made to help meet these needs, but the challenge and opportunity for further improvement to better serve the agriculture industry is almost unlimited. We need to review and evaluate the present role and responsibility of research and extension and to project into the future the organizational arrangements and responsibilities required to best meet the needs. The increasing role of industry in both research and education have important implications to future research and extension programs. The dramatic adjustments to technological changes in both the urban and rural sector, and even greater changes expected in the future, serve to emphasize the need for a critical review of research-extension relationships.

The general role of research and extension is well understood. But there is no simple formula that can be applied generally to specify the role and responsbility of each group for complex problems that face agriculture. For example, it is increasingly apparent that effective programs in problem areas such as "causes and remedies of poverty among rural people," "improvement of economic potential of rural youth and adults," "individual and

family adjustment to change," "structural changes in agriculture" and others require not only the closest working relations between research and extension but also with other organizations, groups and individuals in their local communities.

There are an increasing number of "success stories" where this combination of resources is being effectively used in the solution of both rural and urban problems to the mutual benefit of all concerned. We need to build on these experiences and strengthen programs in these areas which today are among the most urgent and which have been sadly neglected in the past. Probably the most important "bottleneck" to progress in these important areas is lack of an adequate supply of well-trained manpower. Programs that will attract and provide opportunity for the training of young minds and retraining of those now working in these areas is a real challenge. In the past this has not been done at a realistic level of support. Progress will be slower than it should be until a stepped-up research program furnishes the answers to many questions essential for effective action programs.

Joint Planning of Major USDA Laboratories

Over the years the USDA and SAES have built laboratories and other facilities to house research programs. In the past, with few exceptions, lack of facilities has not been a major restraint in program development. Today, and looking to the future, increasing demands for limited resources indicate the need for closer and more effective joint planning to assure that program and facility needs are in balance. Research programs projected for the future and the current status of available facilities are the realistic bases for projecting future facility needs. There is a three to five year lag between authorization and availability of facilities. Development of research in some problem areas is now restrained because of lack of facilities. This is likely to be more of a problem in the future which emphasizes the need for early consideration of a facility need program for the next ten years, coordinated with the research program projections of the Long-Range Study.

The Joint USDA-SAES ad hoc task forces have been asked to make suggestions on future facility needs. Representatives from USDA and SAES are now considering facilities to be requested in the 1969 budget. Plans are also being made to review the informal and tentative facility list assembled by USDA and SAES as a basis for arriving at a ten-year facility program. Effective use of funds for facilities under PL 88-74 requires that the station's facility requests become an integral and coordinated part of the university's long-range building program.

Joint SAES-USDA Advisory Committees

The 1946 Marketing Act provides for a National Agricultural Research Advisory Committee. In addition to NARAC, there are thirteen commodity advisory committees that meet annually and advise the Department on current programs and suggest areas of work for additional research effort. Since these are USDA Advisory Committees, attention has been directed primarily to USDA programs. The complete SAES research program has not been available as background, along with the USDA program, for use in evaluating the overall current program and for projecting future needs. There has been preliminary consideration of how best to implement this recommendation, but additional study and consideration of alternatives will serve as a basis for arriving at suggestions for action on this recommendation.

Study of SAES-USDA Program Balance

This recommendation relates to the USDA-SAES distribution of the current research program. The present distribution between State and Federal varies widely. Many different conditions and circumstances were involved and influenced the present distribution. To a degree, it grew like "Topsy" in response to requests from many different individuals and groups. Looking to the future, the present distribution may or may not be the most efficient approach to answering questions where application varies from local to regional, to national and even international. The 1968 budget request and to a considerable extent the 1969 request will be based on the present distribution. There have been preliminary discussions of possible adjustments that may be made in the 1969 budget request. Further consideration will be given to criteria for evaluating distribution of effort with the expectation that adjustments can and will be made in the future in the interest of more effective use of total resources in meeting future needs.

Research Support for ACTION Programs

Representatives who have reviewed the Long-Range Study commented frequently that expanded research effort was needed to provide information in support of their programs. Follow-up discussion with representatives of ACTION agencies indicated a need for better communication and understanding of researchable questions to meet the needs and the limitations and possibilities of providing information useful in ACTION, regulatory and controlled programs. To date, no formal action or specific steps have been taken to

implement this recommendation. It is a matter that deserves and will receive additional attention in the future.

In summary, in spite of the difficult problems involved, I am pleased with the progress to date and the almost unlimited opportunities for even closer, more effective joint effort in the future. The Long-Range Study provides background information that we have never had before. The projections of the Long-Range Study are useful guidelines that must be supplemented with more specific and detailed information. The work of the task forces will provide additional detail essential for effective budget planning and development. Each of you at this workshop has the opportunity to make an important contribution to the planning and development of a stronger home economics research program in the future. In fact, unless you do it, it is not likely to be done. The same also applies to other areas of research. Individually and collectively, we need to develop these plans together. Unless we develop programs directed to the solution of the most urgent problems of tomorrow, set forth the costs and benefits to be derived, and present the total overall needs in a readily understandable manner, we are not likely to be successful in obtaining the support necessary to do the job.

DEVELOPMENTS IN INFORMATION RETRIEVAL

James Turnbull

Current Research Information System
U.S. Department of Agriculture

It is indeed a pleasure for me to be here with you at this National Seminar and Workshop for Home Economics Research. I know of few other fields of research which encompass such a broad variety of tasks, requiring a knowledge of and cooperation with so many varied disciplines, as does home economics.

Those of you who are concerned with foods and nutrition find that the chemists, the biochemists, and the medical profession are also conducting research in your area of interest. In the clothing and textile area engineers and plant scientists work with you on measuring and improving fiber strength and other characteristics which are important in durability, attractiveness, sound absorption and related properties. When you conduct research in the area of family life you find your interests merged with those of sociologists and psychologists. As you pursue the goals of family economics you find general and agricultural economists making studies which are of interest to you, particularly in the consumer area. In housing you cooperate with engineers and architects and perhaps with economists and MD's in the design of rooms and homes which meet particular needs.

It is obvious that with such a diversity of interests and cooperation you have a correspondingly difficult problem in keeping in touch with all the research which others are conducting in areas of interest to you.

Within one's own special discipline, if it isn't too extensive, it may be entirely feasible to know most or even all of the people in USDA and in the State stations who are working on a specific range of problems. The real difficulty lies in the peripheral work--the work being done by someone in a different discipline but closely related to your own particular interests.

Much of the this work in the fields in which you are vitally interested will be in the State agricultural experiment stations or in the U.S. Department of Agriculture. But some of it may very well be work of which you are not aware. Mary Beth Minden will confirm, I'm sure, that there is a great deal of work going on at the State stations in which, as a home economist, she has a direct interest but which is being conducted in other departments. A significant portion of her time is required to identify this related work. Each of you, as scientists or scientist administrators also spends a considerable portion of your time in this activity. It has been estimated that scientists, on the average, devote approximately 25 percent of their time simply to keeping up with work in their own fields. Compounding the problem of keeping fully aware of new work is the delay which is frequently encountered in publishing research results. Some professional journals require 6 months to 2 years to publish papers submitted to them. Add to this the 2 to 5 years normally required from initiation of a research project to preparing the report, and the magnitude of the gap in our flow of information is quite evident. At present it must be filled largely by personal contact and correspondence. As research programs have proliferated and the tempo of our needs has increased there has been mounting concern about ways of improving the transfer of information about on-going research.

Information Retrieval

An approach to solving the problem of keeping everyone informed as to what research is being done, where it is being done, and by whom was made a number of years ago when each experiment station director and each major field station of the USDA was furnished with a complete set of card abstracts covering the research underway throughout the country. These sets include an abstract of every research project being conducted either by the State stations or by USDA.

This system has had only limited success, however. The sets are cumbersome, difficult to use and maintain, not always fully informative, and not as readily available as they ought to be. They contain no information on funds or man power allocations. This lack of management type information is a particularly serious shortcoming and has been a difficult problem for you in Home Economics.

When Helen Conoyer made her survey of home economics research expenditures in 1962 it was the most complete effort that had been nade in this area to that time.

The Long-Range Study has since given us a more specific look at the research in various categories of home economics. The Long-Range Study and its related inventory of research was designed, however, as a one-time approach. Day to day management requires a continual updating of the inventory. In addition we are frequently faced with the problem of identifying costs and man power allocated to research on subjects which are in fact subdivisions of the Long-Range Study categories, and which are not identified in the Long-Range Study.

I have discussed the problems in identifying and assembling scientific and management information in the home economics area not because they are unique to your particular field of interest but because they are indicative of the problems which face scientists and administrators in all research areas in the Department and in the State agricultural experiment stations.

Establishment of CRIS

Simultaneously we were faced with increasing demands from Congress, from industry, and from within Government for better and more complete information on our combined USDA-SAES research program. This led Dr. Nyle C. Brady, then Director of Science and Education, to establish a Project System Task Force in July 1964. The present effort to develop an effective Current Research Information System is really the culmination of the efforts of this task force. The Current Research Information System, widely known--and we hope affectionately--as CRIS, was officially established in April 1966. CRIS will be ar automated information storage and retrieval system and will be designed to do two things:

1. Improve communications among scientists with regard to research which is presently under way.
2. Provide more effective management information on the total research programs of the State stations and the USDA.

CRIS has been planned in three phases. Phase I, which is now complete, was a survey of needs and a preliminary systems design study. Phase II, the contract for which has just been awarded, is the implementation of the system. It is scheduled for completion in 12 months. It will include the development of forms, development of machine programs and software, collection and insertion of project data into the system and testing and debugging of the systems operation. Phase III, also scheduled for 12 months, originally called for contract operation of the system, including training of USDA personnel in operating procedures looking toward direct operation by USDA. We are presently reviewing the need for Phase III and USDA staff may take over full operation at the end of Phase II.

The system as it is currently being implemented provides for three subsystems.

1. A management information subsystem.
2. A scientific information subsystem.
3. An inquiries subsystem.

Management information and the scientific information will be stored on magnetic tape. The inquiries subsystem will involve an inverted file of project identifications on random access disk storage which will permit direct referral to the projects containing the desired information.

The management information subsystem will contain for each project the dollars allocated to that project from each source of funds. It will contain man power allocations by types of man power--scientists, professional support, and sub-professional support. It will also contain, of course, the title of the project, the name of the project leader, and the institution or USDA agency conducting the work and the identify of any cooperators.

The scientific information subsystem will contain a brief description of the project objectives, plan of work, progress, and a list of publications resulting from the research.

The inquiries subsystem will contain keywords which describe each project - as many as 10 or even 15 keywords per project. It will also contain classification data for each project which will permit identification by activity, by commodity or resource, or by field of science. You will recognize these classifications as those used in the Long-Range Study and provided by the stations on CSRS Form 141 and by the USDA agencies on Form T-2.

Lest you be alarmed that all of this information gathering will be an overwhelming

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chore, let me hasten to assure you that the information which is presently being provided by the State stations through the project outline and Form 20, the annual program submission, the annual financial report, and the annual progress report will provide nearly all the basic information needed for the system. Changes in timing or format and some consolidation of present reporting procedures will probably be required, but we don't expect material changes in present fiscal or scientific record keeping procedures at the State stations. The individual experiment station project will continue to be the principal reporting unit for the State stations; and will be the basic financial, management, and scientific information building block of the State portion of the system.

Similarly, in the USDA agencies, we expect that most existing line projects will convert readily into the work units which are the basis of the USDA portion of the system. The principal difference between the present line project and the new work unit is that the work unit will reflect work on a specific identifiable problem at a single location. Line projects, in many instances, have covered research at several locations.

Better Analysis of Information

CRIS is being designed to utilize as much as possible of existing report procedures and to adapt them to the latest developments in automatic data processing equipment, to provide better analysis and dissemination of information. We are working hard to simplify existing procedures and to prevent CRIS from merely adding one more layer to an already onerous reporting system.

Our present plans are to design, implement, and operate the CRIS program with funds available to USDA. The Cooperative State Research Service, together with other research agencies of the Department, will contribute to these costs. We do not, at this time, anticipate charges for routine use of the system. Charges may be necessary, however, for special, complex, and expensive searches and analysis.

Let us look, for a minute or two, at just how CRIS will operate. As has already been indicated, CRIS will serve two groups--the research scientists and the research administrators.

A scientist wishing to know about related work in his own field of interest will be able to query CRIS and receive back a listing of the specific projects which fit his inquiry. The listing will include who is doing the work, where it is being done, the nature of the work, statements of progress, and citations to publications resulting from the research. Inquiries will need to be carefully prepared to identify the specific area of interest.

Obviously, this brief summary won't provide all the scientific information a researcher will want. It will, however, give him a lead as to the particular individuals with whom he should correspond if he finds some particularly intriguing research about which he desires more information.

From the management standpoint, we in Washington on many occasions have needed information on research programs and simply have not had it readily available or not available in the proper form. Mostly, these requests have been for reasonably accurate estimates of dollars or man-years being spent on particular lines of research at particular locations or on specific commodities. Many times we have telephoned or written several or all stations to obtain the needed information.

There have been wide-ranging surveys periodically to provide information for planning purposes. The Whitten Report, the livestock study and the Long-Range Study are recent examples which have involved all the stations.

The ability of CRIS to aggregate information in a wide variety of ways should provide the answers needed to meet recurrent report requirements and many special report requirements. We believe that this capacity will be most helpful in reducing the burden of requests for special information from the State stations.

Compatible System

An agricultural research information system cannot operate in a vacuum or in isolation. It must be closely associated with other research information systems and with the published literature. It is important, therefore, that we look at CRIS in the context of the total information storage and retrieval problem which faces the entire research and development community. CRIS is the USDA-SAES approach to meeting management and scientific information needs in the agricultural research sector. We must be sure it is compatible with other efforts in Government to identify and aggregate total research programs.

The Federal Government alone, this year budgeted $16.5 billion for R & D. The lion's share of this will go, of course, to DOD, NASA, NSF, NIH and AEC but there are innumerable other Government agencies involved in the R & D picture. It is extremely difficult for anyone to obtain a reasonable overview of this tremendous program. The Bureau of the Budget doesn't have a satisfactory overview--neither does the Office of Science and Technology.

Obviously, there are large segments of the total R & D program which can readily be identified--such areas as space vehicle, improved radar protection, and specific medical

research. But there are literally tens of thousands of other research efforts in a score or more agencies which cannot readily be aggregated under present procedures. Water research, for example, is being conducted in at least 26 separate Federal agencies and there is work associated with water problems in as many as 150 Federal agencies. The National Referral Center for Science and Technology lists 434 organizations in the water field in its Directory of Information Services in the United States.

I'm not sure how many agencies conduct research or operations in areas relating to home economics, but it must be a considerable number.

With this wide diffusion of effort among different agencies there is at present no satisfactory way of obtaining a picture of the total research and development program or of effectively coordinating it.

A first step in developing a Government-wide information system has recently been taken by the Federal Council for Science and Technology. A task force of the Federal Council has recommended the establishment of a national information storage and retrieval system to cover all federally supported research. Exploratory conversations are now going on among the agencies of the Federal Government to determine the feasibility of such a system.

In the development of CRIS we have been very much aware of this possible national system and are doing all possible to make certain that we will be compatible with such a system.

In the development of CRIS we have also worked closely with the Science Information Exchange. This is the nearest thing we have at present in the Federal Government to a Government-wide research information exchange; presumably it will have a role in any national system which may develop. SIE has some 100,000 projects in its files. These come from most Government research agencies, from about 125 research foundations, and from many State agencies. All of the USDA and State Agricultural Experiment Station research on which we have received Form 20's is included in the SIE system. We will continue to work closely with SIE in exchanging information. We will provide SIE with information on the research supported by USDA and the State stations and will receive from them information on related work being supported by other agencies and foundations. In general, SIE does not obtain as much information on each project as will CRIS, so the information available from SIE on related research is likely to be less complete than that available from CRIS.

The Committee on Scientific and Technical Information (COSATI) also is concerned with improving the flow of information in the scientific and technical area and has task forces working on:

1. Developing compatible reporting systems.
2. Techniques and systems for information storage and retrieval.
3. Management of information activities.
4. Formats for presenting information.
5. International information exchange.
6. Other aspects of improved communication.

At the Executive Department level the Department of Defense and the National Aeronautics and Space Agency have agreed on similar report forms containing 26 common data elements for reporting on-going research. The common data elements are entered into computerized information systems and can be freely transferred between these two agencies as they keep each other informed about their research activities.

The Defense Documentation Center and Clearinghouse for Federal Scientific and Technical Information of the Department of Commerce, both of which have been organized within the past few years, provide copies of published material in the scientific area.

A more specialized information system in the medical area is MEDLARS - the Medical Literature Analysis and Retrieval System which is a part of the National Institute of Health.

And finally, our National Agricultural Library has awarded a contract for the development of an improved and automated system for retrieval of published information. CRIS will be fully compatible with the National Agricultural Library. We plan, for example, to use the vocabulary which is being developed by them and are working with them to include terms we will need. In addition we plan to use uniform search techniques and we fully anticipate sharing the same data processing equipment. We envisage a request coming in from a scientist which will be answered by a printout of relevant research projects from CRIS and relevant publications provided by a joint search routine of CRIS and the National Agricultural Library.

This many-pronged effort to improve information flow and retrieval in the research and development area is an indication of the seriousness with which the problem is viewed. In CRIS we are trying to profit from the experiences of the existing programs and are designing our system to meet as many of the merging needs as we can foresee.

We are hopeful, too, that as the State stations develop information retrieval systems for their own internal use we can arrange for direct tape transfer of data between CRIS and the State systems so that we can effectively complement each other.

We are sure that when CRIS is operational you will find many uses for the information we will be able to provide. The improved availability of information to the scientist and to the administrator--at all levels--will more than repay the investment in time and effort you will be asked to make in providing the basic project information for the CRIS program.

ROLE OF THE COOPERATIVE STATE RESEARCH SERVICE

T. S. Ronningen

Cooperative State Research Service
U.S. Department of Agriculture

I would like to call to your attention how the Long-Range Study group looked at the Cooperative State Research Service (CSRS). First of all, I note with considerable satisfaction that CSRS is mentioned both under the State agricultural experiment stations and under the U.S. Department of Agriculture. I would like to read a few paragraphs from the report which reflects our role.

"Throughout the years the CSRS staff has assisted the station director in developing a strong research program to serve the needs of the people. CSRS provides assistance to the station directors in coordinating research among State stations and between the State stations and the U.S. Department of Agriculture. This assistance includes participation in long-range program development of budget requests to support these programs."

There is a paragraph on coordination, also to eliminate nonessential duplication, help identify important problems and marshall resources which can be directed towards the solution of specific problems and a coordinated program. Again, I remind you that there is wording in the Hatch Act for which we have responsibility as representatives of the Secretary for coordination among the States and between the State agricultural experiment stations and the U.S. Department of Agriculture. The paragraph reads as follows:

"The research programs of State stations reflect the knowledge, judgment and advice of individual scientists, scientists, administrators, commodity groups, farm organizations, individuals and many formal and informal groups serving in advisory capacities."

The report also mentions that regional research projects are planned and coordinated through joint efforts of interested states and USDA. I remind you that a regional research section is a part of the Hatch Act.

The study refers to the cooperative forest research under the McIntire-Stennis Act, including programs of nine State-supported forestry schools at non-land-grant institutions. Their cooperative work is conducted, coordinated and funded in a manner similar to the programs at State agricultural experiment stations.

I refer you to another paragraph on page 196 of the Long-Range Study. It reads as follows: "Offices and laboratories judged to be inadequate and that must be replaced include 1.5 million square feet of space. Additional space will be required for nearly 8,000 new full-time scientists needed for the recommended program expansion. More than 9 million square feet of space will be needed for such program increases. The total new office and laboratory space needed for the next decade adds up to nearly 11 million square feet or an approximate 100 percent increse in the good to excellent space reported in the 1965 inventory."

I would like to be able to tell you that the prospects for funding such space are very good under P.L. 88-74, the Physical Facilities Act. The 1968 budget askings call for $2 million. You may be aware that the NASULGC has endorsed the proposal of ESCOP to request $12 million each year for physical facilities support under this Act.

We are trying to relate the projections of the Long-Range Study to justification of funds under P.L. 88-74. We insist in the proposal submitted to us that the research to be done in the new facility or refurbished laboratory be clearly defined. We feel this justifiable because this is the way that we tie the needs for facilities to the need for research programs. We can assure you that we will continue to use this Act as well as the Hatch Act and the McIntire-Stennis Act to try to carry out the intents of the Long-Range Study and the various ways in which the directors' groups and representatives interpret projections and needs.

We are cooperating with directors in working up data requested from the State agricultural experiment stations by Director T. W. Dowe, Chairman of the Legislative Subcommittee of ESCOP. Each station has been asked how they would propose to assign increased funds to research areas consistent with the framework and guidelines of the Long-Range Study.

You recognize that this first precommitment probably will not be in line with the blueprint of the national plan. So, these estimates will have to go through several approximations. We intend to be as cooperative as our resources will permit us to, to help the directors resolve the differences.

Also, as Director Browning pointed out, we are working with the directors and with the Department in developing a common basis for a 1969 Fiscal Year budget proposal. This, too, must be consistent with the long-range projections. We intend to use the Hatch Act and the McIntire-Stennis Acts, which are institutional grant acts, as the primary basis for securing funds to implement the long-range projections. As George Browning pointed out so well, we need to work on this together. We hope you will include us on whatever you think is pertinent in achieving the goals in the Long-Range Study.

PROGRAM DEVELOPMENT AT THE STATION LEVEL

H. R. Fortmann

The Pennsylvania State University

This is my first visit to the campus of this distinguished University. It is indeed a pleasant setting with most commodious accommodations. However, in view of the hazardous nature of my topic I may be well advised to adopt the motto and modus operandi of the Crimson Tide: "Be quick; be mobile; hit 'em first; hit 'em hard; keep them off balance: keep them guessing; and do it all with a smile and a southern drawl." Despite the obvious success of those tactics I'm going to proceed with due deliberation and all possible caution.

When Mrs. Hard first sent a copy of the proposed program to me...back in February... I immediately recognized that George Browning had the choice topic on this morning's program. His was a safe topic...strictly a factual accounting of what has been done. Of course, as I knew he would, George has done a superb job.

But with my topic, I'm a man in double or maybe even triple jeopardy. If I don't make specific proposals and suggest the mechanism to implement them, I will rightly be accused of defaulting my assignment. On the other hand there is the danger of suggesting commitments which I may later regret; for which some of my colleagues will castigate me; and which our colleagues in home economics and human development will expect us to honor and fulfill.

A program of research is the result, the concrete evidence, of a series of sequential as well as concomitant activities and decisions. For discussion purposes there are 4 steps in the development of a research program:

1. Recognition of problems.
2. Deciding that these problems fall within our purview to attempt to solve.
3. Proposing the research to solve the problems.
4. Providing the resources to get the research done.

Problems are the obstacles between us and the "good life", or stated more eloquently, they are the deterrents to achieving our goals. They may be as simple as starvation... as exotic as the search for an orchid that will beautify the roadbanks of rural Nebraska, or as elegant as developing a mathematical proof.

The decision that a problem "belongs to us" frequently rests on precedent. "We have always done this kind of research", "Don't tread on my sacred territory." While I'll not bother to defend this stand, it does have merits as well as obvious shortcomings. Whatever the basis, the decision must be made that the problem is part of our research province before we proceed.

Development of research proposals to resolve problems is inextricably intertwined with resources. There are five kinds of resources essential to research performance:

1. The imagination and ingenuity of dedicated scientists.
2. The methodology of research.
3. A place to do research and the things to do it with. This includes buildings, laboratories, libraries, computers, equipment, supplies, and materials.
4. Support personnel: Technical, clerical, and labor to do the "heavy" work.
5. An administrative organization to insure that the details of obtaining the other resources do not unduly impede the actual process of solving problems.

Clearly research projects must be developed and executed by scientists... the first and most important resource of the five I have listed.

The document, "A National Program of Research For Agriculture," represents an interesting effort and (I think I may safely and with appropriate humility say by quoting others) it represents a significant contribution in program planning and development. This document has shortcomings, but I say without equivocation that it provides a remarkably useful point to start from as well as to work toward.

The document includes information, guidelines, and methodology on current and future needs, goals, current program (inventory) and a mechanism for updating it. and projections of

research effort needed to achieve our goals and meet our needs. If the states are to implement their share of the Long-Range Research Program, four actions are required.

1. They must affirm the contents of the Long-Range Report or they must propose and justify modifications.
2. They must assist in determining the portions of the Long-Range Program that are to be the responsibility of the State stations and of the Department. This is a most complex problem. It was one of the charges assigned to the Long-Range Study Task Force. Suggestions were made, but no agreement was reached. The division of responsibility that is devised must consider the ways and means to provide the resources to carry out the program. . . not only the funds to support programs, but those to provide the facilities to house the 38 percent increase in program to 1972 and the 75 percent increase recommended by 1977. Lest you feel complacent about the magnitude of the problem of providing the dollars, I remind you that the Long-Range Projection presumes there will be a 6 percent annual increase in costs to maintain the current level of program.

   The figures in Table 1 show no costs for capital expenditures for buildings and facilities, and they show nothing of the costs for achieving a 38 percent increase in program by 1972, as shown in Table 2.

   To achieve a 38 percent increase in program by 1972, we will need 208 percent as many dollars as we had in 1965 (Table 3).
3. The third step will be for the state stations to develop the details of the research program which will enable them to resolve their responsibilities.
4. Finally, the stations must decide what each will do. The summation of the programs of the 53 state stations is the National SAES program.

Table 1.--Cost of maintaining level of 1965 Program

Year	Percent	SAES	USDA
		Million Dollars	
1965.....	100.0	227	167
1966.....	106.0	241	177
1967.....	112.3	255	188
1968.....	119.1	270	199
1969.....	126.2	286	211
1970.....	133.8	304	223
1971.....	141.9	322	237
1972.....	150.4	341	251

Table 2.--Cost in 1972 of a program increased by 38 percent on the basis of 1965 dollars

Year	Scientific man-years		Proposed expenditures ($ million)	
	SAES	USDA	SAES	USDA
1965.....	6102	4083	227	167
1972.....	8421	5635	472	347
Increase..	2319	1552	245	180

Table 3.--Comparison of research in 1965 and 1972

Year	Scientific man-years	Dollars
	Percent	Percent
1965	100	100
1972	138	208

Development and support of research projects at individual stations is really the creation and execution of a research program. The details must be conceived and carried out by working scientists. Administrators can suggest needs and they influence programs by helping determine the kinds of scientists that are hired and very importantly by the level of support provided to research projects and areas.

I'd like to tell you how we are going to implement the Long-Range Program in three states; New Jersey, New York and Pennsylvania. This modest consortium may serve as a model of what must be done in each of the four regions and ultimately for the 50 states or 53 agricultural experiment stations combined. As most of you know, the southern, northcentral and western regions have regional directors who will exercise leadership in coordinating these efforts.

In the Northeast Region we are functioning as sub-regional units. The three states listed are under a full head of steam with what we have dubbed our NJYPARC Project. For the record, this project was inititiated over three years ago. It reflects a logical effort to integrate and coordinate the research efforts of continguous states. It has the obvious objective of maximizing the return from our research dollars. We have had a background of experience of meetings, planning sessions, etc., involving administrators from research and extension and key staff personnel.

The essence of our program, as we have expanded and developed it since the Long-Range

Report became available, involves just a few straightforward components.

1. The administrative staffs of the four experiment stations in our three states have met to assess procedures and the mechanics to involve our combined research staffs in the planning of our program and the subsequent execution.

   In this process we have made extensive use of the research inventory and the Long-Range Study. This includes detailed information for our individual states, for the three states combined, for the Northeast and nationally. We have this data in terms of dollars, scientist-man-years, and $/SMY. We have it by commodities, activities, and fields of science. We have it by problem areas under the nine research goals. When appropriate, we have commodity sub-totals under problem areas. And we now have it for the three fiscal years--1965, 1966 and 1967. Any information which serves a useful purpose has been or will be made available to staff. I need not emphasize the value of providing adequate information in a meaningful, comprehensible form on past and current programs.
2. The next step is formation of 9 NJYPARC task forces which will serve a function parallel to the 33 national task forces, and as a steering committee in what will be a continuing coordination process.

   There is neither need nor value in justifying the fact that we will be organized as 9 task forces. In fact we may add to or combine some. These nine task forces are: forage crops and other field crops, livestock, fruits, vegetables, ornamentals, human resource development, natural resources, environmental pollution, and food science and marketing. A tenth task force on general economic research was added later.

   The first task force, forage crops and other field crops, met last (Friday (March 31, 1967). Each state had 7 to 10 delegates representing breeding, management, pathology, entomology, mechanization, utilization, and economics.
3. The details of how a task force will function are important but need not be detailed here. The individuals, some of whom are department heads, will head subcommittees which will accomplish the monumental task of assembling the information and recommendations encompassing all commodities and the needs of all our constituents.

   The following charge will be isued to each task force:

   a. Define and describe the problems which confront our constituents and which fall within the purview and competence of the disciplines represented here to solve (or to research).
   b. Define the research needed to provide solutions to these problems. This should include a general indication of the resources that will be required.
   c. Assign priority to this research. For the record, may I state loudly and clearly that the most logical expression of priority is in terms of level of support at a specific point in time.
   d. Provide recommendations on where the research might best be done to meet the total needs of our three states. This should take into account present and future competence and facilities. It must recognize the overall limitation of resources. The recommendation may suggest one or more states. It may recommend concentration at one location by either a state station or the USDA or any of the possible combinations of effort.

Well that's about it.

We identify our job.
We decide how to do it.
We decide where to do it.
We decide who shall do it.
We provide the resources to do it.
And then we do it.

And when the inscrutable sphinx who stands by the side of the road poses her question to us, 'What is the meaning of this day?' we may be wrong but we will give her an answer.

THE HOME ECONOMICS RESPONSIBILITY

Virginia Trotter, University of Nebraska
Doretta Hoffman, Kansas State University

You will note that Doretta Hoffman's name is on the program to present this topic. I am speaking for Dr. Hoffman today because she could not be here. She sends her deepest regrets. She worked very hard with the Long-Range Study group. She was one of the six experiment station members on the joint Task Force, and, as Dr. Browning said, she really added a lot to the group and did a job that no one else could do. We owe her and the

This paper was read by Dr. Virginia Trotter, University of Nebraska.

other members of the total 12-man Department and State Committee a vote of thanks and gratitude for this monumental document that may be one of the most important guides to future agricultural research supported by federal funds.

We were pleased when ESCOP set up the group to work with the USDA that a home economist was included as one of the group. We in home economics have been a vital part of the study.

When evaluating fundamental research, the following statements are some that can be related directly to home economics research:

Vital public interest and a thorough, systematic program is essential.

American families' welfare is closely tied to agriculture.

The needs of rural people are especially important in a time of dramatic change.

Home economics research is a vital part of the overall research program in agriculture. Research to adequately fulfill the goals set forth in the study requires scientists who have a background in home economics. In some goals, home economics will have to provide the major effort; in others it will assist in reaching the goal set forth.

The goals that we believe are particularly related to home economics directly or indirectly are numbers IV through X:

IV. Product development and quality
V. Efficiency in the marketing system
VI. Expand export markets and assist developing countries
VII. Consumer health, nutrition and well-being
VIII. Raise level of living of rural people
IX. Improve community services and environment
X. Basic research

In some of these we have a much larger part to play than in others, and probably the greatest emphasis will be on number VII, VIII, and possibly IX. But we do have a part in these other areas as well.

To understand the role that home economics plays in implementing research plans, let's take a look at the classification system in Table 1.

To bring the way the system works a little bit closer home, we have selected three home economics research projects as examples of classification procedures. Each project is classified by activity, by commodity or resource, and by field of science. The first example used is entitled Pattern of Major Financial Decisions and Crises in the Family Life Cycle. The second example is Vitamin B_1. Content of Red Meats. The third example is A Teaching-Learning Design for Home Economics in Secondary Schools and Extension in Rural Nebraska. The classifications for the research projects are given in Table 2.

Let's consider who performed agricultural research in 1965. For example, in Goals VII and VIII the State experiment stations conducted more research than USDA or industry, and home economics had a large responsibility

Table 1.--Classification system

A. Activity	B. Commodity or resource	C. Field of Science
I. Conservation Development and Use of Resources	I. Natural Resources	I. Biological
	1. Soil	1. Biochemistry
	2. Water	2. Biology-App.
II. Protection from Losses Caused by	3. Watersheds	3. Biology-Mol.
	4. Air and climate	4. Entomology
5. Insects	5. Recreational	5. Genetics
6. Diseases	6. Forests	6. Immunology
7. Weeds	7. Range	7. Microbiology
	8. Wildlife	8. Nematology
III. Efficient Production		9. Nutrition
	II. Crops	10. Parasitology
IV. Product Development		11. Pathology
	III. Animals	12. Pharmacology
V. Efficient Marketing	29. Poultry	13. Physiology
	30. Beef	14. Virology
VI. Consumer Use	31. Dairy	
	32. Swine	II. Physical
VII. Economic and Social Development	33. Sheep	
		III. Social and Behavioral
	IV. Man Made	
	V. Human and Institutional	

Table 2.--Classification procedures

Each project was given 3 classifications

A--By Activity	29 categories
B--By Commodity or Resource	49 categories
C--By Field of Science	32 categories

Example 1--Pattern of major financial decision and crises in the family life cycle

A--24	Quality of family living, including management and use of time, money and other resources	100%
B--41	The family and its members	100%
C--26	Economics	60%
C--32	Sociology	40%

Example 2--Vitamin B_1 content of red meats

A--23	Nutritional value	100%
B--30	Beef	50%
B--32	Swine	35%
B--33	Sheep	15%
C--15	Chemistry, analytical	100%

Example 3--A teaching-learning design for Home Economics in secondary schools and extension in rural Nebraska

A--27	Improvement of social well-being, including social services and facilities and adjustment to social and economic changes	100%
B--43	Communities, areas and regions, including counties and states and their institutions and organizations	100%
C--27	Education and Communications	10%

for these research areas. Unfortunately, when research conducted by SAES, USDA, and industry is combined under these two goals, the part of the total research represented is far too small. Figure 1 illustrates this point.

To have a better understanding of how home economics fits into the Long-Range Study, I would like to illustrate. Dr. Browning has previously explained how the 1965 project inventory was made. My example deals with the resource area B-40--people as workers, consumers, and members of society. The portion of the scientist man-years in this category devoted to such activities as protection, nutrition and consumer use, and development of human resources is summarized in Table 3.

Another example, selected for its interest to home economists, indicates how research interests have been translated from activity and commodity/resource focus that they may be related to problem areas. (See Table 4.)

This exercise illustrates the kinds of program analyses undertaken in developing the 91 problem areas proposed for future research. The next step in understanding the study proposals is to relate the problem areas thus identified to the long-range study goals. And, at the same time, research interests including goals and problem areas can be analyzed as to activity, commodity, and resource focus. For example, in Table 5, note Goals VI, VII, and VIII and related problem areas.

Since the analysis of program focus is very important in understanding the long-range study, it is essential that each of you go back to the study and translate what home economists do as compared with specific examples outlined in the study.

The next step is to relate problem areas to Long-Range Study goals. This can be done for the total inventory and for the areas of interest to home economics. For example, in Table 5 note Goals VI, VII, and VIII in relation to problem areas.

To help you see how we fit into the total study in another way, examine the criteria that were used for appraising agricultural research, as shown in Table 6. To apply this to home economics research, we used human nutrition as our example because it is a problem area suggested for emphasis (Table 7). Scores assigned were a matter of combined judgment of several individuals. The maximum score possible was 300; the score based on these judgments was 265.

There isn't anything that is more urgent than human nutrition in terms of the world today. We really need to do something about it and much more than we have done. The score, however, did not reach the maximum of 300

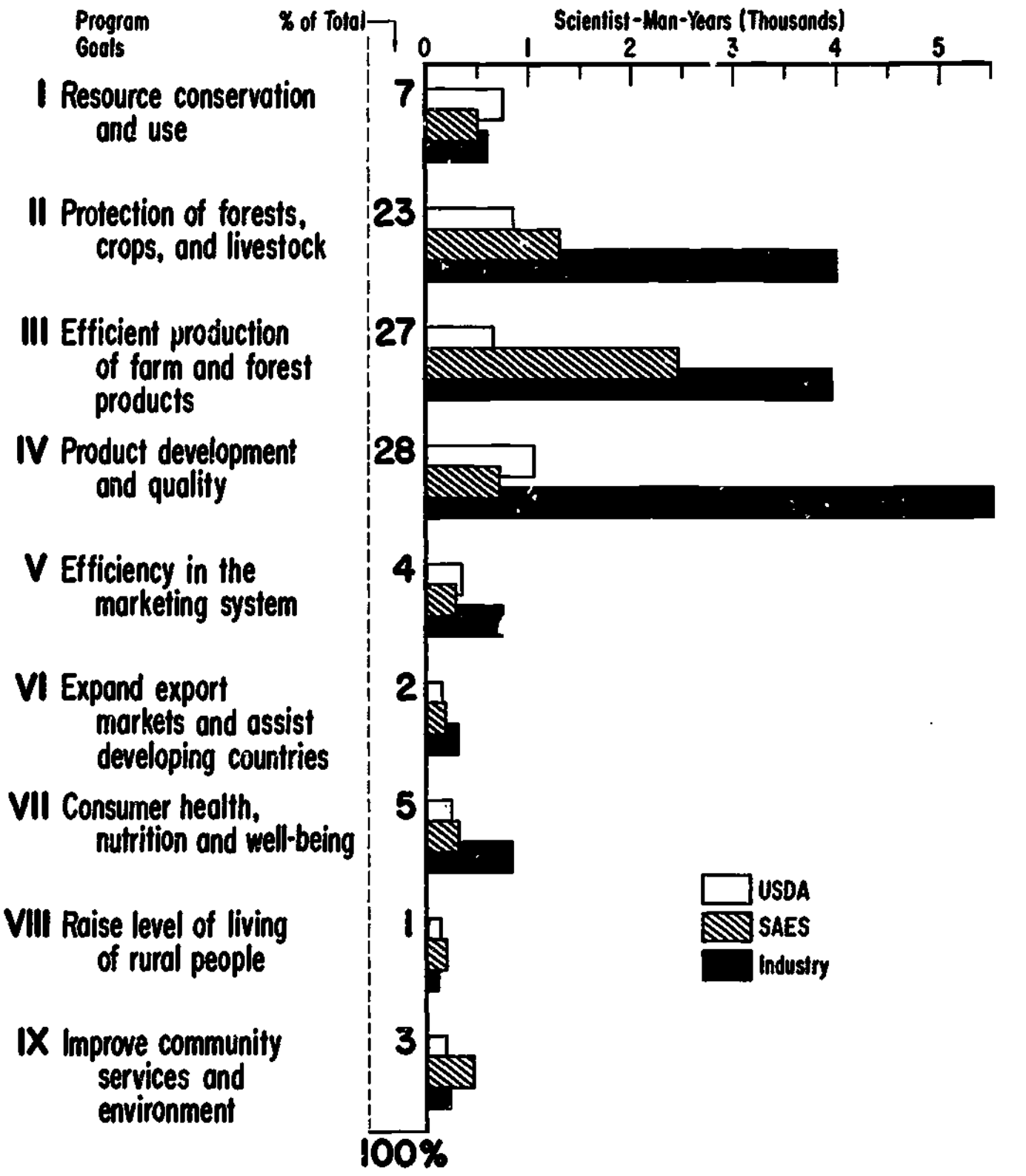

Figure 1.--Distribution of total research effort among nine program goals--FY 1965.

because adoption of results is low and benefit cost relationships are difficult to determine. The score of 265, however, is high. If we used as an example commercial food production in which we are doing some research, the score might rate very low because industry does so much more than we could ever justify doing.

Figure 2 presents the scientist man-years in the SAES-USDA Program by research goal. This is of special interest to us, because it does involve the goals in which we have a part to play. It does mean also that even as we take a look at where we are and where we need to be, we have quite a long way to go. The Long-Range Study Committee made recommendations also for increases in scientist-man-years by problem areas.

In Table 8 we selected nine problem areas pertinent to home economics, and the percent of increase to exemplify recommended percentage increases in 1972 and 1977. Some of these recommended increases may not be as large as the urgency of the problems indicates, but for us to find enough scientists at the

Table 3.--Scientist man-years by commodity and activity, 1965 inventory

	Scientist Man-Years SAES-USDA	
Protection		
A--5 Insect control	40	
A--6 Disease control	8	
A--8 Other hazards	1	
Subtotal		49
Nutrition and Consumer Use		
A--23 Human nutrition requirements	71	
A--24 Quality of family living	5	
Subtotal		76
Development of Human Resources		
A--25 Description, trends	20	
A--26 Economic development	5	
A--27 Social well-being	35	
Subtotal		60
Total people as workers		185

Table 4.--Translation of activity and commodity into problem areas

ACTIVITY	COMMODITY OR RESOURCE	PROBLEM AREA
A--23 Nutritional values, consumption patterns and eating quality of foods	B9-12-14-18-22-25-27-29-33 Food Commodities B38 Food	VII-3 Food choices, habits, consumption VII-4 Home and commercial preparation of food
A--24 Quality of family living	B--21 Cotton B--33 Sheep and wool B--37 Clothing; and textiles	VII-5 Selection and care of clothing and household textiles
A--24 Quality of family living	B--39 Housing, household equipment, and non-textile furnishings	VIII-1 Housing needs of rural families
A--25 Description, inventory and trend A--26 Economic development and adjustment A--27 Improvement of social well-being, including social service and facilities and adjustment to social and economic changes	B-40 People as individuals, workers, consumers, and members of society B--41 The family and its members	VIII-3 Causes and remedies of poverty among rural people VIII-4 Improvement of economic potential of rural youth and adults VIII-5 Communication processes in rural life VIII-6 Individual and family adjustment to change

Table 5.--Relation of problem areas to goals

Goals (9)	Problem Areas (91)
I. Resource Conservation	I-1 Appraisal of soil resources I-12 Range management
II. Protection of Forest Crops, Live	II-1 Control of forest insects II-12 Protection of plants and animals from air pollution
III. Efficient Production	III-1 Improvement of biological efficiency of trees III-16 Farm adjustment and management
IV. Product Development and Quality	IV-1 New and improved forest products IV-16 Quality maintenance in market bargaining power
V. Efficient Marketing	V-1 Improvement of grades and standards V-10 Farmer bargaining power
VI. Exports and Foreign Assistance	VI-1 Expansion of foreign markets VI-3 Technical assistance to Developing countries
VII. Consumer Health, etc.	VII-1 Food free from toxic residues VII-8 Human nutritional well-being
VIII. Rural Level of Living	VIII-1 Housing needs VIII-8 Government programs to balance output and demand
IX. Community Service	IX-1 Alleviate soil, water, and air pollution
X. Basic Research	In each of 91 problem areas

Table 6.--Criteria for appraising agricultural research

Weight	Criteria
9	Extent to which the research meets State experiment station, Department, and national goals
8	Scope and size-considering area, people, and units affected
7	Benefits of research in relation to costs
10	Urgency of research
9	Contribution of knowledge
5	Feasibility of implementation and likelihood of successful completion in a reasonable period of time
6	Likelihood that research results will not be available elsewhere
6	Likelihood of estensive and immediate adoption of results

Table 7.--Criteria applied to problem areas

[Example: human nutrition]

Criteria	Criteria weight	Score	Total
Meets goals.....	9	4	36
Scope.....	8	5	40
Benefit-cost relationship.....	7	3	21
Urgency.....	10	5	50
Contribution to knowledge.....	9	5	45
Feasibility.....	5	5	25
Non-availability elsewhere.....	6	5	30
Adoption.....	6	3	18
Minimum x 1.....	60		
Maximum x 5.....	300		
Total.....			265

recommended level will be very difficult in five years. We have to consider realistically, as Dr. Browning said, what is feasible.

The field of home economics has an opportunity to make contributions to the overall agricultural research program that are essential, important and far reaching in results. To have the opportunity is not enough...the field must meet the challenge by becoming full fledged members of the teams who are doing research.

This does not mean that all of home economics research, by any means, should be confined within the limits of what we are proposing in terms of the long-range study. But since a large proportion of home economics research done in land-grant universities and colleges has been supported by experiment station funds, I am sure that in the future, a continuing large proportion of the research will be within the framework of the Long-Range Study. If we are to meet these challenges as we see them and develop our research programs, we must keep in mind that home economics has a responsibility and that is the only reason we are here today... and we will take this responsibility.

Home economics especially lends itself to regional and inter-regional research. We must seriously consider regional laboratories where expertise in depth can be developed.

This meeting gives us a head start. If we are to meet the challenges we must develop our research programs, keeping in mind the home economics responsibility.

1. Researchers must have strong, sound bases in arts and sciences as well as depth in specialization. All possible steps will have to be taken to encourage capable young people to adequately prepare themselves for research positions in the future. The projections for personnel will require attention of administrators and faculty to inspire undergraduate and graduate students to prepare themselves with all possible speed for the opportunities that will clearly be available to them. We must train new generations of scientists.
2. Home economics research faculties will need to take steps to enhance their present competencies in all possible ways so that they can become more effective research workers in leadership positions. Research faculties must be enlarged and strengthened; quality and effectiveness of research productivity can be no better than the scientific community of which we are a part.
3. Administrators of home economics programs will have to take greater responsibility to encourage faculty to realize the importance of research and to take steps to provide time for doing research along with teaching. Release time for research will need to be an integral part of staff members' appointment.
4. Administrative support is imperative and qualified research projects must be expediently processed with adequate initial and continued financial support.
5. Closer coordination is required between research, teaching, and extension. All faculties involved in home economics research will need to find ways to coordinate all possible interests in the research project--university, government and industry. Greater emphasis needs to be placed on cooperation with industry--an aspect we have given little attention.
6. Research is an intellectual quest for knowledge, and we as administrators have the responsibility to protect the freedom of the individual research worker, staff, or student, from outside pressures that might hinder this freedom.
7. Strong research programs develop when the university has special competencies in a certain field of endeavor. Each of us must assess our own programs, evaluate our strengths, and be willing to set forth priorities. We cannot all have centers of excellence in all areas. Evaluation of research in progress and that being considered is of great importance. Priorities of work to be done and in progress will have to be established since faculty time and monetary support for research are not available in amounts that are unlimited.
8. Vigorous and imaginative approaches to interdepartmental cooperative research needs to be encouraged and implemented.

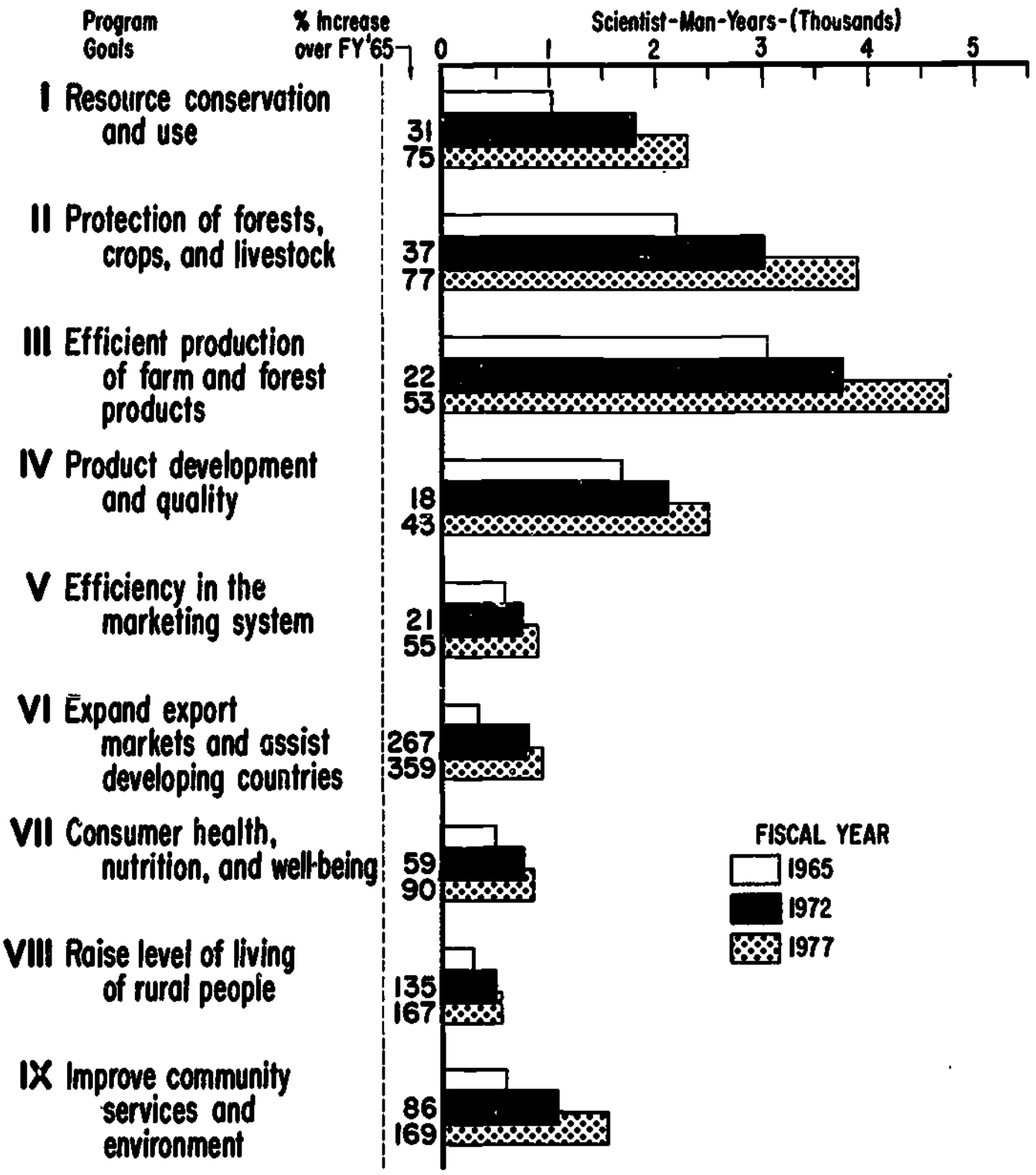

Figure 2.--Scientist man-years in SAES-USDA program goals for FY 1965 and recommended for 1972 and 1977.

We have been modest about our accomplishments of the past. I think we talk too much to each other and not enough to other scientists in the field. We have expertise to offer each other.

9. A comprehensive home economics research program will require financial support from government agencies, private foundations, and industry as well as experiment station support--and the largest proportion has been experiment station support, for which we are grateful.
10. Research results in the files of the scientists add nothing to public knowledge. There is an urgency to publishing results without delay. Increased attention will have to be given by both administrative and research workers to the publishing of research findings. Too often this aspect of research is overlooked or delayed so that the progress in the field is adversely affected.

We in home economics are very much in the Long-Range Study. The opportunity is here.

Table 8.--Scientist man-years in USDA-SAES programs by selected problem areas

[Within research goals VII and VIII]

Problem area	Scientist man-years				
	FY 1965	Recommended for			
		FY 1972		FY 1977	
		SMY	Percent increase	SMY	Percent increase
Insure food products free of toxic residues from agricultural sources	125	200	60	250	100
Protect food supplies from harmful micro-organisms and naturally occurring toxins	40	80	100	100	150
Selection and care of clothing and household textiles	23	30	30	40	74
Human nutritional well-being	98	210	114	250	155
Housing needs of rural families	24	50	108	60	150
Family decision making and financial management	26	55	112	70	169
Causes and remedies of poverty among rural people	11	100	809	100	809
Improvement of economic potential of rural youth and adults	13	75	477	75	477
Individual and family adjustment to change	20	50	150	60	200

What we do with it is up to us. We can use these recommendations to build and broaden our programs at each station. If the recommended levels in scientist man-years are to be attained, we will have to work with all possible speed to educate scientists to fill the positions. It is up to us to identify our job, decide how to do it and when to do it, and provide resources to do the work. Then do it!

HOME ECONOMICS IN THE NATIONAL SCIENTIFIC EFFORT

Catherine Personius

Cornell University

At the outset I would like to acknowledge the contribution which the State agricultural experiment stations ar ' the Cooperative State Research Service of the U.S. Department of Agriculture is making to the field of home economics through their cooperation in the support of this National Seminar and Workshop for Home Economics Research Administrators. While its purpose is to see where mutual interests can be served as the long-range plan for agricultural research is implemented, the occasion is a forceful reminder of agriculture's support and encouragement of the research effort in home economics in land-grant institutions over the years.

I find it of interest that at about 20-year intervals certain events involving the experiment stations have been favorable to the advance of home economics research. And I have faith that this - a 20-year landmark- is one of those events.

Some 20 years after the passage of the Hatch Act, in the early 1900's, the pioneers had introduced courses in certain aspects of home economics in the land-grant colleges and were working through the Lake Placid Conferences toward the development of home economics as a distinct field of education, turning to the research output of the State experiment stations and the Department for some of the substantive content of this new field. This was a logical development in view of the use of many agricultural products for human food, and of other products as the raw materials for clothing and shelter.

Not until 1925--another 20-year period--was there a significant development of programs of research in the home economics departments of land-grant colleges. In her review of Fifty Years of Home Economics Research published in 1959, Dr. Georgian Adams stated that in 1924 there were station research projects of interest to home economists in progress in foods and nutrition, textiles and clothing, household equipment, and economics and sociology. But of some 124 such projects, only 14 were in the

hands of home economists and these were located in just four experiment stations. The situation changed rapidly after the passage of the Purnell Act in 1925. As you know, this Act provided additional funds and also indicated as appropriate areas of investigation economic and sociological investigations that had for their purpose the development of the rural home and rural life.

Although this authorization seemed at that time broad enough to cover all phases of home economics research, the research investigations undertaken were predominantly in family economics and food and nutrition. These emphases can probably be explained by the then current problems associated with the depression of the late '20's and early '30's and the interests and competencies of the available research workers.

Another notable expansion in the home economics research programs in our land-grant institutions came about 20 years later with the passage of the Research and Marketing Act of 1946 with its provision of formal support for regional research. Among the first were the regional projects in the area of rural housing and projects concerned with measurement of the nutritional status of selected population groups. Subsequently through cooperative efforts, regional research investigations have been undertaken in textiles and clothing and in certain aspects of family economics and marketing.

Strengthening Current Programs

And now another 20 years has elapsed. This seminar--workshop in 1967 is designed to help us see how the goals and problem areas recently identified in the Long-Range Study are related to home economics interests and competencies. I am confident that opportunities will be found to strengthen current prorams in home economics research and also to initiate new lines of work through participation in this agricultural scientific effort. And again, agriculture will have contributed to a significant advance in home economics research.

But I was not asked to talk about the contribution of agriculture to the development of home economics research nor about home economics in the long-range plans of agriculture. Instead, the rather awesome topic given me is Home Economics In The National Scientific Effort. In a predominantly agrarian society there was perhaps appreciable similarity between the national and the agricultural scientific effort. But this is not true in an industrial--or post-industrial--society. In such a society some of the goals and problems of national interest, closely related to the concerns and interests of home economics, do not have equally high priority in agricultural programs. To be recognized and accepted as a distinct segment of the educational and scientific enterprise, with special competencies to contribute to the solution of national problems and to attain national goals, specialists in the various areas of home economics will need to expand their participation in various programs outside of agriculture.

I do not suggest diversion of the purpose of this workshop! But I trust that the deliberations here will create an acute awareness of the urgent need to identify problems in other areas of national concern to which home economics research could, and should, be making a significant contribution. Since home economics does not have with other national groups the history of cooperation and support that exists with agriculture, the initial responsibility for identifying these problems and convincing others of the potential contribution of home economics is ours. We cannot count on their seeking our participation. I trust the deliberations here will provide the impetus for other sessions to identify and initiate participation in such other programs with minimum delay.

Two-Way Approach

A consideration of home economics in the national scientific effort can be approached in two ways. We might try to assess the place that home economics now holds in this effort, or we might attempt to describe what it should be. We are probably all agreed that human resources are recognized as one of the most important assets of a nation, and the family is still considered one of the basic units of our society. Therefore, our discipline focus is on the well-being of individuals and families. It seeks to improve the quality of living and should be a significant factor in the national scientific effort. And no matter what it has been, we may readily admit that the contributions of home economics could and should have been greater. But as a matter of fact, we do not have an adequate knowledge of what this contribution is or has been.

Rarely in national analyses of federal support for scientific and educational activities, or of scientific manpower, or even of advanced degrees granted in a given period do you find home economics identified as a distinct category together with its several areas of specialization. If I may speak personally in illustration: My research efforts have been reported as utilization investigations in the field of agriculture (they have involved agricultural products); my scientific competence is recorded either as biological or physical science; and my doctoral degree with a major in the area of food science is usually classified as agricultural or food chemistry. Only my professional address has identified me with the field of home economics.

Some of you will recall the efforts made by a committee of the American Home Economics Association during the late 1950's to investigate the research needs in home economics at the Federal level. There was no record readily available of the current home economics research although such research was evidently in progress in some 35 Federal agencies. Before we can assess, then, the place of home economics in the national scientific effort, some group needs to develop a mechanism for identifying this effort. We need this information to evaluate what has been and is being done, and also as a basis for developing guide lines for the future. If this is to be done, again home economics must undoubtedly take the initiative.

The Current Situation

Lacking a comprehensive and up-to-date inventory, I will risk a few generalizations about the current situation. (Perhaps when the Carnegie Study of Home Economics in member institutions of the National Association of State Universities and Land-Grant Colleges is completed, hard data will be available to support--or refute--these statements.) First, programs of research constitute a relatively small proportion of the total home economics enterprise. This statement is based on experience rather than objective data, but I am confident of its validity. An appreciably larger proportion of our effort--personnel, financial support, and other resources--is devoted to teaching and service programs. In short, the total program of home economics research is modest and so the part of home economics in the national scientific must be modest, also.

Second, the program in home economics research is not well balanced; certain areas of the field have been seriously neglected. The data assembled on expenditures for research during 1961-62 in the home economics departments, schools, and colleges of land-grant institutions--expenditures of funds from all sources--showed 53 percent of the total in food and nutrition, 12 percent in child development and family relationships, and only from 3 to 8 percent in each of the other areas.

The annual report of Theses in Home Economics and Related Fields for 1965-66, reported by "more than 70 institutions in every state" appears in the Journal of Home Economics for March, 1967. A total of 685 titles is listed; only 89 are titles of doctoral theses. Three areas--child development and family relations, food and nutrition, and home economics education--each account for one-fifth of the total number of theses (and each of these fields for somewhat over one-fourth of the doctoral theses). About one-sixth of the theses (but less than one-tenth of the doctoral theses) were in textiles and clothing. The proportion in each of the other areas was obviously small. When the report for 1965-66 is compared with the reports for 1963-64 and 1964-65, one notes a marked percentage increase in the number of thesis titles in the area of child development, home economics education, and housing although the number in housing was still very small. There was, in contrast, a decided decrease in the area of food and nutrition.

Extrapolation of these data to the size of the research effort in the several areas of home economics in 1965-66 is, of course, not warranted. The data do, however, tend to support the conclusion that the research effort in some areas of home economics is minimal. They indicate that the number of persons receiving advanced training that would prepare them to undertake research in these areas is negligible. Again, we need to recognize the limitations of the data; some persons preparing for research careers in home economics choose to obtain their advanced training in one of the related sciences and are not included in these figures. We are nontheless undoubtedly warranted in being concerned about the limited amount of research and the dearth of research leadership in some areas of home economics--conditions which cannot help but limit the recognition of the field as a whole in the national scientific effort.

On the positive side, home economics has made and is making significant contributions to the national scientific effort, albeit the source of the contributions may not always be recognized. The examples that come quickly to mind represent attacks on significant problems related to family or individual well-being. The problems have been broken down into manageable parts and, through the persistent and continuous efforts of one laboratory, or the coordinated efforts of several, new knowledge and understandings have been made available that contributed to the solution of the problems under study. Research conducted in home economics provided extensive information that has been basic to the development of more functional home kitchens and storage areas, and more recently to programs in human rehabilitation. Examples are numerous of the contributions to an understanding of the relation of nutrition to health, of the use of food in providing adequate nutrition, and of the factors in the methods used to prepare and preserve food that influence its quality and in turn our enjoyment of it. Knowledge of the performance to be anticipated from various fabrics and of their response to alternative methods of care has added to satisfaction with clothing and household textiles. All of these have contributed to the quality of living to a degree that we may tend to forget in our affluent society until faced with the conditions of living found in the slum areas of this country and the conditions even more widely prevalent in the less-developed areas of the world.

Research in the social sciences focused on behavioral and economic problems has surely made significant contributions, also. In these areas, however, not only has the research effort been more limited but Home Economics has, insofar as I know, not undertaken coordinated investigations of singificant problems, the results of which are readily identified as home economics contributions. When research is confined to small, isolated problems or when the effort on a particular problem is not well sustained, its effectiveness tends to be decreased.

As I scanned the titles of the 685 theses in home economics and related fields completed in 1965-66, I wondered to what extent the new knowledge and understandings acquired in these studies would be made available not only to the home economics community, but also to the larger scientific community, and where of interest and value, to the lay public as well. In view of the high proportion of masters' theses, perhaps publication would be premature in many instances. But until the results of research have been carefully analyzed, interpreted, and published--and if warranted, disseminated through the various communication media available--the research task is not completed. Home economics cannot hope to be a significant segment of the national scientific effort unless this research responsibility--publication--is fully met.

Greater Recognition Needed

What might be done to earn greater recognition and acceptance of home economics nationally? As many of you know, I have a strong conviction that greater emphasis must be placed on the research programs in our institutions--on the size and nature of our research effort and on its integration with resident instruction and Extension programs. I have already indicated that, in some areas, research programs are very small and need to be expanded markedly. This is especially true of investigations rooted in the social and behavioral sciences. At the same time, investigations need to be continued on the material aspects of living--on food, shelter, and clothing--for these are significant factors in man's environment that affect human development and the quality of living.

There appears to be an increasing concern for human values among scientists that should make this an auspicious time for home economics to expand its research effort through participation in various national programs. You may have been interested, as I was, in reports of a three-day convocation held last October at the California Institute of Technology. The participants were some of the nation's leading natural and social scientists; the topic of the convaction was Scientific Progress And Human Values. According to a New York Times report of this meeting, a professor of theoretical physics at the California Institute of Technology stated that whereas "the old drive (of science) was to control man's environment; the new drive must be to create a richer and more satisfying life"; that "society must give new direction to technology directing it (from applications that yield higher productive efficiency) into areas that yield greater human satisfaction".

Another participant, described as a scientist and industrialist, urged the development of a new class of men called socio-technologists who can "effectively link scientific development with social betterment". He noted that this will involve both finding ways to improve the "texture of human life" and also ways "to persuade the public to use them".

The Director of the Division of Biological Sciences at Cornell University was also a participant in this convocation. His talk, entitled "Where Is Biology Taking Us?," has been published in a recent issue of Science (January 27, 1967). He suggests that as society grows more complex, the family as a social unit appears to decline in prestige. And he indicates the importance of defining the functions that the family can perform better than any other agency and to find ways to strengthen these functions. He points out that the family, which was a fine mechanism for transmitting knowledge and wisdom in a relatively static society, may be relatively poor at assimilating and transmitting the new knowledge needed by the younger generation in our rapidly changing modern world. Noting the increasing knowledge about the plasticity of the human nervous system in early life, he asks how long a socity seeking equal opportunity for all will "abandon its newcomers solely to their families for their most impressionable years" and referred to the Head Start program as a pertinent example.

Conducting Superior Research

Certainly there are numerous issues of current national interest in which home economics has a stake. Past experience suggests that the probability of making significant contributions to their solution will be improved (1) if we identify important areas of investigation for which the interest, training, and experience of home economics provide special competence, and (2) then implement coordinated or cooperative studies of problems relevant to the issues. The several areas of home economics can be expected to make a greater contribution by conducting superior research on a limited number of problems than through undistinguished performance on many problems. Such coordinated or cooperative programs cannot be legislated or produced by administrative edict but they can be suggested, encouraged, and fostered.

Home economics administrators--with the help of appropriate staff members--might well proceed to identify some of the critical problem areas in which there is interest and appears to be the potential for a major contribution. Having identified the areas, persons with the necessary competence would need to be designated to make contact with the administrators of the relevant national programs and become familiar with the particular interests of the agencies and the type of support for which application might be made. Representatives of the various fund-granting agencies repeatedly indicate the desirability of preliminary discussions before formal applications are made. The dramatic increases in support of home economics research in recent years by various branches of the National Institutes of Health and more recently by the U.S. Office of Education make me most optimistic about the availability of funds for the investigation of problems directed toward answering questions judged to be important, timely, and likely to produce new and useful information.

Home economics research workers--as individuals or in teams--in several of our institutions have demonstrated the ability to obtain awards from such agencies for research and for training grants in home economics areas. These have been isolated activities, however, and so give no assurance that some of the most urgent problems that home economics should investigate are receiving attention. One must, of course, rely on the research workers for developing and conducting the investigations. The details of the specific objectives, the approach, and methodology are their responsibility. But perhaps administrators should consciously direct attention to areas in which they see special need for research.

The desirability of establishing "centers of excellence" and of developing cooperative arrangements among research workers in different institutions where their physical location makes this possible--these deserve serious consideration in view of the limitations in available research workers. Home economics is in a favorable position to encourage these developments, which are undoubtedly most feasible among institutions in which research programs are not already well established.

To earn recognition and acceptance, then, as a distinct segment of the national scientific effort--a segment with special competencies to contribute--will require (a) the establishment of contacts with various agencies and scientific organizations, (b) support--both material and moral--of research workers, and (c) the implementation of arrangements for training more research personnel. And public relations will need to be maintained. This will require the leadership of a group of home economics research administrators for whom this is not only their special assignment but often a full-time one. I sincerely believe the time is now for home economics to increase its contribution and also to identify itself in the national scientific effort.

THE DEPARTMENT-STATION PARTNERSHIP

George L. Mehren

Assistant Secretary
U.S. Department of Agriculture

It is a pleasure to be here today - in the heart of America. As I flew in, I noticed the broad sweep of Midwest farm land - typical of a productive agriculture. This is the same land passed over by many pioneers as they travelled by covered wagon to settle the West. Each effort - the development of the land for agricultural purposes and the banding together of families as they moved westward - is evidence of kinds of teamwork that have gone into the shaping of our country. And today I deal with the need for teamwork in every major effort to shape our future.

The American story is one of people - and problems - and solutions. This is our democracy. Its story gives meaning to our being together now. Those of us in this room are heirs to a movement that is over 100 years old - the land-grant system. This was a plan that at least formally was federally envisioned to encourage the development of State colleges to serve the people. The colleges grew and became big universities - universities that like all else today are experiencing changes and challenges. At the same time, there is persistence and vitality in the original and traditional relationships we have known so well. We still feel strongly about the Federal-State partnership - the research-teaching-extension team - the agricultural-home economics-forestry team. All have been with us for a long time - have become institutionalized in our

In the absence of the author, this paper was read by Trienah Meyers, Economic Research Service, U.S. Department of Agriculture.

thinking - and to question these traditions has seemed almost sacrilegious. Yet in fact they are not and never have been rigid in structure or ritualistic in act, so there are always questions to be asked and answered. In our 100 year old Department we are talking about and planning for the year 2000. New programs are emerging and other programs are changing. New missions are appearing. Solutions must be found for the future--not the past. Changes are taking place at your universities too--and within your profession. What will this mean for the partnerships we have known--and specifically for those of which you are a part?

Federal-State Relationships

Let's take a look - first at the Station-USDA relationship. And may I discuss this largely in terms of science and service? The stations--with at least one in each State and Puerto Rico--were created as were most other institutions--in recognition of a need. If agriculture in the broadest sense of the word were to be taught, there must be scientific knowledge. Moreover, if science were to have a problem-solving meaning in the 19th century, a system was needed to direct scientific efforts toward the problems and goals of the day. In agriculture the experiment station system became a major instrument for that direction.

The enactment of the Hatch Legislation of 1887 provided formalized and continuing Federal support for scientific endeavor. From this there evolved a sort of model organizational pattern for Federal-State relationships within the Department of Agriculture. The pattern, including the Federal Legislation, grew out of discussions of agricultural societies plus debates and discussions both within and among the early Land-Grant institutions.

There is a lesson here. The Federal-State partnership still exists. It is far closer than most people know. Generally, it works well. Admittedly it appears to pull in opposite directions at times. Yet, it is still a team effort seeking through debate and deliberation, to find consensus in formulating and achieving our mutual goals. The most recent effort was the joint development of a long range plan for research in the agricultural sciences - an umbrella term which covers numerous interests as wide as the missions of Agriculture. It includes forestry research, home economics research, investigations in veterinary medicine, in business administration, in psychology, anthropology, and even the arts. Scientific talent to meet today's complex needs requires partnership in the broadest sense.

In the development of the long range plan, an inventory of research endeavors--State, USDA, and industry--was made. The research talent doing today's job was identified. This inventory told a story, but it was not enough. Professional groups such as yours have seen a challenge in this plan and have accepted a role in evaluating both the worth of the long range plan and its meaning, in keeping with your scientific interests and competencies may take you. You are to be congratulated on your vision and forthrightness in proposing this seminar. It is through effort and teamwork of groups such as yours that the plan will go forward.

Why is home economics on this team? How does your profession fit in? I am not competent to precisely define your area of concern. I hear you may not even agree among yourselves, and I would be surprised if you did. If this be true, you have good company in other disciplines. Most thinking, progressive, active professional groups have their differences in point of view. It is easier for me--a layman in your area but familiar with your work--to identify your interests as those with a family and consumer focus. I also sense awareness by you of the variations in manner of living found in American society and I think that somehow you interpret this diversity as a positive element. You also actively endorse the need to work toward improved levels of living. These are among the primary missions assigned to the Department.

I see these same goals, and many more, clearly outlined in the research plan for the future. I do not intend to go into the study in detail. This is being done by others appearing on your program. Those more knowledgeable in your field of interest have identified the elements in the study to which you will give special attention. You have invited resource people to probe these areas in depth. However, I do wish to make one or two points in relation to the study. There is generally-recognized need for substantial expansion in research dealing with the living side of society's concerns, although this does not mean cutting the production side.

We have a great success story in agricultural production and in the research contribution that has accomplished these developments. There is a somewhat less than proud story of accomplishment in the solution of human problems, and especially those stemming from poverty and misery--even in a largely affluent America. It appears to me that there is not only recognition of need to alleviate these problems through direct programs, but also an awakening understanding that research can be as important to the solution of human problems as it has been to production problems. It is here that home economics research should have an ever increasing role. This is why yours today is a primary position on the team. The challenge is yours.

Plan of Work

Now, briefly a word about how we plan to make the long range study work. It has already become an integral part of the Department's budgeting process. Projections have been made for the next ten years. They represent the best thinking of the best brains we could tap. These people were realists too. You will note that not all areas are programmed to move ahead at the same pace. You will note that even those areas that are scheduled for a "status quo" position will still be budgeted to receive added support in order that increased costs of research may be met in the future. And other speakers on your program have told you that even these projections will receive annual review and adjustment as new problem areas become known. In this fast moving era, no crystal ball is very clear as one approaches the end of a ten-year period. But it is our intent--the universities and the Department--that the plan be followed as a strategic track within the limitations of national priorities and restraints.

Some have said that the study, in essence, says "more of the same." Is that really so? Let me use just one example: Goals II and III deal with production and protection of farm and forest; Goal VII with Consumer well-being and human nutrition. If projections for 1972 are to be attained, an increase of 22 percent in production research is proposed for the 3 goals combined; 35 percent in protection effort; and 59 percent in consumer-oriented work. Is this "more of the same"? Yes--some more. But it also says a lot about why you are here this week devoting time to programming research for the future.

I have some concerns--one of which I am sure must be a concern of yours. It is that of coordination of efforts at all levels. For example, home economics scientists, along with other disciplinary interests, have been working toward improved family housing. Research has focused not only on the physical structure, but on the place where people live, with all its associated problems. Methods must be found for improved communication among all individuals, agencies and organizations that talents with common interests may be coordinated to focus on the larger problem. Benefits of improved communication would, hopefully, extend our research effort. Information retrieval systems now coming into being, while still suffering the normal birth pangs at the moment, should aid measurably in identifying linkages in the many research efforts underway. Hopefully, scientists under your administration will be in a better position to see their place in the larger effort.

I chose the place where we live as an example. I could have selected food quality, human development, nutrition, or many other problem areas identified in the long range study. The point is that it takes a multiplicity of efforts--and communication that is quick, meaningful. and dependable--if we are to move forward together. We are on the threshold of making this tool available to scientists nationwide. We will anticipate results in quality and effectiveness of research output.

Serving Humanity

May I share some other concerns with you? One is that of making respectable the use of one's research talent in the service of humanity. In some circles, basic research--that which is not pragmatically oriented--has almost become one word, if not a hyphenated word. I personally prefer, in general, the simple term research. This is not quibble over terms. It means rather that the methodology to do the job in a sound manner is always the same. Any research can be designed to serve social or other needs, can conform fully to accepted scientific method, and can be purposeful in outcome. Selection of questions on applied research relates to mission. Yet, once this is done, meaningful applied research needs no apology. Moreover, with limited personnel, we deal in the art of the practical. You know whereof I speak.

Some work under your administration will be more basic--or less goal-related--than other. All problems cannot be attacked at once. But, one point should be kept in mind. You are also educating the talent needed for tomorrow. University scientists in their research programs, especially those in which graduate students are cooperating, must hold to standards that are academically acceptable, purposeful, sound, and problem-oriented to the extent that research yields understandings needed in today's complex society.

One other point should be made clear. The long range study, including its goal orientation for research, does not negate the scientist's right to determine research direction and problem selection. The goals are broad, and choices within the framework of the study are largely of the scientist's own making. This report is, in part, an administrator's tool. Yet any competent administrator knows that research is done by scientists, it is part of the job of the administrator to select the right person for the job to be done, to assist with facility and support needs, and to provide a climate that the scientist may "produce." The scientist does the job.

I am told that the Commission on Home Economics, NASULGC, in its initial meeting established two fundamental needs of home economics in member institutions:

1. To enlarge the scope and strengthen the base of research in home economics, and
2. More effectively integrate the research, resident instruction, and extension functions of home economics.

Let's look at this latter point for a moment. The Department is deeply interested in that need.

Federal programs administered by the Secretary of Agriculture have been closely involved in your research development. Support has been channeled through the experiment stations, plus contract, grant and facility funds. Your contribution to the missions of the Federal-State team is readily identified. It is increasingly important in the Departments' goals and responsibilities. As in other fields the focus on instruction, including graduate education must be much the same as for research and extension. There is already clear and present need for more and better trained people for jobs of the future in dealing with family and consumer well-being. A closer integration of extension functions with other interests in home economics has a potential for strengthening the program base of the Cooperative Extension Services. Yet in your field there is little basis to question the Federal-State relationship for home economics in any of its components.

Undergird Action Programs

The quality of living of many Americans is tied up with this question, "how do we get more research and better research to undergird action programs?" Many programs affect individuals in the family or touch on single problems faced by a family. But we really have very little research directed toward reinforcement of the family. In fact, one might observe that some programs may appear at least superficially to contribute to the breakdown of family unity. Is this what we want? We have no specific Government policy regarding the family as an institution in society. And it is certainly an issue of legitimate debate as to whether there should be any single goal or goals. Nonetheless, many programs do affect our families.

There are no normative judgements here. Yet there are suggestions for sharing or even transfer of specific family functions made by responsible people. We design programs to meet specific social problems when they become most pressing. Or, we plan programs to meet specified human needs--as sufficient food, health care, or job training. What does this splintered approach mean to the family as a social entity? Could research yield insights? It would appear to me that this might well be a major concern of your profession.

A similar question stems from the fact that we are a dynamic and mobile society, but, with the rate of change today, we have not judged too carefully what this means to the family. Could research interpret human need within the context of geographic, social, and economic mobility?

I have shared some thoughts with you. Now let me state the challenge. The long range plan contains missions and goals presumed to be those of your profession and of others. I have rambled a bit, implying that all the research needs may not be included in the report. I also acknowledge that not all ideas worthy of study should be in that report. Now, what do we need to do to get the job done? Are the projections feasible? What is the station potential in meeting the projections? We are looking forward to your comments and suggestions. They will be reviewed with care. The next step is yours.

And, let's not forget, the partnership approach is not one of Station-Department only. It is one of joint attack on relevant research problems by all concerned individuals - scientists and administrators in the Department, directors of the stations, home economics administrators, and station and other scientists from all disciplines. Those in a university setting are most favorably situated for a team approach. And, finally, development of a sense of urgency regarding research with focus on family and consumer needs will be required if our projections are to be met.

CURRENT HOME ECONOMICS RESEARCH IN AGRICULTURAL RESEARCH SERVICE

Ruth M. Leverton

Agricultural Research Service
U.S. Department of Agriculture

You have heard the origin, the intent, and the challenge of the long-range research program. You have heard also that the Long-Range Study (LRS) has been accepted tentatively as the basis for budget development for a National Program of Research for Agriculture.

To implement this program, we must take an inventory of our present program and use this as a baseline from which to build toward the goals established in the LRS.

Dr. Souders and I have prepared for your information the following inventory or summary

of our current program. Our ARS projects in Nutrition and Consumer Use come under several of the Problem Areas of Goal VII "Consumer Health, Nutrition and Well-being" and Goal VIII "Raise Level of Living of Rural People." We have sorted our 80 or more line projects into the appropriate problem areas under these two goals. For each problem area, we have indicated which division, Human Nutrition or Consumer and Food Economics, is involved, or whether they are both involved.

Under each problem area, the similar individual projects have been grouped into an "Activity" for ease of reference. Intramural is separated from extramural and the location of the extramural is shown. Also shown is the type of extramural arrangements--C means Contract, Gr means Grant, and CA means Cooperative Agreement.

A scientist-man-year (SMY) is equivalent to an assistant professor or above and in government to a GS-11 or above. When a money value or cost is established for an SMY, it includes not only salary but his essential support of facilities, equipment, assistance, services, overhead, etc.

There is a slight reduction in the number of SMY's from Fiscal Year 1966 to Fiscal Year 1967. In general, this reflects an increasing cost of SMY's because the same amount of money does not support the same number of SMY's as costs go up.

The summary table shows the relationship between Planning-Programming-Budgeting (PPB) and the LRS. Here, the problem areas of LRS have been sorted into the research program elements of PPB. In other words, these are the crosswalks between the research program elements of the PPB and the research problem areas of the LRS.

None of the figures include our foreign research program conducted under Public Law 480. This research was not included in the original inventory for the LRS. There are several characteristics about the PL 480 research that make it impractical to have it expressed in SMY's. Our PL 480 research program in food and nutrition approximates foreign currencies equivalent to $1.3 million.

Goal VII -- CONSUMER HEALTH, NUTRITION AND WELL-BEING

Problem Area 1 -- Insure food products free from toxic residues from agricultural sources.

Division: Human Nutrition

Scientist Man-Years

	1966	1967 (est.)
Intramural	8.3	9.3
Extramural	5.0	1.8
Total	13.3	11.1

A. Activity: Effects of pesticides on quality, nutrient composition and safety of foods.

HN 1-22 Effects of fumigation of stored wheat on vitamin content of grain, milling fractions, and home-baked products; and on baking performance of flour for household use.

HN 3-29 Quality characteristics and nutrient composition of foods and food products treated with pesticides and other agricultural chemicals in food production.

HN 3-30 Effects of the application of insecticide chemicals during production on the palatability, composition, and related biochemical properties of strawberries.

HN 3-31 Palatability and related compositional changes during home storage of potatoes grown with PCNB fungicide treatment.

Extramural

HN 1-23(C) Nutrient composition of eggs and quality of the meat from hens treated with malathion.
Food and Drug Research Labs., Maspeth, N.Y.

HN 1-24(C) Nutrients of peanuts as affected by lindane treatment of soil.
Texas Agricultural Experiment Station, College Station, Texas

HN 3-27(C) Effect of preparation and cooking on the pesticide residue content of selected vegetables.
National Canners Association Research Foundation, Washington, D.C.

B. Activity: Biological effects of pesticides.

HN 2-41 The metabolic response of the rat to diets containing high levels of bromide residues.

HN 2-44 The metabolic effects of pesticide residues in body fat when the content and distribution of body fat of rats fed different diets are altered by dietary restriction.

HN 2-45 Nutritional effects of benzenehexachloride (BHC, 1,2,3,4,5,6-hexachlorocyclohexane) in microorganisms.

Extramural

HN 2-43(C) The physiological response of rats to diets which include different kinds of fats with and without added chlorinated hydrocarbon pesticides.
Swift & Company, Chicago, Ill.

HN 2-53(Gr) Basic studies of the biochemical response of the female and offspring to diets containing multipesticide components when selected minerals are fed at marginal, excessive, or deficient levels.
University of Florida, Gainesville

HN 2-54(C) Physiological response to diets containing multipesticide components when selected minerals are fed at marginal, excessive, or deficient levels.
Purdue Research Foundation, Lafayette, Ind.

Goal VII -- CONSUMER HEALTH, NUTRITION AND WELL-BEING

Problem Area 3 -- Food choices, habits and consumption.

Division: Consumer and Food Economics

Scientist Man-Years

	1966	1967 (est.)
Intramural	17.3	13.8
Extramural	0.8	4.4
Total	18.1	18.2

A. Activity: Food consumption

CFE 1-7 Food consumption of individuals related to economic and social factors (Discontinued 2/67)

CFE 1-14(CA) Acceptance of the school lunch program in Louisiana high schools.
Louisiana State University, Baton Rouge

CFE 1-11(C) Nationwide survey of household food consumption, 1965.
Research Contract: National Analysts, Inc., Philadelphia, Penna.
Service Contract: General Electric Company, Bethesda, Md.

CFE 1-12(C) Nationwide survey of food intake of individuals, Spring 1965.
Research Contract: National Analysts, Inc., Philadelphia, Penna.
Service Contract: General Electric Company, Bethesda, Md.

B. Activity: Food management practices.

CFE 1-9 Use and discard of food in households. (Discontinued 3/67)

CFE 1-8(C) Household practices in home-freezer management.
Ide Associates, Philadelphia, Penna.

C. Activity: Motivation for consumer food choices.

CFE 2-13(C) Attitudes and beliefs about food and health as factors influencing food choices.
Food and Drug Administration, Washington, D.C.

D. Activity: Methods of informing people about nutrition.

CFE 2-11 Evaluation of publications for applied nutrition programs.

CFE 2-12 Nutrition Programs Service.

Goal VII -- CONSUMER HEALTH, NUTRITION AND WELL-BEING

Problem Area 4 -- Home and commercial preparation of food.

Division: Human Nutrition

Scientist Man-Years

	1966	1967 (est.)
Intramural	8.0	8.0
* AID	1.0	1.1
* School Lunch, etc.	0.8	1.0
Extramural	0.8	---
Total	10.6	10.1

* Partially reimbursed by AID and C&MS

A. Activity: Quality factors affecting consumer use of foods.

HN 3-32 Influence of changes in properties of muscle proteins of frozen, stored turkey meat on eating qualities of juiciness, tenderness, and flavor of cooked meat.

HN 3-22 Investigations of the constituents in cells and cell walls of fruits as related to eating qualities. (Discontinued 9/66)

HN 3-24 Changes in color and tenderness of beef as influenced by different rates and extents of heating by broiling. (Discontinued 8/66)

B. Activity: Consumer guidance in food use.

* HN 3-26 Laboratory investigations of food use problems in the National School Lunch Program.

HN 3-28 Development of new and improved household procedures for food preparation as needed to maintain up-to-date recommendations for consumers.

* HN 0-0-1(AID) Household and institutional food uses for cottonseed, peanut, and soy products in underdeveloped countries.

C. Activity: Nutrient content of specific foods.

HN 1-20 Assay methodological studies of sugars and the application of these methods to the analysis of selected fruits and vegetables. (Discontinued 9/66)

HN 1-27 Nutrient content of wheat and wheat products: carbohydrates, trace minerals, tocopherols, and vitamin B_6.

Extramural

HN 1-25(C) Nutrient content of wheat and wheat products: amino acids, B-vitamins, and macro mineral elements.
American Institute of Baking, Chicago, Ill.

HN 1-26(C) Nutrient content of wheat and wheat products: fatty acids.
Purdue Research Foundation, Lafayette, Ind.

HN 1-28(C) Fatty acids of fat and lean portions of uncooked and cooked beef and pork.
(Beef) University of Wisconsin, Madison
(Pork) University of Missouri, Columbia

Goal VII -- CONSUMER HEALTH, NUTRITION AND WELL-BEING

Problem Area 5 -- Selection and care of clothing and household textiles.

Division: Consumer and Food Economics

Scientist Man-Years

	1966	1967 (est.)
Intramural	2.9	3.5
Extramural	1.4	2.4
Total	4.3	5.9

A. Activity: Anthropometric measurements.

CFE 4-1(C) Women's measurements for sizing apparel.
Boston University, Boston, Mass.

CFE 4-3(C) Development of instrumentation and procedures for anthropometric measurements essential for the improvement of sizing systems for children's footwear.
University of Rochester, Rochester, N.Y.

CFE 4-New(C) Anthropometric measurements of elderly women for sizing apparel. (Proposed)

B. Activity: Performance and care of fabrics for clothing and household textiles.

CFE 4-4 Use of hypochlorite bleach on soiled cotton fabrics as a factor in deterioration of cotton fabrics. Part II.

CFE 4-New Proposed new project to be initiated before July 1, 1967.

C. Activity: Dissemination of microorganisms by textiles.

CFE 4-2(C) Quantitative studies on fabrics as disseminators of microorganisms.
Southern Research Institute, Birmingham, Ala.

CFE 4-New(C) Reserve for funding proposed new projects under consideration.

Goal VII -- CONSUMER HEALTH, NUTRITION AND WELL-BEING

Problem Area 8 -- Human nutrition well-being.

Division: Consumer and Food Economics

Scientist Man-Years

	1966	1967 (est.)
Intramural	13.5	8.7
Extramural	2.3	4.1
Total	15.8	12.8

Division: Human Nutrition

Scientist Man-Years

	1966	1967 (est.)
Intramural	16.0	18.5
Extramural	7.6	4.0
Total	23.6	22.5

A. Activity: Basic studies on procedures for determining nutrients in foods.

HN 1-29 Comparative studies on hydrolytic and analytical procedures for the determination of amino acids in foods.

HN 1-30 Isolation and identification of compounds of methionine and threonine with other constituents, formed during heating.

B. Activity: Functions and biological effects of nutrients in the body.

HN 2-15 Analysis of records of a rat stock colony and development of animals for specific experimental purposes.

HN 2-36 The influence of diet on the sequence of histological changes in two strains of rats.

HN 2-37 The influence of age and diet on enzyme systems in selected tissues of two strains of rats.

HN 2-40 The influence of diet on the lipid metabolism of two strains of rats at various stages in their life cycle.

HN 2-46 Metabolic relationships between carbohydrate and nitrogen.

HN 2-50 The influence of varying dietary composition on body composition and metabolic processes in relation to physical activity.

Extramural

HN 2-52(C) The influence of source of dietary carbohydrate fed at different stages of development on individual variation in physiological and biochemical response.
Hazleton Laboratories, Falls Church, Va.

HN 2-55(Gr) Relationship of immunoproteins to protein status and amino acid intake.
Iowa State University, Ames, Iowa

HN 2-56(Gr) Influence of excessive intakes of certain vitamins by the mother on pre- and post-natal development of the young.
Massachusetts Institute of Technology, Cambridge, Mass.

C. Activity: Human nutritional requirements for and utilization of nutrients.

HN 6-9 Human metabolic response to rates of food intake.

HN 6-12 Metabolic response of human subjects to diets in which the carbohydrate is provided mainly by wheat starch or by sucrose.

Extramural

CFE 1-13(CA) Diets and nutriture of preschool children in low- and middle-income families.
University of Hawaii, Honolulu, Hawaii

HN 6-13(C) Magnesium requirement of adolescent boys as related to level of protein intake.
University of Wisconsin, Madison
University of Connecticut, Storrs

HN 6-14(Gr) Early metabolic effects of different kinds of dietary carbohydrates in young adults.
University of Alabama, University, Ala.

D. Activity: Biological evaluation of foods.

HN 2-42 Utilization of amino acid and amide nitrogen of wheat in tissue protein maintenance.

Extramural

HN 2-49(C) Nutritional response to diets containing selected types of fresh and oxidized fats.
Columbia University, New York, N.Y.

HN 6-10(C) Determination of nutritional value of wheat proteins for adult man.
Michigan State University, Lansing

HN 6-11(C) Nutritional value of wheat flour for adult man.
Agricultural & Technical College of North Carolina Greensboro, N.C.

E. Activity: Development of comprehensive reference tables on nutrient composition of foods.

CFE 2-8 Table of trace elements and sulfur in foods.

CFE 2-9 Tables of selected B-vitamins in food--pantothenic acid and vitamins B_6 and B_{12}.

CFE 2-10 Compilation of data on the composition and nutritive value of foods.

CFE 2-15 Tables of amino acid content of foods.

F. Activity: Development of nutrition guidance materials.

CFE 2-5 Nutritional analysis of the U.S. per capita food supply, 1909 to present.

CFE 2-6 Food budgets.

CFE 2-7 Interpretation of research for food and nutrition programs and policies.

CFE 2-14 Nutritive content of Type A school lunches.

Goal VIII -- RAISE LEVEL OF LIVING OF RURAL PEOPLE

Problem Area 2 -- Family decision making and financial management.

Division: Consumer and Food Economics

Scientist Man-Years

	1966	1967 (est.)
Intramural	6.0	5.9
Extramural	0.8	0.7
Total	6.8	6.6

A. Activity: Rural family expenditures and consumption.

CFE 3-5 Rural family living in selected areas of Texas.

CFE 3-7 Rural family spending patterns in 1961.

CFE 3-10 Use of time by homemakers.

CFE 3-12 Income needed to provide equivalent levels of consumption to rural and urban families.

CFE 3-13(Gr) Resource conservation and augmentation in household activity patterns.
Michigan State University, East Lansing, Michigan

CFE 3-14(C) Development of an index measuring the relative economic status of individual rural families. (Proposed)
Research Triangle Institute, Durham, North Carolina

CFE 3-15(Gr) The use of simulation techniques in the study of family financial decision making. (Proposed)
Washington State University, Pullman, Washington

B. Activity: Guidelines for improved financial management.

CFE 3-1 Development of Family Economics Review, Outlook reports, and other materials on family economics and home management.

CFE 3-9 Development of clothing budgets.

CFE 3-11(CA) Clothing acquisitions as a basis for the development of standards for clothing budgets for low-income families.
Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa

SUMMARY OF RESEARCH INVENTORY[1]

Fiscal Years 1966 and 1967

Relation of "PPB" to "LRS"

Planning-Programming-Budgeting	Long-Range Study		Scientist Man-Years	
Research Program Element	Research Problem Area		FY 1966	FY 1967 (est.)
Health and Safety	VII-1		13.3	11.1
	VII-2		1.0	2.0
		Total	14.3	13.1
Food and Nutrition	VII-3		18.1	18.2
	VII-4		10.6	10.1
	VII-8		39.4	35.3
		Total	68.1	63.6
Improve Standard of Living	VII-5		4.3	5.9
	VIII-1		1.7	0
	VIII-2		6.8	6.6
		Total	12.8	12.5
		NCU Totals	95.2	89.2

[1] Preliminary estimates from Forms T-2

PROGRAMS AT THE STATE STATIONS

Mary Beth Minden

Cooperative State Research Service
U.S. Department of Agriculture

During the early planning stages for this seminar and workshop, it was hoped that you might have a report by Dr. Hoffman indicating the base level of home economics research for fiscal year 1965. I was to have charts and a report indicating program change from 1965 to 1967. Mr. Turnbull indicated this morning that the first printouts would be available next week. Our timetable in processing the 1967 inventory has not allowed us to carry out our original plan. As a stop-gap I will review some aspects of the program which we were able to draw together through other methods. The intended summary will be included in the proceedings.

1967 Inventory[1]

I would like to share some of the inventory experiences with you, for understanding of approach will make the information more useful. Our first problem in summarizing home economics research interests--and a continuing problem to this and other professional groups in using the Long-Range Study--has been that of identifying the home economics contribution to the national program. In the 1966-67 inventory, each project--Hatch, regional, non-Federal, grant, contract, etc.--was reported by each of the 53 stations on Forms 141. Many of you assisted in their preparation. These were reviewed and coded for problem area by CSRS. In addition, the nearly 15,000 project reports were checked against other records in our office and coded for home economics participation. Five hundred seventeen projects were identified; 36 additional projects were on record in CSRS, but not reported on Forms 141. In reviewing program content and preparing the report which follows, only the 517 projects were included.

In coding to identify home economics participation, we defined a home economics project as one conducted by a scientists responsible to a home economics research administrator

[1] At this point, text has been modified to include 1966-67 inventory data and summary report.

within the Station organization. Since not all Universities--and CSRS for that matter--use the term home economics as an administrative or program term, we added one other requirement: that an administrator was designated to represent the Station at home economics research administrators regional meetings. Thus, the term home economics is used in the project summary in an administrative sense.

The 517 projects were further identified in a manner to indicate the degree of interdepartmental cooperation at the Station level. While we know that there is a great deal of informal discussion and consulting, we were looking for joint planning and conduct of research. On Table 1, you will note that such cooperation was reported on 61 projects (11.8%). There was primary leadership in home economics reported on 2/3 of the 61 projects. Interdisciplinary effort at the regional level is not reflected in this summary.

The inventory of home economics program (1966-67) gives us a picture of number of projects, different research problem areas reported, manpower input, source of support, and regional comparisons. A study of Tables 1-3 allows us to establish a baseline point for home economics research, to note diversity of interests, and to quantify the home economics contribution to the national program. No attempt has been made to compare home economics totals or averages with similar segments of the national study nor with the 1965 inventory.

One portion of the inventory--scientific competence--was not summarized for this report. The specialities listed on the Forms 141 did not cover some scientific interests in home economics. This portion of the summary will be undertaken at a time when meaningful results can be anticipated.

Some questions become apparent as the Tables are studied, and hopefully the information now available will provide a basis for

Table 1.--Home economics program analysis by region, 1966-67 inventory

Region	No. of projects reported	No. of projects on record but not reported[1]	No. of different problem areas	SMY's reported	No. of projects with no SMY's reported[2]	Average SMY per project	Interdepartmental cooperation (No. of projects)		
							A[3]	B[4]	C[5]
Northeastern	108	8	18	33.64	8	.31	104	3	1
North Central	186	17	25	59.25	22	.36	162	11	13
Southern	102	3	17	56.67	13	.56	78	17	7
Western	121	8	17	[6] 41.97	14	.35	112	8	2
Total	517	36	[7] 31	191.53	57	.37	456	38	23

[1] 1967 only; largely non-Federal projects. [2] 1967 only and represents 11 percent of the projects. [3] A projects: no interdepartmental cooperation reported. [4] B projects: two or more departments reported; home economics has major leadership [5] C projects: two or more departments reported; major leadership in other than home economics. [6] 26.82 without California. [7] Duplicated areas eliminated.

Table 2.--Home economics program support: Funds obligated, Fiscal Year 1967, by sources and region

Region	No. of projects reported	Funds obligated by source[1] (In thousands of dollars)								
		Hatch	RRF[2]	USDA contract or grant	Other Federal support	State appropriations	Sales of products	Industry grants and contracts	Other non-Federal funds	Total
Northeastern	108	186	75	8	105	371	5	2	44	796
North Central	186	490	146	57	167	800	4	18	23	1,705
Southern	102	412	201	18	38	334	24	8	41	1,076
Western	121	257	134	3	500	727	2	64	2	1,689
Total	517	1,345	556	86	810	2,232	35	92	110	5,266

[1] No figures are shown for "Basic Grants" and "Other CSRS" because funds from these sources were not reported.
[2] Regional research funds.

Table 3.--Home economics program support: Further analysis, by region, Fiscal Year 1967

Region	No. of projects reported	SMY's reported	Amount and source of funds, 1967				Support per project	Support per SMY	Amount and source of funds by percentages		
			Hatch and RRF	State appropriations	All other	Total			Hatch and RRF	State appropriations	All other
			Thousands of dollars						Percent		
Northeastern	108	33.64	261	371	164	796	7.4	23.4	32.8	47.6	19.6
North Central	186	59.25	636	800	269	1,705	9.2	28.8	37.3	46.9	15.8
Southern	102	56.67	613	334	129	1,076	[1] 10.5	[2] 18.8	[3] 56.9	[4] 31.0	[5] 12.1
Western	121	41.97	391	727	571	1,689	[1] 14.0	[2] 40.2	[3] 22.7	[4] 43.0	[5] 34.3
Total	517	191.53	1,901	2,232	1,133	5,266	10.2	27.4	36.1	42.4	21.5

[1] 9.7 without California. [2] 28.1 without California. [3] 44.9 without California. [4] 42.1 without California. [5] 13.0 without California.

deliberations and planning at the regional and State levels. For example, almost 200 scientist man years (SMY's)[2] are involved and an estimated 425 individuals. Their research is coded as contributing to 31 of the 91 problem areas. To what degree is this dispersion of research focus real? Or, is it a predictable result of the coding system and the definitions of the problem areas provided in 1967? Should home economists, through the ESCOP subcommittee, assist in developing greater specificity in relevant definitions that would not only expedite identification of home economics input, but also could make these problem areas more meaningful and useful in interpreting the composite agriculture, home economics and forestry program?

From another standpoint, one could approach this problem of categorizing research problem areas by asking: "What are the missions and goals for home economics?". Given the answer to this question, areas of mutual reasearch interest (agriculture, home economics, forestry) would become more apparent. Given concise problem areas and goals, plus priorities, as seen by the home economics leadership, research administrators would have a better basis for judgments regarding program definition and support. To be most useful, a document prepared by home economists could take a note from the Long-Range Study. It is goal-oriented. Traditional subject matter areas, many times reflecting administrative structure, were avoided. Home economists could fruitfully spend time stating their goals and research missions in a similar problem-oriented fashion.

[2] Defined for university faculty as "scientist time" of an individual at the assistant professor level and above. In this summary, the total SMY figure may be low since time was not reported on 11% of the projects.

Program Support

A continuing concern of all administrators is that of support of program. The inventory included ten source-of-funds categories which are summarized by region in Table 2. Table 3 gives further analysis of support data. Nationally, the reported home economics research is supported by Hatch and regional funds (36%), State appropriations (42%), and other support, which is largely other Federal support (22%). In 1967, average support per project was $10,200, and average support per scientist man-year (SMY) was $27,400.

Regional differences are apparent on the tables and will provide a basis for regional discussions. However, care should be taken in using the information. For example, in the Western Region, one State accounts for over one-third of the program. In several instances, marked differences in averages were noted when California was not included. Seven relevant differences are noted on the tables.

Program Scope

There are three ways of indicating size of program in the several subject matter areas--number of projects, SMY's devoted to the area of interest, and dollar support. In order to consider program content and focus, I would like to attempt a "cross walk" between 31 research problem areas from the Long-Range Study and the research areas of interests that are to be developed by the speakers who follow. They represent the research leadership in their respective fields. They represent a wide range of interests, but also they will provide a unifying force in that several will speak for the traditional home economics subject-matter fields. Table 4 has been prepared to assist in

Table 4.--Problem areas to which home economics research contributed, Fiscal Year 1967

Problem areas	Number of states	Number of projects	Scientist man-years
Goal III Efficient production of farm products			
Improvement of biological efficiency of field crops	1	1	.30
Feed efficiency in production of meat, milk and eggs	2	6	1.61
Farm adjustment and management	1	1	1.00
Goal IV Product development and quality			
Production of fruit and vegetable crops with improved consumer acceptability	1	1	.14
New and improved fruit and vegetable products	6	11	2.32
Quality maintenance in marketing fruits and vegetables	7	9	4.75
Production of field crops with improved consumer acceptability	1	1	.17
New and improved food products from field crops	7	9	2.33
New and improved feed, textile, and industrial products from field crops	2	2	.66
Quality maintenance in marketing field crops	3	3	.23
Production of animals and animal products with improved consumer acceptability	5	5	1.19
New and improved meat, milk and egg products	14	21	6.14
Quality maintenance in marketing animal products	5	7	1.09
Goal V Efficiency in the marketing system			
Physical and economic efficiency in marketing fruits and vegetables	1	1	.10
Physical and economic efficiency in marketing field crops	2	2	.20
Physical and economic efficiency in marketing livestock	1	1	.20
Development of domestic markets for farm products	14	20	10.61
Marketing firm and system efficiency	2	3	.60
Goal VII Consumer health, nutrition and well-being			
Insure food products free from toxic residues from agricultural sources	5	6	4.31
Food choices, habits, and consumption	14	20	7.62
Home and commercial preparation of food	17	42	12.44
Selection and care of clothing and household textiles	30	59	16.72
Human nutritional well-being	40	148	72.18
Goal VIII Raise level of living of rural people			
Housing needs of rural families	17	28	7.12
Family decision making and financial management	23	59	18.99
Causes and remedies of poverty among rural people	4	11	1.50
Improvement of economic potential of rural youth and adults	3	3	3.70
Communication processes in rural life	3	4	.90
Individual and family adjustment to change	18	37	10.80
Government programs to balance farm output and market demand	1	1	.20
Goal IX. Improve community services and environment			
Improvement of rural community institutions and services	4	9	1.41
Total SMY's			191.53

identifying current level of research by the 31 problem areas. Table 5 indicates the home economics baseline (1967) for subject-matter fields as represented by the speakers.

No attempt has been made to indicate current research approaches or detailed information on specific research projects or interests. This can be done most easily when CRIS is operative. However, since about 29.2% of the Hatch support for home economics research is from regional funds, a list of projects plus regional planning committees is included. This will indicate current interests in a phase of the program that may be more readily subject to periodic review and redirection.

In conclusion, while the summary may not give as much information as we would wish, it is more inclusive than any we have had to

Table 5.--Size of home economics program by subject-matter fields and long-range goals, Fiscal Year 1967

Home economics subject-matter fields and seminar speaker	Goals and problem areas as reported in Long-Range Study	Size of Program					
		Number of projects		SMY's		Support (Thousands of dollars)	
		Sub-total	Total	Sub-total	Total	Sub-total	Total
Family life and human development (Dr. Glenn Hawkes)	Goal IX, area 8	9		1.41		35	
	Goal VIII, areas 3, 4, 5, 6	55	64	16.90	18.31	361	396
Family economics and management (Dr. Gwen Bymers)	Goal VIII, area 2	59	59	18.99	18.99	398	398
Family housing (Dr. Murlin Hodgell)	Goal VIII, area 1	28	28	7.12	7.12	188	188
Food economics and level of living studies (Dr. Faith Clark)	Goal VIII, area 8	1		.20		8	
	Goal VII, area 3		21		7.82	178	186
Textiles and clothing (Dr. Ruth Galbraith)	Goal VII, area 5	59	59	16.72	16.72	444	444
Food science (Dr. Pauline Paul)	Goal VII, areas 1 and 4	69		19.02		471	
	Goal IV, areas 2-10 and 12	48		16.75		617	
	Goal III, area 16	1		1.00		19	
			118		36.77		1,107
Human nutrition (Dr. Clara Storvick)	Goal VII, area 8	148		72.18		2,211.5	
	Goal III, areas 7 and 11	7		1.91		84	
			155		74.09		2,296
Consumer behavior and food marketing (Dr. James Shaffer)	Goal V, areas 3, 4, 5, 8 and 9	33		11.71		251	
			33		11.71		251
	Total	N.A.		191.53		5,266	

date. I was pleased with what we found. Because of our diverse interests, we sometimes focus attention most strongly on our problem areas requiring development. We may underplay our program strengths. The inventory provides information that we may face questions squarely and make adjustments over time, if that is our desire. The Long-Range Report provides information that allows us to make these adjustments within the framework of broad research needs of the future.

REGIONAL RESEARCH CONTRIBUTING TO HUMAN NUTRITION, CONSUMER USE, AND FAMILY LIVING RESEARCH

I. Human Nutrition: Nutritional Values, Consumption Patterns, Eating Quality of Foods

NC-74, Utilization of Dietary Fat from Various Sources

NC-75, Food Purchases and Utilization by Families with Preschool Children

NE-52, Utilization of Amino Acids from Protein

S-28, Requirements and Utilization of Selected Nutrients in Preadolescent Children

S-64, Nutritional Interrelationships of Minerals and Other Nutrients: I. Dietary Deficiencies Characteristic of Low Income Groups in the Southeastern USA (proposed)

WM-55, Methods of Measuring Textural Quality of Fruits and Vegetables

W-57, Amino Acid Utilization as Affected by Vitamins

W-91, Species Differences in Lipid Metabolism of Man and Certain Laboratory Animals

II. Quality of Family Living

A. Housing Situations and Needs

NCR-54, Economic, Aesthetic and Environmental Aspects of Family Housing

S-54, Environmental and Economic Factors Related to Improved Rural Family Housing in the South
W-93, Independent Housing for the Elderly

B. Clothing Needs and Textile Properties

NC-68, Determination of the Mechanisms of Fabric Stress, Absorption, and Performance
NEM-32, Properties of Textile-Furnishing Fabrics and Their Importance to Consumer Satisfaction
SM-18, The Relation of Fiber Properties to End-Product Performance
W-80, The Efficiency and Cost of Laundering Textiles as Related to Detergent Type and Water Temperature
W-98, The Relationship of Clothing Behavior to Awareness of Clothing Norms

C. Expenditures, Management, and Level of Living Studies

NCR-52, Family Economics
NCR-55, Factors of Well-Being of the Elderly
NCT-90, Factors Affecting Patterns of Living in Disadvantaged Families (syllabus proposal)
NC-76, Patterns of Major Financial Decisions and Crises in the Family Life Cycle
S-56, Economic Provisions for Old Age Made by Rural Families

D. Community-Family Relationships and Human Resource Development

NCR-11, Child Development and Family Living
S-48, Educational and Vocational Goals of Rural and Urban Youth
S-61, Human Resource Development and Mobility in the Rural South (related research)
S-63, Certain Influences on Occupational Goals of Young People from Three Subcultures in the South (proposed)

III. Consumer Behavior and Preferences

SM-19, Quality of Beef and Factors Motivating Beef Purchases
SM-35, Consumer Buying Behavior and Decisions About Foods

POTENTIAL CONTRIBUTIONS OF HOME ECONOMICS RESEARCH TO IMPROVING FAMILY LIVING CONDITIONS IN RURAL AREAS

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Attempts to enhance the human condition must take into account human development as well as family environment. Recent research and observation in these fields underscores the inherent relationship between them. Recent projects have, in general, been centered on the problem of breaking the poverty cycle. Currently, this part of the national program of research for agriculture centers around attempts to ameliorate the disadvantaging conditions which ensue when poverty is allowed to remain a way of life for a large segment of our population.

There are no easy ways to break the poverty cycle in which many rural families find themselves. In fact, we have not yet grasped the magnitude of this problem. It is becoming increasingly apparent, however, that the relationship between urban poverty and rural poverty is very great. As an example, Ralph McGill, in a recent column of the Atlanta Constitution, reported that when a shipyard at Pasagoula, Mississippi, needed 1000 welders because of a government contract, it was necessary to go out of the State to find these welders in spite of the fact that unemployment in the area was over 64 percent for both white and colored people. The educational and developmental level of these people was so low that it was impossible even to train them for the welding task. They did not have the basic skills on which to build a training program.

The alleviation of poverty has been given a new status of importance in our society, because we have suddenly become conscious of the problem. We have also become aware of poverty's deteriorating effect on a growing economy and the humanistic implications of social pathology among the poor. We have also become aware of the moral implications and the rights of people, which are deeply involved in the relationship between the "have's" and the "have not's".

Dimensions of the Poor

Substandard conditions of living have resulted in chronic dependence in a large portion of our society, which has taken an increasingly large portion of our gross national product

because of the high cost, both in monetary and human terms, of providing adequate - or rather maintenance - livelihoods. Some dimensions of the inhuman conditions characteristic of disadvantaged families are as follows:

1. These families do not value societal institutions as supportive. They are viewed as desirable, but the poor sustain little hope for support from them. This is particularly true of schools, which have not yet accepted into practice the all-important concept of individuality.

2. Community service and community organizations have, at least psychologically, denied participation to low income people. These institutions, as they become standardized in our society, have fostered little acquaintance with the poor and their problems. Certainly all values held by middle class people are not worth striving toward; yet, effectively denying these people participation in middle class society is an insidious form of discrimination.

3. The present welfare system contributes to the degradation of the poor in numerous ways. Welfare monetary level is held at maintenance only. This attitude is justified by moral indignation on the part of the middle class entrepreneur.

4. Research indicates that education is one of the answers to the problems of poverty, but educational focus has not been directed toward that remarkably effective educational institution--the family. Certainly in national goals involving home economists, we ought to push strongly for the strengthening of families so that their educational potential can be exploited. Reforms to date have largely been in the formal educational system. Little has been done to facilitate education through the family, which might move with greater dispatch and greater economy.

Disadvantaged parents know little about reinforcing the values and expectations of the school. Furthermore, the school's attention is directed at a time in the life of the individual which is past the optium moment when intervention by the educational structure can be most effective. Pre-school children learn from their parents essentially what the parents have learned. Consequently, parent education during early parenthood would markedly alter the lives of children if we could find ways to do it effectively.

The tie between family environment and human development is exceedingly strong at this time. Indeed, attempts to separate human development and the need for strengthened family environment are essentially artificial. We have been slow and clumsy in our development of research strategies involving home economists with a child psychology background, and home economists with a family sociology background. The most fruitful ways of achieving our goals of alleviating poverty conditions would seem to lie in effective communication among researchers in these closely related areas.

5. Families of the poor have little knowledge of the importance of health and related matters. Maslow has effectively demonstrated that aspirations for higher order needs, esteem, and self-fulfillment remain inoperative in the absence of physiological and love-need fulfillment. The educative process will be ineffective for people suffering from dietary deficiencies, disease, low physical maintenance, or inordinate physical or psychological abuse. This means that the base of intervention must be broad, to insure prevailing need fulfillment. We must find ways to do this and at the same time allow the individual to maintain his dignity and integrity, else we have accomplished little.

6. Families from minority groups--and this holds especially true for the Mexican-American and Negro--have limited opportunity for imitation of success figures. Research in the educational process indicates that young and middle-aged children learn most effectively in a context which fosters imitation. The absence of Negro and Mexican-American models in all sorts of mass media certainly does little to foster aspiration among these groups. Attempts to provide a springboard for upward mobility are frustrated constantly by the inability of children to mingle or identify with successful people.

7. Research and observation has indicated that the establishment of family structures of a stable nature are important in providing assistance to low income families. By and large, the disadvantaged families in our society tend to have the least secure family structures. The mobility involved with moving from rural to urban areas reinforces this dangerous condition. If these families accept mobility as a way of enhancing their welfare, whatever strength there might have been in the extended family is essentially lost because the patterns of extended family support do not follow this kind of family movement. Furthermore, concerns involved in rearing a large family in the absence of a stable income often lead to conflict, separation and divorce. Among the many elements contributing to school dropout, inferior human relationships, and inability to cope with life's problems--none is more devastating and certain than a broken home. Interestingly enough, some of our welfare patterns and philosophies actually encourage family breakup.

8. Like everybody else, family members who live under disadvantaged circumstances, rural or urban, draw from their perceptual reservoir to interpret current events. We have known for a long time that individuals practice selective perception and retention. What exists does not influence a person nearly as much as what he "sees" as existing. He behaves according to the way events seem to him; and events

have meaning largely on the basis of the past. Therefore, the communication system becomes a critical element in enhancing the lives of our disadvantaged populations. When new information is fed into the human system it is interpreted on the basis of past experience. When this past experience is found wanting, then the individual proceeds toward new goals and new situations with distrust, caution, and timidity. In the transition from rural to urban, or to rural nonfarm environment, this leads to a kind of alienation which is difficult to overcome. We need to understand more of this process and how to make this a productive and dynamic transition rather than a negative and threatening one. To lead productive and fruitful lives without serious adverse effects, these people must understand the circumstances which have propelled them toward change, and the probable results of different kinds of behavior in the new circumstances.

To the poor, life has become unpatterned and unpredictible. Events over which the person has no control tend to be the center of his existence. There is alienation and a sense of powerlessness, so hate and rebellion may become a way of life. Fatalism and resignation are the results of this degradation.

9. The family in modern society is undergoing constant transition. The impact of change from the extended family to the small nuclear family is still largely unknown. We are aware that the kinds of support and services traditionally extended to the individual and his family by the kin, tribe or group, are not available when relationships are weakened by mobility. The role of modern society in providing these "backup" supports is being explored largely in an uncertain way by society as a whole. Direction, guidance, and understanding--all of which could be critical elements in a productive movement--are not as yet available. Research in the interrelationships between the family and its community setting is essential if modern families are to retain or develop the strength and stability which they need in a dynamic, polyglot society.

Poverty is not new to society; it has existed from the times of our first records. We traditionally have attempted to break the poverty cycle by introducing agents external to the family, such as increasing the number of jobs, increasing educational opportunities and, more often, increasing welfare assistance. We have assumed that the motivation and goal-orientation which was expected to follow would allow the individual ultimately to pull himself up by his bootstraps. This force has indeed exerted itself in many cases. In the past this was a more logical method of intervening than it is currently, because the degree of sophistication and technology in frontier society was at a lower level--hence the individual could more easily understand and accept society's goals for him. Times have changed, however, and the fruits of modern middle class society are not available to the poor without the skills and attitudes that are necessary to function effectively with change.

The existing social structure has "wished" these people out of existence, because poverty says things about our way of life which we do not like to have said.

Social Implications of Poverty

Let me give you some ideas of the social implications of the new poverty. These are clearly illustrated in the seven symptoms of poverty noted by the conference on economic progress in 1964.

1. Sixteen million children among the families of the poor bear the scars of their poverty when they enter school. Their limited vocabulary, limited pride, and limited motivation bring limited, slow progress in learning.

2. One half of the men taking the selective service pre-induction test in 1963 failed either the physical or intellectual tests or both. These are largely young adults who are entering the labor market ill prepared for even the simplest technical jobs.

3. The impact of poverty is clearly related and recognizable in the increasing delinquency and crime rates as well as the discouragingly hard-core social problems in our cities.

4. The poverty group is filled with persons who are unable to help themselves--children in broken homes, young female heads of families who cannot work or who earn a limited amount if they do, and the many aged citizens who cannot find a place for themselves in our social and economic system.

5. Poverty and slum life are largely synonymous in the city or on the farm. Inadequate housing, poor physical and mental health, illiteracy rate increasing at a high level, and consumer exploitation as a way of life are all associated with poverty in either place.

6. The concentration of poverty among Negroes and Mexican-Americans intensifies racial tension. Our mass media dangle the fruits of middle class living before those who do not have the means to obtain them.

7. Unemployment persists for the untrained in spite of the shortage of personnel to fill many jobs. The computer age has brought the end of ditch digging. The culture of poverty and its relationship to unemployment can be understood to a certain extent if we see it on the basis of the limited alternatives that these people have. There may be many apparent choices, but choices are not real unless they are understood by the choice maker. Furthermore, poverty has a cumulative effect as far as people are concerned; one failure at employment brings others. These pyramid, and so a person who needs help and understanding operates in a way which limits the amount of

help and understanding he can get. As far as our goals in agriculture are concerned, where does this lead us? Several research needs are exceedingly clear. They are:

1. We do not understand the characteristics of the rural farm and nonfarm poor, nor do we understand the characteristics of those rural poor who have become urban dwellers. Demographic studies of these characteristics are sorely needed.

We are aware that many families are headed by one parent and that their conditions in many cases defy description. We also know from observation that the circumstances under which these types of families live vary from region to region, from State to State, and from city to city. Most of us who are researchers, being steeped in middle class traditions, cannot understand the living conditions of these people until we see them. We must adopt the practice of the social worker and go where the people are in order to understand.

2. We are becoming increasingly aware of the interrelationships of human development and the family. Research in early learning deficiencies has indicated repeatedly that a restrictive family environment does have a strong impact on human development. The opportunity for the child to perceive correctly, to formulate generalizations, to move developmentally in his learning skills, deteriorates rapidly in a negative environment. The younger the child, the more obvious his opportunity for cumulative deterioration. As difficult as research is to solve this problem, it is needed if we are to meet the national goals.

3. The needs of families who live in isolation, physical or psychological, are not well understood. Those people who migrate from the rural areas to the urban areas often find themselves more a part of "the lonely crowd" than those who have retained their identity in their previous milieu. This type of isolation is not understood. New strategies to help understand it must be developed. There seems no choice but to more effectively utilize the skills of the behavioral sciences and to find ways to enhance communication across discipline lines.

4. Population groups of a diverse nature must become an integral part of our studies. An examination of the traditional researches which are quoted constantly by those of us who work in home economics--particularly family relationships and child development--shows that, by and large, we have drawn our generalizations from middle class populations. This, undoubtedly, was a legitimate beginning for our research. These populations were available to us; our expertise was so limited that this did not seem to be the problem that it has now shown itself to be; and financial support was so limited that it was impossible to go to where the people were. Today, however, if we are to be of service in helping to meet the national goals, we must have the resources necessary to explore different population groups. Assuming that a Negro Mississippi family, an Iowa farm family, and a California Mexican-American family have the same goals, aspirations, values, and economic needs is an academic luxury which cannot be tolerated. If we are to build programs on a sound basis, we must have data which will help us understand the diversity of the groups that we must serve if we are to meet these changing needs.

These findings also will help us avoid misleading distinctions. At one time, undoubtedly, the agricultural community involved primarily the small farm operator who was production oriented. Today if we see agriculture in its totality, we must be aware not only of the farm family, but also of farm workers, the rural nonform person, and the impact of this rural population on the urban areas. I have long championed the belief that differences between rural and urban people are not as great as some would have us believe. I have also suggested that the interrelationships between the rural and urban people could be more effective if we would divorce ourselves from this artificial dichotomy which seems to have been a political safeguard.

5. We must find the processes which facilitate change adaptation in some families and those processes which discourage it in others. Change is now recognized as a characteristic of society which will be with us always. The critical need is to find ways by which we can live with change, and how we might use change to serve us.

6. The increasing interrelationship between the biological sciences and the behavioral sciences must be recognized by research administrators. Traditionally, the pattern of communication between the fields has not been encouraging, and yet advances in both clearly delineate the need for overlapping and for fusion. Projects concerned with human development and the family must see both disciplines as sources from which strength is fed into each. Possibly we have failed to meet the changing goals of agricultural research because the preparation of our staff has not been adequate. It is now recognized in nearly all academic fields that retraining is an essential part of the academician. This undoubtedly must be included in the thinking of the research planner and the administrator.

7. An experimental program would help establish the efficacy of some of our generalizations about human development, the family, and the community. Certainly these three factors are closely interrelated. Separating them is artificial, serves to perpetuate academic isolation, and in no way suffices for "real living conditions." This experimental program would undoubtedly call for total

involvement in human welfare. It could involve not only the physical aspects of living, the biology of relationships, but also the psycho-sociological context in which development and organization takes place.

A Research Model

Probably no group is better equipped from a philosophical point of view to set up such a Utopia than the home economics group. The evaluation of such an idea could and would become the experimental basis for adaptations. If a model were established which could be modified with new thinking, possibly we could establish the paramount individual development pattern within a familial context regardless of such extraneous factors as rural vs. urban, economically advantaged vs. economically disadvantaged, racially pure vs. racially impure, and different family life cycles and patterns. Such a research model would allow us to generalize about those factors which really make a difference without being caught up in moralizing about those things which seem to us to be crucial because of our personal orientations.

It seems to me the home economics group can and must play a crucial role in many of agriculture's long term needs to serve humanity. Without the assistance of the home economics group it is to be expected that material needs would be placed in primacy over psychological needs. The mistakes of the past indicate to me that a pattern pertaining only to economic needs will fall short of providing the overall development which all of us seek to foster.

I think, in conclusion, that one must also say that the diversity within home economics can be used as a strength rather than a weakness. Differing points of view and different philosophies will allow us to build from strength rather than weakness--if we are creative and constructive.

FAMILY DECISION MAKING AND FINANCIAL MANAGEMENT

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I do not intend to discuss the decision-making process nor the direction of current research on it. To me, family financial management is decision-making, or rather, it is a manifestation of it. However, it is not financial management as decision-making about which I intend to talk. It is the framework within which we research family financial management that is my interest today.

I want to thank the authors of the report, not only for the comprehensive job they have done in organizing and assembling ideas, but also because they provided me with a take-off point. In my opinion, one of the barriers to progress in the field of family financial management has been our tendency to over-categorize. One of my colleagues who reviewed this paper in an earlier draft suggested that the problem may be that we are blind to all but the established categories. I don't know which it is, but I would draw your attention to the very first sentence on page 161 of the report (Long Range Study) which says that family decisions can be grouped into two broad categories--economic and social. These are then discussed as if they were separate. The social ones, supposedly, are those concerned with major turning points in family development; the economic ones are those concerned with the use of financial resources. I question this distinction.

Why do we study family financial management? If our concern is well-being of family members rather than the identification of spending flows for the merchandiser of culottes or soft drinks, we don't need to always use the traditional categories--food, housing, clothing. To my mind, we should study money expenditures to increase our understanding of this aspect of management and thus improve our ability to help families control their financial destiny, or to get ahead.

Most families interpret getting ahead as being able to enjoy more satisfactions than they had in the past or to be able to assure this situation for their children. In this definition of getting ahead, I am not neglecting the quality of living for the quantity, but I do recognize that raising the level of living of people in the twentieth century is goods-and services-oriented. Communing with Nature, or being able to enjoy the architecture around me, may increase my level of satisfactions. However, to commune with Nature, I have to have the carfare to get beyond the press of human beings, and some investment in intellectual capital needs to have been made before I can consume the satisfaction of the fact that there are bits of lovely old architecture here and there, even in the most squalid tenement districts.

If our real purpose in studying family financial management is to help families get ahead, in the broad sense of the term, we cannot afford to segregate family decisions into economic or social categories. One of the reasons that we

cannot afford this distinction is that it will lead to a specialization of labor and not one that we particularly desire. Sociologists will tend to deal with one set of decisions and the economists with another, and there is far too little dialogue among the social sciences, as we well know.

Economic Decisions

The so-called turning point decisions--whether or not to move to another city, to undertake a business of one's own, to get out of independent farming and become a wage earner--may be social decisions, but they are also economic. I won't be drawn into the argument of their being more one or the other or how much. They are decisions. Once made, these decisions in turn provide restraints and directions for multitude of smaller decisions that follow. Mr. Blanding's Dream House should be required reading for every student of family financial management and decision-making, particularly if one thinks that mutually exclusive categorization or isolation of a decision is possible. Family decisions are not economic or social--they are economic and social. If we could make a breakthrough here, both economists and social psychologists might find themselves moving forward in their attempts to deal with family problems, particularly those of disadvantaged families.

I should like to talk to the next level of over-categorization that plagues me. This has to do with what I sometimes refer to as the Engel strait jacket. We categorize spending along the lines set down by Engel more than 100 years ago--housing, food, clothing, and 5 or 6 or more categories describing what used to be called miscellaneous. When Engel devised this sort, the first 3 comprised 90 percent of the total outlay and the mere existence of the 4th or miscellaneous set was an indicator of improvement in the level of living. These categories no longer perform this function, yet we continue to classify practically every study of family expenditures into a system of categories that are neither mutually exclusive, logically consistent, nor very useful. This problem has long been recognized. In 1926, Professor Hazel Kyrk wrote: "The whole question of proper classification of household expenditures is, of course, a difficult one. It is difficult to find groupings that are both significant and practicable."[1]

Among the difficulties with the system generally used is the fact that some categories tend to be commodity oriented, others are functional in nature, some a blend of both. For example, we might say food is basically a commodity concept, housing more functional, and the clothing category is frequently both. If we were to think of food as part of the functional category of feeding the family, shouldn't we include expenditures on refrigerators and freezers, ranges and fuel in our accounting? Expenditures on housing, transportation and education are other hard-to-handle propositions when you really think about them. Can you make meaningful comparisons of family living by looking at expenditures on housing without transportation or education? Presumably large outlays on the latter might tell us something qualitative, but what do we do about large housing expenditures that include a heavy tax burden to support the best in public education against the spending of families who make the education outlay more directly on the child involved? Frankly, I don't know. The question becomes more ticklish when we try to make quality of living comparisons internationally. Frequently, many of the goods and services provided privately in one country stem from the social sector in another.

Between farm and urban households, the question becomes even more blurred. In the farm area the house is part of the farm capital structure and outlays for housing are hard to separate from the business operation.

Housing itself may be an indicator of the level of living of the family. Dr. Margaret Reid in her book, Housing and Income, says that although she started to study the effect of income on housing expenditures, the further she went the more she began to feel she was studying the effect of housing on income. Housing may be a more reliable indicator of normal income than income is of housing. If this statement contains even a little truth, it provides us with one more reason for approaching the study of family financial management free from the restraints of the traditional framework.

Some of us at Cornell have begun to think about studying family financial management in a different frame of reference than we have used in the past. Many of the ideas I am talking about today came from my colleagues, particularly Dr. Mabel Rollins and Dr. Ethel Vatter who first verbalized them in their introductory management course. Dr. Rollins and I were thinking along somewhat the same lines when our conversations led us into several possible ways of studying family spending. The results of those conversations will soon appear as an experiment station bulletin.[2] In it, we proposed several approaches

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[1] Kyrk, Hazel, Cost of Living on Iowa Farms, p. 68, Iowa Experiment Station Bulletin 237, 1926.

[2] Bymers, Gwen J. & Rollins, Mabel A., Classification Systems: Household Expenditures Data & Household Accounts. Manuscript in process of publication as Experiment Station Bulletin, Cornell Experiment Station, Ithaca, New York.

or possible classification systems that might prove interesting and perhaps contribute to our eventual understanding of the allocation of resources by families.

Suggested Approaches

Among the approaches suggested were the following: A time-horizon approach; a functional approach; and a discretionary non-discretionary approach. So far we have only begun to explore one of these--the time-horizon concept. The idea underlying this approach is that the family's present-future orientation is reflected in its spending habits. This is not an original idea. Milton Friedman,[3] among others, has said that family spending reflects more than simple allocation of current income streams. It is, in fact, the expression of the family's concept of its permanent income. That is a permanent income concept rather than current money income that determines the family's consumption function. Current income for Friedman may contain either a positive or a negative transitory component and household spending habits tend to ignore these temporary fluctuations.

In our present formulation of the time-horizon idea, we are dividing family spending into two large categories--one being present oriented, the second, future. This is a simplification of the three we used in the project currently being published. As a practical solution to the problem that these terms are relative, that is, they exist on a continuum, we have arbitrarily used the three-year limit to distinguish present from future oriented spending. Any outlays made for goods or services from which the family expects to be enjoying satisfaction three years or more from the time of the outlay would fall into our future category.

This future or investment category is divided into three types or subclasses. These are: First, expenditures on equities, stock, bonds, real property or other assets, the traditional net worth items. Second, expenditures on durables, furniture, furnishings, silver, china, and even draperies are included in the future category labeled investment in durables. We have arbitrarily ruled out apparel, sheets, towels and similar goods, even though we realize that for many families, these items may well be providing consumer satisfactions beyond the three-year horizon.

Expenditures for family health and education and those contributing to the cultural and social improvement of the community comprise our third category, investment in human capital. This category, to our knowledge, has been investigated very little in family financial management circles. In economic literature of recent years, several economists have been dealing with the idea and have discussed the extent to which this kind of investment has paid off in greater productivity and real output.

A candidate for the master of science degree in household economics and management at Cornell University,[4] investigated the investment element in family expenditures for higher education among 273 Virginia families who had children in their senior year in college. She was primarily interested in determining if they recognized the investment characteristic of outlays on education and whether or not she could determine different financial management or planning practices among those who regarded these expenditures as investment versus those who were viewing them as current consumption.

The word investment appeared to have a "halo" on the written questionnaire; 77 percent of the families responded that they regarded money income spent on college as an investment. However, their responses to other questions regarding adjustments they would make if faced with a sudden financial setback indicated that they were not regarding these outlays as investments of the same order as money invested in the home, business, or other financial assets. There were many interesting findings. Investment-oriented parents differed significantly from the non-investment oriented where boys were concerned in income and advancement purposes of a college education. Differences regarding financial planning, the share of income going to education, reliance on scholarships and grants-in-aid, and recognition of opportunity costs were not significantly different for investment-versus non-investment-oriented parents, but there were differences and these were in the hypothesized direction.

This study dealt with only a narrow aspect of investment in family members. Costs of moving, retraining, and adult education could all be studied as part of this investment category; yet this remains almost unexplored territory for the persons concerned with family financial management.

Investment in People

I believe the family economist needs to incorporate some understanding of investment in family members into financial management teaching. How different is the family's decision to spend $10,000 on Jr.'s education, as compared with the one Grandpa made when he decided to enlarge his business or buy another piece of land so his Jr. could get a good start? Yet our

[3] Friedman, Milton, The Theory of Consumption Function.

[4] Driver, Carolyn C., "A Study of the Investment Element in Higher Education," Unpublished Master's Thesis, Cornell University, 1966.

studies of expenditure would classify one as investment and the other as current expenditure.

Economic studies have emphasized the enormous payof society has enjoyed from investments in human beings. The temptation is to assume these benefits will continue, but there is no certainty that the impressive rewards to outlays made in this direction can be counted on indefinitely. We need to heed another lesson from the economic literature--that is, the law of diminishing marginal returns may set in. We know that the marginal rate of substitution between brains, brawn, and hardware has been favoring capital expenditures on brains in recent years, but there is no guarantee this will continue. Family economists need to be alert here, too. We must not preach education as the only road to advancement.

Another point of departure for study of family financial management practices could well be on a self-other continuum. Rather than examining money management practices only in relation to the family itself, its size, its SES class, its income or other familiar variables, why not look at financial management in relation to community participation or involvement with others outside the immediately family? Community participation is not a new idea to sociology, although in the limited work with which I am acquainted, it has been regarded as the dependent variable with SES as the independent or explanatory element. What I would like to suggest is that perhaps it works the other way. Participation in the community or involvement with others may precede advancement rather than be an effect of it. If we look beyond the practicalities of politics, some such notion may lie at the bottom of the stress on participation of the poor in the EOA programs. This idea is certainly implicit in Extension work, and yet I don't believe the idea has been explored in family money management circles. I am only suggesting that a measure of the family's contribution to and participation in community activities may be a better clue to intergenerational improvement in levels of living than income plowed back into the family farm, or the speed with which the mortgage was reduced. Community participation scales do exist, perhaps we should borrow a set and examine family money management in light of these.

A few people have begun to think about a definition of a consumption level that would include a socially provided component. By this, we mean a recognition of the kinds of consumer satisfactions that stem from society or community. We have made one small step in this direction. A graduate student[5] devised a simple index of relative use of public-provided goods and services based primarily on frequency and looked at this in relation to socio-economic class and other variables. Education, recreation, welfare, and protective community facilities were included in her study.

She found that families do establish patterns for using available community-provided facilities, and the use is associated with increased income, educational and occupational attainment, and number of children--all factors that are increasing in our society. As a people we can expect to be making greater public outlays for these services in the future. Researchers hoping to talk about real levels of living of families cannot afford to ignore the community or socially provided component much longer. At this point, I wish to note that, contrary to popular thinking, public-provided goods and services appear to have widened rather than narrowed the gap between the poor and the rest of the community in many instances. Higher education, parks, playgrounds, and highways are all used more by middle and upper income groups than they are by the poor. The move toward Medicaid and Medicare may offset, this a bit, but it is too early to tell.

A whole gamut of topics is crying for study here. We simply don't know how to quantify or value community services in a way meaningful for inclusion with family expenditures. Yet we know they are part of real levels of living that should not be ignored.

Security vs. Risk

It is in this area--the self-other continuum--that the fallacy of trying to separate family decisions into economic or social categories comes through loud and clear. We must break out of our thought molds if we, who are in financial management research, are really going to make any contributions to the goal of helping families live better.

Another dimension of family spending that seems to be relevant to family financial management is security versus risk. This has been explored by a few psychologists and some far-out economists who have tried to measure utility. But no one with whom I'm familiar has really attempted to study financial management practices of families according to their preference or aversion for risk. The work that I have seen has tended toward establishing some benchmarks on the security end of the scale. Perhaps we have been looking for the wrong things. Occasionally, one stumbles on clues that are interesting. For instance, when I was looking at 1959 installment debt data from the Michigan Survey Research Center, I noted that the use of credit seemed to be associated with families who thought they were better off this year than last and expected to be even better off the next year. Now it could well be that debtors are by nature optimists

[5] Olson, Geraldine I.L., "A Study of Community Provided Goods and Services Used by Families in Ithaca, N.Y. and an Indication of Use by Various Demographic Characteristics." Unpublished Master's Thesis, Cornell University 1965.

and that lenders select their clients carefully enough to be sure that the borrowers are only those who will be better off financially a year hence. This I doubt. I suggest instead that perhaps there is really something associated with the family's willingness to take a chance, to gamble on their ability to assess risk. Many borrow and get ahead. We haven't paid enough attention to this. I think there are some studies in the farm management and business management circles that have dealt with risk, but family financial management people haven't contributed much here.

Another continuum against which we could test our data is the work-leisure range. Family preferences along these lines might contribute quite a bit more to our understanding of family financial management practices than it has. I am not thinking of this according to hours worked or whether or not mother is out or in the labor force, full or part-time. These are important aspects of the work-leisure continuum but something more is involved here. Family time-use studies could tell us quite a bit. Again, it is the need to explore and relate family financial-management practices to decisions in other areas that catches our attention. The key to better understanding of what it is that helps families improve their real level of living lies in a wider approach to money management.

Lack of Benchmarks

Part of the difficulty facing researchers in the family money-management area is the lack of benchmarks. What is good money management? There seems to be an implicit assumption that it is staying out of debt. Yet I'm uncomfortable with this one, particularly as I appraise the financial advancement of some of my contemporaries who have necessarily had to be less conservative than I am on this score.

If money management has as its goal to help families get ahead, I think we have to recognize that in today's society this may be attained by investments in family members as well as in real estate or stocks and bonds. Durables and travel aren't outside this boundary either. Successful money management practices may be related to many different levels and kinds of living--none of which have been very well identified. There are a few standard budgets around that have been based primarily on cost of a predetermined food standard, but these are not very useful tools for the identification of level of living beyond the modest but adequate. Only recently has there been any work at objectively defining standards or bench marks at other levels--and what there is really just getting underway.

We have come to accept a fact that has been in the literature for 40 years. I refer to the idea that it is really the level of consumption, not of income, that is the indicative of the level of living. However, we aren't very far along the road toward identifying what we mean by consumption either.

Can consumption levels be identified by key indicators of one sort or another? Certainly this is an important research area for family financial management people.

I could go on enumerating possible directions for study until it becomes much later than it is. I shall restrain myself.

I should like to close with a few remarks to you as research administrators. It is not often that I have this opportunity. Usually I'm listening to the "pearls" from your side of the desk.

What I hope I have done today is to indicate that there may be some real payoff in research projects that seem to be breaking out of traditional molds. These may be a little difficult to fit into the categories on the report blanks. The researcher may not always see to clearly where it is that he or she will be coming out or just what the end product will be. You may have to support several of these before you strike gold, but encourage experimentation whenever you can. Volumes of data exist in printed reports of family spending that record expenditures in selected categories. In their present structure, they are not very useful in helping us gain new insight into family money management--insight, that is, that would enable us to be more helpful to families who are trying to raise their level of living.

Home economists, contrary to some of our other social scientists in this type of research, do have an obligation to do more than record and remark on what they see. Our goal is to help families raise their real level of living. Our research efforts should be judged against this criteria.

HOUSING AND THE ENVIRONMENT

Murlin R. Hodgell
University of Nebraska

Fifteen years ago one of our most important projects in housing research was the development of self-help techniques for functionally illiterate people in certain areas of the South. The chances are strong that one of these same functional illiterates--or his frustrated offspring--will be caught helping himself in a looted store in a major northern city during the evening riot of the first 100 degree day this summer. Something was perhaps lacking in our studies of home environment for these people.

Fifteen years ago we rural housers were fascinated with studies of "Step-Saving, U-Shaped Kitchens" in many variations. The work triangle was hailed as the new wife-saver and was presumably a key basis for truly lasting convenience in house design. Last Tuesday there were municipal elections in many local communities here in the Midwest. Bond issues or vote authorizations for new housing authorities had prominent places in many of these elections. The new housing projects will become home for many of the same people who shared our delight in kitchen planning a few years ago. But, some of these new units will not even include family kitchens. Communal dining will be the new pattern for such people. Perhaps our preoccupation with kitchen detailing in earlier years needed a different perspective if it was to produce lasting benefit for these individuals.

Fifteen years ago, we went to great lengths to design our farmhouses in awareness of the full family cycle. Today, some of those same houses stand abandoned as a result of the farm consolidation process. Many others have become homes for mobile farmers or urban commuters who now substitute wheels for such static cycles.

The Missing Element

Yes, something was missing in our rural housing research in those earlier years. The weakness was not in the specific research projects, because many of the techniques and conclusions of those projects remain just as valid today. In retrospect, the weakness of much of that earlier work was in its larger content or, more accurately, in the lack of a fully understood, carefully thought out total picture in which relative values and sequences could be determined for various projects. As a result, project importance was determined too often by the personal interest or capability of the research administrator and value of projects too often went little beyond the publication credit of the researcher. The deprived people of rural areas who, so we rationalized, were the focus of our effort often reaped little or no lasting benefit.

I hope the evolution of events will bring us a new surge in housing research in the near future. But, if it does develop, we must take care not to repeat the mistakes of the past.

For one thing, in the research of the 1950's we boxed ourselves in with some loose definitions. We equated "rural" with "farm" and, as a consequence, largely ignored the needs or problems of the majority of rural people who live in rural villages or other non-farm locations.

We got too involved in our work on a personal basis and, as a result, too frequently identified projects by personal interests rather than by urgency of need. Far too much of our research money in those days was spent on the middle-class problems to which we could personally relate and for the benefit of a class of farm people who were relatively capable of taking care of themselves. Except for the valiant efforts at Tuskegee, pitifully few of our efforts in rural housing were directed at those people who were least capable of controlling their own future. Even at Tuskegee, I fear that we sometimes confused cause and effect. Housing--any kind of housing--has little permanent meaning except as an interrelated aspect of total environment which involves schools, markets, transportation, recreation and, most important of all, job opportunity and satisfaction.

I would contend, therefore, that any program to resume rural housing research should be undertaken only after the perspective of total context and inter-relationship has been established, and that the project elements in such a housing research should be determined in relation to their significance in this total picture.

The Effective Community

In studies of housing for any particular region, this total context should be the effective community. In our mobile age the hazard condition of the county road is at least as important to family convenience and security as is the dimension of the bedroom hall. The protection from junk yards across the road, afforded through county zoning, may have more bearing on the livability of a house than all our efforts at internal space design can achieve. The local and quality of the public educational facility in the community is a far more significant factor in environmental design than are questions of cleaning qualities for bathroom surfaces. Indeed, the quality of that rural education--or lack of it- has become the controlling factor in efforts to alleviate bad housing conditions in slum cities half a nation away from the point of educational origin.

The focus of our revised approach, then, adds community evolution to family cycle and recognizes that housing is only one physical aspect of the complex pattern of today's life. It recognizes that the economics of the home are determined by the economics of the community and region, and are hopelessly intertwined with those broader factors. It recognizes that research expenditures for refinements such as work surface comparisons rarely can be justified in the scope of needs dictated by a new social consciousness.

Once this total context for renewed housing research has been established, I am sure that many of the specific new projects for appropriate study will bear striking resemblance to the type of projects of past years and that many of the established methodologies will find new adaptations. The significance and meaning of results, however, should be vastly improved.

As we move our research into this broader framework, it follows that we can no longer claim competence as isolated professional groups. We need a much more sophisticated approach to inter-disciplinary research, with architects, home economists, planners, engineers, sociologists, economists, and others working as a team: Each individual recognizing the limitations of his area of competence, each recognizing a broader area of responsibility for essential inter-relationship, and all of us exhibiting a concern for the total picture and its evolving characteristics.

To accomplish such goals we need much broadened awareness of the sources of financial help for our studies. The USDA has been replaced or supplemented by the Department of Housing and Urban Development as a prime mover in this area, and many other agencies have become involved in various aspects of the picture. We must adjust, accordingly, if we are to break out of that little box I talked about and move into the full world of opportunities before us. The prospects in housing research are truly exciting if we can move in such a direction.

RESEARCH POTENTIALS--FOOD CONSUMPTION AND RURAL LIFE

Faith Clark

Agricultural Research Service
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My assignment is to bring you some thoughts on how home economists can help solve the problems listed in the Long-Range program report under Goal VIII, Problem Area No. 3, Causes and Remedies of Poverty Among Rural People; No. 7, Structural Changes in Agriculture; and No. 8, Government Programs to Balance Farm Output and Market Demand; and under Goal VII, Problem Area No. 3, Food Choices, Habits and Consumption. Also, I am assured by the planning committee that I have permission to wander into other areas.

First a comment on the qualifications required for carrying out research in these areas. I am sure we all realize that much of it requires an interdisciplinary approach. For the nutrition specialist, background in a number of the social sciences or collaboration with specialists is needed. For the social science specialist, collaboration with food and nutrition specialists will be needed in the problem areas concerned with food. Statistics is an especially important tool in the problem areas I have been asked to cover.

VIII-3. Causes and Remedies of Poverty Among Rural People

The interest of home economists in the problems of the poor was shown by the tremendous response to the American Home Economics Association workshop, "Working with Low-Income Families," help in March 1965. Since then 67 regional and State workshops have been held, attracting 15,000 home economists--approximately half of AHEA's total membership. More home economists are now concerned with low-income families, through participation in anti-poverty programs or through incorporating the special problems of these families in their teaching than ever before. Considerable research on why so many rural people live in poverty and how the poverty cycle can be broken is required if action and educational programs are to be effective.

From nationwide surveys, family expenditure and consumption patterns of the poor have been studied and compared with those of higher income families. Some of the socioeconomic characteristics of the poor have also been quite well researched at the national level, e.g., their educational level, size and type of family, occupation and race. State and local studies would provide needed background facts for community anti-poverty programs.

Fruitful areas of research that I think could be expanded relate to financial management. How is money handled by low-income people? How do they use credit? What do they buy, how are payments met? What are the causes of overuse of credit? How are financial decisions made? Who makes them? What role do the children have in family support and money disbursement? What apparently determines the family's values with respect to earning and spending? The last question is a big one--exceedingly complex, yet important to home economists because they should be in a position to influence values and goals in teaching at the high school and college levels.

Another area of research is concerned with household activity patterns. At one of the stations, we are supporting some research that is testing the hypothesis that families that are moving up the income scale from a poverty level use their time and physical resources and communicate among family members differently from those families that have remained in poverty. I am sure there are

other hypotheses concerning use of resources that home economists could test. Research of this type might produce some useful leads in how to break the poverty cycle among rural or urban families.

One or two additional very practical research questions occur to me that might fall in this problem area. First, the question: Does home-production pay? Many rural families no longer produce at home the foods that used to help provide them a nutritionally adequate diet. Some studies of the relative economy of home-produced versus purchased foods in today's market would be useful background material for Extension agents and those working to help low-income families make the best of their existing resources.

Second, what is poverty? A dollar amount has been set for us at high Government policy levels. A number--or a series of numbers--had to be selected in order to have counts to justify programs and to have guides for administering programs. The yardstick of poverty adopted by the Council of Economic Advisors and the Office of Economic Opportunity was developed by Mollie Orshansky of the Social Security Administration. She used one of our low-cost food budgets and multiplied its cost by a factor that represents the percentage of income spent for food.

We are much concerned with the problem of determining the income needed to support equivalent levels of living by farm and nonfarm families. An approach we are using also starts with food consumption. We make the assumption that, in general, a family uses its available resources so as to obtain a mix of goods and services that provides the same level of satisfaction in each area of consumption. Therefore, groups of families of the same size and composition whose food consumption is equal can be assumed to be at the same overall level of living. We chose food as our locator of level because we have more objective knowledge about it than any other area of consumption and so can relate the food needs of families differing in size and composition and also can "label" the levels of living we discriminate as low-cost, moderate-cost and liberal. Using a complicated mathematical model, we hope to develop scales that will relate these levels for farm, rural nonfarm, and urban families and for families living in the four regions of the U.S.

Some of us also need to be concerned with listing in as objective a manner as possible the kinds and amounts of goods and services that meet certain specified levels of living. Such market baskets, that can be costed periodically, will need to be different for different types of families and in different parts of the Nation and will certainly change over time as our American standards of living change.

Because we do enjoy such a high material level of living in the U.S., the setting of "minimum-decency" standards poses many problems. Even for food, such standards or budgets must rely in large part on socially-determined needs, as well as on physiologically-determined needs. A food budget, determined solely on the basis of nutritional adequacy and minimum cost, would be acceptable to only a very few Americans and would not be a practical standard or guideline to use in either social action or education programs.

It seems to me that there will be an increasing interest in "minimum-decency" standards and possibly in budgets that meet other standards as there is more discussion of guaranteed incomes and negative income taxes.

VIII-7. Structural Changes in Agriculture

This problem area will be researched chiefly by agricultural economists. In their studies of the relationships between changes in the structure of agriculture and the status and composition of the labor force, they may need to draw on the skills of home economists in measuring the levels of living of farm laborers. One factor affecting the organization of agriculture today is the inability of farm operators to pay such laborers enough to maintain decent levels of living. Economists will look to the home economists for research-based information on what constitutes a "minimum-decency" level of living in the geographic area under study.

VIII-8. Government Programs to Balance Farm Output and Market Demand

Home economists in ARS, working with economists in ERS, carried out research that determined the effectiveness of the pilot food stamp program in raising food consumption and dietary levels of participating families. Our home economists have also carried out studies to measure the contribution of Federally-donated foods to diets. Within our resources we give research assistance to the program managers in the Consumer and Marketing Service in carrying out these two Government food programs. More studies are desirable to point up ways to make these programs as effective as possible. Small-scale local studies would be useful.

The school lunch program has long received research assistance from home economists. Results of a large-scale food consumption survey made by the Department in the 1930's were a factor that gave impetus to the first Federally-supported program. Department nutritionists established the type A pattern to be used in administering the program, and

from time to time review it for nutritional adequacy. For that purpose we now have in process a nationwide survey of the food available to sixth grade students served the type A lunch. Three hundred schools in 19 states were drawn to represent a national sample of schools serving type A lunches. We were pleased that all schools cooperated in allowing 4 trays to be taken for 5 days. The food was packed in dry ice and sent to a laboratory for analysis. When analyzed, the lunches will give us a good basis for another review of the nutritional adequacy of the type A pattern.

We also have under way a cooperative research project with Louisiana State University on the acceptance of type A lunches in selected high schools.

Other studies of this type would be useful in isolating some of the factors affecting participation by students in the lunch program. They would help school officials raise the participation rate of this important program to improve nutrition levels of children.

Still other types of studies might relate to the new breakfast program. What is the contribution of the school breakfast to the total food intake of the participating children? How does it differ from the home breakfast (if any) of these non-participants at the same economic level? The same questions might be asked for the preschool children attending Head Start programs. Nutritional evaluation of the content of the food intake of these children can help to indicate the value of these Government programs and point to improvements that might be made.

VII-3. Food Choices, Habits and Consumption

Research on consumer food behavior is basic to improvement programs whether they are educational or Government action programs. Needed are facts on what the dietary situation is and what are the factors contributing to food choices and food habits.

I shall speak first of research on our dietary situation and then move on to the subject of motivation and methods of modifying or changing choices.

Food consumption patterns--At the national level, ARS has an ongoing program or periodic household surveys of food consumption and dietary levels. We are currently processing data from 15,000 households on the kinds and amounts of foods used in a week during the period April 1, 1965 to March 30, 1966. This is the fifth nationwide survey that the Department of Agriculture has made. These surveys have many uses in developing Department policies and programs for the production, marketing, and distribution of food. A new phase of the spring 1965 survey--estimates of the food intake of 13,000 individuals for the 24-hour period preceding the interview--will add to the usefulness of the survey in giving guidance to nutrition education programs. These data will provide a nationwide profile of the food intake of individuals, classified by age and sex, and by region and economic level that we have not had before.

Nationwide surveys are designed primarily to provide information for large population groups within the Nation. The 1965-66 survey of household food supplies will provide data for four regions, with cross classifications by place of residence (urban, rural nonfarm and rural farm), and by family income.

For the first time, seasonal averages will be available. Some additional classifications, as by family size and age of homemaker, will be possible for broad categories of food, but the sample will not permit study in depth of the food patterns of many population groups.

To provide a better basis for education programs, it would be desirable to have more background knowledge on the food consumption patterns (and the consumption patterns for all items of family living) of smaller geographic areas and of families of these types: Low-Income, migrant, American Indian, older families, and young families (teenagers). Here there is scope for many local studies, but I urge that they be additive--that is, that they can add on and be related to the nationwide studies. If the same general type of methodology is used, I believe that they will provide results that are easier to interpret and be more useful in building a profile of U.S. food consumption.

Information on household consumption and dietary levels needs to be supplemented by information on the food intake of individuals. The latter type of data, of course, provides a more accurate indication of food actually ingested and can indicate the types of foods eaten and the diet quality of different age groups. Some age groups have been quite widely studied. Others have not been. It would be useful to know what the teenage mother is eating and also what she is feeding her infant and teenage husband. Facts on food eaten by older people, especially those living alone, would be very useful. They would provide the basis for educational programs and publications geared to the needs of older families of one or two persons. They would be useful also in the development of "a pilot program...to provide nutritional meals," described by President Johnson in his recent message on "Older Americans." (January 23, 1967).

In addition to the nutritional evaluation of the food consumed, the home economics investigator is especially well qualified to study the management aspects of food use. Of interest is the use of convenience foods--prepared or partially prepared--the waste of food in homes, the combinations of foods served at

meals, the types of foods eaten between meals, and the relative economy of the foods used.

Family practices in preparing food in the home is an area of which we have relatively little factual information. For example, how long are vegetables cooked, in how much water, in what kinds of utensils, how are they stored? Answers to such questions would provide guidance for courses in foods and nutrition and in consumer education in schools and colleges and for content of textbooks, bulletins, and leaflets on meal planning, food preparation and buying. They would also be useful in developing values for our tables of food composition.

Other needed information relating to food economics concerns the purchase of food--who does it, frequency, what types of stores, knowledge of brands and quality information, source of such information, and price and other information the purchaser uses in making the decisions at the grocery store.

Food consumption and dietary levels in institutions is another area needed attention. Factual information on food served in institutions for the elderly would be especially helpful in view of the greater emphasis now on improving the welfare of older citizens. About a fifth of our food is used in institutions, restaurants, or other away-from-home facilities. Home economists should be concerned with the choices made by people there if they have a choice, or the adequacy of the food served where there is no choice.

Improved methodology in the collection and processing of dietary survey information is badly needed. The USDA's household food consumption surveys probably over-estimate the amount of food brought into the kitchens. They are not designed to give accurate estimates of food ingested by household members at home because edible waste is not subtracted. Most studies of food intake of individuals probably under-estimate the food eaten because of omissions in either recalls or records.

By statistical procedures, measures of sampling variability can be computed, but the response error in these surveys is harder to get at. There is much room for good research on techniques of collecting the information required: Recall versus record or a combination of the two, the length of the reference period, procedures for converting household measures to weights, techniques for estimating discards from household food supplies, interviewing techniques and training, and other problems. A practical need is a "quickie" method for evaluating the effect of education or other approaches to change food consumption. In methodological research, it is especially important for home economists to work closely with competent survey statisticians.

One of the problems plaguing us now is the processing of data preparatory to tabulation and the actual tabulation of the data. The use of high speed computers seems to have slowed down our timetable! My advice is to learn the strong and weak points of your computer set-up. Some studies may be so small that the use of high speed computers may be uneconomical. I can see the advantage, however, of providing students the experience of working with them.

Food Choices, habits and methods of improving them--We now come to the second part of Goal VII-3, the part that is concerned with the why of food consumption and the how of modifying food choices if the research on food consumption and dietary levels indicates change is desirable.

During World War II, a committee on food habits was formed by the National Research Council and some basic research carried out. Since then, there has been no concerted action in this field although occasional research studies are reported. Presumably, advertising agencies make studies of what motivates people to buy the products on which they carry accounts but this type of study is rarely published. Many of the home economists in industry also contribute to knowledge of food habits and food preferences. Certainly those that are in test kitchens and in demonstration work need to know about what is behind what people will buy.

As a basis for educational programs designed to stimulate adults to modify their food habits, more positive identification of some of the factors that presumably influence change in food habits would be highly desirable. Some of these might be change in income, location and environment; change in marital status; dissatisfcation with personal appearance or with health; and physicians' recommendations. Separate study of some of these factors might be needed for different age groups or perhaps for over-and under-weight individuals.

Because it is usually the homemaker that determines the food patterns of her family, more studies are needed to identify some of the factors that determine her decisions in planning meals. Here could be listed many factors that might be different for families in different income classes, age groups and with other socioeconomic characteristics. Some of these factors might be the cost and availability of foods, ease of preparation, time for preparation, tastes of family, nutritional value, variety, novelty, familiarity, food preparation skills, cooking and other preparation facilities, personal taste, pattern learned in mother's home, calorie value, status value, and patterns of neighbors and friends.

The subject of children's food habits and how they are formed and how they can be modified has received considerable attention, but more is needed. Head Start Programs would provide good laboratories for

socioeconomic groups whose diets are most in need of improvement. Data might be obtained on interrelationships of (1) food availability at home and at school, (2) foods and forms of food known to the child, (3) foods acceptable to the child, and (4) foods acceptable to the mother. A number of hypotheses could be developed and tested. The results would help in identifying those to whom guidance materials should be directed and the content of the materials.

Another type of basic research that is needed concerns taste perception in the development of food habits and preferences. Little is known about the relationship of taste perception of individuals to their preference or prejudices for foods. Threshold sensitivities for basic tastes are known to decrease with age and show genetic variance. The sequence and combination in which foods are tasted also affect taste and flavor responses and may play an important part in response to new taste experiences and food combinations.

It seems to me that one of the most fruitful areas of research for home economists is the study of methods of stimulating people to improve their food habits. More research is needed to test the effectiveness of different types of communication--mass media (radio, TV, magazines and newspapers), bulletins, leaflets, group meetings, personal consultations, other. What ideas should be communicated to each type of audience? Before such research is designed, investigators need to learn all they can about food habits and choices from existing research of the type described above. They also need to have facts about the kinds of information or misinformation that are prevalent and the characteristics of the people most affected.

Then research-trained nutritionists and nutrition educators need to work together to plan evaluations of the methods proposed. Cooperation with Extension specialists would be especially fruitful as many of them have worked out successful programs. Documented evaluations of these programs would be helpful to prove to others their usefulness and perhaps to show up those that are not truly effective. A method successful with one population group may fail with another. Eventually enough knowledge might be gained to make a "planning-programming-budgeting study," in which the benefits of each method used could be related to its cost. On the basis of such a study, the responsible administrator would then select the "best" method to use.

Successful methods of communicating with low-income families are especially needed. Here we need to know what special kinds of problems these homemakers recognize they have and what they need answers for.

Conclusion

In this brief review, I have attempted to point out some specific types of research that need emphasis if the goals of higher levels of living of rural people and better nutrition for all people are to be achieved. In all the research problem areas, there is room, I believe for additional research although I am aware that in some areas a number of studies have been made. In those areas where there is quite a bit of existing research, there is a great need for some good reviews and evaluations. Some sophisticated collation and interpretation of existing research findings would be extremely useful to the policy maker or program planner who must be at the forefront if the goals of the Long-Range Report are to be met. Also, such studies would be useful in passing on to the next generation of home economics research workers the fruits of existing studies.

IMPROVING CONSUMER LIVING STANDARDS THROUGH TEXTILES AND CLOTHING RESEARCH

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The textile and apparel industries of the United States provide an abundance of fashionable clothing at a reasonable cost, thus allowing a majority of the American people to be comparatively well dressed just as they are comparatively well fed. This production has been achieved with much less inflation in the consumer price for clothing than in the consumer price index as a whole. Because of a general satisfaction with the state of the art of textile production as it is at the present time, there has been a tendency to say either (1) We don't need to do any textile research, we're happy with the textiles we have; or (2) since a large segment of the textile industry is not agriculturally connected, we should let industry do the research and that we in home economics and agriculture don't have any stake in the textile industry. I disagree with both of these points! To try to give you some background as to why I disagree and where I think we should put our research dollars in textiles and clothing, I would like to review some of the structure and economics of these two industries.

Textile and Apparel Industries

To a great extent, the companies which make up both industries are small and, in many cases, family owned. They represent the ideal of perfect competition within an industry better than do most others in the United States[1]. Because of this intense competition and intermittent overproduction, prices have been kept low and, in many cases, profits have been nonexistent. Within the past 10-15 years, there has been a marked trend toward integration of mill systems so that a few "giant" corporations are being developed, especially in the textile industry. Within the past 20 years, we have also had the rapid development by the chemical companies of six new families of synthetic fibers which are important to consumers.

Because of the fractured nature of the industries and also because of their low profit margins, their expenditure for research and development is only about 1 percent of sales as compared with an average of about 4-6 percent for many other major manufacturing industries[2]. Most of this research expenditure is being made by:

1. The chemical companies in their development of new and improved fibers and finishes. These companies expend nearly 6 percent of sales on research and they make up the bulk of the industrial research in the field of textiles. We hear a lot about these and they have done a lot for consumers.
2. The U.S. Department of Agriculture, especially in its western and southern regional utilization laboratories. Again, this research effort is concentrated at the fiber and finish stages. This interplay between chemical companies and USDA research has been a wonderful thing for the consumer. It has led to improve fibers and finishes. Everytime the synthetic fiber manufacturer comes out with a fiber with a better property, the cotton and wool research workers try to duplicate the property in their fibers. This means better consumer fabrics.
3. The textile mills, either in their own laboratories or in independent research labs. This research is usually confined to the "giant" companies.

Just recently, some research has been started in the apparel industries through the formation of the Apparel Research Foundation and also through the impetus of durable press finishes, which places final responsibility for fabric finishing at the garment cutters level rather than at the textile mill level.

A direct corollary of the above facts is that many of our new developments in textiles have come from European research; e.g., stretch and bulk yarns, double knits, the even newer stitch-knit fabrics, and even wrinkle resistant resin finishes for cellulosic fibers. As a result of the low prices for finished textile products, little basic research, and lower wage costs in many other countries, our domestic textile industry is threatened at the present time by imports from other countries.

Importance of Textile Industry to Consumers and to Agriculture

How important is this industry to consumers and to agriculture? Do we have a stake in preserving a domestic textile industry by helping to do some research? The textile and apparel industries together are the largest in the non-durable goods field, both in terms of people employed and dollar value of production[3]. An industry this large cannot suffer economic reverses without affecting the economy of the country as a whole. In 1965, 8,486 million pounds of fiber were converted into end-use products[4]. Seventy percent of that total went into apparel and home furnishings and another 10 percent went into other consumer uses. That is the consumer's stake in our textile industry. Only 3 percent of our finished textile products were exported. As a consequence, we have a serious balance of payments deficit in the textiles area.

Agriculture's stake in the fibers used in 1965 was as follows:

1. Cotton	51.2 percent
2. Wool	6.2 percent
3. Cellulose based man-made fibers	18.3 percent
Total	75.7 percent

The cellulose used in the production of rayons and cellulose acetates is grown, not synthesized--but it usually is not listed as an agricultural source for fibers. This percentage is down from the 86.9 percent of consumption which these same fibers claimed in 1960, mostly because of cotton's fall from 62.3 percent to 51.2 percent. This does not mean that the actual poundage of cotton used decreased, but that cotton did not get its proportional share of the increase in fiber used caused by the population increase. The lion's share of this increased fiber consumption went to the nylon and polyester fibers.

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[2] Statistical Abstract of the United States: 1965, 86th ed., U.S. Bureau of Census, pp. 548, 776, 793, and 851, Washington, D.C. 1965.

[3] The Economic Almanac 1964, Department of Commerce, pp. 73, 232-240, and 244, Washington, D.C., 1964.

[4] Textile Fiber End Use Survey 1960-65, Textile Organon, 38:1-16, 1967.

Home Economics Research in Textiles and Clothing

I have spent the preceding time on the structure of the textile industry because I believe that our home economics research efforts should complement those of the industry and the USDA utilization research laboratories rather than duplicate them. Since these laboratories concentrate their major research efforts at the fiber development and the fabric finish levels, this leaves fabric construction for optimum performance, fabric care, and consumer needs and preferences as the major areas where comparatively little research has been done or is being done. I am convinced that the best way we can help the consumer in the long run is to put a major portion of our research dollars into basic research on fabric performance and consumer preferences.

The mills and the garment cutters can then use these data to produce fabrics and garments that perform well in a given end-use and that also satisfy the desires of the consumers in terms of aesthetics. In this aesthetics category, I would place appearance, feel or hand, drapeability, and comfort. Other areas which also deserve some attention are: (1) consumer protection from flammable fabrics and from toxic or allergenic finishes and dyes, (2) development of analytical procedures for determining fiber content and finish, (3) fabric care and maintenance, and (4) the development of better methods of transmitting our knowledge about textiles to the consumer.

Fabric Performance

I would hope that we might eventually develop a theoretical basis for predicting fabric performance that would be as good and as helpful as the knowledge being developed about fiber performance. If we had a coherent body of knowledge in this area, we might be able to do a better job of educating consumers about fabric performance. In addition, I want us to start thinking of fabric performance as an all-encompassing term involving all types of fabric properties and the retention of these throughout use.

We need three different types of research about fabric performance. First of all, we need answers to the "why" questions. Why does a fabric have the properties it has? What proportions of these properties are dependent on fiber properties, yarn and fabric constructions, and fabric finish respectively? How can we correct fabric faults by judicious use of fiber blends, modified fabric constructions, or finishes and still maintain the original good properties of the fabric? The idea of fiber blending has been anathema to many people connected with agricultural fibers, but blended fabrics have too many advantages to disappear from the market. We might best fulfill our dual responsibility to all the consumers and to agriculture by helping to search for ways in which agricultural fibers can make their maximum contribution to blended fabric properties.

Home economics research cannot by itself answer all these questions, because we have a truly critical shortage of qualified research personnel. But it can help if we design our research projects around "pedigreed fabrics" in which fiber, fabric, and finish history are both known and controlled. The experimental designs must be comparatively sophisticated since it is virtually impossible to alter one parameter of fabric construction without altering several others at the same time. Therefore, the experiments should be designed so that the effects of all variable parameters can be isolated and measured. Because the textile and apparel industries are fashion industries, the simple evaluation of fabric properties as they are purchased on the retail market is "too little and too late" to fulfill this particular purpose. By the time the evaluation is completed, another type of fabric is fashion news. In addition, the results do not contribute much to our basic understanding of fabric performance because we don't know the fiber, dye, or finish history of the fabric being evaluated.

Second, we need to develop laboratory methods that will accurately predict fabric performance. We've been trying to do this for some time but, to date, we have just learned a series of tests that don't work. Much of this failure may be attributable to:

1. Trying to use extremely rapid lab tests to predict a very slow process of deterioration during wear.
2. Trying to use only type of stress to predict performance during use which may involve many different types of stress.
3. Expecting one type of tests to predict performance in many different types of end uses where either the desired properties differ or the types of stress applied in actual use differ.

A more reasonable approach to this problem might be the analysis of worn garments or household furnishings of various types and stages of wear to determine the type of deterioration which occurred and the mechanisms by which that deterioration occurred and then the development of laboratory procedures which would reproduce these types of damage.

Third, we need to couple our development of laboratory tests which simulate actual wear with studies of consumer acceptance of changes in fabric properties during use. At what level of damage does a consumer decide that a fabric is too limp, wrinkles too easily, stretches out of shape too readily, or has changed color too much for her to continue to use the article? Is this level of acceptance dependent upon the

type of article and where it will be used as well as upon socio-economic factors such as age, income, occupation, place of residence, size of family, and ethnic background? Without this information, the development of laboratory tests for predicting performance achieves only half the goal. This is information that the textile industry desperately needs and desires now and which we cannot give them. Without it, they are more than toying with the idea of planned obsolescence in clothing by deliberately lowering fabric performance.

Consumer Preferences

We believe that clothing and household textiles fulfill a complex set of both needs and desires in our lives. The textile and apparel industries would go bankrupt if the American public bought only those items they had to have to fulfill the needs of protection from the environment, modesty, cleanliness, and privacy. We theorize that Americans buy much of their clothing for social reasons and that social judgments are made about us by other people on the basis of the clothing we wear. We also theorize that much of this social buying is conditioned by the above mentioned socio-economic factors. However, we have very little actual knowledge of how cultural patterns of living affect clothing preferences. Consequently, we cannot help the industry give better satisfaction to the consumers by being able to tell them what a given set of consumers would like to have. Neither can we predict how a given change in cultural pattern of living will change our acceptance of certain fashions or our desire for more or less clothing. One of the major problems in this area has been, and still is, the development of a methodology for determining why people make the choices they do. Any contribution which we can make to improved methodology for motivational research will aid not only clothing research but home economics research in other areas where our cultural values affect our economic choices as much as do our needs.

Analytical Procedures

The burgeoning technology in fibers and finishes has made the analytical procedures we have used in the past for fiber and finish identification obsolete and ineffective. If we are to be able to analyze a fabric purchased on the retail market for these characteristics, new analystical procedure must be developed. In many cases, these are going to need to be of different types than our traditional wet chemistry methods and may involve such tests as infrared spectrophotometry and gas chromatography.

Clothing Maintenance

With every new development in fibers and finishes, we solve some problems in care but we are very apt to just substitute a new set. Maintaining clothing cleanliness and sanitation without serious damage to either appearance or performance characteristics, therefore, remains a never completely solved problem. Examples of current problems include clothing sanitation if cold water washing is adopted or if clothing is washed or cleaned in equipment used by many families; oily stain removal from fabrics containing polyester or nylon fibers and/or durable press finishes; and the development of a non-toxic, non-flammable grease solvent for home stain removal. We will solve some of these soon, but I can't predict what the next set will be.

Consumer Education

One of our major problems here is that textile technologists and consumers don't talk the same language. Another is that we have not developed a method or methods of reaching all consumers with new consumer information. Even after we have learned more about the factors affecting fabric quality and performance and learned how to analyze what's in a fabric so that we know how to care for it, we must still be able to transmit this information to the consumers in a way that they can understand it and use it.

PRODUCT DEVELOPMENT AND FOOD QUALITY

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The topics which I was asked to discuss may be grouped into three general areas--production, processing and marketing of foods; safety and protection of the food supply; and home and commercial preparation. In this context, commercial preparation refers to institutional feeding situations, not food processing.

A question that arises in many people's minds: Foods and nutrition are closely associated in many ways and they deal with the same raw material, so what is the difference? There is considerable overlap, but there is a difference. I think the simplest explanation was one given by a friend of mine who said: "Food is what happens before you eat it, and

nutrition is what happens after you eat it." So, I am going to talk about what happens "before you eat it".

We hear a great deal of talk about "rapid change" and the "explosion of knowledge". I think we have over-used these terms to such an extent that we now use them without thinking at all what they mean.

As far as food is concerned, when we talk about rapid change we can talk about changes in production practices, in processing, transportation, and so on. A recent estimate is that 20 years ago processed or convenience foods accounted for approximately 55 percent of our total food spending, but today they account for about 70 percent. However, I think the easiest way to exemplify the changes in our food supply is to remember what a grocery store looked like in the '30's, as compared to the present day supermarket. I have great difficulty trying to explain this to the present generation of college students since the only food market they know is the modern supermarket. So the comparison has no meaning for them, but perhaps it will for you.

Changes in Food Knowledge

Then the "explosion of knowledge"--what does this mean in the foods field? The new and increasing knowledge about foods and their constituents is coming in many ways and from many fields. I am going to mention a few related to the scientific background. There are, of course, many other changes. Until recently, most of our so-called scientific explanations about foods were based largely on folk lore. About 20 years ago, we began to see a major change in the way we could talk about the complex molecules which make up food. When I was in college, the instructor discussed starch as an organic molecule made up of glucose units. When you mixed it with water and heated the mixture, it got thick. That was as far as we could go. Nowadays we know a great deal more about starch, and about proteins, and the other constituents of food, and can build our research and our teaching on a much more adequate foundation.

These pieces of information are coming from many branches of sciences and they are tremendously interesting and tremendously useful to us, but we have to make our own adaptations. If you talk to a biochemist about the work he is doing with proteins, for example, he usually will not have the faintest idea as to why you are interested. I recently discussed with a biochemist some work we want to do on heat effects on proteins of muscle. His recommendation was to isolate the individual proteins first, then study them. But this will not give us the same results, because the cellular architecture of the muscle itself influences the response of the proteins to treatment. However, we can utilize the information the biochemists and physical chemists are obtaining with isolated proteins. These proteins are the building blocks that we deal with, and the way they are organized and put together into sub-units, cells, and structures determines what our foods are going to do. For example, a diagram of Kendrew's proposed structure of the myoglobin molecule looks pretty far afield from foods. But this molecule is tremendously important in meat. It is the basic muscle pigment, and the changes it undergoes have great significance in prepackaging, in freezing, in curing, and in cooking of meat. Unless the color of the resulting product is reasonably normal, the consumer will not accept it.

Varied Interests in Food

In the last 10 years, there has been a marked acceleration in the interest in, and application of, current scientific knowledge to food materials and food processing. I would like to read to you a few quotations on this.

Winder writes:

> "To the physical chemical purist, food is a nightmare. The simple systems are rare. Food is almost always complex, and the variety of products is monstrous--more and more, however, food scientists trained in physical chemistry are braving this field with new ideas, new concepts, and an unrelenting development of new techniques for measurement."

Sanders puts it this way:

> "The specific chemical problems being investigated are enormously wide-ranging--as examples, the selective catalytic hydrogenation of vegetable oils, the complex colloidal behavior of milk proteins, the intricate enzyme systems in seeds and fruits, and the molecular configuration of fatty acids.
>
> "The formulation of many new foods is based not only on their nutritional value but also on carefully worked out data on the chemical and physical properties such as viscosity, hardness, elasticity, brittleness, water retention, particle size, and gel stability. The food industry is making increasing use of advanced scientific methods, with many leading laboratories well equipped with gas chromatographs, mass spectrometers, x-ray diffraction equipment, nuclear magnetic resonance equipment, and other advanced instruments."

And Somerville says:

> "Satisfying the food needs of the consumer is not something that can be left entirely to the tasting panel or the recipe inventor. So disciplined are food standards today that the functions of improving products and

developing new ones can only be performed most effectively by the scientists, chemists, or chemical engineer."

So there are a great many people with scientific backgrounds who are interested in food materials. Those in biochemistry, physical chemistry, and other basic fields are interested in the structures and properties of the proteins, fats, carbohydrates and enzymes. Then the food scientists take this information and study these compounds in the structure of the plant or animal tissue. They study the raw materials themselves, and how they react to the treatments that are involved in the processing and preparation of foods. As examples of the types of studies being undertaken, I thought I might read you the titles of some of the articles in the most recent (Jan.-Feb., 1967) issue of Journal of Food Science. I've just selected some of the ones on meat problems, since this is where my own interest lies.

"Biochemical factors affecting beef tenderness"

"Histology of pre-rigor ox muscle before and after cooking and its relation to tenderness"

"Temperature dependence of pH changes in ox muscle post-mortem"

"Histochemical observations of porcine muscle as related to lipid accumulation"

"Free and esterified cholesterol content of animal muscles and meat products"

"Changes in lipid composition of chicken muscle during frozen storage"

"Degradation of nucleotides in ice-stored halibut"

Role of Home Economics

Well, I have been talking about the science side of foods. There is a lot of work going on in this field and it is growing very rapidly. What is the place of home economics in this? First of all, do we have a place now? We do have, but it is very small, and is growing smaller all the time. In the Journal of Food Science issue I just mentioned there were 31 articles of which two are authored by people connected with home economics units. This is actually a larger proportion than usual. There are many issues of this and similar journals that have no articles by people with any connection with, or interest in, home economics.

Should we have a place in this field? Perhaps we should think about Dr. Fortmann's question--"Is this within our purview?" I happen to think that it is, and that we should have a significant place in this field. If you people decide we should, what do we need to do about it?

From the standpoint of home economics, the topic assigned to me divides in another way into two groups. There are problems where we work with people in other disciplines in a cooperative relationship to maximize the total contribution. But in one area I believe we have the major responsibility if anything is to be done about it.

The areas where we share with many other disciplines are those that deal with the production of food materials, with improved consumer acceptability, the development of new and improved food products, quality maintenance in the food process, and the whole area of safety and protection of food.

I think we have several roles here, or we could have. First of all, we like to think, some of us, that we speak to producers and processors and marketers for consumers. Do we really do this? And if we try to do it, what is our knowledge base in this area? I know my base is my own personal experience and that of my immediate friends. In listening to other people both in home economics and in many other professions, I think this tends to be most peoples' base. For example, I think about what people prefer to eat in terms of my own preference, but I have a grand niece who, when given the privilege of selecting her own birthday dinner, requested TV dinners. This isn't my standard of good eating, but it is hers.

How much do we really know about consumer acceptance and standards? This is an area where I am not very competent to talk, because I don't know much about it. I hope Dr. Shaffer is going to say a few things about this. But I did run across an article by Dr. Burk (in the March, 1967, Journal of Home Economics). She writes: "Home economists have focused on development of technological knowledge pertinent to selection. Much less research has been concerned with clarification of consumers' needs and wants for a particular attribute. Relatively few home economists have undertaken the prediction of consumer behavior."

So, if we are going to speak for consumers, what do we know about them?

A second role is that of cooperation with other departments on campus. What level of operation do we achieve in such work? For example, we might work with the agricultural production departments on new crops or on different ways of handling or treating them. I think there are several things we can contribute here, if we want to. First of all, I have found that in many cases, the interest of these other departments stops at the production level, and so we can, if we choose, supply a little education to acquaint them with the fact that until the food gets on the table and somebody eats it, it isn't food. If you are nice about it, you call it surplus. If you are blunt about it, you call it garbage.

Then, of course, there are many of them who do recognize that they need to know how acceptable their products or processes are.

How do they go about doing something about it? Well, there are sort of three levels here. First of all, there are some of them, at least,

who operate on a do-it-yourself level. They come out with something they tell you is wonderful, and you say, "How do you know?" You'll find that they took it home and had their wives fix it for dinner.

Perhaps the second level might be what you could call hiring a cook. Often this is done by going over to home economics and asking the foods people if they will test it for you. And this is really all you are doing--hiring a cook.

Now we call this a nicer term, "service work". Of course, we all recognize that there is a necessity for some service work. We ask others to do some for us, and so certainly we should be willing to do some for them. But I would hope that in some areas, and sometimes, we could get to a little higher level of cooperative work where we could participate in the planning and design of the total project, so that the information coming out in the end would be of greater interest and utility. Actually this could also simplify our lives in just mechanical ways. I will never forget the day a friend called me. He was doing a problem on the use of new insecticides on green bean plants, and he needed somebody to do a rough assessment to see whether these would change the flavor. So I said, "Sure, bring them over". Remember the little sacks that we used to get a nickle's worth of candy in? He brought me three beans per sack. Have you ever tried to cook three green beans?

Cooperative Planning

If we could participate in the planning and design all the way through, I think we could get much better and much more useful information for all of us. As an example, I took some work on the use of hormones in raising meat animals. There has been a great deal of work on this in the last few years, Some of the sex hormones, particularly stilbesterol, have been found to make the animal grow faster and make better utilization of the amount of food so you get more economical production, There has been a great deal of study on this in terms of safety, because you have to be sure that you are not transmitting these sex hormones to the people who eat food. There have been some studies on the acceptability of the meat from these animals, Usually, this has been done with expert panels, who say they can't tell any difference between the treated and untreated meat, so people figure that if the experts can't tell any difference the general public can't either. There has been very little done on the actual composition of the resulting meat cuts. So one can ask the question, if you raise the animal faster with less feed, what do you get? Do you get the same composition or do you get more water or more fat or what? I don't think we really know. The things that have been done seem to suggest that you get the same kind of animal, not one that is markedly altered in composition.

And, finally, there was one study where they carried through completely, including the problem of cooking losses. This was done on chickens. They found, as with other studies, that the chickens grew faster and they got a bigger chicken for the same amount of feed in the same amount of time. So there was more chicken to sell. What does that mean when the housewife buys it and takes it home? If you carry through in the cooking losses, the treated chickens had larger cooking losses and the housewife would up buying a bigger chicken, but not getting any more final cooked meat out of it than she would have if she had bought the smaller untreated chicken. Of course, this is only one study, and certainly is not a definitive answer. But this is the kind of thing I mean where if we could be in on the whole process we could get a more complete story.

Now I'd like to turn to the one it .m where, to me, we have a major responsibility if we wish to assume it. That is the category of home and commercial preparation of foods. I think what this statement means to many people is recipe development. If what you mean by it is recipe development, then I heartily concur that we should spend no time on it. The commercial companies do this very well. A variety of other people do it, You have only to go into the book store and look at the flood of cookbooks that we've had in the last few years. I don't think we need any big projects on recipes, but I think there are many other problems here that we should be working on, and I would like to mention just a few of them. Here I am thinking in much the same vein that Dr. Galbraith was when she said we need an organized base of knowledge from which we can operate in talking to consumers, to the producers and processors and all the others who are interested in the food field. The basic operation we need here is to take the information now coming out about these very complex organic molecules that make up our food, and study them in relation to what they do in the food, For example, we know very little about the role of sugar in protein and starch hydration. To most people, you put sugar into something to sweeten it. So you can substitute saccharine or sucaryl if you want to cut down on your calories and that is the end of it. This works just fine in something like breakfast cereal or lemonade, but it isn't that simple in a cake batter. Sugar in a cake batter influences the rate and degree of hydration of the protein and starch molecules of the flour. In other words, sugar influences the way molecules will hold water, and thus the rheological properties of the batter and the structural characteristics of the finished cake.

Sugar also influences the denaturation and coagulation temperature of proteins. It affects the gelatinization temperature of starch. In many ways, it participates in what we call the functional properties of foods.

Another area that we need to know about is the role of ionic concentrations in influencing the hydration and development of gluten. This is a protein which occurs mainly in wheat flour and is the basis for the structure we expect in our baked goods. The way this gluten structure is developed during the mixing of batters and doughs is very much influenced by the ionic atmosphere in which the proteins are operating. And we forget that we are adding sodium and chloride ions when we add common salt.

In many of these we use baking powder, another source of ions. Of course, there are also the ions that are naturally present. In the advanced foods class I teach, I attempt to give the students some idea of the role of each of the ingredients in a batter and dough. We start out with just the basic two--water and flour. Did you ever bake a mixture of water and flour? We do it in class to see what it is. And then, one at a time, they add the other ingredients. The flour and water are the negative control; the complete cake recipe is the positive control; and then you have all the steps in between. One combination is just flour, water and baking powder; another is flour, water and salt. The students find that even salt alters the viscosity and porosity of the batter; it bakes differently and gives a different appearing product. So I said to the class last fall when they did this, "See, it does make a difference". They turned right around to me and said "Why?" and I said, "I don't know". I'm getting tired of saying I don't know to many questions the students ask about food preparation. I would like to know some answers.

Another topic we should investigate thoroughly is the action of acids on many of our food products. We have said for years that acids hydrolize proteins, and so you cook tough meat with tomato juice to make it tender. In case you don't happen to know, this isn't true. If you think about this reasonably, if you have ever tried to prepare an amino acid in a laboratory, how do you break up a protein? You autoclave it for several hours with concentrated hydrochloric acid. This is a far cry from cooking meat.

Acids also are supposed to hydrolize carbohydrates. Do you know what happens when you cook vegetables in an acid medium? They get tough. The structural part of a vegetable is primarily cellulose, and cellulose is a type of carbohydrate. What is happening? We have no real information, but by analogy with cotton, it seems possible that mild acid treatment may increase the hydrogen bonding between cellulose chains. So maybe what acid does to vegetables is to produce a more highly bonded structure rather than breaking up the structure.

I could go on all day with examples of things we need to know about foods, but I must get on to what I see as our needs if we are going to do anything about such questions.

Better-Trained Researchers

First of all, we need more and better trained research people. Have you ever heard that before? In this field, we need people with a background in mathematics, physics, biochemistry, and physical chemistry. Now, I know you will all throw up your hands in horror at this. But to work effectively in this field, you have to know something about these things to be able to read the literature so that you even know what kind of a base you should be planning from. In addition, we need people who have some concept of and some interest in how consumers use food at home. This is the part of the total food picture that home economists can contribute, but the home economists also need this fundamental scientific information in order to read the literature, utilize new ideas, and talk intelligently to others. If you are going to work with the production and processing people, you have to know something about what they do and what their problems are.

In our primary area, we have to be able, again, to collect the information that is basic and be able to utilize it well enough to explore the problems inherent in food preparation in homes and in institutions.

Even if the decision is that we either cannot or will not support research in this area, we still need more and better trained people to upgrade our teaching of foods. I had the experience this fall of teaching for the first time in I'd hate to say how many years, the Introductory Foods Class. This is a sophomore class and the students all have some background of science, so we looked for a textbook that is up-to-date but would treat foods in at least an elementary scientific way. I am very much distressed by the quality of the textbooks available. These are the modern ones--the ones published in 1965 and 1966--and there are a number of errors in them--the things we've known for 10 years that aren't true but are still being repeated. You find the statement that you put the lemon juice in at the end of the lemon pie-filling making, because otherwise the lemon juice hydrolizes the starch and the filling gets thin. We've had research studies that show this just doesn't happen.

These data are in publications easily accessible to us. You don't have to read physical chemical literature, but the textbooks have not been brought up-to-date. We find, still, the statement that the weakening and the flattening of the egg yolk during storage is due to osmosis. The egg white is less concentrated

than the yolk so water was thought to pass through the yolk membrane. This stretched the yolk like a balloon and eventually it broke. However, when they studied the relative concentration changes they couldn't find any evidence for an increase in the water content of the yolk. They are now suggesting that the weakening of the yolk membrane is due to the same process as that which causes the thinning of the egg white; that is, the change in the aggregation of ovomucin, one of the egg white proteins. The egg yolk membrane is at least partially made up of ovomucin strands which disaggregate on increase of pH as the carbon dioxide is lost through the egg shell.

Support of Personnel

Finally, I would like to say that when you get some good people, and I hope you will, please support them. What research people need first of all is your attention. Will you give them your intelligent and informed interest?

I think that communication has become another of our over-used words that we talk about to the point that we don't even hear what people are saying. I was interested yesterday in talking to one of my friends who made the comment that she wished her superior would listen to her for ten minutes instead of being so full of his own ideas and problems. We often feel the same way about you.

Do you really know what your research people are trying to do and why they are trying to do it? Do you really know what they are aiming at? And, also have you talked over some of your problems with them? Communication is a two-way street. I think you will find that some of your research people could give you considerable help if you give them a chance.

We heard the terminology yesterday of the "research administrator" and "research scientist". I would like to close with a few comments lifted from a meeting I attended a couple of weeks ago. Most of the people were in research, but they did have a vice-president of one of the big companies talk about management problems in administering research. I would like you to remember that you are our management, so I think this quite pertinent.

This vice-president started with a query: "How do we get our industry out of the mess that it is in?" Perhaps we need not be quite as brutal as this about home economics and home economics research, but I would like to repeat three things he said.

1. "If you don't do it, someone else will take it away from you." We are rapidly losing any place in food research. Maybe we should, but I think you need to know that we are.

2. "Are we missing out on bright young people who don't want to join a loser?" Perhaps this is one factor in our staffing problem in home economics. How many of you have tried to hire any staff lately? Fun, isn't it?

3. "Don't wait for someone else to clean the whole room. Pick up a broom and start cleaning up your corner."

HUMAN NUTRITION REQUIREMENTS AND NUTRITIONAL STATUS

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In recent years there has been much discussion of the relative merits of pure, basic, and applied research. An aura of sophistication has surrounded the pure and basic classifications of research and its practitioners, and those who have been engaged in applied research have been led to conclude that their activities are rather pedestrian and, at most, make no real contribution to the fund of knowledge. It was refreshing, therefore, to find some comments, in this regard, in Chemical and Engineering News for June 6, 1966 (page 20) by Dr. Chain who shared with Fleming and Florey the Nobel Prize for the discovery of penicillin. He says that continuing discussion of the relative merits of pure and applied research gets "a little tiresome" and that "only very ignorant people" believe that a sharp distinction can be made between the two. He thinks it would be much more important to classify research as useful or useless.

Some research can be justified readily on an economic basis. Recently, I reviewed a proposal for research on the study of a disease affecting a cereal grain. The combined annual yield of this particular grain in three states has an estimated value of $826 million. I suspect that research on pesticides has been justified, to a large extent, on an economic basis, also. Yet some of the adversities which impair nutritional well-being can not be expressed adequately in economic terms, alone. To be sure, some of these adversities may not be without economic significance but we tend to express their impact in subtler terms.

In preparation for my contribution to this seminar I sent letters to 104 colleagues in nutrition research asking them to send me a list of their projects supported wholly or in part by outside grants and classified according to such federal agencies as the National Aeronautical and Space Administration,

National Institutes of Health, National Science Foundation, Atomic Energy Commission, Army, Navy, etc. and according to such non-federal agencies as the American Heart Association, American Cancer Society, the State Health Departments, University Research Funds, and private granting agencies. I have prepared a summary of the information I obtained and I will distribute copies to you.[1]

Grants from outside agencies which supported research and training programs in nutrition, wholly or in part, are classified in Table 1.

Areas of Study

The list of research projects which I have compiled for you shows a keen awareness among the nutrition research workers of the importance of studying a number of factors which are concerned with health and well-being, for among their investigations are studies to determine:

1. Content of certain nutrients in foods:
   a. proximate composition
   b. minerals
   c. calories
   d. lipids
   e. fatty acids
   f. cholesterol
2. Requirements, function, and metabolism of various nutrients:
   a. function of
      (1) B vitamins
      (2) vitamin B_6
      (3) conjugated proteins
      (4) fatty acid isomers
      (5) essential fatty acids
   b. metabolism of
      (1) folic acid
      (2) vitamin B_{12}
      (3) cholesterol
      (4) lipoproteins
      (5) vitamin B_6
      (6) magnesium
      (7) potassium
3. Effects of specific nutrients on metabolic processes:
   a. dietary carbohydrate on lipid metabolism,
   b. amino acid deficiencies on the secretion of digestive enzymes,
   c. protein on serum albumin turnover,
   d. conjugated proteins on cellular metabolism,
   e. source of carbohydrate,
   f. threonine imbalance,
   g. ascorbic acid on mucopolysaccharide synthesis,
   h. electrolytes on pyridoxine metabolism,
   i. phospholipids and cell division,
   j. vitamin B_6 on sterol metabolism,
   k. protein on carotene metabolism,
   l. ascorbic acid on reproduction,
   m. polyunsaturated fat on serum alpha-tocopherol,
   n. vitamin A and hormones on mucopolysaccharide metabolism,
   o. vitamin B_6 deficiency on lipid composition,
   p. biotin deficiency on fatty acid oxidation,
   q. protein and magnesium on enzyme and tissue changes,
   r. amino acid imbalance
4. Utilization of various nutrients:
   a. protein by adolescent boys,
   b. essential amino acids,
   c. delayed amino acid supplements,
   d. protein of cereal grain
5. Biosynthesis of cholesterol and mucopolysaccharides
6. Effect of restricted movement on protein metabolism and body composition
7. Effect of hormones on lipid composition
8. Effect of vitamin B on glutamic-pyruvic transaminase activity
9. Effect of exposure to nitrogen dioxide on cardio-pulmonary lipid structures
10. Relationship of certain nutrients to atherogenesis (arachidonic acid of serum lipids)
11. Nature of endogenous nitrogen
12. Characterization of lecithins
13. Interrelationships among nutrients (lipids and nicotinic acid in human blood fractions)
14. Bone density as a measure of mineral status
15. Congenital abnormalities in folic acid deficiency
16. Mechanisms of radiation damage
17. Thiaminase in fish
18. Nutritional factors in carcinogenesis
19. Sociocultural factors and food habits
20. Use of computers in searching out nutritional interrelationships

For the execution of the different investigations which I have summarized, sophisticated equipment and specialized techniques have been employed. The current literature

Table 1.--Nutrition program supported by outside grants

	Federal grants						Non-federal grants	Total
	NASA	NIH	OEO	DI	NSF	PHS		
Research	9	50	2	1	3	0	29	94
Training	0	9	1	0	2	1	0	13
Total	9	59	3	1	5	1	29	107

[1] See Appendix, p. 89.

abounds with descriptions of new procedures requiring even more elaborate equipment. The nutrition research worker feels it imperative to be alert to improvements in methodology to the same degree as he strives to keep informed regarding the results of other scientists in the field. That he is now using and is fully conversant with a wide variety of techniques and instruments is made clear through this listing of them:

- Chromatography
  - Paper
  - Thin layer
  - Column
  - Gas
- Molecular sieves
- Electrophoresis
- Spectrophotometry
- Fluorometry
- Spectrophotofluorometry
- High Speed centrifugation
- Microbiological assay techniques
- Techniques for the determination of enzyme activities
- X-ray
- Radioactive tracer techniques

The extensive experience of nutrition research personnel in the use of a wide range of organisms, from microorganisms and metazoa through earthworms, fish, mice, rats, hamsters, guinea pigs, chickens, and primates to man is perhaps without parallel among the scientific disciplines. Of course, there has been special emphasis on the human nutrition as is evidenced by the significant reports of studies on young children, on adolescents, on adults of many categories, viz., undergraduate students, graduate students, university staff, volunteers in the community, residents in homes for the aged, and of volunteers from such State prisons as California and Nebraska.

The great frontiers in nutrition research today are varied and numerous. This is a list of perplexing questions to which we seek answers.

1. By what means can the protein needs of the developing countries be met? That is, through what foods and food combinations that will be acceptable to them?
2. What are the factors, during aging, which affect:
   a. the biosynthesis or degradation of cholesterol,
   b. the demineralization of bone,
   c. the loss of body protein,
   d. the degeneration of muscle tissue
3. What are the normal pathways for the metabolism of carbohydrates, of fats, and of amino acids? What factors alter these pathways?
4. How can diets be devised for those who are known to have inborn errors of metabolism. For example, infants with maple sirup urine disease do not tolerate the amino acids: valine, leucine, and isoleucine. Can a method be found which will selectively remove these amino acids from foods which would ordinarily constitute the child's diet?

It is on these distant stars that the nutrition worker has his eyes.

Inborn Metabolism Errors

Sir Archibald Garrod postulated the concept of "inborn errors of metabolism" in 1908 and classified four as belonging in that category: albinism, alkaptonuria, cystinuria, and pentosuria. It is believed that the first descrption of an inborn error of metabolism is that of albinism which was observed in Noah and is described in the Book of Enoch, not one of the books of the Bible, but, nevertheless one of the sacred books. There we read this description of the infant Noah: "And his body was white as snow and red as the blooming rose, and the hair of his head and his long locks were white as wool, and his eyes beautiful. An when he opened his eyes, he lighted up the whole house like the sun, and the whole house was very full of light."[2]

To quote from a publication by Dr. Margaret Fincke, Head of our Department of Foods and Nutrition:

"It is probable that Garrod had no clear conception of enzyme action, but he foretold the recognition of a large number of conditions which apparently do result from a congenital lack of a specific enzyme. At present, over a hundred biochemical abnormalities have been described which are or might be of genetic origin. They range in severity from the relatively benign states which Garrod describes, up to those so severe that they are incompatible with life, or if life continues, may result in complete idiocy.

"Some, like galactosemia, are manifest within the first few days of life, while the onset of others, such as diabetes, may be delayed for years. In this latter disease, environment may enhance the genetic fault to affect the pathogenesis."[3]

It has been said that it is difficult to cope with the prejudices, attitudes, superstitions, convictions, and traditions in which the production, use, and consumption of food is bathed. In nutrition today we have great contrasts of highlights and darkness, knowledge with ignorance. In some cases our information is very profound, in others, we can not answer some of the most fundamental questions. For example, we have reliable and sophisticated techniques for isolating many constituents of blood. What we do not know fully is why they

[2] Book of Enoch, R. H. Charles, Ed., Chpt. CIV, pp. 301-302, Clarendon Press, Oxford University, 1893.

[3] Journal of the American Dietetic Association, 46: 280, 1965.

are there in the first place. But we do know that the integrity of this tissue must be maintained.

Sound research in nutrition requires adequate background in the basic disciplines of biochemistry, physiology, and microbiology and it requires the team approach. In addition, for certain kinds of nutrition research, the cooperation of medical, dental, and health agencies is required. There was a time when we sought their cooperation but the day is at hand when they seek our help. Of special note are the frequent instances in which they call upon those engaged in nutrition research for counsel in the dietary treatment for, and for collaborative research on, the perplexing inborn errors of metabolism, some of which are associated with mental retardation.

Cooperative effort increases the effectiveness of nutrition research because it broadens the scope of problems that may be attacked and provides opportunities to maintain close contacts with the basis disciplines and with the development of new methodology. I am sure that all of my colleagues in nutrition research will agree that, on both the staff and student level on our university campuses, there is considerable exchange of services, sharing of equipment, and, best of all, of interests and ideas with many departments, e.g., biochemistry, physical chemistry, animal science, poultry science, microbiology, and entomology, which provide a congenial and stimulating atmosphere for research.

We rejoice in the accomplishments of many leaders in nutrition research in schools of home economics and we are challenged by the many unsolved problems which lie before us. We stand ready to meet that challenge.

POTENTIAL CONTRIBUTIONS OF HOME ECONOMICS RESEARCH TO IMPROVED EFFICIENCY OF THE MARKETING SYSTEM

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If I understand my assignment, it is to respond briefly to two related questions:

(1) How best can home economics research contribute to the improved efficiency of the marketing system?--A goal established by a National Program of Research for Agriculture; and
(2) What are the implications of the Report of the National Commission on Food Marketing for research in the consumer interest?

The structure of the discussion is first to attempt to put home economics research in perspective relative to the national economy, and second, to discuss five potential missions of home economics research which are in the consumers' interest and related to improving the efficiency of the marketing system. Within the discussion of the missions are comments about the National Program, the Report of the Food Commission, and some opinions concerning priorities. In the course of the discussion, the following are argued:

(1) Home economics research should be mission oriented--in the consumers' interest--but, that "in the consumers' interest" does not provide an adequate guide to research priorities.
(2) Understanding the market environment in the consumers' interest has been relatively neglected and understanding the consumer in the producers' interest has been over emphasized.
(3) Home economics research has put relatively too much emphasis on improving means to achieve unimproved ends as compared with research to acquire knowledge leading to improved wants.
(4) Home economics research should not limit itself to USDA funding or restrict its research to food, clothing or other tangible goods.

Concept of Efficiency

Since the concept of efficiency is so central to my assignment, we had best have an understanding of its meaning. The efficiency of accomplishing a physical task is simply the ratio of the output to the input. As this output-input ratio increases, the task is said to be performed more efficiently. However, when we talk of efficient allocation of resources--whether in the market or among research activities--efficiency deals with the ratio of benefits to costs. An efficient allocation of resources, given a level of research resources, requires that resources be used first in those activities with the highest ratio of benefits to costs. The National Program is a plan for allocating research resources. The plan represents an efficient allocation of given research resources if the expected benefits from the last dollar spent on each of the defined activities are equal. However, expected benefits of research are difficult to estimate, may be highly subjective, and depend on what is actually done in the research. The research

administrator must help to make these judgments of expected benefits from alternative research activities.

In discussing marketing efficiency, it is useful to differentiate two parallel systems which comprise the marketing system--the physical distribution system and the exchange system. The physical distribution system involves the physical functions of marketing--the production of marketing services. The efficiency of this system is very important to consumers as is the efficiency of all production processes. And, here there should be no confusion. Research contributing to the improvement of efficiency of physical production processes--whether in agriculture, manufacturing, or distribution--is usually very much in the consumers' interest. Much of the "National Program of Research" is concerned with improving physical efficiency. And, this is in the consumers' interest. In fact, probably no single enterprise has contributed as much to American consumers' welfare as those activities which have resulted in our abundant supply of inexpensive food.

Much of the emphasis of the program under the goal of "Efficiency in the Marketing System" is concerned with the efficiency of the physical distribution system, and it is, of course, in the consumers' interest to find less expensive means to process, store, and transport food. But, this is not the mission of home economics research, although some of your research may contribute significantly to the process, and your graduates may be valuable to firms engaged in these activities.

The exchange system is the set of rules and practices governing transactions involving the exchange of property rights. This is the system which coordinates economic activity. It is the system determining the allocation of resources and the distribution of rewards. The efficiency of the market as a mechanism for coordinating economic activities depends upon the ability of consumers to communicate their wants to the market participants and the responsiveness of the market to these expressed wants. In my opinion, home economics research can make a major contribution by obtaining knowledge which will assist consumers in improving their ability to communicate their wants. And, home economics research can contribute to some aspects of the improvement of the responsiveness of the market, but should not expend its limited research resources on all that are in the consumers' interest. For example, the structure of the market--the number of firms, the freedom of entry, etc.--is very important in determining the responsiveness of the market to consumer wants; and research in this area is very much in the consumers' interest. The National Commission on Food Marketing puts heavy emphasis on this area and concludes that the food industry, in general, scores well on competitive performance. While your students should understand this aspect of the economy, most technical research in this area would be best left to the economist.

Research Priorities

Within this context, what are some of the more specific research activities and what can be said of priorities? I suggest for your consideration the following five missions or classes of goals for home economics research which are in the consumers' interest, can contribute to efficiency of the marketing system, and require research which, at least for important aspects, home economics has a comparative advantage in performing. The list is intended to be suggestive rather than exhaustive.

These are the production of:

1. Knowledge contributing to consumers' capacity to discriminate among alternatives offered by the market.
2. Knowledge about consumers which is useful to producers for the purpose of improving the appeal of their products to consumers.
3. Knowledge about consumer practices which add unnecessarily to the costs of marketing.
4. Knowledge about market agency practices which distort the communication of consumer desires or unnecessarily increase prices.
5. Knowledge contributing to improved quality of consumer wants and values.

For our purposes the research producing knowledge contributing to consumers' capacity to discriminate among alternatives offered by the market is most important. This class includes production of knowledge to change the practices of both the marketing firm and consumers. Both the Program and the Commission Report emphasize one aspect of this class of problems. Improvement of grades and standards is one of the ten categories under the goal of efficiency in marketing research, consuming 43 man-years of research in 1965. The majority report of the Food Commission recommends compulsory grade labeling and officially established standards of identity for foods. The majority of the Food Commission also recommended that "Packages and their labels should assist consumers in gaining an accurate impression of the contents and in making price comparisons." The Commission majority also proposed a centralized consumer agency in the Federal Government to assume a primary consumer protection role. The Commission minority opposed each of these recommendations as either not in the consumers' interest or as being simply unnecessary. An understanding of the basis of this conflict in opinion suggests some needed

research. The minority believe consumers are generally capable of making the essential distinctions among commodities without additional help. They believe that imposing grade labeling, product standards, or restrictions on package design would reduce variety, impede innovation and reduce the incentive for manufacturers to maintain high quality to protect the value of their brand names. They argue that regulations establish inflexible and meaningless requirements which make it difficult for manufacturers to adjust to consumers' real wants.

Research is obviously needed to provide some measure of the magnitude of the problem. What is the estimated savings which would accrue to consumers if they were not misled by package design and by current labeling practices? How much could consumers save in time, money and psychic energy if commodities carried grade labels? To what extent would regulation restrict variety and innovation?

Research is also needed to improve grading practices. Most existing grades were not established for consumers, but were trade grades. They often do not reflect characteristics which are most important to consumers. To improve our grading system, research needs to provide: (1) knowledge of consumer thresholds of significant differences in various quality characteristics; (2) knowledge of characteristics of products critical in the commodity's different uses; and (3) knowledge of performance criteria to eliminate rigid specification of product characteristics.

The development of performance criteria is of special importance where minimum standards are established for consumer protection. And, in general, specifying product characteristics rather than performance criteria for grades and standards reduces innovation and may increase costs to consumers. An example may illustrate this point. A Michigan firm developed a new product for infant feeding to be used in hospitals. Their own tests proved the product superior and cheaper than products in general use. However, they discovered almost every State had an established minimum standard for the product in terms of product characteristics. And, the criteria of acceptability differed greatly from State to State. They spent thousands of dollars attempting to either have the standards changed or in proving the product met the standards. This took many months and restricted the market to a few states. A large volume was required to obtain economies of production and distribution. Had the standards been written in terms of performance, the commodity would have been introduced sooner, at a lower price and the firm would not have been discouraged from similar innovative efforts in the future.

Note that effective research to improve grades and standards will require cooperation among researchers skilled in physical and social science research. The payoff seems to lie in: (1) developing performance criteria which are physically measurable, and (2) differentiation of classes which are meaningful to consumers as they use the products or services.

A related area of potentially productive research is the search for knowledge to improve buymanship skills. Here I would put emphasis upon discovering effective techniques. There are many different techniques which might be involved in arriving at purchase decisions. One research approach is to determine the techniques used by actual consumers and evaluate alternatives. A limited amount of this type of research would be useful. However, in my opinion, a more fruitful approach would be to work with simulation models and other analytical methods to discover improved techniques--perhaps techniques consumers have not thought of. There is an unfortunate tendency to equate surveys with research in this area.

Knowledge for Consumers

Home economists research can also produce useful knowledge for consumers about the alternative products offered in the market. Foods and nutrition research has had an excellent record in this area. Knowledge of products can increase their utility to consumers. The extent to which home economics colleges should get involved in general product testing and evaluation is debatable. Certainly with the great variety of products available, consumers need an unbiased source of product information. It is not economically sound for each consumer to do his own product testing. Some type of national organization is probably to be preferred for testing branded products with home economics colleges specializing in more basic, related research.

A question of emphasis needs to be raised in respect to research into both buymanship and product characteristic evaluation. Consumers' needs for information exist for expenditures other than food or even physical commodities. I hope the emphasis of this workshop on the National Program of Research for Agriculture does not reflect a narrow interest in food and clothing, nor a seduction to the relative ease of funding from a familiar source. More long-run funding is probably available from other government agencies, and experiment stations should help you get it. Probably the most neglected research area is that of expenditures for services. We now live in a service economy. More than half the people employed in the United States are in

industries which provide service rather than food, clothing, houses, or other tangible goods. Yet, little research comes from home economics colleges providing knowledge useful in choosing among alternative offerings of insurance, credit, health, retail, repair or other services.

The second mission is production of knowledge about consumers which would be used by producers to improve the appeal of their products. The National Program lists "Development of Domestic Markets for Farm Products" as a subgoal currently consuming about 71 scientific man years of research resources. Activities listed included studies of consumer preferences, habits, and response to promotion and price variation.

My own evaluation of priorities is that home economists should do only a limited amount of this research even though it can be very much in the consumers' interest. Such consumer preference research as is done should generally be restricted to products developed by the university and produced under conditions of atomistic competition where market development research cannot be commercially financed. My reason is that a very strong incentive exists for private producers and those researching in the producers' interest to do it, and they have adequate resources. It is estimated the $500 million were spent by private industry for market research last year. My economic principle in this case is that home economics research should concentrate on research in the consumers' interest which it is no one elses interest to do. In general, I would prefer that publicly employed home economists avoid the study of consumers in the producers' interest and put more emphasis on studying the market in the consumers interest. This should not restrict home economists from consulting with industry where they see the industry is obviously failing to provide products consistent with consumers' preferences.

The third mission is the production of knowledge of consumer practices which add unnecessarily to the costs of marketing--practices of one consumer which harm another. Let me illustrate. with several simple examples. Some food retailers report that as many as one-third of the tomatoes sold in bulk form are spoiled because consumers insist on squeezing them. This increases the cost of tomatoes to consumers by one-third. The practice of "taking advantage of the insurance company" is really a method of doing in consumers of insurance. The preference of many consumers for trading stamps rather than price reductions imposes an extra cost on the marketing system paid for by consumers. The home economist has a legitimate interest in attempting to identify, understand, and correct these practices.

The fourth mission is the production of knowledge about marketing practices which distort the communication of consumer desires or unnecessarily increase prices. The majority of the Food Commission was concerned with what they considered to be excessive selling costs for some commodities. More than $16 billion was spent last year on advertising. Many examples of misleading promotion and exploitive practices can be cited. In my opinion, consumers who are well-informed of the alternatives in the market provide the best protection against these practices, and research leading to more effective means of communicating accurate unbiased information to consumers would be fruitful. At the same time the laws regulating the market must be assessed. While I do not believe this area of study should be the primary concern of home economists, I do believe they should represent the consumers' interest when legislation is considered and that their opinions should be well founded upon research.

The final mission I mention especially, because I detect a reluctance to do such research because it is identified as somehow either unscientific or unethical. This is the search for knowledge contributing to improved consumer wants and values. In my opinion, our society has failed to achieve its potential quality partially because we put all our research emphasis on improved means to obtain unimproved wants. The contributions of early home economists to the improvement of our society were very great as they aided us in developing wants for such things as improved sanitation and nutrition. Now research is needed to discover the wants which if fulfilled would lead to a higher quality of life. Since this class of research is clearly in the consumers' interest--and home economists are in a uniquely advantageous position to do it--the payoff could be very high.

In summary, the effectiveness of the market system in allocating our resources depends upon the quality of wants, the ability of consumers to perceive and judge market alternatives, and the responsiveness of the market to consumers' needs. Home economics research has a major role to play by producing knowledge which will improve both the ability of consumers to perform their role and the capacity of market institutions to faithfully respond.

TO HELP THEM HELP THEMSELVES

Trienah Meyers

Economic Research Service
U.S. Department of Agriculture

Since Dr. Hard first asked if I'd participate in your seminar to discuss how home economists can contribute to the objectives of goal VI of the Long-Range Study of Agricultural Research, that is, "Expand export markets and assist developing countries," I've gone around several circles. First, I almost said "No," simply because I've had a couple of years of steady travel and speech making. Then I decided to accept the invitation because it would be good to organize some thoughts I'd had for awhile. Then I wondered what I could really say to a group which represented the top leadership in home economics research in the United States. You are aware of the problems in developing nations, you know the talents and training of those in your discipline, and you are in a much better position than an "outsider" to know how to relate the two. But here I am!

I'll try to give you a sense of the setting as I see it, the legislative framework we have with the new "Food for Peace" Bill, and some of the specifics which are crying for attention.

Just recently we received a letter from one of our economists who had been in India just a few months. A few paragraphs in that letter gave me, in more expressive words than I can command, a picture of what I've seen in a number of less developed countries, a tone of a way of life so different from ours as to be almost incomprehensible--but which we must comprehend, at best, or recognize, at least, if we are to help them help themselves.

Our economist wrote:

"One thing about India--it is old. When I say old, I don't mean antiquities dug out as in Greece--but a long continuous tradition and way of life that does back thousands of years. Benares is the oldest city in the world with 5000 years of living in it. You don't find layers on layers of civilizations--just the one layer that has been there a long time. It is not unusual for a village of several hundred families to stretch their lineage back generations on generations, with practically no migration either out or in--a closed society in the true sense.

"The other overwhelming thing is people. Five hundred millions on foot, bullocks, camels, bicycles, bicycle rickshaws, human rickshaws. Mix in some old trucks, busses and cars. And that is what you get on the narrow roads and streets in such density (outside of New Delhi where the streets are wide) as to overrun the senses. Privacy in the physical sense is impossible. But there is a kind of inner privacy they do attain.

"Coming into Calcutta from the airport there is a narrow road, not more than a dozen feet wide, lined by stall shops and with every square inch taken up by people or animals or carts. My car got stalled in traffic. Not one foot from me a man was bathing from a public water pipe--sitting with his legs crossed under him splashing water over himself from his copper jug. He continued about his business while other people came to get water--never once looked at my car or me--certainly not a common sight--or at the thousands of others jostling around him. His eyes had a faraway expression. The mind has to escape. Maybe that is why there is so much mysticism here.

"Even though we live well, insulated to some extent by the walls around our houses and in our cars, you feel India around you--a living, pulsating mass. It's so foreign that it is like living in a museum except the exhibits move and breathe."

India may be larger and more complicated than other LDC's--a rough calculation suggests she adds 37.000 new mouths to feed each day--but on a smaller scale you find similar situations and problems repeated from country to country--around the world.

This is not to deny some progress--some bright spots of accomplishment--and when you look at these there is a feeling of achievement. However, when you look at the task yet to be done--one wonders if we'll see a measurable degree of change, in our time.

Now, lest my time-to-time pessimism be what you remember of my talk--let me hasten to add that, in our culture, it is as natural for us to hope and have aspirations and expectation of achievement, as it is to breathe. So we go forward with increasing commitment to play a leadership role in problem-solving, with full knowledge of the growing intensity of the situation in this period when we are reducing death rates and have not brought population growth into line with capacity to produce food. We, that is, the President and his Cabinet and the Congress, have now passed our latest version of our overall modus operandi--the Agricultural Trade Development and Assistance Act of 1954, as amended and extended by the 89th Congress.

Self-Help Concepts

The most significant feature of this new legislation is its call for self-help efforts to accelerate food production within the food deficit nations themselves. This purpose was given major emphasis by President Johnson when he presented the Administration's program. As the food aid bill progressed through the Congress, both the House and Senate added provision after provision, to strengthen the emphasis on agricultural development within the recipient countries.

This avowed policy of the United States to stimulate, encourage and assist the developing nations of the free world to improve their own food production could hardly be more firmly expressed than in the new food aid legislation. It is a new policy, firmly supported not only by both the Executive and Legislative branches of the Government but also by public opinion throughout the Nation. It reflects a changed attitude that has come about as a result of an emerging recognition of the fact that a grave world food crisis can be avoided only by sharply accelerated rates of increase of food production within the food-deficit regions of the world.

To my knowledge there is no formalized machinery for judging self-help. It is and will continue to be a complicated and politically sensitive problem and evaluation will most certainly have to be in terms of specific programs in time and place.

However, with this new emphasis on self-help--on a policy of assisting developing countries to accelerate their own agricultural production--the United States accepts the problem of hunger in developing nations as our own problem. Our policies and our assistance programs must be directed towards its solution--for humanitarian reasons as well as in our own self-interest.

In the first place, it is morally impossible for us to accept widespread hunger and suffering when we know that it is scientifically and physically possible to produce enough for all.

In the second place, we recognize the extent to which our own future economic progress, our own hopes for greater international trade, even our own prospects for a steady and continued increase in commercial exports of farm products depend upon the rate of economic growth in the developing nations. The largest potential market in the world now lies in the less developed nations with their rapidly growing populations. That market is a sleeping giant with an almost limitless capacity to consume. The unmet needs of these billions of people--needs for food, for clothing, for every product of modern industry--far exceed the needs of the developed world. But this sleeping giant will awaken, and this market will come to life, only when economic growth brings higher incomes and greater buying power.

We already have evidence that increased per capita incomes in the developing countries result in increasing exports of American farm products.

As these countries improve their per capita incomes by 10 percent, their imports on commercial terms of commodities in general increase by 11 percent, while their commercial imports of food increase by 16 percent. Among countries that have achieved a substantial measure of economic growth we note that--in comparing 1955-59 with 1961-65--our cash exports of farm products to Israel doubled, those to Spain increased 10-fold, those to Taiwan increased by 13 times, and those to Greece by 16 times.

This is a fascinating and satisfying phenomenon. As these countries become more productive and more viable economically, their demands increase and they become better customers for our own farm products.

A prelude to market development in the developing nations must therefore include policies and programs that stimulate and encourage rapid economic progress in those countries. And, while that progress must affect every sector of their economic life, emphasis on the agricultural sector deserves much higher priority than it has received in the past--if only because most of the people are in rural areas. Until the level of living of these rural majorities can be raised, until hundreds of millions of farmers can rise above their primitive subsistence agriculture and enter the market economy, overall economic growth will be severely retarded.

Thus, paradoxical as it may seem, we must help the farmers of developing nations to improve their own agriculture if we would transform those nations into better cash customers for our own farm products.

A third basis for our policy of assisting agricultural development and economic growth in less developed countries relates to the overriding importance of narrowing the gap between the "have" and the "have-not" nations. Under present trends, this gap is widening. If these trends continue, and if this gap continues to widen, the unrest and violence that must inevitably accompany hunger and poverty in the emerging nations will threaten our own freedom and prospects for peace. Thus we recognize that it is in our own interest, as well as of benefit to all mankind, that we gear our policy toward helping the developing countries to help themselves.

The self-help emphasis in this new legislation encompasses much more than increased agricultural production. It recognizes the need for developing related industries, such as those producing fertilizer and other agricultural chemicals and farm machinery and equipment.

It emphasizes storage facilities as well as improved marketing and distribution systems. It includes a section authorizing the Secretary of Agriculture to establish a program of "farmer-to-farmer" assistance, to recruit and train people "in the practical techniques of transmitting to farmers ... improved practices in agriculture," and to conduct research in tropical and subtropical agriculture.

While the self-help principle is the most far-reaching of the new concepts in our food aid program, there are others of major significance.

It is well known that the new Act no longer limits food aid to surplus commodities, but now encompasses any agricultural commodity or product (except alcoholic beverages for both sales and donation programs and tobacco for donation programs) determined to be available by the Secretary of Agriculture.

Improving Nutritional Value

There is a new emphasis on nutrition in the new legislation. Authority is provided to enrich and fortify commodities to improve their nutritional value. There will be greater emphasis on programs to combat malnutrition in children, through school lunches, and preschool feeding programs. Nutritionally adequate prepared food mixes, designed to meet serious protein and vitamin deficiencies, are getting increased attention. Nutritionally valuable foods that were not previously available because they were not in surplus can now be made available for food aid.

Other features that have been developed and carried out under Public Law 480 during its 12-year history will be continued. Among the most important of these are the development of foreign markets for American agricultural products, research and educational activities in recipient countries, emergency relief, food donation programs operated by voluntary agencies approved by the U.S. Government, food-for-work programs and the use of food to finance agricultural and community development projects, and the promotion and financing of investment and development by private industry--both American and local--in recipient countries.

It is a temptation, with some appeal, for an agriculturally advanced, highly developed nation to think of going all out in expanding food production, pouring the excess in some abundance into the hungry nations. But to follow this temptation would be to allow food aid to be used as a crutch, to tempt the hungry nations, in turn, to delay or neglect their own agricultural development--which alone can provide a permanent solution for the problem of hunger.

In this new food aid program, coupled with our domestic agricultural policy, the United States has resisted the temptation and accepted the challenge.

How can home economics research fit into this setting? I can't be as ingenious as you are in seeing all the possibilities for your research--but I do see a need for your actual participation--in our programs, in the AID missions and in the field--and it's this that leads to my ideas of research needs.

I'm fully aware that we already have tons of research, much of it gathering dust--and probably an equal tonnage of blueprints for action programs. But what happens? What implementation? What have countries done with our fine free advice? What about the people we've taught? After we leave a village--a family--do they continue with new practices when it is a great effort to continue the innovations--or they do not see immediate results--how long do they continue? How long before they revert?

We know our own culture reasonably well and we don't always "educate" when we teach. And even a less lofty goal than "educate"--what about simply relating "information" to behavior. Everyone in the United States, even young children, knows that milk is good for you--but many are non-milk drinkers. Where is there an adult in the United States who has avoided the knowledge of the causal relationship between smoking and lung cancer--but smoking has not decreased. It should be relatively easy to teach "us" with all the scientific information we have and our familiarity with our U.S. audience--yet we are not always able to teach effectively.

Understanding Low Income People

Historically we have taught our girls to be good homemakers or to teach others--others who will have at least middle income homes. For developing nations, to have greatest impact among those who need it most, we must learn how to be teachers for low-income people. Not women with fancy stoves, kitchens, fabrics--but people with what they have now and will have for some time to come.

In these nations, half or more of the people are rural and often low income. We have been teaching teachers in the United States, most of whom live urban lives. These are women who do not tend a garden or have to catch, pluck, and clean a chicken before cooking it.

There is much to do in the LDC's--and we know little about them. What do they really eat? How much? Do they eat or sell the food that grows around the house? Which family members' get what? Which customs are deeply rooted, social, or religious? What has to do with climate? Which exist simply because it's an "easy" way and no one ever suggested a change? Is it lack of money or lack of availability? Do they know the relationship between

lack of cleanliness and disease? Communicableness of certain diseases? Child sickness and the foods fed to children, or the manner of feeding? Even sex and pregnancy? Before we have a knowledge of these cultures, in depth, we can't begin to know what to tell them or how to tell them what might help them live better lives.

Do we talk to the husband or the wife about vegetable gardens, poultry husbandry, infant feeding? Sometimes it's one or the other, sometimes both, but the husband first and separately. Then there's the situation when grandmother calls the shots--and heaven help you if she dreams that "evil-spirits" get into nonfat dried milk! This almost killed one child feeding program until the "dreamer" was convinced the spirits were destroyed.

How do you talk to a woman whose hut consists of a dirt floor, thatched roof and no glass in the windows, no shelves to keep food and utensils off the floor, no containers to keep out insects, a scarcity of fuel so it is kept for cooking and is not used for cleaning, because water is tortuously carried from a distance so you don't use it extravagantly. The stove is a fire surrounded by a few stones on the floor. As for utensils--they may be limited to earthen pots or a battered tin container--and not a measuring cup or spoon in sight.

In spite of this in a number of places I've visited in Latin America, the women's hair is shiny clean, the white clothes are white, and the grounds around the house are more free of litter than you often see in the United States. What I'm getting at is that many are remarkably ingenious and we must know what they are doing before we start advising on change.

The home economics field by its very nature has an unusual opportunity to work intimately with people and to be less disruptive of traditions than many educational programs, and to test tangibles in life situations. To do this, however, requires sensitivity and alertness to other cultures.

Objective Observation

To learn about these other ways of life we must be trained observers as well as technicians in home management, child care, food preparation, etc. We can't get to be "quickie" experts in all fields and in other disciplines. An individual researcher is well advised not to bite off more than he can chew. But he would also be well advised to avoid looking at narrowly defined questions rather than whole problems. Unless he (or she) knows about family life--how does he know whether it's the man who buys the food in the market--and the woman who takes charge at home. If this is it--you tempt the man to try a new food preparation for young children--you try to tell the wife why it's important to boil the water which she probably carries from the stream. You are teachers of the young people who go out. Possibly training them in scientific and objective observation may be the most important thing you can do.

To get at the whole is a job for many--and leads to collaborational research. We speak glibly of interdisciplinary research--and often mean we've read a book in another field. I mean real collaboration--so that researchers really mesh their competencies so the whole becomes even greater than the parts.

Then, when we know our people--how do we transfer knowledge in such a way as to be effective--and lasting? And this is another world of research. How do we tempt, demonstrate, explain--that change is necessary without destroying self-respect, respect for elders, respect for their own cultural background? This is pretty tricky. In the United States when we induced change in first first-generation Americans we often destroyed a delicate and necessary feeling--respect for one's own heritage.

I've seen more than one boner in what we've shipped to a country--the food type itself (yellow corn to people who only know white corn)--the package (no poly liner to a humid climate)--the instructions for school lunch in weight units (to schools which had no scales and no one turned measures into cups or units)--instructions printed in English (to a Portuguese-speaking country). The attempt to introduce improved poultry husbandry to the men in a village--unsuccessfully--because it was woman's work. In this applied field, we don't always need home economists, it's not even exclusively women's work--any sensible observant person would have been alert to these potential problems--but somehow it seems to come more naturally to women in your field--and they should have been a part of these programs for both back-up information and for demonstration and action. I think things would have run more smoothly.

Now--everywhere I look I seem to see a mandate for home economists, their research and teaching. It's in the International Education Act, the USDA Long Range Study of Agricultural Research, and I'm thinking of two goals, "VII. Consumer health, nutrition and well-being" as well as "VI. Expand export markets and assist developing countries." If we need Goal VII for the United States--certainly, we need it for less developed countries. In addition, there are the research implications behind FAO's activities in the area of home economics.

We are not short of problems to research. We are short of knowledge of how to adapt our research to other cultures. We are short of research to evaluate what we've tried to do or have already done. We are short of

people in the United States who are talented in their own discipline and who are sensitive to the need to relate to other disciplines. We are short of trained nationals in the LDC's who must be the ones to open the doors at the village level. And to my continuing frustration, we are short of appreciation among those who are responsible for action programs, for the need for the voice of home economists.

From all I've seen and heard I'm convinced that the needed original and adaptive research must be done in the countries themselves. This is also true of other fields. All of the ingeniousness one can command is crippled if it must operate from a distance without immediate exposure to the specific audience.

On the whole, you will probably have to be the aggressor. You will have to present your ideas of what you have to offer, what you can or should do. I know you have expanded into research and teaching of low income people in this country and many home economists are doing fine jobs in the LDC's. In spite of this, I see few if any proposals from home economists in the documents that float around the agencies--even those concerned with nutrition. If others do not think of your role, you must speak in a louder voice.

HOW A UNIVERSITY WORKS WITH DEVELOPING COUNTRIES

Lura M. Odland
University of Tennessee

My remarks are predicated, in part, on the long term commitments of the University of Tennessee in home economics and agriculture along with reports and observations of experiences of other universities. My general comments may be supplemented with details of our experiences later. Also, I am sure that Dr. LeBaron, Dr. O'Toole, and others here today could provide detailed comments from their cooperative undertakings with developing countries. Specifically, too, I would like to call to your attention the proceedings of the 1963 and 1965 Conferences on International Home Economic Programs sponsored by the Home Economics Division of the National Association of Land-Grant Colleges and State Universities.

We have a strong and rapidly accelerating commitment in international development programs. It is first of all a sizeable responsibility to understand the comprehensive nature of our commitment and the role which we must assume in its fulfillment, along with the multiplicity of demands from other continuing and new programs in our universities.

A priority for our role in research in international assistance has been indicated in Goal VI of the National Program of Research. In the past, the USDA and the State experiment stations have had relatively limited research programs in assistance to developing countries. The current estimate of two percent of total research programs may be conservative; however, current projections to 1977 indicate an increase of approximately 400 percent; or, in keeping with an overall increase of 75 percent for all programs, international assistance programs are estimated at a level of 5 per cent of total programs by 1977. In terms of scientist man-years, this is an increase of from 200 to 1,000 scientist man-years in a 10-year period. Such projections are not unrealistic in view of this country's present international commitments and, as indicated in the Long-Range Report, we will probably have significant increases in our national commitments to international programs.

Areas of Urgency

Currently, Goal VI lists three specific areas requiring immediate research effort: (1) the expansion of foreign markets for U.S. farm products, (2) the evaluation of food aid programs, and (3) technical assistance to developing countries. These three areas may reflect current commodity and economic concern. An expansion of areas of concern is inevitable to use as home economists. Each of the goals which we have discussed during the past two days should have connotations for international as well as national research programs when total needs are considered for any country regardless of the cultural or technological differences which may prevail.

Universities can contribute understanding to the total needs of a developing country through a wealth of accumulated experiences and a multiplicity of resources of knowledge and of personnel in many specialized disciplines. Universities have established research capabilities in problem identification and problem solving, in the training of personnel, and in adaptability to meet new and heavy demands for knowledge. Particularly, the land-grant colleges and universities are well experienced in utilizing and expanding resources to meet changing needs.

In identifying the role of universities, and of home economists, in working with developing countries, considerations which have seemed most pertinent are: (1) the need for

long-range commitment, (2) the need for judicious use of resources, and (3) the need for cooperation and coordination of programs by universities, governmental agencies, foundations and private enterprise, both in this country and in participating countries.

The long-range commitment for assistance has been very clearly documented. Our responsibilities lie in developing with, not for, other countries the mechanisms and resources for fullfilling these commitments. The sense of commitment in international programs in home economics must stem from a belief by the cooperating countries--and particularly by the developing country--in the significant contribution which such programs can make to the economic development and the social progress of the developing country. Such belief should prevail not only in academic circles but also in business and governmental circles. Frequently, this involves a continuing commitment through many changes of personnel, including unexpected or expected changes of students, of faculty, and of governmental administrations.

Wise Use of Resources

The need for judicious use of resources appears critical in international programs, especially so in view of shortages in current domestic programs. In international research programs, our primary concern is for appropriately trained personnel. Realistically, it is recognized that permanent institutions and training programs must be established and strengthened in and by the developing countries to meet personnel needs. Self-sufficiency may be fostered through preliminary appropriate training of foreign students in technical competencies and skills in this country. However, the training of personnel should be assumed increasingly by the developing country. There may always be some need for graduate students from developing countries to receive specialized training in advanced countries. However, in the planning stages of cooperative undertakings, we should aim for the time when students who come to this country do so for unique, short-term training with definite plans and commitments to return to their home countries with needed competencies. They may then train colleagues and successors in their own countries to recognize and to meet the unique needs of those countries.

Academic and research programs should be developed as rapidly as possible in the country which is receiving assistance with direction and guidance from and within the developing country. The need for personnel should be met in times ahead, primarily within the developing country; this can be accomplished only through initial long-range planning. There may be a continuing need for specialized researchers to visit in the developing countries; however, the developing country must assume leadership in the identification of problem areas and of appropriate solutions in order to have a continuity beyond the time when the assistance to that country may not be continued.

The judicious use of resources in program planning for developing countries implies the use of all resources available in planning for total long-range needs. Universities in particular have unique breadth and depth of resources. However, not all universities can or should be involved directly in international assistance programs because of resource or interval priority considerations. Assistance aimed at meeting the total needs of a developing country is very comprehensive. There is a need to evaluate from the beginning of the planning period the extent to which long-range comprehensive commitments of aid in academic training and research programs may be a meaningful part of the overall priority system within the university.

Universities can function best when they and their component departments most likely to be involved actively participate in the critical preliminary discussions of cooperative undertakings. At this time, basic considerations can be given to the unique contributions which the departments could provide in keeping with their own domestic overall program priorities and commitments. Most frequently, comprehensive involvement at the very beginning when program potentialities are being discussed leads to a better utilization of past related experiences and to a better integration of the many current needs for the resources as well as a stimulation for new approaches and decisions.

Early Planning

Home economists envisioning the possibility of cooperative undertaking with developing countries should take the initiative in the early planning stages of such programs in making known the contributions which they might provide to the cultural, social, and economic developments of a country. Involvement with counterparts in the developing country in the initial stages of planning is implicit.

There are many ramifications in programs of assistance in developing countries. Governmental, business, and general cultural involvements need to be thoroughly investigated along with academic and research needs. Here again, widespread involvement in the early planning stages will also lead to better understanding of the long-range needs. Trying to join a team in the second or third quarter of a four-quarter game is not conducive to either enthusiasm or initiative, no matter how good the players may be.

Lastly, improved mechanisms for cooperation among and between universities, government, and industry in both of the cooperating countries have fostered and will increasingly foster assistance programs if these mechanisms are recognized and utilized. In our own country it seems, through our own discussions the last two days, that we are not fully utilizing domestic mechanisms for cooperation, and perhaps as we become more acutely aware of avenues of cooperation and the coordination within this country so we might find similarities in developing countries to help meet our commitments abroad.

To meet our commitments of international scope, there is opportunity to promote cooperative relationships between universities and the instructions that call upon and support them--the Federal government, the foundations, and private enterprise. Excellent suggestions for this are provided in the reports of the Committee on The University and World Affairs. Some of the past difficulties in university programs at home and abroad have arisen from the fact that many programs have been sporadic, ad hoc, and inadequately related one to another. A long-range approach is necessary. As each cooperating unit in a program of assistance seeks to determine its own priorities and its own course, opportunities will arise for cooperation within the institutions and among institutions, governments, agencies both in this country and abroad.

The 1960's brought a rapid expansion in international programs in many universities in a multiplicity of kinds and amounts of involvement. We have at hand a wealth of experience upon which we can base guidelines for future undertakings. However, current and projected national commitments call for the utilization of cumulated experiences along with new approaches and new decisions if we are to make ourselves effective in serving world-wide concerns.

REPORTS OF WORKSHOP GROUP DISCUSSIONS

Group A -- Dr. Marilyn Horn, Chairman

The group recognized a need for a comprehensive approach to the total home economics research program regardless of funds and administrative organization. However, the decision was made to confine the discussion to the goals set forth in the Long Range Study because the time was limited and priorities had already been established for specific areas of work. We, therefore, recommend action.

Selection of the following problem areas was based on (a) urgency of the problem and (b) the fact that they represented areas where home economists could make an important contribution.

Task Force No. 29--Food and Nutrition
- Goal VII. 3. Food choices, habits and consumption
- 4. Home and commercial preparation of food
- 8. Human nutritional well-being

Task Force No. 30--Other Consumer Problems
- Goal VII. 5. Selection and care of clothing and household textiles
- Goal VIII. 2. Family decision making and financial management

Task Force No. 31--Rural Development
- Goal VIII. 3. Causes and remedies of poverty among rural people
- 4. Improvement of economic potential of rural youth and adults
- 6. Individual and family adjustment to change
- 7. Improved income opportunities in rural communities
- 8. Improvement of rural community institutions and services

The group noted that home economists can also contribute to many other task forces, such as those in the commodities of fruits, vegetables, swine, beef, etc.

The necessity for identifying researchable questions within each of the areas listed above was recognized. To accomplish this, the group recommends to the Home Economics Research Sub-Committee of ESCOP the establishment of home economics sub-task forces for each of the nine problem areas listed above. Furthermore, the group suggests that the ESCOP and ECOP Home Economics sub-committees work together in the formation of these sub-task forces. The responsibilities of the sub-task forces would be to provide back-up material for the person who would ultimately represent home economics on the national task force.

The group discussed the types of people needed on the sub-task forces. As an example, the sub-task force for the problem area, Family Decision Making and Financial Management, should consist of people from the following disciplines within home economics: consumer economics, rural sociology, psychology, home management, extension, family life, farm management, and, perhaps, philosophy. The sub-task forces should propose good researchable

questions and show the resources needed to carry out the research. The questions could be formulated at each institution, screened at the regional level, and assembled and synthesized at the national level. The group noted a need for care so that the research proposed would not be limited to the status quo.

Group B -- Dr. Laura Harper, Chairman

The members of Group B concluded that the greatest contributions by home economics to the proposed "National Program for Research in Agriculture" will be made by research scientists working in the various subject-matter areas covered under Goals IV, V, VII, VIII, IX, and X.

Under Goal IV, it appears that the greatest impact can be made in research related to the quality of food products for better consumer acceptability. Without the food scientist being oriented toward the consumer and home economics research, this area will fall short of the objectives as stated.

Under Goal V, the behavioral scientists working in home economics can and should make a significant contribution, especially under the following subitems:

1. Improvement of grades and standards
6. Supply, demand, and price analysis
8. Development of domestic markets for farm products

Goals VII and VIII strike at the very heart of the philosophy, research competence, and potential in home economics.

Some of the problem areas needing research which contribute to Goal VII and in which home economics subject matter specialists have competence are the following:

1. Food products free from toxic residues
2. Protection of food supplies from harmful microorganisms and naturally occurring toxins
3. Food choices, habits and consumption
4. Home and commercial preparation of food
5. Selection and care of clothing and household textiles
6. Human nutritional well-being

The group expressed concern that only three additional scientist-man-years were proposed from 1965-72 to study Item No. 3 (food choices, habits, and consumption) and five from 1972-77 and recommended that a greater increase in scientist-man-years be planned for this important area.

For Goal VII, Item No. 4 (home and commercial preparation of food) where no increase in scientist-man-years was proposed, food scientists wishing to contribute to research on food quality should have ample opportunity to do so by working on food quality problems as delineated under Goal IV.

Some of the research problem areas relating to Goal VIII and in which subject matter specialists in home economics have competence and research concerns are the following:

1. Housing needs of families
2. Family decision making and financial management
3. Causes and remedies of poverty
4. Improvement of economic potential of individuals
5. Communication process in rural life
8. Individual and family adjustment to change

In future planning for more comprehensive research programs relating to family well-being, consideration should be given to greater coordination or alliance between objectives of Goals VII, VIII, and IX, especially as these goals relate to better understanding of the family.

The recommendation was made that the root disciplines included in the scope of home economics be included in the basic research objectives of Goal X along with the discipline embraced in agriculture and forestry and that home economics research administrators and experiment station administrators encourage scientists to pursue more studies classified as basic research.

Other considerations, concerns, and recommendations of Group D included the following:

1. That each state consider the national plan and set priorities, for research.
2. That in setting priorities consideration of the following criteria (among others) is suggested:
   a. Overall needs in home economics research
   b. Previous research investment and available scientists
   c. Alternate sources of funding
   d. Whether home economics will assume leadership of the research or will serve as a cooperator in the research
3. That greater recognition be made of the important contributions of home economics toward Goal VI, especially Item No. 3--technical assistance to developing countries. Efforts to improve the level of living through the teaching of improved practices of homemaking may have a positive effect on a developing economy as well as contribute toward a better quality of home life.
4. Concern was expressed that not all areas of concern of home economics are included in the national plan.
5. That appropriate subject matter representation from home economics be appointed to task forces on
   No. 28--Food Safety
   No. 29--Food and Nutrition
   No. 30--Other Consumer Problems
   No. 31--Rural Development

6. That appointment of home economics consultants to task forces dealing with food and other appropriate commodity task forces be made.
7. That appointment be made of an additional task force on "Quality of Family Living and Adjustment to Change."
8. That graduate education receive greater emphasis.

Group C -- Dr. Elizabeth Gifford, Chairman

I would make two general comments on behalf of myself and the other chairmen. We would recommend a little more research on time perceptions, since I am sure none of us has had an opportunity to polish up our remarks, and I doubt if our recommendations are couched in exactly the terms we might want to use ultimately to transmit them to the appropriate individuals. Yet, I am sure I speak for all of us in thanking the members of our respective discussion groups who really did arrive at recommendations in a very short period of time.

Our group did not try to isolate the home economics component of each of the goals and problem areas. We did, however, spend most of our time on trying to isolate some supplementary ideas which we felt were not covered completely in the report. These dealt specifically with problems in which home economics has a particular concern. We reviewed the complete list of goals. We developed some general recommendations regarding them. As an overall look at what we did, it seems to me that the recurring theme was family and community, and that we probably spent more time in trying to bring that to your attention than we might have if we had had time to complete our review of this report.

The report can not be a total guideline for home economics research. In the future, goals for home economics should be developed similar to those that have been developed for agriculture. However, we have developed recommendations regarding the place of home economics within agricultural goals. These follow:

Home economics should be specifically written into goals IV, V, and IX. In regard to Goal IX, Area 8, Community Services and Environment, families are not now clearly defined in community development. Total environment should be considered in relation to human development; this is complex and cannot be adequately attacked in segments. Community improvement, services, and environment as an area needs to show more concern with urban problems. There is not enough emphasis on the urban syndrome as it affects total society.

In regard to Goals IV and V, home economics has an interest in product development and quality and in consumer behavior relative to agricultural products. The need to preserve eating quality when developing quality in production (disease resistance, etc.), transportation, and marketing aspects must be continuously brought forward for consideration. Consumer education regarding agricultural products and research relevant to its meaningfulness is another area for home economics research. Do consumers learn to accept poor products because of lack of information on quality? Are consumers able to discriminate?

We would encourage greater coordination between agricultural extension and agricultural research. We would urge more effective communication between professional areas operating in the two programs. We feel a need for developing more effective ways to influence behavior and provide the link between agricultural interests and consumer well-being.

Under Goal VI, Research to Provide Knowledge to Assist Developing Countries, we see that from the standpoint of building an institution in which research would be a part of its responsibility, home economics would have a contribution to make. One of the main points of concern is in regard to the cooperative process itself in working with foreign institutions. We see our role as one of assisting other cultures in including home economics research in their programs.

Goal VII, Consumer Health, Nutrition and Well-Being: We did not spend much time on this because we thought it had received considerable attention earlier. One recommendation that we would make, however, is that family well-being should be included as well as nutritional well-being. That is, we felt that many factors entered into family well-being other than nutrition.

Goal VIII, Raise Level of Living of Rural People: In our opinion the concept of housing is more than the house. It encompasses the total environment--physical, social, and economic. We thought that the interrelationships between urban and rural families, their problems, and their commonalities should be given greater attention than that noted in the report. Moreover, recognition should be given to the rural-urban fringe.

Goal IX, Improved Community Services and Environment: There should be recognition that community services and environment must again focus on the family as a basic unit of the community. We see the need in family programs for back-up research, and in this we distinguish between consumer and family. We see the need to emphasize the family as a basis for planning community services and environment with the idea of improving the quality of family life. Community services and environment should be designed with the idea of serving families.

We believe there is an opportunity to perform more meaningfully on communications. There must be better ways to communicate with people such as those in low-income groups.

We need to determine better ways to measure effectiveness of training programs for subprofessional personnel. In the future, more and more action programs will be carried out by this group and research will be needed to make full use of this potential.

In regard to other areas in Goal IX and under Goal I, we note that family needs and concerns are related to plans for land, water, and recreational resources.

Goal X, Basic Research: Home economics should be named specifically as well as agriculture and forestry, which are mentioned prominently in this Goal.

Our group makes the following observations regarding priorities:

1. Home economics should place more emphasis on Goal IX for the following reasons: (a) We have people now who can be put to work on this area, and (b) training funds are available to develop new personnel if some leadership is developed.

2. Our second emphasis should be on Goal VIII.

We place importance on Goals VIII and IX in the next 5 years--not because we don't think the others are important, but because there is a good possibility of recruiting more personnel from other disciplines. For example, there might not be as much additional training required as in Goal VII. Also, we thought that industry was less likely to do research in Areas 8 and 9 and, therefore, we should concentrate on this area. Moreover, it seemed to us that there would be less need for the construction of physical facilities such as laboratories for these two goals. The laboratory is the community, so to speak.

Our group makes the following general recommendations:

1. We suggest that appropriate and proper balance of home economists be considered in forming the various task forces. We did not review the list of task forces to indicate the ones to which home economists should be appointed. We feel that an implementation of this recommendation rests with ESCOP and the home economics subcommittee thereof.

2. We recommend that the subcommittee of ESCOP look into the establishment of more training programs for home economists. We are familiar with training programs in the medical and other fields and feel that there is an opportunity to obtain funds for training personnel and developing manpower for carrying out these research goals. Additionally, we feel that publicity to attract people into this program might be considered.

3. We recommend that facilities be provided in keeping with the plans and goals.

4. We recommend that additional task committees cutting across agricultural lines be considered. We recommend that the list of 33 is incomplete, but we believe that it is within our province to mention some additional committees that might be appropriate. These include: (a) consumer needs, preferences and acceptability, (b) family-community interaction, (c) family environment, including housing, textiles, and clothing, and (d) a task force to deal with personnel, research training, and expanding graduate programs.

5. We recommend that a follow-up of this conference be planned and that the home economics program be evaluated in 1972.

6. When a report of this seminar is available, we recommend that it be reviewed and that a long-range plan for home economics research similar to that of the Long-Range Study for agriculture be developed--probably by the new Association of Administrators of Home Economics. We feel the need to take a look at the total home economics research contribution, including those related to agriculture.

And finally, we recognize the intensive work and cooperation that has gone into the Long-Range Study and we want to recognize particularly the contribution of Dr. Doretta Hoffman. We also want to thank those who have made this seminar possible.

Group D -- Dr. Pearl Aldrich, Chairman

Our attempts to comprehend the scope of the long-term study and to crystalize from it the implications for research in the areas of home economics gave all of us a new respect for the herculean job that had already been done by the parent committee. We would like to acknowledge our appreciation for the opportunity afforded home economics to identify our role and our responsibilities in the total commitment that stands out in this report. And so first we want to salute the parent group and those of you here who are going to work at implementing the recommendations made in it.

In general, Group D, concurred with the definition of Goals VII, VIII, and IX and with the delineation of related problem areas pertinent to the issues which have traditionally been major concerns of our several areas of specialization and competence. There was also general agreement that we did not perceive in some of these problem areas, certain merging emphases which should be reflected if our contribution is to be as meaningful as it might be and should be in relation to the effects of economic, social, technological, and political changes on people. So I want to be rather pointed and specific, as our discussion tended to be this morning, in terms of our response to the certain goals. We didn't take them in sequential order; we took them in the order according to the content for which we felt we had the greatest concern.

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Our conclusions and recommendations for priority on Goal VII were as follows. The highest priority we assigned to increasing emphasis on integrating and interpreting the existing nutrition knowledge, the accumulating additional information on nutritional status, factors affecting it, and methods for modifying it (problem area 8, Goal VII). We also call attention to the importance of the relationship between area 3 of Goal VII and area ? of Goal VIII, and urge a closer relationship than was evident to us in reading these separate areas in Goals VII and VIII. We also recommend that, because of the implications inherent in studies of food choices, habits, and consumption (area 3) for utilization of research in human nutrition and well-being (area 8), projected emphasis for the combined areas should include more man years for area 3 than indicated in the report. Some redistribution of SMY's between 3 and 8 would be desirable in integrating the foods and nutrition problem areas delineated in the report.

We further recommend that, within the projected man hours allotted under Goal VII, area 4, we should increase emphasis on the problems of commercial preparation. Recognizing that because more and more people are eating away from home, we recommend research directed toward the safety, nutritive value, and eating quality of the food prepared and served in volume feeding operations. "Eating out" is increasing every year, and we assume this trend will continue.

Another recommendation related to Goal 7 was that a communication be directed to the task force already appointed in the area of foods and nutrition, urging: that a more comprehensive effort be made to assess the nutritive value of new forms of foods which continually appear on the market. Their impact on nutritional status of the individual is, at this point, unknown. We know that new varieties, new methods of processing, storage, etc. all affect the nutritive quality of these foods. But we know very little about how most are affected. Although this concern may have been implicit in some of the things that were said in the report, we felt that it needed to be made more pointed than it appeared to us to be in the report. We wanted to give high priority also to area 5 under Goal VII which is concerned with clothing. We did feel, though, that, in the report, one aspect of research in clothing was missing--one which we think is gaining in significance and importance in our way of life and quality of living. We would like to see added in the sub-groups under area 5, Goal VII, research in socio-cultural factors that contribute to consumption patterns of textiles, fabrics, and apparel. Perhaps this was implied in the report, but we wanted to make sure.

A further recommendation to Task Force 29: That research on variations in the physiological needs of individuals for recommended nutrients be expanded and correlated with indices of health. We haven't done much, as you heard yesterday from one of the reports, on nutrition research in terms of individual needs and correlating these specifically with evidence of health--other than some of the traditional tests for levels of certain constituents in blood and urine. We think there should be an effort to establish some better indices for assessing these relationships.

In examining Goal VIII, we gave priorities first to area 6 as delineated in the report, feeling it was the most comprehensive and related closely to areas 1 through 5. We felt the task force that works on this should consider combining areas 6 and 2, and interrelating it with the other units in that grouping. We felt that area 6, the individual and family adjustment to change, touched on all of these things and that it was not simply another one of the list. We felt research should focus on this more strongly than was evident to us in the recommendations in the report.

Then we went "all out" and recommended some new task forces which we think are pertinent to the kinds of knowledge we need. So I am presenting these as major recommendations from our group.

We recommend establishing a task force which would be concerned with the communication process in rural and urban life which would focus attention on research designed to maximize the impact of research described under goals VII, VIII and IX. It should also serve to increase the emphasis on and expansion of Goal VIII, problem area 5 which also has to do with communications. We felt that, not only in areas of concern to us but in all other areas, this seemed to be a missing link. Some may view communications in terms of action rather than research, but we felt that research in communications is of major importance if we are to make our research meaningful to people. More effective communication of research findings seems an important aspect of this total report. It is an area in which we believe a special task force would be most useful.

We also recommend a second major task force, Human and Family Development, which would be concerned with the problems of area 6 under Goal VIII, individual and family adjustment to change. We suggest such a task force concentrate on area 6 as it relates to area 3, the causes and remedies of poverty among the rural people, and area 4, improved economic potential of youth and adults. This task force should be concerned with the factors affecting the processes of human and family growth and development potential. It should include members from sociology, consumer economics, anthropology, psychology, human nutrition, child development, child psychology, and family life.

We further recommend a third task force. We found it difficult to decide whether we should separate the one just mentioned and this one, or whether to try to make them a composite. We decided upon a separation, with a recommendation that at the appropriate planning point, they interchange ideas and interrelate objectives. Therefore, we recommend the establishment of a third task force, Man and Environmental Relationships. It would be concerned especially with problems in Goal VIII, areas 1 through 6. It might also touch Goal IX, areas 7 and 8, as these areas relate to the needs of individuals and families.

This task force, Man and Environmental Relationships, would be concerned with the environmental factors as a means of expressing the style of human and family life, and as a means of contributing to its development. The task force should include sociologists, psychologists, economists, housing experts, specialists in apparel and home furnishings, and community planners, architects, artists, and engineers. We aren't claiming this as all "ours," but we are saying that we do have a very big stake in it and a real contribution to make.

Another recommendation was that home economics has a contribution to make to research in Goal VIII, areas 7 d2 and 8c. These have to do with such things as food stamp plans, the impact of marketing to demand, level of living of migratory workers' families, etc. While these areas are couched in terms of the production economist, we think we have a real contribution to make here and hope that we will be included in planning related to these areas.

We would also like to make a general comment about Goal VIII. We see a need to identify and evaluate alternative methods of providing critical services to individuals and families in the community (rather than having community planning based entirely on community problems as viewed by the sociologists, which is what the report seems to imply). We feel that we, too, need to have a part here in terms of services that improve the quality of family living.

We touched on Goals IV and V less expansively than on Goals VII and VIII. We do have concerns in these too, and I would like to indicate some of them. Another recommendation of our group was to indicate a desire to participate in Goal IV, which is concerned with determining the quality characteristics and the refining of techniques and measurements of quality desired by the consumer. We recommend that home economists be members of the task forces concerned with food and fiber quality related to consumer needs and satisfactions. It appeared to us that the research disciplines delineated in Goal IV might not have thought of us as having concern with the kinds of food and fiber developed until they were, in fact, already on the market. Reaction at such a point seems rather late, and we feel that we have a meaningful contribution to make at an earlier stage.

We suggest the relationship be strengthened between objectives A, B, C, D of Goal IV and problem areas described under Goal V, area 1, a, b, c (determining quality characteristics and refinement of techniques for their measurement).

We did not deal extensively with Goal VI either. However, in considering the rapid changes expected in family systems in emerging societies, we recommend that home economists be included in the task force dealing with Goal VI, area 3, especially (d) and (e) subheadings under 3. It is further recommended that universities that have conducted educational programs in home economics in other countries continue research focusing on Goal VI, 3 d and e. The problem area 1 (f) under Goal VI should receive increased attention, including emphasis on identifying new basic indices of nutritional status.

In relation to Goal X, our group concurs with the need for expanding basic research. It is our assumption that this goal relates to all of the others as an undergirding for applied research and subsequent action programs. We call attention to our special interest and competence, particularly in the following areas: T, y. dd, ee, ff, gg, ii, jj.

Considering the time and resources which went into this conference, I think, in all fairness, we must acknowledge that the time allotted to the discussion groups to come up with a product equivalent in quality and quantity was very limited. Perhaps I speak for all participants when I say that the experience we've had during this seminar might be compared with combining several chemicals in a beaker with a very strong catalyst and then not waiting long enough for the reaction to produce the compounds you expect. I think we feel that the mixture is still frothing over the edge of the beaker this afternoon.

However I think this catalyst has just started the reaction. I hope the catalyst continues to act and that we can, indeed, let it come to some kind of equilibrium, producing better-defined end products. I hope you will join me in recommending that home economics has a real obligation to pursue what we have begun here. This seminar has provided a useful structure. I strongly recommend that members of this group continue to use this catalyst as we attempt in the future to give more meaning and direction to our research.

REPORTS OF DIRECTORS REACTOR PANEL

Director Mikell:

The question as proposed to us this afternoon, as I understand it, is, "Where do we go from here?" During the past three days we have been reviewing and studying the areas in which home economics could contribute to the National Program for Research. Many stimulating ideas and challenges have been presented. It is hoped that these have fallen on fertile ears and will stimulate thought in the years ahead.

You will note that the program to which we have devoted our thoughts is a national program. It has been a joint effort by the Department of Agriculture, the State agricultural experiment stations, and industry. I think this fact is important and should say something to us. It means that a joint and coordinated effort should prevail wherever and whenever possible.

Your concern for the National Program for Research is not completed with the close of this seminar. There is much work yet to be done if you, as administrators, are to fullfill home economics' responsibility to the Long-Range Study. The matter of implementation is yet to come.

We have viewed the program from a National level. There are two other levels with which you must be concerned, namely--regional and State. Some of the research priorities recommended at this conference might well be developed into packages suitable for research at the regional level. This would have to be decided upon after careful study. I believe that each region has a mechanism whereby such an approach can be developed. The third and most important level of concern is in your State. This is where you have to really wrestle with the problem of participation. Responsibilities to the constituents of your State must be recognized. Therefore, a thorough evaluation of your present program, the local needs, and the areas of concern that are present at home must be given due consideration before launching into additional programs.

This does not imply that you should return to your State, crawl into a shell and forget all of the planning and discussions that have taken place at this seminar. It does mean, however, that you can contribute effectively only to the extent of available personnel and funds. It is hoped that each may be able to make adjustments whereby the problems we have been discussing may be researched.

By establishing priorities, as the groups have done here, one must realize that there will be areas of concern that will be omitted or receive a low priority. This may mean that some states that are proficient in the low priority areas will not be very active in the early stages of the national program except possibly at the local level. This should not concern us if we value the program in totality.

There is one matter that should receive immediate attention and that is an inventory should be made of professional competency in the various researchable areas that have been established here. If such personnel are lacking, some action should be taken to train persons in these areas so that you will be ready to put into motion the desired programs when the opportunity arises.

This has been a most interesting conference, and those who have been responsible for the planning and programing are to be congratulated. It is hoped that the recommendations which have evolved at this seminar will be developed into packages and made available to those concerned.

Director Kramer:

Even before Margaret Hard sent her kind invitation to attend this significant symposium, I'd been seriously considering attending. My desire stemmed mainly from two sources. One was that I had a desire to return to Lincoln, the scene of my crimes. The other was to get a better insight into home economics programs and the opportunities for research as home economics administrators saw them. This latter concern I share with a great number of directors throughout the country as witnessed by the number of my colleagues that are here and have sat through the entire meetings. Several of us have been asked to serve as reactors to the symposium. Notwithstanding Dr. Leverton's allegory or semantics, the way things are said is important. For example, there is a real question in my mind as to whether what the directors are going to say this afternoon is going to be classified as immortal or simply as death-defying prose.

One of my earliest reactions was that home economics administrators are fully capable of assessing their own situation with an honesty and a refreshing candor which, I'm afraid, if presented in this fashion by any director, could only be interpreted as a complete lack of sympathy and a most appalling failure to understand the problems unique to the disciplines embraced by home economists. Because as an agricultural experiment station director and an agricultural administrator, I am concerned by the appalling lack of understanding of our own general university administration toward the unique problems of agriculture, I would like for a moment to relate your unique problems with ours.

As Dr. Personius has so ably stated, home economics has historically been identified with--if not dependent on--agriculture. In those areas where interests still overlap, there is

certainly no reason why this bond should not be materially strengthened. On the other hand, several speakers have indicated that there are areas which might be considered to logically fall outside the purview of agricultural research interests. Here, home economics should consider itself an independent organism drawing its strength by tentacles spread into other disciplines and offering its help to these same disciplines by means of the lifeline that these tentacles offer. I sense from the excellent and straight-forward presentations that many of you believe home economics has emerged from its comfortable and cozy little den of isolation and is willing and ready to embrace any discipline which can be helpful in meeting its primarily humanitarian goals. There are some good sound old-fashion concepts like: "Educate a man and you educate an individual; educate a woman and you educate a family." That should still pervade your philosophy. But these concepts in themselves are now too narrow to represent your expanding objectives as you have displayed in the past three days.

There are certain general statements which I feel must represent at least a consensus of the directors.

1. Most directors are aware that agriculture like home economics has lost--or is losing--its unique status both on the biological and on the political front.
2. People in agriculture can no longer be regarded as being willing to accept a "way of life" as even partial compensation for the vast investment in capital inputs that now must go into agricultural production.
3. Agricultural research has a certain moral obligation to those people who have been displaced from the agricultural, if not the rural, scene.
4. The directors for some years have been actively seeking ways to meet this "people-oriented" obligation, recognizing that the imminent re-emphasis on production to feed a hungry world is not likely to reverse the out-migration of people from the production phases of agriculture.
5. The directors will support from any discipline specific regional and other projects which are well-conceived, well-planned, and undergirded by a capacity which provides a reasonable chance of meeting what they feel are their obligations to human welfare.
6. The directors will at least attempt to recognize such projects when they see them.

At this point, it may appear that I am proposing that each of you go home, stir up your staff, write a rash of projects, deliver them to your director forthwith, ask him to relinquish bundles of money for their support--and then be prepared to accuse him of being callous, cold, cruel and uncomprehending. I'm not proposing that you do this. What I am suggesting is that the outstanding result of this symposium will become manifest in the posing of specific researchable questions which will be stimulated within the framework of the Long-Range Program now before us. Last fall, for example, each of the directors was asked by CSRS to respond to this specific question. "Assuming that you have an annual increase in Hatch funds of $64,000 per year at your station for each of the next five years, what new projects will you undertake at your station? Give proposed title, year to be initiated, and proposed funding from the point of initiation to the end of the five-year period." Each director in answering this $64,000 question has established part of the basis for the developing budget request. Obviously, there is a reasonable commitment to follow more or less closely those proposals, provided the budget request is granted. It is not too much to expect that this same procedure be followed for home economics interests. This can perhaps be done in one or more of the following ways.

First, take the concepts that were developed here back home with you. Get your staff people together and develop these concepts with them. Then use your staff as resource people for devising short, concise project titles for proposed programs that can be handled within your present or proposed cabilities. Use as general guidelines, the recommendations developed in the reports of the four work session groups whose chairmen have reported just this afternoon. See that your own station director is aware of what you have developed. Encourage him to use it in the projections that he will have to make for use of the legislative subcommittee of ESCOP. Follow the progress of these projections through the legislative deliberations. Encourage your director to adhere to his commitment in home economics when the vast funds which this approach will generate come to him for allocation. Through your Home Economics Sub-Committee, be in a position to suggest the next area or areas which should be given special consideration in the next budget request.

I think I need not repeat the things that you have already told yourselves about what all this will take by way of developing personnel and capability. You know this better than anyone. From the way in which you have seized the initiative in relating your program to the total program, I am confident that you can get this job done. Thank you.

Director Bohmont:

It is my understanding that I am to provide a continuing and changing source of information to a group of people who will respond with some type of reaction. This is what you have been doing for three days. It behooves me to

not duplicate the information presented to you from the other two directors, but to try to simultaneously wear three hats--first, as the administrative adviser to the western home economics research administrators; second, as the representative of the western directors; and third as a director of an experiment station. From these bases, then, let me give you two or three quick points which I believe we need to review.

Each of you should ask yourselves the questions of "what," "why," and "how." I think "what" has been answered. We do have a national plan for agricultural research. It is the first intense effort to organize from a national view all programs that relate to Department of Agriculture's effort in home economics and its related programs. "Why" become perhaps many-faceted, but one of the key points is that it does have a dollar sign or it does have resources. Because each of you represents a State, you have a key and growing responsibility in that State, in the region, and in the Nation. It is your responsibility to make all these fit together. You have done this.

It is nothing new to plan. We go around mumbling goals and PPBS, and all of the other terms, when actually we've been doing this for years but not on a coordinated scale. There are several approaches if this is to be accomplished. One of the first is on the State level. We've heard speakers of this subject during the conference. There are three alternatives to be considered. You may throw it completely out and say it doesn't apply, or you may go down the line completely and say everything applies. Third, you may compromise.

I am suggesting that all of us would probably fall into the category of compromise. Make the plan fit where you believe it should and discard those items which do not really fit into your states' responsibilities. After you've reviewed the plan on the State level, it should be reviewed for regional and national application. I'm very impressed with the discussions during the conference on how you may implement this on a regional and national scale. To go home now from this seminar and not take anything with you in terms of the mechanisms which you can use would be to have only partially participated in this seminar.

After you've looked at it from the State scale, you must look at it from the regional scale. We are organized as a region. There's nothing new to you in planning on a regional scale, but I am pointing out that none of us has really accomplished this yet in terms of where our efforts should be in 1972 and 1977 in the Long-Range Program.

There are many phases of this study that will apply to each of the home economics programs and many will not. I think we should determine where we can most effectively apply our talents and resources. They are limited! You will not have all the resources needed to apply to this program. I am convinced that if we received everything we requested in developing a complete program, we probably wouldn't know where to begin because trained scientists are not sufficiently available to get the job done.

After the evaluation on the State and regional scale, you must apply this on a national level. Perhaps you're the ones who will do this. On the other hand, as professional home economists you may or may not have representatives through a task-force system. In every case you must communicate with those who are responsible for seeing that the interests and abilities as well as needs are adequately reflected. If you don't do this, you have no one to blame but yourself.

In summary: As a reactor director or whatever term we apply, I think that the reaction of the regional directors that I represent would be good toward these meetings. This is the first, concise, and intense effort of planning on a regional and national scale that I've seen. This seminar will be most worthwhile if you consider your own State plan first upon returning home. Advancing from a State plan, you must next consider a regional scale, and then the national level. Finally, you must express the needs of home economics by communicating with all related disciplines to that Long-Range plans can become a reality.

CSRS RESPONSE TO PANEL REPORTS

T. S. Ronningen

Cooperative State Research Service
U.S. Department of Agriculture

I'd like to refer to an article by Theodosius Dobzhansky in a recent issue of Science. He said that we have optimists and pessimists in our country. The optimists are those who believe that we have now the best of all worlds. The pessimists are those people who are afraid they might be right. We have another dimension. Dobzhansky calls it pessimism surmounted. This is a more realistic kind of optimism. And I think the discussions we've had here today represent the kind of optimism that might be pessimism surmounted. If we go by the fine summaries we just heard you can not only surmount pessimism--you can also surmount confusion.

Getting back more specifically to CSRS, our role is limited by legislative authorities. Our history has shown that whenever we seem to exceed legislative decree, we find out about it from the Congress.

We are using the Long-Range Study as the primary basis for developing budget askings. This means you now have an input into our budget projections, not only for 1969 which is being discussed at the present time between representatives of the directors and CSRS in Washington, but also the 1968 budget. We've completed budget hearings in the Senate and have long since passed the Bureau of the Budget and the Department's policy review board. What is in the Long-Range Study for you has been part of this budget justification. For example, we were permitted to ask for $800,000 to support new programs for FY 1968. This is in addition to a proposed increase of about $2.91 million to maintain present program--recognizing, of course, increased costs of doing research. One of the categories that we highlighted in justifying our need for the $800,000 was human nutrition. We would have liked this figure to be larger, but you recognize that there are some rather strong constraints on the whole Federal budget. You should keep in mind that we have legislative restrictions primarily represented by the parameters of the Hatch Act. You aren't involved in the McIntire-Stennis Act.

Your parameter of interest exceeds the legislative authorities that we have at our disposal in CSRS. For instance, you may work in the area of poverty, and you may interest the Department of Health, Education, and Welfare in supporting certain urban phases of such a study. In proportion, we can support the rural phases. I hope that you will consider such possibilities of joint effort as well as those which are related more closely to agricultural and rural development.

I'd also like to express an attitude of the Bureau of the Budget. Before you criticize the Long-Range Study too much (I don't think you will), keep in mind that the Bureau of the Budget has enthusiastically accepted this concept. We believe quite strongly that it's not a very good idea not to consider seriously a document that has received endorsement from the Bureau of the Budget.

I would also like to mention that the Bureau of the Budget will not use the Long-Range Study per se, but they will examine the PPBS (Planning, Programming, Budgeting System) equivalent of what's in the Long-Range Study. We are building "cross-walks" from the Long-Range Study to PPBS equivalent categories. This permits us to keep the Long-Range Study projections as stable as possible, changing it only in the interests of science and not in the interests of changing political views. We will try to get the essence of what you're planning to do, hope to do, and need to do into the proper channels that can be recognized by the PPBS people.

PPBS has a lot of complications, but I think it has one central characteristic. It can show how government can get the most from its money. It means cost-benefit ratios, how return can be maximized for expenditure of dollars. In some cases, one cannot measure benefits in dollar amounts, so cost-benefit ratios can't be calculated. In such instances, we can ask; How can we accomplish goals at least cost?

One of the most noteworthy facts that I can think of is that the Long-Range Study preceded PPBS in the Department of Agriculture. Let's consider what may have happened if it had been the other way around. The Department of Agriculture is largely action-oriented. Research is a small part of the $6 billion budget of the Department. If PPBS had started first, then research, being a minor part of the program, may have had to accept some characteristics that were primarily determined by the nature of the action programs. But because the study did exist, and because it was done well, the Department had a basis for accepting it.

Let us consider the Congress--the source of Federal appropriations. It would be nice if I could say that the Congress had fully accepted the Long-Range Study. They have received it, but they have given us no official report as to whether they like it or not. However, we are optimistic that they will find it useful and sound.

Now, what of the future? The directors who have preceded me have outlined most of the relevant points. I do want to emphasize the relationship between the meaning of precommitment and meaning of action which will result after precommitment is made. Unless there is a resemblance between precommitment and ultimate allocations, it might be embarrassing to justify further increases for programs.

As Director Bohmont pointed out, there are going to have to be some changes in the projections in recognition of individual State needs and the patterns of research capabilities among the State stations. But, there's a difference between legitimate modification and complete disregard for a general plan of precommitment.

It is not who is permitted to do what under the general permissibility of this Long-Range Study, but who can do what best. Generally, the best research represents least cost per unit of progress. However, I think that you need a mix between idealism to compile the best possible national pattern or blueprint and realism, the best use of existing and expected resources--personal, physical, etc.--at each location. Implicit also is relevance of the research proposed to the problems that exist in each State or region, and aggregatively throughout the nation.

You should provide very strong and effective justification for the increases that are already proposed in the Long-Range Study. You may well justify charges or additions to the increases shown in the Long-Range Study projections. However, I believe it's easier to justify an increase already projected than to start anew. These are some of the issues we see at the Federal level. The State inputs are fully as important. Research proposals must come from the scientists, many of whom are in the States. You, who are State researchers must represent their inspiration as well as accomodate to a national plan for research.

CONFERENCE SUMMARY

H. R. Fortmann
The Pennsylvania State University

I couldn't help being extremely impressed with the reports of the four chair-ladies concerning the deliberations of the four work groups. Clearly, there is a job yet to be done with these reports. A job of sorting. A job of consolidation, evaluation, and reconciliation of the recommendations. Some of the recommendations are contradictory; all are worth your very thoughtful consideration. There is a job of implementing these recommendations. This boils down to the challenge of producing a product that has utility. I don't know if an economist would use marginal value or some other term. You must develop a product which is sufficiently attractive that it will sell. You know the market. This will be a carefully considered, carefully planned, carefully constructed, and eloquently presented total program of research for home economics.

There has been a little confusion about terminology, a part of which has been dispelled during these three days. Dr. Leverton referred to one cause of this confusion. It's partly due to a proliferation of terminology for the same things but also partly because we are dealing in new dimensions. I hope we will always be dealing with new dimensions which are just a little strange and a little uncomfortable to us. If we deal only with well-known, well-understood, and the very comfortable, we will, I think, have ceased to fulfill our functions as scientist-administrators.

I have a couple other random thoughts. If self analysis, planning, and coordination of research using agricultural experiment station funds or USDA funds has value, it seems to me self-evident that a similar consideration of the total program of home economics research, disregarding entirely the source of funds, should be equally valuable. Your consideration directed toward the discovery, the enunciation, the definition of researchable problems, and the compilation of these into meaningful, comprehensible, manageable packages will do just that. Look at your problems and define them. Talk about the research. Then talk about where you are going to do it. And then present your case to get the funds to do the job.

A couple of times during our group discussion, I felt there still lingered a little confusion over research priority. Priority is not indicated by the numbers of people that are involved or are going to be committed to a research program. Priority is dependent upon the importance and the significance of the problems that are to be researched. We should assign or recommend the use of only as many scientists as are required to efficiently proceed toward the solution of a problem. If 2 people are enough, the problem may be just as important as a problem that requires 200 or 2,000. I used the simple example this morning of the railroad train. There may be just one engineer but three conductors and brakemen, etc., but the one engineer is just as vital as the three, or whatever the number may be.

In foreign development and research directed toward helping emerging nations, we need to do some research on the kind of training needed to provide the scientists who can effectively do the job that is to be done. I am not sure that the present training of scientists is providing the kind of individuals who can do the job under the conditions that exist where the most critical problems confront us. There is a kind of specialized indoctrination necessary in addition to our regular programs to train scientists for some of these jobs.

I would not consider spoiling the perfect title Trienah Meyers used for her talk. But if I could borrow those words, I'd say we need to do a better job of helping those who would "help them help themselves."

I will close with a repeat of what I and many other people have said many times. It was stated yesterday in one of the talks. We cannot afford the luxury of unnecessary duplication of research. Given the constraint of the limited resources now available, you must really give serious consideration to developing a procedure by which you can determine where you can best do a given piece of research to solve a given problem.

I told Dr. Minden and Dr. Odland that under no circumstances would I attempt to summarize what went on in this conference during these three days. What I would say would be said less well than the speakers said it. I would probably do an injustice to their presentation. That's why I commend your attention and your very serious consideration to the proceedings that will emerge from this conference.

APPENDIX

RECOMMENDATIONS OF THE HOME ECONOMICS RESEARCH SUB-COMMITTEE

(Presented at the May, 1967 meeting of the Experiment Station Committee on Organization and Policy by Margaret Hard, Washington State University)

I. Home Economics Responsibility in "A National Program of Research for Agriculture." Home Economics research responsibility falls mainly under Goals IV, V, VII, VIII, IX and X. Recommendations under each goal can be used as guidelines by appropriate task force or by regional planning groups of home economics research administrators.

A. Goal IV: Product Development and Quality

The greatest impact can be made in research related to the quality of food products for better consumer acceptability. Without the home economics orientation, research in this area will fall short of the objectives as stated.

It is recommended that:

1) High priority be given to research concerned with the level of quality, both edible and nutritional, in new foods and food products and in the maintenance of quality during the marketing cycle.

2) The relationship be strengthened between objectives A, B, C, D of Goal IV and the problem areas under Goal IV, Area 1, a, b, c (determining quality characteristics and the refining techniques for their measurement).

B. Goal V: Efficiency in the Marketing System

Behavioral scientists working in home economics can make significant contributions to areas 1, 6 and 8: Improvement of grades and standards; supply, demand and price analysis; development of domestic markets for farm products.

Concern was expressed for the need to identify and evaluate alternate methods of providing critical services essential to individuals and families when situations in the home make services unavailable which are normally provided by family members or the individual (note relation to Goal IV-8).

C. Goal VI: Expand Exports and Assist Developing Countries

Current contributions by home economists to this goal may be realized within the broad context by promoting economic development in developing countries through technical assistance and food aid programs.

However, it is realized that in a comprehensive approach to the total home economics research program essentially all national goals for home economics may be extended to apply to needs of other countries regardless of cultural or technological differences which may prevail.

Careful study may indicate ways in which research and training programs may be promoted within and by developing countries to meet the total social and economic needs of these countries.

Current and projected national commitments for international assistance require the utilization of cumulated experience along with new approaches for funding, personnel and cooperative resource development among and between universities, governmental agencies, foundations and private enterprise.

Specific comments included:

1) Universities that have conducted educational (home economics) programs in other countries, conduct research focusing on VI-3, d and e (the most effective ways of choosing, developing and training native research personnel to staff the country's

agricultural research and teaching program; evaluation of educational programs to provide information on production practices, nutrition, health, sanitation, housing and techniques of leadership development).

2) Research directed toward identification of basic indices of nutritional status (V1-f) be emphasized.

D. Goal VII: Consumer Health, Nutrition and Well-Being

Goal VII (and VIII) strike at the very heart of the philosophy, research competence and potential in home economics. The specific problem areas in which home economists have responsibility include:

1) Food products free from toxic residues

2) Protection of food supplies from harmful microorganisms and naturally occurring toxins

3) Food choices, habits and consumption

4) Home and commercial preparation of food

5) Selection and care of clothing and household textiles

6) Human nutritional well-being

It is recommended that:

1) Highest priority be given problem area 8 (human nutritional well-being) with increasing emphasis on integrating and interpreting existing knowledge, as well as accumulation of additional information on nutritional status and factors affecting and methods of modifying nutritional status.

2) Studies be increased on variations in physiological needs of individuals for recommended nutrients plus expanded studies of individual intake correlated with indices of health.

3) Critical needs for essential information be reviewed and expanded over and above the problems outlined in the longrange report.

4) VII-3 and VIII-2 be more closely related to VII-8.

5) Because of implications of VII-3 (studies of food choices, habits and consumption) for utilization of research in VII-8, increased emphasis in these two areas should include more SMY in VII-3 in 1972 than shown in the report.

6) Within the projected man-years allotted to VII-4, increased emphasis should be placed on problems of commercial preparation. This area should be interrelated with 8 and 3.

7) A more comprehensive effort should be made to assess the nutritive value of new forms of foods as they appear on the market and their impact on nutritional status.

8) Another problem area (f) be added: study of the socio-cultural and psychological factors contributing to consumption patterns of apparel.

E. Goal VIII: Raise Level of Living of Rural People

Home economics responsibility and competence include the following problem areas:

1) Housing needs of families

2) Family decision making and financial management

3) Causes and remedies of poverty

4) Improvement of economic potential of Individuals

5) Communication process in rural life

6) Individual and family adjustment to change

7) (d-2) Improvement in the level of living and working conditions of seasonal and migratory workers.

8) (c) Determination of the impact on program costs, food consumption and farm income of supplementary food distribution programs

It is recommended that:

1) High priority be given this goal as a whole with greatest emphasis being placed on research in the combined areas of 2 and 6 and with secondary emphasis on 1, 3, 4 and 5 as they relate to areas 2 and 6.

2) Recognition be given the rural-urban fringe problems and the interrelationship between urban-rural families and their problems.

3) The concept of housing research be broadened - it encompasses the total environment (physical, social and economic) not only the house per se.

4) Home economists be involved in VIII-7 (d-2) and VIII-8 (c) in cooperation with other specialists although not recommended as high priority research.

F. Goal IX: Improve Community Services and Environment

It is recommended that:

1) Families be more clearly defined in community development; their needs are related to plans for use of land, water and recreational resources.

2) Total environment be considered in relation to human development.

3) More emphasis be given the urban syndrome.

4) More recognition be given the rural-urban interaction.

5) The family should be the basis for planning community services.

6) Research be undertaken to determine the effectiveness of training programs for sub-professional personnel, e.g. school lunch and day-care programs.

G. Goal X: Basic Research

It is recommended that:

1) Home economics be included in this goal along with agriculture and forestry.

2) Home economic research administrators and experiment station administrators encourage scientists to pursue more studies classified as basic research.

3) Continued efforts be made in the areas designated t, y, aa, ee, ff, gg, hh, ii, with special emphasis on dd and jj.

II. More specific priorities among goals should be set up at the regional and state levels.

III. Task Forces

It is recommended that:

1) Home economists be assigned to task forces concerned with food and fiber qualities as they relate to consumer needs and satisfaction as well as to other appropriate task forces such as those dealing with food safety, food and nutrition, rural development and other consumer problems.

2) Home economists be involved at the beginning of the considerations of a given task force and not brought in for a narrowly defined segment.

3) A task force be established relating to the communication process in rural-urban life which will focus attention on research designed to maximize the impact of Goals VII, VIII, and IX through an increased emphasis and expansion of Goal VIII-5.

4) A task force be established on "Quality of family living and adjustment to change" to coordinate the objectives of Goals VII, VIII and IX as they relate to a better understanding of family life. Research problems delineated by this task force would support the action programs within USDA and the states, e.g., Home Economics Extension and the Farm and Home Administration.

5) Home economics personnel on task forces should use regional technical committees as resource people; that additional regional committees be appointed as needed with representation from extension where feasible.

IV. The Association of Administrators of Home Economics (AAHE) should arrange for a similar report for the total home economics research program including the goals related to agriculture.

V. A task force should be established probably by AAHE to encourage training of research personnel.

A. Emphasis be given to providing scientists for the problems involved in "quality of living" research, both as related to numbers of people and quality of training.

B. Extension of trainee grants similar to those already established in the medical field.

VI. Home Economics research programs must be developed to meet the challenges:

1) Researchers must have strong, sound bases in arts and sciences as well as depth in specialization. All possible steps will have to be taken to encourage capable young people to adequately prepare themselves for research positions in the future. The projections for personnel will require attention of administrators and faculty to inspire undergraduate and graduate students to prepare themselves with all possible speed for the opportunities that will clearly be available to them. We must train new generations of scientists.

2) Home economics research faculty will need to take steps to enhance their present competencies in all possible ways so that they can become more effective research workers in leadership positions. Research faculty must be enlarged and strengthened -- quality and effectiveness of research productivity can be no better than the scientific community of which we are a part.

3) Administrators of home economics programs will have to take greater responsibility to encourage faculty to realize the importance of research and to take steps to provide time for doing research along with teaching. Release time for research will need to be and integral part of staff members' appointment.

4) Administrative support is imperative and qualified research projects must be expediently processed with adequate initial and continued financial support.

5) Closer coordination is required between research, teaching, and extension. All faculty involved in home economics research will need to find ways to coordinate all possible interests in the research project . . . university, government and industry. Greater emphasis needs to be placed on cooperation with industry, an aspect we have given little attention.

6) Research is an intellectual quest for knowledge -- and we as administrators have the responsibility to protect the freedom of the individual research worker, staff, or student, from outside pressures that might hinder this freedom.

7) Strong research programs develop when the university has special competencies in a certain field of endeavor. Each of us must assess our own programs, evaluate our strengths, and be willing to set forth priorities. We cannot all have centers of excellence

in all areas. Evaluation of research in progress and that being considered is of great importance. Priorities of work to be done and in progress will have to be established since faculty time and monetary support for research are not available in amounts that are unlimited.

8) Vigorous and imaginative approaches to interdepartmental cooperative research needs to be encouraged and implemented. We have been modest about our accomplishment of the past. We talk too much to each other and not enough to other scientists in the field. We have expertise to offer each other.

9) A comprehensive home economics research program will require financial support from government agencies, private foundations, and industry as well as experiment station support -- and the largest proportion has been experiment station support, for which we are grateful.

10) Research results in the files of the scientists add nothing to public knowledge. There is an urgency to publishing proven results without delay. Increased attention will have to be given by both administrative and research workers to the publishing of research findings. Too often this aspect of research is overlooked or delayed so that the progress in the field is adversely affected.

VII. A follow-up conference should be held in 3-4 years.

NUTRITION RESEARCH SUPPORTED BY OUTSIDE GRANTS[1]

I. Research Grants

A. Federal Agencies

1. National Aeronautics and Space Administration

(1) Nutritional properties of Hydrogenomonus eutropa
(2) Mineral protein and caloric requirements for man
(3) Nutritional requirements and breeding behavior of Perognathus
(4) Environmental effects upon cellular auto oxidation
(5) Bone density instrumentation
(6) Measurement and interpretation of bone density
(7) Effect of restricted movement upon protein metabolism and body composition
(8) Biochemical changes in hibernating animals
(9) Project not stated

2. National Institutes of Health

(1) Effects of dietary carbohydrates on lipid metabolism in rats
(2) Functioning of B vitamins in relation to the intake of other nutrients
(3) Effect of amino acid deficiencies upon stimulated secretion of digestive enzymes
(4) Effect of protein on serum albumin turnover
(5) Studies of body composition
(6) Role of conjugated proteins in cellular metabolism
(7) Effect of hormones on tissue lipid composition
(8) Characterization of radioprotective factor in alfalfa
(9) Cholesterol injury in guinea pigs and other mammals
(10) Studies on the nutrition of micrometazoa
(11) Metabolism of folic acid and vitamin B_{12}
(12) Nutrition of pure-cultured Annelid
(13) Vitamin, mineral, and growth factor requirements for small laboratory animals
(14) Characterization and isolation of lecithins
(15) Utilization of protein by adolescent boys
(16) Biological mechanisms of radiation damage

[1] This list is a supplement to the paper titled, "Human Nutrition Requirements and Nutritional Status," by Clara A. Storvick, Oregon State University.

(17) Evaluation of lipids and related nutrients
(18) Thiaminase in Hawaiian fish
(19) Relationship of arachidonic acid of serum lipids to resistance and susceptibility to naturally occurring aortic atherosclerosis
(20) Biological functions of vitamin B_6
(21) Synergistic effect of heated fat on a carcinogen
(22) Study of the factors involved in the heat damage of oils
(23) Cholesterol-liporotein metabolism in atherosclerosis
(24) Function of fatty acid isomers in serum components
(25) Utilization of essential amino acids by man
(26) Utilization of delayed amino acid supplements
(27) Effects of source of carbohydrate on sedentary and exercised rats fed diets high or low in fat
(28) Biochemical changes associated with threonine imbalance in rats
(29) Effect of obesity and weight reduction
(30) Effect of feeding cycad
(31) Amino acid imbalance in microorganisms
(32) Evaluation of cereal proteins for man
(33) Amino acid balance
(34) Nature of endogenous nitrogen
(35) Ascorbic acid and micropolysaccharide synthesis
(36) Biochemical role of the essential fatty acids
(37) Electrolyte and pyridoxine metabolism during pregnancy
(38) Phospholipid metabolism in relation to cell division
(39) Measurement and interpretation of bone density
(40) Bone density to assess mineral status
(41) Mucopolysaccharides and cellular lipoproteins in vitamin E
(42) Sulfur compounds of cellular lipoproteins
(43) Energy costs in preadolescent children
(44) Nutritional factors in carcinogenesis
(45) Vitamin B_6 metabolism in man
(46) Magnesium and potassium metabolism in atherogenesis
(47) Nutritional studies on vitamin B_6
(48) Project not stated
(49) Pyridoxine and sterol metabolism
(50) Influence of dietary protein on carotene

3. Office of Economic Opportunity

(1) Sociocultural factors and food habits
(2) Operation Head Start evaluation

4. Department of Interior (Fish and Wildlife Service, Bureau of Commercial Fisheries)

(1) Missouri reservoir fisheries product development and evaluation

5. National Science Foundation

(1) Mucopolysaccharides and cellular lipoproteins in vitamin E
(2) Equipment for research
(3) Use of computers in searching out nutritional interrelationships

B. Non-federal organizations

1. Nutrition Foundation

(1) Glutamic-pyruvic transaminase activity and apoenzyme levels in maternal and fetal tissues of rats fed different levels of pyridoxine
(2) Amino acid nutrition of the guinea pig and protein and energy undernutrition of the guinea pig
(3) Ascorbic acid metabolism in reproduction
(4) Lipid and nicotinic acid interrelationships in human blood fractions

2. Community Chest Funds

Project not stated

3. Corn Products Co.

   (1) Serum alpha-tocopherol levels in 40-60 year old adults on self-selected diets with and without an increased level of polyunsaturated fat

4. Florida Citrus Association

   (1) Vitamin C nutrition of school children

5. Missouri Conservation Commission

   (1) A study of the acceptability of Missouri fish

6. Muscular Dystrophy Association

   (1) Nitrogen and sulfur compounds in urine of boys with motor dysfunction

7. National Livestock and Meat Board

   Project not stated

8. National Vitamin Foundation

   (1) Biochemical status of certain population groups

9. Poultry and Egg National Board

   Project not stated

10. Special Dairy Industry Board

    Project not stated

11. State Health Departments

    (1) Nutritional status during adolescent pregnancy

12. State Heart Associations

    (1) Effect on cardio-pulmonary lipid structures of exposure to nitrogen dioxide
    (2) Factors affecting rate of fatty acid oxidation
    (3) Influence of vitamin A and hormones on mucopolysaccharide metabolism in rat cardiovascular tissue
    (4) Project not stated

13. University Funds

    a. General Research Funds

       (1) Project not specified

    b. Graduate Research Committee

       (1) Studies of nutritional disorders and malabsorption in Colombia
       (2) Study of congenital anomalies in folic acid deficiency in rats
       (3) Amino acid imbalance in microorganisms

    c. Research Foundation

       (1) Role of single cell proteins in human nutrition

    d. State University Medical and Biological Funds

       (1) Lipid composition changes in various tissues during the development of vitamin B_6 deficiency

e. University Faculty Grant

(1) Fatty acid oxidation in biotin deficient rats

f. University Research Foundation

(1) Investigation of enzyme and tissue changes as affected by interactions of dietary protein and magnesium
(2) Relation between tissue and urinary levels of carnitine and related compounds as a parameter of growth

14. Upjohn International

(1) Collaborative program on nutritional anemias with School of Medicine in Colombia, South America

15. Watumull Foundation

(1) Proximate analysis and fatty acid and cholesterol composition of 250 Hawaiian foods

II. Training Grants

A. National Institutes of Health

1. Amino acids and lipids in rat tissues
2. Cholesterol biosynthesis: specific fatty acid effect
3. Xanthine oxidase and free amino acids in rat tissues
4. Lipid metabolism
5. Congenital anomalies in folic acid deficiency in rats
6. Magnesium-vitamin D interrelations
7. Bone density to assess mineral status
8. Dietary habits of children with cystic fibrosis
9. Food habits of low income families

B. National Science Foundation

1. Summer science training program for high ability students
2. Use of computers in searching out nutritional interrelationships

C. Office of Economic Opportunity

1. Regional training program in developing and conducting in-service training for staff

D. USPHS (Children's Bureau)

1. Graduate training program in Public Health Nutrition

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The document derives from the conference, "Estimating the Number of Disabled Residents of New Jersey," sponsored by the Bureau of Economic Research, Rutgers, The State University, on December 1, 1966, to provide for an evaluation of present concepts of disability and the existing data. There were 58 conference participants representing various agencies and fields. The following papers are revised versions of those delivered at the conference: (1) "The General Problems of Forecasting in Vocational Rehabilitation" by Monroe Berkowitz, (2) "Alcoholism as Disability" by Mark Keller, (3) "Estimating the Number of the Retarded in New Jersey," by Maurice G. Kott, (4) "Vocational Rehabilitation of the Mentally Ill," by C.O. Webber, (5) "What of the Blind in New Jersey--1965-1973?" by Philip Trupin, (6) "Systems Analysis as a Tool for Planning," by John F. Cotton, (7) "Vocational Rehabilitation: Highlights and Demand for Services" by Royal A. Crystal, (8) "Social Security and Rehabilitation" by Bernard Popnick, and (9) "Sheltered Workshops and Planning" by Antonio C. Suazo. A tenth paper, not presented at the conference but complementing Philip Trupin's presentation, is "Placement of the Blind in Employment in New Jersey" by Orlo Wagoner, Jr. (JK)

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Monroe Berkowitz, *Editor*

ESTIMATING REHABILITATION NEEDS

A Conference on Planning for Vocational Rehabilitation

Bureau of Economic Research
Rutgers — The State University
In Cooperation With
The Comprehensive Statewide Planning Project
For Vocational Rehabilitation
State of New Jersey

VT 006 388

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Foreword

THIS BOOK derives from a conference on "Estimating the Number of Disabled Residents of New Jersey," which was sponsored by the Bureau of Economic Research, Rutgers - The State University, on December 1, 1966. Nine of the ten papers in this volume are revised versions of papers delivered at the conference. In preparing final versions, we have added supplementary data, incorporated certain other revisions, and added a tenth paper on employment of the blind plus commentary by two other conference participants.

The Bureau of Economic Research sponsored the conference as a first step in the University's participation in New Jersey's Comprehensive Statewide Planning Project for Vocational Rehabilitation. Under the 1965 amendments to the Vocational Rehabilitation Act, Congress provided for Comprehensive Statewide Planning in each of the fifty states. The goal of this planning is to enable each state to provide full rehabilitation services by 1975 to every handicapped citizen who can benefit from them.

The impetus and financial support for this conference and this publication came from the staff of the New Jersey's Comprehensive Statewide Planning Project. John Ellis, Project Director, agreed that it would be helpful to take stock of existing data, studies, and plans as these projects got under way in New Jersey and elsewhere. The directors of the co-sponsoring New Jersey agencies, Beatrice Holderman of the Rehabilitation Commission and Joseph Kohn of the Commission for the Blind, seconded the idea enthusiastically and provided solid support for the conference.

Salvatore G. DiMichael, Assistant Regional Commissioner of the Vocational Rehabilitation Administration, not only provided guidance but delivered a final summary clarifying the purpose of the meeting. His comments

appear as an Epilogue to this book. Terence E. Carroll, director of the National Institutes on Rehabilitation and Health Services, was instrumental in planning the entire program and chaired the afternoon panel. His remarks serve as an introduction to Part III.

The purpose of the conference was to evaluate present concepts of disability and the existing data. By examining some of the state and national statistics, the Bureau hopes to clarify the questions which Comprehensive Statewide Planning must answer, to guide research in projecting future needs, and to relate such needs to the resources much must be provided to meet the goal of full services by 1975.

The morning panel, following an introductory paper, considered data on specific disability categories, while the afternoon panelists discussed the relevant experience of selected public and private agencies.

The Bureau is grateful to Orlo Wagoner, Jr., for permission to revise his paper on employment of the blind in New Jersey for this publication, and to the New Jersey Commission for the Blind, particularly Philip Trupin and Irving Kruger, for assisting Mr. Wagoner and for providing the most recent data for inclusion in his paper.

David Cayer, University Coordinator for the Comprehensive Statewide Planning Project, assisted in editing the papers for publication. In addition, he carried the main burden of arranging the conference and insuring that panelists and participants did not lose sight of our main objectives. He also produced a summary of the papers as a preliminary publication for the use of the Vocational Rehabilitation Administration and the project directors of the statewide projects. J. Carl Cook designed this publication. In administering the conference and preparing the papers for publication, the Bureau received valuable assistance from Helen Martin, Ann W. Farley, Phyllis Master, Geraldine Ructor, and Mary K. Carman.

The Bureau of Economic Research, a unit of the Graduate School of Rutgers, was established to encourage, facilitate, and conduct research related to both basic and applied aspects of economic life in New Jersey and the nation.

MONROE BERKOWITZ
Director
Bureau of Economic Research

Preface

THIS BOOK represents the first fruit of an exciting collaboration between Rutgers, our State University, and the New Jersey Rehabilitation Commission in our joint effort to develop a master plan for rehabilitation services by 1975.

The Comprehensive Statewide Planning Project for Vocational Rehabilitation grew out of the 1965 enactment by Congress of President Johnson's proposals for amendments to the Vocational Rehabilitation Act. These amendments notably liberalized the functioning of the program and provided aid for a wide variety of projects, including valuable opportunities for innovation and experimentation. Congress also appropriated funds which will enable us to offer services to a far greater number of our handicapped fellow-citizens.

Federal expenditures rose from $202 million in fiscal 1966 to $314 million in 1967; the budget estimate for 1968 is $374 million. The federal-state program hopes to rehabilitate more than 218,000 persons in fiscal 1968. We in New Jersey have set ourselves a goal of 7,000 rehabilitants successfully returned to gainful occupations in fiscal 1968—75 percent more than the number for 1966.

But the faster a program grows, the more it needs to know where it is going. Therefore, one of the most significant of the 1965 amendments was that providing for Comprehensive Statewide Planning in each of the fifty states, fully financed by the federal government. Parallel programs to plan needed workshops and facilities are receiving 90 percent federal funding.

The goal of Comprehensive Statewide Planning is both direct and inspiring: we are charged with producing a master plan to provide full vocational rehabilitation services by 1975 to every handicapped citizen

who can benefit from them. Governor Hughes has designated the Rehabilitation Commission as the responsible agency, working with the Commission for the Blind as co-sponsor.

This will not, however, be a purely governmental project. Under the legislation, the Governor has named an Advisory Committee to provide broad policy guidance. This body, together with a Policy Steering Committee, six regional committees, and a group of special task forces, will provide broad participation by interested gtoups and individuals. Already the project staff, directed by John Ellis, has begun its labor by intensive interviewing at the local level to insure that, in the broadest sense, this will be a product of our citizens' interest.

We will have close cooperation from other branches of the State government, including those who have completed planning projects in mental health and mental retardation in the last several years.

All of this help will be necessary for so tremendous a project. Planning, particularly sophisticated planning, has been in short supply. But it will be necessary now if we are to make the fullest use of the resources, federal and state, which will be available for vocational rehabilitation in the next decade.

Beatrice Holderman
Director
New Jersey Rehabilitation Commission

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I
Introduction

Monroe Berkowitz
Director
Bureau of Economic Research
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The General Problems of Forecasting In Vocational Rehabilitation

1

The joint federal-state rehabilitation program began as an educational and training program to supplement the efforts of the military in physically rehabilitating the returning veterans of World War I. Although exceptions can be found, New Jersey among them, this program was poorly supported and largely ignored as it lay hidden in state departments of education.

Federal funds were not available on a matching basis for medical and surgical services, and federal intervention in the beginning may have actually set back the struggling efforts in several states to design a comprehensive vocational rehabilitation program. It took a dozen years, from the beginning of the program in 1920 to 1932, to rehabilitate 50,000 persons. It was in 1948, after the liberating 1943 Barden-La Follette legis-

lation, that the number of rehabilitated in one year exceeded the number successfully handled by the program during its first dozen years.

In 1951 a peak number of 66,000 persons were rehabilitated. In the following years this number declined, and a resurgence took place only after Public Law 565 in 1954. It was recognized in these amendments that making federal funds available for services was not enough. It was necessary to find new and better ideas, to experiment, and most importantly to develop through training programs the counsellors and other persons skilled in rehabilitation. From a low point of 58,000 in 1954, the number nearly doubled by 1963 and climbed upward in the next two years.

The 1965 amendments promise the most radical changes. Eligibility criteria, loosened in 1954, are liberalized once again. Services can be made available to seriously disabled applicants for limited periods to determine their vocational rehabilitation potential. The federal requirement for a means test is eliminated. Federal support is available for the construction and staffing of rehabilitation facilities. Possibly most important, funds are now available for planning.

The 1954 authorization for research and development grants brought a new vitality to this program, the fruits of which have not yet become fully apparent. A portion of the academic community were persuaded to take an interest in the problems of this program. Some portion of the staff of the program were freed from concentration on daily tasks to think about ways and means of improving procedures, programs, ways of attracting clients, and methods of treating clients once they have come to the agency's attention.

The 1965 amendments providing for comprehensive state-wide planning projects necessarily go further. In addition to new research, demonstration and training projects, states may receive grants "to meet the cost of planning for development of a comprehensive vocational rehabilitation program in each State, with a view to achieving the orderly development of vocational rehabilitation services in the State (including vocational rehabilitation services provided by private, nonprofit agencies), and making vocational rehabilitation services available to all handicapped individuals in the State by July 1, 1975...."

The 1954 amendments brought researchers and demonstrators into the fold, but the 1965 amendments will bring citizens onto the planning committee and will make the rehabilitation counsellor, the administrator, the planner and the general public face the obvious problems: What is meant by vocational rehabilitation? How far should it go? What resources should be devoted to it? And what benefit can be gained from it?

The Changed Outlook

Vocational rehabilitation is a happy example of a program that has grown with the times. It was entirely appropriate that it should have been restricted to education, training and placement of returning veterans and those disabled in industrial accidents in the post-World War I period. Even as more funds became available, the emphasis necessarily was on best utilization of these limited funds. The role of the federal government was minimal, and all due care was taken to see that it did not exceed its ambit. Certainly one of the most important persons in any state vocational rehabilitation organization was the accountant, who was the expert on second-guessing the federal auditors as to how and where an exception might be taken. The fear was that a case might involve unauthorized expenditures, that services might have been given without sufficient definition of vocational potential. Small wonder that the easy, obvious cases received priority. But such a restrictive atmosphere is not appropriate in a day when so many agencies have enlisted in the war against poverty and when manpower training and development has become of prime concern.

The experience of the last several years has shown the powerful effects that increasing aggregate demand can have in reducing unemployment levels. But as unemployment rates dip below four percent, it is also obvious that manpower programs are vitally necessary. With manpower increasingly scarce, each person rescued from the scrap heap for more normal, often productive, employment becomes a needed addition to the human resources of the nation. Investment in human resources emerges as one of the great ways in which poverty can be reduced in the nation.

Fighting poverty by means of investment in human resources has certain built-in advantages over mere transfers of income through such redistributional programs as we have in the social insurance schemes. It is also preferable to legislative fiats, like minimum wage legislation, and perhaps to area development legislation which concentrates on regions rather than on people.

But as we look at the several anti-poverty programs, we note a typically American array, confusing and bewildering, of these programs. As political consensus develops for a particular program, Congress is willing to pass it, sometimes without regard for how it fits into any overall scheme for human resource development.

Thus we have the Manpower Training and Development Act, the Neighborhood Youth Corps, Vista, the Job Corps, and Community Action Programs, to list only a few. But is there any more comprehensive program than vocational rehabilitation? This is a program which is not wedded to any method, or any area, or even any particular set of services. A counsellor takes a man as he finds him, attempts to remedy his defects, and then to give him the type of training or other services which will best equip him

to make his way in the labor market. The counsellor is free to purchase a wide range of services from the community and to utilize existing facilities to place the individual in a job. In concept, if not always in practice, the counsellor designs the program for the man. The man is not required to discuss whether he fits into the rubric of any particular retraining, counselling or physical restoration program.

People concerned with the fight against poverty have in a sense rediscovered this program, which existed in one form or another even before the first World War and long before our concentration on the development of human resources. The discovery is that the same principles which guided the restoration of the physically handicapped can possibly be extended to those who suffer from other economic handicaps in labor market competition.

Thus Robson and Mangum point out:

> Only one Federal program approaches in concept the ideal of an integrated manpower program: The Vocational Rehabilitation Program. Like anything else in the real world, it falls far short in practice of what it is designed to accomplish in concept. Nevertheless, it is worth examining as a model of a single program designed to provide the full range of services required by those facing handicaps in labor market competition.[1]

Carl H. Madden, Director of Research, Task Force on Economic Growth and Opportunity of the Chamber of Commerce of the United States, looking for an illustration of one method of fighting poverty through human de-development states:

> Human development, as an antipoverty approach, tries to raise total income though investment in people, especially the poor, in order to increase their individual productivity. It rests on the assumption that investment in human beings will raise their income without reducing society's total income. An example is the Vocational Rehabilitation Act.[2]

There is no doubt that the traditional vocational rehabilitation program, which has been many things to many states, is now presented with an opportunity which it never had before. The one-armed veteran-turned-watchmaker must be surprised to learn that the same program which gave him an opportunity to avoid the debilitation of charity is now being looked upon as a prototype of a manpower development, human resources program by intellectuals and businessmen alike.

The Changing Caseload

Traditionally the emphasis of the program has been on restoring the disabled, however that term has been defined. As can be seen by Table 1-1,

---

[1]R. Thayne Robson and Garth L. Mangum, "Coordination Among Federal Manpower Programs" in Frederick H. Harbison and Joseph D. Mooney, eds. *Critical Issues in Employment Policy*, Princeton University, 1966, p. 127.

[2]"The War on Poverty" in the symposium "Antipoverty Programs" in *Law and Contemporary Problems*, Duke University School of Law, Durham, North Carolina (Vol. XXI, No. 1), 1966, p. 48.

TABLE 1-1
DISTRIBUTION OF REHABILITANTS BY MAJOR DISABLING CONDITION AND AGE

	Fiscal Year				
	1945	1950	1955	1960	1964
Total Number Rehabilitated (000)	41.9	59.6	59.0	88.3	119.7
Median Age at Acceptance	28	33	34	36	34
Percent over Age 45	17.5	23.8	26.5	29.1	28.4
	Percent of Total				
Total Rehabilitants	100.0	100.0	100.0	100.0	100.0
Orthopedic*	50.0	43.3	40.3	40.3	35.6
Visual	11.8	11.9	11.4	10.7	10.0
Hearing	7.5	8.9	6.5	6.1	6.2
Cardiac	4.3	3.9	4.4	4.8	4.4
Pulmonary Tuberculosis	6.3	8.2	11.3	7.0	3.8
Mental Retardation	0.3	0.8	0.9	3.3	6.0
Mental Illness**	3.0	3.3	3.1	5.1	8.2
Epilepsy	0.8	1.8	2.1	2.1	2.0
All Others	16.0	17.9	20.0	20.6	23.8

*Includes amputation of limbs and impairments of limbs, back, head, or chest.
**Psychosis and psychoneurosis.

Source: U. S. Department of Health, Education, and Welfare, *Trends*, 1964, U. S. Government Printing Office, 1965, p. 97; and U. S. Vocational Rehabilitation Administration, *Characteristics of Persons Rehabilitated in Fiscal Years 1964 and 1963*, Rehabilitation Service Series No. 65-14, Supplement 5, December, 1964, mimeo.

the typical rehabilitant in 1945 was less than thirty years of age and had an orthopedic impairment. Only an insignificant number of rehabilitants suffered from mental retardation, mental illness, or any type of disability other than orthopedic, visual, hearing, and possibly certain obvious chest diseases which were significantly connected with industrial employment.

The gradual changes that have occurred in caseloads are significant. The median age of persons in the program has been creeping upward and orthopedic disabilities promise to fall to less than one-third of all cases. The more difficult areas of disability come into the caseload, with mental retardation and mental illness becoming prominent in recent years. The restrictive nature of the law in earlier days practically guaranteed that concentration would be on those with certain obvious physical disabilities, but the recent liberalizing amendments just as obviously meant that the scope of this act would become broader.

Under the 1965 amendments, handicapped individuals are any individuals who are under physical or mental disability which constitutes a substantial handicap to employment but which is of such a nature that vocational rehabilitation services may reasonably be expected to render them fit to engage in a gainful occupation. But in addition, of course, individuals may receive services for a period of six months to 18 months to ascertain

whether it is reasonable to expect that they can engage in gainful occupation. When we consider that "gainful occupation" includes gainful home-bound work, and that there has been an increase in the number of persons who are rehabilitated to gainful employment either in sheltered workshops or as homemakers or unpaid family workers, we can begin to see the liberalizing scope of the program.

All these factors pose problems for planners. Where it is relatively easy to count or to forecast the number of persons with obvious kinds of physical disabilities, it is quite another thing to predict the nature of the handicapping conditions which might make a person eligible for services under the program. It is of course much more difficult to predict the incidence of these conditions. When we enter the area of the culturally deprived, our dimensions are quite different from what they have been, and we must erect new guideposts.

The Supply and Demand for Vocational Rehabilitation

Even if we confine our concepts to the more traditional notions of disability, all surveys of the incidence of disability show strikingly greater numbers of cases than could ever be inferred from rehabilitation experience. The difficulties stem from the multi-faceted term disability itself; from the relations between disability (no matter how defined) and vocational rehabilitation potential, which is dependent upon social, economic and legislative factors; and from differences over time and space in the supply of rehabilitation services and facilities in the broadest sense.

Concepts drawn from the field of economics may be peculiarly appropriate here. One can postulate a certain demand for vocational rehabilitation services from those who are eligible to partake of them. The amount of services demanded is a function of the incidence of disability, the income status of the potential clients, and the "prices" they have to pay for these services. As with any other type of education or training, the essential ingredient in the price paid is the earnings that the person foregoes while engaging in the training program. If the labor market is buoyant, the price may be too great and the person instead enters the job market. If, on the other hand, the alternatives are slim, jobs are difficult to get and foregone earnings may be minimal or zero.

It is well to recognize that whether the handicapped can enter the labor market is a function both of the person's condition and of the state of the market itself. As we push closer to full employment, many who were denied entrance at a less prosperous employment level now find entry into a job possible. The change is not in their persons but in the market's expectations.

It is not enough, however, to look merely at the number of persons who might seek to avail themselves of vocational rehabilitation services.

What of the supply of these services? If we confine our attention to the joint federal-state program, always recognizing that the planning mandate includes private agencies as well, each of the states supplies more or less of the vocational rehabilitation services. The amount will depend upon the cost of the services to the state, the alternative uses of the state's funds, and a host of other factors. Some states choose to push the program aggressively, perhaps substituting its services for others in the medical or welfare fields, whereas in other states this is a relatively less popular program.

One of the stated legislative purposes of the comprehensive planning program is to achieve the orderly development of vocational rehabilitation services in making these services available to all handicapped individuals in the state by July 1, 1975.[3] There is an implicit assumption here that, if services are made available, clients will be forthcoming. This invitation to plan for a full service program is a tempting one. It seems to say that you may safely ignore for a moment the financing of these services. This naturally leads to the reaction that all we must do is discover the number of handicapped individuals (from now until 1975) and these will constitute, in some fashion, some measure of the demand for vocational rehabilitation services. But to forecast the number of disabled individuals in the state from now until July 1, 1975, who can benefit by rehabilitation services turns out to be a formidable task.

Methods of Estimating Number of Disabled Persons Who Are Potential Vocational Rehabilitation Clients

There are three general methods of arriving at numbers of persons who may demand vocational rehabilitation services. It is necessary to emphasize that the term "demand" is not used in any command sense, but in an economic sense, as those who would seek to avail themselves of the bundle of services provided by rehabilitation agencies and facilities.

1. It is possible to use existing surveys of disabled persons or program data for particular disability groups and adjust these data in some manner so as to include only those who are potential vocational rehabilitation clients.

2. It is possible to look at the experience of vocational rehabilitation agencies in general, or that of a state in particular, and project these trends with due account taken of how the future might differ from the past. There actually turn out to be a multiplicity of ways in which past trends might be projected to allow us to say something meaningful about future demand.

---

[3]Under the 1965 amendments special grants are made available to states and to public and other nonprofit organizations for paying part of the cost of planning, preparing for, and initiating special programs to expand vocational rehabilitation service in the state and for establishing special facilities and services which hold promise of making substantial contribution to the solution of vocational rehabilitation problems common to all or several states. Under paragraph 2(a) of section 4(a), grants are made available to expand programs and services where this action holds promise of yielding a substantial increase in the number of persons vocationally rehabilitated.

3. It is possible to make a new survey in the nation, in the state or in an area, specifically inquiring in some relatively unknown way as to the demands for vocational rehabilitation services.

These are listed in order of logical priority. It seems both wise and economical to utilize existing data before one moves on to incur the sizable expense of original survey work. This is especially true since it is really not possible to survey numbers of disabled persons who could benefit by vocational rehabilitation or who would avail themselves of the services, unless one first defines much more accurately the group that one has in mind. Merely to count all those who are disabled without defining the term further is not only meaningless but duplicates existing surveys. To count only those who actually do come to the agencies duplicares what is already known from the case record. Surveys will be vitally necessary, but they certainly cannot be the first step.

Using and Adjusting the Various Surveys of the Disabled

Let us begin with some familiar basic figures. The Vocational Rehabilitation Administration estimates that there is now a stock of about 3.7 million persons in the country who are disabled and who could benefit by vocational rehabilitation services. It is estimated that about 450,000 persons are being added to this pool each year. The most optimistic goal for the next few years is the figure of 200,000 persons rehabilitated per year. This would still leave 250,000 persons to be added to the pool. By any standard of measurement this is a tremendous increase. But of course it is necessary to recognize that the estimated stock may change because of death, recovery, and reentry into the labor force without the aid of rehabilitation. On the other hand, recognize that the data are confined to the physically and mentally handicapped and do not include others with different handicaps interfering with their participation in the labor force.

The VRA estimates are based on data derived from the National Health Interview Survey of the National Center for Health Statistics, Public Health Service. This survey has the overriding virtue of relying on an individual's self-reporting. The interviewer asks whether the person being interviewed considers himself ill and the extent to which this illness results in his cutting down on his usual activities. It may seem strange to consider self-reporting as a virtue, but it may be virtually impossible to gather reliable information from other sources and to devise clinical and pathological criteria. The virtue of the self-evaluation is that we need not bother with legal or programmatic definitions, nor need we devise elaborate criteria. But it should be pointed out that the data necessarily suffer from the limitations of the methods by which they are gathered.

The National Center for Health Statistics designed the National Health

Interview Survey in cooperation with the U. S. Bureau of the Census. Technically speaking, it is a highly stratified, mnltistage probability design. It is quite similar to the household survey of the labor force, from which we derive unemployment data.

The survey does not use the term "disability" or even "morbidity" except in a generic sense. But there are specific indices of disability used with specific terms—such as "disability days" or "bed disability days."

The underlying concept of "morbidity" is a departure from the state of physical or mental well-being, resulting from disease or injury of which the affected individual is aware. The concept of "awareness" connotes some degree of impact on the individual in term of the restrictions and disabilities caused by the morbidity. Morbidity includes not only active or progressive diseases but also impairments, i.e., chronic or permanent defects, static in nature, resulting from disease, injury or congenital malformation. The existence of morbidity caused by a particular disease, injury, or impairment is called a "morbidity condition" or simply a "condition."

In the survey the concept of a "morbidity condition" is usually further limited by specifying that it includes only conditions leading the person to take one of several actions, such as restricting activity, staying in bed, losing time from work, or seeking medical advice.

Perhaps this becomes clearer if we examine the interview procedure. The interviewer first secures some descriptive information about members of the household and then begins to ask the so-called "illness recall questions" designed to elicit reports of illness, injuries, chronic conditions and impairments. A whole series of tested questions are asked, ranging from "Were you sick at any time last week or the week before?" to specific questions about hospitalization experience during past year.

One question asks the subject whether he experienced any of a series of conditions during the past 12 months. The check-list includes 28 specified chronic conditions: asthma, tuberculosis, chronic bronchitis, varicose veins, epilepsy, prostrate trouble, and so on. There is a similar check-list of impairment: deafness, cleft palate, paralysis, club foot, etc.

Whenever a subject reports that he had a particular condition, follow-up questions ascertain whether he saw a doctor, his own description of the condition, and most importantly whether the condition caused a restriction of activity for a day or more. If the answer to the last is affirmative, he states the number of days of disability measured in terms of restricted activity.

What emerges from this are qualitative rather than quantitative measures of dibability. A worker being interviewed is asked whether or not by reason of the chronic condition he has been kept from working entirely, or whether he is able to work but has been limited in the amount or kind of work, or alternatively whether he has been able to work but he has been

limited in kind or amount of *other* activities, or lastly whether the condition has not limited him in any way.

Housewives are asked similar questions except that their major activity is measured by their ability to keep house. The major activity of children from six to 16 is school attendance, and for those under six, play activity.

There are three categories of activity limitation. The first includes persons *unable to carry on a major* activity (pre-school play, school, housework, or work, as appropriate). The second category includes those persons who would be *limited in amount* of activity, and the third category includes persons who are *not limited in the major activity, but who are otherwise limited* (for example, in church activities, sports, or shopping). And of course a fourth category would consist of those without any activity limitation whatsoever.

For sake of completeness it ought to be noted that certain quantitative measures of disability emerge relating to the number and type of restricted activity days. If the subject responds that, during the period immediately before the interview, the chronic condition caused him to restrict normal activities for more than a day, the interviewer notes also the number of days of activity limitation and the number of bed days.

For the survey period 1961-1963, the National Health Survey reports more than 16 million persons were partially or totally limited in conducting their major activity. From this pool, the VRA excludes retirees, those less than 17 years old and females who were not in the labor force, not retired, and not keeping house. This leaves those whose major activity is normally work, or females whose major activity is keeping house, men who during the last year were neither working or retired, and women under 60 in the labor force, but not at work, not keeping house, nor retired.

Of these persons in the survey, 4,700,000 were included in the age groups 17-59. The VRA applied the factor of 55 percent to this group to arrive at the eligible disabled. The 55 percent figure was the median and modal acceptance rate in fiscal 1964 among the general agencies. This same projected acceptance rate was applied to the persons 60 years and over who were currently working and whose major activity was work. Lower acceptances were postulated for the aged who were not in the labor force (40.4 percent for males and 46.2 percent for females). These rates derive from the Patterns of Service study results.[4] For noninstitutional population, therefore,

[4]The state-federal program of vocational rehabilitation operates in all 50 states plus the District of Columbia, Guam, Puerto Rico, and the Virgin Islands. Since 36 states have two agencies, one for the blind and one for the nonblind, there are actually 90 state agencies. For statistical purposes, it is possible to group the agencies in several ways. The "Patterns of Service" studies (for example, *A National Study of 84,699 Applicants For Services From State Vocational Rehabilitation Agencies in the United States*, National Rehabilitation Association, Washington, D. C., 1964) presents data for the 36 agencies which serve the blind, the 36 which serve the nonblind, the 18 states "combined" agencies and the 54 "general" agencies (i.e. all agencies except those which serve only the blind), in addition to totals for all 90 state VR agencies. The applicant data presented below are from this study, as ate the acceptance rates cited.

the total estimated in the pools as of July 1, 1962 was 3,340,000. This figure was increased by 3.7 percent to reflect the population increase between July 1, 1962 and January 1, 1965. The result was 3,450,000. To this sum are added an estimated 214,000 eligible disabled persons in institutions and 21,000 eligible disabled among non-institutional population 16 years of age, for a total of 3.7 million persons.[5]

There are several difficulties in this approach. First of all the chronic condition which limits major activity is a rather broad screen. Even more questionable is the application of prevailing acceptance rates (for those who are motivated enough to apply for services or who are sufficiently disabled to be referred to vocational rehabilitation agencies) to the group responding positively to questions in the National Health Survey. These are really two noncomparable groups. Even here, however, a better approximation might result if we could apply acceptance rates separately according to social, economic and demographic characteristics and perhaps disability characteristics. To be fair to the VRA, it might be noted that attempts to do just this have not been too rewarding as yet.

Unlike programmatic concepts which will be discussed below, the survey data need not be concerned with the legal definition of disability and with matters relating to coverage and eligibility. The constraints on the survey data are quite different. One general limitation is the reliance on self-perception. The survey results cannot improve upon the person's own knowledge of his condition. However, the great advantage is that we do not deal with an ambiguous and contentious concept of disability but are forced to think rigorously of chronic conditions in terms of a qualitative axis of restriction in activity and a quantitative axis of the number of days of restricted activity.

The collected data are related to precise demographic and economic variables. Although not always presented in the best fashion in the published data, these data are potentially useful for any analysis of the relation of disability to vocational rehabilitation potential. The existence of the sophisticated data, relatively unanalyzed, argues against further research projects which are dependent on new grand surveys. This is a line which should be exploited first. There is always a possibility of adding questions to the regular survey, and apparently the Vocational Rehabilitation Administration is now doing this. This is not a simple or inexpensive procedure, but the results are enhanced by reason of their integration with the data available from the survey itself.

Needless to say, the data are not applicable to the individual states. One cannot take the numbers from the National Health Interview Survey and

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[5]I am indebted to Sigmund Schor for typewritten data sheets explaining the methods of estimation used. Mr. Schor is Chief of the Division of Statistics and Studies, Vocational Rehabilitation Administration, Department of Health, Education and Welfare, Washington, D.C.

apply them uncritically at the state level. States, from time to time, in estimating the number of disabled persons in their state do take VRA estimates, convert them to a rate per hundred thousand population and then apply them to their own populations. If the original data cannot be analyzed by states, the data which are derived from the survey certainly cannot be.

Program Data

There are several programs which are capable of yielding a wealth of statistical data as to the incidence of disability. These would include not only the essentially state programs of workmen's compensation, but also the programs of disability insurance under social security, or aid to the permanently and totally disabled under the social security assistance program, temporary disability insurance in four states, and a host of veterans programs. In addition there are data which derive from disability policies under private insurance and similar arrangements, collectively-bargained sick benefit plans, and sick leave plans which may exist independently of any collectively bargained schemes.

The pitfalls in each of these sources is obvious. What we are calling for is a particular legal definition of disability which is going to vary from program to program and from area to area. The difficulties can be besr illustrated in the case of workmen's compensation. Essentially there are two faults. First of all, there are no comparable data that exist among the states. This is not too great a difficulty, especially if one is concerned with a single state. Far more troublesome are the sheer differences that exist between the workmen's compensation program's definition of disability and vocational rehabilitation potential. It is probably safe to assume thar a permanently and totally disabled worker in most jurisidictions mighr qualify as a person who is in need of vocational rehabilitation. Whether he is eligible for it or not, of course, would be quite another matter. But these cases constitute a very small percentage of the total number of cases, certainly far less than one percent.

The trends in the permanent partial disability category of cases are so much influenced by legal definitions that they do not tell us very much about the incidence of handicapping conditions. Relatively few cases are decided on the basis of the schedules which relate parts of the body to dollar figures. More are decided by an administrator's evaluation of the percentage of loss of use of a particular part of the body. This loss may be defined in terms of wage earning capacity or by some physical evaluation. In cases of dispute, the resolution is via adversary proceedings, which may be fair but do not necessarily yield accurate disability statistics.

Workmen's compensation has traditionally been a source of clients for vocational rehabilitation agencies and ir is likely to continue to be so. But

it would be the height of foolishness to estimate patterns of disability based upon trends in workmen's compensation.

The Veteran's Administration programs for disability also suffer somewhat the same defect. The definitions of disability are necessarily influenced by changing legislation and administration.

Temporary disability insurance exists in only four states, but even in these states it may not be a useful source of numbers of potential clients. The intent of each of the programs, in the four states of California, New Jersey, Rhode Island and New York, is to cover nonoccupational disability for a relatively short period. Also, like so many of our other social insurance programs in the United States, eligibility depends upon a worker having been attached to the labor force. It may be that many of the persons who could profit by vocational rehabilitation have not had sufficient labor-force experience to be covered.

The several programs under the Social Security Act do promise to be a potentially rewarding source of data. This is particularly true of the disability insurance coverage under the Social Security Act. The record of rehabilitation in this group has been a mixed one, but as a source of data this has much to commend it. The lessons to be learned from disability insurance are the subject of a separate paper in this series. In addition to disability insurance, of course, all of the social security health insurance provisions are a potential mine of information, except that they are so new that it will be some time before trends become apparent.

We have a wealth of experience in this country under private disability insurance and allied types of arrangements. Of course, public and private plans tend to be inextricably intertwined. Workmen's compensation, for example, has traditionally provided for insurance of employer liability through private companies. Under state temporary disability insurance laws in California, New Jersey, and New York, private insurance carriers may participate under stipulated conditions. The 1965 supplementary medical insurance under social security also involves the participation of private carriers in surgical and medical plans.

There has been promising interest on the part of private carriers in vocational rehabilitation and, as eligibility criteria liberalize, this is going to increase. Since carriers can financially benefit by provision of rehabilitation services, it may well be that the planning groups can persuade groups of carriers to allow access to their data to cast light on the number of disabled persons in several categories.

Although it may be difficult to estimate the number of disabled and those who need vocational rehabilitation services in general, intensive study of particular disability groupa may be a bit easier. There have been several such studies. Particular groups concerned with particular disabilities have wrestled with the problem of forecasting demands. Several of the papers in

this series will deal with several disability groups—the mentally retarded, the alcoholic, the blind, and the mentally ill.

Analysis of the Experience of Rehabilitation Agencies

One of the great advantages of having each state with its own rehabilitation agencies is that we can learn something from the diversity of experience. Table 1-2 shows the applicant rate per one million of population in the 48 conterminous states. These data show an amazing variation. Even if we leave off the extremes in the first group, the rates are between 700 and 800 applicants per one million population, whereas in the last group the rates are between 140 and 250.

Table 1-3 gives us some hint as to the reason for this variation. It shows the applicant characteristics among the state groupings of Table 1-2. There is a clear correspondence between applicant rates and the age and sex char-

TABLE 1-2

APPLICANTS FOR VOCATIONAL REHABILITATION SERVICES PER ONE MILLION POPULATION, 48 CONTERMINOUS STATES, 1st QUARTER 1964

Rank	State	Applicant Rate Per Million	Rank	State	Applicant Rate Per Million
GROUP 1			GROUP 4		
1.	West Virginia	1,304	25.	Minnesota	407
2.	Rhode Island	1,040	26.	Utah	401
3.	Florida	892	27.	Maryland	386
4.	Arkansas	869	28.	Mississippi	384
5.	South Carolina	858	29.	Iowa	360
6.	Virginia	770	30.	New York	354
7.	Georgia	763	31.	Missouri	351
8.	Pennsylvania	742	32.	North Dakota	350
GROUP 2			GROUP 5		
9.	Kentucky	693	33.	Washington	330
10.	Oklahoma	674	34.	Maine	323
11.	Delaware	617	35.	New Jersey	316
12.	North Carolina	607	36.	Louisiana	308
13.	Wisconsin	597	37.	Nebraska	290
14.	Oregon	552	38.	South Dakota	290
15.	Nevada	514	39.	Texas	265
16.	Alabama	513	40.	New Hampshire	248
GROUP 3			GROUP 6		
17.	Colorado	504	41.	Illinois	242
18.	Tennessee	479	42.	Arizona	226
19.	New Mexico	458	43.	Wyoming	215
20.	Massachusetts	452	44.	Kansas	209
21.	Vermont	449	45.	Connecticut	186
22.	Montana	445	46.	Michigan	186
23.	Idaho	431	47.	Indiana	149
24.	California	422	48.	Ohio	147

Source: *A National Study of 84,699 Applicants for Services from State Vocational Rehabilitation Agencies in the United States,* The National Rehabilitation Association, Washington, D. C., 1964. The data are deflated by population in July 1963.

acteristics of applicants. Possibly states with more advanced programs seek out women and older persons. There is no reason to suspect that the age distributions or sex distributions are significantly different among broad groupings of states.

TABLE 1-3
PERCENT DISTRIBUTIONS OF APPLICANTS FOR VOCATIONAL REHABILITATION SERVICES FOR SIX GROUPS OF STATES RANKED BY APPLICANT RATES, 1st QUARTER 1964

Applicant Characteristics	Applicant Rate Group 1	2	3	4	5	6	U.S.
Applicants per Million Pop.	829	604	442	367	294	189	449
	%	%	%	%	%	%	%
Total Applicants	100	100	100	100	100	100	100
Sex							
Male	62	61	67	66	67	69	64
Female	38	39	33	34	33	31	36
Age							
60 and Over	6	6	5	5	4	4	6
50-59	19	19	19	17	15	12	17
40-49	22	20	23	19	18	19	21
30-39	18	19	20	18	17	18	19
20-29	18	19	20	20	21	23	19
16-19	16	16	12	21	23	24	18
Under 16 and Unknown	1	1	1	1	2	1	1
Primary Disability							
Amputations	4	3	3	5	5	7	4
Orthopedic	19	24	30	24	24	25	23
Blindness and visual	10	8	7	9	11	[illegible]	9
Deafness and speech	5	4	4	6	7	7	5
Psychosis and Neurosis	10	13	12	13	10	8	11
Other Personality	6	6	4	5	6	4	5
Mental Retardation	6	6	5	8	12	8	7
Cardiac	7	6	8	8	5	6	7
Epilepsy	2	2	2	3	2	4	2
Pulmonary Tuberculosis	3	3	3	4	3	3	3
Hernia	3	3	1	1	2	1	2
Other and Not Reported	26	24	21	14	14	18	21
Referral Source							
Educational Institutions	9	9	8	14	16	15	11
Hospitals & Health Agencies	19	24	13	20	18	19	19
Physicians	13	15	7	6	7	7	10
BOASI	12	13	16	14	6	8	12
Welfare Agencies	17	13	20	13	12	14	16
Workmen's Compensation	2	3	5	4	6	2	3
State Employment Service	7	4	8	6	7	8	6
An Individual	7	7	8	6	9	10	8
Self Referral	9	9	9	9	7	11	9
Other and Not Reported	5	4	6	8	12	6	6
Disposition							
Accepted	54	61	37	51	60	66	54
Not Accepted	46	39	63	49	40	34	46

Source: *A National Study of 84,699 Applicants for Services from State Vocational Rehabilitation Agencies in the United States,* The National Rehabilitation Association, Washington, D. C., 1964. Percentage distributions may not add to 100 because of rounding; for the same reason, small differences should be ignored.

The same variation is apparent in the nature of the disabilities. Increased applicant rates correspond with a higher proportion of applicants with mental illnesses and a lower proportion of those with amputations or orthopedic conditions. These, of course, are the same relationships noted earlier in discussing changes in emphasis over time.

It has been said that one way to predict the future is merely to look at what is going on today and to project forward. But national trends cannot represent changes over time in the individual states. It is possible, however, to use the diversity among the states and recognize that the low-applicant-rate states might take on some of the characteristics and problems of the high-applicant-rate states as funds increase and as eligibility barriers drop.

It is possible to go further and to ask why the rates vary among the states. This same variation appears whether one deals with referrals, applicants, number accepted, number rehabilitated, or the amount spent. It is possible to reason that this variation may be accounted for by differences in such factors as the income levels of the state, urbanization, labor force participation rates, whether the agency is a general one or whether there are separate agencies for the blind and other disabled, the unemployment rate, the median age of population, the incidence of disability in the population, and many others.

Fortunately it is now entirely feasible to take into account a good many variables by using multivariate regression techniques. Preliminary runs have been made and some of these data are presented in an appendix. About 43 percent of the variation among the states can be explained by such factors as differences in income levels, urbanization, labor force participation rates, agency types, and unemployment rates. The rate of applications appears to be an increasing function of low income and adverse labor market conditions, and a decreasing function of the degree of urbanization, after allowing for the effects of differential rates of labor force participation and whether or not the agency for the blind is separate.[6]

These relationships are highly tentative. We need additional cross-sectional studies and some attention to the time series data. These and other kinds of studies are desperately needed. If we assume that family incomes will rise, labor participation decline, and urbanization intensify, then it may well be that the demand for services, at least with existing eligibility criteria, will increase more slowly than the rate of increase in population. At the very least such studies serve to emphasize that disability is an economic phenomenon as well as a physical phenomenon. To forecast numbers of handicapped people without regard to future economic conditions is possibly to build error into the forecasting models.

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[6]Arthur J. O'Neal, *The Market For Vocational Rehabilitation Services: A Statistical Analysis* (unpublished Ph.D. dissertation, Rutgers—The State University), presents the results of several regressions using applicant and referral data.

It is also quite possible to take a look at the data within a state and find out what accounts for variations among regional offices or among counties. New Jersey is an excellent state in which to carry on some of this work. With some rational explanation of variations within the state, we might better forecast the future for the state as a whole.

New Surveys and Conclusions

Without first exploring in greater detail exactly what one wants, it is useless to go out and count the number of disabled in a school, in the hospital population, or in any other group. There is a great deal of work yet to be done in the exploration of the existing records of particular agencies. Granted that eligibility criteria are changing, and changing more rapidly than most of us realize, the experience of the past is subject to microscopic scrutiny and may shed some light on the future. But this will have to be done while taking due account of interstate and intrastate differences.

More light needs to be shed on exactly who makes the vocational rehabilitation client. How will the liberalized eligibility provisions change acceptance ratios? How have different economic conditions in the past influenced the number of clients and referrals? To what extent can we separate out the influence that changes in expenditures have had, versus the push and pull of the labor market? Some conceptualization along these lines is vitally necessary before new surveys are undertaken.

If new surveys are undertaken, and a time will come when they will become most useful, then the possibilities of utilizing the techniques of the National Health Interview Survey and their sampling procedure ought to be fully explored. Expertise has accumulated here, and it would seem the better part of wisdom to utilize it rather than starting anew.

None of this is meant to be discouraging. All of it is meant to be encouraging. I can think of no better way to begin the search for data, and the construction of an adequate plan to take care of the disabled, than to look at what has already been done. To this end we welcome at this meeting the experiences of persons concerned with particular disability groups and those concerned with particular programs.

Appendix[7]

Analysis of Interstate Variations In Application for Services

Planning a full-service vocational rehabilitation program for some years in the future would be greatly aided if we had a better understanding of

[7]This appendix draws heavily on data and analysis from an unpublished doctoral dissertation of Arthur J. O'Neal. I am also indebted to Peter David Machlis for work which he has done on the concept of a market for vocational rehabilitation services. Responsibility for interpretations, conclusions and errors remain solely with the author.

the market for rehabilitation services. A theoretical model of this market must, of course, abstract from reality. Its purpose is to aid understanding of the fundamental processes and not to represent reality itself. But consider that it is imprecise to speak of all who "need" or who can "benefit" by vocational rehabilitation services without recognizing that people must be motivated to apply for these services, must be legally eligible for them, and must benefit by them in some manner. Also we must recognize that the supply of these services—that is, the amount of physician services, counselling services, training services, as well as materials and devices—is necessarily going to be influenced by a host of factors, including the costs of supplying these services.

Consider first a private market for rehabilitation services in which the individual who wants these services must purchase them. For purposes of exposition, we can think of a standard unit of service which encompasses counsellors' time, physicians' time, use of prosthetic devices, and any other service. These can be weighted in some manner so as to allow expression as a standard unit.

Individuals in general will seek to purchase an increasing number of units of service, at progressively lower prices for services. Presumably the number of units bought will depend upon the utility of the units to him. A person with a mild disability will require fewer units than a person with a more stubborn handicap. As the price of units are lowered, more and more persons may seek to utilize this method of restoration to the labor market.

On Figure 1-1, we draw a negatively sloping demand curve to illustrate the demand schednle. Unlike some other commodities, the demand does not become infinite at a zero price. At some quantity, price becomes negative. In order for a particular number of units to be taken off the market, it is necessary to pay persons rather than asking them to pay for the units. An objection may be raised that, if a good is free, an unlimited amount will be taken off the market. But rehabilitation services involve sacrifices on the part of the person who uses them. If loaves of bread are free, I may seek to take a huge number of them. But if we consider a commodity like attendance at a movie, I will attend more than some optimal number of movies only if I am paid to do so.

The individual must sacrifice his present position in order to undertake rehabilitation. The individual may leave a rather secure position—perhaps of dependency on the family, perhaps of receiving some transfer payment such as public assistance—to enter the fairly risky business of a rehabilitation program. Failure to complete it successfully may entail difficult administrative procedures to get back on the assistance rolls or serious adjustments to return to a sheltered position within the family. Hence there is no purchase of vocational rehabilitation services without some involvement of the

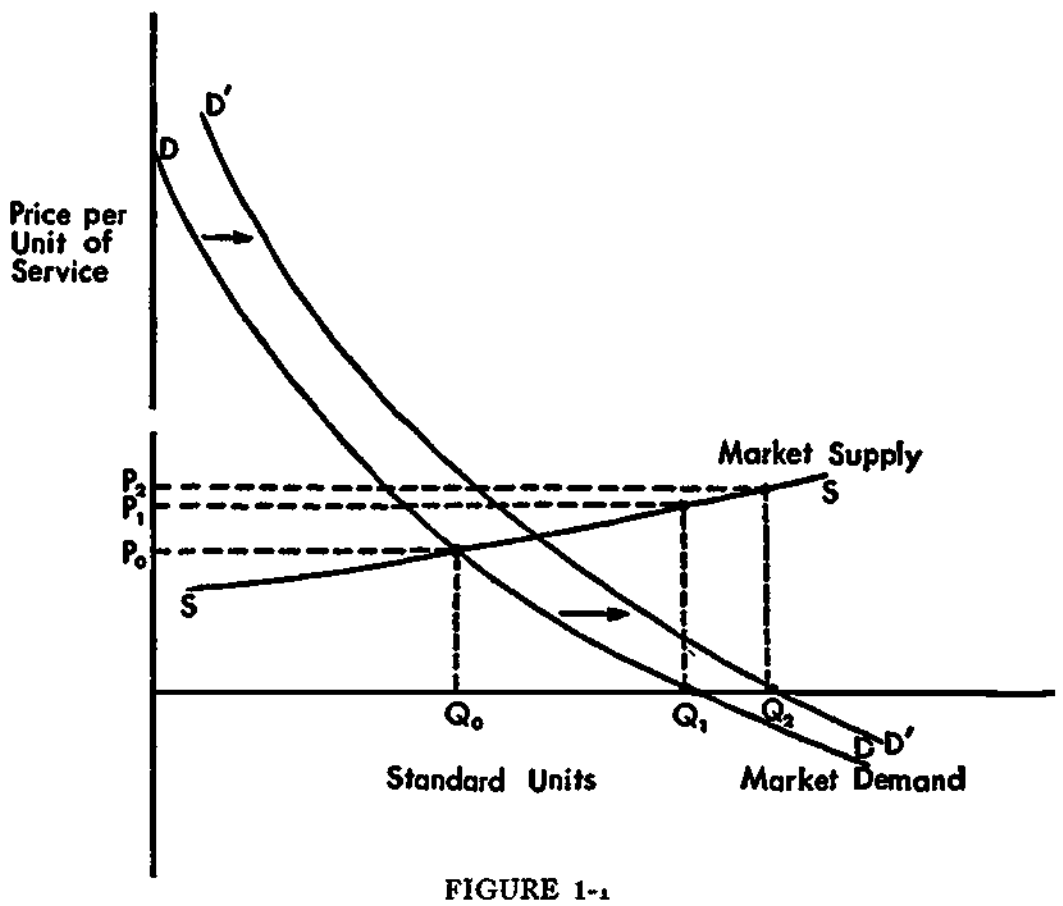

FIGURE 1-1
GRAPHIC ILLUSTRATION OF THE MARKET FOR PUBLIC VOCATIONAL REHABILITATION SERVICES

individual and some payment in terms of foregone earnings or psychic costs.

In Figure 1-1 we postulate a positively sloping supply curve, because, as the number of units of service supplied increase, all other things being equal, we expect costs and the price of the service to increase. More resources are attracted to this endeavor only at higher price, and in the short-run we expect some positive slope to the cutve. Over a longer period of time the supply curve will shift but it is not possible to tell *a priori* whether increased units could be supplied at the same price or whether there would be increasing costs over the long-run. Bear in mind that we refer to a standard unit of service; if more complex services are being used, costs would increase for that reason, but this is not reflected in the diagram.

Although a private market for rehabilitation services does exist, our main concern is with the provision of these services by public agencies in the several states. Assume for purposes of exp)sition that the demand and supply situation prevailing in a private market is known, but that a legislature provided rehabilitation services to all who want it at a zero price. This would mean that the amount Q_1 ought to be supplied. The costs to the government of supplying this according to the market supply curve is P_1. A rectangle measured by the sides $O - P_1$, and $O - Q_1$ measure the amount of appropriations and the amount of the subsidy in this progtam.

Of course the legislature may not guess correctly and may decide to supply an amount greater than Q_1. In this case, if our demand and supply functions are correct, a greater amount of services will be offered than will be taken. All of the appropriated funds will not be spent. On the other hand, if it chooses to supply an amount less than Q_1 there will be unsatisfied demand and clients will have to be turned away.

The job of planning in vocational rehabilitation is essentially to estimate the intersection of the demand curve with the X axis and to estimate the general shape of the curve. It may well be that a zero price is unrealistic and that a government may choose to charge an amount for the services, or conversely to give each client some cash payment to induce him to participate. If one knew the shape and position of the demand curve, then of course one could read off any of these amounts.

We must know a good deal more than we do about the supply curve, but this is not the purpose of this inquiry. Our concentration is in trying to advance our understanding of the demand function.

We would expect that the parameters of this function to be influenced by factors like the age distribution of the population, the extent of disability, and, also quite significantly, the alternative earnings opportunities of potential clients. It cannot be emphasized too often that disability is an economic phenomenon and that, in a buoyant labor market where alternative opportunities beckon, a disability which is medically definable may be economically irrelevant. On the other hand, if the economic situation worsens, the same medical condition may truly be a major activity limitation.

Our interest necessarily is in shifts in these demand schedules. We would like to know exactly what causes these shifts over time and how to predict them. For example, a shift from DD to D′D′ will result in an increase in the quantity demanded. If the legislature is interested in satisfying all who demand services at a zero price, quantity would increase from Q_1 to Q_2. On the supply side, this would result in an increase in costs per unit of service and hence in the necessity for an increase in total appropriations.

Although our interest is in the shifts that have occurred through time, we can approach this problem by looking at the variation in some measures that approximate our concept of demand among the several jurisdictions within the United States. If we can identify some of the factors which influence this variation, we may shed light on the parameters of the curve itself.

Statistical Evidence

It is not possible to apply the concepts of the model to the real world without making some heroic estimates. We have no readily available information as to the demand for standard units of service. Neither is there any obvious way in which the different types of services should be weighted. We do know, however, something of the expenditures in each of the several

jurisdictions, and data are available as to the number of applicants, the number of persons who are accepted by the agency, and of course the number of people who successfully complete the program.

As a poor proxy for the number of units demanded, we use the number of applicants. Two sets of data are available. One of these is Martin Dishart's data from the Patterns of Service study. These data pertain to the first quarter of 1964 and have the advantage of providing considerable information about the characteristics of referred clients processed during this period. Some of these data, presented in Table 1-2 of the text, usefully portray the wide variation among the states. A second source is VRA data showing the number of persons referred in each state. The data used are combined for the years 1961-63.

If we concentrate on what we believe is a measure of demand, and ignore the concept of supply, we seek to explain the variation among the states in the number of applicants for service. We recognize, of course, that some variation may be due to the differences among states as to who is counted as an applicant, but there is little we can do about this. Differences in the raw number of applicants are basically due to differences in the numbers of persons in the various states. We adjust this by placing all of the applicant figures on a per 100,000 or per million population basis.

TABLE 1-4
SUMMARY MEASURES FOR INDEPENDENT VARIABLES USED IN APPLICANTS MODEL

Variable		Unit	Mean†	Standard Deviation	Range High	Range Low
Low Income	X_1	%	14.64	7.44	37.7	5.5
Urbanization	X_3	%	61.95	14.84	88.6	35.2
Labor Force %	X_4	%	38.25	2.52	44.6	31.6
Agency Type	X_8	*	*	*	*	*
Unemployment	X_9	%	5.12	1.22	10.2	2.9
Age	X_{10}	Yrs.	28.56	2.56	33.1	22.8
Draft Rejects	X_{11}	%	48.90	9.74	67	32
Expenditures‡	X_{12}	$	1.836	0.806	4.248	0.605

* Dummy variable: Agency for the blind separate in 13 states.
† Unweighted average of 48 state observations.
‡ Per capita.

Source: Arthur J. O'Neal, *The Market for Vocational Rehabilitation Services: A Statistical Analysis*, Ph.D. dissertation, Rutgers - The State University, 1967.

We use a standard multiple regression analysis to account for the variation that we do find. Hopefully this might shed some light as to the demand for services. Table 1-4 shows the independent variables used in the statistical model to help explain the variation. For each of the variables (the un-

weighted average of the 48 state observations in 1964), the standard deviation and the range are shown.

According to our model, we expect that as alternative earnings opportunities lessen, more applicants should appear at the agencies. If unemployment is widespread, the alternatives that disabled persons have before them are considerably lessened. Consequently, the price that they have to pay in earnings foregone would be less, and we should expect more applicants.

In much the same way, we reason that the larger the proportion of families with low incomes (defined as incomes below $2000 in 1959) the less the opportunities for income-producing jobs and the greater the demand for services. The labor force variable relates to the percentage of the total population in the labor force. A positive relationship is expected between this variable and the number of people who apply. The traditional eligibility restrictions pertain not only to age but, until recent years, have served to confine the program to those who have a reasonable chance of achieving vocational objectives. The greater the percentage of persons in the labor force, the greater the possibility of a job for rehabilitants and the less the risk of undergoing the program. Consequently we expect a positive relationship between applicants and percentage of population in the labor force.

The age variable is also important, although it is necessary to explore it more thoroughly than we have done thus far. There have been upper and lower age limits for eligibility. It is assumed that a high median age is associated with a relatively large proporation of the population over the age 40 or 50. This age variable was entered to test whether the high applicant rates might possible be related to the age structure.

A negative relationship was posited between the volume of applicants and the degree of urbanization in a state. This is not an obvious assumption and it could be argued either way. The National Health Survey data show a greater incidence of disability among the rural farm dwellers than among the rural non-farm or urban population. A large part of this difference may be attributable to the high proportion of older persons on the farms and the remainder to the greater ability of urban persons to adjust to their limitations.[8] It may also be that urban areas have greater alternative opportunities for rehabilitation services among the private agencies, although this is a hypothesis which is subject to test. On the other hand, urban workers are likely to have less flexibility in adapting to a particular job. Work on a farm is more accommodating than work on a specified machine in a factory. On balance, the negative relationship seems most reasonable.

A prime reason for variation in the number of applicants among the states might be differences in the incidence of disability among the states. Unfortunately we do not have good disability data on a state basis, but

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[8]Ronald Conley, *The Economics of Vocational Rehabilitation* (Baltimore: the Johns Hopkins Press, 1965).

several proxies are available. Chosen here is one series dealing with the percentage of persons disqualified for military service by Selective Service. Obviously alternative variables might provide better results. In defense of the measure, it ought to be noted that there are wide interstate variations ranging from 32 percent rejected in Utah to more than 65 percent rejected in Alabama, Mississippi and Louisiana. Of course, the reasons for rejections may include many factors other than disability of the type pertinent to vocational rehabilitation.

The demand for services might well be influenced by the way in which services are offered and presented. For this reason we include as an independent variable the fact of whether a state had a separate agency for the blind or a single general rehabilitation agency serving both blind and non-blind. This is entered as a dummy variable.

The final independent variable is the per capita Title II expenditure during fiscal year 1961-1963. There ought to be a positive relationship between the number of applicants and the amount that is spent on the basic program. However the number of applicants are both the cause and effect of expenditure levels and there is some circularity here, especially if one seeks to explain demand. Regressions were therefore run both with and without the expenditure variable.

Statistical Results

The regression coefficients for five different equations are shown in Table 1-5. The independent variables include applicant data from both the Patterns of Service study (1964) and the VRA data (1961-63). The best estimating is the following equation denoted as C_1 in Table 1-5.

The coefficient of determination is .428, indicating that about 43 percent of the variation is explainable by the indicated factors. Practitioners in the field are fond of relating stories dealing with the imprecision of rehabilitation statistics. Such anecdotes purport to show that all depends upon the idiosyncrasies of individual agencies and their counsellors. The data however indicate that a considerable proportion of the indicated interstate variations in the number of applicants can be explained by reference to objective socio-economic data. Even if we have not correctly identified demand phenomena, this fact is of significance and is worth further study.

Coefficients of regression measure the relationship between an independent variable and the dependent variable when the effects of all other ingredients in the equation are neutralized. Hence, if we hold urbanization, labor-force rate, agency type, and income distribution constant, we should expect an increase of a little more than 38 applicants per 100,000 population with each one percent increase in unemployment. We cannot be absolutely sure about this because of the standard error of the regression coefficient. Given certain assumptions, the chances are 95 out of a 100 that the

true relationship between the independent variable and the dependent variable will be within two standard errors of the regression coefficient.

Each of the independent variables has the expected sign. As expected, the demand for services, if we can equate this with the number of applicants, is positively related to the amount of unemployment, to the percentage of population with low incomes, and to the differential rates of labor-force participation. It is negatively related to the degree of urbanization. These relationships obtain after allowing for whether or not there is a separate agency for the blind.

This regression analysis is presented to illustrate the potentialities of a method rather than to arrive at any grand conclusions. If one uses the Patterns of Service data, it is possible to extend the analysis and use as dependent variables persons referred from particular sources, persons with particular kinds of disability, or clients of particular age and sex groups.

The next steps are fairly obvious ones. It is necessary to refine the

TABLE 1-5
ANALYSIS OF FIVE REGRESSION EQUATIONS OF APPLICANTS FOR PUBLIC VOCATIONAL REHABILITATION SERVICES

		Regression Coefficients (Standard Errors in Parenthesis)				
Independent	Variable	A 1964	B 1964	B_1 1961-63	C 1964	C_1 1961-63
Expenditures	X_{12}	170.93‡ (42.69)				
Unemployment	X_9	68.92† (32.78)	104.35† (35.09)	38.36‡ (10.31)	93.95‡ (25.93)	38.36‡ (10.31)
Low Income	X_1	6.45 (7.74)	16.71† (8.06)	5.71† (2.52)	17.07† (5.91)	5.71† (2.52)
Urbanization	X_3	0.50 (2.81)	−2.23 (3.03)	−2.14* (1.11)		−2.14* (1.11)
Labor Force Rate	X_4	11.36 (20.89)	26.37 (23.03)	12.68* (7.28)	22.56 (18.14)	12.68* (7.28)
Agency Type	X_8	8.34 (70.63)	−73.55 (74.96)	−34.64 (27.11)	−76.69 (69.77)	−34.64 (27.11)
Age	X_{10}	1.40 (16.10)	2.25 (18.15)	#		
Draft Rejectees	X_{11}	−2.21 (4.07)	−2.01 (4.58)	#		
Constant Term	a	−693.38	−1089.90	−430.01	−1066.52	−430.01
Coeff. of Determ.	R^2	.525	.381	.428	.365	.428
Standard Error	S	186.37	210.10	79.48	205.18	79.48

* Coefficient is at least 1.5 times its standard error.
† Significant at .05 level.
‡ Significant at .01 level.
#F-level insufficient to enter.

Source: Arthur J. O'Neal, *The Market for Vocational Rehabilitation Services: A Statistical Analysis,* Ph.D. dissertation, Rutgers - The State University, 1967.

measure of demand and to account for the fact that persons of different age groups or disability groups will use different amounts of services. It is also necessary to introduce supply factors to determine to what extent these account for variations among the states. The long-range goal is a practical statistical model which will enable us to simulate predicted conditions of the future. In this way it may be possible to make reasonable estimates of the demand and supply of these services at future dates from now until 1975.

II

Selected Disability Groups

THE PAPERS in this section deal with four specific disability groups: alcoholics, mental retardates, the mentally ill, and the blind. Concluding this section is an added paper, not originally delivered at the conference, on employment of the blind in New Jersey.

It is obvious that many other groups might have been chosen for examination, because Comprehensive Statewide Planning will have to consider a wide range of disabilities. However, the categories represented here provide valuable test cases in the problem of using existing information for comprehensive planning. All of them have great intrinsic importance. Most states have recognized the problems peculiar to the blind by creating separate agencies to deal with visual handicaps. The other three categories symbolize the recent trend in vocational rehabilitation toward meeting the challenges of mental and social handicaps. Because these handicaps are less clearly defined, they pose a challenge to planners, both in divising modes of service and in estimating the scope of the problem. In addition, mental retardation and mental illness have been the subjects of recent planning efforts within the state of New Jersey.

M. B.

26/27

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Alcoholism As Disability

2

I like to begin by making sure we know what—or whom—we are talking about. In other words, I think it is necessary to say a few words about defining alcoholism—how do we establish that someone is an alcoholic. This is particularly relevant in the present context because we are concerned here first of all with "concepts" of disability. No one would doubt that the mentally retarded and ill, and the blind, are disabled. But is this true of alcoholics—other than when they happen to be stoned? Do they, when not in a severely intoxicated state, come under the umbrella of disablement?

It happens that my conception of alcoholism fits alcoholics precisely into this category—in fact I have based my definition of alcoholism on the fact of disablement. An alcoholic, I have stated, is one who is unable consistently to choose whether he shall drink or not, and who, if he drinks, is unable consistently to choose whether he shall stop or not.[1,2] Note the crucial position of the disability in both these forms of what has been called "loss of control over drinking." I ought to add, for the record, that this disablement of the alcoholic with respect to ingesting alcohol is unquestionably a manifestation of disease. Perhaps it is a special subcategory of Doctor Webber's subject, mental illness; but we all find it more convenient to treat it as a specialism.

Alcoholics are often disabled, physically or mentally, as a consequence of their alcohol-ingesting behavior. They become severely drunk and are

1. Keller, M., "Definitions of Alcoholism," *Quarterly Journal of Studies on Alcohol*, vol. 21, 1960, pp. 125-137.
2. Keller, M. and McCormick, M., *A Dictionary of Words About Alcohol* [in preparation, 1967].

then more or less disabled with regard to all sorts of expected performances. They have hangovers and post-intoxication illnesses which disable them from working for a time. They develop a variety of physical and mental diseases, such as cirrhosis of the liver and delirium tremens. They are unable to attend with optimum regularity to their jobs, and when at work they are frequently less than optimally efficient. Some of them are unable to hold jobs. They experience arrests and institutionalization. A small percentage become physical and mental derelicts.

But these are secondary disablements consequent upon the primary condition. They are not the disablements which bring most of alcoholism, as such, within the purview of the present conference. I propose that alcoholism belongs here because it is a chronic disease whose essential characteristic is the psychological disablement of the alcoholic from choosing adequately adaptive behavior. It is obvious that, although I have called it psychological disablement, I am judgmentally inferring this from manifestations of social disablement. The alcoholic is, in the last analysis, unable to choose a form of socially expected behavior: to stay reasonably sober at appropriate times. For the alcoholic, it could be argued, drunkenness is at least temporally adaptive. From our socially determined perspective, however, even temporally adaptive behavior which results in chronic self-injury is a form of disease.

So much for instant conceptualization. Now what about sources of statistics?

By rights and by logic, the Rutgers Center of Alcohol Studies is the best source of statistics about alcoholism. To a certain extent this is even true, and my colleagues and I have been responsible for the collection and publication of such statistics.[3] Unhappily, this is a source of embarrassment to me. I am not a statistician but at most a critic of statistics.

I want to confess that it was more by accident than by design that I became involved in estimating the number of alcoholics in this country. At first, in collaboration with my colleague Vera Efron, we simply followed the method of E. M. Jellinek, applying the famous Jellinek estimation formula to the country, to the states, and to cities. When it became apparent that this formula was out of whack and no longer applicable, a lot of people seemed to feel that it was still my responsibility to answer the perennial question: How many alcoholics? So I smart-alecked the situation by proposing a way of inferring the number of alcoholics from a somewhat dubious application of that same Jellinek formula.[4]

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3. Efron, V. and Keller, M., *Selected Statistical Tables on the Consumption of Alcohol, 1850-1962, and on Alcoholism, 1930-1960, with a Bibliography of Sources*, New Brunswick, N. J., Rutgers Center of Alcohol Studies, 1963.

4. Keller, M., "The Definition of Alcoholism and the Estimation of Its Prevalence" ["The Problem of Statistics," pp. 317-327], in Pittman, D. J. and Snyder, C. R. eds., *Society, Culture, and Drinking Patterns*, New York, Wiley, 1962.

I will not trouble you with the details of that rather complex methodology. Enough to say that as of 1965 we have estimated that there are 5,015,000—call it an even five million—alcoholics in the U.S.A. We are so shaky about this estimate that we ask for a 20 percent leeway—between four and six million alcoholics. The only thing we are more shaky about are the estimates of others, which range from 6.5 to 9 or 9.5 million, or even from 20 to 30 million. As you see, we are decidedly the conservatives.

Where does New Jersey stand? The original Jellinek estimation formula became steadily less reliable as it was applied to smaller and more restricted populations. My bastard application of this formula to the U.S.A. undoubtedly has more of the same weakness. So it is with trepidation that I offer the calculation that, as of 1965, New Jersey had about 220,000 alcoholics. This is a rate of 5,100 per 100,000 adults. If for the U.S.A. I wanted a 20 percent leeway, for New Jersey I'd like about 40 percent. A range of 150,000-300,000 would realistically represent the weak basis of this estimate. One difficulty is that in the present estimates we are relying on the rate, which we believe to have been reasonably near accurate, of the period 1940-1945, and we are applying this rate to the contemporary population. But we have not allowed for possible important changes in the composition of the New Jersey population in the last 25 years. For example, alcoholism occurs differentially in ethnic groups. If New Jersey should have gained or lost proportionately more of some ethnic groups, this could change the picture substantially. The moral of it all is that we ought to have some field studies, some real epidemiology, attempts to establish the approximate size of the alcoholism problem in this state. I suggest that this is an important project for all of us to consider. Alcoholics are disabled. We are beginning to think of serious undertakings to rehabilitate the disabled. I suggest that alcoholics constitute one of the larger and significant segments of the disabled, and that we need to determine how many there are and where they are as a first step in planning measures of rehabilitation.

Let me now present a few facts about several recognizable groupings of disablement among alcoholics, partly in order to concretize at least the forms of secondary disablement, but mainly in order to suggest where we will find sizable groupings of alcoholics when we start the epidemological studies I have recommended.

First, let us consider the men on Skid Row. I take them up first so that we can get rid of any residual image that this represents the major part of the alcoholism problem. From the viewpoint of disability and opportunity to practice rehabilitation, of course, the Skid Row population represents the extreme of most needy and most difficult.

Three common erroneous notions need to be disposed of quickly. (1) Not all inhabitants of Skid Row are alcoholics. (2) Most of the alcoholics are not on Skid Row. And (3) the vast population of persons arrested for

public drunkenness, many of whom are alcoholics, and we'll come to them soon, is not the same as the Skid Row population, though it includes it.

How many people actually inhabit our Skid Rows as permanent denizens is, naturally, not known. But a few good studies do give us an idea. In Philadelphia, Blumberg et al. actually took a carefully managed census in 1960; they found a total of 2,857, including only 28 women.[5]

In a sampling survey in Chicago, in 1957-58, reported by Bogue, a count of nearly 12,000 was obtained and a total of between 12,500 and 13,000 was estimated. Bogue also estimated that almost all of the hundred largest cities have Skid Row areas with at least 250 homeless men.[6] The largest estimate of the size of the national Skid Row population, made for the year 1950, is nearly 100,000 men in 41 cities. It seems possible that at most there are 200,000 or 250,000 in the whole country. But even if the higher number were correct, and even if they were all alcoholics, they would represent only five percent of the total alcoholics. Actually we have several surveys, including the very good one in Philadelphia, which show that only between 40 and 60 percent of the Skid Row men are alcoholics. So probably, at most, only two or three percent of the alcoholics are on Skid Row. This should banish the notion that the alcoholism problem is on Skid Row; but, of course, the population of Skid Row and Skid Row itself are prime targets for rehabilitation, and in this connection it should be borne in mind that the 50 percent or so of men on Skid Row who are alcoholics represent an even more complicated problem for rehabilitation than those who don't have this additional disablement.

The next population I want to discuss is the one that gets arrested for drunkenness. Here too the Skid Row image obtrudes and tends to distort the picture. The men on Skid Row are frequently and repeatedly arrested and constitute an important part of the arrest-for-drunkenness problem. But they are far, very far, from all of it. My points will be that most of those arrested for drunkenness are not Skid Rowers and that most of them are alcoholics.

We may begin with a statistic from the FBI Uniform crime reports:[7] In 1965 there were at least 1,535,000 arrests for drunkenness, plus at least 241,500 arrests for driving under the influence. This adds up to at least 1,776,000 arrests. There were also 570,000 arrests for something called disorderly conduct, and 120,000 for vagrancy. Now in most of the country, as Bacon and Jones have pointed out in their Moreland Commission report,

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5. Blumberg, L., Shipley, T. E., Jr., Shandler, I. W. and Niebuhr, H., "The Development, Majot Goals and Strategies of a Skid Row Program: Philadelphia," *Quarterly Journal of Studies on Alcohol*, vol. 27, 1966, pp. 242-258.
6. Bogue, D. J., *Skid Row in American Cities*, Chicago, Community and Family Study Center, University of Chicago, 1963.
7. Federal Bureau of Investigation, Department of Justice, *Uniform Crime Reports for the United States . . . 1965*, Washington, 1966.

these labels are chiefly used as alternate labels for public intoxication.[8] If we add only half of these to our previous total of arrests labeled drunkenness, we are well over two million, and for convenience I shall speak of two million. But this number is based on only 4,062 reporting agencies covering a population of only 134 million, or just about two-thirds of our population. On the other hand, many of the reporting jurisdictions don't record arrests for drunkenness; they have policies of different disposition. All in all, it is obvious that two million a year is a very conservative number for arrests for drunkenness. If all jurisdictions had uniform policies, and if they all reported, I suppose the number might well be three million.

Now the first thing to realize is that this number—and I am now talking of the two million we shall consider to be reported—represents arrests—not persons arrested. Drunkenness is an offense for which many people are arrested many times—even several times in the same year. But do not imagine that the special cases you have heard about—such as men named Driver and Easter, who have experienced 100 or 200 arrests—are typical. And anyhow, those are lifetime numbers. Within a single year relatively few people are arrested very frequently for drunkenness. It would be important, however, especially from the viewpoint of the present conference, to know how many people are involved. Another important issue of interest is what proportion of the people arrested for intoxication are Skid Rowers. In other words, what is the overlap?

One of the scarce lines of evidence on this matter comes from the intensive studies carried out in Monroe County and the City of Rochester, N.Y., by Zax, Gardner and Hart.[9] In 1961, 3,118 persons were arrested in Rochester for drunkenness a total of 5,555 times. Now Rochester is a small town, compared to Philadelphia—the population is 320,000 compared to 2,000,000. If Philadelphia has a Skid Row population of under 3,000, it seems safe to say that most of the 3,000-odd persons arrested for drunkenness in Rochester are not denizens of Skid Row. There is another indication to the same effect: 25 percent of the Rochester arrestees put up and forfeited cash bail. This is not Skid Row practice. Another 40 to 50 percent received suspended sentences, so that only about 25 percent were jailed. I suggest that these are strong indications that a substantial majority of those arrested for intoxication were not Skid Rowers.

Now the proportion of persons to arrests in Rochester was 56 percent. In another study of a municipal population of persons arrested for drunkenness, in Baltimore, by Bass and Goldstein, 7,176 persons were arrested

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8. Bacon, S. D. and Jones, R.W., *The Relationship of the Alcoholic Beverage Control Law and the Problems of Alcohol*, New York State (Moreland) Commission on the Alcoholic Beverage Control Law, Study Paper No. 1, New York, 1963.

9. Zax, M., Gardner, E. A. and Hart, W.T., "Public Intoxication in Rochester: A Survey of Individuals Charged During 1961," *Quarterly Journal of Studies on Alcohol*, vol. 25, 1964, pp. 669-678.

11,340 times during 18 months;[10] the proportion of persons is 63 percent. It seems a reasonable guess that 60 percent of the number of arrests for drunkenness equals approximately the number of persons involved. Thus, we may assume that in the arrests reported to the FBI, 1,200,000 persons were involved.

Continuing to apply this proportionality, based on the Rochester data, fewer than 40 percent were first-timers—or, over 60 percent had experienced prior arrest for the same cause. Now I want to suggest very strongly that anyone who gets himself arrested for drunkenness comes under suspicion of being an alcoholic. I want to insist that anyone who gets himself arrested again for drunkenness is probably an alcoholic. Of the minimum of 1.2 million people—I am rounding all the numbers—who experienced the minimum of two million arrests for being drunk, around 720,000 were apparently repeaters. I think, with the unreported cases, we can safely assume this number is a million. These are probably alcoholics. They are not, however, Skid Rowers: remember that the entire Skid Row population is probably less than one-fourth this number, and only half the Skid Rowers are alcoholics. Therefore the Skid Row population, although probably included in the million, constitutes perhaps only 10 to 15 percent of it.

J. Edgar Hoover has kindly sent me arrest data on New Jersey from the FBI files. The FBI recorded 42,221 reported arrests for drunkenness, disorderly conduct, vagrancy, and "driving under the influence" from agencies covering 88 percent of the population. The national proportion seems to be more than twice as high as New Jersey's, and it would be perhaps two-and-one-half times as high if we allowed for the higher percentage of population covered in the statistics for this State. Either we have fewer arrests for these causes or New Jersey reports its data poorly. From a source in Trenton on one segment of those arrested—those accused of "driving under the influence"—I have received data which indicate that New Jersey may report arrests inadequately to Washington. The FBI has records of only 1,632 such arrests in New Jersey for 1965, while Trenton knows of at least 2,841 cases which came to trial (other arrests may not have led to trial). Thus, in this category representing the most serious and perhaps most carefully reported offense, definitely less than 60 percent of New Jersey cases were reported to the FBI.

A good deal of the time of the people who are arrested for drunkenness is spent not in jail, and not even being drunk, but working and supporting families. But from the very fact that they do get arrested now and again, we know that part of the time they are disabled from working and from functioning adequately as supporters of their families and members of society. I think it might be daring, it might be radical, but it would be

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10. Bass, M. and Goldstein, G., "Survey of Habitual Drunkenness Offenders in Baltimore," *Maryland Medical Journal*, vol. 15, no. 2, 1966, pp. 71-72.

appropriate, for those who are thinking of programs of help for the disabled, to take account at last of this multitude whose alcoholism repeatedly disables them in varying degree for varying periods of time.

I must here pause to point especially to a particular segment of the arrested population: those who are arrested for something called "driving under the influence." In the two-thirds of the national population covered by the FBI reports, there were 241,500 arrests for driving under the influence in 1965. In New Jersey (where we have noted almost 3,000 actual trials for this offense in 1965) a first conviction results in loss of driving license for two years; a second conviction, loss for ten years. There are other punishments as well: fines and jail sentences, and jail is mandatory for second offenses. I feel that there is something inhumane about these laws. I don't want anyone to drive while he is under the influence. Yet it seems to me that if you take away a man's right to drive, especially for two or ten years, you might as well chop off his feet. What good is a man in our society without a driving license? Would you not consider him disabled? How can he get and hold a job? Yet, just think: men are actually convicted of this offense, in this area of New Jersey, every day. Not only that: having been convicted once, and knowing that a second conviction means a mandatory jail sentence and loss of driving license for ten years, some men actually repeat the offense, actually drive while intoxicated, actually get themselves caught, and are actually convicted a second time.

Is it reasonable to imagine that these men are acting in a state of "free will," that they are able to choose whether they shall drink or not? I suggest that these men are not just secondarily disabled by being deprived of their license to drive, but primarily disabled by being unable to choose whether they shall drink or not, and whether they shall stop before drinking too much. In other words, the assumption that they are alcoholics is overwhelming. And they are prime candidates for rehabilitation, for help in overcoming the disablement that dooms them to that maladaptive behavior to which society up to now has responded only with the useless and inhumane measure of jailing them and nominally chopping off their round legs—it's called taking away their driving license.

I want to reinforce the hypothesis that alcoholism should be looked on as a form of disablement by citing one more class of statistics: the statistics on accidents. In a sample of alcoholics in the San Francisco Bay Area, compared to the total population of the area of same age and sex, Brenner found alcoholics three times as likely to die from any cause, but seven times as likely to die in some sort of accident.[11] Analyzed by type of accident, alcoholics were four-and-one-half times as likely to die in a motor vehicle accident, 16 times as likely to die in a fall. I think it is obvious that alco-

11. Brenner, B., "Alcoholism and Faral Accidents," *Quarterly Journal of Studies on Alcohol*, vol. 28, 1967 [in press].

holics as a group are inept. I don't think it is stretching the point too far to suggest that their ineptitude in escaping death and especially in evading fatal accidents is an indication of their psychological as well as physical disablement.

If, as I have suggested, the arrested alcoholics are in largest part not the Skid Row population, then it must be that most of the time, when they are not in jail, they are either at home or at work. It is worth taking a glance at some of the information we have about alcoholics as members of the working force, at least to see to what extent they come, here too, into the focus of disablement.

Observer and Maxwell were able to persuade one large corporation, employing well over 10,000 people, to examine their records with an eye to certain factors relevant to alcoholism.[12] They were able to locate a group of employees who could safely be labeled chronic problem drinkers, and to set up matched control groups not known to be problem drinkers. I cite only one type of statistic from this study. Counting only serious absences from work, that is, of eight days' duration or longer, the problem drinkers had two-and-one-half times as many such absences, and two-and-one-half times as many total days absent. The problem drinkers had averaged over 243 days absent; the controls, not quite 97 days. The company had paid the controls an average of $769 in sickness payments, and the alcoholics an average of $2,260. Observer and Maxwell noted, as others have done, that it is possible to identify the alcoholics in the work force, and that they can be helped—indeed, rehabilitated. By superficial logic, the job of locating and helping alcoholics in and through industry might seem the most appropriate approach for a program based on an ideology of vocational rehabilitation. The facts of life, however, are such that concentrating on this approach might result only in frustration. As yet, industrial management finds it convenient to play the game of the mythical ostrich, pretending that the alcoholics aren't there, and that if they find any they can handle it by, at worst, firing them. Whom they can hire instead, except the alcoholic fired by the company across the street, I don't know. So I suppose the time is coming when industry will face this problem and begin the real task of vocational rehabilitation.

In the meantime. it seems to me, there are several groupings of alcoholics who are easily identifiable, and who can even be approached with some effective pressure on the part of the community, if we will recognize them as disabled people and design appropriate programs of rehabilitation, including treatment of their disease, alcoholism. Outstanding among these groupings are the people whom the police find intoxicated in public, the

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12. Observer and Maxwell, M. A., "A Study of Absenteeism, Accidents and Sickness Payments in Problem Drinkers in One Industry," *Quarterly Journal of Studies on Alcohol*, vol. 20, 1959, pp. 302-312.

group known for being arrested for drunkenness. I suggest that both national and New Jersey data indicate that about one alcoholic in five gets arrested for drunkenness or a related charge in the course of a year—about 40,000 in New Jersey. (To some extent this population will overlap with groups identified elsewhere—for example, mental hospitals, general hospitals, and clinics.) A special and important subcategory of those arrested are those accused of driving under the influence. Finally there is a small but hard-core and complex derelict group on Skid Row. I think the Philadelphia program furnishes a good model for tackling the Skid Row problem with a view to abolishing it, and I would certainly like to see Skid Rows abolished throughout the land. I don't imagine it can be done with complete success in any city or few cities alone. It is undoubtedly a national problem. But quite apart from Skid Row, the people arrested—and especially those arrested more than once —for drunkenness should be recognized at least as probable alcoholics, as almost certainly suffering from primary and secondary disablements, and as prime targets for physical, psychological and social rehabilitation.

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Estimating the Number of the Retarded in New Jersey

3

It may be obvious to point out that an essential aspect of planning for comprehensive services to the mentally retarded must involve estimation of caseloads requiring service, both at the present time and at particular dates in the future, but obviousness does not necessarily make accomplishment easier. The act of projecting future populations, even without reference to a specific morbidity, is accompanied by hazard enough. Wars, economic factors, and public attitudes, for instance, play their parts and contribute to error.

When one proposes to provide estimates of service required by individuals who are disabled, however, the error is likely to be compounded because of at least three causes. The first of these involves change in attitude toward the disability by the public and patients themselves, which may result in a greater or diminished number identified and demanding service. The second cause influencing projections involves the imponderable impact on future caseload of new methods of prevention and new types of therapy. The third cause involves trends in the particular portion of the gross population affected and requiring service, which in turn would have a far greater influence on an estimation of number of the disabled than would predictions based on the general population. If one were predicting, for instance, an estimate of the number of cases of German measles, recognition that it is a disease to be found to a greater extent among children than in adults would suggest that the anticipated growth in the population of childhood age would be more significant than the growth of the total population, unless the components making up the entire population were

anticipated to occur in the future in the same proportion that existed at the time of making the prediction. Perhaps this point is clearest in terms of the problem of predicting a geriatric caseload.

In the instance of a symptom complex like mental retardation, the problem of prediction is gargantuan in that the relationship between the manifestation of the condition and etiological factors is not clear. It is hardly on a one-to-one basis as, for instance, in observed tuberculosis and its causative bacillus. The problem of estimation is further compounded because public attitudes and, as a consequence, legal aspects have manifested wide swings, albeit within the recent general trend to modify the past restrictive attitudes of both the public and the statutes. Finally the matter of estimation is difficult because of some essential disagreement among parents, among professionals, and between parents and professionals as to what is a preferred program for a mentally retarded, handicapped individual. In the presence of such disagreement, the number of known cases from which estimates are to be made varies from place to place as well as from time to time.

There has been prevalent a general assumption that about three percent of the general population in the United States is mentally retarded to some degree. Some authorities have been content to use this figure as a basis for future estimation.[1] This assumption about the three percent remains an *idée fixe* to many persons working in the field despite particular studies which have suggested a range of prevalence rates from .68 to 8.83,[2] with the apparent variation in prevalence a function of definition, of samples, of instruments used to achieve identification, and of methods of data collection. Among the plausible explanations for the wide differences in rate are:

1. During the first few years of life mild retardation is not apparent because behavior demanded of the child is in the main within his diminished capability and not significantly below the norm for very young children. Prevalence studies using a large percentage of young children might thus yield a low rate and reflect only those more severe levels of retardation where gross symptomatology is evident.

2. High prevalence, usually observed during school years, may reflect the academic expectations and standards of behavior within the school system, both of which are beyond the capability of the retarded child, as well as "catching" some children who manifest some of the displacement associated with families that are not primarily oriented toward success in the public school situation.

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[1]Department of Institutions, Bureau of Research and Program Analysis, State of Washington, *Reference Report*, "An Analysis of Significant Factors Concerning Washington State Schools for the Mentally Retarded," no. 11, October 1966.

[2]*The New Jersey Comprehensive Plan to Combat Mental Retardation* (produced by an interdepartmental Working Party on Mental Retardation), June, 1966, p. 51.

3. As the school years pass the prevalence rate decreases, reflecting the movement of individuals, apparently considered incapable by the school, to work and social situations where they can satisfy a non-academic, less demanding adult society.

Even if the three percent figure assumed in so many studies were one which a person responsible for population prediction could have a great deal of present confidence in, there are additional factors which would suggest that it might not be apparently safe to utilize this rate with much confidence as far as future prediction is concerned. An entire set of additional factors require consideration. Among these the most siguificant may be:

1. Prematurity and neonatal death rates have been reduced, with the result that a greater number of handicapped children are living to mid-childhood and maturity—to be later identified as retarded. The fetal death rate has dropped from 23.9 per thousand live births in 1945 to 16.4 in 1964; the neonatal mortality rate has dropped from 28.8 in 1940 to 17.9 in 1964, and the infant mortality rate has dropped from 47.0 to 24.8 in 1964.[3]

2. The number of illegitimate live births has increased from 7.1 per thousand in 1940 to 23.4 in 1964.[4] It seems plausible to assume that unwed mothers may, on the one hand, receive the least prenatal care and may, on the other, make attempts to damage the fetus. In either case, this trend may have great implications for the incidence of retardation.

3. More mothers have become a permanent part of the labor force. In the 25 years between 1940 and 1965, the number of females in the labor force has increased from 16.7 percent to 35.7 percent of the female population over 14 years of age.[5] The implication of this data may be that, as mothers leave home to work, there are fewer hands available to provide direct service for the handicapped child. Therefore, service is sought for more cases, increasing apparent prevalence.

4. The expectancy of life at birth has increased from 54.1 years in 1920 to 70.2 years in 1964.[6] Two particular aspects of greater life expectancy may be most significant. First, a British study indicates that the number of mongoloid children in the population has quadrupled in the last three decades, largely because such children are living well beyond an age at which they formerly would have died. The second aspect is that the life expectancy at birth of the non-white population has increased from 32.5 years in 1900 to 61.1 years in 1964. This fact, in combination with the recent tendency for the non-white population to utilize the official avenues of social service available to them in the urban North, may have tremendous influence on the development of a caseload estimate.

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[3]Bureau of the Census, *Statistical Abstract of the United States, 1966*, table 64, p. 50.
[4]*Ibid.*, table 55, p. 49.
[5]*Ibid.*, table 319, p. 227.
[6]*Ibid.*, tables 61-63, pp. 52-54.

5. There has been increasing urbanization in this country, and in particular New Jersey, with differential incidence rate of retardation higher in urban areas. In 1950 81 percent of New Jersey was urban, in 1960 82.6 percent. Urban areas have always contributed disproportionately to the number of known retarded, perhaps reflecting in part the precipitation of less able individuals to the city, where they remain and utilize services, and reflecting in part the general inability of individuals in close contact with each other to tolerate deviant behavior.

6. The population per household in the country has dropped significantly from 4.76 individuals in 1900 to 3.38 in 1960.[7] The suburban family, with an absence of extended family (grandparents, maiden aunts) and a commuting father, may intensify the problem of care and, as a consequence, throw more cases into the channels of identification.

As has already been indicated, even so simple an aspect as the age mix in the population may be significant in terms of future caseload predictions. The number of identified retarded persons is low during the first year of life; with increasing age the prevalence rises markedly, reaching a peak at approximately 12 to 15 years. In late adolescence and early adulthood, known prevalence decreases. As a consequence, it might be anticipated that the gross predicted size of the future caseload would depend perhaps as much on the number of defective children in the population as on any other factor.

Even if the predictor had available to him reasonable prevalence information correlated with the age mix of the population, multiplication of these rates by the anticipated gross population increase might be of little value. Service needs are tied to types and grades of retardation as much as to age factors. Therefore, a gross estimate for some specific time in the future would not be valuable in suggesting how many sheltered workshops would be required, how many children would not be accepted in educable or trainable classes and would require other services, and how many institutional beds would be required. What is apparently required are techniques which will estimate present and future needs in selected important service areas such as special education, residential care, vocational rehabilitation, etc., which would make possible caseload prediction for specific services. In conjunction with comprehensive planning for mental retardation in New Jersey, an attempt at such a methodology was developed, the "Index of Service."[8]

The Index of Service is based on the known number of retarded needing service in a selected major area of service. After consultation with experts in a particular area or kind of service, a figure was obtained for the number of retarded being served in one geographical region which the experts felt

[7] *Ibid.*, table 36, p. 35.
[8] The New Jersey Comprehensive Plan . . ., *op. cit.*, p. 149.

had the best rate of implementation of that kind of service. A person knowledgeable in the field judges, for example, a specific district as being best known to the population it serves, as being the most utilized by the population, and as having available the most appropriate screening for admission. Data from this geographical region is translated then into a prevalence rate and applied to the larger region for which predictions are required. It should be noted, however, that the concept of best implementation as utilized here does not necessarily reflect the region of highest quality of service, since the Index deals with quantity, not quality. The demonstrated need for the region with best implementation constitutes the numerator of a fraction whose denominator would be the total number of persons in the district who are eligible for or require such service because of their age and the type of their retardation. The fraction in its decimal form is the Index of Service.

Two examples of the application of this technique may be illustrative of its usefulness. The first comes from a relatively new area of service—Day Care.

Day Care is a community-centered program designed to provide for the training and social adjustment of profoundly retarded children of school age who cannot fit inro public school programs and who are not in an institution. Thus, retarded children excluded from public school as neither educable nor trainable may receive service. After initial undertakings on a semi-experimental and demonstration basis, an attempt was made to determine the potential caseload throughout the State. No prevalence data, in New Jersey or elsewhere, seemed of value in estimating present and future service needs. Consequently the New Jersey Association of Retarded Children was asked to undertake a survey of its components to estimate current actual needs for this service. The Association reported a statewide known case need of 530. With the use of the Service Index Methodology, it was inferred that 180 additional cases were awaiting services. The impact of the difference between the estimates of 530 and 710, extrapolated on anticipated New Jersey population growth in the 5-18 age category, is considerable, as shown in Table 3-1.

A review of the results of the Service Index Methodology, when applied to the Day Care service areas (the counties), indicates that the indexes are

TABLE 3-1

DAY CARE CASELOAD SERVICES—1965-1980

Comparison of Estimates from Present Known Cases and Index of Service

Basis of Estimate	1965	1970	1975	1980
1. Index of Service	710	765	875	960
2. Known Cases	530	580	630	690
Difference (1-2)	180	185	245	270

not uniform for all areas. It also revealed that the "best implemented district" varies as much as .09 percent from indexes utilizing needs surveys from other districts. This was to be expected because Day Care is in a relatively early stage of development and any surveys will tend to underestimate the potential need. Counties with *low* indexes (below .035 percent) tend to be highly urban. This experience might be caused by one or more of the following factors:

1. Distribution of profoundly retarded children tends to be low in these counties.
2. Parents in these counties are less aware of the possibilities of Day Care and therefore make their need less known than parents in other counties.
3. Parents of profoundly retarded children in these counties tend to send their children to residential institutions rather than keep them at home.
4. Early mortality among the profoundly retarded may be higher in these counties.

Other New Jersey counties seem to have indexes which are high (.0650-.1129 percent). These counties may be classified as rural or resort—but not urban. They may have high indexes because they differ from the urban counties in one or more of the above factors.

It must be remembered that a uniform index applied to the entire State assumes relatively even demand for services and a fairly constant distribution of population. The resultant estimates must be treated as such and not as absolute figures. In addition, the smaller the unit for which one estimates, the more difficult it is to arrive at a relatively useful estimate. It is easier, for example, to estimate the population of the United States than it is to estimate the population of a given state, due to difficulty in obtaining a net migration figure. With this in mind, perhaps the statewide estimate of Day Care need should be used as a more reliable estimate than the break-down by counties.

This methodology, in the case of a new program, such as Day Care, will undoubtedly result in an underestimation of need, but at least it is an estimate based on New Jersey's exhibited need and not on national percentages or on estimates neglecting differences among states. Because of this underestimation, there is a a strong possibility that the index will increase in future years and thus that predictions based on the original index will be low.

An indication of the underestimation may be derived from the following percentages, from the proceedings of a conference on research and training in the field of mental retardation in Lynchburg, Virginia in 1958:

.1 percent of the population of the United States is profoundly retarded.

25 percent of this .1 percent is in state institutions.
75 percent of this .1 percent is in the community.

If the figures are applied to New Jersey for 1964, with the assumption that the age range 5-18 for the profoundly retarded is comparable to non-profoundly retarded as a percent of the State's population (which it is not, due to a shorter life span for the retarded), the following figure for estimated Day Care need in 1964 is derived:

.1 percent of New Jersey's 1964 population, ages 5-18	1,705
25 percent of this group in residential institutions	426
75 percent in the community and needing service	1,279
Day Care Service Index estimate	722
Difference between estimates	557

The second example of use of the Service Index Methodology is in a more traditional area of service than Day Care. Special Education in New Jersey is more than a half century old and in its present form dates from 1955. In this instance, because New Jersey has more than 600 school districts, more than one "model district" was selected. Staff members of the State Department of Education designated the eleven districts of best implementation, and a mean rate of service in these districts in terms of 5-18-year-old population was computed. The Educable Class Need Index was 1.246 percent, the Trainable Class Need Index was .172 percent and the Total Special Class Need Index was 1.419 percent. The total index suggested a 1965 need in New Jersey of 23,800, compared to an estimated total special class enrollment of 18,000. The impact of the difference between these two estimates extrapolated on anticipated New Jersey population growth in the category of 5 to 18 years is shown in Table 3-2.

TABLE 3-2

SPECIAL CLASS ENROLLMENT—1965
Comparison of Estimates from Present Enrollment and Index of Service

Basis of Estimate	1965	1970	1975	1980
1. Index of Service	23,800	26,650	29,300	32,100
2. Known Cases	18,000	19,600	21,400	23,600
Difference (1-2)	5,800	7,050	7,900	8,500

To attempt to assess the validity of the selected districts used as a base for the Service Index Methodology, particularly in view of the broad range in percent in special class in the eleven selected districts (3.55 to .38 per-

cent of enrolled children), rank correlations with social and economic variables in the selected districts for the year 1960 were computed.[9]

The "r's" between percent in Special Class and the indicated variable for the eleven districts were as follows:

Percent earning less than $3,000	.74
Median income	.62
Estimated effective buying power per capita	.71
Estimated effective buying power per household	.64
Percent unemployed in civilian labor force	.74
Median school years completed (population over 25 years)	.54
Percent non-white	.42
Population density	.09

These suggested relationships are in the direction anticipated from other information on the relative contribution to numbers of retarded by socio-economic groups.

Actual test of validity of the Service Index Methodology must, of course, await the passage of time. Periodic surveys will disclose the degree of predictive accuracy. Meanwhile, however, the technique permits a quick estimate of present and future caseload, predicated upon appropriate reference points of age and type of retarded population for which a specific service is intended.

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[9]Data was obtained from U.S. Census Reports for 1960, with the exception of estimated effective buying power per capita and per household, which came from *Sales Management Survey of Buying Power*, Sales Management, New York, 1961.

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Vocational Rehabilitation of the Mentally Ill

4

Public mental hospitals accepting the role of custodian of the mentally ill increased in their population from 75,000 in 1890 to over 609,000 in 1960.[1] They became little more than warehouses for the storage of the mentally disabled. There was little need to provide more than basic custodial care of those unfortunates who had not recovered. The majority of those patients, by the nature of their illness, did not have the motivation or insight to demand improvement in their lot. The community regarded them as being in safe keeping, protected from harm and from being harmful. A continued excess of unemployed in all ages has perpetuated a minimal need for rehabilitation of these disabled. This extended hospitalization has brought about a syndrome of submissiveness, apathy, and loss of individuality among these patients. Chemotherapy with its tranquilization did little to change this syndrome. Motivation has not been forthcoming from the patients, their families, or the community for their return to a more productive existence.

A marked increase in the discharge rate of hospitalized patients and an emphasis on short term hospitalization has returned more and more former mental patients to the community and labor market. This has provided several groups of people in need of vocational rehabilitation: those now in the community, released during the past year and remaining unemployed; a second group in hospitals who have been hospitalized over six months; a third group of those readmitted; and a fourth group of first admissions to hospitals. Patients in hospitals over six months have adapted

1. *World Book*, 1964, vol. 13, p. 328.

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to the hospital way of life that fosters dependency, domination of the patient by hospital rules and idleness, and loss of contact with the outside world. Remotivation must break through these habits of existence in order to bring them to a point of rehabilitation. The readmissions may be prognostically the best group for rehabilitation referral if they have had a satisfactory adjustment in the interim. There are no known studies available for New Jersey; however, patients admitted for the first time in California were studied, revealing that only 31 percent of the patients were employed full time during the six months prior to admission.[2] A Boston study revealed that 50 percent had been inadequate in their core roles prior to admission. This would indicate that 50 to 70 percent of first admissions are occupationally inadequate prior to their admission.[3]

New Jersey has six State Mental Hospitals, including Arthur Brisbane, which cares for emotionally disturbed children under age 13. There are six County Mental Hospitals. Resident population now stands at 18,686 for all hospitals, 12,272 in State Hospitals and 6,414 in County Hospitals.[4] These hospitals serve over 6,000,000 people. No more than one-third of those patients (6,000) would qualify as near reemployable—one third of these would need continued remotivation to reach a level of employability. The admission rate of 1,000 per month is rising—40 percent of these would be in the over-60 age group, leaving 600 per month as possible candidates for rehabilitation. Recent studies in the State of New York indicate a change in incidence of categories of mental disorders. Those associated with aging —(involutional psychosis and chronic brain syndromes) have increased. Schizophrenia has increased while paresis and the depressive psychoses have declined.[5] This trend can be explained on the basis of increased population and increased recognition and treatment of the psychoneurotics and depressive psychoses by private physicians and out-patient clinics. The continued aging process and longevity of our population—with lack of social, community and family support for the aged—necessitates their hospitalization. This leaves an apparent increase in the number of schizophrenics, this being only a relative increase and not an actual increase in ratio to our population. The number of those patients re-employable or suitable for vocational rehabilitation is not determined solely by age, sex or type of illness. The current labor market, the motivation of the patient, and, more recently recognized, the motivation of the patient's family, are all important. These are variables which cannot be controlled by any mental health program but must be recognized and utilized to the advantage of the patient's remotivation.

Information from reviews of rehabilitation programs in Europe and

2. Wilkens, M. L., in *Hospital and Community Psychiatry*, vol. 17, no. 3, 1966, p. 80.
3. Davis, J. A., Freeman, H. E., and Simmons, O. G. in *Social Problems*, vol. 5, 1957, p. 37.
4. New Jersey Department of Institutions and Agencies, Summary, *Statistical Report*, September, 1966.
5. Malzberg, B., in *Acta Psychiatrica et Neurologica Scandinavica*, vol. 39, 1963, p. 19.

Britain indicate that they are eliciting far more productivity from a greater percent of patients than in the United States. This is believed to be due to a difference in philosophy. The Europeans view industrial therapy as something more than keeping the patients busy in a sheltered setting. Their aim is to train the patient in industrial skill, accustom him to living and working in society, and improve his psychiatric condition through the therapeutic effects of these two achievements. The Dutch programs put greater emphasis on vocational rehabilitation than on therapeutic gain. One reason is Holland's critical labor shortage. This important motivation is not available to us. Dutch workshops employ people who would be considered of too low intelligence to be eligible for programs in the United States. Soviet Union workshops provide two features: (1) retraining for employment elsewhere if the patient is incapable of returning to his former position due to the specific nature of his disability; (2) maintaining the individual patient as an active contributor to the national productivity, yet accepting the limitations imposed on him by illness. There is no time limit imposed upon the individual remaining at the workshop.[6]

Rehabilitation is an accepted national trend.[7] National and regional data are meaningful to the locality involved. Unfortunately the statistics are variable and meet the needs of the agencies preparing them. A program suitable for Kansas, Maine or Vermont may not be suitable in Newark or Cape May. A review of current statistics at Marlboro State Hospital is not available at this writing. The Hospital Staff involved with rehabilitation programs are enthusiastic and optimistic for their success. The degree of success of any program depends upon the personnel, the program and the patients involved. There must be more active participation where the patients are, whether in the community or in the hospital.

Guide lines are now available to identify and qualify those factors which determine employability, but they are not fully established. As a generalization, if one desires to anticipate the probable employment performance following a serious mental illness, one might expect continued occupational adjustment in the patient who is married, has accumulated little hospitalization time, has had a high school education, has generally been a white collar worker or better, and has basically outstripped his father both vocationally and educationally. A grimmer work prognosis might be attached the more a given patient fell short of meeting these qualifications.[8] Employer attitudes and family attitudes, as noted above, are equally important factors. Initial steps in the direction of work tolerance are most critical. The most intensive support in this phase, rather than simple referral to job placement, is necessary.[9]

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6. Black, B. J. in *Psychiatric News*, October, 1966.
7. Switzer, M., in *Hospital and Community Psychiatry*, vol. 17, no. 3, 1966, p. 80.
8. Cole, N. J., in *American Journal of Psychiatry*, vol. 120, 1963, p. 465.
9. Stewart, H. F., in *Journal of Rehabilitation*, vol. 30, 1964, p. 19.

The present availability of rehabilitation services necessitates evaluation of employability. A State Motor Vehicle Department ruling dictates that every patient hospitalized in a State Hospital must be re-evaluated for capability of operating a motor vehicle at the time of his release from the hospital. But there is no requirement for determining employability at time of discharge. Requests for this information may come after discharge when the individual does not report back to work. This is a new area of responsibility. No one has voluntarily accepted it. Psychiatrists must reorganize their thinking to assist in this area. Hospitals in this State have been staffed for many years to utilize patient "Industrial Therapy" to provide services in housekeeping, food service, ground and clothing maintenance. The facilities are there, more are needed.

Active programs must be made available at all State and County Hospitals. A Hospital Improvement Program is in progress at Marlboro State Hospital. This program does not involve rehabilitation but promises to be an important adjunct to the Staff in the evaluation of employability. The Adjunctive Therapy Department has an occupational therapist on the reception wards. They begin an evaluation of the patient's ability, capability, interests and motivation within hours after admission. A planned program, prescribed by the psychiatrist, with the assistance of the staff team, is started. Reports are returned by the occupational therapist to the psychiatrist as the patient progresses. This information on adjustment to these adjunctive therapies assists in evaluation of improvement.

The next ten years will see more leisure time available to the individual employee. The 35-hour work week will become a 20-hour work week. Training to adapt to a changing community, to adjust to a general employment area rather than specific job placement, and to utilize leisure time will be necessary. In 1975 children now 5 to 17 years old will be entering adulthood. Current estimates indicated that ten percent of these children are in need of psychiatric care. This group, untreated, will not improve with time. They are presently or will become delinquents, welfare clients and patients in our clinics and hospitals. There are over one and one quarter million children in New Jersey. Ten percent would mean 125,000 in the age group of 15 to 27 years now and in 1975.

In conclusion, the goal should be to salvage, reclaim, and uplift, rather than to provide substitutes. There has been too much preoccupation with affective rather than cognitive and social skills, with pathology rather than strength, with individual rather than social system intervention. Services are poor substitutes for jobs, income, and meaningful participation in community life. Public hospitals are in a transition from custodial to treatment centers. They should not retain anyone if he is considered improved to the point where he can be adequately treated outside. Therefore, the responsibility for his welfare is being returned to the community. Bridgeway facili-

ties have proven their worth. Further improvement and refinement will come with experience. They must be tailored to their locality and their clients. Services are now splintered among public and private agencies even within the same locality. Data must be gleaned from agencies in employment, education, industry and welfare, as well as from hospitals, to determine the disabled. New Jersey ranks seventh in industrial output and third in percentage of persons employed in manufacturing.[10] Manufacturing, tourist, agricultural, fishing and mining industries all should provide a wealth of opportunities for rehabilitation assistance.

10. *World Book*, 1964, vol. 13, p. 328.

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What of the Blind of New Jersey? 1965-1975

There are eight degrees of charity, one is higher than the other, and there is none higher than the one which strengthens the hand of an individual that is poor. Find a job for him in order to strengthen his hand so that he be not in need of, dependent, on people.

Moses Maimonides, 1180

5

Community action through organized programs of services is fast replacing the charity concepts of yesteryear to meet the survival needs of groups and individuals. Not very long ago those problems of human relations included in our concept of vocational rehabilitation found their solutions in the willingness and readiness of individuals to be "their brother's keeper" or to support organized charity.

Social planning through legislation must of necessity concern itself with the physical, social, and economic well-being of every individual in the community. Federal legislation affecting the rehabilitation of the disabled, first enacted in 1920, recognized that the physically impaired are an integral part of the citizenry. However, it was not until 1943, with the enactment of the Barden-LaFollette Act, that the federal government more effectively accepted a responsibility to meet the needs of the disabled, including the blind, by encouraging the states through grants to create vocational rehabilitation programs.

The New Jersey State Commission for the Blind, like other agencies working with the disabled, realized that a major forward step had been

taken—that new opportunities and expanded services could now be offered to its clientele, especially to those with employment potential. In 1945 the Commission for the Blind implemented its vocational rehabilitation program, after a State Plan had been enacted by the Legislature and approved by the federal Office of Vocational Rehabilitation.

The next decade were years of trial and tribulation for the Vocational Rehabilitation Department of the Commission. Its inadequate staff was unable to cope with unwieldy caseloads and impossibly large territories. There was a serious lack of diagnostic and training facilities. Its program was handicapped because it did not have the answers to important practical questions related to its four major services.

Well aware of the quantitative and qualitative shortcomings of its vocational rehabilitation program, the Commission welcomed with anticipation the amended vocational rehabilitation legislation of 1954. The vistas for the vocational rehabilitation of the physically disabled, including the blind, would now take on new meanings and new dimensions.

The records of the vocational rehabilitation program of the Commission for the Blind from 1955 to 1965 are included in the national statistics of the Vocational Rehabilitation Administration. This was an important period for the nation's disabled, for it was ten years of "living and learning" for vocational rehabilitation. New Jersey kept pace with expanded programs and improved facilities. The Commission had its quota in the estimated one million rehabilitants in the nation during this decade. The agency achieved a favorable comparative record both in the region and in the nation. Its professional staff, which doubled during these years, was assisted by an exceptionally well-organized and managed Adult Adjustment and Evaluation Center, by two sub-contract shops, and by an increased number of medical specialists as consultants. It was therefore able to expand its program of services and to improve both the quality and the number of placements in remunerative employment.

This favorable record of performance in the last ten years by the Vocational Rehabilitation Department does not, however, obscure the evidence that neither the Department nor the Commission has been reaching all the blind residents in the State. Projected estimates of the number of blind living in New Jersey are substantially larger than the number registered with the agency. Periodic reports by the Vocational Rehabilitation Department and other departments of the agency recognize this fact. One of the major activities of the Vocational Rehabilitation Department has been its continuous effort to reach many more blind individuals who should be able to benefit from its services.

The National Society for the Prevention of Blindness reports that there were an estimated 12,750 blind persons living in the State of New Jersey in 1965. This is 4,000 more blind persons than were reported by the Com-

mission for 1965, when 8,557 active cases were listed. This large group of non-registered blind individuals could be an important source of vocational rehabilitation clientele if 25 percent of the group are employable, a proportion generally applied to the blind by vocational rehabilitation agencies.

The existing data of the Vocational Rehabilitation Department indicates that only 10-12 percent of the blind population have had active contact with the Department during the last five years. This represents only about one-half of the estimated blind who could benefit from vocational rehabilitation. The average number of clients active each year with the Department from 1962 to 1965 was 1271, only about one-sixth of the active cases in all Commission programs. The Department's average may be broken down as follows:

Average referrals at beginning of year	409
Average new referrals during year	499
Average accepted active cases beginning year	363
Total	1271
Average closures from referral status	287
Average rehabilitated	165
Average closed for other reasons (not rehabilitated)	47
Average yearly closures — Total	499

Of the 165 rehabilitated clients each year, 43 (26 percent) had been previously rehabilitated.

An analysis of the data on rehabilitants in 1963 shows that of the 145 individuals rehabilitated, 58 (40 percent) had secondary disabilities severe enough to make them eligible for vocational rehabilitation services even if they were not blind. This percentage decreased to 28.8 in 1964, but again increased to over 30 percent in 1965. The need to serve the multi-handicapped blind has come a "fact of life" for the VR Department. The Executive Director, in a communication to the Regional Office in October, 1966, reported that there were an estimated 1500 multi-handicapped blind in the State.

The community was again ready for new federal legislation on vocational rehabilitation by 1965. The dynamics of population growth, combined with the pressures produced by accelerated social and economic changes, again strongly motivated community action through legislation to meet the new problems and the unmet needs of the nation's mentally and physically disabled. Public Law 89-333 will not only improve existing vocational rehabilitation programs but will assist and encourage planning for future programs. For the blind, including those multiply disabled, it offered new and almost unlimited opportunities for vocational rehabilitation. The Commission for the Blind is cooperating with the Rehabilitation Commission and assist-

ing the Advisory Committee appointed by the Governor in the Statewide Planning Project that will heip determine the needs of the Stare's disabled in 1975.

Planning for the vocational rehabilitation of the blind for the next decade means planning for a steadily increasing number of blind people. It is estimated that New Jersey's population in 1975 will be 8,148,000. If the "blindness rate" of 1.9 per thousand of the population (a ratio arrived at by the National Society for the Prevention of Blindness) remains constant, the State's blind population will then reach an estimated number of 15,500, and the estimated number of employable blind will be 3,875.

It is conceivable that the vocational rehabilitation caseload will continue to increase during the next ten years, and that it may be double by 1975. Its new clientele will come from the steadily increasing number of biind, from the large number of non-registered blind, and from the blind-multi-handicapped who will seek vocational rehabilitation opportunites made available to them by P.L. 89-333. It can be expected that the removal of such barriers as age, residence and financial needs tests, will increase the number of applicants for services. There is no doubt that well-planned vocational rehabilitation programs will encourage maximum numbers to apply for services.

To ascertain with some exactness what number of blind are to be planned for in 1975, it is necessary to arrive at a reliable estimate of how many blind people are employed in New Jersey. There is, for example, no such record for the 825 people who were placed in employment for the last five years. A thorough-going survey, which would result in reliable data about the many thousands who have been placed in employment in the last 20 years, would help explain why half the estimated employable blind have not been applying for services. The rehabilitation needs of the blind in 1975 could be more soundly planned if some way could be found of reaching the large number of estimated blind that are not registered with the Commission.

In conclusion, the Vocational Rehabilitation Department of the Commission has during the past few years had a number of institutes and conferences concerning the problem of how to reach the maximum number of employable blind. The results point to the following pertinent areas:

1. Referral: to set up systematic procedures, with regular follow-up contacts, with doctors, hospitals and all possible sources of referral, especially with public agencies as Social Security, State Rehabilitation Commission, State Employment, Compensation and county and city welfare agencies.

2. Public relations and community education: to meet with service, business, labor and other groups.

3. District or Area offices: to facilitate client contact with the agency by wide geographical coverage of New Jersey.

4. Workshops and sheltered workshops: to establish new shops and improve existing facilities, giving special consideration to clients with minimum skills, limited work tolerance, and, in general, to those who cannot meet minimum competitive standards in outside employment.

5. Vending stands: to expand and improve existing programs, to set up a training program for new operators, and to develop new locations.

6. Home Industries: to add business enterprise projects to its present activities, to have field representatives make regular calls to homes of self-employed clients to assist with production and marketing problems, and to produce new and different products when necessary.

7. Professional Staff: to recruit competent and dedicated workers in adequate numbers.

The Comprehensive Statewide Vocational Rehabilitation Planning Project will help the blind and all other disabled individuals to meet the vocational challenges and opportunities of the future.

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Placement of the Blind in Employment in New Jersey [1]

6

According to all estimates, the percentage of blind persons has increased in the last 30 years. In 1935 the federal government estimated that one out of every two thousand Americans (.05 percent) were blind.[2] This estimated proportion has risen constantly until at the present time the government estimates that nearly two out of every thousand (.19 percent) are blind.

An indication of the changing age distribution of the blind in New Jersey is given in Table 6-1, based on the approximate numbers of blind on record with the New Jersey State Commission for the Blind in 1935 and 1965. Table 6-1 shows two major trends: During the past 30 years there has been an increase in the proportion of blind persons over 60, as medical progress has increased the life span. Diseases which formerly were fatal are often not so today; their side effects, conversely, have become prevalent. For example, diabetes in the past usually meant an early death; today life can be prolonged, but the side effects of diabetes (one of which is blindness) occur more frequently.

More persons, particularly in the younger categories, are probably reporting to the New Jersey Commission for the Blind, although many blind

1. An earlier version of this paper was submitted as a term project in the Economics of Labor course taught by Professor Kenneth McLennan. The author, himself a blind student, showed acute perception and understanding of the problem. He had gathered much of the material from interviews with officials of the New Jersey Commission for the Blind, an agency he knew both as a student and a client. It was felt that the paper complemented Mr. Trupin's presentation at the Conference. Kenneth McLennan and David Cayer edited the paper for this publication.
Mr. Wagoner wishes to express his indebtedness to Mr. and Mrs. Thomas Wadlington who helped him in his successful efforts to enter the Graduate School of Business of the University of Chicago.
2. New Jersey State Commission for the Blind, *Services to the Blind in New Jersey*, 1935, p. 15.

TABLE 6-1
THE AGE DISTRIBUTION OF BLIND PERSONS I :PORTING TO THE NEW JERSEY COMMISSION FOR T' BLIND

Ages	1935 Number	Percent	Ages	1965 Number	Percent
Under 25	300	15	Under 18	1,350	15
25-59	800	40	19-45	2,250	25
			46-59	900	10
Over 60	900	45	Over 60	4,500	50
Total	2,000	100	Total	9,000	100

Source: State Commission for the Blind, *Services to the Blind in New Jersey, 1935*, p. 16; and interviews with Mr. Philip Trupin, Director of Vocational Services, New Jersey Commission for the Blind. Figures are rounded to reflect the approximate estimates. Agency records indicate 8,557 active cases listed in 1965.

are still not registered. Because of improvements in communication, more people are aware of the Commission's activities and benefits. Only rarely are blind people now hidden from public view. Blindness is not considered hopeless, but rather an obstacle which must and can be overcome. Perhaps one reflection of the greater hopefulness is the increase in the number of multiply handicapped blind on the Commission rolls; the percentage has risen from 15 to 40 percent in the past 30 years.

Legislation Aiding Employment of the Blind

Various legislation has been passed to provide employment for more blind persons. For example, Germany has required employers to hire a certain percentage of blind individuals. When such "quota" measures are not accompanied by rehabilitation provisions, the employer may consider the salary of blind employees simply as an additional tax. The untrained blind employee may eventually be persuaded to stay at home and collect his check rather than interfere with normal production. This type of legislation is neither necessary nor desirable.

Acts of this nature have been proposed in this country, but none has passed. However, various federal and state statutes do concern the blind. The following discussion of legislation concerning employment of the blind is not exhaustive; it considers the major acts relevant to the New Jersey labor market.

Because convenient travel is important for both the economic and the social life of the blind, several laws deal with transportation. A New Jersey law gives a blind person with a white cane the right of way in all traffic,[3] but many drivers are unaware of it and the blind person relying on it risks injury or death. Another New Jersey law gives the blind person the right

3. *Blindness: Some Facts and Figures*, p. 6.

to take his Seeing Eye dog with him on all public conveyances.[4] The ability to travel alone is an important prerequisite for employment.

Early legislation dealing with the employment of the blind sought to reserve a small segment of some industries to the blind. It was thought that the blind could not work competitively with sighted persons, and these laws therefore provided "blind occupations." Although these occupations persist, their economic importance has diminished as it became obvious that blind persons can work competitively with sighted persons.

In 1936 Congress passed the Randolph-Sheppard Act. It gives the blind person the right to operate vending stands in federal buildings, under supervision of the state rehabilitation agency for the blind. The operator cannot sell or lease his franchise; when he no longer can or will operate his stand, the agency may give the franchise to another blind person. A parallel New Jersey act in 1948 gave the blind the right to operate vending machines and stands in State buildings under provisions similar to the Randolph-Sheppard Act.[5] The federal Wagner-O'Day Act of 1938 provided a market for blind-made products. Handicapped workers produce these goods in special shops, chiefly under government contract.[6]

Employment of the handicapped is exempt from state minimum wage law; shops operated as agencies of the state are exempt from federal minimum wage laws. The Walsh-Healey Act sets minimum wages on government contract work in all private industries which obtain government contracts. However, special contract shops employing handicapped workers can obtain exemptions from Walsh-Healey Act provisions, and most of the contract shops which work for the government are those employing the blind.[7]

A milestone in this field was a 1943 amendment to the 1920 Vocational Rehabilitation Act, which classified the blind among the rehabilitable and provided federal grants-in-aid to supplement state funds for the purpose.

Rehabilitation

Every state now has a rehabilitation program for the blind. New Jersey's program dates chiefly from 1945, but major progress did not come until the 1950's. Even at late as 1965, however, half the applicants coming to the Commission were not considered feasible for rehabilitation, many because of advanced age or multiple disabilities. The liberalized standards of 1965 amendments to the Vocational Rehabilitation Act hopefully will improve this picture.

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4. *Ibid.*
5. New Jersey State Commission for the Blind, *Service to the Blind and Visually Handicapped in New Jersey*, 1941, p. 7.
6. *Blindness: Some Facts and Figures*, p. 6.
7. New Jersey Commission for the Blind, *A Handbook of Services of the New Jersey State Commission for the Blind*, 1952, p. 1.

Persons accepted under rehabilitation programs are evaluated at a training center in Newark. This center has a well equipped shop and a kitchen for teaching household skills. (The vocational objective of blind women may not be competitive employment but simply effective homemaking.) The trainee learns to operate machines safely, using other senses and methods, while trained personnel evaluate his qualifications. The trainee also learns many things which are essential for daily living, including the ability to travel alone, so necessary in obtaining a job. He also may learn to operate a talking-book machine and a tape recorder and to develop communication skills like braille and typing.

The diagnostic period, once limited to two or three weeks and later to three to six months, now may extend up to 18 months, under the 1965 amendments to the Vocational Rehabilitation Act. During the diagnostic period, the trainee is observed under varied work situations and is tested extensively to evaluate his intelligence, personality, and aptitude. Medical examinations determine his general health. At the end of the period, consultation with a counsellor will help determine an appropriate plan, which may include further education or specific training geared to a particular job. Funds are available for further education where indicated.

Assignment to a rehabilitation facility in or out of New Jersey may be needed for further evaluation or to provide work-hardening to test the person's ability to withstand the industrial regimen. Not all blind persons can find a place in competitive or open employment. There may be additional work training at one of the two contract shops operated by the State, if placement in employment is not immediately possible. These facilities, specially adapted to the disabled, provide both training in skills and adaptation to a work environment.

Categories of Employment in New Jersey

Only about two percent of the employed blind are in agricultural work, which presents particular difficulties for the blind. Most of those in this field raise poultry, with a few in other forms of livestock and dairy farming. The person with aptitude for agriculture may still need capital or other help, which the Commission may help him obtain.

Small business ventures offer the capable blind person particularly good opportunities. As with agriculture, the Commission can provide funds for additional training or education and help the individual raise the necessary capital.

Many blind persons obtain clerical positions. They frequently get the necessary training through the Commission, which may supply essential equipment (such as a large magnifier, a dictating machine, or special apparatus). Some blind clerical workers obtain Civil Service positions through competitive examinations. Under new regulations, a blind person

may use a reader or such devices as dictating machines to fulfill requirements of the job and the examination. At the ptesent time, New Jersey regulations ate not as liberal as the federal regulations.

Manufacturing employs the latgest propottion of the blind, because thete are many jobs that a blind petson can do effectively. Blind wotkers can operate many machines without difficulty and may rival sighted workers in speed of assembling and packing.

When a request is received from the management of a plant for the possible placement of a blind worker, placement personnel from the commission will survey the jobs in the plant. The purpose is to select a job which a blind wotket can do as well as, or better than, a sighted one. The blind worker may need Braille instruments or gauges, and in extraordinary cases special apparatus, such as a bell or a buzzer. No additional safety devices are recommended. If the job seems unsafe with existing safety devices, placement is usually not recommended.

Another large source of employment is service occupations, such as laundry, cleaning, hospital, and house work. These occupations require little training or skill and usually attract those who are less capable or suitable for other employment. Pay is usually at or near the minimum wage and in some occupations may be below it.

The blind appear to be safer workers than the sighted. Three possible reasons are:

(a) Blind workets are selected much mote carefully by the Commission and management fot particular jobs.

(b) The blind worker receives additional training on the job.

(c) A blind worker is usually much more careful, because he knows his limitations.

Additional cate in selection and training of blind workers by the Commission prior to employment often leads to reduced selection and training costs to the employer. The blind wotker starting on a new job often produces as much or mote than sighted fellow workers, possibly because he is less likely to be distracted by nearby events or to leave his place to talk to others.

The professional, semi-professional, or other highly trained individnal may find his place in employment in a different manner than for other occupations. Very often the Commission will have assisted him in obtaining the training necessary for employment, but the worker will seek employment entirely on his own, or by using the Commission only as an employment agency to learn about available positions. This pattern often applies to those seeking Civil Service positions.

In 1966, there were 50 blind, self-employed operators of State-owned vending stands. Their income varies considerably, depending partly on

their qualities but even more on the location of the stand. Some stands earn as little as ten dollars per week, but others produce a good income.

Some blind workers depend upon the two State-operated contract shops for the blind or the larger number of workshops operated by charitable organizations. Workers in these shops are supposed to be competitive with unskilled labor. Wages are undoubtedly very low, but many of these workers could not in fact compete in private industry. Although wages are supposed to be based upon productivity, it would require a great deal of study to determine if this is so in fact. Weak bargaining power may sometimes be an important factor, because many of these workers can find no other jobs. Some of the sheltered workshops provide jobs for the severely handicapped and for multiple-disability cases; for many, these jobs are, at least in part, a form of therapy.

The Number of Blind Employed in New Jersey

An estimate of the total number of blind employees in New Jersey is presented in Table 6-2. The total of 3,000 blind employees over-estimates the number in "competitive" employment by including non-competitive blind workers in sheltered workshops and non-competitive unpaid family workers. Subtracting the estimated 60 workshop employees and 450 family workers leaves 2,490 in the "competitive" labor market. This adjustment points to a possible weakness in reporting the number of blind in employment; published data may include perhaps 15 percent of the total who are not employed at market wage rates.

TABLE 6-2

ESTIMATED NUMBER OF BLIND WORKING IN NEW JERSEY CATEGORIZED BY OCCUPATIONAL GROUP*

Occupation	No.	Percent
Professional	150	5
Semi-professional, managers and officials	330	11
Clerical and Sales	450	15
Service Occupations	450	15
Agricultural, fishery, forestry and kindred occupations	60	2
Skilled	150	5
Semi-skilled	690	23
Unskilled	210	7
Work in Sheltered Workshops	60	2
Homemakers (own home) and other unpaid family workers (own home)	450	15
Total	3000	100

*This table is based upon the rough estimate that approximately 25 percent of the estimated 12,750 blind in New Jersey are employed. The percentage distribution of the working blind by major occupational group is based on estimates obtained from interviews with representatives of the Commission for the Blind and others in the rehabilitation field. The occupational categories are based on appropriate categories of the *Dictionary of Occupational Titles*.

Some of these may not want to enter this market; age and marital status may restrict others. For many of those outside the competitive labor market, the State Commission for the Blind continually seeks employment and has made considerable progress in placing this group in competitive occupations.

The distribution by major occupational group in Table 6-2 shows the importance of semi-skilled work, which absorbs almost one quarter of the total. Perhaps this suggests the relative ease with which blind persons have been able to enter occupations which involve routine, repetitive operations plus some degree of skill. Approximately five percent secure professional employment. Although this proportion is considerably lower than the 13 percent classified as professional-technical workers in the overall labor force,[8] it demonstrates that many handicapped workers can acquire and utilize a high degree of skill and knowledge.

Characteristics of Rehabilitated Blind Persons in New Jersey

In 1964, the Rehabilitation Department of the New Jersey Commission for the Blind compiled for the first time a group of statistics dealing with those "closed out" of the rehabilitation case load. (The term "closed-out" refers to those no longer under the rehabilitation program, whether employed or not. A few may have been transferred to other programs; others may have been reclassified as unemployable.)

TABLE 6-3
PERCENTAGE OF DISTRIBUTION OF AGE OF REHABILITANTS FOR YEARS ENDING JUNE 30, 1964, 1965, 1966

Year	Age (years)							No. of Rehabilitants
	0-19	20-34	35-44	45-54	55-64	65 and over	Total	
1964	14	32	23	16	14	2	100	170
1965	14	27	18	23	13	5	100	172
1966	16	27	18	27	10	2	100	195

Source: New Jersey Commission for the Blind, *Documentary Report*, R-301, 1964, 1965, 1966 (with slight modification). Included in these and later tables are a small number of rehabilitants, particularly among unemployed housewives and unpaid family workers, who may not be within the legal definition of blindness, but who have substantial visual handicaps, making them suitable clients of this agency rather than the general Rehabilitation Commission.

Table 6-3 shows the age distribution of New Jersey rehabilitants. As

8. This national percentage is based on data obtained from Tables 1, 2A, in Dennis F. Johnston, "Educational Attainment of Workers, March 1964," *Special Labor Force Report No. 53*, U. S. Department of Labor, Bureau of Labor Statistics, 1965.

expected, about half of the rehabilitants are between 20 and 44 and more than two-thirds between 20 and 54. Only about one in six is over 54. This is important because available statistics indicate that about 60 percent of the blind are over 45 years and 50 percent are over 60. Evidently rehabilitation of the blind, like most retraining programs for sighted persons, involves problems (including cost) of helping the older person adjust to a new work environment.

TABLE 6-4
PERCENTAGE OF DISTRIBUTION OF EDUCATION OF REHABILITANTS FOR YEARS ENDING JUNE 30, 1964, 1965, 1966

Year	Education (years)								
	None	1-4	5-6	7-8	9-10	11-12	13 and over	Total	No. of Rehabilitants
1964	1	6	5	22	15	38	12	100	170
1965	2	5	5	22	10	46	12	100	172
1966	1	3	4	20	12	44	16	100	195

Source: New Jersey Commission for the Blind, *Documentary Report,* R-301, 1964, 1965, 1966 (with slight modification).

The data on the education of the New Jersey rehabilitants in Table 6-4 demonstrates that rehabilitation of the blind involves rehabilitation of manpower with relatively little formal education. In 1964, 24.5 percent of the U.S. civilian labor force 18 years of age and over had eight years or less of formal education.[9] According to Table 6-4, more than 30 percent of the New Jersey rehabilitants have had only eight years or less of education. The low educational attainment of the blind is probably due to the fact that many are overcoming physical problems and therefore may take longer to complete a given level of education.

Lack of formal education is a handicap in the labor market. For example, it clearly contributes to the high rate of unemployment among nonwhites, among whom some 40 percent over 18 have had eight years or less of formal education.[10] Consequently, low educational attainment among the blind increases the difficulty of rehabilitating and placing them in competitive employment. The Commission for the Blind has, over the years, tried to raise the educational level, with considerable success. For example, in 1958 there were 15 blind New Jersey students in colleges and universities; today there are 70. The data in Table 6-5 show the distribution of blind persons by labor market status when first accepted for rehabilitation and their status after completing the program. About eight out of ten re-

9. *Ibid.*, Table 2, p. 518.
10. *Ibid.*

habilitants were not working when they entered the program; about one in ten were in the competitive labor market and the remainder were either unpaid family workers, self-employed or working in sheltered workshops. After these blind persons had completed the rehabilitation program, about six out of ten were placed in the competitive labor market, about two out of ten were homemakers or unpaid family workers, over one in ten was self-employed, and the remainder were either in sheltered workshops or in state agency-managed business enterprise programs. These results show the

TABLE 6-5
WORK STATUS OF REHABILITANTS AT ACCEPTANCE AND CLOSURE FOR THE YEARS ENDING JUNE 30, 1964, 1965, 1966

Work Status	Percentage of Distribution of Rehabilitants					
	1966		1965		1964	
	Acceptance	Closure	Acceptance	Closure	Acceptance	Closure
Wage or salaried workers: Competitive labor market	9	71	10	64	11	60
Wage or salaried workers: Sheltered Workshops	0	0	0	1	0	2
Self-employed (except BEP)	3	13	2	12	4	21
BEP (Business Enterprise Program managed by a State agency)	1	4	1	4	1	5
Homemakers and unpaid family workers	8	12	7	19	4	12
Not working: students	10	0	8	0	6	0
Not working: others	70	0	71	0	73	0
Total	100	100	100	100	100	100
Total Number of Rehabilitants	195	195	170	170	172	172

Source: New Jersey Commission for the Blind, *Documentary Report*, R-302 1964, 1965, 1966 (with slight modification).

improvement in employment status among those blind persons who are able to complete the rehabilitation program. The most encouraging finding is, of course, the rapid increase in the proportion of the rehabilitants who are able to enter the competitive labor market after rehabilitation.

Table 6-6 reflects this accomplishment in improving the occupational status of rehabilitants. While a fairly large proportion became workers in their own homes, only a few went to sheltered workshops. The majority entered the competitive labor market in a wide variety of occupations of varying skill requirements. Although most of the rehabilitants are in semi-skilled, service, and clerical sales occupations, approximately one-fifth took semi-professional or professional jobs. Improvements of this type naturally result in increased income.

TABLE 6-6
DISTRIBUTION OF REHABILITANTS BY TYPE OF OCCUPATION AT CLOSING FOR THE YEARS ENDING JUNE 30, 1964, 1965, 1966

Type of Occupation	1964 Percent	1965 Percent	1966 Percent
Professional	9	8	10
Semi-profession, managerial and officials	11	11	10
Clerical and Sales	14	16	19
Service Occupations	12	12	12
Agricultural, Fishery, Forestry and kindred occupations	3	1	2
Skilled	6	5	9
Semi-skilled	22	23	20
Unskilled	7	3	5
Work in Sheltered Workshops	1	1	0
Homemakers (own home) and other unpaid family workers (own family)	14	22	13
Total	100	100	100
Number of rehabilitants	141	139	175

Source: New Jersey Commission for the Blind, *Documentary Report,* R-305, 1964, 1965, 1966 with slight modification. This table includes only rehabilitants blind in both eyes to reflect the placement of the more severely handicapped segment of the caseload.

The statistics collected by the New Jersey Commission permit an estimate of its achievements in rehabilitation. However, the data has weaknesses which hinder a precise evaluation of the program. For example, the number of rehabilitants includes persons who received services in previous years, were closed out successfully, had their cases re-opened, and were again closed out. In the three years 1964-66, these repeat rehabilitants accounted for 25.3, 22.1 and 25.6 percent, respectively, of the total number of rehabilitants. This duplication leads to a cumulative overstatement of the Commission's rehabilitation effort.[11]

Some Dollar Costs of Rehabilitation

Any attempt to improve the productivity and well-being of human resources involves a cost, whether it is done through a retraining program for displaced workers or through a rehabilitation program for the blind. Table 6-7 breaks down the major dollar costs to the agency in rehabilitating 195 persons in 1966.

All rehabilitants use the diagnostic service, but other services are used only as needed. The total cost to the agency is $274,000; the average rehabilitant therefore costs the agency approximately $1,400. The two largest

11. [Cf. Philip Trupin's comment above on the need for continuing employment data on rehabilitants over a period of years. Such data would cast light on both the repeating rehabilitant and, as Mr. Trupin notes, the failure of half the estimated employable blind to apply for services.—Editor's note.]

TABLE 6-7
COST AND USE OF SERVICE FOR
195 PERSONS REHABILITATED IN 1966

Source and Type of Service	No. of Rehabilitants Using Specific Service	Cost to Agency
1. By rehabilitation or adjustment centers	42	$40,978
2. By Workshops	0	0
3. By other sources:		
A. Diagnostic procedures	195	19,033
B. Surgery and treatment	42	13,168
C. Prosthetic appliances	36	3,529
D. Hospitalization and convalescent care	31	12,971
E. Training and training materials	70	84,260
F. Maintenance and transportation	58	80,838
G. Tools, equipment, and licenses	26	11,080
H. Other	9	8,340
		$274,197

Source: New Jersey Commission for the Blind, *Documentary Report,* R-304, 1966.

items are (1) training and training materials, and (2) maintenance and transportation; together they account for 60 percent of the 1966 total. (Maintenance costs represents weekly payments to support trainees while they are at rehabilitation centers. It is reduced if a trainee is receiving welfare payments and is limited to maximums of $30 weekly for those living at home and $39 for those away from home.)

If one assumes that rehabilitation is solely responsible for the rehabilitant's increased earnings, there is a considerable economic payoff in this form of investment in human resources. On the basis of the small New Jersey sample, the average rehabilitant earns approximately $2,100 at closure.[12] Although the exact increase over pre-rehabilitation earnings and the average number of years the rehabilitants remain on the labor market are not known, such programs apparently improve greatly the earnings of Commission clients.

However, the assumptions underlying this analysis merit further exploration. All costs, including earnings foregone by the rehabilitants during evaluation and training, are not adequately reflected. Also, there is no way of knowing what portion of the increased income is due to the rehabilitation program. One way to assess benefits specifically attributable to the program would be to examine a control group of otherwise comparable blind persons who had not gone through the program. We might then attribute to rehabilitation any differential between the earnings of the two

12. New Jersey Commission for the Blind, *Documentary Report,* R-302, 1965, was the source of the income data on which the analysis is based.

groups. Other statistical techniques involving comparisons with labor force data are also capable of yielding approximate answers.

On the other hand, benefits of rehabilitation do not fall to the recipients of the program alone; society as a whole shares in external benefits. An obvious type of external benefit is the reduction in welfare payments which would have to be paid to the blind if their earnings were not raised above the minimum welfare eligibility level. Similarly, society gains from any income taxes paid by the rehabilitated blind. But these are clearly transfer payments and should be distinguished from true costs and benefits.

Despite the limitations of the data on costs and benefits, it appears that the benefits of the rehabilitation program cover the costs. This of course does not mean that the investment in rehabilitation produces the greatest economic efficiency. It may well do so, but such an assessment requires comparison with costs and benefits of alternative types of rehabilitation.

Current Problems and Recommendations

Despite the considerable progress which has been made in preparing the blind for productive employment, there are several restrictions which impede blind persons in securing employment at competitive wages.

One problem area is the seniority system in industry. In many union plants, jobs are rated in sequence as to position and pay. As vacancies occur, it is usual for all workers in lower positions to move up one position. A blind worker who can do only one particular job may be frozen out by a union contract restricting this position to experienced workers moving up from lower ranked jobs. A possible solution might be a clause in the contract permitting the employer to hire a small percentage of handicapped workers and to place them in jobs best suited to their capacities. Such a worker might be held permanently on that job or permitted to advance only when his ability and seniority, compared to other workers, warranted it. Sighted workers in lower positions could by-pass the blind worker's position in accordance with seniority rules.

Another problem concerns the public's understanding of the compensation laws regarding one-eyed workers. If a one-eyed worker loses his remaining eye in a job-related accident, the employer pays compensation only for the loss of one eye. However, in New Jersey the worker will be classified as totally disabled and will receive additional compensation, based on a loss of both eyes, from the subsequent injury fund (sometimes called the "one percent fund"). Although employers are not directly responsible for the loss covered by the special fund and insurance carriers stress the desirability employing the handicapped, many employers do not understand these compensation arrangements and shun one-eyed workers in a mistaken fear that insurance rates will increase.

There are also labor market restrictions on the blind because of licens-

ing systems for special occupations. To obtain a real estate broker's license, for example, a candidate needs a high school education and two years of experience as a real estate salesman. One possible solution to this problem might be a provision in the law which enables a substitution of additional specialized education for experience.

A relatively high proportion of blind persons have always been able to find employment in unskilled, semi-skilled, and repetitive work. Rapidly changing technology has led to mass production or automation of many such jobs. Consequently, automation affects a higher percentage of blind workers than sighted ones. The solution, as with the sighted worker, is to obtain additional skill or education to gain more secure positions. At the present time this is precisely what the Commission is undertaking to do.

A final problem is that of wage rates for blind workers. A high proportion of blind workers earn relatively low wages, often because they cannot work competitively with sighted workers and have lower productivity. However, in other instances the blind worker may be paid less than the value of his productivity to the firm, perhaps because of his inadequate bargaining power compared to the sighted worker. This inadequate bargaining power may arise from his lower degree of mobility or from lack of organization for bargaining purposes. A permanent solution is most likely to be found by improving the skills of the blind, to increase their productivity and improve their bargaining position.

Increasing the productivity of workers is a problem which is not confined to blind persons. Current manpower policies at both the state and federal level have similar goals for many groups—high school dropouts, displaced workers, non-white workers, and others. Rehabilitation of the blind contributes to this manpower policy. The experience in New Jersey demonstrates success in placing blind persons in employment and in providing economic benefits, both for the blind and for society. Future progress in rehabilitation may bring an even higher proportion of the blind into the labor market, so that blind citizens may share directly in the advantages of an expanding economy.

III

Planning For Services: Methods and Experiences of Service Agencies

THE FOUR preceding papers examine some of the problems of estimating needs for rehabilitation services for specific disability groups. Obviously the number of such studies could be multiplied many times, and statewide planners will have to take such efforts as a starting point in their labors.

The following group approaches the problem from a different point of view: the application to planning of methods and experiences of service agencies. In planning vocational rehabilitation services for New Jersey (and the other states), and hopefully in looking simultaneously toward other health needs of our citizens, we must know what will be *relevant* to the needs of the people: what funds and other resources we can realistically expect to muster to meet these needs in the next ten or 15 years.

It has been said that "it is better to be wrong than irrelevant." We may hope that these are not the only alternatives—that we can be right in estimating needs and relevant in planning services to meet those needs. Defining need is complex enough; relating need to services is probably even more complex. It will require planning of a sophisticated type to determine the most efficient of several alternative means for meeting a social demand which is itself shifting and largely unmeasured.

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It often seems that our nation considers planning somehow suspect, even un-American, and probably suited only to tyrannies. That view is changing, and planning now is acceptable as a long-range and continuous function. Indeed, the prestige now conferred upon planners is almost unprecedented in our history.

The first paper in this group deals with an approach to planning now common in most of the federal departments, systems analysis or, in its governmental garb, Planning-Programming-Budgeting System (PPBS). John F. Cotton, Senior Staff Scientist of the State and Local Finance Project of George Washington University, has as his topic "Systems Analysis As a Tool for Planning." Mr. Cotton brings to bear the insights he has gained in this project to set forth the general notions of systems analysis, its uses and possible limitations. All those in vocational rehabilitation must be alive to the potentialities of this method. People who work in this field are naturally wedded to its methods of dealing with and restoring disabled persons to the labor market. It may be, however, that it will be necessaty to take a broader look at the problem. At least questions must be raised: Is this the only method of accomplishing this particular job? If not, what are the alternative methods? Has anyone really defined the overall goal and objectives of the program and looked at alternative ways of accomplishing them?

The paper by Royal A. Crystal presents some of the highlights of our experience with vocational rehabilitation. From it we can gather insights into past, present, and, hopefully, future demand patterns for services. Dr. Ctystal sketches some of the major provisions of the 1965 amendments, and brings together in a brief space a mass of data on vocational rehabilitation progress for the fiscal year 1965, including detailed comparisons for New Jersey. Perhaps more important, he pinpoints the limitations of the available data and suggests a variety of areas for further study.

The third paper is by Bernard Popick, Director of the Bureau of Disability Insurance, the one area of social security which has had several years of solid experience with rehabilitation. He describes recent promising changes in methods of financing, but the past experience of the Bureau reveals that it is an extraordinarily difficult job to rehabilitate persons receiving transfer payments. Perhaps we should expect recipients of social security disability payments to be a difficult group to restore to employment, given the nature of their disabilities. And we may be encouraged by the success of certain experimental approaches. Nevertheless, as we begin planning for full services for all who need them in the next decade, it would appear the better part of wisdom to examine thoroughly the experience of the social security program.

When we speak of rehabilitation, we increasingly note the role of sheltered workshops as training grounds, evaluation centers, and sometimes as eventual employment goals. Antonio C. Suazo examines the historic role

of workshops, their present characteristics, and the potential usefulness as part of a plan for overall rehabilitation services.

The conference was fortunate in having as the discussant and general summarizer, Salvatore G. DiMichael, Assistant Regional Commissioner of the Vocational Rehabilitation Administration. Dr. DiMichael's comments were the capstone of an afternoon of discussion which served to tell us much about where we have been and how we can go forward in planning for effective vocational rehabilitation.

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Systems Analysis as a Tool for Planning[1]

7

Over the past year or so, great attention has been directed to the application of systems analysis to non-defense governmental planning. The major vehicle for this activity has been the Planning-Programming-Budgeting System (PPBS) recently adopted by most federal departments and agencies and currently being explored by a number of state and local governments.

The systematic application of analysis for planning purposes, formalized in the PPB system, was pioneered in the Department of Defense under Robert McNamara. There is widespread, though not universal, acceptance of the assessment that the adoption of PPBS has been a success in the Department of Defense. PPBS has been considered a success in that, in the judgment of many persons, it has enabled the nation to obtain a more effective and balanced military force for the resources committed to defense than would have been the case otherwise.

Two questions probably come to your mind at this point:

(1) What is this tool called systems analysis?

(2) Will systems analysis contribute substantially to planning in the non-defense and "non-technological" areas?

In this paper I have attempted to give a picture of the general concepts and procedures of systems analysis. It is hoped that this discussion will lead those of you in the field of vocational rehabilitation to consider the potential for the use of systems analysis techniques.

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[1]This paper was prepared under a grant from the Ford Foundation to The George Washington University.

What Is Systems Analysis?

There is no simple definition that one can put forward to answer this question. One useful way of viewing systems analysis is to look upon it as the practical application of economic analysis to the problem of selection of governmental programs. As you all know very well, resources required to carry out public programs are scarce. As wealthy as our society is, there are still limits. We would like to do much more than we have, to meet the demands and needs that we see for public services. In this almost universal situation, government at all levels must attempt to use the resources it has in the best possible way. Systems analysis is a tool (or set of tools) designed to aid this attempt. Fundamentally, in systems analysis, we are concerned with the allocation of limited resources.

One can draw a rough analogy between a government with a fixed budget and the consumer with a fixed income. Central to the expenditure decisions of both is the concept of opportunity cost—those other purchases that are precluded when one elects to buy a particular good. Thus, if a consumer is considering the purchase of a new car, the opportunity cost of a Cadillac relative to a Chevrolet may be an addition to his home, or it may be a sailboat, or it may be a hi-fi set, and a new coat for his wife, and a vacation for the family. When his income is fixed, the consumer must ultimately choose some things at the expense of others.

Similarly with government. A particular governmental jurisdiction may consider, for example, a training program in vocational rehabilitation that is greatly increased in coverage of handicapped persons with greater emphasis on tailoring the training of individual needs. The opportunity cost of such a program conceivably might be a major new program in the training of unskilled unemployed persons, or it might be a program to provide a tuition-free two-year college education to all the willing and able youth within the jurisdiction. The explicit recognition that government decision makers must *choose among programs* has been a major stimulus to the application of systems analysis.

We can press the analogy somewhat further by asserting that the goal of systems analysis is to help government behave more like the rational consumer of economic theory.

Loosely speaking, the rational consumer has the following characteristics:

(1) he knows his total income;

(2) he knows the price (total cost) of each good that he might purchase;

(3) he has a consistent set of values so that he can rank, according to utility, all possible combinations of things that he might purchase. That is, ignoring prices, he can state that he values

a Cadillac more than, less than, or equal to a Chevrolet *and*
a sailboat, and so on for all possible combinations of goods.

Given these characteristics, the rational consumer is able to set his expenditure pattern so that he obtains the maximum possible value for his fixed income.

It is clear that it is a very difficult task for an individual to be a rational consumer. How much more difficult it is for the policy decision maker to approximate this behavior in regard to more complicated governmental operations. The task of systems analysis is to ease this problem. To the extent possible, it does this by displaying the total cost of each potential program[2] and providing quantitative measures (measures of effectiveness) which allow the decision maker to interpret how much each program contributes to end objectives.

Ideally, the end product of a comprehensive systems analysis of government would be a display of the cost and the value or utility of all potential feasible programs that a government might undertake. With this information, a fixed budget could be allocated to maximize the value or utility received as in the analogy of the rational consumer. With this information, for example, the decision maker would be able to decide for the particular circumstances whether the new vocational rehabilitation training program should be undertaken instead of a manpower training program.

However, that is an overstatement of the likely contribution of systems analysis to rational decision making. We have a tool with great potential for improving the information base for decision making. Just how much more clearly systems analysis will permit government officials to grasp the true price and utility of possible programs remains to be seen.

The Systems Analysis Process

In practice, systems analyses vary greatly in terms of scope, complexity, and techniques used. However, there are a number of identifiable steps that characterize the process:

1. Definition of the public problem.
2. Projection of factors determining the magnitude of the problem.
3. Generation of alternative approaches that government might use to attack the problem.
4. Cost-effectiveness evaluation of the alternatives.
5. Interpretation of quantitative results.

In the discussion that follows, these are treated as five distinct sequential steps. In practice, they are not distinct—the steps in the process are highly interrelated.

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[2]We define "program" loosely as a group of resources which, as a whole, serve some objective.

A. Definition of the Public Problem

In principle, systems analysis should analyze quantitatively the operation of government programs as a whole. However, this is not feasible with the analytic techniques in existence at the present time; when, if ever, it will be possible is an open question. A major and generally not sufficienrly appreciated task for the analyst[3] is the definition of the proper scope of a problem for analysis.

The selection of an area ultimately must be a compromise, on the one hand avoiding problem definition that is too narrow for proper consideration of alrernatives, and on the other hand avoiding definition of so broad a problem that it cannor be grasped.

Problem definition in a given area is considered here to be comprised of two elements: (1) determination of a workable statemenr of the end goals toward which government or society is moving, and (2) identification of criteria and quantitative measures with which to evaluate progress in relation to the stated ends. These two elements are very closely related. That is, as a rule, a workable statemenr of an end is one for which meaningful evaluarion criteria can be derived.

1. Statement of ends—The analysr is likely ro approach the determination of "working definitions" of ends from either of two directions. In some cases he will receive a broad and usually vague starement of an objective ro translate into more concrete rerms. A major contribution of systems analysis will be to sharpen these statements of end goals.

For example, the general ideal objective of vocational rehabilitation might be stared as—the provision of means to ensure that disabled persons can function to their maximum potenrial as members of sociery. Immediarely the quesrion is raised, how does one define the class *disabled persons?* How does one define subpopulations within the total class? These definirions must be spelled our since rhey structure the scope and nature of vocational rehabilitation programs.[4] One certainly should quesrion whether the traditional definitions are appropriate. A second and very difficult task entails elucidation of the notion *functioning at maximum potential.* Unless this ideal can be broughr down ro more concrete terms, even partial objective evaluation of programs for moving roward the ideal will be virtually impossible. The clarificarion of general goals is a vital firsr step in analysis.

On rhe other hand, in some cases the analysis may have as a starting poinr a specific, overly narrow issue. In the real world, where program decisions musr be made conrinually, this will frequently be rhe situarion. The analysr then would have the problem of placing rhe narrow issue in

[3]The term "analysr" is used here to encompass professional and technical specialists as well as the specialists in systems analysis.

[4]The interrelatedness of the "steps of analysis" is particularly strong here. Normally one would view such definitions as tentative. The ensuing evaluation of the costs and benefits of program options may lead to redefinition.

the proper context. In order to analyze properly the real alternatives, he must identify, in meaningful terms, the broader objective to be served.

For example, the immediate issue in vocational rehabilitation may be whether to provide one or another type of institutional training program for a particular target population of disabled persons. By standing back and viewing this issue in the perspective of the total program, the analyst may recognize other more effective or less costly alternatives.

2. Identification of Criteria—The second and complementary element of problem definition is the establishment of criteria with which to judge progress in relation to the stated ends. Often a specific statement of a goal explicitly identifies some of the criteria that would be appropriate. Perhaps more frequently, the attempt to determine criteria for evaluating progress is a positive aid to the clearer definition of objectives. In vocational rehabilitation, one might consider as criteria for judging the status of a disabled worker such factors as self-sufficiency, self-esteem, and the esteem of fellow workers. In effect, the establishment of criteria begins to give a more concrete expression of the objectives. It is important that the criteria selected adequately cover the implications of the objectives, a factor in which the judgment of those experienced in the programs is paramount.

The task of identifying criteria should include, where possible, the development of quantitative measures for use in analysis. For example, it might be reasonable to accept as a quantitative measure of self-sufficiency the earnings of an individual. The analyst will be challenged in deriving quantitative measures to serve as satisfactory proxies for such criteria as self-esteem and the esteem of fellow workers. (He might obtain quantitative indicators by attaching numerical values to the subjective evaluations of counselors. This technique is clearly not entirely satisfactory, however.)

Ideally, the various quantitative measures would be combined into a single measure of utility or value for use in analysis. However, it is not likely that this will be possible in many instances. The decision maker usually has to make judgments on the basis of the value he imputes to one or more partial quantitative measures and other qualitative factors.

B. Projection of Determinants of the Problem

Having defined the objectives and determined evaluation criteria, the analyst would attempt to make projections, over the time period involved in planning, of those factors in society that determine the magnitude of the problem. That is, he would estimate future conditions affecting the problem area that produce the disparity between the ideal objectives and the real world. This step is essentially the focus of this publication.

In the case of vocational rehabilitation, some of the factors to be projected are the numbers and characteristics (type of disability, age, sex, geographical distribution, etc.) of the target populations, the expected changes

in facilities outside the conttol of the planning group, and anticipated changes in "technology," *e.g.,* developments in programmed teaching or, in another phase, the development of audio devices to help blind persons to "see." These factots, and othets deemed relevant, chatacterize the basic environment within which potential ptogtams should be structured and evaluated.

C. Generation of Alternative Approaches

A major deficiency of past analysis of ptograms in many ateas has been the inadequate consideration of alternatives. All too ftequently, analysis has been limited to a single approach or to a few approaches within a very narrow scope. An explicit attempt should be made to identify the total tange of possible alternatives. Much of the potential benefit to be derived from systems analysis can come from proper consideration of possible apptoaches.

The expetience and judgment of the professional is vital in the structuring of the set of altetnatives to be evaluated. In vocational rehabilitation, where the "program" for a given target gtoup is a multi-phase process, certain of the options are latgely substitutes—*e.g.,* different training options—while others are complements—*e.g.,* a given training program and a sheltered workshop. Prior to quantitative analysis, each multi-phase alternative must be laid out in a logical manner.

D. Determination of Cost and Effectiveness of Alternatives

The next phase of analysis is the determination of quantitative relationships with which to evaluate each of the altetnatives. That is, it is necessary to relate the performance (effectiveness) received from an approach to the amount of resources (cost) put into that approach.

If resources were unlimited, there would be little need for analysis; a government would simply obtain as much of everything as conceivably would be required. However, resources in general are limited. For most ptoblems, the appropriate measure of limited resources is their dollar cost. In some cases, such factors as trained personnel or physical plant may be a real limitation in the short run; these additional constraints also would have to be considered explicitly in the analysis.

Ideally the effectiveness measure would be a single quantitative indicator of utility or value received. In ptactice, however, effectiveness will probably be indicated by a set of quantitative measutes; these will be quantitative measures corresponding to the criteria that have been identified for evaluation of progtess in relation to the end objectives.

The analyst would perform a cost-effectiveness study for each approach that works independently toward the end goal. In many cases, however, two or more approaches will interact and consequently ought to be viewed as a single broader alternative. The cost-effectiveness analysis then would encompass the jointly interacting approaches.

Usually it is desirable to evaluate a number of versions of a single general approach. The analyst could develop independently the numerical values of cost and effectiveness for each version. However, as a rule, it is more efficient to develop relationships—equations—which can be used to evaluate many versions. The equations distinguish factors that will vary for the different versions from those that will remain fixed within a single general approach. Thus a general approach for a type of disability may include diagnosis, counseling and physical restoration, institutional training, placement in an occupation, and follow-up counseling. Each phase may consist of several versions—for example, the institutional training program may be varied in length. The analyst might attempt to obtain general relationships relating the length of training to the costs per trainee and some index of job qualification. This set of relationships or equations is called a "model." Models are efficient also because some or all of the equations frequently have wide-spread applicability; that is, they can be applied to similar situations at other times or in other localities.

A major task is the gathering and analysis of data for use in estimating the cost and effectiveness of the alternatives. If a model has been derived to describe a general approach, data are required to estimate the numerical

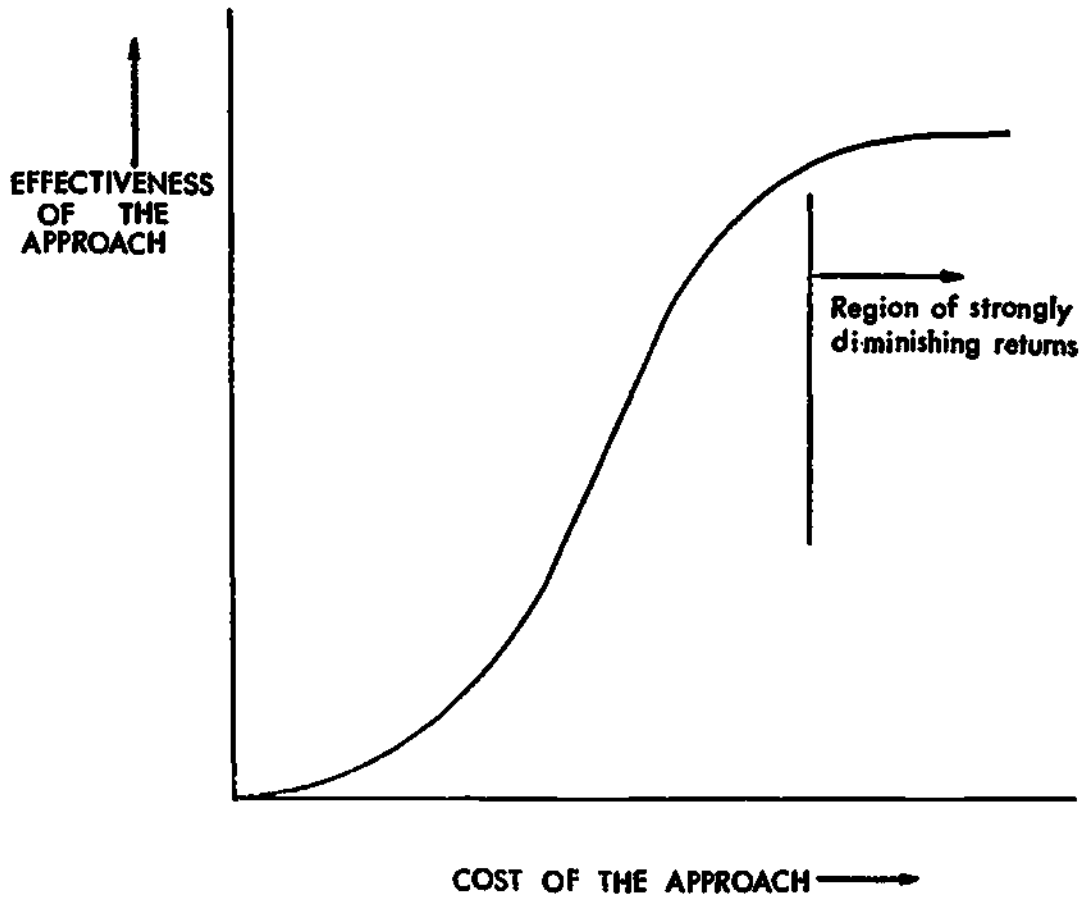

FIGURE 7-1
TYPICAL COST-EFFECTIVENESS CURVE

values of the fixed factors in the equations. The particular data needed will be identified within the analysis. For example, if one of the options is a variation of length of training, the analyst must attempt to find historical data for similar kinds of programs that enable him to estimate the likely costs and success of programs of various lengths. The acquisition of the desired data will not be easy in the first attempts at analysis; in many cases the analysis itself will identify for the first time the data that need to be collected from existing programs.

With the necessary data, the analyst can derive the cost-effectiveness relationships for the alternatives considered. The general character of a single cost-effectiveness relationship is shown in Figure 7-1. The one or more cost-effectiveness curves derived for a single approach or a combination of approaches displays to the decision maker in quantitative terms the various levels of progress toward the end objective that can be obtained for different levels of input resources. It shows graphically the region of diminishing returns—the region in which a large added investment of resources produces relatively little progress.

A set of such cost-effectiveness curves for the target populations then gives the decision maker some guidance in allocating the resources available. For options that are substitutes, the relationships will give an indication of which option is likely to be more effective at a given cost level. For options that are complements, there will be an indication of where potential bottlenecks will occur. The decision maker will have a better picture of where the application of resources may produce substantial payoffs or where resources may have little impact.

E. Interpretation of Results

A final and vital step in analysis is the interpretation of the quantitative results. To use the results of analysis intelligently, the decision maker, above all, must understand the limitation of the studies. This cannot be stated too strongly.

In the analysis of cost-effectiveness, assumptions will have been made. These must be stated clearly and their implications explored to the extent possible. There will be uncertainty in the estimated relationships derived from the available data. The extent of the uncertainty should be assessed and made clear to the decision maker. There will be impacts from the alternatives that are not included in the quantitative effectiveness measures. The nature of these impacts must be identified and brought to the attention of the decision maker. Thus reliance on measures of increased earnings or returns to government in the form of taxes as a result of vocational rehabilitation may substantially understate the social value of the programs. Fundamentally, vocational rehabilitation programs compete for resources with all other government activities. The analyst in evaluating what can be

gained from vocational rehabilitation must attempt to portray the total value received, using quantitative measures where possible and including qualitative assessments as well. In summary, the analyst must attempt to identify and flag any significant factors that are not included in the quantitative measures.

Concluding Comments

In this paper I have given a general description of the systems analysis process. In our work with state and local governments, we have found it useful to distinguish two levels of analysis, the in-depth cost-effectiveness or cost-benefits analysis and a less "rigorous" level of analysis. With the exception of some of the quantitative features—that is, the intensive analysis of data and derivation of comprehensive measures of effectiveness—the procedures in both levels are similar.

It is our feeling that the less quantitative level of analysis will be the main area of activity in the foreseeable future. The in-depth quantitative analysis will be of limited applicability, since there are shortages of analytically trained personnel, there will undoubtedly be a great lack of essential data, and finally, as you can well appreciate, there are many conceptual difficulties in quantitatively evaluating programs.

However, a great deal can be accomplished through the application of the less rigorous analysis. The information for decision making can be improved substantially through a systematic identification and documentation of:

(1) the real objectives of programs
(2) criteria for judging progress
(3) expected changes in the nature of the problem
(4) the range of feasible alternatives
(5) the total costs of the alternatives
(6) the benefit, largely in qualitative terms, to be derived from each alternative.

Perhaps one of the major contributions of this level of analysis will be to a clearer understanding of the research that is needed and the data that must be collected in on-going programs.

Systems analysis, at either level, is a tool to aid decision making and should be kept in perspective. Partly due to its infancy, partly for more fundamental reasons, systems analysis falls far short of being able to provide definitive answers. It will provide a partial, and not a complete, structuring of information essential for decision.

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Vocational Rehabilitation: Highlights and Demand for Services

8

The term vocational rehabilitation embraces a concept which has attained form and substance only recently. The idea, however, is as ancient as the practice of medicine. Rehabilitation concerns itself with the desire to make men whole. Modern rehabilitation consists not only of the correction of and compensation for disability, but also of the development of a way of living which must inevitably be conditioned by the patterns existing in each individual community. The success of rehabilitation will be rooted in the individual patient's hereditary and environmental background, and no less in the background of those trying to help him.[1]

The wide range of present applications and the awakening of public interest in rehabilitation are still relatively new, so that the aims of the program have occasionally been misunderstood, and its techniques—borrowed from half a dozen arts and sciences, medicine and surgery, mechanics, sociology, psychology and others—have not been coordinated to the fullest degree. Yet despite its diverse techniques, rehabilitation as a concept of total patient care, comprising a definite body of knowledge and procedures, has come to be recognized as imperative in meeting the many-faceted problems of disability. It is not solely physical therapy, occupational therapy, or any special-

[1]From Eustace, Charles G. "Rehabilitation: An Evolving Concept", *Journal of the American Medical Association.* March 28, 1966, p. 151.

ized branch of medicine or the social sciences. It is all of these and more.

As we look back at the decades just past, we can see that the nation's rehabilitation programs, spurred by two major wars, have broadened and grown substantially. Our perception of what can be done to provide the physically or mentally disabled person with the opportunity to earn his own way in the world and to participate in family and community life has broadened far beyond the narrow base of the past, in terms of both the potentiality of the individual and his adaptability to the labor market.

Size of the Rehabilitation Job

Estimates of the National Health Survey indicate that about 16 million persons, at or near working age and living ouside of institutions, are limited partially or totally in their ability to carry out normal activities—work, housekeeping, or school. To these estimates must be added a segment of the 5.5 million mentally retarded persons who could profit from vocational rehabilitation, because the Survey does not fully reflect this group.[2]

The Vocational Rehabilitation Administration estimates indicate that among the millions disabled there are over 3.7 million of working age who could be rehabilitated.[3] Each year 450,000 additional people join the group who are disabled and who could be restored to some degree of activity and work through vocational rehabilitation.

History of the Rehabilitation Program

Our broad federal-state public program began in 1921. It is designed primarily to supply services to restore handicapped people to employment. The program operates in all 50 states, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands. The signing of Public Law 89-333, known as the Vocational Rehabilitation Act of 1965, on November 8 of that year served to strengthen our public programs and reflected the vitality of vocational rehabilitation and its willingness to serve more fully than ever before those millions of American citizens who live on the fringes of our society because they are the victims of disability.

More specifically, the 1965 revisions of the Vocational Rehabilitation Act are directed at seven major points:

1. Broadening the base of the federal-state program to take into the program not ouly more of the disabled, but also a greater range of those with severe disabilities.

2. Providing new authority to bring additional federal, state, and local public and voluntary funds into the nation's rehabilitation programs (public and private)—including the liberalization of federal financial support of certain portions of the program so that state money will be more favorably

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[2]Department of Health, Education, and Welfare, *Indicators*, Office of Program Coordination, April 1966, p. 23.

[3]*Ibid.*, p. 23.

matched by federal funds and state vocational rehabilitation agencies will be in better positions to secure appropriations.

3. Supporting a multi-faceted, comprehensive program to improve and strengthen rehabilitation workshops.

4. Supporting rehabilitation facilities construction, primarily of vocationally oriented facilities.

5. Promoting a concerted effort to remove and prevent architectural barriers to rehabilitation.

6. Providing special project grants (a) to focus quickly on particular program areas, such as mental retardation, heart disease, stroke, cancer, cerebral palsy; and (b) to plan on a statewide basis.

7. Establishing intramural programs of rehabilitation research and data collection and dissemination.

National Highlights

Nationally, nearly two million persons have been rehabilitated under the public program since its inception.

The number of persons rehabilitated has been increasing: 523 (1921); 4,600 (1930); 11,900 (1940); 59,600 (1950); 88,300 (1960); and 134,900 (1965). During World War II and the Korean War there were peaks in the number of persons rehabilitated; otherwise the trend line has been steadily moving upward. These figures, although seemingly small, nevertheless show impressive progress, for it must be remembered that rehabilitation is a field in which the progress of the patient rarely is quick and dramatic.

On a national basis, the leading diagnoses among those rehabilitated in 1965 were: orthopedic impairments or deformities, amputations, or absence of extremities (34 percent); mental illness and mental retardation (21.2 percent); blindness and other visual handicaps (9.6 percent); deafness or hearing or speech impairment (7.2 percent).[4]

The number of persons rehabilitated in 1965 reached a new high of almost 135,000. This represents an average of over 500 people rehabilitated each working day of the year. Of the 135,000 persons who were rehabilitated in 1965[5]:

1. The median age was 34 years, compared to 33 years for New Jersey.

2. Six out of every 10 rehabilitated cases were men, as was true in New Jersey.

3. Fifty-five of every 100 had no dependents, compared to 53 out of 100 in New Jersey.

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[4] *Ibid.*, p. 28.

[5] U.S. Dept. of Health, Education, and Welfare. *Characteristics and Trends of Clients Rehabilitated in Fiscal Years 1961-65.* Vocational Rehabilitation Administration.

4. The median number of years of school completed was 10 years as in New Jersey.

5. 15.3 percent had been referred from hospitals or sanitoria, compared to 12.5 percent in New Jersey. Nationally 13.3 percent were referred from educational institutions, 14.4 percent in New Jersey; 14.5 percent from physicians, 8.1 percent in New Jersey; and 11.5 percent self-referred compared to 1.8 percent in New Jersey.

6. More than one in every 10 had been previously rehabilitated (11.0 percent), compared to 7.6 percent in New Jersey.

7. Over half (53.4 percent) of the rehabilitants relied on members of their family and other friends as their primary means of support, compared to 50.6 percent in New Jersey.

8. Nearly 11,000 were completely removed from welfare roles as a result of the rehabilitation process.

9. The mean weekly earnings increased from $7 at acceptance to $44 at closure, while in New Jersey the weekly earnings increased from $9.07 at acceptance to $50.75 at closure.

10. Over one-fifth (20.30 percent) of the rehabilitated clients were employed in service occupations at closure, compared to 17.5 percent in New Jersey.

11. An average of 13 months of processing time was required nationally from referral to closure; 11 months were required acceptance to closure, compared to ten months in New Jersey.

Other rehabilitation highlights of 1965 include the facts that:[6]

1. The 134,900 rehabilitated persons represent a national increase of 13 percent over 1964 and was 46 percent greater than the achievement five years ago. In New Jersey, there was a 14 percent increase in the number of rehabilitated persons from the previous year, and a 117 percent increase over 5 years earlier.

2. In 1965 there were 70 persons per 100,000 population rehabilitated in the nation as a whole, compared to a figure of 52 per 100,000 in New Jersey, an increase of 24 per 100,000 in four years. The State's rank among the 54 jurisdictions rose from fiftieth to thirty-fourth in these years.

3. There were 441,332 persons served during the year. This is a 10 percent increase over the previous year, while the New Jersey increase was 11 percent.

4. Of all persons in the active case load during the year, 31 percent were rehabilitated and 10 percent were closed as not rehabilitated. The remainder continued in the work load into the following year.

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[6]Department of Health, Education, and Welfare. *Caseload Statistics of State Vocational Rehabilitation Agencies in Fiscal Year 1965 and Trends since Fiscal Year 1961.* Vocational Rehabilitation Administration.

5. Of the 395,485 referrals which were processed nationally during the year, half were accepted for active service.

6. The backlog of active cases at the end of the year increased eight percent over the previous year.

Future Demand

Using Census Bureau data, we may estimate a 1985 population of approximately 251.0 million[7], with a range of 239.8 million to 273.3 million.[8] If we assume the percentage of disabled in our population, 8.3 percent (16 million out of 192.1 million in 1965, excluding the 5.5 million mentally retarded), to be constant and assume further that the rate of rehabilitation of 70 per 100,000 will also remain constant, then we may estimate that by 1985 there will be approximately 20.8 million disabled persons in our population and that we will rehabilitate 140,000 in that year. The high estimate would be 22 million disabled of whom 154,000 would be rehabilitated, and the low estimate would be 19.8 million disabled of whom 138,600 would be rehabilitated.

However, it may not be realistic to assume a constant rate of rehabilitation in the future. The number of people demanding such care may very well be far greater than the figures cited; or, with advances in medicine, there may be fewer. In addition, with rapid advances in medical and rehabilitation technology, with the increasing interest and expenditures of public and private agencies in rehabilitation activities, with increasing compensation payments to cover the costs of such care, and with the extension of medical rehabilitation into non-urban areas, the number of disabled who are rehabilitated annually may increase rapidly. On the other hand, if the knowledge, facilities, and trained personnel to deal with the disabling and emotional consequences of disease are lacking, as they may be in non-urban areas, the pressure on our health care facilities and personnel will become exceedingly great. Therefore, it is incumbent on all of us in the health care field to begin planning for the development of resources and the training of more medical and paramedical personnel to meet these demands and needs in the future.

Economic Benefit of Rehabilitation

It may be interesting at this point to review the financial benefits which accrue to society as a result of successful rehabilitation. On a national basis the mean annual earnings of an individual before acceptance to a rehabilitation program are about $377 per year, an amount below the current taxable income rate. In addition, assuming the individual came under the Aid to Permanently and Totally Disabled (APTD) program, the federal government (as of June

[7]Personal Estimate
[8]U.S. Census Bureau Population Estimates. Series P-25. No. 345, July 29, 1966

1966) was expending approximately $977 per year for his maintenance. In addition, there was an additional economic loss as a result of non-productivity, which, based on post-closure earnings of $2,288, amounts to $1,911.

By way of contrast, at closure of the rehabilitation process individuals averaged approximately $2,288 a year in earning capacity. With an estimated tax rate of 14 percent for this tax bracket, the rehabilitated individual returns approximately $242 in federal and state taxes, or nearly one-quarter of his yearly APTD payments. If we spread the average cost of rehabilitation ($511) over the remaining twenty-six years of working life (to age 60), the average annual cost is $19. Therefore, there is a gain to government and hence to the public of $223 ($242-$19) as a result of rehabilitation, rather than a loss of $977. In terms of the economy the gain is the $1,911 referred to above; a fivefold increase in productivity as a result of rehabilitation.

When we consider that 11,000 rehabilitated persons were taken off the welfare rolls in 1965, savings in APTD payments alone amounted to $10.7 million. Additionally the average tax gain ($223 per person) amounted to $2.5 million for the group. Thus the current annual benefit as a result of public rehabilitation programs is $13.2 million.

Limitations of the Data

Despite the impressiveness of these figures, there are still limitations to rehabilitation data. For example, we need to know how uniform the standards are from state to state for identifying rehabilitation clients. Although we are aware of the general patient profile on a national level, we must have more detailed studies and information to plan effectively for rehabilitation at the state level.

We need to have more detailed cost data on the state and local levels as well as more complete knowledge of private versus public costs, in order to determine the feasibility of having rehabilitation covered by health insurance, in addition to public programs.

Although we are generally aware that a rehabilitated individual's weekly income increases after the completion of treatment, a great deal of research must be carried out into how these people can get better incomes via better jobs.

We also need better estimates of the actual number of disabled in order to plan as efficiently as possible for health care facilities which take into account various gradations of rehabilitation care. Finally, it is necessary to carry out more studies on the various methods by which rehabilitation care can be made more available to those who need it and how these resources can be used most effectively in treating the patient.

I would suggest that such studies might include: the use and evaluation of demonstration-teaching rehabilitation institutes and workshops for medical and paramedical personnel; and the effectiveness and feasibility of having

regional rehabilitation centers serving non-urban areas. The list of areas in the rehabilitation field which require our immediate attention in promoting the best and most effective medical care is long, and the aforementioned are but a few examples.

Technical Comments

Economic Costs

From a technical economic standpoint it may be argued that APTD expenditures are normally considered transfer payments in our system of social accounting. As such, they would not be considered as economic losses in calculating the cost of disability.

However, in view of their use as a permanent maintenance mechanism for the disabled, rather than as a "welfare support device," it was felt valid to include them in the calculation of the cost of disability. In making this choice, the assumption was that, if the APTD funds were not expended, they could be used for a variety of other purposes, perhaps unrelated to the disabled. As may be calculated from the text, even without an average saving of $977 per year in APTD funds, the economic value of rehabilitation is great.

Social Benefits

The preceding background notes do not address themself to the social value of rehabilitation. While it would be useful to have a calculation which would reflect the ultimate value of an individual to his family and society in terms which transcend dollars and cents, such a calculation is beyond the current scope of these notes.

Obviously the social value of the rehabilitated individual far exceeds his economic value. For example, the value of not having to support the family through public sources (over and above APTD) is substantial. In addition, the value of family mental health as a result of having the family head gainfully employed and well adjusted is great. These and similar benefits contribute to the ultimate social benefit of rehabilitation.

Cost Benefit and Cost Effectiveness Analysis

Sound planning for vocational rehabilitation services might be materially advanced through the use of cost benefit and cost effectiveness analyses. In the former, the cost benefit model would consider the economic value of various patient mixes ranging from minimal to major rehabilitation requirements—a technique not commonly used at this time. The cost benefit would also consider alternative ways in which available dollars could be spent in place of rehabilitation programs.

The application of cost effectiveness analysis procedures would provide an evaluation of the cost vs. yield for various rehabilitation procedure alternatives or alternative mixes designed to meet specified patient requirements. Ulti-

mately, this preplanning could involve procedural simulation activities for decision making, thus eliminating costly trial and error approaches. Taken together, cost benefit and cost effectiveness analysis could become powerful tools for rehabilitation planning at the regional, state and local level in a variety of settings.

Data Requirements

The background notes delineate some of the limitations of current data and the need for additional data and studies. In the long run, adequate planning requires data not only on the requirements of the rehabilitation case load but also on the resources of the total community. Using this data, it is possible to develop community rehabilitation profiles and develop coordinated programs which maximize the use of public and private facilities, personnel, and funds.

Summary

Since its inception vocational rehabilitation has continuously expanded to meet the needs of the disabled, often making dramatic progress with difficult cases. To date almost two million people have been served, but the number who could benefit from rehabilitation is large and increasing.

Vocational rehabilitation utilizes the skills of many disciplines and borrows the techniques and procedures of numerous arts and sciences. As a result, rehabilitation has taken the "best of all worlds" in its efforts to provide service and in so doing has developed a major fund of knowledge and skills. These skills, however, must be codified, further expanded, and broadly implemented if we are to meet the needs for rehabilitation in the future.

Despite our knowledge of the extent of the job to be done, of the costs and benefits, and of the techniques used, the available data is incomplete. Our general data-gathering programs and our cost development programs must be expanded to provide more refined information, which can be used for planning and evaluative purposes on a broad scale.

In general, much has been accomplished over the years and much is being accomplished now as a result of expanded federal-state and public-private activities. However, we must not become complacent. While our accomplishments are indeed significant, the demands of the future will tax our abilities and resources. We must begin our planning now for the future.

Bernard Popick
Director
Bureau of Disability Insurance
Social Security Administration

Social Security and Rehabilitation

9

The recent adjournment of Congress marked the close of an historic chapter in the enactment of federal legislation promoting the interests of the disabled and the handicapped of the nation.

From the standpoint of rehabilitation of the disabled, no doubt the most direct and significant enactment was the Vocational Rehabilitation Act Amendments of 1965. This provides authority for new and broadened efforts throughout the vocational rehabilitation field and represents a milestone on the road to making the benefits of vocational rehabilitation services available to all who need and can use them.

In 1965 Congress also expanded the protection afforded the disabled by amending the Social Security Act. In addition to the provision of health insurance for the aged under Medicare, the changes in the social security disability program, particularly, provide enlargeu benefit coverage and rehabilitation opportunities for disabled beneficiaries under 65.

The 1965 disability amendments included a liberalization of the definition of disability in determining eligibility for benefits. Under the old law a person could become eligible only if he was, in effect, permanently disabled. Now he can qualify if his impairment has lasted or is expected to last at least 12 months. This change, permitting a large number of workers with nonpermanent disabilities to qualify for benefits, has significant rehabilitation implications. It shonld be noted, however, that aside from this change from the concept of permanent to one of extended disability, the requirement still remains that the individual have a severely disabling impairment that prevents him from doing any substantial gainful work, taking into account his age, education, and previous experience.

The social security disability program has grown substantially in scope and coverage since its original passage in 1954. Monthly cash benefits are now provided for eligible disabled workers and their dependents—wife, husband, or child—and disabled children 18 and over of deceased, retired, or disabled workers insured under social security, if the child has been continuously disabled since before 18. Today over two million disabled workers and their dependents are receiving monthly benefits under the program at the rate of about $1.75 billion annually. As a measure of its scope and potential, over 87 percent of the nation's under-65 population are protected by the program should the breadwinner become severely disabled. In New Jersey about 55,000 persons (including almost 40,000 disabled workers and children) are receiving monthly benefits of over $50 million a year.

It is significant to note that the program is administered through an unusual federal-state administrative arrangement whereby state agencies (usually vocational rehabilitation agencies) determine disability for the federal program. In New Jersey, we have been most pleased to be associated in this activity with the New Jersey Rehabilitation Commission in the Department of Labor and Industry, under the dedicated leadership of Commissioner Male and Mrs. Holderman.

What are the characteristics of workers thus far found disabled under the program? About two-thirds are over age 50 at the onset of disability. Over 85 percent of eligible workers had been disabled less than two years when they applied for benefits. About three out of four are able to leave their homes, and most of them without help. About ten percent of those over 50 are housebound or institutionalized, as compared to one-third under 50.

The overwhelming majority of beneficiaries are disabled as the result of chronic and progressive conditions. Circulatory diseases account for about one-third of all disabilities. Second in prevalence are diseases of the nervous system and sense organs—nearly 15 percent. Other leading causes of disability are mental disorders (particularly schizophrenia), neoplasms, and diseases of the bones and organs of movement (largely arthritis). Each of these accounts for about ten percent. Respiratory diseases—excluding tuberculosis, but predominantly including emphysema—account for about eight percent, and pulmonary tuberculosis for about five percent.

The payment of cash benefits is the primary, but not the sole, objective of the disability insurance program. In its original enactment of the program, Congress enunciated the additional objective of rehabilitation of the maximum number of applicants possible. To help achieve this goal, the law provides that each disability applicant receive consideration for vocational rehabilitation by his state rehabilitation agency under the regular federal-state program. Because the volume of such applicants has far exceeded the number state agencies could serve effectively, screening criteria have been employed to select for fuller attention those with the greatest promise for rehabilitation. Since the

inception of the disability program, fewer than 125,000—or less than three percent of all disability applicants—have been accepted by state rehabilitation agencies for services and less than half of these cases have been closed rehabilitated. A substantial majority of those rehabilitated were individuals whose benefit claims were denied. The total number of disabled applicants in New Jersey since the beginning of the program has been about 150,000, and of these it is estimated that only about 4,000 were accepted for rehabilitation service, with less than half closed rehabilitated.

While these absolute numbers are significant, the proportion rehabilitated has been far smaller than we would like or had hoped for. The reasons for this experience are varied, but it has been generally understood that it results to a large extent from the limited resources heretofore available to state agencies for handling the very large volume of these referrals. The expansion of federal-state rehabilitation activities provided by the 1965 amendments to the Vocational Rehabilitation Act should, of course, enhance the capacity of state agencies to deal more effectively with the rehabilitation potential of this group.

In an effort to improve this experience, Congress included in the 1965 amendments to the disability program a significant extension of its commitment to the rehabilitation of disability beneficiaries. It provided for the use of a limited amount of social security trust funds to finance the cost of rehabilitating selected disability beneficiaries. This provision was enacted on the assumption that the cost of rehabilitating disabled beneficiaries who might otherwise remain on the disability benefit rolls for a substantial period of time would be no greater, and perhaps less, than the amount of benefits that would have to be paid to them and their families. The net cost concept is a basic and important one. In fact, we are required to submit periodic reports to Congress on the operation of this provision specifically reflecting the cost experience.

This new provision calls for an amount equal to one percent of the total disability benefits paid nationally in the preceding year to be made available annually to pay the full costs for state agencies to provide rehabilitation services to disability beneficiaries. In fiscal year 1967, about $15 million is available for this purpose and, based on projected growth rates in the amounts of benefits certified each year, we expect this figure to be close to $18 million by 1972.

The allocations to individual states are made from Vocational Rehabilitation Administration and state agency estimates of state needs, based on the number of beneficiaries in the state. Within the total funds available nationally, there is flexibility to permit reprogramming in order to provide additional funds for agencies which can use them. New Jersey's allocation for fiscal 1967 is $363,000, for both the Rehabilitation Commission and the Commission for the Blind.

In the nation, an estimated 25,000 beneficiaries may receive services this

year, with probably 5,000 to 6,000 returned to employment successfully. Ultimately, when the activity reaches optimum effectiveness, as many as 15,000-20,000 may be rehabilitated each year, including over 1,000 in New Jersey.

These services are provided in conjunction with regular state rehabilitation activities under policies and criteria prescribed by the Secretary of Health, Education, and Welfare, through the Vocational Rehabilitation Administration and the Social Security Administration. To be eligible for 100 percent federal financing, the services must be provided to disability beneficiaries without reference to economic need, residence, or citizenship.

The availability of these additional funds for the rehabilitation of our disabled beneficiaries is an encouraging and exciting prospect indeed. But it is also a most challenging one. The additional funds alone will not assure the results we all seek. It will also take some new thinking and some new approaches in the utilization of these funds to attain our objectives.

We must, for example, deal with the feeling in some quarters that disability beneficiaries are much more difficult to rehabilitate, because they represent as a group the more severely disabled. Several special studies and demonstration projects, sponsored by the Vocational Rehabilitation Administration in collaboration with the Social Security Administration, have indicated that this is not necessarily so. While it is true that disability beneficiaries are older and have more severe impairments, they also have other characteristics which tend to make them better candidates for rehabilitation than many in the regular rehabilitation caseload. For example, they are generally more "work-oriented" as a result of more recent and substantial employment histories. In all, there seems to be little basis at present for the view that our beneficiaries are relatively poor rehabilitation prospects.

Furthermore, disability beneficiaries are subject to the incentives for return to work which are built into the disability benefit program. It is significant that over 75,000 beneficiaries have returned to work and left the benefit rolls since the program began, many of them without the benefit of professional rehabilitation services.

One of the most important work incentives in the law is a provision for a trial work period. A beneficiary who returns to work in spite of a severe impairment can continue to receive benefits for as long as 12 months regardless of the amount of his earnings. This is designed to allay the anxieties of individuals who fear that, if they try to work, their benefits might terminate before they can securely re-establish themselves as self-supporting persons, able to hold down jobs on a sustained and substantial basis.

Another incentive built into the law permits beneficiaries who have recovered medically or returned to substantial work (and whose benefits have accordingly been stopped) to get special consideration if they again become disabled. Ordinarily, disability payments do not begin until the seventh full

month of disability, after a six-month waiting period prescribed in the law. But for a period of five years after benefits have ended, a rehabilitated individual need undergo no waiting period before receiving benefits if disability recurs. This helps reassure persons who fear they will have no means of support if they work successfully for a time and then become disabled again.

The law provides for the suspension of benefits if a beneficiary refuses without good cause to accept rehabilitation services offered him. And it should also be noted that the 1965 amendments re-introduced into the disability program a provision for social security disability benefits to be reduced in some cases when a worker is also receiving workmen's compensation. This offset provision is intended to prevent the payment of excessive benefits from these two combined sources. Where reduction is called for under the conditions prescribed, the social security benefit is reduced so that the total payable to the disabled worker and his dependents under both programs do not exceed 80 percent of his average monthly earnings before the onset of disability. Only a very small percentage of our disability claims, however, overlap with workmen's compensation.

But given such incentives and a more positive attitude toward the rehabilitation potential of disability beneficiaries, we also need to probe further and deeper in analyzing the experience with their rehabilitation. With this experience as a guide, we can better plan and direct the efforts, the techniques and the services that can be most effective in enlarging the number who can be restored to gainful employment.

As a result of the operation of our disability program, there is a substantial amount of data in our records about the medical, vocational and socio-economic characteristics of our disability beneficiaries and those who have made efforts to return to work. Much of this, with the benefit of further correlation and study, could provide valuable insight and direction to more pointed efforts toward increased rehabilitation. Some time ago, for instance, we did a preliminary analysis of a group of beneficiaries who returned to work under the trial work provision previously mentioned. This study, although quite limited in scope, indicated the extent to which such factors as age, education, and nature of impairment seemed to affect the individual's ability to sustain a successful re-employment effort.

Of those under 35 who attempted a job, about half were successful, a ratio which declined steadily with advancing years until, in the age group 60-64, only one out of every four was able to hold his own. Among persons with less than five years of schooling, the chances of a beneficiary completing a trial work period successfully were about one in four, while individuals with at least some college training had close to a 50-50 chance to do so. Persons whose benefits terminated after the trial work period tended to have more formal education than those allowed disability benefits in general, the median

number of years of schooling being about 10 for the former and about 6-7 for the latter.

Persons with pulmonary tuberculosis and mental disease accounted for about 60 percent of those who were able to complete the trial work period. However, between the two groups, the chances of a person with tuberculosis working successfully were about one and one-half times greater than those of a person with a mental disorder (a finding suggesting that while both groups may have optimistic medical prognoses, it is far easier for the recovered tubercular worker to find and hold a job than it is for the individual with a history of mental disturbance). Following tuberculosis and mental disease, the percentage of successful completion of the trial work period within several major disease categories was, in descending order: neoplasms, 35 percent; diseases of the bones and organs of movement, 33 percent; diseases of the circulatory system, 23 percent; and diseases of the nervous system and sense organs, 22 percent. Only three percent of the beneficiaries who attempted to work with respiratory impairments (other than tuberculosis) were able to do so successfully.

One of the factors most predictive of the outcome of a work effort by a disabled beneficiary was whether or not he returned to work with his previous employer. Where the worker returned to his pre-disability employer, the probability of a successful employment effort was markedly higher than if he went to work for someone else. Return to pre-disability occupation was also correlated with work success, although not nearly to the degree as return to work for the pre-disability employer. In fact, where the former employer placed the beneficiary in a new and compatible job, the trial work period was more frequently completed satisfactorily.

This is but a limited example of the type of knowledge and direction to be obtained from a deeper review of our operating experience and that of state rehabilitation agencies. We have much more to do in exploiting the experience and data in our own records to guide and improve programs, and we would be most interested in cooperating with rehabilitation agencies or organizations which would find this data helpful in planning and developing their activities.

Many questions remain to be answered if we are to make greater strides than in the past toward meeting the rehabilitation needs of beneficiaries. The results of past experience and further experimentation must be marshalled to provide answers to such vital questions as:

Are there emerging groups of disability beneficiaries who could profit from rehabilitation services but are not receiving them?

How should we revise gross screening criteria used by state agencies to avoid screening out beneficiaries with good potential?

Are there more efficient and valid techniques for assessing rehabilitation potential?

Does earlier referral of the disability applicant to the rehabilitation agency promote more successful rehabilitation, and, if so, what restructuring of the referral process would accomplish this?

Are there additional services or efforts that would be effective with those whose initial rehabilitation attempt did not succeed or who made no attempt at all?

We are glad to see the New Jersey rehabilitation agency joining the ranks of several other state agencies with a demonstration project to explore some of this relatively unknown territory. We strongly encourage and will support other worthwhile experimental activities.

In this connection, it would be of interest to mention a project jointly sponsored by us and the Vocational Rehabilitation Administration in Atlanta, Georgia, to determine the most effective ways of coordinating the activities of the agencies most directly involved in the disability determination and rehabilitation processes—that is, the Social Security Administration, the Vocational Rehabilitation Administration, the state vocational rehabilitation agency and the state employment service. The project stresses the importance of marshalling medical and allied community resources—workshops for the handicapped, the local health department, the Department of Family and Children's Services, etc.—to identify individuals with good rehabilitation potential as early in the disability determination process as possible and to provide them with rehabilitation and placement services promptly. This effort has been successful in some instances to the extent that applicants have returned to work even before decisions on their disability claims were made.

Much useful kuowledge and experience has been gained from a number of other research and demonstration projects involving disability beneficiaries. One very significant study was recently completed under joint VRA and SSA sponsorship at Ohio State and Tulane Universities and the Sister Kenny Foundation. During the years 1961-1964, the claims of about 2,000 applicants for disability benefits were evaluated by measuring both rehabilitation potential and severity of impairment. Evaluation teams included a physician, social worker, psychologist, vocational counselor, and occupational therapist. While a final report on this project is not yet available, some preliminary observations can be made from preliminary data. Although two-thirds of the sample group had less than eight years of schooling, and about three-quarters of them were in "blue collar" or service jobs, the comprehensive workups that were done resulted in more than doubling the rate of referrals for vocational rehabilitation services.

In addition to indicating that disability beneficiaries and applicants have much greater rehabilitation potential than previously suspected, these findings suggest the type of counseling and placement services that are among the greatest needs of the disabled. Professional counseling is necessary to overcome the attitude of many who believe that they cannot perform any work

other than their former jobs. Similarly, counselors found it necessary to place greater emphasis on helping a handicapped person adjust to work which might be of lower social status than his previous employment.

The study also indicates that a new type of training environment may be needed for disabled persons who can work outside sheltered workshops but who cannot yet meet the demands of competitive employment. Such an intermediate work level would help the disabled person adjust in making his living in the outside world.

Other studies conducted in 11 states under VRA sponsorship provide equally interesting findings. These show that persons with severe disabilities can be rehabilitated at the same rate of success as other handicapped groups in a state's regular vocational rehabilitation program with the use of much more comprehensive and effective screening procedures, as well as more closely coordinated services. Greater use of medical center facilities and of comprehensive rehabilitation centers and workshops is also necessary.

These studies emphasize what more lies ahead to be done in an all-out effort to develop and utilize, boldly and imaginatively, new techniques and resources to improve the full spectrum of rehabilitation services needed by the disabled—assessment, physical restoration, counseling, training, and placement.

The Social Security Administration and the Vocational Rehabilitation Administration are now joined with state rehabilitation agencies in a reinforced, cooperative effort on behalf of the disability beneficiary. The increased availability of social security trust funds for rehabilitation purposes provides a further opportunity to strengthen the coordination of the disability determination and rehabilitation programs in the interest of more unified and effective service under both to disability applicants and beneficiaries, and we will be doing all we can to take advantage of this opportunity. But the full answer to the problem we face lies in the joint efforts and mutual support of all appropriate resources in the community—public and private.

In the year ahead, more than 10,000 new disabled beneficiaries in New Jersey will be added to the social security rolls and an increasingly larger number will be added each year hereafter. The challenge presented in more adequately meeting the rehabilitation needs of these individuals, in addition to the many others in the State who have such needs, is clear. I know that the Vocational Rehabilitation Administration joins us in Social Security in offering you our fullest assistance and support in your endeavors. The availability of expanded program resources, together with a determined interest within the State in utilizing them knowledgeably and effectively, should go a long way in helping to solve the complex problem of turning more lives of dependency and despair into productive and satisfying ones.

ANTONIO C. SUAZO
Executive Director
National Association of Sheltered Workshops
and Homebound Programs

Sheltered Workshops and Planning

10

The experience of the Sheltered Workshop movement clearly demonstrates the need for planning for the future, both for the development of workshops and for rehabilitation in general. The National Association of Sheltered Workshops is well aware that a lack of planning has led to mistakes. We know, for example, that some workshops have been established where they were not needed, even though we also know there is a need for a vast increase in the total number of workshops.

It is therefore gratifying that the 1965 amendments to the Vocational Rehabilitation Act called for statewide planning projects for facilities, including workshops, and I know that this study is well under way in New Jersey. In particular, we must know where we stand today in the capabilities of our workshops and must use this knowledge to project future needs; sound projections are necessary for decision-making and for presentation to both legislative and executive bodies.

In order to plan effectively, we must define precisely what a workshop is. I consider a workshop to be a place where a handicapped person works until he can get a job elsewhere, except for people whose productive capacities are extremely limited and for whom there is no hope for competitive employment. It is a place for training and other services, such as evaluation of work capability, but it is not a permanent place of employment. Within this definition, workshops have played a very important role in solving problems of dependency.

Because there are variations in the interpretation of this definition, there are also variations in the estimates of the present number of workshops. The number has increased greatly in the past 20 years, and at present we estimate

that between 1,000 and 1,200 are in operation nationally. Official listings are more restricted; as of June 30, 1965, the United States Department of Labor had given Wage and Hour Certificates to approximately 800 of these workshops. The Department of Labor listing is now approaching 900. For the past five years, about 50 have been added annually. There were approximately 48,000 handicapped persons working at the 800 shops which had received Certificates on June 30, 1966,[1] and we might estimate the total number of disabled workers in all workshops at from 50,000 to 60,000. A report from California indicates that workshops there may serve 15,000 clients annually, possibly a quarter or more of the national total.

To plan more effectively on a national basis, the National Association in 1965 authorized a Committee on Workshop Populations to prepare a report to identify priority areas for future workshop populations and to recommend effective ways of meeting their needs. Under the leadership of Bernard Stern, Executive Director, Jewish Occupational Council of New York City, the Committee studied the history of the movement, questioned member agencies to gather information on characteristics of clients, studied pertinent research and demonstration projects, and surveyed federal and state agencies on their utilization of workshops.

The historical survey, leaning heavily upon the work of Nathan Nelson, Chief Rehabilitation Workshop Consultant of the California Department of Rehabilitation, indicated that the first workshops, in the 19th century, served the blind exclusively. Near the end of the century, other groups founded workshops which foreshadowed our present interest in socially disadvantaged groups as subjects of rehabilitation; these shops concentrated not on physical or mental disability as such, but on financial need or such social manifestations as alcoholism or delinquency. By 1950, the emphasis in workshops was upon the physically disabled, alcoholics, the aged, but few then served the mentally retarded or ill and the severely cerebral palsied. Workshops began to accept the retarded and palsied during the 1950's, and have begun to serve the mentally ill in the past decade. There has been a historical tendency toward the general disability shop, rather than the unit serving only one type of handicap.

The Committee on Workshop Population circulated a questionaire and received responses from more than 100 workshops to various questions on the characteristics of the clients they served, as of October 1, 1965. These shops were serving 12,000 to 13,000 handicapped clients as of October 1, 1965, or possibly one-quarter of the total number served by workshops during that year.

Table 10-1 indicates the age breakdown of workshop clients in a sample

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[1]See National Association of Sheltered Workshops and Homebound Programs, *Sheltered Workshops—A Handbook*, revised 1966. In 1961 there were only 538 certificated workshops with fewer than 30,000 clients.

population of 11,855, of whom 6,731 were male and 5,124 female. The sample was quite evenly distributed by age grouping, with the largest two groups being the 21-29 and the below-20 groups. Possibly there may be an increasing emphasis on youthful clients in future years, particularly if workshops begin to accept school drop-outs as a part of the national trend to serve socially disadvantaged groups in vocational rehabilitation programs.

TABLE 10-1
AGE OF CLIENTS SERVED
(109 Shops Responding)

Age	Number of Clients	Percent
20 and below	1937	16
21-29	2626	22
30-39	1834	15
40-49	1860	16
50-59	1865	16
60 and over	1742	15
Total	11,855	100

On the other hand, I must note the significant number of clients in the 60 and older category. This figure indicates the capability of workshops to provide good services for aged clients.

Table 10-2 shows the wide variety of agencies referring clients to workshops. The role of state vocational rehabilitation agencies is particularly significant because they accounted for more than one-third of all referrals. The only other single source accounting for more than seven percent of the total was self-referral (by the clients themselves or their families and friends). While we may take pride in the very wide range of institutions which made

TABLE 10-2
SOURCES OF REFERRAL TO WORKSHOPS
(110 Shops Responding)

	Referrals	Percent
Divisions of Vocational Rehabilitation	4129	34
Public Welfare	489	4
Schools	882	7
Hospitals or Physicians	749	6
Rehabilitation Centers	160	1
Community Agencies	673	6
Correctional Institutions and Agencies	174	1
State Employment Service	629	5
Social Security	117	1
Workmen's Compensation and Insurance Companies	14	*
Labor Organizations	69	*
Self (Friends and Families)	2497	21
Other	1489	12
Total	12,071	100

*Denotes less than 0.5 percent

TABLE 10-3
TYPES OF DISABILITIES SERVED
(132 Shops Responding)

	Number of Clients	Percentage of Total
Physical disabilities (excluding visually handicapped)	5585	42
Mentally retarded	2773	21
Emotionally disturbed	1673	13
Disabled aged	1294	10
Visually handicapped	1124	8
Socially handicapped	748	6
Total	13,197	100

use of workshops, we also recognize a need to relate the story of workshops more fully to many of these public and community agencies so that they may play a greater role in referring clients when workshop capacity expands in future years.[2]

The range of disabilities served is demonstrated in Table 10-3. The physically handicapped account for one-half of the sample, if the visually handicapped are added to the number with other physical disabilities. The scope of disabilities embraced by the category "socially handicapped," which accounted for six percent of the total, is enormous. It includes: school dropouts, disadvantaged youth, unmarried mothers, adult public offenders, narcotics addicts, alcoholics, selective service rejectees, parolees, juvenile delinquents, chronic welfare dependents. An increasing number of workshops will probably result in an increasing proportional emphasis upon this category, although obviously services will expand to clients in all the groups.

As part of the Committee's survey, I solicited the views on workshops of a number of state and federal agencies. Two main themes in the responses are the desire of these agencies to make greater use of workshops and the general awareness that the workshop movement could be useful in reaching the groups characterized by deviant social behavior and other forms of social disability. For example, New York commented on the potential usefulness of workshops in the rehabilitation of social offenders, drug addicts, the mentally disturbed, and the economically disadvantaged. This emphasis not only parallels the general tendency toward broader criteria for eligibility, reflected in the 1965 amendments to the Vocational Rehabilitation Act, but it also echoes the past history of the workshop movement, which has long concerned itself with the needy, the alcoholic, and the aged. In addition, there seems to be particularly wide use of workshops to provide services to the mentally retarded.

[2]Among the sources that are found under the category "Other" were ministers, Veterans Administration, mass media, divisions of the blind, parents' associations, clinics, employers, neighborhood youth corps, draft boards, churches.

Among the federal agencies, the Vocational Rehabilitation Administration noted that it had referred 10,000 clients to sheltered workshops in the past year and had spent $3,000,000 in fees to workshops. Parallel expressions of a desire to cooperate with the workshop movement came from the Office of Manpower, Automation and Training; the Bureau of Apprenticeship and Training; the Bureau of Employment Security; and the Bureau of Disability Insurance.

It is possible to gather an idea of the use made of workshops from the response made to my query by my colleague at today's meeting, Bernard Popick of the Bureau of Disability Insurance in the Social Security Administration. He noted that in the past two years most state agencies had begun to rely increasingly on workshops to evaluate the degree of disability of those claiming disability payments under social security. Workshops are able to provide expert work evaluation and a sound judgment of the availability of work at the level of the claimant's capacities. Workshops performed such evaluation services for approximately 400 of 1,850 claimants referred to all types of facility for evaluation.

It is apparent that the workshop movement will receive additional opportunities to serve many governmental agencies as the scope of vocational rehabilitation expands on a national scale. It is therefore important that statewide planning projects take account of the capacities of workshops within their jurisdictions and assess the possibilities of workshop participation in their expanded efforts. A good deal of this work will be done by the workshop and facilities planning projects authorized under the 1965 legislation. In many states, as in New Jersey, these are closely coordinated with the general statewide planning project. .

There are great horizons for the workshop movement. It is also, however, true to say that our recent survey has presented us with more problems than answers. There is a genuine problem in relating the capacities of the workshop movement to the needs of local communities, in convincing influential segments of these communities to sponsor and operate workshops under practical conditions, and in locating suitable work for the shops to do. While the need is obvious, the problems are great, and the statewide planning project will do much to clarify both the needs and the opportunities.

Finally, long range planning is the essential device for helping large groups of handicapped people. But in so doing, we must realize that each handicapped person constitutes a human life and our long range plans will be for naught if, for some reason, we cannot accommodate the handicapped person who does not fit the group or presents unique or special problems. As we look ahead, we need to be acutely aware of the needs of *all* disabled people and we must strive to truly give them something better to live with and something better to be. This is our greatest challenge.

SALVATORE G. DI MICHAEL
Assistant Regional Commissioner
Vocational Rehabilitation Administration

Epilogue

MY ROLE at the conference which led to this volume was to comment, particularly on the last group of papers, from the viewpoint of a government official who must deal daily with the problems of vocational rehabilitation. My admiration was great, for the speakers who dealt so effectively with the problems of planning, for the close cooperation between Rutgers and the State Rehabilitation Commission which made the meeting possible, and for the active and intelligent participation of all who attended.

It seemed to me that there is an underlying theme running through the entire collection: change is necessary and planners must not assume that vocational rehabilitation will continue in the future as it has in the past. Some of the authors' conclusions rest on the assumption that the program would continue along established paths. Such an assumption was natural, since one purpose of the papers is to examine the present state of knowledge and to analyze the value of existing data. But these authors have repeatedly urged us also to ask new questions and to study new options. I hope our planners will heed this element in the papers.

In other words, a scholar or official may logically examine existing data and say, "all things being the same, the future projection will be . . ." But these same papers have shown that all things have *not* remained the same (witness the historical broadening of the groups served), and have suggested some lines of potential development. At this time, with planning receiving so much emphasis, we are in an excellent position to contemplate and execute changes in our former practices, or in John F. Cotton's phrase, to seek a "total range of possible alternatives."

Let me indicate certain possible areas of change—potential variable factors in planning.

Bernard Popick referred to cooperation between state rehabilitation agencies and the Social Security Administration. These programs have achieved certain rehabilitation rates, but these rates need not forever remain what they have been. We feel that the experience of rehabilitation agencies can be applied more effectively to these cases. With increasing experience, those administering disability insurance will know more about the problems of the disabled and will adopt more effective screening techniques. Such screening will lead to earlier referrals, which should in turn raise the rates of rehabilitation

A second variable is motivation. We know we can change the attitudes toward rehabilitation both of the handicapped and of society in general. As we increase our capacities, we can more strongly motivate the disabled to pay the prices, financial or psychic, discussed by Monroe Berkowitz.

A third variable might be the utilization of new types of workshops. Antonio Suazo has indicated the breadth of their existing range of capabilities, but they may have even greater potential. For example, we might consider workshops for the elderly who do not wish to work on a full-time basis, perhaps as satellites of community centers. Or we might consider the benefits of introducing workshoplike facilities in our hospitals, for both productive and therapeutic reasons.

Approaches to multiple disability offer a fourth area of potential change. The effect of multiple disabilities is greater than the sum of the individual handicaps, as one can understand easily by reflecting on the problems of rehabilitating and employing a person who is, for example, both blind and mentally retarded. Yet we have increasingly emphasized services for such persons, and we should now plan on reaching an even greater proportion of those who would once have been classified as hopeless.

Closely related to this last point is a sixth variable. We can no longer think of any clients as fixed entities, for they are living people with continuing problems. We should be able, for example, to reopen cases or to take special approaches to certain disabilities. C. O. Webber's paper points to one such area. It was once thought desirable to confine the emotionally disturbed to institutions, where they become totally dependent. But now, when we prefer to help them return to society, we must face the likelihood of recurrence and of periodic brief re-hospitalizations. We would all agree that this is a price worth paying and that vocational rehabilitation should serve these persons. Yet such clients create major problems for us, and we must be creative in our approaches to these problems.

As a final example of potential change, let me mention the problem of the underemployment of the handicapped. The fact that a person gets a job does not mean that he has achieved optimum employment or adjustment, even though we may then have formal justification for adding him to our total of successful rehabilitants. We must be concerned with maximum qualitative

standards as well as quantitative ones, and must maintain our concern with each case until we have truly done our best.

Let me conclude with a reflection on planning. The attitudes of planners determine a setting or atmosphere for planning. If planning is to be fully rewarding, this atmosphere must promote more than a mere intellectual exercise. Planners must build into their work the attitude that it is exciting because it can promote change and because its goals are worthwhile and meaningful.

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Guides to the Establishment of Cooperative Arrangements with a College by a School Offering a Diploma Program in Nursing.

National League for Nursing, New York, N.Y. Dept. of Diploma Programs
MF AVAILABLE IN VT-ERIC SET.
National League for Nursing, 10 Columbus Circle, New York, New York 10010 ($.25).
Pub Date - 67 2p.

*HEALTH OCCUPATIONS EDUCATION; *NURSING; TECHNICAL EDUCATION; *ADMINISTRATOR GUIDES; *INTERAGENCY COOPERATION; COLLEGES; *HOSPITALS

General and specific considerations essential to the establishment of an effective working relationship are presented. Some general considerations are: (1) The school of nursing has primary responsibility for all the course offerings of the diploma program and the quality of the offerings, (2) The school has responsibility for selecting a college that meets recognized educational standards, determining whether college courses meet the school's requirements, and verifying the competence of the college personnel who will provide instruction, (3) The school maintains full financial responsibility for the total diploma program, including college courses, (4) The school and the college are in close enough proximity to permit joint study and planning, and (5) The school interprets fully the objectives and the requirements of the diploma program. (JK)

VT 006 657

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C.1

GUIDES TO THE ESTABLISHMENT OF COOPERATIVE ARRANGEMENTS WITH A COLLEGE BY A SCHOOL OFFERING A DIPLOMA PROGRAM IN NURSING

When a school offering a diploma program in nursing wishes to have its students receive instruction in one or more courses at a college,* the relationships developed and the arrangements formalized affect the organization of the curriculum and the quality of all of the offerings. The general and specific considerations that comprise this document are designed to serve as guides to the establishment of an effective cooperative endeavor.

General Considerations

1. The school of nursing has primary responsibility for all of the course offerings of the diploma program and for the quality of the offerings.
2. The school of nursing has responsibility for:
   a. Selecting a college that meets recognized educational standards.
   b. Determining whether the courses a college is willing and able to provide meet the school's requirements for conferring the diploma in nursing.
   c. Verifying the qualifications and the competence of the college personnel who will provide instruction.
3. The school of nursing maintains full financial responsibility for the total diploma program, including the courses taught at the college.
4. The school of nursing and the college are in close enough proximity to permit joint study and planning, and meetings and conferences of administrative and faculty groups.
5. The school of nursing interprets fully the objectives and the requirements of the diploma program, so that the college has a clear understanding of the scope and the limitations of the cooperative arrangement.
6. The arrangement is entered into and maintained by the school and the college in a spirit of mutual respect and confidence.

Specific Considerations

1. Thorough joint study of all aspects of the relationship and appropriate planning for implementation precede formalization of the cooperative arrangement between the school of nursing and the college.
   a. Each institution provides separately for competent leadership, sound financial support, and appropriate educational facilities and resources.
   b. Both institutions understand the financial obligations involved in establishing the arrangement.
   c. Each institution promotes inservice growth of instructional personnel, understand-

*The term college is used throughout to refer to a junior or community college, a senior college, or a university.

VT006657

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OFFICE OF EDUCATION

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ing of each other's methods and viewpoints, and continual improvement of the quality of education.

d. The selection and admission policies of the school of nursing include requirements that meet those established by the college for enrollment in the courses.

e. The students of nursing are enrolled in courses offered to college students.

f. Both institutions understand that the courses provided by the college are required parts of the diploma program and must contribute to the attainment of the objectives set by the school for its nursing program.

g. Both institutions see to it that the total course load--hours of instruction (theory and laboratory) and preparation for assignments--carried by students of nursing during a term, a semester, or a quarter is reasonable and compatible with sound educational practices.

h. Each institution understands that its library holdings and services must be sufficient in quantity and quality to assure optimum assistance and use. The college provides for the needs of students enrolled in the courses offered through the cooperative arrangement. The school of nursing provides for the needs of students throughout the diploma program.

i. The space, the facilities, the equipment, and the materials provided are sufficient in quantity and quality to assure instruction of high caliber.

j. If it is necessary for nursing students to use living quarters provided by the college, the same housing provisions are made for them as are made for other students in the college.

2. A written record of the agreement approved by appropriate groups in the school of nursing and the college outlines the nature of the arrangement and is reviewed periodically.

3. It is the responsibility of the administrative authorities in both institutions to see to it that the arrangements spelled out in the agreement are implemented.

4. The school of nursing and the college maintain a continuing exchange of information about objectives, content, quality of instruction, standards, policies, and evaluative practices in order to assure continuity and unity of the college courses with those of the diploma program.

5. Meetings and conferences between administrative authorities and between faculty groups are promoted by both institutions as effective mediums for the exchange and interchange of information.

NATIONAL LEAGUE FOR NURSING
Department of Diploma Programs
10 Columbus Circle, New York, New York 10019

1967

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Characteristics of Diploma Education for Nursing.

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*HEALTH OCCUPATIONS EDUCATION; *TECHNICAL EDUCATION; *NURSING; HOSPITALS; *STANDARDS; PROGRAM DESCRIPTIONS; *EDUCATIONAL SPECIFICATIONS
*NATIONAL LEAGUE FOR NURSING

Diploma type education in nursing is described as code number 16-1243 of the National League for Nursing in terms of interests and goals served, characteristics of the program, and qualifications of graduates. These qualifications are set forth as follows; (1) Know basic scientific principles and utilize them in planning and giving quality nursing care, (2) Recognize the indications of diseases and disabilities and the psychological, social, and physical needs of patients, (3) Have the understanding and skills necessary to organize and implement a plan of nursing care to meet the needs of groups of patients and promote restoration of health, (4) Be qualified to plan for the care of patients and other members of the health team and to direct other members of the nursing team, and (5) Be qualified for general duty nurse positions in the medical, surgical, obstetric, pediatric, and psychiatric nursing areas of hospitals and similar community institutions. (JK)

VT 006 658

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C.1

CHARACTERISTICS OF DIPLOMA EDUCATION FOR NURSING

The diploma program in nursing serves the interests and the goals of qualified high school graduates who want an education centered in a community institution identified with the care of patients, who want an early and continuing opportunity to be with patients and with personnel who provide health services, and who want to prepare for beginning registered nurse positions in hospitals and similar institutions.

An educationally sound diploma program in nursing has a number of identifiable characteristics.

- The diploma program of study is offered by a single purpose school--a school that focuses all of its attention and activities on developing the potentials of individual students as persons, citizens, and competent practitioners of nursing.
- The school of nursing may enter into cooperative relations with collegiate or other institutions in order to provide certain courses of study needed to meet the requirements for graduation from the diploma program.
- The faculty of the school have the academic preparation and the experience in nursing and nursing education that ensure quality education.
- Students are selected by the faculty and admitted directly to the diploma program in nursing.
- Admission requirements include graduation from an approved or accredited high school, satisfactory general academic achievement, and successful completion of certain prerequisite subjects. Personal characteristics and health qualifications are also assessed.
- The faculty develops, implements, and controls the program of study within the framework of the policies of the governing body of the school.
- The program of study includes courses in the theory and the practice of nursing and courses in the biological, physical, and behavioral sciences and may include offerings in the humanities.
- All courses offered as part of the program are planned to meet the personal needs of the student and to develop the skills required of the registered nurse practitioner.
- The faculty of the school has responsibility for all courses planned for students.
- The nursing courses offered throughout the program of study build upon preceding and concurrent learning in the required basic sciences.
- The content of nursing courses combines theory with practice and reinforces learning through the application of scientific, health, and nursing principles to the care of medical and surgical patients, mothers, children, and the mentally ill.
- The primary focus of the nursing courses is on learning to provide nursing care to patients in hospitals and similar community institutions.

The diploma program in nursing is complete for its purpose of preparing students for beginning practice as registered nurses in hospitals or similar community institutions.

The graduates of this program (1) know basic scientific principles and utilize them in planning and giving quality nursing care to people; (2) recognize the indications of diseases and disabilities and the psychological, social, and physical needs of patients; (3) have the understanding and the skills necessary to organize and implement a plan of nursing care that will meet the needs of groups of patients and promote the restoration of health; (4) are qualified to plan for the care of patients with other members of the health team and to direct other members of the nursing team; (5) are qualified for general duty nurse positions in the medical, surgical, obstetric, pediatric, and psychiatric nursing areas of hospitals and similar community institutions; (6) need to be oriented to new work situations as beginning practitioners and to be given time and opportunity to become increasingly effective in the practice of nursing.

NATIONAL LEAGUE FOR NURSING
Department of Diploma Programs
10 Columbus Circle, New York, New York 10019

1966

Code No. 16-1242 Price: 10 cents

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Employee Relations 1984; A Presentation at the 39th NAM Institute on Industrial Relations.

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1984

Environmental conditions will exist by the year 1984 which are likely to affect the utilization of human resources within businesses. This monograph illustrates the type of information needed for business planning, and presents illustrative and informative material which management may find useful in the operation of business and should find essential in appropriate planning of business. The environmental conditions discussed include: labor supply and demand projections, company manpower projection, labor market conditions, compensation projections, compensation administration, state of labor relations, management technology, business organization and management practices, governmental considerations, business economics, and employee relations climate. Areas for which illustrations material are presented include: labor demand characteristics, employment requirements, manpower distribution, cost of recruitment, and compensation projections. (CH)

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Employee Relations 1984

A Presentation at the
NAM Institute on Industrial Relations

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VT 006 712

Industrial Relations Department
NATIONAL ASSOCIATION OF MANUFACTURERS
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Introduction

This monograph outlines some environmental conditions which are likely to exist by the year 1984, and which are likely to affect the utilization of human resources within businesses. It illustrates also the type of information needed for business planning. It presents illustrative and informative material which management may find useful in the operation of the business, and should find essential in appropriate planning of the business.

Certainly, there is no intention to present a comprehensive analysis of future environmental information which companies should have with respect to the human relations aspect of their business. Rather, it represents some selected items of importance—briefly treated. As a point of interest, six months of fact-gathering and some practical research on this subject have already accumulated five file cabinet drawers full of information.

The year 1984—and the interim year 1976—were selected not only because these are years of special interest but more because they tend to coincide with what we think to be an appropriate cycle for purposes of identifying significant environmental changes in the area of human relationships in business. Most identifiable changes of a truly environmental nature in the field of basic human relationships take something like eight years to manifest themselves to a degree which will have a significant impact or pertinence to business success.

We should also note that all of the environmental items here identified involve far more than predictions. They are all matters which have a high probability of occurrence because they have already happened, in the sense that the forces that will bring them into being are now taking place or are actually in motion. Thus, while the facts will exist in the future, and the business implications will be felt in the future, the forces or circumstances that will bring such developments about have already happened or are in fact now happening.

In order to be as precise as possible, we will throughout this monograph attempt in most places to identify our judgment as to the likelihood of occurrence. Some items will be clearly labeled as having a reasonable degree of certainty; others as being probable events; and a few are mere possibilities. We have, of course, in selecting the items for consideration tried to weigh both the likelihood and significance of occurrence.

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Environmental Condition No. 1: Labor Supply and Demand Projections

Overall predictions as to demand characteristics in the labor market in 1976 and 1984 are presented in *Exhibit No. 1.* Such gross economic statistics not only are important to business planning generally, but to manpower planning specifically. The question is, of course, what do they tell us in terms of labor availability in broad categories that have pertinence to our own projected growth areas or aspirations?

A second type of general economic forecast, useful in broad manpower planning, is gained from predictions as to growth businesses of the future. Based upon the combined intelligence of a number of economic studies, *Exhibit No. 2* indicates the growth in total employment requirements of selected industries and *Exhibit No. 3* provides some indication of selected industries and their relation to employment requirements. The question here for the individual company, of course, is to have some understanding of growth businesses and their employment needs, and the impact of this qualitative aspect of growing employment demand upon the company's ability to attract and retain the types and number of persons necessary to achieve its planned goals.

While the conclusions of each business would, of course, to a high degree be unique, there are certain general conclusions that most of these economic studies would suggest:

—that the shortage of qualified management personnel will probably increase in geometric proportions;

—that the demand for knowledge labor (and particularly knowledge labor with the mathematical sciences and the social science skills) will be extreme;

—that the desirability of doing for business reasons what is highly desirable for social reasons (that is, the manpower requirements of the future) will probably require a change of attitude on the part of businesses which have permitted artificial barriers based on race, color, creed or family background.

Supply characteristics of the future will not follow the demand characteristics in important respects. Projections of population and work force presented in *Exhibit No. 3* indicate that somewhere between 1976 and 1984 the population mix may pose an extraordinarily serious problem to certain businesses. The lagging birth rates of the Depression era, for instance, will result in extreme shortages of manpower in the 40 to 50 year age group. By the same token, the high birth rates of the post-war years, particularly among minority group persons, suggest an extreme labor surplus of persons with knowledge

and skill levels which will qualify them only for jobs which industry will not offer.

Environmental Condition No. 2: Company Manpower Projection

One company in the aerospace industry in a period of ten years had a shift of its work force which saw its percentage of factory workers drop from 80 percent to 20 percent of total labor force. While few companies will experience changes this dramatic, almost all will likely experience significant changes in employment mix during the forecasted period. Examples in four industries where studies have been made are shown in *Exhibit No. 4*.

Such projections can be of great assistance to a company in its own business planning and decision-making by focusing thinking and further research in those areas of great manpower need.

Environmental Condition No. 3: Labor Market Conditions

In addition to considerations of quantitative and qualitative manpower demand and supply conditions, we must also focus on labor market conditions—the framework and climate within which company manpower needs may or may not be met.

It is almost certain that the tempo of recruitment, particularly for management and professional purposes, will continue to increase. Current and projected costs of filling positions from outside the company are illustrated in *Exhibit No. 5*. For companies which have a significant amount of recruiting to do from the outside, these costs may well become excessive.

Not only the intensity of recruiting, particularly for management and professional persons, will increase, but there is also great probability that the methods of recruiting will become more intense. We read many interesting stories today of the lengths to which company recruiters go in order to attract a coveted executive. But most of the good stories are not reported. There is some possibility that the methods used may become so extreme that companies will find it necessary to seek legal ways of protecting themselves and their human resources. This, in turn, might possibly lead to legislation controlling, or at least setting limits upon, the methods of recruiting which may be employed.

There will almost certainly be an enormous increase in the degree of transference of management and professional talent, and in many categories of technical and administrative talent, between companies and between industries. Even industries and companies that have felt themselves relatively isolated will find that an increasing number

of their employees can indeed transfer their skills to what may now appear to be totally foreign types of activity.

The growing diversity of business activities, the proliferation of staff specialties where the knowledge is not peculiar to a given business, and the increasing need to expose executives to a variety of experiences and knowledge will all contribute to the greater ability of an incrasing number of persons to find far more varied employment opportunities.

There will probably be an emergence of a number of new types of positions not now commonly found in the labor market. Here are but a few illustrations of the types of new jobs which may emerge:

—*the office technician:* broadly skilled in the maintenance and operation of a variety of highly complex office equipment will be the office equivalent of the shop machinist

—*the governmental relations expert:* a staff expert (probably with government work experience) whose job it will be to advise management on effective relationships with government agencies and persons

—*the staff manager:* a general management specialist who will be particularly skilled at managing specialized knowledge areas.

These are but a few illustrations of new jobs which will likely emerge. Some companies, of course, will have great needs for large numbers of such persons, but the very fact that these are new areas of activity will mean a necessary limitation of supply.

It is also probable—some say certain—that there will be whole groups of jobs which will become obsolete between now and the year 1984. One area is that vast group of middle management and administrative personnel who make programmatic decisions (examples would be insurance underwriters, quality control experts, programmers, distribution experts, etc.). Computer technology and communications methodology will likely supplant such manpower. In many cases, the substitution will be 100%. If this occurs, it is likely that over two million lower middle management and administrative persons—currently in the pay categories of $8,000-$15,000 per year—will be without work. Many of them will not only be unemployed but unemployable, at their former skills.

Environmental Condition No. 4: Compensation Projections

Exhibit No. 6 shows current and projected compensation for two dozen jobs. Each of these projections is based upon recent trends in compensation plus known or anticipated changes in demand/supply conditions.

We should note that all the data are in terms of 1967 dollars, with no consideration of changes in the cost of living for the persons affected. Also, all projections as well as current data report total current cash income. It is suggested that these projections not ouly make interesting conversation but have enormous implications to business.

One obvious implication is cost. Companies which require large numbers of persons in categories where compensation rates are going to increase at very rapid rates may find that from the economic point of view they simply cannot afford the resultant cost. This in turn may force a change in desired business strategy. The cost might also suggest special company emphasis or activity in increasing the productivity of certain types of labor.

Compensation projections also have business implications in terms of employee motivation. A number of recent research undertakings, however, have raised interesting questions about the relationship between money and motivation. They suggest that while money may be far ahead of whatever it is that's in second place, there is an important "second place," and there are an increasing number who place other values above more money.

Environmental Condition No. 5: Compensation Administration

The very increase in the compensation levels of persons will probably require rethinking and reshaping of compensation administration policies and practices in most companies.

In addition, there is almost a certainty that whole new forms of compensation will come into existence, particularly for management and professional persons. This in turn will increase enormously the complexity of compensation administration and requires not only more management of management compensation but also new methods for managing management compensation.

There is a high degree of probability that by 1984 some or all of the following compensation packages will be a fairly common practice in business:

—a second generation stock option program

—multiple fringe benefit packages for individuals

—loss-of-job insurance or some other form of financial job protection for large numbers of managers and professional persons

—increased individualization of income, both in terms of benefits, cash/deferred mix, and non-monetary as well as monetary income alternatives.

There is also the possibility that whole new schemes, not now contemplated, will come into existence.

We have seen, for instance, and will likely continue to see in future years, a rapid decline in the percentage of sales personnel on a commission basis, and a continuing decline in the mix of incentive compensation to base salary. These trends do not represent any diminished interest on the part of management or salesmen in incentive compensation; they merely reflect the basic changes which are taking place in the salesman's job. Another example: piece rate and other direct incentive pay plans will probably be a reality by 1984.

These changes will possibly also call for whole new activities in the field of people management. Here are some of the possible changes already manifested to some degree in company operations:

—an increasing focus on determining measuring standards for values contributed by jobs and individual persons (as well as costs incurred)

—significant expenditures on research in compensation administration (and other areas of personnel administration)

—a significantly different organization and focus of staff persons

—an emerging technology and set of skills in the area of developing and identifying needs and opportunities--rather than a total concentration on skills of developing and implementing programs.

Environmental Condition No. 6: State of Labor Relations

It is probable that a new form of union will grow to a dominant and important position by 1984. This new form of union is evidenced by allegedly professional unions, such as those for teachers and social workers. It is also manifested in the associations—such as those for nurses and automotive engineers. A third variant of the new union is illustrated by the quasi-unions, such as those for governmental workers, including policemen and firemen.

These unions already number membership in the hundreds of thousands. By 1984 they may have a membership which exceeds membership in the traditional craft or industrial trade unions. This would present to companies not only a new dimension of labor relations but a new dimension of management.

It seems highly probable that something will happen to prevent or at least reduce the impact of public emergency strikes. It would seem unsafe to assume that the public will tolerate forever such strikes—particularly those which threaten community health and welfare or national defense. It is impossible to assume what direction such action may take because to date only political considerations have had any influence and these, of course, are highly unpredictable.

But it may mean the real entry of the government into the substantive terms of collective bargaining. This very entry of the government into substantive content of business contracts and relationships may possibly represent a forerunner and the precedent which justifies and perhaps compels such entry into other areas of business relationships.

Finally, it is possible that the increasing institutionalization of traditional trade unionism may progress to the point where the very ineffectiveness of unions in the economic sense becomes a major problem to all businesses, and a special opportunity for some.

Environmental Condition No. 7: Management Technology

It is almost certain that there will be some emerging management technology with respect to the management of personal service businesses. Most of our management technology (even our basic accounting systems) has been developed for and geared to the needs and operations of the product-oriented manufacturing enterprise. Already more people work for service businesses than product businesses; by 1984 as many as two-thirds of the employees in this country may be working for service-oriented businesses. This suggests almost the certainty of some technology and emerging methodology for the management of such businesses. It also suggests at least the possibility that we may be entering a phase of technique development in the service business area that could rival the "scientific management renaissance" ushered in by Taylor and others.

It is highly probable that we will also see great strides made in knowledge input, storage, and retrieval. The result will be that individual managers and professional persons will have a greater availability of personal knowledge, and significant new techniques for achieving this may be developed. It is also reasonably certain that whole new systems of identifying pertinent knowledge, cataloging or storing it in a useable manner, and instantaneous retrieval systems will become a standard part of many businesses. This, in turn, could have vast impact upon basic institutions, including organization theory and decision-making processes.

There is some probability that we may also experience some breakthroughs in training. To date, the vast amount of effort in management development has been largely unrewarding and unproductive. It is always possible that this could continue in the future as it has in the past. But the very need for improving the productiveness of management, professional, and administrative employees might result in a business-oriented focus of developmental activities with significant results.

Environmental Condition No. 8: Business Organization and Management Practices

We will almost certainly see dramatic changes in organizational patterns in business. For instance, some of the very developments which we have cited will likely lead to considerable change in thinking and experience with respect to span of management control. The classic concepts of line and staff already serve no useful purpose; they will likely be replaced by totally new concepts by 1984.

The very proliferation of staff jobs and specialized jobs will probably see the emergence of senior manager jobs in charge of staff functions, as well as new thinking concerning the role of staff, the use of staff, and the management of staff.

There is even some possibility that there will be totally new concepts of organization and practices resulting. The free form corporation is perhaps only the first of a number of significant experiments in management organization and practices.

Almost certainly, there will be a continuation of the trend of having more than one person in the office of the chief executive officer. This may become common practice by 1984; and we may find as many as half a dozen persons in the office of the chief executive officer in some large companies.

Finally, there is some probability that a large number of businesses will be reorganized in one fundamental respect. Traditionally, of course, the business enterprise has been organized to deal with problems and circumstances unique to that enterprise. An increasing number of problems—and opportunities—are, however, not unique to a given business but common to many businesses. Examples would be the need to develop management methodology and technology in the area of service businesses; the image of business, particularly among the young; the dire need for dealing effectively with government—particularly the bureaucratic organization. Traditional multi-employer organization such as industry associations are not geared to meet all of these problems or opportunities; and some, by the nature of their operations, could manifestly not undertake such activities.

Environmental Condition No. 9: Governmental Considerations

There will almost certainly be some form of guaranteed minimum income well before 1984. This will not only have profound economic consequences for most businesses; for many it will present severe problems of attracting and motivating persons in the lower pay categories of the organization.

We will probably also move toward required vesting or portability of pension rights. There is even a possibility that hospitalization and surgical benefits will become a part of the social security system. In the absence of action on the part of the business community generally, or the insurance industry, some movements in these directions seem inevitable. These not only have important cost implications but also have practical implications to business operations, particularly for certain classes of employees. For instance, the company which has long counted on significant pension rights among senior employees in order to assure their retention may have to rethink this situation.

Finally, it seems almost certain that the "interfering class" will represent the most rapidly growing segment of the business economy. It is suggested that, in the absence of contravening forces, many businesses are going to have to get used to the idea of dealing with interfering groups, particularly in bureaucratic departments of the federal government, and will have to develop significant skills in dealing with such forces.

Environmental Condition No. 10: Business Economics

As indicated before, the emergence of the personal service business as the dominant aspect of the economy will probably occur and have influence on businesses by 1984 in two important respects:

1. It will be the basis for the emergence of a whole new management technology.

2. It will significantly influence the nature of supply and demand characteristics in the labor market.

It is also quite possible that the volunteer segment of the economy will emerge into greater dominance and force and take significant new forms. The result would be to inject this important segment of the economy into the labor market picture and, for certain types of jobs, would represent a new form of competition for scarce human resources.

It is probable that there will be a continuing trend toward international business operations. There is already an extremely short supply of persons qualified to carry on such businesses, and, of course, any such extension would aggravate that situation. Also, however, the very increasing intercourse with international businesses may bring in new ideas and concepts to the American business scene. We may learn to import as well as export know-how.

Environmental Condition No. 11: Employee Relations Climate

The dominant climate condition will undoubtedly be the fact that there will be increasing choice on the part of individuals: choice in terms of their work, and choice in terms of their aspirations. Choice will probably be one of the most important words in the management of human resources.

The image of the general business community with the entire community will probably also be an important environmental condition. Companies are already experiencing considerable difficulty in recruiting the numbers and types of persons needed on the campus. To a large extent this is a business image problem. It is an extremely subtle problem and difficult to predict how it may manifest itself in the future. The probability is, however, that it will manifest itself in terms of a problem rather than an opportunity.

Environmental Condition No. 12: Other Factors

There may be many sociological and political factors. Two which seem illustrative would be the growing difficulty of business to operate in cities and the increasing pressure on businesses to assume what others see as their social responsibilities.

By 1984, it is quite probable that many businesses will have moved out of major metropolitan areas such as New York City. It is possible that some cities, such as New York, may become vast poverty areas. This will introduce many different labor market problems and opportunities; it will have fundamental influence on management practices.

For these as well as other reasons, by 1984 we may, as one example, see the emergence on the American business scene of a job which has long existed in many European companies—the Manager of Social Responsibility.

Use of Environmental Information and Data

This outline of information is merely meant to indicate the types of environmental information which might be pertinent in both day-to-day decision making and in long-range or strategic planning of the business.

It is surely the type of information which is essential as one starting point in injecting personnel considerations into the business plan.

Each company must, however, start with such global ideas and areas of information. It must then extend such data to be sure to cover all environmental factors in areas of pertinence to its particular business.

The next task is then to identify those areas of environmental conditions which have major import to the company and to develop, in whatever detail necessary the data, information, and indicators which could then become an integral input into the strategic business plan of the company.

EXHIBIT No. 1

LABOR DEMAND CHARACTERISTICS

(All figures in millions of employees)

	1960	*1976*	*1984*	*Surplus* (+) or Shortage* (—)*
Management and Sr. Professional	1/2	1	2	—
Professional	4	7	11	—
Supervisory and Administration	7	8	8	+
Sales	4	5	6	
Clerical	5	6	5	
Skilled Production	8	10	12	
Unskilled Production	16	19	21	+
Self-employed	2	3	5	
Government	8	13	18	
	54	72	88	

*Surplus and shortage relates to manpower availability.

EXHIBIT No. 2

EMPLOYMENT REQUIREMENTS

(All figures in millions of employees unless otherwise indicated)

	1960	*1976*	*1984*
Durable goods	10	11	11
Non-Durable goods	7	8	8
Transportation & Utilities	4	5	6
Wholesale & Rental	11	14	15
Finance, Insurance & Real Estate	3	4	5
Service	7	12	18
Government	8	13	18
Mining	1	1	1
Construction	3	4	4
Population age 40-49	21	20	19
Workforce			
Percent White	90%	87%	82%
Percent Non-white	10%	13%	18%

EXHIBIT No. 3

GROWTH BUSINESSES

A. *RAPIDLY GROWING BUSINESSES*

Less than Proportionate Employment Increase*	*Proportionate Employment Increase*	*Greater than Proportionate Employment Increase*
Electric Utilities	Computer Hardware	Education
Chemicals	Communications Equipment	Hospitals
Recreation	Investment	Government
		Social Work
		Computer Software

*"Proportionate" indicates comparison to average employment growth.

B. *AVERAGE GROWTH BUSINESSES*

Less than Proportionate Employment Increase	*Proportionate Employment Increase*	*Greater than Proportionate Employment Increase*
Construction	Tire and Rubber	Ethical
Air Transportation	Building Supplies	Electrical/ Electronics
Paper	Metals	Machinery
Household Products	Food and Dairy Fabricating	

C. *BUSINESSES GROWING LESS RAPIDLY THAN ECONOMY*

Less than Proportionate Employment Increase	*Proportionate Employment Increase*	*Greater than Proportionate Employment Increase*
Life & Group Insurance	Casualty Insurance	Wholesale & Retail
Mining	Railroad	
Petroleum		

D. *UNCERTAIN BECAUSE POLITICAL OR TECHNOLOGICAL QUESTIONS ARE DOMINANT*

Aerospace
Automobile & Truck

EXHIBIT No. 4

MANPOWER DISTRIBUTION*

	Pharmaceutical Company		*Machinery Manufacture*		*Hospital*		*Investment Banking Firms*	
	1967	*1984*	*1967*	*1984*	*1967*	*1984*	*1967*	*1984*
General Management	20	30	20	20	5	35	20	60
Professional	100	170	40	100	200	400	50	300
Middle Mgt. & Sub. Prof.	200	400	100	70	200	500	30	100
Administration	50	100	100	50	100	100	150	300
Sales	100	300	30	100	0	20	300	500
Clerical	130	200	110	60	150	150	380	400
Production	400	300	700	400	345	200	70	40
TOTAL	1,000	1,500	1,000	800	1,000	1,200	1,000	1,700

*Based on current employment. In each case current employment assumed to be 1,000, and business volume assumed to increase by 50% by 1984.

EXHIBIT No. 5

COST OF RECRUITMENT*

(All figures in thousands)

	1967 Salary Level	*Recruitment Cost** *1967*	*1976*	*1984*
Executive	$100	$40.0	$75.0	$100.0
Management & Sr. Professional	30	10.0	18.0	25.0
Middle Management, Administrative & Professional	15	5.0	7.0	9.0
Sales (non-supervisory)	15	3.0	4.0	5.0
Skilled Office & Production	10	1.0	2.0	3.0
Operations	5	0.5	0.6	0.5

EXHIBIT No. 6

COMPENSATION PROJECTIONS

(All compensation figures in thousands)

Rank	*Position*	*Salary Increase Rate*	*Total Cash Compensation 1967*	*1976*	*1984*	*1984-Rank*
1	Pres. $1 Billion Sales	5%	$250	$400	$700	1
2	Pres. $100 Million Sales	5	150	240	400	2
5	Director; large hosp.	7	40	70	120	3
3	Div. Mgr. $100 Million Sales	4	65	85	120	4
6	Sr. V.P.; staff; $100 Million Sales	6	40	60	100	5
4	V.P. Sales; $100 Millior Sales	4	60	80	100	6
7	Business Consultant/ Sr. Prof.	6	35	55	95	7
8	Physician; G.P., 10 yrs.	6	30	48	80	8
9	Controller, $100 Million Sales	4	28	38	52	10
10	Plant Mgr.	3	25	32	41	11
11	Senior Scientists	7	24	40	70	9
12	Senior Industrial Eng.	3	20	25	33	13
13	Insurance Underwriter	1	16	17	19	17
14	Design Engineer— 10 yrs.	4	15	21	31	14
15	Senior Accountant	3	14	18	23	16
16	University Professor	4	13	18	25	15
17	Ph.D. Scientist, no experience	7	13	24	40	12
18	Office Manager	1	12	13	14	19
19	Office Technician	6	6	10	15	18
20	Secretary	2	5	6	7	20
21	Machine Operator	3	4	5	6	21
22	Typist/Steno	3	4	5	6	22
23	High School Graduate	3	3	4	5	23
24	Unskilled	0	3	3	3	24

*Includes search fees or agency cost; advertising; company recruiting staff and overhead; and relocation costs. Does not include cost of pay increase; loss of productiveness on new position; or "disruption cost".

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Vocational education has become a controversial issue in American education. After being all but ignored for half a century, there has been a sudden surge of interest, Within this context, the author attempts to sketch how vocational education is presently organized, how it got that way, what it offers, and how effectively it is doing its job. He also summarizes some of the main lines of criticism, the impact of recent legislation, and suggestions for change that have been proposed. Specific sections of the paper include the Smith-Hughes Legacy, Where People Get Vocational Training, Criticism of Vocational Education, and The New Look in Vocational Education. (CH)

VT 006 758

VOCATIONAL EDUCATION IN PERSPECTIVE;

A Background Paper.

by 2

Benjamin Shimberg

3 Educational Testing Service

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May, 1966

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INTRODUCTION

Vocational education has become a controversial issue in American education. After being all but ignored for half a century, there has been a sudden surge of interest. New found wealth--in the form of federal aid and foundation grants--has undoubtedly served to heighten interest. Concerns about automation, unemployment, and delinquency have added an air of urgency. So has the plight of the unmotivated youngster in active or passive rebellion against an unrelenting academic diet.

However, these reasons do not explain why controversy swirls. It is only natural that the "old-guard" who nurtured vocational education during the lean years should want to continue to provide leadership now that their field has gained acceptance and an unprecedented degree of affluence. The old-timers feel that they alone have the background and experience to enlarge existing programs and to develop new ones. However, their leadership is being challenged by critics, many of whom have not had previous experience in vocational education. The very tenets on which existing programs are based have been called into question. Does vocational education belong in the secondary school? Should it be moved into the community college or some other type of post-secondary institution? If it does belong at the secondary level, what arrangement would be most effective: the comprehensive high school? the specialized vocational school? or some hybrid institution? What should be taught: specific skills to equip youngsters for entry jobs? broad skills for a cluster of jobs? or no vocational skills--only basic education as a foundation for later vocational training? Who should be allowed to take vocational courses: the terminal student? the undecided youngster? or anyone--including the college-bound? The critics are by no means unanimous in their prescription for the ills of vocational education. Indeed, they do not agree as to precisely what ails the patient.

In the meantime, the role of the federal government looms large. Besides having vast sums to dispense to states for buildings,

equipment, and new programs, the Office of Education has a substantial sum earmarked for research and development. Whether the research program will generate fresh ideas and whether these ideas can be implemented operationally remains to be seen. At least there is an awareness in Washington of the importance of disseminating information. Only time will tell how far beyond dissemination of information the Office of Education may go and when and how they may become more involved in education or social engineering.

The Manpower Development Training Program and the various anti-poverty programs are also tackling segments of the vocational education job with considerable vigor. These programs are characterized by a greater degree of flexibility and a greater readiness to try new approaches than are found in the more traditional programs. From them may emerge patterns for training and retraining adults that could have important implications for the future.

This brief overview was intended to suggest some of the ferment and controversy to be found in vocational education. In sections that follow, we shall attempt to sketch how vocational education is presently organized, how it got that way, what it offers, and how effectively it is doing its job. Finally, we shall summarize some of the main lines of criticism, the impact of recent legislation, and suggestions for change that have been proposed.

THE SMITH-HUGHES LEGACY

Before we attempt to survey where vocational education stands today, it might be well to look back a century or so to get some historical perspective. For twenty or thirty years after the Civil War, the land-grant colleges were vocational schools. They served a teen-age population and provided training in such fields as farming and mechanical arts. High school graduation was not a prerequisite for admission. Toward the end of the nineteenth century--as the number of high school graduates increased--the land-grant colleges became more selective in their admissions policies. Gradually, as the character and quality of the student body changed (students were more mature and better prepared), the colleges began to upgrade their courses. "Farming" became "Agricultural Science," and "Mechanical Arts" became "Engineering." Thus, as the level of work advanced toward the professional, a vacuum was created at the middle level of vocational preparation. This vacuum should have been filled by the high school, but it was not.

It seems that leaders in secondary education during the 1890's and early 1900's felt that "vocationalism" had no place in the high school. Even manual training (which had been introduced into the schools in the 1880's) was under attack and was being "upgraded" so that there was more intellectual content and less shop-type activity. The opponents of "vocationalism" held their ground right up to the eve of World War I. Finally, the growing population, and especially the needs of industry, caused pressures to mount in favor of change. However, efforts to get vocational education legislation through Congress were blocked by suspicion and bickering among leaders of labor, industry, farm groups, and education. The log-jam broke only when the National Society for the Promotion of Industrial Education (the forerunner of the American Vocational Association) managed to form an alliance among the dissident groups to gain support for the Smith-Hughes Act. The slogan, "We need to

catch up with the Germans in training war workers," undoubtedly helped proponents of the act to carry the day.

Smith-Hughes was a curious bill, reflecting in its far-reaching provisions the distrust and suspicion that its proponents felt toward administrators and other educators who had endeavored to keep vocational education out of the schools. Advocates of vocational education recalled that unsympathetic administrators had modified manual training over the years so that it had become increasingly academic and less practical. They now feared that vocational programs would suffer a similar fate unless the legislation included specific safeguards. This is why the act stipulates the types of courses that would be supported and sets the conditions under which they would be taught. Fully-equipped shops were required for trade courses. All courses had to be taught by teachers with practical experience. At least 50 percent of the time had to be devoted to direct farming or shop work. Smith-Hughes stands as a prime example of federal control of education. Its requirements put vocational education into a legislative strait jacket, discouraged experimentation, and prevented adaptation of programs to local needs.

Originally, the Smith-Hughes Act provided support only for agriculture, trade and industrial education, and home economics. Subsequent legislation added training for distributive education, practical nursing, and the fishery trades. These programs were not limited to in-school youth. According to data presented in Education for a Changing World of Work (p. 47), over half of all participants in federally-supported programs were out-of-school youth and adults.

Table 1

Number and Percent of Enrollees in
Federally Reimbursed Vocational Education Programs, 1960-61

	Preparatory Programs		Extension Programs	
Occupational Category	Enrollment	Percent	Enrollment	Percent
ALL CATEGORIES	1,862,710	100.0	1,992,854	100.0
Agriculture	462,756	24.	342,566	17.2
Trades and Industries	307,344	16.5	656,265	32.9
Home Economics	981,109	52.7	629,225	31.6
Distribution	43,179	2.3	262,904	13.2
Practical Nursing	29,098	1.6	18,166*	.9*
Fishery	0	0	(2,298)*	(.1)*

*Reported under enrollment for trades and industries.

A brief description of each of the major Smith-Hughes programs,* as they existed prior to the enactment of the Vocational Education Act of 1963, is given below:

Vocational Agriculture

The program was designed to prepare young people to earn their livelihood as farmers. In recent years, as the number of farm jobs decreased, the program has shifted its emphasis to such non-farm jobs as floriculture, conservation, operation of recreation facilities, agricultural sales, food processing and packaging, and maintenance of farm equipment.

Home Economics

Until recently, this program has not had a practical vocational orientation. Courses have stressed home management,

*Smith-Hughes is used broadly to cover subsequent legislation, such as the George-Barden Act, as well.

family economics, child development, care and guidance, food and nutrition, home furnishing, clothing and textiles, and home care of the sick and aged. Recently, there has been increased emphasis on preparing girls to become child-care aides, waitresses, and hotel and motel workers.

In 1960-61, the program enrolled over a million and a half girls and women and received about $6 million in federal support. However, the federal contribution is less than 10 percent of the total. Over half is paid for from local funds, with the balance coming from state funds.

Trade and Industry

The trade and industrial classification is very broad, including not only the skilled craftsmen, but also a host of occupations not covered by the other categories.

The goal of trade and industrial training is to turn out a worker who has the skills, technical knowledge, and work attitudes that equip him to enter employment at a productive level and to move ahead within the occupation and its related areas. Every effort is made to reproduce actual work conditions in the training situation. Full-time students generally spend two or three years learning an occupation. The courses most frequently offered in both large and small schools are: auto mechanics, woodworking, and machine shop. Smaller schools tend to make use of cooperative programs (i.e., the student spends about half of his time learning an occupation in a local business or industry). Schools with a more diversified offering are likely to include (in rank order of popularity) the following: (1) electricity, (2) drafting, (3) printing, (4) cosmetology, (5) radio-TV repair, (6) welding, (7) sheet metal, (8) needle trades, (9) commercial cooking, and (10) commercial art. Instructors for all courses are drawn from

the ranks of successful practitioners in the occupation they will teach. The experience requirement varies from state to state, but it ranges between 5 and 12 years.

In 1960-61, trade and industrial programs enrolled fewer than a million students (307,000 in school, 656,000 in extension). The federal subsidy was about $8 million.

Distributive Education

This program is intended to teach students the principles and practices of marketing and distribution--including wholesale and retail trade, finance, warehousing, etc. Students work as sales clerks, stock clerks, cashiers, wrappers, display helpers, service station attendants, etc. They also work in such fields as advertising, insurance, real estate, and export trade. In practice, this program is for people already employed to help them get ahead in their fields. In 1960-61, about 86 percent of the students attended evening classes because they were working full time during the day. About 14 percent of those enrolled studied under cooperative programs.

Practical Nursing and Other Health Occupations

The majority of students studying practical nursing are post-high school students and adults. The course usually takes a year (2000 hours), although in many places it has been extended for a longer period in order to satisfy licensing requirements and to gain professional support. Programs for training hospital aids and attendants range from 4 to 10 weeks.

This, then, is what the Smith-Hughes Act covered. It should be noted that no provision was made for training in office occupations--allegedly because of effective lobbying by private business

school interests. Nevertheless, courses in typing, shorthand, bookkeeping, and other office skills are now taught in about 80 percent of America's high schools, without federal subsidy. Preparation for office occupations is also, by far, the most widely taught occupational program in the country's two-year colleges.

Between 1917 and 1963, the Smith-Hughes appropriations rose from $7.2 million to $79 million. Since World War II, the keystone of vocational education legislation has been the George-Barden Act, which authorized $10 million for agriculture, $8 million for home economics, $8 million for trade and industry, and $2.5 million for distributive education. These funds are available to schools on a matching basis and cover only a portion of instructional and equipment costs. State and local agencies (which must bear the full cost of constructing school facilities) annually spend over $500 million on vocational education. However, in order to obtain federal aid, school officials have been willing to acquiesce to the restrictive conditions imposed by the Smith-Hughes and George-Barden legislation.

When President Kennedy took office in 1961, he initiated studies that he hoped would strengthen and improve all federally-supported education programs. The Omnibus Education Bill, sent to Congress by the administration in 1963, proposed that all existing vocational education legislation--including the Smith-Hughes Act and the George-Barden Act--be repealed and that all support for vocational education be encompassed in a new "package." This approach was strongly opposed by the American Vocational Association, whose members felt that any tampering with these acts (which, among other things, specified the occupational categories eligible for federal support) would destroy the administrative structure of vocational education. That the administration had made a tactical error by suggesting repeal of these acts was acknowledged by

Mr. Wilbur Cohen, Assistant Secretary of Health, Education and Welfare, during his testimony:

> The George-Barden Act, like the Smith-Hughes Act, has become...a symbol of the vocational education program... and they (the vocational educators) felt that taking away the George-Barden Act would be like saying we are going to eliminate the U.S. Constitution and start off with a new document. (Hearings, p. 675).

According to Kliever (in his Case Study of the Vocational Education Act), AVA lawyers, working with the staffs of the House and Senate Education Committees, thereupon drafted a substitute bill which left intact the Smith-Hughes and George-Barden Acts, but expanded greatly federal support for vocational education in a separate bill (H.R. 4955). This bill was introduced in the House by Congressman Perkins, and while substantially modified in the committee, was ultimately enacted as the Vocational Education Act of 1963. (See page 34 for further discussion of this act).

A final note about the Smith-Hughes legacy may be in order. During his testimony on behalf of the Omnibus Education Bill, Mr. Cohen, an administration spokesman, acknowledged that "...it was quite unfortunate that for some 45 years there was really no basic reevaluation of vocational education." (Hearings, p. 631). Cohen urged that any new legislation make specific provision for periodic review to insure that in the future vocational education is not permitted to fall behind the times as it did under the Smith-Hughes Act. The Vocational Education Act of 1963 provides for such evaluation at five-year intervals.

WHERE PEOPLE GET VOCATIONAL TRAINING

Most Americans acquire their vocational skills through on-the-job training, just as they have for hundreds of years. Apprenticeship--learning from an experienced journeyman under a formal agreement--continues in over 300 skilled trades, but the proportion of young people involved in such programs has declined. Large corporations have become the most important job trainers in America today, probably involving more trainees and spending more money than all publicly-supported vocational schools combined. Thousands of small businesses are also engaged in informal on-the-job training. The armed forces are another source of trained manpower. Navy recruiters used to stress "seeing the world." Today, the slogan reads, "Join the Navy and learn a trade."

Granting that most Americans will receive at least part of their training on the job, what is the role of our educational system--public and private--in preparing young people for the world of work? In this section, we shall examine some of the institutions at the secondary and post-secondary level that offer formal programs of vocational preparation--as distinct from programs of general education.

Vocational Education at the Secondary Level

The Comprehensive High School

The comprehensive high school has been hailed as a uniquely American institution that provides educational programs to meet the needs of all types of students--college preparatory, vocational, and general. Dr. Conant, for one, has extolled the virtues of the comprehensive high school as a democratic force in our society. However, its critics claim that the comprehensive high school has several serious drawbacks with respect to vocational education. The argument runs something like this: The cost of equipping shops

makes a broad program of vocational education too expensive, except for the very large school. Unless a high school has an enrollment of about 3000, it probably cannot support a well-rounded vocational program. They note that in smaller high schools the choice of courses is necessarily limited. Auto mechanics, woodwork, drafting, and business education are most commonly offered. Further, because equipment is so expensive, some schools have continued to train students on obsolete equipment. Publicity given to such instances has served to undermine public confidence in all vocational education. Educators who believe that much of the criticism leveled at vocational education in comprehensive high schools is not justified will find support in Eninger's study, which is described briefly on page 14.

One way for comprehensive high schools to avoid heavy capital outlays, while expanding the range of vocational offerings, has been through cooperative work-study programs. Such programs have enabled schools to take advantage of training opportunities in local business and industry. At one time, such programs were limited largely to mercantile establishments. However, an increasing number of industrial plants and research laboratories are becoming involved in cooperative programs. In some states, before a plant or laboratory can be utilized, however, the State Department of Education must certify that environmental conditions are satisfactory and that it meets certain standards of safety. In effect, the industrial plant is declared an "educational facility."

While the comprehensive high school does manage to keep all high-school-age youth in a community under the same roof, it has not always been able to foster the democratic intermingling which its advocates cite as one of its great virtues. More often than not, the vocational programs are housed in a separate wing or in a separate building. The special requirements of programs supported with Smith-Hughes funds have frequently tended to isolate vocational

students from the rest of the student body. Such isolation is reduced when vocational students take their non-vocational courses along with college-prep or general education students.

Observers have noted that even comprehensive high schools seem to have a two-class student body. Academic students do not mingle with the vocational students possibly because vocational programs frequently have a reputation for being a dumping ground for the low-ability student. There is also a tendency for teachers of academic subjects to remain aloof from their vocational education colleagues, possibly because of differences in the education and background of the two groups.

Vocational Schools

For more than fifty years, vocational educators have been advocating separate facilities to offset the limitations of the comprehensive high school. They have suggested that by pooling the resources from several schools--encompassing a city or a county--it would be possible to provide a more comprehensive program, better facilities, and more up-to-date equipment. The Middlesex County Vocational-Technical High School in New Brunswick, New Jersey, is one of the earliest manifestations of this idea and is regarded by many as the prototype of the modern "area vocational school." The distinguishing characteristic of the area vocational school is that the student takes his entire high school program at this school--academic as well as vocational courses--and graduates with a diploma from a vocational school.

A modification of the area vocational school is the shared-time school. Students are bussed to a centrally located school where they may take vocational courses, usually for half of each day. During the other half day, the student attends classes in the high school he would normally attend. He receives his diploma from his own high school rather than from the vocational school.

Administrators report that bussing students involves many headaches (e.g., sending schools do not necessarily open and close on the same date, observe the same holidays, or have periods of the same length). Nevertheless, it seems that ways can be found to accommodate such differences. For example, since the area school usually requires that all shop assignments be completed, students may often make up missed classes on Saturday mornings, during school holidays, and for a short period after the sending schools close for the year.

In larger cities, there may be one or more multi-trade vocational schools, as well as schools specializing in a single craft or occupation. For example, New York City has special schools for printing and the graphic arts, the needle trades, seamanship, etc. These schools are analogous to area vocational schools in that they draw from several districts or from the entire city and serve a full-time student body.

To illustrate the types of vocational programs offered, we have listed the courses given in the vocational schools of Connecticut.

Auto mechanics
Beauty culture
Fashion design
Foods
Licenced practical nursing
Occupational homemaking
Radio and TV servicing
Automatic screw machine
Aeronautical drafting
Machine drafting
Industrial chemistry
Industrial electronics
Instrument making
Machine tool making
Offset printing--lithography
Printing
Tool and die making
Architectural drafting
Carpentry
Electricity
General building trades
Masonry
Painting and decorating
Plumbing and heating
Sheet metal work

Comparison of Vocational and Comprehensive High Schools

A recent study by Eninger at the American Institute for Research seems to indicate that there are no appreciable differences between the "product" of vocational schools and comprehensive high schools--at least insofar as trade and industrial graduates are concerned.

Graduates of vocational programs (N=5,327) were asked to rate their former schools on a four-point scale--from "excellent" to "poor"--on ten factors, including quality of instruction from shop instructors, quality of instruction from academic teachers, condition of shop facilities and equipment, general physical conditions of the school, vocational counseling, etc. No significant differences were found between graduates of vocational and comprehensive schools in terms of the over-all "attitude-toward-school" rating and only small differences on specific items. For example, vocational school students rated their former schools higher on "help given in finding jobs."

The report also inquired about tools, equipment, and work methods in each type of school as compared with those found by the student on his first job. Nine out of ten students who entered the trade for which they had been trained said that tools and equipment were "virtually identical" or "very similar" to those found in school. Eight out of ten graduates made similar statements about work methods. This suggests that although comprehensive high schools may offer a narrower range of vocational courses, the tools and equipment for the courses they do offer seem to be about on par with those found in vocational schools.

The study found no significant differences in employment security, employment stability, earnings, or degree of job satisfaction between the two groups. The only major difference concerned the "relatedness of the first job to the trade studied." Fifty-three percent of the vocational school graduates, as compared to

40 percent of the comprehensive high school graduates, found their first job in the trade for which they had been trained or in a closely related trade. In commenting on the significance of this finding, the report states, "If the graduate's first job is not in the trade studied or in a highly related trade, the chances are high that he will never enter the trade or a highly related trade. But if his first job is in the trade or a highly related trade, the odds are great that he will stay with the trade or an allied trade." The authors attribute the observed difference to the fact that vocational schools seem to give their graduates more help in job-finding than do teachers and counselorsin comprehensive high schools.

A Word About Industrial Arts Education

Before we leave the secondary level, it might be well to mention the relationship between industrial arts education and vocational education. As we noted earlier, vocational education seeks to develop in students marketable skills so that they may take entry jobs after completion of training. Industrial arts, by contrast, considers itself part of general education and disavows training for a specific vocation. Its emphasis is on developing an understanding of industry, developing consumer values, familiarizing the student with materials and processes, and helping him acquire limited skill in the use of hand tools and machines.

At the junior-high-school level, industrial arts is generally a required course for boys, just as home economics is for girls. Boys enrolled in industrial arts take various "shops" which expose them to a variety of experiences. These may include work with wood, metals, plastics, electricity, drafting, and graphic arts. The student acquires some skill in using hand tools and machines. In the course of the program, he may also gain some insight into his own interests and skills. This, in turn, may help him to make educational and vocational decisions later on.

At the high-school level, industrial arts tends to be an elective. In addition to continuing with courses which he started earlier, the student may be able to take work in new areas such as auto mechanics. By electing a graduated sequence of industrial arts courses over several years, the student may acquire sufficient skill to take a job in his field of specialization. This phenomenon has been referred to as "bootleg" vocational education. Its existence would seem to indicate that for some students, at least, the normal channels for vocational education are either not open or are perhaps unattractive because of rigid program requirements, separatism, or status considerations.

Post-High School Opportunities

The young man or woman leaving high school, either with or without a diploma, has never had such a wide choice of opportunities as exist today to acquire vocational training. In years past, if a student failed to take advantage of vocational programs offered in high school, his opportunities for training after high school were extremely limited. Today, in many sections of the country, community colleges, junior colleges, and technical institutes (to say nothing of private vocational schools) offer a smorgasbord of training opportunities. Even comprehensive high schools and area schools frequently offer late afternoon and evening courses for out-of-school youth and adults. While many programs are selective and thereby exclude the low-ability student, others tailor their offering to this heretofore greatly neglected group.

The Opportunity Center

While adult programs frequently utilize high school vocational training facilities outside of school hours, a number of communities have set up special vocational schools for adults. One of the best known is the Emily Griffith Opportunity Center in Denver, Colorado, which serves over 30,000 adults annually. More than 500

teachers provide instruction in 300 different vocational and technical courses. Most courses are tailored to meet the needs of local business and industry, and much of the equipment found in the school has been donated by industry. Instruction is highly individualized. There is no set time for completing a course, nor is any sort of credit given.

The educational concept exemplified by the Emily Griffith School is found in our present-day Manpower Training and Development Centers which are federally financed under the joint sponsorship of the Department of Labor and the Department of Health, Education and Welfare. The MDTA programs (inaugurated in 1962) serve young people who are unemployed (or underemployed) and adults whose job security is threatened by automation. Most MDTA programs are of short duration, ranging from a few months to as long as a year. Their goal is to provide the individual with a marketable skill in the shortest possible time.

During 1964, over half of the 125,000 MDTA trainees were trained for seven fields: clerk-typist, machine tool operator, nurses' aide, licensed practical nurse, auto mechanic, welder, and secretary. The remainder were distributed over a wide range of other occupations, including cook, waitress, sewing machine operator, data processing equipment operator, small appliance repairman, janitor, sheet metal worker, shoe repairman, etc. Originally, the MDTA provided only occupational training, but when it was discovered that a lack of basic skills in reading, mathematics, and communication were barriers to job training, the legislation was amended (in 1963) to include basic skills training.

Many of the leaders in the manpower field believe that skills centers will become a permanent feature of adult education in America. They point out that rapid changes in technology will necessitate retraining of adults on an unprecedented scale--an average of six to eight times during each adult's working life.

People will have to adjust to the notion that old skills must be updated to hold a job and new skills acquired as a hedge against technological unemployment.

Post-Secondary Vocational Centers

Post-secondary vocational centers are another emerging phenomenon in vocational education. In essence, they are regionalized training facilities analogous to area vocational schools. However, their major emphasis is on service to young people who have left high school and to adults seeking training in new skills or upgrading of those they already have. The program in North Carolina will serve to illustrate how such a program operates and to describe how these centers may evolve into technical institutes or community colleges.

In 1959, North Carolina established some 20 industrial education centers in strategic locations, so as to be within commuting distance from any point within the state. The centers offered a broad program of vocational and technical education--all terminal in nature. In addition to serving out-of-school youth and adults, the centers also served as area vocational centers for secondary schools which did not have broad programs in industrial education. Juniors and seniors from such schools were bussed to the centers for vocational(not technical) courses.

In 1963, the North Carolina legislature passed a Community College Law, providing for a state-wide system of public community colleges, technical institutes, and industrial education centers. Educators in the state anticipate that, eventually, North Carolina will have 14 community colleges, 10 technical institutes, and 10 industrial education centers.

The gradual transformation of many of these North Carolina industrial education centers into community colleges appears to be

a logical development. In fact, the Upjohn Institute for Employment Research recently advocated precisely this course of action to the State of Michigan as the best way to meet the long-range education needs of its citizens. (Smith, Harold. Education and Training for the World of Work, p. 4).

Technical Institutes

The Bureau of Labor Statistics defines a technician as a "worker who directly or indirectly supports scientists or engineers in designing, developing, producing, and maintaining the machines used in our scientific and engineering efforts." The term is sometimes used rather loosely to add status to service-type jobs. Thus, an air conditioning maintenance man may also be called a "technician."

Educational programs for engineering technicians are accredited by the Engineers' Council for Professional Development. Technician training places less emphasis on theory than does the training of a graduate engineer, and greater emphasis on applying principles from the fields of science and engineering to the solution of technical problems. Preparation for technicians stresses college-level mathematics, physical science, technical knowledge and laboratory skills.

Technical institutes are only one of the kinds of institutions that prepare technicians. Accredited technician programs are found in many community and junior colleges, in area vocational schools, and in some four-year colleges. Because acute shortages of technicians are anticipated, the government (through NDEA) has encouraged all types of post-secondary institutions to expand their training facilities for technicians.

Community College/Junior College

There are many indications that the community college and the junior college are destined to play an increasingly important role

in American education. At the turn of the century, there were no junior colleges anywhere in the United States. In 1965, there were over 800, enrolling over 1,200,000 students. One-fourth of all college freshmen in the United States are now found in junior colleges, and in some states the percentage of freshmen in junior colleges may be as high as 80 percent of the total. Although the "transfer function" continues to dominate, many junior colleges are giving increased attention to terminal programs, including technician training.

In California, where there are now over 70 junior colleges, the two-year college has a fifty-year history of serving a general education, a transfer, and a vocational-technical education function. In 1962, at least one-third of the students enrolled in California's junior colleges were pursuing occupationally-oriented programs. The range of offerings varies greatly from short, concentrated programs to the full two-year program. They cover virtually all the recognized occupational areas that can be prepared for in two years or less. At some of the larger junior colleges, such as Fullerton Junior College, Los Angeles Trade Technical College, San Francisco City College, and San Diego City College, 30 or more occupational curricula are offered, usually encompassing applied and graphic arts, business and commerce, horticulture and forestry, the skilled trades and crafts, the sciences and engineering technologies, health, government, recreation and other services.

Some of the junior colleges in California also serve high schools in their areas by making available vocational education facilities for the use of eleventh and twelfth-grade students who are transported by bus. This dual use of the junior college provides for a wider variety of occupational preparation opportunities, for greater depth of specific training, for more expensive equipment, and for a more specialized staff than would be possible under other arrangements.

Dr. Wesley Smith, State Director of Vocational Education in California, acknowledges the impact of the junior college on vocational education at the secondary level. He states that,

> The availability of the junior college has without question decreased the emphasis upon vocational education programs, other than agriculture and homemaking education. As an increasing number of high school students enter junior colleges, it becomes convenient for them to delay specific job preparation for job entry. This tendency is bolstered by the pressure upon the high school curriculum for more and more required courses. The tendency is further supported by the strategic ability of the junior college, serving a larger geographic and population area, to provide a wider array and deeper emphasis of occupational curricula. The tendency is also supported by the axiom in vocational education that specific job preparation is best accomplished immediately prior to actual job entry. (Education and Training for the World of Work, p. 99).

The state of Florida has also developed a system of 25 junior colleges with a high degree of articulation between secondary schools and junior colleges, since both are controlled through the County Boards of Public Instruction. In Dade County, for example, students may enroll in industrial or technical programs when they are in the eleventh or twelfth grade, knowing that they can generally continue their training at the junior college.

The Miami-Dade Junior College offers the typical array of academic programs, as well as a variety of technical, vocational, and sub-professional programs. The technical courses include aeronautics, air conditioning and refrigeration, civil engineering, construction, data processing, electronics, graphic arts, instrumentation, machine drafting and design, and courses in industrial management and design. These offerings are not considered technician training courses. Because of the difficulties so frequently encountered in attempting to define a technician, the courses are

simply intended to prepare people for employment in technological occupations. Credits are earned for these courses, but no particular attention is given to their transfer value.

Among the other two-year programs offered at Miami-Dade Junior College are those which prepare students in fashion design, mortuary science, nursing, police science and criminology, radio-television technology, recreational leadership, teachers' aide, and library technical aide. In addition, the catalog lists 18 certificate programs (21-32 credit hours) in such fields as retailing, merchandising, probation officer, general secretarial, general drafting, fashion modeling, court reporting, advertising, and public relations.

Dr. George Mehalis, Director of the Technical, Vocational, and Sub-professional Programs at Miami-Dade Junior College, has expressed the viewpoint that the community college should be highly sensitive to local and regional needs. As if to demonstrate his conviction, Dr. Mehalis is currently working with the Director of the Tropical Atlantic Biological Laboratory in Dade County to develop programs for technicians needed in the field of oceanography--a newly-emerging occupational field in the Southern coastal states. Marine biological aides will assist scientists in making routine observations and measurements, collecting specimens, and making chemical analyses. Dr. Mehalis also envisages programs in marine mechanics, marine architecture, hydrography, ichthyology, marine chemistry, marine hydromechanics, and oceanographic instrumentation.

To meet the need of Miami-based airlines for commercial pilots, a career pilot program was launched about a year ago at Miami-Dade Junior College. This two-year program leads to an associate in science degree and a commercial pilot's license. It prepares the student for employment with the airlines or as a corporation pilot. The ground school and flying phase of the program are contracted with commercial flight operators under well-defined

specifications as to type and age of planes, qualifications of instructors, and compliance with FAA standards. The total cost of the program to the student (including the commerical pilot's license) is about $2700.

These specific illustrations, drawn from junior college programs in two states, cannot do justice to the great diversity found among such institutions or from state to state. They do suggest, however, how deeply such institutions have become involved in preparation of skilled personnel--over and above their role as transfer institutions. However, the transfer role continues to dominate. According to Grant Venn in Man, Education, and Work (p. 88), at the present time, only about 25 percent of the students enrolled in junior colleges are pursuing vocationally-oriented programs, and many of these students change over to academic programs.

Apprentice Training

Apprenticeship programs have long been a basic method of acquiring occupational competence. Its present form combines classroom instruction with on-the-job application. Most apprenticeships run between two and four years, but some last as long as eight years. There is always a formal agreement covering a definite period of time which binds the employer to provide training in return for work from the apprentice. Where a collective bargaining relationship exists, the union is an equal participant with management in the apprenticeship program.

The Bureau of Apprenticeships in the Department of Labor lists some 300 apprenticeable skills and technical occupations. In 1963, the Bureau had formal knowledge of about 160,000 apprenticeship agreements, but acknowledged that the total number in existence might be double that figure. Each year, about 60,000 apprentices complete their training and enter the labor force. However, the Bureau of Labor statistics estimate that, on the average, 520,000

skilled workers must be added to the labor force annually to meet the needs of industry. It's clear that if the need is to be met, the vast majority of America's skilled workers will have to acquire their occupational proficiency either on the job or in school.

Unfortunately, apprenticeship programs have been "blighted" by many different types of discriminatory practices. While the unions would probably contend that limiting the number of apprentices is necessary to maintain the quality of training, there are others who would argue that such restrictions are introduced to maintain an artificial scarcity of skilled workers in certain fields. In many unions, applicants who are not related to a union member are effectively barred from getting the training they desire. Members of minority groups have also been excluded, frequently through the use of tests which have nothing whatever to do with the individual's capacity to learn the job. Although some unions count the time spent in vocational school toward the apprenticeship requirement, others do not. One hears reports that frequently students who enter apprentice training after completing a vocational course in the same field are required to repeat the courses they have already taken--sometimes in the same institution. Another complaint concerns the apprentice programs' disregard for previous training and experience. For example, students who have completed four years in intensive training in printing and the graphic arts may be put through the same apprentice program (starting with the most menial tasks) as the novice with no prior experience.

Grant Venn, in Man, Education and Work, p. 105, observes that,

> ...the often lengthy period of indenture runs counter to the grain of independence in contemporary youth and there is the suspicion that the training and economics of the program leave something to be desired. Apprenticeship in this country is increasingly incongruous. The whole program is long overdue for a thorough evaluation and overhaul.

Private Vocational Schools

Lovejoy's Vocational School Guide (1965) lists over 9000 public and private schools that offer training for over 200 careers, skills, and trades--from baseball umpire to occupational therapist. Many of the schools are public vocational-technical schools, junior colleges, community colleges, and technical institutes. However, 1059 are private schools which train for various trades and technologies; 1286 train for white-collar jobs in business; 846 train for barbering and beauty parlor work; and 917 train pilots and airline personnel.

In view of the training opportunities available in publicly-supported institutions, one might wonder why there are so many privately-operated vocational schools. Nobody really knows what factors cause students to enroll in private vocational schools, but the lack of availability of publicly-supported facilities is likely to be a prime consideration. One might inquire as to how many of these youngsters wanted to take training in fields not included in the local school program; or where a program was available, what proportion couldn't gain acceptance at the time they wanted to take the training. Undoubtedly, some of those who find their way to private schools are students who took general or academic courses in high school and then discovered that the better jobs available to them required specific skills training.

In studies conducted by the Specialty-Oriented Student Research Program at the University of Iowa, Dr. Kenneth Hoyt and his associates have found that a major attraction of the private vocational school is the clear relationship between instruction and the job to be learned. When asked, "What's the biggest difference between this and other schools you have gone to in the past?" over half of the students typically check the alternative, "Here we study only what we need to know." Apparently, these students see no point in the general education content of their school experience.

Hoyt reports that frequently students who withdrew from learning while they were in high school become highly motivated model students in the occupationally-oriented environment. He says counselors and former teachers find the transformation almost beyond belief.

School counselors have frequently been criticized for not knowing about vocational training opportunities beyond high school, expecially about the offerings of the private vocational school. According to Hoyt, counselors and vocational educators are suspicious of private schools--probably because of a tendency for some private schools to make exaggerated claims about their training and to promise placement opportunities which do not, in fact, exist.

One of the difficulties facing the counselor, should he wish to discuss a private school with a student, is the lack of reliable data about the school, especially if it is located in another community. He is understandably suspicious of descriptive brochures prepared by the school itself. Yet, he rarely has access to other sources of information. Feedback from former students is likely to be fragmentary, and there is a danger that he may place too much weight on a single favorable (or unfavorable) report.

Accreditation of private vocational schools, like the schools themselves, is a variable matter. Some "accrediting" groups represent a conscientious attempt to establish and maintain standards. Others are little more than a list of schools that have paid a fee to be included. There is no central accrediting group recognized by the National Commission on Accrediting for privately-operated training institutions. Therefore, such lists are largely ineffective in meeting the needs of counselors for information regarding the work of such institutions.

One would think that as more public institutions are established to serve the vocational training needs of high school youth and adults, the number of private schools might decrease, but this is unlikely. All signs point to a burgeoning demand for specialty training, and it is doubtful that public agencies will ever be able to offer all the different types of courses or be able to accept all those who wish to enroll. However, the emergence of training alternatives such as junior colleges and MDTA--which have heretofore not existed--may have an effect on the private schools' ability to stay in business. In the long run, the greatest asset of the private school may be flexibility--the capacity to meet the needs of changing technology and the ability to accept the student when he is ready to enter training.

The Job Corps

The Job Corps was established as a major weapon in the War On Poverty. Its goal is to increase the employability of youth, 16-21, who are out of school and out of work. The Job Corps operates two types of programs--one type at conservation centers, the other in urban centers.

> The conservation centers are located on or near federal lands where conservation work is required. Corpsmen receive basic education, along with a wide range of experience to fit them for conservation-type jobs. Centers range in size from 100 to 250 men.
>
> The urban centers have been described as large residential vocational schools, operated, under contract, by private corporations and nonprofit organizations (e.g., universities, Y.M.C.A.s). When fully implemented, the programs at each urban center will accommodate between 800 and 2000 young men. The centers for women will be smaller (250 to 1000).

The target population for the Job Corps is the estimated 1,200,000 youth who are out of school and out of work. As of

January, 1966, there were about 17,000 youth in the Job Corps, with plans calling for a total of around 40,000 by July 1, 1966.

Although much has been written about the Job Corps, there has been relatively little discussion of the implications that this program may have for education and for society. To bring about such a dialogue, the National Committee on Employment of Youth (a nonprofit social action agency) invited several leaders of the Job Corps to meet with a small group of leaders concerned with youth employment problems. A summary transcript of the discussions, conducted over a two-day period, is printed in the winter, 1966, issue of the American Child. The transcript provides some unusual insights into the Job Corps. Most of the observations which follow are drawn from this report.

The Job Corps recruits young people with a promise to provide training that will lead to a good job. Whether or not the Job Corps will be able to place all its graduates in good jobs is one of the problems that is worrying some people. They see bitterness and disillusionment developing in the young people who put forth great effort to get training only to discover it was all to no avail. In the discussion held with the NCEP group, Dr. Lewis Eigen, Associate Director of the Job Corps, observed that about one-third of the corpsmen are Negro and that, in general, these had higher capability than the white corpsmen. He noted that, "The white boy with the same skills as these better Negro boys doesn't get to the Job Corps. He gets a job. The Negro ends up in the Job Corps."

Because getting corpsmen placed in jobs has become an all-important goal, tremendous pressures seem to be placed on the students by staff members, especially at the urban centers. Robert Schrank, Director of the Youth Work Corps, Mobilization for Youth in New York City, observed, "If you take the position that they are all going to get jobs they are trained for and then you begin not to deliver, the impact on the kids will be fantastic." The

Job Corps is trying to prevent this from happening by planning its job training in occupations where labor shortages exist or are anticipated. However, no one knows for sure if the economy will be able to absorb all Job Corps graduates.

The program at Camp Kilmer is considered by the Job Corps to be one of the best in operation. It is operated under an $11.5 million dollar contract with Federal Electric, a subsidiary of IT&T. There are about 1300 young men at Kilmer, using about 150 buildings--most of them in a sad state of disrepair. However, the vocational training facilities are the most modern obtainable. Presently, the camp offers instruction in automotive mechanics, office machine operation, offset printing, driver training, cooking and baking, welding, body repair, mechanical drafting, carpentry, plumbing, upholstery, painting, appliance repair, and a number of other specialties.

There has been considerable controversy about the program at Kilmer. A group of consultants from Rutgers has charged that Federal Electric was operating the center along authoritarian lines, and that the staff has no understanding of the life-styles of youth who had grown up in a poverty culture. Dr. Schrank (of Mobilization for Youth) observed that "The academic program at Kilmer is as bad as most training schools for boys. Half the kids were sleeping; the other half were indifferent, and teachers were droning on and on with no involvement. They simply had not won the kids either to the subject or to themselves." He also noted that there was very little relationship between the academic curriculum and the vocational training material. Schrank feels that the vocational instructors at Kilmer are doing an excellent job. "The kids are very much involved in their training, and that's generally a good sign."

Apparently, the top echelon in the Job Corps is concerned with the tremendous variability found at the different centers. While they feel that centers run by private industry are far better than

those run by nonprofit organizations, they are not altogether satisfied with the results they are getting. Recently, invitations were extended to major educational publishers to bid on contracts to develop instructional packages in various vocational areas. The prospectus listed seven occupational clusters: automotive, clerical, culinary arts, conservation, general construction, maintenance, and medical.

There is some concern among people in the social welfare field about the impact of the Job Corps. "Will the setting up of parallel institutions encourage the schools to do a better job," they ask, "or will it give them an excuse not to handle the youth most in need?" Some educators who visit Job Corps installations are struck by the fact that these were the same youngsters who had quit their schools. Yet, two out of three are willing to stick it out in the Job Corps. Many of these youngsters seemingly had little ability when they were in school. Many of them are showing signs of growth and development in a remarkably short time. Why? Research is certainly need to answer this question. One factor may be the residential nature of the Job Corps Centers, which remove students from environments and influences that may discourage attention to school work. On the other hand, the instructional program itself may be responsible, for traditional institutions seem to have done relatively little to change their instructional patterns to meet the needs of the culturally deprived, the unmotivated, and the disaffected.

CRITICISM OF VOCATIONAL EDUCATION

During the Congressional hearings on the Vocational Education Act, several articles highly critical of vocational education were read into the record. One, by Sylvia Porter, called vocational education "a national scandal" for failing to address itself to the needs of jobless youth and for fostering, instead, "archaic farm and home economics courses." (Chicago Daily News, April 10, 1963). Edward T. Chase, writing in Harper's Magazine (April, 1963), entitled his article "Learning to be Unemployable." He, too, was highly critical of the emphasis given to home economics and vocational agriculture and charged that "vo-ag" was a sacred cow in Washington, largely because of the successful lobbying efforts of the AVA. In a Look article, Senior Editor George B. Leonard asked, "Are we cheating 29 million students?" He stressed the fact that most high schools cater to students who will go on to finish college and neglect the vast majority who will not.

Congressman Brademas, after quoting extensively from these articles, asked an administration witness, Mr. Wilbur Cohen, Assistant Secretary of Health, Education, and Welfare, to comment on "these rather widespread and sweeping criticisms." Mr. Cohen's reply included the following statement: "I think that some of those statements in there might be exaggerated, nevertheless, I would have to agree that they are correct in substance." (Hearings, p. 663).

In the spring of 1963, the Panel of Consultants, headed by Benjamin Willis, Superintendent of Chicago Schools, issued its long-awaited report under the title Education for a Changing World of Work. The panel called attention to the fact that while roughly 80 percent of students do not go on to complete four years of college,

only 13 percent of the 15 to 19-year-age group are enrolled in vocational education at the secondary level.

-- Three out of 10 will not even finish high school. ("What has the school done to prepare these dropouts to earn a living?")

-- Of the 7 who finish high school, 3 will not go to college. ("What will these three do to earn a living? How well prepared are they to hold jobs or to manage a home and family?")

-- Of the remaining 4 students who do enter college, only 2 will get baccaulaureate degrees. ("What are the employment prospects of the two who do not complete college" Are they equipped to earn a living?")

Limited availability and wide variation of training opportunities were major concerns of the panel. A special study of six states revealed that although two-thirds of the schools offered one or more vocational programs, 90 percent did not offer any trade and industrial courses, and nearly 95 percent did not offer courses in distributive education. A bright spot in the study was the finding that 80 percent of the schools offered training in office occupations and that one-third of all students take such courses--some vocationally, others for personal reasons (e. g., so that they can type their English themes).

However, the panel found that vocational education in urban areas was falling far short of the need. Vocational enrollments of high-school-age youth in large cities amounted to only 18 percent, of which only 8 percent were taking trade and industrial courses. The panel was also critical of the way instruction was organized. "High schools have failed to provide basic training for groups of occupations. Limiting instruction

to single occupations reduces the scope of the school's program." The report indicated that federal aid had not been available to support the development of instruction for groups or clusters of occupations--a feature which it considered highly desirable.

The failure of vocational educators to be more sensitive to supply and demand factors in the labor force was also mentioned, as was the failure of schools to train youth for emerging occupational areas. Inadequacies of guidance and placement services came in for considerable criticism, as well as the lack of uniformity among states in methods of following up students to collect data job placement. Research in the vocational area was characterized as "sporadic, uncoordinated, and chiefly directed toward program operations. Preparation of teachers and of instructional materials was described as "lagging far behind the need."

Nor did the report limit itself to in-school youth. Considerable emphasis was given to the importance of making more widely available both full and part-time training of young people and adults, the broadening of curriculum offerings, the removal of legislative restrictions, and the closer coordination of job training with the needs of local businesses and industry.

While many of the recommendations of the Willis report are embodied in the Vocational Education Act of 1963, there is some controversy as to how much influence the report had on Congressional opinion. The report had been completed in November, 1962. However, the full text had not been seen by key members of the House Committee on Education as late as April 30, 1963--the day on which public hearings were concluded! (Hearings, p. 631).

Douglas Kliever, reviewing the history of the Vocational Education Act of 1963, expressed the viewpoint that "...few

congressmen who apposed vocational education were converted. Many of those who did favor vocational education were not impressed by the study." He concludes, however, that the report "was not useless. First, it became the visible point for initiating recommendations for a new vocational education program. Second, and related to the above, it became a source of propaganda for the advocates of vocational education. Third, parts of the Panel's recommendations were incorporated into the original administration proposal." (p. 15).

As finally enacted, the new law provided support for training in any occupation where there was reasonable expectation of employment, including business and office occupation and technician training programs. The legislation also provides for training and retraining of out-of-school youth and adult workers, work-study programs for those who need to work, and increased support for guidance and counseling.

Two provisions of the act are of special significance:

(1) At least three percent of each state's allotment must be spent for ancillary services, including training and supervision of teachers, development of instructional materials, and evaluation of programs.

(2) Ten percent of the total sum appropriated each fiscal year must be set aside for research and for experimental, developmental, and pilot programs. Since the appropriation for 1967 will be $225,000,000, the sum available for research will be $22.5 million.

However, control of vocational education programs continues to reside in state and local agencies under leadership which, in many areas, is philosophically committed to the separatist tradition.

Bigger vocational programs may emerge, but they may be no more accessible or attractive to high school youth than were the older programs. A wider range of courses may be offered, but to take them may require students to make the same sort of premature (and often irreversible) judgments that they were forced to make in the past.

Criticism of Vocational Education in Nassau County (New York)

A commission recently surveyed the state of vocational and special education in Nassau County. The majority report endorsed the traditional approach. However, a vigorous minority report, Preparing Youth for the World of Work, raised serious questions about the adequacy of existing programs. A few observations from the minority report (based in part on a follow-up study of 1600 vocational and non-vocational graduates) will suggest some of the areas of concern.

Item: The great majority of all jobs available to high school graduates do not call for any specific training at the high-school level. The skills can be learned best on the job. Many of the jobs that require a good deal of special knowledge or training can be learned only on the job.

Item: Access to an entry job is often determined by factors that ignore previous high school training. In the selection of apprentices, nearly as many non-vocational as vocational high school graduates were accepted (570 versus 670). Further, over one-third of the vocational school graduates who became apprentices entered crafts totally different from the area in which they were trained in school. Finally, industrial organizations (such as the New York Telephone Company) tend to select trainees on the basis of aptitude test results rather than on the basis of previous training.

Item: Because of seniority requirements and other regulations, pre-employment training may offer no clear advantage. The young worker with such training may have to wait just as long as any other worker in order to move up to a skilled classification. For example, New York City provides vocational training for merchant seamen. However, when the young man goes to sea, he is employed in an unskilled category--ordinary seaman. He can work his way up to a skilled rating by taking Coast Guard examinations, but not until he has had three years of employment as an ordinary seaman. During that same period, a young man without any previous experience can acquire the skills necessary to pass the Coast Guard examinations. In short, the promotional sequence is such that there is no advantage in the pre-employment training.

Note: The New York Times (April 15, 1966) reported the graduation of 15 West Virginians from the Harry Lundeberg School of Seamanship in Brooklyn. Each youth had undergone 60 days of intensive training in basic seamanship at the school, thereby qualifying as ordinary seamen aboard an American merchant ship. The project was developed by the Seafarers' International Union and the West Virginia Labor Federation as part of the anti-poverty program. According to the Times, each graduate "qualifies for preferential hiring aboard vessels under contract to SIU" and "can look forward to earning about $500 a month."

The minority report urges that high schools avoid asking students to make a premature commitment to any one program. They feel that this can be accomplished by offering courses with broad content during the tenth and eleventh grades, each of which begins preparation for a large range of occupations. Students who wished to prepare for employment in a specific occupation would then take courses with narrower content.

However, the variety of courses available might be greatly augmented by arranging for students to take their specialized training at a skills center, area vocational school, community college, or through a cooperative education program.

Public Education Association Viewpoint

The Public Education Association, a citizens' organization which undertakes studies and seeks to bring about improvements in public education in New York City, has been an outspoken critic of the existing pattern of vocational education in New York City for some time. It has repeatedly urged the New York City Board of Education to re-evaluate and modify its present approach to vocational education.

A key recommendation of the PEA is that New York City develop a single system of high schools with a basic, but flexible, curriculum to replace the present dual system of distinct academic and vocational high schools. Because of rapid advances in technology, they believe that many of the vocational high schools are no longer suitable for preparing workers to meet the requirements of business and industry. They recommend that both the junior and senior high schools provide a comprehensive education program that will provide a foundation for the development of skills. To this end, the PEA would encourage students to defer training in specific vocational skills until the twelfth grade, or preferably until after the student leaves high school. It is the PEA's view that workers trained in a single vocational skill, without the benefit of a broad program of general education, will have increasing difficulty adapting to the changing labor market. The job training available at the post-secondary level is of more value (says the PEA) than that which can be obtained in secondary schools, even under optimum conditions.

To assist high school students in making occupational choices, PEA also recommends that vocational exploratory courses be offered to provide students with information about, as well as direct experience with, a variety of employment fields.

In urging that vocational programs be provided within the context of a comprehensive high school, the PEA is also advocating removal of present barriers which make it almost impossible for a student to transfer from an academic high school to a vocational high school or vice versa. A single-system high school, says the PEA, will permit greater flexibility in scheduling and allow for shifts in program "as a student's interests change or a professional evaluations of his performance and potential call for a reorientation of his study program." The deferring of training in specific and advanced job skills until after high school will add flexibility to the program.

Rigid time requirements, such as three years of half-time shop experience, says the PEA, should be eliminated completely. They also urge that vocational programs occupy only as much time in shop work as is necessary to complete the purposes of each specific course. Finally, the PEA urges that skills centers be created mainly to provide training for post-high-school youth and adults. However, students who lack the ability, interest, or motivation to take vocational training after high school could also attend the skills center for part of the school day to acquire a marketable skill prior to leaving high school.

For a more detailed discussion of the PEA criticisms and recommendations, see Reorganizing Secondary Education in New York City and The Secondary School Program in New York City, available from the Public Education Association, 20 West Fortieth Street, New York 18, New York.

THE NEW LOOK IN VOCATIONAL EDUCATION

Nobody really knows what the new look will be. To some, it is no more than the old look transferred to a new setting: the skills center, the community college, or the Job Corps training center. To others, it connotes the greater use of programmed materials, including computer-centered teaching, and better use of audio-visual devices, such as sound films, tapes, and closed circuit TV. There are, however, a number of projects under way (or being contemplated) that could have far-reaching implications for the future of vocational education.

Training for "Occupational Clusters"

In Quincy, Massachusetts, a group of behavioral scientists from the American Institute for Research is working with the vocational educators to design a new type of curriculum, tailored to fit a new concept of vocational preparation. Called Project ABLE, the principal goal of the effort is to demonstrate the increased effectiveness of instruction derived explicitly from analysis of behavior on the job.

Eleven job families are being analyzed to determine specifically what people actually do on the job and what skills and knowledge they need. The areas being studied are:

1. Electromechanics
2. Metals and machines
3. Power mechanics
4. General woodworking
5. General piping
6. Foods preparation
7. Computer data processing
8. Health occupations
9. Graphic and commercial arts
10. Home economics
11. Business education

Within each of these areas, the researchers are endeavoring to establish a training sequence which parallels the hierarchy of jobs within the family in such a way that a student will have entry level

skills for some job no matter where he exits from the curriculum. For example, the student in the metals and machines course will learn simple machine operations, the use of tools, etc. that will qualify him for an operative job in a factory. Thus, the level of job for which a student is certified will depend upon the time he spends in the course and on his rate of progress.

The curriculum and methodology which finally emerge from this project may serve to turn vocational education away from its present preoccupation with rather narrow job skills, and focus, instead, on broad clusters of skills. It is hoped that this will equip the individual to cope more effectively with the changing technology he will encounter during his vocational career.

The Richmond Plan

A somewhat different "look" for vocational education emerges when the focus shifts from providing specific job preparation to the implementation of a broad program of basic education within a vocational context. The so-called Richmond Plan (pioneered by Marvin Feldman while he was at Cogswell Polytechnical College in San Francisco) emphasizes the interrelatedness of knowledge and manages to integrate academic subjects with subjects of an applied nature.

Feldman says that he began to experiment in this area because he was disturbed by the attitude of some teachers at Cogswell toward students who were not performing satisfactorily. In an effort to "salvage" these students, Feldman persuaded a group of colleagues to modify their instructional techniques so that academic subjects were taught as an integral part of applied (technical) courses. He found that in this modified teaching environment, students blossomed, achieved far beyond anyone's expectations, and developed academic skills in addition to technical skills.

With a grant from the Rosenberg Foundation, Feldman endeavored to apply the same principles to secondary education, specifically in the schools of Richmond, California. The criteria for admission into his experimental program was that the students had to be doing failing work in at least two subjects but still possess reasonable skill in reading. Discipline cases were not excluded.

The main feature of the program is the dovetailing of technical and academic subjects. Shop and laboratory programs are used to dramatize the relationship between theory and practice. Team teaching lies at the heart of the project. Teachers from various disciplines are trained during a summer workshop and work closely throughout the year to coordinate classroom, laboratory, and shop experience. For example, if the subject of heat is being taught in a physics class, the math class will cover appropriate equations; the lab work will involve the conducting of heat experiments; and the English class will call for oral and written reports on the subject.

Feldman says the students who had heretofore been problems and poor learners were turned into hard-working, highly motivated students, interested in their academic as well as their technical subjects. Because of the encouragement and guidance these students receive, most of them go on to two-year post-high school technical programs, and some complete their baccalaureate degree in engineering. Feldman states that even students who do not go beyond high school are better prepared to take jobs in industry or to qualify for apprenticeship training because they have mastered fundamental academic skills as well as performance skills.

The Richmond Plan is being extended to ten other high schools in the Bay area and to a number of schools in Michigan, and a variant of the Richmond Plan is being conducted in several other San Francisco area schools. Four New York City high schools have also been experimenting with their own versions of the Richmond Plan. These demonstration projects will provide some clues as to how generalizable the

Richmond approach is. They will help to answer the question, "Will it work in other situations?"

The MIT Vocational Education Project

A group of nearly 100 educators meeting at the Massachusetts Institute of Technology during the summer of 1965 concluded that nothing short of a major overhaul of instructional methods, techniques of teacher preparation, and school orgainzation would meet the needs of the young people who must learn to adapt to the rapidly changing demands of our technological society.

The educators who reached this conclusion had been assembled by Professor Ned Frank, a physicist who had played an important role in transforming physics education at the secondary level. The MIT Summer Study, as it was called, addressed itself to the question: What pattern of education will best prepare American youth for satisfying, useful, gainful work at the termination of formal schooling?

In examining the many facets of the problem, the group concluded that present-day schools were not taking full advantage of the built-in motivation that stems from the desire of young people to do things. They recommended the development of new curricular materials and instructional materials, beginning at the junior-high-school level. In contrast to the traditional approach, with its dependence on the written and spoken word, the new pattern (applicable to all students) would utilize the potential of experimental and investigative activity as a springboard to the acquisition of skills, understanding, the development of the ability to think.

Recognizing that their educational revolution called for new methods and materials, as well as skillful administration, the group

also recommended changes in teacher preparation, the creation of a national system of multi-purpose educational centers, and the establishment of institutes of educational management patterned after the best schools of business and industrial management.

They also recognized that students living in deprived areas faced many unique problems. To help overcome some of the accumulated educational deficit, they recommended special transitional programs which would stress work-study courses to help these youngsters acquire basic education and ready entry into gainful employment. A final recommendation concerned the strengthening of apprenticeship programs and the creation of internships in state and local governmental agencies. The aim of these programs would be to continue education as well as to generate transferable skills.

It is unlikely that anyone will quarrel with either Frank's or Feldman's desire to devise ways to make education more meaningful for students who do not respond to traditional approaches. One may wish to ask, however, whether what they are proposing is an adequate substitute for vocational education. In reality, the suggested approaches do not represent direct vocational training. Instead, their major aim is in helping more students find meaning and satisfaction in their academic experience so that they leave school better equipped to undertake vocational training and better prepared to face the demand for people who can adapt to change. Anything that can contribute to this goal will indeed be making a significant contribution to vocational education.

UNFINISHED BUSINESS

This report is open-ended. It was prepared to provide background information for the Trustees and Officers as they consider what the ETS role might be in the field of vocational education.

The author makes no claim for completeness. Indeed, each preliminary probe into some facet of vocational education has invariably exposed new areas for exploration. Much remains to be done. Topics which, of necessity, had to be dealt with cursorily must be re-examined in greater depth. New areas must also be explored: research under way at the major vocational education centers, existing tests and testing practices, training activities in industry and in the armed forces.

It should be noted that these continuing studies are directed toward action. Significant problems and critical issues must be identified and delineated. Only then can practical approaches be formulated, evaluated, and implemented.

If the ETS program in vocational education is to be vital and meaningful, exploration in this area must continue in the years ahead and remain perennially "unfinished business."

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OKLAHOMA

To compile information concerning the labor force for use in curriculum development for area vocational schools, questionnaires were obtained from 119 of 157 firms in the sample. Expansions of obtained data to the universe of mideastern Oklahoma indicated an increase of 6.4 percent in nonfarm employment from June 1967 to June 1969. By June 1972, an increase of 12.7 percent was anticipated. All nonfarm wage and salary industry divisions should experience growth in both the 2- and 5-year spans. The greatest percentage increase is expected to occur in the mining industry. The largest absolute change is forecast for government. Sales jobs should experience the largest percent advance of the major occupational groups. Greatest opportunity for employment is indicated for jobs falling within the professional-technical-managerial occupational group. The largest mideastern Oklahoma occupational categories in June 1967, in order of size were: sales clerk, nurse aide-orderly, elementary teacher, secondary teacher, cook, commodity salesman and sales person, general office clerk, waitress or waiter, secretary, and heavy equipment operator. The relative ranking of these occupations was expected to remain approximately the same over the next 5 years. Tables and colored illustrations present the data in detailed form. For a listing of related reports see VT 007 425. (DM)

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ED 036506

Manpower in Oklahoma

MID-EASTERN REGION

ED 036506

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[illegible]

DURANT
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HUGO
402 East Jackson

LAWTON
311 "D" Avenue

MUSKOGEE
204 East Side Boulevard

OKLAHOMA CITY
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POTEAU
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PRYOR
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SEMINOLE
111 North Francis Street

SHAWNEE
[illegible]

TULSA
660 Mid-Continent Building

WOODWARD
[illegible]

Manpower in Oklahoma:

MID-EASTERN REGION

JULY 1968

This study was prepared under the supervision of Robert E. Turner in the Labor Market Information Section, Research and Planning Division. Dennis Martin was primarily responsible for this project, while Maribelle Richardson did the final typing. Statistical data were compiled and tabulated by the Benefit Records Section, C. L. Gandy, Supervisor. Credit is also due the Business Management Division, headed by Wayne Edge, for their work in varityping and printing.

OKLAHOMA EMPLOYMENT SECURITY COMMISSION
OKLAHOMA STATE EMPLOYMENT SERVICE
RESEARCH AND PLANNING DIVISION
W. J. BOWMAN, CHIEF

PREFACE

The most important resource of an area is its people. Therefore, information and data concerning composition of that part of the population in the labor force is of vital importance. This study was conducted by the Oklahoma Employment Security Commission under a grant from the State Department of Vocational-Technical Education. The project was designed to determine current and future manpower needs by industry division, major occupational group and selected occupations.

The State Department of Vocational-Technical Education was particularly concerned with the compilation of such information for use in curriculum development for new area vocational schools as prescribed under the Vocational Education Act of 1963. Prospective employers, existing business establishments and educational institutions, as well as numerous agencies and other organizations, are also interested in the skills and overall characteristics of the labor force. This is especially true in Oklahoma, a state which has experienced accelerated growth in the past few years and where manifold opportunities for further development exist.

Through an effort to provide information to local leaders, data were compiled for the metropolitan areas of Oklahoma City and Tulsa, as well as nine other geographic regions. This detailed release, pertaining to the Mid-Eastern Oklahoma Region, is the third of a series being prepared from the survey.

We are indebted to employers for their consideration and cooperation in supplying the necessary information. In addition, various private and governmental agencies and organizations, such as chambers of commerce, provided assistance. Finally, we wish to express our gratitude to Dr. Francis Tuttle, Director of the State Department of Vocational-Technical Education and to members of his staff for their assistance and suggestions throughout the course of the study.

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HIGHLIGHTS

This study of Mid-Eastern Oklahoma was developed from information provided by respondents in a sample of 157 firms. Usable information was received from 119 establishments, or 75.8 percent of those surveyed. Data obtained from those firms, when expanded to represent the universe, indicated that nonfarm wage and salary employment in Mid-Eastern Oklahoma should reach 35,920 by June 1969, an increase of 2,170, or 6.4 percent, from the June 1967 figure. Further analysis revealed that five years from the survey date, such employment can be expected to reach 38,050, an increase of 12.7 percent.

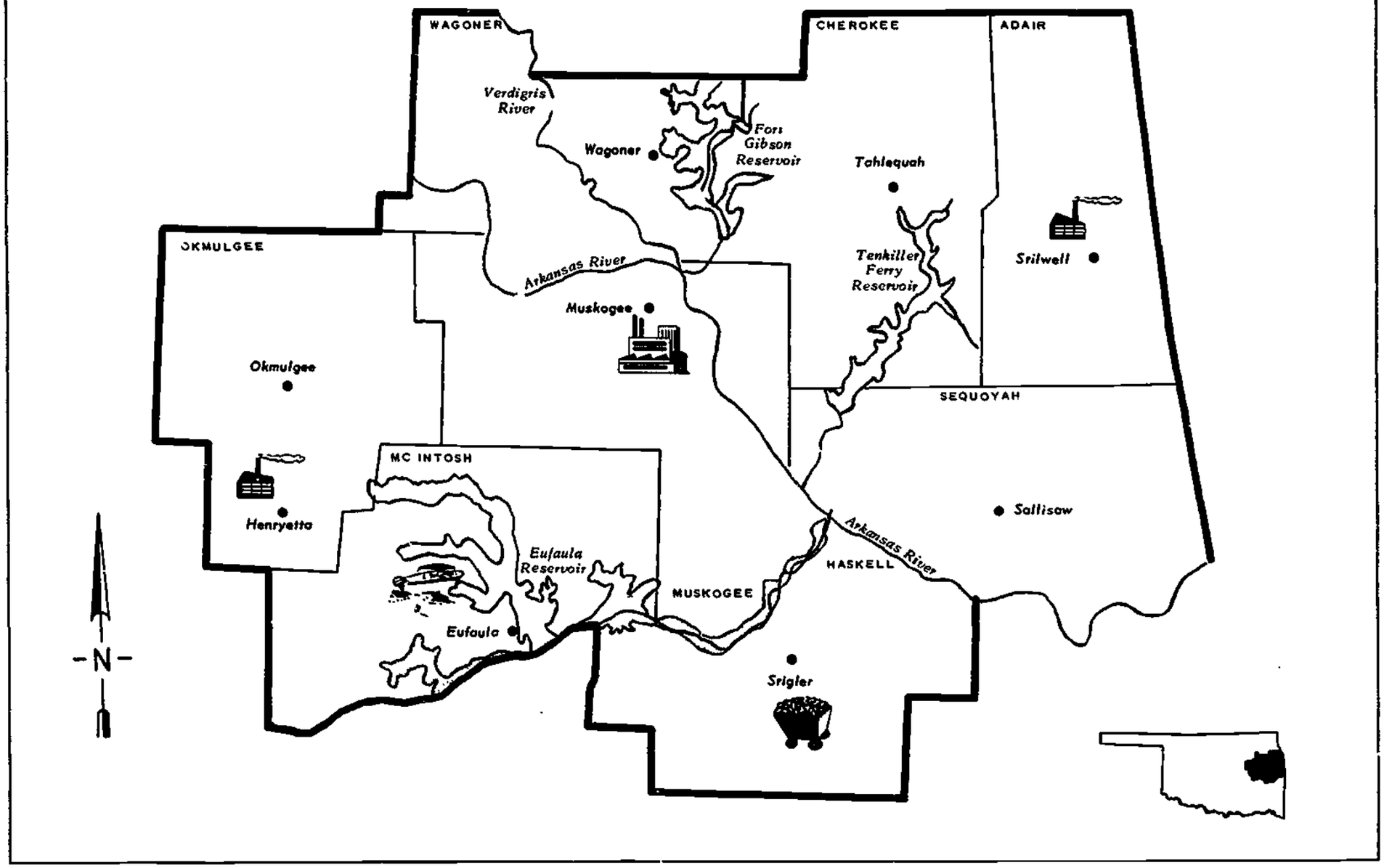
According to surveyed employers, all nonfarm wage and salary industry divisions should experience growth in both the two- and five-year spans. Greatest percentage increase is expected to occur in the mining industry. The largest absolute change, however, is forecast for government. Employment in this category is expected to expand from 9,920 at this writing to 10,590 in June 1969. Projections to June 1972 call for further expansion to 11,370 government jobs. Significant numerical advances should also occur in service, wholesale-retail trade, and manufacturing.

Significant growth is also projected for the major occupational groups. Specifically, sales jobs should experience the largest percent advance. The greatest absolute increase is expected to develop in the professional-technical-managerial occupational group. Such jobs are expected to increase from 8,364 in June 1967 to 8,970 in June 1969 with a 13.5 percent increase forecast for 1972. Jobs within this classification should reach 9,493 by the end of the five-year period. At present, greatest opportunity for employment is indicated for jobs falling within this occupational group. All industry divisions reported significant numbers of professional-technical-managerial jobs. However, the greatest number of such jobs were found in government.

The largest single Mid-Eastern Region occupation in June 1967 was that of sales clerk, with 1,649 jobholders. Following that occupation, ranked in order of size according to 1967 figures, were nurse aide-orderly; teacher, elementary; teacher, secondary; cook (including institutional cook); salesman and salesperson, commodities; clerk, general office; waitress or waiter; secretary; and heavy equipment operator. For the most part, forecast information from surveyed employers indicated notable growth in these occupations with the ranking to remain approximately the same over the next five years. For complete information, Table 6 in the Appendix lists the net additional needs of all occupations surveyed in Mid-Eastern Oklahoma.

FIGURE I

THE MID-EASTERN REGION



ECONOMIC CHARACTERISTICS OF THE MID-EASTERN REGION

The Mid-Eastern Region of Oklahoma, as defined for the purpose of this study, is a 5,434 square mile area, including Adair, Cherokee, Haskell, McIntosh, Muskogee, Okmulgee, Sequoyah and Wagoner Counties. Together, these eight counties form a roughly rectangular-shaped area bounded on the east by the state of Arkansas and stretching westward for approximately 100 miles through Mid-Eastern Oklahoma.

Rich in colorful history, this section of Oklahoma was formerly settled during the decade of 1830 to 1840. Within this time span, President Andrew Jackson initiated a "removal program" whereby he asked Congress for legislation to erase all occupancy of the Indian tribes east of the Mississippi River. This removal program led directly to the settlement of the Mid-Eastern Region by the Creek, Choctaw and Cherokee Indian tribes. The northeastern section of the region was occupied by the Cherokees. It was here in the county now carrying the tribal name that the Cherokee Indians found an end to their historic "Trail of Tears". The city of Tahlequah was founded and established as the Cherokee national capital.

Haskell County, in the extreme southern portion of the Mid-Eastern Region, is in an area that was once a part of the Choctaw Nation while the western half of the region was originally a part of the Creek Nation.

Many Oklahoma historical "firsts" occurred in this region. The Indian Journal, located at Eufaula in McIntosh County, is the oldest surviving newspaper in the State of Oklahoma. It was first published in Muskogee in 1876 as a Creek tribal organ. The original Oklahoma State Fair, now held annually in Oklahoma City, can be traced to Tahlequah in the Cherokee Nation. There, in the 1870's, annual national fairs were held where farmers, ranchers and householders showed farm products, livestock, crafts and handiwork.

The climate of the entire Mid-Eastern Region can be typified by the weather conditions of the centrally located city of Muskogee. The weather is generally temperate with mild winters and occasional snow and sleet which usually stays on the ground for no more than a day or two. Rainfall is fairly evenly distributed throughout the year except for slightly heavier amounts in the early springtime. Annual precipitation is 40 to 43 inches, including about six inches of snow. The average annual relative humidity is approximately 69 percent.

The region's topography varies considerably from east to west. The extreme eastern counties of Adair and Sequoyah contain an extension of the Ozark Mountains. These foothills of the Ozarks extend roughly into the eastern one-third of the region. Although covered with an abundance of scrub timber, these hills produce very little marketable lumber. With few exceptions, from east to west, the land gradually flattens from the rough, wooded, hilly terrain of the east to the low rolling plains of the west. In the western two-thirds of the region, there is very little forestation. Tree growth is primarily restricted to skirting the streams and rivers which traverse the area.

An outstanding feature of the entire Mid-Eastern Region is the vast water development programs either completed, under construction, or planned for the future. Lake Eufaula, one of the largest man-made lakes in the nation, has its entire northern half in McIntosh County in the southwestern section of the region. Much of Fort Gibson Reservoir is contained within the boundaries of Wagoner County in the northwestern section of the region. To the south and east in Cherokee and Sequoyah Counties is Lake Tenkiller. Greenleaf Lake in Muskogee County, although somewhat smaller than the three previously mentioned bodies of water, is a popular recreational spot for Oklahomans as well as out-of-State visitors.

All of these lakes offer excellent recreational facilities to the increasing number of vacationers discovering the natural beauty of this section of Oklahoma. In addition to their sporting and recreational value, the three major lakes are to be utilized in connection with the Arkansas River Navigation Project scheduled for completion in 1970. This project, when completed, will bring about vast changes in the economic outlook for the entire State of Oklahoma, and this region in particular.

After completion of the Arkansas River project, the movement of barges will be possible from the Mississippi River northwest up the Arkansas River, passing near Little Rock and Fort Smith into Oklahoma, progressing close to Muskogee and terminating near Catoosa, a few miles from Tulsa. Completion of this gigantic engineering endeavor will require the establishment of two large facilities, the Robert S. Kerr and Webbers Falls Reservoirs, primarily within the boundaries of the Mid-Eastern Region.

The Arkansas River flows diagonally from the northwest corner of the Mid-Eastern Region, passes through its heart and exits at its southeast corner, thus making every city along its route a potential inland seaport. The overall project will provide a means of low cost transportation to the nation's seaports. This project alone will significantly enhance the prospects for attracting new industry to the Mid-Eastern Region and also will encourage expansion of the industries already located in the area.

In addition to the low cost water transportation soon to be available in this region, the area also has a good highway system. Interstate-40, now under construction, will cross the region from east to west. It is open to public traffic at present with the exception of a fifty-mile section between Checotah in McIntosh County and Sallisaw in Sequoyah County. Work on this section is under way with completion date indefinite at this writing. The region is also served by U.S. Highways 266, 62, 64 and 69, as well as a network of State highways. Every county in the region, with the exception of Cherokee County, has railroad service. Public air transportation for the area is centered in Muskogee with daily flights connecting with major airlines in Tulsa.

The census of 1960 revealed the population of the Mid-Eastern Region to be 184,851. Distributed by race, 80 percent was Caucasian, with the remaining 20 percent comprised primarily of Indians and Negroes. The region has experienced a 23 percent decrease in population since the decennial census year of 1940. This downward trend in population started with the depression of the

TABLE I

REGIONAL POPULATION BY COUNTY

COUNTY	POPULATION		PERCENT CHANGE April 1960 to July 1967	PERCENT DISTRIBUTION
	July 1967 [1]	April 1960 [2]		July 1967
Total	189,000	184,851	2.2	100.0
Adair	14,000	13,112	6.8	7.4
Cherokee	20,000	17,762	12.6	10.6
Haskell	9,300	9,121	2.0	4.9
McIntosh	12,700	12,371	2.7	6.7
Muskogee	61,200	61,866	- 1.1	32.4
Okmulgee	35,800	36,945	- 3.1	18.9
Sequoyah	20,800	18,001	15.5	11.0
Wagoner	15,200	15,673	- 3.0	8.1

1/ *Oklahoma Population Estimates, Oklahoma Employment Security Commission, November, 1967.*
2/ *U. S. Census of Population 1960, Oklahoma PC (1) - 38 A.*

1930's, continued through the 1940's and ended in the late 1950's. Technological advances in all fields of agriculture, coupled with the mechanization of equipment and consolidation of farms, have been largely responsible for this population loss.

With agricultural employment diminishing, many area residents found it necessary to migrate outside the region to the more urbanized areas of the State and nation. This was in keeping with the rural-to-urban trend over the country in the past few decades. During the late 1950's, out-migration from the region slowed somewhat and, since 1960, a gradual increase in population has taken place. July 1967 total population for the Mid-Eastern Region, as estimated by this Agency, was 189,000, a 2.2 percent increase over the 1960 census figure.

For June 1967, the civilian labor force of the Mid-Eastern Region totaled 57,230. Of this figure, some 5,120 persons, or 8.9 percent, were jobless. Total employment, at 52,110, included 12,330 agricultural jobholders and 6,030 in the domestic service-self employed-unpaid family worker group. The remaining major category, nonfarm wage and salary workers, stood at 33,750 with considerable employment in manufacturing, trade and government. Projections made in this study include only nonfarm wage and salary workers.

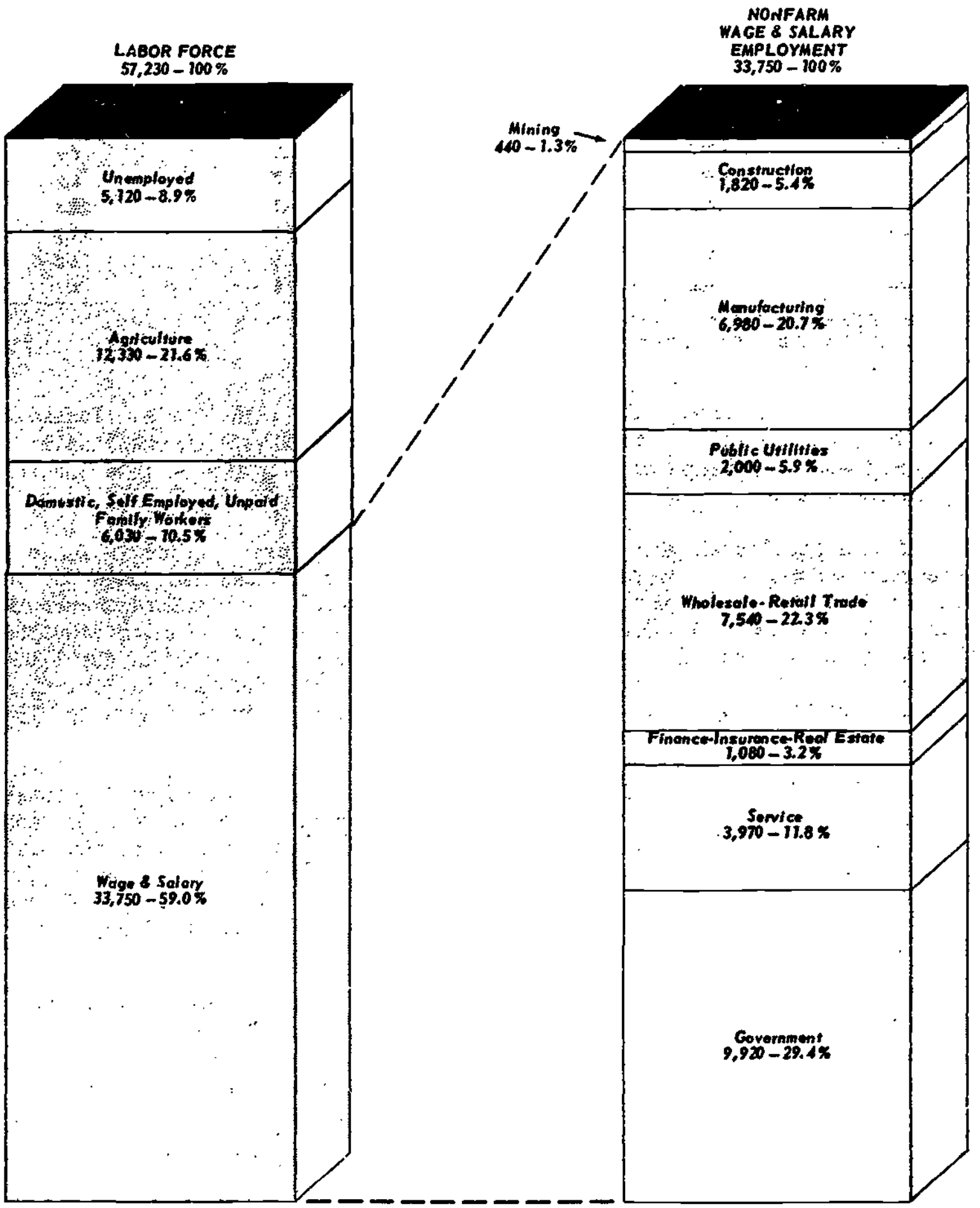
Muskogee County, located in the geographic center of the region, had a total estimated population of 61,200 in July 1967. This represented approximately 32 percent of the entire Mid-Eastern Region's population. The city of Muskogee, with an estimated 1967 count of 38,600 which ranked it seventh in the State, was by far the largest city in the region. 1/

1/ Oklahoma Population Estimates, Oklahoma Employment Security Commission, (Oklahoma City, 1967)

FIGURE II

LABOR FORCE AND EMPLOYMENT BY INDUSTRY DIVISION
MID-EASTERN REGION

JUNE 1967



Muskogee serves as a manufacturing, wholesale-retail trade and service center for a vast agricultural area. Because of the large amount of truck farming in the area, food processing is an important component of total manufacturing. In addition, oil field equipment is produced there. Other manufacturing activities include glass plants, canning factories, rare metal processing as well as paper box and apparel production. Muskogee County is also important in wholesale-retail trade. For the Mid-Eastern Region, almost 50 percent of all such jobs are in this county.

Although Muskogee County is the hub of economic activity in the Mid-Eastern Region, other counties have important local and areawide industries and facilities.

Okmulgee County, with almost 36,000 residents, is second in population in the Mid-Eastern Region. Its two major cities, Okmulgee and Henryetta, have a number of large industrial firms. In addition, a vocational-technological school, offering a wide curriculum of courses, is located in Okmulgee. In 1967, that facility, Oklahoma State Tech, graduated more than 800 skilled technicians, many of whom remained and were employed in the Mid-Eastern Region.

Sequoyah County, in the extreme eastern portion of the region, like most rural areas of Oklahoma, has had to face the problem of transition from an agriculturally based economy to the more job-producing activities of nonfarm industry. Adjacent to the city of Ft. Smith, Arkansas, Sequoyah County is included in the metropolitan area of that city. Many Sequoyah County workers are employed in Ft. Smith while maintaining their residence in Oklahoma.

Sallisaw, the county seat of Sequoyah County, has been active in the promotion of the county as a lucrative site for new industry locations. This promotion has led to the recent announcement of plans for a $25,000,000 uranium plant which will eventually provide employment for approximately 300 persons.

Other counties in the Mid-Eastern Region have faced economic problems not unlike those of Sequoyah. Adair, Cherokee, Haskell, McIntosh and Wagoner Counties all have unemployment rates above the State and national averages. At present, all of these counties are heavily dependent on federal, State and local government activities for thrir economic stability. As a result, government workers account for almost 44 percent of all nonfarm wage and salary employment in these five counties. This is considerably above the regional average of government employment, some 30 percent. Northeastern State College at Tahlequah in Cherokee County, with over 5,000 students, contributes a sizable portion of the government employment.

With the completion of the Arkansas River Navigation Project in sight, much optimism is held for industrial development of the Mid-Eastern Region. First, those counties which, until now, have been slow in their economic development should make significant progress; secondly, counties which have already made substantial industrial advances should receive an additional boost, not only from new industrial location, but also from expansion of those firms already located within the region.

CURRENT EMPLOYMENT AND FORECAST FOR MAJOR INDUSTRY DIVISIONS

Nonfarm wage and salary employment in Mid-Eastern Oklahoma should reach 35,920 by June 1969, an increase of 2,170, or 6.4 percent from the June 1967 figure. Five years from the date of the study, such employment can be expected to climb to 38,050, a gain of 12.7 percent, thus providing 4,300 new jobs. Growth should be experienced in all industry divisions in both the two- and five-year spans. These figures are thought to be conservative as they fail to provide for employment of new firms that might be established in the region over the next five years. One example of this is the development of new manufacturing endeavors which were announced for the region after completion of the field work for this study. The projections do, however, reflect scheduled cutbacks. Information for the survey was also gathered from firms which, by mid-1967, had announced plans to locate in the region but had not begun operations.

Mining

Mining activities include the extraction of minerals occurring naturally: solids, such as coal and ores; liquids, such as crude petroleum; and gases, such as natural gas.

The mining industry of the Mid-Eastern Region recorded fewer employees in June 1967 than did any of the other seven major industry divisions. With 440 workers, mining accounted for only 1.3 percent of nonfarm wage and salary employment. It is significant to note, however, that over the two- and five-year forecast periods, mining is expected to show a larger percent increase than any other industry. By June 1969, total mining employment should advance by 38.6 percent, thus reaching 610 jobs. This figure should climb to 660 by 1972 -- an increase of one-half over the June 1967 total.

The petroleum as well as stone, sand and gravel segments of the mining industry should remain fairly level in employment. The unusually large percent of increase should come about primarily as a result of new coal mining operations in the region. The first underground coal mining activity to be initiated since World War II recently started operations in Haskell County. The low-cost transportation and abundant water supply to be provided by the Arkansas River Navigation Project were prime factors in the location of this operation. These advantages, plus the huge untapped deposits of coal (estimated by the United States Geological Survey to be 55 billion tons for the State), should insure a steady increase in mining employment over the next few years. However, it should be kept in mind that even though an impressive 50 percent increase in mining jobs is expected over the five-year projection period, the mining industry as a whole will still command probably no more than two percent of the total wage and salary employment of this region.

Construction

Construction reported a total working force of 1,820 in June 1967. Two- and five-year forecasts call for slight absolute increases to 1,880 in 1969

and 1,910 in 1972. While having a slight numerical gain over the two- and five-year spans, construction employment should decline relatively when compared with the other industry divisions. In June 1967, it commanded 5.4 percent of nonfarm wage and salary employment. By 1969, this percentage should drop to 5.2 percent and decline further to 5.0 percent by 1972.

Considerable government construction in the region is exerting a large influence on employment in this industry division at present. Extensive highway construction and repair is being undertaken throughout the region. In addition to highway construction, several individual Arkansas River projects are at various stages of completion. These contracts cause wide fluctuations in construction employment over the short run; however, in the long run, this industry division should maintain a slight but steady growth to keep pace with the expanding economy.

Manufacturing

With a total employment of 6,980 in June 1967, manufacturing for the region ranked third in total employment of all the nonfarm wage and salary industry divisions. Slightly more than 20 percent of all such workers were engaged in manufacturing. A 5.3 percent increase is forecast for 1969, bringing total expected employment to 7,350. By June 1972, this figure should reach 7,880, an advance of 12.9 percent for the five-year span.

More than half of all manufacturing employment for the region was centered in Muskogee County. Other counties with a significant number of factory jobs were Adair and Okmulgee. These three areas accounted for over 90 percent of the manufacturing employment in the region.

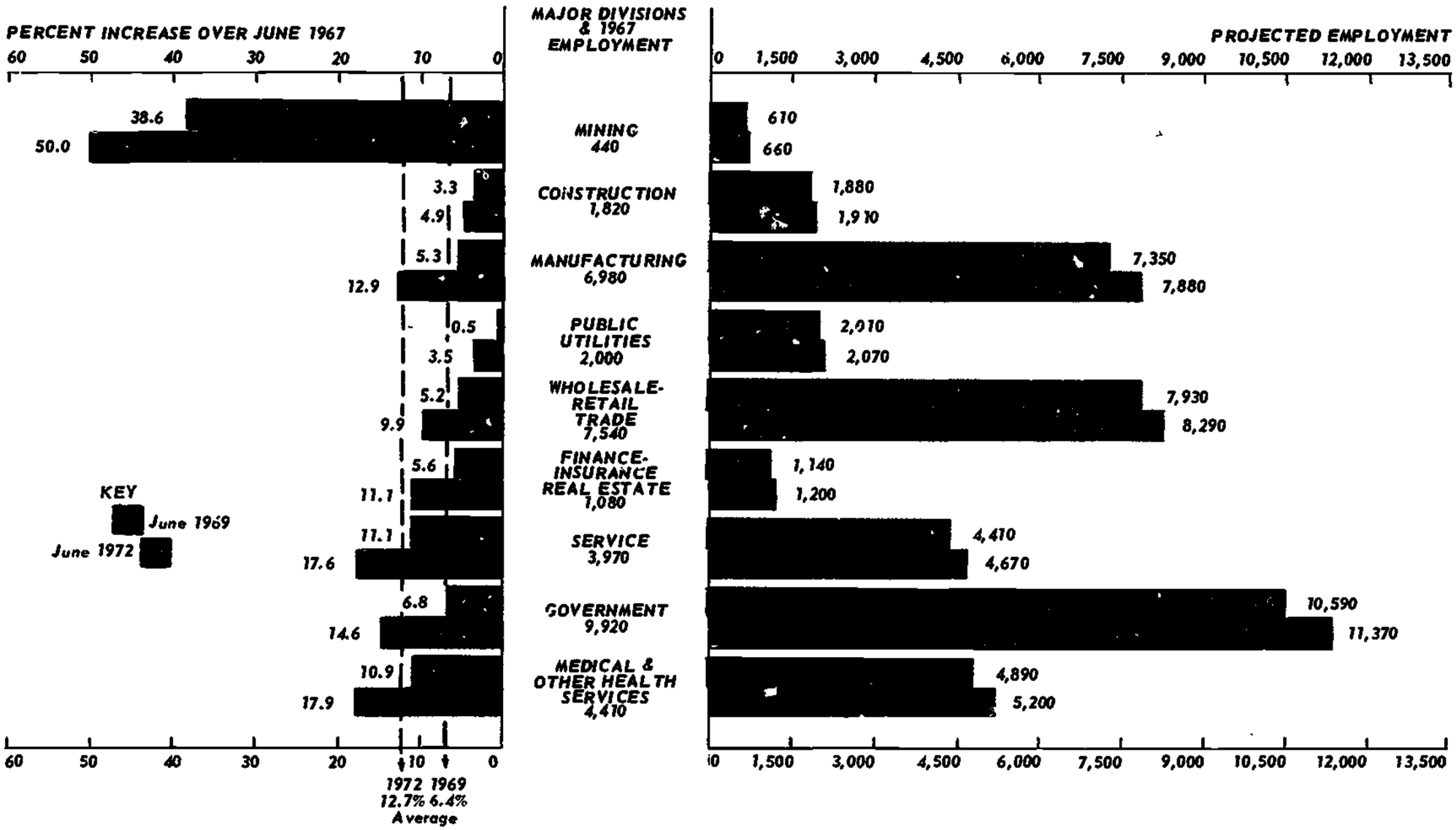
An important portion of the total manufacturing in the region is food processing. Some seasonal as well as yearly variation is to be expected in the canning industry; however, food processing as a whole is diversified enough in the region to maintain a fairly stable level of employment throughout the year with a long-run upward trend in motion.

Public Utilities

Employment in the broad category of public utilities, which also includes transportation and communications, was 2,000 in June 1967. By 1969, public utilities employment should increase only slightly, 0.5 percent, to 2,010 and five years hence should reach 2,070, or a 3.5 percent advance over the 1967 figure. Although ranking fifth in total employment of the eight industry divisions, public utilities is forecast to have less growth, both absolute and percentage, than any of the other groups. This stability is to be expected in public utilities employment. Technological advances, particularly in the communication field, have allowed the public utilities industry to increase its services to keep pace with an expanding population and economy while maintaining a relatively steady level of employment.

FIGURE III

EMPLOYMENT GROWTH BY NONFARM WAGE AND SALARY DIVISION
MID-EASTERN REGION



Wholesale-Retail Trade

Second only to government in total employment, the wholesale-retail trade division utilized a total of 7,540 jobholders during June 1967. While maintaining its second position in nonfarm wage and salary employment, trade is expected to show gains of 5.2 and 9.9 percent over the two- and five-year forecast periods. At these rates of expansion, total wholesale-retail trade jobs will reach 7,930 by 1969 and increase further to 8,290 five years from the survey date.

Increased emphasis on the convenience of "one-stop" shopping has resulted in the development of outlying shopping areas. New marketing techniques, coupled with various and readily available credit plans, have been and will continue to be significant in the growth of trade. Customer mobility is such that areas which were once not suited for trade establishments have now become easily within the range of growing numbers of potential buyers.

One factor which has hampered the expansion of wholesale and some retail trade in the Mid-Eastern Region is its proximity to the important trade centers of Tulsa to the northwest and Fort Smith to the east. However, advances are being made within the region as is reflected by the optimistic projections of trade employers.

Finance-Insurance-Real Estate

Regional employment in this division has been increasing quite rapidly over the past few years. Finance-insurance-real estate is a dependent industry and a good indicator of the overall economic direction of an area. Although commanding only 3.2 percent of the total nonfarm wage and salary employment, increases of 5.6 and 11.1 percent are forecast over the two- and five-year periods. When these rates of growth are realized, total employment will expand from 1,080 in June 1967 to 1,140 in 1969 and further increase to 1,200 by June 1972.

Service

This division encompasses establishments primarily engaged in rendering a wide variety of services to individuals and business. Included are, hotels and other lodging places, establishments providing personal, business, repair, and amusement services, medical, legal, engineering, and other professional services, educational institutions, nonprofit membership organizations and other miscellaneous services.

In the Mid-Eastern Region, service employment was 3,970 in June 1967. With rates of growth forecast to be 11.1 and 17.6 percent over the two- and five-year periods, it is second only to mining in expected percentage growth. Total employment should climb to 4,410 in 1969 and by 1972 is expected to reach 4,670 jobs.

An important segment of service employment for the region is taken up by recreational establishments which cater to tourists. With more leisure time

TABLE II

EMPLOYMENT BY NONFARM WAGE AND SALARY INDUSTRY DIVISION

INDUSTRY DIVISION	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Total Wage & Salary Employment	33,750	35,920	38,050	2,170	4,300	6.4	12.7
Mining	440	610	660	170	220	38.6	50.0
Construction	1,820	1,880	1,910	60	90	3.3	4.9
Manufacturing	6,980	7,350	7,880	370	900	5.3	12.9
Public Utilities	2,000	2,010	2,070	10	70	0.5	3.5
Wholesale-Retail Trade	7,540	7,930	8,290	390	750	5.2	9.9
Finance-Insurance-Real Estate	1,080	1,140	1,200	60	120	5.6	11.1
Service	3,970	4,410	4,670	440	700	11.1	17.6
Government	9,920	10,590	11,370	670	1,450	6.8	14.6
Medical & Other Health Services*	4,410	4,890	5,200	480	790	10.9	17.9

** Data shown as Medical and other Health Services are also included in the overall categories of Service and Government.*

and more money to be spent on recreational activities, increasingly large numbers of tourists are being attracted to the natural beauty of this section of Oklahoma. This, coupled with an expanding demand for more medical services, gives a partial explanation for the large projected increase in service employment.

Government

Federal, State and local government units, combined, employed more workers than any other regional nonfarm wage and salary division in June 1967, with 29.4 percent of all such jobs. Furthermore, government employment is forecast to have a larger absolute increase than any of the other industry divisions. In June 1967, government employment included 9,920 jobholders. Over the two-year forecast period, employment is expected to increase by 6.8 percent. Five years hence, government jobs should register a gain of 14.6 percent, bringing the total to 11,370 workers.

Although job additions are anticipated for most phases of government, employment within the education field is forecast to increase at an accelerated rate. Continuing emphasis on the reduction of the teacher-pupil ratio, plus the ever-increasing importance of education in a technological society, have combined to create this demand.

Medical and other Health Services

Employment figures discussed here for medical and other health services were included in the previously covered categories of service and government. For example, all private and religious-related medical facilities are included in the service division, while all public health institutions are a part of government. Although not generally considered an industry division unto

itself, employment in medical and other health services represents a large enough percentage of service and government employment to warrant separate analysis.

Total employment for medical and other health services in June 1967 was 4,410. This figure is 31.7 percent of the combined totals of government and service employment. Forecast growth calls for expansions of 10.9 and 17.9 percent over the two- and five-year spans. At these rates of growth, total jobs in this category would be 4,890 in 1969 and 5,200 by 1972. Much of this growth can be attributed to the increased care and treatment of the aged.

For example, since Medicare was initiated in 1966, hospital care has been brought within the financial reach of elderly persons who had, in many cases, previously neglected their health needs. Hospitals have expanded facilities and staff to properly handle the increased load. Extended care benefits have resulted in the growth of private nursing homes. By 1972, employment in the medical and other health services category is expected to increase by almost 800 jobs to adequately meet the health needs of the residents of the Mid-Eastern Region.

MANPOWER NEEDS FOR SELECTED OCCUPATIONS

Discussion of industry divisions and major occupational groups is limited to anticipated employment growth. Total demand, however, consists not only of expansion but also includes replacement needs due to persons who will leave the labor force for various reasons, such as retirement, disability or death. In addition, many women will leave the labor market to assume the role of housewife and mother. For individual occupations, replacements available, or supply, are subtracted from the total demand in order to reveal net needs. Supply figures utilized in this study include unemployed persons, in-plant trainees as reported by surveyed employers, and school output.

Professional-Technical-Managerial

Professional-technical-managerial occupations include persons concerned primarily with the theoretical and practical aspects of such fields as art, science, engineering, education, medicine, law, business relations as well as administrative, managerial and technical work. Most of these jobs require substantial educational preparation, usually at the university, junior college, technical institute or post-high school level.

Mid-Eastern Region employment in the professional-technical-managerial group totaled 8,364 in June 1967. This count was equivalent to 25 percent of all nonfarm wage and salary employment and exceeded all other major occupational groups in total jobs. Anticipated growth calls for increases of 6.8 and 13.5 percent by 1969 and 1972, respectively. Expanding at this rate, an additional 1,129 jobs will be available in this category over the five-year period.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
				June 1967 to –		June 1967 to –	
	June 1967	June 1969	June 1972	June 1969	June 1972	June 1969	June 1972
Professional-Technical-Managerial	8,364	8,930	9,493	566	1,129	6.8	13.5

The anticipated growth of these surveyed occupations can readily be related to the growing need for educational and medical services. Specifically, within the education field, survey findings indicate significant demand for teachers at both the elementary and secondary levels. A substantial net need is also forecast for college faculty members. Total demand for educators should number 289 over the two-year period and expand further to 748 over the five year span.

Increased attention to the care of the aged has resulted in job increases in the medical service field. By individual occupation, the greatest net need is indicated for licensed practical nurses. Over the two-year period, 158 such additional jobs should become available. Five years hence, like job additions are expected to number 254. Other occupations within the medical services field which likely will show significant gains are surgical technician, medical librarian, general duty nurse and head or supervisory nurse.

Outside the medical field but still within the professional-technical-managerial group, demand is likely to exceed supply in the specific occupations of accountant, electrical engineer, mechanical draftsman, buyer, loan officer and social worker.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Teacher, Elementary School	1,137	177	48	129	438	94	344
Teacher, Secondary School	1,014	133	18	115	328	30	298
Faculty Member, College or University	252	73	28	45	171	65	106
Nurse, Licensed Practical	336	163	5	158	259	5	254
Surgical Technician	36	7	2	5	17	2	15
Medical-Record Librarian	7	9	0	9	10	0	10
Nurse, General Duty or Office	241	63	1	62	126	1	125
Nurse, Head or Supervisor	215	43	1	42	106	1	105
Accountant	124	13	6	7	33	12	21
Electrical Engineer	12	3	1	2	5	1	4
Draftsman, Mechanical	28	11	2	9	16	4	12
Buyer	30	4	2	2	9	2	7
Loan Officer	202	16	2	14	38	2	36
Social Worker or Case Worker	197	34	4	30	76	10	66

Clerical

The clerical occupation group includes those jobs concerned primarily with the preparation, transcribing, systematizing, and preserving written communications or records, and collecting accounts.

In June 1967, some 4,783 jobs were classified within the clerical group. Two- and five-year projections call for increases of 5.8 and 13.4 percent. By 1969, jobs within this category should number 5,061 and by 1972, further expansion to 5,422 is expected. Employment in this occupational group is forecast to expand sufficiently to maintain approximately 14 percent of nonfarm wage and salary employment over the two- and five-year periods.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
				June 1967 to –		June 1967 to –	
	June 1967	June 1969	June 1972	June 1969	June 1972	June 1969	June 1972
Clerical	4,783	5,061	5,422	278	639	5.8	13.4

A number of clerical occupations are expected to require an increasing quantity of new workers over the five-year span. Numerically, by specific occupations, demand should be greatest for secretaries. For example, a net need of 78 secretaries is forecast for 1969 while projections to 1972 indicate a demand for an additional 231 workers in this occupation.

Significant demand expansion is also forecast for stenographers. However, because of the large number of comparatively small businesses in the Mid-Eastern Region, and the multitude of duties that each office worker must perform in small business, many such workers were classified as secretaries rather than stenographers. Nevertheless, a net need of 42 stenographic jobs is forecast over the two-year projection period and 136 for the five-year span.

Opportunity is expected to develop for an additional 65 post office clerks by 1969, while 119 extra jobs should be available in this occupation by 1972. Several other clerical occupations which should show sizable needs in the forecast periods are bank teller, bookkeeping-machine operator, pay-roll clerk, automotive parts clerk and accounting clerk.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Secretary	539	106	28	78	271	40	231
Stenographer	322	65	23	42	168	32	136
Post Office Clerk	274	70	5	65	124	5	119
Teller, Bank	108	13	4	9	36	4	32
Bookkeeping Machine Operator	162	25	5	20	69	5	64
Pay-Roll Clerk	67	19	4	15	34	5	29
Parts Clerk, Automotive	35	3	0	3	7	0	7
Accounting Clerk	148	21	5	16	85	5	80
Mail Carrier	292	20	1	19	47	1	46
Clerk, General Office	646	78	48	30	222	65	157
Telephone Operator (P.B.X. Operator)	294	39	25	14	93	25	68

Sales

Sales occupations accounted for 3,087, or 9.1 percent, of total nonfarm wage and salary employment in the Mid-Eastern Region during June 1967. Almost 90 percent of all sales jobs were in the wholesale-retail trade industry division. As a group, sales occupations should gain 13.3 percent by June 1969. At this rate of growth, sales personnel will number 3,499 at the end of the two-year period. Projected to 1972, an increase of 779 jobs, or 25.2 percent, is forecast.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE June 1967 to –		PERCENT CHANGE June 1967 to –	
	June 1967	June 1969	June 1972	June 1969	June 1972	June 1969	June 1972
Sales	3,087	3,499	3,866	412	779	13.3	25.2

Exceptional opportunity for employment should exist in most sales occupations through 1972. Outstanding growth may be expected to occur among such individual occupations as sales clerk, salesman and salesperson (commodities), and routeman.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Salesman and Salesperson (Commodities)	647	168	47	121	279	47	232
Sales Clerk	1,649	372	35	337	734	35	699
Routeman	297	49	12	37	126	12	114

Service

This group includes workers occupied primarily with the performance of personal services for individuals which require either contact or close association, such as: jobholders concerned with the cleaning and upkeep of building interiors; workers who prepare and serve food or drink; those who provide lodging and travel accomodations to patrons; persons who operate or tend amusement facilities. Also included are workers concerned with routine attendance to hospital or nursing home patients.

In June 1967, service occupations accounted for 5,216, or 15.5 percent, of regional nonfarm wage and salary jobs. Increases of 6.5 and 13.0 percent are expected over the two- and five-year periods. At these rates of expansion, jobs in this category will number 5,553 in 1969 and 5,892 by 1972.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to - June 1969	June 1967 to - June 1972	June 1967 to - June 1969	June 1967 to - June 1972
Service	5,216	5,553	5,892	337	676	6.5	13.0

Considering unmet needs, the most important single occupation within the service category is nurse aide-orderly. A regional net need of 188 nurse aides is forecast to develop by 1969. Five years hence, this figure should climb to 557. Other significant unmet demand will likely develop for cook (and institutional cook), waitress or waiter, housekeeper, and psychiatric aide.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Nurse-Aide-Orderly	1,566	281	93	188	669	112	557
Cook (and Institutional Cook)	819	127	38	89	302	55	247
Waitress or Waiter	547	64	53	11	159	53	106
Housekeeper	146	36	1	35	71	1	70
Psychiatric Aide	60	27	16	11	38	16	22
Policeman or Detective	104	15	0	15	30	0	30
Grounds Keeper	211	19	1	18	45	1	44

Processing

This category includes occupations concerned with refining, mixing, compounding, chemically treating, heat treating, or similarly working materials and products.

Figures for June 1967 revealed a total of 2,740 jobs in the processing category. Slight total expansion is projected for this occupational group over both the short and long forecast periods. A 2.5 percent increase is forecast for 1969, bringing total jobs to 2,809. Over the longer period, a gain of 6.4 percent, or 176 such jobs, is projected.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Processing	2,740	2,809	2,916	69	176	2.5	6.4

By individual occupation, the most significant net demand should develop for casters. A need should exist for 22 additional casters by 1969 and 55 by 1972. Other occupations with forecast unmet needs are butcher, meat grader, boner or skinner (meat), baker, batch-and-furnace man (glass), and bottle-machine operator (glass).

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Caster	372	22	0	22	55	0	55
Butcher, All-round	117	23	12	11	64	12	52
Grader, Meat	34	10	0	10	21	0	21
Boner or Skinner (Meat)	78	13	3	10	28	3	25
Baker	50	5	3	2	13	5	8
Batch and Furnace Man (Glass)	79	5	0	5	16	0	16
Bottle Machine Operator (Glass)	97	6	0	6	25	0	25

Machine Trades

Machine trades occupations include jobs concerned with feeding, tending, operating, controlling, and setting up machines to cut, bore, mill, print and similarly work such materials as metal, paper, wood and stone.

A total of 1,442 jobs were classified within this occupational group in June 1967. Of these jobs, by far the majority were in the manufacturing and wholesale-retail trade industry divisions. Growth in the machine trades occupations is forecast to be 5.2 percent for the two-year period and 12.6 percent for the five-year span. This would mean an additional 75 jobs by 1969 and 181 through 1972.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Machine Trades	1,442	1,517	1,623	75	181	5.2	12.6

Although most machine trades occupations are expected to show some gain in both forecast periods, there are a few for which an over-supply of workers is forecast. On the plus side, the outstanding individual occupation in this group is mechanic, maintenance with a net need of 13 expected to develop by 1969. Unmet opportunity for employment in this occupation should number 39 jobs by 1972. Other jobs for which significant net demand could exist are machinist (all around), lay-out man, machine set-up operator, machine tool operator (production), shear operator, and automobile mechanic.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Mechanic, Maintenance	206	21	8	13	47	8	39
Machinist, (All-Around)	87	9	1	8	26	1	25
Lay-Out Man	7	4	0	4	6	0	6
Machine Set-Up Operator	50	8	0	8	25	0	25
Machine Tool Operator (Production)	56	13	0	13	34	0	34
Shear Operator, Power	71	4	2	2	15	2	13
Automobile Mechanic	232	26	21	5	70	41	29

Bench Work

The bench work category includes occupations concerned with the use of handtools and bench machines to carve, paint, sew, assemble and similarly work relatively small objects and materials.

With only 584 workers engaged in bench work occupations, this category was the smallest occupational group in the Mid-Eastern Region for June 1967. Additional opportunities are expected to develop for 49 more such workers by 1969, and 102 more jobs should be available by 1972.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Bench Work	584	633	686	49	102	8.4	17.5

Many of the individual occupations in the bench work category had so few workers that little net demand was shown for the forecast periods. However, the individual occupation of assembler (product) is forecast to have a net need of 21 jobs in 1969 and 45 by 1972. Other occupations showing some opportunity for the future are radio and television repairman and sewing machine operator.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Assembler (Product)	75	21	0	21	45	0	45
Radio and Television Repairman	31	3	0	3	6	0	6
Sewing Machine Operator	151	29	2,	2	59	37	22

Structural

Structural work occupations are concerned primarily with fabricating, erecting, installing, paving, and similarly working structures or structural parts, such as bridges, buildings and roads.

In the Mid-Eastern Region, 3,078 jobs were classified within this occupational group in June 1967. Over the two-year period, an increase of 5.9 percent, or 182 jobs, is forecast. A five-year projection calls for an advancement of 10.9 percent, bringing the total to 3,412 structural workers.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Structural Work	3,078	3,260	3,412	182	334	5.9	10.9

Indications are there will be unmet needs for electricians in both the two- and five-year periods. A net need of 67 is indicated by 1969 and 87 jobs in the longer period. There is expected to be some net demand in the individual occupation of maintenance man, heavy equipment operator, welder, automobile body repairman and, in the five-year period, structural steel worker.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Electrician	103	70	3	67	90	3	87
Maintenance Man	88	17	0	17	48	0	48
Heavy Equipment Operator	397	24	21	3	60	27	33
Welder	175	21	14	7	50	34	16
Automobile Body Repairman	96	17	4	13	49	9	40
Structural Steel Worker	180	11	10	1	27	10	17

Miscellaneous

This occupational group includes jobs concerned primarily with transportation services; packaging and warehouseing; technical production of amusement services, such as radio and motion pictures; and various miscellaneous activities.

Miscellaneous occupations accounted for 13.2 percent of the nonfarm wage and salary employment of the Mid-Eastern Region in June 1967. Area residents at work in this group numbered 4,456. This category of jobs can be expected to show gains of some 4.5 percent by June 1967 and 6.4 percent over the longer period.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Miscellaneous	4,456	4,658	4,740	202	284	4.5	6.4

Although there were only three occupations surveyed from this group, job additions should be noted in most of the miscellaneous occupations. One in particular which is forecast to register significant net demand is stationary engineer. Demand should exceed supply by six jobs through 1969 and by 1972, net need is expected to be 15. Power plant operator, although not as significant numerically as some jobs classified as miscellaneous, can be expected to offer opportunities for two additional workers by 1969 and six in the five-year span.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Stationary, Engineer	79	7	1	6	16	1	15
Power Plant Operator	26	2	0	2	6	0	6

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SCOPE AND METHODOLOGY

This study was initiated in cooperation with the State Department of Vocational-Technical Education in an effort to develop current and future occupational data. Such information is needed to assist in curriculum development for the State's area vocational-technical schools. Furthermore, the material should be an invaluable counseling tool for high schools, colleges and the employment service. Finally, this type of data is often useful to private industry, government agencies and civic organizations in planning for the future.

The specific occupations in the survey were selected by a joint committee of personnel from the Department of Vocational-Technical Education and the Oklahoma State Employment Service. The final list consisted of some 299 occupations with either numerical or specific industrial significance within the area. Following this, the occupations were defined according to the U.S. Department of Labor's "Dictionary of Occupational Titles", Third Edition, 1965.

Firms included in the study were drawn from a list of concerns covered by unemployment insurance laws and augmented by a register of the larger noncovered establishments such as government agencies, hospitals and other nonprofit organizations. These firms were listed by industry division in descending order by employment size. Establishments comprising the upper 50 percent of the area's employment total as shown on the register were included in the survey. Next, twenty-percent and four-percent samples were selected from the third and fourth quartiles, respectively.

During the second week of June 1967, questionnaires, job descriptions and instructions were mailed to approximately two-thirds of the surveyed firms. Over the next several weeks personal visits were made to the area's larger employers to solicit their cooperation. An analysis of the response from surveyed employers in this region is shown in Table 1.

As returned, the forms were checked for accuracy and completeness. Following this, the information for each sample size group was tabulated and inflated to represent the universe. Thereupon, an adjustment was made so the data would agree with published industry employment totals. These adjustment factors, in turn, were applied to data for each occupation in the survey. Expansion needs were then determined from these figures while replacement requirements were computed by use of factors and methodology provided by the Bureau of Employment Security, U.S. Department of Labor.

Training conducted by employers in their plants was determined by the survey questionnaire. However, the total supply of workers was derived from three sources: school output, in-plant training, and the unemployed. Graduates from the area's high schools, technical-vocational schools, business schools, and colleges, both public and private, were surveyed to obtain the supply of workers expected to enter the labor force. The unemployed count was derived from the active files of the local employment service offices in the area.

Estimates of supply are difficult to obtain on a regional basis, especially for some occupations such as those in the professional classifications. For example, students from all over Oklahoma as well as other states may be attending a college or university located within the region. Upon graduation, however, many such persons will return to their native areas or accept jobs in more industrialized locations outside of Oklahoma. Therefore, shortages may appear in some occupations in spite of extensive training programs in Oklahoma.

Finally, it should be noted that the estimates of future employment are based on the intentions of surveyed employers and do not include the requirements for new firms which may be established within the forecast period. The figures are presented in precise form to establish the size of the training need; however, they should be regarded as an indication of magnitude rather than as a refined estimate.

In an effort to conserve space, facsimiles of the questionnaires, employer letters, along with detailed descriptions of the major occupational groups and jobs surveyed have been omitted from this report. Copies of these materials may be obtained by writing the Research and Planning Division of the Oklahoma State Employment Service.

TABLE 1
RESPONSE ANALYSIS
SAMPLE SIZE, NUMBER RESPONDING AND PERCENT RETURN

Industry Division	ESTABLISHMENT DATA			EMPLOYMENT DATA		
	Number of Firms In Sample	Number Responding	Percent Return	Total Employment of Sample	Employment of Responding Firms	Percent Return
TOTAL	157	118	75.2	16,455	14,959	90.9
Mining	6	6	100.0	301	301	100.0
Construction	9	6	66.7	245	191	78.0
Manufacturing	33	24	72.7	5,550	4,944	89.1
Public Utilities	12	10	83.3	821	762	92.8
Wholesale-Retail Trade	40	26	65.0	951	684	71.9
Finance-Insurance-Real Estate	6	3	50.0	210	112	53.3
Service	16	11	68.8	461	375	81.3
Government	35	32	91.4	7,916	7,590	95.9

TABLE 2
REGIONAL LABOR FORCE DISTRIBUTION
PRELIMINARY ESTIMATES FOR JUNE 1967

County	Total Civilian Labor Force	UNEMPLOYMENT		EMPLOYMENT				Wage & Salary as Percent of Total Employment
		Number	Rate	Total	Agri-culture	Dom. Ser. Self-Emp. Unpaid Family Workers	Wage & Salary	
TOTAL	57,230	5,120	8.9	52,110	12,330	6,030	33,750	64.8
Adair	4,700	790	16.8	3,910	2,080	240	1,590	40.7
Cherokee	6,160	720	11.7	5,440	1,900	490	3,050	56.1
Haskell	2,570	280	10.9	2,290	1,000	180	1,110	48.5
McIntosh	3,200	310	9.7	2,890	1,150	510	1,230	42.6
Muskogee	22,025	1,500	6.8	20,525	1,950	2,825	15,750	76.7
Okmulgee	10,950	900	8.2	10,050	1,300	1,300	7,450	74.1
Sequoyah	4,210	370	8.8	3,840	1,450	200	2,190	57.0
Wagoner	3,410	250	7.3	3,160	1,500	280	1,380	43.7

TABLE 3
DISTRIBUTION OF EMPLOYMENT BY MAJOR OCCUPATIONAL GROUP WITHIN INDUSTRY DIVISION
JUNE 1967 AND FORECAST PERIODS

Industry	Total	Prof. Tech. Mgr.	Clerical	Sales	Service	Processing	Machine Trades	Bench Work	Struc. Work	Misc.
1967										
Total	33,750	8,364	4,783	3,087	5,216	2,740	1,442	584	3,078	4,456
Mining	440	70	41	2	4	50	39	--	65	169
Construction	1,820	145	88	--	4	--	84	--	1,275	224
Manufacturing	6,980	642	423	161	155	2,137	853	541	324	1,744
Public Utilities	2,000	287	519	40	137	--	18	10	431	558
Wholesale-Retail Trade	7,540	1,089	904	2,760	337	546	362	6	208	1,328
Finance-Insurance-Real Estate	1,080	336	711	2	14	--	--	--	17	--
Service	3,970	1,167	370	109	2,068	2	6	15	63	170
Government	9,920	4,628	1,727	13	2,497	5	80	12	695	263
Medical & other Health Services*	4,410	1,304	445	1	2,501	5	2	3	89	60
1969										
Total	35,920	8,930	5,061	3,499	5,553	2,809	1,517	633	3,260	4,658
Mining	610	78	55	5	9	82	51	4	73	253
Construction	1,880	145	88	--	4	--	84	--	1,335	224
Manufacturing	7,350	687	444	203	160	2,232	901	583	352	1,788
Public Utilities	2,010	262	527	48	137	--	18	10	458	550
Wholesale-Retail Trade	7,930	1,107	922	3,085	342	488	374	8	221	1,383
Finance-Insurance-Real Estate	1,140	340	767	2	14	--	--	--	17	--
Service	4,410	1,352	403	141	2,244	2	6	15	77	170
Government	10,590	4,959	1,855	15	2,643	5	83	13	727	290
Medical & other Health Services*	4,890	1,535	491	2	2,694	5	2	3	97	61
1972										
Total	38,050	9,493	5,422	3,866	5,892	2,916	1,623	686	3,412	4,740
Mining	660	84	57	6	12	96	56	6	74	269
Construction	1,910	145	88	--	4	--	84	--	1,365	224
Manufacturing	7,880	745	489	247	175	2,419	970	629	387	1,819
Public Utilities	2,070	264	536	66	137	--	18	10	476	563
Wholesale-Retail Trade	8,290	1,148	999	3,368	349	394	397	11	245	1,379
Finance-Insurance-Real Estate	1,200	347	820	2	14	--	--	--	17	--
Service	4,670	1,448	453	160	2,337	2	8	15	77	170
Government	11,370	5,312	1,980	17	2,864	5	90	15	771	316
Medical & other Health Services*	5,190	1,646	526	2	2,838	5	3	3	103	64

* Data shown as Medical and other Health Services are also included in the overall categories of Service and Government.

TABLE 4
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	June 1967 Employment Female	Projected Employment June 1969	Projected Employment June 1972	Percent Change June 67 to- June 1969	Percent Change June 67 to- June 1972
PROFESSIONAL, TECHNICAL AND MANAGERIAL OCCUPATIONS						
Electrical Engineer	12	--	14	15	16.7	25.0
Electrical Technician	17	--	18	21	5.9	23.5
Draftsman, Electrical	13	3	13	14	0.0	7.7
Instrumentation Technician	7	--	12	13	71.4	85.7
Civil Engineer	56	--	58	58	3.6	3.6
Civil Engineering Technician	94	--	97	100	3.2	6.4
Draftsman, Civil	9	--	9	9	0.0	0.0
Mechanical Engineer	21	--	26	30	23.8	42.9
Draftsman, Mechanical	28	1	37	40	32.1	42.9
Director, Quality Control	8	--	8	8	0.0	0.0
Industrial Engineer	20	--	22	24	10.0	20.0
Industrial Engineering Technician	8	--	8	8	0.0	0.0
Surveyor	8	--	8	8	0.0	0.0
Quality-Control Technician	38	4	46	49	21.1	28.9
Project Director, Business Data Processing	7	--	10	12	42.9	71.4
Programmer, Business	11	--	15	24	36.4	118.2
Chemist	11	1	13	14	18.2	27.3
Geologist	13	--	14	14	7.7	7.7
Laboratory Technician (Tester)	8	1	10	12	25.0	50.0
Economist	6	--	7	7	16.7	16.7
Director, Nursing Service	15	15	15	15	0.0	0.0
Nurse, Head or Supervisor	215	215	232	255	7.9	18.6
Nurse, General Duty or Office	241	226	275	296	14.1	22.8
Nurse, Industrial Staff (Occupational)	9	6	9	9	0.0	0.0
Dietitian	25	25	34	37	36.0	48.0
Medical Technologist, Chief	11	--	11	11	0.0	0.0
Medical Technologist or Biochemistry Technologist	17	14	22	28	29.4	64.7
Electrocardiograph Technician or Electroencephalograph Technician	11	2	14	16	17.3	45.5

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Fe-male	Projected Employment June 1969	June 1972	Percent Change June 67 to- June 1969	June 1972
PROFESSIONAL, TECHNICAL AND MANAGERIAL OCCUPATIONS (Cont.)						
Radiologic Technologist	24	5	27	31	12.5	29.2
Medical Laboratory Assistant	28	21	42	45	50.0	60.7
Medical Assistant	5	5	5	5	0.0	0.0
Occupational Therapy Aide	5	2	5	7	0.0	40.0
Dental Assistant	5	5	5	5	0.0	0.0
Nurse, Licensed Practical	336	292	461	500	37.2	48.8
Surgical Technician	36	29	39	43	8.3	19.4
Faculty Member, College or University	252	52	307	377	21.8	49.6
Teacher, Secondary School	1,014	488	1,055	1,115	4.0	10.0
Teacher, Elementary School	1,137	987	1,184	1,252	4.1	10.1
Librarian	22	20	24	30	9.1	36.4
Medical-Record Librarian	7	7	15	15	114.3	114.3
Copy Writer	16	8	18	18	12.5	12.5
Reporter	27	13	27	27	0.0	0.0
Lay-Out Man (Printing & Publish.)	10	8	10	10	0.0	0.0
Cameraman or Photographer	6	1	6	6	0.0	0.0
Accountant	124	5	129	137	4.0	10.5
Cost Estimator	12	--	14	14	16.7	16.7
Buyer	30	--	32	35	6.7	16.7
Purchasing Agent	47	1	46	44	- 2.1	- 6.4
Public Relations Man	18	9	18	20	0.0	11.1
Manager, Credit & Collection	85	46	85	90	0.0	5.9
Manager, Traffic	15	--	18	19	20.0	26.7
Manager, Parts	38	--	38	38	0.0	0.0
Bank Cashier	19	--	19	19	0.0	0.0
Loan Officer	202	19	205	207	1.5	2.5
Superintendent, Hospital (Administrator)	29	9	29	29	0.0	0.0
Social Worker or Case Worker	197	148	210	221	6.6	12.2

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Female	Projected Employment June 1969	June 1972	Percent Change June 67 to- June 1969	June 1972
CLERICAL						
Secretary	539	524	580	647	7.6	20.0
Stenographer	322	316	348	393	8.1	22.0
Personnel Clerk	25	18	26	31	4.0	24.0
Clerk-Typist	312	300	335	369	7.4	18.3
Statement Clerk	22	22	22	22	0.0	0.0
Bookkeeper (Hand)	219	179	230	239	5.0	9.1
Cashier	157	121	159	163	1.3	3.8
Teller, Bank	108	95	108	113	0.0	4.6
Digital-Computer Operator	11	2	13	17	18.2	54.5
Key-Punch Operator	48	42	59	65	22.9	35.4
Tabulating-Machine Operator	15	5	16	18	6.7	20.0
Bookkeeping-Machine Operator	162	151	168	183	3.7	13.0
Pay-Roll Clerk	67	44	80	85	19.4	26.9
Transit Clerk	43	43	41	41	- 4.7	- 4.7
Clerk, General Office	646	404	660	709	2.2	9.8
Ward Clerk	36	36	57	63	58.3	75.0
Accounting Clerk	148	116	153	193	3.4	30.4
Parts Clerk, Automotive	35	--	36	37	2.9	5.7
Post Office Clerk	274	--	328	358	19.7	30.7
Mail Carrier	292	--	294	296	0.7	1.4
Telephone Operator (PBX Oper.)	294	292	297	298	1.0	1.4
Room Clerk	38	8	39	41	2.6	7.9
New Account Clerk	67	63	67	67	0.0	0.0
Medical Record Clerk	17	14	19	22	11.8	29.4
SALES						
Salesman, Services	83	20	109	136	31.3	63.9
Salesman and Salesperson, Commodities	647	163	766	805	18.4	24.4
Sales Clerk	1,649	809	1,872	2,012	13.5	22.0
Routeman	297	--	328	379	10.4	27.6

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Fe-male	Projected Employment June 1969	June 1972	Percent Change June 67 to- June 1969	June 1972
SALES (Continued)						
Auctioneer	12	--	12	12	0.0	0.0
Manager, Department (Retail)	68	10	70	70	2.9	2.9
Pest-Control Representative	15	--	19	24	26.7	60.0
SERVICE						
Waitress or Waiter	547	425	552	558	0.9	2.0
Cook (and Institutional Cook)	819	690	854	891	4.3	8.8
Meat Cutter or Butcher	47	23	47	47	0.0	0.0
Food Service Supervisor	11	7	11	11	0.0	0.0
Housekeeper	146	96	167	181	14.4	24.0
Nurse Aide - Orderly	1,566	1,280	1,674	1,802	6.9	15.1
Psychiatric Aide	60	56	80	80	33.3	33.3
Silk Finisher	8	--	10	10	25.0	25.0
Wool Presser	65	--	68	72	4.6	10.8
Fireman (Fire Department)	119	--	119	122	0.0	2.5
Policeman or Detective	104	--	113	119	8.7	14.4
Sheriff or Baliff	36	--	37	38	2.8	5.6
Exterminator	15	--	19	19	26.7	26.7
Grounds Keeper	211	--	217	225	2.8	6.6
PROCESSING						
Caster	372	--	372	372	0.0	0.0
Grinding Mill Operator	13	--	13	13	0.0	0.0
Butcher, All-round	117	--	133	164	13.7	40.2
Grader, Meat	34	6	41	49	20.6	44.1
Boner or Skinner (Meat)	78	--	86	94	10.3	20.5
Baker	50	2	52	55	4.0	10.0
Batch and Furnace Man (Glass)	79	--	79	83	0.0	5.1
Bottle-Machine Operator (Glass)	97	--	97	108	0.0	11.3

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Female	Projected Employment June 1969	Projected Employment June 1972	Percent Change June 67 to- June 1969	Percent Change June 67 to- June 1972
MACHINE TRADES						
Machinist (All Around)	87	--	91	100	4.6	14.9
Lay-Out Man (Machine Shop)	7	--	11	12	57.1	71.4
Machine Set-up Operator	50	--	55	68	10.0	36.0
Machine Tool Operator (Production)	56	11	65	80	16.1	42.9
Shear Operator, Power	71	--	71	76	0.0	7.0
Punch-Press Operator	17	--	17	17	0.0	0.0
Press Operator (Heavy Duty)	6	--	7	8	16.7	33.3
Metal Fabricator (Structural Fitter)	6	1	7	9	16.7	50.0
Roll Operator, Sheet Metal	5	--	5	5	0.0	0.0
Mechanic, Air Conditioning (Auto)	37	--	37	37	0.0	0.0
Mechanic, Automobile	232	--	244	268	5.2	15.5
Mechanic, Diesel	39	--	40	41	2.6	5.1
Mechanic, Maintenance	206	--	215	223	4.4	8.3
Millwright	32	--	32	32	0.0	0.0
Linotype Operator	29	--	29	29	0.0	0.0
Cylinder-Press Man	26	--	26	27	0.0	3.8
Offset-Press Man	37	1	37	39	0.0	5.4
Cutting Machine Operator (Glass)	31	--	33	33	6.5	6.5
BENCH WORK						
Assembler, Product	75	6	91	108	21.3	44.0
Radio and Television Repairman	31	--	32	32	3.2	3.2
Electric Motor Repairman	7	--	8	10	14.3	42.9
Electronics Assembler	8	2	13	18	62.5	125.0
Painter, Spray	19	--	21	25	10.5	31.6
Cutter, Hand or Machine	5	--	5	5	0.0	0.0
Seamstress	10	10	10	10	0.0	0.0
Sewing-Machine Operator	151	151	162	164	7.3	8.6

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Female	Projected Employment June 1969	June 1972	Percent Change June 67 to- June 1969	June 1972
STRUCTURAL						
Structural Steel Worker	180	--	180	180	0.0	0.0
Automobile Body Repairman	96	--	107	131	11.5	36.5
Lay-Out Man (Structural)	23	--	25	26	8.7	13.0
Welder	175	1	186	199	6.3	13.7
Flame Cutting Machine Operator	10	--	10	12	0.0	20.0
Flame Cutter, Hand	12	--	12	12	0.0	0.0
Lineman	217	--	219	220	0.9	1.4
Electrician	103	--	167	178	62.1	72.8
Appliance Repairman, Household	37	--	37	37	0.0	0.0
Electronics Mechanic	13	--	13	14	0.0	7.7
Painter or Paperhanger	33	--	33	33	0.0	0.0
Plasterer	17	--	17	17	0.0	0.0
Cement Mason or Concrete Finisher	79	--	79	79	0.0	0.0
Painter, Automobile	37	--	37	37	0.0	0.0
Heavy Equipment Operator	397	--	398	398	0.3	0.3
Carpenter	246	--	246	246	0.0	0.0
Bricklayer	75	--	75	75	0.0	0.0
Plumber or Pipefitter	201	--	201	202	0.0	0.5
Maintenance Man	88	--	100	113	13.6	28.4
Maintenance Man, Building	253	15	281	292	11.1	15.4
MISCELLANEOUS						
Stationary Engineer	79	--	81	83	2.5	5.1
Power Plant Operator	26	--	26	28	0.0	7.7
Photolithographer	8	--	8	8	0.0	0.0

TABLE 5
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
PROFESSIONAL, TECHNICAL & MANAGERIAL						
Electrical Engineer	3	2	1	5	3	2
Electrical Technician	2	1	1	7	4	3
Draftsman, Electrical	1	0	1	3	1	2
Instrumentation Technician	5	5	0	7	6	1
Civil Engineer	5	2	3	10	2	8
Civil Engineering Technician	9	3	6	20	6	14
Draftsman, Civil	1	0	1	1	0	1
Mechanical Engineer	6	5	1	12	9	3
Draftsman, Mechanical	11	9	2	16	12	4
Director, Quality Control	0	0	0	1	0	1
Industrial Engineer	3	2	1	7	4	3
Industrial Engineering Technician	0	0	0	1	0	1
Surveyor	0	0	0	1	0	1
Quality-Control Technician	10	8	2	17	11	6
Project Director, Business Data Processing	3	3	0	6	5	1
Programmer, Business	5	4	1	15	13	2
Chemist	3	2	1	4	3	1
Geologist	2	1	1	3	1	2
Laboratory Technician (Tester)	2	2	0	5	4	1
Economist	1	1	0	2	1	1
Director, Nursing Service	2	0	2	5	0	5
Nurse, Head or Supervisor	43	17	26	106	40	66
Nurse, General Duty or Office	63	34	29	126	55	71
Nurse, Industrial Staff (Occupational)	1	0	1	2	0	2

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
PROFESSIONAL, TECHNICAL & MANAGERIAL (Cont.)						
Dietitian	12	9	3	20	12	8
Medical Technologist, Chief	1	0	1	2	0	2
Medical Technologist or Biochemistry Technologist	7	5	2	15	11	4
Electrocardiograph Technician or Electroencephalograph Technician	4	3	1	7	5	2
Radiologic Tecimologist	5	3	2	12	7	5
Medical Laboratory Assistant	17	14	3	24	17	7
Medical Assistant	1	0	1	2	0	2
Occupational Therapy Aide	0	0	0	3	2	1
Dental Assistant	1	0	1	2	0	2
Nurse, Licensed Practical	163	125	38	259	164	95
Surgical Technician	7	3	4	17	7	10
Faculty Member, College or University	73	55	18	171	125	46
Teacher, Secondary School	133	41	92	328	101	227
Teacher, Elementary School	177	47	130	438	115	323
Librarian	4	2	2	14	8	6
Medical-Record Librarian	9	8	1	10	8	2
Copy Writer	3	2	1	5	2	3
Reporter	3	0	3	6	0	6
Lay-Out Man (Printing & Publishing)	1	0	1	2	0	2
Cameraman or Photographer	0	0	0	1	0	1
Accountant	13	5	8	33	13	20
Cost Estimator	3	2	1	4	2	2

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
PROFESSIONAL, TECHNICAL & MANAGERIAL (Cont.)						
Buyer	4	2	2	9	5	4
Purchasing Agent	2	- 1	3	4	- 3	7
Public-Relations Man	2	0	2	6	2	4
Manager, Credit & Collections	8	0	8	25	5	20
Manager, Traffic	4	3	1	6	4	2
Manager, Parts	2	0	2	6	0	6
Bank Cashier	1	0	1	3	0	3
Loan Officer	16	3	13	38	5	33
Superintendent, Hospital (Administrator)	2	0	2	6	0	6
Social Worker or Case Worker	34	13	21	76	24	52
CLERICAL						
Secretary	106	41	65	271	108	163
Stenographer	65	26	39	168	71	97
Personnel Clerk	3	1	2	12	6	6
Clerk-Typist	61	23	38	151	57	94
Statement Clerk	3	0	3	7	0	7
Bookkeeper, Hand	35	11	24	81	20	61
Cashier	19	2	17	48	6	42
Teller, Bank	13	0	13	36	5	31
Digital-Computer Operator	3	2	1	8	6	2
Key-Punch Operator	16	11	5	31	17	14

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969			June 1972		
	Total Require-ments	Expan-sion	Replace-ments	Total Require-ments	Expan-sion	Replace-ments
CLERICAL (Continued)						
Tabulating Machine Operator	3	1	2	6	3	3
Bookkeeping-Machine Operator	25	6	19	69	21	48
Pay-Roll Clerk	19	13	6	34	18	16
Transit Clerk	3	- 2	5	11	- 2	13
Clerk, General Office	78	14	64	222	63	159
Ward Clerk	25	21	4	38	27	11
Accounting Clerk	21	5	16	85	45	40
Parts Clerk, Automotive	3	1	2	7	2	5
Post Office Clerk	70	54	16	124	84	40
Mail Carrier	20	2	18	47	4	43
Telephone Operator (PBX Operator)	39	3	36	93	4	89
Room Clerk	4	1	3	9	3	6
New Account Clerk	8	0	8	20	0	20
Medical Record Clerk	4	2	2	9	5	4
SALES						
Salesman, Services	32	26	6	68	53	15
Salesman and Salesperson, Commodities	168	119	49	279	158	121
Sales Clerk	372	223	149	734	363	371
Routeman	49	31	18	126	82	44
Auctioneer	1	0	1	2	0	2
Manager, Department (Retail)	6	2	4	14	2	12
Pest Control Representative	5	4	1	11	9	2

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
SERVICE						
Waitress or Waiter	64	5	59	159	11	148
Cook (and Institutional Cook)	127	35	92	302	72	230
Meat Cutter or Butcher	4	0	4	11	0	11
Food Service Supervisor	1	0	1	3	0	3
Housekeeper	36	21	15	71	35	36
Nurse Aide - Orderly	281	108	173	669	236	433
Psychiatric Aide	27	20	7	38	20	18
Silk Finisher	2	2	0	3	2	1
Wool Presser	7	3	4	17	7	10
Fireman (Fire Department)	7	0	7	21	3	18
Policeman or Detective	15	9	6	30	15	15
Sheriff or Baliff	3	1	2	7	2	5
Exterminator	5	4	1	6	4	2
Grounds Keeper	19	6	13	45	14	31
PROCESSING						
Caster	22	0	22	55	0	55
Grinding Mill Operator	1	0	1	2	0	2
Butcher, All-Round	23	16	7	64	47	17
Grader, Meat	10	7	3	21	15	6
Boner or Skinner (Meat)	13	8	5	28	16	12
Baker	5	2	3	13	5	8
Batch and Furnace Man (Glass)	5	0	5	16	4	12
Bottle Machine Operator (Glass)	6	0	6	25	11	14

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969			June 1972		
	Total Requirements	Expansion	Replacements	Total Requirements	Expansion	Replacements
MACHINE TRADES						
Machinist (All Around)	9	4	5	26	13	13
Lay-Out Man (Machine Shop)	4	4	0	6	5	1
Machine Set-up Operator	8	5	3	25	18	7
Machine-Tool Operator (Production)	13	9	4	34	24	10
Shear Operator, Power	4	0	4	15	5	10
Punch-Press Operator	1	0	1	3	0	3
Press Operator (Heavy Duty)	1	1	0	3	2	1
Metal Fabricator (Structural Fitter)	1	1	0	4	3	1
Roll Operator, Sheet Metal	0	0	0	1	0	1
Mechanic, Air Conditioning (Auto)	2	0	2	5	0	5
Mechanic, Automobile	26	12	14	70	36	34
Mechanic, Diesel	3	1	2	8	2	6
Mechanic, Maintenance	21	9	12	47	17	30
Millwright	2	0	2	5	0	5
Linotype Operator	2	0	2	4	0	4
Cylinder-Pressman	2	0	2	5	1	4
Offset-Pressman	2	0	2	7	2	5
Cutting-Machine Operator (Glass)	4	2	2	7	2	5
BENCHWORK						
Assembler, Product	21	16	5	45	33	12
Radio and Television Repairman	3	1	2	6	1	5
Electric Motor Repairman	1	1	0	4	3	1

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
BENCHWORK (Continued)						
Electronics Assembler	5	5	0	12	10	2
Painter, Spray	4	3	1	9	6	3
Cutter, Hand or Machine	0	0	0	1	0	1
Seamstress	1	0	1	3	0	3
Sewing-Machine Operator	29	11	18	59	13	46
STRUCTURAL						
Structural Steel Worker	11	0	11	27	0	27
Automobile Body Repairman	17	11	6	49	35	14
Lay-Out Man (Structural)	3	2	1	6	3	3
Welder	21	11	10	50	24	26
Flame Cutting Machine Operator	1	0	1	3	2	1
Flame Cutter, Hand	1	0	1	2	0	2
Lineman	15	2	13	35	3	32
Electrician	70	64	6	90	75	15
Appliance Repairman, Household	2	0	2	5	0	5
Electronics Mechanic	1	0	1	3	1	2
Painter or Paperhanger	2	0	2	5	0	5
Plasterer	1	0	1	3	0	3
Cement Mason or Concrete Finisher	5	0	5	12	0	12
Painter, Automobile	2	0	2	5	0	5
Heavy Equipment Operator	24	1	23	60	1	59

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
STRUCTURAL (Continued)						
Carpenter	15	0	15	36	0	36
Bricklayer	5	0	5	11	0	11
Plumber or Pipefitter	12	0	12	31	1	30
Maintenance Man	17	12	5	48	25	13
Maintenance Man, Building	44	28	16	79	39	40
MISCELLANEOUS						
Stationary Engineer	7	2	5	16	4	12
Power Plant Operator	2	0	2	6	2	4
Photolithographer	0	0	0	1	0	1

TABLE 6
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969			June 1972		
	Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
PROFESSIONAL, TECHNICAL AND MANAGERIAL						
Electrical Engineer	3	1	2	5	1	4
Electrical Technician	2	2	0	7	3	4
Draftsman, Electrical	1	0	1	3	0	3
Instrumentation Technician	5	0	5	7	0	7
Civil Engineer	5	0	5	10	0	10
Civil Engineering Technician	9	0	9	20	0	20
Draftsman, Civil	1	1	0	1	3	- 2
Mechanical Engineer	6	2	4	12	5	7
Draftsman, Mechanical	11	2	9	16	4	12
Director, Quality Control	0	0	0	1	0	1
Industrial Engineer	3	0	3	7	0	7
Industrial Engineering Technician	0	0	0	1	0	1
Surveyor	0	2	- 2	1	2	- 1
Quality-Control Technician	10	1	9	17	1	16
Project Director, Business Data Processing	3	0	3	6	0	6
Programmer, Business	5	0	5	15	0	15
Chemist	3	2	1	4	5	- 1
Geologist	2	0	2	3	0	3
Laboratory Technician (Tester)	2	2	0	5	2	3
Economist	1	0	1	2	0	2
Director, Nursing Service	2	0	2	5	0	5
Nurse, Head or Supervisor	43	1	42	106	1	105

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
PROFESSIONAL, TECHNICAL AND MANAGERIAL (Continued)						
Nurse, General Duty or Office	63	1	62	126	1	125
Nurse, Industrial Staff (Occupational)	1	0	1	2	0	2
Dietitian	12	0	12	20	0	20
Medical Technologist, Chief	1	0	1	2	0	2
Medical Technologist or Biochemistry Technologist	7	2	5	15	5	10
Electrocardiograph Technician or Electroencephalograph Technician	4	0	4	7	0	7
Radiologic Technologist	5	0	5	12	0	12
Medical Laboratory Assistant	17	1	16	24	1	23
Medical Assistant	1	0	1	2	0	2
Occupational Therapy Aide	0	2	- 2	3	2	1
Dental Assistant	1	2	- 1	2	2	0
Nurse, Licensed Practical	163	5	158	259	5	254
Surgical Technician	7	2	5	17	2	15
Faculty Member, College or University	73	28	45	171	65	106
Teacher, Secondary School	133	18	115	328	30	298
Teacher, Elementary School	177	48	129	438	94	344
Librarian	4	0	4	14	0	14
Medical-Record Librarian	9	0	9	10	0	10
Copy Writer	3	0	3	5	0	5
Reporter	3	1	3	6	1	5
Lay-Out Man (Printing & Publishing)	1	1	0	2	1	1

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
PROFESSIONAL, TECHNICAL AND MANAGERIAL (Continued)						
Cameraman or Photographer	0	0	0	1	0	1
Accountant	13	6	7	33	12	21
Cost Estimator	3	0	3	4	0	4
Buyer	4	2	2	9	2	7
Purchasing Agent	2	2	0	4	2	2
Public-Relations Man	2	0	2	6	0	6
Manager, Credit and Collection	8	2	6	25	2	23
Manager, Traffic	4	1	3	6	1	5
Manager, Parts	2	1	1	6	1	5
Bank Cashier	1	0	1	3	0	3
Loan Officer	16	2	14	38	2	36
Superintendent, Hospital (Administrator)	2	0	2	6	0	6
Social Worker or Case Worker	34	4	30	76	10	66
CLERICAL						
Secretary	106	28	78	271	40	231
Stenographer	65	23	42	168	32	136
Personnel Clerk	3	0	3	12	0	12
Clerk-Typist	61	56	5	151	125	26
Statement Clerk	3	0	3	7	0	7
Bookkeeper, Hand	35	26	9	81	64	17
Cashier	19	16	3	48	16	32

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969			June 1972		
	Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
CLERICAL (Continued)						
Teller, Bank	13	4	9	36	4	32
Digital-Computer Operator	3	0	3	8	0	8
Key-Punch Operator	16	8	8	31	10	21
Tabulating-Machine Operator	3	2	1	6	2	4
Bookkeeping Machine Operator	25	5	20	69	5	64
Pay-Roll Clerk	19	4	15	34	5	29
Transit Clerk	3	0	3	11	0	11
Clerk, General Office	78	48	30	222	65	157
Ward Clerk	25	0	25	38	0	38
Accounting Clerk	21	5	16	85	5	80
Parts Clerk, Automotive	3	0	3	7	0	7
Post Office Clerk	70	5	65	124	5	119
Mail Carrier	20	1	19	47	1	46
Telephone Operator (PBX Operator)	39	25	14	93	25	68
Room Clerk	4	6	- 2	9	6	3
New Account Clerk	8	1	7	20	1	19
Medical Record Clerk	4	0	4	9	0	9
SALES						
Salesman, Services	32	4	28	68	10	58
Salesman and Salesperson, Commodities	168	47	121	279	47	232
Sales Clerk	372	35	337	734	35	699

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
SALES (Continued)						
Routeman	49	12	37	126	12	114
Auctioneer	1	0	1	2	0	2
Manager, Department (Retail)	6	3	3	14	3	11
Pest-Control Representative	5	1	4	11	2	9
SERVICE						
Waitress or Waiter	64	53	11	159	53	106
Cook (and Institutional Cook)	127	38	89	302	55	247
Meat Cutter or Butcher	4	0	4	11	0	11
Food Service Supervisor	1	0	1	3	0	3
Housekeeper	36	1	35	71	1	70
Nurse Aide - Orderly	281	93	188	669	112	557
Psychiatric Aide	27	16	11	38	16	22
Silk Finisher	2	1	1	3	1	2
Wool Presser	7	7	0	17	7	10
Fireman (Fire Department)	7	1	6	21	1	20
Policeman or Detective	15	0	15	30	0	30
Sheriff or Baliff	3	0	3	7	0	7
Exterminator	5	1	4	6	1	5
Grounds Keeper	19	1	18	45	1	44

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
PROCESSING						
Caster	22	0	22	55	0	55
Grinding Mill Operator	1	0	1	2	0	2
Butcher, All-round	23	12	11	64	12	52
Grader, Meat	10	0	10	21	0	21
Boner or Skinner,(Meat)	13	3	10	28	3	25
Baker	5	3	2	13	5	8
Batch and Furnace Man (Glass)	5	0	5	16	0	16
Bottle-Machine Operator (Glass)	6	0	6	25	0	25
MACHINE TRADES						
Machinist (All-Around)	9	1	8	26	1	25
Lay-Out Man (Machine Shop)	4	0	4	6	0	6
Machine Set-up Operator	8	0	8	25	0	25
Machine Tool Operator (Production)	13	0	13	34	0	34
Shear Operator, Power	4	2	2	15	2	13
Punch Press Operator	1	3	- 2	3	3	0
Press Operator (Heavy Duty)	1	0	1	3	0	3
Metal Fabricator (Structural Fitter)	1	0	1	4	0	4
Roll Operator, Sheet Metal	0	1	- 1	1	1	0
Mechanic, Air Conditioning (Auto)	2	0	2	5	0	5
Mechanic, Automobile	26	21	5	70	41	29
Mechanic, Diesel	3	4	- 1	8	7	1

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
MACHINE TRADES (Continued)						
Mechanic, Maintenance	21	8	13	47	8	39
Millwright	2	3	- 1	5	3	2
Linotype Operator	2	0	2	4	0	4
Cylinder-Press Man	2	2	0	5	2	3
Offset-Press Man	2	2	0	7	3	4
Cutting-Machine Operator (Glass)	4	4	0	7	4	3
BENCH WORK						
Assembler, Product	21	0	21	45	0	45
Radio and Television Repairman	3	0	3	6	0	6
Electric Motor Repairman	1	0	1	4	0	4
Electronics Assembler	5	6	- 1	12	6	6
Painter, Spray	4	9	- 5	9	9	0
Cutter, Hand or Machine	0	0	0	1	0	1
Seamstress	1	3	- 2	3	3	0
Sewing Machine Operator	29	27	2	59	37	22
STRUCTURAL						
Structural Steel Worker	11	10	1	27	10	17
Automobile Body Repairman	17	4	13	49	9	40
Lay-Out Man (Structural)	3	0	3	6	0	6
Welder	21	14	7	50	34	16

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
STRUCTURAL (Continued)						
Flame-Cutting Machine Operator	1	1	0	3	1	2
Flame Cutter, Hand	1	3	- 2	2	3	- 1
Lineman	15	4	11	35	4	31
Electrician	70	3	67	90	3	87
Appliance Repairman, Household	2	2	0	5	4	1
Electronics Mechanic	1	2	- 1	3	2	1
Painter or Paperhanger	2	16	-14	5	16	-11
Plasterer	1	1	0	3	1	2
Cement Mason or Concrete Finisher	5	13	- 8	12	13	- 1
Painter, Automobile	2	1	1	5	1	4
Heavy Equipment Operator	24	21	3	60	27	33
Carpenter	15	38	-23	36	41	- 5
Bricklayer	5	9	- 4	11	9	2
Plumber or Pipefitter	12	19	- 7	31	20	11
Maintenance Man	17	0	17	48	0	48
Maintenance Man, Building	44	10	34	79	10	69
MISCELLANEOUS						
Stationary Engineer	7	1	6	16	1	15
Power Plant Operator	2	0	2	6	0	6
Photolithographer	0	0	0	1	0	1

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As manpower programs have come to engage an ever-larger fraction of public attention and resources, the need for collecting and analyzing job vacancy information has become acute. This bibliography, designed to promote research and improve understanding of job vacancies, includes only those relevant titles which are of major importance and which are easily accessible. Among the 106 materials listed are books, periodicals, government reports, and dissertations. The publication dates ranges from 1932 to 1967, with most dating in the 1960's. Publications emanating from and concerning other countries are included. Among the authors whose works are cited are: Bakke, Bowen, Dunlop, Fine, Hansen, Kerr, Levine, Myers, Parnes, Rees, Ross, Stigler, Wolfbein, and Yoder. (ET)

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Industrial Relations Center
University of Minnesota, Minneapolis

Fall 1967

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800 ABSTRACT
As manpower programs have come to engage an ever-larger fraction of public
801 attention and resources, the need for collecting and analyzing job vacancy
802 information has become acute. This bibliography, designed to promote research
803 and improve understanding of job vacancies, includes only those relevant
804 titles which are of major importance and which are easily accessible. Among the
805 106 materials listed are books, periodicals, government reports, and dissertations.
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808 the authors whose works are cited are: Bakke, Bowen, Dunlop, Fine, Hansen,
809 Kerr, Levine, Myers, Parnes, Rees, Ross, Stigler, Wolfbein, and Yoder. (ET)
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PREFACE

There has been much discussion about the need for systematic information on job vacancies. President Kennedy's Committee to Appraise Employment and Unemployment Statistics in 1962 reported that:

> It is doubtful that any suggestion for the improvement of knowledge about the nation's labor markets was more frequently voiced to this Committee than the calling for job vacancy statistics.*

In spite of this interest, efforts to collect and analyze job vacancy statistics have been rather sporadic. The need for analyzing and collecting vacancy data has become acute as manpower programs have come to engage an ever-larger fraction of public attention and resources.

It is to promote research and improve understanding of job vacancies that the present bibliography is presented. Because the interest in job vacancies is a recent phenomenon, the literature in this area is not plentiful. We have, therefore, included only those titles which are of major importance and which are easily accessible to scholars.

I would like to thank C. W. Wong and R. Towber for research assistance and the Graduate School of Business Administration for financial support.

Mahmood A. Zaidi

Minneapolis
June 1967

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* President's Committee to Appraise Employment and Unemployment Statistics, Measurement Employment and Unemployment, U. S. Government Printing Office, Washington, D. C., 1962, p. 199.

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VT 007 116
Henry, Sarah T., Comp.
A Preparatory Program for Hospital Housekeeping Aides; Course Description and Teaching Materials.

Kentucky Univ., Lexington. Instructional Materials Lab.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 68 44p.

*MAIDS; OCCUPATIONAL HOME ECONOMICS; *PROGRAM DESCRIPTIONS; *INSTRUCTIONAL MATERIALS; BIBLIOGRAPHIES; RESOURCE MATERIALS; TEACHING GUIDES; *HOSPITAL PERSONNEL

Program guidelines were developed by teachers and the author to train adults for the occupation of hospital housekeeper. They were tried and revised in light of the teachers' suggestions. The bulletin contains a program description, the definition of the occupation from the Dictionary of Occupational Titles, and some materials developed and used in the course. The job analysis itemizes the job, skills, and information in chart form. Recruitment, screening and selection, and characteristics of trainees as well as teacher competencies and responsibilities are discussed. A course outline, a block plan for the course, and a detailed teaching guide for the first unit, "Orientat on to Hospital Housekeeping Aide as an Occupation," are included. Unit organization features objectives, suggested content, teaching-learning activities, references and instructional materials. The four lessons cover organization of a hospital, personal qualities for keeping and holding a job as the hospital housekeeping aide, and seeking employment. Detailed teaching guides for units II and III are not included. An appendix contains supplementary materials, a film list and a bibliography. (FP)

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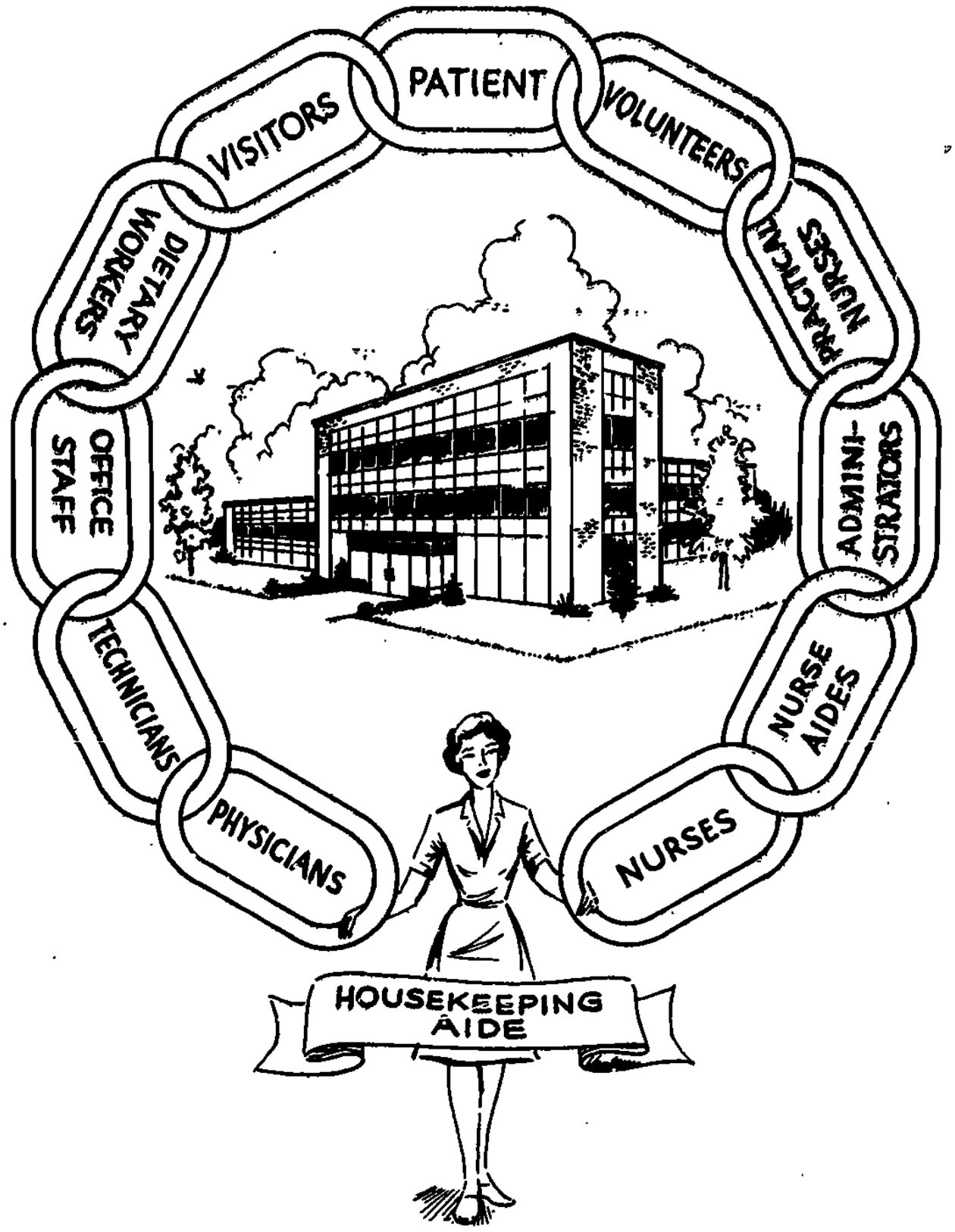
A PREPARATORY PROGRAM FOR *Hospital Housekeeping Aides*



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Home Economics Occupational Training Program
Kentucky

1968

M E M O R A N D U M

TO: The ERIC Clearinghouse on Vocational and Technical Education
The Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

FROM: (Person) Sarah T. Henry (Mrs.) (Agency) Instructional Materials Laboratory

(Address) College of Education, Department of Vocational Ed., University of Kentuck
Lexington, Ky. 40506

DATE: August 29, 1968

RE: (Author, Title, Publisher, Date) Sarah T. Henry, A Preparatory Program for Hospital Housekeeping Aides, Instructional Materials Lab., address above, 1968.

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Type of Program Preparatory program for adults (material has also been used in
Occupational Focus Hospital Housekeeping supplementary programs)
Geographic Adaptability applicable to any geographis area.
Uses of Material teacher's guide
Users of Material teachers and trainees (some material suitable for trainee use)

(4) Requirements for Using Material:
Teacher Competency teachers approved to teach this program.
Student Selection Criteria P

Time Allotment 100 hours (one hundred hours)

Supplemental Media --
Necessary x
Desirable
(Check Which)

Describe various books, bulletins, visuals and equipment

Source (agency) ~~some suggestinns are given in tha material.~~
(address)

Course Description and Teaching Materials

for

A PREPARATORY PROGRAM FOR

HOSPITAL HOUSEKEEPING AIDES

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VT 007 116

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Part A

DESCRIPTION OF A HOSPITAL HOUSEKEEPING AIDE PROGRAM

COORDINATED BY JUNE GOODRICH AND TAUGHT BY MRS. MARY ABELL

NORTHERN KENTUCKY STATE VOCATIONAL SCHOOL
IN COOPERATION WITH ST. LUKE HOSPITAL
COVINGTON, KENTUCKY

Introduction

In the fall of 1967, an experimental program to train hospital housekeeping aides was sponsored by the Northern Kentucky State Vocational School. The program was promoted and coordinated by June Goodrich, Teacher-Coordinator for Home Economics Occupational Training at the Vocational School. Mrs. Mary Abell, a Certified Vocational Home Economics Teacher, was employed to teach the class.

During the preliminary planning stages, Miss Goodrich worked with Mrs. Sarah T. Henry of the Instructional Materials Laboratory for Vocational Education at the University of Kentucky in developing a course outline and collecting teaching materials. Miss Goodrich worked with specialists and observed in the field to analyze the job. Utilizing Miss Goodrich's experiences, a tentative teaching guide was developed for the first phase of the course. Teaching materials were collected and appropriate films and other aids were listed for the teacher's use. After the course was taught, the materials were reviewed and revised in light of the experiences of the teacher and coordinator.

This bulletin includes a description of the program which was taught and some of the materials which were developed and used in the course. Those who worked with this program desire to share these materials and experiences with others who are interested in having similar programs.

Planning the Program

Determining the Need for this Program

Miss Goodrich contacted four hospitals and several nursing homes in the Covington area to determine the employment needs for housekeeping aides. Persons at these institutions indicated a need for trained workers and encouraged her to proceed with plans to provide this training. She also contacted persons in the Employment Security Office who reported some calls for these workers. As a result of these contacts, Miss Goodrich arranged a meeting with representatives of the hospitals.

Job Analysis and Description

In one meeting, Miss Goodrich posted three charts, headed "Jobs," "Skills," and "Information." In an informal discussion, the group contributed information for these charts, which formed the beginning of a job analysis. Miss Goodrich contacted another hospital executive housekeeper, to check for differences and similarities in the job analysis for this hospital. The following persons contributed to a list of tasks which are expected of hospital housekeeping aides in their respective hospitals:

Mrs. Eileen McClain, Executive Housekeeper and William Poll, formerly Personnel Director, St. Luke Hospital, now at St. Elizabeth Hospital, Clifford Hess, Executive Housekeeper, St. Elizabeth Hospital

The definition of this occupation in the Dictionary of Occupational Titles (DOT) was also helpful in developing plans for this course. The job analysis (figure 1) and DOT definition (figure 2) appear on the following pages.

JOB ANALYSIS

HOSPITAL HOUSEKEEPING AIDE

(Compiled from information received from several Executive Housekeepers in the Covington, Ky. area)

JOBS	SKILLS	INFORMATION
Clean Patient Rooms Daily	Mopping Floors with dry & wet mop, Cleaning furniture, making beds, Working efficiently, quietly and quickly (applies to all skills). Preventing spread of bacteria.	Proper weight of mop. Posture and phsyical movement Equipment to use. Supplies to use. How to mix cleaning solution. How to make beds correctly. How to maintain standards of sanitation. How bacteria are spread. How often to change cleaning solution.
Clean Restrooms	Cleaning floors, fixtures, mirrors, light fixtures, chrome, disinfecting shower stalls. Replacing supplies.	Techniques of cleaning. Equipment and supplies to use. How to maintain standards of sanitation
Clean Public Areas	Cleaning floors, furniture, accessories polishing metals.	Techniques of cleaning. Equipment and supplies to use. How to maintain standards of sanitation.
Clean Offices	Cleaning floors, furniture, accessories.	Techniques of cleaning. Equipment and supplies to use.
Clean Rooms upon Dismissal of Patient	Cleaning walls, windows, ceilings. Stripping and waxing floors. Cleaning furniture. Cleaning baths. Washing bed frames. Cleaning screens. Vacuuming ceiling. Cleaning light fixtures and radiators.	Techniques of thorough cleaning. Special sanitary techniques and procedures. Equipment and supplies to use.
Distribute Linens	Handling linens properly.	Linen terminology. Know linen needs for various parts of hospital. Knowledge of linen control.

Figure 1

Job Analysis Contd.

JOBS	SKILLS	INFORMATION
Clean Isolation Rooms	Cleaning room to avoid spread of disease. Fogging room. Disposing of contaminated material.	Proper uniform. Protective measures for employees and patients. Techniques of fogging and disposing of contaminated material.
Collect Waste	Handling waste carefully. Disposing of contaminated material. Cleaning and disinfecting waste containers. Proper use of incinerators.	Safety precautions to avoid cuts, spread of disease, etc. How to dispose of waste. How to clean waste containers. How to use incinerator.
Clean Closets	Keeping closets clean and sanitary. Maintaining supplies.	Importance of clean, sanitary closets. Supplies needed.
Clean Special Areas (surgery, labor, delivery X-ray, emergency rooms, etc.)	Cleaning special areas correctly. Techniques which are different and similar to cleaning other areas of the hospital.	Special techniques, supplies, equipment. Sterile procedures. Proper uniform for cleaning special areas.
Safety Practices	Working to assure safety for patients, visitors and employees. Using equipment and supplies carefully. Lifting properly.	Hospital regulations regarding smoking, fire prevention and other matters affecting safety. Disaster procedures. How to prevent accidents. What to do in cases of accident or injury.
Employer-Employee Relations	Following instructions. Showing respect to supervisors. Knowing and following hospital policies. Practicing good work habits. Keeping information confidential.	How to develop good work habits. Reasons for warnings and termination of employment. Ways to promote good working relationships. Importance of keeping information confidential.
Personal Relations	Taking pride in one's work. Maintaining clean and appropriate appearance. Following ethical practices.	Importance of this job. Dress and grooming requirements. Ethics for hospital workers.
Employee-Patient Relations	Cleaning room with patient present. Judging when to enter and leave room. Treating visitors courteously.	How to speak to patients and visitors. When to enter and leave room. Guides for courtesy.

Figure 2

DEFINITION ACCORDING TO THE DICTIONARY OF OCCUPATIONAL TITLES (DOT)

DOT code number: 323.887, Maid Hospital (medical service). Cleans hospital wards, rooms, baths, laboratories, offices and halls. Mops and waxes floors. Cleans window sills, woodwork, and furniture. Scours and polishes bathtubs, sinks, and laboratory equipment. Polishes brass panels in doors and partitions. Empties ashtrays and trash baskets. Washes bedframes, brushes mattresses, and remakes beds after dismissal of patients. Keeps utility and storage rooms in neat and orderly condition. Distributes laundered articles and linens in wards. May serve patients meals and remove trays and dishes. May disinfect and sterilize equipment and supplies, such as rubber gloves and syringes and test tubes, using germicides and sterilizing equipment. May make up packs of linen supplies, instruments, dressings, and treatment trays preparatory to sterilizing. May mix sterilizing solution according to a formula.

Recruitment and Promotion Activities

The Employment Security Office played a major role in recruiting trainees for this class. An article was placed in the newspaper and a spot announcement was placed on a local radio station instructing anyone interested in the training program to contact this office. The names of persons who called were referred to Miss Goodrich who contacted them by telephone. With the exception of a few who learned about the course through relatives, the majority of the trainees were recruited through the newspaper article. Ten women reported to the first class meeting.

Screening and Selecting Trainees

Miss Goodrich felt that the selection techniques might have been improved and made these suggestions for future programs:

-- Require the health examination which regular housekeeping employees must have before employment.
-- Have a personal interview with each applicant to clarify the nature of the training program to eliminate applicants who seem unsuitable for the program.

Two women withdrew early in the program and indicated that they were not interested in becoming employed in this occupation. A third withdrew later. The remaining seven received certificates of completion.

The application form for this course (Figure 3) is on the next page.

Characteristics of Trainees

Only one trainee was a high-school graduate. As a group, they were unemployed, and untrained for a specific occupation. Several indicated an interest in this occupation because the work seemed somewhat similar to housework and they felt they would not have to make a complete shift to another kind of work. Some were interested because the program was of short duration (four weeks) as compared to longer training programs. One older woman, a widow, had been unable to obtain employment due to her lack of education, training and work experience. Her age had eliminated her from

Figure 3

NORTHERN KENTUCKY STATE
VOCATIONAL SCHOOL
Amsterdam Road
Covington, Ky.

A P P L I C A T I O N
For
Hospital Housekeeping Aide

Training for a Wage Earning Occupation

Name _____
last first middle

Address _____
street city state

Phone Number _____ Date _____ 19__ Age _____

Education (circle last grade completed) 1 2 3 4 5 6 7 8 -Elementary
1 2 3 4 -High School

What w rk experience have you had _____

_____

_____

_____

_____

Do you plan to become employed in the occupation for which this course provides training? Yes _____ No _____

Do you plan to work full time _____ part time _____

other training programs. This woman seemed very appreciative of the opportunity to become trained and hopefully, employed.

Qualifications of the Teacher

Mrs. Abell had taught vocational home economics at the high-school level, therefore she had the teaching preparation and experience, but not the experience in this occupation. In order to become somewhat familiar with the duties of the hospital housekeeping aide, she spent approximately one week observing in hospitals and conferring with the executive housekeepers and other hospital personnel. She observed in two hospitals. This was helpful in being able to point out similarities and differences in the duties of housekeeping personnel. She also found it helpful to observe at different times to see the differences in duties at various hours and on different shifts.

At St. Luke, Mrs. Abell accompanied Mrs. McClain, the Executive Housekeeper, on her supervisory rounds. This was helpful to observe her techniques of supervising adults to see what she looked for in her work. Being at the hospital also allowed Mrs. Abell to become acquainted with many employees and various phases of the hospital operation. Since she was also making some class preparations during this week, the observations helped her to develop more realistic teaching plans.

The teacher possessed some other qualities which well-suited her for teaching this course. She was a very flexible and adaptable person with a good sense of humor. She had the "knack" of correcting the women without offending them, and she did not "talk down" to the trainees. She related well to many different kinds of people in various positions in the hospital. They accepted her readily.

Location of the Course

The observation and participation phases of the course were provided at St. Luke Hospital through the cooperation of hospital officials, including Mr. Poll and Mrs. McClain. Since no classroom or other space was available at the hospital, a meeting room in an office building a block away was used as a classroom. Although it would have been far more desirable to have had the entire course at the hospital, the teacher and trainees made the best of the situation. Hopefully, future classes can be held in a hospital or at the Vocational School in order to have more practical and meaningful demonstrations and practice in an actual hospital setting before going into patient areas. (Home Economics facilities are being built in the addition under construction at the Vocational School.)

Length of the Course

The course lasted four weeks, five days per week for a total of 100 hours. They met from 9 a.m. until 2:30 p.m. which included a 30-minute break.

Description of Teaching for a Skill

In developing the skills for this occupation, Mrs. Abell provided a variety of experiences. As a new skill was introduced, the class studied and discussed background information, viewed filmstrips and used other learning aids. Demonstrations were provided at the hospital. The class observed regular employees performing the task. Each trainee was then assigned to a regular employee and the trainee performed the tasks alongside this employee. Supervision was given by the teacher and the Exeuctive Housekeeper. Individual guidance was given by Mrs. Abell as she observed the work of the class members in the hospital. She made a chart of the essential tasks and checked trainees as they performed these jobs.

The group met in the classroom each day. During the class period, they discussed their observations and problems encountered during the previous day's experience in the hospital. Weekly reviews and some written tests were a part of the classwork.

Mrs. Abell noted one of the chief difficulties in developing skills was clarifying the difference in cleaning procedures, products, and standards of sanitation for hospitals, versus cleaning in one's home. Developing speed was another problem. Since the women were not accustomed to working under the pressure of time, Mrs. Abell found it helpful to set time goals for various tasks. Repetition of tasks to gain skill and speed was a necessary phase of the training program.

Participation in the hospital followed this pattern:

1st week:	The class toured the hospital and observed regular employees at work.
2nd & 3rd week:	They spent at least two hours per day in the hospital. Each trainee was assigned to an employee. Assignments were rotated. Trainees began by performing simple tasks and more difficult tasks were progressively added during this two-week period.
4th week:	Trainees spent about four hours per day in the hospital. Trainees worked more independently of the employees, but continued to have individual supervision from Mrs. Abell.

Uniforms

The Vocational School purchased blue, fitted smocks for the women to wear during the training program. The women were responsible for the care of the smocks which remained the property of the school. The color was selected to conform to the blue uniforms worn by the regular housekeeping aides. The smocks were important for cleanliness, conformity and identification. The women wore nametags which identified them as "Housekeeping Trainees." They were instructed to wear cotton dresses under the smocks. They wore flat, rubber-soled shoes. The uniform met with the approval of the hospital.

Follow-Up

In the few months following the end of the course, St. Luke Hospital employed two trainees full-time and one part-time. One woman was employed in a nursing home. At least one did not desire immediate employment. Miss Goodrich plans to follow-up all trainees periodically.

Future Training Programs

One of the most encouraging outcomes of this program has been the request of the hospital for two up-grading programs for their regular housekeeping employees. The courses were taught by Mrs. Abell. All housekeeping employees were given released time from work for two hours per week for eight weeks. Miss Goodrich hopes to repeat the Hospital Housekeeping Aide (HHA) preparatory class in the near future. When home economics facilities are are available in the new addition to the Vocational School it will be possible for programs of this type to be a continuing part of the occupational training program.

Part B

TEACHING MATERIALS FOR A HOSPITAL HOUSEKEEPING AIDE PROGRAM

Included in this section are the course outline, "blocking" of the course into daily lessons, and a detailed teaching guide for the first unit, "Orientation to Hospital Housekeeping Aide as an Occupation." This unit is worked out in detail to serve as an example for a way in which the entire course might be developed. Unit I was selected because of its significance to the total program and because parts of it may be taught throughout the course. According to Mrs. Abell, "I believe the section on personal qualities is so important that it should be included in every lesson or most of them." Detailed teaching guides for Units II and III are not included. Supplementary materials, film list and bibliography are included in the Appendixes.

COURSE OUTLINE

A Preparatory Program For Hospital Housekeeping Aides

I. Orientation

A. Organization of a hospital

1. Relationship of the housekeeping department to the hospital organization
2. Importance of the housekeeping function to the purpose of hospitals
3. Organization of a housekeeping department

a. Lines of authority
b. Functions of each job
c. Relationships within this department and with other departments

4. Overall duties of the hospital housekeeping aide (HHA)

a. Usual responsibilities of the hospital housekeeping aide
b. Importance of this job
c. Opportunities for advancement

(1) Supervisory positions
(2) Other opportunities for employment
(3) Opportunities for further training

5. Hospital policies

a. Policies common to most hospitals
b. Importance of knowing and following policies

B. Personal qualities for getting and holding a job as a hospital housekeeping aide

1. Health

a. Absence from disease and infection
b. Periodic examinations
c. Illness on the job
d. Maintaining one's health

2. Appearance

a. Cleanliness
b. Grooming of hair, face, hands
c. Uniforms
d. Dress to and from work
e. Underclothing
f. Shoes and hosiery

3. Personal traits

a. Honesty
b. Sobriety
c. Tactfulness
d. Cheerfulness--attitude
e. Calmness in emergencies
f. Voice
g. Courtesy

4. Work habits

a. Promptness
b. Regularity
c. Dependability
e. Efficiency

5. Employer--employee relationships

   a. Acceptance of supervision
   b. Following instructions
   c. Reasons for discipline and termination of employment

6. Employee--employee relationships

   a. Working with others
   b. Talking on the job

7. Employee--patient relationships

   a. What to do when a doctor enters the room
   b. Importance of keeping confidential information about patients
   c. Contact with patients

      (1) Understanding and respecting patient's condition
      (2) Working quietly and quickly
      (3) Functions to avoid
      (4) When to enter and leave room
      (5) Tact in talking to patients

8. Employee--public relationships

   a. Contact with patient's visitors
   b. Courtesy in elevators, corridors, lobbies
   c. Functions to perform

C. Seeking employment

   1. Where to seek employment
   2. Job interviews
   3. Understanding employee benefits
   4. Establishing job references

II. Safety and sanitation for hospital housekeeping aides

A. Importance of safety and sanitation to:

   1. Hospital
   2. Patients
   3. Workers

B. Role of the housekeeping department in maintaining aseptic surroundings

   1. How bacteria are spread
   2. Preventing the spread of bacteria

C. Prevention of injuries

1. Employee injuries
2. Injuries to others in the hospital

D. What to do in case of fire or other emergencies

III. Performing the functions of the hospital housekeeping aide

A. Using supplies and equipment

1. Linens--receiving, caring for, distributing, disposing
2. Consumable supplies

a. Receiving and distributing
b. Conserving

3. Equipment

a. General use and care
b. Importance of keeping equipment clean and sanitary

B. Performing cleaning skills

1. Floors

a. Kinds of floors and floor coverings in hospitals
b. Daily, weekly, emergency and seasonal care

(1) Procedures to follow for each type of floor
(2) Equipment and supplies to use

2. Beds

a. Bedmaking
b. Daily, weekly, seasonal cleaning

(1) Procedures to follow
(2) Equipment and supplies to use
-Receiving and caring for linens

3. Walls and ceilings

a. Kinds of wall coverings
b. Daily, weekly and seasonal care for each kind

(1) Procedures to follow
(2) Equipment and supplies to use

4. Furniture

a. Kinds of furniture found in hospitals
b. Daily, weekly, seasonal care

(1) Procedures to follow
(2) Equipment and supplies to use

5. Accessories and other furnishings

a. Kinds of accessories and furnishings in hospitals
b. Care of these items

6. Windows, window treatments, including cubicle curtains

a. Kinds of windows and window treatments
b. Care of windows and window treatments

(1) Procedures to follow
(2) Equipment and supplies to use

7. Radiators, air conditioners, fans

a. Daily, weekly and seasonal care

(1) Procedures to follow
(2) Equipment and supplies to use

8. Plants, flowers and patients' personal belongings

a. Daily care
b. Precautions to observe

9. Bathroom and washroom fixtures

a. Fixtures and equipment requiring care
b. Daily, weekly and seasonal care

(1) Procedures to follow
(2) Equipment and supplies to use
(3) Filling and caring for dispensers

10. Rubbish disposal and removal

a. Procedures to follow
b. Equipment to use
c. Care of waste containers
d. Use of incinerator
e. Safety precautions to follow

C. Managing cleaning skills in areas to be cleaned by Hospital Housekeeping Aides, including,

-- Standards for clean area
-- Assembling equipment and supplies
-- Performing cleaning skills in an orderly sequence
-- Conserving time and energy
-- Completing check lists or other evaluations
-- Reporting items missing or out of order

(Note: The extent to which this topic is studied may be determined by the length of the course and the job analysis for the hospital housekeeping aide at the specific hospital for which training is being given. There are also specific differences as to which jobs are performed by men and women employees. Areas starred (*) are the ones most commonly cared for by the HHA. Identifying the commonalities among cleaning tasks for each part of the hospital would be helpful in teaching this section of the course, thereby allowing the teacher to help trainees see where previous knowledge and skills could be applied when studying a new task or area of the hospital.)

*1. Patient unit (regular)

    a. Daily care of occupied room
    b. Discharge care
    c. Seasonal care

*2. Patient unit (isolation)

    a. Daily care of occupied room
    b. Discharge care

*3. Public areas

    a. Corridors, stairwells
    b. Waiting areas, lobbies
    c. Restrooms
    d. Elevators
    e. Cafeterias

4. Operating and delivery room

5. Labor room

6. Newborn and premature nurseries

7. Emergency room

8. Intensive-care unit

9. Recovery room

10. Examination, X-ray and treatment room

11. Laboratories

12. Staff areas

    a. Offices and conference rooms
    b. Nurses' stations
    c. Staff lounges
    d. Locker rooms

13. Storerooms

14. Cleaning closets

15. Other areas

IV. Summary and evaluation

NORTHERN KENTUCKY STATE VOCATIONAL SCHOOL

Home Economics Occupational Training Program
Daily Block for Hospital Housekeeping Course - Mrs. Mary Abell, Teacher

Each Block = 1 day (5 hours)

Registration. Basic outline of class. General announcements and policies to be followed by trainess Tour the hospital	Function and importance of HHA. Organization of hospital with special emphasis on how HHA fit into this	Discuss what you as a patient would expect from a hospital during your "stay." Observe HHA in action.	Discuss observations Overall duties and personal qualities (those observed and/or those that are desirable)	Hospital policies. Discuss products used in hospitals as you observed.
Health Equipment-Use and Care	Appearance (Visit to Cosmetology Department of Vocational School) Floors	Personal traits and work habits. Spot-cleaning Windows	Realtionships with employers employees public Furniture	Safety Review and form a terminology list.
Sanitation General care for a patient room	Fire and emergencies General care for bathrooms.	Special problem of waste collection - linen distribution. Curtains	Cleaning closets Assembling cleaning supplies and equipment.	Discuss right and wrong procedures and the "whys" of orderly sequence.
Utility rooms Discuss standards for clean areas throughout the hospital. (include public areas)	Beds Managing cleaning skills	Special areas and special seasonal cleaning.	Seeking employment Special areas	Seeking employment Review and evaluation

TEACHING GUIDE

A Preparatory Program for Hospital Housekeeping Aides

Suggested Teaching Time

Number of hours in classroom and simulated practical experience	50
Number of hours of observation and participation in a hospital	50
Total	100 hours

UNIT I

ORIENTATION TO HOSPITAL HOUSEKEEPING AIDE AS AN OCCUPATION

Unit Objective: To understand the functions of Hospital Housekeeping Aides, the importance of this job, and how to seek and retain employment in this occupation

Problems to be Considered:

1. How does the housekeeping function relate to the total organization and purpose of a hospital?
2. What are the desirable personal qualities for getting and holding a job as a Hospital Housekeeping Aide (HHA)?
3. How does one go about securing work as a Hospital Housekeeping Aide?

Suggested Content:

1. Problem: How does the housekeeping function relate to the total organization and purpose of a hospital?

   Key Ideas

   a. Housekeeping is a major function of a hospital.
   b. Employees engaged in housekeeping are necessary to a hospital as they promote better care for the patient. This has an important affect upon the patient's attitude.
   c. Because of the services of the HHA, doctors, nurses, technicians and other medical personnel can devote themselves to the skills for which they were trained.
   d. One of the housekeeping department's responsibilities is maintaining a good public relations image for the hospital.
   e. Much of the work of the HHA is under constant observation by staff, patients and visitors.
   f. HHA's should be taught to perform their duties because of the need and importance and not in fear of authority.

public areas)

g. All departments of a hospital are a team working together for the good of the patients, therefore, teamwork and cooperation are essential for all departments.
h. Each group of employees needs to understand how its responsibilities affect those of other departments and the kinds of cooperation to be expected.
i. Rules and policies are developed to promote a smooth-running system and to alleviate misunderstandings.
j. A constructive work atmosphere is established upon mutual interest and respect for the other worker's duties.
k. Housekeeping is the only department (excluding administration) that crosses all department lines. The Housekeeping Aides usually clean areas in all departments.
l. Complaints and criticisms should be voiced through one's immediate superior, and then only for the betterment of the services rendered.
m. Clean hospital surroundings have an influence on the patient's mental attitude
n. The fact that one works in a hospital, automatically puts him in the position of representing the hospital to the general public.

Suggested Teaching-Learning Activities:

a. Distribute or project an organization chart of a typical hospital. Discuss here the relationship of the housekeeping department to other departments and functions of the hospital.
b. Consider the over-all aims or purposes of hospitals and how the housekeeping function contributes to these purposes. Have trainees describe the services and kind of treatment from the hospital if they were a patient. Indicate ones the HHA would affect.
c. Invite an executive housekeeper, hospital administrator or another official to discuss the organization of the housekeeping department. Ask the resource person to include such topics as:

   -- lines of authority
   -- functions of each category of employee
   -- relationships within this department and with other departments

d. Adapt the cover design of this unit to a transparency. Show how the various people associated with a hospital are linked together as a chain to perform the essential hospital functions.
e. Show a film such as "For the Love of Life" or "Hospitals are People." Have trainees observe for the different kinds of personnel and departments in a hospital concerned directly or indirectly with the diagnosis, treatment and care of patients. Apply to their roles as HHA's.
f. Arrange for trainees to observe HHA's on-the-job for a work day (or equivalent), in order to determine the usual responsibilities of the HHA. Following this experience allow each trainee to report his observation, listing on the chalkboard the responsibilities observed.
g. Invite a physician, executive housekeeper, another hospital official, and/or a recent hospital patient, to discuss the importance of the HHA to the image of the hospital, the treatment of patients, morale of the staff, etc. Distribute and read the poem, "Don't Belittle Your Job." (See supplementary material in the Appendix.)

h. Have an executive housekeeper, hospital personnel director, and/or coordinator of home economics occupational training challenge the group toward opportunities for advancement in the field of institutional housekeeping. The speaker(s) may stress:

   -- supervisory positions
   -- other opportunities for employment
   -- opportunities for further training
   -- qualities and experience necessary for such advancements

i. Give the meaning of these terms: policies, rules, regulations, law, etc. Discuss the importance of these terms in various phases of life.
j. Distribute a list or have a visual aid which includes some typical policies of hospitals. Use actual policies from a hospital if possible. Include those policies which apply to this occupation.
k. Divide the class into small groups. Assign each group one or more policies to discuss and share with the entire group. In reporting, groups might role-play a situation depicting the right or wrong way of using the policy.
l. Discuss the importance of knowing and following hospital policies. Give some examples of situations which illustrate employees who <u>have</u> or <u>have not</u> followed policies and the results of their actions.
m. Tour a hospital in order to locate and better understand various departments and functions.
n. Discuss the importance of the HHA knowing the location of all hospital facilities in order to correctly inform patients, visitors, and others.

Suggested References and Instructional Materials

Book:

<u>Housekeeping Manual for Health Care Facilities</u>, American Hospital Association

Bulletins

Housekeeping Manuals from local hospitals
Personnel handbooks from local hospitals

Periodical

<u>The Executive Housekeeper</u>

Films

Title	Date and Length	Source	Cost
Hospitals Are People	1957, 18 min., color	American Hospital Association 840 North Lake Shore, Chicago, Illinois 60611	$8.00

Content

Filmed at Yale-New Haven, Connecticut, this motion picture may be used to acquaint the public with the variety of hospital departments and services, from nurses' stations to laboratories, as a volunteer worker takes a patient on tour of the institution, and the narrator explains what the people are doing in the various jobs.

Title	Date and Length	Source	Cost
For the Love of Life	1957, 13 min., color	American Hospital Association	$5.00

Content

Portrays the hospital experience of one man who typifies all patients. Shows the variety of personnel and departments concerned directly and indirectly with his diagnosis, treatment, and care.

Filmstrips	Source
Hospital Housekeeping's Place on the Hospital Team	Vestal Laboratories 4963 Manchester St. Louis, Missouri 63110
Your Responsibility to Patients	Vestal Laboratories

2. Problem: What are the desirable personal qualities for getting and holding a job as an HHA?

Key Ideas on Health of the HHA:

a. Most hospitals require all applicants to have a health screening examination prior to their employment in order to detect any signs of illness or infection which may be a danger to hospital patients.
b. Some hospitals require periodic health examinations of all employees in order to detect any signs of illness.
c. When returning to work following an illness, the employee may need to be cleared by a physician or other hospital authority.
d. Employees who become ill at work should report immediately to their supervisor.

Suggested Teaching-Learning Activities

a. Review a hospital's policies regarding the health of employees. Discuss the reasons for these policies.
b. Arrange for trainees to undergo the kind of examination required of Hospital Housekeeping Aides, prior to employment. Should deficiencies exist, have medical authorities determine whether or not the trainee should continue the course. Have trainees follow-up, under a doctor's supervision, any deficiencies which can be corrected.
c. Show a filmstrip such as "You and Good Health." Apply the information from the filmstrip to persons in this occupation.

d. Prepare and give a checklist on "Health Habits for Hospital Housekeeping Aides." Plan an activity wherein trainees may work on individual health problems. Personal conferences and guidance by the teacher may be needed for each trainee. The teacher may need to encourage trainees to seek professional help on problems such as overweight, dental problems, vision, etc. Health problems which may make it difficult for the trainee to become employed should be identified and corrected, if possible.

Suggested References and Instructional Materials

Book

Housekeeping Manual for Health Care Facilities, AHA

Bulletins

Personnel handbooks from local hospitals
Housekeeping manuals from local hospitals

Periodical

The Executive Housekeeper

Film

Title	Length	Source	Cost
You and Your Food	8 minutes	U. K. A. V. Services, Reynolds Bldg. Lexington, Ky. 40506	$3.00 rental free

Content

Tells the value of food and emphasizes that good health has to be helped and planned by eating properly and getting plenty of water and exercise.

Filmstrip	Source
You and Good Health	Vestal Laboratories

Key Ideas on Appearance of the HHA:

a. People often assume that a person who is neat in appearance will be neat in her work.
b. Hospital employees are expected to take pride in their appearance.
c. Cleanliness of uniforms and underclothing, and freedom from body odor is important for the HHA to help maintain clean and sanitary surroundings.
d. Most hospitals accept a watch, wedding ring, and professional pin as the only jewelry to be worn while in uniforms.

e. Flat, low-heeled oxfords or "duty-shoes" enhance one's comfort and aid in quick movement.
f. Uniforms should not be worn out of the hospital.
g. Uniforms, gowns and masks, designated for a certain area, such as the nursery, isolation room, etc., should not be worn in other parts of the hospital.
h. Make-up, used in moderation, may enhance one's personal appearance. Excess make-up may rub off on uniforms and detract from one's business-like appearance.
i. Poor grooming may prevent an otherwise well-qualified worker from getting a job.

Suggested Teaching-Learning Activities

a. Have a series of activities to analyze the desirable appearance traits of an HHA "from heel to toe." Use a mannequin, poster or transparency of a woman dressed in a uniform suitable for an HHA. Use references, resource people, films, role-palying and other techniques to illustrate the desirable grooming characteristics from "heel to toe." Some references and films are listed later. Include hair, skin care and make-up mouth and teeth, uniforms, foundation garments, body cleanliness, use of deoderants, care of hands, care of feet, selection and care of shoes and hosiery.
b. Have a check sheet or rating scale on personal appearance for the HHA. Check this periodically.
c. Schedule conferences with trainees individually to give guidance and help on appearance and grooming problems. Interpret the need to correct certain problems which might prevent the person from being employed or from advancing in a position.
d. Organize a "beautification" contest for trainees in which those making the most improvements in personal appearance are recognized.
e. Give special attention to the uniforms for the HHA by:

   -- Surveying several hospitals to determine policies regarding uniforms for HHA's
   -- Determining appropriate jewelry, etc. to wear with a uniform
   -- Determining the use of special garments for cleaning certain areas of the hospital, such as the nursery, operating room, etc.
   -- Discussing importance of a clean uniform

f. Visit the cosmetology department of a vocational school. If possible arrange for trainees to have their hair set or styled by the cosmetology students.

Suggested References and Instructional Materials

a. Books

Guide Beauty, Charm, Poise, Tolman
Charm, (and portfolios of activities) Whitcomb & Lang
The Leslie Uggams Beauty Book, Uggams and Fenton
Let's Face It, Archer
Your Life in the Big City, Baxter, Marion
Housekeeping Manual for Health Care Facilities, AHA

b. Bulletins

Rating Scale for Personal Appearance, Navratil, Friant, Rathbone
Guide to Good Grooming, Stevens
Charm Can be Yours, U. of Ky. Cooperative Extension Service, Agriculture and Home Economics, H.E. 2-603A
Special Folders from U. of Ky. Coop. Extension Service (written on elementary reading level). Titles are:
Keep Your Hair Pretty
Let's be Neat and Clean
Look Your Best
Washing Your Hair and Straightening and Smoothing Extra Curly Hair

Key Ideas on Desirable Personal Traits for the HHA

a. Employers have found that more people fail on a job because of undesirable personal traits than for lack of technical skill in the job.
b. Honesty implies fairness of conduct and refusal to deceive in any way.
c. Acts of dishonesty often lead to dismissal.
d. Hospitals have regulations forbidding use of intoxicants on-the-job or persons working under the influence of alcohol.
e. Since the HHA comes in contact with every segment of hospital life, she must develop tact in her contacts with all kinds of people.
f. Employees who show kindness and cheerfulness are providing an encouraging atmosphere which is conducive to a patient's recovery.
g. A low tone of voice is important for persons working in hospitals where harmony and quiet must prevail at all times.
h. Employees must be courteous to patients, visitors and other employees with whom they come in contact.
i. In cases of emergency, it is important for all employees to remain calm, do what is in one's authority to alleviate the situation and refrain from showing excitement in the presence of patients.
j. Employers know that a job applicant is a poor risk, no matter how well trained and experienced he may be, unless he is honest, dependable, industrious, and able to get along with others.

Suggested Teaching-Learning Activities

a. Sponsor a survey of Hospital Executive Housekeepers and/or personnel directors to determine the personal traits which are important for the HHA to possess.
b. Invite a hospital official who hires and/or supervises the housekeeping aides, to talk to the class on the characteristics they look for in hiring these employees, problems caused by personal and character traits are reasons for employee dismissal.
c. Prepare some minute dramas for trainees to enact to depict such characteristics as: cheerfulness, tone of voice, courtesy, honesty and beahvior in emergencies.
d. Show the film, "Personal Qualities for Job Success." Apply this film to succeeding as an HHA and use it as a summary for this lesson.

Suggested References and Instructional Materials

Bulletins

How to Get the Job, Dreese
What is Honesty?, Clark

Periodicals

The Executive Housekeeper
Illinois Teacher of Home Economics, Vol. VIII, No. 3

Film

Title	Length	Source	Cost
Personal Qualities for Job Success	11 minutes	UK-AV Services	$3.00

Content

By observing job interviews of several high school graduates the personality requisites of job success are illustrated--such as initiative, good personal appearance, business-like work habits, willingness to accept criticism, and the ability to get along with people.

Key Ideas on Work Habits for HHA's

a. Employees must work quietly with no hitting of equipment against walls and no slamming of doors.
b. In order to perform the duties assigned to the department, a definite number of employees are needed every day.
c. When housekeeping employees are absent, tardy or undependable, the hospital cannot be kept in adequate condition of cleanliness.
d. The proper function of a hospital depends upon the proper functions of its employees.
e. Some hospitals have policies in which penalties are placed on persons who are late or fail to report when they are unable to come to work.

Suggested Teaching-Learning Activities

a. Have copies of personnel policies and regulations from a local hospital. Divide the class into groups to role-play situations to illustrate the employee breaking the policy and abiding by the policy.
b. Provide a check sheet for trainees to evaluate their own work habits. (See example, "What Do You Have to Offer?", "How to Get Fired, and "My Job-Success Traits" in the Appendix.)
c. Have conferences with each trainee to discuss problem areas and to guide trainees toward setting goals making plans for improvement in their problem areas.
d. Provide each trainee with a copy of the "Employee Pledge." Read it aloud and discuss the meaning of this pledge. (An example is included in the Appendix.)

e. As a summary of this topic divide the class into three groups. Assign each group a topic to discuss such as:

-- How to Get the Job
-- How to Hold the Job
-- How to Get Fired

Share the results of these discussions with the entire group.

Suggested References and Instructional Materials

Book

Housekeeping Manual for Health Care Facilities, AHA

Bulletins

How to Get and Hold the Right Job, Supt. of Documents

Periodicals

Illnois Teacher of Home Economics, Vol. VIII, No. 3

Film

Title	Length	Source	Cost
How to Keep a Job	11 minutes	U. K. AV Service	$1.50

Content

A boy applying for a job learns from his prospective employer the four major characteristics necessary in keeping a job: dependability, initiative, loyalty and industry.

Key Ideas on Employer-Employee Relationship

a. It is considered unethical for employees to discuss their supervisors with other employees.
b. The HHA should not criticize the work of other members of the hospital except to the head of their department, and then only for the betterment of the services rendered.
c. When employees do not accept and follow rules of the hospital, they cannot expect to escape reproval or perhaps dismissal.
d. Employers have certain legal and moral responsibilities toward the safety and welfare of their employees.
e. Employees will be happier and more productive on the job when working for people whom they respect and toward whom they are loyal.

Suggested Teaching-Learning Activities

a. Present some examples, true or fictitious about employer-employee relationships, to illustrate the following:

   -- employees voicing legitimate complaints through correct channels
   -- employees criticizing supervisors
   -- employees being reprimanded for misconduct

b. Discuss the responsibilities employers have to employees.
c. Adapt to this occupation the checklist "Rating Applause from the Boss," pp. 201-206 in Charm: Portfolio of Activities.
d. Determine the values to all concerned when employers and workers have mutual respect and harmonious working relationships.
e. Summarize some guidelines for harmonious employer-employee relationships.

Suggested References and Instructional Materials

Books

Guide to Beauty, Charm, Poise, Tolman
Charm: The Career Girl's Guide to Business and Personal Success and Portfolio of Activities, Whitcomb and Lang

(Note: Although aimed toward employer-employee relationships in an office, these two references contain some basic principles which apply to this occupation.)

Housekeeping Manual for Health Care Facilities, AHA

Periodical

The Executive Housekeeper

Key Ideas on Employee-Employer Relationships

a. Harmonious working relationships among members of the housekeeping department is important to insure a smooth and efficient-running department.
b. Cooperative employees are willing to assist other employees as they are able to do so.
c. Employees should limit their conversation to that which is necessary to carry out their work.
d. Most jobs require teamwork among all employees.
e. Adapt the quiz "The Office Staff" from Charm, Portfolio of Activities, to apply to the HHA. Use as an oral or written summary of this topic. Some other activities in the section "The Office Staff" (pp. 207-210) may also be adapted as many points are general in nature.

Suggested Teaching-Learning Activities

a. Interview an employer on the subject of good working relationships among employees. Have him describe instances where employers' work has been affected by poor work relationships among employees. The interview may be tape-recorded prior to classtime, or presented in person.
b. Summarize some guidelines for harmonious working relationships among employees.

Suggested References and Instructional Materials

Books

Guide to Beauty, Charm, Poise, Tolman
Charm: The Career Girl's Guide to Business and Personal Success, Whitcomb and Lang

(Note: Although aimed toward employee-employer relationships in an office, these references have some basic principles which apply.)

Periodical

The Executive Housekeeper

Key Ideas on Employee-Patient Relationships

a. Employees need an understanding of the psychology of illness and how the patient may have many fears and anxieties regarding his illness which affect his attitude and behavior.
b. Housekeeping employees need to respect the patient's privacy at all times.
c. Housekeeping employees should avoid discussing the patient's illness with him or with anyone else, inside or outside the hospital.
d. The patient's illness is a private matter between the doctor and the patient.
e. Courtesy toward patients and their visitors is important when the HHA must work around patients and when it is necessary to ask visitors to leave the room while the cleaning is done.
f. The HHA must never perform any nursing or medical function regardless of the nature of a patient's request.
g. The HHA may find it helpful to have in mind some statements or replies to typical comments or questions of patients.
h. The HHA always leaves the room when a physician enters.
i. When entering a patient's room the HHA should knock first and say "Housekeeping Aide" as they open the door.
j. Whenever patients give directions pertaining to the care of their rooms, these requests should be filled unless they conflict with established policies.
k. Aides should refrain from lengthy conversations with patients.

Suggested Teaching Learning Activities

a. Invite a physician or head nurse to explain the basic psychology of illness and how various patients react to hospitalization. Have the resource person give examples of ways patients have reacted to fears and anxieties related to their illness. (Such a presentation or interview could be pre-taped for use during this lesson.)
b. Show the film, "The Patient is a Person." Discuss the attitudes of the patients which are illustrated and how various workers in the hospital can contribute to maintaining the patient's confidence. Apply this understanding of the patient's attitude to one's work as an HHA.
c. Consult references, hospital employee handbooks, etc. to determine some guidelines for housekeeping aides as they come in contact with patients.
d. Have a trainee play the role of patient and one as a housekeeping aide to illustrate:

-- How to enter the room to greet the patient
-- What to do if visitors are present
-- What to do if the doctor enters while the Aide is cleaning
-- What to say if the patient insists on discussing his illness
-- What to say if the patient is critical of the hospital or the care he is receiving
-- How to react if the patient asks the HHA to perform a task outside the housekeeping function

f. Have a list of words similar to the ones listed below. Trainees should use each word in a sentence which describes their dealings with patients. Guide trainees in making meaningful statements which will be helpful in their future roles.

-- courtesy
-- tact
-- tolerance
-- respect
-- confidence
-- quietness
-- quickness
-- understanding

Suggested References and Instructional Materials

Book

Housekeeping Manual for Health Care Facilities, AHA

Bulletins

Hospital Housekeeping, Ohio Division of Vocational Education
Manuals and handbooks from local hospitals

Periodical:

The Executive Housekeeper

Films

Title	Date and Length	Source	Cost
The Patient is Person	1956, 20 min., color	American Hospital Association	$4.00

Content

The attitudes which many patients exhibit on entering the hospital are the focal point of this film. Techniques of non-medical care which may aid in dispelling anxieties and thus contribute to the patient's recovery are suggested. The ways in which physicians, the admitting clerk, nurses, housekeepers, and volunteers can maintain the patient's confidence are stressed. Dress styles are somewhat out of date; however, the film's message is still appropriate.

3. Problem: How Does One go About Securing Work as a Hospital Housekeeping Aide?

Key Ideas:

a. Having the necessary papers and credentials may convince a potential employer of one's readiness to accept work responsibilities.
b. Hasty decisions about accepting or refusing a job may be costly both to applicant and employer.
c. Most employers recognize that specialized training will bring one the skill to perform a definite service.
d. In employment interviews the prospective employer will ask questions to give him information concerning the applicant's character and personality.
e. Applicants should be prepared to ask questions about any employee benefits which the employer fails to mention.

Suggested Teaching-Learning Activities

Note: This problem is more effective if delayed until the latter phases of the course.

a. Give a pretest to determine areas where trainees need help.
b. List on the chalkboard some steps in securing a job.
c. Study each step in the detail needed as shown by the pretest. Some activities may include:

1) Studying and practicing with application forms.
2) Preparing other papers and credentials
3) Role-playing interviews
4) Hearing from representatives of the Employment Service and/or hospitals
5) Learning about getting recommendations from previous employers or the training institutions (examples of recommendation forms)
6) Reviewing some ways to keep a job after being hired.

Suggested References and Instructional Materials

Books

Your Life in a Big City, Baxter and Marion
From Kitchen to Career, Lewis and Bobroff

Bulletins

How to Get the Job, Dreese
How to Get and Hold the Right Job, U. S. Government
What Employers Want, Worthy

Films

Title	Length	Source	Cost
I Want a Job	22 minutes	U.K. AV Services	$2.50

Content

Deals with proper and improper techniques of seeking employment, and is designed to build character, to aid the student in his personal development.

Filmstrip		Source	Cost
Your Job Interview	2 filmstrips and 2 l.p. records	Guidance Associates Pleasantville, New York 10570	$35.00

Transparencies

"I WANT A JOB"

(United Transparencies, Inc., Box 888, Binghamton, New York, $25.00 for the set)

Subject included:

I Want a Job
Birth Certificate
Birth Certificate Should Be Kept In a Safe Place
My Social Security Card
When I Have Filled Out my Form
Where Can I Go to Find a Job
If I Cannot Find a Job Through Friends
To Get a Job I Must Fill an Application Blank
What is an Interview?
I Will Want to Wear the Right Clothes
The Way I Speak in an Interview Is Important
I Must be Prepared to Answer Certain Questions
Work Permits and Health Certificates
My Parent or Guardian May Have to Fill a Card
I Want to Keep my Job

Supplementary Material
Problem 1

"DON'T BELITTLE YOUR JOB"
author unknown
(Courtesy of Clifford Hess, St. Elizabeth Hospital,
Covington, Kentucky)

Wherever you are working in office or shop,
And however far you may be from the top
And though you may think you're just treading the mill,
Don't ever belittle the job that you fill,
For however little your job may appear
You're just as important as some little gear
That meshes with others in some big machine
And helps keep it going though never is seen.
They could do without you, you'll have to admit
For business keeps on when the big fellow quits,
And always remember my friends if you can
The job's more important -- Oh yes than the man!
So if it's your hope to stay off the shelf,
Think more of your job than you do of yourself
Your job is important -- don't think it is not,
So try hard to give it the best you've got.
But don't ever think you're of little account
Remember you're part of the total amount.
If they didn't need you, you wouldn't be here,
So always, my friend keep your chin in the air
A porter, maid, nurse or clerk,
Think well of your company, yourself and your work.

APPENDIX I

SUPPLEMENTARY MATERIALS

Supplementary Material
Problem 2

WHAT DO YOU HAVE TO OFFER?[1]

What kind of an employee will you make? You can take stock of yourself and find out. Here are some questions to ask yourself. Answer them honestly, and see how you rate.

	Yes	No	
1. Do you have a real willingness and desire to learn new skills and new ways of doing things?	_____	_____	1.
2. Are you neat in your personal appearance and work habits?	_____	_____	2.
3. Are you punctual?	_____	_____	3.
4. Can you apply yourself to a job without being easily bored or distracted?	_____	_____	4.
5. Can you adapt to new and unexpected situations easily?	_____	_____	5.
6. Can you work under pressure, when necessary, without becoming nervous and upset?	_____	_____	6.
7. Do you have confidence in your abilities?	_____	_____	7.
8. Are you emotionally stable, capable of taking things in your stride?	_____	_____	8.
9. Have you enough initiative to be able to work on your own?	_____	_____	9.
10. Are your job plans in keeping with your own capacities and the opportunities employers have to offer?	_____	_____	10.
11. Do have a sense of duty and responsibility?	_____	_____	11.
12. Are you reliable? Can you be depended on to do a job satisfactorily?	_____	_____	12.
13. Can you gain the friendship and respect of fellow workers?	_____	_____	13.
14. Can you cooperate with fellow workers?	_____	_____	14.

[1]This check sheet is based upon information in Illinois Teacher of Home Economics, Vol. VIII, No. 3, pp. 140-141.

		Yes	No	
15.	Can you ccoperate with supervision and management?	_____	_____	15.
16.	Can you follow directions willingly and without argument because you respect authority?	_____	_____	16.
17.	Can you understand instructions and carry them out accurately?	_____	_____	17.
18.	Can you accept criticism without feeling hurt?	_____	_____	18.
19.	Can you work without constant supervision?	_____	_____	19.
20.	Do you ask questions about things you don't understand?	_____	_____	20.
21.	Can you complete a job once you start it?	_____	_____	21.
22.	Are you a pleasant person to work with?	_____	_____	22.
23.	Do you like people?	_____	_____	23.
24.	Are you friendly and congenial?	_____	_____	24.

BOOSTING THE SCORE

How did you do? If you answered yes to most of the questions, you have the makings of a good employee. All you need now are the necessary skills and training.

If, on the other hand, you answered no to more than a few of the questions, you have some work to do. These are your weak spots, the things about you that can stand improvement. You can go into your "job training" right now by changing those things about yourself and your way of doing things that will help make your career successful.

Supplementary Material
Problem 2

EMPLOYEE PLEDGE

Courtesy of Clifford Hess, St. Elizabeth Hospital,
Covington, Kentucky

Believing that the hospital has a real need of my services as an employee:

I will be conscientious in the fulfillment of my duties and accept supervision graciously.

I will conduct myself with dignity, courtesy and consideration.

I will consider as confidential all information which I may hear directly or indirectly concerning a patient, doctor or any member of personnel, and will not seek information in regard to a patient.

I will take any problems, criticisms, or suggestions to my supervisor.

I will endeavor to make my work the highest quality of which I am capable.

I will report on duty promptly, in full uniform, neat and clean at all times.

I will uphold the traditions and standards of the hospital and will interpret them to the community at large.

Supplementary Material
Problem 2

HOW TO GET FIRED [1]

Adapted from: Seven Keys to Getting and Holding Job

By Lyons and Martin

Let down on production
Talk back to the boss
Resent criticism
Loaf in locker or rest rooms
Break hospital rules
Get the drinking habit
Don't pay your bills
Borrow money around the hospital
Fight with your associates
Get sloppy in work and habits
Take some days off without permission
Take extra long for lunch
Smoke when not permitted
Live beyond your means
Get a bad personal reputation
Let down in appearance
Be a practical joker

MY JOB-SUCCESS TRAITS [2]

	Good	Average	Poor
1. Initiative	____	____	____
2. Self-control	____	____	____
3. Awareness of proper dress and job behavior	____	____	____
4. Desire to learn	____	____	____
5. Willingness to accept supervision	____	____	____
6. Ability to work as well without supervision as with it	____	____	____
7. Ability to accept criticism	____	____	____
8. Stick-to-it-iveness	____	____	____
9. Promptness	____	____	____
10. Dependability	____	____	____
11. Ambition	____	____	____
12. Drive	____	____	____
13. Ability to make decisions	____	____	____
14. Curiosity	____	____	____
15. Leadership	____	____	____
16. Ability to subordinate immediate goals to more important future goals	____	____	____

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[1] These two items are based upon information which appeared in the Illinois Teacher of Home Economics, Volume VIII, No. 3, pp. 141, 142.

[2] Ibid.

APPENDIX II

FILMS AND FILMSTRIPS

SOME SUGGESTED FILMS AND FILMSTRIPS

Notes: For descriptions of the contents of these films, please consult the the catalogs or listings from the sources. Addresses of the sources appear at the end of the list.

All titles are films (motion pictures) except ones indicated as filmstrips.

Title	Source	Length	Rental Cost
Unit I - Orientation			
For the Love of Life	AHA	18 Min.	$5.00
Hospital Housekeeping's Place on the Hospital Team	Vestal	Filmstrip	—
Hospitals are People	AHA	18 Min.	8.00
How to Keep a Job	UK	11 Min.	1.50
I Want a Job	UK	22 Min.	2.50
Patient is a Person, The	AHA	20 Min.	4.00
Personal Qualities for Job Success	UK	11 Min.	3.00
You and Good Health	Vestal	Filmstrip	
You and Your Food	UK	8 min.	3.00
Your Job Interview	Guidance Associates	2 filmstrips + 2 l.p. records	35.00 (purchased)
Your Responsibility to Patients	Vestal	Filmstrip	—
Unit II - Safety and Sanitation			
Basic Biology of Bacteria	USPHS	Filmstrip & Recording	Postage
Big Three, The (bacteria control)	Vestal	30 Min.	—
Hospital Housekeeping Safety	AHA	15 Min.	3.00
Hospital Sepsis: A Communicable Disease	AHA	30 Min.	6.00
How to Lift Properly	Vestal	Filmstrip	—
Nursery Sepsis	AHA	30 Min.	6.00
Prevention and Control of Staphylococcal Infections	USPHS	14 Min.	Postage
You and Bacteria Control	Vestal	Filmstrip	—
Safety Begins With You	Vestal	Filmstrip	—
Unit III - Performing the Functions of the Hospital Housekeeping Aide			
Better Washroom Maintenance	Johnson	9 Min.	Postage
Care and Maintenance of Resilient Tile Floors	Multi-Clean	Filmstrip	Postage
Care and Maintenance of Soft Floors	Multi-Clean	25 Min.	Postage
Finishing Touch, The	Johnson	8 Min.	Postage

Title	Source	Length	Rental Cost
From Start to Finish	Johnson	16 Min.	Postage
Hospital Housekeeping	Multi-Clean	Filmstrip 20 Min.	Postage
Hospital Housekeeping - Mopping, Two Bucket Method	USPHS	9 Min.	Postage
Hospital Housekeeping - Wet Pick-Up	USPHS	7 Min.	Postage
It's Your Challenge(a training film which emphasizes cleaning a patient's room)	Huntington	25 Min.	Postage & Ins.
Linen Handling in Nursing Homes	USPHS	9 Min.	Postage
Ounce of Prevention, An	Johnson	8 Min.	Postage
RX - A Prescription for Better Hospital Procedures (work simplification)	AHA	26 Min.	$3.00
Treatment and Maintenance of Concrete Floors	Multi-Clean	Filmstrip 12 Min.	Postage
Your Asphalt Tile Floor--Its Care and Maintenance	Multi-Clean	Filmstrip 12 Min.	Postage
Your Terrazzo or Oxychloride Floor and How to Maintain It	Multi-Clean	12 Min.	Postage

Addresses of Sources

AHA -	American Hospital Association Film Library 840 North Lake Shore Drive Chicago, Illinois
Guidance Associates -	Pleasantville, New York 10570
Huntington Laboratories, Inc.	P. O. Box 710 Huntington, Indiana 46750
Johnson -	S. C. Johnson and Son, Inc. Attention: Mrs. Lucile Bush Racine, Wisconsin 43404
Multi-Clean -	Multi-Clean's Film Library Multi-Clean Products, Inc. 2277 Ford Parkway Saint Paul, Minnesota 55116
UK -	University of Kentucky Audio-Visual Services Reynolds Building Lexington, Kentucky 40506
USPHS -	U. S. Public Health Service Communicable Disease Center Audio-Visual Center Distribution Unit Atlanta, Georgia 30333
Vestal -	Vestal Laboratories, Div. of W. R. Grace & Co. 4963 Manchester St. Louis, Missouri 63110

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Clark, Thaddeus B. What is Honesty. Chicago: Science Research Associates, Inc., 259 E. Erie Street, 1952.

Dreese, Mitchell. How to Get the Job. Chicago: Science Research Associates, Inc., 259 East Erie Street, 1960.

Freeman, Lucy. Sanitary Maintenance in Hospitals. Fultonville, New York: White Mop Wringer Co., Division of Electrolux Corp., n.d.

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Huntington Laboratories. The Huntington Manual on Daily Maintenance of Public Washrooms. Huntington, Indiana 46750: Huntington Laboratories, Box 710. n.d.

J. I. Holcomb Manufacturing Co. Your Guide to More Beautiful Floors. Indianapolis, Indiana: J. I. Holcomb Mfg. Co., n.d.

Pfeiffer, William B. and Voegele, Walter O. The Correct Maid for Hotels and Motels. New York: Ahrens Publishing Co., Inc., 1962.

S. C. Johnson & Son. Better Washroom Maintenance. Racine, Wisconsin: S. C. Johnson & Son, Inc., 1965.

S. C. Johnson & Son. Johnson Wax Modern Building Maintenance Handbook. Racine, Wisconsin: S. C. Johnson & Son, Inc., 1966.

U. S. Dept. of Health, Education, and Welfare, Office of Education, A Suggested Training Program, Hotel and Motel Housekeeping Aide. Washington, D. C. : Supt. of Documents, 1964.

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Hospitals. The American Hospital Assoc., 840 N. Lake Shore Drive, Chicago, Illinois 60611. ($7.00 per year)

Transparencies

Transparency Set and Workbook. "I Want a Job" United Transparencies, Inc. P. O. Box 888, Binghamton, New York ($25.00)

Printed Transparency Originals (Select ones on bedmaking)

Basic Nursing Skills 1: Patient Care. 3-M Company, Visual Products Division, Box 3100, St. Paul, Minnesota 55101. ($5.00)

Addendum

Student Manual -- Being a Housekeeping Aide. Washington, D. C.: Robert J. Brady Co., 130 Que Street, N.E., Washington, D. C. 2002, 1968 ($5.00)

Instructor's Guide -- Training the Housekeeping Aide. Robert J. Brady Co., address above, 1968 ($7.00)

Visual teaching aids for overhead projectors -- Training the Housekeeping Aide. Robert J. Brady Co., address above, 1968 (Cost not listed)

VT 007 215
Pavalko, Ronald M.
Social Selection and Labor Force Participation Among Teachers and Nurses.

MF AVAILABLE IN VT-ERIC SET.
Pub Date - 68 24p.; Paper presented at the Annual Meeting of the Southern Sociological Society (Atlanta, April, 1968).

*NURSES; *TEACHERS; *LABOR FORCE NONPARTICIPANTS; *EMPLOYED WOMEN; *FOLLOWUP STUDIES; INDIVIDUAL CHARACTERISTICS
SOUTHERN SOCIOLOGICAL SOCIETY ANNUAL MEETING

This paper is based upon the data from two surveys: a survey of Wisconsin high school seniors in 1957 and a follow-up survey in 1964. Of 9,007 cases successfully followed-up, 4,621 were women and, of these, 437 had become teachers and 211 nurses. Some findings about the teacher and nurse groups were: (1) Community size was related to labor force participation, teachers from smaller communities were more likely to continue working and nurses from the largest community size category were least likely to continue working, (2) Although both teachers and nurses were disproportionately drawn from girls of high measured intelligence, those lower on this variable were more likely to continue working, (3) Both nurses and teachers were disproportionately drawn from the better performers in high school; higher school rank was related to continuance of work in nursing but not in teaching, (4) Nurses who made a career decision before leaving high school were more likely to continue working while the time of the decision was not related to continuance in teaching, (5) For both married nurses and married teachers, the husband's occupational status was unrelated to labor force participation, and (6) Nurses of lower socioeconomic background were more likely to continue working while this factor was unrelated to continuance in teaching. (JK)

VT 007 215

ED039370

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SOCIAL SELECTION AND LABOR FORCE PARTICIPATION AMONG TEACHERS AND NURSES

Ronald M. Pavalko

Florida State University

Paper presented at the Annual Meeting of the Southern Sociological Society April, 1968, Atlanta, Georgia.

VT007215

SOCIAL SELECTION AND LABOR FORCE PARTICIPATION AMONG TEACHERS AND NURSES*

Two aspects of the role of women in the occupational structure of the United States constitute the primary concerns of this paper. These are (1) the nature of social selection in primarily female occupations, and (2) factors related to participation in the labor force among women trained to work in a particular occupation. The occupations of teacher and nurse will be examined in relation to these topics.

In the present context social selection refers to the way in which persons are selected into certain occupational roles in terms of particular social characteristics, such as socioeconomic status, ability, and the like. Thus, our attention is focused on the social origins and patterns of occupational entry of the members of an occupations. Social selection in predominantly male occupations has received a good deal of research attention.[1] While some work has been done on social selection in female occupations, it is much less than that devoted to male occupations. One task of this paper is to describe the kind of social selection that occurs among teachers and nurses.

A second task of this paper is to examine the extent of labor force participation and social factors related to labor force participation among teachers and nurses. Discussions of work in contemporary American society often recognize the variable and unstable labor force participation of women as one of the basic characteristics of the American occupational structure. The occupational careers of women, in contrast to those of men, are usually

noncontinuous and subject to such contingencies as marriage and child-rearing. As Caplow has noted, in a predominantly woman's occupation, a sizeable portion of those qualified to work in the occupation are not part of the labor force at any given time.[2]

Where women have acquired rather extensive, costly, and specialized education to prepare them for work in a particular occupation, this in-and-out pattern of labor force participation represents a distinctive type of talent and resource loss. While it is true that women may often return to work when child-rearing is no longer a major life activity, those years of nonparticipation in the labor force cannot be made up. Optimal utilization of educational and occupational training resources is reduced when the training acquired is not utilized. In this sense, compared to men, women may be overeducated insofar as their education and training are underutilized.[3]

Both elementary and secondary school teaching and nursing in the United States are excellent illustrations of variable labor force participation. The fact that women teachers do not work continuously in the occupation for which they have been prepared is well documented. For example, Mason reports that 65 percent of beginning teachers expect to leave teaching within five years and that 70 percent of new women teachers hope to be "homemakers", although five out of six of these eventually want to return to teaching.[4] Similarly, the National Education Association estimated that only 72.5 percent of the newly qualified graduates of 1959 (both men and women) actually entered teaching and that of the new supply of elementary school teachers of 1960 (primarily women) only about 82 percent could be expected to

be teaching the following fall.[5] A similar situation holds in the field of nursing. For example, a survey of registered nurses conducted by the American Nurses Association in 1964 indicated that only 60.8 percent were actually working as nurses.[6]

Methods and Data

The data on which this paper is based are from two surveys -- a survey of Wisconsin high school seniors in 1957 and a follow-up survey of a sample of these former students in 1964.

In 1957 a questionnaire dealing with post-high school educational and occupational plans, parental educational and occupational status, residential characteristics, etc., was administered to virtually the entire population of seniors in the public, private, and parochial high schools in Wisconsin. From this population of high school seniors a random one-third sample of 10,321 cases was selected.

In 1964, seven years after these students completed high school, a follow-up survey of the one-third sample was initiated. The major objective of this phase of the study was to determine the educational and occupational attainment of the former students. A postage-paid double post card questionnaire was sent out to the parents of these students at their 1957 address informing them of their son's or daughter's participation in the study and asking them for information on the post-high school educational attainment and current occupational status of their child. Information was also requested on marital status and, in the case of girls, on whether or not they were currently employed and on the occupation of their husbands.

Four mailings of the questionnaire were conducted. If the first questionnaire was not returned, a second questionnaire stamped "Urgent Second Request" was sent. Nonrespondents after the second wave were sent the same questionnaire stamped "Urgent Third Request". Third-wave nonrespondents were sent a letter explaining again the nature and purposes of the survey, the returnable portion of the questionnaire, and a postage-paid return envelope. An attempt was also made to obtain a telephone interview with those persons who were still nonrespondents after four mailings. This technique was highly successful once the respondent was contacted. However, accurate telephone numbers could be found for only about half of the fourth-wave nonrespondents.

About 20 percent of the initial mailing was returned by the post office as undeliverable for a variety of reasons, such as "moved, left no address", "forwarding period expired", etc. Accurate, up-to-date addresses for over three-fifths of these persons were obtained from the state of Wisconsin tax rolls. Contact was then attempted by successive mailing waves and, if necessary, by telephone. In all, 91.1 percent of the parents were contacted, and 95.8 percent of those contacted provided the information requested. Thus, follow-up information was obtained for 87.3 percent (9,007 cases) of the original sample.[7]

Of the 9,007 former high school seniors successfully followed-up, 4,621 were women. Of these, 437 (9.4 percent) had become elementary and secondary school teachers, while 211 (4.6 percent) had become nurses. It is these women with whom the remainder of this paper is concerned.

The period of time elasped since the women in these two occupations

completed their formal education and the follow-up survey varies and can be inferred from the level of education completed by them, The majority of those who became teachers (62.7 percent) completed a bachelor's degree. Assuming that they typically entered college in the fall of 1957 and graduated in 1961, a period of three years had elapsed since they became qualified to teach. An additional 26.3 percent are graduates of two-year county teachers colleges. On the assumption that they entered these schools in 1957 and graduated in 1959, they could have been teaching for as long as five years at the time of the follow-up survey. Finally, 11.0 percent of the teachers went on to graduate school (1.8 percent received a master's degree and 9.2 percent completed some graduate work but did not receive a degree). Thus, at the time of the follow-up survey, this group could have been engaged in teaching from one to two years. Those girls who became nurses did so in one of two ways. Either through a three-year hospital training program or through a four-year collegiate program. Of all the girls who became nurses, 73.9 percent completed a hospital program. Assuming that they entered training in 1957 and completed in 1960, they could have been engaged in nursing for four years at the time of the follow-up survey. The remaining 26.1 percent who completed a four-year collegiate nursing program could have been practicing nursing for three years at the time of the follow-up survey.

Five variables, based on data from the 1957 survey, will be used in examining <u>social selection</u>. These are socioeconomic background, community size, measured intelligence, high school rank, and time of occupational choice. These same five variables will be examined in relation to <u>labor force</u>

participation. Three additional variables, based on data from the 1964 follow-up survey, will also be examined in relation to labor force participation. These are level of educational attainment, marital status, and husband's occupation.

Socioeconomic background is based on a factor-weighted combination of father's occupation, father's and mother's formal educational level, an estimate of the funds the family could provide if the student were to attend college, the degree of sacrifice this would entail for the family, and the student's perception of the family's wealth and income status in the community. Socioeconomic background is trichotomized into high, medium, and low, with these categories representing approximately equal divisions of the entire one-third sample on this variable (thus, a student from "high" socioeconomic background was in the top third when the original 10,321 cases were ordered on socioeconomic background).

Measured intelligence is based on scores on the Henmon-Nelson Test of Mental Ability[8] taken during the junior year of high school. This variable is divided into three approximately equal categories, high, medium, and low, which, like socioeconomic background, are based on the entire one-third sample.

High school rank is based on the student's relative standing in her high school graduating class. In this analysis, high school rank is trichotomized into high, medium, and low.

Time of occupational choice refers to whether or not the student indicated teaching or nursing as her occupational choice at the time of the 1957 survey. Those who did are regarded as having made their occupational choice

before high school graduation. Those who did not are defined as having made their choice after graduation from high school. It should be noted that both these categories contain a high degree of variation with regard to exactly when this choice was made. The "before high school graduation" category surely includes girls ranging from those who planned to become teachers or nurses for several years prior to graduating from high school to those who made this decision when asked to do so on the questionnaire. Similarly, the "after high school graduation" category undoubtedly includes those who decided to become teachers or nurses in the interim between high school and college or nursing school as well as those who did not decide until after they were in college.

Level of educational attainment refers to the type and amount of schooling acquired. For teachers, three categories will be examined for this variable. These are (1) completion of a two-year county teachers college program, (2) receipt of the bachelors degree, and (3) some graduate work and receipt of the masters degree. For nurses, two categories will be used. These are completion of (1) a three-year hospital training program, and (2) a four-year collegiate program.

Marital status refers to whether or not the girl was married at the time of the follow-up survey. The "not married" category includes, in addition to single girls, a few who are divorced, separated, or widowed.

Husband's occupation, for those teachers and nurses who were married at the time of the follow-up survey, is dichotomized into (1) professional and business proprietors and managers, and (2) clerical, sales, and all blue collar occupations.

Participation in the labor force on the part of these teachers and nurses is based on data from the follow-up survey and can be examined in some detail. Three categories will be presented on this variable. These are (1) never worked since high school, (2) worked since high school, but now not working, and (3) now working. In the second and third categories "now" refers to 1964, the time of the follow-up survey.

Social Selection

Our strategy here will be to compare the distribution of teachers and nurses with all women in the high school senior cohort. Thus, the Total column in Table 1 describes the composition of the cohort from which these teachers and nurses are drawn.

Socioeconomic background clearly operates as a selective factor in the recruitment of both teachers and nurses. While nearly one-third of all women in the sample are from low socioeconomic background, only slightly over 10 percent of those who became either teachers or nurses are drawn from this socioeconomic level. At the other end of the continuum, nearly two thirds of the teachers and half of the nurses are from high socioeconomic background, while this level constitutes only one-third of the sample. Women of low socioeconomic background are underrepresented and those of high socioeconomic background are overrepresented among both teachers and nurses. However, teaching tends to recruit women of higher socioeconomic background than does nursing.

These findings on the socioeconomic origin of teachers contradict what is usually assumed about this occupational group. To describe teachers as being from "lower middle class" backgrounds has become a popular platitude

among social scientists and laymen alike.[9] How can this contradictory finding be explained? The explanation seems to rest on a subtle but important methodological point. Where previous studies have dealt with samples of students in teachers colleges and schools of education or teachers in a particular community, socioeconomic background has already had a selective effect. That is, socioeconomic background is a major determinant of who gets to college to begin with.[10] Consequently, these studies have not compared the socioeconomic characteristics of teachers with any population representative of their age cohort. In the present study, the conclusion that teachers tend to come from high socioeconomic origins relative to the general age cohort from which they are drawn seems more valid. Thus, teaching seems to attract women of high socioeconomic background to a much greater extent than has been assumed.

The findings on the socioeconomic origin of nurses also disagree with those of previous studies. For example, Bressler and Kephart found that the fathers of 808 Pennsylvania nurses who completed their licensing examinations in 1950 were occupationally quite representative of Pennsylvania males of comparable age.[11] The daughters of professionals and skilled manual workers were only slightly over-represented among these nurses. Our findings suggest a considerably greater overrepresentation of girls from high socioeconomic backgrounds. Two Equally plausible explanations may account for these findings. First, a significant change may have occurred in the socioeconomic base from which nurses were recruited during the decade 1950-1960. Second, and not entirely independent of the first interpretation, the increasing

popularity of collegiate nursing programs may be increasing the proportion of higher socioeconomic background women entering the nursing profession. Thus, socioeconomic background may be beginning to operate in a selective manner in nursing comparable to the way it appears to operate in teaching.

[Table 1 about here]

Community size does not seem to operate as a selective factor affecting the recruitment of women to teaching and nursing. The percentage of teachers and nurses from each community size level is approximately the same as for the total sample. With respect to teachers, this finding is again contrary to earlier characterizations of teachers as coming from "rural and small-town backgrounds".[12] Rather, our findings suggest that, in terms of rural-urban origin, these teachers are representative of their age cohort.

Both teachers and nurses are drawn from higher ability levels when measured intelligence is used as an indicator of this variable. Women who ranked in the lowest measured intelligence third are underrepresented among both occupational groups while those in the highest third are overrepresented. Teachers and nurses are remarkably similar on this characteristic. That is, both of these occupations select women who, on the average, are of comparable measured intelligence.

If high school rank can be taken as an indicator of academic performance, it is apparent that this is also an important selective variable. Compared to the total sample, girls who became teachers and nurses are disproportionately drawn from the highest third in high school rank.[13] An important difference

between teachers and nurses on this characteristic is that those girls who became nurses are more likely to have been top performers in high school (80.6 percent) than are those who became teachers (67.5 percent).

Data on time of occupational choice are not available for the entire cohort of female students. Consequently, a comparison with the total sample is not possible. However, a comparison of teachers with nurses indicates sharply contrasting temporal patterns of occupational choice. The vast majority (91.9 percent) of girls who became nurses planned to do so by the end of their senior year in high school. Only 8.0 percent planned to enter some other occupation when they were high school seniors. On the other hand, girls who became teachers were much less likely to have already made their choice as high school seniors and were more likely to have made the choice after graduating from high school (36.4 percent).

This finding suggests that, given the way in which preparation for these occupations is structured, nursing requires an earlier commitment on the part of its recruits, while it is much easier to "drift" into teaching during the first few years of college.

Labor Force Participation

A second concern of this paper is to examine factors related to labor force participation. Data are available to determine whether these teachers and nurses ever worked, worked for some period of time and then dropped out of the labor force, or were working at the time of the follow-up survey. The relevant data are presented in Table 2 for teachers and in Table 3 for nurses.

Examination of the Total rows in these tables indicates that very few

women (3.2 percent of the teachers and 1.0 percent of the nurses) acquire the requisite education for these occupations and then fail to work in them. However, slightly more than one-third (36.8 percent of the teachers and 35.6 percent of the nurses) worked and then dropped out of the labor force. At the time of the follow-up survey, 60.0 percent of the teachers and 63.5 percent of the nurses were still working. Thus, both teachers and nurses have highly similar patterns of labor force participation.

The analysis of variables related to labor force participation can be simplified by looking only at the data for the "Now Working" category since the percentage who "Never Worked" is small and shows little variation and the "Worked, Not Now Working" category is essentially a reciprocal.

Socioeconomic background shows no relationship to labor force participation among teachers, but is related to whether or not nurses are presently working. Among teachers there is only a slight tendency for more of those of low and medium socioeconomic background to be working compared to those high on this variable. Among nurses, the likelihood of being currently employed shows a strong inverse relationship to socioeconomic background.

Community size is related to labor force participation among teachers to the extent that those who grew up in communities over 50,000 in population are less likely to be working than are those from smaller communities. To a lesser extent the same pattern is evident when nurses are examined on this variable.

In the case of both teachers and nurses measured intelligence is also related to whether or not they are still working. For both groups, those in

the lowest third in measured intelligence are more likely to be working than are those in the medium and high categories.

[Tables 2 and 3 about here]

High school rank shows no relationship to labor force participation among teachers. However, nurses in the top third on high school rank are more likely to be working than are those in the medium and low categories.

Time of occupational choice is also unrelated to labor force participation among teachers, but "early deciders" in nursing are more likely to be working than are those who decided on nursing after high school. Apparently, an early commitment to nursing increases the likelihood of continued work in the occupation but does not produce the same result among teachers.

Level of educational attainment is only somewhat related to labor force participation among teachers. There is no difference in the percentage of those with two and four year degrees who are still working. However, those who have done some graduate work and/or obtained a masters degree are more likely to be working than are other teachers. One interpretation of this finding is that this more "professional" level of training in education produces a greater commitment to the occupation which in trun results in a larger proportion continuing to work. Another interpretation is that these teachers have emerged from school more recently and the attrition observed in the other categories has simply not yet had time to occur. Among nurses, there is no difference in the percentage working when those who completed a hospital training program are compared with those who completed a collegiate program. Thus,

the contention of some nursing educators that collegiate programs produce a greater commitment to nursing is not supported by these data.

Marital status is more strongly related to participation in the labor force than is any other variable on which data are available. Ninety percent of the unmarried teachers and 94.1 percent of the unmarried nurses are still working while only 45.8 percent of the married teachers and 53.8 percent of the married nurses are still working. Thus, getting married seems to be a major source of attrition in both occupational groups.

When married teachers and nurses are examined on husband's occupation there is no difference in the percentage working by level on this variable. This finding is somewhat surprising since one would expect women married to men in minor white-collar and blue-collar occupations to be working (mainly to provide supplementary income) more often than those married to men in professional and higher status business occupations. One possibility is that not enough time has elapsed for this socioeconomic difference to emerge. That is, women married to men in higher status occupations may be working "temporarily" while their husbands are recuperating from the financial strain of graduate or professional school, establishing a clientele or business, etc., while for women married to men in lower status occupations, employment may be relatively more permanent. In time, differences in employment by husband's occupational status might emerge.

Summary and Conclusions

In order to summarize the findings of this analysis, an attempt will be made to draw "profiles" of teachers and nurses with regard to variables

related to social selection and labor force participation.

Teachers are selected from well above average socioeconomic backgrounds, but this factor is not related to their participation in the labor force. While community size is not a selective factor in the recruitment of teachers, those from smaller communities are more likely to continue working. Although teachers are disproportionately recruited from girls of higher measured intelligence, it is those of lower measured intelligence who continue working. Girls who are better performers in high school are disproportionately attracted to teaching but high school rank is unrelated to labor force participation. The likelihood of being in the labor force at the time of the follow-up survey is unrelated to whether the decision to become a teacher was made before or after high school graduation. Teachers who did graduate work are more likely to be working than are those who did not. Unmarried teachers are much more likely to be working than are those who are married but, among those who are married, husband's occupational status is unrelated to labor force participation.

Nurses tend to be selected from higher than average socioeconomic backgrounds, but those of lower socioeconomic background are more likely to continue working. Community size is not a selective factor in the recruitment of nurses and is somewhat related to labor force participation with those from the largest community size category least likely to be working. As was the case with teachers, nurses are disproportionately drawn from girls of high measured intelligence but it is those lowest on this variable who are most likely to continue working. However, nurses are disproportionately drawn from girls who were top performers in high school and it is these same girls who

are most likely to continue to work. Those who decided to enter nursing prior to leaving high school are more likely to be working in the occupation than are those who made the decision at some later date. Whether a girl becomes a nurse through a hospital or collegiate training program is unrelated to her later labor force participation. As was the case with teachers, unmarried nurses were much more likely to be working at the time of the follow-up survey than were those who are married. However, for married nurses, husband's occupational status shows no relationship to participation in the labor force.

Hopefully, this analysis has documented the nature of social selection in teaching and nursing. Clearly, socioeconomic background, measured intelligence, and high school rank function as selective factors in the recruitment of young women to these occupations. Our findings on the differing temporal patterns of occupational choice suggest the broader question of the extent to which variation in the structure and organization of training for occupations produces corresponding variation in occupational decision-making on the part of young people.

We have also demonstrated the patterned nature of labor force participation, despite the fact that this pattern is not the same in all respects for both nursing and teaching. Our finding that marriage results in considerable attrition from both occupational groups supports the frequently noted conclusion that young women in contemporary American society seem more committed to the traditional wife and mother role than to occupational careers.[14]

Finally, it should be noted that we have examined labor force participation at a point very soon after completion of preparation for these

occupations. Whether the patterns found here hold after longer periods of time, can only be answered with additional follow-ups of these or similar occupational cohorts.

TABLE 1

Distribution of Teachers and Nurses on Selected Variables, in Per Cent

	Teachers	Nurses	Total (all Women in sample)
Socioeconomic Background			
Low	10.5	10.4	31.2
Medium	28.4	42.2	35.3
High	61.1	47.4	33.5
Total	100.00	100.0	100.0
Community Size			
Farm - 2,500	35.9	33.2	35.8
2,500 - 50,000	38.7	43.1	38.2
Over 50,000	25.4	23.7	25.9
Total	100.0	100.0	99.9
Measured Intelligence			
Low	11.0	8.0	33.1
Medium	32.3	36.0	33.9
High	56.8	55.9	33.0
Total	100.0	99.9	100.0
High School Rank			
Low	10.3	7.1	24.2
Medium	22.2	12.3	32.3
High	67.5	80.6	43.5
Total	100.0	100.0	100.0
Time of Occupational Choice			
Before High School Graduation	63.6	91.9	Not applicable
After High School Graduation	36.4	8.0	
Total	100.0	99.9	
Number of Cases	437	211	4621

TABLE 2

Labor Force Participation of Women Teachers by Selected Variables, in Per Cent

	Labor Force participation				
	Never Worked	Worked, Not Now Working	Now Working	Total	N
Socioeconomic Background					
Low	4.4	30.4	65.2	100.0	46
Medium	7.3	29.8	62.9	100.0	124
High	1.1	41.2	57.7	100.0	267
Community Size					
Farm - 2,500	3.1	33.1	63.7	99.9	157
2,500 - 50,000	3.0	34.9	62.1	100.0	169
Over 50,000	3.6	45.1	51.4	100.1	111
Measured Intelligence					
Low	4.2	22.9	72.9	100.0	48
Medium	4.3	39.0	56.7	100.0	141
High	2.4	38.3	59.3	100.0	248
High School Rank					
Low	4.4	37.8	57.8	100.0	45
Medium	3.1	36.1	60.8	100.0	97
High	3.0	37.0	60.0	100.0	295
Time of Occupational Choice					
Before High School Graduation	4.0	35.6	60.4	100.0	278
After High School Graduation	2.0	39.0	59.1	100.1	159
Level of Education					
Two-year County Teachers College	3.5	40.9	55.6	100.0	115
Bachelor's Degree	3.6	38.7	57.7	100.0	274
Some Graduate Work and Master's Degree	0.0	16.7	83.3	100.0	48
Marital Status					
~~Single~~ Married	2.0	52.2	45.8	100.0	297
Not Married	5.7	4.3	90.0	100.0	140
Husband's Occupation*					
Professional and Business	2.0	51.3	46.7	100.0	199
Clerical, Sales and Blue Collar	2.0	54.1	43.9	100.0	98
Total	3.2	36.8	60.0	100.0	437

*For married teachers only.

TABLE 3

Labor Force Participation of Nurses by Selected Variables, in Per Cent

	Labor Force Participation				
	Never Worked	Worked, Not Now Working	Now Working	Total	N
Socioeconomic Background					
Low	0.0	13.6	86.4	100.0	22
Medium	1.1	31.5	67.4	100.0	89
High	1.0	44.0	55.0	100.0	100
Community Size					
Farm - 2,500	0.0	35.7	64.3	100.0	70
2,500 - 50,000	1.1	33.0	65.9	100.0	91
Over 50,000	2.0	40.0	58.0	100.0	50
Measured Intelligence					
Low	0.0	29.4	70.6	100.0	17
Medium	1.3	38.2	60.5	100.0	76
High	0.8	34.8	64.4	100.0	118
High School Rank					
Low	0.0	46.7	53.3	100.0	15
Medium	7.7	46.2	46.2	100.1	26
High	0.0	33.0	67.1	100.1	170
Time of Occupational Choice					
Before High School Graduation	1.0	34.5	64.4	99.9	194
After High School Graduation	0.0	47.1	52.9	100.0	17
Level of Education					
Hospital Training Program	0.6	35.9	63.5	100.0	156
Collegiate Program	1.8	34.6	63.6	100.0	55
Marital Status					
Married	1.2	45.0	53.8	100.0	160
Not Married	0.0	5.9	94.1	100.0	51
Husband's Occupation*					
Professional and Business	1.2	45.0	53.8	100.0	80
Clerical, Sales, & Blue Collar	1.2	45.0	53.8	100.0	80
Total	1.0	35.6	63.5	100.1	211

* For married nurses only.

FOONOTES

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[1]A few examples are Stuart Adams, "Trends in the Occupational Origins of Physicians", American Sociological Review, 18 (August, 1953), pp. 404-409; Otis Dudley Duncan, "Social Origins of Salaried and Self-Employed Professional Workers", Social Forces, 44 (December, 1965), pp. 186-189; R. K. Kelsall, "Self-Recruitment in Four Professions", in D. V. Glass (ed.), Social Mobility in Britain, London; Routledge and Kegan Paul Ltd., 1954, pp. 308-320; Douglas M. More, "Social Origins of Future Dentists", The Midwest Sociologist, 21 (July, 1959), pp. 69-76; and Joseph Zelan, "Social Origin and the Recruitment of American Lawyers", British Journal of Sociology, 18 (March, 1967), pp. 45-54.

[2]Theodore Caplow, The Sociology of Work, Minneapolis: University of Minnesota Press, 1954, Chapter 10, "Occupations of Women".

[3]"Underutilization of Women Workers", U. S. Department of Labor Publications, Women's Bureau, October, 1966.

[4]Ward Mason, The Beginning Teacher: Status and Career Orientations, Washington: Office of Education, U. S. Department of Health, Education and

Welfare, 1961.

[5]"The Teacher Shortage Analyzed", NEA Research Bulletin, 38 (October, 1960), pp. 68-74.

[6]Facts About Nursing: A Statistical Summary, American Nurses Association, 1966, computed from data in Table 6.

[7]A more detailed discussion of the follow-up survey and an analysis of factors related to early and late response is presented in Kenneth G. Lutterman and Ronald M. Pavalko, "Characteristics of Willing and Reluctant Respondents: Contingency Table Versus Multivariate Analysis", paper presented at the 60th Annual Meeting of the American Sociological Association, Chicago, 1965. In this analysis, comparisons on known student characteristics indicate no significant differences between respondents and nonrespondents.

[8]V. A. C. Henmon and M. J. Nelson, The Henmon-Nelson Test of Mental Ability, Boston: Houghton Mifflin Co., 1942.

[9]Some very early studies that reached this conclusion are Lotus D. Coffman, The Social Composition of the Teaching Population, New York: Bureau of Publications, Teachers College, Columbia University, 1911; Florence Greenhoe, Community Contacts and Participation of Teachers, Washington, D. C.: American Council on Public Affairs, Clyde M. Hill, A Decade of Progress in Teacher Training, New York: Bureau of Publications, Teachers College, Columbia University, 1927; Mary L. Moffett, The Social Background and Activities of Teachers College Students, New York: Bureau of Publications, Teachers College, Columbia University, 1929; and Frederick L.

Whitney, "The Social and Economic Background of Teachers College and of University Students", Education, 47 (April, 1927), pp. 449-456. That teachers are from lower middle class origins is also a common theme running through a number of community studies. See W. Lloyd Warner, Robert J. Havighurst, and Martin B. Loeb, Who Shall Be Educated, New York: Harper and Row, 1944.

[10]William H. Sewell and Vimal P. Shah, "Socioeconomic Status, Intelligence, and the Attainment of Higher Education", Sociology of Education, 40 (Winter, 1967), pp. 1-23.

[11]Marvin Bressler and William Kephart, Career Dynamics: A Survey of Selected Aspects of the Nursing Profession, Harrisburg, Pennsylvania: Pennsylvania Nurses Association, 1955.

[12]See references in footnote 9.

[13]The fact that the total sample of girls in the cohort is not equally distributed among the three levels requires some explanation. High school rank is based on the relative standing of all students (both males and females) in the senior class. The fact that girls perform better in high school than do boys produces the unequal distribution found in Table 1 when girls are examined separately on this variable.

[14]For a recent discussion of this phenomenon among collegiate nursing students, see Fred Davis, Virginia L. Olesen, and Elvi Waik Whittaker, "Problems and Issues in Collegiate Nursing Education", in Fred Davis (ed.), The Nursing Profession: Five Sociological Essays, New York: Wiley, 1966.

VT 007 280
Manpower Requirements in Indiana Nursing Homes.

Indiana Employment Security Div., Indianapolis. Research and Statistics Section
MF AVAILABLE IN VT-ERIC SET.
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*HEALTH OCCUPATIONS; *HEALTH PERSONNEL; *NURSING HOMES; *MANPOWER NEEDS; EMPLOYMENT STATISTICS; EMPLOYMENT PROJECTIONS
*INDIANA

In March 1968, a sample of nursing homes throughout Indiana covered by the Employment Security Act were surveyed to determine current vacancies, current employment, and anticipated needs. Estimates based on this sampling showed total current employment in all nursing homes to be 9,808. This total is expected to climb to almost 13,000 by March 1969. Almost 60 percent of the total employment figure is composed of nurse aides and orderlies. The employment of professional nurses was estimated at 761, a total expected to increase to 992 in a year. Licensed practical nurse employment is expected to rise from the estimated 521 to 773 in a year. The only occupation expected to decline is that of dietician; it is anticipated that as additional food supervisors are trained by dieticians, the services of consulting dieticians will not be used. Measures taken to offset the effects of the labor shortages are: (1) use of consultants in some professional categories, (2) increase in overtime hours worked, (3) use of contracted janitorial and laundry services, (4) use of outside skilled maintenance services, and (5) use of part-time help. (JK)

VT 007 280

ED039370

STATE OF INDIANA
ROGER D. BRANIGIN, GOVERNOR
Indiana Employment Security Division
W. H. Parks, Director

MANPOWER REQUIREMENTS IN INDIANA NURSING HOMES

June 1968

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Indianapolis, Indiana 46204

MANPOWER REQUIREMENTS IN INDIANA NURSING HOMES

Nationally, licensed nursing homes constitute one of the most rapidly expanding phases of the health service field. The American Nursing Home Association estimates that roughly half of all existing nursing home beds have been added in the last five years, and that the growth rate is accelerating. The average size of nursing homes has also risen in recent years from 25 to 42 beds, with new construction now averaging 65 beds per home.

Several factors are contributing to this expansion: the growth in the older segment of the population due to lengthening life expectancy; greater use of rehabilitative techniques for the elderly; wider coverage by private health insurance plans, and the advent of Medicare payments for nursing home care. All of these combine to create additional nursing home needs, both for physical plants and for qualified staff.

In terms of job opportunities, the nursing home industry has grown not only in the total number of employees, but also in the range of needed skills. With the inauguration of Medicare in January 1967, a program which requires certification of skilled nursing homes operating under its regulations, the needs for expanded services have increased rapidly. Participation in the Medicare program is in part dependent on conformity with the Federal staffing requirements, thus establishing standards that tend to lead toward a professional level of nursing home care. Although not all licensed nursing homes are manned and equipped to meet the Federal criteria, the example set in these participating homes has an overall tendency to result in better quality medical and health facilities.

Privately endowed programs are also contributing to the financial support of a professional level of nursing home care. A notable example is the insurance plan of the United Auto Workers making about 2½-million members and dependents eligible for up to 730 days of skilled nursing home benefits. Standards are equivalent to those established under Medicare.

Welfare payments to the elderly in nursing homes in recent years have also increased. In addition to the needs for medical care to these indigent elderly, there is a need for homes providing services at a minimal charge to care for ambulatory welfare recipients needing only custodial care. Growth in this type of institution is also anticipated; however, professional staff needs will not be affected by this type of growth. Rather, it might be viewed as a factor tending to inhibit growth of the medical type of nursing home facility as it would enable utilization of the scarce professional medical workers to better advantage.

Improved nursing home standards automatically necessitate increased professional staffs. To meet Federal standards, many more nursing homes will be required to recruit registered nurses, licensed practical nurses and nurse aides at a time when education and training facilities are already hard pressed to meet current demands for these categories of health personnel. Hospital needs will be increasing also, and will be competing for the inadequate supply of trained workers.

Some types of professional workers can be utilized on a consulting or visiting basis. Examples of the occupations adaptable to this type of employment are the dietitian, and the physical, occupational, and speech and hearing therapists. Other workers such as nurses, practical nurses, and nurse aides must be on duty at all times and the increasing needs will be experienced most sharply in this group.

Measured by employment, the expansion in Indiana's nursing home facilities has paralleled the National trend. Between December 1966 and December 1967, nursing home employment in covered 1/ firms advanced from 5,673 to 7,260, up 28 per cent in the year. During the same period the number of reporting units decreased slightly, from 331 down to 328. This demonstrates that the homes are increasing in size, at least in terms of the number of workers employed per unit. In 1966 the staff size averaged 17 per unit. By the end of 1967 this figure had climbed to 22 per unit.

In March 1968 the Indiana Employment Security Division surveyed a sample of covered nursing homes throughout the State to determine the current vacancies, current employment, and the anticipated manpower needs over the coming year. Information on the major occupational groups was collected and studied. Estimates based on this sampling show total current employment in all establishments, both covered and uncovered, at 9,808. This total is expected to climb to almost 13,000 by March 1969, an increase of 32 per cent over the year. Survey results are shown in the following table:

INDIANA NURSING HOME EMPLOYMENT
MARCH 1968 AND ANTICIPATED ONE YEAR HENCE

OCCUPATIONAL GROUP	CURRENT VACANCIES MARCH 1968	CURRENT EMPLOYMENT MARCH 1968	ANTICIPATED EMPLOYMENT MARCH 1969	PER CENT CHANGE 1968-1969
TOTAL, ALL OCCUPATIONS	360	9,808	12,920	32%
Professional Nurses	26	761	992	30
Licensed Practical Nurses	63	521	773	48
Nurse Aides and Orderlies	235	5,796	7,943	37
Food Service Supervisors	0	101	109	8
Dietitians	0	97	93	- 4
Cooks and Other Food Service Workers	36	1,181	1,418	20
Housekeeping and Laundry Workers	0	639	738	15
Maintenance Workers	0	262	313	19
Clerical Workers	0	279	370	33
Other Occupations, N.E.C.	--	171	171	--

1/ Covered establishments are those covered by the Employment Security Act. Excluded from coverage are nonprofit organizations and those firms which do not employ 4 or more for at least 20 weeks of the year.

Almost 60 per cent of the total estimated nursing home employment is composed of nurse aides and orderlies. March employment in this category was estimated at 5,796 workers, and it is anticipated that it will rise to 7,943 in a year, a 37 per cent climb. This represents an increase of 2,147 workers over the period, and if it is assumed that the 235 current vacancies are also filled, this figure would grow to 2,382.

March employment of professional nurses is estimated at 761, a total that is expected to increase by 30 per cent to 992 in a year. Similarly, licensed practical nursing is projected to rise from 521 currently to 773 in the corresponding 1969 month, a substantial gain of 48 per cent.

In all of the other identified occupational groups, except dietitians, it is predicted that employment will show gains during the next year. These needs are based on survey reports from existing establishments, and as new nursing homes are built the demand for workers will expand proportionately.

Professional nurse, licensed practical nurse, and nurse aide are high-demand occupations. Shortages are due to various reasons. Nurses are not being trained in sufficient numbers to replace those who leave for marriage, pregnancy or to take jobs outside of nursing homes. There is a need for more training facilities for practical nurses as the need is growing more rapidly than the supply. Hospitals are competing for the short supply as they continue to use practical nurses to perform some of the duties formerly assumed by the professional nurse.

Nurse aides are in short supply in nursing homes for a combination of reasons. Mentioned most often was the difference between pay scales for nurse aides and for jobs in factories and other establishments competing for the labor supply. Undesirable working hours was also cited as a limiting factor. Stepped-up training programs have been proposed as a measure to keep the supply flowing in sufficient quantities to meet the demand.

The only occupation expected to decline was dietitian. Most nursing homes use the services of dietitians on a consulting basis when they are used at all. In other cases, food supervisors or the owners supervise the diets. As food supervisors are trained by dietitians to perform these meal-planning duties, the continued services of a consulting dietitian would not be used.

The surveyed employers did not feel that current personnel shortages lowered the quality of nursing care received by patients to a significant degree. In general they felt the two most serious problems are the lack of sufficient number of people being trained in specific occupations and the subsequent loss of these trained people to competitors in other types of businesses.

Measures taken to offset the effects of the labor shortages are the following:

1. Use of consultants in some professional categories
2. Increase in overtime hours worked
3. Use of contracted janitorial and laundry services
4. Use of outside skilled maintenance services
5. Use of part-time help

Some employers cooperate in MDTA training courses for nurse aides and licensed practical nurses. Others have hired or are willing to hire MDTA trained people when they are available.

Hourly wages paid covered a wide range within each occupation and among the various occupational groups surveyed. In the table below, salaries are expressed as the median value.

MEDIAN HOURLY SALARIES, BY OCCUPATIONAL GROUP

	HOURLY RATE
Professional Nurses	$2.94
Licensed Practical Nurses	2.07
Nurse Aides and Orderlies	1.42
Food Service Supervisors	1.94
Dietitians	1/
Cooks and Other Food Service Workers	1.51
Housekeeping and Laundry Workers	1.40
Maintenance Workers	1.93
Clerical Workers	1.98

1/ Only three dietitians listed as full-time employees.

About two-fifths of those responding to the survey qualify currently for Medicare patients. Some who meet the standards for qualifying have not applied for various reasons. Some felt that the cost of the paper work and the additional services required would exceed the benefits to be derived from certification. Three respondents indicated an interest in qualifying at a later date.

VT 007 326
A Guide for the Utilization of Personnel Supportive of Public Health Nursing Services.

American Nurses' Association, New York, N.Y.
MF AVAILABLE IN VT-ERIC SET.
American Nurses' Association, 10 Columbus Circle, New York, New York 10019 ($.35).
Pub Date - 66 13p.

*HOME HEALTH AIDES; *COMMUNITY HEALTH SERVICES; *ADMINISTRATOR GUIDES; *MANPOWER UTILIZATION; NURSES; *NURSING; PRACTICAL NURSES

Thirteen guidelines to assist public health administrators in using supportive personnel such as registered and practical nurses and home health aides include the following: (1) that the team leader responsible for seeing that nursing services are assessed, planned, performed, and evaluated be an experienced public health nurse; (2) that personnel assisting in performing nursing services be employed by the community nursing service or that there be a written contract between the nursing service and the employer of such supportive personnel; (3) that public health nurses participate in recruitment, selection, training, and placement activities and that they supervise and coordinate the services of all personnel supportive to nursing; and (4) that all legal implications relating to supportive personnel be defined and understood. The document also lists 35 questions to be considered by an agency in planning for employment of personnel supportive of public health nursing services, a listing of sources of information regarding planning and implementing a program using supportive personnel, pertinent references, and a glossary of terms. "Guidelines for the Development and Utilization of Home Health Aide Service in the Community," a related document, is available as ED 029 092 (VT 007 327, in this issue). (JK)

VT 007 326

ED039370

C.1

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UTILIZATION OF PERSONNEL SUPPORTIVE OF PUBLIC HEALTH NURSING SERVICES

VT007326

THE preparation of a guide for the utilization of personnel supportive of public health nursing services was referred by the Executive Committee of the Public Health Nurses Section, American Nurses' Association, to the Section's Committee on Practice in March of 1965.

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INTRODUCTION

Social pressures make it imperative that more creative ways be found for meeting the nursing needs of our society. These pressures include increased public recognition and use of public health nursing services, changing health needs, increasing knowledge, government financing of a growing number of health programs, and an increasing number of insurance plans that include public health nursing services.

The nursing profession recognizes its responsibility to provide leadership in meeting these multiplying demands for nursing services. This responsibility extends to planning for the utilization of all appropriate and needed human resources to make high-quality nursing care available to all.

The personnel supportive of public health nursing who are now being employed by many community nursing services cannot replace the professional, licensed and fully prepared public health nurse. However, we believe that nursing direction and supervision can make it possible for persons with varying degrees of ability and preparation to function in assistive and supportive roles without jeopardizing the health and safety of those being served. In fact, the effectiveness of nursing service undoubtedly is enhanced if new types of workers are appropriately utilized and are helped to develop and use their skills to the limits of their abilities.

GUIDELINES

The purpose of the following guidelines is to assist public health nurses in administrative positions to utilize effectively the abilities of supportive personnel such as registered professional nurses, licensed practical nurses, home health aides, and others working in community nursing services.

- The decision to use supportive personnel should be based on community needs and resources and on the ability of the agency to utilize the services of these persons in appropriate ways, with proper supervision.
- The agency should operate under an administrative plan which provides for all pertinent agreements and contracts and which sets policies for its program, procedures, budget, staffing patterns and evaluation. The administrative plan should also make provision for periodic review of the total plan.
- Team nursing is an effective method of providing public health nursing services. However, each member of the public health nursing team must understand his defined role and the roles of other members. Therefore, the roles, functions and legal responsibilities of the various team members must be fully explained and interpreted to the agency staff as well as to other health workers and the general public.
- Cooperative planning with other agencies, or other divisions of the same agency, is essential when personnel in their employ participate as members of the public health nursing service team.

- Each team member, including the patient and his family, should participate in assessing, planning, implementing and evaluating family-centered nursing care.
- The team leader should be an experienced public health nurse who has leadership ability and who accepts the responsibility for seeing that nursing services are assessed, planned, performed and evaluated.
- All personnel who assist in performing public health nursing services should be employed by the community nursing service. When this is not possible or feasible, there should be a written contract with the employer of such supportive personnel.
- Public health nurses should participate in recruitment programs, selection activities, preparation and training, and placement of personnel supportive of public health nursing services.
- Supervision and coordination of the services of all personnel supportive of public health nursing is the responsibility of the public health nurse.
- All personnel should be utilized at the level commensurate with their preparation and competence, and within the framework of the agency's responsibilities.
- A program utilizing supportive personnel must be consistent with all applicable laws. All legal implications relating to supportive personnel must be clearly defined and understood.
- Ongoing evaluation of the utilization of supportive personnel in meeting the public health nursing service needs is essential.
- The agency's program should provide for research and studies in the utilization of supportive personnel in providing quality public health nursing service.

PERTINENT QUESTIONS

The following questions are those that the individual agency should consider in determining policy in planning for employment and utilization of personnel supportive of public health nursing services.

1. Is there a need for supportive nursing personnel? How was the need determined?
2. Is the community ready for this service? Can this readiness be documented?
3. Who would receive service under this program?
4. Who is providing or contemplating such service in your community?
5. Is there professional nurse participation in the pre-employment phases of the program?
6. In your agency, which supportive personnel would extend the nursing service? How?
7. How will the current nursing staff be utilized in the proposed program?
8. Which job descriptions should be written or revised?
9. Are your present personnel policies suitable for personnel supportive of the nursing service?
10. How would the employment of supportive personnel help the public health nurse to maintain priorities of service?

11. From an administrative standpoint, is it practical and feasible to add new personnel?
12. Is there pending legislation pertaining to nursing service personnel and programs?
13. What kinds of joint planning should be carried out with the medical society, nursing organizations, hospitals, local planning groups, other health and welfare agencies, and representatives of recipients of service?
14. Are personnel being prepared elsewhere in the community for positions supportive of nursing? Through what organizations, institutions or agencies?
15. What will be the legal responsibilities of the agency and nursing personnel?
16. If the supportive personnel are employed by another agency, what kind of formal contracts would be needed to protect the patient, the employee, and the agency?
17. What changes would have to be made in existing contracts?
18. What plans are you considering for initial and continued financial support?
19. Are your present methods of auditing, budgeting, cost accounting, establishing fees, adjusting charges, and billing suitable for the proposed program?
20. What arrangements need to be made for identifying the funds and receipts for the proposed program?
21. What are the prospects for recruitment?
22. What are the criteria for selecting supportive personnel?
23. What was included in their pre-employment preparation or training? Was this in an organized program of instruction?

24. What orientation and inservice education is needed? Are there additional laws or regulations which apply?
25. Is your professional nursing staff prepared to assist with training, orientation and inservice education programs?
26. Which activities can be safely and appropriately assigned to personnel supportive of public health nursing in your agency?
27. How do the functions proposed for supportive personnel relate to the nurse practice act in your state?
28. When patients are served by supportive personnel, what responsibilities will the public health nurse have to assume for the admission, selection and periodic evaluation of the patients, and the preparation, supervision and evaluation of supportive personnel?
29. What arrangements can be made for supportive personnel to contact a professional nurse in an emergency?
30. What administrative plan should be developed to permit the expanded nursing service team to operate?
31. Does your staff need additional inservice education in supervision and team nursing?
32. What special preparation will your staff need in terms of the proposed program?
33. What are your plans for evaluation of your program?
34. What records and reports will be needed?
35. What are your plans for interpretation and publicity about the inclusion of supportive personnel?

RESOURCES

Many resources are available to the administrator who needs information or assistance in planning and implementing a program utilizing supportive personnel. They include:

- The American Nurses' Association, state and district nurses associations
- The National League for Nursing, state and regional leagues for nursing
- The Nursing Division, Public Health Service, Department of Health, Education, and Welfare
- The National Federation of Licensed Practical Nurses
- The National Council for Homemaker Services, Inc.
- state boards of nursing
- state and local departments of health
- state and local departments of education
- state and local departments of welfare
- schools of nursing and public health
- local community planning groups
- insurance companies
- representatives of the recipients of the service
- other federal, state and local agencies concerned with health services

REFERENCES*

The administrator may find these references helpful in developing and implementing the program.

PUBLICATIONS OF THE AMERICAN NURSES' ASSOCIATION (ANA)

Functional design for a position description — A Hospital-Based Public Health Nurse, 1965

Functions and Qualifications in the Practice of Public Health Nursing, 1964

Health Occupations Supportive to Nursing, 1965

Nursing Concerns in Health Insurance for the Aged, American Journal of Nursing reprint, September 1965

Nursing Concerns in the Home Health Services in Hea' Insurance for the Aged, American Journal of Nursing reprint, November 1965

Standards for Organized Nursing Services in Hospitals, Public Health Agencies, Nursing Homes, Industries, and Clinics, 1965

Functions of the Licensed Practical Nurse, 1964

The Nature of Public Health Nursing, 1964

Educational Preparation for Nurse Practitioners and Assistants to Nurses: A Position Paper, 1965

PUBLICATIONS OF THE NATIONAL LEAGUE FOR NURSING (NLN)

Augmenting Public Health Nursing Service, 1964

Criteria for Evaluating the Administration of a Public Health Nursing Service, 1961

Home Health Aide Service in Relation to Public Health Nursing, 1965

PUBLICATIONS OF THE U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service
Welfare Administration
Children's Bureau
Social Security Administration
Office of Education

OTHER PUBLICATIONS

Class Specifications for Nursing Positions — A guide for State and Local Public Health Agencies, Public Health Service, Dept. of HEW

Standards for Homemaker — Home Health Aide Services, National Council for Homemaker Services, Inc.

State and local laws and regulations — including the nurse practice act

PERIODICALS

The American Journal of Nursing

The American Journal of Public Health and The Nation's Health

Nursing Outlook

Nursing Research

Public Health Reports

*** ANA PUBLICATIONS 1965, containing a complete list of published materials currently available from the American Nurses' Association, can be obtained, without charge, from ANA headquarters, 10 Columbus Circle, New York, N. Y. 10019**

GLOSSARY

PUBLIC HEALTH NURSING*

Public health nursing is a field of specialization within both professional nursing and the broad area of organized public health practice. It utilizes the philosophy, content, and methods of public health and the knowledges and skills of professional nursing. It is responsible for the provision of nursing service on a family centered basis for individuals and groups, at home, at work, at school, and in public health centers. Public health nursing interweaves its services with those of other health and allied workers, and participates in the planning and implementation of community health programs.

* This definition was adopted at the NLN biennial convention, May 1959.

COMMUNITY NURSING SERVICES: a voluntary or an official agency providing public health nursing services.

HOME HEALTH AIDES: unlicensed, nonprofessional workers who are prepared to give personal care and provide related housekeeping services for convalescent, disabled, or chronically ill patients.

LICENSED PRACTICAL NURSES: graduates of approved schools of practical nursing who are licensed by the state to practice as practical nurses.

NURSING TEAM: public health nurses, registered professional nurses who are not qualified public health nurses and others, who, in association, render nursing services to patients and their families.

PERSONNEL SUPPORTIVE OF PUBLIC HEALTH NURSING SERVICES: (abbreviated — supportive personnel) registered professional nurses who are not qualified public health nurses; licensed practical nurses; home health aides; and others who perform functions supportive of and closely related to the functions of the qualified public health nurse.

Nonprofessional persons employed by or assigned to community health services may be known by various titles, such as health investigators, program representatives, indigenous workers, et cetera. They are considered personnel supportive of public health nursing when they function on a nursing service team.

REGISTERED PROFESSIONAL NURSE: a nurse graduated from a state approved school of professional nursing without preparation in public health nursing, and licensed as an "R.N."

PUBLIC HEALTH NURSE: a registered professional nurse employed in the practice of public health nursing, who meets the qualifications stated in **Functions and Qualifications in the Practice of Public Health Nursing** — 1964.

VT 007 420
Hirshfeld, Marvin; Sassaman, William F.
An Annotated Bibliography of Periodical Literature Pertaining to Distributive Education, 1962-1968.

Temple Univ., Philadelphia. Pa. Dept. of Distributive Education
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 68 64p.

*DISTRIBUTIVE EDUCATION; *ANNOTATED BIBLIOGRAPHIES; *PERIODICALS

This annotated bibliography of periodical literature in distributive education, 1962-1968, was assembled to serve as reference and resource material for professional workers in the field of distributive education. Only periodicals that feature or carry articles regularly on distributive education were included. The material is presented under 34 areas, some of which are: (1) Adult Distributive Education, (2) Area Vocational Schools, (3) Audio-Visual Materials, (4) Automation, (5) Cooperative Programs, (6) Equipment and Facilities, (7) Instructional Methods, (8) Marketing, (9) Public Relations, (10) Research, and (11) Teacher Recruitment. (MM)

VT 007 420

AN ANNOTATED BIBLIOGRAPHY OF PERIODICAL LITERATURE PERTAINING TO DISTRIBUTIVE EDUCATION, 1962-1968

by

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Department of Distributive Education
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FOREWORD

This bibliography, duly annotated, encompasses the contributions to the literature for the six-year period, 1962-68, and is designed as a resource service to undergraduate and graduate students pursuing studies in the field of distributive education.

Graduate students taking courses at this University participated in the research and compilation work involved. Professors Hirshfeld and Sassaman performed editorial services and directed the undertaking.

Additional copies can be obtained, at cost, by directing your inquiry to Temple University, Department of Distributive Education, Philadelphia, Pennsylvania 19122.

ACKNOWLEDGEMENT

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INTRODUCTION

This annotated bibliographical reference is to serve as a resource material for professional workers in the field of distributive education. Hopefully, it should prove useful and advantageous to local coordinators and supervisors as well as state supervisors and teacher educators.

For the graduate student, appropriate headings for references to a variety of subject matters are provided for expeditious locating.

Only periodicals that feature or carry articles regularly on distributive education were included.

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Treatment of methods of adult instruction which can be applied to D.E.

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Adult D.E. and its importance today in the field of education of our people - all levels.

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Five characteristics of effective teachers are provided as gleaned from interviews with extension teachers.

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Education in D.E. related to goals for lifetime careers.

Duxstad, Robert S., "Use the Trade Magazines in Teaching Post High School D.E. Students," National Business Education Quarterly, Vol. 33, No. 1, p. 21, Fall, 1964.

Ertel, Kenneth, "Check List for the Program Coordinator," American Vocational Journal, Vol. 41, No. 3, pp. 22-23, March, 1966.
A checklist is developed for coordinators organizing an adult course in D.E. It is designed for use in other courses as well.

Jacobs, Lowell E., "D.E. Checkers Deliver," American Vocational Journal, Vol. 41, No. 6, pp. 24-25, Sept. 1966.
The article explains an adult D.E. program at Spokane Community College for sales checkers. Details for the six-week course are offered.

Miller, Harry L., "Teaching and Learning in Adult D.E.," New York: The McMillan Company, 1964.
Book for use in teaching Adult D.E.

Mills, Chester O., "Training Adult Instructors in Vocational Distributive Education," Business Education Forum, Vol. 21, May, 1967.
Specific teacher-training programs are needed to develop competent teachers who can make adult education successful and continuing.

Simpson, Lester T., "SOS: Serve Our Supermarkets," American Vocational Journal, Vol. 40, No. 5, p. 14, May, 1965.
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Strainchamps, Ethal, "Advice for Adult Students," Saturday Review, pp. 66-67, Aug. 15, 1964.
Review of Cyril O. Houle's Continuing Your Education - importance to an individual who wishes to progress today.

Venn, Grant, "Learning Beyond the Classroom," American Vocational Journal, pp. 14-16, Sept. 1967.
Responsibilities of the school to supply trained specialized workers are listed. Cooperative work programs are essential to nation's success; schools must also show students how to get along on the job.

ADVERTISING AND DISPLAY

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Russia finds there is no substitute for advertising, as we have proved in the western world.

Birchard, C., "Distinctive Advertising for Small Stores," Journal of Retailing, Spring, 1964.
A how-to-do-it article based on scientific research. A retailer's image is created and colored by his advertising.

Erlandson, G., "Advertising, A Study in Creativity and Depth," Business Education Forum, Vol. 18, No. 24, Feb. 1964.
Explores the use of the project method in teaching an advertising unit.

Honstman, J., "Selling the Brand Name D.E.," Business Education Forum, Vol. 20, pp. 22-23, May, 1966.
Describes an advertising project using D.E. as the product being promoted.

Laird, Noel P., "The Advertising Course: Head In the Clouds or Feet On the Ground?" EBTA Journal, Vol. 4, No. 2, p. 63, Spring, 1966.
Discusses the value of the advertising course in the college program.

Marqulies, Walter P., "Marketers Must Also Learn When to Stand Pat on Package Design," Marketing Insights, p. 14, Oct. 31, 1966.
Reasons given for standing pat with status quo in package-design change are discussed.

Schuler, "Scenic Background Increases Response To a Dress Display," Journal of Retailing, Fall, 1962.
How an attractive background increases the number of persons who stop to look at merchandise.

AREA VOCATIONAL SCHOOL

Bottoms, Gene and Oelke, Merritt, "Needed! Student Personnel Services in Area Vocational-Technical Schools," Vocational Guidance Quarterly, Vol. 15, p. 101, Dec. 1966.
The survey shows the need for developing and organizing a systematic program, at the post secondary level, in 12 essential student personnel areas.

Warren, John, "Program for Progress," Business Education Forum, Vol. 18, p. 25, Oct. 1963.
The author describes the D.E. program instituted in a Vocational-Technical School in Somerset County, New Jersey, which serviced the needs for new stores prior to their opening.

AUDIO VISUAL MATERIALS

Archer, Fred C., "Transparencies Will Improve Your Office Practice Course," Business Teacher, Vol. 41, p. 8, Jan.-Feb. 1964.
The use of transparencies as a teaching aid - the ability to make quick and inexpensive transparencies permits the instructor to show the class items of special interest.

Miller, Aaron M., "Film Techniques in D.E.," Journal of Business Education, pp. 289-290, April, 1962.
How films are selected for D.E. classes according to the grade level, length, content, availability, cost and acceptability. The author explains how to use "key" questions and observation forms as motivation devices.

South-Western Monographs #92, Visual Aids for Business and Economic Education, revised, pp. 11-12, March, 1965.
A selected list of motion pictures, filmstrips and recordings for use in the classroom. Also a selected list of film distributors and a list of books and magazines.

AUTOMATION

Huffman, Harry, "Seventeen Questions and Answers About Programmed Instruction," Business Teacher, Vol. 39, No. 11, Feb. 1962.
A means for individual instruction that frees the instructor to work creatively with individuals and groups.

Mason, Ralph E., "Distributive Education Program," The EBTA Yearbook, Vol. 37, p. 168, 1964.
Discusses the new trends to automatic data processing equipment in business, and how the distributive education teacher should present this area to his students.

Wood, Merle W. & Espegreen, Robert G., "Data Processing, an Introduction for Students: Data Processing's Role in Retailing," Business Education World, Vol. 45, pp. 23-26, Dec. 1964.
Presents detail on computer uses in the retail store.

_____, "Getting and Keeping Your First Job," Distributor, 20:8, Oct. 1966.
Getting the first job and keeping it should be viewed as a means to build business references and to acquire good work habits.

_____, "The Superette - Opportunity for the Independent Owner," Journal of Retailing, Spring, 1963.
Studies the superette food store, its sales, and other methods it might utilize to cope effectively with the supermarket.

Adamy, Clarence G., "Career Opportunities in the Food Industry," Distributor, 18:6, Oct.-Nov. 1964.
Demand for food is constant yet the retailing of food is constantly changing.

Archer, Fred C., "Make Provisions for the Boys, Too," Business Teacher, 40:7, May-June 1963.
Increase in jobs available for white-collar males that formerly were thought to be reserved for females; also similar and related jobs found in the military service that can be career jobs or training for civilian types of occupations.

Beaumont, John A., "Preparatory Education for Careers in Distributive Education," Business Education Forum, 18:7-9, April, 1964.
Emphasizes the need for more education and research in distribution in order to meet the needs of a more sophisticated society.

Benson, L. L. & Rovan, H., "Counseling for Career Development Through Distributive Education," Business Education Forum, 16:10-12, April, 1962.
Emphasizes the need for early career planning with exposure to a wide variety of career information given objectively by the teacher.

Brady, W. J., Jr., "Career Development Through the Club," Business Education Forum, 16:16, April, 1962.
Discusses the importance of the Club program as a supplement to the classroom instruction.

Carter, E. F., "DECA Members Make Good In Auto Accessories Field," Distributor, 20:14, Dec. 1966.
How Firestone Tire and Rubber Company has extended D.E. training to all its stores.

Chamberlain, Neil W., "A Lifetime of Education," National Education Association Journal, p. 11, Jan. 1964.
Education in D.E. related to goals for lifetime careers.

Edgerton, John W., "Retailing, America's No. One Career Opportunity Industry," Distributor, 18:6, Dec. 1964 - Jan. 1965.
With more than 8 million people employed in retailing, the role of distribution is explored and examined.

Klaurens, Mary, "Career Development in the Distributive Job," Business Education Forum, 16:14-15, April, 1962.
Points out that a realistic evaluation of a career field begins when an individual works in a field.

LeMay, Morris, "An Interview File for Occupational Information," Vocational Guidance Quarterly, 14:55, Autumn, 1965.
Most popular occupations are listed on separate sheets in a loose-leaf notebook. Under these occupations, names and addresses are listed.

Matthews, Ronald M., "Try a Student Centered Approach to Occupational Information," Business Education World, Vol. 43, pp. 26-33, April, 1963.
Names, films and approaches for informing students of career objectives.

Mertes, J., "Site Opportunities for the Small Retailers," Fall, 1963.
What to consider in determining a store location, traffic and transportation, parking, congestion, and other factors are discussed.

Metzler, John H., "Occupations in Labor Unions," Vocational Guidance Quarterly, 13:199, Spring, 1965.
The author points out that there is no reason why a high school graduate could not enter an industry with a labor union and sucessfully plan his entry into a paid union job.

Poppel, Norman, "Vocational Planning Sessions," Vocational Guidance Quarterly, 12:57, Fall, 1963.
Actual speech entitled, "Your Vocational Future - Are You Preparing for It?" that has helped stimulate teenagers to learn more about occupations.

Reed, Harold J., "Training Opportunities Other Than Four Year Colleges," Vocational Guidance Quarterly, 14:16, Fall, 1965.
Educators must be aware of and cannot ignore the existence of other types of training institutions than ones that they have been involved with in the past. Technical education since 1959 (NDEA, Title VIII and Vocational Act of 1963) have influenced sharp increase in enrollments in technical and community colleges offering technical courses.

Rumoshosky, Adam J., "Career Opportunities in Petroleum Marketing," Distributor, 19:10, April-May 1965.
The largest single employment and opportunity field in the petroleum area - the service station - is discussed.

Schatz, Harold A., "D.E. and Direct Selling," Distributor, 20:5, March-April 1966.
Direct selling, which is that segment of marketing that brings the product or service directly to the customer, is discussed. On-the-job training during school can lead to continual rewards after school.

Thomas, Roy E., "What Preparation is Best for a Career in Business?" Collegiate News & Views, Vol. 18, No. 2, pp. 7-10, Dec. 1964.
Reports the results of a questionnaire on what business firms prefer from graduate students in the way of training and courses.

Ward, George B., "Banking," Vocational Guidance Quarterly, 13:124, Winter, 1964-65.
Banking is a field with many career opportunities for the high school graduate.

Young, Robert W., "Challenging Careers in the Variety Store Business," Distributor, 19:6, Feb.-Mar. 1965
Opportunities in the variety store field are tremendous and should be investigated by those interested in an excellent future income.

COMMUNITY RELATIONS

Barbarosh, Benjamin, "Developing a Community Vocational Resource Directory," Vocational Guidance Quarterly, 14:179, Spring, 1966.
A composite of qualified residents working on jobs similar to career objectives or interests of students. These residents indicated a willingness to speak with these students on realistic problems that they might face.

Cottrell, Jonathan, "Recruitment of Training Stations," Business Education Forum, 17:22, Dec. 1962.
Suggests techniques which can be used to convince businessmen to participate in the D.E. program.

Faidley, Ray A., "Relationships with Business Community," The EBTA Yearbook, Vol. 39, p. 275, (Administration and Supervision of Business Ed.), 1966.
Discusses the importance of relationships with the business community. Discusses value of advisory committees, visitations, and value in student placement.

Harbrecht, F. O., "Business and Education: Co-Workers for Success," EBTA Journal, Vol. II, No. 2, p. 72, Spring, 1964.
Discussed the importance of cooperation between business and industry to assure successful training of future workers.

Painter, Robert, "Slides for Promoting Co-Operative D.E.," American Vocational Journal, Vol. 41, No. 4, pp. 35-37, April, 1966.
The use of slides for educating the community about D.E. is explained. It stresses the need for basic as well as specific aims. Such slides can also be very effective in student recruitment.

Warner, Richard A., "Public Understanding of Business Education in Selected Illinois Community," National Business Education Quarterly, 32:4, Spring, 1964.
Survey to uncover the origin of misunderstanding on the part of the public as to the value of Business Education.

White, L. T., "The Businessman and D.E.," American Vocational Journal, Vol. 38, No. 2, pp. 23-24, Feb. 1963.

CONSUMER SPENDING

Hardwick, C. T., "Consumer Education in the Twentieth Century," The Balance Sheet, pp. 12-16, p. 42, Sept. 1966.
This article points out that the consumer, especially the student, requires training in spending just as earning has to be learned. Guidelines for the rights and obligations of the consumer are concretely suggested.

LeGrande, B. & Udell, J., "Consumer Behavior in the Market Place," Journal of Retailing, Fall, 1964.
How consumers shop for and select their purchases. Where the consumer finds his information used in shopping for furniture and TV sets.

Mullin, Dickson S., "Do Your Students Realize How Important the Youth Market Is?" Business Education World, Vol. 46, pp. 24-26, p. 45, May, 1966.
The article presents the findings of research in the area of the youth market, giving statistics on amounts spent, and marriage.

Paul, Stephen H., "How Do You Know What the Customer Wants?" Marketing Insights, p. 12, Feb. 6, 1967.
Research project to obtain an accurate description of consumer preferences - where they bought health products, etc.

Udell, J., "A New Approach to Consumer Motivation," Journal of Retailing, Winter, 1964.
A study of buying motives as a guide to decision making in contemplation of an effective marketing program.

_____, "A Study of Curriculum Development in the High School Co-op Program," Vocational Division Bulletin, Office of Education #281, D.E. Series #28 - 0E82000.
Serves as a guide in placing the instructions phase at the D.E. program in proper perspective as vocational instruction in D.E. Reports current opinions in curriculum development.

Bikkie, James A., "Better Instruction On the Job," Business Education Forum, 17:14-15, April, 1963.
Explains the technique of training the sponsors of the cooperative student as developed by the Commonwealth of Virginia.

Corbman, Bernard P. & Hirshfeld, Marvin, " A Successful Cooperative Work Experience Program," Journal of Business Education, 62-64, Nov. 1965.
Bronx Community College's program is discussed as to the retail business management curriculum, general education, business subjects, and part-time work experience. Student selection, training, review, and follow-up is discussed in detail. A rating form is shown which would be beneficial in all such programs.

DeBenning, M. J., "Learn & Earn," American Vocational Journal, Vol. 41, No. 5, p. 30, May, 1966.
A pilot program in Tulsa, Arizona, in learning and earning is explained. The program specializes in training service station personnel. The program is operated in conjunction with an oil company serving the area.

Ferguson, E. J., Jr., "College Directed Occupational Experience Program," Business Education Forum, 8:44-45, May, 1964.
Discusses how the D.E. teacher can gain the required work experience at the same time while obtaining his educational credits.

Huffman, Harry, "Critical Areas of Research in Business Education," National Business Education Quarterly, 30: No. 3, p. 19, Spring, 1962.
Statement on Cooperative Training Programs.

LaRowe, D. P., "Cooperative Distributive Education in Florida's Public Junior Colleges," Business Education Forum, 20:28-30, Jan. 1966.
An explanation of the mid-management program as developed by Florida's public Junior Colleges.

Mason, Ralph E., "Effective Cooperative Business Education Programs," Business Education Forum, 16:21, March, 1962.
Points out the need for adequate record in order to maintain an effective cooperative program.

Neel, W. C., "Guidelines for a Work-Experience Program," The Balance Sheet, pp. 104-106, p. 144, Nov. 1966.
This article discusses the evaluations, guidelines, and advantages of a cooperative work-experience program for all students.

Petersen, Allen L., "D.E. For the Wholesale Industry," American Vocational Journal, Vol. 27, No. 8, p. 26, Nov. 1962.
The results of a survey of wholesalers tells of how a cooperative program is needed for training people for the field. Training depends on local conditions.

Shoemaker, A. R., "The Results of Cooperative Education in Arts College," Collegiate News and Views, Vol. 15, No. 5, pp. 7-9, May, 1962.
A study of a co-op program in a small college with detailed information on its problems, success, academic credit and usefulness to the school and student.

Tedder, Herbert H., "Cooperation Not Co-Existence," The Balance Sheet, pp. 253-254, Feb. 1966.
This article demonstrates a comprehensive plan to involve business management in the active training of cooperative students.

Trapnell, Gail, "A Cooperative Approach With D.E. Setting Pace," American Vocational Journal, Vol. 40, No. 6, p. 31-32, Sept. 1965.
Growth of the nation shows that D.E. can be a leader in many phases of education. It can be correlated with areas such as agriculture and trade and industrial education.

Wilson, Ester E., "Improving the Instruction of Co-op Part-Time D.E. Students at South Sioux City, Nebraska," National Business Education Quarterly, 33: No. 1, Fall, 1964.
A study to find the cause of problems when developing a D.E. program.

COORDINATORS

Abrahamson, Jack, "Career Development in the Distributive Education Classroom," Business Education Forum, Vol. 16, pp. 12-13, April, 1962.
Points out the need for the teacher to have a broad occupational experience to serve as a model for the student.

Buckner, Leroy M., "In-Service Distributive Education for Teachers," American Vocational Journal, Vol. 28, No. 5, pp. 13-14, May, 1963.
The need for direct contact between D.E. coordinators and teacher-educators is explained. Points to remember when making such contact are also discussed.

Burbring, Pauline, "The Work of the Coordinator," Business Education Forum, Vol. 21, No. 7, April, 1967.
A wide variety of materials for use by the distributive education coordinator in a senior high school or junior college are presented.

Chrismer, John M., "Can You Qualify to Become a D.E. Coordinator?" Distributor, Vol. 17, p. 7, Nov. 1963.
Many successful coordinators began as distributive education students.

Curran, Blanche M., "Coordinator's Role in New Concept of D.E.," American Vocational Journal, Vol. 38, No. 9, pp. 14-15, Dec. 1963.
The program of NADET, the national orgainzation of D.E. coordinators, is explained. It stresses the changing patterns of the world of work and the challenge of D.E. coordinators to meet it.

Dannenberg, Raymond A., "Leadership Opportunities in D.E.," American Vocational Journal, Vol. 41, No. 9, p. 36, Dec. 1966.
The author explains ways of developing insight into growth potential for D.E. teacher-educators and coordinators. He points to the need for self-improvement.

Harris, Edward E., "Office Education and D.E. Teacher Coordinators: Critical Requirements and Reasonal Judgment Comparisons," National Business Education Quarterly, Vol. 35, No. 1, p. 28, Fall, 1966.
A study to determine requirements for teacher coordinators in D.E.

Helling, Cliff E., "The Overlapping Roles of Counselors and Coordinators," Delta Pi Epsilon Journal, pp. 88-94, May, 1965.
An investigation of the overlapping relationships, duties, and responsibilities of distributive education teacher-coordinators and guidance counselors. Several pertinent implications indicating the need for more mutual respect and cooperation are discussed.

Krawitz, Myron J., "There's No Business Like Business," Journal of Business Education, Vol. 243, p. 44, March, 1962.
The training requirements of a D. E. teacher coordinator are examined.

Marks, Mary V., "Improving Occupational Experience Through Coordinated Classroom Experiences," Business Education Forum, Vol. 17, pp. 5-6, April, 1963.
Points out the need of the D.E. teacher to relate job experience to theory in the classroom.

McGee, Carroll Eugent, "Problems of the D.E. Teacher," National Business Education Quarterly, Vol. 35, No. 1, p. 40, Fall, 1966.
Study of the relationships between a beginning D.E. teacher's problems and selected learning experiences.

Reynolds, R. J., "Improving Counselor-Coordinator Relations," Business Education Forum, Vol. 19, p. 18, Nov. 1964.
Points out how the guidance counselor and the coordinator can work as a team.

Samson, Harlan E., "Appraisal of Distributive Teacher-Coordinator Behavior," Delta Pi Epsilon Journal, pp. 13-22, Nov. 1964.
This report analyzes the effective and ineffective behavior of secondary school distributive education teacher-coordinators.

Samson, Harlan E., "Critical Requirement for D.E. Teacher-Coordinators," National Business Education Quarterly, Vol. 34, No. 1, p. 49, Fall, 1965.
Solid background necessary.

_____, "Curriculum Planning, Personnel Service, Teaching Methodology," NABTE Bulletin 79, National Business Education Quarterly, Vol. 32, No. 2, p. 15, Winter, 1963-64.
Survey to determine courses necessary in undergraduate school of business teachers.

_____, "The Distributive Subjects," National Business Education Quarterly, 32: No. 2, p. 38, Winter, 1964-65.
Technical content courses needed by teachers of the D.E. subjects.

_____, "The Nature of Content Mastery for the Teacher of Distribution," Delta Pi Epsilon Journal, pp. 10-19, Feb. 1962.
Analyzes the problem of providing content mastery in the training of distributive education teachers. It suggests several approaches to providing this content.

Deuel, Regis P., "Salesmanship - Is There A Role For Business Educators?" Journal of Business Education, 25-26, Sept. 1964.
To improve the role of salesmanship the attitude of the college students must be improved. The old sales image is compared to the new image. Related activities for the coordinator such as a planner, consultant and trainer are discussed as well as sales and its future.

Frederick, Simmons, Kane and Wolf., "A New Undergraduate Curriculum in Marketing," Collegiate News and Views, Vol. 15, No. 3, pp. 5-9, March, 1962.
A new curriculum with a discussion of each course in the marketing sequence developed to meet the needs of St. Louis University.

Haines, Peter G., "Teacher Education: Foundation of D.E.'s Future," American Vocational Journal, Vol. 28, No. 9, pp. 20-22, Dec. 1963.
The article discusses many activities of teacher educators in D.E. and the need for an expanded program for training D.E. coordinators to meet further demands.

Myers, James H., "Teaching the Behavioral Sciences in Marketing," Delta Pi Epsilon Journal, pp. 8-16, Nov. 1963.
This article outlines a one-semester course offered at the School of Business Administration, University of Southern California.

Weiss, E. B., "Science & Marketing Men Draw Closer," Marketing Insights, p. 10, Oct. 31, 1966.
Technical Courses in college bring together students of science and marketing.

CURRICULUM (GENERAL) FOR ALL AREAS OF EDUCATION

Christensen, G. Jay, "How to Teach More in Less Time in Business Math," Journal of Business Education, 112:114, Dec. 1964.
First, you should use pretests and pre-evaluations. Then teach the material that is of immediate use and where the students show the greatest need. Use supplementary materials and audio-visual aids: charts, newspapers, study guides, company material. Introduce new systems to create interest (binary).

Durfee, Richard A. & Brophy, Alfred L., "The Role of Home Study in Educational Planning," Vocational Guidance Quarterly, 10:229, Summer, 1962.
Other educational possibilities through correspondence schools.

Gram, Henry H., "Can We Raise the Level of D.E. Students?" Business Education World, Vol. 42, pp. 16-17, April, 1962.
Suggests teaching tips to stimulate D.E. students, as well as problems that occur with parents, students, and administrators toward the program.

Meyer, W. G., "Patterns for Distributive Occupations Curriculum Organization," Business Education Forum, Vol. 20, pp. 5-9, April, 1966.
Discusses the curriculum changes for all levels as developed in Virginia, Minnesota, and the U. S. Office of Education.

Warmke, R. F., "Relationship of Economic Education to Distributive Education," Business Education Forum, Vol. 19, pp. 22-23, Dec. 1964.
Analyzes the inter-disciplinary relationship between economic education and distributive education.

_____, "Distributive Education - A Study of Curriculum Development in the High School Cooperative Program," Vocational Division, Bulletin No. 281, D.E. Series No. 28, Office of Education 82000. Reports current opinions in curriculum development in the high school Distributive Education program.

_____, "Education for Occupational Growth," American Vocational Journal, Vol. 40, No. 4, pp. 29-30, April, 1965. Article discusses the development of a 3-year D.E. program in Virginia. It includes a full-page chart of the three-year program.

_____, Vocational Bulletin #298, D.E. Series #32, "Food Service Industry Training Programs and Facilities," Bulletin is a guide for training sales personnel in the food-service industry.

Aikin, M. Wood, "A New D.E. Area: Merchandise Handling Occupations," Business Education World, Vol. 47, pp. 19-21, May, 1967. Describes an area that could prove valuable for those poor in academic studies, but who like to work with their hands.

Ashmun, Richard, "Let's Play Business Games," American Vocational Journal, Vol. 37, No. 10, pp. 16-17, Jan. 1963. The author discusses how the use of games can make D.E. learning fun as well as meaningful. The key is in the use of practical problems.

Blanchard, Adelord, "Are Your Students Really Prepared?" Journal of Business Education, 155-56, Jan. 1966. Preparation for job application is important. First letters should be taught and reviewed. Next the interview process with demonstrations (personal and physical appearance, manners, education, skills, questions to ask). Third a comprehensive review of skills.

Blendon, Edward G., "The High School - Multiple Programs for Business Education," The EBTA Yearbook, Vol. 39, p. 116, 1966. Points out the multiple purpose programs under business education. A section of the article discusses the purposes of the distributive education program.

Brown, Richard D., "What General Business Students Should Know About Marketing," Journal of Business Education, 191-92, Feb. 1967.
The students should be made to realize that marketing is our main business problem, that we are dealing with consumer goods rather than industrial goods. Problem solving ability should be implemented.

Bryon, Gerald O., "Give Students a Career Objective Instead of a Job," American Vocational Journal, Vol. 39, No. 7, pp. 32-33, Oct. 1964.
Mr. Bryon states that students should be given a strong background in business and economics then relate it to D.E. with concluding activities relating to on-the-job training.

DeGregorio, Wm. J., "I Need to Find a Job," Vocational Guidance Quarterly, 15:29, Sept. 1966.
A job hunting program for 12th graders that will utilize in-school time.

Dilley, David R., "Common Sense Economics," Journal of Business Education, pp. 195-199, Feb. 1962.
An easier understanding of economics to the average citizen through the use of problem situations and suitable solutions. Many of the problems used refer to school situations (grades) and are compared to government problems (income).

Doll, Ronald C., "Curriculum Improvement - D.E.," Boston: Alyn & Bacon, Inc., 1964.
Discusses and outlines decision making and process of curriculum improvement.

Ely, V. K., "Development of an Expanded Distributive Education Curriculum Concept in Virginia High Schools," Business Education Forum, 20:14-16, April, 1966.
The author discusses the background rationale, and central features of a three year D.E. program developed for use in the Virginia High Schools.

Ertel, Kenneth, "Evaluation & Manpower For D.E.," American Vocational Journal, Vol. 42, No. 2, pp. 53-54, Feb. 1967.
The article offers a summary of topics discussed in 1966 AVA convention. The D.E. theme was "Evaluation of D.E."

Fowler, Jean C., "Let's Make Every Day B.I.E. Day," Business Education World, Vol. 43, pp. 21-22, Nov. 1962.
Guidelines for the interchange of ideas between Business, Industry and Education.

Harrison, Wayne J., "Distributive Education in Wisconsin High Schools," Business Education World, Vol. 47, p. 15, Oct. 1966.
An explanation of the secondary level of D.E. in Wisconsin High Schools including statistics and philosophies.

Hoffman, Ken, "Retail Curriculum for D.E.," American Vocational Journal, Vol. 41, No. 6, pp. 28-29, Sept. 1966.
Four levels to consider in developing a retail curriculum for D.E. are explained. It includes three charts to explain the various areas.

Huffman, Harry & Margulies, Stuart, "Accuracy or Agony in Business Mathematics," Business Teacher, 39:11, March, 1962.
A method of teaching accuracy in arithmetic fundamentals by providing learning conditions that induce accuracy.

Kleindl, James N., "Interest in Investments - Yearround," Journal of Business Education, 320-321, May, 1963.
This can be done by keeping the students continuously involved in sales such as: selling cards at Christmas, candy at Easter, buying stock and watching it day-by-day. Students benefit by making receipts, writing up orders, making change, and keeping records.

Kneeland, Dr. Natalie, "Solving Everyday Problems in D.E.," American Vocational Journal, Vol. 37, No. 1, pp. 13-15, Jan. 1962.
The author explains the leader-follower concept in D.E. It also explains the use of an analysis form that can be used on the job and in the classroom.

Loven, Larry, "Guidelines for Effective Distributive Education Program Development," The Balance Sheet, pp. 403, 432, May, 1966.
This publication recommends procedures for an analysis and development of a distributive education program. It discusses procedural aspects of defining, planning, implementing, and evaluating a distributive education program.

Mortola, Edward J., "What New Directions are Dictated for Business Education by the Changing Business Environment," EBTA Journal, Vol. 3, No. 2, p. 4, Fall, 1964.
Article stresses the importance of updating and changing business education to meet new demands of business.

Nelson, E. L., "Conceptual Framework for Curriculum Development in D.E.," Business Education Forum, 20:10-13, April, 1966.
Suggests the use of a cycle approach in the teaching of the units of instruction.

Novit, Mel J., "Let Your Students 'Corner' the Stock Market," Business Teacher, 42:25, March-April 1965.
An in-class group project that promotes information about stocks and the stockmarket.

Olson, Milton, "Encouraging Professional Growth," National Business Education Quarterly, 30: No. 4, p. 57, Summer, 1962.
Preparation of Courses of Study - Applicable to D.E.

Plevyak, Paul P., "Preparing Courses of Study," The EBTA Yearbook, Vol. 39, p. 182, 1966.
Discusses organization and step by step methods for planning the new course of study. Much of this material could be applied to planning the distributive education curriculum.

Rothchild, Thomas A., "Business Education and the Slow Learner, An Awakening Giant," The Balance Sheet, Nov. 1965.
The article describes a practical business education course of study for a typical slow-learner at the high school level.

Schneider, Arnold E., Smith, Edward A. & Whitcraft, John E., "How to Serve Business Law to Make it Refreshing," Bu iness Teacher, 40:22, March-April 1963.
Use of newspaper clippings to illustrate present day implications in law; also field trips to a court trial that relates to the subject or legal problems that a student can understand.

Scolnick, Arnold H., "An Advanced Placement Program in Marketing," Business Education World, Vol. 43, pp. 15-17, May, 1963.
Ways of selecting students, teachers for a class by which high school students would do college work in the area of marketing (first of two parts).

Syhlman, Wm. D., "D.E. in Area Schools and Community Colleges," American Vocational Journal, Vol. 38, No. 6, pp. 17-18, Sept. 1963.
The article gives possible programs of study in D.E. in vocational-technical schools and community colleges. It includes consideration of a mid-management program beyond the high school level.

Weyant, J. Thomas, "D.E. Assists Agriculture - Business Project," American Vocational Journal, Vol. 38, No. 9, pp. 24-25, Dec. 1963.
Mr. Weyant tells how D.E. work experience is applied to vocational agriculture students in a pilot program in Pennsylvania.

Whitford, Audra, "Investment as a Topic in Secondary Education," National Business Education Quarterly, 33: No. 3, p. 23, Spring, 1965.
A survey of the need for a course on investment.

_____, "How a Chapter Can Contribute to Its School and Community," Distributor, 16:10, March, 1962.
Various types of DECA activities that provide variety for chapters.

_____, "What Makes an Officer," Distributor, 17:12, Oct. 1963.
Qualifications such as: enthusiasm, ability to delegate authority, imagination, humility, parliamentary procedure and intelligence are discussed.

Applegate, Harry A., "DECA...Prepared For New Challenges," American Vocational Journal, Vol. 39, No. 3, pp. 22-24, March, 1964.
The article explains why DECA is an integral part of the D.E. program. It explains various aspects of the organization such as the DECA Foundation and DECA goals.

Cottrell, Jonathan, "Learn Today...Lead Tomorrow," American Vocational Journal, Vol. 41, No. 9, p. 37, Dec. 1966.
DECA and its relationship with D.E. are discussed at a leadership training conference. It explains the value of such leadership conferences, as the type that is being used in Indiana.

DISTRIBUTIVE EDUCATION ABROAD

Bernard, Louise, "A Challenge to Distributive Educators," American Vocational Journal, Vol. 38, No. 8, p. 28, Nov. 1963.
The article explains how, with the assistance of others, D.E. programs are being initiated in Venezuela. The need for forceful leadership is stressed.

Ferrer, Maria L., "D.E. in Puerto Rico," American Vocati nal Journal, Vol. 37, No. 7, pp. 20-21, Oct. 1962.
The 21-year growth of D.E. in Puerto Rico is reviewed. It's effects on the growth of the economy are also discussed.

DISTRIBUTIVE EDUCATION FOR COLLEGE BOUND

Lowe, Calvin D., "Business and Distributive Education Is Also For The College Bound," The Balance Sheet, pp. 304-305, March, 1966. This article discusses the reasons for college-bound students to take courses in business and distributive training necessary for gainful employment and personal consumer purchasing.

EQUIPMENT & FACILITIES

Jackson, John Widber, Jr., "Study of Physical Facilities for D.E. In Selected South Carolina High Schools," National Business Education Quarterly, 33: No. 1, p. 35, Fall, 1964.
Survey to determine available D.E. equipment.

Meyer, Warren G., "D.E. Facilities: 1964," American Vocational Journal, Vol. 39, No. 1, pp. 19-21, Jan. 1964.
Mr. Meyer discusses the changing concept of D.E. and the development of new instructional techniques in the field. He includes figures of possible D.E. room layouts. Equipment for post-high school as well as high school equipment is discussed.

Patterson, G. E., "Who Needs a D. E. Materials Lab?" American Vocational Journal, Vol. 41, No. 1, pp. 26-28, Jan. 1966.
The growth of D.E. in Ohio, and the fact that a D.E. materials laboratory is needed at the state level, is explained. The article mentions that each state's laboratory is different, depending on local needs.

Ristau, Robert A., "A Forward Look in Facilities for D.E.," American Vocational Journal, Vol. 40, No. 1, pp. 30-32, Jan. 1965.
The article shows illustrations and discusses facilities in Wisconsin High School D.E. programs. It also evaluates merchant cooperation.

EVALUATIONS

Erickson, Lawrence W. & Oliverio, Mary Ellen, "Evaluative Criteria for Survey Instruments in Business Education," South-Western Monographs, No. 111, March, 1964.
The purpose of this study is to serve as a guide line in the design, construction, and the evaluation of survey instruments and survey reports.

Mason, Ralph E., "Job Status - A Test of Related Instruction in Distributive Education," Delta Pi Epsilon Journal, pp. 23-32, May, 1962.
Outlines the investigation made in 25 Illinois High Schools of the occupational performance and work history of the 1955 graduates employed in distributive occupations as of 1960.

Swanson, J. C., "Distributive Education, A Qualitative Analysis," Business Education Forum, 19:8-9, April, 1965.
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Wyllie, Eugene, "An Evaluation Plan for Business Education Programs in High Schools," South-Western Monographs, No. 109, Sept. 1963.
A plan for evaluating secondary school business education programs through a checklist that will provide some method of getting study materials to use as a basis for drawing up and implementing plans for program improvement.

_____, "A Time for Professional Statesmanship," Delta Pi Epsilon Journal, pp. 35-65, Feb. 1963.
Presents a review of the recommendations of the Panel of Consultants on Vocational Education and a presentation of position papers and issues including distributive education.

_____, "Distributive Education Project Methods Explained," American Vocational Journal, Vol. 41, No. 2, pp. 14-17, Feb. 1966.
A summary of major topics of D.E. at the AVA 1965 convention is given. The major topics were developed along the lines of the impact of the Vocational Education Act of 1963.

Beaumont, John A., "Distributive Education and the Vocational Education Act of 1963," Business Education Forum, 19:5-7, April, 1965.
Explains the implications of the Vocational Educational Act of 1963 for a D.E. program.

Beaumont, John A., "Federal Role in D.E.," American Vocational Journal, Vol. 38, No. 9, pp. 36-37, Dec. 1963.
The article lists goals of D.E., forecasts future growth of the curriculum, and lists significant activities at the federal level.

Bernard, Louise, "Early Support Gives D.E. Foundation to Build On," American Vocational Journal, Vol. 40, No. 9, p. 18, Dec. 1965.
The article discusses Dr. M. D. Mobley's early support of D.E. in assisting most in its growth. He aided in bringing it into the Vocational Education Act of 1963.

Blue, James L., "The Spur That D.E. Needed: The Vocational Education Act of 1963," Business Education World, Vol. 46, pp. 22-23 and 35, Sept. 1965.
An article showing how the Vocational Education Act will improve D.E. and aid the teacher.

Bolger, James, "The New Look in Vocational Education," Business Education World, Vol. 45, pp. 26 & 29, Nov. 1964.
Examines the Vocational Education Act and its use in distributive education.

DeBenning, M. J., "Implementation of Federal Legislation at the State Level with Reference to Distributive Education in Oklahoma," Business Education Forum, 20:16-17, Jan. 1966.
Explains how Oklahoma is developing its program to take advantage of the Vocational Act of 1963.

Drexler, Violet, "Fundable Job Opportunities in College Business Departments," Business Education World, Vol. 46, pp. 26-27 and 37, April, 1966.
Explains how financial aid to college students is available through the Higher Education Act.

Gradoni, John E., "Distributive Education," The EBTA Yearbook, Vol. 39, Administration and Supervision of Business Education, p. 41, 1966.
Discusses the administration of the distributive education program under the Vocational Education Act of 1963, and the prior acts that affect distributive education.

Forkner, Hamden L., "Vocational Business Education Under the Vocational Education Act of 1963," The Balance Sheet, pp. 256-258, Feb. 1964.
This article points out the specific advantages of the Vocational Education Act to business education.

Marks, Mary V., "New Ventures in Management," American Vocational Journal, Vol. 4, No. 8, pp. 20-23, Nov. 1966.
The effects of the Vocational Education Act of 1963, on D.E. are considered. The article stressed that the act has paved the way for new ventures in D.E. that previously were not possible.

Musselman, Vernon A., "Administration and Supervision of Vocational Business Education," National Business Education Quarterly, Vol. 33, No. 4, p. 5, Summer, 1965.
Survey of Vocational Education Act 1963, State Programs, Public Relations for Business Education.

Runge, W. B. & Gradoni, E. J., "Preparatory D.E. for Youth with Special Needs," Business Education Forum, Vol. 18, pp. 19-21, April, 1964.
Summarizes the findings of the President's Panel for Vocational Education.

Russell, R. B., "Business Education and Vocational Preparation," Journal of Business Education, 337:38, May, 1965.
Publicity recently has increased emphasis on vocational training. Business Education has an informational function, vocational function, and vocational objectives. Vocational training is presented in D.E. through a developmental program and not just as a course.

Selden, William, "Vocational Business Education in Pennsylvania," NABTE, Vol. 34, No. 2, p. 56, Bulletin 83, Winter 1965-1966.
Summary of business education policy, preparation of legislation, certification standards.

Syhlman, W. D., "Expanding Role of the D.E. Curriculum," Business Education Forum, Vol. 20, pp. 21-22, Nov. 1965.
Discusses the need for developing the new curriculum allowed under the Vocational Act of 1963. Points out what Virginia and Washington have developed.

Walsh, Lawrence A., "A Federal Aid Primer for Business Educators," Business Education World, Vol. 46, pp. 33-38, Feb. 1966.
A summary of Manpower Development & Training Act, 1962; Vocational Ed. Act, 1964; Economic Opportunities Act, 1964; and the Elementary & Secondary Act, 1965.

GUIDANCE

Arnold, W. M., "Standard Industrial Classifications for Use in D.E.," U. S. OE82013, 1963.
This S.E.C. bulletin gives standard definitions which are compatible with the census of businesses. Classifications of establishments is made by types of activities in which they are engaged.

Benson, L. L. & Toupin, H., "Counseling for Career Development Through Distributive Education," Business Education Forum, 16:10-12, April, 1962.
Emphasizes the need for early career planning with exposure to a wide variety of career information given objectively by the teacher.

Bonney, Warren C. & McGehearty, Joyce, "Non-Test Pupil Data," Vocational Guidance Quarterly, 11:68, Autumn, 1962.
The possibility of too much emphasis on tests since NDEA has tended to degrade other types of information which might be as valuable or more valuable than tests. This information would include basic information forms, permanent records, etc.

Culhane, Margaret M., "The General Aptitude Test Battery: Its Availibility and Use," Vocational Guidance Quarterly, 13:63, Autumn, 1964.
Broading of occupational horizons to include ninth and tenth norms in 1960 make it possible to use this test in school while Employment Service continues to work with graduating seniors.

Eckerson, A. B., "The New Dictionary of Occupational Titles," Vocational Guidance Quarterly, 12:40, Autumn, 1963.
A condensed article explaining how the revised D.O.T. may be used and how it differs from the 1949 edition.

Helling, Cliff E., "The Overlapping Roles of Counselors and Coordinators," Delta Pi Epsilon Journal, pp. 88-94, May, 1965.
An investigation of the overlapping relationships, duties, and responsibilities of distributive education teacher-coordinators and guidance counselors. Several pertinant implications indicating the need for more mutual respect and cooperation are discussed.

Hughes, Roland G., "See For Yourself a Doing Approach to Vocational Guidance," Vocational Guidance Quarterly, 13:283, Summer, 1965.
Use of a Business and Industrial Visitation Form (p. 285) to keep abreast of local conditions so that specific skills and training needed for a particular type of job can be told to the teacher.

LeMay, Morris, "An Inexpensive File for Occupational Information," Vocational Guidance Quarterly, 14:55, Autumn, 1965.
Most popular occupations are listed on separate sheets in a loose-leaf notebook. Under these occupations, names and addresses regarding information on these jobs are listed.

LeSuer, Bruce L., "The Potential Dropout and Business Education," EBTA Journal, Vol. 3, No. 5, p. 52, Spring, 1965.
Article concerned with preventing potential dropouts from leaving school by helping them find a place in business education.

Masceri, Frank R., "The Recruitment and Selection of Students in Co-op Schools in Illinois," National Business Education Quarterly, Vol. 34, No. 1, p. 40, Fall, 1965.
Survey to determine the factors prompting someone to enter a co-op D.E. program.

Mason, Louis D., "How Counselors View Vocational Business Education," Business Education World, Vol. 47, pp. 22-23 and 42, May, 1967.
Show statistics on the attitude of high school counselors toward vocational areas, especially D.E.

McVey, Jennie M., "Responsibility for Student Placement," The Balance Sheet, pp. 105-107, Nov. 1962.
This article discusses the obligations of a school system to establish an adequate student job placement program. It discusses the guidance function of the business teachers and the total school.

Meyer, Warren G. & Levendowski, J. C., "Enlisting Counselor Support," Business Education Forum, 17:9-11, April, 1963.
Describes the relationship between the counselor and the coordinator in determining student selection.

Reynolds, R. J., "Improving Counselor-Coordinator Relations," Business Education Forum, 19:18, Nov. 1964.
Points out how the guidance counselor and the coordinator can work as a team.

Rowe, Kenneth L., "How Learning Takes Place to Achieve Vocational Outcomes," American Vocational Journal, pp. 20-21, Sept. 1967.
A successful educational program must be based on an understanding of the psychology of the learner and the learning process. The only true measure of learning is performance. Vocational programs may be designed to fit the top ten per cent, as well as, the potential dropout.

Satlow, David I., "Issuing an Occupational Guidance Brochure," EBTA Journal, Vol. 1, No. 2, p. 74, Spring, 1963.
Article discusses the uses of an occupational guidance brochure to aid parents, students, and school personnel in guiding students into the best types of occupational training.

Selden, William, "Guidance for Business Education," Vocational Guidance Quarterly, 12:107, Winter 1963-1964.
A suggested criteria for selecting students.

HISTORY OF DISTRIBUTIVE EDUCATION

Carter, Fairchild H., "National D.E. Archives Established," American Vocational Journal, Vol. 38, No. 9, p. 8, Dec. 1963.
The article explains how the first national D.E. archives is being established at Indiana University, and will be available for use to any person in the field of D.E.

Samson, Harlan E., "D.E.: Past and Future," American Vocational Journal, Vol. 38, No. 9, p. 7, Dec. 1963.
The reader gets a summary of the growth of D.E. from the George-Dean Act to 1963, and learns of future prospects for the area.

INSTRUCTION

Archer, Fred C., "Receipts Are More Important Than Ever," Business Teacher, 42:14, May-June 1965.
Why receipt writing in today's complicated business world is more important than ever; how receipts should be written.

Archer, Fred C., "Time is Money," Business Teacher, 42:11, March-April 1965.
Faults employers find in new employees which, if known prior to employment, will mean an increase in pay to the employee.

Tennyson, W. W. & Blocker, D. H., "Career Development," Business Education Forum, 16:7-10, April, 1962.
Points out the role that the teacher plays in providing motivation for student self-evaluation.

INSTRUCTIONAL METHODS

Antrim, William H., "Realistic Learning in a Simulated Environment," American Vocational Association Journal, Vol. 42, p. 1, Jan. 1967.
The author feels that the cooperative education method continues to offer the surest approach to vocational curriculum, but with the passage of the VEA of 1963, it no longer holds its exclusive role as the sole method of instruction in distributive education programs.

Archer, Fred, "Updating Telephone Technique," Business Teacher, 40:11, Nov.-Dec. 1962.
Better means of communication by using innovations that have been devised to handle more traffic efficiently.

Ashmun, Richard, "Applied Learning Theory in D.E.," American Vocational Association Journal, April, 1967.
The author attempts to state the types of learning theories, to identify the learning outcome for a D. E. student, and to suggest a method of achieving it.

Barone, Rosemarie P., "Let Your Students Keep Trait Diaries," Business Education World, Vol. 54, p. 20, June, 1965.
A diary is composed where the student analyzes his own faults and then tries to correct them.

Bernard, Edwin J., "Teaching Retail Selling Through Role Playing," Journal of Business Education, 61:62, Nov. 1963.
Motivation is the major factor. Tries to get the students interested by having them role play. There should be rehearsal, suggestions and criticism. Benefits are learning about jobs, employers, DECA.

Bigler, G. S., "All for Work Experience," Business Education Forum, 16:32, May, 1962.
Points out the importance of actual work experience in addition to classroom instruction.

Bowden, Edwin R., "Competition - The Salt That Creates Thirst for Knowledge," Collegiate News and Views, Vol. XVII, No. 4, pp. 10-12, May, 1964.
Competitive presentations by student teams are used in sales and advertising courses to improve student performance.

Bowden, Geraldine, "Needed, Human Relations Training," Business Education World, Vol. 44, pp. 28-29, Nov. 1963.
Harmonious employee-employer relationships are necessary for a successful career. A checklist aids instructors in meeting this need.

Broadus, Robert N., "The Place of the Library in Business Education," EBTA Journal, Vol. 1, No. 2, p. 46, Spring, 1963.
Article stresses the importance of having and making use of a library in business education. Suggestions appliable to distributive education.

Crum, D. R., "Merchandising Club: Accent on Activities," Business Education Forum, 17:24, May, 1963.
Recommends the use of a merchandise club as a device to promote a career in distribution.

Dannenberg, R. A., "Future of Programmed Instruction for Distributive Education," Business Education Forum, Vol. 20, p. 23, Oct. 1965.
Recommends that the use of programmed instruction for Distributive Education classes be explored by the D.E. teacher.

Dannenberg, Raymond A., "Programmed Instruction for D.E.," American Vocational Journal, Vol. 38, No. 4, pp. 27-28, April, 1963.
The article explains far-reaching possibilities for using D.E. in the classroom, with programmed learning. D.E. teachers can do much more if programmed learning is used to teach much of the factual data in D.E.

Edmondson, James H., "An Even Dozen Ideas On Making an Industry Trip," EBTA Journal, Vol. II, No. 2, p. 69, Spring, 1964.
Discusses planning to assure students get most out of an industrial field trip. Suggestions appliable to a distributive education class trip.

Halper, A.. "Group Dynamics in Retail Teaching," Journal of Retailing, Spring, 1962.
Retail education should include the case study method. The group dynamics solution minimizes the instructor's role as a superior who inhibits free and positive group interaction.

Harris, Albie, "Sell Your Salesmanship Class," Business Education World, Vol. 44, pp. 26-36, Oct. 1963.
Presents how to show that textbook concepts are related to real life concepts.

Hinsverk, John K., "Role Playing as a Method of Teaching Employer-Employee and Co-Worker Relations to D.E. Students," National Business Education Quarterly, Vol. 33, No. 1, p. 21, Fall, 1964.
Survey to determine the extent of role playing in D.E. classes.

Hoffman, Ken, "Programmed Textbooks Provide Individual Instruction," Business Education Forum, 21:36-37, Jan. 1967.
Explains how programmed material can help develop a flexible vocational program for all kinds of student abilities.

Hosmer, Clark L., "Student Feedback on Classroom Activities," Collegiate News & Views, Vol. XVIII, No. 2, pp. 11-12, Dec. 1964.
The most useful and the least useful classroom activities to be used by the instructor to evaluate and motivate class objectives.

Howard, Gary E., "Retail Grocery Clerk Training," Journal of Business Education, p. 19, Oct. 1962.
How to get cooperation from the local stores in training grocery clerks by having them provide equipment, instructors, and jobs. The Berkley, California school system is explained as well as the cooperation between food stores, union, state department of employment, and the schools.

Jimerson, H. C., "Attitudes Can Be Modified by Planned Teaching," Business Education Forum, 19:22-23, Jan. 1965.
Explains the importance of planned learning experiences to teach specific attitudes.

Jimerson, H. C., "Name It! Rate It! Your Next Contest!" Business Education Forum, 18:19, Nov. 1963.
Discusses the use of contest as a popular device for involving all the students in the learning process.

Jones, Max B., "The Function of Collateral Readings in Teaching Management Principles," Collegiate News & Views, Vol. XVII, No. 4, pp. 7-9, May, 1964.
The need and integrating of collateral readings in a management course.

Knouse, Reno S., "Planning to Teach," Business Education Forum, 21:5-6, April, 1967.
What to do if a course outline has not been prepared by the state department or school system, the first step in planning to teach is the development of a table of contents or an outline of units including the objectives of the course and the aims of the individual units.

Mackey, Pauline, "What Purpose Should a Commercial Club Serve?" Business Education World, Vol. 46, pp. 11-13, Dec. 1965.
The article presents information for the philosophy formation and effective running of a commercial club.

Martin, Craig Taggart, "D.E. Text Books Currently Available for use In High Schools in Upstate New York," National Business Education Quarterly, Vol. 32, No. 1, p. 29, Fall, 1963.
Current D.E. textbooks being used.

Meyer, Warren G., "Improving Occupational Experience," Business Education Forum, 17:3-4, April, 1963.
Points out all the areas of learning which the student learner must utilize to improve his occupational experience.

Musselman, Vernon A., "Motivating General Business Through Varied Pupil Activities," Business Teacher, 40:6, Mar.-Apr. 1963.
Variety in each lesson through the use of pupil centered activities such as demonstration, dramatization and individual projects.

Nelson, E. L., "Conceptual Framework for Curriculum Development in Distributive Education," Business Education Forum, 20:10-13, April, 1966.
Suggests the use of a cycle approach in the teaching of the units of instruction.

Palmer, G. D., "Let's Keep Distributive Education Vocational," Business Education Forum, 20:23-25, Dec. 1965.
Alerts the coordinator to the dangers of teaching in a vacuum unless the project method is used in the non-cooperative program.

Reed, Jack C. & Haas, Howard L., "A Plan for a Retail Manual for D.E. Students," Business Education Forum, 17:22-23, March, 1963.
Explains the use of the store manual which incorporates the facts of an experienced retailer and suggests the method of setting up the format of the manual.

Rimbach, Barbara, "Programmed Instruction for Retail Trainees," Journal of Business Education, Vol. XL, pp. 70-71, Nov. 1964.
How a programmed training course can be taught in one day to people of different ages, sex, intelligence, and experience. This is done by a self-study unit by which everyone works at their own rate of speed. A portfolio is prepared and instructions, directions, responses, problems and tests are systematically presented. Demonstrations are given at the conclusion.

Rosenberg, R. Robert, "The Uniform Commercial Code and Business Law," Business Education World, Vol. 46, p. 28, Feb. 1966.
Insight to the new theories and laws governing commercial transactions.

Samson, H. E. & Thompson, D. A., "High School Preparatory Education for Careers in Distributive Education," Business Education Forum, 18:10-12, April, 1964.
Analyzes the method of organizing a preparatory program which will meet present day student needs.

Samson, H. E., "Organizing Participating Experiences in Distributive Education," Business Education Forum, Vol. 20, pp. 25-26, Feb. 1966.
Emphasizes the importances of planned learning experience for gaining vocational competency.

Satlow, David, "A Dozen Pointers on Teaching Business Arithmetic," Business Education World, Vol. 43, pp. 24 and 36, Sept. 1962.
Offers tips for the more effective teaching of business math.

Satlow, David, "Effective Teaching Techniques for General Business," Business Education World, Vol. 42, pp. 29-32, Jan. 1962.
An article on how to approach and conduct a successful project. Details are given for units on Installment buying and Investing.

Satlow, David, "Effective Teaching Techniques For General Business: Making Use of Dramatic Activities," Business Education World, Vol. 42, pp. 52-55, March, 1962.
Offers topics which may be used as skits in the D.E. class as well as the business class.

Sheedy, Kathryn, "Retraining the Teacher of Retailing," Business Education Forum, 21:13-16, April, 1967.
Here is a D.E. teacher that took a six-month sabbatical for employment in a retailing establishment. She believed that six months of varied work experience in one store from July to December would be the most complete and effective learning situation that could be found.

Tener, Morton, "Teaching Business Principles by the Case Study Method," EBTA Journal, Vol. 5, No. 1, p. 12, Fall, 1966.
Points out the advantages of using the case study in teaching business. Much of this material could be adapted to class discussions in distributive education.

Trimpe A., "Industry Tour, A Motivating Force," Business Education Forum, 18:22, March, 1964.
Describes how field trips can be used as a means of giving the student an overview of occupational choices.

_____, "Planning and Organizing an Export Trade Education Program," Vocational Bulletin No. 302, D.E. Series 34, Office of Education OE 82012, Washington, 1963.
Discusses the need for experimentation of courses in this area. Recognizes the important role of this field in the struggle for the preservation of freedom and a free society.

Hindersman, Charles H., "The Marketing Concept in Schools of Business," Collegiate·News & Views, Vol. 19, No. 2, pp. 7-10, Dec. 1965.
The attitude of the business faculty toward marketing as a discipline.

Stoner, James K., "When is a Small Retail Business Successful?" Journal of Business Education, 233:36, March, 1962.
What a successful business means to different people: independence, prestige, wealth, expansion. How to succeed by having efficient internal control, operating ratios, valuing inventory, recognizing future problems. Making use of every square foot of selling space is emphasized.

Vosi, Byron, "International Marketing as Viewed by an American Importer," Delta Pi Epsilon Journal, pp. 28-32, Nov. 1964.
This article defines some of the problems of the world market, its characteristics, immediate need for trained personnel, and some suggestions on training.

_____, "Educational Change Tomorrow," School and Society, pp. 284-285, Oct. 19, 1964.
Importance of Vocational Education in tomorrow's world, D.E. mentioned along with other areas.

_____, "Facts You Should Know About D.E.," American Vocational Association Journal, reprint.
Points out - What is D.E.? What types of programs recently and presently exist? Who administers D.E. programs? Who are the consultants and sponsors. Goals and your role to make D.E. effective.

_____, "The Importance of Education in Distribution," Office of Distribution, Business and Defense Services Administration, U. S. Dept. of Commerce.
Discusses the important role education plays in the distribution system of this country. Also points out some of the greatest educational needs in this area.

Edgerton, John W., "Goals of D.E.," American Vocational Association Journal, reprint.
Points out the responsibility and opportunity for D.E. to offer instruction and marketing to aid in improving the techniques of distribution and to develop an understanding of the social and economic responsibilities of those engaged in D.E.

Gillespie, Karen R., "Distributive Education - The Multi-faceted Business Subject," Business Teacher, 44:26, Jan.-Feb. 1967.
A comprehensive overview of distributive education.

Hagenau, E. L., "Broader Outlook for Distributive Education," American Vocational Journal, May, 1967.
The business community has not been adequately supplied by distributive education programs. The youth of today will be the leaders of our business community within a few short years. This should be reason enough to expand the development of preparatory distributive education.

Ketchem, Harry W., "Future Opportunities for Distributive Education," Delta Pi Epsilon Journal, pp. 28-32, Nov. 1962.
Explains the importance, justifies need and suggests ways of improving distributive education to meet the responsibilities of today's challenge.

Logan, K. Otto, "This I Believe About D.E.," American Vocational Journal, Vol. 38, No. 9, pp. 10-11, 1963.
The author tells of the importance of D.E. to our economy and the fact that D.E. is such a great part of so many other programs. He also stressed the need for pilot programs.

Mason, Ralph E., "How Effective is D.E.?" American Business Education, Vol. 18, No. 3, pp. 157-160, March, 1962.
Discusses aims and objectives of a local D.E. program.

Penney, J. C., "Vocational Understanding," Distributor, 18:3, Oct.-Nov. 1964.
Too many young people today lack vocational understanding because there is something lacking in our system of training. People must not only be educated but they must also be taught how to use their hands.

Sander, Paul J., "Will Success Spoil Distributive Education?" Journal of Business Education, Feb. 1967.
The question of early placement is broached. The author suggests work stations contacting State employment agencies. In D.E. emphasis should be on education. This means proper preparation before applying for a job.

Willis, Benjamin C., "Awareness and Action for Progress in Distributive Education," American Vocational Association Journal, Dec. 1962.
An address at A. V. A. meeting on D.E. Awareness to the problem of the proposals, the prospects and of the challenges to action. Informed public will seek action.

_____, "Planning and Organizing an Export Trade Education Program," Vocational Bulletin No. 302, D.E. Series #34, Office of Education, OE82012.
This document is a curriculum guide in organizing an Export Trade program.

Ashmun, Richard D. & Swenson, Vernon N., "A Case Study of Post-Secondary Marketing Programs," Delta Pi Epsilon Journal, pp. 21-32, Nov. 1963.
Case studies of post-secondary programs were made in a number of schools in Wisconsin outlining the curriculum, including a non-cooperative feature, community contacts with local business and the use of advisory committees, inter-departmental cooperation, scheduling, student selection, classroom facilities, guidance, placement and follow-up and special tracks.

Corbman, Bernard P. & Hirshfeld, Marvin, "A Successful Cooperative Work Experience Program," Journal of Business Education, 62:64, Nov. 1965.
Bronx Community College's program is discussed as to the retail business management curriculum, general education, business subjects and part-time work experience. Student selection, training, review, and follow-up is discussed in detail. A rating form is shown which would be beneficial in all such programs.

Elder, Walter, "D.E. In Post High School Co-op Programs," Vocational Bulletin No. 283, D.E. Series #29, 1962.
This bulletin points out the differences in high school and post high school co-op programs. Tells where post high school programs are conducted, training methods for D.E. occupations.

Kirkpatrick, Milo O., "The Independent Business School Curriculum," National Business Education Quarterly, 32: No. 4, Summer, 1964.
Basics of a curriculum for an independent business school - post high school. (Applied to D.E.)

Painter, R. L., "Middle Management: The Concept and the Program," Business Education Forum, 21:22-23, Dec. 1966.
Explains the middle management training program offered in the Junior College program in Arizona.

Scolnick, Arnold H., "Community Colleges Can Ease the Crises in Retailing Education," Business Education World, Vol. 46, pp. 20-21, Oct. 1965.
The article presents the dilemna of decreasing enrollments in retailing areas of colleges and how this vacuum may be filled by the community college.

Shaffer, Chet, "Sponsor Development in D.E.," American Vocational Journal, Vol. 39, No. 6, pp. 34-35, Sept. 1964.
The need for growth in D.E. is discussed. It explains sponsor development programs which offer training at the mid-management level. Selling D.E. to retailers is also discussed.

Toothman, R. C. & Haines, P. G., "Post High School Preparatory Education for Careers in Distribution," Business Education Forum, 18, 13-15, April, 1964.
Explains what can be accomplished in a post-high school program with emphasis on specialized product knowledge and service business; and how to program the goals, the curriculum, the teaching staff and the administration.

PUBLIC RELATIONS

Arnold, Cecil B., "How D.E. Contests Benefit Businessmen," Business Education World, Vol. 44, pp. 20-21 and 33, April, 1964.
A good sales presentation on the advantages of D.E. to the businessman.

Barber, Mary M., "Cooperative Teaching Between the Business Community and The School," Journal of Business Education, 149:150, Jan. 1965.
Businessmen come to the school and teach the students and students go to the businesses to learn. Units are discussed before the businessmen come in, so the students can intelligently ask questions.

Burras, Darrell V., "The Business Teacher and the Community," Journal of Business Education, 149:50, Jan. 1962.
Why a teacher should be a member of service organizations. Some of the benefits described are volunteers for the advisory council, visits to industry, speakers, and jobs for the work experience programs. Businesses are always happy to comply because it is good public relations.

Calhoun, Calfrey C., "Public Relations for Business Education," National Business Education Quarterly, 33: No. 4, p. 47, Summer, 1965.
Summary of the need for and the objectives of public relations. Examples of activities to promote better public relations.

Campbell, B. S., "Distributive Education Can Thrive in a Production Oriented Community," Business Education Forum, 20:23, March, 1966.
Describes how the D.E. program flourished in the highly industrialized community of Greenwood, S. C.

Hiserodt, Donald D., "Distributive Education in a Metropolitan Area," Business Education Forum, 17:24, Feb. 1963.
Analyzes the growth and problems of placement of a D.E. program in a metropolitan city, Phoenix, Arizona.

Logan, William B., "Good Co-Workers Relations on the Job," Business Education Forum, 17:15-16, April, 1963.
This article cites the need for recognizing the contribution of the store manager to the D.E. program.

Newhouse, Howard L., "What Happened to Good Manners?" Business Teacher, 41:13, May-June 1964.
Good manners are the heart of public relations.

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Iowa Business Patterns by County Groupings, 1965-1967.

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IOWA

This report is a compilation of employment statistics by county in Iowa. These data have been derived from County Business Patterns, a publication of the U.S. Department of Commerce, Bureau of the Census. The reports are a statistical by-product taken from employment and payroll information supplemented by a special survey of multi-unit companies. This special survey was designed to provide additional details on industries and counties. These employment data provide information by standard industrial classification and county groupings, useful for analyzing the industrial structure of regions, making basic economic studies of areas, and serving other business uses. An attempt was made to group the counties concomitant to the newly established post-high school education areas in Iowa. (CH)

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IOWA BUSINESS PATTERNS BY COUNTY GROUPINGS - 1965 - 1967.

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INTRODUCTION

Iowa Business Patterns by County Groupings, 1965-1967 is a compilation of employment statistics by county in Iowa. These data have been derived from County Business Patterns, a publication of the U.S. Department of Commerce, Bureau of the Census. (See Bibliography)

The reports are a statistical by-product taken from employment and payroll information reported on Treasury Form 941, Schedule A, supplemented by a special survey of multi-unit companies. The special survey was designed to provide industry and county detail needed for County Business Patterns purposes but not reported on Treasury Form 941, Schedule A.

These employment data provide information by Standard Industrial Classification and county groupings, and are useful for analyzing the industrial structure of regions, making basic economic studies of areas, and serving other business uses. The data exclude, however, railroad employees and self-employed persons.

An attempt has been made to group the counties concomitant to the newly established post high school education Areas in Iowa as much as possible. It is not entirely possible, of course, since many counties are divided between two or more Areas. See front cover for the geographic divisions. The contents page lists the counties included in each group.

Key

1. "D" denotes figures withheld to avoid disclosure of operations of individual reporting units. If a number is followed by a plus sign, it indicates there was an individual reporting unit usually shown as a "D" in the county and is shown collectively in that category.

2. "NEC" indicates the information is "not elsewhere classified."

3. (---) denotes no information submitted for that year.

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GROUP A

Counties: Howard, Winneshiek, Allamakee, Chickasaw, Fayette, and Clayton

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agriculture, forestry, & fisheries	131+	116+	152+
Mining	D	D	28+
Contract construction	685	753	824
General building contractors	84	128	138
General contractors, except buildings	---	---	103
Highway & street construction	---	---	103
Masonry, stonework, plastering	---	---	D
Masonry & other stonework	---	---	D
Special trade contractors	330	377	420
Plumbing, heating, & air conditioning	23	27	---
Manufacturing	2,663	2,589	2,656
Food and kindred products	931	992	921
Meat packing	D	D	D
Dairy products	236	218	123+
Grain mill products	D	D	D
Prepared feed for animals and fowls	D	D	D
Primary metal industries	D	D	D
Non-ferrous foundries	D	D	D
Non-ferrous castings, N.E.C.	D	D	D
Miscellaneous manufacturing	D	D	D
Costume jewelry & notions	D	D	D
Buttons	D	D	D
Machinery, except electrical	D	D	D
Special industry machinery	D	D	D
Electrical machinery	389	D	D
Radio and television receiving equipment	D	D	D
Transportation equipment	D	D	D
Motor vehicle & equipment	D	D	D
Transportation equipment, N.E.C.	---	---	D
Trailer coaches	---	---	D
Transportation and other public utilities	773	805	867
Trucking and warehousing	212+	246+	268
Trucking, local & long distance	71+	113+	83+
Trucking without storage	57+	113+	83+
Electric, gas, and sanitary service	D	---	---
Communication	---	114	126

GROUP A (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Wholesale trade	874	787	855
Farm products - raw materials	78	64	62
Miscellaneous wholesalers	259	269	279
Retail trade	4,144	4,369	4,537
Building materials and farm equipment	637	664	680
Lumber and other building materials	---	44	D
Hardware and farm equipment	407	427	461
Hardware stores	105	149	128
Farm equipment dealers	138	65	134
Food	725	757	798
Grocery stores	396+	582+	535+
General merchandise	318	341	377
Automotive dealers and service stations	701	720	733
Car dealers	307	305	309
Gasoline service stations	213	178	187+
Furniture and home furnishings	24	20	---
Apparel and accessories	123	99	110
Eating and drinking places	707	773	857
Miscellaneous retail stores	641	750	748
Farm and garden supply stores	373	429	378
Drug stores & proprietary stores	47	---	---
Retail stores, N.E.C.	17	---	---
Finance, insurance, and real estate	622	652	653
Banking	183	182	119
Commercial & stock savings banks	183	182	119
Insurance agents, brokers, & service	13	13	17
Real Estate	---	---	13
Services	2,423	2,563	2,771
Personal services	292	295	292
Laundries, cleaning, & dyeing plants	109	119	D
Cleaning, dyeing plants, except rugs	D	D	D
Beauty shops	29	---	40
Automobile repair, services, & garages	27	26	31
Automobile repair shops	D	D	D
General automobile repair shops	24	21	24
Medical & other health services	708	835	882
Doctors' offices	32	33	36
Hospitals	D	D	D

GROUP A (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Services (Continued)			
Legal services	18	30	32
Educational services	345+	312+	D
Colleges & universities	D	D	D
Non-profit membership organizations	127	148	211
Religious organizations	---	16	D
Hotels & other lodging places	194	197	296
Hotels, tourist courts, & motels	D	D	D
Rooming & boarding houses	---	---	D

GRDUP B

Counties: Winnebago, Cerro Gordo, Worth, Mitchell, Hancock, Floyd, & Franklin

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	12D+	9D+	97+
Agricultural services, hunting, trapping	25	83	D
Mining	28+	37	32+
Contract construction	1,233	1,32D	1,263
General contractors, buildings	378+	397	321
General contractors, except buildings	---	---	D
Special trade contractors	492+	579	578
Plumbing, heating, air conditioning	---	---	1D5
Painting, paper hanging	---	42	---
Manufacturing	4,D51	7,749	8,449
Food & kindred products	1,726	1,715	1,709
Meat products	D	D	D
Meat packing plants	D	D	D
Poultry & small game packing, wholesale	D	---	---
Grain mill products	---	---	D
Prepared feed for animals & fowls	---	---	D
Bakery products	D	D	D
Bread & related products	D	D	D
Printing & publishing	196	211	2D7
Newspapers	D	D	D
Chemicals & allied products	131+	D	D
Drugs	D	D	D
Pharmaceutical preparations	D	D	D
Agricultural chemicals	127	D	D
Stone, clay, & glass products	891	655	633
Cement, hydraulic	D	D	D
Structural clay products	D	---	D
Brick & structural clay tile	D	---	---
Primary metal industries	D	---	---
Non-ferrous foundries	D	---	---
Non-ferrous castings, N.E.C.	D	---	D
Machinery, except electrical	D	D	D
Farm machinery & equipment	D	D	D
General industrial machinery	---	D	D
Electrical machinery	---	D	D
Household appliances	---	D	D
Household laundry equipment	---	D	D

GROUP B (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Transportation equipment	---	D	D
Transportation equipment, N.E.C.	---	D	D
Trailer coaches	---	D	D
Transportation & other public utilities	1,730	1,558	1,612
Trucking & warehousing	554+	640	573+
Trucking, local & long distance	300+	340+	390+
Trucking without storage	19+	38+	58+
Communication	396	288	354
Telephone communication	D	D	D
Radio Broadcasting & television	D	---	---
Electric, gas & sanitary service	D	D	D
Combination companies & systems	D	D	D
Electric & other services	D	D	D
Wholesale trade	2,021	1,729	1,834
Motor vehicles & automotive equipment	93	98	---
Groceries & related products	375	333	330
Dairy products	237	205	206
Farm products - raw materials	127	42	42
Machinery, equipment & supplies	132	133	148
Commercial & industrial machinery	98	101	110
Miscellaneous wholesalers	518	422	421
Petroleum bulk stations & terminals	60	49	45
Wholesalers, N.E.C.	111	63	---
Retail trade	6,363	6,725	7,099
Building materials & farm equipment	837	1,518	953
Lumber & other building materials	114	215	113
Hardware & farm equipment	522	475	580
Hardware stores	98	160	95
Farm equipment dealers	48	161	273
General merchandise	709	617	740
Department stores	376	357	294
Limited price variety stores	---	---	181
Food	1,130	1,161	1,201
Grocery stores	720+	842+	897+
Automotive dealers & service stations	993	997	1,079
New & used car dealers	267	205	230
Gasoline service stations	393+	385	384
Apparel & accessories	317	348	346
Women's ready-to-wear stores	76	78	85
Family clothing stores	---	D	---
Shoe stores	44	47	45

GROUP B (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade (Continued)			
Furniture & home furnishings	D	137	154
Furniture & home furnishings	93	---	114
Furniture stores	---	---	97
Eating & drinking places	1,130	1,301	1,353
Miscellaneous retail stores	825	944	970
Drug stores & proprietary stores	111	110	101
Farm & garden supply stores	317	384	376
Retail stores, N.E.C.	68	53	51
Finance, insurance & real estate	1,219	1,141	1,142
Banking	216	213	209
Commercial & stock savings banks	216	213	209
Credit agencies other than banks	94	94	100
Personal credit institutions	69	71	74
Insurance carriers	145	60	32
Insurance agents, brokers & service	95	88	94
Real estate	124	130	132
Real estate operators	48	44	45
Services	4,305	4,008	4,433
Hotels & other lodging places	408	275	343
Hotels, tourist courts, & motels	D	D	362
Personal services	402	424	387
Laundries, cleaning & dyeing plants	168	207	179
Cleaning, dyeing plants, except rug	108	110	119
Beauty shops	64	80	99
Miscellaneous business services	117	121	156
Business services, N.E.C.	---	84	103
Automobile repair, services & garages	88	90	95
Automobile repair shops	D	77	D
General automobile repair shops	33	37	38
Miscellaneous repair services	39	35	41
Miscellaneous repair shops	27	25	26
Amusement & recreation services, N.E.C.	73	76	64
Medical & other health services	1,542	1,549	1,715
Offices of physicians & surgeons	D	D	D
Offices of dentists & dental surgeons	40	40	42
Hospitals	D	D	D
Health & allied services, N.E.C.	206	248	350

GROUP B (Continued)

Services (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Legal services	60	86	70
Educational services	345	---	---
Colleges & universities	D	---	---
Nonprofit membership organizations	564	554	564
Labor organizations	97	96	88
Civic, social, fraternal associations	95	105	120
Religious organizations	78	85	73
Miscellaneous service	345	113	118

GROUP C

Counties: Clay, Dickinson, Emmet, Kossuth, and Palo Alto

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	200+	195+	240+
Agricultural services, hunting, trapping	193	162+	181
Animal husbandry services	136	156	D
Mining	D	D	D
Contract construction	633	814	754
General contractors, buildings	86+	195	202
General contractors, except buildings	---	56	63
Special trade contractors	234	194	256
Plumbing, heating, air conditioning	21	20	18
Manufacturing	2,373	2,500	3,138
Food & kindred products	1,002	1,051	1,105
Meat products	D	D	D
Meat packing plants	D	D	D
Grain mill products	D	D	D
Prepared feed for animals & fowls	D	D	D
Printing & publishing	41	44	---
Fabricated metal products	D	---	---
Fabricated structural metal products	D	---	---
Sheet metal works	D	---	---
Machinery, except electrical	D	D	D
Farm machinery & equipment	D	D	D
Electrical machinery	---	D	D
Electric distribution products	---	D	D
Electric measuring instruments	---	D	D
Miscellaneous manufacturing	D	D	D
Toys & sporting goods	D	D	D
Sporting & athletic goods	D	D	D
Transportation & other public utilities	618	457+	548+
Trucking & warehousing	166	156	239
Trucking, local & long distance	36+	46+	47+
Trucking without storage	D	D	D
Communication	D	D	D
Telephone communication	---	---	D

GROUP C (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Wholesale trade	1,273	968	1,182
Motor vehicles & automotive equipment	151	297	145
Automotive equipment	D	D	D
Groceries & related products	123	---	D
Poultry & poultry products	D	---	---
Fish & sea foods	---	---	D
Farm products - raw materials	274	150	124
Miscellaneous wholesalers	302	284	287
Petroleum bulk stations & terminals	118	73	74
Retail trade	3,634	3,979	4,169
Building materials & farm equipment	677	639	705
Lumber & other building materials	D	---	---
Hardware & farm equipment	389	361	434
Hardware stores	29	30	31
Farm equipment dealers	143	131	231
General merchandise	242	255	267
Food	549	564	532
Grocery stores	139+	127+	112+
Automotive dealers & service stations	614	746	770
New & used car dealers	73	94	93
Gasoline service stations	258	332	265+
Apparel & accessories	186	200	228
Furniture & home furnishings	38	41	36
Eating & drinking places	615	629	732
Miscellaneous retail stores	478	648	638
Farm & garden supply stores	185	310	236
Retail stores, N.E.C.	---	---	27
Finance, insurance, & real estate	627	643	662
Banking	86	91	93
Commercial & stock savings banks	86	91	98
Real estate	20	---	32
Services	1,675	1,773	1,974
Hotels & other lodging places	23	133	63+
Hotels, tourist courts, & motels	23	25	---
Personal services	238	264	263
Laundries, cleaning & dyeing plants	76	76	79
Beauty shops	---	---	14
Amusement & recreation services, N.E.C.	38	---	---
Medical & other health services	592	559	647
Hospitals	---	D	D
Legal services	25	24	23
Nonprofit membership organizations	161	172	267
Religious organizations	16	---	---

GROUP D

Counties: Sioux, Lyon, Osceola, and O'Brien

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	31+	67+	116
Agricultural services, hunting, trapping	31+	26+	80
Animal husbandry services	24	---	---
Mining	D	D	D
Contract construction	508	542	506
General contractors, buildings	98	120	D
Special trade contractors	178	197	175
Plumbing, heating, air conditioning	37	42	41
Carpentering & wood flooring	26	34	30
Carpentering	26	34	30
Manufacturing	1,854	1,984	2,100
Food & kindred products	486	377	432
Dairy products	D	D	D
Creamery butter	D	D	D
Miscellaneous food preparations	---	---	D
Soybean oil mills	---	---	D
Fabricated metal products	D	D	D
Fabricated structural metal products	D	D	---
Fabricated plate work (boiler shops)	D	D	---
Electrical machinery	D	D	D
Electronic components	D	D	D
Electronic components, N.E.C.	D	D	D
Machinery except electrical	---	106	126
Transportation & other public utilities	603	571	598
Trucking & warehousing	326	259	284
Trucking, local & long distance	210+	130+	135+
Trucking without storage	210+	130+	135+
Wholesale trade	739	545	546
Groceries & related products	D	D	---
Dairy products	D	D	---
Farm products - raw materials	222	---	---
Miscellaneous wholesalers	148	118	89
Petroleum bulk stations & terminals	113	78	D

GROUP D (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade	2,339	2,567	2,643
Building materials & farm equipment	363	408	392
Hardware & farm equipment	237	262	238
Hardware stores	31	38	41
Farm equipment dealers	114	125	133
General merchandise	138	112	77
Food	492	477	490
Grocery stores	255+	271+	325
Automotive dealers & service stations	425	391	483
New & used car dealers	75	150	160
Gasoline service stations	180	189	203
Apparel & accessories	50+	51+	100
Furniture & home furnishings	61	72	66
Eating & drinking places	371	354	368
Miscellaneous retail stores	309	523	562
Farm & garden supply stores	121	331	308
Finance, insurance & real estate	400	427	432
Banking	109	116	124
Commercial & stock savings banks	109	116	124
Insurance agents, brokers, & service	18	22	---
Services	1,301	1,515	1,602
Personal services	78	72	82
Beauty shops	---	27	---
Automobile repair, services & garages	14	17	---
Automobile repair shops	14	17	---
Amusement & recreation services, N.E.C.	39	60	62
Medical & other health services	447	583	609
Offices of physicians & surgeons	26	---	---
Hospitals	D	D	D
Educational services	242	309	346
Elementary & secondary schools	95	124	127
Colleges & universities	D	D	D
Nonprofit membership organizations	103	115	111
Religious organizations	79	89	78

GROUP E

Counties: Webster, Buena Vista, Pocahontas, Humboldt, Sac, Calhoun, Hamilton, Carroll, Greene, and Wright

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	268+	331+	339+
Agricultural services, hunting, trapping	182+	291	261+
Animal husbandry services	---	18	---
Mining	57+	D	64+
Contract construction	1,801	1,996+	1,913
General contractors, buildings	437+	866	581+
General contractors, except buildings	46	59	57
Special trade contractors	914+	804+	552+
Plumbing, heating, air conditioning	106	109	127
Painting, paper hanging	---	15	---
Carpentering & wood flooring	---	34	39
Miscellaneous special trade contractors	D	---	---
Structural steel erection	D	---	---
Manufacturing	8,351	9,283	9,777
Food & kindred products	3,024+	3,050+	3,075+
Meat products	D	1,395+	1,469+
Meat packing plants	D	D	D
Sausages & other prepared meats	D	D	D
Poultry & small game packing, wholesale	---	---	D
Grain mill products	213	230	256+
Prepared feed for animals & fowls	213	230	256+
Dairy products	D	D	D
Creamery butter	D	D	D
Canned & frozen foods	D	D	D
Frozen fruits, juices & vegetables	---	D	D
Bakery products	D	D	D
Bread & related products	D	D	D
Miscellaneous food preparation	---	D	D
Soybean oil mills	---	D	D
Apparel & related products	---	---	101
Printing & publishing	292	318	138
Newspapers	D	D	D
Chemicals & allied products	D	D	D
Drugs	D	D	D
Pharmaceutical preparations	D	D	D

GROUP E (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Stone, clay, & glass products	1,083	1,106	1,049
Structural clay products	246	196	229
Brick & structural clay tile	D	D	D
Structural clay products, N.E.C.	D	---	---
Concrete, gypsum, & plaster products	837	910	821
Gypsum products	809	875	787
Primary metal industries	---	---	D
Machinery, except electrical	671	974+	964+
Farm machinery & equipment	D	128+	126+
Metalworking machinery	D	D	D
Metalworking machinery, N.E.C.	D	D	D
Service industry machines	---	D	D
Measuring & dispensing pumps	---	D	D
Electrical machinery	D	D	D
Household appliances	D	D	D
Household refrigerators & freezers	D	---	---
Household laundry equipment	---	D	D
Electronic components	D	---	D
Electronic components, N.E.C.	D	---	D
Transportation equipment	---	D	D
Transportation equipment, N.E.C.	---	D	D
Transportation equipment, N.E.C.	---	D	D
Miscellaneous manufacturing	---	---	D
Toys & sporting goods	---	---	D
Sporting & athletic goods, N.E.C.	---	---	D
Administrative & auxiliary	D	---	---
Transportation & other public utilities	2,305	2,344	2,471
Trucking & warehousing	910	964	1,008
Trucking, local & long distance	391+	650+	682+
Trucking without storage	292+	302+	79+
Communication	325	332	372
Telephone communication	157	154+	158+
Electric, gas & sanitary service	D	D	D
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D
Wholesale trade	3,015	2,856	3,020
Motor vehicles & automotive equipment	125	134	137
Automotive equipment	86	92	95
Drugs, chemicals & allied products	---	179	204
Drugs, proprietaries & sundries	---	D	D
Groceries & related products	121+	112+	241+
Poultry & poultry products	D	D	D

GROUP E (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Wholesale trade (Continued)			
Farm products - raw materials	656	413	374
Machinery, equipment, & supplies	166	153	141+
Commercial & industrial machinery	---	---	D
Miscellaneous wholesalers	1,011	806	940
Petroleum bulk stations & terminals	250	110+	50
Wholesalers, N.E.C.	194	---	---
Retail trade	9,114	10,145	10,236
Building materials & farm equipment	1,318	1,421	1,479
Lumber & other building materials	202+	80	142
Hardware & farm equipment	712	870	924
Hardware stores	142	89	40
Farm equipment dealers	397	601	652
General merchandise	957	1,349	1,179
Department stores	313	465	419
Limited price variety stores	106	D	150
General merchandise stores, N.E.C.	D	167	D
Food	1,488	1,557	1,483
Grocery stores	1,031+	815+	785+
Automotive dealers & service stations	1,462	1,566	1,596
New & used car dealers	527	486	587
Gasoline service stations	520+	536+	615+
Apparel & accessories	471	447	448
Mens & boys clothing & furnishings	69	74	75
Shoe stores	80	49	---
Furniture & home furnishings	56+	74+	136
Furniture & home furnishings	70	62	72
Furniture stores	52	41	43
Radio & TV music stores	35	36	---
Eating & drinking places	1,788	1,874	1,976
Miscellaneous retail stores	1,053	1,347	1,451
Drug stores & proprietary stores	89	92	97
Farm & garden supply stores	396	667	574
Retail stores, N.E.C.	60	60	64
Finance, insurance, & real estate	1,765	1,775	1,825
Banking	334	348	375
Commercial & stock savings banks	334	348	375
Credit agencies other than banks	79	92	96
Personal credit institutions	55	62	67
Insurance carriers	227	238	272
Fire, marine, & casualty insurance	D	D	D
Insurance agents, brokers & service	122	131	78
Real estate	89	98	89
Real estate operators	66	69	67

GROUP E (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Services	5,419	5,930	6,150
Hotels & other lodging places	518	413	665+
Hotels, tourist courts & motels	D	D	D
Rooming & boarding houses	D	D	D
Personal services	579	592	647
Laundries, cleaning & dyeing plants	117	129	121
Beauty shops	68	74	92
Miscellaneous business services	81	82	74
Automobile repair, services & garages	104	98	80
Automobile repair shops	13+	57	60
General automobile repair shops	22	23	25
Miscellaneous repair services	17	17	---
Amusement & recreation services, N.E.C.	---	---	106
Medical & other health services	2,083	2,159	2,327
Offices of physicians & surgeons	83	82	83
Offices of dentists & dental surgeons	D	35	38
Hospitals	D	D	D
Health & allied services, N.E.C.	---	---	104
Legal services	51	94	121
Educational services	D	103+	125+
Colleges & universities	---	D	D
Elementary & secondary schools	---	103	125
Nonprofit membership organizations	520	891	643
Labor organizations	---	81	106
Civic, social, fraternal associations	80	79	102
Religious organizations	73	74	82
Miscellaneous services	60	70	85
Accounting, auditing, & bookkeeping	43	40	53

GROUP F

Counties: Marshall, Hardin, Poweshiek, and Tama

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	59+	131+	98+
Agricultural services, hunting, trapping	D	77+	69+
Animal husbandry services	15+	12+	---
Mining	115+	171+	185+
Nonmetallic minerals, except fuels	115	171	185
Crushed & broken stone	D	162	D
Contract construction	1,001	1,604	1,306
General contractors, buildings	163+	654	281+
General contractors, except buildings	D	D	D
Heavy construction, N.E.C.	D	D	D
Special trade contractors	399	257+	417+
Plumbing, heating, air conditioning	105	120	129
Manufacturing	6,294	6,884	7,105
Food & kindred products	678	709	800
Meat products	D	D	D
Meat packing plants	D	D	D
Dairy products	141	126	135
Fluid milk	D	D	D
Grain mill products	---	114	---
Prepared feed for animals & fowls	---	114	---
Paper & allied products	D	D	D
Paperboard mills	D	D	D
Printing & publishing	137	141	143
Primary metal industries	667	729	701
Iron & steel foundries	D	D	D
Gray iron foundries	D	D	D
Nonferrous foundries	D	D	D
Nonferrous castings, N.E.C.	D	D	D
Fabricated metal products	D	D	D
Fabricated metal products, N.E.C.	D	D	D
Valves & pipe fittings	D	D	D
Machinery, except electrical	1,199	1,323	1,073
Farm machinery & equipment	D	D	D
Service industry machines	D	D	D
Commercial refrigeration machinery	D	D	D

GROUP F (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Instruments & related products	D	D	D
Mechanical measuring devices	D	D	D
Mechanical measuring devices	D	D	D
Transportation & other public utilities	1,264	1,287	1,228
Trucking & warehousing	414+	395+	339+
Trucking, local & long distance	340+	355+	315+
Trucking without storage	140+	100+	93+
Communication	116+	123	138
Telephone communication	D	D	D
Electric, gas & sanitary service	D	D	D
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D
Wholesale trade	906	940	926
Farm products - raw materials	118	115	94
Miscellaneous wholesalers	363	397	401
Retail trade	4,734	5,139	5,376
Building materials & farm equipment	616	709	711
Lumber & other building materials	46	---	D
Hardware and farm equipment	367	369	480
Hardware stores	---	---	30
Farm equipment dealers	158	249	182
General merchandise	464	498	501
Department stores	D	D	D
Food	745	737	802
Grocery stores	668	661	725
Automotive dealers & service stations	883	938	908
New & used car dealers	451	480	473
Gasoline service stations	306+	327+	310+
Apparel & accessories	258	253	264
Women's ready-to-wear stores	90	---	---
Furniture & home furnishings	182	159	135
Furniture & home furnishings	79	86	81
Eating & drinking places	913	1,040	1,153
Miscellaneous retail stores	662	761	825
Drug stores & proprietary stores	39	37	37
Farm & garden supply stores	355	417	468

GROUP F (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Finance, insurance, & real estate	823	966	955
Banking	105	262	259
Commercial & stock savings banks	105	262	259
Credit agencies other than banks	47	62	63
Personal credit institutions	36	49	47
Insurance carriers	---	D	36+
Fire, marine, & casualty insurance	---	D	D
Insurance agents, brokers, & service	33+	48	---
Fire, marine & casualty insurance	D	---	---
Real estate	87	107	97
Real estate operators	25	36	31
Services	2,461	2,604	2,769
Hotels & other lodging places	83	76	107
Hotels, tourist courts, & motels	79	---	52+
Personal services	286	308	267
Laundries, cleaning & dyeing plants	65	77	80
Beauty shops	72	75	79
Miscellaneous business services	---	---	27
Automobile repair, services, & garages	41	58	92
Automobile repair shops	30	27	24
General automobile repair shops	21	---	---
Miscellaneous repair services	60	36	---
Amusement & recreation services	33	---	---
Medical & other health services	1,005	1,026	1,092
Offices of physicians & surgeons	84	15+	93
Offices of dentists & dental surgeons	55	29	44
Hospitals	D	D	D
Health & allied services, N.E.C.	D	167	D
Legal services	61	58	56
Educational services	D	D	D
Colleges & universities	D	D	D
Nonprofit membership organizations	194	241	238
Civic, social, fraternal associations	48	81	67
Religious organizations	17	20	21

GROUP G

Counties: Black Hawk, Butler, Bremer, Grundy, and Buchanan

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	156+	153+	136+
Agricultural services, hunting, trapping	74+	77+	105
Animal husbandry services	30+	31	38
Mining	45+	43+	46+
Contract construction	1,539	2,065	2,015
General contractors, buildings	568	926	862
General contractors, except buildings	D	D	D
Heavy construction, N.E.C.	---	---	55
Special trade contractors	761	945	958
Plumbing, heating, air conditioning	169	184	193
Painting, paper hanging	63	69	64
Electrical work	101	125	122
Masonry, stonework, plastering	101	158	149
Masonry & other stonework	56	115	99
Carpentering & wood flooring	17	52	21
Carpentering	---	22	---
Roofing & sheet metal work	54	78	83
Misc. special trade contractors	67	85	95
Manufacturing	20,330	22,227	23,503
Ordnance & accessories	D	D	D
Food & kindred products	5,888	5,266	5,234
Meat products	D	D	D
Meat packing plants	D	D	D
Dairy products	D	D	277+
Condensed & evaporated milk	D	D	D
Fluid milk	168	184	193
Grain mill products	126	D	D
Prepared feed for animals & fowls	126	D	D
Bakery products	D	D	265
Bread & related products	D	D	265
Beverage industries	D	219	D
Bottled & canned soft drinks	D	219	D
Apparel & related products	D	D	D
Men's & boys' furnishings	D	D	D
Men's & boys' clothing, N.E.C.	D	D	D
Fabricated textiles, N.E.C.	D	D	D
Canvass products	D	D	D

GROUP G (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Paper & allied products	D	D	D
Paperboard mills	D	D	D
Corrugated & solid fiber boxes	---	---	D
Printing & publishing	547	656	732
Newspapers	D	D	D
Commercial printing	D	D	D
Commercial printing, letterpress	145	207	260
Rubber & plastics products, N.E.C.	D	D	D
Miscellaneous plastics products	D	D	D
Stone, clay, & glass products	128	510	314
Products of purchased glass	---	D	D
Concrete, Gypsum & plaster products	128	D	D
Other concrete products	103	134	128
Primary metal industries	327	319	361
Iron & steel foundries	194	190	223
Gray iron foundries	194	D	D
Fabricated metal products	1,200	1,314	1,462
Cutlery, hand tools, hardware	133	D	166
Hardware, N.E.C.	D	D	D
Fabricated structural metal products	D	D	D
Sheet metal work	D	D	D
Metal stampings	D	D	D
Machinery, except electrical	10,096	11,096+	12,699
Farm machinery & equipment	D	D	D
Construction & like equipment	432+	616+	648+
Construction machinery & equipment	D	D	D
Metalworking machinery	173	198	277
Special dies & tools	173	198	277
General industrial machinery	D	D	D
Pumps & compressors	D	D	D
Transportation & other public utilities	2,192	2,425	2,471
Local passenger transportation	125	124	120
Trucking & warehousing	908+	1,052+	1,016+
Trucking, local & long distance	823	975	961+
Trucking without storage	702	849	825+
Communication	D	D	D
Telephone communication	D	D	D
Electric, gas & sanitary service	D	D	D
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D

GROUP G (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Wholesale trade	2,645	2,693	2,891
Motor vehicles & automotive equipment	238	237	252
Automotive equipment	174	171	172
Drugs, chemicals & allied products	---	69	62
Groceries & related products	226	267	238
Farm products - raw materials	234	122	95
Hardware, plumbing, heating equipment	191	201	213
Plumbing & heating equipment	132	141	148
Machinery, equipment & supplies	290	314	438
Commercial & industrial machinery	209	215	313
Miscellaneous wholesalers	859	845	958
Petroleum bulk stations & terminals	105	106	---
Lumber & construction materials	92	---	120
Wholesalers, N.E.C.	174	212	286
Administrative & auxiliary	D	D	D
Retail trade	8,654	9,380	10,019
Building materials & farm equipment	729	827	859
Lumber & other building materials	98+	126+	123+
Paint, glass & wallpaper stores	47	---	---
Hardware & farm equipment	405	472	498
Hardware stores	65	66	126
Farm equipment dealers	170	318	332
General merchandise	1,239	1,319	1,546
Department stores	702	750	844
Limited price variety stores	258	321	365
Food	1,543	1,578	1,639
Grocery stores	1,074+	1,101+	1,163+
Automotive dealers & service stations	1,636	1,826	1,935
New & used car dealers	727	775	811
Used car dealers	22	---	---
Tire, battery, & accessory dealers	85	115	77
Gasoline service stations	538+	632+	710+
Apparel & accessories	505	449	458
Men's & boys' clothing & furnishings	126	110	113
Women's ready-to-wear stores	176	179	166
Shoe stores	114	114	148
Furniture & home furnishings	D	28+	D
Furniture & home furnishings	154	180	169
Furniture stores	113	132	129
Household appliance stores	D	55	---
Radio, television, & music stores	46	D	55

GROUP G (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade (Continued)			
Eating & drinking places	1,722	1,744	1,896
Miscellaneous retail stores	882	1,128	1,214
Drug stores & proprietary stores	207	283	291
Farm & garden supply stores	221	320	353
Jewelry stores	42	39	44
Fuel & ice dealers	---	96	96
Retail stores, N.E.C.	127	146	172
Optical goods stores	---	30	45
Finance, insurance, and real estate	1,873	1,872	1,964
Administrative & auxiliary	D	---	318+
Banking	305	313	318
Commercial & stock savings banks	305	313	236
Credit agencies other than banks	200	216	121
Personal credit institutions	91	97	236
Insurance carriers	252	234	208
Life insurance	222	208	---
Insurance agents, brokers, & service	155	139	---
Real estate	237	234	223
Real estate operators	111	110	113
Agents, brokers, & managers	---	D	27
Subdividers & developers	78	63	49
Administrative & auxiliary	---	D	---
Services	6,211	6,215	6,816
Hotels & other lodging places	268	266	289
Hotels, tourist courts, & motels	D	D	D
Rooming & boarding houses	---	---	D
Personal services	655	722	727
Laundries, cleaning & dyeing plants	311	331	320
Cleaning, dyeing plants, except rug	145	149	146
Power laundries, family & commercial	133	146	137
Beauty shops	169	188	190
Barber shops	30	42	41
Funeral service & crematories	---	---	48
Miscellaneous business services	670	462	426
Business services, N.E.C.	457	244	339
Business services, N.E.C.	390	182	264
Automobile repair, services, & garages	193	177	225
Automobile repair shops	104	109	28+
General automobile repair shops	42	34	38

GROUP G (Continued)

Services (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Miscellaneous repair services	78	72	92
Miscellaneous repair shops	45	41	54
Repair shops, N.E.C.	---	---	22
Amusement & recreation services, N.E.C.	276	259	294
Producers, orchestras, entertainers	D	---	---
Bowling alleys & billiard parlors	173	173	183
Other amusement & recreation services	64	55	69
Medical & other health services	2,314	2,361	2,718
Offices of physicians & surgeons	256	267	269
Offices of dentists & dental surgeons	107	112	118
Hospitals	1,227+	1,254+	1,428+
Health & allied services, N.E.C.	201	236	445
Legal services	104	104	110
Educational services	153+	161+	167+
Elementary & secondary schools	D	D	D
Colleges & universities	D	D	D
Nonprofit membership organizations	782	849	978
Labor organizations	157	149	171
Civic, social, fraternal associations	207	238	270
Religious organizations	130	134	149
Charitable organizations	---	111	133
Miscellaneous services	150	208	229
Engineering & architectural services	74	113	144
Accounting, auditing, & bookkeeping	68	87	78

GROUP H

Counties: Dubuque, Delaware, and Jackson

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	46+	54+	76
Agricultural services, hunting, trapping	46	45	53
Animal husbandry services	29	30	33
Mining	66+	57+	71
Contract construction	1,081	1,317	1,378
General contractors, buildings	366	488	469
General contractors, except buildings	---	55	54
Special trade contractors	641	749	799
Plumbing, heating, air conditioning	184	196	221
Painting, paper hanging	57	66	56
Electrical work	72	81	95
Masonry, stonework, plastering	69	97	105
Masonry & other stonework	39	58	62
Carpentering & wood flooring	37	48	47
Carpentering	D	---	47
Miscellaneous special trade contractors	---	---	96
Manufacturing	13,476	14,818	14,437
Food & kindred products	3,617+	3,818	3,901
Meat products	D	D	D
Meat packing plants	D	D	D
Poultry & small game packing, wholesale	D	D	D
Dairy products	213+	453	127+
Fluid milk	150	151	D
Cheese, natural & processed	---	D	---
Bakery products	267	D	D
Bread & related products	267	D	D
Beverage industries	D	---	102
Apparel & related products	140	147	157
Lumber & wood products	D	712	678
Millwork & related products	D	D	D
Millwork plants	D	D	D
Furniture & fixtures	D	D	D
Household furniture	D	D	D
Wood furniture, upholstered	D	D	D

GROUP H (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Paper & allied products	D	D	D
Building paper & building board mills	D	D	D
Paperboard containers & boxes	D	D	D
Corrugated & solid fiber boxes	D	D	D
Printing & publishing	420	420	423
Newspapers	D	D	D
Books	104	D	D
Chemicals & allied products	243	274	281
Cleaning & toilet goods	138	D	D
Polishes & sanitation goods	D	D	D
Agriculture chemicals	---	D	D
Fertilizers	---	D	D
Fabricated metal products	840	944	925
Plumbing & nonelectric heating	D	D	D
Plumbing fixtures (brass goods)	D	D	D
Fabricated structural metal products	138	172	194
Sheet metal work	---	---	D
Metal stampings	D	D	D
Fabricated metal products, N.E.C.	---	---	D
Machinery, except electrical	D	D	D
Radio, TV receiving equipment	D	---	---
Radios & TV receiving sets	D	---	---
Engines & turbines	D	D	D
Internal combustion engines, N.E.C.	D	D	D
Farm machinery & equipment	D	D	D
General industrial machinery	D	D	D
Mechanical power transmission equipment	D	D	D
Electrical machinery	195	D	D
Radio, TV receiving equipment	---	D	D
Radios & TV receiving sets	---	D	D
Electronic components	---	D	D
Miscellaneous manufacturing	171	242	D
Toys & sporting goods	D	D	D
Games & toys, N.E.C.	D	D	D
Transportation & other public utilities	1,525	1,598	1,675
Local passenger transportation	D	150	161
Trucking & warehousing	626	630	674
Trucking, local & long distance	519+	545	595
Trucking without storage	62+	91+	102+
Public warehousing	56	58	65

GROUP H (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Transportation & other public utilities (Cont)			
Communication	220	215	232
Telephone communication	D	D	D
Electric, gas & sanitary service	D	D	D
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D
Wholesale trade	1,618	1,483	1,532
Motor vehicles & automotive equipment	179	186	188
Automotive equipment	D	D	D
Drugs, chemicals, & allied products	D	---	---
Groceries & related products	183	182	146
Electrical goods	---	104	137
Machinery, equipment & supplies	76	91	96
Commercial & industrial machinery	46	60	67
Miscellaneous wholesalers	559	516	557
Petroleum bulk stations & terminals	102+	157	121
Wholesalers, N.E.C.	114+	169	188
Retail trade	5,394	5,701	6,122
Building materials & farm equipment	439	557	583
Lumber & other building materials	129	191	197
Hardware & farm equipment	188	223	251
Hardware stores	34	33	35
Farm equipment dealers	75	90	111
General merchandise	1,012	1,127	1,204
Department stores	480	514	754
Mail order houses	---	---	D
Limited price variety stores	D	195	D
General merchandise stores, N.E.C.	D	D	---
Food	826	746	829
Grocery stores	652+	654	718
Automotive dealers & service stations	867	918	946
New & used car dealers	278	302	298
Tire, battery, & accessory dealers	---	81	---
Gasoline service stations	299	325	353
Apparel & accessories	67+	269	45+
Shoe stores	62	66	64
Furniture & home furnishings	178	D	209
Furniture & home furnishings	95	105	112
Eating & drinking places	1,131	1,137	1,247
Miscellaneous retail stores	573	609	691
Drug stores & proprietary stores	154	171	199
Farm & garden supply stores	166	194	211
Retail stores, N.E.C.	55	61	66

GROUP H (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Finance, insurance, & real estate	1,109	1,188	1,219
Banking	289	301	319
Commercial & stock savings banks	289	301	319
Credit agencies other than banks	273	303	287
Personal credit institutions	252	263	255
Insurance carriers	94	107	105
Insurance agents, brokers, & service	95	96	103
Real estate	140	153	151
Real estate operators	76	89	90
Agents, brokers, & managers	20	15	---
Services	4,709	5,064	5,370
Hotels & other lodging places	313	377	320
Hotels, tourist courts, & motels	199	206	196
Rooming & boarding houses	D	17+	---
Personal services	351	471	390
Laundries, cleaning & dyeing plants	134	155	161
Beauty shops	105	140	131
Barber shops	21	---	22
Funeral service & crematories	27	26	31
Miscellaneous business services	112	140	157
Business services, N.E.C.	30	58	66
Automobile repair, services & garages	157	121	113
Automobile repair shops	D	63	D
General automobile repair shops	29	26	24
Miscellaneous repair services	28	27	25
Amusement & recreation services, N.E.C.	166	174	208
Bowling alleys & billiard parlors	105	114	120
Medical & other health services	1,739	1,956	2,128
Offices of physicians & surgeons	88	214	236
Offices of dentists & dental surgeons	48	52	48
Hospitals	1,087	1,166	1,430
Health & allied services, N.E.C.	296	300	184
Legal services	46	51	54
Educational services	726	801	852
Elementary & secondary schools	D	D	D
Colleges & universities	460	517	546
Nonprofit membership organizations	592	606	612
Labor organizations	69	70	83
Civic, social, fraternal associations	103	93	105
Religious organizations	218	240	239
Charitable organizations	---	---	104
Miscellaneous services	130	143	168
Engineering, auditing & bookkeeping	---	---	D

GROUP I

Counties: Scott, Clinton, Muscatine, and Louisa

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	116+	131+	130+
Agricultural services, hunting, trapping	81	131	87
Horticultural services	---	90	58
Mining	149+	151+	145+
Contract construction	2,584	3,405	3,245
General contractors, buildings	837	1,212	1,053
General contractors, except buildings	133	378	303
Heavy construction, N.E.C.	---	214	175
Special trade contractors	1,531	1,712	1,788
Plumbing, heating, air conditioning	531	570	584
Painting, paper hanging	119	159	156
Electrical work	191	192	242
Masonry, stonework, plastering	116	127	104
Masonry & other stonework	60	70	63
Carpentering & wood flooring	102	98	103
Carpentering	39+	29+	77
Roofing and sheet metal work	63	---	---
Concrete work	D	---	---
Miscellaneous special trade contractors	183	187	203
Excavating & foundation work	---	75	---
Special trade contractors, N.E.C.	---	---	110
Manufacturing	23,820	24,967	26,968
Food & kindred products	4,360+	4,384+	5,038+
Meat products	D	D	D
Meat packing plants	D	D	D
Poultry & small game packing, wholesale	---	D	D
Dairy products	211	226	255
Fluid milk	D	D	D
Canned & frozen foods	D	D	D
Canned fruits, vegetables & jellies	D	D	D
Grain mill products	228+	252+	215+
Prepared feed for animals & fowls	D	D	215+
Wet corn milling	D	D	D

GROUP I (Continued)

Manufacturing (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Bakery products	591	632	842
Bread & related products	D	D	D
Biscuit, crackers & pretzels	D	D	D
Beverage industries	D	D	D
Distilled liquor except brandy	D	D	D
Confectionery & related products	D	D	D
Candy & other confectionery	D	D	D
Apparel & related products	411+	428+	463+
Men's & boys' suits & coats	D	D	D
Women's & misses' outerwear	D	D	D
Dresses	D	D	D
Women's outerwear, N.E.C.	D	D	D
Fabricated textiles, N.E.C.	---	D	D
Fabricated textiles products, N.E.C.	---	D	D
Lumber & wood products	232+	223+	216+
Millwork & related products	D	D	D
Millwork plants	D	D	D
Furniture & fixtures	D	D	D
Household furniture	D	D	D
Wood furniture, not upholstered	D	D	D
Office furniture	D	D	D
Metal office furniture	D	D	D
Paper & allied products	D	D	D
Paperboard containers	D	D	D
Folding paperboard boxes	D	D	D
Sanitary food containers	D	D	D
Printing & publishing	875	870	922
Newspapers	D	D	D
Commercial printing	183	181	188
Commercial printing, lithographic	134	126	129
Chemicals & allied products	D	124+	163+
Basic chemicals	---	---	D
Fibers, plastics, rubbers	D	D	D
Plastics materials	D	D	D
Rubber & plastics products, N.E.C.	D	D	D
Tires & inner tubes	D	D	D
Stone, clay & glass products	415	400	360
Cement, hydraulic	D	D	D
Concrete, gypsum, & plaster products	D	D	---

GROUP I (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Fabricated metal products	646	715	729
Fabricated structural metal products	133+	107+	D
Fabricated structural steel	D	D	D
Fabricated wire products, N.E.C.	D	D	---
Metal stampings	---	---	D
Machinery, except electrical	3,484+	3,757+	4,3[illegible]
Engines & turbines	D	D	[illegible]
Internal combustion engines, N.E.C.	D	D	D
Farm machinery & equipment	D	D	2,242
Construction & like equipment	D	D	D
Construction machinery & equipment	D	D	D
Metalworking machinery	304	319	372
Special dies & tools	D	D	319
Special industry machinery	240	253	244
Food products machinery	D	D	D
General industrial machinery	240	D	D
Pumps & compressors	D	D	D
Machinery, except electrical, N.E.C.	125	181	179
Electrical machinery	D	---	---
Communication equipment	D	---	---
Radio, TV communication equipment	D	---	---
Instruments & related products	D	D	D
Scientific instruments	D	D	D
Watches, clocks & parts	---	D	D
Watches & clocks	---	D	D
Miscellaneous manufacturing	395	391	284
Costume jewelry & notions	369	360	252
Buttons	369	360	252
Transportation & other public utilities	2,952	3,054	3,216
Local passenger transportation	---	167	307
Trucking & warehousing	955	770	709+
Trucking, local & long distance	469+	500+	607+
Trucking without storage	187+	70+	130+
Public warehousing	---	---	D
Communication	733	777+	816
Telephone communication	D	D	D
Radio broadcasting & television	D	D	D
Electric, gas & sanitary service	135+	143+	D
Electric companies & systems	D	D	D
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D

GROUP I (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Wholesale trade	4,269	4,394	4,788
Motor vehicles & automotive equipment	345	334	345
Automotive equipment	210	203	212
Drugs, chemicals & allied products	239+	98+	102+
Chemicals & allied products, N.E.C.	D	D	D
Paints & varnishes	D	---	---
Groceries & related products	848	910	992
Groceries, general line	---	126	120
Groceries & related products, N.E.C.	196+	150+	123+
Electrical goods	319	372	423
Electrical apparatus & equipment	189	266	314
Electrical appliances, TV & radios	102	---	---
Hardware, plumbing, heating equipment	143	138	144
Machinery, equipment & supplies	648	670	757
Commercial & industrial machinery	567	585	667
Miscellaneous wholesalers	1,014	1,126	1,220
Metals & minerals, except petroleum	82	82	86
Petroleum bulk stations & terminals	236	206	126
Scrap & waste materials	267	321	366
Lumber & construction materials	---	---	59
Wholesaler, N.E.C.	97	85	100
Administrative & auxiliary	---	138	164
Retail trade	12,524	13,114	13,754
Building materials & farm equipment	403+	899	921
Lumber & other building materials	304	300	227+
Paint, glass & wallpaper stores	---	144	163
Hardware & farm equipment	268	202+	216+
Hardware stores	72	133	D
Farm equipment dealers	96	65+	198
General merchandise	2,815	2,823	3,018
Department stores	1,739	1,673	1,775
Mail order houses	D	D	D
Limited price variety stores	342	358	336
Directed selling organizations	D	D	148
General merchandise stores, N.E.C.	D	192	D
Food	1,885	1,932	1,941
Grocery stores	1,629+	1,757	1,683
Automotive dealers & service stations	2,045	2,153	2,179
New & used car dealers	884	982	931
Tire, battery, & accessory dealers	87	99	121
Gasoline service stations	915	905	962

GROUP I (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade (Continued)			
Apparel & accessories	722	725	771
Men's & boys' clothing & furnishings	112	117	117
Women's ready-to-wear stores	160	153	160
Women's accessory & specialty stores	27	---	---
Shoe stores	109	98	175
Furniture & home furnishings	470+	503+	501+
Furniture & home furnishings	289	291	276
Furniture stores	189	204	175
Household appliance stores	104	113	119
Radio, television, & music stores	102	108	118
Eating & drinking places	2,343	2,381	2,637
Miscellaneous retail stores	1,173	1,341	1,362
Drug stores & proprietary stores	367	385	381
Farm & garden supply stores	214	257	301
Fuel & ice dealers	---	---	109
Retail stores, N.E.C.	310	266	267
Miscellaneous retail stores	33	50	50
Administrative & auxiliary	D	179	---
Finance, insurance, & real estate	2,730	2,961	2,961
Banking	751	806	839
Commercial & stock savings banks	751	806	839
Credit agencies other than banks	265	244	269
Personal credit institutions	131+	D	136+
Security & commodity brokers & services	103	119	120
Security brokers, flotation companies	103	119	120
Insurance carriers	557+	663+	627+
Life insurance	442	553	479
Fire, marine, & casualty insurance	100+	107+	120+
Insurance agents, brokers, & service	256	263	262
Real estate	461	516	476
Real estate operators	284	316	300
Agents, brokers, & managers	---	33	22
Combined real estate, insurance, etc.	---	55	59
Services	9,545	10,518	11,231
Hotels & other lodging places	970	962	985
Hotels, tourist courts, & motels	667	130	693
Rooming & boarding houses	D	---	---

GROUP I (Continued)

Services (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Personal services	1,035	1,038	1,054
Laundries, cleaning & dyeing plants	620	629	626
Power laundries, family & commercial	186	198	185
Self-service laundries, dry cleaning	24	---	31
Cleaning, dyeing plants, except rug	144	136	139
Beauty shops	221	237	255
Barber shops	65	58	57
Miscellaneous business services	1,400	1,097	1,225+
Credit reporting & collection	D	131	---
Building services	D	90	85
Private agencies	D	---	---
Business services, N.E.C.	384	695+	812+
Detective agency and protective service	D	D	D
Business services, N.E.C.	169+	380	400
Business consulting services	D	D	D
Automobile repair, services & garages	304	323	335
Automobile repair shops	150+	151+	138+
General automobile repair shops	37	31	26
Miscellaneous repair services	153	195	174
Electric repair shops	55	40	40
Electrical repair shops	---	27	27
Miscellaneous repair shops	78	87	78
Amusement & recreation services, N.E.C.	390	433	402
Producers, orchestras, entertainers	---	32	39
Bowling alleys & billiard parlors	176	200	189
Other amusement & recreation services	59	51	49
Medical & other health services	2,984	3,225	3,474
Offices of physicians & surgeons	315	320	329
Offices of dentists & dental surgeons	125	103+	143
Offices of osteopathic physicians	39	40	39
Offices of chiropractors	105	D	11
Hospitals	1,717	1,302+	2,164
Health & allied services, N.E.C.	553	553	552
Legal services	199	196	191
Educational services	305	335	385
Elementary & secondary schools	D	D	173
Colleges & universities	D	D	D
Nonprofit membership organizations	933	1,009	1,145
Business associations	46	---	---
Labor organizations	79	97	115
Civic, social, fraternal association	348	387	373
Religious organizations	137	165	174
Nonprofit member organizations, N.E.C.	D	D	34+
Miscellaneous services	223+	263+	304+
Engineering & architectural services	148+	152+	168+
Accounting, auditing & bookkeeping	59	73	115

GROUP J

Counties: Linn, Benton, Iowa, Johnson, Jones, Cedar, and Washington

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	373	330+	266+
Agricultural services, hunting, trapping	300	330	235+
Animal husbandry services	28	37	29
Mining	412+	D	383+
Nonmetallic minerals, except fuels	412	D	383
Crushed and broken stone	D	D	D
Contract construction	3,098	3,829	3,761
General contractors, buildings	1,046+	1,515	1,165+
General contractors, except buildings	151	D	76+
Highway and street construction	97	124	149
Heavy construction, N.E.C.	54	D	D
Special trade contractors	1,663+	1,837	1,970
Plumbing, heating, air conditioning	518	540	684
Painting, paper hanging	128	136	151
Electrical work	298	327	387
Masonry, stonework, plastering	102	119	95
Plastering & lathing	42	39	41
Carpentering & wood flooring	67	62	56
Carpentering	27	29	23
Floor laying & other floor work, N.E.C.	40	33	---
Roofing & sheet metal work	63	65	90
Concrete work	93	111	---
Miscellaneous special trade contractors	85	104	93
Special trade contractors, N.E.C.	54	47	---
Manufacturing	27,593	29,954	30,403
Food & kindred products	6,552	5,836	6,355
Meat products	D	D	D
Meat packing plants	D	D	D
Dairy products	179	D	D
Fluid milk	D	D	D
Canned & frozen foods	D	---	---
Frozen fruits, juices, & vegetables	D	---	---
Grain mill products	170+	2,722	2,890
Prepared feed for animals & fowls	D	240+	254
Cereal preparations	D	D	D
Wet corn milling	D	D	D

GROUP J (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Food & kindred products (Cont.)			
Bakery products	185	212	D
Bread & related products	185	212	D
Beverage industries	189	184	224
Bottled & canned soft drinks	189	184	224
Miscellaneous food preparations	196	234	212
Soybean oil mills	D	D	D
Textile mill products	D	D	D
Weaving, finishing mills, wool	D	D	D
Furniture & fixtures	D	D	D
Office furniture	D	D	D
Metal office furniture	D	D	D
Lumber & wood products	D	---	---
Paper & allied products	606	654	D
Paper & paperboard products	D	D	D
Bags, except textile bags	D	D	D
Paperboard containers & boxes	D	D	D
Corrugated & solid fiber boxes	D	D	D
Printing & publishing	1,411+	1,602+	1,655+
Newspapers	D	D	D
Periodicals	D	193	D
Commercial printing	533	602+	612+
Commercial printing, letterpress	473	525+	534+
Manifold business forms manufacturing	D	D	D
Chemicals & allied products	D	791	846
Drugs	D	D	D
Pharmaceutical preparations	D	D	D
Cleaning & toilet goods	D	D	D
Toilet preparations	D	D	D
Agricultural chemicals	---	D	D
Fertilizers, mixing only	---	D	D
Rubber & plastics products, N.E.C.	D	D	D
Fabricated rubber products, N.E.C.	D	---	---
Miscellaneous plastics products	---	---	D
Stone, clay & glass products	169	168	173
Concrete, gypsum & plaster products	169	168	D
Fabricated metal products	855	997	D
Cutlery, hand tools, hardware	---	---	D
Hardware, N.E.C.	---	---	D
Plumbing & nonelectric heating	D	D	D
Plumbing fixtures (brass goods)	D	D	D
Heating equipment, except electric	D	D	D
Fabricated structural metal products	404	432	450
Fabricated structural steel	D	D	D

GROUP J (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Machinery, except electrical	4,394+	4,942+	5,196+
Farm machinery & equipment	D	162+	D
Construction & like equipment	3,176	3,589	3,385
Construction machinery & equipment	D	D	D
Mining machinery & equipment	D	D	D
Metalworking machinery	D	364	416
Metalworking machinery, N.E.C.	D	D	D
Special industry machinery	D	D	D
Food products machinery	D	D	D
Printing trades machinery	---	---	D
Machinery, except electrical, N.E.C.	---	---	148
Electrical machinery	,	11,084+	D
Electric distribution products	D	D	D
Switchgear & switchboard apparatus	D	D	D
Household appliances	D	D	D
Household refrigerators & freezers	D	D	D
Radio, TV receiving equipment	D	D	D
Radios & TV receiving sets	D	D	D
Communication equipment	D	D	D
Radio, TV communication equipment	D	D	D
Transportation equipment	---	---	266
Motor vehicles & equipment	---	---	D
Truck trailers	---	---	D
Miscellaneous manufacturing	224	269	294
Toys & sporting goods	D	D	D
Sporting & athletic goods, N.E.C.	D	D	D
Signs & advertising displays	---	129	117
Transportation & other public utilities	3,389	3,732	3,721
Local passenger transportation	135	137	91
Trucking & warehousing	993	1,122	1,095
Trucking, local & long distance	571+	722+	717
Trucking without storage	288+	366+	296+
Communication	1,055	862+	887+
Telephone communication	D	D	D
Radio broadcasting & television	235	238	236
Electric, gas & sanitary service	D	D	D
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D
Administrative & auxiliary	D	D	D

GROUP J (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Wholesale trade	4,506	4,649	4,709
Motor vehicles & automotive equipment	344	337	357
Automobiles & other motor vehicles	142	139	163
Automotive equipment	202	198	194
Drugs, chemicals, & allied products	127	125	142
Groceries & related products	550	542	552
Groceries, general line	137	169	D
Dairy products	D	---	---
Groceries & related products, N.E.C.	116	95	102
Farm products - raw materials	297	240	239
Electrical goods	131	155	177
Electronic parts & equipment	67	88	108
Hardware, plumbing, heating equipment	188	202	211
Plumbing & heating equipment	---	101	104
Machinery, equipment & supplies	804	925	939
Commercial & industrial machinery	659	765	822
Miscellaneous wholesalers	1,380	1,572	1,340
Metals & minerals, except petroleum	---	D	D
Petroleum bulk stations & terminals	238	280	121
Paper and its products	70	78	75
Lumber & construction materials	90	79	68
Wholesalers, N.E.C.	201+	171	200+
Retail trade	16,155	17,089	18,471
Building materials & farm equipment	1,379	1,544	1,583
Lumber & other building materials	331+	399+	326+
Paint, glass & wallpaper stores	78	D	D
Hardware & farm equipment	676	719	806
Hardware stores	59	50	152
Farm equipment dealers	408	535	350+
General merchandise	2,779	3,032	3,279
Department stores	1,908	2,102	2,310
Limited price variety stores	193	226	213
Direct selling organizations	104	---	---
General merchandise stores, N.E.C.	98	123	132
Food	2,296	2,492	2,571
Grocery stores	2,025+	2,117	2,362
Retail bakeries	47	---	346
Automotive dealers & service stations	2,619	2,664	2,688
New & used car dealers	987	1,090	807
Tire, battery & accessory dealers	95	106	---
Gasoline service stations	1,273	1,194	1,325

GROUP J (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade (Continued)			
Apparel & accessories	771	794	910
Men's & boys' clothing & furnishings	48	---	---
Women's ready-to-wear stores	238	251	268
Women's accessory & specialty stores	32	---	---
Shoe stores	154	151	182
Furniture & home furnishings	492+	513+	546+
Furniture & home furnishings	315	326	332
Furniture stores	202	207	203
Household appliance stores	102	116	130
Radio, television & music stores	104	98	111
Eating & drinking places	3,027	3,401	3,973
Miscellaneous retail stores	2,345	2,207	2,326
Drug stores & proprietary stores	734	498	502
Farm & garden supply stores	717	729	806
Jewelry stores	61	62	54
Retail stores, N.E.C.	256	277	310
Optical goods stores	21	20	19
Finance, insurance, & real estate	3,558	3,737	4,005
Banking	945	1,014	1,079
Commercial & stock savings banks	945	1,014	1,079
Credit agencies other than banks	199	221	258
Personal credit institutions	95	108	169
Security & commodity brokers & services	196	241	251
Security brokers, flotation companies	196	D	251
Insurance carriers	990	931	1,002
Life insurance	480	415	471
Fire, marine, & casualty insurance	477	481	495
Insurance agents, brokers & service	301	313	294
Real estate	546	615	682
Real estate operators	264	275	360
Agents, brokers, & managers	81	134	130
Services	10,321	11,247	11,956
Hotels & other lodging places	971	959	995
Hotels, tourist courts, & motels	818	798	835
Organization hotels, membership basis	120	132	154
Personal services	1,144	1,158	1,173
Laundries, cleaning & dyeing plants	451	483	480
Power laundries, family & commercial	185	195	172
Cleaning, dyeing plants, except rug	124	139	131

GROUP J (Continued)

Services (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Personal services (Cont.)			
Photographic studios	28	29	---
Beauty shops	293	299	317
Barber shops	121	107	107
Funeral service & crematories	39	49	52
Miscellaneous business services	923	1,120	1,306
Building services	111+	148	151
Miscellaneous building services	100	D	144
Business services, N.E.C.	374	770	534+
Business consulting services	146	187+	196+
Business services, N.E.C.	183	164	226
Research & testing laboratories	D	D	D
Automobile repair, services, & garages	351	512	481
Automobile repair shops	183+	199+	174+
Top & body repair shops	90	82	74
General automobile repair shops	59	69	61
Automobile services, except repair	---	---	194
Miscellaneous repair services	105	180	118
Miscellaneous repair shops	69	105	72
Repair shops, N.E.C.	26	67	27
Motion pictures	---	---	109
Amusement & recreation services, N.E.C.	469	415	399
Producers, orchestras, entertainers	82	89	63
Bowling alleys & billiard parlors	150	135	143
Other amusement & recreation services	98	108	104
Medical & other health services	3,288	3,503	3,845
Offices of physicians & surgeons	360	370	375
Offices of dentists & dental surgeons	109+	D	53+
Hospitals	D	D	D
Health & allied services, N.E.C.	D	229	263
Legal services	211	230	240
Educational services	656	819	851
Elementary & secondary schools	D	199	D
Colleges & universities	D	540	D
Nonprofit membership organizations	1,137	1,363	1,377
Labor organizations	112	137	123
Civic, social, fraternal associations	375	442	392
Religious organizations	214	209	240
Charitable organizations	130	198	157
Nonprofit member organizations, N.E.C.	46	117	135
Miscellaneous services	411	458	467
Engineering & architectural services	112	108	128
Accounting, auditing & bookkeeping	213	251	212

GROUP K

Counties: Polk, Story, Jasper, Boone, Guthrie, Dallas, Madison, Warren, and Marion

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	455+	527+	586+
Agricultural services, hunting, trapping	350+	443	538
Animal husbandry services	37	D	D
Horticultural services	235	277	337
Mining	244+	243+	252+
Bituminous coal & lignite mining	91	---	---
Bituminous coal	91	---	---
Nonmetallic minerals, except fuels	---	D	D
Contract construction	5,974	7,435	7,268
General contractors, buildings	2,034+	2,341	2,260
General contractors, except buildings	455	1,067	695
Highway & street construction	194	260	221+
Heavy construction, N.E.C.	261	742	423
Special trade contractors	3,058	3,610	3,865
Plumbing, heating, air conditioning	855	824	1,031
Painting, paper hanging	243	318	283
Electrical work	429	485	498
Masonry, stonework, plastering	228	266	249
Masonry and other stonework	165	192	199
Plastering and lathing	29	D	---
Carpentering & wood flooring	148	175	164
Carpentering	106	121	113
Floor laying & other floorwork nec.	---	54	51
Roofing and sheet metal work	180	247	261
Concrete work	D	101	87
Misc. special trade contractors	365	484	482+
Special trade contractors, N.E.C.	328	432	404
Installation of building equipment, N.E.C.	---	---	D
Manufacturing	30,854	33,556	35,863
Food & kindred products	4,151+	4,668	4,664+
Meat products	D	1,318+	1,584+
Meat packing plants	D	D	D
Poultry & small game packing, whsle	---	D	D
Dairy products	941	938	918
Ice cream & frozen desserts	---	---	D
Fluid milk	D	D	D

GROUP K (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Food & kindred products (Cont.)			
Canned & frozen foods	---	D	D
Canned specialties	---	---	D
Grain mill products	434	393	431
Flour & other grain mill products	D	122	120
Prepared feed for animals & fowls	308	271	311
Bakery products	290	205	244
Bread & related products	290	205	244
Confectionery and related products	D	D	---
Candy & other confectionery	D	D	---
Beverage industries	312	334	388
Bottled & canned soft drinks	301	321	D
Miscellaneous food preparations	514	506	508
Soybean oil mills	D	D	D
Animal & marine fats & oils	---	D	151
Food preparations, N.E.C.	193	194	199
Apparel & related products	174+	190+	228+
Men's & boys' furnishings	D	D	D
Men's & boys' separate trousers	D	D	D
Fabricated textiles, N.E.C.	110	128	D
Pleating & stitching	---	D	D
Lumber & wood products	D	D	124
Millwork & related products	D	D	D
Furniture & fixtures	211	240	253
Household furniture	185	D	D
Mattresses & bedsprings	D	D	D
Paper & allied products	571	704	1,044
Paper & paperboard products	487	559	698
Envelopes	---	D	---
Bags, except textile bags	D	---	D
Paperboard containers & boxes	---	147	346
Sanitary food containers	---	---	D
Printing & publishing	4,474	4,526	4,678
Newspapers	D	D	D
Periodicals	D	D	D
Commercial printing	388	426	515
Commercial printing, letterpress	208	227	317
Commercial printing, lithographic	D	190	182
Bookbinding & related industries	162	196	198
Bookbinding & related work	D	D	D

GROUP K (Continued)

Manufacturing (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Chemicals & allied products	637	692	638
Drugs	D	D	D
Biological products	D	D	D
Cleaning & toilet goods	121	142	128
Toilet preparations	---	D	---
Agricultural chemicals	236	217	180
Rubber & plastics products, N.E.C.	D	D	D
Tires & inner tubes	D	D	D
Miscellaneous plastics products	D	D	---
Leather & leather products	D	D	D
Luggage	D	D	D
Stone, clay, & glass products	715	982	942
Cement, hydraulic	D	333	D
Structural clay products	D	D	137+
Concrete, gypsum, & plaster products	305	409	501
Bricks & structural clay tile	D	---	---
Other concrete products	162	189	155
Ready mixed concrete	---	159	161
Primary metal industry	---	D	D
Iron & steel foundries	---	D	---
Gray iron foundries	---	D	---
Fabricated metal products	2,087+	2,301+	2,243+
Plumbing & nonelectric heating	348	375	414
Plumbing fixtures (brass goods)	---	D	D
Heating equipment, except electric	D	D	D
Fabricated structural metal products	1,579	1,632	1,591
Fabricated structural metal	D	D	D
Sheet metal work	303	416	372
Miscellaneous metal work, N.E.C.	D	D	D
Coating, engraving & allied services	---	133	---
Plating and polishing	---	133	---
Metal stampings	D	D	D
Machinery, except electrical	4,411+	5,180+	6,356+
Farm machinery & equipment	3,683	4,088+	5,007+
Construction & like equipment	D	D	471+
Mining machinery & equipment	D	D	D
Construction machinery & equipment	D	D	D
Hoists, cranes, & monorail systems	---	---	D
Special industry machinery	D	D	D
Special industry machinery, N.E.C.	D	D	D
Service industry machines	---	D	D
Automatic merchandising machines	D	D	D
Machinery, except electrical, N.E.C.	---	D	---

GROUP K (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Electrical machinery	D	D	D
Electrical industrial apparatus	D	D	D
Motors & generators	D	D	D
Household appliances	D	D	D
Household laundry equipment	D	D	D
Electric components	D	D	D
Electronic components, N.E.C.	D	D	D
Transportation equipment	718	884	1,207
Motor vehicles & equipment	169	D	311
Motor vehicles & parts	D	---	---
Aircraft & parts	D	D	D
Aircraft engines & parts	D	D	D
Transportation equipment, N.E.C.	D	D	D
Transportation equipment, N.E.C.	D	D	D
Instruments & related products	150	172	147
Medical instruments & supplies	---	D	D
Miscellaneous manufacturing	676+	546+	589+
Toys & sporting goods	246+	D	D
Dolls	D	D	D
Sporting & athletic goods, N.E.C.	D	---	---
Office supplies	D	D	D
Carbon paper & inked ribbons	D	D	D
Miscellaneous manufactures	124+	120+	151+
Signs & advertising displays	D	D	D
Administrative & auxiliary	D	D	132+
Transportation & other public utilities	9,123	9,482	9,759
Local passenger transportation	765	772	756
Local & suburban transportation	D	D	D
Local & suburban transit	D	D	D
Taxicabs	D	D	D
Intercity highway transportation	155	141	138
Intercity bus lines	155	141	138
Trucking & warehousing	3,221	3,405	3,504
Trucking, local & long distance	2,765+	2,883+	3,083+
Trucking without storage	56+	2,533+	2,715+
Local trucking & storage	D	184	128
Public warehousing	211	196	228
General warehousing & storage	118	111	154
Transportation by air	122	135	140
Air transportation	D	D	140

GROUP K (Continued)

Transportation & other public utilities (Cont.)	Number of Employees Mid-March Pay Period 1965	1966	1967
Communication	2,976	3,252	3,477
Telephone communication	D	D	150+
Radio broadcasting & television	D	D	D
Electric, gas & sanitary service	269+	123+	109+
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D
Wholesale trade	11,553	12,195	12,404
Motor vehicles & automotive equipment	1,066	1,146	1,110
Automobile & other motor vehicles	364	435	386
Automotive equipment	676	671	687
Drugs, chemicals, & allied products	467	439	410
Drugs, proprietaries, & sundries	192	195	173
Chemicals & allied products, N.E.C.	212	186	182
Groceries & related products	1,518	1,649	1,600
Groceries, general line	595	638	594
Meats & meat products	165	204	231
Fresh fruits & vegetables	155	153	102
Groceries & related products, N.E.C.	432	467	502
Farm products - raw materials	632	341	351
Electrical goods	562	588	651
Electrical apparatus & equipment	312	326	351
Electrical appliances, TV & radios	217	229	249
Hardware, plumbing, heating equipment	486	510	541
Hardware	109	114	126
Plumbing & heating equipment	257	270	281
Air conditioning & refrigeration	120	126	132
Machinery, equipment & supplies	2,415	2,532	2,516
Commercial & industrial machinery	1,480+	1,581+	1,756
Farm machinery	381	451	406
Professional equipment & supplies	192	180	184
Service establishment equipment	D	92	D
Miscellaneous wholesalers	3,453	4,066	4,118
Metals & minerals, except petroleum	234	251	347
Petroleum bulk stations & terminals	356	286	259
Scrap & waste materials	98	124	86
Beer, wine, & distilled beverages	129	106	129
Paper and its products	380	389	399
Furniture & home furnishings	162	168	190
Lumber & construction materials	587	623	556
Wholesalers, N.E.C.	1,143+	1,587	1,708+
Administrative & auxiliary	343	261	265

GROUP K (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1968
Retail trade	26,876	28,810	31,730
Building materials & farm equipment	1,627	1,835	1,913
Lumber & other building materials	443	454	464
Paint, glass & wallpaper stores	69	188	190
Hardware & farm equipment	746	810	832
Hardware stores	155	162	136
Farm equipment dealers	379	416	436
General merchandise	6,499	6,888	8,301
Department stores	3,256	3,378	249+
Mail order houses	D	D	D
Limited price variety stores	420	417	753
Merchandise vending machine operators	66	---	---
Direct selling organizations	D	D	160
General merchandise stores, N.E.C.	164	195	196
Food	3,839	4,119	4,354
Grocery stores	3,323+	3,577+	3,639+
Retail bakeries	121	99	107
Automotive dealers & service stations	3,809	4,081	4,346
New & used car dealers	1,281	1,601	1,551
Used car dealers	156	99	94
Tire, battery, & accessory dealers	224	250	260
Gasoline service stations	1,668	1,661+	1,936
Miscellaneous automotive dealers	39	50	61
Apparel & accessories	1,719	1,582	1,750
Men's & boys' clothing & furnishings	255	212	295
Women's ready-to-wear stores	534	439	519
Family clothing stores	158	112	---
Shoe stores	243	237	263
Furniture & home furnishings	795	898+	939+
Furniture & home furnishings	401	452	381
Furniture stores	258	280	289
Floor covering stores	66	71	76
Household appliance stores	111	175	182
Radio, television & music stores	130	157	189
Radio & television stores	43	48	53
Music stores	87	109	136
Eating & drinking places	5,354	5,880	6,560
Miscellaneous retail stores	2,699	2,963	2,960
Drug stores & proprietary stores	843	1,007	1,029
Antique stores & secondhand stores	121	34	---
Book & stationery stores	---	---	103

GROUP K (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade (Continued)			
Miscellaneous retail stores (Cont.)			
Farm & garden supply stores	452	590	431
Jewelry stores	118	116	125
Fuel & ice dealers	81	79	---
Retail stores, N.E.C.	416	478	490
Florists	117	132	132
Gift, novelty, & souvenir shops	---	---	28
Optical goods stores	67	67	68
Miscellaneous retail stores, N.E.C.	112	130	125
Administrative & auxiliary	227	168	214
Finance, insurance, and real estate	14,059	14,374	14,975
Banking	1,802	1,852	1,988
Commercial & stock savings banks	280+	281+	341+
Credit agencies other than banks	1,201	1,205	1,507
Savings & loan associations	296	298	270
Personal credit insitutions	741	758	1,069
Security & commodity brokers & services	236	D	D
Security brokers, flotation companies	D	283	311
Insurance carriers	6,747	6,759	7,162
Life insurance	2,811	2,695	2,561
Accident & health insurance	741	841	1,232
Fire, marine, & casualty insurance	2,639	3,125	3,239
Insurance carriers, N.E.C.	---	---	35
Insurance agents, brokers & service	104+	714	687
Real estate	1,000	1,166	1,098
Real estate operators	562	716	588
Agents, brokers, & managers	158	168	194
Subdividers & developers	49	48	55
Operative builders	48	61	47
Combined real estate, insurance, etc.	88	79	72
Holding & other investment companies	182	51	35
Investment companies	D	---	---
Administrative & auxiliary	D	D	D
Services	21,686	23,197	25,256
Hotels & other lodging places	2,104	1,889	2,634+
Hotels, tourist courst, & motels	1,605	1,295	1,836+
Rooming & boarding houses	127	335	370
Organization hotels, membership basis	172	176	156

GROUP K (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Services (Continued)			
Personal services	2,230	2,413	2,510
Laundries, cleaning & dyeing plants	975	1,046	1,108
Power laundries, family & commercial	370	405	370
Self-service laundries, dry cleaning	83	48	63
Cleaning, dyeing plants except rug	368	418	438
Photographic studios	113	134	159
Beauty shops	540	625	687
Barber shops	135	96	77
Shoe repair & hat cleaning	21	24	---
Funeral service & crematories	---	79	---
Pressing, alteration, garment repair	34	---	---
Pressing, alteration, garment repair	34	---	---
Miscellaneous business services	1,941+	2,771	3,000
Advertising	131	128	108
Advertising agencies	106	101	87
Credit reporting & collection	206	274	247
Duplicating, mailing, steno, etc.	212+	212+	264+
Direct mail advertising	175+	179+	224+
Building services	385	503	564
Window cleaning	---	D	D
Disinfecting & exterminating	---	---	D
Miscellaneous building services	306	353	333
Business services, N.E.C.	929	1,078	1,265
Business consulting services	240	276	323
Equipment rental & leasing	133	168	201
Business services, N.E.C.	412	509	505
Automobile repqir, services & garages	1,123	1,131	1,152
Automobile parking	116	185	165
Automobile repair shops	443+	419+	462+
Top & body repair shops	128	125	143
General automobile repair shops	162	149	121
Automobile repair shops, N.E.C.	67	67	71
Automobile services, except repair	367	403	398
Miscellaneous repair services	277	321	316
Electrical repair shops	94	108	107
Electrical repair shops	27	34	26
Radio & television repair	67	74	81
Reupholstery & furniture repair	16	---	17
Miscellaneous repair shops	130	154	151
Repair shops, N.E.C.	106	---	D
Motion pictures	361	362	426
Picture production & distribution	D	D	D
Motion picture distribution	81	---	---
Motion picture theaters	256	249	312

GROUP K (Continued)

Services (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Amusement & recreation services, N.E.C.	903	887	881
Producers, orchestras, entertainers	137	119	73
Bowling alleys & billiard parlors	242	289	281
Other amusement & recreation services	303	313	386
Golf clubs & country clubs	157	163	181
Amusement & recreation, N.E.C.	88	74	86
Medical & other health services	5,586	6,078	6,667
Offices of physicians & surgeons	713	680	788
Offices of dentists & dental surgeons	246	269	251
Offices of osteopathic physicians	148	131	133
Hospitals	2,992	3,158+	3,377+
Medical & dental laboratories	104	105	108
Dental laboratories	104	105	108
Health & allied services, N.E.C.	686	954	1,254
Legal services	430	436	457
Educational services	1,394+	1,525+	1,695+
Elementary & secondary schools	D	D	198
Colleges & universities	D	D	1,111
Nonprofit membership organizations	2,822	3,183	3,190
Business associations	275	274	320
Professional membership organizations	D	108	D
Labor organizations	298	326	412
Civic, social, fraternal associations	768	779	608
Religious organizations	574	624	627
Charitable organizations	288	430+	456+
Nonprofit member organizations, N.E.C.	176	254	210
Miscellaneous services	793	876	972
Engineering & architectural services	308	361	363
Nonprofit research agencies	143	134	D
Accounting, auditing, & bookkeeping	297	322	402
Administrative & auxiliary	D	D	D

GROUP L

Counties: Woodbury, Plymouth, Cherokee, Ida, Monona, and Crawford

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	141+	146+	166+
Agricultural services, hunting, trapping	106	112	113
Animal husbandry services	32	33	---
Mining	8+	D	17+
Contract construction	1,990	2,246	2,268
General contractors, building	395+	573+	D
General contractors, except buildings	D	D	521
Highway & street construction	D	---	---
Heavy construction, N.E.C.	208	123	432
Special trade contractors	911+	982	925
Plumbing, heating, air conditioning	248	221	246
Electrical work	197	204	155
Masonry, stonework, plastering	83	103	93
Carpentering and wood flooring	49	37	66
Carpentering	---	28	59
Misc. special trade contractors	81	105	83
Manufacturing	7,522+	9,897	10,003+
Food & kindred products	3,452+	4,239+	3,639+
Meat products	1,627+	1,842+	1,636+
Meat packing plants	D	D	D
Dairy products	185+	246+	226+
Ice cream & frozen desserts	D	D	D
Fluid milk	D	D	D
Grain mill products	180+	183+	240+
Prepared feed for animals & fowls	180+	183+	240+
Bakery products	668	659	686
Bread & related products	D	D	D
Biscuit, crackers, & pretzels	D	D	D
Confectionery & related products	---	D	D
Candy & other confectionery	---	D	D
Beverage industries	125	138	145
Bottled & canned soft drinks	125	133	145
Miscellaneous food preparations	183	159	288
Soybean oil mills	---	---	D
Food preparations, N.E.C.	---	D	D

GROUP L (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Apparel & related products	D	D	D
Men's & boys' furnishings	D	D	D
Work clothing	D	D	D
Printing & publishing	494	506	505
Newspapers	D	D	D
Commercial printing	D	D	D
Commercial printing, letterpress	104	120	112
Chemical & allied products	---	---	226
Basic chemicals	---	---	D
Inorganic chemicals, N.E.C.	---	---	D
Stone, clay & glass products	123	188	159
Structural clay & glass products	---	D	D
Brick & structural clay tile	---	D	D
Fabricated metal products	228	148	162
Fabricated structural metal products	179	D	D
Fabricated structural steel	120	---	---
Primary metal industries	---	D	D
Iron & steel foundries	---	D	D
Gray iron foundries	---	D	D
Machinery, except electrical	969+	1,230+	1,138+
Construction & like equipment	---	D	D
Hoists, cranes & monorail	---	D	---
Farm machinery & equipment	D	248	143+
Metalworking machinery	D	D	D
Metalworking machinery, N.E.C.	D	D	D
Special industry machinery	D	D	D
Special industry machinery, N.E.C.	D	D	D
Machinery, except electrical, N.E.C.	D	D	D
Electrical machinery	D	D	D
Radio, TV receiving equipment	D	D	D
Radios & TV receiving sets	D	D	D
Transportation equipment	D	611	600
Motor vehicles & equipment	D	D	D
Truck trailers	D	D	D
Transportation equipment, N.E.C.	D	D	D
Transportation equipment, N.E.C.	D	D	D
Miscellaneous manufacturing	---	119	150
Toys & sporting goods	---	---	D
Sporting & athletic goods, N.E.C.	---	---	D

GROUP L (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Transportation & other public utilities	3,385	3,353	3,426
Local passenger transportation	160	173	136
Taxicabs	121	120	---
Trucking & warehousing	1,235	1,191	1,274
Trucking, local & long distance	972+	918+	1,042+
Trucking without storage	928+	882+	892+
Public warehousing	126	118	121
Transportation services	D	D	D
Stockyards	D	D	D
Communication	676	668	699
Telephone communication	D	D	D
Radio broadcasting & television	140	142	147
Electric, gas & sanitary service	D	102+	109+
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D
Wholesale trade	3,915	4,039	4,085
Motor vehicles & automotive equipment	292	309	288
Automobiles & other motor vehicles	102	110	---
Automotive equipment	190	199	189
Drugs, chemicals, & allied products	90	132	124
Groceries & related products	390	368	370
Fresh fruits & vegetables	115	116	110
Groceries & related products, N.E.C.	76	75	74
Farm products - raw materials	673+	722	786
Electrical goods	181	188	196
Electrical appliances, TV & radios	104	---	---
Electrical appliances & equipment	---	---	101
Hardware, plumbing, heating equipment	195	214	214
Plumbing & heating equipment	---	104	105
Machinery, equipment & supplies	508	548	567
Commercial & industrial machinery	348	337	377
Professional equipment & supplies	---	73	---
Miscellaneous wholesalers	966	1,064	1,045
Petroleum bulk stations & terminals	105	105	D
Paper & its products	111	124	128
Lumber & construction materials	126	134	142
Wholesalers, N.E.C.	255	305	267

GROUP L (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade	9,592	10,355	11,019
Building materials & farm equipment	793	879	913
Lumber & other building materials	136	209	170
Hardware & farm equipment	423	364+	428
Hardware stores	57	36	43
Farm equipment dealers	198	131	153
General merchandise	1,467	1,671	1,821
Department stores	1,000	1,231	1,310
Limited price variety stores	229	211	217
Food	1,445	1,403	1,507
Grocery stores	884+	941+	999+
Automotive dealers & service stations	1,403	1,507	1,654
New & used car dealers	457	543	435
Tire, battery, & accessory dealers	95	100	109
Gasoline service stations	465	539	687
Apparel & accessories	654	597	635
Men's & boys' clothing & furnishings	127	141	147
Women's ready-to-wear stores	156	164	167
Shoe stores	114	114	134
Furniture & home furnishings	60+	56+	32+
Furniture & home furnishings	108	119	129
Household appliance stores	41	35	---
Eating & drinking places	1,994	2,153	2,274
Miscellaneous retail stores	1,298	1,489	1,557
Drug stores & proprietary stores	455	509	502
Farm & garden supply stores	361	438	471
Retail stores, N.E.C.	106	99	106
Administration & auxiliary	D	D	D
Finance, insurance, & real estate	2,401	2,509	2,593
Banking	621	632	642
Commercial & stock savings banks	621	632	642
Credit agencies other than banks	298	307	309
Personal credit institutions	203	208	210
Insurance carriers	514	571	652
Life insurance	402	457	492
Accident & health insurance	---	---	D
Insurance agents, brokers, & service	173	176	190
Real estate	284	287	284
Real estate operators	193	184	191
Agents, brokers & managers	---	---	24

GROUP L (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Services	7,286	7,964	8,104
Hotels & other lodging places	389	441	455
Hotels, tourist courts & motels	339	361	351
Rooming & boarding houses	---	---	104
Personal services	757	791	781
Laundries, cleaning & dyeing plants	316	325	337
Power laundries, family & commercial	142	146	140
Self-service laundries, dry cleaning	---	---	D
Cleaning, dyeing plants, except rug	155	157	161
Beauty shops	147	169	168
Barber shops	41	37	28
Funeral services & crematories	43	48	42
Miscellaneous business services	328	348	295
Business services, N.E.C.	200	227	193
Business consulting services	---	57	68
Business services, N.E.C.	139	140	96
Automobile repair, services & garages	288	291	279
Automobile repair shops	138	143	132
Top & body repair shops	48	---	46
General automobile repair shops	36	42	32
Miscellaneous repair services	62	D	95
Electrical repair shops	24	26	29
Miscellaneous repair shops	---	44	54
Repair shops, N.E.C.	---	---	54
Motion pictures	---	148	149
Motion picture theaters	---	D	D
Amusement and recreation services, N.E.C.	201	204	202
Bowling alleys & billiard parlors	---	76	87
Other amusement & recreation services	97	114	101
Amusement & recreation, N.E.C.	D	D	D
Medical & other health services	3,094	3,288	3,292
Offices of physicians & surgeons	263	241	243
Offices of dentists & dental surgeons	59	62	57
Hospitals	1,826+	1,852+	1,858+
Health & allied services, N.E.C.	337	470	501
Legal services	131	139	49+
Educational services	463+	500+	561+
Elementary & secondary schools	96+	100	100
Colleges & universities	D	D	D
Schools & educational services, N.E.C.	D	D	D

GROUP L (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Services (Continued)			
Nonprofit membership organizations	773	847	903
Business associations	76	78	72
Labor organizations	82	80	81
Civic, social, fraternal associations	142	141	151
Religious organizations	190	232	206
Charitable organizations	133	148	148
Miscellaneous services	114	118	133
Engineering & architectural services	45	44	47
Accounting, auditing & bookkeeping	58	67	65

GROUP M

Counties: Pottawattamie, Harrison, Shelby, Audubon, Cass, Mills, Fremont, and Page

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	132+	130+	166+
Agricultural services, hunting, trapping	99+	123	111
Animal husbandry services	39	---	---
Mining	D	D	D
Nonmetallic minerals, except fuels	---	D	---
Crushed & broken stone	---	D	---
Contract construction	989	1,325	1,032
General contractors	230	398	216
Special trade contractors	496	627	534
Plumbing, heating, air conditioning	82	111	71
Painting, paper hanging	33	29	22
Electrical work	44	60	51
Masonry, stonework, plastering	18	37	---
Masonry & other stonework	---	D	D
Carpentering & wood flooring	16	18	---
Misc. special trade contractors	33	---	70
Manufacturing	3,860	3,979	4,419
Food & kindred products	1,333	1,575	1,409+
Meat products	D	D	D
Meat packing plants	D	D	D
Sausages & other prepared meats	D	D	---
Canned & frozen foods	D	D	D
Canned specialties	D	D	D
Grain mill products	D	D	D
Prepared feed for animals & fowls	D	D	D
Lumber & wood products	---	117	112
Sawmills & planing mills	---	104	---
Sawmills & planing mills	---	104	---
Furniture & fixtures	191	232	261
Household furniture	D	D	D
Printing & publishing	325	214	612
Newspapers	139	---	109
Printing trades services	---	---	D
Typesetting	---	---	D

GROUP M (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Primary metal industries	D	D	D
Iron & steel foundries	D	D	D
Gray iron foundries	D	D	D
Fabricated metal products	183	187	198
Fabricated structural metal products	D	D	D
Fabricated structural steel	D	D	D
Machinery, except electrical	D	D	D
Metalworking machinery	D	D	D
Transportation equipment	D	D	D
Motor vehicles & equipment	D	D	D
Truck & bus bodies	D	D	D
Transportation & other public utilities	1,887	1,981	2,084
Local passenger transportation	D	D	D
Trucking & warehousing	552+	666+	734
Trucking, local & long distance	342+	152+	107+
Trucking without storage	38+	459+	495+
Communication	115+	116+	121+
Telephone communication	D	D	D
Electric, gas & sanitary service	D	D	D
Gas companies & systems	D	D	D
Combination companies & systems	D	D	D
Electric & other services combined	D	D	D
Wholesale trade	1,739	1,895	1,839
Motor vehicles & automotive equipment	83	107	100
Groceries & related products	151	110	116
Farm products - raw materials	180	201	157
Miscellaneous wholesalers	586	683	617
Petroleum bulk stations & terminals	158	110+	168
Wholesalers, N.E.C.	53	48	---
Retail trade	8,086	8,719	8,876
Building materials & farm equipment	838	960	1,024
Lumber & other building materials	---	D	76
Hardware & farm equipment	395	417	446
Farm equipment dealers	230	326	355
General merchandise	807	864	957
Department stores	D	D	D
Mail order houses	D	D	D
Limited price variety stores	D	D	D

GROUP M (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade (Continued)			
Food	1,319	1,290	1,321
Grocery stores	896+	904+	930+
Automotive dealers & service stations	1,526	1,538	1,527
New & used car dealers	490	519	492
Gasoline service stations	671	592+	612+
Apparel & accessories	338	355	351
Furniture & home furnishings	156	167	169
Eating & drinking places	1,530	1,794	1,725
Miscellaneous retail stores	1,065	1,209	1,240
Drug stores & proprietary stores	142	145	184
Farm & garden supply stores	448	580	499
Retail stores, N.E.C.	42	46	44
Administrative & auxiliary	D	D	D
Finance, insurance, & real estate	1,438	1,427	1,509
Banking	294	304	314
Commercial & stock savings banks	D	D	D
Credit agencies other than banks	68	76	78
Personal credit institutions	---	24	29
Insurance carriers	109	---	89
Insurance agents, brokers & service	116	105	125
Real estate	201	183	257
Real estate operators	116	90	154
Agents, brokers & managers	28	27	29
Combined real estate, insurance, etc.	39	38	28
Services	4,814	4,936	5,004
Hotels & other lodging places	291	278	122
Hotels, tourist courts, & motels	D	D	110
Rooming & boarding houses	D	D	---
Personal services	584	621	610
Laundries, cleaning & dyeing plants	190	120	99
Cleaning, dyeing plants, except rug	118	110	---
Beauty shops	59	93	104
Barber shops	18	20	14
Miscellaneous business services	74	67	49
Automobile repair, services & garages	111	147	132
Automobile repair shops	D	73	87
Top & body repair shops	26	30	---
General automobile repair shops	24	34	35

GROUP M (Continued)

Services (Continued)	Number of Employees Mid-March Pay Period 1965	1966	1967
Miscellaneous repair services	54	54	59
Amusement & recreation services, N.E.C.	152	119	133
Medical & other health services	2,323	2,276	2,449
Offices of physicians & surgeons	193+	31+	25+
Offices of dentists & dental surgeons	30	27	26
Hospitals	974+	D	D
Health & allied services, N.E.C.	414	666	70
Legal services	47	75	70
Nonprofit membership organizations	350	386	457
Civic, social, fraternal associations	70	51	53
Religious organizations	90	94	88
Miscellaneous services	---	73	69

GROUP N

Counties: Montgomery, Adair, Adams, Union, Clarke, Taylor, Ringgold, and Decatur

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	7+	11+	19+
Mining	D	D	20+
Nonmetallic minerals, except fuels	---	D	D
Crushed & broken stone	---	D	D
Contract construction	338+	478	363
General contractors, buildings	39	48+	49
Heavy construction, N.E.C.	---	D	D
Special trade contractors	104	121	107+
Manufacturing	1,313+	1,645+	1,858
Apparel & related products	---	D	D
Women's undergarments	---	D	D
Women's & children's underwear	---	D	D
Printing & publishing	D	D	D
Commercial printing	D	D	D
Commercial printing, letterpress	D	D	D
Electric machinery	D	D	D
Electrical products, N.E.C.	D	D	D
Primary batteries, dry & wet	D	D	D
Transportation equipment	D	D	---
Motor vehicles & equipment	D	D	D
Motor vehicles & parts	D	D	D
Primary metal industries	---	D	D
Nonferrous foundries	---	D	D
Nonferrous castings, N.E.C.	---	D	D
Transportation & other public utilities	863	703	747
Trucking & warehousing	112	79+	127+
Trucking, local & long distance	34+	43+	44+
Trucking without storage	34+	D	D
Electric, gas, & sanitary service	119	101	102
Wholesale trade	668	679	674
Miscellaneous wholesalers	108	110	107
Petroleum bulk stations & terminals	D	D	---

GROUP N (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade	3,257	3,315	3,716
Building materials & farm equipment	287	603	381
Hardware & farm equipment	172	187	206
Farm equipment dealers	48	---	D
General merchandise	---	---	47
Food	472	489	360
Grocery stores	167+	172+	114+
Automotive dealers & service stations	707	778	805
Gasoline service stations	345	379	323+
Apparel & accessories	127	126	187
Eating & drinking places	474	507	565
Miscellaneous retail stores	557	649	610
Farm & garden supply stores	56	49	65
Finance, insurance, & real estate	502	510	501
Real estate	D	---	---
Real estate operators	D	---	---
Services	1,362	1,493	1,701
Hotels & other lodging places	27	27	12
Personal services	106	149	162
Automobile repair, services & garages	21	---	---
Automobile repair shops	20	---	---
Medical & other health services	168	209	246
Educational services	D	D	D
Colleges & universities	D	D	D
Nonprofit membership organizations	99	100	192+
Business associations	---	---	D

GROUP O

Counties: Wapello, Mahaska, Keokuk, Lucas, Monroe, Jefferson, Wayne, Appanoose, Davis, and Van Buren

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	94+	164+	149+
Agricultural services, hunting, trapping	D	26	88
Mining	296+	250+	272+
Contract construction	896+	1,174+	1,211+
General contractors, buildings	282	347+	355+
General contractors, except buildings	---	---	170
Special trade contractors	313	348	319
Plumbing, heating, air conditioning	83	60	71
Manufacturing	9,521	9,848	11,473
Food & kindred products	168+	165+	177+
Meat products	D	D	D
Meat packing plants	D	D	D
Dairy products	D	D	D
Fluid milk	D	D	D
Bakery products	D	D	D
Bread & related products	D	D	D
Apparel & related products	D	D	D
Men's & boys' separate trousers	D	D	D
Work clothing	D	D	---
Fabricated textiles, N.E.C.	D	D	D
House furnishings, N.E.C.	---	---	D
Lumber & wood products	---	D	D
Millwork & related products	---	---	D
Prefabricated wood products	---	---	D
Wooden containers	---	D	D
Nailed wooden boxes & shook	---	D	D
Leather & leather products	D	D	D
Leather gloves & mittens	D	D	D
Printing & publishing	116	120	115
Rubber & plastics products, N.E.C.	---	D	D
Miscellaneous plastics products	---	D	D
Primary metal industries	D	D	D
Iron & steel foundries	D	D	D
Gray iron foundries	D	D	D
Malleable iron foundries	D	D	D
Steel rolling, & finishing	---	---	D
Steel wire drawing, nails & spikes	---	---	D

GROUP O (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Fabricated metal products	D	D	D
Fabricated structural metal products	D	D	D
Fabricated structural steel	---	D	D
Metal doors, sash & trim	D	---	---
Valves & pipe fittings	D	---	---
Stone, clay, & glass products	D	---	---
Machinery, except electrical	574+	518+	585+
Farm machinery & equipment	D	D	D
Construction & like equipment	D	D	D
Hoists, cranes & monorail systems	D	D	D
Special industry machinery	D	D	D
Food products machinery	D	D	D
General industrial machinery	D	D	D
Mechanical power transmission equipment	D	D	D
Electrical machinery	D	D	D
Household appliances	D	D	D
Household laundry equipment	D	D	D
Radio, TV receiving equipment	---	---	D
Transportation equipment	D	D	D
Transportation equipment, N.E.C.	D	D	D
Transportation equipment, N.E.C.	D	D	D
Motor vehicles & equipment	---	---	D
Motor vehicles & parts	---	---	D
Transportation & other public utilities	1,442	1,635	1,653
Trucking & warehousing	350+	323+	334+
Trucking, local & long distance	81+	283+	46+
Trucking without storage	188+	271+	171+
Communication	148+	D	D
Telephone communication	D	D	D
Electric, gas & sanitary service	---	D	D
Combination companies & systems	---	D	D
Electric & other services combined	---	D	D
Wholesale trade	1,495	1,550	1,547
Groceries & related products	68	106	122
Hardware, plumbing, heating equipment	118	120	---
Machinery, equipment, & supplies	---	141	150
Farm products - raw materials	D	55+	58
Miscellaneous wholesalers	331	337	333
Petroleum bulk stations & terminals	50	98	55

GROUP O (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Retail trade	6,737	6,982	7,510
Building materials & farm equipment	706	735	749
Lumber & other building materials	82	73	79
Hardware & farm equipment	203	166	165
General merchandise	373	504	738
Department stores	203	179	237
Limited price variety stores	---	---	183
Food	871	872	928
Grocery stores	558+	468+	442+
Automotive dealers & service stations	1,223	1,256	1,323
New & used car dealers	345	216	263
Gasoline service stations	432	493	503
Apparel & accessories	431	510	531
Women's ready-to-wear stores	---	113	101
Furniture & home furnishings	D	D	D
Eating & drinking places	1,040	1,125	1,115
Miscellaneous retail stores	914	925	983
Drug stores and proprietary stores	99	121	119
Farm & garden supply stores	244	212	190
Retail stores, N.E.C.	53	97	95
Administrative & auxiliary	D	D	D
Finance, insurance, & real estate	1,118	1,168	1,213
Banking	127	132	135
Commercial & stock savings banks	127	132	135
Credit agencies other than banks	85	72	72
Personal credit institutions	55	50	55
Insurance carriers	---	100	111
Life insurance	---	---	D
Insurance agents, brokers & service	53	68	60
Real estate	105	104	119
Real estate operators	62	63	77
Services	4,213	4,518	4,812
Hotels & other lodging places	187	125	90
Hotels, tourist courts & motels	D	21	---
Personal services	389	347	546
Laundries, cleaning & dyeing plants	---	---	80
Beauty shops	75	73	71
Miscellaneous business services	32	33	---
Automobile repair, services, & garages	58	35	32
Automobile repair shops	58	20	32
Amusement & recreation services, N.E.C.	51	56	---

GROUP O (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Services (Continued)			
Medical & other health services	1,412	1,504	1,596
Offices of physicians & surgeons	96	124	D
Offices of dentists & dental surgeons	31	20	33
Hospitals	D	D	D
Health & allied services, N.E.C.	90+	95+	285
Legal service	47	49	50
Educational services	227+	251+	292+
Colleges & universities	D	D	D
Nonprofit membership organizations	384	422	452
Labor organizations	---	---	63
Civic, social, fraternal associations	101	96	98
Religious organizations	57	52	50
Miscellaneous services	---	41	30

GROUP P

Counties: Des Moines, Henry, and Lee

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Agricultural services, forestry, fisheries	59	148	62
Agricultural services, hunting, trapping	29	31+	26
Mining	68+	D	D
Contract construction	1,212	1,541	1,450
General contractors, buildings	296+	355+	356
General contractors, except buildings	160	142	174
Special trade contractors	623	869	814
Plumbing, heating, air conditioning	203	255	250
Carpentering & wood flooring	64	30	82
Carpentering	59	24	28
Misc. special trade contractors	---	---	33
Manufacturing	14,488	17,419	19,404
Ordnance	D	D	D
Food & kindred products	1,209	1,122	1,174
Meat products	D	---	---
Poultry & small game packing, whsle	D	---	---
Grain mill products	D	D	D
Flour & other grain mill products	D	D	D
Wet corn milling	D	D	D
Bakery products	D	D	248
Bread & related products	---	D	D
Biscuit, crackers & pretzels	D	D	D
Lumber & wood products	D	D	D
Miscellaneous wood products	D	D	D
Wood products, N.E.C.	D	D	D
Furniture & fixtures	D	D	D
Household furniture	D	D	D
Mattresses & bedsprings	D	D	D
Office furniture	D	D	D
Wood furniture	D	D	D
Paper & allied products	445	497	507
Paperboard mills	---	---	D
Paper & paperboard products	D	D	D
Paper coating & glazing	D	D	D
Paperboard containers & boxes	D	D	D
Corrugated & solid fiber boxes	D	D	D

GROUP P (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Manufacturing (Continued)			
Printing & publishing	115	245	260
Miscellaneous publishing	---	D	D
Commercial printing	D	D	---
Chemicals & allied products	885	925	870
Basic chemicals	D	D	D
Inorganic chemicals, N.E.C.	D	D	D
Cleaning & toilet goods	D	D	---
Soap & other detergents	D	---	---
Paints, varnishes & allied products	D	D	D
Rubber & plastics products, N.E.C.	D	D	D
Miscellaneous plastics products	D	D	D
Stone, clay, & glass products	188	183	188
Concrete, gypsum & plaster products	188	D	---
Gypsum products	D	D	---
Primary metal industries	275+	322+	319+
Steel rolling and finishing	D	D	D
Electrometallurgical products	D	D	D
Steel wire drawing, nails & spikes	D	D	---
Iron & steel foundries	D	D	D
Gray iron foundries	D	D	D
Steel foundries	D	D	D
Fabricated metal products	117	127+	134+
Fabricated wire products	117	127+	134+
Fabricated plate work (boiler shops)	D	D	D
Machinery, except electrical	150+	153+	180+
Construction & like equipment	D	D	D
Construction machinery & equipment	D	D	D
Industrial trucks & tractors	---	---	D
Electrical machinery	2,606	3,631	4,036
Electric distribution products	D	D	D
Switchgear & switchboard apparatus	D	D	D
Electronic components	D	D	D
Electron tubes, receiving type	D	D	D
Electron components, N.E.C.	D	D	D
Electrical products, N.E.C.	D	D	D
Engine electrical equipment	D	D	D
Transportation equipment	D	D	D
Transportation equipment, N.E.C.	D	D	D
Miscellaneous manufacturing	101+	D	D
Office supplies	D	D	D
Pens & mechanical pencils	D	D	D
Administrative & auxiliary	D	D	D

GROUP P (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Transportation & other public utilities	1,066	1,134	1,430
Trucking & warehousing	404	447	854
Trucking, local & long distance	103+	114+	137+
Trucking without storage	350+	374+	397
Communication	121+	122+	142+
Telephone communication	D	D	D
Electric, gas & sanitary service	D	209	239
Electric companies & systems	D	D	D
Wholesale trade	1,215	1,163	1,257
Drugs, chemicals & allied products	167	165	186
Chemicals & allied products, N.E.C.	---	---	D
Groceries & related products	70	---	---
Machinery, equipment & supplies	74	77	59
Miscellaneous wholesalers	352	360	315
Petroleum bulk stations & terminals	60	38	---
Retail trade	5,221	5,907	6,454
Building materials & farm equipment	406	358+	474
Hardware & farm equipment	196	185	220
Farm equipment dealers	---	67	---
General merchandise	931	1,142	1,231
Department stores	276	326	231+
Limited price variety stores	118+	263	123
Mail order houses	---	---	D
General merchandise stores, N.E.C.	99+	409	385
Food	924	968	1,152
Grocery stores	864	906	954
Automotive dealers & service stations	957	926	966
New & used car dealers	484	450	482
Gasoline service stations	380	383	325
Apparel & accessories	150+	261	158+
Women's ready-to-wear stores	84	81	---
Shoe stores	43	36	---
Furniture & home furnishings	231	259	255
Furniture & home furnishings	126	46	144
Furniture stores	26	---	---
Eating & drinking places	804	978	1,074
Miscellaneous retail stores	629	698	740
Drug stores & proprietary stores	75	80	85
Retail stores, N.E.C.	59	64	80
Farm & garden supply stores	120	135	232
Administrative & auxiliary	---	D	D

GROUP P (Continued)

	Number of Employees Mid-March Pay Period		
	1965	1966	1967
Finance, insurance, and real estate	836	836	906
Banking	291	316	330
Commercial & stock savings banks	291	316	330
Credit agencies other than banks	86	94	115
Personal credit institutions	---	---	75
Insurance carriers	51	43	36
Insurance agents, brokers & service	119	110	115
Real estate	169	150	184
Real estate operators	106	94	115
Services	4,227	4,368	4,702
Hotels & other lodging places	279	337	432
Hotels, tourist courts & motels	178+	225	285+
Personal services	418	426	368
Laundries, cleaning & dyeing plants	213	106	99
Beauty shops	98	97	105
Miscellaneous business services	350	254+	208+
Advertising	D	---	---
Miscellaneous advertising	D	---	---
Duplicating, mailing, stenographic, etc.	---	D	D
Direct mail advertising	---	D	D
Business services, N.E.C.	52	59	91
Automobile repair, services & garages	14+	93	22
Automobile repair shops	D	D	D
Miscellaneous repair services	43	43	37
Amusement & recreation services, N.E.C.	160	187	155
Other amusement & recreation services	52	---	50
Medical & other health services	1,711	1,838	2,028
Offices of physicians & surgeons	135	161	168
Offices of dentists & dental surgeons	64	66	64
Hospitals	1,242	1,291	1,433
Health & allied services, N.E.C.	151	101	151
Legal services	94	104	113
Educational services	129+	141	152
Elementary & secondary schools	81	86	96
Colleges & universities	D	---	D
Nonprofit membership organizations	509	515	594
Labor organizations	49	60	51
Civic, social, fraternal associations	212	185	191
Religious organizations	109	113	132
Miscellaneous services	45	---	51

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ILLINOIS

The purpose of this bulletin is to provide information and assistance to school administrators, school boards, and educators who are concerned with the development and expansion of programs in trade and industrial education. It outlines the minimum requirements in accord with the Vocational Education Act of 1963 and the Illinois State Plan for Vocational Education. The programs described are suitable for comprehensive high schools, centralized facilities serving several high schools, area vocational schools, or post secondary schools. (EM)

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TRADE AND INDUSTRIAL EDUCATION

ESSENTIALS AND REQUIREMENTS OF A TRADE AND INDUSTRIAL PROGRAM

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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- General Information
- Secondary and Post-Secondary Programs
- Adult Programs
- Qualifications of Personnel
- Organizing and Reporting

Series B - Bulletin No. 173
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State of Illinois
BOARD OF VOCATIONAL EDUCATION AND REHABILITATION
Vocational and Technical Education Division
Springfield

VT007496

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P R E F A C E

Education for employment has recently become recognized by most school administrators as an essential function of a total curriculum in a school system. Our American way of life is founded on the dignity and worth of the individual and his ability to contribute to the economy that sustains it.

Technical and scientific developments have increased at a prodigious rate and have caused unprecedented demands for new knowledge, techniques, and skills in the industrial field. More courses of the preparatory and supplementary type will be needed to meet these demands and also to prepare youth for entering employment and progressing in their job.

Most youth in Illinois, as in the rest of the nation, do not continue formal full-time education beyond high school. On the average seven out of every ten students now in high school have need of some type of vocational education during their high school years.

The purpose of this bulletin is to provide information and to assist local school administrators, school boards and other educators who are concerned with the development of new programs or with the expansion of present programs in trades and industries. This bulletin outlines the minimum requirements in accord with the Vocational Education Act of 1963 and the Illinois State Plan for vocational education. The programs described in this guide apply equally in either the comprehensive high school, centralized facility serving several high schools, area vocational schools, and post-secondary schools.

This publication supercedes Series B - Bulletin No. 173, July 1960 -- Essentials and Requirements of a Vocational Trade and Industrial Program. This bulletin should be of assistance to school superintendents, junior college deans, supervisors of trade and industrial education, school board members and others interested in establishing trade and industrial education programs.

School personnel responsible for the administration of reimbursable secondary, post-secondary and adult education programs in a public school may obtain additional information and further assistance regarding the Trade and Industrial program and the requirements as set forth in this guide by directing their inquiry to the Trade and Industrial Education Service, Vocational and Technical Education Division, 405 Centennial Building, Springfield, Illinois 62706.

Eurus Stoltz, Chief
Trade and Industrial Education

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SECTION I

GENERAL INFORMATION

Philosophy and Objectives of Trade and Industrial Education

The philosophy of the Trade and Industrial Education Service supports the idea that liberal or general education and vocational education are both essential and compatible with respect to the problem of preparing individuals for living and for earning a living. Vocational education is not a course unto itself, rather it is an integral part of a total educational enterprise. It does not supplant liberal education, it supplements it. It might be likened to two similar but different materials inseparably woven into the educational fabric of each individual; (1) that part of a person's development which looks first of all to his life as a responsible citizen, and (2) that part which looks to the person's specialization. Each aspect seeking to compliment the other. An educational program which recognizes value in both liberal and vocational education is most desirable for the attainment of future goals for the majority of all youth and adults.

Such a program would provide an appropriate educational foundation for individuals entering and progressing in trade and industrial occupations. It is expected that a background for this preparation would include adequate basic science, mathematics and technical information in the particular occupational pursuit to qualify graduates to enter employment or further formal education in vocational technical institutes, or institutes of higher learning, and for the acquisition of additional skills and knowledges from job experiences.

It is absurd to think it is possible to provide the student with a curriculum that would equip him with all the necessary skills and technical knowledges that he will need in the future. It is recognized also that vocational education does not delimit training to skills alone. It includes those habits, attitudes, technical knowledges, safety, job judgment and understandings which contribute to the success of a worker on the job. With the proper foundation now through vocational and general education, augmented with supplementary training programs as needed, he should be able to work and progress successfully in a changing society.

Some specific responsibilities and services provided by Trade and Industrial Education are:

1. Assistance and leadership to school administrators, local T & I supervisors, and teachers in planning, organizing and developing functional and adequate educational programs for in-school and out-of-school youth and adults in accordance with local needs.

2. Assistance to T & I supervisors and teachers in improving instruction in the different trade and industrial occupations.

3. Conduct training programs for the development of supervisory personnel in industry.

4. Assistance to both local and state employer and employee organizations and other interested groups and agencies, to establish appropriate training programs for apprentices and other persons who are employed or preparing for employment in trade or industrial occupations.

5. Counsel with educational groups, administrators, T & I supervisors and teachers for the purpose of furthering the development of the vocational-industrial education program.

6. Assist T & I teachers to improve their teaching methods and efficiency through personal conferences.

7. Determine whether or not local T & I vocational programs are conducted in conformance with State Plan provisions for teacher qualifications, equipment, facilities, and time schedule.

Trade and Industrial Education Defined

The purpose of trade and industrial education is to develop occupational skills and job attitudes, teach safe work practices, and provide related and technical information to those preparing to enter employment in an occupation or to extend and update the skills of those already employed in order that they achieve stability or advancement in employment.

Such an occupation shall include (a) any industrial craft, skilled trade, or semi-skilled occupation which directly functions in the designing, producing, processing, fabricating, testing, modifying, assembling, maintaining, servicing or repairing of any manufactured product or commodity, or (b) any other occupations, including a service occupation which is not covered in (a) above, but which is usually considered to be trade or industrial in nature.

Persons to be Served

Vocational trade and industrial education is designed for persons 16 years of age or older who are preparing to enter a trade or occupation and those over 16 years of age who have already entered upon employment.

All secondary and post-secondary students receiving vocational instruction in trade and industrial preparatory classes under the State Plan shall have an occupational objective which is a matter of record.

1. Secondary programs

   Persons attending high school.

2. Post-secondary programs

Persons who have completed or left high school and are available for full-time study in preparation for entering employment.

3. Adult program

Trade and industrial programs for adults shall be made available to such groups as: post-secondary students, journeyman, and other industrial workers; apprentices and other learners; industrial supervisors and supervisory personnel representing both management and labor.

Classes for adults shall consist of a sufficient number of hours to provide organized instruction in a specific subject matter area.

(a) Preparatory -- Persons who want to learn new skills or a new trade or to change occupations upon completion of the instruction.

(b) Supplementary -- Persons who have already entered employment and who desire or need training or retraining to update their occupational skills and knowledge in order to achieve stability or advancement in employment or self-employment.

4. Programs for youth with special needs

Special programs in trade and industrial education may be organized for persons who have academic, socio-economic, or other handicaps that prevent them from succeeding in the regular vocational education programs.

The purpose of this program is to provide for selected students with special needs a means whereby they may learn some occupational skills in accordance with their capabilities, and thereby become employable upon leaving school.

Programs for youth with special needs may be operated in several ways. They could operate all day for a special group with half of the day or less given to manipulative skills and the remaining part of the day given to related subjects, remedial reading, mathematics, communications, etc. Regardless of the plan, if the class has specific vocational objectives and is oriented towards employment, it could be eligible for reimbursement from vocational education funds.

Selection of Students with Special Needs

Many students make poor adjustments while in school and then drop out or leave high school without acquiring any salable skill. Primarily,

the cause for this falls into three basic categories: social, economic and academic. Usually a complex of these conditions causes the unadjusted and disoriented student to become a dropout or identified as a potential dropout.

Individuals will be selected for instruction in classes for persons with special needs if such individuals have academic, socio-economic or other handicaps that have prevented or would prevent them from succeeding in a regular vocational education program, and therefore require instruction which is especially designed to enable such individuals to develop competencies adequate for employment in a recognized occupation.

Organization and Content of Instruction

Trade and industrial education shall be organized so as to provide instruction in any subject which is necessary to develop the manipulative skills, technical knowledge, and related information, including job attitudes, safety practices and trade judgment necessary for employment in a trade and industrial occupation.

The program of instruction will be based on a consideration of the skills and knowledge required in the occupation for which the instruction is being provided and will include a planned logical sequence of those essentials of education and/or experience deemed necessary for the individual to meet his occupational objective.

Soundness and Quality of Instruction

The program of instruction will be developed and conducted in consultation with interested employers and other individuals or groups of individuals having skills in and substantive knowledge of the trade or occupation in which instruction is being given.

The program of instruction will include the most up-to-date knowledge and skills necessary for competencies required in the trade or occupational pursuit in which the individual is being prepared, upgraded, or updated. The instructional content will be constantly revised in order to keep it functional. The technical and specific related information given should be correlated and kept closely related to the work being done in the shop laboratory or on the job. The course of study should include all of the processes of the trade or occupation.

The program of instruction will also be sufficiently extensive in duration and intensive within a scheduled unit of time to enable the students to develop competencies necessary to fit them for employment in the occupation or to upgrade or update their occupational skills and knowledge in order that they achieve stability or advancement in employment.

Schools Eligible for Reimbursement

Any recognized public secondary school or junior or community college may be approved to organize a vocational trade and industrial education

program and be eligible for reimbursement provided the school meets the requirements of the State Plan.

Reimbursement will be made to approved programs of vocational education conducted in schools under public supervision and control and culminating in less than a baccalaureate degree. Payments will be made to:

> Those public secondary schools and junior colleges that are recognized by the Office of the Superintendent of Public Instruction.

Claim forms for requesting reimbursement will be sent to the schools near the end of the school year.

Instructional Equipment and Durable Teaching Aids

The State Board for Vocational Education may use surplus monies to reimburse up to 50% on purchases of any new instructional equipment and durable teaching aids necessary for a program and costing less than $100 per unit.

Reimbursable Instruction

To be eligible for reimbursement, all classes must be approved and supervised by the State Board for Vocational Education. Approval must be given not only for the subject area being taught, but for the students, the instructors, the instructional content, and the facilities.

Reimbursement on salaries of approved secondary and post-secondary teachers is based on that fractional part of the school day that the teacher devotes to approved vocational trade or industrial classes including periods assigned to:

(1) preparation of vocational instruction.
(2) conference periods with vocational students.
(3) supervision of vocational students.

Salaries of approved teachers of supplemental and/or preparatory courses for adults are reimbursed on the percent of time devoted to instruction. The rate of reimbursement for instruction and approved travel for approved adult classes will be determined by the State Board for Vocational Education.

Application for reimbursement shall be made at the end of the school year. Notarized application for reimbursement shall be made by the public educational institution conducting vocational education programs. These forms will be mailed to the school from the state office near the close of school. The application for reimbursement will include (a) salary of teachers, (b) length of courses, (c) class schedules, (d) travel costs, (e) names of personnel, and (f) other information needed for determining the reimbursement due the school from vocational education funds.

Claims for reimbursement from local boards are reviewed by the state supervisor in whose territory the school is located. The supervisor checks such claims with information which he secured when visiting the local program and with all other records and organization reports in the State Office. Following approval by the supervisor, the claim is recommended to the Chief for reimbursement and subsequently submitted for processing and determining the reimbursement due the school.

Approved Travel

Travel expenses of approved trade and industrial teachers, coordinators and supervisors will be reimbursed on the total amount of actual expenditures paid by a local school necessary to effectively carry out the program of vocational education. Mileage shall be reported as that actually paid by a school and reimbursement shall not exceed eight cents (8¢) per mile or the actual cost of transportation by train or bus. Lodging (not to exceed $8.00 per night) and transportation will be reimbursed for meetings called by the State Office and approved by the State Director and for the annual meeting of the Illinois Vocational Association.

Travel and lodging claim is to be reported on Form T&I-38 at the end of the school year. These forms will be sent to the school about three weeks before the close of school.

Vocational Advisory Councils

Vocational trade and industrial education programs must be organized and conducted with the advice and counsel of representative groups. When interested and qualified laymen participate in the planning of programs in accordance with current employment trends, desirable benefits accrue to the students and future employers.

A vocational advisory council representing joint labor-management interests in the community can usually enlist maximum support and cooperation of industry. The efficiency of labor, management, and education as an educational team, is in a large measure responsible for successful programs of trade and industrial education.

An advisory council provides a two-way system of communication between the school and the community. A vocational advisory council has no administrative or legislative authority. The name itself signifies its function, which is to give advice only.

There are three types of advisory councils:

(1) General Advisory Council
(2) Craft Advisory Council
(3) Joint Apprenticeship Committee.

A general advisory council, confining its activity to trade and industrial education, may serve all the schools in the system or a specific school with the school system. The primary purpose of this council is to advise school administrators regarding the scope of training

needed in various trade and industrial occupations and assist in establishing general policies and coordinating the trade and industrial program in the school system.

The purpose of a craft advisory council is to advise local school personnel regarding trade and industrial instructional programs for a specific trade or occupation. Some specific functions are:

1. Identify training needs and assist in the coordination of the training program.
2. Itemize specific skills and related and technical information to be taught.
3. Recommend competent tradesmen as prospective teachers for the adult classes.
4. Provide assistance to teachers.
5. Assist in planning a course of study.
6. Recommend time and length of instruction.
7. Assist in the placement of qualified graduates.
8. Build respect and prestige for the school through a good public relations program.
9. Evaluate the program of instruction.

The role of the local joint apprenticeship committee is to develop and conduct an effective apprentice program. Joint apprenticeship committees are usually organized by the Bureau of Apprenticeship and Training, U.S. Department of Labor.

When acting in the capacity of a joint apprenticeship committee, the committee performs the following administrative functions:

1. Develops suitable training standards for the craft.
2. Reviews applications and selects apprentices.
3. Prepares apprentice training agreements.
4. Registers apprentices with the U.S. Bureau of Apprenticeship and Training.
5. Supervises on-the-job training of apprentices.

When serving as an advisory council to the school, the joint apprenticeship committee performs the following advisory functions in connection with related instruction for apprentices:

1. Assists school administrators in determining related instruction to be taught.
2. Advises school administrators regarding instructional materials to be used.
3. Recommends skilled craftsmen as prospective teachers.

School administrators will find the following publications of value in the organization and functioning of vocational advisory councils:

1. Organization and Effective Use of Advisory Committees, U.S. Office of Education, No. 84009, Washington, D.C.
2. Vocational Advisory Committees, American Vocational Association, Washington, D.C.

Student Selection, Counseling, Placement and Follow-up

It is imperative that students entering a vocational trade and industrial education program have the necessary general education to profit from the instruction which is to prepare them to enter employment in the trade or occupation for which the training is given. Vocational education is most effective when it is preceded, accompanied and followed by vocational guidance. When youths are provided with continuous, adequate guidance services, they are assisted to make known their occupational interests, abilities and aptitudes, and to prepare occupational plans.

An efficient system of student selection is a combination of effective recruitment practices, appropriate selection techniques, and realistic vocational counseling at the time of admittance. Students should be selected for a specific program, with the selection process based upon the abilities, interest, and aptitudes required for the program and upon the intention of the student to gain employment in the selected trade or occupation, all of which is a matter of record.

Student placement is the organized effort of the school to provide job placement for its graduates or for those who leave school. It involves the referring of youth to employment opportunities in accordance with their interest, aptitude, ability and skill. It may also assist the student to adjust to his new environment whether it is on the job or in school.

Schools conducting a placement service will become involved in such activities as:

1. Publicizing the number of students available for employment and the occupations for which they are qualified to enter.
2. Establishing cooperative working relationship with the Illinois Employment Service.
3. Contacting prospective employers and discussing requirements of job opportunities.
4. Selecting and notifying students of employment opportunities.
5. Offering assistance to the student, if needed, in adjusting to his new employment situation.

One of the most common measures used to appraise and evaluate the effectiveness of trade and industrial education programs is the "follow-up" survey. The purpose of this survey is to determine the number of graduates who get jobs in the trade or occupation for which trained or in a related occupation upon completion of their training program, or upon termination of their program. Schools may devise their own follow-up form and technique for obtaining the information they desire to have. The follow-up forms that are required from every program of trade and industrial education are sent to the schools in October. This report covers the students who completed a program during the preceding fiscal year beginning July 1 and ending June 30.

Youth Organizations

Vocational youth organizations shall be established, developed and promoted as an integral part of the total instructional program.

When the activities of local vocational educational youth organizations complement the vocational instruction offered, such activities shall be supervised by persons who are qualified as vocational education teachers. The allocation of time for the program of youth activities shall be the responsibility of the local school administration.

For youth with special needs and others enrolled in experimental or pilot vocational trade and industrial education programs, youth organizations are to complement the goals of these instructional programs.

Cooperation between the several youth organizations in vocational education and other organizations of youth and adults with similar objectives shall be encouraged on the state, district, and local levels where the activities, such as joint meetings and projects would improve the total vocational education program.

The local trade and industrial youth group program shall be evaluated continuously by local school personnel and shall also be reviewed and appraised periodically by the state supervisor as a part of his evaluation of the total instructional program in a school system.

SECTION II

PREPARATORY PROGRAMS FOR SECONDARY AND POST-SECONDARY STUDENTS

Pre-employment Trade Preparatory Classes

Trade preparatory classes are pre-employment vocational classes for secondary or post-secondary (13th and 14th grade) students who are regularly enrolled in a full-time day school and have not entered upon employment.

Instruction is directed toward practical work experience supplemented by related and technical information. At least one half of the time of the instruction in the skilled trades must be devoted to practical work on a useful or productive basis which will prepare the students for advantageous entrance into a specific trade or occupation. Instruction in practical work is considered to be "on a useful or productive basis" when it consists of organized, systematic training in the processes, operation, and principles involved, which are selected with regard to suitability, quality, quantity, and production methods customarily observed in the trade or industrial occupations for which the training is being given. Related and technical instruction may be given incidental to shop or laboratory work, as the need arises, or may be given concurrently with the practical work experiences in separate classes. The related and technical instruction should have a direct functioning value in the trade or occupation for which training is being given.

Related subject courses may be given in addition to or an extension of the instruction given in the shop or laboratory.

Related subjects may be taught by other than the shop instructors. When such instructors are to be utilized, they must have sufficient experience in and knowledge of the trade or occupation being taught.

Courses are based solely upon instruction for a specific trade or occupation; for example, auto mechanic, machinist, draftsman and electrician.

Types of In-school Programs

1. Preparatory Classes in the Apprenticeable Trades or Multi-Skilled Occupations

   These classes are for secondary or post-secondary full-time students who have selected a specific trade or occupation and who desire training for gainful employment in that trade or occupation. The training given is comprehensive in nature, including instruction in manipulative processes, technical information, and related subjects which are needed by the competent worker.

The classes are conducted at a school shop or laboratory which is especially designed and equipped for the trade being taught. Trades and occupations most commonly offered are auto mechanics, cabinetmaking, drafting, electricity-electronics, machine shop practices, printing, commercial cooking, cosmetology, etc.

A. Two-Year Program

(1) Students should be juniors and seniors and must be 16 years of age.
(2) 550 minutes per week of shop or laboratory instruction, thirty-six (36) weeks per year, which shall include related instruction.
(3) Seniors may enter a two-year program for one year only with special permission, providing they have had acceptable previous work experience in the trade, OR
(4) previous class instruction in the trade area, OR
(5) enrolled in a concurrent shop or laboratory class for a minimum of 275 minutes per week, thirty-six (36) weeks per year in the trade area or in one related to the occupational field.

The above applies to all pre-employment preparatory programs except Building Trades. Building Trades programs operating with one class must meet for three (3) consecutive hours per day, five (5) days per week, thirty-six (36) weeks per year. In Building Trades programs that offer two classes per day, it will be permissible for each class to meet for a minimum of two (2) consecutive hours per day, five (5) days per week, thirty-six (36) weeks per year.

B. One-Year Program

(1) Students must be seniors and 16 years of age.
(2) 825 minutes per week of shop and laboratory instruction, thirty-six (36) weeks per year, and shall include related instruction.

2. Preparatory Classes in the Semi-Skilled and Service Occupations (Non-apprenticeable)

These classes are for full-time secondary or special students who desire training in an industrial pursuit in order to enter gainful employment upon high school graduation or completion of the training program. Kinds of classes that may be conducted under this type program are electronics, combination welding, industrial sketching, appliance repair, dry cleaning and pressing, radio and T.V. repair, etc.

A. Two-Year Program

(1) Students should be juniors and seniors and must be 16 years of age.
(2) 275 minutes per week of shop or laboratory instruction, thirty-six (36) weeks per year, and shall include related instruction.
(3) Seniors may enter a two-year program for one year only with special permission.
(See A (3) to (5), page 11.)

B. One-Year Program

(1) Seniors only and must be 16 years of age.
(2) 550 minutes per week of shop or laboratory instruction, thirty-six (36) weeks per year, and shall include related instruction, OR
(3) 550 minutes of instruction per week, thirty-six (36) weeks per year of which 275 minutes is in a concurrent shop or laboratory class related to the occupation.

3. Preparatory Classes in the Single-Skilled Occupations

These classes are for full-time secondary or special students who desire training in preparation for entry into the single-skilled occupations or a cluster of semi-skilled occupations. Arc welding, machine operator, offset and silk screen are examples of classes that may be conducted under this program.

Students must be 16 years of age upon completion of the training and available for employment.

A. Two-Year Program

275 minutes per week of shop or laboratory instruction, thirty-six (36) weeks per year, and include related instruction.

B. One-Year Program

(1) 550 minutes per week of shop or laboratory instruction, thirty-six (36) weeks per year, and include related instruction, OR
(2) 275 minutes per week of shop or laboratory instruction thirty-six (36) weeks per year, if students have had acceptable previous work experience in the occupational field or class instruction related to the occupational field, OR
(3) 550 minutes of instruction per week, thrity-six (36) weeks per year of which 275 minutes is in a concurrent shop or laboratory class related to the occupation.

All pre-employment preparatory class organization shall be reported on VE 2 - T&I forms to the Trade and Industrial Education Service, Vocational and Technical Education Division, 405 Centennial Building, Springfield.

4. Industrial Cooperative Education Programs

Industrial Cooperative Education is a part-time supervised work experience program designed for juniors and seniors (secondary or special students) which is conducted over a period of one or two years on a cooperative basis between the schools, the student and the employers. There are two distinct types of industrial cooperative education programs.

a. Diversified Occupations
b. Supervised Job Training

The objectives of these programs are to provide vocational training for high school students through the cooperation of the school and the industrial and business establishments in the community. A training plan is developed for each student showing (a) the industrial occupational objectives to be attained, (b) providing for compliance with state and federal labor regulations, (c) systematic training on the job and (d) supplementary instruction in school.

Students participating in the industrial cooperative programs shall be known as student-learners and must be placed in occupations that are considered trade and industrial in nature.

Students enrolled in these programs shall be of legal age for employment and be employed under a written training plan worked out between the local school and the employing establishment which shall include the interrelationships and responsibilities of the student-learner, the teacher-coordinator and the training establishment. Student-learners shall be employed for at least fifteen (15) hours per week in a socially accepted and economically profitable trade and industrial occupation which offers real opportunities for training. Provision shall be made for real on-the-job training during these working hours, and such training must be supervised by a teacher-coordinator employed by the school. The major portion of on-the-job training must be during the normal school day.

The student-learner shall be paid a beginning wage comparable to that paid other learners in similar occupations, and all phases of employment shall be in conformity with applicable Federal and State regulations. The total time spent in school and on the approved job by the student-learner shall not exceed forty (40) hours per school week. The responsibility for the welfare of the student-learner rests with the local school authorities.

Vocational instruction for the industrial cooperative education program (Diversified Occupations and Supervised Job Training) consists of two distinct types: (a) related and (b) on-the-job. This instruction shall be provided through a cooperative arrangement between the local school and the employers. The local school shall provide the technical and general related information in the classroom under the supervision of the teacher-coordinator. The employers shall provide on-the-job training. Such arrangements shall provide for a course of instruction for each student-learner on the job in the form of a step-by-step training plan, which is in turn derived from a realistic analysis of the tasks, duties and responsibilities of the student-learner in his part-time occupation. The step-by-step training plan shall indicate what is to be learned and whether it is to be taught in the classroom or on the job.

The classroom instruction is based on a consideration of the skills and knowledge required in the occupation for which instruction is being provided. It is also planned in a logical sequence and closely coordinated with on-the-job experience deemed necessary for the student to meet his occupational objectives. It is the responsibility of the local school authorities to provide adequate instructional materials and appropriate classroom facilities.

The supervised on-the-job experiences shall be sufficiently comprehensive to enable the student to develop competencies necessary to fit him for employment in his chosen industrial occupation. Furthermore, student-learners shall be supervised and coordinated by a qualified teacher-coordinator. Periodic evaluations of the progress of the program are to be made by a State Supervisor

A. Two-Year Program

(1) Students shall be of legal age for employment.
(2) 200 minutes per week, thirty-six (36) weeks per year, of group instruction taught by the teacher-coordinator.
(3) Employment shall comply with State and Federal employment regulations and shall consist of a minimum of fifteen (15) hours per week of on-the-job training.
(4) Vocational instruction shall consist of two types: (a) related and (b) on-the-job.
(5) The course of instruction shall provide a step-by-step training plan indicating what is to be taught on the job and in the related study class.
(6) The program is conducted and coordinated by a qualified teacher-coordinator.

B. One-Year Program

(1) Same as "A" above, except 400 minutes per week, thirty-six (36) weeks per year of group instruction by teacher-coordinator, OR
(2) 200 minutes per week, thirty-six (36) weeks per year, of group instruction by teacher-coordinator AND
(3) Previous work experience in occupational field, or previous class instruction related to the occupational field, or 200 minutes in a concurrent class, vocational or non-vocational (industrial arts), related to the occupational field.

Organization of the Industrial Cooperative Education program is to be reported on T&I-25 forms each semester and forwarded to the Trade and Industrial Education Service.

For complete information and detailed description of the industrial cooperative education program, see Bulletin No. 198, Part-Time Cooperative Industrial Education Program, which can be procured from the Trade and Industrial Education Service, 405 Centennial Building, Springfield.

5. Preparatory Programs for Post-Secondary Students (13th and 14th years)

Preparatory classes at the post-secondary level must be organized as a total program of instruction with an occupational major designed to prepare students for entry into gainful employment in a recognized trade or occupational field.

Areas of instruction may be offered in such fields as: auto and diesel mechanics, drafting and design, electricity and electronics, machine shop practice, graphic arts, air conditioning and refrigeration, cosmetology, police science, etc.

Student must be 16 years of age and have left or graduated from high school and be available for full-time study.

To be eligible for reimbursement classes in shop, laboratory or technical-related courses must be homogenous and taught by an approved vocational teacher. These classes may be comprised of both full-time and part-time students.

The occupational major must include all subjects, shop, laboratory and technical-related, organized on a systematic basis necessary to satisfy course requirements for graduation earning a Vocational Certificate or an Associate Degree. Students may enroll in the occupational curricula as full-time or part-time students.

The length of the program and minimum shop or laboratory instruction time shall be the same as for the secondary preparatory program.

Class instruction (lecture) in technical-related courses of the vocational specialty or occupational objective must carry a minimum of one unit of credit.

Organization of a preparatory post-secondary program is reported on T&I-20 forms to the Trade and Industrial Education Service each semester or quarter.

SECTION III

PROGRAMS FOR ADULTS - PREPARATORY AND SUPPLEMENTARY

Types of Out-of-School Programs

1. Trade Preparatory Classes

Trade preparatory classes are designed for persons 16 years of age or over who have left the full-time school and who lack marketable skills. They should have a definite interest in pursuing training in a trade or industrial occupation, irrespective of whether or not they are currently employed.

Training may be offered for any length of time deemed necessary. Such classes may be operated during the day or evening for less than nine (9) months per year and for less than thirty (30) hours per week. The content and intensity of the instruction must be adequate to prepare those enrolled to enter employment at a productive level in the trade or industrial occupation in which training has been received.

Enrollees in these preparatory classes should have the physical requirements and aptitude for the trade or industrial occupation selected. The background of basic education of those enrolled should be adequate to profit from the instruction received and secure their employment after completing the training.

The organization of these classes are to be reported on T&I - 26-0 forms and submitted to the Trade and Industrial Education Service, Vocational and Technical Education Division, prior to the first class session for review and approval.

All trade and industrial classes for adults, preparatory and supplemental, must be under the control and supervision of a public school system. The teachers must be vocationally certified and be paid by public school authorities, if reimbursement is to be received from vocational education funds.

2. Extension or Supplementary Classes

These classes are designed for employed workers 16 years of age or older who wish to increase their skills and update their knowledge in the trade or occupation in which they are or have been employed. These courses include related instruction for apprentices and/or journeymen and other industrial workers.

Extension or supplementary classes shall be conducted for workers, male or female, normally outside their working hours, day or night, and provide instruction which is supplemental to their employment experiences. Classes may be held in any location in which adequate instructional facilities are available.

Organization of these classes are to be reported on T&I-26 forms for approval, following the first class session.

3. Apprentice Related Instruction Classes

Classes may be organized to provide related instruction to apprentices which is supplemental to their on-the-job training. Courses for apprentices shall meet the same conditions as required for any other trade extension or supplemental class. The term "apprentice" means a worker who is learning a recognized apprenticeable trade in accordance with a written training agreement between the apprentice and an individual employer or a group of employers. This training agreement provides for or makes reference to a document indicating (a) a given length of planned work experience through employment on the job, supplemented by appropriate related instruction, and (b) other recognized standards and requirements of apprenticeship. The joint apprenticeship committee should assist in developing the course of study for all apprenticeship classes.

To be reimbursed from Smith-Hughes part-time funds, related instruction must be conducted for a minimum of 144 clock hours per year. Apprentices, both registered and non-registered may enroll in regular extension or supplemental classes to meet a specific training need. These classes may be conducted for less than 144 clock hours per year.

Registered apprentices are frequently enrolled in a part-time related instruction program with classes being conducted during the regular working hours of the day. Classes are usually eight (8) hours in length, one day per week throughout the school year. Most apprenticeship programs are four (4) years or more in length.

Organization of part-time apprentice classes are reported on T&I-26-2 forms and forwarded to the Trade and Industrial Education Service.

4. Specialized Training for Industry

Specialized skill training for a particular industry may be organized and conducted when there is need for a specific skill providing such training is under local school supervision and control. The selection and admission of trainees shall be worked out cooperatively with the industry, local school authorities, advisory council and employment service. Trainees may or may not be paid by the industry for which the training is being conducted. Compliance with State and Federal employment requirements will be met while trainees are in training.

This type of intensive training is usually conducted from six (6) to eight (8) hours per day, five (5) days per week. The training can be as flexible as required relative to the length of the course, salary of the teacher, location of the training facilities and equipment.

5. General Continuation Classes

General continuation schools or classes are designed for youth above the age of 16 years and below the age of 18 years who are not in regular attendance at all-day school and are regularly and lawfully employed in an occupation.

Such continuation schools or classes are under the control and supervision of a public school system and shall afford instruction in any combination of the following subjects: (a) subjects usually taught in the public school, so as to permit the students in the continuation classes to continue their education from the point where they left in order to work; (b) civic and vocational subjects; and (c) subjects which supplement the daily occupations of the student.

Attendance shall be for not less than eight (8) clock hours per week for at least thirty-six (36) weeks per year. Such classes shall be held between the hours of 8:00 a.m. and 5:00 p.m. on regular business days except Saturday afternoon. The time spent in class shall be considered as a part of the time or number of hours he is permitted by law to work. Employment of students must be in the area of trade and industrial occupations if reimbursement is to be requested from vocational funds allotted to Trade and Industrial Education.

General continuation classes are reported on T&I-27 forms and submitted to the Trade and Industrial Education Service.

6. Supervisory Development for Industrial Personnel

The Illinois Board for Vocational Education through its Trade and Industrial Service makes possible a statewide supervisory development program to meet the growing need for more adequately trained supervisory leadership. The acute shortage of skilled manpower, coupled with the development of technological advances, has created a situation requiring leaders with highly developed skills in carrying out their supervisory functions.

This type training is designed to assist foremen and potential foremen or supervisors in the various aspects of their duties and responsibilities for production work by increasing their teaching, supervisory and managerial abilities. Normally, this training course consists of a sequence of three units of instruction -- Job Instructor Training, Human Relations and Conference Leading.

The statewide supervisory development program has a threefold objective:

(a) To promote supervisory training for trade or industrial personnel through the public schools.
(b) To prepare instructors from trade or industrial personnel to continue supervisory training within their plants.
(c) To provide the public schools with the qualified teachers from industry to conduct supervisory training classes in their adult evening programs.

In order to attain the primary objectives of the statewide supervisory development program, members of the state Trade and Industrial Education staff are available to conduct the initial training classes from which the prospective instructors can be selected.

Certificates are issued to all enrollees who attend regularly and satisfactorily complete the course. These courses must meet the same requirements as other extension or supplemental classes. For more information about this program, contact the Trade and Industrial Service and request the pamphlet entitled "Supervisory Personnel Development."

SECTION IV

QUALIFICATIONS OF TRADE AND INDUSTRIAL PERSONNEL

Qualifications of Teachers and Coordinators

Teachers of secondary preparatory classes must be approved by the Chief of Trade and Industrial Education Service and the right to approve carries with it the right to revoke such approval for cause.

The teacher must be competent and skilled in the trade for which he is giving instruction, and he must be trained for teaching. The following minimum requirements must be met before teachers' salaries are eligible for reimbursement from vocational education funds.

Salaries of teachers and coordinators will be reimbursed on that fractional part of the school day that they teach and/or coordinate approved industrial cooperative programs including periods assigned to:

1. Preparation of vocational instruction.
2. Conference periods with vocational students.

A. Teacher of Trade Preparatory Classes for Secondary and Post-Secondary Students

(1) Experience in trade or occupation to be taught

(a) Four (4) years of training or experience in the trade or industrial occupation to be taught, two (2) years of which must have been full-time employment, OR

(b) Twenty-four (24) calendar months of planned and supervised trade or industrial experience as part of a five-year cooperative curriculum in industrial education for preparing vocational industrial teachers. Cooperative students may waive up to twelve (12) months of supervised trade or industrial internship on the basis of one month of supervised experience for two (2) months of acceptable full-time employment in the trade or industrial occupation to be taught.

Each full year of study in a technical or engineering school above high school level (up to a maximum of two years of such schooling) may be substituted for six (6) months of supervised job training experience.

(2) Training for teaching

(a) Under option (1) (a), teachers will be required to complete within three (3) years after commencing to teach, a minimum of

eight (8) semester hours in approved trade and vocational-industrial professional education subjects. Two (2) semester hours must be in each of the following areas: trade analysis and course organization; preparation of trade and industrial instructional materials; and special methods of teaching trade and industrial subjects.

(b) Under option (1) (b), teachers must have graduated from a five-year cooperative curriculum in industrial education for preparing vocational-industrial teachers. This curriculum shall include twenty-four (24) semester hours of specified shop and drawing courses, and fifteen (15) semester hours of professional vocational-industrial education courses with work in each of the following subject areas: trade analysis and course organization; preparation of trade and industrial instructional materials; methods of teaching trade and industrial subjects; and principles and practices of vocational education.

B. Teacher of Related Subjects (Preparatory Classes)

(1) Same as a teacher of preparatory classes (see A, page 21)
OR

(2) When other than approved shop teachers are utilized, the teacher of the subject or subjects to be taught must have one year of employment experience in the trade or occupation for which the related instruction is given. Furthermore, he must complete, within three (3) years after beginning to teach, eight (8) semester hours in approved trade and vocational-industrial professional education subjects. Two (2) semester hours must be in each of the following subject areas: trade analysis and course organization; preparation of trade and industrial instructional materials; and special methods of teaching trade and industrial subjects.

C. Teacher-Coordinator of Industrial Cooperative Programs (Diversified Occupations and Supervised Job Training)

(1) Training for teaching

(a) Graduation from an accredited college or university, including a major in industrial education or vocational courses.

(b) Completion of eight (8) semester hours in approved trade and vocational-industrial professional subjects within three (3) years after commencing employment, including a course in the preparation of instructional materials and other areas such as: trade analysis and course organization; principles and practices of vocational education; supervision of instruction in industrial education; and organization and administration of the industrial cooperative program.

(c) All beginning industrial teacher-coordinators are required to attend a thirty (30) clock hour workshop conducted by the Trade and Industrial staff at Springfield dealing with the problems of the coordinator in organizing, preparing instructional materials and coordinating the Industrial Cooperative Education program before starting work in their new position.

(2) Experience in trade or industrial pursuits

Two (2) years experience as a wage earner in one or more service trades or industrial occupations or skilled trades. One year of the employment shall have been in a single occupation or trade. Credit may be given for one year of wage earning experience for a Master's degree or three (3) or more years of successful teaching in the school system in which the coordinator is to be employed.

(3) Teaching

One year teaching experience in the public secondary schools in industrial education or an approved vocational education program.

D. Coordinator of Day Trade Preparatory Classes

(1) Experience in a trade or industrial occupation

Same as a teacher of day trade preparatory classes (See A (1), page 21)

(2) Teaching experience

Two (2) years teaching experience in day trade preparatory classes meeting the standards of the State Plan.

(3) Training for coordinating

Must complete within three (3) years professional vocational-industrial education courses in the area of:

(a) Principles and practices in industrial education, and
(b) Supervision of instruction in trade and industrial education.

E. Teacher of Evening and Part-Time Supplemental and Preparatory Classes for Adults

(1) Experience in a trade or industrial occupation

(a) Minimum of one year employment experience beyond completion of a recognized apprenticeship program in the trade or industrial occupation to be taught, OR
(b) Five (5) years of employment experience in the trade or industrial occupation to be taught, OR
(c) Three (3) years of employment experience in the trade or industrial occupation to be taught and four (4) years of collegiate training for teaching trade and industrial subjects, OR
(d) Two (2) years of employment experience in the trade or industrial occupation to be taught and an engineering degree with training in the subject to be taught, OR
(e) Two (2) years of employment experience in the trade or industrial occupation to be taught and two (2) years of full-time study in a vocational-technical institute above the high school level in the subject to be taught, OR
(f) In special situations a person not meeting the above employment experience requirements, may be granted temporary permission to teach, not to exceed one year, upon the recommendation of the local administrator, with the advice of the local consultant committee, or employer groups, and approved by the Chief of Trade and Industrial Education

(2) Training for teaching

(a) Within two (2) years after beginning to teach, must satisfactorily complete one-half semester hour of college credit or eight (8) clock hours of instruction in methods and techniques of teaching trade and industrial subjects.

(b) Teachers who teach more than eight (8) clock hours per week must be re-approved as a vocational preparatory teacher and must complete the same professional vocational-industrial education courses as the day teacher of preparatory classes. (See A (2), pages 21 and 22)

F. Coordinator of Evening and Part-Time Classes

(1) Experience in a trade or industrial occupation

Same as a teacher of evening and part-time supplemental classes. (See E (1), page 24)

(2) Teaching experience

Two (2) years as a teacher of supplemental or preparatory trade classes.

(3) Training for coordination

Must complete within three (3) years professional vocational-industrial education courses in the areas of:

(a) Principles and practices in industrial education, and
(b) Supervision of instruction in trade and industrial education.

G. Teacher of Part-Time General Continuation Classes

(1) Three (3) years of successful teaching experience

(2) Possess a valid teaching certificate in the subject to be taught.

H. Teacher of Apprentice Classes

(1) Experience in trade and industrial occupations

Same as a teacher of evening and part-time supplemental classes. (See E (1), page 24)

(2) Training for teaching

(a) Teachers who teach more than fifty percent of each school day must complete the same professional vocational-industrial courses as the day teacher of preparatory classes. (See A (2), pages 21 and 22)
(b) Teachers who teach less than fifty percent of each school day must complete a two-semester hour course in philosophy and/or fundamentals of vocational education within a two-year period.

I. Industrial Coordinator

(1) Experience in a trade or industrial occupation

Same as a teacher of trade preparatory classes. (See A (1), page 21)

(2) Teaching experience

Two (2) years' experience as a teacher of supplementary or trade preparatory classes.

(3) Training for teaching

Same as a teacher of trade preparatory classes. (See A (2), pages 21 and 22)

J. Foreman and Supervisory Teacher

(1) Graduation with a major in Industrial Education from a recognized four-year college or university, thirty (30) semester hours in professional vocational and related education subjects, including those to be taught, and
three (3) years of experience as a teacher of approved trade and industrial classes which meet the standards of the State Plan, OR

(2) Graduate of a recognized college or university with a Bachelor's degree,
eight (8) semester hours credit in vocational-industrial education subjects beyond the minimum requirement for a day trade and industrial preparatory teacher, and
four (4) years of successful experience as a teacher and/or supervisor of approved trade and industrial classes, OR

(3) Three (3) years' experience as a leader who has conducted supervisory development programs, OR

(4) Two (2) years' experience in a foreman or supervisory capacity in industry and formal training in the course to be taught.

Local Supervisor of Trade and Industrial Education

1. Duties

   a. To plan, promote, execute, coordinate and supervise all local bona fide trade and industrial education programs approved by the local board of education to meet the needs of in-school youth, out-of school youth and adults where student and employment needs exist.
   b. To determine needs for facilities, equipment, and materials, also to organize care and maintenance of all the facilities, materials and equipment.
   c. To interview prospective teachers and assist in selecting adequate staff to conduct an effective trade and industrial education program.
   d. To plan, organize, and direct in-service teacher-training for the instructional staff.
   e. To assist in developing and revising courses of study and to evaluate local programs with respect to meeting State Plan requirements.
   f. To organize and work with vocational advisory councils, craft committees, and Joint Apprenticeship Committees to determine training needs, facilities, equipment, course content, and further development and improvement of trade and industrial education in the community.
   g. To plan and direct programs of student recruitment, guidance, placement and follow-up.
   h. To maintain cooperative relationships with other school personnel, labor, management, and other organizations and individuals in the community.
   i. To be responsible for preparing estimated budgets, records and reports for all trade and industrial education programs.

2. Qualifications

   a. Graduate of a recognized college or university with a Bachelor's degree.
   b. Three (3) years of successful teaching experience as a teacher of approved trade and industrial courses meeting the standards of the State Plan, or two (2) years of teaching approved trade and industrial courses plus one year of supervision or coordination of an approved vocational trade and industrial program.
   c. Twelve (12) semester hours in approved trade and vocational-industrial professional education subjects including a course in supervision of trade and industrial education in areas such as:
      (1) Trade analysis and course organization
      (2) Preparation of trade and industrial education materials
      (3) Special methods of teaching trade and industrial subjects
      (4) Teaching related trade subjects
      (5) Principles and practices of vocational education.

SECTION V

ORGANIZING AND REPORTING

Steps to Follow in Organizing a Trade and Industrial Education Program

1. Determine the need for in-school and/or out-of-school programs for both youth and adults.

2. Establish a vocational advisory council consisting of equal representation of employers, employees, and other interested persons with substantial knowledge in the occupational field and delineate its objectives and functions.

3. Determine types of programs and level of training to be offered, keeping in mind that the effectiveness of the program will be measured largely by the ability of those completing the program to find employment in industrial occupations for which they have received training. The program organizational pattern may include:

    a. Secondary -- preparatory and cooperative
    b. Post-secondary -- preparatory and cooperative
    c. Special needs -- secondary and below grade 9
    d. Adult --
        (1) Preparatory
        (2) Supplementary (including apprentices).

4. Determine objectives of the program.

5. Prepare course of study and other instructional materials.

6. Arrange for shop and laboratory facilities.

7. Arrange for and secure the necessary equipment, materials and supplies.

8. Translate training needs and plans into functional instructional programs.

9. Call on the vocational advisory council for advice in matters pertaining to course content, equipment, materials, methods of instruction, selection and placement.

10. Contact the State Board of Vocational Education and Rehabilitation, Vocational and Technical Education Division, 405 Centennial Building, Springfield, prior to the start of the program for approval of the program, the instructor and the facilities.

Time Schedule for Submitting Forms

APPROVAL FORMS	DUE DATE
1. VE - 1 Program Approval As a part of the contract for reimbursement Form VE - 1 must be completed and placed on file with the State Board of Vocational Education and Rehabilitation, 405 Centennial Building, Springfield. This one form covers the approval for the year for all types of vocational education in Agriculture, Business Education and Office Occupations, Health Occupations, Home Economics, Trades and Industry, etc.	1. Three weeks following the beginning of school.
2. T&I - 11 Secondary Preparatory Classes This form is an application requesting approval of a preparatory class which has not been previously approved and operates for less than three (3) consecutive clock hours per day, five (5) days per week, thirty-six (36) weeks per year.	2. Prior to the starting of a new program.
3. T&I - 14 Instructor Approval	3. Before instructor's first teaching assignment.

INFORMATION REPORT FORMS	
4. VE 2 - T&I Secondary Preparatory Program T&I - 24 Individual Teacher's Schedule To be attached to Form VE 2 - T&I and T&I - 20	4. Three weeks following the beginning of school
5. T&I - 25 Part-Time Cooperative Industrial Education Program T&I - 20 Post-Secondary Preparatory Program	5. Three weeks following the beginning of each semester or summer term.
6. VE - 24 Teacher-Coordinator Activities Report	6. Ten days following the end of the month.
7. T&I - 26 Supplementary (Extension) Classes	7. One week following the first class session.
8. T&I - 26-0 Adult Preparatory Program	8. Before the first class session.

INFORMATION REPORT FORMS	DUE DATE
9. T&I - 26-2 Apprentice Part-Time Courses T&I - 27 General Continuation Part-Time Class	9. Three weeks following the beginning of school.
10. Follow-up on Industrial Co-op Graduates	10. Fifteenth of December following graduation in June.
11. VE - 22 Follow-up on Graduates in Preparatory Programs	11. On or before the 10th of October following graduation.
12. T&I - 29 Plan of Supervision	12. Three weeks following the beginning of school.
REIMBURSEMENT FORMS	
13. VE 3 - T&I Summary of Claim Forms VE 30 Instructional Aids and Equipment T&I - 35 Preparatory Classes T&I - 35-3 Cooperative Part-Time Classes T&I - 36 Supplementary (Extension) Classes T&I - 36-3 Apprentice Part-Time Classes T&I - 37 General Continuation Part-Time Classes T&I - 38 Travel and Lodging Expenses T&I - 39 Supervision	13. To be announced by the Director of Vocational and Technical Education near the end of the school year.

VT 007 537
A Regional Occupational Center System for Fresno County.

Management and Economics Research, Inc., Palo Alto, Calif.
California State Dept. of Education, Sacramento. Bureau of Vocational Education
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*VOCATIONAL EDUCATION; *FEASIBILITY STUDIES; *SCHOOL COMMUNITY PROGRAMS; *EDUCATIONAL COORDINATION; REGIONAL COOPERATION; SCHOOL DISTRICTS; *REGIONAL PROGRAMS; EDUCATIONAL PLANNING
*FRESNO COUNTY; CALIFORNIA

This document is a research report of an independent research corporation, cooperating with secondary school districts in Fresno County to determine the feasibility and suggest implementation of programs to attack the problems of vocational education in the area. The document consists of: (1) Introduction, (2) The Basic Recommendation, (3) The Current Situation, (4) The Regional Occupation Center System Proposal, and (5) 20 tables and illustrations. After 6 months of study and analysis which included visitations to each of the high schools and the junior college, the general assessment of all specific use facilities, interviews of community leaders, and analysis of other studies which had been completed in the area, the independent research firm made the basic recommendation that the various local school districts organize themselves into a regional occupation center system for the purpose of evolving, funding, and directing cooperative programs in occupational education. This would generate additional cooperative effort among the districts which could only further benefit the region. (MM)

VT 007 537

Management & Economics
RESEARCH INCORPORATED

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A REGIONAL OCCUPATIONAL CENTER SYSTEM FOR FRESNO COUNTY

Prepared for

The Fresno County Superintendent of Schools
and
Cooperating Secondary School Districts in Fresno County

Funded in part by the State Department of Education
Bureau of Vocational Education
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MERI Project No. 1124

November 1968

VT 007 537

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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PREFACE

Numerous feasibility and implementation studies attacking the problems of vocational education have been made in California. Despite the effort expended on such studies, very little has been done to implement the recommendations in most cases. It is MERI's belief, however, that the climate for change, the conditions for implementation, and the leadership potential in Fresno County suggests that educational advances will be made as a result of this initial cooperative effort by the office of the County Superintendent of Schools and the various high school districts of the county. The fact that the County Superintendent of Schools office exercised the leadership to initiate such a study, the fact that the various districts within the county saw fit to participate financially and with staff assistance in the study, the fact that a major breakthrough was achieved in cooperative programming and funding by the Concentrated Employment Program and the State Center Junior College District through the good offices of the County Superintendent, the fact that great interest in cooperative regional planning has been shown among the various junior colleges in the San Joaquin Valley, and the fact that great interest in attacking vocational education problems on a regional basis has been evinced in the several seminars conducted by the EDICT Title III Center--in sum, these facts all point to a successful implementation of some sort of a cooperative occupational education program. Many districts in the county have already begun searching out ways of augmenting their existing programs, and evidence of this is to be found in the body of the report.

Despite these individual efforts, however, the success of any proposed cooperative program, including the one outlined herein, will depend on the leadership of some single office. Typically, the office of the County Superintendent of Schools is a service organization. California county schools offices have not been noted in the past for their leadership roles. It is MERI's judgment, however, that the Fresno County Superintendent of Schools office is prepared to assume the

responsibility for bringing such a cooperative plan to fruition. The Superintendent of Schools office will require the support of the districts, both large and small, within the county, if it is to be successful in helping those districts improve educational opportunity for youth in Fresno County.

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I INTRODUCTION

Fresno County offers a microcosm of most of the problems that face the nation on a larger scale. Within the county is an expanding urban complex, the city of Fresno. Surrounding the urban center are the suburbs, populated by emigrants from the central city and by new middle class residents coming to the area from other parts of the state and nation. Many of those left in the center of the city are the economically disadvantaged who cannot afford the flight to the suburbs.

The remainder of the county, rich in the growing value of its agricultural production, is losing out in other respects. Fresno County, with the highest dollar value of agricultural production of any county in the nation, faces a steadily declining proportion of agricultural employment, a lessening of the status of agriculture, and a resulting defensiveness of the agricultural community. Residents in the outlying areas are increasingly suspicious of the problems of the urban center, which they do not consider to be their problems, yet which continuously draw money, energy, and talent away from their problems. Conversely, the urban population resents the defensiveness of the outlanders.

In this context the schools attempt to provide a relevant education to young people and adults of the county. In many respects the schools have been doing an excellent job. In other respects, particularly in preparing students for the world of work, educators, employers, and students all freely acknowledge the inadequacies of the present system. Recognizing the problems inherent in the present fractionated approach to occupational education in Fresno County, several concerned educators, under the leadership of the Fresno County Superintendent of Schools, called upon MERI to study the situation and to make recommendations for ways in which the residents of the county could be better served through expanded and upgraded occupational education programs and services.

The charge to MERI was stated in the objectives of the study as follows:

1. To identify the specific needs within Fresno County which require new and innovative occupational training programs for those youths and adults who are being inadequately served by existing programs in the county. To analyze these needs to indicate the direction and scope of appropriate occupational programs and services for the Fresno County service area.

2. To determine the most advantageous organizational structure for such programs and services which will provide the necessary flexibility, integration, articulation, and coordination.

3. To devise and recommend an operational system relating to the following aspects of the occupational programs and services: staffing, housing, funding, program start-up and phase-out, and administrative activity.

4. To establish a coordinating system and communications network with provisions for articulation between participating personnel and agencies in education, industry, labor, counseling, and other interested public and private agencies.

5. To devise and recommend a functional system for review and evaluation of the programs and services in matters relating to type and scheduling of courses; selection, counseling, evaluation, placement, and follow-up of students; involvement of industrial firms and labor unions in supportive activities; mobility of instructional staff and teaching stations; educational mix of curricula; and other matters directly affecting the operations and administration of occupational education.

MERI, after six months of study and analysis, offers in this report the outline of a system which should:

> upgrade the quantity and quality of occupational education programs and services throughout the county,
>
> in a manner which gives the greatest value for the additional monies spent,
>
> through the cooperative efforts of the secondary schools and junior colleges, employers, and other community organizations,
>
> without sacrificing local autonomy in the individual school districts,
>
> and without creating "second class citizens" of those students participating in the programs by segregating them from mainstream educational efforts.

This system is outlined in Chapter II and described in detail in Chapter IV of this report.

Recommendations contained herein are based upon an analysis of the needs of the residents of Fresno County.

- MERI visited each high school and junior college in the county. At each school, discussions with teachers, counselors, and administrators were directed to discovering the particular needs of the students of that district or school.
- While visiting each high school, MERI made a general assessment of all special use facilities available for occupational education programs.
- Community leaders were interviewed to determine the existing manpower and training needs in Fresno County to which the system should be responsive.
- Other studies completed in the Fresno area were analyzed for their applicability and the study directors were interviewed when possible. Notable studies used extensively include:

  The EDICT Vocational-Occupational Survey
  The State Department of Employment Manpower Survey

The Fresno County Superintendent of Schools Dropout Study
The Educational Needs Assessment-Vocational Education
prepared by DESIGN (Fresno City Unified District
Title III Center).

- A literature search was conducted for information relating to the needs of students in the San Joaquin Valley and to the secondary level occupational education programs generally.

- Occupational education programs and centers in other parts of the state were visited and their operations were analyzed in terms of applicability to the Fresno situation.

During the time MERI was engaged in the Fresno County study, the team was also conducting a similar analysis for the Superintendents of Schools in Tulare and Kings counties. Many benefits accrued to all participants because of this simultaneous effort. For example:

- MERI was able to use materials developed in all areas, thereby reducing the total cost to all the parties.

- The junior college districts overlap all three counties; therefore, program recommendations planned on a broader base can be more meaningful to all the parties.

- The beginnings of a truly regional approach involving several counties came from the studies. This regional approach has long-range possibilities for significant cooperative effort to the benefit of all participants. The junior colleges have already taken initial steps toward cooperative effort in the San Joaquin Valley.

MERI's recommendations for a basic system are appropriate for a cooperative educational effort of the various counties in the San Joaquin Valley. The basic structures of occupational programs and services recommended for both Fresno County and the Tulare/Kings region are similar, although specific recommendations are keyed directly to the needs of the specific communities involved. In some cases basic statements of policy and position will be similar in the two reports.

Throughout the entire study MERI has had the enthusiastic support and cooperation of all concerned educators in Fresno County. Community leaders not only have given willingly of their time, but also have contributed important ideas which are incorporated in the recommendations.

During the course of the study MERI was privileged to participate in an important breakthrough in the utilization of the educational resources of Fresno County. The Concentrated Employment Program (CEP), with a large federal grant to train some of the hard core unemployed in Fresno County, was looking for a contractor to conduct training programs. Initially, CEP's search was directed to private agencies outside the Fresno area. After preliminary discussions with MERI and county office staff, CEP decided that local educational resources could better meet its needs. Consequently, CEP and the State Center Junior College District reached an agreement which appears to be operating to the mutual advantage of both. This type of cooperative effort is the essence of the philosophy underlying MERI's proposals.

This report is only a beginning. It deals with imperfect materials and sources and is therefore not perfect. It does not provide <u>all</u> the answers. Those seeking a rationale for action will find it in this report. Those seeking an excuse for inactivity can also find it here. Those looking for a means of getting off dead center will find here the outline of a plan that can serve as an effective stimulus to action. The yeast will come from those who believe that action is a necessary next step. It is the sincere desire of MERI that this report will be used as a catalyst by Fresno County educational leadership.

II THE BASIC RECOMMENDATION

School districts have been traditionally organized in such a way as to diminish rather than increase mutual cooperation. They compete within given areas for the tax dollar. They compete for staff and for jobs for their students. They jealously guard their local autonomy; therefore, except for athletic scheduling, they seldom come together for cooperative action.

The central thrust of MERI's recommendation is that, to counteract this fragmented effort, the various local school districts organize themselves into a Regional Occupational Center (ROC) System for the purpose of evolving, funding, and directing cooperative programs in occupational education. Such an action would generate additional cooperative efforts among the districts which could only further benefit the region.

For a great many concerned citizens and educators, the most obvious solution to occupational education problems is the building of a technical high school to which all students wishing occupational training might come. MERI rejects this solution for Fresno County on three grounds:

1. Historically such schools in America have become dumping grounds for "second class" student citizens.

2. The net effect of such schools has been to reduce rather than to increase occupational education in the districts served. (Relieved of the responsibility, the "comprehensive" schools have quickly become "academic," giving up their occupational program responsibilities.)

3. Far broader changes are required in the local schools than the mere inclusion of a few new vocational programs--and MERI believes that such changes are more likely to occur if the existing school staffs have the stimulus of a changing occupational program under the same roof with them.

MERI recommends that instead of separating education into two parts--the vocational and the academic--the districts recognize that there is a decreasing job market for 18-year-olds, no matter how specific their training. The high school educational responsibility is therefore decreasingly vocational. Few high school programs teach specific basic skills for an entry job in a chosen career. Instead, educational emphasis is increasingly broadened so that a student is allowed to sample a variety of occupational experiences and to learn a cluster of skills which will give him flexibility to move about in the career world as the technology changes.

With appropriate occupational exploration done in the high school, the student can get his entry skills training at the junior college. Thus the student will have had a richer occupational experience as the basis for his first serious career choice, and society will receive more mature and more broadly educated young workers. For the majority of students in the district, this pattern will become increasingly familiar, and the districts ought to capitalize on it through cooperative effort.

To capitalize on existing local programs and needs, the following approach seems appropriate.

1. Each high school should continue to offer basic or general education programs in Agriculture, Business, Homemaking, and Industrial Arts. These programs are not now truly vocational; however, they do prepare a student for later enrollment in job skills courses which lead directly to job entry. In addition, these programs are good general education programs preparing students for life, even though the students do not pursue careers in the field. Each school should offer as many of these types of curricula as possible and encourage <u>all</u> students to participate in such occupational exploration.

2. The truly vocational programs should be planned around occupational family skill clusters without regard to the traditional four areas of vocational education. This planning should take place under

the direction of the ROC System, which hopefully will include all high school districts in Fresno County. The ROC System should establish five sub-systems of geographically contiguous high school districts. Programs should be allocated to these sub-systems so that a single program could serve all high schools in the sub-system where appropriate. Students should be bussed from their home school to the school offering the particular program in which they are interested, returning to their home school for the rest of their studies.

Not all vocational programs should be offered at a single school within the sub-system. Figure 1 illustrates the concept. Obviously such interschool scheduling requires that the students have significant blocks of time available to make the transferring efficient. Further, the interschool schedules must be compatible. Scheduling would be a first priority problem for the participating districts.

Certain programs might not be offered in all sub-systems, in which case students could be bussed between sub-systems. For example, programs in Electronics might be offered in only three of the five sub-systems with the students from the two sub-systems lacking the program being bussed to one of the three sub-systems offering the program.

3. Because sharing programs means bussing students from one school to another for part of a day, the proximity of various schools is an important consideration. The schools of the area tend to be drawn into five groups when both road network and community orientation are considered. Therefore, MERI recommends that, for purposes of organization and scheduling, the secondary districts be divided into the following five ROC sub-systems:[1/]

Sub-system I - Clovis, Fresno City, and Sierra

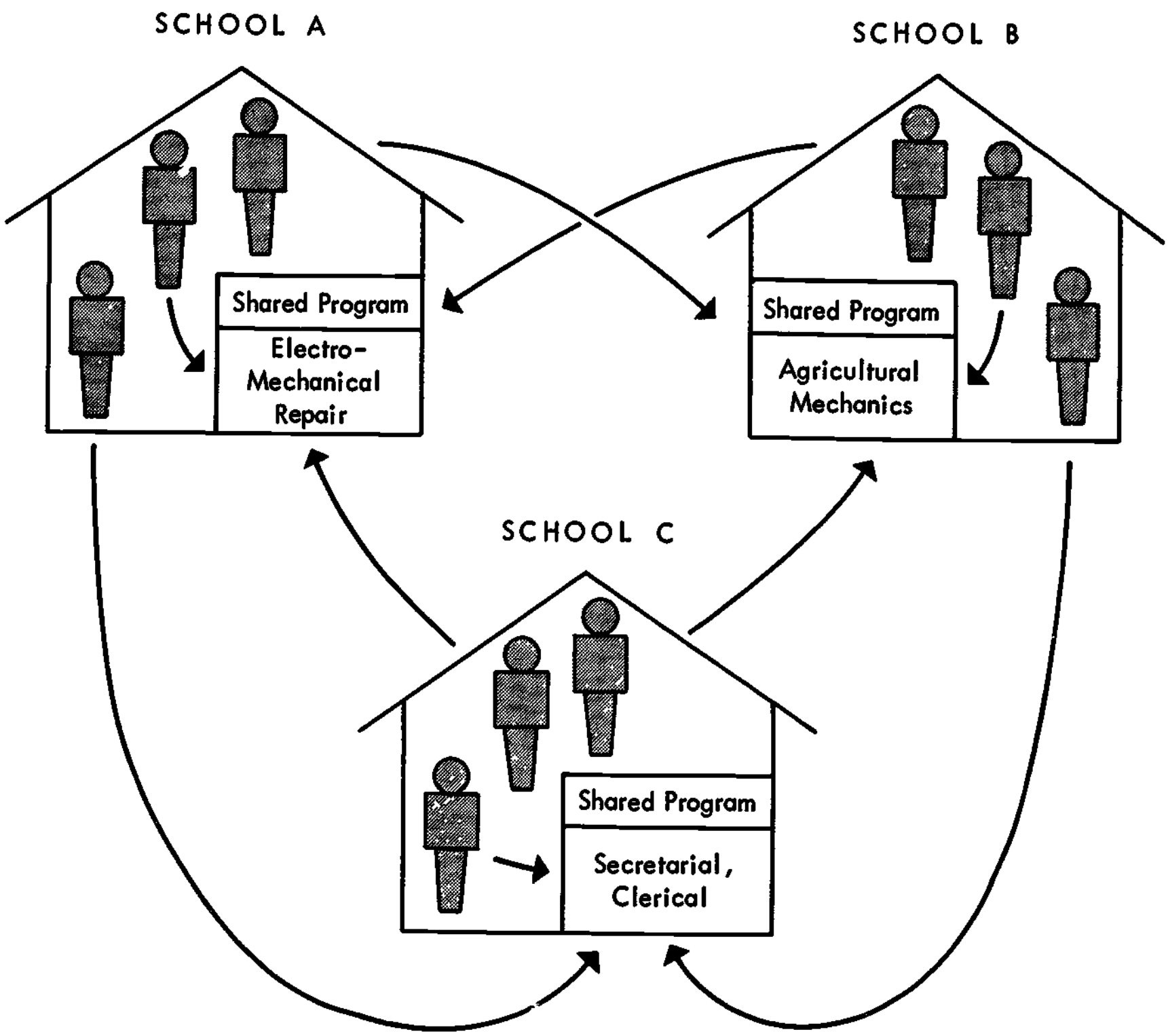
Sub-system II - Fowler, Kingsburg, Kings Canyon, Parlier, Sanger, and Selma

---

1/ Throughout this report the term "city schools" is used specifically for high schools in the Fresno City Unified District. The remaining high schools in the county are referred to as "county schools."

Figure 1

TYPICAL TRANSFER OF STUDENTS INTO SHARED PROGRAMS
BETWEEN SCHOOLS IN A ROC SUB-SYSTEM



Sub-system III - Caruthers, Laton, Riverdale, and Washington

Sub-system IV - Central, Kerman, and Tranquillity

Sub-system V - Coalinga

This suggested division of school districts into ROC sub-systems may require further consideration and adjustment because of changes in enrollment and curriculum patterns; however, it can be used as a basis for planning until other groupings prove to be more advantageous. For example, grouping Avenal (in Kings County) with Coalinga High School and Coalinga Junior College is a possibility. Even though such a grouping crosses county lines, MERI recommends that early steps be taken to arrange joint programming for Avenal students at Coalinga.

Similarly, Dinuba and Orosi (in Tulare County) have their major orientation toward Reedley College, and MERI recommends that the possibility of joint programming between these two districts and Sub-system II be explored. There might also be programming advantages for including Hanford and Lemoore (in Kings County) with Sub-system III.

4. Some vocational programs would be offered only in one or two locations, either because of anticipated limited enrollments, or because of the high cost of equipment and facilities. Where this would be the case, such programs should be offered in a centralized occupational training center or in a junior college. The ROC System should contract for such training services from the junior college district where appropriate. Under Section 6401 and 6403 of the Education Code, 11th and 12th grade students can attend programs at the junior college level, with the local high school receiving full Average Daily Attendance (ADA) credit for the basic educational instruction, and the junior college obtaining ADA credit for a special part-time student. This program should be administered through the ROC System so that control is maintained by the high school districts.

MERI recommends that all vocational programs offered under the ROC System be provided in two fashions:

a. In two centralized locations on sites developed for that purpose
   (1) The Fresno County Fairgrounds
   (2) An industrial plant located in Sub-system II

b. On existing campuses through a student exchange program.

Designated ROC programs should be under the control of the ROC System which can contract services from individual school districts. Each school district that is not a part of the ROC System should pay tuition to the ROC System for its students attending ROC programs.

III THE CURRENT SITUATION

Characteristics of the Community

Any realistic study of educational needs in Fresno County must consider the unique characteristics of the communities in the area. Continuous program planning must also reflect the needs of the broader community, the state, and the nation.

Population

The total population of Fresno County increased from 365,945 in 1960 to 418,200 in 1967 for a gain of 14.3 percent. General population trends to 1975 for the county, San Joaquin Valley, and the state of California are shown in the following table.

GENERAL POPULATION TRENDS OF FRESNO COUNTY,
SAN JOAQUIN VALLEY, AND STATE OF CALIFORNIA
1965-1975

	1965	1970	1975	Percent Change 1960-65	Percent Change 1965-75
Fresno County	408,200	443,500	482,400	11.5%	18.2%
San Joaquin Valley[1/]	1,627,500	1,925,100	2,118,400	12.7	30.2
State of California	18,726,000	21,001,000	23,585,000	18.0	25.9

1/ San Joaquin Valley area includes eleven counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare, Calaveras, Mariposa, and Tuolumne.

Source: State of California, Department of Finance, April 1967.

Past population growth was linked to agricultural development; however, recently population has tended to concentrate in urban centers.

At present, 53.6 percent of the county population resides in 15 incorporated cities. In 1960, 36.6 percent of the county population lived in the city of Fresno. By 1967, this proportion had increased to 38.6 percent, and it is expected that, by 1975, more than 40.0 percent will be Fresno city residents. Thus, the national trend toward larger urban populations is reflected in the population shift within Fresno County.

The age structure of Fresno County's population is shown in Figure 2. Compared with the state, Fresno County has a relatively large school age population (41.7 percent), but a slightly smaller proportion of young adults (20-39) and adults (40-69). This reflects a migration pattern, established during the last decade, in which rural areas of California lost their young adults to the large urban centers, including the San Francisco Bay Area, the Los Angeles Basin, and San Diego.[1/]

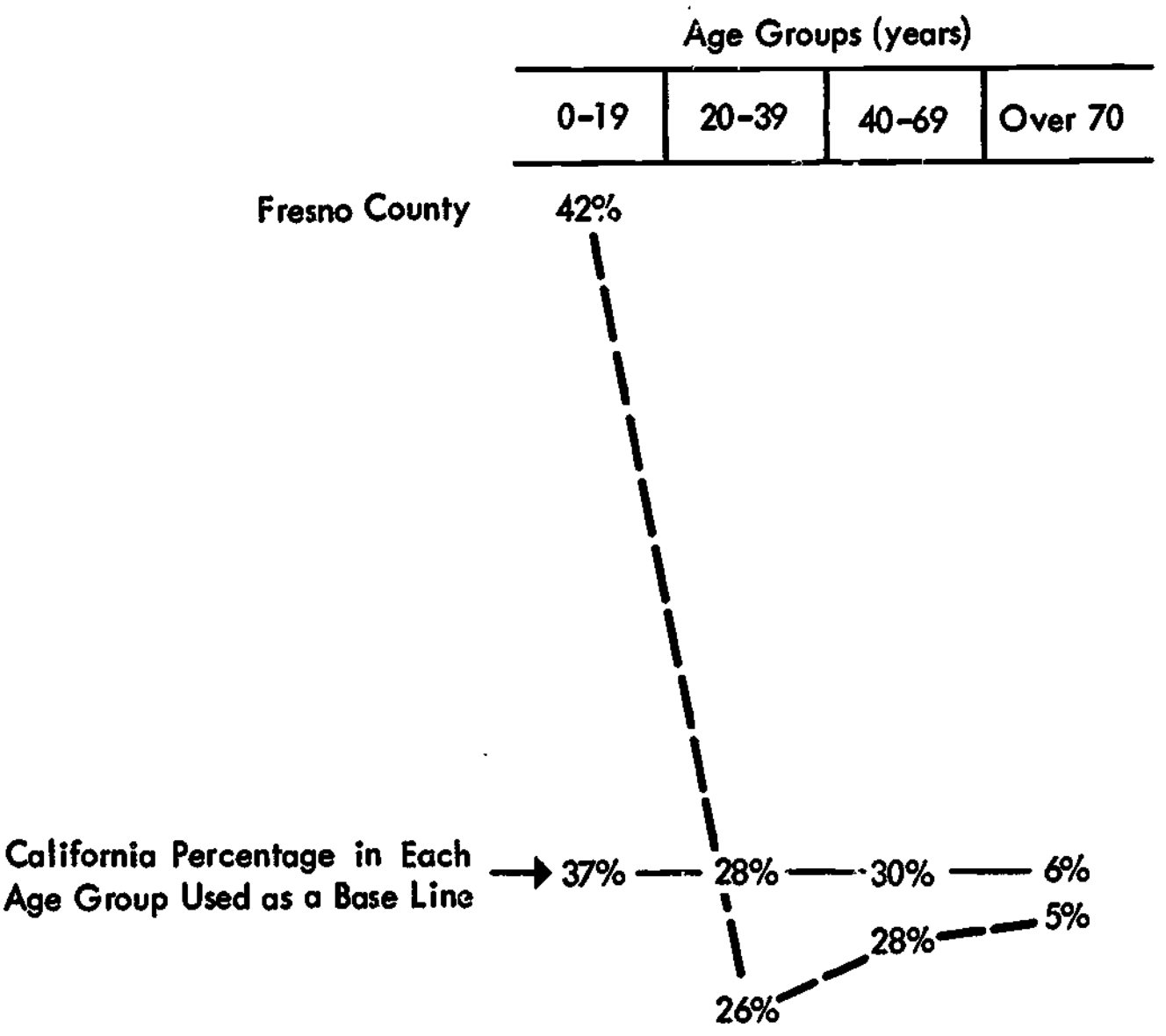
According to 1960 census data, 7.5 percent of the Fresno County population was nonwhite. Although this proportion of nonwhite population was comparable to the statewide proportion of 8 percent, it was significantly below the national proportion of 11.4 percent. The problem, however, is in the concentration of nonwhites living in "West Fresno" which has created social and economic imbalances in the city and county school systems.

Other ethnic groups add to the broad cultural mix of the community and school environment. The largest single ethnic group is the Mexican-American, which constitutes about 20.0 percent of the total county population. This is slightly more than twice the proportion of Mexican-Americans found in the state as a whole.

1/ State of California, Department of Finance, Financial and Population Research Section, California Migration 1955-60, Sacramento, 1964.

Figure 2

COMPARISON OF POPULATION AGE STRUCTURE IN FRESNO COUNTY AND STATE OF CALIFORNIA



SOURCE: State of California, Department of Finance, April 1967.

Economic Trends

Closely related to population trends are economic changes that have occurred during the past two decades and that continue to affect the educational needs of the county.

The decrease in the number of farm units, number of acres cultivated, and number of farm operators has been accompanied by increased mechaniczation and improved farm technology. The net result has been a continuous annual increase in the value of crops produced in Fresno County. Presently, agricultural products valued at more than $450 million are placed on the market annually, making Fresno County the producer of the greatest agricultural value of any county in the nation. Agricultural production, processing, and distribution are expected to remain the economic backbone of the area for the foreseeable future.

Nonagricultural activities, namely manufacturing, have grown considerably during the past decade. (There are now about 500 manufacturing companies in the Fresno metropolitan area.) This growth is indicative of the increasing importance of nonagricultural economic activity within Fresno County.

Economic activity for 1967, as indexed by Fresno Facts and Trends,[1/] shows an increase of over 60 percent over the base years of 1957-1959. During the period between 1959 and 1967, the value of manufactured goods increased over 39 percent. (The increase in California as a whole was 42 percent.)

1/ Fresno State College, School of Business, Bureau of Research and Service, Fresno Facts and Trends, November 1967. The business index is based on a seasonally adjusted economic series, including bank debits, employment, power sales, carloadings, and value of building permits.

Problems of Transition

The economic growth of Fresno County is reflected in the changes that have occurred in the city. The downtown mall, completed as part of an urban renewal project, has become a model for other cities across the nation. Fresno's modern convention and cultural center, new county courthouse, burgeoning shopping centers, new bank buildings, modern air terminal, and urban renewal activity are all signs of the county's transition into a vital, progressive, and productive community. However, there are signs of problems yet unsolved.

The unemployment rate has remained above the 6 percent level since 1960. This is nearly double the national rate. The median educational attainment of persons over the age of 25 remains substantially below the 12th grade, while an increasing number of jobs demand a high school diploma and/or post high school training. Over a third of the wage earners in the county make less than $5,000 per year. Ethnic imbalances in certain schools present unsolved challenges.

These and other problems have stimulated a variety of civic, social, and community organizations to focus their attention on improving educational training opportunities for adults as well as in-school youth. Many community organizations whose efforts are directed toward providing employment opportunities for the chronically unemployed and underemployed have received financial assistance from the federal government through the Office of Equal Opportunity. Other programs have combined federal, state, and local funds. Some programs approach the manpower and training problems from a regional viewpoint (e.g., CAMPS), while other programs concentrate on specific segments of the unemployed (e.g., Mexican-American Education Committee).

The variety of programs concerned with manpower development has raised the complicated problem of coordinating the efforts of each organization so that duplication and overlapping training programs can be minimized. The Fresno Organization for Coordination of Urban Services (FOCUS), the Urban Coalition of Fresno, and the CEP are each

concerned with providing a full range of social, educational, and training services.

The educational system has also directed its effort to identifying the needs of its students, the instructional and counseling staff, and the community. The Regional Planning and Evaluation Center (EDICT) and Project DESIGN have each completed studies on vocational education. However, these studies do not indicate the appropriate interface between the confusing array of employment programs in the community and the educational resources of the school systems. This interface is one which will have to be determined as the objectives and efforts of each community manpower program evolve; however, the school system must be alert for opportunities to offer its services.

As has been mentioned, it would appear that a ROC System would provide a mechanism for furthering the alliance between manpower programs and the vocational educational resources of Fresno County's schools.

Employer Needs

Employers need well qualified workers. Frequent publicity is given to the fact that improving technology is continually eliminating jobs, but infrequent publicity is given to the fact that there are thousands of job vacancies throughout California because employers cannot find adequately trained personnel. This phenomenon is true in Fresno, in the San Joaquin Valley, in California, and across the nation.

In planning occupational education programs for Fresno County, it is necessary to look beyond its borders. Many students trained here will find employment elsewhere. Because the Fresno County labor market differs significantly from that of the state or the nation, it is necessary to look at the needs of employers in Fresno County, the state, and the nation.

Some employer needs are the same regardless of where employment is located. These are mentioned in discussions with employers wherever

MERI has assessed employer needs, and Fresno is no exception. Needs most frequently mentioned by employers include:

- Better training in basic skills, especially reading, handwriting, arithmetic, and verbal communications.
- Better attitudes, especially related to punctuality, accuracy and neatness, and customer relations.
- Better understanding of the economics of work, particularly the relationship between productivity, wages, cost, and price.
- Better understanding by young job seekers of their own strengths and weaknesses and how to sell themselves to prospective employers.
- Greater flexibility on the part of employees to insure that they can move with the changing technology and adapt to new job requirements.

The Fresno Labor Market

Fresno County has been, and continues to be, the richest agricultural county in the nation. Much of the county's employment centers about agriculture, both directly in agricultural production and indirectly in agricultural support services. In 1967, the last full year for which data are available, agricultural workers accounted for 23.5 percent of the total annual average employment in the county. Average employment does not tell the whole story because there were large seasonal fluctuations. The seasonal high of 73,300 workers was in September while in March, the seasonal low, agricultural employment had declined to 30,200 workers.

Fresno County's agricultural employment is unusual in two respects: first, the proportion of total employment in agriculture is significantly higher than in the state or the nation; and second, the actual number of jobs continues to increase rather than decrease, contrary to the general trend. It should be pointed out, however, that although there has been

a net increase in agricultural jobs, the rate of growth has been slower than that for the labor force in total, and, as a result, agricultural employment has been decreasing as a portion of total employment (see Table 1 in Appendix A).[1/]

These agricultural employment trends will probably continue to the foreseeable future. The important trend to note, however, is not the changing numbers of employees, but rather the changing skill requirements of those employed in agriculture. Greater use of machines and chemicals to do the work of farm laborers means there are fewer unskilled jobs but many more technical jobs. The needs of modern agriculture are for skilled mechanics to maintain the sophisticated equipment being used and for trained technicians who know when, how, and where to use available chemicals.

Program planners must make a special effort to be sure that the curricula in agricultural programs are kept current with the needs of the industry. As water is brought to the west side of the San Joaquin Valley from the San Luis Reservoir, occupational training requirements will change further. New and different programs will be required to meet these changed requirements.

Within the nonagricultural industries, those which have shown the greatest relative growth are the services and government categories. (See Table 1.) Although all major industries (except construction) have shown growth in actual numbers, the relative positions of most industries have not changed during the period 1960-1967. Three categories (agriculture, construction, and transportation, communications, and utilities) showed relative declines; two categories (services and government) showed relative increases; and the other categories (manufacturing, trade, and finance, insurance, and real estate) have retained their same relative proportions during the period.

1/ All tables not contained in the text are numbered and presented in Appendix A. Hereafter, reference to the tables in the appendix will be by number only.

These industry trends are also reflected in occupational requirements. MERI has projected 1970 employment in selected occupations for Fresno County based on a mathematical extension of the 1950-1960 census data. These projections are shown in Table 2. The fastest growing occupations based on the 1950-1960 rate of increase include those in services and government, especially bank tellers, cashiers, office machine operators, secretaries and stenographers, manufacturing salesmen, airplane mechanics, radio and television repairmen, auto services, routemen, welders, counter and fountain workers, cosmetologists, practical nurses, and janitors.

Table 2 also shows the total number of new jobs expected to develop between 1960 and 1970. It must be remembered that this estimate is a straight mathematical projection; no attempt was made to accommodate for changing trends. To give an additional indication of the anticipated manpower requirements, MERI has calculated annual replacement needs in 1970 (for anticipated levels of employment at that time) based on national averages of retirement and death.

The number of new jobs plus the number of replacements needed provides a rough approximation of the amount of trained manpower required for Fresno County in the immediate future. These statistics have been used in making program recommendations contained in Chapter IV. These projections have been modified by subjective judgment, however, to reflect such factors as the degree to which jobs will be filled by persons with other than entry level skills; the appropriateness of training for certain occupations at the secondary level; the effect of changing technology as it is presently known or can be estimated; and the changes expected to take place in the Fresno County labor market.

Changing technology and conditions in the Fresno labor market can be expected to affect certain occupations significantly during the coming years, as follows:

- There will continue to be increasing numbers of jobs available in personal and governmental services. New

jobs will be developed for paraprofessionals in occupational families with continuing shortages (e.g., social worker aides, community workers, and teacher aides).

- Fresno's expanding importance as a trade and distribution center for the central valley will create new jobs, both in retail and wholesale trade. Many of those in wholesale trade will require skills different from those traditionally needed.
- Electronic data processing will replace many of the routine jobs being performed by workers in the Fresno area. Most persons employed in clerical occupations will be required to have at least a basic understanding of data processing operations.
- Mechanics of all types will require greater knowledge of electricity and electronics. More machines operate as electro-mechanical devices and require broader skills to maintain.

Other trends concerning industry and occupational employment have been adequately described in the Fresno Job Opportunities Survey which is discussed below.

Fresno County educational planners will be fortunate to have available the Fresno Job Opportunities Survey, to be published later this year by the State Department of Employment. This excellent report provides information on the Fresno labor market, the types of industries and occupations found here, and the anticipated future trends to 1973. The report also shows employers' stated educational requirements for various types of occupations.

There would be little value in summarizing that report here, but some of the key findings are worth emphasizing. The findings most relevant to occupational education program planning are:

- Employers are raising educational requirements. Illustrative of this trend is the statement of one employer: "We have used people with less than a high school education. From now on we will strive to acquire people with one." An employer of trade apprentices said that he was trying to get men to complete junior college.

- Technological progress in the Fresno area economy results in the greatest growth in employment in those occupations requiring higher levels of skills, while semiskilled and unskilled jobs will, for the most part, continue to decline. A typical employer comment: "More complex machinery will require more skilled workers to maintain it."

- The largest growth in jobs between 1968 and 1973 will take place in the following occupational categories:

Professional, technical, and managerial	26.1%
Clerical	19.6
Services	13.3

  Specific occupations will grow at the rate of 10 or more new jobs per year through 1973, and the estimated number of new jobs in each occupation are shown in Table 3.

- Although Fresno County has a higher than average unemployment rate, there exist at the same time significant shortages of qualified workers in some occupations, especially those requiring specialized skills and training. Those occupations showing surpluses and shortages in mid-1968 in the Fresno area are shown in Table 4. Table 5 shows the occupations which employers indicate are difficult to fill. The most obvious conclusion to

be drawn from Table 5 is that almost all jobs which employers find hard to fill require specialized training or experience.

- Jobs available to persons without specialized training are few in number and very limited in type. High school graduates (as opposed to nongraduates) tend to have a broader variety of jobs open to them, i.e., jobs for which they will be considered by Fresno area employers. Training for several of those jobs is presently available at the secondary level, especially in clerical and business courses. Table 6 shows those occupations for which employers are willing to hire workers without related work experience or specialized training. Table 7 shows those jobs for which employers are willing to hire recent high school graduates with no full-time work experience. Significant differences between these two groups of occupations are apparent. There is much greater breadth available to the recent high school graduates.

Although the State Department of Employment does not draw conclusions directly related to occupational program planning, their findings appear to clearly support the conclusion that skill training should be available in the high schools of Fresno County to prepare students for occupations for which local employers are willing to hire recent high school graduates. Other programs are not precluded because they do not appear on this list. In fact, the impact of state and national trends must also be considered in program planning. The most important of these trends are discussed below.

State and National Trends

Much has been written about the state and national manpower picture as it affects requirements for planning training programs. Most of this information is of the type that will be used by the Occupational Family

Advisory Committees (see Chapter IV for a discussion of these Committees) in evaluating the program recommendations and in establishing priorities. This information is too extensive to be summarized here. The Fresno County Superintendent of Schools has a file of this type of information which is readily available. Also, the Vocational-Occupational Survey, recently completed by EDICT, contains a comprehensive bibliography on vocational education and a good discussion of the references. Further information on trends in vocational education may be obtained from these sources.

National and statewide information on specific occupations or occupational families is not included in this report. The reader is referred to the Occupational Outlook Handbook for national trends and to the Occupational Guide series published by the State Department of Employment. Both of these publications have been used extensively in preparing the program recommendations in this report. Both are excellent sources of information as to need and training requirements. Review of other sources indicates the following five areas of national concern have important implications for planning occupational education programs for Fresno County.

The Growing Need for Technicians. According to a recent study by the U.S. Department of Labor entitled, Technician Manpower: Requirements, Resources and Training Needs, the total requirement for technicians will reach nearly one and one-half million by 1975, a 77 percent increase over the 1963 employment levels for these occupations. This same study indicated that there are over one-quarter million technicians needed now throughout the country. The estimated needs by occupational area are shown in the table on the following page.

NUMBER OF TECHNICIANS NEEDED

Occupational Area	Number Needed
Biomedical hospital equipment	50,000
Electro-mechanical	100,000
Electronic computer service	20,000
Communications and telemetry	10,000
Computerized drafting	5,000
Numerically controlled machine tool	10,000
Chemical manufacturing process control	5,000
Agricultural production and service	75,000
Water pollution control	10,000
Total	285,000

New and Emerging Occupations. It will be noted that the foregoing list does not include occupations which are on the forefront of developing technologies. Most of the above occupations are known to many readers of this report, and jobs are immediately available for persons trained in those technologies. In some of the newer technologies, however, occupations have not yet been defined. Examples would be oceanography, radiology, nuclear energy, electro-optics, and environmental control.

Fresno County schools probably cannot provide educational leadership in the development of training programs in these new and emerging occupational areas. Limited resources and lack of direct involvement of the Fresno area economy in these new fields would indicate that developmental work could best be left to other parts of the country that are more directly involved. Fresno County can and must be aware of developments in these technologies and ready to respond by adding programs and adapting curricula as soon as the need becomes apparent.

Job Availability for Young Workers. The U.S. Department of Labor, Bureau of Labor Statistics, has completed a thorough analysis of the

manpower requirements of the United States in 1975 for the National Commission on Technology, Automation, and Economic Progress. This analysis was published in 1966 under the title, The Outlook for Technological Change and Employment, Appendix Vol. 1. In this publication, the U.S. Department of Labor predicts that jobs for young people will be scarcer and that there will be more young people in the labor market. The net result is that persons under 25 will find competition for jobs even stiffer than it is today.

There are two implications for Fresno: first, young people with specific skill training will have an advantage over those who enter the labor market without job preparation; and second, the longer students delay entering the labor market, the better their chances are for finding employment. The obvious answer, then, is for young people to stay in school and take occupational training. The program implication that follows is to offer extensive occupational training at the junior colleges (preferably articulated with secondary level programs) and to counsel students to enter and complete these programs.

The Need for Continuing Occupational Education. In the past, there was a general tendency for a person to prepare for one occupation and stay in that occupation during his entire life. Today, workers change jobs several times during their lives, both by choice and by necessity because of technological change. The U.S. Department of Labor has estimated that the average student leaving high school or junior college today will change jobs more than six times during his life. The frequency decreases with age, but it indicates a continuing pattern into middle age. This phenomenon is shown in the table on the following page.

EXPECTED JOB CHANGES DURING
REMAINING WORKING LIFE

Age	Number of Job Changes
20-24	6.6
25-34	4.8
35-44	2.7
45-54	1.4
55-64	0.6
65 and over	0.2

Occupational education in Fresno County must be available to persons of all ages. Occupational counseling and guidance services must be available to persons presently in the work force. The data on frequency of job changes serve to further emphasize the importance of planning curricula around the core concept, using occupational family groupings which permit broad transferability of skill and knowledge. (See the discussion of the core concept in Chapter IV.)

Training for the Disadvantaged. Much attention has been devoted throughout the nation, the state, and within Fresno County to the training needs of disadvantaged members of society. A chief concern of investigators has been how the disadvantaged can achieve economic independence so that they can participate more fully in all aspects of the culture of our nation. A generally agreed upon solution has been to provide extensive programs of services including occupational training.

Fresno County has significant numbers of disadvantaged residents both in the urban center and in the rural areas. If these persons are to participate meaningfully in the total life of the community, they must have the opportunity to learn to make themselves economically independent. The available occupational education programs and services must be flexible enough to meet the special needs of these citizens. Ways must be found to insure participation in a broad variety of programs. The stereotype which would relegate disadvantaged persons to

minimal occupations has no relevancy to the needs of those persons. Ways must be found to permit them to participate in all programs.

At the same time, the entire system cannot be built around the needs of this one group. Occupational education serves many types of persons, and it must accommodate all of them. Failure to do so will certainly result in a serious lack of effectiveness of the system. Programs have been recommended for persons with varying levels of ability and knowledge. The system must work to serve all needs.

Student and School Characteristics in Fresno County

Included in this study are 22 high schools, 6 in the Fresno City Unified District and 16 high schools located throughout the county. At present, each of the high school districts outside of Fresno city operate a single secondary school, although several are planning new or added facilities.

Enrollments

Enrollments range from about 250 students at Laton to 2,600 at McLane. Most schools have enrollments of 500 to 1,000 students, except that all Fresno city high schools exceed 1,000 students and three serve over 2,000. Table 8 lists all high schools in Fresno County and their approximate day enrollments during the fall term of 1967.

The enrollment in Fresno city high schools constitutes about 45.5 percent of the total secondary school enrollments in the entire county. According to data obtained from the State Department of Education "October Reports," secondary enrollments in Fresno County increased by 15.9 percent during the five-year period preceding fall 1967. This is slightly more than twice the growth rate of the general population in Fresno County. During the same period, secondary enrollments in California grew by 16.9 percent. In nearby Merced, Tulare, and Kings counties the growth rate was 25.5, 15.2, and 4.1 percent, respectively. In Madera County no increase in secondary enrollments was registered during the past five years.

Within Fresno County the growth rates of individual schools vary considerably. Laton High School (the smallest in the county) reported little increase in school enrollments during the past three to five years. The same is true at Riverdale. In contrast, Sierra High School has experienced an annual increase of 8 percent; Central and Kerman high schools, about 6 percent; Clovis, about 5 percent; and Kingsburg, about 3 percent. The Fresno city school system and nearby high school districts appear to have experienced a higher growth rate than most of the outlying school districts.

Ethnic Balance of School Populations

In addition to the uneven growth rates of the high schools throughout the county, the ethnic balance of the students served by each school also differs substantially. Several school administrators acknowledged that Mexican-American students composed 50 percent or more of their student bodies. Washington Union High School is the only school outside of Fresno city with a student body that is more than 20 percent nonwhite.

Few other high schools reported significantly large numbers of Negro or other nonwhite students. However, the problem of minority group balance among county schools still exists. For example, during the past ten years, in which the enrollments at Parlier High School have doubled, the increase in Mexican-American, Oriental, and Negro students has more than doubled so that these students now comprise nearly 90 percent of the student body. In short, the ethnic balance of the student body has been completely reversed during the past decade.

According to surveys conducted by the Fresno City Unified School District, the ethnic distribution of regular high school students is as follows:

ETHNIC DISTRIBUTION IN
FRESNO CITY UNIFIED SCHOOL DISTRICT
SENIOR HIGH SCHOOLS

Ethnic Group	Percent of Total Enrollments
Spanish surname	14.3%
Other white	74.6
Negro	8.5
Other nonwhite	2.5

Source: Fresno City Unified School District, "Survey Regarding Ethnic Imbalances in Fresno City Schools," October 1967.

The percentage of total Fresno city secondary school students falling into any given ethnic group does not reflect the extent of ethnic imbalance in some schools which the district is attempting to rectify. For example, at Edison High School, located on the west side of Fresno, nearly three-fourths of the student body is nonwhite and the other one-fourth possess Spanish surnames. In Roosevelt High School in the southeastern sector of the city, one-third of the students have Spanish surnames. Other high schools in the Fresno city system have much smaller proportions of either Spanish surname or nonwhite students; in fact, all students in two of the schools are white.

Dropouts

It is estimated that nearly 12 percent of the secondary students (9th through 12th grades) in the Fresno city schools leave prior to graduation. According to studies conducted by the Fresno County Superintendent of Schools office, more boys than girls are dropouts, and the heaviest rate occurs in the 11th grade. In county high schools, the

cumulative dropout rate in 1965-1966 was 20.3 percent. This indicates a decline from 1963-1964 when the dropout rate was 33.3 percent. The reasons given by students for dropping out of school vary, but over 50 percent who left did so because (1) they moved away from the school attendance area (19.6 percent); (2) they married (18.0 percent); or (3) they entered the armed forces (13.4 percent). It is noteworthy that only 7.0 percent of the dropouts studied gave employment as a reason for leaving school.

Attitudes of Educators Toward Occupational Education

As part of MERI's effort to discover the existing attitudes of educators toward occupational education in Fresno County, a questionnaire was distributed at selected schools to be completed by administrators, counselors, and teachers. The structure of the sample surveyed was as follows:

STRUCTURE OF SURVEY SAMPLE

	Number of Respondents			
	Administrators	Counselors	Teachers	Total
Fresno city schools	9	8	22	29
Fresno county schools	16	9	28	53
Total	25	17	50	92

Source: MERI survey, May 1968.

Relevant findings from this survey are:

- The majority of respondents estimated that the dropout rate of secondary school students was below 10 percent.
- Only three of the respondents expressed the belief that certain occupational courses currently being offered should be discontinued. (The specific courses mentioned

were Aeronautics, Home Economics, Mechanical Drawing, and Wood Shop.)

- The overwhelming majority of respondents believed that occupational education should be strengthened in their high schools (35 out of 39 responses from the city schools, and 42 out of 53 from county schools).

- The assessment of student needs for occupational programs by city respondents differed significantly from that of county respondents. These differences are summarized as follows:

	City Respondents	County Respondents
1. Estimate of students actually enrolled in occupational programs	Under 10 percent	Between 25 and 50 percent
2. Estimate of students who should take one or more occupational courses	Between 25 and 50 percent	Between 50 and 75 percent
3. Estimate of students entering directly into the labor force upon leaving school (excluding military service)	Between 25 and 75 percent	Between 25 and 75 percent

- The most practical occupational programs currently being offered in order of frequency mentioned were:

City Respondents	County Respondents
(Programs for Boys)	
1. Industrial Arts	1. Agriculture
2. Auto Mechanics	2. Auto Mechanics
3. Electronics	3. Business
4. Business	4. Wood Shop
5. Mechanical Drawing	5. Industrial Arts

City Respondents	County Respondents
(Programs for Girls)	
1. Secretarial/Clerical	1. General Business
2. General Business	2. Secretarial/Clerical
3. Vocational Home Economics	3. General Home Economics
4. General Home Economics	

- Occupational program additions recommended by educators in order of frequency mentioned were:

City Respondents	County Respondents
1. Services	1. Services
2. Vocational Auto Shop	2. Work Experience and Electronics
3. Vocational Foods	3. Auto Mechanics

- The alternative organizational approaches to occupational education favored by city and county respondents were:

Alternative Solution	City Respondents	County Respondents	Total
1. Intensify occupational education in the comprehensive high school	28	37	65
2. Develop advanced placement programs in community colleges for high school occupational education majors	27	27	54
3. Use a centralized vocational-technical facility	20	19	39
4. Bus students from one school to another in order to share programs	26	12	38
5. Use mobile units to provide instruction in special occupational programs	7	9	16
Total	108	104	212

The MERI survey team held discussions with administrators, counselors, and teachers at each school during on-site inspections of facilities. In general, the results of these discussions confirmed the findings and conclusions reached by Harrison and Nixon in their study of vocational education in Fresno County.[1/] Their conclusions follow:

- Other than on an individual and incidental basis, there are no organized or systematic programs for helping learners explore occupational options or the world of work.

- Work experience programs of a realistic nature, with few exceptions, are very weak, and for the most part, non-existent. There are few opportunities for young people to actually work and explore the world of work in realistic settings and circumstances which involve cooperative arrangements between the community and the school.

- Many respondents indicated that they do not really feel that they are engaged in vocational training at all on secondary levels but are engaged in providing exploratory or general education only.

- Virtually no local, regional, or national manpower studies or occupational projections are being used in vocational education planning.

- While many new courses appear to be well-supported and are considered to be quite effective, it is not always apparent that the needs for them have been carefully researched as regards employment potentialities or, indeed, their appropriateness as terminal training at secondary levels.

- Most new courses are those which have recently been either totally or partially funded federally.

- In the secondary schools there are few programs or classes for training or retraining of adults. Such programs are provided by other agencies such as adult education divisions and junior colleges in varying degrees. In some communities there is little or nothing available.

1/ Dr. Raymond Harrison and Dr. Arne Nixon, Vocational-Occupational Survey, Fresno County Planning and Evaluation Center (EDICT), 1968.

- There is not much effective articulation of vocational education programs as it involves the high schools, the junior high schools and the two- and four-year colleges. 'Articulation' with the junior high schools consists primarily of informing the junior high school teachers, students, and parents of the high school's programs. This is done through such traditional devices as visitations, 'Parent Nights,' and the use of films and brochures.

- Articulation between the high schools and the colleges is reported not to be very good or extensive. Articulation between the high schools and the four-year colleges, primarily Fresno State College, is reported to be almost non-existent.

- Only very limited integration of vocational subjects and the humanities and social sciences is reported to be still in existence. These subjects exist as almost totally separate and compartmentalized areas of learning.

- Little is being done to train young people for jobs related to newly emerging programs involving the use of subprofessional or paraprofessional personnel (in fields such as teaching, health, personal services, etc.)

- There is virtually no identification of specific jobs or careers for which vocational home economics classes on secondary levels prepare young women.

- There do not appear to be many systematic or carefully planned counseling programs related to the needs of young people who are considering careers related to vocational education. The major emphasis appears to be upon testing. Lack of time, specialized expertise, and personnel limit the help which is available.

The objectives and methodology used by Harrison and Nixon differed from those of this study, but the recognition of the foregoing problems by the majority of educators interviewed by MERI indicates the need for changes in the approach to occupational education currently being used in most secondary schools in the county.

Occupational Programs Available in High Schools

The MERI staff reviewed the course offerings in all 22 high schools in order to determine the current status of occupational education at the secondary level. Information regarding specific courses offered in each school was taken from class schedules and other reports were obtained from the schools or from the County Superintendent of Schools office.

No attempt was made to analyze the content or methodology used in the courses. The purpose of this review was primarily to determine the opportunities available for students to receive occupational training. Courses with similar titles were placed in the same general category. Thus, a course labeled "General Business" in one school was considered equivalent to "Introduction to Business" in another; similarly, "Wood Shop" in one school was considered the equivalent of "Woodworking" in another.

On the surface it appears that a wide variety of occupational programs are available in the high schools. A considerable difference in the offerings does exist, however, between the smallest and largest schools. Course titles alone are not a sufficient criterion for judging how closely a course is actually related to occupational preparation. In fact, many educational administrators indicated quite specifically that their courses are not truly occupational but are exploratory in nature.

The summary and review of the occupationally oriented courses offered in each high school appears in Table 9. MERI recognizes that there may not be complete agreement as to what constitutes an "occupational course" or "occupational program;" however, the following overview is presented as an indication of current course offerings which may provide the basis for future occupational program development. Table 9 shows the number of sections or periods a particular course is offered in any given school and an approximation of the number of students enrolled in each program during the fall term of 1967.

Agriculture and Related Courses

This category includes all General Agriculture courses including Plant and Animal Science, Mechanics, and other agricultural shop programs. Also included are Ornamental Horticulture and Forestry. All 16 county high school districts offered some agriculturally related courses and programs in which over 1,000 students were enrolled. No agricultural programs were reported by the six city high schools. Most of the agricultural programs are linked with Future Farmers of America (FFA). None of the high school districts currently share agricultural training facilities such as shops or laboratory farms. Six high schools offer Ornamental Horticulture to a total enrollment of nearly 200 students.

Home Economics and Food Services

All courses in Homemaking and Home Economics that included sections on food preparation and clothing were placed in a single category. Many courses in this category are not directed toward occupational training, but the relationship of their content to skills required in some occupational fields is sufficient reason to consider these with vocational courses. All high schools offer two or more courses in Home Economics. Most schools offer classes in Cooking, Sewing, and Homemaking. Only two schools, Selma and Edison, offer a course in Vocational Foods.

The only course in Health Occupations (Nurse's Aide) is offered at Selma.

Business Education

This category includes courses in Bookkeeping, Typing, Secretarial, Office Practice, Data Processing, General Business, Merchandising, and Work Experience programs. All schools surveyed offered three or more business courses; the most commonly taught were Typing, Shorthand, Bookkeeping, and General Business. While all 22 high schools offered Typing and 20 schools offered Shorthand, enrollments in Typing courses were

nearly six times greater than enrollments in Shorthand. Office Practice was offered in 14 high schools.

One of the most innovative and imaginative Office Practice programs found in the county was the Office Occupations Laboratory offered at Clovis High School. This program accommodates approximately 90 high school students during two-hour block periods offered during the school day and is open to adults during the late afternoon. The Office Occupations Laboratory program was funded in part by federal funds.

Only two high schools offered a Work Experience program. The combined enrollments were fewer than 75 students. No school offered a course in techniques of being interviewed for a job, job application procedures, and familiarization with realistic job expectations. These subjects may be covered as topics in other business classes, but no unit is being given.

Industrial Arts, Vocational Shops, and Related Courses

This is one of the most diverse categories and commonly includes classes in Aeronautics, Auto Mechanics, Electronics, Electricity, Graphic/Applied Arts, Metals, Woods, and Welding. Additional courses offered in some schools include Power Mechanics, Plastics, and Carpentry. Courses in Drafting, Commercial Drawing, and nonshop classes in Electronics have also been placed in this group. An overview of the schools offering courses in this category indicates that the smaller schools generally have a more limited array of shop programs. For example, Laton High School, the smallest school in Fresno County, offers three Industrial Arts courses (Metals, Electricity, and Woods), while larger schools such as Central, Clovis, Reedley, Selma, and Sierra each offer seven or more Industrial Arts programs. Among the city schools, Bullard is the only one offering fewer than six Industrial Arts programs.

In terms of the total number of students enrolled in various shop programs, the following table indicates that Auto, Woods, Metals Shops, and Drafting are among the most popular programs in both the city and county schools. General Shop is the fifth most popular program in the

county schools, while Electricity/Electronics is the fifth most popular program in city schools. After these most popular programs, the number of students enrolled in other shop courses drops off substantially. In the county schools, Electricity/Electronics (404 students), Welding (255), and Commercial Art (147) are the only programs with an aggregate enrollment of more than 100 students. In city high schools, only Commercial Art (407), Aeronautics (115), and Graphic/Applied Arts (113) have more than 100 students enrolled.

COMPARISON OF STUDENT ENROLLMENTS IN THE FIVF LARGEST SHOP PROGRAMS OFFERED IN COUNTY AND CITY HIGH SCHOOLS

Rank Order	County Schools		City Schools	
	Program	Total Enrollment	Program	Total Enrollment
1	Wood Shop	1,406	Drafting	1,258
2	Auto Shop	1,243	Auto Shop	1,059
3	Drafting	1,084	Wood Shop	1,018
4	Metal Shop	803	Metal Shop	757
5	General Shop	639	Electricity/ Electronics	535

Source: Individual school class schedules and enrollments, fall 1967.

Federally Reimbursed Programs

According to data for 1966, federal funds have been used as follows: agricultural education, nearly 100 percent of the vocational programs are federally reimbursed; home economics, about 50 percent; industrial arts, less than 10 percent; and business education 5 percent.

Student enrollments in federally reimbursed occupational programs in 1966 are shown in Table 10. Home economics, office occupations, and vocational agriculture had the highest enrollments, while distributive education (work experience) and trade and industry programs had only

minimal enrollments. No students were reported in health occupations or technical programs at the secondary level in 1966.

The emphasis on health occupations, technical, and trade and industry programs at the junior college level is reflected in enrollments in federally reimbursed programs being offered at the three community colleges located in Fresno County. (See Table 10.) At the same time relatively little emphasis has been placed on reimbursable programs in home economics, vocational agriculture or distributive education in the community colleges.

Use of Specially Equipped Occupational Facilities

To determine the gross utilization of existing occupational facilities (i.e., those requiring special equipment or other special characteristics for instructional purposes), MERI reviewed class scheduling patterns in all schools. For purposes of this analysis, specially equipped occupational facilities were considered to be those shops and laboratories requiring machines, equipment, tools, electrical outlets, special ventilation systems, or specially constructed student stations or demonstration areas. The use of a specially equipped facility was considered "primary" when instruction in a particular subject required the equipment, tools, or specially constructed student stations (for example, typewriters in a typing room, welding stations in a metal shop, or dictating equipment in a stenographic laboratory). When these were not required, the use was considered "secondary" (for example, General Business taught in a typing room). When a facility was used for multiple purposes, such as a combined agricultural shop and metal shop, the primary function was designated according to one or more of three criteria: (1) the nature of the equipment in the facility, (2) the basis of the most frequently scheduled course requiring special equipment, or (3) the advice of the instructional and administrative staff of the school.

The utilization of a given vocational shop or laboratory was based on the number of periods during a regular school day in which it was

scheduled for primary use, secondary use, and no use. From these data the percent of time used in each category was computed.

The proportion of time a given facility was in primary use was computed on the basis of the number of periods it was scheduled for that purpose out of the total number of periods available during the school day. The number of scheduled periods per day in the high schools located in Fresno County was either 7 or 8, including lunch periods. Thus, in a school having 8 scheduled periods, a shop scheduled for 4 periods of special shop courses would be utilized 50 percent of the time for its primary use.

Table 11 shows the aggregate use of specially equipped facilities for their primary function in all high schools in the county. Agricultural shops were used 80 percent of the periods they were available. Homemaking rooms (cooking and sewing rooms combined) were used 72 percent and 77 percent of available periods by city and county schools, respectively. Office practice laboratories (stenographic) were used 76 percent of the time in city schools and 57 percent of the time in county schools. Typing rooms were used about 80 percent of the time in both city and county schools. It should be noted that, in both city and county schools, office practice laboratories and typing rooms often were used for other courses such as Bookkeeping or General Business, so that in most cases these rooms were occupied 80 to 100 percent of the regularly scheduled school day.

Auto shops were used 80 percent in the city schools and 85 percent of the time in the county schools. Metal shops were used for their primary purpose a higher percent of the time in city schools (79 percent) than in the county schools (68 percent). In those county schools which combined metal shop and agricultural shop, utilization was improved. In one of the smaller county schools, attempts to improve use of existing metal and wood shops have resulted in the sharing of these facilities with the junior high school. Generally, shop facilities in the smaller

schools in the county are not used to the same extent as shop facilities in city schools and in larger county schools because of smaller enrollments.

Electricity/electronics facilities are used about 48 percent of the time in the city and 56 percent of the time in the county school systems. These facilities are the least utilized of all occupational facilities. Drafting rooms are used 80 percent of the available periods in the city and 59 percent of the available periods in county schools.

It might be noted that even though slight differences in utilization occur between city and county schools and between large and small schools, the overall scheduling of occupational facilities for their primary purpose is very high. There is, however, the possibility for added use. Most schools do not schedule classes during the lunch hour. This could be done. With increased student availability some special use facilities could be used during more periods in the day.

The planning implication to be drawn from these data is that there are a significant number of periods each day during which special facilities are not used. Additional time could be made available if secondary uses could be scheduled to other rooms. In order to gain additional use, three things would have to occur: first, student enrollments in programs would have to be increased; second, other facilities would have to be available to which secondary uses could be scheduled; and third, scheduling would have to be more flexible. One important way in which the ROC System can be helpful is that it will increase enrollments by enlarging the effective student body of each school.

Use of Existing Student Stations in Specially Equipped Facilities

Related to, but distinct from, the percent of time a given school facility is used for its primary function, is the use of the available student stations in a facility. This index of use was derived by determining the total number of student stations in each specially equipped facility and then multiplying that number by the number of

scheduled class periods per day. A shop with 24 student stations in a school having 7 scheduled class periods would have 168 potential student stations available. The potential number of student stations was then compared with the actual number of students enrolled each day in each specially equipped facility. Only student enrollments in courses scheduled for primary use facilities were used in computing the percent of utilization.

The student enrollments and the number of student stations in each specially equipped facility were obtained from school records and on-site inspection by the MERI survey team. A reasonable effort was made to verify with school officials the assigned number of student stations and the number of student enrollments in the facilities in question.

The resulting percentages of the use of student stations for primary functions, by proposed sub-system, appear in Table 12. In cases where data were incomplete, no percentage was calculated. This index of use shows the relative availability of various types of facilities under the existing scheduling patterns in each high school. No attempt was made to gauge use against an arbitrary standard to reflect the use of shops and laboratories for secondary purposes.

In both city and county high schools, particularly in smaller institutions, secondary uses are made of some occupational education facilities. In most cases this is necessitated by the scarcity of general classrooms and/or tight scheduling patterns. The following discussion of student utilization covers only primary use of occupational facilities.

Few agricultural shops are used beyond 50 percent of their student station capacity, even though they are shared with auto and metal programs in many county schools.

Among the sub-systems, home economics facilities (cooking, sewing, and special use rooms) are utilized between 50 and 90 percent of student station capacity, although the use of such facilities ranges from

27 percent to 98 percent among the 16 individual schools. The average for all schools was 63 percent.

Business education facilities (office practice and typing rooms) are used over 80 percent of capacity in Sub-systems I and IV, but there are available student stations in Sub-systems II and V.

Auto shops were scheduled an average of 77 percent of existing capacity among all schools. Other industrial arts facilities were not so heavily scheduled; utilization ranged from 46 percent in electricity/electronics to 60 percent in wood shops. High schools with student enrollments of 700 or more were able to put their facilities to a higher level of use. For example, at Clovis auto and wood shops were filled to capacity; at Reedley all industrial arts shops were scheduled 88 percent or more of their available capacity. At Sanger, scheduling of industrial arts facilities was relatively heavy in all programs, except metal shops, where reported student enrollments were only 23 percent of capacity.

While there were exceptions, Kerman, Kingsburg, Laton, Parlier, Riverdale, and Sierra high schools generally scheduled student stations in industrial arts facilities at less than 55 percent of available capacity. In each of these high schools, reported enrollments were less than 700 students.

An examination of schedules in county high schools reveals that the starting and ending times of regular school days differ among most schools, as do the number of periods offered, the length of class periods, and the inclusion of lunch periods as potential teaching periods. The widespread differences in these practices within the county creates a particularly difficult planning problem that must receive early attention if schools are to participate in student exchanges for shared occupational programs, or if students are to be transported to centralized facilities for part of their occupational skills training.

Planning Implications for Evaluating Alternative Solutions

The foregoing information leads to several conclusions which have important planning implications. These conclusions and their implications, which are discussed in the paragraphs that follow, provide a basis for the recommendations contained in Chapter IV.

- The fact that many of the youth leave Fresno County indicates the special role that the county must assume in training its young people. Large numbers of the county's young people will be trained in local schools but will go elsewhere to find employment. These students must therefore be prepared for the jobs that await them outside the agriculturally dominated economy of the Fresno area.

- Among the most rapidly growing occupational families in the Fresno area labor market is that of services. These service occupations will continue to grow at a faster than average rate. Many such positions are available in the Fresno area, yet training for service occupations is almost nonexistent in all the schools in Fresno County. This indicates one of the greatest deficits to be filled in occupational training in Fresno County for local employment.

- The need for technical manpower on a national basis is growing far more rapidly than is the training for technicians. Very little is being done to train technicians at the secondary level at any of the schools in Fresno County. Moreover, not much is being done to prepare students at the secondary level for technician training in the junior colleges.

- Educational administrators of the area express the belief that more occupational education should take place. Independent investigation leads to the conclusion by

MERI and others that more students should have the benefits of occupational education. Yet, there is no concerted effort to counsel students either as to occupational choice or as to occupational training. Any recommended program of occupational counseling and guidance in the Fresno area must seek to change the attitudes, traditions, and processes which cause the misdirection of students.

- Statistics have been developed which indicate the seriousness of the dropout problem in Fresno County. Educators consistently underestimate the proportion of their students who leave school prior to completion. Little effort is made to understand the needs of dropouts or to provide the kind of educational process in which they can participate. Continuation school activities, although a step in the right direction, are totally inadequate in occupational education. Recent changes in the federal legislation affecting the age limits on adult education programs may enable Fresno County to make significant headway in this area.

- In some occupationally oriented programs, student enrollments continue to show declines, and little effort has been expended to determine the reasons for student disinterest, or to change these programs in an attempt to reverse this trend. Educators, although aware of declining enrollments, express little concern that the curricula in these programs has not been updated in recent years. To remain viable, programs must be reviewed regularly, and the ones that are not current must be eliminated. Instructors should regularly update their skills and knowledge in their occupational fields, and provision must be made in the system to allow for

professional growth and development of instructors in occupational programs.

- Very few new programs have been added in any of the schools in Fresno County in recent years, and these, for the most part, have been at least partially financed by federal funds. Scarce resources in the Fresno area are not being allocated in any significant degree toward the development of occupational education programs. New revenue sources must be found to meet the occupational education needs of Fresno County residents.

- Utilization of facilities appears to be directly related to size of student body. Small schools that are unable to afford a wide variety of facilities or a specially trained teaching staff are precluded from offering many programs. At the same time, other small schools in close proximity are faced with the same problem. Yet, no co-operative effort now exists whereby smaller schools are sharing facilities, teaching staff, or other resources in order to broaden the services provided to students. One of the better ways to increase student availability for programs is to share students. Therefore, closely contiguous schools should be grouped and processes should be developed so that occupational programs can be offered cooperatively.

IV THE ROC SYSTEM PROPOSAL

The data base upon which MERI has based its recommendations was presented in Chapter II. The information contained in that chapter leads to the conclusion that the present approach is too fractionated to meet the occupational education needs of Fresno County residents effectively. Some of the inefficiencies in the present system are:

- Tax revenues that are not available to certain individual districts would be available through cooperative effort, specifically those revenues authorized under Education Code Section 7450 and following sections.
- Available federal monies under the Vocational Education Act of 1963 are not being effectively used because they are not massed for significant program improvements, but are received in small amounts by individual districts.
- Student stations, particularly in the smaller schools, are inadequately used, while at the same time other schools are experiencing overcrowding and some programs cannot be offered for lack of facilities.
- Many organizations (schools, industry, government agencies) are competitively recruiting for a limited number of well qualified occupational instructors. As a result some programs cannot be offered because of the unavailability of staff; other programs are not successful because of marginally qualified instructors.
- Some badly needed services are not now available, particularly in the areas of vocational counseling and guidance and in curriculum development and planning. Because no single district is large enough to carry the entire cost alone, each district struggles along on its own, doing less than is needed.

- Serious gaps exist in the types of programs being offered, while at the same time there is a redundancy in other programs. Because each individual district decides which programs it will offer without regard to an overall plan for the county, there is no way of insuring that the results will meet the needs of the employers and students of the county.

Alternative Solutions

There are several ways in which Fresno County can go about approaching the problems mentioned above. They must be considered in terms of their potential effectiveness in meeting the needs of Fresno County. Each of the alternatives which MERI believes to have some potential is discussed in the paragraphs which follow.

Development of Truly Comprehensive High Schools

Philosophically, the development of truly comprehensive high schools has a distinct appeal. If the curriculum of each high school in Fresno County could be improved to include comprehensive occupational programs in addition to present offerings, this alternative solution might be best. Unfortunately this is not a possibility. The job is too big, and there are too many limitations on resources, especially on revenue, personnel, and facilities.

Many schools are not sufficiently large so that student enrollments in specialized programs would be adequate. Instructors would have to spend portions of their time teaching other subjects. Additionally, specialized facilities would be unused for major segments of time. Most districts cannot afford to provide adequately equipped facilities to offer a wide variety of occupational programs.

Building of a Technical High School

At the other end of the spectrum of alternatives would be the construction of a technical high school, centrally located, to serve the entire county. Such a high school would be able to offer a wide variety of occupational programs, teaching staff could be of the highest caliber, and equipment and facilities could reflect the current needs of the occupations for which training is offered. This solution has much to commend it, and it has been given serious consideration by some educators in Fresno County.

There are serious drawbacks, however, to creating a technical high school. Early in this century there were a number of trade schools in California. At this writing there are very few, if any, technical high schools operating in the state. The technical high schools did not survive in the modern school system because they tended to become second class in the views of students, faculties, and communities, and ultimately second class in goals and in product. In operation, these schools tended to inhibit vocational education, in that the remaining schools of a district having a technical high school either reduced or completely eliminated their interest and involvement in occupational education. As a result, vocational education was diminished rather than augmented. Because of the second class status traditionally accorded to technical high schools, enrollments declined and students became disinterested in segregating themselves from the mainstream educational effort, even though they might prefer to take occupational training.

Fresno County itself had experience with a technical high school. Reports indicate that educators who were familiar with the operation of the school have mixed feelings about its effectiveness. Some claim that it was highly effective, and they would like to see a similar institution recreated. Others saw results similar to those described above and have no desire to take this chance. Regardless of how successful the previous technical high school might have been, the nation, the state, and Fresno County have changed significantly since Fresno Technical High School ceased to exist. Students' attitudes and goals have changed,

the requirements of the labor market are significantly different, and the educational process itself has been seriously affected by these changes.

MERI, after careful consideration of all of the above factors, believes that a technical high school would not meet the needs of Fresno County, that enrollments would not justify the expense of building such a school, and that the end result would be further delay in providing the kind of occupational education which should be offered immediately.

Use of Junior College Facilities and Programs

There is enabling legislation (Education Code 6401-03) which would permit 15 percent of 11th and 12th grade enrollments in high schools to participate in occupational education programs at the junior college. Under this legislation the home high school could collect full ADA for the student, provided the student attended a minimum day at the high school and, in addition, the junior college would collect ADA based upon a regular part-time student.

This possibility does not share many of the disadvantages found in the other alternative solutions. For example, there would be no stigma attached to attending the junior college for an occupational program, as there might be to attending a technical high school. Also, because of the wide variety of occupational programs available in the three junior colleges in the county, students could obtain training in many occupational areas not now available to them. Individual districts could contract directly with the junior college, and there would be no need for the creation of any facilities duplicative of those available in the junior colleges.

The very real limiting factor in this alternative, however, is the fact that the junior colleges do not have sufficient space available to accommodate the numbers of students who should be served by the programs. If this alternative were to be seriously considered, each junior college would have to significantly expand its facilities in order to provide

room for those students wishing to attend its programs. Additionally, because of the 15 percent limitation, the junior colleges would be able to enroll only a portion of those students who should be participating in the training. MERI believes this alternative has usefulness in Fresno County; however, its application should be restricted to those programs which are not offered by the secondary system itself.

Use of Existing Facilities

There are some specialized educational facilities in Fresno County which are inadequately used. There are other facilities available in the county which are not now used for educational purposes but which might be made available for such use. It is also possible that local employers might make their facilities available for specialized training, thereby further increasing the amount of space that might be used for occupational programs. If this variety of facilities were to be used, the chief problem would be one of control and coordination of the programs to be offered within the available space. The use of existing school facilities would require the negotiation of interdistrict agreements between those schools sharing facilities. Although interdistrict agreements could take care of facility sharing, this method would not permit the overall coordination in the use of facilities which is dictated by the Fresno situation.

The use of available space scattered throughout the county creates an additional problem of getting students and instructors transported to those locations where training can take place. There are three possible solutions to this problem: (1) to use space where students are available and to transport instructors from one program to another; (2) to transport students and/or instructors to the place where space is available; or (3) to create mobile instructional units which the instructor can take to the student.

The third alternative has limited applicability because much of the specialized equipment and facility needs of many occupational programs cannot be easily transported. In a few instances, some specialized

types of equipment might be mounted on a trailer and transported to the various locations offering that particular program. The first two alternatives offer real solutions to the problem. In some cases it may be more efficient to transport students, while in others, where there are sufficient numbers available in close proximity to the facility, the instructor might more easily move from one facility to the other.

The details of such a transportation system would have to be carefully worked out. Because facilities would be available in different school districts and in nonschool district situations, coordination of scheduling and of the physical aspects of transportation would require early intensive consideration. Considering all of the problems with respect to the use of existing facilities, this approach may hold a possible key element to the solution of the Fresno County problem.

A Combination Approach

No single alternative solution impressed MERI as being the complete answer. As each possibility was considered and reconsidered it became increasingly apparent that some combination of the above solutions would be better directed to Fresno County's needs. The recommended solution presented below does incorporate elements of a centralized technical high school; it also attempts to make maximum use of existing facilities both within the schools and within the community in general; and it attempts to maintain the comprehensive high school concept wherever, and to the maximum extent that, it can be accomplished.

The Choice of Alternatives

The Criteria

The proposed system is based upon several conditions which MERI believes are essential to any system adopted in Fresno County. These are:

- To meet student needs, occupational education programs and services must be significantly expanded in Fresno County. Present programs are inadequate both as to

quantity and quality, and this inadequacy is part of the cause of the estrangement of significant numbers of students from the educational process.

- The best way to increase occupational education in Fresno County is through the cooperative effort of all interested agencies, including the secondary school districts, the junior college districts, the County Superintendent of Schools, and community organizations interested in the areas of manpower and training. Limitations of resources, particularly of facilities, staff, and revenue, require cooperative effort for maximum benefit at minimum cost.
- Cooperative effort can only be achieved if individual school districts and agencies are allowed to maintain their individuality and independence. Local control of students and of basic programs must be preserved, and students must be able to maintain their identification with the local high school.

The Regional Occupational Center Law

In looking for ways in which these criteria could be met, MERI investigated the possibility of the use of the ROC enabling legislation (Education Code Section 7450 and following sections) and came to the conclusion that this legislation provided an ideal solution to Fresno County requirements. The Regional Occupational Center Act, enacted by the State Legislature in 1965, calls for cooperative action between the county superintendents and local districts to solve the kinds of problems facing Fresno County.

In essence, this act allows either of two possible plans of action, both of which result in the establishment of vocational programs that will benefit students from more than one district. In either case a property tax may be levied in those participating districts not to exceed $0.10 per $100 of assessed valuation for operational purposes and

$0.05 per $100 of assessed valuation for capital outlay purposes. The key elements of the two plans are:

Plan I - Countywide Regional Occupational Center(s)

1. Organized by the County Superintendent (Education Code 7451)
2. Funded by all taxpayers in the county (Education Code 7456)
3. Tax permission granted by the County Board of Supervisors (Education Code 7451 and 7456)
4. Open to all qualified students in the county (Education Code 7455)
5. Location convenient to all qualified students (Education Code 7452)

Plan II - Interdistrict Occupational Center(s)

1. Organized by school boards of cooperating districts (Education Code 7451)
2. Funded by taxpayers of cooperating districts (Education Code 7456)
3. Tax permission granted by the County Superintendent (Education Code 7451 and 7456)
4. Open to all qualified students of the cooperating districts (Education Code 7455)
5. Location convenient to all qualified students (Education Code 7452)

After discussion with the County Superintendent of Schools, MERI decided that Plan II offers greater potential for Fresno County. Because of the cooperative nature of the project itself, involving financial contributions from both the County Superintendent of Schools office and from participating school districts, and because of the interest of individual school superintendents, MERI believes that an interdistrict effort is the best answer.

Financial Considerations

Money is frequently the chief barrier to the accomplishment of plans of significant proportion. Most school districts in Fresno County need added revenue to maintain and upgrade existing services. Several districts face the necessity of replacing facilities that do not meet Field Act requirements. The county has a spotty record of passing bond issues, and districts are concerned about future elections.

Use of the ROC Tax

Yet, in spite of this somewhat gloomy picture, Fresno County has a good tax base. Under the authorization of the Regional Occupational Center Act, a sizable amount of money could be made available for occupational programs in Fresno County. Total assessed value in the county in 1967-1968 approached $1 billion. If the full authorized ROC tax were levied, approximately $500,000 would be available for facilities, furniture, equipment, and fixtures, and approximately $1 million would be available for operation each year.

There is no way of knowing what the costs will be before actual detailed programs are developed. In general, it can be assumed that only those programs will be developed which can be supported by the available funds and that all of the available funds will be used. The $500,000 which can be available under the ROC System tax for capital expenditures are totally inadequate for the construction of a new facility. A check of occupational educational facilities built in other parts of the state shows that the cost of the vocational center in San Jose was nearly $4 million, and the cost of the one in Torrance will exceed $5 million. The students of Fresno County should not have to wait until sufficient revenue could be developed under the ROC tax to construct, equip, and furnish such a center. Ways must be found to accommodate programs in existing facilities, although the capital outlay tax can be used for improvements and additions to existing facilities.

If the ROC System decides to levy the full tax, as authorized by the Education Code, a total of $1.5 million per year will be available. Further, such funds can be stretched significantly by using ROC tax monies as matching funds for the securing of state and federal funds. It must be stressed that this is a minimum of $1.5 million over what is presently available. These additional monies are necessary to develop the type of comprehensive cooperative program needed by the students of Fresno County.

Table 13 presents a summary of federal and state monies received for occupationally oriented programs in Fresno County school districts during the past three years. Nearly $1 million has come into the county, usually in small grants to individual districts. If these monies were to be massed and channeled into program development to serve the entire county, it is estimated that an additional $1 million to $1.5 million would be available annually.

The 1968 Amendments to the Vocational Education Act

These amendments make cooperative effort more necessary. The amounts of money available are significantly increased, and the State Department of Education has indicated that it will be unable to review the myriad requests which will be forthcoming. Consequently, the Department is very interested in encouraging more cooperative effort in order to simplify the administration of the law.

Aside from program assistance, the 1968 amendments to the Vocational Education Act provide for special grants which may be of interest to Fresno County. These special grants are discussed below.

Exemplary Programs. The State Board of Education may make grants to local educational agencies to pay for all or part of the cost of developing or operating exemplary occupational programs. It would appear that the type of program envisioned in this report is exemplary in nature, particularly in that several school districts are brought together in cooperative problem-solving activity. This money is available only for

three years; however, it could be very beneficial in financing some of the initial activities of getting the ROC System into operation.

Residential Vocational Schools. Applications may be made directly to the U.S. Office of Education for funds to be used in the construction and operation of residential schools to provide vocational education. Considering the distances which some students will have to travel to attend programs, the ROC System may wish to consider the construction of limited residential facilities. Students from Sierra Union High School District and from Coalinga might be brought to Fresno for block periods of time--such as two or three days per week, a week, a month, or a semester--and live in the residential facilities provided. If this is contemplated, the Fresno County ROC System could be one of the very early applicants for funds under this amendment.

Cooperative Work Study Programs. Significant amounts of money will be available for the development of work study programs cooperatively with business and industry in the local community. Because work experience is an integral part of training, the ROC System should make an early request for funds. This money may also be used to provide personnel to coordinate such programs; thus, it is possible that the ROC System could fund the salary for a work experience coordinator with Vocational Education Act monies.

Curriculum Development. Money will be available for curriculum development. Most of it undoubtedly will go to colleges and universities concerned with teacher training; however, money may be granted to public or nonprofit private agencies for the development of vocational education curriculum materials. As part of its program of curriculum development, particularly in those curricula areas which are proposed for articulation with junior college programs, the ROC System might be in a good position to obtain direct federal assistance.

Professional Development. One of the service functions of the ROC System is that of providing in-service training for vocational education personnel. Under Title II of the 1968 amendments, money will be available for in-service training, teaching institutes, and exchange programs. The ROC System should make application to fund much of its activity in this area through direct grants under Title II.

Availability of Adult Education Programs to 16- and 17-Year-Old Students. Title III provides that eligibility for participation in adult education programs will be available to 16- and 17-year-old students. If California follows the federal direction, which it is likely to do, there would be a greater possibility for flexibility in the use of centralized facilities. In that case, continuation school students might participate in federally funded adult education programs and receive credit toward their high school diplomas.

Additional revenue can come through contracts which the ROC System makes with private employers, school districts, and other public agencies interested in manpower training. An example of this type of financial arrangement is found in the recently approved contract between the CEP and the State Center Junior College District, whereby the district is to conduct basic education for participants. The money received by the district under the contract will be partly used for development purposes. These activities will have carryover value for similar programs in which the district may become involved. In a sense, this is the type of accounting used by many private concerns to make each project pay for a portion of research and development costs.

The Regional Approach

Fresno County has 17 high school districts and 22 high schools within its boundaries. With the possible exception of the Fresno City Unified District, any cooperative offering of programs or services will necessarily cross district lines. For this reason it became necessary

to determine which districts might best be grouped into sub-systems to offer joint occupational education programs and services.

The criteria used by MERI in deciding upon the recommended sub-systems included the following:

- The schools in the sub-system must be within reasonable commuting distance from one another, so that bussing of students for specialized programs can take place with a minimum disruption of normal schedules.
- The sub-system must involve sufficient student enrollments to support a wide variety of occupational programs.
- The traditions and present orientation of the faculty, the trustees, and the students in the districts must be such that sharing can take place.
- The sub-system must allow the students to maintain an identity with their local high school and to take their basic classes from that school.

A significant factor in the operation of most county districts is the need to transport students to and from school in buses. The highest proportion of students transported appears to be at Sierra High School, where about 97 percent of the students ride school buses. The lowest proportion in county school districts was 32 percent reported by Parlier. The county average is over 50 percent. In comparison, the proportion of students transported by bus in city high schools ranged from 7 percent at Hoover to 19 percent at Roosevelt.

The widespread distribution of schools in county districts is of particular importance in the development of interschool student exchanges or centralized vocational facilities. The problem is compounded by the mountainous topography of the eastern sector of the county. Sierra High School in the northeast sector is virtually isolated from other schools in the county because of the present road system. (Proposed highway construction may alleviate this problem by the mid-1970s.)

Coalinga in the southwestern sector is removed from the general population concentration and urban center of Fresno County by approximately 60 miles. The remaining schools in the central region of the county are located on relatively level terrain, and an adequate all-weather road network links them to U.S. Interstate Highway 99. Except for those few occasions when heavy fog impedes driving conditions, bus transportation for an ROC System appears feasible on the basis of safety and commute time.

Aside from the 6 high schools in the Fresno city school system, the majority (10 out of 16) of the county high schools are clustered in the south-central region of the county. Four county high schools are located across the north-central region of the county. The two remaining county high schools (Sierra and Coalinga) are considerably outside the central region of the county. Thus, all but 4 of 22 high schools in the county are within a 20-mile radius of the central district of the city of Fresno. The following table shows the approximate distance of 11 county schools from the city of Fresno.

APPROXIMATE DISTANCE OF SELECTED HIGH SCHOOLS FROM CITY OF FRESNO

School	Approximate Number of Miles from City of Fresno	Direction from City of Fresno	Access to Highway 99
Central	8	West	Good
Clovis	10	Northeast	Fair
Coalinga	60	Southwest	Very poor
Fowler	10	South	Good
Kerman	15	Northwest	Fair
Kingsburg	20	South	Very good
Reedley	25	Southeast	Fair
Sanger	15	South	Very good
Selma	15	South	Very good
Sierra	45	Northeast	Very poor
Tranquillity	25	Northwest	Poor

Source: MERI.

Figure 3 shows the five sub-systems which MERI recommends. The schools in each proposed sub-system are connected by solid lines. Schools outside Fresno County which might be a part of a proposed sub-system are connected with dotted lines. Junior college locations are also shown.

Sub-System I

Sub-system I, containing Fresno City, Clovis, and Sierra High School Districts is the largest of the sub-systems. Over half of the total high school enrollments in Fresno County are enrolled in the eight high schools of this sub-system (see Table 14). With the exception of Sierra, all high schools in this sub-system are within close commuting distance; in fact, students are presently being bussed among the various high schools in the Fresno City Unified District for specialized programs.

The Sierra High School presents a special problem because of its distance from the city of Fresno. The transportation network clearly indicates that this is the sub-system with which this high school should be connected. It is expected that within five years a new highway will be completed from Fresno to Tollhouse, very near Sierra High School, which will cut driving time significantly.

It may be desirable to arrange for a limited number of residential units to be developed in Fresno, so that students from outlying districts can participate in programs offered only in the Fresno area. If such residences are available, Sierra students might be scheduled into these programs for blocked periods of training and live nearby.

Clovis High School, although physically close to the Fresno city high schools, appears to be separate by custom and tradition. If this sub-system is to operate effectively, it will be necessary to recognize this tradition. Care should be taken to insure that Sierra and Clovis students do not get the feeling they are being "swallowed up" by the Fresno city system.

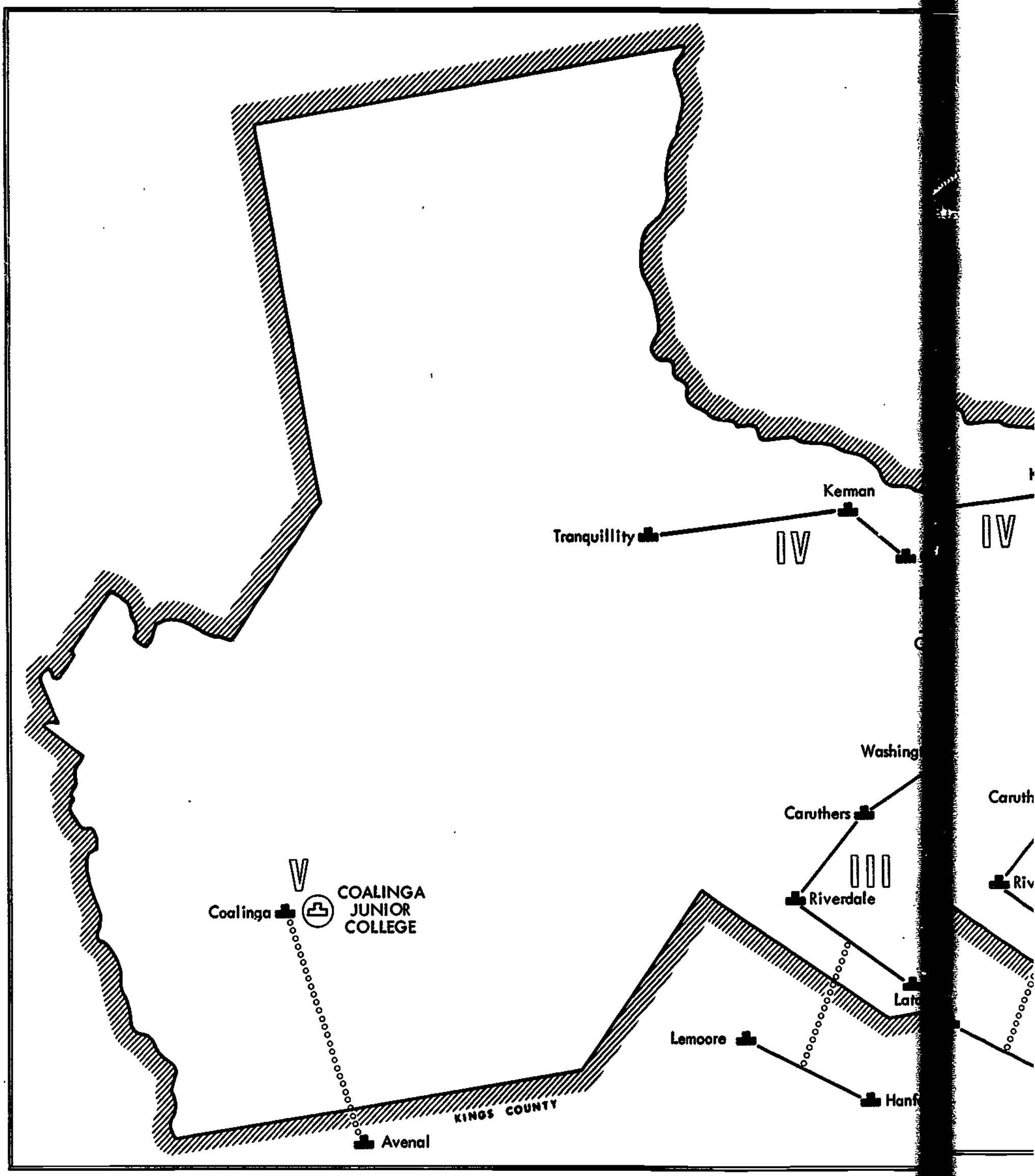
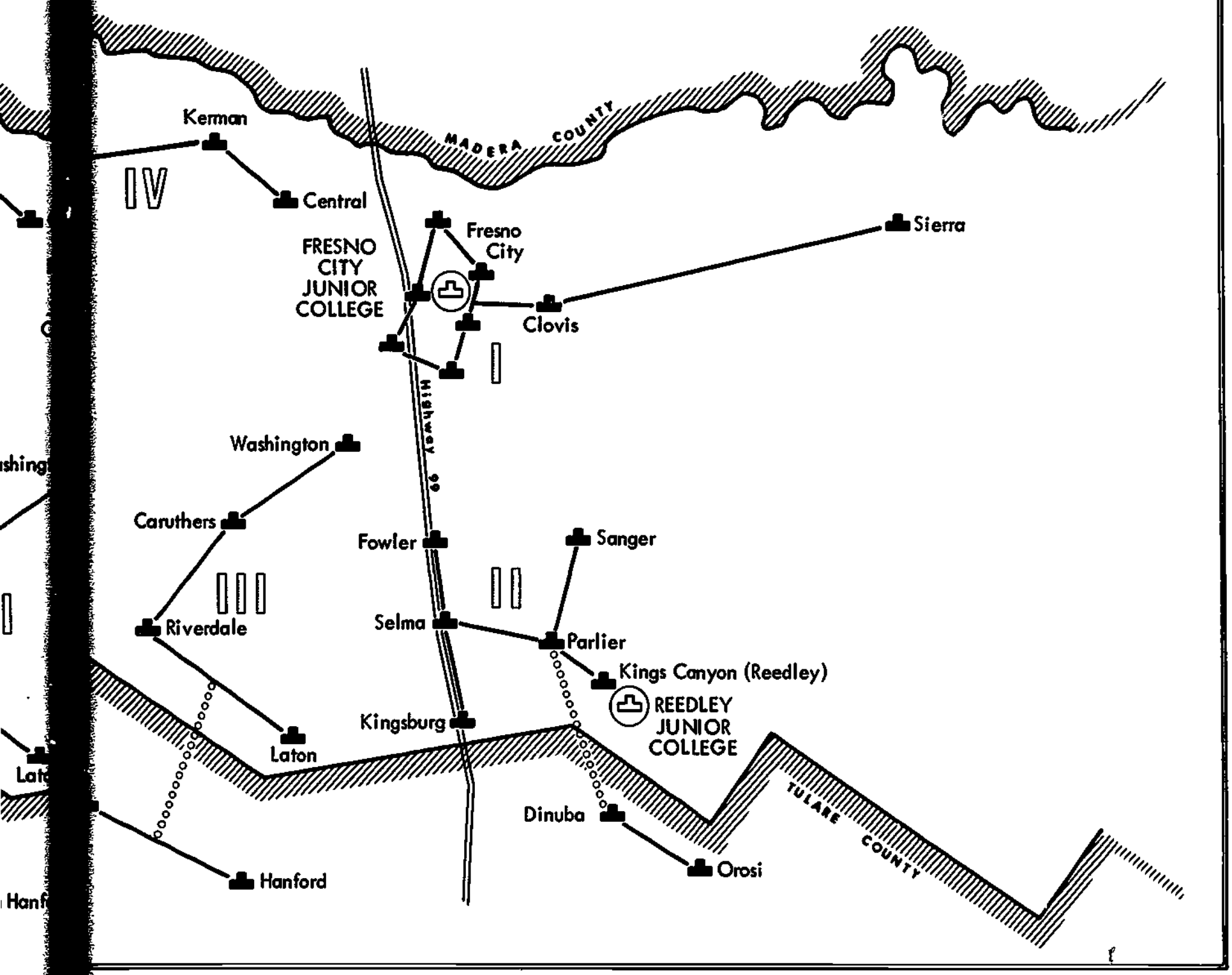

Kerman
Tranquillity
IV
IV
Washing
Caruthers
III
Riverdale
Riv
Caruth
V
COALINGA
JUNIOR
COLLEGE
Coalinga
Lemoore
Hanf
KINGS COUNTY
Avenal

Figure 3

MAP SHOWING HIGH SCHOOLS, JUNIOR COLLEGES,
AND PROPOSED ROC SUB-SYSTEMS FOR FRESNO COUNTY



Sub-System II

Sub-system II, the second largest of the sub-systems, contains six high schools with a little over 21 percent of the total enrollment of the county (Fowler, Kingsburg, Kings Canyon, Parlier, Sanger, and Selma). Reedley Junior College of the State Center Junior College District is also located in this sub-system.

In Tulare County there are two high school districts which are also closely oriented to this sub-system: Dinuba and Orosi. Although it is not possible at this time to make a definite recommendation that these two schools be included in Sub-system II, this possibility should be reserved for future consideration. MERI has made a similar recommendation to Tulare and Kings counties concerning the development of the sub-systems of their schools. One of the sub-systems recommended was that of Dinuba High School and Orosi High School. These two schools as a sub-system are marginal in terms of numbers of students required to support a comprehensive occupational education program. For that reason, if they could at some future date be combined with Sub-system II in Fresno County, there would be mutual advantage.

Sub-System III

This sub-system with four high schools (Caruthers, Laton, Riverdale, and Washington) includes approximately 10 percent of the total enrollment in Fresno County. The chief difficulty with this sub-system is that the largest high school, Washington, has about half of the total enrollment of the sub-system. Washington High School is located closer to the Fresno City Unified District than it is to any of the three high schools in the sub-system. The traditional orientation of Washington High School is split three ways: toward Caruthers, Fowler, and Fresno city. It seems appropriate to include Washington in Sub-system III in order that there would be sufficient student enrollment to justify a comprehensive selection of occupational education programs.

Here, as in Sub-system II, there are two high schools in a neighboring county (Kings) located close by. These two schools are Hanford and Lemoore, with a total enrollment of approximately 3,000 students--a little more than the enrollment of the four Fresno County schools in the sub-system. Again, there would be advantages in including the two Kings County schools in this sub-system; however, this would undoubtedly be a long-range goal, and in the meantime the four Fresno County schools could comprise a sub-system.

Sub-System IV

This grouping includes Central, Kerman, and Tranquillity high schools and has approximately 10 percent of the total enrollment of high school students in Fresno County. There is some question whether Central is more traditionally aligned with the Fresno city system than it is with Kerman and Tranquillity; however, in order to form a sub-system of sufficient size, MERI recommends that it be included within Sub-system IV. Discussions with local administrators, both in Fresno city and in Central, indicate that it is reasonable to include it within Sub-system IV.

Sub-System V

This sub-system, comprised only of Coalinga, presents a special problem. Coalinga High School contains only about 3 percent of the total enrollment of Fresno County. Furthermore, it is isolated from the other high schools (Tranquillity and Riverdale) in the Coalinga Junior College District. The closest high school to Coalinga is Avenal in Kings County, and it has an enrollment of only about 400 students. The combined enrollments of both Coalinga and Avenal high schools are not sufficient to justify a wide range of occupational programs at the high school level. It is proposed that Sub-system V also include Coalinga Junior College for occupational programs. The combined enrollments of the three schools would be sufficient to justify a wide range of occupational programs. In fact, Coalinga Junior College already has a large number of occupational programs available.

This sub-system would be different from the others in that the junior college curriculum should be more closely allied with that of the high schools. This presents some problems in that Riverdale (in Sub-system III) and Tranquillity (in Sub-system IV) are also located within the Coalinga Junior College District. Coalinga Junior College will be sensitive to any organization which would tend to reorient any of its feeder high schools toward the State Center Junior College District. For that reason the inclusion of Riverdale in Sub-system III and Tranquillity in Sub-system IV must be done with the recognition that those students will be attending Coalinga Junior College rather than one of the State Center Junior College campuses.

The San Joaquin Valley Regional Junior College Coordinating Committee

Under present arrangements the 11 junior colleges in the San Joaquin Valley, from Stockton in the north to Bakersfield in the south, are cooperating to insure that a wide variety of occupational programs are made available to students of the San Joaquin Valley. Thus, a student desiring a specialized program not offered by his own junior college may attend any of the other junior colleges which do offer such a program. As this concept is developed and matured, it would be expected that students from Riverdale desiring to take special programs in the State Center Junior College District would be allowed to do so, and that students from Caruthers, Washington, and Laton desiring to take special programs offered only by the Coalinga Junior College District would be permitted to do so. In this way the students in Sub-system III might go in either direction to specialized programs at the junior college level, depending upon their own particular preferences with respect to the type of occupational education they wish to undertake. The inclusion of Riverdale in Sub-system III and of Tranquillity in Sub-system IV does not mean that the students from those high schools would necessarily orient to the State Center Junior College District. In fact, students

attending high schools in the State Center Junior College District might take specialized programs in preparation for transfer to Coalinga Junior College.

Arrangements between Sub-Systems

In Sub-systems III and IV potential enrollments may not be large enough to justify certain programs. In these cases, the students from Sub-system III should attend the programs in Sub-system II, and the students from Sub-system IV should attend the programs in Sub-system I. In this way, all programs can be made available to all students.

The ROC System Organization and Functions

The organization chart shown on Figure 4 lists the significant components of the recommended ROC System organization. This proposal brings together all of the high school districts and the junior college districts into a confederation.

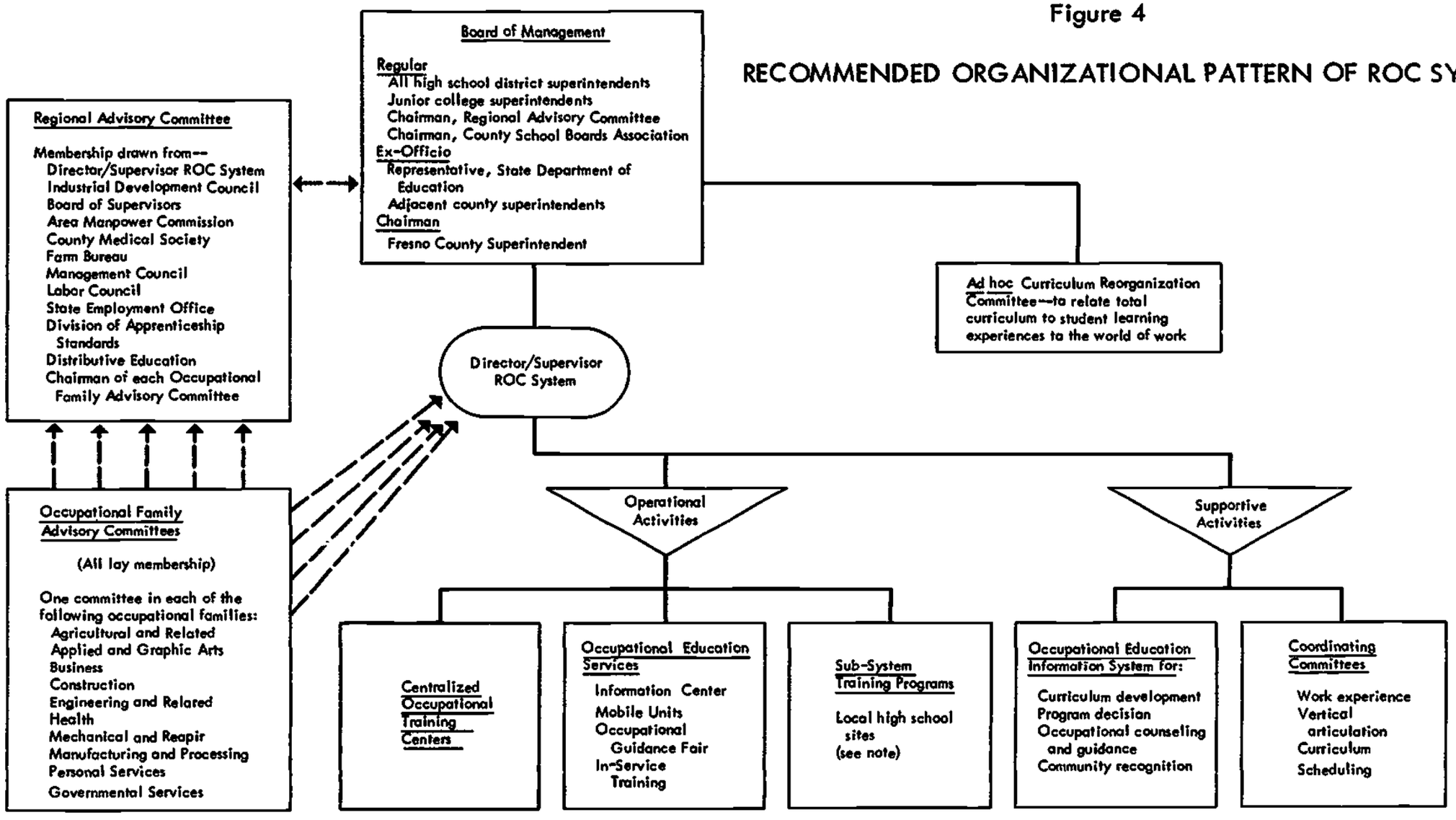
The key element of the system is the voluntary banding together of educational administrators of the entire area to make a frontal attack on occupational education needs. Another important element of the proposed system is the way in which the educational resources of the area are made more readily responsive to the expressed needs of the community, and the way in which the community is drawn into the support of the educational system. These elements are discussed below with respect to each of the separate organizational units and functions of the system.

The Board of Management

Membership. Under the proposed organization, the Board of Management is the pivotal element of the ROC System. The Board has as voting members each of the high school district superintendents and each of the junior college district superintendents. Other voting members include the chairman of the Regional Advisory Committee and the chairman of the County School Boards Association. The Fresno County Superintendent of Schools serves as chairman of the Board and is a regular voting member.

Figure 4

RECOMMENDED ORGANIZATIONAL PATTERN OF ROC SYSTEM



NOTE: MERI recommends that ROC program teachers be under the administration of the local district for all except program supervision and direction. MERI recommends that these latter functions be fulfilled by the ROC System Director/Supervisor.

Ex-Officio members include the county superintendents of schools from adjacent counties. The reason for including adjacent county superintendents is to encourage cooperation on a broader regional base. As has been mentioned, a similar ROC System has been recommended by MERI for Tulare and Kings counties, and it has been suggested that the Fresno County Superintendent of Schools serve as an ex-officio member on their Board of Management. Through this type of regular communication it is hoped that regional planning might take place on a broader base and actually be extended eventually to include additional contiguous counties.

It would be advantageous to include (in an ex-officio capacity) a representative of the State Department of Education, Bureau of Vocational Education, who would be concerned with keeping abreast of developments throughout the San Joaquin Valley by participating in such Boards of Management. Additionally, he could serve a valuable function in keeping the Board apprised of developments at the state and national level.

Functions. The functions of the Board of Management lie in three broad areas:

Fiscal
Program planning, scheduling, and control
Program evaluation

In each area the Board's responsibilities are policymaking rather than administrative. The administrative responsibility is delegated by the Board to the director/supervisor of the ROC System, a full-time employee hired by and directly responsible to the Board.

MERI recommends that the Board of Management authorize the Fresno County Superintendent of Schools to levy ROC taxes for both capital and operating expenses. The Board of Management itself has no authority to levy such a tax; only the County Superintendent of Schools can do so. However, under the proposed arrangement the County Superintendent of Schools would not levy a tax unless he had the concurrence of the Board of Management. The Board would determine the amount of the tax to be

levied under the Education Code authorization and, in effect, would authorize the County Superintendent to levy such a tax on the participating districts. Additionally, the Board of Management would make decisions with respect to expenditure of the tax monies.

In the area of program control, planning, and scheduling, the Board of Management would develop criteria and establish policies for determining when new programs should be started and when existing programs should be phased out. In addition, the Board of Management (probably through a sub-committee) would carefully study the problems that arise from scheduling differences. If students are to be bussed from one school to another, schedules must be compatible so that there would be a minimal disruption at any individual high school. Additionally, the Board of Management would be concerned with the development of block scheduling in programs.

The third and perhaps most important function of the Board of Management would be that of continual evaluation of all programs and services of the ROC System. In this regard, the Board of Management in the beginning should establish the evaluation procedures to be used. Some portions of the evaluation would provide information to be used in continuing program planning and analysis. Other parts would include periodic studies and regular analysis of curriculum content by the Occupational Family Advisory Committees.

Accountability. Ultimately the Board of Management is responsible to the taxpayers of Fresno County. More specifically, however, the Board is accountable to the Regional Advisory Committee in the sense that it should be responsive to the expressed wishes of the Committee, and the Committee should be sure that the ROC System is meeting the needs of the community for occupational education.

Conversely, the Regional Advisory Committee is accountable to the Board of Management to insure that it is supportive of the ROC System's needs and that there is a continuous flow of information in both directions between the Board of Management and the Regional Advisory

Committee. When the ROC System would need particular kinds of support (for example, teaching staff, teaching facilities, or work experience stations) the Regional Advisory Committee would be accountable to the Board of Management for providing it.

The director/supervisor of the ROC System reports directly to the Board of Management and participates in all of their meetings.

Regional Advisory Committee

The Regional Advisory Committee forms the chief link between the ROC System and the community-at-large. For that reason it is proposed that the membership of this Committee include persons drawn from all segments of community activities interested in manpower and training. Examples of these types of persons are representatives from the Board of Supervisors, the Fresno City Council, the Area Manpower Commission, and the various professional and trade associations. Additionally, the chairman of each Occupational Family Advisory Committee should serve on the Board of Management. The director/supervisor of the ROC System should also be a Board member, and he perhaps might serve as the executive secretary of the Board.

The functions of the Regional Advisory Committee would be to evaluate the recommendations made by the Occupational Family Advisory Committees and to establish priorities for program implementation to be recommended to the Board of Management. Additionally, the Committee would be valuable in bringing support to the ROC System from the community. The Committee might also serve in a liaison capacity to make the services of the ROC System known and available to the employing community. It should be responsible for screening requests from local industry both for training and for making recommendations to the Board of Management concerning the ways in which the ROC System might provide training for local industry.

Occupational Family Advisory Committees

It is recommended that there be ten Committees, one for each of the occupational families discussed in the program recommendations. Each Occupational Family Advisory Committee should be composed of the most knowledgeable and influential people in the community who are representative of occupations in that family. The members of the Committees should be selected so that the entire county is represented and so that recommendations made by the Committees would be representative of the needs of the entire area served by the ROC System. Each Committee might also have members representing junior colleges and the ROC System.

The functions of each Committee would be to study program needs and make recommendations to the Regional Advisory Committee as to which programs should be offered within each occupational family. Each Committee would work with the persons responsible for the development of the curriculum to insure that it is responsive to the needs of the entire community. Each Committee might also be responsible for certain evaluative tasks with respect to programs in its occupational family. Where specialized community assistance would be needed for programs, the Occupational Family Advisory Committees could serve as a liaison with the community to develop such assistance.

Ad Hoc Curriculum Reorganization Committee

This Committee should be composed of the most knowledgeable and most highly motivated educational administrators in Fresno County. Its function would be to make recommendations affecting the entire secondary curriculum in Fresno County. It is important that the membership include persons who are highly respected educators so that the Committee's recommendations gain acceptance within the educational community.

This Committee would be responsible for taking an overall look at the ways in which both occupational and academic education could be fused into a single educative process. The objective of the Committee would be to introduce occupational information and occupational

knowledge into the basic curriculum, and, at the same time, to provide for training in basic skills, i.e., communications and arithmetic in the occupational skill training programs. Even if the ROC System, as proposed, does not come into being in the immediate future, there would be value in having such a Committee make this kind of analysis.

The ROC System Activities

The activities of the ROC System are of two major types: operational and supportive. The operational activities are those performed directly by the ROC System and financed by tax money levied by the Board of Management. The supportive activities are those of a primarily coordinative nature whereby the ROC System provides advice, guidance, and assistance to the local school districts on programs related to occupational education. Operational activities will require staff on the payroll of the ROC System, whereas supportive activities may or may not require such staff.

Operational Activities

An Occupational Training Center. MERI recommends that the ROC System establish in the beginning one Occupational Training Center, preferably located somewhere in the city of Fresno. MERI does not recommend that the ROC System build a new facility. Rather, it is believed that an existing facility can be used for the purpose of housing centralized programs. There are several reasons for this recommendation:

- The limited resources of the community should not be spent upon building a new facility when available facilities can be used effectively.
- Until it is proved that the ROC System of cooperative effort among districts will work, there should be no major expenditure on a facility which may at some future time become a "white elephant." Rather, the funds

in the initial stages should be used for the development and administration of programs directly benefiting students.

- The Center's primary function would be to serve the needs of regular high school students wishing to enroll in occupational programs that cannot be offered by individual high schools. The Center would offer two types of programs: first, those which would serve the entire county (that is, where there would be only one program for all schools in the county); and second, those Sub-system I programs which would be offered at only one location in the sub-system. Not all programs in Sub-system I would be offered through this Occupational Training Center. Some would be offered through the individual high schools of Sub-system I. Those requiring highly specialized equipment or facilities, however, could probably best be offered at such a Center.

- The Center should be open to the adults of the Fresno area as well as to the youth. If the Board of Management would be willing to intermix adult and regular high school programs, adult programs could be offered during the day. Community organizations concerned with manpower and training could make excellent use of such a facility by purchasing services from the ROC System. For example, the CEP could purchase skill training services from the ROC System, using this facility. Individual industries or employers might also wish to contract with the System for the training and retraining of persons already on the payroll.

There are sufficient students available to also justify establishing such a Center in Sub-system II. Here again, MERI recommends that no new facility be built at this time, but that an available facility

be used on an interim basis until it is established that a permanent facility is needed.

Discussions with local citizens indicate that facilities suitable for Occupational Training Centers might very well be available in both Sub-systems I and II. For example, in Sub-system I, Fresno County Fairgrounds could readily provide about 50,000 square feet of space which could be adapted for occupational skill training with minimum capital expenditures. MERI has held preliminary discussions with the executive secretary of the County Fair Board, and believes that the ROC System could lease this space from the Fair.

In Sub-system II, a major industrial facility will become available within the next few months. It is quite possible that this facility could be leased on a short-term basis to provide space for an Occupational Training Center.

Potential enrollments from Sub-systems III, IV, and V are not large enough to support a separate facility. It is possible, however, that facilities in individual schools would be sufficient to absorb the programs to be offered in these sub-systems. For example, in Sub-system IV, Kerman High School has recently abandoned its old campus and moved to a new campus. Some of the facilities of the old campus might be adequate for programs to be offered by this sub-system. In Sub-system III, it is unlikely that sufficient facilities can be available in the existing school plants, and students may have to be bussed to the centralized facility in Sub-system II for some programs. An alternative for the ROC Board would be to authorize certain local construction using ROC funds.

Sub-System Training Programs. Most of the programs offered by the ROC System would be housed in facilities of existing high schools. Students would be bussed from one school to another within a sub-system or instructors would travel from one school to another to participate in the programs offered in that sub-system.

Because of the geographical distances involved, Sub-system V cannot reasonably bus students into any of the other sub-systems. For this reason a different approach will have to be worked out involving the junior college district. If Coalinga High School, Avenal High School, and Coalinga College share facilities, a greater variety of occupational programs could be made available to the students in both high schools.

MERI envisions that the ROC programs offered in the local high schools would be under the management and control of the ROC System. The teaching staff would take administrative direction from the local high school, and the students would be under the control of the local administration while at that high school; however, program direction itself should come from the ROC System. The teaching staff would normally be on the payroll of the ROC System. However, if some teachers have additional time available, local school districts might purchase this time from the ROC System for programs to be offered to the students of that district alone.

Occupational Education Services. The ROC System could provide significant services to the local high school districts in two major areas: first, occupational counseling and guidance; and second, in-service training for vocational teachers and counselors. These functions cannot and should not be entirely taken over by the ROC System; however, the System can offer significant assistance to local districts in both areas. For example, a mobile counseling and guidance unit might be developed which could rotate among the various high schools in the county, or a centralized Occupational Information Center with microfiche units in individual high schools might be established.

Countywide in-service training programs for teachers and counselors could be offered to teachers both in the ROC System and in the local high school districts. These in-service training programs should be a key element in keeping the faculty current on developments in their particular occupational field.

Supportive Activities

Occupational Education Information System. One of the chief needs identified during the survey in Fresno County is for a coordinated information system. Many individual agencies are asking for separate studies, gathering information for their own use, and needing information that is not available locally. At present, however, there is no overall system whereby these agencies can cooperate either to share available information or to gather needed information on a joint basis. For this reason, MERI recommends that the ROC System develop an information system. The areas in which information should be gathered and disseminated are:

Curriculum development
Program decisions, i.e., phase-in and phase-out
Occupational counseling and guidance
Community recognition and support

In the beginning the information system could be established on a voluntary basis; there is no need for an employee to operate it. As the ROC System develops in its complexity and coverage, however, it is possible that a full-time supervisor would be needed to insure that the necessary information is regularly collected, interpreted, analyzed, and then disseminated to those persons needing it for decision making purposes.

Coordinating Committees. MERI recommends that four Coordinating Committees be established: Work Experience, Vertical Articulation, Curriculum, and Scheduling. These would be continuing Committees although the membership might rotate. Their primary purpose would be to perform a coordinative function in their subject matter areas on a countywide basis, as described below.

MERI has recommended that work experience programs be expanded significantly in all areas of occupational education. If this is to be accomplished, there would need to be a major effort by the Work Experience Committee in the identification of new work experience stations

so that this can take place. In the past, work experience has been handled by the individual high schools; however, the work experience stations have not all been within the respective districts. The more aggressive work experience coordinators have tended to identify and get first choice of those stations available in the community. The Work Experience Committee would try to make more stations available to more students throughout the county and would build work experience into more of the occupational programs.

The Vertical Articulation Committee would be concerned with the development of four- and five-year curricula extending over the last two or three years of high school and the two years of junior college. For the most part, these programs would be developed in the area of technological training. Those occupational areas which offer the greatest opportunity for the long-range curriculum are described in the program recommendations.

The Curriculum Committee would be primarily concerned with insuring the compatibility of those programs that are offered in more than one location. This is not to say that they must be identical; however, differences should result from planning to meet special needs rather than from a lack of coordination.

One of the most important Coordinating Committees is the Scheduling Committee. If the ROC System is to operate, scheduling problems must be overcome early in the planning process. It is recommended that the Scheduling Committee be appointed as soon as possible.

Program Recommendations

Program Planning Bases

Out of the analysis of Fresno County needs and out of MERI's experience in planning occupational education programs elsewhere have come the following bases for MERI's program recommendations:

1. Nearly all education today is or should be occupational, in that it is preparing persons for economic independence. As a result,

the traditional dichotomy between occupational and academic education is unreal. The goals of curriculum planning are to provide for the development of occupational skills and knowledge in all courses and, conversely, to provide for the development of breadth of understanding of the broader values of life through occupational training.

2. There is no longer any justification for considering any type of education as terminal. Whether a person's vocation is that of doctor or janitor, his education must be a continuing process. Therefore, programs must be planned in a way that will encourage entrance and exit to develop the skills and knowledge needed at that time by the participant. The entrance and exit should take place throughout the entire life of every person in the labor force, and the educational process itself must provide for the development of this attitude on the part of the community's work force.

3. Occupational education in a broad sense needs to be expanded significantly in Fresno County. Skills training must be available to all high school students to provide interim vocational opportunities so that they can meet immediate economic objectives while pursuing further education. Greater opportunities must be provided for students to explore the world of work and to learn of the opportunities available to them.

4. The Fresno labor market cannot absorb all of the youth who become available in any year. Additionally, many youths will prefer to leave the area to seek employment in other parts of the state and nation. Curriculum planning must be based upon national, state, and regional manpower needs, as well as upon local manpower needs. Program offerings must prepare students for employment in the broader based world of work.

5. The world of work, particularly in its national setting, is in a state of constant change. New occupations are emerging, old occupations are requiring new skills, and some occupations are no longer needed. Consequently, occupational curriculum planning must be a continuous process with constant assessment of program needs and with consequent action to initiate new programs and to phase out unneeded programs. Not only is program planning itself a continuous process, but also those programs which are continued must be constantly updated and the curriculum changed to reflect current occupational needs.

6. As technology increases in complexity, individual occupations are becoming more specialized. As a result there is a greater need, not only for training in depth, but also for a broader approach to occupations. Curricula must be planned around occupational families which give students maximum potentiality for learning

about the different types of occupations available within a particular family. Student transferability between specific programs can be simplified through the occupational family approach to planning. Also, the sharing of facilities, teaching staff, and community resources can be enhanced through this type of approach. While a student is learning the specific skills required in his occupational choice, he is in close contact with students and faculty teaching in the broader occupational area, and he thereby has a chance to learn more about the total context in which he will be working.

7. The increasing complexity of technology also makes demands in terms of the needs for specific training offered in certain occupations. It is becoming increasingly difficult to provide adequate educational preparation in two years of training for a specific occupation. For that reason curricula dealing with the more complex technologies need to be planned on a four- or five-year basis extending over the last two or three years of high school and two years of junior college. The areas in which such curricula are particularly needed relate specifically to engineering, sciences, and mechanics.

8. Students learn better and gain a better understanding of their chosen occupational field when they are given an opportunity to perform meaningful work in their chosen occupational area. Therefore, occupational programs should be built around, and should include as an integral part of the curriculum, significant portions of time in work experience. The most valuable type of work experience is that directly related to the classroom experience, in which both the classroom and work situations contribute equally to the learning of the student, and in which the learning between the two is unitary in approach.

9. The community has an important stake in occupational education. The economic growth and prosperity of the area are in large part dependent upon the quality of the community's labor force. Thus, major emphasis in program planning should be placed upon the involvement of community resources. Business and industry representatives should be involved in the decisions on whether or not programs are to be offered and whether or not they are to be continued. Additionally, they should be constantly involved in the educational process to insure that employers and educators are working cooperatively in the best interest of the students in the system.

10. Because of the stake which the local economy has in educative processes, programs should be planned so that maximum use is made of community resources. Programs should be built around existing community resources wherever possible, so that costs are kept to a minimum. Existing facilities should be used wherever possible. Also, existing organizations and staff should be used wherever possible.

11. Program planning should not take place in a vacuum. Both educators and employers should systematically evaluate the needs of students by finding out what happens to them after they leave individual programs. They also should systematically evaluate the occupational training needs of the local labor market and the needs of the state and nation.

Types of Programs

Program recommendations are built around three types of occupational curricula: (1) general education programs, namely, Agriculture, Homemaking, Business, and Industrial Arts as they are presently offered; (2) programs that prepare students for specific employment upon completion; and (3) programs offered at the secondary level that articulate with programs at the junior college level in a four- or five-year curriculum. Each of these types will be discussed separately.

General Education Programs. MERI surveyed all of the programs in Fresno County that currently are classified as Occupational or Vocational Education. It was the judgment of the survey team that very few of these are truly occupational in nature. For the most part, the programs are concerned with general information in their occupational area rather than with skill preparation for specific occupations. The chief exception to this is in Business Education where many high school graduates are prepared for clerical or secretarial positions.

There are a few truly occupational programs, such as Nurse's Aide and Food Preparation at Selma, and Welding, Auto Mechanics, and Auto Body Repair i· Fresno city. The purpose of most programs, however, was not job preparation, but rather to give the students a broad spectrum of knowledge in the ge: eral occupational area and to offer them an opportunity for exploration. Program recommendations include general education programs in the areas of Agriculture, Homemaking, Business, and Industrial Arts or General Mechanics at each of the high schools in Fresno County. The curricula in some of these programs should be reevaluated to insure that they serve the intended purpose.

Entry Level Skill Training. Although there are limited employment opportunities for students right out of high school, there is a need for a limited number of programs that specifically prepare students for immediate employment. For the most part, these programs offer training in lower skill occupations. Present programs do not, for the most part, offer training for immediate employment, and the many students in Fresno County who make no attempt for further education beyond high school are therefore penalized. Many of them are low ability students, and, because they have not been specifically trained for entry level occupations, they find it nearly impossible to find suitable employment upon completion of their high school training. This is the group to which the ROC System s' ,uld address its efforts in preparation for entry level positions upon graduation from high school.

The Vertically Articulated Curricula. As technology becomes increasingly complex, employers insist that preparation for technological jobs cannot be completed in one or two years. Particularly in the area of new and emerging occupations, there is a need to plan four- and five-year curricula patterns carefully articulated from the 10th or 11th through the 14th grades.

Several program recommendations are based upon a concept of four- or five-year curricula. At the present time there is but one example of this type of planning in Fresno County. This is the Riverdale High School/ Coalinga College Tech-Science Program. This program could serve as a model for some of the programs to be developed under the ROC System. In some curricula, more specific skill training can take place in the 11th and 12th grades. Occupational programs offered by the three junior colleges according to their individual catalogs are shown on Table 15.

Most of the junior college programs offer opportunities for the development of the pre-tech type program at the secondary level. Although these programs are planned to develop skills over a four- or five-year period, some students will develop sufficient skills for employability at interim levels. For example, some students may have learned enough

at the completion of the 12th grade to obtain employment in a related occupation. Others may be hired at the end of the 13th grade, before completing the program. Although it would be desirable that students stay throughout the entire curriculum, those who leave for employment have gained one of the objectives of occupational education programs, and therefore the program has served a need.

General Occupational Programs

The need for expanded activity in the area of counseling and guidance, in-service training of occupational teachers, and work experience for students is pressing. Also, the need for integrating the occupational and academic curricula so that students get good basic preparation in both requires immediate attention. MERI believes that there are two additional programs which should be made a part of the general educational curricula in all high schools. These are: (1) training in the techniques of looking for, applying for, getting, and keeping a job; and (2) basic economic education specifically related to the relationships between productivity and pay, profit and loss, and the basic functioning of the employment market.

Employers uniformly indicate that young people, particularly those coming out of high school, do not understand the value of their services or the lack of value of their services. They do not understand what it is that makes an employer willing, or unwilling, to pay an hourly rate for their services. Many employers complain that students do not present themselves well when applying for jobs and do not understand that they are in effect selling their capabilities, skill, and knowledge in much the same way that they would sell a product. Basic training in both areas would be warranted in all Fresno County high schools.

Occupational Skill Programs

In Appendix B MERI presents the program recommendations resulting from the study of the Fresno labor market, the needs of California employers, and the national economy. These recommendations are grouped

according to occupational families. An occupational family is a cluster of related occupations that involve similar skills and knowledge and a high degree of transferability of student interest. Programs that are planned according to occupational family lines permit greater flexibility for students to move from one to another with a minimum loss of previous training and experience. Additionally, they offer the students more exposure to a variety of specific occupations within their general area of interest. The occupational families under which program recommendations are grouped include agriculture and related occupations, applied and graphic arts, business, construction, engineering and related occupations, health occupations, mechanical and repair occupations, manufacturing and processing occupations, personal service occupations, and governmental service occupations.

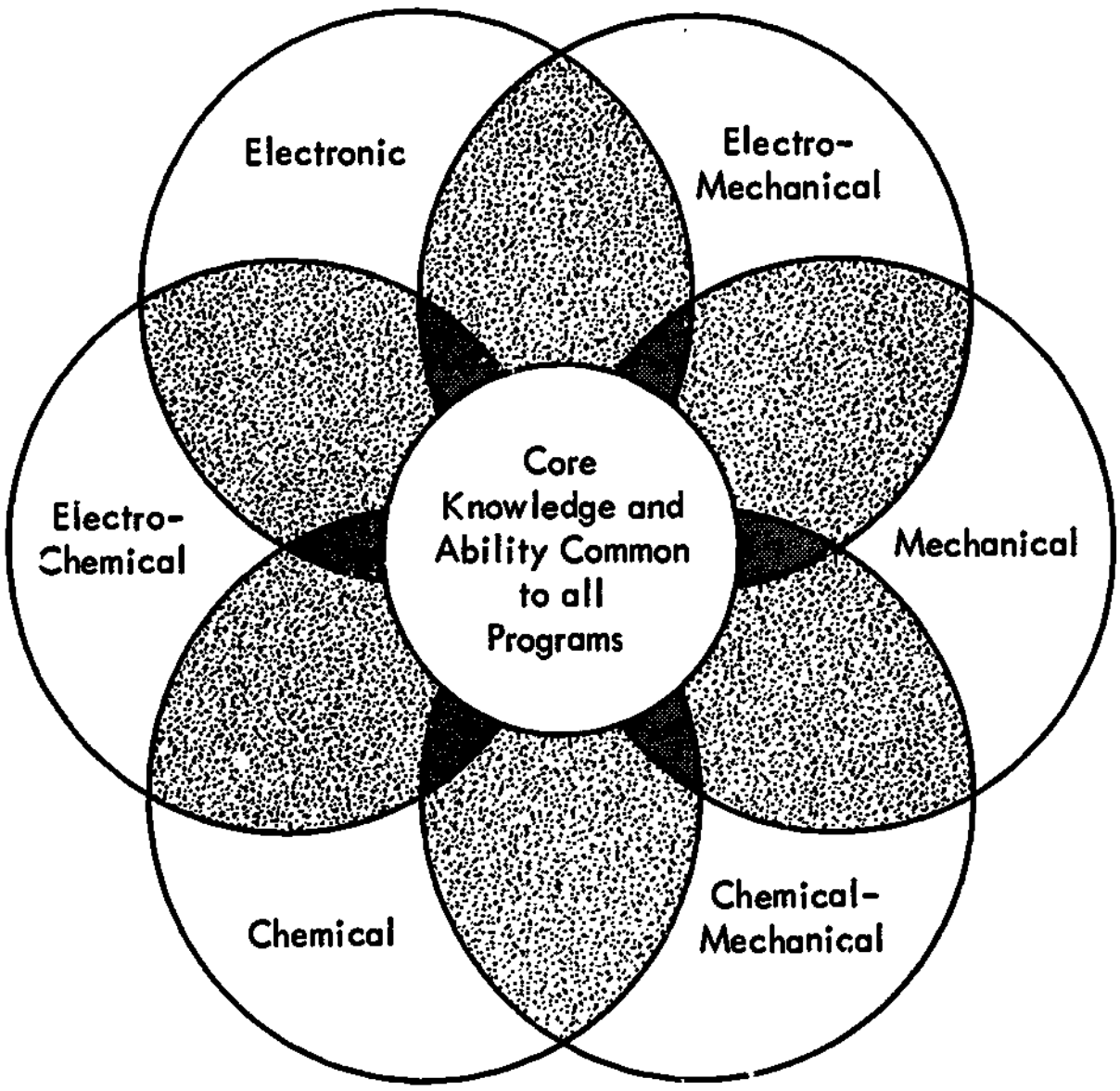
Grouping programs around occupational families also permits greater utilization of educational resources. The use of facilities and equipment of teaching staff and of community resources can all be enhanced if programs are planned according to broad occupational groups rather than limited to very specific types of skill training.

Perhaps the iggest advantage to be obtained by considering programs in occupational family groupings comes from the impetus to plan core curricula. Students would be better prepared for later specialized occupational training after completion of core curricula. This concept has been described in research reported by William J. Schill and Joseph Paul Arnold of the University of Illinois in a pamphlet entitled Curricula Content for Six Technologies, published in 1965.

The concept is graphically portrayed in Figure 5. Each technological curriculum is composed of some learning common to all six technologies shown, some is common only to one or two others, and some is exclusive to the particular technology. These types of curricula give added flexibility to the student because he does not have to take all new courses if he decides to change his occupational preparation.

Figure 5

SCHEMATIC REPRESENTATION OF GENERAL AND SPECIFIC KNOWLEDGE REQUIRED BY RELATED PROGRAMS



Knowledge and Ability Shared By:

Two Technologies

Three Technologies

SOURCE: William J. Schill and Joseph Paul Arnold, Curricula Content for Six Technologies, University of Illinois, 1965.

MERI's program recommendations should be considered as the ultimate or long-range objective of the system. MERI recognizes that it will require several years before all of these programs can be in operation in Fresno County. One of the first steps in the development of the ROC System should be the appointment of the Occupational Family Advisory Committees. Each Committee should evaluate the program recommendations for its occupational family in terms of priorities to be established. Then development of the curriculum can begin, one program at a time, until all of the proposed program recommendations are implemented.

How To Go About It

Sell the Concept

The next step is action.

The beginning point for action is the assumption that the educators of Fresno County wish to participate in some type of cooperative effort to improve occupational education programs and services for Fresno County residents. MERI's initial contacts during the course of this study indicated that this is a safe assumption in Fresno County. Although there may be some who hesitate and must be convinced of the value of cooperative effort, the majority of those with whom the proposed system has been discussed have been positively receptive.

There is still a large job to be done in informing the community about both the need for increased occupational programs and services and the value of cooperative effort. Before the ROC tax can be levied by the County Superintendent, the community must generally support the concept. For that reason the initial step must be an extensive public relations campaign aimed at the community in general, but particularly at such organizations as the Chamber of Commerce, School District Trustees, manpower organizations, and employer associations. These groups must be convinced of the need for the additional tax and made aware of the values to be gained from the recommended system.

The State Department of Education, Bureau of Vocational Education, has been apprised of activities in Fresno County. With the full support of the Bureau, Fresno County's cooperative efforts to improve occupational education will be significantly augmented.

Initial Actions of the Board of Management

When the Fresno County Superintendent of Schools is convinced that most of the high school districts in the county are willing to participate in the ROC System, he should call together the Board of Management for its initial meeting. It is suggested that at this meeting the Board form a series of internal Action Committees. The tasks of these Committees would be as follows:

1. To develop qualifications and to take initial steps for recruitment of the director/supervisor of the ROC System. This is probably the most important first step to be conducted by the Board. A strong director/supervisor will provide the type of on-going administrative talent needed to get such a system organized and operative.

2. To determine the membership of the Regional Advisory Committee and the availability of persons proposed to serve on it.

3. To perform the same functions with respect to the Occupational Family Advisory Committees. These Committees should not begin to operate, however, until after the Regional Advisory Committee is appointed, and they should draw heavily upon the Regional Advisory Committee for membership suggestions.

4. To investigate the possibility of finding suitable facilities for the centralized programs, one to be located in Fresno city and one to be located somewhere in Sub-system II. This Committee should look at the facilities of Fresno County Fairgrounds, among other

possible locations, and make recommendations to the Board conconcerning the leasing of such facilities.

5. To investigate and make recommendations concerning the establishment of the information system. This Committee should be concerned with identifying the types of information that should be gathered and the manner in which it is to be analyzed and reported; it should also make an analysis of equipment and personnel needs to support the system.

6. To study fiscal arrangements and to determine the amount of tax money that would be available from the ROC tax. This Committee should also make some preliminary estimates of the amounts of money that might be available from federal funds through the State Department of Education under the Vocational Education Act and the National Defense Education Act, and related programs. Based upon this information, a tentative budget should be prepared for the next year's operation and submitted to the Board of Management for its review.

Certain Committees could serve a useful function to upgrade occupational education in Fresno County, whether or not this ROC System finally goes into operation. For that reason it is recommended that the Board of Management appoint an Ad Hoc Curriculum Reorganization Committee and the four Coordinating Committees (Work Experience, Vertical Articulation, Curriculum, and Scheduling). All of these Committees, with the exception of the Scheduling Coordinating Committee, would serve an important function whether or not the system becomes operative. The Scheduling Coordinating Committee, however, would be so critical to working out the details of the implementation of the operation of ROC programs that it should get an early start.

The Time Line

It is important to recognize that the proposed ROC System cannot be brought into being overnight. The total implementation of the system should be planned for a five-year base line. However, some portions of it can be in operation by the fall of 1969. MERI recommends that the Board of Management begin cautiously (not necessarily slowly) to develop and offer occupational programs and services. Each idea should be tested and improved before it is expanded to the full system.

MERI also recommends that the Board of Management establish a series of target dates against which it can check its progress. A suggested time line with target dates has been submitted to the Fresno County Superintendent of Schools which could be made available to the Board.

Appendix A

TABULAR DATA

(Tables 1-15)

Table 1

FRESNO COUNTY EMPLOYMENT BY INDUSTRY, 1960-1967

	1960	1961	1962	1963	1964	1965	1966	1967
Total employment	137,900	139,900	141,300	147,300	150,500	155,400	163,600	162,400
Total agricultural employment	36,700	37,500	36,100	37,600	37,500	38,900	40,400	38,200
New agricultural jobs	--	+800	-1,400	+1,500	-100	+1,400	+1,500	-2,200
Net increase, 1960-1967: 1,500								
Average increase: 214 per year								
Total nonagricultural employment	101,200	102,400	105,200	109,700	113,000	116,500	123,200	124,200
New nonagricultural jobs	--	+1,200	+2,800	+4,500	+3,300	+3,500	+6,700	+1,000
Net increase, 1960-1967: 23,000								
Average increase: 3,286 per year								
Percent of Total Employment[1/]								
Agriculture	26.6%	26.8%	25.5%	25.5%	24.9%	25.0%	24.7%	23.5%
Nonagricultural	73.4	72.9	74.5	74.3	75.0	75.3	75.7	76.5
Agricultural services	.6	0.7	0.8	0.6	0.7	0.6	0.5	0.5
Mining	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.5
Construction	3.9	3.6	3.5	3.5	3.5	3.6	3.7	2.6
Manufacturing	10.2	10.0	10.3	10.2	10.2	10.0	10.0	10.0
Transportation, communications, and utilities	5.8	5.5	5.4	5.2	5.0	5.0	5.0	5.0
Trade	17.7	17.6	17.8	17.5	17.6	18.0	17.7	18.0
Finance, insurance, and real estate	2.6	2.6	2.8	2.9	2.9	3.0	3.1	3.0
Services	8.3	8.4	8.9	9.2	9.7	10.0	10.3	10.8
Government	12.0	12.4	12.8	13.0	13.2	13.1	14.0	15.0
Self-employed and domestic	11.7	11.5	11.6	11.5	11.5	11.3	10.8	11.1

1/ Totals may not add due to rounding.

Source: MERI, based on data from the State of California, Department of Employment.

Table 2

FRESNO COUNTY EMPLOYMENT BY SELECTED OCCUPATIONS, 1960, PROJECTED 1970, AND EXPECTED ANNUAL REPLACEMENT NEEDS IN 1970

Occupation	1960 Employment	Projected 1970 Employment	Needed Replacements Due to Death and Retirements in 1970
Draftsmen	240	320	3
Nurses	1,146	1,562	47
Photographers	81	79	1
Surveyors	167	212	2
Medical, dental technicians	162	197	4
Engineering, electrical technicians	156	--	2
Farmers, farm managers	6,655	5,466	93
Buyers, department heads, retail stores	436	644	17
Purchasing agents, buyers	143	216	4
Salaried, self-employed managers			
Construction	856	941	20
Manufacturing	1,184	1,348	28
Wholesale trade	903	1,030	22
Retail trade	3,563	3,454	72
Banking and finance	451	904	19
Insurance, real estate	386	576	12
Bank tellers	377	722	14
Bookkeepers	2,157	2,881	75
Cashiers	923	1,822	36
Office machine operators	340	631	19
Secretaries, stenographers	2,907	4,346	130
Stock clerks, storekeepers	351	--	8
Typists	623	--	19
Other clerical	4,614	5,903	165

Table 2 (Continued)

Occupation	1960 Employment	Projected 1970 Employment	Needed Replacements Due to Death and Retirement in 1970
Sales workers	10,560	12,983	363
Insurance agents, underwriters	725	871	19
Real estate agents and brokers	593	792	38
Salesmen, manufacturing	798	1,618	32
Salesmen, wholesale	1,279	1,529	31
Salesmen, retail	6,081	6,913	194
Brickmasons	201	244	4
Cabinetmakers	201	227	6
Carpenters	1,616	1,389	32
Painting trades	272	269	5
Electricians	444	460	7
Excavating machine operators	469	714	9
Machinists	409	404	8
Mechanics and repairmen			
Air conditioning, refrigeration	121	342	4
Airplane	101	112	1
Auto	1,746	1,613	21
Office machine	31	84	1
Radio and TV	242	334	3
Other	2,393	2,307	37
Painters and paperhangers	698	755	19
Plumbers and pipefitters	460	497	9
Sheetmetal workers	204	273	3
Apprentices	191	--	--
Auto services attendants	1,036	1,666	17
Garage laborers	264	402	7
Bus drivers	391	548	7
Routemen	934	1,710	27
Dressmakers, seamstresses	211	213	6
Laundry, dry cleaning operators	785	894	25
Meatcutters	406	456	11
Truck drivers	3,478	4,081	49

Table 2 (Continued)

Occupation	1960 Employment	Projected 1970 Employment	Needed Replacements Due to Death and Retirements in 1970
Welders	798	1,258	19
Manufacturing operators	3,030	3,440	62
Private household workers	2,413	3,385	129
Hospital attendants	569	798	18
Barbers	421	479	10
Cooks	1,343	1,703	43
Counter/fountain workers	230	386	11
Cosmetologists	653	1,059	34
Janitors	1,682	2,528	114
Practical nurses	384	687	22
Firemen	286	395	6
Policemen, sheriffs	610	865	14
Waiters, waitresses	1,972	2,692	75
Farm laborers, foremen	12,914	14,129	240
Gardeners, groundskeepers	629	754	13
Other laborers	3,970	3,825	65

Source: MERI, based on information from U.S. Bureau of the Census and U.S. Department of Labor.

Table 3

SELECTED NEW JOBS EXPECTED TO BE ADDED
TO THE EMPLOYMENT BASE IN
FRESNO COUNTY, 1968-1973

Job	Forecast Employment 1973	Net Increase 1968-1973
Engineering and Related		
All draftsmen	390	90
Medical and Health		
Registered nurse	1,420	390
Medical assistant	510	70
Dental assistant	420	70
Licensed vocational nurse	710	240
Clerical		
Secretary	1,250	230
Stenographer	1,120	180
Typist	790	140
File clerk	410	60
Clerk-typist	1,690	290
Clerk, general	470	60
Bookkeeper	1,500	130
Cashier	550	50
Teller	680	130
Computer operator	180	60
Keypunch operator	310	100
Clerk, general office	4,120	620
Post Office clerk	500	70
Mail carrier	550	100
Telephone operator, PBX	440	80
Receptionist	710	70
All other	1,140	140
Sales		
Salesman, insurance	810	170
Salesman, real estate	620	70
All other salesmen	2,350	190
All other salespersons	4,020	300
Sales clerk	1,680	140
Salesman-driver	1,090	130
Grocery checker	1,550	150

Table 3 (Continued)

Job	Forecast Employment 1973	Net Increase 1968-1973
Service		
Waiter and waitress	2,110	180
Cook	870	90
Cook, short order	550	90
Meat cutter	440	70
Kitchen helper and dishwasher	1,040	140
Maid, hospital	280	80
Cosmetologist	830	110
Nurse's aide	1,150	340
Orderly	180	50
Patrolman and sheriff deputy	480	50
Porter	2,170	200
Janitor	540	80
Forestry and Groundskeeping		
Groundskeeper	380	50
Forester aide and forestry worker	270	50
Machine Trades		
Machinist and apprentice	510	60
Machine operator	440	120
Automobile mechanic	1,170	130
Truck and tractor mechanic	550	50
Farm equipment mechanic	280	50
Diesel mechanic	330	50
Refrigeration mechanic	320	70
Maintenance mecha ˙c	540	70
Wood working machine operator	120	50
Bench Work		
Sewing machine operator, garment	540	150
Structural		
All welders	660	100
Electrician	540	50
Operating engineer	590	90
Carpenter	1,450	250
Plumber-pipefitter	320	50
Construction worker	630	50

Table 3 (Continued)

Job	Forecast Employment 1973	Net Increase 1968-1973
Miscellaneous		
Tractor-trailer truck driver	1,470	100
Truck driver, heavy	1,770	170
Bus driver	550	80
Automobile service station attendant	1,560	160
Laborer, stores	1,560	70
All others	690	50

Source: State of California, Department of Employment.

Table 4

SHORTGAGE AND SURPLUS OCCUPATIONS IN FRESNO COUNTY
May 27, 1968

Shortgage	Surplus
Registered nurse	General clerk
Medical technician	Cashier
Licensed vocational nurse	Key punch operator
Stenographer	Telephone operator
Insurance salesman	Receptionist
Cook	Sales, general
Shirt presser	Cashier-checker
Machinist	Salesman-driver
Tool and die maker	Day worker
Diesel mechanic	Maid
Office equipment repair	Kitchen helper
Maintenance machinist	Cosmetologist
Color TV repairman	Orderly
Sheet metal worker	Janitor
Auto body	Auto mechanic
Combination welder	Truck driver
	Laborer

Source: State of California, Department of Employment.

Table 5

JOBS DIFFICULT TO FILL BY
FRESNO AREA EMPLOYERS

Refrigeration mechanic

Supervisor

Sewing machine operator

Skilled lumber mill operator--machine operator

Machinist

Engineering aid

Draftsman

Editor

Copy reader

General maintenance men with experience in electrical and mechanical

MIG welder and TIG welder

Estimator

Steel fitter

Combination welder.

Tool and die maker

Sales representative (engineering)

Jig and fixture builder

More highly trained quality control personnel

Computer operator

Stenographer
Cost accountant

Laboratory technician

Heavy duty mechanic

TV repairman

Tailor

Corsetiere

Men's clothing salesman

Registered nurse

Dispatcher

Table 5 (Continued)

Bookkeeper

Department of Motor Vehicle clerk

All clerical jobs

Cook

Stenographer

Rate clerk, insurance

Bookkeeping machine operator

Presser, (wood, shirt, and flatwork)

Diesel mechanic

Draftsman

Licensed vocational nurse

Laboratory technician

X-Ray technician

Forestry technician

Engineering technician

Source: State of California, Department of Employment, Interior Area, Research and Statistics Section.

Table 6

JOBS FOR WHICH FRESNO AREA EMPLOYERS WILL HIRE WORKERS
WHO HAVE NO RELATED WORK EXPERIENCE OR
SPECIALIZED TRAINING

Apprentice program (construction)
Stock clerk
Delivery boy
Laborer
Warehouseman
Window installer
Insulator
Janitor
Sewing machine operator
Lumber mill laborer
Some clerical jobs
Sheet metal fabricator
Plant production
Printing apprentice
Messenger
Copy boy
Packer
Salesman--driver
Security guard
Nurse's aide
Dietary aide
Orderly
Laundry worker
Cashier
Salesperson
Groundsman

Source: State of California, Department of Employment.

Table 7

JOBS FOR WHICH FRESNO AREA EMPLOYERS WILL HIRE
RECENT HIGH SCHOOL GRADUATES WHO HAVE
NO FULL-TIME WORK EXPERIENCE

Receptionist
Construction apprentice
Sheet metal apprentice
Pipe fitting apprentice
Refrigeration mechanic apprentice
Machine operator
Lumber mill laborer
Spray painter
Clerk typist
File clerk
Service station attendant
Tour guide
Clerk, general
Nurse's aide
Dietary aide
Orderly
Auto mechanic apprentice
Checker trainee
Meat cutter trainee
Dishwasher
Busboy
Pinsetter
Teller
Stenographer
Maid
Mail clerk
Groundsman

Source: State of California, Department of Employment.

Table 8

APPROXIMATE SECONDARY ENROLLMENTS IN
ALL HIGH SCHOOLS IN FRESNO COUNTY
(Grades 9-12)
Fall 1967

High School	Enrollment
Fresno City Schools	
Bullard	1,403
Edison	1,004
Fresno	2,359
Hoover	1,726
McLane	2,677
Roosevelt	2,388
DeWolf (Continuation)	235
Subtotal	11,792
Fresno County Schools	
Caruthers	462
Central	1,226
Clovis	1,989
Coalinga	792
Fowler	551
Kerman	626
Kingsburg	700
Kings Canyon (Reedley)	1,349
Laton	248
Parlier	363
Riverdale	501
Sanger	1,594
Selma	1,067
Sierra	693
Tranquillity	746
Washington	1,200
Subtotal	14,107
Total	25,899

Sources: Fresno City Unified District, November 1967.

Fresno County, Department of Education, Directory 1967-68, September 1967.

Table 9

SUMMARY OF OCCUPATIONAL COURSES, NUMBER OF PERIODS OFFERED, AND ENROLLMENTS IN FRESNO CITY AND COUNTY SCHOOLS
Fall 1967

Programs and Courses	Fresno City Schools		Fresno County Schools		Total	
AGRICULTURE AND RELATED						
Agriculture			(73)	1,190	(73)	1,190
Horticulture			(17)	197	(17)	197
Agricultural Mechanics			(37)	590	(37)	590
HOME ECONOMICS AND FOOD SERVICES						
Vocational Homemaking			(3)	177	(3)	177
Family Food	(33)	808	(12)	220	(45)	1,028
Vocational Food	(2)	42	(2)	16	(4)	58
Family Clothes	(38)	987	(14)	246	(52)	1,233
Vocational Clothes			(1)	20	(1)	20
Homemaking I	(8)	185	(55)	1,190	(63)	1,375
Homemaking II	(8)	190	(29)	589	(37)	779
Homemaking III	(2)	48	(17)	307	(19)	355
Homemaking IV	(2)	52	(12)	236	(14)	288
Social Living	(30)	928			(30)	928
Nurse's Aide			(2)	38	(2)	38
BUSINESS EDUCATION						
General Business	(4)	92	(35)	941	(39)	1,033
Bookkeeping	(17)	504	(34)	784	(51)	1,288
Record Keeping	(21)	672	(17)	353	(38)	1,025
Typing	(88)	3,002	(123)	3,157	(211)	6,159
Shorthand	(26)	682	(33)	587	(59)	1,269
Office Machines	(1)	24	(14)	273	(15)	297
Office Practice	(17)	405	(19)	426	(36)	831
Secretarial, Clerical Training						
Work Experience	(8)	24	(1)	54	(9)	78
Merchandising/Sales	(4)	98	(5)	122	(9)	220
Business Law	(12)	367	(7)	155	(19)	522
Business Math	(2)	66	(10)	252	(12)	318
Business English			(4)	83	(4)	83
Accounting			(2)	45	(2)	45
INDUSTRIAL ARTS, VOCATIONAL SHOPS AND RELATED						
General Shop	(3)	42	(35)	639	(38)	681
Auto Shop	(48)	1,059	(64)	1,243	(112)	2,302
Metal Shop	(34)	757	(42)	803	(76)	1,560
Welding	(4)	80	(11)	170	(15)	250
Electricity/Electronics	(23)	535	(22)	404	(45)	939
Wood Shop	(44)	1,018	(81)	1,406	(125)	2,424
Drafting/Drawing	(51)	1,258	(52)	1,084	(103)	2,342
Graphic/Applied Arts	(5)	113	(4)	92	(9)	205
Commercial Art	(15)	407	(8)	147	(23)	554
Aeronautics	(4)	115			(4)	115
Plastics	(3)	68			(3)	68

Note: Figures in parentheses indicate number of periods offered; other figures indicate reported student enrollments.

Source: MERI, based on individual class schedules and student enrollments submitted by each high school, fall 1967.

Table 9 (Continued)

SUMMARY OF OCCUPATIONAL COURSES, NUMBER OF PERIODS OFFERE
AND ENROLLMENTS IN SUB-SYSTEM I
Fall 1967

Programs and Courses	Bullard		Clovis		Edison		Fresno		Hoover		McLane	
AGRICULTURE AND RELATED												
Agriculture			(7)	136								
Horticulture			(7)	41								
Agricultural Mechanics			(2)	43								
HOME ECONOMICS AND FOOD SERVICES												
Vocational Homemaking												
Family Food	(1)	22			(4)	71	(6)	152	(6)	156	(9)	224
Vocational Food					(2)	42						
Family Clothes	(3)	72			(4)	71	(6)	180	(8)	253	(10)	250
Vocational Clothes												
Homemaking I	(1)	28	(6)	164	(7)	157						
Homemaking II			(3)	64	(4)	94	(2)	48				
Homemaking III			(3)	26			(2)	48				
Homemaking IV	(2)	52										
Social Living							(4)	110	(9)	364	(9)	256
BUSINESS EDUCATION												
General Business	(1)	35	(6)	163	(3)	57						
Bookkeeping	(3)	96	(4)	86	(1)	14	(3)	104	(4)	84	(4)	140
Record Keeping			(2)	24	(1)	17	(5)	172	(3)	110	(6)	190
Typing	(9)	314	(15)	407	(7)	213	(18)	595	(11)	398	(19)	731
Shorthand	(1)	18	(4)	68	(2)	31	(8)	236	(5)	105	(5)	136
Office Machines			(1)	8								
Office Practice			(8)	184	(3)	67	(5)	141	(2)	39	(5)	101
Secretarial, Clerical Training												
Work Experience	(8)	24										
Merchandising/Sales	(1)	36					(1)	30	(1)	16		
Business Law	(3)	97			(1)	19	(4)	124	(2)	64		
Business Math									(2)	66		
Business English												
Accounting												
INDUSTRIAL ARTS, VOCATIONAL SHOPS AND RELATED												
General Shop					(2)	21						
Auto Shop	(4)	83	(12)	258	(12)	162	(7)	177	(9)	227	(8)	201
Metal Shop	(4)	97	(6)	118	(7)	128	(7)	162	(3)	78	(7)	136
Welding			(2)	34	(4)	80						
Electricity/Electronics					(1)	12	(5)	117	(6)	160	(6)	121
Wood Shop	(6)	159	(9)	166	(7)	142	(7)	161	(7)	149	(7)	151
Drafting/Drawing	(6)	129	(6)	126	(5)	113	(8)	202	(6)	144	(16)	411
Graphic/Applied Arts			(3)	67	(5)	113						
Commercial Art	(4)	100	(2)	38			(4)	105	(2)	57	(2)	4
Aeronautics												
Plastics									(3)	68		

Note: Figures in parentheses indicate number of periods offered; other figures indicate reported student enrollments.

Source: MERI, based on individual class schedules and student enrollments submitted by each high school, fall 1967.

ble 9 (Continued)

FERE

L COURSES, NUMBER OF PERIODS OFFERED,
LLMENTS IN SUB-SYSTEM I
Fall 1967

ane		Fresno		Hoover		McLane		Roosevelt		Sierra		Sub-System I Total	
										(5)	103	(12)	239
												(7)	41
												(2)	43
224													
	71	(6)	152	(6)	156	(9)	224	(7)	183			(33)	808
250	42											(2)	42
	71	(6)	180	(8)	253	(10)	250	(7)	181			(38)	987
	57									(5)	100	(19)	449
	94	(2)	48					(2)	48	(1)	20	(12)	274
		(2)	48							(1)	24	(6)	98
256										(2)	55	(4)	107
		(4)	110	(9)	364	(9)	256	(8)	198			(30)	928
140	57									(1)	34	(11)	289
198	14	(3)	104	(4)	84	(4)	140	(2)	66	(1)	21	(22)	611
731	17	(5)	172	(3)	110	(6)	198	(6)	175			(23)	696
134	13	(18)	595	(11)	398	(19)	731	(24)	751	(5)	120	(108)	3,529
	31	(8)	236	(5)	105	(5)	134	(5)	158	(1)	20	(31)	770
10								(1)	24			(2)	32
	67	(5)	141	(2)	39	(5)	101	(2)	57	(1)	19	(26)	608
												(8)	24
		(1)	30	(1)	16			(1)	16			(4)	98
	19	(4)	124	(2)	64			(2)	63			(12)	367
				(2)	66							(2)	66
										(1)	12	(1)	12
20	21							(1)	21	(5)	96	(8)	138
13	162	(7)	177	(9)	227	(8)	208	(8)	202	(5)	78	(65)	1,395
	128	(7)	162	(3)	78	(7)	139	(6)	153	(3)	78	(43)	953
12	80											(6)	114
15	12	(5)	117	(6)	160	(6)	121	(5)	125	(3)	58	(26)	593
41	142	(7)	161	(7)	149	(7)	153	(10)	254	(1)	24	(54)	1,208
	113	(8)	202	(6)	144	(16)	415	(10)	255	(2)	44	(59)	1,428
4	113											(8)	180
		(4)	105	(2)	57	(2)	45	(3)	100	(3)	53	(20)	498
								(4)	115			(4)	115
				(3)	68							(3)	68

nts.

igures indicate reported student enrollments.

7.

s submitted by each high school, fall 1967.

Table 9 (Continued)

SUMMARY OF OCCUPATIONAL COURSES, NUMBER OF PERIODS OFFERED, AND ENROLLMENTS IN SUB-SYSTEM II
Fall 1967

Programs and Courses	Fowler		Kingsburg		Kings Canyon (Reedley)		Parlier		Sanger		
AGRICULTURE AND RELATED											
Agriculture	(3)	46	(4)	66	(3)	52	(2)	19	(5)	72	(6
Horticulture					(1)	11			(4)	64	(1
Agricultural Mechanics	(1)	21	(2)	29	(3)	54	(3)	18	(6)	97	(3
HOME ECONOMICS AND FOOD SERVICES											
Vocational Homemaking											(3
Family Food			(2)	44					(2)	36	(1
Vocational Food											(2
Family Clothes					(2)	35			(1)	14	(1
Vocational Clothes											
Homemaking I	(3)	76	(2)	53	(5)	98	(2)	27	(10)	224	
Homemaking II	(2)	51			(5)	114	(1)	14	(5)	103	
Homemaking III			(2)	55			(1)	17			
Homemaking IV	(1)	23	(2)	55			(1)	10			
Social Living											
Nurse's Aide											(2
BUSINESS EDUCATION											
General Business	(2)	54	(2)	42	(2)	55			(5)	149	(2
Bookeeping	(1)	20			(5)	133			(5)	95	(2
Record Keeping					(4)	97	(2)	26			(2
Typing	(6)	146	(5)	156	(8)	217	(5)	96	(15)	379	(8
Shorthand	(1)	24	(2)	28	(3)	41	(3)	36	(2)	31	
Office Machines	(2)	31									(2
Office Practice					(2)	35					
Secretarial, Clerical Training											
Work Experience											(1
Merchandising/Sales											(1
Business Law					(1)	27			(1)	17	
Business Math					(2)	47	(1)	15	(1)	32	
Business English											
Accounting											
INDUSTRIAL ARTS, VOCATIONAL SHOPS AND RELATED											
General Shop			(4)	ü5	(3)	77	(1)	9			(4
Auto Shop	(3)	72	(4)	67	(12)	248	(1)	19	(5)	91	(6
Metal Shop	(3)	66	(2)	27	(5)	117	(2)	36	(2)	38	(3
Welding											(3
Electricity/Electronics			(2)	32	(2)	38			(6)	122	(3
Wood Shop	(4)	82	(3)	63	(8)	109	(4)	66	(8)	163	(3
Drafting/Drawing	(5)	98	(2)	22	(6)	122	(1)	12	(6)	134	(3
Graphic/Applied Arts											
Commercial Art					(1)	16					(1
Aeronautics											
Plastics											

Note: Figures in parentheses indicate number of periods offered; other figures indicate reported student enro

Source: MERI, based on individual class schedules and student enrollments submitted by each high school, fall

Continued)

ES, NUMBER OF PERIODS OFFERED,
IN SUB-SYSTEM II
1967

	gs Canyon (Reedley)		Parlier		Sanger		Selma		Sub-System II Total	
	3)	52	(2)	19	(5)	72	(6)	132	(23)	387
(6	1)	11			(4)	64	(1)	12	(6)	87
(1	)	54	(3)	18	(6)	97	(3)	58	(18)	277
(3										
							(3)	177	(3)	177
					(2)	36	(1)	17	(5)	97
(3							(2)	16	(2)	16
(1										
(2	2)	35			(1)	14	(1)	12	(4)	61
(1										
	5)	98	(2)	27	(10)	224			(22)	478
	5)	114	(1)	14	(5)	103			(13)	282
			(1)	17					(3)	72
			(1)	10					(4)	88
							(2)	38	(2)	38
(2										
	2)	55			(5)	149	(2)	43	(13)	343
(2	5)	133			(5)	95	(2)	47	(13)	295
(2	4)	97	(2)	26			(2)	55	(8)	178
(2	8)	217	(5)	96	(15)	379	(8)	245	(47)	1,239
(2	3)	41	(3)	36	(2)	31			(11)	160
(8							(2)	48	(4)	79
	2)	35							(2)	35
(2										
							(1)	54	(1)	54
							(1)	26	(1)	26
(1	1)	27			(1)	17			(2)	44
(1	2)	47	(1)	15	(1)	32			(4)	94
	3)	77	(1)	9			(4)	81	(12)	232
	12)	248	(1)	19	(5)	91	(6)	86	(31)	583
	5)	117	(2)	36	(2)	38	(1)	15	(15)	299
(6							(2)	28	(2)	28
(3	2)	38			(6)	122	(3)	39	(13)	231
(3	8)	109	(4)	66	(8)	163	(3)	46	(30)	529
(3	6)	122	(1)	12	(6)	134	(3)	79	(23)	467
(3										
	1)	16					(1)	28	(2)	44
(3										

other figures indicate reported student enrollments.

t enro

ollments submitted by each high school, fall 1967.

fall

Table 9 (Continued)

SUMMARY OF OCCUPATIONAL COURSES, NUMBER OF PERIODS OFFERED, AND ENROLLMENTS IN SUB-SYSTEM III
Fall 1967

Programs and Courses	Caruthers		Laton		Riverdale		Washington		Sub-System III Total	
AGRICULTURE AND RELATED										
Agriculture	(6)	93	(3)	44	(2)	31	(3)	44	(14)	212
Horticulture					(1)	15			(1)	15
Agricultural Mechanics					(2)	42	(2)	37	(4)	79
HOME ECONOMICS AND FOOD SERVICES										
Vocational Homemaking										
Family Food					(1)	23			(1)	23
Vocational Food										
Family Clothes										
Vocational Clothes										
Homemaking I	(2)	32	(1)	16	(3)	69	(7)	131	(13)	248
Homemaking II	(2)	46			(2)	41	(2)	37	(6)	124
Homemaking III	(1)	19	(1)	19			(3)	63	(5)	101
Homemaking IV			(1)	18					(1)	18
Social Living										
Nurse's Aide										
BUSINESS EDUCATION										
General Business	(2)	17					(5)	151	(7)	168
Bookkeeping	(1)	23	(1)	24	(1)	26	(3)	53	(6)	126
Record Keeping										
Typing	(5)	115	(3)	76	(4)	70	(12)	304	(24)	565
Shorthand	(1)	6	(1)	14	(1)	5	(5)	165	(8)	190
Office Machines										
Office Practice							(3)	79	(3)	79
Secretarial, Clerical Training										
Work Experience										
Merchandise/Sales	(1)	16					(3)	80	(4)	96
Business Law										
Business Math	(1)	27					(3)	71	(4)	98
Business English							(3)	71	(3)	71
Accounting							(2)	45	(2)	45
INDUSTRIAL ARTS, VOCATIONAL SHOPS AND RELATED										
General Shop	(3)	32			(5)	102			(8)	134
Auto Shop					(1)	15	(2)	36	(3)	51
Metal Shop	(3)	41	(2)	40	(3)	54	(4)	84	(12)	219
Welding										
Electricity/Electronics			(1)	13	(1)	26	(1)	18	(3)	57
Wood Shop	(4)	59	(3)	42	(3)	28	(8)	187	(18)	316
Drafting/Drawing	(1)	17			(2)	34	(6)	145	(9)	196
Graphic/Applied Arts										
Commercial Art										
Aeronautics										
Plastics										

Note: Figures in parentheses indicate number of periods offered; other figures indicate reported student enrollments.

Source: MERI, based on individual class schedules and student enrollments submitted by each high school, fall 1967.

Table 9 (Continued)

SUMMARY OF OCCUPATIONAL COURSES, NUMBER OF PERIODS OFFERED, AND ENROLLMENTS IN SUB-SYSTEM IV
Fall 1967

Programs and Courses	Central		Kerman		Tranquillity		Sub-System IV Total	
AGRICULTURE AND RELATED								
Agriculture	(7)	90	(6)	68	(4)	55	(17)	213
Horticulture								
Agricultural Mechanics	(6)	87	(1)	6	(4)	54	(11)	147
HOME ECONOMICS AND FOOD SERVICES								
Vocational Homemaking								
Family Food			(1)	20	(5)	80	(6)	100
Vocational Food								
Family Clothes			(1)	22	(5)	61	(6)	83
Vocational Clothes								
Homemaking I	(5)	107	(2)	43			(7)	150
Homemaking II	(5)	82	(1)	17			(6)	99
Homemaking III	(4)	68	(1)	16			(5)	84
Homemaking IV	(4)	74	(1)	1			(5)	75
Social Living								
Nurse's Aide								
BUSINESS EDUCATION								
General Business	(2)	53			(3)	81	(5)	134
Bookkeeping	(4)	117	(2)	29	(2)	38	(8)	184
Record Keeping			(1)	12	(4)	83	(5)	95
Typing	(11)	313	(4)	109	(10)	208	(25)	630
Shorthand	(4)	62	(1)	15	(1)	12	(6)	89
Office Machines	(3)	65	(2)	43	(2)	38	(7)	146
Office Practice	(2)	59	(1)	20	(1)	10	(4)	89
Secretarial, Clerical Training								
Work Experience								
Merchandising/Sales								
Business Law	(2)	43	(3)	68			(5)	111
Business Math	(1)	27	(1)	33			(2)	60
Business English								
Accounting								
INDUSTRIAL ARTS, VOCATIONAL SHOPS AND RELATED								
General Shop	(8)	132			(2)	45	(10)	177
Auto Shop	(8)	155					(8)	155
Metal Shop	(3)	39	(3)	50			(6)	89
Welding	(2)	30			(2)	15	(4)	45
Electricity/Electronics	(2)	33			(1)	25	(3)	58
Wood Shop	(5)	76	(7)	84	(6)	80	(18)	240
Drafting/Drawing	(6)	119	(3)	42			(9)	161
Graphic/Applied Arts					(1)	25	(1)	25
Commercial Art					(1)	12	(1)	12
Aeronautics								
Plastics								

Note: Figures in parentheses indicate number of periods offered; other figures indicate reported student enrollments.

Source: MERI, based on individual class schedules and student enrollments submitted by each high school, fall 1967.

Table 9 (Continued)

SUMMARY OF OCCUPATIONAL COURSES, NUMBER OF PERIODS OFFERED, AND ENROLLMENTS IN SUB-SYSTEM V
Fall 1967

Programs and Courses	Coalinga	
AGRICULTURE AND RELATED		
Agriculture	(7)	139
Horticulture	(3)	54
Agricultural Mechanics	(2)	44
HOME ECONOMICS AND FOOD SERVICES		
Vocational Homemaking		
Family Food		
Vocational Food		
Family Clothes	(4)	102
Vocational Clothes	(1)	20
Homemaking I	(2)	50
Homemaking II		
Homemaking III		
Homemaking IV		
Social Living		
Nurse's Aide		
BUSINESS EDUCATION		
General Business	(3)	99
Bookkeeping	(2)	72
Record Keeping	(2)	56
Typing	(7)	196
Shorthand	(3)	60
Office Machines	(2)	40
Office Practice	(1)	20
Secretarial, Clerical Training		
Work Experience		
Merchandising/Sales		
Business Law		
Business Math		
Business English		
Accounting		
INDUSTRIAL ARTS, VOCATIONAL SHOPS AND RELATED		
General Shop		
Auto Shop	(5)	118
Metal Shop		
Welding	(3)	63
Electricity/Electronics		
Wood Shop	(5)	131
Drafting/Drawing	(3)	90
Graphic/Applied Arts		
Commercial Art		
Aeronautics		
Plastics		

Note: Figures in parentheses indicate number of periods offered; other figures indicate reported student enrollments.

Source: MERI, based on individual class schedules and student enrollments submitted by each high school, fall 1967.

Table 10

ENROLLMENTS IN FEDERALLY REIMBURSABLE VOCATIONAL-TECHNICAL PROGRAMS, HIGH SCHOOLS AND COMMUNITY COLLEGES, FRESNO COUNTY 1966

High Schools and Colleges	Vocational Agriculture	Home Economics	Health Occupations	Office Occupations	Distributive Education	Technical	Trade and Industry	Total
City high schools								
Bullard	--	114	--	66	9	--	--	189
Edison	--	161	--	59	--	--	85	305
Fresno	--	194	--	278	--	17	--	489
Hoover	--	--	--	89	--	--	19	108
McLane	--	--	--	261	23	--	--	284
Roosevelt	--	20	--	243	--	--	18	281
Subtotal	--	489	--	996	32	17	122	1,656
County high schools								
Caruthers	54	107	--	32	13	--	--	206
Central	114	262	--	228	--	--	--	604
Clovis	137	342	--	382	--	--	--	861
Coalinga	90	55	--	151	--	--	--	296
Fowler	59	115	--	45	10	--	--	229
Kerman	53	71	--	147	--	--	--	271
Kings Canyon (Reedley)	75	227	--	193	--	--	20	515
Kingsburgh	61	115	--	55	--	--	--	231
Laton	30	34	--	31	--	--	--	95
Parlier	34	97	--	52	--	--	--	183
Riverdale	80	128	--	112	--	--	--	320
Sanger	119	--	--	68	12	--	--	199
Selma	99	255	--	169	17	--	--	540
Sierra	115	--	--	31	--	--	--	146
Tranquillity	80	33	--	59	--	--	--	172
Washington	56	--	--	60	--	--	--	116
Subtotal	1,256	1,841	--	1,815	52	--	20	4,984
Total high schools	1,256	2,330	--	2,811	84	17	142	6,640
Junior colleges								
Coalinga Junior College	--	--	--	--	--	50	36	86
Fresno City College	--	--	88	954	41	177	1,491	2,751
Reedley Junior College	48	--	78	--	--	33	168	327
Total junior colleges	48	--	166	954	41	260	1,695	3,164

Source: University of Wisconsin, Center for Studies in Vocational and Technical Education, Directory Vocational Education Programs, 1966.

Table 11

AGGREGATE USE OF SPECIALLY EQUIPPED FACILITIES
FOR PRIMARY FUNCTION IN FRESNO CITY AND COUNTY HIGH SCHOOLS

Type of Facility	City Schools[1/]			County Schools		
	Number of Periods Available	Number of Periods Used	Percent of Periods Used	Number of Periods Available	Number of Periods Used	Percent of Periods Used
Agricultural shops	--	--	--%	166	132	80%
Homemaking rooms (food and clothing)	144	103	72	190	146	77
Business education						
Office practice	112	85	76	201	115	57
Typing rooms	113	88	78	158	126	80
Industrial arts						
Auto	55	44	80	74	63	85
Metal	48	38	79	93	63	68
Wood	64	44	69	135	98	73
Electricity/ electronics	40	19	48	50	28	56
Drafting	64	51	80	86	51	59

1/ City school calculations do not include Hoover High School, which was on modular scheduling in the fall term.

Source: Class schedules obtained from individual high schools, fall 1967.

Table 12

SUMMARY OF USE OF AVAILABLE STUDENT STATIONS IN SPECIALLY EQUIPPED FACILITIES, BY PROGRAM AND SUB-SYSTEM Fall 1967

Type of Facility	Percent of Available Student Stations Occupied When Classroom is Utilized for its Primary Purpose by Sub-System					
	I[1/]	II[2/]	III[3/]	IV[4/]	V[5/]	Total
Agricultural shops	31.2%	40.0%	53.4%	48.7%	27.5%	42.3%
Homemaking rooms (food and clothing)	67.2	65.3	51.5	54.3	89.6	63.3
Business education						
Office practice	82.7	55.1	--	81.0	45.8	72.3
Typing rooms	78.1	70.3	64.0	65.6	94.2	72.9
Industrial arts						
Auto	80.3	69.5	--	96.9	73.8	77.0
Metal	68.6	49.3	46.2	75.0	39.4	58.2
Wood	70.1	59.7	42.8	52.4	81.9	60.0
Electricity/ electronics	53.7	40.1	--	22.9	--	46.3
Drafting	63.2	46.2	56.6	25.6	56.2	54.7

1/ Sub-system I includes Bullard, Clovis, Edison, Fresno, McLane, Roosevelt, and Sierra high schools. It does not include Hoover, which was on modular scheduling in the fall term. For Edison; because of sharing of facilities, office practice data is included in the typing facility; vocational auto shop courses are not included in the auto shop courses; welding is included in the metal facilities; data on electronics courses are not available. Agriculture is offered only at Clovis.

2/ Sub-system II includes Fowler, Kingsburg, Kings Canyon, Parlier, Sanger, and Selma high schools. Fowler data on metal courses is included in auto facility. Some junior high school students are included in office practice data for Kings Canyon. At Parlier, data on auto and metal classes are listed under the agricultural facility. Information was not available on electricity/electronics courses at Kings Canyon and Selma, nor on drafting courses at Parlier.

3/ Sub-system III includes Caruthers, Laton, Riverdale, and Washington high schools. Information was not available on Laton's and Washington's electricity/electronics classes, nor on Caruthers' and Riverdale's drafting classes. At Laton, all data includes a number of junior high school students. Both Riverdale and Washington held auto classes in the metal facility and data appears under metal. Electricity/electronics data is listed under the agricultural facility at Riverdale. Office practice is included in the typing facility at Washington.

4/ Sub-system IV includes Central, Kerman, and Tranquillity high schools. Both Kerman and Tranquillity held metal courses in the agriculture facility, and those data are combined under agriculture. At Tranquillity, information was not available for metal, electricity/electronics, and drafting courses.

5/ Sub-system V includes Coalinga high school.

Source: Percentages were computed from data obtained from class schedules and enrollments provided by each school district.

Table 13

VOCATIONAL EDUCATION PROJECTS FUNDED FOR FRESNO CITY AND COUNTY HIGH SCHOOLS AND JUNIOR COLLEGES
1965-1966 through 1967-1968

Project	High School or Junior College	Amount	
Agriculture			
Skills and general courses	Clovis	$ 3,789	
	Selma	11,602	
			$ 15,391
Mechanics and equipment sales	Clovis	6,385	
	Sanger	5,467	
	Coalinga J.C.	8,461	
	Reedley J.C.	10,286	
	State Center J.C.	16,267	
			46,866
Instructing skills	Reedley J.C.	3,717	3,717
Work experience	Coalinga J.C.	3,878	3,878
Survey	Reedley J.C.	2,100	2,100
Horticulture	Central	7,797	
	Clovis	5,497	
	Coalinga	5,348	
	Sanger	9,402	
	Selma	4,480	
	State Center J.C.	7,202	
			39,726
Total Agriculture			$111,678

Table 13 (Continued)

Project	High School or Junior College	Amount	
Business			
Community business needs, office clerks, stenographers	Riverdale	$ 3,590	
	Clovis	25,058	
	Coalinga	23,503	
	Fowler	6,499	
	Fresno	9,730	
	Hoover	10,911	
	McLane	9,176	
	Roosevelt	9,620	
	Kerman	5,615	
	Kings Canyon	11,781	
	Sanger	8,975	
	Selma	4,935	
	Washington	9,108	
	Reedley J.C.	17,631	
	State Center J.C.	4,093	$156,635
Work experience	Fresno City Unified	88,343	
	Selma	2,023	90,366
Data processing	Coalinga J.C.	4,308	4,308
Total Business			$254,899

Table 13 (Continued)

Project	High School or Junior College	Amount	
Industrial Arts			
Drafting	McLane	$ 2,353	$ 2,353
Mechanical technology	Fresno J.C.	22,354	22,354
Auto technology	Edison	9,399	
	Hoover	6,562	
	McLane	2,664	
	Roosevelt	7,223	
	Coalinga J.C.	4,624	
	Reedley J.C.	30,795	
			61,267
Aviation technology	Reedley J.C.	39,946	39,946
Heavy equipment maintenance	Sierra	9,679	9,679
Electronics	Fresno	7,021	
	McLane	2,739	
	Coalinga J.C.	2,250	
			12,010
Welding	Fresno City Unified	23,111[1/]	23,111
Commercial art	Edison	4,959	4,959
Total Industrial Arts			$175,679

1/ MDTA funded.

Table 13 (Continued)

Project	High School or Junior College	Amount	
Services			
Food	Fresno City Unified	$ 9,639	
	Selma	2,124	$ 11,763
Health	Fresno City Unified	5,814	
	State Center J.C.	21,355	27,169
Home health aide	Fresno City Unified	11,674[1/]	11,674
Nursing aide	Coalinga	1,536	
	Selma	2,343	
	Coalinga J.C.	3,886	7,765
Dental science	Reedley J.C.	7,992	7,992
Police science	Fresno J.C.	22,354	22,354
Presser	Fresno City Unified	22,426	22,426
Total Services			$111,143

1/ $8,704 of this amount is MDTA funded.

Table 13 (Continued)

Project	High School or Junior College	Amount	
General			
Vocational education	Fresno City Unified	$76,029	
	Laton	9,692	
	Riverdale	3,590	
	Coalinga J.C.	17,345	
	State Center J.C.	6,432	$113,088
Personnel director, counselor, advisor	Tranquillity	8,217	
	Washington	3,000	
	Coalinga J.C.	8,492	
	Fresno J.C.	16,265	
	Reedley J.C.	11,481	
	State Center J.C.	21,847	69,302
Area vocational facilities	Coalinga J.C.	91,662	91,662
Occupational information center	County Superintendent of Schools	7,418	7,418
CORE classes	Sierra	3,040	3,040
Total General			284,510
Total Vocational Education Project Funding			$937,909

Source: MERI, compiled from information submitted by the individual schools and from the State of California, Department of Education, Central Region VEA Proposals, 1967-1968.

Table 14

ENROLLMENTS BY SCHOOL AND SUB-SYSTEM AS A
PERCENTAGE OF TOTAL ENROLLMENT IN FRESNO COUNTY
(Grades 9-12)
Fall 1967

	Enrollment	Percent of Total Enrollment in Fresno County
Sub-System I		
Bullard	1,403	5.4%
Clovis	1,989	7.7
Edison	1,004	3.9
Fresno	2,359	9.1
Hoover	1,726	6.7
McLane	2,677	10.3
Roosevelt	2,388	9.2
Sierra	693	2.7
DeWolf (Continuation)	235	0.9
Subtotal	14,474	55.9%
Sub-System II		
Fowler	551	2.1%
Kingsburg	700	2.7
Kings Canyon	1,349	5.2
Parlier	363	1.4
Sanger	1,594	6.2
Selma	1,067	4.1
Subtotal	5,624	21.7%
Sub-System III		
Caruthers	462	1.8%
Laton	248	1.0
Riverdale	501	1.9
Washington	1,200	4.6
Subtotal	2,411	9.3%

Table 14 (Continued)

	Enrollment	Percent of Total Enrollment in Fresno County
Sub-System IV		
Central	1,226	4.7%
Kerman	626	2.4
Tranquillity	746	2.9
Subtotal	2,598	10.0%
Sub-System V		
Coalinga	792	3.1%
Total	25,899	100.0%

Sources: Fresno City Unified District, "Enrollments--November 1967."

Fresno County, Department of Education, Directory 1967-68, September 1967.

Table 15

OCCUPATIONAL PROGRAMS OFFERED AT FRESNO COUNTY JUNIOR COLLEGES, 1968-1969

Program	Colleges Which Offer Programs		
	Coalinga	Fresno	Reedley
AGRICULTURAL AND RELATED			
Agricultural Business	X		X
Agricultural Chemicals			X
Agricultural Inspection			X
Agricultural Power Mechanics			X
Animal Husbandry	X		X
Applied Agricultural Engineering	X		
Crop Production	X		
Dairy Husbandry	X		
Landscape Horticulture			X
Viticulture			X
APPLIED AND GRAPHIC ARTS			
Art	X	X	
Journalism	X		
BUSINESS			
Accounting		X	X
Accounts Clerk	X		
Basic Clerical	X		
Business Data Processing		X	
Clerical, General Office	X	X	
Clerk, Stenographer	X	X	
Clerk Typist	X		X
Court Reporting		X	
General Business		X	X
General Secretarial	X	X	X
Insurance		X	
Legal Secretary	X	X	X
Marketing		X	X
Medical Assistant-Secretary		X	
Medical Receptionist-Stenographer		X	
Medical Records Technician		X	
Medical Secretary	X	X	X
Office Administration	X		
Office Machines		X	
Professional Secretary	X		
Real Estate		X	

Table 15 (Continued)

Program	Colleges Which Offer Programs: Coalinga	Fresno	Reedley
BUSINESS (Continued)			
Receptionist		X	
Technical Secretary	X	X	
Transcription (non-shorthand)	X		
Transportation		X	
CONSTRUCTION			
Building Construction Technology		X	
Carpenter		X	
Electrician	X	X	
Mill Cabinetmaker		X	
ENGINEERING AND RELATED			
Architectural Drafting	X	X	
Civil Technology	X		
Engineering Technician and Surveyor	X	X	X
Industrial Draftsman		X	
Industrial Laboratory Technician		X	
Mechanical Drafting	X		X
HEALTH			
Dental Assisting			X
Inhalation Therapy		X	
Registered Nursing		X	
Vocational Nursing		X	
X-ray Technology		X	
MECHANICAL AND REPAIR			
Aeronautics, Airframe and Power-plant Mechanic		X	X
Automotive Technology	X	X	X
Body-Fender Mechanic		X	
Diesel Mechanic		X	
Electronics Technician		X	X
Mechanical Technology		X	
Office Machine Repairman and Serviceman		X	
Radio and TV Repairman		X	

Table 15 (Continued)

Program	Colleges Which Offer Programs		
	Coalinga	Fresno	Reedley
MANUFACTURING AND PROCESSING			
Machinist		X	
Sheet Metal Worker		X	
Welder		X	
PUBLIC SERVICES			
Fire Science		X	
Police Science		X	
Recreational Leadership		X	

Source: MERI from the 1968-1969 catalog of each college.

Appendix B

OCCUPATIONAL EDUCATION PROGRAM RECOMMENDATIONS FOR FRESNO COUNTY

SUMMARY

Program	Number of Occupational Education Program Recommendations for Fresno County by Sub-System 1/					
	I	II	III	IV	V	Total
AGRICULTURAL AND RELATED OCCUPATIONS						
Agricultural Mechanics	--	1	1	1	1	4
Agricultural Chemicals and Supplies	--	1	1	1	1	4
Ornamental Horticulture	1	1	1	1	1	5
APPLIED AND GRAPHIC ARTS OCCUPATIONS						
Visual Communications Technician	1	--	--	--	--	1
Commercial Art	1	--	--	--	--	1
BUSINESS OCCUPATIONS						
Secretarial, Clerical	3	2	1	1	1	8
Data Processing	1	--	--	--	--	1
Merchandising	2	1	1	1	1	6
Stock Control, Stock Clerk	1	--	--	--	--	1
CONSTRUCTION OCCUPATIONS						
Construction Technician	1	1	--	--	--	2
ENGINEERING AND RELATED OCCUPATIONS						
Draftsman	2	1	1	1	1	6
Engineering Technician	1	1	--	--	--	2
HEALTH OCCUPATIONS						
Nurse's Aide	2	1	--	--	--	3
MECHANICAL AND REPAIR OCCUPATIONS						
Aeronautics	1	1	--	--	--	2
Automotive Mechanics	3	2	1	1	1	8
Auto Body Repair	1	1	--	--	--	2
Heavy Equipment Mechanic	1	--	--	--	--	1
Small Engine Repair	1	--	--	--	--	1
Electronic Repair	1	1	--	--	--	2
Electro-Mechanical Repair	2	1	1	1	1	6
Air Conditioning and Refrigeration Technician	1	--	--	--	--	1

SUMMARY (Continued)

Program	Number of Occupational Education Program Recommendations for Fresno County by Sub-System[1/]					
	I	II	III	IV	V	Total
MANUFACTURING AND PROCESSING OCCUPATIONS						
Machinist	2	1	1	1	1	6
Welding	2	1	1	1	1	6
PERSONAL SERVICE OCCUPATIONS						
Food Preparation and Management	1	1	--	--	--	2
Laundry and Dry Cleaning Occupations, including Clothing Repair	1	--	--	--	--	1
Cosmetology	1	--	--	--	--	1
Meat Cutter/Butcher	1	--	--	--	--	1
Service Station Attendant	1	1	--	--	--	2
Maid	1	--	--	--	--	1
Janitor/Custodian	1	--	--	--	--	1
GOVERNMENTAL SERVICE OCCUPATIONS						
Nursery School Aide, Teacher Aide, and Social Service Aide	1	1	--	--	--	2
Total	39	21	10	10	10	90

Note: Placement of programs within the sub-systems is to be decided by the Board of Management of the ROC System.

1/ Existing programs are not listed. These are: General Agriculture, 16 (1 in each county high school); and General Business, General Mechanics and Industrial Arts, and General Homemaking, 22 each (1 in each city and county high school).

OCCUPATIONAL EDUCATION PROGRAM RECOMMENDATIONS
FOR FRESNO COUNTY

Family and Program	Number of Recommended Programs Total	By Sub-System	Explanation
A. Agricultural and Related Occupations			
1. General Agriculture (existing programs)	16	1 in each county high school	This program should be continued in each county high school where enrollments, facilities, and staff make it feasible. It provides sound general education; however, present programs are not generally vocational in nature and should not be considered as such. Programs are exploratory and can serve to provide basic skills for agricultural technology programs.
2. Agricultural Mechanics	4	1 in II 1 in III 1 in IV 1 in V	This course should be developed as a 4-year vertically articulated program in the 11th, 12th, 13th, and 14th grades. It is a highly sophisticated program concerned with the repair, maintenance, and operation of complex agricultural machines, and it includes elements of mechanics, hydraulics, electronics, and internal combustion engines.
3. Agricultural Chemicals and Supplies	4	1 in II 1 in III 1 in IV 1 in V	This is a 4-year vertically articulated program in the 11th, 12th, 13th, and 14th grades. The subject matter is concentrated primarily in the use and marketing of agricultural chemicals. Persons trained in this program would work in agricultural supply houses and with major agricultural employers recommending and selling agricultural chemicals and other supplies for purposes of pest control, fertilizing, etc.

Family and Program	Number of Recommended Programs: Total	By Sub-System	Explanation
4. Ornamental Horticulture	5	1 in I 1 in II 1 in III 1 in IV 1 in V	This program is designed to give 12th grade graduates basic skills to enable them to work as nursery employees, groundskeepers, and landscape maintenance men. Emphasis should be on plant materials, propogation, fertilizing, and pest control.
B. Applied and Graphic Arts Occupations			
1. Visual Communications Technician	1	1 in I	This program is designed to train students for employment in a wide range of jobs, all of which require skill in the preparation and use of visual communications media. It would include such positions as audio-visual technicians in a school system preparing visual teaching materials for use by instructors. It would also include fundamental preparation in lettering, sign painting and placard making, and would be closely allied to the Commercial Art program.
2. Commercial Art	1	1 in I	This program should prepare students for employment as commercial artists, particularly in the preparation of store displays and advertising. Students who are artistically inclined would be attracted to this program.

Family and Program	Number of Recommended Programs Total	By Sub-System	Explanation
C. Business Occupations			
1. General Business (existing program)	22	1 in each city and county high school	This should be offered as a general education program. Like the general programs in Agriculture, Homemaking, and in Mechanics, it is not intended to be a vocational program, but rather it is intended to offer students a chance to explore the occupational field of business, and to acquire some basic skills which may be useful in other specialized business occupations.
2. Secretarial, Clerical	8	3 in I 2 in II 1 in III 1 in IV 1 in V	This should be an intensified 2-year program to prepare young women for entry level office positions, particularly as secretaries and stenographers. It should include all areas of secretarial practice and office procedure and could be patterned after the Clovis program. It should also be excellent preparation for transfer into junior college programs for Medical or Legal Secretary.
3. Data Processing	1	1 in I	This program is designed to train students in data processing operations and to prepare them in a pre-technological sense for progression into the junior college in data processing programming. Skills learned in this program should include those basic to an understanding of data processing operations, particularly as used in record keeping and business accounting. Equipment should be available so that students can have actual hands-on experience in its operation. Students should be permitted the opportunity to develop simple programs and to use these programs in their machine operation experience.

Family and Program	Number of Recommended Programs: Total	By Sub-System	Explanation
4. Merchandising	6	2 in I 1 in II 1 in III 1 in IV 1 in V	This program should be designed to prepare students for careers in merchandising and selling. Work experience is essential to the program and various specialties can be developed in conjunction with it; for example, apparel merchandising, food merchandising, and hardware and building material merchandising. Short-term courses in selling should also be offered for those students who wish to learn interim skills.
5. Stock Control, Stock Clerk	1	1 in I	This program is designed to prepare students for employment in warehousing and stock control positions. Typical positions include inventory clerk, warehouseman, parts man, and materials expediter.
D. Construction Occupations			
1. Construction Technician	2	1 in I 1 in II	This program is basically pre-apprentice training in the various construction trades including carpentry, electrical, plumbing, masonry, drywall, sheetmetal, and mill-cabinet. It is a 3-year program with the last year spent building a structure. The first year could be a regular workshop course expanded to include an introduction to some of the other trades. The program should also serve as the pre-technology phase of a 4-year vertically articulated program with the junior college building technology program.

Family and Program	Number of Recommended Programs Total	By Sub-System	Explanation
E. Engineering and Related Occupations			
1. Draftsman	6	2 in I 1 in II 1 in III 1 in IV 1 in V	This program is designed to train students for entry level positions using drafting skills in various areas of specialization. The last year of the program should offer specialization in architectural drafting, mechanical drafting, or electrical drafting. The program may also be considered as pre-technological for additional training at the junior college level on a 4-year articulated basis. However, completion of the program should prepare the student for immediate employment. This program is closely related to the Engineering Technician program.
2. Engineering Technician	2	1 in I 1 in II	This program is designed to train students for employment as assistants to professional engineers. The curriculum emphasis should be on mathematics, engineering theory, and engineering processes. The program should be articulated with those at the junior college to provide a 4-year continuous program. Although the main emphasis is theoretical, the program must also involve hands-on experience with the various engineering tools, and materials because the true value of the technician comes in making the transition from theory to practicality. The high school portion of the program should be generally oriented and specialization should take place in the 13th and 14th grade levels. This program is closely allied with that of Drafting.

Family and Program	Number of Recommended Programs: Total	By Sub-System	Explanation
F. Health Occupations[1/]			
1. Nurse's Aide	3	2 in I 1 in II	This program should prepare students for immediate employment as nurses' aides and at the same time should give them sufficient background to enable them to move into licensed vocational nursing programs at the junior college level. An integral part of the program is work experience in the hospital setting; therefore, the program should be offered at a location where transportation to the hospital will be convenient. The size of the program is expandable, depending upon student availability. The labor market will be able to absorb large numbers of nurses' aides both in regular hospitals and in convalescent hospitals and nursing homes.
G. Mechanical and Repair Occupations			
1. General Mechanics and Industrial Arts (existing program)	22	1 in each city and county high school	This a general education program designed to acquaint students with principles of internal combustion engines, power transmission, electrical motors, metals, machining, and hydraulics and woodworking.

1/ The secondary school level is not suitable for providing training in most other health occupations, even though the demand for trained persons is great. Such programs (i.e., Licensed Vocational Nurse and Dental Assistant) should be offered at the junior college level. The junior colleges and ROC System could explore whether or not a curriculum should be offered at the high schools to prepare students for transfer into specialized medically related programs at the junior colleges.

Family and Program	Number of Recommended Programs Total	By Sub-System	Explanation
1. General Mechanics and Industrial Arts (continued)			Not intended to be a vocational program, it should be pre-vocational in the sense that it should give basic knowledge and provide skills required in all programs offered in the occupational families of Mechanical and Repair Occupations, Manufacturing and Processing Occupations, and some others. This program should be offered at each high school and should provide opportunities for transfer into the ROC vocational programs in these families. Students may also complete the general course and enroll in specialized programs at the junior college or enter apprenticeship programs.
2. Aeronautics	2	1 in I 1 in II	This is a pre-technology program articulated with the aeronautics curriculum at the junior colleges. The program should be planned on a 4-year basis, including the 11th through the 14th grades. It is not intended to prepare students for employment upon 12th grade graduation.
3. Automotive Mechanics	8	3 in 1 2 in II 1 in III 1 in IV 1 in V	This program serves both as a program which prepares students for immediate employment upon graduation from the 12th grade and as a pre-technology program preparing students for transfer into junior college specialized automotive mechanical curricula. At the secondary level training would be on the total automotive system and specialization in particular automotive sub-systems would take place at the junior college level.

Family and Program	Number of Recommended Programs Total	By Sub-System	Explanation
4. Auto Body Repair	2	1 in I 1 in II	This program prepares students for immediate employment as auto body repairmen in body shops and for transfer into the junior college body and fender program.
5. Heavy Equipment Mechanic	1	1 in I	This program is designed primarily to prepare students for work on diesel engines and heavy equipment, such as construction equipment, trucks, and buses. It is both a program to prepare students for immediate employment upon graduation from the 12th grade as helpers in heavy equipment repair shops and a pre-technology program to prepare students for Diesel Mechanics programs at the junior college.
6. Small Engine Repair	1	1 in I	This program is designed to prepare students for employment immediately upon completion in repair shops which specialize in the maintenance and repair of such equipment as power lawn mowers, power saws, outboard motors for boats, and powered small construction equipment, including compressors and other related internal combustion driven equipment.
7. Electronic Repair	2	1 in I 1 in II	This is a pre-technology program designed to prepare students for transfer to the junior college programs in electronic equipment repair and maintenance. At the secondary level the emphasis should be on general electronic theory and systems. Specialization should take place at the junior college level in the areas of TV and radio repair, communications equipment repair, and electronic measurement equipment repair. The skills learned in the secondary program will not prepare the student for employment upon completion, but will prepare him to continue into the junior college level programs.

Family and Program	Number of Recommended Programs: Total	By Sub-System	Explanation
8. Electro-Mechanical Repair	6	2 in I 1 in II 1 in III 1 in IV 1 in V	This program is designed to give students necessary skills to perform as equipment repairmen on home appliances, office machines, or vending machines. It is also designed as a pre-technology program to prepare students for transfer into 13th and 14th level advanced programs in electro-mechanical specialties. Limited specialization should take place in the last year of the program but heavy emphasis should be upon mechanics, electricity, and electronics, and the interrelated workings of complex electro-mechancial equipment.
9. Air Conditioning and Refrigeration Technician	1	1 in I	Emphasis in this program is on commercial and industrial air conditioning and refrigeration. It is intended both to provide students with basic skills for immediate employment as apprentices or helpers to refrigeration and air conditioning mechanics and to provide the first 2 years of a 4-year technology program to be articulated with the program at the junior college.
H. Manufacturing and Processing Occupations			
1. Machinist	6	2 in I 1 in II 1 in III 1 in IV 1 in V	This program is designed both to prepare students for immediate employment upon completion as machine operators and to provide the first 2 years of a 4-year vertically articulated program for general machinists.

Family and Program	Number of Recommended Programs: Total	By Sub-System	Explanation
2. Welding	6	2 in I 1 in II 1 in III 1 in IV 1 in V	This program is designed to train students for immediate employment as certified welders. It is not intended to be vertically articulated with the junior college program, although students may take advanced training at the junior college level.
I. Personal Service Occupations			
1. General Homemaking (existing program)	22	1 in each city and county high school	This is another of the existing general education programs that should be continued. The general homemaking curriculum should be reviewed to introduce additional occupational elements.
2. Food Preparation and Management	2	1 in I 1 in II	This program is designed to prepare students for employment upon completion as kitchen helpers, fry cooks, counter and fountain workers and waiters-waitresses. It is also designed to prepare students for entering into junior college level programs in hotel and restaurant management. In that respect the program should be vertically articulated with programs offered by the junior colleges. This program could be patterned after the San Francisco City College program and its satellite FEAST programs.
3. Laundry and Dry Cleaning Occupations, including Clothing Repair	1	1 in I	This program will prepare students for immediate employment in the laundry and dry cleaning industry. Skills to be taught should be worked out with the American Institute of Dry Cleaners and should include cleaning, spotting, pressing, wool pressing, and other dry cleaning specialties, clothing repair and alteration, and laundry and dry cleaning counter work.

Family and Program	Number of Recommended Programs Total	By Sub-System	Explanation
4. Cosmetology	1	1 in I	This program should enable high school students to complete their necessary 1,900 hours of training for cosmetology licensing.
5. Meat Cutter/ Butcher	1	1 in I	This program should prepare students for employment as apprentice meat cutters.
6. Service Station Attendant	2	1 in I 1 in II	This program should prepare students for immediate employment upon completion as service station attendants. Training should emphasize sales techniques, mechanics, and the business aspects of service station operation. This program is closely allied with the Business Education family in Merchandising and with the Mechanic and Repair family in Automotive Mechanics. There should be some transferability of students between this program and the Automotive Mechanics program.
7. Maid	1	1 in I	This program prepares students for immediate employment as hotel and motel maids or as maids in private residences.
8. Janitor/ Custodian	1	1 in I	This program prepares students for immediate employment as janitor or custodian. Most employment will be with large janitorial firms, and training emphasis should be placed upon the use of cleaning equipment and supplies and upon the business aspects of janitorial services.

Family and Program	Number of Recommended Programs Total	By Sub-System	Explanation
J. Governmental Service Occupations			
1. Nursery School Aide, Teacher Aide, and Social Service Aide	2	1 in I 1 in II	This is a 4-year vertically articulated program and should be developed in cooperation with the junior colleges. Students completing this program will not be prepared for immediate employment but will be prepared for completion of the 13th and 14th grade level curriculum in an area of specialization. The secondary level program is designed to provide students with basic knowledge and abilities necessary to enable them to specialize at the junior college level. It is noted that programs are not currently in existence at the junior college for these occupations; however, impetus can come from the ROC System to create such programs at the junior college level.

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Projected Training Needs for Health Service Occupations. Arizona's Challenge. Research Report.

Arizona Health Services Education Association, Phoenix
Arizona State Dept. of Vocational Education, Phoenix
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ARIZONA

The project surveys the projected need for health service personnel for a selected group of occupations in Arizona, and their future availability. Some highlights of the survey are: (1) The demand for workers will grow more rapidly than the population, while immigration will barely be adequate to offset regular losses due to death, retirement. etc., (2) Arizona's dependence upon other states for trained health service personnel is exemplified by the fact that 85 percent of the newly registered nurses have been educated elsewhere, (3) Over the next decade, the state needs to train annually 300 to 400 registered nurses, 300 to 400 licensed practical nurses, 400 to 600 nurse aides, 35 to 40 medical assistants, 35 to 40 surgical technicians, and 10 to 15 occupational therapists. (JK)

VT 007 556

PROJECTED TRAINING NEEDS FOR

HEALTH SERVICE OCCUPATIONS

ARIZONA'S CHALLENGE

Arizona Health Services Education Association
Phoenix, Arizona
Arthur M. Lee, Director
Harold H. Moore, Assistant Director

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Research Report
Supported by a Grant

From

Arizona Department of Vocational Education

September 30, 1966

VT 007 556

HIGHLIGHTS OF SURVEY FINDINGS

. . . . . The demand for workers in health service occupations will grow more rapidly than will the population in Arizona during the next decade.

. . . . . Immigration of trained, experienced workers from other states will barely be adequate to offset losses due to death, retirement, withdrawal from the labor force, and outmigration of health service personnel in Arizona.

. . . . . By 1975, population in Arizona will have increased 44 percent. The demand for registered nurses will have increased 55 percent; for licensed practical nurses, 83 percent; for medical technologists, 64 percent. The demand for medical record librarians, medical record technicians, inhalation therapists, physical therapists and many other health service occupations will more than double during the period.

. . . . . By 1975, there will be nearly 30 percent more hospital beds in Arizona, and the average percent occupancy will have increased from 72 percent to approximately 80 percent of existing beds.

. . . . . Arizona's historical dependence on other states for trained medical and health service personnel is exemplified by the fact that 85 percent of the newly registered nurses in Arizona have been educated elsewhere. Forty percent of the nurses educated in Arizona have left the State or the occupation by the end of the first year after their graduation.

. . . . . For Arizona to meet the demand for 100 additional nurses, it is necessary to train 166 nurses.

. . . . . Over the next decade, Arizona needs to train between 300-400 registered nurses each year to meet the demands for health services even considering those available from immigration from other states.

. . . . . Sizeable training requirements exist for many other health occupations including, for example, 300 to 400 L.P.N.'s per year, 400 to 600 nurse aides per year, 35 to 40 medical assistants, 35 to 40 surgical technicians, 10 to 15 occupational therapists per year.

. . . . . These significant health service personnel requirements for a new era of health care are a challenge to be met by Arizona.

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INTRODUCTION

This project was conducted by the research staff of the Arizona Health Services Education Association. It was financed in part by a grant from the Arizona State Department of Vocational Education.

Part A of this report presents a review of Arizona health service personnel needs in the future. In a sense, part A presents the future demand for health service personnel for a selected group of occupations. These demands are based on the numbers of persons needed in health service occupations due to the growth in population, the numbers needed to staff required health service facilities and the number needed due to the implementation of the 1965 amendments to the Social Security Act, commonly known as Medicare.

Part B considers the future availability of health service personnel in Arizona. In this part, attention is directed to the inmigration and attrition of trained health service personnel. In the past, Arizona has been heavily dependent upon other states as a source of trained, experienced health service personnel. Because nearly one-half of the future population growth in the State will consist of persons migrating to Arizona from other parts of the nation, a careful appraisal of the occupational content of the future inmigration must be made. Counterbalancing the additions to the labor force are losses that occur due to death, retirement, withdrawal from the labor force and similar reasons. Withdrawal from the labor force for purposes of raising a family is of particular importance in occupations that are dominated by women workers. Inasmuch as the vast majority of health service workers are female, careful attention must be paid to the attrition factor in appraising the future availability of health service personnel in Arizona.

Part C compares the material developed in parts A and B and defines the dimension or scope of the problem of availability of health service personnel. In these pages a target is presented for the desired output of all educational facilities in Arizona commensurate with the occupational demands for the State's health requirements. Brief attention is also devoted to an appraisal of Arizona's responsibility to the national needs for health service personnel.

Miss Wilma A. Richard, research consultant, was primarily responsible for part B of this report. Mr. William A. Langbehn contributed much of parts A and C. The entire research staff of the Arizona Health Services Education Association cooperated closely in all stages of this report.

Part "A"

ARIZONA HEALTH SERVICES PERSONNEL NEEDS

IN THE NEXT DECADE

INTRODUCTION

As is stated in the Coggeshall Report, "Planning for Medical Progress Through Education,"

> It once took only one doctor to resign himself and the child's parents to the inevitable death of a blue baby. It now takes a team of medical specialists and auxiliary personnel to correct the congenital abnormality of a baby's heart to insure the child a normal life span. At least 15 persons including four surgeons are needed in the operating room for the repair of a congenital lesion of the heart. More than 100 medical specialists, nurses and skilled technicians are involved in preparation and performance of the operation and post-surgical care of the patient.

The health manpower situation is complex and constantly changing. One important reason is technological advance. This would be important even if the demand for health care were to remain constant, but it will not. Many forces are exerting constant upward pressure upon Arizona's health resources. Among these are rising incomes, better education, urbanization, population growth, change in age structure of the population, new mechanisms for payment for services, including private insurance coverage and Medicare, and better public awareness of the needs for improved medical services.

Arizona has been highly dependent upon other states for its supply of trained medical and health service personnel. The Medical College of the University of Arizona is only now coming into being. Though Arizona has had education facilities for nurses for over 50 years, registration records show that 85 percent of the nurses joining the work force in Arizona have been educated in other states or foreign countries. Nearly one-half of the newly employed licensed practical nurses in Arizona have come from other states. All of the dental hygienists, all of the physical therapists, all of the medical record librarians, many of the medical record technicians, all of the certified laboratory assistants, inhalation therapists, occupational therapists, dental technicians, as well as many other health service workers have come to Arizona from other states. This gross dependency upon inmigration has tended to obscure the magnitude of the health manpower training needs of the State of Arizona. Although vacancies exist for trained and experienced personnel, the tendency has been to rely upon the flow of newcomers to the State as a source of workers.

Migration to Arizona will continue in the future. There is no way to alter the fact that nearly one-half of our population growth from 1960-1975 will result from the flow of persons from other states of the

nation to the desert Southwest. Indeed, this is to be desired from the point of view of supply of trained and experienced manpower, financial resources for business and industrial development, business and trade experience and cultural and social leadership to the State, but it is unrealistic indeed to base our future standards of health care upon the training output of the other states of the nation. Medical and allied health personnel are in scarce supply throughout the world. Arizona must do its part in training and educating to meet our requirements and the requirements of the nation.

It is significant that Arizona's past experience in the education of registered nurses shows that only about 85 percent of the graduates register in Arizona, and that by the end of the first year subsequent to their graduation only 61 percent are still working in the State. Thus, four out of every 10 registered nurses trained in Arizona are not available to work in the State by the end of the first year. To train for an Arizona need of 100 registered nurses the total training output required is 166.

Outmigration of recent graduates of health service education programs is an indication of the nationwide demand for these persons and their flexibility in place of employment. Most of these graduates are women and typically at the time of graduation are unmarried. They are, thus, highly mobile and capable of finding employment in any part of the nation. On the other hand, fully two-thirds of the employed registered nurses in Arizona are married women and an additional 16 percent are widowed, divorced or separated. Thus, over 80 percent of the employed nurses in Arizona are women who are, or who have been, married. It is probable that their migration patterns to the State of Arizona may well have been influenced by the availability of employment for their husbands who in most cases may be considered as the primary wage earner of the family.

In summary, it should be noted that recent graduates are mobile and capable of migration as they have a highly marketable skill and no family responsibilities. The employed workers in Arizona, on the other hand, are typically women who have been or who are married and who may have migrated to Arizona in association with a family move precipitated by their husband's change of employment.

The effect is that Arizona's training needs must take into account the outmigration of graduates and the inmigration of persons trained in other states.

The following pages present a narrative and tabular review of the projected medical facilities needs, the rationale for projected personnel needs based on these facilities, and a careful appraisal of the effects of Medicare. Table 3 presents the current employment and current vacancies in health service occupations as revealed in the AHSEA survey, Arizona Health Services Education For a New Era of Health Care, together with employment projections based on population growth. Table 4 presents information on the estimated number of additional medical and allied health personnel required due to the implementation of the Medicare

legislation. Table 5 presents a more detailed listing of the additional personnel required due to Medicare by individual health services occupation. Table 6 presents the estimated future employment required including both the effects of Medicare and the demands of normal population growth. Estimates for 1970 and 1975, based on both a high series and a low series of population projections, are presented in Table 6.

I

PROJECTED MEDICAL FACILITIES NEEDS

IN ARIZONA

There are several approaches to estimates of future medical facilities needs and future employment levels of health service personnel in Arizona. Essentially, however, the basic factors remain the same: personnel are required to serve the public and to staff medical facilities.

As an initial step in the estimation of future facilities needs and employment levels for any occupation, assumptions must be made with regard to the population characteristics that will exist in the area at the time of the estimates. For purposes of this report, the United States Department of Commerce, Bureau of the Census, publication Illustrative Projections of the Population of States, 1970-1985 has been selected to provide a range of data for analysis. The highest and the lowest of the Bureau of the Census estimates for the State of Arizona have been utilized. The Table of Population estimates, Table 1, indicates that the rate of population growth will slow down in the period 1970 to 1975 as compared with the period 1965 through 1970. In 1965 the State's population was estimated at 1,609,000. Estimates for 1970 range from 1,898,000 to 1,976,000. For 1975 the estimates are from 2,154,000 to 2,308,000.

Because of the interest and concern that has been expressed with regard to the probable impact of "Medicare" on medical facilities and personnel needs, population estimates of the age group concerned have been examined. These data show that in 1965, population over age 65 was about 7.5 percent of the State's total. The estimates call for a slight decline in 1970 to a range of from 7.3 percent for the high series of estimates to 7.4 percent for the low series of estimates. By 1975, however, the proportion of persons over age 65 will have increased to 7.6 percent in the high series of estimates or 7.7 percent in the low series of estimates. The footnote to Table 1 explains the difference in the proportion of population. The high series of estimates is based on a very moderate decline in fertility level, or stated conversely, only a moderate proportionate increase in the over age 65 group. The low series of estimates is based on a substantial drop in fertility levels. Similarly, the high series estimates are based on a continuation of migration at a relatively high rate whereas the low series estimates reflect a much reduced rate of migration. Migration has in the past been primarily by persons of the wage earning and employable age group; therefore, a lower level of migration would tend to increase the proportionate numbers in the over age 65 group.

Projections of medical facilities needs have been prepared in accordance with formulas established by the United States Public Health Service for the administration of Federal funds for the construction and modernization of hospitals and other medical facilities. The formulae are defined in the Arizona State Plan for Construction and Modernization of Hospitals and Related Medical Facilities, Fiscal Year 1966. The criteria and methods used for computation of bed needs are presented on page 41 and tabular presentations of the same type of information are on pages 173-176 of that publication.

TABLE 1

POPULATION ESTIMATES FOR ARIZONA

AND PRINCIPLE COUNTIES

	1965	1970		1975	
		High	Low	High	Low
TOTAL					
State	1,609,000	1,976,000	1,898,000	2,303,000	2,154,000
Maricopa	875,000	1,146,000	1,101,000	1,335,000	1,292,000
Pima	322,000	395,000	380,000	462,000	431,000
Other	412,000	435,000	417,000	461,000	431,000
OVER 65					
State	120,000	145,000	141,000	176,000	167,000
Maricopa	66,000	84,000	82,000	106,000	101,000
Pima	24,000	29,000	28,000	35,000	33,000
Other	30,000	32,000	31,000	35,000	83,000

Sources: 1965 - State data from U.S. Department of Commerce, Bureau of the Census, Series P-25 #333, March 30, 1965. County data from Maricopa County Planning Department, Valley National Bank, and AHSEA staff estimates.

1970 and 1975 data: State estimates from U.S. Department of Commerce, Bureau of the Census, Series P-25, #326, February 7, 1966. Estimate series I-B and II-D were used (see below). County estimates were by AHSEA research staff.

Series	Interstate migration assumption	National fertility assumption
I-B... (High)	Gross migration rates of the 1955-60 period will continue throughout projection period.	Very moderate decline from present levels.
II-D.. (Low)	Convergence of the 1955-60 gross migration rates during the projection period.	Substantial drop from present levels.

Essentially, a "use-factor" is computed by analyzing the State's present pattern of patient days vs. population. For this report, the patient days figure utilized was that reported for general hospitals in Arizona Health Services Education For a New Era of Health Care, Table 1. Population estimates for 1965 are from the same source. This use-factor is then applied to the future population estimates presented in Table 1. The highest and the lowest population estimates provide estimates of total patient days which in turn can be converted to average daily census and hospital beds. A similar approach is used for nursing home facilities. The resulting facilities needs are presented in Table 2.

TABLE 2

PROJECTED MEDICAL FACILITIES NEEDS FOR ARIZONA

1970 AND 1975

	1970		1975	
	High	Low	High	Low
POPULATION	1,976,000	1,898,000	2,308,000	2,154,000
HOSPITALS				
Beds	8,130	7,809	9,475	8,844
Average Daily Census	6,504	6,247	7,580	7,075
Patient Days	2,373,960	2,280,155	2,766,700	2,582,375
NURSING HOMES				
Beds	2,539	2,439	2,939	2,789
Average Daily Census	2,251	2,163	2,654	2,476
Patient Days	821,615	7,894,495	968,710	903,740

II

PROJECTED HEALTH SERVICE PERSONNEL NEEDS

Health service personnel needs are essentially related to (1) the requirements to serve the population, (2) the availability of medical facilities which must be staffed and (3) the patterns of personnel utilization within the professions themselves. For this report a series of key health service occupations have been selected for analysis. These same occupations will be considered in all sections of this report.

The projected health service occupational needs are to be viewed as target employment levels. These projections are based on the population estimates for 1970 and 1975 previously presented in Table 1, on the projected medical facilities needs as presented in Table 2 and on the changing patterns of relative utilization within the occupations. It must be emphasized that these are projected personnel needs and projected employment levels. As such, they represent "best possible" estimates of the future, but are subject to considerable modification as conditions change.

As appropriate, target ratios established by the Surgeon General, by the various professional associations and by other similar sources of authoritative opinion have been utilized in the projections of health service personnel needs. Table 3 presents the projected employment levels by occupation. The following paragraphs review for some of the significant occupations the rationale for projection.

EMPLOYMENT LEVEL PROJECTIONS

Registered Nurse The future employment levels for registered nurses have been estimated according to the 1965 ratio of number of registered nurses employed (plus vacancies) to 100,000 population. This ratio was 364.8 in 1965--somewhat higher than the Surgeon General's recommended ratio of 350 registered nurses per 100,000 population. The Surgeon General's target ratio has been utilized nationally as a measure of future occupational needs and as such is a fairly reasonable target for use in Arizona's estimates. It must be emphasized, however, that because of differences in the characteristics of Arizona's climate and population the ratio of nurses may well vary considerably from the target 350 per 100,000 population.

Licensed Practical Nurse: The employment estimates for licensed practical nurses reflect an increasing ratio of L.P.N.'s per 100,000 population. The ratio in 1970 will increase from the present level of 107 to 113 per 100,000 population; in 1975 the ratio should be 119 licensed practical nurses per 100,000 population. The increase in ratio of licensed practical nurses reflects the growing utilization of this level of occupation in health services care and continues the trend toward utilization of sub-professional personnel in the field.

Medical Record Librarian: The estimated number of medical record librarians was based on a ratio of current employment in the occupation to the existing number of hospital beds. This ratio was projected through the future for the increased number of beds and increased hospital utilization. A slightly increasing proportion of medical record librarians per 1,000 hospital beds was utilized in the estimates.

TABLE 3

EMPLOYMENT LEVELS BY OCCUPATION

Occupations	1965		Total Current Need	Employment projections Based on Population Growth			
				1970		1975	
	Current Employ.	Current Vacancies		High	Low	High	Low
1. R.N.	5556	314	5870	7200	6900	8400	7850
2. L.P.N.	1578	141	1719	2250	2150	2750	2550
3. Nurse Aide	3309	135	3444	4200	4000	4850	4550
4. Medical Assistant	257	1	258	320	300	375	350
5. Surgical Technician	116	14	130	190	180	250	235
6. Medical Record Librarian	63	9	72	105	100	125	120
7. Medical Record Technician	116	8	124	195	185	235	225
8. Medical Record Secretary	138	8	146	205	195	250	230
9. Office Nurse (Not Registered)	311	6	317	400	385	510	475
10. Medical Secretary	829	12	841	1050	1000	1200	1125
11. Medical Technologist	610	21	631	790	760	980	920
12. Laboratory Assistant	261	18	279	375	360	500	465
13. X-Ray Technologist	410	27	437	600	575	790	730
14. Inhalation Therapist	36	7	43	70	65	110	100
15. Physical Therapist	145	8	153	220	215	315	290
16. Physical Therapy Assistant	14	1	15	---	---	---	---
17. Occupational Therapist	40	12	52	85	80	115	105
18. Occupational Therapy Asst.	4	1	5	---	---	---	---
19. Medical Social Worker	73	7	80	100	95	125	120
20. Dental Hygienist	100	7	107	140	130	190	175
21. Dental Assistant	699	12	711	875	840	1020	950
22. Dental Technician	61	---	61	75	75	80	80
23. Dietician	59	4	63	80	78	90	85

Medical Record Technician: The estimate for medical record technicians is based on the growth in the medical record activities. The increase in hospital insurance, in the importance of diagnostic and clinical records, and in the complexity of hospital records calls for a continued increase in the field. The rate of growth in medical record technicians is slightly greater than that of medical record librarians and represents an increase of the ratio between technicians and librarians in the future. This is a reflection of the fact that as medical record centers increase in size the relative use of technicians will increase.

Medical Technologist: Estimated employment levels for medical technologists show a continued increase in the utilization of laboratory personnel. Currently there are approximately 38 medical technologists per 100,000 population. In 1970 the estimated ratio will be 40 per 100,000 population while in 1975 it is estimated that the ratio will have increased to 43 per 100,000 persons. This increasing ratio is in part a reflection of the increasing complexity of laboratory work, the increasing utilization of laboratory diagnostic techniques, and the increasing emphasis on well-qualified laboratory personnel.

Laboratory Assistant: Estimates for the occupation of laboratory assistant (primarily certified laboratory assistants) are based on the ratio of laboratory assistants to medical technologists. In the future estimates, slightly increasing ratios of assistants to technologists is foreseen. The forecast level of employment for laboratory assistants reflects an increase in the relative size of laboratories allowing for a higher utilization of assistants. The fact that the ratio of assistants to technologists has not increased more than is forecast is a reflection of the anticipated increase in complexity of laboratory procedures and tests which will require the utilization of the more highly-skilled, trained and experienced medical technologists.

X-Ray Technologist: Anticipated employment levels of X-ray technologists are based on a continuance of the ratio of technologists to the general population as represented by the gain in the ratio from 1960 through 1965. In 1965 there were approximately 27 X-ray technologists per 100,000 population. By 1970 the ratio will increase to slightly over 30 per 100,000 while in 1975 the ratio will be in excess of 33 per 100,000. Again, this is an increase in utilization of health service personnel based on the growth in demand for medical attention and care and the increased utilization of X-ray diagnostic facilities and X-ray treatments.

Inhalation Therapist: At the present time all inhalation therapists employed in Arizona are found in hospitals. It is probable that the utilization of this occupation will tend to increase in the future as new techniques for, and uses of, inhalation therapy are developed. The estimates in this report reflect increases in the size of the general population and a continued increase in the ratio of employment in this occupation to the general population. As this is a relatively new occupation, it is extremely difficult to arrive with precision at realistic future estimates.

Physical Therapist: Estimates of the increasing future use of physical therapists are based on an increase in the ratio to population. In 1965 fewer than 10 physical therapists were employed per 100,000 population. In 1970 the ratio is anticipated to increase to slightly over 11 while in 1975 the ratio will increase at a slightly greater rate to nearly 13.6 per 100,000 population.

Occupational Therapist: The estimates for the future levels of employment in this occupation are derived from a basic ratio per 100,000 population concept. In 1970 the ratio is estimated to be slightly in excess of four per 100,000 while in 1975 the ratio will increase to nearly five per 100,000. In 1965 the ratio was less than three per 100,000 population. As this is a relatively new occupation, the rate of increase will be more rapid than would be the case with some other occupations.

Dental Hygienist: Estimates for the dental hygienists are based on a study of the legal records of this licensable occupation and a change in the trend of the ratio per 100,000 population. In 1965 approximately 6.3 dental hygienists were employed per 100,000 persons in Arizona. In 1970 the ratio should increase to 7.0 per 100,000 population while in 1975 the ratio will have continued to increase at a faster rate and reach approximately 8.7 per 100,000. Members of the dental profession recommend that there be one dental hygienst for each three dentists. At the present time, the ratio in the State of Arizona is slightly less than this target level.

Nurse Aide: The estimated employmert in this occupation is based primarly upon a projection of the existing pattern of distribution of health service personnel within the State of Arizona, coupled with the projections of hospital and nursing home beds for the future. As of 1965 nearly 90 percent of the nurse aides were employed in hospitals and nursing homes. It is reasonable to assume a similar percentage of nurse aides will be employed in the hospitals and nursing homes in 1970 and 1975 and that their relative proportion to total health services occupational employment will not differ markedly from the current pattern.

Surgical Technician: Nearly 90 percent of all surgical technicians in Arizona are employed in hospitals. Based on the current employment patterns and the projected number of hospital beds for the years 1970 and 1975, a minimal projection can be derived for surgical technician employment. However, because of changing practices in hospitals, and the increased dependence on specialized technician workers in surgical procedures, it is assumed that this will be an occupation of increasing prevalence. In 1965 there were 1.8 surgical technicians per 100 beds. By 1970 it is estimated that the ratio will increase to 2.3 per 100 beds and in 1975 the estimate is based on a ratio of 2.6 surgical technicians per 100 hospital beds.

Medical Record Secretary: This is again an emerging occupation, extremely difficult to project in terms of actual numbers needed. Part of the great difficulty is in the definition of the content of the occupation itself. The estimates of future numbers to be employed have been made on the basis of employment of medical record librarians and medical record technicians. The ratio of utilization of medical record secretary to these occupations has been increased slightly for the future to reflect the increase in size of medical record centers that is anticipated to occur.

Other Occupations: Estimates of the numbers to be employed in other health service occupations are included in Table 3. These are based primarily upon the existing relative distribution of employment within the health service occupations. In two cases, physical therapy assistant and occupational therapy assistant, no projections have been made. Because of the relative scarcity of these workers in the employment pattern of 1965, it was felt that the data was inadequate for purposes of future estimates.

ADJUSTMENTS TO PROJECTED EMPLOYMENT LEVELS

The foregoing ratios and target employment estimating procedures have been based upon normal population growth and normal growth in medical facilities needs in the State of Arizona. It must be emphasized that these in no way reflect the total anticipated employment levels in these health service occupations. Because of the recent enactment of amendments to the Social Security Act, the senior citizens of Arizona are now in a position to receive increasingly adequate medical attention. A careful evaluation of the effects of Medicare must be included in any appraisal of the future employment levels. The next part of this report will deal with the anticipated and reported effects of Medicare.

III

EFFECTS OF MEDICARE

The 1965 Social Security amendments established a broad program of health insurance known popularly as "Medicare" for people age 65 or older. Essentially, there are two main types of benefits offered under this program. Medicare "A" consists of hospital insurance to help pay bills of persons who are hospitalized. One title under Medicare "A" calls for nursing home care, but this title will not be implemented until January 1, 1967. The second part of Medicare, the so called Medicare "B", consists of supplemental health insurance benefits to assist in the payment of bills for doctors' services and for a number of other medical items and services not covered under the hospital insurance program. Medicare "B" is a voluntary program; however, an estimated 90 percent of the persons eligible had by the time of the initial deadline signed up for voluntary coverage.

Medicare "A" benefits include in-patient hospital care, nursing home care (to be implemented January 1, 1967) post-hospital home care, out-patient hospital diagnostic studies and in-patient psychiatric care. The principle aspects of the Medicare "B" coverage include physicians' and surgeons' services, home health visits, out-patient diagnostic and treatment services and psychiatric care in clinics and physicians' offices. Obviously, the exact details of coverage cannot be completely presented in a brief snythesis such as the few previous sentences.

The actual effects of such a major program of health services must be taken into account in considering the overall health service manpower needs of Arizona. Each of the various titles and coverage aspects of Medicare has relationship to the overall personnel needs of the State. It should be emphasized, however, that the impact of Medicare on the total health service personnel needs of Arizona is relatively minor. The first month's experience under Medicare indicated that hospital bed occupancy in the State increased only about five percent over a comparable earlier period. As will be pointed out in the following pages, bed capacity existed at the time of the implementation of Medicare to adequately house the estimated number of patients.

The increased number of personnel needed immediately and ten years in the future due to the implementation of Medicare varies from occupation to occupation. For registered nurses, for instance, the highest estimate for ten years in the future calls for but a two percent increase in the number of registered nurses required due to the implementation of Medicare.

Even though the magnitude of the personnel demands imposed by the implementation of Medicare is relatively minor, it is essential that they be investigated carefully in this appraisal of health service personnel needs for Arizona. All available information from Federal and State sources throughout the United States has been utilized in the preparation of these estimates. The future population estimates are consistent with those that have been used in the remainder of this report. Estimating factors by type of coverage

within the various Medicare titles have come primarily from studies conducted in California, St. Louis, the Arizona State Department of Health, the State of Georgia, and from the Medical Care Chart Book published by the University of Michigan. Staffing requirements with regard to patients have come primarily from the St. Louis study, the California study and the Michigan Chart Book.

SOURCES OF DATA FOR ESTIMATING EFFECTS OF MEDICARE

Actual ratios and estimating procedures for the computation of the effects of the various types of Medicare coverage were based primarily on the study performed in St. Louis, Missouri. These ratios, percentages and distributions to a great extent are comparable to those developed from the California Geriatric Multiphasic Screening in the Oakland Community Health Improvement Plan, 1962 Through 1965, published by the State Department of Public Health, Berkeley, California, June, 1965. Similar data was also obtained from the publication, Problems of Aged and Aging, U.S. Senate, March, 1961. Some data on visits and exposure rates came from the Annual Report to the Governor of Georgia, the Georgia Commission on Aging, 1963-64. These data from other states were obtained from the original documents or from the Arizona State Department of Health. Additional ratios and estimates on exposure factors were from the Medical Care Chart Book published by the University of Michigan, School of Public Health.

The estimates of bed needs and personnel needs reported in Table 4 do not fully reflect the immediate bulges or jam-ups caused (1) by the July 1, 1966 increase of temporarily postponed medical care and (2) by the January 1, 1967 increase in hospital and nursing home care by the implementation of the nursing home title. The nursing home title of Medicare calls for a discharge from a general hospital prior to nursing home care; therefore, there may well be a jam-up in the regular hospitals before recipients get into the nursing homes.

In order to carefully appraise the total effects of Medicare on health service personnel needs, each of the important titles of Medicare "A" and of Medicare "B" will be examined in turn. The exposure rate of patients, the patient load, the bed requirement for hospitals and the personnel required to service the increased patient load will be presented. Again, the rationale is that people require hospital facilities which in turn calls for a requirement of health service personnel. Health service personnel in addition are required to serve the people as well as health facilities. Thus, by working from an exposure rate to estimates of bed requirements, one can derive personnel requirements for in-hospital care. Similarly, by working from exposure rates, one can derive personnel requirements to service the population in non-hospital circumstances.

ESTIMATED EFFECTS OF MEDICARE "A"

In-patient Hospital Care: Prior to the implementation of Medicare (July 1, 1966), it was estimated that 14 percent of the population over age 65 were hospitalized in a given year with an average hospital stay of 22 days.

Subsequent to Medicare, the sources cited previously for estimating the effects indicated that 10 percent of the over age 65 population would be hospitalized. The average stay would decrease to 20 days per patient since the Medicare increase will include relatively fewer serious illnesses. Bed requirements have been estimated at 80 percent occupancy. Additional personnel requirements to service these patients are estimated at 240 health service personnel in total per 100 beds. Of these, 30 percent are estimated to be registered nurses.

Nursing Home Care: Nine percent of the patients discharged from hospitals (equivalent for these estimates to the number of persons hospitalized--18 percent of the over age 65 population) will receive nursing home care under this title of Medicare when it is implemented January 1, 1967. The sources utilized in this study estimate that the average stay in nursing homes for these patients will be the maximum--100 days per patient. Nursing home bed needs are based on an estimated 90 percent occupancy, while additional personnel are estimated on the basis of 52 persons in total per 100 patients. Of these 52 health service persons, 45 are registered nurses, licensed practical nurses and nurse aides. The remainder include clerical personnel, administrative personnel, etc.

Post-hospital Home Care: Five percent of the patients discharged from general hospitals will be eligible for this coverage. (For purposes of these estimates, this is equivalent to five percent of the admissions to hospitals--10 percent of the population over 65.) It is estimated that the maximum coverage under Medicare will in fact be the average per patient load for this coverage. This would consist of 100 visits per patient. The average health services worker could make six visits per day, five days a week, 50 weeks per year which would total 1500 visits per man year. Thus, the personnel requirements can be estimated using the basic assumption that 25 percent will be registered nurses, 50 percent will be licensed practical nurses, and 25 percent will be therapy specialists including physical, occupational and speech therapists.

Other Medicare "A" Coverage: Personnel required to meet the needs of other coverage under Medicare "A" cannot be estimated as there are no experiences or data adequate for the purposes of forecasting.

ESTIMATED EFFECTS OF MEDICARE "B"

Physicians' Services: It was estimated at the time of the implementation of Medicare (and later validated by surveys throughout the nation) that approximately 90 percent of the population over age 65 would elect the voluntary Medicare "B" coverage. The sources for estimating the effects of Medicare indicate that 75 percent of these will use physicians' services at least once each year. They will average nine visits each year as opposed to seven visits a year currently by persons in this age group. It is probable, however, that the actual number of patients consulting physicians will not increase due to the rather wide prevalence of private health insurance plans and other sources of medical and physicians' services that were available before Medicare. Therefore, the increase is based on the increased number of visits. The increase in personnel is derived from an estimated

increase in the physicians required based on the ability of an individual physician to handle 7,500 patient contacts (visits) per year. Auxiliary health service personnel needs are based on the employment patterns existing in late 1965 as derived from the AHSEA survey.

DERIVATION OF PERSONNEL REQUIREMENTS

The estimates of the effects of the implementation of Medicare are shown in Tables 4 and 5. Table 4 presents increases in terms of number of persons receiving service, number of hospital or nursing home beds required, and number of additional personnel required. Table 5 presents, for the selected health service occupations under study in this report, the additional personnel required due to all aspects of Medicare for the final half of the year 1966, for 1970 and for 1975.

It should be emphasized that the estimates of the effects of Medicare refer only to those facilities requirements and personnel demands above and beyond those caused by the normal population growth. The effects of normal population growth (see Tables 2 and 3 in preceding sections) have been computed utilizing standard United States Public Health Service formulas. These, however, do not take into account the effects of the increased utilization of facilities by persons over age 65 due to the implementation of Medicare. Therefore, the data on beds and personnel needs caused by Medicare are supplemental to, and above and beyond, the data reflected in Tables 2 and 3.

It should also be emphasized that the beds required by Medicare may very well exist in the other estimates due to the reduced utilization factors, etc. that were used in the computation. The important point to remember is that Medicare can be identified as an additional need above and beyond that which currently exists or which will result from normal growth patterns.

ACTUAL EFFECTS OF MEDICARE, 1966

When Medicare came into effect on July 1, 1966, the results were extremely difficult to assess. At the end of the first month, a survey of hospitals conducted by the Arizona Republic indicated that bed occupancy in Arizona had increased only about five percent.*

Based on calculated health service needs, the in-patient hospital care of Medicare "A" would require 255 additional general hospital beds in the State during the last six months of the year. The average daily census of Medicare patients was estimated at 203 patients, calling for a total of 37,400 patient days during the last half of 1966. This would require, under normal circumstances, a total increase in hospital personnel of about 612, of whom 184 should be registered nurses. Post-hospital home nursing care would call for 60,000 visits during the last half of 1966. These would require an estimated 80 additional personnel. With a ratio of 25 percent R.N.'s, 50 percent L.P.N.'s, and 25 percent therapists of various types, the division of these personnel would be 20 R.N.'s, 40 L.P.N.'s, and 20 therapists. (The Arizona Visiting Nurses' Association estimated that, at least initially, they would utilize 50 percent R.N.'s, 25 percent L.P.N.'s,

*Arizona Republic, July 31, 1966, Section B, page 1.

TABLE 4

PERSONNEL NEEDS DUE TO MEDICARE - NUMBER REQUIRED IN ADDITION TO REQUIREMENTS OF POPULATION GROWTH ALONE
ARIZONA

Medicare Benefits	1966 (½ year)	1970 High	1970 Low	1975 High	1975 Low
In-patient					
Persons Hospitalized	13,000	26,100	25,400	31,700	30,000
Increase in Patient Days	37,400	75,400	73,300	91,500	86,800
Average Daily Census	203	207	200	250	235
Beds	255	260	250	315	300
Total Additional Personnel	612	625	600	760	720
R.N.'s	184	190	180	230	220
Nursing Home					
Cases	------	2,350	2,290	2,850	2,700
Increase in Patient Days	------	141,000	135,000	135,000	191,000
Average Daily Census	------	390	370	525	485
Beds	------	430	410	580	540
Total Additional Personnel	------	200	190	275	250
R.N.'s, L.P.N.'s, Aides	------	85	80	115	105
Home Care					
Cases	750	1,300	1,270	1,580	1,500
Visits	60,000	130,000	127,000	158,000	150,000
Total Additional Personnel	80	86	84	105	100
25% R.N.	20	22	21	26	25
50% L.P.N.	40	42	42	53	50
25% Therapists	20	22	21	26	25
"B" Physicians' Services					
Patients	81,000	97,900	95,200	118,800	112,700
Additional Patient Visists	81,000	195,800	190,400	237,600	225,400
Additional Physicians	22	26	25	32	30

Table 5

ADDITIONAL PERSONNEL REQUIRED IN
ARIZONA DUE TO "MEDICARE"

Occupations	1966	1970		1975	
		High	Low	High	Low
1. R.N.	201	234	224	274	261
2. L.P.N.	96	110	105	133	128
3. Nurse Aide	130	194	183	243	229
4. Medical Assistant	3	3	3	4	3
5. Surgical Technician	6	7	6	8	8
6. Medical Record Librarian	3	3	3	4	3
7. Medical Record Technician	6	7	6	8	8
8. Medical Record Secretary	6	6	6	7	7
9. Office Nurse (Not Registered)	---	---	---	---	---
10. Medical Secretary	6	7	6	8	8
11. Medical Technologist	15	15	15	19	18
12. Laboratory Assistant	9	9	8	11	10
13. X-Ray Technologist	12	13	12	15	15
14. Inhalation Therapist	2	2	2	3	2
15. Physical Therapist	7	7	7	8	9
16. Physical Therapy Assistant	---	---	---	---	---
17. Occupational Therapist	6	7	7	8	8
18. Occupational Therapy Asst.	---	---	---	---	---
19. Medical Social Worker	1	1	1	1	2
20. Dental Hygienist	---	---	---	---	---
21. Dental Assistant	---	---	---	---	---
22. Dental Technician	---	---	---	---	---
23. Dietician	2	2	2	3	2

and 25 percent therapists. These estimates would then be changed to call for 40 R.N.'s, 20 L.P.N.'s and 20 therapists to handle the additional visits.) Physicians' services under Medicare "B" coverage at an average load of 7,500 visits per year would call for 22 additional physicians to handle the 81,000 estimated additional visits during the last six months of the year.

In 1965 there were available in the State of Arizona 7,358 hospital beds. The average daily census of 5,318 patients represented 72 percent occupancy. There were available approximately 2,000 unoccupied beds in Arizona each day. The average daily census could be increased from the reported 5,318 in 1965 to 5,884 before attaining an 80 percent occupancy of the existing beds. Stated another way, 566 additional patients could be accommodated each day before hitting the 80 percent occupancy rate. The estimated effects of Medicare during the last half of 1966 call for an increase in the average daily census of only 203. Thus, there were more than enough additional general hospital beds available to accommodate the Medicare patients. This is borne out by the newspaper report that hospital bed occupancy increased only about five percent during the first month following Medicare.

Unfortunately, the question of staffing cannot as readily be answered. It is difficult to ascertain whether or not additional personnel above and beyond those employed prior to Medicare would in actuality be needed to service the patients coming to the hospitals under Medicare. If additional personnel must be hired, some 200 to 217 additional R.N.'s would be required. From 96 to 113 additional L.P.N.'s would be needed and 20 additional therapists of various types would be required. (The differing figures for L.P.N.'s and R.N.'s are dependent upon the ratios of utilization in the home visitation program as mentioned above.)

PERSONNEL REQUIREMENTS, 1970

High Population Estimates: Using the maximum population estimates of the Bureau of the Census, the additional impact of Medicare in 1970 would involve 26,100 patients. An average daily census of 207 patients would result in 75,400 patient days requiring 260 beds and 625 personnel in the hospitals. Of these, 190 would be registered nurses.

Nursing home care would service 2,350 patients with an average daily census of 390 patients. This would result in 141,000 patient days requiring 430 beds and 200 total additional persons of whom 85 would be registered nurses, L.P.N.'s and nurse aides. Post-hospital home care would service 1,300 patients. At an average visitation of 100 visits per patient, there would be 130,000 visits. This would require a total of 86 additional personnel. Using the 25% registered nurses, 50% L.P.N. estimates this would be 22 R.N.'s, 42 L.P.N.'s, and 22 therapists. Doctors' visits under Medicare "B" coverage would service 97,000 persons for approximately 195,750 visits requiring 26 additional physicians.

Low Population Estimates: Based on the low population estimates of the Bureau of the Census, in-patient hospital care would be received by 25,400 persons over 65. Patient days would total 73,000 with an average

daily census of 200. This would require 250 beds and 600 additional personnel of whom 180 would be registered nurses. Nursing home care would be received by 2,200 persons. An average daily census of 370 patients would result in 135,000 patient days and would require 410 beds. One hundred ninety medical and allied health service workers would be required of whom 80 would be registered nurses, licensed practical nurses and nurse aides. Post-hospital home care would be received by 1,270 patients for 127,000 visits requiring 84 additional personnel. Using the 25 percent R.N. estimates, there would be 21 registered nurses, 42 L.P.N.'s and 21 therapists. Physicians' services would be received by 95,200 persons, totaling 190,350 additional visits, requiring 25 additional physicians.

PERSONNEL REQUIREMENTS, 1975

High Population Estimates: The high population estimate for 1975 includes 176,000 persons over age 65. In-patient hospital care would be received by 31,700 patients resulting in 91,500 patient days with an average daily census of 250 patients requiring 315 beds. This occupancy rate would call for 760 additional personnel (above and beyond those who would probably be required in the absence of Medicare) of whom 230 should be registered nurses. Nursing home care would be received by 2,850 patients for a total of 191,000 patient days, an average daily census of 525. This would require 580 beds and 275 additional persons in nursing homes. Of these 155 should be registered nurses, licensed practical nurses and nurse aides. Post-hospital home care would be received by 1,580 patients resulting in 158,000 visits and requiring 105 additional personnel. These additional personnel, based on a 25 percent registered nurse estimate, would be distributed between 26 registered nurses, 53 licensed practical nurses and 26 therapists of various types. Medicare coverage "B", physicians' service, would be utilized by 118,800 persons for a total of 237,600 additional visits. This would require 32 additional physicians.

Low Population Estimates: The Bureau of the Census lowest population estimates for 1975 call for 167,000 persons over age 65 in Arizona. Of these approximately 30,000 would be hospitalized for a patient day total of 86,800 and an average daily census of about 235. This would call for approximately 300 additional hospital beds requiring 720 personnel of whom 220 should be registered nurses. Nursing home care would be received by about 2,700 persons for a total of 176,500 patient days. The average daily census would be slightly under 485. This would call for approximately 540 beds and 250 persons in nursing homes staffing. Of these, 105 would consist of registered nurses, licensed practical nurses and nurse aides. Home nursing care would be received by 1,500 patients for a total of 150,000 visits. This would require 100 persons and, based on 25 percent registered nurses, there would be 25 R.N.'s, 50 L.P.N.'s and 25 therapists of various types required for this service. The additional physicians' services coverage under Medicare "B" would result in 225,450 visits by approximately 112,700 persons. This would call for about 30 additional physicians.

IV

PROJECTED FUTURE EMPLOYMENT LEVELS

Section I has developed projections of the medical facilities needed in Arizona for the years 1970 and 1975. These projections were based upon population estimates derived by the United States Department, Bureau of the Census.

Section II has translated the facilities needs into projections of the health service personnel required to meet the normal population growth. These projections have been based upon past patterns of employment, recommended employment target levels, ratios of employment suggested by members of the professional associations themselves and other informed judgements.

Section III has presented a review of the anticipated effects of the 1965 Social Security amendments, commonly known as "Medicare". While of relatively minor magnitude so much public attention has been devoted to the question that a careful analysis of these effects has been included. For the forecast years of 1970 and 1975 the increased personnel requirements attributable to Medicare are in the range of less than five percent of the total estimated employment levels.

At this point it is necessary to summarize the preceding pages. Table 6 presents the projected employment levels of health service personnel in selected occupations as of 1970 and 1975. Two projections are presented for each target year, depending upon the population estimates utilized in deriving the employment level projections. The high series of estimates are based on a 1970 population of 1,976,000 and a 1975 population of 2,303,000 in the State of Arizona. The low series of estimates are based on a 1970 population estimate of 1,898,000 and a 1975 estimate of 2,154,000. In Table 6 the full requirements to meet the normal population growth and the effects of Medicare have been presented.

Table 6 is the best possible estimate of the total demand for health service personnel as of 1970 and 1975. It is a realistic presentation of how many persons will be required and of how many persons employers will wish to employ in a selected group of health service occupations.

Table 6

PROJECTED EMPLOYMENT OF
HEALTH SERVICE PERSONNEL

Occupations	Future Employment Required Including "Medicare"			
	1970		1975	
	High	Low	High	Low
1. R.N.	7430	7125	8675	8110
2. L.P.N.	2360	2255	2885	2680
3. Nurse Aide	4390	4185	5095	4780
4. Medical Assistant	320	305	380	355
5. Surgical Technician	195	185	260	245
6. Medical Record Librarian	110	105	130	125
7. Medical Record Technician	200	190	245	235
8. Medical REcord Secretary	210	200	260	240
9. Office Nurse (Not Registered)	400	385	510	475
10. Medical Secretary	1060	1005	1210	1135
11. Medical Technologist	805	775	1000	940
12. Laboratory Assistant	385	370	510	475
13. X-Ray Technologist	615	585	805	745
14. Inhalation Therapist	70	65	115	100
15. Physical Therapist	225	220	325	300
16. Occupational Therapist	90	85	125	115
17. Medical Social Worker	100	95	125	120
18. Dental Hygienist	140	135	190	175
19. Dental Assistant	875	840	1020	950
20. Dental Technician	75	75	80	80
21. Dietician	80	80	95	90

PART B

FUTURE AVAILABILITY OF HEALTH SERVICE PERSONNEL IN ARIZONA

INTRODUCTION

Future employment levels can be viewed from the aspect of the number of persons available in an occupation. Regardless of how many persons are required or how many persons employers wish to employ in an occupation, if these people are not available, they cannot be gainfully employed. Therefore, an appraisal of the future supply of trained health service personnel is of vital importance.

The future number of persons available in any given occupation consists of the number who are currently available at the present time, plus the gains to that occupation, minus the losses through the future estimating time. Losses to the occupation include those who leave the State or area to work in other areas, as well as those who withdraw from the labor force due to death, retirement or other reasons. The gains consist of those who migrate into the area, those who attain occupational proficiencies through formal or informal training, plus those who reenter the labor force after a period of retirement or withdrawal.

In the following pages careful analyses of the effects of inmigration (a major part of the gains) and attrition (losses) on the existing supply of health service personnel will be presented. Because of the availability of information, detailed analyses are possible with regard to registered professional nurses, licensed practical nurses, registered dental hygienists, and registered physical therapists. Some preliminary data can be assembled also on other health service occupations.

I

REGISTERED PROFESSIONAL NURSE

Though Arizona has had education facilities for professional nurses for over 50 years (St. Mary's Hospital School of Nursing in Tucson opened December 1, 1914), only a small portion of the nurses employed in Arizona have been educated here. Study of registration records from 1958 through 1965 shows that 85 percent of the new additions to the work force in nursing during the eight-year period had been educated in other states or foreign countries.

In spite of the reliance on inmigration to meet employment demands for professional nurses, Arizona has maintained a better ratio of employed nurses to population than the United States as a whole according to recent July population estimates published by the Bureau of the Census and the Occupational Outlook Handbook published by the U. S. Department of Labor in 1963 and 1965. In 1962, there were an estimated 550,000 registered nurses employed nationwide with a nurse-to-population ratio of 296 per 100,000. The employment estimate for 1965 was 580,000, (an increase of 5.5 percent) and an increase in nurse-to-population ratio to 299 per 100,000. During the same period (according to U. S. Census Bureau population estimates) Arizona's nurse-to-population ratio increased from 317 per 100,000 in 1962 to 327 per 100,000 in July, 1965. The number of nurses employed during the period increased 12.9 percent from 4,654 in 1962 to an estimated 5,254 in July, 1965.*

It would appear that Arizona was in an advantageous position with a considerably higher nurse-to-population ratio than the nation. However, this State has long been a haven for health seekers, particularly those with respiratory diseases and arthritis. The high proportion of new residents needing medical attention when they arrive keeps the demand for health services at a very high level.

In 1958, 5,312 nurses were actively registered with the Arizona State Nursing Board, but 963 lived in other states or foreign countries, leaving only 4,352 available to work in Arizona. Of this number, 1,020 were not employed at renewal time in December which left a total of only 3,332 actually employed.

During the eight-year period from 1958 through 1965, 5,994 professional nurses from out-of-state have registered with the Arizona State Nursing Board, of whom an estimated 5,030 (based on experience from 1963 through 1965) actually migrated to Arizona. A total of 1,039 of the 1,160 graduates from schools of nursing in Arizona registered during this period--17 percent of total new registrations.

Since 1958, 3,266 have dropped their registrations due to outmigration, retirement, or death. Of the 8,322 registered at the end of 1965, 1,198 (14 percent) lived in other states or countries. Of the 7,124 living

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*Estimate of nurse employment for July based on proportionate losses and seasonality of nurses coming to Arizona according to unpublished records of the Arizona State Nursing Board.

in Arizona at that time, 1,568 (22 percent) were not employed at renewal time in December. Table 1 below illustrates the changes which have taken place in registrations since 1958.

TABLE 1

TOTAL REGISTERED, NEW REGISTRATIONS BY SOURCE AND ATTRITION OF REGISTERED NURSES, ARIZONA 1958 THROUGH 1965

	Total Registered End of Year	New Registrations From Out-of-State	New Registrations Arizona Graduates	Attrition	Net Gain
1958	5315	664	87	---	---
1959	5812	722	157	382	497
1960	6183	748	75	452	371
1961	6620	713	131	407	437
1962	7201	820	156	395	581
1963	7675	807	141	474	474
1964	8072	806	158	567	397
1965	8322	714	125	589	250
TOTAL	----	5994	1030	3266	3007

Note: Data from published annual reports, Arizona State Nursing Board.

It is quite obvious from the columns showing new registrations from out-of-state, attrition and yearly net gain that the rate of increase has slowed considerably since 1962.

Over the eight-year period an average of only 65 percent of the nurses actively registered in Arizona have lived and worked in the State. Table 2 shows changes in registration among registered nurses actually employed in Arizona.

Further discussion of R.N.'s will be limited primarily to those who are employed and data will be comparable to that shown in Table 2. The same slow-down pattern is apparent in 1964 and 1965 as was shown in Table 1. Even though the largest number of new inmigrants were working at the end of 1963 than in any other year, a drop in registration of Arizona graduates that year caused a slight drop in the rate of increase.

TABLE 2

TOTAL REGISTERED, NEW REGISTRATIONS BY SOURCE AND ATTRITION OF REGISTERED NURSES EMPLOYED IN ARIZONA, 1958 THROUGH 1965

	Total Registered and Employed (End of Year)	New Registrations Employed at End of Year		Attrition	Net Gain (For Year)
		Inmigrants	Arizona Graduates		
1958	3332	467	71	---	---
1959	3754	556	139	273	422
1960	3963	601	75	467	209
1961	4138	516	94	435	175
1962	4654	609	113	206	516
1963	5137	622	72	211	483
1964	5348	561	118	468	211
1965	5556	499	99	390	208
TOTAL	----	4431	781	2450	2224

Note: Data from published annual reports of Arizona State Nursing Board.

Table 3 illustrates the proportionate decrease in inmigrants and the increasing rate of annual attrition since 1962.

TABLE 3

PROPORTION OF EMPLOYED REGISTERED NURSES IN ARIZONA NEW THROUGH INMIGRATION AND THROUGH LOCAL SUPPLY, CHANGE AND PERCENT ATTRITION BY YEAR 1958 THROUGH 1965

	Percent Renewed From Previous Year's Registration	Percent Due To Inmigration	Percent Due To Local Supply	Percent Change From Previous Year	Percent Attrition From Previous Year
1958	83.9	14.0	2.1	---	---
1959	81.5	14.8	3.7	12.7	7.2
1960	82.9	15.2	1.9	5.6	7.8
1961	85.3	12.5	2.2	4.4	6.6
1962	85.4	13.1	2.4	12.5	6.0
1963	86.5	12.1	1.4	11.1	6.6
1964	87.3	10.5	2.2	4.1	7.4
1965	89.2	9.0	1.8	3.9	7.3

Source: Published Annual Reports, Arizona Nursing Board.

The combination of high attrition and low inmigration has caused the rate of increase in employed nurses to drop considerably below the rate of population increase since 1963. Figure I graphically presents the dependence upon inmigration as well as the dwindling rate of addition of out-of-state nurses. The trend of the past two years in inmigration registration is apparently continuing as only 139 permits to work pending licensure have been issued to out-of-state nurses during first quarter 1966. This is about the same as in 1964 and 1965, but 21 percent fewer than first quarter 1963. Nursing Board records for the first three quarters of fiscal 1966, however, show a 10 percent decrease in total registrations (local and inmigrant) from the comparable period of fiscal 1965 and permits issued for the same period are running 13 percent behind 1965.

Several factors enter into the drop in inmigration of R.N.'s which seem likely to continue to have an impact. The Surgeon General's Report concerning the national shortage of nurses was published in 1963. This report frankly admitted that employment needs of 350 per 100,000 population were virtually impossible to meet and set a lower, more realistic goal for increased education at the national level. The passage of Medicare brought about even greater needs for nursing personnel than were anticipated in the Surgeon General's Report. Employers of nurses are now offering inducements in the way of higher salaries and fringe benefits to hold the nurses they now have. Though Arizona salaries and fringe benefits have increased in the past few years, we are still behind many areas, particularly California.

It is commonly believed that most inmigrants come to Arizona during the winter months, but a study of the months in which permits to work pending licensure are issued to out-of-state professional nurses* indicates that the end of school and the beginning of school are probably prime factors in timing. Table 4 shows the months of June, September and October to be the times more nurses make first application for licensure.

Since there is approximately three months lag-time between getting a permit to practice pending licensure and the granting of the Arizona license, the number actually coming to Arizona in a given year will vary somewhat from the number of licenses granted. Comparison with the years 1963, 1964 and 1965 in Table 2 shows that more enter Arizona and get a permit than are employed at year's end. The data in Table 4 applies only to those who had been granted licenses up through May, 1966.

Figure II graphically illustrates the wide monthly variance in the number of out-of-state nurses obtaining permits. Though the pattern for 1963 varies somewhat from the last two years, the three-year monthly average shown in the inset points up February, June, September and October as the only months above average.

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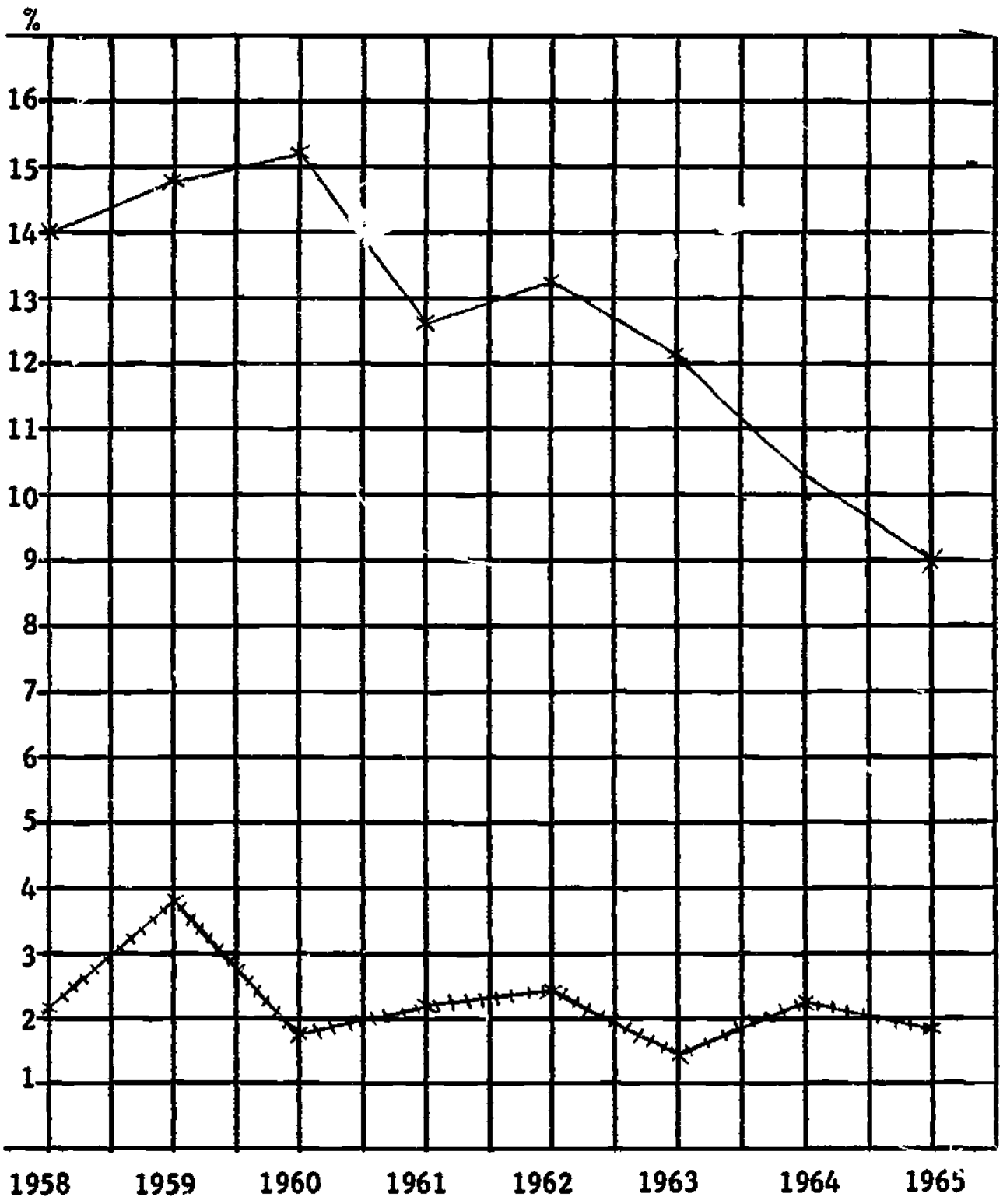
*Data: From unpublished records of Arizona State Nursing Board.

FIGURE I

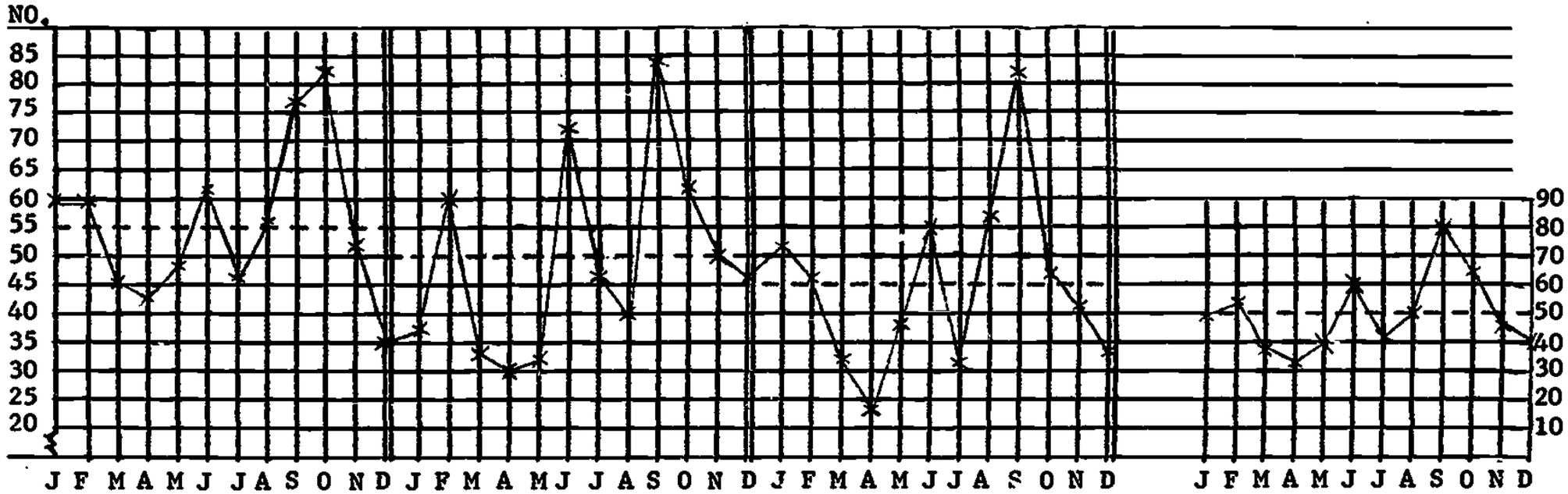
ANNUAL PERCENT TOTAL EMPLOYED NURSES
DUE TO INMIGRATION AND LOCAL SUPPLY
1958 THROUGH 1965



SOURCE: Published Annual Reports, Arizona State Nursing Board

FIGURE II

MONTH IN WHICH WORK PERMIT OBTAINED BY OUT-OF-STATE PROFESSIONAL NURSES WHO HAVE BEEN GRANTED LICENSE THROUGH ENDORSEMENT 1963 THROUGH 1965



_ _ _ _ _ _ _ _ Monthly average for individual years

SOURCE: Unpublished records, Arizona State Nursing Board

TABLE 4

MONTH IN WHICH WORK PERMIT OBTAINED BY OUT-OF-STATE PROFESSIONAL NURSES WHO HAVE BEEN GRANTED LICENSE BY ENDORSEMENT 1963 THROUGH 1965

Month	1963	1964	1965	Three-Year Total	Average Monthly Number	% Of Total
January	59	37	51	147	49	8
February	59	60	46	165	55	9
March	46	34	32	112	37	6
April	43	30	24	97	33	5
May	48	33	39	120	40	7
June	61	72	54	187	62	10
July	47	47	31	125	41	7
August	56	40	57	153	51	9
September	78	84	82	244	81	14
October	82	62	47	192	64	11
November	52	50	41	143	48	8
December	35	47	33	116	39	6
TOTAL	666	596	537	1799	---	---
MONTHLY AVERAGE	55	50	45	50		

Source: Unpublished records, Arizona State Nursing Board.

All but one hospital queried in the Phoenix area indicated that June to September were the months of greatest shortage, but felt that this was due primarily to temporary withdrawal of mothers from the labor force while school was out. The fact that two-thirds of all employed nurses in 1965 were married and another 16 percent were widowed or separated bears out this theory. Recruiting of nurses should be the best in September as mothers reenter the labor force and an estimated average of 80 inmigrant nurses become available each year.

As a matter of interest, Arizona is indebted primarily to the midwest and northeastern states for a large proportion of its nurses. Of the number granted licenses from January 1 to May 18, 1966, 39 percent were from Illinois, Minnesota, Indiana, Michigan, Wisconsin and other midwest states and 31 percent came from New Jersey, Pennslyvania, New York, Ohio and other eastern states. The southeastern states; primarily Georgia, South Carolina and Maryland, furnished eight percent. California (which gets a large proportion of those leaving Arizona) furnished only five percent of our inmigrants--the same number as Canada. In addition, seven nurses who had been educated in Arizona and had outmigrated, returned to Arizona this year.

Outmigration is difficult to determine among nurses. Losses are not as well documented as gains and many who withdraw from the labor force continue to maintain their registrations. Others fail to renew their licenses by December 31 and become delinquent, but do renew immediately

after the first of the year if employed. As of December 31, 1965, a total of 823 registered at some time during 1965 became delinquent or asked for inactive status. Nearly 40 percent (313) asked for inactive status, which usually means that they are withdrawing from the labor force and intend to return to work at some future time. Just over 17 percent of those asking for inactive status were inmigrant nurses who had held an Arizona license for one year or less, but 43 percent (136) were out-of-state nurses who had held an Arizona license for five years or more. Inmigrants accounted for 86 percent (704) of the total number not renewing, but 306 (43 percent) had been here five years or more. Seventy percent (82) of the Arizona educated nurses not renewing had held a license in Arizona for five years or more. A total of 510 became delinquent as of January, 1966 of which 432 (85 percent) were out-of-state and 20 percent were out-of-state nurses who had held a license one year or less.

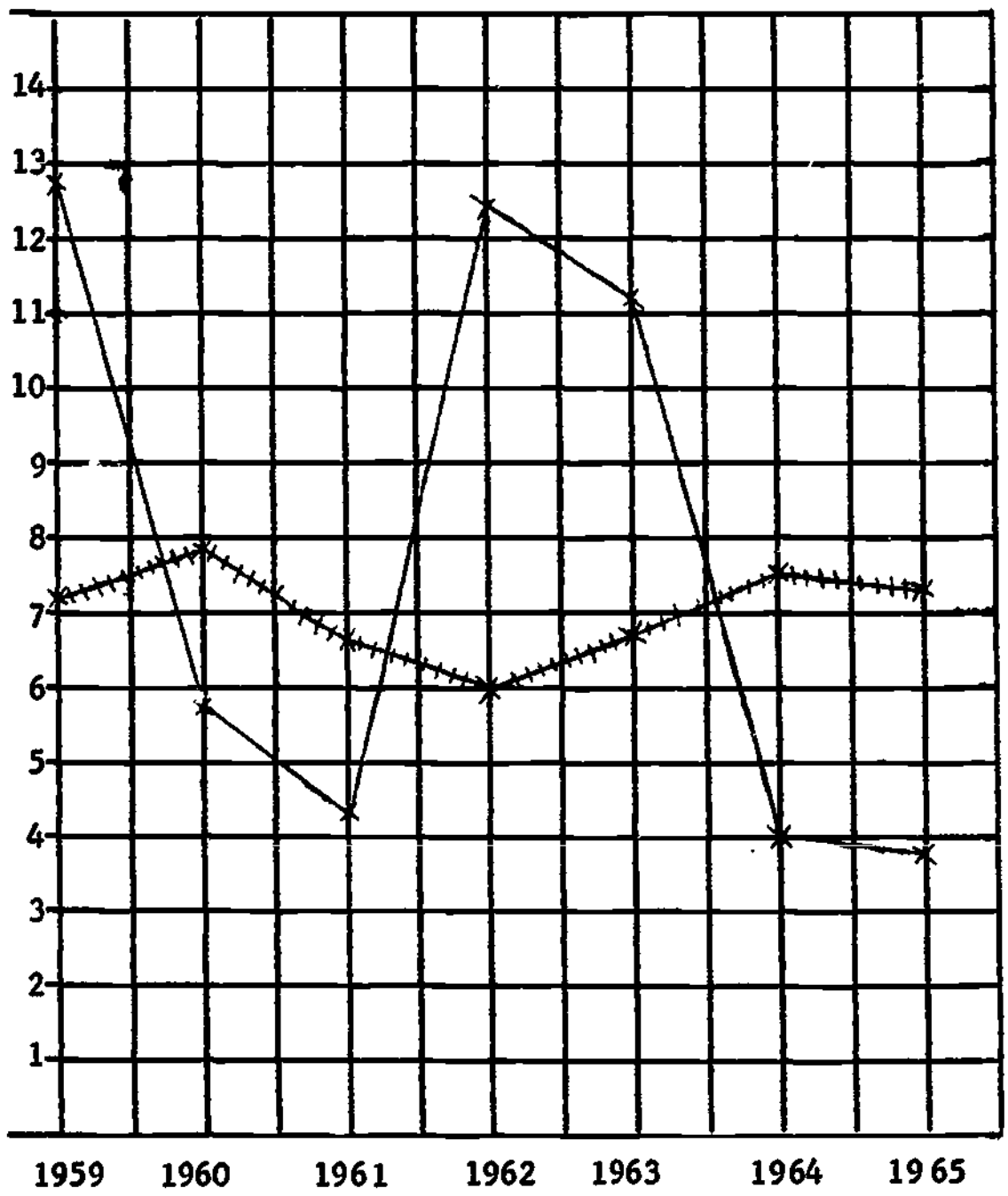
How much of this loss is due to outmigration is pretty much a matter of conjecture; however, study of changes of address on out-of-state applications for registration who had obtained a permit to work during 1963 through 1965 shows that about six percent had moved to another state before their license was granted. About eight percent of Arizona graduates who take the examination for licensing in Arizona move to another state or country during their first year. Through the first six months of 1966, 109 R.N.'s have been endorsed by Arizona to other states. Nearly 70 percent (74) of those leaving were Arizona graduates. Almost half (44 percent) were endorsed to California with six percent going to Texas and Colorado and four percent each to Florida and Virginia. Nearly one-third (32 percent) left Arizona in April, while only 35 percent left during the first three months.

A survey of June, 1965 nursing school graduates (in which a 33 percent response was received) showed that nine percent intended to work immediately in other states; four percent will work in Arizona at first but move to other states within three months; six percent will work in Arizona at first, but will continue their education in the fall. Another three percent will not work right away due to marriage and family responsibility. It would seem, then, that 22 percent of this year's graduates will not be available to work in Arizona by fall. Only nine percent indicated they would not take the State Board examination, but only 170 of 203 graduates (84 percent) actually took the examination in June. Since 1961, only 85 percent of Arizona graduates have registered in Arizona and only 61 percent have been working in the State at the end of the year in which they graduated. Attrition among employed nurses has been three times the number of employed new Arizona graduates annually since 1959.

Figure III compares the percent increase and the percent attrition since 1959. The outlook is for even greater attrition in the years just ahead as the proportion of R.N.'s 60 years of age or over has increased from six percent in 1961 to 14 percent in 1965. Retirement will most certainly take a heavier toll in the years just ahead than it has in the past.

FIGURE III

ANNUAL PERCENT INCREASE AND PERCENT ATTRITION FROM PREVIOUS YEAR AMONG EMPLOYED REGISTERED NURSES ARIZONA - 1959 THROUGH 1965



Percent Increase

Percent Attrition

SOURCE: Published Annual Reports, Arizona State Nursing Board

Projections to 1970 and 1975, based on past experience and on desired ratios of employed registered nurses to 100,000 population, show that Arizona will have to educate more nurses if it is to meet employment demands. In a survey of health service personnel conducted by the Arizona Health Services Education Association and the Arizona State Employment Service early in 1966, employers listed 314 vacancies for registered nurses and felt that expansion during 1966 would require at least another 300 in addition to current vacancies. This would require a net gain this year of at least 614 compared to last year's net gain of 208. If we could fill all vacancies and meet normal expansion demands, from 6,900 to 7,200 nurses would be employed by 1970 and between 7,850 to 8,400 would be employed in 1975. Estimates of additional needs for Medicare would call for 225 more by 1970 and 260 to 275 additional by 1975. But current vacancies coupled with decreases in inmigration and a high proportion of nurses in the 60 and over age group soon to retire will probably hold actual employment considerably below desired levels.

Projections for the five and ten-year periods to 1970 and 1975, including Medicare needs are as follows:

Employment	1965	5556	Employment need 1965	5870
Projected Inmigration	1965 to 1970	2750		
Projected Attrition	1965 to 1970	2100		
Projected Number Available	1970	6200*	Employment need 1970	7125 to 7430

Arizona training needs 1965 to 1970: 925 to 1230

Projected Inmigration	1965 to 1975	5450		
Projected Attrition		4700		
Projected Number Available	1975	6300*	Employment need 1975	8100 to 8675

Arizona training needs 1965 to 1975: 1810 to 2375

Low and high projections based on low and high Arizona population projections published by U. S. Department of Commerce, Bureau of the Census, Series P-25 #326, February, 1966.

*Projected number available from present labor force plus inmigration. Does not include supply available from local education sources. Attrition includes losses due to outmigration, retirement, death and temporary withdrawal from the labor force.

II

LICENSED PRACTICAL NURSE

In 1950, licensing of practical nurses became mandatory in Arizona. Since many had been working at this occupation without the formal education now required, most of them were licensed by waiver at the outset.

From 1950 until July 1, 1966, persons who had completed part of a registered nurse course could become licensed as a practical nurse through examination if they had completed the specific courses required for practical nursing. This type of entry is known as "licensed through equivalency".* Arizona has educated a larger proportion of its L.P.N.'s than it has those health service occupations requiring longer periods of training.

Arizona has a much lower ratio of L.P.N.'s to 100,000 population than the United States as a whole; but our ratio is increasing fairly rapidly. In 1958, there were 221,000 L.P.N.'s in the nation--125.8 per 100,000 population. The number of L.P.N.'s employed increased 13 percent to 280,000 by 1965, but the ratio to population rose only to 129 per 100,000. Arizona's 1958 employment of 960 made the ratio 82.2 per 100,000 population. The number of L.P.N.'s increased 52 per cent to 1,473 by the end of 1965 and had reached a ratio of 91.5 per 100,000 population. A survey early in 1966 reported 1,578 employed, a considerable rise since December, 1965, but it will be some time before we can reach the national ratio to population.

In 1958, 1,235 practical nurses were actively licensed with the Arizona State Nursing Board, but 98 lived in other states or countries. Of the 1,137 living in Arizona, 177 did not work which left only 960 working at renewal time in December. During the eight years from 1958 through 1965, 767 out-of-state L.P.N.'s were licensed in Arizona of which an estimated 600 actually migrated to the State and worked (estimate based on unpublished records of work permits issued to out-of-state L.P.N.'s 1963-1965). During the same period a total of 786 graduates of Arizona practical nursing schools registered and 223 obtained a license through equivalency. The origin of those being licensed through equivalency is not specified in the records available, so the proportion of inmigrants is not known. Beginning in July, 1966, no further licensing will be done through equivalency. Since 1958, 786 have dropped their licenses due to outmigration, retirement or death. Of the 2,096 licensed at the end of 1965, 226 lived in other states and six lived in foreign countries--11 percent in all. Of the 1,864 living in the State 1,473 (79 percent) were working at renewal time in December. Table 5 shows the licensing changes which have taken place since 1958.

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*A similar program of recognition of equivalency of courses and course content has been suggested for other health service occupations within job families or clusters. It is unfortunate equivalency licensing has been abandoned for L.P.N.'s just at the time that similar equivalency programs are being suggested.

TABLE 5

TOTAL LICENSED, NEW LICENSES BY SOURCE AND ATTRITION
OF LICENSED PRACTICAL NURSES, ARIZONA
1958-1965

		New Licensies				
	Total Licensed End of Year	From out of state by endorsement	Arizona Graduates by Examination	Equivalency by Examination	Attrition	Net Gain
1958	1235	68	46	15	--	--
1959	1356	96	92	11	78	121
1960	1496	78	110	27	75	140
1961	1593	92	69	28	92	97
1962	1754	100	113	36	88	161
1963	1880	117	100	32	123	126
1964	1952	112	86	37	163	72
1965	2096	104	170	37	167	144
TOTAL	----	767	786	223	786	861

Note: Data from published annual reports, Arizona State Board of Nursing.

The drop in inmigration and the increase in attrition since 1962 demonstrates the same pattern as recent records for registered professional nurses, but the increase in Arizona graduates in 1965 is very encouraging.

More than one quarter of the practical nurses licensed with the Arizona State Nursing Board during the eight years since 1958 have lived in other states or, though living in Arizona, have not worked, so that an average of only 73 percent have been employed. Since only those who live here and are available for employment can be relied upon in meeting our manpower needs, further discussion will be devoted primarily to those who are employed. Table 6 depicts the changes in licensing among employed L.P.N.'s since 1958.

Trends in inmigration have been mixed among L.P.N.'s, but slight drops occurred in both 1964 and 1965. This trend may have reversed in 1966, however, as new licenses issued during the first three quarters of fiscal 1966 are 28 percent higher than the comparable period in fiscal 1965 and permits to work pending licensure are running 33 percent ahead of fiscal 1965.

TABLE 6

TOTAL LICENSED, NEW LICENSES BY SOURCE AND ATTRITION
OF EMPLOYED LICENSED PRACTICAL NURSES, ARIZONA
1958-1965

		Newly Licensed - Employed End of Year				
	Total Licensed & Employed End of Year	From out of state by endorsement	Arizona Graduates by Examination	Equivalency by Examination	Attrition	Net Gain
1958	960	36	27	7	--	--
1959	1060	61	76	10	47	100
1960	1109	51	65	18	85	49
1961	1223	71	64	23	44	114
1962	1230	61	76	28	158	7
1963	1353	89	87	24	75	123
1964	1376	71	66	20	134	23
1965	1473	68	135	17	123	97
TOTAL	----	508	596	147	666	513

Source: Published annual reports, Arizona State Board of Nursing.

Table 7 shows the percent of each year's employment due to inmigration, to local sources and to equivalency. It can readily be seen that Arizona had educated more than half of the new additions from 1958 to 1965 exclusive of those obtaining a license through equivalency.

TABLE 7

PROPORTION OF TOTAL EMPLOYED LICENSED PRACTICAL NURSES IN ARIZONA NEW THROUGH INMIGRATION AND THROUGH LOCAL SUPPLY, PERCENT CHANGE AND PERCENT ATTRITION BY YEAR, 1958-1965

	Employed During Year					
	% From Previous Year	% Due To Inmigration	% Due To Local Supply	% Due To Equivalency	% Change From Previous Year	% Attrition From Previous Year
1958	92.7	3.8	2.8	0.7	---	---
1959	86.1	5.8	7.2	0.9	10.4	4.3
1960	87.9	4.6	5.9	1.6	4.4	7.7
1961	87.1	5.8	5.2	1.9	9.3	3.6
1962	86.5	5.0	6.2	2.3	0.6	12.8
1963	87.0	5.0	6.2	1.8	9.1	5.5
1964	89.5	5.2	4.8	1.5	1.7	9.7
1965	85.0	4.6	9.2	1.2	6.6	8.4

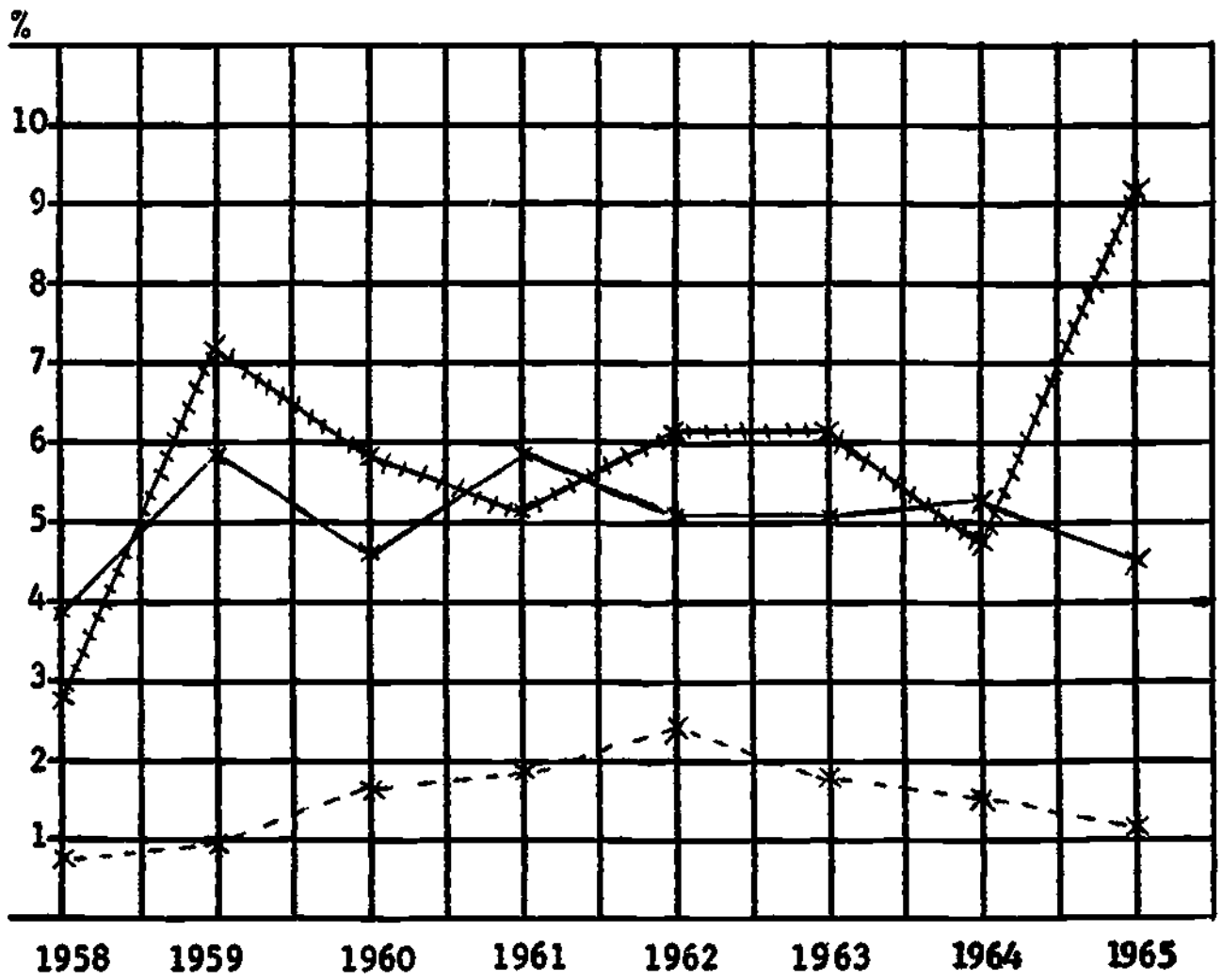
Source: Published Annual Reports, Arizona State Nursing Board.

Figure IV illustrates the source of new addition to the pool of employed L.P.N.'s. In five of the eight years, more Arizona educated L.P.N.'s were added to the labor force than were inmigrants. (If the source of L.P.N.'s qualifying through equivalency was known, this might not be true.) In the future, equivalency licensure will be discontinued. Though their numbers have never been large, and only 66 percent have continued working through the year in which licensed, this is one source of supply that will not be available in the future.

The seasonal pattern of L.P.N. inmigrants differs considerably from that of R.N.'s as shown by the months in which permits to work pending licensure are issued. Table 8 shows the patterns over the past three years. Figure V shows that January, February and August are the highest months over the three-year period and December is low, but there is little similarity in the annual patterns.

FIGURE IV

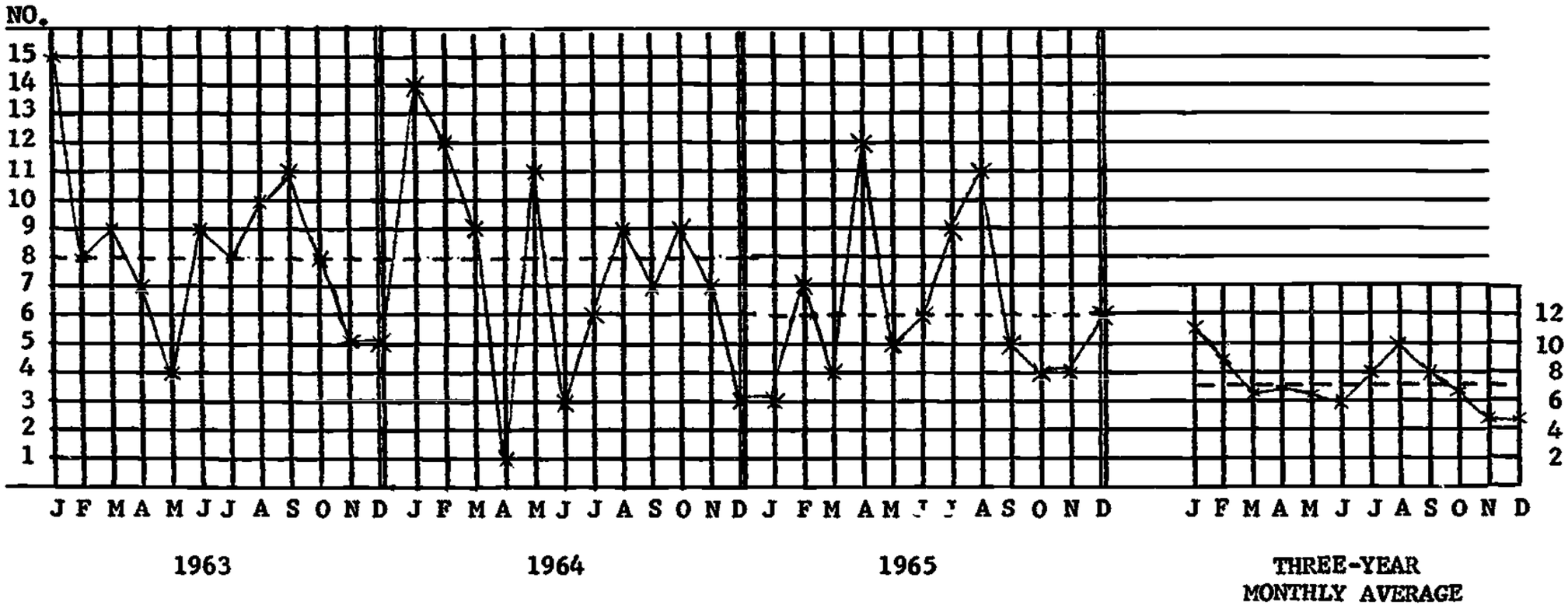
ANNUAL PROPORTION OF EMPLOYED L.P.N.'S DUE
TO INMIGRATION, LOCAL SUPPLY AND EQUIVALENCY



SOURCE: Arizona State Nursing Board

FIGURE V

MONTH IN WHICH PERMIT OBTAINED BY OUT-OF-STATE L.P.N.'S
WHO HAVE BEEN GRANTED LICENSE THROUGH ENDORSEMENT
1963 - 1965



_ _ _ _ _ _ _ Monthly average for individual years and for three-year monthly average

TABLE 8

MONTH IN WHICH WORK PERMIT WAS OBTAINED BY OUT-OF-STATE L.P.N.'S WHO HAVE BEEN GRANTED LICENSE BY ENDORSEMENT 1963-1965

Month	1963	1964	1965	Three-year Total	Average Mon. Total	Percent of Total
January	15	14	3	32	11	12
February	8	12	7	27	9	10
March	9	9	4	22	7	8
April	7	1	12	20	7	8
May	4	11	5	20	7	8
June	9	3	6	18	6	7
July	8	6	9	23	8	9
August	10	9	11	30	10	11
September	11	7	5	23	8	9
October	8	9	4	21	7	8
November	5	7	4	16	5	6
December	5	3	6	14	5	5
TOTAL	99	91	76	266	---	100
MONTHLY AVERAGE	8	8	6	7.4	7.4	

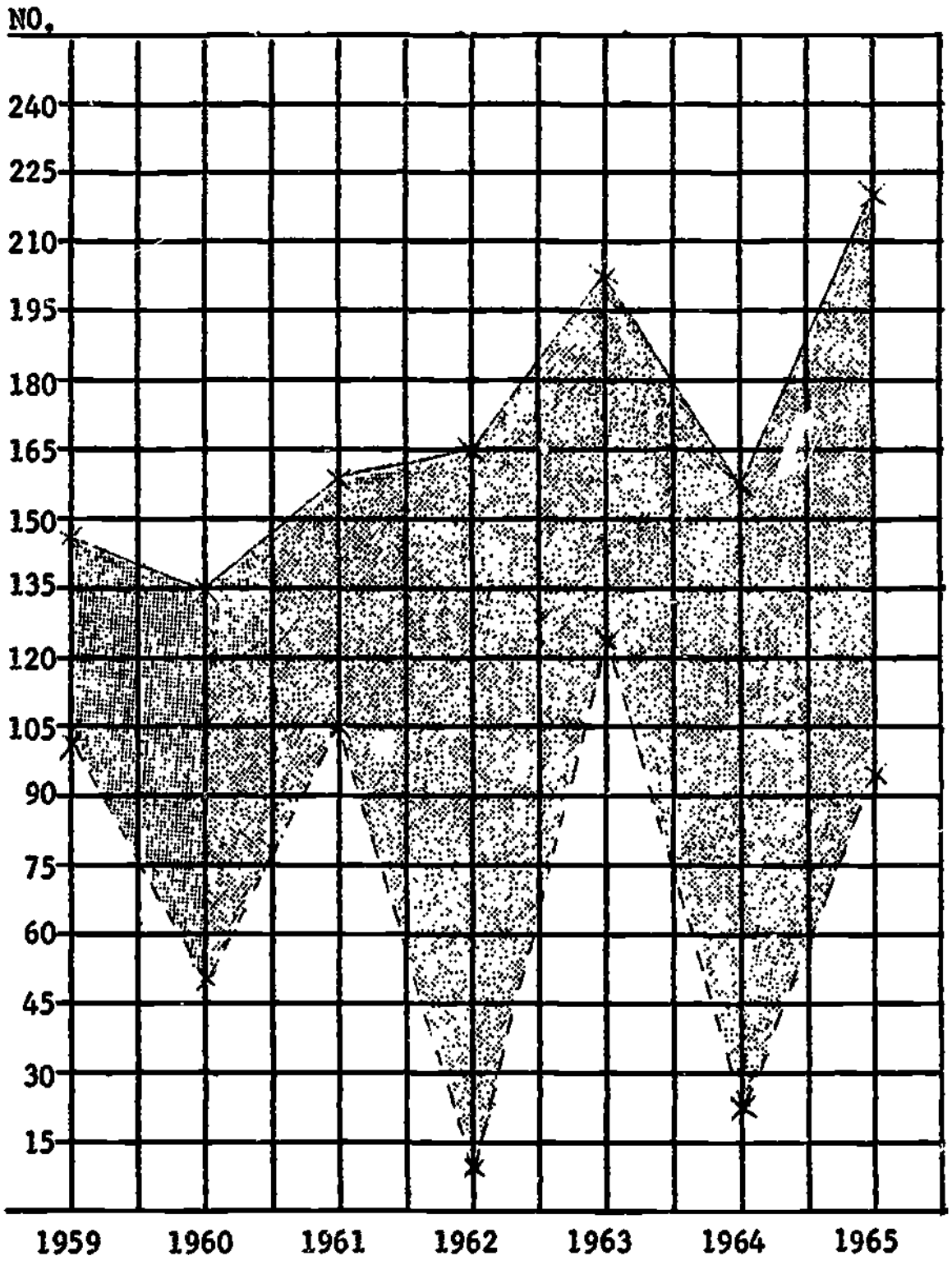
Source: Unpublished records, Arizona State Nursing Board.

Attrition has not taken quite as great a toll on L.P.N.'s as it has on R.N.'s. Over the eight-year period, L.P.N.'s averaged 5.8 percent attrition and R.N.'s averaged 6.8 annually, but L.P.N. attrition has varied from as high as 12.8 percent to as low as 4.3 percent in different years with the losses in 1962 almost equaling the gain. Since only 88 licenses were dropped that year, apparently some 70 withdrew temporarily from the labor force.

Figure VI shows the irregular annual pattern of attrition rather dramatically. How much of the attrition is outmigration is difficult to determine as historical records on this factor are not available. During the first six months of 1966, 37 L.P.N.'s have been endorsed to other states. This does not necessarily mean that they already left Arizona, as some 15 percent of those licensed from out-of-state do not

FIGURE VI

NEW EMPLOYED L.P.N.'S, ANNUAL
NET GAIN AND ATTRITION



move immediately to Arizona. However, intent to move is implicit in becoming licensed in another state. Of the 37 endorsed to other states so far this year, 33 (89 percent) were educated in Arizona.

Retirement is an important factor in attrition in the L.P.N. occupation as 15.6 percent were 60 years of age or older in 1965 and 30 percent were 50 to 59. The median age of those employed in 1965 was 48.2--up from 47.0 in 1960. Twenty-one percent of those living in Arizona are not employed at present, about one-fifth of whom are 60 or older and will probably never return to work. Many women are over 40 when they begin practical nursing school. They are not as likely to leave the labor force for marriage and childbirth, but their working life expectancy is limited.

Projections to 1970 and 1975 based on past experience and on reasonable attainable ratios of employed L.P.N.'s to population show that Arizona will have to educate and hold even more L.P.N.'s if it is to meet employment demands. The survey of health service personnel conducted this spring showed an increase of 100 L.P.N.'s over the December, 1965 figure but also showed 144 unfilled vacancies and additional expansion needs to 1967 of 260 L.P.N.'s. If these needs were to be met we would have to have a net gain of over 400 L.P.N.'s during 1966. The largest annual net gain to date has been 123 in 1963.

If we could fill all vacancies and meet normal expansion needs, from 2,150 to 2,250 L.P.N.'s would be employed by 1970 and between 2,550 and 2,750 would be employed by 1975. Estimates of additional needs for Medicare would call for 105 to 110 more by 1970 and 130 to 135 more by 1975. But current vacancies, the loss of new additions through equivalency and high attrition rates will probably limit employment to below desired levels.

Projections for the five and ten-year period to 1970 and 1975, including additional needs for Medicare are as follows:

Employment 1965	1578	Current Demand	1720
Projected Inmigration to 1970	500		
Projected Attrition to 1970	720		
Projected Number Available 1970	1350*	Probable Demand 1970	2255 to 2360
Arizona training needs to 1970:	905 to 1010		
Projected Inmigration to 1975	975		
Projected Attrition to 1975	2000	Probable Demand 1975	2680 to 2885
Projected Number Available 1975	500*		
Arizona training need to 1975:	2130 to 2335		

Note: Low and high projections based on low and high Arizona population projections published by U. S. Department of Commerce, Bureau of the Census, P-25, #326, February 7, 1966.

*Projected number available from present labor force plus inmigration. Does not include supply available from local education sources. Attrition includes outmigration, retirement, death, and temporary withdrawal from the labor force.

III

REGISTERED DENTAL HYGIENIST

All dental hygienists registered and practicing in Arizona have been inmigrants at some time, as training for this occupation is not available in this State. At the time licensure was instituted in Arizona in 1947, only four dental hygienists were registered. At the end of 11 years in 1958, 60 were actively registered to practice in the State, but 21 lived in other states, leaving only 39 who were available to work in Arizona. Since that time, 153 have registered to practice in Arizona, but only 90 actually migrated to Arizona of which 26 have outmigrated or dropped their registration due to retirement, change of occupation or death. Nearly half of those currently registered in Arizona live in other states and are not available to practice here.

Table 9 illustrates the changes which have taken place in registration since 1958 among all dental hygienists who registered in Arizona.

TABLE 9

TOTAL REGISTERED, NEW REGISTRATIONS AND ATTRITION OF DENTAL HYGIENISTS, ARIZONA, 1958 THROUGH 1965

Year	Total Registered At End of Year	New Registrations	Registrations Dropped
1958	60	--	--
1959	72	17	5
1960	91	21	2
1961	107	19	3
1962	114	13	6
1963	126	17	5
1964	156	30	0
1965	192	36	0
TOTAL	---	153	21

Though the Arizona "theory" examination is waived for applicants who have passed the National Board examination for dental hygienists, all who wish to register here must come here to take a "practical" examination. In spite of this, nearly half do not move immediately to Arizona. Table 10 shows the changes among those dental hygienists who live in Arizona. All further discussion of dental hygienists will be limited to those living here and will be comparable to the data shown in Table 10.

TABLE 10

TOTAL REGISTERED, NEW REGISTRATIONS AND ATTRITION OF DENTAL HYGIENISTS LIVING IN ARIZONA, 1958 THROUGH 1965

Year	Total Registered At End of Year	Inmigrants New Registrations	Attrition
1958	39	--	--
1959	42	8	5
1960	48	8	2
1961	58	13	3
1962	62	8	4
1963	71	14	5
1964	90	23	4*
1965	103	16	3*
TOTAL	---	90	26

*Registrations were not dropped; registrants moved to other states.

A total of 30 dental hygienists were scheduled to take the Arizona examination for licensure in June, 1966. However, those who are expected to live and work in the State number about 20.

Dental hygienist is a rapidly growing occupation. In 1962 an estimated 10,000 were employed in the United States. That number increased 19 per cent to 12,000 by early 1965. Dental hygienists were not used as intensively in Arizona as in other parts of the nation in 1962 as there were only 4.2 per 100,000 population while the United States as a whole had 5.4 per 100,000 population. By early 1965, increased employment closed the gap, and both Arizona and the nation had 6.2 dental hygienists per 100,000 population according to population estimates by the United States Bureau of the Census. While national employment of dental hygienists increased 19 percent during the three-year period, it increased 66 percent in Arizona.

The proportion of total registrants living in Arizona new through inmigration averaged 22 percent annually over the eight-year period.

TABLE 11

PROPORTION OF TOTAL REGISTERED DENTAL HYGIENISTS LIVING IN ARIZONA NEW THROUGH INMIGRATION, PERCENT CHANGE AND PERCENT ATTRITION BY YEAR 1958 THROUGH 1965

	Percent Renewed From Previous Registration	Percent Due To Annual Inmigration	Percent Change From Previous Year	Percent Attrition From Previous Year
1958	59	41	---	---
1959	81	19	+7.7	12.8
1960	83	17	+14.3	4.8
1961	78	22	+20.8	6.3
1962	87	13	+6.9	6.9
1963	80	20	+14.5	8.1
1964	74	26	+28.8	5.6
1965	84	16	+14.4	3.3

Records available for study did not yield information on the number out-migrating. The date of graduation from dental hygienist's school indicated that a very small percentage of those currently registered are in the over 50 age category. However, nearly all dental hygienists are female and withdrawal from the labor force may have accounted for as much as half of the attrition in past years.

If the experience of the last eight years continued without appreciable change, there would be approximately 135-140 employed in 1970. Since there were seven vacancies reported in 1965 and an anticipated demand for nine next year, indications are that shortages will continue. It is estimated that not more than 120 will be available by 1970. As population grows and recent trends toward better dental care continue, demand for dental hygienists will probably reach 175 to 190 by 1975, with the projected number available from existing sources being only 140.

Prospects for meeting the need in the dental hygienist profession in the foreseeable future are not particularly good. Even though a dental hygienist school is scheduled to begin at Phoenix College in the fall of 1967, accreditation for new schools is often slow in coming. Though Medicare is not expected to have any impact on this occupation, natural population growth will create demands which are not likely to be met. Projections of changes which will take place in the next five years and ten years are as follows:

Arizona Supply 1965	100	Current Demand	107
Projected Inmigration to 1970	55		
Projected Attrition to 1970	35		
Projected Number Available 1970	120	Probable Demand 1970	135 to 140
Projected Inmigration to 1975	120		
Projected Attrition to 1975	80		
Projected Number Available 1975	140	Probable Demand 1975	175 to 190

No additional demands anticipated due to Medicare.

Attrition due to outmigrating, death, retirement and temporary withdrawal from the labor force.

IV

REGISTERED PHYSICAL THERAPIST

All physical therapists registered and practicing in Arizona are either inmigrants or Arizonans who have left the State to go to physical therapy school. This is true of many states as there are only 41 physical therapy schools in 19 states approved by the AMA and the American Physical Therapy Association.

In 1960 there were only 8,000 physical therapists employed in the entire nation. Arizona had slightly more than its share as we had 0.72 percent of the total population and 1.2 percent of the nation's physical therapists (93). Employment of licensed physical therapists increased 25 percent to 10,000 in the nation by 1964 while Arizona had a 48 percent to 138, or 1.4 percent of the nation's total.

During the period from 1958 through 1965, 101 physical therapists migrated to Arizona and registered with the State Board of Physical Therapy Examiners, but during that same period, 36 left Arizona and 13 discontinued registration due to retirement or death.

Table 12 illustrates the changes which have taken place in registrations since 1958.

TABLE 12

TOTAL REGISTERED, NEW REGISTRATIONS, AND ATTRITION
OF PHYSICAL THERAPISTS IN ARIZONA
1958 THROUGH 1965

	Total Registered End of Year	New Registrations (Inmigrants)	Out-Migrants	Retired or Deceased	Total Attrition
1958	93	5	4	3	7
1959	87	4	8	2	10
1960	93	9	3	0	3
1961	104	17	4	2	6
1962	111	8	1	0	1
1963	137	31	5	0	5
1964	138	10	5	4	9
1965	147	17	6	2	8
TOTAL	---	101	36	13	49

Since renewal of license is on a three-year basis, data is available on attrition only at the time renewal is due; therefore, the attrition figures may be underestimated. For example, of the five shown as outmigrants during 1963, some or all could have left the State during 1963 or 1964 or even 1962, their most recent year of licensure.

Table 13 below indicates that the physical therapy profession has been more fortunate than the nursing profession in continuing to attract personnel from other states. The proportion of total registrants new through inmigration averaged 8.6 percent annually since 1962. Outmigration on the other hand has decreased slightly from an annual average of 4.4 percent through 1962 to 4.1 percent from 1963 through 1965.

TABLE 13

PROPORTION OF TOTAL REGISTERED PHYSICAL THERAPISTS DUE TO INMIGRATION PERCENT CHANGE AND PERCENT OUTMIGRATION BY YEAR, 1958 THROUGH 1965

	Percent From Previous Years	Percent Due To Inmigration	Percent Change From Previous Year	Percent Outmigration From Previous Year
1958	94.6	5.4	---	---
1959	95.4	4.6	-6.5	8.6
1960	90.3	9.7	+6.9	3.4
1961	83.7	16.3	+11.8	4.3
1962	98.8	7.2	+6.7	1.0
1963	77.4	22.6	+23.4	4.5
1964	72.8	7.2	+0.7	3.6
1965	88.4	11.6	+6.5	4.3

An annual average of 4.5 physical therapists migrated to other states and 1.6 left the field due to death or retirement, while an average of 12.6 inmigrated to Arizona each year during the eight-year period. Total net annual gain averaged 6.5 (or 4.6 percent).

Discussion with establishments which employ physical therapists and with several who are self-employed indicates that the need for personnel in this field has never been satisfied. The extraordinary number entering Arizona during 1963 has been at least partially explained by increased emphasis on physical therapy in hospitals resulting in greater awareness

and use by physicians. Another factor having some influence on this influx was greater national availability of physical therapists. Some schools started taking two classes per year in the late 1950's making more trained personnel available by 1963, and several new schools have been started. A general rise in salary levels starting in 1960-61 may have been helpful in recruiting qualified therapists.

The increased emphasis on physical therapy is not unique to Arizona as demands for their services are very strong across the nation. The chances of Arizona continuing to attract a higher proportion of such scarce specialists are exceedingly dim. One section of the 1965 amendments to the Socail Security Act provides funds for increased services for crippled children and other federal funds are being allocated for physical rehabilitation centers. All these factors have served to increase the public interest in physical rehabilitation. Improvements in treatment equipment and techniques have brought about much greater use of physical therapy by physicians.

All these factors will tend to make Arizona recruitment more difficult than in the past and may bring about more outmigration than we have experienced. To add to the problem, losses due to retirement and death will probably take a greater toll in the future. The 1960 Census of Population showed that 15 percent of all female therapists were 60 years of age or older, and an additional 14 percent were 55 or older. As we have lost only eight through death and retirement since 1960, a rough estimate of 20 are now 60 years of age or older with at least 10 over 65. More than half (30) of the 57 registered in 1952 when licensure became mandatory are still actively registered and many of this group will be retiring in the years just ahead.

The outlook for meeting the needs on the physical therapy profession in the foreseeable future is not promising. Even though efforts will be made to establish a school of physical therapy in connection with the medical school scheduled to start in 1967, graduates will not become available until after 1970. Though the national Occupational Outlook Handbook published by the U. S. Department of Labor states that all the 41 physical therapy schools are not filled to capacity, current increases in enrollment would have a lag-time of two to four years before graduates became available. The demands are with us now, as they are with almost every health services occupation, and they will continue to increase at a faster rate than in the past. Ten new therapists have registered this year bringing the total supply to 157 as of May 31. However, data on losses due to outmigration, death and retirement is not yet available.

Estimates and projections of changes which will take place in five years and ten years are as follows:

Supply 1965	145	Current Demand	152
Projected Inmigration to 1970	95		
Projected Outmigration to 1970	25		
Projected Attrition*	15		
Projected Number Available 1970	200	Employment Need 1970	220-225**
Projected Inmigration to 1975	205		
Projected Outmigration to 1975	55		
Projected Attrition* to 1975	35		
Projected Number Available 1975	260	Employment Need 1975	300-325**

Projected Arizona Training Requirements	1965-1970	20-25
	1970-1975	40-65

*Attrition due to retirement, death and temporary withdrawal from the labor force.

**1970 and 1975 employment needs include an estimate of approximately 10 due strictly to Medicare.

V

NON-LICENSED HEALTH SERVICE PERSONNEL

Data on inmigration and outmigration are practically non-existent for health service occupations which do not require licensing as there are no legal records of additions or losses. Opinions of workers in the various fields are of considerable value; but they are seldom quantitative.

There is considerable inmigration and outmigration of medical technologists according to leaders in that field, but the in-flow and out-flow follows demand and slack periods within reason. There is a constant shortage which is not filled during the winter when medical technologists are entering Arizona's labor force as well as during the comparatively slack summer period when workers are moving out.

Attrition projections for the non-licensed occupations are based primarily on replacement data furnished by employers in past surveys and on adjudged similarity or dissimilarity to that experienced by R.N.'s and physical therapists. Census data on age among workers in the occupation (when available) were also taken into consideration.

Inmigration projections are based primarily on knowledge of Arizona's ability to attract educated workers in each of the non-licensed occupations, and past growth trends in the occupation. National expectation of future growth and Arizona's proportion of the total employed nationally were used where possible.

Some occupations such as inhalation therapist are so new that no past data exists on which to base projections and some occupations defy definitive description to such an extent that projections could not be made. Most of the latter are occupations requiring informal preparation or very short formal training. Inmigration for such jobs would be incidental to moving to Arizona and these types of positions have little holding power compared to the occupations requiring longer training time.

It is felt that inmigration would be limited in most of these occupations and that attrition would be high as is the pattern in less skilled jobs requiring only short training periods.

Part "C"

PERSONNEL REQUIREMENTS FOR A NEW ERA OF HEALTH CARE--A CHALLENGE TO ARIZONA

INTRODUCTION

The preceding pages have presented the background and framework for an analysis of the dimensions of the challenge facing Arizona. Essentially, the State must meet the required employment levels in a number of health service occupations. Workers to fill these jobs can come from only limited sources: (1) those Arizonans who are currently employed in the occupation; (2) those who migrate to Arizona from other areas already experienced and trained in the occupation and; (3) those who are trained in Arizona for jobs that exist in this State as well as for occupational requirements of the United States as a whole.

Part A of this report has presented the demand side of the equation, and shown in detail the numbers of persons required in each of the various occupations. Part B has presented for a limited number of occupations detailed analyses of the future availability of personnel. In the following pages, the demand and supply aspects of the question will be brought together. The size, scope and dimensions of the challenge facing Arizona will be presented. This challenge to provide trained personnel in the allied health service occupations must be met if the citizens of our State are to enjoy the true measure and benefit of the full and healthly life to which they are entitled.

I

HEALTH SERVICE PERSONNEL BALANCE SHEET

The materials developed in Part A of this report define the demand for persons in health service occupations. These data are reproduced in Table 1 which indicates the future employment required in Arizona including the numbers of persons required to provide service to patients under Medicare. In 1970 over 7,000 registered nurses will be needed in Arizona. This represents an increase (utilizing the high population estimate series) of nearly 1,900 nurses from the number employed in 1965. By 1975, again utilizing the high series estimates, employment demand will have increased an additional 1,200 and have attained a level of nearly 8,700 registered nurses. Even considering the low series of population estimates, the employment of registered nurses at that time will be in excess of 8,100.

Demand for persons in occupations of direct support to registered nurses, such as licensed practical nurses and nurse aides, will also increase sharply. The final columns of Table 1 represent the increased employment demands for each of the five-year periods in the next decade. As can be seen for most occupations, the increase is greater during the first five years of the period than during the second. This is consistent with the trends in population growth.

Table 2 presents information on the expected increase in numbers available in the various occupations due to inmigration. A comparison of Tables 1 and 2 points out sharply the heavy dependence of Arizona employers on out-of-state sources for trained, experienced, health service personnel.

Inmigration of nurses, licensed practical nurses, medical secretaries, medical technologists, X-ray technologists, physical therapists, dental hygienists, dental assistants and dental technicians is anticipated to be greater than the actual increase in numbers employed in these occupations during the two five-year periods. For example, employment demand for registered nurses from 1970 to 1975 is estimated to increase 1,245, according to the high series of estimates. During the same period, the numbers available from inmigration are anticipated to be 2,700. Similar comparisons can be made for the other occupations mentioned. In a number of additional occupations the flow of inmigration is almost equal to the increased employment demand in the two five-year periods.

The fact that inmigration will supply workers adequate in number to meet the expansion needs of Arizona is somewhat misleading. The expected losses in the numbers available due to withdrawal from the labor force caused by death, retirement or leaving the work force for family duties is extremely heavy in health service occupations. Again with regard to registered nurses, Table 3 indicates that during the period 1970-1975 the losses in the numbers available from such attrition will be 2,600. This means that the balancing effect between inmigration and attrition for this five-year period will result in only a net increase of 100 registered nurses available. In the case of licensed practical nurses

TABLE 1

EMPLOYMENT LEVELS AND INCREASE IN EMPLOYMENT OF HEALTH SERVICE PERSONNEL

Occupations	Future Employment Required Including "Medicare"				Employment Increases			
	1970		1975		HIGH SERIES		LOW SERIES	
	High	Low	High	Low	65-70	70-75	65-70	70-75
1. R.N.	7430	7125	8675	8110	1874	1245	1569	985
2. L.P.N.	2360	2255	2885	2680	782	525	677	425
3. Nurse Aide	4390	4185	5095	4780	1081	705	876	595
4. Medical Assistant	320	305	380	355	63	60	48	50
5. Surgical Technician	195	185	260	245	79	65	69	60
6. Medical Record Librarian	110	105	130	125	47	20	42	20
7. Medical Record Technician	200	190	245	235	84	45	74	45
8. Medical Record Secretary	210	200	260	240	72	50	62	40
9. Office Nurse (Not Registered)	400	385	510	475	89	110	74	90
10. Medical Secretary	1060	1005	1210	1135	231	150	176	130
11. Medical Technologist	805	775	1000	940	195	195	165	165
12. Laboratory Assistant	385	370	510	475	124	125	109	105
13. X-ray Technologist	615	585	805	745	205	190	175	160
14. Inhalation Therapist	70	65	115	100	34	45	29	35
15. Physical Therapist	225	220	325	300	80	100	75	80
16. Occupational Therapist	90	85	125	115	50	35	45	30
17. Medical Social Worker	100	95	125	120	27	25	22	25
18. Dental Hygienist	140	135	190	175	40	50	35	40
19. Dental Assistant	875	840	1020	950	176	145	141	110
20. Dental Technician	75	75	80	80	14	5	14	5
21. Dietician	80	80	95	90	21	15	21	10

TABLE 2

EXPECTED INCREASES IN NUMBERS
AVAILABLE FROM IMMIGRATION

Occupations	65-70	70-75
1. R.N.	2750	2700
2. L.P.N.	500	475
3. Nurse Aide	480	380
4. Medical Assistant	45	30
5. Surgical Technician	15	10
6. Medical Record Librarian	15	20
7. Medical Record Technician	15	20
8. Medical Record Secretary	20	15
9. Office Nurse (Not Registered)	110	85
10. Medical Secretary	175	135
11. Medical Technologist	180	170
12. Laboratory Assistant	55	45
13. X-ray Technologist	185	195
14. Inhalation Therapist	15	35
15. Physical Therapist	95	110
16. Occupational Therapist	20	25
17. Medical Social Worker	15	25
18. Dental Hygienist	55	65
19. Dental Assistant	280	200
20. Dental Technician	10	10
21. Dietician	10	5

during the two five-year periods under consideration, the attrition far exceeds the flow of newcomers due to inmigration. This situation is the case in the majority of the health service occupations.

A comparison of Table 2 and Table 3 indicates that, with the exception of registered nurses, medical record librarians, medical technologists, X-ray technologists, inhalation therapists, physical therapists, occupational therapists and dental hygienists, losses to the labor force due to death, retirement, or permanent withdrawal from the work force will exceed the numbers that Arizona can anticipate to draw from other states.

The meaning is clear. It is the responsibility of Arizona to provide training facilities and training opportunities to her residents in order to meet the expected increases in employment demand detailed in Table 1. The dimensions and scope of these training responsibilities are discussed in greater detail in the following pages. At this point, it is sufficient to indicate that the deficits in the numbers of available personnel are sizeable. Table 4 presents the health service personnel balance sheet as of 1970.

In Table 4 the employment in 1965 forms the basis for the analysis. Added to the employment that existed at the time of the AHSEA survey is the projected inmigration in the occupation for the five-year period through 1970. Subtracted from this is the anticipated attrition during the same five years which results in the projected number available as of 1970 in the State of Arizona. Please note that the projected number available does not include an estimate of the training output of Arizona training facilities.

Table 4 indicates that there will be an increase of approximately 12 percent in the number of registered nurses available during the five-year period due to the balance between inmigration and attrition. Increases are also anticipated in the numbers available of medical record librarians, medical technologists, X-ray technologists, inhalation therapists, physical therapists, occupational therapists and dental hygienists. In each case these increases are attributable to inmigration exceeding attrition. In all other occupations there will be a net decrease in the numbers available during the five-year period. Table 4 also presents the projected total demand or projected employment levels for each of the occupations based on the high and low series of population estimates. Comparing these data with the projected number available as of 1970, indicates the deficit that will exist as of that time.

The deficit in health service personnel as of 1970 must be met from local Arizona sources. It is unrealistic to assume that the inmigration can be stepped up or increased to overcome this deficit.

Table 5 presents the health service personnel balance sheet as of 1975 and summarizes the changes for the total decade. Again, the employment in 1965 is increased by the inmigration during the ten-year period.

TABLE 3

EXPECTED LOSSES IN NUMBERS AVAILABLE FROM ATTRITION*

Occupations	65-70	70-75
1. R.N.	2100	2600
2. L.P.N.	720	1280
3. Nurse Aide	1250	1050
4. Medical Assistant	100	85
5. Surgical Technician	60	70
6. Medical Record Librarian	5	5
7. Medical Record Technician	35	40
8. Medical Record Secretary	85	65
9. Office Nurse (Not Registered)	220	190
10. Medical Secretary	320	275
11. Medical Technologist	90	110
12. Laboratory Assistant	125	150
13. X-ray Technologist	95	115
14. Inhalation Therapist	10	20
15. Physical Therapist	40	50
16. Occupational Therapist	5	10
17. Medical Social Worker	25	30
18. Dental Hygienist	35	45
19. Dental Assistant	465	340
20. Dental Technician	20	15
21. Dietician	20	15

* Withdrawal from labor force due to death, retirement, etc.

TABLE 4

HEALTH SERVICE PERSONNEL BALANCE SHEET -- 1970

Occupations	Emp. 1965	Projected			Projected Total Demand		DEFICIT	
		Inmig.	Attrit.	# Avail.	High	Low	High	Low
1. R.N.	5550	2750	2100	6200	7430	7125	1230	925
2. L.P.N.	1575	500	720	1350	2360	2255	1010	905
3. Nurse Aide	3310	480	1250	2540	4390	4185	1850	1645
4. Medical Assistant	260	45	100	205	320	305	115	100
5. Surgical Technician	115	15	60	70	195	185	125	115
6. Medical Record Librarian	65	15	5	75	110	105	35	30
7. Medical Record Technician	120	15	35	100	200	190	100	90
8. Medical Record Secretary	140	20	85	75	210	200	135	125
9. Office Nurse (Not Registered)	310	110	220	200	400	385	200	185
10. Medical Secretary	830	175	320	685	1060	1005	375	320
11. Medical Technologist	610	180	90	700	805	775	105	75
12. Laboratory Assistant	260	55	125	190	385	370	195	180
13. X-ray Technologist	410	185	95	500	615	585	115	85
14. Inhalation Therapist	35	15	10	40	70	65	30	25
15. Physical Therapist	145	95	40	200	225	220	25	20
16. Occupational Therapist	40	20	5	55	90	85	35	30
17. Medical Social Worker	75	15	25	65	100	95	35	30
18. Dental Hygienist	100	55	35	120	140	135	20	15
19. Dental Assistant	700	280	465	515	875	840	360	325
20. Dental Technician	60	10	20	50	75	75	25	25
21. Dietician	60	10	20	50	80	80	30	30

TABLE 5

HEALTH SERVICE PERSONNEL BALANCE SHEET -- 1975

Occupations	Emp. 1965	Projected			Projected Total Demand		DEFICIT	
		Inmig.	Attrit.	# Avail.	High	Low	High	Low
1. R.N.	5550	5450	4700	6300	8675	8110	2375	1810
2. L.P.N.	1575	975	2000	550	2885	2680	2335	2130
3. Nurse Aide	3310	860	2300	1870	5095	4780	3225	2910
4. Medical Assistant	260	75	185	150	380	355	230	205
5. Surgical Technician	115	25	130	10	260	245	250	235
6. Medical Record Librarian	65	35	10	90	130	125	40	35
7. Medical Record Technician	120	35	75	80	245	235	165	155
8. Medical Record Secretary	140	35	150	25	260	240	235	215
9. Office Nurse (Not Registered)	310	195	410	95	510	475	415	380
10. Medical Secretary	830	310	595	545	1210	1135	665	590
11. Medical Technologist	610	350	200	760	1000	940	240	180
12. Laboratory Assistant	260	100	275	85	510	475	425	390
13. X-ray Technologist	410	380	210	580	805	745	225	165
14. Inhalation Therapist	35	50	30	55	115	100	60	45
15. Physical Therapist	145	205	90	260	325	300	65	40
16. Occupational Therapist	40	45	15	70	125	115	55	45
17. Medical Social Worker	75	40	55	60	125	120	65	60
18. Dental Hygienist	100	120	80	140	190	175	50	35
19. Dental Assistant	700	480	805	375	1020	950	645	575
20. Dental Technician	60	20	35	45	80	80	35	35
21. Dietician	60	15	35	40	95	90	55	50

Decreases due to attrition are taken into account to arrive at the projected number available in 1975. The projected total demand by occupation as of 1975 is again presented with both the high and low series of estimates indicated. The final columns of Table 5 present the total deficit for the decade that must be supplied from Arizona sources.

It is essential to realize, however, that there is a sharp difference between the personnel deficit as reported in Tables 4 and 5 and the actual training need that must be met by Arizona. The challenge of training for health service personnel is greater than the personnel deficits as reported in these tables. It is to this question that we now direct our attention.

II

CHALLENGE--HEALTH SERVICES OCCUPATIONAL TRAINING REQUIREMENTS

The previous section of this report has developed the total personnel deficits for the five-year period 1965 through 1970 and for the decade 1965 through 1975. These deficits include, of course, current shortages and actual occupational vacancies that exist in hospitals, doctors' offices and other employing institutions that were covered by the AHSEA survey of health service personnel employment.

The deficits must be met. These people are essential to provide adequate health care to the citizens of Arizona, but the deficits alone do not constitute the training needs of Arizona. Persons trained in this State are free to move and travel to other states of the nation for advanced training or for employment. Data on licensable occupations indicates that only about 85 percent of the persons trained in Arizona for licensable occupations actually register in the State. By the end of the first year subsequent to their graduation only about 60 percent are still employed in the State of Arizona. The other 40 percent have either left the occupation or left the State for employment elsewhere or for advanced training. In order to fill 100 vacancies in Arizona it is necessary, therefore, to train 166 persons.

In order to visualize the training requirements that constitute the challenge to Arizona, the personnel deficits of Tables 4 and 5 have been expressed as annual figures in Table 6. The deficits as of 1970 are expressed as annual personnel deficits for the period 1965 to 1970. Similarly, annual deficits for the period 1970 through 1975 have been computed. It is these annual targets that must be met by training programs geared to produce adequate numbers of graduates each year.

Table 7, derived from Table 6 and historical experience of licensable occupations registration, presents the annual training requirements necessary to meet the annual personnel deficits. The requirements differ from the deficits in the sense that they take into account the persons who do not register or practice their occupation in Arizona and those who leave prior to the end of the first year subsequent to their graduation.

It must be recognized that enrollment in any given program must of necessity exceed the annual training output inasmuch as there are dropouts from the course, some courses take longer than one year for preparation, and some students fail to meet graduation requirements. Table 7, however, does present the annual output that should be utilized as a target in planning educational programs, training programs and facilities for health services occupational training in Arizona.

The annual training output requirements are indeed staggering. During the years 1965 through 1970 from 1,700 to 2,000 persons should be completing training each year in this group of occupations. During the

TABLE 6

ANNUAL PERSONNEL DEFICITS IN ARIZONA

Occupation	High Series		Low Series	
	1965-70 Total	1970-75 Total	1965-70 Total	1970-75 Total
R.N.	245	229	185	179
L.P.N.	202	265	181	245
Nurse Aide	370	275	329	253
Medical Assistant	23	23	20	21
Surgical Technician	25	25	23	24
Medical Record Librarian	7	1	6	1
Medical Record Technician	20	13	18	13
Mecical Record Secretary	27	20	25	18
Office Nurse (Not Registered)	40	43	37	39
Medical Secretary	75	58	64	54
Medical Technologist	21	27	15	21
Laboratory Assistant	39	46	36	42
X-ray Technologist	23	22	17	16
Inhalation Therapist	6	6	5	4
Physical Therapist	5	8	4	4
Occupational Therapist	7	4	6	3
Medical Social Worker	7	7	6	6
Dental Hygienist	4	6	3	4
Dental Assistant	72	57	65	50
Dental Technician	5	2	5	2
Dietician	6	5	6	4
TOTAL	1229	1142	1056	1003

TABLE 7

ANNUAL TRAINING REQUIREMENTS

Occupation	High Series		Low Series	
	1965-70 Total	1970-75 Total	1965-70 Total	1970-75 Total
R.N.	408	381	308	298
L.P.N.	337	442	302	408
Nurse Aide	614	456	525	420
Medical Assistant	38	38	33	35
Surgical Technician	42	42	38	40
Medical Record Librarian	12	2	10	2
Medical Record Technician	33	22	30	22
Medical Record Secretary	45	33	43	30
Office Nurse (Not Registered)	66	71	62	65
Medical Secretary	125	96	110	92
Medical Technologist	35	45	25	35
Laboratory Assistant	65	77	60	70
X-ray Technologist	38	37	28	27
Inhalation Therapist	10	10	8	7
Physical Therapist	8	13	7	7
Occupational Therapist	1[illegible]	7	10	5
Medical Social Worker	12	12	10	10
Dental Hygienist	7	10	5	7
Dental Assistant	115	95	108	80
Dental Technician	8	3	8	3
Dietician	10	8	10	7

second half of the decade the requirements will drop but slightly to levels of from about 1,670 to 1,900 each year. Since at the present time Arizona is graduating far less than one-half (and indeed only approximately one-third) of the annual number required, the magnitude of the challenge becomes apparent. For many of the occupations in which sizeable numbers should be graduating each year, training programs do not even exist in Arizona. In others the annual output is far below the required level. In many instances jobs in these occupations for which formal training is desirable and practical are being filled with partially skilled, partially trained and partially experienced workers through rather haphazard programs of on-the-job training. In an occupational area as critical as the health service occupations, it is questionable whether Arizona can afford such haphazard methods of employee preparation.

Arizona is not an isolated entity, and although we are fortunate in having a steady stream of trained personnel available from other states we also share a responsibility with the nation as a whole to train the necessary number of persons for proper health care. In recent congressional hearings on the Allied Health Professions Personnel Training Act of 1966, representatives of a number of national professional organizations described substantial unmet needs in their respective fields. These are summarized in Table 8 for seven occupations showing the annual number of graduates required to meet the needs of 1975. Arizona's proportionate share of the responsibility to meet these needs has been computed on a population basis. Arizona's population is expected to equal one percent of the national total in 1975, providing a convenient yardstick for determining this State's obligations to the nation as well as to our own student population.

During the school year 1970-71, approximately 3,000,000 students will graduate from high schools in the United States.* Attainable national health manpower goals have been estimated at 224,000. This would indicate that the national annual output of health services manpower should be approximately seven and one-half percent of the 1970 high school graduation.**

In Table 9 these estimates of educational responsibility are broken down into various categories and the Arizona share in each case has been computed. In all categories from short term training programs at the post high school level to the doctoral programs, Arizona's responsibility on this basis by 1975 would be an annual output of 2,240 health service personnel.

Table 9 indicates, for instance, that the annual output target for 1975 for Arizona's nurse training programs should be 600. Data in Table 7

---

*Projections of Educational Statistics to 1974-75, U. S. Office of Education, Publication No. 10030.

**In 1965 3.3 percent of the civilian labor force consisted of persons in health occupations. This percentage has increased from 3.0 percent in 1960.

TABLE 8

SELECTED ALLIED HEALTH OCCUPATIONS
ESTIMATED ANNUAL GRADUATES NEEDED[1]
1975

Occupation	Annual Graduates Needed To Meet U.S. Needs 1975	Arizona's "Share"[2]
Total 7 occupations	37,000	370
Dental Hygiene[3]	5,500	55
Medical Record Library Service	1,500	15
Medical Technology[3]	6,000	60
Occupational Therapy	8,000	80
Physical Therapy	8,000	80
Speech Pathology and Audiology	2,000	20
X-ray Technology[3]	6,000	60

[1]Need based on estimated 1975 requirements
[2]Arizona's "share" estimated at one percent of national total
[3]Includes Associate degree and certificate programs

TABLE 9

FEASIBLE GOALS IN HEALTH MANPOWER, 1975

Level of Training	1975 Annual Output U.S.	Arizona
Total	224,000	2,240
Doctoral	14,000	140
Nursing (Baccalaureate, Diploma and Associate Art Degree)	60,000	600
Baccalaureate and Master's (exclusive of nursing)	20,000	200
Professions identified in Health Professions Education Assistance Act: Pharmacy, Optometry, Podiatry	6,000	60
Allied Health Occupations	14,000	140
Junior College and Other Technical and Vocational Programs (exclusive of nursing)	80,000	800
Practical Nursing	40,000	400
Other	40,000	400
Short Training	50,000	500

*Arizona share estimated at one percent.

indicates that, considering probable inmigration and attrition, the annual training requirements to meet the personnel deficits in nursing in Arizona would be approximately 300 to 400. A comparison of Tables 7 and 9 emphasizes that Arizona's total responsibility to the national needs for health service education is much greater than just the training requirements to meet the needs of Arizona.

VT 007 605
Lee, John D., Ed.
Policies and Guidelines for Business and Office Education.

Indiana State Dept. of Public Instruction, Indianapolis. Div. of Vocational Education
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Jun68 252p.

*PROGRAM GUIDES; *BUSINESS EDUCATION; SECONDARY GRADES; GUIDELINES; ADMINISTRATIVE POLICY; *COOPERATIVE EDUCATION; *PROJECT TRAINING METHODS
INDIANA

This manual for Indiana includes a discussion and illustration of: (1) an overview of business and office education, (2) a program proposal cover sheet and outline form, (3) policies for business and office education in Indiana, (4) general information section for vocational-technical education, (5) criteria for teacher requirements, equipment, community survey, follow-up survey, and rental equipment, (6) the intensive lab program, (7) cooperative office education program, (8) adult business and office education, and (9) use of advisory committee. The sections dealing with the intensive lab program and cooperative office education program present sufficient detail for implementation of the program. (MM)

VT 007 605

Policies and Guidelines for

BUSINESS AND OFFICE EDUCATION

Compiled and Edited by:

John D. Lee, Supervisor
Business and Office Education

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Richard D. Wells
State Superintendent of Public Instruction

H. Robert Hewlett, Director
Division of Vocational Education

June, 1968

VT 007 605

Reproduced by:
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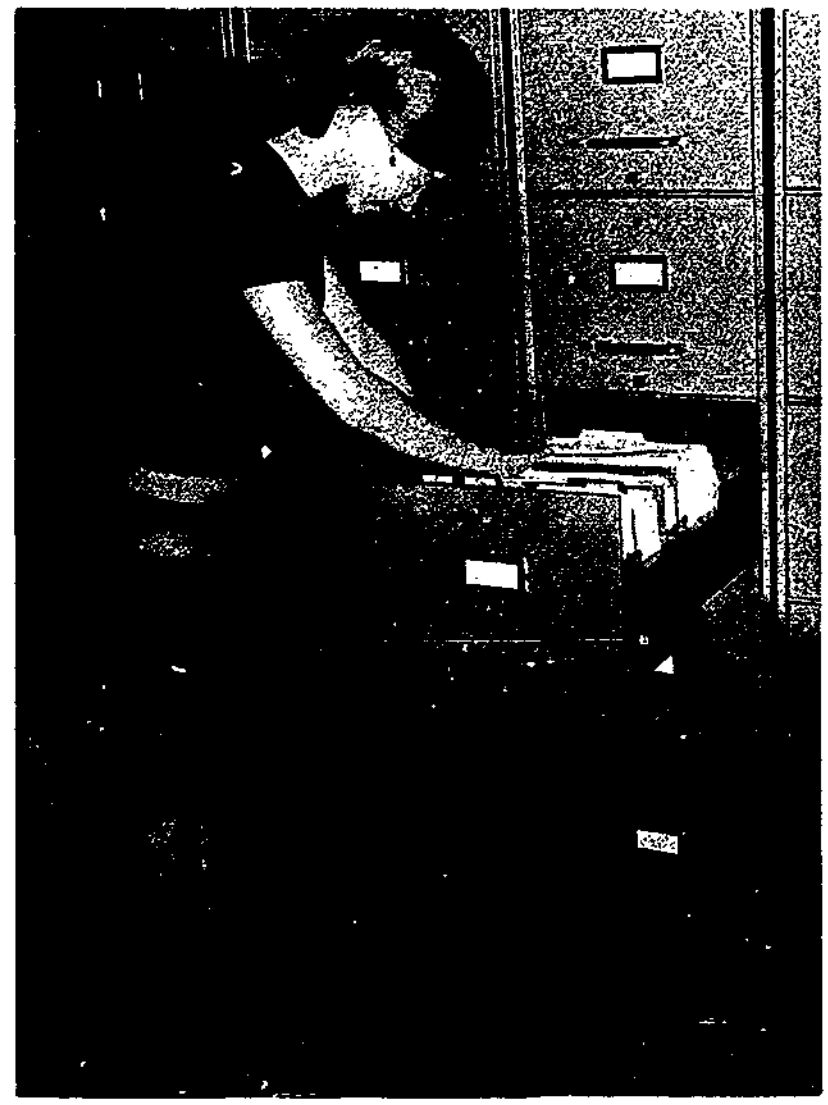
Indiana State University
Terre Haute, Indiana 47809

THE "BEFORE"

IN BUSINESS AND OFFICE EDUCATION

WORK PROGRAM



Before: The Pupil

1. Is hired as a producing worker.
2. Learns only the "how-to-do-it" aspects of his job.
3. Is not always able to understand the relationship of his work experience to his classroom activities.
4. Does not always rotate from job to job within the organization but performs same duty each day.
5. Is tempted to drop out of school to accept a full-time position.
6. May work under conditions which may deteriorate.

Before: The School

1. Has little or no opportunity to integrate classroom activities with the work experiences of the pupil.
2. Has no opportunity to assist the pupil in matters of social adjustment.
3. Ordinarily does not give credit for unsupervised work experience.

Before: The Parent

1. Is not sure where the responsibility of the school begins or ends.
2. Is not sure of the relationship of the job experiences and the classroom activities.
3. Is not sure that the pupil knows what he got himself into.
4. Is not sure when the pupil's working hours begin or end.
5. Does not know what prestige the job has, in terms of acceptance of the pupil by his peers.

Before: The Employer

1. Obtain a raw recruit who wants to earn money.
2. Must train the worker.
3. Does not feel obligated to train the pupil.
4. Can hire or fire the pupil at will.
5. Does not always have a continuing relationship with the school after the job is filled.

THE "NOW"

IN BUSINESS AND OFFICE EDUCATION COOPERATIVE OFFICE EDUCATION

Now: The Pupil

1. Is hired as a learning worker.
2. Learns also the "why-it-is-done" aspects of his work.
3. Engages in classroom activities which are integrated with his on-the-job experiences.
4. Follows a planned rotation schedule during the length of the year-long program.
5. Receives the benefits of a job analysis.
6. Is matched to the job by an occupationally experienced coordinator.
7. Will work in an establishment which is continuously approved by the coordinator.

Now: The Parent

1. Knows that the school has not relinquished responsibility for the pupil.
2. Knows that the pupil received the benefit of good guidance before being placed on the job.
3. Knows that the pupil is not being exploited.
4. Knows that the pupil receives the maximum of prestige from an approved credit-carrying course of study.
5. Knows that the on-the-job experiences and the classroom activities compliment and strengthen each other.

Now: The School

1. By means of the job analysis, is able to integrate the classroom activities of each pupil with his on-the-job experiences.
2. Is prepared, when the need arises, to assist the pupil to make necessary social adjustments.
3. Can give credit for vocational experience, part of which is acceptable for college entrance.
4. Has the advantage of the services of an advisory committee.

Now: The Employer

1. Obtain an oriented pupil who wants to learn to work.
2. Receives the assistance of the school and the coordinator in training the pupil.
3. Participates in the planning which results in better training of the pupil.
4. Receives the benefit of guidance and testing techniques which bring to light the abilities of the pupil.
5. Has a continuous relationship through an organized program with the school.

THE "NOW"

IN BUSINESS AND OFFICE EDUCATION

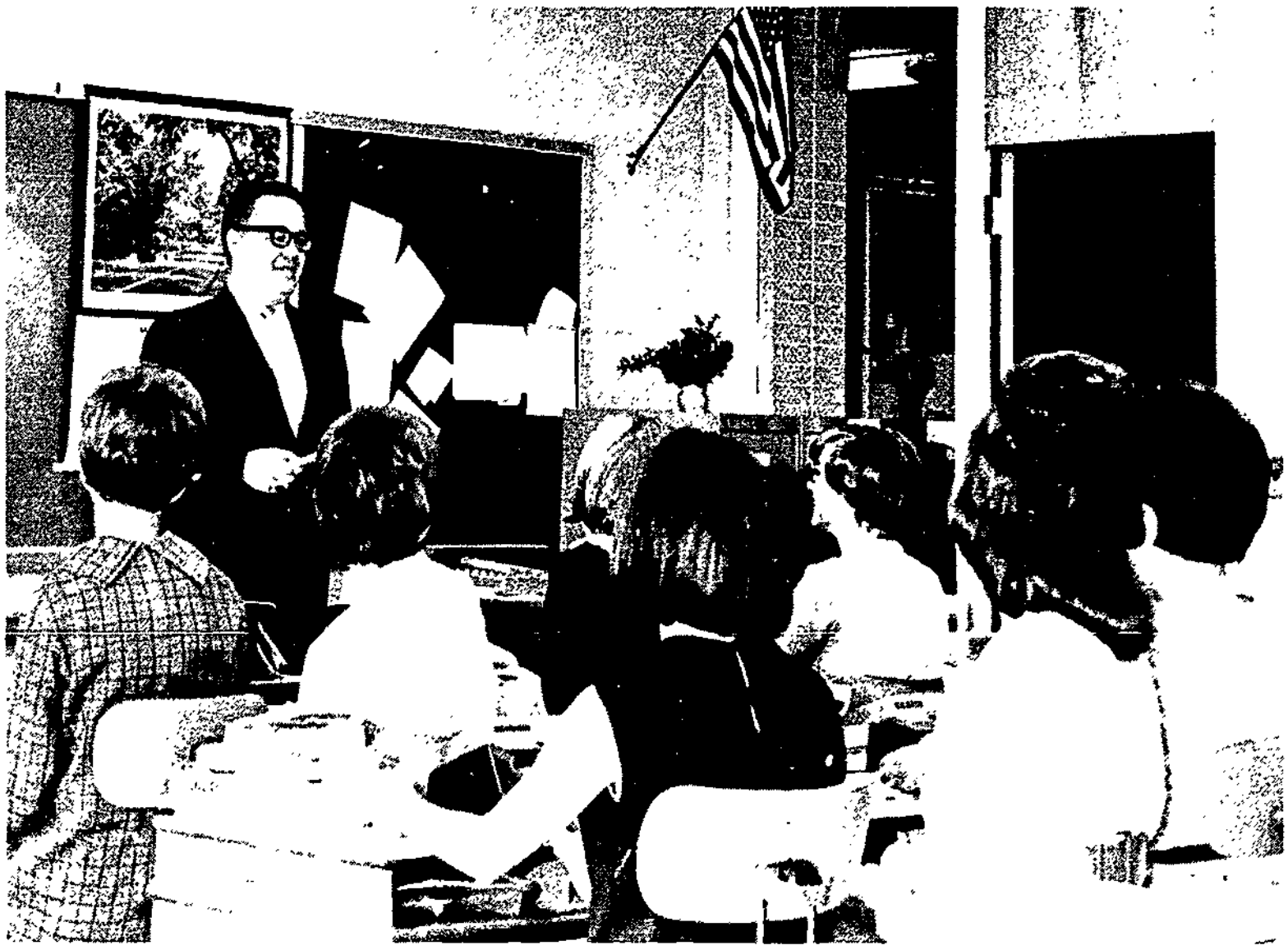
INTENSIVE OFFICE LABORATORY

1. In atmosphere, layout, and equipment, the office laboratory is fully comparable to a modern, well-designed, functional business office.
2. Experiences are provided through the lab in which exercises and problems involving the application of knowledges and skills will be an integral part of the learning experiences, and also in which the instruction will center in the performance of production tasks on actual occupational and educational projects which are brought into the laboratory from outside agencies or from within the school rather than a textbook or practice set.
3. The program is directly related to employment opportunities and has course work set up and maintained with advice from the occupational groups concerned.
4. There is a statement of career objective for each student that is a matter of record.

5. Instruction is offered only to persons who need, desire, and can profit from it occupationally.
6. Each student in the office laboratory is required to perform a variety of major tasks which comprise the office occupation for which the student is preparing.
7. The length of instruction is determined by the requirements of the occupation and the needs of the students.
8. Each student performs actual office activities as an individual, while under office pressures, and not as a group.
9. Grade requirements are equal to actual entry job standards.
10. Instruction is provided on the individual basis and thus can provide the above average a higher degree of proficiency and technical education as well as offering the below average an employable skill.

THE "BEFORE" IN BUSINESS AND OFFICE EDUCATION

CLASSROOM



1. All students are doing the same thing at the same time.
2. Materials and projects come from published textbooks and practice sets.
3. Mostly developing basic skills rather than applying skills to an office situation.
4. Length of instruction, no matter career objective of the student, is usually the same for all.
5. Lacks office pressures, and so the student usually enters private schools for additional training.
6. The classroom doesn't bridge the gap between the school and the world of work.
7. Equipment mainly of the same make rather than of the variety found in the business offices.
8. Usually a course and not a program of instruction for immediate and gainful employment: presents much "how" and lacks "why" something is done.
9. Usually represents general preparation for a job rather than preparation for a career.
10. Course work is not maintained with advice from occupational groups or according to employment opportunities.
11. The classroom doesn't provide technical training for the above or below average student but the middle-of-road approach for all.

THE "NOW"

IN BUSINESS AND OFFICE EDUCATION

INTENSIVE OFFICE LABORATORY

1. In atmosphere, layout, and equipment, the office laboratory is fully comparable to a modern, well-designed, functional business office.
2. Experiences are provided through the lab in which exercises and problems involving the application of knowledges and skills will be an integral part of the learning experiences, and also in which the instruction will center in the performance of production tasks on actual occupational and educational projects which are brought into the laboratory from outside agencies or from within the school rather than a textbook or practice set.
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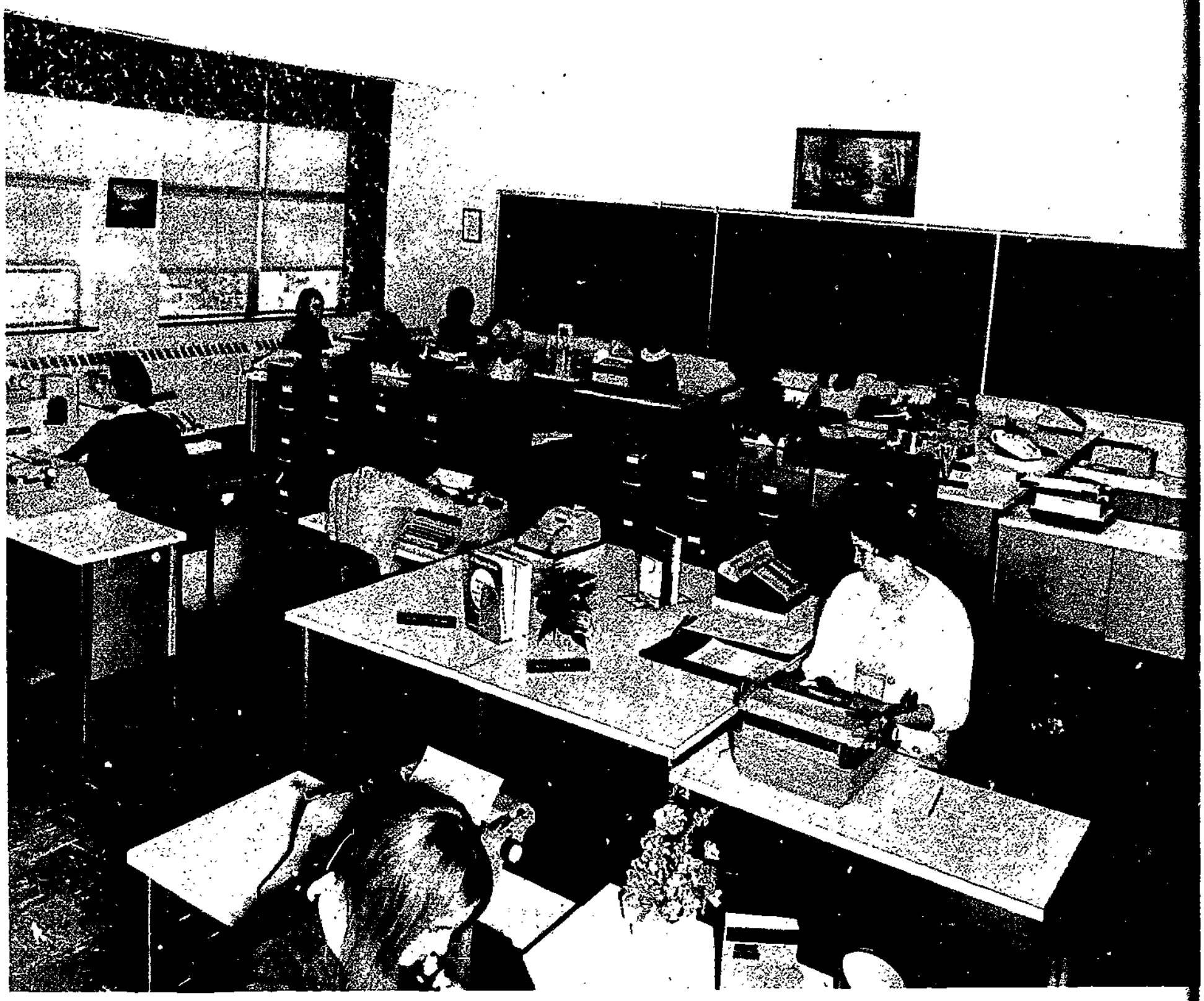
8. Each student performs actual office activities as an individual, while under office pressures, and not as a group.
9. Grade requirements are equal to actual entry job standards.
10. Instruction is provided on the individual basis and thus can provide the above average a higher degree of proficiency and technical education as well as offering the below average an employable skill.

"THE NOW"

IN BUSINESS AND OFFICE EDUCATION INTENSIVE OFFICE LABORATORY



DEPARTMENT OF PUBLIC INSTRUCTION
DIVISION OF VOCATIONAL EDUCATION

M E M O R A N D U M

MEMO TO: ALL SUPERINTENDENTS, PRINCIPALS, AND BUSINESS TEACHERS
FROM: JOHN D. LEE, STATE SUPERVISOR, BUSINESS AND OFFICE EDUCATION
SUBJECT: PREPARING YOUR PROPOSAL FOR AN APPROVED BUSINESS AND OFFICE EDUCATION PROGRAM

In order to implement a true program of Business and Office Education for the balance of 19__ and to make plans for fiscal year 19__, the State Department of Vocational and Technical Education, Department of Public Instruction, has set up a procedural pattern to be followed by school corporations.

1. Prepare your proposal by first determining the type of program you desire. (Sections are arranged in order according to the following information.)

   (a.) The section, "Business and Office Education," explains what a business program is, when it is vocational, and general information on the types of available programs.
   (b.) The next two sections, "What Is An Intensive Lab?," (Section I-B), and, "The Cooperative Office Education Program," (Section I-B), go into more detail on the major possibilities of the programs available to you.
   (c.) These sections help you to determine if your school should offer a Business and Office Education program and if so, which program.

2. Program Proposal Cover Sheet, (Section #2).

   (a.) Use this cover sheet as a sample for preparing your cover sheet.

3. Program Proposal Outline Form, (Section #3). (Five copies to be submitted)

   (a.) This is an outline for you to follow in establishing an approved program.
   (b.) Each section of the outline refers, when it applies, to a certain section of the "Policies of Business and Office Education," (numbers 7.0-7.78), and the "General Information Section for Vocational and Technical Education," (numbers 0.1-0.10-4).
   (c.) This section is very valuable as an outline, because it refers directly to the State Policies of Indiana and contains many suggestions for the teacher and/or coordinator of the program.
   (d.) We do not expect the ultimate to be reached in the beginning. The questions indicate the desired outcome; but in the beginning, we understand that we must be flexible so that you may establish yourself and your program. Please just plan your program in stages of development - what you can do this year, next, and if this will best serve your situation.

4. Policy for Business and Office Education in Indiana, (Section #4.)

   (a.) This is referred to in the Program Proposal Outline by the numbers 7.0-7.78.
   (b.) This section, as well as the whole handbook, is very valuable and should be kept for future reference.
   (c.) This section contains the "Policies" by which the merit of a program is judged.

      (1.) The "Policies" are subjected to change according to "new developments in the field of business."
      (2.) Each proposal will be judged according to its own merit, individual situation, and the policy established at the time the proposal is submitted to the State Supervisor of Business and Office Education.

5. General Information Section for Vocational and Technical Education, (Section #5).

   (a.) This section supplies additional information for your use.
   (b.) This section is referred to in the Program Proposal Outline by the numbers 0.1-0.10-4.

6. Prepare your Proposal following the outline; use the copy of the Policies and General Information Section in developing the proposal; and send the completed proposal to Mr John D. Lee, State Supervisor of Business and Office Education, 600 Old Trails Building, 309 West Washington Street, Indianapolis, Indiana 46204.

7. Approval (or rejection) will be determined by an Evaluation Committee under the direction of the State Supervisor of Business and Office Education.

8. Approval will be based upon need and time priority--all other things being equal.

9. Adjustments, when deemed necessary for approval, will be made by the Evaluation Committee and the proposal will be returned to the local school corporation for corrections and/or additions.

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SECTION I-A

BUSINESS AND OFFICE EDUCATION OVERVIEW

BUSINESS AND OFFICE EDUCATION OVERVIEW

Definition

Business and Office Education is vocational education for a career in office work; it prepares people to produce services for business. It makes them an expert in one or more of the many techniques and procedures used in the modern office, such as automation, operational systems, data processing, and the coordinating and communicating of information.

Business and Office Education, therefore, is not synonymous with basic business education, which is needed by every consumer of the products and services of business and which is essential for an economically literate society. A strong Business and Office Education program is the friend of basic business education: if the latter is needed by everyone, it is doubly needed by the office worker.

How Can You Tell if it is a Business and Office Education Program?

The title of a course alone is not a reliable guide for distinguishing vocational instruction from non-vocational. The 1963 Act stipulates that secondary school vocational Business and Office Education should possess certain essential characteristics.

1. The program is directly related to employment opportunities and has course work set up and maintained with advice from the occupational groups concerned.

2. There is a statement of career objective for each student that is a matter of record.

3. The facilities and equipment used in instruction are comparable to those found in the particular occupation.

4. The instruction duplicates, as nearly as possible, desirable working conditions and at the same time provides effective learning situations.

5. The length of instruction is determined by the requirements of the occupation and the needs of the students.

6. Training is carried to the point of developing marketable skills, abilities, understandings, attitudes, work habits, and appreciation.

7. Instruction is offered only to persons who need, desire, and can profit from it occupationally.

8. There is a vocationally competent and experienced teacher.

9. Continuous research and follow-up is an integral part of the program.

State Plan

The Indiana State Plan for Occupational Education states that these learning experiences may be provided through cooperative part-time office experience method and/or through intensive laboratory courses.

Points on an Intensive Pre-Employment or In-School Business and Office Education Program

1. The intensive office laboratory instruction should be placed in the Business and Office Education sequence so that the student may enter employment directly from the laboratory without further Business and Office Education courses.

2. In atmosphere, layout, and equipment, the office laboratory should be fully comparable to a modern, well-designed, functional general business office.

3. Experiences should be provided through the lab in which exercises and problems involving the application of knowledges and skills will be an integral part of the learning experiences, and also in which the instruction will center in the performance of production tasks on actual work projects which are brought into the laboratory from outside agencies or from within the school.

4. The teacher of the office lab should be in full charge and should accept only those jobs or projects that contribute to the learning experiences of the students enrolled.

5. Each student in the office laboratory should be required to perform a variety of major tasks which comprise the office occupation for which the student is preparing.

Cooperative Office Education

1. This is a program in which the student leaves school and goes to work in the community for part of the school day. The cooperative plan should be used when there are sufficient training stations in your community that can offer the student a variety of activities while employed.

2. A student must be "ready" to enter the "Co-op" program. The students must have basic marketable skills; they must be pleasant and presentable; they must be of maturation levels to enter the work field and realize that they are going to have to meet two standards: school and job.

3. Some students might progress from an intensive program to the C.O.E. program. Others from the general program who have taken certain skill courses could be accepted into the C.O.E. program. Cooperative Office Education is offered only at the 12th grade level.

Selection of Students

1. The function of Business and Office Education is to provide opportunities for education leading to employability for students in all brackets of general scholastic ability who have an interest in an office occupational career.

2. A student should be counseled into the kind of curriculum in which he will succeed. In other words, a lower ability student should not be permitted to waste time in a stenographical or business data processing program. There are many types of curriculum that can be developed that will take care of all abilities and ranges of needs of students.

Summary

We must face the fact that the present vocational effort in the field of business education is not overly efficient and accept the need to establish specific, identifiable, high quality vocational preparation in the field of BUSINESS AND OFFICE EDUCATION.

The latest edition of the Dictionary of Occupational Titles should be used to determine the job families and specific job classification titles in the office occupations for the purpose of indicating curricula appropriate for the various training objectives in all vocational Business and Office Education programs.

SECTION I-B

"What Is An Intensive Lab?"

(See Section #7 for:)
(1.) Teaching Suggestions
(2.) Reference Materials
(3.) Equipment Needed
(4.) Projects for Laboratory

and

"Co-operative Program"

(See also Section #8 for:)
(1.) Letter to Parents
(2.) Work Experience vs. Cooperative Education
(3.) Cooperative Training Agreement
(4.) Rating Sheet for Employers
(5.) How to Select Training Stations
(6.) Letter of Thanks to Employer
(7.) Additional Sample--Agreement Contract (See also Cooperative Training Agreement in this section)
(8.) Introduction Card for Students
(9.) My Pledge to the BOE Program
(10.) Student Interest Survey

WHAT IS AN INTENSIVE LAB?

The dictionary defines intensive as "giving force or emphasis, very strong, and characterized by much action."

We define an intensive lab as a situation that, as near as possible, duplicates an office in responsibility and equipment. It would be a program that is given in the school for a block of time (more than one period, usually two to three periods offered together and if possible, in one room).

An ideal situation would be an individual work station with around 25 square feet of work area. This will allow sufficient desk area for the various jobs and equipment demanded and sufficient to make the moves required daily by an office employee.

Emphasis would be given to all areas; the basic training already being accomplished in the prerequisite courses.

The aims, prerequisites, and the objectives for each lab will vary. Each should have set requirements for entrance in the lab and set requirements upon completion. These requirements should be set according to the job requirements in yours and surrounding communities.

The objectives of the lab will also depend upon the objectives of the students. With new students each year, the objectives of the lab will be different---you cannot treat the lab as a class.

The lab program is offered only to people who desire, need, and can benefit by employment upon the termination of the program (seniors only). It is a situation which prepares the students for immediate employment and not further training.

The intensive lab should be intense, taking the expected as well as the unexpected activities into account. Because it is so intense and with so many various activities taking place at the same time, your student load should be around 20-25. The extreme number of 25 could cause many students to lose personal contact and help needed from the teacher, and therefore, turning out a person who is unemployable.

You must be dynamic and have up-to-date equipment and up-to-date methods of instruction. Each must change as your community changes---to meet a need where there is no need is wasted time. To meet the need, you must know the need, your students' as well as the employers'.

If an employer has to train or retrain a person for a common job, your lab has not been intensive or your objectives could be wrong. An example: teaching a student how to change a ribbon on a typewriter.

HOW CAN YOU TELL IF IT IS AN OFFICE EDUCATION PROGRAM?

There is a statement of career objective for each student.
There is vocational office orientation for each course(s).
There is adequate coordination of courses and on-the-job education.
There is sufficient time allowed for effective teaching and learning in classroom, laboratory, and field activities, developing abilities and skills needed in office work.
There is a vocationally competent and experienced teacher.

The intent to establish a true vocational program in Business and Office Education by creating a new curriculum sequence, expanding the existing curriculum, or departing from the present business education program must be evident in the proposal that is submitted to the state office before reimbursement can take place.

The equipment purchased for the intensive situation can be reimbused at 50%.

The teacher's salary will be partly reimbursed (up to 50%) for the time he teaches in the intensive situation.

If you cannot send your students out to work in a "live" situation, create the "live" situation in your school.

You will destroy the motivation of the intensive situation if the periods are treated as classes.

Motivation will be created when forms, projects, materials, and activities are acquired from actual places of business or school offices.

The appointing of an advisory committee of local business people can help to develop your course content and help to select equipment you should have in the lab--if it is not in the office, it should not be in the classroom.

Activities, forms, and projects found in legal, medical, insurance, banks, real estate, loan, and other local businesses should be brought in. (This is not the place for a book because the book would not necessarily solve the needs found in your community or the needs of your students.)

Your intensive office lab must meet the needs of each student. If a student has a career objective to work in a legal office, he should receive training on forms and activities found in a legal office. (Your advisory committee can help if a legal person is appointed.)

The preparation of folders on various businesses and various activities found in those businesses is not as difficult as it may seem.

A station could be established for each type of business found in your community. The students would then rotate from one station to another for a variety of skill and knowledge development.

A station could be established for each activity found in an office: a receptionist, file clerk, secretary, telephone operator, duplication, etc. The student would then rotate from one station to another.

A student could be assigned to a teacher or school office, during a study hall, for practice in a "live" office situation. The student would rotate from one teacher to another in order to receive a variety of activity.

"It is not a class but an office situation which is intensive and one which offers a variety of activities, utilizing outside resources."

THE INTENSIVE OFFICE LABORATORY--Adaline D. Jones, Ph. D., Ball State University

The intensive office laboratory is an organization for instruction whereby each learner in the class receives final opportunity within the school to participate in these integrated and interrelated practical work experiences and related learning activities which are necessary for him in order that he may develop vocational competence for his chosen office career.

The Indiana State Plan for Vocational Education provides two methods by which Federal reimbursement is available for the senior-year finishing course in vocational education for office careers: the cooperative office education plan and the intensive office laboratory plan. Both plans have the same ultimate aim: that of providing those practical work experiences and related learnings which will enable a student to develop vocational competence for his chosen career. The cooperative education plan has had a long record of success as a method for achieving this aim--not only in the area of office education but in any other branch of vocational education. The question is, Can the intensive office laboratory approach the cooperative plan in the effectiveness by which the ultimate aim is achieved?

In our studies at Ball State University, we have found that, by incorporating as far as possible the elements that should exist in a sound cooperative education program, it is possible to provide a vocational education program for the students that approaches the cooperative plan in achieving the ultimate aim. The basic difference, of course, is the place where the practical work experience laboratory exists; otherwise, the two plans can be made quite similar. In the cooperative plan, the laboratory occurs in the actual office in the form of on-the-job training; in the intensive laboratory plan, the laboratory occurs in the school.

If the intensive office laboratory plan is to be comparable to the cooperative office education plan, the learning experiences must be of three kinds for each student: laboratory experiences, field experiences, and related instruction. Excluding any one of the three seriously weakens the quality of the vocational education provided and greatly threatens the achievement of the ultimate aim of the intensive office laboratory program.

The limitations of space here do not allow a detailed discussion of these three types of experiences, but perhaps a statement of the objectives and a listing of the characteristics of the intensive office laboratory plan may provide some guidance to anyone who is concerned about the quality of the intensive office laboratory program for which he is responsible.

Objectives of the Intensive Office Laboratory

The intensive office laboratory should be established to provide for each student-learner in the class opportunity for:

1. Development of sophistications with regard to employment that are comparable to those which would be developed in a cooperative education program or an on-the-job training program

2. Development of self-direction in the performance of office tasks

3. Development of initiative and a sense of responsibility for the quality and quantity of production

4. Understanding of the relationship among different work stations in an organization--an understanding of flow of work

5. Further development to occupational standards, or higher, of the skills and knowledges previously learned

6. Understanding of the occupations which exist and the employment requirements for these

7. Understanding of the businesses of the community and their relationship to each other

8. Development of the ability to work harmoniously with others--development of effective human relationships

9. Further development of efficient work habits

10. Development of knowledge about and skill in performing various office tasks

11. Development of knowledge about and skill in using such documents as flow charts, office manuals, procedure manuals, organizational charts, etc.

12. Refinement of knowledges and skills according to individual needs (remedial instruction, etc.)

13. Development of capability to secure employment, to maintain employment, and to advance in employment

Characteristics of a Sound Intensive Office Laboratory

A sound intensive office laboratory should be characterized by the following:

1. There is a statement of a career objective for each student.

2. There is vocational office orientation for each student's individual course.

3. There is sufficient time allowed for effective teaching and learning in the classroom, laboratory, and field activities, to develop abilities and skills needed in office work.

4. There is a vocationally competent and experienced teacher.

5. The basic training has already been accomplished before a student is admitted to the laboratory program.

6. The instruction is geared directly to occupations in the employment community and to the classifications in the Dictionary of Occupational Titles.

7. Individualized instruction is the basic pattern of instruction.

8. An individual training plan has been built for each student.

9. Work stations related to business occupations in the employment community are established; instructional materials are so designed that the work experiences of the students are like or very similar to the work done in the business occupations.

10. Of a three-hour block of time, one hour is devoted to related instruction.

11. Two Carnegie units of credit are given for the combined laboratory and related instruction experiences.

12. Student enrollment in the laboratory does not exceed 25.

13. A proposal has been submitted to and approved by the State Vocational Education Division.

14. An advisory committee exists to serve as consultants; this committee is composed of selected community leaders.

15. A work station is established for each type of business in the employment community or for each kind of office operation.

16. Rotation plans, individual study, small group activities, and battery plans are all used. The laboratory itself is characterized by the rotation plan and individual study. The related instruction portion utilizes all four techniques.

17. Work stations to cause the laboratory to function as a business office exist. Procedure manuals exist for these work stations.

18. Sound office management principles permeate every aspect of the laboratory.

19. Psychological learning principles are the basis for instruction in all aspects of the laboratory program.

20. A community survey has been made to identify the occupations in the employment community and the possible occupations for which work stations may be built.

21. A job analysis for each of these occupations for which training is being offered is the basis for the development of the instructional materials for the laboratory, particularly the instructional materials for the projects work stations.

22. The atmosphere of the laboratory is comparable to that in a real office.

23. Equipment and facilities are of the kind for which training should be provided and of the kind needed for the effective operation of the functional work stations.

24. Evaluation procedures are comparable to those that are employed in a real office.

Such an intensive office laboratory class is, of course, the antithesis of the usual formal class organization in the school. Factors for which the approach must be different from the usual class include: classroom organization, teaching techniques, instructional materials to be used, ways of using the instructional materials, facilities needed, learning experiences to be had by the learners, amount and distribution of time needed by the learners, utilization of the instructor's time, relationships between the instructor and the learners, relationships among the learners, and evaluation procedures.

Our studies at Ball State University have revealed that careful attention must be given to all of these considerations by a school establishing or operating an intensive office laboratory if that laboratory is to fulfill its reason for being.

COOPERATIVE PROGRAM

(1.) What is a Cooperative Business Education Program?
(2.) When should you use it?
(3.) Can a cooperative and intensive lab be developed together?
(4.) What is the job of the coordinator?
(5.) Scheduling of cooperative class?
(6.) Reimbursement?

The previous questions are only a few I have been asked, but they are the major ones. The following material will attempt to answer the questions in the order given above.

(1.) A cooperative program is a program where the student leaves school and goes to work in a "live" situation of employment for part of the school day.

The student will have a business major and will be required to take certain prerequisite courses in order to develop a business skill. He will be placed in a job for which he is best qualified.

All students will pursue a normal study program in school. He may try to "group" his study halls and then leave school for his training station during this time. The student is required to work between 15-18 hours a week, with the majority of work being done during school time.

If the training station is near, the student could go to school, leave school for work, and then return to complete the school day.

One period a day must be set aside for related instruction. During this time, problems that developed at the training station will be handled. There will not be a definite routine, because students and instructor will deal mainly with the problems that arise from the job. This is to be considered a separate program and not an appendix to another program.

(2.) A cooperative plan should be used when there are sufficient training stations in your community. No training station is better than a poor one. Training stations used should be only those which can develop a person's knowledge and skill beyond what they already possess.

Many schools use the cooperative plan because many find opportunities for training exist in their communities. Some lack the facilities and equipment in the school, and others have it because they believe it is the best. Use it only if the training stations are sufficient and can offer a variety of activities--never use it if the training sponsor will have the

student just "filing" and nothing else. Employers need well-rounded people, and students need training stations that offer a variety of activities.

(3.) Many schools will develop a combination of intensive lab and cooperative programs.

Some students will have other obligations which would interfere with a cooperative program. Play practice, sports, school paper, and class officer are a few situations which will keep the student in school. These students belong in a lab situation.

Both programs could exist and a student could enjoy a fine relationship in both or in either as long as he already has the basic skills to work in an intensive lab situation (when you can't work in a "live" situation, you develop one like it) and/or on-the-job training.

(4.) The coordinator will set up the training stations, conduct the related class, and coordinate the student, job, employer, and class into one integrating unit.

The coordinator will see that some type of on-the-job training schedule is drawn up with the employer and carried out. This will be done by numerous visits to the training station and evaluation under each of the various activities they perform.

Each student is to work no less than 15 hours per week, the major portion being during school time and paid a wage equal to a normal beginning employee with a comparable background in a similar job.

Each coordinator, qualified according to the State Plan and Bulletin 400, shall provide a minimum of one-half hour per student per week for coordination and supervision while on the job.

Credit earned for cooperative instruction shall be commensurate with the combined instruction in the on-the-job training program and in the related instruction.

(5.) Many schools offer the related class in the middle of the day. Some students will work in the morning and return to school for the afternoon and others the reverse--school and then work--this is only an example.

This arrangement will allow coordinators to use two students in one training station--one in the morning and one in the afternoon.

In most cases, the coordinator will teach regular classes and the related class in the morning and the afternoon is open for coordination of the training stations.

(6.) Reimbursement for teacher's time in actual teaching of the related class and during the coordination time will usually be reimbursed around 50% of their time in these situations.

An extended contract, two weeks at the close of the year and two weeks prior to the opening of school, is almost necessary for a successful program.

The extended contract time is used in setting up training stations, conducting follow-up studies and working with and selection of an advisory committee.

Reimbursement will be 50% for all local meetings and 100% for any conference, workshop, etc. called by the state.

Equipment necessary for a well-rounded and beneficial related class can also be reimbursed at 50%. This equipment must be used directly in relationship with the objectives of the program and the training stations and remain in this set classroom. The equipment can be used by any student as long as it remains in the room set for the related class and not when the related class is in process.

(7.) Pit-falls:

(a.) Not visiting the training station regularly--1/2 hour, per student, per week.
(b.) Waiting too late to set up training stations; best ones gone.
(c.) Not knowing students personally
  (1.) courses taken
  (2.) proficiency of skills
  (3.) career objective
(d.) Think of it as a work study program--it is a training station coordinated to a related class by a coordinator.
(e.) Accepting standards less than occupational standards.
(f.) Too many students or not enough time allowed for coordination.
(g.) Your prerequisite courses were not meeting the needs of the community and so the students lack a needed skill.
(h.) Not following the requirements of the child labor laws.

Question, misunderstanding, or doubt--call now, 317-633-4841. There is still enough time to develop a program for the next semester.

Coordinator's Schedule
(On the Job Training)

A coordinator in vocational Business and Office Education may teach any course he desires as long as he teaches one related cooperative class and allows sufficient time to coordinate the students with their training stations.

The amount of time necessary for coordination will be determined by the number of students in the program. A coordinator will need one-half hour, per week, per student, for coordination.

This is an example of a coordinator's schedule with 25 students enrolled:

1 Regular teaching assignment
2 Regular teaching assignment
3 Related cooperative class
4 Lunch
5 Coordination
6 Coordination
7 Coordination

Periods 3, 5, 6, and 7 will be reimbursed.

If you do not believe your students are ready for a cooperative program the first semester of the senior year, place them in an intensive office laboratory situation for additional development of their abilities and skills at this time. Then during the second semester, send your students out on a cooperative program.

* Qualified and Dedicated Teacher-Coordinator

Experience has shown that those most successful as cooperative office education teacher-coordinators are excellent classroom teachers. But, also, they are knowledgeable about the demands of contemporary office occupations. They are willing to maintain personal contact with business to keep abreast of projected employment demands. Teacher-coordinators who have had comparatively recent employment in office occupations as production workers or as supervisors are most likely to bring realism to related instruction and to coordination contacts. Special professional education, workshop participation, and professional contacts with businessmen and other teacher-coordinators increase the likelihood of success.

Adequate Training Stations

One of the most challenging areas in cooperative education today is the development of adequately supervised training stations. One does not just select a business because there is "work experience" or "a job" there for the student and then breathe a sigh of relief when a student has been "placed." The prospective employer must be oriented to the cooperative method, must be willing to provide adequate supervision and rotation of experiences for a given student, and must be willing to review the development of the training station periodically with the teacher-coordinator. Such training station situations are available. A qualified and dedicated teacher-coordinator seeks out such training opportunities and develops the training stations over time.

Adequate Coordination and Feedback

Coordination consists of all those activities of the coordinator outside the classroom that are carried on to explain, develop, and evaluate the cooperative program. One important part of these activities is that of planned training station

visitation. Appropriate planning of training station visits will accommodate orientation of prospective new cooperating employers, the initial setting up of step-by-step training plans, the review of such training plans, the arrangement for and the follow-up of student-trainee interviews, cooperative evaluation of student progress on the job and in specific related classroom instruction, and the gathering or realistic and current instructional materials. The feedback into the related classroom instruction of the results of coordination visitations is most effective when coordination is done by the teacher who has direct contact with the student-trainees in the classroom at school. Coordination contacts planned in advance are most fruitful.

* Material supplied by Dr. Ralph Mason, Indiana State University

SECTION I-C

"Should Our School Offer A Business and Office Education Program?"

SHOULD OUR SCHOOL OFFER A BUSINESS AND OFFICE EDUCATION PROGRAM?[1]

During state staff visitations the question concerning the recommendation of establishing vocational business education programs is asked, in one form or another. In each case we find that a compilation of vital information is necessary. A pattern of specific steps to be taken is given below. At a certain point in the series of steps the matter of establishing or not establishing a business and office education program would become quite apparent as well as the type of program(s) to be offered--cooperative featuring part-time employment, or in-school stressing supervised intensive laboratory. The recommended steps to be taken are as follows:

1. Obtain from all students who are over 16 years of age and who (1) hold regular part-time jobs or (2) may have identified fairly realistic career goals, the following data:
   a. Name, age, home address
   b. If employed:
      (1) Name and address of establishment where the part-time work is done. (Identify as supermarket, service station, office, etc.)
      (2) The title of his job. (Sales clerk, waitress, mechanic, etc.)
   c. Regardless of employment status, a listing of three tentative career goals.
   d. Sort the above data according to families of occupations for which training should be given. (Non-educable occupations would include carrying papers, mowing lawns, etc.)

2. For how many of these "families of occupations" should the school provide vocational programs? (Secretarial, Clerical, Stenographical, etc.)

3. Select some representative business from the data received from employed students and hold interviews to determine:
   a. If the establishment and the occupation are worthy of inclusion as a training station for a cooperative program.
   b. (1) If the establishment is interested in continuing to employ part-time students as student-learners in a cooperative program; and
      (2) If the establishment is interested in employing high school graduates having certain business skills, knowledge, and attitudes.

---

[1]Note: Paper presented by Mrs. Patricia M. Rath at Business Education Conferences at Indiana State University, Terre Haute, Indiana, and in Wisconsin.

c. (1) If the person in charge would be interested in cooperating with the schools in providing a training station, a step by step training plan, sponsorship, etc; or
(2) If the person in charge would be interested in cooperating with an in-school program by participating in some supervised practical experiences such as providing for over-the-shoulder work observations by individual students; field trips; serving as a classroom resource person; offering part-time employment for a limited period (Saturdays or after school hours); or lending trade journals and other instructional materials. (or both)

Tentative conclusion: If the above data result in positive answers in areas b. 1. and c. 1., the business community can be judged as "potentially interested" in a cooperative program. If areas b. 2. and c. 2. seem more appealing to business, the community can be considered as potentially interested in an in-school intensive laboratory program.

4. For a Cooperative Program: Interview a number of seniors and juniors who now hold regular part-time jobs to determine:
a. If they would be interested in the idea of a cooperative program.
b. If they have ambitions to enter the occupations in which they hold part-time jobs.
c. If they would accept the responsibility of being a student-learner in such a program.

Tentative conclusion: Positive (or negative) answers to the items in this step would indicate whether a cooperative program would have the "status" among the students which would insure success, or failure.

OR

For an in-school Intensive Laboratory Program: Interview a number of seniors and juniors who have indicated career goals in business to determine:
a. How they plan to attain their career goals.
b. If they would be interested in the idea of an in-school intensive laboratory program.
c. If they would accept the responsibility of being an in-school intensive laboratory student.

5. Meet with selected parents, patrons and others to determine the "acceptance" of a business and office program.

Conclusion: By this time, the choice between a cooperative and/or an in-school intensive laboratory program and its possible success or failure will have become apparent.

SUPERVISED PRACTICAL EXPERIENCES

With the passage of the Vocational Education Act of 1963 and the adoption of State Plans for the administration of vocational education, new concepts in vocational education are being implemented. One of these is that vocational education is now geared to meet the needs of people of varied ages and educational backgrounds.

Designed for people who request their schools to provide occupational instruction requiring less than a baccalaureate degree, vocational education can prepare people for 90 per cent of the available jobs--many of these are in business.

The most successful method of vocational education traditionally has been supervised "learning by doing." Under the guidance of a qualified instructor, the vocational student has received supervised practical experiences on the job, supplemented by instruction in school.

With the advent of recent legislation, business and office education can offer not only cooperative employment combined with instruction in school but also programs conducted wholly within the school. To maximize instruction, in-school intensive laboratory programs utilize simulated occupational experiences, presented in project form, another type of supervised practical experience.

Supervised practical experiences are composed of on-the-job instruction or in-school activities derived from an analysis of the competencies required in the occupation selected by the student as a career goal. To maximize learning, these experiences are presented in a sequence meaningful to the student. Each supervised practical experience, whether taught in actual or simulated employment situations, contains four essential elements. These are: (1) directed observation; (2) participation; (3) responsible action; (4) evaluation.

This bulletin material contains four parts. They are: (1) an overview of the areas of competency required for successful employment in business and office education; (2) a description of supervised practical experiences, including suggestions for projects; (3) suggestions for planning supervised practical experiences; and (4) sample schedules of supervised practical experiences.

AREAS OF OCCUPATIONAL COMPETENCY IN BUSINESS AND OFFICE EDUCATION

There are more employment possibilities in business than there are qualified people to fill them. If we are to be concerned with qualifying people for these opportunities, we should examine the nature of these competencies

that are possessed to one degree or another by people engaged in business. These occupational competencies may be enumerated as follows:

First, there is a social competency. People engaged in business occupations have a set of personal characteristics which are vocationally relevant. Although Business and Office Education occupations are characterized as being machine-oriented, most office tasks are initiated and carried through to completion by people; therefore, human relationships are important.

Second, there is a basic skill competency. People employed in business occupations make constant application of the basic skills of communications and mathematics. Business depends upon communications to accomplish goals. This fact places a premium on one's facility with these tools subjects as a basis for employment in business and office education.

Third, there is a specialty or technology competency. People in office occupations can become proficient in specialized areas such as secretarial work, machine operation, or data processing. The degree of success depends on the extent of proficiency in the specialty area. A functioning knowledge of the first occupation becomes the base upon which other knowledges, skills, and attitudes are applied.

Fourth, there is an office or marketing competency. People engaged in Business occupations have demonstrated accomplishment in the performance of one or more office occupations which include the compilation, reproduction, storage, retrieval, and dissemination of data.

Fifth, there is an economic competency. Those engaged in business can contribute to a greater degree to the success of that enterprise when they are aware of the objectives of business. To understand corporate goals, an understanding of the fundamentals of our economy, including the free enterprise system and the profit motive is basic. Finally, to derive greater personal satisfaction from employment, people need to order their financial lives, including budgeting, purchasing, and savings. An understanding of how our economy functions and their responsibilities to it, aids them in accomplishing these goals.

WHAT ARE SUPERVISED PRACTICAL EXPERIENCES?

Supervised practical experiences are meaningful learning activities presented in a pattern that leads to employability in the occupational area of the student's choice. They are derived from an analysis of the competencies required in the occupation selected by the student as a career goal. Each supervised practical experience consists of four parts presented in sequence. These parts are: (1) directed observation; (2) participation; (3) responsible action; and (4) evaluation.

Directed Observation

During the observation stage of learning, the student observes the vocational activity under the guidance of an instructor. He acquaints himself with the purpose of the related supervised practical experience. From the many directed observation projects such as field trips, classroom demonstrations, tapes and recordings, and films and television, the instructor selects for each supervised practical experience the project best suited to the needs of the students. Other directed observation projects can include:

Trade exhibits or museum visits
Non-paid "over-the-shoulder" demonstrations of personnel in career-goal related occupations
Attending adult business meetings and conventions
Attending youth group meetings and conferences
Resource visitors (guest speakers) on special topics such as grooming, business etiquette, and Income Tax

Participation

After directed observation, participation lets the student try out the occupational activity through the project method. For example, a class newsletter project in office education enables student-stenographers to take news items in shorthand from a variety of sources such as teachers, administrators, and other students. Participating in this activity offers the students experience in a variety of dictation patterns. Other participation activities can include:

Interviews and surveys
Preparing charts, graphs, or drawings
Case studies, business games, and other problem-solving projects
Committee work, "buzz sessions", directed discussions, and brainstorming
Reading trade journals, supplementary text and newspaper articles and reporting on them
Occupationally-related school or community service work
Creating exhibits or displays
Preparing assembly, parent night, and open house programs
Communications, skill, knowledge, and attitude projects
Career-related participation contests

Responsible Action

In this stage of the experience, the student takes responsible action which lets him utilize his skills, knowledges, and attitudes in a project leading to his employability. For example, the office education class that has planned the newsletter sees it through to completion from the gathering of the news items to the typing, editing, proof-reading, stencil-cutting, duplicating, collating, and distribution of the finished product.

Other projects calling for responsible action can include:

Part-time employment
Civil Service tests
Job interviews
Production work in a model office
School receptionists, secretary, or stenographer
Career Notebooks
Employer-employee banquets

Evaluation

Evaluation aids the student in maintaining a relationship between the projects and his career goal. The purposes of evaluation are:

(1) to discover those behavioral changes that the student has undergone which will assist him in reaching his career goal;
(2) to analyze the effectiveness of the supervised practical experiences in bringing the student closer to his career goal; and
(3) to determine subsequent instructional steps assisting the student to reach his career goal.

Formal evaluation is conducted whenever necessary to determine the progress of the success of the project in accomplishing its objectives. Data should come from the student, the teacher, the supervisor, and others cooperating in the project. It should be used to identify the strengths and weaknesses of the relationship between the student and his career goal. Effective evaluation induces critical analysis and change to improve vocational instruction.

PLANNING SUPERVISED PRACTICAL EXPERIENCES

Planning is necessary to assure students of varied and meaningful experiences. To insure the successful implementation of plans, business and office education courses should include:

(1) students having career goals related to the instruction provided in the vocational program;
(2) written evidence of individual and group instruction in the form of supervised practical experiences such as step-by-step training plans for cooperative programs or schedules of supervised practical experiences for in-school intensive programs; and
(3) provision for each student to participate in supervised practical experiences leading to employment in his chosen business occupation.

Where Are Supervised Practical Experiences Conducted?

Each student is to participate in an organized program of instruction that includes supervised practical experiences. These experiences may be conducted within or outside of the classroom. Wherever offered, they are supervised by the teacher responsible for the classroom instruction. If the experiences are conducted outside of regular class time, responsibility for supervision rests with the classroom instructor teaching the vocational program.

It is understood that supervised practical experiences do not "use" or "exploit" the student in any manner for the gain of the supervisor, instructor, other teachers, other students or other personnel within or outside of the program.

How Are Supervised Practical Experiences Designed?

Every supervised practical experience should be planned and designed to present an accurate picture of business and of the student's career field. The Schedule of Supervised Practical Experiences may contain the following:

Outline of Schedule of Supervised Practical Experiences

(1) Student's name
(2) Career goal and appropriate D.O.T. number
(3) Description of job duties
(4) Description of competencies needed for the occupation
(5) Outline of areas of experience
(6) Supervised practical experiences and projects conducted in each area
(7) Date completed
(8) Evaluation: including:
    8.1 Experience gained from supervised activities
    8.2 Behavioral change in student
    8.3 Strengths and weaknesses of the experience
    8.4 Areas of improvement for subsequent use

SAMPLE

BUSINESS AND OFFICE EDUCATION

SCHEDULE OF PRACTICAL EXPERIENCES

Name of Student: _____

Career Goal: Clerical Typist D.O.T. No.: _____

Nature of Work: Types all work from rough draft or corrected copy. The work consists of addressing envelopes, typing letters, copying data, filing report forms, miscellaneous typing, and limited stencil cutting.

Areas of Competency:

1. Social Competency - has an effective business personality; is able to work well independently and with others. Is well groomed and in good health.
2. Basic Skill Competency - uses communications tools of language and arithmetic. These include correct grammar, spelling, and punctuation, and the performance of required arithmetical computations.
3. Specialty Competency - has a knowledge of a special area of office competency such as stenography, machine operation, or data processing. Is able to learn specific office practices and terminology.
4. General Office Competency - understands the fundamentals of the free enterprise system, including the profit motive and the employed person's responsibility to that system; and can handle personal finances. Is aware of job opportunities in office occupations and the requirements for them.

DETAILED OUTLINE OF AREAS OF COMPETENCY:

Key to right hand columns:
(1) Observation (2) Participation
(3) Responsible Action
(4) Evaluation (5) Date completed

Area	Project	(1)	(2)	(3)	(4)	(5)
1. Social Competency 1.1 Knows and follows good business grooming						
1.2 Maintains good health for effective job performance						
1.3 Uses correct procedures in applying for a job						
1.4 Practices business etiquette						

Area	Project	(1)	(2)	(3)	(4)	(5)
1.5 Has pride in caliber and speed of production						
1.6 Can accept criticism						
2. Basic Skill Competency						
2.1 Speaks and writes clearly						
2.2 Can perform necessary arithmetic						
2.3 Uses office style grammar						
2.4 Uses the dictionary and other references						
2.5 Knows how to make corrections						
2.6 Knows proofreading techniques						
3. Specialty Competency						
3.1 Typewriting						
3.11 Types accurately at 60 wpm						
3.12 Types production material						
3.13 Completes routine work						
3.2 Able to learn specific business practices						
3.21 Business forms						
3.22 Systems of control						
3.23 Management channels						
3.24 Telephone techniques						
3.25 Records management						
3.26 Stencil reference materials						

Area	Project	(1)	(2)	(3)	(4)	(5)
4. General Office Competency						
4.1 Typewriting						
4.11 Speed and accuracy						
4.12 Addressing envelopes at production rate						
4.13 Typing letters at production rate						
4.14 Arranging material						
4.15 Typing complicated reports						
4.16 Uses carbon						
4.17 Cuts stencils						
4.2 Office Machines						
4.21 Mimeograph and ditto						
4.22 Adding machine						
4.23 Copying machine						
4.24 Transcribing machine						
4.25 Others						
4.3 Completing an assigned task						
4.31 Continuous typing						
4.32 Follows directions						
4.33 Uses independent judgment						
4.4 Office Practices						
4.41 Answering the telephone						
4.42 Handling visitors						
4.43 Care of office supplies and equipment						
4.44 General office management policies						
5. Economic Competency						
5.1 Understands the fundamentals of the free enterprise system						
5.2 Understands the responsibilities of an employed person in our economy						
5.3 Can handle personal finances						
5.4 Knows the job opportunities in office occupations and the qualifications to attain them						
6. Other						

SECTIONS 2 and 3

"Program Proposal Cover Sheet"

and

"Program Proposal Outline Form"

(Five copies are needed by the State Office)

DEPARTMENT OF PUBLIC INSTRUCTION
DIVISION OF VOCATIONAL AND TECHNICAL EDUCATION

_____
Date

A Program Proposal In Business and Office Education for:

_____
Legal Name of School

_____
Street, Rural Route, P.O. Box

_____
City State Zip Code

This program developed for: Regular High School ☐
(One only per proposal)

Persons with Special Needs ☐

Type of Program: ☐ Intensive Lab ☐ Co-op ☐ Data Processing

Estimated number of students in program: _____

Expected beginning date of the program: _____

Respectfully Submitted

_____ _____
Superintendent Phone

_____ _____
Principal, Vocational Director Phone

_____ _____
Teacher of Program Phone

Action: _____

Signed: _____
Evaluation Committee

DEPARTMENT OF PUBLIC INSTRUCTION
DIVISION OF VOCATIONAL EDUCATION

MEMORANDUM

MEMO TO: SUPERINTENDENTS, PRINCIPALS, BUSINESS TEACHERS
FROM: JOHN D. LEE, STATE SUPERVISOR, BUSINESS AND OFFICE EDUCATION
SUBJECT: PROPOSAL OUTLINE SAMPLE FOR A HIGH SCHOOL TERMINAL BUSINESS AND OFFICE EDUCATION PROGRAM (INTENSIVE OFFICE LABORATORY AND COOPERATIVE OFFICE EDUCATION PROGRAM)

Enclosed is a proposal outline for a high school terminal Business and Office Education Program. Every part of your application must be adapted, changed, or added to in order to fit a specific school and a specific employing community. An Intensive Laboratory Program would reflect plans, facilities, and staff appropriate to prepare for the clerical occupations. (See Section #7)

A proposal for a Cooperative Part-Time Training Experience Program would incorporate those additional necessary requirements that are set forth in the policies. (See Section #8)

(The numbers found in each section refer to a certain section in the State Policies. You will find this information very valuable in preparing your proposal. Your teachers should see this sample, because there are valuable suggestions included on how to conduct a true terminal type program.)

The purpose of supplying this sample is to stress the importance of a proposal being complete. Of particular importance are the showing of the present business education program and facilities in the school, the proposed Business and Office Education program and facilities, the justification for the proposed change, and a complete budget to support the total program with an indication of that part of the budget for which reimbursement is requested--list each item and cost of each.

The intent to establish a true terminal program in Business and Office Education by creating a new curriculum sequence, expanding the existing curriculum, or departing from the present business education program must be evident in the proposal that is submitted to the state office.

THIS IS TO BE USED ONLY AS A GUIDE. THIS SAMPLE WAS DEVELOPED FOR A CERTAIN NEED, AND IT APPLIES ONLY TO THAT NEED. PLEASE DO NOT COPY IT.

An Outline for the Preparation of a Program
Proposal in Business and Office Education

A school desiring to qualify for participation in an approved Business and Office Education program should submit a separate proposal for each Business and Office Education curriculum or offering at least three months prior to the beginning of instruction.

A suggested outline for the preparation of a proposal for an instructional program follows:

(This outline is not applicable to the development of proposals for purchases of major equipment or for ancillary services such as research projects, workshops, etc.)

Outline of Proposal for Instructional Program

SAMPLE SAMPLE

APPLICATION FOR APPROVAL FOR A HIGH SCHOOL
BUSINESS AND OFFICE EDUCATION PROGRAM
BY

_____ _____ HIGH SCHOOL, _____ INDIANA, _____ COUNTY

I. Characteristics of Program

1. Type of program
   Designate type of program--i.e.
   (a.) Intensive laboratory?
      (1.) Type of laboratory?
   (b.) Cooperative program?

   Reference: See Indiana Policies for Business and Office Education, 7.23.

2. Describe the general purposes and objectives of the proposed curriculum or offering and classify by the most recent Office Occupational Titles. This is necessary.

   See Section 6-6.

   Reference: See Indiana Policies for Business and Office Education, 7.2, 7.12.
   (See enclosed sheet on 0.0.)

3. Identify the types or categories of students who will be accommodated by the proposed program of study such as:
   (a.) Who may enroll?
   (b.) How will students be selected?
   (c.) What are the prerequisite courses for entry into this program?
      (1.) If typewriting is a prerequisite, state the speed requirement.
      (2.) If shorthand is a prerequisite, state the English grade and speed requirement.

Reference: See Indiana Policies for Business and Office Education, 7.24, 7.34.. See 0.3 of General Information Section.

II. Evidences of need for the proposed program

1. A need for the program should be supported by a survey of your community and surrounding area.
   (a.) Enclosed is a sample survey form for your use.

See Section 6-5 .

   (1.) This will justify that for which you desire to train.
   (2.) This will justify and inform you of the type of equipment to purchase.
   (3.) This will supply information ior course content.

   (b.) The Indiana Employment Security Division, the nearest one to you, most likely can give additional justification of a need for your type program.
   (c.) It is suggested you take a survey of your students to see how many would be interested in this program.
      (1.) The business students in the senior class were surveyed to determine the number who would be interested in the vocational program. There were _____ qualified senior students who expressed a desire to participate in the program.
      (2.) From the evidence of the needs for such a program, the _____ City School is planning a vocational program for _____ students per year.

Reference: See Indiana Policies for Business and Office Education, 7.13-3.

III. Present Business Education curriculum program. Show the present Business courses offered in your school and the credits for each course. See the following example:

Option II

Civics	1	Economics or Sociology	1
Sec. Training	1	Advanced Bookkeeping	1
3 Electives	3	Office Practice	1
		2 Electives	2

Option III

Civics	1	Economics or Sociology	1
4 Electives	4	Advanced Bookkeeping	1
		Office Practice	1
		2 Electives	2

(a.) State the objectives and description of each Business course now being offered.

Reference: See Indiana Guidelines for Business and Office Education 7.12-2, 7.22 ff.

2. Proposed Business Education curriculum program. Show the proposed Business courses and the area in which you desire reimbursement. See the following example:

Description of the Proposed Course of Instruction for a Vocational Intensive Laboratory-Stenographic Program.

Nonreimbursable Subjects

Freshman Year

First Semester	Credit	Second Semester	Credit
English I (Expression)	1	English 2 (Literature)	1
Business Ed. I (Com. Math)	1	Business Ed. II (Com. Math)	1
Business Ed. 7 (Gen. Bus.)	1	Business Ed. 8 (Gen. Bus.)	1
P.E. and Safety	.5	P.E. and Safety	.5
Elective	1	Elective	1

Sophomore Year

First Semester	Credit	Second Semester	Credit
English 3 (Expression)	1	English 4 (Literature)	1
Business Ed. 5 (Typing)	1	Business Ed. 6 (Typing)	1
Math 3 (Algebra)	1	Math 4 (Algebra)	1
P.E. and Safety	.5	P.E. and Safety	.5
Science (Biology)	1	Science (Biology)	1

Junior Year

First Semester	Credit	Second Semester	Credit
English 5 (Expressio:.)	1	English 6 (Literature)	1
Social Studies (U.S. History) (Bus.Law)	1	Social Studies (U.S. History) (Bus. Law)	1
Beginning Short!:nd	1	Beginning Shorthand	1
Beginning Bookkeeping	1	Beginning Bookkeeping	1
Advanced Typing	1	Advanced Typing	1
Clerical Practice	1	Clerical Practice	1

SUMMER SCHOOL (BETWEEN JUNIOR AND SENIOR YEAR)
1/2 day for eight weeks
(A possibility - but not typical)

Time	Course	Credit
2 hours	Secretarial Training	1
2 hours	Filing	1

TERMINAL INTENSIVE LABORATORY STENOGRAPHIC PROGRAM

Time	First Semester	Credit	Time	Second Semester	Credit
1 hour	Government	1	1 hour	Sociology or Econ.	1
1 hour	Elective	1	1 hour	Elective	1
1 hour	(Adv. Shorthand)	1	1 hour	(Adv. Shorthand)	1

REIMBURSABLE THREE HOURS PER DAY TERMINAL INTENSIVE LABORATORY PROGRAM OR COOPERATIVE OFFICE EDUCATION

First Semester	Credit	Second Semester	Credit
Office Laboratory	(2) 3	Office Laboratory	(2) 3
(Advanced Shorthand)	1	(Stenographic Transcription)	1
Related Coordination	1	Related Coordination	1
Coordination	2	Coordination	2

(a.) If this is an intensive laboratory, give a detailed description of the Senior Year program.

See Intensive Laboratory paper, Section I-B.

(TO BE ANSWERED ONLY BY THE TEACHER OF THIS PROGRAM)

(1.) How many periods it will meet. It must be for a block of time--more than one period.
(2.) How many students will be enrolled in the laboratory?
(3.) Have all of these students met previous set requirements for entry?
(4.) Give the objectives and philosophy of the intensive laboratory. (If more than one activity, show objectives and philosophy for each activity--show in detail.)

(5.) Have you created a new curriculum sequence, expanded from the existing curriculum, or departed from the present Business Education program? This evidence is necessary in this section.

(6.) Do you have individual work stations for the students?

(TO BE ANSWERED ONLY BY THE TEACHER OF THIS PROGRAM)

(7.) Relevant work experience in the intensive laboratory class.

(a.) The advanced-level regular vocational stenographic subjects will provide for intensified office experience and problems involving the laboratory in which not only exercises and problems involving the application of knowledges but also in which the instructions will center upon the performance of production tasks on actual work projects which are brought into the laboratory.

(1.) List some projects you plan on using from outside sources such as:

(a.) School office

(b.) Business places

(2.) Student training possibilities:

(a.) Assigning students to teachers during study hall for office-type work.

(b.) Working in school office

(c.) Switchboard operator for school.

(d.) Guidance department

(TO BE ANSWERED ONLY BY THE TEACHER OF THIS PROGRAM)

(8.) Occupational standards for intensive laboratory program

(a.) The minimum standards for graduation from the vocational intensive laboratory stenographic curriculum shall be at least equal to and preferably superior to competency and performance standards considered acceptable by Civil Service testing services for stenographic entrance employment.

(b..) It shall be the responsibility of the school to see that the competency and skill standards required of the student to meet Civil Service testing standards are the standards for a certification for completion of the program.

(c.) The results of working on a letter--it is "mailable," or it is "not mailable."

(d.) What will your standards for graduation be for this program?

Reference: See Indiana Policies for Business and Office Education, 7.1, 7.13-2, 7.13-5, 7.13-8, 7.21, 7.22-4, 7.23-2 (necessary), 7.26 (very important section), 7.25, General Information Section for Vocational and Technical Education, 0.22 (very important section).

See Section #7.

(9.) If this is a cooperative work training program, give a detailed description of the Senior year program.

See Cooperative Program paper, Section I-B.

(TO BE ANSWERED ONLY BY THE TEACHER OF THIS PROGRAM)

(a.) Necessary information: (Most of the policies for the laboratory situation apply here.)
(1.) Number of students?
(2.) Prerequisite for entry?
(3.) How will training stations be selected?
(4.) What type of training stations do you plan to use? (Type of business)
(5.) How will your students be evaluated?
(6.) Activity schedule--activities and training the students will receive? Do you have a training schedule with each employer?
(7.) What period is the related class? Show coordinator's schedule here (include all teaching assignments, lunch, free periods, and coordination time).
(a.) A teacher must have one-half hour, per student, per week, for coordination.
(b.) A teacher must teach one related class which includes all cooperative students.
(8.) What are some of the projects and the objectives you plan to use and develop in the cooperative related class?
(9.) What is the average number of hours a week that a student will work? How much of this is during school time?
(10.) What is the average wage they are to receive?
(11.) Will the teacher be on an extended contract? It is suggested that they start to work two weeks before school and work two weeks after the close of school. (This can be discussed in more detail if information is desired.)

Reference: See General Information Section for Vocational and Technical Education, 0.2, page 2; 0.1, page 1.

See Section #8.

3. Basis for reimbursement

Identify the portion of the "total curriculum" contained in the proposal upon which reimbursement will be claimed. Explain.

(a.) Reimbursement is being requested for the terminal program. This would be the half day or three hour block of time during the twelfth grade or senior year of the terminal program.
(1.) Show courses to be reimbursed.

(b.) Reimbursement is being requested for half-time or half-day terminal teacher salary and for new equipment needed in order to initiate the program.

See Section 6-7 for required forms.

(c.) The _____ City Schools system is presenting this plan for a terminal intensive laboratory and/or co-operative program to the State Supervisor of Business and Office Education for approval for reimbursement as stipulated in the Indiana State Plan for Business and and Office Education.

(d.) It is understood that reimbursement will be based on reimbursement for Business and Office Education programs as provided for in the State Plan.

Reference: See Indiana Policies for Business and Office Education, 7.26, 7.36.

4. Facilities, equipment, and supplies

Describe the office laboratories including facilities, equipment, and supplies to be used in the courses included in the proposal. Indicate changes and additions necessary to insure implementation of the expanded program. Attach an exhibit if desirable.

(a.) Show the equipment you have in your business department.
(b.) Show the equipment you desire.

(TO BE ANSWERED ONLY BY THE TEACHER OF THIS PROGRAM) See Section #7.

(1.) Do the business people have this equipment in their offices?

See Section 6-5.

(2.) Will the skill acquired from this equipment be of value to the students and the business community?

(3.) See information on "Reimbursable Equipment."

See Section 6-3,4 for forms.

(c.) Show the price of each item (estimate) you desire.
(d.) How will this equipment be used?
(e.) Where will this equipment be located?
(1.) This equipment is to remain in the laboratory and should never be moved to another department. The only reason for moving will be a new location of laboratory situation.
(a.) A statement to this effect is necessary to be included in your proposal.

Reference: See General Information Section for Vocational and Technical Education, 0.7. (Very important section)

5. How will the program be evaluated?

(TO BE ANSWERED ONLY BY THE TEACHER OF OF THIS PROGRAM)

(a.) Example of evaluating student progress

Evaluation in clerical office and secretarial practice includes continuous appraisal of the student's development in business skills, concepts, and knowledge. Also to be evaluated is his development of attitudes, values, and judgments beneficial in business endeavors. Arriving at these evaluations is one of the teacher's most important and difficult duties.

Objectives set up for the terminal intensive stenographic laboratory shall be made known to the students, and standards for measuring student achievement shall be clearly understood.

The teacher taps many resources in appraising the progress of students. One resource is the organized program of guidance. Cumulative records kept for each student are pertinent to the teacher's problem of appraisal. Such data may include:

General achievement profiles
Achievement profiles in reading, language arts, vocabulary, spelling, and other related curriculum areas
Personality scales
Aptitude and mental ability scores
Interest and preference inventories
Biographical materials and counseling reports

In addition to information obtained outside the classroom, the teacher uses within the room a variety of evaluation techniques.

1. Please list qualifications and background of each person who plans to teach, coordinate, supervise, direct, or give guidance in the reimbursed area. (Each person must comply with bulletin 400.)

See Section 6-1 .

(a.) Names

(b.) Type of license
(c.) Teaching experience
(d.) Occupational experience
(e.) Degree

2. How many teachers are there in the business department?
3. To be certified for a one-year limited provisional license:
   (a.) Must have a B.S. degree with a major (or above) in Business Education.
4. To be certified for five years, full provisional license:
   (a.) Must have 2a and six semester hours of professional Business and Office Education, always including principles, philosophy, administrative, and techniques of coordination.

See Section 6-1, 2 .

VI. Consultive Committee (Advisory Committee) (This is necessary.)
1. Consultive committee and consultants who shall be used by the teachers of the vocational intensive laboratory program are:
   (a.) Give names (if you do not have one appointed now, please submit names as soon as possible)
   (b.) Title
   (c.) The following are people who could be included:
      (1.) Guidance personnel of the local school system
      (2.) Vocational director of the local school system
      (3.) Administrative personnel of the local school
      (4.) State Supervisor of Business and Office Education and his staff
      (5.) Local employers (necessary)

Reference: See General Information Section for Vocational and Technical Education, 0.5.

See Section #10.

VII. Description of services available through guidance and placement

Reference: See General Information Section for Vocational and Technical Education, 0.9.

VIII. Miscellaneous provisions
1. Which of the following provisions will apply to you?
   (a.) Provisions for teaching and supervisory personnel to attend State-called workshops.

Vocational teachers and supervisory personnel will be permitted to attend all State-called workshops and meetings. This has always been the policy of the _____ City School System.

IF YOUR SCHOOL IS BEING REIMBURSED FOR ITS PROGRAM AND YOU ARE THE CERTIFIED TEACHER, COORDINATOR, AND/OR BEING RE-

IMBURSED FOR ANY OF YOUR SALARY, IT IS A MUST THAT YOU ATTEND ALL STATE-CALLED MEETINGS.

(b.) Provisions for reimbursing travel expenses for teaching and supervisory personnel

Most of this travel will be State-called meetings and would be reimbursed according to the policy of the State departments pending available funds.

See Section 6-7 for required forms and information.

(c.) Reports

The teacher will be responsible for all preliminary, final and follow-up reports that are required by the State Supervisor of Business and Office Education. The teacher will make use of both oral and written reports to the superintendent, board of education, advisory committee members, principal, and other persons who are vitally interested in the progress of the program.

There will be at least four methods in which reports will be used by the teacher. Reports will be used (1) to inform the school administration of accomplishments of the program, (2) to prepare and disseminate publicity on the program, (3) to provide data for the development of charts and information helpful for vocational guidance purposes, and (4) to make comparisons with other programs.

Some of these reports will be made as needed; other reports will be made at a definite time period. For example, the report of student progress will be made every grading period and other reports will be made on the over-all progress of the program and turned in to the superintendent and board of education at the end of the school year.

*The forms which we are planning to use in operating and reporting our vocational program are: (sample titles)

1. Application for Admittance
2. Rating and Students Enrolled
3. Teachers Reference Report
4. Training Station Agreement
5. Employer's Rating Sheet
6. Student's' Work-Appraisal Sheet

The local school corporation may develop whatever forms necessary to operate the program correctly.

See all of Section 6.

*A copy of the forms mentioned may be found in the appendix.

IX. Budget to implement proposed terminal program

	Year	Half Year
1. Salary of instructional-supervisory personnel	$8,000.00	$4,000.00
2. Travel for instructional-supervisory personnel	80.00	40.00
3. Necessary additional equipment*		
(a.) List the equipment here if you did not list it before.		
(b.) You must, in either case, still fill in the enclosed 746's on equipment.		
See Section 6-3,4.		
Totals	7,020.00	3,510.00
	$15,100.00	$7,550.00

*Please attach to your 746's, include with proposal or submit at a later date, a survey showing the equipment is actually found in local and surrounding places of business. (See Section 6-5 for sample survey)

SECTION 4

"Policies for Business and Office Education in Indiana"

(also known as State Plan)

POLICY for

BUSINESS and OFFICE EDUCATION

in INDIANA

The essentials and requirements for establishing an approved program in Business and Office Education programs are presented in this document. The Vocational Education Act of 1963, and, subsequently, the State Plan for Vocational and Technical Education, have provided many new opportunities for broadening Vocational Education, including Business and Office Education programs in the State of Indiana. These Policies outline the minimum requirements which are derived from the above Act and State Plan, and are designed to assist school administrators and other educators in the preparation of their local Program Proposals for Business and Office Education.

Approved by:

THE INDIANA GENERAL COMMISSION

THE DIVISION OF VOCATIONAL AND TECHNICAL EDUCATION

THE BUSINESS AND OFFICE EDUCATION COMMITTEE

Department of Public Instruction
Division of Vocational and
Technical Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana 46204

7.0 Business and office occupations education

7.1 Definitions, objectives, and audiences served by business and office occupations

7.11 Definition and objectives of business and office occupations

Business and Office Education means vocational or technical training or retraining which is given in schools and/or classes (including field or laboratory work incidental thereto) under the supervision and control of the State Department of Vocational and Technical Education and is conducted as part of a program designed to prepare individuals for gainful employment and semi-skilled or skilled workers or technicians in recognized business and office occupations.

This program is for persons over 14 years of age who have the ability to profit from the instruction, and has as its purpose initial preparation, refresher and/or upgrading of individuals leading to employment and advancement in business and office careers.

7.12 Occupations to be served

7.12-1 Definition of office occupations

Business and office occupations are those occupations performed by individuals in public or private enterprises including managing functions such as planning, organizing, staffing, coordinating, controlling, and supervising and faciliating functions such as recording, communicating, processing, reporting, storing, retrieving, and interpreting business data and information.

7.12-2 Curriculum classification

For the purpose of indicating curricula appropriate for the various training objectives in all Business and Office Education programs, the latest edition of the Dictionary of Occupational Titles will be used to determine the job families and specific job classification titles in the business and office occupations.

7.13 Essential Characteristics, Standards, and Requirements of Business and Office Education

7.13-1 The State Board for Vocational and Technical Education shall employ a full-time State Supervisor of Business and Office Education. The State Supervisor's office

shall be located within the Department of Vocational and Technical Education. As the need arises, the State Board, upon the recommendation of the State Supervisor of Business and Office Education and the approval of the State Director of Vocational and Technical Education may employ assistant supervisors, area supervisors, and specialized program supervisors.

7.13-2 Business and Office Education shall be provided through curricula or prescribed sequences of courses which contribute directly to the career objective of the enrollees. A student completing his program should be prepared to enter employment directly or if already employed to assume the next step in his career.

A proposal for a Business and Office Education curriculum or offering shall be submitted in the form of a local plan for each curriculum or offering. Although in some types of schools, reimbursement of costs by the State Department of Vocational and Technical Education may be limited to costs incurred in certain specified segments of a total curriculum or offering, the local plan shall include provisions for nonreimbursable classes and/or activities of a general nature or of a prevocational nature. A Business and Office Education program shall operate on the principle that there must be unity and harmony among the components of the program, prevocational requirement, and vocational requirement.

7.13-3 Curricula, courses, and methods of instruction in the Business and Office Education program shall be appropriate to the level of instruction and the nature of the enrollees, based on facts that demonstrate the present and emerging needs and opportunities in the employment market served. When appropriate, surveys shall be made to help in determining the needs and opportunities in the various business and office occupations.

7.13-4 Courses and curricula shall be under the direction of teachers and supervisors qualified under the State Plan.

7.13-5 Business and Office Education courses may also be available in cooperation with other vocational education programs, to those who have entered upon, or are preparing to enter, an occupation in which Business and Office Education has direct application and value.

7.13-6 Business and Office Education curricula and programs under this plan may be offered, to but not including the four-year baccalaureate degree, in any qualified school, that is high school.

7.13-7 A local plan for Business and Office Education shall be submitted for approval to the State Supervisor of Business and Office Education at least three months prior to the beginning of any program of instruction. A separate local plan shall be prepared for each vocational Business and Office Education curriculum or program.

A suggested outline to be used in the development of a local plan to provide a framework for the operation of a local program is included as an appendix to this section of the State Plan.

7.13-8 All Business and Office Education programs, except adult programs of a special nature, shall include a planned sequence of courses and shall make specific provisions for the following:

The satisfactory development of basic business and economic competencies.

An understanding of business principles which includes the theory, principles, and practices of administration and operation.

Relevant integrating experiences determined on the basis of individual needs which shall be carried out in school or out-of-school by an enrollee to provide practical applications of skills, knowledges, and techniques requisite to success and advancement in the enrollee's career objective. The relevant integrating experiences shall be provided through one of the following methods: cooperative part-time courses, intensive laboratory courses, or suitable combination thereof.

Instruction in background business and economic information essential to employment.

The development of adequate office and technical skills.

Other instruction related to the occupations for which the student is being trained or necessary for him to benefit from such training.

Occupational specializations which include the knowledge skills, procedures, and practices involved in office occupations.

7.13-9 Scope of state and local program of Business and Office Education.

The state and local program of Business and Office Education shall be interpreted to include:

Curricula as indicated in paragraph 7.13-8 for all categories of persons needing vocational training as set forth in the Vocational Education Act of 1963.

Provision for vocational guidance and counseling in connection with such training.

The training of persons engaged as, or preparing to become Business and Office Education teachers, teacher-educators, supervisors, and directors for such training.

Teaching aids, materials, and instructional equipment.

The acquisition, maintenance, and repair of instructional equipment and supplies.

Approved travel of students and vocational education personnel.

The primary career objective of each student enrolled in a vocational course in all Business and Office curricula will be a matter of record.

7.13-10 All provisions and regulations pertaining to vocational Office and Business Education set forth in this State Plan are fully applicable to and binding on all other programs involving Business and Office Education that are authorized and operatable under other federal acts.

7.14 Definitions

For terms and definitions see paragraph 0.1.

7.15 Methods of Providing Relevant Work Experience

For suggestions and regulations see paragraph 0.2.

7.2 High School Business and Office Education Programs

7.21 Nature of program

The purpose of the high school Business and Office Education program shall be to prepare students for initial employment in specified families of occupations as classified in the most recent Dictionary of Occupational Titles and also to provide the background preparation in knowledges, competencies, and skills necessary for making progress in the specific occupations for which they are preparing.

The function of the Business and Office Education program is to provide opportunities for education leading to employability for students in all brackets of general scholastic ability who have an interest in a business or office occupational career.

7.22 Curricula

7.22-1 A Business and Office Education curriculum is defined as a sequence of learning experiences designed for the attainment of employability and satisfactory job performance on the part of the students in a family of business and office occupations or in a specific occupation chosen as a career objective by the student.

The learning experiences shall be provided through general education subjects, economics and principles of business, and specialized technical Business and Office Education subjects.

7.22-2 Each curriculum shall be described in separate local plan and shall be designed to meet each specific business and office occupational career objective for which preservice education is given. Although only the cost of certain specified vocational business and office subjects will be reimbursable, each curriculum shall include required and elective general education subjects, related subjects, and vocational technical business and office subjects; the prescribed sequence of subjects; grade level; time allotment; amount of credit; prerequisites and other essential curricular information.

7.22-3 Each business and office curriculum shall include at least one Carnegie unit of preparation in subjects intended to develop an understanding of business and economics and economics and the responsibilities and obligations of employees. The subjects to meet this curricular requirement are the basic business subjects such as general business, advanced or senior general business, business principles, business law, and economics. However, in special cases at the discretion of the state supervisor, a provision may be included in the local plan so that subjects such as civics, government, and problems of American democracy may be approved to fulfill this requirement in lieu of the basic business subjects.

7.22-4 Essential characteristics of high school business and office curricula:

--Shall be compatible with employment opportunities.
--Shall provide for the acquisition of background knowledge and mastery of skills compatible with the practices in and requisites of the occupation.

--Shall be compatible insofar as possible with the business and office occupational interests and career goals of students

--Shall adequately prepare students for initial employment in their chosen business and office career occupation without the necessity of pursuing advanced preparation except for upgrading or extension purposes as may be desirable during employment.

--May be interrelated with instructional programs in other vocational education fields provided under other federal vocational education acts.

--Ordinarily will involve sequences of business and office occupation subjects requiring four or more semesters; curricula designed for a business or office occupation in which the range of skills required is narrow, such as keypunch operation or file clerk, ordinarily will involve general occupational preparation such as typewriting, bookkeeping, general business or other occupation related subjects.

7.23 Types of classes for relevant work experience

In all business and office curricula, provision shall be made for students to have experiences in using and applying in work situations the knowledges and skills essential to their chosen occupation. These learning experiences may be provided through cooperative part-time work experience programs, or through intensive laboratory courses in the laboratory courses in the school.

7.23-1 Cooperative part-time classes

The guiding principles, regulations, and procedures for intensive laboratory instruction classes are set forth in paragraph 0.22.

Advanced-level regular business and office subjects may provide for intensive office experience through the medium of an office laboratory in which not only exercise and problems involving the application of knowledges and skills will be an integral part of the learning experience but also in which the instruction will center upon the performance of production tasks on actual work projects which are brought into the laboratory. These actual work projects may originate within the school offices or they may be brought in from outside agencies.

If relevant work experience and the application of knowledge and skills in actual production situations are to be provided through intensive instruction in an office laboratory situation the following principles shall be observed.

--The office laboratory must be fully comparable to a modern well-designed, functional general business office in atmosphere, layout and equipment; there shall be a work station for each student enrolled.

--The business teacher in charge of the office laboratory shall accept only those office jobs or projects that contribute to the learning experiences of the student enrolled.

--Each student in the intensive office laboratory situation shall be assigned to the performance of a variety of major tasks of which the office occupation for which he is preparing is comprised.

--The intensive office laboratory instruction shall be so placed in the sequence of Business and Office Education courses that the student enters employment directly from the laboratory course; this means just prior to graduation or to leaving school to enter upon a business and office career.

7.24 Student qualifications for enrollment in reimbursable high school Business and Office Education courses are:

7.24-1 Have fulfilled all pre-requisites for the course, e.g., Shorthand I and II with a mark of "C" or above may be required for admission to a course in transcription.

7.24-2 Have identified a career objective for which the vocational subject is an essential part of the total preparation.

7.24-3 Where applicable be of legal employable age and have a work permit issued by the proper authorities.

7.24-4 Have ability to profit by the instruction and possess the personal qualifications required for employment in the type of work for which the training is offered.

7.25 Occupational standards

The minimum standards for graduation from any business and office curriculum shall be at least equal to and preferably superior to competency and performance standards considered acceptable in the specific occupation or family of occupations for which the curriculum provides training. The standards considered acceptable in the various business and office occupations shall be a school responsibility and shall be determined through analysis of job descriptions and qualifications, contacts with personnel and office managers, continuous review of research findings, and other means.

It shall be the responsibility of the school to see that the competency and skill standards required of students for graduation or certification are commensurable to occupational standards.

7.26 Basis for reimbursement

Reimbursement for Business and Office Education programs shall be limited to advanced level specialized, subjects and to prorate share of the time of the school department head, supervisor, or coordinator that is spent in administration and supervision of the reimbursable subjects. By advanced level, specialized subjects is meant those not to exceed two semesters in length, offered in the senior year of high school, and designed as a terminal subject from which the student is prepared to enter employment directly.

In most business and office curricula a sequence of four semesters of subjects in a given occupational area is required. For example, a typical sequence of subjects for the preparation of a stenographer will include four semesters of shorthand and four semesters of typewriting. In this case only the third and fourth semester classes in shorthand and typewriting shall be reimbursable. Likewise, in business and office curricula comprised of general business subjects, related, and specialized Business and Office Education technical subjects, the latter category only shall be reimbursable. For example, a typical curriculum leading to employability as a general office clerk may include: one year, general business; one year, bookkeeping; four semesters, typewriting; and two semesters, office practice (via cooperative part-time or intensive laboratory instruction). In this instance the cost of instruction in the third and fourth semesters of typewriting and in the first and second semesters of senior level office practice shall be reimbursable.

7.3 Post High School Business and Office Programs

By post high school is meant full-time initial training after high school graduation for broad occupational areas such as stenographer, secretary, bookkeeper, or data processing programmer requiring several weeks, months, or longer for completion.

7.31 Nature of program

The purpose and function of the Business and Office Education programs in post-high school programs shall be essentially the same as for high school programs except that the program of studies and instructional emphasis shall be at a level appropriate for post-high school programs. See paragraph 7.21.

SECTION 5

"General Information Section
for
Vocational and Technical Education"
0.1 - 0.10-4

GENERAL INFORMATION

0.1 Definitions

0.11 Supervisor

A member of the school staff responsible for the promotion, development, maintenance and improvement of instruction in vocational education.

0.12 Coordinator

A member of the school staff responsible for integrating the classroom instruction and occupational experiences of the student. The coordinator acts as a liaison between the school and employers.

0.13 Teacher-coordinator

A member of the school staff who teaches the vocational courses and coordinates the classroom instruction with occupational experiences.

0.14 Vocational teacher

A member of the school staff who is certified or approved to provide classroom instruction in vocational education classes exclusive of the occupational experiences.

In some schools one person may perform two or more of these functions, as an example: teacher coordinator. In such cases, this person could be required to meet the qualifications in all of the categories in which he engages.

0.15 Training sponsor

The individual responsible for the instruction and training program for the student while on the job. He may be an owner or manager or a responsible person appointed by the management. In any case, he is a representative of the establishment and not of the school staff.

0.16 Vocational student

A student who is pursuing a vocational education program.

0.17 Training station

A place and position of employment in any establishment which employs student learners part time for the purpose of instruction and cooperates with the school in a coordinated instructional program.

Methods of Providing Relevant Work Experience

0.21 Cooperative part-time work experience instruction

Cooperative programs may be included in vocational education curricula for high school students, post high school students, adults and those with special needs.

All students pursuing a full-time study program which includes co-operative part-time instruction shall have at least one period a day for related instruction.

Persons eligible for enrollment in cooperative instruction shall have satisfactorily completed the basic, prerequisite courses and shall possess the personal and social qualities essential for success in the occupation for which they are preparing.

The student shall be employed for not less than 15 hours per week, the major portion of such employment shall be during the regular school day. The number of weeks spent in cooperative instruction shall be of sufficient duration to develop the competencies necessary to prepare the student for employment in the occupation for which he is being trained.

Only training stations which provide opportunities for comprehensive experience for the duration of the cooperative training instruction are to be used.

The vocational student will be assigned to a training sponsor who will be responsible for the supervision of the student's on-the-job training.

These classes are to be organized through voluntary, cooperative agreements between the schools and employers which provide for legal employment of the students, an organized program of training on-the-job and related vocational instruction.

The vocational student shall receive a wage equal to that normally paid a beginning employee with a comparable background in a similar job.

The total hours per week in school and at work and the monetary wage paid the vocational student must conform to the State and Federal Laws governing employment.

The program shall be under the direction of a coordinator, qualified under the State Plan, and he shall be provided a minimum of one-half hour per student per week for coordination and supervision.

Training stations are to be visited regularly by the coordinator, and student progress is to be evaluated according to the schedule of experiences.

A schedule of on-the-job training experiences for each student is to be drawn up cooperatively with each employer and adhered to.

Credit earned for cooperative instruction shall be commensurate with the combined instruction in the on-the-job training program and in the related instruction.

0.22 Intensive laboratory instruction

Intensive laboratory instruction may be included in the vocational education curricula for high school students, post high school, adults, students and those with special needs which combine technical instruction with intensive laboratory experiences consistent with the career objective of the student.

The time spent in vocational instruction in the classroom and in the laboratory should be of sufficient duration to develop competencies necessary to prepare the student for the occupation for which he is being trained.

Students eligible for admission to intensive laboratory instruction shall have completed the basic prerequisite courses and shall possess the personal and social qualities essential for success in the occupation for which they are preparing.

A laboratory for intensive instruction in a given vocational area shall be comparable to modern, well-designed, functional facilities in the industry in which the occupation is found. There shall be an individual work station for each student enrolled.

The intensive laboratory instruction shall be under the direction and supervision of a qualified vocational teacher or coordinator.

The vocational teacher in charge of the intensive laboratory shall accept only those projects that contribute to the learning experiences of the students enrolled.

Each student shall proceed through a progressive pattern of learning experiences and activities encompassing all of the tasks of the occupation for which he is preparing.

Vocational Education for Persons with Special Needs

0.31 Definition

Persons with special needs are those persons who have academic socio-economic, or other handicaps that prevent them from succeeding in the regular vocational education program.

These persons may be minority groups, migrants, mentally retarded, emotionally disturbed, or delinquents. They may lack motivation and aspiration. They may be high school drop-outs or potential drop-outs. They may be culturally deprived, disinterested, or reluctant. They may be physically handicapped.

0.32 Purpose of Classes for Persons with Special Needs

0.32-1 The purpose of classes for persons with special needs is to guide, teach, and train these persons so that they may become acceptable employees.

0.32-2 Some persons with special needs may not be employable in the unrealistic goals set for them by their parents, companions, teachers, or others; therefore, they need the services of experts who through understanding, praise, motivation, encouragement and patience give them the satisfaction to be derived from the selection of a career and achievement of occupational competency in that career.

For this group the purpose of classes is to help enrollees to select a career objective and to train them for employment in that career.

0.32-3 This orientation may require the services of experts in special education, guidance, and vocational rehabilitation.

0.33 Career Objectives

0.33-1 Realistic occupation goals may not be immediately determinable for persons with special needs, but their identification is crucial.

Career objectives must be within their capacity and ability, and occupational competency must be obtainable. Persons with special needs may require an orientation to the world of work that will develop:

--a respect of the dignity of work

--acceptable work habits, attitudes, and skills

--understanding of the role of employer and employee

--an awareness of the importance of education in relation to the employment and the fact that it can, with honor, be obtained.

0.33-2 For most persons it will be possible to identify career objectives with special needs with specific Dictionary of Occupational Titles Classifications.

0.34 Curriculum

0.34-1 Each vocational curricula for persons with special needs must be a sequence of courses geared to the specific interests and abilities of the enrollees and the opportunities for employment of these persons.

0.34-2 The curriculum must train the enrollee with occupational competencies required for employment.

0.34-3 Where the number of persons with similar special needs is large, classes may be organized to train for job competencies; but there may be cases that will require the individual instruction of a tutor.

0.34-4 The program should not tolerate meaningless, busywork activities but should help the learner to develop the ability to act intelligently in work situations. The enrollee should be helped to develop the capacity to observe, listen, interpret, make judgments and to be resourceful.

0.34-5 The curriculum should strive to remove deficiencies which exclude enrollees from regular classes through instruction to improve personality traits, educational fundamentals, and to develop a desire to reach a chosen attainable occupational goal.

0.34-6 The curriculum must provide for the development of marketable skills which make possible gainful employment. This will require motivation of enrollees and a wide range of levels and degrees of skills determined by individual abilities and job opportunities.

0.34-7 The first objective of each program of occupational training for a person with special needs is to establish self-esteem, develop desire to succeed, and establish career objectives. This objective should be attained as early in the training program as possible in order to make the vocational skill training meaningful and effective.

0.34.8 Curricular programs may include many variations such as:

--A single semester course focusing the activity on employment guidance or counseling, with content derived from combining existing offerings.

--A division of the 6-hour school day into two equal parts to provide basic remedial instruction and specific pre-employment training.

--A reduction of the school day to four hours of classroom instruction combining remedial work and specific occupational training.

--A combination of classwork daily with a series of simulated job experiences in school projects.

--Curtailment of formal classroom instruction substituting a combination of simulated and actual occupational experiences.

--Curricula and individual program planned cooperatively with vocational rehabilitation and special education when appropriate to avoid duplication of effort and to insure a complete and effective program, curricula and individual programs may be planned cooperatively with vocational rehabilitation and special education when appropriate.

0.35 Personnel to serve persons with special needs

0.35-1 A local consultive committee may be needed whose membership will be determined by the special needs of persons in the local community. Guidance directors, social workers, psychologists, psychiatrists, school nurses, heads of business departments, school administrators, personnel staff members, youth workers, and other interested persons may be needed on this committee.

0.35-2 Qualifications of teachers for vocational education of persons with special needs.

--Teachers for persons with special needs shall have the same qualifications and education as teachers who teach comparable courses in the respective vocational areas in high school, adult and extension schools, and post high school institutions.

--For some classes training in special education may be necessary. Work and teaching experience, and training in guidance and counseling are desirable qualifications.

--A likely source for candidates for teachers in this field will be established vocational education teachers who desire to gain experience or to make a contribution to this challenging field.

0.36 Research

Research studies will be necessary to support work with persons with special needs. Much research can be done at the state level, but some will be useful only if it is done at the local level. Needed research studies include:

0.36-1 Identify competencies needed for satisfactory performance in office occupations.

0.36-2 Determine correlation between attitudes, abilities, and socio-economic status of persons with special needs and fields where the disadvantaged appear to succeed.

0.36-3 Identify traits which indicate potential acceptability in office work.

0.36-4 Study existing programs for persons with special needs which involve the various occupations.

0.36-5 Identify agencies which can be of assistance--labor, education, government, and foundations.

0.36-6 Determine jobs that can be acceptably performed by the handicapped or persons with special needs.

0.36-7 Establish need for programs to assist persons with special needs at local, regional, and state levels.

0.36-8 Identify common courses and content which are appropriate for many jobs and persons with special problems.

0.37 Evaluation

0.37-1 Evaluation of the program for persons with special needs shall be made in terms of the objectives which were based on the needs and abilities of the persons served.

0.37-2 Evaluation ordinarily shall be in terms of the number of enrollees that have been placed on jobs and their degree of success on the job.

0.37-3 Programs for persons with special needs shall be established as pilot or experimental programs in vocational education and must be evaluated as such.

0.37-4 A written evaluation of the program shall be filed with the State Board.

0.38 Reimbursement

The specific basis for reimbursement for each school or agency offering vocational education programs for persons with special needs shall be negotiated with the institution by the state supervisor subject to the approval of the State Board for Vocational Education.

0.4 Functions of the Supervisory Staff

0.41 Function of State supervision shall include the following:

0.41-1 Provide administrative leadership and maintain an effective program of leadership at all levels.

0.41-2 Review and evaluate all vocational education programs and make recommendations for continuing improvement.

0.41-3 Make recommendations to the State Board for reimbursement.

0.41-4 Serve in a consultant capacity to the general, nonreimbursable job preparatory program.

0.41-5 Assist in the up-grading of teachers, coordinators, and local supervisors.

0.41-6 Cooperatively plan the in-service teacher education programs.

0.41-7 Organize and conduct in-service development conferences of teachers, coordinators, and local supervisors.

0.41-8 Encourage, direct, and assist in the conducting of research studies, surveys and investigations affecting the vocational education program.

0.41-9 Encourage, direct, and assist in programs of leadership development.

0.41-10 Encourage, direct, and assist in the preparation of courses of study and other instructional and informational material.

0.41-11 Work with professional associations in the development and improvement of the entire program of vocational education.

0.41-12 Provide leadership for youth organizations in vocational education.

0.41-13 Work with the State Director of Vocational Education and the State Board for Vocational Education in establishing State Consultive Committees in the various occupational fields as may be directed by the State Director of Vocational and Technical Education. Work with these committees in planning educational programs and prepare reports of the activities of these committees.

0.41-14 Work with business and trade associations, public employment services, employers, labor and school officials, including counseling and guidance personnel in the continuing development of the program.

0.5 Consultive Committee

0.51 A General state consultive committee may be established for each major occupational area upon the recommendation of the state supervisor in any area and the approval of the State Director of Vocational Education.

0.52 Single purpose consultive or steering committees may be organized to provide counsel to the State staff in developing specialized programs for specific groups.

0.53 Schools or communities desiring to participate in an approved program for Vocational Education may also organize general and single purpose consultive committees.

0.54 The committee should be composed of members who are employers, employees and other individuals having skill in and substantive knowledge of the particular occupational area in which the training is provided.

0.55 All such committees shall act in a consultive capacity only and shall have no administrative responsibilities. These committees may periodically review the occupational education program of the state, or of the community as the case may be. The findings of these groups may be used by appropriate school authorities in planning, developing, and evaluating Vocational Education program.

0.6 Youth Organizations

0.61 Each school in which vocational education is offered is encouraged to have an appropriate youth club for each major occupational area.

0.62 The club may be of local origin and association; it may be affiliated with a state or national organization, or some other state or national group which may subsequent to the adoption of this plan be organized for vocational education students in a particular occupational area.

0.63 The major purpose and activities of this occupational club shall be to

expand the students knowledge about occupations beyond that which can be obtained through classroom or laboratory activities, to build an espirit de Corps among the advanced students on vocational occupation curricula, and to enroll the assistance of students in appropriate activities leading to improvement of the program of studies.

0.64 Membership in the occupational club shall be encouraged but not required of each student enrolled in the approved vocational occupation curricula except as decided upon by the local school.

0.7 Facilities, Equipment, and Materials

0.71 The equipment and facilities shall be commensurate with the curricula the individual school has been approved to offer in vocational education. Adequate space shall be provided for student work stations needed for the development of the required knowledges and skills. Equipment and specialized facilities shall be available in sufficient quantity and kind to assure that each student will have available the space, equipment, and materials required to master the knowledge and skills.

0.72 The facilities, equipment, and materials may be permanent possessions of the educational institution, may be rented for the period of time required for use by the students, or may be made available through cooperative agreements between the school and persons or firms in the community.

0.73 The quantity and appropriateness of the facilities, equipment, and materials will be appropriate to the specific kinds of vocational education for which the individual school has been approved.

0.74 The facilities, equipment, and materials will be of sufficient recent origin to compare with those in use in the positions for which the students are being prepared.

0.75 All equipment and facilities shall comply with Rule B-I (Procedure, Planning, and Approval in Remodeling Old, or Constructing New School Plants) of the Commission on General Education.

0.8 Evaluation

All State and local vocational education programs shall file reports as required with the State Supervisor in charge of the vocational area to which the training program belongs. Personal visitation by properly constituted person shall certify the adequacy and success of such programs where, in the opinion of the state officer, such personal verification is desirable.

All evaluation of local plans shall be made in terms of the objectives of the local program.

Local and state plans and programs may be presented to appropriate consultive committees for counsel and advice; and the state, through its state-supported

public institutions of higher education, shall conduct such continuous review and evaluation of its supervisory and administrative services as to assure a successful state-wide program of vocational education.

0.9 Guidance, Placement, and Follow-up

0.91 GUIDANCE

The purpose of assisting individuals to understand their capabilities and interests, to choose a suitable vocation, and to prepare for, enter, and make successful progress in it.

0.92 PLACEMENT

Assistance in helping persons to locate work, either part-time or full-time, in the field for which they are trained, which is consistent with their abilities, experiences, and backgrounds.

0.93 FOLLOW-UP

Evaluate the success or failure factors of vocational students or graduates.

0.10 Research, Demonstrations, or Experimental Programs

0.10-1 Vocational funds shall be used for research, demonstrations, or experimental programs in vocational education if, in the opinion of the State Board, a proposal for use of funds can reasonably be expected to make a contribution to vocational education.

0.10-11 A proposal describing any program operated under this Section of this State Plan shall be presented to the State Board, reviewed by a subcommittee of the Board, approved by the Board, and forwarded to the commissioner for approval.

0.10-12 Any research, demonstration or experimental program of more than one year's duration must be reviewed and renewed by the Board at least ninety days prior to the expiration of each year of the duration of the program.

0.10-13 When plans for conducting research, studies, and investigations have been approved, the actual research, study, or investigation may be done at any one of the state-supported public institutions of higher education or at other agencies approved by the State Board. Five copies of the final report of each research project study or investigation shall be filed with the State Director of Vocational and Technical Education.

0.10-2 Evaluation of Research

The State Board shall receive a written evaluation of the program at the time of renewal or expiration whichever shall come first. This report shall detail the procedures and the conclusions of the program and shall be signed by the person(s) conducting the program and the director(s) of the vocational service branch involved.

0.10-3 Departure from Standards and Requirements of the State Plan

Any research, demonstration or experimental program may depart from the provisions of this State Plan provided that, in the opinion of the Board, this departure will carry out the purpose of this State Plan and provided further that the proposal has been submitted properly and approved by the Commissioner.

0.10-4 Direction of Research

The director of principal investigator of each research project, demonstration, experimental project, or pilot study shall be approved in advance by the State Director of Vocational and Technical Education.

SECTION 6

CONTENTS OF SECTION 6

Number

1. Teacher and/or coordinator requirements
   (a.) Includes Bulletin 400
   (b.) Refers to anyone who is associated with the reimbursed program

2. Request for evaluation of teacher's and/or coordinator's credentials--V-52's

3. Equipment which is reimbursable and not reimbursable

4. Request forms for equipment, BOE 746

5. Letterhead--sample copy of a community survey

6. 0.0 numbers by which you classify your students

7. BOE required forms
   (a.) BOE 1 - reimbursement of teacher's salary and/or coordinator's salary
   (b.) BOE 2 - students enrolled in intensive or cooperative program
   (c.) BOE 4 - report for out-of-school youth and adults
   (d.) BOE 5 - report on attendance in each Business and Office Education class for out-of-school youth and adults
   (e.) BOE-TR-6 - travel expense claim
   (f.) BOE-Ad-7 - Advisory Committee report

8. Form E - report of expenditures for all vocational instruction

9. Follow-up survey form (use in relationship with federal form to be mailed later)

10. Request for additional forms

11. Criteria for rental of equipment - Data Processing

SECTION 6-1

BUSINESS AND OFFICE EDUCATION
CERTIFICATION PATTERN

Page 30 of Bulletin 400

(10) Teachers of Business and Office Education will be required to hold an appropriate Provisional secondary teacher certificate with major (or above) requirements in Business Education: endorsed for teaching the specific Business and Office Education courses.

If the teacher has a B.S. degree with a major (or above) in Business Education, he will be certified for one year.

In addition to the above certification requirements for Secondary School Teaching Certificate, Provisional, the certification requirements for teaching Business and Office Education in all high school offerings (as distinguished from adult and evening offerings) will include a minimum of six semester hours in professional Business and Office Education, always including principles, philosophy, administration, and techniques of coordination.

If the teacher has a major in business and the six semester hours of work in a certified training institution, he will qualify for a five-year provisional license.

A minimum of 2000 hours of paid occupational experience in the appropriate vocational fields is desirable (not mandatory) for coordinators of part time cooperative courses and instructors of intensive office laboratory subjects.

The 2000 hours are not mandatory but should be used by the administrators in making a selection of the appropriate teacher to teach in this "select" area.

SECTION 6-2

Department of Public Instruction
Vocational Education Division
309 West Washington Street
600 Old Trails Building
Indianapolis, Indiana

PROCEDURAL PATTERN FOR TEACHER CERTIFICATION

To apply for certification as a teacher or teacher/coordinator in _____, please submit information according to the following procedure:

1. Fill out two copies of Form V-52.
2. Provide official transcripts of all college and/or university courses which have been acquired by the applicant if conventional certification is requested.
3. Send the two completed copies of Form V-52 and all official transcripts (if required) to the State Supervisor of _____ at the above address.

DO NOT SEND MONEY TO THIS OFFICE

These credentials will be evaluated and an endorsement and recommendation for certification will be made on the standard "Application for Teacher's Certificate" form. (In the event there are deficiencies in Occupational Experience and/or academic requirements, recommendations will be made to satisfy the necessary additional requirements in order to comply with the certification pattern as set forth in the INDIANA STATE PLAN FOR VOCATIONAL AND TECHNICAL EDUCATION and BULLETIN 400 of the DIVISION OF TEACHER EDUCATION AND CERTIFICATION.)

The endorsed "Application for Teacher's Certificate," one endorsed copy of Form V-52, and any accompanying transcripts will be returned to you.

Upon receipt of this material:

1. Complete all of the application.

2. Send the completed and endorsed application, the endorsed copy of Form V-52, your official transcript of courses, and a check for $5.00 (payable to the State of Indiana) to:

   The Department of Public Instruction
   Division of Teacher Education and Certification
   Room 230, State House
   Indianapolis, Indiana 46204

The teacher's certificate will be issued by the Division of Teacher Education and Certification.

Division of Teacher Training
And Certification
State House Room 230
Indianapolis, Indiana 46204

V. E. Form V-52-A
(Submit 2-copies)
Revised January-68

REQUEST FOR EVALUATION OF CREDENTIALS RELATED TO CERTIFICATION OF VOCATIONAL EDUCATION

Social Security Number _____ - _____ - _____

Print Name _____ _____ _____
Last First Middle or Maiden

Address: _____ Birthdate _____

_____ Age _____

Name of School Corp. _____

Address of School Corp. _____

Type of Certificate: Conventional _____ Non-Conventional _____

Original _____ Renewal _____ Full Time _____ Part Time _____

Occupational or Subject Area: _____

Report of Training

	Years	Name and Location of Institution	Date of Completion	Degree or Credit Earned
High School				
College or University				
Other				

TRADE AND/OR OCCUPATIONAL EXPERIENCE

Name of Firm	Office Only	Classification	City or Town	No. Months	Beginning Date	Ending Date

If Renewal: _____ Clock Hours; _____ Sem. Hrs. (attach transcript)
To my knowledge the above statements are true and valid.

Applicants Signature _____
Date

Verified and Recommended by.

_____ Superintendent of Schools _____
or
_____ Local Vocational Director
or
_____ Certification Advisor . _____
Title or Institution

Division of Teacher Training
And Certification
State House Room 230
Indianapolis, Indiana 46204

V. E. Form V-S-A
(Submit 2-copies)
Revised January 68

REQUEST FOR EVALUATION OF CREDENTIALS RELATED TO CERTIFICATION OF VOCATIONAL EDUCATION

Social Security Number _____-_____-_____

Print Name _____ _____ _____
Last First Middle or Maiden

Address: _____ Birthdate _____

_____ Age _____

Name of School Corp. _____

Address of School Corp. _____

Type of Certificate: Conventional _____ Non-Conventional _____

Original _____ Renewal _____ Full Time _____ Part Time _____

Occupational or Subject Area: _____

Report of Training

	Years	Name and Location of Institution	Date of Completion	Degree or Credit Earned
High School				
College or University				
Other				

TRADE AND/OR OCCUPATIONAL EXPERIENCE

Name of Firm	Office Only	Classification	City or Town	No. Months	Beginning Date	Ending Date

If Renewal: _____ Clock Hours; _____ Sem. Hrs. (attach transcript)
To my knowledge the above statements are true and valid.

Applicants Signature _____
Date

Verified and Recommended by:

_____ Superintendent of Schools _____
or
_____ Local Vocational Director
or
_____ Certification Advisor _____
Title or Institution

REIMBURSABLE EQUIPMENT PURCHASES for VOCATIONAL BUSINESS AND OFFICE EDUCATION

GENERAL

Form BOE 746 is to be used for requesting approval of anticipated purchases of equipment for Business and Office Education programs under the 1963 Vocational Act. The school corporation seeking reimbursement for equipment purchases, first, must have an approved Terminal Business and Office Education program, either Part-Time Cooperative or Intensive Office Laboratory, in accordance with the Indiana State Plan for Vocational and Technical Education. Reimbursement is at the rate of 50% Federal Funds with matching state and/or local funds.

PROCEDURE

The following procedure will be followed in reimbursing equipment purchases by local school corporation through the State Vocational Office:

1. Have an approved Business and Office Education program.

2. Submit 2 copies of Form BOE 746 to the State Office, listing anticipated purchases (see SPECIFIC section). Please omit brand names on the anticipated purchase request, but supply sufficient information in order that we may identify the equipment you are requesting.

3. After receiving approval by the State Office, accept bids locally (if amount of the purchase requires bids), and issue purchase orders.

4. Submit purchase orders and paid invoices to the State Office.

5. The items of equipment and dollar amount of the paid invoices will be checked against the original, approved request for the anticipated purchase of equipment.

6. A voucher then will be issued to the school corporation on the basis of the paid invoices, not to exceed 50% of the original total dollar request for which approval was given.

For the fiscal year, _____, Requests for Approval of Anticipated Purchases of Equipment (Form BOE 746) are due in the State Office no later than April 15, _____. Finalized copies of the purchase orders are to be submitted to the State Office no later than June 1, _____.

SPECIFIC

Equipment for instruction in the reimbursable Business and Office Education program shall mean durable equipment that is necessary for, and used directly in, the instructional process-rather than equipment that is merely accessory and subordinate to the instructional process. The equipment is to remain in the intensive work laboratory.

REIMBURSABLE ITEMS

(Each item is limited according to price, makes, models, and available funds.)

1. 10-key listing calculator-limited
2. Rotary calculator-limited
3. Spirit duplicator
4. Stencil duplicator
5. Dictation and transcription equipment
6. Long-carriage typewriter
7. Keypunch simulators-(limited only to schools where employment area survey determines a definite need)
8. Mimeoscope

* 9. Electric typewriters-special-see "no" items #3

REIMBURSABLE IF FUNDS ARE AVAILABLE

(Each item is limited according to price, makes, models, and available funds.)

**1. Data Processing equipment-see "no" items #13
2. 10-key adding machines
3. Actual office-style desks, not just "L" shaped.

*4. Shorthand laboratory units
*5. Installation-electrical wiring
*6. Bookkeeping machine
7. Full keyboard adding machine-see"no" item #4

* Evaluated separately if funds are available and the need is justified.

** Evaluated separately if funds are available and might require lease or rental and not out-right purchase. Approval and reimbursement to depend upon actual student use, student enrollment, and schools served.

NOT REIMBURSABLE

1. Teacher's desks and chairs
2. Student's chairs
3. Standard manual or electric typewriters
4. Key-driven machines
5. Overhead projector
6. Copying equipment
7. Books and materials
8. Filing and storage cabinets
9. Models and mock-ups
10. Tape recorders
11. Shorthand belts
12. Tables
13. Computer-Data Processing
14. Teaching aids
15. Paper cutters

This is not a judgment as to what items are educational or should be in the laboratory, but a criteria established so the funds can serve a large number of schools. All of these items have a true and sound vocational function for immediate and gainful employment preparation; but as our funds are limited, so must our reimbursement be limited for equipment.

(Send 2 copies to
State Office)

_____
(County)

_____
(Name of School)

_____
(Address of School)

_____
(Date)

Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

REQUEST FOR APPROVAL OF ANTICIPATED PURCHASE OF EQUIPMENT UNDER
THE 1963 VOCATIONAL EDUCATION ACT
Business and Office Education

Description of Item	Where Will Equipment Be Located	Approximate Cost
TOTAL		

Approved by:

_____
State Supervisor of Business
and Office Education

_____
Superintendent, Director, or Coordinator

_____
Date

FORM BOE 746

(Send 2 copies to
State Office)

_____
(County)

_____
(Name of School)

_____
(Address of School)

_____
(Date)

Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

REQUEST FOR APPROVAL OF ANTICIPATED PURCHASE OF EQUIPMENT UNDER
THE 1963 VOCATIONAL EDUCATION ACT
Business and Office Education

Description of Item	Where Will Equipment Be Located	Approximate Cost
TOTAL		

Approved by:

_____
State Supervisor of Business
and Office Education

_____
Superintendent, Director, or Coordinator

_____
Date

FORM BOE 746

SECTION 6-5

SURVEY OF BUSINESS OFFICES

Business Education Department
_____ High School - _____, Indiana

Firm Name _____ Address _____

Form Completed by _____ Title _____

Date _____ 19 _____

1. Do you employ graduates of high school business programs in your offices?
   Yes_____ No _____

2. Approximately how many of your office employees are high school graduates? _____%
   Business school graduates _____% University graduates _____%
   Other school (Kind) _____ _____%

3. In what jobs do you place high school graduates? Place a check in front of the job titles; also, add any other jobs not listed.

___Typist	___Stenographer	___Receptionist	___Comptometer Op.
___Clerk-Typist	___Secretary	___Payroll Clerk	___Key punch Op.
___Cashier	___Bookkeeper	___Mail Clerk	___ _____
___File Clerk	___General Clerk	___Order/Credit Clerk	___ _____
___Mimeo Operator	___Dictaphone Operator	___PBX Operator	___ _____

4. Do you require previous experience for these jobs? Yes _____ No _____ (If yes, which one) _____?

5. Do you feel there is an adequate supply of qualified workers available to fill the job classifications? Yes_____ No_____ If no, which job titles are in short supply_____
   _____?

6. Below are listed deficiencies found in office workers. Please check those you find prevalent in the high school graduates employed in your office.

___Can't spell, doesn't correct errors
___Illegible handwriting
___Can't type quickly or accurately
___Can't compose business letters
___Doesn't answer phone correctly
___Arithmetic fundamentals weak
___Weak in filing skills
___Lacks bookkeeping knowledge (weak)
___Shorthand skills inadequate
___More skill needed in use of adding machines, calculators
___More skill needed in use of duplicating machines
___Needs skill in machine transcription
___Lacks maturity, is giddy, silly
___Wastes time, supplies
___Does not follow instructions
___Lacks initiative, drive, ambition
___Can't get along with people
___Lack of respect for work and lack of pride in work done
___Doesn't accept responsibility
___Poor attendance record
___Excessive tardiness
___Discourteous, rude
___Poor personal appearance, grooming
___Not dependable
___Indicates a "world owes me something" or "what's in it for me" attitude

___Weak in English grammar, written
___Poor speech, oral English poor
___Inadequate vocabulary
___Can't organize work assignment
___Unable to meet the public
___Lack concept of business and management function
___Unable to accept criticism
___Other (fill in) _____
___ _____
___ _____
___ _____
___ _____
___ _____

If necessary, continue any answers on reverse side of paper.

---

7. What employment standards do you have for beginning office workers?

Typing rate of speed desired _____words per minute for _____minutes
Typing accuracy--maximum number of errors per minute allowed in timed test_____

Shorthand dictation speed rate desired of_____words per minute, _____% errors
Bookkeeping knowledge of _____ working papers, _____payroll, _____ balance sheet
Filing knowledge of _____ alphabetic system, _____payroll, _____ geographic,
_____ numeric, _____ combination of _____

8. Please indicate the office machines used in your office, manufacturer (or trade name). In Column I, indicate if you believe high school should provide training in use of the specific machines. In Column II, check if electric or not.

Column I Should high school train in use of these machines? (Circle)		Kind of equipment	Trade name and/or manufacturer's name	Column II Electric (Circle Yes or No)	
Yes	No	Ten-key adding machine	_____	Yes	No
Yes	No	Full-key board adding machine	_____	Yes	No
Yes	No	Key-driven calculators	_____	Yes	No
Yes	No	Rotary Calculators	_____	Yes	No
Yes	No	Fluid duplicator	_____	Yes	No
Yes	No	Mimeograph (stencil) duplicator	_____	Yes	No
Yes	No	Transcribing machine	_____	Yes	No
Yes	No	Bookkeeping machines	_____	Yes	No
Yes	No	Other (list)	_____	Yes	No

9. Kinds of: Typewriters _____ What _____% Electric
Typewriters _____ What _____% Manual

Approximately _____% has pica (larger) type? _____% elite (smaller)

10. What recommendations would you make to the high school Vocational Office Education teachers to help improve the quality of training and the type of training for office workers?

_____

11. Do you wish a copy of the results of this survey? Yes_____ No _____

12. Would you like a senior, Business major, to work part-time in your office in one of the following positions: Payroll clerk _____ Bookkeeper _____ Stenographer _____
Secretary _____ Typist _____ File Clerk _____ PBX Operator _____ Store Clerk _____

Do you prefer to employ a person who has had bookkeeping in high school for clerical work? Yes_____ No _____

13. What is the rate of turnover in your office or store?
5% - 20% _____ 20% - 35% _____ 35% - 50% _____ Over 50% _____

14. In what area is the lowest turnover?
_____General Office _____Machine Operators
_____Accounting _____Selling

15. In what area is the highest turnover?
_____General Office _____Machine Operators
_____Accounting _____Selling

16. Selection Tests

1. Do you give tests for selecting prospective employees? Yes _____ No _____
   A. If so, what types do you give?
      Typing _____ Shorthand _____ Aptitude _____ Achievement _____
   B. Are the tests administered by you? Yes _____ No _____
   C. Are the tests administered by the Employment Bureau? Yes _____ No _____
   D. Are these tests your own? Yes _____ No _____
   E. Are they Employment Bureau tests? Yes _____ No _____
   F. Others? _____

COMMENTS:

SECTION 6-6

0.0 CLASSIFICATIONS AS THE PRIMARY VOCATIONAL OBJECTIVE FOR TRAINEES IN BUSINESS AND OFFICE EDUCATION PROGRAMS

Specific jobs that fall into the category of "business and office education" and that should be the primary objective of the teacher to incorporate into the program are as follows:

OFFICE OCCUPATIONS
14.00 00

The body of subject matter, or combinations of courses and practical experience, organized into programs of instruction to provide opportunities for pupils to prepare for and achieve career objectives in selected office occupations. In the instructional process substantive content frequently is comprised of subject matter drawn from other subject matter areas. Learning experiences are designed to lead to employment and/or advancement of individuals in occupations in public or private enterprises or organizations related to the facilitating function* of the office. Included is a variety of activities, such as recording and retrieval of data, supervision, and coordination of office activities, internal and external communication, and the reporting of information. Under this heading are the items of information which identify categories of career objectives in office occupations, and around which courses and practical experiences are developed.

01 00 Accounting and Computing--Planned learning experiences which include a combination of courses and practical experiences concerned with systematizing information about transactions and activities into accounts and quantitative records, and paying and receiving money. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Junior Accountants, Bookkeepers, Cashiers, Machine Operators, Tellers, and Other Accounting and Computing occupations.

02 00 Business Data Processing Systems--Planned learning experiences which include a combination of courses and practical experiences concerned with business data processing systems and operations. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Computer and Console Operators, Peripheral Equipment Operators, Programmers, Systems Analysis, and Other Business Data Processing Systems Occupations.

*"Facilitating function", as used in Office Occupations Education, refers to the expediting role played by office occupations as the connecting link between the production and distribution activities of an organization.

03 00 Filing, Office Machines, and General Office Clerical--Planned learning experiences which include a combination of courses and practical experiences concerned with the recording and retrieval of data, including classifying, sorting, filing, correspondence, records, and other data. Career objectives are identified with a variety of occupational groups and specialization (as indicated in the Dictionary of Occupational Titles), such as Duplicating Machine Operators, File Clerks, General Office Clerks, and Other Filing, Office Machines, and General Office Clerical Occupations.

04 00 Information Communication--Learning experiences which include a combination of courses and practical experiences concerned with the distribution of information, e.g., by mail, telephone, telegraph, and in person. Career objectives are identified with a variety of occupational groups, (as indicated in the Dictionary of Occupational Titles), and specialization such as Communication Systems Clerks and Operators, Correspondence Clerks, Mail and Postal Clerks, Mail-preparing and Mail-handling Machine Operators, Messengers and Office Boys and Girls, Receptionists and Information Clerks, and Other Information Communication Occupations.

05 00 Materials Support Occupations: Transporting, Storing, and Recording--Planned learning experiences which include a combination of courses and practical experiences concerned with (1) receiving, storing, issuing, shipping, requisitioning, and accounting for stores of material or material in use; (2) assigning locations and space to items, including verification of quality, identification, condition, and value; (3) the physical handling of items, including binning, picking, stacking, and counting; (4) preparing or committing stock for shipment; (5) inventorying stock; (6) replenishing depleted items; and (7) filling orders, and issuing tools, equipment, or materials to workers. Career objectives are identified with a variety of occupational groups and specializations, (as indicated in the Dictionary of Occupational Titles), such as Planning and Production Clerks, Traffic, Rate, and Transportation Clerks, and Other Transporting, Storing, and Recording Occupations.

06 00 Personnel, Training, and Related--Planned learning experiences which include a combination of courses and practical experiences concerned with personnel administration of an organization and the facilitating functions of scheduling and conducting clerical work and management and operations of organizations. Career objectives are identified with a variety of occupational groups and specialization (as indicated in the Dictionary of Occupational Titles), such as Educational and Training Assistants, Interviewers and Tests Technicians, Personnel Assistants, and Other Personnel, Training, and Related Occupations.

07 00 Stenographic, Secretarial, and Related--Planned learning activities which include a combination of courses and practical experiences concerned with making, classifying, and filing records, including written communications. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Executive Administrative Secretary, Secretaries, Stenographers, and other Stenographic, Secretarial, and Related Occupations.

08 00 Supervisory and Administrative Management--Learning activities and experiences concerned with a variety of responsibilities such as (1) studying policies, organizational structures, and administrative practices of such organizations as governmental units, industrial firms, and non-profit groups; (2) reviewing periodic budgets submitted by operations personnel; (3) preparing reports summarizing findings and recommending changes in policy, organization, and administration to line management; (4) consolidating the budget estimates and preparing financial reports for consideration and action by upper echelons of management; and (5) supervising and coordinating activities, determining work procedures, and assigning duties. (0.0 No. _____)

09 00 Typing and Related--Planned learning activities which include a combination of courses and practical experiences concerned with recording data, supervising, and administering typing staffs and typing, and managing offices. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Clerk Typists, Key Punch and Coding Equipment Operators, Typists, and Other Typing and Related Occupations.

10 00 Miscellaneous Office (Specify)--Planned learning experiences (not elsewhere classified) which include a combination of courses and practical experiences concerned with the facilitating functions, e.g., public contact such as registering hotel and motel guests, examining claims and records, and collecting and tracing accounts. Career objectives are identified with a variety of occupational groups and specialization, (as indicated in the Dictionary of Occupational Titles), such as Collectors, Hotel Clerks, Clerical Technicians, Credit Clerks, and other occupations and areas of specialization concerned with office occupations not listed or classifiable in the above categories, including emerging office occupations not classifiable in the above categories. (List 0.0 Nos.)

99 00 Other, NEC (Specify)

**NOTE THESE FIGURES ARE TO BE SHOWN IN THE APPROPRIATE COLUMNS ON FORM B.O.E. 2, FOLLOW-UP STUDY REPORT, AND FORM B.O.E. 5.

WHEN CREATING A PROGRAM PROPOSAL FOR A BUSINESS AND OFFICE EDUCATION PROGRAM, THESE CLASSIFICATION NUMBERS SHOULD BE INDICATED IN SECTION III, PART I--PURPOSES AND OBJECTIVES--OF THE PROPOSAL.

SECTION 6-7

DATES FOR SUBMITTING B.O.E. FORMS

BOE 1 — Agreement for reimbursement of teacher's salary. (See Form E)
(To be submitted with BOE 2)
Date to Superintendent - Aug. 15
Date due in Dept. -
Prelim. - Oct. 1
Final - April 1

BOE 2 — Student enrollment in cooperative and/or intensive lab.
(To be submitted with BOE 1)
Date to Superintendent -
Prelim. - Aug. 15
Final - March 1
Date due in Dept. -
Prelim. - Oct. 1
Final - April 1

BOE 4 — Preliminary report for each class of out-of-school youth and adults. (See Form E) (See Section #9 for Policies and Regulations for Adult Program)
Date to Superintendent - Aug. 15
Date due in Dept. - prior to first class meeting

BOE 5 — Report on attendance in each class of out-of-school youth and adults.
Date to Superintendent - Aug. 15
Date due in Dept. - upon completion of the course

BOE-TR-6 — Travel report for supervision--coordinator, teacher activities.
(See Form E)
Date to Superintendent - Aug. 15
Date due in Dept. - 15th following month's travel

BOE-Ad-7 — Advisory Committee report. (Mail along with BOE 1 and 2)

BOE 4045A — Follow-up study conducted on each enrollee.
Date due in Dept. - Nov. 1

BOE 4045 — Follow-up study showing the total results of 4945A.
Date due in Dept. - Nov. 1

October & April 1
Submit BOE 1, BOE 2, BOE-Ad-7

September & January
Submit BOE 4

January & June
Submit BOE 5

April 1

Submit Form E (Business and Office Education report of expenditures for vocational instruction-report on teachers' salary, travel, adult, and extended contract to be reimbursed.)

November 1

Submit O.E. 4045 and 4045A

FORM B.O.E. 1

Two copies of this form are due in the State Office on October and April 1. Reimbursement for related instruction, coordination, the intensive laboratory, and extended contract are reported on this form.

The total salary on the back of form must agree with salary report during the fiscal year, July 1-June 30, on the front of the form.

The schedule of the teacher must be shown and those periods must be circled for which reimbursement is requested.

NOTE: Statements on the back of the form.

This information must be supported by Form E at the end of the fiscal year.

See Section 6-10 for form request.

Form B.O.E. – 1
(Two Copies Due in State Office October 1 and April 1)

INDIANA DEPARTMENT OF PUBLIC INSTRUCTION
Richard D. Wells, State Superintendent
Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

(COUNTY)

(SCHOOL CORPORATION)

(ADDRESS)

(DATE)

AGREEMENT FOR REIMBURSEMENT BUSINESS AND OFFICE EDUCATION

July 1, 19_____ to June 30, 19_____

We, the local board of education of _____
(Name of School Corporation)
in _____ County, hereby enter into an agreement with the Indiana State Board for Vocational Education to conduct one or more ☐ Part-time Cooperative (and) ☐ Intensive Office Laboratory Vocational Business and Office Education Training Programs and agree to expend the amount for the salary of the Teacher- Coordinator listed below. (Please mark appropriate box or boxes)

It is further agreed that all phases of the program comply with the Indiana State Plan for Vocational Education.

Name of Coordinator _____ School _____

SALARY

Total Salary to be received from the local school corporation:

1. During the fiscal year, July 1 – June 30. . . . . $ (1) 7,000*
2. During the regular school year (time classes are in session) . . . . . $ (2) 6,000

REGULAR SCHOOL YEAR **

CLASS OR ACTIVITY	BEGINNING DATE	ENDING DATE	NO. OF WEEKS	NO. OF PERIODS DAILY	SALARY ASSIGNED TO CLASS OR ACTIVITY *	
Intensive Office Laboratory					(3)	
Related Vocational Business and Office Instruction	9-70	4-71	36	1	(4) 1,000	
Coordination	9-70	4-71	36	2	(5) 2,000	
Other: (Include Co-Curricular Activities)	9-70	4-71	36	3	(6) 3,000	
Total (same as Line 2)					6,000	

EXTENDED CONTRACT TIME **

PERIOD PRIOR TO OPENING OF SCHOOL

Coordination	8-15-70	9-6-70	2	8	500	Amount of Extended Contract
PERIOD SUBSEQUENT TO CLOSING OF SCHOOL						$ (7) 1,000 (Line 2 minus line 1)
Coordination	4-6-71	4-20-71	2	8	500	

* IMPORTANT—List all figures to the nearest dollar amount

**See example on Form E for End-of-Year Report

SALARY ASSIGNED TO REIMBURSABLE VOCATIONAL ACTIVITIES

Intensive Office Laboratory _____ (line ③) _____ $ _____

Related Vocational Instruction (line ④) _____ $ _____

Coordination: During Regular School Year (line ⑤) $ _____

TOTAL VOCATIONAL SALARY Regular School Year _____ $ [ ]

Coordination: Extended Contract (line ⑦) _____ $ [ ]

TOTAL VOCATIONAL SALARY: Fiscal Year _____ $ _____

Salary Assigned to NON-REIMBURSABLE Activities (line ⑥) _____ $ _____

TOTAL (same as line ①) _____ $ _____

1. All students in the related vocational classes are legally employed in business and office occupations in selected training stations for not less than 15 hours per week during the entire school year.
2. All Students are 16 years of age or older.
3. All student-trainees receive a monetary wage commensurate with other workers on the same level, together with high school credit for their on-the-job training and experience.
4. The coordinator should have at least ½ hour per student per week of time scheduled for coordination activities.
5. The teacher-coordinator is meeting the progressive pattern of certification, in this field.
6. All students in the intensive office laboratory classes are being given vocational training incorporating materials and projects brought in from actual places of business.
7. The intensive office laboratory meets for a block of time and each student is enrolled for this block of time and not just a part or a period.

Signed _____ Approved _____ Date _____
Local Coordinator Local Director or Supt.

Approved _____ Approved _____ Date _____
State Supervisor State Director Vocational Ed.

SCHEDULE OF COORDINATOR

CIRCLE the periods for which reimbursement is claimed
Show Full Schedule with course titles

Period	Begins	Monday	Tuesday	Wednesday	Thursday	Friday	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

* IMPORTANT–List all figures to the nearest dollar amount

Form B.O.E. – 1
(Two Copies Due in State
Office October 1 and April 1)

INDIANA DEPARTMENT OF PUBLIC INSTRUCTION
Richard D. Wells, State Superintendent
Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

(COUNTY)

(SCHOOL CORPORATION)

(ADDRESS)

(DATE)

AGREEMENT FOR REIMBURSEMENT BUSINESS AND OFFICE EDUCATION

July 1, 19_____ to June 30, 19_____

We, the local board of education of _____
(Name of School Corporation)
in _____ County, hereby enter into an agreement with the Indiana State Board for Vocational Education to conduct one or more ☐ Part-time Cooperative (and) ☐ Intensive Office Laboratory Vocational Business and Office Education Training Programs and agree to expend the amount for the salary of the Teacher-Coordinator listed below. (Please make appropriate box or boxes)

It is further agreed that all phases of the program comply with the Indiana State Plan for Vocational Education.

Name Coordinator _____ School _____

SALARY

Total Salary to be received from the local school corporation:

1. During the fiscal year, July 1 – June 30 . . . . . $ (1)_____
2. During the regular school year (three classes are in session) . . . . . $ (2)_____

REGULAR SCHOOL YEAR

CLASS OR ACTIVITY	BEGINNING DATE	ENDING DATE	NO. OF WEEKS	NO. OF PERIODS DAILY	SALARY ASSIGNED TO CLASS OR ACTIVITY *	
Intensive Office Laboratory					(3)	
Related Vocational Business and Office Instruction					(4)	
Coordination					(5)	
Other: (Include Co-Curricular Activities)					(6)	
Total (same as Line 2)						

EXTENDED CONTRACT TIME

PERIOD PRIOR TO OPENING OF SCHOOL

Coordination						Amount of Extended Contract
PERIOD SUBSEQUENT TO CLOSING OF SCHOOL						$ (7)_____ (Line 2 minus line 1)
Coordination						

* IMPORTANT—List all figures to the nearest dollar amount

SALARY ASSIGNED TO REIMBURSABLE VOCATIONAL ACTIVITIES

Intensive Office Laboratory (line ③) $ _____

Related Vocational Instruction (line ④) $ 1,000

Coordination: During Regular School Year (line ⑤) $ 2,000

TOTAL VOCATIONAL SALARY: Regular School Year $ 3,000

Coordination: Extended Contract (line ⑦) $ 1,000

TOTAL VOCATIONAL SALARY: Fiscal Year $ 4,000

Salary Assigned to NON-REIMBURSABLE Activities (line ⑥) $ 3,000

TOTAL (same as line ①) $ 7,000

1. All students in the related vocational classes are legally employed in business and office occupations in selected training stations for not less than 15 hours per week during the entire school year.
2. All Students are 16 years of age or older.
3. All student-trainees receive a monetary wage commensurate with other workers on the same level, together with high school credit for their on-the-job training and experience.
4. The coordinator should have at least ½ hour per student per week of time scheduled for coordination activities.
5. The teacher-coordinator is meeting the progressive pattern of certification, in this field.
6. All students in the intensive office laboratory classes are being given vocational training incorporating materials and projects brought in from actual places of business.
7. The intensive office laboratory meets for a block of time and each student is enrolled for this block of time and not just a part or a period.

Signed _____ Approved _____ Date _____
Local Coordinator Local Director or Supt.

Approved _____ Approved _____ Date _____
State Supervisor State Director Vocational Ed.

SCHEDULE OF COORDINATOR

CIRCLE the periods for which reimbursement is claimed
Show Full Schedule with course titles

Period	Begins	Monday	Tuesday	Wednesday	Thursday	Friday	
1	8	Off. Pract.	-	-	-	-	
2	9	Typ. II	-	-	-	-	
3	10	Typ. III	-	-	-	-	
4	11	Lunch	-	-	-	-	
(5)	12	Related COE	-	-	-	-	
(6)	1	Coordination	-	-	-	-	
(7)	2	Coordination	-	-	-	-	
8							
9							
10							

* IMPORTANT–List all figures to the nearest dollar amount

FORM B.O.E. 2

Each student enrolled in the cooperative or intensive office laboratory must indicate a career objective. This career objective must be classified by a 0.0 number (see Section 6-6) and recorded on this form.

It is only necessary to complete the career objective (0.0) for an intensive office laboratory. If you are reporting for a cooperative program; it is necessary to complete all columns on the front, plus the five columns on the back of the October report- all columns on the back to be completed on the April report.

For cooperative students, it is not necessary that their present employment (job title and 0.0. number) agree with their career objective (job title and 0.0. number).

Two copies of B.O.E. are due in the State Office on October 1 and April 1. See Section 6-10 for form request.

JUNIOR STUDENTS

Junior students are also to be reported on two separate copies of the BOE 2 form. Please check the left-hand corner for the appropriate grade level. These juniors would be those students that are enrolled in the prerequisite courses for entry into the laboratory or the cooperative program. It would only be those individuals that you have contacted and found that they possess a desire for employment upon graduation and do have a true career objective for a position within the office.

Please list the individuals only once even though they may be enrolled in more than one prerequisite course. If at all possible, indicate their career objectives in the appropriate space provided.

Some schools that lack a definite contact with their junior students will not be able to provide this information. The recording of these individuals will never be totally correct; but for those who can identify these juniors (bona fide and occupational students), please so submit on separate BOE 2's and indicate the grade level in the upper-left hand corner of the forms.

When listing your students on the BOE 2's, please do not list by alphabetical order but group them according to the occupational numbers-example, first, list all students with 0100 career objective, then all with 0200, etc. If you have a mix of males and females, please list all males with 0100, then all females with 0100, all males with 0200, then all females with 0200.

FORM B.O.E. -12
(2 Copies to State Office Oct. 1, & April 1)

INDIANA DEPARTMENT OF PUBLIC INSTRUCTION

Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

_____ (COUNTY)

_____ (SCHOOL CORPORATION)

_____ (ADDRESS)

_____ (DATE)

_____ (TEACHER-COORDINATOR)

CLASS:
(Please check)
☐ HIGH SCHOOL
_____ 11th
_____ 12th
☐ POST-SECONDARY
_____ 13th
_____ 14th

Student Enrollment in: ☐ COOPERATIVE BUSINESS AND OFFICE ED.
(check only one) ☐ INTENSIVE OFFICE LABORATORY

_____ Semester, 19_____ to 19_____

NAME OF STUDENT	PSN *	SEX	CAREER OBJECTIVE		**	**	PRESENT EMPLOYMENT	
			JOB TITLE	O.E. NO. 14.00.00	NAME OF TRAINING ESTABLISHMENT	TYPE OF BUSINESS	JOB TITLE **	O.E. NO. ** 14.00.00
Bill Prepared	a	M	Accounting	0100				
Charles Right	c	M	"	0100				
June Education		F	"	0100	Group students according			
Linda Barnaby		F	Secretarial	0700				
Mary Lynde	b	F	"	0700	to numbers rather than			
Jill Job		F	"	0700				
Ronnie Employment		F	Adm. Managmt.	0800	alphabetical order			
Karen Skinful		F	"	0800				
Jo Immediate		F	"	0800				
Lyra Direct		F	Typing & Related	0900				
Lillian From	d	F	"	0900				
Sharon School		F	"	0900				

Total Enrollment: M 2 F 10 Total 12

Signed _____
Teacher-Coordinator

Approved _____ Date _____
State Supervisor

Signed _____
Superintendent or Vocational Director

* Person with Special needs: Use letter code
(a.) Phy. handicapped,(b) Mentally handicapped (IQ–75 to 90),(c) Emotional block,(d) Slow learner,(e) Minority group
**To be used ONLY for Part-time Cooperative Trainees in addition to Career Objective Section.

SEE REVERSE SIDE

SEE REVERSE SIDE

FORM B O E. - 2
(2 Copies to State
Office Oct. 1, & April 1)

INDIANA DEPARTMENT OF PUBLIC INSTRUCTION

Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

_____ (COUNTY)

_____ (SCHOOL CORPORATION)

_____ (ADDRESS)

_____ (DATE)

_____ (TEACHER-COORDINATOR)

CLASS:
(Please check)
☐ HIGH SCHOOL
_____ 11th
_____ 12th
☐ POST-SECONDARY
_____ 13th
_____ 14th

Student Enrollment in: ☐ COOPERATIVE BUSINESS AND OFFICE ED.
(check only one) ☐ INTENSIVE OFFICE LABORATORY

_____ Semester, 19_____ to 19_____

NAME OF STUDENT	PSN *	SEX	CAREER OBJECTIVE		**	**	PRESENT EMPLOYMENT	
			JOB TITLE	O.E. NO. 14.00.00	NAME OF TRAINING ESTABLISHMENT	TYPE OF BUSINESS	JOB TITLE **	O.E. NO. ** 14.00.00

Total Enrollment: M_____ F_____ Total_____

Approved_____ Date_____
State Supervisor

Signed_____
Teacher-Coordinator

Signed_____
Superintendent or Vocational Director

* Person with Special needs: Use letter code
(a.) Phy. handicapped,(b) Mentally handicapped (IQ–75 to 90),(c) Emotional block,(d) Slow learner,(e) Minority group
**To be used ONLY for Part-time Cooperative Trainees in addition to Career Objective Section.

SEE REVERSE SIDE

This section ONLY for Part-time Cooperative Trainees

NAME OF STUDENT	WAGES PER HOUR	PER WEEK			ENTIRE YEAR	
		PERIODS IN SCHOOL		HOURS AT WORK		
		Other Subjects	Related Subjects		No. Weeks In Class	Total Hours Worked

FORM B.O.E.-Ad-7--1 copy*

Every school with an intensive office laboratory or a cooperative office education program must have an advisory committee composed of local business people.

This committee will have many functions, and the following are only a few suggestions:

(1.) Indicate job standards for employees.

(2.) Inform school of equipment found in the office.

(3.) Supply forms, letter, etc., found in their offices.

(4.) Offer suggestions on curriculum and course content.

(5.) Aid in establishing stations that duplicate an office in layout, equipment, and materials.

This report is due, along with your BOE 1 and 2, in October and April, one copy each time.

*See Section on Advisory Committee.

Indiana Department of Public Instruction
Richard D. Wells, Superintendent
Vocational Education Division
600 Old Trails Bldg.
309 West Washington Street
Indianapolis, Indiana

FORM BOE--Ad 7
STATE DEPARTMENT OF PUBLIC INSTRUCTION
VOCATIONAL EDUCATION DIVISION
ADVISORY COMMITTEE REPORT

BUSINESS AND OFFICE EDUCATION

_____ (County)

_____ (School Corporation

_____ (Address)

_____ (Month) (Year)

Form B.O.E. Ad 7
(One Copy Due in State Office
October 1 and April 1 along with
B.O.E.'s 1 and 2)

We, the local board of education of _____ (Name of School Corporation)
in _____ County, hereby enter into an agreement with the Indiana State Board for Vocational Education to conduct one or more ☐ Part-time Cooperative (and) ☐ Intensive Office Laboratory Business and Office Education Training Programs and agree to establish an advisory committee, composed of local business people, as a fundamental part of the total program. (Please mark appropriate box or boxes)

It is further agreed that all phases of the program comply with the Indiana State Plan for Vocational Education.

Name of Coordinator _____ School _____

	LOCAL COMMITTEE	OCCUPATION	ADDRESS	TELEPHONE
1.				
2.				
3.				
4.				
5.				
6.				
7.				

OFFICERS OF COMMITTEE:	OFFICE HELD:

(See other side)

PLEASE COMPLETE IF POSSIBLE

(1.) Number of meetings held last year (or semester) : _____

(a.) Dates: _____ _____

_____ _____

_____ _____

(b.) Average attendance: _____

(2.) Number of meetings planned for this year: _____

(a.) Dates: _____ _____

_____ _____

_____ _____

(b.) Location of meetings:

_____

_____

(3.) What was the greatest contribution that was presented by your committee:

_____

_____

_____

_____

_____

_____

_____

Signed: _____
Local Coordinator

Signed: _____
President of Committee

Signed: _____
Local Director or Superintendent

FORM B.O.E. 4 & 5

These forms are to be submitted to this office for our information and records.

Please apply the regulations for filling out B.O.E. 1 and 2 to these.

Two copies of B.O.E. 4 are due in this office prior to the first class meeting.

Two copies of B.O.E. 5 are due in this office upon completion of the course.

FORM B.O E. - 4
(Three Copies to State Office Prior to First Class Meeting)

INDIANA DEPARTMENT OF PUBLIC INSTRUCTION

Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

(COUNTY)

(SCHOOL CORPORATION)

(ADDRESS)

(DATE)

Preliminary Report for Each Business and Office Education Class for Out-of-school Youth and Adults

Course Title_____ For what group_____ Estimated enrollment_____

Building and room where class will meet_____ Address_____

Class to start_____, 19____ Class to end_____, 19____ No. meetings_____ No. Min. per Meeting_____

Schedule of meetings (days and hours)_____

Total clock hours_____ Instructor's hourly salary_____ Total salary_____

Instructor_____ Does instructor hove Vocational Licenses for this class?_____

Do you have on file in your office an outline of this course?_____

Is a copy on file in the State Office?_____

In what way may a teacher trainer be of assistance to you and your instructor?_____

I hereby certify that the above class complies with standards of the Indiana State Plan.

Signed_____ Approved_____ Date_____
Local Coordinator — Supt. or Vocational Director

Approved_____ Date_____
State Supervisor

This report must be filed and approved before the class begins.
Make out in triplicate and forward all three copies to the State Supervisor.
Triplicate to be signed by State Supervisor and returned to sender.
Use a separate form for each class or section.

Approved_____
State Director of Vocational Education

ACTUAL COURSE COST

I. ENROLLMENT INCOME

(1.) Enrollment fee per enrollee $_____

(2.) Number of enrollees $_____

(3.) Income from enrollment (1 x 2) $_____

(4.) Other income $_____

(5.) Total actual course income (3 + 4) $_____

II. EXPENSES

(1.) Amount for instruction

(a.) Name of teacher _____

(1.) Amount $_____

(b.) Total instruction expense (a + b) $_____

(2.) List other expenses:

(a.) _____ $_____

(b.) _____ $_____

(c.) _____ $_____

(d.) _____ $_____

(e.) _____ $_____

(f.) Total other expenses (a + e) $_____

(3.) Total expense (1c + 2f) $_____

III. OVERAGE (To Local School's Business Department) (I-5 greater than II-3) $_____

IV. SHORTAGE (To Be Reimbursed at 50%) (II-3 greater than I-5) $_____

Coordination - total amount to be paid to individual who promotes and coordinates the course ($5.00 per hour - reimbursable). Do not report this figure in proposed course budget. $_____

Vocational Director	State Supervisor, Business and Office Ed.
Superintendent of Schools	State Director of Vocational Education
Notary Public	Date

FORM B.O.E. - 5
(3 Copies in State Office upon Completion of Course)

INDIANA DEPARTMENT OF PUBLIC INSTRUCTION

Division of Vocational Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

(COUNTY)

(SCHOOL CORPORATION)

(ADDRESS)

(DATE)

(INSTRUCTOR)

Report on Attendance in Each Business and Office Education Class for Out-of-school Youth and Adults

Course Title_____

Class Began_____, 19_____ Class Ended_____, 19_____ Building where class was held_____

NAME OF ENROLLEES	SEX M	SEX F	TITLE OR POSITION	TYPE OF BUSINESS OR SERVICE	D.O.T. NO.	FIRM NAME	NO. OF TIMES PRESENT

ACTUAL COURSE COST

I. ENROLLMENT INCOME

(1.) Enrollment fee per enrollee $_____

(2.) Number of enrollees $_____

(3.) Income from enrollment (1 x 2) $_____

(4.) Other income $_____

(5.) Total actual course income (3 + 4) $_____

II. EXPENSES

(1.) Amount for instruction

(a.) Name of teacher _____

(1.) Amount $_____

(b.) Total instruction expense (a + b) $_____

(2.) List other expenses:

(a.) _____ $_____

(b.) _____ $_____

(c.) _____ $_____

(d.) _____ $_____

(e.) _____ $_____

(f.) Total other expenses (a + e) $_____

(3.) Total expense (1c + 2f) $_____

III. OVERAGE (To Local School's Business Department) (I-5 greater than II-3) $_____

IV. SHORTAGE (To Be Reimbursed at 50%) (II-3 greater than I-5) $_____

Coordination - total amount to be paid to individual who promotes and coordinates the course ($5.00 per hour - reimbursable). Do not report this figure in proposed course budget. $_____

Vocational Director	State Supervisor, Business and Office Ed.
Superintendent of Schools	State Director of Vocational Education
Notary Public	Date

FORM B.O.E.-TR-6--2 copies

Only the schools with approved Business and Office Education programs will be reimbursed for teacher's travel and for per diem.

The state allows 8¢ per mile travel expense. The travel expense and per diem for Business and Office Education coordinators are reimbursed at 100%, pending available funds, when they are attending state-called conferences. Local travel for coordination and supervision purposes will be reimbursed at 50% when TR forms are submitted on the 15th of each month for the preceding month's travel.

Per diem is $12.00 ($3.00 per quarter) in-state, $16.00 per diem ($4.00 per quarter) out-of-state.

You are not allowed the per diem of $12.00 or $16.00 unless you stay overnight. The per diem will be paid if the place of business is over 50 miles from your school or local office.

A day is divided into four quarters (six hours each). By figuring the total hours and dividing by six, you can calculate your quarters for per diem.

Request for travel per diem for out-of-state travel or out-of-local area travel must be submitted to State Supervisor of Business and Office Education for prior approval.

ALL HOUSING RECEIPTS AND REGISTRATION FEE RECEIPTS MUST BE ATTACHED TO ONE COPY OF THE TRAVEL CLAIM, BOE-TR-6.

A copy of the TR will be returned to the school. The amount of approved travel per diem on record is to be reported also in the Business and Office Education section of the FORM E report, at the end of the fiscal year.

IMPORTANT

The value found in a true Cooperative Office Education program is in the coordination of the training stations through regular visits by the coordinator. In order that we may prove that we do have a true educational function, it is requested that each coordinator, even if he is not requesting reimbursement for his travel, submits to the state office the BOE-TR-6 form the 15th of the month following travel. This will allow us to provide proof to individuals that the stations are actually being coordinated by the person in charge of the program.

Since each Cooperative Office Education coordinator will be submitting these forms and some will be requesting reimbursement while others will not, it is necessary that those not requesting reimbursement so indicate across the front of their forms, "Reimbursement Not Requested."

Forms requesting as well as not requesting reimbursement will be returned to the appropriate individual at your school. Only the teachers of the schools with approved Business and Office Education programs will be reimbursed for travel and per diem. The teacher of the laboratory program need not submit BOE-TR-6's when reimbursement is not being requested but only when reimbursement is so desired.

All teachers and coordinators that request travel must supply the amount of approved travel and per diem in the Business and Office Education section of the Form E report at the end of the fiscal year.

Please see the next page on how to figure travel reimbursement.

HOW TO FIGURE TRAVEL REIMBURSEMENT ON BOE-TR-6 FORM

(1) Local Travel-Show total miles and multiply by 8¢ (100 x .08=8.00). The state will reimburse the school 50% of the amount allowed by the state (4¢). We hope the school will pay the individual the remaining 4¢ for a total of 8¢ a mile. Meals, etc. are not reimbursed for any travel. Registration fees are reimbursed at 100% through the school and then to the individual (copy of registration bill must accompany the claim to the state office).

(2) Out-of Local-Area Travel-This is the same as the above but requires prior approval by the state office.

(3) State-Called Meetings-Reimbusement will be 100% of what the state allows (8¢ a mile).

(4) Per Diem-This is only paid when one stays overnight, has received prior approval by the state office for such travel, is over 50 miles from the home office, and has a copy of the motel bill attached to the TR-6 form. Per diem for in-state travel is $12.00 and $16.00 for out-of-state. Each 24-hour period constitutes one full day of per diem.

Example - if one left at 6 a.m. and returned the following day at 6 a.m., the per diem would be $12.00. Each day is divided into 4 quarters - $3.00 a quarter ($4.00 out-of-state). If you left at 6 a.m. and returned the next day at 12 noon, $12.00 plus one additional quarter of $3.00 for a total claim of $15.00 would be granted. This would be 24 hours plus 6 hours for a total of 30 hours - 4 quarters a day (6 hours each quarter) plus one more for a total of 5 quarters (5 x 3.00=$5.00). If you had returned at 6 p.m. that evening, it would have been 6 quarters for a total claim of $18.00 (total - 36 hours, 6 quarters, $3.00 each quarter, for a claim of $18.00).

(5) Reimbursement Claim - The individual initiates the claim (TR-6-two copies) the 15th of the month following the previous month's travel sent through the superintendent, principal, or vocational director for his signature.

(6) Actual Reimbursement - This takes place by the state office at the end of the fiscal year when submitted on Form E. One TR-6 will be returned to the school for figuring the total claim. When the TR-6 is returned, most schools will reimburse the teacher at that time even though reimbursement is not returned to the school until the end of the year.

(7) State Pays	School Usually Pays
4¢ - local travel	4¢ - local travel
8¢ - state-called meetings	Nothing
100% - registration fees	Nothing
$12.00 and $16.00 - per diem	Nothing

*See Form E for example on how to claim End-of-Year Travel Reimbursement

Indiana Department of Public Instruction

Vocational Education Division
600 Old Trails Bldg.
309 West Washington Street
Indianapolis, Indiana

2 copies due into State Supervisor of Business and Office Education by the 15th of the month following travel.

FORM BOE-TR-6
STATE DEPARTMENT OF PUBLIC INSTRUCTION
VOCATIONAL EDUCATION DIVISION
TRAVEL EXPENSE CLAIM

BUSINESS AND OFFICE EDUCATION

_____ (County)

_____ (School Corporation)

_____ (Month) (Year)

(1)	(2)	(3)	(4) Miles Traveled		(5) Subsistance Per Diem		
							Amount
Date	Person or place visited	Purpose of trip	A * In Local Area	B * Out of Local Area	A * Leaving Home (Date and Hour)	B * Arriving Home (Date and Hour)	* At $2.50 per quarter (No. of quarter)
8-15	Conference - Indiana State University			60	6 a.m.	8 a.m.	3 - $9.00
16							4 -$12.00
17							4 -$12.00
18	Return home			60	5 p.m.	6 a.m.	3 - $9.00

Presented by _____ (Supervisor, Coordinator, Teacher) _____ (Date)

Approved by _____ (Superintendent, Director, or Principal) _____ (Date)

Claim Approved by _____ (State Supervisor of Vocational Business and Office Education) _____ (Date)

Total Miles Traveled 120

Total Amount of Travel Claimed @ 8¢ per mile $ 9.60
Total Subsistance 42.00 **
Registration fee 4.50 **

Grand Total 56.10

* Prior approval, by State Office, is necessary. The hour and date of leaving and arriving are necessary to determine quarters.

** A copy of all claims must accompany this form: motel, registration, etc.

State Office Only
50% reimbursement $_____
100% reimbursement _____
TOTAL $_____

SECTION 6-8

To: ALL COUNTY AND CITY SUPERINTENDENTS AND PRINCIPALS

IMPORTANT

Subject: REGULATIONS FOR FILING VOCATIONAL CLAIMS AND REPORTS

I. In compliance with an action of the State Board of Education all claims and reports shall be made through the office of the county or city superintendent of schools.

II. The responsibility for making claims in the proper form and at the time required by law and regulation rests upon the school corporation claiming reimbursement.

III. All claims for reimbursement for vocational instruction must be filed in this office on or before April 1. Claims received later than April 15 will not be included in computation of the Reimbursement distribution (Schools closing later than this date should estimate costs.)

IV. Form E to be used in making claim for salary and travel expenditure for vocational teachers must be correctly filled out in every detail, SIGNED AND NOTARIZED. All vocational teachers employed by a school corporation shall be entered on the same Form E.

V. B.O.E. 1, 2, and B.O.E. TR-6's will be used to verify the information found on the Form E.

(a.) Form E is to be mailed to:

Vocational Education Division
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

Please write "Form E", lower left corner of envelope.

(b.) All other forms are to be mailed to:

John D. Lee, State Supervisor
Business and Office Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana

FORM E
REVISED 1966

THIS CLAIM IS DUE ON OR BEFORE APRIL 1

REPORT OF EXPENDITURES FOR VOCATIONAL INSTRUCTION

FOR THE 19____-19____SCHOOL YEAR

Name of School Corporation (Township or City) (County)

Location (Post Office)

IMPORTANT NOTICE

One copy of this report is due in DIVISION OF VOCATIONAL EDUCATION, 227 STATE HOUSE, INDIANAPOLIS 4, INDIANA, on April 1, for all schools. Retain one copy for local files. Local school official shall carry full responsibility for the return of this claim on or before the above dates. THE STATE BOARD FOR VOCATIONAL EDUCATION nor its representative agents are responsible for claims presented after April 1.

NAME AND ADDRESS OF INDIVIDUAL TO WHOM THE STATE WARRANT SHOULD BE MAILED

Name (Print or Type) Official Title

Post Office Address

Chapter 188, 1923 Acts. The state, in order to aid in the maintenance of approved vocational schools or departments for industrial, agricultural home economic education and distributive education, shall, as provided in this act, pay annually after June 30, 1923, to school cities and towns and townships maintaining such schools and departments an amount not to exceed one-third of the sum expended for instruction in vocational and technical subjects authorized and approved by the state board of education. Such cost of instruction shall consist of the total amount raised by local taxation and expended for salaries and official travel of the teachers of approved vocational and technical subjects. (As amended, Acts 1941, p. 237.)

BUSINESS AND OFFICE EDUCATION

Report Same Figures Here As Submitted On Final BOE 1 Report

Name of each Teacher in Bus. & Office Ed.	Course or Subject	Total Fiscal Year Salary (Line 1)	Total Regular Sch. Yr. Salary (Line 2)	Extended Contract (Line 7)	Amount of Regular Salary Assigned to			VOCATION Salary Reg. Sch. Yr. (Line 3-5)	NON-Reimb. Salary (Line 6)	ADULT (From Approved BOE 5)	TRAVEL (Tot. of Approved BOE-TR-6)
					Intensive Off. Lab. (Line 3)	Related Instr. (Line 4)	Coord. or Super. (Line 5)				
Charlie Education		7000	6000	1000		1000	2000	3000	3000		56.10

SECTION 6-9

The O.E. 4045A is necessary for conducting your follow-up study. You might desire to add additional questions for your own need or reason.

The survey information will be needed by this office on November 1 of each year, pertaining to the previous spring graduation class. (Example: In November of 1970, this information will be needed for the students enrolled in the classes of 1969-70.)

The 4045A is for each individual student, whereas, the 4045 is for the summary of your student enrollment in the B.O.E. program.

This is one of the most important things that is needed. For through this information, one can justify that which he is doing and keep up to date on actual happenings within the business world.

O.E. 4045A

FOLLOW-UP SURVEY OF BUSINESS AND OFFICE EDUCATION GRADUATES IN INDIANA (STUDENT'S QUESTIONNAIRE)

INSTRUCTIONS: Please respond to questions as they apply to you. Return completed questionnaire in the enclosed envelope.

Graduated From: High School ____ Post High School ____

Year of Graduation 19 ____

NAME OF TEACHER AND INSTITUTION:

NAME: _____
ADDRESS OF INSTITUTION: _____

NAME AND ADDRESS OF STUDENT:

NAME: _____
PRESENT ADDRESS: _____

1. Are you in the Military Service? Yes ____ No ____
2. Are you enrolled in an institution for further education? Yes ____ No ____
3. If enrolled, are you unemployed ____ part-time employed ____?
4. Are you unemployed for another reason other than Military Service and further education? Yes ____ No ____
5. If unemployed for another reason, are you seeking work ? Yes ____ No ____
6. If not in the Military Service and not continuing in further education, are you employed full-time ____ part-time ____?
   6a. Is your present job in the distributive occupation for which you were trained? Yes ____ No ____

IF 6a is NO:

   6b. Is your present job in an occupation that is related to the business occupation for which you were trained? Yes ____ No ____

7. If your answer to either 6a or 6b is YES, please give your:
   PRESENT JOB TITLE _____
   PLACE OF EMPLOYMENT _____
   KIND OF BUSINESS (such as department, hardware or food stores, wholesale, drugs, real estate, insurance, etc. _____
8. If your answer to both 6a and 6b is NO, please give your:
   PRESENT JOB TITLE _____
   PLACE OF EMPLOYMENT _____
   KIND OF BUSINESS _____
9. Are you using any equipment now that you were not trained to use in school? _____
10. Do you have any suggestions of activities that should have been included in your office classes? _____

11. What activities in your office class seemed to be the most useful?

_____

_____

12. What activity was of no help or served no useful purpose for you?

_____

_____

Form OE-4045

Return 1 copy by November 1 to the appropriate state supervisor, Division of Vocational Education, 600 Old Trails Building, 309 West Washington Street, Indianapolis, Indiana 46204

FOLLOW-UP OF ENROLLEES IN PREPARATORY VOCATIONAL EDUCATION PROGRAMS

☐ SECONDARY PROGRAM

☐ POST-SECONDARY PROGRAM

Prepare a separate form for the Secondary and Post-secondary Program

STATE/TERRITORY | Voc. Director or Supervisor | DATE PREPARED | FISCAL YR. END: *June 30, 19___* | DATE DUE: November 1

OE CODE	OCCUPATIONAL CLASSIFICATION	SEX	TOTAL NUMBER COMPLETED PROGRAM REQUIREMENTS	NUMBER STATUS UNKNOWN	NUMBER NOT PRESENTLY AVAILABLE FOR PLACEMENT			NO. EMPLOYED AND/OR AVAILABLE (ADD COLS. 5 THRU 8 AND SUBTRACT FROM COL. 4)	NUMBER IN LABOR FORCE					LEFT PRIOR NORMAL COMPLETION TIME WITH MARKETABLE SKILLS
					ENTERED ARMED FORCES	CONTINUED FULL-TIME SCHOOL	OTHER REASONS NOT IN LABOR FORCE		EMPLOYED FULL-TIME			EMPLOYED PART-TIME (EXCLUDE THOSE REPORTED IN COL. 7)	NUMBER UNEMPLOYED (SEEKING WORK)	
									OCCUPATION TRAINED	RELATED OCCUPATION	OTHER			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
01	AGRICULTURE	M												
		F												
04	DISTRIBUTION	M												
		F												
07	HEALTH	M												
		F												
09	HOME ECONOMICS (Wage earning only)	M												
		F												
14	OFFICE	M												
		F												
16	TECHNICAL	M												
		F												
17	TRADES AND INDUSTRY	M												
		F												
	TOTAL: →													

On reverse side, note directions for completion of follow-up Form OE-4045

DIRECTIONS FOR COMPLETION OF FOLLOW-UP FORM OE 4045

This form is concerned with a follow-up of the regular full-time day school programs only. Report due **November 1** each year.

Report Occupational status as of October 15 of the current calendar year.

Column 4 - Total Number Completed Program Requirements - Report the number of students who successfully completed the vocational instructional program requirements and graduated from high school or post-high school during fiscal year covered by this report. Also include students that completed vocational program requirements and left school at the end of the school year, without graduating. Include completions recognized by certificate award.

Column 5 - Number Status Unknown - Report number status unknown.

Column 6 - Entered Armed Forces - Indicate the number of students reported in Column 4 that entered the Armed Forces.

Column 7 - Continued Full-time School - Indicate the number of students that continued full-time school, post-secondary, all types.

Column 8 - Other Reasons not in Labor Force - Indicate the number of students not in Labor Force due to death, illness or choice.

Column 9 - Number employed and/or Available - Add Columns 5, 6, 7 and 8 and subtract from figures in Column 4.

Column 10 - Employed Full-time - Occupation Trained - Report number entered occupation trained on a full-time basis. Full-time basis means working the numbet of hours per week considered a normal work week in the particular business or industry.

Column 11 - Employed Full-time - Related Occupation - Report number that were employed full-time, in an occupation in which successful entry and performance are dependent on skills and/or competencies learned in the Vocational Education Instructional Program concerned.

Column 13 - Number in Labor Force - Employed Part-time - Report number employed less than the normal work week for the business or industry in which they are employed. Include all part-time employment in occupation trained. related occuparion, and any other occupation.

Column 14 - Number Unemployed (Seeking Work) - Report number not working but are seeking employment.

Column 15 - Left Prior to Normal Completion Time With Marketable Skills - Report the number of students who have left the instructional occupational program before completion (dropouts) and are employed full-time in job trained or a job related to the occupational Program. (These students are not to be reported in Columns 4-14)

NOTE: Every student reported in Column 9 should be accounted for in Columns 10, 11, 12, 13 and 14.

Follow the color code below:

Name of Program	Color for Program
Agriculture	Blue
Business & Office Ed.	Buff
Distributive Ed.	Green
Home Economics	Canary
Health Occupations	Goldenrod
Technical Education	Pink
Trade & Industry	White

SECTION6-11

Criteria for:
Rental of Equipment (Data Processing)

1. Vocational funds should not be used to purchase or rent equipment if the school plans to use it for purposes other than vocational instruction.

2. If the equipment serves as an instructional tool for a limited number of students per year - then per capita cost is extremely high and is difficult to justify. The cost for this kind of equipment is extremely high, and it is anticipated that perhaps no more than three or four metropolitan centers qualify for reimbursement.

   a. If equipment is used 50% of the time first year and increases in time utilization in succeeding years, it can be justified.

3. A vocational data processing program should be preceded by an introductory course in data processing and be considered as a part of the program.

4. A joint proposal for the high school, adult program and utilization by surrounding schools should be submitted.

   a. Show the period by period breakdown by schools (or classes) to use this equipment, hours of instruction by the different schools, and adult and evening programs.

   b. Justification can be found when machines are used by more than one school or a school system and the students all concentrate to one school.

   c. The school should be a centrally located one for the city or for that area.

5. A need for this program must be supported by definite evidence from your community each year that reimbursement is requested.

   a. Indiana Employment Security Division.

   b. Local survey of companies and agents which will employ your graduates - letter of need from major ones.

6. The machine to be used should be designed for instructional purposes. It does not need to embody all the refinements that are necessary for production work.

7. The use and the knowledge of instruction for this equipment will require understanding beyond the regular business degree.

   a. Each school must justify the ability of the teacher designated to teach this course. The ability of the teacher will be evaluated by the State Supervisor of Business and Office Education.

8. A general course outline, in which the reimbursed equipment is used, is to be submitted to the State Board of Vocational Education before the semester starts and resubmitted each time there is a change in course content.

   a. It should also contain a list of job classifications for which the students are being trained.

   b. A follow-up study will be taken each year to see if the students are being properly trained. A list (by name) of graduates placed will be compiled.

9. The usual Vocational Business and Office Education proposal must be prepared, supplemented by appropriate information on the data processing offerings.

10. A local advisory committee will be appointed by the school system or the school which houses the equipment.

   a. The committee shall consist of six to ten people:

      1. Guidance Personnel
      2. Teacher
      3. Office Manager
      4. Office Personnel
      5. Data Processing company representative
      6. Representative of companies employing graduates of your program

   b. Duties of committee:

      1. To help develop course outline and assisting the teacher in relating his instruction to the particular needs of the community.
      2. To supply classroom materials.
      3. To serve as guest speakers.
      4. To aid in a follow-up program, type of information needed, and to help evaluate this information.
      5. To aid in the selection of equipment and material.
      6. To aid and help in obtaining jobs for graduates who have successfully completed their training.
      7. To provide the school with advice on the types of courses needed to satisfy the needs of the community.

11. In all possible cases, the equipment should be highly evaluated for rental or "cut" right purchase. This decision could place considerable limitations on funds for other programs.

SECTION 7

(1.) Teaching Suggestions and Class Projects
(2.) Reference Material
(3.) Equipment to Include in your Laboratory
(4.) In-Class Duties for Students
(5.) "Do you Have an Office Situation?
Don't, Do, and Why"
(6.) "You Train Secretaries--So You Say"
(7.) "How You Can Gather Projects for your
Laboratory
(8.) Record of Your Business Education Students
(9.) Job Standards in Your Classroom

SPECIFIC TEACHING SUGGESTIONS

No course is more challenging to the business teacher than in clerical, secretarial, or office practice. Not only is the content of the course widely varied, but much of the instruction must be highly individualized to meet the needs of each student in the class.

The following teaching suggestions are designed to make the most effective use of the students' and teacher's time:

(1.) Have the students assist in administrative details of the class. They will be required to handle such details in an office. Assign students to such tasks as:

(a) Distributing materials.
(b) Collecting materials.
(c) Keeping attendance records.
(d) Making requisitions for additional supplies.
(e) Filing finished assignments.
(f) Serving as payroll clerk.
(g) Serving as office manager for the week.
(h) Serving as time keeper.
(i) Serving as receptionist--receiving visitors; answering inquiries.

(2.) Have specific jobs that the students are to complete for each unit. The students should know exactly what they are expected to do, how to do it, and when it is to be completed.

(3.) Do not require all students to complete all the units in the course. Many authorities believe students who show unusual skill in some areas should be allowed to specialize in those areas and thus develop a high degree of skill in them. Though all students should be expected to complete a certain minimum number of units--and they should know exactly what those units are--extra credit should be given to those students who are able to complete additional units and who put forth the effort to do so. However, these units should include additional learnings and should not represent simply more practice at the same level of difficulty as the basic units all students must complete.

(4.) Use job instruction sheets in those units where they are practical. Many of the jobs in clerical practice can be taught through the use of job instruction sheets. These sheets free the teacher to move about the class and work with any group needing her help. No time is lost starting work at the beginning of the period. The job instruction sheet is particularly valuable in office practice courses where the

students are engaged in many different learning activities. The job sheets should indicate the jobs the students are to do and they correct procedures to follow in doing the jobs. In this particular instance the job instruction sheet should include complete instructions for typing a stencil with questions on the reading. These job sheets may be typed and duplicated by the students in the duplicating units and filed for use as needed.

(5.) When possible, use practice sets in such units as filing and clerical office typewriting. Use of these practice sets will save the teacher countless hours in the preparation of instructional material and will, at the same time, provide excellent practice activities for the students

(6.) Rotate the members of the class through the various units. In most clerical and office practice courses limitations of equipment and supplies make such a procedure necessary.

(7.) Provide special drills for the improvement of the fundamentals whenever necessary. Obviously there is not time in the clerical practice course to reteach the fundamentals. Furthermore, this should not be necessary. However, since much of the clerical work in the business office does involve handwriting, spelling, and simple computations, it is important that each student master these fundamentals. Many teachers give their students a test on the fundamentals early in the course to determine those areas in which each student needs further drill. Students whose handwriting is illegible may be given homework assignments designed to correct this deficiency. Others may be given assignments emphasizing spelling or arithmetic skills.

(8.) Teach good work habits. Teach students to analyze the job and determine how to do it with the minimum of time and motion. The students should learn to organize their work and to arrange their materials according to the principles of motion and time study

(9.) Give the students practice in developing skill in proofreading. They should have acquired this skill in typewriting, but regardless of any previous training, too much emphasis cannot be placed upon checking one's work carefully in clerical practice.

(10.) Use pre-tests at the beginning of those units in which the students have had some previous instruction to determine any deficiencies and points needing particular emphasis. For example, if the course includes a unit on clerical typing, the teacher needs to know at the beginning of the unit the typing skill of each student. A student who can type only 35 words a minute may need job assignments quite different from the student typing 50 to 60 words a minute.

(11.) Give the students practice in the correct use of the telephone. Every classroom should have a practice telephone. Excellent practice equipment and teaching materials may often be secured from the telephone company.

(12.) Keep assignments flexible to allow for outside rush jobs, but avoid interruptions unless the jobs will contribute to the students' learning.

(13.) Give the students actual clerical jobs to perform when such jobs are available and meet the needs of the class. For instance, the jobs in the duplicating unit should usually consist of the preparation of materials that may be used in the class. A file clerk may be appointed once a week to file students' papers and other materials that have been removed from the files during the period.

(14.) Stress the importance of organizing work and keeping an orderly desk at all times.

(15.) Arrange for demonstrations of office machines and equipment from local equipment firms.

(16.) Have the students rate themselves on a personality rating scale both at the beginning and at the end of the semester. The teacher may also rate the students and compare the two ratings.

(17.) Keep an up-to-date resource file of reference material such as articles, pamphlets, and the like that are related to office work and that may prove helpful to the students.

(18.) Remember that clerical practice should be an activity course. Lectures and even class discussion should be kept to a minimum. Much of the information that the teacher may wish the students to know can be presented to them through the use of study guides or information sheets. These sheets may be typed and duplicated in the duplicating units and distributed to the students without losing valuable class time imparting the information. The students should understand that they are expected to study these sheets and will be tested on them.

(19.) Toward the end of the semester have the students come to class dressed as they would dress in the business office. A discussion of good grooming and appropriate office dress is often ineffective unless the students are required sometime during the semester to come to class dressed as they would for the office.

(20.) Have the students participate in at least one field trip to a business office. If the class is small, the teacher may select the firm to be visited and take the class as a group to study the office routines, procedures, and jobs performed in the company. Other teachers prefer to have each student select an office for study. The student then pre-

pares a written report of the procedures and jobs that he observed in the office or presents his report orally in class, depending upon the class time available.

(21.) Emphasize the importance of regular attendance on the job by requiring the students to make up any time lost through absences or tardiness.

(22.) Make effective use of the bulletin boards. Display illustrations of unusual letter styles, business forms, statistical reports, new equipment, and supplies. Post proofreading drills occasionally. Change the display frequently. Have the students prepare some of the bulletin.

(23.) Give the students practice in filling out application blanks. Have two or three local businessmen interview some of the students before the other members of the class. The interview should be followed with a discussion of the students' strong and weak points during the interview.

SPECIFIC TEACHING SUGGESTIONS FOR STENOGRAPHIC PRACTICE

Many of the teaching suggestions given for clerical practice may be used equally effectively in stenographic practice. Other suggestions that may be helpful to the teacher include the following:

1. If possible, use the workbook that accompanies the text. It will provide business forms as well as excellent problem-solving assignments.

2. Avoid too much class discussion, recitation, and lecture presentation. On the high school level, stenographic practice should be primarily an activity course in which the students are given an opportunity to build skill in the production of office-type jobs.

3. Do not correct all the students' transcripts. They should be taught to be responsible for locating their own errors. Check production tests carefully.

4. Give the students extensive practice in building transcription power. Emphasize the importance of both speed and accuracy in transcription.

5. Give the students definite goals toward which to work. Time the students on their transcription production so that they can determine their rate of progress. Indicate either in words a minute or number of letters what their transcription rate should be throughout the course.

6. Give the students some practice in taking office-style dictation and in transcribing such material.

7. Teach the students how to make the most effective use of their shorthand notebooks.

8. Teach the students good work habits, both in taking dictation and in transcribing.

9. Emphasize the importance of good tools with which to work in transcription--good quality paper and carbon, the right kind of typing erasers, erasing shields, and so on.

10. Occasionally interrupt students during the transcription period. Office workers are constantly being interrupted in their work and must learn to cope with such interruptions.

11. See that all students have an opportunity to build skill in transcription on electric typewriters.

12. Do not limit the transcription and dictation practice to business letters. Include practice in completing business forms, preparing business reports, typing up minutes, and the like.

13. Emphasize spelling. Include drills on commonly misspelled words, proper names, homonyms, words often confused, and so on. Have the students keep a list of their spelling errors and test them on these words occasionally.

14. Review important principles of grammar, punctuation, capitalization, and typing usage.

15. Emphasize the importance of accurate proofreading. Give the students proofreading drills, if necessary.

16. Provide some practice in composition of letters and telegrams.

17. Teach the students to record all instructions in shorthand in their notebooks. Do not always provide written instructions or permit them to rely upon memory. Avoid repeating instructions.

18. Occasionally dictate letters and other material to be mailed.

19. Review the correct techniques for inserting multiple carbon packs, chain feeding of envelopes, correcting bound manuscripts, and other specialized typing problems.

20. Toward the end of the semester have the students come to class for one week dressed as they would in the office.

21. Assign one student a week to the "model secretarial desk." This student should be responsible for seeing that the desk is equipped with all necessary supplies and for doing any stenographic or secretarial work that the instructor may assign to her. Insofar as possible, these jobs should consist of actual office work rather than simulated office activities.

22. During the latter part of the course, assign some dictation projects that will integrate many of the skills and knowledges that have been emphasized in the course.

Title of Project Letters in Action

Participating Activities:

1. Obtain two actual business letters which have been received. Evaluate the the letters according to the standards explained in your reading. Write your criticisms.

2. Interview at least two office workers and find out if they compose and write letters for their employers.

3. Find and read from two other sources information about letter writing. Compare this information with the information you have learned in this project.

Evaluation:

1. This letter was sent by a department store to a well-known national fur manufacturer. It placed the writer's interest first and brought poor results. Rewrite the letter.

   Dear Mr. Liss:

   We are in need of facts about furs women wear for a pamphlet suitable as a giveaway in our fur department. Can you oblige us with some information?

2. Rewrite the following letter. Remember to make the opening paragraph one that will capture the reader's interest first. The opening sentences should make for clarity of thought and eliminate confusion.

   Dear Mr. Bass:

   Replying to your request of June 19th, as soon as our schedule permits, we shall forthwith send you a number of combination slogan and trademark letterhead illustrations that have been very big sellers with us, and also ask our representative, Mr. Lurt Kaminer to contact you for the purpose of assisting you, should you care to discuss special art-work problems.

   I believe there is nothing further we can do until you are ready to place your order. Thanking you for your past patronage.

   Yours very truly

PROJECT: FILING OBSERVATION REPORT

Name_____ Date _____
Firm Type of
Visited_____ Business_____

Size of business: Small_____Medium_____Large_____

Office Manager_____ File Clerk_____

Is there a central filing department?_____

Type of filing used:

Alphabetic _____ Geographic_____
Numeric _____ Combinations _____
Subject _____ If so, what?_____

Are incoming letters time stamped? _____

What does the company use for release marks?_____

When inspecting, did the clerk find any letters not released for filing?_____
If so, how were the letters handled?_____

_____

In indexing, which of the five possibilities were used most often?

Name on the letterhead_____
Name of person or company to whom letter was addressed_____
Name in the signature_____
Name of subject mentioned in the letter_____
Name of location_____

Was a printed form used to cross-reference any of the letters?_____

How was the coding step completed?

Was the indexing caption underlined?_____
Were colored pencils used in coding?_____
Was the filing caption written on the letter?_____
Was a line drawn under name used in cross-referencing?_____
Was an "x" placed at the end of the line?_____

Was special equipment used for sorting the correspondence?_____

If sorting equipment was not used, describe the sorting step.

_____
_____
_____

_____

Murphy. Workshop. Indiana State University.

Did any of the correspondence require mending before filing?_____
If so, how was it mended?_____

In the storing process, did the file clerk lift the folder out of the file cabinet before placing the letter in the folder?_____

Was the correspondence placed in the folder with the heading to the left?_____

Did the file clerk notice the date of the correspondence before placing in in the folder?_____

Was the latest date placed on top?_____

How was the material arranged in miscellaneous folders?_____
_____

Were any of the following guides used?
Primary_____
Secondary_____
Special_____

Were single or double captions used on guides?_____

Were the guides in staggered arrangement?_____

Were the folders behind the guides in staggered arrangement?_____

Did the file drawers appear neat and workable or were they overcrowded?_____
_____

Did the file clerk close each file drawer when she had finished filing in that drawer?_____

Were any folder labels prepared during your visit?_____
If so, what was the procedure of preparing them?_____
_____
_____

When a piece of correspondence or a folder was taken from the file drawer, was one of the following put in its place?
Substitution card_____ Out guide_____
Out folder_____ Nothing was used_____

Instead of taking a folder out of the drawer did the file clerk place the contents of the folder in a carrier folder?_____

Did the file clerk use a card (tickler) file for follow-up?_____

How often are the contents of the files transferred from the active to the inactive files? _____

Where are the inactive files stored? _____

Does the company make use of microfilming in preserving business records?

_____

Was the filing system used by the company one of the commercial systems mentioned in the text or did the company establish its own system?

_____

Does the company make use of any of the following?

Rotary visible card index files _____
Rotary wheel card files _____
Open-shelf filing _____
Large file tub _____
Counter height files _____
Five-drawer files _____
Six-drawer files _____

Attach a sketch of the floor plan of the filing department.

Would you like to work for this company? _____ Why?

Other comments and observations:

TITLE ORGANIZING BUSINESS LUNCHEONS D.O.T. 202.388

CAREER OBJECTIVE STENOGRAPHER

TIME LIMIT One Week

IMPORTANCE OF THE PROJECT:

A stenographer is often called upon to perform various duties which are of importance in public relations. One of these duties may be to organize a special meeting or luncheon in which members of the community may participate. The efficient organization and success of these affairs will do much to promote good will for the employer.

OBJECTIVES OF THE PROJECT:

1. To teach the student how to compose a letter of invitation.
2. To teach the student how to arrange for a luncheon with a local hotel, motel, or restaurant.
3. To teach the student how to develop a luncheon menu.
4. To teach the student how to figure costs and provide a pleasant, economical luncheon.
5. To teach the student how to make seating arrangements and place cards for the participants.
6. To teach the student how to prepare a program to be given to the participants.

PROCEDURES:

Assume that your boss has told you that your company is to participate in the annual Business-Education Day in your community. You have been given a list of names to whom you are to send a letter of invitation to tour your business office. The following steps are to be followed in this project:

1. Prepare a letter of invitation to be sent to 40 teachers telling them of the expected arrival time, the purpose of the visit, and the unexpected departure time.

2. Assume that you receive an acceptance letter from 35 teachers, and you must make arrangements for a luncheon for these 35 teachers, your boss, and two other department managers.

3. Develop a menu for the luncheon.

Sparc . Workshop. Indiana State University.

4. Contact three local hotels, motels, or restaurants, either by telephone or in person, and consult with the managers about the rental of a room and service for a luncheon for this group. Ask about prices, and compare costs; select the one which you feel will best suit your purposes.

5. *Prepare name cards and draw layout of the room indicating placement of each person and a speaker's table.

6. Prepare a program for the participants detailing the day's activities--arrival time--luncheon time--menu--speakers--and departure time.

7. Prepare a report to be handed to your teacher listing the hotels, motels, or restaurants you contacted, the persons to whom you talked, the prices quoted, and the one selected. State the reason for your selection. Also, hand in a copy of the menu developed, the layout of the room, the name or place cards, and the program developed.

References:

Complete Secretary's Handbook, Doris & Miller, page 218.
"Hints on Helping With a Conference" Modern Secretary, April, 1962.
*The Local Telephone Directory (To he used to obtain 35 names)

Evaluation:

The student is to have one week to finish the project. This may be partially done during class time, and partially outside of the classroom. The project should be evaluated on the basis of neatness, originality, time spent, and accuracy in figuring costs and typing the programs and reports.

TITLE: Preparing Minutes of a Business Meeting

Career Objective: Clerk-Stenographer

Time Limit: Three days

One day you will observe a club meeting.
One day you will take the minutes in shorthand.
One day you will make a recording of the meeting.

Objectives:

Observe how minutes are taken in actual practice. Learn to take minutes in shorthand and transcribe, first in rough draft form, and then making all corrections type the completed copy with one carbon. Take minutes with a tape recorder and then transcribe as above.

Note: In typing from rough draft remember it sometimes contains many errors. Read the entire manuscript, indicating all corrections in pencil, before you start typing. Learn to quote exactly.

If the minutes require more than one page, you may make the carbon copy of the second page on the back of the same onionskin sheets that were used for the carbons of the first page. This plan is often followed to a avoid crowding of files.

Main purpose of the project: Develop techniques in taking dictation from several people in the same meeting.

Materials needed: Pen
Shorthand notebook
Plain paper 8 1/2" x 11" for first pages of minutes
Onionskin paper for carbons 8 1/2" x 11"
One sheet carbon paper
Tape recorder

References:

Applied Secretarial Practice, Fries, Albert C., Rowe, Margaret, and Travis, Dorothy L., Gregg Pub. Div., McGraw-Hill Book Co., Inc., Chicago, Illinois, pp 252-254

Roberts Rules of Order, General Henry M. Robert, Scott, Foresman, and Co., Chicago, Illinois, 1951.

Enrichment: Ask for permission to attend church or community meetings and observe others taking minutes, their reading of minutes and approving of them in the meeting.

Howard. Workshop. Indiana State University.

Student Participating Activities:

1. Make appointment with club advisor and observe. *
2. Make appointment with another club advisor and take the minutes in shorthand. Type rough draft and hand in both rough draft and final form with one carbon copy.

3. Make appointment with a third club advisor to take a recording, in tape, of the meeting. From the tape, type a rough draft, make the corrections in pencil and type the final copy with a carbon.

Evaluation: Hand in both rough drafts and final copies with the carbon of 2 and 3 above.

1. With what forms of business writing other than letters may the secretary be called upon to help her boss?

2. What are some of the secretary's duties in the preparation of reports and manuscripts?

3. What are some of the rules to remember in typing rough drafts?

4. What items should a secretary consider in typing reports or manuscripts?

5. Who should act as copyholder in proofreading--the one who typed the material or his co-worker?

6. In what ways might a secretary be expected to assist an employer who is called upon to make speeches?

7. What are some of the situations in which a secretary might be expected to prepare a summary?

8. What are some of the characteristics of a good summary?

9. What information should be included in the minutes of a meeting?

10. Define each of the following: agenda
minutes
notice

11. What new words have you added to your vocabulary as a result of this project?

* In our school scheduled club meetings are scheduled during the 35-minute homeroom period, and this schedule is on the bulletin board in each homeroom.

GRADED BY _____ SATISFACTORY _____
UNSATISFACTORY _____

CLASS PROJECTS - INTERVIEWS

(1.) Teacher assigns a businessman or company to each student.

(2.) The student makes an appointment for interview on, "What are Your Qualifications for a Good Secretary?"

(3.) The student records information in shorthand.

(4.) The student gives each class member a copy.

(5.) The students, if 20, will have 20 results of interviews and can combine into one notebook.

(6.) Before the interview:
(a) Discuss grooming
(b) Discuss personal hygiene
(c) Discuss interviewing techniques
(d) Discuss personality and respect.

TRANSPORTATION PROJECT[1]

1. Service
   a. Passenger--air, train, rent-a-car, auto, bus
   b. Shipping--train, air, express, truck

2. Sources of travel assistance and time schedules
   a. Travel agencies
   b. Automobile Associations
   c. Petroleum Products Service
   d. Travelers' Aid
   e. Consul Services

3. Hotel and Motel Reservations

4. Travel funds--travelers' checks, credit cards, letters of credit

5. Expense reports

SPECIFIC:

Give each student a destination and period of time to make a trip. Have him prepare a schedule using his choice of transportation and the proper tables and directories. Include at least one hotel reservation. At the close of the schedule have him give the advantages of the transportation he picked over the others. Why did he choose that type of transportation and that particular route?

Pick a city that cannot be reached by any one means of transportation. Have a set time that the person must be there.

Individual reports on requirements for foreign travel--health, passports, customs, etc.

Reports on different types of credit cards, application, use, responsibility in case of loss, method of payment, etc.

BASIC: Compare different kinds of travelers' checks available as to cost and replacement if lost. Bulletin board display.

Discuss means of transportation--advantages and disadvantages of each.

Speaker who has traveled, perhaps a recent graduate who is home on leave from service, fellow teacher who is a veteran, or in the Indianapolis area, the International Headquarters of the Oriental Missionary Society has many returned missionaries who are available. Address: Fry Road, Greenwood, Indiana.

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[1] Binde, Howard, and Jackson. Indiana State University Workshop.

BIBLIOGRAPHY OF 79 INDIVIDUAL INSTRUCTION MATERIALS
FOR TEACHER-COORDINATORS OF BUSINESS EDUCATION

1. Alphabetic Indexing by Fisher. South-Western Publishing Company. Combination textbook--workbook which provides training in alphabetic indexing. Two weeks work.

2. Alphabetic Indexing by Guthrie. South-Western Publishing Company. Combination workbook--textbook that may be used for a short intensive basic course. Consists of 28 simple alphabetic and 2 achievement tests.

3. Applied Arithmetic Essentials by Mitchell and Reigner. H. M. Rowe Company. Combination textbook and workbook on basic arithmetic and its everyday applications.

4. Applied English Essentials by Reigner. H. M. Rowe Company. Combination textbook and workbook which develops and strengthens the use of good English.

5. Applied Penmanship by L. H. Lyon. South-Western Publishing Company. Combination textbook--workbook which contains penmanship drills, corrective drills, and diagnostic drills.

6. Applied Punctuation by Reigner. H. M. Rowe Company. Combination textbook and workbook on punctuation usage.

7. Automation Office Practice by Wanous and Wanous. South-Western Publishing Company. Textbook and practice set available. Designed to get a basic understanding of automated data processing. Five to six weeks of work.

8. Basic Typewriting Operations--Principles and Problems by Frank E. Lignori. A new kind of supplementary typewriting book with five sections.
   Section 1 - Basic Skill and Mastery Drills
   Section 2 - Centering
   Section 3 - Manuscript
   Section 4 - Business Letters
   Section 5 - Tabulation

9. Bookkeeping Charts by George F. Cram Company, 730 East Washington Street, Indianapolis, Indiana. Based on 20th Century Bookkeeping and Accounting Textbook. Available in three sets:
   Set #20 - Based on 20th Edition
   Set #21 - Based on 21st Edition
   Set #22 - Based on 22nd Edition

10. Business Filing and Records Control by Bassett - Agnew - Goodman. South-Western Publishing Company. Textbook and practice set available. Coverage of four basic correspondence filing systems--alphabetic, numeric, subject, and geographic.

11. Business Letter Typing by Bowman. South-Western Publishing Company. A paper-bound book which includes 24 letter models for further training in the mechanical preparation of business letters.

12. Business Machine Laboratory Manual by C. A. Swensen. William C. Brown Book Company, 135 South Locust Street, Subuque, Iowa. A 244-page comprehensive business machines manual which contains complete instructions for operating 12 fully-illustrated types of machines, 1,000 approximate practice problems and 27 tests, and instructors' procedure guide when school adopts the manual.

13. Business Practice. South-Western Publishing Company. Practice set that may be used for record keeping.

14. Can I Be An Office Worker. General Motors Corporation. A paper-bound booklet describing the job of office employees. A good promotional booklet.

15. Careers in Business Chart. South-Western Publishing Company. A good chart which can be used for promotional activities and student counselling.

16. Charm--The Career Girls Guide to Business and Personal Success by Whitcomb and Lang. Gregg Division of McGraw-Hill Book Company. A new book on beauty, poise, personality, glamor, and style designed especially for young women planning careers. It contains many practical hints to help the career girl to become more attractive and an interesting appearing person. 72 pages.

17. Clerical Occupations for Women, Today and Tomorrow--1964. U. S. Government Printing Office, Washington, D.C. Bulletin #289. A report produced by the Department of Labor, Women's Bureau.

18. Clerical Practice and Record Keeping by Pendery. South-Western Publishing Company. Combination textbook--workbook that covers clerical procedures in payroll work.

19. Clerical Practice and Record Keeping by Kirk-Scott-Lurie. H. M. Rowe Company. A combination textbook-workbook giving drills in arithmetic, handwriting, and spelling. It also gives training in indexing and filing, payroll, and record-keeping of a small business office.

20. DDC Spelling Aid (Record)
Dictation Disc Company, 170 Broadway, New York, N.Y. 10038.

21. Dictation Disc Sets (Records)
Dictation Disc Company. Each set contains:
1. Four 45 rpm records
2. 45 minutes dictation
3. Three different speeds
4. Instructions for speed development
5. Shorthand Achievement Progress Chart

BUSINESS LETTERS
Set 40-40, 50, 60
Set 400-50, 60, 70
Set 410-70, 80, 90
Set 42-80, 90, 100
Set 42B-80, 90, 100
Set 420-90, 100, 110
Set 43-100, 110, 120
Set 44-110, 120, 130
Set 430-120, 130, 140
Set 440-130, 140, 150
Set 441-140, 150, 160

CHALLENGE SERIES
Set 52-50 to 160
Set 53-50 to 120
Set 54-80 to 150

BRIEF FORM AND PHRASE LETTERS
Set 38-60, 70, 80, 90
Set 380-100, 110, 120, 130

500 COMMONEST WORDS
Set 39-60, 70, 80, 90
Set 390-100, 110, 120, 130

MISCELLANEOUS
Set 49 Reporting 130 to 180
Set 50 Legal 80 to 120
Set 51 Medical 80 to 120

5-MINUTE DICTATIONS
Set 450-60, 70, 80, 90, 100
Set 460-100, 110, 120, 130, 140
Set 462-100, 110, 120, 130

FOR BEGINNING SHORTHAND WRITERS
Gregg--from the new book
Set 480: Brief forms and phrases in letters
Graded and Cumulative 40 to 80
Set 481: Word beginnings and endings in letters
Graded and Cumulative 40 to 80
Set 482: Complete theory review 60 to 90

Pitman-Mastery Review Lessons
Set 64 - 40 to 60
Set 65 - 50 to 80
Set 66: Short forms and phrases in letters
Graded and Cumulative 50 to 90
Set 20: 20th Century Typewriting Records
Set 99: Typing to music 20 to 50

22. Directed Homework in Gregg Shorthand by Young. Gregg Division of McGraw-Hill Book Company. New theory-drill workbook used for supplementary aid for shorthand correlated for lesson-by-lesson use with Gregg Shorthand (Basic Manual) Diamond Jubilee Series. 144 pages.

23. Eleven inch by fourteen inch posters. Reprint Department, Today's Secretary, 330 W. 42nd St., New York, N.Y. 10036. Illustrates pictorially the qualities that make up the perfect boss and the perfect secretary. Ideal for bulletin boards in secretarial classrooms.

24. English The Easy Way by Norman Schacter. South-Western Publishing Company. Textbook--Workbook on the use of correct English.

25. Essential Business Practice and Essential Business Forms by Charles G. Reigner. H. M. Rowe Company. A practical set for extra training in the preparation of business forms. Each unit in the 56-page book of instructions, describes one of the most often-used business forms, explains its purpose, and gives detailed directions for completion.

26. Ezerase Test Packet. Millers Falls Paper Company, Millers Falls, Massachusetts 01349. A free test packet is available for use in typing or secretarial practice when studying types of paper.

27. Filing Office Practice by Bassett-Agnew-Goodman. South-Western Publishing Company. Contains a set of 64 cards for filing, 256 names, and a set of 96 pieces of business correspondence.

28. Full-keyboard Adding-Listing Machine Course by Agnew and Pasewark. South-Western Publishing Company. 20 jobs for instruction on standard manual and standard electric machines.

29. Gregg Shorthand Course for Speed Development. Dictaphone Corporation. A set of 60 dictabelt records.

30. Gregg Typing Picture Posters. Gregg Supplies and Recordings Department, McGraw-Hill Book Company. Two sets are available. One, Gregg typing picture posters--personal typing series, and two, gregg typing picture posters--letter style series.

31. Gregg Typing Wall Chart. Gregg Recordings and Supplies Department, McGraw-Hill Book Company. A king-size wall chart that doubles as a projection screen.

32. How to Find and Apply for a Job by Keily and Walters. South-Western Publishing Company. An 84-page paper-bound book containing such topics as (1) First step in selling yourself: Personal Inventory, (2) Discovering your opportunities, (3) Selling yourself in a personal interview, (4) Promoting and selling by your application blank, and (5) Selling your services by a letter of application.

33. How to Find the Right Secretarial Job. Today's Secretary. A 64-page complete step-by-step guide to job satisfaction and personal contentment.

34. How to Punctuate a Business Letter by Edward Kramer. Pitman Publishing Corporation. A pocket-sized paper-bound booklet giving rules on punctuation.

35. How to Use Adding and Calculating Machines by Walker-Roach-Hanna. Gregg Division of McGraw-Hill Book Company, 250 pages.

36. How to Write Effective Reports by Addison-Wesley Publishing Company, Inc., Reading, Massachusetts. A self-teaching programmed text which probably would be used on a limited basis.

37. Human Relations (Booklets). Enterprise Publications, 20 North Walker Drive, Chicago, Illinois 60606. Twenty 16-page booklets. Titles of interest: Everyday human relations
A tale of four companies
How you communicate accidentally
The high cost of a blabber mouth
What gives a business organization vitality?

38. Instant Spelling Dictionary. Career Institute, 30 East Adams, Chicago, Illinois 60603. 320 pages, 4 x 6 inches, 25,000 words, spelled, divided, and accented.

39. Intensive Clerical and Civil Service Training by Fisher. South-Western Publishing Company. Combination textbook--workbook and tests to prepare students to take jobs in business and to pass civil service examinations.

40. Job Study Guides. University of Minnesota and the University of Ohio. Available from Nicholson Hall Bookstore, University of Minnesota, Minneapolis, Minnesota.

(1) OF-1 File Clerk
(2) OI-1 Insurance Secretary
(3) OL-1 Legal Secretary
(4) OM-1 Mailing Clerk
(5) OP-1 Payroll Clerk
(6) OT-1 Tabulating Clerk
(7) OA-1 Advertising Office Stenographers
(8) OB-1 Bank Office Worker (General)
(9) OD-1 Dental Assistant (Office)

41. Key-Driven Calculator Course by Agnew and Pasewark. South-Western Publishing Company. 60 jobs for instruction for Burroughs Calculators, the Comptometer and the Plus Calculator.

42. Machine Office Practice by Agnew. South-Western Publishing Company. Contains 40 different jobs using business forms such as checks, sales slips, deposit tickets, invoices, and time cards. For use with any adding or calculating machine after the student obtains reasonable operating skill.

43. Mathematics Skill Builder by Briggs. South-Western Publishing Company. Workbook that provides a thorough review of the fundamentals of mathematics.

44. Medical Secretary Course for Speed Development. Dictaphone Corporation. A set of 10 dictabelt records.

45. Office Career Notebook by Bernard M. Ohm and Dr. Ralph E. Mason. Interstate Printers and Publishers, Inc., Danville, Illinois 61834. A notebook which may be used by each student enrolled in vocational on-the-job business education program, that will acquaint them with their business.

46. Office Machines Course by Agnew and Cornelia. South-Western Publishing Company. 10 jobs for full-keyboard adding-testing machines, 10 jobs for ten-key adding-listing machines, 15 jobs for rotary calculators, and 15 jobs for key-driven calculators.

47. Office Practice for Typists. H. M. Rowe Company. A short course--31 assignments--giving students an opportunity to improve their typing skills to true-to-life office problems.

48. Office Typing. H. M. Rowe Company. A set consisting of a textbook and envelope of working materials for typing true-to-life office jobs.

49. Opportunities in Office Occupations by Estelle L. Papham. Vocational Guidance Manuals. Educational Books Division of Universal Publishing and Distributing Corporation, 800 Second Avenue, New York, N.Y.

50. Programmed Business Mathematics by Harry Huffman. Gregg Publishing Division of McGraw-Hill Book Company.

51. Programmed Instruction Units. Argyle Publishing Corporation, 605 Third Avenue, New York, N.Y. 10016. Units included are:
    (1) Improving Your Written Communication
    (2) Methods Improvement in Work Controls
    (3) The Secretary--Jill of All Trades
    (4) Understanding Public Relations
    (5) Introduction to PERT
    (6) Cutting Office Costs
    (7) Application on Reliability Techniques
    (8) Selling to Business and Industry
    (9) Conducting Employee Interviews

52. Projects in Clerical Practice by Goodfellow and Rosenberg. South-Western Publishing Company. Textbook--workbook containing 6 projects involving writing checks. Keeping purchases invoice register, taking stock, calculating, tax deductions, preparing cash register tallies, reports of past-due accounts, alphabetic and numerical indexes, daily and periodic summary sheets for salesmen and handling complaints and making adjustments.

53. Record Keeping for Small Businesses. South-Western Publishing Company. A complete, self-contained bookkeeping outfit emphasizing record keeping for small businesses--36 hours of work.

54. Reference Manual for Office Employees by Larson and Koebele. South-Western Publishing Company. 150-page paper-bound book that is reasonable for all students. Covers topics such as mail, style letters, capitalization, care of typewriter, abbreviations, and punctuation.

55. Resources for Office Education Programs. U. S. Government Printing Office, Washington, D.C. A ready source of information listing films, filmstrips, major publications, periodicals, and supplementary materials.

56. William A. Roberts, M.D. Practice Set by Palmer and Archer. Gregg Division of McGraw-Hill Book Company. Realistic, up-to-date medical practice set for first term accounting students. Materials designed to take about 25-30 hours.

57. Rotary Calculator Course by Agnew and Pasewark. South-Western Publishing Company. 30 jobs for manual, electric semi-automatic, and fully automatic calculators.

58. Rowe Filing Practice Set. H. M. Rowe Company. A set consisting of an instruction book, a file box, and an envelope of miniature letters and cross reference sheets that teaches both alphabetic and geographic filing.

59. Shorthand Transcription Studies by Balsley and Wanous. South-Western Publishing Company. Textbook that leads the student from simple to complex matter.

60. Specialized Dictation Tapes for Medical Secretaries. Gregg Division of McGraw-Hill Book Company. The set consists of ten dual-track one-hour reels of skill-building tapes for training medical secretarial students.

61. Spelling Drills and Exercises by Brendel and Near. Gregg Division of McGraw-Hill Book Company. A new programmed-style book containing fifty 15-minute lessons for a thorough review of spelling principles.

62. Statistical Typing by Wanous. South-Western Publishing Company. Recommended for special emphasis in tabulating. Well-planned with special review drills followed by exercises which emphasize special problems in centering and tabulating.

63. Successful Devices for Teaching Shorthand by Wayne A. Alston. J. Weston Walch Co., Box 1075, Portland, Maine.

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64. Sustained Timed Writings by Grubbs and White. Gregg Division of Mc-Graw-Hill Book Company. A book of 46 timed writing selections.

65. Ten-Key Adding-Listing Machine and Printing Calculator Course by Agnew and Pasewark. South-Western Publishing Company. 30 jobs for instruction on the standard manual, the standard electric, the automatic multiplier, and the printing calculator.

66. 300 Commas by Leonard J. West. Gregg Publishing Company. A new programmed book that presents in step-by-step sequence the major use of the comma. 112 pages.

67. 20,000 Words by Louis A. Leslie. Gregg Publishing Company. Pocket-sized book that spells and divides more than 20,000 frequently used words. 256 pages.

68. Typewriting Office Practice by Agnew. South-Western Publishing Company. A practice set containing all materials for 40 typewriting jobs.

69. Typewriting Style Manual. South-Western Publishing Company. 56-page paper-bound booklet covering centering, business letter styles, manuscripts, tabulation, capitalization, and punctuation.

70. Typing for Accuracy. H. M. Rowe Company. A book giving corrective drills to help students cut down errors and build up speed.

71. Typing, Tapes, and Records. South-Western Publishing Company. Available for 16 selected lessons for Part I of the Eighth Edition or 20th Century Typewriting. The recorded lessons supplement the work of the teacher and free the teacher to do individual instruction.

72. Using Rotary Calculators in the Modern Office by Meehan. Gregg Division of McGraw-Hill Book Company. 30 lesson textbook--workbook which provides detailed instruction for operating rotary calculators.

73. Various Recordings for Gregg Shorthand. Gregg Recordings and Supplies Department of McGraw-Hill Book Company. Teachers should write for a listing of records that are available.

74. Various Typewriting Recordings. Gregg Recordings and Supplies Department of McGraw-Hill Book Company. Teachers should write for a listing of records that are available.

75. Various Bookkeeping Practice Sets. South-Western Publishing Company. The teacher should write to this address for price list of these bookkeeping practice sets--5001 West Harrison Street, Chicago, Illinois, 60644.

76. Word Division Manual by J. E. Silverthorn. South-Western Publishing Company. Recommended for supplementary use; serves two purposes: "Basic Word List" for correct spelling and division of words and "High Frequency Word List" for frequency of words used in business.

77. Word Finder by Anderson, Straub, and Gibson. Prentice-Hall, Inc. Englewood Cliffs, New Jersey. The entire word list in this reference book has been up-dated to conform to the most recent trends in word division, pronunciation, and spelling. 244 pages.

78. Word Studies by Lamb. South-Western Publishing Company. Textbook--workbook and tests available. Builds a mastery of words needed by persons in all walks of life.

79. Words Often Used in Business by Cities Service Oil Company. A paper-back reference book listing words and definitions.

Additional Basic References:

1. Agnew, Peter L., and Pasewark, William R. Full-Keyboard Adding-Listing Machine Course. 3rd ed. Cincinnati: South-Western Publishing Company, 1963. pp. 76.

2. Barron, Allan E., and Taylor, James R. Clerical Office Training. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963. pp. 436.

3. Rowe, John L., and Others. Gregg Typing, 191 Series, Book Two, Office Production Typing. New York: McGraw-Hill Book Company, Inc., 1963. pp. 282.

4. Stewart, Marie M., and Others. Business English and Communication. 2nd ed. New York: McGraw-Hill Book Company, Inc., 1961. pp. 564.

Supplementary References:

5. Agnew, Peter L., and Brady, Mary Margaret. Advanced Key-Driven Calculator Course. Cincinnati: South-Western Publishing Company, 1958. pp. 158.

6. Agnew, Peter L., and Meehan, James R. Clerical Office Practice. 3rd ed. Cincinnati: South-Western Publishing Company, 1961. pp. 602.

7. Anderson, Ruth I., and Porter, Leonard J. 130 Basic Typing Jobs. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1960. pp. 61.

8. Archer, Fred C., and Others. General Office Practice. New York: Gregg Publishing Division McGraw-Hill Book Company, Inc., 1958. pp. 504.

9. _____. General Office Practice. 2nd ed. New York: Gregg Publishing Division McGraw-Hill Book Company, Inc., 1963. pp. 502.

10. Bassett, E. D., and Agnew, Peter L. Business Filing. 2nd ed. Cincinnati: South-Western Publishing Company, 1955. pp. 170.

11. Bowman, Wallace B. Business Letter Writing. Cincinnati: South-Western Publishing Company, 1957. pp. 122.

12. Coffin, Kenneth B., and Leslie, Louis A., Handbook for the Legal Secretary. New York: Gregg Publishing Division McGraw-Hill Book Company, Inc., 1958. pp. 378.

13. Fasnacht, Harold D., and Bauernfeind, Harry B. How to Use Business Machines. 2nd ed. New York: Gregg Publishing Division, McGraw-Hill Book Company, Inc., 1962. pp. 124.

14. Grubbs, Robert L., and White, James L. Sustained Timed Writings. 2nd ed. New York: McGraw-Hill Book Company, Inc., 1963. pp. 88.

15. Hager, Hubert A., Stewart, Marie M., and Hutchinson, E. Lillian. Business English and Letter Writing. New York: Gregg Publishing Division, McGraw-Hill Book Company, Inc., 1953. pp. 563.

16. Lessenberry, D. D., and Others. 20th Century Typewriting. 7th ed. Cincinnati: South-Western Publishing Company, 1957. pp. 338.

17. Liles, Parker, and Others. Typing Mailable Letters. New York: McGraw-Hill Book Company, Inc., 1960. pp. 146.

18. Lloyd, Allen C., and Hosler, Russell J. Personal Typing. 2nd ed. New York: McGraw-Hill Book Company, Inc., 1959. pp. 120.

19. Lloyd, Allen C., and Others. Typing Power Drills. New York: McGraw-Hill Book Company, Inc., 1956. pp. 118.

20. MacClain, Leonore Fenton, and Dame, J. Frank. Typewriting Techniques. Cincinnati: South-Western Publishing Company, 1961. pp. 105.

21. Mount, Dick. Progressive Typewriting Speed Tests. New York: McGraw-Hill Book Company, Inc., 1955. pp. 91.

22. Oliverio, Mary Ellen, and Palmer, Harold O. Graded Timed Writings. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1959. pp. 63.

23. Reel, Rita M. File 'n Find. Portland: Walch, J. Weston, Publisher, 1959. pp. 63.

24. Russon, Allien R. Business Behavior. 3rd ed. Cincinnati: South-Western Publishing Company, 1964. pp. 304.

25. Taintor, Sarah Augusta, and Monro, Kate M. The Secretary's Handbook. 8th ed. New York: The Macmillan Company, 1952. pp. 124.

26. Thompson, James M. Typewriting Timed Writings and Selected Drills. Cincinnati: South-Western Publishing Company, 1961. pp. 130.

27. Tidwell, M. Fred, and Others. Tested Timed Writings. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1961. pp. 64.

28. Wanous, S. J. Personal and Professional Typing. Cincinnati: South-Western Publishing Company, 1952. pp. 169.

Periodicals:

29. Balance Sheet. Cincinnati: South-Western Publishing Company. Monthly.

30. Business Curriculum, The. Monograph 100. Cincinnati: South-Western Publishing Company.

31. Business Education World. New York: McGraw-Hill Book Company, Inc. Monthly.

32. Business Teacher. New York: McGraw-Hill Book Company, Inc. Monthly.

33. FBE Bulletin. Foundation for Business Education. Quarterly.

34. Journal of Business Education. Monthly.

35. Let's Educate Youth for Effective Business Life. Monograph 98. Cincinnati: South-Western Publishing Company.

36. National Business Education Quarterly. National Business Education Association. Quarterly.

37. Production Typewriting. Monograph 97. Cincinnati: South-Western Publishing Company.

38. Rowe Budget, The. Baltimore: The H. M. Rowe Company. Monthly.

39. Suggestions for Programs of Office Practice and Procedures. Cincinnati: South-Western Publishing Company.

40. Today's Secretary. New York: McGraw-Hill Book Company, Inc. Monthly.

41. Typewriting News. Cincinnati: South-Western Publishing Company. Annually.

42. Visual Aids and Reading References on Business Careers. Monograph 84. Cincinnati: South-Western Publishing Company.

43. Visual Aids for Business and Economic Education. Monograph 92 Cincinnati: South-Western Publishing Company.

Films:

44. Advanced Typing - Duplicating and Manuscript. 16mm. 25 min. B/W. Sound n.d. U.S. Navy, United World Films, Inc.

45. Advanced Typing Shortcuts. 16mm 35 min. B/W. Sound. n.d. U.S. Navy, United World Films, Inc.

46. Build Your Vocabulary. 16mm 10 min. B/W and Color. Sound n.d. Coronet Films.

47. Building Typing Skill. 16mm. 10 min. B/W and Color. Sound. n.d. Coronet Films.

48. Developing Responsibility. 16mm. 10 min. B/W and Color. Sound. n.d. Coronet Films.

49. Developing Self-Reliance. 16mm. 11 min. B/W and Color. Sound. n.d. Coronet Films.

50. Developing Shorthand Speed. 16mm. 14 min. B/W. Sound. n.d. McGraw-Hill Book Company, Inc.

51. Developing Your Character. 16mm. 10 min. B/W and Color. Sound. n.d. Coronet Films.

52. Duplicating by the Spirit Method. 16mm. 14 min. Color. Sound. n.d. Bailey Films, Inc.

53. Getting a Job. 16mm. 16 min. B/W. Sound n.d. Encyclopedia Britannica Films, Inc.

54. Mimeographing Techniques. 16 mm. 16 min. Color. Sound. n.d. Bailey Films, Inc.

55. Office Courtesy - Meeting the Public. 16mm. 12 min. B/W. Sound. n.d. Encyclopedia Britannica Films, Inc.

56. Office Etiquette. 16mm. 16 min. B/W. Sound. n.d. Encyclopedia Britannica Films, Inc.

57. Parliamentary Procedure. 16mm. 11 min. B/W and Color. Sound. n.d. Coronet Films.

58. Personal Qualifications for Job Success. 16mm. 10 min. B/W and Color. Sound. n.d. Coronet Films.

59. Printing Through the Ages. 16mm. 12 min. B/W. Sound. n.d. Encyclopedia Britannica Films, Inc.

60. Punctuation. 16mm. 6 min. Color. Sound. n. d. Bailey and Imperial Films.

61. Sentences. 16mm. 6 min. Color. Sound. n.d. Bailey and Imperial Films.

62. The Secretary - A Normal Day. 16mm. 11 min. B/W and Color. Sound. n. d. Coronet Films.

63. The Secretary - Taking Dictation. 16mm. 10 min. B/W. Sound. n.d. Coronet Films.

64. The Secretary - Transcribing. 16mm. 10 min. B/W. Sound. n.d. Coronet Films.

65. The Secretary's Day. 16mm. 10 min. B/W and Color. Sound. n. d. Coronet Films.

66. Writing a Good Paragraph. 16mm. 11 min. B/W. Sound. n.d. Coronet Films.

67. Writing Through the Ages. 16mm. 10 min. B/W. Sound. n.d. Encyclopedia Britannica Films, Inc.

68. Your Earning Power. 16mm. 10 min. B/W and Color. Sound. n.d. Coronet Films.

69. Your Postal Service: Letters. 16mm. 11 min. B/W. Sound. n.d. Bailey Films, Inc.

70. Your Postal Service: Parcel Post. 16mm. 11 min. B/W. Sound. n.d. Bailey Films, Inc.

Vocational and Technical Education
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana 46204

Dear Business Teacher:

I have just received some very valuable course outlines for machines, secretarial and clerical practice, published by the Office of Vocational Office Education in Miami, Florida.

The course outlines show topics and matters that should be discussed. It has broken each area up into blocks, and then it gives references to textbooks and workbooks, which may be used as reference in each area. Even the exact page number is referred to in these textbooks and workbooks.

In an intensive situation, anything that you should do should refer to something that takes place in the office. Each of your objectives should work towards employment for the students. An intensive situation does not consist of courses, but it consists of jobs and problems that a student will face on being employed. Every instance in the intensive situation should relate to an office experience, or it has no place within this block of time.

The above material may be received free by writing and requesting the above items:

Director of Center
Vocational Instructional Materials Laboratory
Lindsey Hopkins Education Center
Miami 32, Florida

Sincerely,

John D. Lee
State Supervisor
Business and Office Education

JDL/lb

P.S. If you have a cooperative program, the following book will be very useful to you: "Cooperative Occupational Education", Mason and Haines, The Interstate Printing Publishers, Inc., Danville, Illinois. (This may be purchased at Indiana State University, Terre Haute, Indiana.)

EQUIPMENT AND SUPPLIES NEEDED IN LABORATORY

The list is not complete, but it gives one an idea of what an intensive situation should include:

1. Typewriters of various makes--manual and electric, pica and elite type.
2. One long-carriage typewriter.
3. Executive typewriter.
4. Miniature filing outfits or practice sets.
5. Filing cabinets.
6. Ten-key calculators--various makes.
7. Rotary calculators--various makes.
8. Ten-key adding machines--various makes.
9. Full-keyboard listing machines--various makes.
10. Stencil duplicating machines.
11. Direct-process duplicating machines.
12. Mimeoscope.
13. Styli.
14. Transcribing machines--various makes.
15. Paper cutter.
16. Letter opener.
17. Stencils and masters--various makes.
18. Carbon.
19. Typing paper.
20. Duplicating paper.
21. Stationery and envelopes.
22. Correction fluid.
23. Practice telephone.

24. Copy holders.

25. Staples and staple remover.

26. Dictionary and other reference books.

27. Small office supplies such as paper clips, pins, scotch tape, package labels, paste, rubber bands, shears, and so forth.

28. Address-o-graph.

IN-CLASS DUTIES FOR STUDENT

For a two weeks' period, there will be two girls serving in the following capacities, along with their other learning experiences. (These tasks will be performed each week--two girls for each category.)

SUPPLIES - See that all supplies (carbon, second sheets, ditto paper, etc.) are organized neatly and available for use.

TELEPHONE - Make calls for the entire block, repair service, reser tions for field trips, etc. You should contact General Telephone Company for learning techniques used in using the telephone.

MAIL - Pick up, sort, and open my mail. The girls would be in charge of any mailing done by the class.

FILING - In charge of all of the filing.

ASSISTANT SUPERVISOR - To be in charge in case of my having to leave the room, pass out papers to be distributed, and help teacher supervise.

RECEPTIONIST - Greet visitors, introduce guests, etc.

BULLETIN BOARD - In charge of getting together and arranging material for the bulletin board.

PROOFREADING - Four girls to proofread to see that all material is mailable.

REFERENCE MATERIALS - Girl in charge of organizing dictionaries, magazines, telephone directory, postal manual, English grammar books, secretarial handbooks, typing books, city map, Hotel Red Book, road maps, travel information, etc.

OFFICE HOUSEKEEPING - In charge of lighting, heating, blackboard, motivation charts, order pins, etc.

ATTENDANCE - Attendance chart kept, noting reasons for absences.

FINANCES - Collecting and spending of all monies - in charge of payroll.

Field trips, the recording of voices of businessmen giv ng dictation, inviting of businessmen in to dictate, actual dictation from teachers, the interrupting of transcription for other jobs (for example, the taking of a telegram), set up situations so that the students will have to answer letters of complaints, etc., are just a few examples of carrying out lifelike experiences.

Once a month a businessman or a past graduate come in and talk to the girls about their jobs and the types of businesses for which they work.

DO YOU HAVE AN OFFICE SITUATION?

Read and See

	Don't	Do	Why?
(1.)	Be quiet during timed writing.	Make Noise.	Because an office has noise.
(2.)	Talk to students.	Ask questions, stop them, and interrupt them.	Because they do this in an office.
(3.)	Work from straight copy.	Work from rough draft, scribbled notes.	Because they do this in an office.
(4.)	Teacher changes the ribbons and cleans the type.	The students are not typists if they can't do this.	Because they do this in an office.
(5.)	Can't erase in class; or if so, they always use an eraser.	Use an eraser, but also use chalk-out paper, etc.	Because this is what is in an office.
(6.)	Give complete memo.	Give them a subject, and let them compose the memo.	Because they do this in an office.
(7.)	Always allow them to take shorthand notes.	Give oral dictation while at the typewriter.	Because they do this in an office.
(8.)	Always talk plain while dictating.	Talk with accent, items in mouth, etc.	Because they do this in an office.
(9.)	Follow the letters in your book.	Write letters pertaining to business in your community, their products, and their vocabulary.	Because they do this in an office.
(10.)	Always make one carbon	Make more than one carbon, each with a different address.	Because they do this in an office.
(11.)	Follow a standard procedure.	Mix it up, mess it up--do this--do that.	Because they do this in an office.
(12.)	The purchase of equipment should be determined by the price.	The price should be the last item of consideration.	If it is not in the office, it should not be in the class.
(13.)	Teach basic skills in the intensive laboratory.	Teach by activities--do something new each day.	Because in an office, you must have the skill before hiring. Develop skill before and polish it in the laboratory.
(14.)	Just teach how to duplicate.	Teach how to clean and store the stencils, the machines, and make minor repairs	Because they do this in an office.
(15.)	Have only earphones in the shorthand laboratory.	Have transcribing and dictating equipment.	Because they have this in an office.

	Don't	Do	Why?
(16.)	Spell all words correct, and use proper English.	Use bad English, and spell the same word many ways.	Because they do this in an office.
(17.)	Never talk about dress or make-up.	Grade them on every point.	Because they do this in an office.
(18.)	Teach only how to add, etc. in machine calculation.	This is not an office experience--apply it to something--taxes, invoices, and purchase orders.	Because they do this in an office.
(19.)	Use only letterhead paper for letters.	Some have and some do not have but should be ready for either.	Because they do this in an office.
(20.)	Never stop them in the middle of a letter.	Stop them, remove paper, start something new and then come back to the old.	Because they do this in an office.
(21.)	Have all the students doing the same thing at the same time.	Have different activities taking place all the time.	Because they do this in an office, and this is to be an office laboratory.
(22.)	Use only the book established for the course.	Get most of your materials and projects from an office. (school office)	In the office, they do not use a book.
(23.)	Listen to a personnel manager who has never been a teacher.	He is the one who will hire your students.	Because they do it that way in his office--even if you think he is wrong.
(24.)	Do as you did last year.	Visit an office--they will be happy to have you. You can save them from training employees.	Because the office is the first to change and show progress.
(25.)	Train for one job.	Train for a variety but variety with a skill.	Because the office does not have just a 10-key operator.
(26.)	Train for only the academic student.	Train the academic student with a skill.	Because all will not stay in school, and some will need summer jobs.
(27.)	Train for personal use by personal typing.	Train also for employment. To center jam on a label is like centering a date on a letter. (if you tell the student)	Because someday, they might want to earn a living this way.
(28.)	Give timed writings from straight copy.	Give timed writings on letters.	Because they must do this in an office.
(29.)	Spend only one day on production work.	Spend a week straight or more.	Because they do this in an office.

Don't	Do	Why?
(30.) Let the student answer the phone, make machine adjustments, or proofread someone else's paper.	Develop responsibility.	Because they do this in an office.

If you cannot send them out to work, develop a "live" office situation in your school.

(a.) If it is not in the office, it should not be in the classroom.
(b.) If it is in the office, it should be in the classroom.
  (1.) This applies to equipment as well as projects.
(c.) If you have not been in an office, it will be hard to teach a "live" office situation--visit one.

"YOU TRAIN SECRETARIES--SO YOU SAY"

"Say, Karen, I've got something a little special in mind for a party this weekend," Lee King, president of Chicago's Edward H. Weiss & Co. advertising agency, announced casually to his executive secretary one morning. "Could you see, please, if you can track down some polka-dot tennis balls?"

"I've almost become blase' about some of the crazy assignments I get," Karen Laven, a pert, well-contoured brunette of 25, confessed last week, "But the polka-dot tennis balls was just about the craziest one." Still, she gamely scoured sporting-goods and department stores throughout Chicago--without success. So, resourcefully, she bought some conventional white balls and spent an afternoon at her desk dabbing large spots on them with a felt-tip color marker.

By steadfastly producing everything from polka-dot tennis balls to airline tickets and smoothing over everything from dictation grammar to broken appointments, the executive secretary today has become as vital to American commerce as plant and equipment and even, it sometimes seems, as the boss himself. At her best, she is a kind of all-purpose sentry, diplomat, psychologist, business lawyer, researcher, writer, errand girl, desk duster and shock absorber. "For an executive" observes Marvin Katke, Ford Motor Co.'s vice-president for manufacturing, "the choice of a good secretary can be as important as the choice of a good wife."

Two Virtues: That indispensability, in fact, rang as a recurrent theme last week through the Statler-Hilton Hotel in Dallas where 1,000 secretaries gathered for the 21st annual convention of the National Secretaries Association. And the professional status of the secretary even got a boost from the White House where Luci Baines Johnson reported she was thinking of taking up typing and shorthand after her wedding next week. "My father, she explained, "considers them the two greatest virtues."

At that altitude in management, they are required to have, beyond sheer stenographic proficiency, some executive qualities of their own. They must possess, for example, the administrative ability to keep an office running smoothly, the insight to assign priorities to various projects and the presence to issue orders in the boss's name. "The executive secretary," says Lois Gaigalas, 45, who earns $12,000 a year working for Detroit financier Frederick Matthaei, Jr., "should always try to do whatever relieves her boss so that he can do what he has to do."

In an association this close, most secretaries say that a feminine empathy is essential to establishing an effective working rapport with the boss. "Being an executive secretary is like being a wife without getting all the goodies," says Helen Nickerson, secretary to volatile Broadway producer David Merrick in New York. "You more or less have to have a personal relationship. You have to be aware of his moods, be enthusiastic over his

successes and build him up when he is down--although I must say that Mr. Merrick requires very little ego building." A successful secretary also must be able to adjust to her boss's idiosyncrasies. Merrick, for one, has a fondness for pretending to be someone else on the telephone and for an occasionally slinking through the office in a stooped Groucho Marx walk.

Barrier: The biggest contribution they can make to their boss's productivity, most executive secretaries agree, is to conserve his time by gracefully but firmly screening all telephone calls, visitors, and mail. As both the chairman of Los Angeles' Hunt Foods & Industries, Inc., and a celebrated art patron, Norton Simon is deluged with unsolicited calls and letters. "You can't imagine how many offers he gets for everything from wooden eyeglasses to undiscovered da Vincis," says his secretary, Angie Boaz, 36. So while Simon works at a small teakwood table in his homelike office (he very seldom uses his desk), Mrs. Boaz politely fends off all the potential intruders.

Many executive secretaries deal with unsolicited or crank calls by diverting them to other departments or taking the callers' names and messages and promising the boss will get back to them if he can. But one secretary who represents an absolute dead-end is Betty Patrick, a comely, 28-year-old brunette who takes the calls for millionaire recluse Howard Hughes at Hughes Tool Co. in Houston. Although she works for the company's top official, executive vice president Raymond M. Holiday, part of her job is to brush off all calls, most of them from crank inventors, for Hughes. Her standard reply: "I'm sorry, Mr. Hughes is not here. I don't know where he is." Mrs. Patrick insists that she herself has never spoken with Hughes. But she does admit that he often consults with Holiday by phone. All of these calls, she indicates are made on a private "hot line" outside of the company switchboard.

Niceties: Most secretaries try to provide such little supplementary flourishes. Outside the elegant, seventeenth-floor office of Chase Manhattan Bank chairman George Champion in New York, his two secretaries--Elsa Whelan, 47, and Marie Jacobs, 50--keep between their desks a large confidential card file stocked with pertinent reminders and personal tidbits. Under one name, for example, appears the notation "pest, don't let in"; under another, "does not like to play golf." In Chicago, Mrs. Laven tries to match the luncheons she orders for adman King with his mood. "When he's in a bad temper, I get stuffed tomato salad," she says. "When he's feeling fine, I get steak sandwiches."

Years of working with a man also equip most executive secretaries to duplicate not only his signature on letters but his writing style as well. A good amount of business correspondence, as a result, is composed by such ladies as Sue Buffington, the trim, graying secretary to Houston oil tycoon R. R. (Bob) Smith, whose personal income has been estimated at $500,000 a month. "I'd wash out deals with her," Smith declares. Nonetheless, when Mrs. Buffington sends out a letter that he laters reads and disapproves, Smith has a cagey way of correcting it. He follows it up with another one, explaining that the earlier letter was "dicatated but not read."

Connie McCauley's problem at Hollywood's Jalem Productions, movie star Jack Lemmon's independent production company, is that Lemmon has a habit of ripping up the letters to which he has just dictated answers. "He says 'kindest regards' and then he'll tear up the letter," she laments. "It turns me pale. If I can't piece the letter together later, I can't figure out who I'm supposed to be writing to."

Lemmon brings the same light comic touch to the office that he does to his film roles. The first time Miss McCauley met him, two years ago, he walked in straight from a pie-throwing scene in "The Great Race." With gooey cream dripping from his face, he sat down and, completely deadpan, rattled off an hour of dictation. Lemmon normally shows up dressed in unpressed blue denims, a sport shirt and a checkered golf cap parked sideways on his head. "He does some funny routines," Miss McCauley says, "and when he leaves he usually says 'Pull yourself together' or something like that."

Male Stronghold: Not all secretaries are women. There are some 20,000 men in the position, many of them in the railroad industry where executives still do much of their work on overnight train trips. "We date back to the tough days of frontier railroading," notes Herbert Snyder, 50, a portly father of two and veteran of the Battle of the Bulge who is executive secretary to Illinois Central Railroad chairman Wayne Johnson. "In those days the boss would be gone for months. Only men were prepared to make the sacrifice and the railroads have been stuck with us ever since." Snyder reports that he is seldom joshed about his unusual role. He does have some difficulties, though, with female secretaries who phone and, after hearing Snyder's voice, refuse to accept him as Johnson's secretary. When he finally convinces them, he says, "a long silence ensues after which they say 'Oh' and go into embarrassed apologies."

Increasingly, competent and conscientious secretaries of either gender are becoming hard to find. As business expands, so does the demand for secretaries and the good ones consequently can afford to be choosy about the jobs they accept. The Katherine Gibbs School, which, with four branches in New York City, Boston, Providence and Montclair, N. J., is the business girls' Ivy Leage, reports that it now gets 10,000 requests for the 1,400 secretaries it graduates each year. Chairman Gordon Gibbs (who himself married his secretary) says one employer was so desperate to hire a girl this spring he told the school "all she has to be able to do is find my office, and I'll hire her."

For many women, though, the lure of stepping up to executive secretary is so inviting that they purposefully set about grooming themselves for it. To increase their professional stature, they take a special six-part examination administered annually by the National Secretaries Association to qualify as a "certified professional secretary." And they enroll in three-day seminars that the American Management Association conducts eight times a year on "skill development for executive secretaries."

Rewards: Once a woman reaches the upper plateaus, remarks Dorothy C. Joyce, executive secretary to Gillette Co. chairman Vincent C. Ziegler in Boston, "every day is different. Every day there's a challenge. You never know who's going to come in or what's going to happen."

Are all the extra responsibilities that the executive secretary has to assume worth it? In some extreme cases, the rewards can be quite spectacular. When former Aluminum Co. of America chairman Arthur Vining Davis died four years ago, he left his executive secretary, Miss Evelyn Mitchell, a tidy $1 million. Most secretaries, though, have to be content with far less dramatic forms of recognition. "You become completely involved with what your boss is doing," says Gene Henson, executive secretary to top Atlanta attorney G. Maynard Smith. "And it only follows that if he is successful, you will be, too."[1]

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[1] "Newsweek Magazine", August 1, 1966.

"How You Can Gather Projects for Your Laboratory"

Business students completing a secretarial course in the secondary schools of the Evansville-Vanderburgh School Corporation will have an opportunity to become familiar with office practices and procedures in a variety of Evansville businesses. Intensive Lab for Secretarial Practice, becomes a part of the curriculum.

Instructional materials for the Intensive Lab have been developed by a team of ten Evansville Business teachers participating in a summer workshop sponsored by the Evansville-Vanderburgh School Corporation with funds provided by the Federal Government. These materials are unique in that they were prepared through collaboration with businessmen in offices representing ten types of business which most frequently employ business graduates of the local high schools.

Thirty-five offices were visited by workshop participants, a teacher being assigned to each of the following "areas" for study: Banking and Finance, Communications and Public Service, Insurance, Manufacturing, Medical, Legal, Real Estate, Retailing, and Science and Research.

Interviews were conducted with office managers, employment directors, supervisors, and secretarial employees in these offices. Actual dictation of correspondence, office memos, information for business forms, etc. was placed on tape during these interviews. Job descriptions, time allotments, vocabulary lists, and detailed information regarding office procedures were gathered during these visits for later use in preparing programmed instruction for job stations in the Intensive Lab.

When all of these materials had been assembled, each participant in the workshop prepared tapes outlining the work to be done by the secretarial students who would rotate to each of these stations in the Intensive Lab. While the work on one station would duplicate many of the secretarial duties and responsibilities in a law office, another station would be devoted entirely to the work of an insurance agency; thus every "area" of business visited and studied is represented by a job station in the Intensive Lab. By using tape recorders, general instructions pertaining to the office organization, company policy, style manuals, and office procedures could be presented before the student actually began "to work" in that office station. Every detail of instruction the student must follow to accomplish each job assigned to her as an employee of the office of that station had to be spelled out carefully on the tape. Thus every tape for each job station had to be carefully edited, a "key" prepared for each job to be completed, and a narrative provided for everything that had been put on the tapes.

It was also necessary to prepare a list of "supplies" necessary for the student to use on each job station, as well as a list of special equipment needed.

In addition to the job stations created to provide experience as secretaries in the business "areas" studied, the Intensive Lab will also include a two-week orientation on good grooming, proper attitudes and work habits, office layout and organization, promotional opportunities, and office economics. There will also be stations in the Intensive Lab for an "Office Manager," a "Secretary to Lab Director," a "Material Secretary," and an "Executive Secretary to Dept. Head." Duties for these stations have been planned to integrate and coordinate the work in the lab, to maintain library reference materials in the lab, to replace the job station supplies as they are used, to keep records of equipment repair, to keep accurate records of jobs completed by students on each job station and provide an evaluation of these, and to take dictation and prepare correspondence, etc. for the Lab Director and the Business Dept. Head.

In keeping with the requirements of the Indiana State Plan for Business Education, the course, Intensive Lab for Secretarial Practice has been built entirely around the needs of the local business offices which provide most of the employment for the students graduating from the high schools on a secretarial course.

MEMORANDUM TO SUPERVISOR

Dear Supervisor:

Because of your special qualifications as a supervisor, you have been chosen to participate in a most important study of the aptitudes, knowledges, and skills needed by first-level entry workers in your unit. The occupation in your unit selected for study is:

Occupation	Name of Worker
_____	_____

For this worker you have been given the following materials:

1. A set of 5 task sheets
2. An accompanying questionnaire
3. A Memorandum to Employee

Also, you have been given a Worker Characteristics Form and a Questionnaire to Supervisor for the occupation in your unit being studied.

You can contribute in an important way to this study by doing the following:

1. Have an employee in the occupation indicated above complete the task sheets in detail for one week.
2. Have this employee complete the accompanying questionnaire.
3. Complete a Worker Characteristics Form for this occupation.
4. Complete the Questionnaire to Supervisor for the occupation listed above.
5. Return the completed materials to the person named below.

Your assistance on this project will contribute much to the establishment of an effective intensified laboratory in office education in high school.

WORKER CHARACTERISTICS FORM

OCCUPATION _____

DIRECTIONS: Indicate the amount of each characteristic required of the worker in order to do the job satisfactorily by putting an X in the appropriate column.

If some characteristic not on this list is required, write it in, rate it, and define it briefly at the bottom of the form.

Characteristic	NOT REQUIRED for satisfactory performance	A VERY LOW DEGREE required in some element of the job	A MEDIUM or VERY LOW DEGREE required in some element or elements of the job	An ABOVE-AVERAGE DEGREE required either in numerous elements of the job or in the major or most skilled element	A VERY HIGH DEGREE required for progress in the job or for promotion
1. Work rapidly for long periods					
2. Strength of hands					
3. Strength of back					
4. Strength of arms					
5. Strength of legs					
6. Dexterity of fingers					
7. Dexterity of hands and arms					
8. Dexterity of feet and legs					
9. Eye-hand coordination					
10. Foot-hand-eye coordination					
11. Coordination of both hands					
12. Estimate size of objects					
13. Estimate quantity of objects					
14. Perceive form of objects					
15. Estimate speed of moving objects					
16. Keenness of vision					
17. Keenness of hearing					
18. Sense of smell					
19. Sense of taste					
20. Touch discrimination					
21. Muscular discrimination					
22. Memory for details (things)					
23. Memory for ideas (abstracts)					

23. Memory for ideas (abstracts)					

Characteristic	NOT REQUIRED for satisfactory performance	A VERY LOW DEGREE required in some element of the job	A MEDIUM or VERY LOW DEGREE required in some element or elements of the job	An ABOVE-AVERAGE DEGREE required, either in numerous elements of the job or in the major or most skilled element	A VERY HIGH DEGREE required for progress in the job or for promotion
24. Memory for oral directions					
25. Memory for written directions					
26. Arithmetic computation					
27. Intelligence					
28. Adaptability					
29. Ability to make decisions					
30. Ability to plan					
31. Initiative					
32. Understanding of mechanical devices					
33. Attention to many items					
34. Oral expression					
35. Skill in written expression					
36. Tact in dealing with people					
37. Memory of names and persons					
38. Personal appearance					
39. Concentration amidst distractions					
40. Work under hazardous conditions					
41. Emotional stability					
42. Estimate quality of objects					
43. Ability to adapt to unpleasant physical conditions					
44. Color discrimination					
45. Ability to meet and deal with public					
46. Height					
47. Weight					
48.					
49.					
50.					

REMARKS:

QUESTIONNAIRE TO SUPERVISOR

OCCUPATION _____

ORGANIZATION _____

Date _____

Name of Supervisor:

_____

Name of Employee in This Occupation Who Is Participating in the Study:

1. _____

1. Please give the following information concerning the hiring procedures for this employee:

   A. From what source was this worker secured for employment in this occupation?

   B. Were aptitude tests given? Yes_____ No_____

      If yes, what tests?

   C. Were other types of tests given? Yes_____ No_____

      If yes, what tests?

2. Are aptitude tests given to all workers in this occupation? Yes____ No _____
   If no, why not?

3. Are the other tests listed above given to all workers in this occupation?
   Yes_____ No_____. If no, why not?

4. How adequate do you feel these tests are as a device for selecting all workers in this occupation?

5. If employees in this occupation (not necessarily the one listed above) were to be promoted, to what positions might they normally be promoted?

6. (a) What methods are used to measure the performance of employees in this occupation?

   (b) If standards of speed and accuracy are used, please list these standards.

7. Indicate the forms frequently used by employees in this occupation: Please attach a sample of each.

	Title of Form	Description	Nature of Operation Performed on Form	Amount of Time Spent
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				

MEMORANDUM TO EMPLOYEE

TO: Participants in Intensified Laboratory Study

As an office worker, you have been chosen to participate in a most important study to develop instructional materials for an intensified laboratory in office education in high school.

With this memorandum, you have received the following materials:

1. A set of 5 task sheets
2. An accompanying questionnaire

You can contribute in a most important way to this study by doing the following things:

1. Under the direction of your supervisor, complete a task sheet for each day of the week indicated to you by your supervisor.

2. On the task sheet, indicate in detail the duties and operations you perform. There are 2 sides to each task sheet.

3. Complete the accompanying questionnaire after you have completed all of the task sheets. There are 2 sides to the questionnaire.

4. Return the completed materials to your supervisor.

IF YOU NEED ANY ADVICE OR GUIDANCE IN USING THESE FORMS, PLEASE SEE YOUR SUPERVISOR.

Your careful attention to this project will contribute much to the progress of the study to develop instructional materials for an intensified laboratory in office education in high school.

FIFTH HOUR	SEVENTH HOUR
SIXTH HOUR	EIGHTH HOUR
If you have worked overtime, please list in this block the duties and operations you performed during the period of overtime.	

REMARKS:

QUESTIONNAIRE TO EMPLOYEE

OCCUPATION _____

Date _____

ORGANIZATION _____

Name of Employee:

Name of Supervisor:

_____

_____

PART I

1. What major or frequently occurring duties or operations do you perform during the days of the month not covered by the task sheets? (Please list in detail and include an estimate in hours per month of the amount of time you spend on each activity.)

2. What machines do you operate? (Give name, model, serial number, and manufacturer.)

   a. Daily

   b. Regularly

   c. Occasionally

3. Roughly, how much of your time is spent per week:

   SITTING _____ MOVING ABOUT, CARRYING THINGS ____

   STANDING _____ MOVING ABOUT, NOT CARRYING THINGS _____

4. What persons do you contact in your work? (Give titles of persons, not names.)

PART II

1. How long have you worked in your present position? _____

2. How did you obtain this position? _____

_____

3. What kind of work did you do before you were employed in this position? _____

_____

4. What special instruction in your company have you received which has helped you to do your job?

Kind of Instruction	Length of Time Spent in Instruction

5. What special courses have you taken since you were employed in your present position?

Special Course	Place Where Taken	Length of Time Spent in Instruction

6. Were there educational courses or training in the past that you did not elect but which you now think would have helped you in your job?

7. To what position(s) would you normally expect to be promoted? _____

_____

8. Is your job changing? Yes _____ No _____. If yes, describe how you think it is changing.

9. Describe any special features in your job not covered in this questionnaire or in the task sheets.

RECORD IN VOCATIONAL BUSINESS AND OFFICE EDUCATION

Year entering _____ Age then _____ Date of birth _____ _____ Address _____
Distance from home to school _____
Parent or guardian (if applicable) _____
Occupation of parent _____

NOTE: This is a basic permanent record card for in-service students taking vocational education. Supplementary record sheets may be developed and added to this folder to meet the need for a particular type of vocational program.

PHOTO

OCCUPATIONAL OBJECTIVE

Occupational Objective (Name)	Date Selected

RECORD OF STANDARD TESTS
(Aptitude - Intelligence - Others)

Standard Tests	Date	Score

VOCATIONAL COURSES, SUBJECTS, OR BLOCKS OF TRAINING

Courses or Blocks of Training	Date Completed	Evaluation

RECORD OF VOCATIONAL TESTS

Vocational Tests	Date	Score

RECORD OF SUPERVISED WORK EXPERIENCE

Kind of Work	Beginning Date	Ending Date	Hours Worked	Earnings	Evaluation of Work Experience			
					Teacher (Name)	Evaluation	Employer (Name)	Evaluation

EVALUATION OF PERSONAL AND SOCIAL CHARACTERISTICS

Characteristic	Evaluation			
	Excellent	Good	Fair	Poor
1. Seriousness of purpose				
2. Cooperation				
3. Courtesy				
4. Dependability				
5. Loyalty				
6. Honesty - Integrity				
7. Industriousness				

Characteristic	Evaluation			
	Excellent	Good	Fair	Poor
8. Initiative				
9. Personal appearance				
10. Self-control				
11. Responsibility				
12. Concern for others				
13. Leadership				
14. Emotional stability				

SIGNIFICANT HEALTH CHARACTERISTICS

HOBBIES - CLUBS - OUT - OF - SCHOOL ACTIVITIES

RECORD AFTER VOCATIONAL BUSINESS AND OFFICE EDUCATION

Year	Occupation (Name)	Performance In Occupation	Employer (Name firm)	Location (City)	Continued Education (Name kind)

JOB STANDARDS[1]

The following standards have been determined from an exhaustive study of literature on the subject, including articles in periodicals, research studies, i.e., Administrative Management Society survey, suggested standards of machine manufacturers, etc. Upon completion of vocational programs, students should be expected to meet these standards.

ACTIVITY	STANDARD	REMARKS
Typewriting		
Straight copy	50 words a minute	range from 40 to 60
Form letters with envelopes	10 per hour	20 60-space lines, (average)
Machine transcription	25 words per minute	
Stencils	4 per hour	8 1/2 x 11 inches, single-spaced
Masters, gelatin or fluid	5 to 7 per hour	average 200 words
Fill-ins, 4 lines	100 per hour	
Envelopes	150 per hour	
Billing	1 in 5 minutes	2 entries of 10 lines
Manuscript	8 to 10 pages per hour	
Tabulation, simple	3 to 5 per hour	
Shorthand		
Dictation	80 words per minute	
Transcription (Shorthand notes)	20-25 words per minute	

[1]STATE DEPARTMENT OF EDUCATION, Division of Vocational Education, Montgomery, Alabama.

ACTIVITY	STANDARD	REMARKS
Filing		
8 1/2 x 11 letters (code and rough sort)	250 pieces per hour	
Alphabetizing, 8 1/2 x 11 letters	100 per hour	
Alphabetizing, 3 x 5 cards, inserting or pulling	150 per hour	
Inserting or pulling 3 x 5 cards	300 per hour	already alphabetized
Machines, Key-driven		
Addition, 30 three to five digit units	60 columns per hour	1 a minute
Bank checks	80 per minute	turn and add
Sales checks	90 per minute	turn and add
Multiplication, 3 to 5 digit units by 3 to 5 digits	400 per hour	60 every 10 seconds
Subtraction, 4 to 6 digits	300 per hour	50 every 10 seconds
Division, 3 to 5 digits	150 per hour	25 every 10 seconds
Machines, Rotary		
Addition	200 key reaches per minutes	5 digits
Multiplication	6 2/3 calculations per minute	5 digits minuend, 2 to 8 digit subtrahend
Subtraction	6 2/3 calculations per minute	5 digit minuend, 2 to 5 digit subtrahend
Division	2 6/7 calculations per minute	4 digit dividends, 3 to 5 digits divisors

ACTIVITY	STANDARD	REMARKS
Others		
Changing ribbons	1 minute	
Looking up words	1 a minute	Location of definition, pronunciation and part of speech
Erasure, original only	15 seconds	
Erasure, original and 2 carbons	1/2 minute	
Collating, 3 sheets to a set	1,000 sets per hour	average 17 per minute
Folding mail manually	12 per minute	mostly 2 fold
Inserting folded mail	7 per minute	
Sealing envelopes manually	19 1/2 per minute	

THE INTENSIVE OFFICE LABORATORY

I. The class was organized as an office by:

A. Having each girl write a letter of application and prepare a personal data sheet.

B. Using a person outside the teaching faculty to conduct a personal interview for each girl.

C. Requiring a social security number for each worker and the completion of a W-4 form.

D. Conducting an orientation session to acquaint students with what they would be expected to do.

E. Placing each girl in a working station in the simulated office.

II. The physical setup

A. There are four "departments" or four working groups:

1. Stenographic pool

a. Types all purchase orders

b. Prepares mailing lists

c. Prepares and maintains all forms used by other departments.

2. Purchases department

a. Maintains stock and posts out-of-stock notices

b. Checks totals on all purchase orders

c. Logs all orders

d. Writes advertising letters.

3. Sales department

a. Files purchase orders

b. Prepares invoices

c. Logs all sales

d. Prepares weekly and monthly sales reports.

4. Accounting department

   a. Accounts receivable ledger

   b. Monthly statements to customers

   c. Preparing shipping memos

   d. All payroll work including tax reporting.

B. Each department has:

   1. Four desks with electric typewriters at each desk.

   2. A telephone that connects with the other departments and to an outside room.

   3. A ten-key adding machine or a full-keyboard adding machine.

   4. A printing calculator or a rotary calculator.

   5. A filing cab' et or box.

C. Other provisions are:

   1. A central file that all departments use.

   2. Dictaphones for the stenographic pool.

   3. A receptionist for the office.

D. Machines that relate to the work are grouped together.

E. Work done in one station is sent to other stations for further use.

III. Training clinics to cover the following topics:

A. Composing letters and producing mailable copies.

B. Typing from rough drafts.

C. Visual reproduction.

D. Handling mail--incoming and outgoing.

E. Filing procedure.

F. Use of machines and equipment.

G. Grooming and professional development.

Student _____ Date _____

Station Code _____ Company _____

INDIVIDUAL PROGRESS CHART

JOB NO.	JOB DESCRIPTION	RECEIVED	ACCEPTED	REJECTED	REMARKS

Individual Progress Chart / Page 2

Jobs Rejected and Returned

General Comments of Student Work on This Project:

Final
Grade _____

_____
Office Manager

_____
Teacher

Student _____ Date _____

Station Code Number___ _____ Company _____

PROFICIENCY INDEX OF STUDENT

KEY: (1) poor, (2) average, (3) excellent

Personal Appearance

Grooming	1 2 3
Suitability of dress	1 2 3
Poise	1 2 3
Posture	1 2 3
Health	1 2 3
Stamina	1 2 3

Personal Traits

Tact	1 2 3
Ambition	1 2 3
Use of time	1 2 3
Promptness	1 2 3
Being confidential	1 2 3
Initiative	1 2 3
Cooperation	1 2 3
Adaptability	1 2 3
Interest in work	1 2 3
Manners	1 2 3
Sense of Humor	1 2 3
Resourcefulness	1 2 3
Attendance	1 2 3
Oral expression	1 2 3
Personality	1 2 3

Attendance

Times Absent	_____
Times Tardy	_____

Dependability

To follow directions	1 2 3
To take criticism	1 2 3
To understand written instructions	1 2 3
To understand oral instructions	1 2 3
To attend to details	1 2 3
To keep on the job	1 2 3
To get things done on time	1 2 3
To plan ahead	1 2 3
To adapt to new ideas	1 2 3

Skill Performance

Typing	1 2 3
Transcribing	1 2 3
Filing	1 2 3
Business Machines	1 2 3
Spelling	1 2 3
Proofreading	1 2 3
Grammar	1 2 3
Punctuation	1 2 3
Composition	1 2 3
Record Keeping	1 2 3

Business Techniques

Use of telephone	1 2 3
Use of sources of information	1 2 3
Office Housekeeping	1 2 3
Use of Supplies	1 2 3
Public Relations	1 2 3

COMMENTS:

Student _____ Date _____

Station Code _____ Company _____

STUDENT EVALUATION OF WORK STATION

Please comment on the following after completion of your work station and return it to your teacher. TYPE YOUR ANSWERS on a separate sheet of paper and attach it to this sheet.

1. What new knowledge or skill did you learn on this project? Describe.

2. What did you learn in class that you applied on the job, either from study or from classroom discussion? Explain.

3. What difficulty occurred or what mistakes did you make on this project? What did you do to correct your errors?

4. On what job could you have used help in performing better? Explain.

5. What information did you learn that would make you a better employee? Describe.

6. What were the most challenging jobs for you on this project? Describe.

7. Were there adequate reference materials available?

8. Was there adequate time for you to do your best on this project? Explain.

9. How could this work station be improved to make it a more effective learning situation for future employees? Explain.

10. How have previous duties on work stations helped you in completing this assignment (answer this question when the third work station has been completed)? Explain.

SECTION 8

Cooperative Program Information

(1.) Letter to Parents
(2.) Work Experience vs. Cooperative Education
(3.) Cooperative Training Agreement
(4.) Rating Sheets for Employers
(5.) Criteria for Selection of Training Stations
(6.) Letter of Thanks to Merchants
(7.) Introduction Card for Students
(8.) My Pledge to B.O.E. Program
(9.) Student Interest Survey
(10.) Record of Your Business Education Student (See Section 7)
(11.) Application for Admittance to the Cooperative Program
(12.) Student's Notebook
(The intensive lab teacher will also find this section very valuable.)
(13.) Student Test

****

TO THE PARENTS OF _____ HIGH SCHOOL FRESHMEN

The Business Education Department at _____ would like to bring to your attention a program called Cooperative Business Education.

This is a program offered to young men and women who desire a career in the field of Business. This program will allow the student to actually apply what he has learned in school.

The student moves from the theory and skill development into an actual training situation.

The senior-level student will carry a basic school program in the morning, and then the afternoon will be under the supervision of a local employer selected as a training establishment.

This program will develop the student to the point where he is ready for immediate employment on graduation. Many of the students are kept by their training employer as full-time employees. Many students upon graduation receive more than an entry-level job; many are hired for a higher position because of their experience.

This type of program allows the student to receive an advanced education with the actual training experience.

This program, in no way, will effect the student's eligibility to enter college. These programs are well known throughout the United States in which hundreds are being carried on.

A teacher is assigned to establish the training stations. The student will work under the direction of a carefully selected employer and a teacher. He will receive job entry wages and will have an opportunity to select the business field which meets his career objectives. He will receive high school credit for being enrolled.

Your son or daughter should plan his program now in order to be eligible to enroll during the senior year.

His plans will depend on his career objective, and a few are now listed:

(1.) Bookkeeper and accounting work
(2.) Stenographic and secretarial work
(3.) Clerical and general office work

If you would like more information, please call _____ High School, Phone _____, and ask for _____.

We invite you to ask questions.

WORK EXPERIENCE VS. COOPERATIVE EDUCATION*

Comparison of Elements Reveals Fundamental Differences in Two Types of Programs

The following salient features of Work Experience and Cooperative Education make possible a comparison of the two types of programs.

THE PUPIL

In the Work Experience program:	In the Cooperative Education program:
1. Is hired as a producing worker.	1. Is hired as a learning worker.
2. Learns only the "how-to-do-it" aspects of his job.	2. Learns also the "why-it-is done" aspects of his work.
3. Is not always able to understand the relationship of his work experience to his classroom activities.	3. Engages in classroom activities which are integrated with his on-the-job experiences.
4. Does not always rotate from job to job within the organization.	4. Follows a planned rotation schedule during the length of the year-long program.
5. Does not receive the benefits of a job analysis.	5. Receives the benefits of a job analysis.
6. May or may not be suited to the occupation.	6. Is matched to the job by an occupationally experienced coordinator.
7. Receives little assistance in matters of personal development and social adjustment.	7. Receives the immediate attention of the coordinator in matters pertaining to personal development and social adjustment.
8. Receives little information or inspiration to take additional or specialized training.	8. Is given an insight into his need and abilities for taking additional or specialized training.
9. Is tempted to drop out of school to accept a full-time position.	9. Is encouraged to remain in school and increase his vocational competency.
10. May work under conditions which may deteriorate.	10. Will work in an establishment which is continuously approved by the coordinator.
11. May attempt to maintain a school schedule and work schedule which are injurious to his health.	11. Follows a reduced schedule of school activities and a supervised job schedule which are not permitted to have an adverse effect on him.

*Published ILLINOIS VOCATIONAL PROGRESS
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THE PARENT

In relation to the Work Experience program:

1. Is not sure where the responsibility of the school begins or ends.
2. Is not sure of the relationship of the job experiences and the classroom activities.
3. Is not sure that the pupil knows what he got himself into.
4. Is not sure when the pupil's working hours begin or end.
5. Does not know what prestige the job has, in terms of acceptance of the pupil by his peers.

In relation to the Cooperative Education program:

1. Knows that the school has not relinguished responsibility for the pupil.
2. Knows that the on-the-job experiences and the classroom activities compliment and strengthen each other.
3. Knows that the pupil received the benefit of good guidance before being placed on the job.
4. Knows that the pupil is not being exploited.
5. Knows that the pupil receives the maximum of prestige from an approved credit-carrying course of study.

THE SCHOOL

Which operates a Work Experience program:

1. Has little or no opportunity to integrate classroom activities with the work experiences of the pupil.
2. Has no opportunity to assist the pupil in matters of social adjustment.
3. Loses an opportunity to maintain the contacts with the pupil which are so important for later adult education.
4. Ordinarily does not give credit for unsupervised work experience.
5. Is comparatively helpless in relation to adverse publicity in connection with this type of program.
6. Must make arrangements with each employer.

Which operates a Cooperative Education program:

1. By means of the job analysis, is able to integrate the classroom activities of each pupil with his on-the-job experiences.
2. Is prepared, when the need arises, to assist the pupil to make necessary social adjustments.
3. Gains an opportunity to develop an interest in postgraduate and adult education.
4. Can give credit for vocational experience, part of which is acceptable for college entrance.
5. Prevents the rise of adverse publicity through frequent visits by the coordinator.
6. Has the advantage of the services of an advisory committee.

THE EMPLOYER

Who participates in a Work Experience program:

1. Obtain a raw recruit who wants to earn money.
2. Must train the worker.
3. Does not feel obligated to train the pupil.
4. Is deprived of the benefit of new training methods.
5. Can hire or fire the pupil at will.
6. Is not always able to judge the capabilities of the pupil.
7. Does not always have a continuing relationship with the school after the job is filled.

Who participates in a Cooperative Education program:

1. Obtain an oriented pupil who wants to learn to work.
2. Receives the assistance of the school and the coordinator in training the pupil.
3. Participates in the planning which results in better training of the pupil.
4. Receives the advantages of learning about new training techniques from the coordinator.
5. Confers with coordinator relative to pupil's work or behavior.
6. Receives the benefit of guidance and testing techniques which bring to light the abilities of the pupil.
7. Has a continuous relationship through an organized program with the school.

TRAINING MEMORANDUM

At the time a student-learner has been placed in an approved training center, a "Training Memorandum" should be completed. This form is designed to indicate the responsibilities of all persons involved in the employment of a student within a training station and to impress upon all persons concerned that this is a training program with certain obligations to be met.

The student tends to accept this memorandum as a contract with the cooperating employer. This memorandum causes the parents to feel a greater responsibility in the program. Because of the working out of this form, the employer feels that he must give training to this student.

Four copies of the memorandum are needed for each student-learner. One copy goes to the student, one copy to the employer, one copy to the parent, and one copy to the coordinator.

An example of a "Training Memorandum" appears following this page.

TRAINING-SPONSOR RESPONSIBILITIES

(The training sponsor may be the owner or manager, or he may be a responsible individual appointed by management.)

To provide regular employment, (a minimum of 15 hours per week) throughout the school year for the student working in the training station.

To rotate the student's work assignments so that the student receives training in several aspects of the business.

To counsel with and direct the student regarding means of improving his performance .

To evaluate or rate the student at regular intervals so that the coordinator may better direct the student classroom instruction.

To pay the students at least the going wages for beginning employees.

To dismiss the student only for cause, and after consulation with the coordinator.

To confer with the coordinator on the student's progress.

To assist the coordinator in keeping up to date.

RECOMMENDED EMPLOYMENT SCHEDULE OF TRAINEES

Students enrolled in the program are required a minimum of 15 hours per week of supervised employment and on-the-job training or sufficient hours of vocational project centered training. In situations utilizing on-the-job training, at least one-half of this work experience training should be during time that school is in session. Therefore, students shall be released in the afternoon for work experience training according to the agreed upon training schedules.

PROVISIONS FOR ON-THE-JOB TRAINING

The training-sponsor and the teacher-coordinator will agree upon a training program schedule prior to the on-the-job training. This will ensure a minimum of 15 hours per week of supervised employment and on-the-job training during the school year.

There shall be a training memorandum or agreement between the local school and the employing establishment which shall include the interrelationship and responsibilities of the student-learner, teacher-coordinator, and the training establishment.

The course of instruction for each student-learner on the job is to be in the form of a step by step training plan which is in turn derived from a realistic analysis of the tasks, duties, and responsibilities of the student-learner and his part-time occupation. The step by step training plan shall indicate what is to be learned and whether it is to be taught in the classroom or on the job.

COOPERATIVE TRAINING AGREEMENT

School _____

Business _____

Each coordinator should have an agreement with the employer of each training station.

Some of the points that should be included in the agreement are now listed:

(1.) The employer agrees to give the student well-rounded training by assigning the student to a variety of jobs.
(2.) The employer agrees to pay the _____ per hour for _____ hours per week.
(3.) The training period begins _____ and ends _____.
(4.) The coordinator agrees to visit the training station for one-half hour, per week, per student while the student is being trained.
(5.) The student agrees to work to the best of his ability at all times.
(6.) The student agrees to improve himself at all times and agrees to work under the same regulations that apply to other employees.
(7.) The student agrees to work between 15-18 hours per week.
(8.) This agreement may be terminated at anytime as long as notice is given to the signing parties.

Outline of Work Experience:

	Activity	Successful	Unsuccessful
1.	Use filing system or systems	_____	_____
2.	Use telephone	_____	_____
3.	Use adding machine	_____	_____
4.	Type addresses on envelopes	_____	_____
5.	Make carbon copies	_____	_____
6.	Use calculating machine	_____	_____
7.	Copy data from one record to another on typewriter	_____	_____
8.	Verify and/or list information from business papers	_____	_____
9.	Prepare material for filing	_____	_____
10.	Use stapler	_____	_____
11.	Copy from rough draft or corrected copy on typewriter	_____	_____
12.	Figure extensions on bills, invoices, statements	_____	_____
13.	Type letters	_____	_____
14.	Fold, insert letters and seal envelopes	_____	_____
15.	Type cards	_____	_____
16.	Fill in printed forms on typewriter	_____	_____
17.	Use follow-up files	_____	_____
18.	Prepare trial balance	_____	_____
19.	Examine and/or sort business papers	_____	_____

	Activity	Successful	Unsuccessful
20.	Prepare operating and/or financial statements	_____	_____
21.	Keep inventory records	_____	_____
22.	Make journal entries	_____	_____
23.	Figure discounts	_____	_____
24.	Compose and type letters with or without instructions as to content	_____	_____
25.	Make cross references	_____	_____
26.	Prepare stencil for use on duplicating machine	_____	_____
27.	Receive business callers	_____	_____
28.	Type bills, invoices, statements	_____	_____
29.	Make entries in ledger accounts	_____	_____
30.	Open, sort, and distribute mail	_____	_____
31.	Use duplicating equipment	_____	_____
32.	Use transcription and dictation equipment	_____	_____
33.	Operate folding machine	_____	_____

Signatures: _____
Coordinator

_____
Student

_____
Parent

_____
Employer

(These are a few ideas which you might use in your School-Employment Agreement.)

BUSINESS AND OFFICE EDUCATION
COOPERATIVE PART-TIME TRAINING MEMORANDUM

Employer	Student	Age	Birthdate

Local Public Schools	Hours of Employment--Monday Through Friday No earlier than: No later than:
Beginning Salary ☐ Hour ☐ Week	Hours of Employment--Weekends and Holidays No earlier than: No later than:

This memorandum of training between the above named student and employer will serve as a plan for training under the cooperative part-time arrangement, and will outline the conditions under which effective training, of great value to both employers and students, may be carried on. The conditions are as follows:

1. The employer should have final selection of those students who are found qualified for work in the occupation and will assist the school in the training by employing the students on a part-time basis during the full school year.
2. The student agrees to perform diligently and faithfully the work of the occupation throughout the learning period. The parents are asked to provide cooperation and encouragement to the student as he pursues his training program.
3. The employer will assign the student to such positions as are available in the various departments, rotating the student where practicable.
4. The student shall attend school half of each day and work in the establishment providing job training experience on average of 15 hours during the school week. An experienced employee should be assigned to assist in training if possible.
5. It is understood that the employment of this student will be in accordance with all state and federal labor laws.
6. The student shall be subject to the same rules and regulations as other employees. The coordinator should be notified immediately concerning problems related to the student's employment.
7. The coordinator will provide instruction related to the work of the students and will correlate the classroom activities with the on-the-job training.

In order to provide well rounded on-the-job training, the following experiences will be given the student by the employer:

In order that the school may provide practical related training, the following classroom instruction will be taught by the coordinator.

The undersigned fully understand that this training memorandum is intended as a guide to assure a well-rounded training program.

Student		Parent or Guardian
Employer	Coordinator	State Supervisor of B.O.E.

Employer's Student Rating to the School
STUDENT JOB RATING SHEET

School	Location	Phone
Student	Training Agency	Phone

Rating Code: 1. Very Poor 2. Poor 3. Average 4. Good 5. Superior

CHARACTERISTICS	GRADING PERIODS First	Second	Third	Fourth	Fifth	Sixth
1. ATTENDANCE: Compare actual attendance with hours assigned.						
2. PUNCTUALITY: Consider times late. Do not consider reason.						
3. GENERAL ATTITUDE: Consider attitude toward job, superiors, other employees.						
4. QUALITY OF WORK: Compare with others of equal age and experience.						
5. QUANTITY OF WORK: Compare with others of equal age and experience.						
6. ATTITUDE TOWARD SUPERVISION: Accepts criticism.						
7. APPEARANCE: Compare with standards set by other employees in the occupation						
8. DEPENDABILITY: Able to follow instructions.						
9. INITIATIVE: Does things without being told.						
10. SAFETY PRACTICES: How well does he observe safety rules?						

Grading Period 1 _____ Date of Rating _____ Signed _____ (Supervisor)
Grading Period 2 _____ Date of Rating _____ Signed _____ (Supervisor)
Grading Period 3 _____ Date of Rating _____ Signed _____ (Supervisor)
Grading Period 4 _____ Date of Rating _____ Signed _____ (Supervisor)
Grading Period 5 _____ Date of Rating _____ Signed _____ (Supervisor)
Grading Period 6 _____ Date of Rating _____ Signed _____ (Supervisor)

COMMENTS

First Grading Period _____

_____

_____

_____

Second Grading Period _____

_____

_____

_____

Third Grading Period _____

_____

_____

_____

Fourth Grading Period _____

_____

_____

_____

Fifth Grading Period _____

_____

_____

_____

Sixth Grading Period _____

_____

_____

_____

RATING SHEET FOR EMPLOYER

Student _____
School _____
Business Firm _____

Rate the student from 1 - 4, example, 1 - Superior; 2 - Good; 3 - Average; 4 - Poor.

(1.) Accuracy in clerical operations.
(2.) Dependability.
(3.) Speed in clerical operations--amount of acceptable work produced.
(4.) Ability to follow instructions accurately and without repetition.
(5.) Ability to maintain harmonious working relations with others.
(6.) Industry.
(7.) Capacity for remembering necessary details, figures, instructions, and so on.
(8.) Initiative and/or resourcefulness.
(9.) Ability to work under pressure or abnormal conditions, such as meeting deadlines, multiple assignments, extra work.
(10.) Ability to make judgments or decisions quickly and accurately.
(11.) Natural ability and aptitude for clerical work.
(12.) Presentability of work--appropriateness of arrangement and appearance of work.
(13.) Ability to organize work.
(14.) Attendance, tardiness, and strict observance of recess or lunch periods.
(15.) Does not lose excessive time in personal telephone calls, talking with fellow workers, going to rest room, and the like.
(16.) Personal appearance--appropriate dress and grooming.
(17.) Personality--cheerfulness and/or charm.
(18.) Physical fitness for work.
(19.) Neatness and orderliness in maintenance and arrangement of physical surroundings, such as desk, files, floor, and the
(20.) Ability to suggest improvements in clerical techniques and operations.

Signature: _____

CRITERIA FOR THE RECOGNITION OF TRAINING STATIONS IN BUSINESS EDUCATION COOPERATIVE PROGRAMS[1]

What are the characteristics which teacher-coordinators in Illinois seek in a training station: The following questions, listed in order of frequency, indicate viewpoints of the teacher-coordinators.

1. What is the ATTITUDE of the training station, including management and the direct sponsor? Is the Business Education Cooperative program identified in terms of its educational objectives and not as another source of part-time help?

   1.1 Does the training station management understand, show interest in, and cooperate with the school program?

   1.2 Do the training station sponsors understand and show interest in the vocational development of the individual student-learner?

   1.3 Is the training station willing to meet the needs of the student-learner, matching learning experience to the individual student's capabilities?

   1.4 Is the teacher-coordinator well received and accepted by the training station?

   1.5 Can regular and special conferences be scheduled with ease at the training station by the teacher-coordinator?

2. What LEARNING EXPERIENCES are available? Is the philosophy of the Business Education Cooperative program put into effect at the training station?

   2.1 Are a well-rounded variety of learning experiences available to the student-learner?

   2.2 Does the training station sponsor develop with the teacher-coordinator a step by step training plan of organized learning experiences for each student-learner?

   2.3 Is the step by step training plan put into operation by the training station?

   2.4 Does the training station sponsor work closely and effectively with the student-learners, giving much personal instruction?

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[1] State of Illinois, Board of Vocational Education, Vocational Education Division, Springfield, Illinois.

2.5 Does the training station make available to the student-learner and teacher-coordinator instructional materials which are of use?

3. What SUPERVISION is available? Is supervision consistent and effective at the training station?

3.1 Is an immediate supervisor, or training station sponsor appointed for each student-learner?

3.2 Is the training station sponsor available to review the progress and performance of the student-learner in periodic personal conferences with the teacher-coordinator?

3.3 Does the training station review the student-learner's progress and performance with the student-learner?

3.4 Does the training station contact the teacher-coordinator concerning questions or problems as they arise, before action is taken?

3.5 Are adequate records kept by the training station?

4. What is the CAREER POTENTIAL IN THE FIELD? Is there an opportunity for a vocation which matches the interests and capabilities of the student-learner?

4.1 Does this vocational area offer opportunity for full-time employment after graduation?

4.2 Does the training station give additional responsibility to the student-learner as he shows ability and readiness?

4.3 Does opportunity exist for advancement in the field?

4.4 Are career possibilities discussed with the student-learner by the training station?

4.5 Does the training station occupation match or relate to the career objective of the individual student-learner?

5. What are the WORKING CONDITIONS for the student-learners, first assuming that all legal responsibilities concerned with the employment have been met?

5.1 Is the physical environment safe and beneficial for student-learners?

5.2 Are the hours moderate and occurring within the framework established by the local program?

5.3 Is the employment regular throughout the school year?

5.4 Are the student-learners selected carefully by the training station?

5.5 Is the training station accessible for the student-learner?

5.6 Is the training station an up-to-date business?

5.7 Is the equipment good?

5.8 Is the reputation of the training station acceptable?

5.9 Are the wages higher than minimum?

CHARACTERISTICS OF THE MOST DESIRABLE TRAINING STATIONS[1]

1.	Bank	This establishment is always looking out for the interest of the student, the supervisor of the student cooperates with the teacher-coordinator and consultations are frequent concerning the training plan.
2.	Boy Scout Office	The on-the-job training is complete, varied, gradual, considerate and thoughtful. There is good supervision and a high standard of work is expected. The student-learner is groomed for a permanent position.
3.	Not Identified	The business has a philosophy of training as opposed to work experience only. There is a sympathetic understanding between the on-the-job training sponsor and the teacher-coordinator relative to the variety of tasks and the on-the-job instruction.
4.	Not identified	This large company has many departments, and a variety of tasks provide the student-learners with many opportunities to learn new processes.
5.	Not Identified	This station has a planned training program. The teacher-coordinator is given the job specifications, enabling him to place a student-learner in a position most suitable to his interests and abilities. A designated industry coordinator is assigned to work with the teacher-coordinator.
6.	Not Identified	The business is up-to-date in equipment and methods. The office manager is interested in the program and provides the supervision necessary to the step by step training plan. The tasks within the office are rotated.
7.	Not Identified	The business establishment: 1. realizes that it is a part of an educational program. 2. shows an interest in the student-learner. 3. offers job rotation and responsibility if the student is capable. 4. offers supervision and understanding of the student. 5. is likely to offer a full-time position after graduation.

[1]State of Illinois, Board of Vocational Education, Vocational Education Division, Springfield, Illinois.

CHARACTERISTICS OF THE LEAST DESIRABLE TRAINING STATIONS[1]

1.	School Office	Too much grading of tests, recording of data of testing programs, and duplicating. Very little supervision.
2.	Insurance Office	Very routine record keeping and filing. Very little typing of letters.
3.	Not Identified	The hours of the on-the-job experience interfere with the class schedule. The reason for this seems to be poor organization within the business, and may be only temporary
4.	Not Identified	There is no supervision and no teaching of the student-learner. The student just works. There is a travel problem for the student, and also a time problem. The student is limited to menial tasks because of a "secrecy" policy of the company. The on-the-job sponsor does not seem to understand the purposes of the program.
5.	Not Identified	The age of the immediate supervisor is too close to that of the student-learner. There is also a personality conflict between the two. The work hours are unreasonable, and there is no job rotation.
6.	Not Identified	The dress and etiquette standards of the office are not high enough. The working conditions are undesirable, both physically and emotionally.
7.	Not Identified	Poor equipment, too frequent changes of supervisor (too many bosses), too large (too departmentized), causing slow and infrequent job rotation.
8.	One-man Insurance Office	Owner away from the office, no supervision given, no learning involved, no work pattern. The danger is that the student-learner will learn the wrong work habits.

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[1]State of Illinois, Board of Vocational Education, Vocational Education Division, Springfield, Illinois.

CRITERIA FOR SELECTION OF TRAINING STATIONS

The following criteria shall be used in the preliminary selection of training stations:

1. Is the employer in sympathy with the idea of training?
2. Will he be willing to cooperate with the school in a cooperative program of school and on-the-job training?
3. Can he employ school students on a part-time basis.
4. Will he be willing to keep the students during the entire school year?
5. Does the business establishment provide prospective full-time employment for students after the completion of school?
6. Does this business have equipment and working conditions that will provide a good all-round training program and on-the-job work experience for student trainees.
7. Are desirable working conditions present that will not be detrimental to the student's physical, mental, or moral weli being?
8. Is a training sponsor or supervisor present who can be assigned the job of helping the part-time worker?
9. Are conditions for pay of employees satisfactory?
10. Is the location of the business establishment satisfactory to the student and for coordination activities?
11. Will the employer really be interested in helping and training his student trainee to become an efficient worker in our economy?
12. Is the occupation one that requires skills, attitudes, and information that can be presented and developed in the classroom to supplement on-the-job experience?

(SAMPLE)

LETTER TO COOPERATING MERCHANTS

BUSINESS AND OFFICE EDUCATION, _____ HIGH SCHOOL

_____ 19 _____

Dear Sir:

I wish to extend to you our thanks for the fine work experience your organization has given the following member or members of the Cooperative Business and Office Education Class of _____ High School:

_____

Your excellent cooperation makes it possible for these students to enjoy the advantages of a very practical school-work experience type of program. Such experience will enable these students to smooth out the difficult path of adjustment from the theoretical classroom to the practical working world.

It may be of interest to you to learn that this group of _____ seniors, during the first half year of their training just ended, worked a total of _____ hours and earned wages totaling more than $_____. During this same period each member of the class received _____ hours of related class instruction in Business and Office Education.

The rating sheets which you returned have been carefully analyzed and discussed with the class. It is our intent to work with these students so that they may improve the qualities in which they seem lacking.

You are cordially invited to visit with us and observe the work of the group.

Your continued cooperation will be sincerely appreciated.

_____

Coordinator
Business and Office Education

Approved by:

_____

Principal

INTRODUCTION CARD

Business and Office Education, _____ High School

_____
Date

To the prospective employer _____

Firm name _____

This will introduce _____ of the Cooperative Business and Office Education Program at _____ High School, who is interested in obtaining part-time employment for at least _____ hours per week to supplement the training in Business and Office Education received at school.

_____
Teacher-Coordinator

Accepted _____

Not Accepted _____

Comments: _____

_____

_____

_____

MY PLEDGE TO THE BUSINESS AND OFFICE EDUCATION PROGRAM

I agree to:

1. Be punctual at all times.

2. Display good work habits at all times.

3. Perform in school and on the job effectively. I understand that failure to do so may result in the loss of credit and employment and assignment to afternoon study period.

4. Work for the best interest of the employer, the Business and Office Education Program, the school and myself.

5. Keep matters of business in strict confidence.

6. Acquaint myself with the store rules, school rules, and policies of the Business and Office Education Program, and make every effort to live up to them.

7. Make up work in all classes when absent, within the time set forth by my teachers.

8. Make the best use of any training material furnished by the company or coordinator.

9. Keep the same work schedule as other employees insofar as school hours will permit (with regard to such things as store meetings, overtime, etc.)

10. Look to the job ahead and prepare myself for promotion.

11. Notify my employer no later than 10:00 a.m. on any day it is impossible to be at work.

12. Secure coordinator's permission to work in afternoons when absent from morning session of school. If at all possible, call should be made from 8:00-8:30 a.m. or the evening before hand.

13. Discuss job difficulties with the coordinator, who in turn will attempt to correct the problem.

14. Not quit a training station without express consent and knowledge of the coordinator.

15. Be careful of my appearance and actions at all times, realizing that everyone with whom I come in contact will know me as a young adult business person. I realize that business people who are sincerely trying to get ahead do not indulge in flashy fad hairdos, clothing, jewelry, and make-up, and that blue jeans and cowboy boots are more appropriately worn to rodeos.

_____

Signature of Student

(SAMPLE)

BUSINESS AND OFFICE EDUCATION STUDENT SURVEY

_____ High School

_____ Indiana

Student's Name

Present Home Room Teacher

_____ _____

I am interested in taking Business and Office Education next year.

Yes _____

No _____

I have worked before. Yes _____

No _____

If yes, tell where you have worked and how long.

I will have _____ number of units at the end of this year _____.

My birthday is _____ _____ _____. I am now _____ years old.
Mo. Day Year

I am free at the _____ period.

I have no free period daily _____.

APPLICATION FOR ADMITTANCE IN THE COOPERATIVE BUSINESS AND OFFICE EDUCATION PROGRAM

SCHOOL _____ ADDRESS _____ GUIDANCE OFFICE PHONE _____

STUDENT PERSONAL DATA

NAME OF STUDENT _____ DATE _____

ADDRESS _____ City _____ State _____ PHONE _____

AGE (Last Birthday) _____ DATE OF BIRTH _____ HEIGHT _____ WEIGHT ____

PHYSICAL CONDITION _____ Remarks concerning physical condition _____

_____ YEAR IN SCHOOL NOW _____

MOTHER'S NAME _____ OCCUPATION _____

FATHER'S NAME _____ OCCUPATION _____

ACADEMIC

MAJORS 1. _____ 2. _____

CURRICULUM _____

MINORS 1. _____ 2. _____

LIST SUBJECTS YOU LIKE BEST _____

DO YOU PLAN TO ATTEND COLLEGE? _____ WHERE? _____ COURSE _____

IN WHAT ACTIVITIES HAVE YOU PARTICIPATED DURING HIGH SCHOOL? _____

LIST BELOW HIGH SCHOOL SUBJECTS TAKEN:

FRESHMAN YEAR			SOPHOMORE YEAR			JUNIOR YEAR			SENIOR YEAR		
Subject	Grade	Unit	Subject	Grade	Unit	Subject	Grade	Unit	Subject	Grade	Unit

SECURE THE NAMES OF THREE TEACHERS WITH WHOM YOU HAVE STUDIES FOR ONE OR MORE SEMESTERS AND WHO WILL WRITE A RECOMMENDATION FOR YOU. LIST BELOW:

1. _____ 2. _____ 3. _____

EXPERIENCE

SOCIAL SECURITY NO. _____

LIST YOUR WORK EXPERIENCE:

NAME OF ESTABLISHMENT	TYPE OF WORK	NO. MONTHS WORKED

WHAT DO YOU DO IN YOUR SPARE TIME? _____

VOCATION

WHAT BENEFITS DO YOU WISH TO GAIN FROM THE COOPERATIVE VOCATIONAL EDUCATION PROGRAM? _____

OCCUPATIONS FOR WHICH YOU WOULD LIKE TO PREPARE:

FIRST CHOICE: _____ SECOND CHOICE _____

IS THERE ANY PARTICULAR SHOP, STORE, OR PLACE OF BUSINESS WHERE YOU WOULD PREFER TO WORK? IF SO, LIST NAME AND ADDRESS OF THIS ESTABLISHMENT:

Name of Establishment	Type of Business	Address

REMARKS

IF YOUR APPLICATION IS APPROVED:

WILL YOU ATTEND BOTH SCHOOL AND WORK REGULARLY? _____
WILL YOU ABIDE BY ALL RULES AND REGULATIONS INCLUDED IN THE PROGRAM? _____
WILL YOU AGREE TO COMPLETE THE TRAINING PROGRAM THAT WILL BE SET UP BY THE SCHOOL AND YOUR EMPLOYER? _____

SIGNATURE _____ APPROVED _____
Student Parent

PLACEMENT

Place of Employment	Occupation	Date

STUDENT NOTEBOOK

A notebook is available from the Interstate Printers & Publishers, Incorporated, Danville, Illinois, for the coordinator of a Cooperative Business and Office Education Program.

The title is "Office Career Notebook for Occupational Growth". The notebook was written by Dr. Ralph Mason, Indiana State University, and Mr. Bernard M. Ohm, State of Illinois.

This notebook has proven to be very valuable and was recommended by the coordinators that have established and operated programs.

The following forms were removed from the notebook as an aid to you, and it is highly recommended that the notebook be purchased for a truly successful program.

CALENDAR OF EVENTS FOR AN ON-GOING COOPERATIVE OFFICE EDUCATION PROGRAM

I. MARCH--Month to prepare for spring registration

A. Survey community

1. To determine the feasibility of retaining training stations being used.

2. To locate new training stations

B. Advertise the cooperative office education program

1. Provide the school community with information concerning the program--in other words, sell or resell the program

2. Publicize the name of the business persons who are participating in the program through news in the local newspaper

C. Have an assembly program on registration for cooperative office education

1. Use transparencies to explain registration

a. Curricula

b. Commitment forms

c. Schedule of business classes to be taken at each grade level

D. Meeting of advisory committee

1. Plan for future programs of committee

a. Plan calendar of meeting dates

b. Size of community and school may determine frequency of meetings

2. Gain influence with local clubs and organizations

E. Regular supervision of student trainees

II. APRIL--Registration Month

A. Selection of cooperative office education students for the next school year

1. Registration

2. Making contact with parents

a. Acquainting parents with program

b. Gaining permission for student to work

3. Students sign a commitment or reaffirm commitments already made--it is best to get a student to outline a program of study in his/her sophomore year

4. Supervision of student trainees

5. Conference with student employers

B. Composite evaluation of cooperative students

1. Evaluation should be used in preparation for registration

2. Evaluation should be made by all teachers having cooperative students in classes

3. Evaluation includes

a. Courtesy

b. Dependability

c. Honesty

d. Emotional stability

C. Check to see that all students have a social security number. Assist those not having one

III. MAY--Preparation month

A. From April registration prepare individual folders for prospective employers

1. Folders should contain

a. Job applications

b. Personal data

c. Job permit

d. Parent's signed permit--added in fall

e. Evaluation forms

f. Any other information that will assist in better supervision of student workers

B. Folder for coordinator

1. Signed commitment

2. Past academic record

3. Test scores

4. Brief autobiography of student

5. Materials added as needed

a. Student's class schedule

b. Completed time sheets

c. Evaluation by employer (once each six weeks)

C. Meeting of advisory committee

IV. AUGUST-SEPTEMBER

A. wo weeks prior to the beginning of school

1. Match student's ability, according to record, with job requirements

2. Tentatively place student with employer

3. Contact each prospective employer and set a day for student interview--delivering student folder

4. Plan program for year

B. Beginning of school year with students

1. Students go personally for interview

2. Work permits are obtained

3. Federal and state regulations are met

4. Intensive training period of one week prior to students beginning training

5. Job orientation--adjustments, training begins

C. Close supervision and evaluation

1. Student should keep a record of wages and duties performed. Teacher checks periodically

V. OCTOBER

A. Follow-up on vocational graduates

B. Meeting of advisory committee

C. Open house or some planned opportunity for business personnel to visit department

D. Work with guidance department in giving tests--IQ, Achievement, etc.

E. Supervision and evaluation of training station of student trainees

F. Conference with the student's employers

VI. NOVEMBER, DECEMBER, JANUARY, FEBRUARY--Months of consecration on academic work, planning, and supervision.

A. Recording of test scores--scores for sophomores and juniors who have signed commitments should also be taken

B. Ending semester work

C. Making any changes necessary in training stations for second semester

D. Compiling or revising handbook for vocational student--handbook should be brief, but completely outlined program

E. Supervision and evaluation of student workers

Name: _____

Date: _____
Coordinator's
initials: _____

PERSONALITY INVENTORY

The ratings you believe are most correct are to be circled. Complete the left hand portion of the inventory at the beginning of the year, and the right portion at the end of the year. Use the following scale: E-Very Low; D-Low; C-Average; B-High; A-Very High

September	January	Appearance and Physical Factors	June
A B C D E	A B C D E	General grooming and neatness	A B C D E
A B C D E	A B C D E	Cleanliness	A B C D E
A B C D E	A B C D E	Health	A B C D E
A B C D E	A B C D E	Posture	A B C D E
A B C D E	A B C D E	Good eating habits and proper diet	A B C D E
A B C D E	A B C D E	Adequate rest	A B C D E
A B C D E	A B C D E	Sufficient exercise	A B C D E
A B C D E	A B C D E	Physical vitality and energy	A B C D E
A B C D E	A B C D E	Regular medical checkups	A B C D E
A B C D E	A B C D E	Absence of distracting mannerisms or habits	A B C D E
A B C D E	A B C D E	Appropriate businesslike clothes	A B C D E
A B C D E	A B C D E	Physical poise	A B C D E
A B C D E	A B C D E	Motor coordination	A B C D E
A B C D E	A B C D E	Manual dexterity	A B C D E
A B C D E	A B C D E	Penmanship	A B C D E
		Speech	
A B C D E	A B C D E	Sincerity	A B C D E
A B C D E	A B C D E	Use of correct English	A B C D E
A B C D E	A B C D E	Adequate volume	A B C D E
A B C D E	A B C D E	Enunciation	A B C D E
A B C D E	A B C D E	Conversational tone	A B C D E
A B C D E	A B C D E	Moderate speed	A B C D E
A B C D E	A B C D E	Broad vocabulary	A B C D E
A B C D E	A B C D E	Proper use of emphasis	A B C D E
A B C D E	A B C D E	Variation in pitch	A B C D E
A B C D E	A B C D E	Good word choice	A B C D E
A B C D E	A B C D E	Composure while speaking	A B C D E
		Mental Maturity	
A B C D E	A B C D E	General intelligence (ability to think, capacity to learn, good judgment, common sense)	A B C D E

September	January	Mental Maturity (cont'd)	June
A B C D E	A B C D E	Honesty	A B C D E
A B C D E	A B C D E	Loyalty	A B C D E
A B C D E	A B C D E	Interest in job	A B C D E
A B C D E	A B C D E	Self-confidence	A B C D E
A B C D E	A B C D E	Initiative	A B C D E
A B C D E	A B C D E	Alertness	A B C D E
A B C D E	A B C D E	Enthusiasm	A B C D E
A B C D E	A B C D E	Ambition	A B C D E
A B C D E	A B C D E	Industriousness	A B C D E
A B C D E	A B C D E	Imagination	A B C D E
A B C D E	A B C D E	Resourcefulness	A B C D E
A B C D E	A B C D E	Ability to listen	A B C D E
A B C D E	A B C D E	Adaptability	A B C D E
A B C D E	A B C D E	Safety consciousness	A B C D E
A B C D E	A B C D E	Accuracy	A B C D E
		Social Maturity	
A B C D E	A B C D E	General emotional balance	A B C D E
A B C D E	A B C D E	Courtesy	A B C D E
A B C D E	A B C D E	Tactfulness	A B C D E
A B C D E	A B C D E	Cooperation	A B C D E
A B C D E	A B C D E	Reliability and dexterity	A B C D E
A B C D E	A B C D E	Ability to follow directions	A B C D E
A B C D E	A B C D E	Ability to profit from constructive criticism	A B C D E
A B C D E	A B C D E	Sense of justice	A B C D E
A B C D E	A B C D E	Courage	A B C D E
A B C D E	A B C D E	Leadership ability	A B C D E
A B C D E	A B C D E	Sense of humor	A B C D E
A B C D E	A B C D E	Friendly interest in others	A B C D E
A B C D E	A B C D E	Ability to meet and mix with people	A B C D E
A B C D E	A B C D E	Tolerance and openmindedness	A B C D E
A B C D E	A B C D E	Cheerfulness and generosity	A B C D E
A B C D E	A B C D E	Ability to hold your own when a principle is at stake	A B C D E

Coordinator's initials: _____

PERSONAL DATA SHEET

Full Name: _____

Date: _____

Address: _____ Recent

_____ photograph

Telephone: _____

Preferred Employment Field:

_____

Date Available for Employment:

_____

Personal Data:

Age: Health:

Height: Defects:

Weight: Marital status:

Business Experience:

(employer - address - length of employment - type of work done)

1. _____

_____

Experience obtained: _____

_____

From: _____ To: _____

2. _____

_____

_____

Experience obtained: _____

_____

From: _____ To: _____

Education:

(schools attended - dates - major areas of study - grade average)

Honors, Extracurricular Activities, and Interests:

Military Experience or Draft Classification:

References (no relatives):

(names, titles, and mailing addresses)

1. _____ 2. _____

_____ _____

_____ _____

3. _____

_____

_____

Name: _____

Date: _____

Coordinator's
initials: _____

WHAT IS EXPECTED OF YOU ON THE JOB

On the other side of this page place a copy of the training agreement between your training station, the school, and you. What are your responsibilities under the agreement:

1. Duty hours:

Day	Check-in Time	Check-out Time	Number of Working Hours
Monday	_____	_____	_____
Tuesday	_____	_____	_____
Wednesday	_____	_____	_____
Thursday	_____	_____	_____
Friday	_____	_____	_____
Saturday	_____	_____	_____
Sunday	_____	_____	_____
		Total hours employed	_____
			_____

2. Report to: _____

3. Check-in procedure: _____

_____

_____

4. Personal property storage: _____

_____

5. Location of posted office announcement: _____

_____

6. Lunch hour (when applicable): _____

_____

7. Employer's policy on "break" periods when applies to you: _____

_____

8. Other comments on your general job responsibilities: _____

_____

Sample Training Plan II
STENOGRAPHER

A. Title of job: Stenographer, bank

B. Job description: Take dictation and then transcribe notes on an electric typewriter. Do typing, answer telephones, operate the adding machine, and perform other clerical duties. The ability to type from technical notes and do tabulation becomes important.

C. Career objective: Secretary

D. Areas of experience and training:

1. Public Relations
2. Telephone Technique
3. Sorting Mail
4. Filing
5. Typewriting
6. Dictation and Transcription

E. Detail of areas of experience and training:

Duties	Planned Learning: In Class	Planned Learning: On Job
1. Public Relations		
a. Learn to deal with bank customers	x	x
b. Learn to furnish proper information	x	x
c. Learn to supply available materials		x
2. Telephone Technique		
a. Learn intercom, local, and long distance techniques	x	x
b. Learn customer relations by phone		x
3. Sorting mail		
a. Learn most efficient procedure	x	x
b. Learn bank personnel		x
4. Filing		
a. Learn efficient systems	x	x
b. Learn bank's system and improve if necessary		x
5. Typewriting		
a. Develop accuracy at a rate of 60 wpm	x	x
b. Learn to type form letters at production rate	x	x
c. Learn to use reference books and materials		x
d. Learn to type involved statements	x	x
6. Dictation and transcription		
a. Learn to take and transcribe rapid dictation accurately	x	x

b. Learn to be resourceful in preparing mailable copy x x

c. Study files of previous correspondence x

F. Project:

1. Preparation of a personal data brochure and sample office-type production work.

2. Preparation of an office manual for a beginning employee or the completion of the office career notebook.

G. Career Objective References and Activities:

1. Today's Secretary - regular reading of each issue.
2. U.S. News and World Report - regular reading of selected articles.
3. Administrative Management - regular reading of selected articles.
4. Investigate possibility of further formal education or in-service training available to prepare to become an administrative clerk.
5. Business Week, August 8, 1964, "Is Your Secretary Really the Boss?"

Sample Training Plan I
CLERK-TYPIST

A. Title of job: Clerk-typist

B. Job description: Does general clerical work requiring the use of the typewriter in the accomplishment of a majority of the duties: typewrites letters, reports, and other matter from rough draft or corrected copy. Files records and reports. Makes out bills, answers telephone, sorts and distributes incoming mail, addresses outgoing mail, and does other clerical work, performing one or a combination of clerical duties.

C. Career objective: Administrative clerk

D. Areas of experience and training:

1. Handling Mail
2. Filing
3. Communications
4. Typewriting
5. Handling Papers and Proofreading
6. Office Production Techniques

E. Detail of areas of experience and training:

Duties	Planned Learning: In Class	Planned Learning: On Job
1. Handling Mail		
a. Learn to use stamp affixer		x
b. Learn to stuff and seal envelopes	x	x
c. Learn to use postal meter	x	x
d. Learn to use postal scale	x	x
e. Learn to weigh mail and figure postage	x	x
f. Learn to fold, insert letters and seal envelopes	x	x
g. Learn to inspect mail before sending		x
2. Filing		
a. Learn to file alphabetically	x	x
b. Learn to file numerically	x	x
c. Learn to operate card index file	x	x
d. Learn to use cross reference in files	x	x
e. Learn to classify material to be filed	x	x
f. Learn to get material from files		x
g. Learn to prepare folders for filing		x
h. Learn the office system and how to be efficient		x
i. Learn to improve the office system	x	x
3. Communications		
a. Learn to make telephone calls	x	x
b. Learn to answer the telephone	x	x
c. Learn to make long distance calls		x

	Planned Learning	
	In Class	On Job
d. Learn to operate telephone switchboard		x
e. Learn to send telegrams	x	x
f. Learn to meet office callers	x	x
g. Learn to represent the office well		x
h. Learn office and shop personnel		x
4. Typewriting:		
a. Learn to use manual typewriter	x	x
b. Learn to do straight copy typewriting	x	x
c. Learn to type letters	x	x
d. Learn to copy from rough draft or corrected copy on typewriter	x	x
e. Learn to make carbon copies	x	x
f. Learn to type information on blank forms	x	x
g. Learn to type tabulations	x	x
h. Learn to type statistical material accurately	x	x
i. Develop techniques of careful proofing of all productions	x	x
j. Develop accuracy at a good production rate	x	x
5. Handling Papers and Proofreading		
a. Learn to check copies of data with originals	x	x
b. Learn to collate and staple	x	x
6. Office Production Techniques		
a. Learn to operate office equipment	x	x
b. Learn to handle paper and other material efficiently	x	x
c. Learn swift, accurate ways to handle a variety of office tasks	x	x
d. Learn to look for ways to improve production techniques in office	x	x
e. Learn to use the reference resources available in the office	x	x

F. Project:
1. Preparation of a personal data brochure and sample office-type production work.
2. Preparation of an office manual for a beginning employee.

G. Career Objective Reference and Activities:
1. Today's Secretary-regular reading of each issue.
2. U.S. World and News Report-regular reading of selected articles.
3. Administrative Management-regular reading of selected articles.
4. Investigate possibility of further formal education or in-service training available toprepare to become an administrative clerk.
5. Business Week, August 8, 1964, "Is Your Secretary Really the Boss?"

Coordinator's
initials: _____

OFFICE OCCUPATIONS STUDENT-LEARNER'S WEEKLY TRAINING STATION REPORT

Student-learner: _____ For week ending: _____

1. What were your responsibilities or duties on the job this week?

Responsibility or Job Assignment	Approximate Time Spent (hours or days)
a. _____	_____
b. _____	_____
c. _____	_____
d. _____	_____

2. What new knowledge or skill did you learn on the job? Describe. _____

_____

_____

_____

3. What did you learn in class that you applied on the job, either from study or classroom discussion? Explain.

_____

_____

_____

4. What difficulty occurred or what mistake did you make on the job? What did you do to correct it?

_____

_____

_____

5. On what skill or question could you use help in performing your job better?

_____

_____

6. What interesting or challenging relationship did you have this week with a fellow worker, a client, or your job sponsor? Describe.

_____

_____

_____

Summary of Duty Time and Earnings

Date	Check-in Time	Check-out Time	Duty Hours: Regular	Duty Hours: Overtime
___	_____	_____	_____	_____
___	_____	_____	_____	_____
___	_____	_____	_____	_____
___	_____	_____	_____	_____
___	_____	_____	_____	_____
___	_____	_____	_____	_____
___	_____	_____	_____	_____
		Totals	_____	_____

Total Hours _____

Regular hourly rate _____

Gross earnings for regular hours _____

Overtime hours _____

Overtime hourly rate _____

Gross earnings for overtime hours _____

Total earnings _____

Less deductions:

_____ _____

_____ _____

_____ _____

Total deducations _____

Net earnings for the pay period _____

Name: _____

Date: _____

Coordinator's
initials: _____

THE OFFICE IN WHICH YOU WORK

1. Describe in general the type of business firm in which you are employed and the service or commodity in which it deals. _____

2. Explain briefly the major function (s) which your office performs in support of the total business operation. _____

3. In which of the above functions are you working and training? Define your position, giving job title and duties. _____

4. Describe in some detail your major tasks and responsibilities in the day-to-day performance of your duties. _____

Name: _____

Date: _____

Coordinator's
initials: _____

PURPOSES SERVED BY TODAY'S OFFICE

1. In what way (s) does your office contribute to the over-all needs of the business firm for which you work? _____

2. List by office title and job description each of the persons employed in your own section or department. _____

3. Referring to the organizational chart previously prepared, describe briefly the business activities conducted in each of these departments.

Name: _____

Date: _____
Coordinator's
initials: _____

OFFICE SKILLS

Your level of skill in the areas listed below may not be very high at this time. Looking ahead to progress and advancement on the job, it is suggested that you develop your abilities to as high a degree as possible in each area while you are in office education. You have opportunities both in class and on the job to acquire higher levels of skill development.

With your career objective in mind, answer the following questions to show how these skills are to be utilized in your training station. Consider only those skill areas which are a part of your training (plan) program. Remember effective job performance is a priority in your training.

TYPEWRITING

1. To what extent is thorough training in typewriting a requirement in your present position in your training station? _____

_____

_____

_____

_____

What portion of an average day on the job do you devote to typing? _____

_____

2. There are various kinds of typed materials produced in offices, i.e., letters, manuscripts, forms, cards, memos, etc. What kind of typed materials are prepared by you in your present position? _____

_____

_____

_____

_____

_____

3. Name and describe other positions within your training station which require typewriting skills. _____

4. What advanced office positions may be obtained through a greater development of typewriting skills and knowledge of typing forms? _____

Other Comments:

Name: _____

Date: _____
Coordinator's
initials: _____

SHORTHAND

1. What are the minimum job competencies in taking dictation and transcription required by your employer? _____

2. What advanced positions may be available to one who increases his skill in shorthand? Do these advanced positions require other skills also? Name these skills.

3. Does your office use dictating machines? If so, is shorthand also required? What are the comparative advantages and disadvantages, if any as you see them, of dictating machines as opposed to shorthand transcription? _____

4. What uses does skill in shorthand serve other than in correspondence? _____

What vocations other than the one you are presently considering might require an ability to use shorthand? _____

Name: _____

Date: _____
Coordinator's
initials: _____

FILING

1. What skills does the filing done in your training station require, other than knowing the alphabet? _____

2. Each office or firm may have its own filing system, adapted to its own needs. Describe the filing system used in your training station and explain why it is designed as it is. _____

3. What is "records management"? Is records management (in any form) an integral part of the office or firm where you are training? Explain. _____

Does your work contribute to the records management program? _____

How? _____

Name: _____

Date: _____
Coordinator's
initials: _____

PROOFREADING AND VERIFICATION

1. The verification of figures and written materials is of great importance in all offices. Describe in detail the extent to which you are required to verify either your own work assignments or those prepared or partially prepared by someone else: _____

2. What office machines do you use in verifying figures? _____

3. What special skills are required or procedures followed for the type of proofreading or verification which you do? _____

Name: _____

Date: _____

Coordinator's
initials: _____

MISCELLANEOUS SKILLS

1. Indicate which of the following job skills are included as a part of your daily work routine:

   Computing _____

   Machine calculation _____

   Posting _____

   Handling mail _____

   Tabulating _____

   Reproduction _____

2. In what ways can the Cooperative Office Education class contribute to your acquiring greater skill development in these areas? _____

3. How do these skills relate to your total job performance? _____

4. In what ways do you represent your office or firm to the public? _____

TEST

The following addresses will supply tests for testing students prior to entry of after entry has been to the cooperative program.

(1.) "Wonderlic Personnel Test", Form A, E. F. Wonderlic, P.O. Box 7, Northfield, Illinois.

(2.) Factored Aptitude Series, "Numbers", Exhibit D, Industrial Psychology, Incorporated, Chicago, Illinois.

(3.) Same as number (2) but a test of "Perception".

SECTION 9

ADULT BUSINESS AND OFFICE EDUCATION

ADULT PROGRAMS IN BUSINESS AND OFFICE EDUCATION*

Many schools desire to offer adult Business and Office Education classes and in doing so may be eligible for reimbursement and/or having an approved program through the Department of Public Instruction, Division of Vocational Education.

To qualify for reimbursement and/or to have an approved adult Business and Office Education program, the courses must conform to certain quality standards:

1. It is for individuals preparing to enter into an office position.

2. It is for individuals seeking a promotion within their present employment.

3. It is for those desiring retraining for office employment.

4. It is not open for students enrolled in high school.

5. The enrollees in the adult program are 16 years of age or over.

6. The enrollees are not seeking high school credit.

7. The curriculum will be designed to train for a selected occupation utilizing both related and practical learning experience.

8. The course is classified as either preparatory or supplementary and has as its outcome a specific and specialized objective through a sequence of courses and not disconnected offerings.

9. For each individual course, there must be on file in the State Department a BOE 4 form two weeks prior to the first meeting of the class.

10. For each individual course, there must be on file in the State Department a BOE 5 form two weeks after the course is completed.

11. The BOE 4 form, including the proposed budget on the reverse side of the form, must be approved by the State Supervisor of Business and Office Education and the State Director of Vocational Education.

12. The majority of the enrollees in any individual class must represent those businesses which Business and Office Education is intended to serve as set forth in the Indiana State Plan for Vocational and Technical Education.

13. Each individual course must meet for a minimum of 10 clock hours.

14. Each individual course should have a minimum of 15 enrollees.

15. A course outline for each course must be on file in the State Department prior to the first class meeting.

16. Reimbursement of coordination and other expenses requires the completion of all forms duly signed by an official of the local school corporation and also notarized.

17. All aspects of each individual course must conform to the basic concepts of vocational education as set forth in the Indiana State Plan for Vocational and Technical Education.

18. The teacher of the program is a fully licensed business teacher with a major or above and certified to this effect. This major or above will remove reimbursement to those programs where the teachers have only a minor or restricted license in Business and Office Education.

Schedule of Reimbursement

Reimbursement for approved adult Business and Office Education classes will be made on one of the two separate plans.

Plan I: Those courses that do not cover their costs of operation through enrollment fees will be reimbursed as follows:

A. Those costs, greater than the income and other than the cost of coordination, appearing in the Actual Budget (Form BOE 5), will be reimbursed at the rate of fifty (50) percent.

B. The costs of coordination, as appearing in the Actual Budget (Form BOE 5), will be reimbursed at the rate of five dollars ($5.00) per hour of class instruction.

Plan II: Those courses that do cover, or exceed, their costs of operation through enrollment fees will be reimbursed as follows:

A. The cost of coordination, as appearing in the Actual Budget (Form BOE 5), will be reimbursed at the rate of five dollars ($5.00) per hour of class instruction.

Upon approval of the proposed courses by the State Supervisor of Business and Office Education, one copy of BOE 4 will be returned to the school corporation initiating the program. Within two weeks upon completion of the classes, enrollment figures are necessary as a matter of record for the annual state report. The amount of reimbursement requested for the program must appear in Actual Cost Report on the back of Form BOE 5. Upon approval by the State Supervisor of Business and Office Education for the amount claimed for reimbursement for the completed program, one copy of BOE 5 will be returned to the school corporation. The school corporation should report the approved amount of reimbursement on the annual Form E report at the end of the fiscal year.

*See Section 6, Part G, for necessary forms.

SECTION 10

Advisory Committee

PROVISIONS FOR ADVISORY COMMITTEE

An advisory committee shall be established in an initial effort to obtain advice to improve the Vocational Business and Office Education programs. Members shall be chosen from the community; the teacher-coordinator shall serve as a member; and the vocational director or superintendent shall also serve. Members shall be chosen on the basis of the following qualifications. Members must have had recent, successful, firsthand, practical experience in the Business and Office Education occupations. They should have the respect and confidence of their associates. Members must be able to keep in close contact with school officials. This means they should be available to meet when requested. Candidates shall also be chosen on the basis of intelligence, integrity, keen and balanced mind, courage and unselfish spirit. They should be potentially responsible, civic minded, and cooperative committee members..

How Selected, Who Appoints

Advisory committee members shall be selected by the teacher-coordinator and approved by the superintendent and school board. Members shall serve for a period of one year. At the end of the year, members shall be either reappointed or replaced.

General Duties and Responsibilities

To provide the school administration with advice on the types of courses in Business and Office Education needed to satisfy the day and evening training needs of the community.

To help in the work of community surveys by determining the data to be gathered and by supporting the studies and gaining the best community reaction to them, as well as by helping to evaluate the returns from the studies.

To help plan courses and establish ways for keeping instruction practical and functional.

To help set up standards for entrance into vocational Business and Office Education courses and to assist in obtaining jobs for graduates who have successfully completed their training.

To assist the teacher in relating his instruction to the particular needs of the community.

To recommend applicants for training on the basis of the qualifications required by the organization in which the students are to be taught; help the school conform to the state wage and hour laws· recommend and help to set up the local training standards. The committee should discuss working agreements, changes in job training status and all other student-training program problems.

To offer suggestions and advice in determining wage rates, training stations, types of training, and aid in the general promotion of the program.

USE OF ADVISORY COMMITTEES IN STRENGTHENING COOPERATIVE PROGRAMS

I. Choosing the Committee

A. Choose the committee from a cross section of the community

B. Let all business teachers help select, but teachers should not dominate meetings after committee begins functioning

II. Getting the Committee Started

A. Acquaint the committee with the vocational program

B. Let the committee elect its own officers, call its own meetings, and appoint subcommittees (these will meet separately from regular committee)

C. Have guidelines to show the functions of the committee, length of time to be served, etc.

D. This is not a social committee

E. Possibly, have one teacher to meet with the committee and take the minutes

III. Functions for Committee Meetings

A. Standards in typing, shorthand, etc.

B. Developing and improving curriculum patterns

C. Advisability of specialized training (medical secretaries, etc.)

D. Speakers Bureau

E. Free films and filmstrips for classes

F. Aid in the placement of graduating business students

G. Securing job stations for cooperative office practice students

H. Teachers cooperate by

1. Listening to recommendations of the committee

2. Keeping minutes of meetings and distributing them to all business teachers

---

The Key--Let the committee do the work. Don't let the teachers "hog the show." Let the committee "run the show"--set their own agenda.

YOUR ADVISORY COMMITTEE*

When one gets ready to consider establishing either one of the Business and Office Education programs in a community, then he should use one of the two types of advisory committees. One is called a steering committee. If you already have a program going, you have no use for this steering committee. But if you are getting ready to consider a program, either the lab or cooperative, then you have a need for these, which should be a cross-section of the interested publics that would be involved in or concerned about your program.

On this steering committee, you want people who are in favor and people who might not be in favor. You would have both labor and management. You would have your guidance people, administration, and teaching staff at the school. You would have your parents and your prospective students represented among the interested publics. You could think of others you would want in your own community, but this is the committee that would be organized the year prior to or two years prior to your active program getting started. This is the first consideration of a sounding board.

This steering committee would be one with which you would need to do a lot of orientation.. The first meeting of the steering committee should be an information meeting. Many of them will not know what you are talking about. They won't probably know what intensive lab is. They won't know what the cooperative is. This would probably involve somewhere from two to four meetings, and it is an early kind of session when you first have the seed of an idea that you want to start one of these programs.

Another kind of committee is called the advisory committee. This is the committee you use when you desire to start your program or have an on-going program. This can be a smaller one--something like eight to twelve members.

This one might be drawn from some of the people you found to be good as your result from the steering committee membership. Now you want the positive ones. You found the ones that were highly interested and might help with your training stations. You found the ones that have good potential for a lot of good instructional materials or techniques. You will want membership here with people who will think positive of your program and give good advice and assistance.

This one would be a membership rotation set up on the basis of one, two, to three-year memberships, so that you do not have all of them disappearing each year. You have some experienced people on there that will continue from year to year. And, in the case of the cooperative, out of these eight or twelve, four or five, whatever you decide but a majority, would be your training station employer and then you would want a school administration representative. You would also want labor representation as well as management. Perhaps a parent or have a successful graduate under the cooperative as a representative. If this be a laboratory situation, then you are going to want employers, labor, administration, and resource individuals who can assist you with this matter of establishing stations in your lab and providing instructional materials and teaching technique ideas.

One that is not used quite as often could be possibly called a technical advisory committee or a special committee. In the cooperative or laboratory, this could be used in which you have specialized area where assistance is needed.

If you have particular problems in instructional materials or deciding on course outlines, finding the equipment, availability, then you would want a special committee here and perhaps three members might be adequate.

In data processing and accounting, and particular machine areas, technical committees have become important to us. They need only to meet as often as you need their advice. In the technical, this could mean only two or four formal meetings. In the case of the advisory committees, some business educators find that three or four formal meetings a year are adequate; but then contact with individual members becomes important. It is important that you keep in contact with your chairman of the advisory committee and the individual members in-between. On the technical situation, this could be a series of two or three formal meetings with further individual contact.

With these three kinds of committees, advice and warning are issued. Call on only as often as you have something specific to do. When you call a committee meeting, you must have an agenda, and very advisedly so, an agenda that is mailed out in advance. Meet as long as necessary only and get these busy people back on their way. If they come to committee meetings with an agenda and do things, they will be more than willing to talk of this report. But if they come there to waste time and just a social affair, then it is going to die quickly. Let's say it would be, "What I want in this community would be data processing by people who have direct installations and could help me in setting up a Course of Study to serve my employing community." When it comes to a technical community, look closely on the employing community and not just a local community.

As for setting the time for the advisory committee meetings, a short luncheon meeting or a four o'clock meeting seems to work pretty well. They do not like to give up their nights. Saturdays are bad days.

At the advisory committee meeting, arrange for some good visual presentations. There is a good film on "Office Occupations" which can be obtained through Keystone Steel & Wire Company, in Peoria, Illinois. If you do not want to use this kind of thing, use some simple transparencies and do some charting under the discipline of instruction.

The first meeting is an information meeting. There should be two or three other meetings during the year.

The second meeting could be a matter of exchanging ideas on training stations if in cooperative. Develop training stations, talk about needs, and help explain what a good training station is.

The third meeting of the year, during an active year, might be an overview of what has happened; some of your needs for the coming year sets the stage for the fourth meeting.

We are in the business of teaching the managements of things. We are in the discipline of management. We are in the business of creating information and managing it. We are in the business of working with personnel.

We are in the discipline of management and to teach office skills along with this. Secondly, we are in the business of teaching the technology that applies to certain occupations. This is where we zero in on the student's career objective and add to the technology of the career occupation.

Third, we are finding that we have to deal with the social skills these days because students have to get along with people on the job and learn how to benefit from supervision.

Fourth, we cannot avoid this matter of economic understanding.

We need help in achieving these goals for our students, and these committees can provide many answers.

*Speech given by Dr. Ralph Mason, Indiana State University, at the annual Vocational Conference.

VT 007 653
Criteria for the Use of a School District in Evaluating Its Business Education Program.

Pennsylvania State Dept. of Public Instruction, Harrisburg
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*BUSINESS EDUCATION; *PROGRAM EVALUATION; *EVALUATION TECHNIQUES; *PROGRAM IMPROVEMENT; *INSTRUMENTATION
PENNSYLVANIA

This document is a practical check list to be used by each school district to evaluate its business education department and to serve as a guide for evaluating its program against standards set forth. Part I, General Area, includes: (1) instructional procedures, (2) organization and staff, (3) guidance service, (4) community and school relations, (5) physical plant and equipment. Included in Part II, Subject Area, are: (1) bookkeeping, (2) business economics, (3) business English, (4) business law, (5) business mathematics, (6) data processing, (7) general business, (8) office practice, (9) shorthand, and (10) typewriting. The check list provides for a "yes" or "no" response at the left of each item and a bar graph is included at the end to be used in plotting the results of the evaluation. (MM)

VT 007 653

ED039370

Commonwealth of Pennsylvania
DEPARTMENT OF PUBLIC INSTRUCTION
Harrisburg 17126

CRITERIA
for
THE USE OF A SCHOOL DISTRICT
in
EVALUATING ITS
BUSINESS EDUCATION PROGRAM

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

March 1968

VT007653

MESSAGE FROM THE SUPERINTENDENT OF PUBLIC INSTRUCTION

The practical check lists contained herein have been prepared as a means of giving each school district an opportunity to evaluate its business education department. These check lists will be of greatest value when they are used by administrators and business education department personnel as a guide for evaluating their own program against standards set forth. It should serve as a means of determining areas where improvement can be made.

This material is, in part, a revision of the Department of Public Instruction's Criteria for the Use of a School District in Evaluating Its Business Education Program, dated September 1959.

Inquiries about this publication should be directed to William H. Selden, Jr., State Supervisor, Business Education, Robert D. Edwards, Adviser, Business Education, or Kenneth A. Swatt, Adviser, Business Education, Department of Public Instruction, Harrisburg, Pennsylvania.

David H. Kurtzman

March 1968

SUGGESTIONS FOR USE OF CRITERIA

This criteria is offered as a practical and simple means of evaluating business education programs with a view to making them more effective. It is divided into two parts and presents the following aspects of business education:

Part I. General Area

Instructional Procedures
Organization and Staff
Guidance Service
Community and School Relations
Physical Plant and Equipment

Part II. Subject Area

Bookkeeping
Business Economics
Business English
Business Law
Business Mathematics
Data Processing
General Business
Office Practice
Shorthand
Typewriting

A check (✓) may be used to indicate a "yes" or "no" response in the space provided at the left of each item. The last page contains a bar graph to be used in plotting the results of this evaluation. In preparing the graph, one point should be allowed for each statement where an affirmative answer is indicated.

Part I. General Area

INSTRUCTIONAL PROCEDURES

The objectives of business education are a significant factor in the success of the program and appropriate instructional procedures play a major role in achieving this success.

YES NO

___ ___ 1. Instruction is consistent with school and departmental objectives which, in turn, are based on accepted long-range needs of the business community.

___ ___ 2. Low ability or marginal pupils are given additional individual attention.

___ ___ 3. High ability pupils are challenged through occasional enrichment assignments in areas of specific interest to them.

___ ___ 4. Testing is used as one of the bases for remedial instruction.

___ ___ 5. Pupils are informed periodically of their progress.

___ ___ 6. The teacher varies the daily procedure to maintain interest and stimulate enthusiasm.

___ ___ 7. Assignments are previewed to direct pupils' attention to specific items which they will be expected to learn.

___ ___ 8. Pupil projects are designed to illustrate the practical application of business principles in everyday life.

___ ___ 9. Business teachers continuously attempt to foster with pupils an understanding of how to adapt to changing work situations.

___ ___ 10. Pupils are encouraged to develop business-like work habits.

___ ___ 11. Pupils are taught the value of good character and the value of learning to improve their personality traits.

___ ___ 12. Textbooks are replaced periodically to keep them up to date.

___ ___ 13. The teachers use the key or teacher's manual with discretion and do not lend it to pupils.

___ ___ 14. Supplementary books and periodicals are used to enrich the content matter.

___ ___ 15. Community resources (interesting outside speakers and field trips), trade publications, and employee handbooks are used for instructional purposes whenever appropriate.

___ ___ 16. Books, periodicals, and other publications relative to the area of business are available in the school library for pupils' use.

___ ___ 17. Business pupils are encouraged to borrow and read books from the school or community library for the purpose of building vocabulary, broadening understanding, and developing an appreciation of human relations.

___ ___ 18. Bulletin board space is used as an instructional aid and material is current.

ORGANIZATION AND STAFF

Business needs will be met more adequately when business education is effectively organized, administered, and supervised.

YES NO

___ ___ 1. When there are two or more business teachers, one of the teachers is designated as chairman of the department.

___ ___ 2. The department chairman with three or four teachers has at least two periods a day, and the department chairman with five or more teachers has at least three periods a day, to devote to administrative and supervisory duties.

___ ___ 3. The department chairman has an opportunity to interview applicants for his department and to make comments concerning their potentialities.

___ ___ 4. The department chairman or principal visits each teacher at least once each six weeks for the purpose of observing the presentation of a lesson. This observation is discussed with the teacher.

___ ___ 5. The department chairman or a business teacher either participates actively, or gives consultation, in the rostering or scheduling of business pupils.

___ ___ 6. The department chairman maintains an inventory and approves the request of teachers for departmental equipment, supplies, and textbooks.

___ ___ 7. Once a year each business teacher observes another teacher for at least two periods in the same, or in a different, school system.

___ ___ 8. All business teachers have had experience working in, or with, business during the past four years and the experience might include the making of time and motion studies, writing of job descriptions, and setting up office procedures and policies.

___ ___ 9. Each business teacher attends at least one professional business education meeting, seminar, clinic, or workshop a year.

___ ___ 10. The school reimburses each business teacher for expenses to attend at least one professional business education meeting a year.

___ ___ 11. Each business teacher has at least one period a day to devote to nonteaching professional activities.

___ ___ 12. Business teachers are consulted when changes in the business curriculum and physical facilities are being considered.

___ ___ 13. Each year the staff of the department works on a major project such as curriculum revision, instructional methods, or public relations venture.

___ ___ 14. Departmental meetings which are held when needed include consideration and discussion of issues for improving the instructional program and are not devoted primarily to procedural items.

___ ___ 15. Special care is exercised in rostering, or scheduling, classes to permit teachers to be in the same room for most or all of the day.

___ ___ 16. Maximum class sizes are: Typewriting, 32 pupils; office practice, 24 pupils; and others, 30 pupils.

GUIDANCE SERVICE

Pupils interested in the business education program can be more effectively serviced through the concerted effort of both the business educator and the school counselor.

YES NO

___ ___ 1. The school counselors understand all facets of the business curriculum and use an appropriate amount of their time and effort working with pupils who are interested in business subjects.

___ ___ 2. Scheduling allows pupils to enroll in any business subject from which they can profit.

___ ___ 3. Parents continually are informed of the advantages, as well as any possible disadvantages, of their son's or daughter's enrolling in the business curriculum.

___ ___ 4. Business teacher(s) and school counselor(s) cooperatively prepare a series of information dissemination activities prior to the time of curriculum choice.

___ ___ 5. Former business pupils from various employment levels are invited to talk in either business classes or assembly programs concerning their general experience, as well as their specific role, in the business world.

___ ___ 6. Opportunities for pupil self-exploration are provided and specific information on educational alternatives is available to the pupil.

___ ___ 7. Pupils who plan to major in business administration in college are shown the relationship between high school business subjects and future course work on the college level.

___ ___ 8. Career conferences and other desirable activities are planned yearly to enable pupils to learn about business careers.

___ ___ 9. The school has a business club, such as an FBLA (Future Business Leaders of America) Chapter, which attempts to develop an understanding of the value of making an intelligent choice of business occupations.

___ ___ 10. Bulletin board displays, assembly programs, and/or the school paper are used to publicize educational and occupational information of interest to current and prospective business pupils.

___ ___ 11. Up-to-date occupations files are available within the school.

___ ___ 12. Films, filmstrips, and slides about business and office occupations are shown to pupils who are interested in enrolling in the business curriculum.

___ ___ 13. The business education department cooperates with the counselor on placement or is responsible for the placement of vocational business graduates.

___ ___ 14. Policies are established for the release of appropriate business pupil information for placement purposes.

___ ___ 15. Employers consult with the business education department and the guidance department before employing business graduates.

___ ___ 16. The guidance service is developmental in nature with its primary objective of enhancing the pupil's ability for self-direction.

COMMUNITY AND SCHOOL RELATIONS

Business education must function in relation to the life of the community and to the total school curriculum.

YES NO

___ ___ 1. The business education department, once every five years, makes a survey of business offices in the employment area for the purpose of determining the need for possible curriculum revision and to aid in the selection of business machines.

___ ___ 2. A follow-up study in cooperation with the guidance department is mad of each year's business graduates, as well as dropouts, who give their evalu cion of the curriculum for the purpose of making revisions.

___ ___ 3. The staff of the business education department and an administrator (superintendent, supervising principal, or principal) meet with a committee of three or more businessmen (lay-advisory committee) at least twice a year for the purpose of promoting business-education understanding and cooperation.

___ ___ 4. The business education department presents a high school assembly program at least once a year.

___ ___ 5. The business education department invites at least one businessman a year to speak either in business classes or an assembly.

___ ___ 6. The business education department releases at least two articles to the school newspaper each school year.

___ ___ 7. The business education department, with the approval of the school administration, releases at least one article to the local newspaper each year.

___ ___ 8. The school is adequately serving the needs of the community by providing appropriate adult business courses.

___ ___ 9. If there are new business teachers, an orientation program relating to the community and school system is scheduled during the first few weeks of the school term or preceding the school term to enhance the effectiveness of their job.

___ ___ 10. The business teachers are well acquainted with business activities and businessmen in the community and are active in community affairs.

___ ___ 11. Vocational business pupils make a minimum of one field trip a year to observe the operation of a business office.

___ ___ 12. A teacher precedes a field trip by a variety of preliminary steps that are known to be necessary; for example (1) the future host is aware of the learnings that should result, (2) the pupils have discussed the observations to be made, and (3) such activities as library research and outside readings have been completed when advisable.

___ ___ 13. A field trip progresses with (1) small groups for adequate observations, (2) the opportunity to ask questions, and (3) the recording of observations.

___ ___ 14. The teacher prepares and makes use of follow-up questions for class discussion immediately after a field trip, and the field trip is followed by a "thank you" note written by one of the pupils.

PHYSICAL PLANT AND EQUIPMENT

Adequate housing and equipment should be a prime consideration in the business education program and includes the planning of new facilities and the practical use of present equipment and school buildings.

YES NO

___ ___ 1. The size, shape, and location of rooms assigned to the business education department permit layouts suitable to the purpose of the program.

___ ___ 2. The data processing, office practice, and typewriting rooms are acoustically treated to reduce excessive noise, which may cause pupil fatigue, and to prevent interference with instruction in other classes.

___ ___ 3. Adequate storage facilities are provided either in each room or within the area of the department.

___ ___ 4. Each business education room has at least one four-drawer filing cabinet.

___ ___ 5. Bookkeeping, business mathematics, general business, and shorthand classrooms have a minimum of twenty-five running feet of chalkboard.

___ ___ 6. Office practice and typewriting classrooms have a minimum of fifteen running feet of chalkboard.

___ ___ 7. All rooms have adequate bulletin board space.

___ ___ 8. There is a sufficient number of electrical outlets in the classroom.

___ ___ 9. A master switch is provided for rooms which have a series of electric outlets.

___ ___ 10. Most of the following items of audio-visual equipment are readily available for all business teachers: copying machine, opaque projector, overhead projector, filmstrip and slide projectors, motion picture projector, record player, and tape recorder.

___ ___ 11. Facilities for the showing of projected materials are readily available for all business classes.

___ ___ 12. Equipment is representative of that being used in the community, as evidenced in a recent employment area survey.

___ ___ 13. Those electric typewriters which receive maximum usage are replaced on a systematic basis every four to six years.

___ ___ 14. Those business machines other than typewriters which receive maximum usage are replaced on a systematic basis every eight to ten years.

___ ___ 15. All business machines including typewriters are cleaned, oiled, and adjusted at least once every school year.

___ ___ 16. A comprehensive record is kept of all machines and includes: description of the item, date of purchase, cost, from whom purchased, serial number, repair service, disposition date, and trade-in credit.

Part II. Subject Area

BOOKKEEPING

The study of oookkeeping provides a valuable overall background of business organizations and operations as well as meets vocational and personal use objectives.

YES NO

___ ___ 1. Bookkeeping is offered to business pupils in grades eleven and twelve.

___ ___ 2. All vocational business pupils take at least one year of bookkeeping or recordkeeping.

___ ___ 3. An understanding of the need and use of systematically-kept bookkeeping records is developed.

___ ___ 4. The basic principles of bookkeeping are related to the pupils' previous common experiences.

___ ___ 5. A definite attempt is made to improve the fundamental skills of arithmetic and handwriting.

___ ___ 6. Pupils are required to use ink in completing exercises and practice sets for all entries except pencil footings and work sheets.

___ ___ 7. Emphasis is given to problem-solving procedures--interpreting, reasoning, understanding, and recording.

___ ___ 8. Business forms and financial reports used in business are presented to the class for their interpretation.

___ ___ 9. Bookkeeping instruction is integrated with work offered in data processing.

___ ___ 10. Workbooks are provided for each pupil enrolled in bookkeeping.

___ ___ 11. Each pupil works a minimum of one complete practice set a year with business papers.

___ ___ 12. Short quizzes and tests administered periodically are used to evaluate pupil progress.

___ ___ 13. Periodic tests include both theory and practical application of theory.

___ ___ 14. Pupils are taught bookkeeping ethics.

___ ___ 15. An ample amount of pupil work is placed on display.

___ ___ 16. The teacher makes frequent and effective use of the chalkboard, the overhead projector, and other appropriate audio-visual aids.

___ ___ 17. There are at least two adding-listing machines in the bookkeeping room which are used by pupils who have been taught to operate them properly.

___ ___ 18. The desks used in the bookkeeping room have a minimum working area of 5 square feet (720 square inches).

BUSINESS ECONOMICS

If high school pupils are to meet their responsibilities as citizens and as consumers in a basically free enterprise economy, economic understanding is essential.

YES NO

___ ___ 1. Business economics is taught in grade twelve.

___ ___ 2. The social studies department cooperates with the planning of the course.

___ ___ 3. The content of business economics concerns itself with the economic knowledge and understandings which have practical application for every person as a citizen, consumer, and producer.

___ ___ 4. One of the purposes of business economics is to develop in the pupils an appreciation of the American system of free enterprise.

___ ___ 5. Business economics attempts to develop in the pupil an appreciation of the increased economic interdependence of individuals and organizations.

___ ___ 6. Pupils are taught to replace unreasoned judgments with objective analysis by using the rational approach to problem solving (statement of the problem, analysis of the problem, method of solution, presentation of data, and conclusions).

___ ___ 7. The instructional program points up that the scarcity which every economic system faces is basic to all economic problems.

___ ___ 8. Pupils are taught to perceive economic trends and relationships from statistics presented in the form of charts, graphs, or tables.

___ ___ 9. Objective examination of controversial issues is included in the teaching of business economics, as a means of helping pupils develop the ability to reach their own conclusions on important socio-economic problems.

___ ___ 10. Pupils are encouraged to master a basic vocabulary of economic terms.

___ ___ 11. A comparison of business enterprises and economic systems is included in business economics.

___ ___ 12. Pupils frequently are given the opportunity to analyze practical economic problems, thereby giving concrete meaning in relation to the pupil's own experience and interests.

___ ___ 13. The ability level of pupils is considered when problems to be analyzed are assigned.

___ ___ 14. The teacher makes frequent use of supplementary materials which are current, objective, and informative.

___ ___ 15. Pupils are encouraged to bring to class newspaper clippings, periodicals, and other information relating to topics under discussion.

___ ___ 16. The teacher has participated recently in a summer workshop in economics or has returned to college for additional course work in economics.

BUSINESS ENGLISH

Applying for a position, recording facts, developing ideas, and communicating with others require language skill. Therefore, a fundamental knowledge of English is one of the most important tools of the office worker.

YES NO

___ ___ 1. Standard English usage is taught as a unit and in conjunction with all oral and written exercises.

___ ___ 2. Pupils are provided with the opportunity of mastering the mechanics of English; e.g., punctuation, capitalization, and number expression.

___ ___ 3. Appropriate vocabulary study is integrated throughout the entire course.

___ ___ 4. Frequent drills are conducted in spelling with emphasis on commonly misspelled words.

___ ___ 5. Pupils are taught to listen attentively by receiving ample practice in recording assignments accurately and getting the main facts from a presentation.

___ ___ 6. Business materials including books, magazines, and other pertinent publications are available for reference and appropriate assignments.

___ ___ 7. Instruction in the use of basic reference materials (e.g., dictionaries of word meaning, usage, and spelling; secretarial handbooks; and thesaurus) is provided.

___ ___ 8. Exercises are conducted to help pupils improve their oral expression.

___ ___ 9. Voice recording equipment, such as tape recorders or dictation-transcribing machines, is available as an aid for speech improvement and for composing business correspondence.

___ ___ 10. Pupils are presented with the fundamental principles of letter writing and are given practice in composing business letters.

___ ___ 11. Pupils are introduced to the importance of improving their mastery in English usage, mechanics, and proofreading.

___ ___ 12. Practice is given in the preparation of job application: letters of application, data sheets, interviews, and follow-up letters.

___ ___ 13. A variety of actual business correspondence is available for analysis by pupils.

___ ___ 14. Audio-visual aids such as the tape recorder, record player, and overhead projector are available for instructional purposes.

BUSINESS LAW

Business law shows the application of the law to common problems arising in the life of an individual as citizen, consumer, and employee.

YES NO

___ ___ 1. Business law is taught in grade twelve.

___ ___ 2. A realization is developed that ordinances, laws, courts, and governmental services exist for the protection of society.

___ ___ 3. An effort is made to develop in pupils a wholesome respect for the law.

___ ___ 4. An understanding is given of the fundamental principles of law--contracts; negotiable instruments; and sales, buyer and seller relations--useful to all persons in everyday living.

___ ___ 5. Pupils are taught that contractual rights carry corresponding obligations which an individual should not avoid.

___ ___ 6. The pupil is given a practical knowledge of his rights and obligations in common business transactions to help him to avoid legal entanglements and to know when to seek the advice of a lawyer.

___ ___ 7. The approach to the study of business law is based on the experiences of the pupil in his daily school, home, and community contacts.

___ ___ 8. Pupils are taught the use and purpose of legal documents and are given the opportunity to study these documents in detail.

___ ___ 9. Pupils are encouraged to master a basic vocabulary of business law terms.

___ ___ 10. Pupils are acquainted with the American system of courts, their function, and their jurisdiction.

___ ___ 11. An attempt is made to develop in pupils the ability to see both sides of a dispute and to give due weight to all the facts in arriving at a conclusion.

___ ___ 12. Once during the school term an appropriate court case is selected for pupils to witness.

___ ___ 13. Teachers occasionally dramatize legal principles and business law subject matter.

___ ___ 14. Extensive use of simple cases help develop a clear understanding of the principles of business law, thus arousing genuine interest in the subject.

___ ___ 15. Pupils are encouraged to collect and bring to class newspaper clippings, advertisements, legal notices, and other information relating to topics under discussion.

___ ___ 16. An annotated copy of the Uniform Commercial Code is available in the school library for use by the teacher and pupils.

BUSINESS MATHEMATICS

Business mathematics stresses basic arithmetic as applied to problems of business life--including those of the consumer.

YES NO

___ ___ 1. Extensive use is made of diagnostic tests in planning the instructional program.

___ ___ 2. Instruction is given in proving all types of problems in a manner different from the way they were worked originally.

___ ___ 3. Pupils learn to solve problems by using the most expeditious approach.

___ ___ 4. Pupils learn to estimate answers, especially in division and multiplication, to determine whether a logical answer has been obtained.

___ ___ 5. Pupils learn to check figures which have been copied from a book, another paper, or the chalkboard.

___ ___ 6. Pupils learn to read amounts of various sizes for the purpose of rapid checking.

___ ___ 7. Pupils learn how to read tables and charts such as those used in determining the cost of insurance, social security, and income tax.

___ ___ 8. Warmup exercises are used daily.

___ ___ 9. The teacher carefully defines the business terminology of a written problem.

___ ___ 10. Pupils are encouraged to label all numbers to promote logical solutions of narrative problems.

___ ___ 11. Speed drills are used often to promote the pupil's skill in rapid computation.

___ ___ 12. Flash cards, or a tachistoscope, are used to promote the learning of number combinations.

___ ___ 13. Examinations, so administered that no pupil can complete all of the problems, occasionally are given to test speed.

___ ___ 14. Frequent quizzes are given to evaluate learning.

___ ___ 15. As a result of tests or oral recitation, the teacher maintains a record of the strengths and weaknesses of each pupil in the fundamental processes.

___ ___ 16. The teacher uses the chalkboard frequently and has a specific method of placing problems on the board.

___ ___ 17. Each pupil has a chance to work at least one problem on the chalkboard every week.

___ ___ 18. When possible, a written problem is not taught as an isolated situation; but some background explanation is given to place it in a business environment.

___ ___ 19. Emphasis is placed on writing figures legibly and neatly.

___ ___ 20. Pupils usually have time in class to start homework problems which have been explained carefully.

DATA PROCESSING

Data processing is playing an increasingly important role in business offices and it is the responsibility of the school to teach pupils the basic understandings and the operation of unit record equipment as well as computer theory.

YES NO

___ ___ 1. Typewriting and bookkeeping are prerequisites to the study of data processing.

___ ___ 2. The specialized vocabulary of data processing is studied.

___ ___ 3. Punched cards, punched paper tape, magnetic tape, discs, drums, and MICR as input and output media are included in the instruction.

___ ___ 4. The preparation of flow charts and a study of accounting systems are a part of the instruction.

___ ___ 5. Card punch training and the preparation of program cards are included in the instruction.

___ ___ 6. The majority of the problems solved on the data processing equipment are realistic business problems.

___ ___ 7. Introduction to computer theory is taught and includes basic concepts in computer logic, programming, and storage.

___ ___ 8. "Hands on" training on data processing equipment is provided wherever possible.

___ ___ 9. A plan for rotating pupils on the data processing equipment is devised to permit maximum use of the equipment.

___ ___ 10. Resource books, pamphlets, and manufacturers' machine manuals are available for pupil use.

___ ___ 11. Community resources are used extensively for speakers, field trips, and career conferences on employment opportunities in data processing.

___ ___ 12. Films, slides, filmstrips, and demonstrations are used frequently to show types of equipment and their operation.

___ ___ 13. Pupils are not required to process data for the school administration other than those problems which relate to classroom instruction.

___ ___ 14. Data processing machines are housed in an air-conditioned and sound-proofed room.

___ ___ 15. The lecture area and machine area are separated by a partition.

___ ___ 16. Storage bins and racks are provided to store control panels and wires.

___ ___ 17. Diagrams, card templates, transparencies, overhead projector, etc., are part of the supplies and equipment.

___ ___ 18. A sufficient number of control panels and wires is provided to allow the pupil the opportunity to diagram, wire, and debug his own problem.

GENERAL BUSINESS

General business consists of a study of basic economic problems and concepts essential for intelligent decision-making by consumers in a basically free enterprise economy. It also provides education in the performance of those business activities in which all persons engage irrespective of their age, occupation, and economic status.

YES NO

___ ___ 1. General business is offered to business pupils before they enroll in subjects such as bookkeeping, shorthand, and typewriting.

___ ___ 2. Pupils in other curriculums are encouraged to elect general business.

___ ___ 3. The consumer aspects of business and economics, such as budgeting and buying, savings and investments, and insurance, are emphasized.

___ ___ 4. An attempt is made to teach pupils to use goods and business services economically.

___ ___ 5. Pupils are taught to look at business problems from the point of view of both the businessman and the consumer.

___ ___ 6. One of the main purposes of general business is to develop in the pupils an appreciation of the American system of free enterprise.

___ ___ 7. A unit relative to business data processing and the respective job opportunities is included in this subject when data processing is not offered as a separate subject.

___ ___ 8. Job opportunities related to the types of business enterprises studied are highlighted continuously.

___ ___ 9. A definite attempt is made to promote good spelling, and to encourage pupils to acquire a basic business vocabulary.

___ ___ 10. Legible handwriting is encouraged in all written work.

___ ___ 11. Project or activity methods are used in general business.

___ ___ 12. Visual aids such as filmstrips, motion pictures, and transparencies are used frequently.

___ ___ 13. Reference is made continuously to daily living situations, such as available safeguards in handling money (checks, money orders, etc.).

___ ___ 14. Whenever possible, instruction is geared to the activities, ambitions, and experience of teen-age pupils.

OFFICE PRACTICE

The content of this subject is specifically conceived to include an understanding of office procedures, indexing and filing techniques, general clerical information, and a working knowledge of machines commonly found in the business office.

YES NO

___ ___ 1. Office practice is taught in grade twelve and designed as a terminal course for vocational business pupils.

___ ___ 2. At least one year of typewriting is a prerequisite for office practice.

___ ___ 3. The use of reference books (telephone directory, city directory, zip code directory, secretary's handbook, dictionary, etc.) is part of the instruction.

___ ___ 4. A unit on job information, application forms, letters, interviews, and employment testing is included.

___ ___ 5. Pupils are oriented about business conduct and grooming, and the necessity of cooperation with fellow-workers is emphasized.

___ ___ 6. Pupils are given instruction in the handling of mail, the use of the telephone and telegraph services, and the handling of travel arrangements.

___ ___ 7. Alphabetic, geographic, numeric and subject filing is taught with adequate stress on the filing sequence and on the responsibility for maintaining neat, accurate files.

___ ___ 8. Pupils' classwork is evaluated similar to on-the-job work performed by beginning office employees.

___ ___ 9. A short "office staff" meeting (including teacher and all pupils) is held periodically to discuss quality of work, organization of work, room appearance, and other matters that can be discussed in a group meeting.

___ ___ 10. Pupils are made aware of the importance of both independent and group planning.

___ ___ 11. Pupils are expected to complete assignments on time with a minimum of instruction and supervision.

___ ___ 12. Miniature filing practice sets or workbooks are provided for each pupil.

___ ___ 13. Machines in the office practice room include typewriters, duplication equipment, transcribing machines, adding-listing machines, and calculators.

___ ___ 14. Enough machines are housed in the office practice room, so that each pupil has a machine to operate when the class is concerned with this type of work.

___ ___ 15. The duplicating equipment is located in a small room adjacent to or in a corner of the office practice room.

___ ___ 16. The transcribing machines are located as far away from the other machines as possible to insure the greatest degree of quietness.

___ ___ 17. Washing facilities are available.

___ ___ 18. There is a rotation plan of organization whereby each pupil operates a machine for a stated period of time.

SHORTHAND

The ultimate objective of this subject is production of mailable copy at acceptable speed for vocational use.

YES NO

___ ___ 1. Such factors as success in English and an average or better I.Q. are considered in counseling pupils who wish to elect shorthand.

___ ___ 2. Pupils receive guidance information concerning the concept of shorthand, the amount of homework involved, and the necessity for correct English usage in transcription before enrolling in the course.

___ ___ 3. Pupils are acquainted with the opportunities and qualifications for positions in the secretarial field.

___ ___ 4. Two years of shorthand instruction are offered to vocational business pupils in grades eleven and twelve.

___ ___ 5. Each pupil is aware of the standards he must attain to pass a course in shorthand and the standards for second-year shorthand are commensurate with vocational requirements for beginning secretarial employees.

___ ___ 6. Pupils are given assistance in developing correct study habits.

___ ___ 7. Personal-use value is stressed by assigning themes or letters to be composed in shorthand and by taking notes from lectures, library resources, radio programs, and television programs.

___ ___ 8. Dictation practice is begun soon after shorthand writing is introduced.

___ ___ 9. The teacher who offers first-year shorthand to a group of pupils is assigned to teach second-year shorthand to the same group.

___ ___ 10. Pupils have access to typewriters during the same period that instruction in shorthand is given or during the following period.

___ ___ 11. In second-year shorthand, there is a definite schedule for dictation followed by transcription.

___ ___ 12. In second-year shorthand, dictation is given at least twice by a local businessman or a school administrator.

___ ___ 13. Transcripts are graded on the basis of mailability--the quality of a letter an executive would be willing to sign without need for correction or retyping.

___ ___ 14. Office style dictation is given in the second-year shorthand class and includes multiple carbons, enclosures, and envelopes.

___ ___ 15. A record player, tape recorder, or shorthand dictation laboratory is available for groups and individual pupils during their study periods.

___ ___ 16. A supply of dictation records is available in the library for pupils who desire to use them for practice at home.

___ ___ 17. Dictation laboratories or multi-headset equipment is used as a means of providing for individual differences in the ability to take dictation.

___ ___ 18. The chalkboard or overhead projector is used frequently by the teacher for demonstration and drill.

TYPEWRITING

Each unit of work should become the foundation for a higher level of typewriting performance whether for vocational or personal use.

YES NO

___ ___ 1. Typewriting is offered to business pupils in grades eleven and twelve.

___ ___ 2. There are standards for production and straight copy work, and each pupil is aware of the standards he must attain to pass a course in typewriting.

___ ___ 3. Proofreading is an integral part of the typewriting program.

___ ___ 4. Outside assignments are given in proofreading, spelling, syllabication, and planning the organization of problems that require tabulation.

___ ___ 5. Pupils receive instruction on the care and cleaning of the typewriter and changing the ribbon.

___ ___ 6. Vocational business pupils receive at least one year of instruction exclusively on an electric typewriter.

___ ___ 7. A textbook is given to each pupil.

___ ___ 8. There is a quality dictionary, or a book which gives the spelling and syllabication of words, available at each typewriting desk or table.

___ ___ 9. Supplementary typewriting materials are available for use in strengthening specific typing weaknesses.

___ ___ 10. Typewriters with open (lettered), rather than blank, keyboards are used.

___ ___ 11. At least two utility typewriters are housed in each typewriting room for use if any of the typewriters break down.

___ ___ 12. Typewriting desks or tables with book racks are adjustable or vary in height between 27 and 30 inches.

___ ___ 13. Posture chairs, adjustable in height, are provided in the typewriting room.

___ ___ 14. All typewriting desks or tables face the same direction.

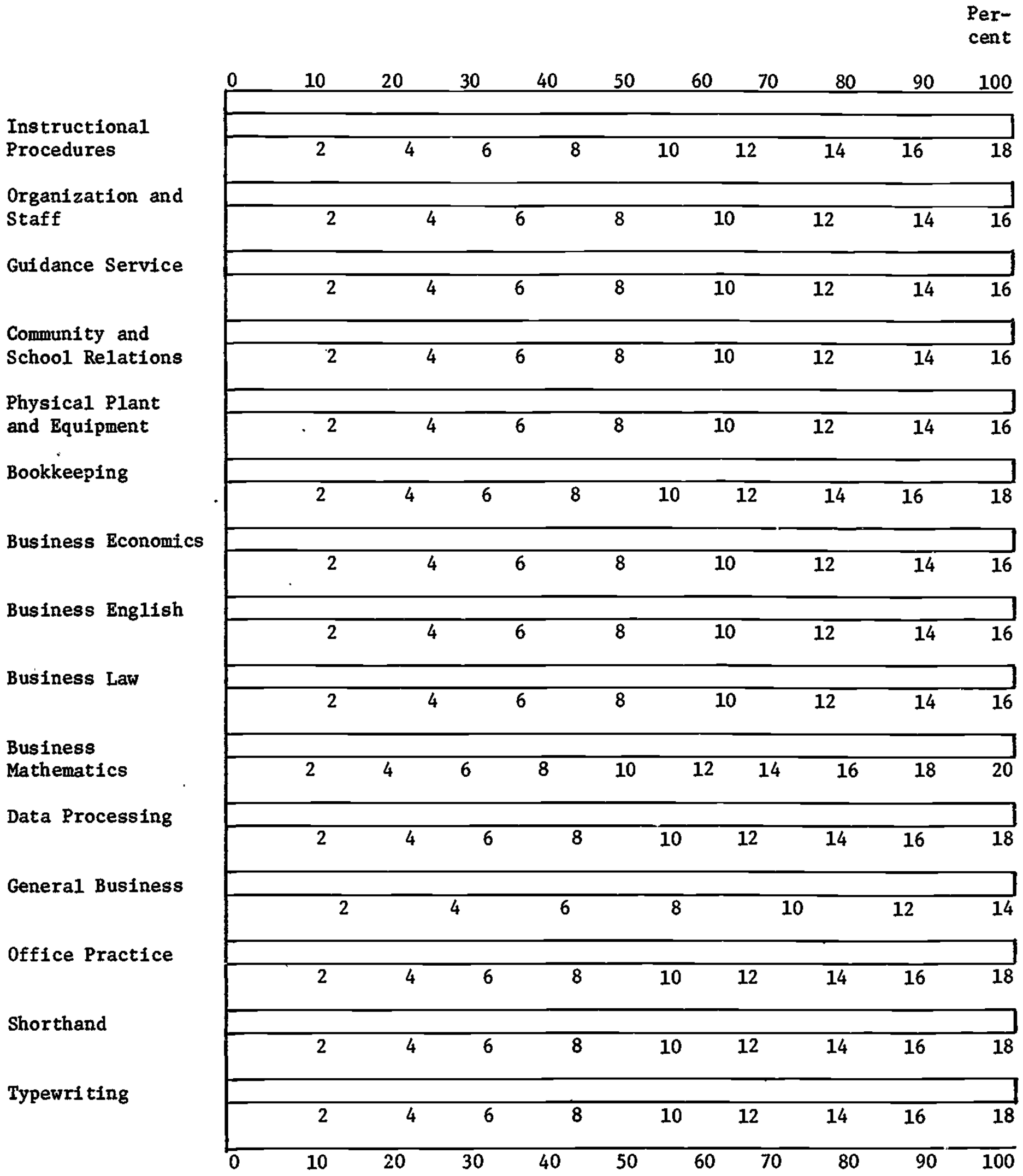
___ ___ 15. Each desk or table in the typewriting room contains not more than one typewriter.

___ ___ 16. Copyholders are available at each typewriting desk or table and are used by the pupils.

___ ___ 17. Each typewriting room has a typewriter and a typewriting demonstration stand on wheels which the teacher uses for demonstration purposes.

___ ___ 18. A drawer with folders in which pupils place their work is available in one of the filing cabinets.

GRAPH ILLUSTRATING CRITERIA FINDINGS



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This bulletin describes the current manpower policy of Canada, explains its relation to other national goals, outlines the organization of manpower administration, and discusses some of the major elements of its manpower programs. Canada has pioneered in developing, administering, and financing adult training programs and in maintaining family incomes during training. The employment service has been restructured to provide manpower centers staffed with counselors to match workers and jobs or to guide individuals into training, mobility, or health programs. Area and seasonal unemployment problems have been attacked with original programs, and research and assessment agreements resulting from critical examinations of technological changes are exemplary case studies. The Economic Council of Canada represents organizational and operational ways to integrate manpower policies with economic and social policies. (EM)

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OTHER MANPOWER RESEARCH BULLETINS

Training Foreign Nationals for Employment with U.S. Companies in Developing Countries - Implications for Domestic Programs (No. 7, 1965)

Training Needs in Correctional Institutions (No. 8, 1966)

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Sheltered Workshops — A Pathway to Regular Employment (No. 15, 1967)

CANADA
MANPOWER POLICY
and
PROGRAMS

U.S. DEPARTMENT OF HEALTH, EDUCATION
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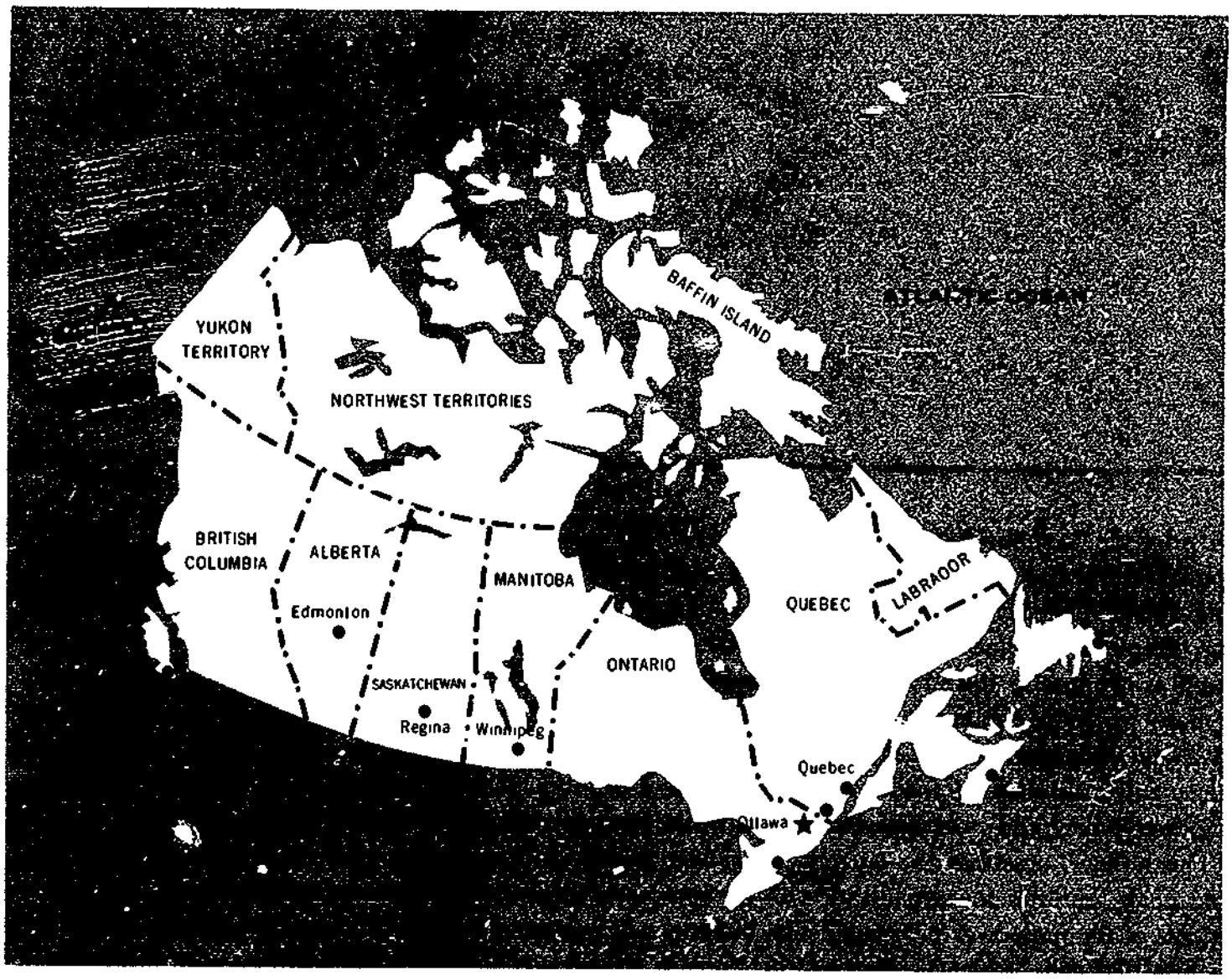
MANPOWER ADMINISTRATION
Stanley H. Ruttenberg, Manpower Administrator

VT 007 666

Preface

Under the Manpower Development and Training Act of 1962, the Secretary of Labor is required to publish information that gives promise of furthering the objectives of the act, which include developing and applying information and methods needed to deal with the problems of unemployment. Other countries are faced with similar problems of unemployment created by technological progress as well as changes in the structure of production and demand on the use of human resources. Canada has many problems similar to those of the United States, some of which grow out of the same economic and social developments. The Canadians have undertaken independent and parallel programs to achieve full utilization of their human resources. Therefore, it is appropriate that we understand the manpower policy and programs of Canada in developing methods to deal with our problems.

This bulletin describes the current manpower policy of Canada, explains its relation to other national goals, outlines the organization of manpower administration, and discusses some of the major elements of its manpower programs. The bulletin was prepared by Mrs. Philomena Mullady under the direction of Lewis H. Earl, Chief of the Foreign Manpower Programs Staff, Manpower Administration. Mrs. Mullady interviewed more than 60 persons in Canada closely concerned with manpower policy and programs in June 1967 to supplement the published materials that provide the basis for this bulletin. Although the manuscript has been reviewed by Canadian officials who have given generously of their time to this publication, the organization and interpretations in the bulletin are the responsibility of the Manpower Administration, U. S. Department of Labor.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Introduction

Manpower is recognized as one of the main resources of Canada in that country's effort to achieve economic growth. Despite an abundance of natural resources, high priority is being given to full and effective utilization of manpower. National policies are directed not only toward achieving full employment but also toward increasing the productivity of employment.

The manpower problems of Canada are in many respects similar to those of the United States. With a large and sparsely populated land area, geographic mobility and communications in Canada are not achieved without difficulties. The population of Canada is about 10 percent of that of the United States, and is concentrated in the territory near the U.S. border, which stretches for almost 4,000 miles. This proximity to the United States complicates Canada's manpower problems.

Canada manpower policy, through the guidance of the Economic Council of Canada, is closely related and integrated with Canada's economic policy. The Council has given direction to ways of achieving full employment and focused attention on the effects of employment policy on the economy as a whole.

The structure of Canada's adult training recognizes the need for training and retraining workers beyond their academic level to meet the changing structure of the economy. How they have developed their occupational training for adults in spite of their Federal system is very important because they face states-rights problems similar to ours. None of the European countries can provide us with this kind of example.

Canada's Manpower Centers, which replace their previous Employment Service, performing a role far beyond just placement service, appear to be a real advance in organization and operation.

For many reasons the Canadian economy is closely intertwined with developments in the United States. For example, about three-fifths

of the Canadian exports go to the United States, while almost three-fourths of Canada's imports come from the United States. Therefore, Canadian manpower policy must take into account anticipated economic developments of its southern neighbor. The continued growth of the U.S. economy since 1961 has helped the economic advancement of Canada.

Techniques for handling the problems of manpower adjustments to technological and other changes have been devised, using various services of the Canada Manpower Centers, such as training and mobility assistance.

Canada has a greater problem of integration of immigrants into its labor force than does the United States, although it is similar to ours. Their coordination of the work of the Immigration and Manpower Divisions under the Department of Manpower and Immigration is an important innovation in policy and program.

Early in the 1960's, Canada adopted a goal of high economic growth that involved making full and increasingly effective use, on a sustained basis, of both human and material resources. Faced with higher rates of unemployment at the beginning of the decade than were experienced in the United States, Canada undertook to achieve full employment, while maintaining reasonably stable prices.

Since 1960 the rate of unemployment in Canada has been reduced more markedly than in other industrial countries. (See table 1.) Although unemployment rose in 1967, manpower programs and administrative organizations in Canada were prepared to meet the problems.

The fact that Canada exports nearly one-fifth of its gross national product requires attention to the balance of payments and the competitiveness of Canadian goods and services in world markets. Associated with all of these national goals was an effort to give assurance that all Canadians would share in rising living standards. Canada has had reasonable success in harmonizing policies and programs to achieve these goals.

The reduction in unemployment rates during this decade in Canada has been achieved while there has been a substantial growth in the labor force. The increase in gross national product further verifies the achievement of established goals in Canada. Between 1960 and 1965 the average annual increase in real output in Canada was 5.5 percent. The growth rate had increased to 6.5 percent in the 1963-65 period. This exceeded the 1960-70 target growth rate of 5.3 percent, set in the Organisation for Economic Co-operation and Development and the growth rate of other major industrial countries, except Japan.

With the high proportion of Canada's trade and other financial transactions with the United States, the balance of payments with its neighbor has tended to show a deficit on current accounts, while reflecting a surplus with the rest of the world. In total, Canada has faced a deficit situation in current account in the 1960's.

TABLE 1. UNEMPLOYMENT RATES OF EIGHT INDUSTRIAL COUNTRIES ADJUSTED TO U.S. DEFINITIONS, 1960-66

[Percent Unemployed]

Year	Canada	United States	France	Germany	Great Britain	Italy	Japan	Sweden
1960	7.0	5.6	2.6	0.7	2.4	4.3	1.4	[1]
1961	7.1	6.7	2.0	0.4	2.3	3.7	1.3	1.5
1962	5.9	5.6	2.0	0.4	2.8	3.2	1.1	1.5
1963	5.5	5.7	2.4[2]	0.4	3.4	2.7	1.1	1.7
1964	4.7	5.2	1.9[2]	0.4[2]	2.4	3.0	1.0	1.6
1965	3.9	4.6	2.3[2]	0.3[2]	2.1	4.0	1.0	1.2
1966	3.6	3.9	2.4[2]	0.4[2]	2.3[2]	4.3[2]	1.1[2]	1.6[2]

[1] Data not available.

[2] Preliminary estimates based on incomplete data.

SOURCE: Arthur F. Neef, and Rosa A. Holland, *Monthly Labor . view,* April 1967, p. 19.

1

Manpower Policy

Manpower policy has come to be considered an integral and essential component of general economic and social policy. This philosophy has been fostered by the Economic Council of Canada (ECC), which was created in 1963 under an act of Parliament as an independent body to study the medium- and long-term development of the Canadian economy in the attainment of its economic and social goals.

The goals that formed the Council's terms of reference were: full employment, a high rate of economic growth, reasonable stability of prices, a viable balance of payments, and an equitable distribution of income. Since the Council recognizes that these goals are not always compatible with each other, it has evolved a requirement to reconcile conflicting tendencies and achieve consistency. The efficient use of manpower resources has been sought in Canada as the means for achieving full employment without inflation or deterioration of the balance of payments.

National economic policy in Canada considers an active manpower policy important and seeks to integrate it with fiscal and monetary policy to achieve national goals. The manpower policy of Canada attempts to match the supply and demand for labor in specific locations and occupations so that manpower is most productively utilized. Therefore, stress is given to upgrading the capability of the work force and increasing mobility to achieve full employment. The manpower programs of Canada, therefore, give balanced attention to eliminating unemployment and raising the productivity of the work force.

Underlying the recent achievements of Canadian manpower policy are some important philosophies respecting training that are quite widely supported. Training programs for adults are considered as a part of the normal stage in the working life of an individual rather than as a regression "back to school." After an individual

has entered the labor force, the financing of further training for employment is taken to be a responsibility of the Federal Government. Allocation of resources to training is considered as one of the costs of a progressive and dynamic economy. The need for training is recognized as a means for improving productivity and making Canadian products competitive in world markets.

Canadian manpower programs provide for a high percentage of the adult labor force to be continually undergoing training as a means of upgrading the labor force. Since much training can be done on the job, the Government assumes the costs for training in skills that can be used by the worker for more than one employer. In addition to supporting institutional training programs, the Federal Government will pay 100 percent of the out-of-pocket costs of companies providing approved adult training, including allowances to workers for the support of their families.

Canada has recognized the futility of training for jobs that do not exist in the home locality of the worker. Therefore, relocation grants have been coupled with adult training on a nationwide basis. The portability of pensions from one province to another aids mobility. Family allowances, with cash payments by the Federal Government for all children, reaching one-third of the total population of Canada, ease the geographic mobility of workers. Uniformly recognized certificates of qualification o' skilled tradesmen that are being developed between Provinces also add to worker mobility.

Manpower research has been given an important role in the manpower program of Canada and was supported by a $3 million budget in the Ministry of Manpower and Immigration in fiscal year 1967-68. About two-thirds of the funds were allocated for research contracts. In addition to manpower research supported by the Ministry, the Economic Council of Canada has supported research studies with strong manpower implications. The operational people in the Ministry are given almost complete veto power over research, to insure that it is linked to their needs. The products of research and experimental projects are fed into the total manpower operational programs. The research products are used by officials of the local Manpower Centers and of the training programs in determining the training needs of industry, job vacancies, skill shortages, and probable technological changes.

Immigration policy and programs are an integral part of Canada manpower policy. Canada has depended heavily on immigration to supply both quantitative and qualitative manpower needs. Since World War II, about 40 percent of the skilled workers added to the labor force have come from other countries.

Special attention has been given to seasonal unemployment with programs and policies developed to overcome its ill effects. The long, cold winters of Canada cause many workers to lose their jobs for several months. A winter homebuilding incentive program has been used. Fiscal aid to municipalities has been designed to reduce seasonal unemployment. A Federal Government supplementary construction program has also been employed. Supported by a publicity campaign, the winter employment program of the private sector has had success in reducing the peak of winter unemployment. The savings in welfare payments and improved tax revenue have more than recovered the costs of the winter programs.

The manpower policy and programs of Canada have been supported by a major restructuring of the Federal agencies and functions under the new Ministry of Manpower and Immigration. There has been an upgrading of the staff through training programs. Active recruiting of university graduates followed by inservice training has been stressed. The importance of the counseling functions in the Canada Manpower Centers is emphasized in the operation of manpower programs. The use of Manpower Consultative Services to assist in solving problems of manpower adjustment to technological change at the enterprise level has been effective. The cooperative relationship between manpower officials and the managers of industries is reflected in the number of memos of agreement for advance warning of changes in employment. The administrative organization for determining and conducting manpower programs is inter-

linked with Canadian manpower policymaking.

Growing out of recommendations of the Economic Council of Canada, a realignment of Federal departments and agencies into a single department has been effected to give major responsibility for manpower policy to the Ministry of Manpower and Immigration. The administrative structure was developed to coordinate all manpower and employment programs and administer services previously provided by other agencies and Government departments. Emphasis is given to improving the quality of manpower services and making them accessible to Canadians everywhere, even in the sparsely settled regions. The Canadian effort to solve manpower problems is characterized by innovation, breadth of approach, clarity of purpose, and willingness to experiment.

2

Manpower Administration

Manpower Organization

In response to the needs referred to by the Economic Council, on January 1, 1966, the Government created the Department of Manpower and Immigration. In the realignment of functions, the Canadian Department of Labour retained responsibility for labor standards, the administration of the labor code, labor relations under the Federal jurisdiction, and Canada's work with the International Labour Organisation.

The Department of Manpower and Immigration, composed of six divisions and services, is headed by a cabinet-level minister. (See chart 1.) The Deputy Minister of Manpower and Immigration has major administrative responsibilities. The Canada Manpower Division and the Canada Immigration Division are the major operational organizations, each headed by an Assistant Deputy Minister. The other major organizational units provide support services to the two operating divisions.

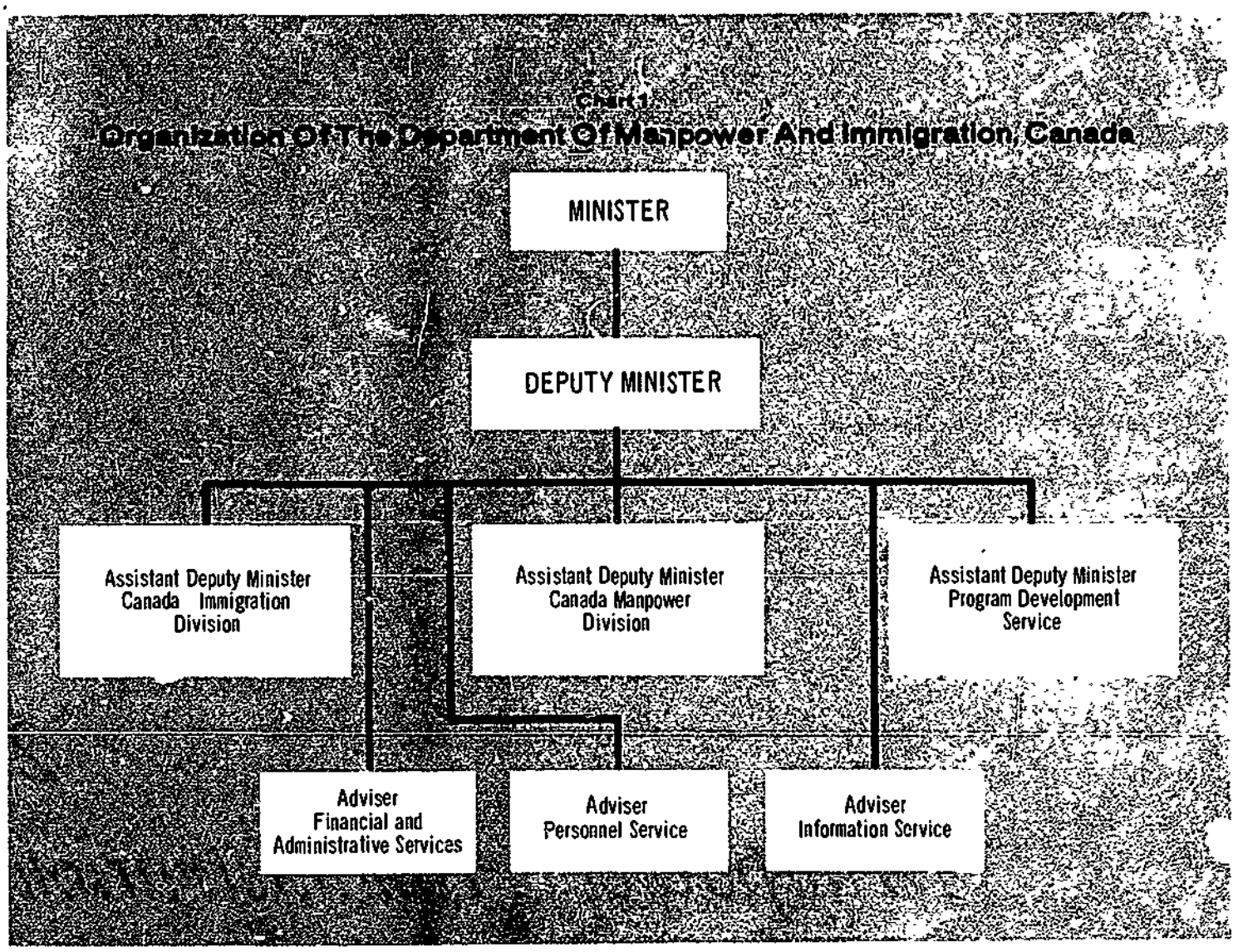
The Canada Manpower Division (chart 2) is composed of most of the former National Employment Service organization, together with the placement, settlement, and family counseling services of the Immigration Branch of the former Department of Citizenship and Immigration. It also incorporates these former functions of the Department of Labour: training, rehabilitation, employment stabilization, and operational support, which includes the Manpower Consultative Services Section.

The national office of the Canada Manpower Division in Ottawa is the center for policymaking and developing guidelines for major operational decisions. The five regional offices report to the Director General of the Canada Manpower Division; the functional branches report to him through the Assistant Director General.

There is a substantial decentralization of op-

Chart 1

Organization Of The Department Of Manpower And Immigration, Canada



erating authority in the Canada Manpower Division to the administrative regions—Atlantic, Quebec, Ontario, Prairie, and Pacific—whose Regional Director adapts the guidelines to the specific needs of his area and reports to the Director General. The Regional Directors work directly with the major industries, the unions, and the provincial governments in determining the local needs for services and making arrangements to meet those needs. The 219 area offices, called Canada Manpower Centers (CMC's), have the responsibility for undertaking the necessary action to meet the full range of manpower needs of the community, such as counseling, placement, training, mobility, and data collection.

The six functional branches of the Manpower Division (chart 2), operating through the Assistant Director General, supply the specialized information and services required by the Regional Directors in carrying out their responsibilities of supplying the variety of manpower services required by the people using the CMC's.

As of November 1, 1967, there were 316 points of permanent service. There will be an expansion of services as the need arises.

Since integration of the Immigration Division into the Department of Manpower and Immigration, the chief functions of the Division are to promote immigration, select and counsel prospective immigrants, control their flow to Canada, and enforce the provisions of the Immigration Act and Regulations regarding admission to and expulsion from Canada of those persons who are or become prohibited persons.

The Immigration Division (chart 3) has three branches: the Foreign Branch, the Home Services Branch, and the Programs and Procedures Branch.

The Foreign Branch contains three regional offices: London, covering the United Kingdom and Ireland, the area from which the largest proportion of immigrants has always come; Geneva, which has the responsibility for Western

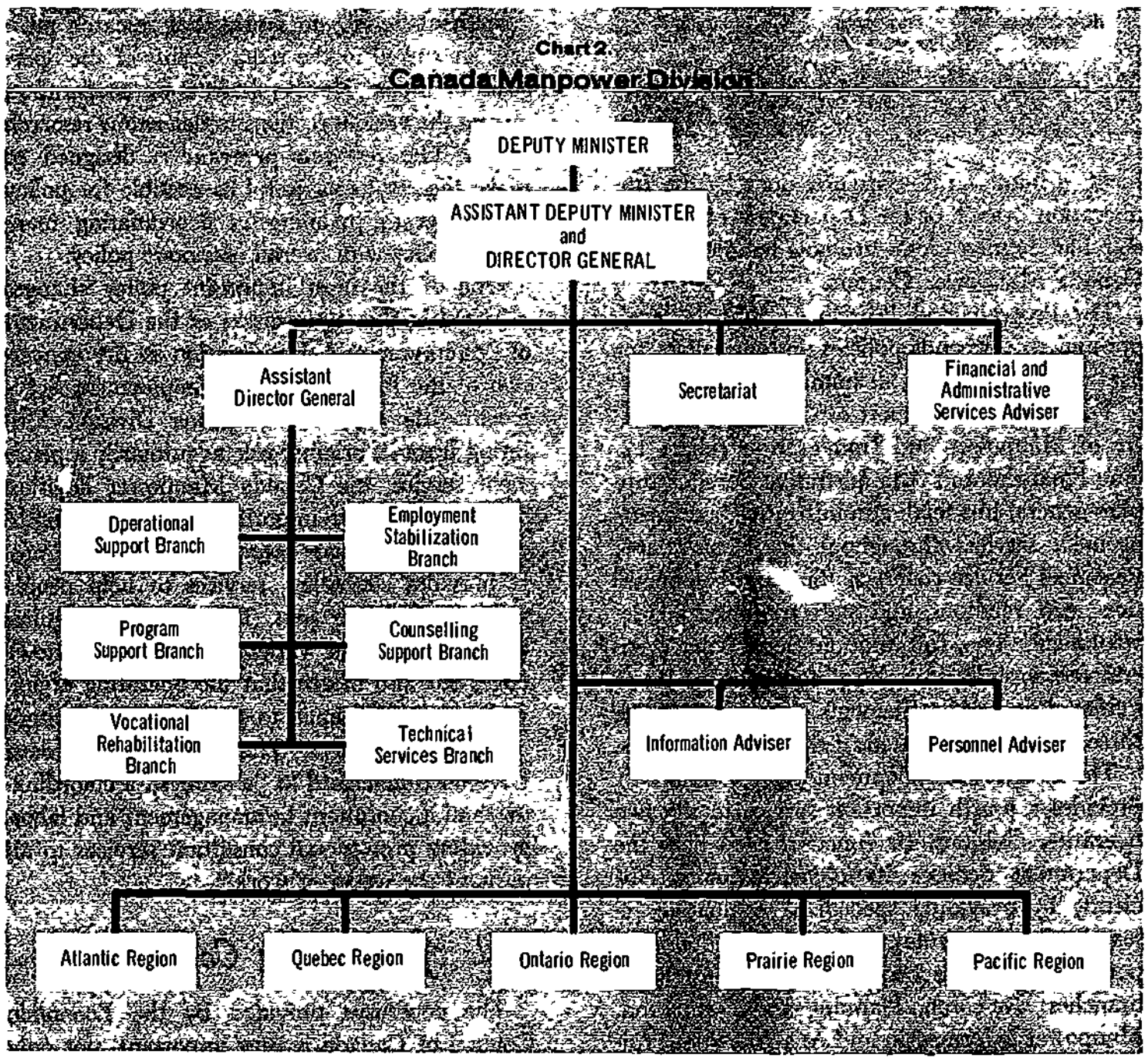
Europe; and Ottawa, which covers the remainder of the world. As of July 1, 1968, there were 42 local offices overseas: seven report to London, 19 to Geneva, and 16 to Ottawa. Each local office develops its own program and budget proposal, receives its funds, and manages and accounts for its money. The three regional offices hold an annual meeting to allocate foreign service personnel throughout the world and schedule transfers within the regions.

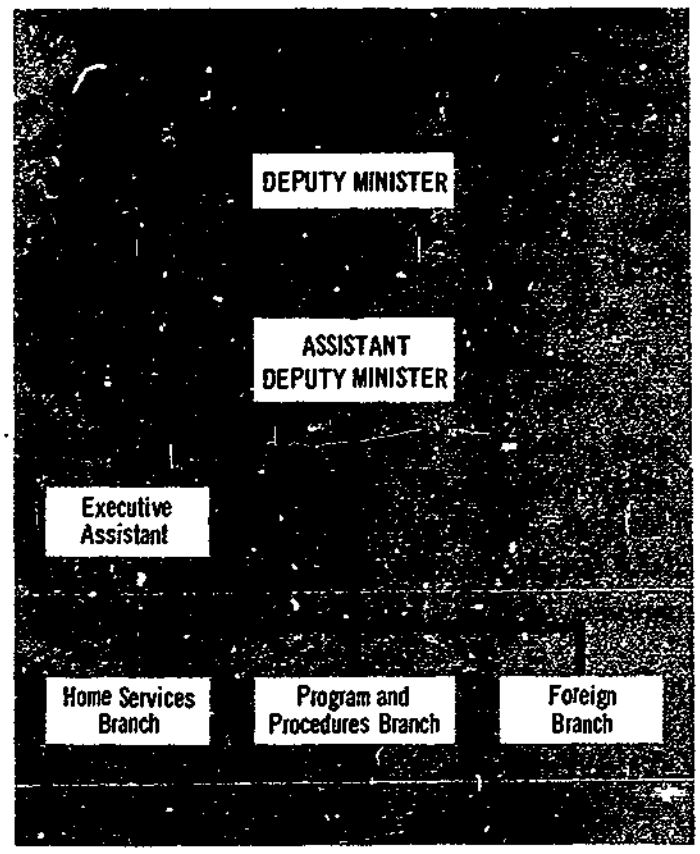
The Home Services Branch is responsible for the admission, exclusion, or expulsion of immigrants or nonimmigrants, and for providing guidance for the administration of the Immigration Act.

Immigration interests in Canada outside Divisional Headquarters in Ottawa are the responsibilities of five Regional Directors of Immigrant Operations located in Halifax, Montreal, Toronto, Winnepeg, and Vancouver. While these officials report through the Regional Directors of Manpower and Immigration to the Director General of Operations, they receive guidance on immigration matters from Immigration Divisional Headquarters. The Regional Directors supervise the landing of immigrants and provide temporary housing and emergency assistance if needed. The relocation of the families, counseling concerning social and economic facilities, job development, and place-

Chart 2

Canada Manpower Division





ment of immigrants—formerly done by the Immigration Branch of the Department of Citizenship and Immigration—are now handled by the Canada Manpower Centers.

The Program and Procedures Branch develops and recommends policies and gnidelines for the administration of all immigration activities.

There are four support services in the Ministry of Manpower and Immigration (chart 1). The Financial and Administrative Services supplies general financial, administrative, and management services throughout the Department; Personnel Service covers staffing and compensation, staff relations, and staff training and development. The Information Service has general responsibility for the preparation of informational material. Elements of each of these three services are located in the regional offices.

The Program Development Service (chart 4) provides a fourth important service to the two operating divisions. Its function is to help the Department achieve its objective more efficiently by providing specialized evaluative research, developmental, coordination, and support services. It is composed of the following branches: Research, Planning and Evaluation, Manpower Information and Analysis, Pilot Projects, and Advisory Council and Liaison.

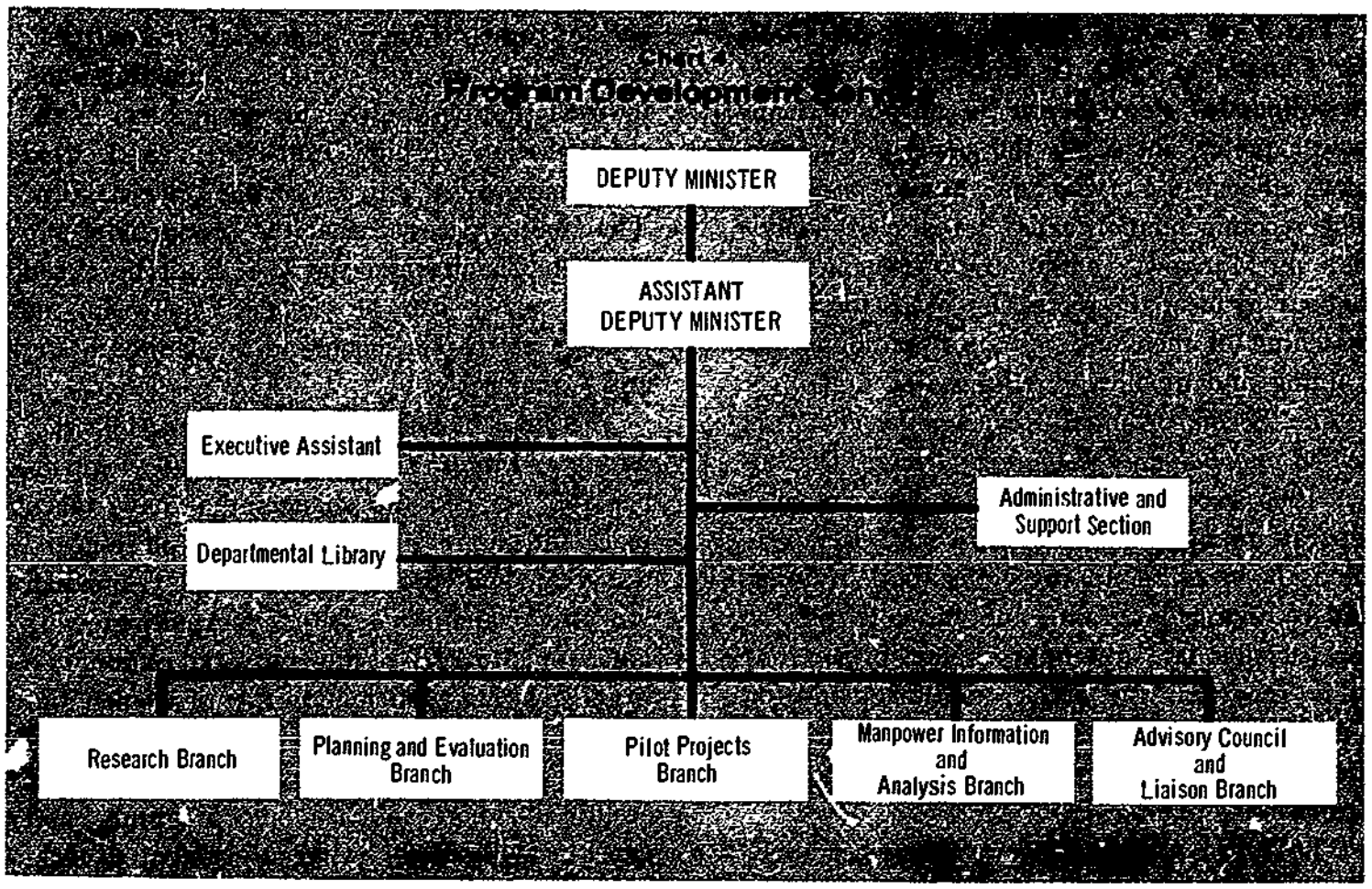
The Research Branch, with about 35 staff members in the economist and statistician categories, does long-range studies and also provides information for action programs. The Manpower Information and Analysis Branch, with about 20 professionals at headquarters and about 33 in the five regional offices and Canada Manpower Centers, carries out current job market analyses and supplies current job market information to the Department. Data now are gathered for "occupations in persistent short supply" and the "number that can be absorbed in the area at going rates of pay." It is expected that professional staff will increase to approximately 126 before 1970.

It is the responsibility of the Program Development Service to insure that research projects are linked to the requirements of the operating divisions. The emphasis is on cooperation among the various sections to determine research needs. The research program is designed to make the results as useful as possible for policy and program planning in coordinating manpower policy with overall economic policy.

One of the most important policy changes reflected in the organization of the Department of Manpower and Immigration is the conversion of the former National Employment Service into the Canada Manpower Division. Differing from its original role as primarily a placement service, the Canada Manpower Division provides the most important link for strengthening Canada's manpower policy and programs. It provides counseling services to help people get and do better jobs. This not only requires training in a wide variety of skills and knowledge, but also means that the operating organization must be tuned to the dynamic economic and social changes. The Canada Manpower Division is described as "a catalyst, a co-ordinator, and a consultant to management and labor, providing professional consultant services to all parts of the world of work."

Role of Economic Council

The consensus provided by the Economic Council of Canada is very important, not only to various levels of the Government but to many



aspects of Canada's economic, political, and social activities. Because manpower policy is intimately related to economic policy objectives, the Economic Council of Canada plays an important role in Canada manpower administration.

The Economic Council of Canada (ECC) was created by an act of Parliament during the summer of 1963 as an independent body to develop medium- and long-term goals. It came into full operation early in 1964 with 28 members. The chairman, vice-chairman, and director serve on a full-time basis in their capacities as professional economists. The other 25 members serve part time for specified terms. Each can be reappointed. To represent all aspects of the Canadian economy, the 25 members have been selected from such organizations as unions, management, agriculture, consumers' organizations, and the universities. They meet every 2 months. The Council has no executive or administrative functions and therefore has no representative of the Government. The Council is financed by Government appropriation. Its chairman reports to Parliament through the Prime Minister. It is the duty of the Council, operating under a very broad mandate, to advise and recommend how the economic and social goals set out in the act establishing the Economic Council can best be achieved simultaneously and consistently.

The research program, carried out by the 40 professionals who constitute the ECC staff, is worked out by the Council. Staff-prepared material is sent to the Council members in advance of meetings so they can be prepared to discuss it. The full Council is actively involved in preparing the Annual Review, which the Council is required to publish. Drafts of sections and chapters are sent to the Council members as the work goes on, and they make significant contributions to its final form. The Review is written for the layman. Staff and contract research studies, designed to provide background information on problems of special interest to the country, are published from time to time. Committees of the ECC have been organized to work in special fields. Several conferences, bringing together experts in specific problem areas, have been sponsored by the Council.

The First Annual Review, *Economic Goals for Canada to 1970*, December 1964, strongly recommended steps to achieve an active manpower policy, including the development and more efficient use of Canada's human resources. The recommendation called for a special Division of Manpower within the Department of Labour to meet the increasing needs for better matching of men and jobs. Responsibility for training and mobility programs was urged.

The Second Annual Review, *Toward Sustained and Balanced Economic Growth*, December 1965, recommended the establishment of a separate manpower ministry. The ECC emphasized the need to improve education, training and retraining programs, and the collection of job vacancy data; the improvement of the mobility program; the acceleration of plans for aiding areas of high and increasing unemployment; and the more efficient use of skilled and professional manpower.

The Third Annual Review, November 1966, was devoted to *Prices, Productivity and Employment*, a subject studied by the Council at the special request of the Government. Recommendations were made for improving productivity and devising better ways to deal with the manpower problems resulting from technological and other changes. The ECC warned that increased productivity, while fundamental, is not by itself the total answer to the problem of the reconciliation of high employment and rapid economic growth with reasonable price stability. The Council stressed that the productivity gap between Canada and the U.S. must be closed before parity can be achieved between the average per capita income in the United States and Canada.

The Fourth Annual Review, *The Canadian Economy from the 1960's to the 1970's*, September 1967, traced the changes that have taken place and that are expected to take place in the resources and productivity of the Canadian economy. Canada has the most rapidly growing labor force to 1970 of any industrial nation, due to the growing participation rate of women and the number of men under 25. The Council stressed the need to improve mobility, expand adult education and training programs, and develop methods for rapid adjustment to technological and other changes. Stress was also placed on the need for increased efforts to solve regional problems, especially the differences in income and the acute unemployment in eastern Quebec and the Atlantic Provinces. (See table 2.)

TABLE 2. UNEMPLOYMENT BY REGION

[Number in thousands]

Region	Number			Percent of labor force	
	1961	1966	Change	1961	1966
Atlantic	64	40	— 24	11.2	6.4
Quebec	168	100	— 68	9.2	4.7
Ontario	132	69	— 63	5.5	2.5
Prairies	53	26	— 27	4.6	2.1
British Columbia	49	32	— 17	8.5	4.5
Canada	466	267	—199	7.2	3.6

SOURCE: Table from *The Canadian Economy from the 1960's through the 1970's*, (Ottawa: Economic Council of Canada, September 1967), Fourth Annual Review, p. 31. Based on data from Dominion Bureau of Statistics.

Public Advisory Bodies

An act of Parliament effective December 21, 1967, established an advisory agency to the Department of Manpower and Immigration called the Canada Manpower and Immigration Council (CMIC). It consists of not more than 15 members selected after consultation with representatives of national organizations, plus the chairmen of the advisory boards. There are four

advisory boards which report to the CMIC, each designated to handle a specific area: manpower and immigration research, adult occupational training, the adjustment of immigrants, and coordination of rehabilitation services of disabled persons. The act also makes provision for establishing Regional and Local Manpower Committees to advise and assist in carrying out the functions of the Canada Manpower Division. It is expected there will be representation from employer and employee groups in each of these organizations.

Canada Manpower Centers

The Economic Council of Canada in the first two annual reviews emphasized the need for a manpower agency that would be more than a placement service, important as that function is. A key operational agency for implementing manpower policies and the sole coordinating agency of all policies and programs related to the job market was required.

With the establishment of the new Department of Manpower and Immigration in 1966, the National Employment Service (NES) became part of the Canada Manpower Division. The NES offices were given the new name, Canada Manpower Centers (CMC's), which more accurately reflects the new functions. These Manpower Centers—the regional and area offices and branches—are the key operational arm of Canada's manpower program. Matching workers and jobs in a rapidly growing economy is the primary function of the CMC's.

The Canada Manpower Centers are the heart of the new Department of Manpower and Immigration and are essential to the attainment of Canada's manpower objectives. All of the manpower programs are tied together and implemented through the network of Manpower Centers across Canada. The aim is for each office to play a vital part in the life of the community, earning the confidence of workers and employers through recruiting, job-finding, training, and mobility programs and the rehabilitation of workers. The CMC's expect to become as well patronized by workers and employers as are the banks in Canada. The staff is being trained to do a sensitive professional job.

The Canada Manpower Division has been organized into five regions, with a network of operating area offices and branches across Canada, which provide the coordination for all policies and programs relating to manpower.

Each of the five regional offices is headed by a Director who reports to the Director General of the Canada Manpower Division. The Ontario Region is the largest region, with 99 locations and a staff of 2,000. The Pacific Region including the Yukon Territory is the smallest region, with 29 locations and a 700 member staff. Quebec has 25 manpower centers, one for each of the economic subregions. The total staff of the CMC's is approximately 5,500, to which about 900 are to be added in 1968, to increase the total to approximately 6,400.

Quebec is at present the only Province operating an employment service. Before the establishment of the National Employment Service in 1941, several other Provinces operated employment services. The CMC's provide placement and other services for individuals throughout the entire Dominion, including Quebec, where there are both the Provincial system and the CMC's. There are wide variations throughout Canada in area manpower problems such as unemployment, education, training, skill levels, and job opportunities. The Department of Manpower and Immigration consults the Provinces when necessary in the development of new programs, and where programs are of direct concern to both levels of government, they are operated on a cooperative basis.

The essential activity of the Canada Manpower Centers is counseling—advising people where they can get jobs or how they can improve their chances of getting and holding better jobs. All other functions in the Manpower Division are support activities designed to give the manpower and immigration officer the information and tools that he needs.

For the employer, the area manpower officer can give information on available workers, on training programs, and on the graduates of training programs who are available for employment. The local officers also have access to public and private agencies such as schools, adult

training programs, youth organizations, and rehabilitation and medical services that can help people improve their job opportunities. Training allowances and mobility grants give the counselors additional resources with which to help workers. Information is provided to local offices from the regional and the national headquarters offices.

The five regional offices of the Division (chart 2) are stronger than the regional organization of other Government departments. The CMC's function effectively under the decentralized organization with the Regional Director as a high-level, decisionmaking officer. Manpower programs must be acutely sensitive to regional needs. Very good relations with Provincial government are essential and these are achieved by having responsibility for operational policy at the regional level.

The Regional Director is a senior Government officer able to deal on an equal level with heads of the major Provincial government departments and capable of securing the confidence and cooperation of major employers in the region. He also negotiates cooperative agreements with senior officials of private and public agencies.

The Regional Directors need considerable staff support under their control in their regional offices. The lines of responsibility run solely from the Director General to the Director of the region. Staff specialists in Ottawa and staff specialists in the regions have channels of communication, but the regional staff specialists are responsible only to the Regional Director.

The Regional Director has line command of the area CMC offices. The regional organization (chart 5) provides for two Assistant Directors, one of whom is the Assistant Director of Operations, directly responsible for the area CMC offices. Because of the number of offices in each region, he has a staff of superintendents to assist in supervision. In the larger regions there are three or four superintendents specializing on a district basis. Their base of operation is the regional office and they act in place of the Assistant Director in dealing with the district offices. The Assistant Director of Staff Services is responsible for a range of specialists similar to those in the national office in Ottawa. He also has a Training and Rehabilitation Staff.

Through the CMC offices, people are placed in employment, and employers are enabled to secure workers. Assisted by the mobility program, employers can secure workers from other parts of Canada. Through the Foreign Branch of the Immigration Division, the CMC's can also arrange to secure workers from other countries.

When a client contacts the local CMC seeking employment or other services, an appointment is made for him to talk as soon as possible with a counselor. This system of appointments has been found to be more effective than having the individual wait in line for an indefinite time. If the worker cannot be placed on a permanent job, the counselor has an arsenal of other services at his command. He can send data on the man's qualifications through the clearance system of the region or to other regions. He can refer the individual to a specific training course in the locality or in another area. If a suitable job or training is not available in the community, the counselor can authorize and arrange for the movement of the worker to another area. The manpower counselor has a responsibility to give his clients the best possible service by utilizing the available resources.

Sensitive to local needs, the CMC's are using mobile units. For example, in Saskatchewan the unit spends 2 or 3 days in a small community. In a community with seasonal demands for workers, counselors will be sent in to handle recruitment and placement. The trailer that they use for a temporary office has a teletype to relay information on jobs and men available to the Centers in that and other regions.

To provide high-quality professional service, the Department of Manpower and Immigration has developed a substantial recruitment and training program for its manpower counseling staff. Much of the training given to manpower counselors has been conducted by the departmental Staff Development Group. Upgrading of the staff is being achieved by actively recruiting university graduates and sending them through a 3-month orientation and training pro-

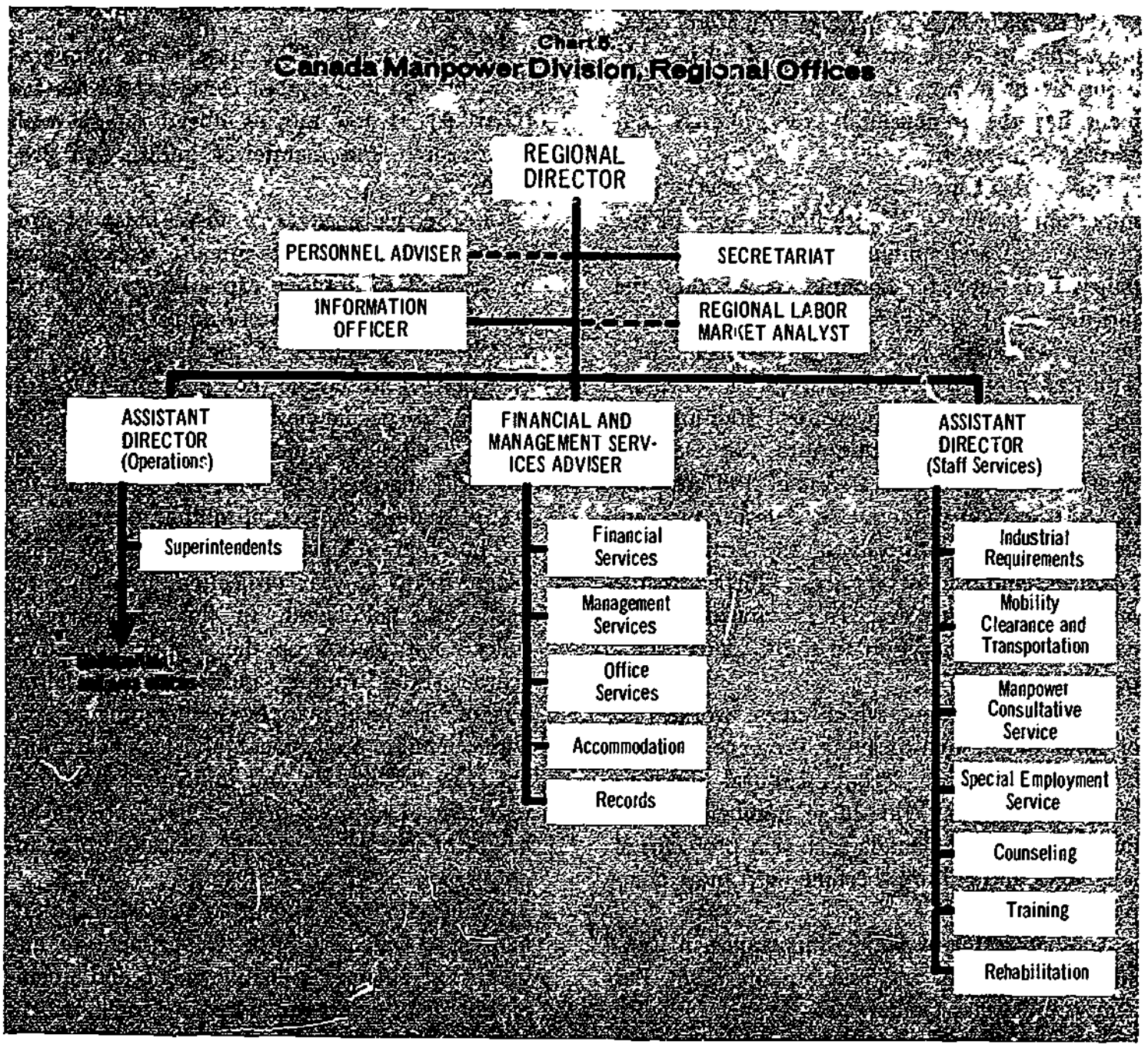
gram immediately after recruitment. Afterward a 2-year program of on-the-job training is given by senior staff members. Courses especially developed for the inservice trainees by the Counseling Service Branch are given in several universities throughout Canada. Staff counselors from the old National Employment Service and the Immigration Service received short-term training to prepare them for the new type of service now required of CMC counselors. Counselors who work with the difficult-to-place receive special training for that work.

The program to expand and train the staff of the Department of Manpower and Immigration is expected to take 3 or 4 years. The target ratio for 1972 is expected to be nine manpower-service staff members for each 10,000 in the labor force. The aim of the Department of Manpower and Immigration is to have a minimum of two support-service persons for each counselor. Heavy use of electronic data to support operations is planned.

Constraints on Manpower Policymaking

To develop a single manpower policy applied across Canada takes an effort on the part of many individuals to bridge cultural and language differences. The feedback of information from the CMC's is important in developing pol-

Chart 5.
Canada Manpower Division, Regional Offices



icy and programs. Policymaking is influenced by the Federal-Provincial relationships.

The Dominion of Canada is a federal state with 10 Provincial governments and a Federal Government, each having the powers assigned under the British North America Act of 1867. The distribution of legislative powers in Canada under the BNA Act was based on the federal principle that matters of a general interest were to be given to the Dominion and those of a particular or local interest were to be given to the Provinces. The Federal Government was given, first, a comprehensive grant to make laws for the peace, order, and good government of Canada in relation to those matters not given to the Provinces and, secondly, a list of specific powers. The Provinces were given an exclusive power to make laws in relation to matters coming within 16 enumerated classes of subjects. It is important to note that the Federal Government has the responsibility for national economic development.

Under the Canadian system of government important problems of jurisdiction arise in the development and administration of manpower policy. Education, for example, comes under the jurisdiction of the Provinces. The distinction between education and training has been a fundamental problem for several years in developing and carrying out Government training programs. Definitions written into the Occupational Training of Adults Act of 1967 are expected to resolve the question. Another problem results from the authority of the Provinces to establish employment services. Quebec is the only Province that now has a Provincial employment service in addition to the Canada Manpower Centers.

Mobility programs, which move workers to or from the French-speaking Province of Quebec, must take into account cultural and language differences. With large numbers of immigrants entering Canada each year problems of languages and cultures become even more complicated.

Another factor of major importance in Canada is the cultural and religious pluralism. For nearly 150 years Canada was French. English law, language, administration, and culture have been superimposed on that early foundation. The Federal Government of Canada is bilingual and bicultural. The fact that there are two languages and two cultures limits the ease of manpower and economic policymaking and program development.

At every step of the development and administration of programs by the Canada Manpower Division, the Provincial governments are consulted. In the application of guidelines, regional differences need to be resolved. The Regional Directors of the Canada Manpower Division negotiate with Provincial officers to reach mutual agreements. The agreements for the Provinces to provide specific training are examples.

Research and Data Collection

The Department of Manpower and Immigration, through its Program Development Service (chart 4), is now moving ahead rapidly with the research and manpower information programs.

The Service engages in three kinds of programs. The first includes inhouse research done by the staff to improve capability to carry out operating programs. The second is contract research—the purchase of the research services of experts from outside the Government to find answers to specific problems. Under the third, the Federal Government may enter into contracts to share equally with the Provinces the cost of studying subjects of mutual interest.

The Program Development Service does long-range, 5- to 15-year projections of manpower needs and fulfillment. In this connection, it collects information on the supply, utilization, characteristics, training, and fields of specialization of high-level manpower, including persons with scientific, professional, and technical training. The distribution and utilization of human resources to improve productivity, and the behavior of job markets in the allocation of manpower, are other areas of study.

Studies are made of short-run problems, alerting senior officials of the Department to any significant changes in employment and unemployment. A short-run forecast, for 6 to 18 months, of all aspects of the economy, but espe-

cially employment and unemployment, is prepared quarterly for the guidance of the Department.

The Program Development Service works with representatives of the operating divisions and the other branches of the Program Development Service in evaluating ongoing programs, planning changes, and developing new projects. It has made cost-benefit studies of mobility programs, as well as an analysis of the use of workers from Jamaica to cultivate and harvest crops for farmers in Ontario during 1966. This was made before the Minister of Manpower and Immigration signed the agreement to permit the importation of Jamaicans in 1967. Experimental and demonstration programs are carried out in the field of training and mobility in order to evaluate current programs and plan new ones.

Collection and analyses of current manpower information from a number of sources for the use of the Department and the public are an essential program. The Manpower Information and Analysis Branch of the Program Development Service has a staff of regional analysts stationed across the country. The greater part of the branch's work is directed towards developing detailed data to the point at which precise information for matching jobs and workers can be made available quickly to every Canadian and overseas office of the Department. The specific activities include the development and distribution of information on current and prospective job opportunities, employment forecasts, occupational data, training, wage rate data, manpower profiles, and regional and area reports on manpower conditions.

Experimental, development, and testing functions of the Program Development Service are employed in providing new and innovative programs. The initial responsibility of the Pilot Projects Branch is to design, develop, and implement the Canada New Start Program, which is being undertaken to develop new methods and systems to motivate and qualify disadvantaged youths and adults for stable and rewarding employment.

Research at the local level is carried out by individual pilot training project corporations established jointly by Federal and Provincial governments. The Federal Government is assuming full responsibility for costs, although the Federal and Provincial governments will hold equal shares in the companies. The Pilot Projects Branch has established a Technical Support Center to develop methods of organizing and conducting programs to motivate and qualify disadvantaged youths and adults for employment; to encourage and assist the corporations to test these and other methods; and to collate and evaluate the total experience and prepare approaches, methods, and materials for widespread use on an operational basis by educational and training authorities. It is expected that there will be one New Start Corporation in each of the 10 Provinces in an area of high unemployment. Four New Start corporations had been established by early 1968. Their findings are in the process of being analyzed and implemented.

The products of research and data gathering are made available by the Program Development Service to counselors in the Canada Manpower Centers, to the Immigration Division officials, and to those who develop and operate training programs. The best means of collecting and transmitting information, the most useful forms of presentation, and the frequency with which they are required are being explored through testing and experience. Priority is now given to satisfying the urgent need of the CMC counselors for manpower profiles for individual areas, as well as for monthly analyses of the current Canada manpower situation. Priority is also given to the analysis and interpretation of the results of the job vacancy surveys.

A monthly report of the manpower situation throughout Canada gives a general summary and forecast, a statement of developments in particular industries and regions, and an indication of occupational shortages and surpluses. A monthly press release on employment and unemployment is prepared jointly with the Dominion Bureau of Statistics. In addition to the national summary, it is planned to have regional summaries prepared in the regional offices.

The Federal Government shares equally with the Provincial governments the cost of studying

subjects of mutual interest, proposed by the Provinces. Some Provincial Departments of Labour have a research division, which provides detailed manpower data to the Province and the Federal Government.

The manpower research budget of $3 million for 1967-68 provided $2 million for contract research and $1 million for departmental research. (The United States would require a $30 million manpower research budget to be comparable on a per capita basis.)

An example of contract research is the monthly job vacancy survey, begun in September 1967, carried out by the Dominion Bureau of Statistics on behalf of the Department of Manpower and Immigration. The survey is being done by mail and is supported by personal interviews. It includes about 5,000 larger firms every month and a sample of about 30,000 or 10 percent of the smaller firms every quarter. An example of the inhouse research is the work on techniques for forecasting technological changes.

3

Manpower Programs

Adult Training

The Economic Council of Canada has repeatedly urged an enormous expansion of adult training. Each annual review pointed out that, although there had been a significant advance in facilities for the technical training of students in vocational high schools under the vocational Training and Assistance Act of 1960, no significant breakthrough had been achieved in the training or retraining of existing members of the labor force.

The Federal Adult Occupational Training Act, 1967, (OTA) replaces the Technical and Vocational Training Assistance Act, 1960. The OTA extends training services and training allowances to all persons with adult responsibilities who can benefit from training. The Minister of Manpower and Immigration emphasized that the OTA "is an explicit recognition of the federal responsibility for the overall performance of the economy, and the advancement of the workers on whom that performance depends." The direction of OTA is the responsibility of the Program Support Branch.

Under the 1960 Technical and Vocational Training Assistance Act, the Federal Government had been sharing the costs of training with the Provinces through a number of programs. The Provinces were assisted with the operating and capital costs of technical and vocational training at the secondary, postsecondary and adult levels. The majority of the funds were used for the first two; much less was spent on training, retraining, and upgrading adult workers.

Under the Adult Occupational Training Act the Federal Government will pay 100 percent of the cost of training allowances paid directly to eligible adult trainees. It will also pay 100 percent of the cost of operating employment-oriented adult training courses incurred by the

Provinces and may, in addition, make loans to Provincial governments to help with the purchase or construction of adult occupational training facilities. It may also make contributions to the Provinces for research and development programs related to adult training which the Province undertakes.

To be eligible for a training allowance under the OTA, a person must have been working or seeking work for the last 3 years; but someone with dependents can qualify if he has been out of school for just 1 year and is 1 year past the school-leaving age in the Province in which he resides.

Adults with no dependents get free training if they are 1 year past the regular school-leaving age and either have been out of school 12 months or more or are in an apprenticeship training course.

The Canada Manpower Centers select the adults to be trained and pay for their training. If the manpower officer who interviews an eligible adult considers that he would benefit from the training, he will arrange to have him enrolled in a training course that will increase his earning capacity or his opportunities for employment.

Because the Provinces have the responsibility for all education, the Department of Manpower and Immigration through its five regional offices signs agreements with the Provincial governments to purchase adult occupational training authorized under the OTA Act from public institutions run by the Provinces or municipalities. The Province thus has a firm commitment for a number of trainees by occupations. If there are no facilities in the area for giving a needed type of training, the worker may be sent elsewhere.

The training will usually be provided in a publicly operated course of 1 year or less. The OTA defines "occupational training course" as employment-oriented adult training in courses providing "not more than 52 weeks of full-time instruction or 1,800 hours of part-time instruction."

If no provincially or municipally operated training courses are available, the manpower officer may arrange for the enrollment of eligible adults in private training schools. In such cases the Minister of Manpower and Immigration may authorize the payment of tuition fees. The Government would not use private facilities unless it was necessary and unless the Province agreed.

Arrangements may also be made for training adults in industry. The OTA is not designed to pay for the kind of on-the-job training in a particular job that is a normal and necessary part of industrial costs. Rather, it is concerned with the kind of general training that will be useful if workers transfer to other employment.. The Government will also pay for on-the-job training if it is necessary to help employees adjust to technological or economic changes affecting their employer.

When arrangements are made with an employer to train his workers, the Government will pay the cost of operating the training course, including either reimbursement of the wages paid to the workers while they are learning or an amount equal to the maximum training allowance that may be paid to an adult under the OTA.

The Federal Government may also make 30-year loans to the Provinces for the purchase or construction of occupational training facilities for adults. The Government, by "renting" the facilities, will pay for their construction.

The need to develop better ways of providing training to meet new manpower needs led to a provision in the OTA for research and development agreements with the Provinces. The Government pays to the Province 50 percent of the cost of research on adult occupational training and 50 percent of the costs to develop such courses and materials.

The Province may request that a joint committee be established with the Federal Government to assess Provincial manpower needs. Manpower officers, in making decisions concerning applicants for training, must take into account the recommendations of the joint committees.

The Provinces are responsible for seeing that the training-in-industry given under the OTA meets the standards developed with the Federal Government through the joint committees. These standards include approved courses of study and teacher qualifications. Officials of the

Province visit the schools, monitor the training programs, and evaluate the graduates. The Federal Government will not pay for the training and equipment unless the Province provides satisfactory monitoring.

Each Province has legislation regarding apprenticeship programs covering on-the-job training and supplementary school instruction for designated skill trades. Most Provinces provide that certificates of qualification be issued to tradesmen in certain trades. In some Provinces, a certificate of competency is mandatory for certain trades. Coordination of the various Provincial apprenticeship training programs to facilitate interprovincial mobility of skilled workers is a joint responsibility of the Canada Manpower Division and the Provincial officials.

Under the OTA Act, training costs are estimated to be $5.58 per training day, plus $10.29 per day for allowances, a total of $15.87 per day, for an estimated 75 days of training per trainee. During fiscal 1966-67, 132,000 workers completed training; in fiscal 1967-68 approximately 9 million training days were purchased. It is expected that the number being trained will increase during the next 5 years from .32 percent of the labor force at any point during 1966-67 to approximately 1.2 percent of the labor force at any one time during 1972-73.

The funds for training in the fiscal year 1967-68 provided for $107 million to be spent under the Occupational Training for Adults Act and $81 million under the expiring Technical and Vocational Training Act. In 1968-69 approximately $223 million will be spent under the OTA Act. In 1961 the average number of years of schooling among the Canadian male labor force was slightly over 9 years. The aim is to bring adults up to the grade 12 level while concentrating on basic skill development.

The capital grants that have been made to the Provinces under the shared-cost arrangements for building secondary, postsecondary, and adult technical and vocational training facilities are to be phased out gradually. Under the transitional agreements provided for in the Adult Occupational Training Act, the Federal Government will continue to pay 75 percent of the capital expenditures incurred by a Province for construction, purchase, or alteration of approved facilities for technical or vocational training, and equipping the facilities after March 31, 1967. When the Province has received $480 for each person in its 1961 youth population — persons 15 to 19 years of age — the Federal contribution reverts to 50 percent of Provincial expenditures. Under the phaseout arrangements, a further $320 per youth will be available at the 50 percent sharing rate with the Provinces.

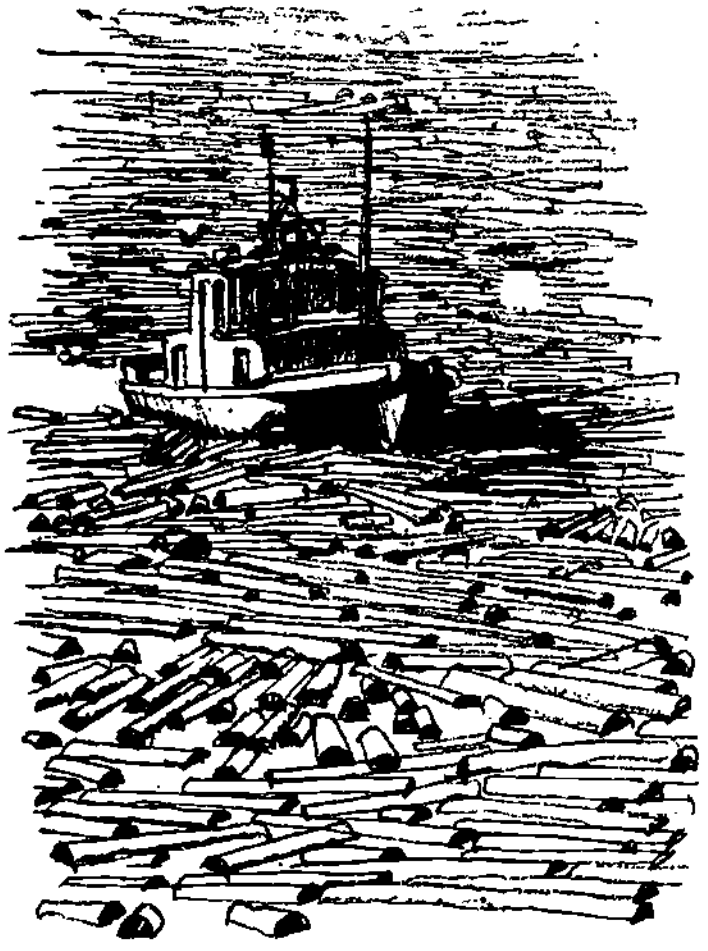
Manpower Mobility

Another program designed to help maintain full employment and insure the most effective use of Canada's available manpower resources is the Manpower Mobility Program, administered by the Programs Branch of the Canada Manpower Division. Begun in 1965, it was liberalized and changed from a program of loans for the short-term unemployed and grants for those unem-

ployed 4 of the 6 months immediately preceding the date of application, to one of grants only on April 1, 1967. The Manpower Mobility Program budget of $6 million for 1968-69 is expected to increase considerably in the next few years.

Any worker, 18 years or older, who is unemployed or underemployed and cannot secure full-time employment in his community is eligible for a mobility grant. An employed worker who has received written notice of his permanent layoff can also secure a grant. All grants are financed by the Federal Government and authorized by the Manpower Counselor—Mobility in a CMC.

The exploratory grant and the trainee travel grant cover travel expenses by the most appropriate, economical means, including meals and overnight accommodations, to the worker while in transit. Subsistence for the worker, and an allowance to support his dependents while he is away, also are paid under the Occupational Training of Adults Act to those who receive trainee travel grants. The dependency allowance varies from Province to Province, but the maximum amounts to $20 per week for the first dependent, $30 for two, and $40 for three or more. Workers who receive exploratory grants also receive a subsistence allowance for their dependents on the same scale as the dependency allowance under the Adult Occupational Training Act. However, the worker does not receive a living allowance. It is expected that he will use his Unemployment Insurance benefits for that purpose. A dependency allowance in such cases is paid weekly for any period up to 4 weeks that a worker is absent from his home and actively seeking employment. If unsuccessful in obtaining a job on his first exploratory trip, one or two additional exploratory grants may be authorized, but expenditures will not be approved for a series of purposeless jaunts. When four or more exploratory trips are required, they must be approved by the Regional Consultant—Mobility.



The relocation grant covers the transportation expense by the most economical means of the worker and his family, including meals and necessary overnight accommodations, and the cost of moving their household effects. A reestablishment payment of up to $1,000 is made over a 6-month period. The amount depends on the number of dependents: $200 for the worker, $200 for one dependent, and $100 for each additional dependent to a maximum of six. The cost of a prehire medical examination required by the employer also will be paid.

Because of the expense a worker faces in selling his home, a lump sum of $500, called a homeowner's allowance, is paid when the home is sold or a new one purchased within 12 months after moving to the new locality.

The manpower counselor in the CMC where the worker lives is responsible for the transferee who receives a grant until he and his dependents leave for the area of relocation. The CMC at his new location receives the worker's file by mail, and a counselor there takes over the responsibility of assisting the family to become reestablished.

Immigrants are eligible for trainee travel grants, exploratory grants, and relocation grants, but cannot receive homeowners' allowances until they have lived in Canada at least 12 months.

The Manpower Mobility Program is administered locally by a counselor or his alternate designated by the Regional Director as especially responsible for mobility. While all CMC man-

power counselors may counsel applicants about the Manpower Mobility Program, only the designated Manpower Counselor — Mobility may authorize grants and requisition payments by the Treasury. At the regional level, a Regional Consultant—Mobility is responsible for the administration of the Manpower Mobility Program throughout the region. The Regional Consultant —Mobility makes decisions in regard to difficult cases and gives guidance to the Manpower Counselors—Mobility in the CMC's about the administration and operation of the program. When a manpower counselor at the local level rules a person ineligible for a grant, that person upon written request can have the case referred to the Regional Consultant—Mobility. He, in turn, sends his written decision to the client through the CMC at which the application was filed.

The movement of workers and their families is coordinated with Federal and Provincial industrial development programs to insure that the best interests of the worker and the country as a whole are served. When the major employer in a single-industry town, for instance, closes down, CMC counselors encourage the purposeful use of both exploratory and relocation grants to assist workers and their families to get permanent employment elsewhere. The program also is used in conjunction with Federal-Provincial rural redevelopment and farm consolidation programs.

Many workers are reluctant to move, and the Department of Manpower and Immigration, along with several other departments, has financed a fairly comprehensive study of the barriers to mobility. Attachments to one's place of birth, to family, and to friends are, of course, strong. The high cost of housing in cities or labor-short growth areas appears to be another major deterrent. And for some, the confusion, impersonality, loneliness, and lack of outdoor space in the cities discourages migration, or causes those who have moved to return home.

On the other hand, the introduction of the Canada Pension Plan, January 1, 1966, (the Quebec Pension Plan, which became effective on the same date, is identical in regard to contributions and benefits) removed one very meaningful barrier. These pension programs gave workers in the 10 Provinces, as well as the Northwest and Yukon Territories, their first comprehensive old-age, disability, and survivors' insurance coverage. The important feature of the new plan is the portability of pensions throughout Canada: Benefits are not reduced or lost when the worker moves to another job or to another geographic area.

During the 15 months' period from January 1966 to April 1967, under the old loans and grants mobility program 1,267 loans and 1,481

grants were approved for relocation purposes. Under the new all-grants program for the fiscal year April 1967 through March 1968, 18,839 trainee travel grants, 4,436 exploratory grants, and 5,745 relocation grants were made to workers. This is more than double the number of permanent movers under the old program.

Income Maintenance Aspects

Canada has provided for substantial payments to workers during training, movement to other geographic areas, and vocational rehabilitation. Payments provide income to support the worker and his family during the adjustment period. These payments have been appropriated from general revenues by the Federal Government.

Rapid changes in the economy make it necessary to move people to new localities to find employment or into training which will fit them for jobs that become available. An adequate family income is provided in the form of pay for training, because the trainee is engaged in an economically useful activity.

Income During Training

Training and upgrading of adult workers for improving the productivity of the Canadian economy are important in Canada, and the allowances paid to trainees support the importance given to training. High training allowances are used as an incentive for trainees to prepare themselves to make a more productive contribution in the future.

Under the Training Allowance Act, passed in June 1966, an adult attending a training course, for either retraining or upgrading, is not regarded as being unemployed. He is considered engaged in an important and useful economic activity. Therefore, he is entitled to compensation. Adults recognizing the need for, and who take, the retraining provided under the Occupational Training for Adults Act are contributing to the economic welfare of the country and themselves. The Canada Manpower Division urges adults to accept retraining as a normal part of a working life, and not as something for failures and dropouts.

To be eligible for training under the OTA, the individual must be 12 months past school-leaving age, and not have attended school on a regular basis for the previous 12 months. To be eligible for an allowance, the worker must not only meet the above criteria, but in addition must have been a member of the labor force for the last 3 years or have one or more persons dependent upon him. Immigrants are eligible for training and allowances on the same basis as other workers.

The maximum training allowance is $35 per week plus payments to dependents: $20 per week for the first, $30 if there are two, and $40 for three or more. If the worker is required to travel away from his community in order to receive training, he receives $15 per week for subsistence. The maximum allowance could thus be $90 per week. The cost of travel to and from the training center is paid under a trainee travel grant administered by the Manpower Mobility Program.

If the worker is not eligible for an allowance during his period of training, he may, if eligible, draw his unemployment insurance benefits. The trainee's rights to unemployment benefits remain intact during training.

Family Allowances

A floor under all family incomes is provided by the family allowance plan which has been in existence since 1945. All children born in and resident in Canada, and children of immigrants who have lived in Canada for 1 year, regardless of economic status, are eligible for tax-free monthly family allowances paid by the Federal Department of National Health and Welfare to the mother. For children under 10 the allowance is $6; up to 15, it is $8, and for youths 16 to 17 who are in school it is $10. Children of recent immigrants, and those Canadians who have been living abroad, receive family assistance grants equal in amounts to the above allowances, until they meet time limits of allowance eligibility. One-third of the total population of Canada is made up of children for whom family allowances are paid.

Vocational Rehabilitation

The Vocational Rehabilitation Branch of the Canada Manpower Division has the responsibility for administering the June 1, 1961, act which provides for the vocational rehabilitation of disabled persons. The purpose is to bring the handicapped into the job market and help them secure suitable employment so they may contribute to the economy and thus maximize the use of Canada's human resources. Special counselors in the CMC refer the individual to training or job opportunities. The Federal-Provincial Vocational Rehabilitation Program had rehabil-

itated 12,918 handicapped persons to March 31, 1967. Veteran rehabilitation and workmen's compensation cases are covered under other legislation.

Under the 1961 legislation, the Federal Government has signed agreements with each of the Provinces covering a period of up to 6 years. The Federal Government pays 50 percent of the costs incurred by the Province in a comprehensive program for vocational rehabilitation of disabled persons. The services financed include assessment of disability, restorative service to relieve or remove the handicap, vocational training under the Adult Occupational Training Act, counseling services, employment placement, and the cost of training special counselors.

The Provinces may use voluntary organizations for rehabilitation services. However, the Province is responsible under the agreement for the coordination of all rehabilitation activities in the Province. The staff of the Rehabilitation Branch of the Canada Manpower Division is available to the Provinces for consultation and advice. The Advisory Board on the Coordination of Rehabilitation Services for Disabled Persons considers and advises on matters referred to it by the Minister of Manpower and Immigration, and other matters it chooses to consider.

The Provinces in 1967 had 100 specialists in physical rehabilitation, and 40 rehabilitation centers, with 300 counselors and supporting staff. Voluntary organizations had 200 sheltered workshops.

Seasonal Stabilization of Employment

During the long, bitter Canadian winter approximately 8 per cent of the labor force lose their jobs. More than half (330,000) leave the labor force. The 270,000 who become seasonally unemployed constitute the group which has been the object of public policy. The two largest occupational groups in the seasonally unemployed are construction workers and unskilled laborers; the occupational groups which experience most seasonality are those which predominate in the construction and primary industries, and, to a lesser extent, transportation. The construction industry accounts for one-third of seasonal unemployment.

Under the Winter House Building Incentive Program (1963), Canada began to resolve its long-standing problem of winter unemployment. A tax-free bonus of $500 was given to the original purchaser of the house put up during the winter. This plan was very successful in some areas over the 3 years of its operation. Between $14 million and $17 million were paid out each year. However, the bonus for winter-built houses was dropped because its impact on slow-growth, high winter-unemployment areas was relatively low. The program was changed in 1967 to provide a flow of insured mortgage funds of $300 million to stimulate winter-built housing. This revised program is administered by the Central Mortgage and Housing Corporation which, since January 1968, has reported to the President of the Treasury Board.

The Federal Government in 1963 also amplified the existing program of incentives to municipalities (cities, towns, and villages) which

launch public works during the winter under the Federal Municipal Winter Works Incentive Program. The Minister of Manpower and Immigration and the Minister of Municipal Affairs of each of the Provincial governments jointly administer this program.

The Federal Government pays one-half of the direct, onsite payroll costs of capital undertakings. A maximum of $100,000 each is available for approved municipal works projects carried out during the winter months. Maintenance work does not receive Federal aid. In designated high unemployment areas, the subsidy amounts to 60 percent. The Provinces and municipalities also make contributions. In 1966-67 the Federal contribution was close to $38 million. The amount, however, is being reduced; plans for 1967-68 called for $25 million in Federal funds to be spent on this program. It is quite effective in large municipalities, where there is sufficient work to enable the government to shift a sizable proportion of its work projects to the winter. However, in smaller communities there is not enough construction. This program does not provide employment for the farmworkers, fishermen, forestry workers and motel workers who also suffer unemployment during the winter.

The Employment Stabilization Branch of the Canada Manpower Division is responsible for the Municipal Winter Works Incentive Programs. Each year the Division, together with the Provinces, sets the dates spanning 5 to 7 months within which the incentive programs will be in effect. For example, in 1966-67, the dates were November 1 through April 30. The 1967-68 program set 5 consecutive months, with the Province choosing November 1 or December 1 as the starting date.

The program is originated each year through a notice sent by the Minister of Manpower and Immigration to the Premier of each Province stating that funds for municipal winter works programs are available. Cost estimates are sent by the municipalities to the Provincial government, and after approval, are transmitted to the Federal Government for approval. Interim and final claims for the subsidy are audited and certified to the Federal Government by the Provinces. The Federal Government encourages normal construction at prevailing rates and discourages any considerable overtime. Schools, hospitals, and subways are not included under the Municipal Winter Works Incentive Program because they are covered by other grants. The largest number of requests are for brush clearing on roads and watercourses and the building of sewers and water works, roads and sidewalks, parks and playgrounds, municipal buildings, and electrical installations.

The third program to encourage employment during the winter is the Federal Government Supplementary Construction Program. This is designed to force the Federal Government to do some of its construction during the winter. There is an interdepartmental committee to coordinate the programs. Each department is required to submit its plans for winter construction, and is urged to make changes if additional winter construction is needed. Funds are allocated by the Government to pay for the increased costs. Between 1964 and 1967, $29 million of the $300 million spent by the Federal Government for construction was shifted to the winter. Many officials urge that the departmental plans for winter construction be made for longer than 1 year since fiscal and monetary policies are involved.

Municipal loans, guaranteed by the Federal Government under the National House Mortgages Act, for home improvements and small businesses are available throughout the year. An additional supply of mortgage money is made available under that act for winter building. The Building Research Division of the National Research Council develops and publicizes new techniques for winter construction. The construction industry, encourages the retraining of workers and the development of new skills to meet winter construction changes. For those who can be moved to other industries during the winter, special training is available.

It is estimated that the employment stabilization program in Canada has shifted 260,000

jobs from summer to winter months. In January 1966, the unadjusted unemployment rate had dropped to 5.1 percent, compared to 8.3 percent in January 1963. The July 1966 rate was 3.1 percent.

An intensive, nationwide publicity campaign by the private sector, DO IT NOW — WHY WAIT FOR SPRING, to encourage building or remodeling and repairs during the winter, is given much credit for encouraging winter employment in the private sector. Improvements in cold weather technology have made winter construction possible, but it is the Government's financial incentives that have motivated the builders to use them.

Because of the unemployment and welfare payments saved and the taxes gained, it is estimated that the Government more than recovered the millions spent in bonuses.

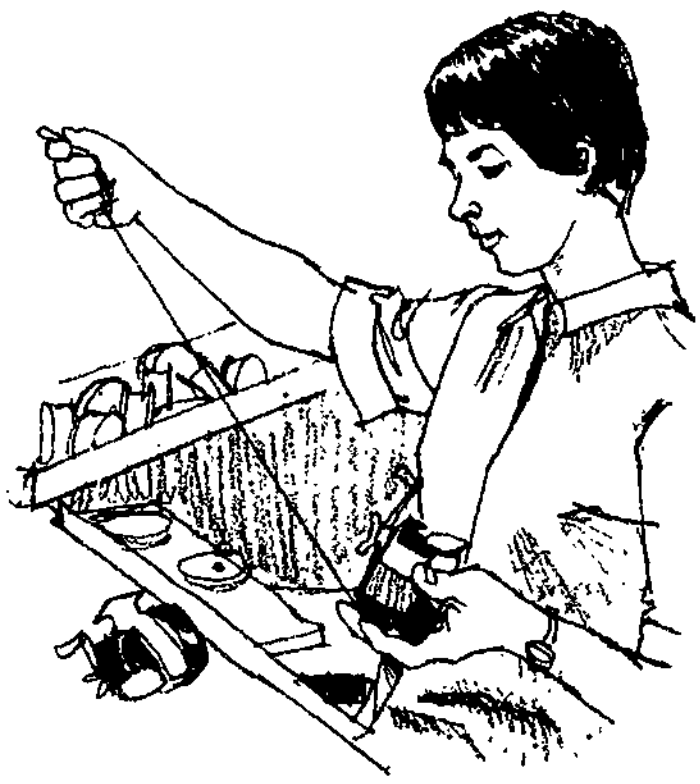
Adjustment to Economic and Technological Change

The Manpower Consultative Service was established in 1963 to assist in manpower adjustment problems resulting from technological or other changes. In 1966 it was transferred from the Department of Labour to the Canada Manpower Division of the Department of Manpower and Immigration.

The purpose of the Service is to encourage research and planning by unions and management at the plant or industry level to solve manpower problems resulting from changes, such as plant shutdown or technological innovations, that cause displacement of workers and mass layoffs. If a union is involved, it must be party to the consultation and the assessment agreement which is made by the parties — union, employer, and Federal Government or, at times, Provincial governments — to solve problems. If the company is not organized, management must keep workers informed of steps taken to reach solutions to manpower problems.

When manpower problems resulting from technological or other changes arise, a staff expert from the Manpower Consultative Services section of the Operational Support Services is assigned to make contacts with the Provincial officials, the union, and management to explore the situation. If the parties wish, they negotiate an agreement designed to assess the effects of changes on the workers and find the best measures, such as retraining and upgrading or relocation, to help those who suffer unemployment or downgrading. Ratification of the agreement by the order-in-Council gives it legal status. The staff expert continues to act as an advisor when called upon by the parties. He may recommend a competent person to serve as chairman of the Joint Union-Management Committee set up under the assessment agreement and to help develop the structure of the research to be undertaken to find a solution to the manpower adjustment problems.

When the final report of the committee's findings is filed with the Department of Manpower and Immigration, the expert helps to secure any government services recommended, such as counseling, training, placement, and mobility grants, all provided through the Canada Manpower Centers. The function of the Manpower Consultative Service is that of catalyst—to bring the parties together. Its power is limited to stimulating research and making recommendations.



The Federal Government provides up to 50 percent of the cost of research needed to develop the recommended program under the assessment agreement. The other parties — the employer, the union, and, at times, the Province — pay the remainder of the cost. The research may take a year or more. Under the joint assessment agreement which initiates the search for methods of manpower adjustments to technological and other changes, the union and employer have pledged themselves and are obligated to implement the recommendations.

Sixteen Manpower Consultative Assessment agreements had been signed by mid-1966, covering nearly 32,000 workers in 269 companies and 25 unions. The research under some agreements had been completed, and the unions and management are in the process of carrying out the recommendations with the help of services provided by Canada Manpower Centers.

As yet there is no early warning system to help activate the Manpower Consultative Services. Every resource is used by the Service to serve as an "intelligence network." The Regional Directors of the Canada Manpower Division have signed memos of agreement to provide advance warning of changes with several of the larger employers. The CMC's provide some information to the Consultative Service regarding old plants where changes are likely to occur. The Program Development Service is developing improved techniques for forecasting technological changes.

In Canada there is a keen and growing interest in ways to resolve major problems resulting from technological and other changes which are facing unions and management. Late in 1966 the Prime Minister appointed a Task Force to make a comprehensive study of the whole area of industrial relations.

The Economic Council of Canada prepared *A Declaration on Manpower Adjustments to Technological and Other Changes* and used it as the basis for a 1967 conference. Attention was focused on the need for new approaches to deal effectively and equitably with human problems of change, and the need to improve communications between the representatives of unions and management. The Council, through its members, who represent all segments of the Canadian economy, fosters cooperation by unions and management with the Government authorities responsible for manpower and job market programs to help improve productivity and preserve employment security by anticipating and solving problems resulting from changes. The Council has pointed out in its reports that, unless there is full employment, it is virtually impossible to assist workers displaced by changes.

The Department of Labour of Canada is also active in fostering joint union-management programs to resolve problems of change as they develop. Regular union-management channels of communication, away from the pressure of bargaining, are fostered by the Labor-Management Consultation Branch of the Department of Labour. It has had more than 2,000 plant-level committees since World War II. During 1967 many had been reorganized and new ones added. There are no serious overlappings of responsibilities between the Consultation Branch and the work of the Manpower Consultative Services, since only the Department of Manpower and Immigration has access to the funds necessary for intensive research in this area.

Immigration

The Canada Immigration Division is responsible for the recruitment of immigrants and the enforcement of standards for the admission of persons from other countries. The Foreign Branch of the Division is responsible for the promotion of immigration to Canada and for the selection of candidates. Some countries welcome such recruitment. Canada has a firm immigration policy of no quotas and no discrimination on the basis of race, color, or creed. However, immigrants must meet standards which have been set by Canada to serve the best interests of the immigrant and the country. Every immigrant must also meet certain medical standards as well as be free from a background of criminal or subversive activities.

Canada realizes that, in spite of its expanded training program, the needs of industry for certain skilled and professional personnel cannot be met entirely from within the country. Histori-

cally, Canada has imported a substantial portion of its trained manpower and is proud of the cultural values and diversification in Canadian society resulting from the varied backgrounds of its immigrants. Although economic considerations are fundamental in Canada's immigration policy, there is also a strong humanitarian concern in it, expressed primarily in the provisions governing the admission of dependents.

There are three types of immigrants—the dependent, the independent applicant, and the nominated relative. Dependents are defined for immigration purposes as husband or wife; fiance or fiancee; unmarried sons or daughters under 21; parents or grandparents over 60—or younger if they are widowed or unable to work — and orphaned brothers, sisters, nephews, nieces or grandchildren under 18. Provision also is made for adopted children and, in cases where the only dependent is a husband or wife, for the nearest living relative.

To qualify for admission, independent applicants normally have to obtain 50 of the 100 assessment units available based on the following factors: (1) *Education and training:* Up to 20 assessment units to be awarded on the basis of one unit for each successful year of formal education or occupational training; (2) *Personal assessment:* Up to 15 units on the basis of the immigration officer's assessment of the applicant's adaptability, motivation, initiative, and other similar qualities; (3) *Occupational demand:* Up to 15 units if demand for the applicant's occupation is strong within Canada, whether the occupation is skilled or unskilled; (4) *Occupational skill:* Up to 10 units for the professional, ranging down to one unit for the unskilled; (5) *Age:* Ten units for applicants under 35 with one unit deducted for each year over 35; (6) *Arranged employment:* Ten units if the applicant has a definite job arranged in Canada; (7) *Knowledge of French and English:* Up to 10 units dependent upon the degree of fluency in French and English; (8) *Relative:* Up to five units if the applicant has a relative in Canada able to help him become established but unprepared or unable to sponsor or nominate him; (9) *Employment opportunities in area of destination:* Up to five units if the applicant intends to go to an area of Canada where there is a generally strong demand for labor.

The "nominated relative" category includes sons and daughters over 21, married sons and daughters under 21, brothers or sisters, parents or grandparents under 60, nephews, nieces, uncles, aunts, and grandchildren. The nominators of these relatives are required to provide for a period of 5 years, if necessary, such assistance as the nominees may require to become established in Canada. In recognition of this assistance, only the first five factors in the assessment which applies to independent applicants apply to applicants in the nominated relative category. The five factors are: education, personal assessment, occupational demand, occupational skill, and age.

An immigrant who is nominated by a citizen has a slightly higher preference given to his admission than the immigrant nominee of a noncitizen.

The Canada Manpower Division, through the CMC's, provides to the Immigration Division information on job vacancies and local needs for skills. The Immigration Division also provides assistance to Canadian employers who are unable to obtain the workers they need in Canada. The Division circulates such needs to their posts abroad for recruiting. On some occasions employers go directly abroad to recruit and frequently, in these instances, the Immigration offices overseas provide temporary interviewing space and other assistance.

Area Development

Canada has wide differences in economic growth, manpower utilization, and incomes in its several regions. Persistent pockets of unemployment continue to exist and remain insensitive to general economic activity and periods of great expansion in Canada.

The Economic Council of Canada has continued to urge increased efforts to deal with these large regional differences in income and unemployment, especially those in eastern Quebec and the Atlantic area. Those two regions have large numbers of rural nonfarm workers who suffer

from high unemployment, low earnings, severe seasonal fluctuations, and low general levels of education and productivity.

Workers who are in areas of continuing high unemployment, underemployment, and low family incomes — called designated areas — receive special assistance from the Canada Manpower Division in securing training and assistance in moving to jobs through the mobility program. The Area Development Agency (ADA) of the Department of Industry selects the designated areas on the basis of unemployment, earnings, and other data. Training programs have been developed by CMC's for low-income farmers, fishermen and other rural adults who are employed, unemployed, or underemployed. Counselors are brought into rural areas to inform, orient, and advise the residents of the full range of manpower programs available to them, such as occupational training and training allowances, employment opportunities, and mobility assistance.

The Department of Industry Act of 1963 provides financial assistance to employers to develop more and better manufacturing employment opportunities in the designated areas. The act, administered by the Area Development Agency of the Department of Industry, was revised and expanded in 1965 and again in 1967 to aid approximately 20 percent of the Canadian population.

The ADIA was designed to bring jobs to workers who cannot take advantage of mobility programs. Cash grants are given to companies to establish or expand plants in the designated areas. One-third of the capital cost of building and 50 percent of the cost of equipping the manufacturing and processing plants established or expanded in the area are paid for by the Federal Government, provided 95 percent of the machinery is new. Although the Provinces are consulted, they are in no way involved in financing or administering the programs. The construction, building supply, and service industries also benefit from the employment and business resulting from the new and expanded plants built in the designated areas.

To help rural people adjust to economic, social, and technological changes, the Agricultural Rehabilitation Development Act (ARDA) was passed in 1961. Because ARDA develops employment opportunities in rural areas, the Department of Forestry and Rural Development has responsibility for administration of the act. The ARDA program development, administration, and coordination are carried out by Provincial officials. The Federal Government provides 50 percent of the cost of the programs.

For the purpose of administering the Agricultural and Rural Development Act, Canada is divided into four regions, the Atlantic, Quebec, Ontario, and Western Regions. Each is headed by a Director. The Federal staffs in these regions, plus Federal-Provincial joint advisory committees which review ARDA projects, provide communications with the 10 Provinces.

For 1966 the Fund for Rural Economic Development (FRED) was set up to finance programs to solve the problems of surplus farm population, low-income rural populations, and concentrated, low-income rural nonfarm areas. Joint Federal-Provincial advisory boards review comprehensive regional development plans, recommend budgets and programs, and evaluate the results.

FRED has $300 million in Federal money alone for the period 1965-1970. FRED programs differ from other ARDA programs under the Rural Development Act in that Federal-Provincial cost sharing is not necessarily on a fifty-fifty basis. The Federal Government can pay more or less than 50 percent of the cost of FRED programs — each program being judged on its own merit. Normally in the development of comprehensive regional programs, FRED money will be used to supplement other Federal and Provincial programs — particularly to cover the cost of needed programs that are not provided by ongoing programs.

FRED funds can be used for research, land use, farm adjustment, and rehabilitation of manpower. The Federal Government and the Province can jointly purchase uneconomic farms. The title is placed in the name of the Province. The Department of Manpower and Immigration and the Department of Forestry and Rural Development provide counseling, placement, training, and mobility services.

Five of the 10 Provinces have made a detailed study of the human and physical resources of one of their rural areas for a pilot regional development program to be sponsored by FRED. Two other Provinces have studies underway.

In three areas major research has been done and 10-year agreements for comprehensive development plans have been signed by the Federal Government and the Provinces. Occupational training and mobility assistance will be provided by the Canada Manpower Division. The Central Mortgage and Housing Corporation provides money for housing.

The people of the Province play an important role in originating economic development plans and carrying them out. The individual farmer or fisherman who has to change his occupation, local leaders and members of development boards, school boards, and voluntary organizations and businessmen all are involved in the decisionmaking required by the development plans through joint management steering committees and other area and local committees. These representatives rally the support of the community for the programs.

Whether or not the FRED programs can solve the hard-core rural unemployment problems remains to be seen. As each plan is developed and put into operation, experience is gained in formulating other plans. The principal objective is to enable people in rural areas to secure jobs which make use of their abilities.

4
Conclusions

Many aspects of the Canada manpower policy and programs provide new insights to help other countries find solutions to similar problems.

Pioneering work is being done in Canada in developing, administering, and financing adult training programs and in maintaining family incomes during training.

The restructuring of the employment service in Canada to provide manpower centers staffed by counselors trained to match workers and jobs, or to guide individuals into training, mobility, or health programs supplies a stimulating new avenue to an active manpower program.

Area and seasonal unemployment problems, which beset many countries, have been attacked in Canada with original types of programs.

Manpower implications of technological changes are being critically examined in Canada through joint committees made up of the groups affected. The resulting research and assessment agreements and their implementation are providing other countries with case-study material to help in solving manpower problems arising from change.

The type of organization and the methods of operation of the Canada Economic Council show ways to integrate manpower policies with economic and social policies.

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WHERE TO GET MORE INFORMATION

Copies of this publication or additional information on manpower programs and activities may be obtained from the U.S. Department of Labor's Manpower Administration in Washington, D. C. Publications on manpower are also available from the Department's Regional Information Offices at the addresses listed below.

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Manpower In Oklahoma. South-Central Region.

Oklahoma Employment Security Commission, Oklahoma City. Research and Planning Div.
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OKLAHOMA

This manpower survey was designed to determine current and future manpower needs by industry division, major occupational group, and selected occupations. Nonfarm wage and salary employment in South-Central Oklahoma is forecast to reach 32,890 by June 1960, an increase of 2,810, or 9.3 percent from the June 1967 figure. Furthermore, 5 years from the survey date such employment can be expected to reach 35,220--an advance of 5,140 jobs or 17.1 percent. The greatest proportional, as well as absolute job increase over both projection periods, is expected in manufacturing. Specifically, factory employment should advance to 5,520 in June 1969, up 1,010 or 22.4 percent from the survey date. Looking forward 5 years, such employment should reach 6,190--an increase of 37.2 percent. The greatest proportional growth is expected to develop in machine trades occupations. Forecast advances of 22 percent and 39 percent would provide the economy with 309 and 549 new work opportunities in those occupations over the two projection periods. Largest numerical gains projected to occur in the professional-technical-managerial ranks were 577 and 1,110 new jobs becoming available in the 2- to 5-year periods, respectively. (CH)

VT 007 691

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Manpower in Oklahoma

SOUTH-CENTRAL REGION

OKLAHOMA EMPLOYMENT SECURITY COMMISSION
OKLAHOMA STATE EMPLOYMENT SERVICE
RESEARCH AND PLANNING DIVISION
WILL ROGERS MEMORIAL OFFICE BUILDING
OKLAHOMA CITY, OKLAHOMA

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ED039370

Manpower in Oklahoma

SOUTH-CENTRAL REGION

NOVEMBER 1968

This study was prepared under the supervision of Robert E. Turner in the Labor Market Information Section, Research and Planning Division. Dennis O. Martin was primarily responsible for this project, while Maribelle Richardson did the final typing. Statistical data were compiled and tabulated by the Benefit Records Section, C. L. Gandy, Supervisor. Credit is also due the Business Management Division, headed by Wayne Edge, for their work in varityping and printing.

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OKLAHOMA EMPLOYMENT SECURITY COMMISSION
OKLAHOMA STATE EMPLOYMENT SERVICE
RESEARCH AND PLANNING DIVISION
W. J. BOWMAN, CHIEF

PREFACE

The most important resource of an area is its people. Therefore, information and data concerning composition of that part of the population in the labor force is of vital importance. This study was conducted by the Oklahoma Employment Security Commission under a grant from the State Department of Vocational-Technical Education. The project was designed to determine current and future manpower needs by industry division, major occupational group and selected occupations.

The State Department of Vocational-Technical Education was particularly concerned with the compilation of such information for use in curriculum development for new area vocational schools as prescribed under the Vocational Education Act of 1963. Prospective employers, existing business establishments and educational institutions, as well as numerous agencies and other organizations, are also interested in the skills and overall characteristics of the labor force. This is especially true in Oklahoma, a state which has experienced accelerated growth in the past few years and where manifold opportunities for further development exist.

Through an effort to provide information to local leaders, data were compiled for the metropolitan areas of Oklahoma City and Tulsa, as well as nine other geographic regions. This detailed release, pertaining to the South-Central Oklahoma Region, is the eighth of a series being prepared from the survey.

We are indebted to employers for their consideration and cooperation in supplying the necessary information. In addition, various private and governmental agencies and organizations, such as chambers of commerce, provided assistance. Finally, we wish to express our gratitude to Dr. Francis Tuttle, Director of the State Department of Vocational-Technical Education and to members of his staff for their assistance and suggestions throughout the course of the study.

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HIGHLIGHTS

Nonfarm wage and salary employment in South-Central Oklahoma is forecast to reach 32,890 by June 1969, an increase of 2,810, or 9.3 percent from the June 1967 figure. Furthermore, five years from the survey date, such employment can be expected to reach 35,220 -- an advance of 5,140 jobs or 17.1 percent. These figures are thought to be conservative as they fail to provide for the various new firms that may be established in the region over the next five years. However, scheduled cutbacks in some existing firms are reflected. Data for this study were obtained from information provided by respondents in a sample of 225 firms. Usable information was received from 157 establishments, or 69.8 percent of those surveyed.

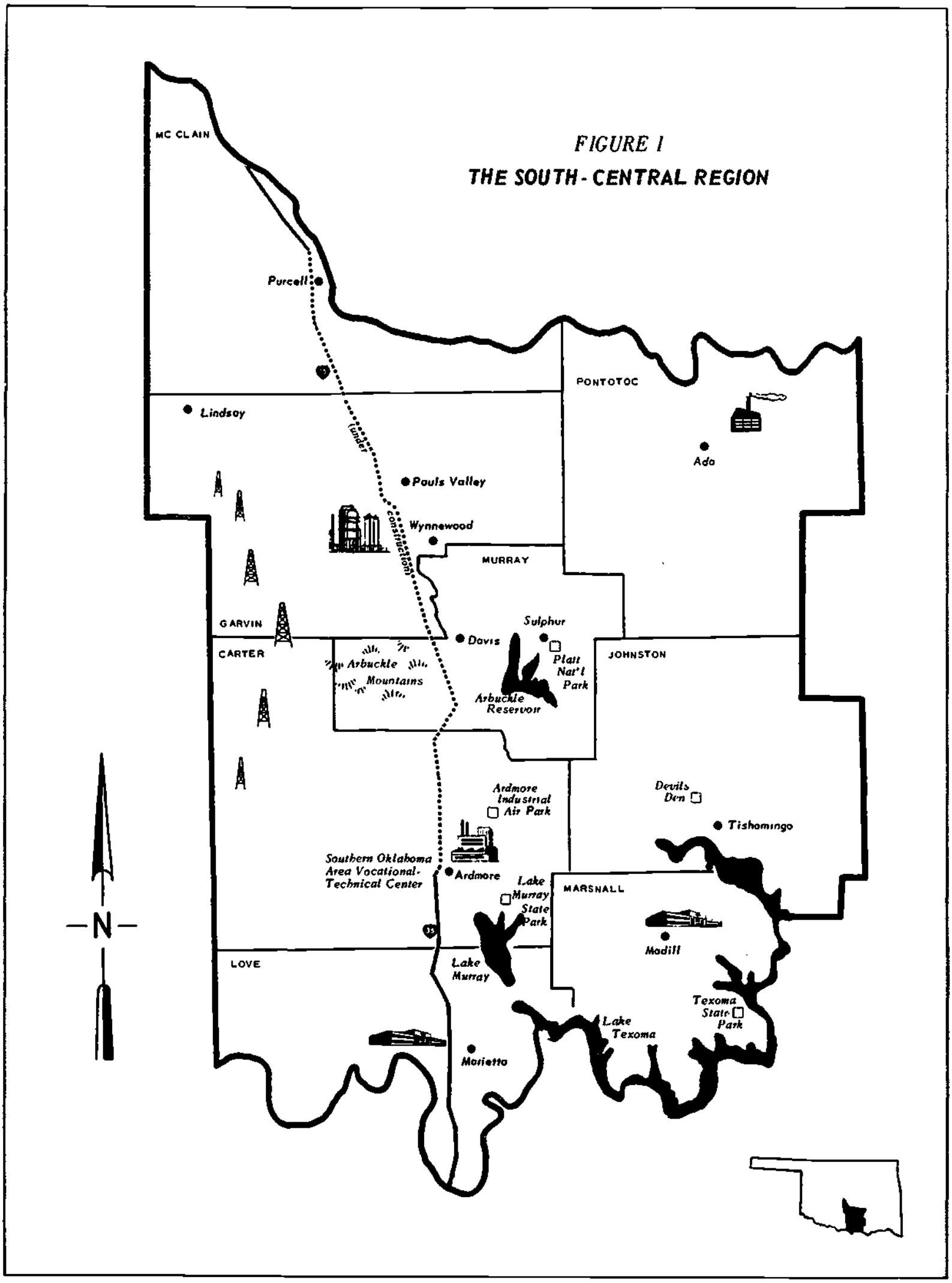
According to cooperating firms, all nonfarm wage and salary industry divisions should experience employment growth in both the two- and five-year spans. The greatest proportional, as well as absolute job increase over both projection periods is expected in manufacturing. Specifically, factory employment should advance to 5,520 in June 1969, up 1,010 or 22.4 percent from the survey date. Looking forward five years, such employment should reach 6,190 -- an increase of 37.2 percent over the June 1967 total. Other industry divisions which should show significant job advances are construction, trade and service.

When applied to occupational groups, greatest proportionate growth is expected to develop in machine trades occupations. Forecast advances of 22.0 and 39.0 percent would provide the economy with 309 and 549 new work opportunities in those occupations over the two projection periods. The notable growth in machine trades occupations is a reflection of the large increase forecast in manufacturing jobs. Largest numerical gains are projected to occur in the professional-technical-managerial ranks, with 577 and 1,110 new jobs becoming available in the two- and five-year periods, respectively.

Most surveyed occupations in the region should present needs for additional workers in the two forecast periods. Those jobs in which many people are presently employed tend to offer the greatest opportunity due mainly to replacement requirements. Examples are nurse aide or orderly, sales clerk, teacher, general office clerk and secretary. However, with increased manufacturing activities in the region, some occupations which have had sparce representation until now are projected to expand quite rapidly over the next few years. A few examples of occupations falling within this category are machinist (all-around), machine set-up operator, cabinetmaker, millman, and furniture or hardware assembler. For complete information, Table 6 in the Appendix lists the net additional needs of all occupations surveyed in South-Central Oklahoma.

FIGURE 1

THE SOUTH-CENTRAL REGION



ECONOMIC CHARACTERISTICS OF THE SOUTH-CENTRAL REGION

The South-Central Region is a 4,833-square-mile portion of Oklahoma composed of Carter, Garvin, Johnston, Love, Marshall, McClain, Murray and Pontotoc Counties. Together, these eight counties form a roughly rectangular-shaped region bounded on the south by the Red River and on the north by the South Canadian River.

The region is rich in pioneer history, having witnessed many notable events centered around Indians, cattlemen, oilmen and farmers. Significantly, all of the South-Central Region is contained within the boundaries of the old Chickasaw Nation.

During the 1830's, the federal government persuaded the Chickasaws to move from their home in Mississippi to the southern section of Oklahoma's Indian Territory. Their actual removal followed the Treaty of Pontotoc in 1832 and the Treaty of Doaksville in 1837. Due to wise management of the removal by the tribal leaders, the Chickasaws' migration was the most orderly and peaceful experienced by any of the Five Civilized Tribes. In Indian Territory, the Chickasaws settled upon a portion of the Choctaw domain and were within the Choctaw governmental structure.

In 1855, the Chickasaws seceded from the Choctaw Nation and established their own government. Tishomingo, in Johnston County, served as the national capital. Many other towns in the Chickasaw Nation are also rich in historic interest. More specifically, Purcell, Wayne, Pauls Valley, Davis, Ardmore and Marietta were on the first railway line passing through the area while Roff, Stonewall and Hennepin on Wild Horse Creek each has a distinctive story relating to early-day Oklahoma.

The West Shawnee Trail, which connected the cattle country of Texas with the railhead at Abilene, Kansas, crossed Pontotoc County. Great herds of Longhorns were driven along this trail to eastern markets during the late 1860's and early 1870's. Many cattlemen involved in these drives returned to live and develop the area.

When oil was discovered in the South-Central Region, the agriculturally-based economy was expanded substantially to maintain and develop the petroleum industry. The oil springs in the Chickasaw Nation had long been used for their purported therapeutic qualities, especially in the treatment of chronic diseases such as rheumatism. Today, Carter, Garvin, McClain and Pontotoc Counties all produce considerable quantities of petroleum.

Weather conditions have a great effect upon the economy of any region. The climate of South-Central Oklahoma can be typified by conditions in Ardmore. The winters are mild with little snow or sleet and the summers are hot. Total average rainfall is around 36 inches with an average annual temperature of 65°. Rainfall is sufficient to provide moisture for most types of agriculture and industry.

The topography varies considerably within the region. The rugged Arbuckle Mountains are found in the south-central part of the region. To the east, and lower in elevation, is the coastal plain. Tree growth is found primarily along the streams and rivers.

Air, Rail and highway transportation is available in the area. Interstate 35 crosses the western portion of the South-Central Region. Other U.S. highways include 70, 77 and 177. A fine system of state highways also serves the area. Every county in the area has railroad service. Commercial airline service for the area is centered in Ardmore.

The South-Central Region has many fine recreational attractions. A significant part of the 96,000-acre Lake Texoma lies in the southeast corner of this eight-county area. Many persons from all over the United States enjoy sailing, water skiing, boating, fishing and swimming at Texoma. Lake Murray, in Carter and Love Counties, and Arbuckle Reservoir, in Murray County, offer a wide variety of sports for the outdoorsman. Other recreational sites in the region include Devil's Den in Johnston County. Its rugged natural beauty is highlighted by a row of huge, grotesque granite boulders known as the "Parade of Elephants". Platt National Park, located in Murray County, is the only National Park in Oklahoma. This 912-acre park contains numerous mineral springs and is considered to have more different varieties of trees than any other small area in the United States. Although the park itself is comparatively small, its recreational value has been enhanced considerably by its proximity to the Arbuckle Reservoir and Recreation Area.

The Arbuckle Mountain Range, covering over 1,000 square miles, provides the residents of the region ample space for hiking and other outdoor activities. This range is contained primarily in Murray County. The picturesque Turner Falls recreational area is located in the Arbuckle Mountains. The mountains are also one of the nation's great geological showcases where students can examine a number of stratifications of the earth extending for thousands of feet.

Much of the rich heritage of the area has been preserved in the museums of the region. The East-Central Oklahoma Museum, located at Ada in Pontotoc County, contains many reminders of Oklahoma's early history. Other attractions include the 350-million-year-old Callixylon fossil tree on the campus of East-Central State College. Tucker Tower Museum, perched on a rocky peninsula of Lake Murray in Carter County, features exhibits and explanations of the many unique and interesting geological formations found in the Arbuckle Mountains.

At the time of the 1960 census, the South-Central Region had 140,427 residents. By race, 92.8 percent were Caucasian. The remaining 7.2 percent were comprised primarily of Indians and Negroes. From 1960 to July 1967 the population decreased to an estimated 139,500 inhabitants. 1/

1/ Oklahoma Population Estimates, Oklahoma Employment Security Commission, November 1968.

TABLE I

REGIONAL POPULATION BY COUNTY

COUNTY	POPULATION		PERCENT CHANGE April 1960 to July 1967	PERCENT DISTRIBUTION
	July 1967[1/]	April 1960[2/]		July 1967
Total	139,500	140,427	- 0.7	100.0
Carter	38,500	39,044	- 1.4	27.6
Garvin	28,400	28,290	0.4	20.4
Johnston	8,100	8,517	- 4.9	5.8
Love	5,900	5,862	0.6	4.2
McClain	13,300	12,740	4.4	9.6
Marshall	7,300	7,263	0.5	5.2
Murray	10,800	10,622	1.7	7.7
Pontotoc	27,200	28,089	- 3.2	19.5

1/ *Oklahoma Population Estimates, Oklahoma Employment Security Commission, November 1968.*
2/ *U. S. Census of Population 1960. Oklahoma PC (1) - 38 A.*

As of June 1967, the civilian labor force of the South-Central Region numbered 47,660. Of this figure, some 2,850, or 6.0 percent, were unemployed. Employment totaled 44,810, including 8,290 agricultural jobholders and 6,440 in the domestic service-self employed-unpaid family worker group. Nonfarm wage and salary workers, the remaining category, stood at 30,080, with considerable employment in trade, manufacturing and government. Projections made in this study include only nonfarm wage and salary workers.

Carter County, in the southern section of the region, had an estimated population of 38,500 persons in July 1967 to account for approximately 28 percent of the eight-county total. Moreover, one-third of all wage and salary employment positions in the South-Central Region are found in this county. Ardmore, the Carter County seat, is the largest city in the region with an estimated population of 20,600 in July 1967.

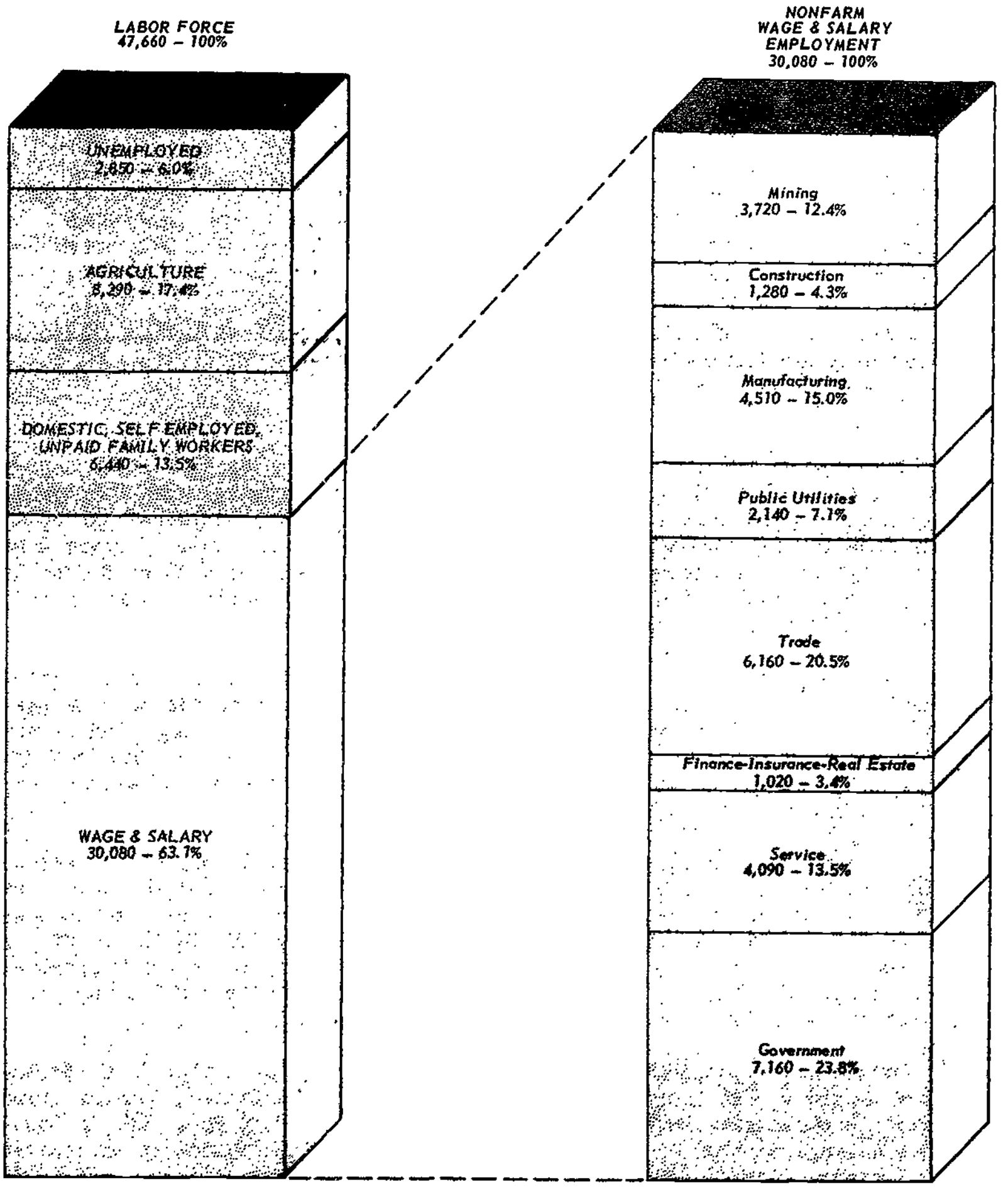
A modern, expanding city, Ardmore has a diversified economy. It serves as the trade hub for the surrounding area and is important as an oil field servicing and exploration center. Growth in the manufacturing of electronic components for aircraft and missiles has provided many new jobs in the county as has the development of a pilot training school and airline charter service. Future growth in the manufacturing category appears imminent following plans for the construction of a large plant to manufacture tires.

Garvin County, with 28,400 residents, is second in population in the South-Central Region. The largest city in the county, Pauls Valley, ranked third in size for the region, with an April 1960 population of 6,856. Garvin County has a large portion of its nonfarm wage and salary employment in wholesale-retail trade. Also, a significant amount of the employment in the county is

FIGURE II

LABOR FORCE AND EMPLOYMENT BY INDUSTRY DIVISION
SOUTH-CENTRAL REGION

JUNE 1967



related to the mining industry. Companies involved in the exploration and recovery of crude oil are found in the county. Wynnewood is the home of a large petroleum refining installation which produces gasoline, oil and various petroleum products. Garvin County, with Pauls Valley State School, also has significant government employment.

The third most populous county in the South-Central Region is Pontotoc with 27,200 residents. Ada, the county seat, had an estimated population of 14,300 in 1967, ranking it second in the region. As the home of East-Central State College, much of the employment in Pontotoc County is related to college activity. Specifically, service and wholesale-retail trade are important components of nonfarm wage and salary employment.

In addition to the above-mentioned sources of employment, the agricultural sector of the economy provides substantial employment in Pontotoc County. Noteworthy, manufacturing activities play an important role in the county's economic structure with glass, cement and brick produced locally. Also, large reserves of petroleum create employment in the mining category.

The three counties of Carter, Garvin and Pontotoc accounted for over two-thirds of the region's population in July 1967, and three-fourths of the total nonfarm wage and salary employment. The remaining five counties are heavily dependent on agriculture with 30 percent of those persons employed working in farm jobs. In each of these five counties, government employment contributes significantly to their economic well-being. Over thirty-five percent of all nonfarm wage and salary jobs in Johnston, Love, Marshall, McClain and Murray Counties are in government. The Oklahoma School for the Deaf and State War Veteran's Hospital in Sulphur along with the Murray State School of Agriculture in Tishomingo add significantly to such employment.

In facing the problem of transition from an agriculturally-based economy to more job-producing nonfarm industry, these counties, Johnston, Love, Marshall, McClain and Murray, have been active in promoting the area as ideal for industrial expansion. Success in this endeavor can be seen where clothing manufacturers have located plants in Marietta, Purcell and Madill. Manufacturing employment will eventually be boosted in Murray County with the opening of a large carpet mill near Davis. Also, at this writing, plans are under way for a manufacturing facility at Tishomingo.

To supply the needed skills for industrial growth, the Southern Oklahoma Area Vocational-Technical Center at Ardmore was opened in 1966. Currently, plans are being made to develop the McClain-Cleveland-Garvin Area Vocational-Technical School District # 8. The site for this facility had not been selected at this writing.

With considerable progress being made in establishing additional industry in several communities and with others actively seeking industrial growth, the outlook for the South-Central Region is favorable. The additional industrialization, coupled with the existing economic structure, should provide the South-Central Region with a solid basis for future population and employment growth.

CURRENT EMPLOYMENT AND FORECAST FOR MAJOR INDUSTRY DIVISIONS

Nonfarm wage and salary employment in South-Central Oklahoma should reach 32,890 by June 1969, an increase of 2,810, or 9.3 percent from the June 1967 figure. Five years from the date of the survey, such employment can be expected to climb to 35,220, a gain of some 17.1 percent, thus providing 5,140 more jobs. Furthermore, growth should be experienced in all industry divisions for both the two- and five-year spans.

The above figures are thought to be conservative as they do not include employment of new firms which might be established in the region over the next five years. One example of this is the development of new manufacturing endeavors which were announced for the region after completion of the field work for this study. The projections do, however, reflect scheduled cutbacks. Information for the study was also gathered from firms which, by mid-1967, had announced plans to locate in the region but had not begun operations.

Mining

Employment in the mining industry, which includes the extraction of all types of minerals, solids and liquids, is expected to show only nominal growth of 1.1 and 4.0 percent over the two- and five-year periods. Expanding from a base employment of 3,720 in June 1967, total workers in this industry division should reach 3,760 by the end of the 24-month period and 3,870 five years from the survey date.

The stability in mining employment for this region is not the result of cutbacks on the part of any one or two major firms. With no significant increases expected in oil production, employers generally indicated little change in the projected number of jobs.

Construction

Construction employment in the South-Central Region totaled 1,280 in June 1967. Projected to June 1969, this figure should increase to 1,470 -- an advance of 14.8 percent. By June 1972, such jobs should be augmented by almost one-third, bringing the total to 1,700.

Currently, extensive heavy construction is taking place to complete Interstate Highway 35 which links Oklahoma City and Dallas. This construction, along with other highway maintenance and repair work and the normal construction needs of an expanding population, should continue the growth trend in construction.

Manufacturing

The South-Central Region is presently in an economic transitional period. The shift from an economy which has been based heavily on mining and agricultural activities to one which receives its stability from manufacturing is now in full swing.

Factory jobs in the region numbered 4,510 in June 1967. Advances of 22.4 and 37.2 percent are expected for the two- and five-year spans, making manufacturing the leading industry division in projected growth. Expanding at these rates, manufacturing jobs will number 5,520 by June 1969 and 6,190 three years later.

It is readily apparent that the region is now on the threshold of greatly developing its industrial potential. In the past year, announcements hav been made of new manufacturing industries locating in Carter and Murray Cou - ties alone which will eventually provide more than 1,500 additional factory jobs. It should be pointed out that announcements of these job additions have been made since the initial data were gathered for this study. Thus, the employment projections which have been presented above can indeed be considered conservative.

Public Utilities

The public utilities division includes private transportation firms, telephone and telegraph services, radio and television broadcasting, and enterprises engaged in the supplying of electricity, gas, water and sanitary services.

Employment in the public utilities industry of South-Central Oklahoma stood at 2,140 in June 1967. Growth in this industry division is forecast to be nominal for both projection periods. Seventy new positions are expected by June 1969 and 180 through June 1972. Almost half of all public utilities employment for the region is found in the more populous Carter County.

Wholesale-Retail Trade

Second only to government in total employment, the wholesale-retail trade division utilized a total of 6,160 jobholders during June 1967. While maintaining its second position in nonfarm wage and salary employment, trade is expected to show job gains of some 7.3 and 13.1 percent over the two- and five-year forecast periods. At these rates of expansion, trade jobs will reach 6,610 by 1969, and increase further to 6,970 five years from the survey date. Again, more populous Carter County is responsible for the larger portion of the employment in this division. Pontotoc County also has significance in regional trade employment.

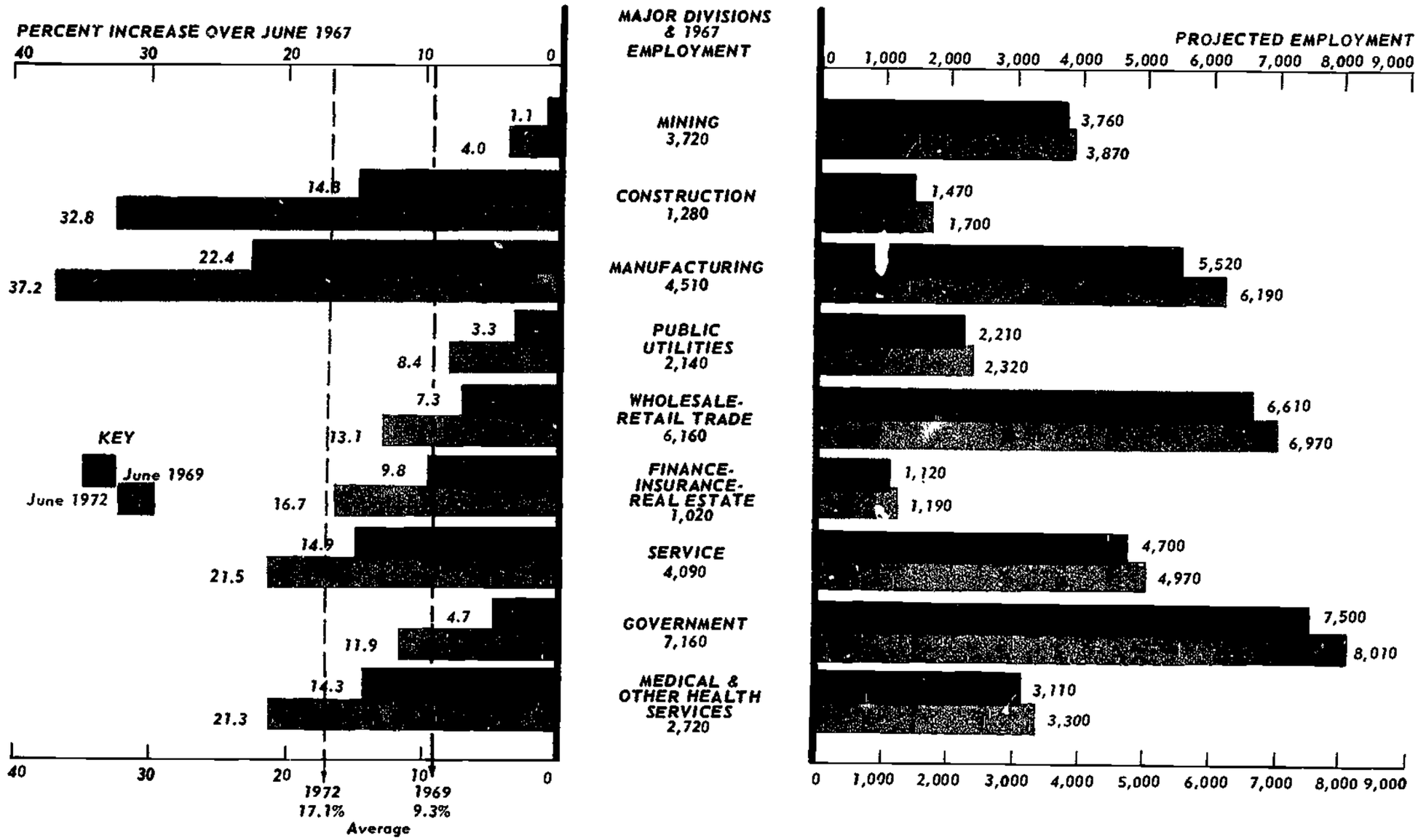
Growth in the trade industry division will probably lag a little behind the expansion in manufacturing and some of the other industry divisions. However, as the expansion anticipated in manufacturing is realized, wholesale and particularly retail trade will grow to meet the requirements of an expanding economy and population.

Finance-Insurance-Real Estate

Regional employment in the finance-insurance-real estate division was 1,020 in June 1967. Fewer jobs were classified within this industry division

FIGURE III

EMPLOYMENT GROWTH BY NONFARM WAGE AND SALARY DIVISION
SOUTH - CENTRAL REGION



than in any other nonfarm wage and salary group. Projected to 1969, jobs in finance-insurance-real estate should increase to 1,120 for a gain of 9.8 percent. By June 1972, 170 additional positions are forecast, bringing the employment to 1,190. Significantly, more than two-thirds of the jobs in this industry division are in Carter and Pontotoc Counties.

Service

This industry division includes firms primarily engaged in rendering a wide variety of services to individuals and business establishments. To be specific, this group consists of hotels and other lodging places; establishments providing personal, business, repair, and amusement services; medical, legal, engineering and other professional services; non-government educational institutions, nonprofit membership organizations and other miscellaneous services.

Employment in this industry division is expanding quite rapidly in the South-Central Region. In absolute job additions, service is expected to rank second in the region with 610 more workers by 1969. By June 1972, such additions should number 880. Expanding from an employment base of 4,090 in June 1967, these additions will amount to increases of 14.9 and 21.5 percent in the respective projection periods.

As elsewhere, the growth of private medical facilities will be of significance in the expansion of service employment. This, coupled with the necessary job additions to keep pace with an expanding economy and population, will insure the continuation of the growth trend in the service industry division.

TABLE II

EMPLOYMENT BY NONFARM WAGE AND SALARY INDUSTRY DIVISION

INDUSTRY DIVISION	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Total Wage & Salary Employment	30,080	32,890	35,220	2,810	5,140	9.3	17.1
Mining	3,720	3,760	3,870	40	150	1.1	4.0
Construction	1,280	1,470	1,700	190	420	14.8	32.8
Manufacturing	4,510	5,520	6,190	1,010	1,680	22.4	37.2
Public Utilities	2,140	2,210	2,320	70	180	3.3	8.4
Wholesale-Retail Trade	6,160	6,610	6,970	450	810	7.3	13.1
Finance-Insurance-Real Estate	1,020	1,120	1,190	100	170	9.8	16.7
Service	4,090	4,700	4,970	610	880	14.9	21.5
Government	7,160	7,500	8,010	340	850	4.7	11.9
Medical & Other Health Services*	2,720	3,110	3,300	390	580	14.3	21.3

* *Data shown as Medical and Other Health Services are also included in the overall categories of Service and Government.*

Government

Federal, State and local government units, combined, employed more workers than any other regional nonfarm wage and salary division in June 1967, with 23.8 percent of all such jobs. At the survey date, June 1967, this division employed 7,160 workers in the South-Central Region. Two- and five-year projections call for increases of 4.7 and 11.9 percent, respectively. These advances are considerably less than those which are projected for some of the other divisions such as manufacturing, construction and service.

It is important to note that, in addition to the normal government activities found in a region of this size, the South-Central Region also contains a number of government-operated medical facilities. The War Veterans Hospital and the Arbuckle Memorial Hospital, both in Sulphur, and Johnston Memorial Hospital in Tishomingo, all provide significant government employment. These facilities, along with East Central State College at Ada, Murray State College in Tishomingo, the Oklahoma School for the Deaf at Sulphur and the Pauls Valley State School will continue to add significantly to the region's government jobs.

Medical and Other Health Services

Employment figures discussed here for medical and other health services were included in the previously covered categories of service and government. For example, all private and religious-related medical facilities are included in the service division, while all public health institutions are a part of government. Although not generally considered an industry division unto itself, employment in medical and other health services represents a large enough percentage of service and government employment to warrant separate analysis.

During June 1967, there were 2,720 persons employed in the medical and other health services group in the South-Central Region. Forecast growth calls for expansion of 14.3 and 21.3 percent over the two- and five-year spans. At these rates, total jobs in this category would be 3,110 in 1969 and 3,300 by 1972. Much of this growth can be attributed to the increased care and treatment of the aged.

For example, since Medicare was initiated in 1966, hospital care has been brought within the financial reach of elderly persons who had, in many cases, previously neglected their health needs. In order to meet the increased load, hospitals have had to expand their facilities and staff.

MANPOWER NEEDS FOR SELECTED OCCUPATIONS

Discussion of industry divisions and major occupational groups is limited to anticipated employment growth. Total demand, however, consists not only of expansion but also includes replacement needs for persons who will leave the labor force for various reasons, such as retirement, disability or death. In addition, many women will withdraw from the labor market to assume the role of housewife and mother. For individual occupations, replacements available or supply, are subtracted from the total demand in order to reveal net needs. Supply figures utilized in this study include unemployed persons, in-plant trainees as reported by surveyed employers, and school output.

Professional-Technical-Managerial

Professional-technical-managerial occupations include jobs concerned primarily with the theoretical and practical aspects of such fields as art, science, engineering, education, medicine, law, business relations, as well as administrative, managerial and technical work. Most of these jobs require substantial educational preparation, usually at the university, junior college, technical institute or post-high school level.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Professional-Technical-Managerial	7,652	8,229	8,762	577	1,110	7.5	14.5

South-Central Region employment in the professional-technical-managerial ranks totaled 7,652 in June 1967. This was equivalent to one-fourth of the total nonfarm wage and salary employment. Anticipated growth in this category will be sufficient to maintain the ratio through the five-year forecast period. Specifically, 577 additional jobs should become available in this group by June 1969 for an increase of some 7.5 percent. Five years from the survey date, such jobs are forecast to register an increase of 14.5 percent bringing the total to 8,762 -- an addition of 1,110 new positions. Expanding at these rates, the professional-technical-managerial group is expected to maintain its number one position in total jobs of all the major regional occupational groups.

In looking at specific occupations within the professional-technical-managerial ranks, it appears that most will have notable net demand in both the two- and five-year projection periods. Following the trend over the past few years, those jobs related to educational and medical services should provide outstanding opportunity for future employment. Specifically, a net demand for 220 educators (elementary school teacher through college faculty member) should develop by June 1969. Through June 1972, unmet opportunity will exist for 560 additional teachers.

In the medical service field, numerous occupations are forecast to have significant net demand in both projection periods. Specifically, the occupation of licensed practical nurse should register a net need of 113 in the 24-

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Teacher, Elementary School	874	136	35	101	338	78	260
Teacher, Secandary School	793	103	20	83	258	48	210
Faculty Member, College or University	129	51	15	36	125	35	90
Nurse, Licensed Practical	183	136	23	113	196	42	154
Nurse, Head or Supervisor	106	42	0	42	79	0	79
Nurse, General Duty or Office	137	51	10	41	90	25	65
Civil Engineering Technician	110	10	1	9	23	3	20
Quality Cantrol Technician	46	7	0	7	17	0	17
Radiolagic Technolagist	17	6	1	5	10	1	9
Accauntant	114	21	3	18	36	7	29
Social Worker or Case Worker	113	16	3	13	41	9	32

month period and 154 in the five-year span. Over the two-year period, opportunities are expected to develop for 42 additional nurses, head or supervisor. Five years hence, demand in this occupation should exceed supply by some 79 jobs.

The steadily increasing need for skilled technicians and technologists was re-emphasized by this study. Significant opportunity is forecast for the occupations of civil engineering technician, quality control technician, radiologic technologist and, in the longer period, electrical technician.

Clerical

The clerical occupation group consists of jobs concerned primarily with the preparation, transcribing, systematizing, and preserving written communications or records, and collecting accounts.

Clerical jobs in the South-Central Region, numbering 4,637 in 1967, are expected to increase to 5,030 in 1969 and further expand to 5,340 by 1972 for a growth of 15.2 percent.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE June 1967 to –		PERCENT CHANGE June 1967 to –	
	June 1967	June 1969	June 1972	June 1969	June 1972	June 1969	June 1972
Clerical	4,637	5,030	5,340	393	703	8.5	15.2

Considering net demand for workers in individual occupations within the clerical group, it appears that employment opportunities will be available in most jobs. Secretarial positions should be available for an additional 107 workers by 1969 and 213 through June 1972. The occupation of general office

clerk can be expected to present a net need for 61 workers by 1969. Five years from the survey date, 236 such positions should become available. Other clerical positions which are anticipated to have considerable unmet needs for the future are stenographer, clerk-typist, bookkeeper (hand), post office clerk, accounting clerk, and bookkeeping machine operator.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Secretary	428	128	21	107	244	31	213
Stenographer	193	32	26	6	83	50	33
Clerk-Typist	291	46	27	19	135	44	91
Bookkeeper (Hand)	294	67	29	38	148	38	110
Teller, Bank	101	25	2	23	52	2	50
Bookkeeping-Machine Operator	115	41	3	38	91	3	88
Clerk, General Office	520	112	51	61	288	52	236
Accounting Clerk	112	15	0	15	39	0	39
Post Office Clerk	229	25	1	24	57	1	56
Mail Carrier	156	16	1	15	32	1	31
Telephone Operator (P.B.X. Operator)	320	41	8	33	100	8	92

Sales

Sales occupations accounted for 2,058 jobs in the South-Central Region during June 1967. Projected to June 1969, sales jobs should increase by 8.1 percent to a total of 2,224. Looking forward five years from the survey date, such jobs should increase by 271 to a total of 2,329, up 13.2 percent.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Sales	2,058	2,224	2,329	166	271	8.1	13.2

All occupations surveyed from the sales category are expected to have unmet needs in both forecast periods. Numerically, the most significant opportunity for employment is forecast to occur in the occupation of sales clerk.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Salesman and Salesperson, Commodities	311	129	48	81	227	48	179
Salesman, Services	63	7	2	5	27	2	25
Sales Clerk	1,283	169	28	141	331	30	301
Routeman	149	29	2	27	56	2	54

Over the 24-month period from the survey date, 141 net job opportunities should become available in this occupation. Five years hence, such needs should number 301. Also of significance in this category of jobs are the occupations of salesman and salesperson, commodities, and routeman.

Service

This group of occupations includes workers concerned primarily with the performance of personal services for individuals requiring either contact or close association such as: jobholders concerned with the cleaning and upkeep of building interiors; workers who prepare and serve food or drink; those who provide lodging and travel accomodations to patrons; persons who operate or tend amusement facilities. Also included are workers concerned with routine attendance to hospital or nursing home patients.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
				June 1967 to –		June 1967 to –	
	June 1967	June 1969	June 1972	June 1969	June 1972	June 1969	June 1972
Service	4,715	5,135	5,389	420	674	8.9	14.3

Service employment stood at 4,715 in the South-Central Region in June 1967. Expanding at anticipated rates of 8.9 and 14.3 percent for the two- and five-year projection periods, such jobs should number 5,135 in June 1969 and 5,389 for the same month in 1972.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Waitress or Waiter	418	225	26	199	324	26	298
Cook (and Institutional Cook)	1,007	151	25	126	384	25	359
Housekeeper	136	28	0	28	65	0	65
Nurse Aide-Orderly	1,273	245	64	181	549	76	473
Policeman or Detective	103	19	5	14	38	8	30

A number of individual occupations within this group should offer good opportunity for future employment. During the 24-month period, 199 positions as waitress or waiter should become available. For the five-year period, 298 job requirements are forecast to develop. Unmet opportunity for cook (and institutional cook) should be 126 jobs by 1969 and 359 through June 1972. Other occupations which are anticipated to have significant unmet worker requirements are housekeeper, nurse aide-orderly, with needs of 181 and 473 in the respective forecast periods, and policeman or detective.

Processing

This category of jobs includes occupations concerned with refining, mixing, compounding, chemically treating, heat treating, or similarly working materials and products.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Processing	910	1,036	1,127	126	217	13.8	23.8

Employment in processing occupations, 910, was smaller than in any other major occupational group. An increase of 126 jobs can be expected by June 1969. Over the five-year forecast period, 217 new positions should be added. Because of the small employment base at the time of the survey, nominal gains in a few occupations have resulted in the unusually large forecast increases of 13.8 and 23.8 percent for this category of jobs. Furthermore, figures for many occupations which were sampled from the processing category cannot be released as they would reveal the anticipated requirements of individual firms. A few occupations which should have significant needs but fall into the above category are; bottle machine operator, dough mixer and batch and furnace man (glass). The occupation of stillman (petroleum refining) should offer 5 extra job opportunities in the 24-month period and 13 in the five-year span.

Machine Trades

Machine trades occupations include jobs concerned with feeding, tending, operating, controlling, and the setting up of machines to cut, bore, mill, print and similarly work such materials as metal, paper, wood and stone.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Machine Trades	1,406	1,715	1,955	309	549	22.0	39.0

Employment in the machine trades occupational group stood at 1,406 in June 1967. Growth of 22.0 and 39.0 percent is anticipated for the two- and five-year periods, respectively. Again, it must be remembered that because of the small employment base, actual job additions will not be as significant as the percentage of increase might indicate. Regional employment in machine trades should reach 1,715 by June 1969 and 1,955 by the same month in 1972.

Outstanding among the individual occupations in net needs will be machinist (all-around) with a shortage of 28 workers in the two-year span and 63 in the five-year period. Falling in line behind machinist will be automobile mechanic with needs of 14 and 46 in the two forecast periods. Other jobs which should register unmet opportunity will be machine-tool operator (production), maintenance mechanic and offset-press man.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Machinist (All Around)	89	30	2	28	65	2	63
Machine Tool Operator, Production	105	6	0	6	16	0	16
Mechanic, Automobile	198	27	13	14	63	17	46
Mechanic, Maintenance	161	14	1	13	46	1	45

Bench Work

The bench work category includes occupations concerned with the use of handtools and bench machines to carve, paint, sew, assemble and similarly work relatively small objects and materials.

With 1,602 jobholders, the bench work category is one of the smaller occupational groups in the South-Central Region. Anticipated growth calls for expansion of 17.8 percent in the two-year period and 29.1 over the five-year span. Overall expansion in the five-year projection period should amount to 466 new jobs.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Bench Work	1,602	1,887	2,068	285	466	17.8	29.1

Significant opportunity should be offered for employment in many individual occupations within the bench work category. Sewing machine operators should have a net demand of 79 in the short period and 352 in the five-year span. Good opportunity should exist for product assembler with net needs of 142 and 177 in the two respective forecast periods. Other occupations which should have significant net needs but for which specific employment requirements cannot be released are electronics assembler, furniture finisher and furniture or hardware assembler.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Assembler, Product	122	143	1	142	178	1	177
Sewing Machine Operator	1,085	156	77	79	429	77	352

Structural

Structural work occupations are concerned primarily with fabricating, erecting, installing, paving, and similarly working structures or structural parts, such as bridges, buildings and roads.

Employment in this group of occupations stood at 2,590 in June 1967. Expanding from this base, such jobs should number 2,891 by June 1969 and 3,268 by the same month in 1972.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Structural Work	2,590	2,891	3,268	301	678	11.6	26.2

A host of individual structural occupations are forecast to have unmet needs in both projection periods. The most severe shortage should be felt in the occupation of heavy equipment operator with a net need of 65 indicated by 1969 and 166 through June 1972. Welders will be in demand with needs of 53 and 108 in 1969 and 1972, respectively. Shortages will also be felt in the individual occupations of structural steel worker, lineman, electrician, carpenter and building maintenance man.

SELECTED OCCUPATIONS

OCCUPATION	Employment June 1967	JUNE 1969			JUNE 1972		
		Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
Structural Steel Worker	68	44	10	34	89	10	79
Welder	171	71	18	53	130	22	108
Lineman	252	20	1	19	87	1	86
Electrician	141	20	2	18	49	3	46
Cement Mason or Concrete Finisher	88	25	6	19	62	6	56
Heavy Equipment Operator	548	74	9	65	176	10	166
Carpenter	164	50	24	26	105	31	74
Maintenance Man, Building	196	33	4	29	74	5	69

Miscellaneous

This group includes persons concerned primarily with transportation service; packaging and warehousing; technical production of amusement services, such as radio and motion pictures; and various miscellaneous activities.

OCCUPATIONAL GROUP	EMPLOYMENT			ABSOLUTE CHANGE		PERCENT CHANGE	
	June 1967	June 1969	June 1972	June 1967 to – June 1969	June 1967 to – June 1972	June 1967 to – June 1969	June 1967 to – June 1972
Miscellaneous	4,510	4,743	4,982	233	472	5.2	10.5

Miscellaneous occupations accounted for 15 percent of the nonfarm wage and salary employment of the South-Central Region in June 1967. Area residents at work in this group totaled 4,510. Increases of 5.2 and 10.5 percent are expected by 1969 and 1972, respectively. At these rates of growth, the total of such jobs should reach 4,982 by June 1972.

Few occupations were sampled from this group. However, some need was indicated for stationary engineers and power plant operators.

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SCOPE AND METHODOLOGY

This study was initiated in cooperation with the State Department of Vocational-Technical Education in an effort to develop current and future occupational data. Such information is needed to assist in curriculum development for the State's area vocational-technical schools. Furthermore, the material should be an invaluable counseling tool for high schools, colleges and the employment service. Finally, this type of data is often useful to private industry, governmental agencies and civic organizations in planning for the future.

The specific occupations in the survey were selected by a joint committee of personnel from the Department of Vocational-Technical Education and the Oklahoma State Employment Service. The final list consisted of some 299 occupations with either numerical or specific industrial significance within the area. Following this, the occupations were defined according to the U.S. Department of Labor's "Dictionary of Occupational Titles", Third Edition, 1965.

Firms included in the study were drawn from a list of concerns covered by unemployment insurance laws and augmented by a register of the larger noncovered establishments such as government agencies, hospitals and other nonprofit organizations. These firms were listed by industry division in descending order by employment size. Establishments comprising the upper 50 percent of the area's employment total as shown on the register were included in the survey. Next, twenty-percent and four-percent samples were selected from the third and fourth quartiles, respectively.

During the second week of June 1967, questionnaires, job descriptions and instructions were mailed to approximately two-thirds of the surveyed firms. Over the next several weeks personal visits were made to the area's larger employers to solicit their cooperation. An analysis of the response from surveyed employers in this region is shown in Table 1.

As returned, the forms were checked for accuracy and completeness. Following this, the information for each sample size group was tabulated and inflated to represent the universe. Thereupon, an adjustment was made so the data would agree with published industry employment totals. These adjustment factors, in turn, were applied to data for each occupation in the survey. Expansion needs were then determined from these figures while replacement requirements were computed by use of factors and methodology provided by the Bureau of Employment Security, U.S. Department of Labor.

Training conducted by employers in their plants was determined by the survey questionnaire. However, the total supply of workers was derived from three sources: school output, in-plant training, and the unemployed. Graduates from the area's high schools, technical-vocational schools, business schools, and colleges, both public and private, were surveyed to obtain the supply of workers expected to enter the labor force. The unemployed count was derived from the active files of the local employment service offices in the area.

Estimates of supply are difficult to obtain on a regional basis, especially for some occupations such as those in the professional classifications. For example, students from all over Oklahoma as well as other states may be attending a college or university located within the region. Upon graduation, however, many such persons will return to their native areas or accept jobs in more industrialized locations outside of Oklahoma. Therefore, shortages may appear in some occupations in spite of extensive training programs in Oklahoma.

Finally, it should be noted that the estimates of future employment are based on the intentions of surveyed employers and do not include the requirements for new firms which may be established within the forecast period. The figures are presented in precise form to establish the size of the training need; however, they should be regarded as an indication of magnitude rather than a refined estimate.

In an effort to conserve space, facsimiles of the questionnaires, employer letters, along with detailed descriptions of the major occupational groups and jobs surveyed have been omitted from this report. Copies of these materials may be obtained by writing the Research and Planning Division of the Oklahoma State Employment Service.

TABLE 1
RESPONSE ANALYSIS
SAMPLE SIZE, NUMBER RESPONDING AND PERCENT RETURN

	ESTABLISHMENT DATA			EMPLOYMENT DATA		
Industry Division	Number of Firms In Sample	Number Responding	Percent Return	Total Employment of Sample	Employment of Responding Firms	Percent Return
TOTAL	225	157	69.8	14,479	12,062	83.3
Mining	35	22	62.9	1,592	974	61.2
Construction	13	11	84.6	362	290	80.1
Manufacturing	32	24	75.0	3,223	2,778	86.2
Public Utilities	19	15	78.9	1,193	1,087	91.1
Wholesale-Retail Trade	57	32	56.1	1,365	814	59.6
Finance-Insurance-Real Estate	10	8	80.0	216	160	74.1
Service	27	19	70.4	1,246	1,047	84.0
Government	32	26	81.3	5,282	4,912	93.0

TABLE 2
REGIONAL LABOR FORCE DISTRIBUTION
PRELIMINARY ESTIMATES FOR JUNE 1967

County	Total Civilian Labor Force	UNEMPLOYMENT		EMPLOYMENT				Wage & Salary As Percent of Total Employment
		Number	Rate	Total	Agri-culture	Dom. Ser. Self-Emp. Unpaid Family Workers	Wage & Salary	
TOTAL	47,660	2,850	6.0	44,810	8,290	6,440	30,080	67.1
Carter	14,100	780	5.5	13,320	1,100	2,150	10,070	75.6
Garvin	8,980	460	5.1	8,520	1,670	1,450	5,400	63.4
Johnston	2,130	230	10.8	1,900	820	180	900	47.4
Love	2,210	190	8.6	2,020	700	190	1,130	55.9
Marshall	2,430	120	4.9	2,310	540	270	1,500	64.9
McClain	3,540	310	8.8	3,230	1,080	490	1,660	51.4
Murray	3,540	170	4.8	3,370	690	440	2,240	66.5
Pontotoc	10,730	590	5.5	10,140	1,690	1,270	7,180	70.8

TABLE 3
DISTRIBUTION OF EMPLOYMENT BY MAJOR OCCUPATIONAL GROUP WITHIN INDUSTRY DIVISION
JUNE 1967 AND FORECAST PERIODS

Industry	Total	Prof. Tech. Mgr.	Clerical	Sales	Service	Processing	Machine Trades	Bench Work	Struc. Work	Misc.
1967										
Total	30,080	7,652	4,637	2,058	4,715	910	1,406	1,602	2,590	4,510
Mining	3,720	748	362	87	20	305	111	--	144	1,943
Construction	1,280	74	76	--	3	2	43	--	949	133
Manufacturing	4,510	356	200	97	98	540	797	1,442	253	727
Public Utilities	2,140	227	715	19	107	--	166	4	391	511
Wholesale-Retail Trade	6,160	781	949	1,722	1,281	56	209	156	200	806
Finance-Insurance-Real Estate	1,020	385	510	9	116	--	--	--	--	--
Service	4,090	1,371	829	124	1,540	--	16	--	66	144
Government	7,160	3,710	996	--	1,550	7	64	--	587	246
Medical & Other Health Services *	2,720	826	480	--	1,355	3	--	--	41	15
1969										
Total	32,890	8,229	5,030	2,224	5,135	1,036	1,715	1,887	2,891	4,743
Mining	3,760	749	363	87	20	305	104	--	146	1,986
Construction	1,470	75	108	--	5	2	46	--	1,101	133
Manufacturing	5,520	458	272	162	115	608	1,071	1,693	330	811
Public Utilities	2,210	236	725	21	115	--	181	4	411	517
Wholesale-Retail Trade	6,610	814	973	1,804	1,464	113	227	190	205	820
Finance-Insurance-Real Estate	1,120	437	553	12	118	--	--	--	--	--
Service	4,700	1,573	994	138	1,681	--	18	--	83	213
Government	7,500	3,887	1,042	--	1,617	8	68	--	615	263
Medical & Other Health Services *	3,110	1,043	500	--	1,502	3	--	--	47	15
1972										
Total	35,220	8,762	5,340	2,329	5,389	1,127	1,955	2,068	3,268	4,982
Mining	3,870	749	365	87	20	305	104	--	166	2,074
Construction	1,700	76	138	--	5	2	49	--	1,293	137
Manufacturing	6,190	515	308	210	119	674	1,249	1,862	375	878
Public Utilities	2,320	254	742	24	125	--	197	5	451	522
Wholesale-Retail Trade	6,970	924	1,073	1,830	1,499	136	246	201	218	843
Finance-Insurance-Real Estate	1,190	455	601	16	118	--	--	--	--	--
Service	4,970	1,636	1,029	162	1,779	--	31	--	94	239
Government	8,010	4,153	1,084	--	1,724	10	79	--	671	289
Medical & Other Health Services *	3,300	1,110	524	--	1,601	3	--	--	47	15

* Data shown as Medical and Other Health Services are also included in the overall categories of Service and Government.

TABLE 4
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Female	Projected Employment June 1969	Projected Employment June 1972	Percent Change June 67 to- June 1969	Percent Change June 67 to- June 1972
PROFESSIONAL, TECHNICAL AND MANAGERIAL						
Electronic Engineer	8	--	8	8	0.0	0.0
Electrical Technician	17	--	18	22	5.9	29.4
Electronic Technician	22	--	22	22	0.0	0.0
Instrumentation Technician	12	--	12	12	0.0	0.0
Civil Engineer	50	--	52	53	4.0	6.0
Civil Engineering Technician	110	--	113	117	2.7	6.4
Draftsman, Civil	8	--	9	12	12.5	50.0
Mechanical Engineer	12	--	14	14	16.7	16.7
Mechanical Engineering Technician	13	--	13	13	0.0	0.0
Petroleum Engineer	33	--	33	33	0.0	0.0
Draftsman, Geological	11	2	11	11	0.0	0.0
Director, Quality Control	6	--	6	6	0.0	0.0
Industrial Engineer	5	--	5	5	0.0	0.0
Surveyor	22	--	22	22	0.0	0.0
Quality-Control Technician	46	5	50	55	8.7	19.6
Geologist	22	--	22	22	0.0	0.0
Director, Nursing Service	29	27	30	30	3.4	3.4
Nurse, Head or Supervisor	106	106	135	153	27.4	44.3
Nurse, General Duty or Office	137	137	171	185	24.8	35.0
Dietitian	21	19	24	26	14.3	23.8
Medical Technologist, Chief	15	3	16	19	6.7	26.7
Medical Technologist or Biochemistry Technologist	26	11	31	32	19.2	23.1
Electrocardiograph Technician or Electroencephalograph Technician	13	13	15	15	15.4	15.4
Radiologic Technologist	17	9	22	23	29.4	35.3
Medical Laboratory Assistant	21	16	25	28	19.0	33.3
Medical Assistant	29	29	29	29	0.0	0.0
Nurse, Licensed Practical	183	181	297	324	62.3	77.0
Physical Therapist	9	4	14	14	55.6	55.6

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Female	Projected Employment June 1969	June 1972	Percent Change June 67 to- June 1969	June 1972
PROFESSIONAL, TECHNICAL AND MANAGERIAL (Continued)						
Surgical Technician	18	11	22	22	22.2	22.2
Faculty Member, College or University	129	30	170	230	31.8	78.3
Teacher, Secondary School	793	386	825	873	4.0	10.1
Teacher, Elementary School	874	761	910	963	4.1	10.2
Librarian	11	7	12	14	9.1	27.3
Medical-Record Librarian	13	13	17	17	30.8	30.8
Abstractor	12	--	17	17	41.7	41.7
Reporter	16	10	17	19	6.3	18.8
Copy Reader	5	4	5	5	0.0	0.0
Lay-Out Man (Printing & Publishing)	7	2	7	7	0.0	0.0
Accountant	114	6	128	132	12.3	15.8
Cost Estimator	6	--	14	23	133.3	*
Buyer	32	13	32	32	0.0	0.0
Purchasing Agent	25	--	27	27	8.0	8.0
Public Relations Man	10	3	11	13	10.0	30.0
Manager, Credit & Collection	44	8	44	45	0.0	2.3
Manager, Traffic	9	--	9	11	0.0	22.2
Manager, Parts	20	2	20	20	0.0	0.0
Bank Cashier	24	--	24	24	0.0	0.0
Loan Officer	119	--	119	126	0.0	5.9
Superintendent, Hospital (Administrator)	23	2	27	27	17.4	17.4
Leaseman	18	--	18	18	0.0	0.0
Social Worker or Case Worker	113	85	117	124	3.5	9.7
CLERICAL						
Secretary	428	428	504	541	17.8	26.4
Stenographer	193	187	202	218	4.7	13.0
Personnel Clerk	16	15	19	19	18.8	18.8
Clerk-Typist	291	288	302	338	3.8	16.2
Statement Clerk	9	9	11	14	22.2	55.6

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	June 1967 Employment Female	Projected Employment June 1969	Projected Employment June 1972	Percent Change June 67 to- June 1969	Percent Change June 67 to- June 1972
CLERICAL (Continued)						
Bookkeeper, Hand	294	256	328	358	11.6	21.8
Cashier	148	108	148	158	0.0	6.8
Teller, Bank	101	95	114	123	12.9	21.8
Key-Punch Operator	35	33	39	51	11.4	45.7
Tabulating-Machine Operator	12	--	12	12	0.0	0.0
Bookkeeping-Machine Operator	115	114	142	171	23.5	48.7
Pay-Roll Clerk	64	57	68	69	6.2	7.8
Transit Clerk	14	14	16	17	14.3	21.4
Clerk, General Office	520	516	569	650	9.4	25.0
Ward Clerk	11	11	15	15	36.4	36.4
Interest Clerk	8	8	9	12	12.5	50.0
Sorting Clerk	21	21	21	21	0.0	0.0
Accounting Clerk	112	76	116	123	3.6	9.8
Parts Clerk, Automotive	46	7	48	48	4.3	4.3
Post Office Clerk	229	118	233	234	1.7	2.2
Mail Carrier	156	3	163	164	4.5	5.1
Telephone Operator (PBX Operator)	320	319	322	323	0.6	0.9
New Account Clerk	23	19	23	23	0.0	0.0
Medical Record Clerk	21	21	24	24	14.3	14.3
SALES						
Salesman, Services	63	3	66	80	4.8	27.0
Salesman and Salesperson (Commodities)	311	59	418	483	34.4	55.3
Sales Clerk	1,283	624	1,336	1,327	4.1	3.4
Routeman	149	21	167	180	12.1	20.8
Manager, Department (Retail)	67	14	72	72	7.5	7.5
SERVICE						
Waitress or Waiter	418	417	592	615	41.6	47.1
Cook (and Institutional Cook)	1,007	991	1,036	1,087	2.9	7.9
Meat Cutter or Butcher	55	7	55	56	0.0	1.8
Food Service Supervisor	15	8	18	18	20.0	20.0
Housekeeper	136	85	151	167	11.0	22.8

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Female	Projected Employment June 1969	June 1972	Percent Change June 67 to- June 1969	June 1972
SERVICE (Continued)						
Nurse Aide - Orderly	1,273	1,124	1,372	1,457	7.8	14.5
Fireman (Fire Department)	71	--	83	89	16.9	25.4
Policeman or Detective	103	3	116	125	12.6	21.4
Sheriff or Baliff	32	5	34	37	6.3	15.6
Grounds Keeper	79	9	83	100	5.1	26.6
PROCESSING						
Butcher, All-Round	15	--	15	17	0.0	13.3
Boner or Skinner (Meat)	9	--	9	10	0.0	11.1
Stillman (Petroleum Refining)	95	--	95	95	0.0	0.0
MACHINE TRADES						
Machinist (All-Around)	89	--	114	141	28.1	58.4
Template Maker	8	--	11	14	37.5	75.0
Machine Tool Operator (Production)	105	--	105	105	0.0	0.0
Metal Fabricator (Structural Fitter)	26	--	27	30	3.8	15.4
Mechanic, Air Conditioning (Auto)	32	--	35	35	9.4	9.4
Mechanic, Automobile	198	--	213	232	7.6	17.2
Mechanic, Diesel	41	--	41	42	0.0	2.4
Mechanic, Air Conditioning or Refrigeration	11	--	14	19	27.3	72.7
Mechanic, Maintenance	161	--	165	183	2.5	13.7
Millwright	11	--	11	11	0.0	0.0
Linotype Operator	24	--	24	24	0.0	0.0
Cylinder-Press Man	11	--	11	12	0.0	9.1
Offset-Press Man	37	--	37	37	0.0	0.0
BENCH WORK						
Assembler, Product	122	6	257	281	110.7	130.3
Radio and Television Repairman	24	--	30	36	25.0	50.0
Painter, Spray	7	1	13	19	85.7	171.4
Cutter, Hand or Machine	21	16	21	22	0.0	4.8
Sewing-Machine Operator	1,085	1,077	1,109	1,184	2.2	9.1

TABLE 4 - Continued
EMPLOYMENT IN SURVEYED OCCUPATIONS

Occupation	June 1967 Employment Total	Female	Projected Employment June 1969	June 1972	Percent Change June 67 to- June 1969	June 1972
STRUCTURAL						
Structural Steel Worker	68	--	108	147	58.8	116.2
Sheet-Metal Worker	23	--	33	33	43.5	43.5
Automobile Body Repairman	42	--	46	49	9.5	16.7
Lay-Out Man (Structural)	49	--	49	49	0.0	0.0
Welder	171	1	232	276	35.7	61.4
Lineman	252	--	267	302	6.0	19.8
Radio Mechanic	7	--	7	8	0.0	14.3
Electrician	141	--	153	169	8.5	19.9
Appliance Repairman, Household	28	--	28	28	0.0	0.0
Cement Mason or Concrete Finisher	88	--	108	137	22.7	55.7
Painter, Automobile	25	--	25	25	0.0	0.0
Heavy Equipment Operator	548	--	589	643	7.5	17.3
Carpenter	164	--	204	245	24.4	49.4
Bricklayer	50	--	50	60	0.0	20.0
Plumber or Pipefitter	57	--	59	62	3.5	8.8
Roofer	22	--	23	23	4.5	4.5
Maintenance Man	124	--	134	139	8.1	12.1
Maintenance Man, Building	196	8	217	240	10.7	22.4
MISCELLANEOUS						
Stationary Engineer	59	--	61	61	3.4	3.4
Power Plant Operator	8	--	8	8	0.0	0.0

* 200 Percent Increase and Over

TABLE 5
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
PROFESSIONAL, TECHNICAL AND MANAGERIAL						
Electronic Engineer	0	--	--	1	--	1
Electrical Technician	2	1	1	8	5	3
Electronic Technician	1	--	1	3	--	3
Instrumentation Technician	1	--	1	2	--	2
Civil Engineer	5	2	3	10	3	7
Civil Engineering Technician	10	3	7	23	7	16
Draftsman, Civil	1	1	--	5	4	1
Mechanical Engineer	3	2	1	4	2	2
Mechanical Engineering Technician	1	--	1	2	--	2
Petroleum Engineer	2	--	2	5	--	5
Draftsman, Geological	1	--	1	2	--	2
Director, Quality Control	0	--	--	1	--	1
Industrial Engineer	0	--	--	1	--	1
Surveyor	1	--	1	3	--	3
Quality-Control Technician	7	4	3	17	9	8
Geologist	1	--	1	3	--	3
Director, Nursing Service	4	1	3	9	1	8
Nurse, Head or Supervisor	42	29	13	79	47	32
Nurse, General Duty or Office	51	34	17	90	48	42
Dietitian	5	3	2	11	5	6
Medical Technologist, Chief	2	1	1	6	3	3
Medical Technologist or Biochemistry Technologist	7	5	2	11	6	5
Electrocardiograph Technician or Electroencephlograph Technician	4	2	2	6	2	4

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
PROFESSIONAL, TECHNICAL AND MANAGERIAL (Continued)						
Radiologic Technologist	6	5	1	10	6	4
Medical Laboratory Assistant	6	4	2	13	7	6
Medical Assistant	4	--	4	9	--	9
Nurse, Licensed Practical	136	114	22	196	141	55
Physical Therapist	5	5	--	7	5	2
Surgical Technician	5	4	1	8	4	4
Faculty Member, College or University	51	41	10	125	101	24
Teacher, Secondary School	103	32	71	258	80	178
Teacher, Elementary School	136	36	100	338	89	249
Librarian	2	1	1	5	2	3
Medical-Record Librarian	6	4	2	8	4	4
Abstractor	6	5	1	7	5	2
Reporter	2	1	1	7	3	4
Copy Reader	0	--	--	1	--	1
Lay-Out Man (Printing & Publishing)	0	--	--	2	--	2
Accountant	21	14	7	36	18	18
Cost Estimator	8	8	--	18	17	1
Buyer	3	--	3	7	--	7
Purchasing Agent	4	2	2	6	2	4
Public-Relations Man	1	1	--	5	3	2
Manager, Credit & Collection	3	--	3	8	1	7
Manager, Traffic	1	--	1	3	2	1
Manager, Parts	1	--	1	4	--	4

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
PROFESSIONAL, TECHNICAL AND MANAGERIAL (Continued)						
Bank Cashier	1	--	1	4	--	4
Loan Officer	7	--	7	25	7	18
Superintendent, Hospital (Administrator)	5	4	1	8	4	4
Leaseman	1	--	1	3	--	3
Social Worker or Case Worker	16	4	12	41	11	30
CLERICAL						
Secretary	128	76	52	244	113	131
Stenographer	32	9	23	83	25	58
Personnel Clerk	5	3	2	8	3	5
Clerk-Typist	46	11	35	135	47	88
Statement Clerk	3	2	1	8	5	3
Bookkeeper, Hand	67	34	33	148	64	84
Cashier	15	--	15	49	10	39
Teller, Bank	25	13	12	52	22	30
Key-Punch Operator	8	4	4	26	16	10
Tabulating-Machine Operator	1	--	1	2	--	2
Bookkeeping-Machine Operator	41	27	14	91	56	35
Pay-Roll Clerk	11	4	7	23	5	18
Transit Clerk	4	2	2	7	3	4
Clerk, General Office	112	49	63	288	130	158
Ward Clerk	5	4	1	7	4	3
Interest Clerk	2	1	1	6	4	2
Sorting Clerk	3	--	3	6	--	6

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
CLERICAL (Continued)						
Accounting Clerk	15	4	11	39	11	28
Parts Clerk, Automotive	5	2	3	10	2	8
Post Office Clerk	25	4	21	57	5	52
Mail Carrier	16	7	9	32	8	24
Telephone Operator (PBX Operator)	41	2	39	100	3	97
New Account Clerk	2	--	2	7	--	7
Medical Record Clerk	6	3	3	9	3	6
SALES						
Salesman, Services	7	3	4	27	17	10
Salesman and Salesperson, Commodities	129	107	22	227	172	55
Sales Clerk	169	53	116	331	44	287
Routeman	29	18	11	56	31	25
Manager, Department (Retail)	10	5	5	17	5	12
SERVICE						
Waitress or Waiter	225	174	51	324	197	127
Cook (and Institutional Cook)	151	29	122	384	80	304
Meat Cutter or Butcher	4	--	4	10	1	9
Food Service Supervisor	4	3	1	6	3	3
Housekeeper	28	15	13	65	31	34
Nurse Aide - Orderly	245	99	146	549	184	365
Fireman (Fire Department)	16	12	4	28	18	10
Policeman or Detective	19	13	6	38	22	16
Sheriff or Baliff	7	4	3	11	5	6
Grounds Keeper	9	4	5	34	21	13

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969			June 1972		
	Total Requirements	Expansion	Replacements	Total Requirements	Expansion	Replacements
PROCESSING						
Butcher, All-Round	1	--	1	4	2	2
Boner or Skinner, Meat	1	--	1	2	1	1
Stillman (Petroleum Refining)	6	--	6	14	--	14
MACHINE TRADES						
Machinist (All-Around)	30	25	5	65	52	13
Template Maker	3	3	--	7	6	1
Machine Tool Operator (Production)	6	--	6	16	--	16
Metal Fabricator (Structural Fitter)	3	1	2	7	3	4
Mechanic, Air Conditioning (Automobile)	5	3	2	8	3	5
Mechanic, Automobile	27	15	12	63	34	29
Mechanic, Diesel	2	--	2	7	1	6
Mechanic, Air Conditioning or Refrigeration	4	3	1	10	8	2
Mechanic, Maintenance	14	4	10	46	22	24
Millwright	1	--	1	2	--	2
Linotype Operator	1	--	1	4	--	4
Cylinder-Press Man	1	--	1	3	1	2
Offset-Press Man	2	--	2	5	--	5
BENCH WORK						
Assembler, Product	143	135	8	178	159	19
Radio and Television Repairman	7	6	1	16	12	4
Painter, Spray	6	6	--	13	12	1
Cutter, Hand or Machine	2	--	2	7	1	6
Sewing Machine Operator	156	24	132	429	99	330

TABLE 5 - Continued
ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Total Requirements	June 1969 Expansion	June 1969 Replacements	June 1972 Total Requirements	June 1972 Expansion	June 1972 Replacements
STRUCTURAL						
Structural Steel Worker	44	40	4	89	79	10
Sheet-Metal Worker	1,	10	1	13	10	3
Automobile Body Repairman	7	4	3	13	7	6
Lay-Out Man (Structural)	3	--	3	7	--	7
Welder	71	61	10	130	105	25
Lineman	20	5	15	87	50	37
Radio Mechanic	0	--	--	2	1	1
Electrician	20	12	8	49	28	21
Appliance Repairman, Household	2	--	2	4	--	4
Cement Mason or Concrete Finisher	25	20	5	62	49	13
Painter, Automobile	2	--	2	4	--	4
Heavy Equipment Operator	74	41	33	176	95	81
Carpenter	50	40	10	105	81	24
Bricklayer	3	--	3	17	10	7
Plumber or Pipefitter	5	2	3	13	5	8
Roofer	2	1	1	4	1	3
Maintenance Man	17	10	7	33	15	18
Maintenance Man, Building	33	21	12	74	44	30
MISCELLANEOUS						
Stationary Engineer	6	2	4	11	2	9
Power Plant Operator	0	--	--	1	--	1

TABLE 6
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969			June 1972		
	Additional Requirements	Replacements Available	Net Additional Needs	Additional Requirements	Replacements Available	Net Additional Needs
PROFESSIONAL, TECHNICAL AND MANAGERIAL						
Electronic Engineer	0	0	0	1	0	1
Electrical Technician	2	0	2	8	0	8
Electronic Technician	1	1	0	3	1	2
Instrumentation Technician	1	0	1	2	0	2
Civil Engineer	5	2	3	10	5	5
Civil Engineering Technician	10	1	9	23	3	20
Draftsman, Civil	1	1	0	5	1	4
Mechanical Engineer	3	0	3	4	0	4
Mechanical Engineering Technician	1	0	1	2	0	2
Petroleum Engineer	2	0	2	5	0	5
Draftsman, Geological	1	0	1	2	0	2
Director, Quality Control	0	0	0	1	0	1
Industrial Engineer	0	0	0	1	0	1
Surveyor	1	0	1	3	0	3
Quality-Control Technician	7	0	7	17	0	17
Geologist	1	0	1	3	0	3
Director, Nursing Service	4	0	4	9	0	9
Nurse, Head or Supervisor	42	0	42	79	0	79
Nurse, General Duty or Office	51	10	41	90	25	65
Dietitian	5	1	4	11	1	10
Medical Technologist, Chief	2	0	2	6	0	6
Medical Technologist or Biochemistry Technologist	7	2	5	11	5	6

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
PROFESSIONAL, TECHNICAL AND MANAGERIAL (Continued)						
Electrocardiograph Technician or Electroencephalograph Technician	4	0	4	6	0	6
Radiologic Technologist	6	1	5	10	1	9
Medical Laboratory Assistant	6	0	6	13	0	13
Medical Assistant	4	0	4	9	0	9
Nurse, Licensed Practical	136	23	113	196	42	154
Physical Therapist	5	1	4	7	1	6
Surgical Technician	5	1	4	8	1	7
Faculty Member, College or University	51	15	36	125	35	90
Teacher, Secondary School	103	20	83	258	48	210
Teacher, Elementary School	136	35	101	338	78	260
Librarian	2	0	2	5	0	5
Medical-Record Librarian	6	2	4	8	3	5
Abstractor	6	0	6	7	0	7
Reporter	2	0	2	7	0	7
Copy Reader	0	0	0	1	0	1
Lay-Out Man (Printing & Publishing)	0	0	0	2	0	2
Accountant	21	3	18	36	7	29
Cost-Estimator	8	3	5	18	6	12
Buyer	3	0	3	7	0	7
Purchasing Agent	4	1	3	6	1	5
Public-Relations Man	1	0	1	5	0	5
Manager, Credit & Collection	3	1	2	8	1	7

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
PROFESSIONAL, TECHNICAL AND MANAGERIAL (Continued)						
Manager, Traffic	1	0	1	3	0	3
Manager, Parts	1	0	1	4	0	4
Bank Cashier	1	0	1	4	0	4
Loan Officer	7	0	7	25	0	25
Superintendent, Hospital (Administrator)	5	0	5	8	0	8
Leaseman	1	0	1	3	0	3
Social Worker or Case Worker	16	3	13	41	9	32
CLERICAL						
Secretary	128	21	107	244	31	213
Stenographer	32	26	6	83	50	33
Personnel Clerk	5	1	4	8	1	7
Clerk-Typist	46	27	19	135	44	91
Statement Clerk	3	0	3	8	0	8
Bookkeeper, Hand	67	29	38	148	38	110
Cashier	15	14	1	49	15	34
Teller, Bank	25	2	23	52	2	50
Key-Punch Operator	8	4	4	26	6	20
Tabulating-Machine Operator	1	0	1	2	0	2
Bookkeeping-Machine Operator	41	3	38	91	3	88
Payroll Clerk	11	4	7	23	4	19
Transit Clerk	4	0	4	7	0	7
Clerk, General Office	112	51	61	288	52	236

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
CLERICAL (Continued)						
Ward Clerk	5	2	3	7	2	5
Interest Clerk	2	0	2	6	0	6
Sorting Clerk	3	0	3	6	0	6
Accounting Clerk	15	0	15	39	0	39
Parts Clerk, Automotive	5	3	2	10	3	7
Post Office Clerk	25	1	24	57	1	56
Mail Carrier	16	1	15	32	1	31
Telephone Operator (PBX Operator)	41	8	33	100	8	92
New Account Clerk	2	1	1	7	1	6
Medical Record Clerk	6	0	6	9	0	9
SALES						
Salesman, Services	7	2	5	27	2	25
Salesman and Salesperson, Commodities	129	48	81	227	48	179
Sales Clerk	169	28	141	331	30	301
Routeman	29	2	27	56	2	54
Manager, Department (Retail)	10	1	9	17	1	16
SERVICE						
Waitress or Waiter	225	26	199	324	26	298
Cook (and Institutional Cook)	151	25	126	384	25	359
Meat Cutter or Butcher	4	2	2	10	5	5
Food Service Supervisor	4	2	2	6		4

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
SERVICE (Continued)						
Housekeeper	28	0	28	65	0	65
Nurse Aide - Orderly	245	64	181	549	76	473
Fireman (Fire Department)	16	7	9	28	10	18
Policeman or Detective	19	5	14	38	8	30
Sheriff or Baliff	7	0	7	11	0	11
Grounds Keeper	9	2	7	34	5	29
PROCESSING						
Butcher, All-round	1	1	0	4	1	3
Boner or Skinner (Meat)	1	1	0	2	1	1
Stillman (Petroleum Refining)	6	1	5	14	1	13
MACHINE TRADES						
Machinist (All Around)	30	2	28	65	2	63
Template Maker	3	0	3	7	0	7
Machine Tool Operator (Production)	6	0	6	16	0	16
Metal Fabricator (Structural Fitter)	3	0	3	7	0	7
Mechanic, Air Conditioning (Automobile)	5	0	5	8	0	8
Mechanic, Automobile	27	13	14	63	17	46
Mechanic, Diesel	2	0	2	7	0	7
Mechanic, Air Conditioning or Refrigeration	4	1	3	10	2	8
Mechanic, Maintenance	14	1	13	46	1	45
Millwright	1	0	1	2	0	2

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
MACHINE TRADES (Continued)						
Linotype Operator	1	0	1	4	0	4
Cylinder-Press Man	1	0	1	3	0	3
Offset-Press Man	2	0	2	5	0	5
BENCH WORK						
Assembler, Product	143	1	142	178	1	177
Radio and Television Repairman	7	0	7	16	0	16
Painter, Spray	6	2	4	13	2	11
Cutter, Hand or Machine	2	1	1	7	1	6
Sewing Machine Operator	156	77	79	429	77	352
STRUCTURAL						
Structural Steel Worker	44	10	34	89	10	79
Sheet-Metal Worker	11	2	9	13	2	11
Automobile Body Repairman	7	3	4	13	5	8
Lay-Out Man (Structural)	3	0	3	7	0	7
Welder	71	18	53	130	22	108
Lineman	20	1	19	87	1	86
Radio Mechanic	0	0	0	2	0	2
Electrician	20	2	18	49	3	46
Appliance Repairman, Household	2	0	2	4	0	4
Cement Mason or Concrete Finisher	25	6	19	62	6	56
Painter, Automobile	2	0	2	4	0	4
Heavy Equipment Operator	74	9	65	176	10	166

TABLE 6 - Continued
NET ADDITIONAL MANPOWER REQUIREMENTS

Occupation	June 1969 Additional Requirements	June 1969 Replacements Available	June 1969 Net Additional Needs	June 1972 Additional Requirements	June 1972 Replacements Available	June 1972 Net Additional Needs
STRUCTURAL (Continued)						
Carpenter	50	24	26	105	31	74
Bricklayer	3	1	2	17	1	16
Plumber or Pipefitter	5	8	- 3	13	8	5
Roofer	2	2	0	4	2	2
Maintenance Man	17	4	13	33	4	29
Maintenance Man, Building	33	4	29	74	5	69
MISCELLANEOUS						
Stationary Engineer	6	3	3	11	3	8
Power Plant Operator	0	0	0	1	0	1

VT 007 819
Career Opportunities as a Licensed Practical Nurse.

National Association for Practical Nurse Education and Service, Inc., New York, N.Y.
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*OCCUPATIONAL INFORMATION; *PRACTICAL NURSING; *HEALTH OCCUPATIONS EDUCATION; *ACCREDITATION (INSTITUTIONS); *DIRECTORIES

To provide assistance to prospective students the pamphlet presents basic information about the nature of practical nursing, earnings and working conditions, selection of a school, entrance requirements, length of study, program of instruction, cost, the state board examination, and the services of the National Association for Practical Nurse Education and Service, Incoporated (NAPNES). A directory of state approved schools and a listing of schools approved by NAPNES are included. (JK)

VT 007 819

career opportunities as a

LICENSED PRACTICAL NURSE

including a

DIRECTORY OF STATE-APPROVED SCHOOLS AND PROGRAMS OF PRACTICAL NURSING

compiled by the

National Association for Practical Nurse Education and Service, Inc.

1968

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National Association for
Practical Nurse
Education and Service
535 Fifth Avenue—New York, N. Y. 10017

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PRACTICAL NURSING—
A CAREER TO CONSIDER

You can enjoy a challenging and rewarding career in practical nursing if you

— like to help people

— like new experiences

— wish to share the responsibility of meeting the health needs of our nation

— want a career which offers more than just "earning a living"

As a licensed practical or vocational nurse,* you will be working in a team relationship with registered nurses and physicians in giving skilled care and comfort to people. You will have such responsibilities as giving treatments and medications, observing and reporting patient progress, and bathing and feeding patients.

Practical nursing offers a variety of attractive career opportunities for both men and women. If you select it as a career, not only will you be able to hold staff positions in hospitals, clinics, nursing homes, visiting nurse associations and other public health agencies, but you will also find openings in physicians' offices, school infirmaries, camps, airlines, passenger ships, and industry. You may take private duty cases in patients' homes or in hospitals. The U. S. Army is recruiting LPNs as non-commissioned officers, and the Peace Corps is urging them to serve overseas.

Earnings and Working Conditions

Salaries of licensed practical nurses vary according to type of duty and section of the country, but the range is usually from about $3,000 to about $6,000 annually. In general, salaries for LPNs are about three-fourths of those of registered nurses in comparable positions.

The LPN may usually expect a forty-hour, five-day week, with from two to four weeks vacation and allowance for illness.

Selecting a School

If you are interested in pursuing a career in practical nursing, you may consult your vocational

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*In California and Texas, the title "licensed vocational nurse" is the equivalent of "licensed practical nurse" used in all the other states. For the sake of brevity, our use here of the term LPN will be interpreted as LVN when such application is required.

counselor or discuss practical nursing with community health career services and others in the health field. Many high school students and adults have been helped to decide on practical nursing as a career by serving as a volunteer at a hospital or in a health agency and seeing LPNs at work.

The first step in becoming a licensed practical nurse is to graduate from a school of practical nursing that is approved by the board of nursing in the state in which the school is located. All of the schools listed in this booklet are state-approved. You will notice that practical nurses are prepared in vocational and technical schools and high schools, schools conducted by hospitals, community colleges, and other community agencies.

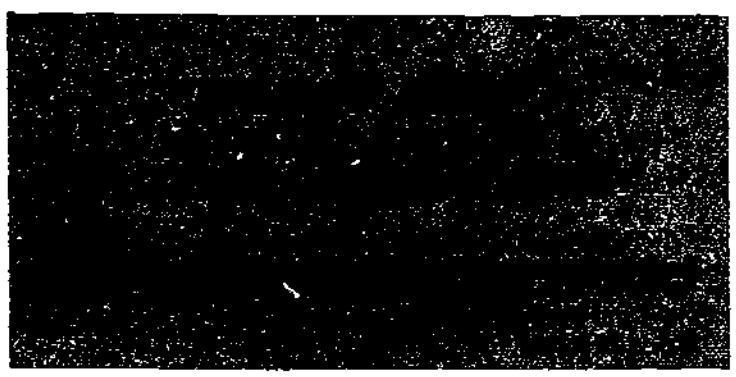
With the names of state-approved schools, you may write to several in the area or city in which you wish to study and ask for their school bulletins. Request an interview with the director of one or two schools in which you are especially interested and if it is possible, visit the school before you make a final decision.

You will want to consider many features about the school—costs, availability of scholarships and other financial assistance, and living facilities. The reputation and standards of the school are the most important considerations. If a school is nationally accredited by the National Association for Practical Nurse Education and Service (NAPNES), you can be sure that it is of high quality and has a good reputation.

Entrance Requirements

Each school establishes its own entrance requirements based upon, but often higher than, the standards set by the board of nursing in the state.

Education: At least two years of high school or its equivalent is required for admission to most schools. More and more schools, however, are specifying graduation from high school as an entrance requirement. Specially related subjects are seldom required for admission, but an entrance aptitude test is usually given.



Age: The age range for admission to most schools is 17 to 50. Applicants 50 and over are considered on an individual basis.

Health requirements: A health examination is usually required of all applicants.

Citizenship: Some states require students to be U. S. citizens or applicants for naturalization.

Sex: More and more schools are accepting male applicants.

Marital status: Most schools accept married students.

Length of Study

The basic program in practical nursing is usually one year in length. A limited number of programs are offered in the evening, and inquiries concerning them should be directed to the vocational counselors in your local high school or to your local state employment service.

Program of Instruction

You will learn how to take care of medical-surgical patients, mothers and their newborn babies, and children, and you will also learn how to promote health and prevent illness. So that you will have the understanding necessary for giving such care you will also study such subjects as anatomy and physiology, nutrition, and pharmacology. Some of the instruction will be given in the classroom, but the major share of your learning experiences will consist of clinical instruction and supervised practice with patients in hospitals and other health agencies.

Cost

The cost of attending an approved school of practical nursing varies greatly. Tuition ranges from no charge to over $500. Additional charges may be made for room and board, books, uniforms, and supplies.

Scholarships and other means of financial assistance are generally available. Directors of schools are willing to discuss financial matters and have information about scholarships and loans that are available. Students in NAPNES-accredited programs may obtain loans that are guaranteed by the federal government and on which the government pays part of the interest. You may also write to NAPNES for information about its scholarship program.

After Graduation

After you have graduated from a school of practical nursing, you will be required to pass a state licensing examination in order to accept employment as a licensed practical nurse. This license assures you status and protects the public you serve.

NAPNES

You will want the prestige and fellowship which come with membership and active participation in both your state licensed practical nurse association and the National Association for Practical Nurse Education and Service. You will also want to further develop your nursing skills in inservice education programs where you work and in workshops, institutes, and seminars sponsored by NAPNES and other organizations.

In time, you may find that you would like to specialize in fields such as psychiatric, pediatric, surgical, obstetric, and rehabilitation nursing. There are postgraduate courses available in these specialties, and you may secure information about them from NAPNES.

You will also want to keep abreast of advances constantly being made in medicine and science and brought to you in current nursing literature such as **The Journal of Practical Nursing,** NAPNES' official monthly publication.

A career in practical nursing offers not only a respectable earning capacity and financial independence but also a lifetime of rewarding experiences in service to your nation and its people in the exciting climate of medical advances. IT MAY WELL BE THE CAREER FOR YOU!

DIRECTORY

of State-Approved Schools and Programs of Practical/ Vocational Nursing

ALABAMA

Anniston 36201
School of Practical Nursing, Ayers State Trade School, P.O. Box 1647

Bessemer 35020
Practical Nursing Program, Bessemer State Technical Institute, P.O. Box 308

Birmingham 35203
Department of Vocational Education, Birmingham Public Schools, P.O. Box 114, 2015 7th Avenue, North

Birmingham 35211
School of Practical Nursing, Wenonah State Technical School, Route 10, Box 474

Childersburg 35044
Practical Nursing Program, Nunnelley State Vocational Tech. Institute, P.O. Box 389

Decatur 35601
School of Practical Nursing, John C. Calhoun Jr. College and Technical School, P.O. Box 548

Dothan 36301
School of Practical Nursing, Wallace State Technical Trade School, Napier Field

Eufaula 36027
Practical Nursing Program, Sparks State Trade School, P.O. Box 56

Evergreen 36401
Practical Nursing Program, Reid State Trade School, P.O. Box 457

Gadsden 35901
Practical Nursing Program, Gadsden State Tech. Trade School, 600 Valley Street

Greenville 36037
Butler County School of Practical Nursing, Butler County Board of Education

Hamilton 35570
Practical Nursing Program, Northwest Alabama State Tech. Institute, P.O. Box 9

Hanceville 35077
Practical Nursing Program, Wallace State Trade School of Cullman County, P.O. Box 250

Huntsville 35811
School of Practical Nursing, Drake State Technical Trade School, 3421 Meridian Street, North

Mobile 36605
School of Practical Nursing, Southwest State Technical Institute, 925 Dauphin Island Parkway

Mobile 36607
School of Practical Nursing, Carver State Technical Trade School, P.O. Box 7175

Montgomery 36108
School of Practical Nursing, St. Jude Hospital, 2048 West Fairview Avenue

Montgomery 36108
Practical Nursing Program, Trenholm State Trade School, 1225 Air Base Blvd.

Montgomery 36111
School of Practical Nursing, Patterson State Vocational Technical School, P.O. Box 6199

Muscle Shoals 35660
Practical Nursing Program, Muscle Shoals Technical Institute, P.O. Box 2025

Opelika 36801
School of Practical Nursing, Opelika State Vocational Technical Institute

Opp 36467
School of Practical Nursing, MacArthur State Trade School, P.O. Box 425

Selma 36701
School of Practical Nursing, Good Samaritan Hospital

Selma 36701
School of Practical Nursing, King State Trade School, P.O. Box 758

Sumiton 35148
Practical Nursing Program, Walker County State Trade School, Drawer L
Thomasville 36784
Practical Nursing Program, Hobson State Trade School, P.O. Box 425
Tuscaloosa 35401
School of Practical Nursing, Tuscaloosa State Trade School, P.O. Box 2270
Tuscaloosa 35404
School of Practical Nursing, Shelton State Technical Institute, Drawer J, East Side Station

ALASKA

Anchorage 99501
Practical Nursing Program, Anchorage Community College, 670 Fireweed Lane

ARIZONA

Douglas 85607
Practical Nursing Program, Cochise College
Florence 85232
Practical Nursing Program, Florence Union High School, P.O. Box 829
Mesa 85201
Division of Practical Nursing, Mesa Community College, 1833 W. Southern Ave.
Phoenix 85004
★School of Practical Nursing, Phoenix Union High School, 512 East Van Buren Street
Adult Education Students
High School Students
Prescott 86301
Prescott High School Practical Nursing Program
Tucson 85713
S. H. Kress Practical Nursing School, Pima County General Hospital, 2900 South Sixth Avenue
Tucson 85716
Practical Nursing Program, Tucson Public Schools, Education Center
Adult Education Students
High School Students
Yuma 85364
Practical Nursing Program, Yuma Union High School

ARKANSAS

Batesville 72501
Foothills Vocational Technical School, Batesville Division, Practical Nurse Program, P.O. Box 998
Camden 71701
Camden Practical Nurse School, c/o Whiteside School
El Dorado 71730
Oil Belt Vocational Technical School, Practical Nurse Program, P.O. Box 1777
Fayetteville 72701
Sequoyah Vocational Technical School, Practical Nurse Program, 219 South School Avenue
Forrest City 72335
Crowley Ridge Vocational Technical School, Practical Nurse Program, 310 Garland
Fort Smith 72901
Fort Smith Practical Nurse School No. 1, 810 South 14th St.
Fort Smith 72901
Fort Smith Practical Nurse School No. 2, 1610 South "B" St.
Harrison 72601
Twin-Lakes Vocational Technical School, Practical Nurse Program
Helena 72342
Helena Practical Nurse School, Helena Hospital
Hope 71801
Red River Vocational Technical School, Practical Nurse Program, Highway 29 South

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★Accredited by NAPNES.

Hot Springs 71901
Hot Springs Practical Nurse School, Cedar St. and Whittington Ave.
Jonesboro 72401
Jonesboro Practical Nurse School, 1300 South Church St.
Little Rock 72202
Arkansas Baptist Practical Nurse School, 1700 West 13th St.
Little Rock 72202
Little Rock Vocational School, Practical Nurse Program, 14th & Scott
Little Rock 72201
St. Vincent Infirmary Practical Nurse School, Markham and University
Morrilton 72110
Petit Jean Vocational Technical School, Practical Nurse Program, Highway 9
Ozark 72949
Arkansas Valley Vocational Technical School, Practical Nurse Program
Pine Bluff 71601
Pines Vocational Technical School, Practical Nurse Program, 2220 West 18th Street
Searcy 72143
Foothills Vocational Technical School, Practical Nurse Program

CALIFORNIA

Alta Loma 91701
Vocational Nursing Program, Chaffey College, 5885 Haven Avenue
Aptos 95003
Vocational Nursing Program, Cabrillo College, 6500 Soquel Drive
Azusa 91702
Vocational Nursing Program, Citrus College, 18824 East Foothill Boulevard
Bakersfield 93305
Vocational Nursing Program, Department of Nursing, Bakersfield College
Barstow 92311
Vocational Nursing Program, Barstow College, 2700 Barstow Road
Beaumont 92223
Vocational Nursing Program, Mt. San Jacinto College
Campbell 95008
Vocational Nursing Program, West Valley Junior College, 51 East Campbell
Chula Vista 92010
Vocational Nursing Program, Sweetwater Adult School, c/o Southwestern College, 5400 Otay Lakes Rd.
Compton 90221
Vocational Nursing Program, Compton College, 1111 East Artesia Boulevard
Costa Mesa 92626
Vocational Nursing Program, Orange Coast College, P.O. Box 307
Cupertino 95014
Vocational Nursing Program, DeAnza College, 21250 Stevens Creek Road
Eureka 95501
Vocational Nursing Program, Eureka Evening High School
Fresno 93704
Vocational Nursing Program, Fresno City College, 1101 University Avenue
Fullerton 92634
Vocational Nursing Program, Fullerton Junior College, 200-300 East Chapman
Glendale 91208
Vocational Nursing Program, Glendale College, 1500 North Verdugo Road
Grossmont 92030
Vocational Nursing Program, Grossmont Adult School, 5345 Timken Street, Suite F
Hanford 93230
Vocational Nursing Program, Hanford Adult School, 120 East Grangeville Boulevard
Hayward 94544
Vocational Nursing Program, Hayward Adult and Technical School, 26316 Hesperian

Imperial 92251
Vocational Nursing Program, Imperial Valley College, P.O. Box 158
Kentfield 94904
Vocational Nursing Program, College of Marin
Lancaster 93534
Vocational Nursing Program, Antelope Valley College, 3041 West Avenue K
Long Beach 90806
Vocational Nursing Program, Long Beach City College, 1305 East Pacific Coast Highway
Los Angeles 90022
Vocational Nursing Program, East Los Angeles College, 5357 East Brooklyn Avenue
Los Angeles 90015
Vocational Nursing Program, Los Angeles Trade-Technical College, 400 West Washington Boulevard
Los Angeles 90057
Vocational Nursing School of California, 2503 West 7th Street
Los Angeles 90033
White Memorial Medical Center School of Vocational Nursing, 1720 Brooklyn Avenue
Los Angeles 90055
Vocational Nursing Program, YWCA Job Corps, P.O. Box 6120
Marysville 95901
Vocational Nursing Program, Yuba College
Merced 95340
Vocational Nursing Program, Merced Junior College
Modesto 95350
Vocational Nursing Program, Modesto Junior College
Napa 94558
Vocational Nursing Program, Napa Junior College, 2277 Napa-Vallejo Highway
North Hollywood 90028
Vocational Nursing Program, Valley College of Medical-Dental Assistants, 11316 Magnolia Boulevard
Norwalk 90651
Department of Vocational Nursing, Cerritos College, 11110 East Alondra
Oakland 94606
Vocational Nursing Program, Laney College, 1001 Third Avenue
Oceanside 92054
Vocational Nursing Program, Mira Costa College, Barnard Drive
Oroville 95965
Vocational Nursing Program, Butte County Junior College District, 2060 Third Street
Palm Desert 92260
Vocational Nursing Program, College of the Desert, 43-500 Monterey
Pasadena 91106
Vocational Nursing Program, Pasadena City College, 1570 East Colorado Boulevard
Pleasant Hill 94523
Vocational Nursing Program, Diablo Valley College, 321 Golf Club Road
Porterville 93257
Vocational Nursing Program, Porterville College, P.O. Box 952
Redding 96001
Vocational Nursing Program, Shasta College, 2500 Eureka Way
Riverside 92506
Vocational Nursing Program, Riverside City College, 3650 Fairfax Avenue
Rocklin 95677
School of Vocational Nursing, Sierra College, 5000 Rocklin Road
Sacramento 95822
Department of Vocational Nurse Education, Sacramento City College, 3835 Freeport Boulevard
Salinas 93901
Vocational Nursing Program, Hartnell College, 156 Homestead Avenue
San Bernardino 92403
Vocational Nursing Program, San Bernardino Valley College, 701 South Mount Vernon Avenue
San Diego 92111
Vocational Nursing Program, San Diego Mesa College, 7250 Artillery Drive

San Fernando 91340
School of Vocational Nursing, Holy Cross Hospital, 15031 Rinaldi Street
San Francisco 94019
Vocational Nursing Education Program, Galileo Adult School, Bay Street and Van Ness Avenue
San Jose 95110
Vocational Nursing Program, San Jose Unified School District, Adult Division, 102 Sonora Avenue
San Mateo 94402
Vocational Nursing Program, College of San Mateo
San Pablo 94806
Vocational Nursing Program, Contra Costa College, 2600 Mission Bell Drive
San Quentin 94964
School of Vocational Nursing, Neumiller Hospital
Santa Barbara 93105
Vocational Nursing Program, Santa Barbara City College, Cliff Drive at Leadbetter Drive
Santa Monica 90406
Vocational Nursing Program, Santa Monica City College, 1815 Pearl Street
Santa Rosa 95401
Vocational Nursing Program, Santa Rosa Junior College
Stockton 95204
Vocational Nursing Program, San Joaquin Delta College, Alpine and Kensington Avenues
Ukiah 95482
School of Vocational Nursing, Ukiah District, 704 North Spring Street
Vallejo 94590
Vocational Nursing Program, Solano County College, Whitney at Mini Drive
Van Nuys 91401
Vocational Nursing Program, Los Angeles Valley College, 5800 Fulton Avenue
Ventura 93003
Vocational Nursing Program, Ventura College, 4620 Loma Vista Road
Visalia 93277
Vocational Nursing Program, College of the Sequoias, Mooney Boulevard
Walnut 91789
Vocational Nursing Program, Mount San Antonio College, P.O. Box 801
Whittier 90601
Vocational Nursing Program, Rio Hondo Junior College, 3600 Workman Mill Road
Wilmington 90744
Vocational Nursing Program, Los Angeles Harbor College, 1111 Figueroa Place

COLORADO

Boulder 80304
Boulder Valley School of Practical Nursing, P.O. Box 186
Colorado Springs 80902
Colorado Springs District 11 School of Practical Nursing (MDTA), 406 North Weber Street
Colorado Springs 80907
★Penrose Hospital School of Practical Nursing, 2215 North Cascade Avenue
Denver 80210
Program of Practical Nursing, Porter Memorial Hospital, 2525 South Downing
Denver 80204
★St. Anthony Hospital School of Practical Nursing, 4001 West 16th Avenue
Denver 80204
Practical Nursing Program, Emily Griffith Opportunity School, 414 Fourteenth Street
Durango 81302
Durango Public School District 9R School of Practical Nursing, Box 181
Fort Collins 80521
Poudre School District R1 School of Practical Nursing, 317 South College Avenue
Grand Junction 81501
Practical Nursing Program, Mesa College, 1120 North Avenue

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La Junta 81050
La Junta Mennonite Hospital School of Practical Nursing, 12th and Carson
Pueblo 81005
Department of Practical Nursing, Southern Colorado State College
Sterling 80751
Practical Nursing Program, Northeastern Junior College
Trinidad 81082
School of Practical Nursing, Trinidad Junior College

CONNECTICUT

Bridgeport 06610
Practical Nursing Program, Bullard Havens Regional Voc.-Tech. School, Palisade Avenue
Danbury 068[illegible]
Practical Nursing Program, Henry Abbott Regional Voc.-Tech. School, Hayestown Road
Hamden 06516
Practical Nursing Program, Eli Whitney Regional Voc.-Tech. School, Jones Road
Hartford 06106
Practical Nursing Program, A. I. Prince Regional Voc.-Tech. School, 500 Brookfield Street
Middletown 06457
Practical Nursing Program, Vinal Regional Voc.-Tech. School, 60 Daniels Street
New Britain 06053
Practical Nursing Program, E. C. Goodwin Regional Voc.-Tech. School, 735 Slater Road
Stamford 06902
Practical Nursing Program, J. M. Wright Regional Voc.-Tech. School, Woodside Park
Waterbury 06708
Practical Nursing Program, Kaynor Regional Voc.-Tech. School, 43 Tomkins Street
Willimantic 06226
Practical Nursing Program, Windham Regional Voc.-Tech. School, 210 Birch Street

DELAWARE

Georgetown 19801
Practical Nursing Program, Sussex County Vocational-Technical Center, P.O. Box 351
Wilmington 19801
Practical Nursing Program, Brown Technical High School, 14th and Market Streets
Adult Education Students
High School Students
Woodside 19980
Practical Nursing Program, Kent County Vocational-Technical Center, P.O. Box 97

DISTRICT OF COLUMBIA

Washington 20011
★Anna Burdick Vocational High School, Practical Nursing Program, 1300 Allison Street, N.W.
Washington 20007
Hannah Harrison School of Practical Nursing, 4470 MacArthur Boulevard, N.W.
Washington 20001
★Margaret Murray Washington Vocational High School, Practical Nursing Program, O Street between First and Third, N.W.
Adult Education Students
High School Students

FLORIDA

Bartow 33830
Polk County Practical Nursing Program, Route 1, Box 71 E
Bradenton 33505
Practical Nursing Program, Manatee County School, 215 Manatee Avenue, West

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★Accredited by NAPNES.

Daytona Beach 32015
Department of Practical Nursing, Daytona Beach Junior College, P.O. Box 111
Fort Lauderdale 33310
Broward County Practical Nursing Program, P.O. Box 8369
Fort Myers 33902
Lee County School of Practical Nursing, 2266 Second Street
Gainesville 32601
Practical Nursing Program, Santa Fe Junior College, 25 S.E. Second Place
Jacksonville 32207
Duval County Practical Nursing Program, Cumberland Campus, Florida Junior College
Madison 32340
Practical Nursing Division, North Florida Junior College
Marianna 32446
School of Practical Nursing, Chipola Junior College
Miami 33132
Practical Nursing Program, Lindsey Hopkins Education Center, 1410 N.E. Second Avenue
Miami Beach 33140
School of Practical Nursing, Mount Sinai Hospital, 4300 Alton Road
Orlando 32803
School of Practical Nursing, Florida Sanitarium and Hospital, 601 East Rollins Avenue
Orlando 32801
Practical Nursing Program, Orange County Vocational School, 325 North Palmetto Avenue
Panama City 32402
Practical Nursing Program, Bay County Adult and Vocational School, P.O. Box 666
Pensacola 32504
Practical Nursing Program, Pensacola Junior College Center for Adult Studies, Pensacola Junior College, 1000 College Boulevard
St. Augustine 32084
St. Johns County Practical Nursing Program, P.O. Box 450
St. Petersburg 33701
Pinellas County School of Practical Nursing, 296 Mirror Lake Drive
Sanford 32771
Seminole County Practical Nursing Program, 100 N. Mellonville Avenue
Sarasota 33581
Practical Nursing Program, Sarasota County Vocational-Technical School, 4748 Beneva Road
Tallahassee 32301
Practical Nursing Program, Lincoln Vocational School, 438 W. Brevard Street
Tallahassee 32303
Practical Nursing Program, Lively Technical School, P.O. Box 1026
Tampa 33603
Hillsborough County School of Practical Nursing, 805 East Buffalo Avenue
West Palm Beach 33401
Practical Nursing Program, Palm Beach County Vocational School, 810 Gardenia Street

GEORGIA

Albany 31705
Practical Nursing Program, Albany Area Vocational School, 1800 S. Slappey Drive
Albany 31705
Practical Nursing Program, Monroe Area Vocational School, 800 Lippitt Drive
Americus 31709
Practical Nursing Program, South Georgia Vocational School, 712 Forsyth Street
Athens 30601
Athens General Hospital School of Practical Nursing, 797 Cobb Street
Athens 30601
Practical Nursing Program, Athens Area Vocational-Technical School (MDTA), 419 Pope Street
Atlanta 30314
Atlanta School of Practical Nursing, 14 Ashby Street, S.W.

Atlanta 30315
Carver Vocational School of Practical Nursing,
1275 Capitol Avenue, S.W.
Atlanta 30312
Hoke Smith School of Practical Nursing,
535 Hill Street, S.E.
Atlanta 30303
Practical Nursing Program, Fairlie Street Training
Center (MDTA), 52 Fairlie Street, N.W.
Atlanta 30312
Practical Nursing Program, Smith-Hughes Vocational
School, 535 Hill Street, S.E.
Atlanta 30312
Tillman School of Practical Nursing,
285 North Highland Avenue, N.E.
Augusta 30904
Practical Nursing Program, Augusta Vocational School,
3112 Lake Forest Drive
Augusta 30904
Practical Nursing Program, Richmond Area Vocational
School (MDTA), 930 Russell Street
Augusta 30904
Practical Nursing Program, Augusta Area Vocational
Technical School, 1539 White Road
Brunswick 31520
Practical Nursing Program, Brunswick Vocational
School, 1521 Norwich Street
Calhoun 30701
Gordon County Hospital School of Practical Nursing,
Memorial Drive
Carrollton 30117
Practical Nursing Program, Carroll County Vocational
School, 115 Dixie Street
Clarkesville 30523
Practical Nursing Program, North Georgia
Tech.-Voc. School
Adult Education Students
High School Students
Clarkston 30021
Practical Nursing Program, DeKalb Area Vocational
School, 495 Indian Creek Drive
Columbus 31901
The Medical Center School of Practical Nursing
Columbus 31901
Columbus MDTA School of Practical Nursing,
700 Tennessee Drive
Cordele 31015
Gillespie-Selden Institute of Practical Nursing,
610 Sixteenth Avenue, West
Dallas 30132
Paulding Memorial Hospital School of Practical Nursing
Dalton 30720
Practical Nursing Program, Dalton Vocational School,
P.O. Box 291
Elberton 30635
Practical Nursing Program, Elbert County Vocational
School, 31 Chestnut Street
Ellijay 30540
Watkins Memorial Hospital School of Practical
Nursing, Box 314
Fitzgerald 31750
Ben Hill County Hospital School of Practical Nursing,
Box 512
Griffin 30223
Practical Nursing Program, Griffin-Spalding Vocational
School, 317 South Eighth Street
La Grange 30240
Practical Nursing Program, Troup County Vocational
Technical School, Route 2, Whitesville Road
La Grange 30240
Troup County School of Practical Nursing (MDTA),
City County Hospital
Macon 31204
Dudley M. Hughes School of Practical Nursing,
1062 Forsyth Street
Marietta 30060
Practical Nursing Program, Marietta-Cobb Area
Vocational School, 210 South Cobb Drive
Milledgeville 31061
Practical Nursing Program, Baldwin County Vocational
School, P.O. Box 690

Rome 30181
Coosa Valley Vocational Technical School of Practical Nursing, 112 Hemlock Avenue
Rome 30161
Battey State Hospital School of Practical Nursing, Redmont Road
Savannah 31401
Practical Nursing Program, Harris Area Vocational School, 502 East Harris Street
Savannah 31401
Practical Nursing Program, Savannah Vocational School, 214 West Bay Street
Swainsboro 30401
Practical Nursing Program, Swainsboro Vocational School, 201 Kite Road
Thomaston 30286
Practical Nursing Program, Upson County Vocational School, P.O. Box 6
Thomasville 31792
Practical Nursing Program, Thomas Area Vocational School, P.O. Box 257
Adult Education Students
High School Students
Thomasville 31792
Practical Nursing Program, Walton Area Vocational School, 400 Wolfe Street
Tifton 31704
Tift County Vocational School, Practical Nursing Program (MDTA), 1209 Tift Avenue
Valdosta 31801
Practical Nursing Program, Valdosta Vocational School, Route 1, Box 118-A
Waycross 31501
Practical Nursing Program, Waycross Vocational School, Memorial Hospital, Box 980
Waycross 31501
Practical Nursing Program, Waycross Vocational Technical School (MDTA), Drawer 20

HAWAII

Hilo 98720
Practical Nursing Program, Hawaii Technical School, 1175 Manono Street
Honolulu 96814
Kapiolani Technical School, Practical Nursing Program, 620 Pensacola Street
Kailua (Oahu) 98734
Castle Memorial Hospital School of Practical Nursing, 640 Ulukahiki Street

IDAHO

Blackfoot 83221
School District #55 Practical Nursing Program, Bingham Memorial Hospital, 440 West Judicial
Boise 83702
Boise College, Practical Nursing Program, St. Luke's Hospital, 130 East Bannock Street
Boise 83702
Boise College, Practical Nursing Program, St. Alphonsus Hospital, 506 North Fifth Street
Bonners Ferry 83805
School District #101 Practical Nursing Program, Community Hospital, 551 Kaniksu Street
Burley 83318
School District Joint #151 Practical Nursing Program, Cassia Memorial Hospital, P.O. Box 638
Caldwell 83605
School District #132 Practical Nursing Program, Caldwell Memorial Hospital, 1515 Fillmore
Coeur d'Alene 83814
North Idaho Junior College, Practical Nursing Program, Kootenai Memorial Hospital, 2003 Lincoln Way
Grangeville 83530
School District Joint #241 Practical Nursing Program, General Hospital
Idaho Falls 83401
School District #91 Practical Nursing Program, Idaho Falls L.D.S. Hospital, Memorial Drive
Idaho Falls 83401
School District #91 Practical Nursing Program, Sacred Heart Hospital, 2525 South Boulevard

Kellogg 83837
School District Joint #391 Practical Nursing Program,
West Shoshone General Hospital, Jacob Gulch
Lewiston 83501
Lewis-Clark Normal School, Practical Nursing Program,
St. Joseph's Hospital, 4th Avenue and 6th Street
Moscow 83843
School District #281 Practical Nursing Program,
Gritman Memorial Hospital, 710 South Main
Nampa 83651
School District #131 Practical Nursing Program,
Mercy Hospital, 1615 Eighth Street South
Pocatello 83201
Idaho State University, Practical Nursing Program,
Bannock Memorial Hospital, Memorial Drive
Pocatello 83201
Idaho State University, Practical Nursing Program,
St. Anthony Community Hospital, 650 North 7th
Sandpoint 83864
School District #82 Practical Nursing Program,
Bonner General Hospital, 502 North Third
Twin Falls 83301
College of Southern Idaho, Practical Nursing Program,
Magic Valley Memorial Hospital, 650 Addison Ave., West

ILLINOIS

Alton 62005
Alton Practical Nursing Program, F. W. Olin
Vocational School, 2200 College
Bloomington 61701
Bloomington School of Practical Nursing,
709 South Clinton
Carbondale 62901
Practical Nurse Program, Vocational Technical Institute,
Southern Illinois University, Southern Area Campus
Champaign 61821
Champaign School of Practical Nursing,
103 North Prospect
Chicago 60612
Practical Nursing Center, Chicago Public Schools,
1820 West Grenshaw
Adult Education Students
High School Students
Chicago 60616
Practical Nurse Training Program, Manpower Div.,
Chicago Public Schools, 535 East 35th Street
Chicago 60607
St. Francis Cabrini School of Practical Nursing,
811 South Lytle Street
Danville 61833
Danville Junior College School of Practical Nursing,
305 West Madison Street
Decatur 62522
Decatur School of Practical Nursing,
210 West North Street
Dixon 61021
Dixon State School of Practical Nursing,
2600 North Brinton
Dixon 61021
Sauk Valley Practical Nursing Program
East St. Louis 62205
East St. Louis School of Practical Nursing,
332 North 9th Street
Galesburg 61401
Galesburg Practical Nurse Program, 650 Locust Street
Harrisburg 62946
School of Practical Nursing, Southeastern Illinois
College, 333 West College Street
Hinsdale 60521
Hinsdale Hospital School of Practical Nursing,
120 North Oak Street
Jacksonville 62650
School of Practical Nursing, Jacksonville Board of
Education, 504 East Court Street
Joliet 60432
School of Practical Nursing, Joliet Township High
School, 201 East Jefferson
Kankakee 60901
Kankakee School of Practical Nursing,
293 East Court Street

LaSalle 61301
St. Mary's Hospital School of Practical Nursing,
1015 O'Connor Street
Mattoon 61938
Practical Nursing Program, Lakeland College
Maywood 60154
Proviso Township School of Practical Nursing,
807 South First Street
Mt. Carmel 62863
School of Practical Nursing, Wabash Valley College
Mt. Vernon 62864
Mt. Vernon School of Practical Nursing,
7th and Casey Streets
Oak Forest 60452
Oak Forest Hospital School of Practical Nursing,
15900 South Cicero
Pekin 61554
Pekin Practical Nurse Program, East End High School
Peoria 61606
Peoria School of Practical Nursing, 509 West High Street
Quincy 62301
Quincy School of Practical Nursing, 1200 Maine Street
Rockford 61101
Rockford School of Practical Nursing,
201 South Madison
Rock Island 61201
Rock Island County School of Practical Nursing,
2122-25th Avenue
Skokie 60076
School of Practical Nursing, Niles Township High
School, Lincoln and Niles
Springfield 62704
Springfield School of Practical Nursing,
Second and Laurel
Streator 61364
Streator Township High School, Practical Nurse Program
Waukegan 60089
Practical Nursing Program, Waukegan Township
High School, 1011 Washington

INDIANA

Bloomington 47401
Bloomington Practical Nurse School, Bloomington
Metropolitan School, 640 South Rogers Street
Columbus 47201
Bartholomew Consolidated School Corporation,
School of Practical Nursing
Evansville 47711
Evansville School of Practical Nursing, Evansville-
Vanderburgh School Corporation, 1216 East Illinois
Fort Wayne 46805
School of Practical Nursing, Fort Wayne Community
Schools, 2004 Alabama Avenue
Hammond 46323
Practical Nurse Training Program, Purdue University,
Calumet Campus, 2233 171st Street
Hobart 46342
River Forest School of Practical Nursing, Hobart
Township Schools
Indianapolis 46201
School of Practical Nursing, Adult Education Division,
Indianapolis Public Schools, 26 North Arsenal
Kokomo 46901
Kokomo School of Practical Nursing, Kokomo Center
Township Consolidated School Corporation,
900 Goyer Road
Marion 46952
Grant School of Practical Nursing, Marion Community
Schools, Marion High School Vocational Building,
716 West 26th
Muncie 47303
★Muncie School of Practical Nursing, 2300 West Gilbert
New Albany 47150
New Albany School of Practical Nursing,
New Albany-Floyd County Consolidated School
Corporation, 818 Jay Street

★Accredited by NAPNES.

Richmond 47374
Richmond School of Practical Nursing, Reid Memorial Hospital, Spring Grove
South Bend 46619
South Bend School of Practical Nursing, The South Bend Community School Corporation, 1534 Sample Street
Terre Haute 47807
Vocational School of Practical Nursing, Vigo County School Corporation, 1421 Second Avenue
Adult Education Students
High School Students
Vincennes 47591
School of Practical Nursing, Vincennes University

IOWA

Ames 51401
Ames School of Practical Nursing, Ames Community Schools
Burlington 52601
Southeastern Iowa College, Division of Practical Nursing
Calmar 52132
Northeast Area One Vocational School District, Practical Nursing Program
Carroll 50401
Antonian School of Practical Nursing, St. Anthony Hospital
Cedar Rapids 52404
Area Ten Community College, Department of Practical Nurse Education
Cedar Rapids 52402
St. Luke's Methodist Hospital, School of Practical Nursing
Centerville 52544
Centerville Community College, School of Practical Nursing
Cherokee 51012
Cherokee School of Practical Nursing, Cherokee Community Schools
Clarinda 51632
Iowa Western Community College, School of Practical Nursing
Clinton 52732
Eastern Iowa Community College, Department of Practical Nurse Education
Council Bluffs 51501
Iowa Western Community College, School of Practical Nursing
Davenport 52804
Eastern Iowa Community College, Practical Nurse Education Department
Des Moines 50314
Des Moines School of Practical Nursing
Dubuque 52001
Dubuque School of Practical Nursing, Dubuque Public Schools
Estherville 51334
Estherville Junior College, Division of Practical Nursing
Fort Dodge 50501
Iowa Central Community College, Department of Practical Nurse Education
Harlan 51537
Iowa Western Community College, Department of Practical Nurse Education
Marshalltown 50158
Mercedian School of Practical Nursing, Mercy Hospital
Mason City 50402
North Iowa Area Community College, Division of Practical Nursing
Ottumwa 52501
Iowa Tech—Area XV School District, Division of Practical Nursing
Sioux City 51101
Western Iowa Tech, Division of Practical Nursing
Waterloo 50702
Hawkeye Institute of Technology, Practical Nurse Division

KANSAS

Atchison 66002
Atchison Public School of Practical Nursing, 605 Kansas Avenue
Chanute 66720
Chanute Public School of Practical Nursing, 400 South Evergreen
Dodge City 67801
Department of Practical Nurse Education, Dodge City Community Junior College, 1000 Second Avenue
Emporia 66801
Practical Nurse Program, Flint Hills Area Vocational-Technical School, 3015 West 18th Street
Kansas City 66103
★Florence Cook Dept. of Practical Nurse Education, University of Kansas Medical Center, 39th and Rainbow Boulevard
Lawrence 66044
Practical Nurse Program, Haskell Institute
McPherson 67460
McPherson School of Practical Nursing, P.O. Box 484, Peoples Bank Building
Topeka 66616
Kaw Area Vocational-Technical School, Department of Practical Nurse Education, 3600 Seward Street
Wichita 67202
Wichita Public School, Practical Nursing Program, 324 North Emporia

KENTUCKY

Ashland 41101
Ashland State Vocational Technical School, Department of Practical Nursing
Covington 41011
School of Practical Nurse Education, William Booth Memorial Hospital
Covington 41011
Northern Kentucky State Vocational School of Practical Nursing
Danville 40422
Danville School of Practical Nursing, Lafayette Vocational-Technical School
Glasgow 42141
Glasgow School for Practical Nurses, Western State Vocational School
Greenville 42345
Greenville School of Practical Nursing, Madisonville State Vocational School
Hazard 41701
Hazard School of Practical Nursing, Hazard Area Vocational School
Jeffersontown 40029
Jefferson County School of Practical Nursing, Jefferson Area Vocational School
Lexington 40501
Appalachian School of Practical Nursing, Lafayette Vocational-Technical School
Madisonville 42431
Madisonville School for Practical Nurses, Madisonville State Vocational School
Owensboro 42301
Owensboro School for Practical Nurses, Owensboro Area Vocational School
Paducah 42001
School of Practical Nursing, Western Baptist Hospital
Paintsville 41240
Department of Practical Nursing, Mayo State Vocational School
Pineville 40977
Pineville School for Practical Nurses, Harlan Area Vocational School

LOUISIANA

Abbeville 70501
Practical Nursing Program, Gulf Area Vocational-Technical School, P.O. Box 541

★Accredited by NAPNES.

Alexandria 71303
Practical Nursing Program, Alexandria Trade School, P.O. Box 5698
Baton Rouge 70805
Practical Nursing Program, Baton Rouge Vocational-Technical School, 3400 Winbourne Avenue
Baton Rouge 70802
Practical Nursing Program, Capitol Area Vocational School, 1500 South 13th Street
Bogalusa 70427
Practical Nursing Program, Sullivan Memorial Trade School
Crowley 70526
Practical Nursing Program, Southwest Louisiana Vocational-Technical School
Farmerville 71241
Practical Nursing Program, North Central Area Vocational-Technical School
Hammond 70401
Practical Nursing Program, Hammond Area Vocational School, P.O. Box 489
Houma 70361
Practical Nursing Program, South Louisiana Trade School, P.O. Box 1330
Lake Charles 70601
Practical Nursing Program, Sowela Technical Institute, 501 Broad Street
Many 71449
Practical Nursing Program, Sabine Valley Vocational-Technical School, P.O. Box 721
Metairie 70121
Practical Nursing Program, Jefferson Parish Vocational-Technical School, 925 Labarre Road
Monroe 71203
Practical Nursing Program, Delta Area Trade School, P.O. Box 1321
Morgan City 70380
Practical Nursing Program, Young Memorial Vocational-Technical School
Natchitoches 71457
Practical Nursing Program, Central Area Trade School, 415 Lee Street
New Iberia 70561
Practical Nursing Program, Teche Area Vocational-Technical School, P.O. Box 230
New Orleans 70125
Practical Nursing Program, Booker T. Washington High School, 4211 South Miro Street
New Orleans 70125
Practical Nursing Program, L. E. Rabouin Vocational High School, 4211 South Miro Street
Opelousas 70570
Practical Nursing Program, T. H. Harris Vocational-Technical School, 358 East Laurent Street
Plaquemine 70764
Practical Nursing Program, Tri-Parish Area Trade School, 1201 Bayou Road
Shreveport 71107
Practical Nursing Program, Shreveport-Bossier Vocational-Technical School, 2010 N. Market Street
West Monroe 71291
Practical Nursing Program, Ouachita Valley Vocational-Technical School, P.O. Box 546

MAINE

Bangor 04401
St. Joseph Hospital School of Practical Nursing, 297 Center Street
Portland 04102
Maine School of Practical Nursing, 22 Bramhall Street
Presque Isle 04769
Maine School of Practical Nursing, Northern Maine Vocational & Technical Institute
Waterville 04101
Maine School of Practical Nursing, Highwood Street

MARYLAND

Annapolis 21400
Anne Arundel General Hospital School of Practical Nursing
Baltimore 21224
Baltimore City Hospitals School of Practical Nursing

Baltimore 21218
Baltimore City Public School, Department of Practical Nursing, 3 East 25th Street
Adult Education Students
High School Students

Baltimore 21201
Division of Practical Nursing, School of Nursing, University of Maryland

Baltimore 21230
South Baltimore General Hospital School of Practical Nursing

Baltimore 21218
Johnston School of Practical Nursing, Union Memorial Hospital

Bethesda 20014
Suburban Hospital School of Practical Nursing

Cambridge 21613
Eastern Shore State Hospital School of Practical Nursing

Cambridge 21613
Cambridge-Maryland Hospital, Inc., Program of Practical Nursing

Centerville 21617
Queen Anne's County High School Program of Practical Nursing

Cheverly 20785
Prince George's General Hospital School of Practical Nursing

Cumberland 21502
Sacred Heart Hospital Program of Practical Nursing

Frederick 21701
Frederick County Vocational Program of Practical Nursing

Hagerstown 21740
Washington County Voc-Tech. Center Program of Practical Nursing

Havre De Grace 21078
Harford Memorial Hospital Program of Practical Nursing

Salisbury 21801
Wicomico County Vocational-Technical Center, Practical Nursing Program

Sykesville 21784
Springfield State Hospital School of Practical Nursing

Takoma Park 20012
Washington Sanitarium & Hospital, Program of Practical Nursing

MASSACHUSETTS

Beverly 01915
School of Practical Nursing, Beverly Hospital, Heather and Herrick Streets

Boston 02118
School of Practical Nursing, Department of Health and Hospitals, City of Boston, 818 Harrison Avenue

Boston 02115
Practical Nursing Program, Boston Trade High School for Girls, 56 The Fenway

Boston 02116
Shepard-Gill School of Practical Nursing, 222 Newberry Street

Cambridge 02138
School of Practical Nursing, Holy Ghost Hospital, 1575 Cambridge Street

Chelsea 02150
Soldiers' Home, School of Practical Nursing

Fall River 02720
Diman Vocational School, Practical Nursing Program, 575 Prospect Street

Fitchburg 01420
Burbank Hospital School of Practical Nursing, Nichols Road

Foxboro 02035
Practical Nursing Program, Mass. Dept. Mental Health School of Practical Nursing, Norfolk Div., Foxboro State Hospital, Chestnut Street

Gardner 01440
Gardner State Hospital School of Practical Nursing

Gloucester 01930
Addison Gilbert Hospital School for Practical Nurses, 298 Washington Street

Hathorne 01937
Essex Agricultural and Technical Institute, Practical Nursing Program
Haverhill 01830
Practical Nursing Program, Haverhill Trade High School, 18 Wingate Street
Holyoke 01040
Practical Nursing Program, Holyoke Trade High School, 325 Pine Street
Hyannis 02601
Cape Cod Hospital School of Practical Nursing, 27 Park Street
Jamaica Plain 02130
★Lemuel Shattuck Hospital School of Practical Nursing, 180 Morton Street
Lawrence 01841
Practical Nursing Program, Lawrence Vocational School, 60 Allen Street, Leonard School Building
Leominster 01453
Practical Nursing Program, Leominster Trade High School, 305 Whitney Street
Lowell 01852
Practical Nursing Program, Lowell Trade High School, 64 John Street
North Adams 01247
Practical Nursing Program, Charles H. McCann Regional Vocational High School, Hodges Crossroad
Northampton 01061
Practical Nursing Program, Mass. Dept. Mental Health School of Practical Nursing, Pioneer Valley Div.-Northampton State Hospital, Hospital Hill
Northampton 01061
Practical Nursing Program, Smith's Vocational High School, 80 Locust Street
Norwood 02062
Practical Nursing Program, Henry O. Peabody School for Girls, Peabody Road
Pittsfield 01201
Practical Nursing Program, Pittsfield Vocational High School, 300 East Street
Plymouth 02360
Plymouth Vocational School, Practical Nursing Program, Sandwich Street
Quincy 02169
Practical Nurse Program, Quincy Voc.-Tech. School, Coddington Street
Salem 01970
Northshore Babies and Children's School of Practical Nursing, 57 Highland Avenue
South Easton 02375
Practical Nursing Program, Southeastern Regional Voc.-Tech. High School, 250 Foundry Street
Springfield 01109
Practical Nursing Program, Springfield Technical Institute, 1300 State Street
Taunton 02780
Practical Nursing Program, Taunton Vocational High School, 25 North Pleasant Street
Tewksbury 01876
★Tewksbury Hospital School of Practical Nursing, East Street
Walpole 02081
Pondville Hospital School of Practical Nursing, P.O. Box 111
Waltham 02154
Waltham Trade High School, Practical Nurse Program, Hope Avenue
Westborough 01581
Westborough State Hospital School of Practical Nursing, Box 288
Westfield 01085
★Western Massachusetts Hospital School for Practical Nurses, E. Mountain Road
Winthrop 02152
Practica. Nursing Program, Winthrop Community Hospital, 25 Lincoln Street
Worcester 01608
Practical Nursing Program, David Hale Fanning Trade High School, 24 Chatham Street

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MICHIGAN

Alma 48801
Alma-Mt. Pleasant Practical Nursing Education Center, 300 South Warwick Avenue
Ann Arbor 48104
Practical Nurse Education Center, 401 North Division Street
Battle Creek 49016
Practical Nurse Education Center, Kellogg Community College, 450 North Avenue
Benton Harbor 49022
Practical Nurse Program, Lake Michigan College, 711 East Britain Avenue
Cadillac 49601
Mercy School of Practical Nursing, Oak and Hobart Streets
Coldwater 49036
South Central Michigan School of Practical Nursing, 65 East Washington Street
Detroit 48201
Practical Nursing Center, 453 Stimson
Detroit 48226
School of Practical Nursing (MDTA), Detroit Board of Education, 8741 John C. Lodge Expressway
Detroit 48235
Shapero School of Practical Nursing, 6801 West Outer Drive
Dowagiac 49047
Practical Nurse Program, Southwestern Michigan College, Cherry Grove Road
Escanaba 49829
Bay de Noc Community College School of Practical Nursing, South 12th Street
Essexville 48732
Bay City Practical Nurse Center, 564 West Hampton Road
Flint 48503
Practical Nurse Program, Flint Community Junior College, 1401 East Court Street
Grand Rapids 49503
Division of Practical Nursing, Grand Rapids Junior College, 143 Bostwick, N.E.
Grand Rapids 49508
Practical Nurse Program, Pine Rest Christian Hospital, 6850 Division Street South
Howell 48843
McPherson Health Center, School for Practical Nurse Education, 620 Byron Road
Jackson 49201
Practical Nurse Program, Jackson Community College, 512 Wildwood Avenue
Kalamazoo 49001
Practical Nursing Center, 727 Lane Boulevard
Lansing 48914
Division of Practical Nursing, Lansing Community College, 419 North Capitol
Livonia 48151
Practical Nursing Education, Schoolcraft College, 18600 Haggerty Road
Marquette 49855
Nursing Education Center, Northern Michigan University
Midland 48640
Midland Hospital, School of Practical Nursing, 4005 Orchard Drive
Mt. Clemens 48044
★School of Practical Nursing, St. Joseph Hospital, 20 Parkview Avenue
Muskegon 49443
Practical Nurse Program of Muskegon County Community College, Wood and Myrtle
Pontiac 48058
Oakland Community College Practical Nurse Program, 313 Hubbard Building
Port Huron 48061
Department of Practical Nursing, Port Huron Junior College, 323 Erie Street
Saginaw 48607
Saginaw Practical Nurse School, 420 South Warren

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Sault Ste. Marie 49783
The Unit Program of Practical Nursing Education,
Lake Superior State College, Sault Ste. Marie Branch
Sidney 48885
Practical Nurse Program, Montcalm Community College,
Traverse City 49684
Practical Nurse Center, Northwestern Michigan College,
200 College Drive
White Pigeon 49099
Division of Nursing Education, Glen Oaks
Community College

MINNESOTA

Alexandria 56308
Alexandria Program of Practical Nursing,
16th and Jefferson Streets
Anoka 55303
Anoka-Hennepin Practical Nursing Program,
Technical Education Center, P.O. Box 191
Austin 55913
Austin School of Practical Nursing,
203 Fourth Street, N.W.
Bemidji 56601
Practical Nursing Program, Bemidji Area
Vocational-Technical School
Brainerd 56401
Brainerd Practical Nursing Program,
St. Joseph's Hospital
Crookston 56716
Crookston School of Practical Nursing,
Bethesda Hospital
Crookston 56716
St. Francis Hospital School of Practical Nursing,
516 Walsh Street
Detroit Lakes 56501
Detroit Lakes Practical Nursing Program, Area
Vocational-Technical School
Duluth 55802
Duluth School of Practical Nursing, 2 East Second Street
Faribault 55021
Faribault School of Practical Nursing, Rice County
District No. 1 Hospital
Fergus Falls 56537
Fergus Falls Practical Nursing Program,
216 West Cavour Street
Grand Rapids 55744
Grand Rapids Practical Nursing Program,
Itasca State Junior College
Hastings 55033
Hastings Practical Nursing Program,
Ninth and Ramsey Streets
Litchfield 55355
Meeker County School of Practical Nursing,
Meeker County Hospital
Mankato 56001
St. Joseph's Hospital School of Practical Nursing,
325 Garden Boulevard
Minneapolis 55404
Minneapolis Vocational School of Practical Nursing,
914 South 8th Street
New Ulm 56073
New Ulm School of Practical Nursing,
7th Street South and Broadway
Red Wing 55066
Red Wing School of Practical Nursing,
1407 West Fourth Street
Rochester 55901
Rochester School of Practical Nursing,
St. Mary's Hospital, 1216 Second Street, S.W.
Rochester 55901
Practical Nursing Program, Rochester Area
Voc.-Tech. School, Coffman Building
St. Cloud 56301
St. Cloud Practical Nursing Program, Area Vocational-
Technical School, 1601 N. 9th Avenue
St. Paul 55103
Bethesda Lutheran Hospital School of Practical
Nursing, 570 Capitol Boulevard
St. Paul 55102
Miller Hospital-Vocational School of Practical
Nursing, 125 West College Avenue

Thief River Falls 56701
Thief River Falls School of Practical Nursing, Box 150
Virginia 55792
Virginia School of Practical Nursing
Willmar 56201
Willmar Practical Nursing Program, Area Vocational-Technical School
Winona 55987
Winona School of Practical Nursing, Community Memorial Hospital

MISSISSIPPI

Booneville 38829
Practical Nurse Program, Northeast Mississippi Junior College
Clarksdale 38614
Practical Nurse Program, Clarksdale Public Schools
Adult Education Students
High School Students
Cleveland 38732
Practical Nurse Program, Cleveland High School
Columbia 39429
Practical Nurse Program, Columbia City Schools
Ellisville 39437
Practical Nurse Program, Jones County Junior College
Goodman 39079
Practical Nurse Program, Holmes Junior College
Houston 38851
Practical Nurse Program, Houston Public Schools
Jackson 39201
Practical Nurse Program, Mississippi Baptist Hospital
Meridian 39301
Practical Nurse Program, Meridian Junior College
Oxford 38655
Practical Nurse Program, Oxford Public Schools
Perkinston 39573
Practical Nurse Program, Gulf Coast Junior College District
Poplarville 39470
Practical Nurse Program, Pearl River Junior College
Raymond 39154
Practical Nurse Program, Hinds Junior College
Tupelo 38801
Practical Nurse Program, Itawamba Junior College, Vocational and Technical Center
Wesson 39191
Practical Nurse Program, Copiah-Lincoln Junior College

MISSOURI

Bonne Terre 63628
Mineral Area College Program in Practical Nursing, 10 Lake Drive
Brookfield 64628
Brookfield R-III Area School of Practical Nursing, 216 Linn Street
Columbia 65201
Columbia Public School of Practical Nursing, Adult Education Program, University of Missouri Medical Ctr.
Hannibal 63401
Hannibal Public School of Practical Nursing, 1020 Broadway
Independence 64050
Jennie Lund School of Practical Nursing, 101 East 8th Street
Jefferson City 65101
Jefferson City Public School of Practical Nursing, Senior High School
Joplin 64801
Joplin Board of Education R-VIII School of Practical Nursing, 2020 Iowa
Kansas City 64106
Kansas City Board of Education Program of Practical Nursing, 1215 Truman Road
Kansas City 64108
St. Mary's Hospital School of Practical Nursing, 101 Memorial Drive
Kirksville 63501
Kirksville Public School of Practical Nursing, 401 East McPherson Street

Mexico 65265
Mexico Public School of Practical Nursing, Audrain Hospital
Nevada 64772
Nevada Public School of Practical Nursing, Moore Building
Poplar Bluff 63901
Poplar Bluff School District R-I Practical Nurse Program, North Main Street
Rolla 65401
Rolla School of Practical Nursing, Vocational Education Building
St. Joseph 64503
N. S. Hillyard Technical School, Practical Nurse Program, 100 South 9th Street
St. Louis 63110
Board of Education Practical Nurse Program, 5101 Northrup Avenue
St. Louis 63117
St. Mary's Hospital School of Practical Nursing, 6420 Clayton Road
Sikeston 63801
Sikeston Public Schools Practical Nurse Program, 1008 North Main
Springfield 65802
Springfield Board of Education Practical Nurse Program, 815 North Sherman
Trenton 64683
Trenton Public School of Practical Nursing, 101 East 8th Street

MONTANA

Billings 59102
Billings School of Practical Nursing, MDTA, 522 18th Street
Bozeman 59715
Bozeman School of Practical Nursing, Adult Education Programs, P.O. Box 148
Butte 59701
Butte School of Practical Nursing, MDTA, Public Schools, Vocational Programs
Great Falls 59401
Great Falls School of Practical Nursing, P.O. Box 2669
Havre 59501
Practical Nurse Program, Northern Montana College
Lewistown 59457
St. Joseph's School of Practical Nursing, P.O. Box 1043
Missoula 59801
Missoula School of Practical Nursing, Missoula Co. High School (Sentinel)

NEBRASKA

Alliance 69301
Alliance Vocational School of Practical Nursing, 416 West 11th Street, St. Joseph Hospital
Kearney 68847
Kearney Vocational School of Practical Nursing, Longfellow High School, 303 West 22nd Street
Lincoln 68504
Lincoln Public School of Practical Nursing, 630 North 48th Street
Omaha 68132
Omaha Public School of Practical Nursing, 4822 Dodge Street

NEVADA

Carson City 89701
Sierra Nevada School of Practical Nursing
Elko 89801
Elko School of Practical Nursing
Fallon 89406
Lahontan School of Practical Nursing, Churchill Public Hospital
Las Vegas 89102
Southern Nevada School of Practical Nursing, Southern Nevada Memorial Hospital, Charleston Boulevard
Las Vegas 89101
Sunrise School of Practical Nursing, Sunrise Hospital, P.O. Box 580

Reno 89503
St. Mary's Hospital School of Practical Nursing, 235 West 6th Street
Reno 89502
Washoe Western School of Practical Nursing, Washoe Medical Center, Mill and Kirman Streets
Yerington 89447
Lyon School of Practical Nursing, Lyon Health Center
Adult Education Students
High School Students

NEW HAMPSHIRE

Goffstown 03045
★School of Practical Nursing, Moore General Hospital, RFD #2
Hanover 03755
Hanover School of Practical Nursing, 11 Rope Ferry Road
Nashua 03060
School of Practical Nursing, St. Joseph's Hospital
Portsmouth 03801
New Hampshire Vocational Institute School of Practical Nursing

NEW JERSEY

Atlantic City 08401
Practical Nurse Program, Atlantic City H.S. Tech. Center, 41 North Illinois Avenue
Adult Education Students
High School Students
Bayonne 07002
Practical Nurse Program, Bayonne High School, 30th Street and Avenue A
Burlington 08016
Practical Nurse Program, Burlington County Voc. and Tech. Schools, Cadillac Road
Camden 08103
Practical Nurse Program, Camden High School, Baird Avenue and Park Boulevard
Cape May 08204
Practical Nurse Program, Cape May County Voc. Tech. Institute, Franklin Street
Flemington 08822
Practical Nursing Program, Hunterdon Central High School, Route 69
Jersey City 07306
Practical Nurse Program, Voc. Div., J.C. Bd. of Ed. P.S. No. 31, 3055 Kennedy Blvd.
Long Branch 07740
Practical Nurse Program, Monmouth County Vocational School, Westwood Avenue
Mays Landing 08330
Practical Nursing Program, Atlantic County Vocational School (MDTA), 14 West Main Street
Merchantville 08109
Practical Nurse Program, Camden County Voc. and Tech. H.S., 6008 Browning Road
Millville 08332
Practical Nurse Program, Millville Senior High School, Wade Boulevard
Montclair 07042
Practical Nurse Program, St. Vincent's Hospital, 45 Elm Street
Morristown 07960
Practical Nurse Program, Morristown High School, Early Street
Adult Education Students
High School Students
Newark 07107
Practical Nurse Program, Essex County Adult Technical, 300 North 13th Street
Newark 07104
Practical Nursing Program, Newark Skill Center (MDTA), Broadway and 4th Avenue
Newton 07860
Practical Nurse Program, Sussex County Voc. Tech., 18 Church Street

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★Accredited by NAPNES.

Paramus 07652
Practical Nurse Program, Bergen Pines County Hospital, Ridgewood Road
Paterson 07501
Practical Nurse Program, Passaic Co. Tech. and Voc. High School, Summer and Ellison Streets
Penns Grove 08069
Practical Nurse Program, Salem County Voc. Institute, Golfview
Princeton 08541
★School of Practical Nursing, Princeton Hospital, 253 Witherspoon Street
Raritan 08869
Practical Nurse Program, Somerset County Voc. Tech. School No. 2 Annex, Route 28
Rockaway 07866
Practical Nurse Program, Morris Hills High School, West Main Street
Adult Education Students
High School Students
Scotch Plains 07076
Practical Nurse Program, Union County Tech. Institute, 433 Park Avenue
Summit 07901
★School of Practical Nursing, Overlook Hospital, 193 Morris Avenue
Toms River 08753
Practical Nurse Program, Ocean County Voc. Tech. School, West Water Street
Trenton 08609
Practical Nurse Program, Voc. Tech. School, Central High School, Chambers Streets
Vineland 08360
Practical Nurse Program, Vineland High School, West Landis Avenue
Washington 07882
Practical Nurse Program, Warren County Voc. School and Tech. Institute, 151 West Washington Avenue
Woodbridge 07095
Practical Nurse Program, Middlesex County Voc. and Tech. High, Convery Boulevard and Florida Grove Road
Adult Education Students
High School Students

NEW MEXICO

Albuquerque 87106
School of Practical Nursing, Presbyterian Hospital
Albuquerque 87107
★Indian School of Practical Nursing (admits Indian girls only), 1015 Indian School Road, N.W.
Hobbs 88240
Practical Nursing Program, New Mexico Junior College, P.O. Box 2279
Las Cruces 88001
Las Cruces School of Practical Nursing, Juniper at Solano
Roswell 88240
Roswell Campus Program in Practical Nursing, Eastern New Mexico University, P.O. Box 6761
Santa Fe 87501
★School of Practical Nursing, St. Vincent's Hospital, 210 East Palace Avenue

NEW YORK

Designation of schools for "Adults" indicated by "(A)" and those of Secondary education by "(S)." BOCES is for Board of Cooperative Education and Services.

Albany 12208
Albany School of PN (A), 470 Myrtle Avenue
Auburn 13021
Cayuga County Program of Practical Nursing, 2 Exchange Place
Batavia 14020
Catherine McAuley School of Practical Nursing (A), 211 E. Main Street
Binghamton 13901
Binghamton School of Practical Nursing (A), 164 Hawley Street

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★Accredited by NAPNES.

Bronx 10458
Dodge School of Practical Nursing (S),
189th Street and Crotona Avenue
Bronx 10456
Jane Addams Vocational High School Practical Nurse
Program (S), 900 Tinton Avenue
Bronx 10456
Morris High School, Practical Nursing Program,
166th St. and Boston Road
Brooklyn 11217
Brooklyn YWCA School of Practical Nursing,
30 Third Avenue
Brooklyn 11226
Caledonian Hospital School of Practical Nursing (A),
132 Parkside Avenue
Brooklyn 11225
Clara Barton High School Practical Nursing Program (S),
901 Classon Avenue
Brooklyn 11237
Wyckoff Heights Hospital School of Practical Nursing
(A), 374 Stockholm Street
Buffalo 14224
BOCES 1st Supervisory Dist. Erie County Practical
Nursing Program (A), 705 Potter Road
Buffalo 14224
Practical Nursing Program, BOCES 1st Supervisory
District, Erie County (S), 705 Potter Road
Buffalo 14209
Edna G. Dyett School of Practical Nursing (A),
Millard Fillmore Hospital, 3 Gates Circle
Buffalo 14204
Practical Nursing Program, Fosdick-Masten Vocational
High School (S), North Street and Masten Avenue
Adult Education Students
High School Students
Cambridge 12816
★Mary McClellan Hospital School of Practical Nursing (A)
Canisteo 14823
Steuben County BOCES Practical Nurse Program,
9 Steuben Street
Carmel 10512
Putnam County BOCES, School of Practical Nursing
Chatham 12037
Columbia County BOCES Practical Nurse Program
Geneva 14456
Geneva School of Practical Nursing (A),
196-198 North Street
Geneva 14456
Finger Lakes Occupational School, Practical Nursing
Program, 248 Exchange Street
Glen Cove 11542
Practical Nursing Program, Community Hospital at
Glen Cove (A), St. Andrew's Lane
Herkimer 13350
Herkimer County BOCES, Practical Nursing Program,
401 East German Street
Huntington 11743
Huntington School of Practical Nursing (A), Huntington
High School, McKay and Oakwood Roads
Huntington 11743
Huntington School of Practical Nursing (S), Huntington
High School, McKay and Oakwood Roads
Ithaca 14850
Tompkins-Seneca County, BOCES School of
Practical Nursing, Tompkins County Hospital,
Trumansburg Road
Jamestown 14701
Jamestown School of Practical Nursing (A), Jefferson
Jr. High School, Camp and May Streets
Kingston 12401
Ulster County BOCES School of Practical Nursing,
29 Grand Street
Liberty 12754
Sullivan County Program of Practical Nursing,
100 Lake Street
Lindenhurst 11757
Western Suffolk School of Practical Nursing (S),
301 W. Hoffman Avenue
Long Island City 11101
Queens Vocational School of Practical Nursing (S),
3702 47th Avenue

★Accredited by NAPNES.

Lowville 13367
Lewis County Area Practical Nurse Program,
c/o Lewis County General Hospital
Massena 13662
Massena School of Practical Nursing,
Memorial Hospital
Millbrook 12545
Dutchess County BOCES Practical Nurse Program,
Thorne Memorial Bldg.
Morrisville 13408
Practical Nursing Program, State University Agricultural
and Technical Institute (A)
Newburgh 12550
Practical Nursing Program, Newburgh Free Academy (S)
New York City 10017
Central School for Practical Nurses (A), Central Nurses
Residence, Welfare Island
New York City 10035
★Helene Fuld School of Practical Nursing (A),
1919 Madison Avenue
New York City 10021
★Hospital for Special Surgery, School of Practical
Nursing (A), 535 East 70th Street
New York City 10021
Julia Richman High School for Practical Nursing (S),
317 East 67th Street
New York City 10003
Practical Nursing Program, Washington Irving High
School (S), 40 Irving Place
New York City 10028
Practical Nursing Program, Yorkville Vocational
High School (S), 421 East 88th Street
Niagara Falls 14301
Practical Nursing Program, Trott Vocational High
School (S), 11th Street and Ashland Avenue
Niagara Falls 14301
Practical Nursing Program, Trott Vocational High
School (A), 11th Street and Ashland Avenue
North Tarrytown 10591
Phelps Memorial Hospital School of Practical Nursing (A)
North Tonawanda 14120
Practical Nursing Program, No. Tonawanda
High School (S), 405 Meadow Drive
Olean 14760
St. Francis Hospital School of Practical Nursing (A),
2221 W. State Street
Oneonta 13820
Practical Nurse School of Oneonta (A), 1 Norton Avenue
Patchogue 11772
Mid-Suffolk School for Practical Nursing,
201 Sunrise Highway
Plattsburgh 12901
Clinton County BOCES School of Practical Nursing (S),
104 Boynton Avenue
Riverhead 11901
Riverhead Area Occupational Education Center
Practical Nurse Program, 201 Howell Avenue
Riverhead 11901
Eastern Suffolk School of Practical Nursing,
205 Osborne Avenue
Rochester 14608
Isabella Graham Hart School of Practical Nursing (A),
Rochester General Hospital, 521 W. Main Street
Rochester 14614
Rochester School of Practical Nursing (A),
359 East Main Street
Rochester 14614
Practical Nurse Program, Rochester
High School, 359 East Main Street
Schenectady 12303
Program in Practical Nurse Education, Schenectady
Cooperative (S), Linton High School
School (A)
Schenectady 12303
Rensselaer County Area Occupational School
Practical Nurse Program, 3434 Carman Road
Selden 11784
Practical Nurse Program (S), Newfield Central
High School, Marshall Drive

★Accredited by NAPNES.

Staten Island 10301
Program in Practical Nursing, Curtis High School (S), Hamilton Avenue
Staten Island 10314
School for Practical Nursing at Willowbrook State School (A)
Syracuse 13203
School of Practical Nursing, Central Technical High School (A), 717 So. Warren Street
Syracuse 13203
School of Practical Nursing, Central Technical High School (S), 717 So. Warren Street
Utica 13503
Utica School for Practical Nurses (A), Wetmore School, 405 Wetmore Street
Valhalla 10595
Grasslands School of Practical Nursing (A), Grasslands Hospital
Verona 13478
West Oneida and Madison County BOCES High School Practical Nurse Program, John D. George, Sr. Elementary School, Main Street
Watertown 13601
Jefferson County Area School of Practical Nursing (S), Case Junior High School
Westbury 11590
Practical Nurse Program, East Meadow Tresper Clarke High School (S), Edgewood Drive
West Nyack 10994
Rockland County Practical Nurse School, BOCES (S), 61 Parrott Road
Williamson 14589
Program of Practical Nursing, BOCES 2nd Supervisory District Wayne County (S), 539 E. Ridge Road
Wilton 14172
Saratoga Area School of Practical Nursing
Yonkers 10701
St. Joseph's Hospital School of Practical Nursing (A), 127 So. Broadway
Yorktown Heights 10598
Northern Westchester BOCES Practical Nurse Program (S), 845 Fox Meadow Road
Yorkville 13495
Utica BOCES Practical Nurse Program, Box 43

PRACTICAL NURSING PROGRAMS MANPOWER DEVELOPMENT AND TRAINING ACT

Albany 12207
Albany Board of Education School of Practical Nursing, 45 Columbia Street
Amsterdam 12010
Amsterdam School of Practical Nursing, 43 Division Street
Auburn 13021
Auburn School of Practical Nursing, West High School, West Genesee Street, P.O. Box 3
Brooklyn 11216
New York City Board of Education School of Practical Nursing, 475 Nostrand Avenue
Buffalo 14202
Buffalo School of Practical Nursing, Board of Education, City Hall
Buffalo 14225
BOCES, 1st Supervisory District, Erie County Practical Nursing, 99 Aero Drive
Chazy 12921
BOCES of Clinton County School of Practical Nursing, BOCES Educational Services Center
Dunkirk 14048
Dunkirk Public Schools Practical Nursing Program, Industrial High School, Lake Shore Drive
Glens Falls 12801
Glens Falls School of Practical Nursing, Glens Falls Hospital
Gloversville 12078
Gloversville School of Practical Nursing, 23 Prospect Avenue
Herkimer 13350
Herkimer School of Practical Nursing, Steuben School Shop Center, 401 E. Genesee Street
Hornell 14843
Hornell School of Practical Nursing, Washington Street High School, 10 Main Street

Hudson 12534
Hudson School of Practical Nursing, 4th Street Elementary School, 361 State Street
Lindenhurst 11747
Western Suffolk School of Practical Nursing, 301 W. Hoffman Avenue
Lowville 13367
Lewis County School of Practical Nursing, Lewis County General Hospital
Malone 12953
Malone School of Practical Nursing, Park Street School
Middletown 10940
Middletown School of Practical Nursing, 159 Prospect Avenue
Mineola 11501
Nassau County Vocational and Extension Board, School of Practical Nursing
Newburgh 12550
Newburgh School of Practical Nursing, Newburgh Free Academy, 98 Grand Street
North Tonawanda 14120
North Tonawanda School of Practical Nursing, 236 Grundy Street
Ogdensburg 13669
Ogdensburg School of Practical Nursing, George Hall Junior High School, State Street
Oswego 13126
Oswego School of Practical Nursing, 184 Conway Terrace
Poughkeepsie 12603
Poughkeepsie School of Practical Nursing, Board of Education, 11 College Avenue
Rochester 14614
Rochester School of Practical Nursing, MDT Program, 242 Main Street, West
Rochester 14614
Rochester School of Practical Nursing, MDT Youth, 242 Main Street, West
Rome 13440
Rome School of Practical Nursing, Board of Education, 108 E. Garden Street
Syracuse 13210
Syracuse School of Practical Nursing #1 (MDT), 917 Madison Street
Syracuse 13210
Syracuse School of Practical Nursing, #2, 917 Madison Street
Utica 13502
Utica MDT School for Practical Nursing, 1231 Hart Street
Watertown 13601
Watertown School of Practical Nursing (MDT), 1335 Washington Avenue
Westbury 11590
Vocational Education and Extension Board (Nassau County) School of Practical Nursing, 113 Rushmore Street
West Nyack 10994
Rockland County Practical Nursing School (BOCES), 61 Parrott Road
White Plains 10606
White Plains School of Practical Nursing, Rochambeau School
Yonkers 10706
Yonkers Board of Education Practical Nurse Program, 138 South Broadway
Yorktown Heights 10598
Northern Westchester BOCES Practical Nurse Program, Adult, 845 Fox Meadow Road

NORTH CAROLINA

Asheboro 27203
Randolph Technical Institute, Program of Practical Nurse Education
Asheville 28801
Asheville-Buncombe Technical Institute, Program of Practical Nurse Education, 428 Biltmore Avenue
Burlington 27215
Technical Institute of Alamance, Program of Practical Nurse Education, 411 Camp Road
Charlotte 28204
Central Piedmont Community College, Program of Practical Nurse Education

Clinton 28328
Sampson County Program of Practical Nurse Education, 303 B East Rowan Street
Clyde 28721
Haywood County Unit, Asheville-Buncombe Technical Institute, Program of Practical Nursing
Durham 27703
Durtham Technical Institute, Program of Practical Nurse Education, 11307 East Durham Station
Durham 27701
★Watts Hospital, Practical Nursing Program, Broad Street and Club Boulevard
Elizabeth City 27909
College of the Albemarle, Program of Practical Nurse Education
Fayetteville 28303
Fayetteville Technical Institute, Program of Practical Nurse Education, P. O. Box 5236
Fort Bragg 28307
Womack Army Hospital, Program of Practical Nurse Education (for Army personnel only)
Gastonia 28053
Gaston Memorial Hospital, School of Practical Nursing
Goldsboro 27530
Wayne Technical Institute, Program of Practical Nurse Education
Adult Education Students
High School Students
Greensboro 27282
Guilford Technical Institute, Program of Practical Nurse Education
Hickory 28601
Catawba Valley Tech-Institute, Practical Nurse Education Program
Jacksonville 28540
Onslow Technical Institute, Program of Practical Nurse Education
Kenansville 28349
James Sprunt Institute, Program of Practical Nurse Education
Laurinburg 28352
Laurinburg-Richmond Technical Institute, Program of Practical Nurse Education
Lenoir 28645
Banner Elk-Caldwell Technical Institute, Program of Practical Nurse Education
Lenoir 28645
Lenoir Program of Practical Nurse Education, Caldwell Technical Institute
Morehead City 28577
Carteret County Unit-Wayne Technical Institute, Program of Practical Nurse Education
New Bern 28501
New Bern-Lenoir County Community College, Program of Practical Nurse Education
Raleigh 27603
W. W. Holding Technical Institute, Program of Practical Nurse Education, Route 3, Box 127
Roanoke Rapids 27870
Roanoke Rapids-Pitt Technical Institute, Program of Practical Nurse Education
Roxboro 27573
Roxboro-Durham Technical Institute Program of Practical Nurse Education
St. Pauls 28384
Robeson County Program of Practical Nurse Education, P.O. Box 96
Salisbury 28144
Rowan Technical Institute, Program of Practical Nurse Education
Sanford 27330
Central Carolina Technical Institute, Program of Practical Nurse Education
Shelby 28150
Shelby Program of Practical Nurse Education, Unit of Cleveland County, Gaston College
Sylva 28779
Jackson County Industrial Education Center Program of Practical Nurse Education

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★Accredited by NAPNES.

Washington 27889
Washington-Pitt Technical Institute, Program of Practical Nurse Education, c/o Beaufort County Hospital
Whiteville 28472
Southeastern Community College, Program of Practical Nurse Education, Columbus County Hospital
Wilkesboro 28697
Wilkes Community College, Program of Practical Nurse Education
Wilmington 28401
Cape Fear Technical Institute, Program of Practical Nurse Education
Wilson 27895
Wilson Technical Institute, Program of Practical Nurse Education, 902 Herring Avenue
Winston-Salem 27103
Forsyth Technical Institute, Program of Practical Nurse Education

NORTH DAKOTA

Devils Lake 58301
Practical Nurse Program, Lake Region Junior College
Dickinson 58601
★School of Practical Nursing, St. Joseph's Hospital Seventh Street, West
Wahpeton 58075
Practical Nurse Program, N.D. State School of Science

OHIO

Akron 44314
★Akron School of Practical Nursing, Margaret Park School, 1413 Manchester Road
Bellaire 43903
The Bellaire School of Practical Nursing, 4570 Harrison Street
Bowling Green 43402
Bowling Green Area School of Practical Nursing, 140 South Grove Street
Canton 44704
★Timken Mercy Hospital School of Practical Nursing, 2015 Twelfth Street, N.W.
Canton 44710
Practical Nurse Program of Canton City Schools, 2600 Sixth St., S.W.
Cincinnati 45223
Claude V. Courter Technical High School, School of Practical Nursing, 3520 Central Parkway
Cincinnati 45238
St. Francis Central School of Practical Nursing, 1860 Queen City Avenue
Cleveland 44114
Central School of Practical Nursing, Inc., 3300 Chester Avenue
Cleveland 44103
★Jane Addams School of Practical Nursing, 4940 Carnegie Avenue
Columbus 43212
School of Practical Nursing, Columbus Public Schools, 1485 West Fifth Avenue
Coshocton 43812
Tri-County School of Practical Nursing, 301½ Main Street
Cuyahoga Falls 44221
School of Practical Nursing, Cuyahoga Falls High School, 2737 Front Street
Dayton 45409
★Dayton School of Practical Nursing, 301 Lowes Street
Elyria 44035
Practical Nurse School of Elyria, Sixth and Middle Avenue
Euclid 44119
Euclid School of Practical Nursing, 551 East 200th Street
Garfield Heights 44125
Marymount School of Practical Nursing, 12300 McCracken Road
Hamilton 45013
Hamilton Program of Practical Nurse Education, 1008 Cereal Avenue

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★Accredited by NAPNES.

Lakewood 44107
Lakewood School of Practical Nursing,
1456 Warren Road
Lima 45801
Lima School of Practical Nursing,
600 South Pierce Street
Lorain 44052
★St. Joseph Hospital School of Practical Nursing,
205 West 20th Street
Mansfield 44907
Mid-Ohio Practical Nurse Program, 205 West Cook Road
Marietta 45750
Marietta Area Technical School Program of
Practical Nursing, Ft. Square
Marion 43302
Marion General Hospital School of Practical Nursing,
McKinley Park Drive
Parma 44129
Parma School of Practical Nursing, 6726 Ridge Road
Portsmouth 45662
Practical Nurse Program of Portsmouth City Schools,
1241 Eighteenth Street
Salem 44460
Hannah E. Mullins School of Practical Nursing,
1926 East S[illegible] Street
Sandusky 44870
Sandusky School of Practical Nursing, 404 Wayne Street
Springfield 45505
Springfield and Clark County Joint Vocational School
District School of Practical Nursing, 1901 Selma Road
Toledo 43611
Northwestern Ohio Practical Nurse Training Center,
Chase and Chicago Streets
Warren 44485
Warren City Schools, School of Practical Nursing,
200 Loveless, S.W.
Willoughby 44094
Willoughby-Eastlake School of Practical Nursing,
37047 Ridge Road
Adult Education Students
High School Students
Wooster 44691
Wayne Practical Nurse Program,
116 West Larwill Street
Youngstown 44503
★Choffin School of Practical Nursing, Choffin Vocational
Center, East Wood and Walnut Streets
Zanesville 43701
Muskingum Area Vocational School Practical Nurse
Program, 300 Bethesda Street

OKLAHOMA

Ada 74820
Ada Vocational School of Practical Nursing,
Valley View Hospital
Ardmore 73401
Southern Oklahoma Area Vocational Technical Center,
Division of Practical Nursing, Ardmore Public Schools
Bartlesville 74003
Bartlesville Vocational School of Practical Nursnig, Jane
Phillips Episcopal Hospital, 3500 East Frank Philips Blvd.
Blackwell 74631
Blackwell General Hospital School of Practical Nursing,
13th and West Ferguson
Lawton 73501
Lawton Vocational School of Practical Nursing,
Memorial Hospital, P.O. Box 148
McAlester 74501
McAlester Vocational School of Practical Nursing,
P.O. Box 849
Miami 74354
Vocational School of Practical Nursing, Northeastern
Oklahoma A & M College
Midwest City 73110
Midwest City Vocational School of Practical Nursing,
Midwest City Public Schools, 213 Elm Drive
Muskogee 74401
Muskogee Vocational School of Practical Nursing,
Muskogee General Hospital, 300 Rockefeller Drive

★Accredited by NAPNES.

Norman 73069
Norman Vocational School of Practical Nursing, 915 North Porter
Oklahoma City 73106
Oklahoma City Vocational School of Practical Nursing, 820 West California
Shawnee 74801
Shawnee Vocational School of Practical Nursing, Mission Hill Memorial Hospital, Highway 18 South
Tulsa 74114
Tulsa Vocational School of Practical Nursing, P.O. Box 4715
Woodward 73801
Woodward Vocational School of Practical Nursing, Woodward Memorial Hospital, 1014 17th, P.O. Box 448
Stillwater 74074
Oklahoma State Board for Vocational Education, 1515 West Sixth Avenue

OREGON

Bend 97701
Central Oregon Community College, Practical Nursing Program, 230 East Sixth Street
Coos Bay 97421
Southwestern Oregon College, School of Practical Nursing
Eugene 97401
Lane Community College, School of Practical Nursing, 200 North Monroe
Forest Grove 97116
Forest Grove Practical Nurse School, Union High School, West Pacific Avenue
Gresham 97030
Mt. Hood Community College, Practical Nurse Program, P.O. Box 585
Medford 97501
Southern Oregon School of Practical Nursing, 500 Monroe
Ontario 97914
Treasure Valley Community College, Department of Practical Nursing, 650 College Boulevard
Pendleton 97801
Blue Mt. Community College, School of Practical Nursing, P.O. Box 100
Portland 97201
Portland Community College, Division of Practical Nursing, 049 S.W. Porter Street
Portland 97215
Portland Sanitarium & Hospital Practical Nurse School, 932 S.E. 60th Avenue
Roseburg 97470
Umpqua Community College, Practical Nurse Program, P.O. Box 967
Salem 97421
Salem Technical-Vocational Community College, Practical Nurse Program, 4389 Satter Drive N.E.

PENNSYLVANIA

Allentown 18104
Practical Nursing Program, Lehigh Community College
Altoona 16602
Practical Nursing Program, Altoona City School District, 1415 Seventh Avenue
Bellefonte 16823
Practical Nursing Program, Centre County Area Vocational-Technical School, Bush Arcade Building, West High Street
Bethlehem 18015
Practical Nursing Program, Bethlehem Area Vocational-Technical School, Broughal Junior High School, Broughal and Parker Streets
Bradford 16701
Practical Nursing Program, Bradford Area High School, Interstate Parkway
Carlisle 17013
Carlisle Hospital School of Practical Nursing, 246 Parker Street
Chambersburg 17201
Practical Nursing Program, Chambersburg Area School District, 140 South Fourth Street

Chester 19013
Practical Nursing Program, Chester School District, 911 Barclay Street
Coatesville 19320
★Practical Nursing Program, Center Chester County Technical School, 1635 Lincoln Highway
Danville 17821
Practical Nursing Program, Danville Area School District
Darby 19023
Camillus Catholic School of Practical Nursing, 14th Street and Lansdowne Avenue
DuBois 15801
Practical Nursing Program, DuBois Area School District
Easton 18042
Practical Nursing Program, Eastern Northampton County Area Vocational-Technical School, 811 Northampton Road
Elkins Park 19012
Rolling Hill Hospital School of Practical Nursing, 60 East Township Lane
Erie 16508
Practical Nursing Program, School District of the City of Erie, 3325 Cherry Street
Fairless Hills 19030
Practical Nursing Program, Bucks County Technical School, Wister Road
Freedom 15042
Practical Nursing Program, Beaver County Community College
Greensburg 15601
Practical Nursing Program, Greensburg-Salem School District, 534 East Pittsburgh
Hanover 17331
Practical Nursing Program, Hanover Borough School District, 190 East Walnut Street
Harrisburg 17110
Practical Nursing Program, Harrisburg-Steelton-Highspire Technical School, 3001 North Second Street
Hopwood 15445
Practical Nursing Program, Fayette County Area Technical School, Paul Street
Jim Thorpe 18229
Practical Nursing Program, Carbon County Area Vocational-Technical School
Johnstown 15905
Practical Nursing Program, Greater Johnstown School District, c/o Osborne School Building, 51 Akers Street
Lancaster 17603
Practical Nursing Program, School District of Lancaster, 225 West Orange Street
Lansdale 19446
Practical Nursing Program, North Montco Area Vocational-Technical School
Lebanon 17042
Practical Nursing Program, Lebanon School District, Borrowes Building, 420 Willow Street
New Castle 16101
Practical Nursing Program, Lawrence County Area Vocational-Technical School
New Kensington 15068
Practical Nursing Program, New Kensington School District
Norristown 19401
Sacred Heart Hospital School of Practical Nursing, 1430 DeKalb Street
Oil City 16301
Practical Nursing Program, Oil City Area School District
Perkasie 18944
Practical Nursing Program, Upper Bucks County Area Vocational-Technical School, Star Route
Philadelphia 19104
Presbyterian-University of Pennsylvalnia Medical Center School of Practical Nursing, 51 North 39th Street
Philadelphia 19107
Jefferson Medical College School of Practical Nursing, 11th and Walnut Streets
Philadelphia 19125
St. Mary's Franciscan Hospital School of Practical Nursing, Frankford Avenue and Palmer Street

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★Accredited by NAPNES.

Philadelphia 19134
Practical Nursing Program, School District of Philadelphia, Richmond and Ontario Streets
Philadelphia 19143
Misericordia Hospital School of Practical Nursing, 54th and Cedar Avenue
Philadelphia 19151
Lankenau Hospital School of Practical Nursing, Lancaster Ave. W. of City Line
Pittsburgh 15201
Alvernia-St. Francis General Hospital School of Practical Nursing, 45th Street and Penn Avenue
Pittsburgh 15212
Practical Nursing Programs, Pittsburgh Public Schools, A. G. H. Nurses Residence, 170 Hemlock Street
Pittsburgh 15219
Catherine McAuley School of Practical Nursing, 140 Locust Street
Pittsburgh 15237
North Hills Passavant Hospital School of Practical Nursing, 9100 Babcock Boulevard
Pottsville 17901
Practical Nursing Program, Schuylkill County Area Vocational-Technical School
Reading 19602
Practical Nursing Program, Reading School District, Southern Junior High School, Tenth and Chestnut Streets
Adult Education Students
High School Students
Scranton 18501
Practical Nursing Program, Scranton School District
Scranton 18505
★Mercedian School of Practical Nursing, Mercy Heights Hospital, 512 Stafford Avenue
Somerset 15501
Practical Nursing Program, Somerset Area Schools
Torrance 15779
Practical Nursing Program, Torrance State Hospital School of Practical Nursing
Wilkes-Barre 18702
Practical Nursing Program, Wilkes-Barre City Schools, Mackin School, Hillard Street
Williamsport 17701
Practical Nursing Program, Williamsport Area Community College, Campbell and Edwin Streets
Willow Grove 19090
Practical Nursing Program, Eastern Montgomery County Area Vocational-Technical School, 175 Terwood Road
York 17404
Practical Nursing Program, York County Area Vocational-Technical School, North Pershing Avenue at Jefferson Avenue
Adult Education Students
High School Students

RHODE ISLAND

North Providence 02904
Our Lady of Fatima Hospital School of Practical Nursing, 200 High Service Avenue
Providence 02909
Rhode Island School of Practical Nursing, Providence Branch, 370 Hartford Avenue
Warwick 02886
Rhode Island School of Practical Nursing, Long Street

SOUTH CAROLINA

Aiken 29801
Aiken County School of Practical Nursing
Anderson 29621
Anderson School of Practical Nursing
Bennettsville 29512
Bennettsville Area School of Practical Nursing
Camden 29020
Kershaw County Hospital School of Practical Nursing
Charleston 29401
Roper Hospital School of Practical Nursing, 300 Calhoun Street
Charleston 29401
Medical College of South Carolina Practical Nurse Program, 80 Barre Street

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Columbia 29204
Columbia Schools, Practical Nursing Program,
2020 Hampton Street, Columbia Hospital Division
Columbia 29201
South Carolina Baptist Hospital School of
Practical Nursing
Conway 29526
Conway School of Practical Nursing
Florence 29501
Florence Program of Practical Nursnig, c/o McClenaghan
High School, 504 South Dargan Street
Adult Education Students
High School Students
Florence 29501
Saunders Memorial Hospital School of Practical
Nursing, 513 South Dargan Street
Georgetown 29440
Georgetown City Schools, Practical Nurse Program
Greenville 29601
Greenville County School of Practical Nursing,
205 Anderson Street
Hartsville 29550
Hartsville Area School of Practical Nursing
Lancaster 29720
Lancaster School of Practical Nursing
Spartanburg 29301
Spartanburg County School of Practical Nursing,
Spartanburg General Hospital
Walhalla 29691
Oconee County School District, Practical Nursing
Program, P.O. Box 217
Walterboro 29488
Walterboro School of Practical Nursing, P.O. Box 413

SOUTH DAKOTA

Mitchell 57301
Mitchell School of Practical Nursing,
1100 East 5th Avenue
Pierre 57501
★Pierre School of Practical Nursing, 803 East Dakota
Sioux Falls 57104
★Sioux Falls School of Practical Nursing,
921 South Summit Avenue

TENNESSEE

Chattanooga 37402
Practical Nursing Program, Chattanooga City Schools,
Department of Vocational Education, Clara Carpenter
Center for Continuing Education, 400 Chestnut Street
Greeneville 37743
Takoma Hospital School of Practical Nursing
Johnson City 37601
Johnson City Vocational School, Program of Practical
Nursing, Memorial Hospital, Boone Street and
Fairview Avenue
Kingsport 37662
Practical Nursing Program, Kingsport City Schools,
Department of Vocational Education, Holston Valley
Community Hospital, West Ravine Street
Knoxville 37917
Practical Nursing Program, Knoxville City Schools,
Department of Vocational Education, 528 Lamar Street
Memphis 38112
Practical Nursing Program, Memphis City Schools,
Department of Vocational Education, 2597 Avery Avenue
Nashville 37203
Practical Nurse Training Program, Metropolitan
Nashville Schools, 205 Hume-Fogg Building,
700 Broadway
Nashville 37207
Riverside Sanitarium School of Practical Nursing,
800 Young's Lane
Nashville 37219
State Board of Vocational Education, Tennessee
Practical Nursing Program

★Accredited by NAPNES.

TEXAS

Abilene 79601
Hendrick Memorial Hospital, School of Vocational Nursing, 19th and Hickory Streets
Alpine 79831
Alpine Public Schools, School of Vocational Nursing, Box 180
Alvin 77511
Alvin Memorial Hospital, School of Vocational Nursing, Box 551
Amarillo 79105
Amarillo College, Vocational Nursing Program, Box 447
Andrews 79714
Permian General Hospital, School of Vocational Nursing, Box 2108
Anson 79501
Jones County School of Vocational Nursing, c/o Anson General Hospital, 100 First Street
Arlington 76010
Arlington Memorial Hospital, School of Vocational Nursing, 800 West Randol Mill Road
Athens 75751
Henderson County Junior College Vocational Nursing Program, c/o Henderson County Memorial Hospital, 405 Linsey Lane
Austin 78701
Brackenridge Hospital, School of Vocational Nursing, 15th and East Avenue
Austin 78751
Austin State Hospital School of Vocational Nursing, 4110 Guadalupe
Ballinger 76821
Ballinger Memorial Hospital, School of Vocational Nursing, Box 69
Baytown 77521
Lee College School of Vocational Nursing, Box 818
Beaumont 77704
Lamar School of Vocational Nursing, Lamar State College of Technology, Box 430
Beeville 78102
Bee County College, Vocational Nursing Program, P. O. Box 100
Big Spring 79721
Howard County Junior College, School of Vocational Nursing, Birdwell Lane
Big Spring 79720
Medical Arts Clinic-Hospital, School of Vocational Nursing, 710 Gregg Street
Bonham 75418
S. B. Allen Memorial Hospital School of Vocational Nursing
Borger 79006
North Plains Hospital, School of Vocational Nursing, 200 South McGee
Brady 76825
Brady Hospital, School of Vocational Nursing, 1304 South High Street
Brenham 77833
Blinn College, School of Vocational Nursing
Brownfield 79316
Brownfield General Hospital, School of Vocational Nursing, 213 South Sixth Street
Brownsville 78520
Texas Southmost College, Division of Vocational Nursing, P. O. Box 2139
Brownwood 76801
Brownwood School of Vocational Nursing, c/o Brownwood Memorial Hospital, 2400 Coggin Avenue
Bryan 77801
Bryan School of Vocational Nursing, c/o Travis Elementary School, Box 953
Burnet 78611
Shepperd Memorial Hospital, School of Vocational Nursing, Box 130
Cameron 76520
St. Edward's Hospital, School of Vocational Nursing, 908 North Crockett
Carthage 75633
Panola Junior College
Panola County School of Vocational Nursing
Cisco 76437
Cisco Junior College-Cisco Branch, School of Vocational Nursing

Clarendon 79226
Adair Hospital School of Vocational Nursing, P.O. Box 987
Cleburne 76031
Johnson County Memorial Hospital, School of Vocational Nursing, 1600 North Main Street
Cleveland 77327
Cleveland School of Vocational Nursing, P.O. Box 758
Clifton 76634
Goodall-Witcher Hospital Foundation, School of Vocational Nursing
Coleman 76834
Overall-Morris Memorial Hospital Foundation, School of Vocational Nursing, Elm and Pecos Streets
Corpus Christi 78404
★Del Mar Technical Institute Vocational Nursing School, Branch of Del Mar College, 4101 Old Brownsville Road
Corsicana 71110
Navarro Junior College, Vocational Nursing Program
Cotulla 78014
LaSalle School of Vocational Nursing, LaSalle Hospital and Clinic
Crockett 75835
Crockett Clinic and Hospital, School of Vocational Nursing, 208 South Fourth Street
Crowell 79227
Greenbelt School of Vocational Nursing, P.O. Box 86
Cuero 77954
Burns Hospital, School of Vocational Nursing, 1102 North Gonzales Street
Dallas 75204
Dallas Osteopathic Hospital, School of Vocational Nursing, 5003 Ross Avenue
Dallas 75201
Dallas Vocational Nursing Program, 2222 Ross Avenue
Dallas 75216
John Buist Chester Hospital School of Vocational Nursing, 3330 S. Lancaster
Dallas 75211
Paramedics Division, Vocational Nursing, El Centro Campus, Dallas County Junior College District
Denison 75021
Grayson County College, School of Vocational Nursing, P.O. Box 979
Denver City 79323
Yoakum County Hospital, School of Vocational Nursing, Drawer 1300
Dilley 78017
Winter Garden Medical Center, School of Vocational Nursing
Dimmitt 79027
Plains Memorial Hospital, School of Vocational Nursing, 310 West Halsell Street
Dublin 76446
Dublin Hospital, School of Vocational Nursing, 205 North Patrick
Dumas 79029
Memorial Hospital, School of Vocational Nursing, 224 East Second Street
El Paso 79905
El Paso School of Vocational Nursing, El Paso Technical High School, 2231 Arizona Avenue
Fort Sam Houston 78234
Clinical Specialist Course Headquarters, Brooke General Hospital, Brooke Army Medical Center
Fort Worth 76101
All Saints Episcopal Hospital, School of Vocational Nursing, 1400 East Enderly Place, Box 31
Fort Worth 76104
Fort Worth School of Vocational Nursing, Technical Institute, 1510 St. Louis Street
Fort Worth 76104
Harris Hospital, School of Vocational Nursing, 1423 Pruitt Street
Fort Worth 76104
St. Joseph's Hospital, School of Vocational Nursing, 1401 South Main Street
Gainesville 76240
Gainesville Memorial Hospital, School of Vocational Nursing, 1410 O'Neal Street

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Galveston 77550
Vocational Nursing Program, Galveston Community College, Room 210, Ashbel Smith Building
Ganado 77962
Mauritz Memorial Jackson County Hospital, School of Vocational Nursing, 206 Sutherland Street, Box 608
Gatesville 76528
Coryell Memorial Hospital, School of Vocational Nursing, 211 North Lutterloh
Georgetown 78626
Georgetown Medical and Surgical Clinic, School of Vocational Nursing, 605 East 12th Street
Goldthwaite 76844
Childress and Cruzcosa School of Vocational Nursing, 1219 Parker Street
Gonzales 78629
Holmes Memorial Hospital, School of Vocational Nursing, 1118 East St. Louis Street
Graham 76046
Cisco Junior College—Graham Branch, School of Vocational Nursing, P.O. Box 837
Grand Saline 75140
Cozby-Germany Hospital, School of Vocational Nursing, 707 N. Waldrip
Greenville 75401
Greenville School of Vocational Nursing, 4200 Stuart Street
Groesbeck 76642
Dr. Cox's Hospital, School of Vocational Nursing
Groom 79039
Dr. John V. London School of Vocational Nursing, P.O. Box 250
Hale Center 79041
Hi Plains Hospital, School of Vocational Nursing, Drawer H
Halletsville 77964
Renger Memorial Hospital, School of Vocational Nursing, 414 South Main Street
Hamilton 76531
Hamilton County General Hospital, School of Vocational Nursing, 400 North Brown Avenue
Harlingen 78551
Valley Baptist Hospital, School of Vocational Nursing, 2101 South Commerce Street, Box 271
Henderson 75652
Henderson Memorial Hospital, School of Vocational Nursing, 622 North High Stree
Hereford 79045
Deaf Smith County Hospital, School of Vocational Nursing, 801 East Third Street, Box 552
Hico 76457
Hico City Hospital, School of Vocational Nursing
Hillsboro 76645
Grant-Buie Medical Center, School of Vocational Nursing, 101 Circle Drive
Hillsboro 76645
Hillsboro Hospital, Inc., School of Vocational Nursing, 203 Ransome Street
Houston 77036
Bellaire General Hospital, School of Vocational Nursing, 5314 Dashwood Street
Houston 77025
★Hermann, Texas Medical Center, School of Vocational Nursing, 6411 Fannin
Houston 77004
Houston Vocational Nursing Program, 1300 Holman Avenue, Room 114
Huntsville 77340
Huntsville Memorial Hospital School of Vocational Nursing, Box 432
Jacksonville 75766
Nan Travis School of Vocational Nursing, 501 Ragsdale Street
Kenedy 78119
Kenedy Clinic and Hospital, School of Vocational Nursing, 330 West Liveoak Street
Kermit 79745
Kermit School of Vocational Nursing, c/o Winkler County Memorial Hospital, 821 Jeffee Drive

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Kerrville 78028
Sid Peterson Memorial Hospital, School of Vocational Nursing, 710 Water Street
Kingsville 78363
Kleberg County Hospital, School of Vocational Nursing
Klondike 75448
Area Health Services School of Vocational Nursing, Wintermute Memorial Hospital, Rt. 1, Box 37
LaMarque 77568
Galveston County Memorial Hospital, School of Vocational Nursing, Box 127
Lamesa 79331
Medical Arts Hospital, School of Vocational Nursing, 1600 North Bryan Avenue
Laredo 78041
Mercy Hospital, School of Vocational Nursing, 1515 Logan Street, Box 698
Levelland 79336
South Plains College, Vocational Nursing Program
Llano 78643
Llano Memorial Hospital, School of Vocational Nursing, Wright and Ollie Streets
Lockhart 78644
City of Lockhart Hospital School of Vocational Nursing, 901 Bois D'Arc Street
Lockney 79241
Lockney General Hospital, School of Vocational Nursing, 320 North Main Street
Longview 75603
Good Shepherd Hospital, Longview Public School of Vocational Nursing, c/o Good Shepherd Hospital, 621 North Fifth Street, Drawer 1552
Lubbock 79401
Lubbock School of Vocational Nursing, 1302 18th Street
Lufkin 75902
Memorial Hospital, School of Vocational Nursing, Box 1447
Marlin 76661
Marlin School of Vocational Nursing, c/o Torbett, Hutchings, Smith Memorial Hospital, 322 Coleman Street
Marshall 75670
Marshall School of Vocational Nursing, c/o Memorial Hospital, 203 University Avenue
McAllen 78501
McAllen Independent School District, School of Vocational Nursing, 110 South 10th
McKinney 75069
Collin Memorial Hospital, School of Vocational Nursing, 1500 Harroun Street, Box 370
McKinney 75069
McKinney Job Corps School of Vocational Nursing, P.O. Box 750
Memphis 79245
Hall County Hospital School of Vocational Nursing
Mexia 76667
General Mexia Hospital School of Vocational Nursing 600 South Bonham
Midland 79704
Midland Memorial Hospital, School of Vocational Nursing, 2200 West Illinois Avenue
Mission 78572
Mission Municipal Hospital, School of Vocational Nursing, 1205 Bryce Drive, Box 713
Mt. Pleasant 75455
Memorial Hospital, School of Vocational Nursing, New Talco Highway, Box 90
Muleshoe 79347
West Plains Hospital & Clinic, School of Vocational Nursing, 708 South First Street
Nacogdoches 75961
City Memorial Hospital, School of Vocational Nursing, 1204 Mound
New Braunfels 78131
New Braunfels School of Vocational Nursing, P.O. Box 1061
Odessa 79760
Odessa College, School of Vocational Nursing, Box 3752
Olney 76374
George B. Hamilton School of Vocational Nursing of the Olney Public School System, Box 158

Orange 77630
Orange Memorial Hospital, School of Vocational Nursing, 3244 MacArthur Drive, Box 37
Ozona 76943
Crockett County Hospital, School of Vocational Nursing, Avenue H and First Street
Palestine 75801
Palestine School of Vocational Nursing, c/o Anderson County Memorial Hospital, 900 South Sycamore Street, Box 1156
Pampa 79066
Highland General Hospital, School of Vocational Nursing, 1224 North Hobart, Box 2217
Paris 75460
St. Joseph's Hospital, School of Vocational Nursing, 820 Clarksville Street
Pasadena 77502
Pasadena School of Vocational Nursing, 302 South Shaver
Port Arthur 77642
Park Place Hospital, School of Vocational Nursing, 3050 39th Street
Port Lavaca 77979
Champ Traylor Memorial Hospital, School of Vocational Nursing, 810 North Ann Street
Richmond 77469
Polly Ryon Memorial Hospital, School of Vocational Nursing, 1701 Main Street
San Angelo 76901
San Angelo School of Vocational Nursing, 100 North Magdalen Street
San Antonio 78203
Department of Vocational Nursing, St. Phillip's College, 2111 Nevada Street
San Antonio 78205
San Antonio Vocational & Technical School of Nursing, 437 West Travis
San Antonio 78207
Santa Rosa Medical Center, School of Vocational Nursing, 745 West Houston Street
San Marcos 78666
Hays Memorial Hospital, School of Vocational Nursing, Box 767
San Marcos 78666
Texas Educational Foundation, Inc., Gary Job Corps Training Center, Box 1108
San Saba 76877
San Saba Memorial Hospital, School of Vocational Nursing
Seymour 76380
Baylor County Hospital, School of Vocational Nursing, 400 North Washington Street, Box 351
Shiner 77984
Frank Wagner School of Vocational Nursing, Ninth Street and Avenue D, Box 596
Snyder 79549
Snyder School of Vocational Nursing, D. M. Cogdell Memorial Hospital, Box 206
Sonora 76950
Lillian M. Hudspeth Memorial Hospital, School of Vocational Nursing, 101 Hudspeth Avenue, Box 455
Spearman 79081
Hansford Hospital School of Vocational Nursing, 707 S. Roland
Stamford 79553
Stamford Memorial Hospital, School of Vocational Nursing, 519 East Gould Street
Stephenville 76401
Stephenville Hospital, School of Vocational Nursing, 411 North Belknap Street
Sulphur Springs 75482
Sulphur Springs School of Vocational Nursing, 611 North Davis Street, Box 275
Sweetwater 79556
Sweetwater School of Vocational Nursing, c/o Simmons Memorial Hospital, 1301 Hailey Street
Taylor 76574
Johns Hospital, School of Vocational Nursing, 720 West Sixth Street, Box 1010
Temple 76501
King's Daughters Hospital, School of Vocational Nursing, 304 South 22nd Street

Terrell 75160
Terrell School of Vocational Nursing, 204 North Nash Street
Texarkana 75501
Texarkana College, School of Vocational Nursing
Three Rivers 78071
Three Rivers Hospital, School of Vocational Nursing
Throckmorton 76083
Throckmorton County Memorial Hospital, School of Vocational Nursing, Minter Avenue, Box 487
Tomball 77375
Tomball Medical Center, School of Vocational Nursing
Tyler 75705
Medical Center Hospital, School of Vocational Nursing, 1000 South Beckham Street
Tyler 75701
Mother Frances Hospital, School of Vocational Nursing, 825 East Houston Street
Uvalde 78801
Southwest Texas Jr. College, School of Vocational Nursing, Box 70
Victoria 77901
Victoria College, School of Vocational Nursing, 2200 East Red River Street
Waco 76708
Hillcrest Baptist Hospital, School of Vocational Nursing, Box 5100
Waxahachie 75165
W. C. Tenery Community Hospital, School of Vocational Nursing, 1405 West Jefferson Street
Weatherford 76086
Campbell Memorial Hospital, School of Vocational Nursing, 104 East Throckmorton Street
Wharton 77488
Wharton County Junior College, School of Vocational Nursing
Whitney 76692
Whitney School of Vocational Nursing, c/o Whitney Hospital, 100 Washington Street
Wichita Falls 76301
Bethania Hospital, School of Vocational Nursing, 1600 11th Street
Woodville 75979
Tyler County Hospital, School of Vocational Nursing, Kelly Boulevard and Highway 190
Yoakum 77995
Huth Memorial Hospital, School of Vocational Nursing, 303 Hubbard Street

UTAH

Cedar City 84720
Practical Nursing Program (MDTA) College of Southern Utah
Ogden 84403
Practical Nursing Program (MDTA) Weber State College, 3750 Harrison Boulevard
Provo 84601
Practical Nursing Program, Utah Technical College of Provo
Salt Lake City 84111
Practical Nursing Program, Utah Technical College at Salt Lake, 4600 South Redwood Road

VERMONT

Bennington 05201
★Henry W. Putnam Memorial Hospital School for Practical Nurses
Brattleboro 05301
★Thompson School for Practical Nurses, 30 Maple Street
Winooski 05404
★Fanny Allen Memorial School for Practical Nursing, 101 College Parkway

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VIRGINIA

Bedford 24523
Practical Nursing Program, Bedford County Schools, Bedford County Memorial Hospital
Burkeville 23922
Practical Nursing Program, Piedmont Sanatorium
Charlottesville 22901
Practical Nursing Program, Albemarle High School-Martha Jefferson Hospital, 459 Locust Avenue
Charlottesville 22903
University of Virginia Hospital Practical Nursing Program
Chesapeake 23320
Practical Nursing Program, Chesapeake City Schools-General Hospital of Virginia Beach
Culpeper 22701
Culpeper County School of Practical Nursing
Danville 24541
Danville Community College-Memorial Hospital School of Practical Nursing, 142 South Main Street
Emporia 23847
Practical Nursing Program, Greensville County Schools-Greensville Memorial Hospital
Fairfax 22030
Practical Nursing Program, Fairfax County Schools-Fairfax Hospital
Farmville 22903
Southside School of Practical Nursing
Fort Belvoir 22060
Practical Nursing Program, Medical Specialist Advanced Course (for Army Personnel only), DeWitt Army Hospital
Franklin 23851
Southampton Memorial Hospital School of Practical Nursing, 100 Fairview Drive, Box 149
Fredericksburg 22401
Practical Nursing Program, Fredericksburg-Stafford County Schools, Mary Washington Hospital, 2301 Washington Avenue
Grundy 24614
Buchanan County School of Practical Nursing
Hampton 23361
Practical Nursing Program, Hampton City Schools-Dixie Hospital, 3120 Victoria Boulevard
Adult Education Students
High School Students
Lexington 24450
Practical Nursing Program, Rockbridge County Schools, Stonewall Jackson Hospital
Lynchburg 24501
Lynchburg General Hospital School of Practical Nursing, Tate Springs Road
Marion 24354
Smyth County School of Practical Nursing
Martinsville 24112
Practical Nursing Program, Martinsville City Schools, Martinsville General Hospital
Mount Jackson 22842
Practical Nursing Program, Triplett Business & Technical Institute
Nassawadox 23413
Practical Nursing Program, Northampton-Accomack County Schools, Northampton-Accomack Memorial Hospital
Newport News 23607
New Careers School of Practical Nursing
Newport News 23606
Practical Nursing Program, Newport News Public Schools, Riverside Hospital, J. Clyde Morris Boulevard
Norfolk 23507
Practical Nursing Program, Norfolk City Schools, Leigh Memorial Hospital
Norfolk 23513
Practical Nursing Program, Norfolk City Schools, Norfolk General Hospital, 735 Boissevain Avenue
Petersburg 23803
Practical Nursing Program, Petersburg City Schools, Petersburg General Hospital
Adult Education Students
High School Students
Portsmouth 23701
Portsmouth School of Practical Nursing

Pulaski 24301
Practical Nursing Program, New River Vocational-Technical School, Pulaski Hospital
Radford 24141
Practical Nursing Program, New River Vocational-Technical School, Radford Community Hospital
Richlands 24641
Practical Nursing Program, Tazewell County Schools, Clinch Valley Clinic Hospital, 2949 West Front Street
Richmond 23226
Henrico Public School-St. Mary's Hospital School of Practical Nursing
Richmond 23219
Richmond City School of Practical Nursing, Medical College of Virginia, P.O. Box 194
Adult Education Students
High School Students
Roanoke 24017
Practical Nursing Program, Lucy Addison High School, Burrell Memorial Hospital
Adult Education Students
High School Students
Roanoke 24014
Practical Nursing Program, Roanoke City Schools, Roanoke Memorial Hospital, Belleview and Lake Avenue
Salem 24153
Practical Nursing Program, Roanoke County Education Center, Community Hospital of Roanoke Valley
South Boston 24592
Practical Nursing Program, Halifax County High School, Halifax Community Hospital, Box 50
South Hill 23970
Practical Nursing Program, Brunswick-Lunenburg-Mecklenburg County Schools, County Memorial Hospital
Staunton 24401
Practical Nursing Program, Wilson Memorial High School, King's Daughters' Hospital, 1410 N. Augusta
Suffolk 23434
Practical Nursing Program, Suffolk Public Schools, Louise Obici Memorial Hospital, Windsor Road, Box 1100
Waynesboro 22980
Waynesboro School of Practical Nursing
Winchester 22601
Clarke-Frederick-Warren County-Winchester City Schools of Practical Nursing, Winchester Memorial Hospital
Wise 24293
Practical Nursing Program, Wise County Technical School
Adult Education Students
High School Students

WASHINGTON

Aberdeen 98520
Practical Nursing Program, Grays Harbor College, College Heights
Auburn 98002
Practical Nursing Program, Green River Community College, 12401 S.E. 320th
Bellevue 98004
Practical Nursing Program, Bellevue Community College, 4333 128th Ave. S.E.
Bellingham 98225
Practical Nursing Program, Bellingham Technical School, 3028 Lindbergh Avenue
Bremerton 98312
Practical Nursing Program, Olympic College, 16th and Chester
Centralia 98531
Practical Nursing Program, Centralia College, P.O. Box 660
Clarkston 99403
Practical Nursing Program, Clarkston Public Schools, Box 271
Ellensburg 98926
Practical Nursing Program, Ellensburg Public Schools, First and Sprague
Everett 98201
Practical Nursing Program, Everett Junior College, 801 Wetmore Avenue
Grandview 98930
Practical Nursing Program, Grandview School District, Box C

Lakewood Center 98499
Practical Nursing Program, Clover Park Vocational-Technical School, 4500 Steilacoom Boulevard, S.W.
Longview 98632
Practical Nursing Program, Lower Columbia College, 1600 Maple
Moses Lake 98837
Practical Nursing Program, Big Bend Community College, P.O. Box 1547
Mount Vernon 98273
Practical Nursing Program, Skagit Valley College
Olympia 98501
Practical Nursing Program, St. Peter Hospital, 420 South Sherman
Pasco 99301
Practical Nursing Program, Columbia Basin College, 2600 North Chase
Port Angeles 98362
Practical Nursing Program, Peninsula College, Grace Street
Seattle 98122
Practical Nursing Program, Edison Technical School, 1625 Broadway
Spokane 99202
Practical Nursing Program, Spokane Community College, East 3403 Mission Avenue
Tacoma 98431
Practical Nursing Program, Medical Specialist (Advanced) Course, Madigan General Hospital
Tacoma 98405
Practical Nursing Program, Tacoma Vocational-Technical Institute, 1101 South Yakima
Vancouver 98663
Practical Nursing Program, Clark College, 1925 Fort Vancouver Way
Walla Walla 99362
Practical Nursing Program, Walla Walla Community College, 340 South Park Street
Wenatchee 98801
Practical Nursing Program, Wenatchee Valley College, 1350 Fifth Street
Yakima 98901
Practical Nursing Program, Yakima Valley College, 16th and Lenox Avenue

WEST VIRGINIA

Beckley 25801
★School of Practical Nursing, Raleigh County Vocational Technical Center, 229 Second Street
Bluefield 24701
Mercer County MDTA Program in Practical Nursing, 300 Ramsey Street
Boomer 25031
Fayette County MDTA Program in Practical Nursing
Charleston 25301
Practical Nursing Program, Job Corps Center for Women, Virginia and Summers Streets
Charleston 25312
Kanawha County Vocational School of Practical Nursing, 1301 Second Avenue
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Harrison County MDTA Program in Practical Nursing, Harrison County Schools
Elkins 26241
Davis Memorial Hospital School of Practical Nursing, 905 Harrison Avenue
Glen Dale 26038
★B. M. Spurr School of Practical Nursing, 800 Wheeling Avenue
Huntington 25702
Huntington East High Vocational-Technical School of Practical Nursing, 2800 Fifth Avenue
Logan 25601
Logan County Vocational School of Practical Nursing, 317 Stratton Street
Martinsburg 25401
Berkeley County Vocational School of Practical Nursing (MDTA), 515 West Martin Street

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Monongalia County Vocational School of Practical Nursing, 263 Prairie Avenue
Parkersburg 26101
Wood County Vocational School of Practical Nursing, 2101 Dudley Avenue
South Charleston 25303
Kanawha County MDTA Program in Practical Nursing, Central School, "C" Street
Welch 24801
McDowell County Vocational and Technical School of Practical Nursing, Vine Street

WISCONSIN

Fond du Lac 54935
Practical Nursing Program, Fond du Lac Vocational-Technical and Adult School, 805 East Johnson Street
Green Bay 54303
Practical Nurse Program, Green Bay School of Vocational-Technical and Adult Education, 200 South Broadway
Kenosha 53140
Practical Nurse Program, Kenosha Technical Institute, 625 52nd Street
La Crosse 54601
Practical Nurse Program, Coleman Technical Institute 6th Street, Vine to Pine
Madison 53703
Practical Nurse Program, Madison Vocational-Technical and Adult Schools, 211 North Carroll Street
Milwaukee 53203
Practical Nurse Program, Milwaukee Institute of Technology, 1015 North 6th Street
Milwaukee 53214
Sacred Heart School of Practical Nursing, 1442 South 92nd Street
Neenah 54956
Practical Nursing Program, Neenah-Menasha Vocational-Technical and Adult Scohols, 410 South Commercial Street
Stevens Point 54481
Practical Nurse Program, Stevens Point School of Vocational, Technical and Adult Education
Superior 54881
Practical Nurse Program, Superior Vocational-Technical and Adult School, 805 Belknap
Waukesha 53186
Practical Nursing Program, Waukesha Vocational, Technical and Adult School

WYOMING

Casper 82601
Practical Nursing Program, Casper College
Laramie 82070
Laramie Vocational School of Practical Nursing, Junior High School Building

AMERICAN SAMOA

Pago Pago 96960
Hospital of American Samoa School of Practical Nursing

PUERTO RICO

Aguadilla 00603
Practical Nursing Program, Aguadilla Vocational High School
Arecibo 00612
Practical Nursing Program, Arecibo Vocational High School
Caguas 00625
Marta del Rio Practical Nursing Program, Calle Padial
Fajardo 00648
Practical Nursing Program, Fajardo Vocational High School
Guayama 00654
Practical Nursing Program, Guayama Vocational High School
Humacao 00661
Practical Nursing Program, Ryder Memorial Hospital
Mayaguez 00708
Practical Nursing Program, Mayaguez Vocational High School
Ponce 00731
Practical Nursing Program, Ponce Vocational High School
Rio Piedras 00926
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St. Thomas Practical Nurse Program, c/o Department of Education

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Penrose Hospital School of Practical Nursing, Colorado Springs
St. Anthony Hospital School of Practical Nursing, Denver
DISTRICT OF COLUMBIA
Anna Burdick Vocational High School Practical Nursing Program
Margaret Murray Washington Vocational High School Practical Nursing Department (two programs)
INDIANA
Muncie School of Practical Nursing, Muncie
KANSAS
Florence Cook Department of Practical Nurse Education, University of Kansas Medical Center, Kansas City
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Tewksbury Hospital School of Practical Nursing, Tewksbury
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B. M. Spurr School of Practical Nursing, Glen Dale
PUERTO RICO
Practical Nursing Program, Hospital de la Concepcion, San German

VT 007 821
Practical Nursing Education. A Guide for Establishing and Improving Educational Programs. Criteria and Procedures for Accreditation. Pamphlet Number 3.

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The ultimate purpose of the accreditation program of the National Association for Practical Nurse Education and Service is to improve patient care through increasing the number of well prepared practical nurses. The scope of the accrediting service includes basic programs which prepare students for beginning practice and for licensure, and postgraduate courses in which licensed practical nurses are helped to extend their abilities beyond those developed in the basic program. The pamphlet explains policies and procedures and spells out criteria. Criteria for basic programs are organized under the headings: (1) Philosophy and Objectives, (2) Control and Organization, (3) Faculty, (4) Students, (5) Curriculum and Instruction, (6) Resources and Facilities, (7) Community Relations, and (8) Evaluation and Further Development of the Program. Criteria for postgraduate programs are similarly organized. Procedures for accreditation are included. (JK)

VT 007 821

PRACTICAL NURSING EDUCATION

A GUIDE FOR ESTABLISHING AND IMPROVING EDUCATIONAL PROGRAMS

CRITERIA AND PROCEDURES FOR ACCREDITATION

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PAMPHLET NUMBER 3

National Association for Practical Nurse Education and Service, Inc.
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THE ACCREDITATION AND CONSULTATION SERVICES

The National Association for Practical Nurse Education and Service maintains an accrediting service for two types of educational offerings in practical/vocational* nursing: (1) basic programs in practical nursing which prepare students for beginning practice and for licensure, and (2) postgraduate courses in which licensed practical nurses are helped to extend their abilities beyond those developed in the basic program.

The ultimate purpose of NAPNES' accreditation service is to improve the care of patients through increasing the number of well-prepared practical nurses. Specifically, NAPNES believes that its accreditation program serves to:

1. Promote the development of sound educational opportunities for those who wish to become licensed practical nurses and for licensed practical nurses who wish to extend and deepen their nursing abilities.
2. Help those responsible for the conduct of programs and courses in practical nursing to improve their educational practices.
3. Assist prospective students in their selection of a program or course in practical nursing.
4. Guide employers in assessing the qualifications of licensed practical nurses.
5. Identify programs and courses in practical nursing that merit public recognition.

Development of the Service for Basic Programs

NAPNES' accrediting service for basic programs was established in 1945 at a time when few states had arrangements for the licensing of practical nurses or for the associated function of approving schools whose graduates would be eligible to take the licensing examination. Thus, for several years NAPNES' accreditation service was of inestimable benefit in establishing the standing of a school and protecting the status of its graduates. As more and more states provided for the licensure of practical nurses and adopted standards for the approval of practical nursing programs within the state, NAPNES' accreditation efforts were directed toward identifying programs that were not merely acceptable but were deserving of national recognition as being of superior quality.

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* The title used in the nursing practice acts of California and Texas is "vocational nurse." All other jurisdictions in the United States use the title "practical nurse," which, for the sake of brevity, will be used in this document.

This shift in emphasis, coupled with the steady advancement in the quality and scope of practical nursing education throughout the country, has necessitated a frequent review and upgrading of NAPNES' criteria for accreditation. NAPNES' continuous attention to this need for revision is demonstrated by the number of original and revised publications through which it has informed the faculties in practical nursing programs of its criteria for accreditation and indicated ways of achieving them. These publications include: *Practical Nurse Education—Handbook of Practices* (1947, rev. 1957), which supplied detailed information about the establishment and conduct of a practical nursing program; *Policies for Accreditation of Practical Nursing Programs* (1953, rev. 1956 and 1959), which outlined the basis for eligibility for accreditation by NAPNES; and *A Guide for the Evaluation of a Practical Nursing Program* (1959, rev. 1960), which was designed to help faculties to evaluate their programs in preparation for accreditation by NAPNES. In developing these publications, NAPNES called upon the services of many nursing educators.

In 1965, it became apparent that because of the tremendous growth in the number of practical nursing programs during the past few years and the increasing diversity of institutional responsibility for these programs, more definitive information pertaining to NAPNES' accreditation service was called for. Accordingly, representatives from all NAPNES-accredited programs were invited to attend a meeting in Cleveland in November, 1965, to review and revise or restate the then-existing policies, criteria, and procedures for accreditation. The criteria and procedures proposed by this group have subsequently been tested by the personnel involved in NAPNES' accrediting service and further refined in the light of this testing.

The criteria for basic programs and the accreditation policies and procedures that are set forth in this book are the result of this study.

Development of the Service for Postgraduate Courses

In 1955, NAPNES extended the scope of its accrediting service to include the accreditation of postgraduate courses for licensed practical nurses. The purposes served by this newer accreditation activity are the same as those fulfilled by the accreditation of the basic programs. However, since no other agency, official or voluntary, is engaged in approving or accrediting postgraduate courses, the need for NAPNES' service to them is magnified. In particular, practical nurses need assurance that they are investing their time, money, and effort in a course which is truly educational in orientation and that the results of this investment will be widely recognized and their employment opportunities significantly increased. Moreover, as is always the case in a pioneer effort, those who are developing or are contemplating the development of postgraduate courses are in need of guidance.

The criteria for these courses have also been revised several times. Those presented in this document are substantially the same as those that were developed in 1962.

Consultation Service

As a further help to those conducting or contemplating the establishment of a program or postgraduate course in practical nursing, NAPNES offers a consultation service. This service is valuable for any program or course, but it is particularly helpful in the case of one that is in the planning stage. Guidance at this time may help those initiating the program or course to avoid mistakes which, once made, are not always easy to correct. Faculties which, after a study of NAPNES criteria for accreditation, recognize that they will have difficulty in meeting these criteria, also find NAPNES' consultation service to be extremely valuable.

ACCREDITING POLICIES

Accreditation by the National Association for Practical Nurse Education and Service may be sought by any basic educational program in practical nursing that is fully approved by the state authorities and by any postgraduate course for practical nurses in a specialized area of nursing.

This accreditation is based on an evaluation of the entire educational program or postgraduate course in the light of the criteria established by NAPNES and the objectives of the program or course itself. In this evaluation consideration is given to the general excellence of the total program or course as well as the balance of specific strengths and weaknesses as indicated by the degree to which the criteria are met. The evaluation is based on data submitted by the faculty of the program or course substantiated and supplemented by information obtained by NAPNES' accrediting representatives in a site visit to the program.

The period for which accreditation is granted is three years, at the end of which time a re-evaluation of the total program or course is required for continuation of status as an accredited program or course. In each of the intervening two years, the faculty is expected to submit an annual report containing qualitative and quantitative data pertaining to the program or course.

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CRITERIA FOR BASIC PROGRAMS

PHILOSOPHY AND OBJECTIVES

1. Statements of the philosophy and objectives of the program have been formulated by the faculty to serve as guides in the development of the entire program.

2. The statement of philosophy incorporates the following beliefs about practical nursing and practical nursing education:
   a. Practical nursing today is nursing and not an auxiliary service.
   b. To learn how to nurse, it is essential for the student to have experience in nursing patients in a real-life situation, as well as to develop an understanding of the principles basic to her practice.
   c. Although the welfare of patients constitutes the ultimate purpose of all nursing education and must therefore serve as a touchstone for all activities in the educational program, the primary immediate goal of a practical nursing program is the education of its students, not the maintenance of the nursing services in which they have learning experiences.
   d. The opportunity to prepare for practical nursing should be available to any person, regardless of race, color, or creed, who shows reasonable promise of being able to complete the practical nursing program.

3. The statement of objectives* specifies, as expected changes in the student, the development of:
   a. The knowledge, technical skills, attitudes, and cognitive abilities that are generally considered essential for the practice of practical nursing.
   b. Attitudes which contribute to constructive relationships with other members of the health team and with patients and their families.

CONTROL AND ORGANIZATION

1. The controlling institution is accredited by the appropriate accrediting body.

2. There is on file an organization chart which clearly defines the lines of authority and responsibility and channels of communication.

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* For a list of the specific skills that are usually considered essential for the practical nurse, see: National Association for Practical Nurse Education and Service, *Practical Nursing Education—A Guide to Curriculum Development*, the Association, 1965, pp. 4-5.

3. The controlling institution demonstrates recognition of and respect for the program in practical nursing commensurate with that accorded any other program it may offer and provides financial support for the conduct of the entire program, including the support required for:
   a. The provision and maintenance of adequate physical facilities.
   b. The employment of an administrator/coordinator, the instructors who teach in the classroom and clinical areas, and clerical personnel.
   c. Equipment, supplies, and educational materials, including library holdings.
   d. The student welfare program.
   e. Consultation that may be needed for the continued development and improvement of the program.
4. A separate cost accounting budget is maintained for the program and is based on the expressed needs of the administrator/coordinator, who participates in the planning of the budget.
5. The controlling institution permits flexibility in the planning and operation of the program under the guidance of the administrator/coordinator.
6. Each cooperating agency is accredited by the appropriate accrediting body or bodies.
7. There is a signed agreement between the controlling institution and each cooperating agency, which specifies:
   a. The effective date of the agreement.
   b. The length of time the cooperating agency will be used for each student group.
   c. The number of students in each group.
   d. The physical facilities that will be provided for student learning experiences.
   e. The provisions for the health and safety of the faculty members and the students.
   f. The review and renewal conditions.
8. The signed agreement includes statements that insure:
   a. That the final authority for all matters pertaining to the education of the students, including the selection of the faculty, rests with the controlling institution.
   b. That the program will have protective priority in the event of a change of administration in either of the contracting institutions or the assumption by either of responsibility for a new educational program.
9. The general atmosphere in the controlling institution and all cooperating agencies is conducive to the growth of the program.

FACULTY

1. The faculty members are given and assume the responsibility for:
   a. Formulating the philosophy, objectives, and educational policies of the program.
   b. Planning and evaluating the total curriculum.
   c. Selecting the clinical resources and educational materials utilized in the program.
   d. Teaching the students in both the classroom and the clinical setting.
   e. Evaluating the students' achievement throughout the program, counseling the students on the basis of these evaluations, and determining when a student will not be permitted to continue in the program.
   f. Serving on appropriate committees.
   g. Furthering their own professional development.

2. The faculty members employed by the institution are qualified by education and experience and are sufficient in number to accomplish all of these tasks without being expected to carry an unrealistic workload.
   a. The professional faculty members hold a minimum of a baccalaureate degree.
   b. The professional nurse faculty members are currently registered in the state in which the controlling institution is located.
   c. The administrator/coordinator:
      (1) Is a professional nurse who has specialized preparation and experience which enables her to provide leadership and assume the other responsibilities of her position.
      (2) Is employed on a full-time basis by the institution.
   d. The nursing instructors:
      (1) Are sufficient in terms of the varied responsibilities involved in the faculty role and the number of students enrolled. (It is recommended that the student-instructor ratio in the clinical nursing courses not exceed 15:1.)
      (2) Are free of any nursing service assignment.

3. Provision is made for all of the faculty members to participate actively in the review of the program's philosophy, objectives, and educational policies and the revision of these when necessary, and in the ongoing development and evaluation of the curriculum.
   a. Regularly scheduled meetings of the total faculty are held for these purposes.
   b. The minutes of these meetings record the action taken.

4. The faculty is represented on all committees and councils of the controlling institution or the cooperating agencies which are concerned with matters pertaining to the program.

5. For the purpose of assisting the faculty members to further their professional development and to increase their effectiveness in the program:
   a. An ongoing inservice education program is provided.
   b. The faculty members are encouraged to:
      (1) Hold membership in, attend meetings of, and participate in the activities of appropriate nursing and educational organizations.
      (2) Participate in community activities to keep pace with trends that affect the educational program and the needs of the practicing graduate practical nurse, as well as to contribute to the community's development.
6. Written personnel policies for the faculty are on file, which specify:
   a. Work hours per week.
   b. Salary and promotion schedules.
   c. Health services and illness allowance.
   d. Leaves of absence and vacation.
7. For each faculty position there is a written job description that specifies the responsibilities of and the qualifications for the position.
8. The educational philosophy and objectives of the program are interpreted to each new faculty member.
9. Each faculty member is evaluated periodically in terms of her achievement and development.
10. For each faculty member there are cumulative records which are used as the basis for her periodic evaluation. These records are made available to authorized personnel only.

STUDENTS

Admission

1. The students are admitted in groups at stated times.
2. The criteria for admission are established by the faculty with the assistance of suitable persons if such are available.
3. The criteria take into consideration:
   a. The requirements for licensure in the state.
   b. The admission requirements of the controlling institution.
   c. The student characteristics that are consonant with the attainment of the objectives of the program, including those with respect to:
      (1) Previous educational achievement (as evidenced by high school records).
      (2) General intelligence (as evidenced by performance on standardized pre-entrance tests).

(3) Physical, emotional, and social health (as evidenced by a medical examination, a personal interview, and references).

4. The final decision on each applicant is made by a committee on which the faculty is represented.
5. The policies regarding re-admission to the program and admission with advanced standing are clearly stated.

Student Welfare

1. There is in operation a health program which makes provision for preventive, remedial, and curative measures throughout the program and includes a terminal physical examination prior to graduation.
2. Student personnel policies include:
   a. At least two weeks' vacation per year.
   b. Provision for sick leave.
3. There is some provision for a student organization and for social and recreational activities which promote the growth of the individual as a member of society.
4. There is provision for financial assistance (loans and/or scholarships).
5. There are written statements of policies, given to all students, which clearly define the rules and regulations of the program relative to:
   a. Conduct.
   b. Attendance.
   c. Grading system.
   d. Outside employment.

Student Progress

1. Student achievement is evaluated systematically through such means as check lists, written tests, and observation of clinical performance.
   a. The student participates in her evaluation.
   b. The results of the periodic evaluations are used in guiding the student and in determining her progress in the program.
2. For each currently enrolled student and each former student, records are kept, including:
   a. Admission records.
   b. Health records.
   c. Records of the amount of time spent in each course and in each setting (classroom or clinical) utilized in the course.
   d. Grades and other evaluative data.
   e. The final summary of student progress and the results on the state board examination (for graduates).
3. These records are made available to authorized personnel only.

CURRICULUM AND INSTRUCTION

1. The faculty has developed and utilizes a master plan of the curriculum which shows the length and sequence of the courses and, for each course, the areas of content covered and the setting or settings (classroom/clinical laboratory) used.

2. The master plan gives evidence that the curriculum is designed to achieve the objectives of the program. In particular,
   a. It includes classroom and clinical experiences which provide the students with opportunities to learn how to meet both physical and emotional needs of mothers and infants, children, medical-surgical patients, the aged, and patients with long-term illnesses.
   b. The time provided is sufficient for the achievement of the objectives. (A total of at least 1700 scheduled hours is recommended.)

3. The curriculum is so organized that:
   a. Experiences in the clinical laboratory are provided early in the program.
   b. The sequence of courses is such that there is a progression of content from the simple to the complex.
   c. The subject matter in each course is closely correlated with that in other courses.

4. For each course the instructor or instructors have developed and utilize:
   a. A written course outline which indicates the course objectives, the sequence of content, the time allotted to each unit of content, the setting or settings in which each unit of content is taught, and the methods used in evaluating the students.
   b. A written plan for each lesson which shows the objectives, the content, the amount of time allocated, and the teaching methods.

5. The course outline and lesson plans give evidence that:
   a. The objectives of the course or lesson are consistent with, and contribute to, the achievement of the objectives of the program and curriculum.
   b. Insofar as is possible the clinical learning experiences for a unit of content are provided concurrently with classroom instruction.
   c. The time is distributed in such a way that:
      (1) The time allotted to each lesson is consistent with the content to be covered and the learning expected of the students.
      (2) The scheduled time for classroom and clinical experiences does not exceed 40 hours per week or 8 hours per day, and the scheduled hours for each day are consecutive.
      (3) The time allotted for each clinical learning experience is sufficient to permit the teacher to modify the planned assignments in order to meet the needs of individual students.
   d. The content and teaching methods reflect current concepts and practices in nursing and education.

6. Supervision is provided for the students in all clinical experiences wherever and whenever these may occur.
7. The clinical laboratory experiences are selected by the instructors on the basis of their contribution to the objectives of the course and the total program.
8. The clinical laboratory experiences include, in addition to experiences with patients:
   a. Instructor-student conferences (individual or group) related to the care of the patients.
   b. Participation of the students in staff conferences on patients, ward reports, and the like.

RESOURCES AND FACILITIES

1. The nursing units utilized for student learning experiences:
   a. Contain a sufficient number and variety of patients to permit the provision of a reasonable breadth and variety of experiences for each student.
   b. Are staffed by qualified service personnel at all levels and in sufficient numbers to meet the needs of the patients.
2. The classrooms in both the controlling institution and the cooperating agencies:
   a. Are adequate in number and size for accommodating the number of students and for meeting the requirements of the program.
   b. Have sufficient and appropriate equipment and teaching aids.
3. The library in each institution that is used is:
   a. Easily accessible to the students and faculty members.
   b. Equipped with a sufficient number of tables and chairs to accommodate at least 15 percent of the student body which uses it.
4. Library holdings are:
   a. Sufficient in scope of content and number of volumes to provide for the needs of both students and faculty members.
   b. Classified, catalogued, and easily available to users. If the services of a librarian cannot be provided, the responsibility for a system of withdrawal is vested in one person.
   c. Kept up to date by means of a periodic review by a committee which is competent to make recommendations concerning acquisitions and materials to be discarded and to recommend budget requests.
5. The administrator/coordinator has an adequately equipped office which provides privacy for carrying out administrative functions and for individual conferences.

6. The instructors have suitably equipped office space that is easily accessible to the students and that provides privacy for individual conferences. If possible, each instructor should have her own office with available telephone service.
7. Dining rooms, lounges, rest rooms, and lockers are adequate in number and suitable in type for the convenience and comfort of the students and faculty members.
8. Adequate space and equipment are provided for the storage of records, including those that are confidential, and clerical and teaching supplies and materials.
9. The secretarial service is adequate for insuring efficient and prompt management of the clerical obligations of the program.

COMMUNITY RELATIONS

1. An up-to-date description of the program is available for distribution, in the form of a separate bulletin or a section of the bulletin of the controlling agency or both. This description is so presented that it can be used as a public relations instrument for providing information to the community concerning the program and as a tool for the recruitment of students and faculty. It includes information about:
   a. The philosophy and aims of the program.
   b. Admission requirements.
   c. Number of classes admitted annually and dates of admission.
   d. Broad description of courses.
   e. Length of the program.
   f. Living accommodations (if any).
   g. Statement of all costs and fees.
   h. Availability of financial assistance.
2. If the program includes in its organization an advisory committee of persons not employed by the controlling or cooperating institutions:
   a. The functions of this committee are limited to interpreting the program and its needs to the community and interpreting community needs to those responsible for the program. These functions and the person or group to whom the committee serves in an advisory capacity are defined in writing.
   b. The committee is widely representative of community interests and includes at least one licensed practical nurse.
   c. The committee meets at stated intervals, and the administrator/coordinator or her representative attends all meetings to interpret the program and its needs.
   d. Minutes are on file which record the activities of the committee or of any working subcommittees.
   e. Any recommendations of the committee are prepared in writing.

EVALUATION AND FURTHER DEVELOPMENT OF THE PROGRAM

1. The program is periodically evaluated by the faculty to determine its effectiveness in meeting the current and anticipated needs of society for practical nursing care and the educational needs of the students.
2. This evaluation includes the utilization of data on:
   a. The results of the evaluations of student achievement throughout the program.
   b. The admissions and withdrawals of students.
   c. The performance of the graduates on the state licensing examination.
   d. The performance of the graduates in the nursing services in which they are employed.
3. The evaluation of the program includes consideration of whether the needed improvements that have been identified in previous evaluations by the faculty and approving and accrediting agencies have been brought about.
4. The findings of this evaluation are used in the further development of the program as well as in its improvement.
5. In the plans for the further development of the program, account is taken of:
   a. The need for changes in the objectives indicated by emerging needs of the public for practical nursing care.
   b. The way in which the changes in one aspect of the program affect another aspect or aspects. In particular,
      (1) Changes in the size of the student body are reflected in the size of the faculty group and in the physical resources that are available.
      (2) Changes in the objectives are reflected in the planned curriculum.
      (3) Changes in the curriculum are reflected in the criteria for admission to the program.

PROCEDURES FOR ACCREDITING BASIC PROGRAMS

Accrediting Personnel

The personnel involved in the accreditation process, other than the persons participating directly in the educational program seeking accreditation, are:

1. The Survey Team. Two registered nurses, qualified by both education and experience to serve as a faculty member in a practical nursing program, are appointed by NAPNES to make the survey. This team is composed of two nurse faculty members in practical nursing programs, or one faculty member and a staff member of NAPNES. An effort is made to have on the survey team a faculty member from a program that is controlled by the same type of institution as the program being visited.

2. The Accrediting Committee. The evaluation is made by a committee of eleven persons who are qualified to review it from varying points of view. This committee also reviews the application for evaluation for accreditation. It usually meets three times a year. Seven members constitute a quorum.

The Application

Application for evaluation for accreditation is made on a form, obtainable from NAPNES, which asks for general information concerning the program and its controlling institution and for data on the size of its student enrollment, the criteria for admission, the number and qualifications of the faculty members, the plan of the curriculum, the institutions in which the students are taught, and the like. The completed form is returned to NAPNES and is reviewed by the Accrediting Committee at its next meeting.

Usually, the application is accepted immediately and the evaluation process is continued. Sometimes, however, on the basis of the information contained in the application, the Accrediting Committee is of the opinion that the program is seriously deficient in meeting the criteria. In such instances, to spare the program the expense of a survey from which a negative result seems highly probable, it informs the faculty that in its opinion the program is not yet ready for evaluation for accreditation, notes the major weaknesses evidenced on the application, and recommends that consultation be secured. The faculty of the program makes the final decision about whether the accreditation process will be continued at this time; it has the privilege of asking for a survey without making any change in the program.

The Survey

Every effort is made to schedule the survey on a date that is convenient for the personnel associated with the program. A member of the state board of nursing is invited by NAPNES to accompany its survey team.

Two days are allowed for most surveys, but if the program utilizes the facilities of several agencies, one or more additional days are allowed. The u ual length of a survey day is from 9:00 a.m. to 4:00 p.m.

The arrangements that are made for the visitors should include:

1. A conference with the administrator/coordinator of the program regarding organization, budget, personnel policies, the over-all plan of the curriculum, and student performance. Written materials pertaining to these subjects should be available for discussion, as well as minutes of faculty meetings and of the meetings of the advisory committee or community relations if one exists.
2. An opportunity to meet with the administrative officer of each of the institutions utilized in the program and, in the case of hospitals or related institutions, the director of nursing service.
3. A tour of all facilities utilized by the students in both the controlling institution and all cooperating institutions, including:
   a. Patient units utilized for student assignments.
   b. Classrooms.
   c. Library facilities.
   d. Dining rooms, lockers, dressing rooms, lounges, etc. that are available for use by the students.
   e. The student residence if there is one.
4. Conferences with individual instructors* during which the following material should be available for review:
   a. Course outlines and unit and lesson plans.
   b. Samples of classroom tests, forms used for evaluating clinical performance, forms used for case studies, counseling forms, and texts and workbooks.
5. An opportunity to meet with the student body.
6. An opportunity to meet with the faculty as a whole at the conclusion of the survey.

The Evaluation

The survey team prepares a report which incorporates factual data about the program that have been accumulated from the application form and during the survey. This report is reviewed by all members of the Accrediting Committee who are present at the next meeting of the committee. In this review the committee checks the degree to which the program meets or deviates from each of the criteria and, in addition, notes evidence of over-all vitality and excellence. It

* Classes are audited only upon the special request of the faculty.

then votes in favor of approval or disapproval for accreditation. A majority vote determines the final decision. When the action is one of disapproval, NAPNES does not in any way reveal that the program has been evaluated for accreditation.

Following the meeting of the Accrediting Committee, the administrator/coordinator of the program is informed by letter of the committee's action and is sent copies of the report in the number that she has requested. In this letter is indicated the committee's opinions about the major strengths and weaknesses of the program, together with recommendations for improvement.

Annual Report

An annual report form is mailed to each accredited program in November of each of the two years following an evaluation for accreditation. This form asks for data on the current enrollment and the performance of recent graduates on the state licensing examination and for information about any major changes that have been made in the policies or personnel of the program or the controlling institution, the curriculum, or the institutions used for instruction. It also asks for evidence of progress toward correcting any deficiencies noted in the last evaluation for accreditation.

These data are reviewed by the Accrediting Committee at its next meeting, and a report listing the strengths and weaknesses and recommendations for improvement is sent to the administrator/coordinator of the program. In this letter the committee may also recommend that the program secure consultative assistance.

Maintenance of Accreditation

The resurvey of an accredited program, which is conducted three years after the initial survey if the program wishes to maintain its accreditation status, is patterned on the general plan of the initial survey. The amount of time needed is governed by the number of changes that have occurred in the program.

In an evaluation following a resurvey, the Accrediting Committee takes particular note of the degree to which the program has profited from recommendations made following the previous survey and review of annual reports.

CRITERIA AND PROCEDURES FOR POSTGRADUATE COURSES

The type of postgraduate course to which NAPNES extends its accreditation service is one which (1) prepares licensed practical nurses in one specialized area of nursing or a sub-area of a nursing specialty and (2) aims to extend the abilities of the students admitted to the course beyond those which they have developed in the basic program.

In connection with this second qualification, it must be recognized that the expansion in the scope of practical nursing practice over the years has resulted in the expansion of content in basic practical nursing programs, and that this expansion has occurred at different rates in different localities. Accordingly, the abilities that licensed practical nurses have developed in their basic programs may vary according to the program in which basic preparation was secured and the time of graduation from the program. This variation must be taken into account in the admission practices of the postgraduate course. For example, a postgraduate course which aims to prepare licensed practical nurses for practice in psychiatric settings would not admit licensed practical nurses who have had *sufficient* preparation of this kind in their basic programs. Similarly, a postgraduate course in medical-surgical, maternity, or pediatric nursing should prepare the students for functions beyond those that they have been prepared for in their basic programs.

Eligibility for Accreditation

To be evaluated for accreditation by NAPNES, a postgraduate course must have been in full-scale operation for a period long enough for one class of students to be at the point of completing it

Philosophy and Objectives

1. The philosophy of those responsible for the course includes the beliefs that:
   a. The purpose of postgraduate education in practical nursing is to assist the student to extend her abilities in one clinical nursing specialty or sub-specialty beyond those which are developed in the basic program.
   b. A postgraduate course should qualify the person who completes it to practice in any setting in which practical nurses are employed, regardless of size or type.
2. The stated objectives give evidence that the course is designed to:
   a. Offer qualified students from any community an opportunity to prepare for service as a practical nurse in a specialized area of nursing and for functioning in that area with additional understanding and skill.
   b. Add breadth and depth to the students' knowledge of basic nursing principles.

c. Foster attitudes which contribute to constructive relationships with other members of the health team and with patients and their families.

Administration

1. The institution offering the course is a hospital approved by the appropriate accrediting body or bodies.
2. The institution assumes responsibility for the financial support of the course and for providing appropriate resources for conducting the course and for student welfare.

Content and Learning Experiences

1. The length of the course is sufficient for the students to attain the stated objectives, but is not in excess of the time required for this purpose. The accepted maximum is six months.
2. To insure sufficient homogeneity in the students' ability for them to progress at the rate required to achieve the objectives of the program, an initial period in the course is regarded as a screening period during which all students are evaluated for continuation in the course. The length of this period is four weeks in a six-month course and a minimum of two weeks in shorter courses.
3. A detailed outline of the content and the classroom and clinical learning experiences is available.
4. There are at least 8 hours of classroom instruction per week.
5. The amount of evening and night experience is governed by the objectives of the course.

Facilities and Resources

1. The clinical facility utilized for instruction has a daily census and a variety of patients sufficient for providing worthwhile learning experiences for all of the students. In a lying this criterion consideration is given to other groups of nursing students, if any, for whom the clinical facility is utilized.
2. The classroom facilities and library resources meet the criteria of those established for the basic program.

Faculty

1. The number of faculty members is sufficient to conduct a sound course for the number of students enrolled.
2. The coordinator-instructor is employed full-time by the institution which offers the course.
3. The faculty members have special preparation and experience in the clinical specialty.

4. Written personnel policies for the faculty, such as those pertaining to salary, hours of work, health service, vacation, and educational leave, are on file.
5. There is a weekly schedule which indicates the hours of instruction and supervision for each faculty member.
6. Faculty meetings are held regularly and frequently for the evaluation of the course and the policies governing it. Minutes of these meetings record decisions and recommendations for changes.

Students

1. All students are graduates of state-approved programs in practical nursing and are currently licensed.
2. The students are selected for their ability to profit from the course. Admission criteria pertain to previous educational achievement in practical nursing, health, age, and personal qualifications. The transcript of the records in the basic program is utilized and is supplemented, if possible, by a pretest and a biographical sketch.
3. There is a health program which includes a physical examination.
4. Admission, health, and counseling records and records of achievement in both the classroom and the clinical laboratory are on file for each student.
5. In addition to the evaluation at the end of the probationary period, there is a terminal evaluation of each student.
6. A certificate which indicates the type of course completed and the institution which conducts it is granted to each student who successfully completes the course.

Evaluation and Further Development

1. The faculty evaluates the course periodically in the light of:
   a. The students' achievement of the objectives.
   b. The performance of those who have completed the course in the services in which they are subsequently employed.
   c. The extent to which expansion in content in basic programs should be reflected in changes in the objectives and content of the postgraduate course.
2. The results of this evaluation are utilized in the improvement and further development of the course.

Accrediting Procedures

The procedures for evaluating a postgraduate course for accreditation resemble those used for the evaluation of basic programs. However, since fewer institutions are usually involved in the implementation of the course, the survey time is limited to one day.

VT 007 889
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MF AVAILABLE IN VT-ERIC SET. OEG-4-6-062729-2083 08
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*ANNOTATED BIBLIOGRAPHIES; *EDUCATIONAL RESOURCES; INSTRUCTIONAL MATERIALS; *VOCATIONAL EDUCATION; *RESEARCH COORDINATING UNITS; *LIBRARY COLLECTIONS; LIBRARY CIRCULATION; INFORMATION CENTERS; REFERENCE MATERIALS
WYOMING

The bibliography consists mainly of documents related directly to vocational education and published after 1962. Documents were collected from practically every other state as well as Wyoming, and all are available on a 1-month loan basis in Wyoming. (JK)

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FOREWORD

In addition to many educational publications emanating from within Wyoming, as well as publishing many of its own, the Wyoming Research Coordinating Unit receives numerous publications pertaining to education from practically every other state.

To make these documents available to as many people as possible, the Research Coordinating Unit has compiled this bibliography for distribution throughout Wyoming. Documents may be checked out for a period of one month. Requests should be directed to the Research Coordinating Unit giving the following information.

NAME _____

ADDRESS _____

DATE _____

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Urbana, Illinois; University of Illinois; 1966
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St. Paul, Minnesota; University of Minnesota; Jan. 1968
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Washington, D.C.; U.S. Office of Education and American Vocational Association; 1966
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Washington, D.C.; U.S. Office of Education; June 1966
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Las Cruces, New Mexico; New Mexico State University; 1967
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Arkansas State Department of Education; 1968
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Watertown, South Dakota; Watertown Public School System
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Cheyenne, Wyoming; State Department of Education
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East Lansing, Michigan; Michigan State University; 1967
12 p.
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Cheyenne, Wyoming; State Department of Education; 1967
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Topeka, Kansas; State Board for Vocational Education
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Columbus, Ohio; Center fot Vocational and Technical Education; 1967
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Cheyenne, Wyoming; State Department of Education; 1967
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CHEYENNE, Wyoming; State Department of Education; 1964
16 p.
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Cheyenne, Wyoming; State Department of Education; 1966
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Cheyenne, Wyoming; Office of Economic Opportunity; 1968
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East Lansing, Michigan; Michigan State University
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VT 251 Q
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Lansing, Michigan; State Department of Education; 1967
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Cheyenne, Wyoming; Wyoming State Library; 1968
3 p.
A bibliography of books available at the Wyoming State Library on China.

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7 p
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Santa Fe, New Mexico; State Department of Education; 1967
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A study to evaluate the effect of two different high school curricula, college preparatory and non-college preparatory, upon college achievement.

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Inglewood, Calif.; Southwest Regional Laboratory for Educational Research and Development; 1968
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Washington, D.C.; Public Health Service; 1963
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414 p.
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See also AREA VOCATIONAL PROGRAMS

18. COMPREHENSIVE HIGH SCHOOL

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Reno, Nevada; University of Nevada; 1968
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Columbia, Missouri; University of Missouri; 1966
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Topeka, Kansas; Research Foundation of Kansas; 1968
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HOW HIGH SCHOOL COOPERATIVE TRAINEES FARE IN THE LABOR MARKET: PHASE B
East Lansing, Michigan; State Department of Education; 1965
2 p.
A study to measure the effectiveness of secondary school cooperative occupational education programs by assessing the employment status of the trainees after graduation.

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A bibliography of books and periodicals on cost-benefit analysis.

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EFFECTS OF A SUMMER COUNSELING PROGRAM WITH POTENTIAL DROPOUTS
Cheyenne, Wyoming; State Department of Education; 1966
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Report of a research project to determine if summer counseling could reduce the dropout rate in Wyoming schools.

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Washington, D.C.; Bureau of Employment Security; Dec., 1966
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Issue of Employment Service Review devoted to counseling.

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Oregon; Blue Mountain Community College; 1964
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27. COURSE CONSTRUCTION

NB-003

Dillon, Roy D. and Horner, James T.
OCCUPATIONAL COMMONALITIES: A BASE FOR COURSE CONSTRUCTION
Lincoln, Nebraska; University of Nebraska
14 p.
A study of job titles that require similar competencies.

28. CRIME

V-SN-007

TASK FORCE REPORT: JUVENILE DELINQUENCY AND YOUTH CRIME
Washington, D.C.; President's Commission on Law Enforcement and Administration of Justice; 1967
428 p.
Report of the President's Commission on Law Enforcement and Administration of Justice, on juvenile delinquency.

29. CURRICULUM

AK-002

Beima, James R.
OCCUPATION ANALYSIS AS A BASIS FOR VOCATIONAL EDUCATION CURRICULUM CHANGE
Juneau, Alaska; State Department of Education; 1967
93 p.
The first attempt by the Vocatinnal Division of the Alaska State Department of Education to actuate a State-wide occupational survey.

VT 2524

Accession No. Subject:
CURRICULUM (cont.)

CA-033 Colt, Irvin
STUDY OF OCCUPATIONAL CURRICULA NEWS
Mount San Antonio College; Walnut, California; 1965
22 p.
An investigation to provide basis for the development of appropriate instructional programs in technical-vocational education for the Los Rios Junior College District.

MI-013 Dommer, Miss Carolyn
HOSPITALITY EDUCATION CURRICULUM DEVELOPMENT PROJECT
East Lansing, Michigan; Michigan State University; 1967
31 p.
Project concerned in planning the present and future direction for developing vocational education programs involving occupations related to home economics.

GA-006 Lester, Herschel T., Jr. (editor)
REPORT OF A NATIONAL VOCATIONAL-TECHNICAL EDUCATION SEMINAR ON RESEARCH AND CURRICULUM DEVELOPMENT
Athens, Georgia; University of Georgia; 1966
132 p.
Seminar on the intensification of the development of vocational-technical education.

WY-106 Perryman, Bruce C.
CONFERENCE REPORT
Cheyenne, Wyoming; State Department of Education; 1967
6 p.
A report of the San Francisco State College Conference on Curriculum Programs in Action - Their Administration and Evaluation.

OK-003 Voth, Theodore H.
OCCUPATIONAL CURRICULA FOR STATE JUNIOR COLLEGES
Stillwater, Oklahoma; Oklahoma State University
8 p.
Results of a questionnaire on what businesses consider to be desirable features of the occupational curricula of the State's junior colleges.

CA-023 _____
OCCUPATIONAL CURRICULAR NEEDS
Costa Mesa, Calif.; Orange County Junior College Districts; 1966
94 p.
A study to furnish information to allow for effective planning for curriculum and facilities in the occupational or technical and vocational fields.

CA-026 _____
THE PRE-TECHNOLGY PROGRAM
San Francisco, California; Cogswell Polytechnical College; 1966
88 p.
Study of a re-evaluation of the principles and practices in high school programs designed to meet the specialized needs of "average" high school students in terms of continuing education.

CT-008 _____
CURRICULUM IN FOOD HANDLING AND DISTRIBUTION: A GUIDE FOR EXPERIMENTATION IN HIGH SCHOOL AND POST HIGH SCHOOL VOCATIONAL TRAINING
Hartford, Connecticut; State Department of Education; 1967
158 p.
Study on educational requirements in food handling and distribution and data on employment opportunities. A guide for developing curriculum in the area of food handling and distribution.

Accession No. Subject:
CURRICULUM (cont.)

DC-035 _____ PROGRESS REPORT AND AVAILABLE CURRICULUM MATERIALS
Washington, D.C.; U.S. Office of Education; 1967
7 p.
Curriculum materials available from the Bureau of Adult and Vocational Education and a progress report on publications not yet completed.

DC-049 _____ CIVIL TECHNOLOGY: HIGHWAY AND STRUCTURAL OPTIONS
Washington, D.C.; U.S. Office of Education; 1966
107 p.
A post-high school curriculum for highway and structural technology specialists.

DC-050 See also CHEMISTRY

DC-052 _____ CIVIL AND HIGHWAY TECHNOLOGY
Washington, D.C.; Office of Education; 1962
20 p.
Suggested techniques for determining courses of study in civil and highway technology.

DC-054 _____ ELECTRONIC DATA PROCESSING - I
Washington, D.C.; U.S. Office of Education; 1963
49 p.
A suggested 2-year post high school curriculum for computer programmers and business application analysts.

DC-055 _____ ELECTRICAL AND ELECTRONIC TECHNOLOGIES
Washington, D.C.; U.S. Office of Education; 1964
34 p.
Job description and suggested techniques for determining courses of study in electrical and electronic technologies.

DC-056 _____ 1966 REGIONAL CONFERENCE SUMMARIES
Washington, D.C.; U.S. Office of Education; 1966
56 p.
Summaries of nine regional conferences on Vocational and Technical Education.

DC-093 _____ GUIDES FOR DEVELOPING CURRICULA FOR THE EDUCATION OF PRACTICAL NURSES
Washington, D.C.; U.S. Office of Education; 1959
165 p.
Publication designed to help meet the needs of persons who are interested in the education of practical nurses.

DC-107 _____ COURSE IN INSTRUMENT MAINTENANCE
Washington, D.C.; U. S. Office of Education; 1963
238 p.
Suggested 1-year training program in instrument maintenance.

DC-109 _____ INSTRUMENTATION TECHNOLOGY
Washington, D.C.; U.S. Office of Education; 1964
119 p.
Suggested curriculum for a 2-year full-time educational program to train technicians to be highly skilled in instrumentation.

Accession No. Subject:
CURRICULUM (cont.)

DC-110 _____ MECHANICAL TECHOLOGY DESIGN AND PRODUCTION
Washington, D.C.; U.S. Office of Education; 1962
29 p.
Suggested techniques for determining courses of study in mechanical technology design and production.

DC-146 _____ AVAILABLE CURRICULUM MATERIALS
Washington, D.C.; U. S. Office of Education; 1966
7 p.
Listing of curriculum materials now available and in process.

DC-189 See also ADULT BASIC EDUCATION

MI-020 _____ PREPARING STUDENTS FOR THE WORLD OF WORK
Detroit, Michigan; Research Coordinating Unit; 1965
15 p.
Report of evaluation of programs preparing students for employment.

NB-005 See also ADMINISTRATION

NB-003 See also COURSE CONSTRUCTION

NJ-003 _____ PERSONAL INVOLVEMENT IN LEARNING
Princeton, New Jersey; The Learning Center; 1967
32 p.
Catalog of curriculum materials for use in grades K through 8.

NM-003 _____ A GUIDE TO THE DEVELOPMENT OF A COURSE OUTLINE FOR PRINTING
Santa Fe, New Mexico; State Department of Education
217 p.
Guidelines for developing a vocational printing curriculum at the high school level.

NM-004 _____ A GUIDE TO THE DEVELOPMENT OF A COURSE OUTLINE FOR AUTOMOTIVE MECHANICS
Santa Fe, New Mexico; State Department of Education
88 p.
Guidelines prepared to assist the new instructor in establishing his program and development of his instructional materials and to aid in the improvement of existing programs.

NM-006 See also COLLEGE STUDENTS

OR-012 See also COUNSELING

V-AE-010 See also ADULT EDUCATION

V-CG-001 _____ PRETECHNICAL POST HIGH SCHOOL PROGRAMS
Washington, D.C.; U.S. Office of Education; 1967
67 p.
Suggested program of remedial instruction for post high school students whose scholastic preparation does not meet the required level to insure their success in a technical program.

Accession No. Subject:
CURRICULUM (cont.)

V-CG-002

VT 431 Q

MACHINE DESIGN TECHNOLOGY
Urbana, Illinois; University of Illinois; 1963
60 p.
A suggested 2-year post high school program in machine design technology.

V-CG-003

VT 2271 Q

THE FORESTRY AIDE
Washington, D.C.; U.S. Office of Education; 1964
21 p.
A suggested training program for persons interested in becoming forestry aides.

V-CG-004

VT 4843 Q

FOOD PROCESSING TECHNOLOGY
Washington, D.C.; U.S. Office of Education; 1967
97 p.
A suggested 2-year post high school curriculum on food processing technology.

V-CG-005

VT 1679 Q

GUIDE FOR PUBLIC SCHOOLS IN PLANNING PROGRAMS OF VOCATIONAL EDUATION FOR IN-SCHOOL STUDENTS
Austin, Texas; Texas Education Agency; 1965
103 p.
A guide to assist local public schools in organizing and conducting a broadened program of vocational education of significant scope.

V-DD-009

THE EDUCATIONAL PROGRAM
Des Moines, Iowa; State Department of Education; 1966
75 p.
A guide to curriculum design formulated by the Iowa State Department of Education.

V-MR-008

NATIONAL CURRICULUM MATERIALS CLINIC
Washington, D.C.; U.S. Office of Education; 1967
112 p.
Report of the National Curriculum Materials Clinic held in Kansas City, Missouri, in January of 1967.

V-PR-006

AFTER ASSESSMENT, WHAT?
Washington, D.C.; Association for Supervision and Curriculum Development, November, 1966
104 p.
Article in Educational Leadership, publication of the A.S.C.D.

WI-021

CURRICULUM
University of Wisconsin; Center for Studies in Vocational and Technical Education; 1967
28 p.
A bibliography of curriculum materials.

D

1. DATA ANALYSIS

DC-040

REPLICATION
Washington, D.C.; U.S. Public Health Service; 1966
38 p.
An approach to the analysis of data from complex surveys; development and evaluation of a replication technique for estimating variance.

Accession No. Subject:

2. DATA GATHERING INSTRUMENTS

DC-194 ———

INFORMATION NEEDED FOR CLEARANCE OF DATA-GATHERING INSTRUMENTS
Washington, D.C.; U.S. Office of Education; 1966
4 p.
Rules and regulations pertaining to data-gathering instruments in relation to research projects.

3. DATA PROCESSING

CA-034 Berquist, Robert
COMPUTER SCHEDULING EDUCATIONAL REFORM USING S^4 - THE STANFORD SCHOOL SCHEDULING SYSTEM
Stanford, California; Stanford University
23 p.
Study of flexible scheduling and curriculum study.

MI-041 Cook, Fred S.
THE NEED FOR IN-SCHOOL BUSINESS DATA PROCESSING PROGRAMS
Detroit, Michigan; Wayne State University; 1966
3 p.
A research brief on a project to determine the current and projected status of employment in data processing installations in the Detroit Standard Metropolitan Statistical Area to ascertain the need for in-school training programs.

DC-054 See also CURRICULUM

OR-007 ———

SELECTED BIBLIOGRAPHY OF JOURNAL ARTICLES ON EDUCATIONAL DATA PROCESSING
Eugene, Oregon; ERIC Clearinghouse on Educational Administration
8 p.
A bibliography of articles on educational data processing.

WY-130 ———

DATA PROCESSING BIBLIOGRAPHY
Cheyenne, Wyoming; Wyoming State Library; 1967
9 p.
Material on data processing that is available for loan at the Wyoming State Library.

4. DATA STORAGE RETRIEVAL

MS-002 Handley, Willard
A TENTATIVE VOCATIONAL-TECHNICAL EDUCATION DATA STORAGE-RETRIEVAL SYSTEM FOR THE MISSISSIPPI RCU
Mississippi State University; 1967
24 p.
Guidelines for setting up an education data storage-retrieval system for the Mississippi R.C.U.

5. DEMONSTRATION CENTERS

KS-002 ———

TYOTNC
Kansas; The KANSAS TEACHER; 1967
3 p.
Demonstration centers on how to make the teacher's job more manageable and teaching more effective.

Accession No. Subject:

6. DENTAL EDUCATION

DC-103 Miller, Ben F. III
THE STATUS OF THE CDT PROGRAM, AS OF JULY 1, 1962
Chicago, Ill.; American Dental Association; 1962
9 p.
A position paper on the certification of dental technicians and laboratory accreditation.

DC-104 _____
REQUIREMENTS FOR APPROVAL OF EDUCATIONAL PROGRAMS FOR DENTAL ASSISTANTS
Chicago, Ill.; American Dental Association; 1960
5 p.
Outline of a program which will be effective in providing education needed by a dental assistant.

DC-105 _____
POLICIES AND GUIDELINES FOR THE TRAINING OF DENTAL AUXILIARIES
VT 1964 Ø
Chicago, Ill.; American Dental Association; 1966
28 p.
Guidelines for training dental assistants, hygienists and laboratory technicians.

DC-106 _____
ORGANIZING A DENTAL ASSISTANT TRAINING PROGRAM
VT 1794 Ø
Washington, D.C.; U.S. Office of Education; 1965
43 p.
A handbook for the planning of dental assisting curriculums and teaching facilities.

NC-006 _____
DENTAL LABORATORY TECHNICIAN'S TRAINING PROGRAM PLANS AND POLICIES (PROPOSED)
VT 5587 Ø
Durham, North Carolina; Industrial Education Center
29 p.
Program to provide a means for the training of qualified individuals, who plan to pursue a career as a dental laboratory technician.

7. DESIGNING EDUCATION FOR THE FUTURE

CO-001 Bebell, Clifford F.S.
THE EDUCATIONAL PROGRAM
Denver, Colorado; Designing Education for the Future Project Office; 1967
59 p.
Monograph for the State Advisory and Study Committees in DEF and others concerned with planning improvements in education.

CO-012 Morphet, Edgar L. and Jesser, David L., Editors
COOPERATIVE PLANNING FOR EDUCATION IN 1980
Denver, Colorado; DEF Project Office; 1968
105 p.
Reports prepared for a conference of State Representatives.

CO-010 Morphet, Edgar L. and Jesser, David L., Editors
EMERGING DESIGNS FOR EDUCATION
Denver, Colorado; DEF Project Office; 1968
240 p.
Reports prepared for an Area Conference.

Accession No. Subject:

8. DIFFUSION

MI-006 Rogers, Everett M. and Jain, Nemi C.
NEEDED RESEARCH ON DIFFUSION WITHIN EDUCATIONAL ORGANIZATIONS
East Lansing, Michigan; Michigan State University; 1968
30 p.
Paper presented at the National Conference on the Diffusion of Educational Ideas.

MI-004 ———
A STUDY OF THE DIFFUSION PROCESS OF VOCATIONAL EDUCATION INNOVATIONS
VT 1738
Lansing,Michigan; Michigan State University; 1967
48 p.
Study to trace the spread of vocational education practices and to learn what communications patterns exist among schools of Michigan.

9. DISADVANTAGED

WA-005 Blue, James L.
HANDBOOK FOR SUPERVISORS OF THE DISADVANTAGED
Olympia, Washington; Coordinating Council for Occupational Education; 1968
45 p.
Handbook to serve as a guide for conducting a seminar-type study of responsibilities and techniques performed by supervisors who work with employees classified as disadvantaged persons and to serve as a reference for the future use of supervisors as they perform their daily task of leading people.

V-SN-008 Kemp, Barbara H.
THE ROLE OF THE GUIDANCE SERVICES IN MEETING THE PARTICULAR NEEDS OF DISADVANTAGED YOUTH
Washington, D.C.; U.S. Office of Education; 1965
5 p.
A speech given at a session of the American Vocational Association meeting in Miami, Florida on Dec. 6, 1965.

DC-187 Kemp, Barbara H.
THE YOUTH WE HAVEN'T SERVED
Washington, D.C.; U.S. Office of Education; 1966
51 p.
Description of some of the characteristics of the socio-economically handicapped, some of the steps which must be taken to enable these young people to succeed in the regular vocational education programs and to provide them with an education that will meet their special needs, and some of the opportunities opened for them by the provisions of the Vocational Education Act of 1963.

AR-005 ———
EDUCATION FOR THE CULTURALLY DISADVANTAGED
Arkansas; South Central Region Educational Laboratory; 1967
116 p.
Proceedings of the National Conference on Educational Objectives for the Culturally Disadvantaged.

DE-001 ———
RESOURCE PAPERS ON THE DISADVANTAGED
Dover, Delaware; Occupational Research Coordinating Unit; 1967
56 p.
Provides information that will assist in understanding and developing programs for disadvantaged persons.

Accession No. Subject:
DISADVANTAGED (cont.)

V-SN-004

NATIONAL CONFERENCE ON EDUCATION OF THE DISADVANTAGED
Washington, D.C.; U.S. Office of Education; 1966
86 p.
Report of a national Conference held in Washington, D.C. July 18-20, 1966.

V-SN-011

THE EDUCATION OF DISADVANTAGED CHILDREN
Washington, D.C.; U.S. Office of Education; 1966
32 p.
A bibliography of materials on the education of disadvantaged children available from the Educational Materials Center, Division of Research Training and Dissemination, at the U.S. Office of Education.

WI-016

DISADVANTAGED GROUPS
University of Wisconsin; Center for Studies in Vocational and Technical Education; 1967
11 p.
Bibliography of publications on disadvantaged groups.

10. DISARMAMENT

WY-139

DISARMAMENT
Cheyenne, Wyoming; Wyoming State Library; 1964
11 p.
Bibliography of publications on disarmament available at the Wyoming State Library.

11. DISTRIBUTIVE EDUCATION

MI-001

Carmichael, John
INSTITUTE FOR POST-HIGH SCHOOL TEACHERS OF DISTRIBUTION AND MARKETING, JUNE 26 - JULY 22, 1966
East Lansing, Michigan; Michigan State University; 1967
14 p.
Final report of an institute to provide for professional development and growth of instructional personnel in the post-high school program of education for distribution.

MI-061

Dommer, Miss Carolyn
HOSPITALITY EDUCATION: RURAL SCHOOLS: DISTRIBUTIVE EDUCATION
East Lansing, Michigan; Michigan State University; 1967
16 p.
Development of a practical, educationally and vocationally sound approach to training students for eventual employment in the hospitality industry.

MI-060

Ferguson, Edward, Jr.
A PILOT PROGRAM COMPARING COOPERATIVE AND PROJECT METHODS OF TEACHING DISTRIBUTIVE EDUCATION
East Lansing, Michigan; Michigan State University; 1967
12 p.
A research and development project in curriculum.

KS-005 See also BUSINESS AND OFFICE EDUCATION

KS-006 See also BUSINESS AND OFFICE EDUCATION

Accession No. Subject:
DISTRIBUTIVE EDUCATION (cont.)

NY-004

INSTRUCTIONAL MATERIALS FOR DISTRIBUTION AND MARKETING
New York, N.Y.; Gregg-McGraw Hill; 1967
20 p.
Brochures on instructional materials for distributive education classes.

TN-007

SECTION IV OPERATIONAL PROCEDURES AND MINIMUM STANDARDS FOR VOCATIONAL EDUCATION IN TENNESSEE: DISTRIBUTIVE EDUCATION
Tennessee; State Department of Education; 1965
13 p.
Procedures and standards manual for distributive education in Tennessee, for planning purposes only.

WA-005 See also DISADVANTAGED

WY-087

WYOMING SUMMARY AND DIRECTORY
Cheyenne, Wyoming; State Department of Education; 1966
12 p.
Summary of Distributive Education in Wyoming and a directory of teacher-coordinators in Wyoming high schools.

12. DRAFTING AND DESIGN TECHNOLOGY

DC-111

MECHANICAL DRAFTING AND DESIGN TECHNOLOGY
Washington, D.C.; U.S. Office of Education; 1964
26 p.
Job descriptions and suggested techniques for determining courses of study in drafting and design technology.

VT 1823X

13. DROPOUTS

MI-050

Meaders, Dr. O. Donald
SHARED-TIME (DUAL ENROLLMENT) CONCEPT FOR AREA VOCATIONAL EDUCATION PROGRAMS
East Lansing, Michigan; Michigan State University; 1967
15 p.
Project designed to contribute to the development and expansion of vocational education programs at the high school level.

NY-010

Miller, S.M.; Saleem, Betty L. and others
SCHOOL DROPOUTS: A COMMENTARY AND ANNOTATED BIBLIOGRAPHY
Syracuse, New York; Syracuse University; 1964
103 p.
Final report of a study on dropouts with an annotated bibliography and reference section.

E

1. EARTH SCIENCE

NY-021

1968 EQUIPMENT CATALOG
New York, N.H.; Houghton Mifflin Company; 1968
45 p.
Earth Science Curriculum Project approved materials for science classes.

NY-022

INVESTIGATING THE EARTH
New York, N.Y.; Houghton Mifflin Company; 1967
24 p.
Brochure describing a new science textbook; INVESTIGATING THE EARTH.

Accession No. Subject:

2. ECONOMICS

WY-009 Harmston, Floyd K. and Lund, Richard E.
A STUDY OF THE RESOURCES, PEOPLE & ECONOMY OF EAST-CENTRAL WYOMING, 1963
Cheyenne, Wyoming; Natural Resource Board; 1963
111 p.
Economic study of natural resources, human resources, and sources of basic income in East-Central Wyoming.

HA-001 _____
ECONOMY OF HAWAII, 1967
Honolulu, Hawaii; Bank of Hawaii; 1967
47 p.
Annual Economic Report designed to provide information that will be of help in evaluating business and investment opportunities in Hawaii.

IL-002 _____
IRWIN BOOKS IN ECONOMICS AND BUSINESS
Homewood, Illinois; Richard D. Irwin, Inc.; 1968
222 p.
Catalog of books on economics and business.

WY-022 _____
BASE ECONOMIC STUDY: CAMPBELL COUNTY, WYOMING
Casper, Wyoming; Employment Security Commission
95 p.
A survey of the base economy of Campbell County, Wyoming.

WY-023 _____
TETON COUNTY, WYOMING: BASIC ECONOMIC STUDY
Casper, Wyoming; Employment Security Commission
92 p.
A study of the basic economy of Teton County.

2A. ECONOMIC OPPORTUNITY

V-RD-005 Haines, Peter G.
EDUCATION FOR ECONOMIC OPPORTUNITY
East Lansing, Michigan; Michigan State University; 1965
176 p.
A research study to determine the feasibility of establishing one or more area vocational schools and technical institutes for the five-county Grand Traverse area.

3. EDUCATIONAL CHANGE

V-MR-006 _____
MILESTONES IN EDUCATION
Washington, D.C.; U.S. Office of Education; 1964
43 p.
Federal legislation enacted in 1963 and 1964 to strengthen education.

4. EDUCATIONAL LABORATORIES

DC-144 _____
GUIDELINES FOR A NATIONAL PROGRAM OF EDUCATIONAL LABORATORIES
Washington, D.C.; U.S. Office of Education; 1966
5 p.
Guidelines for following P.L. 89-10 Title IV pertaining to educational laboratories.

Accession No. Subject:

5. EDUCATIONAL NEEDS

WY-070 Dodge, Larry
A SURVEY OF VOCATIONAL-TECHNICAL EDUCATION NEEDS IN GOSHEN COUNTY
Torrington, Wyoming; Eastern Wyoming College; 1967
72 p.
A study of the needs of Goshen County residents in the area of vocational-technical education and recommendatinns drawn from these needs.

MA-002 Thomas, Victor E.
SURVEY OF POST-HIGH SCHOOL EDUCATIONAL NEEDS AS COMPUTED FROM A HIGH SCHOOL POINT OF VIEW
Holyoke, Massachusetts; Holyoke Community College; 1965
9 p.
A questionnaire that was filled out by guidance counselors and a summary of data that was obtained in the survey on educational needs after high school.

AK-001 _____
WHAT IS VOCATIONAL EDUCATION?
Juneau, Alaska; State Department of Education; 1966
25 p.
Descriptions of various vocational education programs in operation in Alaska.

CO-008 _____
VOCATIONAL EDUCATION
Denver, Colorado; State Board for Vocational Education; 1966
26 p.
The first Annual Report of the findings and recommendations of the Advisory Council to the State Board for Vocational Education.

MT-002 _____
VOCATIONAL-TECHNICAL EDUCATION NEEDS OF MONTANA YOUTH AND ADULTS
Helena, Montana; State Department of Education
88 p.
Reports of a panel of consultants of the needs of vocational technical education in Montana.

PA-005 _____
AN OUTLINE PROPOSAL OF A STUDY OF VOCATIONAL AND TECHNICAL EDUCATION IN PENNSYLVANIA
Harrisburg, Pennsylvania; Department of Public Instruction; 1967
12 p.
Proposal for a study of the problem of matching people with jobs.

6. EDUCATIONAL POLICY

WI-017 _____
EDUCATIONAL POLICY
University of Wisconsin; Center for Studies in Vocational and Technical Education; 1967
9 p.
Bibliography of materials on educational policy available from the Center for Studies in Vocational and Technical Education.

7. EDUCATIONAL STATISTICS

DC-215 _____
DIGEST OF EDUCATIONAL STATISTICS
Washington, D.C.; U.S. Office of Education; 1964
175 p.
Up-dated version of DC-216.

Accession No. Subject:
EDUCATIONAL STATISTICS (cont.)

DC-216
DIGEST OF EDUCATIONAL STATISTICS
Washington, D.C.; U.S. Office of Education; 1962
155 p.
Compilation of significant statistical material available in the Office of Education on the American educational system.

DC-229
DIGEST OF EDUCATIONAL STATISTICS
Washington, D.C.; U.S. Office of Education; 1965
182 p.
Updated version of DC-216 and DC-215.

8. ELEMENTARY AND SECONDARY EDUCATION ACT (E.S.E.A.)

DC-118
A MANUAL FOR PROJECT APPLICANTS AND GRANTEES
Washington, D.C.; U.S. Office of Education; 1967
94 p.
Guidelines for developing projects and submitting applications under Title III and an interpretation of the Act and Regulations for education agencies.

DC-128
ELEMENTARY AND SECONDARY EDUCATION AMENDMENTS OF 1967
Washington, D.C.; U.S. Office of Education; 1967
14 p.
Fact sheets of E.S.E.A. amendments on teacher corps, educational planning, vocational education, educational opportunities for handicapped children.

WY-067
TITLE I, E.S.E.A. PROJECT SUMMARY 1967-68
Cheyenne, Wyoming; State Department of Education; 1968
15 p.
Summary of TITLE I, ESEA projects for FY 1968.

9. EMPLOYMENT

DC-060
Arnold, Walter M.
DEVELOPMENT OF INFORMATION ON MANPOWER NEEDS AND EMPLOYMENT OPPORTUNITIES - PROJECTED PROGRAM ACTIVITIES
Washington, D.C.; U.S. Office of Education; 1967
5 p.
A summary of the current and projected manpower needs and employment opportunities.

DC-026
AREA TRENDS IN EMPLOYMENT AND UNEMPLOYMENT, SEPTEMBER, 1966
Washington, D.C.; U.S. Department of Labor; 1966
46 p.
Up-dated and expanded version of DC-065

DC-043
AREA SKILL SURVEY
Washington, D.C.; U.S. Department of Labor; 1965
43 p.
A handbook on employment security job market research methods.

DC-065
AREA TRENDS IN EMPLOYMENT AND UNEMPLOYMENT, AUGUST, 1966
Washington, D.C.; U.S. Department of Labor; 1966
34 p.
Statistics on unemployment areas, unemployment in major areas and in smaller areas.

Accession No. Subject:
EMPLOYMENT (cont.)

DC-080

PUBLIC EMPLOYMENT IN 1966
Washington, D.C.; U.S. Department of Commerce; 1967
31 p.
Statistics on employment by state, for 1966.

MD-001

TECHNICAL AND SEMI-PROFESSIONAL OCCUPATIONAL SURVEY
Montgomery Junior College; Maryland; 1963
94 p.
Community survey to determine whether the junior college meets the emerging occupational trends.

MS-003 See also AGRICULTURE

WY-012

WYOMING STATISTICAL REVIEW
Casper, Wyoming; Employment Security Commission; 1967
56 p.
Data concerning job openings, work applications, job placements, claims for unemployment insurance benefits, payment of unemployment insurance benefits, and other related activities.

WY-016

FAIR EMPLOYMENT CODE
Cheyenne, Wyoming; Wyoming Education Code; 1966
2 p.
Flyer on the Fair Employment Practices Code of the W.E.A. adopted in 1966.

WY-069A

PRELIMINARY LABOR FORCE SURVEY OF SHERIDAN AND JOHNSON COUNTIES
Casper, Wyoming; Employment Security Commission
57 p.
Labor statistics on Sheridan, Wyoming and the area surrounding in a 50 mile radius.

WY-073

LABOR AND EMPLOYMENT TRENDS (An Abstract)
Cheyenne, Wyoming; Research Coordinating Unit; 1966
8 p.
Summary of economic developments in the nation in both private industry and the Armed Forces in 1966.

WY-092

SWEETWATER COUNTY LEADS WYOMING EMPLOYMENT INCREASE, U.S. CENSUS REPORT SHOWS
Washington, D.C.; U.S. Department of Commerce; 1966
2 p.
News release on the Sweetwater County increase in business and industrial employment from March 1965 to March 1966.

WY-099

COUNTY BUSINESS PATTERNS
Washington, D.C.; U.S. Department of Census; 1965
21 p.
A publication presenting first quarter employment and payroll statistics, by county and by industry.

10. ENGINEERING

AZ-003 Lee, Arthur M.
ENGINEERING AND TECHNOLOGY IN ARIZONA
Flagstaff, Arizona; Northern Arizona University; 1968
274 p.
A report on the education of engineers, technicians and skilled craftsmen and the educational needs of industry.

Accession No. Subject:
ENGINEERING (cont.)

AZ-005 Lee, Dr. Arthur M.
RESEARCH PROJECT IN ENGINEERING TECHNOLOGY EDUCATION OBJECTIVES
Phoenix, Arizona; State Department of Education
3 p.
A guide for program development in engineering technology education.

ND-010 Van Erdewyk, Zeno M.
VARIABLES RELATED TO PERSISTENCE, TRANSFER AND ATTRITION OF ENGINEERING STUDENTS
Grand Forks, North Dakota; Center for Research in Vocational and Technical Education; 1967
32 p.
Guidelines for the pre-college training of engineering students.

CA-013 See also ADVISORY COMMITTEE

CA-019 _____
SCIENCE AND ENGINEERING TECHNICIAN STUDY
Sacramento, California; State Department of Education; 1964
70 p.
A study of science and engineering technicians in Santa Clara and San Mateo Counties to determine the industrial role of those technicians and the part of junior colleges in training them.

DC-041 _____
CURRENT LABOR MARKET CONDITIONS IN ENGINEERING, SCIENTIFIC, AND TECHNICAL OCCUPATIONS
Washington, D.C.; U.S. Department of Labor; 1964
29 p.
Statistics on job openings for selected engineering, scientific, and technical occupations place in interarea clearance by public employment offices throughout the country.

V-CG-002 See also CURRICULUM

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Geneva, Illinois; Houghton Mifflin Company; 1967
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MO-002 Walsh, Raymond J.
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Columbia, Missouri; University of Missouri; 1966
10 p.
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Lansing, Michigan; State Department of Education;1968
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PUBLIC MEMBERSHIP IN MICHIGAN BY GRADE: Sept. 1967
Lansing, Michigan; State Department of Education; 1968
14 p.
Up-dated version of MI-027.

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Lansing, Michigan; State Department of Education; 1967
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OK-005 _____
ENROLLMENT AND FOLLOW-UP PROCEDURES
Stillwater, Oklahoma; Vocational Research Coordinating Unit; 1967
9 p.
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Springfield, Illinois; Board of Vocational Education and Rehabilitation; 1967
14 p.
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Columbus, Ohio; ERIC Clearinghouse; The Center for Vocational and Technical Education; 1967
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Accession No. Subject:
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Lansing, Michigan; State Department of Education; 1966
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Lexington, Kentucky; University of Kentucky; 1968
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College Park, Maryland; University of Maryland; 1967
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Berkeley, California; University of California; 1967
109 p.
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CA-003 _____
EVALUATION IN VOCATIONAL EDUCATION
Sacramento, California; State Department of Education; 1967
77 p.
Guidelines for evaluation of vocational education programs in relation to their effectiveness in training young adults for employment.

FL-001 See also ACCREDITATION

MI-002 _____
A SYSTEMS APPROACH TO THE EVALUATION OF VOCATIONAL EDUCATION
East Lansing, Michigan; Michigan State University; 1967
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A brochure describing the research and development program for evaluation systems which is part of the research and development program in vocational technical education at Michigan State University.

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New York, N.Y.; Department of Practical Nursing Programs; 1965
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Accession No. Subject:
EVALUATION (cont.)
See also ADMINISTRATION

V-EF-002
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New York, N.Y.; State Department of Education
22 p.
Form for evaluating trade and technical education programs.

WA-007
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Olympia, Washington; Educational Press Association of America; Nov.,-Dec., 1967
27 p.
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WY-102
_____ A PROCEDURE FOR THE EVALUATION OF A LOCAL PROGRAM OF TRADE AND INDUSTRIAL EDUCATION PART ONE: ADMINISTRATION AND SUPERVISION
Cheyenne, Wyoming; State Department of Education
9 p.
Form to be used in evaluating the administration and supervision of trade and industrial education programs.

WY-103
_____ A PROCEDURE FOR THE EVALUATION OF A LOCAL PROGRAM OF TRADE AND INDUSTRIAL EDUCATION PART TWO: INDIVIDUAL TRAINING PROGRAM
Cheyenne, Wyoming; State Department of Education
14 p.
Form to be used in evaluating trade and industrial education programs.

WY-109
_____ STANDARDS FOR ACCREDITATION
Cheyenne, Wyoming; State Department of Education; 1968
87 p.
Standards for use in evaluating schools in Wyoming.

15. EXCEPTIONAL CHILDREN

WY-074
_____ REGULATIONS FOR EXCEPTIONAL CHILDREN
Cheyenne, Wyoming; State Legislature; 1967
7 p.
Session laws relating to exceptional children, their definition, and special needs.

16. EXPERIMENT

IL-020
Helgager, David B.
REPORT - VEXED CONFERENCE
Springfield, Illinois; Illinois Research Coordinating Unit; 1967
11 p.
Report of the Vocational Experimental Education Conference held in August, 1967.

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_____ ABSTRACTS OF EXPERIMENTAL PROJECTS
Springfield, Illinois; Research Coordinating Unit; 1968
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Accession No. Subject:
EXPERIMENT (cont.)

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Springfield, Illinois; State Department of Education; 1966
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A list of projects approved in vocational education.

V-MR-001

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Washington, D.C.; President's Science Advisory Committee; 1964
79 p.
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NB-006
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SCHOOL PLANT PLANNING
Lincoln, Nebraska; State Department of Education; 1958
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Recommended procedures for initiating and developing a school plant improvement program.

DC-023
Chase, William W.; Browne, Johnny W.; and Russo, Michael
BASIC PLANNING GUIDE FOR VOCATIONAL AND TECHNICAL EDUCATION FACILITIES
Washington, D.C.; U.S. Office of Education; 1965
32 p.
A guide that outlines major considerations and basic principles in planning facilities for vocational and technical education.

NV-001
McQueen, Dr. Robert
REPORT OF NATIONAL VOCATIONAL-TECHNICAL FACILITY PLANNING CONFERENCE
Reno, Nevada; Department of School Administration; University of Nevada; 1967
107 p.
Reports of seven speeches given at the National Conference on Vocational-Technical Facility Planning.

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Valentine, I.E. and Conrad, M.J.
PROGRESS REPORT: VOCATIONAL-TECHNICAL FACILITIES PROJECT
Columbus, Ohio; The Center for Vocational and Technical Education; 1967
118 p.
Guidelines to be followed in the composition of facility planning guides.

CA-004

_____ FACILITIES PLANNING
Stanford, California; Stanford University; School of Education; 1965
20 p.
Items to be taken into consideration when planning vocational-technical schools.

DC-094

_____ CONSTRUCTION GRANTS PROGRAM FOR SCHOOLS OF NURSING
Washington, D.C.; Public Health Service; 1965
7 p.
Explanation of the Nurse Training Act.

Accession No. Subject:
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DC-095 _____ GRANTS FOR CONSTRUCTING EDUCATIONAL FACILITIES FOR THE HEALTH PROFESSIONS UNDER P.L. 88-129
Washington, D.C.; U.S. Public Health Service; 1965
1 p.
Facts for applicants seeking grants under the provisions of the Health Professions Educational Assistance Act of 1963.

DC-099 _____ NURSING EDUCATION FACILITIES
Washington, D.C.; Public Health Service; 1964
88 p.
Programing considerations and architectural guide for nursing education facilities.

FL-006 _____ MIAMI-DADE JUNIOR COLLEGE SCIENCE AND TECHNOLOGY BUILDING
Miami, Florida; Miami-Dade Junior College
38 p.
Floor plans for the Miami-Dade Junior College Science and Technolgy Building.

IA-005 _____ AREA COMMUNITY COLLEGE - AREA VOCATIONAL SCHOOLS: CONSTRUCTION GUIDELINES
Burlington, Iowa; Burlington Community College; 1966
38 p.
Guidelines to assist in the planning process, to encourage good school plant design, and criteria for evaluation of area community college and area vocational school plans.

MD-006 _____ APPLICATION FOR APPROVAL: CONSTRUCTION OF AREA VOCATIONAL SCHOOL PROJECT
Baltimore, Maryland; State Department of Education; 1964
3 p.
Form to use when applying for funds for vocational-school construction.

MI-021 _____ A MANUAL FOR MAKING APPLICATION FOR VOCATIONAL-TECHNICAL EDUCATION FUNDS
Lansing, Michigan; State Department of Education; 1966
24 p.
Definition of terms, an explanation of acceptable programs, an outline of limitations, and established criteria necessary to qualify for reimbursement for each of the categories for which funds are available.

PA-009 _____ A COMPREHENSIVE CONCEPT FOR VOCATIONAL EDUCATION FACILITIES
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Pittsburg, Pennsylvania; Pittsburg Board of Public Education; 1967
59 p.
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WI-003 _____ VOCATIONAL, TECHNICAL AND ADULT EDUCATION FACILITIES
Madison, Wisconsin; State Board of Vocational, Technical and Adult Education; 1967
100 p.
A study of enrollments, facilities utilization and needs and projections in vocational-technical and adult education.

Accession No. Subject:

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DC-082 See also AGRICULTURE TECHNICIANS

DC-083 See also AGRICULTURE TECHNICIANS

DC-084 See also AGRICULTURE TECHNICIANS

DC-086 _____ YOUR GUIDE TO FARM JOBS: INTERMOUNTAIN STATES
Washington, D.C.; U. S. Department of Labor; 1964
2 p.
Map showing crop areas, time tables, highways, and local offices of State Employment Services.

3. FARM WORK AREAS

DC-087 See also AGRICULTURE TECHNICIANS

4. FEDERAL AGENCIES

V-PR-009 Levitan, Sar A.
VOCATIONAL EDUCATION AND FEDERAL POLICY
Kalamazoo, Michigan; W. E. Upjohn Institute for Employment Research
30 p.
A report on pending federal legislation in the field of vocational eduation and the relationship which exists between unemployment and the means by which vocational education may provide for alleviation of this crucial national problem.

VT 3305 Q

WY-126 Meyer, Louis S.
FEDERAL GRANTS-IN-AID TO WYOMING
Laramie, Wyoming; Article in Wyoming Trade Winds, March, 1967
11 p.
A history of Federal grants-in-aid to Wyoming, starting with the Land Ordinance of 1785.

DC-001 See also COMMUNITY IMPROVEMENT

DC-004 _____ CATALOG OF FEDERAL ASSISTANCE PROGRAMS
Washington, D.C.; Office of Economic Opportunity; 1967
701 p.
A description of the Federal government's domestic programs to assist the American people in furthering their social and economic progress.

DC-123 _____ FEDERAL BENEFITS FOR VETERANS AND DEPENDENTS
Washington, D.C.; Veterans Administration; 1966
44 p.
Fact sheet designed to provide general information concerning Federal benefits for veterans, their dependents and beneficiaries.

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WY-036 _____ WYOMING FEDERAL PROGRAMS BULLETIN
Cheyenne, Wyoming; State Department of Education; 1968
11 p.
Bulletin on federal programs involving Titles I, II, III, ESEA and III NDEA.

Accession No. Subject:
FEDERAL AGENCIES (cont.)

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FEDERAL FUNDS ALLOTTED TO WYOMING UNDER EXISTING FEDERAL ACTS FISCAL YEARS 1966 & 1967 IN SUPPORT OF VOCATIONAL EDUCATION
Cheyenne, Wyoming; State Department of Education
1 p.
List of Federal money allotted to Wyoming for vocational education.

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V-PR-013
Pateros, John J.
FINANCIAL MANAGEMENT OF FEDERAL-STATE EDUCATION PROGRAMS
Washington, D.C.; U. S. Office of Eduation; 1962
11 p.
Summary of basic principles to be applied to the management of the funds involved in a program regardless of the purpose for which the funds are provided.

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INSTRUCTIONS FOR APPLYING FOR ASSISTANCE FOR VOCATIONAL EDUCATION PROJECTS
Sacramento, California; State Department of Education; 1966
24 p.
Guidelines for applying for financial assistance under P.L. 88-210.

DC-014
REVIEW OF EDUCATIONAL RESEARCH: EDUCATIONAL ORGANIZATION, ADMINISTRATION, AND FINANCE
Washington, D.C.; American Educational Research Association; 1967
97 p.
An issue of REVIEW OF EDUCATIONAL RESEARCH devoted to educational organization, administration and finance.

DC-039
PERSONAL HEALTH EXPENSES
Washington, D.C.; U.S. Public Health Service; 1965
42 p.
Statistics on the proportion of persons with no annual personal health expenses and the proportion of persons with expenses in selected expense intervals, by age, sex, family income, and education of the head of the family. Based on data collected by self-enumeration during the period July-December 1962.

DC-047
PERSONAL HEALTH EXPENSES
Washington, D.C.; U.S. Public Health Service; 1966
53 p.
Statistics on the per capita health expenses by age, sex, color, family income, education of the head of the household, family size, geographic region, residence, limitation of activity, and insurance coverage. Based on data collected by self-enumeration during the period July-December, 1962.

DC-211
PROBLEMS AND OPPORTUNITIES IN FINANCING EDUCATION
Washington, D.C.; National Education Association; 1959
160 p.
Proceedings of the second national conference on school finance problems.

Accession No. Subject:
FINANCES (cont.)

DC-212 ———— FINANCING THE CHANGING SCHOOL PROGRAM
Washington, D.C.; National Education Association; 1962
154 p.
Proceedings of the fifth national conference on school finance held in St. Louis on April 5-6, 1962.

DC-217 ———— FINANCIAL ACCOUNTING FOR SCHOOL ACTIVITIES
Washington, D.C.; U.S. Office of Education; 1959
109 p.
A guide to accounting for school activity funds; designed for use by individual schools and school systems.

WI-019 ————
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University of Wisconsin; 1967
5 p.
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WY-064 ———— WYOMING PUBLIC SCHOOL FINANCE, 1966-67
Cheyenne, Wyoming; State Department of Education; 1968
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A brochure on current financial information about Wyoming public schools.

WY-128 ———— WYOMING HANDBOOK FOR FINANCIAL ACCOUNTING FOR PUBLIC SCHOOL SYSTEMS.
Cheyenne, Wyoming; State Department of Eduation; 1966
111 p.
Outline of the minimum essentials in public school financial accounting for Wyoming schools.

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NY-008 Eninger, Max U.
REPORT ON NEW YORK STATE DATA FROM A NATIONAL FOLLOW UP STUDY OF HIGH SCHOOL LEVEL TRADE AND INDUSTRIAL VOCATIONAL GRADUATES
VT 5266 Q
Albany, New York; State Education Department; 1967
14 p.
Abstract of a study designed to direct the attention of administrators and teachers to the needs of graduates from trade and technical courses in making adjustments to post high school experiences.

V-PR-012 Eninger, Max U.
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5267 Q
Pittsburg, Pennsylvania; Educational Systems Research Institute; 1967
157 p.
Report concerning the post high school follow-up data on the vocational and academic program graduates of 8 New York high schools that participated in a nation-wide survey of high school level T & I graduates.

ID-002 Gentry, N. Dale
A FOLLOW-UP STUDY OF VOCATIONAL STUDENTS AT NORTH IDAHO JUNIOR COLLEGE
2156 Q
Moscow, Idaho; Occupational Research Unit; 1967
52 p.
Report of a follow-up study of students formerly enrolled in three vocational-technical programs at North Idaho Junior College in Coeur d'Alene.

Accession No. Subject:
FOLLOW-UP (cont.)

WY-030 Goff, Maurice L.
SELECTED TECHNIQUES FOR FORMULATING THE QUESTIONNAIRE, MECHANICS AND RELATED MATERIALS OF A FOLLOW-UP PROCEDURE DEALING WITH POST SECONDARY VOCATIONAL-TECHNICAL GRADUATES
Cheyenne, Wyoming; State Department of Education; 1966
34 p.
Guidelines for setting up a follow-up questionnaire.

WA-006 Lowe, Lee
A SURVEY OF VOCATIONAL EDUCATION POSSIBILITIES IN THE MERCER ISLAND SCHOOLS
Mercer Island, Washington; Mercer Island Schools; 1968
20 p.
Survey of the needs of the vocational education program in the Mercer Island school system.

CO-002 _____
COLORADO VOCATIONAL EDUCATION STUDENT FOLLOW-UP SYSTEM
Denver, Colorado; State Board for Community Colleges and Occupational Education;
26 p.
Guidelines for follow-up studies of graduates of occupational education programs.

CO-005 _____
A CONTINUATION OF THE 1963 HIGH SCHOOL GRADUATES FOLLOW-UP STUDY
Fort Collins, Colorado; Research Coordinating Unit; 1966
54 p.
Report of a follow-up study conducted by the Research Coordinating Unit at Colorado State University.

CT-001 _____
GRADUATE FOLLOW-UP 1966
Hartford, Connecticut; State Department of Education; 1967
67 p.
Report showing placement data for seven vocational program fields; covers vocational courses in local high schools and community colleges, as well as state operated technical institutes.

CT-003 _____
A SUMMARY OF A FIVE AND TEN-YEAR GRADUATE FOLLOW-UP
Hartford, Connecticut; Department of Education; 1967
3 p.
Summary report of a study to determine the status of Connecticut vocational-technical school graduates several years after graduation.

MI-025 See also COOPERATIVE EDUCATION

OK-005 See also ENROLLMENT

OR-012 See also COUNSELING

WA-003 _____
FOLLOW-UP STUDY: VOCATIONAL PREPARATORY STUDENTS
Olympia, Washington; State Department of Education; 1966
14 p.
Development of a system which would efficiently follow up students who have had vocational preparatory training.

Accession No. Subject:
FOLLOW-UP (cont.)

WY-029
A STUDY OF THE 1963 GRADUATES FROM WYOMING'S PUBLIC HIGH SCHOOLS
Cheyenne, Wyoming; State Department of Education; 1964
19 p.
A study of mental abilities, courses of study, first-year pursuits, mobility, and size of graduating class of the 1963 high school graduates of Wyoming.

7. FOOD SERVICE OCCUPATION

DE-004
Holden, Claudia and Williams, Florence
WAITRESS
Dover, Delaware; Department of Public Instruction; 1965
22 p.
Job descriptions of waitress and related occupations.

CT-008 See also CURRICULUM

DC-227
ORGANIZING A FOOD TRAINING PROGRAM
Washington, D.C.; U.S. Office of Education; 1967
28 p.
Guidelines for educational planners, school administrators, and industry advisory committees desiring to establish sound programs in quantity food preparation.

DC-228
QUANTITY FOOD PREPARATION
Washington, D.C.; U.S. Office of Education; 1967
39 p.
Suggested plan to be used by school officials in developing a training program in quantity food preparation.

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WY-136
FOREIGN AID
Cheyenne, Wyoming; Wyoming State Library; 1966
34 p.
Bibliography of material available at the State Library on the foreign aid policy of the United States.

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CD-001
THE CANADA NEWSTART PROGRAM
Ottawa, Canada; Department of Manpower and Immigration; 1967
18 p.
Description of the Canada NewStart Program (vocational-education training for post-high school adults).

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CIRF ABSTRACTS
Geneva, Switzerland; International Vocational Training Information and Research Centre; 1965
60 p.
Forty-seven abstracts on reforms of vocational and technical education and training in several countries.

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DC-016 See also AGRICULTURE

Accession No. Subject:
FORESTRY (cont.)

DC-069 _____
GUIDELINES FOR GRANTS FOR BASIC FORESTRY RESEARCH UNDER PUBLIC LAW 85-934
Washington, D.C.; U.S. Department of Agriculture; 1965
7 p.
Guidelines for submission of proposals for grants for forestry research.

11. FRUIT AND VEGETABLE PROCESSING

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COLLEGE EDUCATION FOR THE FRUIT AND VEGETABLE PROCESSING INDUSTRY
Washington, D.C.; Food Technology, March, 1966
3 p.
An article on a pilot study on educational needs in the fruit and vegetable processing industry.

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ALLOTMENTS FOR VOCATIONAL EDUCATION, FISCAL YEAR 1966
Washington, D.C.; U.S. Office of Education; 1965
3 p.
1966 fiscal year allotments by state for vocational education.

OR-006 Loomis, William G.
_____
Salem, Oregon; State Department of Education; 1966
29 p.
Special FEDERAL (1963 Vocational Education Act) and STATE vocational education funds available to local education agencies during the 1966-67 fiscal year and policies and procedures relating to the allocation of these funds.

DC-077 See also AREA VOCATIONAL PROGRAMS

DC-135 _____
PROJECTS FUNDED, FISCAL YEAR 1967
Washington, D.C.; U.S. Office of Education; 1967
14 p.
Projects funded by the Bureau of Research, Division of Adult and Vocational Research.

MI-021 See also FACILITIES

PA-007 _____
MANUAL: APPLICATION FOR VOCATIONAL EDUCATION FUNDS
Harrisburg, Pennsylvania; State Department of Education; 1965
10 p.
Detailed information about how to apply for Federal money for vocational education programs.

WY-095 See also FEDERAL AGENCIES

G 1. GLASSWARE
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GLASSWARE BIBLIOGRAPHY
Cheyenne, Wyoming; Wyoming State Library; 1967
4 p.
Bibliography of materials available at the Wyoming State Library on glassware.

Accession No. Subject:

2. GOAL IDENTIFICATION

MI-043 Soule, David H.
AN EXPERIMENTAL PROGRAM DESIGNED TO PROMOTE A GREATER INTEREST IN FULFILLING LATENT POTENTIAL IN UNDER-ACHIEVING HIGH SCHOOL BOYS THROUGH GOAL IDENTIFICATION
Lansing, Michigan; State Department of Education; 1964
2 p.
Research brief on a project to promote interest in a variety of occupations and professions to boys who had not been applying themselves in high school.

3. GOVERNMENT, CITY AND COUNTY

WY-145 MUNICIPAL AND COUNTY GOVERNMENTS
Cheyenne, Wyoming; Wyoming State Library; 1967
6 p.
A bibliography of materials on municipal and county governments available at the State Library.

4. GOVERNOR'S COMMITTEE

AZ-006 EDUCATING FOR A CHANGING WORLD OF WORK
Phoenix, Arizona; State Department of Education; 1962
26 p.
Summary report of the governor's committee on technical-vocational education.

WY-110 PROGRESS REPORT OF THE GOVERNOR'S COMMITTEE ON VOCATIONAL-TECHNICAL EDUCATION
rec'd Cheyenne, Wyoming; State Department of Education; 1968
24 p.
Guidelines for vocational-technical education and recommendations of the governor's committee for vocational education.

5. GRADUATES

MI-012 See also ENROLLMENT

6. GRANTS-IN-AID

DC-077 See also AREA VOCATIONAL PROGRAMS

DC-095 See also FACILITIES

DC-096 See also COMMUNITY HEALTH

DC-121 GRANTS FOR RESEARCH AND DEMONSTRATIONS IN SOCIAL WELFARE
Washington, D.C.; U.S. Welfare Administration; 1965
10 p.
A description of new programs for awarding research or demonstration grants fo non-Federal organizations concerned with social welfare.

NY-014 GRANTS FOR VOCATIONAL AND TECHNICAL EDUCATION
ordered 4-69 New York, N.Y.; The Ford Foundation; 1964
20 p.
Summary of grants made by the Ford Foundation for vocational-technical education.

V-GR-003 Same publication as NY-014

Accession No. Subject:
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V-GR-005
VOCATIONAL EDUCATION: SPECIAL GRANTS
Washington, D.C.; U.S. Office of Education; Reprinted from FEDERAL REGISTER, October 6, 1964
2 p.
Research, training and experimental, developmental or pilot programs in vocational and technical education.

V-GR-006
GRANTS FOR RESEARCH, TRAINING, EXPERIMENTAL DEVELOPMENTAL, OR PILOT PROGRAMS IN VOCATIONAL AND TECHNICAL EDUCATION
Washington, D.C.; U.S. Office of Education; 1964
30 p.
Conditions and procedures for proposing and conducting Grant programs authorized under Section 4c of P.L. 88-210, the Vocational Education Act of 1963.

V-SN-001
THE GRANT PROGRAM FOR THE PREPARATION OF PROFESSIONAL PERSONNEL IN THE EDUCATION OF HANDICAPPED CHILDREN
Washington, D.C.; U.S. Office of Education; 1966
A list of qualifications of fellowship, traineeship, summer session or special study traineeship candidates; and a list of colleges and universities receiving traineeships and fellowships under P.L. 85-926.

WY-126 See also FEDERAL AGENCY

7. GREENHOUSE PLANT PRODUCTION

MI-062 See also AGRICULTURE

8. GROWTH

DC-015
GROWTH, DEVELOPMENT AND LEARNING
Washington, D.C.; American Educational Research Association; 1967
171 p.
Issue of REVIEW OF EDUCATIONAL RESEARCH devoted to growth, development and learning.

9. GUIDANCE

NV-003 Bailey, John A.
CAREER DEVELOPMENT CONCEPTS: SIGNIFICANCE AND UTILITY
Reno, Nevada; Research Coordinating Unit; 1967
16 p.
Identification of essential career-development concepts.

CO-004A Cavnar, LeRoy B.
ATTITUDES OF COLORADO SCHOOL ADMINISTRATORS TOWARD GUIDANCE, COUNSELING AND VOCATIONAL EDUCATION
Fort Collins, Colorado; Research Coordinating Unit; 1967
22 p.
Facts and attitudes concerning guidance and counseling on a state-wide level.

V-DD-005 See also CAREER INFORMATION

WY-066 Morris, Thomas L.
GUIDANCE FOR ALL
Cheyenne, Wyoming; Department of Education; 1968
13 p.
A description of what guidance programs should do and who they should help.

48 p.

Accession No. Subject:
GUIDANCE (cont.)

WY-078 Safar, Dwight
VOCATIONAL TRAINING OPPORTUNITIES BEYOND THE HIGH SCHOOL IN WYOMING
Cheyenne, Wyoming; State Department of Education; 1964
8 p.
Information concerning the sources available for post high school vocational training in Wyoming.

DC-046 Warner, O. Ray
COMMITMENT TO YOUTH
Washington, D.C.; U.S. Office of Education; 1964
44 p.
Information and statistics on the first 5 years of Federal, state and local programs under Title V, NDEA.

MI-031 Wenrich, Ralph C.
HIGH SCHOOL PRINCIPAL'S PERCEPTIONS OF THE ROLES AND RESPONSIBILITIES OF PERSONS WHO WOULD BE CHARGED WITH THE RESPONSIBILITIES FOR LEADERSHIP IN THE DEVELOPMENT OF OCCUPATIONALLY ORIENTED PROGRAMS IN HIGH SCHOOLS
Lansing, Michigan; Department of Education; 1965
2 p.
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CA-009 Yunker, John A.
PRE-HIGH SCHOOL VOCATIONAL GROUP GUIDANCE FOR POTENTIAL DROPOUTS AND NON-COLLEGE BOUND STUDENTS
Tracy, California; Tracy Elementary School District; 1967
34 p.
A project to provide vocational guidance services to an experimental group of male 8th graders who were deemed lacking in academic interest and/or ability and who were classified as potential dropouts and non-college bound students.

CA-008 See also ADULT EDUCATION

CA-013 See also ADVISORY COMMITTEE

DC-032 _____
STEP UP TO YOUR FUTURE THROUGH VOCATIONAL GUIDANCE
Washington, D.C.; National Vocational Guidance Association; 1967
25 p.
Handbook prepared to help professional and civic organizations to make an effective local contribution to National Vocational Guidance Week.

GA-005 _____
CONFERENCE ON WAYS THE AREA SCHOOL PERSONNEL WORKER AND THE HIGH SCHOOL COUNSELOR CAN WORK TOGETHER
Atlanta, Georgia; State Department of Education; 1966
71 p.
Report of a conference of personnel workers and high school counselors in Georgia in an attempt to spell out ways in which they can work together to inform potential students of area school programs.

MI-020 See also CURRICULUM

OH-067 _____
GUIDANCE SERVICES IN CAREER PLANNING
Ohio State Department of Education; 1964
9 p.
Responses of a Student Vocational Planning Questionnaire to determine the practicability of initiating or expanding vocational course offerings in the high school curriculum.

Accession No. Subject:
GUIDANCE (cont.)

TN-001 ———
SECTION X: OPERATIONAL PROCEDURES AND MINIMUM STANDARDS FOR VOCATIONAL EDUCATION IN TENNESSEE: GUIDANCE
Tennessee Department of Education; 1965
4 p.
Standards and procedures for vocational guidance programs in Tennessee.

V-SN-008 See also DISADVANTAGED

WI-006 ———
GUIDANCE
Madison, Wisconsin; University of Wisconsin; Center for Studies in Vocational and Technical Education; 1967
24 p.
Bibliography of materials available at the Center for Studies in Vocational and Technical Education on guidance.

WY-002 ———
DIRECTORY: GUIDANCE PERSONNEL, 1967-68
Cheyenne, Wyoming; State Department of Education; 1967
11 p.
Names and schools of persons in Wyoming public schools who are certificated counselors; counselor-educators and counselors at the University of Wyoming and counselors at the Wyoming junior colleges.

10. GUIDELINES

IN-001 Arnold, Joseph P.; Erickson, Richard D.; Suess, Alan R.
GUIDELINES FOR THE DEVELOPMENT OF BACCALAUREATE TECHNICAL TEACHER EDUCATION PROGRAMS
Lafayette, Indiana; Purdue University; 1967
17 p.
Guidelines to provide direction for those involved in the initiation or revision of baccalaureate technical teacher education programs.

DC-025 See also BUDGET

DC-037 ———
GUIDE TO LOCAL OCCUPATIONAL INFORMATION
Washington, D.C.; U.S. Department of Labor; 1966
149 p.
Occupational titles listed by occupational group, and state; area skill surveys, listings by states and locality.

DC-093 See also CURRICULUM

DC-141 ———
PRELIMINARY STATEMENT OF THE GUIDELINES FOR THE OCCUPATIONAL RESERACH AND PLANNING PROGRAM
Washington, D.C.; U.S. Office of Education; 1964
5 p.
Guidelines for the occupational research and planning program which will allocate the funds available for research, training, and pilot and demonstration programs.

NB-004 ———
GUIDELINES FOR VOCATIONAL EDUCATION PROGRAMS IN NEBRASKA PUBLIC SCHOOLS
Lincoln, Nebraska; State Department of Education; 1966
46 p.
Procedures that local public schools must follow for participation in the vocational education program.

Accession No. Subject:
GUIDELINES (cont.)

V-HE-013

GUIDELINES
Boulder, Colorado; Western Council on Higher Education for Nurses
2 p.
Guidelines for developing associate degree nursing programs in the West.

V-SN-006

GUIDELINES FOR REPORTING PERSONS WITH SPECIAL NEEDS
Cheyenne, Wyoming; State Department of Education
2 p.
Suggested guidelines for reporting persons with special needs enrolled in vocational education.

WY-097

RESEARCH PROJECT PROGRESS REPORTS
Cheyenne, Wyoming; Research Coordinating Unit
4 p.
Guidelines that must be followed in submitting quarterly progress reports on research projects.

11. GUNS

WY-137

GUNS
Cheyenne, Wyoming; Wyoming State Library; 1965
4 p.
Bibliography of books and materials on guns available at the Wyoming State Library.

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1. HANDICAPPED

ID-008

Martin, Grant L.
A STUDY OF VOCATIONAL TRAINING FOR MENTALLY AND PHYSICALLY HANDICAPPED
Moscow, Idaho; Research Coordinating Unit; 1966
17 p.
A study of training facilities for mentally and physically handicapped persons in Idaho.

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V-SN-001

See also GRANTS-IN-AID

2. HEADSTART

V-SN-014

CHILDREN
Washington, D.C.; U.S. Department of Health, Education and Welfare; March-April, 1968
85 p.
An interdisciplinary journal for the professions serving children with an issue devoted to the Headstart programs.

3. HEALTH

DC-168

Arnold, Walter M.
SURVEY OF ORGANIZED CURRICULUMS IN HEALTH VOCATIONS 1965-66
Washington, D.C.; U.S. Office of Education; 1967
4 p.
Information on a survey to be carried out by the Office of Education's National Center for Education Statistics.

Accession No. Subject:
HEALTH (cont.)

OH-030 Nanglo, Grace L., compiler
HEALTH OCCUPATIONS EDUCATION CENTERS
Columbus, Ohio; The Center for Vocational and Technical Education
156 p.
Report of a seminar held on health occupations eduation centers.

NM-008 Rihm, Sister Alma; Mock, Mrs. Hardy K.; and Montag, Dr. Mildred L.
A TRANSITION IN NURSING EDUCATION
Santa Fe, New Mexico; State Department of Education; 1967
114 p.
Guidelines resulting from the phasing out of a diploma nursing program and the establishment of an associate degree program.

IL-012 Tomlinson, R. M.; Ash, C. L.; Landgon; Lois M.; Suzuki, W. N.
PRACTICAL NURSING IN ILLINOIS: A PROFILE
Urbana, Illinois; University of Illinois
160 p.
A supplemental report to present research findings and related materials developed from a basic project entitled An Integrated, Longitudinal Study of Practical Nursing.

CT-006 ———
HEALTH SERVICE OCCUPATIONS
Hartford, Connecticut; State Department of Education; 1966
50 p.
A study of job needs and the type of training required for health service occupations in the Hartford area.

CT-009 ———
HEALTH SERVICE OCCUPATIONS
Hartford, Connecticut; State Department of Education; 1967
117 p.
A study of job needs and the type of training required for health service occupations (State of Connecticut).

DC-029 ———
REPORT TO THE SURGEON GENERAL
Washington, D.C.; Public Health Service; 1963
70 p.
Report of the Second National Conference on Public Health Training, including recommendations to the Congress.

DC-039 See also FINANCES

DC-047 See also FINANCES

DC-093 See also CURRICULUM

DC-094 See also FACILITIES

DC-095 See also FACILITIES

DC-096 See also COMMUNITY HEALTH

NY-006 ———
STATISTICAL DATA: ASSOCIATE DEGREE PROGRAMS IN NURSING
New York, N.Y.; National League for Nursing, Inc.; 1966
8 p.
Data on associate degree programs in nursing, by state, number of programs and enrollment.

Accession No. Subject:
HEALTH (cont.)

OH-045

NURSING EDUCATION PROGRAMS TODAY
New York, N.Y.; National League for Nursing; 1961
15 p.
A statement of educational programs in nursing in their current stage of development.

TN-008

OPERATIONAL PROCEDURES AND MINIMUM STANDARDS FOR VOCATIONAL EDUCATION IN TENNESSEE: HEALTH OCCUPATIONS EDUCATION
Tennessee State Department of Education; 1965
17 p.
Standards and operational procedures for conducting programs in health occupations education in Tennessee.

V-HE-001

ENVIRONMENTAL HEALTH
New York, N.Y.; Allied Chemical Corp.
8 p.
Pamphlet on air polution.

V-HE-002

NEW PROGRAMS
Washington, D.C.; U.S. Department of Health, Education, and Welfare; 1965
14 p.
Booklet to inform Housing Project Managers and others concerned about seven new programs and how to obtain information about their availability in the local community.

V-HE-005

A STATEMENT OF BASIC BELIEFS
Washington, D.C.; The Society of State Directors of Health, Physical Education, and Recreation; 1965
16 p.
A summary of some of the basic beliefs of the Society with particular pertinence to programs of health education, physical education, and recreation in state and local school systems.

V-HE-006

HEALTH EDUCATION OCCUPATIONS
Austin, Texas; State Education Agency; 1967
22 p.
Description of a relatively new type of vocational program that has been initiated in secondary schools in Texas. Includes a bibliography, film lists, and sources of teaching aids.

V-HE-008

HEALTH RESOURCES STATISTICS
Washington, D.C.; U.S. Public Health Service; 1965
182 p.
Information on health manpower resources, requirements, utilization, education and training, and recruitment of professional, technical, and auxiliary workers for all health activities.

V-HE-010

TECHNOLOGY AND MANPOWER IN THE HEALTH SERVICE INDUSTRY 1965-75
Washington, D.C.; Manpower Administration; 1967
109 p.
A general perspective and some conclusions which may be useful in shaping broad programs and policies in manpower programs for health service occupations.

Accession No. Subject:

4. HIGH SCHOOL LEAVERS

MI-039 Cook, Fred S.
OPPORTUNITIES AND REQUIREMENTS FOR INITIAL EMPLOYMENT OF SCHOOL LEAVERS WITH EMPHASIS ON OFFICE RETAIL JOBS
Lansing, Michigan; State Department of Education; 1966
3 p.
A study to determine the number and type of entry jobs available for high school leavers aged 16-21 and the specific skills demanded for these--as reported by employers within the city of Detroit.

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5. HIGHER EDUCATION

DC-158 A FIERCE COMMITMENT
Washington, D.C.; Reprint from AMERICAN EDUCATION, Nov., 1965
8 p.
Explanation of the Higher Education Act of 1965.

DC-225 EVERY INDIVIDUAL SHALL HAVE THE OPPORTUNITY TO CONTINUE APPROPRIATE EDUCATION
Washington, D.C.; The American Association of Junior Colleges
9 p.
A brochure explaining junior colleges --- descriptions of their purposes and their structure.

DC-226 EDUCATION DIRECTORY
Washington, D.C.; U.S. Office of Education; 1966
242 p.
Directory of institutions of higher education.

V-GR-002 SELECTED STATISTICS OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES -- 1965 REPORT
Washington, D.C.; U.S. Office of Education; 1965
11 p.
Selected items of information on enrollments, faculty salaries, and finances of state universities and land-grant colleges.

6. HIGHWAY TECHNOLOGY

DC-049 See also CURRICULUM

DC-052 See also CURRICULUM

7. HISTORY

WY-004 Whittenburg, Clarice
WYOMING: PRELUDE TO STATEHOOD
Cheyenne, Wyoming; Wyoming Travel Commission; 1966
44 p.
Booklet on the history of Wyoming previous to the granting of Statehood.

V-SN-010 THE HISTORY OF THE AMERICAN NEGRO SERIES
New York, N.Y.; McGraw-Hill Book Company
2 p.
A brochure describing the films available in the "History of the American Negro" film series.

Accession No. Subject:

8. HOME ECONOMICS

OH-007 Chadderdon, Hester; Fanslow, Alyce M.
REVIEW AND SYNTHESIS OF RESEARCH IN HOME ECONOMICS EDUCATION
Columbus, Ohio; Center for Vocational and Technical Education; 1966
104 p.
An aid for assessing the current state of the art in research for the field of home economics education.

MI-034 Vossbrink, Meta
ATTITUDES AND BELIEFS ABOUT HOMEMAKING AND/OR HOME ECONOMICS EDUCATION IN MICHIGAN SECONDARY SCHOOLS
East Lansing, Michigan; Department of Education
4 p.
A project to describe and analyze the feelings about homemaking and/or home economics education in Michigan secondary schools.

MS-001 Witt, Mildred R. and Wall, James E.
RESEARCH IN HOME ECONOMICS GAINFUL EMPLOYMENT: FIVE PILOT PROJECTS IN MISSISSIPPI -- 1965-1966
Jackson, Mississippi; State Department of Education; 1966
28 p.
Description of some of the methods and techniques used in organizing and conducting home economics gainful employment training programs in local communities.

DC-067 _____
PILOT TRAINING PROGRAMS IN HOME ECONOMICS
Washington, D.C.; American Vocational Association, Inc.;
15 p.
A booklet on home economics pilot training programs that are related to wage earning. Intended for teachers, supervisors, and administrators in the field of vocational education.

DC-068 _____
RESEARCH, DEVELOPMENTAL-PILOT, AND TRAINING PROJECTS IN THE FIELD OF VOCATIONAL HOME ECONOMICS EDUCATION
Washington, D.C.; U.S. Office of Education; 1966
6 p.
Brief descriptions of new research and programs in vocational home economics.

KS-016 See also AGRICULTURE

TN-006 _____
OPERATIONAL PROCEDURES AND MINIMUM STANDARDS FOR VOCATIONAL EDUCATION IN TENNESSEE: HOME ECONOMICS
Tennessee State Department of Education; 1965
21 p.
Unofficial guidelines for program planning in home economics education.

WY-039 _____
HOME ECONOMICS CURRICULUM BULLETIN NO. 1
Cheyenne, Wyoming; State Department of Education; 1967
47 p.
Guidelines to assist teachers and administrators in planning effective school programs in home economices education.

9. HOSPITALITY EDUCATION

MI-013 See also CURRICULUM

MI-061 See also DISTRIBUTIVE EDUCATION

Accession No. Subject:

I 1. IMPLEMENTATION OF RESEARCH

NC-005 Miller, Texton R.
IMPLEMENTING A NEW CONCEPT OF SUPERVISED PRACTICE IN VOCATIONAL AGRICULTURE
Raleigh, North Carolina; North Carolina State University; 1967
25 p.
Report of a pilot program for the purpose of improving teachers' ability to develop appropriate supervised practice.

PA-004 _____
RITE
Philadelphia, Pa.; Research for Better Schools, Inc,; 1967
9 p.
Report on a conference on educational research utilization held in January, 1967.

2. IMPROVEMENT
See also COMMUNITY IMPROVEMENT

DC-001

FL-005 _____
IMPROVING VOCATIONAL EDUCATION THROUGH PLANNED CHANGE
Tallahassee, Florida; State Department of Education; 1966
22 p.
Proceedings of first conference on the Florida Vocational Program Research Coordinating Unit held May 12-13, 1966.

V-MR-0020 _____
IMPROVING STATE LEADERSHIP IN EDUCATION
Washington, D.C.; U.S. Office of Education; 1966
145 p.
An annual report of the Advisory Council on State Departments of Education.

3. INDIAN EDUCATION

ND-016 Miller, Harold J.
THE EFFECTS OF INTEGRATION ON RURAL INDIAN PUPILS
Grand Forks, North Dakota; Center for Research in Vocational and Technical Education; 1968
29 p.
Summary of a final report on the effects of integration on rural Indian pupils.

DC-200 _____
STATISTICS CONCERNING INDIAN EDUCATION
Washington, D.C.; U.S. Department of the Interior; 1965
37 p.
Fiscal year 1965 statistics concerning Indian education.

DC-201 _____
INDIAN AFFAIRS: 1965
Washington, D.C.; Department of Interior; 1966
22 p.
A progress report on Indian affairs from the Commissioner of Indian Affairs.

DC-203 _____
THE INDIAN HEALTH PROGRAM OF THE U.S. PUBLIC HEALTH SERVICE
Washington, D.C.; U.S. Department of Health, Education, and Welfare, Public Health Service; 1966
35 p.
A booklet on health services for the American Indian and Alaska native.

Accession No. Subject:
INDIAN EDUCATION (cont.)

DC-204 ———— THE INDIAN INDUSTRIAL DEVELOPMENT PROGRAM
Washington, D.C.; U.S. Department of the Interior; 1964
12 p.
A booklet that illustrates some of the facts about the incentives of the Indian Industrial Development Program.

4. INDIVIDUAL INSTRUCTION

NY-016 Shelley, Edwin F.
TOWARD AN INDIVIDJALIZED EDUCATION
New York, N.Y.; E.F. Shelley and Company, Inc.; 1968
8 p.
A paper presented before the 1968 National Convention of the Institute of Electrical and Electronics Engineers.

IA-009 ———— INDIVIDUAL INSTRUCTION
Des Moines, Iowa; State Department of Education
8 p.
Bibliography of 79 individual instruction materials for teacher-coordinators of office education.

PA-006 ———— INDIVIDUALLY PRESCRIBED INSTRUCTION
Philadelphia, Pennsylvania; Research for Better Schools, Inc.
16 p.
A brochure describing Individually Prescribed Instruction and an instructional system.

5. INDUSTRY-SCHOOL RELATIONS

V-MR-009 ———— SCHOOL-INDUSTRY CONFERENCE
Nashville, Tennessee; State Board for Vocational-Technical Education; 1967
23 p.
Summary report of a school-industry conference held in Oak Ridge, Tennessee on July 11-12, 1967.

6. INDUSTRIAL EDUCATION

OH-008 Streichler, Jerry
REVIEW AND SYNTHESIS OF RESEARCH IN INDUSTRIAL ARTS EDUCATION
Columbus, Ohio, Center for Research and Leadership Development in Vocational and Technical Education; 1966
88 p.
An aid for assessing the current state of the art in research for the field of industrial arts education.

DC-192 ———— INDUSTRIAL ARTS AND TRADE AND INDUSTRIAL EDUCATION
Washington, D.C.; American Vocational Journal
2 p.
An operational description of industrial arts and trade and industrial education.

IA-010 See also COLLEGE CREDIT FOR WORK EXPERIENCE

IN-003 ———— JOURNAL OF INDUSTRIAL TEACHER EDUCATION
Lafayette, Indiana; National Association of Industrial Teacher Education; 1965
51 p.
Fall, 1965, issue of a publication of research reports on industrial teacher education.

Accession No. Subject:
INDUSTRIAL EDUCATION (cont.)

MI-022

THE PARTNERSHIP VOCATIONAL EDUCATION PROJECT
Mount Pleasant, Michigan; Central Michigan University; 1967
12 p.
A description of a new program in Industrial-Technical Education designed to improve the quality of industrial-technical education courses, the quality of instruction, the articulation from one phase of education to another, and the application of knowledge through correlation of industrial-technical subjects with other academic areas.

NC-006 See also DENTAL EDUCATION

6. INDUSTRIAL HYGIENISTS

DC-137

INDUSTRIAL HYGIENISTS
Chicago, Illinois; Science Research Associates, Inc.; 1966
4 p.
An occupational brief on the field of industrial hygienist.

8. INDUSTRIAL MACHINERY MAINTENANCE WORKERS

IL-024

AN INVESTIGATION OF THE TRAINING AND SKILL REQUIREMENTS OF INDUSTRIAL MACHINERY MAINTENANCE WORKERS
Chicago, Illinois; Midwest Institute for Research and Training; 1967
13 p.
Summarization of an investigation to identify the specific knowledge, skill, and training required of occupations within the machinery maintenance field and to determine how these requirements might change in the foreseeable future.

9. INDUSTRIAL RADIOGRAPHY

DC-220

INDUSTRIAL RADIOGRAPHY COURSE
Washington, D.C.; U.S. Office of Education; 1967
200 p.
Instructor's guide for a course in industrial radiography.

10. INDUSTRIAL RELATIONS

WI-025

ANNUAL REPORT, NOVEMBER, 1966
Madison, Wisconsin; University of Wisconsin; 1966
64 p.
Annual report of the Center for Studies in Vocational and Technical education and the Industrial Relations Research Institute.

WI-028

IRRI REPORT
Madison, Wisconsin; Center for Studies in Vocational and Technical Education; 1968
19 p.
A publication of the Industrial Relations Research Institute and Center for Studies in Vocational and Technical Education.

11. INDUSTRIAL TRAINING ACT

DC-101

Hansen, Gary B.
BRITAIN'S INDUSTRIAL TRAINING ACT: ITS HISTORY, DEVELOPMENT AND IMPLICATIONS FOR AMERICA
Washington, D.C.; U.S. Department of Labor; 1967
76 p.
Analysis of the British Industrial Training Act.

Accession No. Subject:

12. INFORMATION

NY-001 DuBato, George S.
A FEASIBILITY STUDY TO INVESTIGATE THE STRUCTURE AND OPERATION OF A MODEL OCCUPATIONAL INFORMATION DISSEMINATION UNIT WHICH WOULD OPERATE BETWEEN THE NEW YORK STATE EMPLOYMENT SERVICE AND THE NEW YORK STATE EDUCATION DEPARTMENT
Washington, D.C.; U.S. Office of Education; 1967
155 p.
A feasibility study to investigate the need for establishing an occupational information dissemination unit that would directly assist counselors and occupational educators by translating, synthesizing, and adapting the increasing array of occupational information for use in secondary schools and two-year colleges.

KS-003 Elson, Donald E.
A SURVEY OF RCU INFORMATION SERVICES
Topeka, Kansas; Kansas Vocational Education Research Coordinating Unit; 1967
28 p.
A study of the information services of the RCUs in each state.

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IA-014 Lindquist, E.F.; Marker, Robert W.; Van Dusseldorp, Ralph A.
EDUCATIONAL INFORMATION PROJECT
Iowa City, Iowa; University of Iowa; 1966
288 p.
Report of a research project to develop an educational information center.

CO-006 _____
A CENTER FOR VOCATIONAL INFORMATION PROCUREMENT FOR COLORADO
Denver, Colorado; State Department of Education
6 p.
A proposal to the State Board for Vocational Education for the establishment of a center for vocational information procurement for Colorado.

MA-004 _____
PROGRESS REPORT
Woburn, Massachusetts; Research Coordinating Unit; 1967
28 p.
Progress report on the Massachusetts Vocational Education Information System.

NJ-004 See also BEGINNING TEACHERS

PA-011 _____
PENNSYLVANIA RETRIEVAL OF INFORMATION FOR MATHEMATICS EDUCATION SYSTEM
Harrisburg, Pa.; Department of Public Instruction
11 p.
A brochure on the Pennsylvania Retrieval of Information for Mathematics Education System.

13. INITIAL EMPLOYMENT

MI-039 See also HIGH SCHOOL LEAVERS

14. INNOVATION

CA-020 _____
ORANGE COUNTY, CALIFORNIA, SURVEY
Los Angeles, California; U.C.L.A.
70 p.
Plan for junior college school district reorganization in Southern California.

Accession No. Subject

INNOVATION (cont.)

DC-045 _____
PUTTING RESEARCH, EXPERIMENTAL AND DEMONSTRATION FINDINGS TO USE
Washington,D.C.; U.S. Department of Labor; 1967
71 p.
Report of a multiagency seminar held November 28-29, 1966 in Washington, D.C. on a special manpower project.

DC-128 See also ELEMENTARY AND SECONDARY EDUCATION ACT

MI-004 See also DIFFUSION

MI-052 _____
THE DIFFUSION PROCESS OF VOCATIONAL EDUCATION INNOVATIONS IN THE STATE OF MICHIGAN
Lansing, Michigan; Research Coordinating Unit; 1966
14 p.
A research proposal on the diffusion process of vocational education innovations.

PA-003 _____
A NEW KIND OF PARTNERSHIP
Philadelphia, Pa.; Research for Better Schools, Inc.
18 p.
A description of the Research for Better Schools Laboratory.

V-MR-001 See also EXPERIMENT

15. INSTRUCTION

GA-004 Lester, Herschel T., Jr.
ESTABLISHED PROCEDURES USED IN 36 STATES TO ADMINISTER PERSONNEL WHO PREPARE SUBJECT MATTER AND/OR INSTRUCTIONAL MATERIALS
Atlanta, Georgia; State Department of Education; 1964
21 p.
Report of a study of procedures in 36 states used to administer personnel who prepare subject matter and/or instructional materials.

DC-012 _____
REVIEW OF EDUCATIONAL RESEARCH
Washington, D.C.; American Educational Research Association; April, 1968
85 p.
Issue of a publication of the American Educational Research Association devoted to instructional materials: Educational Media and Technology.

PA-006 See also INDIVIDUAL INSTRUCTION

WI-005 _____
INSTRUCTION
Madison, Wisconsin; University of Wisconsin; Center for Studies in Vocational and Technical Education; 1967
20 p.
Bibliography of materials on instruction available from the Center for Studies in Vocational and Technical Education.

16. INSTRUMENT MAINTENANCE

DC-107 See also CURRICULUM

Accession No. Subject:

17. INSTRUMENTATION TECHNOLOGY

DC-149 Brooking, Dr. Walter J.
THE DEVELOPMENT AND USE OF AN INSTRUMENTATION TECHNOLOGY CURRICULUM GUIDE
Washington, D.C.; U.S. Office of Education; 1964
10 p.
A paper delivered at the 19th Annual Instrument Society of America, Conference and Exhibit, Oct. 12-15, 1964.

DC-109 See also CURRICULUM

18. INTEGRATION

ND-016 See also INDIAN EDUCATION

19. INTELLECTUAL FREEDOM

WY-141 INTELLECTUAL FREEDOM: A BIBLIOGRAPHY
Cheyenne, Wyoming; Wyoming State Library
4 p.
A bibliography of books available from the Wyoming State Library on intellectual freedom.

20. INTERNSHIP

V-RD-004 Gleason, Dr. William E. and Davis, Dwight E.
PROFESSIONAL INTERNSHIP IN VOCATIONAL-TECHNICAL EDUCATION
Lansing, Michigan; Michigan State University; 1967
35 p.
Report of a conference to identify those factors which seemed to characterize successful internship teacher preparation programs.

21. INTERVIEWING PROCEDURES

OR-013 Lane, W. Clayton; Ellis, Robert A.; Card, Douglas P., Editors
RELATIVE EFFICACY OF INTERVIEWING AND QUESTIONNAIRE PROCEDURES
Eugene, Oregon; University of Oregon; 1966
36 p.
An annotated bibliography of materials on interviewing and questionnaire procedures.

J 1. JOB ANALYSIS

V-DD-004 JOB ANALYSIS
Washington, D.C.; U.S. Department of Labor; 1965
91 p.
Training and reference manual for job analysis.

WI-008 JOB ANALYSIS
Madison, Wisconsin; Center for Studies in Vocational and Technical Education; 1967
13 p.
Bibliography of materials on job analysis available from the Center for Studies in Vocational and Technical Education.

Accession No. Subject:

2. JOB CLUSTER CONCEPT

WI-015

JOB CLUSTER CONCEPT
Madison, Wisconsin; Center for Studies in Vocational and Technical Education; 1967
1 p.
Bibliography of materials available from the Center for Studies in Vocational and Technical Education on the job cluster concept.

3. JOB GUIDE

DC-042

JOB GUIDE FOR YOUNG WORKERS
Washington, D.C.; U.S. Department of Labor; 1963
78 p.
A booklet to be used as a reference in working with young people interested in knowing about jobs that can be obtained after graduating from high school.

4. JOB MARKET

DC-043

See also EMPLOYMENT

5. JOB MOBILITY

WI-002

Stern, James L. and Johnson, David B.
BLUE TO WHITE COLLAR JOB MOBILITY: A PRELIMINARY REPORT
Madison, Wisconsin; University of Wisconsin; 1964
21 p.
A report on job mobility taken from the 1964 SOCIAL STATISTICS PROCEEDINGS OF THE AMERICAN STATISTICAL ASSOCIATION.

6. JOB OPPORTUNITIES

MI-007

Wenrich, Ralph C. and Crowley, Robert J.
VOCATIONAL EDUCATION AS PERCEIVED BY DIFFERENT SEGMENTS OF THE POPULATION
Ann Arbor, Michigan; University of Michigan; 1964
148 p.
This survey discusses the steps in the preparation and evaluation of the Image of Vocational Education and suggests methods of using the IVE.

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DC-034

ABILITY IS AGELESS
Washington, D.C.; U.S. Department of Labor; 1960
16 p.
A guide to improving job opportunities for 40-plus workers through community action.

7. JOB PLACEMENT

WI-009

JOB PLACEMENT
Madison, Wisconsin; Center for Studies in Vocational and Technical Education; 1967
12 p.
Bibliography of materials on job placement available from the Center for Studies in Vocational and Technical Education.

8. JOB PREPARATION

V-OS-003

Brum, H.D.
A PROPOSAL FOR DEVELOPING A CENTER FOR VOCATIONAL REHABILITATION AND JOB PREPARATION
Columbus, Ohio; State Department of Education; 1967
10 p.
A proposal for development of large city centers for vocational rehabilitation and job preparation.

Accession No. Subject:

9. JOINT DATA SYSTEM

DC-145

OC-CEDS STANDING COMMITTEES DISCUSS EXPANSION OF JOINT DATA SYSTEM
Washington, D.C.; U.S. Office of Education; 1966
14 p.
Conferences held on joint data systems by Standing Sub-committees.

10. JOINT VOCATIONAL SCHOOLS

OH-071

EXPANDING EDUCATIONAL OPPORTUNITY THROUGH JOINT VOCATIONAL SCHOOLS
Columbus, Ohio; State Department of Education
3 p.
A brochure on the Joint Vocational School District plan in Ohio.

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1. KARACHI AMERICAN SCHOOL

WY-028

Marvel, John A.
AN APPRAISAL OF THE KARACHI AMERICAN SCHOOL, KARACHI, PAKISTAN
Laramie, Wyoming; University of Wyoming; 1966
97 p.
Analysis of the educational program of the Karachi American School based on data secured from surveys, observations, conferences and classroom visits conducted between November 3 and 25, 1965.

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1. LABOR

DC-073

Wirtz, W. Willard
FACTS YOU SHOULD KNOW ABOUT LABOR AND VOCATIONAL EDUCATION
Washington, D.C.; U.S. Department of Labor; 1963
8 p.
A statement by Secretary Wirtz given before the General Sub-committee on Education, House Committee on Education and Labor, U.S. House of Representatives, March 26, 1963.

MI-038A

MICHIGAN MANPOWER STUDY
Lansing, Michigan; State of Michigan; 1966
12 p.
An analysis of the characteristics of the labor force of Michigan as projected to 1980.

WY-024

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A LOOK AT VOCATIONAL EDUCATION AND THE LABOR FORCE OF WYOMING
Cheyenne, Wyoming; State Department of Education; 1966
9 p.
Information on vocational education and the labor force in Wyoming.

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Washington, D.C.; U.S. Department of Labor; 1966
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Washington, D.C.; U.S. Department of Labor; 1965
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Park Ridge, Illinois; American Medical Technologists; 1966
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Stillwater, Oklahoma; The Research Foundation; 1968
28 p.
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26 p.
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Albany, New York; State Education Department; 1966
11 p.
A paper representing the viewpoint of the State Department of Education's several offices which have a concern for occupational education.

NY-019 ———— EDUCATION FOR OCCUPATIONS
Albany, New York; State Education Department; 1967
82 p.
A summary of local area studies in occupational education in New York State.

OK-003 See also CURRICULUM

V-OS-007 See also COMMUNITY COLLEGE

2. OCCUPATIONAL EXPERIENCE

NM-014 See also BUSINESS AND OFFICE EDUCATION

3. OCCUPATIONAL THERAPY

DC-154 ———— CERTIFICATION PROCEDURE FOR OCCUPATIONAL THERAPY ASSISTANTS
New York, N.Y.; American Occupational Therapy Association; 1960
3 p.
Information and forms for graduates of approved occupational therapy training programs.

DC-171 ———— AOTA REQUIREMENTS OF A TRAINING PROGRAM FOR OCCUPATIONAL THERAPY ASSISTANTS
New York, N.Y.; American Occupational Therapy Association; 1965
16 p.
Requirements for the preparation of occupational therapy assistants, including forms.

WI-026 ———— OCCUPATIONAL THERAPY ASSISTANTS COURSE: GERIATRICS
Madison, Wisconsin; State Board of Health; 1966
10 p.
Curriculum outline presently being used for training course for occupational therapy assistants.

4. OCEANOGRAPHY TECHNICIANS

DC-066 Teel, Ward; McVay, Donald R.; Serwold, John C.
THE NEED TO ESTABLISH A MARINE SCIENCES TECHNOLOGY PROGRAM AT SHORELINE COMMUNITY COLLEGE
Olympia, Washington; State Department of Education; 1966
27 p.
Report to the Vocational Division of the Washington State Department of Education on the feasibility of setting up a Marine Technician training program at the community college level.

5. OFFICE EDUCATION

MI-040 Cook, Fred S.
OFFICE MACHINES USED IN BUSINESS TODAY
Lansing, Michigan; Research Coordinating Unit; 1966
2 p.
Report of a pilot study concerned with the implications for business and distributive education of current and projected use of machines in business and of the necessary in-school training for these machines.

Accession No. Subject:
OFFICE EDUCATION (cont.)

IA-008 ———— VOCATIONAL OFFICE EDUCATION
Des Moines, Iowa; State Department of Education; 1965
8 p.
Policy bulletin giving minimum guidelines for the office education program of Iowa.

IA-009 See also INDIVIDUAL INSTRUCTION

MI-009 ———— A BLOCK-TIME LABORATORY APPROACH TO OFFICE EDUCATION
Lansing, Michigan; Michigan State University
8 p.
A brochure describing block time scheduling in vocational office classes.

MI-017 See also BLOCK TIME SCHEDULE

6. OFFICE RETAIL JOBS

MI-039 Cook, Fred S.
OPPORTUNITIES AND REQUIREMENTS FOR INITIAL EMPLOYMENT OF SCHOOL LEAVERS WITH EMPHASIS ON OFFICE RETAIL JOBS
Lansing, Michigan; Research Coordinating Unit; 1966
3 p.
Report of a project to determine the number and type of entry jobs available for high school leavers aged 16-21 and the skills needed for these jobs.

7. OFFICE WORKERS

CT-002 Burton, John R.; Carlson, Julie A.; Paquette, William R.; Snyder, Patricia A.; Whitehouse, Nancy L.; Baker, Harriet L.; Garber, Herbert; and Malsbary, Dean R.
A STUDY OF BEGINNING OFFICE WORKERS IN CONNECTICUT
Hartford, Connecticut; Division of Vocational Education; 1967
206 p.
A study of the opportunities for, requirements of, and knowledges, abilities, and related characteristics needed by beginning office workers in the State of Connecticut, with implications for business and office education.

8. OPPORTUNITIES

DC-191 Coleman, James S.; Campbell, Ernest Q.; Hobson, Carol J.; McPartland, James; Mood, Alexander M.; Weinfeld, Frederic D.; York, Robert L.
EQUALITY OF EDUCATIONAL OPPORTUNITY
Washington, D.C.; U.S. Office of Education; 1966
737 p.
A report submitted to the President and to Congress on a survey concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion, or national origin in public educational institutions at all levels in the United States, its territories and possessions, and the District of Columbia.

TX-002 Estes, Dwain M. and Darling, David W. - Editors
IMPROVING EDUCATIONAL OPPORTUNITIES OF THE MEXICAN-AMERICAN
San Antonio, Texas; Texas Education Agency; 1967
157 p.
Proceedings of the first Texas conference for the Mexican-American.

Accession No. Subject:

9. ORIENTATION TO EMPLOYMENT

OK-006 Whatley, Dr. Alice Elron; Warren Mary A.; & Parker, Dr. Harry
YOUTH ORIENTATION TO EMPLOYMENT: CONCEPTS AND GENERALIZATIONS
Stillwater, Oklahoma; State Board for Vocational Education; 1967
13 p.
Identification of concepts and generalizations considered important for the orientation of youth to the world of work.

10. ORNAMENTAL HORTICULTURE

NH-002 ORNAMENTAL HORTICULTURE
Albany, New York; State Department of Education; 1966
24 p.
Guidelines for evaluating secondary vocational programs in ornamental horticulture.

11. OSTEOPATHIC EDUCATION

IL-023 Mills, Lawrence W., Editor
OSTEOPATHIC EDUCATION
Chicago, Illinois; American Osteopathic Association; 1966
31 p.
Supplement to the January 1966, edition of the Journal of the American Osteopathic Association.

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1. PARENT EDUCATION

CA-028 Babitz, Milton
PARENT EDUCATION: CURRICULUMS, METHODS, AND MATERIALS
Sacramento, California; State Department of Education; 1961
145 p.
Curriculum guide on child management, concepts and principles of human growth, development, and motivation.

2. PARENT SURVEY

ND-007 McCrystal, Thomas J.
A SURVEY OF PARENTS OF NORTH DAKOTA HIGH SCHOOL STUDENTS WHO WERE SENIORS IN 1966.
Grand Forks, North Dakota; Center for Research in Vocational and Technical Education; 1967
16 p.
Report of a survey taken of the parents of 2,674 North Dakota high school students who were seniors in 1966.

3. PERCEPTUAL TRAINING

WY-081 COOPERATIVE RESEARCH PROPOSAL
Cheyenne, Wyoming; State Department of Education; 1967
3 p.
Proposal for a study to determine the relative value of exposing pre-school children to perceptual training and the longitudinal effects of such training in the future school years.

4. PERT

OH-068 Cook, Desmond L.
AN INTRODUCTION TO PERT
Columbus, Ohio; The Ohio State University
18 p.
An introduction to the general nature of the Program Evaluation and Review Technique.

Accession No. Subject:

PERT (cont.)

OH-074 Cook, Desmond L.
PROGRAM EVALUATION AND REVIEW TECHNIQUE
Washington, D.C.; U.S. Office of Education; 1966
100 p.
Description of methods of applying or implementing PERT on research and development projects pertaining to education.

5. PHOTOGRAMMETRY

VA-001 WHAT ABOUT A CAREER IN PHOTOGRAMMETRY
Falls Church, Virginia; American Society of Photogrammetry; 1964
22 p.
An informational brochure on photogrammetry.

6. PHYSICAL EDUCATION

V-HE-005 See also HEALTH

7. PHYSICAL THERAPY AIDE

DC-152 PROPOSED PROGRAM FOR PHYSICAL THERAPY AIDE TRAINING
New York, N.Y.; American Physical Therapy Association; 1966
9 p.
Outline of subject matter which could be included in an aide training program; a sample of the way an aide training program might be organized.

DC-153 PHYSICAL THERAPY AIDE
New York, N.Y.; American Physical Therapy Association; 1966
25 p.
Proposed policy statement on the training and utilization of the physical therapy aide.

8. PILOT PROGRAMS

DC-067 See also HOME ECONOMICS

GA-008 See also AREA VOCATIONAL PROGRAMS

IL-021 See also AGRICULTURE EDUCATION

MI-046 See also MOTIVATION

MI-060 See also DISTRIBUTIVE EDUCATION

9. PLACEMENT SERVICE

DC-048 See also EMPLOYMENT

10. PLANNED CHANGE

FL-005 IMPROVING VOCATIONAL EDUCATION THROUGH PLANNED CHANGE
Tallahassee, Florida; State Department of Education; 1966
22 p.
Proceedings of first conference of the Florida Vocational Program, Research Coordinating Unit.

11. POLICIES AND PROCEDURES FOR VOCATIONAL EDUCATION

MI-023 Byram, Harold M.
EVALUATION OF LOCAL VOCATIONAL EDUCATION PROGRAMS
East Lansing, Michigan; Michigan State University; 1965
81 p.
An evaluation manual for administrators, teachers, and citizens developed by the Bureau of Educational Research Services of M.S.U.

Accession No. Subject:
POLICIES & PROCEDURES FOR VOCATIONAL EDUCATION (cont.)

CT-007 Okula, Frederick S.
SOME PROBLEMS IN THE ADMINISTRATION OF VOCATIONAL PROGRAMS UNDER THE VOCATIONAL EDUCATION ACT OF 1963.
Storrs, Connecticut; University of Connecticut; 1966
34 p.
A document to assist vocational coordinators in eliminating some problems which evolve when undertaking the development and operation of occupational training programs.

CA-025 _____
INSTRUCTIONS FOR APPLYING FOR ASSISTANCE FOR VOCATIONAL EDUCATION PROJECTS UNDER THE VOCATIONAL EDUCATION ACT OF 1963
Sacramento, California; State Department of Education; 1966
24 p.
Information needed in making the necessary applications and a detailed statement of the procedures that are to be followed in preparing and submitting applications for assistance.

CO-009 _____
VOCATIONAL EDUCATION IN COLORADO
Denver, Colorado; State Department of Education; 1966
101 p.
Descriptions of the various vocational education programs in Colorado.

ID-006 _____
POLICIES FOR AREA VOCATIONAL EDUCATION SCHOOLS IN IDAHO
Boise, Idaho; State Board for Vocational Education; 1965
6 p.
Policies of the Idaho State Board for Vocational Education and a basis for cooperative agreements to operate Area Vocational Education Schools in Idaho.

ID-009 _____
SUGGESTED GUIDELINES FOR PREPARING PROPOSALS FOR VOCATIONAL EDUCATION PROGRAMS IN SECONDARY SCHOOLS, COLLEGES, AND AREA VOCATIONAL EDUCATION SCHOOLS
Boise, Idaho; State Board for Vocational Education;
5 p.
Guidelines to assist schools in preparing proposals for vocational education programs.

MO-001 _____
MANUAL OF OPERATION FOR VOCATIONAL EDUCATION PROGRAMS IN MISSOURI
Jefferson City, Missouri; State Department of Education; 1965
12 p.
Manual of information needed to effectively organize and efficiently operate programs of vocational education.

NB-004 See also GUIDELINES

NH-001 _____
GUIDELINES FOR DEVELOPING VOCATIONAL EDUCATION PROGRAMS
Concord, New Hampshire; State Department of Education; 1965
4 p.
Guidelines designed to assist in the development of approved vocational education programs for youth and adults in New Hampshire secondary schools.

NV-004 _____
POLICY STATEMENT ON VOCATIONAL-TECHNICAL EDUCATION IN NEVADA
Carson City, Nevada; State Board for Vocational Education; 1966
12 p.
Policy statement for vocational education in regard to public institutions offering vocational-technical education in Nevada.

Accession No. Subject:
POLICIES & PROCEDURES FOR VOCATIONAL EDUCATION (cont.)

PA-007 See also FUNDING

PA-008 _____
GOALS AND POLICIES TO IMPROVE AND EXPAND VOCATIONAL AND TECHNICAL EDUCATION
Harrisburg, Pennsylvania; State Department of Education; 1966
18 p.
Detailed information on how to apply for Federal money for vocational education programs.

RI-001 See also ADMINISTRATION OF VOCATIONAL EDUCATION PROGRAMS

SC-001 _____
STATE PLAN FOR VOCATIONAL EDUCATION
Columbia, South Carolina; State Department of Education; 1966
117 p.
State plan for vocational education submitted to the U.S. Office of Education.

TN-009 _____
OPERATIONAL PROCEDURES AND MINIMUM STANDARDS FOR VOCATIONAL EDUCATION IN TENNESSEE: GENERAL PROVISIONS
Nashville, Tennessee; State Department of Education; 1965
14 p.
Guidelines for the operation and implementation of all Federal and State acts pertaining to Vocational and Technical Education in Tennessee.

12. POST-HIGH SCHOOL EDUCATION

IA-001 _____
PROPOSAL FOR PROGRESS
Des Moines, Iowa; State Department of Education; 1966
31 p.
Results of a cooperative study of post-high school education in Iowa.

13. POVERTY

V-SN-012 See also NATIONAL TEACHER CORPS

14. PRACTICAL NURSING

DC-098 West, Margaret D. & Crowther, Beatrice
EDUCATION FOR PRACTICAL NURSING, 1960
New York, N.Y.; National League for Nursing; 1962
63 p.
A report of the committee on the questionnaire study of practical nursing schools.

DC-093 See also CURRICULUM

IL-012 See also HEALTH

NY-015 See also EVALUATION

15. PRACTICAL TRAINING PROGRAM

MI-045 Martin, Arland F.
PROGRESS REPORT #2 FOR THE PORTAGE HIGH SCHOOL PRACTICAL TRAINING PROGRAM
Lansing, Michigan; State Department of Education; 1964
3 p.
Report of a program designed to reduce dropout rates, provide for occupational competency, and provide adjustment through a program designed to meet the special needs of students.

Accession No. Subject:

16. PRE-TECHNICAL PROGRAMS

CA-026 See also CURRICULUM

GA-008 See also AREA VOCATIONAL PROGRAMS

V-CG-001 See also CURRICULUM

17. PRINTING

NM-003 See also CURRICULUM

18. PRISON EDUCATION

DC-030 Sard, Thomas R.
A CHANCE ON THE OUTSIDE
Washington, D.C.; U.S. Office of Education; Reprint from AMERICAN EDUCATION; April, 1966
4 p.
An article on the success of the MDTA programs operating in correctional institutions around the country.

19. PRIVATE VOCATIONAL SCHOOLS

ND-004

PRIVATE VOCATIONAL SCHOOLS IN NORTH DAKOTA
Grand Forks, North Dakota; Center for Research in Vocational and Technical Education; 1966
28 p.
A study dealing with the educational opportunities offered by private vocational schools in North Dakota.

20. PROGRAM DEVELOPMENT

V-MR-004 Connolly, John; Editor
FINAL REPORT, NATIONAL SEMINAR ON PROGRAM PLANNING, BUDGETING AND EVALUATION VOCATIONAL-TECHNICAL EDUCATION
College Park, Maryland; University of Maryland; 1967
53 p.
Report of a national seminar conducted by the University of Maryland on program planning, budgeting and evaluation of vocational-technical programs.

DC-025 See also BUDGET

DC-038A

STATE REPORTS OF VOCATIONAL-TECHNICAL PROGRAM DEVELOPMENT
Washington, D.C.; U.S. Office of Education; 1966
48 p.
Summary reports of vocational-technical program development in the States and Territories.

21. PROGRAMMED INSTRUCTION

CO-014 Couger, J.Daniel & Shannon, Loren E.
FORTRAN IV
Homewood, Illinois; Richard D. Irwin, Inc.;
2 p.
Brochure on a programming text designed for use by schools of business.

NY-007 Norton, Robert E.
USING PROGRAMMED INSTRUCTION IN OCCUPATIONAL EDUCATION
Albany, New York; State Education Department; 1967
51 p.
A guide to be used by occupational teachers, supervisors, and administrators in planning, developing, and using various types of programed instruction as a guide in the learning process.

Accession No. Subject:

PROGRAMMED INSTRUCTION (cont.)

NY-030 Norton, Robert E.
USING PROGRAMMED INSTRUCTION WITH AND WITHOUT SELF-INSTRUCTIONAL PRACTICE TO TEACH PSYCHOMOTOR SKILLS
Ithaca, New York; Cornell University; 1967
3 p.
A study to find out if programmed instruction can satisfactorily teach psychomotor tasks which require the learning of cognitive knowledge in order to properly utilize motor skills the learner already possesses.

MI-046 See also MOTIVATION

22. PROJECT RESEARCH

DC-134 SMALL PROJECT RESEARCH
Washington, D.C.; U.S. Office of Education; Bureau of Research; 1967
12 p.
A description of the rules and regulations governing small project research proposals.

DC-135 See also FUNDING

23. PROPOSAL WRITING

WV-002 PROCEDURAL GUIDE FOR THE WRITING OF PROPOSALS
Huntington, West Virginia; Marshall University; 1968
40 p.
Guidelines for a systematic approach to the preparation, submission and approval of research activities in Vocational Education in West Virginia.

24. PSYCHOMOTOR SKILLS

NY-030 See also PROGRAMMED INSTRUCTION

25. PUBLIC HEALTH TRAINING

DC-029 See also HEALTH

26. PUBLIC INFORMATION

CA-031 Holliday, Al
PUBLIC UNDERSTANDING OF EDUCATION AS A FIELD OF STUDY
Madison, Wisconsin; Project Public Information; 1967
36 p.
Report of a conference held in Palo Alto, California, on Nov. 30 and Dec. 1, 1967 on the importance of educational public information services.

GA-001 A FRAMEWORK FOR PUBLIC INFORMATION IN VOCATIONAL EDUCATION
Atlanta, Georgia; Georgia State College; 1967
9 p.
A statement developed at the first nationwide seminar for Vocational-Technical Education Public Information Officers pertaining to the importance of public information specialists and the requirements they should meet.

Accession No. Subject:

27. PUBLIC RELATIONS OF VOCATIONAL EDUCATION

V-DD-002 Bush, Dr. Donald O.
OCCUPATIONAL EDUCATION
Greeley, Colorado; Rocky Mountain Educational Laboratory, Inc.; 1968
35 p.
Draft copy of a position statement on Occupational Education produced by the Rocky Mountain Educational Laboratory.

V-PR-002 Carey, Walter F.
WHITE COLLARS FOR ALL
Washington, D.C.; Chamber of Commerce of the United States; 1964
10 p.
An address given by Walter F. Carey, President of the U.S. Chamber of Commerce before the Utah Motor Transport Association and the Salt Lake City Chamber of Commerce.

V-PR-007 Gruenberg, Charles W.; Editor
WE
New York, N.Y.; Western Electric Company; June, 1967
33 p.
A publication for the employees of the Western Electric Company, with articles on vocational education.

V-PR-001 Howe, Harold II
EDUCATION . . . EVERYBODY'S BUSINESS
Washington, D.C.; U.S. Office of Education; 1967
33 p.
Remarks on four aspects of the contemporary educational scene.

V-PR-003 Kourmadas, John F., Editor
THE BULLETIN OF THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS
Washington, D.C.; National Association of Secondary-School Principals; May 1965
164 p.
An issue of the BULLETIN OF THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS devoted to vocational education.

V-DD-010 McWherter, Mrs. Jo Ann, Editor
VOCATIONAL -TECHNICAL EDUCATION BRINGS SUCCESS TO THESE TENNESSEANS
Murfreesboro, Tennessee; Vocational Curriculum Laboratory; 1968
38 p.
Fifteen stories of success gained by persons enrolled in courses of vocational education in Tennessee.

GA-009 Murphy, Mary Kay
FINDING THEIR WAY TO WORK
Atlanta, Georgia; The Atlanta Journal and Constitution; 1968
20 p.
A series of articles on vocational education that appeared in the Atlanta Journal over a seven-week period.

WI-027 O'Brien, Dean W., Editor
NOW I KNOW WHY
Madison, Wisconsin; Project Public Information; 1968
55 p.
An educator's guide for student involvement in learning about education.

V-PR-005 Venn, Grant
EDUCATION: THE BRIDGE BETWEEN MAN AND HIS WORK
Sacramento, Calif.; Industrial Education Teachers & Administrators of California
11 p.
A lecture given each year in connection with the Annual Conference of Industrial Education in California.

Accession No. Subject:
PUBLIC RELATIONS OF VOCATIONAL EDUCATION (cont.)

DC-007

SOUND PUBLIC EDUCATION
Washington, D.C.; American Vocational Association
8 p.
A brochure on facts about vocational education important to those who make and influence public policy for vocational and practical arts education.

DC-021

VOCATIONAL EDUCATION: THE BRIDGE BETWEEN MAN AND HIS WORK
Washington, D.C.; U.S. Office of Education; 1968
16 p.
Summary and recommendations adapted from the General Report of the Advisory Council on Vocational Education.

DC-044 See also AREA VOCATIONAL PROGRAMS

DC-062 See also MDTA

DC-073 See also LABOR

DC-074

NEW DESIGNS FOR THE CHALLENGE OF THE 1970'S
Washington, D.C.; American Vocational Association; 1968
12 p.
A short summary of notes taken at a seminar conducted at Austin, Texas on what trade and industrial education will contribute to America's future.

DC-133

VOCATIONAL EDUCATION ACT OF 1963
Washington, D.C.; U.S. Office of Education; 1965
12 p.
A summary of Part A of Public law 88-210.

DC-139

STUDENT INVOLVEMENT IN LEARNING ABOUT EDUCATION
Madison, Wisconsin; Project Public Information
2 p.
Report of four pilot programs in student involvement by Project Public Information.

DC-158 See also HIGHER EDUCATION

DC-159 See also OCCUPATIONAL EDUCATION

DC-163

AMERICA'S MOST WANTED STUDENTS
Washington, D.C.; Reprint from LOOK MAGAZINE; July 26, 1965
5 p.
An article on the business education program in Seattle, Washington.

DC-185

NEW DIRECTIONS IN VOCATIONAL EDUCATION
Washington, D.C.; U.S. Office of Education; 1968
55 p.
Five case studies on innovative programs in vocational education.

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DC-187 See also DISADVANTAGED

DC-224

VOCATIONAL EDUCATION FOR AMERICAN YOUTH
Washington, D.C.; American Vocational Association
16 p.
A brochure on vocational education for secondary school youth.

Accession No. Subject:
PUBLIC RELATIONS OF VOCATIONAL EDUCATION (cont.)

DC-225 See also HIGHER EDUCATION

IA-013

_____ VOCATIONAL EDUCATION
Chicago, Ill.; McGraw-Hill, Inc.; Reprint from NATION'S SCHOOLS; Aug., 1967
8 p.
Report of several programs in vocational-technical education in operation in various parts of the country.

IL-026

_____ VOCATIONAL EDUCATION IN ILLINOIS
Springfield, Ill.; State Board of Vocational Education and Rehabilitation; 1967
24 p.
Annual report of the State of Illinois Board of Vocational Education and Rehabilitation Division of Vocational-Technical Education.

KS-011

_____ SERVICES
Topeka, Kansas; Research Foundation of Kansas; 1968
6 p.
A brochure describing the services available from the Research Foundation of Kansas.

NJ-002

_____ DEVELOPING HUMAN RESOURCES
Trenton, New Jersey; State Department of Education; 1967
40 p.
Report of the progress made in New Jersey in vocational education since January of 1965.

NM-009

_____ VOCATIONAL-TECHNICAL EDUCATION IN NEW MEXICO
Santa Fe, New Mexico; State Department of Education; 1966
58 p.
A brief resume of the various programs administered by the Vocational Education Division of the State Department of Education of New Mexico.

NY-006 See also HEALTH

OH-070 See also ADJUSTMENT

OH-073

_____ VOCATIONAL EDUCATION: GATEWAY TO JOBS
Columbus, Ohio; Division of Vocational Education
1 p.
Description of vocational education programs in operation in Ohio.

PA-012

_____ A PENNSYLVANIA SUCCESS STORY
Harrisburg, Pa.; State Chamber of Commerce; July-August; 1967
2 p.
History of vocational-technical area schools in Pennsylvania.

VA-002

_____ VOCATIONAL TECHNICAL EDUCATION IN VIRGINIA
Richmond, Va.; State Department of Education; 1964
32 p.
A brochure describing the vocational education programs in operation in Virginia.

Accession No. Subject:
PUBLIC RELATIONS OF VOCATIONAL EDUCATION (cont.)

V-PR-006 See also CURRICULUM

V-PR-011 _____
AN ALL-AGE, ALL-JOB PROGRAM
Washington, D.C.; U.S. Office of Education; Jan. 1965, reprint from AMERICAN EDUCATION
3 p.
An article on the importance of providing a well-balanced vocational education program.

V-RD-001 _____
VOCATIONAL EDUCATION IN A ROBOT REVOLUTION
East Lansing, Michigan; Michigan State University; 1957
37 p.
A series of articles on needed changes in vocational education.

28. PUBLICATIONS ON VOCATIONAL EDUCATION

DC-169 Senge, Alice
VOCATIONAL EDUCATION
Washington, D.C.; U.S. Office of Education; 1966
59 p.
An annotated bibliography of selected references on vocational education.

Q 1. QUESTIONNAIRE PROCEDURES
OR-013 See also INTERVIEWING PROCEDURES

R 1. RACIAL MINORITIES
WI-029 _____
THE EDUCATION AND TRAINING OF RACIAL MINORITIES
Madison, Wisconsin; Center for Studies in Vocational and Technical Education; 1968
211 p.
Proceedings of a conference held at the University of Wisconsin on May 11 and 12, 1967 on the education and training of racial minorities.

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2. RANKINGS OF THE STATES

DC-222 _____
RANKINGS OF THE STATES, 1968
Washington, D.C.; National Education Association; 1968
71 p.
One hundred-twenty nine ranked lists of state data on the school systems of the 50 states and our possessions.

3. READING

NY-023 Rowan, Helen; Editor
CARNEGIE QUARTERLY
New York, N.Y.; Carnegie Corp. of New York; Summer, 1967
8 p.
An issue of the Carnegie Quarterly devoted to learning to read.

WY-067 See also ELEMENTARY AND SECONDARY EDUCATION ACT

Accession No. Subject:

4. RECREATION

V-HE-005

A STATEMENT OF BASIC BELIEFS
Oklahoma City, Oklahoma; State Department of Education; 1965
16 p.
A statement of basic beliefs on Oklahoma's school programs in health, physical education, and recreation by the Society of State Directors of Health, Physical Education, and Recreation.

5. REGIONAL EDUCATIONAL LABORATORIES

CO-007

PROGRAMS FOR PROGRESS
Greeley, Colo.; Rocky Mountain Educational Laboratory, Inc.; 1967
19 p.
A summary of the programs of the regional educational laboratories.

CO-015

ROCKY MOUNTAIN EDUCATION LABORATORY, INC.
Greeley, Colo.; Rocky Mountain Educational Laboratory, Inc.
2 p.
A brochure listing the members of the laboratory's Regional Council and professional staff.

NM-001 See also COOPERATIVE EDUCATION

NM-001A

SWCEL
Albuquerque, N.M.; Southwestern Cooperative Educational Laboratory
8 p.
A brochure describing the program and services of the Southwestern Cooperative Educational Laboratory.

6. REHABILITATION

DC-081

THE VOCATIONAL REHABILITATION ACT
Washington, D.C.; Vocational Rehabilitation Administration; 1966
20 p.
The Vocational Rehabilitation Act as amended through 1965.

DC-124

FEDERAL ASSISTANCE TO REHABILITATION FACILITIES AND WORKSHOPS
Washington, D.C.; Vocational Rehabilitation Administration; 1964
20 p.
Charts designed to provide general information on a number of programs which may be of help to public or private agencies or organizations interested in the planning, establishment, construction, equipping, initial staffing, expansion, or improvement of public or other non-profit rehabilitation facilities and workshops.

IA-011

THE ROLE OF THE COMMUNITY WORKSHOP IN THE EMPLOYMENT OF THE DISABLED
Des Moines, Iowa; The Iowa Society for Crippled Children; 1964
24 p.
Proceedings of the Third Annual Conference of the Iowa Rehabilitation Association, held Oct. 28, 1964.

Accession No. Subject:

7. REHABILITATION FACILITIES

DC-071

FEDERAL ASSISTANCE TO REHABILITATION FACILITIES AND WORKSHOPS
Washington, D.C.; Vocational Rehabilitation Administration; 1965
8 p.
A document designed to provide general information on all types of Federal assistance currently available to facilities and workshops through Vocational Rehabilitation Administration programs.

IL-015

1964 DIRECTORY OF REHABILITATION FACILITIES
Evanston, Illinois; Association of Rehabilitation Centers, Inc.; 1964
52 p.
Listing of rehabilitation facilities in the United States and Canada.

8. REIMBURSEMENT CRITERIA

OH-046 See also AGRICULTURE EDUCATION

9. RELIGION

WY-146

RELIGION
Cheyenne, Wyoming; Wyoming State Library; 1968
16 p.
A bibliography of materials available at the Wyoming State Library on religion.

10. REORGANIZATION

WY-085 See also BOUNDARIES

11. RESEARCH

DC-031 Bean, John E.
RESEARCH IN STATE DEPARTMENTS OF EDUCATION
Washington, D.C.; U.S. Office of Education; 1965
185 p.
A bulletin reporting the current status of educational research in state departments of education.

GA-002 Bottoms, James E.
RESEARCH PROBLEMS IN VOCATIONAL EDUCATION
Atlanta, Georgia; Department of Education; 1967
25 p.
A list of the major problems in vocational education and occupational training which the Advisory Committee of Georgia's RCU identified as being priority problems to which occupational research should be directed.

IL-014 Burgener, V. E.
THE SPECTRUM OF RESEARCH AND DEVELOPMENT
Springfield, Illinois; Board of Vocational Education and Rehabilitation; 1967
9 p.
A rationale for research in vocational education.

IL-006 Gray, Robert K.; Haley, Richard I.; Nelsen, Richard L.
AN ILLINOIS INVENTORY OF RESEARCH AND STUDIES IN VOCATIONAL EDUCATION
Springfield, Illinois; Board of Vocational Education and Rehabilitation; 1967
32 p.
A directory of existing vocational education research in Illinois.

Accession No. Subject:
RESEARCH (cont.)

NY-009 Krathwohl, David R.
HOW TO PREPARE A RESEARCH PROPOSAL
Syracuse, New York; Syracuse University; 1965
50 p.
Suggestions for those seeking funds for behavioral science research.

OR-005 Ryan, T. Antoinette
ORIGINATORS OF VOCATIONAL EDUCATION RESEARCH PROPOSALS IN NINE WESTERN STATES
Corvallis, Oregon; Oregon State University; 1965
4 p.
A compilation of information on originators of research proposals in Arizona, California; Colorado, Idaho, Montana, New Mexico, Oregon, Utah, and Washington.

AZ-001 _____
REPORT OF STATE-WIDE RESEARCH CONFERENCE
Phoenix, Arizona; Research Coordinating Unit; 1965
26 p.
Addresses made at a conference to determine the needs for research in the State of Arizona to assist, improve, and develop technical and vocational education.

CA-016 _____
PRIORITY RESEARCH AND DEVELOPMENT NEEDS IN VOCATIONAL EDUCATION IN CALIFORNIA
Sacramento, California; State Department of Education; 1968
6 p.
A survey of priority research and development needs in vocational education in the State of California.

DC-120 _____
RESEARCH AND DEMONSTRATION PROJECTS: AN ANNOTATED LISTING
Washington, D.C.; Vocational Rehabilitation Administration; 1965
171 p.
An annotated listing of research and demonstration projects under the Research and Demonstration Program of the Vocational Rehabilitation Administration.

DC-134 _____
SMALL PROJECT RESEARCH: REGIONAL RESEARCH PROGRAM
Washington, D.C.; U.S. Office of Education; 1967
12 p.
Rules and regulations governing application for small project research.

DC-136 _____
DAVR COMPLETED PROJECTS
Washington, D.C.; U.S. Office of Education; 1967
16 p.
List of projects completed as of June 30, 1967 under the DAVR program.

DC-166 _____
VOCATIONAL, TECHNICAL AND ADULT EDUCATION RESEARCH PROGRAMS 1967-68
Washington, D.C.; U.S. Office Of Education; 1967
14 p.
Rules, regulations and standards for proposals in vocational education.

Accession No. Subject:
RESEARCH (cont.)

FL-004

LIST OF APPROVED AND FUNDED PROPOSALS BY THE DIVISION OF ADULT AND VOCATIONAL RESEARCH
Tallahassee, Florida; State Department of Education, 1966
43 p.
A list of research proposals approved and funded by the Division of Adult and Vocational Research, U.S. Department of Health, Education and Welfare.

GA-006 See also CURRICULUM

IL-002

ABSTRACTS OF RESEARCH PROJECTS
Springfield, Illinois; Board of Vocational Education and Rehabilitation; 1967
20 p.
Abstracts of research projects in vocational education supported by the Illinois RCU.

IL-010

KEY TO TOMORROW
Springfield, Illinois; State Department of Education; 1967
16 p.
A booklet describing the range of activities which receive support administered by the State Board of Vocational Education and Rehabilitation through the Research Coordinating Unit and the general procedure to be used by those who seek the services and support offered by the Unit.

MI-019

MICHIGAN VOCATIONAL-TECHNICAL EDUCATION R & D NEEDS SURVEY
Lansing, Michigan; State Board of Education; 1966
14 p.
Final report of a survey of research and development needs for improvement and new programs.

ND-011

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A REVIEW AND SYNTHESIS OF RESEARCH RELATING TO VOCATIONAL EDUCATION IN NORTH DAKOTA
Grand Forks, North Dakota; Center for Research in Vocational and Technical Education; 1968
49 p.
A report of research related to vocational and technical education in North Dakota.

V-HE-003

REPORTS ON HIGHER EDUCATION
Boulder, Colorado; Western Interstate Commission for Higher Education; 1967
8 p.
An issue of the WICHE magazine devoted to special needs.

WY-071

ADULT AND VOCATIONAL RESEARCH, TRAINING, AND EXPERIMENTAL PROGRAMS
Washington, D.C.; U.S. Office of Education
1 p.
A brochure of proposals for research projects in adult and vocational research, training, and experimental programs.

Accession No. Subject:

12. RESEARCH COORDINATING UNITS

DC-126 Bushnell, David S.
RESOLUTIONS ADOPTED BY THE RCU REPRESENTATIVES AT THE RCU NATIONAL CONFERENCE ON APRIL 27, 1967
Washington, D.C:; U.S. Office of Education; 1967
2 p.
Reactions of the Director of adult and vocational research to the resolutions adopted by the RCU representatives at their national conference.

KS-001 Robinson, George A.
RCU STAFF STUDY
Topeka, Kansas; Kansas Vocational Education Research Coordinating Unit; 1967
18 p.
A study to determine what positions occur in Research Coordinating Units.

MI-037 _____
MINUTES OF THE NATIONAL MEETING OF THE RCU DIRECTORS
East Lansing, Michigan; Michigan State University; 1968
2 p.
Minutes taken at the national meeting of the RCU directors on March 27, 1968, at East Lansing, Michigan.

WY-105 _____
WYOMING RESEARCH COORDINATING UNIT
Cheyenne, Wyoming; Research Coordinating Unit; 1966
11 p.
Notes from a Research Coordinating Unit Conference held in Washington, D.C., Sept. 18-23, 1966.

13. RESEARCH REPORTS

KS-015 _____
1967 REPORT OF PROGRESS - RESEARCH FOUNDATION OF KANSAS
Topeka, Kansas; Research Foundation of Kansas; 1968
14 p.
Annual progress report of the Research Foundation of Kansas.

14. RETRAINING

PA-002 See also ADULT EDUCATION

WI-020 _____ _____
RETRAINING
Madison, Wisconsin; Center for Studies in Vocational and Technical Education; 1967
5 p.
A bibliography of materials on retraining available from the Center for Studies in Vocational and Technical Education.

15. RURAL SCHOOLS

MI-016 Sweany, Dr. H. Paul
THE DEVELOPMENT AND DEMONSTRATION OF UNIFIED VOCATIONAL-TECHNICAL EDUCATION PROGRAMS IN SMALL RURAL AREA HIGH SCHOOLS
East Lansing, Michigan; Michigan State University; 1967
15 p.
Report of a project designed to improve the vocational education of youth in rural communities.

MI-061 See also DISTRIBUTIVE EDUCATION

Accession No. Subject:
RURAL SCHOOLS (cont.)

V-MR-003 ———— NATIONAL OUTLOOK CONFERENCE ON RURAL YOUTH
Washington, D.C.; Department of Agriculture; 1967
57 p.
A compilation of speeches delivered at a special session on quality of living for rural youth at the National Outlook Conference on Rural Youth.

16. RURAL YOUTH

MS-004 Shill, James F.
EDUCATIONAL ASPIRATIONS, EXPECTATIONS, AND ABILITIES OF RURAL MALE HIGH SCHOOL SENIORS IN MISSISSIPPI
State College, Mississippi; Mississippi State University; 1968
55 p.
A report focusing upon the differences between students with vocational agriculture training and those without such training.

V-DD-007 ———— RURAL YOUTH IN A CHANGING SOCIETY
Washington, D C , U S Department of Agriculture; 1967
11 p.
Description of a slide set adapted from a chartbook prepared for National Outlook Conference on Rural Youth, 1967.

V-DD-008 Same as V-MR-003, RURAL SCHOOLS

S 1. SALARIES
UT-003 See also ADMINISTRATION

WY-011 ———— 1967-68 SALARY RESEARCH BULLETIN
Cheyenne, Wyoming; Wyoming Education Association; 1968
100 p.
Information on salaries in Wyoming by district; salary schedules from other states; Wyoming salary schedules; special assignment schedules; and fringe benefits.

2. SCHOOL BUSINESS ADMINISTRATORS

GA-007 ———— PROCEEDINGS
Atlanta, Georgia; Georgia Association of School Business Officials, 1967
10? p.
Proceedings and official report of the first annual conference of the Georgia Association of School Business Officials.

3. SCHOOL DISTRICT REORGANIZATION

DC-210 Fitzwater, C. O.
ORGANIZING DISTRICTS FOR BETTER SCHOOLS
Washington, D.C.; U.S. Office of Education; 1958
49 p.
A summary of school district reorganization policies and procedures.

4. SCHOOL DROPOUTS

ND-002 Boyles, Gary E.
A REPORT ON DROPOUTS FROM NORTH DAKOTA PUBLIC HIGH SCHOOLS
Grand Forks, North Dakota; Center for Research in Vocational and Technical Education; 1966
96 p.
Report of a study on dropouts in North Dakota.

Accession No. Subject:
SCHOOL DROPOUTS (cont.)

IL-003 Gallington, Ralph O.
SUCCESS FACTORS IN RETAINING POTENTIAL DROPOUTS
Carbondale, Illinois; Southern Illinois University; 1968
62 p.
Final report of an experimental and demonstration project in vocational education on success factors in retaining potential dropouts.

CA-009 See also GUIDANCE

DC-156 ———
ANTI-DROPOUT PROGRAM
Washington, D.C.; Education Age; Sept.-Oct., 1966
4 p.
An article in EDUCATION AGE on a program in Pasco, Washington designed to keep potentical dropouts in high school.

MI-014 ———
CHARACTERISTICS OF PUBLIC HIGH SCHOOL DROPOUTS IN MICHIGAN
Lansing, Michigan; State Department of Education; 1967
10 p.
A study that brings into focus a variety of the characteristics of the dropout in Michigan;

MI-015 ———
PUBLIC HIGH SCHOOL DROPOUTS IN MICHIGAN: 1965-66
Lansing, Michigan; State Department of Education; 1967
22 p.
Fourth annual in-depth analysis of high school dropouts in Michigan.

MI-057 ———
PUBLIC HIGH SCHOOL DROPOUTS IN MICHIGAN: 1966-67
Lansing, Michigan; State Department of Education; 1968
22 p.
Fifth in-depth analysis of public school dropouts in Michigan.

MO-002 See also ENROLLMENT

WY-027 See also COUNSELING

WY-033 See also MANPOWER

5. SCHOOL LAWS AND STANDARDS

IA-006 ———
SELECTED SCHOOL LAWS AND STANDARDS
Des Moines, Iowa; State Department of Public Instruction; 1968
37 p.
A summary containing specific school laws relating to area schools and public community and junior colleges and standards for area vocational schools and area community colleges.

6. SCHOOL TO EMPLOYMENT

NY-024 ———
STEP
Albany, New York; State Department of Education; 1968
8 p.
A description of the School To Employment Program (STEP) in New York State by participating school districts.

Accession No. Subject:
SCHOOL TO EMPLOYMENT (cont.)

OH-072 ———
INNER-CITY HIGH SCHOOL GRADUATES GET JOBS
Cleveland, Ohio; Businessmen's Interracial Committee on Community Affairs; 1967
1 p.
A pamphlet on job development service for inner-city high school students in the Cleveland public schools.

7. SCHOOL STATISTICS

DC-010 Barr, Richard H. and Foster, Betty J.
PRELIMINARY STATISTICS OF STATE SCHOOL SYSTEMS: 1965-66
Washington, D.C.; U.S. Office of Education; 1966
17 p.
A summary of data from the regular biennial survey of State elementary and secondary school statistics for the 1965-66 school year.

8. SCIENCE

WY-132 ———
SCIENCE: A CREATIVE DISCIPLINE
Cheyenne, Wyoming; Wyoming State Library; 1968
4 p.
A bibliography of books available at the State Library on science that are listed in the Combined Book Exhibit, Book List for University Women.

9. SOCIO-ECONOMICALLY DEPRIVED

TX-002 See also OPPORTUNITIES

10. SOCIAL WELFARE

DC-121 See also GRANTS-IN-AID

11. SPACE

WY-134 ———
SPACE
Cheyenne, Wyoming; Wyoming State Library; 1968
1 p.
Bibliography of books about space available from the Wyoming State Library.

12. SPECIAL NEEDS

OH-064 Groves, Ramsey M.
A SURVEY OF VOCATIONAL EDUCATION PROGRAMS FOR STUDENTS WITH SPECIAL NEEDS
Columbus, Ohio; The Center for Vocational and Technical Education; 1967
102 p.
Report of a survey designed to provide insights into the extensiveness of vocational education programs for students with special needs.

WY-093 Hirst, Dr. Wilma
OCCUPATIONAL NEEDS OF THE SOCIO-ECONOMIC, DISADVANTAGED, AND OTHER HANDICAPPED YOUTH OF LARAMIE COUNTY SCHOOL DISTRICT NUMBER ONE
Cheyenne, Wyoming; School District #1; 1967
27 p.
A research project on how the occupational needs of students with special needs are being met in Laramie County School District #1.

Accession No. Subject:
SPECIAL NEEDS (cont.)

KY-004 Van Tassel, Carol, Editor
GUIDELINES FOR PROFESSIONALS WORKING WITH PERSONS WITH SPECIAL NEEDS DEVELOPED FROM THE SEMINAR FOR SUPERVISORS AND TEACHER EDUCATORS OF TEACHERS OF PERSONS WITH SPECIAL NEEDS
Lexington, Kentucky; Kentucky Research Coordinating Unit; 1967
9 p.
A summary of the consultative discussions of the seminar focusing on persons with special needs.

DC-030 See also PRISON EDUCATION

DC-072 See also OCCUPATIONAL EDUCATION

DC-128 See also ELEMENTARY AND SECONDARY EDUCATION ACT

DC-131 _____
A SUMMARY OF MAJOR POINTS IN DEVELOPING PROGRAMS FOR PERSONS WITH SPECIAL NEEDS
Washington, D.C.; U.S. Office of Education; 1965
4 p.
Brochure describing characteristics of persons with special needs and provisions of the Vocational Education Act of 1963 relating to persons with special needs.

V-OS-002 _____
GATEWAY TO JOBS
Columbus, Ohio; State Department of Education; 1967
23 p.
A publication describing the kinds of vocational education programs designed specifically to motivate and provide youth with special needs with the necessary job preparation to enter the world of work.

V-SN-006 See also GUIDELINES

V-SN-013 Same as DC-187, DISADVANTAGED

WA-005 See also DISADVANTAGED

WY-008 See also SCHOOL DROPOUTS

13. STATE BOARDS OF EDUCATION

OH-011 Rice, Dick and Toth, Powell E., Editors
THE EMERGING ROLE OF STATE EDUCATION DEPARTMENTS WITH SPECIFIC IMPLICATIONS FOR DIVISIONS OF VOCATIONAL-TECHNICAL EDUCATION
Columbus, Ohio; The Center for Vocational and Technical Education; 1967
395 p.
Papers delivered at a National Conference on State Department Leadership in Vocational Education held in Columbus, Ohio on February 27 - March 2, 1967.

DC-031 See also RESEARCH

V-MR-0020 See also IMPROVEMENT

14. STATE PLAN

NV-004 See also POLICIES AND PROCEDURES FOR VOCATIONAL EDUCATION

RI-001 See also ADMINISTRATION OF VOCATIONAL EDUCATION PROGRAMS

Accession No. Subject:
STATE PLAN (cont.)

SC-001 SOUTH CAROLINA STATE PLAN FOR VOCATIONAL EDUCATION
Columbia, S.C.; State Department of Education; 1966
117 p.
South Carolina State plan for vocational education submitted to the U.S. Office of Education.

WA-001 WASHINGTON STATE PLAN FOR VOCATIONAL EDUCATION
Olympia, Washington; State Board for Vocational Education; 1965
172 p.
Washington State Plan for Vocational Education approved by the U.S. Office of Education in December, 1964.

15. STATISTICS

DC-214 Seibert, Ivan N., Waddell, Jerry N., & Murphy, Louise R., Compilers
STATE PLANS FOR IMPROVING STATISTICAL SERVICES
Washington, D.C.; U.S. Office of Education; 1961
173 p.
A compilation of summaries of State Plan provisions and program activities.

DC-021 See also PUBLIC RELATIONS IN VOCATIONAL EDUCATION

DC-145 See also JOINT DATA SYSTEMS

DC-200 See also INDUSTRIAL EDUCATION

DC-215 See also EDUCATIONAL STATISTICS

DC-216 See also EDUCATIONAL STATISTICS

V-GR-002 See also HIGHER EDUCATION

V-HE-008 See also HEALTH

WY-010A BIENNIAL STATISTICAL REPORT 1964-1966
Cheyenne, Wyoming; State Department of Education; 1966
42 p.
Statistical section of the Wyoming Biennial Report for the biennium 1964-1966.

WY-011 See also SALARIES

WY-012 See also EMPLOYMENT

WY-024 See also LABOR

16. STUDENT ASSISTANTS

KS-004 Weaver, Jerry L.
STUDENT ASSISTANTS IN VOCATIONAL-TECHNICAL EDUCATION
Topeka, Kansas; Research Foundation of Kansas; 1967
4 p.
An article on using student assistants in vocational education classes that appeared in the Oct. 31, 1967 issue of VOCATIONAL EDUCATION RESEARCH HIGHLIGHTS.

17. STUDENT INVOLVEMENT PROGRAM

DC-139 See also PUBLIC RELATIONS IN VOCATIONAL EDUCATION

WI-027 See also PUBLIC RELATIONS IN VOCATIONAL EDUCATION

Accession No. Subject:

18. STUDENT PERSONNEL SERVICES

GA-003 Bottoms, James E.
DEVELOPING A PROGRAM OF STUDENT PERSONNEL SERVICES FOR AREA VOCATIONAL-TECHNICAL SCHOOLS
Atlanta, Georgia; State Department of Education; 1966
261 p.
Phase I report of a project to develop a systematic and organized program of student personnel services in area vocational technical schools, based on the actual needs of these institutions.

19. STUDENT SURVEY

ID-001 Richman, Robert W.
HIGH SCHOOL VOCATIONAL INTEREST SURVEY IN CANYON COUNTY
Moscow, Idaho; Occupational Research Unit
13 p.
Informal report of a portion of a feasibility study for an area vocational school.

OH-067 See also GUIDANCE

WY-070 See also EDUCATIONAL NEEDS

20. SUCCESSION

OR-008 Thiemann, Francis C.
SELECTED BIBLIOGRAPHY OF SUCCESSION IN COMPLEX ORGANIZATIONS
Eugene, Oregon; ERIC Clearinghouse of Educational Administration; 1967
7 p.
Bibliography of materials on succession compiled by the ERIC Clearinghouse of Educational Administration.

21. SUMMER PROGRAMS FOR TEENAGERS

MI-054 ———
POST CONFERENCE REPORT
Lansing, Michigan; State Department of Education; 1967
79 p.
Report of a National Teen-age Opportunity Programs in Summer conference held in Lansing, Michigan on August 17 and 18, 1967.

22. SUPPORT FOR RESEARCH ACTIVITIES

DC-116 ———
SUPPORT FOR RESEARCH AND RELATED ACTIVITIES
Washington, D.C.; U.S. Office of Education; 1965
4p.
Brochure describing the project and program support available from the Bureau of Research and outlining the application procedure.

V-GR-007 ———
SUPPORT FOR RESEARCH AND RELATED ACTIVITIES
Washington, D.C.; U.S. Office of Education; 1967
22 p.
A booklet describing the activities which receive support administered by the Bureau of Research and the general application procedure to be used.

23. SYSTEMS ANALYSIS

NY-002 ———
EDUCATIONAL ESCALATION THROUGH SYSTEMS ANALYSIS
New York, N.Y.; New York Institute of Technology
28 p.
Report of a systems approach to education.

Accession No. Subject:

24. SYSTEM THEORY

ID-012 Heger, Robert J.
OPEN SYSTEM THEORY AND CHANGE IN VOCATIONAL PROGRAMS ON IDAHO SECONDARY SCHOOLS
Moscow, Idaho; State Occupational Research Unit; 1968
148 p.
Report of a study on an attempt to apply open system theory to change in programs of vocational education in Idaho secondary schools.

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WY-017 1. TAX LAWS

SALES TAX & USE TAX LAWS OF THE STATE OF WYOMING
Cheyenne, Wyoming; State Department of Revenue; 1967
75 p.
A compilation of the Sales Tax and Use Tax laws; and the rules and regulations of the State Board of Equalization.

2. TEACHER CORPS

V-SN-012 See also NATIONAL TEACHER CORPS

3. TEACHER EDUCATION

PA-010 Bjorkquist, David C.; Brandon, George L.; Finch, Curtis R.; Impellitteri, Joseph T.; and Wiersteiner, S. Richard
TRADE AND INDUSTRIAL TEACHER EDUCATION: A RESEARCH CRITIQUE AND MODEL FOR ACTION
University Park, Pennsylvania; Pennsylvania State University; 1968
16 p.
Report on research in trade and industrial teacher education, including characteristics of current research and a model designed to facilitate the study of trade and industrial teacher education.

6628 Q

OH-018 Miller, Aaron J.
RESEARCH PRIORITIES IN TECHNICAL TEACHER EDUCATION: A PLANNING MODEL
Columbus, Ohio; Center for Research and Leadership Development; 1967
48 p.
A document analyzing the general area of technical education to provide a framework for further inspection of specific facets within this educational system.

KS-002 See also DEMONSTRATION CENTERS

MI-008

A DEVELOPMENTAL VOCATIONAL EDUCATION AND TEACHER EDUCATION PROGRAM BASED ON A CLINICAL SCHOOL CONCEPT
East Lansing, Michigan; Michigan State University
10 p.
A brochure describing the clinical teacher education project at the Michigan State University.

MI-018 See also CLINICAL SCHOOL

NY-002 See also SYSTEMS ANALYSIS

OH-043

VOCATIONAL-TECHNICAL TEACHER EDUCATION: NATIONAL SEMINAR PROCEEDINGS
Columbus, Ohio; Center for Vocational and Technical Education; 1968
284 p.
Proceedings of the first National Seminar on Vocational-Technical Teacher Education held in Chicago from Sept. 24-29, 1967.

Accession No. Subject:
TEACHER EDUCATION (cont.)

OH-066
THE DEMAND FOR TEACHERS IN VOCATIONAL AND TECHNICAL EDUCATION
Columbus, Ohio; The Center for Vocational and Technical Education; 1967
82 p.
A report of a survey of State directors in vocational education on the teacher supply problem in vocational and technical education.

V-EF-003
AN INSTRUMENT FOR ASSESSING CRITERIA AND INDICATORS OF STATE TEACHER EDUCATION PROGRAMS
Columbus, Ohio; The Center for Vocational and Technical Education
11 p.
A questionnaire presenting a set of criteria which might be used to evaluate a state vocational teacher education program.

4. TEACHING ADULTS

V-AE-003
A TREASURY OF TECHNIQUES FOR TEACHING ADULTS
Washington, D.C.; National Association for Public School Adult Education
2 p.
A brochure on a new publication on teaching adults.

5. TEACHING DEVICES

DC-003
Luster, George L.
NATIONAL SEMINAR TO IMPROVE THE USE OF YOUTH ORGANIZATIONS IN VOCATIONAL EDUCATION AS TEACHING DEVICES
Washington, D.C.; U.S. Office of Education; 1967
179 p.
Proceedings of a seminar on using youth organizations in vocational education as teaching devices held in Kentucky June 12-16, 1967.

NY-002 See also SYSTEMS ANALYSIS

6. TEACHING METHODS

DC-056 See also CURRICULUM

7. TEACHING STAFF

WI-007
TEACHING STAFF
Madison, Wisconsin; University of Wisconsin; 1967
15 p.
Annotated bibliography of materials available from the Center for Studies in Vocational and Technical Education on teaching staff.

8. TECHNICAL ASSISTANCE PROGRAM

WY-120
WYTAP
Laramie, Wyoming; University of Wyoming
1 p.
A flyer on the Wyoming Technical Assistance Program operated by the University of Wyoming.

Accession No. Subject:

9. TECHNICAL EDUCATION

ND-003 Anderson, Roger C.
PREDICTING ACHIEVEMENT IN TECHNICAL PROGRAMS AT THE NORTH DAKOTA STATE SCHOOL OF SCIENCE
Grand Forks, North Dakota; Center for Research in Vocational and Technical Education; 1966
18 p.
A study to provide further information to vocational guidance and counseling personnel on the characteristics and the predictors of success of technically oriented students.

CA-017 Dauwalder, Donald D.
EDUCATION AND TRAINING FOR TECHNICAL OCCUPATIONS
Los Angeles, Calif.; Los Angeles City Junior College District
188 p.
A study of industries and schools in the San Fernando Valley, California, relating to the education and training required for technicians and related occupations.

MI-033 Harris, Norman C.
TECHNICAL EDUCATION IN MICHIGAN COMMUNITY COLLEGES
Ann Arbor, Michigan; Research Coordinating Unit; 1964
2 p.
Report of a research project to ascertain from high school and community college personnel in Michigan, information about technician curriculum offerings and guidance procedures, and to elicit the opinion of knowledgeable and responsible educators at both levels about the possibilities of pre-technical programs in Michigan high schools.

OH-009 Larson, Milton E.
REVIEW AND SYNTHESIS OF RESEARCH IN TECHNICAL EDUCATION
Columbus, Ohio; Center for Research and Leadership Development in Vocational and Technical Education; 1966
69 p.
A review of studies being carried on in technical education, including significant research findings resulting from studies by individuals, organizations, and units of government.

OH-042 Miller, A. J. & Valentine, I.E., Compilers
NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION, 1967
Columbus, Ohio; The Center for Vocational and Technical Education; 1968
194 p.
Selected instructional materials and presentations generated by the four national program development institutes held on technical education.

NY-020 Shaw, H. Walter, Editor
TECHNICAL EDUCATION NEWS
New York, N.Y.; McGraw-Hill Book Co.; Sept., 1966
48 p.
Twenty-fifth anniversary issue of the TECHNICAL EDUCATION NEWS, a publication for administrators and teachers in technical education and for those working with training programs in business, industry, and the government.

OK-004 Stevenson, Bill W.
PERSONNEL NEEDS AND SUPPLY IN VOCATIONAL-TECHNICAL EDUCATION ABOVE LOCAL TEACHER LEVEL
Stillwater, Oklahoma; Vocational Research Coordinating Unit; 1967
7 p.
A study conducted by the Oklahoma Research Coordinating Unit of teacher personnel needs and supply in each state.

Accession No. Subject:
TECHNICAL EDUCATION (cont.)

CA-019 See also ENGINEERING

CA-027 _____ TRADE INDUSTRIAL AND TECHNICAL EDUCATION
Sacramento, California; State Department of Education; 1967
49 p.
A summary prepared to provide a brief description of the type of research recently completed in the field of industrial and technical education.

DC-024 See also OCCUPATIONAL EDUCATION

DC-041 See also ENGINEERING

DC-183 _____ CAREERS IN TECHNICAL OCCUPATIONS
Washington, D.C.; U.S. Office of Education; 1965
2 p.
A brochure on various technician occupations.

IA-013 See also PUBLIC RELATIONS IN VOCATIONAL EDUCATION

MI-022 See also INDUSTRIAL EDUCATION

TN-004 _____ TECHNICAL EDUCATION
Tennessee State Department of Education; 1965
6 p.
Operational procedures and minimum standards for technical education programs in Tennessee.

WI-004 _____ RESEARCH REPORT
Madison, Wisconsin; State Board of Vocational, Technical and Adult Education; 1967
54 p.
Report of a regional seminar on research held in Wisconsin in 1967.

10. TEENAGE OPPORTUNITY PROGRAMS

MI-054 See also SUMMER PROGRAMS FOR TEENAGERS

11. TECHNICAL STUDENTS

V-PR-007 See also PUBLIC RELATIONS IN VOCATIONAL EDUCATION

12. TECHNICAL TEACHERS

CO-003 Larson, Dr. Milton E.
INSTITUTE INTEREST OF TECHNICAL, TRADE AND INDUSTRIAL TEACHERS OF COLORADO
Fort Collins, Colorado; Department of Vocational Education; 1967
21 p.
Report of a study of the needs of Colorado for replenishing knowledge and improving the skills of vocational educators in technical, trade and industrial education.

IN-001 See also GUIDELINES

OH-018 See also TEACHER EDUCATION

Accession No. Subject:

13. TECHNICIANS

PA-001 Bjorkquist, David C., Editor
THE EDUCATION AND EMPLOYMENT OF TECHNICIANS: INTERIM REPORT
University Park, Pennsylvania; Pennsylvania State University; 1968
79 p.
Record of proceedings of the final conference held at Pennsylvania State University on January 24 and 25, 1968 on the effects of field and job oriented technical retraining on manpower utilization of the unemployed.

IL-017 Roen, Howard and Capes, Donald
FREEPORT COMMUNITY COLLEGE CITIZENS ADVISORY COMMITTEE TECHNICAL EDUCATION SUB-COMMITTEE AREA TECHNICIANS SURVEY SUMMARY REPORT
Freeport, Illinois; Survey Committee; 1963
3 p.
Report of a survey to determine the employment of, and anticipated need for technicians in various areas of technology in Freeport, Illinois, business and industry.

DC-066 See also OCEANOGRAPHY TECHNICIANS

DC-112 SCIENTIFIC AND TECHNICAL SOCIETIES PERTINENT TO THE EDUCATION OF TECHNICIANS
Washington, D.C.; U.S. Office of Education; 1965
48 p.
A listing of selected national scientific and technical societies published to assist Federal, State and local school administrators, supervisors, department heads, teachers, librarians, and guidance personnel to understand better the services of such societies and to provide an easily accessible and specific guide to them.

MI-044 See also INDUSTRIAL EDUCATION

14. TECHNOLOGY

AR-003 See also NEEDS OF INDUSTRY

AZ-003 See also ENGINEERING

WI-013 TECHNOLOGICAL CHANGE
Madison, Wisconsin; Center for Studies in Vocational and Technical Education; 1967
7 p.
Annotated bibliography of materials available at the Center for Studies in Vocational and Technical Education on technological change.

15. TERMINOLOGY IN VOCATIONAL-TECHNICAL EDUCATION

DC-022 DEFINITIONS OF TERMS IN VOCATIONAL TECHNICAL AND PRACTICAL ARTS EDUCATION
Washington, D.C.; American Vocational Association, Inc.
23 p.
A compilation of terms used in vocational, technical, and practical arts education.

Accession No. Subject:

16. TESTING

DC-011 Hunt, Jacob T., Editor
REVIEW OF EDUCATIONAL RESEARCH
Washington, D.C.; American Educational Research Association; 1968
110 p.
An issue of REVIEW OF EDUCATIONAL RESEARCH devoted to educational and psychological testing.

DC-046 See also GUIDANCE

17. TOPOGRAPHY

DC-075 See also MAPS

DC-076 See also MAPS

18. TRADE AND INDUSTRIAL EDUCATION

V-PR-010 Barlow, Melvin L.
DEVELOPMENTS AND DIRECTIONS IN TRADE AND INDUSTRIAL EDUCATION
Denver, Colorado; State Board of Education; 1966
14 p.
A speech given at a meeting of the Colorado State Board of Education on trade and industrial education.

OH-010 Tuckman, Bruce W. and Schaefer, Carl J.
REVIEW AND SYNTHESIS OF RESEARCH IN TRADE AND INDUSTRIAL EDUCATION
Columbus, Ohio; Center for Research and Leadership Development in Vocational and Technical Education; 1966
76 p.
Review of research being carried on in the field of trade and industrial education.

CA-027 See also TECHNICAL EDUCATION

DE-003 _____
GOOD JOBS WAITING
Dover, Delaware; Occupational Research Coordinating Unit
7 p.
Tables listing pay scales, training qualifications, and industries where the jobs are for skilled laborers.

DC-192 See also INDUSTRIAL EDUCATION

OH-044 _____
MANUAL OF OPERATION
Columbus, Ohio; State Department of Education; 1966
119 p.
A manual of operating policies, practices and standards to be used in the organization and administration of trade and industrial education programs.

TN-005 _____
OPERATIONAL PROCEDURES AND MINIMUM STANDARDS FOR VOCATIONAL EDUCATION IN TENNESSEE: TRADE AND INDUSTRIAL EDUCATION
Tennessee State Department of Education; 1965
22 p.
Operational procedures and minimum standards for trade and industrial education in Tennessee.

V-EF-002 See also EVALUATION

Accession No. Subject:
TRADE AND INDUSTRIAL EDUCATION (cont.)

WA-004

TRADE AND INDUSTRIAL EDUCATION
Olympia, Washington; State Board for Vocational Education; 1963
110 p.
Washington State handbook for supervisors of trade and industrial education programs. Also used as reference material by those needing more information regarding the objectives, philosophies and operational details of trade and industrial training in the public schools.

WY-102 See also EVALUATION

WY-103 See also EVALUATION

19. TRADE AND INDUSTRIAL TEACHERS

CO-003 See also TECHNICAL TEACHERS

PA-010 See also TEACHER EDUCATION

20. TRADE AND INDUSTRIAL GRADUATES

NY-008 See also FOLLOW-UP

21. TRAINING NEEDS SURVEY

DC-061

MDTA HANDBOOK: CHAPTER II
Washington, D.C.; U.S. Department of Labor; 1965
22 p.
A handbook which sets forth procedures for quickly identifying occupations in short supply for which training courses can be initiated.

22. TRAINING OPPORTUNITIES

WY-078 See also GUIDANCE

23. TRANSITION FROM HIGH SCHOOL TO WORK

OH-020 Garbin, A. P.; Campbell, Robert E.; Jackson, Dorothy P. and Feldman, Ronnie
PROBLEMS IN THE TRANSITION FROM HIGH SCHOOL TO WORK AS PERCEIVED BY VOCATIONAL EDUCATORS
Columbus, Ohio; Center for Vocational and Technical Education; 1967
76 p.
Report of a study to collect data which would help guide subsequent research in the area of the worker adjustment problems of youth.

OH-070 See also ADJUSTMENT

U 1. UNDER ACHIEVERS

MI-043 See also GOAL IDENTIFICATION

2. UNDERPRIVILEGED YOUTH

DC-187 See also DISADVANTAGED

Accession No. Subject:

V 1. VALUES

MI-048 Haines, Peter G.
A QUESTION OF VALUES: HOW HIGH SCHOOL TEACHERS VIEW COOPERATIVE EDUCATION
Lansing, Michigan; Research Coordinating Unit; 1962
3 p.
A survey of teachers in selected Michigan high schools on their opinions of cooperative education.

2. VETERANS' BENEFITS

DC-123 See also FEDERAL BENEFITS

3. VOCATIONAL EDUCATION

V-MR-0050 Davie, Bruce F. and Patterson, Philip D., Jr.
VOCATIONAL EDUCATION AND INTERGOVERNMENTAL FISCAL RELATIONS IN THE POSTWAR PERIOD
Washington, D.C.; Georgetown University; 1966
107 p.
A study of the major aspects of intergovernmental fiscal relations as they pertain to vocational education.

NM-015 DeBlassie, Richard R. and Jones, William P.
PRE-VOCATIONAL ORIENTATION IN VOCATIONAL EDUCATION FOR JUNIOR HIGH SCHOOL STUDENTS IN NEW MEXICO
Santa Fe, New Mexico; State Department of Education
125 p.
A source of occupational information materials relevant to opportunities in vocational education which are appropriate for use with junior high school students in New Mexico.

DC-028 Songe, Alice
VOCATIONAL EDUCATION
Washington, D.C.; U.S. Office of Education; 1967
39 p.
An annotated bibliography which lists and describes pertinent sources which trace the history of vocational education in the United States from the early 20th Century to the close of 1966.

MI-007 Wenrich, Ralph C. & Crowley, Robert J.
VOCATIONAL EDUCATION AS PERCEIVED BY DIFFERENT SEGMENTS OF THE POPULATION
Ann Arbor, Michigan; University of Michigan; 1964
147 p.
A survey of the steps in the preparation and evaluation of the image of vocational education and suggestions for using the IVE.

AK-001 See also EDUCATIONAL NEEDS

DC-021 See also STATISTICS

DC-056 See also CURRICULUM

DC-164 See also PUBLIC RELATIONS OF VOCATIONAL EDUCATION - V-PR-011

DC-170 See also LEGISLATION

IA-013 See also PUBLIC RELATIONS OF VOCATIONAL EDUCATION

IL-026 See also PUBLIC RELATIONS OF VOCATIONAL EDUCATION

NJ-002 See also PUBLIC RELATIONS OF VOCATIONAL EDUCATION

OH-037 See also ERIC

OH-073 See also PUBLIC RELATIONS OF VOCATIONAL EDUCATION

Accession No. Subject:
VOCATIONAL EDUCATION (cont.)

V-CG-005 See also CURRICULUM

V-DD-001

VOCATIONAL AND TECHNICAL EDUCATION
Washington, D.C.; U.S. Office of Education; 1966
152 p.
Annual report for fiscal year 1966 on vocational and technical education from the U.S. Office of Education.

V-MR-006 See also EDUCATIONAL CHANGE

V-MR-007 See also MANPOWER

V-OS-008

TEACHER'S GUIDE FOR INTRODUCTION TO VOCATIONAL-TECHNICAL TEACHING
Minneapolis, St. Paul, Minnesota; University of Minnesota; State Department of Education; 1968
150 p.
A pre-service teacher training course for potential vocational teachers in Minnesota.

V-PR-008 See also FEDERAL AGENCY

V-PR-009

VOCATIONAL EDUCATION OF COLLEGE GRADE
Washington, D.C.; U.S. Office of Education; 1946
126 p.
Report on the program of vocational education between high school and college.

V-RD-001 See also PUBLIC RELATIONS IN VOCATIONAL EDUCATION

4. VOCATIONAL EDUCATION EVALUATION

V-RD-002 Byram, Harold M. and McKinney, Floyd
EVALUATION OF LOCAL VOCATIONAL EDUCATION PROGRAMS
East Lansing, Michigan; Michigan State University; 1968
80 p.
A manual for administrators, teachers and citizens for the evaluation of local vocational education programs.

CA-003 See also EVALUATION

5. VOCATIONAL LEGISLATION

DC-170 See also LEGISLATION

6. VOCATIONAL NEEDS

MA-003 Frank, N. H.
SUMMER STUDY OF OCCUPATIONAL, VOCATIONAL, AND TECHNICAL EDUCATION
Cambridge, Mass.; Massachusetts Institute of Technology; 1965
16 p.
Summary report of a study on occupational, vocational and technical education conducted by M.I.T. in July and August of 1965.

MT-002 See also EDUCATIONAL NEEDS

NB-007

THE JOB AHEAD
Lincoln, Nebraska; State Department of Education
3 p.
A model for determining area vocational needs.

Accession No. Subject:
VOCATIONAL NEEDS (cont.)

WA-006 See also FOLLOW-UP

7. VOCATIONAL PATTERNS

DC-033 _____
BASIC VOCATIONAL PATTERNS IN UNITED STATES AND CANADA
Washington, D.C.; U.S. Office of Education; 1965
8 p.
Vocational schools in the United States by state and type of school.

8. VOCATIONAL REHABILITATION

V-SN-005 Brum, H. D.
A PROPOSAL FOR DEVELOPING A CENTER FOR VOCATIONAL REHABILITATION AND JOB PREPARATION
Columbus, Ohio; State Department of Education; 1967
10 p.
Proposal of a program being put into operation in Ohio designed to motivate and prepare the large numbers of school alienated teenage youth in big cities for jobs.

DC-081 See also REHABILITATION

DC-119 _____
RESEARCH AND DEMONSTRATION GRANT PROGRAM
Washington, D.C.; Vocational Rehabilitation Administration; 1965
36 p.
A description of the program and procedures for applying for and administering grants.

DC-120 See also RESEARCH

DC-122 _____
VOCATIONAL REHABILITATION ADMINISTRATION TRAINING GRANT PROGRAM
Washington, D.C.; Vocational Rehabilitation Administration; 1967
56 p.
A description of program and procedures for applying for and administering grants.

V-OS-003 See also JOB PREPARATION

V-OS-006 _____
STATE VOCATIONAL REHABILITATION AGENCY PROGRAM DATA
Washington, D.C.; Social and Rehabilitation Service, Rehabilitation Services Administration; 1968
49 p.
A detailed accounting of expenditures made by State vocational rehabilitation agencies during the 1967 fiscal year.

9. VOCATIONAL SURVEY

IL-008 _____
SURVEY OF INFORMATION ON VOCATIONAL AND TECHNICAL EDUCATION IN THE STATE OF ILLINOIS
Chicago, Illinois; Corplan Associates; 1966
98 p.
Report of a survey to identify and gather information helpful in planning and developing vocational and technical education in the State of Illinois.

OH-065 See also AREA VOCATIONAL PROGRAMS

Accession No. Subject:

W 1. WAITRESS

DE-004 See also FOOD SERVICE OCCUPATIONS

2. WOMEN'S EDUCATION

OH-019 Lee, Sylvia A.; Vetter, Louise; Howell, Kathleen M.; Smith, Patricia
IMPLICATIONS OF WOMEN'S WORK PATTERNS FOR PROGRAM DEVELOPMENT IN VOCATIONAL AND TECHNICAL EDUCATION
Columbus, Ohio; Center for Vocational and Technical Education; 1967
69 p.
Report of a project devoted to the implications of women's work patterns for program planning in vocational and technical education.

DC-036 TRENDS IN EDUCATIONAL ATTAINMENT OF WOMEN
Washington, D.C.; U.S. Department of Labor; 1967
19 p.
Comparisons of educational levels attained by men and by women since the beginning of the 20th Century.

DC-205 See also ADULT EDUCATION

3. WORK EDUCATION

DC-079 Schill, William John
CONCURRENT WORK-EDUCATION
Urbana, Illinois; University of Illinois; 1966
51 p.
Report on cooperative education and work-study education programs in the 50 states.

4. WORK EXPERIENCE

DC-157 COMMUNITY-SPONSORED TRAINING
New York, N.Y.; National Association of Manufacturers; 1965
4 p.
A case study on a program to help the youth of a community develop work skills while attending high school.

WI-010 WORK EXPERIENCE
Madison, Wisconsin; University of Wisconsin; 1967
11 p.
An annotated bibliography of materials available from the Center for Studies in Vocational and Technical Education on work experience.

WY-098 See also MDTA

5. WORK FORCE

MI-012 See also ENROLLMENT

6. WORK STUDY

DC-160 Bowler, Earl M.
AN ANSWER TO TRAINING NEEDS OF BUSINESS
Washington, D.C.; U.S. Office of Education; 1963
4 p.
A supplement to the WASHINGTON REPORT for Oct. 11, 1963 on work-study programs.

Accession No. Subject:
WORK STUDY (cont.)

CA-010 Chiantelli, Leo W.
A PARTIAL STUDY OF THE WORK EXPERIENCE AND WORK STUDY PROGRAMS AT SHASTA COLLEGE DURING THE SPRING SEMESTER OF 1965
Redding, Calif.; Shasta College; 1966
57 p.
Report of a study on the work experience and work study programs in operation at Shasta College.

DC-079 See also WORK EDUCATION

DC-165 _____
THE WORK-STUDY PROGRAM UNDER THE VOCATIONAL EDUCATION ACT OF 1963
Washington, D.C.; U.S. Office of Education; 1966
4 p.
Description of the work-study program, who is eligible and current status of program development.

DC-167 See also NEIGHBORHOOD YOUTH CORPS

MD-002 _____
WORK -STUDY PROGRAM
Baltimore, Maryland; State Department of Education; 1965
7 p.
Procedures for obtaining approval for participation in the work-study program in Maryland.

MI-020 See also CURRICULUM

MI-021 See also FACILITIES

TN-003 _____
WORK STUDY PROGRAM
Nashville, Tennessee; State Department of Education; 1965
16 p.
Explanation of the work study program and regulations pertaining to it in the State of Tennessee.

WY-077 _____
THE WORK STUDY PROGRAM IN WYOMING
Cheyenne, Wyoming; State Department of Education
16 p.
Explanation of the forms for the work-study program in Wyoming schools.

7. WORLD OF WORK

MI-047 Smith, Harold T.
EDUCATION AND TRAINING FOR THE WORLD OF WORK: A VOCATIONAL EDUCATION PROGRAM FOR THE STATE OF MICHIGAN
Lansing, Michigan; State Department of Education; 1963
4 p.
Report of a project to identify and analyze the present and future needs of vocational education in Michigan and to provide recommendations for meeting those needs.

NC-002 _____
INTRODUCTION TO VOCATIONS
Raleigh, North Carolina; State Department of Public Instruction
1 p.
A brochure describing the various areas of study in the introduction to vocations course.

Accession No.	Subject:
Y	1. YOUNG WORKERS
DC-042	See also JOB GUIDE
	2. YOUTH ORGANIZATIONS
DC-003	See also TEACHING DEVICES

VT 007 981
Webb, Earl S.
Why Not Become a Farm Tractor and Implement Mechanic?

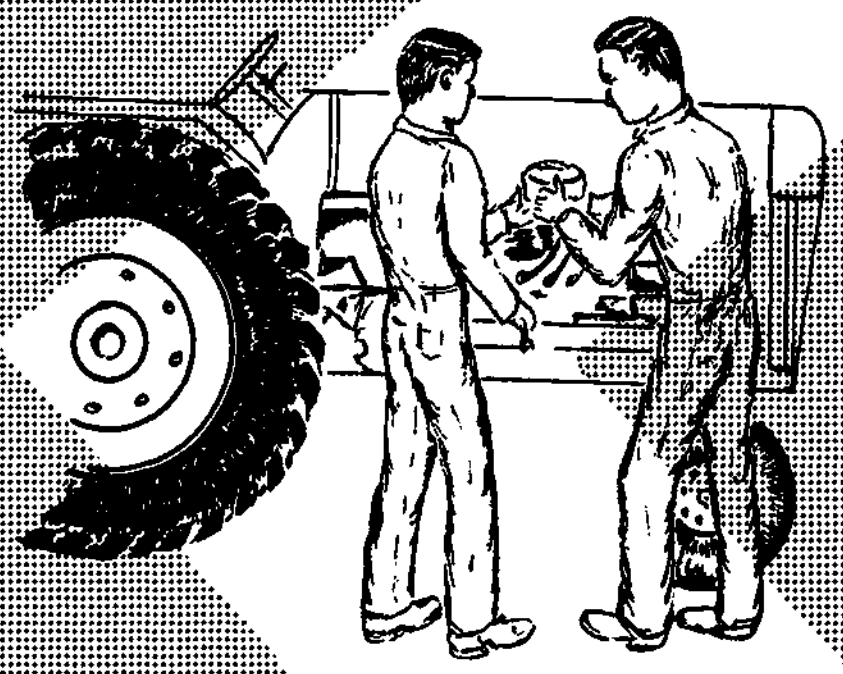
Texas A and M University, College Station
Texas Agricultural Experiment Station, College Station
Texas Occupational Research Coordinating Unit, Austin
Texas Education Agency, Austin
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 68 8p.

*OCCUPATIONAL INFORMATION; *OCCUPATIONAL GUIDANCE; *STUDY GUIDES; OCCUPATIONAL CHOICE; SECONDARY GRADES; CAREER PLANNING; AGRICULTURAL MACHINERY OCCUPATIONS; *FARM MECHANICS (OCCUPATION); *AGRICULTURAL EDUCATION; AGRICULTURAL ENGINEERING

Occupational information relating to farm tractor and implement mechanics occupations is presented to assist the student in exploring this occupational area. The material was developed by an individual author with advice from teacher educators and tradesmen. The purpose of the material is to help the student decide if he desires to select and prepare for the occupation of farm tractor and implement mechanic. Information is provided under the topics of: (1) Know Yourself, (2) Investigate for Yourself, (3) Preparing for the Occupation, (4) Wages and Hours, (5) Fringe Benefits, and (6) On-the-Job Training. The material may be used in vocational agriculture classes or occupational guidance programs by any student interested in the trade. (HC)

VT 007 981

WHY NOT BECOME A FARM TRACTOR AND IMPLEMENT MECHANIC ?



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by

Earl S. Webb, Professor

Department of Agricultural Education

Texas A&M University

College Station, Texas

Sponsored Cooperatively by

Occupational Research Coordinating Unit

Texas Education Agency

and

Texas Agricultural Experiment Station

VT007981

VT 7981

M E M O R A N D U M

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The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210

2L FROM: (Person) Earl S. Webb (Agency) Texas A&M University

(Address) College Station, Texas 77843

DATE: April 25, 1969

RE: (Author, Title, Publisher, Date) Webb, Earl S. Why Not Become a Farm Tractor and Implement Mechanic? Texas A & M University, Texas RCU, Texas Ed. Agency, Texas Ag. Experiment Station. 1968

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Type of Program High school class - Counselors - Teachers
Occupational Focus Mechanics trade
Geographic Adaptability Universal
Uses of Material Guidance and counseling
Users of Material Counselors - Teachers - Students

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Student Selection Criteria Any student interested in mechanics trade
Time Allotment Reading time

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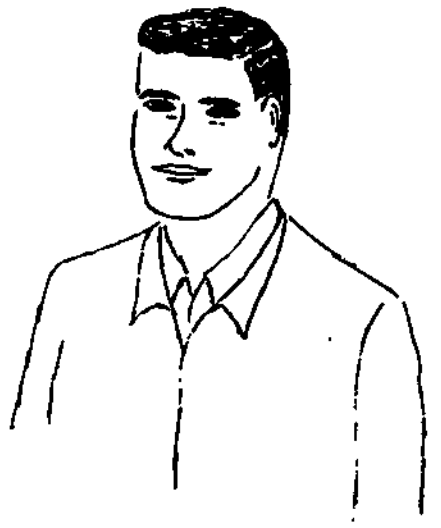
ED039370

WHY NOT BECOME A FARM TRACTOR AND IMPLEMENT MECHANIC?

The purpose of this publication is to help you decide if you want to be a mechanic. The need for skilled mechanics is so great that one can almost select his place of residence and be assured of full-time employment. In a recent study made by the Texas Education Agency, 90% of the participating farm machinery businesses stated that their most critical labor need was well-qualified mechanics. However, before you decide to become a mechanic, you should consider several factors. The most important is YOU.

Know Yourself



The following questions should be answered in making your decision:

1. Do you want to be a mechanic?

   Employers list desire as the number one requirement for success.

2. Do you have the aptitude to be a mechanic?

   Regardless of how hard a person tries, he cannot be successful in an occupation if he does not have the aptitude to do the work required. You should consult with your school counselor about taking a series of mechanical aptitude tests. If they are not available at your school, the youth counselor at the Texas Employment Commission near you will provide tests and counsel without charge.

3. Do you read and follow directions well?

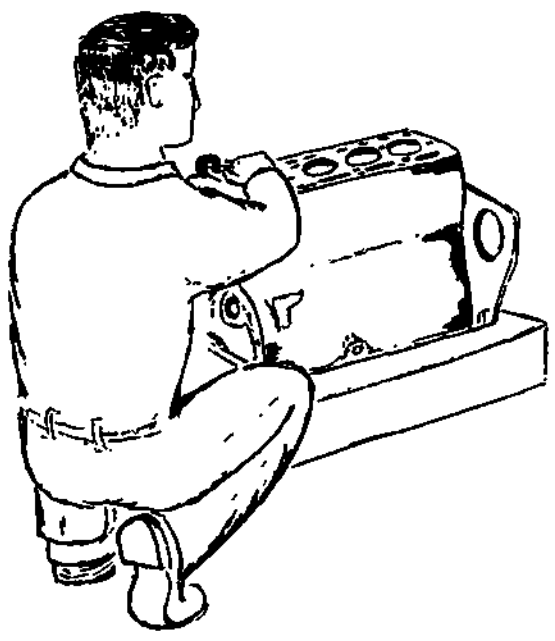
   The mechanics trade, like almost all occupations, requires a person who reads well and can follow written directions. Not even the best mechanic can remember all the details for repairing and adjusting complicated machinery; reading and interpreting technical bulletins and service manuals are essential.

4. Do you have the proper attitude?

   All persons who work for others are obligated to follow assignments. Not only must they do the job assigned but they must also do it in the manner requested. Most persons who lose jobs lose them because of a bad attitude; they don't want to do what they are told to do.

5. Do you have physical handicaps?

   The work of a mechanic is hard. It involves lifting heavy items, working in uncomfortable positions, and working long hours. Likewise, oil, grease, hydraulic fluids and such tend to irritate the skin of some persons.



Investigate for Yourself

There are two other steps you should consider before making a final decision. First, visit farm machinery shops and talk with service managers. They will be glad to tell you about the kinds of persons that make good mechanics and to give advice on how to prepare for entry into the trade.

Second, obtain a job during the summer or on weekends in a farm machinery service and repair department. This will provide you with firsthand information and a series of experiences that should help you in making a final decision as to whether or not you want to be a farm power and implement mechanic.

Preparing for Occupation

Some of the basic requirements for being a successful mechanic have been mentioned: desire, aptitude, ability to follow written directions, proper attitude, and physical fitness. Next you should seek a training program that will equip you with the basic knowledge and skills required for employment. It is almost impossible for an unskilled person to learn a trade on a job. Therefore, it is essential that you enter the trade with some skills already developed. Understanding of the theory involved in a trade is important, but you will be hired to perform skills.

Currently, the number of schools offering mechanical training programs is limited. The Texas Education Agency has initiated programs as a part of vocational agriculture in many high schools for the purpose of training persons to be mechanics in farm machinery businesses. If your school offers a program of this kind, you should enroll in it. James Connally Technical Institute at Waco, Texas, has a farm machinery program you may wish to consider after you complete high school. Your school counselor or vocational agriculture teacher has information about other training programs.

Wages and Hours

After you have completed training, you will probably go to work as a mechanic's helper. You will be assigned to work with a master mechanic. Your first jobs may seem to require limited mechanical ability; however, as you gain the master mechanic's confidence, he will allow you to take more and more responsibility. After about two to three years, depending on how hard you work and study, you will graduate to a mechanic.

The average beginning wage for a beginning mechanic will range from $50 per week and up. The average is approximately $75 per week, but this varies with size of business and other factors. Your first major goal is to learn the trade.

Once you have advanced to the level of a tradesman, you can expect a salary in the range from $100 per week to $200, depending on the size and location of the business. The average weekly wage for farm machinery mechanics in Texas is approximately $121.

The hours per week you will be expected to work will range from 44 to 54. The average number is approximately 48.

Fringe Benefits

In addition to State workmen's compensation and social security taxes, most farm machinery businesses have some type of hospital and medical insurance program in which they share costs with employees. The arrangements vary by

businesses, usually according to the number of employees. A very common arrangement is for the business to pay one half the cost and the employee to pay the other half.

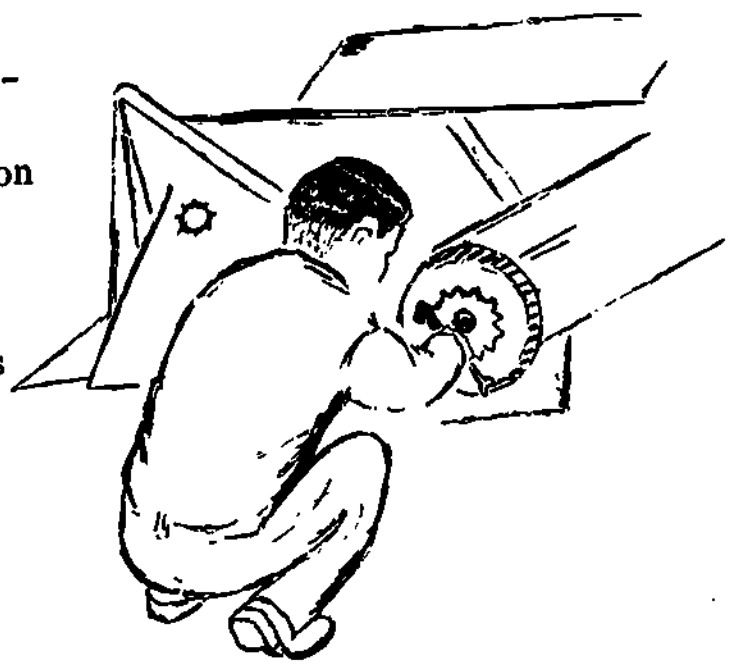
Almost all farm machinery businesses have a sick leave program. The range is from five to fifteen days per year with full pay. Some employers allow these days to accumulate, but most do not.

In addition to sick leave, all machinery businesses provide vacation time with pay. The most common arrangement is to allow one week for the first three to five years, with increases up to two weeks as years with the business accumulate.

On-the-Job Training

As a beginning mechanic, you will be confronted with a double problem. First, you will be developing basic mechanical skills; and second, you will be learning how to service and repair new equipment. Learning is a never-ending process for a mechanic. Therefore, companies provide local training programs in the form of records, films, and other devices which will give you an opportunity to learn on the job.

In addition, all major companies sponsor special training programs for mechanics and others on a district or regional basis. The expenses and wages of employees are paid by the local business during these special training workshops.



Therefore, there is no reason why you cannot become a master mechanic in two or three years by independent study, by carefully observing master mechanics, by participating in local training programs, and by attending district and regional short courses.

One service manager in a large and well-operated farm machinery service and repair shop when asked how long it would take for a young man to become a mechanic replied:

> It would take about two years, on an average, for a man to be considered a mechanic provided that the young man is willing to do what the service manager tells him to do and doesn't mind getting his hands greasy and getting with it. I suggest that the young mechanics learn to work clean, have their repair parts clean, and their tools and tool box or trays clean. They should always put the tools back in their respective places when the job is finished. Never leave them scattered all over the bench or floor. We all know that when a customer comes to the shop to have some work done, he looks at the mechanic; and if he sees that he is clean, his tools are clean, and his bench is clean, he says to himself, 'Now I know I am going to get a good job done here.' As a rule, he is. Another thing, the beginning mechanic should learn to do as the master mechanic tells him. He shouldn't talk back or laugh at him. He should be nice to him and it will be a pleasure for the master mechanic to work with the young mechanic. I suggest that is the best and quickest way to become a good mechanic.

VT 007 990
Mietus, Walter S.
An Experiment in the Development of Creative Thinking and Its Effect on Selected Cognitive, Affective and Psychomotor Behaviors of Students in High School Industrial Arts Courses.

MF AVAILABLE IN VT-ERIC SET.
Pub Date - Feb69 19p.; Speech presented at American Educational Research Association Conference Session Number 17.9 (Los Angeles, Feb. 1969).

SPEECHES; *INDUSTRIAL ARTS; *DRAFTING; GRADE 10; *EXPERIMENTAL CURRICULUM; CURRICULUM DEVELOPMENT; DOCTORAL THESES; CURRICULUM EVALUATION; EDUCATIONAL RESEARCH; *CREATIVITY; CREATIVE DEVELOPMENT; CREATIVITY RESEARCH; *CREATIVE THINKING; *COGNITIVE ABILITY; AFFECTIVE BEHAVIOR; PSYCHOMOTOR SKILLS

A dissertation study was conducted to develop and evaluate a course to stimulate students needing an opportunity for creative expression. The four major phases were: (1) the development of a 10th grade industrial arts drafting course designed to nurture creative, productive thinking, (2) the selection and training of teachers, (3) the construction and pilot testing of a test of creative abilities, and (4) a 16-week experiment to test the differences between the new and old courses on selected cognitive, affective, and psychomotor behaviors of 250 students. Five industrial methods for enhancing creative ideation were integrated in appropriate course units, these were (1) the attribute listing technique, (2) synectics, (3) hypothetical situations, (4) brainstorming, and (5) the forced relations method. Findings included: (1) Creative thinking of the experimental group was significantly better than the control group, (2) Achievement for the two groups was not significantly different, (3) Femininity, flexibility, and dominance scores on the California Psychological Inventory (CPI) were significantly higher for the experimental group, and conformance and self-acceptance scores were significantly higher for the control group, (4) There was no difference on independence scores (CPI) between groups, and (5) Linguistic abilities rather than quantitative abilities predicted creative abilities. (EM)

VT 007 990

ED039370

AN EXPERIMENT IN THE DEVELOPMENT OF CREATIVE THINKING AND ITS EFFECT ON SELECTED COGNITIVE, AFFECTIVE AND PSYCHOMOTOR BEHAVIORS OF STUDENTS IN HIGH SCHOOL INDUSTRIAL ARTS COURSES

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by

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Technically inclined high school boys whose interests, aptitudes and abilities are not concomitant with the traditional school subjects and academic expectations, like other students, have need for creative expression. To meet this need, a special program of technical activities close to the interests of such boys and a possibility of a high level of

VT007990

* Presented at American Educational Research Association Conference Session Number 17.9, Los Angeles, California, February, 1969.

ego involvement was developed. The program was implemented and its effects on selected variables were evaluated.

This research (1) proceeded on the premise that the creative output of non-academic or technical students involves special abilities which can be manifested through the medium of special products and as such, require appropriate conditions, techniques of teaching and instruments of measurement and evaluation. Another basic premise was that creative products are not restricted to the literary arts and sciences but are in fact, often developed in applied technology.

The design of the study incorporated these four major phases:

1. Research and development of a course of studies designed to nurture creative productive thinking.

2. The selection and training of teachers in the content and methods necessary for implementing the course of studies.

3. The construction of a special technical content test of creative abilities and by a series of pilot studies obtaining empirical evidences of validity and reliability.

4. The designing and carrying out of a large scale sixteen week experiment to investigate the effects of the program on selected cognitive, affective and psychomotor behaviors. Also studied was the relationship of creative abilities to lingual and verbal abilities.

Creativity Program: The first phase was concerned with the development of an industrial arts course of studies integrated with the range of mental operations defined by Guilford and Merrifield (1) as central to creative productive thinking. For this purpose a well standardized course of studies in high school drafting used throughout the city of Chicago was selected. The selection was made on the basis that the need for creative abilities is amplified when it is considered that students electing to study drafting are

the engineers, the innovators, and the technicians of tomorrow.

A working rather than a global definition of creative ability was formulated to guide the development of this study and to establish a criterion for validation correlates. Creativity was defined as a behavior distinguished by the capacity to produce a quantity of socially useful and unique solutions to problems that relate to reality at a given time within a given population. The solutions or ideas were manifested in a highly non-verbal but observable form, a form composed of technical sketches and drawings.

To enhance creative ideation, practical lessons with concrete examples on the psychology of creative thinking were incorporated and adjusted to high school students. The following five industrial methods for increasing or enhancing creative ideation were integrated with appropriate units of study.

1. The Attribute Listing Technique (2)
2. Synectics (3)
3. Hypothetical Situations (4)
4. Brainstorming Method (5)
5. Forced Relations Method (6)

The environmental conditions and teacher attitudes and pedagogical practices necessary for nurturing creativity were guided by Rogers' (7) theory of psychological freedom and safety.

Teacher Training: The second phase of the study included the selection and training of teachers by means of workshops, practicuums and actual experiences gained in pilot programs. The selection of teachers was expedited in that the investigator taught a graduate course in Content and Methods of Teaching Industrial Arts. Potential research assistants were identified herein by their ability to comprehend the methods and problems of nurturing creative behavior.

With the inclusion of a questionnaire and an interview, seven out of 97 teachers were selected to participate in this research. They were identified as having completed a course in research methods and evaluation, having over 24 credit hours toward a masters' degree, willing to write a masters' thesis under the guidance of the investigator, teaching at least three courses of drafting at the sophomore level in the Chicago Public Schools, and following the city wide standardized course of studies.

The third major phase of this research included the completion of four pilot studies. The purpose of these studies was fourfold: 1. to establish satisfactory criterion measures for creative abilities against which evidence of validity and reliability for a pencil and paper test of creativity could be determined; 2. to develop and to provide evidence of validity and reliability for rating scales used in conjunction with evaluating behaviors; 3. to provide trial runs or preliminary experiences in implementing the units of study for creative productive thinking and improving the lesson plans; 4. to predetermine and to resolve the problems that may emerge in coordinating research within ten classrooms distributed in various geographic areas of Chicago.

Creativity Test: The test underwent a process of refinement in the completion of a series of four pilot studies. In the last two pilot studies statistical analyses were applied for obtaining evidence of concurrent validity and reliability.

Constructs for the test were those recommended by Guilford and Merrifield (1) as essential for creative productive thinking. Accordingly, the test items were designed to include the mental

operations of cognition: convergent and divergent operations with figural and symbolic content where the products were manifested in visible transformations, systems, relations, classes and units.

Additional criteria for the test items specified were:

1. The item content should be of a technical nature of appropriate level and close to the general interests of boys who choose to study technical courses.

2. Many alternate solutions should be inherent in each problem or required task of performance.

3. The problems must be new in the experience of the students.

4. The solutions should not require detailed technical knowledge and not be dependent upon textbook information.

5. The items should provide the possibility of evaluating solutions on the basis of quality (inventive level of products), flexibility (the total number of acceptable solutions), and uniqueness (statistical infrequency within the peer group).

6. The items must have positive index of discrimination.

7. The total one-hour test should be divided into two sections to conform to the school schedule.

Test Criterion, The Determination of Validity and Reliability

With the consent of the Special Research Committee of the Chicago Board of Education, 250 tenth grade male students were used as subjects for obtaining a creativity criterion. They all completed one year of industrial arts studies and were enrolled in the second course of drafting. Their intelligence scores were within plus and minus one standard deviation of the mean. Fifty-nine percent of the total were from minority groups.

To establish a criterion, the subjects were given special tasks

where they were provided an opportunity to periodically demonstrate their ability to be inventive, innovative and productive.

At various intervals during the school year, students were assigned tasks to redesign or to substitute such products as desk lamps, door bumpers, mail boxes, auto accessories, home appliances and machine parts with better alternative of design, function and purpose. Sixteen such tasks were administered providing criterion products for 200 subjects. The subjects never had prior knowledge of what task or products would be used. On each occasion the time for the generation of ideas for new products was controlled to thirty-five minutes. These criterion products were in the form of engineering sketches and drawings. A creativity score for each subject was obtained by evaluating the products produced.

The evaluation was based on the three criterion factors included in the definition of creative ability. Flexibility (F) was defined as the ability to produce a quantity of alternatives to a given task in a given interval of time. After the commonplace and banal solutions were rejected by trained judges using a check list, the total sum of plausible solutions was used as the (F) score for each subject. Uniqueness (U) was used as the ability to produce original or statistically infrequent products. The degree of uniqueness was determined by ranking all of the solutions from the entire sample in order of frequency. Stated in another way, the scales used in the evaluation provided high (U) point value for the most infrequent solution down a graduated scale which accorded no points for very common solutions.

The Quality (Q) of solutions or products was determined on a

special scale. This scale was weighted and designed on the following continuum of specifications:

1. A product which employed commercially available components to form some new device was accorded a low value.

2. A product employing different but established principles of technology was accorded a higher value.

3. A product characterized as being non-representative and without precedent was accorded the highest value upon approval from a commercial market research analysis company.

All of the products in the form of technical sketches and drawings were brought to one central location, combined into one stack, randomized and made temporarily anonymous, distributed to specially trained judges, and evaluated. Following the first evaluation, the solutions were combined and re-evaluated in such a manner that the two different judges provided an F, a Q, and a U score for each product. The first evaluation was correlated with the second. The Pearson product-moment correlation coefficient was used to obtain the estimate of reliability. The coefficients of reliability found were: Flexibility, .8905; Quality, .5904; Uniqueness, .8688 and for the total test, .7681.

After establishing creativity criterion scores for the subjects, the Test of Creative Thinking Abilities was administered on approximately the thirty-fifth week of the school year. The tests were evaluated on the same criteria and method as was used in evaluating products for obtaining the criterion scores. Each test was evaluated by two different judges. The first evaluation was correlated with the second. The Pearson product-moment correlation

coefficient was used. The coefficients of reliability were: F, .9011; Q, .6104; U, .8581.

To establish evidence for concurrent validity, normalized scores from the criterion measures were correlated with normalized scores from the creativity test. Pearson product-moment coefficients found were: F = .6041; Q = .5801; U = .7841, and for the total criterion and test scores, .5801.

At the conclusion of the third phase, the cooperating teachers were trained and had experience in working with the creativity oriented course of studies. At this time also, all course materials were printed and the evidence of validity and reliability was establised for the test of creativity.

The Experiment: The fourth phase, which continued for sixteen weeks, was confined to a population of boys who elected to study a sequence of technical courses. The boys, who were identified as normal urban high school boys of average intelligence within the Chicago Public school system, had an average age of 15.6; 48 percent of these were from minority groups. Four hundred and fifty students were available. Intact classes were randomly assigned so that each of five schools had an experimental and a control group. The control groups were taught according to the standardized course of studies; the experimental group was taught with the newly developed program.

To investigate the degree and nature of observed differences between intact classes forming randomly assigned control and experimental groups, a battery of tests was given at the beginning and at the close of the experiment. These tests included measures of achievement, creative ability, and the California Psychological

Inventory. However, the intelligence test (Thurstone Test of Mental Alertness) was administered only once at the beginning of the experiment. Accordingly, hypotheses were constructed to test the effects of the special treatment on the variables measured. The Honeywell Fortran Series 200 Operation System D was employed to expedite statistical computations.

Simple analysis of covariance statistical procedure, (8) where the differences of the final scores adjusted on the basis of the initial scores, was used as a test for determining whether there were any significant differences between the data gathered from both groups. Both groups were formed by matching on the basis of verbal abilities as measured by the Thurstone Test of Mental Alertness. Complete data was available for 250 subjects where for the control, N = 125 and for the experimental group, N = 125. Prior to testing all hypotheses Hartley's maximum F-ratio was used to test homogeneity of variance. In no case did the F-ratio reach a value making the use of covariance inappropriate.

Results

Table 1 provides a summary of pertinent data derived from both groups equal in number and matched on verbal abilities.

Creativity: The hypothesis that there is no difference in creative thinking abilities of high school boys who have had the creative thinking training and those who have not was tested. Evidence on the basis of final scores obtained from adjusted initial scores indicated that the experimental group made significant gains ($p \geq .01$) over the control group on those abilities herein defined

as central to creative thinking . See Table 2.

TABLE 1

INITIAL AND FINAL ADJUSTED MEANS AND STANDARD DEVIATIONS
FROM VARIABLES FOR TOTAL EXPERIMENTAL
AND CONTROL GROUPS

Instrument	Group	Initial			Final		
		N	Orig. Mean	S	N	Adj. Mean	S
Thurstone Lingual	Cont.	125	25.06	10.00	125		
	Exp.	"	25.15	8.17	"		
Creativity	Cont.	"	30.01	8.23	"	30.11	7.81
	Exp.	"	28.99	9.16	"	34.46	8.79
Achievement	Cont.	"	9.67	3.73	"	48.49	10.48
	Exp.		10.62	3.64	"	69.14	21.14
CPI Flexibility	Cont.	"	7.97	2.30	"	9.53	3.78
	Exp.	"	7.92	2.42	"	13.89	5.02
CPI Femininity	Cont.	"	12.56	4.84	"	11.94	4.87
	Exp.	"	10.96	3.37	"	17.26	5.10
CPI Independence	Cont.	"	15.20	4.89	"	14.52	4.08
	Exp.	"	14.53	4.91	"	14.44	3.68
CPI Conformance	Cont.	"	17.00	4.92	"	19.07	4.91
	Exp.	"	16.22	4.83	"	14.02	4.21
CPI Dominance	Cont.	"	16.81	4.24	"	17.68	4.42
	Exp.	"	16.17	4.61	"	19.33	6.24
CPI Self Acceptance	Cont.	"	16.75	5.27	"	17.87	3.65
	Exp.	"	17.05	5.38	"	15.69	5.09

TABLE 2

ANALYSIS OF COVARIANCE OF CREATIVITY SCORES
(FINAL SCORES ADJUSTED FOR DIFFERENCES ON INITIAL SCORES)

Source of Variation	Sum of Squares	df	Mean Square	F
Treatment	30904.78	1	30904.78	15.70
Subjects (within)	486075.06	247	1967.92	
TOTAL	516979.84			

Achievement: The effect of the creative thinking program on the achievement of the prescribed or traditional course learnings was investigated. The means are presented in Table 1. By using the ANCOVA statistic an F-ratio of .480 was obtained indicating no significant difference between the adjusted achievement score means of both groups. Stated in another way, the innovated course of studies including creative thinking exercises did not curtail or have a negative effect on the achievement of the knowledge expected in the traditional convergent thinking type course of studies.

Affective Behaviors: An exploration of frequently accepted but untested assumption that personality characteristics and affective behaviors can be changed when individuals are free to express their creative potential, was undertaken. The writer had evidence to believe that boys with technical interests experience very few

occasions, if any at all, to express their special interests or technical creative abilities. From elementary school through high school they are compelled to depress their own interests and to conform to academic expectations imposed by traditional education. Through the years, they may develop behaviors of non-conformance, dependence, a faulty or uncertain self concept and rigid rather than flexible thinking patterns. To investigate such possibilities, selected scales from the California Psychological Inventory (9) measuring Self Acceptance, Flexibility, Dominance, Conformance, Independence and Femininity were used. The total C.P.I. test was administered at the beginning and at the end of the sixteen week program to the control and experimental groups.

Femininity: The C.P.I. subtest of Femininity was designed to reflect the following bipolar dimensions. Low scores were related to the behaviors of being opportunistic in dealing with others, blunt and direct in thinking and acting, impatient with delay, indecision and reflection. High scores signify behaviors as being patient, helpful, moderate, appreciative, persevering, sincere, and respectful of others.

Examination of the data presented in Table 1 indicates that the means for the control group decreased whereas the means for the experimental group increased. This relationship contributed to the large observed F-ratio shown in Table 3.

The observed F-ratio (Table 3) was found to be significant ($p=>.01$). From this data it was inferred that the standard course of studies including convergent problem solving type experiences makes no significant contribution to the development of those

characteristics of Femininity as defined and measured by the C.P.I. The traditional course of studies tended to encourage the behaviors of being blunt, direct in thinking and action and impatient with delay. The experimental group scored significantly higher than the control group to indicated changes in those desirable behaviors as being persevering, capable of reflection, appreciative, and patient.

TABLE 3

ANALYSIS OF COVARIANCE OF FEMININITY SCORES
(FINAL SCORES ADJUSTED FOR DIFFERENCES ON INITIAL SCORES)

Source of Variation	Sum of Squares	df	Mean Square	F
Treatment	1693.71	1	1693.71	85.36
Subjects (within)	4900.65	247	19.84	
TOTAL	6594.36			

Flexibility: Central to the program of creative thinking was the development of the intellectual mode of flexibility. Exercises and lessons were designed to develop the abilities of being sensitive to needs and problems, capable of making change in mental set, capable of producing a number of solutions to practical problems, aware of the need for group ideation with temporal segregation of criticism, capable of individual ideation and the exercise of judicial evaluation after many alternative hypotheses are evolved.

Statistical data (Table 1) indicated that the experimental group demonstrated superior performance on the C.P.I. test of Flexibility

($p => .01$). Using ANCOVA an F-ratio of 7.68 was observed. A table value for F of 6.80 was necessary for the .01 level of significance. It was inferred that the program for developing creative thinking was effective in enhancing mental flexibility.

Independence: The C.P.I. subtest of Achievement via Independence was designed to evaluate those factors of interest and motivation which facilitate achievement in any setting, where autonomy and independence are positive behaviors. Statistical data (Table 1) provided evidence that there was no significant difference between the final scores after the adjustments on the basis of the initial scores.

Self Acceptance: The C.P.I. subtest of Self Acceptance was designed to assess factors of poise and personal worth on a bipolar dimension. High scores would identify the subjects that would be characterized as being demanding, aggressive, self centered, and possessing self assurance. Low scores would tend to identify behaviors as methodical, dependable, easy going, quiet and tending to be self abasing. Using the ANCOVA statistic where the differences of the final scores were determined from the adjusted initial scores, an F-ratio of 14.29 ($p => .01$) was observed. The control group made significant gains (Table 1),whereas the experimental groups were found to remain stable on this variable.

Conformance: The C.P.I. subtest of achievement via Conformance was designed to evaluate those factors of interest and motivation which facilitate achievement in any setting where conformance is a positive behavior. Significant differences between the means (Table 1) beyond the .01 level in favor of the control group were obtained. It was inferred from the data that the

treatment provided the experimental group had a restricting effect on the variable of conformance.

Dominance: The C.P.I. subtest of Dominance was designed to assess factors of ascendancy, leadership, persistence, self-reliance, and social initiative. Low scores on this scale would indicate retiring, inhibitive behaviors and avoidance of situations of tension and decision making.

Using the ANCOVA statistic an F-ratio of 38.63 was observed ($p \gg .01$) in favor of the experimental group. See Table 1 for other data. The inference was made that the program or treatment was very effective in changing these behaviors. The new course of studies experienced by the experimental group included lessons on inhibitive forces which could act as blocks to thinking and expression, and on the understanding of the tensions that may arise during the process of productive thinking. The treatment also included training which encouraged persistence in searching for and thinking of numerous solutions to problems.

The Relationship Between Creative Abilities and Intelligence

The relationship between normalized lingual and quantitative scores from the Thurstone Test of Mental Alertness were correlated with normalized scores derived from the creativity test. The Pearson product-moment correlation coefficients derived from the experimental group N = 125 were: for lingual and creative abilities $r = .2124$ ($p \gg .05$), quantitative and creative abilities, $r = .1706$, for the relationship of the total tests $r = .1804$. The data indicated that linguistic abilities rather than quantitative scores

predict creative abilities. The Thurstone Test of Mental Alertness was found to be a better predictor of course achievement rather than creative abilities.

The Relationship of Creative Abilities and Selected Psychomotor Skills

A special manipulative performance test designed to measure the fine specialized skills to make engineering drawings was developed. The rationale and evidence of validity and reliability are found in a study by Mietus [10].

Three groups of [N=25 each] were obtained by stratifying the subjects of the experimental group into high, average and low creative abilities. Highly creative boys were found to be significantly less capable of performing exacting psychomotor skills than were boys with average creative ability. Data from the low creative and the high creative groups correlated negatively [but not significantly] with psychomotor abilities; data from the average creative group correlated positively [$p \geq .05$] with psychomotor abilities.

Summary of Findings and Recommendations

The data gathered indicated that the creative thinking abilities of urban high school boys with average academic performance but with technical interests, can be nurtured and elicited.

Positive evidence was found to indicate that courses in Industrial Arts designed to provide for creative thinking and expression have far more desirable effects on cognitive and affective behaviors than those courses designed strictly on the basis of industrial functions, processes, and products.

Subjects of the EG who received training in creative thinking demonstrated significant gains [p=>.01] as determined on pre and posttest measures and also significantly higher [p=>.01] scores as those achieved by the CG. Data from the CG (taught by the traditional problem solving methods) indicated an arrested level of creative abilities.

Integrating the standard course of studies with creative experiences had no adverse effect on the students' achievement of the traditionally expected knowledges and skills.

The data observed provide evidence that the students of the CG and EG performed differently on selected measures of affective behaviors and personality characteristics as measured by the C. P. I. The EG scored significantly higher [p=>.01] scores on the scales of Femininity, Flexibility, and Dominance. The CG scored significantly higher on scales of Self Acceptance and Conformance. No significant difference was found on the scale of Independence. The evidence supported the hypothesis that personality characteristics and affective behaviors can be changed when boys are provided with an environment and conditions conducive to expressing their creative potential.

Significant [p=>.05] positive correlations between creative abilities and C. P. I. scales of Femininity, Flexibility, and Independence were found; however, with scales of Dominance, Conformance, and Self Acceptance negative but insignificant correlations were found. Investigations should be carried out to determine whether personality complexity and the ability to integrate it is the best indication of a creative student.

Psychomotor abilities of the high and the low creative ability groups correlated negatively but not significantly; whereas the average creative group correlated positively and significantly beyond the .05 level. Guidance and placement personnel should be cautioned by these findings, for boys who are evaluated highly on the skills of drafting performance are not those who are high in the ability of being inventive and productive thinkers, an ability which is a frequent job expectation.

The correlations between course achievement and intelligence as measured on the Thurstone Test of Mental Alertness was significant [p=>.01], whereas the relationship between intelligence and creativity was low positive and statistically non-significant. Linguistic subtest scores rather than total I. Q. or quantitative ability scores tended to predict creative abilities.

Because encouraging results were obtained through this breakthrough research study, it is believed that more effort be made to meet the needs of the growing number of urban boys with technical interests and whose aptitudes and abilities are not concommitant with traditional school subjects.

FOOTNOTES

.1 This article is based in part upon a doctoral dissertation completed at the Loyola University, Chicago, Illinois in August of 1966 under the direction of Sister Mary Constantine, Ph.D.

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VT 007 991
Mietus, Walter S.
The Development, Implementation and Field Evaluation of the Cluster Concept Program in Vocational Education at the Secondary School Level.

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SPEECHES; *TRADE AND INDUSTRIAL EDUCATION; TASK ANALYSIS; *OCCUPATIONAL CLUSTERS; *CURRICULUM DEVELOPMENT; *CURRICULUM EVALUATION; VOCATIONAL EDUCATION; GRADE 11; GRADE 12; EXPERIMENTAL CURRICULUM; *EDUCATIONAL RESEARCH; DEVELOPMENTAL PROGRAMS
*CLUSTER CONCEPT PROGRAM; MARYLAND

The occupational cluster approach in vocational education is aimed at entry level job preparation of 11th and 12th grade students in a variety of related, rather than specific, occupations. Three occupational clusters selected on the basis of stated criteria were construction, electro-mechanical installation and repair, and metal forming and fabrication. Task inventories were made for each occupation within each cluster by reviews of job descriptions, texts, courses of study, and training manuals with the assistance of occupational leaders. The inventory items were submitted to panels of industrial experts for classification as to "not required," "required entry-level," and "required soon after entry." The second phase of the project sought to identify and train competent teachers and to accomplish further curriculum development. Phase three involved field testing of curriculum guides, course outlines, and newly trained teachers in 10 Maryland senior high schools. The new programs were contrasted to traditional vocational programs. It was concluded that cluster concept programs have the potential to become vigorous, alternative forms of vocational education. Summarized research findings are included. (EM)

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ED039370

THE DEVELOPMENT, IMPLEMENTATION AND FIELD EVALUATION OF THE CLUSTER CONCEPT PROGRAM IN VOCATIONAL EDUCATION AT THE SECONDARY SCHOOL LEVEL

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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The research reported herein was performed pursuant to grants with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education Position or policy.

The current year, 1969, marks the fourth year of research with the Cluster Concept Program and the initiation of phase four. The program

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VT007991

has its foundations in three years of continuous research supported by the U. S. Department of Health, Education, and Welfare. The purpose of this abstract is to present briefly the major efforts and progress made in these three years. For detailed information relevant to the first three years of research and development, reference should be made to the previous documents which emerged as products of this investigation. To obtain these documents, interested individuals should write to either the ERIC Documentation center at the Ohio State University or to the National Cash Register Company of Bethesda, Maryland. The materials can be obtained by making reference to the principal investigator, Dr. Donald Maley, or to the designated ERIC numbers given below.

Course Outlines		Instructional Plans	
1966		1967	
Final Report	ED010301	Final Report	ED016841
Construction	ED010302	Construction	ED016842
Electro-Mech	ED010303	Metals	ED016843
Metals	ED010304	Electro-Mech	ED016844

Phase I, or the first year efforts began in September of 1965. During that phase an investigation of the need for and a rationale for the cluster concept approach to vocational education was made with due consideration of recommendations and findings of previous research in various related fields. Supportive evidence to build a rationale and evidence of the need for the cluster approach were found in many sources. One hundred and sixty studies from the fields of guidance, vocational placement, education, military training, and psychology were reviewed; and pertinent findings were presented as a justification for this approach to vocational education.

The cluster concept as envisioned, was aimed at the preparation of eleventh and twelfth grade youth for entry level capability in a variety of related rather than specific occupations. It was based on the premise that educational experiences with a range of related occupations appear defensible for most secondary students who have no realistic basis for decision making along the lines of selecting a specific trade. The cluster concept program was designed to enhance the individual's potential employability by virtue of offering a wider range of entrance skills and a level of articulation across several occupational areas. This type of fundamental training, it is believed, will enable the individual to move back and forth over several occupational categories as well as vertically within the occupation.

The cluster approach, as an alternate form of vocational education, would provide a secondary student with a greater degree of flexibility for vocational decision making rather than demanding a committment to the "one-goal" directed traditional program. The student would gain experience in a family of related occupations with many commonalities of human requirements.

Field research for determining the acceptability and feasibility was conducted by the research staff by gathering data on the attitudes, opinions, and beliefs of responsible civic and industrial leaders. The data gathered from these individuals strongly tended to support the premise that students with a cluster concept background would be excellent potential employees and would be less difficult to adapt to work in a rapidly changing technological society. The data gathered also indicated that the implementation of the program into the public schools would not present any major difficulties and that graduates from these programs would be considered employ-

able individuals.

With heavy and often total reliance on representation from business and industry, the research staff evolved a system and criteria for establishing occupational clusters, specific occupations within the clusters, and finally, the elements or tasks for all level I and level II job requirements. The following criteria were used:

The occupational cluster:

1. Should be in the area of vocational industrial education.
2. Should include occupations that are related on the basis of either similar processes, materials, products, or human requirements.
3. Should be broad enough to include occupations with a wide variety of skills and knowledge.
4. Should involve occupations that require not more than a high school education and/or two years beyond high school.
5. Should provide for the opportunity for mobility on a geographical and occupational basis.

The three clusters established through the application of the criteria and limitations set forth this research are presented in Figure 1. More clusters were possible but the decision was made to limit the study to three. Each of the clusters was analyzed to establish special occupations for each category. See Figure 1. The following criteria were used for selection. The occupation must have:

1. A favorable employment outlook.
2. The instructional capability of being implemented in a secondary school program.
3. Opportunity for job entry upon graduation from high school.
4. Numerous skills, knowledge and human requirements which would provide an opportunity for the identification of commonalities or relatedness with other occupations.
5. Opportunities for advancement through further schoolings as on-the-job training, or apprentice programs.

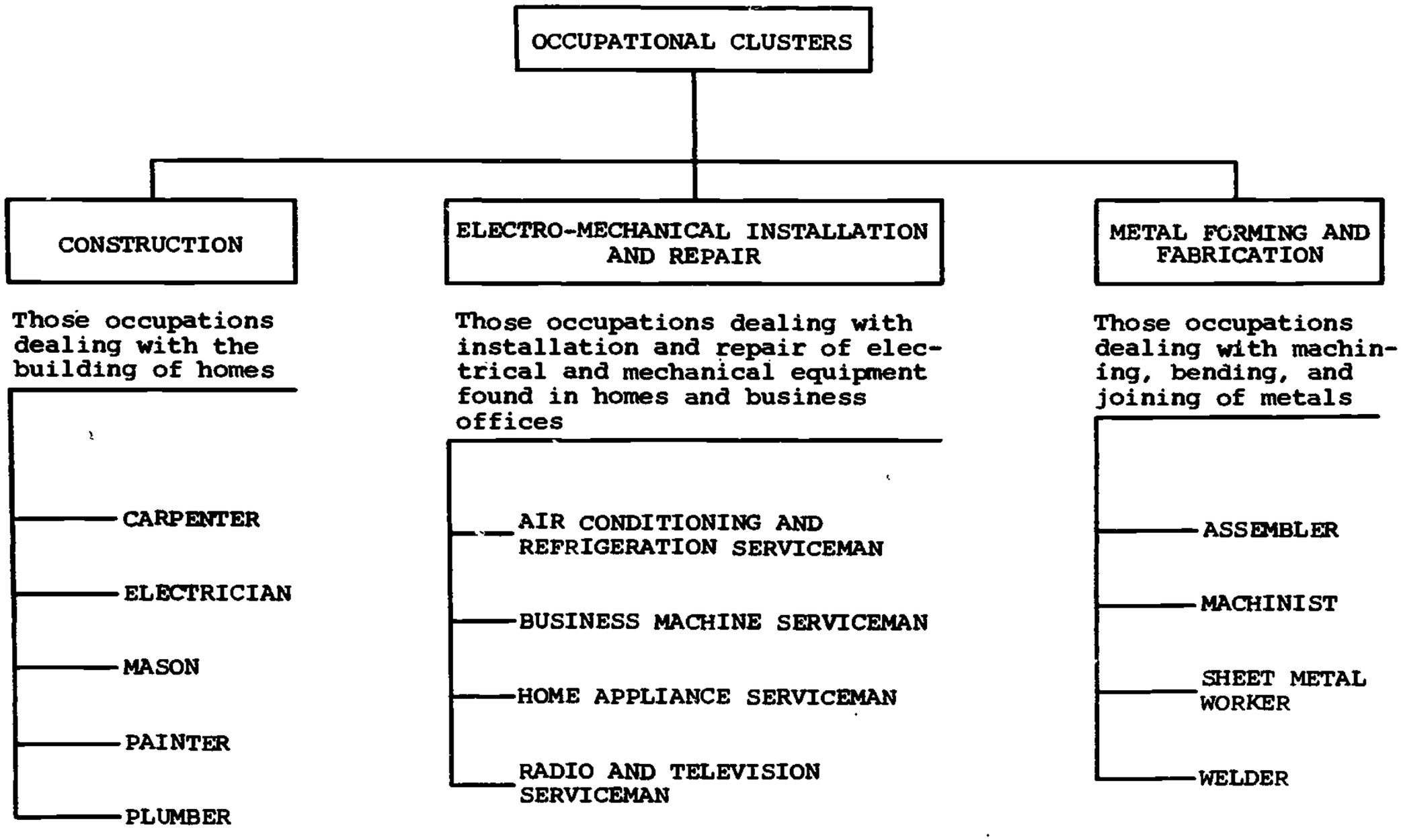

Figure 1 Occupational Clusters

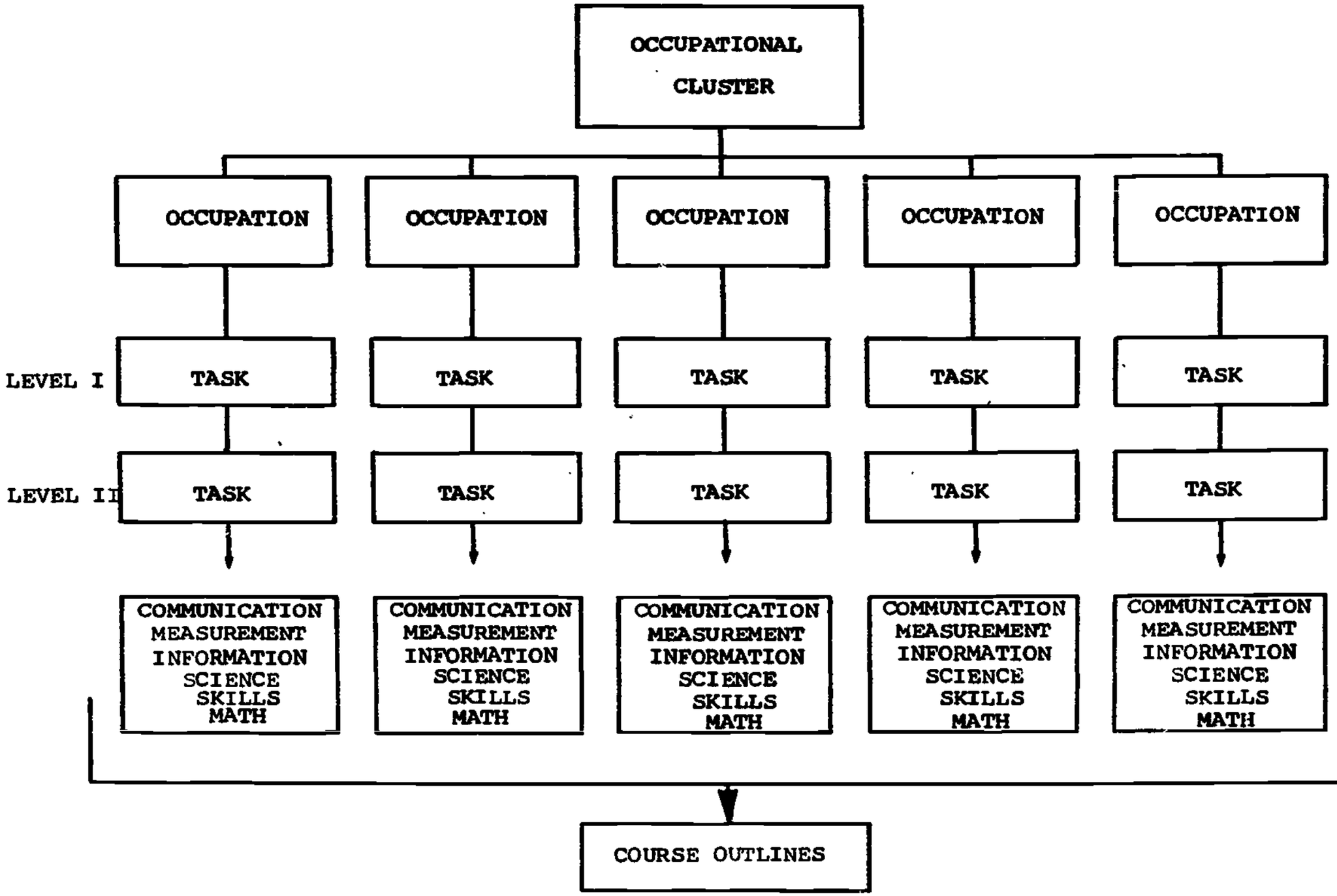

FIGURE 2. RESEARCH MODEL FOR DEVELOPING COURSES OUTLINES

Central to the development of a course of studies required for field implementation of the program was the development of a task inventory for each occupation within a cluster. This procedure is outlined graphically in Figure 2. Tasks described the work performed by an individual in an occupation and consisted of observable human behaviors involving more than one area of human requirement. The human requirements, cognitive and psychomotor, that may be found in the performance of work by an individual in an occupation include:

1. Communications
   vocabulary
   symbols
   drawings and blueprints
   systems of communication
   speech
   English
   maps

2. Measurement
   time
   temperature
   weight
   volume
   length, width, and depth
   meters (electrical and mechanical)
   instruments
   systems of measurement

3. Skills
   hand
   mental
   machine

4. Mathematics and science
   practical and applied

5. Information
   technical
   operational
   occupational
   economic
   social
   safety
   personal hygiene
   personal standards
   occupational and job standards

The development of task inventories was accomplished through the review of job descriptions, textbooks, courses of study, training manuals, and active participation of recognized leaders from appropriate occupations. All tasks were written in behavioral terms using an action verb to describe the behavior, a noun identifying the object of the action, and adverbial or adjectival phrases describing the results of the action on the object. The format of task statements and an example of a task so written is shown in Figure 3. Modifiers were used to clarify the results of the action and to specify the accuracy or limits that were required in the performance of the task. Whenever possible, the task statement specified the tolerances that were required. By so stating the tasks, validity was satisfactorily achieved. The task statement could be used as a criteria for evaluation from one individual to another, and structured check lists for recording the field progress could be made.

After the task inventories were developed they were submitted to panels of experts from industry representative of the occupations forming clusters, for the purpose of classifying tasks into categories of (1) not required in an occupation, (2) required "entry-level" tasks within an occupation, and (3) required soon after entry into an occupation. With the results of this classification, it soon became evident by a frequency count for each occupation which occupations had a strength of relationship or similarity in human requirements. This information was used for the development of course outlines, for the building of achievement test items, student progress charts, and for evaluation criteria for use during visitation to the schools implementing the programs.

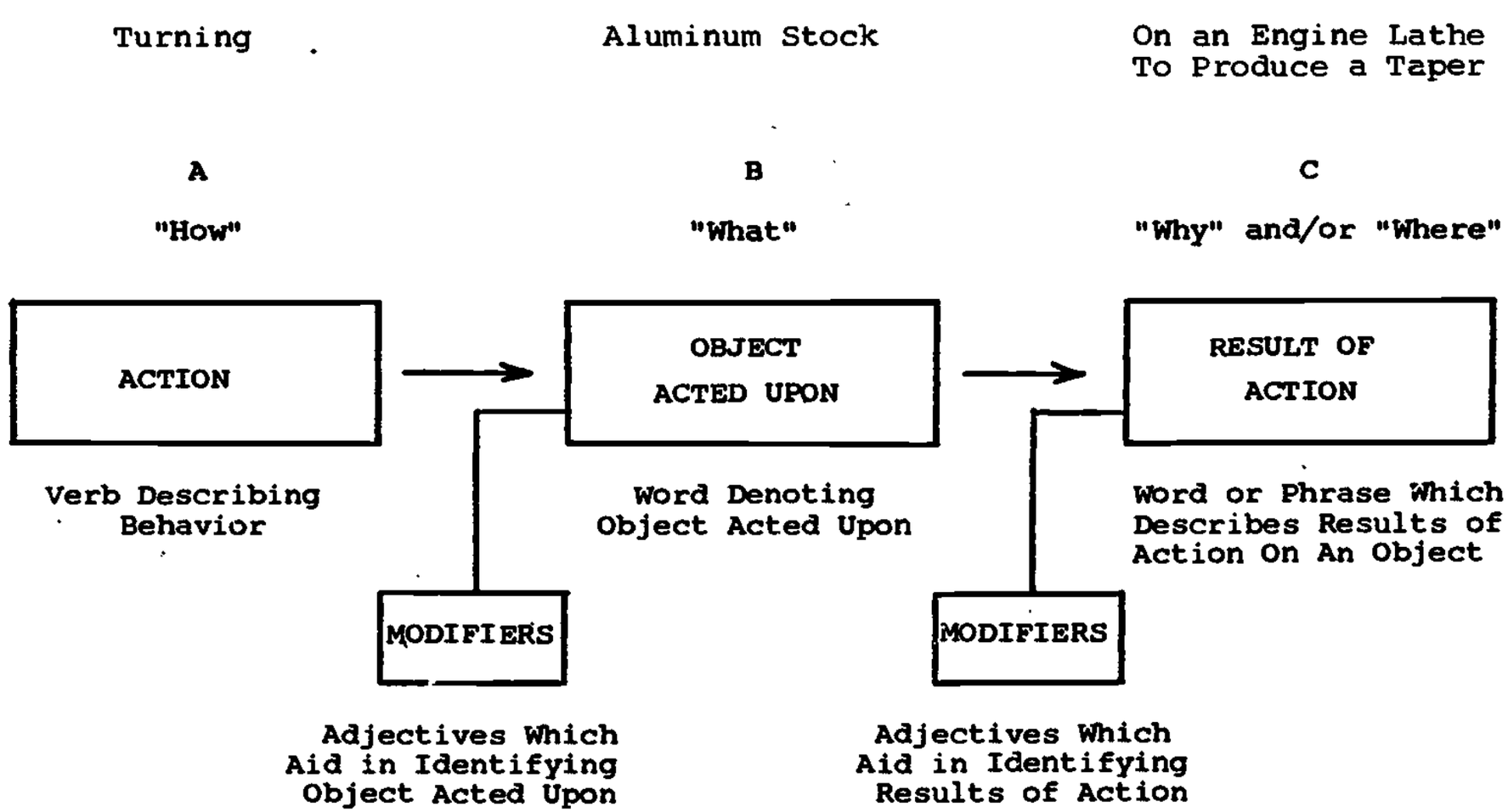

FIGURE 3. TASK STATEMENT FORMAT

Phase II (September 1966 through August 1967)

The second phase of the project was characterized as having as its chief aims, the identification and training of competent teachers, and the further development of curriculum materials to implement the cluster programs.

With the cooperation of the Maryland State Vocational Department, thirty teachers were identified as candidates for the teaching of the new programs. After screening the candidates through a series of interviews and formal tests, and evaluating their professional qualifications and past teaching performances, eleven teachers were selected. Four teachers specialized in the Construction Cluster, four in the Metal Fabrication Cluster, and three in the Electro-Mechanical Cluster.

After careful study and research of the requirements of the cluster programs, the teachers were evaluated on their competencies, and their needs to implement the programs were identified. To meet these needs intensive training on campus and off campus was arranged. Private industrial and governmental organizations were available for establishing cooperative programs. Some of the cooperating organizations were: Sylvania Electric Corporation, Westinghouse, Technifax Corporation, Remington Rand Corporation, Associated Builders and Contractors, and the National Aeronautics and Space Administration.

Further activities of phase II included: (1) the development of instructional plans for the programs, (2) the acquainting of teachers with instructional materials and equipment, (3) the preparation of occupational information units, (4) arranging the content for each cluster in an instructional sequence including the tasks and human requirements as specified in phase I.

Phase III (September 1967 through August 1968)

The primary purpose was to evaluate, in a "field setting," the adequacy and effectiveness of the curriculum guides, course outlines, and preparation of the newly trained teachers. Descriptive, comparative, and quantitative data were generated and gathered to assess the impact of the first year of the programs on the school administration, teachers, and students.

Full control of all the variables necessary for an ideal experiment was not achieved; therefore, phase III was completed in the tradition of quasi-experimental design with full recognition of the factors which render the results equivocal.

Subjects from ten senior high schools in four Maryland counties have participated in this project. See Table I. One school had two cluster programs, each taught by a cluster concept instructor; thus, eleven teachers and eleven separate cluster programs were included. Each cluster program was compared with a control group composed of students from a traditional vocational education course. Each school was considered and evaluated as a separate experiment.

Problems. To obtain an indirect estimate of the effectiveness of the cluster concept programs, three principal areas of investigation were conducted. These were:

1. The impact of the three cluster concept programs on selected cognitive and affective behaviors, and task performances (psychomotor behaviors) of students.

2. The adequacy and appropriateness of the content of the newly developed courses and instructional materials.

3. The educational process, its adequacy and appropriateness with a consideration of administrative support, teacher effectiveness, and selected environmental conditions.

TABLE I.

NUMBER OF SUBJECTS COMPLETING THE PROGRAMS

School	Teacher	Number of students cluster or experimental group	Number of students control group
		Construction Cluster	
A	108	15	17
H	101	16	12
D	102	16	7
C	106	14	11
	Totals	61	47
		Metal Fabrication Cluster	
B	110	17	17
E	105	16	10
F	111	12	8
J	104	15	10
	Totals	60	45
		Electro-Mechanical Cluster	
K	103	0	0
M	109	13	14
G	107	9	11
	Totals	22	25
	Grand Totals	143	117

To investigate the first area (1) of research, the changes of behaviors of subjects from the experimental and control groups were evaluated by the administration of a battery of tests at the beginning and at the end of the school year. See Table II. The tests included newly developed achievement tests for each cluster, the Minnesota Vocational Interest Inventory, the D. A. T. Mechanical Reasoning Test, and an instrument to evaluate the students' knowledge of occupational information.

Treatment of data. Comparability or homogeneity of the students forming both groups was established on the basis of intelligence test scores (lingual or verbal abilities), and in one school, on the Mechanical Reasoning Test. In all but two experiments the analysis of variance statistic was used to determine whether there were significant differences between the two groups on the basis of the derived data. Prior to testing for differences, the F max ratio was used to determine homogeneity of variances. Non-parametric statistics were used in two experiments. The .05 level of significance was considered minimal in all data analyzed.

Findings. Statistical analysis of achievement test data indicated the following:

(a) Three construction cluster programs out of four achieved significantly higher scores than the control group. Three schools also were distinguished as making significant gains on the basis of the differences between the initial and final scores. One school made very modest insignificant gains. None of the control groups achieved significant gains on the achievement tests.

(b) All four schools implementing the metal forming and fabrication cluster program made significant gains on the achievement tests; whereas no significant differences were observed from the control groups. All experimental groups achieved significantly higher scores than the control groups on the posttests.

(c) Three schools initially were involved with the implementation of the electro-mechanical installation and repair cluster.

TABLE II

VARIABLES OF PRE- AND POSTTESTS

Domain	Instruments	Factors Evaluated
Cognitive	Cluster Concept Achievement Test	Human Requirements* 1. Vocabulary 2. Measurement 3. Skills 4. Math and Science 5. Information
Cognitive	Mechanical Reasoning Differential Aptitude Test (The Psychological Corporation)	Applied science and mechanical reasoning
Affective	Minnesota Vocational Interest Inventory (The Psychological Corporation)	Interest patterns in relation to: 1. Carpentry field 2. Mechanical field 3. Electronics 4. Machinist 5. Painter 6. Plasterer 7. Sheet metal 8. Radio & TV
Cognitive	Occupational Information	Availability Status role Expectations Mobility
Psychomotor	Task Inventory Sheets	Performances of specific tasks derived from manipulative jobs required for each cluster.

*Based on analysis of occupations phase I and II.

Due to many failures to meet required specifications, one school operation was discontinued.
Of the two remaining schools neither achieved significant gains or significantly higher scores than the control group.
One of the dominant factors influencing these results was that the control group consisted of boys who had been exposed to one or two years of vocational education in electronics.

(d) Data derived from the D. A. T. Mechanical Reasoning Test (from each of the ten experimental and control groups) indicated that both types of vocational education programs had insignificant effects on the development of the abilities required to solve problems of applied science and technology.

Affective behaviors. Both groups were administered the MVII and the supplementary questionnaire at the beginning and at the end of the school year.

Findings. The data derived from the MVII were perplexing and generally unsatisfactory for a clear group analysis. No clear patterns or directions of student vocational preferences were found. The cluster groups showed more flexibility of occupational choice than did the control groups.

Within the various groups of subjects, it was found that between twenty-five and forty percent of boys were dissatisfied with high school and would prefer to be gainfully employed or to pursue on-the-job training.

The number of students who expressed an appreciation for obtaining broad entry level skills, as opposed to specific in-depth training in high school, increased significantly.

Task performances. In the second (2) area of study, field observations and records of specific overt behaviors of students and teachers were made. The specific behaviors were referred to as job tasks and were set forth in objective behavioral terms. The tasks were incorporated into the course materials, inventory charts, and evaluation charts. The teachers' progress in implementing the instructional materials and student progress

were recorded by the use of these devices.

Findings. The range of tasks (as structured into the programs) completed by the instructors of the construction cluster was from thirty-four to sixty-seven percent. Of the tasks completed from fifty to sixty-six percent of the tasks must be restudied by the students.

The metal forming and fabrication cluster group completed from fifty to sixty-seven percent of the tasks. Of these, it was projected that twenty-five to thirty-four percent of the tasks must be retaught.

The instructors implementing the electro-mechanical installation and repair cluster completed fifty percent of the tasks. Of these, two thirds will be repeated in the second year.

The primary cause for the failure to complete specified tasks was due to the lack of equipment, materials, tools, and some inadequacy in physical facilities. Causes for repeating tasks were: the complex nature of the tasks and the shortage of time for exercises due to delays in remodeling or in setting up laboratories.

The third area (3) of investigation was concerned with the evaluation of selected supportive dimensions including: (a) administration, (b) the teacher, (c) physical facilities, and (d) community acceptance.

In addition to anecdotal records, the following devices were used to obtain descriptive data: (1) personal vita and records of teachers, (2) survey inventory forms for tools, equipment, and materials for each cluster, (3)drawings and sketches of physical facilities, (4) visual media such as drawings, plans, photographs, and written descriptions of practical work performed while implementing the course outlines, and (5) student progress charts and student evaluation charts.

Findings: construction cluster. Administrative support from the state, county, and local levels ranged from enthusiastic verbal support to active participation in overcoming the problems of procurement of physical facilities, materials, and equipment. Since these problems were never fully resolved, various construction tasks were not completed. Consequently, the sequence and balance of the programs were disturbed. Some tasks were overemphasized and in a few situations, omitted altogether.

Various activities of interaction with the community were observed. Resourceful teachers obtained materials from local industries and arranged for student employment during the summer months. One field operation reported job placement of ninety percent of the students.

Findings. metal forming and fabrication cluster. Four separate field operations were involved with implementing this type of cluster program. The programs were restricted in different ways and varying degrees due to the lack of equipment and materials. The use of shops which were designed for the study of a single occupation did not provide sufficient working area and in some cases sources of power had to be added. This group of cluster teachers was evaluated to be most effective in meeting the goals and objectives of their respective cluster programs.

Findings: electro-mechanical installation and repair. This cluster program did not escape the damaging effects caused by inadequate supplies, materials, and equipment. The requisition-acquisition time lag strongly suggests that all programs should have been in operation several years before the optimum potential of these programs could be achieved.

One field operation was dropped due to failures in meeting the specifications of the cluster programs.

Conclusions

The action research conducted provided data which made it evident that the cluster concept programs have the potential of becoming vigorous, alternate forms of vocational education. The programs changed student behaviors in the direction of the established objectives. Changes in cognitive abilities, broadened interests, flexibility of occupational choices within a cluster, and growth in performance tasks were observed.

The inadequacies identified served to establish a list of recommendations for the further development and refinement of the cluster concept programs. The knowledges and experiences gained provided a basis for making realistic plans and expectations for meeting the problems of phase IV.

The subjects of this experiment will be completing their final year in high school and the second year of the two year cluster program. Placement and follow-up studies are planned to obtain further information as to the relative merits of the new alternate form of vocational education.

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Who Is Liable for Pupil Injuries?

National Education Association, Washington, D.C.
National Commission on Safety Education
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School authorities recognize the need for early education in safety and that the schools have been given the responsibility to teach safe living to the young. Because school accidents do arise, two basic questions are raised: what can be done to prevent school accidents, and what are the legal liabilities of the school districts and personnel when pupils are injured. These questions are explored by reviewing civil court cases on the law of negligence and stating the school district's responsibility for injuries to pupils. The responsibility of the administrator and classroom teacher is explained where pupil injury is a result of wrongful conduct of school authorities, school personnel, or the pupils themselves. Several danger spots are explored, with major emphasis on transportation, building and grounds, playground, physical education and sports events, field trips and school patrols. Suggested guidelines for school safety, information about first aid and medical treatment, and insurance and related compensation of injured pupils are included. (GR)

VT 008 009

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WHO IS LIABLE

for pupil injuries?

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Foreword

In our highly developed technological society, accidents take a staggering toll of life and limb, to say nothing of the social losses in the form of wages and manpower. Accidents are not confined to any sector of the population, but as to the younger age groups, the latest figures show that accidents cause more deaths in children aged 1 to 14 than any disease.

The need for early education in safety is now well recognized, and it is the schools that have been given the responsibility to teach safe living to the young. Safety education has become an integral part of the school curriculum. The schools also have a responsibility that goes beyond the teaching of safety education. They must provide pupils with a safe environment; they must translate into their own school practices the safety lessons they teach. This calls for the exercise of every precaution by the school authorities to safeguard pupils from injury while on the school premises and during school-related activities away from the school grounds. It is through the co-ordinated efforts of the administrative, supervisory, teaching, special services, and maintenance staffs that certain types of school accidents can be avoided altogether, and others reduced to a minimum.

Because school accidents do arise, two basic questions are raised: *What can be done to prevent school accidents*, and *what are the legal liabilities of the school districts and school personnel when pupils are injured.* Both of these questions are explored in this booklet.

This booklet is the third on the subject of liability for pupil injuries prepared by the NEA Research Division and the second prepared for the NEA National Commission on Safety Education. The earlier editions appeared in April 1940 and October 1950. The current publication, a revision of the 1950 booklet, was prepared by Frieda S. Shapiro, Research Associate, NEA Research Division, and was reviewed by Martha L. Ware, Assistant Director, NEA Research Division, Robert L. Marshall, Associate Executive Secretary, NEA National Commission on Safety Education, and S. A. Abercrombie, Assistant Executive Secretary, NEA National Commission on Safety Education. The basic program of the Commission is made possible through grants from the Automotive Safety Foundation.

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Introduction

Under our legal system, every person enjoys the right to be free from bodily injury, intentionally or carelessly caused by others. It is a universal principle of law that every individual is personally liable in damages for his own acts of negligence. This general rule applies equally to school personnel in their relationship to pupils. However faultless school people may regard their own conduct toward pupils who sustained injuries, court cases do arise where they are named as defendants.

In a nationwide public-school system that in 1962 served upwards of 40 million elementary- and secondary-school pupils, school accidents are likely to, and unfortunately do occur. Some incidents causing bodily harm to pupils while under school control are in the nature of pure accidents. These may happen despite the utmost care taken to protect the safety and well-being of the pupils. On the other hand, pupil injuries may be the result of wrongful conduct on the part of the school district, the administrative or teaching staff, other school personnel, or the pupils themselves.

Accidents to pupils may take place anywhere on the school premises, the school playground, the corridors and stairways of the school building, or the regular classroom; injuries may occur during athletic activities, in gymnasiums, science laboratories or shop classes, or during field trips. School administrators and school bus drivers are often concerned with injuries pupils sustain in school transportation, whether furnished by school-owned buses, or by means of school-board contracts with private bus operators. All school employees face the possibility of being sued by injured pupils for alleged negligence.

Who is liable for pupil injury? If a school employee is negligent in the performance of his duties toward pupils, he is legally responsible for the injuries that follow. Most likely, he will have to compensate the pupil out of his own funds, unless he works in one of the few states where the law obligates the employing school district to reimburse him for any financial loss he sustains, or makes the district liable for the negligence of its employees.

From the pupil's viewpoint, against whom can he proceed to recover damages when he is injured because of the negligent conduct of others, and through no fault of his own?

As against individuals

The pupil can always seek redress from the individual personally responsible for negligently causing him injury, be he a teacher, an administrator, a bus driver, any other school employee, or a fellow pupil. He may be able to prove his case and get a money judgment in his favor, but he may not be able to collect it if the individual sued lacks financial resources. The injured pupil is in a better position to satisfy his judgment if his state is one of the few that by law requires or permits school districts to save harmless and protect school personnel from financial loss.

As against school districts

Except in a few states, the pupil is without a remedy, even if the school district itself is responsible for the harm done. The common-law governmental immunity doctrine stands in his way. Similarly, he cannot, as a general rule, obtain a judgment against the school district for damages traceable to negligent acts or omissions of school employees.

Does liability insurance coverage help compensate the pupil? If the injured pupil comes from a state that empowers and authorizes school boards to purchase liability insurance to cover the district or its employees for negligence, and the district has procured such coverage, he may be able to collect his damages under the policy. His chances are better if the authorizing statute provides that the governmental immunity doctrine of the district is waived to the extent of the insurance purchased; or when the statute is clear that the insurance company is the one to be sued, or that it may not assert the governmental immunity defense. If the pupil happens to attend school in a district that has purchased liability insurance but where the state law contains no waiver of governmental immunity to the limits of the policy, under the prevailing judicial view he is unable to proceed against the school district even if only to establish his claim in order to recover from the insurance company.

Section I of this publication explains the law of negligence and how it relates to school personnel. Statutes and court decisions concerned with school district liability for pupil injuries are discussed in Section II. Responsibilities of the school administrator and the classroom teacher for pupil safety and personal liability for negligence receive attention in Sections III and IV. Section V is devoted to danger spots in school activities, particularly as to the following categories: transportation, buildings and grounds, playgrounds and recess games, physical education and sports events, shops, science laboratories, driver education, field trips, and school patrols. A number of court decisions relating to these activity areas are cited, and

suggestions for lessening school accidents are outlined. Information is also given on existing legislation that pertains to driver education and school safety patrol programs. The teacher's role in administering first aid and medical treatment of injured pupils is covered in Section VI. Lastly, Section VII deals with insurance and related compensation for injured pupils.

I.

The Law of Negligence

In line of duty all teachers are often in potential danger spots that may leave them open to court actions alleging negligence insofar as pupil injuries are concerned. This is truer for some teachers than for others because of the particular subjects they teach or activities with which they are connected. In addition to general supervision of pupils in the classroom, classroom teachers may have hall or lunchroom duties or may be required to supervise playgrounds. Shop teachers, science teachers who supervise laboratory work, driver education teachers, physical education teachers and coaches of sports, and school bus drivers are in positions in which some danger is inherent.

Teachers should realize that they cannot take too much caution to prevent injuries to pupils. On many occasions teachers have had to defend themselves against charges of negligence. It is important, therefore, for teachers to have an understanding of the legal principles on which negligence rests. If a teacher is found to be negligent in a court of law, he is legally responsible for damages. But if the teacher can justify his behavior and successfully defend himself against the allegation that his negligence caused the injury, no liability ensues.

Pure accidents

Not all injuries suffered by pupils are due to negligence. Some injuries are caused by misadventure or pure accident; that is to say, no individual is legally at fault. The accident occurs without negligence. It could not have been avoided under the circumstances by the exercise of reasonable precautions.

The line of demarcation between a pure accident and an injury caused by negligence is sometimes difficult to draw.

For example, a pupil cut herself when she fell off a chair she was standing on to water a plant. Although the teacher permitted the child to use a milk bottle to water the plant and allowed her to climb upon a chair to do so, the teacher was not held liable. The court said the teacher could not have been expected to foresee that the child would fall off the chair or that the milk bottle would break and cut her.[1]

[1] *Gaincott* v. *Davis*, 275 N.W. 229 (Michigan, 1937).

Some educators would believe that this teacher had been negligent since the little girl was only 8 years old. The teacher knew that the child could not reach the plant without some elevation, that a milk bottle is breakable, and that broken glass might cause a serious cut.

Unavoidable injuries due to pure accident are identifiable only by the process of elimination. If an injury is not caused by negligence as defined by law, it is the result of a pure accident. Before an accident can be labeled unavoidable, the principles of negligence must be applied. If no negligence can be found, the accident may be said to have been unavoidable and no liability accrues.

Negligence

Personal liability of school personnel for damages to pupils injured because of their own negligent conduct is judged by the same general legal principles that impose liability on private individuals whose negligence harms others. Because of the relationship that members of the school staff have to pupils, there is a legal duty to exercise care to prevent injuries to them. Elements for a cause of action are present when (a) there is a breach of this duty, (b) there is a reasonably close causal connection between the conduct and the resulting harm, (c) there is a lack of fault on the part of the pupil, and (d) the pupil suffers actual loss or damages.

In deciding whether there is negligence, the courts consider these factors: the nature of the conduct, the legal cause of the injury, and the foreseeability of the harm.

What kind of conduct constitutes negligence in the eyes of the law to make a school employee legally responsible for damages? *Negligence* is any conduct which falls below the standard established by law for the protection of others against unreasonable risk of harm. The standard of conduct is measured against what a reasonable man of ordinary prudence would have done in the same or similar circumstances. For those in the teaching profession, the standard would be that of a prudent teacher, not of a prudent layman, according to one view. As one court put it: "The standard of care required of an officer or employee of a public school is that which a person of ordinary prudence charged with his duties, would exercise under the same circumstances." [2] But other courts have held that "a teacher may be charged only with reasonable care such as a parent of ordinary prudence would exercise under comparable circumstances." [3] Whether the particular facts of a case involve negligence on the part of the teacher is a question the jury decides.

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[2] *Firkle* v. *Oakdale Union Grammar School District*, 253 P. (2d) 1 (California, 1953).

[3] *Ohman* v. *Board of Education of City of New York*, 90 N.E. (2d) 474 (New York, 1949).

In general, negligent conduct may be of two types: (a) an act which a reasonable man would have realized involved an unreasonable risk of injury to others, and (b) failure to do an act which is necessary to protect or assist another and which one is under a duty to do.

An act of negligence may be one which involves unreasonable risk of harm to others, even though it is done with reasonable care, skill, preparation, and warning. The negligence is inherent in the act. In other types of conduct the act may become negligent through the lack of care, skill, preparation, or warning, although the act in itself would not have constituted negligent conduct had reasonable care, skill, preparation, or warning been used.

It is negligence to use an instrumentality, whether a human being or thing, which a person knows or should know to be so incompetent, inappropriate, or defective that its use involves an unreasonable risk of harm to others. It is also negligent to permit a third person, for instance a pupil, to use a thing or to engage in an activity which is under the control of the teacher if the teacher knows or should know that the pupil intends to use or is likely to use the thing or to conduct himself in the activity in such a way as to create an unreasonable risk of harm to others. In view of the special relation that exists between teacher and pupils, the teacher is under a duty to control the conduct of pupils so as to prevent so far as possible any pupil causing bodily harm to others.

Legal causation

Negligence in each case is determined by the particular circumstances involved. In order to establish negligence, it must be shown that the conduct complained of is the *legal* or, as it is otherwise known, the *proximate cause* of the injury. If the conduct of the teacher is a substantial factor in bringing about the injury, and there is no rule relieving him of liability because of the manner in which his negligence has resulted in the harm, the teacher's negligence is the legal cause of the pupil's injury.

In most instances, the factual cause of the injury is obvious, and the difficulty lies in proving the legal cause—that cause but for which the pupil would not have been injured. The legal cause is that cause among all the antecedent events which in the natural and continuous sequence of events, without the interference of an independent superseding cause, produced the damage. Put another way, there must have been between the wrongful act and the injury an unbroken connection, the sequence being such as to make it just to hold the teacher responsible for the injury the pupil has suffered. To illustrate: a student was fatally hurt after he bumped heads with another player while both were jumping for a basketball. The teacher was absent from the school gymnasium at the time. The court found no causal connection between the absence of the teacher and the injury, stating

that the bumping together of the heads of the students was a natural and normal possible consequence of the game which could not have been prevented by the presence of and proper supervision of the teacher.[4]

If the teacher's conduct is a substantial factor in causing the pupil's injury, he will not be absolved from responsibility merely because other causes have contributed to the result. One is not necessarily relieved of liability because the negligence of another is also a contributing cause. Even if two forces are actively operating, one because of the teacher's negligence and the other not because of any misconduct on the teacher's part, but each force alone is sufficient to bring about harm to another, the negligence of the teacher may be considered a legal cause of the harm done regardless of the other cause for which he is not responsible. For example, when a motorist injures a pupil who is crossing the street after alighting from the school bus, the bus driver and the motorist may both be negligent. The fact that the motorist violates the law by failing to stop when the bus stops to discharge pupils does not relieve the bus driver of liability if he also is negligent in the particular circumstances.

A teacher may be relieved of legal responsibility for his negligent conduct if some other subsequent event breaks the connection between his act and the injury suffered in such a way as to be legally considered a superseding cause of the injury. For instance, a teacher may not be held liable for damage one pupil causes another if he could not foresee the conduct of the pupil causing the injury. However, if the intervening act is the normal response to a stimulus of the situation created by the teacher's negligent conduct, or if he could have foreseen the intervening act, legally it is not a superseding cause of the resultant injury.

Nor does the intervening negligent conduct of a third person, such as a pupil, make it a legally superseding cause of harm unless the conduct of the third person was extraordinary. To break the causal connection between the teacher's original negligent act and its harmful consequences, there must be a new and independent factor which intervenes to produce the injury. This rule was applied in a case where a student cleaning a power jig saw hurt his finger in a belt-driven mechanism when a fellow pupil turned on a switch in violation of known safety rules. The act of the fellow student in starting the mechanism was held to be an independent intervening act breaking the chain of causation between the accident and the asserted negligence of the school board in not having a guard over the belt-drive. Starting the machine was regarded as the legal cause of the injury.[5] In a similar situation, a pupil was injured when a classmate

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[4] *Kaufman* v. *City of New York*, 214 N.Y.S. (2d) 767 (New York, 1961).

[5] *Meyer* v. *Board of Education, Middletown Township*, 86 A. (2d) 761 (New Jersey, 1952).

stepped on a treadle and set in motion the shop machine from which he was attempting to extricate a piece of metal. The teacher was nine feet away from the machine. The actual cause of the accident was the act of the other pupil; the legal cause of the accident was said to be the negligence of the teacher in failing to have the machine locked when it was stopped and in seeing that other pupils did not tamper with it.[6]

Test of foreseeability

As already stated, the standard of care the law expects one to exercise to protect others from unreasonable risks of harm is that which a reasonable and prudent man would employ in the circumstances. The test for determining whether one's conduct was proper or negligent is that of *foreseeability*. In situations where a reasonable and prudent person could have foreseen the harmful consequences of his action or inaction, an individual who disregards the foreseeable consequences is liable for negligent conduct. If the accident or event is one that a person of ordinary prudence in the reasonable exercise of care would reasonably anticipate, failure to take the necessary precautionary steps is negligence. Thus, a teacher could not reasonably foresee the latent danger that a paper bag would contain a broken soda bottle and that the pupil whom she asked to pick up the bag would cut herself.[7] But a school district was held liable for injuries suffered by a nine-year-old girl when an old upright piano set on casters which she and other children were moving tipped over. Permission had been granted to use the school room where the accident occurred. The piano, a top-heavy instrument, had been placed with its keyboard side against a wall, with just enough space for a small child to squeeze through. The court said it was foreseeable that some child or group of children would want to use the piano and would try to move it. Consequently, reasonable minds could conclude that it was negligent for anyone to leave the piano in such a position where it might overturn if moved.[8]

Contributory negligence

Although pupil injuries may be found to be due to the teacher's negligent conduct, there may be available to the teacher one or more defenses to relieve him of liability. Among these is the defense of contributory negligence. Reasonable self-protection is expected of all sane persons. The law defines *contributory negligence* as conduct

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[6] *DeBenedittis* v. *Board Education of New York City*, 67 N.Y.S. (2d) (New York, 1946).

[7] *West* v. *Board of Education of City of New York*, 187 N.Y.S. (2d) 88 (New York, 1959).

[8] *Kidwell* v. *School District No. 300, Whitman County*, 335 P. (2d) 805 (Washington, 1959).

on the part of the injured person that falls below the standard to which he should conform for his own protection and which is a legally contributing cause, co-operating with the negligence of the defendant in bringing about the harm the injured person complains of. This means, with some exceptions, that if a pupil does something which in itself is also negligent and is a factor contributing to his injury, the pupil cannot recover damages from the teacher whose negligent conduct would otherwise make him liable to the pupil.

The traditional rule is that if both parties to the suit are at fault, neither can recover from the other for the resulting harm. When there is wrong and negligence on both sides, the courts ordinarily will not attempt to apportion the wrong between them. There are a few states that have adopted what is called *comparative negligence;* under this rule, if the teacher's negligence is greater than that of the pupil, the damages would be prorated. But under either principle—contributory negligence or comparative negligence—in a case where a pupil alleges that his injury was caused by the teacher's negligence, and the teacher defends himself by evidence of the pupil's own negligence, the court would be influenced by the pupil's age and the teacher's experience.

Minors are not held to the same degree of care for self-protection as are adults. The standard required of children is that degree of care which the great mass of children of like age, intelligence, and experience ordinarily would exercise under the same circumstances. If a pupil has failed to exercise that degree of care and caution customarily expected of one of his years, knowledge, experience, and mental capacity, his contributory negligence may bar recovery from a negligent teacher. On the other hand, when a child is too young to be charged with contributory negligence, his age may be a factor in determining the teacher's liability. Thus, the pupil's age may increase the precautions necessary on the part of the teacher to avoid exposing the pupil to an unreasonable risk of harm.

Contributory negligence is most often invoked in pupil injury cases when the injury occurs on a street or highway after the pupil leaves the school bus. If the child is of an age and experience to be capable of taking care of himself while crossing the street, it is usually held that his own negligence contributed to the injury and the bus driver or district is not liable.

Assumption of risk

A teacher will sometimes raise the defense of assumption of risk in order to exonerate himself of liability for negligence in a pupil injury action. *Assumption of risk* is a legal doctrine which presupposes that despite a relation or situation known to be dangerous, a person appreciating the danger involved voluntarily chooses to enter upon and remain within the area of risk.

Courts do not often permit the defense of assumption of risk to stand, on the ground that while pupils may know that a condition is dangerous, they may not fully appreciate the extent of the danger involved. In a case where a spark from an acetylene torch ignited a detached automobile gas tank and caused an explosion which killed one student and injured a second, the appellate court ruled it was error to instruct the jury on assumption of risk in the absence of evidence that the boys had knowledge of the dangerous proximity of the gas tank to the torch or appreciated the danger of an explosion. The accident occurred in an automobile mechanics shop class where the two students had paused to watch another boy use the torch on his car.[9]

Pupils engaging in certain school activities, like athletics, assume the normal risks involved. A high-school freshman in a compulsory physical education class fell and broke his arm when he made a leapfrog jump over a gymnasium horse. The teacher had instructed this pupil and the others in the class on how to use the horse, had demonstrated the jump, had warned them of possible dangers, and had told them not to try the jump if they did not think they could do it. Since the pupil knew of the danger involved and assumed the risk, the teacher was not held liable for the injury.[10]

Extent of liability

When a teacher's negligent conduct has resulted in injury to a pupil so as to create a right of action, his liability may have the same far-reaching consequences as a private negligent individual would have. Not only would the teacher be liable in damages for the actual physical harm he caused, he may also be liable:

1. for physical harm resulting from fright or shock or other similar or immediate emotional disturbances caused by the injury or the negligent conduct causing it
2. for additional bodily harm resulting from acts done by third persons in rendering aid irrespective of whether such acts are done in a proper or a negligent manner
3. for any disease which is contracted because of lowered vitality resulting from the injury caused by his negligent conduct
4. for harm sustained in a subsequent accident which would not have occurred had the pupil's bodily efficiency not been impaired by the original negligence.

Furthermore, the teacher may be liable for injuries resulting from his conduct where the prior physical condition of the pupil is unknown.

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[9] *Dutcher* v. *City of Santa Rosa High School District*, 319 P. (2d) 14 (California, 1957).

[10] *Sayers* v. *Ranger*, 83 A. (2d) 775 (New Jersey, 1951).

II.

School District Responsibility for Injuries to Pupils

In the absence of a statute to the contrary, it is the general common-law rule that school districts, as government entities, are immune from tort liability for injuries suffered by pupils. This immunity applies to their own negligent acts, as well as to the negligent acts of their officers, agents, or employees; or for injuries arising from dangerous or improper care and maintenance of school buildings and grounds, defective appliances, or unsafe operation of the school transportation system.

The common-law governmental immunity doctrine has been challenged in the courts time and again, but the doctrine prevails with strict application in most states today. However, there is a developing trend toward abrogation of governmental immunity by judicial decision. Since 1959, courts in two states, Illinois and Wisconsin, have abolished the tort immunity of school districts, and the Minnesota Supreme Court is on record that it does not intend to recognize governmental immunity as a defense to tort claims against school districts arising after the adjournment of the 1963 regular session of the state legislature.

Courts in a few states have interpreted the school district's governmental immunity less broadly than is traditional by applying theoretical or factual distinctions in certain situations so as to permit recovery of damages directly from the school districts.

In a few states the governmental immunity of school districts has been abrogated by statute. Statutes in several other states have seemed to point to the abandonment of the doctrine by the legislatures, but strict court interpretations of the statutes have held otherwise.

Common-law immunity of school districts

The governmental immunity doctrine has long been considered by legal scholars and some courts as an historical anachronism, and one which works an injustice to all parties concerned—the victim, the subordinate officer or employee responsible for the injury, and the community. Because the doctrine continues to prevail despite

severe criticism, it is helpful to have an understanding of how it originated and the reasoning that supports it.

The common-law immunity doctrine protecting governmental entities from tort liability stems from English case law. Its theoretical basis evolved from the medieval concept of the "divine right of Kings" from which came the maxim that "the King can do no wrong." In our country, the state has the attributes of sovereignty and our courts reasoned, therefore, that the state is immune from tort liability and cannot be sued without its consent. This sovereignty extends to the school district as an arm or agency of the state; since education is a government function, the school district is immune to tort action. Innumerable court cases have upheld the doctrine on this basis.

In addition, the courts have relied on other reasons to sustain the principle of nonliability of school districts. Among them are these: (a) school districts, acting through their school boards, have only those limited powers explicitly given them by statute, and these do not include permission to commit a tort, or to raise money to pay damage claims; (b) the "trust fund" theory which holds that the use of school funds to pay damage claims is an improper diversion of public funds held in trust for education; (c) abolition of the rule would lead to a multiplicity of law suits which would impose a great financial burden on the district and seriously hamper its education functions; (d) the doctrine of *respondeat superior* whereby private employers are vicariously liable for torts of their employees committed within the scope of and during the course of their employment, does not apply to school districts; and (e) the abrogation of the rule is the prerogative of the legislature, not of the courts.

Most of these reasons were considered and rejected by the Illinois Supreme Court in its 1959 decision in a school bus pupil-injury action. The court reversed a half-century of judicial precedent in Illinois by expressly abrogating the common-law doctrine that school districts are immune from tort liability.[1] The opinion quotes with approval these statements from other decisions attacking the doctrine:

> **The whole doctrine of governmental immunity from liability for tort rests upon a rotten foundation. It is almost incredible that in this modern age of comparative sociological enlightenment, and in a republic, the medieval absolutism supposed to be implicit in the maxim "the King can do no wrong" should exempt the various branches of the government from liability for their torts, and that the entire burden of damage resulting from the wrongful acts of government should be imposed upon the single individual who suffers the injury, rather than distributed among the entire community constituting the government, where it could be borne without hardship and where it justly belongs . . .**
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> **. . . in preserving the sovereign immunity theory, courts have overlooked that the Revolutionary War was fought to abolish that "divine right of kings" on which the theory is based.**

[1] *Molitor* v. *Kaneland Community Unit District No. 302*, 163 N.E. (2d) 89 (Illinois, 1959).

The court felt that today, when public education is one of the biggest businesses of the country, immunity cannot be justified on the theory of protection of public funds and public property. On analysis, the court said, immunity is based on the idea that payment of damage claims is a diversion of education funds to an improper use.

The court stated that:

> the payment of damage claims incurred as an adjunct to transportation is as much a "transportation purpose" and therefore a proper authorized purpose as are payments of other expenses involved in operating school buses. If tax funds can properly be spent to pay premiums on liability insurance there seems to be no good reason why they cannot be spent to pay the liability itself in the absence of insurance.

The court answered the plea that abolition of the rule would create grave and unpredictable problems of school finance and administration by expressing its accord with the view that:

> taxation is not the subject matter of judicial concern where justice to the individual citizen is involved. It is the business of other departments of government to provide the funds required to pay the damages assessed against them by the courts.

And finally the court answered the argument that the legislature should abolish the court-made rule. Having found the rule to be unjust, unsupported by valid reason, and without place in modern-day society, the court concluded it had the power and the duty to abrogate the immunity. It reiterated, "We closed our courtroom doors without legislative help and we can likewise open them."

The Wisconsin Supreme Court followed the Illinois Supreme Court in abrogating the immunity rule by judicial decree, effective as of July 15, 1962. The case involved a suit against a municipality, but the court made it clear how far the scope of the abrogation extended:

> We consider that abrogation applies to all public bodies within the state: the state, counties, cities, villages, towns, school districts, sewer districts, drainage districts, and any other political subdivision of the state—whether they be incorporated or not. By reason of the rule of *respondeat superior* a public body shall be liable for damages for torts of its officers, agents, and employees occurring in the course of business of such public body.[2]

Other courts have expressed their dissatisfaction with the harshness of the governmental immunity doctrine in no uncertain terms.[3] However, they are reluctant or feel powerless to alter or nullify the

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[2] *Holytz* v. *City of Milwaukee*, 115 N.W. (2d) 619 (Wisconsin, 1962).

[3] It is to be noted that in a unanimous decision rendered December 14, 1962, the Minnesota Supreme Court expressed its intention to overrule the court-imposed doctrine of governmental immunity as a defense with respect to tort claims against school districts, municipal corporations, and other governmental units, except the state itself, arising after the adjournment of the 1963 regular session of the state legislature. *Spanel* v. *Mounds View School District No. 621*, ... N.W. (2d) ....., 31 U.S. Law Week 2309.

doctrine by judicial decree.[4] These courts continue to follow their own judicial precedents, maintaining that it is the function of the legislature to abrogate the doctrine and impose legal liability on school districts for torts.

Exceptions to general immunity

As has already been stated, unless statutes decree otherwise, school districts are immune from liability for injuries pupils or the public at large suffer by reason of negligence of their officers or employees in the exercise of their governmental functions, except when there has been active or positive wrongdoing as opposed to mere negligence.[5] This exception was unsuccessfully urged in a case where the physical education teacher cast a shot which hit a pupil whom he told to stand in a certain place to mark where the shot fell. The court ruled that the circumstances did not involve "active misconduct" within the meaning of the exception although the teacher had taken a positive action to place the pupil in danger.[6] In fact, this exception to the general immunity principle has never been used successfully in any pupil injury case cited in the reports of court decisions.

To overcome the legal infirmity against the recovery of damages imposed by the governmental immunity rule, differentiation as to function has been applied or argued in the courts. When the injury complained of arises out of an activity or function that is recoguized as proprietary as opposed to governmental, the immunity rule has no effect. This distinction applies most often to city governments which may operate a number of functions denominated proprietary, as for instance, the public transportation system.

School districts, however, seldom have proprietary functions. Ball games and other sports events at which an admission fee is charged are still within the area of governmental function.[7] Exceptions creep in occasionally. In one instance where a school district leased its stadium to another for a fee, the lessor was held to have been engaged in a proprietary activity, and consequently was liable to a spectator

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[4] *Vendrell* v. *School District No. 26C Malheur County*, 360 P. (2d) 282 (Oregon, 1961). See also *Williams* v. *City of Detroit*, 111 N.W. (2d) 1 (Michigan, 1961) where it appeared that governmental immunity was judicially abrogated in the state of Michigan. Later decisions, however, have made it clear that the abrogation is only as against municipalities and that governmental immunity continues to operate with respect to school districts. *Sayers* v. *School District No. 1*, 114 N.W. (2d) 191 (Michigan, 1962).

[5] *Thompson* v. *Board of Education, City of Millville*, 79 A. (2d) 100 (New Jersey, 1951).

[6] *Bartell* v. *School District No. 28, Lake County*, 137 P. (2d) 422 (Montana, 1943).

[7] *Thompson* v. *Board of Education, City of Millville*, 79 A. (2d) 100 (New Jersey, 1951); *Reed* v. *Rhea County*, 225 S.W. (2d) 49 (Tennessee, 1949).

at a football game who was injured when a railing broke.[8] It is also worthy of note that the collection of tuition in a public college does not make its operation a proprietary function.[9] But the operation of a summer recreation program by a school district open to all upon the payment of a fee, which the district was not required by statute to undertake and which was not a part of its regular curriculum, has been termed proprietary in nature by the court; therefore, the district was subject to suit for liability for negligence of its employees when a child attending the program drowned in the swimming pool.[10]

Another approach in the effort to obtain relief from the governmental immunity rule is through the nuisance doctrine. A "nuisance" may be said to be the existence or creation of a dangerous, unsafe, or offensive condition which is likely to cause injury, harm, or inconvenience to others. This doctrine has been employed more successfully in actions against municipalities than against school districts. In a few jurisdictions the courts have held school districts responsible for damages where the maintenance of a nuisance has been shown. For example, a junk pile in the corner of the grounds of a country school was considered a nuisance for which the school district was liable when a pupil stumbled over a piece of junk and fell while playing at recess.[11] Dangerous play equipment available for use by all pupils has also been determined to be a nuisance.[12]

In general, however, as recent cases confirm, the courts reject the nuisance principle on either of the following grounds: even if creation and maintenance of a nuisance on the part of the school board is shown, as in the case of a 6-year-old pupil who fell into an unprotected stairwell in a schoolyard, the governmental immunity rule bars recovery since building and maintaining a school yard is the performance of a governmental function;[13] or else that the condition complained of is considered to be in the nature of negligence, not nuisance, as in the situation where a child was severely burned on a school playground when he stepped into live coals in a hole covered over with ashes and left unattended by a school custodian who had burned out a tree stump on the spot.[14]

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[8] *Sawaya* v. *Tucson High School District No. 1*, 281 P (2d) 105 (Arizona, 1955).

[9] *Daszkiewicz* v. *Board of Education of Detroit*, 3 N.W. (2d) 71 (Michigan, 1942).

[10] *Morris* v. *School District of the Township of Mount Lebanon*, 144 A. (2d) 737 (Pennsylvania, 1958).

[11] *Popow* v. *Central School District No. 1, Towns of Hillsdale et al.*, 13 N.E. (2d) 463 (New York, 1938).

[12] *Bush* v. *City of Norwalk*, 189 Atl. 608 (Connecticut, 1937).

[13] *Barnett* v. *City of Memphis*, 269 S.W. (2d) 906, cert. denied, 75 S. Ct. 536 (Tennessee, 1954).

[14] *Rose* v. *Board of Education of Abilene*, 337 P. (2d) 652 (Kansas, 1959).

Since the theoretical exceptions to the immunity of municipal corporations by and large are not acceptable to the courts so as to fix liability upon school districts for pupil injuries arising out of negligence, in the absence of judicial nullification of the common-law rule, its abrogation can be achieved only through legislation. And, as will be seen in the discussion that follows, legislation to abrogate the common-law immunity doctrine must be drafted carefully if it is to achieve this purpose.

Statutory imposition of responsibility on school districts

Thus far, the courts in three states, Illinois, Wisconsin, and New York, have placed on school districts legal responsibility for torts without prior statutory imposition of liability. By judicial determination, school districts in Illinois and Wisconsin are no longer protected by the common-law governmental immunity rule, and are liable to pupils negligently injured in school accidents.[15] Before the enactment of the save harmless statute in 1937, New York courts had held school boards liable in their corporate capacity for injuries resulting from their negligent performance of duties imposed on them by law.[16] The save harmless statute definitely placed liability upon boards of education for school-connected injuries due to the negligence of teachers or other staff members. In its present form, this law reads as follows:

> Section 3023. Liability of a board of education, trustee, or trustees, or board of cooperative educational services:
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> Notwithstanding any inconsistent provision of law, general, special, or local, or the limitation contained in the provisions of any city charter, it shall be the duty of each board of education, trustee or trustees, in any school district having a population of less than one million, and each board of cooperative educational services established pursuant to section nineteen hundred and fifty-eight of this chapter, to save harmless and protect all teachers, practice or cadet teachers, and members of supervisory and administrative staff or employees from financial loss arising out of any claim, demand, suit, or judgment by reason of alleged negligence or other act resulting in accidental bodily injury to any person within or without the school building, provided such teacher, practice or cadet teacher, or member of the supervisory or administrative staff or employee, at the time of the accident or injury was acting in the discharge of his duties within the scope of his employment and/or under the direction of said board of education, trustee, trustees, or board of cooperative educational services; and said board of education, trustee, trustees, or board of cooperative educational services may arrange for and maintain appropriate insurance with any insurance company created by or under the laws of this state, or in any insurance company

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[15] See also comments in footnote 3 regarding the expressed intention of the Minnesota Supreme Court to overrule the governmental immunity rule.

[16] *Herman* v. *Board of Education*, 137 N.E. 24 (New York, 1922).

authorized by law to transact business in this state, or such board, trustee, trustees, or board of cooperative educational services may elect to act as self-insurers to maintain the aforesaid protection.[17]

A similar statutory provision saves harmless "any duly appointed member of the teaching or supervisory staff, officer, or employee" of school boards of cities of more than one million population.[18]

Two other states, New Jersey in 1938 [19] and Connecticut in 1945,[20] enacted mandatory save harmless laws practically identical to the New York law set forth above. These two laws also require the school boards to pay legal expenses of teachers when pupil-injury suits are brought against them; but this does not apply to New Jersey teachers sued for damages because of corporal punishment, which is prohibited by statute.

The New York courts have ruled that the save harmless law imposes a direct responsibility on the school board, and it is unnecessary, therefore, to first sue and obtain a judgment against the negligent teacher before the injured pupil can seek settlement of the judgment from the school board.[21] But the courts have ruled otherwise in both New Jersey [22] and Connecticut.[23] They hold that the save harmless statutes do not alter the school board's defense of governmental immunity from suit, but operate only to indemnify teachers from financial loss arising out of alleged negligence. In these states, the injured party cannot sue the school board directly to recover damages, but must proceed against the individual who negligently inflicted the harm.

In three states, Wyoming, Oregon, and Massachusetts, school districts may assume the liability imposed on a teacher because of negligence. In 1955 Wyoming passed a permissive save harmless statute with provisions similar to New York's mandatory law.[24]

A 1955 Oregon statute, as amended in 1961, permits "any county, city, town, district, board or other public body" at its own expense to provide a defense for any public officer or employee thereof who is sued in a civil action because of personal injuries due, among other things, to his negligence or carlessness occurring in the course of his employment. The public employer may also pay all or part

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[17] *New York Education Law*, sec. 3023.

[18] *Ibid.*, sec. 2560.

[19] *New Jersey Statutes Annotated*, secs. 18:5-50.2—18:5-50.4.

[20] *Connecticut General Statutes Annotated*, Revision of 1958, sec. 10-235.

[21] *Reeder* v. *Board of Education of City of New York*, 50 N.E. (2d) 236 (New York, 1943).

[22] *Tripus* v. *Peterson*, 78 A. (2d) 149 (New Jersey, 1950).

[23] *Swainbank* v. *Coombs*, 115 A. (2d) 468 (Connecticut, 1955).

[24] *Wyoming Statutes, 1957*, sec. 21-158.

of the court costs, attorney's fees, and the amount of any judgment rendered against the public officer or employee.[25] These provisions are believed to apply to school districts in Oregon.[26]

A permissive law enacted in Massachusetts in 1959, and later amended, allows a city, town, or regional school district to indemnify a teacher out of public funds appropriated for this purpose, for expenses or damages sustained by him by reason of any action or claim against him while acting as a teacher. In order to receive indemnification, the teacher must have been acting within the scope of his employment at the time of the occurrence, and a defense or settlement of the action or claim shall have been made by legal counsel of the employer, or by the teacher's attorney if the employer's attorney fails or refuses to defend the action against the teacher.[27]

Hawaii enacted a state tort liability act in 1957 wherein the state waived its governmental immunity from liability for certain torts, including negligence, committed by officers or employees of the state or any of its agencies. Since Hawaii public-school teachers are employed by the state department of education, the provisions of this law are applicable to them.[28]

The question of school district liability has been approached differently by the state legislatures in California, Illinois, and Washington. The school districts in these states may be sued for their negligence, or the negligence of their officers or employees. First enacted in 1923, the California law now provides:

> The governing board of any school district is liable as such in the name of the district for any judgment against the district on account of injury to person or property arising because of the negligence of the district, or its officers, or employees.[29]

The Illinois legislature left standing the 1959 court decision abrogating the governmental immunity of school districts, but enacted a law limiting to a maximum of $10,000 the amount of damages recoverable in any separate cause of action against a school district for negligence in the conduct of school district affairs.[30]

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[25] *Oregon Revised Statutes*, secs. 243.610, 243.620.

[26] Informal opinion of the Oregon Attorney General, June 27, 1962.

[27] *Annotated Laws of Massachusetts*, Ch. 41, sec. 100C.

[28] *Revised Laws of Hawaii 1955*, 1960 Supplement, Ch. 245A.

[29] *California Education Code*, sec. 903. See also section 13551 which provides that no school employee may be held liable for pupil injuries unless caused by the employee's own negligence.

[30] *Smith-Hurd Illinois Annotated Statutes*, Ch. 122, secs. 821-831.

Washington has had a statute since 1859 permitting court actions to be instituted against school districts for any injury to the rights of the plaintiff arising from some action, or omission to act, of the district. This statute, virtually unchanged since its original enactment, reads:

> An action may be maintained against a county, or other of the public corporations mentioned or described in [the preceding section which names school districts] either upon a contract made by such county or other public corporation in its corporate character, and within the scope of its authority, or for an injury to the rights of the plaintiff arising from some act or omission of such county or other public corporation.[31]

Another law passed in 1917 provides:

> No action shall be brought or maintained against any school district or its officers for any noncontractual act or omission of the district, its agents, officers, or employees, relating to any park, playground, or field house, athletic apparatus or appliance, or manual training equipment, whether situated in or about any schoolhouse, or elsewhere, owned, operated, or maintained by such school district.[32]

The Washington courts have interpreted the preceding statutes to mean that actions may be brought against school districts for injuries sustained by any means and manner *other* than those listed in the prohibitive law. The most recent case involving these statutes holds that the liability of school districts for negligence is the same as that of any person or corporation except that districts have absolute immunity from accidents resulting from any athletic apparatus or appliance, or manual training equipment.[33]

There are statutes in other states which make school districts suable, but these have not been interpreted by the courts as intending to make the school districts liable for negligence. For example, Oregon provided by law in 1862:

> An action or suit may be maintained against any other public corporation mentioned [in the preceding section which includes school districts] in its corporate character, and within the scope of its authority, or for an injury to the rights of the plaintiff arising from some act or omission of such other public corporation.[34]

Despite the similarity of this language to that contained in the Washington statute cited above, the Oregon courts have interpreted this provision as a mere re-enactment of the common-law rule that a public corporation is liable for negligence only in the performance of private functions. The Oregon Supreme Court has indicated that

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[31] *Revised Code of Washington*, sec. 4.08.120.

[32] *Ibid.*, sec. 28.58.030.

[33] *Sherwood* v. *Moxee School District No. 90*, 363 P. (2d) 138 (Washington, 1961).

[34] *Oregon Revised Statutes*, sec. 30-320.

a school district performs only public functions.[35] Therefore, this law does not enable pupils to recover damages from the school district for injuries sustained through negligence of the district or its employees.

In Minnesota, also, where the law provides that an action may be brought against any school district either upon a contract made with the district or its board in its official capacity or within the scope of its authority, or for "an injury to the rights of the plaintiff arising from some act or omission of such board,"[36] the courts have held that this in no way changes the common-law immunity rule that a school district is not liable for its own negligence or that of its employees.[37]

To summarize: Governmental immunity from tort liability no longer prevails for school districts in Illinois and Wisconsin by judicial decree. In Hawaii, statutory waiver of the state's immunity from certain torts of its employees imposes liability on the state department of education for injuries negligently inflicted on pupils by public-school teachers. Statutes in California and Washington make definite the liability of school districts for their own torts or those of their employees, while in New York this has been accomplished by court decisions and legislation. By statute, school districts in New Jersey and Connecticut must bear the financial cost when it has been established that negligent acts of employees have resulted in injuries to pupils, but this does not mean that the defense of governmental immunity has been waived. Massachusetts, Oregon, and Wyoming permit school districts to assume liability for teacher negligence.

It is to be noted that the constitutions of four states, Alabama, Arkansas, Illinois, and West Virginia, forever prohibit suits naming the state as a defendant. Since school districts are regarded as arms of the state, one may ask whether this prohibition also bars suits against them in these four states? The prohibition definitely does not apply to school districts in Illinois where, as has already been shown, they are liable for torts. The West Virginia court has ruled that school districts are immune from tort liability because they perform a governmental function, not because of the constitutional provision.[38] School districts in Alabama and Arkansas share the state's immunity from tort liability.

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[35] *Antin* v. *Union High School District No.* 2, 280 Pac. 664 (Oregon, 1929).

[36] *Minnesota Statutes Annotated,* sec. 127.03.

[37] *Bank* v. *Brainerd School District,* 51 N.W. 814 (Minnesota, 1892); however, see comments in footnote 3 regarding the expressed intention of the Minnesota Supreme Court to overrule the governmental immunity doctrine.

[38] *State* v. *Board of Education of Braxton County,* 58 S.E. (2) 279 (West Virginia, 1950).

The constitutions of two-fifths of the states permit the legislature to authorize suits against the state; a few others have clauses specifying how proceedings with respect to claims against the state shall be conducted. Nevertheless, in most instances there has been no general elimination of the governmental immunity doctrine for the state or its lesser units. Where statutes have permitted suits against the state, they have been deemed to allow contract suits, not tort suits. In jurisdictions where a general waiver of immunity has been enacted, the waiver applies to the state and its agencies, but not to subordinate units such as counties, municipalities, and school districts.[39] North Carolina may be cited as a jurisdiction whose State Torts Claims Act has been held not to apply to a county or city school district, with the result that a pupil injured through the negligence of a maintenance employee while entering the school could not recover damages from the city school district.[40]

Some states have established state claims commissions to hear claims against the state and its instrumentalities, but again, unless the statutes specifically mention school districts, it is questionable whether claims against them may be heard and considered by this medium. Provisions for hearing and considering claims of pupils injured in school transportation accidents by commissions in Alabama, Mississippi, and North Carolina are described elsewhere in this report.

Safe place statutes

In some jurisdictions there are other legal avenues that may be open to injured pupils to recover damages from school districts. Legislation enacted in some states requires safe construction and maintenance of buildings. This type of legislation is commonly referred to as a "safe place" statute. Often these statutes cover public buildings, including school buildings, but unless the legislation is clear that the remedy is available, it is likely that courts in the states adhering to the governmental immunity doctrine will construe these statutes narrowly to prohibit suits against school districts. There are a few state laws that specifically require school playgrounds to be kept in safe condition; without such a provision, the safe place statute may be interpreted to cover buildings only, and not to extend to the school grounds. The Wisconsin "safe place" statute covers public buildings.[41] But a school district was held not liable under this statute when a flagpole on the playground broke and fell, killing a

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[39] For a comprehensive discussion on this subject, see Leflar and Kantrowitz, *Tort Liability of the States*, 29 New York University Law Review, p. 1363-1415 (1954).

[40] *Turner* v. *Gastonia City Board of Education*, 109 S.E. (2d) 211 (North Carolina, 1959).

[41] *Wisconsin Statutes Annotated*, secs. 101.01, 101.06.

pupil. The court said that neither the school grounds, the sidewalk area surrounding the pole, nor the pole itself came within the meaning of the statute.[42]

The California statute is not limited to buildings. Public agencies, including school districts, are liable for torts "resulting from dangerous or defective condition of public property." The statute defines public property to include buildings, grounds, and property. An injured pupil may recover damages under these provisions provided the school district had knowledge or notice of the defect and failed to remedy the situation within a reasonable time thereafter.[43] A New Jersey statute, on the other hand, provides that school districts shall not be liable for injury to a person from the use of any public grounds, buildings, or structures.[44]

Procurement of insurance

Matters of insurance and related compensation to injured pupils are discussed in another section. It is sufficient to point out here that statutory authority or even a requirement for the purchase of accident, liability, or indemnity insurance covering school buses or the negligence of school districts and their personnel, does not constitute a waiver of the district's governmental immunity, unless the statute so provides. Under the prevailing judicial view, procurement of insurance does not end the district's immunity from tort liability.

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[42] *Lawver v. Joint District No. 1, Mount Horeb and Blue Mounds*, 288 N.W. 192 (Wisconsin, 1939).

[43] *California Government Code*, secs. 53050, 53051.

[44] *New Jersey Statutes Annotated*, sec. 18:5-3ᵕ

III.

The Administrator's Responsibilities

Although court cases involving pupil injuries are not uncommon, seldom is legal responsibility charged to the school administrator, that is, the superintendent of the entire school system or the principal of the particular school in which the accident occurred. Lawsuits brought by injured pupils usually name as defendant the person directly concerned with the mishap, such as the classroom teacher in charge, the bus driver, or the nonprofessional school employee; often the school board itself is joined as a defendant, or else the board is the only defendant sued.

An administrator, like a teacher, is liable under general principles of tort law for his own personal acts of negligence or wrongdoing. Where his duties call for promulgation of rules and regulations for adequate supervision, failure to do so may be negligence. Thus, an acting principal was held to be negligent when a pupil was injured on being struck by a bicycle ridden by another pupil. The negligence was based on lack of proper supervision of young children on school grounds and failure to adopt rules and regulations for their safety.[1]

In another instance, the negligent act of a principal resulted in the school board's liability to a pupil who was injured in an unprovoked attack upon him by a classmate. The principal knew of the assaultive propensities of the misbehaving pupil but did not alert the substitute teacher in charge of the class. Failure of the principal to have exercised good discretion and prudence in telling the teacher about the pupil's known propensities constituted negligence. This lack of knowledge, the court said, deprived the teacher of the chance to use her own judgment as to whether any supervisory steps were necessary with regard to the assaultive pupil.[2]

Liability is not imposed on an administrator for wrongful or negligent acts of a subordinate. No employer-employee relation exists between the administrator and the subordinate employee, even though the administrator may hire teachers and other school employees and supervise their activities. The school board is the employer.

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[1] *Selleck* v. *Board of Education*, 94 N. Y. S. (2d) 318 (New York, 1949).

[2] *Ferraro* v. *Board of Education of City of New York*, 212 N.Y.S. (2d) 615 (New York, 1961).

However, the administrator would be liable for the negligence of his subordinate if he employed the subordinate knowing him to be incompetent, or if the administrator directed the subordinate employee to do some act which was in itself dangerous to pupil safety and resulted in pupil injury. Under this rule, a Kentucky court has held that a negligence action could be maintained against a district school superintendent where it was alleged, among other things, that the superintendent negligently employed a maintenance supervisor whose negligent acts, coupled with others, caused serious injury to a pupil. In this case faulty installation of the school plumbing and hot water system caused boiling water from a school fountain to be expelled into the child's face while she was attempting to take a drink.[3]

A number of school accidents occur because of inadequate supervision. The responsibility for this lack of proper supervision may rest with the administrator who is in charge of the school building or with the individual who arranges the classroom teacher's schedules. Yet it is the teacher who is sued. The relationship between pupils and teacher is much closer than between pupils and administrator. It has been said that the responsibility for preventing pupils from injuring each other rests upon the teacher in charge rather than upon either the administrator or the school board; and that the responsibility of the school board and the administrators ends when competent teachers are selected, the responsibility thereafter resting upon the teachers concerned. Even when a teacher has been given authority to conduct some activity which results in pupil injury, the administrator who gave the permission is not legally responsible if the classroom teacher was competent and the administrator ascertained that the teacher would be present during the activity.[4]

When the injury complained of is caused by defective equipment, it is the building principal who should have actual notice of the defect or constructive notice, as where the defect existed long enough to justify that this condition should have been known. When the injury is due to inadequate playground supervision, the inadequacy frequently exists because of arrangements made by the building principal. To cite a few examples: A teacher in charge of one playground was required to stay in the building to teach a make-up class; another teacher was required to supervise large grounds on which 150 pupils were playing; another teacher neglected the playground to answer the telephone. All of these inadequacies may be chargeable to the administrators. In none of these instances did the lawsuit direct a charge of responsibility to the administrator.

Unless direct acts of negligence by the administrator are alleged, it is unlikely that the court will permit a suit against him to stand.

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[3] *Whitt* v. *Reed*, 239 S.W. (2d) 489 (Kentucky, 1951).

[4] *De Gooyer* v. *Harkness*, 13 N.W. (2d) 815 (South Dakota, 1944).

In a recent Oregon decision, it was held that a student, severely injured in a varsity football game, did not state a cause of action against the school superintendent or the school principal for negligence where his complaint did not recite facts sufficient to state a breach of duty by these defendants in failing to exercise supervision in connection with the game. The negligence the pupil alleged was that these defendants allowed him, an unco-ordinated and inexperienced freshman weighing 140 pounds, to play against an experienced, tough, and physically superior team without proper or sufficient instruction. The court held that the superintendent and the principal are not charged with the responsibility of supervising the detailed activities involved in the conduct of the athletic program. These defendants, the court said, did not have the duty to ascertain whether each member of the team had received adequate coaching or instruction relating to his manner of playing; at most, theirs was a general duty of supervision of the athletic program, and not the duty of supervising the specific sports activities.[5]

Another court dismissed an action for negligence against a supervising principal for injuries a pupil sustained when she fell and fractured her arm during a game in a physical education class. The principal had knowledge of the pupil's previous fracture history. The alleged negligence was that the principal should have seen to it that the teacher did not permit the pupil to engage in gymnasium activities in which she might fall. The court held that the principal was not negligent because her duties were only administrative, and she did not have the authority, let alone the duty, to personally supervise the physical education classes.[6]

Although not legally liable for injuries to pupils unless he is personally guilty of acts of negligence, the school administrator, nevertheless, has a professional responsibility to the pupils and to the school staff for safe maintenance of the school premises and for proper management of the school. The administrator can do much to help make the school environment free of hazards and effectively reduce pupil accidents by initiating and implementing procedures and practices that promote school safety, and through exercising appropriate and adequate supervision.

The school administrator protects the safety of pupils in a positive way when he:

- Adopts procedures for school personnel to report dangerous practices and unsafe conditions they become aware of
- Institutes a system of regular inspection of buildings, grounds, facilities, and equipment, to uncover hazards and dangerous conditions

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[5] *Vendrell* v. *School District No. 26C Malheur County*, 360 P. (2d) 299 (Oregon, 1961).

[6] *Luce* v. *Board of Education of Village of Johnson City*, 157 N.Y.S. (2d) 123 (New York, 1956); affirmed, 143 N.E. (2d) 797 (1957).

- Takes steps to promptly eliminate, repair, or correct defects and deterioration and to remove obstructions
- Selects competent personnel
- Holds regular meetings with the professional staff and with maintenance and service personnel to review and evaluate school accidents and to consider ways to avoid their recurrence
- Develops reasonable regulations for student traffic in corridors, on stairways, and elsewhere on school premises
- Provides adequate supervision for field trips and other educational activities away from the school
- Provides adequate supervision in play areas and other areas in the school where large numbers of pupils congregate
- Adopts rules and regulations for safe school bus transportation
- Requires all school accidents to be promptly reported and investigates all accidents
- Initiates a complete system of accident reporting and analysis.

Hindsight with respect to school accidents is more easily translatable into the needed foresight to keep schools accident-free when it is understood where, why, and how pupil accidents occur, and prompt steps are taken to prevent future accidents. In all of this, the school superintendent has a significant role and an important responsibility.

IV.

The Classroom Teacher's Responsibilities

Classroom teachers are more closely related to pupil activities than are other members of the school staff. It is hardly surprising, therefore, that they are most often named as defendants in pupil-injury actions alleging negligence. Taking all reasonable precautions to safeguard pupils against the possibility of harm is a teacher's professional responsibility. If the teacher is negligent in this regard, he is legally responsible and becomes personally liable for the payment of damages, unless he teaches in one of the few states where the school district is liable for his negligence, or where a judgment against him may be paid out of school funds.

Knowledge of the principles of negligence and liability discussed in the preceding pages will help the teacher protect himself against possible pupil-injury litigation. Understanding what the law considers negligent conduct assures the teacher that he need not fear he will be held legally accountable for all accidents that befall his pupils. The courts have repeatedly said that the schools are not insurers of pupil safety. But the teacher must know that he cannot escape liability if he fails to conduct himself as a reasonable and prudent person would in like circumstances.

Any teacher may be subject to allegations of negligence, whether he is a classroom teacher in an elementary school, or teaches only academic subjects, or is connected with a school activity, or teaches a special subject in which some danger is inherent. Pupil-injury actions against teachers are most often based on allegations of lack of proper supervision or instruction. A number of cases arise because misconduct or careless behavior of pupils has resulted in harm to fellow pupils. It is the duty of the teacher to supervise and control pupil conduct in the classroom and in other areas, such as playgrounds, halls, and stairways, and other posts to which the teacher may be assigned, to prevent misconduct, unruliness, or accidents.

Injuries are sometimes inflicted on one pupil by another on the playground or in the classroom while the teacher is present. Or this may occur during unsupervised moments while the teacher is attending to duties elsewhere. Under what circumstances will the teacher's lack of supervision or inadequate supervision constitute negligence? The answer can be stated only in general terms. When the pupil

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conduct causing the harm is of the kind that the teacher, in the exercise of reasonable care, can neither control nor anticipate, it is unlikely that a charge of negligence will prevail. But a case will be made out against the teacher if the injuries occur because of the teacher's negligent omission to regulate conduct of pupils with respect to known acts or practices of pupils which, with reasonable exercise of prudence, the teacher should have anticipated.

For how long can a teacher leave the classroom unsupervised without being considered negligent? Absence for a few minutes is not likely to be interpreted as negligent lack of supervision, especially if the teacher's absence was connected with the performance of duty. It has been held that the temporary absence of a teacher from the classroom (the teacher was storing supplies in a nearby closet) did not render the teacher, the school principal, or the school board liable to a pupil who was struck in the eye by a pencil thrown by a classmate. Although the evidence was in conflict, the court held that whether the teacher was away from the classroom for over an hour or only a minute was wholly immaterial, as there was no causal connection between the accident and the teacher's absence; the legal cause of the injury was the unforeseen act of the pencil-throwing pupil which, under the circumstance, the court said, could hardly have been anticipated in the reasonable exercise of the teacher's legal duty toward the injured pupil.[1]

To avoid accidents of this kind, it is good school practice not to leave classes unsupervised and unattended for long. In view of the nature of children, it would seem reasonable to expect that the absence of the teacher from the classroom, even if only briefly, would tend to lessen class discipline and result in misbehavior that could lead to pupils injuring one another.

A teacher is not likely to be held liable for injuries because of pupil misconduct in the nature of physical assaults on others,[2] particularly if the assaultive propensities of the pupil inflicting the hurt are unknown to the teacher. Misconduct of pupils in a classroom for defectives and incorrigibles has been held to be outside the teacher's responsibility since misbehavior to pupils in this kind of class might have occurred regardless of the teacher's presence or absence.[3] However, it is arguable that a teacher of incorrigibles would be required to exercise even more than ordinary care in supervision to prevent misconduct. The age, maturity, intelligence, and previous misconduct of pupils bear on the degree of care required of teachers to prevent accidents causing pupil injuries.

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[1] *Ohman* v. *Board of Education of City of New York*, 90 N.E. (2d) 474 (New York, 1949); rehearing denied, 93 N.E. (2d) 927 (1950).

[2] *Doktor* v. *Greenberg*, 155 A. (2d) 793 (New Jersey, 1959).

[3] *Guyten* v. *Rhodes*, 29 N.E. (2d) 444 (Ohio, 1940).

Teachers should also be aware that pupils assigned to do school errands and chores may injure themselves or others in the process. A school board was held negligent and liable for the payment of damages to a frail student-monitor who suffered a heart impairment from the strain of lifting heavy packages beyond his physical capabilities. The trial court found that the boy's activities as a member of the stockroom squad were not properly supervised by the teacher or the assistant school principal. In the court's words, "Parents do not send their children to school to be returned to them maimed because of the absence of proper supervision or the abandonment of supervision." [4]

The type of activity in which the pupil injuries occur also has a bearing on teacher liability. The following sections treat some of the situations in which injuries arise and are likely to arise, and stress some of the safety precautions that can be utilized to avoid both accidents and liability.

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[4] *Feuerstein* v. *Board of Education of City of New York*, 202 N.Y.S. (2d) 524 (New York, 1960).

V.

Danger Spots in School Activities

Certain aspects of school activities present more danger of pupil injuries than others. This section discusses the situations which commonly create dangers to pupils and which have resulted or might result in injuries to them.

a. transportation

Considering the many millions of pupils who are served by school bus transportation and the hazards of road travel, pupil accidents connected with this type of activity are almost inevitable. Liability and accident insurance covering the operation of school buses and state compensaton plans in some jurisdictions help spread the risk involved in this school-connected service. Through these means of disposing of damage claims, many pupil-injury cases, and perhaps the most flagrant incidents of driver negligence never reach the courts. Nevertheless, school bus transportation accidents frequently end up in litigation.

If not otherwise provided by statute or court decision, the school district's governmental immunity from tort liability applies to negligence connected with the school transportation program. This immunity does not attach to private contractors furnishing school bus transportation or to the individual school bus drivers, whether employed by the school district or by the private owner of the vehicle. Negligent school bus drivers are liable for injuries they cause to pupils. Some courts hold that school bus drivers are under a duty to exercise extraordinary or the highest degree of care for the safety of the pupils being transported to and from school.[1]

While it is known that school bus collisions with other motor vehicles or trains occur, cases involving accidents of this type seldom come before the appellate courts. The most prevalent pupil-injury actions are associated with the loading and unloading of buses on school grounds or with accidents that occur after children en route home alight from buses.

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[1] *Davidson* v. *Horne*, 71 S.E. (2d) 464 (Georgia, 1952); *Van Cleave* v. *Illini Coach Co.*, 100 N.E. (2d) 398 (Illinois, 1951).

Loading accidents happen when pupils crowd around a bus stop. There is the ever-present chance that one will be jostled against or under the bus. In one such case the court said that "the setting was a proclamation of its hazards." [2] It is wise for school authorities at least to require pupils to form a line and to warn them against jostling or pushing each other. The presence of a loading supervisor or school bus patrol member would serve as an extra precaution against loading accidents. In one jurisdiction where governmental immunity has been abrogated, a school district was held liable in damages for the death of a 12-year-old boy who was killed when the bus backed upon school property where he and other pupils were waiting to board buses. Failure to provide supervision of pupils waiting for the buses on school grounds, and failure to promulgate and enforce rules and regulations for the safety of the pupils so waiting were ruled acts of negligence.[3]

Pupils have been known to jump onto a moving bus as it entered the school grounds to load its passengers, to run out on the street to board a bus, or to run across the school grounds in front of a bus. Drivers should be warned of these dangers and should be instructed on how best to avoid accidents at loading and unloading time. Certainly opening the bus door before bringing the bus to a stop is a negligent act [4] and stopping the bus away from the curb and not at the regular bus stop could also lead to allegations of negligence.[5]

Accidents en route may happen without liability on the part of the bus driver. To establish his liability for pupil injuries it is necessary to prove negligent operation of the bus. To cite a few examples: A bus driver was held negligent when the bus turned over;[6] so, too, were a driver who carelessly propelled the bus forward suddenly while a child was standing [7] and a driver traveling on a familiar route who failed to slow down or swerve the vehicle to avoid a protruding limb of a tree which entered an open window and struck a pupil in the eye.[8] When a driver stopped the bus after a fast rate of speed, causing a pupil to be thrown out of the bus, a negligence action against the driver was sustainable.[9] But a verdict against the driver without submitting the question of his negligence to the jury was reversed when the door of the bus was not defective, and there was evidence

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[2] *Wynn* v. *Gandy*, 197 S.E. 527 (Virginia, 1938).

[3] *Barth* v. *Central School District No. 1*, 102 N.Y.S. (2d) 263 (New York, 1951).

[4] *Taylor* v. *Cobble*, 187 S.W. (2d) 648 (Tennessee, 1945).

[5] *Webb* v. *City of Seattle*, 157 P. (2d) 312 (Washington, 1945).

[6] *Olson* v. *Cushman*, 276 N.W. 777 (Iowa, 1937).

[7] *Van Cleave* v. *Illini Coach Co.*, 100 N.E. (2d) 398 (Illinois, 1951).

[8] *Eason* v. *Crews*, 77 S.E. (2d) 245 (Georgia, 1953).

[9] *Roberts* v. *Baker*, 196 S.E. 104 (Georgia, 1938).

of safe operation of the bus from which a pupil sitting on a box beside the door fell out.[10]

Contributory negligence was a successful defense in a case when a pupil was injured by sticking his foot through a hole in the floor of a privately owned bus while it was moving. This pupil had been warned of the danger by other pupils in the bus.[11]

Failure to maintain proper pupil conduct in the bus (to stop rowdyism) may result in driver liability, as when a pupil had her eye injured by a paper clip shot by a rubberband in the hands of another pupil-passenger.[12] But there was no liability where a driver, in attempting to control the behavior of an unruly pupil, placed him in a seat and in the process hurt another pupil. The driver had a duty to maintain order and to use reasonable means to do so.[13]

Court cases alleging driver negligence by pupils injured on alighting from school buses occur with unfortunate regularity. Children face the danger of being struck by school buses they have just left or by on-coming vehicles while crossing streets or highways on their way home. In the past 10 years no fewer than 12 court cases were concerned with serious or fatal accidents of this nature. In some the driver was held to be negligent; in others he was not. The cases raise these questions: Is the bus driver under a duty to restrain and warn pupils about approaching vehicles? Is he under a duty to see them safely across the road? The pupil's age is a determinative factor on whether he is capable of looking after his own safety on alighting from the school bus. One court in such a case summarized the following principles as controlling:

1. That the age of the child and his consequent ability or lack of ability to look after his own safety after alighting from the bus is . . . "the dominant factor."
2. That a peculiar and special obligation arises out of the nature of the relationship of the driver of a school bus to the children entrusted to his care. Whether or not this be termed a "high degree of care," in the technical sense, it is generally held that this relationship demands a special care proportionate to the age of the child and [his] ability, or lack of it, to care for [himself].
3. That the zone or area of legal responsibility for care of immature school children extends beyond the mere landing of the child from the bus in a place safe in itself, and includes the known pathway which the child must immediately pursue.
4. That the duty to warn is an imperative incident to the general obligation to exercise care proportionate to the age of the child and the attendant conditions in discharging a school child from a bus.

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[10] *McVeigh* v. *Harrison*, 22 S.E. (2d) 752 (Georgia, 1942).

[11] *Gilcrease* v. *Speight*, 6 So. (2d) 95 (Louisiana, 1942).

[12] *Maley* v. *Children's Bus Service, Inc.*, 117 N.Y.S. (2d) 888 (New York, 1952); affirmed, 125 N.Y.S. (2d) 643 (1953).

[13] *Thornburgh* v. *Hunkler*, 255 S.W. (2d) 975 (Missouri, 1953).

5. That the question in this class of cases is one for determination by the jury, on the particular facts of the case under consideration.[14]

Age alone is not the only determining factor in holding drivers negligent when young pupils are hit by on-coming vehicles. Failure to discharge pupils in a safe place is another determining factor. Thus, a driver who stopped the bus without drawing to the right side of the road was not relieved of liability because a pupil he discharged was struck by a speeding car even though the motorist failed to stop for the school bus as required by law.[15] It has also been held that it is the duty of the bus driver to see that children who must cross the road after alighting are in a place of safety before he sets his vehicle in motion.[16]

Accidents to pedestrian pupils

Children who walk to and from school are subject to traffic accidents. Young children are sometimes sent home from school unattended. Is the school responsible when children meet with accidents in these situations? Pedestrian approaches to the school may be hazardous. Such conditions may be the lack of sidewalks, high-speed road crossings, or on-going superhighway construction which isolates the school from safe means of access to pupils who walk to school. Must the school furnish transportation in these circumstances? Is the school district liable for negligence when a pupil is injured in a traffic accident that may have been avoided had transportation been provided?

State law governs whether school districts must or may furnish school transportation to pupils. In a large number of states the transportation of all children living beyond a specified distance from school is mandatory. In these states court action could be brought to compel the board of education to provide transportation. Where the furnishing of transportation is discretionary, failure to do so does not show negligence. Even in those states where the governmental immunity rule has been abrogated, recovery of damages for traffic injuries to pupils who go to and from school on foot is unlikely. In a California case, a child was killed by a car while he was crossing a heavily traveled street on his way home from school. Transportation was provided only *to* school. The court held that the failure of the school district to transport the child home *from* school did not constitute negligence. This was a remote cause of the accident. Being hit by the car was the proximate cause of the fatality.[17]

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[14] *Cartwright* v. *Graves*, 184 S.W. (2d) 373 (Tennessee, 1944).

[15] *Davidson* v. *Horne*, 71 S.E. (2d) 464 (Georgia, 1952).

[16] *Greene* v. *Mitchell County Board of Education*, 75 S.E. (2d) 129 (North Carolina, 1953).

[17] *Girard* v. *Monrovia City School District*, 264 P. (2d) 115 (California, 1953); *Angelis* v. *Foster*, 75 P. (2d) 650 (California, 1938).

As to providing transportation to pupils when approaches to the school are unsafe, a recent interpretation of a transportation law in a Connecticut decision is of interest. Statutory provisions require each town in this state to furnish, by transportation or otherwise, school accommodations for children between certain ages, and for the town school board to provide transportation "wherever transportation is reasonable and desirable." Parents of children living less than a mile from a particular school instituted suit when the school board denied their request to supply transportation because of traffic hazards until sidewalks and safety guards around the school were provided. The court found that the requirement to furnish transportation comprehended not only distance, but safety factors as well. It concluded that the failure of a town to provide transportation which is reasonable and desirable for the safety of children of a particular school they are required to attend, constitutes a failure to provide school accommodations. The court said the duty to furnish school accommodations, by transportation or otherwise, means "that a town shall provide a proper school building, staffed with legally competent teachers, and transportation to that school if the distance from the pupils' homes to the school or the hazards they may encounter on their way to and from school, or both, make transportation reasonable and desirable." [18]

Accident prevention measures

There are definite aids school administrators can employ to avoid or reduce school transportation accidents. Among them:

- Use of only safe and properly equipped vehicles. School buses should measure up at least to the minimum standards and specifications set by the state department of education
- A regular check of the mechanical condition of the buses by qualified mechanics
- Employment of drivers who are competent, experienced, and physically fit
- Regular and systematic instruction to bus drivers on driving and traffic regulations, particularly as they relate to school buses
- Establishment of a definite pattern for school bus drivers to use in approaching, loading, parking, and leaving the school grounds
- Adoption and enforcement of rules and regulations for supervising pupils during loading and unloading
- Promotion of safe bus riding habits among pupil passengers
- Specific instructions to drivers to park in a safe place before discharging pupils and to caution pupils to use care in crossing streets and highways after alighting from the school bus
- Establishment of definite and well-understood procedures and regulations to safeguard the bus and its passengers from accident whenever the bus is used for field and other non-route trips.

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[18] *Town of Waterford* v. *Connecticut State Board of Education*, 169 A. (2d) 891 (Connecticut, 1961).

b. buildings and grounds

Pupil-injury actions alleging unsafe conditions of school buildings and grounds are plentiful and disclose a variety of accident-causing situations. The law of the jurisdiction and the circumstances of the injury determine whether recovery of damages is possible. Unless governmental immunity has been abrogated, or a safe place statute prevails, or the rules with respect to nuisance or proprietary functions are held applicable (see Part II), school districts are not liable for pupil injuries caused by dangerous, defective, or improper conditions of school premises.

Unsafe conditions in school buildings that commonly cause accidents include unlighted or poorly lighted halls and stairways, stairs with insufficient or no handrails, broken steps, wet or slippery surfaces, worn floor coverings, holes in floors, and presence of obstructions in common passageways. Overcrowding on stairways and in halls and lack of adequate supervision to regulate traffic and control pupil conduct also lead to accidents. Pupil injuries have resulted from faulty construction causing part of the building to fall, and from falls due to building defects such as balustrades of insufficient height for pupil safety and unprotected stairwells. Defective installation of plumbing, unprotected steam pipes or radiators in classrooms, lockers loosened from walls, plaster falling from ceilings, and defective door-closing devices have led to pupil-injury litigation.

Even in those states where injuries to pupils are compensable, recovery from the school district will not be allowed unless dangerous, defective, or negligent conditions of the school premises are shown to exist. But liability will be imposed if the school district knew or should have known of the condition and failed to take corrective steps to remedy it within a reasonable time after such actual or constructive notice was had. Constructive notice means that the defect or dangerous condition existed for so long a time as to justify that it should have been known by the school district. Under these rules, a California school district was held liable when a loosened locker attached to a gymnasium wall fell on a pupil.[19]

In a New York case, a pupil could not recover for injuries he sustained when, at the teacher's request, he volunteered to retrieve a pencil dropped through a grate covering a trap door in a ventilating system. In the attempt, the pupil lifted the grate and jumped on the door which flew open and threw him to the basement some 12 feet below. It was held that there was no defect in the ventilating system, that the grate was not there to be lifted by pupils, and that the risk of the injury under the circumstances was not reasonably

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[19] *Freund* v. *Oakland Board of Education*, 82 P. (2d) 197 (California, 1938).

foreseeable.[20] Nor was liability imposed on a school district when, in the absence of evidence as to the negligent construction or maintenance of the steps, a descending pupil fell down four steps in a school auditorium.[21] No negligence was found on the part of a New York school district in a case where a pupil's fingers were caught in a door which had no door check. In this instance, the court said the door was not unusually heavy, and door checks were not customarily used.[22] But when a top-heavy piano on casters was left in a playroom in such a position that children would have to move the instrument to use it, and when upon being moved it overturned on a child, a Washington school board was held liable for failing to keep the premises and facilities safe for the use of children.[23]

On the grounds of the school building there may be danger spots in the manner of caring for trees, shrubbery, and plants, in protruding water cut-off valves, uneven or broken pavements, holes, loose gratings, unprotected openings, and piles of rubbish. Even unguarded building materials and equipment left on school grounds during construction or repair may become attractive playthings. Children have been hurt by swinging on loose gates and tripping over wires stretched across playgrounds, and by falling flagpoles. Injuries have been attributed to playground equipment or apparatus in disrepair, to defective fences, and to faulty erection of temporary bleachers. Failure to remove ice and snow from school grounds, unattended live embers after incineration of rubbish, and operation of power lawn mowers while pupils are on the grounds are hazards.

Keeping the surface of playgrounds and other areas smooth and free from trash and other hazards helps avoid injuries to pupils who fall. A fall during a play period may be foreseen and liability would accrue in a non-immune school district where the grounds are in an unsafe condition, unless an intervening cause breaks the chain of causation between the negligence of the school district and the injury. In one case several boys pulled another down onto the playground where he was injured by a clinker on the surface. The district was not held liable since the proximate cause of the accident was the unforeseen intervention of the other boys and not the failure of the district to maintain the surface of the playground in reasonably safe condition.[24]

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[20] *Gillman* v. *City of New York*, 17 N.Y.S. (2d) 551 (New York, 1939).

[21] *Steele* v. *Board of Education of City of New York*, 124 N.Y.S. (2d) 899 (New York, 1953).

[22] *White* v. *Board of Education of New York City*, 293 N.Y.S. 70 (New York, 1937).

[23] *Kidwell* v. *School District No. 300, Whitman County*, 335 P. (2d) 805 (Washington, 1959).

[24] *May* v. *Board of Education of Union Free School District No. 1, Town of Mamaroneck*, 68 N.E. (2d) 44 (New York, 1946).

However, a Washington court found that the action of other pupils was not an intervening cause of the injury sustained by a pupil who stumbled on a step elevated above ground level, lost her balance, and fell down the steps toward the basement door which another pupil slammed shut suddenly. The pupil's hand went through the glass panel in the door. The district was held liable for the dangerous condition of the step, for permitting the glass panel in the door, and for allowing pupils to play on the steps.[25]

Although governmental immunity insulates most school districts from liability, school boards and administrators have an obligation to provide pupils with a physical environment that is as safe as possible. School authorities meet their responsibility in this direction by:

- Initial careful planning, design, and construction of the school building, facilities, and surrounding grounds with safety factors in mind and according to recommended standards of recognized authorities
- Regular, systematic, and careful inspection of school buildings, play areas, and school grounds to uncover hazards
- Prompt repair and correction of dangerous, defective, and deteriorating conditions
- Elimination of poor housekeeping practices that present a threat to pupil safety.

c. playground and recess games

School accident statistics show a high incidence of pupil accidents during playground activities. Among the younger children especially, injuries are associated with the use of playground apparatus and with unorganized games during recess or noon intermissions.[26] To reduce playground accidents, it is essential that school authorities at the administrative level provide proper and sufficient supervision. The supervision should be suitable to the size and nature of the grounds, the play apparatus thereon, and the number and ages of the children using the area.

In pupil-injury actions arising out of playground accidents, failure to adequately supervise the activities of the children is frequently alleged. Playground injuries, however, may be due to accidents not caused by the negligence of the school district or the teacher in charge, such as when a pupil fell off a horizontal ladder,[27] or ran against a

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[25] *Eckerson* v. *Ford's Prairie School District No. 11 of Lewis County*, 101 P. (2d) 345 (Washington, 1940).

[26] *Accident Facts*, 1962 Edition. National Safety Council (annual).

[27] *Cordaro* v. *Union Free High School District Number 22, Farmingdale*, 220 N.Y.S. (2d) 656 (New York, 1961); affirmed, 183 N.E. (2d) 912 (1962). *Rodriques* v. *San Jose Unified School District*, 322 P. (2d) 70 (California, 1958).

flagpole support while playing,[28] or broke his front teeth in a fall when pushed by a classmate,[29] or when a pupil was hit by a ball,[30] or by a bat while participating in a game,[31] or by a stone batted by another pupil.[32] Courts have said in connection with these types of injuries that every act of every pupil cannot be anticipated and that teachers are not required to keep pupils under constant scrutiny at all times.

The school district should make rules and regulations for pupils' conduct so as to minimize playground dangers. For example, it has been held to be negligence to permit pupils to ride bicycles on the playground while other pupils are playing.[33]

The supervision during unorganized play should be adequate. When it is either lacking or inadequate, school districts that are not immune from suit are liable for negligence in not providing adequate supervision. To illustrate: A school district has been held liable for injuries a young pupil suffered after she jumped off backwards from a five-foot bleacher stand in an unsupervised play area.[34] Failure to enforce adequate play rules has been deemed to be negligence and has resulted in assessment of damages against a school district for injuries a second-grade pupil sustained when she ran into the line of play and was struck by a baseball bat swung by an older pupil,[35] and negligent supervision of a playground by the school district was held responsible for the death of a 10-year-old boy who fell and struck his head on the pavement when his playmate in a game of "blackout" released a hold on him.[36]

Neither the school district nor the teacher will be liable where supervision of playground activities is adequate and reasonable. Supervision has been held to be adequate in a case where a physical

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[28] *Hough* v. *Orleans Elementary School District of Humboldt County*, 144 P. (2d) 383 (California, 1943).

[29] *Woodsmall* v. *Mt. Diablo Unified School District*, 10 Cal. Rptr. 447 (California, 1961).

[30] *Graff* v. *Board of Education of New York City*, 27 N.E. (2d) 438 (New York, 1940).

[31] *Nestor* v. *City of New York*, 211 N.Y.S. (2d) 975 (New York, 1961).

[32] *Wilber* v. *City of Binghamton*, 66 N.Y.S. (2d) 250 (New York, 1946); affirmed, 73 N.E. (2d) 263 (1947).

[33] *Buzzard* v. *East Lake School District of Lake County*, 93 P. (2d) 233 (California, 1939).

[34] *Decker* v. *Dundee Central School District*, 151 N.E. (2d) 866 (New York, 1958).

[35] *Germond* v. *Board of Education of Central School District No. 1*, 197 N.Y.S. (2d) 548 (New York, 1960).

[36] *Tymkowicz* v. *San Jose Unified School District*, 312 P. (2d) 388 (California, 1957).

education teacher immediately prior to a noon recess game, and on previous occasions in the regular class, had instructed the pupils on how to play touch football and had warned the pupils that rough play would not be tolerated. Under these circumstances, no negligence was found, and the court would not compensate a voluntary participant who was injured by a heavier opponent during this competitive game played according to the rules.[37]

Unorganized play at recess or noon should be supervised by competent personnel. A school janitor is not qualified to supervise play.[38] Moreover, the number of teachers assigned to a play area should be suitable to the circumstances. It has been held that one teacher cannot supervise a large playground where some 150 pupils of various ages play at the same time.[39]

If a pupil wanders away from the group during playground games and is injured by an existing dangerous condition into which he places himself, the teacher in charge may be liable for negligent pupil supervision.[40] But there was no liability when a pupil violated a known rule by deliberately leaving the supervised play area at noon recess with a playmate for a prohibited part of the school grounds where he was injured in the eye by a palm thorn his companion pulled from a shrub.[41]

Injuries may occur on the playground because the play equipment is defective. Non-immune school districts may be answerable for damages if pupils are hurt on faulty equipment. Washington excludes liability for all injuries sustained by pupils on playground equipment, although its statute imposes liability on school districts for certain other kinds of pupil accidents.

In New York, where school districts are liable for their own negligence, recovery was allowed a pupil injured because of a defective slide of which the school board had notice.[42] But in another case, a

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[37] *Pirkle* v. *Oakdale Union Grammar School District*, 253 P. (2d) 1 (California, 1953).

[38] *Garber* v. *Central High School District No. 1 of Town of Sharon*, 295 N.Y.S. 850 (New York, 1937).

[39] *Charonnat* v. *San Francisco Unified School District*, 133 P. (2d) 643 (California, 1943).

[40] *Miller* v. *Board of Education, Union Free School District No. 1 of Town of Albion*, 50 N.E. (2d) 529 (New York, 1943).

[41] *Ford* v. *Riverside City School District*, 263 P. (2d) 626 (California, 1953).

[42] *Howell* v. *Union Free School District No. 1*, 294 N.Y.S. 333 (New York, 1937).

school district was not liable for an injury caused by a defect in a slide in the absence of evidence that the defect had existed a sufficient length of time for the school authorities to have knowledge of it.[43]

In a situation where a pupil was injured using playground equipment not in a state of disrepair, he could not collect damages. This pupil fell off a monkey bar. The court held that specific supervision of each game and each piece of playground equipment would be an unreasonable requirement. This pupil merely met with an accident which was not the fault of the playground supervisor.[44] However, there may be liability where playground equipment, though not defective, is dangerous for use by small children. A school district was declared liable for injuries sustained by a small child who fell from a ramp during unsupervised recess. The court held that liability rested upon the maintenance of a dangerous piece of playground equipment, and the use to which it was put. This ramp had been constructed for the use of older boys and even they were to use it only under supervision.[45]

When children of all ages share a play area, extra precautions should be taken to prevent accidents, since some children are more adept than others in using equipment, and some equipment may be dangerous to the young and unskilled.

To summarize, playground hazards and accidents during unorganized play periods can be materially reduced if:

- Adequate and competent supervision is provided
- Use of the play area is scheduled to avoid crowding
- Older children are separated from younger ones
- Bicycle riding and other inherently dangerous activities in the play area are prohibited
- Rules and regulations are adopted for the control of pupil conduct on the playground
- Playground equipment and apparatus are of the types recognized as safe for the use of children, and are kept in good repair
- The playground area is kept free of obstructions and rubbish piles, and the surfaces are properly maintained.

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[43] *Handy* v. *Hadley-Luzerne Union Free School District No. 1*, 14 N.E. (2d) 390 (New York, 1938).

[44] *Miller* v. *Union Free School District No. 1, Town of Oyster Bay*, 291 N.Y.S. 633 (New York, 1936); *Cordaro* v. *Union Free School District No. 22, Farmingdale*, 220 N.Y.S. (2d) 656 (New York, 1961); affirmed, 183 N.E. (2d) 912 (1962).

[45] *Sullivan* v. *City of Binghamton*, 65 N.Y.S. (2d) 838 (New York, 1946).

d. physical education and sport events

Accidents in the physical education classes and in school athletic programs are numerous and result from a variety of causes. Court cases relating to school-connected mishaps in these areas of activity show that pupil injuries occur when playground or gymnasium equipment is defective or the play area is overcrowded, when pupils attempt an exercise or sport for which they have not been sufficiently trained, when there is inadequate supervision of the exercise or insufficient warning of its dangers, when other pupils conduct themselves in a negligent manner, and even when pupils are mere spectators at sport events.

The physical education teacher is under "a duty to exercise reasonable care to prevent injuries and to assign pupils to such activities as were within their abilities, and to properly and adequately supervise the activities. The failure to do so constitutes actionable negligence on the part of the teacher." [46]

Under the principle just stated, teachers of physical education may be liable for injuries that occur to pupils who attempt to do an exercise that is beyond their skills. A running-jump somersault,[47] a headstanding exercise,[48] and boxing [49] are examples. Where there is evidence that the previous instruction was inadequate, and the pupils were not warned of the dangers, liability is likely to be imposed. However, where both the previous instruction and the supervision provided by a competent teacher during the exercise or game are adequate, there is little likelihood that liability will attach. The following two cases illustrate these points:

A physical education teacher directed two untrained pupils to box three rounds of one minute each, with a minute of rest intervening. The teacher did not inform the pupils of the dangers of boxing and did not teach them the principles of defense. One pupil suffered a cerebral hemorrhage caused by a blow on the temple. The teacher was held negligent for allowing the pupils to engage in a dangerous exercise without adequate instruction.[50]

A 14-year-old boy broke his arm when he made a leapfrog jump over a gym horse. The physical education teacher supervised the jump, and had previously instructed the boy on the use of the horse, had demonstrated the jump, had warned the boy of the possible dan-

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[46] *Luce* v. *Board of Education of Village of Johnson City*, 157 N.Y.S. (2d) 123 (New York, 1956); affirmed, 143 N.E. (2d) 797 (1957).

[47] *Govel* v. *Board of Education of Albany*, 60 N.E. (2d) 133 (New York, 1944).

[48] *Gardner* v. *State of New York*, 22 N.E. (2d) 344 (New York, 1939).

[49] *La Valley* v. *Stanford*, 70 N.Y.S. (2d) 460 (New York, 1947).

[50] *Ibid.*

gers, and had told him not to attempt the exercise if he felt unable to do it. The court held the teacher was not liable for the injury.[51]

Liability for negligence may result if the teacher fails to take account of the inherently dangerous nature of a game played under his supervision and he permits pupils unevenly matched as to height and weight to participate. In a soccer game where the teams were randomly formed, a seventh-grade pupil was kicked in the head by an opposing player as both ran at high speed to kick a ball placed between the lines; his opponent was about 6 feet tall and weighed over 180 pounds. The injured pupil was allowed to recover damages for a cerebral concussion.[52] Since certain exercises and games are known to involve greater risk of physical harm than others, it is obvious that the degree of supervision and instruction the teacher provides should be commensurate.

There is judicial authority that negligence may be chargeable to the physical education teacher or coach when he encourages or permits a student, whom he knows or should know is physically unfit because of a prior injury, to play in an athletic game where his injury may be worsened or may be the cause of another injury.[53] However, in a contrary view, an action for negligence was barred against a coach who allegedly ordered football practice for a 16-year-old boy he knew to have been injured in practice a week before. The court stated the boy knew the dangers involved and failed to show he protested against playing.[54]

While ordinarily a pupil who voluntarily participates in the school's competitive sports program assumes the normal risks of the game for which he has been properly instructed, the physical education coach or the non-immune school district is liable for damages if the injuries suffered in a game are aggravated by the negligent way the player is removed from the scene of the accident.[55]

As in other types of pupil injuries, the physical education teacher is not liable if the injury occurred without his negligence, as for instance, when the pupil is injured through his own carelessness.[56] If the harm is caused by the negligence of another pupil, the teacher

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[51] *Sayers* v. *Ranger*, 83 A. (2d) 775 (New Jersey, 1951).

[52] *Brooks* v. *Board of Education of City of New York*, 205 N.Y.S. (2d) 777 (New York, 1960).

[53] *Morris* v. *Union High School District A*, 294 Pac. 998 (Washington, 1931).

[54] *Hale* v. *Davies*, 70 S.E. (2d) 923 (Georgia, 1952).

[55] *Welch* v. *Dunsmuir Joint Union High School District*, 326 P. (2d) 633 (California, 1958).

[56] *Wright* v. *City of San Bernardino High School District*, 263 P. (2d) 25 (California, 1952).

is likely to be relieved of liability if the other pupil's action or misconduct was not foreseeable. Pure accidents occur in sports also, and if there is no negligence, there is no liability.[57]

Unsafe conditions in the school gymnasium or equipment may result in liability for the physical education teacher or the school district which is not otherwise immune from suit. A teacher of physical education must do all he reasonably can to make the environment safe for his pupils. He should make frequent periodic examination of all equipment in the gymnasium and the play area to uncover defects. Otherwise he may be charged with negligence in not having corrected equipment defects he was aware of or which have existed for a sufficient length of time that ignorance of the defect is a presumption of negligence. For example, the absence of a mat under a chinning bar may lead to liability if as a result of such lack the pupil is injured.[58]

The play area provided for required games and exercises should be large enough to safely accommodate the activities carried on. Where eight contiguous or overlapping basketball courts in a school gymnasium 80 feet long and 43 feet wide were used simultaneously by 48 players, the court held that the situation created a condition of danger the school board should reasonably have anticipated; hence the school board was held liable when a pupil was injured in these circumstances.[59]

Sports events to which nonparticipating pupils and even the public are invited raise other problems of liability for the district or the physical education teacher in charge. If the injury occurs in a state where the district is immune, the charge of an admission fee generally does not nullify the district's immunity or make the activity a proprietary function, excepted from the immunity rule.[60] If the accident occurs in a state where the school district is liable for at least certain kinds of injuries, as in California, the invitation to attend a sports event includes an invitation to use the nearby grounds and equipment, thus imposing liability for injury from broken glass or other dangers.[61] If a spectator is accidentally hit by a ball, however, there is no

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[57] *Maurer* v. *Board of Education of City of New York*, 60 N.E. (2d) 759 (New York, 1945).

[58] *Fein* v. *Board of Education of New York City*, 111 N.E. (2d) 732 (New York, 1953).

[59] *Bauer* v. *Board of Education of City of New York*, 140 N.Y.S. (2d) 167 (New York, 1955).

[60] *Watson* v. *School District of Bay City*, 36 N.W. (2d) 195 (Michigan, 1949).

[61] *Brown* v. *City of Oakland*, 124 P. (2d) 369 (California, 1942).

liability. Even when a pupil was injured by being hit by a bottle at a game, there was no liability because the misconduct of the other pupil-spectator was not foreseeable.[62]

e. *shops*

Because of the nature of the subjects they teach, and the kinds of machinery and tools used in instruction, vocational education teachers are in a school environment where there is inherent danger. Power-driven machinery, equipment with movable parts, and sharp tools are potential sources of serious cuts, dismemberment, and loss of sight. Defective machinery and equipment, lack of proper safety appliances, and unsafe work habits of students, like starting up machines others are working at, may cause injuries.

In view of the surroundings in which they work, shop teachers have a legal responsibility to act with caution and prudence to keep their special classrooms free of hazards and accidents. A teacher has omitted a specific legal duty and would be liable for negligence in the event a pupil is hurt if he fails to adequately instruct the pupil on the correct method of using a dangerous machine or tool, or if he fails to warn of the dangers that may arise if safety rules are disobeyed, or if the use of safety devices is ignored, or if personal protective equipment is not worn. The teacher leaves himself open to a charge of negligence if he fails to properly supervise the activities in the shop to prevent pupils from inflicting harm on each other.

The shop teacher is not necessarily relieved of liability because the actions of other pupils directly cause injury to another, since he has the responsibility to supervise the pupils in the shop more carefully than in some other school situations. This was the decision when a pupil was injured by a gun that was brought to the shop for repairs and was being tested by another pupil.[63] In another case, a pupil trying to extricate a piece of metal from a machine was injured when another pupil stepped on the treadle. Failure of the shop teacher to have the machine locked when it was stopped and to see that other pupils did not tamper with it was held to be negligence.[64] Other courts, however, have held in the circumstances presented that injuries to hands caught in a printing press or jig saw were not the result of negligence on the part of the teacher, but that the act of the

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[62] *Weldy* v. *Oakland High School District of Alameda County,* 65 P. (2d) 851 (California, 1937).

[63] *Govel* v. *Board of Education of Albany,* 60 N.E. (2d) 133 (New York, 1944).

[64] *DeBenedittis* v. *Board of Education of New York City,* 67 N.Y.S. (2d) 30 (New York, 1946).

fellow pupil in starting up the machine was the legal cause of the injury.[65]

Contributory negligence is a defense sometimes raised in court actions arising out of school shop accidents. In this connection it has been said that even though a pupil knows there is danger in using a power saw without a guard, he does not know the *amount* of danger; hence his using the unguarded machine without ever having received any instructions not to operate it without the guard, does not constitute contributory negligence which would relieve the school district of liability for permitting the unguarded machine to be used.[66]

School districts in most states are not liable for injuries pupils sustain during vocational education classes. As in all instances involving negligence, they are insulated from tort liability under the governmental immunity rule. Even in the state of Washington, where the rule has been partially abrogated, school districts are exonerated from tort liability for injuries connected with vocational education equipment.

Despite governmental immunity, school districts owe it to pupils to provide proper machines and tools, equipped with safety guards that meet the standards set by government agencies for industrial workers, and to maintain them in good working order.

Injuries in vocational education shops bring into the picture still another aspect of the district's liability because in many instances the school accepts money for the work pupils do as part of the learning process in the shop. This practice, however, has been held by several courts not to make the pupils employees, which means that they are not covered for injuries under workmen's compensation laws; neither does it make the operation a proprietary function of the board rather than a governmental function. Safe place statutes that include school buildings have been held not to include machines in school shops.[67]

Failure to provide personal protective equipment, such as coveralls or aprons, was held by a New York court to be negligence on the part of the school district. Where a student crushed his thumb on a lathe when trying to extricate his sweater caught in the machine, the court said the school district was under an obligation to furnish the same protective clothing to pupils in the machine shops that the New York statutes require industrial employers to furnish to their employees working on similar machines. This court said, "It seems clear that

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[65] *Taylor* v. *Kevlin*, 1 A. (2d) 433 (New Jersey, 1938); *Meyer* v. *Board of Education, Middletown Township*, 86 A. (2d) 761 (New Jersey, 1952).

[66] *Ridge* v. *Boulder Creek Union Junior-Senior High School District of Santa Cruz County*, 140 P. (2d) 990 (California, 1943).

[67] *Kirchoff* v. *City of Janesville*, 38 N.W. (2d) 698 (Wisconsin, 1949).

the Legislature did not intend that children in schools should be subjected to danger of serious injury because of lack of equipment which it was requiring employers to furnish to men." [68]

A similar view was adopted by a California court in an action brought by a pupil who caught his fingers in a printing press which had no guard. The court held that violation of safety regulations of the Division of Industrial Safety protecting employees was applicable to school districts and their violation is an act for which a board of education may be held liable.[69] However, a Massachusetts court reached the opposite conclusion. That court, following the common-law principle of immunity, held that safety devices required of employers were not necessary in school shops because the pupils were not employees.[70]

Shop accidents can be prevented and the chance of being sued for negligence can be avoided if the vocational education teacher:

- **Reports knowledge of hazardous conditions and defects relating to the shop, the machinery and equipment, to the proper school authorities**
- **Regularly inspects machinery, equipment, and environmental factors for safety**
- **Posts in his shop conspicious notices of regulations, possible hazards, safeguards, and precautions**
- **Makes certain that appropriate safety devices and guards are available and used by students**
- **Makes sure students know and understand pertinent safe practices relating to the activities in which they are engaged**
- **Requires students to wear appropriate personal protective equipment, such as goggles, aprons, helmets, and gloves, during hazardous activities**
- **Adequately instructs and demonstrates the use of power tools or other hazardous equipment before initially permitting such use by a pupil; permits initial use only under direct supervision of the teacher**
- **Shuts off power tools if he must leave the shop**
- **Exercises continuous supervision to see that shop safety practices are observed**
- **Makes himself a model for pupils to follow by personally obeying all safety rules and practices.**

f. science laboratories

The school science laboratory is an area in which adequate instruction and supervision of pupils are essential for the sake of pupil safety.

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[68] *Edkins* v. *Board of Education of New York City*, 41 N.E. (2d) 75 (New York, 1942).

[69] *Lehmann* v. *Los Angeles City Board of Education*, 316 P. (2d) 55 (California, 1957).

[70] *Fulgoni* v. *Johnston*, 19 N.E. (2d) 542 (Massachusetts, 1939).

In the chemistry laboratory, especially, mishandling of combustible, volatile, or corrosive substances by pupils who are not fully aware or mindful of the consequences of their activities, may result in serious harm to themselves and others in the class.

Since the science teacher functions in an area that is inherently dangerous, he has the duty to do whatever is reasonably necessary to prevent mishaps in his classroom. If he fails to instruct his pupils properly on how to conduct their laboratory experiments, and to warn of the dangers that may arise, and if he fails to keep close supervision over the activities in the class, he may be chargeable with negligence if a pupil is injured.[71] This duty was spelled out by a court in a case involving an explosion in a chemistry laboratory, where a pupil, by mistake or otherwise, used the wrong ingredients, and deviated from the method the textbook described for the experiment. The court said:

> It is not unreasonable to assume that it is the duty of a teacher of chemistry, in the exercise of ordinary care, to instruct students regarding the selection, mingling, and use of ingredients with which dangerous experiments are to be accomplished, rather than merely hand them a text-book with general instructions to follow the text. This would seem to be particularly true when young and inexperienced students are expected to select from similar containers a proper harmless substance rather than another dangerous one which is very similar in appearance.[72]

In conducting a dangerous experiment, the teacher must take precautions to safeguard his pupils. Failure to do so constituted negligence in one instance.[73]

Easy access to hazardous chemicals also presents risks. Pupils may take them without permission for private experimentation or for other uses outside the school. Injuries sustained by a pupil in an explosion during outside experimentation with chemicals taken from the school storeroom has resulted in a negligence action against a California school district. Contrary to school rules, the school janitor unlocked the door of the chemistry supply room and permitted two pupils to enter. They helped themselves to chemicals and gave some to a third pupil who was later injured. The court held that unlocking the door and permitting entry to the two pupils, even though against the school rules, was not a direct cause of the injuries the plaintiff suffered. Between the act of the janitor in admitting the two pupils to the supply room and the explosion in which the injuries occurred, there intervened the independent acts of the pupils in stealing the chemicals and giving them to plaintiff, and the latter's act in experi-

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[71] *Mastrangelo* v. *West Side Union High School District of Merced County*, 42 P. (2d) 634 (California, 1935).

[72] *Ibid.*

[73] *Damgaard* v. *Oakland High School District*, 298 P. 983 (California, 1931).

menting with them. In these circumstances, the school district was held not to be liable.[74] A different result might have been reached had the chemistry teacher left the supply door unlocked, or had he stored the chemicals so that all pupils could have free access to them, or had he given them to the pupils for private experimentation.

To help prevent accidents in the school science laboratory and forestall the possibility of injuries to pupils who use school chemicals for outside experiments, the science teacher should:

- Make certain that the pupils know and understand beforehand the nature of the experiment to be performed, and the dangers that may arise if proper procedures are not followed
- Give careful and adequate instruction on the use of the equipment and materials available for experiments
- Maintain proper supervision of the classroom tests and experiments
- See that chemicals and other substances used in the laboratory are properly packaged, labeled, and stored
- Keep potentially dangerous chemicals under lock and key
- Control access to the supply room so that pupils cannot take chemicals for private use without permission.

g. driver education

Driver education, comprising classroom and practice driving instruction, has become an integral part of the secondary-school curriculum. Almost every state has recognized the importance of teaching this phase of safety education. Many states have enacted statutes authorizing and describing procedures for driver education. The purpose of driver education has been expressed in a recent statutory enactment as follows:

> The aims and purposes of automobile driver education shall be to develop a knowledge of . . . laws of this state relating to motor vehicles, a proper acceptance of personal responsibility in traffic, and a true appreciation of the causes, seriousness and consequences of traffic accidents [and] . . . to develop the knowledge, attitudes, habits and skills necessary for the safe operation of motor vehicles. . . .[75]

Some of the driver education laws are simply permissive statutes authorizing local school districts to provide driver education; some require the state board of education to prepare a course of study; some are amendments to the motor vehicle code with regard to junior or student licenses.

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[74] *Frace* v. *Long Beach City High School District*, 137 P. (2d) 60 (California, 1943).

[75] *West Virginia Code of 1961 Annotated*, sec. 1740(2).

Accidents may occur to pupils while taking driver education courses. This raises the question of the liability of the school district or the individual teacher in the event of such an occurrence.

Few of the statutes concerned with driver education contain specific provisions with respect to the liability of teachers when pupils under their supervision are injured during practice driving instruction. The Pennsylvania law states that "no liability shall attach to any individual, school director, superintendent, teacher or other school authority by reason of teaching safe driving, except that which is protected by automobile insurance policies." [76]

Besides Pennsylvania, school districts in California, Minnesota, and Ohio may expend public funds to procure insurance against liability arising out of the use of motor vehicles operated under a course in driver education.[77] The Minnesota law specifically preserves the governmental immunity of school districts for injuries stemming from the driver education program. Nevada and West Virginia school districts must carry liability insurance on vehicles used in driver education courses,[78] and the Maryland law provides that instruction cars, if used, shall be furnished, maintained, and insured by the Department of Maryland State Police unless boards of education make other provisions therefor.[79]

As noted in Section VII, Insurance and Related Compensation for Injured Pupils, a number of states authorize school districts to purchase liability insurance to protect officers or employees against damages due to negligent acts or omissions. These provisions and other general provisions permitting coverage of motor vehicles of the school district may come to the aid of the driver education teacher or to the pupil injured during practice driving instruction.

There appear to be no court decisions touching on school district or teacher liability for injuries sustained by pupils during driver education courses. Unless protected by statute, driver education teachers are no more relieved of liability than are other teachers whose negligent acts cause harm to pupils. Similarly, non-immune school districts are subject to court actions for pupil injuries negligently arising out of driver education activities. Proper instruction and careful supervision of pupils, and well-maintained equipment, are the keys to a safe driver education program and the avoidance of litigation.

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[76] *Purdon's Pennsylvania Statutes Annotated.* Title 24, sec. 15-1519.

[77] *California Education Code,* sec. 8112; *Minnesota Statutes Annotated,* secs. 123.18(10) and 123.39(10); *Page's Ohio Revised Code Annotated,* sec. 3313.201.

[78] *Nevada Revised Statutes,* Title 34, sec. 389.090(4); *West Virginia Code of 1961 Annotated.* sec. 1740(2d).

[79] *Annotated Code of Maryland,* Article 77, sec. 212.

h. field trips

It is customary school practice to take pupils on field trips to industrial plants, historical sites, government agencies, parks, museums, and similar places. Other school-connected trips away from home may be to sports contests or music activities. These excursions are not confined to the immediate locality of the school but are often made to distant cities and across state lines.

Field trips enrich the curriculum, but they also present hazards that may be encountered during travel and at the visiting site. The possibility of accidents to pupils while on field trips under school sponsorship can be lessened through the combined efforts of the school administrator and the teachers.

The school administrator has the obligation to develop policies for field trips and to adopt procedures for adequate supervision by competent school personnel. The procedures should embody rules for safe transportation, with special attention given to the hazards of long-distance travel.

Teachers who take their classes on field trips must accept the responsibility for reasonable care to avoid accidents to their pupils. Careful advance planning of the trip is important. The dangers that may be met in an unfamiliar environment should be kept in mind and pupils should be cautioned about these beforehand. Establishing rules for good behavior also contributes to making the trip a safe one.

Although in the courts of record there is no instance of a suit against a teacher for pupil injury received on a field trip, accidents during trips do occur occasionally. While the teachers are not insurers of pupil safety, reasonable care on their part is required to safeguard the pupils from harm. The scope of the reasonable care depends upon the age, intelligence, and maturity of the pupils on the trip and the inherent dangers of the place visited. If the teacher fails to exercise the reasonable care called for in the particular circumstances, he is liable for pupil injuries due to his negligence. Permission of the parents and authorization of the school principal or superintendent to take the pupils on the trip do not relieve the teacher of responsibility for their safety or of liability for negligence in the event of injury.

Pupils on visits to industrial plants may be subject to greater dangers than on visits elsewhere. If injured on the premises of an industrial establishment through no fault of his own, can the pupil recover damages from the owner? The answer depends on whether the pupil visits the plant as an *invitee* or as a *licensee*. An invitee is one who visits at the express or implied invitation of the owner for the benefit of the owner or for the benefit of both owner and visitor. A licensee is one who visits the premises for his own

purposes. The owner is liable for negligence to an injured invitee if he fails to exercise care to keep the premises in reasonably safe condition. The owner has no duty to provide safeguards for a licensee. When the pupil visits as a licensee, even with the owner's permission, the only duty the owner has is to point out hidden dangers known to him which the teacher or pupil is not likely to see for himself.

Several cases have been brought against industrial plant owners for pupil injuries during visits by a group in charge of a teacher. Except in one instance, the owners have not been held liable.[80] However, where a company widely advertised and encouraged inspection of its creamery and baking plant and it was a long-established custom to bring home economics classes to the facility, the court held the evidence justified the finding that these visits were for the benefit of the company which served a large trading area, and that the injured pupil was an invitee; consequently the company was held liable for failing to exercise reasonable care for her safety.[81]

i. school patrols

School safety patrol programs are in operation in school districts throughout the country in the form of building patrols, fire patrols, school bus patrols, and street traffic patrols.[82] In itself the practice of assigning pupils to safety patrol service, especially to street traffic patrols, in order to safeguard other pupils, presents possible hazards depending upon the scope of the activities.

Except as to street traffic patrols, the safety patrol programs are not the subject of specific legislation. At least 14 states have enacted permissive statutes relative to street traffic patrols.[83] In states where there is no explicit statutory authorization, school boards operate the school safety patrol program under authority implied from their general powers.

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[80] *Myers* v. *Gulf Public Service Corp.*, 132 So. 416 (Louisiana, 1931); *Benson* v. *Baltimore Traction Co.*, 26 Atl. 973 (Maryland, 1893); *Roe* v. *St. Louis Independent Packing Co.*, 217 S.W. 335 (Missouri, 1920); *Castonguay* v. *Acme Knitting Machine and Needle Co.*, 136 Atl. 702 (New Hampshire, 1927).

[81] *Gilliland* v. *Bondurant*, 59 S.W. (2d) 679 (Missouri, 1933).

[82] National Education Association, Research Division. "Pupil Patrols in Elementary and Secondary Schools." *Research Bulletin* 28: 1-44; February 1950.

[83] *Alaska Compiled Laws Annotated 1949: Cumulative Supplement 1959*, sec. 50-1-7, 50-5-12; *California Education Code*, secs. 12051-12059; *Idaho Code*, secs. 33-2734—33-2737; *Illinois School Code of 1961*, Ch. 122, sec. 10-22.28; *Annotated Laws of Massachusetts*, Ch. 71, sec. 48A; *Minnesota Statutes Annotated*, sec. 126.15; *New Jersey Statutes Annotated*, sec. 18:14-92; *New York Education Law*, sec. 806; *Oregon Revised Statutes*, secs. 336.450—336.480; *Purdon's Pennsylvania Statutes Annotated*, Title 24, sec. 5-510; *Utah Code Annotated 1953*, sec. 53-12-1; *Vermont Statutes Annotated*, Title 16, sec. 1482; *Revised Code of Washington*, sec. 46.48.160; *Wisconsin Statutes Annotated*, sec. 40.63.

The purpose of the school traffic patrol is to influence and encourage other pupils to refrain from crossing public streets and highways at points other than regular crossings and to direct pupils not to cross streets and highways at times when the presence of traffic would make the crossing unsafe.

Typically, the street traffic patrol laws give the school districts power to organize, maintain, and operate the program. Written parental consent before the pupils can become members is usually required. Most of the laws do not permit pupils to direct vehicular traffic, and a number expressly require patrol members to remain on the sidewalk or curb while carrying out their duties. A few of the laws allow patrols to caution or signal motor vehicles from the curb that pupils are crossing. Idaho, Oregon, and Washington permit them to display "stop" or directional signals at school crossings or at other points where school children cross the highway. In Massachusetts and Utah the patrol members may assist drivers of school buses to maintain safety rules and to protect pupils in boarding and alighting. A similar provision is found in North Carolina, which authorizes only the appointment of pupil-monitors for school buses.[84] A Mississippi statute directs the superintendent of each school whose pupils are transported in a bus to appoint a safety council from among the student body to carry out certain duties; the statute does not otherwise refer to school traffic patrols.[85]

Most of the states with statutory authorization for the operation of street traffic patrols provide, in language almost identical with the following provision, that there shall be no liability for accidents:

> No liability shall attach either to the board of education or any individual director, superintendent, teacher or other school authority by virtue of the organization, maintenance, or operation of a school safety patrol organized, maintained and operated under authority of this section.[86]

This provision would seem to apply not only to the pupils serving as street traffic patrols but also to other children injured through the inadvertent direction or misjudgment of a pupil patrol. The Minnesota and Vermont laws spell out that the nonliability of the district and the school employees extends to an injured pupil "whether a member of the patrol or otherwise." [87]

It is to be noted that this nonliability provision appears also in New Jersey and New York, two states where other laws require school districts to "save harmless and protect all teachers and members of the supervisory and administrative staff from financial loss arising out

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[84] *General Statutes of North Carolina*, sec. 115-185.

[85] *Mississippi Code Annotated 1942* (Recompiled 1952), sec. 6357.

[86] *Purdon's Pennsylvania Statutes Annotated*, Title 24, sec. 5-510.

[87] For citation to statutes, see footnote 83.

of any claim, demand, suit, or judgment." However, the New Jersey save harmless statute postdates the nonliability provision in the safety patrol law; in New York, the safety patrol provisions and the save harmless statute were enacted in the same year, but the latter states that its provisions shall be applicable notwithstanding any inconsistent provision contained in other laws.

Provisions for carrying insurance are to be found in several of the school safety patrol laws. School boards in Vermont must keep in force adequate accident insurance to protect pupils acting as safety patrols. Public funds may be used to pay premiums for life and accident insurance policies covering school safety patrol members in Idaho and Washington. School districts in Idaho, Minnesota,[88] and Oregon [89] are allowed to expend public funds to secure medical or hospital insurance benefits; school districts in California are authorized to provide for adequate medical and hospital care for school partol members who may be injured while performing patrol duties. While Nevada has no specific statute authorizing school districts to form school traffic partols, under the industrial insurance law pupils who are members of partols are entitled to be compensated for duty-related injuries.[90] Liability insurance on school traffic patrol programs may be carried by school districts in Idaho and Oregon.

The legality of the school patrol program in states without explicit laws on this subject has not been tested in the courts. Neither has any decision involving a street traffic patrol member, or other pupil who may have had injuries traceable to the operation of a safety patrol program, appeared in a court of record. In the event of litigation, the same rules of law governing negligent injuries to pupils in other school activities would apply. The school boards in most states are not liable because of governmental immunity. Where not relieved of liability by statute, school personnel supervising the school patrol program would be answerable for damages if negligence against them is proven.

Accidents arising out of school traffic patrol programs can be minimized if sound procedures for their operation are in force. Rules and regulations designed to provide safety for patrol members and the pupils they are protecting from traffic hazards are spelled out and recommended for adoption by school boards in *Policies and Practices for School Safety Patrols.*[91]

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[88] *Minnesota Statutes Annotated*, secs. 123.18(11) and 123.39(11).

[89] *Oregon Revised Statutes*, sec. 332.180.

[90] *Nevada Revised Statutes*, sec. 616.075.

[91] The latest revision (1958) was prepared with the co-operation of many organizations interested in school patrols, including the National Commission on Safety Education of the NEA, from which copies may be obtained.

These rules emphasize that "patrols should not be charged with the responsibility of directing vehicular traffic, nor should they be allowed to direct it." They recommend that the "patrol member should stand back of the curb—*not in the street*—and remind the children to wait behind him until he sees an adequate gap in traffic. When the gap occurs, he should step aside and motion for the children to cross the street in a group." The standards formulated for school safety patrols also include the following:

- **The school superintendent should assume the leadership in determining over-all school safety patrol policies**
- **Careful instruction and continuous supervision of the patrols by qualified and responsible school personnel are essential**
- **All patrol members should be properly instructed in their duties and given "on-the-job" training before being assigned**
- **Members of the safety patrols should be selected from the upper grades, preferably not below the fifth, on the basis of their leadership and reliability**
- **Patrol services should be voluntary and open to all who qualify; written approval of the parents should be secured.**

VI.

First Aid and Medical Treatment of Injured Pupils

If a pupil is injured, the teacher present should immediately call the school nurse or school physician if there is one. If no person with medical training is available, the proper action to be taken by the teacher depends upon the nature of the injury.

When immediate first-aid treatment seems indicated, the teacher is obligated by his relationship to the pupil to do the best he can. Such first-aid knowledge as is expected of laymen is required of teachers in these circumstances. Either lack of action or unwise action in an emergency may lead to a charge of negligence against the teacher. For instance, a physical education coach was found to have acted negligently when he permitted a student hurt in a football scrimmage to be carried off a playing field without the use of a stretcher, with the result that his injuries were aggravated.[1] Certain situations may require the teacher to administer first aid to an injured pupil. However, when no emergency exists, teachers should refrain from giving or prescribing medical treatment.

When the injured pupil does not need immediate attention, the teacher should await the attendance of a medically trained person. Teachers without medical training should not attempt to give medical treatment in such cases. If they do and leave the pupil in worse condition than they found him, they open themselves to a charge of negligence. To illustrate: Two teachers who held a pupil's infected hand in scalding water, causing blisters and permanent disfigurement, were held to be negligent.[2] One would hardly presume that the teachers were not well intentioned. But if the teachers thought that the pupil's infection was so serious that it could not wait until after school for attention, they should have called the parents or the pupil's family physician instead of undertaking treatment.

Failure to obtain immediate medical attention where there appears to be no immediate need for it does not render a teacher liable. This was the holding in a case where delayed medical attention was one act of alleged negligence against the teacher. The pupil had been struck

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[1] *Welch* v. *Dunsmuir Joint Union High School District*, 326 P. (2d) 633 (California, 1958).

[2] *Guerrieri* v. *Tyson*, 24 A. (2d) 468 (Pennsylvania, 1942).

in the abdomen during a touch football game. The teacher had him rest, and he was taken home two hours after the accident. The injury necessitated the removal of a kidney and spleen. Expert medical testimony showed that a layman could not reasonably have been expected to discover the nature of the injury, and that no injury resulted to the pupil because of the delay.[3]

In another case, a pupil dislocated his shoulder in football tackle practice. One of the teachers present snapped it back into place, placed the boy's arm in a sling, and sent him home. No negligence was found against the teachers and coaches of the team in the absence of a showing that there was an immediate pressing necessity for medical aid before the boy went home and that the decision to obtain medical aid could not await his parents' consideration.[4]

In a third instance, a physical education teacher walked a boy a short distance to the supervisor's office after he broke his arm jumping over a gym horse. There he was given first aid and then taken to a hospital. According to the parents, the boy should not have been directed to walk to the office after he was hurt. Holding that the teacher was not liable for negligence, the court stated that the steps taken to aid the injured boy were better than having him wait for a doctor to come to school.[5]

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[3] *Pirkle* v. *Oakdale Union Grammar School District*, 253 P. (2d) 1 (California, 1953).

[4] *Duda* v. *Gaines*, 79 A. (2d) 695 (New Jersey, 1951).

[5] *Sayers* v. *Ranger*, 83 A. (2d) 775 (New Jersey, 1951).

VII.

Insurance and Related Compensation for Injured Pupils

Insurance coverage is one means of helping injured pupils to recover medical and hospital expenses and pecuniary damages for bodily harm suffered in school accidents. It also serves to protect school personnel from financial loss when liability for their negligence is established in pupil-injury cases. Statutory provisions in each state determine the kind of insurance school districts may or must carry, types of risks to be insured against, and the dollar limits of the coverage. Distinctions should be drawn between two types of insurance: accident and liability.

Accident insurance is payable regardless of fault. Depending on the terms of the policy, accident insurance may cover pupils injured while traveling to and from school, during school attendance, or while engaged in certain school-connected activities of a regular curricular or extra-curricular nature. The distinctive feature of accident insurance is that it provides for compensation to the injured party because of the accident, not because of the negligence of the insured.

Under *liability insurance*, payments for damages to the injured pupil depend on the negligence of the insured, that is, for the negligence on the part of the school district or its personnel. No payments are made under liability insurance coverage for injuries suffered apart from negligence or other wrongful acts, unless the policy also contains an accident insurance provision.

School transportation insurance

The number of states requiring or specifically authorizing school districts to procure insurance has grown considerably in the past 15 years.

Most widespread are statutory provisions relating to insurance for school bus transportation. A 1961 survey [1] shows that 22 states

[1] Featherston, E. Glenn, and Murray, John B. *State Provisions for School Bus Insurance*. Circular No. 486 (Revised). Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, 1961. 7 p.

require school districts to carry liability insurance on publicly owned school buses—17 by statute and five by administrative regulation; by statute, 18 states specifically permit school boards to purchase liability insurance on their own buses, while in four other states, obtaining coverage is deemed permissible under the school board's implied powers. The legal status of school boards in Maine and Missouri as to the purchase of liability insurance on buses they own is not clearly defined. In only four states, Alabama, Mississippi, South Dakota, and Texas, are school boards forbidden by court decisions, attorney general opinions, or other rulings from insuring their school buses against liability; but Alabama and Mississippi otherwise provide for the payment of pupil transportation accident claims.

A number of pupil transportation accidents occur after the pupil has alighted from the bus. It is noteworthy, therefore, that there is judicial opinion to the effect that opening the bus door and allowing pupils to alight and walk in front of the bus and start across the highway when a truck was passing the bus is a risk within the liability insurance coverage limiting the liability insurer to damages for injuries arising out of the operation of the school bus.[2]

Statutory permission to carry liability insurance on school buses does not necessarily mean that accident insurance may also be purchased. Pupil accident and medical payments insurance coverage for injuries during transportation on publicly owned school buses is required by statute in four states and by administrative ruling in two others. Either by direct statutory authorization, or under their implied powers, school districts in 24 states may provide this coverage. In five states school districts may not carry insurance of this kind. In 15 states the legal authority of school districts to secure accident and medical payments insurance is not clear.[3]

In place of transportation insurance provisions, Alabama has established a board of adjustment to hear claims against the state and its subdivisions. The law specifically provides that this board shall hear and consider claims of public-school pupils resulting from accidents while being transported in a school bus, publicly owned or operated through contract, either to and from school or in connection with any school activity.[4] Claims must be filed with this board and cannot be adjudicated in the courts.[5] They are paid out of an annual state appropriation.

Mississippi has created an "Accident Contingent Fund" to which all school districts operating school buses must contribute. It is

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[2] *Earl W. Baker and Co.* v. *Lagaly,* 144 F. (2d) 344 (Oklahoma, 1944).

[3] Featherston, E. Glenn, and Murray, John B., *op. cit.*

[4] *Code of Alabama* (Recompiled 1958), Title 55, sec. 334.

[5] *Hawkins* v. *State Board of Adjustment,* 7 So. (2d) 775 (Alabama, 1942).

out of this fund that a pupil injured due to the negligent operation and maintenance of school buses can be compensated up to the limit of $5,000. The pupil has the right of action against the school district, and the school district may not plead the defense of governmental immunity.[6]

North Carolina provides for recovery of damages for injuries suffered in school bus accidents in two ways. The state board of education is authorized to set up a budget item out of which to reimburse parents of children injured while boarding, riding, or alighting from a school bus, or injured by a bus on school grounds. Payments are made for medical, hospital, surgical, or funeral expenses, up to a maximum of $600. This provision does not apply to activity buses. Claims are payable whether or not negligence is involved.[7] Another statute gives jurisdiction to the State Industrial Commission to hear and determine tort claims due to the negligent act of a school bus driver employed by a city, county, or administrative unit, whose salary is paid out of the nine-month state school fund. Awards are payable from state funds appropriated for this purpose. Commission awards in excess of $1,000 cannot be honored by the state board of education unless the local school board shall have contested or defended against the claim in good faith.[8]

Accident insurance

Besides the states that have statutory provisions for accident and medical payments insurance relating to school transporation, there are a few states that allow school districts to buy insurance to cover all pupils for all or most kinds of accidents. In addition, the legislatures of about one-fourth of the states have specifically authorized insurance coverage for pupils engaged in athletics; the premiums for this insurance may be paid out of public funds in some states, but in others the cost may be defrayed only out of funds derived from athletic activities.

In recent years a popular type of group coverage made available to pupils through the schools is the student accident insurance policy. Parents pay the premium if they wish their children to be covered. These policies insure children against accidental bodily injury or death incurred in going to and from school, while they are in school, or during participation in school-related activities. What coverage the policies include or exclude and how much is collectible varies with the terms of the insurance contract. A few courts have been called to interpret the clauses in these policies when reimbursement for

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[6] *Mississippi Code 1942 Annotated* (Recompiled 1952), sec. 6336-19.

[7] *General Statutes of North Carolina*, sec. 115-193.

[8] *Ibid.*, sec. 143-300.1.

damages became a disputed issue between the insurance company and insured pupil. To illustrate: A question arose as to whether a pupil who deviated somewhat from his route home from school to accompany a friend on an errand could collect damages for injuries he sustained when a bicycle he was riding collided with a car. The particular policy contained a clause covering pupils traveling directly between home and school within an hour from the start and close of school. Recovery under the policy was allowed, the court stating that in view of the purpose of the policy, and the human nature of children, the reasonable, practical, and sensible interpretation of the phrase "directly home from school" permitted a reasonable deviation.[9]

Liability insurance

Apart from statutory provisions for liability insurance to cover the operation of school buses, the California statute requires [10] and the statutes in at least 14 other states expressly authorize the school districts to purchase with public funds liability insurance to protect officers or employees against damages due to negligent acts or omissions while performing their school duties. These states are: Connecticut, Illinois, Massachusetts, Minnesota, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oregon, Pennsylvania, South Dakota, Washington, and Wyoming.[11]

In five other states, Arkansas, Idaho, Iowa, North Dakota, and Vermont, statutory provisions having reference to liability insurance for government units, may possibly have application to school districts also.[12]

Waiver of governmental immmunity

In those states where school districts are empowered or required to carry liability insurance, provisions in the law differ with respect

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[9] *Dzurko* v. *Pilot Life Insurance Company*, 171 A. (2d) 885 (Pennsylvania, 1961).

[10] *California Education Code*, sec. 1044.

[11] *Connecticut General Statutes Annotated*, Revision of 1958, sec. 10-236; *Illinois School Code of 1961*, Chapter 122, sec. 10-22.3; *Annotated Laws of Massachusetts*, Chapter 40, sec. 40:5(1); *Minnesota Statutes Annotated*, secs. 123.20, 123.41, 465.62; *New Hampshire Revised Statutes Annotated*, secs. 194:3, 412:3; *New Jersey Statutes Annotated*, sec. 18:5-50-4; *New Mexico Statutes 1953 Annotated*, secs. 5-6-18—5-6-22; *New York Education Law*, sec. 3023; *General Statutes of North Carolina*, sec. 115-53; *Oregon Revised Statutes*, sec. 332.180; *Purdon's Pennsylvania Statutes Annotated*, Title 24, sec. 7-774; *South Dakota Code of 1939*, 1960 Supplement, sec. 15.3815; *Revised Code of Washington*, sec. 28.76.410; *Wyoming Statutes 1957*, secs. 21-158, 21-159.

[12] *Arkansas Statutes 1947 Annotated* (1957 Replacement Volume), secs. 66-3240—66-3242; *Idaho Code*, secs. 41-3304 to 41-3306; *Iowa Code Annotated*, sec. 517A.1; *North Dakota Century Code*, sec. 40-43-07; *Vermont Statutes Annotated*, Title 29, secs. 1401-1406.

to the waiver of governmental immunity. Some statutes expressly provide that the district's immunity is not waived, some are silent, and still others are quite specific that the immunity is waived to the extent of the insurance obtained. A few of the state laws make it clear that the insurance company is the party to be sued, or that the insurer may not assert the defense of governmental immunity.

Does a school district waive its governmental immunity from liability or from suit when it procures liability insurance? This question has been litigated in a number of jurisdictions. Unless there is express waiver by statute, it is the prevailing judicial view that the existence of insurance coverage does not affect the district's immunity from tort liability.[13] Thus, unless the statutes contain a declaration of legislative policy as to the status of the school district in this respect, most courts will not accept a suit against an immune school district, even if only to determine the amount of damages the insurance company is to pay. This difficulty may be overcome by writing into the policy a provision that the claimant may maintain a direct action against the insurance company, and that the defense of governmental immunity is not to be asserted by the insurer. The more desirable method is to change the statute to permit suits against school districts where there is insurance coverage.

A few courts, notably in Illinois, Kentucky, Oregon, and Tennessee, have held that when insurance coverage has been purchased, the school district's immunity from tort liability is removed to the extent of the policy. The Oregon court has indicated that the school district is the proper defendant.[14] The reasoning of this judicial minority is that the primary purpose of the immunity doctrine—to protect public funds—no longer exists when insurance protection is secured.

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[13] *Livingston* v. *New Mexico College of A. and M. Arts*, 328 P. (2d) 79 (New Mexico, 1958); *Supler* v. *School District of North Franklin Township*, 182 A. (2d) 535 (Pennsylvania, 1962).

[14] *Vendrell* v. *School District No. 26C Malheur County*, 360 P. (2d) 282 (Oregon, 1931).

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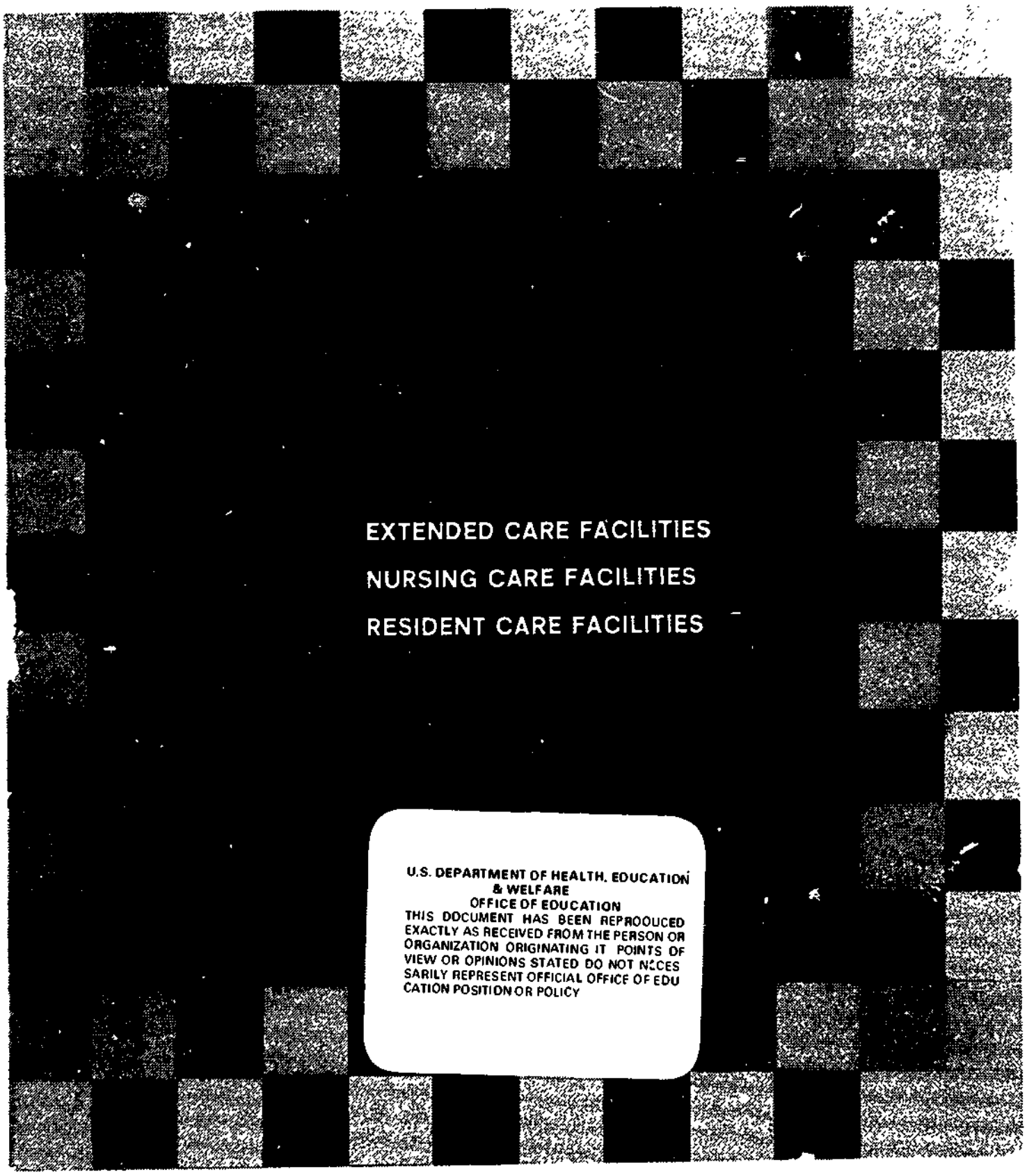

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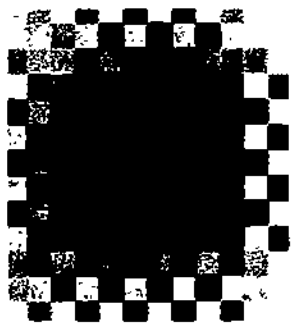

Introduction

Consideration of principles essential for a good nursing service must begin with the facility of which the nursing service is an important and integral part. The philosophy and objectives, activities, organizational structure, and administrative policies of the total facility are reflected in the nature and scope of its nursing service.[1] The authority, responsibility, and accountability for the activities of the nursing service are vested in the director of nursing services.[2] In order for the nursing service to function best, therefore, the director of the service or a delegated representative should be a member of those groups that, using democratic processes, determine the policies of the total facility and the plans that affect patient care, administration, and personnel.

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[1] American Hospital Association, *Annual Report* (1964). "Principles of Organization, Management, and Community Relations for Hospitals."

[2] American Nurses' Association, *Statement of Functions, Standards, and Qualifications for the Director of Nursing Service.*

All services share, in some measure, in the activities through which all of the objectives of the facility are accomplished. Each service, however, has specific functions for which it has major responsibility. The specific function of the nursing service is to provide all nursing care and to participate in the coordination of patient care activities.

The National League for Nursing interprets nursing care as that which meets the total nursing care needs of patients, whether these be diagnostic, preventive, supportive, therapeutic, or restorative. The League recognizes the patient as an individual with a distinct personality and corresponding needs which are influenced by his place within the family and the community, and who must be helped to make an optimal adjustment to his condition and his social environment. This concept underscores the involvement expected of the nursing service in providing continuity of nursing care from patients as they move from hospital to home.

In view of the fast changing trends in society resulting from the development of new knowledge, the nursing service must be ready always to adapt to the new needs. Principles must also be subject to continuing study and periodic updating. Many nursing services already are performing at or beyond the level expected in the principles contained in this guide.

These principles then are intended as general guides, and they may be applied in many ways. No one principle stands alone. All are interrelated and are, in addition, related to the principles affecting patient care developed by other appropriate health organizations or by state and municipal regulatory agencies.

Following are some suggestions of ways in which these principles may be used effectively:

1. As a tool for self-evaluation and program improvement by directors of nursing services.
2. As an informative and interpretive device for nursing service and other facility personnel.
3. As a guide for community groups, governmental agencies, and others interested in supporting safe and effective nursing care of patients.

*Principles for Assessing Nursing Service In a Long Term Facility**

1. **The nursing service has definitive statements of philosophy and objectives.**

2. **The nursing service has an established plan of organization consistent with the objectives of nursing care and the overall facility organization.**

3. **The nursing service develops and implements written administrative policies.**

4. **The nursing service develops and implements policies for its personnel.**

5. **The nursing service develops and implements the program for providing nursing care.**

6. **The nursing service develops a budget for its operation.**

7. **The nursing service estimates its needs and operates a system for control and use of equipment, facilities, and supplies.**

8. **The nursing service develops and maintains an effective system of clinical and administrative records and reports.**

9. **The nursing service involves itself in a program of staff development for all personnel.**

10. **The nursing service conducts a systematic appraisal program by which it evaluates its progress toward attainment of established objectives.**

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*Extended Care Facility, Nursing Care Facility, Resident Care Facility.

The Principles and Their Interpretation

1.

The nursing service has definitive statements of philosophy and objectives.

1. There is a written statement of the philosophy and objectives of the type of care that the facility proposes to render.[1]

2. The philosophy expresses the intent to give the kind of nursing care which is safe, effective, and efficiently rendered.[1]

3. The philosophy of nursing recognizes the importance of integrating both the plan of medical care and the plan of nursing care for the patient's total well-being.[1]

4. There is recognition that achievement of quality care depends on the employment of qualified, motivated personnel.[1]

5. The philosophy, objectives and short term and long range plans are understood by the personnel concerned and are periodically evaluated and revised in terms of changing nursing care requirements.

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1. From guidelines prepared by New York State Department of Health, Division of Hospital Affairs, Office of Hospital Nursing Services, for use with the Department's Nursing Home Operation Code, Subchapter D.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

2.

The nursing service has an established plan of organization consistent with the objectives of nursing care and the overall facility organization.

1. The written organization plan is current and defines the responsibility, authority, and relationships of all positions within the nursing service.

2. The organization plan defines intra-service relationships.

3. The organization plan defines relationships with other related agencies.

4. The organization plan sets forth a system through which coordinated planning for meeting patient care needs can be achieved.

5. The organization plan establishes a system for communicating written or verbal information.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

3.

The nursing service develops and implements written administrative policies.

1. These policies clarify for nursing service the overall facility policies in which nursing shares responsibility.

2. The policies establish direction for personnel who are responsible and accountable for management of nursing care and nursing personnel.

"es	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

4.

The nursing service develops and implements policies for its personnel.

1. Policies for nursing personnel are consistent with overall facility personnel policies.

2. Staffing requirements are determined and policies established for the recruitment, selection, and placement of qualified personnel.

3. Job requirements and specifications are defined in writing.

4. Written procedures are established for personnel appointment, counseling, appraisal, promotion, and separation from employment.

5. A confidential file is maintained for each employee from initial contact through separation from employment.

6. Provision is made for health, welfare, and safety programs in the interest of each employee.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

5.

The nursing service develops and implements the program for providing nursing care.

1. Written policies and procedures are established to implement the program of nursing care.

2. The registered professional nurse, in cooperation with other members of the nursing staff, develops, implements, and evaluates a written plan of care for each patient. The plan of care is kept current with the patient's changing nursing needs.

3. Nursing care plans support the medical care plans and reflect the preventive, diagnostic, therapeutic, supportive, and restorative care needed by the patient.

4. The written nursing care plan is reflected in the patient's clinical record which gives evidence of the nursing care provided and the progress made by the patient.

5. The registered professional nurse determines nursing care requirements, assumes the responsibilities requiring professional skill and judgment, and assigns and supervises the care which can be safely performed by the licensed practical/vocational nurse and the activities which can be carried out by other personnel.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

6.

The nursing service develops a budget for its operation.

1. The budget is compatible with the defined objectives and organization plans.

2. The budget is developed by cooperative effort of the nursing administrative personnel.

3. The budget for nursing service is coordinated with the total budget of the facility.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

7.

The nursing service estimates its needs and operates a system for control and use of equipment, facilities, and supplies.

1. Policies and plans are in effect for optimum use of facilities in support of patient care.

2. Standards and specifications for type, quantity, and use of all equipment and supplies have been prepared by appropriate personnel.

3. A program for replacement of supplies and equipment needed for effective operation is established.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

8.

The nursing service develops and maintains an effective system of clinical and administrative records and reports.

1. There is a system for reporting progress of patients and nursing activities and accomplishments to the administration and the medical staff of the facility.

2. There is a system for intra- and inter-service reporting of the progress of patients, activities, and accomplishments at established intervals by each level of nursing administration to the appropriate superior.

3. There is a system for reporting accidents and incidents involving patients, personnel, and visitors.

4. There is a system for recording accurate and objective observations of patients in the clinical record.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

9.

The nursing service involves itself in a program of staff development for all personnel.

1. There is a written plan for an ongoing staff development program.

2. Appropriate staff representatives participate in planning, conducting, evaluating, and revising the staff development program.

3. There is a plan for participation in appropriate patient care discussions and educational programs.

4. There is a plan for participation in community activities and professional organizations.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

10.

The nursing service conducts a systematic appraisal program by which it evaluates its progress toward attainment of established objectives.

1. There is a plan for evaluation of nursing care by persons providing, and by patients receiving, nursing care.

2. Nursing personnel participate with other members of the patient care team in evaluating the patient care and planning for its improvement.

3. Administrative personnel of nursing service make frequent evaluations of patient care being given.

4. Administrative and clinical records and reports are utilized as tools to evaluate nursing care.

5. The nursing director or delegated representative consults at regular intervals with other service and administrative personnel to evaluate progress toward attainment of established objectives.

6. Evaluation data are used to forecast, modify, and develop objectives.

Yes	No	If Yes, Indicate Evidences If No, Why not?	Future Plans

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Pub Date - Jun68 9p.

*OCCUPATIONAL GUIDANCE; *OCCUPATIONAL INFORMATION; CAREER PLANNING; DEMONSTRATION PROJECTS; PROGRAM EFFECTIVENESS; MICROFILM; COMMUNITY COLLEGES; *GUIDANCE SERVICES; *INFORMATION DISSEMINATION; OCCUPATIONS; SECONDARY SCHOOLS; CAREER OPPORTUNITIES; *PROGRAM EVALUATION; EMPLOYMENT OPPORTUNITIES; LABOR MARKET; QUESTIONNAIRES
NASSAU COUNTY; SUFFOLK COUNTY; NEW YORK METROPOLITAN AREA

"Vocational Guidance in Education. A Demonstration System of Occupational Information for Career Guidance" is summarized. See abstract of ED 024 838 or VT 007 626 (ARM Fall 1969) for the complete report. (CH)

VT 008 043

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VEA PROJECT No.68-6-79

VOGUE
VOCATIONAL GUIDANCE IN EDUCATION

A DEMONSTRATION SYSTEM OF OCCUPATIONAL INFORMATION FOR CAREER GUIDANCE

Board of Cooperative Educational Services,
Nassau County 131 Jericho Turnpike,
Jericho, New York 11753

VT 008 043

SUMMARY

The University of the State of New York
The State Education Department
Bureau of Occupational Education Research

[redacted]

THE UNIVERSITY OF THE STATE OF NEW YORK

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With years when terms expire

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Director, Division of Evaluation
Alan G. Robertson

Chief, Bureau of Occupational Education Research
Louis A. Cohen

FOREWORD

Project VOGUE gathered and disseminated occupational information primarily to demonstrate and test the adequacy of appropriate material pertaining to occupations on the local scene. Through the cooperation of the Department of Labor, Division of Employment, 200 occupational guides were prepared, published, and used by students in twelve educational institutions.

The research findings as reported by counselors, teachers, and students showed that the guides were well received and considered superior to the average run of occupational information found in most occupational information files.

The final report is available on loan from the Bureau of Occupational Education Research, State Education Department, Albany, New York 12224.

Robert S. Seckendorf
Assistant Commissioner for
Occupational Education

Carl E. Wedekind
Director
Division of Research

SUMMARY

The purpose of this project was to test the effectiveness of a cooperative arrangement between the New York State Education Department and the New York State Employment Service, undertaken to produce and to disseminate up-to-date information about local-entry occupations for use in the career guidance of students. This sampling was taken of high schools and two-year colleges in Nassau and Suffolk Counties of the New York metropolitan area.

Four-page descriptions of 200 entry occupations were prepared by the State Employment Service and published by the Nassau County Board of Cooperative Educational Services in two forms: (1) a loose-leaf binder and (2) a deck of microfilm aperture cards.

Three comprehensive high schools, three academic high schools, three area vocational-technical programs, and three two-year colleges were supplied with the 200 occupational guides. Four of the schools received the guides in the form of printed loose-leaf binders which were given to each counselor. Four schools received a microfilm reader, 200 aperture cards, and twenty-five printed copies of each occupational guide to distribute to students who requested them. Four schools received a microfilm reader-printer and 200 aperture cards. With the press of a button the reader-printer could produce printed copies of the guides.

Counselors and teachers were invited to use the guides in their counseling and teaching and to encourage students to refer to the guides for occupational information. The guides were used and evaluated

according to a predetermined plan during an experimental period of two months.

In general the guides were well received by counselors, teachers, and students and were considered superior to the average run of occupational information found in most occupational information files. The loose-leaf binder of printed guides and the reader-printer with its aperture cards were about equally popular. The reader was used less than either the loose-leaf binder or reader-printer.

Ninety-two percent of the students who used the guides said they would recommend the guides to other students; 75 percent wanted to keep copies of the guides they had read.

In the comprehensive and academic high schools, most of the students who used the guides did so at the suggestion of their counselors. In the area vocational-technical programs most such referrals came from the classroom instructors. In the two-year colleges, most of the suggestions came from fellow students. The college students said they seldom went to see their counselors except on academic problems; they thought that their instructors were more competent than their counselors to help them with occupational information.

Although 48 percent of the students said they planned to make appointments with their counselors to discuss what they had read in the occupational guides, a later followup of a small sample of them revealed that only 3 percent had done so.

Generally, the counselors in the twelve pilot schools reported that they referred the students to the guides and had little followup with them after they had read the guides. The teacher-coordinators, however,

generally reported that they used the occupational guides as a basis for instruction in their daily classes and in individual contacts with their students.

In two of the three colleges, with a combined enrollment of 7,666 students and 18 counselors, the occupational guides were used by only 16 students.

In proportion to enrollment, students in area vocational-technical education programs made twice as much use of the guides as did the students in either academic or comprehensive high schools, and 13 times as much use as the students in two-year colleges.

The twelve pilot schools had a total enrollment of 27,823. Of these, 1,282 students (approximately 5 percent) read the occupational guides at least once during the experimental period of two months. Without comparable figures on how many students use other sources of occupational information during a comparable period, it is difficult to judge whether or not 5 percent indicates progress.

As a followup to Project VOGUE, the New York State Bureau of Guidance will undertake a program of disseminating the occupational guides during 1968-1969 to as many schools as possible in Nassau and Suffolk Counties. The Division of Employment will be requested to update the guides and add new occupational titles as needed.

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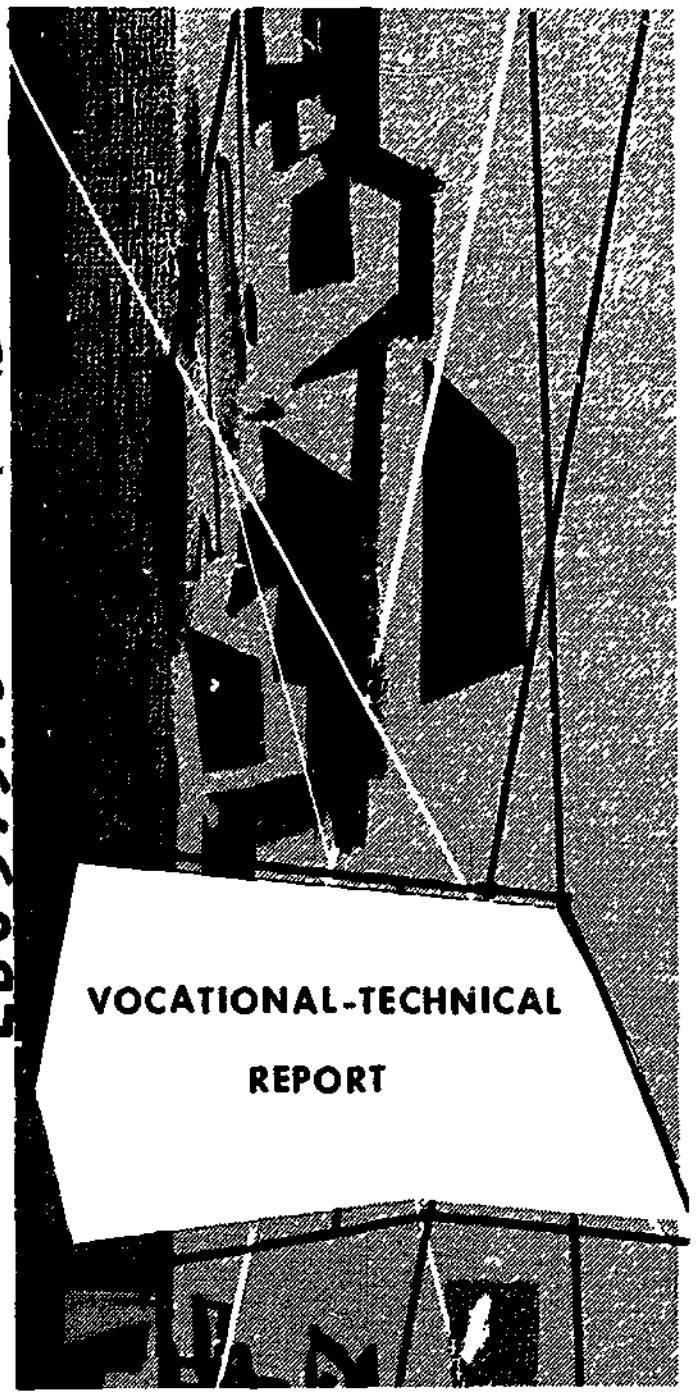

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7579 International Labour Office
MANPOWER ADJUSTMENT PROGRAMMES: II. SWEDEN, USSR, UNITED STATES. Geneva, 1967.
190 p. Labour and Automation Bulletin No. 6.
$2.50.
Includes analysis of work adjustment--training programs for women, the elderly and the disabled. Also discusses aid to the unemployed and research activities.

2622 Job Corps - Office of Economic Opportunity
DIRECTORY: JOB CORPS CENTERS. Washington, D.C., 1966.
Unpaged.

6503 Jones, Lamar B.
EDUCATION AND TRAINING OF MEXICAN AMERICANS: PROBLEMS AND PROSPECTS. Baton Rouge, Louisiana State University, 1967.
17 p. Free.

6418 Kruger, Daniel H.
TRENDS IN SERVICE EMPLOYMENT: IMPLICATIONS FOR THE EDUCABLE MENTALLY RETARDED. (Reprinted from Exceptional Children, Vol. 30, No. 4, Dec., 1963, p. 167-172).

6764 Ketterling, Marvin E., ed.
GROUP COUNSELING WITH THE DISADVANTAGED ADOLESCENT. Milwaukee, Milwaukee Vocational, Technical and Adult Schools, 1967.
130 p. Free. Project No. 70-312.
Project analyzing the effectiveness of group counseling on behavioral changes of adolescent males.

7588 Klein, William
NEW CAREERS: MANUAL OF ORGANIZATION AND DEVELOPMENT, by W. Klein and others. Washington, D.C., University Research Corporation, 1968.
15 p. Free.
Discusses overall design, recruitment selection of trainees, job development, training programs, techniques and curriculum as well as training of instructors and supervisors.

6387 Kruger, Daniel H.
DEVELOPING JOBS FOR DISADVANTAGED, by D. H. Kruger and A. W. Saltzman. Lansing, Michigan, Economic Opportunity Office, 1966.
12 p. Free.

7599 Levitan, Sar A.
IS THE POVERTY WAS "DIFFERENT"? (Reprint from Dimensions of Manpower Policy, 1966, pp. 43-60).
Survey of the various elements of the EOA, the accomplishments of the various approaches to eliminate poverty and estimates of successes.

7626 Lloyd, G. A.
THE HUMAN SIDE OF INDUSTRY. (In Vocational Guidance Quarterly, Vol. 16, No. 4, June, 1968, pp. 301-05).
Calls for realistic look at cities' ghettos, by business men.

7627 Long, Huey B.
EQUAL OPPORTUNITY EMPLOYMENT PRACTICES FOR TRAINING DIRECTORS. (In Training and Development Journal, Vol. 22, No. 7, July, 1968, pp. 44-8).
As increasing numbers of training programs are opened for disadvantaged Negroes and other groups, the training problems faced by the instructor are apt to be different from those encountered in an all-white group. This article suggests some of the problems and possible solutions to them that can occur in racially mixed training groups. One suggestion is that a "buddy" system where a Negro trainee is matched with a white worker for the training period may have [illegible] results.

6287 Mangum, Garth L.
VOCATIONAL REHABILITATION AND FEDERAL MANPOWER POLICY, by G. L. Mangum and L. M. Glenn. Ann Arbor, University of Michigan. and Wayne State University, I.I.R., 1967.
57 p. $1.25. Policy Paper No. 4.
A paper on vocational rehabilitation and federal manpower policy and evaluation. Conclusion emphasizes economic benefits of rehabilitation of disadvantaged people and individualized approach to the delivery of manpower services.

6858 Marshall, F. Ray
REMEDIES FOR DISCRIMINATION IN APPRENTICESHIP PROGRAMS. (Xeroxed from Industrial Relations, University of California, May, 1967, Vol. 6, No. 3, pp. 303-320).
Reviews the effectiveness of remedies for discrimination in apprenticeship programs and makes some suggestions based on 1966 studies for the U.S. Dept. of Labor on Negro participation in apprenticeship programs.

6497 Martin, John M.
LOWER-CLASS DELINQUENCY AND WORK PROGRAMS. New York, New York University - Center for Study of Unemployed Youth, 1966.
26 p. $1.55. Training Series.
A paper discussing problems and characteristics of delinquency in the lower classes with recommendations for rehabilitation.

7634 McCarthy, Matthew
MANPOWER TRAINING FOR YOUTH: A BLUE-CHIP INVESTMENT. (In Illinois Vocational Progress, Vol. 25, No. 2, Nov., 1967, p. 24-8).
Shows cost-benefit relationship of training the unemployed youth and dropouts.

6758 McGraw-Hill, Inc.
BUSINESS AND THE URBAN CRISES: A MCGRAW-HILL SPECIAL REPORT, New York, 1968.
16 p. Free.
Explains the types of cooperation needed in industry to help the disadvantaged; gives examples of present instances of cooperation.

5999 McMillion, Martin B.
RELATIONSHIP OF SOCIO-ECONOMIC POSITION TO THE CONNOTATIVE MEANING OF CERTAIN WORDS USED IN VOCATIONAL AGRICULTURE. (Ed.D. Thesis), University of Illinois Library, Urbana, Illinois, 1966.
135 p.
Study of high school students in all four years of vocational agriculture, illustrating teachers perception of students' interpretation of words or phrases.

6856 McPherron, Donald R.
JOBS FOR THE DISADVANTAGED - HOW? (Xeroxed from Public Personnel Review, July, 1967, Vol. 28, No. 3, pp. 165-168).
Advocates merit system employment of the disadvantaged. Recommends job redesign to provide job opportunities for disadvantaged.

6818 Miller, Maurine R.
A PRE-VOCATIONAL TRAINING PROGRAM FOR HARD-CORE HANDICAPPED. (Xeroxed from Community Mental Health Journal, Vol. 2, No. 2, Summer, 1966, pp. 170-1).
Indiana Goodwill Industries became interested in the number of handicapped people who could be taught work habits and work skills if the training period were long enough. This article explains some of the methods used for the program and the results of the program.

7639 Minneapolis - Economic Opportunity Committee
YOUTH DEVELOPMENT PROJECT: RESEARCH BULLETIN NO. 10. Final report and summary. Minneapolis, 1966.
4 p.
Summary of the activities of the Youth Development Project, active 1964-66, in Minneapolis.

7640 Moritz, Paul W.
THE YMCA AND POVERTY'S CHILDREN. National Council of YMCA, New York, 1966.
35 p. Free.
Study of the poor and what the YMCA is doing to try to help the poverty situation in the U.S.

6760 National Committee on Employment of Youth
GETTING HIRED, GETTING TRAINED: A STUDY OF INDUSTRY PRACTICES AND POLICIES. U.S. Dept. of H.E.W., 1965.
112 p.
AB in Poverty and Human Resources Abstracts, Vol. 2, No. 6, November-December, 1967, p. 50.
Concerned mainly with youth.

6899 New Detroit Committee
PROGRESS REPORT. Detroit, Michigan, Metropolitan Fund, Inc., 1968.
160 p. Free.
New Detroit committee efforts to solve urban crisis. Book II, "Endeavors and Guidelines" lists 8 areas of concentration: 1) housing, 2) education and training, 3) employment, 4) support of community organizations, 5) economic development, 6) youth, recreational and cultural affairs, 7) community services and 8) community attitudes.

6905 New Generation (Formerly American Child)
THE JOBLESS AND THE JOB AHEAD. (Whole issue of New Generation, Vol. 50, No. 1, Winter, 1968, pp. 1-36).
Series of six articles surveying the labor market and unemployment in regard to the urban crisis. Emphasis on: 1) rates of unemployment--though decreasing aren't an accurate measure of job scene, 2) segregation in job opportunities, 3) unemployment and the "over-educated" worker (realistic job requirements), 4) malemployment: the problem of underpaid and dirty work, 5) inventory of manpower programs and 6) discussion of requirements needed in valid workable program.

6538 New York University - Center for Study of Unemployed Youth
WORKSHOP ON JOB DEVELOPMENT FOR DISADVANTAGED YOUTH: SUMMARY OF PROCEEDINGS. New York, 1967.
102 p. $1.25-series. Manpower Training Series.
Comprehensive review of job development for the disadvantaged youth, relation to labor market, discrimination, and future plans.

6474 New York University - Center for Study of Unemployed Youth
WORKSHOP ON IMPACT OF A TIGHTENING LABOR MARKET ON EMPLOYABILITY AND EMPLOYMENT OF DISADVANTAGED YOUTH. New York, 1966.
32 p. 65¢. Training Series.

6773 New York University - Center for Study of Unemployed Youth
WORKSHOP ON WORK PREPARATION AND JOB PLACEMENT SERVICES IN YOUTH PROBATION PROCESS: Summary of Proceedings. New York, 1967.
74 p. Free. Manpower Training Series.

6390 Nixon R. A.
LEGISLATIVE DIMENSIONS OF NEW CAREERS PROGRAM. New York, New York University, Center for Unemployed Youth, 1967.
31 p. $1.00, Manpower Training Series.
Presents legislation directed at attacking the problems of unemployment.

7525 North Dakota, State Board for Vocational Education
TRAINING PLAN, FORT TOTTEN RESERVATION: HOUSE BUILDER. Bismarck, 1967.
8 p, Free.
Very brief outline of the training plan of housebuilding for American Indians.

6391 Northern Arizona University
NAVAJO REHABILITATION PROJECT: TECHNICAL REPORTS, 3,4,6,7,8,9. Flagstaff, 1967.
Various paging. Free.
A series of reports describing the problems and procedures of the rehabilitation project.

6492 Paniagua, Lita
NEW CAREERS IN INDUSTRY. New York, N.Y.U. - New Careers Training Laboratory, 1967.
15 p. Mimeo. Free.
A paper presenting training programs for the under-educated unemployed.

7568 Parker, Glenn M.
CAN NEW CAREERS BE CREATED FOR THE POOR? (Xeroxed from Training and Development Journal, Vol. 21, No. 10, October, 1967, pp. 47-52).
Argues that it is necessary to remove, for the poor and jobless, traditional requirements and approaches to jobs. Surveys various approaches to establishing "new careers" for non-professionals.

7602 Peterson, Ronald A.
REHABILITATION OF THE CULTURALLY DIFFERENT: A MODEL OF THE INDIVIDUAL IN CULTURAL CHANGE. (In Personnel and Guidance Journal, Vol. 45, No. 10, June, 1967, pp. 1001-07).
Discussion of the problem of cultural transition and the amount of guidance needed for vocational rehabilitation.

6972 Philco-Ford Corporation
MADERA EMPLOYMENT TRAINING CENTER (METC). Madera, California, 1967.
3 p. Pamphlet. Free.
Newsletter of activities, goals of METC.

3253 Phipps, Lloyd J.
A STUDY IN COMMUNICATION BETWEEN HIGH SCHOOL TEACHERS OF VOCATIONAL AGRICULTURE AND SOCIO-ECONOMICALLY DISADVANTAGED YOUTH BY USE OF SEMANTIC DIFFERENTIAL. (Abstract in American Vocational Journal, Vol. 41, No. 5, May, 1966, p. 35).

6691 Pittsburgh Public Schools
NEIGHBORHOOD YOUTH CORPS--PROGRESS REPORT AND HOLDING POWER STUDY. Pittsburgh, 1966-67.
34 & 11 p. respectively. Free.
Attempts to determine whether Neighborhood Youth Corps Programs in the Pittsburgh Public Schools is making possible the continuation of the education of its enrollees, and thereby fulfilling in part the purpose for which the Corps was established. The dropout rate for NYC enrollees was compared with the dropout rate for non-NYC students in each of the 16 high schools. The 3 vocational-technical high schools were included.

5790 Prentice-Hall Editorial Staff
EDUCATOR'S COMPLETE ERIC HANDBOOK. Englewood Cliffs, New Jersey, 1967.
862 p. $29.95.
A handbook of information about the most significant research reports on the education of culturally deprived, or otherwise disadvantaged children from 23 communities: 1700 + abstracts of studies concerning ability grouping, adjustment problems, instructional materials, and communicative skills.

6429 President's Committee on Employment of Handicapped
EMPLOYMENT ASSISTANCE FOR THE HANDICAPPED: DIRECTORY OF PROGRAMS. Washington, D.C., 1967.
37 p. Free.

7607 Public Aid in Illinois
A JOB MAKES ALL THE DIFFERENCE. (Clipped from Public Aid in Illinois, Vol. 35, No. 6, June, 1968, pp. 15-18).
Case study of women who "made good" through training received with the help of the Department of Public Aid.

7608 Public Aid in Illinois
POWER OF THE PAYCHECK. (Clipped from Public Aid in Illinois, Vol. 35, No. 6, June, 1968, pp. 19-23).
Describes the operation of Chicago College of Computer Sciences, an organization for training recepients of ADC or GA to be keypunch operators.

6733 Quigley, Stephen P., ed.
THE VOCATIONAL REHABILITATION OF DEAF PEOPLE: *WORKSHOP REPORT*. Washington, D.C., U.S. Dept. of H.E.W., 1967.
133 p. Free.

6739 Randolph, H. Helen
URBAN EDUCATION BIBLIOGRAPHY: ANNOTATED LISTING. New York, Center for Urban Education, 1968.
98 p. Free.

7611 Review of Educational Research
EDUCATION OF EXCEPTIONAL CHILDREN. (Whole Issue, Vol. XXVI, No. 1, Feb., 1966, p. 1-202). Washington, American Educational Research Association, 1965.
Review of research done in education of the physically and emotionally handicapped. Includes articles on the deaf, mentally retarded and blind as well as on training of counselors.

6840 Rochester Bureau of Municipal Research, Inc.
A STUDY OF UNEMPLOYED IN ROCHESTER AND MONROE COUNTY, N.Y. Rochester, N.Y., 1967.
106 p. + appendices. Free.
In 1965, the Rochester Bureau of Municipal Research began a comprehensive study of the characteristics of the unemployed population in Rochester and Monroe County to provide base-line data for guidance of remedial programs.

6697 Rusalem, Herbert
AN INTEGRATED, COMMUNITY-ORIENTED, VOCATIONAL REHABILITATION APPROACH TO THE VOCATIONAL PROBLEMS OF THE DISABLED INDIVIDUAL 60 YEARS OF AGE AND OLDER. 3 Volumes. Project RD-903-P.
Vol. 1 - REHABILITATING THE OLDER DISABLED WORKER: REPORT OF PROJECT EXPERIENCE. 89 p. Vol. 2 - VOCATIONAL ADJUSTMENT OF OLDER DISABLED WORKER: SELECTIVE REVIEW OF RECENT LITERATURE. 52 p. Vol. 3 - VOCATIONAL REHABILITATION OF NEIGHBORHOOD-BOUND OLDER DISABLED PERSONS: PROGRAM GUIDE. 87 p. New York, Federation Employment and Guidance Service, 1967.
Free.

6344 Rutledge, Aaron L.
NINETEEN NEGRO MEN, by A. L. Rutledge & G. Z. Gass. San Francisco, Jossey-Bass, Inc., 1967.
109 p. $5.50.
A study of hard-core unemployed Negro men involved in a practical nursing training program.

6896 St. Mary's Dominican College
SECRETARIAL TRAINING WITH SPEECH IMPROVEMENT: Experimental and Demonstration Project. New Orleans, Louisiana, 1966.
150 p. Free. OMPER Contract No. 82-17-75.
Also "Experiment in Employability," by A. R. Geoffray: mimeo, 7 p., Descriptive outline, n.d.
Reports on training or retraining of female disadvantaged workers for entrance into the business world. Emphasizes speech improvement as well as skill development.

6778 Schasre, Robert
READINGS IN REACHING THE DISADVANTAGED CHILD, by R. Schasre and J. Wallach. Los Angeles, University of Southern California - Youth Studies Center, 1965.
107 p. Training Series for Social Agencies, Vol. 5. $2.50.
The last chapter, "Issues in Educating the Culturally Disadvantaged," has a discussion of important issues for the dropouts and disadvantaged children.

7651 School Guidance Worker
HALF A MILLION NEED CAREERS GUIDANCE. (In School Guidance Worker, Vol. 22, No. 8, May, 1967, pp. 5-8).
Case study of a high school dropout and the problems he faces.

7652 School Guidance Worker
24,000 OPPORTUNITIES...THROUGH STATE SUMMER JOB PROGRAM. (In School Guidance Worker, Vol. 22, No. 8, May, 1967, pp. 22-25).
Description of cases where summer jobs in New York state helped young people through financial means and by helping them decide on future job areas.

6305 School Shop
CLEVELAND TO LAUNCH "SCHOOL-FACTORY" PROJECT. (In School Shop, Vol. 27, No. 7, March, 1968, pp. 52-3).
Article describes a pilot project to train inner-city youth with job entry skills.

6683 Schreiber, Daniel, ed.
PROFILE OF THE SCHOOL DROPOUT. New York, Random House, 1967.
393 p. $7.95.
Collection of papers discussing the ability of schools in urban America to confront such problems as the socially damaged child, poverty, community apathy and the life-problems of the dropout.

6797 Schucat, Theodor
VOCATIONAL EDUCATION AMENDMENTS OF 1968. (From Washington report in School Shop, Vol. 27, No. 10, June, 1968, p. 62, 66, 68 & 70).
The Vocational Education Amendments of 1968 consolidate previous legislation and stress distribution to states, home economics education and the disadvantaged. This bill replaces the PLEA proposal.

7655 Scientific, Engineering and Technical Manpower Comments
HARD-CORE UNEMPLOYED. (In Scientific, Engineering and Technical Manpower Comments, Vol. 5, No. 6, June, 1968, pp. 30-31).
Expresses the opinion that a large number of the hard-core unemployed are 'bums' being supported by the government.

7663 Slaisman, Donald
CIVIL RIGHTS IN THE URBAN CRISIS. Washington, D.C., U.S. Department of Labor, 1967.
28 p. Free. Seminar on Manpower Policy and Program.
Concerned with the lack of a representative number of Negroes in apprenticeship programs.

7664 Smith, Georgina M.
"ON THE WELFARE:" CHARACTERISTICS OF NEWARK'S GENERAL ASSISTANCE CASELOAD. New Brunswick, Rutgers, University - Institute of Management and Industrial Relations, 1967.
73 p. $1.50.
Discussion of the characteristics of the unemployed and those on welfare in New Jersey.

6292 Somers, Gerald G.
OUR EXPERIENCE WITH RETRAINING AND RELOCATION. (Reprinted from Toward a Manpower Policy edited by R. A. Gordon, 1967, pp. 215-36). Madison, University of Wisconsin, I.R.R.I., Center for Studies in Vocational and Technical Education, 1967.
Free.
Evaluation of government retraining and relocation programs. Conclusion suggests further economic analysis of various government policies and further training of disadvantaged and on-the-job training.

6745 Stewart, Raymond B., Jr.
SUGGESTIONS FOR CURRICULUM AND ANCILLARY SERVICES IN TRAINING THE BLIND TO PROGRAM COMPUTERS. Santa Monica, California, System Development Corporation, 1967.
8 p. Free. TM-3714/000/00..

3699 Sweeney, Thomas J.
A DEVELOPMENTAL PROGRAM FOR VOCATIONAL COUNSELORS DIRECTED TOWARD SERVING DISADVANTAGED YOUTH MORE EFFECTIVELY. Columbia, University of South Carolina, 1966.
60 p.

2829 Thomason, Bruce
THE PLACEMENT PROCESS IN VOCATIONAL REHABILITATION COUNSELING, ed. by B. Thomason and Albert M. Barrett. Washington, D.C., U.S. Department of H.E.W., 1960.
104 p.

7680 Training in Business and Industry
SOURCE OF TRAINING INFORMATION - AMA CONFERENCE. (In Training in Business and Industry, Vol. 4, No. 10, October, 1967, p. 28-29 and 36).
Discussion of the role of ERIC.

6939 Trans-Century Corporation
SUMMER PROGRAMS FOR YOUTH - FROM THE STREET: EVALUATION FOR DEPARTMENT OF HEALTH, EDUCATION AND WELFARE. Washington, D.C., 1967.
170 p. Free.
The Trans-Century Corporation reports its findings on how effective federally-sponsored, summer programs are at serving the young adults of depressed areas.

7684 Tree, Chris
STOREFRONT SCHOOLS. In Urban Review, Vol. 2, No. 4, Feb., 1968, pp. 16-18 & 28-29.
Describes the successes and problems of a "storefront school" in Harlem. Training is geared to the vocational level rather than purely academic.

6807 Truelson, Andrew R. N.
TITLE V WORK-EXPERIENCE AND TRAINING PROGRAMS: EFFECT ON PERSONS ELIGIBLE FOR PUBLIC ASSISTANCE. Washington, D.C., U.S. Department of Health, Education and Welfare, 1967.
19 p. mimeo. Free.

6762 U.S. Department of H.E.W.
CHANCE FOR A CHANGE: NEW SCHOOL PROGRAMS FOR DISADVANTAGED. Washington, D.C., 1966.
65 p. 60¢
Outline of government approved and financed projects for low-income and handicapped people. Shows fund distribution by state.

6689 U.S. Department of H.E.W.
FEDERAL PROGRAMS IN JOB TRAINING AND RETRAINING. Washington, D.C., 1967.
73 p. 50¢
The purpose of this publication is to make known the major federally sponsored job training and retraining programs and their characteristics.

4506 U.S. Department of Labor
MANPOWER REPORT OF THE PRESIDENT AND A REPORT ON MANPOWER REQUIREMENTS, RESOURCES, UTILIZATION AND TRAINING. Washington,D.C., 1967.
285 p. $1.25.
This annual manpower report by the Department of Labor highlights employment-unemployment trends, manpower policies and programs, both rural and urban, shortages and training needs.

6832 U.S. Department of Labor
MANPOWER REPORT OF THE PRESIDENT INCLUDING A REPORT ON MANPOWER REQUIREMENTS, RESOURCES, UTILIZATION AND TRAINING. Washington, D.C., 1968.
323 p. $2.25.
Also 1964, 1965, 1966, and 1967.

6903 U.S. Department of Labor
THE MDTA AND INMATES OF CORRECTIONAL INSTITUTIONS. Washington, D.C., 1968.
Pamphlet, 15 p. Free.
Describes the MDTA programs and its goals in helping inmates of correctional institutions to become skilled and accepted members of the labor force.

7669 U.S. Department of Labor, Women's Bureau
NEGRO WOMEN IN POPULATION AND LABOR FORCE. Washington, D.C., 1967.
41 p. Free.
Study of Negro women according to age, education, marital status and occupation.

6959 U.S. Department of Labor
NEIGHBORHOOD YOUTH CORPS: FIRST NATIONAL CONFERENCE REPORT. Washington, D.C., 1966.
80 p. Free.
Considers the goals and plans for the future for the Youth Corps program.

6928 U.S. Department of Labor
RESEARCH ON REACTION OF EMPLOYERS TO UTILIZATION OF DISADVANTAGED WORKERS. (in folder). Preliminary draft. Washington, D.C., 1966.
22 p.
A plea for new research and the use of what has already been done in order to make use of disadvantaged workers.

6431 U.S. Equal Employment Opportunity Commission
NINE CITY MINORITY GROUP EMPLOYMENT PROFILE. Washington, D.C., 1967.
Unpaged. Free. Research report 1967-19-A.
Analysis of the official report of patterns of minority group employment filed in the 1964 Civil Rights Act.

6589 Van Hook, V.
BUSINESS EDUCATION FOR THE DISADVANTAGED. NABTE Bulletin 86. 1967.
8-26 p.
Business education must accept the responsibility of working with more low achievers in the future. Programs must be available that will help identify the jobs in which they can succeed.

6967 Wall, James E.
ESTABLISHMENT OF MISSISSIPPI RCU FOR VOCATIONAL-TECHNICAl EDUCATION. State College, Mississippi State University, 1967.
Folder, various paging. Final Report, Quarterly Report, 1965 & 1966. Free.
Goals of the RCU include creating new and improving existent programs of occupational training.

7693 Weber, George
SCHOOL DROPOUTS "FUGITIVES" FROM COERCIVE SYSTEM, by G. Weber and A. G. Motz. (Review of study in Education Technology, Vol. 8, No. 12, June 30, 1968, inside cover).
Describes the attitudes of Negro dropouts toward teachers and counselors.

6763 Williams, Gertrude
COUNSELING FOR SPECIAL GROUPS. Paris, Organization for Economic Cooperation and Development, 1967.
118 p. Employment of Special Groups, 3. $2.50.
Discussion of reasons for long-term unemployment, improved methods of counseling and follow-up studies.

6716 Wisconsin - Division of Vocational Rehabilitation
ANNUAL REPORT, 1967. Madison, Wisconsin, 1967.
24 p. Free.

6709 Wisconsin, University of - Center for Studies in Vocational and Technical Education
CONFERENCE ON EDUCATION AND TRAINING IN CORRECTIONAL INSTITUTIONS. Unpublished papers. Madison, 1968.
Folder, various paging. Free.

6629 Wisconsin, University of - Center for Studies in Vocational and Technical Education
EDUCATION AND TRAINING OF RACIAL MINORITIES: PROCEEDINGS OF A CONFERENCE. Madison, Wisconsin, 1968.
211 p. $3.00.

6803 Wolfbein, Seymour L.
EDUCATION AND TRAINING FOR FULL EMPLOYMENT. New York, Columbia University Press, 1967.
264 p. $6.95.
Activities in the education and training field in the U.S. in the 1960's designed to eliminate unemployment.

6396 + AB Youmans, E. Grant
AFTER HIGH SCHOOL, WHAT? STUDY OF CAREER PLANS OF NEGRO AND WHITE RURAL YOUTH IN THREE FLORIDA COUNTIES, by E. G. Youmans and others. Gainesville, University of Florida, (1963?).
19 p.
AB in Occupational Status...of Negro Youth, Kuvlesky and Lever, 1967, p. 38.
A study of the career orientation and aspirations of a sample of Negro and White youth in rural Florida.

6529 Zito, Robert J.
NEGRO ADOLESCENTS' SUCCESS AND FAILURE IMAGERY CONCERNING WORK AND SCHOOL, by R. J. Zito & J. I Bardon. (In Vocational Guidance Quarterly, Vol. 16, No. 3, March, 1968, p. 181-84).

Non-Library Materials

6847 Apps, Dr. Jerold W.
ADULT LEADERSHIP FOR LOW SOCIO-ECONOMIC RURAL YOUTH. Department of Agricultural and Extension Education and Specialist Staff Training and Development, University of Wisconsin Extension, Madison, January 1967.
18 p.
Gives factors for the recruitment and training of volunteer adult leaders for work with lower socio-economic rural youth. Study gives rural youth perceptions regarding personal characteristics desired in an adult leader, and style of leadership desired.

7033 Brayfield, Authur H.
HUMAN RESOURCES DEVELOPMENT. American Psychologist, Vol. 23, No. 7, July 1968.
Analyzes attitudes of employers and employees; includes discussion of the effects of the Black Revolution.

6957 Chernick, Jack
NEWARK, NEW JERSEY - POPULATION AND LABOR FORCE, SPRING 1967, Research study. New Brunswick, Rutgers University, Institute of Management and Labor Relations. 1967.
40 p. Free.
Analysis of employment, unemployment and underemployment in Newark, New Jersey.

6632 Douglah, Mohammad A. and Peter F. Roycraft
STUDY THE LOW-INCOME FAMILY. Journal of Cooperative Extension Education, Extension Journal, Inc., University of Wisconsin, Madison, Vol. V, No. 3, Fall 1967. Copy in Agricultural Library.
pp. 164-170
Summary of a Wisconsin study of the perception and aspiration level of rural farm operators. Characteristics of the respondents were collected and comparisons were made between those living in poverty and those not poverty stricken. Income and educational level were ascertained.

6619 Duxbury, Donald E.
A STUDY OF SELECTED CHARACTERISTICS OF YOUTH FROM LOW-INCOME FAMILIES AND THEIR IMPLICATIONS TO COOPERATIVE EXTENSION SERVICE YOUTH PROGRAMS. (M.S. Seminar Report), Department of Agricultural and Extension Education, University of Wisconsin, Madison, 1965.
88 p.
Characteristics studied include youth aspirations, participation, home and family condition education, verbal facility, literacy, leadership traits desired, health, and delinquency, religion, and morality.

7034 Educational Leadership
SOCIAL CLASS AND URBANIZATION. Whole issue, Vol. 25, No. 1, October 1967.
Presents changes needed in curriculum to help solve the problems of urbanization and ghettoes.

6566 Everson, Norman O. & Jerold W. Apps
REACHING YOUTH IN LOW-INCOME AREAS. Journal of Cooperative Extension, Extension Journal, Inc., Agriculture Hall, University of Wisconsin, Madison, Winter 1967. Copy in Agricultural Library.
pp. 205-213.
Summary of research on youth participatinn, interest, and aspirations concerning 4-H and learning. Parental influence, perception of rural low social status, youth, attitudes, and peer group influence were part of the study. Study may be related to the membership in the FFA (Leadership club for voc-ag students).

6587 Gehring, Virgil D.
CONFLICTING OPINIONS IN TEACHING THE SLOW LEARNER IN VOCATIONAL BUSINESS EDUCATION--AS REVEALED IN THE LITERATURE. University of North Dakota, 1962.

5995 Hayes, Glenn W.
THE RELATIONSHIP OF SOCIO-ECONOMIC STATUS OF PUPILS TO THEIR COMPREHENSION OF REFERENCE MATERIALS WRITTEN AT DIFFERENT LEVELS OF READABILITY. (Ed.D. Thesis), University of Illinois Library, Urbana, Illinois, 1966.
113 p.

7035 Jensen, Arthur R.
THE CULTURALLY DISADVANTAGED: PSYCHOLOGICAL AND EDUCATIONAL ASPECTS. Educational Research, Vol. 10, No. 1, November 1967.
pp. 4-20.
A thorough discussion of the different types of culturally disadvantaged children.

6354 LeSuer, Bruce
"THE POTENTIAL DROPOUT AND BUSINESS EDUCATION." EBTA Journal, Spring, 1965.
pp. 52-56.
Research completed in Maryland and Pennsylvania indicated that the majority of the dropouts left school because of lack of interest. There is a potential in business education which could be utilized more fully in retaining in school the youngsters who can be helped.

7074 Littig, Lawrence W.
NEGRO PERSONALITY CORRELATES OF ASPIRATION TO TRADITIONALLY OPEN AND CLOSED OCCUPATIONS. Journal of Negro Education, Vol. 37, No. 1, Winter 1968.
pp. 31-36.
Analyzes the Negro attitude toward risk-taking and occupatioal choices.

6953 Miernyk, William H. & I. L. Hernnstadt
THE OLDER WORKER AND THE EMPLOYMENT SERVICE: A CASE STUDY OF WORCHESTER, MASSACHUSETTS. Boston, Northeastern University, Bureau of Business and Economic Research, 1965.
170 p. $2.75. Final Report.

6615 Myers, Maxine
A FOLLOW-UP STUDY OF 25 NEGRO GRADUATES OF CENTRAL HIGH SCHOOL IN KANSAS TO DETERMINE THEIR ADJUSTMENT IN INITIAL EMPLOYMENT. Kansas State Teachers College, 1966.

6631 Shimel, William A.
YOUTH IN LOW-INCOME FAMILIES OF WISCONSIN. Department of Agricultural and Extension Education, University of Wisconsin, Madison, Seminar Report, 1965.
93 p.
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VT 008 296
Methods of Teaching the Disadvantaged.

Milwaukee Vocational Technical and Adult Schools, Wi. In-Service Training Dept.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 67 48p.

*TEACHING METHODS; *TEACHING SKILLS; *DISADVANTAGED GROUPS; *INSERVICE PROGRAMS

The instructional units are intended to assist the teacher in instructing disadvantaged students. Informational units include: (1) The Teacher of the Disadvantaged, (2) Teacher Atmosphere and Self-Analysis, (3) Teaching and Learning, (4) The Four-Step Instructional Process, (5) Fundamentals of Learning and Teaching, (6) Learning Difficulties, (7) Audio-Visual Instruction, and (8) Audio-Visual Equipment. A classroom critique guide is presented. (JK)

VT 008 296

ED039370

C.1.

METHODS OF TEACHING THE DISADVANTAGED

1967

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Milwaukee Vocational Technical and Adult Schools
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Milwaukee Vocational Technical and Adult Schools

METHODS OF TEACHING THE DISADVANTAGED

In-Service Training Department

The instructional units that follow have been formulated to assist you in improving your methods of instructing disadvantaged persons. Only the essential elements of information are included in order that you may readily apply the principles of teaching and learning within your area of instructional interest.

Spiro Mehail
Teacher Trainer
Milwaukee Vocational
Technical and Adult Schools

Milwaukee Vocational Technical and Adult Schools

Methods of Instruction

In-Service Training Department

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Milwaukee Vocational Technical and Adult Schools

Methods of Instruction

In-Service Training

Information Unit 1 — The Teacher of the Disadvantaged

Vocational education courses traditionally attract motivated students who are interested in job advancement or initial job training. As a result, the experience of most vocational education teachers has been with students who are alert, have an aptitude for the work, have the right attitude toward their studies and have the characteristics which will make them employable.

On the other hand, the majority of students coming from predominantly disadvantaged areas and backgrounds are less motivated, less inspired and ill prepared, socially, culturally, and educationally. The teacher of the disadvanteged has not been prepared to meet the multiple problems of language development, varying social norms, habits not generally accepted by teachers, behavior which is often not success oriented, lack of student cooperation, and achievement levels well below those that teachers normally expect to find.

Effective teachers of the disadvantaged need to have:[1]

1. Competence in the subject matter and work skills in the field of specialization.

2. Interest in working with people who have special problems.

3. Ability to reinforce the slow learner and to refrain from responding only to those students who respond to them.

4. Ability to seek and find additional techniques to enable them to communicate with all students.

5. Skill in presenting goals to the students and in helping them to meet challenges.

6. Ability to measure students by their individual achievements without lowering standards for the class.

7. Special training or knowledge for work with the disadvantaged, including an understanding of their way of life.

8. Ability to work with other school personnel to increase the effectiveness of their work.

9. Willingness to use instructional materials geared to the understanding of their students and patience to work with the slower learner.

10. Skill in working with students to build up their self-concept, in seeking hidden strengths, and in helping to channel these in productive directions.

11. Possessed of patience

---

[1]Adapted from The Youth We Haven't Secured, U.S. Department of Health Education and Welfare, Washington, D.C., 1966.

The Instructor and His Job

Are you a "born" teacher? Of course you are--if you possess certain traits and native qualities that are essential to teaching. But the same traits and qualities would perhaps have made you a "born" doctor, lawyer, merchant, or industrialist. This is a moot question. Cannot traits and native qualities be developed? What are the tools used by the professional instructor and how does he use them? In the use of his tools, what does he fashion from the material upon which he works? Does he produce a product like that of the mechanic who subjects a piece of raw material to a variety of processes in such a manner that the raw material is transformed into something immediately ready to serve a useful purpose? The comparison here implied is relatively shallow. Yet, in either case, both the mechanic and the instructor do have material to shape; and both do have tools to use that facilitate the shaping. Each must know what tool to use and when to use it. Of equal importance, each must know how to use it. Material of this course will deal largely with the instructor's tools.

This course in "Methods" proposes to present useful material with respect to problems and principles of teaching. It proposes further through accompanying laboratory experiences to develop techniques of teaching that will be useful when applied under real classroom situations. The pick-up method of learning to teach, like the pick-up method of learning a trade, is slow and costly and may result in much grief and scrap. There are fundamentals of teaching, and there are fundamentals of learning; largely they are a constant, unaffected by subject matter. A knowledge of both should be in the instructor's kit, plus an understanding of the means of determining what to teach and of methods and devices for putting the instruction over. Though this brief statement of the course objective does not include every salient point involved in the *three-fold responsibilities of an instructor, it does indicate the center of major emphasis.

The mere fact that the course title is "Methods of Instructing the Disadvantaged" would seem to indicate that here is an area of specialized teaching, that teaching such subjects is different from teaching other subjects. As progress is made through the course, differences and similarities will become apparent. Such differences as do exist are more to be found between the teaching of shop subjects and the teaching of related or academic subjects. For the present this statement will suffice: In all subjects the fundamentals are similar; differences are differences in teaching techniques.

It is important at the outset to have a common understanding of the two terms, shop subjects and related subjects. The work a man does when he practices his trade or craft may be divided into two parts: (1) the exercise of manipulative skill and (2) the exercise of technical knowledge. These two parts, however, cannot be separated as easily as that statement would seem to indicate, nor in actual practice, both in teaching and learning, should they be so sharply separated.

Shop Subjects

The shop instructor deals with courses that are organized to train students to perform the physical manipulative work of a trade or craft using appropriate tools and supplies to either transform the stock materials into a usable product or to repair and maintain prescribed equipment. Shop subjects are designed to develop the fundamental skills that are used in the particular trade. The machinist is enabled to operate the engine lathe, and perform the necessary operational functions in changing or producing a product. The carpenter develops skills required in

*(1) Teaching (2) Managing (3) Supervising

hanging a door. The electrician is taught efficient methods of installing wiring and conduit; the plumber the installation of the sink; the auto mechanic the servicing of an engine.

Related Subjects

The exercise of any of the shop skills requires an understanding and a working knowledge of a variety of technical principles. This is particulary true if a worker is to become a self-reliant and independent tradesman or craftsman, one capable of applying technical knowledge to his manipulative skills so that he can successfully cope with an everchanging variety of jobs. The related subject deals with this phase of his training. As an example, the machinist that is assigned the job of machining a cap screw has to determine the procedure for doing the job, as doubtless it may be done in many ways. To plan the job exercices a vast store of knowledge, but to illustrate one point, let us say that the worker must first be able to read the blueprint. As he interprets the blueprint, he exercises a knowledge of certain definite drawing principles. Through this knowledge, he is able to determine the required length of the finished cap screw and then, according to his plan for doing the job, he calculates the length of stock required. To do this he exercises a knowledge of certain definite mathematical principles. When he turns down the stock, he is careful that the work is properly mounted because, among many other things, he knows about the generation and transmission of heat, a science principle.

Thus, what one does in performing the work of a trade or occupation is predicated on skill training. However, one cannot do all the work unless he is equipped with a storehouse of information and unless he possesses an ability to apply that information in the exercise of judgments. The ability to exercise judgment is enhanced through the study of related subjects.

The term "related" took on special significance early in the vocational education movement. It has become actually a "work term" with those working in this field. It is used to denote that area of knowledges, rules, principles, and theory that is needful in doing the work of a trade or occupation. Common parlance is to speak of it as related subjects information.

General Education Subjects

In vocational education, the general education subjects are included in programs of instruction as enrichment courses that are designed to transmit our cultural heritage or way of life;to improve the environment in which people live and work; and to provide for individual needs of people who live in our democratic society. However, general education subjects become increasingly important in the instruction of the disadvantaged since general education contains the basic tools of learning - reading, writing and arithmetic and the formulation of acceptable standards and attitudes towards self and society.

The Instructor's Three Functions

The primary aim of instruction of course, is to train others so that they may perform creditably the work upon which training is centered. The instructor's three functions are (1) to instruct; but the exercise of this function in a school situation inescapably brings into play two others; (2) that of managing and (3) that of supervising. What does the instructor have to do with management! And what with supervision! Perhaps these functions begin with the fact that he has responsibility for a shop or classroom and tools, equipment, and supplies; secondly, he has a responsibility for a number of learners. He must organize his program, plan selection and distribution of supplies and equipment, plan and establish various procedures, and the like. These are managerial responsibilities. As soon as he

begins to put his plans into operation, he acts in the capacity of a supervisor over the activities of his group of learners, checking the quality of their work and their use of the materials, tools, and equipment. In actual practice the three functions are often so closely knit as to be not readily discernable, but it is well to recognize that the instructor actually does more than simply instruct. Instruction itself will suffer if the managerial and supervisory responsibilities are not properly discharged. From time to time it will be necessary to deal further with this relationship.

Conclusion

This program will concern itself with the principles and techniques involved in the teaching process, and inescapably related to it will be consideration of principles involved in the learning process. Fundamentally, teaching one type of subject is similar in principle to teaching any type of subject; the vehicle for accomplishing it possibly being different. In a trade, a choice of tools to do a job may be made, but often there is the one best way. So, too, in doing a job of teaching. The trained, practiced, and alert teacher applies his techniques, devices, and methods to each teaching lesson in such a way that the job may be done in the one best way. He, too, has tools and the privilege to choose. The influences that affect his selection will become apparent as progress is made through this program.

Annex A

Duties and Responsibilities of the Instructor of the Disadvanteged

1. Prepare course outlines
2. Prepare lesson plans
3. Select teaching equipment
4. Select teaching procedure (Method)
5. Guide thinking of learners during lesson
6. Hold interest
7. Make assignments
8. Conduct examinations
9. Keep progress
10. Discipline
11. Keep room clean and orderly
12. Be neat in personal appearance
13. Avoid "High Hat" attitude
14. Be patient
15. Use diplomacy and tact
16. Inspect machines and equipment
17. Observe safety regulations
18. Revise course content

Responsibilities to the Students

1. Correlate related subjects
2. Guidance
3. Select reading matter
4. Teach safety
5. Keep proper atmosphere
6. Have understanding of individual differences
7. Check progress
8. Manage conduct of students
9. Develop attitude of fairness
10. Teach value of materials and tools
11. Develop good work habits among students
12. Develop respect for authority
13. Teach students to follow directions

Information Unit 2 — Teacher Atmosphere and Self Analysis

A joyous atmosphere is reflected in some classrooms; in others the atmosphere is filled with tension and hostility. There could be many reasons for the latter, but the chief determinant is the way a teacher feels towards the pupils.

The teacher's real attitude is generally reflected in the pitch of the voice, tension of manner and other similar signs. Most teachers possess good will toward students and interests in their profession. However, some teachers reflect in practice, attitudes which preclude any friendly feeling toward the student.

The teacher can help create an atmosphere in which the individual student feels that the teacher has a concern in his problems with the work at hand. The student should be made to feel at ease and be encouraged to question, to criticize, to contribute, to create, to learn.

Self-Analysis

1. Am I really interested and enthusiastic about instruction, or is it just another chore to me?

2. Is my appearance clean and neat and is it representative of my school?

3. Do I prepare myself carefully before opening a class, making sure that the material, tools, charts, books, examination papers, grade cards, etc., are available?

4. Do I realize that my students are not machines, but humans who have different capacities for learning and that I, therefore, must adjust my teaching to fit?

5. Do I make an effort to study the students as individuals so that knowing their particular weaknesses, difficulties, and moods I can help them better?

6. Am I reasonably cordial or am I distant and impersonal?

7. Do I have patience or am I easily irritated? Am I ever sarcastic?

8. Am I at ease before the trainees? Have I any annoying or distracting mannerisms?

9. Do I encourage by finding something to praise in the work of every earnest and industrious student?

10. Am I sure that my instruction is clear so each student fully understands the job he is to do?

11. Do I help correct mistakes and misunderstandings, or do I merely reveal them? Real teaching aims to correct errors as well as reveal them.

12. Do I grade fairly and without prejudice?

13. Do I realize that the only measurement of my ability as a teacher is by what my students know and can do, as a result of having worked with them?

Conclusion

Teacher atmosphere is a product of teacher attitudes toward students. The following constitutes a list of teacher qualities most desired by students. Teachers that possess most of them have greater success and consequently produce progressive learners.

1. Asks for suggestions and makes you feel your ideas are worth something.
2. Gives you a chance to work things out on your own initiative.
3. Shows personal interest.
4. Is always courteous in his relationship with students.
5. Has personal habits that are pleasing to the students.
6. Lets you know what is expected of you.
7. Has high standards of work and performance and stimulates you to do your best.
8. Seldom makes a promise without seeing that it is fulfilled.
9. Can make suggestions and corrections without making you feel angry.
10. Always praises good work.
11. Plans the instruction so that everyone knows and understand the assignments and course requirements.
12. Shows no favoritism.
13. Knows his job.
14. Has a good disposition and is seldom hotheaded, grouchy, or moody.
15. Has ability t' get his ideas into operation.

Information Unit 3 Teaching and Learning

GENERAL INFORMATION

The objective is to help you teach and train others well in order that the instruction process becomes easier, more pleasant and more effective.

Teaching is a process of helping others learn. It is getting individuals able to do something useful they could not do before, or getting them to do something better than they ever did it before.

Training implies repetitive doing and practice on the part of the learner so necessary in acquiring skill, ease in doing, endurance and other desirable ends.

FIVE "AVENUES" OF LEARNING

Everyone is familiar with the five senses, but sometimes we fail to realize that these five senses constitute "avenues" of learning. Whatever we learn throughout life comes by way of one or more of these routes. So, if we are to teach others well, we should realize that our planning must be in terms of:

Sight - stimulated by light, objects, color, motion, etc.

Hearing - stimulated by sounds and noise, speaking, etc.

Touch - stimulated by heat, cold, liquids, solids, air currents, etc.

Taste - stimulated by sweet, sour, salt, etc.

Smell - stimulated by odors and aromas of various kinds.

FORMS OF TEACHING MATERIAL

In order to promote and stimulate learning, we must have something with which to teach. In our search for suitable materials of instruction, they will be discovered in the following terms or combinations thereof:

1. Actual Materials--examples include tools, equipment, and paraphernalia of various kinds; machinery; buildings.

2. Models and Representations--examples include "mock-ups", sets, workboards, etc.

3. Graphic and Pictorial Materials--examples include maps, charts, diagrams, graphs, flat illustrations, drawings, blueprints, photographs, cartoons, and projections such as motion pictures and slides.

4. Written-Word Materials--examples include publications of all kinds--books, bulletins, manuals, administrative guides, leaflets, circulars, duplicated materials. Also included are pertinent newspaper and magazine articles.

5. Spoken-Word Materials--examples include materials drawn from addresses lectures, talks, interviews, conferences, accounts of individual and group experience; also radio and television information.

BASIC WAYS OF GUIDING LEARNING

If we have appropriate materials with which to teach and we recognize the "avenues" of learning, it is well to "take stock" of the basic ways of guiding the learning process. How can we best utilize facts and information along with the materials of instruction in presenting a learning pattern? Ordinarily it can be done through one, or a combination of the following ways:

1. Demonstration - by performing the job yourself, or having someone even more capable and qualified to demonstrate how to do a complete job, as well as the various steps within the job.

2. Questioning - by the skillful use of questions put to learners for the purpose of stimulating interest, clinching key points and encouraging learner participation in course work.

3. Illustrating - by giving or showing the learner verbal or graphic representation.

4. Telling - by using word pictures to help explain who, what, how, when and where.

5. Directing - by using planned learner activities to provide self-teaching, practice and performance test--individually or in groups.

IMPORTANT ELEMENTS IN A GOOD LEARNING SET-UP

1. An instructor who knows his subject, who can teach effectively and who is eager to continue to learn.

2. Students who have the desire and the ability to learn.

3. Adequate and appropriate instructional aids, materials and equipment.

4. Sufficient uninterrupted time to do the teaching.

5. An opportunity to follow-up on the instruction given.

QUESTIONS LEARNERS ASK THEMSELVES

1. Is this something desirable--something worthwhile to mankind?

2. Is there an advantage to me?

3. Does this learning seem to be necessary in order to proceed to something even more useful?

4. Is my interest and ability challenged.

5. Is this knowledge or skill going to contribute to human comfort, prevent further injury, save life and save property?

SOME CONDITIONS WHICH AFFECT LEARNING

At MVTAS we are dealing with adults having adult responsibilities. They have to be approached and treated as adult learners. Our responsibility is to fit these bits together into a practical training course in such a way as to develop a satisfactory worker for our community. The following conditions and situations affect learning and must be considered in the instructional pattern and pace:

fatigue
worry
nervousness
emotional disturbance
familty problems
illness
uncertainty
excessive noise
distractions

SOME CHARACTERISTICS OF ADULT-LEARNER GROUPS

1. A seriousness of purpose and eagerness to improve and advance.

2. A wide variation in native ability, experience, education, skill, work habits, temperament, background and character. Sometimes there is considerable variation in age.

3. A keen interest in practical training and practical applications of the knowledge obtained.

4. Keen interest in the "why" and "how" of what they are doing.

5. A sincere appreciation of, and respect for, the instructor who knows his subject and has the knack of getting instruction across.

GETTING READY TO TEACH

There are important things you can do to get ready to teach before you meet a class for instructional purposes. Some of these things you will already know about; others may not have occurred to you. The following steps are suggested in preparing to make a presentation before a class or group:

1. Select the lesson to be taught.
2. Review and study the subject matter involved in the lesson.
3. Spot the "key" points.
4. Block out a logical teaching approach and plan of lesson development.
5. Select some good teaching devices.
6. Prepare a "skeleton" lesson plan.
7. Provide teaching materials, equipment and references needed.
8. Guided by your lesson plan, go through the procedures in advance of meeting the class.

HINTS ON OPENING A CLASS

1. Start on time.
2. Approach the group with a cooperative attitude.
3. Be pleasant and informal but business-like.
4. Name the job under consideration.
5. Indicate the knowledge and skills to be acquired by the learner.

HINTS ON CONDUCTING A CLASS

1. Get directly to the instruction.
2. Follow your lesson plan but do not be a "slave" to your notes.
3. Keep the instruction interesting make it move along in an orderly sequence--step by step.
4. Go back and restate or demonstrate as necessary to carry all your learners along together.
5. Vary your approach, methods, and devices to keep up interest and to fit the situation.
6. Know the members of your class as well as possible.

HINTS ON CLOSING A CLASS

1. Try to gauge your time so as to leave a few minutes in which to close.
2. Summarize steps and key points.
3. Do not allow the class to "run down". Make the closing definite.
4. Close on time and, if possible, indicate something interesting and challenging in the coming lessons.

PERSONAL HINTS TO INSTRUCTORS

1. Be natural.
2. Be interesting.
3. Avoid spending time on things that are unimportant.
4. Question yourself and your methods constantly and strengthen your teaching ability as you go along.
5. Present things clearly. Develop the knack of getting a lesson across.
6. Keep enthusiasm flowing from you to the learners.
7. Adjust your teaching pace and procedures to the age and abilities of the learners.
8. Be resourceful.
9. Continually analyze situations and revise plans for the benefit of yourself and the learner.
10. Praise learners for their accomplishments.

LAWS OF LEARNING

1. Readiness - Just as a child won't walk until his bones are ready, the adult won't learn without a conditioning process.

2. Effect - Principles of rewards and penalties.

3. Use - We tend to learn better what we use. Therefore, an instructor should teach theory and its application at the same time if possible. The following figures are approximate, but are based on actual tests for given periods of time.

   a. Merely telling - limited in value because retention is short-lived.

b. We remember more of what we see - but used alone, it is of limited value.
c. Participation - remember longest and best when accompanied by seeing and hearing.

WHAT WE REMEMBER

1. Of what we hear - 10%
2. Of what we see - 50%
3. Of what we do - 80%

FACTORS IN LEARNING

1. Concentration - Rare person who can do more than one thing at a time.

   Physical planning of the classroom can eliminate some distrations - shades, noises, etc.

2. Association - Learn easiest when building on what we know.

   Know your class--age groups, economic groups, social, religious, business, neighborhood, etc. Use when planning examples.

3. Repetition - Present the same material in different ways not like a broken record.

FOUR-STEP METHOD OF INSTRUCTION

1. Preparation - Motivate by arousing interest and desire to learn. Determine why a given lesson is important. Know your objectives. Let the class know where they have been, where they are, and where they are going.

2. Presentation - Transmission best with use of SENSE APPEAL CALLED AVENUES OF LEARNING:

   Sight-stimulated by light, objects, color, motion.

   Hearing-stimulated by sounds, noise, speaking voice.

   Touch-stimulated by heat, cold, liquids.

   Taste-stimulated by sweet, sour, salt.

   Smell-stimulated by odors and aromas.

   a. Methods of Presentation:

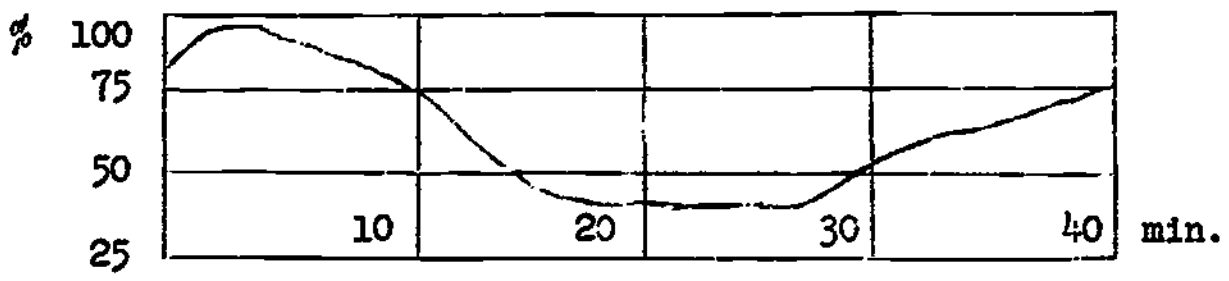
      (1) Lecture: Not very effective when used alone.

          In teaching theory, two senses are used: hearing and seeing.

          Seeing best, so consider appealing visual aids.

Hearing alone difficult for class.

Graph indicates percentage of class paying full attention when <u>hearing only</u> is used.



(2) Demonstration - a most effective method when practical.
(3) Illustration - movies, charts, diagrams. Can strengthen other methods of presentation or, as in movies, can almost be a method in itself.

(4) Questioning - Develop concise questions which cannot be answered by "yes" or "no". Best used with more advanced students when some learning has already taken place. What part of course could this be used?

(5) Discussion - Best used with more advanced classes and experienced teachers to prevent class getting off the subject.

(6) Conference - Only for experienced teachers with advanced classes. Most participation here by class members - must guard against misinformation becoming part of the learning situation.

b. <u>Average Class Learns More When Following Ratio Is Used</u>:

1. Practice - 65%
2. Demonstration - 25%
3. Explanation - 10%

(Not practiced for all subjects)

3. <u>Application</u> - You may already have accomplished this as a part of your presentation. Students must participate-they learn more by doing.

So important, it's one of the four steps.

4. <u>Check-up and Review</u> - Accomplished by questioning on test.

a. To find out how much actually has been taught.
b. To stimulate learning.

c. To review (repetition).
d. To correct mistakes.
e. To find out where instruction could be revised (no two classes are alike). A different method of presentation or change of vocabulary may be needed.

GUIDE TO THE FIRST WEEK OF TEACHING

1. Inspect the classroom or shop to note the size, facilities and aids available.

2. Inspect the entire school in order to locate gymnasium, first aid room, offices, lunch room, or any other special rooms within the school. This should be done to orient one's self in the school.

3. Contact the supervisor and/or teachers to ascertain the type of pupils and environment of the immediate locality.

4. Inquire as to the policy of the school in matters of classroom and hall conduct.

5. Inquire before hand to determine the basic curriculum requirements in the immediate class.

6. Acquant yourself with the faculty and administrators and make as many immediate friends as possible. This is necessary not only for a happier relationship, but also as a means of obtaining advice and guidance in any problem that may arise and wise assistance may prove very helpful.

7. Preparation in all subject matter for at least one week's duration in order to avoid any embarrassing lulls that may arise.

8. Consistent discipline must be maintained during the first week in order to start keeping the class under control for the remainder of the semester.

9. In order to become better acquainted with the class, tell the class about yourself.

10. Sincerity and honesty on your part must be attempted. Any facts or any other information you do not know must be readily admitted.

11. An attempt must be made to make the classroom activities self-directed (pupil directed)

CONCLUSION

Principles of good instruction combine the laws of learning (readiness, effect, use); factors in learing (concentration, association repetition); and the four-step method of instruction (preparation, presentation, participation, check-up and review.

Methods of Instruction

In-Service Training Department

Information Unit 4 — The Four-Step Instructional Process

GENERAL INFORMATION

Everyone, not just those classified as professional teachers, does some teaching in one form or another. The man on the street who directs a stranger to a distant location (and what a poor job nearly everyone does with that), the parents who train their child in habits of orderliness, the friends with whom you play your first new game of cards, the coach who strives to develop a winning football team, the foreman in a shipyard who "breaks in" the new man, the manager of an office who wants a new record set up; these and hundreds more like them illustrate the wide practice of teaching. Some employ one method, some another; some get results expected and think nothing of it; some fail completely and are at a loss to know why. Actually, teaching can be rather an exacting science.

Being highly skilled in a craft or well versed in a subject does not in itself make a good instructor. While it is a foremost requirement, great skill and vast knowledge can easily interfere with teaching or learning if certain important but really elementary principles of teaching and learning are not observed. A foreman in a blacksmith shop was observed at one time teaching a young man to make a cold chisel. He began with the raw stock cut to length and, while the young man looked on, he put the stock through the heating processes, the shaping with hammer and anvil, the quenching, and the final testing. It was a real exhibition of skill in making a cold chisel, but is it any wonder the young man's mouth was agape with wonder, amazement, and utter bewilderment when the demonstration was over? Some teaching took place in this demonstration just as some learning took place. The important thing about it is that whatever did take place was incidental and that the objective of teaching the learner how to make a cold chisel was definitely not achieved.

The art of teaching when viewed in its entirety is a complex process. An experienced teacher uses on occasion varied methods and many devices. Running the risk of over-simplification, the four-step process of instruction is presented as a guide covering many fundamentals. This plan is an outgrowth of work developed by John Frederick Herbart (1776-1841). Obviously it is an attempt to make education a science. He listed four steps, labeling them (1) clearness (2) association (3) system (4) method. These were later changed by followers of Herbart to five: (1) preparation (2) presentation (3) comparison (4) generalization, and (5) application. Other versions have been used from time to time. The detailed plan that follows, for example, while the same in principle, is given a vocational or industrial slant. The Herbartian method is a general one based on inductive-deductive thinking and useful in the teaching of ideas or skills. From it teachers will develop special means of application.

Let us take apart the process of instruction and look at some of the parts separately. We will become aware of the things one must do at the time of teaching in order to teach and the things one must do at the time of learning in order to learn--a coordinated process. There is no short cut to good instruction other than the plan presented herein.

FAULTY INSTRUCTION

Instruction might be thought of as the art of getting someone to do something he had never known how to do before or of developing in another individual certain understandings and abilities. What might an instructor do to get someone to do and understand a new task?

Telling

For one thing he might tell him how to do the job. But telling alone is not good instruction. It is very doubtful if the learner could do the job properly by just being told. Telling is definitely a part of the process of instruction, but, if used alone, it has serious limitations. A learner must, of course, absorb and understand that to which he is listening. It is hard to "tell" just the right amount. It is impossible to know if the learner understands. It is hard to describe the new job in words alone. Most people have difficulty in using the exact words necessary--perhaps that is why nearly everyone employs gestures of one kind or another to add emphasis to his words. Maybe you have had experiences yourself in being told how to do something new. For example, have you asked to be directed to a certain place in a strange town? Everything was unfamiliar. You received the following directions: "Drive ahead on this street until you come to the second stop sign; then turn left at the next corner." Perfectly simple to the one who gave the directions and apparently simple to the one who received them. But here are some of the difficulties to be encountered in following them. The first stop sign was a plain arterial stop; the next was a stop-go light. Was that the second stop sign? At the next corner the street forked sharply to the left; also there was the usual cross street. Both turned left; which was the proper one? Things didn't look quite like you thought they would. You were in a predicament and confused. Now, while this is a very simple illustration, it does point out that telling alone, even if an excellent job of telling be done, is not good teaching. How much more would you be confused if you were "told" how to operate a fast-moving, noisy, perhaps dangerous machine.

Showing

Repeating the original question, what might an instructor do to get someone to do and understand a new task? Instead of telling him how, he might show him how to do it. "Telling" alone was not good instruction; neither is "showing" alone good instruction. Either may meet with some measure of success, if well done. But showing, too, has serious limitations. A learner does not know what to look for. In the hands of an old expert, the job often looks so very simple. Motions may be copied perfectly for a time without really being understood. Merely copying motions is no assurance that one has learned. Added to it must be the knowledge of what was done and why it was done that way. A learner may do a job correctly this morning after being shown, but this afternoon may be getting into trouble. Why? He didn't really understand. Of course, some motions are tricky and hard to copy. They involve a knack, "twist of the wrist," or definite form to accomplish. "Showing" alone will hardly put them over.

Sometimes the learner watches from a poor position; he may even see the operation backward. Some things are most difficult to show correctly. Like telling, an instructor can't tell from showing alone just how much to attempt to put over. How much scrap and grief have resulted because the learner didn't really learn?

THE FOUR-STEP INSTRUCTIONAL PROCESS

Telling alone and showing alone, as has been pointed out, do not constitute good instruction. If used together, they still do not constitute good instruction.

Teaching is not accomplished until complete learning has taken place. Perhaps with enough telling and showing one can learn to do something new, but these methods are not dependable. There is, however, a sure and dependable process of instruction that works every time if it is applied. It requires activity on the part of both instructor and learner. It involves four main steps that ought to be understood clearly by every instructor. It will be presented here in terms of shop or practical application, but is just as applicable with slight but obvious modifications to related or academic subjects.

HOW TO INSTRUCT - THE FOUR STEPS

Step I - Preparation

To prepare the learner to receive the instruction, the instructor must do the following:

1. Put him at ease.
2. Find out what he already knows about the job.
3. Get him interested in the job.
4. Put him in the correct position.

Step II - Presentation

In the first step the introduction was made. Now the instructor leads off into that which is new to the learner.

1. He tells, shows, and asks.
2. He presents one step at a time clearly and patiently.
3. He stresses key points.
4. He presents no more than the learner can master.

Step III - Application

Here the instructor has the learner perform that which has been presented to him. The learner tells and shows the instructor what he is doing. The instructor:

1. Checks key points.
2. Questions.
3. Corrects errors.
4. Has learner repeat performance until he is sure learner knows.

Step IV - Follow Up

No one has really learned until he can perform without direct supervision. Recognizing this, the instructor:

1. Puts learner "on his own."
2. Directs him in what to do if he needs help; to whom he should go.
3. Checks back frequently.
4. Gradually tapers off coaching.

METHODS OF INSTRUCTION

In the teaching process five methods of instructing are generally used. Sometimes one method is used to present a lesson; oftentimes a combination of two or three methods is used. The five methods are:

1. The Lecture Method

   a. Telling activity
   b. Should include class discussion
   c. Should include answers to questions
   d. It is recommended that it be accompanied by the use of suitable training aids of literature
   e. Should be short and well-organized around a small number of key points
   f. Instructor must know what he is talking about
   g. Instructor must know how to say what he wants to say
   h. Use this method when you want a class to see the solution of a problem, the answer of which is already known

2. The Demonstration Method

   a. Instruction which combines showing with telling
   b. Should be used when it is difficult to present a work picture of the lesson
   c. Should be designed to give appeal to the sense of sight as well as the sense of hearing
   d. Requires the instructor to have highly organized sequence of presentation as well as selection of words and terminology

3. The Conference Method (Panel Discussion)

   a. Not instruction by any individual
   b. Should be directed by a leader
   c. Act of consulting together formally
   d. Shaping individual opinions to the will of the majority
   e. Problems common to the group are analyzed, facts studied, advantages and disadvantages discussed--then attempts are made to arrive at conclusions
   f. There could be no conference without discussion
   g. Is not applicable to a lesson when students do not know the subject matter and have no common problems
   h. In a lecture, the answer to the problem is known; in a conference, the answer is unknown--possible solution of a problem is the aim of a conference

4. The Coach-Pupil Method (Individualized)

   a. Individualized instruction
   b. Capable members of the class can be trained to teach other students, but
      (1) The quick learner is not always able to help the slow one
      (2) Many times a slow student prefers to work alone
      (3) Personalities may clash
      (4) Use students only where sufficient instructors are not available to give individualized instruction
      (5) Using students in the coach-pupil method can multiply the effects of the instructor

5. The Performance Method

   a. Learning by doing--priviging the student an opportunity to perform the job under instructor guidance

b. Facilitates learning
c. Avoids loss of time, materials, or equipment if mistakes are made
d. Demonstration is a part of this method
e. Discussions are integral parts of the performance method
f. Only by sufficient practice can skill be acquired. It is developed through learning by doing.

SELECTING A METHOD

Which method will the instructor select? What techniques will he employ? The ability as an instructor will depend upon his proficiency in selecting and applying the most effective instructional devices to meet the immediate training objective. All of this means that planning must be flexible in order to adapt the subject to different situations.

Often the selection and the combination of methods will depend on the effort the teacher is willing to expend, his personality and training.

Points to consider when selecting a method, or methods, of teaching:

1. Types of material to be taught--some material is taught easier by demonstration, other by discussion
2. The objectives--is the lesson taught to gain knowledge or develop skill?
3. Equipment--is the equipment available and/or adaptable?
4. Time element--do not crowd too many things into a presentation
5. Size of class--is the class too large for an effective demonstration/ performance?

CONCLUSION

Transition from one instructional step to the next should be orderly and smooth, not an abrupt procedure as the outline of the instructional process may seem to indicate. If each step can be applied as indicated and if the learner is capable of receiving the instruction, the process is sure-fire and will work every time. Every item listed under each step has a sound basis. Most of these pertain to factors involved in the learning process which will be considered in detail in a following instructional unit. Of course, the four-step instructional process cannot be successful unless the instructor has made preparation for it. Getting ready to instruct will be the subject of the next instructional unit.

Teaching methods cannot and should not be highly formalized but should reflect the personality of the teacher himself. The beginning teacher, however, may well stick to format for a time at least until the essence of teaching becomes habitual with him. This idea is well stated by *Henderson: "Whatever the method used by the teacher, it should assist the pupil in the development of his abilities; it should help him to think more clearly and to become increasingly independent in his thought; it must stimulate thought and be based upon the way man thinks. Any method that accomplishes this is a good method."

*LESSON PLAN

INSTRUCTIONAL UNIT: (What is the subject to be presented?)

TYPE: (Which methods will be used? Lecture, conference, demonstration, practical exercise.)

TIME ALLOTTED: (How much time?)

CLASSES PRESENTED TO: (Who will receive the instruction?)

TOOLS, EQUIPMENT, AND MATERIALS: (What items will the instructor need to supply to the students for his class?)

PERSONNEL: (What assistant instructors are needed?)

INSTRUCTIONAL AIDS: (What training aids will be required? Detailed description of aids may be put into an annex to the plan.)

REFERENCES: (Where is the subject matter for this lesson found?)

STUDY ASSIGNMENTS: (What should the student study before coming to class?)

STUDENT ATTIRE AND EQUIPMENT: (What should the student bring to class, and how should he dress?)

NOTE: Place in the heading of the lesson plan all information regarding preparation necessary for the conduct of the lesson. Do not omit elements of the heading; if they do not apply, write NONE. The heading serves as a check list for the preparation stage.

A. PRESENTATION (State method and time required.)

1. Introduction (Time required)

Note: If some special technique is used to gain the attention of the class, such as a demonstration or skit, put it into your lesson plan as a NOTE.

a. Objective. Give the objective or purpose of the instruction.
b. Standards. If specific standards are required in the lesson, tell the students what is expected of them.
c. Reasons. Give the student reasons for learning this lesson. Stress its importance.
d. Other elements which may be outlined in the introduction.
   (1) Review of previous instruction.
   (2) Procedure to be followed in this unit.

Note: These elements in the introduction may be outlined in any order which seems best for the presentation.

2. Explanation and/or Demonstration (Time required)

a. All main points of the presentation should be designated a, b, c, etc.
b. When notes, training aids, questions, and other instructional procedures supplementary to the lesson are used, they are put into the plan as follows:

QUESTION: What are the limitations of the light-gun tank?

NOTE: Use Chart Nr. 7.

*From FM 21-6, Techniques of Military Instruction.

ILLUSTRATION: Draw circuit diagram on blackboard.

CAUTION: Be sure driving spring rod slot is in vertical position and locked in bolt.

EXAMPLE: Combat story of poorly planned patrol action.

SUMMARIZE: First three points covered.

c. If a demonstration is used:
(1) Outline in proper order the steps of the procedure.
(2) Include in the outline:
(a) Questions to check understanding.
(b) Notes on use of equipment.
(c) Notes on safety precautions.

3. Summary (Time required)

NOTE: Summary should be used here if the unit includes application and/or examination. When the lesson includes only presentation and review or critique stages, use the summary in the review or critique stage.

a. Review main points.
b. Re-emphasize important items and safety precautions.

B. APPLICATION (State method and time required)

1. Outline in Detail

a. Directions to students.
b. Arragnement of students, requirements, and material.
c. General plan for conduct of the practical work.
d. Practical exercises, if any, in an annex to the plan.
(1) Outline instructor's activities.
(a) Supervision.
(b) Procedure to be followed.
(c) Safety precautions to be observed.

C. EXAMINATION (State method and time required)

1. Written tests. Include complete test with directions in an annex to the plan.

2. Oral tests. Include questions to be asked.

3. Observation of student work.

a. List specific points to check.
b. Indicate how to rate or score the students.

D. REVIEW OR CRITIQUE (State method and time required)

1. Clarify points of difficulty by asking students if they have any questions.

2. Summarize the lesson.

a. Recap points covered.
b. Outline these main points in the plan.

3. Close with a strong statement. Outline in detail or write out.

Note: A lesson which does not contain application or examination stages will number only those stages employed and omit the others. In the case of a lesson which employs only one stage of instruction, the main divisions of the outline will be:

1. INTRODUCTION

2. EXPLANATION

3. SUMMARY

Milwaukee Vocational Technical and Adult Schools

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In-Service Training Department

Assignment Unit 4 — Lesson Plan

1. _____ (Title of Lesson) 2. _____ (Time in Minutes)

OBJECTIVES

4. INSTRUCTIONAL AIDS AND EQUIPMENT

5. Step 1 - PREPARATION

(Motivation - Association - Goals or Outcomes)

(over)

6. Step 2 - PRESENTATION

Important Steps or Main Topics	Points to be Stressed	Devices or Aids

(Continued on page 25)

6. Step 2 - PRESENTATION (Continued)

Important Steps or Main Topics	Points to be Stressed	Devices or Aids

7. Step 3 - APPLICATION OR TRYOUT

8. Step 4 - TESTING OR FOLLOW-UP

9. REFERENCES

Methods of Instruction

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Information Unit 5 — Fundamentals of Learning and Teaching

GENERAL INFORMATION

The four-step instructional process previously discussed has been characterized as sure-fire; that means that it never fails. Of course two qualifications have to be met: (1) it must be properly applied and (2) the learner must be mentally and/or physically sound, meaning a fit person to receive the instruction.

The four-step instructional process was presented as a pattern for instructing a learner to do something new. It went only little beyond the mechanics of the pattern and therefore it falls short in telling the complete story, since the instructor's other duties, those of management and supervision, impinge upon his time and effort. However, it ought to be made clear that, no matter what the school situation, the principles involved in the four-step instructional process are sound and ought to be incorporated into whatever method an instructor uses if instruction is to be efficiently and well done and conversely if learning is to take place efficiently and completely. The pattern of instruction for the school must be flexible in order to take care of a variety of situations. To make it so, some of the basic laws, principles, and reasons behind the acts present in the sure-fire plan must be understood.

What is Teaching?

"If the learner hasn't learned, the instructor hasn't taught." This is a most familiar quotation. It expresses a realization that teaching is a complete process, inseparable from learning. Both go together all the way. It means the instructor has got to stay with his learners until a satisfactory degree of mastery has been attained. It means the instructor can't quit as soon as he has made his presentation. It means more than telling, showing, illustrating, and explaining. It means these things, but it also means questioning, observing, correcting, encouraging, putting the learner "on his own", and the like. It involves planning, selecting devices, choosing methods, getting things ready, and a host of other activities. In short, teaching is the entire process of imparting new skills and knowledge effectively to the learner.

When teaching, the instructor must take into consideration the fact that all minds do not work alike, and must use methods and devices which will develop the thinking and guide the learning of each member of the class.

In general, people develop or learn two kinds of skills - bodily skills and mind skills. Bodily skills are those acquired in using the body or muscles. Mind skills are those acquired in using the mind - in thinking about what we do. These skills are fixed habits. Very few habits are formed without definite thinking.

In teaching we work with the mind because the mind governs the hand.

Teaching is the process of controlling, directing, or managing the thinking of the learner so that he will be able to do and understand.

In teaching occupational subjects, instructors are often prone to think in terms of their own, rather than in terms of the learners' experiences and backgrounds. If they have been occupationally trained, they will very likely teach jobs in the sequence in which they are performed in practice. This is not always the logical order of learning. Too often in practice the most difficult step must be performed first, while the least complex step may be done last. In teaching, this order should be reversed or rearranged to provide a sound training sequence.

No two teaching situations are absolutely identical. There may be several ways of presenting instructional material, but if an instructor knows all the factors to be considered, he can usually plan to use a method of presentation which will be better than any other. The instructor is a manager securing good or bad results in the terms of his skill in selecting devices to overcome learning difficulties or situations. Learning is a process largely hidden from the instructor, but he can determine the extent to which the learners are actually learning by observing their reactions to methods selected and initiated by him.

What is Learning?

If teaching is what it is purported to be, learning must be its corollary. Learning can be defined as the gaining of knowledge, understanding and skills by study, instruction and investigation. Learning in any degree involves a number of elements that tend to retard or accelerate learning. Successful teaching is dependent upon an appreciation of these elements, some of which will be discussed.

No attempt will be made to discuss the psychology of learning or why minds work as they do. However, the instructor should understand that the mind works through three common stages - stimulus, thinking, and action. The mind is aroused or stimulated, we think, and then we act.

The following are laws or ways in which human beings establish associations or bonds, and finally semi-automatic or automatic habits in using their minds or muscles.

Through experiences the mind sets up its own associations of ideas and actions. By practice and association a bond may be set up, and through further repetition, it may be developed into a fixed habit. A habit can be developed only by repetition and practice. The effective way to develop a habit or skill in doing or thinking is to practice it correctly from the start. Until it has become fully established it should be practiced in the same manner. We carry from one experience in learning to another only the associations, bonds, or habits that we have developed in connection with the first or previous experiences. A habit should be practiced under conditions under which it is to function with standards established to evaluate progress. It is best developed under actual working conditions. It may wane from disuse. A few habits of muscular type, such as swimming, wane slowly and are easily relearned. It is easier to revive a habit which has waned than to learn it in the first place. The best way to break a bad habit is to practice a correct one in its place.

In the development of a habit or skill, the learner does not steadily progress, but moves forward by alternate periods of improvement and apparent stagnations that are sometimes called "plateaus of learning." One way to become resourceful in the use of any habit, whether it be in the performance of physical work or in thinking, is to practice it under a wide variety of situations. The measure of any habit or skill, in thinking or doing, is performance which is the ultimate test of ability.

Kinds of Learners

Pitkin in his book "How We Learn" classifies learners as of four types:

1. Those who learn fast and forget fast.
2. Those who learn fast and forget slowly.
3. Those who learn slowly and forget slowly.
4. Those who learn slowly and forget fast.

This classification of learners represents rather a broad generalization. The fact that time is a factor in each classification is significant. It suggests that the quality of memory or the ability to retain marks the good learner. Memory is essential but, like some other things that we think of as native endowments, the ability to use it can be developed. How often do we hear the statement "I can't remember names" or "I have difficulty in remembering dates." The reason may be a habitual lack of a systematic method in establishing associative trends. There is much that enters into this matter of memory. For the present it should be appreciated as a factor in learning for it is hard to imagine one learning even the simplest thing without making use of his faculty of remembering. In fact it is through the exercise of memory that associations are developed that lead him to an understanding of the new. A skill completely learned is one completely mastered. This is sometimes referred to as overlearning which, in other words, means "learning never to forget." For example, everyone who swims has had to learn to swim. If this activity were practiced often for several years, with a proper mental attitude toward swimming, one would still swim after a lapse of 10, 20, 30 or more years if thrown into the water.

The quality of memory does vary among individuals. It is one of the ways in which individuals differ. Effective instruction requires that this be recognized.

Three Factors of Learning

Of importance in the learning process are the three C-A-R factors, CONCENTRATION, ASSOCIATION, AND REPETITION. Each must be present; omit any one and little permanent learning, if any, will be accomplished. The degree of learning will parallel the degree of application of any of the three. The meaning is quite simple. If one is to learn, he must concentrate upon that which he wishes to learn. He must associate something he already knows with that which he wishes to learn. And he must repeat it over and over until it is learned.

The three factors have not been listed in any intentional sequence with respect to their application to learning. It is not intended to imply that a learner first concentrates, then associates, and finally repeats. By placing them in this order, however, the initials of the factors spell out a simple well-known word (car) which provides a ready means of association and a jog to one's memory. In no time at all one will be associating them with the word car.

Concentration

The ability to concentrate differs among individuals. Everyone has made that observation if he stops to think of it. The efficiency of learning is dependent to a great extent upon the ability of the learner to fix his attention upon that which he attempts to learn. In our grade school days we remember the oft-spoken words of the teacher, "Now, John, pay attention!" as if some such command would do the trick. Maybe it helped for a while. Distractions, as we know, are the foe of concentration. But what distracts one may aid another. Intense quiet is known to distract some, while others demand it. In the classroom or shop there may be hundreds of interferences such as:

1. The instructor's voice, mannerisms, appearance.
2. Students moving about.
3. Noisy machines of just noise out of place.
4. Someone standing by or reading over shoulder.
5. Fear, illness, fatigue on part of students.
6. Etc.

There may be no need to go into this further except perhaps to make this simple point. In order to learn, one must think about that which is to be learned. And if he is thinking about it, then he is concentrating upon it. Part of sure-fire instruction is to bring about this condition.

Association

In dealing with the learning process, association refers to mental connections that must be made to enable learning to proceed. It is evident to everyone that learning is an accumulative process. A concept learned today is added to another learned yesterday. Life begins with a few instinctive actions that gradually broaden out and take on characteristics of mental activity. The new is learned through exploitation of the old. When a school or college lists one course as prerequisite to another, it is saying the same thing in another way. The college recognizes the advantage in having the student possessed of ideas within a certain pattern so that these ideas may be readily drawn upon (associated) when he proceeds to learn topics presented in the new course. We tend to think in images and we tend to think in terms of our spoken or written language. Think a word, we see its image. We constantly make comparisons. "What is there about this new experience that is like what I have experienced before?" We reason in that manner and solve problems by bringing together ideas we already possess. If we stop to think for a moment, we would realize that learning would be a most painful and drawn out affair if knowledge or skill once attained could not be used to advantage in learning something new.

There is much more to association than brought out in the foregoing, but perhaps it is sufficient for our purpose. It is the job of the instructor to see that the learner makes correct associations. In some respects it comes about automatically when the instructor "finds out what he knows about the job" and thereby establishes the "jumping off" place.

Repetition

Repetition is important especially for complete mastery or overlearning. It is synonymous with practice. It is common knowledge that "practice makes perfect." Of course it refers only to proper practice. The value of repetition in the learning process is no doubt traceable to the manner in which the mind functions. It involves the matter of habit formation.

"The mind acts like a telephone switchboard, and is said to be capable of making more than three trillion connections. Through experiences inside and outside itself, this switchboard wires itself up automatically--sets up its own associations, connections, and circuits of ideas and actions. By repetition these associations, connections, or circuits may be developed into a pattern. By further repetition this pattern may be fixed--be developed into a habit--a more or less automatic or semi-automatic action of the mental switchboard."

It is important then that a learner be given the opportunity to practice or repeat what he is trying to learn. "We learn by doing" is another way of expressing the same thing. In former years, drill was much more the vogue. For example, we were "drilled" in the multiplication table. Painful perhaps, but we learned the tables. Now practice, repetition, drill should be tempered of course with reasoning, which in itself is subject to the same exercise of repetition.

Laws of Learning

The three C-A-R factors of learning can be applied only in a situation that recognizes the *laws of learning, namely, (1) the Law of Readiness (2) the Law of Exercise, and (3) the Law of Effect. These same laws will be found to permeate the

*Thorndike and others.

4-step instructional process, as is to be expected. The preparation step has little other purpose than to put the learner in a state of readiness to receive the instruction, a state that must be maintained until the learner has learned. The tryout step, as well as the follow-up, definitely applies the Law of Exercise, and the Law of Effect acts favorably upon the learner throughout the process as long as he can follow the instruction, and as long as the instruction culminates in success or achievement that satisfies.

Habit Formation

Unless schooled in the psychology of learning, the word habit probably suggests something to be avoided. But there are good habits as well as bad habits, and the formation of good habits plays a most important part in the learning process. Habits can be formed relative to the use of the mind just as they can be formed relative to the use of the hands. In other words, there are habits of thinking as well as habits of performance.

What is a habit? "A custom or practice; especially, an aptitude or inclination for some action, acquired by repetition and showing itself in facility of performance or in decreased power of resistance; as the opium habit." The dictionary by its illustration gives the impression of a habit as being something bad. But the terms good and bad are wholly relative. A good habit in one instance may be a bad habit in another instance. For example, the proper grip on and swing of the baseball bat is wrong when applied to the golf club. A baseball player has got to do some unlearning if he is to become a near-par golf player.

Repeating a performance tends to develop a habit to the point of fixation where the performance becomes automatic or at least semi-automatic. The setting of the alarm clock is a simple illustration. To set it the first time, one proceeds through each step very conciously. An examination of the setting mechanism is made, notes are read, the time lever is carefully set, and the lever is conciously pushed to the on position. The next time a check of time setting and observation of the word "on," are made and the lever is pushed. As time goes on, the direction the lever should be pushed is fixed in mind, so only a check of the time setting is made and the lever pushed. If faith in one's clock develops, one merely pushes the lever. These actions have become so habitual that they are practically automatic; but there, too, lurks danger.

Everyone has probably asked himself this question, or one like it, at a time after a customary performance--"Did I set the alarm?" The usual response is one of uncertainty, ending up by checking to see if the alarm had been set. Failure in a simple performance like this may not be too serious. But failure in performance in some machine operations can be very serious, especially from the standpoint of safety to person, machine, or work. This would seem to indicate that while concentration is necessary for initial learning, it is necessary too for habitual practice.

Conclusion

A pattern of instructing a learner, such as the sure-fire plan, requires a flexibility based on an understanding of basic principles of learning and of the ways in which learners differ. Instruction should not be stereotyped. Devices, methods, and approach should be in tune with conditions present at the time of instruction.

Instruction goes hand-in-hand with learning. There can't be one without the other. The extent of teaching is measured by the extent of learning. Most efficient teaching, as well as most efficient learning, must recognize the C-A-R factors and observance of the Laws of Learning.

Efficient work has a background of habit formation. It is, therefore, important that an instructor be familiar with the principles of habit formation so that habits may be developed which are orderly and proper. It is important, too, to recognize that habits of thinking may be developed as well as habits of motor skill.

Information Unit 6 Learning Difficulties

GENERAL INFORMATION

It is quite obvious that everyone is confronted with difficulty in one form or another in his attempt to learn something new. If this were not true, there would be no problem at all in teaching except to determine what to teach and there would be no problem at all in learning. But neither teaching nor learning are simple processes.

Learning results from application of the three previously discussed factors; concentration, association, and repetition, and as learning advances, habits of all kinds are likely to develop and must be directed. It is well to know also that much of the sure-fire plan of instruction is a strategy for overcoming learning difficulties.

A learning difficulty is anything that stands in the way of ready learning. It might of course be one of many, such as the noisy shop, low native ability of learner, poor physical condition of both shop and learner, and the like, and conceivably it might be the instructor himself.

Learner Difficulties

Learner difficulties are those of a personal nature under the control of the individual. They are personal, and most of them, through proper teaching and handling, can be helped a great deal.

1. VARIATION IN EDUCATIONAL BACKGROUND: There may be wide variation in the previous schooling of the learners, and it is often difficult to group them in classes according to scholastic standing. Therefore, one of the difficulties to be encountered is that of grouping according to background. The ability to learn does not depend entirely upon the amount of work completed in the regular school system. Many will have acquired considerable education since leaving school. This wide variation in educational background necessitates more individual assistance.

2. PRACTICAL EXPERIENCE LACKING: A percentage of the learners may lack experience as a background upon which to build new information and ideas. Not having had practical experience, they are unable to learn through the ear alone. Appeal must be made through all the senses - eye, ear, and hand. Most of these learners will be able to think in a very practical way when the teaching is based upon some experience which they have had. Under existing conditions, it is not always possible to provide practice to fix an idea; but the instructor can in many parts of each lesson give practical application of the idea through an illustration by citing a case, making reference to practical examples, or by giving a demonstration.

3. FEAR OF EXPOSING IGNORANCE: Many disadvantaged will not attend classes because they do not want to expose their ignorance. They are timid, awkward, hesitant in asking for help, and because of their inability to express themselves clearly and their fear of being laughed at, they resent being called upon to participate in a group discussion. Where this fear of exposing ignorance is apparent, the instructor should be patient in gradually removing it through tactful management.

4. LITTLE OR NO NATIVE ABILITY: A variation in native ability may be apparent. Some are capable of making rapid progress in the development of skills. Others may have very little ability to do things of a manipulative character. Many may have had no previous chance to develop their talents.

5. INABILITY TO STUDY: Some may never have been taught how to study. They have had little experience in looking up material for themselves. If they are to be trained effectively, they must set up new habits of acquiring information. This is a challenge to the instructor.

6. FATIGUE: It will be found that some come to the classes in a fatigued condition. They are tired after having worked all day. They may be sleepy, and become more so when they come for instruction.

7. NEED FOR INDIVIDUAL HELP: In practically every class of any size, there will be individuals who are unable to make normal progress. This may be due to illness, absence, inability to study, or the lack of native ability to learn. This is a difficulty that must be recognized early, and a plan set up to assist these individuals.

8. SIZE OF THE CLASS: Under certain conditions the class may be too large. This may cause disturbance, noise, and distraction of attention, all of which increases difficulties for the learner. Whenever a class exceeds 30, one may expect considerable noise. It is not possible with large classes to distribute questions and discussion so as to insure active participation of all members of the class. On the other hand, a class may be so small that there is lack of interest. No minimums or maximums are suggested here. What size of class will insure best teaching results will depend in some measure upon the type of lesson presented. A class of 15 to 20 people in vocational subjects is, in general, considered desirable for efficient teaching. In all cases, efficient class management is important.

Instructor Difficulties

Under this heading are discussed the things which an instructor does or does not do which make it harder for the trainee to learn. These are difficulties under the control of the instructor.

1. HAS NOT MASTERED SKILL AND KNOWLEDGE: Because the instructor has not mastered the skill and knowledge of a subject, the learner has difficulty in understanding and using to advantage that which is taught.

2. LACKS ABILITY TO TEACH: Unless he has ability to teach and has learned further how to use, as needed, special methods and devices, the instructor cannot put over his subject. He does not know when to illustrate or when to demonstrate; he may talk too fast or too slow; he lectures instead of teaching; he does not know when he has taught his lesson; he tells all he knows in one or two meetings and thinks he has been teaching.

3. LACKS ABILITY TO ANALYZE: The instructor may not know how to analyze his occupation for teachable content. He may not know how to arrange the content in proper sequence, and in general, his material may be mixed, widely varied, unusable, and not all applicable to the subject selected for the lesson.

4. IS TOO TECHNICAL: The instructor may present problems over the heads of the learners. He may entertain a group, but from a learning standpoint the class has gained little. It is doubtful if a lesson can be too simple in its language.

The college graduate, when he first starts to instruct in technical subjects, is inclined to teach the way he has been taught. Simple, common sense, occupational terms should be used if the teaching is to be understandable.

5. IS NOT A GOOD MANAGER OF THE CLASS: The instructor may cater to the exceptionally bright and neglect the average or less brilliant. He may attempt to discipline instead of manage the class. He may lack business-like dignity; may not be orderly in his manner of procedure and habits; may allow disturbances to occur within the group, and may fail to control discussion. Under such conditions, learners are confused and learning becomes more difficult.

6. DOES NOT PLAN IN ADVANCE: Where the instructor does not plan in advance, it is difficult for the learner to follow the instruction because interruptions are bound to occur in getting equipment set up, selecting devices, putting up charts and so on. This delay and lack of preparation in advance reduces the effectiveness of teaching.

7. LACKS RESPECT OF THE CLASS: The instructor may have failed to gain the confidence of the group. They may doubt his statements, have no faith in his opinions, and discount him in general. He is supposed, as the instructor of the group, to know his subject, to be able to teach it, and to command the respect of the group because of his successful experience in his occupation.

Job Difficulties

In training workers to do new jobs, industry has isolated six kinds of difficulties that confront the worker. They are the same in the school shop, and some of them apply in the related subjects or academic classroom. They are as follows:

1. Confusion over complex details.
2. Understanding the main idea.
3. Unlearning old habits.
4. Catching the knack.
5. Getting the "feel."
6. Developing speed, ease, and confidence.

1. Confusion Over Complex Details. Every job, except the very simplest, is confusing in one way or another to a beginner. This is because most jobs at first present a confusing mass of detail. The whole job, therefore, seems complex because practically every detail is unfamiliar though each in itself may be quite simple. Confusion spreads over the learner while he tries to give attention to everything at once. For example, most everyone has attempted to play a new game of cards with others who already were adept at it. Doubtless, each of us can remember the emotional strain and the mental confusion, the uncertainty of bid or action, and the fear of ridiculous misplay. A game of cards contains a lot of small detail and to comprehend all of it immediately is most difficult.

This type of confusion that permeates and surrounds most every new job can be minimized in only one way. The details must be recognized by the instructor, they must be arranged in proper learning order with emphasis upon the easier and most necessary ones first. It isn't hard to see the relationship between this and "Break Down the Job" into Important Steps and Key Points, which was the now familiar step in getting ready to instruct. Neither is it hard to see the relationship between this and certain admonishings in the sure-fire plan of instruction such as "present not more than he can master," "one step at a time, slowly, patiently," "stress the key points," etc.

2. Understanding the Main Idea. Most jobs have a main principle which, if it becomes understood by the learner, simplifies the whole learning of the job. It may take a long time for the learner to stumble upon the main idea himself. If he has to do so, he is learning by the "pick-up" method which has been previously labeled as inefficient. The difficulty arises pretty largely from failure on the part of the instructor to teach the reason "why" so that the learner will better understand, or to emphasize sufficiently the key to satisfactory operation. For example, in chiseling, punching, or nail setting, it is important that the worker watch the contact between work and tool rather than the end of the tool he is about to strike with the hammer. The gap on a spark plug should be set rather close to specification. Why? "Is the spark the same in intensity when under compression as when being tested in open air?" "Does the shape of electrode affect the quality of the spark?" "What causes a spark to jump the gap at an exact instant anyway?" The answer to questions like these will assuredly help a learner who has a job of testing and installing spark plugs in an engine.

3. Unlearning Old Habits. Old habits can stand in the way of learning to do a new job. This is particularly true if there is some similarity between the way of doing the old job and of doing the new. For example, the baseball player has a problem when he attempts to drive a golf ball. His baseball batting habits get in the way. Naturally enough, he follows his old habituated swing. That is why at the outset it is sound logic for him to employ the "pro," a man trained to detect quickly wrong habit and to supplant it with training that will counteract it.

Because of little work experience, many of our students do not at the start have many job habits. Thus, this difficulty is not too serious in our shop training programs. It becomes serious, however, as a learner moves on from one skill to another as he becomes broadly trained. If he has learned, for example, to apply ordinary wall paint, he will be in difficulty when he comes next to apply white enamel. The "brushing out" habit he formed in the first case will be all wrong in the second.

The field of related subjects may be subjected more to this difficulty than the shops. If students had formed correct study habits previously, those habits in most cases may not interfere. The difficulty is likely to be in a student's inability to adjust himself to an extreme of individual instruction and response.

There is really only one thing an instructor can do to minimize the negative results of old habits. He must be alert to detect the "acting up" of such a habit when his learner is trying out his performance and take immediate steps to correct it by calling his learner's attention to it and by re-emphasizing the correct procedure. If the old habit is a bad habit, it must be broken, and as was stated earlier, the way to break a habit is to substitute another for it.

4. Catching the Knack. When one has learned to do with fair smoothness a new job involving several coordinated movements, he has caught the knack of it. He may have had a rather hard time of it. Probably he said to his instructor, "It looks so easy when you do it." Most things do when an expert performs. Most skills are learned step by step or one step at a time. Within many of the steps themselves lies a knack of performing them--some coordinated movement, perhaps an unusual stance, a "twist of the wrist" at the proper instant. A learner gets so he can perform each step separately with a degree of skill and then has difficulty in moving from one step to the next or in joining them all together in smooth operation. This again requires knack and when accomplished results in smooth or skillful operation throughout.

The instructor can minimize this difficulty most by directing the attention of the learner to each detail that requires a peculiar knack. He can't cover them up as the old tradesman did in order to keep the skill pretty much to himself. Catching the knack is a part of one of the factors in determining what a key point is, namely, making the job easier to do. Picking out the key points of the job was emphasized as a very important part of the sure-fire plan of instruction.

5. Getting the "Feel." Everyone moves rather cautiously through his attempt to do a new job. He does so largely because he isn't sure of himself; he doesn't know what will happen if he doesn't perform exactly as instructed; he may not know the reason for everything he does and thus cannot be aware of consequences. The feel of the tools and the action of the machine levers are strange to him. "Let the clutch in slowly," "Tighten the nut securely," "strike a sharp blow with the hammer"--these directions are about as good as words can give. But, how fast is "slowly," how tight is "securely," what degree of force is "sharp." By careful instruction, an instructor can bring a learner to a fair degree of understanding of points involving "feel" but, like the learning of anything else, it isn't accomplished until a certain amount of practice has been experienced. Through practice certain things happen; one gets so used to the feel of a certain pair of pliers, of a certain hammer, of the tension on a certain lever, that a change throws a worker off-stride. In performing many operations a rhythm of motion is required and consequently has to be learned. This, too, is something that can be felt. In order to develop such motion, an instructor must be aware of it himself and be alert to detect points of departure in the motion of his learner.

6. Developing Speed, Ease, and Confidence. Speed, ease, and confidence grow out pretty largely from overcoming the other difficulties heretofore mentioned. They result as a rule from prolonged practice. After a degree of accuracy is achieved, further practice tends to develop speed without injury to accuracy. The importance of time should not be overlooked. Most anyone can do creditable work on any job if given enough time. This difficulty can be overcome by overcoming first the five other difficulties, by persistent practice in doing each part absolutely correct as to form and motion, by conscious effort to make each move count.

Conclusion

Whatever gets in the way of ready learning constitutes a learning difficulty. These difficulties may be within the learner himself because of his physical, constitutional or mental nature; they may arise from conditions surrounding the learning situation, or they may be inherent in the job itself because of its very nature in relation to the qualities or characteristics of the learner. While all difficulties must be taken into consideration by an instructor, those inherent in the job itself are herein emphasized. Others are treated exhaustively in the text and in many other published works. Job difficulties may be overcome, or at least greatly lessened, by complete and conscientious application of the four-step instructional process in every one of its details.

References

1. "Principles of Trade and Industrial Teaching," Selvidge and Fryklund.
2. "Creative Teaching," F. T. Struck.
3. "Job Instruction," Western Electric Company.

Information Unit 7 Audio-Visual Instruction

The Learning Process

The learning process involves differentiation - concrete experiences that if properly interpreted form the basis upon which all higher mental activity is found. The ability to interpret these experiences is dependent on the breadth of the previous experience of the individual. The success of interpretation is gradually progressive, and finally, the individual will quickly and automatically analyze new concrete experiences.

Concurrently interpreted facts will be integrated into logical relationships, finally creating a broad background from which generalizations will emerge.

The teacher must play a leading part in all of these steps in the learning process. He should present many concrete objects in one manner or another, help the student analyze them, direct the discovery of relationships, make logical integrations, and finally engineer the formulation of generalizations.

Interest Created by Use of Audio-Visual Aids

Effective learning cannot be promoted without student interest in subject matter. What little may be learned if interest is lacking will be memorized and will contribute little or nothing to the effective education of the student.

Misdirected interest may be harmful under certain circumstances especially if it is responsible for incorrect student reactions. The use of movies is a case in point. The average student's initial approach to classroom films is one of entertainment. This reaction is difficult to dispel though it is natural enough. However, if the teacher is careless, the feeling of entertainment will become the normal student reaction, and the educational value of the film will be lost. A picture, film strip, slides, model or film properly integrated into a lesson will present a stimulating challenge to the student and create lasting interest.

TYPES OF AUDIO-VISUAL AIDS

Objects, Models, and Specimens

Objects, models, and specimens are commonly referred to as museum materials. These are as realistic as things seen on a school journey, but they lack the actual relationships; and perhaps there is lacking the learning values of hearing and smelling that come into play in actually seeing things in a normal life situation. The advantage of objects, models, and specimens lies in the fact that they may be used in the classroom or shop and may be examined and studied as long as it is necessary for complete learning.

Objects, models, and specimens make it possible to bring to the classroom materials from the four corners of the earth. From them such characteristics as form, weight, texture, odor, taste, hardness, and serial steps in production or development may result.

Objects are the real thing; models are imitations either made from substitute materials or miniature in size, where the original is too large for classroom use. Sometimes they may be parts of a whole removed so they may be handled and observed.

Objects, models, and specimens may be obtained from the following sources:

1. Made in school

2. From commercial sources (scientific companies)

3. From industrial concerns

Instructional Films

Silent films have perforations on both sides while the sound film is perforated on one side only, the other side being used for the sound track. For this reason sound films may not be shown on silent projectors without their destruction. However, silent films may be shown on sound projectors if the machine is built so the proper silent speed may be obtained. Sound films project 24 individual films each second. Most 16 mm. sound machines are built so that both speeds may be obtained by changing a switch.

Motion pictures are very valuable educationally because:

1. They are able to present in realistic manner actions in all parts of the world.

2. They can slow down actions too fast to be seen by the eye. (Motion of the needle of a sewing machine.)

3. They are able to speed up action too slow for the eye to see. (Growth of plants, blossoming of flowers.)

4. They are able to show materials too small to be seen by the eye. (Photomicrographs of structure of metals, fibers, bacteria, etc.)

5. By the use of animations, actions which cannot be seen due to physical limitations may be shown dramatically. (Operation of an automobile engine showing explosions, action of pistons, water pump, oil pump, etc.)

The use of good educational motion picture films:

1. Increases learning

2. Increases speed of learning

3. Creates interest

4. Stimulates imagination

5. Causes greater retention of factual material

6. Causes "slow" students to learn more and faster

7. Speeds the learning of skills

8. Economizes on instruction time

9. Stimulates an increase in reading

All films should be viewed by the instructor before use. If the material in the film parallels other instructional materials, it may be used like a textbook to obtain new information and to be the basis for class discussion. A film may be used as an introduction to the lesson, or along with text materials, or for summary and review. The organization of the individual film will determine the best manner of use.

Still Photographs, Film Strips and Slides

The ordinary flat photograph may be used in the classroom in one of several ways:

1. It may be used for individual instruction as a contact print.

2. It may be enlarged and used for group instruction.

3. It may be projected through an opaque projector and used for group instruction.

4. It may be made into a filmstrip and projected for group instruction.

5. It may be made into a transparency and projected on an overhead projector for individual or group instruction.

All pictures desired for permanent use should be mounted on stiff cardboard. No pictures can be projected in an opaque projector unless they are mounted, due to the cooling current of air passing through to keep the paper from burning.

Film strips, slides and photographs may be used at any time in the lesson presentation depending on its content and the purpose desired. Selection of filmstrips and slides should be made with great care so that interpretation may be accurate and timely. Otherwise the impressions obtained by the student will be misleading.

Graphic Aids

Graphic representations are the most abstract of all visual aids and their understanding in some instances is difficult unless the student has a generous background of information in the field illustrated by the graphic representation.

The following are generally accepted as being graphic materials:

1. The illustration serves much the same purpose as the flat photograph and may be an oil painting, etching, or a drawing.

2. Cartoons are intended to emphasize a single idea frequently by exaggeration.

3. Posters are not generally as simple as cartoons. They frequently are very pointed since in their making the artist may emphasize the ideas he wants to bring out, leaving out extraneous background, and creating attraction by graceful line and color.

4. Maps and globes by their very nature are highly abstract and exaggerative. Their usual purpose is to show special relationships.

5. Graphs may be pictorial, bar, or line graphs. Any type presents statistical information simply for quick assimilation.

Blackboard and Bulletin Board

The blackboard is a tool which makes possible the presentation of graphic materials. Sketches, drawings, maps, and the like may be presented effectively in this manner. Work on the blackboard may be made a cooperative student project with telling value. It lends itself to socialize study, and in its very nature creates suspense and interest. The extent to which a blackboard may be used in classroom instruction is limited by the energy and resourcefulness of the teacher.

The bulletin board is another graphic tool. Its value as an aid to instruction depends on the manner in which it is handled. Usually a committee of students which has been given the responsibility of maintaining materials on the bulletin board does a very good job. Above all, materials must be related to the subject matter being taught and they should be changed frequently because nothing kills interest in such a project faster than stale clippings, cartoons, or posters.

All graphic materials are entirely man-conceived and man-made. For that reason they must be interpreted carefully because the one who created them may have placed undue emphasis on the things that he may deem important but which give a wrong impression. The cartoon is generally used to propagandize for one thing or another, while graphs may be so constructed as to indicate one trend for one person and quite a different trend for another. Nevertheless these aids are of great value. They may be used any time in the presentation of a lesson and in combination with other aids as well as other instructional material.

Selection of Audio-Visual Aids

If visual aids are to be an integral part of lesson presentation, they should be selected when other instructional materials are organized. The aids should be borne in mind even when the first plans for the lesson are being formulated.

If each important step in the lesson is analyzed to reveal the nature of the material to be presented, it is not difficult to select the best aid or combination of aids to provide emphasis and clarity for the benefit of the learner.

After the desired aids are listed and placed in their proper location in the lesson outline, the next step is to collect the aids or at least locate them so that they may be ready for use when the lesson plan calls for them.

Motion picture films which will parallel the lesson presentation will be the hardest of all aids to locate. A film covering in general the same field as the lesson may be easily found, but one which is organized like the lesson is quite another matter. The reason for this is that two persons rarely present instructional material in the same form and in the same sequence even though the material is the same in every detail.

No rule can be laid down which can be followed in the selection of educational films or other aids. The type of lesson, the extent of the field covered, the nature of the material itself, all must be considered. Then the aids finally selected will be or should be the result of a logical and thorough analysis of the objectives of the lesson and the materials which should be utilized to accomplish the desired ends.

Care must be taken not to overburden a lesson with so many aids that only a picture story may be told. While they should play an important part in the lesson, they should not be conspicuous. Rather they should be an element which helps to harmonize all of the factors of learning.

Conclusion

All steps in the learning process - differentiation, integration and generalization, function at the same time, so an important point in teaching is the creation of situations that encourage physical and mental activity.

Audio-visual aids not only create interest in instructional material, but they are also responsible for greater speed of learning. They may be used to introduce new subjects effectively, to give concreteness to other abstract instructional material, and to summarize a lesson in review.

The type of aids necessary for any specific teaching situation can only be determined after cafeful analysis of the situation and an appraisal of the educational objectives of the lesson. Students must be made to realize the educational nature of aids, as the number of aids must be limited to those that are especially pertinent to the subject and those that are accurate.

Methods of Instruction

Assignment Unit 7 — Audio-Visual Equipment

1. The following constitutes an equipment list upon which each instructor will be reviewed for operational proficiency.

Sound Projector	(16MM)
Technicolor Projector	(8MM)
Film Strip Projector	(Manual)
Film Strip Sound Projector	(Manual and Automatic)
Record Player	
Tape Recorder	
Overhead Projector	
Opaque Projector	
Slide Projector	(2 x 2 manual and automatic)

2. Familiarization of transparency machines will be accomplished by observing demonstrations on the production of master copies of each machine.

   3-M Transparency Machine
   OZALID Transparency Machine

Milwaukee Vocational Technical and Adult Schools

APPLIED METHODS OF TEACHING VOCATIONAL SCHOOL SUBJECTS

Classroom Critique Sheet

Date _____ Subject _____ Instructor _____

Observer _____ Lesson Title _____

Evaluation Score _____

Classroom Check List	Yes	No	Comment
Ventilation and lighting well controlled			
Students arranged advantageously			
Instructional material ready			
Training aids ready			
Material presented in sequence			
Lesson Plan used			
Good class discipline demonstrated			
Personal appearance exemplary			

Instructor Presentation	Superior	Excellent	Good	Sat.	Unsat.
1. Statement and clarification of objectives					
2. Speech technique					
3. Use of training aids					
4. Key points emphasized					
5. Questioning techniques					
6. Class participation					
7. Clarification techniques					
8. Summarization					
9. Provision for application					
10. Test or check for understanding					
11. Motivation of students					

APPLIED METHODS OF TEACHING VOCATIONAL SCHOOL SUBJECTS

Classroom Critique Guide for Observer

Only the superior qualities are explained. The observer will rate the instructor by using objective judgment.

1. Statement and Clarification of Objectives - Has title of lesson and objectives placed on blackboard. Announces title and the objectives at the beginning of the lesson. Shows relationship of lesson to past and future lessons. Establishes atmosphere for the presentation.

2. Speech Technique - Effective use of voice to express degrees of thought, emphasis and sincerity. Makes maximum use of illustrations and unit. Students alert but not nervous. Movements natural. Gestures used to vividly convey ideas. Does not pace. Dynamic.

3. Use of Training Aids - Displays thorough familiarity with training aids used. All aids introduced with enthusiasm; follow-up and tie-in thorough and effective. Students display enthusiasm and interest. No excess training aids used. Training aids never distracting.

4. Key Points Emphasized - Strong emphasis on key points. Key points written on blackboard. Ties in key points with students' experiences. Checks for understanding on key points. Uses thought-provoking questions. Emphasizes importance of key points during summary and checks as to their clarity.

5. Questioning Technique - Constantly asking thought-provoking questions. All questions clearly and concisely stated. Questions asked in orderly sequence. Always states question before calling on individual. Pauses for student to think. Calls on student and tactfully recognizes all answers. Acknowledges good questions complimentarily.

6. Class Participation - Frequent questions by students and contributing remarks. Students show stimulation for further participation. Maximum learning situation.

7. Clarification Techniques - No confusion on part of instructor or students. Free discussion between instructor and students. Thought-provoking questions asked by instructor. Forceful examples and illustrations used. Explains so there is no misunderstanding. Summarizes and checks for understanding.

8. Summarization - Important key points or steps are listed. Relationships of steps in job carefully explained and checked.

9. Provision for Application - Ensures practice in correct procedure. Vitalizes and makes practice realistic. No time wasted at beginning or end of class. Each student thoroughly checked on procedure, safety, and required standards. Difficulty anticipated. Adequate equipment and supplies in excellent condition. Training spaces neat and orderly.

10. Test or Check for Understanding - No point in lesson left without assurance that students understand. Appropriate use of tests. Questions were discriminating and thought-provoking.

11. Motivation of Students - Shows a need; develop an intent to learn; maintains interest; encourages early success; gives recognition and credit; uses friendly competition; uses rewards and punishment; avoids creating feelings and emotional responses that interfere with learning.

VT 008 365
College Student Volunteers in State Mental Hospitals. PHS Pub. 1752.

National Inst. of Mental Health. Chevy Chase, Md. Citizens Participation Branch
MF AVAILABLE IN VT-ERIC SET.
Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20004 (FS2.22:M52/68).
Pub Date - 68 34p.

*PSYCHIATRIC HOSPITALS; *STUDENT VOLUNTEERS; *COLLEGE STUDENTS; NATIONAL SURVEYS; PROGRAM DESCRIPTIONS; *DIRECTORIES

The survey of college student volunteer programs in state mental hospitals was undertaken to update the listing of participating hospitals and academic institutions and to gather information about the programs. Questionnaires were sent to 226 hospitals, and 190 in 47 states replied. Of the hospitals responding, 114 used college volunteers who represented 301 of the nation's colleges. Approximately 7,700 college students were reported as volunteers during the 1965-66 academic year. One hundred and nine hospitals reported information regarding program origin. The earliest data reported was 1910 when students of Hanover College began volunteer work at Madison State Hospital. The decade 1956-66 accounted for the origins of 86 programs. Student volunteers worked with long-term and short-term patients in all age groups. Recreational and conversational activities predominated and patient excursions into the community were used in an effort to minimize the transportation probems faced by some student groups. The value of the volunteer programs was rated "very helpful" by 90 institutions and "somewhat helpful" by 17. There was no response to this question in five cases and there were multiple responses in two instances. The appendix identifies hospitals and academic institutions participating in college student volunteer programs. (JK)

VT 008 365

"The volunteer serving psychiatric patients is many people and many things.

"It is unwise--indeed, hardly possible--patly to define who he is or what he does, for he changes as the need for his services changes. His job is fluid and constantly developing.

"This much is sure: he is a man or a woman who gives to psychiatric patients and staffs without being paid in money. This is not to say he is not paid. He is paid in experience, in the satisfaction of doing an acutely needed job well, in the warmth of human relationships which is as old as the Golden Rule and to which words cannot do justice."

The Volunteer and the Psychiatric Patient. American Psychiatric Association, Washington, D. C., 1959.

ED039370

COLLEGE STUDENT VOLUNTEERS IN STATE MENTAL HOSPITALS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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FOREWORD

The survey of "College Volunteers in the State Mental Hospitals"* was originally undertaken by Sister Mary Josephine Cummins in fulfillment of a master's thesis requirement. Additional survey responses were received following completion of the thesis, and we felt the total report should be summarized for distribution to all respondents, academic institutions, and personnel interested in the college student volunteer program.

We are pleased to assist in the preparation and dissemination of this summary report concerned with a significant aspect of volunteering in mental health programs. In addition to communicating the intrinsic values of the college student volunteer program, it is our modest hope that this report in some small measure will reflect the humanitarian interests of many students enrolled in colleges across the country.

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* Dissertation, National Catholic School of Social Service, Catholic University of America, Washington, D. C., June 1967, Mary C. Cummins.

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A survey of college student volunteer programs in State mental hospitals across the United States was undertaken in order to update the listing of participating hospitals and academic institutions and to gather information on the various programs in existence. It was hoped that the information obtained would prove useful for dissemination not only to participants but also to those who might be considering the initiation of a college student mental health volunteer program.

The survey was conducted by mail questionnaire sent to the superintendents of State mental hospitals.[1] Items of inquiry included identification of participating colleges, historical origins of the program, and characteristics concerning the number of volunteers, the hours of service given, and types of supervision provided the students. Informational aspects of program planning and development were sought in questions relating to selection and characteristics of patients with whom the volunteers spent their time as well as a description of activities in which the college volunteers participated with patients. Finally, the staff member responding was requested to evaluate the college volunteer program and to comment briefly on his reply.

Response to the questionnaire was most encouraging, and a deep expression of gratitude is conveyed to all respondents for their interest. There were 190 replies received from the 226 hospitals originally sent questionnaires. A further breakdown of the 190 responses revealed that 114 State mental hospitals across the country have college volunteers, while 76 hospitals replied that they did not. Among the latter grouping, there were frequent explanatory comments that geographic distance between hospital and college was a prohibitive factor in development of a college volunteer program. There were only two respondents indicating their facility did not use any volunteers. Broad representation of the Nation's mental hospitals was reflected by the fact that mental hospitals in only three of the fifty States contacted failed to respond.

1/ 1965 Directory of Facilities for the Mentally Ill and the Mentally Retarded in the United States. American Psychiatric Association, Washington, D. C., 1965.

Extent of Participation

A significant recommendation of the Joint Commission on Mental Illness and Health states that "The volunteer work with mental hospital patients done by college students and many others should be encouraged and extended."[2] A sampling of colleges and universities in 1961 by Greenblatt and Kantor revealed that 87 colleges were involved in a mental health volunteer program at that time.[3] One important aspect of our survey was to determine the further extension of this program.

The growth and extension of the program may be seen by the fact that the 114 State mental hospitals have student volunteers from 301 of the Nation's colleges. While the wide geographical distribution of the colleges and hospitals is clearly seen in the Appendix, it should also be observed that the 114 hospitals are located in 40 States.

The encouraging reception given this program by hospital staff may be noted in the frequent reporting that more than one college provided volunteer services to a given hospital. Three-fourths of the responding hospitals had student volunteers from multiple colleges. In turn, the increased interest among the students may be seen not only in the total number (301) of colleges but also in the fact that 21 colleges provided volunteers for more than one hospital.

Approximately 7700 college students were reported as volunteering during the academic year 1965-66. While a number of the respondents did not have data differentiating the number of male and female student volunteers, there was strong evidence from those who did maintain these figures that the numbers were comparable. In addition, the majority of colleges involved in the program were coeducational institutions, and participation of all male or all female colleges was not significantly different in number.

2/ Joint Commission on Mental Illness and Health, Action For Mental Health. Basic Books, New York, 1961. P. xi.

3/ Milton Greenblatt and David Kantor, "Student Volunteer Movement and the Manpower Shortage." Amer. J. Psychiat., Vol. 118, No. 9 (March 1962), p. 809.

As might be expected, the amount of time given each week by the students varied, with a range from less than two hours to over four hours. The majority of regular student volunteers were found to be averaging from two to four hours per week. In some instances, student groups spent weekends at the hospital. In other examples, student groups were on call for special activities and came to the hospital when needed. The observation of one volunteer coordinator epitomized the high degree of motivation and interest of the regular weekly student volunteer groups:

> These students who have a five and a half day academic week drive sixty-five miles to the hospital and spend Saturday afternoons with the patients.

Program Initiation and Development

Consistent with our interest in learning more about the growth and extension of the program, we felt it important to obtain information concerning the programs' origins. All but five of our 114 respondents were able to identify the year in which the college volunteer program had been initiated in the hospital. This distribution is as follows:

Originating Period	No. of Programs
1910 - 1955	21
1956 - 1960	26
1961	11
1962	18
1963	9
1964	7
1965	9
1966	6
January and February 1967	2
	109

The earliest date reported was by Madison State Hospital in Indiana which indicated that Hanover College students and faculty had been volunteers since 1910. The decade 1956-66, however, marked the greatest period of increase in programs, with 86 of the 109 hospitals reporting program origin in that time period.

While there was some suggestion that a number of the programs originated with the students, the data was insufficient to warrant making this a general conclusion. It was quite clear, however, that students now learn about volunteer opportunities from various sources, including hospital personnel, faculty members, college service organizations, and other student volunteers. In one State--Indiana--the mental health association was cited as a source of information since campus mental health units have been established by the State association for mental health. An interesting remark on one questionnaire revealed that students learned about volunteering from their parents, who were active volunteers themselves.

Comments on program development presented some interesting observations. The problem areas centered around lack of continuity because of holidays or examinations and difficulties involved in rescheduling each semester. One volunteer coordinator stressed the need to have the students volunteer for a year if the above difficulties were to be balanced off for the staff, volunteer, and patient.

A few respondents mentioned the need for improving communication and pointed out the advisability of the students appointing a chairman. In addition to the student chairman, it was recommended that a faculty member be assigned the role of liaison to show the support of the college administration and to provide continuity for the program.

> Ours is not an ongoing program, but depends on the interest of each year's students. I believe it requires some interest and motivation on the part of the faculty in order to keep the program going from year to year. We are planning to try this in the future. In one case . . . the program which had been supported financially by the school petered out when the motivating professor left the school and other instructors failed to encourage the students.

There was also an example given of one university with a coordinator of volunteers: "The university has a three-fourths-time staff employee who promotes both volunteer service programs and individual volunteer services." The response on this same

questionnaire indicated that some of the students volunteered weekly and others sponsored activities three times a week, suggesting a great variety of student volunteering in this hospital.

Several hospital personnel identified the problem of staff shortage as limiting the development of the program. With insufficient staff, it was felt there was inadequate time to plan for the work of the students. One volunteer coordinator emphasized the need for staff to create new and challenging assignments for the college volunteer.

Although the hospital staff is responsible for program planning, the students were also involved in this process in the majority of the programs. One volunteer coordinator described the students' contributions thusly: "The volunteers bring in new ideas for programs and activities which appeal to the patients." In another hospital some of the programs were jointly planned by the college volunteers and the patients.

In summary, it might be noted that the increased number of student volunteer programs, the various sources of information available to students concerning volunteer opportunities, and the many expressions of interest in program improvement, all point to greater involvement in and acceptance of the student volunteer program.

The Volunteers and the Patients

We were interested in determining whether the student volunteers were predominantly working with long-term patients or those recently admitted to the hospital. Accordingly, respondents were asked to indicate if the volunteers worked with patients admitted for a period of six months or less, patients hospitalized from six months to a year, or those hospitalized for five years or more. The multiplicity of responses to all three questions quite clearly indicated that duration of hospitalization was not a factor in assignment of patients to the student volunteers.

Inquiry was also made concerning age grouping and sex of patients assigned to male and female volunteers. Age differentiation was categorized as children, teenagers, adults, and geriatric patients. Responses showed the student volunteers

worked with patients in all age groups. While children appeared less frequently than other age groups, this fact seemed related to the limited number of hospitals which provided services for children. Although the college men were more often assigned to male than to female patients and the college women were listed more often as helping the female patients, the frequency of this reported item was not considered significant.

Difference of staff opinion with respect to assignment of student volunteers to any particular group of patients was only noted with the geriatric patients. In one instance the students' contribution to the older patient was expressed thusly:

> Geriatric patients respond quite favorably to college volunteers . . . . The patient is realistically lonely and has the least opportunity to be in active hospital programs because of physical and mental deterioration. Often, volunteers are the only friends the patients may have from the outside.

In contrast, another respondent reflected on the geriatric patient as a problem area for the college volunteer with a suggestion for improvement:

> It has been my experience that many of the young college students do not gain satisfaction from working with the geriatric patient and prefer areas that are a bit more dramatic. I have planned for future groups of students a more extensive orientation program covering such topics as the physical and psychological problems of aging and hope this will give the college volunteer a more positive outlook and a better understanding of our senior citizen.

The valuable contributions of the students were stressed in many of the comments. One statement synthesized these values as well as pointed up the importance of assignment of volunteers:

> The principal value to the patient is the knowledge that community people are interested in him. Patient contact with volunteers assists greatly in developing hope and initiative for patients. Patients sometimes respond with more incentive and cooperation because they feel the volunteer is not conducting the activity because he is paid and required to perform this service. Problems do develop, however, in securing the most efficient services of the volunteer by assignments which "fit them in" to the prescribed treatment programs of the individual patient. Great skill must be executed in planning for the volunteer so that his skills are utilized and the situation is comfortable.

A variety of patterns were indicated in response to the inquiry on who made the choice of assignment of volunteers to patients. In most cases, the choice appeared to be one arising from group discussion involving volunteer coordinator and/or various members of the ward team (psychiatrist, psychologist, social worker, nurse, etc.) or members of the particular service requesting volunteers; these services included recreation, education, occupational therapy, chaplaincy, etc. In a number of instances, the volunteers themselves were also involved in this decision making.

The importance of providing supervision to the student volunteer was stressed in virtually all of the replies. There were only two hospitals in the survey failing to answer the question relating to methods of supervision available to the students. The absence of response was interpreted as oversight in completing the questionnaire rather than indication of lack of supervisory methods. The educational component of supervision was expressed in one report thusly:

> A two-way bridge of education for the patient about the community life and for the volunteer knowledge about mental health.

The use of group meetings led by professionals was the most frequently reported method of providing supervision. Approximately half of the hospitals, however, indicated the

use of individual conferences with the volunteers. A combination of group and individual conferences was mentioned by more than a fourth of the hospitals. Variation in methods used was often related to the frequency of volunteering as well as the type of volunteer activity. Several programs made mention of grouping new employees and volunteers into orientation and supervisory meetings. Other hospitals commented on use of a continuing inservice training program in which the students participated.

The importance of supervision was particularly emphasized by one respondent in the following terms:

> We have found that most of our units request volunteers because "we need them." We refuse to program volunteers into an area which "needs" volunteers, finding they receive little if any supervision. We insist that the unit must be willing to supervise, plan, and program with the volunteers if it is to be of any value to the patients, staff, and volunteer.

Student Volunteer Activities

Activities in which college volunteers participated with patients were identified on the questionnaire under the following headings: Recreation, Conversation, Education, Excursions into the Community, and Other. Respondents were also asked to identify the activity as related to particular age groups of patients, i.e., Child, Teenager, Adult, and Geriatric. In general, recreational and conversational activities predominated with every age group; the multiplicity of responses, however, indicated little, if any, differentiation between a particular activity and the age group of patients. Although there tended to be overlapping in the terms used for activities headings on the questionnaire itself, the written descriptions of volunteer activities reflected both variety and innovation.

While excursions into the community represented a therapeutic contribution to the patients, this type of activity was also used in an effort to minimize the transportation problems faced by some student groups. One hospital experimented with sending the school-age patients into town to meet the college

volunteers who, in turn, took them one by one to activities in the community. In another instance, adult patients were taken to the college campus for sporting events and plays; a student companion was provided for each patient. Both examples were cited as successful undertakings.

Examples of student volunteer participation in educational activities included the following: individual tutoring of adult, adolescent, and child patients in such subject areas as reading, spelling, English literature, etc.; assisting in occupational therapy projects; providing swimming lessons for children; teaching art to adolescents; conducting classes for the deaf; teaching catechism; giving lessons in piano, creative dance, etc. One hospital also reported that college seniors were trained to take case histories. In another hospital, students who were majoring in teaching emotionally disturbed children volunteered a minimum of three hours per week as student teachers, tutors, and speech therapists. The contribution of the volunteer in educational endeavors was succinctly expressed by one volunteer coordinator:

> The service of the college volunteer in education is of immense value to our patients who may not have otherwise received this personal attention.

Recreation, as might be anticipated, included a variety of activities such as ward parties, group and individual games, square dances, special entertainment programs, spectator sports, informal team participation, song fests, and assisting in the hospital's planned recreational program. Student involvement was expressed thusly:

> One group of students is organized to work with a specific group of patients between the ages of fifteen and twenty-five. . . . The students come to the hospital two evenings a month during the school year. Together, the students and patients plan their programs including athletic nites, musical programs, card playing, games, special speakers and discussion groups.

While we have endeavored to depict some of the volunteer activities under specific headings, there were numerous examples of multiple activities undertaken by student groups. One example described the students:

> An inspiration to staff--a very real and tangible part of our therapy programs to our patients. The girls work in Therapeutic Education, Drama, Psychotherapy Groups (with professionals), Art, Recreation, Occupational Therapy, in Cooking School, and on all types of wards. At the Geriatric Units they are worth the medication of the day.

Another example depicted multiple activities of student volunteers assigned to an adolescent ward:

> Our teenage ward is only a little over a year old and we feel they do a fine job in social recreation, personal involvement projects and in interpersonal relationship situations.

A third example represented use of college volunteers on a different ward:

> The majority of our college students are working--presently--on our new Exit Ward program. Here, patients who have been hospitalized for many years are being retaught how to live and act in the community. Our students are invaluable whether working on the ward or going into the community.

There were frequent examples given of companionship assignment of one volunteer to one patient. In instances involving visits of patients to the campus or to the community, the students arranged to have one student for every patient making the trip as a companion for the duration of the visit. Another program described a Case Aide approach with the student volunteer establishing a one-to-one relationship with a patient, visiting regularly once a week, conversing on the ward, walking on the grounds, or accompanying the patient off the grounds for

shopping or recreation. Positive comments were also made concerning the assignment of female students in the roles of "Big Sisters" to teenage girl patients; this was seen as contributing to the treatment program and meeting a special need of the patients.

Values of the companionship program were aptly summarized by one volunteer coordinator who observed:

> The companionship program gives our patients a friend outside of the hospital they can depend on and who cares about them.

Staff Views

The final section of the questionnaire asked for a brief evaluation of the program in terms of its being very helpful, somewhat helpful, of little help, or being viewed as having negative value. In addition, a short explanatory comment on the response was requested.

Responses to this question of program value were as follows:

Very Helpful	90
Somewhat Helpful	17
No Response	5
Multiple Responses	2
Total	114

There were only two questionnaires having multiple responses. One staff member felt the program was both very helpful and somewhat helpful, depending upon the particular student group. Another respondent checked all items, feeling this was an appropriate evaluation for individual students. Accordingly, this was the only questionnaire which contained a negative view of the program's value, although the same respondent also checked positive value statements.

Five respondents did not answer this particular question, indicating there was inadequate basis for evaluation due to newness of the program, periodic special event nature of the volunteering, or the particular stage of program development.

The majority of comments following the "somewhat helpful" category reflected a similarity to the problems previously described under program development. These were, for the most part, difficulties associated with irregularity of attendance (due to transportation problems, class schedules, examinations, school vacation periods, etc.), staff shortages limiting supervision of the program, and need to improve communication between the college and the hospital through a student chairman and/or faculty liaison. There were only two comments containing some criticism of the volunteers' actual contributions.

In many cases, those who viewed the program as "very helpful" emphasized this evaluation by writing in such terms as "definitely," "extremely," "indeed," and "excellent help." Comments illustrated values to the patients, the hospital, the staff, and to the promotion of mental health. Representative of the comments were the following:

> The student companion spends two to four hours a week with the patient "to provide a period of personal attention" difficult to get in a crowded institution. They take a very personal interest in their "patient friends" and through their interest many patients have been helped to return to their communities.
>
> Patients look forward to the students' visits and service. The values are many: not only good service to the patients but also a good source for recruitment for mental health careers. Through the aid of college students you can elevate the standing of the hospital.
>
> We have used college students in our volunteer service program for over 14 years. We find they bring joy, tolerance, and understanding and are certainly worth any effort on our part. These are the people who are going to talk about mental health and illness and will be the taxpayers in tomorrow's community.

> The contact of the college students with the patients and the resultant interest in the problems of the patients has much value in the long range program of educating the public to the needs of the mentally ill. This project also acts as a health career promotional program.

The following final comment exemplified staff interest in further development of the student volunteer program:

> We feel that the college volunteer program is extremely worthwhile and are continually finding new ways these young people can contribute to the well being of our patients as well as have a satisfying and rewarding experience themselves. We find these students relate well to both young and old . . . . Some of the side benefits we feel are the influencing of these young people to pursue a career in the health field. Because the college volunteers will of necessity be changing from year to year and even circumstance to circumstance, we feel we will be continually building a program and never entirely arriving at the fullest possibility. However, with sufficient direction, the extent of the students' contribution is almost unlimited.

Salute

The Appendix, which follows, identifies the hospitals and academic institutions participating in this program. Within these settings are the patients, the hospital superintendents and staff, the interested faculty, and the student volunteers. These are the people who have made this report possible!

APPENDIX

State Psychiatric Hospitals and Participating Academic Institutions (Reported through February 1967)

ALABAMA

Bryce Hospital, Tuscaloosa:
Auburn University, Auburn
Birmingham-Southern College, Birmingham
University of Alabama, University

ALASKA

Alaska Psychiatric Institute, Anchorage:
Alaska Methodist University, Anchorage

ARIZONA

Arizona State Hospital, Phoenix:
Arizona State University, Tempe

CALIFORNIA

Agnews State Hospital, San Jose:
College of San Mateo, San Mateo
Foothill College, Los Altos Hills
San Jose City College, San Jose
San Jose State College, San Jose
Stanford University, Palo Alto
University of Santa Clara, Santa Clara

Atascadero State Hospital, Atascadero:
California State Polytechnic College, San Luis Obispo
University of Santa Clara, Santa Clara

California Medical Facility, Vacaville:
Sacramento State College, Sacramento
University of California: Davis Campus

CALIFORNIA (cont'd)

DeWitt State Hospital, Auburn:
American River Junior College, Sacramento
Sacramento City College, Sacramento
Sacramento State College, Sacramento
Sierra College, Rocklin

Metropolitan State Hospital, Norwalk:
California State College at Fullerton
California State College at Los Angeles
Cerritos College, Norwalk
Chaffey College, Alta Loma
Citrus Junior College, Azusa
Claremont Men's College, Claremont
Los Angeles Harbor College, Wilmington
Mount San Antonio College, Walnut
Pasadena City College, Pasadena
Pepperdine College, Los Angeles
Rio Hondo Junior College, Santa Fe Springs
University of California: Los Angeles Campus
University of Southern California, Los Angeles
Whittier College, Whittier

Modesto State Hospital, Modesto:
Modesto Junior College, Modesto

Napa State Hospital, Imola:
Contra Costa College, San Pablo
San Francisco State College, San Francisco

Neuropsychiatric Institute, Los Angeles:
San Fernando Valley State College, Northridge
University of California: Los Angeles Campus
University of Southern California, Los Angeles

Patton State Hospital, Patton:
California State College, San Bernardino
San Bernardino Valley College, San Bernardino
San Diego State College, San Diego
University of Redlands, Redlands

Stockton State Hospital, Stockton:
San Joaquin Delta College, Stockton
University of the Pacific, Stockton

COLORADO

Colorado Psychopathic Hospital, Denver:
University of Colorado, Boulder

Fort Logan Mental Health Center, Denver:
Colorado State University, Fort Collins
Colorado Woman's College, Denver
Loretto Heights College, Loretto
University of Colorado, Boulder
University of Denver, Denver

CONNECTICUT

Connecticut Valley Hospital, Middletown:
Central Connecticut State College, New Britain
Connecticut College, New London
Hartford College for Women, Hartford
Holy Apostles Seminary, Cromwell
Trinity College, Hartford
Wesleyan University, Middletown
Yale University, New Haven

DELAWARE

Governor Bacon Health Center, Delaware City:
University of Delaware, Newark

FLORIDA

South Florida State Hospital, Hollywood:
Florida Atlantic University, Boca Raton
Junior College of Broward County, Fort Lauderdale
Miami-Dade Junior College, Miami

GEORGIA

Milledgeville State Hospital, Milledgeville:
Mercer University, Macon
Woman's College of Georgia, The, Milledgeville

ILLINOIS

Alton State Hospital, Alton:
Monticello College, Godfrey
Southern Illinois University: Edwardsville Campus

Anna State Hospital, Anna:
Southeast Missouri State College, Cape Girardeau, Missouri

East Moline State Hospital, East Moline:
Asbury Bible College, Milan
Augustana College, Rock Island
Black Hawk College, Moline

Jacksonville State Hospital, Jacksonville:
Illinois College, Jacksonville
MacMurray College, Jacksonville
Quincy College, Quincy
Springfield Junior College, Springfield

Kankakee State Hospital, Kankakee:
Olivet Nazarene College, Kankakee
University of Illinois, Urbana

Peoria State Hospital, Peoria:
Bradley University, Peoria

INDIANA

Central State Hospital, Indianapolis:
Butler University, Indianapolis
Marian College, Indianapolis

Dr. Norman M. Beatty Memorial Hospital, Westville:
Goshen College, Goshen
St. Joseph's College, Rensselaer
St. Mary's College, Notre Dame
University of Notre Dame, Notre Dame
Valparaiso University, Valparaiso

Logansport State Hospital, Logansport:
Manchester College, North Manchester
Purdue University, Lafayette

INDIANA (cont'd)

Madison State Hospital, Madison:
Hanover College, Hanover
Indiana University, Bloomington

Richmond State Hospital, Richmond:
Earlham College, Richmond
Miami University, Oxford, Ohio

IOWA

Mental Health Institute, Independence:
Cornell College, Mount Vernon

Mental Health Institute, Mt. Pleasant:
Cornell College, Mount Vernon
Drake University, Des Moines
Graceland College, Lamoni
Iowa State University of Science and Technology, Ames
Iowa Wesleyan College, Mt. Pleasant
Keokuk Community College, Keokuk
Morningside College, Sioux City
Muscatine Community College, Muscatine
Simpson College, Indianola
State College of Iowa, Cedar Falls
University of Iowa, Iowa City
Upper Iowa University, Fayette

KANSAS

Larned State Hospital, Larned:
Fort Hays Kansas State College, Hays

Osawatomie State Hospital, Osawatomie:
Baker University, Baldwin City
Ottawa University, Ottawa

KENTUCKY

Eastern State Hospital, Lexington:
Eastern Kentucky State College, Richmond
Georgetown College, Georgetown
Transylvania College, Lexington
University of Kentucky, Lexington

KENTUCKY (cont'd)

Kentucky State Hospital, Danville:
Centre College of Kentucky, Danville

Western State Hospital, Hopkinsville:
Murray State College, Murray
Western Kentucky State College, Bowling Green

MAINE

Pineland Hospital and Training Center, Pownal:
Bates College, Lewiston
Bowdoin College, Brunswick
Gorham State College, Gorham
St. Joseph's College, North Windham
Westbrook Junior College, Portland

MARYLAND

The Clifton T. Perkins State Hospital, Jessup:
Johns Hopkins University, Baltimore
St. Mary's Seminar and University, Baltimore

Crownsville State Hospital, Crownsville:
Catholic University of America, The: Theological College, Washington, D. C.
Morgan State College, Baltimore
St. John's College, Annapolis

Springfield State Hospital, Sykesville
Hood College, Frederick
Western Maryland College, Westminster

Spring Grove State Hospital, Baltimore:
Catonsville Community College, Catonsville
College of Notre Dame of Maryland, Inc., Baltimore
Georgetown University, Washington, D. C.
Johns Hopkins University, Baltimore
University of Maryland, College Park
Woodstock College, Woodstock

MASSACHUSETTS

Boston State Hospital, Boston:
Boston College, Chestnut Hill
Boston University, Boston
Emerson College, Boston
Harvard University, Cambridge
Massachusetts Institute of Technology, Cambridge
Newton College of the Sacred Heart, Newton
Radcliffe College, Cambridge
Simmons College, Boston
Tufts University, Medford
Wellesley College, Wellesley

Bridgewater State Hospital, Bridgewater:
Harvard University, Cambridge
Radcliffe College, Cambridge

Gardner State Hospital, Gardner:
State College at Fitchburg

Grafton State Hospital, North Grafton:
Clark University, Worcester
College of the Holy Cross, Worcester

Massachusetts Mental Health Center, Boston:
Boston College, Chestnut Hill
Boston University, Boston
Emmanuel College, Boston
Newton College of the Sacred Heart, Newton
Simmons College, Boston
Tufts University, Medford
Wheelock College, Boston

Metropolitan State Hospital, Waltham:
Boston University, Boston
Brandeis University, Waltham
Harvard University, Cambridge
Radcliffe College, Cambridge

MASSACHUSETTS (cont'd)

Northampton State Hospital, Northampton:
American International College, Springfield
Amherst College, Amherst
College of Our Lady of the Elms, Chicopee
Holyoke Community College, Holyoke
Mount Holyoke College, South Hadley
Northampton Commercial College, Northampton
Smith College, Northampton
Springfield College, Springfield
University of Massachusetts, Amherst

Worcester State Hospital, Worcester:
Anna Maria College for Women, Paxton
Becker Junior College, Worcester
Boston College, Chestnut Hill
Clark University, Worcester
College of the Holy Cross, Worcester

MICHIGAN

Kalamazoo State Hospital, Kalamazoo:
Kalamazoo College, Kalamazoo
Nazareth College, Kalamazoo
Western Michigan University, Kalamazoo

Pontiac State Hospital, Pontiac:
Michigan State University: Oakland University, Rochester

Ypsilanti State Hospital, Ypsilanti:
Eastern Michigan University, Ypsilanti
University of Michigan, The, Ann Arbor

MINNESOTA

Fergus Falls State Hospital, Fergus Falls:
Fergus Falls Junior College, Fergus Falls

Hastings State Hospital, Hastings:
Carleton College, Northfield
Macalester College, St. Paul
St. Olaf College, Northfield
University of Minnesota, Minneapolis

MINNESOTA (cont'd)

Rochester State Hospital, Rochester:
Austin Junior College, Austin
Rochester Junior College, Rochester
St. Mary's College, Winona

St. Peter State Hospital, St. Peter:
Gustavus Adolphus College, St. Peter
Mankato State College, Mankato

Willmar State Hospital, Willmar:
Willmar State Junior College, Willmar

MISSISSIPPI

Mississippi State Hospital, Whitfield:
Millsaps College, Jackson
Mississippi College, Clinton

MISSOURI

Missouri State Hospital No. 2, St. Joseph:
Missouri Western Junior College, St. Joseph

St. Louis State Hospital, St. Louis:
St. Louis University, St. Louis
Washington University, St. Louis
Webster College, Webster Groves

State Hospital No. 1, Fulton:
Stephens College, Columbia
Westminster College, Fulton
William Woods College, Fulton
University of Missouri, Columbia

State Hospital No. 3, Nevada:
Cottey College, Nevada

MONTANA

Montana State Hospital, Warm Springs:
Montana State University, Bozeman
University of Montana, Missoula

NEBRASKA

Hastings State Hospital, Ingleside:
Hastings College, Hastings

Lincoln State Hospital, Lincoln:
Concordia Teachers College, Seward
Nebraska Wesleyan University, Lincoln
Union College, Lincoln
University of Nebraska, Lincoln

NEW JERSEY

New Jersey State Hospital, Greystone Park:
College of St. Elizabeth, Convent Station
Drew University, Madison
Fairleigh Dickinson University: Florham-Madison Campus

NEW MEXICO

New Mexico State Hospital, Las Vegas:
Eastern New Mexico University, Portales
New Mexico Highlands University, Las Vegas
University of New Mexico, Albuquerque

NEW YORK

Binghamton State Hospital, Binghamton:
Broome Technical Community College, Binghamton
Keuka College, Keuka Park
State University of New York at Binghamton

Brooklyn State Hospital, Brooklyn:
City University of New York, The: Brooklyn College
Long Island University, Greenvale
New York University, New York

Buffalo State Hospital, Buffalo:
Canisius College, Buffalo
Rosary Hill College, Buffalo
State University of New York: College at Buffalo
State University of New York: SUNY at Buffalo

NEW YORK (cont'd)

Central Islip State Hospital, Central Islip:
Adelphi University: Adelphi Suffolk College, Garden City
Hofstra University, Hempstead
State University of New York: SUNY at Stony Brook
Suffolk Community College, Selden

Hudson River State Hospital, Poughkeepsie:
Dutchess Community College, Poughkeepsie
Fordham University: Novitiate of St. Andrew-on-Hudson, Poughkeepsie
Marist College, Poughkeepsie
Vassar College, Poughkeepsie

Kings Park State Hospital, Kings Park:
Nassau Community College, Garden City
State University of New York: Agricultural and Technical College at Farmingdale
Suffolk Community College, Selden

Manhattan State Hospital, New York:
City University of New York, The: City College, New York
Manhattan College, Bronx

Marcy State Hospital, Marcy:
Bard College, Annandale-on-Hudson
Colgate University, Hamilton
Hamilton College, Clinton

New York State Psychiatric Institute, New York:
Columbia University, New York

Pilgrim State Hospital, West Brentwood:
Nassau Community College, Garden City

Rochester State Hospital, Rochester:
Monroe Community College, Rochester
St. John Fisher College, Inc., Rochester
State University of New York: College at Brockport
University of Rochester, Rochester

NEW YORK (cont'd)

Rockland State Hospital, Orangeburg:
Fairleigh Dickinson University: Teaneck, N. J., Campus
Nyack Missionary College, Nyack
St. Vladimir's Orthodox Theological Seminary, Tuckahoe

Utica State Hospital, Utica:
Hamilton College, Clinton
Mohawk Valley Community College, Utica
Syracuse University: Utica College, Utica
Utica School of Commerce, Utica

Willard State Hospital, Willard:
Cornell University, Ithaca

NORTH CAROLINA

John Umstead Hospital, Butner:
Duke University, Durham
North Carolina College at Durham
University of North Carolina at Chapel Hill

NORTH DAKOTA

North Dakota State Hospital, Jamestown:
Jamestown College, Jamestown

OHIO

Athens State Hospital, Athens:
Ohio University, Athens

Cleveland State Hospital, Cleveland:
Case Institute of Technology, Cleveland
Oberlin College, Oberlin
Western Reserve University, Cleveland

Columbus State Hospital, Columbus:
Denison University, Granville
Ohio State University, The, Columbus

Dayton State and Receiving Hospital, Dayton:
Antioch College, Yellow Springs
University of Dayton, Dayton

OHIO (cont'd)

Longview State Hospital, Cincinnati:
University of Cincinnati, Cincinnati
Western College for Women, Oxford
Xavier University, Cincinnati

Tiffin State Hospital, Tiffin:
Heidelberg College, Tiffin
Tiffin University, Tiffin

Woodside Receiving Hospital, Youngstown:
Youngstown University, The, Youngstown

OKLAHOMA

Central State Griffin Memorial Hospital, Norman:
Oklahoma Baptist University, Shawnee
Oklahoma City University, Oklahoma City
University of Oklahoma, Norman

OREGON

Oregon State Hospital, Salem:
Meritt Davis Business College, Salem
Oregon State University, Corvallis
University of Oregon, Eugene
Willamette University, Salem

PENNSYLVANIA

Eastern State School and Hospital, Trevose:
Beaver College, Glenside
University of Pennsylvania, Philadelphia

Mayview State Hospital, Bridgeville:
Mount Mercy College, Pittsburgh
University of Pittsburgh, Pittsburgh

Philadelphia State Hospital, Philadelphia:
Beaver College, Glenside
Temple University, Philadelphia

Retreat State Hospital, Hunlock Creek:
College Misericordia, Dallas

PENNSYLVANIA (cont'd)

Torrance State Hospital, Torrance:
St. Vincent College, Latrobe
Seton Hill College, Greensburg

Wernersville State Hospital, Wernersville:
Albright College, Reading
Lebanon Valley College, Annville
Novitiate of St. Isaac Jogues, The, Wernersville

Woodville State Hospital, Woodville:
Pittsburgh Theological Seminary, Pittsburgh
St. Paul's Seminary, Pittsburgh

RHODE ISLAND

Rhode Island Medical Center, Institute of Mental Health, Howard:
Rhode Island College, Providence
Rhode Island School of Design, Providence
University of Rhode Island, Kingston

SOUTH CAROLINA

Crafts-Farrow State Hospital, Columbia:
Benedict College, Columbia
University of South Carolina, Columbia

SOUTH DAKOTA

Yankton State Hospital, Yankton:
Mount Marty College, Yankton
University of South Dakota, Yankton
Yankton College, Yankton

TEXAS

Austin State Hospital, Austin:
Southwest Texas State College, San Marcos
Southwestern University, Georgetown
University of Texas, Austin

TEXAS (cont'd)

San Antonio State Hospital, San Antonio:
Our Lady of the Lake College, San Antonio
St. Anthony Seminary, San Antonio
St. Mary's University of San Antonio
San Antonio College, San Antonio

UTAH

Utah State Hospital, Provo:
Brigham Young University, Provo

VIRGINIA

Central State Hospital, Petersburg:
Virginia State College, Petersburg

Eastern State Hospital, Williamsburg:
College of William and Mary, Williamsburg

Western State Hospital, Staunton:
Bridgewater College, Bridgewater
Madison College, Harrisonburg
Mary Baldwin College, Staunton
University of Virginia, Charlottesville
Washington and Lee University, Lexington

WASHINGTON

Northern State Hospital, Sedro Woolley:
Skagit Valley College, Mount Vernon
Western Washington State College, Bellingham

Western State Hospital, Ft. Steilacoom:
Pacific Lutheran University, Tacoma
St. Martin's College, Olympia
Seattle University, Seattle
Tacoma Community College, Tacoma

WISCONSIN

Central State Hospital, Waupun:
Ripon College, Ripon
Wisconsin State University--Oshkosh

WISCONSIN (cont'd)

Mendota State Hospital, Madison:
Edgewood College of the Sacred Heart, Madison
University of Wisconsin, Madison

Winnebago State Hospital, Winnebago:
Lawrence University, Appleton
Wisconsin State University--Oshkosh

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National Clearinghouse for Mental Health Information

Public Health Service Publication No. 1752

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service

VT 008 388
Proceedings of the National Association of Industrial and Technical Teacher Educators (NAITTE) Executive Committee Meetings at the Annual Vocational Convention of the American Vocational Convention (61st, Cleveland, Dec. 4-8, 1967).

MF AVAILABLE IN VT-ERIC SET.
Pub Date - Dec67 58p.

*CONFERENCE REPORTS; TECHNICAL EDUCATION; *INDUSTRIAL ARTS; *TRADE AND INDUSTRIAL EDUCATION; *POLICY; *PROGRAM DESCRIPTIONS; TEST VALIDITY; *ORGANIZATIONS (GROUPS); GROUP ACTIVITIES
NAITTE; *NATIONAL ASSOCIATION OF INDUSTRIAL AND TECHNICAL TEACHER EDUCATORS; AMERICAN VOCATIONAL CONVENTION, CLEVELAND, DECEMBER 4-8, 1967

These proceedings of the National Association of Industrial and Technical Teacher Educators include: (1) the minutes of three executive committee sessions and two business meetings, (2) "The President's Report for 1967" by Denver Sans, (3) Financial Report for 1966-67, (4) "Report of the Industrial Arts Division Activities" by Lowell Carver, (5) "Report of the Trade and Industrial Education Division Activities" by Durwin Hanson, (6) "Report of the Vocational Industrial Clubs of America Activities" by Joe Reed, (7) Report of the "Journal of Industrial Teacher Education" by the Editor, (8) Membership and Circulation Report, (9) Revised and Approved Constitution and By-Laws, (10) Report on the Industrial Teacher Education Directory, (11) "Leadership Development and Information Retrieval" by Calvin J. Cotrell, and (12) "The Validity of Paper and Pencil Types of Creativity Tests in Industrial Education" by Lester G. Duenk. VT 008 387 (found in ARM Summer 1969) is the 1968 proceedings. (EM)

VT 008 388

P 83

EDO 39370

Proceedings of the National Association of Industrial and Technical Teacher Educators (NAITTE) Executive Committee Meetings at the 61st Annual Vocational Convention

of the

American Vocational Convention

Cleveland, Ohio

December 4-8, 1967

VT008388

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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1967

TO: Members of the National Association of Industrial and Technical Teacher Educators

FROM: W. R. Miller, Secretary-Treasurer

RE: Information of Interest to NAITTE Members

For a number of years your organization has supported a plan whereby all NAITTE members are informed of the business matters that take place at the annual convention. (Name change by action on a Constitution and By-Law revision proposed at Annual Business Meeting)

The results of executive committee action are especially significant since the officers are functioning in your behalf and this is your only opportunity to be informed about their actions.

The contents of this packet are most helpful to those of us who may not be able to attend the convention at all, or who have conflicts and find it necessary to miss one or more NAITTE sessions.

The following items, in the order listed, are included:

1. Minutes of three Executive Committee sessions and two Business Meetings held during annual convention.
2. The President's Report for 1967-Dr. Denver Sams.
3. Financial Report for 1966-67.
4. Report of IA Division Activities by Representative Lowell Carver.
5. Report of T & I Division Activities by Representative Durwin Hanson.
6. Report of VICA Activities by Representative Joe Reed.
7. Report of the Editor-Journal of Industrial Teacher Education.
8. Membership and Circulation Report.
9. Revised and Approved Constitution and By-Laws.
10. Report on the Industrial Teacher Education Directory.
11. Presentation by Dr. Calvin J. Cotrell-Research, Leadership Development and Information Retrieval.
12. Presentation by Dr. Lester G. Duenk-The Validity of Paper and Pencil Types of Creativity Tests in Industrial Education.

MINUTES OF THE FIRST EXECTIVE COMMITTEE MEETING
National Association of Industrial Teacher Educators
Sunday, December 3, 1967 (2:00 to 4:00 p.m.)

Members present: President Sams, Vice-President Anderson, Williams McMahon, Secretary Miller, Past President Cotrell, Trustee Taylor, and the representative of the AVA Council on Teacher Education, George Brandon

1.0 First item of business was the approval of the minutes of the 1966 Denver convention which were approved as distributed.

2.0 Vice-President Carlisle Anderson, who was to serve as the Chairman for the First General Session, clarified the agenda with the committee.

3.0 President Sams called upon Secretary Miller to report on the honorary memberships to be awarded at the second general session. After this report some discussion was held regarding the problems of awarding honorary memberships. President Sams was asked to appoint an ad hoc committee to consider the problem of honorary memberships especially related to (1) JITE dedication statements and (2) some type of recognition other than the honorary memberships for non-industrial teacher education personnel (the committee should consider the number as well as the manner of presentation).

4.0 On behalf of Membership Chairman William H. Mason, Secretary Miller was asked to report on the number of members (569) and the membership promotional efforts and record keeping systems that had been developed by Mason, Miller and the JITE circulation manager, Howard McVicker.

5.0 The chairman of the auditing committee, Cyrus Taylor, indicated that the auditing committee had found the financial records to be in good order and suggested that the committee go on record as supporting the accuracy of the financial statement and the methods of bookkeeping.

6.0 President Sams thanked the officers in attendance for the help that they had given him as President, especially in view of the fact that he had been ill much of the 1967 membership year.

6.1 It was moved by Past President Cotrell that the president send a letter to the Dean of the College of Education, as well as the Chairman of the Department of Industrial Education at the University of Missouri, commending the Secretary-Treasurer for his outstanding services to the association.

7.0 Vice President Williams introduced a discussion relative to a reprinting of the Accident Prevention Manual for Shop Teachers and reported on suggestions by the Publisher (ATS) regarding a reprinting and/or revision.

7.1 After considerable discussion by members of the committee, Secretary Miller moved that the publisher be authorized to reprint the Accident Prevention Manual and that Vice President Williams be asked to coordinate the editorial changes that are required. Motion was seconded and passed.

8.0 Past President Cotrell reported on activities of the Constitution and By-law Revision Committee and presented suggested changes for the Executive Committee's consideration. After a discussion of the suggested changes and careful study of the mimeographed revisions, Vice President McMahon moved that the suggested changes in the Constitution and By-laws be endorsed by the Executive Committee and presented to the membership at the first general session on Sunday evening, December 3, 1967. The motion was seconded and passed.

9.0 Past President Cotrell, who had been asked during the past year to assume the chairmanship of the NAITE Research Committee, reported on a revitalized system for making research in Industrial and Technical Teacher Education more visible. This revised system was aimed at tying in the Research Committee efforts with the work of the educational research and instruction material Clearinghouse for vocational and Technical Education, funded by the U. S. Office of Education. This system, as further described by Mr. Charles Harris, representative of the ERIC Clearinghouse, would allow the Committee to continue to secure a bibliography of Doctoral, Masters, and Field Studies, but in addition, copies of research studies would be fed into the ERIC network publications. The Executive Committee went on record as endorsing the system and supported the Research Committee's activity in conjunction with ERIC.

10.0 There being no further business to come before the committee, President Sams declared the meeting adjourned.

Respectfully submitted,

W. R. Miller

W. R. Miller
Secretary-Treasurer

MINUTES OF THE FIRST GENERAL SESSION AND BUSINESS MEETING
National Association of Industrial Teacher Educators
Sunday, December 3, 1967 (8:00 to 10:00 p.m.)

1.0 The meeting was called to order by Vice President Carlisle Anderson, who recognized the host and recorder for the session.

1.1 President Sams presented the Presidential Report for the 1966-67 year in which he expressed appreciation for the assistance provided during the year by members of the Executive Committee and the general membership of the NAITE (report enclosed).

2.0 Secretary-Treasurer Miller was asked to formally present the financial report for NAITE which had been distributed to the membership as they entered the assembly room. Several significant items of expenditure and income were emphasized (copy enclosed).

2.1 Auditing Committee Chairman, Cyrus Taylor reported on the status of the NAITE financial records and moved the acceptance of the financial report. The motion was seconded and passed.

3.0 Professor Lowell Carver, representative of the IA Division Policy and Planning Committee, gave a report of IA Division activities that took place during the past year (report enclosed).

4.0 Professor Durwin Hanson, representative of the T & I Division Policy and Planning Committee reported on the activities of the T & I Division during the past year (report enclosed).

5.0 Professor Joe L. Reed, NAITE representative on the Advisory Council, for Vocational Industrial Clubs of America presented a report on the activities of VICA, which had occurred during the past year. Three leaders of VICA were introduced and one of the leaders expressed appreciation for the support of NAITE in VICA matters (report enclosed).

6.0 Professor Carl Schaefer, current editor of the Journal of Industrial Teacher Education, introduced the journal staff and reported upon some of the problems and accomplishments connected with the publication of the JITE during the past year (report enclosed).

7.0 In the absence of the membership chairman, Professor William H. Mason and circulation manager for the JITE, Professor Howard McVicker, both of Purdue University, JITE editor Carl Schaefer described the procedures which had been developed to promote NAITE memberships and Journal subscriptions. A sizeable increase in the number of memberships was reported; 569 for the year ending November 14, 1967 as compared with 508 for the year ending November 14, 1966 (a joint report from these two men is enclosed).

8.0 Secretary Miller, member of the Constitution and By-laws Revision Committee gave a brief report of the activities of this committee which was chaired by Past President Cotrell. The session host was asked to present copies of the proposed revisions to the membership. The members were asked to review the proposed revisions between the time of this meeting and the second general session to be held on Tuesday morning, December 5. It was indicated that action would be taken upon the revised Constitution and By-laws at the Tuesday breakfast meeting. (Copies of the revised Constitution and By-laws was approved at the second general session are enclosed.)

9.0 Vice President William A. Williams described the plans for a second printing of NAITE's Accident Prevention Manual for Shop Teachers. It was pointed out that this second printing would be able to incorporate minor editorial changes, more current statistics and improved pictures. Vice President Williams indicated that the Executive Committee had endorsed the second printing and had asked him to serve as Editor for these modifications. It was asked that the membership make any suggestions for changes in the Accident Prevention Manual in order that this next printing might be maximally effective. Any suggestions are to be reported directly to Professor Williams at The Pennsylvania State University.

10.0 Past President Cotrell, who had assumed the chairmanship of the Research Committee of NAITE, presented a report of activities related to research that had been coordinated and carried out through The Center For Research And Leadership Development in Vocational and Technical Education at The Ohio State University, Columbus, Ohio. In addition, Professor Cotrell described the ERIC system and related the research identification and reporting activities of the NAITE Research Committee, which will be incorporated into the ERIC network. (report enclosed)

11.0 Chairman of the session, Vice President Carlisle Anderson asked for announcements, and thereafter, declared the session adjourned.

Respectfully submitted,

W. R. Miller

W. R. Miller
Secretary-Treasurer

SECOND EXECUTIVE COMMITTEE MEETING
National Association of Industrial Teacher Educators
Monday, December 4, 1967 (5:00 to 6:30 p.m.)

Members present: Anderson, McMahon, Konecny, Cotrell, Rudiger, Hanson, Taylor, Spence, Sams, and Miller, Invited guests: G. S. Wall and Harold Silvius

1.0 The meeting was called to order by President Sams, who in turn asked Professor G. S. Wall to make a report to the Executive Committee concerning activities related to the Directory of Industrial Teacher Education.

1.1 Professor Wall presented a brief report of Directory preparation procedures and possible policy changes which might affect the preparation of the 1968 Directory of Industrial Teacher Education.

1.2 After discussion of Professor Wall's suggestion, it was moved that the Directory include only those institutions granting baccalaureate and/or graduate degree programs in Industrial and Technical Teacher Education. This policy change was seconded and passed. The problems of listing state department personnel and the inclusion of non-teaching technology majors were aired to a considerable degree by the committee.

2.0 President Sams asked Professor Harold Silvius to describe the manner in which he would present the honorary membership certificates at the second general session to be held on Tuesday morning, December 5.

2.1 Professor Silvius reviewed his presentation procedures and received endorsement by the committee.

2.2 In addition, Professor Silvius requested that the Executive Committee provide another JITE contributor to help with the writing of dedicatory statements for honorary memberships that appear in the JITE. President Sams indicated that he would make this suggestion to the Journal Editor, Carl Schaefer.

3.0 The representative to the Trade and Industrial Division Policy and Planning Committee, Durwin Hanson, reported that an alternate representative from NAITE needed to be appointed for 1968 by the newly elected President of NAITE.

4.0 Robert Rudiger, representative on the AVA Advisory Council reported the concern of the Advisory Council with regard to "operation impact" and urged active support by NAITE.

4.1 Representative Hanson also echoed these sentiments from the T & I Policy and Planning Committee.

5.0 President Sams asked Vice-President Gordon McMahon to describe the agenda for the second general session of NAITE to be held at 7:00 a.m. on December 5. After some discussion for purposses of clarification, the Executive Committee meeting was declared adjourned.

Respectfully submitted,

W. R. Miller
Secretary-Treasurer

MINUTES OF THE SECOND GENERAL SESSION AND BUSINESS MEETING
National Association of Industrial Teacher Educators
Tuesday, December 5, 1967 (7:00 to 8:30 a.m.)

1.0 The meeting was called to order by Vice President Gordon McMahon, who introduced the officers and special guests.

2.0 Professor Melvin Barlow was introduced as the speaker for the session. Professor Barlow addressed the topic "How We Study The History of Industrial Teacher Education" (outline of remarks enclosed).

3.0 Professor Harold Silvius introduced the following men: Dean James R. D. Eddy, Dean Rupert Evans, Dean Ernest C. Jeppsen, Dr. H. H. London, Dr. William Micheels, Dr. Robert Worthington and appropriately commended each for his outstanding contributions to the Industrial Teacher Education profession and to NAITE. Professor Silvius next called forward three men who had served the profession and NAITE through their respective publishing firms and financial support of Association activities. These honorees were: Mr. Floyd Mix, President of the Goodheart-Willcox Publishing Company, Mr. William McKnight, Jr., President of the McKnight and McKnight Publishing Company, and Mr. Lawrence Prakken, President of Prakken Publications, Incorporated. All nine of these individuals were awarded certificates of honorary membership by President Sams and warmly applauded by the membership.

4.0 The Nominating Committee's report was presented by Chairman Calvin Cotrell, with the following individuals nominated for office. For the Office of President, Dr. William P. Spence; for the Office of Vice President for T & I, Dr. Durwin Hanson; for the Office of Vice President for Industrial Arts, Dr. Rutherford Lockette; and for Trustee, Dr. Walter C. Brown.

4.1 Nominations were requested from the floor. When none were forthcoming, Dr. G. S. Wall moved that nominations be closed and that the Secretary be authorized to cast a unanimous ballot for the nominees. The motion was seconded by Dr. Robert Reese and passed.

4.2 Dr. Tom Olivo conducted the installation ceremony in which the five new officers were reminded of their responsibilities for the work of the Association. Lowell Carver was also formally installed as representative to the Industrial Arts Policy and Planning Committee. Professor Carver had been appointed in 1966 but was not installed at the 1966 convention.

5.0 Secretary Miller called for action on the revised Constitution and By-laws as presented to the membership at the first general session on December 3, 1967.

5.1 Perhaps the most significant change is in the organization name which now becomes National Association of Industrial and Technical Teacher Educators.

5.2 After several questions had been raised and discussed and an ammendment to By-law Item 13 was made (the ammendment called for the VICA representative to be a member from the Trade and Industrial Division) the revised Constitution and By-laws as ammended were adopted by a unanimous vote of the membership in attendance. (There were approximately 110 members at the meeting.)

6.0 The meeting was adjourned by Vice President McMahon.

Respectfully submitted,

W R Miller

W. R. Miller
Secretary-Treasurer

MINUTES OF THE THIRD EXECUTIVE COMMITTEE MEETING
National Association of Industrial and Technical Teacher Educators
Tuesday, December 5, 1967 (4:00 to 6:30 p.m.)

Members present: IA Division Representative Carver; Vice Presidents Anderson, Williams, McMahon, and Lockette; Trustees Brown and Konecny, President Sams; Past President Cotrell and Secretary Miller.

1.0 President Sams opened the meeting by clarifying the responsibilities of the new officers and requested the assistance of all officers in suggesting names of persons who might be named to some of the appointive positions in the organization for the coming year.

1.1 Past President Cotrell offered suggestions which grew out of the Nomination Committee's deliberations. Special emphasis was placed upon the necessity for active and informed alternate representatives to the two Policy and Planning Committees.

2.0 President Sams suggested that a letter be sent to the current JITE Editor Carl Schaefer, with carbons to the appropriate administrative officers at The Rutgers University offering commendation for his efforts during the past two years as Editor of the JITE.

3.0 The convention program responsibilities for 1968 were agreed upon by the committee as follows: First General Session - Durwin Hanson; Second General Session - Carlisle Anderson; Research Session - Rutherford Lockette; Breakfast Session - William A. Williams.

3.1 Problems related to the scheduling of the convention program to be held in 1968 were discussed.

3.2 It was suggested that the newly elected President, William Spence, be asked to contact the program chairman for the IA and T & I Division in an effort to carefully coordinate program timing and avoid excessive conflicts.

3.3 Following discussion, it was agreed that each Vice President would be responsible for securing hosts and a recorder as well as program participants for each of the sessions.

4.0 JITE Editor Carl Schaefer reported that the American Technical Society will again support the 1967-68 Journal in the amount of $3200.00.

4.1 Incoming editor Jerome Moss will ask one of the assistant editors to assist Professor Harold Silvius with the preparation of dedicatory statements.

4.2 Editor Schaefer reported that it had been requested by the JITE Council to have the number of copies increased in order to provide complimentary copies to "resident" doctoral students.

5.0 The Industrial Arts Policy and Planning Committee representative Lowell Carver reported a change in the procedure whereby the convention report from the IA Division Policy and Planning Committee will be up-to-date with the activities of the Division as reported at the current convention rather than from the previous convention's activities as has been past practice.

6.0 President Sams read a letter from VICA submitted through one of the board members Mr. Merton Wheeler, Director of Industrial Education in the State of Missouri. Through the letter VICA he requested that NAITE prepare a supportive statement endorseing the VICA movement and its effort to develop a Center for Youth Leadership Development. After considerable discussion on the matter it was taken as a consensus of the Executive Committee that the President would write such a letter endorsing the VICA movement and supporting its efforts to develop a Center for Youth Leadership Development. It was recognized by the Committee that no funds were available in the Treasury of NAITE to financially support such a Center.

7.0 President Sams brought before the group the concern of the AVA Advisory Council that the membership year for NAITE be brought in line with the membership year of the American Vocational Association.

7.1 It was the consensus of the Executive Committee that a Constitutional revision which would provide for a change in the membership year to July 1 to June 30 be brought before the membership at the 1968 convention.

8.0 Vice President Williams offered the suggestion that a "Facilities Handbook" be considered as an appropriate activity for NAITE. After some discussion of the matter, it was agreed to table the item until the 1968 meeting.

Respectfully submitted,

W. R. Miller

W. R. Miller
Secretary-Treasurer

THE PRESIDENT'S REPORT

Our Association has made much progress during the 1966-67 year. It is my pleasure to report to you upon this progress. The following items should be of considerable interest to all members:

1. Our Association took on a new name. We are now the National Association of Industrial and Technical Teacher Educators. This change resulted from an extensive study by an Ad Hoc Committee on Constitution and By-laws chaired by Dr. Calvin J. Cotrell. They made this recommendation, and it was approved at our annual meeting in Cleveland. This change is particularly appropriate because of the increasing prevalence of the word "technical" in our departments and programs.
2. We have seen during the last year a substantial increase in our membership. Because of the strong influence of Professor William H. Mason, Membership Chairman, our membership has grown from approximately 500 to almost 600. Although this increase is very gratifying, we still need to realize that our potential exceeds 2,000. Because of this, I challenge each member to continue to help Chairman Mason to build this membership to a much higher level.
3. During 1966-67 our Journal (JITE) became a four-issue publication instead of the previous three. This was made possible through the continued support of the American Technical Society (ATS). Not to be overlooked, however, is the fact that our members have continued to support this growth through their increasing contribution of manuscripts. Your JITE editor will continue to appreciate the submission of

manuscripts.

We have seen during the last year a much improved management of the circulation of our Journal. This has resulted through the combined efforts of: Circulation Manager, Professor Howard McVicker; our Membership Chairman, Professor William Mason; the Executive Secretary-Treasurer, Dr. Wilbur Miller; Editors, Dr. Carl Schaefer and Dr. Jerome Moss; and Publications Editor, Dr. Fred Kagy. Due to improved communication among these key JITE people, our Journal has taken on increasing quality, both in terms of content and in adherence to established publication dates.

There remains one severe problem with our Journal: We still need a sharp increase in the number of Journal subscribers. I therefore urge each of you to send to Circulation Manager McVicker any thoughts or ideas you may have for increasing the number of subscribers.

4. Our Directory of Industrial Teacher Educators has also demonstrated progress during the past year. Because of joint agreement between NAITTE and ACIATE, the Directory will now be published every year as opposed to the previous policy of every other year. Like our Journal, the publication of the Directory is expensive. We probably could not have undertaken this yearly publication without the support of Goodhart Wilcox. Furthermore, the Directory requires much effort, and all of us are indebted to Dr. Gus Wall for his continued excellent management of its publication.

5. For several years we have had a Research Committee. I am happy to inform the members that during last year Dr. Calvin Cotrell agreed to accept the chairmanship of this committee. I know that Dr. Cotrell will bring renewed zest and leadership to this vital facet of NAITTE activities. His appointment is particularly significant because of his continued affiliation with ERIC at Ohio State University.

6. With the attendance at each NAITTE annual meeting, many of us observed increased excitement about the growth of the Vocational-Industrial Clubs of American (VICA). Our representative to VICA is Dr. Joe Reed of the University of Tennessee. I am sure Dr. Reed would join me in urging each member of NAITTE to become familiar with VICA, and to in any way support this organization in behalf of our national youth associated with vocational and industrial education.

Finally, during the past year, many members of NAITTE have meant more to me than ever before. I would like to use this opportunity to express my profound appreciation for the privilege of serving as your president, and to pledge my continued support to the growth and progress of NAITTE.

Denver Sams
President

NATIONAL ASSOCIATION OF INDUSTRIAL TEACHER EDUCATORS
Report of the Treasurer for the Fiscal Period
November 15, 1966 - November 14, 1967

Balance, November 14, 1966

In account with Boone County Nat'l Bank, Columbia, Missouri	$5777.33	
		$5777.33

Receipts

Membership Dues	2366.00	
Subscription to JITE	932.78	
American Technical Society (Royalty Payment for ACCIDENT PREVENTION MANUAL FOR SHOP TEACHERS)	443.42	
American Technical Society (Contribution for JITE production costs)	2800.00	
Sale of Directory	43.00	
Interest on Certificate of Saving	50.00	
Total Receipts		$6635.20
Gross Balance		12412.53

Disbursements

JITE Expenses	2949.18	
Membership Expenses	291.19	
Secretarial Expenses (typing, clerical work, preparation for mailing)	261.07	
Office Supplies	98.01	
Postage, Mailing & Shipping Expenses	232.17	
Preparation of ACCIDENT PREVENTION STUDY GUIDE	200.00	
Purchase of Certificate of Saving	2000.00	
AOTE assessment for '64-'65 & '65-'66	734.00	
Miscellaneous Expenses	76.34	
Total Disbursements		$6841.96
		6841.96
NET BALANCE		$5570.57

Balance, November 14, 1967
In account with Boone County National Bank, Columbia, Missouri $5570.57

Report has been examined and found to be correct:

Auditing Committee: s/ Lewis Yoho s/Denver Sams
s/William H. Mason

Date: December 3, 1967

W. R. Miller
W. R. Miller, Treasurer

NATIONAL ASSOCIATION OF INDUSTRIAL TEACHER EDUCATORS
Report of the Treasurer for the Fiscal Period
November 15, 1966 - November 14, 1967

ANALYSIS OF EXPENDITURES

JITE

$2643.26	Publication and Circulation
283.92	Related Postage and Mailing Expense
22.00	Refund of Cancelled and Overpaid Subscriptions
$2949.18	

MEMBERSHIP PROMOTION

$ 129.94	Membership Promotion Envelopes
6.55	Membership Cards
154.69	Related Postage & Membership Record Cards
$ 291.19	

OFFICE EXPENSE

$ 98.01	Office Supplies
261.07	Secretarial and Clerical Labor
232.17	Postage, Mailing and Shipping Expense
76.09	Reproduction of Convention Reports
34.65	Telephone
21.58	Honorary Membership Certificate & Frames
$ 663.57	

MISCELLANEOUS

$2000.00	Certificate of Saving @ 5%
200.00	Preparation of STUDY GUIDE Manuscript
734.00	AOTE assessment for '64-'65 and '65-'66
4.02	Bank charges
$2938.02	

TOTAL EXPENDITURES

$6841.96

NATIONAL ASSOCIATION OF INDUSTRIAL TEACHER EDUCATORS
Report of the Treasurer for the Fiscal Period
November 15, 1966 - November 14, 1967

Check No.	DISBURSEMENTS BY CHECK	Amount
131	W.R. Miller (Postage)	$ 10.00
132	Miss Anna Desantis (Prep. of Manus. for Study Guide)	200.00
133	Curtis 1000, Inc. (Membership Material)	129.94
134	Johnson Publishing Co. (fall issue)(JITE)	555.23
135	Dr. Fred Kagy (JITE Postage)	17.45
136	Lafayette Mailing Service (Membership solicitation mailing to 1900)	127.15
137	W.R. Miller (stamps-15.00, phone-11.40, certificates-17.08)	43.48
138	University of Mo. (Print Certificates)	3.00
139	Electronics Bus. Equip. (Labels)	35.59
140	Transfer to Savings	2000.00
141	University of Mo. (Clerical Service)	124.55
142	Univ. of Mo. (Supplies-13.36,Reproduction-16.09, mailing-20.50)	50.22
143	AOTE (payment for '64-'65=$351.00; '65-'66=$383.00)	734.00
144	University of Mo. (membership cards)	9.50
145	K.M. Eaddy (Dues Overp'd)	2.00
146	C.D. Lesh Paper Co. (JITE Envelopes)	11.62
147	University of Mo. (Certificate)	1.50
148	Lafayette Mailing Service (JITE Labels)	42.76
149	Lafayette Mailing Service (JITE Labels)	12.06
150	University of Mo. (Postage)	29.84
151	Johnson Publishing Co. (Dec. JITE Mailing)	688.62
152	Dr. Fred Kagy (JITE Mailing)	4.20
153	University of Mo. (Meter Mailing)	47.97
154	Elec. Business Equipment (Labels)	36.31
155	University of Mo. (Office Supplies)	12.48
156	University of Mo. (Steno. Service)	88.52
157	Mrs. Betty Dam (JITE Clerk)	15.00
158	Lafayette Mailing Service (JITE Labels)	15.61
159	F.W. Faxon (Cancel'd JITE)	8.50
160	Lafayette Mailing Service (JITE Labels)	44.30
161	Howard McVicker (Stamps)	15.00
162	Lafayette Mailing Service	2.90
163	Lafayette Mailing Service	6.55
164	Lafayette Mailing Service	1.63
165	Johnson Publishing Co. (JITE)	546.41
166	Lafayette Mailing Service	7.15
167	W.R. Miller (Postage & Telephone)	71.50
168	University of Mo. (Meter Mailing)	13.14
169	Moore-Cottrell (JITE cancel)	4.25
170	Lafayette Mailing Service (JITE Labels)	10.35
171	McGregor Mag. Agency (overpayed)	2.00
172	Lafayette Mailing Service (JITE Labels)	6.99

Check No.	DISBURSEMENT BY CHECK	Amount
173 *		$
174	University of Mo. (Postage)	2.66
175	Lafayette Mailing Service (JITE Labels)	12.06
176	Dr. Denver Sams (Postage)	9.51
177	Howard McVicker (Postage)(JITE)	15.00
178	Dr. Fred Kagy (Postage)(JITE)	9.70
179	Johnson Publishing Co. (Summer JITE)	318.79
180	Mrs. Anita Moores (Clerical)	20.00
181	Lafayette Mailing Service (JITE Labels)	19.33
182	F.W. Faxon (Subs. Refund)(JITE)	4.25
183	Lafayette Mailing Service (JITE)	53.56
184	University of Mo. (Meter Mailing)	17.56
185	Mrs. Anita J. Moores (Clerical)	28.00
186	W.R. Miller (Postage & Phone)	27.25
---	Non-check disbursements**	15.02
		$6841.96

* Ck. #173 replaced Ck. #143, which was voided, but records not changed in ledger.

**

Returned Check (Stale Date) Western Carolina College	5.00
Non Par Bank (Long Lake, Minnesota)	.05
Bank debit for W. J. Hall	3.00
Canadian Discount of $3.00 check	.23
Returned Check to Western Carolina College	6.00
Canadian Discount on $6.00 check	.74
	$15.02

SUMMARY REPORT

The Industrial Arts Policy and Planning Committee held two meetings in Denver, Colorado, on December 5 and 6, 1966, and a cabinet meeting in Washington, D. C., on March 12 and 13, 1967.

This report attempts to summarize the items of business that may be of interest to the National Association of Industrial Teacher Educators

A. Publications Committee

Ernest L. Minelli, Chairman of the Publications Committee, made a progress report for a very active and productive committee.

1. A Guide to Improving Instruction in Industrial Arts. In February, 1962, the I.A.P.P.C. approved a revision of this publication. A committee was appointed and revision began. The committee in its work has carefully considered the updating of goals, content, and philosophical approach for industrial arts. The new edition represents a complete rewrite. The manuscript awaits final approval by the General AVA Publications Committee and AVA Board of Directors.

2. Promotional Membership Brochure. At the annual meeting in 1965, a decision was made to develop a "Promotional Membership Brochure." A committee was appointed consisting of Wilbur R. Miller and William E. Sexton as co-chairmen to develop a brochure for promotional purposes. The borchure will include the following headings:

   Why an Industrial Arts Division of AVA.
   The Relationship Between Industrial Arts Division of AVA and AIAA.
   Contributions of the Industrial Arts Division.
   How Does AVA Serve Your Profession.

   The final manuscript has been completed.

3. Evaluative Criteria for Industrial Arts Education. During the Miami Convention in 1965, the Planning and Policy Committee authorized the revision of the publication, "Evaluative Criteria for Industrial Arts Education." A committee was appointed with Walter J. Robinson as chairman. The committee is to review, revise, and update the present edition, reflecting changes in industrial arts education. This new committee held its first meeting at Denver in 1966 and its second in Cleveland in 1967. Assignments have been made and progress will be forthcoming.

4. AVA Publications or Revisions. The Division again, as in past years, has cooperated in the usual manner by reviewing and editing several new AVA publications or revisions.

5. New Publication. A suggestion was made that consideration be given to the possibilities of preparing a bulletin reviewing and reporting innovative programs in industrial arts education. Walter C. Brown has accepted the chairmanship of this committee

6. Increased Publication Efforts. The Publications Committee feels that it should intensify its efforts and increase its productivity. To do so, it needs assistance. It is extremely important that all ideas, projects, or work which may have publication possibilities or might culminate in a divisional publication be reported to the Publications Committee or the Division's vice president.

7. Guidelines for Publications. Guidelines for initiating and preparing publications are available and can be obtained by writing the Chairman, I.A. Publications Committee, or Dr. Pauline Garrett, Chairman, A.V.A. Publications Committee, A.V.A. Office.

B. Research

Dr. Rutherford E. Lockette, Chairman, Research Committee of the Industrial Arts Division of AVA made the progress report.

1. The committee felt that the objectives which it should serve are to identify researchable topics and encourage committee members and other interested professionals to write proposals. These topics should be organized on a priority basis and disseminated to the membership through the Journal of Industrial Teacher Education. It was also suggested that surveys be conducted at regular intervals of industrial arts teacher education institutions to ascertain the titles of staff and doctoral degree studies in progress. The resulting list should be grouped by states and submitted to the Journal of Industrial Teacher Education periodically.

2. Research Awards. The research committee was asked to identify individuals whom it wished to recognize with an award for outstanding research efforts. Due to a series of problems of some magnitude, no research citations were given in 1966.

3. Research Convention Programs. The Industrial Arts Division Research Committee has sponsored programs concerned with research a number of times. Because of the magnitude of the research effort in the foreseeable future, it seems highly desirable that the research committee continue to sponsor a program at each of the annual conventions.

C. Awards

The Industrial Arts Policy and Planning Committee made plans under the leadership of Walter E. Burdette, Chairman of the Awards Committee, to recognize outstanding contributions by its members. The recognition is to come under two general headings, namely:

1. Certification of appreciation for program participation.

   James Joyner
   Wendell Howard
   Jack Bunnel

2. Leadership awards

   a. Officers and Non-officers

      Rutherford Lockette
      Ernest Minelli

   b. Service

      Pat Atteberry
      Ralph Bohn

   c. Research

      No award

D. Membership

Dr. W. R. Miller and his committee are making a concentrated effort to increase membership in the I.A. Division.

1. Considerable effort has been made to see that all industrial arts people are properly classified.

2. Plans have been completed for divisional as well as state membership representatives.

3. State Vocational Association presidents have been asked to assist, when possible, by adding the I.A. Division state representative to their state vocational association membership promotional team.

4. Effort is being exerted toward the preparation of a membership promotional brochure for the I.A. Division.

5. Membership is very important if the I.A. Division is to maintain its position in A.V.A.

E. Legislative Committee

Walter C. Brown, Chairman, reported the following progress concerning present legislation including N.D.E.A. and Higher Educatio Acts:

1. Chairman Brown reported a need for additional support of industrial arts by A.V.A.

2. There is a real need for a more realistic scholarship program.

3. The suggestion was made the A.V.A. and A.I.A.A. cooperatively prepare articles supporting legislation for industrial arts, possibly through School Shop Magazine. The Legislative Committee was authorized to explore the possibilities of a joint publication with the Legislative committee of A.I.A.A. indicating the importance of federal legislation for industrial arts and, if not, the committee should proceed with publications of their own.

F. Fluid Power Committee

Gerald Baysinger, Chairman of the Fluid Power Committee, reported that throughout the past year, the committee has worked closely with the Vocational and Technical Education Committee of the Fluid Power Society and individual members have participated in national meetings and local chapter meetings and activities. Under consideration is a plan to develop and publish curriculum guidelines for fluid power. The demand for such materials has been growing, and many requests from school have not been met. It is hoped that this material can be developed and made available during the coming year.

G. Industrial Contacts Committee

Gerald A. Parks reports that the committee has no known history of purpose, philosophy, or activity. Consequently, much groundwork must be laid. The committee plans to report regional activities of interest, analyze potential scope of activities, and set a course of action for the coming year.

H. Four-Year Technology Programs

A committee chaired by C. Thomas Dean made their final report concerning "Four-Year Technology Programs for the American Vocational Association." The report of this committee concerned itself with the following:

Philosophy of Industrial Technology
General Objectives
Laboratory Requirements
Selection of Faculty
Selection, Placement, and Follow-up of Four-Year Technology Students
Recommendations

Respectfully submitted,

Lowell L. Carver

SUMMARY OF T&I DIVISION ACTIVITIES AND

SELECTED POLICY AND PLANNING COMMITTEE MINUTES

1. The Policy and Planning Committee of the Trade and Industrial Education Division of the American Vocational Association convened in the Potomac Room of the Pick Lee Hotel, Washington, D. C. with Chairman John R. Plenke presiding. All members of the Committee were present.

2. Minutes of the meeting held December 3-8, 1966 in Denver, Colorado were reviewed and corrected. Motion by Von Robertson and seconded by Joe Reed that the Minutes be accepted as corrected. Motion passed.

Chairman Plenke complimented Grace Martin for the excellent preparation of the Minutes and the outstanding service that she had rendered as Secretary of the Policy and Planning Committee,

Charles D. Bates assumed the duties of Secretary for the Committee. Chairman Plenke, outgoing representative for the National Association of State Supervisors of Trade and Industrial Education, introduced Fred Gordon, State Supervisor of Trade and Industrial Education, St. Paul, Minnesota, as his successor effective July 1, 1967.

Herbert C. Donaghay, Director, Salem County Technical Institute, Penns Grove, New Jersey, was introduced as a new member representing the American Technical Education Association.

3. Chairman Plenke presented a printed copy of the agenda items to be considered.

4. <u>Program of Work Committee</u>

5. Report of the Vice-President of the T&I Division - LEE W. RALSTON

6. 1967 AVA Convention - Cleveland

Harry Davis, Program Chairman, will work with the AVA staff in scheduling the T&I meetings in Cleveland.

7. Report of AVA Activities - MARY ALLEN

8. AVA Report - ALTON ICE

9. Progress of VICA - LARRY W. JOHNSON

Status of VICA Growth as of January 31, 1967

Fact Sheet on the First Year of Activities

VICA Professional News

Vocational Industrial Youth Luncheon

- VICA Observes 50th Anniversary of Vocational Education
- Presented plaque expressing VICA's appreciation to the Honorable Charles D. Perkins, Kentucky Chairman of the House Education and Labor Committee at the luncheon.

Industrial Interests

- Lincoln Welding
- DuPont
- Sears
- American Institute of Cooperatives
- Simpson Rets

National Leadership Conference - Columbus, Ohio, June 19-21, 196?

Publications - Joint publication on Trade and Industrial Education with emphasis on teaching in Industrial Education

Attempt to create interest with present students to enter the teaching profession in their area of specialty.

National Seminar on Youth Organization - Kentucky - June 12-16, 1967 (VICA will be represented)

Teacher Education Film - Simpson Rets Educational Systems have expressed an interest in sponsoring a teacher education film on Trade and Industrial Education in cooperation with VICA. Motion by Von Robertson, seconded by Howard Nelson that the proposal by Simpson Rets Educational System will produce a teacher education film in cooperation with the Vice-President for Trade and Industrial Education and Lowell Burkett. Motion passed.

Requested that Committee Members help work for additional membership in VICA.

Contests - Contests appear to be the life's blood for students' participation. Lee Ralston recommended that Larry Johnson be commended for the outstanding job he has done in developing VICA to the point of prestige and stature that it has now obtained in National Youth Organizations. The recommendation was accepted by the full Committee and Chairman Plenke expressed the Committee's approval for the outstanding job that Larry is doing and pledged the support of the Policy and Planning Committee to continue to work for VICA.

10. AVA Report - MARY ELLIS

11. Program of Work - Trade and Industrial Education Division - PHIL SEAGREN

Concerned on a lack of activity in the Program of Work Committee

Reference to resolutions approved at Denver Convention

AVA combined resolution and Program of Work Committees

Hard to find out names from regions due to reorganization stages that we are going through

Structure:

. Ways and means to reach NCLA, NASSTIE, etc.

Regional Representation

. Report back to Program of Work Committee during the year

Walter Bialobrzeski to prepare rough draft of plan by Cleveland Convention.

12. Review of Policy and Planning Committee Membership - HOWARD NELSON

Minutes of the sub-committee on restructure of Policy and Planning Committee were passed out to each member. This sub-committee was composed of Howard F. Nelson, Chairman; F. Jack Konecny, Von Robertson, Lee W. Ralston. This report is contained in the Denver Minutes on page 18 and 19.

The regions are scheduled to meet this spring.

13. AVA-BAT Committee

Chairman Plenke reports that this Committee is unable to meet at this time.

14. Report of AVA Journal Editor - MELVIN L. BARLOW

15. USOE Report - ROBERT M. KNOEBEL

Problems of representation

Publicize what we are doing

Potentials of what we can do

Change of signals in regions:

. Will effect staffing

. Three vacancies exist in Trade and Industrial Education Section

Regional Conferences

What type of Regional Meetings

Strengthen State Department of Education:

. Using local personnel

16. National Advisory Council to Trade and Industrial Education Division - AVA - LEE RALSTON

It is anticipated that representatives of Labor, Management and Vocational Education will attend the National Advisory Council of the Trade and Industrial Education Division of the AVA Meeting scheduled for March 2, 1967.

17. Revision of Operating Policies for Trade and Industrial Division- VON ROBERTSON

The sub-committee of Von Robertson and Fred Gordon have been working on the revision of the operating policies using Trade and Industrial Education Policy and Planning Committee Manual and Trade and Industrial Education Operating Policies. A preliminary copy was submitted to members for review.

18. USOE Report - ERNEST STUDEBAKER

Mr. Studebaker gave a very interesting and informative report concerning Trade and Industrial Education activities of the USOE.

19. Joint Trade and Industrial Education and Industrial Arts Committee - LEE RALSTON

There was some discussion regarding the report of the Industrial Arts and Trade and Industrial Education Joint Committee which was submitted to the Board of Directors of the American Vocational Association at Denver.

A letter from Burr Coe to Lee Ralston and a letter from Burr Coe to Joe Carroll were read.

Lee Ralston is going to recommend that the report be sent out as adopted at the AVA Convention in Denver without any change. (A copy of this report is Apprendix IV from the Denver Minutes.)

20. <u>USOE Report</u> - HELEN POWERS

A report was given from a committee appointed at the Denver Convention to consider the proposal of establishing a division for health occupations in AVA.

21. <u>USOE Report</u> - ALEXANDER C. DUCAT

TECHNICAL EDUCATION UNIT

Walter J. Brooking

Alexander C. Ducat

Responsibilities and work functions are unchanged. Efforts are directed toward the improvement of quality and increase in the number of technical education programs. Program of work includes:

- Summer institute training
- Program development in technical education
- Developing comprehensive technical teacher education program
- Development of curriculum and new course
- Participate in research activities
- The enrollment for 1966 was 104,421 in post-high school; 20,853 in high school.

22. <u>Report of Publication Committee</u> - VON ROBERTSON

The bulletin "The Challenge" will be updated and rewritten. Jim Eddy will head this committee.

The bulletin "Principles Involved in Evaluating Trade and and Industrial Education Programs" - Albert E. Jochen will help edit this publication.

"The Yearbook" - American Technical Society has offered to publish the Yearbook.

The Bulletin #250 "Administration of Local Programs of Trade and Industrial Education" has been funded out by USOE for publication.

23. A vote of thanks by all committee members was given to Grace Martin for her tenure as Secretary of the Policy and Planning Committee.

24. Jack Plenke retiring Chairman of the Policy and Planning Committee expressed appreciation to Vice-President Lee Ralston for the fine cooperation, assistance, and encouragement that he had given to the Chairman and to the Committee during his tenure of office. Members of the Committee expressed their appreciation to Jack Plenke for the fine job that he has done as Chairman of the Committee.

25. The next meeting of this Committee is scheduled for December 2 in Cleveland in connection with the American Vocational Association Annual Convention.

Meeting was adjourned at 12:00 noon.

Charles D. Bates, Secretary

NAITE REPRESENTATIVE REPORT
VOCATIONAL INDUSTRIAL CLUBS OF AMERICA
JOE L. REED

As of October 31, 1967, the following thirty-one states and provinces had affiliated with the National Organizations:

1. Arizona
2. Arkansas
3. California
4. Colorado
5. Georgia
6. Guam
7. Illinois
8. Indiana
9. Iowa
10. Kansas
11. Louisiana
12. Maine
13. Michigan
14. Minnesota
15. Missouri
16. Montana
17. Nebraska
18. Nevada
19. New Jersey
20. New Mexico
21. New York
22. North Carolina
23. Ohio
24. Oklahoma
25. Pennsylvania
26. Puerto Rico
27. Tennessee
28. Texas
29. Utah
30. Virginia
31. West Virginia

Comparison of 1965-66 Program with 1966-67 Program

Year	Membership	Student Adults	Clubs	States & Provinces
1965-66	29,534	419	1,074	26
1966-67	42,255	797	1,386	31

Special Meetings

On August 1, 2, 3, 1966, First State Advisors Workshop was held at Willard Hotel, Washington, D. C. with 19 states participating.

Later in the year, February 11-16, 1967, A National Officers Leadership Taining Conference was also held in Washington, D. C. and 42 youth and adults attended from 16 Associations. The purpose of this meeting was to give our VICA youth information and training on the National level. This served to broaden their perspectives and to acquaint these leaders with the activities and problems of VICA and of other States across the Nation. Opportunities were provided for the youth to associate with leaders of the United States Chamber of Commerce, the National Office of Education, the American Vocational Association, and the AFL-CIO. Many of our youth attending this meeting visited their Senators and Representatives on Capitol Hill.

Public Relations

National VICA has an important mandate in the National Program of work to carry out a vigorous program of public relations. It is our purpose to give industrial youth the best possible image as they prepare to enter the world of work. It was this mandate that directed National Headquarters to employ in December, 1966, a Director of Public Information and Editor for the VICA Journal. It has been the responsibility of the person in this position, Miss Virginia Croft, to conduct our public relations activities. Most visibly, the Journal stands out, but this is only a part of her responsibilities.

MEMORANDUM

TO: NAITE Membership

FROM: Carl J. Schaefer, Editor

TOPIC: Annual Report (1967) - Journal of Industrial Teacher Educatio:

DATE: December 3, 1967 - Cleveland AVA Meeting

Since this will be my last official report to the NAITE Membership as Editor of your Journal (Jerome Moss takes over as Editor with the September, 1968 Issue), I would like to start by expressing thanks to the many individuals who have assisted in this endeavor. Last publication year (Volume 4) was the first as a quarterly. With some trepidation I said in my column FROM THE EDITOR, "It is benefitting as we enter the fourth year of publication that we note the Journal is being expanded into a quarterly. Through the assistance of the American Technical Society the Journal now embodies prestige and gives status to the National Association of Industrial Teacher Educators never before enjoyed. It will be our hope to maintain a level of sophistication of articles in this, the first quarterly year, and to make the Journal of Industrial Teacher Education even more of value to those within the profession." Four issues hence, I can report with confidence, that there does exist enough quality manuscripts to enable the Journal to be a quarterly publication.

In this last four issues you will find in them twenty-eight published manuscripts as authored by thirty different individuals. Moreover, our able historian and dedicatory author, Harold Silvius, has recognized four of our honorary members (Harry C. Thayer, Gilbert G. Weaver, Lynn A. Emerson, and Andrew W. Althouse) with the rhetoric which only he commands.

Thanks to Fred Kagy, our publications manager, and to Howard McVicker, circulations manager, I can report that many of the mechanical problems have been solved. But we do have a problem which will take some assistance by all. As yet, we have not been able to get the Journal included in the Educational Index. It appears that the librarians control the content of this index and until our Journal is requested enough, well enough known, very much in demand and rated "in" so as to speak, it will remain outside of the Educational Index. You can assist by making known its popularity as a tool of your undergraduate and graduate students.

Your suggestions as how the Journal can better serve you are always welcome. The Editorial Board meets Tuesday morning, and the Board Members will welcome your ideas.

Another worthy endeavor worth mentioning is that being directed by Robert M. Worthington to determine the practicability of supplying the Journal free of cost to all industrial educational doctoral students. This and other important decisions will be made at Tuesday's Editorial Board Meeting.

Annual Report
Membership and Circulation Report
1966-67

On November 15, 1967, the terminal date for the past year's efforts, the NAITE paid membership was 569 compared to 483 a year ago at the same time, an increase of 18% for the year. This increase can probably be attributed to many reasons or causes, but it is felt that getting out the two-way envelope reminders earlier than in past years has contributed greatly. The renewal rate of past members is up considerably.

The mailing picture is as follows:

569 paid memberships
20 honoraries
174 paid subscriptions (libraries, etc.)
763 total mailing

We also have 50 persons who were members before but did not join this past year. Efforts have been made to bring them into the fold.

The membership chairman and circulation manager, both being at Purdue, have set up one central file system on membership and subscriptions to cut down on duplicated effort. The card system as set up has been replicated for the treasurer and every effort has been made to maintain and update these systems. In the past, communications between the treasurer and persons handling the circulation and membership has been a problem. By keeping the treasurer's card system up-to date with the one used for circulation many past problems are being eliminated. Dr. Miller has been very considerate and cooperative and we feel that by continuing the closely coordinated efforts of all three parties the membership will increase and efficiency of circulation will improve considerably.

A membership confirmation form has been developed and put into use. By use of this form we feel communications between the treasurer and the circulation office will be more accurate and will provide less potential for error on transacting correspondence concerning memberships.

The experience with using gummed labels this past year has presented problems that apparently existed in prior years. Many complaints from members have indicated that somehow the labels either come off in transit or are lost someplace prior to being mailed. Either of the reasons above is easily envisioned when dealing with "sticky" paper about one inch by three inches. We have initiated a new labeling method for the second issue of this year with the cooperation of Dr. Kagy which eliminates the gummed labels. On a trial basis we are now printing addresses directly onto the envelopes in which the Journals will be mailed.

Some people still confuse the information on the subscription-membership page and send checks for the wrong selection. Members (potential) send in $5 for a year and subscribers $3 in several cases. Several letters have been received indicating the shortcomings of this page and pointing out the weaknesses. We have made recommendations for changing the format slightly which, if put into practice, will hopefully correct this confusion factor.

We feel we have made progress in systematizing the membership and circulation procedures which will result in increased efficiency in maintaining each member's status and getting correspondence to him.

We wish to thank Dr. Miller and Dr. Kagy for their patience and cooperation in assisting in getting these improvements instituted.

Respectfully submitted,

William H. Mason
Membership Chairman
Department of Industrial Education
Michael Golden Labs
Purdue University
Lafayette, Indiana 47907

Howard E. McVicker
Circulation Manager
Department of Industrial Education
Bldg. C, South Campus Courts
Purdue University
Lafayette, Indiana 47907

The National Association of Industrial and Technical Teacher Educators

CONSTITUTION AND BY-LAWS*

Article I. Name, Affiliation, and Meetings.

Section 1. This professional group shall be known as the National Association of Industrial and Technical Teacher Educators.

Section 2. It shall exist under affiliation with the Industrial Arts Division and Trade and Industrial Division of the American Vocational Association, Inc., and shall hold its major annual meeting in connection with the annual convention of that Association.

Section 3. Other meetings may be called by the President and shall be called by him upon petition signed by twenty members of the Association.

Article II. Aims or Purposes.

Section 1. This Association shall earnestly endeavor:

a. To bring about closer cooperation among those engaged in preparing and improving teachers and other workers in health occupations, industrial arts, technical education, and trade and industrial education;

b. To stimulate and to take appropriate action concerning practices and proposals in industrial and technical teacher education and in other educational phases related thereto;

c. To increase the contribution of the group to the extension and perfection of all phases of industrial arts and vocational and technical education;

d. To foster research and recording of experiences in line with professional interests;

e. To promote other common desires of the group.

*Revision--approved December 5, 1967

Article III. Membership

Section 1. Eligibility for membership shall be assumed to embrace all persons interested in the problems relating to the preparation of teachers for health occupations, industrial arts, technical education, and trade and industrial education.

Section 2. There shall be only two types of memberships: active and honorary.

Section 3. An active member is a member whose dues in the Association are paid to date.

Section 4. Honorary Membership.

a. Honorary members must:

(1) Be nominated by an active member. The nomination must be presented to the Secretary in writing. Recommendations including detailed specifics concerning the achievements of individuals nominated for honorary life membership are the responsibility of the individual or group making the nomination. The application deadline is two months prior to the annual meeting. Individuals to be honored will be notified.

(2) Be approved for honorary membership by a majority of the Executive Committee.

b. Nominees for honorary membership shall be drawn from three categories of persons:

(1) Industrial and technical teacher educators who have retired by reason of age or disability or who have at least twenty-five (25) years of service in this field, and have:

(a) Made significant contributions to this organization.

(b) Been paid active members during the last ten years of their careers. Individuals who enter the profession late in life (generally after 55 years of age) are exempted from this criterion. Failure to comply with this criterion due to illness, foreign service or other extenuating circumstances will not operate against a person who is recommended.

(2) Other industrial and technical teacher educators who have made contributions which are clearly outstanding, such as:

(a) Promotion to positions of distinction which lend prestige and direction to industrial and technical teacher education, as a college presidency, vice presidency, deanship or similar office.

(b) Successful completion of research projects which are of monumental value to the field.

(3) Those persons outside the field of industrial and technical teacher education who have made contributions of outstanding value to the organization and its efforts.

Article IV. Dues and Assessments.

Section 1. Membership dues or assessments shall be fixed by the Executive Committee except when the Association, at an annual meeting, shall act in these matters. There shall be no dues or assessments required of honorary members.

Section 2. Only members whose current and past dues and assessments have been paid in full shall be eligible for election to office or appointment to committee.

Article V. Officers and Committees.

Section 1. The officers shall consist of:

* president
* four vice-presidents (two from industrial arts education; two from trade and industrial and technical education)
* editor JITE
* secretary-treasurer
* three trustees

Section 2. The three trustees shall act as an Auditing Committee.

Section 3. There shall be such standing committees as may be designated in the By-Laws or authorized at an annual meeting and such special committees as may be appointed by the President.

Section 4. The office of secretary-treasurer shall be continuous.

Article VI. Amendments

Section 1. Any member may propose amendment to this Constitution or to its By-Laws at any annual meeting. There need be no advance notice of such intention. The proposal shall be read and submitted in writing, signed by the member.

Section 2. A two-thirds vote of members present shall be necessary for amendments. Twenty members shall be the minimum number present and voting.

By-Laws

Item 1. Election of Officers.

Officers shall be elected by a majority vote at the annual meeting, and they shall serve until their successors have been duly chosen.

Item 2. Election of Trustees.

One trustee shall be elected each year for a three-year term, by majority vote, at the annual meeting.

Item 3. Nominating of Officers and Trustees.

The President shall appoint a nominating committee of three at the opening of each annual meeting. This committee shall offer one person in nomination for each vacancy. Other nominations may be made from the floor at the business session before the vote.

Item 4. Duties of Officers.

Officers shall perform the usual duties and have the customary powers, respectively.

Item 5. Vacancies.

In case the President is absent from any meeting or unable to complete his term, the other members of the Executive Committee shall request one of the vice-presidents to serve as president. Other offices which may become vacant shall so remain until the next election, and the President shall assume or delegate the duties and powers interrupted. In case the office of president becomes vacant, the position shall be filled by a vice-president chosen by vote of the Executive Committee.

Item 6. Ex Officio Service.

The President shall be, ex officio, a member of all standing or special committees, except the Nominating Committee, with power to vote. He shall not serve as chairman.

Item 7. Committee Reports.

Chairman of all committees shall make their own reports to the annual meeting and shall file such reports with the secretary-treasurer.

Item 8. Rules of Order.

Roberts' Rules of Order shall be in effect, except as the Association may otherwise direct.

Item 9. American Vocational Association Advisory Council representative.

The President shall each year appoint two members to serve as representative and alternate, respectively, to the American Vocational Association Advisory Council. One of the representatives shall be the Immediate Past President.

Item 10. Term of Office.

The terms of office for the President and the Vice-Presidents shall be one year and two years, respectively.

Item 11. Executive Committee.

The elected officers and trustees, the Immediate Past President and editor of the Journal, shall constitute the Executive Committee of the Association and shall meet immediately following the annual meeting during the AVA Convention. In addition to the duties stated and implied in the Constitution and By-Laws, they shall plan the program and determine policies for the ensuing year, review present projects, and approve or reject new projects of the Association. They shall prepare plans to implement all projects undertaken by the Association.

Item 12. Fiscal Year.

The fiscal year of the Association shall be established as starting November 15 and ending November 14 of the following year.

Item 13. The Industrial Arts Policy and Planning Committee and the Trade and Industrial Education Policy and Planning Committee Representatives.

When a vacancy is anticipated, the nominating committee shall offer one person in nomination and one person as an alternate to serve as representative to the Policy and Planning Committee. The appointment shall be for a term of three years.

Item 14. The Vocational Industrial Clubs of America Advisory Council Representatives.

When a vacancy is anticipated, the nominating committee shall offer one person in nomination from trade and industrial education and one person as an alternate from trade and industrial education to serve as representative to the Vocational Industrial Clubs of America Advisory Council. The appointment shall be for a term of one year.

Item 15. AVA Council on Teacher Education Representatives.

Through the AVA Council on Teacher Education, the Association shall be affiliated with the Associated Organizations of Teacher Education. Four representatives (two from industrial arts education and two from trade and industrial and technical education shall represent the Association on the AVA Council on Teacher Education. When a vacancy occurs, the President shall appoint the replacement. The appointment shall be for a term of four years.

A Brief Report
on the
INDUSTRIAL TEACHER EDUCATION DIRECTORY 1967-68
by
G. S. Wall

NAITE
First General Session
Cleveland, Ohio
December 3, 1967

As the Directory is still in the process of being produced it is necessary to confine my comments to only some of the major aspects of it. It is hoped that it will be distributed before the end of December or the first week in January so that each of you should soon have a copy.

In general, the format and content is the same as in previous issues except that the 1967-68 Directory does not list graduate or research assistants. It does, as did the 1966 Directory, list state departments and their vocational teacher educators as well as departments in institutions and their personnel. The latter are given by name, rank, degree held, and teaching area; the state department personnel generally by name only. The number of degrees granted was requested to be given to cover the twelve month period beginning with July 1, 1966 and ending June 30, 1967, rather than the past academic year and the 1967 summer session as was previously done.

Overall, there are 53 state departments included, as was the case in 1966. There are 225 institutions listed, a gain of 4 over the number included in 1966. This gain comes from the fact that 6 new institutions are listed and 2 institutions were dropped from the listing as no longer having an industrial teacher education department.

The number of departments increased from 232 in 1966 to 234 in the 1967-68 issue. This increase came about in spite of the fact that

4 institutions no longer have industrial education separated into industrial arts and vocational departments as there were 2 institutions that changed from a single department to a dual department. There are 9 institutions in the 1967-68 Directory which have dual departments; 11 having been listed in the 1966 issue.

A new institution was added by each of the following states: Arkansas, Florida, Maryland, Nevada, Oklahoma, and Pennsylvania; the gain in Oklahoma and Pennsylvania being offset by one institution being dropped in them. A new department was added in New York and South Dakota as the former single department listing was changed to two departments in one institution in each. Dual departmentalization was dropped in one institution each in Hawaii, Michigan, North Carolina and Texas.

As to personnel listed the number increased to about 2517 (this has not been verified positively at this time, but should be reasonably correct), or about 400 more than appeared in the 1966 issue which listed 2105 individuals. The 1967-68 total represents 130 state department teacher educators, exclusive of those listed as being on a college faculty, and 2387 individuals assigned as institution department faculty members. It should be remembered that the 1967-68 Directory does not list graduate or research assistants.

Interestingly, it should be noted that a preliminary check of those listed in the index reveals that there are approximately 800 names which did not appear in the 1966 issue, with over 400 names having been removed from it. A more detailed report on the Directory may be prepared later, time permitting, for distribution to NAITE members.

INDUSTRIAL ARTS, TECHNICAL AND TRADE AND INDUSTRIAL EDUCATION--RESEARCH, LEADERSHIP DEVELOPMENT AND INFORMATION RETRIEVAL[1]

Calvin J. Cotrell[2]

It is a pleasure to have this opportunity to share with you information about recent and current activities in industrial arts, trade and industrial and technical education at The Center for Research and Leadership Development in Vocational and Technical Education at The Ohio State University.

First, however, I must give you some information about the total Center operation in all areas of vocational education and the related areas of occupational psychology, manpower economics, and occupational sociology. Our Center is an independent administrative unit with a director (Dr. Robert E. Taylor) reporting to the Vice President for Academic Affairs and Provost of The University. In the total Center operation we currently have approximately 14 different research, development and training projects in vocational and technical education. I will review only a few of these current projects as I discuss those recently completed or on-going activities in the areas of interest to this audience. My comments will be concerned with research and related activities, leadership development and information storage, retrieval and dissemination.

Research Activities

In May of 1966, we held a national invitational research planning conference on T & I teacher education. During this conference, twenty-one research and development priorities were listed. I am happy to report that eight of these have been implemented. Incidentally, a few copies of the report of this conference are still available.

We are now completing the data processing for the first or pilot phase of our micro-teaching project. In this project we are assessing the effectiveness of the use of the micro-teaching process and videotape recording techniques in vocational and technical teacher preparation and in-service training.

For those who may not be familiar with the micro-teaching process I will describe it. Micro-teaching refers to scaled-down teaching encounters ranging from five to ten minutes in length with four to five pupils. It is real teaching. The pupils are at the grade level that the teacher or prospective teacher is preparing to teach. The candidate has the opportunity to teach, to have his teaching

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[1]An illustrated presentation to the NAITTE General Session at the American Vocational Association Convention in Cleveland on December 3, 1967.

[2]Dr. Cotrell is Specialist in Trade and Industrial Education, The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University, Columbus, Ohio.

critiqued, and then to re-teach the same lesson to a different group of pupils to see if he can improve. Please note that the description of the process does not mention "peer teaching" or videotape recording. As done at Stanford University and in our experiment, high school pupils are employed to participate. The process of micro-teaching can be performed without videotape recording but it is believed that learning can be expedited if videotape recordings are used to enhance the impact of supervisory feedback. The advantages of instant replay and total reconstruction of the teaching-learning situation make the videotape recorder a very important tool in facilitating the supervision of teaching. Obviously, there are many other useful applications of this kind of hardware in teacher education. Videotape recording is an important aid to research in learning since we can record the observation for the purpose of collecting data and at a later time evaluate or analyze it.

The micro-teaching cycle in teacher education consists of the following: The teacher (1) plans a five-minute lesson, (2) teaches the lesson to a group of four or five students, (3) views the videotaped replay with his supervisor and determines what he needs to do to improve, (4) revises his lesson plan, (5) teaches the revised lesson to a new group of students, and (6) views the videotaped replay with his supervisor to be assisted in analyzing his progress and in determining his needs for improvement of this teaching. The total micro-teaching cycle can be completed in one hour after a teacher's initial lesson is planned.

We are going to assess micro-teaching and videotape recording applications in various pre-service and in-service settings to determine if we can find ways to improve the effectiveness and efficiency of teacher education. Included in this effort will be experiments with various kinds of supervisory feedback and situations involving delay in feedback.

The study of common and unique elements of vocational and technical teacher education is another teacher education project which I find very exciting. Its purposes are to identify the common and unique teaching skills in current practices, to determine the priority teaching competencies in each area, and to develop recommended curricula for more effective and efficient preparation of vocational and technical teachers. Our motivation for this project has been (1) the heavier loads (both pre-service and in-service teacher training) for present teacher educators caused by an increasing number of local programs of vocational and technical education, and (2) the old issue over separate teacher education programs for each service versus a combined program for all services. We have had no empirical evidence to support a separate program for the training of technical teachers and none to support technical teachers being training through a T & I teacher training program, but we have strong advocates of both approaches.

Through our study, we believe we will find a common core of teaching skills which are common to vocational teaching in all service areas, however, we also expect to find teaching skills which are unique to one or more of the seven teaching areas included in our study.

Our methodology in this project will include (1) a behavioral analysis of teaching in seven service areas, and (2) the use of a task force and critical incident technique to determine priority teaching skills.

From all of the data collected we expect to develop some recommended model vocational and technical teacher education curricula, which will be suggested in terms of behavioral objectives for each course in a curriculum--and in each case, a curriculum which will be designed to meet the needs of teachers.

In January of this year, a national research planning conference on technical education was held at The Center. This conference involved 16 national leaders in technical education and related disciplines. Seven areas of research needs were cited in the report. Subsequent to the initial planning conference, several task force conferences were held to develop a planning model for research and development in technical teacher education and to establish a list of 24 suggested research and development projects. The report of this activity has recently been released and may be obtained through The Center.

While we are on the subject of research publications, it is my pleasure to mention three more publications of interest to you which were recently released by The Center. They are:

1. The Review and Synthesis of Research in Industrial Arts which was prepared by Dr. Jerry Streichler of Trenton State College.

2. The Review and Synthesis of Research in Technical Education which was prepared by Dr. Milton Larson, Colorado State University.

3. The Review and Synthesis of Research in Trade and Industrial Education ... prepared by Dr. Bruce Tuckman and Dr. Carl Schaefer, both of Rutgers - The State University.

One more research planning activity should be mentioned. In October, 1967, a National Invitational Research Planning Seminar on Trade and Industrial Teacher Education and Certification was held in Columbus. It was planned and organized by the AVA-T & I Division Research Committee which has Dr. Carl Schaefer of Rutgers as its chairman. The seminar consisting of 18 nationally recognized vocational educators was co-sponsored by The Center for Occupational Education, North Carolina State University and The Center for Vocational and Technical Education at The Ohio State University. Dr. Robert Reese of The Ohio State University was chairman of the three-day conference. The members of the planning conference reviewed the research relevant to T & I teacher preparation and certification, set up a list of research priorities and developed three mini-proposals for research projects.

Leadership Development Activities

In the area of Leadership Development, I will cite three or four of our recent activities.

During the period from April, 1966, until May, 1967, we planned, conducted, evaluated and reported on five institutes which were in a consortium effort coordinated by The Center. One-hundred-ninety-five persons from 46 states participated in these five two-week summer institutes designed to provide training for leaders and potential leaders in technical education. The four Center publications which resulted from this activity are as follows: (1) A Compilation of Technical Education Materials prepared by Lynn Emerson and Milton Larson, (2) A Compilation of Technical Education Instructional Materials Supplement I--New and Revised Informational Resources and (3) Supplement II--Institute Presentations edited by C. J. Cotrell and Ivan Valentine, and (4) the final report to the U.S.O.E. on this project.

We became so involved in Technical Education that The Center had to employ Dr. A. J. Miller, a specialist in this area, in August of 1966. Someone convinced Dr. Miller that these summer institutes were important; consequently, he submitted a proposal and obtained a grant from the U.S.O.E. to conduct four institutes during this past summer. These were held at the University of California, University of Connecticut, Mississippi State University, and Utah State University. Incidentally, Dr. Miller has informed me that he plans to conduct two more of these institutes next summer.

Because of the national need for persons in vocational and technical education to learn about new educational media and its applications in vocational education, The Center sponsored a national seminar on Educational Media in Vocational and Technical Education. Approximately 150 persons from all service areas of vocational and technical education participated in this four-day seminar which was sponsored by The Center and held in Columbus last August. The report on this conference will be out in January, 1968.

ERIC--Information Storage, Retrieval and Dissemination

I promised that I would tell you about the information storage, retrieval and dissemination work at The Center in the areas of industrial arts, technical, and trade and industrial education. This activity is a part of the Educational Resources Information Center of the U.S.O.E., better known as the ERIC System. Our Center is one of the 18 clearinghouses on educational resources information in the nation. It is the Clearinghouse for Vocational and Technical Education materials. For many years, vocational educators have recognized the need for an organized system for storing and retrieving pertinent information. We have badly needed such a system in our research efforts and in our curriculum development work. This system should help us to minimize duplication of effort, to build on existing knowledge, and to facilitate the application of new information resulting from research and development efforts.

ERIC operates within the U. S. Office of Education, Bureau of Research, as a branch in the Division of Information Technology and Dissemination in Washington, D. C. We refer to it as Central ERIC to distinguish it from the clearinghouses in the field. ERIC-VT has been under development since March, 1966. It was one of the first clearinghouses, but since it was established, others have been started until we now have 18. These range from ERIC-AC--Library for Adult and Continuing Education, Syracuse University to ERIC-UD--Urban Disadvantaged at Yeshiva University. Originally, the emphasis in ERIC was on research material but now the coverage has been expanded to include bibliographic lists, instructional and curriculum materials, course outlines, study guides, and conference proceedings.

The basic responsibilities of the clearinghouse include acquiring significant literature, selecting appropriate literature for the retrieval and dissemination system, indexing and abstracting the literature and maintaining a storage, retrieval and dissemination system locally as well as sending documents to ERIC Central for inclusion in the national system

One of the primary means of access to materials in the ERIC system is the monthly publication, Research in Education. This publication provides you with a means of keeping abreast of information being fed into Central ERIC which will assist you in ordering materials from the ERIC Document Reproduction Service,

National Cash Register, Rockville, Maryland. At the present time our clearinghouse is sending approximately 120 abstracts per month into the ERIC System. In Research in Education, the title of each listing is assigned an ERIC Document number. This E. D. number is used to retrieve specific titles and must be used to order microfiche or hard oopy of the document from the ERIC Document Reproduction Service. The monthly publication, Research in Education, is available from the Superintendent of Documents, Government Printing Office, Washington, D. C. at a subscription cost of $11.00 per year.

The principal means of information storage by the ERIC System is the use of microfiche. The microfiche is four inches by six inches and may include the images of approximately seventy pages of the original document. A microfiche reader must be used to project the images of the microfiche on a screen so that you may read them.

In addition to supplying documents and abstracts for Central ERIC and listings in RIE, the Clearinghouse for Vocational and Technical Education has two publications. These publications are the primary means for identifying materials on Vocational and Technical Education. AIM, an acronym for Abstracts of Instructional Materials, and ARM, Abstracts of Research and Related Materials. The listing of all materials both in AIM and ARM give the following information: the document number (for ordering), the title, author or original source, where to order, key to index terms, and a brief informative abstract. These Center publications have a limited free distribution to certain groups in the profession which presently include state directors of vocational education, head state supervisors of vocational education, head vocational teacher educators, U. S. Office of Education Regional Offices, the regional laboratories, most university libraries, and local directors of vocational education in cities of 50,000 population or more. AIM and ARM are available to others at a subscription price of $9.00 per year.

If you are interested in the present operational status of our clearinghouse, I am happy to report that all materials listed in AIM, ARM and RIE (Research in Education) are available to you. As the input to the system grows in coming months, more documents will be listed in these publications. In order to make more publications available through this system, we need your help. One of the big problems of the ERIC operation is acquisitions. You can personally contribute by sending two copies of research reports, instructional materials (trade analyses, course outlines, etc.), conference reports, speeches, bibliographies, etc., to our clearinghouse. You may receive the following materials from the ERIC-VT Clearinghouse: AIM, ARM, synthesis and analysis papers, microfiche, hard copy, bibliographies, and abstracts.

THE VALIDITY OF PAPER AND PENCIL TYPES OF CREATIVITY TESTS IN INDUSTRIAL EDUCATION

A Paper Prepared by

Lester G. Duenk
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Presented at
1967 American Vocational Association Convention
National Association of Industrial Teacher Educators
Cleveland, Ohio
December 4, 1967

THE VALIDITY OF PAPER AND PENCIL TYPES OF CREATIVITY TESTS IN INDUSTRIAL EDUCATION

This is a report of a study designed to ascertain the validity of paper and pencil types of creativity tests in measuring creative industrial arts performance.[1]

The Problem

My original reason for becoming interested in doing research on creativity was because I was somewhat concerned with the extensive use being made of creativity tests with so little basis on which to substantiate their validity. It appeared to me that teachers were taking a great deal of blind faith in the scores which were gained in these tests. I began to wonder if all of these tests were really measuring creative thinking; and, if so, what kind of creative thinking was being measured. In other words, just what does a student score on an academically oriented creativity test really mean for the industrial arts teacher? For example, how does the ability to decorate a toy dog on the Minnesota Tests of Creative Thinking relate to a student's creativity in developing an efficient sequence of tool operation in an industrial arts class? Does the ability of a student to make objects out of circles also make him a more creative student in designing furniture? It seemed to me that the expression "Creative Thinking" becomes just so much jargon unless it is qualified with reference to the various types of creative production which describe

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[1]Duenk, Lester G., A Study of the Concurrent Validity of The Minnesota Tests of Creative Thinking, Abbr. Form VII, for Eighth Grade Industrial Arts Students, Project No. 118, Division of Adult and Vocational Education, United States Office of Education.

how a person is creative. The artistic student who can express creative talent in an article of aesthetic beauty may not necessarily be capable of planning a creative approach to a machine production problem, or writing a beautiful symphony which the world has never heard. The deeper we probe into this business of creativity, the more its multifarious nature becomes apparent.

What's the danger in all this? Virtually everything which has been done so far in creativity research is based upon the results of instruments which are yet too new to prove their worth. Then, too, studies of test validity are few and far between. These studies take a great deal of time because they usually involve making up a new instrument in order to obtain criterion measures against those of the instrument being validated. This means lots of work with little reward. Studies of validity are not popular; - - there is always the criticism that the criterion instrument which the investigator develops hasn't been validated either. Then, too, there is more fame and fortune in developing new tests, even though it can't be proven just exactly what they measure, than to study the validity of the tests which we now have.

School systems have even begun the practice of administering creativity tests and recording the results in the student's cumulative files. The upshot of all this is that educators are making some very important decisions which may effect the lives of youngsters on the basis of results yielded by instruments which are still in their infancy. Being concerned over the number of industrial arts teachers who were using the Minnesota Tests of Creative Thinking to evaluate the creative abilities of their students, I decided to do a study of the validity of a battery of these tests for eighth grade

industrial arts students. I wanted to find out whether this instrument was really picking out those students who possessed an "industrial arts" type of creativity. Was the student who on a paper and pencil test, was adept at decorating a dog, finding uses for tin cans, finishing incomplete figures, and designing objects from circles, also the student who exhibited creativity in the industrial arts laboratory?

Procedure

The logical way to proceed was to construct my own test which would get at what I considered to be industrial arts oriented creativity and validate the results of this test against those yielded by the Minnesota Tests of Creative Thinking for the same students. I would like, at this time to explain the system which I used in measuring "industrial arts creativity" because it represents a new system for measuring creativity, and is a system which can be used in areas other than industrial arts. Most important of all, this system enables the measurement of creativity of students who are able to exhibit their creativity in a tangible form rather than through written representations.

First of all, most all of the creativity tests on the market are academically oriented, that is, they are paper and pencil type tests. A first consideration was that my test should involve the manipulation of simple tools and materials typical of those found in the industrial arts laboratory. The criterion instrument should characterize industrial arts performance.

The next step was to decide what types of creativity we were concerned with in the industrial arts laboratory. Three types of creativity, all based upon research by Guilford, were decided upon, -- symbolic, figural and behavioral creativity.

Symbolic creativity. Creative behavior in which the ideational content deals with the aesthetic and other abstract qualities of tangible objects and processes. In industrial arts, symbolic creativity might be expressed in types of coding or representation, systems of measurement, or the artistic aspects of design.

Figural creativity. Creative behavior in which the ideational content deals with the manipulation of real, concrete, inanimate objects and processes. Typically such behavior might be expressed in the combination or use of materials for functional purposes, the sequence or kind of operations used in completing a project, or the mechanics involved in performing an operation.

A definition of creativity in industrial arts dealing with the unusualness and usefulness of the student products, formulated by Dr. Jerome Moss at the University of Minnesota, was the basis for the rating system used. (This definition, really a theoretical model, is found in the Journal of Industrial Arts Education (Jan.-Feb. 1965, "What is Creativity in Industrial Arts?") The basic idea is to measure both the amount of unusualness and usefulness exhibited by students for the three types of creativity with which we are concerned. Unusualness is interpreted as being the frequency of occurrence of unusual ideas. Usefulness is the degree to which a product actually "works." By multiplying unusualness times usefulness, a total score for creativity could be obtained. The same system was used for all three types of creativity. Total creativity was obtained by summing up symbolic, figural and behavioral creativity.

A test was devised to measure both unusualness and usefulness in the three creativity categories.

In order to measure symbolic unusualness the 129 industrial arts students in the sample were asked to make a fruit or nut bowl out of styrofoam using a kit of special tools. The completed products were then evaluated in terms of their primary differentiating characteristics, - - in other words, those things which distinguished one bowl from another. The characteristics decided upon were:

(a) The plane view.
(b) Shape of side contour.
(c) Thickness of lip.
(d) Support for container.
(e) Ornamentation.
(f) Lifting devices.
(g) Relationship of inside to outside contour.
(h) Placement and number of divisions, trays, units.

The system devised for rating these products was to break down each of the eight main categories into sub-categories which were descriptive of variations in the manner of solving a particular problem. For example, category No. 1 (Plane view) was broken down into (a) round, (b) oval or elliptical, (c) rectangular, (d) square, (e) four straight sides, not rectangular, (f) five sides, (g) six sides, (h) eight sides, (i) free form, no symmetry, (j) free form, symmetrical, (k) rectangular with rounded corners, (l) diamond, and (m) resembles an object.

The higher the frequency of occurrence, the less unusual the product, hence high frequencies reflect low unusualness ratings and vice versa.

Symbolic usefulness is defined in terms of aesthetic beauty, a product is useful only if it is so beautiful that people gain a "good feeling" from its appearance. Its usefulness is the admiration and appeal that it evokes.

In order to obtain a useful score, a panel of judges ranked all products according to a forced normal distribution.

Figural creativity was gained by utilizing the same system, the only difference being the nature of the products. A special purpose tool was the subject of the evaluation rather than a fruit bowl.

Behavioral creativity was assessed by using a situational problem in which the respondents reacted to human relations problems typical of the school shop situation.

A complete description of techniques used in evaluating the three types of creative performance is contained in a paper entitled "A Method for Evaluating Creative Products." Copies of this paper are available upon request.

Findings

1. I found that only 19 out of a total of 128 correlation coefficients between my scores and the scores yielded by the Minnesota Tests of Creative Thinking were statistically significant, and even these were quite low. It appears that my creativity instrument and the Minnesota Tests of Creative Thinking are not measuring the same types of creative behavior.

2. Furthermore, a very low relationship was found between symbolic, figural, and behavioral types of creativity. This finding points once again to the multifarious nature of what we call creativity. The boy who is "creative" with visualizing spacial relationships, tool operations, sequences, how parts fit together, may or may not be creative in his relationships with other people, or in designing a work of art. People are creative in many different ways, and it appears that many of these ways have not been discovered yet. To say that a person is creative is meaningless unless we also

specify the manner in which he is creative. We know that it simply is not true that a student who scores high in mathematics will necessarily score high in English, or History. Why then should we make any different conclusions regarding creativity?

3. It was found that the ability to generate unusual ideas was generally accompanied by the ability to produce the most useful products.

Moss Study. Similar findings were reported in another investigation of the validity of Minnesota Tests of Creative Thinking. Moss used typical classroom performance measures of creativity as criterion measures. Teacher-raters actually observed students for an eighteen week period and rated their creative performance as it was exhibited in the classroom. Observation of actual performance is cumbersome, but a quite accurate manner of evaluating creativity. The results of that study also suggested that creativity, as it was exhibited in the industrial arts classroom was not being measured by the Minnesota Tests of Creative Thinking.

Perhaps you might be interested in hearing a little about the relationship of creativity to other variables. In my study relationships were sought between creativity and teacher grades, achievement test scores, IQ, and certain selected personality traits. First, it is necessary to present a little background on what has already been done in this area.

Creativity and IQ. Research indicates that, except for the area of mathematics, where there appears to be a low, positive correlation between IQ and level of creativeness, in the higher IQ ranges there is essentially a zero relationship between creativity and intelligence. Psychologists who have done work in this area set

the cut-off limit at from 120 (Torrance) to 130 (McKinnon) IQ. Below this point there is a relationship between these two variables. Recent observations also suggest that we are unlikely to find creative individuals in the low or even low-average IQ's. What it amounts to is this: Low IQ indicates low creativity, but the opposite relationship does not hold. -- high IQ does not indicate high creativity. An individual with a high IQ may or may not be high on creativity. Getzels and Jacksons' book, Creativity and Intelligence, stresses the lack of predictability at the upper levels. The average IQ of subjects in that study was 132.

The results of my study bear out findings of previous investigations. I found the lowest correlation to be between symbolic creativity and IQ. This same finding has been reported in several studies in the field of art education. Highest, although modest, correlations were reported between figural creativity and IQ. This finding is also borne out in the research.

Creativity and achievement. In a recent study by Getzels and Jackson, it was indicated that in the higher IQ ranges, the top 20% on creativity achieved as well in school as the top 20% on IQ. Studies done on normally distributed populations, however, do not indicate a pronounced relationship, but nevertheless the more creative students achieved better than the less creative, IQ being held equal.

In my own study I found that creativity was related to achievement in pretty much the same way as it was related to IQ. IQ is, of course, a better predictor of achievement than is creativity. Figural creativity was correlated with achievement to a greater extent than was behavioral or symbolic creativity.

Personality and creativity. Despite the stereotyped notion that creative persons tend to be eccentric and anti-social, sociability and creativity measures showed a greater correlation than was evidenced for other traits of personality investigated. There was, in fact, evidence that the creative individual expressed considerably more sensitivity than the non-creative person, both to other people as well as to the other aspects of environment. This sensitivity when misunderstood may cause frustrations interpreted as undesirable behavior.

Other research has suggested that among younger subjects, the less desirable traits of personality are not nearly as pronounced. This was borne out in my study also. From the little evidence which we now have, it appears that many of the undesirable personality traits are developed to a large extent by the intolerance of others, peers and authority figures alike, who do not understand and are insensitive to the creative student's way of thinking and performing.

VT 008 412
Evaluation of Work Scholarship Program.

District of Columbia Public Schools, Washington, D.C. Dept. of Research, Budget, and Legislation
MF AVAILABLE IN VT-ERIC SET.
District of Columbia Public Schools' Division of Planning, Innovation and Research, 415 12th Street, N.W., Washington, D.C. 20004 (no charge).
Pub Date - Jun67 28p.

*WORK EXPERIENCE PROGRAMS; *DROPOUT PREVENTION; *PROGRAM EVALUATION; *HIGH SCHOOLS; SCHOOL SURVEYS; FAMILY BACKGROUND; GRADES (SCHOLASTIC); WAGES; ATTENDANCE PATTERNS; CONDUCT; *STUDENT IMPROVEMENT; STUDENT CHARACTERISTICS
WASHINGTON, D.C.

This report concerns two studies of work scholarship program participants in the junior and senior public high schools of the District of Columbia. The first report used a sample of 286 participants during 1964-65 and 1965-66 and sought (1) to determine the effectiveness of this program in aiding students to stay in school, and (2) to evaluate the effects that program participants had on indicators of school motivation and achievement. Data show that the program has been effective in reducing dropout rates at a statistically significant level; however, other factors, such as scholarship, deportment, and attendance, were not improved. A second study was made of 518 participants during the 1966-67 school year in order to determine how the work scholarship pay was spent. Finding indicated that most students used their earnings for essential items such as food and clothing, school supplies, and participation in various school activities. Recommendations for future evaluations suggest concentration on actual performance changes of participating students. (CH)

VT 008 412

ED039370

EVALUATION OF WORK SCHOLARSHIP PROGRAM

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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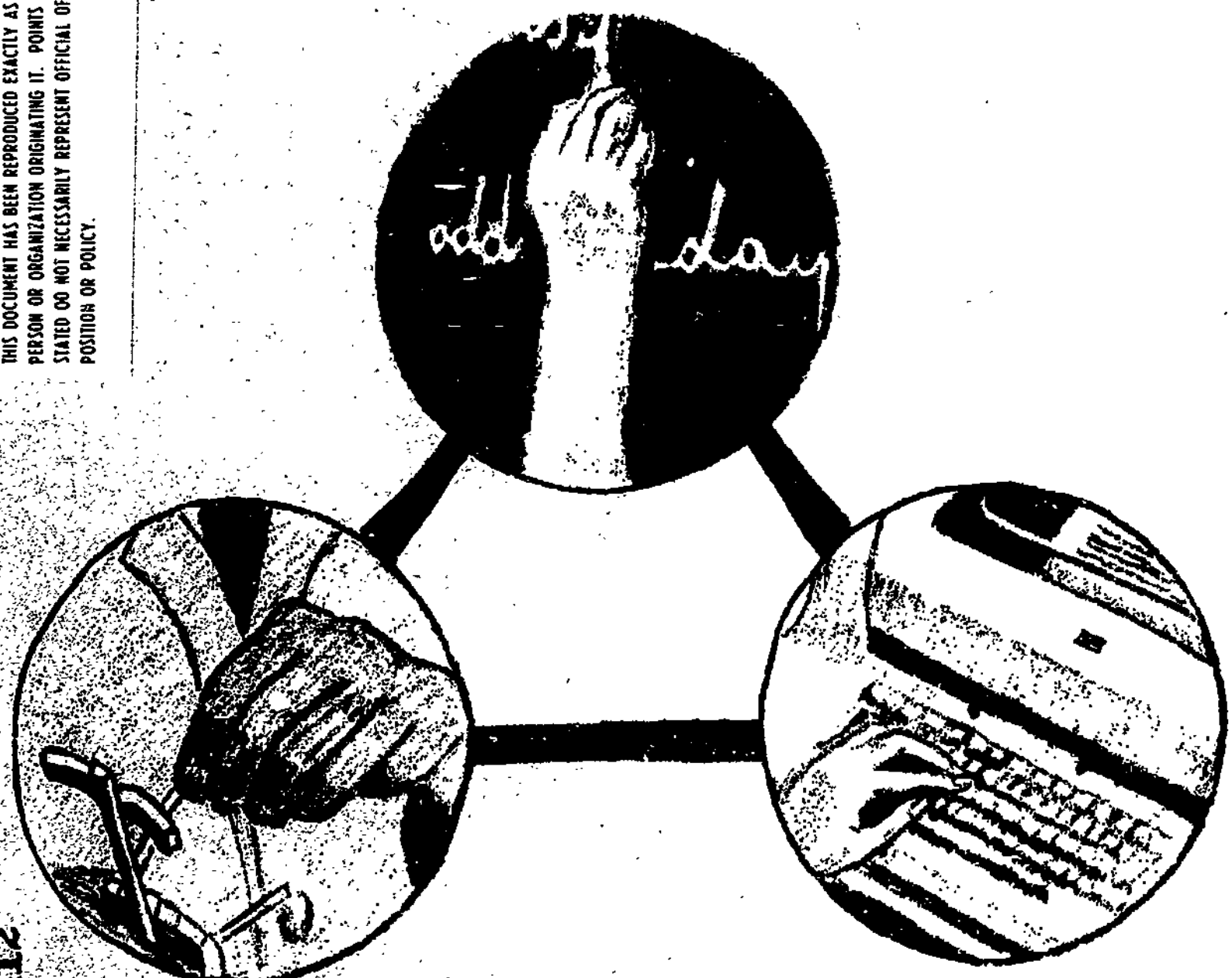

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VT008412

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Public Schools of the District of Columbia

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EVALUATION OF WORK SCHOLARSHIP PROGRAM

For over two years the Work Scholarship Program has been in operation in most of the junior and senior high schools of the Public Schools of the District of Columbia. The purpose of the Work Scholarship Program is to help needy students by providing part-time positions in the schools.

Data are reported here for three different groups of students participating in the program: 1) 286 who participated during 1964-1965 and 1965-1966; 2) 609 who participated during the summer of 1960; and 3) 518 who participated during the 1966-1967 school year.

This report primarily concerns a study conducted in April 1967 at three high schools in the target areas of the District: Dunbar, Eastern, and Cardozo. A sample of 286 participants during 1964-1965 and 1965-1966 were studied to determine the effectiveness of this program in aiding students to stay in school and also to evaluate the effects that program participation had on indicators of school motivation and achievement. The data show that the program has been effective in reducing dropout rates at a statistically significant level. However, other factors such as scholarship, deportment, and attendance were not improved. Attendance records were actually poorer during participation in the Work Scholarship Program, but this possibly may be due to the expected poor records of some students who would have otherwise dropped out of school according to predicted dropout rates.

Another study was made of 518 participants during the 1966-1967 school year in order to determine how the Work Scholarship pay was spent. This survey indicated that most students used their earnings for essential items such as food and clothing, for school supplies and for participation in various school activities. The data also indicated that many of these students otherwise would have had little or no money to spend.

Descriptive data concerning the number of participants, the type of job held, family size and family income are also presented for a group of 609 participants during the summer of 1966. This is included as background material only and no further study has been done with this group.

In summary, the Work Scholarship Program is a successful program in reducing dropouts and thus one which should be continued. Future evaluations should concentrate on actual performance changes of participating students as additional years of experience become available for study.

EVALUATION OF WORK SCHOLARSHIP PROGRAM

PART I. A STUDY OF THE EFFECT OF THE WORK SCHOLARSHIP PROGRAM ON PARTICIPANTS

Introduction

The Work Scholarship Program was begun in April 1965 in order to provide part-time employment in the schools for needy students. Approximately 600 students have participated each year in this program which is operating in most of the junior and senior high schools in the District of Columbia. For example, during the summer of 1966 there were 609 in the program, 179 males (29 percent) and 430 females (71 percent). In the sample used in Part I of this study there were 286 students who participated during 1964-1965 and 1965-1966. Of these 80 were males (28 percent) and 206 were females (72 percent).

This self-help opportunity enables students to learn as they earn in paid part-time positions in schools where they are supervised by the school staff. They work 2-3 hours per day for $1.25 per hour and serve as teachers' helpers, general office helpers, custodial helpers, file clerks, typists, and switchboard operators. As an example of the number of students having various types of jobs, Table 1 below shows the job classifications of the 609 students who were enrolled in the program throughout the District during the summer of 1966.

TABLE 1

JOB CLASSIFICATION OF 609 WORK SCHOLARSHIP PROGRAM PARTICIPANTS DURING SUMMER 1966

Type of Position	Male	Female	Total	Percentage
Office Aides	23	213	236	39
Teacher Aides	22	216	238	39
Custodial Aides	134	1	13[illegible]	22
Total	179	430	609	100

Not only do these students discover acceptable ways to meet the frustrations caused from lack of funds for school supplies and activities, but working helps them feel that they belong to the entire school program. Also, long before they meet the demands of the adult working situations, they learn by their mistakes under sympathetic guidance of the school personnel. In addition, these student-workers bring much-needed help to heavily burdened school personnel.

Selection of the participants in the Work Scholarship Program is based on two factors: 1) family income and 2) family size (see Table 2). To qualify, a student must come from a family with an income not exceeding the income allowed for his particular family size. For example, the family income of a student coming from a family of five members cannot be more than $3,685.

TABLE 2

FINANCIAL NEED CRITERIA USED TO SELECT
WORK SCHOLARSHIP PROGRAM PARTICIPANTS

Income Index	Family Size
$1,540	1
1,990	2
2,440	3
3,130	4
3,685	5
4,135	6
+,685	7
5,235	8
5,789	9
6,335	10
6,885	11
7,435	12
7,985	13
8,535	14
9,085	15

In a study of 609 enrollees in the Work Scholarship Program during the summer of 1966, the median family size was six while the median family income was $4,146.24.

Although the major criteria for eligibility is financial need as determined by family income and size, priority is given to students having a personal as well as economic need for participating. Every consideration is to be given to selecting youth characterized by any of the following:

-marginal school achievement
-language deficiencies
-poor school attendance records
-potential dropouts
-frequent disciplinary problems
-lack of motivation
-emotional or attitudinal problems requiring personal adjustment assistance

Thus, students who are potential dropouts and those with other problems which might lead to dropping out of school (for example, marginal school achievement, poor attendance and lack of motivation) are to be given priority in selection for the Work Scholarship Program.

In actual practice some variation occurs within the schools regarding the selection of participants. According to the counselors in charge of the program at the three schools studied, one school emphasized selecting potential dropouts while the other two did not. At Cardozo first priority is given to students who are judged by teachers to be potential dropouts and also meet the financial need requirement. At Eastern and Dunbar high schools, however, the Work Scholarship Program has been based on financial need while the Job Conditioning Program has concentrated on helping potential dropout students secure part-time employment.

* * * * * *

Study of Dropout Rate, Attendance, Scholarship and Deportment

A. Purpose. The purpose of this study is to evaluate various possible effects that the Work Scholarship Program may have on the student participants. The primary variables to be considered are the dropout rate, attendance record, scholarship and deportment grades.

The following null hypotheses have been established:

1. There is no significant difference between the dropout rate of the students in the Work Scholarship Program and the dropout rate for the total student population of the school.

2. There is no significant difference between the attendance of the students in the Work Scholarship Program and the attendance of the total student population of the school.

3. There is no significant difference in the attendance of the students in the Work Scholarship Program before, during and following their participation in the program.

4. There is no significant difference in the scholarship of the students in the Work Scholarship Program before, during and following their participation in the program.

5. There is no significant difference in the deportment of the students in the Work Scholarship Program before, during and following their participation in the program.

B. Sample Selection. The population includes all students at Dunbar, Eastern and Cardozo during 1964-1965 and 1965-1966. The sample includes students who participated in the Work Scholarship Program during 1964-1965 and 1965-1966 at three high schools in the inner-city area; Dunbar, Eastern and Cardozo. The total number of enrollees for 1964-1965 was 56 at Eastern and 79 at Dunbar (a list of enrollees at Cardozo was not available). During 1965-1966 there were 78 enrollees at Dunbar, 62 at Eastern and 44 at Cardozo. Thus, the total sample for 1964-1965 was 135 and for 1965-1966 was 184.

An attempt was made to include the total number of enrollees at these three schools in the sample for this study; however, information could not be obtained for every student because some of the permanent records could not be located. Those participating in 1964-1965 whose records were obtained included 45 out of 56 at Eastern and 77 out of 79 at Dunbar or 122 out of 135. Thus, the sample for 1964-1965 included 90 percent of the total enrollees. Those participating in 1965-1966 whose records were obtained included 40 out of 44 at Cardozo High School, 48 out of 62 at Eastern High School and 76 out of 78 at Dunbar High School. Thus information was obtained for a sample of 164 out of 184 enrollees or 89 percent of the total number.

The total sample used in the study was 286 students who participated in the program during 1964-1965 or 1965-1966 at Dunbar, Eastern and Cardozo high schools. Table 3 shows the distribution.

TABLE 3

SAMPLE SIZE BY SCHOOLS AND YEAR IN PROGRAM FOR WORK SCHOLARSHIP PROGRAM STUDY

School	Number in Program		Total
	1964-1965	1965-1966	
Dunbar	77	76	153
Eastern	45	48	93
Cardozo	--	40	40
Total	122	164	286

Since each year was considered separately, students who participated both years are included twice in the study. This number is small, however, since the number of continuing students was only four at Eastern High School and 14 at Dunbar High School.

C. Research Methods and Data Collection. The data concerning dropout rates, attendance, scholarship and deportment grades of the student participants were obtained from the permanent records kept in the administrative offices of the three high schools. Comparative statistical information regarding dropout rates and attendance rates for the total student population of these schools was obtained from the Office of the Statistical Analyst of the Department of Research, Budget and Legislation. Information such as lists of participants, the operation of the program and selection of the participants was obtained from the personnel of the D. C. Public Schools' Work Scholarship Office. The counselors who are in charge of the program in each of the three high schools provided information concerning the basis on which students are identified to participate in this program.

D. Findings and Discussion.

1. Dropout Rates. Although the primary aim of the Work Scholarship Program is to help these students in financial need, some priority is given to students judged to be potential dropouts and who have other problems such as poor attendance

and little motivation which are contributing factors to dropping out of school. Thus, one might anticipate that the dropout rate for the students selected to participate in the Work Scholarship Program would be higher than that for the entire school population. However, in the study undertaken, the results indicate that this is not the case. The percentage of dropouts among the Work Scholarship Program participants was lower when compared with the percentage of total dropouts for each of the three schools (see Table 4). Only 1.7 percent of the 121 participants during 1964-1965 dropped out while the dropout rate was 18.9 percent for the two schools attended by the participants, Eastern and Dunbar. For the following year, 1965-1966, only 1.8 percent of the participants dropped out while 17.5 percent of the total number of students of the three schools sampled did drop out. Thus, it appears that the small amount of money that the students earn may be an important factor in keeping them in school. Indications are that the program provides them with funds necessary for school and personal needs and also seems to develop in them a sense of respect for work. This experience in the Work Scholarship Program may also have helped the students to realize the advantages of finishing high school for better jobs.

TABLE 4

NUMBER AND PERCENTAGE OF DROPOUTS OF PARTICIPANTS IN WORK SCHOLARSHIP PROGRAM OF SELECTED SCHOOLS AS COMPARED WITH THE NUMBER AND PERCENTAGE OF DROPOUTS OF THE TOTAL STUDENT POPULATION OF THESE SCHOOLS 1964-1965

School	Work Scholarship Program Participants			Total Student Population		
	Total Number of Students	Number of Dropouts	Percentage of Dropouts	Total Number of Students	Number of Dropouts	Percentage of Dropouts
Eastern	45	1	2.2	2628	501	19.1
Dunbar	76	1	1.3	1416	263	18.6
Cardozo	--	--	--	--	--	--
Total	121	2	1.7	4044	764	18.9

TABLE 4 --Continued

NUMBER AND PERCENTAGE OF DROPOUTS OF PARTICIPANTS IN WORK SCHOLARSHIP PROGRAM OF SELECTED SCHOOLS AS COMPARED WITH THE NUMBER AND PERCENTAGE OF DROPOUTS OF THE TOTAL STUDENT POPULATION OF THESE SCHOOLS 1965-1966

School	Work Scholarship Program Participants			Total Student Population		
	Total Number of Students	Number of Dropouts	Percentage of Dropouts	Total Number of Students	Number of Dropouts	Percentage of Dropouts
Eastern	48	0	0.0	2621	483	18.4
Dunbar	77	2	2.6	1511	241	15.9
Cardozo	40	1	2.5	1791	311	17.4
Total	165	3	1.8	5923	1035	17.5

A comparison was also made of the number in the program who actually dropped out of school and the number who would have been predicted to do so according to the schools' dropout rate (see Table 5). During a one-year period only two of the 121 participants during the 1964-1965 school year dropped out of school as compared to a total of 23 who would have been predicted to drop out on the basis of dropout rates for the total school population at Eastern and Dunbar. Of the 165 participants during the 1965-1966 school year, only three dropped out of school while 28 would have been predicted to do so according to the schools' dropout rates. Thus, of the 51 students who would have been predicted to drop out, only five (less than 10 percent) actually did drop out. It may, therefore, be said that 46 predicted dropouts in the Work Scholarship Program remained in school during the year they participated in the program.

TABLE 5

ACTUAL NUMBER OF DROPOUTS COMPARED WITH
PREDICTED DROPOUTS BASED ON SCHOOLS' DROPOUT RATES

School	1964-1965 Program Participants				1965-1966 Program Participants			
	No. in Program	Actual Dropouts	Predicted Dropouts	Diff.	No. in Program	Actual Dropouts	Predicted Dropouts	Diff.
Eastern	45	1	9	8	48	0	9	9
Dunbar	76	1	14	13	77	2	12	10
Cardozo	--	--	--	--	40	1	7	6
Total	121	2	23	21	165	3	28	25

2. Attendance. The question whether a student's attendance suffers as a result of working part-time was also investigated. For this comparison, only the 165 students participating in the program during 1965-1966 were studied. Attendance data for the school years 1964-1965, 1965-1966 and the first semester of 1966-1967 were available. Thus, a comparison could be made of attendance records before, during and following participation in the Work Scholarship Program. In order to place the attendance figures for 1965-1966 and 1966-1967 on a comparable basis, the 1966-1967 figures were doubled to obtain an estimate for the whole year. In the comparisons, only students with average number of absences for both years were included. Results of this analysis appear in Table 6.

For the three schools under study, the average number of absences of students was higher while they were in the program. However, only Dunbar's difference proved statistically significant when the 1964-1965 figures (before) were compared with 1965-1966 (during). For the year following participation in the program (1966-1967), a statistically significant decrease was seen in the average number of absences at Cardozo and Eastern. Thus, we can infer from these findings that a student's attendance is affected adversely while working part-time.

TABLE 6

COMPARISON BY SCHOOL OF AVERAGE NUMBER OF ABSENCES OF PARTICIPANTS BEFORE, DURING AND AFTER BEING IN THE WORK SCHOLARSHIP PROGRAM

School	Before 1964-1965 Average	During 1965-1966 Average	Number	Difference	Comment
Cardozo	14.3	17.5	27	3.2	Not significant
Dunbar	10.0	14.8	42	4.8	Significant at 1% level
Eastern	9.8	10.9	27	1.1	Not significant

School	During 1965-1966 Average	After 1966-1967 Average	Number	Difference	Comment
Cardozo	19.8	10.4	24	9.4	Significant at 5% level
Dunbar	12.7	13.5	71	.8	Not significant
Eastern	14.6	9.1	38	5.5	Significant at 1% level

The attendance of Work Scholarship Program students and that of the entire population was also compared (see Table 7). In every case the average number of absences of the entire student population is considerably greater than that of the Work Scholarship Program students. Thus, although there was a significant trend for absence rates to increase while the student worked part-time, the number of absences still remained considerably lower than that of the average student in the school.

3. Scholarship. In attempting to find the impact of the Work Scholarship Program on various aspects of the participants' activities in school, another important factor investigated was the effect of part-time work on the students' academic ratings. Average grades of the students while in the program were compared with their grades before and after their participation in the program. A t-test was used to test significance of the differences in the average grades.

TABLE 7

COMPARISON OF AVERAGE NUMBER OF ABSENCES OF 1965-1966 PARTICIPANTS IN THE WORK SCHOLARSHIP PROGRAM WITH THE AVERAGE NUMBER OF ABSENCES FOR THE ENTIRE SCHOOL FROM WHICH THEY COME -- FOR SCHOOL YEARS 1964-1965 AND 1965-1966

School	1964-1965	1965-1966
Cardozo		
Work Scholarship	14.3	17.5
Total Cardozo	24.3	25.1
Dunbar		
Work Scholarship	10.0	14.8
Total Dunbar	16.3	20.3
Eastern		
Work Scholarship	9.8	10.9
Total Eastern	21.2	21.0

Table 8 shows the frequency distribution of the average grades of students at Dunbar and Eastern high schools who participated in the Work Scholarship Program during the school year 1964-1965. Table 9 shows the average grades distribution of participants in the succeeding year.

No statistically significant differences were found between the average grades of participants before and while they were in the program. A similar result was obtained when the grades of students after they participated were compared with their grades while having part-time work. Thus, it would seem safe to conclude that part-time work does not adversely affect students' academic ratings.

No really adequate or comparable standard was available to determine how the Work Scholarship Program students stood in relation to the entire student population in regard to scholarship. The only cumulative record of academic grades which is kept by the schools is a class ranking which is made for graduates and potential graduates for each year. Data on the median or mid-point of the grade point averages of ranked students for the classes of 1965, 1966 and 1967 in the schools studied are reported in Table 10.

TABLE 8

FREQUENCY DISTRIBUTION BY SCHOOL OF AVERAGE GRADES OF 1964-1965 PARTICIPANTS IN THE WORK SCHOLARSHIP PROGRAM FOR SCHOOL YEARS 1963-1964 THROUGH 1965-1966

School	Grades	School Year		
		Before Program 1963-1964	During Program 1964-1965	After Program 1965-1966
Dunbar	A	--	--	1
	B	18	19	19
	C	39	40	34
	D	15	15	10
	Total	72	74	64
Eastern	A	--	--	2
	B	9	9	10
	C	18	19	14
	D	12	13	15
	Total	39	41	41
Total Both Schools	A	--	--	1
	B	27	28	29
	C	57	59	48
	D	27	28	25
	Total	111	115	103

TABLE 9

FREQUENCY DISTRIBUTION BY SCHOOL OF AVERAGE GRADES OF 1965-1966 PARTICIPANTS IN THE WORK SCHOLARSHIP PROGRAM FOR SCHOOL YEARS 1964-1965 THROUGH 1965-1966

School	Grades	School Year		
		Before Program 1964-1965	During Program 1965-1966	After Program 1966-1967
Cardozo				
	A	--	1	2
	B	12	10	6
	C	14	19	14
	D	10	9	14
	Total	36	39	36
Dunbar				
	A	--	1	1
	B	26	21	25
	C	37	40	35
	D	14	14	10
	Total	77	76	71
Eastern				
	A	--	1	--
	B	12	14	14
	C	24	20	24
	D	7	13	9
	Total	43	48	47
Total All Schools				
	A	--	3	3
	B	50	45	45
	C	75	79	73
	D	31	36	33
	Total	156	163	154

TABLE 10

MEDIAN GRADE POINT AVERAGES BY SCHOOLS OF GRADUATES AND POTENTIAL GRADUATES FOR 1965, 1966 AND 1967

School	Graduating Class		
	1965	1966	1967
Dunbar	1.87	1.96	1.87
Eastern	1.93	1.87	--
Cardozo	1.92	2.00	1.95

As can readily be seen, the highest median grade point average was 2.00 for the 1966 class at Cardozo High School.

On the other hand, the average grades of program participants during any one year was 2.00 or higher as shown in Table 11.

TABLE 11

AVERAGE GRADE BY YEARS RECEIVED BY STUDENTS IN THE WORK SCHOLARSHIP PROGRAM

	1963-1964	1964-1965	1965-1966	1966-1967
1964-1965 Participants	2.00	2.00	2.06	--
1965-1966 Participants	--	2.12	2.09	2.08

NOTE: 4 = A; 3 = B; 2 = C; 1 = D.

Only very rough comparisons may be made between the class rankings and the average grade received by program participants. The class rankings include all grades received by the student during his high school career until graduation (or until the senior year for the 1967 graduates) while the average grade of program participants is simply the average of the grades received that one year. Also, the measures of central tendency differ in that the median is used with class rankings and the mean or arithmetic average is used with the average grade received by program

participants. Making this rough comparison, however, the data seem to indicate that scholarship of Work Scholarship Program participants is at least as high as that of the average graduate or potential graduate in these three schools.

4. Deportment. Deportment grades of participants in th Work Scholarship Program during the school year 1965-1966 for Cardozo and Eastern were available and their percentage distributions are presented in Table 12. Because the deportment grades given at Dunbar were not letter grades but merely "S" for satisfactory and "U" for unsatisfactory, this school was not included in the analysis. For participants from Eastern High School, there was a marked improvement in their deportment grades while they were in the program. No one received a grade of "D" which constituted 8.3 percent in the year preceding and 4.4 percent the year after. Cardozo's distribution, however, presents a less encouraging result. There was a greater percentage of students getting "C's" and "D's" while they were in the program.

Because no adequate standard could be obtained, no comparison was made between deportment grades of students in the program and those received by the total school population.

TABLE 12

PERCENTAGE DISTRIBUTION BY SCHOOL OF DEPORTMENT GRADES OF PARTICIPANTS IN THE WORK SCHOLARSHIP PROGRAM DURING SCHOOL YEARS 1964-1965 THROUGH 1966-1967

School	Grades	School Year		
		1964-1965	1965-1966	1966-1967
Cardozo				
	A	50.0	50.0	50.0
	B	42.9	30.6	42.9
	C	7.1	13.9	7.1
	D	--	5.5	--
	Total	100.0	100.0	100.0
Eastern				
	A	54.2	57.1	37.8
	B	29.2	26.2	31.1
	C	8.3	16.7	26.7
	D	8.3	--	4.4
	Total	100.0	100.0	100.0

E. Summary and Conclusions. Two of the five null hypotheses tested were rejected at the .05 level of confidence. Strong support was found that there are fewer dropouts among the Work Scholarship Program students than among the total student population. Comparing actual dropouts among Work Scholarship participants and the predicted number of dropouts according to school dropout rates, it may be said that 46 students remained in school who might otherwise have left. Because of the emphasis given to selecting students who might be inclined to drop out of school because of financial need as well as other problems such as poor motivation, this improvement in retention is very strongly supportive of the value of the Work Scholarship Program as an incentive to stay in school. When the increased value of the high school graduate versus the high school dropout in regard to his contribution to society and to himself (increased income) is considered, the cost of this program is money well spent.

However, part-time work did not seem to improve attendance, scholarship or deportment grades. On the contrary, it had an adverse effect on the attendance in that the average number of absences per year increased significantly the following year. This difference may have been the result of the poor attendance records of the approximately 46 poorly motivated students who have otherwise dropped out of school according to school dropout-rate predictions. Because of the Work Scholarship Program and the opportunity to work part-time and earn some money while remaining in school, they did stay in school and brought the attendance level down. This interpretation does not, however, explain the improvement in attendance seen for the following year.

Comparing attendance of the Work Scholarship Program students with the total school population, the former had consistently better records. Thus, although they did worse while they were in the program, they were still better than the school average.

Similar to the findings for attendance, no statistically significant differences were found for scholarship before, during and after participation in the Work Scholarship Program. Also, rough comparisons of the grade point averages of graduates and potential graduates with Work Scholarship Program students indicated that the scholarship of the latter was at least as high as that of the average student graduating from these three schools. Thus, part-time work does not seem to adversely affect scholarship.

No conclusions may be drawn from the data collected concerning deportment grades since students in one school improved while in the other schools the trend was in the opposite direction.

Another rough indication of program success or at least the value as seen by the students participating in the program is the number of students who continue with the program from year to year. Although the number of students continuing from the first year of the program, 1964-1965, to the second year, 1965-1966, was quite low -- only 14 at Dunbar High School and four at Eastern High School (Cardozo participant list for 1964-1965 was not available), a substantially larger number continued with the Work Scholarship Program from the second year, 1965-1966, to the present year, 1966-1967. Those continuing included 38 out of 62 at Eastern High School, 17 out of 44 at Cardozo High School, and 55 out of 78 at Dunbar High School. Thus, a total of 110 out of 184 or 60 percent of those participating in the Work Scholarship Program at these three schools during 1965-1966 continued with the program the following year.

Some of the limitations which must be placed on this data and the conclusions drawn from it are as follows:

1. The schools selected for the sample were those in the inner-city area; thus, the variables such as scholarship and attendance would be expected to be lower and dropout rates to be higher than in other schools in the District. This would be expected not only among the sample of Work Scholarship students included in the study but also among the entire student population of those schools against which the sample rates were compared.

2. Information could not be obtained for all of the students who were enrolled in the program, because the students' permanent records could not be located. As indicated under Sample Selection information was obtained for only 90 percent of the 1964-1965 participants and 89 percent of the 1965-1966 participants.

The reasons that these records could not be found are numerous and include the following: the record was filed incorrectly, the name was misspelled, the record had been lost, a school counselor had the record, etc. There is a possibility that among those whose records could not be located there were more with problems such as dropping out of school, poor attendance and poor scholarship and thus, a counselor had the record or it had been misplaced following frequent use. Nothing, however, can really be said about the approximately 11 percent who are missing from the sample, so it must be assumed that their records would show the same trend as those included in the sample.

3. Attendance records were available for only the tenth, eleventh and twelfth grades. Therefore, for students who participated in the program during their tenth grade, attendance records were not available for the year preceding their participation in the Work Scholarship Program. Likewise, for students who participated in the Work Scholarship Program during the twelfth grade, neither attendance nor scholarship records were available for the year following their program participation. Thus, the comparison of the attendance and scholarship records before, during and after participation in the program was incomplete for the students in either the tenth or twelfth grade.

4. Dropout records in some of the schools were not kept in a complete manner. Sometimes they did not specify the reason why the student left school. Thus, there is the possibility of error in that transfers and actual dropouts were not easily separated.

PART II. A STUDY OF EARNINGS OF WORK SCHOLARSHIP PROGRAM PARTICIPANTS

Because the only area of significance that was found was in regard to the program's value in retention of students in school, it was felt that information concerning the difference that receiving money under the Work Scholarship Program may have made to these students would be valuable. A brief study was conducted among the students participating in the Work Scholarship Program from September to November of 1966 in order to determine how they spent the money they received and how much money they might otherwise have had available.

A. Earnings Survey. In an attempt to analyze the pattern of expenditure of students with the money they receive in the Work Scholarship Program, 518 students completed the Earnings Survey questionnaire in which they were asked to check all of the ways in which they spent their Work Scholarship (Neighborhood Youth Corps) wages (see page 18). The students' reported expenses were categorized into four groups as follows: 1) personal items, 2) school supplies, 3) school related activities and 4) other. The last category includes miscellaneous expenses for such items as tickets for concerts, plays and similar items.

EARNINGS SURVEY

Please check below all of the ways you have been spending your NYC wages:

1. _____ School carfare
2. _____ School lunch
3. _____ Clothing
4. _____ School Identification Card
5. _____ School Insurance
6. _____ Towel fees for gym
7. _____ Lock and locker fee
8. _____ School supplies (paper, pencils, workbooks or books for class use)
9. _____ Buying books for your own reading.
10. _____ Tickets to SCHOOL SPORTS events (football games, basketball games, etc.)
11. _____ Tickets to SCHOOL plays, concerts, dances, movies, talent shows
12. _____ Tickets to COMMUNITY activities such as plays, concerts
13. _____ Tickets to COMMUNITY activities such as roller skating, bowling, movies, pool, swimming, amusement centers
14. _____ Testing fees (like PSAT, N'tl Merit, etc.)
15. _____ College admissions fees
16. _____ Senior fees (cap and gown, invitations, prom)
17. _____ Yearbook
18. _____ Senior Pictures
19. _____ Class Ring
20. _____ Cadet Uniform
21. _____ Gym uniform
22. _____ Meals other than lunch
23. _____ Contributing to family (such as rent, food, clothing or help with brothers and sisters)
24. _____ Room rent
25. _____ Savings
26. _____ Dry cleaning, laundry, shoe repair
27. _____ Personal needs such as toothpaste, deodorants, soap, etc.
28. _____ Beauty shop fees
29. _____ Barber shop fees
30. _____ Trips to places of interest in the city
31. _____ Trips to places away from the city
32. Other ways money is spent:

_____

_____

_____

_____ I am self-supporting and my money is used to keep me in school.

_____ I have one or more dependents and my money is used to support them.

If you were not working under this program how much money would you have each week for your needs (other than food and clothing)? _____

Table 13 shows the four categories of expenditures along with the items of expenditure ranked according to the frequency of their occurrence. Under personal items, 82 percent of the 518 participants spent part of their earnings for clothing, 71 percent for dry cleaning, laundry and shoe repair and about 61 percent for personal needs such as toothpaste, soap, etc.

TABLE 13

DISTRIBUTION OF EXPENDITURES BY PARTICIPANTS
IN THE WORK SCHOLARSHIP PROGRAM, 1966-1967

Percentage Bands	Personal Items	Supplies for All Aspects of School	School Related Activities	Other
80-89	Clothing	School Supplies	--	--
70-79	Dry Cleaning, Laundry, Shoe Repair	--	School Lunch	--
60-69	Personal Needs	--	--	--
50-59	--	--	School Carfare	Tickets for Community Activities Tickets for School Play
40-49	--	Books for Own Reading School ID Card	Locker Fee	Tickets for School Sports Savings Contribution to Family Expenses
30-39	Barber Shop Fees Gym Uniform Class Ring Beauty Shop Fees	Yearbook	Senior Fees Senior Pictures	Trips of Interest in the City
20-29	--	--	School Insurance Travel for Gym	--
10-19	Cadet Uniform	--	Testing Fee	Trips to Places Away from the City
0-9	--	--	College Admission Fee	Room Rent

The one area for which the largest number of students spent part of their money is school supplies. Eighty-three percent of the students claimed spending their money on school supplies. Another encouraging sign is the amount spent for books for personal reading. This expenditure item ranks second highest in the second category.

School lunch was bought by 75 percent of the students. Thus, one wonders how the students would have fared in school without money for lunch. Also significant is the amount spent for carfare.

While most of the expenditures under the category of "Other" are cultural in nature, two items stand out. Forty-four percent of the participants saved part of their earnings and 43 percent of them reported giving some amount as contributions to family expenses.

Another important finding is the fact that the students spent nothing for such items as gifts, dates, cigarettes and for other hobbies. Thus, it would be safe to conclude that a great proportion of the participants' earnings were spent for the prime necessities in their lives.

Table 14 indicates the amount of money the enrollee in the Work Scholarship Program would have had otherwise to spend on the items listed in the previous table. Nearly half of the students (43 percent) would have had no money to spend were they not participating in the Work Scholarship Program. Another 44 percent would have had $5.00 or less. The remaining 13 percent would have had more than $5.00 available, but generally this represents additional money from other sources. In some instances self-supporting students have two jobs or are drawing social security checks.

Comparing the number of students who spend the Work Scholarship (Neighborhood Youth Corps) wages on necessities and also other worthwhile expenses with the amount of money that would have been otherwise available to these students, one can see the value of this program in providing such students not only with needed food and clothing but also with the desire to remain in school. Without this Work Scholarship money these students would feel much more pressure to leave school in order to obtain employment and purchase personal necessities. Also, the wages from the Work Scholarship Program help them feel more like they belong to the school in that they are able to purchase yearbooks, class rings and activity tickets which they probably could not otherwise afford.

TABLE 14

AMOUNT OF MONEY PER WEEK THE WORK SCHOLARSHIP PROGRAM STUDENTS WOULD HAVE HAD WERE THEY NOT PARTICIPATING IN THE PROGRAM

Amount	Percentage
Nothing	43
$ 1.00	3
2.00	13
3.00	8
4.00	4
5.00	16
6.00	1
7.00	1
8.00	Less than 1
10.00	3
12.00	Less than 1
15.00	2
20.00	1
25.00	Less than 1
26.00	Less than 1
30.00	Less than 1

B. Summary and Conclusions. Although this part of the study covers a very brief period, the findings are indicative of the manner in which the students spent their earnings from the Work Scholarship Program. It is worthy to note that most items of the students' expenditures were for prime necessities in their lives. Three items were prevalent in the participants' expenditure pattern. School supplies ranks highest, followed by clothing. School lunch, accounting for 75 percent of part of the students' earnings, ranks third.

Participation in extracurricular activities such as school plays, school sports and field trips often demands additional expenses on the part of the students.

That the participants in the Work Scholarship Program were able to join in some of these activities is certainly a big boost to their school morale not to mention other benefits derived from these activities.

Also of special significance is the fact that 43 percent of the students would have no money at all for school expenses were they not participating in the Work Scholarship Program. The value of this program therefore lies primarily in helping students stay in school by giving them the opportunity to earn part of their way through school.

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The purpose of this document is to bring an awareness to counselors, teachers, educators, and parents of those vocational education programs now available, not only for persons in school, but also for those out of school and unemployed, for those already in the a labor market who need training orretraining, and for those persons who are emotionally, economically, or physically handicapped. Programs are discussed for each of the vocational education service areas as well as for students with special needs, that is, academic, socio-economic, or other handicaps preventing them from succeeding in regular on-going programs of vocational education. Vocational youth organizations are discussed as an important component in the training and development of the student as he engages in both individual and group activities connected with his career objective. (CH)

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VOCATIONAL GUIDANCE MANUAL

for

COUNSELORS, TEACHERS and EDUCATORS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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INTRODUCTION

The term "vocational education" is not new; it is as old as civilization itself. Vocational education has become prominent in recent years because of the technological changes in the work world. The total education program in the public schools of Indiana includes the preparation and training of students for living. This includes the acquisition of knowledge and skills, both mental and physical. Therefore, vocational education has been included but not defined as a separate program in the education picture. In the past few years the spotlight has been focused upon vocational education, giving it an apparent separation from the total picture.

This dichotomy into "academic" and "vocational" may have been separated further by those who reasoned that the ultimate goal in life is a college education. Thus, any other than this is second class. The need for technicians in many areas of work has opened new fields of training for Indiana students. The public schools now are saying to all students "We are trying to fulfill your needs, whether they are academic or vocational."

Educators have been aware of the uniqueness of the individual. The time element, massive numbers of students, student ratio, and many other tasks - all of which limit the effectiveness of the counselor- have taken their toll. The opportunity to accurately counsel a student with particular needs has been limited. The changing occupational information has almost become a barrier to counselor, parent, and student alike. This occupational information, with the awareness of a student's capabilities and limitations, is fundamental to the making of wise choices for the future. The ultimate dream of success may be reached by various methods. Thus, the educational

program opened to the student, whether academic or vocational is a means to reaching the best fulfillment of life.

In some Indiana schools a program for change is being implemented. Others are seeking an answer to the problem of their apparent inability to serve all students. Whatever the case may be, how do we adjust our sights for the future? How do we help the individual? The Department of Public Instruction, through its Vocational Division, is now providing the leadership and policies which are necessary for a comprehensive vocational education program in the State of Indiana. The Division is concerned with a total program of education, not only for persons in school, but for those out of school and unemployed, for those already in the labor market but who need training or retraining, and for those persons who are emotionally, economically, or physically handicapped.

The purpose of this booklet is to bring an awareness to counselors, teachers, educators, and parents of those vocational education programs now available. This will assist in the giving of appropriate information to each unique individual so he or she may then make a more intelligent choice for the future.

HOME ECONOMICS EDUCATION

It is safe to say that no segment of education is more important to the present generation of Americans and to the stability of American family life than that of home economics education. Home economics in the public schools today teaches more than how to bake, set the table, and serve meals. The newer emphasis of homemaking are often complex and intangible. Personality development, individual security, personal values, cultural patterns, and respect for the rights of others are qualities which society expects the present day family to develop. These intangible qualities are in addition to the traditional aspects of managing the home, spending the family income wisely, providing shelter, food and clothing, and keeping the family well and happy. The future will demand more of this kind of training for the well being of present and future generations. Every civic leader, parent, superintendent of school, school board member, guidance counselor, and teacher should give his enthusiastic support to help expand programs of home economics education.

Reasons for Importance

As the American family seeks to discharge its important responsibilities there is an ever-growing concern regarding its status and future. Some of the other reasons for this concern are the following:

1. The high divorce rate.
2. Early and frequently unwise marriage.
3. Increase in illegitimacy.
4. The high percentage of mothers working outside the home.

5. The number of women so involved in outside activities that children are neglected.

6. The high incidence of migration from one community to another, resulting in a "rootless" way of life.

7. The competition for family attention by interest outside the home.

8. Unemployment and unemployability.

9. More than 2,000,000 children living in a one-parent home.

10. Increase in the number of mentally ill resulting in adverse effects upon families.

If the family is to remain strong in the face of the problems brought about by our rapidly changing world, the importance of preparation for the vocation of homemaking must not be underestimated. Homemakers should be intelligent well-trained citizens and home economics education courses provide the basic preparation for this all important vocation.

HOME ECONOMICS IN INDIANA SCHOOLS

Home Economics in the public school train junior and senior high school students and adults in two types of programs - the homemaking program and the occupational training program.

THE HOMEMAKING PROGRAM

The home making program is designed to emphasize the acquisition of knowledge, understandings, attitudes and skills relevant to personal and family life in the areas described below. In each of these areas, related concepts are drawn from the natural and social sciences and the humanities.

Child Development - concerned with the study of children in their physical, mental, emotional, and social growth and development.

Clothing and Textiles - concerned with the nature, acquisition, and uses of textiles and clothing products.

Consumer Education - concerned with consumer education as it relates to management of a home and to the welfare of family members.

Family Health - concerned with nutrition, creative homemaking and emotional health, the relationship of the health of an individual to the well-being of the family, the prevention of illness, and the management involved in caring for the ill and convalescent in the home.

Family Relations - concerned with the varied family living conditions, the establishment and maintenance of relationships, and the preparation for marriage and family life. These designated aspects of family relationships emphasize the universality of families, the uniqueness of individuals and families, the development and socialization of the individual, and meeting the variety of needs and interests of family members.

Foods and Nutrition - concerned with the role of food in personal and family living, including the basic principles of health, food management, and economics.

Home Management - concerned with formulating goals, making decisions, and effectively using and controlling human and other resource for establishing and maintaining a home and family.

Housing and Home Furnishings - designed to develop the judgement needed for creating a favorable environment for family living. Attention is given to a complex of factors including influence of housing on people, types and costs of housing, interior design, the care, maintenance, and improvement of homes and furnishings, and the relation of resources to family needs.

HOMEMAKING PROGRAM CURRICULUM OUTLINE

Homemaking for Grades 7 and 8

Designed to be an exploratory course for the vocation of homemaking, the following two-semester program is recommended:

Semester One	Semester Two
Understanding Self, Family, and Friends	Managing Personal Resources
Helping at Home	Understanding Young Children
Four Food Groups	Personal Appearance and Beginning Clothing
Snacks and Quick Meals	

HOMEMAKING I

Required for a major or minor in home economics. Pupils shall enroll for a full year and earn one unit or two credits.

Semester One	Semester Two
Human Development (Personal and Child Development)	Management of Personal Time and Money
Nutrition and Principles of Food Preparation	Clothing and Textiles
	Care of House and Furnishings

HOMEMAKING II

Designed to follow Homemaking I.

Semester One	Semester Two
Family Health (includes First Aid; Home Care of the Sick and Elderly)	Clothing and Textiles (emphasis, selection and care)
Family Meal Management	Financial Management and Consumer Credit

HOMEMAKING III

Open to any Junior or Senior without prerequisite.

Semester One	Semester Two
Family Relations	Housing and Home Furnishings
Child Development	Home Management

SPECIAL HOMEMAKING COURSES

Elective courses are available to meet special interest and needs .

A. Advanced study in selected areas such as:

1. Flat Pattern and Designing
2. Tailoring
3. Experimental Foods
4. Family Economics
5. Orientation to the World of Work

B. Non-Major

1. Family Living
2. Family Economics
3. Child Development
4. Boys' Home Economics
5. Home Economics for the College Bound
6. Orientation of the World of Work

OCCUPATIONAL TRAINING PROGRAM

The second type of program in home economics offered in the public schools of Indiana is the occupational training program. This program prepares students for occupations which utilize knowledge and skills from the subject matter areas of home economics. The home economics related occupations may be those which provide (1) services to families in the home and similar services to others in group

situations; (2) assistance to professional home economists and professionals in fields related to home economics in industries, agencies, and organizations; and (3) other services and/or assistance directly related to one or more home economics subject matter areas.

Training is provided in the following occupational areas:

1) Care and Guidance of Children

2) Clothing Management, Production and Services

3) Food Management, Production and Services

4) Home Furnishings, Equipment, and Services

5) Institutional and Home Management and Supporting Services

Care and Guidance of Children - preparation for a variety of employment related to child care centers and young children, e.g., assisting directors of child day-care centers or nursery schools, assisting with activities on playgrounds and in recreation centers, and caring for children in stores and airports.

Clothing Management, Producation, and Services - concerned with clothing and textiles, e.g., fitting and altering ready-made garments, custom tailoring and dressmaking, laundry - dry cleaning work, and demonstration and technical work in business and industry.

Food Management, Production, and Services - preparation for a variety of employment related to institutional and commercial food services. These may include workers and supervisors in hospitals, child day-care centers, homes for the elderly, school lunch programs, and demonstrators and technicians in the food industries.

Home Furnishings, Equipment, and Services - concerned with employment related to home furnishings and/or equipment which includes assistance to purchasers in the selection of suitable home furnishings and/or equipment, assisting interior

decorators, and custommaking of curtains, draperies, slip covers, and other related items.

Institutional and Home Management, and Supporting Services - concerned with employment in public housing services to homemakers, and housekeeping services.

HOW THE OCCUPATIONAL PROGRAM WORKS

The Student:

1) shall meet legal age requirements for entry into the occupation for which she wishes to take training by the end of the semester.
2) shall be classified as a regular high school student
3) shall receive instruction in the classroom for minimum of one regular class period per day, five days per week.
4) shall receive work experience in a job outside the school, related to the occupation being studied in the school. The related instruction is to be carried in the school. The work experience is to be carried on under the supervision of both the employer and the teacher of the course.

The school:

1) offers a realistic counseling program which aids students in the selection of courses by providing information concerning opportunities for employment, educational requirements for successful achievement, and opportunities for advancement in the occupational courses being taught.

The teacher:

1) meets the certification standards for home economics teachers as outlined in the Indiana State Plan for Vocational Education.
2) has earned a major in a specific home economics subject matter field related to the particular occupation to be taught.
3) works in cooperation with persons who possess accurate information and

skills in the occupation to be taught.

4) shall be provided time in the school schedule for counseling occupational students, surveying employment opportunities, making contracts with prospective employers of students, working with an advisory committee and supervising work experience. While a student is participating in on-the-job work experience the teacher shall visit him or her at least once every two weeks for supervision and counseling with the manager or supervisor.

For further information write:

Supervisor
Home Economics
Division of Vocational Education
401-N State House
Indianapolis, Indiana 46204

SPECIAL NEEDS

The program of occupational training for students with special needs is designed for students enrolled in a public secondary school who have academic, socio-economic or other handicaps preventing them from succeeding in regular on-going programs of vocational education. The program consists of a combination of the academic curriculum and practical vocational experience, developed to fit the achievement level of the students. This program gives the students the opportunity to acquire basic educational skills and those occupational skills that will prepare them for entry into the work force.

Some of the criteria for the selection of students for this program are:

1. Any student, 16 years or over, who has been identified by trained guidance counselors as not being qualified for any of the regular skilled or technical occupations normally offered by public vocational education programs.
2. Students with low ability in communication skills.
3. Students who are irregular in attendance and who, in general, seem to have no interest in school in its traditional offerings.
4. Students who are members of families of low income or long time recipients of welfare payments or other forms of subsistence.
5. Students who have failed courses in the traditional curriculum offerings of the school, but who possess average or above ability.
6. Low or under-achievers who are retarded by one or more grades and are potential dropouts.

The program is designed for persons who need and can profit from it, whether they have physical or mental handicaps, are dropouts, are deprived or have no academic aspirations. The program helps the students to understand their limitations

and have responsibility for a place in the world of work. Also, students succeeding in this program have preferential hiring intheir communities.

There are two phases in the program of occupational training--the academic phase and the occupational phase.

Academic Phase

The academic phase of the program is flexible, to enable instruction to be presented on the achievement level of the student. Students having handicaps in communication and mathematic skills must be provided remedial instruction instead of traditional English and math. The academic phase of the program should be closely related to the occupational skills being taught; in this way the student can readily see the importance of the academic phase. Primary emphasis is placed on the basic tools of communication and arithmetic skills.

Occupational Phase

The occupational training portion of the program includes a combination of related classroom instruction with actual shop or laboratory training. Where possible, instruction should be on a level adapted to the interest, aptitudes, and ability of the student. The occupational training may be in one vocational discipline or can include a combination of the disciplines. The primary goal of the occupational phase must be the teaching of skills that will make the student employable and a contributing member of society. Adequate vocational guidance and counseling will play an important role in the occupational phase.

Qualifications of Teachers

1. All counselors, teachers, and supervisors will be chosen on the basis of their deep desire to help students having academic, socio-economic or other handicaps.

2. Occupational training teachers should have a minimum of two years of trade experience in one or more of the occupational fields included in the training program. They should meet the requirements for vocational teachers in the occupational fields in which training is offered.

Organization of Programs

All programs are so organized that they will meet the needs of individual students. The pattern of organization is governed, to a great extent, by the needs of the students in a particular community. Each school organizing a program for students with special needs should organize the type of program that best fits the needs of their school and community.

Inter-Divisional Cooperation

An additional effort is under way for developing programs for persons with special needs through the cooperation of three divisions of the Department of Public Instruction. These three divisions are:

1. The Vocational Education Division
2. The Special Education Division
3. The Vocational Rehabilitation Division

Currently, criteria is being formulated by and with the approval of all three divisions of the Department of Public Instruction. The purpose of this is to make greater utilization of resources and financial aid, to expand existing programs and create new ones, and to provide training for a greater number of persons with special needs.

For further information concerning the Special Needs Program you may contact:

State Supervisor For Special Needs
600 Old Trails Building
309 West Washington Street
Indianapolis, Indiana 46220

THE CRISIS IN HEALTH CARE

The National Advisory Commission on Health Manpower recently reported to the President of the U.S. that there is a "crisis" in American health care.

The executive director of the 14-member commission, Dr. Peter S. Bing, said the population is growing at a faster rate in proportion to the number of doctors and hospital beds. He noted that the country was still faced by a medical crisis because of greater demand for care, increasing specialization by doctors which produce personnel shortage in some areas, and the growing complexity of hospital and medical practice.

The report warned that if the demand for medical care is not met through better utilization of available manpower and medical facilities, costs for health care in the U.S. will skyrocket. Also, the report said that informed predictions suggest the health industry would become the nation's largest employer by 1975.

It is the task of counselors, teachers, and the schools of Indiana to help fill the needs in this area.

HEALTH OCCUPATIONS EDUCATION IN INDIANA

Vocational Education in Health Occupations provides instruction for youth and adults which will assist them in the development of knowledge, skills and attitudes which will qualify them for gainful employment. Those sucessfully achieving their goals will not only be gaining personal success, but will also make a real contribution to the health and well-being of the individual and the community.

A relatively new concept, nationally as well as in Indiana, is that of education for the health field in a vocational setting at the secondary school level. The regulations of the Vocational Education Act of 1963 set Health Occupations out

as a separate field. However, at present no precedent or even rough guidelines are available for secondary school preparatory education in the health occupations.

A recently assembled State Health Occupations Education Study Committee serves as a sounding board for the staff and Division. It is self-evident that much groundwork is needed to identify courses and establish requirements for programs. For the most part, the Supervisor will be occupied with giving this direction.

The Vocational Health Occupations Education program as it now functions in Indiana is as follows:

Each school system should choose the program of instruction which best meets the needs of the students, the community and the school.

The curriculum is designed to meet the needs of the learner, utilizing the regulations of licensing boards of a given health occupation or the standards of the appropriate occupational group.

Public schools may offer courses of study according to community needs and resources as follows:

Program of Instruction

HEALTH AIDE

Basic - A program covering one senior year, and organized to provide classroom-laboratory learning for half of each school day.

Practical Nursing - Presently the program is organized to include the two semesters of the senior year and is continued post high school for about eight months.

Also included are courses in the following six areas.

1. Nurse Aide
2. Dental Assistant

3. Medical Laboratory Assistant

4. Surgical Technical Aide

5. Doctor's Office Assistant

6. Medical Records

Both the Health Aide and the Practical Nursing programs are designed to provide the student with job entry abilities in services supportive to the health professions. In these programs high school seniors are engaged in classroom-laboratory learnings. The laboratory activities are planned in cooperation with the general hospital or other health agencies. Students attend school one-half day in academic classes and one-half day in health aide activities. One vital aspect of this program is that the nurse-teacher serves in both the classroom and the health agency. The curriculum provides for a correlated program of clinical instruction and practice within the scope of health activities.

THE COOPERATIVE PROGRAM

The Cooperative Program in Health Occupations Education is an on-the-job program covering two school years. Schools utilizing this plan enroll students, who are 16 years or older, during their junior year, and the program continues through their senior year. Students attend regular school one-half day and are employed in part-time jobs as health aides during the remaining half of the day. During their senior year students select a health aide major in one of the following areas:

1. Geriatric Aide

2. Specialty Aide (eg. obstetrical, medical, surgical)

3. Psychiatric-Mental Health Aide

4. Ward Clerk

Classroom-laboratory learnings take place five periods a week and pertain to each major area. Students receive one unit credit for class and one unit credit for work experience each year. Students are programmed to work a minimum of 15 hours per week and the combined school and work week may not exceed 40 hours.

OCCUPATIONAL TITLES IN HEALTH EDUCATION

Included under this heading are items of information which describe selected aspects of education for health occupations.

Dental Services - Included in this category are occupations concerned with the supportive services to the dental profession.

Dental Assistant - concerned with preparing a person to assist the dentist at the chairside in the dental operatory, to perform reception and clerical functions, and to carry out selected dental laboratory work.

Dental Hygientist (Associate Degree)* - concerned with providing services to patients, such as performing complete oral prophylaxis, applying medication, and providing dental health education services, both for chairside patients and in community health programs, under the supervision of the dentist.

Dental Laboratory Technician - concerned with preparing a person to execute the work in producing restorative appliances required for the oral health of the patient as authorized by the dentist.

Medical Services - Included in this category are occupations concerned with supportive services to the medical professional.

Cytology Technician (Cytotechnologist) - concerned with preparing a person to stain and screen smeared slides for determination of abnormalities of exfoliated cells that may assist in the diagnosis of cancer. This work is performed under the supervision of a physician.

Histology Technician - concerned with enabling a person to prepare, section, and stain tissues for microscopic study, usually by a pathologist or other clinical scientist.

Medical Laboratory Assistant - concerned with preparing a person to work under the supervision of medical technologists, clinical pathologists, or physicians to perform routine clinical laboratory procedures.

Nurse, Associate Degree* - concerned with preparing a person to work with the nurse supervisor, the physician, and other members of the health team in providing nursing care.

Practical (Vocational) Nurse* - concerned with preparing a person to give direct nursing care under the supervision of a nurse or physician.

Nurse's Aide - concerned with preparing a person to perform simple tasks involved in the personal care of individuals receiving nursing services. These tasks are performed under the supervision of a nurse.

Hospital Food Services Supervisor - designed to qualify a person for preparing and serving meals in a hospital or other health institutions under the supervision of the dietitian.

Inhalation Therapy Technician - designed to prepare a person to perform procedures and operate and maintain equipment used in supporting respiratory functions, including the administration of oxygen and other sustaining gases, as directed by a physician.

Medical X-ray Technician (Radiologic Technologist) - designed to prepare a person for the sage use of X-ray equipment in both laboratory and clinical settings under the supervision of a radiologist or other physician.

Optician - designed to train a person to prepare, assemble and fit corrective lenses as prescribed by a physician or optometrist.

Surgical Technician (Operating Room Technician) - designed to prepare a person to serve as a general technical assistant on the surgical team in the operating suite.

Occupational Therapy Assistant - designed to prepare a person to assist the occupational therapist in implementing the plan of therapy for a patient as prescribed by a physician.

* Registration, licensure, and certification: a statement concerning registration, licensure, and certification as applied to items identified by an asterisk (*) in this subject area is to be developed.

For further information on Health careers, you may write or call the following non-profit organization, which provides an excellent brochure entitled "Opportunities Unlimited", which describes 82 health careers:

Indiana Health Careers, Inc.
3826 North Pennsylvania Street
Indianapolis, Indiana 46205

Phone 923-2311
Executive Director,
(Mrs.) Jan Davidson

or write:

Supervisor, Health Occupations
Division of Vocational Education
401 - N State House
Indianapolis, Indiana 46204

TRADE, INDUSTRIAL AND TECHNICAL EDUCATION

Trade and Industrial Education in Indiana schools is rapidly expanding to keep pace with the rapid growth of industrial development in the state. Known in school circles as T & I, the vocational program operates under the Indiana Departmer of Public Instruction, and offers students instruction for development of skills and knowledge directed toward successful technical and vocational careers. The purpose of training and up-grading programs in Trade and Industrial Education is to provide the opportunity for all people to gain the necessary skills to become gainfully employed, make a contribution to society and lead more useful and satisfying lives.

Vocational education in trades and industries under the State Plan is designed for persons over 14 years of age who have entered upon or are preparing to enter upon the work of a trade or industrial pursuit. Among the areas served are the following: Electrical technology, instrumentation technology, automotive technology, industrial technology, foremanship, supervision and management, development, automotive industries, aviation occupations, construction and maintenance trades, custodial services, industrial electrician, machine shop, commercial art, graphic arts occupations, quantity food occupations, textile production and fabrication, and shop manufacturing and repair.

The Area Vocational School

Area vocational schools are now offering expanded T & I programs. It must be remembered however, that many of our fine comprehensive schools offer a wide variety of T & I programs. Under the area plan several schools cooperate in providing vocational education instruction.

The area vocational school provides a place where vocationally talented students

from all schools can work intensively in the further development of their abilities. It provides many more types of opportunities than can be provided in each school separately. So, the ideal of providing for the development of each student of his greatest potential is further enhanced. In the Area Technical-Vocational School the student gains credit toward graduation, develops good work attitudes, and becomes vocationally competent and an employable technical person regardless of where training takes place. The student develops confidence through simulated industrial and technical experience while still in school, and is prepared for immediate and gainful employment upon graduation.

The Industrial Cooperative Training Program

The Industrial Cooperative Training Program is a cooperative program of vocational education between the school and industrial community. The Industrial Cooperative Training Program in Indiana is a blend of classroom study and on-the-job training designed to equip persons for useful employment in the various technical and industrial organizations in the community. It functions within the framework of the overall curriculum of the school, using both the facilities of the school and the industrial resources of the community through a mutually planned working agreement. The student receives classroom instruction directly related to his work in the cooperating industrial organization, and he receives on-the-job supervised training from his employer. The student works a minimum of fifteen hours per week (at least 50% during school hours) for which he receives pay and credit toward graduation.

How the I.C.T. Program Operates

The Employer Agrees:

1. To provide a course of training designed to run for one or two years, a minimum

of 15 hours per week is required as on-the-job training and at least one period in each school day required as supervised and directed study of technical and related subjects, for the student of his choice.

2. To rotate the student's work assignments so that the student receives training in several aspects of the industrial organization.
3. To counsel with and direct the student regarding means of improving his performance.
4. To carry both compensation insurance and public liability insurance to cover the student.
5. To evaluate or rate the student at regular intervals so that the coordinator may better direct the student's classroom instruction.
6. To pay the student at least the going wage for beginning employees.
7. To dismiss the student only for just cause, and only after consultation with the coordinator.

The Student Agrees:

1. To be regular in his work schedule.
2. To strive diligently to improve his performance both in school and on the job.
3. To obey all company rules and regulations.
4. To carry out all work assignments cheerfully, promptly, and to the best of his ability.
5. To accept suggestions for improvement in the proper spirit.
6. To be loyal to his employer.

The School Agrees:

1. To cooperate with the employer to the fullest extent possible.

2. To provide courses of instruction in related subjects which are designed to aid the student-learner in his job training.
3. To promote the mutual interests of the school, the employer, and the student.
4. To recommend juniors and seniors who are 16 years of age or over and seem to be interested and qualified for training.

The Coordinator Agrees:

1. To "coordinate" the learning activities of the student both in school and on the job.
2. To cooperate with the employer in all aspects of the training program.
3. To counsel, guide, and work for the improvement of the student.

The Need for Vocational Counselors

Vocational educators, particularly the day trade instructors, have complained vigorously for years, and probably with some justification, that their classes were being used as a "dumping ground" for the incorrigible and academically unqualified students. Now, something can be done about this problem. The 1963 Vocational Education Act provided funds for reimbursing local school corporations for one or more vocational counselors. It seems reasonable to assume that each school corporation that is operating one or more approved programs in trade and industrial education should have the services of a vocational counselor. This service should be extended to evening trade and industrial education programs. Having such personnel in the day-school program, coupled with a well planned and organized student selection program, should result in having enrolled in approved trade and industrial education courses only those who can profit from such instruction.

Occupational Titles in Trade and Industry

The trades and industrial occupations are concerned with producing, processing, assembling, testing, maintaining, servicing, or repairing a product or commodity. The following is an annotated listing of some of the most common occupations in trades and industries.

Auto Mechanics - concerned with the components of the vehicle, including engine, power transmission, steering, brakes, and electrical systems. Included is training in the use of diagnostic and testing equipment and tools in the repair process.

Auto Body and Fender Repair - concerned with all phases of the repair of damaged bodies and fenders, including metal straightening by hammering, smoothing areas by filing, grinding or sanding, concealment of imperfections, painting, and replacement of body components including trim.

Machinist - concerned with all aspects of shaping metal parts, such as making computations relating to work dimensions, tooling, feeds, and speeds of machining. Also emphasized is work on the bench, lathes, shapers, milling machines, grinders and drills, the use of precision measuring instruments such as layout tools, micrometers and gages, methods of machining and heat treatment of various metals, blueprint reading, and the layout of machine parts.

Drafting Occupations - concerned with learning experiences which include theory, use of the drafting room, laboratory and shop work as each relates to the gathering and translating of data or specifications, planning, preparing and interpreting mechanical, architectural, structural, pneumatic, marine, electrical, electronic, topographical, and other drawings and sketches.

Electronics Technology - concerned with the design, development and testing of

electronic circuits, devices and systems. Content incorporates solid state and microminiaturization devices and representative systems such as: microwave systems, computers and controls.

Construction and Maintenance Trades - concerned with the erection, installation, maintenance or repair of buildings, highways, airports, missile sites, earth and other structures, using assorted materials such as metal, wood, stone, brick, glass, concrete, or composition substances.

Welding - concerned with all types of metal welding, brazing, and flame cutting. Instruction emphasizes properties of metals, blueprint reading, electrical principles, welding symbols, and mechanical drawing.

Carpentry - concerned with the layout, fabrication, assembly, installation, and repair of structural units. Included is instruction in the care and use of hand or power tools, equipment and materials, common systems of frame and sound construction, drafting, blueprint reading, applied mathematics, and materials estimating.

Electrical Occupations - concerned with the theory, laboratory, and shop work as each relates to planning functions, generating and transmitting electricity, installing and maintaining electrical and communications systems, equipment and components.

Quantity Food Occupations - concerned with the planning, selecting, purchasing, preserving, preparing, and serving food and food products. Included is the study of a variety of foods and their nutritional values, food processing, quantity cooking, storing equipment, and sanitation in food handling and management. Instruction emphasizes quantity food service occupations in commercial food service establishments such as restaurants, cafeterias, drive-ins, tea rooms, bakeries, and meat, fish, and poultry markets, etc.

Other technical, trades, and industrial occupational titles are as follows: Engineering Related Technology, Aeronautical Technology, Architectural Technology, Automotive Technology, Chemical Technology, Civil Technology, Electrical Technology, Electro-Mechanical Technology, Environmental Control Technology, Industrial Technology, Instrumentation Technology, Mechanical Technology, Metallurgical Technology, Nuclear Technology, Petroleum Technology, Scientific Data Processing, Appliance Repair, Aviation Occupations, Aircraft Maintenance, Aircraft Operations, Ground Operations, Blueprint Reading, Business Machine Maintenance, Commercial Art Occupations, Commercial Fishery Occupations, Commercial Photography Occupations, Heavy Equipment (Construction), Masonry, Painting and Decorating, Plastering, Plumbing and Pipefitting, Custodial Services, Diesel Mechanic, Industrial Electrician, Lineman, Motor Repairman, Communications, Radio/Television, Fabric Maintenance Services, Drycleaning, Laundering; Foremanship, Supervision, and Management Development, Graphic Arts Occupations, Industrial Atomic Energy Occupations, Installation, Operation and Maintenance of Reactors, Radiography, Industrial Uses of Radioisotopes, Maritime Occupations, Metalworking Occupations, Foundry, Machine Shop, Machine Tool Operation, Metal Trades, Sheet Metal, Metallurgy, Metallurgy Occupations, Nucleonic Occupations, Personal Services, Barbering, Cosmetology, Plastics Occupations, Public Service, Fireman Training, Law Enforcement Training, Baker, Cook/Chef, Meat Cutter, Waiter/Waitress, Refrigeration, Small Engine Repair (Internal Combustion), Stationary Energy Sources Occupations, Electric Power and Generating Plants, Pumping Plants, Textile Production and Fabrication, Dressmaking, Tailoring, Shoe Manufacturing/Repair, Upholstering Woodworking Occupations, and Millwork and Cabinet Making.

For further information write:

Supervisor, Trade and Industrial Education
Division of Vocational Education
401 - N State House
Indianapolis, Indiana 46204

DISTRIBUTIVE EDUCATION
(D.E.)

Distributive Education is a cooperative program of education between the school and business community. The D.E. program in Indiana is a blend of classroom study and on-the-job training designed to equip persons for useful employment in the merchandising, marketing and management phases of retail, wholesale, and service businesses. It functions within the framework of the overall cirriculum of the school, using both the facilities of the school and the merchandising resources of the community, through a mutually planned working arrangement. The student receives classroom instruction directly related to his work in the cooperating business organization, and he receives on-the-job supervised training from his employer. The student works a minimum of fifteen hours per week (at least 50% during school hours) for which he receives pay and credit toward graduation.

Why the Need?

There is a definite need and place for Distributive Education, either as a singular vocational discipline or jointly in cooperation with other vocational disciplines, in the curriculum of every high school in Indiana, no matter how small or large the school may be. A recent report by the Indiana Employment Security Division supports this need by stating that there is a persistent shortage of trained personnel available to fill existing vacancies in identifiable distributive occupations in 26 of the 27 labor market areas in the state that report to the Employment Division.

In order to fill the needs for the State of Indiana, the anticipated expansion for Vocational Distributive Education programs in Indiana high schools for the next few

years is as follows:

	Cooperative	Project-method	Inter-Disciplinary
68-69	78	5	2
69-70	85	10	5
70-71	93	15	8
71-72	100	20	10

National enrollment figures for the current year as compared to last year also show a 27% increase in Distributive Education - the fastest growth rate of all vocational areas. The U.S. Labor Department says that one of the biggest booms in the making is in the service industries - advertising, marketing, finance, real estate, insurance, printing, laundering and repairing.

The U.S. Office of Education thinks that next year D.E. enrollment will be up to 180,000 from the present 104,000; by 1970, the figure is expected to be 277,000, and in 1975 it should reach 405,000. Education, labor, industry, states, communities, and the nation as a whole, all have a vital interest in solving the problems of meeting the demands for needed jobs. Well trained workers, interested in their jobs, em ployed where good working conditions exist and fair employment and promotion policies are practiced, are one of this country's greatest resources.

HOW THE D.E. PROGRAM OPERATES

The Employer Agrees:

1. To provide regular employment, (minimum of 15 hours per week) throughout the school year for the student of his choice.
2. To rotate the student's work assiguments so that the student receives training in several aspects of the business.

3. To counsel with and direct the student regarding means of improving his performance.

4. To evaluate or rate the student at regular intervals so that the coordinator may better direct the student's classroom instruction.

5. To pay the student at least the going wage for beginning employees.

6. To dismiss the student only for just cause, and after consultation with the coordinator.

The Student Agrees:

1. To be regular in his work schedule.

2. To strive diligently to improve his performance both in school and on the job.

3. To obey all the store rules and regulations.

4. To carry out all work assignments cheerfully, promptly, and to the best of his ability.

5. To accept suggestions for improvement in the proper spirit.

6. To be loyal to his employer.

The School Agrees:

1. To cooperate with the employer to the fullest extent possible.

2. To provide the appropriate learning environment and instructional materials.

3. To promote the mutual interests of the school, the employer, and the student.

The Coordinator Agrees:

1. To "coordinate" the learning activities of the student both in school and on the job.

2. To cooperate with the employer in all aspects of the training program.

3. To counsel, guide, and work for the improvement of the student.

OCCUPATIONAL TITLES IN D.E.

Distributive education includes various combinations of subject matter and learning experiences related to the performance of activities that direct the flow of goods and services, including their appropriate utilization, from the producer to the consumer or user. Distributive occupations are found in such businesses as retail and wholesale trade; finance, insurance and real estate; services and service trades; manufacturing; transportation and utilities; and communications. Below is an annotated listing of career objectives in distribution and marketing occupations, around which courses and practical experiences are developed.

Advertising Services - concerned with tasks performed by distributive employees and management in demand creation, planning, placement, and evaluation of sales promotion activities, utilizing merchandising and mass media.

Apparel and Accessories - concerned with sales, fashion, and sales-supporting tasks performed by employees and management in establishments primarily engaged in selling clothing of all kinds and related articles for personal wear and adornment.

Automotive and Petroleum - concerned with the sales and sales-supporting tasks performed by employees and management in retail or wholesale establishments engaged in distribution of cars and trucks, automotive parts, accessories and equipment, or gasoline and petroleum products.

Finance and Credit - concerned with the tasks involved in deposit banking or closely related functions, extending credit in the form of loans, services allied with the exchange of securities and commodities, or consumer credit and collections.

Food Distribution - concerned with the sales and sales-supporting tasks performed by employees and management in establishments primarily engaged in selling food for home preparation and consumption or selling a general or commodity line of food

products at wholesale.

Food Services - concerned with the sales and merchandising tasks performed in establishments serving prepared foods and drinks for consumption on their own premises or at a place designated by the customer.

Foreign Trade (International Trade) - concerned with the tasks in export sales, trade controls, foreign operations and attitudes, monetary problems, and other elements in international marketing.

General Merchandise - concerned with the tasks in selling a variety of merchandise in department stores, junior department stores, mail-order houses, variety stores, general merchandise stores, discount stores, and direct selling organizations or merchandise vending units.

Hardware, Building Materials, Farm and Garden Supplies, and Equipment - concerned with the various sales tasks in selling the basic lines of hardware, lumber, building materials, supplies and equipment for home construction, and farm and garden supplies and equipment at retail, wholesale, or to contractors.

Home Furnishings - concerned with the various sales tasks in selling merchandise used in furnishing the home, such as furniture, household appliances, floor coverings, draperies, and specialized lines of home furnishings.

Hotel and Lodging - concerned with the tasks performed by distributive personnel and management in establishments providing lodging, lodging and meals or other tourist services on a year-round or seasonal basis to the general public or to an organization's membership.

Insurance - concerned with the tasks performed by sales and management personnel for insurance carriers of all types, or by agents representing carriers and brokers dealing in the sale or placement of insurance contracts with carriers.

Management - concerned with the tasks performed by owners, proprietors, and managers in organizing and operating a business enterprise, usually a retail or service trade firm, a wholesale firm, or an unincorporated business.

Marketing (General) - concerned with the tasks performed by employees and management responsible for demand creation and a constant flow of goods and services to consumers and users at the rate of production.

Mid-Management - concerned with the tasks performed by personnel who serve primarily in a liaison capacity between employees and management and have responsibility for the supervision of products and/or people.

Real Estate - concerned with the tasks related to the sales, appraisal, and management performed by real estate operators, owners, and leasors, as well as buyers, sellers, developers, agents, and brokers of real estate.

Retailing (General/Miscellaneous) - concerned with the sales and sales-supporting tasks performed by employees and management of establishments engaged in selling merchandise purchases for resale to customers for personal, household, or farm use.

Transportation - concerned with physical distribution, sales, storage, and management tasks performed in enterprises engaging in passenger and freight transportation, public warehousing, and services incidental to transportation.

Wholesaling (General/Miscellaneous) - concerned with the tasks performed by employees and management of business places engaged primarily in selling goods to retailers, to industrial, commercial, institutional, or professional users, and bringing buyer and seller together.

For further information write:

Supervisor, Distributive Education
Division of Vocational Education
401 -N State House
Indianapolis, Indiana 46204

CLOSING THE SCHOOL-BUSINESS WORLD GAP

One of the roles that the school guidance counselor and teacher performs is helping students make the transition from one school level to another, from one school to another and from school to employment successfully. The successful transition of young people from school to job will become easier to accomplish as the artificial wall between the schools and the outside world breaks down. In reality the wall has been crumbling for some time, and is fated to disintegrate further.

In the majority of yesterday's schools, business offerings were nothing more than masses of disconnected courses. Now, most schools are offering a sequence of courses which can prepare a student for a specific career objective. Students are advised of such sequences and enroll for a program of occupational preparation rather than for just "so many classes or credit."

Bridging the Gap in Indiana

Today, the schools of Indiana are establishing two kinds of business and office education programs. One is the Intensive Office Laboratory and the second is the Cooperative Office Education program. The following estimated growth of programs was based on final curriculum change, new building construction, and teachers becoming certified for the program:

1967-68	-	80 programs
1968-69	-	150 programs
1969-70	-	260 programs
1970-71	-	300 programs

The above estimate is a conservative one. The publicity and incorporation of teacher-training programs in three state universities, as well as regional and

extension centers, will develop unforeseen possibilities and desires for either or both programs.

THE INTENSIVE OFFICE LABORATORY

The Intensive Office Laboratory is an in-school vocational education program for a career in office work; it prepares students for a career in office work or services for business. It provides training in one or more of the many techniques and procedures used in the modern office, such as automation, operational systems, data processing, and the coordinating and communicating of information.

If you cannot send your students out to work in a "live" office situation, you create a "live" office situation in your school. And this is what is done in the Intensive Office Laboratory. The pressures of an office are incorporated in the simulated office, within the school, with actual forms and problems maintained through the advice of actual business people, during the senior year. There is a recorded statement of career objectives for each student and the facilities and employment used in instruction are comparable to those found in a given occupation. The length of instruction is determined by the requirements of the occupation and the needs of each student. It is to be emphasized that this program is not a classroom situation, but a simulated office situation, and it prepares the student not for a single task, but for a career in business and office service.

In the Intensive Office Laboratory the student gains credit toward graduation, develops good work attitudes, and becomes vocationally competent and an employable office person. The student develops confidence through simulated office situations while still in school, and is prepared for immediate and gainful employment upon graduation.

COOPERATIVE OFFICE EDUCATION

The second kind of business and office education program established in Indiana schools today is the Cooperative Office Education. This is a vocational program pro-

viding a cooperative venture between the school and the community. It is designed to prepare boys and girls, 16 years of age or older, for occupational life. The program utilizes the offices of local business establishments as laboratories for the training. This enables the student to receive actual occupational experience and employment, development of self-confidence and "know how" in real situations, coordinated with related study for a well-balanced occupational preparation.

Senior students are at a training station a minimum of 15 hours per week which offers the student a bona fide training program in an actual situation. The student is paid at least the state minimum wage, and the schedule of work, related training and pay is determined by written agreement of employer, school coordinator, student and parent.

OCCUPATIONAL TITLES

Under this heading are the items of information which identify categories of career objectives in office occupations, and around which courses and practical experiences are developed.

Accounting and Computing - concerned with systematizing information about transactions and activities into accounts and quantitative records, and paying and receiving money. Career objectives are identified with a variety of occupational groups and specialization, such as Junior Accountants, Bookkeepers, Cashiers, Machine Operators, Tellers, and other Accounting and Computing occupations.

Business Data Processing Systems - concerned with business data processing systems and operations. Career objectives are identified with scuh occupational groups as Computer and Console Operators, Peripheral Equipment Operators, Programmers, Systems Analysts, and other Business Data Processing Systems occupations.

Filing, Office Machines, and General Office Clerical - concerned with the

dissemination of information, e.g., by mail, t lephone, telegraph, and in person. Career objectives are identified with such occupational groups as Communication Systems Clerks and Operators, Correspondence Clerks, Mail and Postal Clerks, Mail-preparing and Mail-handling Machine Operators, Messengers and Office boys and girls, Receptionists and Information Clerks, and other Information Communication occupations.

Materials Support Occupations: Transporting, Storing, and Recording - concerned with (1) receiving, storing, issuing, shipping, requisitioning, and accounting for stores of material or material in use; (2) assigning locations and space to items, including verification of quality, identification, condition and value; (3) the physical handling of items, including binning, picking, stacking, and counting; (4) preparing or committing stocks for shipment; (5) inventorying stock; (6) replenishing depleted items; and (7) filling orders, and issuing tools, equipment, or materials to workers. Career objectives are identified with such occupational groups as Planning and Production Clerks, Shipping and Receiving Clerks, Stock and Inventory Clerks, Traffic, Rate, and Transportation Clerks, and other Transporting, Storing, and Recording occupations.

Personnel, Training, and Related - concerned with personnel administration of an organization and the facilitating functions of scheduling and conducting clerical work and management operations of organizations. Career objectives are identified with such occupational groups as Educational and Training Assistants, Interviewers and Test Technicians, Personnel Assistants, and other Personnel, Training, and Related occupations.

Stenographic, Secretarial, and Related - concerned with making, classifying, and filing records, including written communications. Career objectives are identified with such occupational groups as Executive Administrative Secretary, Secretaries, Stenographers, and other Stenographic, Secretarial, and related occupations.

Supervisory and Administrative Management - concerned with a variety of responsibilities such as (1) studying policies, organizational structures, and administrative practices of such organizations as governmental units, industrial firms, and nonprofit groups; (2) reviewing periodic budgets submitted by operations personnel; (3) preparing reports summarizing findings and recommending changes in policy, organization, and administration to line management; (4) consolidating the budget estimates and preparing financial reports for consideration and action by higher authorities of management; and (5) supervising and coordinating activities, determining work procedures, and assigning duties.

Typing and Related - concerned with recording data, supervising and administering typing staffs and typing, and managing offices. Career objectives are identified with such occupational groups as Clerk Typists, Key Punch and Coding Equipment Operators, Typists, and other Typing and related occupations.

Miscellaneous Office - concerned with the facilitating function, e.g., public contact, such as registering hotel and motel guests, examining claims and records, and collecting and tracing accounts. Career objectives are identified with such occupational groups as Collectors, Hotel Clerks, Clerical Technicians, Credit Clerks, and other occupations and areas of specialization concerned with office occupations not listed or classifiable in the above categories, including emerging office occupations not classifiable in the above categories.

For further information write:

Supervisor, Business and Office Education
Division of Vocational Education
401-M State House
Indianapolis, Indiana 46204

VOCATIONAL AGRICULTURE EDUCATION

All of us are dependent upon agriculture. An efficient agriculture makes possible our modern way of life. Only ten percent of the population of the United States is required for farming. In Russia 45 percent is required. In some other countries 80 to 90 percent of the population are engaged in farming.

With only 10 percent of the population supplying the food and fiber we require, it is essential that farmers be highly efficient. Modern commercial farming is a large, complex, and competitive operation in which only the fit can survive. Our farmers require more general education and more specialized education for farming than farmers have ever before required.

The Changes in Farming

No phase of American life is changing more rapidly or radically than farming. Among the changes having great impact are the following:

1. Extensive use of machinery and automation.
2. Application to farming of the research agencies.
3. Migration of 2,000,000 persons a year from farm to city.
4. Enormous increases in the capital requirements for farming.
5. Rapid increase in part-time farming by persons who work part-time in other occupations.
6. Changes in the dietary habits of the American people which call for shifts in food production.

Agricultural Education in Indiana

There is a need for Agricultural Education in every high school in the State of Indiana. This need may be met by a program in Vocational Agriculture or in joint cooperation with other vocational disciplines.

State Consultant Committees have been organized to provide assistance to the State Department in each of the occupational areas of Vocational Agriculture.

The State Horticulture Consultant Committee advises the state office of tremendous employment opportunities in the area of Horticulture. Occupational opportunities in landscaping, floriculture, and lawn and grounds maintenance have reached the point that employment of individuals for these occupations has become critical. At this time a vast majority of those people now employed have had little or no training in these occupations.

The Consultant Committee for the program in Agriculture Mechanics has indicated that there is a need for 200-300 young men each year for the occupations of set-up men and mechanic's helpers in the implement dealerships throughout the State of Indiana. This is only one small segment of the Agriculture Mechanics opportunities. There are many opportunities in the field of manufacturing of agricultural machinery which have not been explored.

The Sales and Service Occupations Consultant Committee has indicated a need for trained young men and women in the occupations of agricultural supply sales and service. These occupations include those in the feed, fertilizer, seed, chemical, agriculture petroleum and farm building industries. Increasing demands in production agriculture have led the State Consultant Committee on Farm Management to emphasize the needs in this area.

Studies show that in the area of production agriculture there are from 3,000-4,000 people who enter this occupation each year. The present enrollment in Vocational Agriculture provides for less than one-half this number. With the concerted effort of agricultural people to produce, and the realization of the need for the production of food and fiber existing, the need for trained individuals who will enter the

production agriculture field is crucial.

New horizons in Vocational Agricultural Education are now offered in the Public Schools of Indiana. The old objective of training for farming has been replaced by the new objective of basic instruction and training for all agricultural occupations.

Through classroom instruction, supervised experience programs, and activities in F.F.A., vocational agriculture prepares persons for vocations in the following segments of the agricultural industry: Production, Horticulture, Sales and Service, Mechanics, Management, Forestry and Beautification, and Conservation.

Vocational Education in Production Agriculture

The program in production agriculture or farming differs from the other segments of agricultural education in that the student's work experience does not take place during released time from school. Rather, the student begins the program during his freshman year in high school, during after-school hours, on his home farm or a placement farm in the local community. This is a four-year program in which the student receives credit toward graduation and related instruction in the school in production agriculture. The student also receives direct supervision from the school and the cooperating farmer.

The major objective of the program is to provide supervised instruction which will develop agricultural competencies needed by individuals engaged in or preparing to engage in production agriculture. The attainment of this major objective requires competencies in one or more areas of plant science, animal science, soil science, agricultural business management, and agricultural mechanization. There are several different occupational levels at which individuals are engaged in production agriculture (owner-operator, manager, tenant, technician, laborer, etc.). Since the knowledge and skills needed at different levels vary, educational programs designed to prepare

and upgrade individual students will also vary in length and level of instruction.

Foremost among contributory objectives in production agriculture are abilities to:

1. Begin and advance in production agriculture.
2. Manage an agricultural business effectively by:
    a. Producing agricultural products efficiently.
    b. Marketing agricultural products advantageously.
    c. Financing an agricultural business successfully.
    d. Providing for efficient agricultural buildings and mechanization.
    e. Making decisions based upon the analysis of accurate and proper records.
    f. Conserving soil and other natural resources.
    g. Applying effective employee-employer relationships.
    h. Making the most efficient use of physical and human resources in conducting the agricultural business, which may also involve supplemental or alternate sources of income.
3. Maintain a favorable home environment.

A night school program in production agriculture is also conducted in many Indiana communities for young farmers who have graduated or dropped out of school and desire further instruction as an aid to becoming established in farming on a sound basis; and this program is also offered to adult farmers who have already become established in farming, but desire instruction which will enable them to improve their farm business and family living.

The interests and needs of the above mentioned groups (students, young farmers, adult farmers) vary. Therefore, the instructional program, to be functional, should vary. One of the important responsibilities of the teacher and guidance counselor of vocational agriculture is to collect general and factual information concerning the

interests and needs of these groups and individuals, analyze this information, and then work with each group and individual in formulating a program of instruction which will best develop the needed abilities.

OFF-FARM VOCATIONAL AGRICULTURAL EDUCATION

Tremendous changes have taken place in the agricultural industry in recent years. Numerous off-farm agricultural businesses and services have arisen to assist with the work of the production farmer. The program in Off-Farm Vocational Education consists of classroom instruction and work experience in off-farm agricultural occupations.

The classroom instruction is related to the student's career objective. It usually includes agricultural salesmanship, human relations, employee and employer responsibilities and career opportunities in agriculture. Other areas may be added according to the needs of the individual student.

The work experience will consist of employment in an agricultural business or industry. Some examples are farm machinery, feed, seed, fertilizer, and other agricultural sales and supply firms. It may include any business in which training in agriculture would be an asset to the business.

During this period of training, the student is evaluated by the teacher and employer. Progress in training is noted and additional instruction and counseling is given based on employer's recommendations.

The student is released for part of the school day to obtain the work experience and may receive credits toward graduation upon completion of the program. The student also is paid for his services to the employer. Any senior boy or girl who is interested in an off-farm agricultural occupation and has had previous agricultural experience may participate in the program.

OCCUPATIONAL TITLES IN VOCATIONAL AGRICULTURE

Included in this subject matter area are the items of information which identify various aspects of agriculture.

Agricultural Production--concerned with the principles and processes involved in the planning related to and the economic use of facilities, land, machinery, chemicals, finance, and labor, in the production of plant and animal products. In practice, activities include classroom instruction and laboratory experiences in and out of school, including farms and other agriculturally related establishments. Aspects of production agriculture are organized under a variety of descriptive titles, such as Animal Science, Plant Science, Farm Mechanics, Farm Business Management, and Other Production Agriculture.

Agricultural Supplies--concerned with preparing students for occupations which provide consumable supplies used in the production phase of agriculture--including consultative and other services.

Agricultural Mechanics--concerned with developing abilities necessary for performing and assisting with the operations of selection, operation, maintenance, and use of agricultural power, agricultural machinery and equipment, structures and utilities, soil and water management, and agricultural mechanics shop.

Agricultural Products (Processing)--A combination of subject matter and planned learning experiences designed to teach information, processes, science principles, and management decisions concerned with agricultural competencies in the food technology occupations. The groups of products include:

(1) meat, fish, poultry, and eggs
(2) dairy products
(3) fruits and vegetables
(4) cereal grains
(5) other foods and beverages

Ornamental Horticulture--concerned with the culture of plants used principally for ornamental or aesthetic purposes. Subject matter and practical experiences in ornamental horticulture are organized under such descriptive titles as Arboriculture, Fine Turf Management, Floriculture, Greenhouse Management, Landscaping, Nursery Operation, and Other Ornamental Horticulture.

Agricultural Resources--A combination of subject matter and planned learning experiences which are concerned with the principles and processes involved in the preservation and/or improvement of natural resources such as air, forests, soil, water, fish, and wildlife for economic and recreational purposes. Instruction also emphasizes such factors as the establishment, management, and operation of forest lands used for recreational purposes.

VOCATIONAL YOUTH ORGANIZATIONS

The youth organizations, which are a part of every vocational education program in the high school, are an important component in the training and development of the student. Each young man or woman who participates in the activities of his club is adding to his personal growth as well as furthering his vocational objective of preparation for useful employment.

The school-sponsored club offers the student an opportunity to participate in activities which begin in his own school and which can lead to national conferences involving students from all the United States and often from other nations. The participation in these activities is limited only by the student's own interest, ability, and desire.

One of the fundamental purposes of these clubs is to futher the education of the student in his chosen field of endeavor. A wide variety of activities take place during the year to further this objective. The student engages in both individual and group activities connected with his career objective. Each student also has the opportunity to prepare materials to be entered in the various contests which take place at the state and national level.

These events not only serve to broaden the student's knowledge and understanding of his chosen field, but also place him into a situation of cooperating with his fellow students and competing with his peers in the various activities. These experiences are planned under as realistic conditions as possible to enhance their educational value to the student.

Important as this furthering of the career objective is to the student, the club activities also serve to develop the qualities of leadership in the student. Each of the clubs is student-operated under the general guidance of the vocational teacher.

The students originate and implement all governing policies in their own local club within the framework of the state and national organizations. Each local student and club also takes an active role in developing the policy of these latter organizations. It is becoming increasingly important for each individual to understand the basis of group interaction if he is to be able to take an active role in civic affairs. The clubs contribute significantly to this understanding in vocational students.

In many cases the clubs also serve as an important part of the vocational student's social acitivities. They offer the opportunity for planned recreational activities within the club group, and the chance to meet socially with other students throughout the nation.

The various national education youth organizations are contributing significantly to the career development and the personal development of each of the participating students. Together with the classroom instruction, they form an important link between school and the job for each student.

DISTRIBUTIVE EDUCATION CLUBS OF AMERICA (DECA)

Added to classroom instruction and on-the-job instruction and application, the Distributive Education Club completes the total instructional program. The club may be regarded as a useful supplement to the two other phases of the total instruction program. It affords the student leadership development in an environment which is student-dominated. The club program also serves to help interpret the instructional program to businessmen, faculty, parents and other students.

Early in the development of the secondary school program a need was recognized for some type of youth activity program. Growing out of this need, clubs were formed at the local levels, and a series of activities were developed for interested distributive education students. The local development became more widespread within states, and there arose a request for the organization of state-wide associations of local clubs. The state associations found a community of interest and joined together in a national organization which was established as the Distributive Education Clubs of America.

Each local club elects its own officers and plans and conducts its own program of activities. The local Distributive Education teacher-coordinator serves as the club adviser. The Distributive Education Clubs of Indiana (DECI) is the state association and is comprised of all the local chapters. Each state has a club adviser operating out of the Department of Public Instruction . Delegates from these chapters, meeting once in the fall, elect their own state officers and state delegates. These delegates, in turn, elect their national officers at the national leadership conference of DECA.

The strength of the club program lies in its independence and democracy. The national association, DECA, is controlled by the several state associations which, in turn, are controlled by their respective local chapters. However, throughout the organization there runs a strong bond of common interest and unity of purposes.

These purposes focus upon certain broad areas which are readily applicable to the club program. Properly conducted, these educational activities within the club program will also strengthen classroom and job instruction. The five areas which have been selected for particular emphasis in the club program are:

1. Broadening of economic understanding
2. Increasing knowledge of distribution.
3. Maintaining an inquiring attitude toward techniques used in distribution
4. Increasing abilities in citizenship activities
5. Developing an understanding of the social and economic responsibilities of those engaged in distribution.

As previously indicated, the club program should serve to complement, supplement and strengthen the total instructional program. It should never supplant or substitute for the educational activities in the school or on the job. The club program serves to round out the classroom instruction and the job instruction by providing a controlled method for student centered participation in activities which are of particular interest to the members of the club. Translated freely, all the activities provided through the club program must parallel the responsibilities of distributive education. A club is educational when its activities are interwoven with the total instructional program.

For further information you may write:

Distributive Education Clubs of America
200 Park Avenue
Falls Church, Virginia 22046

VOCATIONAL INDUSTRIAL CLUBS OF AMERICA
(VICA)

The Vocational Industrial Clubs of America is a National organization of youth--boys and girls enrolled in secondary vocational industrial education. This includes students in trade, industrial, or technical education courses that are vocationally and occupationally oriented. It provides opportunities for development of leadership, fosters high ideals and appreciation for employment in business and industry, promotes high standards of scholarship and workmanship, and stimulates interest in educational and wholesome recreational activities.

The Vocational Industrial Clubs of America, Inc., sponsors VICA, the youth organization, and an Administrative Board composed of members of VICA, Inc., the U.S. Office of Education, and the AVA, serves as the adult governing body. Ten national VICA officers, elected annually by the members, serve on the National Executive Council. They are: President, Vice President, Secretary, Treasurer, Parliamentarian, and five Regional Vice Presidents.

A National Advisory Council provides counsel, advise, and assistance to the Board. Its members are persons from all facets of education, labor, and business. An Executive Secretary, appointed by the Administrative Board, serves as the administrative officer of the National organization in its headquarters in Falls Church, Virginia.

The Indiana Association of Vocational Industrial Clubs of America comprises 47 local clubs with a membership of over 1300. The national membership stands at over 63,000 young people who are preparing for leadership in the world of work.

National annual membership dues of one dollar per member per year support VICA. Dues are paid through the State Associations. State Association and local club dues are set by the state and local groups.

Some of the goals and purposes of the Vocational Industrial Clubs of America are:

1. To unite in a common bond all students enrolled in trade and industrial education.
2. To develop leadership abilities through participation in educational, vocational, civic, recreational and social activities.
3. To foster a deep respect for the dignity of work.
4. To assist students in establishing realistic vocational goals.
5. To help students attain a purposeful life.
6. To create enthusiasm for learning.
7. To promote high standards in trade ethics, workmanship, scholarship, and safety.
8. To develop the ability of students to plan together, organize, and carry out worthy activities and projects through use of the democratic process.
9. To foster a wholesome understanding of the functions of labor and management organizations and a recognition of their mutual interdependence.
10. To create among students, faculty members, patrons of the school and persons in business and industry, a sincere interest in and esteem for trade and industrial education.
11. To develop patriotism through a knowledge of our Nations heritage and the practice of democracy.

For futher information write to:

Vocational Industrial Clubs of America
105 North Virginia Avenue
Falls Church, Virginia 22046

AID FOR COUNSELORS

"Aviation-Where Career Opportunities Are Bright" is a new aviation careers filmstrip designed for group counseling. The filmstrip (152 color frames) with a 33 1/3 rpm recording, is about 28 1/2 minutes long. With a Counselor's Guide providing details to students' questions about approximately 100 aviation careers, it is available at $10.00 from the National Aerospace Education Council, 806 15th Street, N.W., Washington, D.C. 20005.

The story is an on-the-scenes report on aviation careers which a committee of high school students present to their classmates. The film is a joint project of the National Aerospace Education Council, the Division of Vocational and Technical Education, U.S. Office of Education, and the Office of General Aviation Affairs, Federal Aviation Administration, Department of Transportation.

For further information write:

Executive Secretary
Vocational Industrial Clubs of America
105 North Virginia Avenue
Falls Church, Virginia 22046

OFFICE EDUCATION ASSOCIATION
(O.E.A.)

The Office Education Association is a voluntary association of State youth groups, supporting office occupations education.

The O.E.A. has as one of its objectives, the development of student abilities in planning together, organizing, and carrying out worthy activities. The activities of the club provide for close relationships between community employers and the student. Many businessmen favor employing these students, because of student interest and training, as demonstrated in the employer's business.

Membership in O.E.A. gives the student an opportunity to participate in national Officers' Leadership Conferences, as well as the annual national O.E.A. Leadership Conference. The organization unites in a common bond those students enrolled in classes with office employment as their objective, and assists students in establishing realistic training and employment objectives. The members learn to serve as well as lead, and have the opportunity for state and national recognition.

The Office Education Association of Indiana received its charter from the national O.E.A. on May 13, 1967. In less than one year there were 23 O.E.A. chapters formed in Indiana, and the State organization anticipates that another 76 clubs will be chartered within the next year.

The purposes of the Office Education Association of Indiana (OEAI) are:

1. To unite in a common bond without regard to race, creed, or national origin, the students enrolled in a program for preparation for immediate and gainful office employment as their objective.
2. To develop leadership abilities through participation in vocational education, civic, service, and social activities.

3. To assist students in establishing realistic training and employment objectives.
4. To create enthusiasm for learning and appreciation for the dignity of work.
5. To promote high standards in ethics, workmanship, and scholarship.
6. To develop the ability of students to plan together, organize, and carry out worthy activities and projects through the use of the democratic processes.
7. To foster an understanding of the functions of labor and management organizations.
8. To develop competent, aggressive business and office education leadership.
9. To develop and strengthen confidence in themselves and their work.
10. To develop character, train for citizenship, and foster patriotism.
11. To develop and participate in a cooperative effort.
12. To provide satisfactory social and recreational activities.
13. To foster practical application of business and office education through competition.
14. To assist local club members in the growth and development of these purposes.

The O.E.A. is divided into two distinct groups--the high school group and the post-secondary group. Any existing or emerging youth group, which demonstrates how it will meet state vocational educational requirements, may participate in the O.E.A. Federation or "Umbrella."

As a Federation or "Umbrella," specific provision has been made for students who are members of FSA, FDPA, FBLA, and local clubs to participate in O.E.A., if they are vocational students with a career objective in office occupations and are under the direction of a vocationally approved teacher.

For further information write:

Assistant Supervisor of Business and Office Education
Room 401, State House
Indianapolis, Indiana 46204

INDIANA YOUNG FARMERS ASSOCIATION
(IYFA)

During 1961-62 more than twenty local young farmer chapters were organized in Indiana under the leadership of regular teachers of vocational agriculture and school administrators. As a result of the tremendous interest and enthusiasm in young farmer chapters shown by the young farmer members and chapter advisers, on July 30, 1962 a constitutional convention was held at Purdue University to organize the Indiana Young Farmers Association. During the convention, delegates from local chapters adopted a constitution, elected officers, and developed a program of work for the State Association.

The purposes of the educational, non-political, non-profit, non-sectarian Indiana Young Farmers Association are as follows:

1. To interest and aid out-of-school farm youth in becoming established in farming through a program of organized instruction in vocational agriculture.
2. To develop a greater appreciation of the opportunities in farming and agriculture, and of country living.
3. To develop an understanding of the ways to secure and utilize the services available to farmers in improving their economic status and social-family relations.
4. To cooperate with all agencies and organizations whose objectives are the improvement of the economic, educational and social conditions of rural life.
5. To further develop the leadership abilities needed to effectively participate in desirable activities of rural life.
6. To provide wholesome social and recreational activities for the entire young farmer family.

7. To plan and render worthwhile community service.
8. To give young farmers group identification and status.
9. To assist the vocational agriculture instructor with the planning and conducting of instructional activities.

The Indiana Young Farmers Association is an organization of, by and for young men studying vocational agriculture in public schools, under provisions of the National Vocational Education Acts. It is a state organization of affiliated local chapters. A local chapter desiring to affiliate with the state association must fulfill the following requirements:

1. Enroll at least ten active members.
2. Accept the provisions of the state association constitution.
3. Adopt a constitution and have it approved by the state adviser.
4. Adopt an annual program of work and have it approved by the state adviser.
5. Pay the state dues of its active members.
6. Furnish the state executive secretary the names and addresses of charter members, and the names of the chapter officers.

Active membership in a local young farmers chapter is open to any young man between the ages of 16 and 30, who is out of school and regularly enrolled in a young farmer program in vocational agriculture, taught by a vocational agriculture teacher in the public schools of Indiana. Officers of the local chapter, consisting of a president, vice president, secretary, treasurer and reporter, are elected annually from among the active members of the chapter. The vocational agriculture instructor serves as the chapter adviser. The State Association has a comparable set of officers with a member of the State Department of Public Instruction, Vocational Education Division, serving as the State Adviser. The

activities of the local chapter and the State Association are planned and conducted through an executive committee and six standing committees. The standing committees are : Farm Planning, Cooperative Activities, Leadership, Community Service, Conduct of Meetings, and Public Relations. Special committees are appointed as the need arises.

For further information concerning the Indiana Young Farmers Association write:

Vocational Agriculture Division
State Department of Public Instruction
401-N State House
Indianapolis, Indiana 46204

FUTURE HOMEMAKERS OF AMERICA
(FHA)

Future Homemakers of America is a national organization of students studying homemaking in junior and senior high schools. It is an incorporated, non-profit organization supported by membership dues. Any student who is taking or has taken a homemaking course in school is eligible for membership. At the national level, FHA is sponsored jointly by the Home Economics Branch of the U.S. Office of Education and the American Home Economics Association. Cooperating groups are home economics sections of the National Education Association and American Vocation Association. At the state level, FHA is sponsored by the Division of Home Economics of the State Department of Public Instruction. Cooperating groups are the Indiana Home Economics Association and the Home Economics Section of the Indiana Vocational Association.

The national organization was founded in June 1945 and the Indiana Association was chartered in January 1946. The Indiana Association has grown from 45 chapters with a membership of 1,569 in 1946, to a total of 224 chapters and 11, 434 members currently.

The overall goal of the Future Homemakers program is the same as the overall goal of home economics education--that is, to help individuals improve personal and family living. The FHA program is an integral part of the program of home economics in the junior and senior high school in that it supplements and provides opportunities to gain additional experiences related to the goals of the overall program.

One of the outstanding educational features of the Future Homemakers program is that it is basically pupil-initiated and pupil-directed. Because of this feature FHA provides opportunities for individual development and group initiative in planning and carrying out activities related to the home. Nowhere is this better illustrated than in the development of the program of work.

The national program of work is developed on a four-year basis by a planning committee composed of the national president and four national vice presidents, along with several state and local advisers. The state program of work is based upon the national program of work and is developed by Indiana's forty-eight state and district officers at a leadership conference held annually in July. At this conference, the officers meet to interpret the national program of work, adopt a one-year program for the state, define it in terms of objectives and projects, and develop a packet of materials to be distributed to affiliated chapters in Indiana. From the program of work, one particular objective or project is chosen to receive special emphasis each year. Consultants for this workshop are the Assistant State Advisers, state FHA adviser, and eight assistant district advisers.

Another outstanding feature is that in Future Homemakers of America the emphasis is placed on cooperative rather than competitive activities. While many aspects of life are competitive, homemaking cannot, in any way, be considered a competitive vocation. Therefore, learning to function as a member of a group is necessary in achieving the goals of homemaking education. Members share in planning the work of the organization, and are encouraged to work on projects where all may share in the success. Any activity, whether cooperative or competitive, is judged in the light of the basic question "Does it contribute to the educational ends sought?"

The Future Homemakers organization gives recognition of personal growth to individual members through the Degrees of Achievement Program. In working on this program, members are encouraged to study their own needs, set their own goals for personal growth, and evaluate their progress toward these goals. The two degrees toward which Indiana members may work are: Junior Homemaker and Chapter Homemaker. Members who successfully complete the necessary requirements for a degree are permitted to attach the special key or scroll guard to their pin. Participation in the Degree of Achievement Program is

voluntary.

Thus, Future Homemakers of America is an organization which:

1. Complements the home economics education program in the junior and senior high schools of Indiana.
2. Fosters the development of individual and group initiative.
3. Develops leadership qualities.
4. Supports cooperative action.
5. Defines and studies the needs of youth.
6. Encourages concern for others.
7. Recognizes individual growth.

Opportunities for achieving these educational objectives are offered through active participation in local chapters, district meetings, leadership workshops, and state and national conventions.

For further information you may write to the following:

State Adviser
Indiana Association
Future Homemakers of America
223 South Jordan
Indiana University
Bloomington, Indiana 47401

FUTURE FARMERS OF AMERICA
(F.F.A.)

The Future Farmers of America or F.F.A. is a national organization for students who are studying vocational agriculture in the public secondary schools, under the provisions of the National Vocational Education Acts. It was formed in 1928. In 1950, it was granted a charter of incorporation by the U.S. Congress. The Indiana Association of Future Farmers of America was organized in 1929 and granted Charter 19 by the national organization.

The primary aim of the F.F.A. is to develop the abilities of its members in agricultural leadership, cooperation, and citizenship. Among its specific purposes is that of aiding members, who are interested and properly adapted, to determine their opportunities in farming, and to prepare for and become established in farming.

The F.F.A. is not an organization for the indoctrination of its members with the idea that they should all become farmers. Its principal goal is to help develop each person as a human being, with due regard to his interests, capabilities, and opportunities. For some members, this development includes preparation for and guidance into farming. For other members, it includes some development of abilities in agriculture, but insofar as possible, guidance into agriculturally related or other occupations.

One important value of the F.F.A. is that is helps to motivate, guide, and prepare the member through a work program of farming projects. In this program, he discovers problems, assembles information and develops skills, learns to keep and analyze records, makes decisions, develops skills, learns to keep and analyze records, makes decisions, develops desirable works habits, and learns the importance of efficiency in management and labor.

The F.F.A., as an integral part of vocational agriculture, is an important part of the public school system. The local chapter is under the direction of the local school administration and of the local teacher of vocational agriculture, who serves as chapter adviser. However, the responsibility for the effective functioning of the chapter, as much as possible, is placed upon the members and officers of the chapter.

The chapter is a part of a district organization, a section organization, the state association and the national organization. Each of these units of F.F.A. has a staff of member officers and an adult adviser. There are twelve F.F.A. districts in Indiana with three districts in each of the four F.F.A. sections.

The state F.F.A. association has the direct guidance of two adults--a state adviser and a state executive secretary-treasurer. The state adviser is also the state supervisor of agricultural educational and, as such, is under the direction of the State Board of Education and the State Superintendent of Public Instruction. The state F.F.A. Constitution also provides for an Advisory Council of four adults. One of the principal functions of the state association is to aid the smaller units in improving their activities and in achieving worthwhile educational objectives.

The six state officers, the four section presidents, the twelve district directors, the state F.F.A. chorus president, the immediate past state president, the state adviser, and the state executive secretary-treasurer constitute a state F.F.A. executive committee. This committee serves as a group of leaders to help implement the policies and activities that have been acted upon by the chapter delegates at the annual state convention. It is also a pilot group to explore and help initiate improved or new activities. To fulfill its responsibilities, the executive committee usually holds ten meetings during the year. In addition to these group functions, individual members of the committee give

leadership in the sections and the districts. The executive committee, as an official group, attends the national F.F.A. convention at Kansas City each year. The observation of activities of the national organization helps the committee to improve F.F.A. in Indiana.

Each of the twelve F.F.A. districts has a minimum of two meetings per year. The fall meetings are for leadership training of the chapter officers in the district. The spring meetings are for selecting district winners in various activities.

The annual state convention is held at Purdue University in the spring. The convention is primarily a meeting of two delegates from each chapter. In addition to the delegates, the convention is attended by candidates for advanced degrees, by winners of district and section activities, by visiting members, and by advisers and friends of F.F.A. The convention program includes business meetings, the election of new officers, the planning of state, section and district programs, the work of committees, the recognition of state, section and district programs, the work of committees, the recognition of activity winners, and inspirational and informative addresses by prominent civic, farm, educational or F.F.A. leaders. At the convention, successful members are awarded the Hoosier Farmer Degree, which is the highest state honor that a member may win. To win the degree, a member must rank high in farming, leadership and community activities. He must also have satisfactory scholorship. The public speaking contest and the chapter meeting contest are important parts of the convention program. The state F.F.A. band and the state F.F.A. chorus perform. The band and chorus are not musical training organizations, but are media for the expression of training received from other sources, which are used to provide entertainment and to develop interest at the convention.

Some of the more worthwhile F.F.A. activities are of a group nature. Typical of them are the chapter meeting and the state chapter contests. The chapter meeting activity starts

with a chapter team of not more than twelve members and progresses through district and section elimination contests, until four teams are left to compete at the state convention. The development of abilities to conduct and to participate properly in meetings is the outcome sought in this activity. The state chapter contest includes activities in farming, cooperation, community service, leadership, earnings and savings, conduct of meetings, scholarship, recreation, and public relations. This contest trains the members to work together and stresses successful chapter accomplishment.

There are many activities for individual participation. The farming efficiency activities, such as livestock and crop farming, dairy farming, and farm electrification, are examples of such activities. The public speaking and the essay contests also provide for individual participation. The farming efficiency activities include the use of better techniques in different areas of farming. They help motivate the member to learn and to use good farming practices.

One of the important F.F.A. activities is the state leadership school. One purpose of this school is to train the state, section, and district officers, who attend, for leadership. The second purpose is to make plans for a series of twelve district training schools. At these schools, leadership training will be projected to the chapter officers. This training, in total, eventually influences each chapter member and each chapter program in the state.

In 1961 a state F.F.A. foundation was organized and chartered. This organization is completely separate and independent of the F.F.A. It is a foundation representing business and industry, which helps the F.F.A. by financial contributions. This sponsorship has encouraged the F.F.A. members and has helped the F.F.A. to broaden its activities.

For further information concerning the F.F.A. you may write:

Future Farmers of America
c/o U.S. Office of Education
Washington, D.C. 20202

VT 008 540
Directory of Business Schools, 1969. A Handbook for Vocational Advisors and Guidance Officers.

United Business Schools Association, Washington, D.C.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 69 27p.

*OFFICE OCCUPATIONS; *PRIVATE SCHOOLS; *DIRECTORIES; ACCREDITATION (INSTITUTIONS); FINANCIAL SUPPORT; JOB PLACEMENT; STANDARDS; *BUSINESS EDUCATION
*UNITED BUSINESS SCHOOLS ASSOCIATION; UBSA

This directory is published as a service and convenience for those who want to know the names and locations of private business schools. The nearly 500 independent business schools listed in this directory are members of The United Business Schools Association, and are located primarily in the United States, Canada, Puerto Rico and Latin America. This directory will be useful to employers, parents, students, school superintendents, high school principals, business teachers in high schools, and guidance counselors. In addition to the directory, this publication includes (1) discussion of the place and purpose of the private business school and (2) discussion of operating and ethical standards. (CH)

VT 008 540

UBSA

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United Business Schools Association

1969 Directory of Business Schools

UNITED BUSINESS SCHOOLS ASSOCIATION
1101 SEVENTEENTH STREET, N.W.
WASHINGTON, D. C. 20036

VT 008549

A Special Note to Vocational Advisers and Guidance Officers

The *Official Directory of Accredited Institutions* can be obtained by writing to:

The Accrediting Commission for Business Schools
7430 Second Boulevard
Suite 724
Detroit, Michigan 48202

In addition to this Directory of Business Schools, UBSA provides, at no charge, additional relevant pamphlets and brochures to teachers, librarians, and guidance counselors.

Special guidance brochures in the Secretarial and Accounting fields are now available at no charge to students upon request.

UBSA NATIONAL HEADQUARTERS
1101 Seventeenth Street, N.W. Washington, D. C. 20036
Phone: 202/659-2460

A HANDBOOK *for Vocational Advisors and Guidance Officers*

ED039370

Preface

The leading business schools of America through one unified professional association have had the privilege of more than a half century of service to the public, government and industry. However, many member institutions of UBSA are over 100 years old.

The first organized group of business school administrators met December 12, 1912, to establish definite guidelines delineating the purposes and practices of independent business schools. UBSA and its predecessors have spurred the development of curriculum structure and standards of practice plus the enforcement of a Code of Ethics for the betterment of business education and the protection of the student.

This same search for standards resulted in the establishment of the Accrediting Commission for Business Schools which for purposes of Federal legislation was designated in 1956 by the U. S. Office of Education as a "nationally recognized accrediting agency." For those member institutions which are qualified and wish to achieve such national status the Accrediting Commission may perform this additional function. Listing in this Directory does not imply accreditation of the institution.

You are most cordially invited to visit and inspect the member schools listed in this Directory. For additional specific information such as curriculum, tuition, enrollment policies and dormitory facilities, may I suggest that you telephone or write to the school or schools in which you may be interested.

RICHARD A. FULTON
Executive Director & General Counsel

Foreword

Contained in this directory are the names of nearly 500 independent business schools which comprise the membership of the UNITED BUSINESS SCHOOLS ASSOCIATION. The enrollment of these schools, located primarily in the United States, Canada, Puerto Rico, and Latin America, exceeds 150,000 students.

This directory is published as a service and convenience by the UNITED BUSINESS SCHOOLS ASSOCIATION for those who want to know the names and locations of outstanding private business schools.

It is published for employers, for parents, and for students who are interested in education for office employment.

It is published particularly for use by school superintendents, high school principals, business teachers in high schools, and guidance counselors.

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LEO BLACKBURN 1967-70
Portsmouth Interstate Business College
815 Roy Rogers Esplanade
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Chicago, Illinois 60645

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Lincoln School of Commerce
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Lincoln, Nebraska 68501

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CULLEN HENDRICK 1966-69
Capital City Business College
P.O. Box 3776
Little Rock, Arkansas 72203

District No. 11 (Okla., Texas)

DON A. PHILLIPS 1967-70
Nixon-Clay Commercial College
Eighth & Colorado
Austin, Texas 78701

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C. W. DURHAM 1968-71
Durham Supervisory
Route 3, Box 88
Lexington, Texas 78947

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JOHN L. BONHOLTZER, JR. 1968-71
Sawyer College of Business
1165 E. Colorado Boulevard
Pasadena, California 91101

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Aberdeen School of Commerce
314½ S. Lincoln Street
Aberdeen, South Dakota 57101

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MAURICE F. EGAN 1967-70
Peterson School of Business
1905 Third Avenue at Stewart Street
Seattle, Washington 98101

The Place and Purpose of the Private Business School

Increased job opportunities in business, industry and government are provided for students in the independent business school through career structured programs of education and training for business and office occupations. There is today, an ever-growing need for a steady flow of competent office workers. The private business school, a post-secondary institution providing education and training beyond the high school, has for more than a century offered students a solid educational background to gain worthwhile work experience upon which job promotions and career advancement can be based.

FEDERAL GOVERNMENT OR PRIVATE INDUSTRY?

The nation's largest single employer, the Federal Government, recognizes the value of a business school education in its job standards. For example, the educational requirements for Junior Federal Assistant or Accounting Technician can be completely satisfied by attending a business school. The standards of the U.S. Civil Service Commission require "two successfully completed academic years of study above the high school level in a junior or community college, *business school*, 4-year college or university." Similarly, a secretary who is a business school graduate may enter the federal service one salary level higher than someone who is a high school graduate. And in private industry, the business school graduate usually receives both a higher salary and a higher position than an employee without post high school training.

WHY A PRIVATE SCHOOL?

American Education, published by the U.S. Office of Education has posed this question: "Why do so many young high school graduates—more than has generally been suspected—pass up low-cost public education to go to proprietary schools?" Stanford Research Institute investigator Edward A. Podesta put this question to students including many enrolled in private business schools in a survey of vocational education planning funded by the USOE's Cooperative Research Program.

Students most frequently mentioned time, convenience and course content in explaining their decision to enroll in a private school program such as that offered in an independent business school. They observed that they usually could start class within a week after enrolling, and that the course length set completion within a relatively short period of time—less than a year and often under six months. They pointed out that the curriculum was entirely skill-oriented and free of what they considered to be non-essential subjects. Finally, many students mentioned placement service, believing that the school's continuation as a non-tax supported educational institution would depend on the degree to which its students were successful in securing employment after training.

COOPERATION WITH FEDERAL-STATE PROGRAMS

Student financial aid is often available through a number of Federal-State programs for those enrolled in a private business school. Such aid is authorized by the following programs:

1. War Orphans and War Widows Education Assistance
2. Veterans Readjustment Benefits Act of 1966
3. National Defense Student Loan Act
4. Insured Loan and College Work-Study Programs of the Higher Education Act
5. Social Security Dependents
6. Federal Employees Compensation Act Dependents
7. Civil Service Retirement Dependents
8. Railroad Retirement Dependents
9. Student Dependency and Indemnity for Veterans Children

The private business school also cooperates with state and federal governments in training people under contract in a number of programs such as the Vocational Rehabilitation Act of 1920, the Manpower Development and Training Act of 1963 and the Economic Opportunity Act of 1964.

Today, there are approximately 1,300 independent business schools in the United States attempting to fill this need. About 600,000 people are enrolled in private business schools, 200,000 of whom receive diplomas or certificates each year.

Thus, the independent business school is filling a growing need for highly skilled and efficient business office employees, as well as office workers for federal, state, and local governments. The business school offers the specialized training made necessary by increased use of electronic data processing equipment in today's office and by America's growing dependence upon science and technology.

In the final analysis, the job of the post-secondary independent business school is not to displace, but to complement and supplement the business education offered in the nation's secondary schools. It also offers specialized education programs for the college graduate, the college transfer, the mature woman re-entering the nation's work force and the returning veteran.

AFTER GRADUATION . . . FREE JOB PLACEMENT

The private business school believes that it has succeeded in educating and training an individual only when it has implemented that training with placement in a rewarding position. All UBSA member schools maintain free lifetime placement services for their own graduates and for graduates of other UBSA schools. Hence, there is a nationwide network for free job placement available to the graduates of every UBSA school. According to a recent survey, private business schools have an average of 7.3 available positions for each female graduate and 4.5 available positions for each male gradute.

Operating and Ethical Standards

The *minimum* standards of practice that follow cover areas which are fundamental to the evaluation of any business school as a reliable educational institution. Flexibility and freedom of initiative are the greatest assets of the private business school. Because of this, certain area and regional differences will exist. In the final analysis, the effectiveness of an educational institution may be measured by whether or not the school fulfills a need in its local community, not only to its students, but to the employers who hire its graduates and the public in general.

The principal purpose of the United Business Schools Association is to encourage and promote high quality in the educational programs of its member schools. For this reason the following have been adopted as the minimum standards of practice for judging the quality, effectiveness, and reliability of a private business school.

1. Member schools shall issue a printed catalogue or bulletin which shall include a statement of the general objectives of the school and a description and outline of the various courses offered with the estimated length of each. Each subject will be evaluated by either the semester hour, quarter hour, or clock hour method. The Association has adopted the standard semester hour unit of measure, but will accept either of the other two methods where required by local authorities. For the purpose of evaluation, three quarter hours will be the equivalent of two semester hours. In evaluating subjects taught primarily by the laboratory method, two class periods of work per week during a 16- to 18-week period will be required for each semester hour of credit.

2. The requirements for admission shall be graduation from a recognized high school or its equivalent. A high school transcript will be required for each student entering school in a diploma or degree program. Students who are above the high school age limit and have discontinued public school attendance may, however, be admitted as special students at the discretion of the school.

3. Member schools shall maintain adequate records of scholastic attainment and of daily attendance, indicating dates of admissions and withdrawals, financial transactions, and placement.

4. Member schools shall maintain at least one full-time instructor for each thirty-five, full-time students or the equivalent thereof.

5. New instructors or additions to the faculty on a full-time basis shall have a degree from a recognized institution of higher learning or its equivalent.

6. Member schools shall maintain the necessary equipment to fulfill educational objectives as required by the course content and employment demands in each local community.

7. Diplomas may be issued upon completion of any program of 30 or more semester hours. Appropriate degrees may be conferred

upon completion of 60 or more semester hours. Certificates shall be issued for completion of any subject or program of less than 30 semester hours.

8. Membership in the United Business Schools Association constitutes an endorsement of the school and its activities. Statements and representations of member schools must be predicated on facts designed to provide prospective students and the public in general with reliable information. Advertising and representations, including probable earnings, opportunities, transfer of credits, educational services, and the size and scope of the school's facilities must be in accord with the above statement.

9. Each member school shall maintain free placement assistance for its graduates. Such placement-assistance service shall operate with reciprocity among all member schools for those students who graduate from UBSA member schools. No member school shall guarantee the placement or starting salary of its graduates either directly or by implication.

10. A member school shall not permit its representatives to encourage any student to leave an educational institution where he is in attendance, nor shall any school seek to induce a student to change his plans after the student has signed an enrollment form and paid a registration fee to another school.

11. A member school shall publish its tuition rates, methods of payments, and refund policy in its catalogue or on a separate rate sheet. Tuition may be collected in advance; but should the student fail to enter school, all tuition paid in excess of $50 shall be refunded.

12. Member schools may participate in bona fide scholarship programs approved by the Association. Tuition deductions, partial scholarships, free services, or any plan which is merely a deduction from the published tuition rates is not permitted. Bona fide scholarship programs shall be printed in the school catalogue.

13. Member schools shall refrain from all statements relating to the character, nature, quality, value, or scope of educational programs offered by other schools, or the resources or ability of such schools to fulfill their obligations.

14. Member schools shall furnish each enrollee copies of all enrollment documents and the rules and regulations of the school where such rules do not appear in the published catalogue.

15. The United Business Schools Association is an educational membership organization and does not accredit schools. No member school shall use the term "accredited by" in relation to his UBSA membership.

The purpose and intent of these *minimum* standards are to provide students, parents, other educators and the public with a reliable assurance concerning the efficacy of the operation and administration of the educational institutions holding membership in United Business Schools Association.

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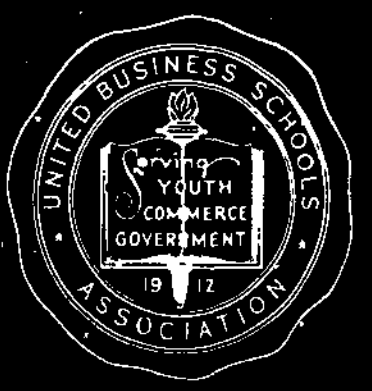

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CAREER OPPORTUNITIES IN AVIATION

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CAREER OPPORTUNITIES IN AVIATION

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March 1967

50 cents

NATIONAL AEROSPACE EDUCATION COUNCIL

Room 616, Shoreham Building • 806 15th Street, N. W. • Washington, D. C. 20005

FOREWORD

This booklet contains a general survey of aviation career opportunities and detailed coverage of the aviation mechanic field, including related high school courses, how to get started, a complete roster of FAA-certificated mechanic schools, and sample FAA examination questions (oral, practical, and written). It also includes the results of a recent industry survey covering airline flight officer employment qualifications and opportunities.

The contributions to aerospace education of William J. Winter, editor of AMERICAN MODELER, the Model Aviation Magazine, and Joseph S. Murphy, editor and publisher of AIR TRANSPORT WORLD, are gratefully acknowledged.

WALTER ZAHAREVITZ
Executive Director
National Aerospace Education Council

The nation's aviation system includes nearly 118,000 aircraft—creating jobs at more than 10,000 locations.

YOUR CAREER IN AVIATION

Reprinted from AMERICAN MODELER, September/October 1966

Already employing more persons than any non-agricultural industry in America, the aerospace field faces a manpower shortage. Modelers have unprecedented opportunities for jobs. What training do you need? What should you do? Special report prepared by . . .

Dr. MERVIN K. STRICKLER, JR., Special Assistant for Aviation Education, Office of General Aviation Affairs, Federal Aviation Agency

WALTER ZAHAREVITZ, Executive Director, National Aerospace Education Council

Are you interested in a career associated with aviation? For the young man or woman, or the more experienced and mature person seeking a career in aviation, there are job opportunities for those who are properly prepared and qualified. Aviation experts throughout the nation suggest the country may be in for aviation labor shortages. The sooner you decide upon a career, the sooner you can concentrate on the proper preparation. Your school courses will take on extra meaning for you—because a goal will furnish you with purpose. This article will provide you with some aviation facts and trends which show job potential and will help you in making one of the most important decisions in your young life—career choice.

The nation's aviation system includes nearly 118,000 aircraft. (See Chart on page 3). These aircraft are flown by over 430,000 pilots ranging from student to air transport pilot. Mechanics, dispatchers, flight engineers, control tower operators, and other categories of airmen add several hundred thousand additional jobs to the aviation field. Additional thousands are employed in aviation and space manufacturing. The aerospace industry employs more persons than any non-agricultural industry

in America. The implication is obvious.

Civil aviation use of aircraft is growing on every front—passengers, cargo, business, agricultural, instructional, recreational. Aviation jobs are at more than 10,000 locations throughout the nation at airports and industrial facilities. Both the *air carrier industry* (the scheduled airlines that carry people and cargo) and *general aviation* (all aviation other than the scheduled air carriers and military aviation) are in periods of growth.

The Aerospace Industries Association recently made an employment estimate survey of fifty-seven major aerospace companies. Employment in the aerospace industry has increased to 1,266,000 in mid-1966, a gain of 48,000 over employment reported at the end of 1965. Growth of aircraft activity is clearly evident in the commercial aviation field. Employment in transport aircraft grew from 75,423 in December 1965 to 90,800 in June 1966. Commercial air transportation is increasing at a more rapid rate than the rest of the economy, and this growth pattern is expected to continue.

Pilots, mechanics, and other supporting aviation workers are being sought by industry. As one example, the Aircraft Division of Pratt and Whitney (Connecticut) has been actively searching for applicants for their reopened training schools. Successful applicants will be paid as they learn.

Model builders have unprecedented opportunities for aviation jobs. In fact, some companies and governmental agencies employ engineering assistants or technicians as model builders. Most important, the characteristics of the modeler describe many elements of the good employee—originality, creativity, perserverance, experience, and above all, high motivation. One research study investigating factors contributing to success in pilot training, concluded that the most important element in the prediction of success was an early and sustained interest in aviation. Many successful people in aviation today were (and are) modelers—as you are. If you want to make use of your model building interests and background in the aviation field, now may be the best possible time.

During your working lifetime (if you are under twenty-one) you will probably have to undergo job training and retraining from eight to ten times. Students who are in school today will be among those actively employed during the twenty-first century. Changes that will take place in technology and vocations in the next half century can scarcely be imagined or predicted. The past twenty-five years, however, teach us some lessons for the future.

You will be employed in many jobs that do not even exist today. For example, it is estimated that the civil supersonic transport program will create 50,000 new jobs in the aviation industry. Many students in school today will help build this aircraft. Still others will fly it, maintain it, and otherwise be employed in the supporting services related to it.

For further examples of the job opportunities available, let us examine some additional information. The category of *general aviation* includes personal, instructional, commercial, and business flying. It covers all aviation except military and scheduled air carrier or airline aviation. Much of the aviation activity in general aviation is associated with business. For example, nearly 15,000 corporations own and operate their own aircraft. Some of these aircraft are the same type flown by the airlines. Others are high performance planes designed just for business use. These include some of the latest turbine and jet-powered aircraft, such as the Lear jet, Lockheed JetStar, the Jet Commander, the Gulfstream, and the King Air. It is not unusual for a businessman, engineer, scientist, architect, doctor, lawyer, salesman, or educator to use a general aviation

AEROSPACE AGE CAREERS AND SCHOOL SUBJECTS

SCHOOL SUBJECTS	Chemistry	Physics	Bookkeeping	Bus. Machines	Biology	English	Mathematics	Speech	Mechanics	Sheet Metal	Machine Shop	Welding	Radio	Electricity	Mech. Drawing	Woodworking	Journalism	Psychology	Typing	Shorthand	Photography	Nutrition
Aeronautical Engineer	●	●					●		●					●	●							
Nuclear Engineer	●	●					●							●	●							
Flight Test Mechanic		●					●		●					●								
Design Draftsman							●								●							
Instrument Mechanic	●	●					●		●				●	●								
Airline Pilot	●	●					●		●				●	●								
Flight Engineer	●	●					●		●				●	●								
Airline Hostess					●	●		●										●				●
Ground Radio Operator		●				●		●					●	●								
Airline Maintenance Inspector	●	●					●		●	●	●	●	●	●		●						
Business Pilot		●					●		●			●	●	●								
Meteorologist	●	●					●						●	●								
Airframe Mechanic		●					●		●	●	●	●				●						
Jet Engine Mechanic		●					●		●	●	●	●		●								
Nuclear Weapons Mechanic	●	●			●		●		●	●			●	●								
Air Electronics Officer		●					●						●	●								
Aircraft Navigator							●						●	●								
Military Pilot	●	●					●		●				●	●								
Electronics Engineer	●	●					●		●				●	●	●							
Airline Traffic Manager						●	●	●					●	●								
Flight Surgeon	●	●			●		●											●				●
Scale Model Builder		●					●		●	●	●	●			●	●						
Airline Accountant			●	●			●															
Stenographer					●														●	●		
Aerial Photographer	●	●																			●	
Public Relations Director					●		●										●	●			●	
Physicist	●	●					●		●					●								
Mathematician		●					●															
Chemist	●	●					●															
Metallurgist	●	●					●			●		●										
Mechanical Engineer	●	●					●		●					●	●							
Chemical Engineer	●	●					●							●								

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Strickler, left, and Zaharevitz, with airminded sons. Todd Strickler, next to dad, and Daniel Zaharevitz, right, are AMA members.

aircraft and cover territory that includes half the nation—within a 24-hour period—providing business or professional service. Arnold Palmer, golf professional and business executive, uses his jet plane to get him to more golf tournaments, supervise his business interests, and spend more time at home with his family. His jet plane gives him time-saving transportation.

All of this aviation activity, of course, means more jobs of many kinds. One of the newly emerging forms of general aviation activity is the air taxi industry. There are nearly 4,000 air taxi operators in America. Of these, over 100 offer scheduled taxi service from point to point. These scheduled air taxi operators, along with the others, provide a valuable adjunct to the airline system of transportation.

In 1964, there were twelve scheduled air taxi operators in the nation. By November 1965, there were seventy-eight. Today there are over 100 and the number is increasing each month. There is every indication that this phase of air transportation will continue to grow rapidly. It is easy to understand why this type of aviation is on the increase, if you realize that while our nation has over 9,000 airports, only 555 of them receive scheduled air service. General aviation carries many passengers to and from scheduled airline stops. It also takes people where airlines and other forms of transportation are not available.

Another important phase of general aviation is that performed by helicopters. Off the Gulf Coast of Louisiana, many workers are transported to off-shore drilling rigs daily by helicopter service. In other remote areas as well as in metropolitan sections of our nation, helicopters are used to carry pieces of construction, flying fabricated steel beams for delivery directly to the user at the construction site.

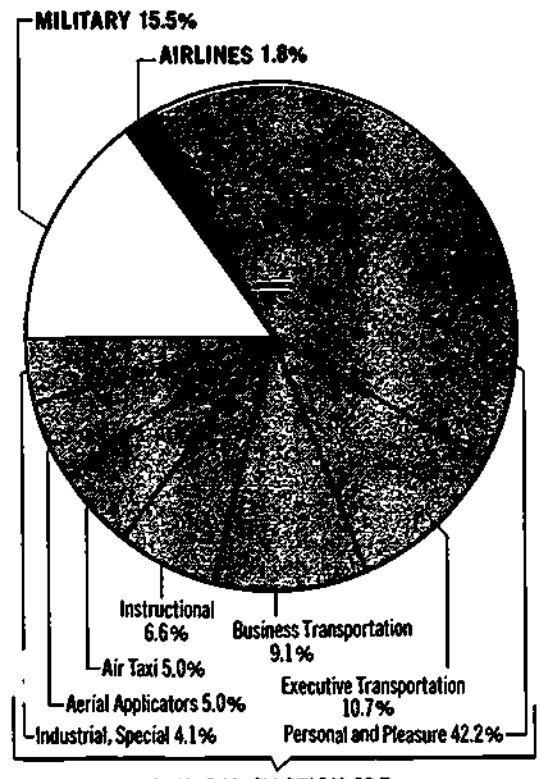
In agricultural aviation, sixty million acres of farm land are treated each year with insecticides, fertilizer, and seeds dispensed by aircraft flown by expert pilots.

Aviation job opportunities are available in government—local, state, and federal. Some cities now employ flying policemen, patrol, rescue, and traffic-directing personnel. Many state governments have aviation departments employing civil engineers, accountants, pilots, mechanics, and others. The federal government employs a variety of aviation personnel. Among the federal governmental agencies with aviation career opportunities are the Federal Aviation Agency, the Civil Aeronautics Board, the National Aeronautics and Space Administration, the Department of Interior, the Department of Agriculture, and the Department of Defense.

What training is needed for an aviation career? How do I get career information? What are employers looking for? Where do I go from here? These are some typical questions which you undoubtedly have in mind.

Modern aircraft, including those flown for recreation, are high performance in nature. Many of them exceed early World War II fighter aircraft in performance and sophistication. They require skill in designing and manufacturing along with good workmanship in flying and maintaining them. The electronic equipment on a modern privately-owned aircraft opens the door for the aircraft owner to a multi-billion dollar ground-based system of airports and electronic aids along thousands of miles of aerial highways. All of this equipment requires skilled workers for installation, inspection and maintenance.

One characteristic of aviation workers is a high standard of workmanship. You may be satisfied with 70 percent



AIRLINES	2,100
MILITARY	18,251
GENERAL AVIATION	97,300

as a passing grade in school; however, this is not a high enough standard in aviation. Who wants to fly with a pilot who can land safely only 70 percent of the time? You should not enter the aviation field unless you are dedicated to safety, service, and high standards of workmanship. If you want a stimulating and rewarding career, there are ample opportunities in aviation—

Boeing's entry in the SST race will look like this. The civil supersonic transport program will create 50,000 new jobs.

APTITUDES AND AEROSPACE AGE CAREERS

Aptitudes	Related Vocational Activities	Selected Aerospace Age Careers
Mechanical	Equipment Development Aircraft Maintenance Machinery Repair	Aeromechanical Engineer Astronautical Engineer Production Technician Powerplant Mechanic Instrument Repairman
Verbal	Speaking and Writing Giving Instructions Persuasive Activities	Flight Instructor Public Relations Director Air Traffic Controller Military Information Specialist Airline Sales Representative
Scientific	Research and Invention Experimentation Scientific Investigation	Aeronautical Engineer Physical Chemist Research Metallurgist Astrophysicist Aeromedical Lab Technician
Manipulative	Equipment Operation Machinery Control Instrument Supervision	Aircraft Pilot Flight Engineer Radar Specialist Machine Tool Operator Production Expediter
Numerical	Mathematical Calculations Arithmetic Reasoning Computational Activities	Data Processing Engineer Aircraft Navigator Research Mathematician Industrial Accountant Airline Statistician
Administrative	Managerial Activities Supervisory Responsibility Secretarial Duties	Research Project Director Management Engineer Airport Operator Military Administrative Officer Stenographer
Social	Service, Advice, and Assistance to Individuals and Groups	Aviation Psychologist Personnel Manager Flight Nurse Training Director Airline Hostess
Artistic	Self-expression Through Design, Drawing, and Other Creative Skills	Design Engineer Airline Architect Photographic Technician Technical Illustrator Scale Model Builder

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both now and in the promising future.

Airlines, corporation and the fixed-base operators, the private enterprise managers of our nation's aviation system, are all looking for good pilots, mechanics, avionics, and other aviation personnel. Many fixed-base operators need reliable and dependable people as mechanics and flight instructors.

Onc of the most important things you can do is to obtain as much education as possible. Talk over your interest in exploring an aviation career with your school counselor. Include in your school studies, a general aviation course or specialized vocational or technical training offered by your school, community college, private school, or university. High school students should check on the newly inaugurated high school Air Force Junior ROTC program. Twenty high schools throughout the nation have already been selected as an expanded pilot group to start the program this fall. Other high schools will be selected. Your high school might be one of them. Those of you in college, or planning to go to college, should investigate enrollment in college ROTC programs.

Whether or not an aviation course is included in the curriculum of your school, you should contact your local airport or aircraft industry and seek a part-time, after-school position to learn on-the-job.

An analysis of subjects studied in school shows that many of them are related to aviation careers. Civil Air Patrol has identified a list of school subjects and their aerospace-age career relationship. (See chart page 2).

Check your own aptitudes (your school counselor or teacher can help you with this) and those related to various vocational activities and possible job opportunities described by the Civil Air Patrol Aerospace Career Chart on this page.

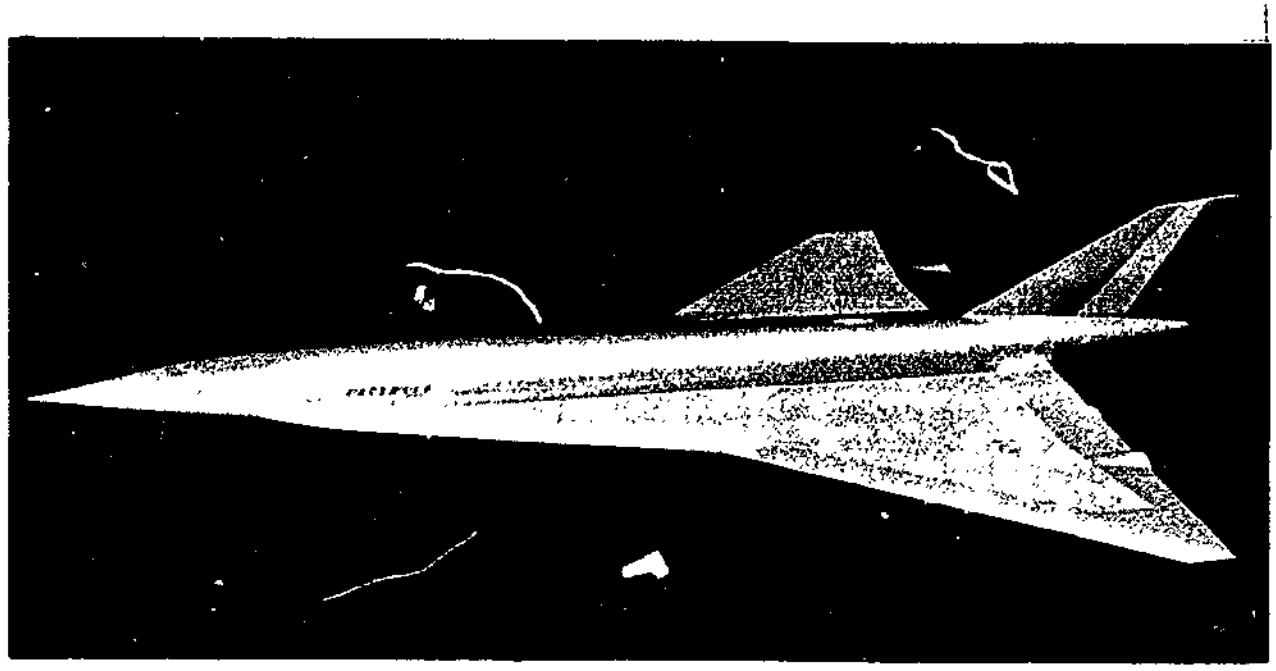
Many high schools throughout the nation are starting aviation programs. Some include studies of aeronautics with flight training as an elective part of the course or as a part of a flying laboratory experience. If your school wants to start a program of this type, they may get help by contacting one of the following organizations:

National Aerospace Education Council
616 Shoreham Building
806 15th Street, N.W.
Washington, D. C., 20005

National Headquarters
Civil Air Patrol (CPE)
Ellington Air Force Base
Texas, 77030

Federal Aviation Agency
Office of General Aviation Affairs
Aviation Education Program
800 Independence Avenue, S.W.
Washington, D.C. 20553

Career experts say that at least four million employees hate their jobs. It would be tragic for you to be included in this statistic. It is important—to you and your prospective employer—for you to determine what areas of employment you are truly interested in. The advice to "know thyself" is still pertinent today. Another important item in your career planning is for you to decide what you have to offer a potential employer. Remember that you will be hired for what you can do in answer to your employer's needs. Occupational counselors speak of this as "saleable skills." Employers are normally seeking a mechanic, a pilot, a stewardess, a ground instructor—not an individual.



Lockheed's approach to the SST is the double-delta configuration. Many students in school today may help build it.

PERSONNEL, PAYROLL, AND AVERAGE SALARY OF CERTIFICATED ROUTE AIR CARRIERS, 1965

Type of service and personnel classification	Personnel	Average annual salary
Total domestic passenger/cargo	**169,952**	**$8,525**
Pilots and copilots	14,469	19,946
Other flight personnel	3,911	13,468
Stewards, stewardesses, pursers	14,220	5,144
Communications personnel	2,001	6,448
Mechanics and other maintenance personnel	35,367	7,985
Aircraft and traffic servicing personnel	45,777	7,223
Office employees	34,561	6,924
All other employees	19,646	8,605
Total international/territorial passenger/cargo	**36,882**	**7,294**
Pilots and copilots	1,924	21,758
Other flight personnel	781	17,110
Stewards, stewardesses, pursers	2,987	6,257
Communications personnel	1,104	4,295
Mechanics and other maintenance personnel	5,343	7,853
Aircraft and traffic servicing personnel	10,788	5,698
Office employees	9,026	5,919
All other employees	4,929	6,798

Source: Office of Carrier Accounts and Statistics, CAB.

Surveys show that the most important element in the prediction of success is an early sustained interest in aviation.

If your skills and training are not substantial, or are not in the area of work you are interested in, then additional study or training will help you be of more value to an employer.

If you wish to become a licensed aircraft and power-plant mechanic, there are some facts you should know. There are nearly 100,000 active maintenance airmen employed in civil aviation. The average age of mechanics employed, according to the most recent Federal Aviation Agency survey, is thirty-eight. This means that many more young people are needed. There are many excellent FAA-approved mechanic schools in the nation. For a free list of these, you may write to the Federal Aviation Agency at the address given at the end of this article. At a conference of leaders of these schools recently, opportunities in the aviation mechanic field were discussed. Some of these aviation educators commented about opportunities for aviation mechanics:

Mr. Lewis H. Bardo, Dean, Applied Arts and Sciences, Williamsport Area Community College, Williamsport, Pennsylvania, indicated "the Industrial demand for A&P Mechanics is very great."

Mr. Frank Woehr, Principal, Aviation High School, Long Island City, New York, stated that "the demand [for A&P mechanics] is increasing each year beyond the number that could be trained by the school. The shortage is approaching the critical stage for industry. Advertising, visits to schools, recruiting of employees, and increasing starting salaries as much as 60¢ per hour...are being offered by industry. They cannot find any certified A&P mechanics looking for employment."

According to *Mr. H. Gene Little*, Chairman, Aeronautics Department, College of San Mateo, San Mateo, California, "The needs of the San Francisco Bay Area aeronautics industry indicate an annual increase of approximately 2,000 A&P mechanics each year through 1976."

Mr. C. L. Johnson, Janesville Vocational Technical and Adult School, Janesville, Wisconsin, said: "While no survey has been made as to the actual needs in numbers by industry the requests made by industry to the school are indicative of the shortage of A&P mechanics. It is anticipated that it will be possible to accommodate only approximately twenty percent of the students who are seeking admission to the course."

Mr. W. B. Creel, College of Engineering Technology, School of Aerospace, Delgado Institute, New Orleans, Louisana, stated: "We have the impression that we could place ten A&P technicians per graduate. We are receiving requests by letter from various parts of the nation."

Much has been said about pilot shortages in aviation. It is difficult to get precise nationwide pilot manpower figures. Some of the airlines have a policy of hiring college graduates without any aviation experience, but who otherwise meet their standards, and they provide arrangements for the pilot-applicant to learn to fly while taking training. Other airlines require a minimum of two years of college and either a private or commercial pilot's license with an instrument rating. For an indication of the kinds of jobs, the number of people employed, and the salaries paid by the airlines, the chart on page 5 is of interest.

The airlines are always in need of young women who want a career as a stewardess. Typical airline hostess qualifications are:

Age: Minimum age 20
Height: 5'2" to 5'9"
Weight: 100 to 138, proportionate to height.
Physical Condition: Must pass company examination.
Appearance: Well groomed, clear complection.
Education: At least a high school graduate.
Marital Status: Unmarried; widows or divorcees with no children meet this qualification.

Numerous opportunities for a career in aviation are available for you today—and the forecasts of increased growth in all phases of the aviation and space industry holds high promise for those of you who are preparing for tomorrow. This aviation growth and increased activity means more jobs. Perhaps one of them will be just the one for you.

For additional detailed information on aviation careers, write for the following publications.

TO	FOR
National Aerospace Education Council 806 15th Street, N.W. Washington, D. C. 20005	**Booklet:** "Careers in Aviation" (reprint from FLYING magazine, August 1963) Price 25¢
Federal Aviation Agency Printing Branch, HQ-438 Washington, D.C. 20553	**Advisory Circular No. AC 147-2A,** "Federal Aviation Agency Certificated Mechanic School Directory." Free
National Aviation Trades Association Dupont Circle Building 1346 Connecticut Avenue, N.W. Washington, D.C. 20036	For the location of the fixed-base operator closest to you.
Information Services Department Air Transport Association of America 1000 Connecticut Avenue, N.W. Washington, D. C. 20036	**New pamphlet:** "Career Opportunities with the Airlines." Free
Superintendent of Documents U. S. Government Printing Office Washington, D.C. 20402	**Booklet:** EP-33, "Seven Steps in Space Science and Technology. 45¢.

WANTED: A & P mechanics

Reprinted from AMERICAN MODELER, February 1967

All segments of the aviation industry offer job and career opportunities by the thousands. If you have appropriate interests and abilities, you can fit into the picture. This article—the first of two—is loaded with down-to-earth information.

By WALTER ZAHAREVITZ and DR. MERVIN K. STRICKLER, JR.

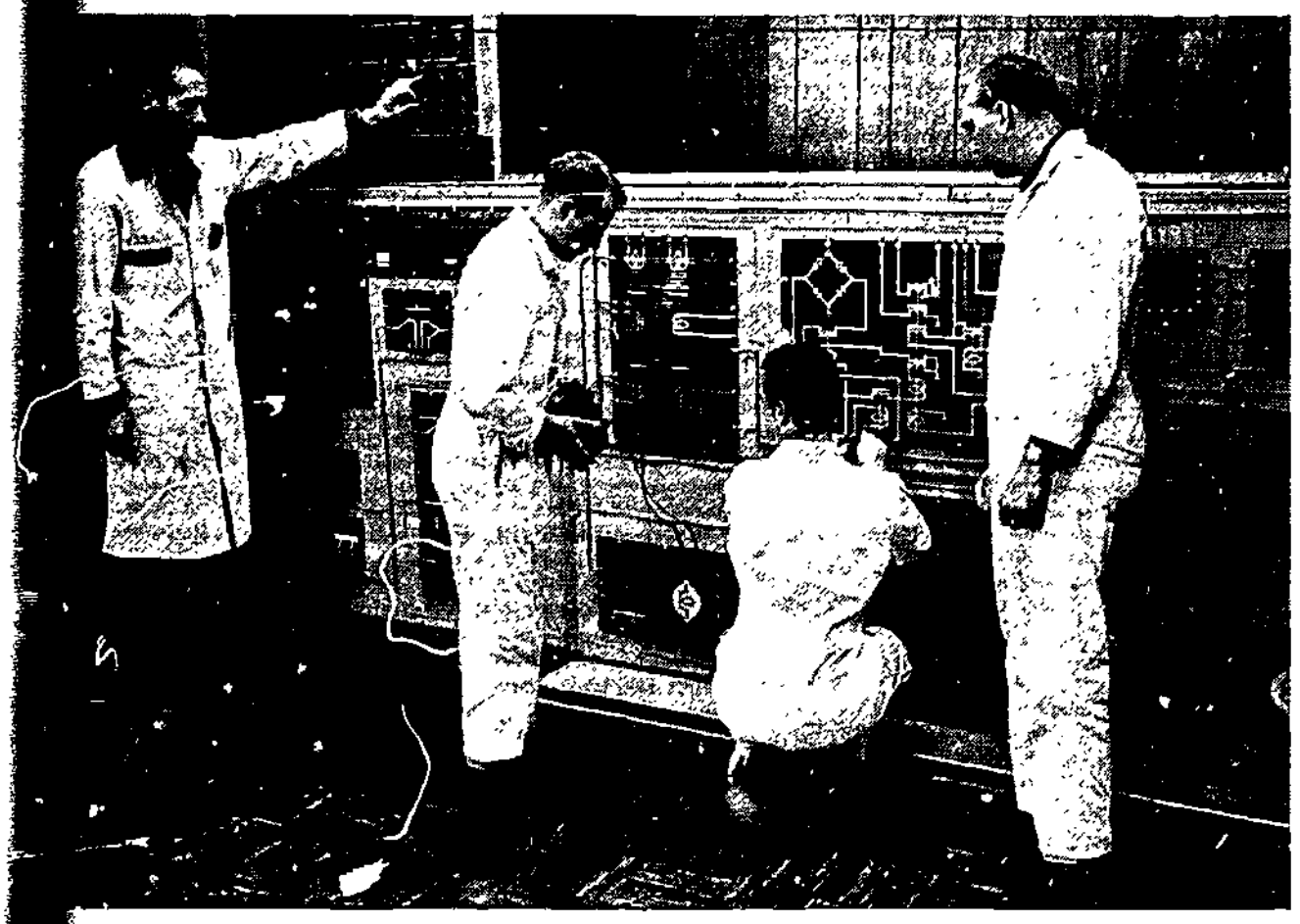
(Mr. Zaharevitz is Executive Director, National Aerospace Education Council.
Dr. Strickler is Special Assistant for Aviation Education, Office of General Aviation Affairs, Federal Aviation Agency.)

Wanted: A&P mechanics. This statement does not mean a well-known food chain is looking for workers. It does mean skilled, well-trained mechanics are needed by all segments of the aviation industry.

What is an A&P mechanic? According to the Federal Aviation Agency (FAA), A&P mechanics, commonly called aviation mechanics, are "maintenance airmen." They hold the combined ratings of Airframe (A) and Powerplant (P) mechanic and are certificated (licensed) by the Federal Aviation Agency. The A&P mechanic services, repairs, and overhauls aircraft and aircraft engines to insure airworthiness. He repairs, replaces, and assembles parts, such as wings, fuselage, tail assembly, landing gear, control cables, propeller assembly, and fuel and oil tanks, using tools, such as power shears, sheet metal breaker, arc and acetylene welding equipment, rivet gun, and air or electric drills to rebuild or replace an airframe or its components.

Not everyone can be an A&P mechanic. If your interests and abilities are in a mechanical direction, then this article will aid you in exploring the job requirements, the trends, and the necessary preparation. It is your life's work you will be planning. The sooner you get at it, the sooner you will identify the career field suitable for you, and the sooner you will be able to take maximum advantage of your educational opportunities. The following publications will prove useful in your planning efforts: *My Career Guidebook* by Harry S. Belman and Bruce E. Shertzer, 1964, published by Bruce Publishing Company, Milwaukee, Wisc.; *A Career-Planning Guide* by A. H. Edgerton, 1956, published by The World Book Encyclopedia, Chicago, Ill.

Adjusting the timing of seven-cylinder radial. Some mechanics specialize on a particular part of an aircraft—prop, engine, etc.



Today's aircraft and engine mechanic is a mighty sophisticated chap who must comprehend the nature of complex hydraulic and electrical systems. Here, the instructor guides students practicing with aid of intricate electrical training aid device.

Look at your activities for clues regarding your true interests. What are the things you do on your own—with very little prompting from others? When you are presented with a choice among several activities, which do *you* choose? Is there a pattern in your choices? Take a close look at your abilities. What can you do best? What do you do best? This includes a study of your successes in school subjects, hobbies, and part-time employment. Your school counselor can assist you in your inventory of your strengths and weaknesses, your interests and abilities, your physical condition, and your personality. He can also aid you to make plans for your career development. But remember—this inventory is *your* activity! The school counselor can help you only if *you* take the initiative, make

the personal commitment, and have the interest to make the effort required to learn about yourself.

America's changing economy provides few job opportunities for unskilled labor. The demand in practically all occupational areas, including the aviation mechanic field, is for more and more education and training. Unemployment rates are highest for young workers and for those with the least schooling. (See the chart on this page.)Take to heart the advice you hear to "stay in school" and advance as high as you can. Those without a high school education will have increased difficulties in finding satisfactory and rewarding work. In addition, the monetary advantages of education are significant. (See the chart on this page.)

What are some basic qualities necessary for a good A&P mechanic? They include: 1) Mechanical ability; 2) A desire to work with tools and with your hands; 3) An interest in aviation; 4) The temperament to do thorough and accurate work—to be responsible and dependable; 5) A desire to continue learning—to remain current with the changing aviation technology. Ever-occurring changes are normal—not exceptional—in aircraft maintenance work. The A&P mechanic must keep abreast of technological changes and must readjust his past training to function with new equipment, new aircraft, and new engines.

NATURE OF THE WORK: The locations at which aviation mechanics are employed are on or near the 10,000 airports throughout the United States. Aviation mechanics have the responsible and important job of helping assure safe and efficient flight. Mechanics working for the airlines work at big airline facilities doing what is called line maintenance and emergency repairs. They also are employed at overhaul bases where major repairs and regular periodic inspections are performed. Airline mechanics often have their work directed by a line maintenance mechanic, flight engineer, or lead mechanic.

General aviation (all civil aviation other than the scheduled airlines) mechanics do repair and maintenance work comparable to that done by airline mechanics. While many of the general aviation aircraft are smaller than those used by the airlines, larger turbine- and jet-powered aircraft are being used in general aviation for such purposes as air-taxi, charter, and corporate flying. Many times the general aviation mechanic has to do his entire job with very little supervision. He often works on many different types of planes and engines.

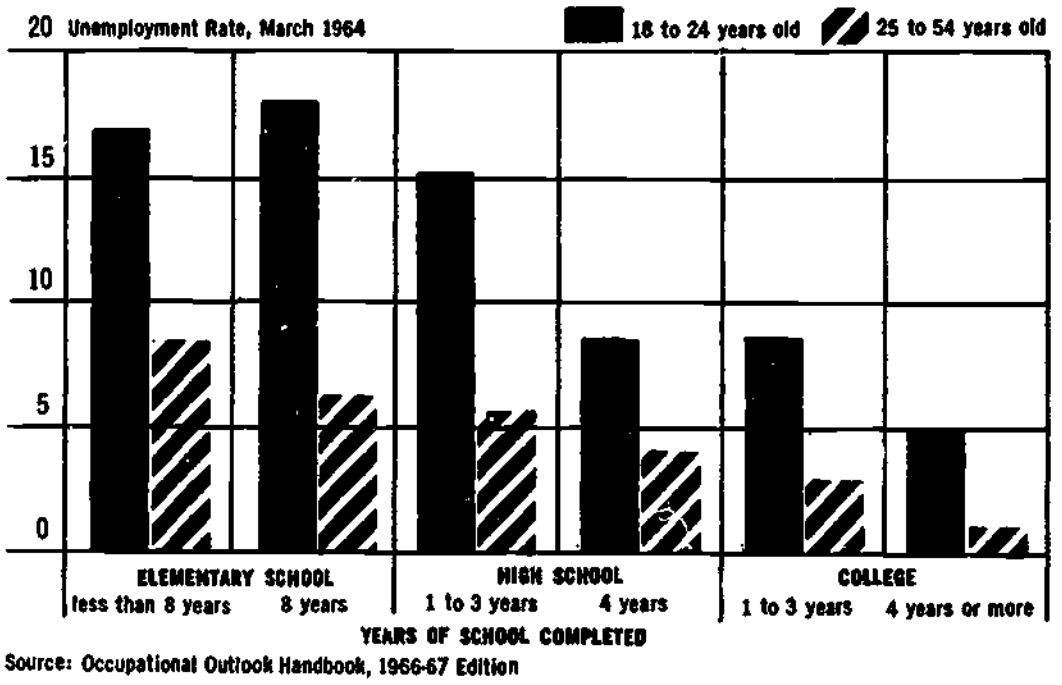
Aviation mechanics use a variety of tools from simple handtools to complete and expensive trouble-shooting equipment. Using modern scientific techniques for locating hidden defects is just one part of the aviation mechanic's contribution to aviation safety.

Some mechanics specialize in work on a particular part of an aircraft: metal or fabric surface, avionic equipment (airborne electronics), hydraulic unit, landing gear, propeller, or engine.

WHAT ARE THE WAGES? Certificated A&P mechanics with the scheduled airlines (who normally command a higher wage than do mechanics employed by general aviation) start at about $3.36 an hour. By 1968, this will be $4.13 an hour.

The *average* annual salary of mechanics and other maintenance personnel of the scheduled airlines in 1965 was $7,985. Fringe benefits are common in the industry. Workers usually get two weeks of paid vacation after one or two years of service, and three weeks after ten or 12 years. They generally get six to eight paid holidays a year and one week of paid sick leave. Other major benefits include group and health insurance and retirement pensions. Most airlines mechanics receive free and reduced air transportation. Mechanics employed by most major airlines are covered by union agreements. Most of these employees are members

UNEMPLOYMENT RATES ARE HIGHEST FOR YOUNG WORKERS AND FOR THOSE WITH THE LEAST SCHOOLING



Source: Occupational Outlook Handbook, 1966-67 Edition

Estimated Average Lifetime Earnings of Elementary and High School Male Graduates, Selected Occupations

Occupation	Lifetime earnings from age 18 to 64		
	Elementary school graduates	High school graduates	Differential
Craftsmen, Foremen, and Kindred Workers			
Average	$207,000	$243,000	$36,000
Brickmasons, stonemasons, and tile setters	204,000	233,000	29,000
Carpenters	178,000	209,000	31,000
Compositors and typesetters	229,000	254,000	25,000
Electricians	236,000	257,000	21,000
Linemen and servicemen, telegraph, telephone, power	228,000	263,000	35,000
Machinists	215,000	239,000	24,000
Mechanics and repairmen	191,000	216,000	25,000
Painters, construction and maintenance	167,000	189,000	22,000
Plasterers	197,000	239,000	42,000
Plumbers and pipefitters	222,000	252,000	30,000
Toolmakers, and diemakers and setters	264,000	282,000	18,000
Operatives and Kindred Workers			
Average	186,000	210,000	24,000
Busdrivers	172,000	196,000	24,000
Mine operatives and laborers	173,000	212,000	39,000
Truck and tractor drivers	189,000	212,000	23,000
Operatives and kindred workers	188,000	212,000	24,000
Service Workers, Including Private Household			
Average	147,000	181,000	34,000
Barbers	184,000	189,000	5,000
Firemen, fire protection	215,000	244,000	29,000
Policemen and detectives	192,000	230,000	38,000

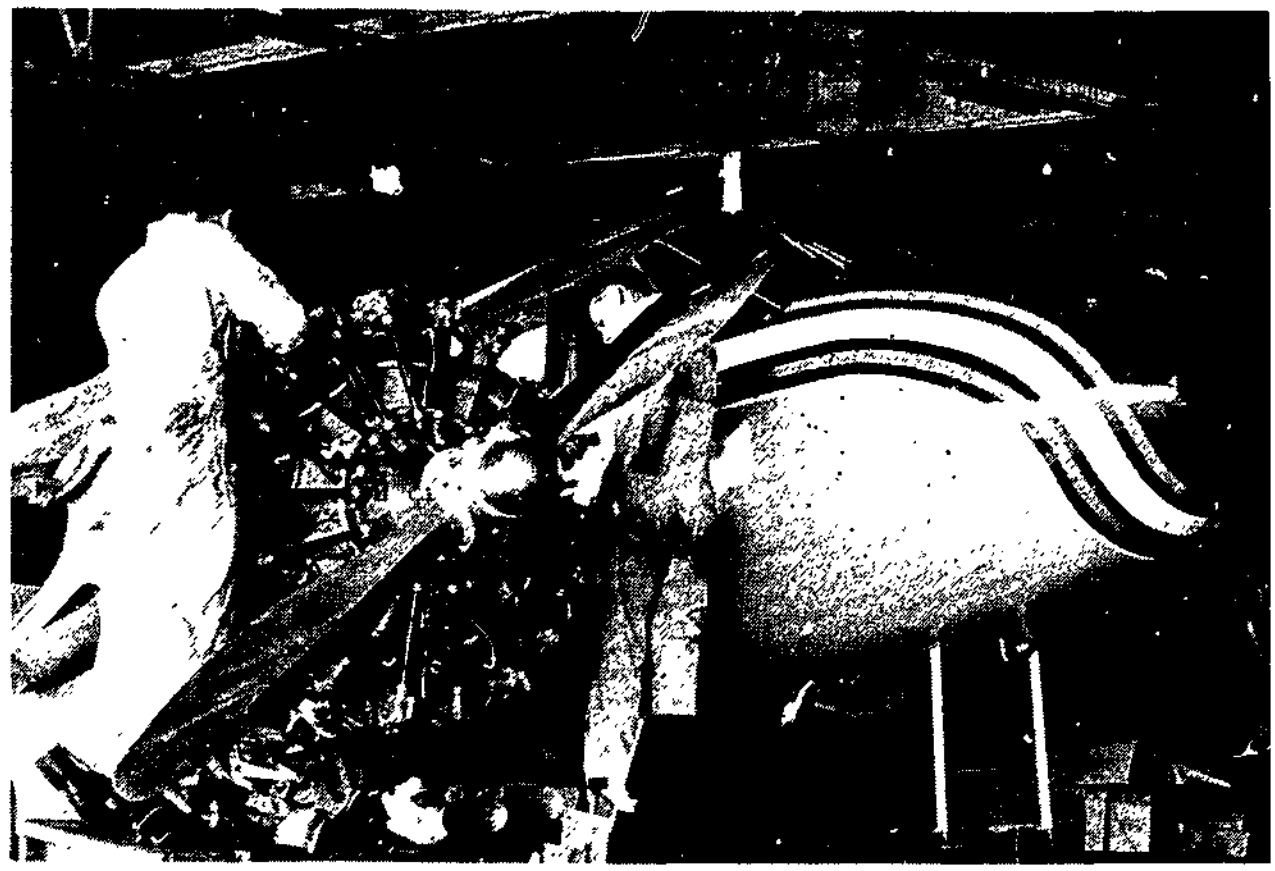
Source: Basic data from the 1960 Census of Population, U.S. Department of Commerce.

of the International Association of Machinists and Aerospace Workers. Many others belong to the Transport Workers Union of America.

WHAT ADVANCEMENT STEPS?

The line of advancement is usually the mechanic, lead mechanic (or crew chief), inspector, lead inspector, shop foreman, and, in a few cases, supervisory and executive positions. In most shops, mechanics in the higher grade positions are required to have both airframe and powerplant ratings. In many cases, the mechanic must pass a company examination before he is promoted.

To qualify for jobs as FAA inspectors, mechanics must have broad experience in maintenance and overhaul work, including supervision over the maintenance of aircraft.



General aviation mechs (other than scheduled airlines) do work comparable to airline men, but often on different types of equipment. By 1968, certificated airline mechs will start at $4.13 an hour.

To the young whose skilled hands will hold safety of pilots and passengers, veteran oldtimers, masters of their trade, impart the air's tradition of craftmanship.

WHAT IS THE DEMAND FOR A&P MECHANICS? In civil aviation the air carriers (scheduled airlines) employ the largest number of air transportation workers—nearly 200,000. Four out of five of these workers are in ground occupations. Mechanics and related aircraft maintenance personnel represent the largest job category of scheduled airline employment—20 per cent. Pilots and co-pilots make up 8 per cent of airline workers.

In general aviation 40 per cent of the workers are aviation mechanics. The largest number of aviation mechanics in general aviation work in FAA certificated repair stations. As of July 1966, there were 1,438 FAA certificated repair stations in the United States.

Greater numbers of aircraft necessarily mean a greater demand for A&P mechanics to service these aircraft. Here are some reports of trends dealing with increasing numbers of aircraft:

1. The Air Transport Association's recent survey of aircraft on order by American scheduled airlines showed that the program for growth and improvement in the five-year period 1966-1970 has expanded to 825 airplanes valued at $4.8 billion. This is an increase on top of expenditures for flight equipment of $3.1 billion during the previous five years and $2.6 billion during 1956-1960. The cost of all flight equipment in service as of June 30, 1966, was $5.6 billion. The new program thus represents 86 per cent of that amount. In addition to these firm orders by the scheduled airlines, the local service airlines are planning to convert 63 piston planes to turboprops at an estimated cost of $3.8 million. A forecast of the 10-year period ending December 1975 amounts to a total capital outlay of $14 billion.

2. The Aerospace Industries Association reports an increase in aerospace employment of some 11 per cent, as of December 1966 compared with December 1965, with *(Continued on next page)*

During refueling, two highly skilled mechanics check out a jet engine. egun by United Air Lines is a Mechanic Advance Acceptance Program which assures qualified applicants a job before they spend time and money on training to acquire necessary licenses. Such projects as SST and Jumbo, plus expanding business and private aviation, foreshadow spectacular advantages for those seeking a career in aviation—notably mechanics! This photograph, courtesy United Air Lines, others from the Federal Aviation Agency.

the biggest proportion of the gain to be made in the aircraft segment of the industry. They indicate that despite significant accomplishments and advancements in missile and space activities, aircraft manufacturing is still the backbone of the industry.

3. While three-quarters of all airline seat miles are flown today by jet aircraft, there are only 75 airports in the nation that have transport jet service. As Robert V. Reynolds, Assistant Administrator for General Aviation, FAA, stated: "The traveler who demands air service beyond these points must look to general aviation and the air-taxi operator." The growth of air-taxi operations (they serve as extensions and feeder-lines of the scheduled airlines and the regional service airlines) has been spectacular; there were more than 3,000 air-taxi operators at the end of 1966. These air-taxi operators have grown from the use of 4,500 planes in 1963 to 5,300 in 1964, and the size of their fleet is still growing.

One of the nation's major airline presidents recently indicated that he could foresee a need for 50,000 more aviation workers in the airline category during the next five years. This forecast does not include the rapidly expanding general aviation field.

According to C. Pate Hutchens, United Air Lines' manager of employment and placement, the United Air Lines plans to hire from 1,400 to 1,700 additional mechanics a year for the next five years. This includes both line and maintenance base mechanics. He indicated that the growing number of jet aircraft and expanded schedules combined with a scarcity of skilled workers has created an urgent need for mechanics. This is the requirement for just one of the scheduled airlines.

One local report dealt only with the fixed-base operators, the grass roots operators of local airfield, of Kansas. This report indicated a need for an additional 116 A&P mechanics in 1968; 143 a year by 1970; and 231 a year by 1975. There are nearly 10,000 airports in the United States.

There are approximately 100,000 active maintenance airmen employed in civil aviation. The average age of mechanics employed, according to the most recent Federal Aviation Agency survey, is thirty-eight. This means that many more young people are needed.

HIGH SCHOOL COURSES RELATED TO A&P MECHANIC TASKS: A cooperative study of the aviation mechanics occupation was recently made by the Bureau of Industrial Education, California State Department of Education and the Division of Vocational Education, University of California, Los Angeles. Among other things, the report indicated that:

"*. . . the aviation mechanic needs a command of mathematics, and English, a view supported by many comments made during the interviews. It was also found that mechanics need to study physics and chemistry because they use the applied principles of these sciences in their daily work. . . "The study found that both electricity and electronics are becoming integrated with the aviation mechanic's occupation. The Advisory Committee recommended teaching both subjects to student aviation mechanics.*"

The following selections of the many tasks to be performed identified in the study are related to high school subjects offered by most high schools:

Mathematics: "Mathematics requirements vary with the type of work being performed. The skills can range from basic arithmetic through the algebra required for weight and balance computation to the geometry and trigonometry required for template development and layout."

English "English usage is required of the aviation mechanic so that he can communicate with others, as well as write in the aircraft logbook descriptions of technical work he performed on the aircraft. Reading comprehension is very important if the mechanic is to understand maintenance manuals and other publications related to aircraft servicing and maintenance.

"Aviation mechanics must use proper nomenclature in order to communicate effectively. Proper nomenclature helps in the identification and classification of aircraft and their components. It is also essential in writing technical reports and logbook entries.

"Mechanics must know where to find and how to use data in maintaining aircraft. They must be capable of using FAA forms, airworthiness directives, logbooks, Technical Standard Orders, Civil and Federal Air Regulations, and flight safety mechanics' bulletins."

Physics: "An understanding of the laws of physics helps the mechanic to better service and maintain the various aircraft and powerplant components he must work with. It also gives him a better understanding of aircraft systems and provides him with a foundation for much of his trouble-shooting."

Chemistry: "The mechanic is required to know certain chemical principles if he is to understand the operation and maintenance of batteries, the process of plating, the prevention of corrosion, and the properties of the various aircraft fluids, such as fuels, solvents, and paints. Although mechanics do not work with chemical formulas, they do make many practical applications of the principles of chemistry."

Theory of flight: "A knowledge of today's complex aircraft and their flight control systems is essential to airworthy maintenance. An understanding of the relationships between the atmosphere and the aircraft and its forces in flight is necessary in order to make decisions affecting the flight safety of airplanes, both fixed wing and helicopter."

Shop Management Responsibilities: "Mechanics should know the principles of operating and managing an aircraft maintenance business. Such knowledge helps promote work efficiency in an organization. Such fundamentals as elementary accounting, job estimating, and inventory control should be part of the mechanic's knowledge, especially if he plans to work for himself or for a small aviation company."

HOW TO GET STARTED AS AN AVIATION MECHANIC: Having taken full advantage of the courses offered by your high school, your next step is to continue your schooling, if at all possible. Aviation mechanic courses are offered by many vocational or technical high schools, adult vocational departments of local school systems, private institutions, junior colleges, and four-year colleges. And the list of schools offering such courses is growing each year. At an FAA-certificated mechanic school, you must figure on spending about $1,200 to $2,400 for tuition for 18 to 24 months of training. You will have to add the expense of room and board, if you will be living away from home.

A unique program, called the Mechanic Advance Acceptance Program, has been started by the *United Air Lines*. Young men wanting to be aircraft mechanics are assured of a well-paying job *before* they invest time and money in technical training. Under this new mechanic program, applicants, who must be high school graduates, are given the company's regular employment tests and physical examinations. If qualified, the young men are guaranteed a job as line mechanics on condition that they obtain the necessary training and licenses, according to C. Pate Hutchens, United Air Lines' manager of employment and placement.

Once accepted, the mechanic applicant is expected to attend any approved technical school to obtain the skills qualifying him to take either an FAA exam for his airframe-powerplant license (A&P) or the FCC test for the second class radio-telephone license (R&E). The applicant is given adequate time to complete the course and two additional months to obtain his license. The United Air Lines' commitment will be contingent on the applicant continuing to meet United's employment standards, including general conduct and physical condition. The young man also must be available within 60 days of a mutually agreed upon reporting date. United, the nation's largest airline, has line mechanics based at 39 stations along its 18,000 mile system. Most openings occur in Washington, D.C., San Francisco, Los Angeles, Chicago, and the New York City area. The United Air Lines' program ensures a young man that he can attend a school and learn the skills of an airline mechanic without having to worry about finding a job after completing the course.

If you enlist in the armed forces, or are drafted, you may apply for aviation mechanic training conducted by the military. This excellent training is usually given for specialized equipment; however, with additional study and work, you can prepare yourself for the FAA mechanic's examination.

There is still another possibility for you to obtain experience and get your foot in the industry door. You can work as a mechanic helper or apprentice. About 50 per cent of the mechanics employed in approved repair stations are not certificated. There are thousands of good mechanics: auto mechanics, farm mechanics, mechanics with military experience, or old-timers who do not aspire to be licensed. The work, however, must be signed off by a licensed mechanic. A study of the man-

power requirements of the civil aviation industry by the Federal Aviation Agency recommended on-the-job mechanic training by small- and medium-sized fixed-base operators. These operators usually have difficulty obtaining and keeping the skilled personnel they require because of the competition of the airlines and aviation manufacturers. In addition to the study's recommendation, many people in the airport industry are advocating that aviation repair stations and local fixed-based operators train their own mechanics through some sort of an apprentice program.

IMPORTANCE OF THE AVIATION MECHANIC: In the recently published *national* study of the Aviation Mechanics Occupation by the Division of Vocational Education, University of California, Los Angeles, the Bureau of Industrial Education, California State Department of Education, and the U.S. Office of Education, there is a tribute to the role of the mechanic in air safety and a statement of the need for mechanics to constantly train and re-train as aviation grows and changes.

"Foremost among those who form the work force of the aviation industry are the aviation mechanics, who are characterized by their dedication to air safety and pride of workmanship. Involvement in safety of flight is a part of the working life of each mechanic throughout his employment in aviation. This theme is stated repeatedly in the instruction he receives. Pride of workmanship is a characteristic that develops in the student mechanic from the time he first enters aviation mechanics school. As his skill and knowledge increase, confidence in his ability to perform well also increases, leading to a feeling of pride in his accomplishments and causing him to seek further improvement of his skill and knowledge.

"There is in fact no point in his career at which an aviation mechanic can rest in the knowledge that he is fully prepared for the remaining years he may work in aviation. The changing technology of aviation is reflected by new equipment, new aircraft, and constantly recurring changes in aviation engineering. Each change demands that the mechanic have immediate command of the skill and knowledge needed to perform the necessary tasks.

"Thus there is need not only for thorough, up-to-date initial training but continuing in-service training."

AVIATION MECHANIC'S CREED: If you decide to become an aviation mechanic, you will have a creed—like a doctor—to hold constantly before you. The good mechanics in aviation all believe in the creed printed in full on this page.

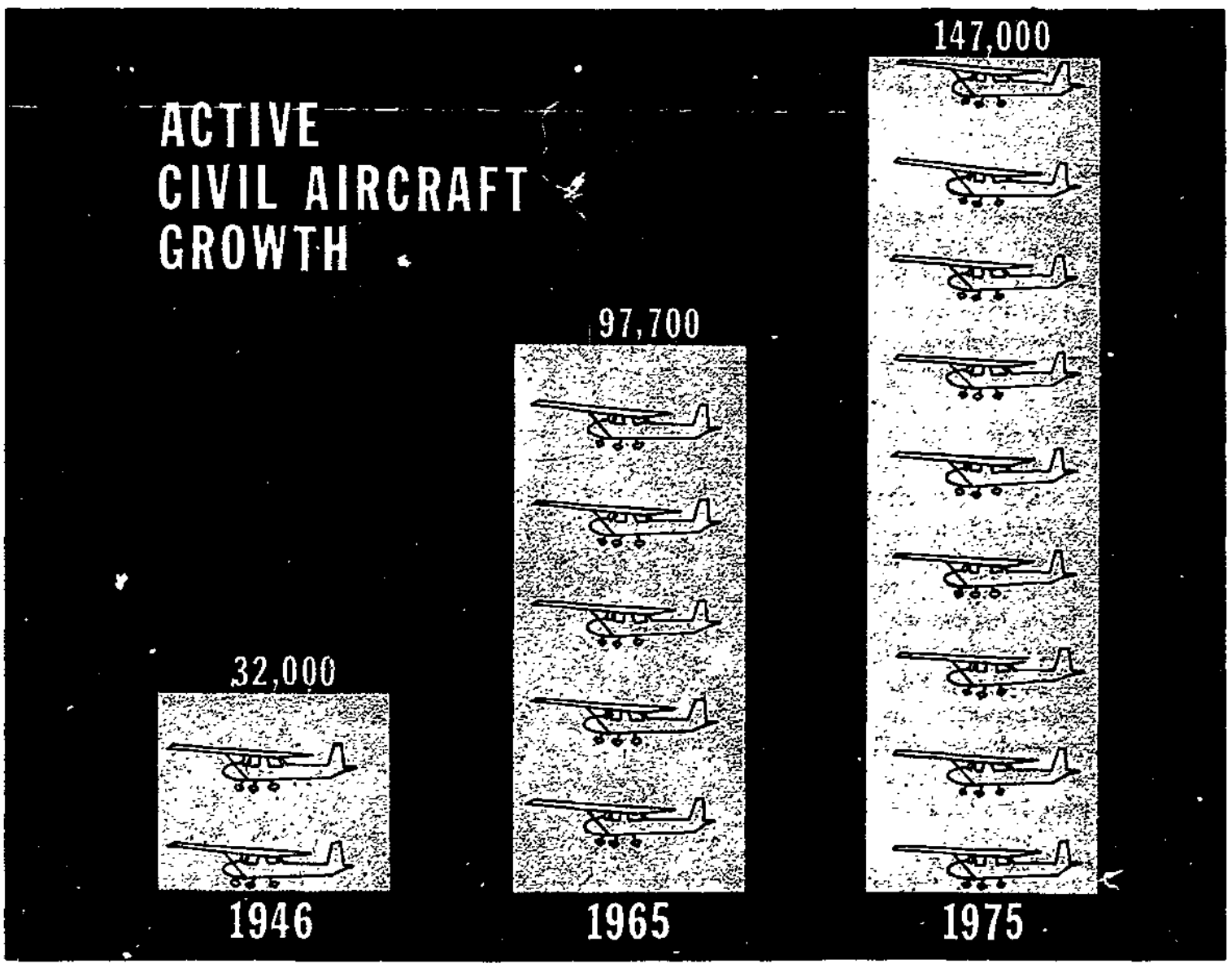
Aviation Mechanic's Creed

UPON MY HONOR I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a certified mechanic. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I shall never knowingly subject others to risks which I would not be willing to assume for myself, or for those dear to me.

IN DISCHARGING this trust, I pledge myself never to undertake work or approve work which I feel to be beyond the limits of my knowledge; nor shall I allow any non-certificated superior to persuade me to approve aircraft or equipment as airworthy against my better judgment; nor shall I permit my judgment to be influenced by money or other personal gain; nor shall I pass as airworthy aircraft or equipment about which I am in doubt, either as a result of direct inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.

I REALIZE the grave responsibility which is mine as a certified airman, to exercise my judgment on the airworthiness of aircraft and equipment. I, therefore, pledge unyielding adherence to these precepts for the advancement of aviation and for the dignity of my vocation.—Joseph M. Chase

Reproduced with permission of Flight Safety Foundation, Inc.



WANTED: A & P mechanics Part II

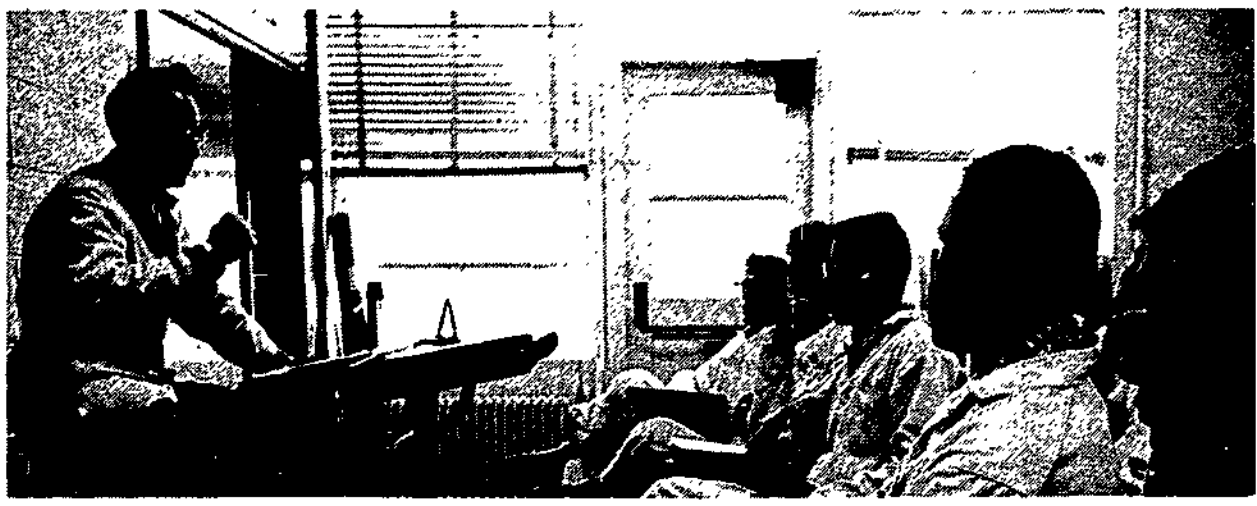
Reprinted from AMERICAN MODELER, March 1967

How to qualify for a license. Where to study. FAA certificated schools, skills and knowledge required. What the FAA examinations cover.

By WALTER ZAHAREVITZ and DR. MERVIN K. STRICKLER, JR.

(Mr. Zaharevitz is Executive Director, National Aerospace Education Council.
Dr. Strickler is Special Assistant for Aviation Education, Office for General Aviation Affairs, Federal Aviation Agency.)

Aviation is not inherently dangerous but to an even greater extent than the sea, it is terribly unforgiving of any carelessness, incapacity or neglect. Safety of aircraft is delegated through various levels but in the final analysis it is the mechanic working on the aircraft who has this responsibility.—An aviation axiom



Students listen attentively to instructor at one of the 79 Federal Aviation Agency certificated schools. A complete listing is given at the end of this article.

Last month's portion of this article emphasized the following factors in relation to the A&P mechanic: the importance of education, the basic characteristics necessary for a good A&P mechanic, the nature of the work, wages, the demand, high school courses related to aviation mechanic tasks, how to get started, and the importance of the aviation mechanic. It also included the Aviation Mechanic's Creed.

This concluding portion of the article will provide you with information on how to qualify for an A&P mechanic's license (certification).

WHERE TO STUDY

There are two main avenues for you to become an FAA-licensed A&P mechanic. Experience can be gained by: 1) attending an FAA-certificated mechanic school, or 2) by performing, for a specified period of time, the duties appropriate to the rating.

An applicant for either the A or the P rating must show he has performed the duties appropriate to that particular rating for a period of at least 18 months. For both ratings, concurrently, 30 months of experience are required. In any case, applicants for a license who follow the experience route or those who attend mechanic school must pass FAA oral, written, and practical examinations. The age minimum for an A and/or P rating is 18. You cannot have the license issued to you before your 18th birthday.

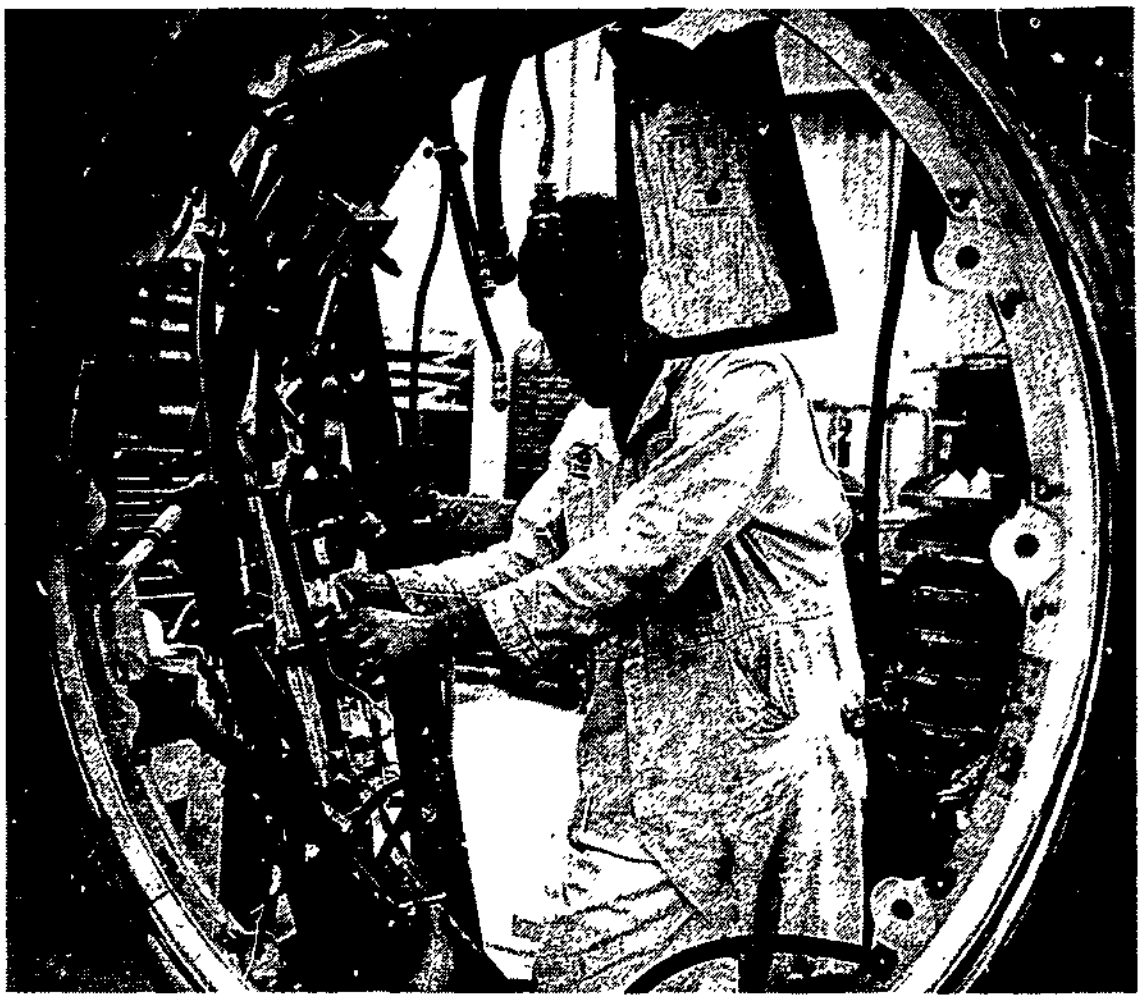
FAA CERTIFICATED SCHOOLS

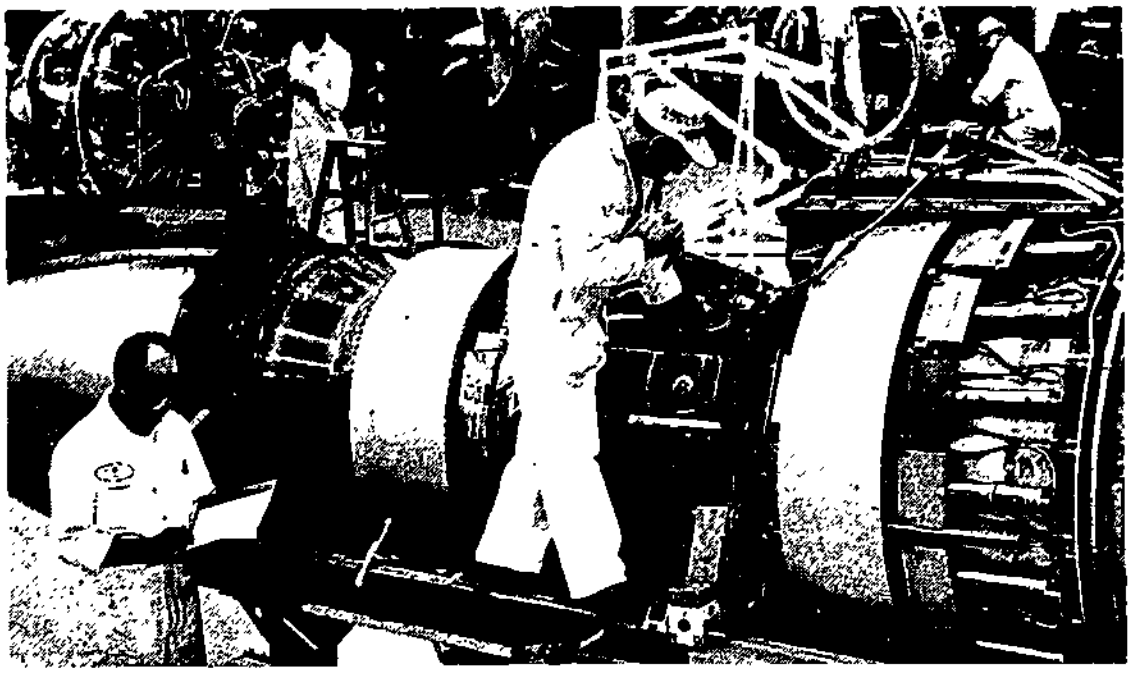
As of August 1, 1966, the Federal Aviation Agency listed 79 certificated mechanic schools. (See page 16.)

These schools are one of four types: 1) A high school and adult education trade school program; 2) A public school vocational and technical program; 3) A two-year associate in arts degree program (community or Junior college.) 4) A four-year baccalaureate degree program (college or university).

In picking the right school for you,

Alternate route to a rating is to perform for a specified period, duties appropriate to the rating. Either way, FAA oral, written and practical exams must be passed.





Users of piston and/or jet engines offer distinct employment opportunities to the student who "sticks it out." The military offers valuable in-service experience.

some selection guidelines may be helpful:

1. The program should be directly related to employment opportunities, determined by school officials in cooperation with the aviation community and competent individuals and groups.

2. The course content should be confirmed or changed after periodic evaluations and job analyses of aviation mechanic performance.

3. The course content should be set up and maintained with the advice and cooperation of the school officials, the FAA, and the appropriate representatives of the aviation community.

Private aviation, most especially in business flying, required men like these who here service a flat-four engine.

4. The facilities and equipment to be used in instruction should be comparable to those found in the aviation community.

5. The conditions under which instruction is given should duplicate as nearly as possible desirable conditions in the aviation community itself and at the same time provide effective learning situations.

6. Training should be carried to the point of marketable skills, abilities, understandings, attitudes, work habits, and appreciations sufficient to enable the student to obtain a job at the completion of the course.

7. Instructors should be competent and possess adequate qualifications for teaching.

8. Continuous research on the part of the schools and their staffs should be an integral part of the school program.

KNOWLEDGE AND SKILL REQUIREMENTS FOR THE A& P MECHANIC RATING

The Federal Aviation Regulations require each applicant for a mechanic certificate or additional rating to demonstrate that he meets the knowledge requirements by passing a written examination. The tests cover the construction and maintenance of aircraft appropriate to the rating; the Regulations pertaining to the certification of, and operating rules for mechanics; the applicable provisions of the Regulations that deal with maintenance, repair, and alteration of aircraft; and general operating rules.

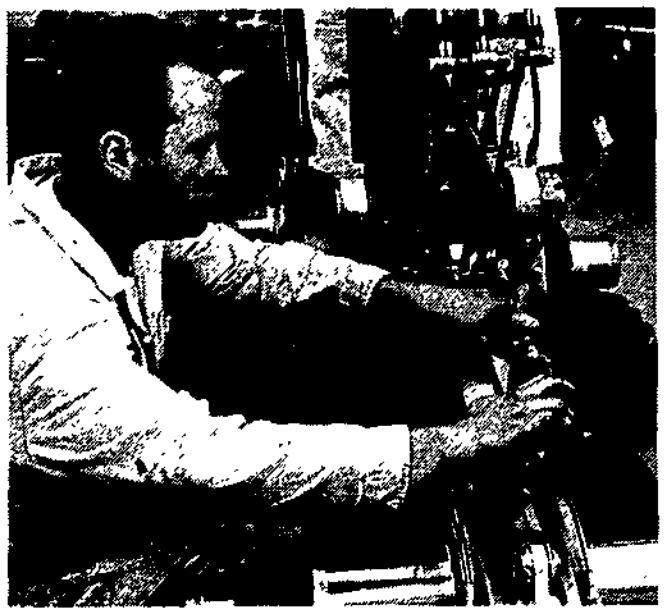
Skill requirements, like experience and knowledge, are related to the rating sought. The Federal Aviation Regulations require each applicant for a mechanic certificate or rating to pass an oral and a practical test for the rating he seeks. The tests cover the applicant's basic skill in performing practical projects in the same general subject areas covered by the written test for that rating.

WHAT AREAS DO EXAMINATIONS COVER?

The subjects with which mechanic examinations are concerned are arranged into three categories: 1) general, which relates to both airframe and powerplant ratings; 2) airframe, which relates to the airframe rating only; and 3) powerplant, which relates to the powerplant rating only.

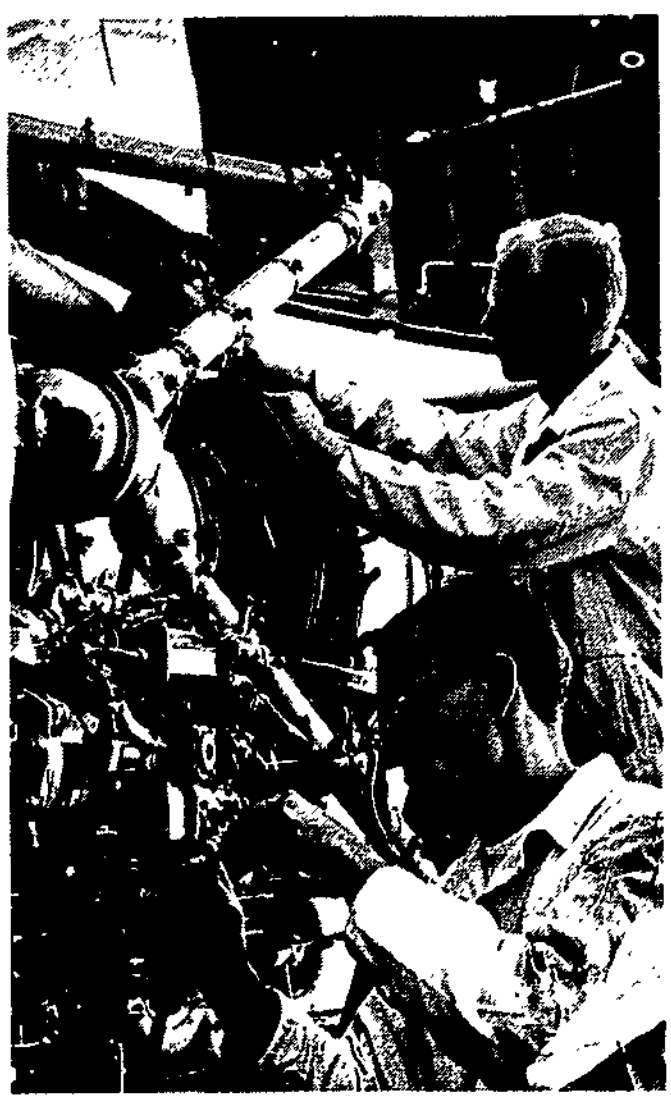
1. GENERAL SUBJECTS:

a) Mechanic Privileges and Limitations b) Offi- *(Continued on next page)*



Mechanic, working on hydraulic system of a landing gear, is symbolic of today's specialized society.

Working on powerful turboprop, these painstaking craftsmen compare favorably with skilled in other vital professions.



cial FAA Publications, c) Various Maintenance Forms and Records, d) Basic Physics, e) Basic Mathematics, f) Maintenance Publications, g) Mechanical Drawing, h) Aircraft Weight and Balance, i) Basic Handtools and Measuring Devices, j) Basic Aerodynamics, k) Nondestructive Testing, l) Basic Electricity; m) Batteries; n) Aircraft Maintenance Equipment, Techniques, and Practices; o) Safety Practices; p) Inspection Procedures and Techniques; q) Fuels and Fuel Systems.

2. AIRFRAME SUBJECTS

a) Theory of Flight, b) Flight Control Systems, c) Cleaning and Preservation, d) Assembly and Rigging, e) Aircraft Finishes, f) Aircraft Covering, g) Aircraft Structures, h) Structural Materials, i) Procedures and Techniques, j) Aircraft Hydraulic Systems, k) Hydraulic Fluids, l) Hydraulic Pumps and Actuators.

m) Hydraulic Pressure and Flow Control, n) Aircraft Landing Gear, o) Aircraft Pneumatic Systems, p) Aircraft Fire Detection and Control Systems, q) Cabin Atmosphere Control, r) Aircraft Instrument Systems, s) Airframe Ice Detection and Control Systems, t) Aircraft Communication and Navigation Systems, u) Generators and Generator Control, v) Motors and Motor Control, w) Aircraft Electrical Systems.

3. POWERPLANT SUBJECTS

a) Basic Carburetion, b) Induction Systems, c) Float-type Carburetors, d) Pressure Carburetors, e) Direct Fuel Injection Systems, f) Carburetor Systems, g) Turbine Fuel Control, h) Superchargers and Impellers, i) Basic Ignition, j) Magnetos, k) Ignition Wiring, l) Turbine Ignition.

m) Spark Plugs and Igniters, n) Starting Aids, o) Basic Engine Principles, p) Engine Operation, q) Engine Installations, r) Engine Instruments, s) Exhaust Systems, t) Cooling Systems, u) Engine Maintenance Procedures and Techniques, v) Basic Lubrication.

w) Lubrication Systems, x) Basic Propeller Principles, y) Propeller Operation, z) Propeller Installations, aa) Variable Pitch Propellers, bb) Propeller Maintenance Procedures and Techniques, cc) Generators and Generator Control, dd) Motors and Motor Control, ee) Aircraft Electrical Systems.

SAMPLE ORAL EXAMINATION QUESTIONS

Some examples of the type of questions asked during the oral examination are:

1) What is a blind rivet and how is it used?
2) What is the difference between welding and brazing?
3) What is a circuit breaker and how does it work?
4) What are two causes of vapor lock in a fuel line?
5) Which cylinder should be removed last during the disassembly of a radial aircraft engine?
6) How would you check a propeller for correct track?
7) How is the moment of an item of equipment determined in computing aircraft weight and balance?

TYPICAL PRACTICAL EXAMINATION PROJECTS

The following are typical of the projects assigned during the practical examination:

1) Make a sheet metal splice.
2) Make a steel tube welded splice.
3) Compute empty weight center of gravity and the most forward and rearward loaded center of gravity of an aircraft.
4) Time the valves of an engine.
5) Install and time engine magnetos.
6) Remove and install a propeller.

Remember: you may obtain more information and assistance regarding A&P mechanics as a possibility for your career from the following sources:

1) Your school counselor, teacher, and/or librarian.
2) Your state employment office.
3) Your local airport.
4) Your public library.

ANSWERS TO SAMPLE WRITTEN EXAMINATION ITEMS

Item Number	Answer	Item Number	Answer
1	1	11	1
2	4	12	3
3	2	13	4
4	1	14	2
5	4	15	2
6	4	16	2
7	1	17	2
8	2	18	1
9	1	19	2
10	1	20	4

An additional possibility for exceptionally capable young men is United Air Lines' rapidly growing Apprentice Mechanic Program—on-the-job training conducted at their San Francisco and Chicago locations. You may obtain a copy of United's new brochure outlining its complete career program for people interested in becoming aircraft mechanics by writing to the United Air Lines, Education and Training Center, P. O. Box 8776, O'Hare International Airport, Chicago, Illinois, 60666.

TEST YOUR KNOWLEDGE

To find out something about what an A&P written examination is like and to test your knowledge of some of the things an aviation mechanic needs to know, try the following test based on sample written examination questions that are like those on an FAA mechanic's examination. **(You can check your answers with the correct answers given on page 14).**

1. What must a certificated mechanic with both airframe and powerplant ratings do prior to returning to service an aircraft on which he has performed and approved a 100-hour inspection?

1) Make the proper entries in the appropriate logbooks.
2) Present his work and records to a mechanic holding an Inspection Authorization for final approval and release.
3) Complete the required copies of Form FAA-337, including an accurate description of the work performed, date, mechanic's name, and certificate number.
4) Notify the local FAA maintenance inspector in writing of his intention to return the aircraft to service.

2. If the container volume of a confined gas is doubled (assume temperature remains constant) the pressure will:

1) Increase in direct proportion to the volume increase.
2) Remain the same.
3) Be doubled.
4) Be reduced to one-half its original value.

3. As the velocity of the air across an airplane wing increases, the pressure of the air on the upper-surface:

1) Increases.
2) Decreases.
3) Drops to zero.
4) Remains unchanged.

4. If the cross-section area of a given conductor is increased to four times its original value and the length and temperature remain constant, the resistance of the conductor will be:

1) One-fourth its original value.
2) Four times its original value.
3) The same as its original value.
4) Found by multiplying the original resistance by the percentage increase in cross-sectional area.

5. Which of the following sequences of connecting and tightening the battery leads should result in the safest procedure of installation of a battery in an aircraft with a single wire ground-return electrical system?

1) Connect and tighten the negative (ground) lead before connecting the positive lead.
2) Connect the negative (ground) lead, connect the positive lead, then tighten in the same order.
3) Connect the positive lead, connect the negative (ground) lead, then tighten in the same order.
4) Connect and tighten the positive lead before connecting the negative (ground) lead.

6. Which of the following has little or no effect upon the rate of vaporization of a given fuel?

1) The pressure of the surrounding air.
2) The temperature of the fuel.
3) The temperature of the surrounding air.
4) The antiknock value of the fuel.

7. If an aircraft is cruising in level flight and the stick or control column is moved forward the elevator will:

1) Go down and the nose of the aircraft will go down.
2) Go up and the nose of the aircraft will go down.
3) Go down and the nose of the aircraft will go up.
4) Go up and the nose of the aircraft will go up.

8. Which of the following is not indicated by the aluminum sheet designation ALCLAD 2024-T36?

1) The specific process or combination of operations used to produce the stable temper.
2) The nominal thickness of the sheet.
3) Major alloying element.
4) Method used to produce stable temper (whether strain hardened or heat treated).

9. If it is necessary to adjust several valves in a hydraulic system, what particular sequence, if any, should be followed?

1) Units with the highest pressure settings are adjusted first.
2) Units with the lowest specified pressure settings should be adjusted first.
3) Units are independent of each other and therefore no particular sequence is necessary.
4) Units most distant from the hydraulic pump should be adjusted first.

10. Shuttle valves installed in large aircraft braking systems allow:

1) Two independent systems to operate the same actuator if necessary.
2) The safe application of brakes regardless of ground speed due to the compensating action of the valves.
3) Fluid to bypass from the right wheel cylinder to the left wheel cylinder if braking pressures are different.
4) The compensating port, interconnecting both master cylinders, to discharge fluid alternately from one to the other.

11. Built-in aircraft fire extinguishing systems ordinarily are charged with:

1) Carbon dioxide and nitrogen.
2) Carbon tetrachloride.
3) Sodium bicarbonate.
4) Freon and nitrogen.

12. Instrument static system leakage can be detected by observing the rate of change in indication of the:

1) Altimeter after pressure has been applied to the static system to cause a prescribed equivalent altitude to be indicated.
2) Airspeed indicator after pressure has been applied to the static system to cause a prescribed equivalent airspeed to be indicated.
3) Altimeter after suction has been applied to the static system to cause a prescribed equivalent altitude to be indicated.
4) Airspeed indicator after suction has been applied to the static system to cause a prescribed equivalent airspeed to be indicated.

13. What effect will increased generator voltage have on the strength of the electromagnet which controls the pressure applied to the stack of carbon discs in a carbon pile voltage regulator?

1) Both magnet strength and the pressure applied to the carbon discs will increase.
2) Both magnet strength and the pressure applied to the carbon discs will decrease.
3) Magnet strength will decrease and the pressure applied to the carbon discs will increase.
4) Magnet strength will increase and the pressure applied to the carbon discs will decrease.

14. What effect will increased humidity have on engine power output?

1) No appreciable change in power output.
2) Power output will decrease at all altitudes.
3) Power output will increase at all altitudes.
4) No effect at sea level but greater power output at altitude.

15. Aircraft engine direct cylinder fuel injection systems normally discharge fuel into each cylinder during which stroke(s)?

1) Compression.
2) Intake.
3) All (continuously).
4) Intake and compression.

16. When a single-stage, two speed supercharger is shifted from low to high impeller ratio during a ground check there should be:

1) A momentary drop in oil pressure, no drop in manifold pressure, and no change in RPM.
2) A momentary drop in oil pressure, a slight rise in manifold pressure, and an increase in RPM.
3) No drop in oil pressure, no drop in manifold pressure, and an increase in RPM.
4) No drop in oil pressure, a slight drop in manifold pressure, and a decrease in RPM.

17. Which statement about the ignition system of a turbojet engine is correct?

1) It is a low voltage, high amperage system.
2) The engine will operate normally after start if the ignition system is deenergized.
3) The engine will not continue to operate after start if the ignition system is deenergized.
4) The system generally includes a polar inductor type magneto.

18. Thermocouple type temperature indicating instrument systems:

1) Require no external power source.
2) Are classed as balanced type, variable resistor circuits.
3) Usually contain a balancing circuit in the instrument case to prevent fluctuations of the aircraft electrical system voltage from affecting the temperature reading.
4) Will not indicate a true reading if the aircraft electrical system voltage varies beyond the range for which the instruments are calibrated.

19. Which of the following is referred to as the propeller blade face?

1) The root end of a propeller blade.
2) The flat side of a propeller blade.
3) The cambered side of a propeller blade.
4) The cuff around a propeller blade.

20. Select the proper sequence to be followed when using the etching process as an inspection method for determining the surface condition of an aluminum alloy propeller blade.

1) Nitric acid etch, water rinse.
2) Nitric acid etch, caustic bath, water rinse.
3) Abrasive cleaning, nitric acid etch, water rinse, caustic bath, water rinse.
4) Abrasive cleaning, caustic etch, water rinse, nitric acid bath, water rinse.

FAA CERTIFICATED MECHANIC SCHOOLS AS OF AUGUST 1, 1966

Key to Ratings: A Airframe Mechanic P Powerplant Mechanic C Combined Airframe and Powerplant Mechanic

EASTERN REGION

Academy of Aeronautics
La Guardia Field
Flushing, N.Y. 11757 (APC)

Aviation High Schoo.
Queens Blvd & 35th St.
Long Island City, N.Y. 11101 (AP)

Burgard Vocational High School
400 Kensington Ave.
Buffalo, N.Y. 14225 (APC)

East Coast Aero-Tech. School, Inc.
P.O. Box 12
Lexington, Mass. 02173 (APC)

East New York Vocational & Technical School
Fountain Ave. & Wells St.
Brooklyn, N.Y. 11208 (P)

Essex County Vocational & Tech. High School
209 Franklin St.
Bloomfield, N.J. 07003 (APC)

Harvard H. Ellis Regional Vocational Tech. School
Maple St., P.O. Box 149
Danielson, Conn. 06239 (APC)

Mergenthaler Vocational Tech. High School
Hillen Road & 35th St.
Baltimore, Md. 21218 (C)

Pittsburgh Institute of Aeronautics
Allegheny County Airport
P.O. Box 10897
Pittsburgh, Pa. 15236 (APC)

Quaker City School of Aeronautics
2563-69 Grays Ferry Ave.
Philadelphia, Pa. 19146 (APC)

Rome MDTA Airplane Mechanics School
Buildings 325, 326, 917
Griffiss Air Force Base
Rome, New York 13442 (APC)

Teterboro School of Aeronautics, Inc.
Teterboro Airport
Teterboro, N.J. 07608 (APC)

Wentworth Institute
550 Huntington Ave.
Boston, Mass. 02115 (APC)

Williamsport Area Community College
1005 West Third St.
Williamsport, Pa. 17701 (AP)

SOUTHERN REGION

Alabama Institute of Aviation Technology
1439 South Union Ave.
Ozark, Ala. 36360 (APC)

Eastern Air Lines, Inc.
Mechanic Training School
P.O. Box 787
International Airport Br.
Miami, Fla. 33142 (APC)

Emby-Riddle Aero. Inst.
Daytona Beach Municipal Airport
P.O. Box 2411
Daytona Beach, Fla. 32016 (APC)

Florence-Darlington Technical Education Center
P.O. Box 384
Florence, S.C. 29501 (AP)

George T. Baker Aviation School
3275 N.W. 42nd Ave.
Miami, Fla. 33142 (APC)

Lively Technical School
Duval St. and Park Ave.
Tallahasee, Fla. 32301 (APC)

Miguel Such Metropolitan Vocational School
Barbosa Ave. (Carpenter Road)
Rio Piedras, P.R. 00923 (AP)

South Georgia Technical & Vocational School
P.O. Box 560
Americus, Ga. 31709 (APC)

SOUTHWEST REGION

Aeronautical Technology
The Technical Institute
Oklahoma State University
Stillwater, Okla. 74074 (APC)

Delgado Trades and Technical Institute
615 City Park Ave.
New Orleans, La. 70119 (APC)

LeTourneau College of Aeronautical Technology
P.O. Box 2307
Longview, Tex. 75604 (AP)

Spartan School of Aeronautics
P.O. Box 51239
Tulsa International Airport
Tulsa, Okla. 74151 (APC)

Technical High School & Technical Institute
1003 West Cannon Ave.
Fort Worth, Tex. 76104 (APC)

CENTRAL REGION

Aero Mechanics School
13214 French Road
Detroit, Mich. 48234 (AP)

Aero Mechanics School
838 Richards Road
Municipal Airport
Kansas City, Mo. 64116 (APC)

Area Technical-Vocational School
Thief River Falls, Minn. 56701 (APC)

Board of Education—City of Chicago
228 N. La Salle St.
Chicago, Ill. 60604 (APC)

Des Moines Technical School
1800 Grand Ave.
Des Moines, Iowa 50307 (C)

Helena Public School—Dept. of Aeronautics & Related Trades
2300 East Poplar Ave.
Helena, Mont. 59601 (APC)

Hoffmann Aircraft Institute
7924 Floyd
Overland Park, Kan. 66204 (P)

Janesville Vocational, Technical and Adult School
527 S. Franklin St.
Janesville, Wis. 53545 (APC)

Kundert Aviation, Inc.
Box 1467, Hector Field
Fargo, N.D. 58102 (APC)

Lewis College, Technical Institute
Route 66A
Lockport, Ill. 60441 (APC)

Lincoln Aviation Institute, Inc.
Municipal Airport
Lincoln, Neb. 68524 (C)

Milwaukee Vocational Technical and Adult Schools
9305 W. Appelton Ave.
Timmerman Field
Milwaukee, Wis. 53225 (AP)

Minneapolis Vocational H.S. & Tech. Inst.
1101 Third Ave. So.
Minneapolis, Minn. 55404 (AP)

Moody Bible Inst.
820 N. La Salle St.
Chicago, Ill. 60610 (C)

Parks College of Aeronautical Tech. of St. Louis Univ.
Parks Airport
East St. Louis, Ill. 62201 (APC)

Purdue University, Dept. of Aviation Tech.
Lafayette, Ind. 47907 (AP)

Southern Illinois University Aviation Technology
Southern Illinois Airport
Carbondale, Ill. 62901 (APC)

University of Illinois, Institute of Aviation
Univ. of Ill. Willard Airport
Savoy, Ill. 61874 (APC)

Vincennes University, Aviation Technology Dept.
1002 N. First St.
Vincennes, Ind. 47591 (C)

Watertown Aviation Mechanics School
Municipal Airport
Watertown, S.D. 57201 (A)

Western Michigan University
Kalamazoo, Mich. 49001 (C)

WESTERN REGION

Big Bend Community College
Moses Lake Municipal Airport
Highway 17 & Nelson Rd.
Moses Lake, Wash. 98837 (A)

Chaffey College,
5885 Haven Ave.
Alta Loma, Calif. 91701 (APC)

Clover Park Vocational-Technical School
4500 Steilacoom Blvd., S.W.
Lakewood Center, Wash. 98499 (APC)

College of San Mateo
1700 Hillsdale Blvd.
San Mateo, Calif. 94402 (AP)

Deuel Vocational Inst.
P.O. Box 400
Tracy, Calif. 95376 (APC)

Gavilan College
2310 San Felipe Rd.
Hollister, Calif. 95023 (C)

Emily Griffith Opportunity School
13th and Welton Sts.
Denver, Colo. 80204 (APC)

Fresno City College
1101 University Ave.
Fresno, Calif. 93704 (APC)

Glendale College
1500 North Verdugo Road
Glendale, Calif. 91208 (APC)

Holgate Technical School
5925—3rd Ave., South
Seattle, Wash. 98108 (AP)

John A. O'Connell Vocational H.S. and Tech. Inst.
21st & Harrison St.
San Francisco, Calif. 94110 (AP)

Kensair Technical Training School
Jefferson County Airport
Broomfield, Colo 80020 (APC)

Lane Community College
200 North Monroe St.
Eugene, Oreg. 97402 (AP)

Laney College—Peralta College School District
1001 3rd Avenue
Oakland, Calif. 94606 (APC)

Long Beach City College Bus. and Tech. Div.
1305 East Pacific Coast Highway
Long Beach, Calif. 90806 (APC)

Los Angeles Trade and Technical College
9700 So. Sepulveda Blvd.
Los Angeles, Calif. 90045 (APC)

Mt. San Antonio College
1100 N. Grand Ave.
Walnut, Calif. 91789 (APC)

Northrop Institute of Tech.
1155 W. Arbor Vitae St.
Inglewood, Calif. 90301 (APC)

Palo Alto Unified School Dist.
50 Embarcadero Road
Palo Alto, Calif. 94301 (P)

Phoenix Union High School
512 East Van Buren Street
Phoenix, Ariz 85004 (P)

Reedley College
Manning & Reed Ave.
P.O. Box 552
Reedley, Calif. 93654 (APC)

Sacramento City College
3835 Freeport Blvd.
Sacramento, Calif. 95822 (APC)

San Bernardino Valley College
701 So. Mt. Vernon Ave.
San Bernardino, Calif. 92410 (APC)

San Diego City College
1425 Russ Boulevard
San Diego, Calif. 92101 (C)

San Jose State College
San Jose, Calif. 95112 (APC)

School of Trade and Technical Education
Idaho State University
Pocatello Municipal Airport
Pocatello, Idaho 83201 (AP)

Spokane Community College
E. 3402 Mission Ave.
Spokane, Wash. 99202 (AP)

Utah State University of Agriculture & Applied Sciences
Aeronautics Dept.
College Hill
Logan, Utah 84321 (APC)

PACIFIC REGION

Aero-Tech Division of Honolulu Technical School
Honolulu International Airport
Honolulu, Hawaii 96819 (APC)

ALASKAN REGION

North Star Borough School of Aviation
1504 Gillam Way
Fairbanks, Alaska 99701 (AP)

FOR ADDITIONAL INFORMATION ABOUT AVIATION MECHANICS, WRITE TO:

International Assoc. of
Machinists & Aerospace Workers
Machinists' Building
1300 Connecticut Ave., N.W.
Washington, D. C. 20036

Transport Workers Union of
America (AFL-CIO)
Air Transport Division
1980 Broadway
New York, N. Y. 10023

What The Airlines Need In New Flight Personnel

Reprinted from AIR TRANSPORT WORLD, January 1967

ATW Survey indicates demand exceeds all previous forecasts. 1966-67 hirings increase rosters by 35%

AIRLINE companies offering pilot jobs that will pay a career income of a million dollars plus fringe benefits of paid vacations, hospitalization and life insurance as well as free travel benefits and guaranteed retirement are having difficulty finding suitable applicants.

The rapid expansion experienced throughout the industry within the past several years has produced a severe shortage in personnel.

Prior to the commencement of the jet era, airline piloting jobs were fairly scarce. Applicants were required to show substantial experience in multi-engine equipment and flying hours accumulated. Most of the pilots flying for the airlines were of military origin.

But early in 1960 the industry noticed an alarming decline in pilot applications. The mandatory age sixty retirement rule, as contained in the FAR, erected barriers against extended utilization of crew members otherwise physically fit.

Most carriers found themselves facing a not too distant large-scale pilot replacement problem. In review of the overall problem, *Air Transport World* has completed an industry survey covering flight officer employment qualifications and opportunities.

Survey results, as reported by individual carriers, are shown on the following pages.

In contrast with earlier estimates as contained in various studies, including the FAA inquiry entitled. "Project Long Look" completed in 1964, industry requirements are exceeding all prior predictions.

The carriers reporting to *ATW* added 4258 new flight officers in 1966 and will be increasing pilot trainees by 3249 in 1967. These two years alone account for an increase of approximately 35 percent.

By 1970 pilot roles will show employment of 35,000 flight crew members or more.

Qualifications for employment have been reduced generally. Only a few carriers still require college backgrounds. In most instances a high school diploma is sufficient.

Most airlines require a commercial license plus an instrument rating. However, some of the major companies are now accepting trainees with only the commercial license. United Air Lines has an extensive program offering financial assistance and prospective employment to worthy applicants at the zero time level.

In the meantime, pilot training schools and company indoctrination programs are moving ahead with larger schedules and larger classes. Although physical requirements remain essentially consistent with the FAA first-class medical, a few carriers are accepting trainees with visual corrections.

Although starting salaries are modest at best, since World War II pilot salaries and fringe benefits have been improving regularly.

At present, according to the *ATW* survey, first year salaries for first officers range from $4800 to $5400.

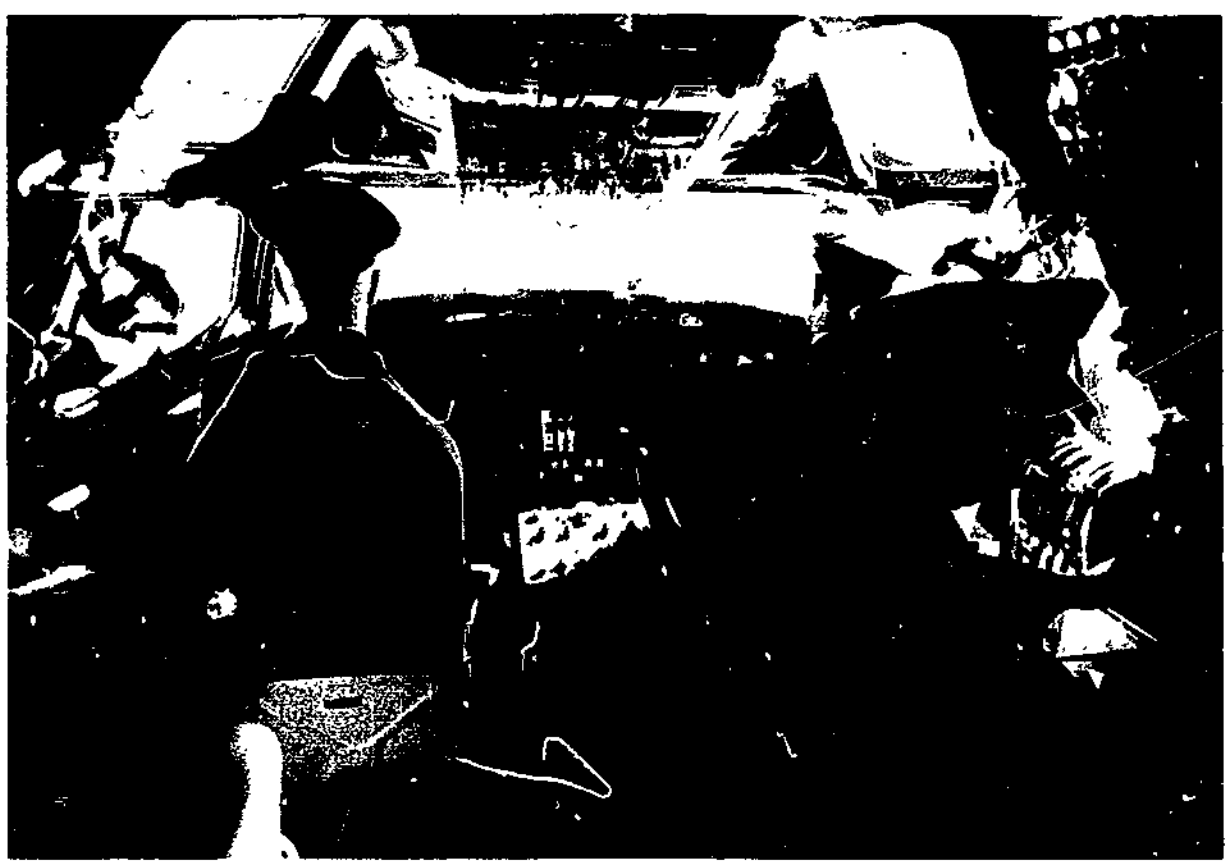
Commencing with the second year, they receive a regular base rate plus a percentage of the first pilot payscale. This usually starts at 42% advancing to about 55% at annual increments. Second year 1st officers average between $7300 and $10,000 depending on equipment flown and third year men on jets will earn up to $16,000.

First year salaries for second officers and flight engineers range between $5700 and $6000. The apparent discrepancy vis-a-vis first officers may be found in the types of carriers reporting in each category.

Because of smaller aircraft types in use, most local service airlines hire only pilot trainees whereas trunks start new men as engineers who upgrade in seniority separate from the pilot list.

The top employers among airlines during 1967, according to the survey, will be United (800), TWA (600), Eastern (500) and American (400).

The *Air Transport World* survey represents the experience of 44 airlines —30 U. S. carriers and 14 from outside the U. S.



The cockpit of a jet airliner is a busy place. The captain sits in the traditional left seat position, with his co-pilot, or first officer, at his right. The second officer, sometimes called the flight engineer, monitors the engine and aircraft systems at his station behind the co-pilot.

NAME, ADDRESS, CONTACT	AGE	HEIGHT	VISION	MED.-FAA CERTIFICATES	EDUCATION	FAA CERTIFICATES	EXAMS	HRS. FLYING EXPERIENCE	OTHER QUALIFICATIONS
Air Canada 1 Pl. Ville Maria, Montreal J. L. Rood	18-28	5'7" min.	20/20	Can. DOT & Co.	Univ. entr.	Comm.	Written Oral	S/E 200 Inst. 20	References
Air Congo Box 10.120 Leopoldville R. Watson	21-35	N/A	N/A	1st Class	College grad.	ATR License	Oral	S/E 1000	None
Alia Box 302, Amman, Jordan M. Tijani	20 min.	160 cms.	20/20	1st Class	HS	Comm. Instr.	Written Oral	S/E 200 Inst. 40	References Single Eng. spoken
Ansett-ANA Melbourne Airport Capt. C. R. Sealey	28 max.	N/A	As for license	As for license	Aust. lv. standard	Austr. Comm.	None	S/E 750	References PMG Third Cl.
Austrian Airlines Salesianerpasse 1, Vienna Capt. Alexander Raab	21-27	172 cms.	1st Class	1st Class	HS	Comm.	Written Oral	S/E 200 Inst. 50	References Draft complete Austrian citizen
Britannia Airways Luton Airport Capt. D. Davidson	18-35	N/A	20/20	C.M.B. Stds.	5 G.C.E. '0' 2 G.C.E. 'A'	N/A	Written Oral	None	Reference English citizen
BOAC London Airport Capt. F. W. Walton	18-26	N/A	ATPL	ATPL	5 G.C.E. '0' 2 G.C.E. 'A'	N/A	Company board	None	References Single English citizen
Ethiopian Airlines Box 1755, Addis Ababa Dir. of Flying	21 min.	5'5"	20/20	CAD Med.	HS	N/A	Oral	N/A	References Single Ethiopian citizen
Irish International Box 180, Dublin N. G. Weldon	17½-23½	N/A	20/20	Co. Stds.	Leaving Cert.	N/A	Written Oral	N/R	Irish citizen
Lloyd International Gatwick Airport, Surrey Capt. D. G. Blake	N/A	CPL	CPL	CPL Stds.	CPL Stds.	N/A	Written	S/E 200	References
Middle East Airlines Box 206, Beirut Airport Capt. G. McGilvray	18-30	166 cms.	ICAO 1 Cl.	DCA & ICAO	HS	N/A	Written Oral	S/E 150 M/E 50	References
Qantas Box 689, Sidney, Aust. T. R. Vasey	35 max.	5'5"-6'6"	20/20	ATR Std.	College grad.	ATR pref.	Written Oral	S/E 300 M/E 500 Inst. 50	References Draft complete British citizen
Quebecair Rimouski, Que. Bernard Sansoucy	30 max.	N/R	20/20	DOT A-1 DOT CL 1	College 2 years	Comm. Instr.	Oral	Total 1000	Night flying Inst. Cl. II
Trans Mediterranean Box 3018, Beirut	21 min.	N/A	20/20	Med. req.	College grad.	Comm. Instr.	Written Oral	M/E 300 hrs. Instr.	References
U.S. AIRLINES									
Alaska Coastal 2 Marine Way, Juneau Ray Renshaw	23-35	N/A	20/20	2nd Class	HS	Comm. Instr.	Oral	S/E 1000 M/E 1500 Instr.	References Draft complete C/P Experience
Allegheny Airlines Greater Pittsburgh Airport W. L. Wickman	23-30	N/A	20/20	1st Class	HS College pref.	Comm. Instr.	Written Oral	1000 total M/E 200	References Draft complete U.S. citizen
Aloha Airlines Honolulu Int'l Airport P. N. Economou	32 max.	N/A	1st Class	1st Class	HS	Comm. Instr.	Oral	S/E 500	References Draft complete U.S. citizen
American Airlines 633 Third Ave., New York P. V. Vygantas, W. W. Braznell	21-35	5'6"-6'4"	20/20	1st Class	College 2 years	Comm. Instr.	Written Oral	variable	References FCC permit
Bonanza Air Lines Sky Harbor Airport, Phoenix P. A. Beach	21-32	N/A	20/20 corr.	1st Class	HS	Comm. Instr.	None	S/E 500	References Draft complete U.S. citizen
Braniff International Exchange Park, Dallas M. G. Safrit	21-30	5'8" min.	20/20	1st Class	College 2 years	Comm. Instr.	Written	S/E, Inst.	References Draft complete U.S. citizen
Central Airlines Box 2554, Fort Worth E. Lingle	23-29	N/A	20/20 corr.	1st Class	College 2 years	Comm. Instr.	Written Oral	S/E 900	References FCC license
Delta Air Lines Atlanta, Georgia W. T. Beebe	21-31	5'8"-6'4"	N/A	1st Class	College pref.	Comm. Instr.	Written Oral	S/E 500	References Draft complete FCC license

POSITIONS AVAILABLE	S/O—F/E SALARY	F/O SALARY	SENIORITY LIST NO.	HIRING SCHEDULE	PRIVILEGES	BENEFITS
S/O, F/O	Yr. 1 $ 6600 Yr. 2 7200 Yr. 3 $ 9840	Yr. 1 $ 6600 Yr. 2 7200 9840	865	'66— 285 '68—140 '67— 150 '69—160 '70—110	Vacation: 3 wks. to 10 years., 4 wks. after Sick leave	Insurance Retirement program Uniform allowance
F/E, F/O	Yr. 1 $ 9600 Yr. 2 9840 Yr. 3 10200	Yr. 1 $ 9600 Yr. 2 10320 Yr. 3 10800	68 F/O 15 F/E	'66— 13 '67—not available	Vacation: after 10 mo., 50 days Sick leave	Insurance
S/E	Not available	Yr. 1 $ 8400 Yr. 2 9000 Yr. 3 9600		Not available	Vacation: 30 days per year Sick leave: 45 days full pay	Insurance
F/E, F/O	Not available	Yr. 1 A$ 4202 Yr. 2 4460 5145	600	'66— 10 '68— 30 '67— 30 '69— 30 '70— 30	Vacation: 5 wks. per year Sick leave: 2 wks. per year	Insurance Retirement program Travel privileges
F/O	Not available	Yr. 1 8000 Aus. Yr. 2 10000 Aus. Yr. 3 11000 Aus.	90	'66— 5 '68— 15 '67— 10 '69— 15 '70— 15	Vacation: 4 wks. min. Sick leave: 14 wks. max.	Insurance Retirement program
F/O	Not available	Yr. 1 £ 1500 Yr. 2 2400		'66— 3 '68— 3 '67— 3 '69— 6	Vacation: 28 days per year Sick leave: 6 weeks	Insurance Retirement program
None	Yr. 1 £ 1515 Yr. 2 1575 Yr. 3 1645	Yr. 1 £ 2828 Yr. 2 2876 Yr. 3 2924		Not available	Vacation: F/O—28 days per year Sick leave: 26 weeks after 3 yrs.	
F/O	Yr. 1 $ 3336 Yr. 2 3504	Flexible	65	'66— 65 '68 90 '67— 80 '69—100 '70—110	Vacation privileges Sick leave privileges	Insurance Retirement program Travel privileges
S/O	Yr. 1 £ 1662 Yr. 2 1701 Yr. 3 1740	Yr. 1 £ 2396 Yr. 2 2451 Yr. 3 2506	257	'66— 15 '67— 30	Vacation: 30 days per year Sick leave: 6 mo. full pay	Insurance Retirement program
F/O	Not available		45	'66— 0 '67— 10	Vacation: 28 days per year Sick leave: 6 mo.	Insurance Retirement program
F/E, F/O	Yr. 1 10800LL Yr. 2 12000LL Yr. 3 13200LL	Yr. 1 12000LL Yr. 2 12600LL Yr. 3 13200LL		Not available	Vacation: 30 days per year Sick leave: as to seniority	Insurance Retirement program Medical expense plan
S/E 80	Yr. 1 A$ 2954 Yr. 2 A$ 3469 Yr. 3 A$ 3724	Yr. 1 A$ 8377 Yr. 2 A$ 8506 Yr. 3 A$ 8635	450	'66— 80 '68— 60 '67— 80 '69— 40 '70— 40	Vacation: 4 wks. per year Sick leave: 3 wks. per year	Insurance Retirement program
F/E, F/O	Not available	Yr. 1 $ 535 Yr. 2 565 Yr. 3 615		'66— 12 '68— 15 '67— 15 '69— 20 '70— 20	Vacation: 2 wks, after 1 yr., 3 wks. after 10 yrs. ;Sick Leave: 9 days per yr., cumul. to 60 days.	Insurance
F/O, F/E	Yr. 1 $19800LL Yr. 2 $20400LL Yr. 3 $21000LL	Yr. 1 $17400LL Yr. 2 $17700LL Yr. 3 $18000LL		'66— 20 '68— 20 '67— 20 '69— 20 '70— 20	Vacation: 30 days per year Sick leave	Insurance Educational benefits
F/O	Not available	Not available	357	'67— 2	Vacation: 23 days per year	Insurance Retirement program Travel privileges
F/O	Not available on present equip.	Yr. 1 $ 5840 Yr. 2 8400 Yr. 3 9600	298	'66— 0 '68— 30 '67— 30 '69— 30 '70— 30	Vacation: to 6 yrs., 15 days Sick leave: accumulative to 90 days	Insurance Retirement program Travel privileges
F/O	Not available on present equip.	Yr. 1 $ 6600	62	'66— 0 '68— 10 '67— 10 '69— 10 '70— 10	Vacation: after 1 year, 2 wks. Sick leave: 5 hrs. per month	Insurance Retirement program
F/O, F/E	Yr. 1 $ 6600 Yr. 2 12024 Yr. 3 13776	Yr. 1 $ .... Yr. 2 12360 Yr. 3 13952	2700	'66—1070 '68—300 '67— 400 '69—300 '70—300	Vacation: to 6 yrs., 15 days Sick leave: 1 day per month	Insurance Retirement program Travel privileges
F/O	Not available on present equip.	Yr. 1 $ 5940 Yr. 2 6960 Yr. 3 9000	106	'66— 0 '68— 12 '67— 12	Vacation: 2 wks. per year Sick leave	Insurance Retirement program
F/E 283 F/O	Yr. 1 $ 5700 Yr. 2 6800 Yr. 3 open	Contract	765	'66— 230 '68— 50 '67— 283	Vacation: 1 1/6 days per month employed Sick leave: 3 hrs. per mo.	Insurance Retirement program
F/O	Not available on present equip.	Yr. 1 $ 5400 Yr. 2 6300 Yr. 3 open	145	Not available	Vacation: 1 day per month emoloyed to max. 21 days Sick leave: 3 hrs. per mo.	Insurance Retirement program Travel privileges
S/E 200	Yr. 1 $ 6000 Yr. 2 10000 Yr. 3 13000	Not available	1343	'66— 0 '68—150 '67— 150 '69—150 '70—150	Vacation: after 1 yr., 2 wks. Sick leave: 7 days per year	Insurance Retirement program Travel privileges

NAME, ADDRESS, CONTACT	AGE	HEIGHT	VISION	MED.-FAA CERTIFICATES	EDUCATION	FAA CERTIFICATES	EXAMS	HRS. FLYING EXPERIENCE	OTHER QUALIFICATIONS
Eastern Airlines 3600 N.W. 46 St., Miami R. H. Larsen	21 min.	5'6"- 6'4"	20/20 corr.	1st Class	College 2 years	Comm. Instr.	None	N/A	Draft complete U.S. citizen
Flying Tiger Line Los Angeles Int'l Airport	N/A	N/A	20/20	1st Class	College 2 years	Comm. Instr.	Written	S/E 200	U.S. citizen
Frontier Airlines 5900 E. 39 Ave., Denver C. G. Shaffer	30 max.	5'7"- 6'2"	20/20 corr.	1st or 2nd Cl.	HS College pref.	Comm. Instr.	Written	S/E 1000	U.S. citizen Draft complete
Hawaiian Airlines Box 9008, Honolulu C. "Ed" White	20-30	N/A	1st Class	1st Class	HS	Comm. Instr.	Written Oral	S/E, Inst.	References U.S. citizen
Lake Central Weir Cook Airport, Indianapolis R. D. Collins	21-30	N/A	Glasses permitted	1st Class	HS	Comm. Instr.	None	Ratings	U.S. citizen
Los Angeles Airways 5901 W. Imperial Highway R. G. Crawford	25-29	5'4"- 6'4"	Class 1	2nd Class	HS	Comm. Rotorcraft	Oral	S/E 1000	U.S. or Canadian References Draft complete
Mohawk Airlines Oneida Airport, Utica, N. Y. R. P. Day	20-35	5'7"- 6'4"	20/20 corr.	1st Class	HS	Comm. Instr. Radio	Written Oral	1000 Total M/E 300	References
New York Airways LaGuardia Airport J. B. Conley	21 min.	N/A	20/20	2nd Class	HS	Comm. Instr. Rotorcraft	None	1000 Total 200 rotor.	References
North Central 6201 34 Ave. S., Minneapolis A. W. Hinke	19-30	5'7" min.	20/20	1st Class	HS College pref.	Comm. Instr.	Written Oral	S/E 500	References
Northeast Boston, Mass. J. J. Kilkelly	21-32	5'7"- 6'2"	20/20	1st Class	College 2 years	Comm. Instr.	Written	S/E 1000	References U.S. citizen
No. Consolidated Box 6247, Intl. Airport Anchorage—W. R. Rice	open	open	20/20	1st Class	HS	Comm. Instr.	Oral	S/E 1000 M/E 2000 Instr.	References Draft complete U.S. citizen
Northwest Airlines Minneapolis Intl. Airport V. J. Fenol	21-32	5'10"- 6'4"	20/20	1st Class	College 2 years	Comm. Instr.	Written Oral	No. min.	References
Ozark Airlines Lambert Field, St. Louis C. C. Mount	20-30	5'7"- 6'2"	20/20	1st Class	HS	Comm. Instr. Radio	Written	S/E 500- 1000 hrs., Instr.	References U.S. citizen
Piedmont Airlines Smith Reynolds Airport Winston-Salem, N.C.—J. Bradley	31 max.	5' min.	20/50	1st Class	College pref.	Comm. Instr.	Written Oral	S/E 1000 Instr.	References Draft complete U.S. citizen
Seaboard World Kennedy Int'l Airport, N. Y. C. H. Horenburger	21-35	N/A	20/20 corr.	1st Class	College pref.	Comm. Instr.	Written Oral	S/E 800 M/E 500	References Draft complete U.S. citizen
Southern Airways Atlanta Airport E. S. Heyward, Jr.	20-35	5'8"- 6'2"	20/20	1st Class	College 2 years	Comm. Instr.	Written Oral	S/E 500	References Instr. test
Trans Caribbean Hangar 1, Kennedy Int'l. Wm. Moree	N/A	5'2" min.	20/20	1st Class	HS	Comm. Instr.	None	S/E 250 M/E 250 Instr. 100	References U.S. citizen
Trans-Texas Airways Int'l. Airport, Houston R. S. Reid	21-30	5'8"- 6'3"	20/20	1st Class	HS	Comm. Instr.	None	S/E 1000 M/E 100	References Draft complete U.S. citizen
Trans World Airlines 605 Third Ave., New York R. B. Mueller	20-32	5'7"- 6'4"	20/20 corr.	1st Class	College 2 years	Comm. Instr.	Written Oral	as for ratings	References
West Coast Airlines Boeing Field, Seattle S. Tuttle, D. Gooding	21 min.	N/A	N/A	1st Class	College 2 years	Comm. Instr. Radio	Written	S/E, M/E, Instr.	References U.S. citizen
Western Airlines 6060 Avion Dr., Los Angeles D. C. Severson	21-32	5'6"- 6'4"	20/20 corr.	None	HS	Comm. Instr.	Written Oral	1000 min.	References
United Air Lines Box 8800, O'Hare Intl. C. P. Hutchens	20-29	5'6"- 6'4"	20/20 corr.	1st or 2nd Cl.	HS College pref.	Comm.	Written Oral	as for ratings	References, application will be verified

N/A Not applicable N/R Not required F/O First Officer F/E Flight Engineer S/O Second Officer

POSITIONS AVAILABLE	S/O—F/E SALARY	F/O SALARY	SENIORITY LIST NO.	HIRING SCHEDULE	PRIVILEGES	BENEFITS
S/O, F/O	Yr. 1 $ 6300 Yr. 2 7800 Yr. 3 12000	Not available	2677	'66— 445 '68—500 '67— 500 '69—500 '70—500	Vacation: 15 to 30 days Sick leave: max. 130	Retirement program Medical plan
S/O	Yr. 1 $ 6300	Capt. $29200	129	'67— 290	Not reported	Not reported
F/O	Yr. 1 $ 6000 Yr. 2 10000 Yr. 3 10800	Yr. 1 $ 6000 Yr. 2 10000 Yr. 3 10800	236	Not available	Vacation: accumulative with employment Sick leave: 480 hrs. max.	Insurance Retirement program
F/O	Not available on present equip.	Yr. 1 to $11100 Yr. 2 to 11300 Yr. 3 to 12300	112	'66— 0 '68— 14 '67— 4 '69— 24 '70— 35	Vacation: after 1 yr., 2 wks. Sick leave: after 6 mo., 24 hrs.	Insurance Retirement program Travel privileges
F/O	No F/E on present equip.	Yr. 1 $ 6000 Yr. 2 6720 Yr. 3 7354	185	'66— 0 '68— 15 '67— 15 '69— 15 '70— 15	Vacation: after 1 year, 2 wks. Sick leave: max. 400 hrs.	Insurance Retirement program Medical plan
F/O 10	No F/E on present equip.	Yr. 1 $ 6700 Yr. 2 7400 Yr. 3 8100	34	'66— 4 '68— 15 '67— 10 '69— 20 '70— 30	Vacation: 2 wks. first 5 years Sick leave: max. 300 hrs.	Insurance Retirement program Travel privileges
F/O	No F/E on present equip.	Yr. 1 $ 6000	311	'66— 0 '68— 50 '67— 35 '69— 50 '70— 60	Vacation: after 1 year, 2 wks.	Insurance Retirement program Travel privileges
F/O	No F/E on present equip.	Yr. 1 $ 6900 Yr. 2 7800 Yr. 3 8500	62	No projections available	Vacation: after 1 year, to 12 days Sick leave: 5 hrs. per month	Insurance Retirement program Travel privileges
F/O	No F/E on present equip.	Yr. 1 $ 5580 Yr. 2 6600 Yr. 3 8400	340	'66— 0 '68— 20 '67— 20 '69— 20 '70— 20	Vacation: to 8 yrs., 15 days Sick leave: max. 500 hrs.	Insurance Retirement program Travel privileges
F/E, F/O	Yr. 1 $ 5800 Yr. 2 8400 Yr. 3 open	Yr. 1 $ 5800 Yr. 2 8400 Yr. 3 open	384	'67— 120	Vacation: 2 wks. per year 3 wks. after 10 years Sick leave: max. 250 hrs.	Insurance Retirement program
F/O	No F/E on present equip.	Yr. 1 $ 4800 Yr. 2 9983 Yr. 3 11316	23	'67— 2	Vacation: after 1 year, 2 wks. Sick leave: 5 hrs. per month	Insurance Retirement program
F/E	Yr. 1 $ 6800 Yr. 2 10680 Yr. 3 12000	Yr. 2 $14280 Yr. 3 16080	1012	'66— 310 '68—150 '67— 225 '69—150 '70—150	Vacation: 14 to 30 days Sick leave: 10 days per year	Insurance Retirement program Travel privileges
F/O	No F/E on present equip.	Yr. 1 $ 5640 Yr. 2 6600 Yr. 3 8400	287	'66— 5 '68— 10 '67— 10 '69— 10 '70— 10	Vacation: 14 to 23 days Sick leave: given as pay	Insurance Retirement program Travel privileges
F/E, F/O	No F/E on present equip.	Yr. 1 $ 5400 Yr. 2 8400 Yr. 3 9600	272	'66— 40 '68— 40 '67— 40 '69— 40 '70— 40	Vacation: to 23 days Sick leave: to 40 days	Insurance Retirement program
F/O	Yr. 1 $ 7800 Yr. 2 10200 Yr. 3 13280	Yr. 1 $ 6240 Yr. 2 to 11380 Yr. 3 to 12800	129	'66— 8 '68— 40 '67— 40 '69— 40 '70— 40	Vacation: 14 to 21 days Sick leave: per contract	Insurance Retirement program Travel privileges
F/O	No F/E on present equip.	Yr. 1 $ 6000 Yr. 2 6600 Yr. 3 open	208	'66— 30 '68— 20 '67— 30 '69— 20 '70— 20	Vacation: after 1 year, 15 days Sick leave: 3 hrs. per month	Insurance Retirement program
F/E 33 F/O 9	Yr. 1 $ 6900 Yr. 2 10244 Yr. 3 12500	Yr. 1 $ 6900 Yr. 2 12600 Yr. 3 13800	67	'66— 0 '68— 5 '67— 42 '69— 5 '70— 5	Vacation: 15 days first 5 years Sick leave 2.8 hrs. per month	Insurance Retirement program
F/O	No F/E	Yr. 1 $ 5400 Yr. 2 6300 Yr. 3 9600	291	'66— 20 '68— 45 '67— 60 '69— 20 '70— 20	Vacation: 15 days first 10 years Sick leave: 3 hrs. per month	Insurance Retirement program Travel privileges
F/E	Yr. 1 $ 7200 Yr. 2 15780 Yr. 3 16080	Not available	3381	'66— 325 '68—500 '67— 600 '69—500 '70—325	Vacation: after 1 year, 2 wks. Sick leave: per contract	Insurance Retirement program Contract benefits
F/O	No F/E	Yr. 1 $ 5400 Yr. 2 6900 Yr. 3 open	135	No projections available	Vacation: 15 days first 7 years Sick leave: 5½ hrs. per month	Insurance Retirement program
F/E	Yr. 1 $ 6000 Yr. 2 7800 Yr. 3 open	Not available	554	'66— 158 '68—100 '67— 100	Vacation: 15 days first 10 years Sick leave: max. 255 flight hrs.	Insurance Retirement program Travel privileges
S/O	2nd officers only hired	Yr. 1 $ 6600 Yr. 2 10200 Yr. 3 14400	4000	'66— 823 '68—800 '67— 800	Vacation Sick leave	Insurance Retirement program Travel privileges

More Results On ATW Pilot Survey

Reprinted from AIR TRANSPORT WORLD, February 1967

In its January issue, pages 27-31, Air Transport World reported the results filed by 44 airlines to a survey of pilot needs and qualifications. Three more airlines have since reported and their results are tabulated here.

Name	Pacific Air Lines	Pan American World Airways	Philippine Air Lines
Address	San Francisco Int'l Airport	Hangar 14, JFK Airport, N. Y.	Box 954, Manila, Philippines
Contact	Wm. E. Company	Mgr. Employment	Capt. P. V. Dangoy
Age	21-35	20-30	18-30
Height	5'6"-6'3"	5'6"-6'4"	5'4" min.
Vision	20/20	20/20	20/20
Medical Certificates	First Class	Company Physical	Company Physical
Education	High School	College—2 years	College—2 years
FAA Cert. & Experience	Commercial Instrument M/E rating	Commercial Instrument S/E 500 Hrs.	Commercial 200 hrs. min.
Examinations	Written—Oral	Written—Oral	Written—Oral
Other Qualifications	References Draft cplt. U.S. citizen	References Draft cplt. U.S. citizen	References Filipino Single pref.
Positions Available	F/O	S/O, F/E	F/E, F/O
Salary—F/E, S/O	Not Available	Yr. 1 $ 14,376 Yr. 2 15,060	Yr. 1 $ 13,200
Salary—F/O	Yr. 1 $ 6,3000 Yr. 2 open	Yr. 2 $ 9,984 Yr. 3 13,464	Yr. 1 to $ 9,720 Yr. 2 to 15,600
Seniority List No.	131	3015	220
To Be Hired	'67—20 '69—30 '68—25 '70—30	Not available	75-100 per year
Privileges	Vacation: 2 wks. plus Sick leave	Vacation: 2 wks. after 1 yr. Sick leave: 300 hrs. max	Vacation: 21 days per year Sick leave: 14 days per year
Benefits	Insurance Retirement program Travel privileges	Insurance Retirement program Choice of domicile	Insurance Travel privileges

AIRLINES FLIGHT OFFICER PERSONNEL

(Based on ATW Pilot Survey)

	Total Airlines Reporting	Seniority List Total	Total Hiring Schedule				
			1966	1967	1968	1969	1970
U. S. AIRLINES	32	23,751	3,468	3,850	2,901	1,934	1,790
No. Airlines Reporting*		32	13	27	23	19	19
AIRLINES OUTSIDE U. S.	15	2,660	595	515	460	478	432
No. Airlines Reporting*		9	11	11	9	9	8

*Data not available from every airline for each year.

NATIONAL AEROSPACE EDUCATION COUNCIL

Room 616 ■ 806 15th St. N.W.
Washington, D. C. 20005

VT 008 564
The Human Resource Development Concept.

Manpower Administration (DOL), Washington, D.C.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 67 61p.

*DISADVANTAGED GROUPS; *UNEMPLOYED; REHABILITATION; MANPOWER DEVELOPMENT; HUMAN RESOURCES; COMMUNITY SERVICE PROGRAMS; FEDERAL PROGRAMS; *PROGRAM GUIDES; PROGRAM ADMINISTRATION; *HUMAN SERVICES; *EMPLOYMENT SERVICES; FEDERAL STATE RELATIONSHIP; JOB DEVELOPMENT; COMMUNITY ACTION; JOB PLACEMENT
*HUMAN RESOURCES DEVELOPMENT CONCEPT; HRD CONCEPT

The Human Resources Development redirects available resources to solving the problem of the hard-core unemployed. The concept has been applied in 140 metropolitan areas and in selective rural areas, including Appalachia, and areas with a heavy concentration of Spanish speaking people. Human Resources Development Services will be performed by personnel who are specially trained and assigned within the Federal State Employment Service system. Those served will include poor Negroes, Indians, Puerto Ricans, Mexican-Americans, whites, physically and mentally handicapped civilians and disabled veterans, the aged, and youth who are rehabilitated law offenders or high school graduates and drop-outs but who lack work experience or educational achievement. Target areas have been selected in 19 major cities and two rural areas. A total of $105 million in combined funds have been made available to develop intensive employment, training, and work training programs for the hard-core unemployed and underemployed living in these areas. The document contains information about administration and organization, human resources development services, and community organization and public relations. (FP)

VT 008 564

ED039370

HRD the human resources development concept

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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VT 008 564

This handbook was prepared under the personal supervision of Mr. Charles E. Odell, Director, United States Employment Service.

Material for its contents has been contributed from many sources within the Bureau of Employment Security and from State employment security agencies.

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THE HUMAN RESOURCES DEVELOPMENT CONCEPT

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THE HUMAN RESOURCES DEVELOPMENT CONCEPT

I. INTRODUCTION

The Human Resources Development (HRD) concept marks an important step in the Federal-State Employment Service's determination to redefine its mission and to respond vigorously and effectively to the changing manpower needs of our society. It is addressed to the challenge of the times, and it anticipates the future in distinguishing, formally and purposefully, between an active and a passive manpower policy.

The HRD concept signifies emphasis on an active policy which begins by recognizing that every American has a right to the opportunity to work and to earn a decent wage if he or she is willing and able to do so. But, more: It denies the limitations of a passive policy which screens into the world of work only the currently "qualified" and abandons the rest of the potential work force to an existence of enforced idleness, dependency, and bitterness.

The Federal-State Employment Service's HRD concept is predicated on the certainty that the service can perform an <u>active and useful</u> role for the unemployed and underemployed <u>and</u> employers alike. It means reaching out to all who are willing to work, regardless of age, sex, race, color, creed, national origin, experience, educational level, or physical capacity, to help them find a meaningful and productive place in the American economy. In working toward this end, the American economy is strengthened.

The HRD concept is further based on urgency. <u>Now</u> is the time to provide jobs and training opportunities for those traditionally "screened out." Today there are growing manpower demands, not only for skilled workers, but, in many areas, for semiskilled, unskilled, and service workers. Those who are committed to a growing and healthy economy today are not concerned primarily with land, capital, or technology, but with

the critical lack of "qualified" manpower. This manpower shortage, exemplified in many local State employment offices by a flood of unfilled job openings, can be remedied only through a strenuous effort to recruit and improve the employability of the unemployed and underemployed.

For these reasons the HRD concept has been developed to enable the public Employment Service to fulfill its social and economic responsibility to all those who want to work, regardless of employment barriers, and to meet the manpower needs of our economy. Only by redirecting its efforts along these lines can the public employment service become the operational arm of the Nation's active manpower policy -- the Comprehensive Manpower Center contemplated by the Secretary of Labor's Employment Service Task Force.

A. A person-to-person approach. Under the HRD concept, the person-to-person approach is used to reach, communicate with, and assist those who need employment assistance the most -- the hard-core unemployed or underemployed. This person-to-person approach aims at helping each individual reached who needs help to develop a realistic plan of action to improve his employability and obtain a self-sustaining job.

B. A step-by-step approach. Step by step, the HRD approach involves:

1. Individualized contact, beginning with intensive outreach and the outstationing of employment service personnel in the neighborhoods and agencies where the hard-core unemployed are located.

2. Development within the local Employment Service of a comprehensive employability service for adults paralleling the service developed for youth in the Youth Opportunity Centers.

3. Job development and placement in meaningful jobs, providing at least the beginning steps up the ladder to economic self-sufficiency.

4. Provision of job market information to all concerned persons in the community, including employers, community leaders, employment service staff, and the hard-core unemployed.

C. Intensive outreach. The Youth Opportunity Center (YOC) experiences, as well as the HRD experimental and demonstration projects conducted in Chicago, Houston, St. Louis, Los Angeles, and Rochester, N.Y., showed that new techniques must be used if outreach is to be effective among the hard-core unemployed. The outstationing of professional personnel, even in the poverty areas, is not enough. It is personal contact, primarily through the use of trained indigenous workers in the homes, hangouts, and streets of the poverty areas, that provides the initial components to build the bridge between the ES and the long-term unemployed.

D. Comprehensive employability service for adults. The key to this employability service is the development of a comprehensive plan of service for each person, including a plan of training and related supportive services and job development and placement, which accepts the jobseeker where he is and helps move him through the needed program of services as quickly as possible into a job. In the experimental HRD efforts in five cities, one out of two of those reached in the neighborhoods needed one or more kinds of basic health and welfare services before, or in conjunction with, referral to training or a job.

In line with training plans, there is need for coupling and joint funding of educational and training efforts so that the individual, after receiving literacy training or basic education, is not left hanging at the end of that experience. Instead, the

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individual should move into prevocational or skill training and from there into a job. Whenever practical, these educational and skill training services should be built into the job situation itself as supportive services provided as part of on-the-job training (OJT) and leading as quickly as possible into a genuine career possibility in the private or public sector.

E. Job development and placement for HRD. The job developer faces the challenge of creating job opportunities for significant numbers of the hard-core unemployed who are qualified for immediate referral, as well as for those who have gone through the HRD employability and training processes.

To accomplish this, the HRD job development effort must go far beyond the traditional concept of offering employers the benefit of our assessment that those being referred are necessarily the best qualified persons available for a specific job opening. There is a necessity for asking the employer to cooperate in offering jobs and training opportunities to those persons who have the potential but whom, traditionally, he may have rejected. This requires the building of training and supervisory systems into the job situation to ensure that persons hired on this basis do not simply get caught in the revolving door of the company employment office.

One key to securing employer cooperation lies in much deeper employment service involvement in community affairs than is the existing pattern. To assure success, the active assistance of key elements in the employer and labor community must be enlisted. The socio-economic message of making productive citizens can be conveyed best by employers to employers, by trade union leaders to their members, and by community development organizations to their constituencies.

Therefore, efforts must be made to enlist active community leadership. This may be accomplished by persuading an existing organization to accept this responsibility -- by stimulating formation of a representative committee or by supporting the efforts of appropriate community agencies with the involvement of management and labor leadership through their boards of directors.

F. Job market information. Information about local job market trends, job openings, job-related supportive services, and training opportunities is essential to the success of the HRD effort. However, all too often, job market information does not reach the hard-core unemployed because of the manner of presentation and the media used. Frequently, the "good news" that there are jobs and training opportunities simply does not penetrate the neighborhoods. When it does, as demonstrated in recent experiences, there is a positive and sometimes overwhelming response. Therefore, there is real need for job market information, appropriately expressed and distributed by suitable media, which will actually reach and be understood by the hard-core unemployed and underemployed.

All the communication media, including the press, radio, television, and even more important, word-of-mouth communication through neighborhood churches, community centers, and other gathering places of the hard-core unemployed must be systematically used in this effort to reach them with specific news about work and training opportunities in the competitive job market.

In the JOBS NOW program, recruitment was difficult at first among the gang leaders and followers who were the primary target population. Based on their past experience, these leaders were skeptical and suspicious of JOBS NOW. Today it is an accepted program because the word has come back by word-of-mouth and

example that something positive and constructive is really happening -- and happen-fast -- to those who sign up. This is one situation where the communications gap has been closed in a hurry by a program which has a high return in terms of results that can be reported back to the neighborhood.

G. Conclusion. Working with each individual is time-consuming and costly. The return on such an investment, however, should be measured in terms of making a substantial contribution toward eliminating poverty, remaking urban life, overcoming discrimination in employment, and supporting a higher and more satisfying standard of individual fulfillment.

The alternative to redirecting available resources toward solving the problems of the hard-core unemployed -- increased crime, welfare payments, and so forth -- is far more costly than the HRD effort. To close our eyes to the hardships of the long-term unemployed or severely underemployed, to sentence them to an existence where idleness, frustration, and despair fester in an atmosphere of degrading hopelessness is to invite the explosive condemnation of the ghetto, the further waste of urban and rural human resources. It means the denial of the basic concept, at home and abroad, of America as a land of opportunity for all its citizens.

II. GUIDELINE QUESTIONS ABOUT HRD

The following questions concerning the HRD concept have been asked so often that a brief discussion of each is offered for guidance.

A. Human Resources Development - What is it? Under HRD a substantial share of the total staff and program of the Federal-State Employment Service is directed to the job and training needs of the hard-core unemployed and underemployed. HRD involves outreach into the urban slums and rural pockets of poverty to locate those

needing employability services, such as employment counseling, training, job development, and placement, and demands a creative use of the widening range of opportunities in training and work-training programs available under the Manpower Development and Training Act and the Economic Opportunity Act.

B. Where is the HRD concept applied? It is being initially applied in the 140 metropolitan areas in which Youth Opportunity Centers are now located as well as in selected rural areas, including Appalachia, the Mississippi Delta, Indian reservations, and agricultural areas in which there are heavy concentrations of Spanish-speaking people.

C. Who provides HRD services? HRD services will be performed primarily by personnel specially trained and assigned within the Federal-State employment service system. In addition, the full cooperation of other community agencies is being tied into the total effort. Assistance will be provided by OEO-CAP neighborhood center personnel, such as neighborhood workers, volunteers from religious, civic, and civil rights organizations, and the professional staffs of local public and voluntary health, education, and welfare organizations which offer needed supportive services. The agencies and personnel represented in the Cooperative Area Manpower Planning System (CAMPS) will be linked into this operation to broaden HRD interagency resources. Employers and labor organizations are also being asked to support the program by opening up job and training opportunities to the hard-core unemployed and underemployed.

D. What will be the relationship of HRD to Community Action Agencies? To ensure effective local CAA involvement in HRD planning, the HRD area plan (which should be a part of the plan of service) must include signed evidence that the executive director of the local CAA, or his designated representative, has reviewed the plan.

If there are fundamental differences between local CAA's and local ES managers concerning the area Plan of Action that cannot be resolved locally, the problems should be referred to the State ES, the regional BES, and the OEO regional office for resolution and, if necessary, to the BES and OEO national offices.

When ES personnel are outstationed in CAA neighborhood centers, regardless of who is paying for their services, they will report to the local CAA neighborhood center director or his designee for the specific purposes of hours of work and day-to-day assignments for the provision of employability services in accordance with an agreed upon outreach and intake schedule. Such ES personnel will report to the area or local ES manager or ES-HRD supervisor for purposes of qualitative and quantitative control of their activities. Such personnel will remain subject to and perform their work in accordance with the overall policies of the State agency and the personnel rules applicable to all ES employees in the State established by the State Merit System and by the State agency.

E. Whom does HRD reach and serve? The hard-core unemployed and underemployed, which include several million people who are living in poverty primarily because they lack the necessary education, skills, and employment qualifications traditionally required by employers. They include poor Negroes, Indians, Puerto Ricans, Mexican-Americans, and whites. They include some people who speak only Spanish and others with other language difficulties. They include physically and mentally handicapped civilians and disabled veterans. Among them are men and women aged 45 and over who are barred from employment because of age, youth who are high school graduates and dropouts but who lack work experience or educational achievement sufficient to compete in today's job market, and rehabilitated law offenders. And among these poor are many people with combinations of these roadblocks to employability.

F. What is the timetable for HRD? HRD has been operative for several years in behalf of unemployed and underemployed youth served by YOC's. The adult phase of the program was funded as of January 31, 1967, and State employment agencies then began recruiting and training new staff to bring HRD services to adults.

G. What is the relationship of HRD to the Concentrated Employment Program? Because of the limited appropriations available to fund the adult work-training program titles of the Economic Opportunity Act -- the so-called New Careers and Special Impact Programs -- it has been necessary to concentrate most of the funds appropriated under these titles in a limited number of target areas. Therefore, target areas have been selected in 19 major cities and 2 rural areas, and a total of about $105,000,000 in combined MDTA and Economic Opportunity Act funds have been made available to develop intensive employment, training, and work-training programs for the hard-core unemployed and underemployed living in these areas. The CEP program will be further extended primarily to communities covered by the Model Cities Program under the Department of Housing and Urban Development (HUD). The Employment Service HRD concept, augmented by CEP funds, and in close cooperation with local CAA's, will affect the organization and staffing of manpower services essential to the outreach, employability, and job development phases of the Concentrated Employment Program in these cities.

The Employment Service staff, working closely with an overall community steering committee, is responsible for developing and carrying out a JOBS NOW type of program designed to obtain commitments from employers to hire significant numbers of hard-core unemployed and underemployed people who will be screened into the jobs by means of a 2-week preemployment training and orientation program. Efforts will be made in each of the 19 cities, working through local CAA's and other

organizations, to develop a special impact program to find employment for a minimum of 2500 slum residents, whose work-training will be funded under programs such as the Neighborhood Youth Corps, On-the-Job Training, Nelson-Scheuer, MDTA, and JOBS NOW. The Nelson-Scheuer program, in particular, offers new opportunities for work-training for adults in public service employment which are designed to lead, as quickly as possible, to career-type jobs in the employing agencies. In some of the cities, it is contemplated that Scheuer funds will be used to employ and train Employment Service aides who will become career employees at the end of the work-training period.

H. Will HRD affect special rural area problems? The HRD concept includes outreach into rural areas and recognizes that special techniques are required. The approach should be the same as that now provided by the Smaller Communities Program, using the mobile team concept. Augmented staff members involved in (1) the Smaller Communities Program mobile team operations, (2) MDTA selection and referral in smaller communities, (3) farm placement activities, (4) special Indian programs, and (5) special mobility programs provide the initial personnel for rural HRD activities.

I. At what point in the HRD process may an applicant be referred to employment? Any individual who is reached and provided HRD services will be referred to employment at any point in the process where he is regarded as ready for employment in line with his training and abilities. The primary objective in the Human Resources Development concept is the bringing of increasing numbers of underemployed and unemployed disadvantaged persons into the competitive economy. This process is illustrated in the accompanying flow chart.

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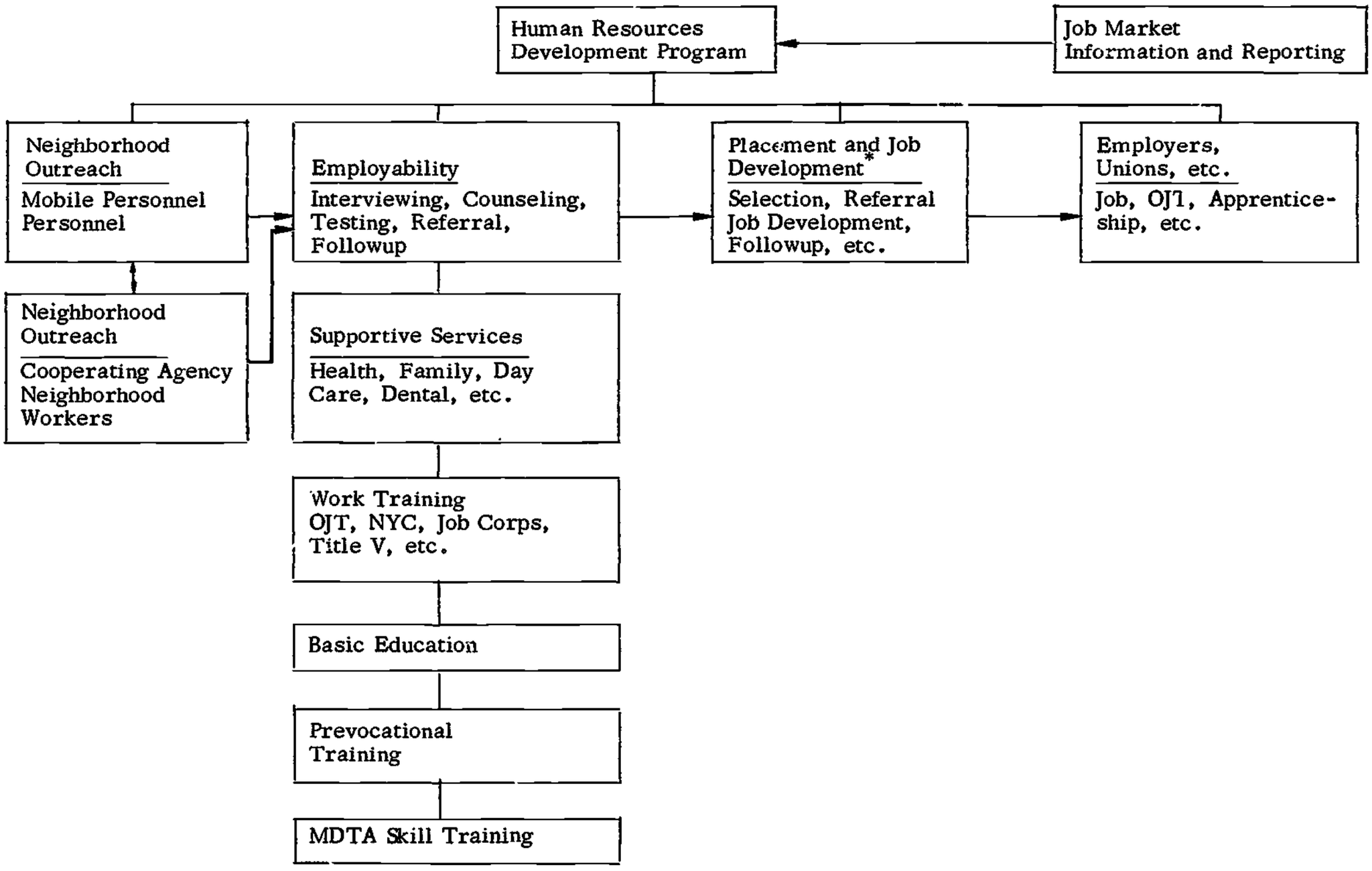
FUNCTIONAL FLOW OF WORK AND RELATIONSHIPS IN A HUMAN RESOURCES DEVELOPMENT PROGRAM FOR THE DISADVANTAGED



*Placement and job development may be delegated but overall responsibility remains centralized in regular employment security offices.

NOTE: Any individual who is reached and served in this program may be referred to employment at any point in the process where he is regarded as ready fo employment in line with his training and abilities.

III. ADMINISTRATION AND ORGANIZATION

A. Relationship between the YOC's and the HRD concept. The development of the HRD concept in no way indicates de-emphasis of the YOC program or of services to youth. On the contrary, the HRD concept provides for the types of services pioneered by YOC's to be available to all individuals who have need for such individualized assistance. YOC's will continue to offer services to youth and will be a significant part of the total HRD concept. It is anticipated that the staff of the YOC's will be the backbone of the HRD effort.

It is particularly important that the Employment Service take advantage of the experience gained in the YOC program relating to outreach and community organization. By using this experience as a frame work, more creative and innovative programs can be developed at the local level.

B. Location. To the maximum degree possible, this concept will be carried out through existing local employment service offices, including use of space in Youth Opportunity Centers, rather than by creating new, permanent facilities in new locations. For example, the outreach effort should make use of the facilities and services of on-going organizations. Employability services may well also be housed in these facilities by outstationing of interviewers and counselors, or arrangements can be made for referral and, if necessary, transporting of those reached to regular ES facilities. If other appropriate physical facilities are not available, temporary quarters such as store fronts or mobile units should be considered, particularly for conducting outreach services.

Whenever YOC space is used in the Human Resources Development effort, the YOC should remain clearly identifiable, and youth should be referred for service to

the YOC part of the facility. When, because of space limitations in the YOC, separate facilities and services are established for adults in the local office or in other space, the entire operation should be under a single manager responsible for the Human Resources Development concept in the area.

C. Identification. Signs designating HRD services may be developed according to the needs of the State. It is recommended, however, that signs and labels be uniform throughout any State agency. The facility housing HRD services may be labeled ES Opportunity Center, Manpower Center, Human Resources Development Center, or any other appropriate title.

Signs designating YOC's should remain, but if the local HRD services for adults are located in the same office, then the overall designation decided upon for the HRD service should be displayed. The YOC sign will then identify the youth services facility and a similar sign will identify the facility serving adults.

D. Staff. Each State Employment Service will review current staff utilization and will reassign staff and redirect and restructure the organization to provide the maximum services to accomplish the objectives of the HRD concept. Supplementary positions have been provided which will be used to strengthen the services of employability improvement, job development, referral to training or jobs, and job market information.

E. Staff Training. Present plans for the implementation of the HRD concept throughout the Employment Service require special training for all personnel. The training objectives are to present the concept of HRD and to improve communication between employment service staff and persons who are suffering because of inability to make a satisfactory entry into, or adjustment to, the world of work. The areas

to be covered to accomplish the training objectives are: attitudinal training, exposure to ghetto environments, communication training, sociological and psychological aspects of poverty, and an overview of new programs of the Employment Service and of other agencies.

F. Supervision.

1. The State agency employment service director should designate one overall ES supervisor at the first level of operations who will direct and coordinate the activities of the local area or community employment service facilities in implementing the HRD concept. This will insure that all ES units at the local level are performing the functions of outreach, employability improvement, referral to training and jobs, job development and placement, and dissemination of job market information on a regular basis and in an appropriate manner. In addition, a local supervisor can further assure that proper supervisory and informational systems are established and that local industrial-occupational offices are performing and delegating, as required, placement and job development activities.

2. State and local supervisors should maintain continuity between employment service operations, directed in the past primarily to meeting employer needs, and HRD activities which are directed to the needs of jobseekers. If the HRD concept is to succeed in enhancing the view and use of the public Employment Service by employers, workers, and the community at large, employment service supervisors and staff members will need to recognize its potentiality for serving both employers and workers. HRD emphasizes an active manpower policy which helps the employer to accommodate the jobseeker as well as to meet his manpower requirements.

G. Reporting. Reporting instructions have been issued to each State agency to provide for the collection of data pertinent to ES operations under the HRD concept.

IV. HRD SERVICES

The following services are components of the HRD effort: (a) outreach; (b) employability improvement; (c) job development and placement; and (d) job market information.

A. Outreach Services. The HRD concept calls for an intensive person-to-person approach to the problems of the hard-core unemployed and underemployed. The first step in this individualized approach is unified and comprehensive outreach.

The need for such outreach is crucial. The hard-core unemployed, especially in urban slums, have little faith in private and public agencies, including the Employment Service. Meaningful job opportunity has been denied them, often resulting in a belief that it is futile for them to strive to improve their situation. Often they feel isolated and alienated from the main community.

The purpose of outreach is to break through these feelings of isolation and abandonment and to demonstrate to the hard-core unemployed that the community is interested and prepared to assist them in finding meaningful employment. The accomplishment of such a breakthrough presents a tremendous challenge to the Employment Service and calls for a reassessment of traditional outreach techniques and for imaginative new techniques.

1. Identifying the population. Before the outreach effort is launched, the target population must be identified. This identification includes a description of the numbers, composition, characteristics, and location of the hard-core unemployed and underemployed in the community. These data can be drawn from:

a. An analysis of ES active and inactive files to reveal geographic areas or neighborhood concentrations of persons in need of HRD services. This analysis is not suggested so that a massive call-in campaign by mail may result,

but to provide an added source of information as to where the HRD applicants may be found and reached by personal contact;

b. existing statistical studies and information compiled by any recognized organization, such as the local CAP, public and private health, welfare, and education agencies, Urban League, and other social, civic, and service organizations. In this preliminary stage, positive advice on the method of outreach should be solicited from organizations in contact with individuals with employability problems who know how to reach and motivate them.

2. Reaching the hard-core unemployed and underemployed. HRD experimental and demonstration projects conducted in five major cities show that new techniques must be used if outreach is to be effective among the hard-core unemployed. The use of publicity or the outstationing of personnel on the fringe of poverty areas is not sufficient to do the job. To reach the hard-core unemployed and stimulate their interest in the services of the HRD concept, our experimental programs found that it was effective to divide the poverty area into tracts and to canvass each tract on a block-by-block, case-by-case basis. This type of outreach was not mere doorbell ringing; it required personal contact in the homes, bars, pool halls, alleys, and on the street corners. As an example of the results this type of outreach can produce, in one HRD project, out of the first 1600 reached on a neighborhood basis by the ES more than 200 found jobs on their own within the first 3 months. Followup with these individuals indicated that many found jobs after being given new hope by the fact that someone cared enough to contact them and bring the message that there were jobs and training opportunities available to them.

3. Trained neighborhood workers. Perhaps the most effective way to conduct intensive outreach is through trained indigenous neighborhood workers who have firsthand everyday experience in the poverty area and are easily accepted when they canvass the neighborhood. Whenever possible, the Employment Service should tie in with the outreach activity of local Community Action Agencies and other organizations which have neighborhood workers on their staff. Such arrangements will work best when there is a formal understanding and procedure worked out between the local ES office and the CAA. Similar arrangements should also be developed with other public and voluntary organizations, including civil rights and religious leadership groups in the target areas.

Linkage with ongoing community outreach efforts is desirable in the interests of a strong, unified outreach program, but the Employment Service is charged with the responsibility of evaluating the outreach effort in terms of its effectiveness in relation to the HRD concept. If such outreach is not effective, or is absent, the Employment Service must initiate its own intensive search for the hard-core unemployed in the areas in which they live.

The primary function of personnel engaged in outreach is to establish personal contact and communication with the hard-core unemployed and underemployed, to explain the services available under the HRD concept, to motivate and refer those contacted to the appropriate ES facilities or, in some obvious cases, to another agency for remedial or supportive services. Referral to appropriate ES facilities includes referral of those ready for employment to mainstream placement units or of those needing employability services to HRD personnel either outstationed in neighborhood centers or located in employability units.

4. Referrals to supportive services. In referring applicants to ES facilities, consider the need for transportation and other supportive services which may be necessary to ensure that the applicant actually does report. Experience has shown that, while large numbers of the hard-core unemployed can be reached, many are lost after the initial contact for lack of effective follow-through, and lack of direct transportation to those services. In rural poverty areas, the problem of transportation is especially severe and may have to be alleviated by the use of mobile units.

The need for close support of the hard-core unemployed after initial contact is highlighted in a recent report from a State employment service. In an outreach demonstration project in a large city, it was found that community workers often had to accompany and remain with applicants because ". . . many of the people reached had a poor image of the Employment Service because of inexperience with basic office procedure or even the inability to write well enough to fill out an application form. Grown men were seen to sweat and shake profusely. A few could sign their names. Several could not read." Clearly, many of these applicants would not and could not avail themselves of ES services without the sustaining influence of supportive services.

In the past, the approach of the Employment Service has often been one of "waiting to serve." Our responsibility has been thought to begin only when the applicant, on his own initiative, enters the local office. The HRD concept is based on another outlook, namely, that the potential HRD applicant has been subjected to gross social neglect which has crippled his desire to advance himself, has severely handicapped his employability, and has prevented him from assuming the positive self-direction our society considers acceptable. To

offset this negative force, the HRD concept calls for special assistance to the hard-core unemployed and underemployed, whether youth or adult, whether found in urban slums or rural pockets of poverty. The unified, comprehensive outreach called for in the HRD concept is intended as the first thrust of the Employment Service, in concert with the community, to meet its social responsibility to a long-neglected segment of our population.

Experience indicates that no particular type of person or approach represents the best or only approach to outreach. Nevertheless, it is important to involve and employ individuals who are indigenous to, or familiar with, the neighborhood or the particular population being served. Some States report that outreach teams composed of an interviewer or a counselor and an indigenous aide are most effective in bridging the gap from the neighborhood to the agency. Others report that, once trained, the aides function best individually or in teams but without the direct involvement of the professional staff. However it is done and whoever does it, outreach, to be effective, must be supported by a sensitive and responsive intake and employability service.

B. Employability improvement services. "Improving employability" means developing those qualities and skills in a person that give him reasonable expectation of securing meaningful employment. Employability services are intended to help the person become a "somebody," to achieve an occupational competence (in job skills, job literacy, and job attitudes) which enables him to think of himself as a person of status and worth in the mainstream of the American economy.

This new emphasis in the HRD concept not only recognizes the basic need to stimulate more rapid economic growth in order to provide jobs for all who are willing and able to work, but also the need to develop, by design and intent, workers

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whose interests, skills, and abilities can be utilized at their optimum levels. In this broad context, the basic function of the Employment Service takes on a new and expanded meaning. While the objective continues to be the placement of workers in suitable jobs, for an increasing number, placement is likely to represent the final step in a long process designed to develop their interests, skills, and abilities before they can be fully utilized. Furthermore, with jobs changing continually and at an ever increasing rate, an emerging task of the Employment Service is to identify and serve those workers who are, or who are likely to become, the "hard-core" unemployed or underemployed.

1. Initial contact with the ES employability services.

   a. Reception. All persons coming to the employability service should be met by a receptionist who can make them feel welcome and who is trained to determine quickly whether the person needs employability services. The reassurance of being escorted and introduced by the neighborhood aide who established contact with the jobseeker is frequently helpful in this process.

   b. Orientation of the service. This involves explaining the various services offered through group or individual orientation sessions, such as: individual counseling, group techniques, placement in various training and retraining programs, and job development and placement.

   c. Interviewing and intake. This involves interviewing, filling out forms, gathering necessary background data and information about the individual, and establishing the individual's eligibility for various programs. The final step in intake is to assess the person's needs and to refer the individual to appropriate services.

2. Counseling.

a. The individual counseling interview.

(1) Role of the counselor. The role of the counselor should be that of an interested listener, an understanding friend, an opener of new horizons, a provider of needed information and advice, a referral agent to other supportive services, and a dependable source of continued support.

(2) Objectives of counseling. Ultimate objectives include self-knowledge and understanding, and problem solving and adjustment ability without complete dependency on vocational direction from others. Immediate objectives include: a job or work training slot which builds on positive motivation for work and develops positive work attitudes and habits; correction of health and other problems; remedial and basic education prevocational and skill training leading to broadened experiences and aspirations.

(3) Special counseling techniques and approaches. General principles of counseling are applicable to all persons; however, some cautions and adaptations are in order in working with the hard-core unemployed. The counselor may find it more difficult and time-consuming to establish an effective counseling relationship since changes in attitudes and motivations come slowly. It should be stressed that: (a) A sustained interest on the part of the counselor is necessary until the individual is able to stand on his own feet. While the counselor may delegate certain tasks, he must coordinate all efforts and retain primary responsibility. Followup while the individual is in training or on a job is essential.

(b) Problems must be clearly defined as soon as they are recognized and action started toward their solution as quickly as possible. (c) Horizons can be broadened by arranging civic and industrial tours; participating in community sponsored social, educational, and work projects; making arrangements for films on current resources to meet community problems; and arranging for part-time paid or volunteer work experience. (d) Unduly pessimistic or optimistic job expectations can be modified by discussion and planned work experience. (e) Goals can be raised, as potentiality for higher level work becomes apparent, by bringing to the individual's attention the kinds of work to which he might reasonably aspire. (f) Choices can be broadened by offering various alternatives. (g) Steps and actions involved in attaining a desired goal should be explained in simple concrete terms which the individual can understand. (h) Newly learned skills can be reaffirmed and strengthened by arranging for counselees to demonstrate or to explain what they have achieved in group situations. (i) Case records should contain essential background, job-related, and family information. (j) Concise statements of problems, progress, and interim goals, as well as arrangements with, and information from, other agencies, should be noted. Case conferences should be used extensively to bring together the thinking and competencies of staff, as well as those of other agencies, regarding service needs and occupational aspects of the individual. Such conferences are also useful in training ES staff.

b. Appraisal of the individual. Counseling and appraisal begins where the counselee is now and attempts to determine how far he can go. We must first determine present ability, interests, and assets. Appraisal or

reappraisal is accomplished through judgment and psychological measurements, keeping in mind that:

(1) The counselor must be sensitive to feelings and needs and alert to the possibilities of hidden aptitudes and capacities not readily apparent or measurable.

(2) A continuing record should reveal information on strengths, weaknesses, and problem areas. Environmental, personal, and social information is needed, including: attitudes and feelings, needs and desires, motivation forces, self-concept, physical capacities, aptitudes, knowledge, school achievement, skills, and interests. Self-concept should be accepted as the applicant sees himself--however, attempts should be made to strenghten and reinforce positive aspects

(3) Appraisal data can be obtained through observation and reports of individual interviews, role playing and group sessions, interaction with peers, and performance while in training or on a job. To augment and validate his judgments, the counselor should visit training and work projects. Trainers and work supervisors should be contacted to provide additional assessment data.

(4) Work sample tryouts. This is a promising non-test appraisal technique being utilized in a few experimental adjustment centers.

(5) Test appraisal. Counselors should be specifically trained to deal with the problems involved in testing applicants with educational and cultural deficiencies. Tests should be used with caution and due

concern for their limitations and appropriateness. The decision on whether or not to test a particular counselee should be made by the counselor on the basis of the information obtained during the counseling process. The GATB Screening Exercises should be used by the counselor when he is in doubt as to the applicant's ability to follow instructions and to read and understand test items in the GATB and the USES Non-Reading Measure of General Learning Ability.

Tests should be administered only when they are seen as helpful assists in the decision-making process. In some cases, although tests may have potential value, the individual has a negative attitude towards testing. Test readiness can be developed through practice testing, orientation, and group discussion.

With this in mind we should consider some of the guidelines issued by the Equal Employment Opportunity Commission: (a) Use a system of total personal assessment; do not rely solely on test assessment. (b) Define skill requirements on a job through job analysis. (c) Relate the test to required job skills. (d) Relate screening procedures to job requirements. (e) Review tests for their adequacy, according to the "Standards for Educational and Psychological Tests and Manuals" available from the American Psychological Association. (f) Attempt to appraise through actual performance whenever feasible, rather than through test performance. (g) Retest the disadvantaged persons if they have availed themselves of additional education or exploratory work experience. (h) In administering tests, be aware of the possible anxiety that the counselee is experiencing.

c. Group Techniques. Group activities can often be more effective than individual sessions and should be used along with individual counseling. Group activities are of several different types, all of which require some care in the selection of group participants to assure a reasonable degree of homogeneity within the group.

(1) Group guidance. Here the aim is to inform. Group guidance activities may include group tours, speakers from industry, presentation of films -- followed by group discussion, panels, and role playing. (a) Role playing provides the individual an opportunity to act out a situation with a counselor or in a group. Possible role playing situations include job applicant-personnel worker, worker-supervisor, counselor-applicant. In a group, several people might try out the same role. Following role playing, discussions should be held on effective approaches and how some approaches might have been improved. (b) Group training in job finding involves a series of training sessions in basic principles of job finding. In Houston 500 persons and in Chicago 750 persons reached in target areas during the first 6 months of a demonstration program found their own jobs after assistance in job seeking.

(2) Group counseling. While content is of primary significance in most group guidance situations, interaction between participants is essential to group counseling. Therefore, the group should be small to ensure full participation. Most of the discussion will come from the group members with some leader direction. Through group counseling, the participant will see how he is accepted in a group, will accept

suggestions from his peers, and will try out new behavior in a group situation. The group should number no more than 12; beyond this point meaningful interaction becomes difficult. The leader should be trained in both individual and group counseling. Generally more than one session is needed; consequently, the technique might be built into on-going NYC or MDTA training, or to other special projects.

(3) Teamwork. Attitudinal training can be gained through teamwork. Teams can be involved in recreation, training, or work activities. The team leader should create and maintain a positive and cohesive working situation.

(4) Orientation courses. Courses might concentrate on one area or combine several needs of disadvantaged persons, including vocational exploration, literacy training, coaching for exams, and exposure to community services. Such experiences can now be structured and funded with MDTA training allowances. This approach can be built into OJT projects and projects such as "JOBS NOW."

d. Sources of Occupational Information for Counselees. In effective employment counseling, an individual gains insight, knowledge, and understanding of himself and the world of work. Opportunities to broaden the jobseeker's occupational knowledge are essential to the success of HRD. Here are a few ways:

(1) Observation of jobs. Many individuals have never been in a factory or a business office; consequently, they have little idea of the variety of jobs within our society. Through planned visits, some individuals

may aspire to new goals. Visits to MDTA training classes can be arranged. Tour arrangements may also be made with local trade and commercial schools.

(2) Work-sample tryouts. The work-sample technique may be of value: (a) in the determination of an individual's ability to perform a given task, (b) in vocational or prevocational training projccts, and (c) in work adjustment centers. Applicants are given the chance to work at machines and clerical functions, with materials or equipment in a variety of simulated on-job situations.

(3) Demonstration. This method is effective for imparting job knowledge and involving the participant. The demonstration(s) might be given by an individual who has observed or learned a skill or by workers or vocational teachers from one or more occupational areas. Under guided instruction, participants may perform the operations demonstrated.

(4) Work exploration. This can be accomplished through a series of planned work experiences including "donated" part-time or temporary jobs (preferably in conjunction with education or training). Multi-occupational MDTA projects and skill centers provide an opportunity for job exploration.

(5) Speakers or individual resource personnel. Speakers from industries and occupations in which there is interest can be invited to talk about their chosen occupations. If a person shows interest in a given job, arrangements can be made for him to talk with people in the field of his vocational interest.

(6) Group discussion. This technique can be used with large groups after industrial or training project tours, after viewing occupational films, or in conjunction with speakers. Individuals could report on what they have learned about an occupation as a result of interviews, part-time jobs, or reading.

(7) Visual aids and displays. Films give a realistic picture of occupations previously discussed and can show an array of occupations similar to those involved in the process of vocational exploration. Films might be shown by a volunteer, followed by discussion led by a counselor. All films should be reviewed prior to showing. Film sources include: the public libraries, industries, labor organizations, and the BES Office of Information. Local ES staff has considerable occupational data at its fingertips not immediately useful to others including: business newspaper reports, area skill surveys, and unemployment and industrial occupational trends. This information could be put into simple graphs and charts and displayed in reception areas or used in classes.

(8) Supplementary reading materials. Material should be easily understood and should be given to a counselee as he is ready. Attractive materials can be used in a display. Sources outside the Bureau of Employment Security include private concerns (Chronicle Guidance, SRA), professional and trade associations, government agencies, and industrial firms. One staff member in each office should be responsible for obtaining and compiling occupational data so that these data are available in readily usable form.

e. Imple nenting plans of action.

(1) The whole idea of a long range plan or goal may be difficult to interpret to clients who live from day to day and have limited understanding of personal planning. Therefore, the plan and the goal should be realistic and attainable and, if necessary, should be broken down into attainable intermediate steps. A final goal may not be formulated in some instances until intermediate steps, experiences, and successes have occurred, in order that the person may have the necessary confidence before attempting to achieve it.

(2) The counselor must keep informed of the counselee's progress during a training or work project. Advance arrangements should be made with a training or work supervisor to provide progress reports.

(3) Always state an interim or immediate goal where appropriate, so followup can be made.

(4) The individual may feel threatened or fear change as he is exposed to new experiences. At this point, counseling is essential so that progress can continue.

(5) Maximum use should be made of community resources to meet nonvocational needs and to effect job placement at the highest practicable level.

(6) When the counselor experiences difficulty in resolving an applicant's problems, consideration should be given to (a) case discussion by the counseling staff, (b) transfer of the case to another counselor,

(c) encouraging a supervisor, friend, or teacher to find out what the problem is and whether help is desired.

(7) While the counselor is responsible for seeing that needed service is provided to counselees, this does not mean that he must do all the job development and placement work. However, he should be prepared to carry out such activities when additional counseling is required during the placement process.

f. Followthrough on counseling. Volunteers, employers, other agencies, teachers, and contemporaries of the counselee can provide followup information. In most cases personal followthrough is needed. Whenever vitally needed, visits to the home, job, or training site should be made. Employer cooperation must be solicited. If the employer accepts the individual as one who needs continued support to attain his potential and adjust to a work situation, he may be willing to have the worker return to the counselor on a scheduled basis as needed. The employer will benefit if the worker profits from his experiences, overcomes fears, and learns to plan for the future. Also, the counselor may be able to foresee potential problems.

3. The HRD concept of training. The success of the employability improvement effort is dependent on the quality of counseling, training, work training, and job opportunities made available to the individual. The quality of these services is in turn dependent on the abilities and knowledge of the responsible staff. All staff working with the hard-core unemployed need to be aware of the following:

a. Problems in training.

(1) Economic. Many such persons will not readily accept training opportunities. Prior to making referrals to a training course, an objective determination should be made of financial need. If financial needs are overwhelming, consider referral to an appropriate agency, a job, or other resource where financial assistance is available. Inform the individual of any allowances provided.

(2) Educational. Because of low literacy level, failure experiences in school, or limited aspirations, many individuals will not seek training related to future employment. For them, training can effectively be combined with work or related to a work situation.

(3) Environmental. Because of a culturally deprived environment, many persons lack appropriate work attitudes, habits, and behavior. To facilitate acceptance of training we might (a) have successful trainees lead group discussions, (b) have successful workers from similar backgrounds discuss training and employment, and (c) use celebrities in the sports and amusement areas to show the variety of opportunities available and to demonstrate that the "road to success" involves hard work and training. The use of training and occupational films can also be effective.

(4) Personal. Some individuals with severe personal problems will need other community services before, or concurrent with, training.

b. Factors to consider in arranging training opportunities. The training referral should be predicated on the following factors:

(1) Training referrals should be in the best interest of the individual. When prevocational training or basic education is needed, positive steps should be taken for the individual to acquire such training.

(2) Training plans or arrangements must be made with regard to the availability and adequacy of facilities and instructors. Many jobseekers lose faith and interest if training is delayed. The possibility of time delay should be determined before a training referral is made.

(3) Training should be the most economical in terms of the individual's needs, potential urgency of employment, and available resources.

c. Selected types of training opportunities.

(1) MDTA. The underemployed and unemployed may secure vocational preparation through institutional, OJT, and coupled training projects.

(a) Institutional training is conducted in classrooms or training centers by public and private agencies. Eligible persons needing basic education and communication skills or other prevocational training before they can profitably pursue occupational training may be assisted in special classes. Under MDTA, training in basic education is also available for those not in need of specific skill training. (b) On-the-Job Training (OJT) is conducted under contract with the Bureau of Apprenticeship and Training, private employers, or other suitable agencies. OJT provides training in an actual work situation which is designed to provide new skills to obtain a job, upgrade skills and earning power of underemployed workers, and provide other workers with an opportunity to train for jobs where a present manpower shortage exists. When

possible, each supervisor should teach skills, impose learning demands, reinforce positive work attitudes, and offer support. (c) Coupled projects provide institutional and on-the-job training. These programs have proven to be an expedient means to help large groups of unemployed or underemployed persons. Training allowances may serve as a motivating force to complete training and will help alleviate immediate financial needs. In some cases an individual completing one MDTA course may be referred to another course and may receive allowances. If a training advance is needed to continue training, this advance can be granted. Some employed individuals who need additional training may be referred to part-time training. In such cases an incentive payment may also be provided. Maximum use should be made of the multi-occupational training projects, as many hard-core jobseekers would benefit from literacy training along with training in a range of occupations which permit skill exploration.

(2) The apprenticeship program offers an opportunity for those who qualify to acquire a trade through instruction and on-the-job experience. Efforts should be made to encourage employers to initiate special programs to take as many applicants as possible. Coupled projects developed under the Apprenticeship Program have been quite successful.

(3) Work experience programs under the Economic Opportunity Act provide opportunities for both youth and adults to acquire useful work experience. (a) The NYC enables youth to develop sound work habits, learn basic skills, and acquire a record of successful work experience. (b) Work and training programs under Title V of the Economic Opportunity Act are available to the adult receiving public welfare assistance

as well as to those likely to become welfare recipients. Opportunities are provided to secure constructive work experience and needed training. Instructions covering this program will be issued shortly. (c) Work study programs allow an individual to complete or gain additional education while working. Study becomes more meaningful when it is related to work. Resources include the Boards of Education, OEO, NYC, and special projects such as those funded by the Ford Foundation. A planned orientation to work is recommended prior to the work experience.

(4) Adult education programs are available for persons aged 18 or older whose ability to get or keep employment is substantially impaired by their inability to read or write. These programs, administered by the Department of Health, Education, and Welfare are frequently carried out through the local school systems.

(5) Vocational rehabilitation programs offer training to those persons with physical, mental, or emotional disabilities who have a reasonable chance of being employed. Section 333 of the VR Act of 1966 permits prevocational training opportunities for the poor.

(6) Job Corps and other total environmental experiences such as the military can provide planned and controlled learning experiences. Discipline and support are provided in varying degrees.

4. Supportive services. Supportive services are needed to meet the total needs of the individual, particularly those interfering with maximum employability and adjustment to a job. Neither the counselor nor the ES alone can succeed in helping the hard-core unemployed overcome problems. The

counselor must be aware of, and must utilize, the total resources of the community. The counselor must recognize all major needs of applicants, not just vocationally related ones, and should refer as necessary to other community services. The counselor, therefore, needs extensive firsthand knowledge of effective use of community services and resources. To ensure maximum coordination and service, the counselor would: (a) give the applicant the name of a person to see, not just the name of the agency; (b) provide transportation to community facilities when necessary and, if the individual desires, arrange for a volunteer or preprofessional to accompany him to the referral source; (c) make arrangements for representatives of several agencies to meet to discuss mutual problems and successful techniques; and (d) encourage a number of agencies to undertake a mutual project for multiple-problem persons.

The ES should outstation staff whenever feasible and advantageous to the ES and the community. Community resources should be encouraged to outstation their staff in ES facilities. Outstationing can be for one-half day a week in one or more facilities or a permanent assignment. Care must be taken to see that there is a sufficient workload to justify outstationing. ES personnel might work in training projects, settlement houses, welfare agencies, prisons, CAP agencies, or the Urban League, while personnel from VRA, public health, special community projects, or family services might be found in ES offices.

The more important types of supportive services for which arrangements should be made are listed below:

a. Physical examination and treatment. Medical needs are extensive among the poor. Crowded living conditions and poor nutrition influence the cause and spread of disease. Many such persons have never had a complete physical examination. Medical resources for eligible persons include. health and welfare agencies, VRA, medical expense under MDTA (not yet funded), public health, visiting nurses, hospitals, and the VA. Some of these resources may also be used for staff training.

b. Prostheses (hearing aids, eye glasses). Arrangements for needed protheses for eligible persons might be made through VRA, MDTA amendment (when funded), welfare, civic health associations, churches, and philanthropic groups.

c. Consumer education. Many persons need assistance in learning how to plan and prepare meals and how to spend grocery money wisely. Such assitance may be available from the CAP, homemaker services, and utility companies. Handout materials are available from the Food and Drug Administration, Department of Agriculture, home economics associations, and food producing companies.

d. Legal services. The poor person often does not know how or where to get legal counsel. Yet this counsel is often needed to protect his livelihood, his housing, his money, or his liberty. Legal service may be available through an organized legal group or a CAP arrangement. Court social workers or probation officers may be able to provide useful information to the counselor.

e. Family services, such as chiid day care. Most cities usually have day care centers; however, the number is seldom adequate to meet the need. The CAP or welfare agency may wish to spearhead a campaign for additional day care facilities. Neighborhood babysitters or sitting associations can also be used. A nursery school might be run by volunteers. Family counseling is available through family service and ministerial associations.

f. Group transportation. In the HRD plans, State agencies were asked to make arrangements for transportation through the lease or purchase of equipment or by having a community agency or civic association take on this responsibility. Also, a bus or car-rental company might loan a vehicle for a good cause.

g. Out-of-pocket expense (carfare, lunches). If arrangements are made for transportation, out-of-pocket expense should decrease. Special needs such as clothing, hair cuts, lunches might be provided by churches, the Salvation Army, barber or beauty colleges, or civic and philanthropic organizations. Some businesses may be willing to donate shirts, ties, and other small clothing items. In some cities the CAP operates a credit union for small loans. Also, welfare agencies will usually take care of immediate and urgent financial needs. The Bureau is sponsoring a demonstration project, beginning July 1, 1967, in 10 Youth Opportunity Centers on the use of petty cash funds.

h. Persons leaving a rural area will need such services as counseling with family members before the move (what is involved), Traveler's Aid, and a buddy at the other end (a volunteer, union member, and so forth) who can acquaint the individual with the city, help him locate housing, and direct him to the ES and other needed services.

i. Tutoring services. Some private or community services provide tutoring to increase basic education skills. This can also be done by volunteers, college and professional associations, or substitute teachers and housewives who have some teacher training. Persons with bilingual skills may be needed in some areas.

j. VISTA and other volunteers should be used as their ability, interest, and background permit. Volunteers may meet new people coming into the city, do outreach, and accompany persons to needed community services.

The poor as a group have extensive needs for community services. ES counselors must know the community resources, keep track of needed services, note which needs can be taken care of and which cannot due to lack of facilities. Unmet needs must be made known to appropriate individuals and groups, and an aggressive attitude should be taken by the ES in mobilizing community support to provide necessary supportive services in the volume and quality necessary to achieve the objectives of the HRD concept. The present proliferation of manpower services by other agencies directed toward the needs of the hard-core unemployed should be redirected toward the funding of the supportive health and welfare services needed to supplement the HRD concept of the Employment Service. The local ES manager should aggressively pursue this objective.

C. Job development and placement services. The success of the HRD concept depends on the effectiveness of employer relations, job development, and placement activities of the local office. These activities are so interrelated and interdependent that they are virtually inseparable. However, to accomplish the purpose of this instruction, each of these activities will be discussed separately.

1. Employer relations. An effective employer relations program is essential to development of job opportunities and job openings for the unemployed and underemployed. This holds not only for normal operations of the local employment office, but especially for job development as part of the HRD concept. Here the local office must go beyond a direct approach to employers. To assure support of the employer community, the assistance of leaders in the employer group must be secured. It is easier for one employer to convince another that it is good business to hire a certain percentage of the less competitive, and the HRD message will be more quickly accepted if presented by an employer group.

Where employer support has been obtained, the local office should play a strong supporting role and gear its promotional efforts to supplement those of the employer group providing leadership. If active employer support is not obtained, the local office is apt to face a long uphill battle in developing the necessary job opportunities.

The employer should be advised that some applicants are available and ready for jobs. Other applicants will require additional development by him. The employer should be persuaded that the development of human resources is a community effort and is not the responsibility of one agency, one organization, or one industry.

Employers in certain instances will be helpful only in the degree to which the Employment Service can help them build a capable work force which will enable them to be competitive and maintain their businesses. Employer relations representatives, or other staff who contact employers, should be alert to creating job entry opportunities by persuading and assisting employers

to upgrade the current workforce into skilled and semiskilled jobs. The use by employers of job restructuring, job ladders, and personnel inventories is necessary to open up job opportunities at the lower skill levels. Local office staff should have a thorough knowledge of occupational analysis and industrial services techniques.

Specific information about applicants or applicant groups must be available. As the shortage of applicants becomes acute, it will be increasingly important to have complete knowledge of how the qualifications of available applicants can be utilized by a specific industry or employer.

2. Job development. Job development is the reverse of conventional "order filling" in the placement function. The initial action is to develop a job opening for the applicant instead of finding an applicant for the job. Job openings for applicants who received "employability services" must be developed in terms of the potential and assets of the applicant rather than by an appeal to the employer's sympathy.

The Employment Service should assume leadership in getting cooperating employers to contact other employers in job development efforts. In JOBS NOW, Plans for Progress, Business and Industrial Coordinating Council (BICC), and the Watts project of the Committee for Merit Employment, it was proven that job development was most effective when prompted by employers themselves.

When appropriate, employers should be motivated to "customize" their jobs to fit the applicant; in this manner, skill shortages will be minimized, and available manpower will be better employed. This approach has been used successfully for many years in selective placement of the handicapped.

Job development involves: (a) good community and employer relations; (b) use of industrial services and employer participation to create jobs; (c) working with employer groups or associations on behalf of a group of applicants; (d) analysis of jobs for a specific employer so that applicants may be "screened in." Job opportunities must be developed or created for applicants who are job ready or who have been made employable.

The job development activity should be closely attuned to the HRD concept to secure jobs in which the incumbents can learn and grow. The job development program should include:

a. Persuading employers to share with government the responsibility for providing both job and training opportunities for noncompetitive people. This would include informing employers about, and enlisting their cooperation in, special programs that have proven successful in providing jobs for the long-term unemployed. Recent programs of this type include:

(1) JOBS NOW, a broad-based community effort which obtains from major employers a commitment for jobs for the long-term unemployed. Applicants are given an intensive 2-week "world of work" orientation and individual assessment program by the Employment Service. Applicants are then placed with cooperating employers who have also agreed to provide high support for them while on the job. Job coaches are available to help with work adjustment problems. Employers and supervisors are also given "sensitivity" training in the problems and needs of the long-term unemployed. In Chicago, the JOBS NOW program resulted in 3000 jobs being set aside for the long-term unemployed.

(2) Project PLACE, an intensive employer contact campaign which solicits not job orders but rather promises from cooperating employers to interview and try to hire the long-term unemployed who are currently employable.

b. Acceptance of the concept and active participation by leading employers, on the other hand, will open many doors and should even assist local office staff to see the new concept's potentialities more clearly.

In recent years, communication with employers, through employer visits and promotional telephone contacts, has sharply declined. By reestablishing contact with employers and development groups, job openings can be developed and employer participation achieved in the HRD concept. Relationships between the local office and the employer must be built on service established by planned and purposeful contacts and through community organizations. Mutual confidence and trust must prevail between the employer and the local office to gain acceptance and participation in the program. In this regard, several factors should be kept in mind:

(1) Calls should not be made to employers (personal, telephone) without adequate preparation. Staff members must have a thorough knowledge of the local job market situation, the characteristics of available applicants, program objectives of the Employment Service, and as much information as is available about each employer's operation.

(2) Staff members must relate and present this information so as to emphasize benefits to the employer and the community in terms these groups understand.

In using this approach, each employer must be properly advised regarding the problems, needs, and potentialities of each applicant. Of equal importance, each applicant must be made fully aware if there is no definite job opening present. Steps must be taken to provide additional services in the event an applicant is not hired. In Connecticut, over 1700 placements resulted in the first 6 weeks of the program.

(3) Assist employers to upgrade workers, thus creating job opportunities at unskilled and semiskilled levels. Business and industry require workers of lesser skills to support the output of skilled workers.

(4) Encourage and assist employers to lower hiring specifications wherever possible and to restructure jobs to fit available applicants.

(5) Develop broad community support for the aforementioned activities.

c. To persuade employers to hire applicants who are less than fully qualified, the Employment Service must establish confidence in its ability to screen and supply the applicants sought by employers. Employers may be involved by the use of small forums focused on the specific capabilities of a real group of applicants.

3. Staff coordination. Staff efforts should be coordinated to organize and plan job development activities. Placement interviewers and employer service representatives should confer with counselors to: (a) obtain information on "job ready" applicants' qualifications, personal characteristics, training, attitudes, and interests; (b) provide feedback information.

4. Placement. The final goal of outreach, employability development, and job development is placement in jobs that offer an opportunity to learn and advance.

The primary responsibility for coordinating and providing placement services belongs to the job order holding office (professional, industrial, service, clerical, or sales).

The order-taking process must be approached from the standpoint of supply capabilities as well as demand requirements. Employers should be urged to evaluate hiring requirements realistically.

Local office staff must have substantial knowledge about job requirements so that they may discuss unrealistic hiring requirements with employers. Similarly, staff who receive orders should be quick to recognize the need or the possibility for restructuring jobs so that attempts may be made to modify orders.

The screening and selection process may be approached from the standpoint of what the applicant can do, or potentially can do, and how he can fit into a job, rather than why he does not meet the requirements.

The approach should be positive; it must be a screening in rather than a screening out process. This approach will necessitate more in-depth selection interviews and a sensitive attitude on the part of the interviewer.

The interviewer and his supervisor should be as concerned about the active applications of the job-ready unemployed or underemployed applicants not receiving service as they are about unfilled orders. Workers in these categories filed their applications for jobs with the expectation of obtaining employment. Since they are voluntarily seeking assistance in obtaining employment, placement services should be provided.

For the same reason that it is important for each employer to make maximum use of the skills of his work force, it is equally important for the local office to make maximum use of applicant skills. The referral of applicants to jobs below their skill level only lessens job opportunities for less skilled applicants. If no opening exists for a particularly skilled or easily trainable applicant, one should be developed. He should not be referred to a job opening requiring less skills or potential. When jobs cannot be developed locally for this type of applicant, interarea recruitment should be considered and discussed with the applicant.

Local offices should seek to develop job openings that offer satisfactory wages and working conditions and opportunity for individual development. Job developers and placement staff should be alert to the requirements of Titles VI and VII of the Civil Rights Act and should be prepared to discuss the law and policies which must be observed when serving applicants and employers.

To evaluate employer satisfaction and placement success, the manager should institute a followup system with employers. Sometimes followup may be accomplished at the time verification is made. During regular visits by employer relations representatives, past placements with employers should be reviewed so that problems of service can be discussed.

Supervisors should include followup contact as part of their staff performance and program evaluation. Information from the followup should be compiled and used for staff training and improvement. Followup information on applicants from the employability development phase of the program should be made available to supervisors and staff so that better performance may be achieved.

5. Community Employment Development. In the HRD effort, both job development and the community employment development approaches are needed. As differentiated in employment service operations, "job development" generally has involved persuading employers to allocate specific jobs to specific individuals or groups of applicants. "Community employment development" applies the availability of manpower information and the full range of employment services as local area assets to stimulate community development groups toward job creation. The resultant community economic development activity seeks to achieve job creation through the expansion of present local employers or the attraction of new employers to the community. In rural and smaller towns, these functions are served by the Smaller Communities Program mobile teams operated by 18 State agencies.

6. State and local office action. Contacts should be made with executives of large companies in the State, particularly those with multiple establishments, to encourage their participation and secure commitments for job openings for the unemployed and underemployed.

Local office managers should assume leadership in coordinating employer contact and job development activities with public agencies and organizations in the community to ensure the broadest coverage. The CAMPS system described on page 53 will help increase effective interagency relationships.

D. Job market information. The HRD concept requires changes in the direction and focus of the job market and area labor information programs. Special new tools and approaches are needed to meet HRD requirements and to assure that adequate services are provided to the chronically unemployed and other groups that HRD efforts will assist.

In preparing HRD job market and area labor information, State agencies will be directing materials to reach two basically different audiences--to employers and the community at large and to HRD applicants and jobseekers--and at the same time guiding local office management and staff in different types of urban and rural communities.

1. Information approaches for employers and community groups. To enlist support and active cooperation in the HRD effort, materials need to answer such questions as "Why do we keep reading about millions of unemployed while we have trouble getting the kinds of workers we need?" "Does this mean the unemployed don't want to work?"

Some approaches used successfully in HRD efforts to inform employer and community groups are described as follows:

a. Provide factual information on "Who are the unemployed?" Highlight primary characteristics revealed by the active files--people in the youngest and oldest age groups, inexperienced or with obsolete skills; poorly educated workers or those with prison records or poor work histories. Provide resumes of such workers, constructively summarizing their work experience and qualifications, showing some of the barriers to employment they face after interest in the workers' potentialities has been created.

b. The "blind ad technique." Under the heading of "Would you hire these people?" provide short resumes of prominent persons such as Abraham Lincoln, Thomas Edison, and others from deprived backgrounds. Only at the end of the resumes are the individuals identified. Presentation of success stories of persons who lacked the "proper credentials" effectively

points out that only by being given a fair chance can a person realize his true potential.

c. Publicity on success stories in which unrealistically high job specifications were modified, taking into account the qualifications of people now available for jobs.

2. Information approaches for HRD applicants. To insure that they receive full information on available job opportunities and how to qualify for them, materials designed for HRD applicants must be easy to understand and use and should eliminate misconceptions that cause discouragement. The approaches described below have been used successfully.

a. Provide factual information on the job market that helps answer why "jobs go begging" or why "instant jobs" at higher pay require advanced training and education. Provide lists of types of jobs actually available in the local area, wages offered, how to apply, how to qualify for higher paying jobs.

b. The blind ad technique (described earlier) adapted under the heading "Would you take this job?" with examples of entry jobs taken by famous persons, respected in the deprived community.

c. Career fairs or "job-or-ramas" on a decentralized or neighborhood basis, properly planned and broadly sponsored.

d. Simple and direct information on all training opportunities and facilities, public and private, and local or area supportive services to correct health problems or other limitations before, or in conjunction with, referral to training or a job.

e. In cooperation with community groups, press, and employers, special publicity through all media on "What Job Openings are Hard to Fill," "Who's Hiring Now" (on openings not held by local employment office), "Training Opportunities and Facilities." Include an inventory of "supportive services" with description and eligibility requirements, and revised, simplified occupational guides to help motivate applicants to consider both higher and lower skilled jobs that appear frequently.

In publicizing occupational guides, those concerned with higher skill jobs should include information on entry-level jobs which represent a starting point for progression to these positions. Guides on lower skill entry jobs which are hard to fill should include career ladder information which shows how some of the available openings can lead to higher paying employment opportunities with additional training and experience.

3. Information approaches for internal use by State agency. Program planning at all levels for the broader services necessary in HRD, will require new area labor information and job market information materials. State agencies will need to be alert in adjusting materials to the HRD responsibilities and concerns of local office managers, counselors, employer relations personnel, and others.

The following illustrate the types of materials of primary importance at the initial stages of the HRD concept and the reasons for their significance.

a. Data on characteristics of target areas. Slum area surveys in nine cities pointed up the fact that--despite improvements in other sections of these metropolitan areas--employment conditions in the slum districts had not changed significantly since 1960. Job market analysis in HRD areas can

assist in defining special target areas--in terms of census tracts with significant poverty and unemployment problems--and update 1960 census data on the characteristics of workers in these districts. This will provide an overview of the slum area problem for use by the local office. These data can also be compared by the State agency with information on the characteristics of HRD applicants to help identify groups who are still being missed by our program.

b. Special applicant data. Inevitably, even under HRD, there are individuals or groups whose employment problems are not resolved. Prior to the transfer of their cards to the inactive file, a review of applicant characteristics is recommended. Such a review will provide additional insights as to groups or individuals not reached by present services and will offer clues to the need for improving HRD service.

4. Conclusion. There is a significant amount of job market information available from both public and private sources on the local, State, and national level. The goal we have is one of presenting this information in ways that actually reach, and are effective for, the long-term unemployed. What we hope to achieve is to wipe out the "communications gap" existing in many areas between government services and the individuals and agencies which compose the service community and the hard-core unemployed and underemployed. To accomplish this, the job market information service must be viewed not as an appendage but as an integral and essential part of the HRD concept.

V. COMMUNITY ORGANIZATION AND PUBLIC RELATIONS

A. Purpose. To interpret to the community the goals of the Human Resources Development concept, its reason for being, its scope, operational framework, and implications for the future.

To awaken a sense of responsibility and need for action within the private as well as the public sector of the community in assisting unemployed and underemployed citizens to obtain meaningful employment.

Community organization as the term is used here implies the coordinated action of various elements in that community, working together for improvement of a specific condition.

Public relations is not to be confused with, or confined to, "publicity." It means the development and dissemination of objective and convincing information through community channels at the neighborhood level, in the broader metropolitan echelons, and through all applicable media.

B. The HRD concept in the community. The import of the HRD concept must be clearly understood by the community if HRD is to succeed in the community. There must be an active partnership of the employing community on whom ultimate success will depend. Community members must be alerted to their responsibility and to the eventual benefits which will accrue to their own interest. Specific suggestions must be communicated for restructuring jobs, reevaluating hiring specifications, and other matters which will assist in providing meaningful employment for all members of our society.

State agencies will need to stress that community relations is the direct responsibility of:

1. The local office manager, his key staff, and all local office employees. They bear the brunt for interpreting and carrying out manpower concepts in the community.

2. Ex-officio, actively involved allies, such as the agencies having membership in various advisory committees. A good example is the one organized to implement CAMPS. Many committees with varying names are in existence all over the country, and many perform highly effective service.

3. CAP's and other public agencies.

The advisory committee. The combined resources of a community are needed to solve the problems of manpower shortages and the hard-core unemployed. The ES cannot assume sole responsibility, but it can function as a leader, coordinator, and focal point for all the manpower services in a community. To involve all elements of the city, there is no better generator than a strong and active advisory committee. Many YOC's and other local offices are now served by advisory committees.

The committee situation of the community should be objectively appraised in terms of the relationship of the present committee to the local office, its composition, and its record of service. When a committee is performing a valuable service, it should be asked to expand its advisory function to include the new HRD work. This can be accomplished after preliminary consultation with its officers and the executive committee or, if there is none, with chairmen of subcommittees or several of the more active members. The HRD concept should be presented first to them, and its far-reaching importance made clear. Then the concept should be explained to the entire committee, and their cooperation requested.

In some instances it will be expedient to restructure the existing committee, enlisting new, stronger, more representative members. Provisions must be made for the various other advisory committees, such as those for youth, older workers, MDTA, veterans, and dependents, to participate in the work of, and be represented on, the

HRD committee. It is imperative that all advisory groups understand the HRD concept and lend it their wholehearted support.

Sometimes purely local reasons might work against constituting an HRD advisory committee. In such instances State agencies may suggest that an unofficial "committee" could be formed within the nucleus of the local office, using the personal involvements of the individual staff in their own professional memberships and contacts. Through these relationships, other organizations can learn of HRD and offer their cooperation. The community would thus be involved in ever-widening circles.

C. The Cooperative Area Manpower Planning System Agreement. To promote further interagency coordination at all levels of administrative responsibility the Federal administrators of major manpower development and related programs are engaged in cooperative planning and implementation of program activities.

The focal point for joint effort is in the local area where manpower services and those who need them come together. Therefore, the planning system being established is known as the "Cooperative Area Manpower Planning System" (CAMPS).

CAMPS is national in scope. It provides, to all agencies concerned with manpower, an opportunity to discuss manpower and related problems and program activities and their impact on manpower goals. It provides a systematic exchange of information among agencies about resources and coordination of services among interested groups. CAMPS should increase the number of persons served and improve matching of services with the requirements of individuals. It should eliminate overlap, duplication, and wasteful competition among agencies providing manpower services. Sound and integrated programming of manpower service should overcome problems of unfilled program slots and high dropout rates due to lack of needed services. It should contribute

to a significant decline in structural unemployment. The CAMPS operation should be utilized whenever possible when organizing the resources of a community.

D. Organizing an advisory committee. If a new committee must be organized, a provisional committee of no more than 10 leaders can be recruited from industry, labor, schools, health and welfare, key voluntary organizations, and from groups or organizations that represent the poor. When this ad hoc group convenes, with the local office manager serving as chairman, the order of business should be:

1. Explain the HRD concept, scope, and urgency.

2. Provide local data on unemployment and characteristics of the unemployed. (Where local data is not available, efforts should be made to obtain it.)

3. Discuss manpower shortages.

4. Explain the terms "hard-core unemployed" and "underemployed," relate them to the city or town, and identify those so described.

5. Draw up a balance sheet showing those community resources now available to meet employability problems and those which are lacking.

6. Describe the urgency for strong community organization and the extra-dimensional value of an advisory committee.

7. Enumerate the elements in the community which should be represented on the committee--employers, schools, unions, health and welfare agencies; civic, service, and professional organizations; minority group associations, women's clubs, the press, Chamber of Commerce, and others with special interests representing strategic forces in the city, including the poor.

8. Emphasize that membership on the permanent committee should not exceed 25, that it has to be a working committee. Each member should be expected to contribute in some precise way, and it would be well to point out that it is not always the most prominent person in the city who serves best. He is sure to be on many other committees. However, his recommendation of an associate to represent him should be sought.

9. Plan to recruit the total committee from suggestions made by the provisional group, and determine the ways to invite their participation.

If technical assistance could be helpful at this stage, it may be enlisted at the national, regional, or State level.

E. Advisory committee operations. At the first meeting of the committee, the following would transpire:

1. Election of officers --chairman, vice-chairman, secretary.

2. A statement of purpose agreed on. Subcommittee functions discussed and outlined for record.

3. Schedule for meetings decided (at least once a month).

4. Subcommittees named, to cover the four areas of the HRD concept--outreach, employability improvement, job development and placement, and public relations and information.

An official of the local office should be named executive secretary to keep a close check on plans, programs for meetings, and followthrough. If the office is a YOC, the community relations coordinator is usually a good candidate for this assignment.

F. Primary functions of the committee.

1. Serve as liaison with the public, to assure understanding and support of the HRD concept.

2. Help stimulate public cooperation in providing needed employability resources.

3. Act as envoys to employers in urging their understanding and cooperation.

4. Provide suggestions to neighborhood leaders and organizations for outreach work.

5. Develop and support special projects for special needs. Examples: surveys to determine training needs, remedial plans.

6. Recruit volunteers when necessary.

G. Public relations and HRD. When the HRD concept has been firmly established in the understanding of the staff, the advisory committee, community organizations, and others working closely with the local office, a concerted community mobilization can be planned. With the groundwork established, there should be community-wide publicity.

Administrators, State staff, area managers, and local office managers must exercise strong leadership in the States and communities to coordinate employment service activities with those of other organizations.

The State office should contact, at the State level, appropriate public agencies, chambers of commerce, industrial, trade, and professional associations, unions, and similar groups to secure their participation in the HRD effort.

The local office must have the confidence and support of industry leaders, unions, service clubs, churches, and other groups to implement successfully the HRD concept. To achieve leadership, the manager and key members of his staff must participate in activities and meetings of professional and trade associations to identify with the interests of the community and its economy.

The leaders of the community will then be more receptive to the objectives of the HRD concept and will participate to a greater degree in employment service efforts.

Names always make news, and members of the advisory committees who are newsworthy should be asked to give interviews and make statements of the goals of HRD. Perhaps a special event will be the occasion for announcing the new concept -- a conference of employers, an open house, a job fair, a special TV program whose theme is suggested to the local stations by the local office.

All conventional media should be included. Each will have its particular value, and each should be utilized in accordance with its effectiveness in reaching targets wielding influence and contributing to the accomplishment of the HRD goals.

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Work Orientation Program, 1965-1968. Final Report.

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*WORK ORIENTATION PROGRAM; TOWNSHIP HIGH SCHOOL DISTRICT 214; MOUNT PROSPECT; ILLINOIS

This academic and prevocational program was a coordinated effort to increase the self-sufficiency and employability of physically and mentally handicapped youth. The 4-year program for students 15 to 19 years of age included: (1) social-vocational evaluation in education, (2) prevocational and in-school work experience, (3) on-the-job adjustment training in the community, and (4) placement and follow-up. This report summarizes the first 2 years and presents details of the third year in the areas of (1) work orientation, (2) philosophy and objectives, (3) student selection, (4) evaluations of technical processes, enrichment, buildings, counseling, science, and English and reading, (5) program studies, (6) workshop reports, (7) dissemination of information, and (8) the division of vocational rehabilitation. (FP)

VT 008 581

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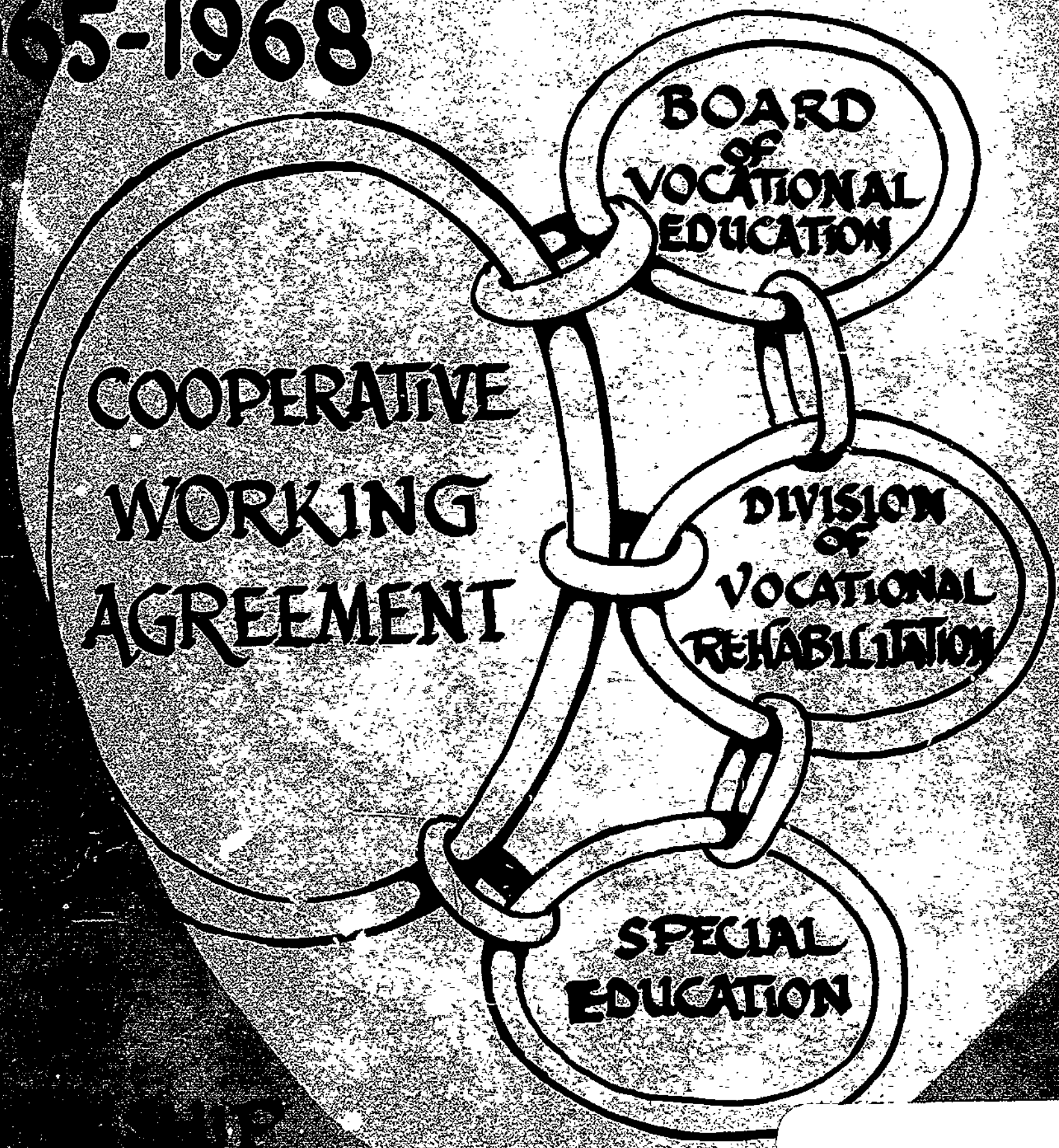
FINAL REPORT

WORK ORIENTATION PROGRAM

1965-1968



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TO

RESEARCH COORDINATING UNIT

BOARD OF VOCATIONAL EDUCATION AND REHABILITATION

405 CENTENNIAL BUILDING

SPRINGFIELD, ILLINOIS

THREE YEAR REPORT

FOR

1965 - 1966
1966 - 1967
1967 - 1968

SUBMITTED BY: TOWNSHIP HIGH SCHOOL DISTRICT 214

DR. EDWARD H. GILBERT, SUPERINTENDENT

PREPARED BY: ROBERT E. CUDNEY

DIRECTOR OF COOPERATIVE WORKING AGREEMENT

1968

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FOREWORD

The primary objective of the Vocational Education Act of 1963 was to focus attention upon the development of programs for those students with special vocational needs who were not succeeding in the regular school program. This concern placed a sharp emphasis on evolving new programs and operational patterns and procedures in education to adequately serve this group.

The following report will attempt to chronologically trace the pattern of development that High School District 214 took in its attempt to fulfill its obligation to provide each student with an educational opportunity that meets their individual needs.

The evaluation of this program spans three years which has seen many changes in the program and much growth in the district. Though the structure and size of the program has changed in these three years, its original philosophy of providing an environment where the student has an opportunity to modify attitudes and improve self-concept, has remained constant.

In this report, I will attempt to summarize highlights the first two years of the program and submit in detail the 1967-68 evaluations since the program in its present form is just a refinement of the first two years.

ACKNOWLEDGMENTS

The following quote from W. B. Featherstone summarizes the feelings of these people who have been instrumental in providing this program in our district.

> "In school, at home, no matter where, one must never forget that these students are no less a 'person' no less an individual, than any other human being. His talents may be few, his promise slight, but he is none the less a member of mankind. He claims equal rights with others in the regard of his fellow men, and to guidance and instruction designed to stimulate his growth to the fullest stature his powers permit. He too must be helped to stand on his own feet and face the world, self-reliant and unafraid. 'With malice towards none, with charity for all' must be the teacher's watchword. Any other point of view denies the faith that has made America great."

We are indebted to the following for their support, interest, and participation in this program.

Dr. E. H. Gilbert, Superintendent
Dr. R. C. McLennan, Assistant Superintendent
Board of Education
W. David Whiteside, Coordinator Pupil Personnel Services
W. A. Collier, Coordinator Vocational Education
Instructional Coordinators

The following deserve special commendation for their contribution to this report.

Arlington High School

Anna Bazik, Counselor
Howett Claney, Counselor
Betty Cobb, Reading Teacher
Curtis Larsen, Technical Teacher
Donald Schroeder, Director of Pupil Personnel Services
John Strong, Social Counselor
Guy Vena, English Teacher

Elk Grove High School

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Judith Maldonado, English Teacher
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Joseph Prendergast, English Teacher
James Prow, Counselor
Gretchen Ulrich, Counselor

Forest View High School

Eileen Gascon, Counselor
John Hangey, Technical Processes Teacher
Thomas Hansen, Counselor
Gerald Konetshny, Counselor
Rosemarie Lesmeister, Cafeteria Supervisor
Michael Nelson, English Teacher
Ronald Rovin, Counselor
Dorothy Scharf, Home Economics Teacher
Jean Shelton, Counselor
Richard Stanowski, Director of Pupil Personnel Services
Roland Wickiser, Counselor

Prospect High School

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Richard Etherton, Technical Processes Teacher
David Exline, Counselor
Clarence Feiereisel, Director of Pupil Personnel Services
Jeanne Fowler, Counselor
William Reid, Counselor
John Turnbull, Counselor

Wheeling High School

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Donald Haid, Science Teacher
Donald Henne, Counselor
James Moran, Counselor
David Toepke, Counselor
Marian Tomlinson, Home Economics Teacher
Gary Trainor, English Teacher

Part 1

WORK ORIENTATION PROPOSAL

This is the original proposal submitted to the Board of Vocational Education for a work orientation program for potential dropouts and alienated students. The following presents highlights of that proposal. This program operated in the district through the 1965-66 and 1966-67 school year. The Work Orientation program provided the basis for what is now the Cooperative Working Agreement.

Schools

Township High School District 214
(Arlington, Prospect, Forest View, and Wheeling High School)
799 West Kensington Road
Mount Prospect, Illinois
Phone 259-5300 (area code 312)

This township high school district is located in the suburbs of Chicago approximately 25 miles from the downtown Loop. It is the largest high school district outside of Chicago in the Chicago area, comprising some 66 square miles. Within its bounds are located six incorporated villages ranging in size from 10,000 to 37,000 population. The total population of the area is now 125,000.

Currently there are enrolled in the four high schools of the district (grades 9 through 12) 9,383 students. A fifth high school will open in the fall of 1966 when the expected enrollment of the district will be 11,000. Enrollment projection indicates a high school population by the 1969-70 school year of a little over 15,000. Seven underlying separate elementary districts feed into the high school district; these have a combined enrollment of some 42,000 students at present.

The socio-economic status of the district's population ranges essentially from lower middle class to the lower upper class with the majority of the residents in the middle class but toward the higher levels of that socio-economic stratum. There are a few groups of lower class status, principally migrant workers who have settled in the area.

Education is highly regarded by the citizens of the district as evidenced by the continued support of new buildings and the increasing cost of running the schools. Most entering ninth graders finish high school, but we do have our dropouts. Some 8 to 10 per cent of the entering freshmen fail to finish the 12th grade. And unfortunately, of those who drop out, many are quite capable but are not achieving up to what could be expected of them.

The administration of the school is very stable. The present superintendent has been in the district for some twenty years and is in his 12th year

as superintendent. Though there are many new teachers on the staff each year due to growth (129 new teachers were added for 1965-66), turnover is relatively low, approximately 8 per cent over the past few years. Less than 10 per cent of the teachers this year are beginners. A majority of the staff have considerable teaching experience and hold a master's degree. Grouping, in order to help meet the varying needs of students, has been practiced for several years. High achieving students are placed in special honors or accelerated classes. Remedial and slow students are also assigned to separate sections.

Review of Present Program and Course Outline

In the four high schools of Township High School District 214, we are trying an occupationally oriented program for those students who would benefit from a shorter academic day and additional occupational training.

The program is for the underachiever and potential dropout as identified by administration, counselors, and teachers; basically students with a history of academic problems - truancy and general discipline problems. These students because of the problems do not qualify for our other vocational education programs such as D.O., D.E., O.O., etc. The general thesis in secondary education has been to attempt to provide a unique program for this type of student. The students are in school for one-half day and may work in an occupation for at least three hours each school day for some employer who has been approved by the project coordinator. The intent of the district has been to make a curriculum flexible enough that the type of students enrolled will find school both interesting and challenging.

The New York State Youth Commission states that it has long favored redesigning and overhauling curriculum plans, if some of the academically alienated students are to have their needs met.

The Cleveland Board of Education concluded after an extensive study that the comprehensive high school needed work related courses and work experience to meet the needs of the potential dropouts.

Another article by Francis W. Matika and Rebecca Sheerer, "Are the Causes of Dropouts Excuses?" brings out the fact that dropouts give one reason but probably have another for dropping out of school. One reason that seems valid is, "School does not offer what I want, to meet tomorrow's world."

District 214 has tried to develop their program so the students could see some correlation with the course and the occupational fields available to them. Some things that we have found are:

1. Some change in attitude toward school
2. Less absence as compared to the year before enrolling in the occupational program
3. A slight increase in overall grade record.

The program as proposed for the school year 1965-66 would be one of building on what we have been doing the past three years with the addition of stronger counseling services, better occupational experiences through the Technical Processes Units and help from the Reading Specialist.

The program would consist of the following:

Students starting school approximately 10:00 A.M.

1. Attend two classes and P.E. in the regular school program such as Math, Science or English. The staff will be selected so these classes could have a heavy occupational orientation.

2. Attend the related class especially designed to present the occupational technical curricula and develop better communication skills. This class will be taught by a counselor who will be assigned a lighter load of counselees so extra time can be devoted to the students in the experimental group.

3. The School Reading Specialists will be assigned to the students from the related class the same hour that the related class is in session, thereby providing the opportunity of a team approach to improvement of the communication skills.

4. Provisions for conducting evening counseling sessions for the students in small groups to help improve their attitudes toward school and society. Also time for a group of parents to meet with the same counselor on an evening basis for better understanding of their children and the program will be provided.

5. Establish in the afternoon the technical processes approach to the field of manufacturing to provide skill training experiences for the students.

6. <u>Typical Program</u>

Regular Program	3rd Hour -	P.E.	(Student reports to his first class approximately 10:00 A.M.)
	4th Hour -	English I	Unit 1
	5th Hour -	Math or Science	Unit 2
Special Program (3:30 to 5:30)	6th Hour -	Related Class	Unit 3
	7th Hour -	Break	
	8th and 9th Hour -	Technical Processes	Unit 4

Student paid on a per hour rate

Rate fluctuations based on production efficiency

1/5 Counselor to work with students and parents in P.M.

Related Class

Students are to be enrolled in the Related Class for one period of the day. The class is designed to teach understanding of self, the world of work and the relationship between the two. In addition, each student will be taught those skills in communication (reading, writing, speaking and listening) which will better enable them to enter vocational fields. It has been the intent of this committee to construct a curriculum flexible enough that the students enrolled will find school both interesting and challenging. The curriculum to be developed is to be based on the basic communications inherent to the business and industrial world. This will enable students to cope with the occupational demands they will encounter in the future. Students' progress will be regularly evaluated and effort will be made to improve academically; and if deemed desirable, the student may transfer into the regular program.

Although there are relatively few materials available for use in this area (field), those selected will be selected in such a manner as to allow each student to begin at his own ability level and progress at his own rate of speed. Some of the materials to be used are listed at the bottom of this summary. It is anticipated, and indeed necessary that the teacher of this class will develop additional materials for use. All facilities available will be utilized and outside personnel brought in to help broaden the students' horizons of experience.

Occupational Techniques

The skill training phase will serve as an integral part of this program with many desirable features and opportunities for both boys and girls. An outstanding feature will be the close contact between teacher and student with a maximum class load of 15 students. This will enhance the building of desirable student attitudes.

1. The industrial manufacturing and/or construction processes would include categories of metal fabrication of products, machine tool operations, graphic arts technology, cabinet and furniture manufacturing, engine maintenance, electrical and electronic technology, plastics fabrication, and construction skills

2. The business occupation areas would include typing and filing, operation of business machines, office administration procedures correspondence, accounting procedures, I.B.M., and other automated systems operations, and retail marketing procedures

3. The Home Economics area would bring in a dual aspect of preparing girls for both domestic and commercial services. This would include preparation and handling, interior decorating, product evaluating and purchasing, and development of healthy family and social attitudes. With this particular educational program, we will not only develop the maximum social potential but will provide sufficient information and materials to develop technical proficiency

Counseling

Statement of Need: Individual and group counseling sessions with students and parents will be used in an attempt to change their self-images and attitudes. Most of the students personally feel that they are outside of the suburban in-group, their self-images are poor, they are distrustful of people in general and adults in particular, and consider themselves as unsuccessful students. The parents of these youngsters often have similar attitudes as well as other kinds of problems which interfere with their ability to create the kind of atmosphere in which young people can flourish.

Procedure: In each of four schools thirty families will be interviewed from which we will select at random approximately fifteen families which will become our pilot or experimental group. Those not included will be our control group. Those parents in each pilot group will have periodic conferences with our psychiatric social worker who will attempt to develop a social history, diagnose the problem and course of action the family might follow. This may include either family group counseling and/or individual counseling of parents. All parents will be requested to commit themselves to periodic conferences for evaluation of students' progress and requested to aid us in every way to formulate the best in-school and out-of-school atmosphere for their son.

In addition, the students will be working with counselors on an intensive individual and/or group basis.

Part 2

JOINT AGREEMENT

COOPERATIVE WORKING AGREEMENT PROPOSAL
1967 - 1968
INTERAGENCY COOPERATIVE
BOARD OF VOCATIONAL EDUCATION AND REHABILITATION
DEPARTMENT OF SPECIAL EDUCATION
ILLINOIS DIVISION OF VOCATIONAL REHABILITATION

The Work Orientation programs met the student needs for a period of two years, but it was evident that as the program grew there was a pressing need to broaden and enlarge the scope of the program. Through the combined efforts of Mr. Bernie Quigley of the Board of Vocational Education, Miss Bonnie Gladder of D.V.R., and Mr. John Evans of the Division of Special Education, a joint agreement was developed to facilitate a program for students with special needs. Mr. W. D. Whiteside and Mr. W. A. Collier, 214 administrators, were instrumental in coordinating the development of this agreement at the local level. The essential parts of this agreement follow.

Purpose

To provide a concurrent progressive sequence of academic and prevocational services directed toward improving maximum self-sufficiency and employability in the physically and mentally handicapped student through coordination of services provided by the Department of Special Education; the Illinois Division of Vocational Rehabilitation; Research and Statistics Service, Board of Vocational Education and Rehabilitation; and Township High School District 214. To accomplish this, the following is proposed:

1. A combination of prevocational and in-school work experience, special classroom work, integration into selected coursework within the regular curriculum, and on-the-job adjustment training.

2. The program will be four years in duration and will include students whose ages are approximately fifteen to nineteen. The program involves four phases which are flexible and adjusted to the individual student. These phases are as follows:

   a. Social-Vocational Evaluation and Education
   b. Prevocational and In-School Work Experience
   c. On-the-Job Adjustment Training in the Community
   d. Placement and Follow-up

Objectives

To facilitate maximum self-sufficiency and employability in the maladjusted and the physically and mentally handicapped, a prevocational program shall be established and maintained. The objectives of the prevocational program are:

1. To meet the needs of the maladjusted and the mentally and physically handicapped students for vocational preparedness.

2. To develop the necessary habits and attitudes leading to successful employment.

3. To provide a vocational laboratory experience for these students.

4. To evaluate students while in a realistic working situation.

5. To measure the student's vocational adjustment.

6. To provide work experience for as many students as possible.

Implementation Of Program

The Illinois Division of Vocational Rehabilitation, Department of Special Education, Board of Vocational Education and Rehabilitation, and Township High School District 214 will give prime consideration to the following:

1. The program will be an approved Special Education program with approved Special Education staff. It will be coordinated with approved vocational and compensatory education programs provided by the school district.

2. The curriculum qualifications of school personnel and the age of pupils entering the various phases of the program are decisions of mutual agreement between the State Departments of Special Education, Vocational Education, and the local school district administrative staff.

3. Being a joint program of public education, vocational education, and vocational rehabilitation, the school will provide adequate course accreditation to all aspects of the program so that the student will meet the necessary graduation requirements as a State approved program. Upon graduation the

student will receive a "Certificate of Graduation." This should be interpreted to mean a valid high school diploma or certificate free from any stigma of handicapping condition or special program. (Article 14 - School Code of Illinois, Section 4 - par. 3) (Civil Rights Act - 1964).

4. Township High School District 214 will employ or release from present staff a qualified person to serve as a Prevocational Coordinator. (Refer to section labeled RESPONSIBILITIES OF PARTICIPATING PERSONNEL).

5. The Division of Vocational Rehabilitation will decide what phases of prevocational work training experience are reimbursable by DVR training fees. DVR cannot provide training fees for any vocational training that legally and traditionally falls within the normal and customary responsibilities of the school. This is interpreted by DVR to mean group classes in industrial arts, home repairs, home economics, typing, auto mechanics, arts, and crafts. These classes are excellent and participation is expected when integrating the vocationally handicapped student into selected courses in the normal curriculum of the school. These types of services can be provided and paid for in part by the Board of Vocational Education and Rehabilitation.

The types of work training experiences which DVR can provide and support are practical and meaningful work training experiences in the following areas:

In-school prevocational on-the-job experience in the areas of cafeteria services, library, athletics, receiving and shipping department, custodial, maintenance, groundskeeping, school office, secretarial and clerical, the building of or construction of projects for various agencies such as park districts, schools, etc., and any other areas of similar work experience. The training may be received from academic or non-academic staff but supervised by the Prevocational Coordinator with cooperative supervisory help from the DVR Counselor. To receive full payment of training fees DVR asks a minimum of 8 hours involvement per 5-day week. The Department of Special Education requires this to be a maximum for in-school participation. (A discussion of fees occurs under PROVISION OF DVR TRAINING FEES).

Work adjustment training, under supervision of the public schools, can be provided from a private or community workshop which meets the standards for the Division of

Vocational Rehabilitation. To receive full payment of fees DVR asks a minimum of 3 hours per day, 5-day week. The Department of Special Education requires this to be a maximum for out-of-school participation.

On-the-job training with various employers in the community - to receive full payment of fees DVR requires a minimum of 3 hours per day, 5-day week. The Department of Special Education requires this to be a maximum for out-of-school participation.

Non-academic staff and community employers serving as trainers will be chosen on the basis of possessing sensitivity and insight into problems of the vocationally handicapped youth and having the skill and knowledge required in the discipline involved.

For any phases of prevocational work training, the program may be extended through the summer months when school is not in session, providing the school continues to provide the same quality of supervision and guidance. During the summer months, the student may participate on a full-day basis and the training fee will be adjusted.

6. As a part of this agreement, the school district agrees to permit the local DVR Counselor, working in cooperation with an appointed representative of the school, to accept any eligible handicapped students in the school system for DVR service who may not be participating in the prevocational work study program. In addition to individual referrals, this may be accomplished through completion of a Physical Survey Form provided and administered annually by the local DVR Counselor.

7. All handicapped pupils served by Township High School District 214 will be considered for the prevocational program. The acceptance of pupils eligible for Division of Vocational Rehabilitation services will be determined by a committee consisting of or named by:

   a. Region VIII DVR Supervisor
      (1) Area I Assistant Regional Supervisor
   b. Coordinator Industrial and Vocational Education
   c. Special Education Director, Township High School District 214

   This committee will determine eligibility by a study of pertinent information collected or furnished by Township High School District 214's Division of Pupil Personnel Services and determined through a staffing that an individual definitely has a physical or mental handicap and could benefit from Vocational Rehabilitation services as

part of his or her school program. This information will consist of:

a. Psychological reports
b. General physical and special medical examinations
c. Classroom reports from instructors and other personnel
d. School counselor reports
e. Other materials necessary to reach a decision

Final determination of eligibility for DVR services will be the prerogative of the DVR Counselor assigned to the program or his immediate casework supervisor. Students who are non-eligible or non-feasible according to DVR rules and regulations may participate in the program at the expense of the school district and may be referred again at any time that eligibility and feasibility criteria can be met.

Provision Of DVR Training Fees

Training fees paid to a cooperative Special Education-Vocational Rehabilitation Prevocational Program can be applied to overall operational costs of that program providing prevocational services for pupil-clients of the Illinois Division of Vocational Rehabilitation.

However, no DVR funds can be expended for any aspect of the academic program which is traditionally the responsibility of the school. This is interpreted to mean training fees cannot be used to subsidize certified academic personnel and educational materials necessary for the teaching of academics. These funds, however, can be provided through Vocational Education and Rehabilitation.

The same policy applies to training fees paid for out-of-school situations.

Short interruptions of training may be made up by the student-client without an adjustment in the training fees. However, prolonged interruption of training will necessitate an adjustment of training fees. The prevocational coordinator will inform the DVR Counselor in cases where prolonged interruption, extension of, or cancellation of training fees is involved. Where the time participation in any program is less than the minimum eight hours a week, fees will be adjusted on a percentage basis.

The Division of Vocational Rehabilitation in fulfilling its share of the cooperative prevocational program can, in addition to cooperative counseling, guidance, and placement, assist in providing training fees as follows:

1. For prevocational work experiences provided within the school setting, the Division of Vocational Rehabilitation agrees to pay a maximum of $12.00 per student, per week,

for all phases of realistic work training such as custodial, maintenance, horticulture, secretarial, clerical, food service, and the building of or construction of projects for various agencies such as park districts, schools, etc., and similar types of in-school training. A minimum of eight hours will constitute a basis for a week's training fee.

2. For work adjustment training in the community, the Division of Vocational Rehabilitation agrees to pay $10.00 per pupil per week for 5 one-half days of supervised training for the number of participating weeks within the fiscal school year.

3. For training services secured from a DVR approved workshop or evaluation facility, the Division of Vocational Rehabilitation agrees to pay up to 50% of the participating facility's established fee for all DVR clients. The maximum amount (50%) is applicable only where there is actual one-half day client participation. If the time spent in a workshop is less than one-half the workshop day, then training fees are determined by the percentage of time in actual participation.

   a. School Responsibility: It will be the responsibility of the school to inform the DVR Counselor of the beginning and ending dates of training and the number of hours per day participation.

   b. DVR Responsibility: It will be the responsibility of the DVR Counselor to compute and to authorize the correct amount of training fees and to make periodic checks to assure total amount of service is being rendered.

School Year	On Campus Training:	$12 per 8-hr. week, $1.50 per hr. session
	Off Campus Training:	$10 per 5-day week, 3 hrs. constituting one-half day, $2 each session
Summer Period	On Campus Training:	$24 per 5-day week, 6-hr. per day minimum
	Off Campus Training:	$20 per 5-day week, 6-hr. per day minimum

All payments for training services will be paid by group voucher on a four week or quarterly basis. Vouchers will be made payable to Township High School District 214.

Responsibilities of Participating Personnel

Prevocational Coordinator: Is responsible to the Director of Special Education and the Coordinator of Vocational and Industrial Education and will be responsible for the development and coordination of all prevocational activities within the school and the community; will maintain liaison between the school, community and local and state agencies; will develop and coordinate training stations in cooperation with the DVR Counselor; will see that periodic evaluations and other pertinent information are kept in the student-client vocational file; will prepare a quarterly budget covering costs to DVR for vouchering purposes; will collect pertinent data on students; will counsel with students on individual problems affecting job training; will prepare forms for Admissions Committee.

Division of Pupil Personnel Services: Will assist the Prevocational Coordinator in all activities of the prevocational program; these will include the following:

1. Major responsibility for prevocational adjustment counseling.

2. Initiate referrals through the prevocational coordinator, providing -

   a. Case History Information
   b. Health Information
   c. Work with parents in establishing realistic vocational goals; and
   d. Initiate referrals for additional services for those student-clients having difficulty in school or on the job.

Will have major responsibility for prevocational adjustment counseling; will initiate referrals through the Prevocational Coordinator for additional services for those student-clients having difficulty in school or on the job.

Teacher-Coordinator (Special Education Teacher): The approved Teacher-Coordinator will assist the Prevocational Coordinator and will provide regularly scheduled on-the-job follow-up both in school and the community.

Psychologist: Will be responsible for evaluation of learning ability, and of social competency, assessment of emotional stability, ascertainment of academic progress, appraisal of vocational fitness, and formulation of recommendations. The Psychologist will participate in case conferences and serve on the screening committee.

Special Education and/or Selected Regular Classroom Instructors: Will work closely with the Prevocational Coordinator in reference to the in-school work experience program and on-the-job adjustment training program; will develop and implement, with the help of consultants, a vocationally oriented curriculum; will keep pertinent accumulative records to help determine readiness for particular phases of the prevocational program; will

make referrals and recommendations and will provide supplementary data regarding the student as requested.

Non-Academic Supervisory Personnel: Will work closely with the Prevocational Coordinator, classroom teacher and the local DVR Counselor. He will develop, supervise, instruct and evaluate the work participation of the pupils directly under his immediate supervision.

Division of Vocational Rehabilitation Counselor's Responsibility: The DVR Counselor is the key person on the eligibility screening committee. The Counselor and/or the Regional Supervisor will be responsible for final determination of eligibility of students for DVR services. He will meet with students and parents to initiate the referral form and provide for special medical examinations, if needed. He will assist school staff and provide vocational counseling and guidance of students as required. He will meet periodically with the Prevocational Coordinator and assist him in locating job training stations. He will attend all case conferences relative to student-clients.

Program Evaluation

This cooperative working agreement is to be reviewed when any agency feels the need, taking into consideration all possibilities to enhance relationships between the participating state agencies and the school system to provide for new developments and to enrich opportunity for students handicapped for employability. Any participating agency may take the initiative in setting the date for meetings as established by the school administrative staff.

Near to or at the end of the school year, the Director of Special Education, and the Coordinator of Industrial and Vocational Education will be responsible for submitting an annual report to the Coordinator of Special Education - Vocational Rehabilitation Programs. The report form will be supplied by the DVR Central Staff Coordinator. The report is concerned with obtaining information relative to the number of clients served, disability distribution, those successfully completing the program, projections for the next year and financial information relative to case expenditures. The Coordinator, in turn, will supply a completed annual report to all participating agencies and any interested school districts. In order to secure a thorough evaluation, the Director of Research for the School District will supervise the evaluation procedure.

Socially Maladjusted - Type A

A breakdown of the four years in school is as follows:

1. Social-Vocational Evaluation and Education

   The overall curriculum during the first year would emphasize content which would develop attention, concentration, judgment, and interest through the use of experiences introduced through life situations. The Technical Processes class would acquaint

the student with four major areas of vocational education -- mechanical drawing, woods, metals, electricity. The academic courses would follow the regular content of these courses as closely as possible; however, the content would be geared to the individual's interest and aptitude.

2. Prevocational and In-School Work Experience

   The second year would be a continuation from the first with some In-School Work Experience substituted as electives.

3. The third and fourth years would include two academic courses as prescribed by the school and would offer on-the-job training in the community.

The specific scope and sequence would be as follows:

Ninth Grade	Units	Tenth Grade	Units
Occupational English (related class)	1	Occupational English (related class)	1
Biology	1	Physical Science	1
Math	1	2nd course with sequence of the student's choice	1
Physical Education	1/4	Technical Processes (Individual specialization in the area of student's interest)	1
Technical Processes (Mechanical Drawing, Woods, Metals, Electricity)	1	Physical Education	1/4
Study Hall		Study Hall	
Eleventh Grade	**Units**	**Twelfth Grade**	**Units**
English III	1	Social Studies (2nd year)	1
U.S. History	1	Industrial Arts course	1
Physical Education	1/4	Supervised Job Training or Cooperative Work Training	2
Supervised Job Training (SJT) or Cooperative Work Training (CWT) built around skills acquired in grades 9 and 10 - D.O. could fit those who qualify	2	Physical Education	1/4

COOPERATIVE WORKING AGREEMENT
SUMMARY

The Cooperative Working Agreement program is directed at students too young to fit into any of the other work-study programs such as Distributive Education, Diversified Occupations, or Office Occupations. High School District 214 saw the program as a means of reaching "academically alienated" students who could well drop out of school if not provided with greater motivation and more immediate goals. The important part of the program was an attempt to change student attitudes by providing them with a taste of success, an opportunity to earn some money, and an exposure to sympathetic adult direction.

Originally, students contracted with outside business and industry for specific services. The program was quite similar to Junior Achievement in that students shared in the profits of the venture. The program was pre-vocational rather than vocational since it was not expected that students would prepare themselves for specific jobs as a result of their cooperative work experience.

One of the more successful "ventures" was the establishment of a Tea Room at one of the district's high schools. The school identified freshman girls with a need for the cooperative working approach and assigned them three hours a day to a home economics teacher. A classroom was transformed into an elegant dining room, and the girls planned the meals, prepared the food, served the food, and literally "ran" the Tea Room. Faculty members and guests were the most regular customers. The girls shared the profits of the Tea Room but the benefits included improved relations between the students and the school, improved attitudes, more self-pride in the students, and improved dress and behavior. Projects for other students included "manufacturing" (one group built all of the cabinets for the new high school), and contracting for industrial services (packaging, light assembly work, etc.).

Students received both school credit and wages as a result of their participation. The district felt that it was providing an important educational program for students with special needs. Some 192 students were enrolled last year, and the revised program now includes some 232 students.

Part 3

PROGRAM PHILOSOPHY AND OBJECTIVES

We are committed to providing each student in our district with a well balanced educational atmosphere. We are all sincere and interested in forming our youngsters of today into wholesome productive citizens of tomorrow. If we are successful in directing this tremendous potential, we will live in a better America with well prepared individuals having a realistic sense for the world of work, and thus have succeeded in providing a comprehensive program in education for each and every child regardless of his or her ability.

Individual growth, personal adjustment, understanding of oneself, change in attitude towards school, society, work, and adults, are all desirable changes necessary for a desirable community. These can hopefully be obtained through a flexible educational program that will treat individuals as individuals and permit them to function within a comprehensive program.

"In every classroom there are children with problems that seriously interfere with school and personal life. These children find studying difficult, they can't get along with teachers or classmates, they are constantly "out of sorts" with their families. If they receive no help, they are apt to become the unhappy and ineffective adults of tomorrow. Many will become seriously handicapped, while others will not live up to their capacity."

Since one of the major deficiencies of students with special needs is the lack of social-vocational knowledge and understanding, it is essential that this program remain vocationally rather than academically orientated. Our goals are to develop additional social-vocational awareness and knowledge, and personal, social and academic competencies applicable in preparation for gainful employment. We strive to expand the students' social-vocational experiences and information in preparation for subsequent vocational programs.

The intent of this program is to vary somewhat from our traditional educational program of the past and interject a more realistic approach for students with special needs. We have at our disposal recent research that indicates a need in this area of new experimentation in order to make productive citizens of all the members of our community. Our tomorrow will be what we educators make it today, thus we have a responsibility to ascertain individual needs and attempt to design programs around certain basic needs.

In the "typical" educational programs for students with special needs, provision is made for teaching basic skills to the students. All too frequently, however, no attempt is made to provide students with sufficient social-vocational experience requisite to success in our competitive society.

These students progressing through the traditional educational program are presented primarily with academically oriented materials. It is essential that

this type of learning take place so as to serve as the foundation upon which other learning is built. In a great many cases however, the student entering the secondary program lacks many basic experiences essential to success in society. The crucial "gaps" in the social-vocational information and experience of the student must be bridged.

The Major Aims and Objectives of the Program - 1965-66

1. To encourage students to complete a vocational program which will lead to employment upon graduation from high school.

2. To build self-confidence, self-respect, social status, acceptance by their peers, and the adult society, and personal responsibility needed for employment.

3. To encourage students to develop functional work habits, job skills and attitudes necessary for employment.

4. To develop an understanding of occupations so that the students can realistically and intelligently choose a career.

5. To emphasize a learning by doing through a variety of work experiences.

6. To hold students in school so that on the junior-senior levels they can be channeled into one of our cooperative work programs.

Design and Scope of the Work Experience Area

1. The students will be in the work experience class for two hours per day, five days a week.

*2. The school plans to use jobber units provided by industries, contractors, community organizations, and individuals in a controlled workshop.

*3. Small multiple assembly jobs and work using machine lathes and etc., provided by industries will be an integral part of this program.

*(Subcontracting with business and industry was declared illegal in the spring of 1967. This was one of the chain of events that led to the development of the Cooperative Working Agreement.)

Program Objectives- 1967-68

The staff working with the program has agreed on a number of basic objectives:

1. To provide a carefully supervised in-school work-study program in which the student could develop habits of responsibility and wholesome work attitudes as well as specific technical skills.

2. To provide a work-study program for students under the age of 16.

3. To provide a paid work experience to help the student recognize the relationship between work and reward.

4. To provide varied experiences which would help the student develop a more positive attitude toward self.

5. To attempt to improve basic academic skills as well as social skills and attitudes.

6. To provide the parents with opportunities to become involved in their youngster's educational growth.

7. To encourage parents to participate in a counseling group which would endeavor to give the parents insights into their effect on the child.

8. To improve basic academic skills as well as social skills of dress, appearance, manners, and speech.

9. To rehabilitate students and prepare them for the regular school program.

The Value of the Work Experience Program to the Pupil

1. To help these boys and girls develop a sense of adequacy and belonging through being able to hold a job successfully.

2. To help them provide for material needs.

3. To increase their ability to assume responsibility, to get along with others, to follow directions and to handle money wisely.

4. To bring about an awareness of the relationship between school subjects and the demands of the working world.

5. To increase their general information and salable skills.

6. To insure, in so far as possible, a measure of success in their first experience in the world of work.

7. To encourage continued school attendance past the age of sixteen.

8. To provide ego satisfaction through successful wage earning.

9. To encourage wholesome attitudes toward honest work.

The program has also made certain distinct and valuable contributions to the school and community.

The Value of the Work Experience Program to the School

1. To the school, the program provides meaningful and functional curriculum material for the academic and job training areas.

2. Provides teachers with excellent means of motivation for units and centers of interest pertaining to employment.

3. Provides teachers with real opportunities to relate school experiences to the employment needs of the pupils.

4. Provides real situations for group guidance.

5. Provides additional and valuable information concerning each individual who is placed on the program in terms of his adjustment or lack of adjustment on the job.

Part 4

STUDENT SELECTION

The selection of the students begins with the counselors meeting with the junior high school teachers and getting their recommendations of students who could profit by a specialized vocational-educational experience. The counselor reviews the students cumulative folder and makes a careful study of past academic and test records. The counselor looks specifically for some of the following:

1. Low reading scores along with teacher verification that the student has a very obvious reading problem.

2. Underachievement as indicated by a discrepancy between standardized achievement scores and actual school achievement, as represented by grades.

3. Excessive absence is considered an indication of a student's lack of interest in school.

4. Home environment - instability in the home.

The C.W.A. screening of incoming students provides a dual service to the school. It identifies those students with special needs who require special services. Secondly, even though students may not be placed in the C.W.A. programs they are referred to the proper source along with all accumulated data.

After careful review of cumulative data, and a conference with feeder school principals and teachers, a parent meeting is set up to acquaint the parents with the purpose and goals of the program. At this meeting the parents are given an option of scheduling their child in the program. The parents are also asked to attend periodic group meetings.

Letter to Parents - Wheeling High School

Dear Parents:

You no doubt have heard a good deal from your youngster about the Work Orientation Program by this time. Perhaps you have a clear picture of this unique program, but more likely you have many questions which go unanswered.

The W.O. staff of our high school cordially invites you to participate in an orientation meeting for parents on Wednesday, October 18, 1967, at 8:00 P.M., in our cafeteria. We hope to accomplish several things at this meeting.

1. Help you get acquainted with "your" teachers.
2. Acquaint you with the objectives of the Work Orientation Program.
3. Introduce you to some of the special activities designed for the students.
4. Invite you to actively participate in your youngster's development.

5. Answer any questions you may have.

Our staff and administration are excited about the potential that this special program may have for all students. This is the final year that it will be considered experimental. We hope that you can share with us the satisfaction of having taken part in an educational experiment which may have far-reaching effects on the education of children in the future. Won't you please join us for this important meeting on Wednesday?

Wheeling High School Report

With regard to identification, it is felt that this is one of the most important factors for a successful program. Last year, much time was spent in reviewing cumulative folders, but the time was beneficially spent. Some items for identification used were: attendance, low reading level, poor grades, underachieving, home environment, and recommendation of junior high counselor or principal. Care was taken not to accept severe juvenile delinquents or students with extreme psychological problems. It was illustrated that most of the problems we had were caused by students who were accepted into the program at a later date after the beginning of the school year. Therefore, it might not be wise to accept students at a later date.

Selection of Students

Our observations of the underachieving student helped us to establish a criteria for selection. Certain basic characteristics were often present in the case histories studied. We used the following criteria to help us select our students.

1. Poor school attendance.
2. Low achievement for ability.
3. Reading disability.
4. Poor ability to relate, cooperate, and participate.
5. Intelligence level average or above.
6. Lack of participation in school extra-curricular activities.
7. Poor attitude toward school, teachers, community and self.
8. Distrustful of even closest associates.
9. Stable enough to profit from program.
10. Parent and student with willingness to participate in unique program.

Forest View High School Report

The selection of students for any special type of program has always been a difficult task to select the best possible individuals who would profit the most from the Work Orientation Program; the following criteria has been established. A student may fit into one or more of the following categories, but not necessarily all the categories.

Selection criteria:

1. School attendance record.
2. Achievement abilities.
3. Low reading ability.
4. Ability to relate, cooperate and participate.
5. Intelligence level. (underachieving)
6. Commitment to the program. (parent and student)
7. Non-participation of school activities.
8. Attitude toward school, teachers, and community.
9. Home environment. (family relationship)
10. Emotional stability.

Since the basis of selection is an involved, difficult and delicate procedure the process must be precise. The selectors or interviewers would include teachers and counselors involved either directly or indirectly with the program. The following guidelines have been set forth so a proper sequential procedure can be followed.

Interviewing procedures:

1. At least one full week be devoted prior to the opening of school to select the students.

   a. A meeting with the junior high faculty, high school counselors, technical processes teachers, and related materials teachers for orientation of selection procedures. This meeting could possibly take place during the previous spring.

   b. Adequate time arranged for counselors to meet with group of students for pre-orientation counseling and testing.

   c. Visitation by selected students to technical processes and related class areas for description of overall program.

   d. Individual interviews of possible participants by counselors and teachers.

   e. Individaul parent conferences and home visits.

   f. Joint staffing with individual candidates for final selection.

We have thus far stated the criteria for selection and the procedures for interviewing, but another important area that illustrates the need of teamwork can now be clearly defined. The commitment of a successful program involves the junior high faculty, high school counselors, all teachers associated with the program, and most important, direct parent involvement and approval.

The role of the high school teachers and counselors is to:

1. Participate actively together for proper orientation purposes in the feeder junior high schools.

2. Participate mutually in interviews and home visits.

3. Opportunity to share equally in the final selection of students for the program.

Parent involvement in the program is clearly defined and must follow arranged agreements:

1. A definite commitment by parents that their children will participate in the program.

2. Questionnaires that may be sent should all be returned promptly with necessary information.

3. A possible orientation meeting or dinner meeting at which information can be disseminated.

4. Individual conferences and home visits with final selected students.

5. A definite commitment by parents to attend individual or group counseling sessions.

This program has been designed to meet the needs of underachieving disenchanted students who fit one or more of the categories described in the selection procedures. The program meets these needs by attempting to provide the best possible total educational environment for this student which encompasses the combined efforts of our teaching and counseling staff.

Teachers desirous of working with this program have shown interest in working with these types of students. A team approach of teachers and counselors provides an atmosphere in which the student is most able to succeed.

An effort is made by staff members to get to know each student and to better understand individual strengths and weaknesses. The staff members meet frequently to discuss student progress and evaluate the program.

These students have been selected because their previous records indicate little if any success in the regular school program. The technical processes classes involve the use of manipulative talents that heretofore have never been

realized. Incorporating an area where skills are necessary, the students not only receive financial reimbursement, they possibly, for the first time, view a material achievement come into being. This taste of material success plays an important part in the significance of the program.

We can better describe the important aspects of the technical processes area in interpreting the following criteria:

1. To involve as many staff members as possible to incorporate it into the school day at the time most suitable for scheduling.

2. Skill training is a very necessary part of the program in which the student can experience success and visualize progress in a tangible way. Financial compensation is an integral and important part of this area.

3. The individual proportion of compensation is determined by their individual contribution to the class project.

4. The technical processes class involves a variety of training skills in the areas such as, food services, automotive servicing and maintenance, metals and woods production and fabrication.

The related academic classes are also designed around a practical realistic approach with emphasis upon application. These are also taught by teachers who have indicated a desire to work with special students in special classes or special students combined in selected regular classes.

Portions of a fall and spring workshop are devoted to the introduction of our Work Orientation Program to the high school faculty. Special emphasis can be placed at this time to explain and encourage more teachers to become involved in the project.

The related academic areas must include the following:

1. Encompass the necessary requirements for graduation through an inclusive but flexible academic program.

2. The curriculum development of this area has an emphasis on practical application i.e.; Industrial Mathematics, Business English and Composition, Applied Physical Science, and Consumer Problems and Vocational Exploration.

The daily group counseling sessions play an important role in the total program. If possible a counselor also teaches the related class since this keeps the group closely related for observation purposes and guidance. Since the counselors are actively involved with parent conferences this enables the entire group to have a very close working relationship.

The importance of the counseling aspects can be more specifically defined through interpretation of the following criteria.

1. Orientation of the total program reflects closer unity among students, parents, and teachers.

2. Group unity is quite important for the students and important with this group because many have difficulty in relating to others either within their peer group or adult groups.

3. Scheduling of parent conferences either through a group approach or individual basis for proper explanation and understanding of the total program.

4. Obtain a definite commitment of the parents to meet at a regular basis to observe the progress of the program.

5. Arrange a meeting for the final evaluation of the student involving teaching staff, counselors, administrators, and parents.

Part 5

BUILDING EVALUATIONS

This section presents a synopsis of building coordinator reports giving an overview of the program in their particular school. Reports will be presented chronologically so that the sequence in growth and development in the program can be followed by the reader. It is evident that the reports vary in scope and coverage. It will also be noticed that as the program developed, and became more sophisticated and fully adapted in the buildings, the reports became more meaningful and significant. There were many difficulties encountered in the early stages of the program and it took a great deal of patience, time, and work on the part of the staff to build a successful program. These efforts have certainly been vindicated in the successes we have experienced.

General Overview of First Year's Program, 1965-66

Our program and curriculum does not always meet the needs of our students, therefore, some special programs are necessary in order to attempt to meet the needs of all our students. It is with this idea in mind that a special Work Orientation Program was developed. The program is an attempt to meet the needs of students who are identified as academically alienated, or who seem destined to leave school before graduation.

Identification

The rush to establish the program in some schools provided some expected problems. Since the school year was under way, it made it rather difficult to do the desired job of identification, as this task was just another burden heaped on our pupil personnel services. Considering the lateness of establishing the program, it is a tribute to those staff members involved that the program even got off the ground this year.

A couple of our schools had initiated a special program for these students prior to state acceptance of the proposal. They had completed preliminary identification of students and were thus ready to go when state approval. was received.

Students were selected for the program by a committee of teachers, counselors, administrators, and social workers who reviewed each case and then made the recommendation of students to be placed in the program. Student selection was based on some of the following criteria; reading level, grades, age, attendance, teacher recommendations, and junior high staff recommendations. This selection procedure proved to be quite reliable in identifying those students requiring special help.

Two schools limited their selection to freshman students, while our other two schools had three class levels in their program. As a result of this experience, the program will be geared to freshman and sophomore level students. We hope to add the work experience phase as the students move to their junior year.

As a result of our experiences this year we are certain that a careful selection of students is absolutely necessary for any degree of success. Those schools which hurriedly selected students found more problems than those which had more time. Some standardization of evaluation will come out of this year's experience; also to improve our identification of students a two week Work Orientation workshop is scheduled for this summer. One of the two objectives of this workshop will be to develop guidelines to facilitate better identification.

The Work Orientation curriculum had the following goals:

1. Change in attitude toward school.
2. Less absence as compared to the year before enrolling in the program.
3. An increase in overall grade record.

The program curriculum includes strong counseling services, help from a Reading Specialist, the related class designed to present occupational-technical curricula and develop better communication skills, and the technical processes which incorporates a work approach to the field of manufacturing.

Three schools followed the written proposal of dividing the student's schedule between the regular and special program. This meant W.O. Students in those schools had three classes with the regular school population, then the remainder of their day was spent in the special program which includes the Related Class and Technical Processes.

The review of the related class at one of these schools is as follows: The Related Class is heavy on vocational material, individual growth and understanding of oneself. A favorite topic is parents and their problems. The class is conducted in as relaxed a manner as possible, leaning heavily on content that is of special interest to the students. Each day of the week the team member, who is an English teacher (also a trained counselor), takes three students out for special reading help.

The class has a somewhat individualized reading program and once again much freedom in the selection of materials that interest them. They have chosen to read such books as 1984, Niggar, Hotrod, Black Like Me, and others that would make the typical English teacher cringe with horror. The basic feeling is that one cannot reach these students and encourage reading by insisting on "good" literature only. We felt that we needed to begin with their genuine interests, and have tried to follow this policy.

In the beginning there was concern about the immediate drop off of grades, increase in absenteeism, and general misbehavior. At this time, there is

definitely a noticeable increase in grades, reduction in absences, and behavior though not perfect is much improved. With regards to reading, we note an increase in the desire to read and boys who were rarely seen carrying a book are now becoming enthused.

For tangible evidence of the value of the program at one school, a comparison grade point average of the first semester grades and third quarter grades was made. Since four students are no longer in the program and one sophomore is a returning dropout with no first semester grades, only ten students' grades could be compared. Two of these students' grades dropped, but the remaining eight improved. The group as a whole improved by .435 in grades.

One school experimented by placing all their W.O. students on the same schedule. They selected teachers with a sympathetic understanding for these children. I quote the following evaluation from that school:

> "For the most part, the Work Orientation Program at our school has been successful. I have been impressed with the academic progress made by most of the students. However, the most impressive progress has been in the students' attitude toward school, their school work, and the program. At the beginning, they were distrustful, suspicious, anxious, and somewhat bewildered. Much of the time during the first weeks was spent in allaying many of their fears and attempting to remove the stigma many of them felt by being placed in a special program for what they termed "retards," "troublemakers," "greasers," and "dummies." There was no sudden change in their attitude and some still seem to be bothered by doubts and anxieties. On the whole, though, they are confident and secure in the program and appear to be making satisfactory progress."

The above quote points out the importance of working with attitudes rather than academic materials. The curriculum for the related class must be flexible, whatever is taught must have an immediate practical use: in the beginning, knowledge for the sake of knowledge will not work with these students.

There is some doubt in the minds of several people as to what approach is best in helping these students. On one hand this program has given a sense of achievement and success for the first time to these students. On the other hand, the increased flexibility of the program has been abused by some students. The W.O. students obviously appreciate the interest and special efforts being directed their way. At the same time, they take advantage and continually test those involved as if to say, "I see it, but I don't believe it."

The field trip is an important media in the curriculum. Ideally, the event is established by the class and plans developed by a committee with the help of a counselor. Examples: visits to the Museum of Science and Industry, Vacation Sports Show, Statesville Prison, an afternoon of roller

skating and swimming at the "Y," and a twenty mile canoe trip down the Des Plaines River.

These field trips have been successful and have given us clues as to at least one very basic need of this type youngster. A need to be noticed is usually evident. One could best observe this during skating and swimming. "Hey, Mr._____, watch this dive. Look how I can float! Didja see me skating backward?" Almost every boy wants his peers to see something in him that was good and acceptable. Most handled it with the approach and reaction one might expect of a child much younger. There was constant vying for the eye of one of the adults present and little desire to impress one another.

More and more we realize that these students need to have as total an experience with empathic, understanding, and accepting adults as can be created. They need to have positive emotional and ego building experiences that are usually had at an earlier age by most children.

The last part of the day is the two hour work period known as the technical processes. We will describe and evaluate this portion of the curriculum later under a special heading.

General Overview of Second Year's Program, 1966-67

The Work Orientation Program was developed to work with alienated youth. The program was initiated because we were aware of the threat that a number of poorly educated, unemployed youth would pose to the social and economic institutions of our complicated industrial society. We were committed to the philosophy that human beings have a right to an education. which gives them meaningful preparation for some sort of employment.

From the review of the evaluation for this year's program at the five buildings, one can see that no program will succeed, regardless how well it may be planned, unless it is built around counselors and teachers who are skilled in supervising and guiding a relatively small number of students. Also, the educational component of our program is not likely to be much help unless it is carried out, at least in part, by highly skilled teachers and specialists who possess empathy for alienated youth. Of equal importance is having additional programs for alienated students, because no one program will satisfy the needs of all alienated youth.

Our past two year's experience has affirmed the belief that the greatest success with alienated youth will come through programs designed for students sixteen years or younger. According to, Mr. Daniel U. Levine, educators across the nation are drawing the same conclusion. In his article, "Work-Study Programs for Alienated High School Students," he said:

> "Programs should be directed and enlarged so as to serve alienated youngsters 16 years of age or younger. Few programs are now directed at youth below the age of 16, despite the widespread agreement among psychologists,

> sociologists, and educators that it is much harder to effectuate behavioral change and cognitive development as youngsters grow older and their behavioral patterns and mental processes become increasingly fixed."

Since many of the alienated youth enrolled in Work Orientation lack habits of punctuality and persistence and generally do not understand the expectations to which employers will hold them, a good deal of attention must be given to building good attitudes toward work and to developing understanding of what it takes to succeed. Not all teachers can work effectively with alienated students. For this reason, the success of the Work Orientation Program in each of the five buildings is dependent on their ability to staff the program.

General Overview of Third Year's Program, 1967-68

The merger of High School District 214 with the Department of Special Education, the Illinois Division of Vocational Rehabilitation and the Board of Vocational Education and Rehabilitation has thus far had a beneficial effect on our educational program. The consolidation of agencies has unified our efforts in behalf of the Special Education student and the student with social problems. The combined resources of these agencies make it possible for our district to provide these students with educational and vocational opportunities commensurate with their skills and abilities.

Students receiving the advantages provided through the Cooperative Working Agreement are those students in our Special Education classes (Educable Mentally Handicapped, Perceptually Handicapped, Partially Sighted, Blind), and those students who are in what was formerly our Work Orientation program. Students with physical handicaps may also share in some of the available services.

We have been very pleased with the cooperation and encouragement we have received from related state agencies.

To meet the many varied needs of the students under the Cooperative Working Agreement, forty-eight teachers, counselors, social workers and psychologists are engaged either full-time or part-time. We have also just received state qualification of eight more of our teachers as Special Education teachers under this agreement. The Cooperative Working Agreement has made it possible for us to assemble all these resources in behalf of the student with special needs.

Up to this point, the Cooperative Working Agreement is directed at two specific student groups in our schools--the educable mentally handicapped and the student with special needs.

The Division of Vocational Rehabilitation has authorized thirty-two educable mentally handicapped students for their services and benefits. Eighteen of these students are developing an orientation to the world of

work in out-of-school work stations, and fourteen are getting supervised work experience at in-school training stations. Students placed in out-of-school work stations receive compensation for their services from their employer. The students placed in school receive remuneration for services rendered through funds provided by the Division of Vocational Rehabilitation. Out-of-school work stations vary from Beeline Fashions to Harper College and St. Alexius Hospital. The in-school training stations are likewise varied, ranging from the cafeteria to audiovisual to custodial.

We are still in the process of acquainting the parents of the students with special needs with the benefits of affiliation with the Division of Vocational Rehabilitation. Meetings for parents have been held in all of our schools. The D.V.R. application must be signed by the parent. After parental consent for participation in this Cooperative Working Agreement program, the student must be judged eligible for D.V.R. services. This is ascertained by a case study work-up of pertinent information on the student. The student's past performance in school, both academically and behaviorally, as determined by the teachers and counselors, is considered. The student must also have a medical examination and a current test indicating ability level.

While we are introducing this new arrangement, we are not neglecting the vocational curiosity of these students. We are presently providing introductory units in our training stations. We hope to provide laboratory experiences as soon as possible in all buildings. Presently, we have been able to provide realistic work stations in the area of foods, woods and power mechanics.

The freshman girls in the "Tea Room" at Forest View High School served their first meal last week. Though the girls had "opening night jitters," all went well, and it looks like they are off to another successful year.

The interior of the new John Hersey High School is sure to be enhanced by the fine craftsmanship of the boys from C.W.A. who will be making cabinets for the shops and business areas.

Another workaday experience offered these students is the area of power mechanics. The students don't spend their time trying to reclaim "junk heaps." They utilize this laboratory experience to develop the skills required to keep a car running smoothly and safely on the road. They tune up everything from an outboard motor to an eight-cylinder engine. To provide these worthwhile experiences, it is necessary to have "guinea pigs" on which to work. These have come from the students' parents and the faculty. The charges are minimal for the job.

To provide a complete work experience, we intend to provide pay for services rendered in all of our work training stations. At present, no student in the special needs area is receiving pay. We expect to commence paying these students as soon as they are authorized under D.V.R.

The goal is to provide a work training station in each school which provides the student tangible evidence of his or her efforts. Our rationale is that these students need a situation in which they can experience some success. We feel there is no better way than for them to produce a product or service in which they can take personal pride.

At present, we have one hundred ninety-two students in our C.W.A. program. We anticipate an increase in this number by next year.

New Projects Initiated

Arlington High School - The boys are busily engaged in making the redwood signs for the new 18-hole golf course in Palatine. We are in the process of purchasing a router apparatus that will greatly facilitate the sign-making operation. We will be able to turn out a very attractive sign that has many uses and should be in demand. Any suggestions where we might find more sign projects will be appreciated.

Prospect High School - The technical processes class is making pamphlet racks for Harper College. When we get a sample completed, we will display it in the hope that we will get more orders.

Since our goal is to provide as many experiences as possible for these boys, we will be adding a new operation at Prospect. We have ordered an engraving machine that can be used to engrave plaques, name plates, plastic signs, etc. Our D.O. people and Harper College have already assured us of projects. We anticipate a big market for these various items.

Wheeling High School - The class is working on in-school service projects such as medical and storage cabinets. We are seeking orders from district schools for tape racks to be used to store shorthand tapes, and for typing bookstands. Lecterns for the new John Hersey High School building are being considered for a later project.

Forest View High School - Mr. Freeman has initiated a complete student-run auto service operation. He will act only in a supervisory capacity. The boys will have complete responsibility for the entire operation. They will plan the job, order parts and supplies, and direct all activities. The boys are always in need of cars for tune-ups, oil change, grease jobs, etc. They are happy to provide service. Bring your car in some time.

Through the efforts of Dr. Gilbert I was given the opportunity to apprise the area superintendents of the service we may be able to provide them in our C.W.A. technical processes classes. I distributed sheets describing our operation and the type of projects we are seeking. Any tax-supported, non-profit organization is encouraged to explore the possibility of our doing some project for them. The superintendents were very receptive. I received calls from five districts which resulted in two projects. The projects, which are for District 59, consist of making benches and storage boxes for Physical Education and also making bulletin boards.

I have called each park district in our area, introducing them to the possible service available to them through our program. The Palatine Golf Course project is the one result. Once we get samples of the fine work accomplished by these boys, I think more projects will be forthcoming.

The highlights of our activities for the month was the NBC-TV program of the Forest View Tearoom and the wood shop operations. I was well pleased with the way the program was presented. I am indebted to all those who were so helpful and cooperative in making this show such a fine success.

The TV presentation will receive national viewing over the NBC network. I have ordered a kinescope copy of the program so we may have it available to show visitors wishing to know about the operation.

Individual School Reports, 1966-67

Arlington High School - The W.O. program in Arlington has suffered many setbacks this year. They have been so numerous and to such a degree, that at times, its merit was completely overshadowed. Four of our original group quit school before the end of the first semester in spite of all efforts to hold them. Two proved to be so demoralizing to the program that they were removed at the end of the first semester. Both are still in school, simply because they have not reached the age to legally leave. One student four and a half months in a mental hospital, but he has returned and is an interested member of the group.

Early in January the technical processes class was dissolved and the W.O. Occupational English class under Miss Bazik was established. This arrangement pleased the students and teachers alike. Now the related class could and did become a working group without the upset of having certain students out every day for reading help. With this established routine, the students settled down to serious work.

At the beginning of the second semester nine new students were added. They are all still enrolled, however, one has attended class only twice. He has been identified as school-phobic and has come to the attention of the courts.

All of the above experiences have been discouraging, but there are bright spots and rewarding moments. There has been a definite improvement in the general attitude of the group as evidenced by improved attendance records and class behavior. Parents have been particularly vocal in expressing appreciation for improvements which they can see in the family relationships. There is still much anger being voiced in the counseling groups against parents, teachers, and all figures of authority, but it is heartening to note that there seems to be less violence in their hearts when their actions are curbed or they do not get exactly what they want.

These group counseling sessions are scheduled weekly and the students look forward to the opportunity to air their feelings. They are able to help each other in problem solving and decision making, and I am constantly surprised at their insight when they are not trying to make an impression

by being the tough guy.

In conclusion, I feel rather strongly that the reading-improvement is much more valuable to the student who meets W.O. qualifications than the original technical processes class.

Elk Grove High School - It is my general feeling most phases of the program this year were quite successful, but there are some areas that, if they are to continue, will need a thorough revamping. The successful phases were certainly the related class, the student counseling, and the parent counseling. Mr. Cudney provided an atmosphere in the classroom that was conducive to self-expression, self-examination, and growth. The students were able to explore openly their feelings toward their environment, examine these feelings with their peers and with an adult whom they trusted and respected, and by this process set a pattern for growth. Mr. Cudney provided a variety of meaningful classroom activities in the areas of English, vocational choice, psychology, and everyday affairs. In my own interviews with students the theme of having experienced a meaningful relationship with an adult who was understanding and just, was often expressed along with an appreciation of the educational activities provided.

The student counseling was also handled by Mr. Cudney and proved beneficial by itself and as an aid in conditioning the related class. The students seemed to be able to relate very easily to Mr. Cudney in the one-to-one counseling interviews, and I am certain he has helped many of the students resolve personal conflicts and has encouraged others to seek additional professional help.

Since Mr. Cudney had the most contact with the students he was often contacted by parents and teachers when problems arose in the home and in the school and was often able to help resolve these difficulties. Consolidating the contact with these students in one person's hands has certainly proved beneficial. I think the selection process, while not as elaborate as some procedures used in the past, was effective for the most part as it provided us with students who were definitely not functioning in the regular school program, but did have a good chance for success in a program of this type. Mr. Cudney's time and efforts in this program have certainly proved most of the impetus that produced what success we have had.

The parent counseling was provided by Miss Ulrich and although it was not started until the second semester it has proven to be a valuable part of the total program. Having a counselor who is not directly connected with the W.O. students dealing with the parent groups has worked quite well. There are no conflicts of interest and it negates the possibility of suspicion that private information will be flowing from parent to student and vice versa. The home calls made by Miss Ulrich to preface the organization of the parent group is something we feel should be expanded upon both for W.O. and for other students not in our special programs.

The reading instruction phase of W.O. has proven to be successful to the limit that we have access to the Occupational English specialist. The

Occupational English consultant in our school was not part of our original program. Mr. Prendergast joined the program on a one day a week basis after we had been in operation for some months. His work has been good and he has had access to our reading lab and the materials associated with this room. He has attempted to take an individual approach with each student. This has been somewhat hampered by the limited time that he and the students are available. If we want to continue this phase of the program, I hope we will be able to make it an integral part of our program from the beginning of next year and provide more of an opportunity for individual student work. Mr. Prendergast's efforts are certainly appreciated.

The greatest difficulty has been with the Technical Processes phase of the program. We have had two separate sets of problems. During the first semester this part of the program was handled by Mr. Royal who was hampered by the fact that he was not directly connected with any particular division of our school and was thus unable to have full access to the proper facilities. The work operation was first performed in a mathematics classroom and then in an electronics classroom, neither of which provided necessary working conditions. I feel that Mr. Royal did an adequate job in promoting a work climate considering the conditions under which he operated, his lack of experience in this program, and the type of work the students were performing. Mr. Royal's limited background in industrial arts and the facilities made the work projects necessarily of the simple nature. This was fine for a beginning operation but we had hoped to go to more complex meaningful work as the year progressed.

With this as one of the major factors, Mr. Darling took over the operation for the second semester. This provided the program with a teacher of wide industrial arts background and offered the facilities of the industrial arts area. New problems arose under this set-up, although it began well. The students had three separate projects that provided a variety of work experiences and kept their interest. We completed two of the projects and were left with only one repetitive task and the students soon tired of this work - creating irritability between students and teachers. Greater discipline problems soon developed that have made the contribution of this phase questionable.

If we are to continue this phase of the program I feel that the following measures are necessary:

1. We have a commitment from the school to provide proper facilities for a work program.

2. We have a staff member made available who has a background that will equip him to provide and direct meaningful work experience while still having an understanding and empathy for the type of students enrolled in this program.

3. That meaningful work projects providing a greater variety of tasks be available.

I think this part of the program can be highly successful and worthwhile under the above mentioned conditions.

In conclusion, I repeat that I feel the program was generally worthwhile, and if we could institute the aforementioned suggestions we would have a highly successful program that would definitely benefit a group of students that we find in our school each year, who cannot function successfully in the traditional program.

Forest View High School - It is the purpose of the Work Orientation Program to create an educational atmosphere which would make it possible for the disenchanted, underachieving student to gain in self-esteem and confidence. Too often these students are regarded as hopelessly unmotivated and completely unable to profit from any educational opportunity. It was our desire to find teachers and counselors who did not share this view and who were willing to relate to these students in a positive way taking them from where they were, and going as far as they could go.

Prospect High School - The Prospect High School Work Orientation program for the school year 1966-67 has been more successful in some aspects, but also disappointing in some aspects. As I review the year in my mind, I find it much smoother, fewer crises, and better organized. At the same time, we have become more sophisticated in our expectations and we can be more critical of the program and of ourselves.

The summer workshop of last year was very helpful in the selection of appropriate students for the program. The guidelines and ideas presented in this workshop did a great deal toward making the year an easier one. Using the ideas developed, a more careful screening was accomplished. Last year several acting out students caused many disruptions; this year we did not have these overtones. The intake interviews with students and parents did much to clarify the program of the school and the problems of the family.

Wheeling High School - A Work Orientation workshop was held last summer to develop a course of study for the related class. This course of study seemingly met the needs of the students. The only criticism would be that it encompassed too much material for one year. It would be advisable to divide the material into a two year course of study.

Next year will present a problem in that Mr. Henne's class has had both freshmen and sophomores during the year. This means there might be some overlapping of course content. It is possible that a General Business approach could be implemented with the upcoming sophomore group which will number twenty-three students. The incoming freshmen (15-20) could still work from the present course of study with emphasis on the home, school, etc. It is felt that the Related Class is somewhat orientated around a group therapy approach, however, it is also felt that more emphasis can be placed on homework and tests. Firmness is also a trait that must be applied, but at the same time we must be practical.

Individual School Reports, 1967-68

Arlington High School - This was a very good year for the program. As I review the evaluations by the staff, I am convinced that each of us, as he views his areas and his goals, must agree. I must hasten to state that "a good year" does not imply 100% effectiveness nor even a dramatic change in the attitudes and/or behavior of the twelve boys; there is change, it is subtle, but it is evident. I feel that the most significant and obvious change in the boys was their uniformly positive approach to school as an institution and as an idea. The relative academic success, the improvement of attendance, the ability of some of the boys to establish relationships with some of the staff, the general improvement of self-images, the increase in self-esteem, the budding pride in workmanship, these are subtle, hard-to-measure changes.

The combination of these minute changes produces a discernibly different youngster; parents see glimmers of hope, teachers are encouraged by a modicum of success. One of the advantages of this program is that these boys work with, and under the direction of special people. This staff was completely committed to the premise that these boys could be helped by means of a special program.

It would seem to be appropriate to discuss specific facets of the program individually:

1. Staff - Mrs. Claney continued as counselor; her role in the selection process, her experience with the program since its inception, her competence as a counselor, and her experience as a teacher of English for students classified as slow, made Mrs. Claney's selection a natural one. I feel Mrs. Claney is the real driving force of the Arlington High School program; she must continue.

   Miss Cobb served as Reading Teacher; her interest in and training for teaching students with reading problems prompted her recruitment. Miss Cobb's contribution is major: these students must improve their reading skills.

   Mr. Larsen supervised the Technical Processes portion of the program, and did an outstanding job. In my opinion, Mr. Larsen represents the major difference between the failure of the 1966-67 program and the success of the 1967-68 program. Here was a very powerfully masculine figure with many years of experience in both Industrial Arts and Athletics.

   Mr. Strong, our school Social Worker, had a positive impact on parent groups; as he reports in his evaluation, his effectiveness with individuals was very limited. In cooperation with Mrs. Claney, his leadershop and guidance with the parent groups was most meaningful. Group counseling for the parents of the students promises to be a most fruitful aspect of the program, probably

because of John Strong. In my estimation, it makes extremely good sense for Mr. Strong to act as a chaperone for field trips, since it enables him to see the boys in a social setting.

Mr. Vena taught the English class, and became an outstanding representative of the C.W.A. staff. His emphatically masculine image, coupled with the skills of a master teacher and the genuine concern of an adult, enabled Mr. Vena to establish exceptionally good relationships with the boys. His enthusiasm for the program and his willingness to give freely of his time and himself have made better boys of his students.

2. Students - It is neither feasible, nor worthwhile to review each boy's case; in addition, Mrs. Claney's evaluation deals with this topic. It is appropriate, however, to make some general comments concerning the group.

   a. I have, in the past, felt very strongly that the C.W.A. student needs immediate reward for his efforts, and I feel even more emphatically that this is true after this year. I have changed by opinion regarding pay, however; it is now my feeling that pay per se is not the way to instill those attitudes and values for which the C.W.A. Program was designed. The staff and I feel very strongly that self-respect and respect for others, pride in workmanship, loyalty to school, family, and self, dependability, and a host of other attitudes can be learned and nurtured, without a direct relationship to salary or grades.

   b. These students should function in a very structured classroom atmosphere; they should be impressed by the fact that every teacher is so concerned with the C.W.A. class that every day's goal must be clearly identifiable, the means of reaching the goal must be flexible - not unbridled or haphazard, but easily adapted.

   c. As the Building Coordinator, I am convinced that each boy in the C.W.A. Project has made significant and obvious strides from where he was (in relation to 2(a))when he came to Arlington, to where he was at the end of the school year. I would refuse, in an instant, to hole these boys up as models of Young American Males, but I would not hesitate to use them as examples of what the C.W.A. can accomplish.

      I hold no doubt that the boys made progress only because they came under the influence of competent professionals in a specially structured setting, with a carefully controlled atmosphere.

3. Technical Processes Projects - During the '67-68 school year, the Arlington C.W.A. Program was blessed with outstanding projects. The worthwhile nature of the projects was easily and clearly impressed on the boys -- never could they have gotten the impression that this was a "make-work" activity. The values and goals discussed in 2 (a) were clearly related to the work on the products and/or the use to be made of the products. It is essential that projects be evaluated by this criteria to insure the maximum correlation between classroom or philosophical goals, and opportunities offered for their practical application in the Technical Processes Room.

4. General Working Conditions - It must be said that the facilities afforded, and attitude of the building administration were of significant importance to the success of the C.W.A. Program. The physical setting of the in-school activities was comparable to any extended to regular classes; a willingness to consider special requests and to comply whenever feasible was not only appreciated, but an important contribution - above all, in the matter of special field trip days. The latter is an extremely important point because of the generally extraordinary nature of the trip or destination.

   By sheer chance, all staff members were available for meetings at the same time, this too, had its influence on the program since it provided an opportunity to:

   a. Establish a closely knit group.
   b. Exchange information.
   c. Compare the behavior of the boys in several settings.

5. Parent Counseling Groups - Mrs. Claney and Mr. Strong report great satisfaction in the progress of the group toward the goals which had been determined prior to the opening session. We had agreed that the prime goals should be:

   a. To provide parents with similar problems with an opportunity to share experiences and ideas.

   b. To demonstrate our concern for their child.

   c. To put into the community parents who were knowledgeable about and supportive of the C.W.A. Program.

   d. To effect some change in the relationship between child and parent that would indicate a better understanding of the etiology of each others' attitudes, and, hopefully, easier acceptance of one another as independent personalities.

Elk Grove High School - It is my feeling that most phases of the C.W.A. program this year were successful while others for reasons outlined later in this report were less successful. I felt that the individual counseling and the C.W.A. English class were probably most successful. The student group counseling, as explained

in the section relating to that subject, ran into some difficulties, as did the parent groups. I feel however, that there was success with these endeavors. The greatest difficulty occurred in the C.W.A. Technical Processes Class. This is certainly a key area in determining success of the total program and I hope the difficulties present this year can be resolved as we begin the program for 1968-69.

Before I expand on each of these activities I would like to address myself to the selection process used last year and the information given to parents at the inception of this program. I have the feeling that much of our difficulty stemmed directly from a misunderstanding of what the program would be doing. Each parent was contacted and given an explanation of the program as it was envisioned during the summer of 1967. All the parents accepted the program as outlined for them and agreed to the enrollment of their boys. The boys were contacted, but on a more limited basis and had their initial explanation of the program from the parents. Evidently the parents understanding of the program was not as clear as we had thought, and the boys come to us with a chip on their shoulders believing that they had been put in a special group for reasons other than those outlined in our program. To further complicate this situation the status of the C.W.A. Program was in a state of flux as school opened and conflicting opinions about its operation were present. As the direction became clear it was somewhat different from our original plans and the course, particularly the Technical Processes Class, had to be altered. This of course added to the feelings of the students and some of the parents that this was a different program than they were originally offered. This feeling prevailed, although efforts were certainly made to alter it, through the school year, and limited our success. The present program is certainly more adequately defined and our procedure to be used in selecting students for next year's program will provide for adequate communication with both parents and students. I mention this only to put into proper focus many of the points mentioned in the following reports.

I would like to express my commendation of Mary Barber and James Prow who worked as a team in providing the counseling services for this program. They gave of themselves fully to make this program a success. Their work with the students both individually and in groups, and with the parents both individually and in groups was highly commendable. The suggestions and procedures worked out by these people to be incorporated in our '68-'69 program should give us impetus for greater success. As you will see in their reports and research they are highly committed to this program.

I would like to express my appreciation for an outstanding effort to Mrs. Judy Maldonado, teacher of the C.W.A. English class. Without a course outline, Mrs. Maldonado developed a meaningful program in reading and English for this group of students. From personal observation and from student feedback, I feel this was a very effective part of our total program, and those students choosing to enter the regular school program next year should have little difficulty.

The Technical Processes as indicated previously was the source of some difficulty. Mr. Robert Lorenz made an effort to provide a meaningful experience, but due to many circumstances had difficulty in making progress in this direction.

Mr. Lorenz was put in this program with only a brief orientation; woodworking is not his major field; we changed our approach after the program began; the attitude of the students was not conducive to total success. These are some of the reasons for the difficulties that did arise. Yet this group, once a project was established was able to successfully produce thirty lecterns that are now used in classrooms through the school. I believe that as this project was drawing to a close the group pride and individual pride that we were trying to instill was beginning to develop. The mistakes made this year in this phase of the program have made us aware of the need for a new approach. We feel that this has been instituted in our plans for '68-69.

Activities of note that were used this year would include:

1. Group counseling in lieu of one day of English class.

2. Availability of individual counseling on a regular basis.

3. Parent contact developed through group sessions, but maintained through frequent individual contacts by the counselor.

4. Research to determine progress in attitude, achievement, and scholastic success.

5. A realistic approach to providing a meaningful freshman English experience, using a variety of available materials not usually used in the regular ninth grade program.

6. The development of a project in the Technical Processes class that can elicit a feeling of individual and group pride.

7. The provision for a money earning experience for these students by simulating a real working situation in the school.

8. Involvement of the total school staff if only to make them aware of the existence of this type of student.

Provisions that we feel should be instituted for the '68-'69 program would include:

1. A thorough orientation for all involved in the program.

2. A program set at the beginning of the year that will not be greatly changed as the year progresses.

3. A method of providing a monetary reward for student efforts in the Technical Processes that will be instituted at the beginning of the year.

4. The development of a series of meaningful projects in the Technical Processes classes.

5. Commitment to this program by all assigned to be a part of it.

6. Regularly scheduled times for all involved to meet to coordinate efforts.

7. Explanation of the program to both students and parents prior to placement.

8. A commitment of the parents to involvement in group sessions on a regular basis.

9. Continued counseling, both individual and group, on a regular basis and in cooperation with the teachers of the C.W.A. classes.

As one can readily see we cannot term this year's program a total success, but we have had enough small successes that we can say that this program has been worthwhile to many students and that it has shown us the potential of being a needed addition to our total school offerings. With the inclusion of many of the recommendations mentioned in this report we hope to change this potential to reality in 1968-69.

Prospect High School - As an overview, the people connected with the program have felt that this year we have continued to improve the program in the past years. We feel that this year's program with the boys was particularly successful. It is difficult to explain why, but some possible reasons are as follows:

1. Continued refinement in the selection procedures.
2. Fewer hostile, acting out, sick students.
3. Better clarification of students expectations.
4. More goal orientated teaching was attempted.

Mr. Exline discussed with us some of the methods and techniques that he used with the students. This was tape recorded and has been routed to the people who will be working in the program next year. Mr. Exline was able to have the students determine their own limits and set methods for achieving these limits. He feels that this permitted a more positive identification toward school and education.

This year we made more extensive use of field trips than in the past, and this was also used as a lever in seeking students' cooperation. This seems to have worked very well. Mr. Etherton indicated that this was the best group of students that he has had in the several years we have had the Work Orientation Program. Besides the reasons listed above, Mr. Etherton felt that having the students work in smaller groups of two or three on more individual projects was more beneficial compared to a larger group working on a single project.

The counselors involved in counseling these students feel that W.O. students are particularly difficult to work with, in that "action counseling" is more appropriate than our usual individual or group methods. This year the emphasis was on group counseling rather than individual counseling. There is the feeling that we need to make more emphasis on coordinating and communicating

between the counselor and the teachers of these students.

There is concern over dropping the technical processes class for next year. It would be more desirable to have both more counselors and a technical processes class, but this does not appear possible.

Part 6

ENGLISH AND READING EVALUATIONS

1966 - 67
1967 - 68

The criterion for placement in the program is that the student be below grade level in reading achievement, thus major emphasis is placed upon developing reading and communication skills. The method and materials used in working with these students vary. The teacher has the flexibility to adjust and adapt his curriculum to meet the needs and ability level of the student.

When possible the English and Reading teacher work together as a team combining their talents to work with these students. This team is complemented by counselors and social workers who meet with the students in the class to work on personnel-social adjustment.

The English related class was taught by a counselor during the first two years of the program, then it was assigned to an English teacher who continued to work closely with the guidance staff. This arrangement has proved to be quite successful.

Individual Schools - 1966-67

Arlington High School - During the second semester of the 1966-67 school year, the W.O. Occupational English class seems to be providing the kinds of learning experiences, reading skills, and environment which help foster a more acceptable and wholesome attitude for the students enrolled in the program. The location and scheduling of the class setting has added many positive features. The class which is held during the first period each day, meets in the reading laboratory room. The fact that the class meets during the first period of the day provides a kind of cohesiveness and there has been very little, if any, restlessness or boredom. The well-equipped reading lab with its many reading machines, paperback books, and adjoining reading rooms has provided the kind of environment which the W.O. student needs.

So far this year, the students have made use of many of the machines. Each student has worked with the Craig Reader at his particular level. All of the students are using the E.D.L. Listen and Read Program. One student has done a great deal of reading with the shadowscope and a few students used the S.R.A. Reading Accelerator. Seven of the students are now using the E.D.L. Controlled Reader. From time to time, the Tachistoscope is used

with the entire class as a kind of motivational device. One of the students is usually assigned to operate the machine and a kind of "group-dependence" emerges.

In addition to using the reading machines, the students have also been given a great deal of basic reading skill instruction through board work, workbooks, and individualized reading selections. Every student learned the P.Q.R.S.T. method of study and the study skills slides from the Instructional Resource Center were shown. Each student has completed or soon will complete a workbook or reading skills from the Follett Vocational Reading Series. Several boys are seriously working on a somewhat technical workbook entitled Understanding the Automobile published by the Follett Company.

The class has also spent a great deal of time in learning the skills of critical listening and effective participation in group discussion. One method used to stimulate this kind of learning was the showing of two film strips distributed by Guidance Associates. The films used were "The Tuned Out Generation" and "Sex: A Moral Dilema for Teenagers."

Besides being a skill-building and reading improvement course, the W.O. Occupational English course is also a developmental kind of reading program. It is developmental in nature, by the fact that some attempt has been made to have some carry-over of reading improvement into the other subjects which the students are taking. Each teacher who has the W.O. students in his classes has been contacted. Some of the dittoed forms used in making these contacts are attached to this report. The students were made aware of the fact that their teachers were kept informed about their progress and the students seemed to show much appreciation for this kind of communication.

The students also indicated some other positive reactions when they were recently asked to comment on their feelings toward the W.O. Occupational English class. Attached are a few of their responses:

"I like this class very much. I know I am learning because it shows in my other classes. I hope to be in it next year too."

"I like this class very much. I learned more about reading than if I were in a regular English class."

"I like this class and the kids in here. It is the best class that I ever had, and it is much better than any other class."

"I like the class very much. I think it helps your reading skill greatly. I know I enjoy working with the Craig Reader, and it's very beneficial to one's reading skill. All in all, I really like the class."

"Yes, I like it, but not some of the students sometimes. I try to learn and I think I have learned a little in here."

"I think this class is a very helpful one to all of us, and I think we're all getting a lot out of it."

"I like this class and I've learned more English here than I did since I started school."

"I really like W.O. It is fun and interesting. I learned a little, too."

"I like this class and it helped me because I don't have as much trouble reading as I did before."

"The W.O. reading class is fine. I improved my reading since I've been in here. This is about the only class that you can air your feelings out on anything: school, police, etc. I like classes that are informal. You are more relaxed and you learn more that way."

"I think this is a good class and I like it except for one kid and you know who that is. And I think we learn a lot in this class too."

Each student in the Work Orientation Program was provided with at least one period of reading instruction each week. Reading was taught on an individual basis. The students were given an individual evaluation on intelligence, reading ability and personal interest. After evaluations were completed and the reading levels and reading problems of the students were determined, each student was provided with reading material that was at his level of ability. The reading teacher gave individual instruction on word recognition skills, vocabulary, and comprehension. The books used included the following:

1. Reader's Digest Adult Readers - 3rd grade level
2. Reader's Digest Reading Skill Builder
3. Reader's Digest Advanced Reading Skill Builder
4. How to Improve Your Reading - SRA
5. How to Become a Better Reader - SRA
6. Reader's Digest - Help Yourself to Improve Your Reading

Each student kept his reading progress on a form such as the following:

Date	Name of Selection Read	Rate	Percent Comprehension

Additional books, magazines and pamphlets were provided for recreational reading. The students found the following materials to be most interesting:

S.R.A. Pamphlets, e.g.:

Facts About Alcohol
Finding Part-Time Jobs
Facts About Juvenile Delinquency
Understanding Yourself
Understanding the Other Sex

Twenty Grand Short Stories
Vanguard - Scott Foresman
Hot Rod Magazine
Outdoor Life Magazine
Follet Vocational reading series, e.g. The Delso Sisters, Beauticians

The S.R.A. Reading Accelerator was also used with some of the students. The members of the class who used the accelerator seemed motivated and also seemed to enjoy reading with it. Several students also found that by using the tape recorder, they could more easily identify some of their reading problems. The tape recorder was also a very excellent motivational device.

During the semester, a few reading sessions were held with the entire class. Two meetings which seemed to be most beneficial were the following:

1. A session on How to Study. The P.Q.R.S.T. study method was presented.

2. A group discussion on "It's a Dead-End Road for the Dropout" - A Reader's Digest reprint. The discussion was a result of a lesson on finding topic sentences and main ideas in the article mentioned above.

At the end of the semester, the students were retested. A summary of the test results is attached to this report.

I feel that the reading phase of the Work Orientation program is extremely important. Many students seemed to improve in their reading efficiency. In some instances, where no positive change in reading ability was apparent positive change in attitude seemed to prevail. I also feel that one semester was quite a short period of time to accomplish a great deal in reading, and that on a yearly schedule much more can be done. I am looking forward to working with a similar group next year.

e.g.:

TABLE I

I.Q. Scores of Work Orientation Students

Student	S.R.A.-HSPT	WECHSLER Verbal	WECHSLER Performance	WECHSLER Full Scale	Peabody Picture Voc. I.Q.
1	101	106	120	114	100
2	99	123	124	125	112
3	98	111	114	114	93
4	79	78	74	75	67
5	85	103	100	102	104
6	95	104	100	102	104
7	91	81	96	89	79
8	96	113	136	126	103
9	Otis 100	116	95	108	109
10	Otis 88	94	89	91	97
11	104	109	106	108	105

TABLE II - READING TESTS SUMMARY

		Gates Reading Survey						Gray Oral Reading Test	
		Form I-Pretest			Form II-Post-test			Form A-Pretest	Form D-Post-test
		Speed and Accuracy							
Student	Reading Expectancy	G.E.	% Correct	Acc. Rating	G.E.	% Correct	Acc. Rating	Grade Equivalents	Grade Equivalents
1	12.4	6.3	78	V.Low	6.3	93	Low	3.0	3.3
2	12.3	12.1	94	Low	11.4	96	Med.	7.5	8.3
3	11.3	5.3	92	Med.	7.8	100	V.high	4.6	4.8
4	7.8	3.9	100	V.high	4.8	100	V.high	3.5	3.3
5	11.2	6.3	100	V.high	7.4	100	V.high	2.1	4.1
6	10.2	12.1	94	Low	7.4	95	Med.	10.4	9.8
7	8.1	5.8	100	V.high	7.8	100	V.high	4.5	5.7
8	13.6	8.6	100	V.high	8.2	100	V.high	10.8	11.9
9	12.9	11.4	96	Med.	not taken			11.0	12.0+
10	10.1	6.5	100	V.high	6.5	88	Low	3.9	6.8
11	10.7	9.9	100	V.high	11.3	100	V.high	6.0	10.0

MEMO
TO: Teachers - 1966
RE: Work Orientation Occupational English Program

I thought that the following information on_____might be helpful to you:

1. S.R.A. High School Placement Test Scores

	Reading	Arith.	Lang. Arts	Composite
Grade Equivalents	_____	_____	_____	_____

2. Differential Aptitude Test Scores

	Verbal Reasoning	Numerical Ability	Abstract Reasoning	Mechanical Reasoning	V.R.+N.A.
Percentiles (National Norms)	_____	_____	_____	_____	_____

3. Iowa Test of Educational Development

	Percentile	Grade Equivalent
Composite	_____	_____

4. Gates Reading Survey

	Speed	Vocab	Comprehension	Average
	_____	_____	_____	_____
Grade Equivalents	Percent Rating _____			
	Accuracy Rating _____			

5. O'Rourke Survey Test of Vocabulary
Percentile
(National Norms)_____

6. Huelsman's Word Discrimination Test
Grade Equivalent_____

If you would like a more detailed interpretation of these results, I shall be very glad to go over the scores with you. Feel free to come to my office Room 109.

I would also be interested in knowing how this student is doing in your class. Please tear off the bottom of this sheet and return your comments to me as soon as possible.

Name of Student_____Date_____
Subject_____

Comment briefly on the general attitude of this student_____
_____
_____
Times absent in your class_____Times tardy to your class_____
How often homework done: Never_____, Sometimes_____, Always_____
Present grades in class_____
List any interests which this student may have expressed in class_____
_____
Add any additional comments on the back of this sheet.

_____
Teacher Signature

MEMO

TO: Teachers - 1967
RE: Occupational English Program

_____, who is in your_____

_____class is enrolled in the Work Orientation Program here at Arlington High School. All students in the W.O. Program are provided with one course of reading instruction. The reading program is designed to help students read more efficiently so that they can be able to function adequately in the world of work, enjoy leisure time reading materials, and also do a better job in their other school courses. Reading is taught on an individual basis. The students are given an individual evaluation in intelligence, reading ability, and personal interests. After evaluations are completed and the reading levels and reading problems are determined, each student is provided with reading material that is at his level of ability and caliber of interest. In addition to working on these reading materials, the students also work on some of their assignments from other classes.

I am presently teaching this reading class, and I would like to talk with you from time to time on the progress of this student in your class. If you notice any reading difficulties or behavior problems with the student named above, I would like to hear about these as soon as possible. Just drop a note in my mailbox. If you would like to have more information about this student and the W.O. Program feel free to come in and see me.

Elk Grove High School - This year's W.O. Program has achieved many things--some of a positive nature and a few negative. Any time a program of this type is initiated, difficulties can be expected, but from these we hope to learn. We have learned a great deal, and I am sure have profited by the experience.

Any true evaluation must include the goals which we were attempting to achieve and just how we measured up to them. The basic philosophy and goals of our W.O. Program were the following:

1. To provide the student with a modified school program.

2. To provide the student with understanding and sympathetic counseling on a day-to-day basis.

3. To provide the environment for significant attitudinal changes on the part of the participants.

4. To provide meaningful work experience in a supervised and controlled setting.

5. To provide the student with opportunities for skill development in reading.

I feel that we have met these goals within the scope of our expectations. We weren't going to change significantly the behavioral patterns of all the students at this stage of their schooling. I feel that we did make some changes and that the attempt was justified.

We did modify the student schedule in terms of actual academic participation. Many of the participants felt that the reduction of academic pressure was their greatest need at the present time. The combination of academics, related class, and work experience was very appealing to them.

The provision of counseling daily, both in the group process, and individually in the counseling office was a consoling factor. The students found in this, the security and friendship they all were seeking. All of the students appreciated having a friend who would take time to listen to their troubles. I am sure many difficulties were resolved through this relationship.

I think that we provided the environment for those who wished to make positive changes in attitude. Some took advantage of the opportunities, but a few were unable to see the significance for them. Immediate gratification of needs still continues to be the goal of a few in the program.

The basic philosophy of the work experience program was excellent but the actual implementation was somewhat discouraging. The students were provided with work activities but the nature of the tasks became too boring. Due to circumstances, the stuaents were assigned to repetitive tasks for most of the year. The lack of diversification in work experiences did

a great deal of damage to the morale of the participants and also the supervisors. I will say that success in the technical processes areas is greatly dependent upon the personality and viewpoint of the supervisor. This program can be successful but the supervising personnel must be selected with care. The type of student we identified for this program needs a patient and understanding teacher.

The skill development in reading was successful. The students weren't particularly overjoyed with this phase of the program, but once they got down to the task, they seemed to enjoy it and get something for it.

Some observations:

1. The students were unanimous in their support of the program until they found the technical processes class to be very uncomfortable. They became bored and very dissatisfied with the methods of supervision.

2. The students felt that the classroom experience was a good opportunity for them to open up and be themselves. Many problems and difficulties were resolved in this setting.

3. They looked forward to any opportunity to get out of school - field trip especially. They didn't particularly care where, just so they got out.

4. The girls in the bookstore thought it was very worthwhile experience. This aspect of work experience was very successful.

5. The letters sent home to parents, and the home visits were very successful.

6. The parent counseling was well received. Some of the participants were disappointed when they ended the sessions.

7. We lost one boy who dropped out after consultation with his parents and the school psychologist. His association with W.O. was the sole factor in keeping him in school as long as we did. He found employment in a service station where he could feel some satisfaction in his work.

Recommendations:

1. Make early identification of students for the program so they will be assigned on the first day of school.

2. Continue the related type class on a three day a week basis with reading on the remaining two.

3. Do not continue the library study; they don't have enough to study.

4. The use of weekly assignments should be discontinued; the student and teachers would not follow through on them.

5. The bookstore should be retained as a work station; it has excellent potential.

6. The use of Scope Magazine should be continued in the classroom.

7. The Guidance Associates film strips and records are excellent devices for stimulating discussions.

8. The Follett and Turner-Livingston materials were poorly received by the students. I don't recommend their continued use.

9. The related class emphasis should be on group guidance and counseling. Preparation for "everyday living" should be the goal.

10. Technical Processes under the present arrangement should be dropped.

11. A Technical Processes program should be devised which gives the student opportunity to create a finished product in which he can take individual pride.

12. Use the bookstore as an outlet for a variety of products made in the Technical Processes class.

13. Get a man in Technical Processes who has a background in Arts and Crafts.

14. Do not allow girls in the Technical Processes class unless there are specific tasks they can perform. (Bookstore included).

15. Play down the aspect of pay in the Technical Processes program; this should be secondary, not the primary motivator.

16. Make home visits at the beginning of the year and periodically throughout the year.

17. Continue parent counseling - parent contact is the key to success.

18. Keep the class size in the twelve to fifteen ratio.

19. Do not release any students from Technical Processes for out-of-school work experience.

We have met success and failure this year in our program, but we have gained much on which to build our programs of the future. We can be proud of our successes and rededicate ourselves to the task of reversing our failures. Patience is the by-word by which we should guide ourselves in working with this type of child.

The efforts, encouragement, and cooperation which we received from Mr. Thomas O'Driscoll, Director of Pupil Personnel Services, and Mr. Warren Collier was greatly appreciated. We were very fortunate to receive the backing of the school administration. Both Dr. Thomas and Mr. Haskell were

very helpful. I was pleased with the favorable reaction from the faculty. In general, the program was well backed by the administration and faculty.

I personally feel that the program has gone well. I have enjoyed my association with the group of students. They have presented me with many trials and tribulations but I hope they have been worthwhile.

W.O. students are programmed into the reading lab one class period during the week. The Gates Reading Survey is administered to determine approximate reading grade level. While these are being scored and evaluated, the class does readings on the nature of good reading and the causes of reading disabilities. After several class sessions most students are ready to accept a guided reading program.

The objectives of the guided reading program are to increase speed and comprehension and to develop a positive attitude toward books. Motivation is a major problem and for this reason a machine approach to reading is preferred. Students are timed on short reading selections in Nila Benton Smith's Be A Better Reader, Book Four. Elizabeth Simpson's Better Reading Book yields a reading rate for each student on a long selection. All timed readings are followed by comprehension and vocabulary exercises. The students are then directed through either a Craig Reader Program on their reading level or through the EDL Controlled Reader. Timed readings are continued to mark student progress in a normal reading situation. Most students show an increase in speed and comprehension.

Students are encouraged at all sessions to continue practice in reading through an independent reading program. For this purpose a variety of paperback books has been made available. No book reports are required and the only follow-up is informal discussion with the reading teacher.

It is my recommendation that the reading program for W.O. students be continued. The program would greatly improve, however, from additional reading instruction during the week. One class period per week, for example, in the school library would not be at all out of line. One more class period each week reading current newspapers or periodicals under the guidance of the W.O. instructor would greatly support the Occupational English program. It is my conviction, however, that a textbook/workbook approach to reading be avoided.

Forest View High School - Mr. Ron Rovin experimented with a speed reading course developed by a commercial school. He used our W.O. students and non-W.O. students and selected a random group as a control group. Pre-tests were given in reading skills and a post-test will be given in May to determine the rate of growth or loss that this method produces. Mr. Rovin had concluded that this highly structured approach cannot be taught effectively over a thirty week period to most students. He recommends a shortened course of concentrated effort and study followed by small discussion groups. He also concluded that increased ability in reading does generally result in increased academic confidence. All of the students in the program read a good deal more than usual. Several parents were pleased with the improved attitude in reading that their youngsters displayed. With some adjustment in method and time, the reading will continue to be

an important facet of our program.

The consensus of opinion is that the Reading Program should be revamped to make it an integral part of the class procedure. Taking the students from the regular class and sending them to the reading teacher has not been successful. The Scope materials have held the interest of the students quite well. Movies have been used more extensively than in the past. Student interest in reading plays has been a surprise to the teacher, but has been capitalized upon as a technique. The monthly field trips have been an excellent motivational tool. One boy indicated surprise that anyone would want to take him anywhere, especially the school. This year the related class has been the most successful aspect of the program. One reason is the year's experience of the teachers. Another, I feel, is the "two teacher" approach. This has permitted a great deal of flexibility and manipulation of the class. In many activities the class has been divided into two groups and this has worked very well.

Individual Schools - 1967-68

Arlington High School - The best word to describe this year's C.W.A. English program at Arlington High School would be "experimental." Coming in "cold" to this program was certainly an experience to be remembered. Having absolutely no background in course work or experience with this kind of student, I felt at a loss when I began. I experimented with getting acquainted with the students because I felt somewhat strange and I could sense that the boys were also uncomfortable. This proved to be valuable because I think the boys appreciated knowing what I expected of them and what they expected from me. I felt that the teacher must show these boys that teachers are human. This I believe was very instrumental in gaining their confidence.

The second phase of our class was concerned with more "experimentation." We used workbooks (TURNER-LIVINGSTON COMMUNICATION SERIES), the feeling was that the workbooks would be better than the traditional grammar book. Much of the time we discussed the situations in the stories and talked about values and attitudes. Because of the extensive discussions, only a few of the books were completed. Trying to achieve variety and avoid monotony, we also worked with the Follett Basic Learning Program in English. This series was more concerned with the fundamentals of English. I believe this would be better to use at a freshman level and the Turner series more adapted for the sophomore level.

We did not complete either series because of the movie project which I believe was the most important phase of this year's program. I got the idea to make a film from a recent article I read. It might be a way to have the boys do something creative. I introduced the idea through an article in Scope Magazine which we had been using for supplemental reading throughout the year. Immediately the boys interest was aroused knowing that the movie project was their responsibility which they accepted enthusiastically. We began by having the boys try out for parts. I let the boys be the judge and their choices were identical with mine. At this point in the school year I

was beginning to know something about the dynamics of these students. I felt the best approach in working with these boys would be for me to start by accentuating their talents and strong points. This way both the students and I felt that we had accomplished something. We progressed into more difficult work as the year went by, but always trying to build their confidence. These students had not experienced much success in school up to this point. Once some confidence is built you can then work on attitudes and values.

The movie project is still in progress. I hope to have it completed shortly. We have had a slight delay, one of the actors cut his foot. I have noticed a slight change in the boys attitude since we started this project. For example, while shooting this film the boys were very punctual. When I say punctual this also includes the students coming on on Saturday mornings. We have met and shot film on six different Saturdays beginning at 7:00 A.M. and lasting until 12:00 noon. At no time did the boys ever refuse to meet on Saturday. I believe some, even if minute, progress has been made. The boys behaved excellently while filming in the police station and in general conducted themselves well.

Generally, I feel that the class has shown some accomplishment. They are still rough, sometimes crude, but they are a little different now than they were at the beginning of the year. Different in a positive sense.

I don't feel qualified to offer any recommendations at this point, but I think the field trips were extremely valuable, and I would like to see them scheduled in the future. Of course the field trip to Springfield was not only educationally excellent, but a superb way to show the students that the school is concerned about them.

I think the cooperation this year between faculty members in this program was exceptionally good; it added a spirit of togetherness that made teaching enjoyable.

I would like to compliment Mr. Schroeder and Mrs. Claney for their valuable assistance and willing manner concerning any request I presented. I believe this kind of attitude will make the program a success.

A reading skills program was set up in connection with the 12 W.O. boys during the school year 1967-68. Two reading tests -- the Gates Reading Survey, Form 1, for Grade 3 through Grade 10 and the Von Wagenen Analytical Reading Scales, Form M, Junior division -- were administered in order to establish the reading performance level of each individual. Then a reading program was formulated at each grade level. Each student was given a folder of work at his performance level in which he was to work at his own speed. Reading scores for this group ranged from 3rd to 10th grade. (two at 3rd grade; three at 4th grade; three at 5th grade; two at 6th grade; one at 7th grade; and one at 10th grade.)

Materials used in the program folders included:

Craig Reader, programs C1-C2-C3-C4-C5- and B
Be a Better Reader by N. B. Smith, Books I and II
Reader's Digest Skill Builders, 3, 4, 5, 6, 7
Programmed Reading (at all levels)
Language in Your Life I, Scope (at all levels)
Scope Magazine
Newspaper

Any or all programs available in the Arlington reading laboratory which were needed for practice in a specific skill.

Students came in once a week in an exchange period when my English I remedial students went for a free-reading period with the teacher of the related English skills in W.O. Some progress was noted, but high interest was shown by only a few students. This program has decided limitations: first, it is not easy for this type of student to switch to a new situation once a week for an hour and follow the continuity of the work; second, it is not easy for this type of student to come into a one-period-a-week class and behave in such a fashion that he can settle down immediately to work; third, one-period-a-week is not enough time to develop skills. Therefore, I do not recommend the scheduling of this type of reading program for next year. Instead we hope that these students will come to the reading lab two or three times a week from a study hall rather than from the English-related-skills class. They will come in small groups of three or four on Monday, Wednesday, Friday, or Tuesday, Thursday. They will be tested and put to work on their individualized programs when I will be having English I remedial or developmental reading classes. We hope to have tutors available during these periods to assist in answering questions and instructing in the use of new materials. These tutors will be volunteer upper-classmen who are willing to assist during their study hall periods. Properly chosen tutors have a very beneficial effect on this particular type of student who sometimes is more willing to accept guidance from a peer than from an adult. Hopefully this new plan for scheduling of C.W.A. students in the reading lab will prove more beneficial to the student in giving him more time in the lab and a better working atmosphere. He should be better able to direct his attention to his reading problems than to the behavior of his classmates. He will also be in contact with other students who have a more serious interest in improving their reading skills, and this may prove stimulating to the C.W.A. student.

Elk Grove High School - In the English class at Elk Grove High School, I started off by giving these students the Gates Better Reading test, Forms 1, 2, and 3. This was followed up with weekly timings of their reading speed and comprehension. Materials used for group work are as follows:

Tactics in Reading, Scope Magazine, and various additional materials covering phonics. Chicago Sun-Times newspaper was brought in for reading practice.

Individual work was in the following areas:

Turner - Livingston series very useful especially The Jobs You Get and the Money You Make. (The students selected these particular workbooks to do). Success In Language series did not keep the interest of the students.

EDL - Useful with individuals or small groups. Three students went regularly to the lab to work with this machine. Craig Readers were too complicated for most of the students.

Advanced Skills in Reading I and III and Basic Reading Skills provided greater challenge than workbooks, but these did not keep the interest of the students as well. I introduced these materials fourth quarter only.

SRA and Lit. Sampler - used occasionally in individual and group lessons.

Books - paperbacks were primary source, students were required to write a report on each book read on 3 x 5 cards.

Composition - One page journals were required each day. Recopied notes from other classes were acceptable. Several students wrote original papers daily while others had to rely on copied material. These journals were not read for content but checked for length and neatness. Students kept journals for the entire year.

The students were given an opportunity to listen to a variety of musicals such as "Oliver," "South Pacific," "How To Succeed.....," etc. Most students expressed a desire to hear these after seeing "Mame," which was one of their cultural field trips.

Classroom Methods:

Individual and group work alternated by quarters. After the first quarter of group work covering phonics, students expressed a desire to work individually. Students kept folders of their work, and when a certain number of exercises had been completed, I graded the folders.

Various systems must be devised for grading individual work--depending on the materials that students use. An index of materials on the remedial level for English I is available and very useful. Third quarter students continued doing group work in phonics in addition to doing the grammar exercises and phonics X-work puzzles from Scope Magazine. Fourth quarter consisted of individual work in Adv. Skills in Reading I, III, and Basic Reading Skills.

Recommendations:

1. A period of orientation to the program for the teachers as well

as the students would allow for a better understanding of the goals and objectives of the program.

Students must understand the purpose of being grouped separately in academic subject areas before entering the program to prevent misconceptions.

2. Greater coordination of the teachers in all subject areas involved in the program would aid in evaluation of the students.

3. Limited class size is excellent for individual work.

Forest View High School - Before outlining the general techniques and considerations of the course, it may be helpful to say something about those students concerned. The students are identified as underachievers or reluctant learners, usually due to either a lack of parental acceptance or guidance. Most of these students tend to react defensively and negatively in the school environment and social relationships rather than to think positively. Some are physically and orally oriented--always fidgeting with something and tending to talk; others are introverted, quiet and withdrawn. Both types tend to dislike reading and writing except when the material concerned relates directly to their interests and is not subject to examination. Their attitudes toward school can be summed up by saying that the school requirements are not relevant to the immediate realities and felt needs of their lives. School is attended for the social contacts it provides, as an escape from home environment because of parental pressure (or state law), or because the future need of education is recognized (seldom the case). The two main interests of these students are first, the building and maintaining of their self-esteem and second, the solving of personal problems (usually regarding home life). At the extreme, the basic behavior patterns of these students in class can be observed as the following. There is exclusive self-interest, shifting between "contact" type behavior (usually talking with a peer), which reflects their continual need to find acceptance, or at least be noticed, and "escape" type, whose main aim is to avoid thinking about themselves, their future and basic responsibilities. Self insight seems only achievable at those times when their self-concept is positive enough to allow it (negative, although hopefully constructive, criticism).

The individual's basic need is acceptance. With acceptance a feeling of self-worth follows and in turn makes the chances for satisfactory performance and competency much higher than would be possible with a negative self image. In other words a positive self-concept allows an individual to leave a negative and defensive world and to gain a positive one characterized by optimism and confidence. (Students thirteen and fourteen years old with the opposite past environment will obviously not respond immediately to such an atmosphere; only time will make its impression).

The basic aim of the course should be to provide basic acceptance. The following aims are secondary and probably only achievable after the first has been fulfilled:

1. Present experiences which appeal to the student's interests.

2. Enable the student to understand and evaluate his own experience.

3. Enable the student to accept personal responsibility for his own actions and their consequences.

4. Enable the student to cooperate and eventually to emphathize with others.

5. Enable the student to learn the basic skills and to satisfy his personal interests while respecting the equality of others.

Besides an atmosphere of basic acceptance (each student as an individual--his integrity as a human being--not necessarily acceptance of all his actions) a set of definite behavior responsibilities and enforcement procedures is a necessity. Three points to remember; first, justice of individual treatment and especially of discipline is essential; second (as a guide to course content and performance expectations), an individual responds directly to what is asked of him; third, it's not so much what is asked of an individual, as how it is asked. Being interested in the student, being able to listen and give advice by exploring alternatives are also necessary teacher characteristics.

For structure the length and type of activities of the class period vary considerably according to need. The structure should provide learning opportunities emphasizing both rigid and flexible orientations. Specifically, self-contained class periods where no assignment or material extends to the next day; exceptions to this structure are the assigning of paperback novels, library research papers, and full-length movie viewing and discussion. Usually the class period combines different types of work; oral and silent reading from all sources (short stories, novels, and plays); discussion of reading materials (books and magazines); films, (the best are 20-40 minutes in length, allowing immediate discussion), individual and group experience; writing, usually of a brief nature--questionnaires, paragraphs, and short themes and research papers. I also make an allotment, at least twice a week of ten to twenty minutes (55 minute period), for free time for conversation, records, and any needed individual help. (During spring I occasionally took the class out to play softball.)

In dealing with materials the emphasis is on cause-effect and point-of-view in analyzing and understanding. Depending on the type of group involved, the materials used are on a hit-and-miss basis. My basic criterion for selection is appeal to student interest, at the same time fulfilling needs. (I have found that almost any material can be used to bring out certain principles of human relationship and self-understanding). At present these materials are oriented toward experience which reflects the student or with which they can identify. As far as particular units or areas are concerned, I have used materials on current world and local events, political ideas, and moral judgments as related to human values; for example: poverty, population, law, pollution, prejudice,

Viet Nam, Civil Rights, Hippies. However, the most effective materials are those dealing with the students' own lives--school, home and friends.

In terms of evaluation students are to evaluate themselves with certain guidelines provided. In general the students graded themselves accurately. I have also considered the pass-fail and single grade systems. During the final quarter of the school year a version of independent study was tried. Minimum requirements for a C grade were established. Those students who desired a grade above a C could choose to submit a project of any acceptable nature (which was indicated before work began) for credit towards an A or B grade. (A necessary feature of this plan is a general approach sheet for student reference). Student interest in grades will vary from considerable to none. I prefer the independent study alternative with minimum requirements for a C grade, however, the structure of this system must be made clear to the students.

At this point in the individual's education the patterns of behavior, perception, and attitude are becoming fixed. The major function of the program at this point is to allow the individual time to mature in a school environment which makes minimal demands, except definite behavior rules, while providing positive experience by working through interests and giving basic teacher acceptance. The course content should cater to the interests of these or any students; it is essential that it does, for the school must seek to be relevant to the individual's needs. If the feeling of irrelevance enters a student's attitude, school becomes an institution designed merely to keep him off the streets or to fit him to the needs of society. Concrete changes in attitude, perception, and behavior will be few and gradual, perhaps even less if the home situation (usual negative experience) remains the same. Family counseling for both parents, individually and together is almost always advisable if only to acquaint them with the child's problem as the staff sees it. Ideally this type of program should begin in the grade school to reach its full potential.

Conclusion

Finally, and most important, the basic social problem of society is evident in these students. The family, education, and society deny the young people the necessary and meaningful in-depth contact with adults which results in a mature, understanding relationship. This is especially true with these students because the primary source of meaningful adult contact is usually not merely missing, but negative (poor family relationship). This compounds the problem and throws more responsibility on society in general and education specifically. The problem of self-acceptance, identity, and meaning, is difficult enough for the average young person; for these young people it can become impossible.

The problem to be solved is that of relating the generations. For teachers this takes precedence over skill and knowledge aims. The solution is more dependent on individual teacher's character and experience than on books and curriculum offerings.

Questions

This section is designed to present those questions which are important and quite open to debate. Following it, is a summary of the 1967-68 curriculum with some brief evaluative comments. I have also tried to list most of the basic materials used and others which are suggested. Lastly, the bibliography will provide background information necessary for all overall perspective of the basic problems.

The behavior requirements are essential; they must be definite and followed without arbitrary exception. The course requirements are necessarily slight because of this type of student's exclusive self-interest, absence of self-discipline and lack of responsibility. This last point is to be questioned. Should these students be divided and assigned to average tract classes and consequently have average responsibilities? Being in such a class and underachiever would have no support from other underachievers and would therefore have to emulate an average student or withdraw completely into himself. In addition, provision for a special class for the group of underachievers (within an English class or in place of study hall or after school) would allow special treatment (group and individual counseling).

Is the usual lack of a positive self-concept occasionally or even often, relative to the basic context of the situation? If a student lacks self-esteem in the school, does he also lack it at home, with his peers, etc.? If he does not, does this make a crucial comment on the relevance of the school context? And if so, what is it and how can the teachers and program respond?

Part of the basic structure of the program divides the five weekly class periods into two sections. For three days the students have English, for the remaining two days they meet with counselors in a group situation. The problem, or question, which arises is the compulsory nature of the two weekly periods of group counseling. This situation was continually the object of student complaint. Whether or not it is advisable to continue this division should be decided by the counselors. However, the type of student dealt with makes it necessary that the academic teacher have additional free time for research and recovery. It is also apparent that while some students are able to benefit from the group situation, many first need extensive in-depth individual counseling.

Schedule for Year

Date	Unit	Comment	Film and or Book
Sept. 5-8, 1967	Introduction Study/Communications		
11-15	Poverty	Good--can be read	Two Blocks Apart-G
18-22		orally in its entirety	Superfluous People-F
25-29		Unit too long--more class activity.	
Oct. 2-6			
9-13	Prejudice	Material not related	Everybody's Prejudiced-G
16-20		to individual well	
23-27		enough--need more structure.	Clinton & the Law-G
Nov. 2		Planned structure	High Wall-G
6-10		evaporating	Did You Hear What I Said-F
13-17		In class experience	Black Like Me-G
20-22		of short duration-- immediate & personal	Minister of Hate-F
Dec. -1	Library Research	Out of class experience	
4-8	Paper (frosh)	independent in nature	The Twisted Cross-F
11-15		Students have become	
18-21		adjusted enough to be-	
Jan. 3-5, 1968		come critical--not	Social Revolution-P
8-12		constructively; they	Grapes of Wrath-G
15-19		remain self-oriented	Emotional Health-F
22-25		with little regard to anything which doesn't touch them personally.	Feelings of Rejection-G

(First semester is other--oriented; second; self-oriented--emphasis on student interest, and activity and variety)

Feb. -2	Understanding Self		No Reason to Stay-G
5-9	and Relating to Others		Eye of the Beholder-G
13-16			Nobody Waved Goodbye-G
19-23			Great Expectations-F
			Getting the Facts-F-P
March -1			The Shook-Up Generation-G
4-8	Library Research	(A variation used	
11-15	Paper (frosh)	with the sophs-inde-	Loneliness of Runner-G
18-22		pendent study)	Who's Boss?-F
25-29	Mythology (frosh)		The Odyssey-G
			No Man is an Island-G
April 1-5		The best movies seem	Obligations-P
16-19	Determining Values--	to have a story line	The Corner-G-F
22-26	Law	with not too much intellectual dialogue	Dropouts Anonymous-F
May -3	Future	Spring fever has set	
6-10		in	The 4 of us R Strangers-F
13-17			The individual
20-24			High Noon
27-29			1984
June 3-7			
10-14	Exams & Workshop		P-Poor F-Fair G-Good (according to class acceptance not film treatment of content)

Materials

Paperback Books:

Two Blocks Apart; Black Like Me; Nigger; To Kill a Mockingbird; The Ugly American; Viet Nam Diary; Brave New World; Loneliness of the Long Distance Runner; Saturday Night and Sunday Morning; The Shook-Up Generation; The Assistant; The Cool World; The Blackboard Jungle.

Magazines:

One daily subscription to a newspaper; one monthly subscription to each of the following: Hot Rod; Motor Trend; Cycle; Teen; Eye; Seventeen; Popular Science; etc.

Weekly subscription to each of the following: Life; Sports Illustrated; Time; Scope; P.E.

Textbooks:

Slow and Average English whenever appropriate.

Films:

Nobody Waved Goodbye 1; Eye of the Beholder 3; No Reason to Stay: Choosing for Happiness 3; Grapes of Wrath 1; 1984 1; High Noon 1; Loneliness of the Long Distance Runner 6; What's in a Story 3; Monkey on the Back 3; LSD Insight or Insanity 3; Clinton and the Law 3; Everybody's Prejudiced 3; Who's Boss? 3; Why Vandalism? 3; High Wall 3; Day in the Life of J. Mole 3; Understanding the Law 3; Obligations 3; The Corner 1; Dropouts Anonymous 1.
(The above were viewed by all classes 67-68)

Lonely are the Brave 5; The Hustler 2; Hud 2; The Informer 1; Rebel Without a Cause 2; Hemingways Adventures of a Young Man 2; On the Waterfront 1; The Outsider 5; Nothing but a Man 1; Baby the Rain Must Fall 5; Oxbow Incident 1; The Charming Couple 3; All the Way Home 3; An American Girl 3; Dr. Strangelove; Bedford Incident; The Victors 1; The Quiet One 3; 400 Blows; Casablanca 1; Fail Safe 1; Lord of the Flies 6; Saturday Night and Sunday Morning 6; Edge of the City 2; To Kill a Mockingbird 5; The Ugly American 5; Paths of Glory; The Battle of Culloden; A Time Out of War 4; An Occurrence at Owl Creek Bridge 4; Potemkin 1; Treasure of the Sierra Madre 1; Advise and Consent 1; The Fountainhead 1; The Caine Mutiny 1; The Sporting Life 5; Behold a Pale Horse 5; The Hole 1; The Test; The Pusher 1; Savage Innocents; Barabbas 1; The Young and the Damned.

1-Brandon; 2-Films, Inc.; 3-District; 4-Contemporary; 5-Twyman; 6-Continental 16

Teacher's Background Sources

Compulsory Miseducation by Goodman
The Vanishing Adolescent by Friedenberg
Underachievers by Fine
Condemned to Meaning by Smith
People or Personnel by Goodman

Growing-up Absurd by Goodman
The Shook-Up Generation by Salisbury
The Dropout by Cervantes
Parent on the Run by Beecher
Profile of the School Dropout, edited by Schrieber

Wheeling High School - The young men and women in this sophomore English class have shown significant personality development. They seem to appreciate things that are done for them. Their occasional lapses into crude behavior are not unlike those which take place in other classes. When corrected these people respond in a constructive manner.

This group of sophomores is not academically oriented. They have poor study habits and often come unprepared. The danger of incurring their inner resentment and destroying the benefits of the group therapy which is practiced with the parent-student-counselor meetings is ever present. One has to "talk loudly but carry no big stick" with these people.

Academically, also, one must allow much more time than one intended originally for these people to complete an assignment. Absenteeism and unpreparedness are reasons for this.

Emphasis academically is built around areas of their interests and around human values. These people are not all insensitive clods. They can appreciate the problems of those less fortunate than themselves and they can appreciate each other's problems. Whether they move to actively help those with problems is questionable.

An example of building a unit around areas of interest would be as follows:

1. Indicate that West Side Story is an excellent story about street gangs and their problems and frustrations.

2. Indicate the general nature of the plot, suggesting that it parallels a famous Shakespearean play, Romeo and Juliet.

3. Play the musical score from West Side Story.

4. Indicate that this play is being done at a dinner theater. Develop enthusiasm for attending this.

5. Pass out books (West Side Story). Short novel, salty language, easy to identify with characters.

6. Enthusiasm for story developed. Now ask for volunteers to handle field trip details. No problem here.

7. Finish West Side Story. Read abbreviated version of Romeo and Juliet (in poetic form) with each student taking a part. No problem here. They do not mind reading when in their own group. Embarrassment is not much of a factor.

8. Attend dinner theater - an excellent social experience.

9. Summing up: This worked out very well. The students enjoyed the experience immensely.

In speech courses for these people as sophomores, the political theme and the personal interest theme were emphasized. The Shakespearean play Julius Caesar was explored for its poetry and emphasis on political intrigue, and for its powerful speeches employing irony and sophistry. Dramatic structure of tragedy and plays in general is mentioned "as we proceed." Mechanics of poetry such as rime, metre, rhythm, and the figures of speech, personification, metaphor, and simile were explored and analyzed.

The other speech emphasis was placed on areas of interest to the students. To make the speechmaking process less painful initially the speeches emphasized demonstrations and explanations involving visual aids. These speeches were followed by questions from the other members of the class. Emphasis was placed on organizing the speech (outline), preparation of visual aids, and good techniques for oral presentation. I was hypercritical of some of their efforts in order to emphasize limiting the topic, presenting the main points initially in the introductory phase of the speech, developing these points in detail, and summarizing briefly. Actually these are merely principles of organization. However, these people have two failings which are going to "murder" them in life; the first is lack of self-discipline and the second follows from this. It is a lack of organizational ability. The latter is what I was striving for in the speeches.

The writing aspects of the program involved journal writing. The philosophy is writing something is better than writing nothing. Criticism is minor and only upon request. The emphasis is on quantity done. Deadlines are to be met. Credit is given for quantity.

Regarding skills themselves, they were explored through Roots for Success, (Vocabulary), and Be a Better Reader IV, (Vocabulary, speed and comprehension), Controlled Reader, (Machines emphasizing speed, vocabulary, comprehension). These materials are graded materials.

To sum up, these students have made good social progress, adequate academic progress, and better than average progress in the area of organization and self-discipline. Their exposure to school in my class has been without pressure. They seem to want to be here. Absenteeism has been low except for two students. Their final speeches were good efforts and, they completed their assignment with a high degree of success as a final remembrance of this past year. I am reserving judgment as to how well these people will succeed when this tight knit group is broken up. The other teachers will not know who they are and they will have to conform to the standards of less than informed people. This is life I know, but these people are not really going to function in a situation where constant adjustments are not made to suit their perculiarities of habit and personality. They will succeed better if they are kept together.

I found the Turner-Livingston Series extremely helpful in working in the related class at the freshman level. The first series is very helpful in stimulating thought and discussion in the area of personal-social relationships. The Career Guidance Series is very helpful in motivating the

students to think and become actively involved in discussing their future plans.

Both series are geared to the underachiever to the point that the reading level becomes too easy for some members of the class. By supplementing the series with SRA Guidance Booklets or any other relevant material, the series becomes very worthwhile for the entire class.

Turner-Livingston Reading Series

1. The Person You Are - covers areas of self-control, use of leisure time, personality traits, physical and social needs, dating, developing worthwhile goals, learning to understand others, learning to accept yourself.

2. The Money You Spend - covers areas of budgeting and banking, buying wisely, getting part-time job, expenses on date, advantages of staying in school, security money brings.

3. The Family You Belong To - covers areas of how to get along with your family, family relationships, handling responsibility, being an only child, etc.

4. The Jobs You Get - covers job applications, how to read want ads, job interviews, letters of reference, private vs. state employment agencies, improving speech and handwriting.

5. The Friends You Make - covers learning how to make and keep friends, good manners, going steady, alcohol and drugs, gangs and how to stay out of them, developing new interests, importance of team work.

6. The Town You Live In - covers various areas of towns, a T.V. studio, a newspaper, adjusting to city life, police dept., fire dept., recreational facilities in a large city.

The Turner Career Guidance Series

This series expands on the reading series listed above as they relate to vocational preparation.

1. Wanting A Job - explains where to begin in finding a job, career objectives, aptitudes and attitudes, social security, personal history forms, employment agencies, the interview.

2. Training For A Job - deals with trainees, apprentices, and beginning workmen, the job application, fringe benefits, help wanted advertisements, job skills, and job descriptions.

3. Starting A Job - is concerned with job ratings, personal budgets, managing money, the pay envelope, deductions, hospitalization insurance, unions, automobile and motorcycle licensing and procedures.

4. Looking For A Job - job misfortunes and what to do about them, personnel agencies, letters of application and recommendation, help wanted ads, small business, and improving skills.

5. Holding A Job - good working habits, job conditions, commuting, job in business and industry, domestic and employment crises and how to handle them.

6. Changing A Job - deals with changing jobs for career satisfaction and long range goals, union practices, skilled workers, pay rates, job experience and work maturity.

Material Used

We used the current events newspaper which I received from Central Admir_stration weekly. We read the paper and discussed the current events, both in panel discussion and in class-open-discussion. This was very effective, because the students were more aware of world events.

We also used short story books for slow students and drama for slows. In reading these I stressed learning didactic lessons; that is, how can we benefit from others' mistakes.

We read "West Side Story" and "To Sir With Love" also, and I tried to apply these experiences to their own lives. It was easier for them to make the transfer to their own lives here.

We also made use of the Scope Reader, again stressing learning of attitudes rather than memorizing facts.

I am thankful that the number of students in one class was kept at a minimum. I understand that the purpose of the class was to stress attitude rather than grades, and this is what I tried to do, along with stressing practical values. I am happy to say that I noticed a few positive changes in attitude among some students.

I made no field trips with those in the program, so I cannot comment on this aspect.

I feel the goals set up for the program are valid and in a few cases are accomplished. However, it seems to me that there is a lot of disappointment and frustration involved in working with the program due to the unwillingness of students to cooperate.

I think the program is a welcome one in that it does serve to compensate for those students who are involved in it. Keep up the good work.

Thank you for your counseling help during the year.

The related class for our Wheeling sophomores was tied in with business in the world of work. Since 13 of my 15 boys and girls were working, we were able to relate the class to job experiences. My main goal was to develop a basic understanding of everyday business situations, plus a positive attitude toward work, and what is expected by employers. Our reference text was General Business for Economic Jnderstanding by Crabbe, Debrum, and Haimer plus the related workbooks.

The major areas covered during the year were as follows:

1. How to find, apply, get, and hold a job.

2. Social Security and income tax; basic systems and how they tie in with your job.

3. Types of insurance; your needs now and later.

4. Credit; how your employer uses it and how you should.

5. Budgeting the money you earn.

6. Opening a savings and checking account; how and why.

I feel that this sort of related class for second year W.O. students can be very useful especially when tied in with our first year program whose aim is to orient students to high school and develop positive attitudes toward school.

Part 7

SCIENCE EVALUATION

1967-68

This section offers one report from Wheeling High School. This was the only school offering "pure C.W.A. science." The reactions and comments in this report have been well presented and are certainly pertinent to the total report.

Wheeling High School - During the course of this year, I personally, have learned a great deal about people outside of my "little" world. These students are certainly disadvantaged in more ways than one. Their economic conditions for some; their family situations for some; their scholastic abilities for another; their manners too -- all provide a reason for a very negative attitude.

With this information in mind, I played the nice guy role from the start. I haven't decided yet if this was the right approach or not. True, I find them prone to take advantage of the situation. I found out early that if I yelled or got angry, I would get ulcers and their ears would get callus or deaf to me; thus, a regression would begin. My patience was wearing thin at times and my regular classes would feel the release of my anger. To be truthful, holding back one's anger can be mighty frustrating. What can be suggested from this? I feel the person must be firm yet lax on certain points. Don't be concerned with amount taught, but get them in a better frame of mind. There are a few days when they just don't want to do anything. You must stop and talk of news, cars, fish, or Tiny Tim, then try tying your lesson into the discussion.

Field trips are very good if the teacher selects proper areas. They behave well and feel much more attention is being given to them. Their attitudes toward you is noticeably improved.

I recommend smaller classes (10) and strongly suggest field trips. I think this type of child, with a short attention span and poor attitude can learn more and really get excited over a topic if he gets involved with it physically. I wish I could say I did enough of this, this year but I haven't. With increased access to lab rooms next year, I feel I am better equipped to reach some of the students. Showing of films frequently have had very positive results. Many gimmicks have worked well such as giving them a book even if they don't use it. If one student has a bad day for some unknown reason, and it happens frequently, I think he should be sent to a counselor to cool him off. Many disturbances result from petty disagreements or problems with people around them.

I think the program, undoubtly, is a success from several viewpoints. One, social growth is necessary and it is shown by most of the students. They must and have to a degree, learned to respect the personality of others. This is a tough job!

Two, these students are discovering that life can be pleasant and can be rewarding. I was shocked when I asked one class what do they get out of life, or what do they seek. They are getting away from a twisted outlook on life. They have a long way to go and many of them show a positive change.

Three, I think my students have learned quite a bit this year. They should know many biological happenings which will affect their lives. I've tried to make the course usuable to them in the future.

In closing, what we must work on is attitudes. I wish I could have done more along this line. Yes, there were improvements, but there are some days when I feel I have accomplished nothing. It will be interesting to watch these students next year.

Science Program

1. Introduction to Biology and Science
   a. Zoology
   b. Botany

2. Scientific Method (Type case, Malaria)

3. Problem: How are livings alike?
   a. Microscope
      (1) parts
      (2) use
   b. Hooke, Jannsen
   c. Examine plant and animal tissues.
   d. Realize how plant and animal cells differ.
   e. Cell parts
      (1) stains and why
      (2) cell drawings

4. Cell Types
   a. Tissues
   b. Organs
   c. Systems
   d. Diffusion

5. Plant Reproduction
   a. Seeds
   b. Underground stems
   c. Runners
   d. Budding

6. Plants
   a. Simple to complex (short field trip on school grounds)
   b. Classifications
   c. Parasite, Saprophyte, Symbiosis

7. The flower and seed and growth
   a. Seed collection and dissection
   b. Flower dissection and drawings
   c. Germination
   d. Photo and Geotropisms
   e. Leaf, Stem, Shoot
      (1) Photosyntesis
      (2) Cutin
      (3) Cross Sections
      (4) Guard Cells

8. Animals
   a. Protozoans
   b. Porifera
   c. Coelenterates, etc.
   d. Mitosis and Meiosis
   e. Metamorphosis

9. Ecology
   a. Food chains, food webs
   b. Vocabulary
   c. Conservation
   d. Decomposers

10. Micro-Organisms
   a. Viruses
   b. Bacteria
      (1) Culture medium (Petri dishes)
      (2) Types
      (3) Antiseptics
      (4) Drugs
      (5) Mouthwashes
      (6) Deodorants
      (7) Sterile
      (8) Koch's postulates

11. Digestion
   a. Why
   b. Taste buds on tongue
   c. Saliva and starch

d. Enzymes
e. Foods
f. Alimentary Canal

12. Respiration
    a. How and why
    b. Mechanics of breathing
    c. Proof of CO2 in breath

13. Circulation
    a. Blood
        (1) Typing and types (why)
        (2) Composition
    b. Vessels
    c. Heart
    d. Blood pressure

14. Nervous system
    a. Why
    b. Parts
    c. Reflex arc
        (1) Neurons
        (2) Stimuli (pupil reflex)

15. Skeleton

16. Reproduction and Endocrines
    a. Syphilis
    b. Lower to higher animals
    c. Male and female functions

Part 8

COUNSELING EVALUATIONS

Not only is the student provided a specialized academic program along with realistic vocational experiences, but he and his parents are the recipient of intensive counseling and guidance services. Changing student attitudes toward self, school, and society is a primary goal of the program. If we are to accomplish this, counseling must complement efforts of the other academic and vocational teachers.

Counseling is a very important member of the "team," serving in a coordinating capacity to assure smooth operation of the program. The counseling personnel involved with the program meet regularly with students and parents both individually and in groups.

Parent group meetings are held periodically to acquaint parents with the program and to help them keep up-to-date on student progress. These meetings are planned and directed by the counseling staff.

Student enrichment activities are usually initiated, planned, and chaperoned by the counseling staff.

Overview of Counseling, 1965-66

Individual and group counseling sessions with students and parents will be used in an attempt to change their self-images and attitudes. Most of the students personally feel that they are outside of the suburban in-group, their self-images are poor, they are distrustful of people in general and adults in particular, and consider themselves as unsuccessful students. The parents of these youngsters often have similar attitudes, as well as other kinds of problems, which interfere with their ability to create the kind of atmosphere in which young people can flourish.

In each of four schools thirty families will be interviewed from which we will select at random approximately fifteen families which will become our pilot or experimental group. Those not included will be our control group. Those parents in each pilot group will have periodic conferences with our psychiatric social worker who will attempt to develop a social history, diagnose the problem and course of action the family might follow. This may include either family group counseling and/or individual counseling of parents. All parents will be requested to commit themselves to periodic conferences for evaluation of students' progress and requested to aid us in every way to formulate the best in-school and out-of-school atmosphere for their son.

In addition, the students will be working with counselors on an intensive individual and/or group basis.

Another tool which we feel is essential to our study is to have the services of outside consultants to aid us in working with and understanding the parents and students of the experimental group. A social worker, psychologist, and psychiatrist should be available to bring to us their own particular disciplines and to aid us in evaluation, diagnosis, and planning for this group. Every effort will be made to facilitate a comprehensive evaluation of the counseling phase, so as to provide profile data which may be reproduced and made available to other interested persons and agencies. All records will be available to the State Board of Vocational Education and Rehabilitation, Office of Research and Statistics.

Counseling Services

The counseling services include student-counselor conferences, parent-counselor conferences, group counseling sessions, and indirect counseling which the student experiences as he follows his schedule. These services have varied in each of our four buildings. This is due to three factors: (1) Individual differences of counselors working with the W.O. Program, (2) Difference in organizational ability, and (3) Building philosophy--there is a difference of opinion concerning how far one should psychologically delve into the problems of these students. Example: Two schools called a psychologist to evaluate and work with special cases while the other schools either did not feel the need or were reluctant to use this service.

There is a feeling among the majority of our staff that a student's success is dependent on the strength of the counseling services. One of the most striking factors coming out in the related class was the incidence of family and personal problems. These students must be seen on a regular basis and there must be a working relation between the counselor and the teachers of the program. Even though the confidence of the students must be respected, there are many ways in which the counselors and teachers can help each other. We have experienced one problem in this area; for an example, I will quote from a report of one building.

> "Once I got my feet wet in the program, I was amazed at the amount of time required to coordinate within our building for so few students. Part of this is due to coordination between three different departments - Industrial Education, English, and Guidance. We found there was no time before or after school, or evenings, when all parties could meet to plan. We have, therefore, evolved a number of regular meetings, with fractions of the staff involved, that seems to be working satisfactorily."

To elevate this problem we plan to adjust the schedules of those teachers working in the W.O. program. Also, we are planning district W.O. meetings during our regular workshops at the beginning and end of the school year, as well as utilization of our half-day workshops In addition, we have scheduled a summer workshop.

One school is making use of tapes in counseling with the students. Tapes are made of individual conferences as well as group sessions. The playback is both interesting and helpful in gaining additional information about the students.

Parent or Family Involvement

Before any student was admitted to W.O., the parent was notified of our interest in placing them in an experimental venture. If the parent showed an interest we arranged a meeting to explain the program and answer any questions. Parent or family involvement has varied greatly within the district. Next year we plan a monthly district W.O. newsletter for these parents. Hopefully, at each school we see the development of social activities and a discussion group.

To best illustrate the variation of parent involvement this year I would like to signt these two reports from two of our schools.

School "A":

> The parental response to the program was outstanding. Many called for more information after the initial contact. The attitude of the parents seemed to be one of great pleasure. They felt that the school was doing something beyond what was necessary and the school was interested in more than just the bright child.

When we discussed the creation of parent groups, there was also an interest expressed. However, when it finally came to a commitment of an evening and regular attendance, some of these same parents made excuses and failed to join. We were, naturally, disappointed; but after thinking about this, it should have been expected. These students have been problems in school for a number of reasons, one of which is lack of parental commitment to the child. The parent groups, I feel, are a crucial factor. One possibility would be to mix the W.O. parents with more "normal" parents in a group situation.

We have attempted to communicate with the parents, but here again this is an area that needs to be developed, planned, and coordinated more.

School "B":

> The counselors working with parent counseling and student group counseling have generally agreed that after eight sessions they are beginning to see that the parents are developing insight into themselves and their children. Most of the parents who have continued beyond the five week commitment are the testimony which tells us progress is being made. It is really too early to say how effective the group counseling has been with the students, as they had a later start and usually move more slowly in group work than do adults.

Individual Schools, 1966-67

Elk Grove High School - It was felt by the director of Pupil Personnel Services, the director of the W.O. Program and a counselor at Elk Grove High School that additional insight concerning the attitudes and the family relations of the students enrolled in the program might be obtained from making home visits. In addition, we attempted to further explain and interpret the function of the W.O. Program in relation to their child's total school experience. The third purpose of the visits was to explore the feeling of the parents concerning their interest in attending group counseling sessions.

It was the counselor's feeling, from previous work with parent groups, that there is an unmeasured positive attitude change in the family when parents attend group counseling sessions. Parents have observed that they have increased knowledge of their teenager's behavior. Students have indicated concern about their parents' attendance at the session. When the parents attend, the students feel that their parents are really taking an obvious step toward trying to understand and help them. Finally, the group counseling can aid the director of the W.O. Program, the counselor and the teaching staff by giving them a better understanding of each family situation.

Two counselors set up interviews with all of the students in the W.O. Program. Several homes had been visited earlier in the year and some parents were too threatened by the prospect of having the counselor come to their home. In those cases, they had a conference over the phone or came to the school. The counselors made 11 home visits. Each visit lasted approximately one hour and was made after school or in the evening at the parents' convenience.

The majority of parents were interested in attending five group counseling sessions. Initially two groups were formed. One group showed insufficient interest in continuing after the first night so it was disbanded after the first session. Eight people attended the other group session: three sets of husbands and wives, a divorcée, and the counselor. Five 2-hour evening sessions were held on a weekly basis. The second group was disbanded after the fifth session because the counselor had other obligations in the evening.

The home visits strengthened communication and understanding between the parents and the school. The group counseling sessions improved parents' insight into their family dynamics.

If the W.O. Program continues, it is recommended that home visits be made during the first month that the student is enrolled in the program. Funds need not come from the federal government to finance group counseling sessions with parents. The pupil personnel decision and the district could provide for release time from the regular school hours if there is a counselor who is interested in conducting these sessions.

Forest View High School - Four separate parent groups functioned throughout the second semester. Each of the four counselors felt that parents made progress in understanding their feelings, themselves, and children better. Tapes made at these sessions have been reviewed by the counseling staff and its consultant, Dr. Neumann. All agree that the sessions have been worthwhile and should be continued as long as possible. The experience, of course, has also been helpful in the professional growth of the counseling staff. Several student counseling groups have sprouted up as a result of this and similar experiences. The most discouraging aspect of the parent groups is that we were unable to get all W.O. parents involved.

One of the counselors, who works with a parent group gave the following evaluation of his parent group:

1. My Wednesday evening parent counseling has been held on a weekly basis since January. The number of parents involved has been approximately sixteen with some dropped and others added.

2. The positive aspects of the weekly sessions seem to be an a) interchange of ideas, b) discussion of common problem areas of adolescent understanding, and c) communication and verbalization of problem areas which have resulted in attitude changes on part of parents.

3. Some side lights came from teachers and counselors alike who have expressed to me that they have noticed an appreciable behavioral change in several youngsters, whose parents have been attending these sessions on a regular basis. If these behavior changes are directly related to the parent counseling, then I believe that counseling has played a major role in this development in the youngsters.

4. The parent counseling seems to be one of the most rewarding and challenging aspects of the W.O. program. It has been shown that total family involvement can bring about behavior and attitude changes. I highly recommend that this positive approach to reaching the so-called unreachable youngsters in our total school program be continued.

Student Counseling

Little counseling was done during the early part of the year while the class was going through the adjustment phase. The second semester we organized a more formal and structured program. Several of the counselors from the department have taken two students each. In this area we are also experimenting with a variety of approaches. The one-to-one counseling technique that we used last year seemed to have limited success. In our consultation with Dr. Neumann, a local psychologist, we have attempted some "action counseling" in which the counselor may take the student off the school campus, (i.e., just drive around or hit golf balls). We feel this has been more successful than the more typical approach.

We have been disappointed that few parents have displayed interest in working with the school. We attempted to start several parent groups, but we had inadequate interest to start even one. We attempted several evening programs to have parents see what their children were doing, but the turnout was mediocre.

Related Counseling Classes

These classes have been successful in direct ratio that students and counselor have been able to relate to each other. Most students have made progress in improved general school attitudes and ability to cope with the usual school regulations. A genuinely close relationship with fellow Work Orientation students and staff has been very important to these students. For some this has probably been the first time that anyone has had a sustained interest in them, in spite of their attitudes and motivation.

Other activities included semi-weekly group sessions with two freshmen classes, first and sixth periods. These consisted of group discussions, films on adolescent problems and concerns, and individual counseling sessions. Parents were contacted for after school and before school interviews on minor adjustment problems that arose during the school year. In many cases personal growth of individuals has been noted. Ability to get along with others has also improved in some cases. Others continue to need more counseling of an individual nature, with more preparation for eventual group work.

Wheeling High School - My general reaction to the overall program has been one of surprise at how useful it is to the students involved and even more at how both they and their parents consistently verbalize positive reactions.

The counseling activity during the year, can be broken down into the following types:

1. Individual conferences--every two weeks if possible.

2. Home visitations with the student and parents. I feel this is an especially valuable technique if used in a positive manner, although, many of my boys and girls initially feared the visitation (as I myself did at first). They soon became a useful method of developing rapport with the student and establishing better communication with the family.

3. A group session was held each Monday of the fourth quarter during the related class. I think that group sessions can be very valuable to the program if properly utilized. Unfortunately, partly because of my inexperience, and partly because of my personality our group sessions did not succeed to the extent I would have wished.

4. Group parent meetings at school.

The home visits were extremely encouraging and more of this type of activity should be planned for the future. The cooperation of the parents and the insight of the home visits were extremely beneficial for the program. We consider this an indispensable part of the program. One of the surprising facts was the type of home in which many of the students are living. It seems as though many of them were in the $20,000 to $30,000 bracket and yet it was obvious that the family had difficulty maintaining a standard of living to correlate with the type of home. In short, they were definitely living beyond their means.

This same cooperation was evident in the parent meetings. A good turnover was evident at each meeting. Many more informal meetings at a small group discussion level should be encouraged.

Counseling was and should be the most time consuming part of the program. These students demand at the very minimum, an hour a day outside the classroom situation. These problems are intensive and do involve deep counseling. They also demand much attention at a superficial level, (i.e., student who always wants someone to watch him perform his deeds). This area should be one of the strengths of the program.

Individual Schools, 1967-68

Arlington High School - The writer was involved in the Arlington High School program primarily in terms of intake histories, the parent groups which met weekly, and accompanying a group of students on field trips. On a number of occasions, and consistently with three boys, individual counseling

work was attempted, with quite minimal results.

One's first encounter with this group of freshmen boys was sufficient to convince one that a formidable task was ahead. Generally, they were impulse-ridden, hyperactive, suffering from years of academic and social frustrations, consequently they were hostile toward the "Establishment."

Clinically speaking, they are concerned with pursuit of the pleasure principle and most have ego dysfunctions. By this is meant that, among the four main functions of the ego (to receive the basic biological drives and impulses, assimilate them, test them against the culture, and execute them) these boys break down in the area of reality testing. There is little regard for the consequences of their actions and value systems differ from the norm. By the same token, one of the strengths of the program is that of trying to enhance reality. This "technical processes" class, for example, could be compared to a psychiatric hospital's occupational therapy wherein basket weaving or crafts are a significant contact with reality.

So, it appears to this observer, that we are dealing with rather severely impaired personalities who have little hope of success in a generic school situation. Ideally, perhaps a self-contained classroom would be the answer. The attention span of these youngsters is so short, and their response to stimuli so primitive, that something along the lines of the EMH program could be beneficial.

Field trips during the past year were largely to industrial plants, with one visit to a military base, one to a court, and two primarily cultural; to a historical shrine and to museums. It is this writer's opinion that field trips in the future might well include more work in the areas of conservation, service occupations, postal and other subprofessional civil service, and the military. Owing to some of the comments above, it is felt that they derive little benefit from cultural field trips, per se.

The parent groups were an interesting experience. Our main accomplishment in this activity was perhaps the alleviation of guilt on the part of the parents. Most of them had pressed their students through the years for more productivity, unaware of the learning disabilities. Secondary benefits included the acceptance they met from the group and leaders, sharing of future plans, and anticipating future problems. It appeared that members of the group, over the school year, were able to modify former attitudes, vent criticism of the manner in which their children were dealt with earlier, at the same time recognizing that the entire concept of learning disabilities is a relatively new one.

Dr. Patrick Ashlock, an educator who has specialized in the identifying and remediation of learning disabilities, talked with staff members and met one evening with our parent group. All concerned seemed to feel that this was most valuable. The writer would strongly recommend retaining him as a consultant for the coming year.

In terms of counseling, it is the feeling of this writer that such techniques as role playing and psychodrama, supplemented with audiovisual aids, are more valuable than sitting across a desk from such students. The literature indicates that a relatively strong and intact ego, as well as a fairly strong intelligence, are necessary in order to benefit from intensive counseling, therapy, or whatever we wish to call it.

Finally, a personal puzzlement with this writer has been the fact that it is extremely difficult to trace the etiology of these students' dysfunctions. If they are sent for psychological evaluation, or physiological evaluation, the findings are not illuminating. Dr. Ashlock feels that this should not concern us, and that we should focus on remediation. In this, the writer concurs.

It has been a very interesting experience, despite the frustrations and slow movement on the part of the students.

Counseling of C.W.A. Students

Throughout the school year the boys in the C.W.A. program met in small groups with their counselor at least once each week. They also received individual counseling on an irregular basis as the need arose. There seems to be a gradual change in the attitudes of the boys toward school and they have developed a pride in academic success. Four of the students were willing to accept tutoring from other students and two others arranged for additional help from their teachers on a regularly scheduled basis.

It was felt that academic success in school could do much toward holding the boys in school until graduation. Therefore much emphasis was placed on grades and the accumulation of credits. In previous years they had been promoted each year in spite of their failing grades and it was necessary for them to realize that they could be given credit only if they passed their subjects. Some time was spent during each meeting in talking about good grades or any other evidence of academic success. Our conferences seemed to have been effective for at the end of the first semester only one boy made a failing grade and that was for only one subject.

After working with this group for a year, it seems there is some evidence of success in holding the boys in school and that is the primary purpose of the program. Only one student has dropped out of school and he came to Arlington High School in April from another school in the district. However, I have no reason to believe we might have been able to hold him. The other eleven boys definitely plan to graduate from high school and three of them are talking about attending college.

Some of the problems we have experienced this year might be attributed to the crowded condition of our building. Those students who had a sixth period study hall were dismissed early. This meant they were available for group counseling only during their fourth period study. Individual class schedules were changed without warning making it difficult to stick to a group counseling schedule. It is hoped that next year all of these students can be scheduled for

study hall at the same time thus making them available for counseling, for tutoring, for reading instruction, and for studying.

This year brought many pleasures, some worries, a few disappointments and many questions. Are we on the right track? Am I the one for the job? Is it all worthwhile? Who can answer these and many more questions? I only know the program has become a part of all who are involved. We think about the boys much of the time and are constantly looking and waiting for that special sign that says, "All is well."

Comment from student regarding C.W.A.:

> "I want to thank you, Mrs. Claney, for putting me in this program; I learned a lot and I passed everything. I also want to thank you for the nice trips we took; they were great. Thank you, too, for my summer job; I really like it."

Elk Grove High School - The C.W.A. students were counseled individually and in groups over the entire school year. The individual counseling was offered in accordance with the student's felt needs. The group sessions were scheduled on a weekly basis, one hour a week.

The students responded well to the group counseling situation at the outset and seemed to be benefiting from the experience. The last quarter of the school found the students with an increased discontent over counseling and a desire to discontinue with the sessions. The major portion of the group counseling was well received.

The source of discontent with the group counseling seemed to stem from the difference in the students expectations of the counselor's role and the reality of the situation. The students pictured the counselors as "problem solvers." They expected to be able to register a complaint with the counselors and they in turn would adjust the situation for the student. When the counselors failed to live up to this expectation, the boys became disillusioned with counseling and found it very difficult to alter their expectation.

Two counselors co-counseled with these students in a group of ten. Attempts were made to establish an unstructured, non-directive atmosphere within the counseling situation. The responsibility for establishing limits and choosing topics for discussion was left with the members of the group. The counselors served only to help the members of the group better understand the processes of the group and the feelings being expressed.

As previously mentioned, the students seemed to benefit from the experience, but the real effectiveness of the group was somewhat impaired by the lack of more mature and responsible members in the group. The unstructured setting was too unlimited for these students and they found it difficult to use their time in a positive manner. They were unable to evolve their own limits or to develop

their own constructive counseling atmosphere. The level of maturity of these students is such that more control and well defined limits must be set, if they are to truly benefit from the experience.

Many of the students became disinterested in the topics which were chosen, and in many cases the period was spent in social conversation. These difficulties were expressed by the counselors, but the group was unable to take constructive action. The expression of mutually disturbing problems and the discussion of more vital concerns seemed impossible for these boys to attempt.

In the future, group counseling with this type of student should have a more topic oriented format. The setting of limits and the active direction of the group by the counselors seems to be to promote constructive use of the available counseling time. The tendency for these boys to guard their feelings from each other, and their failure to develop trust in one another or adults, would indicate a need for the counselors to actively channel their attention into these areas.

The members of this group did benefit from the experience of group formation even though progress was only slight. They were able to relieve or vent many of their frustrations and dislikes in the presence of the counselors and this experience of acceptance and understanding did have a positive effect. It is our belief that having this opportunity to express their feelings contributed to a reduced amount of compulsive and misguided behavior on their part.

Some of the characteristics of these students which became apparent in both the individual and group counseling sessions are enumerated in the following paragraphs. The most obvious characteristic was their inability to take responsibility for their own actions. The tendency to project their faults on others and to fix blame for their difficulties outside themselves constantly served as a problem for these boys. These problems contributed to their inability to accept counseling for they could not see themselves in need of it.

Other general feelings among these boys were isolation and rejection. They felt set apart from the main stream of the student body. There were strong feelings of inadequacy and worthlessness. As a result these students were very sensitive to differential treatment. They felt set apart by the program. In counseling they continually expressed their dislike for being separated into "special" classes. Even though they were given a choice upon entering the program they felt they had been forced into it. They remained very negative to it and to any treatment that might further emphasize their problems.

In reference to the classroom itself, they often expressed the belief that they were not trusted or cared for. They feel that teachers are not interested in them as persons. They seem to want to be accepted by other students and by members of the school staff, but they don't seem to be able to learn new techniques for gaining this acceptance.

Parent Group Evaluation

The first parent group conference was organized by letter. The letter was sent to all the parents who had sons enrolled in the C.W.A. program. It described briefly the program and pointed out the importance of their regular attendance at the group sessions.

The first session was well attended with all but three families represented (eleven students were enrolled). It was planned that two counselors would work together (co-counsel) with the parents. This first session was structural with the counselors presenting a description of the program and an explanation of why their sons were chosen for it. This presentation lead to a lengthy discussion of the difficulties these parents were having with their sons and the frustrations they were experiencing. The interchange of ideas, seemed to be good, and as the evening progressed, all gained confidence in the group and began to take part in the discussion. It was felt that this first session was very successful.

The parents themselves planned the time and format of the future sessions, The group decided to meet once a month and to do the same things that they had done at the first meeting. The counselors were asked to send out notices in advance of the meetings and times were set.

After this first session the attendance was low with no more than three of the eleven families represented at any one meeting for the remainder of the first semester. Five meetings were attempted in the first semester with no increase in attendance. Letters were sent to parents requesting a return phone call if they planned to attend, but this did little to aid in bettering attendance. The counselors also attempted to phone each family prior to the next session with little success. Generally, attendance at group sessions was so sparse that group processes could never develop to any significant extent. As a result parent conferences or counseling was of little consequence.

The second semester found us unable to attract any more parents to our sessions. After two equally unsuccessful meetings, they were discontinued until the end of the year. A last meeting was called and a letter sent to the parents of all C.W.A. students to explain the purpose of the final meeting. None of the parents responded to this final proposed meeting.

It seemed that those parents who attended the group meetings were satisfied with them and enjoyed the experience. Some commented on their feelings. The discovery that other parents were having many of the same problems and many of the same frustrations as they had seemed to be relieving. They also felt that hearing other and different approaches to these difficulties was beneficial in aiding them to alter their own approaches. All in all, the immediate reaction to the group meetings was good, but had little effect on future attendance.

Why the poor attendance? It would seem that parents do not understand the purpose and goals of counseling. It is possible that since the format was left up to the parent group itself, they could not see what good could

come from attendance. More structure should be added by the counselors to aid the parents in seeing the purpose of the meetings, and to aid them in getting involved. The meetings that were well attended were those at which material was presented by the counselors. The meeting at which the program was presented and the meeting at which D.V.R. was explained, were well attended, and both ended in fairly good group counseling sessions once the material was presented. It would seem from this, that presentation of some formal material, possibly of a guidance nature, could lead to increased involvement and attendance.

We believe that any real success with a program of this type will depend largely on the amount of parent participation. Gaining their cooperation and interest can do a great deal to help their sons to benefit from what is offered. Therefore, future programs will have to make a greater effort to organize and implement effective long range parent group counseling. Ways of gaining more participation and involvement will have to be discovered and tested.

Forest View High School - Parent Meeting - I thought some of you may be interested in the program presented to the parents by Mr. Stanowski and the W.O. staff. The parent reaction to affiliation with D.V.R. was excellent. The parents seemed to be greatly pleased with the special opportunities offered their children. I submitted these notes from the meeting, solely as an example. You may find some approaches that would be applicable to your program. In no way do I intend for you to emulate this procedure.

Mr. Stanowski opened the meeting at 8:00 P.M. Sixteen parents were present. History of program was presented. Typical program of W.O. English, a W.O. student, W.O. Technical Processes, Counseling.

Homemaking Program - Mrs. Scharf

Ten girls in W.O. Foods I. "Developing skills and acquiring techniques is primary goal." Small group makes individual attention possible. "Serve lunch to faculty and visitors a couple of times a week. Lunch cost is 75¢, you should try to made a lunch date at Forest View. Menu and cost analysis is the responsibility of the student. The students are thrilled to see the warm reaction to the food and service they offer in "The Tea Room." They are very interested in pleasing their guests. "Sophomore students work in the cafeteria-goal of program is not to make a waitress, dietician, etc., just to provide the opportunity for the student to explore the world of work. Girls rotate from work station to work station, thus gaining exposure to different tasks."

Parent Question:

"How long is the class?" "The students meet two periods a day."

Auto Mechanics - Mr. Freeman

"Students need immediate success. Students work in a small group setting. Immediate feedback to the student, indicating his progress, is made possible. They receive immediate praise or constructive criticism."

Parent Question:

"Do you think the boy will be motivated to go beyond the area of Auto Mechanics?" "We are not making mechanics, we are developing attitudes and work habits that will prepare the student for whatever vocation he may choose."

Parent Question:

"Do you actually have motors for the boys to work with?" "We work on student and faculty cars and have motors and equipment available for student use. The students take a great deal of pride in their work. They are given tangible evidence of their work efforts. They can see and quickly tell if they did a good job or not."

Woodworking - Mr. Hangey

"Presently working on developing safety habits and learning the use of tools and equipment. Basic orientation. Cabinet project will begin very soon. Students will start on this project for the new John Hersey High School. The cabinet making project has been going on for two years. Students take great pride in their finished product."

Parent Question:

"Why was my child chosen for this program? This is the first time I heard anything about it, what are the objectives of this program?" Mr. Stanowski: "Forty-four students are in the program. Try to contact both child and parent before placement in program. Your son or daughter was recommended from the eighth grade as being a student who would profit from this type of educational experience."

Students selected are; the underachieving student who seems to be working or functioning below his potential. The unmotivated student - no interest in school. The student who is frequently absent. The student who is withdrawn and who needs personal attention. The student who acts out, seeks attention. The student who is reading below his grade level. The student who shows little interest in extra-curricular activities. "We basically focus on students who need extra help and attention." "Success is the key to motivation, great for the ego. Really builds up the confidence of the student."

He then smoothly moved into the topic of pay for services rendered. "We paid students on a merit basis. The more the student works - the better the quality of the work, the more the pay. The student receives immediate evaluation of his work by the amount of pay he receives." "What we were doing was illegal (paying the students), we weren't keeping within labor laws."

"We are presently working on the possibility of getting additional credit for the participants. As far as pay is concerned we will try to get additional funds from a state agency. The Division of Vocational Rehabilitation is a state

agency which will cooperate with funding our experimental program. We will need your consent for D.V.R. participation. Money is not the object - the feeling of accomplishment in making their own way is the key to this phase of the program." (Generally I felt the parents were very receptive to the proposal of associating with D.V.R.).

"We consider the interaction of the small groups in the W.O. class setting to be essential. The various activities associated with the W.O. program gives the student a different insight into the makeup of the teachers. They realize that teachers are "real people." Parent involvement is important to the success of the program. If you approve of the pay aspect of this program, it will be necessary for you to sign the D.V.R. release sheet. (The sheets were passed out and signed without any questions being asked. All present signed for their child).

Parent Question:

"Would the element of pay on a graded scale tend to discourage the student or demotivate the less capable student who tries real hard but just can't quite produce?" Mr. Hangey clarified by stating that he was primarily concerned with attendance, and this was the determining factor upon how much pay was earned. "Some do have better ability than others. Some tasks are more natural for some than others. Quality of work was not the primary concern for pay." There again seemed to be a general non-verbal agreement with pay for the students.

Parent Reaction:

"Paying on an individual basis will be more like it actually is on the real job when they finish school." Mr. Stanowski invited the parents to see the program in operation. "The things these students are doing are very exciting and provide a wonderful experience."

Parent involvement was discussed. The parents were invited to participate in the parent groups. "The groups are small and your participation is strictly voluntary."

"Through these small groups you come to know how others see you. How you feel toward yourself. How you operate in different situations. How you react to other parents and their problems. We must insist you commit yourself to at least five sessions. The first couple sessions are usually devoted to the P.T.A. type discussion, and then we finally get down to actually talking about ourselves and some of the things bothering us."

Parent Question:

How often do we meet? "On a weekly basis, usually 7:30 P.M. to 9:30 P.M."

Mr. Stanowski: "We do not want to give you the impression that something is wrong with you; counseling is a problem solving situation. The group counseling approach gives you a chance to know more about yourself. You have

nothing to lose but time. You may find yourself taking a second look at what you are really like." Group activities are becoming more and more accepted by all types of people and groups, (churches, educational, industrial, etc.). If you develop through a group your children may also have more potential for a fuller life. If your children have problems you may have contributed to them, possibly a group experience will help. All but one couple and a gentleman who works sixteen hours a day committed themselves to a group. The attitude and general feeling of the people present was encouraging.

I think we will find that these parents are having more problems with their kids than all of us put together. They see some possibility of help and change through association with this program.

After a discouraging start with our group of sophomore W.O. students Mr. Konetshny and I have revised our goals for the W.O. class and the students have responded. We attempted to use tests and interest inventories to gain information which could be used for vocational counseling. Apparently these students had been probed and prodded until they rebelled. They refused to cooperate with any structured program such as this.

It seemed to be appropriate to take a much softer approach and allow the need for vocational information to emanate from the students. After several weeks we have developed fairly good rapport and have gained their confidence to a large degree; however, they will probably always be somewhat skeptical of authoritarian figures. We have never been able to develop a group counseling situation largely because of certain personalities in the group who cannot allow others the opportunity to think aloud. We have found it more profitable to talk with students either alone or in smaller groups.

There is the added obstacle of feuding among themselves, although there seems to be a much better atmosphere and unity for the group than was evident at the beginning of the year.

The improved peer relations among the group and with others in the school, their emerging ability to recognize their own strengths and weaknesses, and their willingness to communicate with authoritarian figures are the gains which are most evident.

When these students are working on a project such as a dinner or are going on a field trip, the cooperation, loyalty and close relationships are particularly exemplified.

I am sure that both maturity and the work orientation program have contributed to these gains.

My involvement in C.W.A. included a once a week class of sophomore students, and a Tuesday evening parent group. Both the class and parent group have been functioning since the beginning of the school year.

The class was structured around a once a week group counseling session. The sessions were conducted by a co-counseling team of Dorothy Zuzula and myself. It was felt a man-woman team would help lend itself to role models as discussed and promoted in psychological literature. The group consisted of six boys and three girls. The group co-counseling approach used with the youngsters has merit and at times lent itself to excellent sessions with the students. The chance for the youngsters to test, question, react to and communicate with two accepting adults of different sex opened the way for much in the way of active interaction. However, it also was found that the group seemed to function as well as the weakest member of the group. Meaning that at times the severe degree of maladjustment of several of the youngsters lent itself to the hindrance of total movement of the group in the direction of positive growth. Yet, several youngsters did make excellent progress over the course of the weekly group sessions. Two in particular began the year at a high level of social maladjustment within the group. At the end of the year their behavior and contributions to the group were very positive and leadership qualities were found in both of the students.

I recommend that a mixed co-counseling approach be continued. However, the groups must be better selected and those students diagnosed as too maladjusted to function in groups should be seen individually. Also, the youngsters should not be forced to be in a group. The structure of the groups should, in my opinion, involve other students not in C.W.A. classes in order to have more positive and healthy peer reinforcement within the framework of the group. Even with the many difficulties this year, working with this group has been an interesting and profitable experience for me.

The Tuesday evening parent group has met since the opening of school. The parents of C.W.A. students are asked to participate in this group experience. This year the parent group was handled on a co-counseling basis with Gerry Konetshny acting with myself as co-counselors. It has been proven that co-counseling in groups lends itself to more flexibility, greater intensity, and offers the parents a more effective chance for positive growth. Though we have had some parents attend for no more than two or three sessions, we do have a constant and regular attendance of four sets of parents. These people have made a tremendous amount of growth in the time thay have been coming. For example, one father at the beginning of the year was very hostile, refused to contribute to the group, and in general rejected the whole idea of parent counseling as a waste of time. Recently other group members have pointed out to him that his attitude has changed, he is now very positive in his interaction with the group and he himself has stated he better understands his son (in C.W.A.) and himself. His relationship with his wife is closer than it has ever been in the past few years because of the constant conflict with his son at home. Now that he is better able to cope with his own feelings he can now deal with his son in a more positive and reasonable manner thus lending itself to a better adjustment on his part and an overall happier home situation.

I recommend that parent counseling be continued with possibly making it almost mandatory for parents of C.W.A. students to spend at least five sessions with a counseling group. The idea of co-counseling should also be continued with a possible introduction of mixed teams (man-woman) to offer, again, role models for the participating parents.

I feel the total C.W.A. program and the great effort being put forth is well worth every minute of the time, and every dollar being spent, even if only one student is given the insight and help to overcome himself. As the old adage goes, an ounce of prevention (C.W.A. program) is worth a pound (institutionalization, court action or relief rolls) of cure.

Part 9

TECHNICAL PROCESSES EVALUATION

The student who finds it difficult to function in the traditional academic program, and who has a negative attitude toward school may find a modified program offering academic and vocational experiences the vehicle by which a more positive attitude can be developed.

The technical processes phase of the program provides the student with an environment in which he can achieve some success and see tangible evidence of his efforts. Each student is provided a two period block of time which is devoted to realistic type work experiences. To enhance the total learning experience, the student is paid for his services.

The work aspects of the program has encountered difficulties but the present arrangement of providing services for tax supported, nonprofit institutions seems to have alleviated the problems.

Individual Schools - 1965-66

Arlington High School - Since the outset of the Work Orientation Program, the work experience class has been involved in two projects. The first was the construction of greenhouse flats for a local nursery. This process met with limited success. The students had a high interest level and showed great industry, but seemed to lack an understanding of the need for quality work. Instead, their main concern was quantity. Due to a limited supply of low cost materials available, the construction of "flats" was discontinued and we began the assembly of electrical coils for an electric hand massaging machine. This was through a subcontract with the Nelco Coil Supply Company.

The coil assembly offered the possibility of more money for the students in our program. Each student is paid on a "piece-work" basis scaled to the number of good coils he produces. The amount of money earned by individual students has varied a great deal. The reason for this is the wide difference in attendance and desire to produce coils.

The program has met with success for some in meeting the goals of changing attitudes toward their place in society, the work-a-day world, and life in general. Each student needs the undivided attention of an instructor at all times. This makes working with this group a difficult task. The general feeling is that these students would be impossible to cope with in a larger ratio than our present fifteen to one.

Forest View High School - The Technical Processes class is busily engaged in the construction of electrical cabinets for Elk Grove High School. They work for two hours and are paid a basic wage of fifty cents an hour. Time missed for any reason is deducted from the student's salary. There is an expected end-of-project profit which will be shared by the boys according to the grades they receive in the class. (The "A" student receiving five shares as compared with a two share "D" student). The incentive appears to be a positive one.

In the construction of this project the boys experience the following operations:

1. Accurate computation of all joints in relation to openings for doors and drawers.
2. Construction of drawers and drawer operation.
3. Setting up of machines to cut various joints.
4. Selection of proper joints applicable to project that provide optimum strength.
5. A thorough knowledge of production methods applicable to mass production.
6. A technical understanding of proper uses of woods (plywood, solid stock, etc.).
7. Determination of best machining process for type of wood.
8. Application of hardware, and understanding function, in order to select properly.
9. Thorough knowledge of finishing procedures.
10. Basic understanding of cost, waste, and planning, in order to stay within the budget.

In the beginning, the teacher saw these restless untrained freshmen as a potential hazard and was truly fearful lest some fingers be lost (an early accident on the shaper almost proved him right). Now after fourteen weeks, we can see many positive things coming out of the program. Our instructor stated the boys have accomplished one-third more than he expected of a group of inexperienced freshmen. Though the start was slow and much had to be taught the students before they could begin their project, they have worked diligently and there has been a minimum of wasted effort. He has found that these youngsters are unable to take criticism very well (an area for exploration in the Related Class and counseling). Though many still would not be considered first class workers by adult standards, they have accomplished much and produced a quality product.

Prospect High School - The Technical Processes class is in the process of building 24 base units with 3 drawers each and 12 maple tops to fit on top of the base units. The units are $29\text{-}\frac{1}{2}$" wide, 28" deep, and $31\text{-}\frac{1}{4}$" high. The inside of the drawers measure 6" x 24" x 24". The drawers of the units will be used to store electronic bread boards with room for parts to be mounted on the boards while in the drawer instead of lying around loose. Each drawer is keyed separately and mastered for the teacher. The drawer is also large enough for the student to store parts of an individual project he might be working on. No

commercial model available had drawers large enough to solve this storage problem.

While constructing this product the students have received instruction in, and performed the following types of operations in the woodworking shop:

1. Ripping on circular saw.
2. Crosscutting on radial arm saw.
3. Jointing on jointer.
4. Plane on surfacer.
5. Mortising on router.
6. Gluing with conventional clamps and with electronic gluer.
7. Rabbeting with shaper and circular saw.
8. Shaping with shaper.
9. Routing with router.
10. Making dovetails with router.
11. Sanding with machines and by hand.
12. Cutting with saber saw.
13. Nailing.
14. Application of finishes by spray coat method.

The students' pay is based on a scale of one to four. At the end of each week the student is evaluated on the basis of how well he has performed that week. At this time, his rating is discussed with him to discover and explain any differences of opinion. The rate of pay can be changed on any day the student does not perform at his usual level. This seems to help motivate the student to not slack off but to perform at a more constant level.

The class seems to be functioning extremely well. This is due, as is true with most of our staff, to the efforts of the instructor. He has extended himself to the point of gaining the cooperation of students with non-cooperative backgrounds. As a result, the students are ahead of schedule on their project, and the level of achievement is good.

Wheeling High School - The technical processes portion of the Work Orientation program is set up, for the most part, as a business. The first job consisted of contracting with Klehm's Nursery to build five hundred flats. These are containers that give the appearance of a peach crate.

The second job included contracting for twelve study carrels for Forest View High School. The carrels are made of wood and involved operations normally required in cabinetmaking. The cost of materials, the anticipated hourly wage to be paid to the students, and the time estimated to construct the carrels was calculated before arriving at a unit price. This work was completed the first week of May.

General Blower, a manufacturing company in Wheeling, has agreed to subcontract work possibly beginning the first week of May. The work requires certain machine tool operations in the metal laboratory. The jobs will include facing

halves of fan blades, mounting them together into a complete fan blade unit and fitting them on a shaft.

The students have been receiving fifty cents an hour for their work. Should they become so efficient as to build up a surplus, this will be divided among them in the form of a dividend or on a profit sharing basis. Should a student drop out of the program for any reason, he will not receive any of the surplus funds.

At the outset of the program, this group of students had a poor attitude and poor work habits. These students saw very little purpose in what they were doing in school. While the first job was not a very interesting one, the students began working enthusiastically. It was emphasized that while this particular type of work may not be challenging, it prepares one to accept various jobs whether the work be interesting or uninteresting.

The second job consisted primarily of cabinetwork. This sparked more interest as the work was more challenging. Here too, some operations were not as enjoyable as others. Considerable salesmanship had to be used to convince the students that a good employee not only accepts all work he is asked to do, but does a good job while performing the work. As they near completion, the cabinets look very good. There is evidence that as the students look at the finished product, pride of workmanship shows in their expression.

There is an obvious improvement in the attitude of these students at this time. A number of them have developed good work habits which includes being constructively busy during the entire working period. The students appear to enjoy working with power equipment. Admittedly, there is still room for improvement, and all phases of the work continue to include training that will assist the student in developing into an ideal employee.

Individual Schools - 1966-67

Arlington High School - To say that the technical processes section of the Work Orientation program was doomed when it started would be unfortunate, and perhaps inaccurate. However, it does seem safe to say that the elements which led to the disbanding of the class were present early in the year. The re-organization of the Work Orientation program which placed its activities within the school day, and the concept of immediate reward for effort, i.e., pay for acceptable work, were both positive aspects for the type of student selected for the program, but they were not enough to counter-balance other negative aspects. It seems appropriate to list what I see as obstacles to the success of this phase of the program:

1. Facility: The room was not equipped to handle some of the work - there were neither enough nor appropriate tables or benches to provide a good working condition for the flannel-board contract. The same room was used, and continues to be used, for the English

class, but it took some time to have it arranged as a recognizable classroom. The eventual removal of an old automobile engine and stacks of unused tablet-arm-chairs has helped.

2. Student personnel: I feel that those students in the program really belonged in it, but we failed to instill in them any sense of responsibility for the program or their own efforts, nor were we effective in helping them to take pride in their work. Those of us involved must share in this failure, but I have the feeling that the facilities and the jobs played their parts, in spite of the fact, that the same jobs were done very well in other schools.

3. I feel very strongly that the student who participates in Work Orientation needs:

    a. Immediacy of reward - he should be paid regularly and in direct proportion to his efforts, whether monetarily or with grades.

    b. A highly structured setting in a facility that readily lends itself for adequate supervision, rather than in a room with "blind spots."

4. Supervisory personnel: It is unfortunate, and a severe handicap to have the technical processes teacher assigned to more than one building. For all intents and purposes, this precludes his being available for conferences with his colleagues, or coordinator, or students; nor can he effectively plan or set-up for varying class activities. In the future it would be helpful if this teacher had industrial arts training, and background in working with the type of students for whom the program is designed. It is not unreasonable to assume that the technical processes instructor has a major share of the motivation responsibility, since he is in the best position to instill positive attitudes toward the world of work.

5. Jobs: In many, if not most instances the work contracts are routine, monotonous, and menial; probably they should be or must be. If this is the case, then an imaginative approach must be found which will prohibit this notion from being communicated to the student.

Forest View High School - The project of this year has not been nearly as successful as last year's project. The students have not been enthusiastic about the type of work. The W.O. students seem to need a project where success and accomplishment are easily visible. If they could have taken the assembly process to completion, this would have been helpful. That way they would have seen the final product and had a greater sense of achievement. Details of the project had to be worked out after school started. This delay was a problem

for the teacher in keeping the students busy. Termination of the project in April also caused problems in that another adjustment period was necessary while a new project was found, arranged, and initiated. I fear that some of our goals for the technical processes phase were not achieved because of these delays.

Technical Processes: The sophomore boys in the cabinetmaking class have now worked together for one and a half years. Unlike the first months of the program, these lads have learned a sense of pride and responsibility. The boys have been unified from a group of individuals into a single unit for the common good. The quality of their products has been excellent and their teacher, Mr. John Hangey, has been very pleased with their progress. The boys have shown appreciable growth in positive attitude. A great deal of pride has been justifiably shown due to the fine quality of work done primarily for their school district. They have been able to identify with the school. It is obvious too that the instructors and counselors associated with these boys have learned a new respect for this class. Many times the staff felt discouraged with their progress but they look back on the past fourteen months as having been worthwhile for all concerned. Two boys were dropped as undesirable for this program.

The freshmen girls' group managed to develop rapidly enough to make their tearoom very successful. It was the feeling of the teacher, Mrs. Dorothy Scharf, that the early lack of unity and cooperation of the girls would result in utter failure of the tearoom. However, after a few weeks of effort Mrs. Scharf was able to whip the girls into an efficient and able group. Teachers who have sampled the cuisine of this group can attest to the excellent preparation of the food. Literally dozens of visitors, including some of the critics of the program, had nothing but praise for the accomplishments of these girls. Only one girl dropped after the first semester.

The freshmen boys' group in Power Mechanics had many problems to overcome. In the beginning weeks of the auto maintenance program, the lack of any special training forced the boys into repeated experiences of car washing. After several weeks, many of the boys were demoralized by the low (profit) wage and lack of variety. Some of the boys also found that they had no genuine interest in autos. By the end of the first semester, eight of the thirteen boys dropped the program and were shifted into areas of special interest to them. The remaining five boys have progressed to more advanced maintenance and wish to continue in the program next year. It is our plan to find eight to ten sophomores to fill vacancies for next year's program. It appears to the staff at this point that selection of boys for this program will be difficult. A more thorough interviewing procedure may reduce the dropout rate of this group. We believe, too, that as the boys generally know what to expect their unrealistic views of what can be accomplished will be reduced.

Individual School - 1967-68

Arlington High School - The program included twelve boys. We spent the latter part of the first semester in the metal shop. The project made was for each individual of the class. The project was a letter or note holder. This project included design, layout, cutting of metal, spot welding, plus soldering and painting. The course was designed for the use of hand tools but not machinery. It was also designed to help students become familiar with manufacturing procedures of various projects. It also was used to develop habits for safety as they might apply to a metal shop.

The second semester we moved into the woods shop. Instruction was given on use of hand tools and some power machines such as the jigsaw, power belt sander, and lathe. The course was to provide experience in manipulation to use general and usable skills in order to conform with the various jobs which we were going to be doing. It also was intended to inspire an interest in production work along with attitudes.

The products made in the second semester included twenty large picnic benches made of redwood. We made about one hundred fifty bulletin boards of various sizes for School District 59. These included a number of operations which would be used on a production line basis. Design of pre-kindergarten furniture and building after designing. We also made many signs of redwood for the Palatine Park District; all signs were used at the golf course. This type of work gave the boys a chance on measuring, spacing and setting up on a cutting machine, design for such rustic signs.

I feel that a course such as this can be helpful only if the students involved can be kept busy with not only one type of project, but many to keep repetition out of the course. Constantly working on one type of project can discourage the students. I am quite sure the intent of the course reached some boys. Others, I have my doubts. I feel that some boys I had lacked interest in the program and would be better off in a different type of class, or just taking the regular classes given instead of this program.

I enjoyed last year's work because it gave me a challenge. It was also inspiring to see that I was able to reach some of the boys and possibly change their attitudes toward being a better boy and citizen.

Elk Grove High School - I feel the program has fine possibilities if handled properly. What hurt it this year was the lack of organization and communication among the people handling it. The most important thing that must be done is to motivate the students to do a good job all the time.

At the beginning of the year the students were supposed to work on individual projects which were accomplished with a fair amount of success. Somewhere around the end of the first quarter the teacher lecture stands for Elk Grove High School were drawn up and started as a class project. The students

reluctantly accepted the project. The students really disliked this activity and sometimes almost "sabotaged" the project.

The D.V.R. went into effect in March, paying the boys for their work. This proved successful for a short time but it wasn't long before they were their old belligerent selves. However, the lecture stands were finished by the end of May, thus allowing the boys to return to work on individual projects. A few participated by helping in the shop doing various jobs.

Forest View High School - All in all this has been a very successful year. I am especially pleased with the progress of certain students in the class. I feel these students are capable of the leadership needed for a successful program next year. They should be able to give the new teacher the cooperation, interest, and help necessary to assure a successful year.

The projects completed by this year's C.W.A. group include electronic benches, drafting accessory holders, typing and business machine tables, tool panel and storage unit for the woodshop, and various holders for tools. These items were budgeted for from the John Hersey High School account and will be installed during the summer.

If our original conception of the program was to provide work to students, then we have fulfilled that goal ten times over this year.

Introduction to Large Quantity Food Service

This course is planned for tenth grade students. The students who have completed the ninth grade Food-Work Orientation Course and others who have shown interest in food service work. The program will acquaint the student with various work opportunities in the food service field, expose the student to institutional work methods and equipment, also allow the student to gain experience cooperating with food service personnel.

Objectives:

1. Observe and learn methods of receiving, storing, preparing and serving foods in large quantities.

2. Gain an understanding and appreciation of necessary sanitation procedure.

3. Ability to evaluate food products and recognition of standard food products.

4. Recognize the importance of a standardized recipe.

5. Be familiar with types of equipment used and their operation.

6. Work effectively with others in the food service situation.

7. Ability to carry out both verbal and written instructions satisfactorily.

8. Achieve work satisfaction.

9. Ability to evaluate their own personal progress.

Sequence of Work Experiences:

A. Food Preparation (1 semester)

1. Cooking
2. Baking
3. Molded Salads
4. Vegetable Salads
5. A la carte preparation
6. Pre-portioning of foods for service

B. Serving of Food ($\frac{1}{2}$ semester)

1. Pre-portioning of foods for service
2. Set up counters
3. Supply serving lines
4. Serving of food
5. Cash register and money changer
6. Dish machine room

C. General clean-up and pre-preparation of food ($\frac{1}{2}$ semester)

1. Serving counters
2. Dish machine room
3. Scullery area
4. Cleaning of refrigerators or freezers
5. Cooking preparation
6. Baking preparation
7. Vegetable preparation

If students desire, they may receive at no charge a lunch ticket valued at 50 cents. This ticket is good for purchase of a Type A lunch including the soup, salad, sandwich and milk special offered on the a la carte line. The additional 10 cents may be used for dessert or an additional choice of salad or vegetable.

Work Experience Description

Under direction of the manager students will be assigned to positions for a period of one to three weeks. Manager may ask students to substitute or assist temporarily in another position if necessary to facilitate the general operation of the kitchen.

A. Food Preparation:

1. Cooking

a. Observe and assist cooks in

b. Preparation of entree, hot sandwiches, soups, gravy and vegetables.

c. Understanding of standardized recipe

d. Operation, use and care of equipment in area

1. Compartment steamers
2. Steam jacketed kettles
3. 60-q' mixer
4. Food cutter
5. Slicer
6. Work counters
7. Knives and other utensils
8. General clean-up of the area

2. Baking

a. Observe and assist bakers in preparation of hot breads, rolls, and desserts

b. Understanding of a standardized recipe

c. Operation use and care of equipment in area

1. 20-qt. mixer and 10-qt. bowl and adapter
2. 60-qt. mixer and 40-qt. bowl and adapter
3. Refrigerator
4. Baker's table
5. Portable pins
6. Roll divider and other utensils
7. General clean-up of the area

3. Molded Salad

a. Observe and assist worker in preparation of molded fruit and vegetable salads

b. Understanding of a standardized recipe

c. Operation and use of a steam jacketed kettle

d. Use of electric can opener and other small equipment

e. General clean-up of the area

4. Vegetable Salads

a. Observe and assist worker in preparation of tossed salad, cole slaw, lettuce wedges, and relish, dish salads

b. Understanding of a standardized recipe

c. Operation and use of equipment in area:

1. Chopper
2. French and other knives and other small equipment used
3. Cutting boards
4. Portable salad bowls

d. General clean-up of area

5. A la Carte Preparation

a. Observe and assist worker in preparation of luncheon meats, ham, egg and tuna salad, salad dressing. Prepare condiments and salad dressing for lunch service

b. Understanding of a standardized recipe

c. Importance of portion control in slicing luncheon meats and cheese for sandwiches

d. Operation and use of equipment:

1. Chopper
2. 60-qt. mixer and 40-qt. bowl and adapter
3. Other utensils and small equipment

e. General clean-up of area

6. Preparation of foods for service:

a. Observe and assist worker in portioning of salads, desserts and fruits, and preparation of weight watcher salad plate

b. Assemble utensils and serving dishes

c. Arrange work area

d. Check work sheets for products to be portioned

e. Check recipes for amount to be served

f. Obtain products from the kitchen area

g. Portioning and garnishing of salads and desserts

h. General clean-up of area

Project Development

One phase of the district's program for students with special needs is to provide them with realistic work experience. Through such work experience freshmen and sophomore students have the opportunity to develop vocational maturity and skills. A production-like experience is the vehicle by which we hope to achieve this goal. To provide worthwhile work experience, we are always in need of new projects. The students working an hour or more a day can turn out a lot of work.

We need help and support in the way of new projects if we are going to continue to give the students this valuable and realistic work experience. If you are anticipating or have projects that we may do, please keep us in mind.

Our goal is not specifically to teach a skill but to develop better attitudes toward self and work. To accomplish these goals, we must make the work experience as realistic as possible.

Some possible questions about the program might be:

Question: Who can use the services of these students?

Answer: Our agreement states that we may work for non-profit organizations and agencies. This limits the scope of job possibilities to schools, park districts, municipalities, and organizations--thus, the reason for our appeal to you.

Question: What type of work projects are preferred?

Answer: We prefer a project that offers us the opportunity for mass production techniques. If we can involve all the students on a project, we feel it presents a more realistic work experience.

Question: Will single projects be accepted?

Answer: We prefer the assembly-line approach but will take custom jobs, hoping that we may get others interested in the product. Single projects involve only a few boys, thus the work situation is very much like our regular shop class. The students seem to function much more efficiently as a team on a common project in which they can take group pride.

Question: What would be the cost to us?

Answer: You provide the material, plans, and specifications, and we provide the labor. Your cost is greatly minimized by cutting out the labor. You will be requested to deliver the material or have it delivered and to pick up the finished product.

Question: What are some items which might be produced under this program?

Answer: We rely on your ideas but we have a few suggestions--lecterns, bookcases, cabinets, pamphlet racks, magazine racks, easels, play equipment for pre-primary and primary grades, signs, benches, tables, etc.

If you have the project but your own staff can't get to it, why not let us see if we can help you out. You help yourself while helping these students develop vocational maturity and responsibility.

Prospect High School - The boys in the work experience class at Prospect High School are now able to provide an engraving service to our schools. The recent addition of an engraving machine makes it possible for them to engrave trophies and plaques and to make name plates, signs, etc. You recall that all you supply or pay for is the material; the labor is a service. You save while providing these boys with realistic work experiences. Keep them in mind.

We would appreciate your passing this information on to your Division and Department Heads and to anyone else who may have a project.

Wheeling High School - The technical processes class in cabinetmaking undertook many projects this past year. Work included design and construction of cabinets, elaborate shelving for storage, and mass production of metal book stands for typing books.

Students learned many of the essential procedures in planning and construction. It was evident that many of these students experienced success, as a number of them indicated they did not believe they could do quality work. This type of work-oriented experience has much value in developing confidence in these students.

The program did not function without problems, however. The group was

totally disoriented at the beginning of the school year. It was extremely difficult to start them out on a sequential basis. Since they were not aware of the necessity of organization and follow-through on a job, the task soon became mentally fatiguing to the teacher.

There were times when it became necessary to forget about the work portion and concentrate on group discussion of developing good work habits and the importance of these habits. There were also times when it seemed best to allow some students to sit in the classroom instead of working as it was obvious that certain problems had developed. In most cases the student was ready to go to work the next day and seemed to appreciate the fact that he was left alone when he did not want anyone around him. This type of behavior practically disappeared by the end of the school year.

In conclusion, I believe this program should be continued as I am convinced much good is being done for these students. I do strongly recommend that the students should be placed with experienced teachers who have the "know-how" to deal with disturbed students. I believe these teachers should possess the following characteristics:

1. Accept the Child for What He is. This is extremely important since the development of a good pupil-teacher relationship is acceptance by both parties. The teacher must not only be willing to accept the student for what he is but to exercise his skills to get the student to accept him. When the child accepts the teacher, learning can then begin.

2. Skill in Teaching Methods. The teacher must exercise good judgment in teaching a group of emotionally disturbed students. He must recognize that there may be times when it is better not to teach subject matter but to concentrate on maintaining a healthy relationship with the student. It is possible that each student may require a different teaching method. Adequate and meaningful working experiences must be provided the child each day.

3. Emotionally Stable. Regardless of how often the student may lose his temper or cause other serious disruptions in class, the teacher must remain calm and handle the situation in such a way that the disturbance will not get out of hand. The student causing the disturbance is testing the teacher. He has gotten accustomed to not getting along with his previous teachers. As a result the student causing the disturbance possibly cannot believe that all of a sudden he has a teacher who tolerates misbehavior. It will probably take a number of experiences to remove the suspicion and hostility the student has developed for the teacher. This is why it is important for the teacher to give a good response in return for a bad one.

4. Excellent Knowledge of Subject Matter and Enthusiasm for Teaching. When the emotionally disturbed child has completely accepted the teacher, he needs to be and usually is impressed with the knowledge and skill the teacher possesses. Since it is quite evident that enthusiasm is caught and not taught, the teacher should display natural enthusiasm in hopes that the student will adopt this excellent trait.

5. Pleasant Personality. A pleasing personality is a valuable asset in many endeavors. In teaching, however, a pleasant personality appeals to many students.

Cabinetmaking Course of Study - 1967-68

1. Sketching

   a. Simplified pictorial drawings.
   b. Exploded views for easy comprehension of construction.
   c. Pencil rendering to produce attractive sketches.

2. Working Drawings

   a. Necessity of working drawings.
   b. Importance attached to reading and understanding working drawings.

3. Cabinet Terminology

   a. Basic terms.
   b. Purpose of knowing terms.

4. Construction Materials

   a. Solid wood.
   b. Plywood.
   c. Veneers.
   d. Formica - laminated plastic.

5. Finishing Materials

   a. Stains.
   b. Sealers.
   c. Exterior clear finishes.
   d. Paints - primer, enamels.

6. Methods of Applying Finishes

   a. Brushing.
   b. Spray.

7. Methods of Construction

   a. Basic joints.
   b. Simple construction.

8. Techniques of Assembly

   a. Gluing and clamping joints.
   b. Assembling with fasteners.

9. Work Habits

   a. Arriving on time.
   b. Satisfactory progress.
   c. Pride of workmanship.
   d. Care of equipment and supplies.
   e. Safety.
   f. Getting along with co-workers.
   g. Assisting co-workers.
   h. Importance of clean-up.
   i. Proper grooming and dress.
   j. Developing confidence.

10. Social Habits

   a. Proper attitude.
   b. Personality.
   c. Respect for each other and other people.
   d. Good citizenship.
   e. Contributing to society.

Home Economics Course of Study - First Semester

1. Good Grooming

   a. Appropriate lines and colors.
      (1) Styles for fall and winter.
   b. Selecting appropriate fabrics.
   c. Make-up and hair.
   d. Care of clothing.
   e. Diet and nutrition in relation to good grooming.
      (1) Balanced meals.
      (2) Weight control.

2. Clothing

   a. Selecting material and pattern.
   b. Sewing machine parts and operation.
   c. Preparation of fabric.
   d. Processes in making a shift or jumper.
      (1) Layout and cutting.
      (2) Marking.
      (3) Staystitching.
      (4) Darts.
      (5) Facing.
      (6) Zipper.
      (7) Hems.
      (8) Pressing.

e. Clothes remodeling.

3. Christmas Unit

a. Decorations
b. Christmas Tea for Sophomore boy's class.
(1) Food.
(2) Arranging tea table.
(3) Manners.

4. Child Care

a. Babysitting.
(1) Responsibilities.
(2) Problems.
(3) Play and toys.
(4) Stories.
(5) Safety for children.
(6) Positive and negative approach.

b. Children's party
(1) Refreshments.
(2) Games.

c. How to take care of a baby.
(1) Physical care.
(2) Emotional care.

Second Semester

5. Foods and Nutrition

a. Measurements and name of equipment.
b. Techniques and terms in cooking.
c. Table service and etiquette.
d. Selection, planning, preparation, and evaluation of food groups in the Basic Four.

(1) Breakfast
(a) Quick breads.
(b) Fruits.
(c) Meats and eggs.
(d) Complete breakfast.

(2) Lunches
(a) Menu planning and writing.
(b) Hot sandwiches.
(c) Main dish salads.
(d) Simple puddings.
(e) Cookies.
(f) Casseroles.
(g) Complete luncheon.

(3) Dinners
- (a) Pastries.
- (b) Cakes.
- (c) Cake mixes--different uses.
- (d) Yeast breads.
- (e) Meats.
- (f) Leftovers.

(4) Dinner for sponsors of trip.
- (a) Menu.
- (b) Grocery order.
- (c) Time schedule.
- (d) Duties.
- (e) Evaluation.
- (f) Entertainment foods.

6. Sew typing covers to qualify for D.V.R.

Teaching Aids

1. Field Trips
2. Film Strips
3. Movies
4. Laboratory Experiences

Field Trip Evaluation

1. Beauty shop to have hair set.
   Hagenbring's and Wieboldt's to select material for clothing project.

Evaluation: Some of the girls did not appreciate having their hair set. This is typical of most teen-age girls. They are never satisfied with their appearance. Some of the class became more aware of their appearance and due to this experience looked better. The trip looking for fabrics was very profitable, because I could give them advice on what to select.

2. Merchandise Mart

Evaluation: This was a good trip because they were with juniors and senior girls.

3. Maryville Children's Home
   Lake Bluff Children's Home

Evaluation: Best trip of the year. They saw problems that children had that were much worse than theirs. They seemed to appreciate their own parents a little more.

4. Sara Lee Kitchen

Evaluation: There was not much comment on this trip, but I hope that it was another experience that gave them knowledge on the outside world.

5. Forest View Tearoom

Evaluation: Some ate food they had not eaten before, met other girls; saw what other W.O. programs were doing.

Class Activities

1. Laboratory experiences in clothing construction and foods.

2. Weight control - visit to nurse's office every week to check weight (first semester).
This was very effective, because the girls talked more objectively about good grooming in and out of class.

3. Christmas Tea for Sophomore boy's class.

4. Children's Party - I was ill for this party, but the substitute thought it a very good learning experience. I wish I had spent more time in this area, for the girls were interested in children and through the study of children they would have understood their own problems.

5. Dinner for sponsors of trip. The highlight of the year. The girls seemed to have a sense of accomplishment that I had not noticed during the year.

6. D.V.R.

Made one hundred fifty typing covers for Wheeling Business Education Department.

Synopsis

To implement the vocational aspects of the Agreement, we have developed various technical curriculums. At this point, we have not completed Division of Vocational Rehabilitation authorization for all students in the program, but hope to have all students staffed and clients of D.V.R. by the second semester. We are attempting to provide specific realistic work situations for all students in the program. During the interim period when such projects have not been found, students are involved in a basic shop orientation.

Following is a description of the technical processes activities in each building:

Arlington High School - This program is devoted primarily to general shop orientation. The boys have had worthwhile experiences in developing proper shop safety habits. They have also been building wooden lathe holders which will be used in the shops at Arlington, and have been reconditioning picture frames. Tentative plans include possible projects for John Hersey High School, care and maintenance of automobiles in the industrial education area, and the building of various kinds of models.

Elk Grove High School - General orientation to shop skills has been the main emphasis at Elk Grove. A tentative proposal, with a bid to build lecterns to be used in the school classrooms has been submitted. There is also a possibility of working on projects for John Hersey High School and Harper College. Again, no pay will be given students until they become D.V.R. clients.

Forest View High School - We have four training stations at Forest View. The boys in the program are engaged in work in the power mechanics area and in woods. In the power mechanics phase, they are provided a laboratory experience in maintaining and servicing automobiles. The boys service everything from aging power mowers to their father's outboard.

To insure these students a realistic experience, we depend upon parents and faculty members to bring their cars for tune-ups and safety checks. We charge for parts used and, in addition, there is a minimal service charge to cover supplies and equipment. We intend to pay these boys once they become clients of D.V.R.

In the freshman woods class, the boys already have built about forty drawers for cabinets at John Hersey High School. This project is making a most significant contribution to John Hersey High School. Unfortunately, it has been difficult to find projects of this nature for all schools of the district.

The girls at Forest View High School are still turning out delicious luncheons in the tearoom on Tuesdays and Thursdays. Call in your reservations; the girls will be happy to serve you.

Last year's graduates from the tearoom are now making their mark in the school cafeteria, where their services are most welcome and appreciated. The ladies in the cafeteria express a real loss when the girls are not there; they find the girls both pleasant to work with and helpful. Neither the girls in the tearoom nor in the cafeteria receive pay at this time. However, it has been possible to provide the cafeteria girls with lunches.

Prospect High School - The boys at Prospect are engaged in making a very practical and useful cutting block for use in the kitchen. The cutting block includes knife holders and is approximately eight inches square. The boys are given the first one thay make and pay for the cost of materials for any others they may construct. The boys are presently using the blocks as gifts and have sold some of them to relatives and friends.

Future plans at Prospect call for the construction of other small projects such as the cutting block, while, in the meantime, we have been seeking projects from the school district and from other public agencies, but have had difficulty in finding them.

Wheeling High School - The technical processes class at Wheeling is presently engaged in general shop activities. This includes orientation to woods, metals, drawing and electricity. The availability of space is the greatest problem here. We have purchased a plastics machine and hope that meaningful projects can evolve. Presently, we are investigating the possibility of making plastic items having usefulness to service or charitable organizations.

The girls in the program are being provided experiences in the area of home economics. Generally, they are making clothing for themselves or remodeling those they have.

This briefly summarizes the technical processes phase of our Cooperative Working Agreement to date. We are open to any suggestions for projects which may contribute to the student's vocational development while, at the same time, providing a service to the school and community. Of course, our greatest interest is in the development of educational and vocational initiative within these students. Cooperation of faculty members has been outstanding and appreciated.

Part 10

EVALUATION OF ENRICHMENT ACTIVITIES

Students in the C.W.A. program are provided with supplemental experiences outside the school which enhances and broadens their scope of interest and knowledge. Our goal is to provide one out-of-school activity per month for students in the program. The activities vary from vocational, to cultural, and social.

Individual School - 1967-68

Arlington High School - It was felt that exposure to industry and actual work situations would be of vital importance in changing undesirable attitudes toward education and work. It was evident that cultural enrichment experiences were needed and so the field trips were designed to meet both the above-mentioned needs.

Trips included:

1. General Fire Extinguisher Mfg. Co.
   Northbrook, Illinois

2. Glenview Naval Air Station
   Glenview, Illinois

3. Western Electric Company
   Hawthorn Plant

4. Sara Lee Kitchen, Deerfield
   Fire Academy, Chicago

5. Narcotics Court

6. Museum of Science & Industry

7. Chrysler Plant, Belvidere

8. Springfield, Illinois

This final field trip, we felt, was the highlight of the year. The boys were flown by jet both ways and the tour of historical points of interest was provided by Capital Tours. Points covered were, Lincoln's Tomb, State Museum, the Capitol, Lincoln's Home, and the restored village New Salem.

Much planning and grooming was exercised to make each trip meaningful and beneficial.

Forest View High School - One cannot underestimate the value of the field trips organized by the group. These trips have given much insight to the staff and a realization by the students that there are adults who will walk that extra mile (or two) with them. Some of the field trips were:

1. A visit to Starved Rock State Park
2. Auto Show
3. Theater Party
4. Fishing trip (overnight)
5. Canoe trip (planned for May)
6. Several business or industrial tours

Field trips attended this year with W.O. students were:

Film: Camelot
Auto Show
United Airlines Training School
Plentywood Farm Kitchens

District Field Trips for 1967-68 School Year

O'Hare International Airport	Wrigley Field
Merchandise Mart	Chicago Tribune
Museum of Science and Industry 1	Prudential Building
Brookfield Zoo	Belvidere Chrysler Plant
Homemakers Show International Amphitheater	Springfield - Plane trip and tour of Capitol and Lincoln Shrine
Camping Lake Geneva, Wisconsin	Hull House Camp East Troy, Wisconsin
Adler Planetarium	Field Museum
Cinestage Theater 11	Sara Lee Kitchens 1
Fire Academy Chicago	Boat and Travel Show Amphitheater
Lincoln Park Zoo	Union Stock Yards
Jewel Food Store	Ravenswood Hospital
Stateville Penitentiary Joliet, Illinois	Naval Training Center Great Lakes

Narcotics Court
Chicago, Illinois

Chicago Post Office

United Airlines
O'Hare International Airport

Auto Show
International Amphitheater

Illinois Bell Museum

Plentywood Farm
Bensenville

Shedd Aquarium

Jewel Warehouse

Fisher Body Company
Janesville, Wisconsin

Des Plaines Beauty School

Chicago Board of Trade

Hinsdale Health Museum

State Lake Theater

Bell's Apple Orchard

Western Electric Plant

Glenview Naval Air Station

Bismarck Theater

Marina Towers

Theater in the Round Playhouse

Fort Sheridan Army Base

Milwaukee Zoo

Wilmot (ski trip)

Part 11

PROGRAM STUDIES

1966-67
1967-68

Program evaluation consists primarily of subjective data gathered from the staff working in the program. Since the major goal of the program is to improve attitudes and change behavior it is difficult to obtain objective data. There are standard scales to measure attitudinal changes but the staff prefers to assess pupil change on a subjective basis which is more personal and individual.

Complete psychological assessments are made of the students who seem to deviate too much from the norm of the group. We rely a great deal on feedback from teachers, parents and administrators to provide us with reactions concerning these students.

Hard data such as attendance, discipline, record, and grades are always accessible. Statements such as the following, received in a letter by one of the principals, gives evidence that we are on the right track and that we have been able to succeed with some students.

> "Words cannot express our gratitude for your fine W.O. program and the help you have given our son. Thanks to the wonderful people in the program, we have a changed boy who is enjoying his school experience for the first time. You certainly can be proud of your staff.
>
> The weekly meetings with the parents are a great help and the progress of our son is unbelievable. John, I know, joins us in thanking you for a wonderful school year."

C.W.A. Student Profile - 1967 - 1968

Student in program range from 76 to 125 I.Q.

Average I.Q. C.W.A. student	97
Average I.Q. District	114
	+17

Student range 4.1 to 11.1

Reading G.P.A. - C.W.A. student	6.6
Reading G.P.A. for District	9.8
	+3.2

Student range 2.8 to 11.5

Arithmetic G.P.A. - C.W.A. student	6.9
Arithmetic for District	9.4
	+2.5

Student range 4.0 to 10.8

Language Arts G.P.A. - C.W.A. student	6.9
Language Arts for District	9.7
	+2.8

Student range 3.8 to 10.4

Composite G.P.A. - C.W.A. student	6.8
Composite for District	9.6
	+2.8

Teacher Evaluation of Students Vocational Progress

Attitude of Student	Mid-Year Report	End of Year	Change
Cooperative	8%	16%	+8%
Fairly Cooperative	55%	52%	-3%
Indifferent	35%	26%	-9%
Not Cooperative	2%	6%	+4%

Cooperative - significant change.
Fairly Cooperative - no significant change.
Indifferent - a decrease which is interpreted as being a positive change.
Not Cooperative - shows a significant change, indicating the teacher saw hope in first evaluation but finally realized the student had given up.

Quality of Work	Mid-Year Report	End of Year	Change
Excellent	8%	16%	+8%
Good	55%	52%	-3%
Fair	35%	26%	-9%
Poor	2%	6%	+4%

Increase at the extremes show that the change became more evident as the year progressed. The change of 8% in the excellent category is quite significant.

Overall Student Improvement and Progress	Mid-Year Report	End of Year	Change
Accelerated	9%	18%	+9%
Average	63%	56%	-7%
Slow	27%	22%	-5%
None	17%	4%	+3%

The decrease in the average slow area and the significant change in the accelerated - no improvement and progress areas indicates that the students did make a change, not all of it for the better. 75% of the students are still clustered in the upper half of the scale.

The goal of the program is to change student behavior toward work. Listed below is some subjective pre and post data submitted by the work supervisors.

PRE	POST
Making slow progress, but steady.	Much improvement this period, has the potential.
Will not accept any responsibility. Doesn't finish anything.	Can now trust him to start and complete a job.
Frequently absent, can't depend on him.	Bob was absent far too often, but he has improved his attendance the past quarter.
He needs to be handled with special care.	I don't have to spend as much time with him; has really come along.
Looks like he has the potential to make a real contribution to the class; can be a leader if he wants to put his mind to it.	Gary is my shop superintendent and is in charge of the group. He does a good job of getting the students to clean-up properly and to take care of the equipment and supplies.
Very disruptive, requires a great deal of time and attention. Cannot work well with others.	He needs professional help. He continues to disrupt the entire class. He works well alone however.
Hard to get along with, an uncontrollable temper.	Tom has made considerable progress in controlling his temper. He has become pleasant to work with.
Can do the work when he wants to but that's the problem he doesn't want to do it often.	When he wants to he can do very good work. He's slowly becoming more stable.

Not reliable, will not work with the other student.	He works better alone, but has performed satisfactorily assisting other students.
Can't be trusted.	He has slowly improved to the point where he can be trusted.
Needs to be handled carefully, he will not be "hard nosed."	He minds well when treated with respect.
He gets very angry if he is laughed at by his group when he makes a mistake, very sensitive.	He works better separated from the group, his progress has been slow.
No self-discipline. Will not accept responsibility.	Needs definite rules and guidelines for behavior to develop self-discipline. Has made progress in the direction.
She is very immature. She trys to get by without doing her part and always blames someone else for what happens.	Has made some progress. Will admit to her failings. A little more cooperative.
Very slow, can do very little on her own; very little confidence.	Has shown improvement, but is probably working to her ability as far as thinking through problems.
Lacks confidence in herself.	Has shown improvement. Not afraid to try, and usually succeeds.
Very hostile toward authority and adult direction.	Is able to cope with supervision in a little more positive manner; does well when she wants to.
Very negative, has difficulty adjusting to changing situations.	Handicapped by adverse home life but has made considerable progress.
Immature, very unstable. Unable to be relied upon.	Has shown considerable growth but needs more training; still cannot assume much responsibility.
Does everything asked of him, a good worker.	A fine boy, a pleasure to have in class.
Feels he is being picked on.	Attitude has improved some, can now accept some direction.

"Knows all the answers, anti-everything.	Still cocky, may have improved to the extent where he now realizes that he is his own worst enemy.
She is not interested in school and she is absent too much; can never depend on her.	Not much improvement; still frequently absent, not dependable.
Seems like a nice boy, not much ability but he is willing to try.	This boy has done everything I've asked; excellent worker.
Negative attitude, doesn't want to work. Shows very little interest in projects.	This boy's attitude, and his willingness to work has greatly improved. He's been a great help working on the cutting machine for making signs.
No real problem, seems to get along fairly well.	Very much improved, has come a long way.
Not much effort, little interest in his work.	He can do a good job if he wants to.
Sloppy work, doesn't care if job is done well or not. Won't contribute to the team effort.	His work has greatly improved. He works well when not with a group.
Will not accept responsibility- a trouble maker.	Required a great deal of time and attention, has improved some.
Slow in learning, easily distracted by others, always a follower.	Short attention span, needs to be directed. Change very slight.
Very independent, thinks he knows it all.	Hasn't learned to listen and follow instructions.
Doesn't pay attention, always talking. Doesn't take work seriously.	Still needs to grow up. Has taken some interest in his work, but sporadic.
Seems at least willing to try and cooperate.	Could make a good boy for this kind of work.
Just doesn't want to follow instructions, unless pushed.	Doesn't care for school, wants to quit.
Seems to have the potential but not consistent. Very unstable.	Did quality work most days, but is so unpredictable you never know what to expect.
Doesn't want to follow rules and regulations.	Still thinks she knows it all, wants to do everything her way.

Has the ability but won't try.	Has contributed to the work; still not much motivation.
Very moody, has difficulty adjusting to changing situations.	Seems to have made a good adjustment, is much more flexible.
No interest, could care less. Interested only in self.	No progress; would rather sit around and do nothing.

Group Comparison Studies - 1967-68

To get some idea of the effectiveness of the program in terms of grade point average, credits earned, and attendance, we selected like groups of students who would have qualified for the program if we had the room to accommodate them.

It must be understood that there are many variables that have to be taken into consideration concerning the results of these comparisons. To say that this is significant proof that the program is effective would not be valid, but we might say that it gives some indication that something has affected a slight change in the students.

You can see from the following tables that the C.W.A. group has fared slightly above the control group.

Academic Credits

Forest View High School

	Semester 1	Semester 2	Credits
Control (11 students)	2.46	2.63	3.68
C.W.A. (43 students)	2.79	2.66	3.84
	+0.33	+0.03	+0.16

Prospect High School

Control (10 students)*	2.09	2.12	3.20
C.W.A. (13 students)	2.34	2.56	4.23
	+0.25	+0.44	+1.03

*One student dropped school 3-11-68.

Averages

Arlington High School

	1st Semester G.P.A.	2nd Semester G.P.A.	Credits Earned
Control (12 students)	2.02	1.71	2.67
C.W.A. (11 students)	2.68	2.59	3.64
	+0.66	+0.88	+0.97

Wheeling High School

Control (34 students)	2.23	2.08	3.23
C.W.A. (32 students)	2.77	2.68	3.91
	+0.54	+0.60	+0.68

Average Absences Per Year

Arlington High School

Control	22.04
C.W.A.	12.32
	+9.72

Elk Grove High School

Control	18.43
C.W.A.	14.78
	+3.65

Forest View High School

Control	9.36
C.W.A.	13.88
	-4.52

Prospect High School

Control	13.70
C.W.A.	11.46
	+2.24

Wheeling High School

Control	22.93
C.W.A.	17.00
	+5.93

Attitude Study of Arlington High School - 1967-68

The purpose of this study was to measure changes in student attitude of members of the 1967-68 C.W.A. class at Arlington High School.

It was felt that changes in individual and group attitude might be the best indicator of student progress in the short span of time that their students have been in the C.W.A. program.

Instruments

The tests chosen to measure attitudes were the Gordon Personal Profile and the Gordon Personal Inventory. Utilizing the limitations of such instruments it was felt that results of the tests could be used as a starting point for future study as well as for evaluation purposes. The Personal Profile provides four score scales -- Ascendancy (verbal ascendancy, self-assurance, self-assertiveness), Responsibility, Emotional Stability, and Sociability. The Personal Inventory provides four additional scales: Cautiousness, Original Thinking, Personal Relations, and Vigor (likes to work vigorously and rapidly).

Procedure

Students were given the pre-test during the first week of class meeting, October 19, 1967. The post-test was given May 27, 1968. The tests were the same form for both testings. Scores were accumulated for all students who took a pre-test and post-test and a comparison was made of the October scores and the May scores.

Discussion

The changes shown on the table seem to indicate that there was a definite positive change in the C.W.A. group in the areas of Ascendancy, and Emotional Stability where the positive changes in the areas of Responsibility and Sociability are less impressive. The positive changes in the areas of Original Thinking and Personal Relations are also more impressive than the positive changes in the areas of Cautiousness and Vigor.

Seven of the twelve C.W.A. students involved showed more positive than negative changes, two had equal numbers of both and two had more negative than positive changes. One student did not complete the testing.

Individual Student Change

	Scales							
Student	A	B	E	S	C	O	P	V
A	-1	+6	-1	-4	E	E	+1	-1
B	+2	-3	E	E	+2	-5	E	-7
C	-2	+2	+2	E	+1	6	-3	+6
D	+5	-6	-1	-2	-1	6	+11	+6
E	-7	+4	+5	+2	-3	+4	E	+7
F	+1	+2	+5	-2	-3	-5	-7	+1
G	+7	+2	+1	+8	N	+1	+2	+1
H	N	N	N	N	N	N	N	N
I	+1	-5	+2	+2	E	+3	+4	E
J	+5	E	+1	-4	+1	+2	+4	-1
K	+2	+1	+5	+1	+2	-1	+2	E
L	E	+4	E	+2	+3	+4	+1	+2
	+13	+7	+19	+7	+2	+15	+15	+14

\+ = Positive Change
\- = Negative Change
E = No Change
N = Student did not take this test.

Analysis of Academic Progress

Grade point averages were computed at the end of each quarter through the third quarter. End of the year grades are not available at this time. Examination of the GPAs listed below will show that while there were individual fluctuations, the class as a whole did not make any significant change in academic achievement from the first through the third quarter. In fact the class averages for first and third quarters are identical. A comparison of average GPAs compiled from junior high grades with third quarter GPAs shows an increase of .51, which is slight but at least in a positive direction.

	Grade Point Averages					Differences	
Student	Jr.Hi	1st Q	2nd Q	(Sem.)	3rd Q	3rd-1st	3rd-Jr.Hi
A	2.80	2.00	2.25	(2.25)	2.75	+.75	-.05
B	1.83	2.00	2.25	(2.25)	2.50	+.50	+.67
C	2.57	2.75	2.75	(2.75)	3.00	+.25	+.43
D	2.85	3.25	3.25	(3.00)	3.00	-.25	+.15
E	2.50	2.50	1.75	(2.25)	2.00	-.50	-.50
F	3.44	3.00	2.75	(3.00)	2.75	-.25	-.69
G	2.80	2.50	2.25	(2.50)	2.25	-.25	-.55
*H	2.57	2.75	2.75	(3.00)	2.50	-.25	-.07
J	1.43	2.50	1.75	(2.25)	2.25	-.25	+.82
K	1.70	1.75	1.50	(1.50)	2.00	+.25	+.30
				Total Difference		0	+.51
Class Average	2.45	2.50	2.33	(2.48)	2.50	0	+.05

*Student H transferred before end of 1st semester. His scores are not included.

In spite of the lack of reliable objective evidence, faculty involved in the program have felt that the program did benefit most of the students. As evidences to support this feeling it can be reported that several of the boys were involved in organized athletic programs, absenteeism was not as great as might have been predicted, the number of impending failure notices sent to parents has decreased during each ensuing grading period, and none of the boys have indicated that they plan to drop out of school.

In an attempt to verify subjective feelings to some extent, a control group was selected and several comparisons made. The control group was chosen by examination of cumulative records from junior high and selection of ten boys who seemed to have attributes similar to those of the C.W.A. class enrollees, such as; low reading scores; average intellectual ability; tendency toward disciplinary problems and lack of motivation or involvement with school. The

comparisons are shown below and lend credence to the feeling that the C.W.A. experience contributes to an upward trend.

	1st Sem. GPA (ave.)	3rd Q GPA (ave.)	No. Failing Notices Sent to Parents 4th Q
C.W.A. Class	2.48	2.50	7
Control Group	2.13	1.95	30

Number of Courses Failed

	1st Q	2nd Q	(1st Sem.)	3rd Q
C.W.A. Class	6	10	9	6
Control Group	18	14	12	19

Attitude Survey

The Purdue High School Attitude Scale was administered to the students at the beginning of the fourth quarter in one of the group counseling sessions. Although there are two forms of this scale, only one (A) was administered because of the timing. The testing situation was not rigidly controlled and results would not be considered significant although they are somewhat interesting. The primary purpose in using this instrument was to stimulate thinking and discussion, and it served that purpose. In the forthcoming year both forms will be used in a pre-test and post-test situation and should provide more significant data.

Ten subjects took the test and results are reported as percentage of agreement with the statements. Students were asked to record whether they agreed, disagreed or felt neutral about each statement. Weights were assigned as follows: Agreed - 100; Disagreed - 0; Neutral - 50. Total points for each statement were divided by the number of students (10) and results were considered to be the average percentage of agreement.

Statement	Percentage of Agreement
1. A high school education is worth a million dollars to any young person.	50
2. High school develops self-reliance.	60
3. A high school education will help one to be a good citizen.	55

4.	It helps one to get a job if he has a high school diploma.	100
5.	I like to do school work.	25
6.	I would rather go to high school than to stay at home.	70
7.	I don't like to associate with people who haven't a high school education.	0
8.	High school has its drawbacks, but I like to go.	55
9.	I don't care about high school, but I think one ought to.	55
10.	High school is all right, but I don't like it.	40
11.	High school may be all right, but I don't think it does any good.	25
12.	There are too many rules and regulations in schools.	70
13.	My classes are very uninteresting.	60
14.	I can learn more working on a job than in high school.	60
15.	A high school graduate is often worse off morally than he was before going to high school.	30
16.	In high school, pupils learn to disrespect everything of high idealistic character.	55
17.	High school teachers are parasites on the community.	80

Most of the scores cluster near neutral which could indicate lack of interest or understanding or inability to formulate clear-cut opinions. A few scores seem to have interesting connotations. It will be noted that all subjects agreed with statement No. 4 and disagreed with statement No. 7, which might indicate that these students see practical but not cultural advantages in education. Rather high scores for No. 12 and No. 17 probably reflect resentment toward authority or adults in general as well as toward specific persons. A rather high score on No. 6 might be prompted by the need to socialize or lack of creativity and inner resources.

Work Orientation Study - Prospect High School - 1965-66

Within our school district, we have two school populations: one, students enrolled in the regular school program; and two, students for whom the regular program did not appear to meet their needs. This latter group of students is called the Work Orientation group. Our current testing program administers both an achievement and an aptitude test to all students, but the results of the tests do not appear to differentiate between the two populations. It was hoped that an interest index might prove useful as an indicator. By comparing the interests of students currently enrolled in both the regular and the Work Orientation programs, it was hoped that a level of interest in certain school subjects might be used as a predictor of membership in one group or the other.

In the past, the identification of students for the Work Orientation was often delayed until such a time that the students were so alienated from school that it was difficult to help them. If these students could be identified at an earlier stage, it would present us with an opportunity to meet their needs more adequately.

Within the limitations of the library at our disposal, we were able to uncover no previous research utilizing a comparison of interests.

Because no difference was discernible for these students on the basis of "feeder" school backgrounds, socio-economic backgrounds, and other factors considered for purposes of selection, it was assumed that there would be no difference in their interest patterns. Thus, our hypothesis is; there will be no difference in interest patterns between Work Orientation students and those tested from the normal school population.

The Work Orientation students can, in general, be characterized as students who have lost interest in school. They have increasing absenteeism, short attention spans, poor study habits, poor basic skills (particularly in the area of reading), and generally poor social relationships with their peers. They seem to have lost respect for themselves and expect failure. In a generally academically-oriented school, they are not members of the "in group." Many of these students are, in effect, "biding their time" until they are old enough to quit school. They have long since been psychological dropouts, moved from one grade to another, waiting to become actual physical dropouts.

The Work Orientation program is based on the assumption that by providing certain work experiences, the students within the program can be helped to become less alienated toward school and/or become productive citizens through the development of positive attitudes toward work.

The W.O. program deviates from the regular program in basically two aspects: a related class, in which students can receive help with the

basic skills, and a technical processes class which calls for a rearranged school day. Within the district, there are four schools, each with a W.O. program. The curriculum for the W.O. program within each school is determined by that school. In some cases, students attend classes in a self-contained unit with special teachers. In others, they attend part of the day with the regular population and (as a second phase of the curriculum) they attend the related and technical processes classes.

To select a random sample of the general population, the students were numbered in alphabetical order by year in school. Using Rand's Table of Random numbers, numbers were drawn to produce from the general population by year in school an equivalent group to the W.O. group.

As freshmen, all of the general population are enrolled in English, biology, a mathematics course, and one elective. As sophomores, they are enrolled in English and physical science, plus two electives. All required courses tend to lean toward the college preparatory student, although they are divided into five ability level tracts.

All students, W.O. and general, come to the high school district from a number of public and parochial feeder schools. The "feeder" schools have varying facilities and philosophies of instruction. As an example: in some elementary schools, all students take a foreign language, in others they are selected by ability to take a foreign language, and in others no foreign language is offered. Similar variations exist in many areas of the curriculum.

As previously stated, the entire W.O. population was tested and a random sample of the general population. These populations were stratified by year in school (using equal numbers of frosh and soph). In this stratification sex was not used as a criterion, but might be considered in future surveys. Because one school restricted their selection to boys for the W.O. program, there was a predominance of males in the W.O. population.

The Modified Interest Index, 8.2A from the eight year study, was used as the testing instrument. The entire test consists of a student opinion questionnaire, personal profile, and the interest index. The test was given within each high school to both groups combined. Testing in the high school took place on different days, with the same individual supervising the administration in each high school. Upon completion of the testing, the student answer sheets were coded and prepared for scoring by three staff members from within District 214. The coding sheets were then presented to the University of Chicago Cooperative Study Program staff for actual scoring and statistical analysis. Because of the size of the program used for scoring, it was necessary to omit the scoring of several student opinion areas.

The statistical procedures used for analysis were developed through a correlation matrix and regression equations. The correlation matrix was developed through use of the index scores and some opinion scores: a total of 16 variables. The variables used were: group, math opinion, art opinion, music opinion, sex, I.Q., social science interest, biology interest, physical science interest, English interest, foreign language interest, math interest, art

interest, music interest, reading interest, and total interest.

Of the above listed variables, two should be immediately discounted: sex and I.Q. Sex, because it is a skewed measure; the predominance of males in the W.O. group colors results based upon sex. I.Q. should be discarded because no actual I.Q. scores were entered as variables. The model used was a point bi-serial (rpb). The "t" test of significance of the (rpb) is equivalent to the "t" test of the significance of the difference of the mean of the two independent samples. Based on these "t's" the hypothesis was accepted for the following interest variables:

	"t"
Biology Interest	1.5391
Physical Science Interest	.1063
Art Interest	.5354
Music Interest	1.0287

The hypothesis was rejected for the following variables:

	"t"
Social Science Interest	3.9579
English Interest	4.3397
Foreign Language Interest	5.3477
Math Interest	2.7060
Reading Interest	3.9796
Total Interest	3.2524

To be significant at the .05 level, the "t" score needed to be 1.98; at the .01 level, 2.63. Those variables which rejected the null hypothesis were all significant beyond the .01 level.

The data was subjected to a correlational analysis to determine to what extent the variables were interrelated. From the analysis of that data, combinations of significant variables were considered. Multiple regressions were computed between membership of W.O. and normal population using sixteen variables. The variables of foreign language interest and art interest resulted in the best possible multiple correlation coefficient of .54. This figure would account for approximately 29% of the variance between the general population and the W.O. group. Foreign language by itself yielded zero order correlation coefficient of .48. Additional variables did not result in significantly increased predictions over that obtained using just the foreign language and art variables. It is hoped that this information may be utilized along with other data in establishing cutting scores to distinguish (select) students from the general population for the W.O. groups.

In comparing the means and standard deviations of the regular and W.O. groups, the following sub-tests were found to vary significantly between the two groups at the .01 level and rejected the null hypothesis:

1. Social Science
2. English
3. Foreign Language
4. Mathematics
5. Reading
6. Total Score

Those sub-tests which supported the null hypothesis are:

Music
Fine Arts
Biology
Physical Science

Based on the total score of the modified interest index, the null hypothesis (i.e. that there would be no difference between the interests of the two groups) was rejected. Differences in interest were shown to exist in the areas of:

1. Social Science
2. English
3. Foreign Language
4. Mathematics
5. Reading
6. Total Score

It would be our recommendation in the event that further study is conducted in this area that additional variables (i.e., achievement scores, socio-economic levels, other interest measures) be introduced, and that an attempt be made to develop a method of differentiating between these two groups.

At present, our plans are to re-test the Work Orientation group in mid-May, utilizing the Modified Interest Index. We then hope to compare the results of the pre and post tests in an effort to determine whether there has been any significant change in interest toward academic subjects itemized on the index scale.

Appendix I

SOCIAL SCIENCE

	W.O. Students	Reg. Students	Difference
Mean	48.32	41.02	7.30
Std. Dev.	8.70	10.91	
Number	51.	50.	
Standard Error of Difference is		1.97	
Critical Ratio	3.71		

ENGLISH

	W.O. Students	Reg. Students	Difference
Mean	52.82	44.63	8.19
Std. Dev.	8.64	11.26	
Number	51.	50.	
Standard Error of Difference is		2.00	
Critical Ratio	4.10		

FOREIGN LANGUAGE

	W.O. Students	Reg. Students	Difference
Mean	54.06	42.31	11.75
Std. Dev.	9.93	12.54	
Number	51.	50.	
Standard Error of Difference is		2.25	
Critical Ratio	5.21		

MATHEMATICS

	W.O. Students	Reg. Students	Difference
Mean	50.24	43.18	7.06
Std. Dev.	13.11	13.18	
Number	51.	50.	
Standard Error of Difference is		2.62	
Critical Ratio	2.70		

READING

	W.O. Students	Reg. Students	Difference
Mean	91.72	80.02	11.70
Std. Dev.	14.85	17.28	
Number	51.	50.	
Standard Error of Difference is		3.21	
Critical Ratio	3.65		

TOTAL SCORES

	W.O. Students	Reg. Students	Difference
Mean	387.24	350.02	37.22
Std. Dev.	58.18	64.97	
Number	51.	50.	
Standard Error of Difference is		12.28	
Critical Ratio	3.03		

Attitude Study of Elk Grove High School - 1967-68

The purpose of this study is to measure changes in attitude, as measured by a standard instrument, of members of the 1967-68 C.W.A. class at Elk Grove High School.

It was felt that changes in individual and group attitude might be a good indicator of student progress resulting from experience in the C.W.A. program.

Instruments

The tests chosen to measure attitudes were the Gordon Personal Profile and the Gordon Personal Inventory. Realizing the limitations of such instruments it was felt that results of the test could be used as a starting point for further study as well as for evaluation purposes. The Personal Profile provides four score-scales: Ascendancy (verbal ascendancy, self-assurance, self-assertiveness), Responsibility, Emotional Stability, and Sociability. The Personal Inventory provides four additional scales: Cautiousness, Original Thinking, Personal Relations, and Vigor (energy, rapidity of accomplishment).

Procedure

Students were given a pre-test in October of 1967 shortly after the class was formed. The post-test was given near the end of May, 1968. The forms were the same for both testings. Scores were accumulated for all students taking both tests. This gave an N of 10. A comparison was made of the October scores and the May scores (Tables 1-8). The Sign Test was used to determine the level of significance.

Results

For four tests - Ascendancy, Responsibility, Emotional Stability and Vigor - the pre-test and post-test differences were not statistically significant. The Personal Relations scale had a moderate negative significance of .377, showing a group decline in this area. The Cautiousness scale had a positive significance of .172 describing an upward change in group attitudes for these scales. The scales for Sociability and Original Thinking had a negative significance of .254, indicating a decline in the responses to this scale.

Table 9 shows the changes for each member of the group indicating that five of the ten students had more positive changes than negative. While this is not statistically significant it may be indicative of the fact that at least for some students positive values may be accruing.

Discussion

While the results of any single measurement have many shortcomings and can produce uncalled for conclusions it is felt that studies of this type have value in providing starting points for further study. As the C.W.A. program progresses I hope we can continue to investigate attitudinal changes and expand our search through improved methods to determine reasons for change or lack of change. It will also be important to investigate why some students had positive changes while presumably similar students manifested many negative changes. As you can see, the door is open for much further study.

TABLE 1

SCALE - ASCENDANCY

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	23	18	-5
B	24	16	-8
C	27	27	E
D	28	27	-1
E	18	25	+7
F	18	21	+3
G	27	28	+1
H	16	24	+8
I	21	19	-2
J	20	22	+2

N = 9 x = 5 Level of significance .746 (one tailed)

+ = 5
- = 4
E = 1

TABLE 2

SCALE - RESPONSIBILITY

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	13	15	+2
B	13	18	+5
C	20	24	+4
D	31	28	-3
E	24	21	-3
F	31	27	-4
G	24	23	-1
H	19	17	-2
I	21	23	+2
J	13	22	+9

N = 10 x = 5 Level of significance .623 (one tailed)

\+ = 5
\- = 5

TABLE 3

SCALE - EMOTIONAL STABILITY

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	18	23	+5
B	24	28	+4
C	26	25	-1
D	27	21	-6
E	25	29	+4
F	29	26	-3
G	30	28	-2
H	11	24	+13
I	29	17	-12
J	17	25	+8

N = 10 x = 5 Level of significance .623 (one tailed)

\+ = 5
\- = 5

TABLE 4

SCALE - SOCIABILITY

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	20	16	-4
B	19	18	-1
C	29	30	+1
D	20	24	+4
E	23	22	-1
F	24	20	-4
G	23	19	-4
H	15	23	+8
I	15	15	E
J	20	19	-1

N = 9 x = 3 Level of significance .254 (one tailed)

+ = 3
- = 6
E = 1

TABLE 5

SCALE - CAUTIOUSNESS

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	23	19	-4
B	20	26	+6
C	17	18	+1
D	20	24	+4
E	21	22	+1
F	18	21	+3
G	21	11	-10
H	11	10	-1
I	11	17	+6
J	12	23	+11

N = 10 x = 3 Level of significance .172 (one tailed)

+ = 7
- = 3

TABLE 6

SCALE - ORIGINAL THINKING

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	21	24	+3
B	18	24	+6
C	22	20	-2
D	27	25	-2
E	19	19	E
F	28	20	-8
G	28	11	-17
H	17	20	+3
I	23	22	-1
J	17	16	-1

N = 9 x = 3 Level of significance .254 (one tailed)

\+ = 3
\- = 6
E = 1

TABLE 7

SCALE - PERSONAL RELATIONS

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	21	23	+2
B	24	19	-5
C	15	19	+4
D	27	23	-4
E	25	18	-7
F	22	21	-1
G	23	14	-9
H	11	13	+2
I	14	13	-1
J	20	24	+4

N = 10 x = 4 Level of significance .377 (one tailed)

\+ = 4
\- = 6

TABLE 8

SCALE - VIGOR

Student	Pre-Test 10/67	Post-Test 5/68	Change
A	21	21	E
B	12	20	+8
C	24	20	-4
D	26	30	+4
E	25	23	-2
F	26	30	+4
G	32	19	-13
H	14	21	+7
I	24	23	-1
J	18	23	+5

N = 9 x = 4 Level of significance .500 (one tailed)

+ = 5
- = 4

TABLE 9

INDIVIDUAL STUDENT CHANGE

	SCALES								SUMMARY		
Student	A	R	E	S	C	O	P	V	+	-	O
A	-	+	+	-	-	+	+	O	4	3	1
B	-	+	+	-	+	+	-	+	5	3	0
C	O	+	-	+	+	-	+	-	4	3	1
D	-	-	-	+	+	-	-	+	3	5	0
E	+	-	+	-	+	O	-	-	3	4	1
F	+	-	-	-	+	-	-	+	3	5	0
G	+	-	-	-	-	-	-	-	1	7	0
H	+	-	+	+	-	+	+	+	6	2	0
I	-	+	-	O	+	-	-	-	2	5	1
J	+	+	+	-	+	-	+	+	6	2	0
						TOTALS			37	39	4

+ = Positive change
- = Negative change
O = No change

Part 12

WORKSHOP REPORTS

1965-66
1966-67

If our goal of providing an environment in which the alienated student can change attitudes is to be achieved, we must have staff who are prepared to work with this type of child. It is essential that the teacher know the dynamics of this type of child and have a course of studies and materials to present the child in academic classes.

To accomplish these goals, workshops have been held where program personnel have had an opportunity to develop philosophy and materials.

Reports from the Half-day Institute - 1965-66

I. A. Counseling with parents. Four main questions were brought up for discussion:

1. How can we improve W.O. parent counseling services?
2. How can we improve parent communication?
3. How can we improve W.O. counseling?
4. How can we strengthen our relationship with feeder schools in regard to counseling and getting information on W.O. students?

Two strong points were brought out:

1. There is no uniform way in which counseling is being done in the four W.O. groups. There seems to be a general feeling that all W.O. parents need counseling, but is this necessarily true? Are we then clinicians, if we do extensive counseling, or should it be "available counseling?" Communication is needed, but is it necessarily counseling? How do we involve parents?

2. A workshop is needed for people involved in W.O. to firm up ideas, exchange ideas, and get new ideas for working with these students. At present, the possibility of a summer workshop is being explored, depending upon the number of people interested and available, and pending administrative approval.

Committee Statement:

That we continue to improve counseling and parent communication, but that required parent counseling not be made a restriction for admission to the program.

B. Technical Processes

The group at the institute was a small one and much of the time was spent explaining the development of the program, the projects being carried on, and the procedure of payment. It is hoped that in the future the program can be expanded to include other areas, such as business, home economics, etc., but expansion is basically left to the imagination of the individuals involved for ideas.

C. Reading

A representative from the Perceptually Handicapped Laboratories, demonstrated the Remote Control Projector. He presented a film on teaching language to remedial students.

The group met with Mr. Alfred Snap. Mr. Snap distributed copies of the following two booklets:

The Mott Basic Language Skills Program - Series 1500 - Teaching Adults to Read

The Mott Basic Language Skills Program - Series 1500 - Keys to Basic Language

Mr. Snap explained that the Teaching Adults to Read Book could be used as a practical textbook. The group agreed that this book might be quite a good one for the W.O. students.

Mr. Collier pointed out that the Mott Program has fifty scholarships each year for interested persons.

Some informal discussion followed. The group agreed that another meeting of the W.O. reading teachers with Mr. Snap would be very beneficial.

D. Related Classes

The group concluded that working with attitudes was the important thing; academic material came second. The curriculum, if such exists for the related class, must be flexible. Whatever is taught must have an immediate practical use; knowledge for the sake of knowledge will not work with these students at this point. Grading was discussed, and the general feeling of the group seemed to be that no limits should be set on the range of grades these students could receive. However, it is to the teacher to realize that the granting of, for example, a "B" in the W.O. section is the same as granting a "B" in a high average class. As the grade is the same, so should the quality of work be.

II. The proposed budget for 1966-67 was presented for general information. The allocation will still be on a per pupil cost of approximately $843 per pupil.

The item of transportation is provided for in the new budget. The budget is based on a projected enrollment of 150 students with a teacher ratio of 1-15. The cost will be adjusted to meet the enrollment.

III. Mr. Collier presented a summary of W.O. program problems that had been mentioned to him in evaluations. Some of the items were discussed. On four specific items, questions were raised which need further consideration:

1. Change of daily schedule for the numerous reasons which occur creates a problem for these students. (Assemblies, institutes, etc., affect the bus schedule, as well as the academic programs.)

2. Shorter class periods.

3. Drop students from P.E. responsibility. (It was pointed out that in some programs, this is the W.O. student's only opportunity to be part of the group. Perhaps what we need to do, rather than absolve the students of a requirement, is to stimulate P.O. programs that will meet their needs.)

4. Put the Technical Processes part of the program into the regular school day.

It was further decided that the program would concentrate on, but not necessarily be limited to, Frosh-Soph level students. Hopefully, Juniors would go into D.O. or D.E. classes if they meet the qualifications. If not, we could try to place them in a W.E. type program.

Workshop Report - 1966

The workshop group on Work Orientation met at Prospect High School July 5-15, 1966. The first few days were spent with the group exchanging ideas on course content and identification of students for the program.

It was determined that a rigid course of study would not be appropriate. Instead, a series of study units were organized. The units were prepared not as separate entities but as overlapping learning areas, flexible enough to be used totally or in part. Each unit suggests subject matter content, resources, films, field trips, and outside speakers. The unit topics are Personal Adjustment, Vocations and Business, School, the Community, and Social Problems.

In addition, the group compiled a list of field trips which could be used during any part of the school year, general resources for teachers, and for the students, possible evaluative instruments, and recommendations to the district for the Work Orientation program.

It was difficult to determine specific requirements for entrance to the Work Orientation program. A list of general characteristics of W.O. students was compiled by the group and is presented in the workshop report. A particular student may have only one of these characteristics, or he may have many. At any rate, the final selection of students for the program should be left to the instructor or instructors who will be dealing with him everyday. The prime requisite is a commitment to the program on the part of the student and his parents.

Later in the week, the group divided to work on specific parts of the W.O. program: curriculum materials, enrollment of individuals for next year's classes, and summarization of ideas, suggestions, and recommendations brought out in workshop discussion.

Selection

One of the areas that this workshop committee was asked to work on was the establishment of guidelines for the selection of students to participate in the Work Orientation program. It is difficult to set strict requirements for entrance for these students because each student varies so much. However, after much discussion, the workshop committee developed some characteristics which we feel these students have exhibited. A particular student may have only one of these characteristics, or he may have many. The final selection of the student for the program should be left to the instructor or instructors who will deal with him every day. The prime requisite we felt should apply to all students is that they and their parents must make a commitment to the program. The general characteristics are listed below.

1. Academically-alienated; the physical and/or psychological dropout.
2. Evidence some academic problem.
3. Non-achiever. (regardless of level of ability)
4. Low reading ability.
5. Generally negative attitude toward school.
6. Low academic achievement.
7. Poor attendance record.
8. 9th and 10th grade age level.
9. Students needing individual instruction and personal attention.
10. Feeling of inadequacy.
11. Non-participation in school activities.
12. Poor student-adult relationships.
13. Recommended by counselor and/or teacher.

It was generally felt that no student should be excluded from consideration because of emotional difficulties, but that the final decision should rest with the instructor or instructors.

Course Outline

To develop a strict course of study for the Work Related class is inappropriate. The class is being taught throughout the district in many ways and under many headings, all with merit. Individual growth and understanding of

oneself is a prime goal in these classes, and it is hoped that through this growth and understanding, changes will occur: change in attitude toward school, attitude toward work, community, adults, increase in attendance at school and overall grade point average. On the following pages are outlines of field trips, evaluation, parent involvement, and workshop recommendations.

General Field Trips

The following are some suggested field trips which did not seem to fit any particular unit, but which we felt could be of educational, social and/or cultural value and interest.

Maxwell Street; Madison Street
The Loop (movies, play, stores, restaurants, etc.)
Boat Trip on the Lake
Field Museum
Museum of Science and Industry
Aquarium
Historical Scoiety
Art Institute
Stock Car Races at O'Hare Field
Ice Skating; Tobogganing
Y.M.C.A. Swimming party
Picnic
Fishing
Camping Trip
Boating
Sara Lee Bakery (or comparable manufacturing company)
Chrysler Plant in Belvedire
Hinsdale Health Museum; Graue Mill; Fullersburg Woods
Zoo
Hager Pottery (Dundee)
American Motors
Great Lakes
Centex Park (Kay Manufacturing Company)
United Airline School (girls)
O'Hare Field
Chinatown
Baseball game, Football game, or other sporting event
Specialty Shows (boat, auto, rodeo, etc.)
Old Town
Restaurant
Prudential Building
Radio or TV station
Port Authority
Daily News in Chicago

Possible Evaluative Instruments

The following are merely suggestions of evaluative instruments. Not all have been tried, but if you wish to follow up on them, descriptions and additional information are available in Mental Measurements Yearbook (Sixth). The first tests mentioned were used this year by Arlington High School, in a study of attitudinal change.

1. Gordon's Personal Profile and Gordon's Personal Inventory (MMY #102-103)
2. Sentence Completions
3. Mooney Problem Check List (MMY #145)
4. Minnesota Counseling Inventory (MMY #142)
5. The Adjustment Inventory (MMY #59)
6. Attitude-Interest Analysis Test (MMY #61)
7. Billett-Starr Youth Problems Inventory (MMY #66)
8. California Psychological Inventory (MMY #71)
9. California Test of Personality (MMY #73)
10. Family Adjustment Test (MMY #95)
11. Mental Health Analysis (MMY #141)
12. Personality Inventory (MMY #157)
13. A Process for In-school Screening of Children with Emotional Handicaps (MMY #164)
14. SRA Youth Inventory (MMY #170)

Parent Involvement

As previously stated, it was the feeling of the workshop committee that the parent as well as the child should make some commitment to the program. However, as we well know, not all parents are willing or able to commit themselves to a specific number of group meetings, a though this has met with some success in some schools. We would encourage these group meetings where possible. However, the method for the involvement of the parents should remain flexible and be conducted at the discretion of the people involved in the program within each building.

Some additional methods which might be used to involve parents were suggested and are as follows.

1. When additional chaperones are needed for a field trip, it might be possible to ask specific parents if they would like to go along. This would give them an opportunity to see their child in a different light. Care should be used in selecting the parents so that their child (or the other students) does not feel that he has to be "on guard".

2. Encourage group meetings of parents and explore the possibility of making home visits. It is often far more productive to meet parents in their home territory.

3. Invite parents to come in at the end of the school day to talk with the counselor or related class teacher and possibly visit the Technical Processes class.

Recommendations

The workshop committee would like to propose the following recommendations:

1. That a workshop be held each summer in each building to select, interview and schedule students for the program for the following year. As a general rule, time during the regular school year will allow for some initial screening, but does not permit the detail necessary to select students, particularly the incoming freshmen.

2. That the final selection of students for the program be in the hands of the instructors of the program. Initial screening can be accomplished by counselor and teacher recommendation, perusal of records, junior high comments, etc., but the final choice of the student should be made by the instructor who will deal with the student every day.

3. That the counseling load for counselors involved in the related class be reduced and/or that they be relieved of some duties. These students are very consuming in both time and energy. The instructor should not be hampered by additional time-consuming activities such as study halls, class sponsorships or other classes.

4. That the instructor of the related class or classes be given an hour released time for preparation and conferences.

5. That there be no limit in the grades to be given this particular group of students. Since this is not a class determined by ability, but rather encompasses a variety of abilities, the grade should be based on the achievement of the individual with no limit on the number of specific grades given or the grade range.

6. That regular staff meetings for coordination with each building be held, even if it means dismissing the W.O. students early so that all staff members can be available.

7. That the program be flexible enough so that a student need not necessarily be in both the Related Class and the Technical Processes, but may participate in either, dependent upon the individual needs of the student and at the discretion of the instructors. Such students may want to pick up an additional subject or subjects, and consideration should be given to this with the recommendation of the W.O. instructors.

8. That both boys and girls be allowed to participate in the same Related Class and Technical Processes class. Where this has been done this year, it appears to have worked well. The girls were found to be as capable and willing in Technical Processes class as the boys, and the mixing in the Related Class seems to have provided a "stabilizing" factor.

9. That there be greater faculty involvement, possibly through conferences, serving on committees, volunteer efforts, staffings, assisting on field trips or acting as a guest speaker for a class.

10. That there be greater parent involvement through parent groups, home visits, showing class projects or assisting on field trips.

11. That the counseling with these students be more flexible in both approach and environs. It should be possible to meet with these students on occasion outside the school.

12. That it be possible, when desired, to schedule at least one field trip a month, on regular school field trip days when possible, if the trip is of benefit educationally, socially, or culturally (in the opinion of the instructor) to the students.

13. That, where transportation is a difficulty for field trips, the possibility of combining W.O. classes from two or more schools and using a bus for the field trip to be explored.

14. That, as a general rule, the supervision on a field trip should be at a ratio of one chaperone for every two students. It may not be necessary to have this number on each field trip, but where the element of definite liability is present it should be considered. It should be up to the W.O. instructor to determine the number of chaperones needed.

Field trips are felt to be an essential part of this program. They provide an enlargement of experiences for the student and promote camaraderie and a sense of belonging. They also allow for the involvement of people outside the program. The feelings developed on a field trip definitely aid with discipline in the group and give all participants a chance to meet as individuals, rather than strictly as students and teachers.

Random Thoughts

1. Have the audiovisual director (if possible) give instruction to interested students on running and handling equipment.

2. Appoint a student who has an interest in photography to be class recorder. Keep a photographic record of class activities and progress.

3. Tape and play back class activities (play readings, choral readings, class discussions, etc.)

4. Keeping a student-written log of activities and field trips.

Workshop Report - 1967

Wheeling High School - The purpose of the Work Orientation Workshop was to: establish an organized method of inaugurating the program for the coming year in regards to selection and placing in the master schedule; develop a slide-tape presentation of the Work Orientation program and revise the related class curriculum.

Selection

The selection of the students began with the counselors reviewing the High School Placement Tests scores and junior high teacher recommendations. More specifically, the counselors considered the following factors in identifying the prospective W.O. student:

1. Low reading scores accompanied by teacher comments, etc. verifying a reading problem.

2. Underachievement as indicated by the discrepancy between standardized test scores and actual school achievement, as represented by grades.

3. Discipline problems: Counselors rejected students with severe psychological problems as the program is not structured to be beneficial to this type of student. A list was made of these students and they were referred to the school social worker and the information gleaned was given to their respective counselors.

4. Attendance: The students generally averaged over 15 days a year absence over the past three years. Several averaged 25 or more days absence.

5. Home environment: The student records indicated continually some form of instability in the home in regards to socio-educational factors.

6. Negative attitude towards school and feeling of inadequacy as identified by teacher-principal comments in cumulative folder.

From the 950 incoming freshmen, 160 were identified as having some problem relating to their educational future. From this list, the counselors developed separate lists for referrals relating to:

1. Educable mentally handicapped.
2. Perceptually handicapped as stated by junior high records.
3. Social worker referral.
4. Audio-Visual problems and
5. Speech problems.

These special lists were turned over to the appropriate sources. It is hoped that this will be an additional benefit to the school even though these students were not elected to the Work Orientation program. After identifying the original 160 from this list, the counselors then identified 59 students for further consideration in the Work Orientation program. The junior high principals were contacted by phone to set up a personal interview to discuss the students they had selected as possibilities. The principles were very cooperative and gave the counselors much insight into various problems they might have with individual students.

Following the counselor-principal meetings, the list of 59 students was revised for the final selection of 26 students who would be invited to an evening program during which the Work Orientation program would be discussed with them. The 26 students' families were then notified by letter of their son/daughter's selection. A brief explanation of the program and an invitation to attend the evening meeting was included in the letter. The counselors followed up the letter two days later with a personal phone call to discover parents-child reaction to the letter, answer questions they had regarding the type of program and reminded them of the approaching evening meeting.

The evening meeting was structured so as to make the parents and students feel comfortable in the school setting. The cafeteria was selected to provide coffee, cokes and rolls and a large area to display W.O. projects of the past year. The parents and students were greeted by the counselors as they arrived and diverted to the refreshments until all had arrived. Informal discussion at this point seemed to relax the parents and students as both were somewhat unsure of the actual purpose of the W.O. program.

The program began with the introduction of the building principal who welcomed the parents and spoke briefly on the history and general purpose of the program. Following the principal's welcome, the two counselors involved presented the program in detail and played the tape recording of the 1966-67 W.O. students and their reactions to the program. This was followed by a question-answer period at which time the parents became actively involved and very interested in how the program might help their son or daughter. It seems that the time spent in identification, selection, and structuring the evening meeting was well worth while as the fifteen families represented at the meeting <u>all</u> selected the program for the coming year. All parents also committed themselves to periodic home visits and group meetings at the high school.

Slide-Tape Presentation

Since the Work Orientation program has become an important part of the District 214 curriculum, it seemed worthwhile to develop a presentation which could be taken out into the community and feeder schools. In this way the community would become aware of the innovations taking place in District 214 and also acquaint the feeder schools with the type of student for whom we are looking.

In preparation for this project, the counselors acquired the services of the school audiovisual department. The department cooperated in taking slide pictures of the program during the school day and in assisting the counselors in the use of the tape recorders for editing the tapes. Contemporary music was also taped as a background to the presentation thus making the presentation more interesting to the viewers. Several days were spent in organizing the sequences of the slides, the appropriate student remarks and the right musical background to blend in with voices. From this, a final rough presentation was developed. This was studied, reorganized somewhat and the services of the audiovisual department were again used in retaping on a higher quality recorder for final presentation. While this was being done, the services of the Instructional Resources Center were used in the production of title slides and introductory slides.

Revising Related Class Curriculum

In following the recommended related class curriculum as put forth by the 1966 W.O. Workshop, it was discovered to be too comprehensive for a one year curriculum. From experience in the related class this past year, the counselors discovered a logical breakdown which would make the same recommended curriculum able to be used, but over a two year period. Following is a breakdown of the originally recommended curriculum.

Unit I	Personal Adjustment
Unit II	Vocational & Business
Unit III	School
Unit IV	Community
Unit V	Social Problems

Using the same curriculum as a guide, the counselors recommended removing Unit II, Vocational and Business and using it as a curriculum in itself for the entire second year. With the selection of a teacher qualified in this area, the unit would be of greater benefit to the sophomore student who is becoming more concerned with work outisde of the school. The freshman curriculum would thus be comprised of Units I, (Personal Adjustment), III (School), IV (Community) and V (Social Problems).

A counselor is, at the present time, developing the second year curriculum and will have it finished for the start of 1967-68 school year, at which time it will be presented to the district as an addition to the workshop report.

Evaluation of Workshop and Recommendations

In evaluating the workshop, both counselors agreed that the time was vitally necessary to the successful inauguration of the Work Orientation Program into the overall school program. Both also agreed in recommending that the budget in the following years provide for two counselors from each high school working two weeks in the summer to organize the program for the coming year in their particular school. <u>This time is of vital importance to the success or failure of the program</u>.

The time is necessary to sift through over 900 incoming freshmen and read material in the cumulative records of at least 150 freshmen. The time is needed also for personal contacts with junior high personnel in identifying the potential W.O. students and other special problems the high school will be receiving. Time is also needed to revise or initiate any changes which may be necessary in the program and to develop new ideas for the program.

Part 13

DISSEMINATION OF INFORMATION

Our program for students who do not respond to the "traditional academic program" has received a great amount of publicity, and has been the feature topic of presentation to various interested groups of educators. Information about the program has been requested from all over the country, and numerous groups have visited our district to see the program in operation.

A review of publicity activities pertaining to the program follow. These include the N.B.C. Television Show and newspaper articles concerning the program.

T.V. Show

The N.B.C. Television Show featuring the Forest View Tearoom and the Woods production area was one of the highlights of the 1967-1968 year. The Memorandum Show, "These Children of Ours," was taped at Forest View High School. The show was presented twice in the Chicago area and then distributed to N.B.C. stations across the country. Reactions to the program have been excellent. We have purchased a kinescope copy of the show which has been shown to interested groups.

Field Trip to Springfield

The C.W.A. students at Arlington High School, used their money from school projects to finance a one day trip to visit the Capitol and Lincoln Shrine in Springfield. The group flew to Springfield by way of Ozark Airlines.

Mr. David Helgager, Information Specialist with the Board of Vocational Education arranged to have Capitol Tours meet the plane and provide the complete tour of Springfield including New Salem. He also arranged a television news coverage showing the boys at the Lincoln Tomb. This was carried on the evening and night T.V. news in Springfield.

The following letter was received from Mrs. Lenore Everist, owner of Capitol Tours in lieu of a bill.

> "Dear Mr. Cudney:
>
> I have come to understand this group put forth extreme effort to make this trip possible.
>
> As one of the owners of Capitol Tours, I wish to donate my guide fee to this fine and well mannered group.
>
> Sincerely,"

NEWSPAPER ARTICLES

District 214 Program Aids Dropout Prone Students

A special program is in operation in District 214 for students who are academically capable but poorly motivated. The program is a product of the Cooperative Working Agreement between three state agencies. They are the State Board of Vocational Rehabilitation, the Division of Special Education, and the Division of Vocational Rehabilitation. According to Robert E. Cudney, District Coordinator of the Cooperative Work Program, efforts are being made to find courses that will stimulate the dropout prone student.

"We provide an opportunity for many of them to achieve some success for the first time," said Cudney. "The child who is mentally retarded or truly emotionally disturbed is not included. We feel the program is more applicable to the student with a high potential for change."

Recommendations for enrollment in the program are given to the district by junior high school teachers in the area. A prognosis must be evident. The students attend an occupational English course that is applied rather than theoretical. They learn the basic skills in written and oral communication.

Group counseling is offered once a week in the English classes. At Prospect and Wheeling High Schools, a counselor teaches the course. Parent counseling is also offered in home visitations.

The District is also using a work-study approach in the program. Students are engaged in realistic production activities in class, according to Cudney. Last fall, Cudney met with superintendents and park district representatives in the area to explain the program and offer the students' services. Previously students in the program worked with different industrial concerns. Citizens in the area objected that this procedure exploited the students as cheap labor. Now the students work only for tax-supported agencies and are reimbursed monetarily by the Division of Vocational Rehabilitation or in the form of extended services such as camping trips by the schools.

Arlington High School under the direction of Curtis R. Larsen, Industrial Arts instructor, is constructing forty redwood picnic tables and benches for the Palatine Park District. A $1,000 routing machine was received at Arlington High School last week. Mr. Larsen's class will use the machine to make redwood direction signs for the Palatine Park District Golf Course. The signs will feature a diagram to illustrate the area pointed to. Richard C. Etherton's industrial arts class at Prospect High School is using an engraving machine to make plaques for the Diversified Occupations Program. The machine is also used for nameplates and other signs.

At Elk Grove High School, students in the C.W.A. program are making lecterns for all of the classrooms in the building. Bob Lorenz is directing the class. The electronics cabinets and the typing tables for the new John Hersey High School are being constructed by students at Forest View High School. The class is directed by John L. Hangey.

All contracts with the C.W.A. program state that the different agencies using the student's services must provide the necessary materials. "These are not skill development classes," said Cudney. "We hope that through their individual creativity the students will become productive employees and more vocationally oriented."

Illinois Vocational Homemaking Teachers Tour Forest View

One-hundred and thirty members of the Illinois Vocational Homemaking Teachers' Association toured Forest View High School yesterday to observe the Cooperative Working Agreement program. The Illinois Vocational Association is holding a convention at the Sherman House in Chicago. The tour was a first for the association.

The teachers attended four different visiting stations, including the food laboratory of the school's tearoom; the tearoom, directed by Mrs. Dorothy Scharf; the woodshop, directed by John Hangey, where the boys were working on electric cabinets to be installed in the new John Hersey High School; and the auto shop, directed by Robert Freeman, where the boys were servicing and repairing autos. The tour culminated with a greeting from Dr. L. Jenness, principal, and a film entitled "Memorandum." The film showed the C.W.A. program in action and compensated for the fact that the girls would not be operating the tearoom during the tour. Mrs. Scharf discussed her program after the film.

The C.W.A. program is a product of the combined efforts of the District 214 Administration and three state agencies, the Division of Special Education, the Division of Vocational Rehabilitation, and the Board of Vocational Education and Rehabilitation. According to Robert Cudney, Coordinator of the C.W.A., "the tearoom and workshops are realistic work experiences within the school setting aimed at fulfilling the students' vocational needs. They are pre-vocational and provided chiefly for freshman and sophmores. Later in their junior and senior years, these students will work half a day in school and half a day in the community."

Students in W.O. Programs Will Soon be Paid for Work

Pay incentives will soon be put back into High School District 214's Work Orientation program. Some Prospect High School students in the W.O. classes have already qualified for pay. Qualification of W.O. students at Arlington, Forest View, Wheeling and Elk Grove High Schools is under way. A student may receive pay for completing W.O. projects under a State Department of Vocational Education and Rehabilitation grant aimed at helping students with special needs.

District 214's Work Orientation classes are planned for students who do not respond to a standard classroom program. Started as an experiment two years ago with one class of 15 students, District 214's W.O. program is now on a regular footing. There are now more than 100 students enrolled in the classes with at least one section at each high school and four at Forest View. Students assigned

to a W.O. section attend English and social studies together, have additional counseling and course work help, and complete projects intended to teach the value of good workmanship.

Pay incentives were included from the program's start, but dropped last year after a new federal labor law went into effect covering school employees. However, students being paid through the Department of Vocational Education and Rehabilitation grant are exempt from the federal wage law requirements. Warren Collier, instructional coordinator for District 214, said most area W.O. students will soon qualify for the pay incentive plan. Projects the students are undertaking in their work-pay program must be for taxing bodies and non-profit organizations.

Prospect students are making pamphlet racks for Harper Junior College, benches and stacking box units for Elk Grove Village District 59 physical education classes, and study carrels for Mount Prospect District 57. They will also be making some church benches and tables and have agreed to build thirty walnut storage units for the junior college.

Arlington students have completed some signs for the Palatine Park District's new golf course and will make redwood picnic tables and benches for the park district as well. They have also made aluminum-framed bulletin boards for District 59.

Forest View's tearoom operation has received much attention in the press and television. Forest View students operate a tearoom, construct electronic storage units for Hersey High School and operate an auto service department and are able to do tuneups and a complete safety check.

Wheeling students have built storage units for use in industrial arts classes and have constructed shorthand tape racks for business education classes. They will soon begin constructing A-frame stands to hold the high school's typing textbooks.

Elk Grove students have been building floor-type lecterns. One will go in each of the high school's classrooms.

Signs of the Times

When Palatine Hills Golf Course opens this spring, eighteen large redwood signs marking the layout of each hole will stand out to golfers, thanks to a special program at Arlington High School. In addition, the Work Orientation high school class, composed of twelve freshman boys, is making about 200 more signs, tree markers and forty picnic benches for the park district. Palatine's park district, of course, has furnished all the materials, but the labor is free. "We've been looking for projects like this one," said Curtis "Tego" Larsen, director of the program.

The Work Orientation program is designed to teach qualifying students certain skills in addition to academic work. "We didn't start the industrial arts part

of the program until late in the first semester, because we didn't have any job requests," Larsen explained, "Now we have more than we can handle but we feel obligated to finish the golf course signs right now since they were the first to come to us," he explained.

Larry Rogers, assistant park director for Palatine, was searching for an inexpensive way to outfit the golf course when he heard about Arlington High School's program. "We really were lucky to find them," he smiled, "and they're doing a fantastic job."

The boys begin with large pieces of redwood that must be cut to the correct size. They sand the wood, draw stencils, and engrave the letters. The lettering then is painted and sealed to assure long-lasting readability. Although a machine does much of the lettering, layouts of each hole must be handcarved.

Mr. Larsen is especially happy about the golf course project since the sport has played a major part in his teaching career. Coming to Arlington High twenty-two years ago, he was both football and golf course coach from 1946 until 1957. During that time, Arlington's golf team took many honors, including the state championship in 1956. The golf course project is more than a service to the Work Orientation class. The boys will be spending one hour a day on the project for several months and they will receive a grade for their work. At the end of the semester, it is tentatively planned to give awards for efficiency and skill. The total project probably will be done by the middle of April, prospective tee-off time at Palatine Hills, according to Mr. Larsen. Then the class will begin its next project making 300 bulletin boards for Elk Grove Township School District 59.

Articles

An article entitled "Behavior and Attitudes Change in a Tearoom" was published in the May issue of the Illinois Vocational Progress.

The following, "A Dream Becomes a Reality," was submitted as a forward to the article on the tearoom.

The tearoom phase of our Cooperative Working Agreement is one part of our total program. We have similar programs in each of our five high schools. Each building has a different type program, but with the same goal of providing the student with realistic work experience within the school.

The Cooperative Agreement is the result of years of planning, research, and experimentation. In an attempt to meet the needs of students who were not reaching their academic potential, many programs were tried. A program that provided academic work that was career-oriented, along with realistic work experience and intensive counseling, was the result of this careful study.

To provide realistic work experience, production-type projects were secured on a subcontractual basis from local industry. This arrangement worked beautifully until the legality of this type operation within a school was questioned. The dropping of the subcontractual agreement really backed us to the wall. What do we do now? The program was too valuable to let a legality deprive the students of this opportunity.

Mr. Warren Collier, Program Coordinator, and Mr. W. David Whiteside, Director of Pupil Personnel Services, who was one of the program originators, again turned to the people at the Board of Vocational Education and Rehabilitation for their advice and help.

Mr. Bernard Quigley of the Research Coordinating Unit came up with the suggestion which is now our Cooperative Working Agreement. With the help of Miss Bonnie Gladden of the Division of Vocational Rehabilitation, and Mr. John Evans of the Division of Special Education, a cooperative effort to continue the program for these students with special needs was developed. Dr. Edward H. Gilbert, Superintendent of District 214, recognizing the potential of this type of unified effort, gave full district support to the proposal.

What started as an experimental program under R.C.U. is now an ongoing program with three state agencies cooperating with our own school district to make a dream a reality.

Part 14

DIVISION OF VOCATIONAL REHABILITATION

The Division of Vocational Rehabilitation provides the C.W.A. program with financial aid, counseling, and placement services. The nature of these services requires that the staff of D.V.R. be closely involved with the program director and building personnel.

This involvement has been ably provided by Mr. Norman Koshkarian, D.V.R. Counselor, who has been most cooperative and helpful in implementing their phase of the cooperative agreement. Since each student in the program is referred for authorization to D.V.R., a great deal of time and effort is required to prepare and submit information for staffing of each student.

The services of D.V.R. have had a very positive influence upon our program. Their funds not only provide pay for students but also make it possible to enhance their opportunities for experiences. Some information pertaining to D.V.R. procedures and practices as they are implemented in our district are presented for reference purposes.

D.V.R. Placement for Special Students

There are many students in High School District 214 who may possibly qualify for services from the Division of Vocational Rehabilitation. At present we have all the sophomore, junior and senior students in our Educable Mentally Handicapped classes authorized for D.V.R. services.

The underclassmen are employed at in-school work stations and the seniors are all placed on out-of-school work stations.

The Cooperative Working Agreement gives us the go-ahead to broaden these services. We will be considering referrals from other special areas such as perceptually handicapped classes, partially sighted and classes for the blind. We can consider referrals who are either physically or mentally handicapped.

Students with "Social Problems" will also be considered for D.V.R. authorization These students will come primarily from our W.O. classes and possibly a few from Cooperative Work Training classes.

At present we will focus our attention on the Work Orientation students. The rationale for referring these students is that they meet the criteria of having a mental handicap.

By affiliation with D.V.R. we can make it possible for the student to receive work experience in a sheltered environment with some financial remuneration for

their services. The financial reward for their work has been very satisfying for the student.

The availability of financial aid is made possible by the State. The state agency providing these funds is the Division of Vocational Rehabilitation. Reimbursement is not possible unless we receive authorization for the student from D.V.R. To receive authorization we must go through the procedure outlined on the attached procedure sheet.

Association with D.V.R. in no way changes the status of a student in school, if anything it enhances his opportunities. Affiliation with D.V.R. can be an asset if the student has difficulty fitting into a vocational situation.

Cooperative Working Agreement

The Special Education part of our Cooperative Working Agreement falls under the category called Educational Services for Special Students. The following definition and eligibility requirements are taken from the most recent manual of Special Education Rules and Regulations:

A. Definition

Rule 7.01 "Maladjusted children . . . means children between the ages of 5 and 21 years who, because of social or emotional problems, are unable to make constructive use of their school experience and require the provisions of special services designed to promote their educational growth and development." (The School Code of Illinois, 14-1, Par. 2.)

a. "Social Problems" is interpreted to mean poor social adadjustment associated with such factors as cultural deprivation, education retardation, population mobility, socio-economic considerations, and inadequate school opportunities.

b. "Social Problems" is also interpreted to mean serious educational maladjustment resulting from extreme discrepancy between ability and school achievement associated with such factors as perceptual impairment, severe learning disorders, and neurological involvement.

c. "Emotional Problems" is interpreted to mean persistent and intense personality deviations or aberrations associated with poor mental health.

D. Eligibility

Rule 7.12 Eligibility for individual instruction, itinerant teacher, or special classes shall be determined by a case study fully reviewed by professional personnel in a staff conference. In

general, professional personnel should include teachers, the qualified psychological examiner, the school social worker, the school nurse, the director of special education, and other professional persons as designated by the superintendent of schools.

Operational Procedure for D.V.R. Placement

1. D.V.R. application from must be completely filled out.

   a. Financial information on application is not necessary.

   b. Student must have social security.

   c. Parent must sign application. This is not to be sent home with the student. Parent should be requested to come in or a home visit should be made.

2. Substantiating evidence of either a physical or mental handicap.

   a. Psychological if available is adequate proof.

   b. If there is no psychological, there must be a staffing. Any available test information should be provided.

3. Medical.

   a. A current physical examination will fulfill this requirement.

   b. If there is not a current physical, the student must get one.

      1. D.V.R. will pay for the physical.

      2. We will need the physician's name and date of physical so we can list it on the medical voucher to pay. The student may go to his family doctor.

      3. Do not send directly to doctor without voucher.

4. In the section REPORTED DISABILITY: Please list special program student is in, his I.Q., and the test that determined his placement in the program.

5. Upon completion of application, submit it along with substantiating evidence, staffing report and the date of medical, and the name of the physician, to Mr. Cudney, Pre-Vocational Counselor, Administration Center.

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Use of D.V.R. Funds by the School District

1. Overall Operational Costs of Work Experience Programs.

   This area of expenditure depends upon the size and scope of the individual program. Many programs have not developed to the stage where all of these areas are applicable.

   Examples of overall operational costs are:

   a. Portions of rent and utility payments which a school district may incur for the use of an outside building which provides a setting for prevocational evaluation and work experiences. D.V.R. funds, however, cannot be used to defray costs of buildings normally maintained by the school district for educational purposes.

   b. Purchase or leasing of equipment used as a media for providing work experiences and training for pupil-clients.

   c. Secretarial assistance either part or full-time. The duties which may be compensated for by D.V.R. are those which relate to the work program, keeping of D.V.R. records, reports and vouchering.

2. Transportation Deficits.

   Transportation costs to and from the jobs of pupil-clients in work experience programs may be paid from D.V.R. funds. However, 80% of the cost of transportation for these pupils is reimbursable by Special Education. The additional 20% deficit may come from D.V.R. fees.

3. Incentive wages to pupils engaged in realistic work experience.

4. Field trips and related social-vocational experiences above and beyond those which are traditionally provided for by the school district.

5. Payment of wages to non-academic personnel - providing supervision and guidance during the realistic work experiences.

   D.V.R. monies cannot pay certified personnel providing academic instruction or supervision under contract to a public school district as a "teacher."

6. Small tools, supplies and equipment necessary to the pupil-client for participation in his assigned realistic work experience above and beyond those which are provided.

7. Personal client expenditures such as food, uniforms and meals, which are directly related to the pupil and his need for such items in order to more successfully adjust and perform in a work experience program.

8. Miscellaneous Expenditures.

If these are questions as to the legality of use of D.V.R. training fees, there should be consultation with the local D.V.R. Counselor and/or his immediate casework supervisor. As stated in the cooperative agreements, the local counselor decides what phases of prevocational training are reimbursable with D.V.R. training fees. If the counselor assigned to a client feels a certain expenditure is justifiable in terms of overall rehabilitation, the expenditure can be made.

If, in the event the questions are relative to statewide policy, the Coordinator of Special Education-Vocational Rehabilitation Programs should be notified. The questions will be discussed with other appropriate administrative personnel before a decision is made.

Special Education Disability Groups

1. Educable Mentally Handicapped are:

Pupils with retarded intellectual development as determined by individual psychological examination and who are incapable of being educated profitably and efficiently through ordinary classroom instruction. The rate of mental development is approximately 1/2 to 4/5 that of children of average intelligence. In terms of an IQ quotient, this can be interpreted to mean an IQ of 55-80 on an individual intelligence test.

Older children being considered for high school EMH programs who have been in elementary special classes for a number of years and who obtain IQ scores higher than 80 (not to exceed 90) may be approved for continued eligibility if they remain incapable of being educated properly in a regular program. This determination is usually made through a professional staff conference.

Discussion - D.V.R. upper limits for mentally retarded is one standard deviation below the mean. In terms of IQ this is ±85. This numerical score for determination of eligibility is somewhat higher than that utilized by Special Education. It does give a certain leeway to the D.V.R. counselor in making a disability decision. In instances where there is a change in tests or in the test forms (ex: Wechslar Intelligence Scale for Children to Wechslar Adult Intelligence Scale) there may be a considerable change in scores. This change is applicable at both extremes and should not be the only consideration for determining retardation levels. A lower or higher IQ score from that previously attained may mean nothing in terms of social and adaptive behavior as it relates to the ability to function in a vocational society. Here individual decisions of eligibility and feasibility must be made.

In coding mental retardation as the primary disability, D.V.R. codes 530, 532 and occasionally 534 are used. The code used is in keeping with the diagnostic materials gathered by the counselor.

2. Socially Maladjusted

Type A refers to those pupils who have both social and behavioral maladjustment associated with factors such as cultural deprivation, educational retardation, population mobility, socio-economic considerations and inadequate school opportunities. Intelligence levels are not necessarily within the 80-90 IQ range. Frequently there is indication of average or better than average intelligence which has been suppressed due to the other factors mentioned in this section.

Type B refers to those pupils who have serious educational maladjustment resulting from extreme educational discrepancies between ability and school achievement associated with such factors as perceptual involvement, severe learning disabilities and neurological involvement.

Type C refers to those pupils having persistent and intense personality deviations associated with poor mental health.

Discussion - Type A maladjusted pupils are generally not found in designated group classes such as we find for the EMH. In addition to Special Education services which they may be receiving, they are incorporated into the regular program.

Referral information given to D.V.R. for the socially maladjusted usually and should include all psychological and social information the school has available. Here the emphasis is on the social worker reports rather than on psychological reports. In approved Special Education programs these children have been carefully screened and evaluated through staffing. The discussion and results of this staffing are recorded in report form and should be made available to the D.V.R. counselor upon referral. If the pupil is referred for the work program, this recommendation should also be incorporated into the staffing report. In the report, there should be a statement to the effect that the pupil cannot benefit from the regular academic program and because of social maladjustment is definitely under a vocational handicap. In addition, a recommendation should be made stating that the pupil could benefit from evaluation and experiences offered in the prevocational work program.

Type B differs from Type A in tnat most often these children have psychological-neurological involvement. Many of them have had social work-ups and neurological examinations which indicate organicity. In an approved Special Education program this information is generally a part of the pupil's accumulative record. These records in total or abstraction would be part of the referral information available to D.V.R. A different disability classification may need to be used, depending upon the counselor's decision.

In coding socially maladjusted Type A, two D.V.R. categories are most often used - MR-530 and characteristic, personality and behavior

disorders - 522. This decision should be in keeping with D.V.R. Bulletin 080 (3/1/67), Rehabilitation Standards, Supplement #1 to #67-1, question and answer #6. In summary of that discussion, one should consider the implications in that the maladjustment should exhibit some of the following features - persistence of condition over a period of time; disruptedness; manifestations in the school setting, on-the-job, before the courts and in the family; and reports from a variety of examiners and observers such as teachers, employers, probation officers, social agencies and police.

The differentiation between true mental retardation (530) and a personality disorder (522) is generally made by the Special Education staff prior to referral. In many instances, a D.V.R. counselor will wish to use both. The decision as to which is primary and which is secondary is in all instances that of the individual counselor and/or the immediate casework supervisor.

In-District use of Funds

D.V.R. authorization of students with special needs provides funds that may be used for pay and/or provides additional materials or opportunities that should specifically enhance the educational opportunities of these students.

We may not buy supplies or materials that would normally be purchased through our regular budget. Any items purchased must be used directly by the student for vocational development, and must not be something that would be provided had it not been for these additional funds made available by D.V.R. affiliation.

D.V.R. funds may be used for the following:

1. Transportation - Will pay fare of students to and from the job.

2. Classroom equipment and vocational materials, such as, cash register, work time clock, and other materials or equipment that are specifically designed to provide the student with vocational skills and habits.

3. Individual work equipment.

   a. Tools needed in vocational choice.
   b. Uniforms.
   c. Any special equipment or clothes that will improve the student's vocational potentialities.

4. Secretarial help that would specifically contribute to the student's vocational preparation.

5. Para-professionals to be used in the classroom or training station to provide the student with additional vocational opportunities.

6. Consultants. (no pay for regular staff)

   a. Psychological services.
   b. Vocational resource people.

7. Cultural and social enrichment of the student's life - Field trips, such as, museums, plays, and visits to industries.

Part 15

CONCLUSIONS AND RECOMMENDATIONS

This section concludes the report of the first three years of our program, providing a modified school environment whereby the student is encouraged to develop a more positive attitude.

We do not claim to have the complete solution to a program for alienated students, but we are trying. It is our hope that our attempts are not in vain and that by our failures we will learn. These lessons can be transformed into positive experiences for the child who so badly needs our help.

The program has had many successes and failures, but those who have committed themselves to the program feel that their efforts have been worthwhile. The goal of our district is to provide each student with educational opportunities appropriate to their needs. This may be a difficult task to achieve but we are dedicated to trying.

General Conclusion - 1965-66

We feel the program in High School District 214 has been successful. With most students a change of a negative attitude toward a more positive attitude has been noted. I hasten to point out that the program has not been without problems. Any new, experimental program needs patience. Many problems must be solved; mistakes will be made and adjustments must be considered. Some problems occurred as a result of our own encouragement to innovate within the structure of the proposal. Through this approach one is able to experiment within an experimental program.

We started with fifty-three students and finished the year with forty-four students in the program. Of the nine we lost, seven were dropped and can be attributed to poor identification, while the other two would fall in the "expected dropout" category. As was pointed out earlier, one of the objectives of the planned summer workshop will be to develop guidelines for identification of students for W.O.

Next year we open our fifth high school which will contribute to our planned expansion. Also, at two schools there is a need to increase the number of W.O. students for next year. At present, our district estimate is one hundred and twenty students on the freshman-sophomore level.

Our hope is that next year we will be able to continue our efforts, and that we will find people who are interested in working with these problems, this being the key to any success in education; also that we will succeed to an even greater degree than we have succeeded this year.

Many of our experiences point up the need to adopt certain measures to improve and expand our present Work Orientation Program.

Conclusion - Prospect High School - 1966-67

Prospect High School Work Orientation students have not achieved significantly higher grades as a result of their experience in the program. However, they are less alienated, there are fewer "psychological" dropouts, and they have a more favorable attitude toward school, as a result of their experiences in Work Orientation. I would further hypothesize that Work Orientation has helped students involved feel more adequate. feel more a part of the school, develop a sounder conscience in regard to right and wrong, and helped them identify with healthy, "good" adults.

In addition, I feel that working in the Work Orientation program has given the staff members involved knowledge in regard to:

1. Grouping for such a class - selection, class size, and limitations.

2. Use of a male and female teacher working jointly in such a class to help meet some of the particular needs of such a group.

3. The content and curriculum that help meet the particular needs of such a group.

4. How to use counselors effectively.

5. The development of a particular climate conductive to growth and development in psychologically retarded 9th and 10th grade boys.

6. The use of limits and a reward system applied to such a group.

7. A sense of what is possible in terms of being able to tolerate a special defiant group within the regular school setting.

Conclusion - Wheeling High School - 1966-67

Technical Processing is perhaps one of the most important aspects of the program. Students obtain a sense of worth and independence by participating in this class. It is felt that this class is responsible for the increased attendance of our students. It is pointed out that this class should again be held during the school day to allow the students to participate in extra-curricular activities. The money is important and the work habits maintained are even more important. It is also recommended that money should be made available for salaries to pay students the first month before the program begins to realize a profit. Also, it would help if there were jobs and contracts available when school opened so our students could begin work immediately. A work-time schedule would help a great deal in planning out the jobs.

More extra-curricular activities should be emphasized. We found that many students did participate and enjoy these activities.

Perhaps the most striking effect of the program is the change of attitude that occurred between the student and home, school and friends. This change is from a negative approach toward like to a more positive and confident approach.

This report, along with various other evaluations, was given at a meeting in April. The purpose of the meeting was to make plans for the next year's program.

As a result of this meeting, it appears next year's program will remain the same except for a few moderations.

The curriculum for the freshmen will again be: P.E., English I, Related Class (emphasis on personal adjustment), Biology and Technical Processes. The sophomores will have: P.E., English II, Related English (emphasis on General Business approach), Physical Science, and Technical Processes. A very flexible type of program will again be in order, (i.e., if a student wants additional or different courses, we will do all we can to accommodate their desires.)

Mr. Hemauer will work in a supervisory capacity in setting up the Technical Processes class and Mr. Henne will be coordinator of the W.O. program in the Wheeling Building. Mr. Toepke will be taking the freshman group while the new teacher of the Related Class will handle the sophomore group. Mr. Henne and Mr. Toepke will continue to counsel and make the home visits. Next year we will encourage the classroom teachers to make a certain number of home visits in relation to their particular class.

A workshop has been approved for the summer. Mr. Toepke and Mr. Henne will identify approximately 15-20 students to enter the program in the fall. They will also develop a slide-tape presentation of the Wheeling program.

There is evidence of increasing value and interest in this program for our students. We were just getting to the point of developing a fine program when the federal legislation closed down our operation with industry.

Because the administration, the faculty, and the Board of Education believes in the goals of the Work Orientation program, an attempt is being made to preserve the program within the limitations of the law and in a manner which would not exploit the students.

The aforementioned fact, and the recommendations being presented are the results of a two-month study by the administration, including contacts with various agencies as well as with Mr. John Beaumont, Director of the Division of Vocational and Technical Education. The information gained through this study enabled us to develop a plan to resolve the problems and continue a program that would benefit our students.

After consideration of all factors, it seems most appropriate to recommend the following course of action:

> The district establish a form of a "normal training program" in each of its high schools. This type of program would begin with freshman boys and would be a year of introduction to the four

major areas of our vocational program - mechanical drawing, woods, metals, electricity - similar to our former industrial arts courses, but geared to motivate the interest of the non-achiever. This would provide a springboard for more sophisticated training in the sophomore year. An example of a four-year program might look something like this:

Ninth Grade

Occupational English (related class)
Biology
Math
Physical Education
Technical Processes
(Mechanical Drawing, Woods, Metals, Electricity)
Study Hall

Tenth Grade

Occupational English (related class)
Physical Science
(2nd course with sequence of the student's choice)
Technical Processes
(Individual specialization in the area of student's interest)
Physical Education
Study Hall

Eleventh Grade

English III
U.S. History
Physical Education
Supervised Job Training (SJT) or Cooperative Work Training (C.W.T.) built around skills acquired in grades 9 and 10
D.O. could fit those who qualify

Twelfth Grade

Social Studies (2nd year)
Industrial Arts course
Supervised Job Training or Cooperative Work Training
Physical Education

The approach would provide direction for the W.O. program in the future and provide enough flexibility to allow those students who desire to do so to transfer back to a regular academic program. Students could be placed in this program during the school year with minimal difficulty. It is essential that flexibility be permitted so each building can develop a program with regard to the needs of the students, environmental conditions, and available personnel.

A brief description of the tentative plans for the Work Orientation program for the 1967-68 school year, in each of the high schools, follows:

Arlington High School (One group, fifteen, predominantly freshman boys)
The program will be on the "early bird" schedule to allow these students the use of the advanced reading skills room. Mr. John Strong and Mrs. Howett Claney will conduct the parent group counseling sessions. The technical processes class will implement the "normal training" approach because of the students' grade level and of the facilities.

Elk Grove High School (one group, both boys and girls, on the freshman level)
The girls will be in charge of the school bookstore. The boys will be in a "normal training" program in the technical processes class.

Forest View High School (Four groups, freshman and sophomore girls and boys)
The technical processes class will use the "normal training program" and will structure it as follows:

Project training in woods - freshman boys
"Tearoom" - freshman girls
Project training in power mechanics - sophomore boys
Cafeteria - sophomore girls

Prospect High School (One group, all boys)
Prospect High School plans to implement the "normal training program" at the beginning of the school year. As soon as it is feasible to do so, plans are to develop a project for a nonprofit organization or our school district.

Wheeling High School (Three groups, freshman and sophomore girls and boys)
The technical processes class at Wheeling High School will use the "normal training program" with one group of girls in the home economics area and two groups of boys in the power mechanics and metals areas.

Conclusion - Wheeling High School - 1967-68

The girls in home economics need activity rather than a lecture type class or guide questions. Some of the students have commented that they would have dropped out if they had homework, or guide questions.

If I teach this kind of group next year, I would change many things. My curriculum would include more activities because these girls must be kept busy. This type of girl is so unpredictable and there seems to be so many bad days which requires a lot of patience. We had many ups and downs and there were days when my patience was a little short. This group needs to be given more sincere praise than an ordinary class. It is a magic word to them to hear someone tell them they have done well.

I think this is a good program and certainly worthwhile. I would hope that we could continue this program for a larger number of students, but somehow the students shouldn't be given the idea they are different. There were times by class called themselves the "dumb-dumbs". I do not have the answer, but I think we should work toward keeping this program and the people in this program thinking that they are not different from the rest of the school.

General Recommendations - 1965-66

1. We wish to adopt a policy of parent commitment for no less than four to five group meetings per year. If parents choose to continue beyond this number we would gladly provide the facility and supervision to meet their needs. To further encourage parent involvement we hope to develop a district newsletter. Through this media the parents would keep abreast with W.O. activities and individual accomplishments at each building.

2. Our attempt to work with a small number of juniors proved to be unsuccessful. This program seems to operate best with freshman and sophomore students; however, we will provide a work experience program for juniors that show an improved attitudinal change during their sophomore year.

3. The staff believes the students' success is dependent on the coordination of curriculum and counseling. Without periodic staff meetings, the right hand does not know what the left hand is doing. To cope with this problem, we will provide workshops during the year and arrange schedules to facilitate staff meetings. Here they will have an opportunity to discuss the best approach in working with various students in the program.

4. Faculty members not working in the W.O. program shall be alerted to the policy of discipline; students in this program are different, but not immune to discipline. These students are a part of the school even though they are in a special program. Another consideration is working with the stigma attached to the program. To best solve this point of concern, we suggest improving communications to the district faculty of our program activities and policies.

5. We suggest experimenting at one or two schools by scheduling the Work Orientation program during the normal school day. This is due to the strong possibility of W.O. becoming a regular part of the curriculum operating during the regular school day.

Recommendations

Arlington High School - 1966-67

1. Rather than allow students to leave the Technical Processes lab between the two periods, take a ten minute break for milk and rolls - much like a factory does.

2. Maintain a formal and separate Occupational English class, similar to the one that was in operation during the second semester 1966-67. The effect, as outlined by Mrs. Claney and Miss Bazik, seems to have been one of real benefit for the students.

3. Arrange tours of the companies awarding contracts in an effort to demonstrate the vital nature of the work performed for the companies.

4. Eliminate study halls for enrollees.

5. Consider making one of the requirements for admission that of being unemployed on a regular basis outside of school. This will make W.O. earnings very important and add to the motivational power of the regular payday. Students who do not have jobs are probably not 16 years old; therefore, the students enrolled in W.O. would be freshman and sophomore students. Experience has shown that the younger student profits most from the W.O. experience.

6. Arrange for regular meetings of the coordinator, supervisor, counselor and teacher and expect them to attend. Greater coordination and much better communication would result, as would a better understanding of the program and, more importantly, its participants.

1. W.O. staff should encourage further participation by the general staff.

2. We should keep the general staff aware of the program. Portions of our faculty spring and fall workshops should be devoted to explaining the program in some detail.

3. Effort should be made to give the general staff a greater understanding of how they can best work with these students.

4. Program expansion should be explored. Other technical areas being studied are:

   a. Building and grounds maintenance.
   b. Clerical and secretarial pools.
   c. Service station management and operation.
   d. Institutional food services.
   e. Publications and graphic arts program.
   f. Child care, practical nursing and hospital services.

5. More refined selection procedures.

6. Increased effort to involve parents in total program.

7. Long range study of participants vocational and school adjustment.

Though our adjustment inventories do not tend to show any radical shift in problem areas of students tested, and there has been no sudden shift to much higher grades, we sincerely feel that the program has contributed to many, too difficult to measure gains. The students' response to the program is our best measure of success. One student aptly summarized his improved relationship with our staff by introducing the W.O. staff to his parents as "these are the guys who wear the white hats."

Forest View High School - 1966-67

It is a sincere recommendation that this program should expand as the needs present themselves. Many areas can be included that would enhance and enrich the total program. Some suggestions can be obtained from the following list and expanded or interpreted depending upon the needs of the student, school, and community.

Areas of exploration are:

1. Building and grounds maintenance services.

2. Clerical and secretarial pools.

3. Service station management and operation programs.

4. Institutional food services, i.e., chefs, dietitions, bakers, food handlers, and those who prepare special foods.

5. Publication and production of graphics arts materials.

6. Child care, nursing home, and hospital services.

This list is far from being totally inclusive, but it does offer many suggestions for possible expansion. Individual interpretation is the basis for good judgement to select a program that best fits individual needs. Cultures, backgrounds, and economic conditions will be a determining factor for communities to determine which areas are most suitable for a proper and effective educational program.

Elk Grove High School - 1967-68

1. All personnel involved with the program should meet frequently and regularly.

2. More out-of-school activities such as field trips should be provided to aid students to become more involved with school.

3. Both student and parent group sessions should include more structured activities and more direction on the part of the counselors. Bringing these activities more in line with student and parent expectations should promote increased involvement and participation.

4. Individual counseling should be offered on a regular basis. Because some students seem to have difficulty expressing themselves in a group setting, this would provide the opportunity that might otherwise be lacking.

5. Students should be encouraged to participate more in organized school activities, such as athletics, music programs, and clubs.

6. At time of enrollment parents should be asked to commit themselves to attend regularly scheduled group meetings.

7. Improve communication and sharing of ideas among various schools through more frequent district-wide meetings.

Forest View High School - 1967-68

1. Although the building coordinator did a good job coordinating the W.O. program, as head of the guidance department he could not devote all the time needed. Under the circumstances he did an excellent job. Therefore, a special W.O. coordinator was recommended by the North Central Evaluation Committee.

2. There were several counselors who did not seem to fit into this type of program. This was due mainly to their lack of interest in the students. There were some teachers and counselors who pryed into student problems before the student was ready to bring them out. As a result, only those individuals who display a definite interest in the program and have a positive attitude toward the students should be selected. In addition the staff members involved should have no other commitments.

3. For the related class a full set of both freshman and sophomore average English texts should be supplied to the appropriate student or placed in the room as a class set. As the year progresses, individualized instruction at scheduled times will be a necessity - especially in the areas of reading and writing.

4. A room in the school which allows for excessive noise, and ease of access, will eliminate the problems of disturbing surrounding classrooms.

5. It is also recommended that staff meetings be held at least weekly for the first month, and monthly or bi-monthly thereafter. This will allow for student staffing and the intercommunication between staff members which is so essential to this type of program.

6. More parent-student-teacher activities should be scheduled.

Field trips are an important part of the program. Particularly a trip which involves a close relationship on the part of the students and those people involved in the program. Additional supervision will be added on future trips.

English should be taught at a practical level, with an emphasis on reading. The teacher should be flexible and at the same time firm. This year it appears the class developed into this type of class situation of interdependence.

The same thing can be said of the Math program. It should be taught by a firm but understanding teacher who will place emphasis on the practical aspects of Math. Biology should be offered to the students next year in order to fulfill course requirements.

Suggestions for 1968-69

1. More individual work to prepare students for eventual group work. Some may never be good group candidates.

2. Closer selection of candidates.

3. More parental involvement in evening counseling.

4. Request more parental commitment at time of selection.

5. One C.W.A. counselor should be responsible for communication to C.W.A. teachers as to field trips, and what group or groups are to attend.

If a school system is interested in developing this or one of many other worthwhile programs, that school system should be prepared to reduce teaching loads, establish summer workshops, or make other arrangements to provide time for curriculum development.

VT 008 641
Light, Israel
Development and Growth of New Allied Health Fields.

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SPEECHES; *CURRICULUM DEVELOPMENT; *HEALTH OCCUPATIONS EDUCATION; HEALTH OCCUPATIONS; *TASK ANALYSIS; CORE CURRICULUM; EQUIVALENCY TESTS; OCCUPATIONAL MOBILITY; INTERAGENCY COOPERATION; *EDUCATIONAL RESPONSIBILITY; PROGRAM DEVELOPMENT; EDUCATIONAL NEEDS; EDUCATIONAL PLANNING
AMERICAN MEDICAL ASSOCIATION; AMA; *AMA ANNUAL CONFERENCE ON MEDICAL EDUCATION, CHICAGO, ILLINOIS, FEBRUARY 9, 1969

Among factors to be considered in planning a new curriculum in a health field are the following: (1) legitimate specialization versus fragmentation, (2) task analysis, (3) examination and re-assessment of the job descriptions of the medical speciality leadership, (4) sharing of responsibility by the team captain as opposed to delegating duties, (5) cooperation of medical specialists and professional educators in approaching curriculum construction, (6) obligations to trainees--geographic mobility, occupational mobility, competitive wage, and visible membership on the health team, and (7) involvement of some organized medical speciality leadership in the development of the new field from the beginning. Problem areas requiring intimate collaboration between professional educators and medical leaders are: (1) the need for guidelines by which educational equivalency credits can be offered for on-the-job experiences, (2) cooperation in planning an integrated program of general education and vocational training, (3) provisions for occupational mobility, and (4) the core curriculum concept. However, many organizations are engaged in solving problems in the health field. (JK)

VT 008 641

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DEVELOPMENT AND GROWTH OF NEW ALLIED HEALTH FIELDS*

by

Israel Light, Ed.D.**

Those who constructed this particular panel are to be congratulated because its composition of an Ed.D., Ph.D., and an M.D. very directly corroborates the need for more cooperative working relationships among medical leaders and professional educators to an order and magnitude far beyond that which exists today, if we wish more orderly and coordinated growth in the allied health occupations.

I interpret the term "fields" liberally as referring to specialized fields of work recently created and in the process of becoming institutionalized, and to the current development of additional competency levels within well-established health occupations as well.

The facts of critical manpower conditions in the health sector of our economy are well known. Therefore, rather than engage in the numbers game or prognosticate the nature and extent of health manpower 20 or 30 years hence, I wish to bring to your attention briefly some of the elements and characteristics of the dynamic process of developing a new specialty at any level, and to note a number of implications and possible desirable and undesirable consequences of such development which are often lost sight of.

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*Presented at the 65th Annual Congress on Medical Education, Council on Medical Education of the American Medical Association, Palmer House, Chicago, February 9, 1969.

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The following presenation is divided into four parts: one, some reasons for engaging in thoroughgoing job analysis of an entire specialty or functional area when developing assistant categories; two, questions to be asked when planning and constructing a new curriculum; three, the separate and joint responsibilities of the educational and medical spheres in the development of new fields; and four, the identification of some current activities representative of new developments in the allied health occupations.

The total treatment is designed to be comprehensive in scope rather than exhaustive in detail.

A first question to be asked is: can we distinguish between a frankly local manpower crisis and job idiosyncracy or do we have in mind the creation of a new job or specialty having the potential for replication elsewhere and for development into a nationally visible member of the health team? Another key question must be asked. Is there any existing specialty's job description that could be altered in some way to accommodate the proposed new functions, duties, responsibilities, and skills? The usual answer is "yes," but most often such alteration and accommodation represent addition and subtraction rather than re-assessment. When the work becomes too burdensome, we arbitrarily establish a "new" specialty or competency level, most often a sub-specialty.

If it is a new specialty, we must accept certain consequences of letting the genie out of the bottle. We must be prepared to contribute to the occupational jungle, certain unfortunate characteristics of which we know only too well. First, the new breed proliferates and forms a national organization. Second, this specialty develops its own technical jargon to distinguish the "ins" from the "outs," thereby adding its own

idiosyncratic terminology to the communications pipelines already clogged and showing signs of atherosclerosis.

Third, the specialty develops its own wage scale, of which we may have too many to begin with. Fourth, it may very well find itself in jurisdictional disputes, thereby driving medical directors and administrators to distraction. Fifth, it may develop specialty educational and performance requirements as much for visibility and status as for legitimate standards of competence. Sixth, it establishes a quarterly journal of initial dubious merit.

It doesn't have to turn out this way, but, unfortunately, these are among the more unsavory attributes of organized professional life, and we are beholden to "tell it like it is." Also, these are among the results of not addressing the question: where does legitimate specialization end and unwarranted fragmentation begin?

If we have in mind either a new specialty or another competency level within an existing health occupation, we usually write a new job description first. Now, we all know how job descriptions are prepared.

At one time a hospital administrator introduces a genuinely needed and innovative practice. By emulative replication it ripples across the land by adoption rather than adaptation and we wonder why or how it fizzled or became distorted. At another time, a member of the staff walks past the Medical Director's open door and is literally thrown, perhaps in desperation, some new function or duty. Because of staff short-handedness, it works its way into the old job description after a few years. By training and competency standards, it doesn't belong in that old job description but by sweat and trial and error it is shoe-horned in. In still another format, a national association appoints a committee

of elder statesmen who meet periodically over a two-year period and at a forthcoming convention a voice vote or hand vote at the business meeting establishes the new job description.

I submit that there are less haphazard and fortuitous and more professionally acceptable and rigorous ways of modifying a profession's or occupation's activities. When developing a new allied health field or a new competency level, it is essential that the entire occupation's or specialty's job description be scrutinized. This is inescapable. The addition of new people and more people, educated and trained in different competency levels, to provide new or expanded care and services--all such developments force the re-examination of the <u>entire</u> specialty's work.

Whether the contemplated job represents a newly developed specialty or a new competency level, a first set of questions must be answered.

Exactly what is the problem? Is it a lack of higher-trained manpower? Are there new functions to be carried out? Is more specialization required because of an increase in subject matter? Is it a matter of less specialization, because we cannot afford it--a means of avoiding higher pay and the objective is the creation of a cheaper version of the specialist? Is it a matter of logistics?

Once the questions have been addressed, the second step is to engage in a detailed analysis of the care and services rendered to the patient by <u>everyone</u> in the specialty. If we agree that we cannot produce enough physicians to handle the population's physical and mental ills, then additional categories of associates or assistants are needed. What will these additional people do? No one can answer this question better than you medical specialists. In the reassignment, reshuffle, and redistribution

of work to be done and services to be rendered, yours are the prime tasks of identifying how much of which functions, duties, responsibilities, and skills can be shifted to others, and what their training should be. And the preparation of job descriptions, no matter how detailed, is the third step, not the second step.

The second step requires thorough-going job or task analyses. Job (or occupational) analysis has long had an honored and strategic place in the administrative, managerial, and supervisory scheme of things in the manufacturing and industrial sectors of our economy. It is all but unheard of in the health field, and its comprehensive introduction in our midst is long overdue.

I wish to make a few technical points clear. A job description is an identification and grouping of performance requirements of the job holder. These represent the <u>what</u> of the job. Job analysis or task analysis represents the how and why of the individual performance requirements.

There are two different-but-related types of task analyses. One might be designated "job factoring." The other may be called "developmental."* The first type looks at jobs and services from the point of view of those rendering service. The second type focuses on the needs of those being rendered the services. In the first type, the analysis is made of what care and services are <u>currently</u> being provided the patient (including some which may not be necessary, are outmoded and survive through tradition, or which may represent aspects of professional ritual or mystique). The "developmental"

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*For these observations and terminology I am indebted to Dr. Sidney Fine, William Upjohn Institute for Employment Research, and to colleagues in the U. S. Department of Labor.

form of task analysis focuses on the identification, description, and analysis of functions, duties, responsibilities, and skills which exist or can be anticipated relative to patient needs. For example, many categories of aides have been created as results of job factoring, whereas physical and occupational therapy came into being as a result of the developmental approach.

The distinctions between these two approaches to task analysis are fine but clear. Perhaps the major differences are that the job factoring avenue is more quickly and easily travelled, and it establishes a greater rationalization of the total work load from the point of view of the professional and health team captain; whereas, the developmental avenue is more sensitive to changing patient needs and requirements and is more clearly geared to career development than to job development. Of course, it is possible to modify either of these techniques by incorporating elements of the other. Furthermore, the later steps of both procedures are identical.

The job factoring route is followed because it seems to provide quicker and more direct solutions to manpower problems. Also, it minimizes threats to what the physician, or team captain, or highest-level trained specialist does and how he practices. In addition, it has the advantage of introducing the employer, study group, or institution in easy steps to the intricacies of examining and reassessing the details of performance.

I am willing to admit to a technically trained occupational analyst that the distinctions I've just made between job factoring and developmental analysis may be a semantic exercise or an otherwise unwarranted differentiation. At the very least, however, I submit that, if the focus is truly on the patient, then some form of the developmental task approach

not only is desirable and in order but also is essential and strategic, and the specialty leadership's own job description will be affected and altered.

Basic and strategic reasons exist for making task analysis the first step in developing a curriculum to produce either a new allied health specialty or a new competency level. First, task analysis will help to identify what must be learned under formal, organized, instructional arrangements and what may be planned to be acquired on the job. These decisions and distinctions are important because they influence training time, affect the use of instructional staff, involve a variety of cost considerations, and relate to the "raw material" available for training. Second, task analysis makes it easier to identify and assign competency levels for performance. Without task analysis, conventional procedures will be followed, as I have already described.

Third, task analysis has the potential of effectively determining how many functions and responsibilities can reasonably be assigned to a single individual at a particular level of competence. The possible need for more than one competency level may lead to the creation of a realistic career ladder or series of job advancement opportunities. Fourth, task analysis can produce data helpful in documenting and justifying more equitable pay schedules. Fifth, task analysis will uncover data necessary to more easily determine the educational equivalency credit to be assigned for different amounts and kinds of on-the-job experiences. Sixth, task analysis will clarify teaching-learning objectives on which curriculum construction must be based. Seventh, task analysis should result in the re-assessment of duties and responsibilities as performed by the highest trained specialists in the particular field.

This last point must be reiterated because of its implications for the health team concept. Historically, most allied health occupations have developed independent of the physician. If it seems impossible so far to relate the members of the team more closely while in their training stage, then perhaps task analysis with focus on patient needs is one attempt to bring the captain and his team members into a closer, more meaningful, and effective working relationship on the job.

One constructive outgrowth of a closer working relationship should be more sharing of responsibilities as opposed to mere delegation of duties to assistants. As an example of the inter-relatedness of various actions and consequences of developing health manpower, it is quite clear that, with more sharing of responsibilities, various licensing laws and other regulatory mechanisms will have to be re-examined and made more flexible, and the "captains" will have to participate more actively in planning and conducting the training of their team members.

Assuming that we have in mind a truly new specialty, that we have analyzed current job descriptions, and that we still find the proposed additional occupation or specialty absolutely necessary to deliver adequate care, we must proceed to answer the following questions: (1) Is there anyone anywhere else who has developed an identical or reasonable facsimile of what we have in mind? (2) If so, what have been the results of the effort? (3) What advantages inhere to both patient needs and related specialists' work? (4) Is this new kind of work available elsewhere? (5) What do other potential employers think the functions, duties, responsibilities, and skills should be for this new person?

At this point, the job description is added to the initial objectives for formal training, considerations of the raw material available for training, and the potential for immediate employment upon completion of training. Attention can now be given to curriculum planning and development. The following are representative of the questions which must be answered: (6) What instructional materials are already in existence which can be used "as is," how much of what exists must be modified and how, and what must be newly written? (7) Into what sequence with what prerequisites should courses be developed? (8) How long should the training program take? (9) What screening procedures should be used and what background must candidates have for entrance to the training program? (10) What is the best "mix" of general education and specialized training for this new specialty? (11) To what level should this person be trained in educational institutions, or is this a hospital-based program? (12) What should the nature and extent of clinical, supervised, on-the-job exposure be like? (13) Where are the teachers to be found to offer the curriculum and what special qualifications should they possess, both as teachers and as technically competent people? (14) How can the student-teacher ratio be modified to produce more trained people per teacher without jeopardizing quality of instruction? (15) What special facilities are required, such as floor space and equipment? (16) What will it cost to train such people, realizing that the initial costs for the first trained generations should come down once the program becomes established? (17) What about certification, how, when, and by whom? (18) In what ways do (or could) how much of curricular content articulate with programs at levels below and above the particular educational level

contemplated for the new curriculum? I'm certain that the reader can think of still more questions to be asked.

Although this is neither the time nor place to consider the detailed content of curriculums, I wish to recognize the increasing potential of a particular trend. With the passage of time, with the proliferating sophistication involved in the delivery of health care and services, and with such delivery related to the increasing complexity of organization and with ever larger numbers of people, it is quite possible that those who are trained at the baccalaureate (and higher) level in the allied health occupations can look forward to more and more of their job descriptions being devoted to administrative, managerial, and supervisory duties and responsibilities, with the more specifically technical knowledge-skill-oriented services assigned to junior college trained personnel. If this trend gathers credibility and validity, the relevance of general education and the social-behavioral sciences in their curriculums becomes more pronounced.

From another vantage point in looking at the curriculum and training program, the focus on the trainee raises some basic questions. First, do they have geographic mobility? Are their newly-acquired skills and talents useful in Maine, Florida, California, and elsewhere in our Nation? Second, do they have occupational mobility? Where can they go, either vertically or horizontally, if, for example, they are truly competent and are appropriately motivated to go on to more sophisticated and responsible work? On the other hand, how can we train them so that, if they find themselves round pegs in square holes, they can move to another health field rather than be tempted to leave the health field altogether? We must avoid creating dead-end jobs. Third, knowing that the tempo of

technological change is accelerating, and that the half-life of new knowledge is increasingly short, to what extent can we introduce more principles and fewer facts, and more problem-solving and less memorization, in our educational and training programs, in order to provide the flexibility necessary for successful adjustment to new job demands?

Fourth, will the trained person have a competitive salary, depending upon the level of training involved? Fifth, will this person assume a respectable place on the health team? It might be a distinctive uniform, a new title, or a desk or door nameplate. It might be the privilege of sitting in periodically at staff conferences, or attending grand rounds, or participating with higher-level staff associates in continuing education courses.

The questions raised thus far have related to the need for the new specialty or competency level, the need for job analysis, curriculum planning, and obligations to the "new" trained person.

The following question might very well have been asked first in this entire presenation: who is sponsoring this new specialty? To what extent is the medical specialty leadership either interested in or directly involved in the development of the new specialty? It could be that the innovators are sufficiently ahead of their times to permit only limited employment possibilities for their first-born generation, who may wither on the vine. It could be that the first trainees have been developed to a job description which is initially unacceptable to a sufficient number of potential employers, thereby leaving the first of the new breed occupationally nowhere and requiring major overhaul of the experimental curriculum.

No doubt, all leadership groups are interested so that perhaps, I have in mind the degree of involvement. The example I have in mind is that of the Academy of one of the specialties which quickly and aggressively became interested in a four-month, hospital-based training program to produce a first and new assistant category. The experimental training program was soon expanded to eight months. At present, the Academy is closely following an experimental, Federally funded, two-year, junior college program to train the same new specialist. The Education Committee of the Academy established a sub-committee devoted exclusively to the nurture of this new assistant. It has regularly advised those conducting the pilot projects. The Academy has for the past two or three years introduced to its members the notion and potential of the developing assistant via its newsletters and annual meetings. It has arranged for an exhibit explaining the new assistant to be displayed at Career Weeks, State Medical Society meetings, and related gatherings. The Academy will eventually plead the case of this new specialty group to the AMA Council on Education for program approval.*

I consider such activities as occupationally realistic and responsible, representative of the highest expressions of professional leadership, and essential to the sound growth of allied health specialties.

Before going on to still other facets involved in the development of health occupations, I wish to recapitulate and reiterate the major points presented thus far.

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*If a sub-specialty or new competency level within an established health occupation is involved, the active interest and involvement of the national professional society are essential, along with the ranking body of the appropriate medical specialty.

First, it is necessary to distinguish between legitimate specialization and unwarranted fragmentation.

Second, the functions, duties, responsibilities, and skills necessary for optimum patient care and service must be identified and described via task analyses as a basis for constructing valid job descriptions.

Third, the orderly and coordinated development of new specialty fields and/or new competency levels within established health occupations requires that the medical specialty leadership's own forms of job descriptions be examined and re-assessed.

Fourth, the health team will become more effective and efficient to the extent that the team captain shares responsibilities rather than delegates duties.

Fifth, the major elements of curriculum construction include a long series of questions and problems which must be addressed jointly by medical specialists and professional educators.

Sixth, obligations to the trainees include geographic mobility, occupational mobility, competitive wage, and distinctly visible membership on the health team.

Seventh, it is essential that some form of organized medical specialty leadership become integrally involved in the development of the allied health field "from the ground up if not sooner."

From all that has been presented and outlined thus far, it is clear that there must be a much closer working relationship between Substance and Technique, between Professional Medicine and Professional Education, and, I might add very significantly, between Academe and the world of work.

It is in this last-named area that we strike paydirt, where the problems are the knottiest, and where the impact is the greatest. Professional educators and medical leaders have their own respective collection of "hangups" or problems to be worked through in order to make effective rapport and collaborative efforts possible. There are also some problems to be solved only through joint efforts. I wish to identify them because of their strategic impact on the growth and development of allied health occupations.

I have already alluded to a few of the problems facing the medical fraternity: the need to clarify the health team concept; the resolution of conflict between specialties at the highest-trained professional levels, such as psychiatrist-clinical psychologist, ophthalmologist-optometrist, orthopedist-podiatrist, etc.; the distinctions to be made between specialization and fragmentation.

The Educational Establishment has its share of problems. It is unfortunate that formal schooling is still too often regarded as the end of learning rather than the beginning. It may well be the end of study, but it ought to be the beginning of learning. In the field of vocational selection and adjustment, there are still no significant number of work-study programs in the secondary schools, despite their relevance to students' notions and appraisals of the working world. In this regard, the Scandinavian countries are far ahead of us, insofar as occupational exposures (not specific specialty skills) are an integral part of their secondary educational programs. At the same time, and despite the compelling logic of on-the-job exposure for students, the vocational literature discloses little evidence of any positive relationship between on-the-job experiences and eventual

occupational choice. Vocational education in this country lacks status. Among the millions of students enrolled in the public schools, ages 13-18, only 17,000 are exposed to the "health industry" at the secondary school level. Yet here is where the pool of health manpower is first identified and developed. Practically all of public (especially secondary) education is geared to the 20 percent of students who are college bound. The other 80 percent must find their own way somehow.

Great reluctance persists to develop the potential of and apply some of the newer educational technologies such as programmed instruction and closed circuit television. With more aggressive recruitment campaigns, and, hopefull, more effective counselling procedures, it is essential that more teachers be developed to handle the increasing numbers of students who will become interested in the health occupations. The ranks of practitioners will have to be approached. The welcome given to competent practitioners brought into the educational world as teachers is often less than cordial. Great store is set by the teacher-training mystique as currently applied. Yet some admittedly meager data suggest the possibility that with a maximum intensive twelve-month tightly supervised exposure to "the tricks of the teaching trade," many technically competent allied health occupations practitioners could be transformed into reasonably effective communicators in the teaching-learning process.

The drive for "professional" status has distorted the educational enterprise as well as many parts of the world of work. The urge for academic acceptability, respectability, and visibility represents maneuvers in the lower end of the occupational structure for more status, money, and responsibility, among other reasons. If a teacher-training institution

examines the work of school janitors in a nearby community and then announces a Graduate Program in Custodial Science, it would be engaging in an exercise comparable to that of many medical centers, professional societies, and related groups that announce another set of degree requirements for a "new breed of cat," thereby giving professional acceptability precedence over reasonable requirements for job performance.

The problem areas of greatest concern, however, are those requiring the intimate collaborative efforts of professional educators and medical leaders, and I wish to identify them.

First, the long-standing tradition of educational institutions, professional societies, and employers to equate potential for quality performance with educational achievement is open to serious question when posed as the sole route to a livelihood. Educators and medical specialists have yet to get together to develop even crude criteria or guidelines by which educational equivalency credits or values can be offered for specified amounts and kinds of on-the-job experiences. This constitutes a major roadblock to manpower development, to efficient utilization, and to occupational mobility.

As a result, the certified laboratory assistant, for example, with seven years of competent service on the job, finds herself taking a full year of elementary bacteriology when she applies to a college or university for enrollment in a baccalaureate program, whereas some kind of examination could make her eligible for an advanced course and she could receive credit for the elementary offering. Surely, there must be ways in addition for formal education and the acquisition of a "piece of paper" to prove the value and competence of a person on the job!

Second, the increasing trend away from totally hospital-based, apprentice-type training to a combination of education and training with anchor in educational institutions represents recognition of the need to eliminate the costs of as much of such activity as possible from patient bills. It also represents recognition of the need for a more sophisticated level and amount of general knowledge possessed by all health personnel, knowledge which cannot be acquired solely from on-the-job skill-focused exposures. Since trainee time is valuable and the need for service is so great, compromise is in order. It simply will not do to add a few general education courses to an intact hospital-based program and expect the award of an appropriate "piece of paper." This obviously assaults the administrative and curricular integrity of the educational institution. Genuine give-and-take and considerable re-evaluation of all current training program content are in order.

Third, job advancement opportunities within and between health occupations are totally inadequate. It cannot be denied that many health occupations do have career ladders. But responsible leaders in these same occupations admit freely and ruefully that there is still little or no occupational mobility and that the feet of those in each of the competency levels remain in concrete. It is much too convenient to place the blame on the rigidity of regulatory mechanisms. Justification for greater flexibility must be based, in turn, on evidence of closer articulation among educational and training levels, more equitable distribution of total workload, clearer demarcation in job descriptions between competency levels, and related elements. The economically disadvantaged have had two- and three-generation-long experiences with dead-end jobs and won't touch them.

Middle-class workers are too restless to "stay put," especially if they possess modest talent and are appropriately motivated.

Fourth, the logic, economy, and related values of the core course and core curriculum continue more as pious declarations of intent than a conviction and fact of operational curricular life. In times of limited physical plant and scarce teaching talent, it is unfortunate to come upon as many as four or five variations of the anatomy course, for example, on the same campus: in the medical school, in the Graduate School of Arts and Sciences, in the bio-medical engineering department, in radiologic technology, in physical therapy, etc. In one health occupation, a survey of instruction in some 55-60 accredited program disclosed that almost two-thirds of all instruction in anatomy was exclusively for those enrolled in that particular occupation.

The concept of "core" is more easily appreciated than demonstrated. For example, a great number of health occupations specialists share certain categories of background, such as medical terminology, elements of anatomy, basic physiology, the psychology of patient care, medical ethics, and hospital organization and operation. In another variation, radiobiology is considered as "core" for all those training for the different-but-related cluster of specialties involved with radiation, whether it be for diagnosis, therapy, research, or safety. In still another variation, some suggest that real "core" is represented by the merger and integration of, say, anatomy and physiology and medical terminology into a single course.

A number of features of the core concept are most attractive.

(a) There is considerable saving in both teacher time and cost. Trainees representing a variety of health occupations should be sitting in the same

classroom at the same time to receive instruction in anatomy and/or physiology, for example, from the same instructor. (b) The introduction of commonly shared basic units of instruction aids the move toward integrating the organization, administration, and conduct of related curricula. The increasing establishment of Departments, Divisions, and Schools of Allied Health Professions suggests greater efficiency, effectiveness, and economy in the utilization of faculty, instructional techniques, equipment, and physical plant. (c) Common background may make it easier for trainees who find themselves "round pegs in square holes" to shift at some time to a different-but-related field rather than face the usual alternative of dropping out entirely from the health occupations area for training and employment in other and unrelated fields. (d) Temporary on-the-job assignments in related specialty fields may be more competently carried out if the individual's education and training include shared knowledge and skills. (e) In related fashion, the "health team" is clarified and given greater operational effectiveness when members of the team bring commonly acquired background to health care and service activities.

Consideration of core elements is related to the specific and repeated reference in this presentation to coordination among specialty fields within the medical community as well as coordination between educators and medical leaders. Considering the rapid growth of new knowledge and technological developments, one could justify increasing specialization at the highest levels of training. However, I am not so certain that each such specialty must have a less sophisticated sub-specialty person trained in the identical image. In terms of providing economy of training, job satisfaction, and occupational and geographic mobility, is it possible to

identify a number of functions, duties, responsibilities, and skills common to a number of medical specialties sufficient to add up to a single, basic job description which is generic for a series of specialty clusters?

Depending upon one's bias, the answer "Yes" comes forth sceptically or forthrightly, when considering the extent to which the ranks of nurses are regularly raided, upon which to build specialty associates--the pediatric nurse, nurse anesthetist, public health nurse, psychiatric nurse, geriatric nurse, etc. What is there which is so common denominator about nurse training? Similarly, what is there of a common denominator nature in the work of the assistant to, for example, the obstetrician and pediatrician, or to the orthopedist, physiatrist, and physical therapist? The obvious search here is to reduce the number of separate categories of assistants, to provide appealing comprehensive training, and to provide some kind of interchangeability of employer and work emphasis for the assistant. As a result of such a wide exposure of the assistant to fields of specialization, he or she may develop a particular affinity, and can then acquire the necessary additional specialty training without having to start "from the ground up" in another or related field.

The list of problems is far from complete, although I cannot refrain from at least identifying a few more. The average age of the State licensing laws for one of the major health occupations dates to 1915! The "new careers" movement is gaining momentum and visibility. Cost-benefit and cost-effectiveness studies in the health field are practically non-existent, although their complexity must not be underestimated and methodologies have yet to be developed. Overwhelming emphasis is on patient care and much too little is to be found in the picture relative to preventice medicine and environmental health.

At the same time, all is far from lost, and I wish to record some examples of what is being done to answer some of the problems I have raised in previous paragraphs.

The American College of Radiology and the American Society of Radiologic Technologists are collaborating in developing the orderly movement away from total hospital-based training programs and toward a judicious "mix" of general education and specialized training anchored in educational institutions.

The American Society of Medical Technologists is interested in proficiency testing and an educational equivalency credit system.

The American Speech and Hearing Association is seriously considering a first assistant category to help service the millions who require corrective aural therapy.

The American Physical Therapy Association is actively developing its Assistant category.

The American Occupational Therapy Association is quite willing to see undertaken a comprehensive analysis of all its services at all levels of competency.

The American Dietetic Association is interested in experimenting with a program to reduce an approved curriculum from five to four years without loss of quality.

The American Academy of Orthopedic Surgeons is aggressively involved "from the ground up" in creating an orthopedic technical assistant.

Pediatricians and anesthesiologists are in various stages of re-examining their job descriptions with a view to creating an assistant category.

The State University of New York-Buffalo School of Health Related Professions has established one of the few programs to train teachers specifically for allied health fields.

The Bureau of Health Professions Education and Manpower Training of DHEW and the Occupational Analysis Branch of the U. S. Employment Service (Department of Labor) are collaborating in an attempt to modify a job analysis technique already widely used in manufacturing and industry to make it more useful and applicable to the health occupations.

The first formal experimental training program to produce biomedical equipment technicians is under way.

A few junior colleges are pilot projecting the transformation of the nursing home operator into a trained extended care facility administrator.

Although medical leaderships have not become too involved, by and large, in the creation of entry-level aides, their development indicates the need to give greater attention to the lower end of the health occupations employment spectrum, beginning as low as the junior-senior high school years.

A child health associate is being developed in one of the Western States.

There are many more, I am sure. These are simply representative of what comes to mind quickly.

This recital of activities in the development of allied health occupations suggests that there is considerable potential. But the actions remain "bits and pieces." Some actions will get caught up in squabbles over the status quo. Some actions constitute noble experiments and stop at the point of proving feasibility. Some actions result in excellent programs, the details of which become quickly diluted in the biomedical communications network. There is still no organized coordination and leadership.

Finally, I cannot refrain from identifying two major and highly visible "smokescreens" which, in my estimation, prevent closer and more effective working relationships among professional educators and medical specialists in developing the allied health occupations. When approached by educators to reconsider and re-assess current training requirements, the physicians' resistance and defense are reflected in: "Well, after all, we don't want to dilute or jeopardize competency and quality performance on the job!" When approached by the medical community, the educator's defense of his bailiwick revolves around the need for the "educated citizen," more theory, general education, specialized courses, didactic instruction, degree requirements, and other appurtenances of a certificate-oriented Educational Establishment. Obviously, both are partly right, which means, of course, that both are partly wrong. All of which indicates quite clearly that more exposure to one another's world, greater appreciation of and respect for each other's expertise, and much more compromise are imperative. These are not insurmountable goals or objectives. This partnership, though basic, must be expanded--and the sooner the better--to include greater participation by employers, regulatory mechanisms, and the Federal Government. The health and welfare of this country's single most important resource--people--are at stake. Let us get on with the job.

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A single program of agricultural education cannot be described which would fit the needs of communities across the nation; however, administrators and those in the federal bureaucracy must recognize their responsibility for preserving, or creating and supporting, environments in which teaching and learning can be maximized. Decision making should be shared at local, state, and federal levels. Current trends reflect greater financial support and control at the federal level. Agricultural educators must involve themselves in an attempt to shape programs. Areas of needed program development are training of agricultural entrepreneurs. education for wage-earning occupations, and retention and strengthening of service area specialists in program administration and supervision. Program evaluation at all levels should consider the unique contribution of each vocational service area. Vocational agriculture must continue to accept responsibility for serving all people without discrimination. (DM)

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AGRICULTURAL EDUCATION:

Some Issues and Some Reactions

Presented at the
American Association of Teacher Educators in Agriculture
American Vocational Association Convention
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AGRICULTURAL EDUCATION:
SOME ISSUES AND SOME REACTIONS

by
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Should this role as Mystery Speaker have come my way 30 years ago, the task would have been easy. At that time I was certain of solutions to problems that had not yet been encountered. Now, after about 40 years of laboring in the vineyard, I have accumulated sufficient scar tissue to know better.

As I rolled around in my mind the various ways in which one might approach this moment--and it is a high honor--I reviewed the previous Mystery Speeches. It immediately became apparent that any attempt to match the oratory of those who preceded me to this podium would be an exercise in futility. Therefore, I speak to you from my heart, with a bit of an assist, I hope, from my head. This will be pure Peterson, if the adjective is applicable!

Carsie Hammonds, beloved and respected agricultural educator of Kentucky, in his way of oversimplifying a complex process, has said, "The job of the teacher is to teach." We can accept this statement without debate. We may refine Carsie's pronouncement somewhat to the effect that, "The job of the vocational agriculture teacher is to teach the vocations of agriculture." This brings into focus several issues--issues that have been with us since Squanto, circa 1620, taught the Pilgrims some approved practices of corn production, including the use of dead fish as organic fertilizer, in the first vocational agriculture program in our land.

One does not give thoughtful consideration to agricultural education without being confronted by issues which automatically generate additional issues of increasing complexity. This should not be surprising. It is an observable fact that the closer a problem is to home, the more difficult is its solution. The more you know, the less you are sure of. There is a sort of Parkinson's Law that I will claim as Peterson's Principle. It goes like this: "When a person is not burdened with knowledge of a problem, or responsibility for its solution, he is apt to utter profound statements." This principle is illustrated frequently in the statements regarding vocational education in agriculture derived from people with a background of profound ignorance.

I am sure you do not expect me to present solutions to the issues confronting agricultural education. But I will try to provide a frame of reference within which we might move toward a clearer identification of some of the more important evils which beset us and set the stage for their resolution. As I used to remind Dr. H. M. Hamlin when he chanced to differ with me, everyone is entitled to be wrong occasionally.

Certainly one cannot describe a program of agricultural education and expect it to fit the needs of all communities in the nation. This is a temptation that is hard to resist at the national political and bureaucratic levels. It has the inherent weakness of prescribing one size of hat for every head. It just won't fit.

I think we have the right to expect administrators and the federal bureaucracy to recognize their responsibility for preserving, or creating and supporting, environments in which teaching and learning can be maximized. Similarly, we should be able to look to the state bureaucracy to devote its energies to help local community schools develop vocational programs best suited to their particular needs and desires.

The Posture of Agricultural Education

Some of you may remember your high schoo. Shakespeare well enough to identify the quote, "Sweet are the ways of adversity, which like the toad, though ugly and venomous, weare yet a precious jewel in its head."

This has relevance in many ways to agricultural education in the public community schools. We have always had to fight for and justify our programs, to be constantly on the offensive, to counteract the prophets of doom sounding the death knell of farming and vocational agriculture. This situation has unified us and brought to our ranks a sense of solidarity.

We should hopefully expect administrators at the national level to visualize their function, in large part, as one of helping the states provide the kinds of vocational agriculture programs most needed by the community schools within their boundaries. In this process, decision making should be shared at all levels. Now you and I know that in too many cases this is wishful thinking. Decision-making power has moved from the local and state levels to the national level. It appears that this is a trend not to be reversed. This brings me to the first critical issue in vocational agriculture education.

Financial Support

The basics of an educational program are teaching and research. These are the red and white corpuscles of the blood stream, but the carrier is dollars. Over the years local support has far surpassed federal inputs of money for vocational agriculture. However, the recent increases in federal funding have dramatically shifted the ratio. The most recent figures available to me indicate that local funds amount to 44 percent of the total, with state funds accounting for 27 percent and federal

funds 29 percent. I predict that the percentage of federal funds will continue to increase. With this increase in federal funding will come a drastic and dangerous change in the traditional philosophy of public education in the United States.

It has been a most interesting phenomenon that concern for, or at least vocal interest in, vocational education has increased in direct proportion to the increased allocation of federal money. I'm sure you have observed, as I have that in the last 10 years a great many people have "discovered" vocational education. This has been stimulated and encouraged in high places, and it may be a good thing, if vocational education can survive all the present "advice." If you agree with me that financial support of vocational education is an issue of significance, then you must also agree that the source of that support is the essence of the issue.

There seems to be an idea prevalent among us that federal money is somebody else's money. It follows that the more federal money channelled into particular program or project, the less it will cost the local and state taxpayers. This rationale has been used to stimulate local and state support of many activities, including vocational agriculture.

There is a small grain of truth in this rationale. Federal money is derived from the taxpayers of 50 states, and if one state or local school district secures federal money, it is, in effect, being subsidized by the other 49 states. However, it is precisely the expertise of the federal government in separating people from their money in the first place that enables it to be the generous donor in the second place.

What is the most desirable ratio among local, state, and federal support? Some may respond that this is an academic question, that it has already been settled in Washington and the best interests of vocational agriculture demand that we get as much money as possible from any source.

Others will point out that the larger the stake the local population has in a program, the more worthwhile it will seem to persons in that community. We will all agree that nobody ever gets anything for nothing. So let's not kid ourselves that increased federal funding is an unmixed blessing. It anaesthetizes local concern and subordinates local and state leadership to federal dictation.

On the basis of the evidence at hand, we can expect more and more massive federal spending for vocational-technical education, including education in agriculture. How, then, do we stimulate local and state investment? If three men are paying the fiddler, does the one with the biggest bank roll call the tune? This leads to the second issue in this discussion, that of program control.

Program Control

We in America have cherished the notion of local control of public education. This was a natural development paralleling the growth of our public school system. As far as vocational agriculture is concerned, however, local control was never a fact, although the fiction may have been maintained. Vocational agriculture entered the public schools of the United States when it became obvious to state governments that local districts could not or would not meet the obvious need. This was not a nationwide movement. It developed in Minnesota, for example, at the turn of the century with passage of legislation providing special state aid for instruction in agriculture in 10 schools. This was subsequently expanded, until in 1914 Minnesota had a vigorous program of agricultural instruction in operation. Many other states never got around to doing much, if anything, along these lines.

With the development of state support for agricultural education in

Minnesota came also a set of rules and regulations sometimes camouflaged as guidelines. To secure the extra state support for these programs, certain requirements had to be met. Special supervision and special teacher education programs were initiated through the University of Minnesota. By 1914 a department of agricultural education had been established in the College of Agriculture. Publication of a professional magazine, The Visitor, helped carry teaching suggestions and news of program development to the schools. Incidentally, The Visitor is still published regularly and, as far as I know, is the oldest professional publication in vocational-technical education in the world.

Then, in 1917, something happened. You all know what I am referring to--the Smith-Hughes Act. It took Minnesota several years to recover from this. As soon as the state decided to accept the provisions of the Smith-Hughes Act, it was a new ball game with a new set of rules and, most significantly, a new author of the rule book--the federal government.

I cite this case history because it traces very clearly the transfer of program control from local to state to federal government levels. I use it also to point out that financial support for vocational agriculture did not originate in Washington. However, it is true that in many, if not most, cases vocational-technical education as a component of the public school system had its birth with the passage of the Act. This is an indictment of local and state leadership.

How did this affect program control? In several ways. First, it directly involved state departments of education by requiring state boards for vocational education to administer the Act within the states. Second, it initiated teacher education programs in colleges and universities. Third, it prompted the appointment of state supervisors as representatives of the state boards. Fourth, it precipitated state plans structured to meet federal requirements spelling out standards

to be met in order to qualify for federal funds. Fifth, it stimulated the provision of state and local appropriations on a matching basis with federal dollars. In the states I know about, local and state funds have always substantially out-matched federal money. Sixth, it generated a hue and cry among general education ranks for more federal aid. This is incidental to our topic, but it is amusing to observe state departments of education and local school districts running in all directions to qualify for funds under this or that title of this or that act in the wake of recent federal legislation. And this after years of NEA propaganda that federal aid need not mean federal control! The exposure of this myth must have the same effect on those naive enough to believe it as the unveiling of Santa Claus has on the very young.

You are probably all familiar with more recent legislation. I think we have all learned to accept the fact that just as state aid to local districts brought more direct state control and regulation, so does federal aid entail observance of conditions prescribed by Congress and administered by a national bureaucracy. I believe this is as it should be. A unit of government giving away tax money without conditions is irresponsible. This does not in any way imply agreement with the regulations handed down from time to time, but I do support the principle.

The issue, as far as we are concerned, is how to use the funds for improvement of educational opportunity in agriculture. We have the further responsibility of working for changes of conditions we feel are wrong. To put it more simply, we must take it or leave it. If we take it, as we must, let us work to <u>shape</u> control patterns rather than <u>submit</u> to them. Control is where the money is. Control of the money governs program development. This is the third major issue.

Program Development

None of us needs to be reminded that changes in vocational agriculture have occurred. All fields of service have been given additional responsibility under recent legislation. In the welter of pilot programs, innovative experiments, field demonstrations, across-the-board homogenization, and a blind acceptance that any change is progress, a few issues stand out in bold relief. Vocational agriculture has done, is doing, and likely will continue to do a creditable job of preparing people for entry into, and advancement in, agriculture. Likewise, the training and retraining of adults constitute a high-priority program item. There is, however, an aspect of vocational agriculture that is being undernourished.

Who is training the entrepreneurs? What programs are providing education in proprietary management? Where can students gain instruction and supervised experience in the art and science of combining land, labor, raw materials, and capital for the purpose of making a profit? I believe this to be a paramount issue.

Vocational agriculture and all vocational education must do more than tailor a product to meet an employer's standards. We must weave into the learning experiences those activities that will encourage the budding proprietor, owner, manager--the future employer, the capitalist. Vocational agriculture has met this challenge in part. I sometimes think this has happened by indirection as much as by deliberate and conscious effort and understanding. Entrepreneurial training was a direct outgrowth of supervised farming programs. And in this context I pay tribute to the FFA--whatever it is called in the future.

There is a second issue in program development that needs our attention, although it is not precisely germane. Home economics has provided this nation with an almost universal homemaking education

program. I believe it is a fair statement that home economics has provided most, if not all, of the education in nutrition, child care, family life, and homemaking skills that the vast majority of the brides of America brirg to their homes. This basic contribution must be preserved, strengthened, expanded. Vocational agriculture, as a partner of home economics, must continue to give support to vocational home economics education.

But home economics education has been given additional responsibility, as have all other fields of vocational service. It must provide vocational education in the wage-earning and proprietary occupations. Food service occupations, specialized institutional occupations such as nursing-home management, child care, and proxy parent training to assist working mothers, illustrate the range and variety of the task.

The issue is not whether home economics, vocational agriculture, and other fields of service should choose either broad occupational and entrepreneurial training or wage-earning education. Both must be accomplished. The issue is one of securing additional resources, especially teachers, and combining present resources to insure the development of one without prejudice to the other. The opportunities for educational leadership in agriculture and home economics are unlimited but carry prerequisites of sound philosophy, tough intellect, and absolute dedication.

Still another issue of far-reaching dimensions confronts all of us as we move ahead in program development. In an effort to make the most effective use of available resources, we are combining programs--developing multi-service programs that utilize two or more specialized areas. In some cases this is working out well. But there is a danger involved. In some state education departments, the fields of service are no longer specifically identified. There are no longer state supervisors for agricultural, home economics, distributive, industrial, and business

education. Instead we find a group of consultants in vocational-technical education. Each one is assumed to serve all fields of service with equal effectiveness. I call this death by homogenization. Some may call it integration. It is to be devoutly hoped that this issue will be resolved by its own absurdity.

One does not make trade and industrial education less specialized or less complex by calling it something else. One does not serve the educational needs of modern agricultural production, marketing, processing, distribution, and servicing by lumping agriculture with other equally specialized fields. Nor does one give much assistance to the coordinator of a part-time cooperative program by providing a state supervisor trained in administration. The point is this: Vocational education programs are useful when they utilize specialists in each field of service. This must be the case at all levels of teacher education, state supervision, and local instruction.

Program development must be nourished by dollars. Here is another issue before us. Federal legislation mandates vocational education for all people in all communities. There aren't that many dollars; therefore, the financial nourishment must be rationed. Rationing involves priorities, in this case educational priorities. How are these determined? I suggest that first priority be given to the kind of vocational agriculture that is in most immediate need and that has the highest benefit-cost ratio. One may ask how we can justify adding new programs when we are not meeting the needs in traditional bread-and-butter programs. Yet we must!

We are constantly reminded that vocational agriculture is obsolete, that we should be training for the jobs of the future, that the average worker will change jobs 10 times during his career, that the job a high school vo-ag student may take has not yet emerged, and so on and on. Most of this kind of advice comes from people with good intentions but with

little actual working experience in vocational agriculture.

If we do a good job of developing programs needed right now, if we keep up with technological advances, and if adult education, basically farm business management training and retraining, is given high priority, program development will be self-generating. We should constantly be on the alert for needed changes and also recognize the values in present programs. This brings me to the fourth issue, program evaluation.

Program Evaluation

As Congress expands its support of vocational education, the necessity for country-wide evaluation will also increase. This is a complex and sometimes frustrating experience. Evaluation can be done in a variety of ways. It can be a simple head count of students trained and of students placed as a result of that training. It can be done also through a benefit-cost analysis, which is considerably more sophisticated. Evaluation procedures can also be devised to take into account intangibles, such as entrepreneurial and risk-taking attitudes. These are necessarily more subjective. The importance of evaluation at the federal level is obvious, since the results go to the root of financial nourishment. The objective of national evaluation, in simplest terms, is to determine if state programs are following the guidelines laid down by Congressional action and USOE regulations.

Evaluation at the state level is done for at least two reasons. First and foremost is the gathering of data necessary for federal reporting. Second is the interest in determining the status and operational strengths and weaknesses of local programs. There is also the motivation of securing data useful for state legislative committees.

An issue that must be reckoned with is the temptation to over-unify evaluation procedures at all levels. While the overall purposes of the various vocational fields are rooted in a common philosophy and guided by certain common principles, there are differences in practices and procedures that must be recognized. For example, there are several significant and recognizable differences between a balanced program in home economics and one in industrial education. T and I training operates at the adult level with a much higher degree of specificity and within a narrower range of individual program objectives. A balanced home economics program will range from homemaking and family living orientation to specific requirements of a catering service or dietician aides program. In distributive education, the program will range from training for a salesclerk at Kresge's to inservice training for clothing store managers. In agriculture, the range and variety are even greater--from the basic agricultural science and technology courses to the training for feed, seed, fertilizer, chemical, and machinery and equipment occupations, and the more sophisticated business analysis programs for production agriculture and horticulture.

Thus we come again to the fact that while we in vocational-technical education work together and support one another, there is no such thing as general vocational education. Each field seeks to accomplish its objectives by a pattern of educational experiences most effective for its particular specialization. Truly we cut the cloth to fit the pattern. Evaluation must do the same if it is to be valid. As we grow, expand, and develop, certain phenomena will be observed and should be noted. These constitute issue number five.

Aspects of Concept and Philosophy

As I address myself to changes in concept and philosophy, I have the notion that some of the alleged changes in philosophy may more accurately be described as the same tried and true philosophy operating within new and larger dimensions.

I predict, and hope correctly so, that every field of vocational education will recognize the need for preparing the employer as well as the employee, the wage payer as well as the wage earner, the proprietor as well as the laborer. Without well-managed, profitable farms and ranches, businesses, and industries, the outlook for improved economic opportunity is gloomy indeed. I believe we in vocational agriculture have a major contribution to make in training the proprietors, entrepreneurs, and workers of today and tomorrow.

There has been a degree of intellectual snobbery at work in our educational system. This is true more in private schools than in the public system, although it certainly operates throughout. This evil pseudo-philosophy has done as much as anything to deprive vocational agriculture of its proper status and support. In this way it has served to cripple the earning capacity of who knows how many millions of students.

With your indulgence, I will use an illustration from my own experience. Time was when vocational agriculture students in Minnesota high schools more often than not were forced to make a choice between vo-ag and chemistry, or maybe higher algebra or biology or some other science course. Such a situation was based on the erroneous concept that people interested in agriculture did not need the sciences, that it was an "either - or" situation. This is no longer the case in most Minnesota schools, and I hope it is not true in the other states. It is based on the myth that the alleged existence of a college preparatory

program is an alternative to programs for the lesser citizen who would work in some phase of agriculture.

If any high school student needs all the math and science he can absorb, it is the student of agriculture. And he needs this as a part of his training in modern vocational agriculture. In the same breath let me say that there is also a demand in agriculture for those less inclined toward the sciences.

I am convinced that this phenomenon I call intellectual snobbery has its origins in the inherent ego-building tendency of man. It is also closely associated with the mystique of the unfamiliar.

There is an old saying, "The grass is always greener on the other side of the fence," to which I would add, "until you get there." Let me try to illustrate this with reference to vocational agriculture.

Some years ago I visited several high schools in Minnesota. Three of these schools were prime examples of the mystique of the unfamiliar. They were located in fertile farm territory. Many of the farmers followed a rotation of wheat and sugar beets in the summer and Florida in the winter. In none of these schools was there a trace of vocational education--no shop, no agriculture, no home economics, no anything. There were, however, three years of Latin, extra English literature classes, and a high dropout rate. These schools had administrators who gauged their success on the number of students who left the community for college, foreign missions, or, in more recent times, the Peace Corps. They failed to integrate the school curriculum with the needs and aspirations of the community and the people who were paying most of the taxes.

They were victims of the mystique of the unfamiliar. They were also victims of their ignorance of the community school philosophy. Their schools were apart from, rather than a part of, the community they purported to serve.

I submit vocational agriculture has always served all people without discrimination. With the limited resources available, vocational agriculture has done a good job. But new concepts are emerging. Logic, reason, and the formerly accepted laws of cause and effect seem to be in limbo. I confess I am confused by the political power of the extremist leaders of the so-called deprived. There is even now serious discussion of a negative income tax. Vocational agriculture, and the rest of the country, is suddenly called upon to devote 90 percent of its resources to serve 10 percent of the population. There is no question of minorities conforming to majority values; indeed the reverse is demanded. For vocational agriculture this has the most serious implications, especially in metropolitan areas. It seems to me that, in many respects, we are being "had." Too many of our political and educational leaders are scared of their own heritage.

This in no way denies the right of everyone to a chance to get sound vocational training; quite the opposite. But it seems to me it is time to inject a modicum of common sense and realism into the welter of hysteria and anarchy. In any event, I am confident that vocational agriculture will meet this issue.

Some Concluding Observations

I am totally committed to the community school philosophy and the role of vocational agriculture within this context. It is my judgment that if more people thought more before they talked, they would really have little to say but a lot of work to do! Perhaps some of you will agree that this applies to me, so I shall stop soon. Nevertheless, as I look at the situation, we have some alternatives. They are determined by the kind of national policy that emerges in the future.

It seems inevitable that vocational education, including agriculture, will have an ever-increasing role in society. The stabilization of social development must be rescued from extremists in politics, sociology, psychology, anthropology, economics, and education. Each of us in every state has the tools to help us. First, each field of service should develop its own professional organization. We can take pride in the AATEA. All groups should work together through their state vocational associations. Strong state vocational associations make for a strong AVA. These are our best tools. And believe me, we need to reinvigorate our AVA!

Finally, let us all face up to the issues and strive to preserve and improve specialized expertise in vocational agriculture as we also strive to improve educational opportunity in the total program of vocational-technical endeavor--together we can serve.

And so, in closing, I say to each of you: Hold fast to your ideals; go and sin no more--not even as much.

VT 008 654
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Health Careers Association of Greater Cincinnati, Ohio
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Oct66 30p.

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OHIO; KENTUCKY; INDIANA

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HEALTH CAREERS

WHERE TO STUDY IN

OHIO, KENTUCKY & INDIANA

COMPILED BY

Health Careers Association of Greater Cincinnati

(A United Appeal Agency)

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For further information on the careers listed in this booklet, write to the registrar of the school (just use the name and city as listed). For additional information you may also contact:

- Health Careers Association of Greater Cincinnati
  2400 Reading Road. Cincinnati, Ohio 45202

- Indiana Health Careers, Inc.
  1100 West Michigan Street, Indianapolis, Indiana 46207

- Local and State Academies and Societies of Medicine and Dentistry.

- The Hospitals, Hospital Associations and Health Departments.

For full description of health careers, refer to Health Careers *Guidebook,* published by the U. S. Department of Labor, 1965, which is in your school library or counselor's office.

Universities, Colleges, Hospitals and Schools where accredited training programs for health careers are offered in 290 institutions in Ohio, Kentucky and Indiana.

Note: "Years" after title is time after high school graduation.

ANATOMIST (4 to 8 years)

Ohio
Ohio State University, Columbus

Kentucky
University of Kentucky, Lexington

Indiana
Indiana State College, Terre Haute
Indiana University, Bloomington

BACTERIOLOGIST (4 to 8 years)

Ohio
Miami University, Oxford
Ohio State University, Columbus
Ohio Wesleyan University, Delaware
University of Cincinnati, Cincinnati

Kentucky
University of Kentucky, Lexington

Indiana
DePauw University, Greencastle
Indiana University, Bloomington
Purdue University, Lafayette

BIOLOGIST (4 to 8 years)

Ohio
Antioch College, Yellow Springs
Ashland College, Ashland
Baldwin-Wallace College, Berea
Bluffton College, Bluffton
Bowling Green State University, Bowling Green
Capital University, Columbus
Central State College, Wilberforce
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Cincinnati
College of Steubenville, Steubenville
College of Wooster, Wooster
Defiance College, Defiance
Denison University, Granville
Cleveland State College, Cleveland
Findlay College, Findlay

Heidelberg College, Tiffin
Hiram College, Hiram
Kent State University, Kent
Kenyon College, Gambier
Lake Erie College, Painesville
Malone College, Canton
Marietta College, Marietta
Mary Manse College, Toledo
Miami University, Oxford
Mount Union College, Alliance
Muskingum College, New Concord
Notre Dame College, Cleveland
Oberlin College, Oberlin
Ohio Northern University, Ada
Ohio State University, Columbus
Ohio University, Athens
Otterbein College, Westerville
Our Lady of Cincinnati College, Cincinnati
Rio Grande College, Rio Grande
University of Akron, Akron
University of Cincinnati, Cincinnati
University of Dayton, Dayton
University of Toledo, Toledo
Ursuline College, Cleveland
Walsh College, Canton
Western College for Women, Oxford
Western Reserve University, Cleveland
Wilberforce University, Wilberforce
Wilmington College, Wilmington
Wittenberg University, Springfield
Xavier University, Cincinnati
Youngstown University, Youngstown

Kentucky

Asbury College, Wilmore
Bellarmine College, Louisville
Berea College, Berea
Brescia College, Owensboro
Campbellsville College, Campbellsville
Catherine Spalding College, Louisville
Centre College of Kentucky, Danville
Cumberland College, Williamsburg
Eastern Kentucky State College, Richmond
Georgetown College, Georgetown

Kentucky State College, Frankfort
Kentucky Wesleyan College, Owensboro
Morehead State College, Morehead
Nazareth College of Kentucky, Nazareth
Pikeville College, Pikeville
Transylvania College, Lexington
Union College, Barbourville
University of Kentucky, Lexington
University of Louisville, Louisville
Villa Madonna College, Covington
Western Kentucky State College, Bowling Green

Indiana

Anderson College, Anderson
Ball State University, Muncie
Concordia Senior College, Fort Wayne
DePauw University, Greencastle
Earlham College, Richmond
Evansville College, Evansville
Franklin College of Indiana, Franklin
Goshen College, Goshen
Hanover College, Hanover
Huntington College, Huntington
Indiana Central College, Indianapolis
Indiana State College, Terre Haute
Indiana University, Bloomington
Manchester College, North Manchester
Marian College, Indianapolis
Oakland City College, Oakland
Purdue University, Lafayette
Saint Francis College, Fort Wayne
Saint Joseph's College, Rensselaer
Saint Mary-of-the-Woods, Saint Mary-of-the-Woods
Saint Mary's College, Notre Dame
Saint Meinrad Seminary, Saint Meinrad
Taylor University, Upland
University of Notre Dame, Notre Dame
Valparaiso University, Valparaiso
Wabash College, Crawfordsville

CHEMIST (4 to 8 years)

Ohio

Antioch College, Yellow Springs
Ashland College, Ashland

Baldwin-Wallace College, Berea
Bluffton College, Bluffton
Bowling Green State University, Bowling Green
Capital University, Columbus
Case Institute of Technology, Cleveland
Central State College, Wilberforce
College of Mount St. Joseph-on-the-Ohio Mount St. Joseph, Cincinnati
College of St. Mary of the Springs, Columbus
College of Steubenville, Steubenville
College of Wooster, Wooster
Defiance College, Defiance
Denison University, Granville
Cleveland State College, Cleveland
Findlay College, Findlay
Heidelberg College, Tiffin
Hiram College, Hiram
John Carroll University, Cleveland
Kent State University, Kent
Kenyon College, Bambier
Lake Erie College, Painesville
Malone College, Canton
Marietta College, Marietta
Mary Manse College, Toledo
Miami University, Oxford
Mount Union College, Alliance
Muskingum College, New Concord
Notre Dame College, Cleveland
Oberlin College, Oberlin
Ohio Northern University, Ada
Ohio State University, Columbus
Ohio University, Athens
Ohio Wesleyan University, Delaware
Otterbein College, Westerville
Our Lady of Cincinnati College, Cincinnati
Rio Grande College, Rio Grande
University of Akron, Akron
University of Cincinnati, Cincinnati
University of Dayton, Dayton
University of Toledo, Toledo
Ursuline College, Cleveland
Walsh College, Canton
Western College for Women, Oxford
Western Reserve University, Cleveland

Wilmington College, Wilmington
Wittenberg University, Springfield
Xavier University, Cincinnati
Youngstown University, Youngstown

Kentucky

Asbury College, Wilmore
Bellarmine College, Louisville
Berea College, Berea
Brescia College, Owensboro
Campbellsville College, Campbellsville
Catherine Spalding College, Louisville
Centre College of Kentucky, Danville
Cumberland College, Williamsburg
Eastern Kentucky State College, Richmond
Georgetown College, Georgetown
Kentucky State College, Frankfort
Kentucky Wesleyan College, Owensboro
Morehead State College, Morehead
Murray State College, Murray
Nazareth College of Kentucky, Nazareth
Transylvania College, Lexington
Union College, Barbourville
University of Kentucky, Lexington
University of Louisville, Louisville
Ursuline College, Louisville
Villa Madonna College, Covington
Western Kentucky State College, Bowling Green

Indiana

Anderson College, Anderson
Ball State University, Muncie
Butler University, Indianapolis
DePauw University, Greencastle
Earlham College, Richmond
Evansville College, Evansville
Franklin College of Indiana, Franklin
Goshen College, Goshen
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Marian College, Indianapolis
Oakland City College, Oakland
Purdue University, Lafayette
Rose Polytechnic Institute, Terre Haute
Saint Francis College, Fort Wayne
Saint Joseph's College, Rensselaer
Saint Mary-of-the-Woods, Saint Mary-of-the-Woods
Saint Mary's College, Notre Dame
Taylor University, Upland
University of Notre Dame, Notre Dame
Valparaiso University, Valparaiso
Wabash College, Crawfordsville

CYTOTECHNOLOGIST & CYTOLOGICAL TECHNICIAN (1 to 3 years)

Ohio
Mary Manse College, Toledo
St. Luke's Hospital, Cleveland
Steubenville College, Steubenville

Kentucky
University of Louisville, Louisville

Indiana
Indiana University Medical Center, Indianapolis
South Bend Medical Foundation, South Bend

DENTAL ASSISTANT (1 year)

Ohio
Jane Addams Vocational School, Cleveland
University of Toledo, Toledo

Kentucky
Jefferson County School. Jeffersontown

Indiana
Indiana-Purdue Universities, Fort Wayne
Harry E. Wood High School, Indianapolis

DENTAL HYGIENIST (2 to 4 years)

Ohio
Cuyahoga Community College, Cleveland
Ohio State University, Columbus
University of Cincinnati, Cincinnati (1967)

Kentucky
University of Louisville, Louisville

Indiana
Indiana University, School of Dentistry, Indianapolis
Indiana University-Indiana-Purdue Regional Campus, Fort Wayne

DENTAL LABORATORY TECHNICIAN (1 year)

Kentucky
University of Kentucky, Lexington

DENTIST (DOCTOR OF DENTISTRY) (6 to 8 years)

Ohio
Ohio State University, Columbus
Western Reserve University, Cleveland

Kentucky
University of Kentucky, Lexington
University of Louisville, Louisville

Indiana
Indiana University School of Dentistry, Indianapolis

DIETICIAN (4 years college — 1 year internship)

Ohio
Baldwin-Wallace College, Berea
Central State College, Wilberforce
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Cincinnati
College of St. Mary of the Springs, Columbus
Hiram College, Hiram
Kent State University, Kent
Miami University, Oxford
Notre Dame College, Cleveland
Ohio State University, Columbus
Ohio University, Athens
Ohio Wesleyan University, Delaware
Our Lady of Cincinnati College, Cincinnati
University of Akron, Akron
University of Cincinnati, Cincinnati
University of Dayton, Dayton
Ursuline College, Cleveland
Western College for Women, Oxford
Western Reserve University, Cleveland
Youngstown University, Youngstown

Kentucky
Berea College, Berea
Catherine Spalding College, Louisville
Nazareth College of Kentucky, Nazareth
University of Kentucky, Lexington

Indiana
Ball State University, Muncie
DePauw University, Greencastle
Goshen College, Goshen
Indiana State College, Terre Haute
Manchester College, North Manchester
Marian College, Indianapolis
Purdue University, Lafayette
Saint Mary-of-the-Woods, Saint Mary-of-the-Woods
Saint Mary's College, Notre Dame
Valparaiso University, Valparaiso

ENVIRONMENTAL HEALTH SANITARIAN (5 years)

Indiana
Indiana University, Bloomington

FOOD TECHNOLOGIST — NUTRITIONIST (4 years)

Ohio
Baldwin-Wallace College, Berea
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Cincinnati
Kent State University, Kent
Miami University, Oxford
Notre Dame College, Cleveland
Ohio State University, Columbus
Our Lady of Cincinnati College, Cincinnati
University of Akron, Akron
University of Cincinnati, Cincinnati
University of Dayton, Dayton
Ursuline College, Cleveland
Western Reserve University, Cleveland
Youngstown University, Youngstown

Kentucky
Berea College, Berea
Nazareth College of Kentucky, Nazareth
University of Kentucky, Lexington
Ursuline College, Louisville

Indiana
Marian College, Indianapolis
Purdue University, Lafayette
Saint Mary's College, Notre Dame

HEALTH EDUCATION TEACHER (4 years)

Ohio
Baldwin-Wallace College, Berea
Central State College, Wilberforce
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Cincinnati
Kent State University, Kent
Ohio Northern University, Ada
Ohio State University, Columbus
Ohio University, Athens
Ohio Wesleyan University, Delaware
University of Cincinnati, Cincinnati
University of Dayton, Dayton
Wilmington College, Wilmington
Wittenberg University, Springfield

Kentucky
Campbellsville College, Campbellsville
Union College, Barbourville
University of Louisville, Louisville

Indiana
Ball State University, Muncie
Franklin College, Franklin
Indiana State College, Terre Haute
Indiana University, Bloomington
Manchester College, North Manchester
Purdue University, Lafayette

HOSPITAL ADMINISTRATOR (4 to 6 years)

Ohio
Xavier University, Cincinnati

INHALATION THERAPY TECHNICIAN (1 to 2 years)

Kentucky
University of Kentucky Medical Center, Lexington

Indiana
St. Mary Mercy Hospital, Gary

MEDICAL ILLUSTRATOR (4 to 6 years)

Ohio
Ohio State University, Columbus
University of Cincinnati, Cincinnati

MEDICAL LABORATORY — CERTIFIED LABORATORY ASSISTANT (1 or 2 years)

Ohio
Cuyahoga Community College, Cleveland
Aultman Hospital, Canton
Dettmer General Hospital, Troy
Marietta Memorial Hospital, Marietta
Mercy Hospital, Portsmouth
Timken-Mercy School, Canton

Kentucky
Appalachian Regional Hospital, Harlan
Central Baptist Hospital, Lexington
King's Daughters' Hospital, Ashland

Indiana
Clinic Hospital, Bluffton
St. Anthony Hospital, Michigan City
Terre-Haute School of Laboratory Assistants, Terre Haute
Thornton-Haymond-Costin Medical Laboratory, Indianapolis

MEDICAL LIBRARIAN (5 years)

Ohio
Ohio State University, Columbus

Indiana
Indiana University Medical Center, Indianapolis

MEDICAL RECORD LIBRARIAN (4 years)

Indiana
Indiana University Medical Center, Indianapolis

MEDICAL RECORD TECHNICIAN (1 year)

Ohio
Marymount Hospital, Garfield Heights, Cleveland

Indiana
St. Margaret's Hospital, Hammond

MEDICAL SECRETARY (2 years)

Ohio
Cuyahoga Community College, Cleveland
Dyke College, Cleveland
University of Cincinnati, Cincinnati
University of Toledo, Toledo

MEDICAL SOCIAL WORKER (5 to 6 years)

Ohio
Cincinnati Center of Ohio State University, University of Cincinnati, Cincinnati, Ohio
Ohio State University, Columbus
Western Reserve University, Cleveland

Kentucky
University of Louisville, Louisville

Indiana
Indiana University, Bloomington

MEDICAL TECHNOLOGIST (4 years)

Ohio
Ashland College, Ashland
Baldwin-Wallace College, Berea
Bluffton College, Bluffton
Bowling Green State University, Bowling Green
Capital University, Columbus
Central State College, Wilberforce
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Cincinnati
College of St. Mary of the Springs, Columbus
College of Steubenville, Steubenville
Denison University, Granville
Defiance College, Defiance
Findlay College, Findlay
Heidelberg College, Tiffin
Kent State University, Kent
Malone College, Canton
Mary Manse College, Toledo
Miami University, Oxford
Mount Union College, Alliance
Ohio Northern University, Ada
Ohio State University, Columbus
Otterbein College, Westerville

Our Lady of Cincinnati College, Cincinnati
University of Akron, Akron
University of Cincinnati, Cincinnati
University of Dayton, Dayton
University of Toledo, Toledo
Western College for Women, Oxford
Western Reserve University, Cleveland
Wilmington College, Wilmington
Wittenberg University, Springfield
Youngstown University, Youngstown

Kentucky
Brescia College, Owensboro
Catherine Spalding College, Louisville
Campbellsville College, Campbellsville
Cumberland College, Williamsburg
Eastern Kentucky State College. Richmond
Georgetown College, Georgetown
Kentucky Wesleyan, College, Owensboro
Morehead State College, Morehead
Murray State College, Murray
Nazareth College of Kentucky, Nazareth
Pikeville College, Pikeville
Transylvania College, Lexington
Union College, Barbourville
University of Kentucky, Lexington
University of Kentucky, Henderson Community College, Henderson
University of Kentucky, Northern Community College, Covington
University of Louisville, Louisville
Ursuline College, Louisville
Villa Madonna College, Covington
Western Kentucky State College, Bowling Green

Indiana
Anderson College, Anderson
Ball State University, Muncie
Butler University, Indianapolis
DePauw University, Greencastle
Evansville College, Evansville
Franklin College, Franklin
Goshen College, Goshen
Hanover College, Hanover
Indiana State University, Earlham

Indiana University, Bloomington
Marian College, Indianapolis
Purdue University, Lafayette
Saint Francis College, Fort Wayne
Saint Mary's College, Notre Dame
Taylor University, Upland
Vincennes University, Vincennes

MEDICINE — DOCTOR OF MEDICINE (PHYSICIAN) (7 to 8 years)

Ohio
Ohio State University, Columbus
University of Cincinnati, Cincinnati
Western Reserve University, Cleveland

Kentucky
University of Kentucky, Lexington
University of Louisville, Louisville

Indiana
Indiana University Medical Center, Indianapolis

NUCLEAR MEDCIAL TECHNOLOGIST (4 to 5 years)

Ohio
University of Cincinnati, Cincinnati

NURSE

M-Male students admitted
W-Married students admitted
Not marked — open to women only

Baccalaureate Degree Nurse (4 years)

Ohio
Capital University, Columbus (M-W)
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Cincinnati
Ohio State University, Columbus (M-W)
St. John's College of Cleveland, Cleveland
University of Cincinnati College of Nursing and Health, Cincinnati (W)
Western Reserve University, Cleveland (W)

Kentucky
Berea College, Berea (M-W)
Catherine Spalding College, Louisville (W)
Murray State College, Murray (M-W)
University of Kentucky, Lexington (M-W)

Indiana
Ball State University, Muncie (M-W)
DePauw University School of Nursing, Indianapolis (W)
Evansville College, Evansville (W)
Goshen College, Goshen (M-W)
Indiana University Medical Center, Indianapolis (M-W)
Indiana State College, Terre Haute (M-W)

Associate Degree Nurse (2 years)

Ohio
Cuyahoga Community College, Cleveland (M-W)
Kettering Medical Center, Kettering (M-W)
Lorain County Community College, Lorain (M-W)
University of Cincinnati, Cincinnati (scheduled 1967) (M-W)

Kentucky
Eastern Kentucky State College, Richmond (M-W)
Paducah Junior College, Paducah (M-W)
Western Kentucky State College, Bowling Green (M-W)
University of Kentucky, Elizabethtown Community College, Elizabethtown (M-W)
University of Kentucky, Henderson Community College, Harlan (M-W)
University of Kentucky Technical Institute, Lexington (M-W)
University of Kentucky, Northern Community College, Covington (M-W)

Indiana
Indiana Central College, Indianapolis (M-W)
Indiana University, Program in Nursing, Gary (M-W)
Purdue University, Hammond Branch, Hammond (M-W)
Purdue University, Fort Wayne (M-W)
Purdue University School of Technology, Lafayette (M-W)
Purdue University, Indianapolis (M-W)
Purdue University, Michigan City (M-W)
Vincennes University Junior College, Vincennes (M-W)

Diploma Nurse (3 years)

Ohio
Akron City Hospital, Akron (M)
Akron General Hospital, Akron (M-W)
Aultman Hospital, Canton (M-W)
Bethesda Hospital, Cincinnati (W)
Bethesda Hospital, Zanesville (W)
Christ Hospital, Cincinnati (M)
City Hospital, East Liverpool (M-W)

Cuyahoga County Hospital, Cleveland (M-W)
Deaconess Hospital, Cincinnati (M)
Elyria Memorial Hospital. Elyria (W)
Fairview Park Hospital, Cleveland (M-W)
Flower Hospital, Toledo (M-W)
Good Samaritan Hospital, Cincinnati (M)
Good Samaritan Hospital, Dayton (M-W)
Good Samaritan Hospital, Zanesville
Grant Hospital, Columbus (W)
Holzer Hospital, Gallipolis
Huron Road Hospital, East Cleveland (W)
Jewish Hospital, Cincinnati (M-W)
Lima Memorial Hospital, Lima (M)
Lutheran Hospital, Cleveland
Mansfield General Hospital, Mansfield (M-W)
Massillon City Hospital, Massillon (M-W)
Maumee Valley Hospital, Toledo (M-W)
Mercy Hospital, Canton
Mercy Hospital, Hamilton
Mercy Hospital, Toledo
Miami Valley Hospital, Dayton (M-W)
Middletown Hospital, Middletown (M-W)
Mt. Carmel Hospital, Columbus (W)
Mt. Sinai Hospital, Cleveland (M-W)
Ohio Valley Hospital, Steubenville
Providence Hospital, Sandusky (M-W)
Riverside Hospital, Toledo (W)
Riverside Methodist White Cross Hospital, Columbus (M-W)
St. Alexis Hospital, Cleveland
St. Elizabeth Hospital, Dayton (M)
St. Elizabeth Hospital, Youngstown
St. Francis Hospital, Columbus (M-W)
St. John's Hospital, Cleveland
St. Luke's Hospital, Cleveland (M-W)
St. Rita's School of Nursing, Lima (M)
St. Thomas Hospital, Akron
St. Vincent Charity Hospital, Cleveland
St. Vincent's Hospital, Toledo
Samaritan School of Nursing, Ashland
Springfield City Hospital, Springfield (M-W)
Toledo Hospital, Toledo
Trumbull Memorial Hospital, Warren (M-W)
Youngstown Hospital Association, Youngstown (M-W)

Kentucky
Appalachian Regional Hospital, Harlan (M-W)
Good Samaritan Hospital, Lexington (M-W)
Kentucky Baptist Hospital, Louisville
King's Daughters' Hospital, Ashland (M-W)
Norton Memorial Infirmary, Louisville (W)
Owensboro-Daviess County Hospital, Owensboro (M-W)
Sts. Mary & Elizabeth Hospital, Louisville (M-W)
St. Anthony Hospital, Louisville (W)
St. Joseph Infirmary, Louisville (W)

Indiana
Holy Cross School of Nursing, South Bend
Lutheran Hospital, Fort Wayne
Marion County General Hospital, Indianapolis (M-W)
Memorial Hospital, South Bend (W)
St. Mary Mercy Hospital, Gary (W)
Parkview Methodist Hospital, Fort Wayne (M-W)
Protestant Deaconess Hospital, Evansville (M-W)
St. Anthony Hospital, Terre Haute (W)
St. Elizabeth School of Nursing, Lafayette (M-W)
St. Joseph's Hospital, Fort Wayne (M-W)
St. Margaret Hospital, Hammond (M-W)
St. Vincent's Hospital, Indianapolis (M-W)

Practical Nurse (1 year)

Ohio
Akron School of PN, Akron (M-W)
Bellaire School of PN, Bellaire (M-W)
Choffin School of PN, Youngstown (W)
Bowling Green Area School of PN, Bowling Green (W)
Central School of PN, Inc., Cleveland (W)
Columbus Public School of PN, Columbus (M-W)
Claude V. Courter Technical School of PN, Cincinnati (M-W)
Dayton School of PN, Dayton (M-W)
Elyria PN School, Elyria (W)
Euclid School of PN, Euclid (W)
Hamilton Program of PN Education, Hamilton (W)
Hannah E. Mullins School of PN, Salem (M-W)
Jane Addams School of PN, Cleveland (M-W)
Lakewood School of PN, Lakewood (M-W)
Lima School of PN, Lima (M-W)
Marietta Area Technical School of PN, Marietta (M-W)
Marion General Hospital School of PN, Marion (M-W)
Marymount Hospital School of PN, Garfield Heights (W)

Mercy Central School of PN, Springfield (W)
Mid-Ohio PN Program, Mansfield (M-W)
Northwestern Ohio PN Training Center, Toledo (M-W)
Parma School of PN, Parma (M-W)
Portsmouth City Schools PN Program, Portsmouth (W)
Sandusky School of PN, Sandusky (W)
St. Francis Hospital of PN, Cincinnati (M-W)
St. Joseph School of PN, Lorain (W)
Timken Mercy Hospital School of PN, Canton (M-W)
Warren City Schools, School of PN, Warren (W)
Willoughby-Eastlake School of PN, Willoughby (M-W)

Kentucky

Appalachian School of PN, Lexington (W)
Danville School of PN, Danville (M-W)
Glasgow School of PN, Glasgow (M-W)
Greenville School of PN, Greenville (M-W)
Hazard School of PN, Hazard (W)
Jefferson County School of PN, Jeffersontown (M-W)
Mayo State Vocational School, Dept. of PN, Painesville (M-W)
Madisonville School of PN, Madisonville (M-W)
Northern Kentucky State Vocational School of PN, Covington (M-W)
Owensboro School for PN, Owensboro (M-W)
Pineville School for PN, Pineville (M-W)
Western Baptist Hospital School of PN, Paducah (M-W)
Wm. Booth Memorial Hospital School of PN, Covington (M-W)

Indiana

Bartholomew Consolidated School Corp. School of PN, Columbus (M-W)
Bloomington PN School, Bloomington (W)
Evansville School of PN, Evansville (M-W)
Fort Wayne School of PN, Fort Wayne (M-W)
Grant School of PN, Marion Community Schools, Marion (M-W)
Indianapolis Public Schools, School of PN, Indianapolis (M-W)
Kokomo School of PN, Kokomo (M-W)
Muncie School of PN, Muncie (W)
New Albany-Floyd County School of PN, New Albany (M-W)
Purdue University, Calumet Campus, PN Training Program, Hammond (W)
Richmond School of PN, Reid Memorial Hospital, Spring Grove, Richmond (W)
South Bend School of PN, South Bend (M-W)
Vigo County School Corp., Vocational School of PN, Terre Haute (M-W)

OCCUPATIONAL THERAPIST (4 to 5 years)

Ohio
Ohio State University, Columbus

Indiana
Indiana University Medical Center, Indianapolis

OPTOMETRIST (Doctor of Optometry) (6 years)

Ohio
Ohio State University, Columbus

Indiana
Indiana University Medical Center, Indianapolis

ORTHOPTIST (1 year)

Ohio
Ohio State University, Columbus

PHARMACIST (4 to 5 years)

Ohio
Ohio Northern University, Ada
Ohio State University, Columbus
University of Cincinnati, Cincinnati
University of Toledo, Toledo

Kentucky
University of Kentucky, Lexington

Indiana
Butler University, Indianapolis
Purdue University, Lafayette

PHYSICAL EDUCATION TEACHER (4 years)

Ohio
Ashland College, Ashland
Baldwin-Wallace College, Berea
Bowling Green State University, Bowling Green
Central State College, Wilberforce
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Cincinnati
College of Wooster, Wooster
Denison University, Granville
Findlay College, Findlay

Heidelberg College Tiffin
Hiram College, Hiram
Kent State University, Kent
Lake Erie College, Painesville
Marietta College, Marietta
Miami University, Oxford
Muskingum College, New Concord
Oberlin College, Oberlin
Ohio Northern University, Ada
Ohio State University, Columbus
Ohio University, Athens
Ohio Wesleyan University, Delaware
Otterbein College, Westerville
University of Akron, Akron
University of Cincinnati, Cincinnati
University of Dayton, Dayton
University of Toledo, Toledo
Western Reserve University, Cleveland
Wilmington College, Wilmington
Wittenberg University, Springfield
Youngstown University, Youngstown

Kentucky
Asbury College. Wilmore
Berea College, Berea
Campbellsville College, Campbellsville
Cumberland College, Williamsburg
Eastern Kentucky State College, Richmond
Georgetown College, Georgetown
Kentucky State College, Frankfort
Morehead State College. Morehead
Murray State College, Murray
Pikeville College. Pikeville
Transylvania College, Lexington
Union College. Barbourville
University of Kentucky, Lexington
University of Louisville. Louisville
Western Kentucky State College. Bowling Green

Indiana
Anderson College, Anderson
Ball State University, Muncie
Butler University, Indianapolis
DePauw University, Greencastle
Earlham College, Richmond

Franklin College, Franklin
Goshen College, Goshen
Hanover College, Hanover
Indiana Central College, Indianapolis
Indiana University, Bloomington
Indiana State College, Terre Haute
Manchester College, North Manchester
Oakland City College, Oakland
Purdue University, Lafayette
St. Joseph's College, Rensselaer
Taylor University, Upland
Valparaiso University, Valparaiso

PHYSICAL THERAPIST (4 to 5 years)

Ohio
Ohio State University, Columbus
University of Cincinnati, Cincinnati (scheduled 1967-68)
Western Reserve University, Cleveland

Indiana
Indiana University Medical Center, Indianapolis

PODIATRIST (Doctor of Podiatry) (6 years)

Ohio
Ohio College of Podiatry, Cleveland

PSYCHIATRIC SOCIAL WORKER (5 to 6 years)

(See Social Worker)

PSYCHOLOGIST (5 to 7 years)

Ohio
Antioch College, Yellow Springs
Ashland College, Ashland
Baldwin-Wallace College, Berea
Bluffton College, Bluffton
Bowling Green State University, Bowling Green
Capital University, Columbus
Central State College, Wilberforce
College of Steubenville, Steubenville
College of Wooster, Wooster
Defiance College, Defiance
Denison University, Granville
Cleveland State College, Cleveland

Findlay College, Findlay
Heidelberg College, Tiffin
Hiram College, Hiram
John Carroll University, Cleveland
Kent State University, Kent
Kenyon College, Gambier
Lake Erie College, Painesville
Marietta College, Marietta
Mary Manse College, Toledo
Miami University, Oxford
Mount Union College, Alliance
Muskingum College, New Concord
Oberlin College, Oberlin
Ohio Northern University, Ada
Ohio State University, Columbus
Ohio University, Athens
Ohio Wesleyan University, Delaware
Otterbein College, Westerville
University of Akron, Akron
University of Cincinnati, Cincinnati
University of Dayton, Dayton
University of Toledo, Toledo
Western College for Women, Oxford
Western Reserve University, Cleveland
Wilberforce University, Wilberforce
Wilmington College, Wilmington
Wittenberg University, Springfield
Xavier University, Cincinnati
Youngstown University, Youngstown

Kentucky

Asbury College, Wilmore
Bellarmine College, Louisville
Berea College, Berea
Catherine Spalding College, Louisville
Centre College of Kentucky, Danville
Georgetown College, Georgetown
Murray State College, Murray
Transylvania College, Lexington
University of Kentucky, Lexington
University of Louisville, Louisville
Villa Madonna College, Covington
Western Kentucky State College, Bowling Green

Indiana
Anderson College, Anderson
Butler University, Indianapolis
Concordia Senior College, Fort Wayne
DePauw University, Greencastle
Earlham College, Richmond
Evansville College, Evansville
Franklin College of Indiana, Franklin
Goshen College, Goshen
Hanover College, Hanover
Huntington College, Huntington
Indiana Central College, Indianapolis
Indiana State College, Terre Haute
Indiana University, Bloomington
Manchester College, North Manchester
Purdue University, Lafayette
St. Francis College, Fort Wayne
St. Mary-of-the-Woods College, St. Mary-of-the-Woods
Taylor University, Upland
Valparaiso University, Valparaiso
Wabash College, Crawfordsville

PUBLIC HEALTH EDUCATOR (5 to 6 years)

Indiana
Indiana University, Bloomington

PUBLIC HEALTH NURSE (4 to 6 years)

Ohio
Ohio State University, Columbus
University of Cincinnati, Cincinnati

Kentucky
University of Kentucky, Lexington

Indiana
Indiana University, Bloomington

PUBLIC HEALTH SANITARIAN (5 years)

Indiana
Indiana University Medical Center, Indianapolis

PUBLIC HEALTH STATISTICIAN (4 to 5 years)

Any accredited college or university offering a minor or major in statistics.

RADIOLOGIC TECHNOLOGIST (X-RAY) (2 years)

Ohio

Akron City Hospital, Akron
Akron General Hospital, Akron
Aultman Hospital, Canton
Barberton Citizens' Hospital, Barberton
Children's Hospital, Akron
Christ Hospital, Cincinnati
Cincinnati General Hospital, Cincinnati
Cleveland Clinic Educational Foundation, Cleveland
Cleveland Metropolitan General Hospital, Cleveland
Doctors Hospital, Cleveland
Elyria Memorial Hospital, Elyria
Euclid-Glenville Hospital, Euclid
Flower Hospital, Toledo
Fort Hamilton Hospital, Hamilton
Fisher-Titus Memorial Hospital, Norwalk
General Hospital, Mansfield
Good Samaritan Hospital, Cincinnati
Good Samaritan Hospital, Dayton
Good Samaritan Hospital, Sandusky
Good Samaritan Hospital, Zanesville
Huron Road Hospital, Cleveland
Jewish Hospital, Cincinnati
Kettering-Memorial Hospital, Dayton
Lancaster-Fairfield County Hospital, Lancaster
Licking County Hospital, Newark
Marymount Hospital, Garfield Heights
Maumee Valley Hospital, Toledo
Medina Community Hospital, Medina
Mercy Hospital, Canton
Mercy Hospital, Hamilton
Mercy Hospital, Portsmouth
Mercy Hospital, Toledo
Miami Valley Hospital, Dayton
Mt. Sinai Hospital, Cleveland
Ohio Valley Hospital, Steubenville
Ohio State University, Columbus
Our Lady of Mercy Hospital, Cincinnati
Providence Hospital, Sandusky
Riverside Hospital, Toledo
Riverside Methodist White Cross Hospital, Columbus
Robinson Memorial Hospital, Ravenna
St. Alexis Hospital, Cleveland

St. Charles Hospital, Oregon
St. Elizabeth Hospital, Dayton
St. Elizabeth Hospital, Youngstown
St. Francis Hospital, Cincinnati
St. John's Hospital, Steubenville
St. Joseph Hospital, Lorain
St. Luke's Hospital, Cleveland
St. Luke's Hospital, Toledo
St. Rita's Hospital, Lima
St. Thomas Hospital, Akron
St. Vincent's Hospital, Toledo
St. Vincent's Charity Hospital, Cleveland
Southwest Community Hospital, Berea
Stouder Memorial Hospital. Troy
Toledo Hospital, Toledo
Trumbull Memorial Hospital, Warren
Union Hospital Association, Dover
University Hospitals of Cleveland, Cleveland
Youngstown Hospital Assn.. North Side Unit, Youngstown
Youngstown Hospital Assn.. South Side Unit, Youngstown

Kentucky
Central Baptist Hospital, Lexington
Good Samaritan Hospital, Lexington
Hopkins County Hospital, Madisonville
King's Daughters' Hospital, Ashland
Kentucky Baptist Hospital, Louisville
Louisville General Hospital, Louisville
Lourdes Hospital, Paducah
Norton Memorial Infirmary, Louisville
Owensboro-Daviess County Hospital, Owensboro
St. Anthony Hospital, Louisville
St. Elizabeth Hospital, Covington
St. Joseph Hospital, Lexington
St. Joseph Infirmary, Louisville
Sts. Mary & Elizabeth Hospital. Louisville
Wm. Booth Memorial Hospital. Covington

Indiana
Ball Memorial Hospital, Muncie
Elkhart General Hospital, Elkhart
Good Samaritan Hospital. Vincennes
Indiana University Medical Center. Indianapolis
Lutheran Hospital. Fort Wayne
Methodist Hospital. Gary

Methodist Hospital, Indianapolis
Memorial Hospital, South Bend
Parkview Memorial Hospital, Fort Wayne
Porter Memorial Hospital, Valparaiso
Protestant Deaconess Hospital, Evansville
Reid Memorial Hospital, Richmond
St. Anthony Hospital, Terre Haute
St. Catherine Hospital, East Chicago
St. Joseph's Hospital, Fort Wayne
St. Margaret's Hospital, Hammond
St. Mary's Hospital, Evansville
St. Vincent's Hospital, Indianapolis

RECREATION EDUCATION TEACHER (4 years)

Ohio
Central State College, Wilberforce
Findlay College, Findlay
Kent State University, Kent
Ohio State University, Columbus

Kentucky
Asbury College, Wilmore
University of Kentucky, Lexington
University of Louisville, Louisville

Indiana
Butler University, Indianapolis
Franklin College, Franklin
Indiana State College, Terre Haute
Indiana University, Bloomington
Purdue University, Lafayette

REHABILITATION COUNSELOR (5 to 6 years)

Ohio
University of Cincinnati, Cincinnati

SOCIAL WORKER (5 to 6 years)

Ohio
Cincinnati Center of Ohio State University, University of Cincinnati, Cincinnati
Ohio State University, Columbus
Western Reserve University, Cleveland

Kentucky
University of Louisville, Louisville

Indiana
Indiana University, Bloomington

SPEECH AND HEARING THERAPIST (4 to 5 years)

Ohio
Ohio State University, Columbus
University of Cincinnati, Cincinnati

Kentucky
Nazareth College of Kentucky, Nazareth
University of Kentucky, Lexington
Ursuline College, Louisville

Indiana
Ball State University, Muncie
Indiana State College, Terre Haute
Indiana University, Bloomington
Purdue University, Lafayette

VETERINARIAN (DOCTOR OF VETERINARY MEDICINE)
(6 to 8 years)

Ohio
Ohio State University, Columbus

Indiana
Purdue University, Lafayette

X-RAY TECHNOLOGIST (2 years)
(See Radiologic Technologist)

Oct 1966
19M

VT 008 656
A Summary of Enrollment and Enrollment Termination in the Farm Management Education Program from December 1, 1955 to December 1, 1968.

Independent School District 742, St. Cloud, Minn. Agriculture Dept.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 68 9p.

*FARM MANAGEMENT; *ADULT FARMER EDUCATION; *AGRICULTURAL EDUCATION; FARM ACCOUNTS; *DROPOUT RESEARCH; PROGRAM DESCRIPTIONS; DROPOUT CHARACTERISTICS; DROPOUT IDENTIFICATION; STUDENT ENROLLMENT; *PROGRAM EVALUATION
ST. CLOUD; MINNESOTA

Statistical data reporting enrollment and termination figures for an adult farm management program from 1955 through 1968 are reported for 89 farms and 98 farm operators. Reasons farmers terminated the farm management education program were: (1) Five farmers transferred to other schools, (2) Four farmers retired, (3) Six farmers quit farming, (4) Three farmers died while on the program, (5) One could not attend because of family problems, (6) One disliked the Minnesota farm record book, (7) Two were drafted, and (8) One left farming because of a parent-son problem. Two of 98 operators or 2.04 percent of the enrollment could be described as dropouts over a 12-year period. A longer-tenure stable enrollment and sound educational program has resulted in expansion to: (1) farm management classes at three elementary centers outside of St. Cloud, (2) a cooperative farm management program with school districts whose boundaries are contiguous to St. Cloud, (3) a post-adult program, and (4) the establishment of enterprise classes for those who may not be taken care of or want a full time management program. (DM)

VT 008 656

ED039370

A Summary of Enrollment and Enrollment Termination

From
December 1, 1955 to December 1, 1968

In the
Farm Management Education Program
Agriculture Department, Technical High School
Independent School District 742
St. Cloud, Minnesota

Edward J. O'Connell
Local and Area Voag Program Coordinator

James K. Michie
Superintendent of Schools

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT008656

A Summary of Enrollment and Termination
For the Period December 1, 1955 to December 1, 1968
St. Cloud Farm Management Program
Agriculture Department, Technical High School
Independent School District 742
St. Cloud, Minnesota

Introduction

This summary considers the eighty-nine farms and the ninety eight operators who lived on thes' farms. For the purposes of this summary we have considered the 98 operators as the individual adults enrolled in the farm management educational program. We did not include the wives in the statistics because such wouldn't change the statistics. Most all wives participated in class,as well as in individual instruction, a great share of the time.

The instructors in the department have been employed as follows:

1. Raymond A. Anderson was employed in July 1, 1955. He was on half time high school and half time adult farm management from July 1, 1955 until July 1, 1966. He has been a full time instructor in farm management since July 1, 1966.

2. Mr. Robert Underwood was employed on July 1, 1960. He has always been employed as half time high school and half time adult farm management since 1960.

3. Mr. O"Connell's experiences in the school area and other local programs of adult agriculture education started in 1940, when the department was opened at St. Cloud. He started work on coordination of the area vocational agriculture education in fifteen central Minnesota counties on a thirty percent time allocation in the 1959-60 school year.

In 1963-64 the time share was increased to ninety percent on area work and ten percent to local supervision.. There were 282 farmers and 19 instructors represented in the area farm management summary for the 1967 analysis.

All farmers have attended classes at the St. Cloud Department Center. Prior to 1967 most all farmers were within the high school area served by St. Cloud.Present school district reorganization has resulted in some farmers being in other districts where high schools do not provide an opportunity for adult farm management education.

This summary is completed at the time plans are being considered for an expanded program in the district, in contiguous districts and in the schools in the fifteen county area.

A Summary of Enrollment and Termination
For the Period December 1, 1955 to December 1, 1968
Saint Cloud Farm Management Education Program
Agriculture Department, St. Cloud, Minnesota

Class by teacher First yr. of Analysis	R.A.Class 1956		R.A.Class 1957-60		R.A.Class 1966-67		R.A.Class 1964-C.S.		R.A.Class 1964-65		Total Column	
	Farm	Op.	Farm	Op.	Farm	Op.	Farm	Op.	Farm	Op.	Farm	Op.
Number of farms started	12		29		18		16		14		89	
Number of operators on farms		15		30		20		17		16		98
Reasons for Termination:												
1. Transferred to a program at another school	3	4	1	1	0	0	0	0	0	0	4	5
2. Dad retired - sons took over, enrolled in program	2	4	0	0	0	0	0	0	0	0	2	4
3. Operator stopped his farm family operation	2	2	4	4	0	0	0	0	0	0	6	6
4. Death of Operator	1	1	1	1	0	0	0	0	1	1	3	3
5. Couldn't attend class	0	0	1	1	0	0	0	0	0	0	1	1
6. Didn't like the Minn. Account Book	0	0	1	1	0	0	0	0	0	0	1	1
7. Drafted into the Armed Services	0	0	0	0	1	1	0	0	1	1	2	2
8. Sold the Farm	0	0	0	0	1	1	0	0	1	1	2	2
9. Other reasons	0	0	0	0	0	0	0	0	0	0	0	0
Total Terminations	8	11	8	8	2	2	0	0	3	3	21	24
Remainder of Original Class	4	4	21	22	16	18	16	17	11	13	68	74
Terminators who returned to class at a later date	0	0	0	0	2	2	0	0	0	0	2	2
Number of Operators Dec. 1968		4		22		20		17		13		76
Number of Farms Dec. 1968	4		21		18		16		11		70	

Per Farm Statistics Basic to the Summary

Details that describe the reasons why farmers terminated their farm management education program are listed as follows:

1. Five farmers, code numbers 2-4-9-11 and 31, transferred to other schools. Four farmers have been attending classes at another school (Foley). One is in an area where instruction isn't available. This farmer, code 4, will continue the analysis program at St. Cloud and may receive help on call at least once or twice a year.

   Code 2 - 4 years analysis - 1956-1959
   Code 4 - 10 years analysis - 1956-1965
   Code 9 - 9 years analysis - 1956-1964
   Code 11 - 9 years analysis - 1956-1964
   Code 31 - 3 years analysis - 1959-1961
   Consequently ~~on~~ nineteen farms terminated their programs.

2. Four farmers, code number 4-5-6 and 11 retired. The sons of these farmers have taken over these farms. These sons are also enrolled in another class section. Although farmer 17 retired, with no one to take over, we listed him under the retirement reason..

   Code 4 - 9 years analysis -1956-1965
   Code 5 - 1 year analysis -1956-1956
   Code 6 -12 years analysis -1956-1967
   Code 11 -9 years analysis -1956-1964
   Code 17 - 6 years analysis -1957-1962

3. Six farmers quit farming. They were codes 7-12-17-24-26 and 34. Code 7 and 12 are still farming but live in the urban growth pattern in west St. Cloud. Code 17 retired but final plan for son to take over isn't completed.. Code 24 is an airline pilot who has gotten out of farming as he was while on the program. Code 26 had a father who refuses to accept current agriculture nor let the son take over the farm. Consequently the son had to quit and took a non farm job this winter. Code 34 decided to sell out to the neighbor who is code 122 on the program. Code 34 is about age 45 and took a non-farm job as he moved to town. Our opinion is that the facts made available, along with individual instruction, was as valuable in getting these people out of farming as it may be to others whom we attempt to establish on a farm.

   Code 7 - 9 years analysis - 1956-1964
   Code 12 - 6 years analysis - 1956-1961
   Code 17 - 6 years analysis - 1957-1962
   Code 24 - 4 years analysis - 1960-1963
   Code 26 - 9 years analysis - 1959-1967
   Code 34 - 4 years analysis - 1960-1963

4. Three farmers, code 10-35 and 120 died while on the program. Two died from cancer, one from a fireworks explosion. In all cases our instructor was farm counselor in the closing up of the estate and in one case in counseling code 6 about buying the farm from the father of the dead son who was code 120.

   Code 10 - 10 years analysis 1956-1965
   Code 35 - 4 years analysis 1961-1964
   Code 120-4 years analysis 1964-1967

5. Farmer 19 could not attend class because of family problems, thus quit the class.

   Code 19 - 2 years analysis 1958-1959

6. Farmer 22 had been in a neighbor school G.I. program where he had become sour on the Minnesota Farm Record Book, after the first analysis he quit the class because of the reason he gave us. It is our opinion that there may have been other reasons for his attitude on not continuing in class.

   Code 22 - 1 year analysis - 1958

7. Farmer 44 was drafted in 1967. He has returned to the program. Farmer 106 was also drafted and returned home. So far he has not volunteered nor been recruited back. We feel that the parents accounting system is considered, their own private system and perhaps the boy isn't going to have much to say for some time...

   Code 44 - 1 year analysis - 1966
   Code 106- 1 year analysis - 1964

8. Farmer 107 sold out because of a parent-son problem at home. The educational activity of the son had to be terminated as a result.

   Code 107 - 1 year analysis _ 1965

9. We have not found any other reasons for termination. We have been satisfied the more definite reasons used were truly representative of the situation.

Conclusions About Terminations

1. Enrollment terminations included 24 adults. Since five who terminated from the St. Cloud program have enrolled for further education there were only nineteen farmers out of a total of 98 farmers who actually terminated their educational opportunity.

2. Only six of the 24 farmers terminated had only one year of education and one year of analysis. Four operators had as few as a three year term. The remaining fourteen operators were in the program for four or more years. These were in what we consider to be in an advanced class but in a situation of need where education must progress with a progressive farmer primarily in times of farm organization, planning and important decision making.

   Thus 6/98 or 6.1% had only year of education, 1/98 or 1.02% had two years of education, 4/98 or 4% had three years of education, 14/98 or 14.2% had from four to nine years of education..

3. If we confine termination to the nineteen who receive no more education we can conclude that 6/19 or 31.5% had a year of instruction, 3/19 or 15.8% had three years of instruction and 10/19 or 52.7% had four or more years of instruction. Seventeen of the nineteen farmers terminated because of farm problems that followed an educational enrollment period of four or more years.

4. Only two cases, code 19 under reason five and code 22 under reason six, were cases where terminations might be considered as program dropouts. Thus only two of 98 operators or 2.04% of the enrollment could be described as dropouts over the twelve year period from December 1, 1956 to December 1, 1968.

Personal Interpretation of Reasons

Why the Dropout Problem Has Been Eliminated

The interpretations are based on past teaching experience, farmer comments, teacher discussions and the results based primarily on the concept that farm management education should be "an organized program of instruction."

1. The original recruitment of a cooperative key group of twelve farm families set the stage for a community illustrative of what management education was in 1956 and 1957. The enrollment made in 1958 and 1959 were an accrual of the illustration in 1956. Several transfers and contacts from these two class groups were the basic for initiation of the program at Foley High School at the time their G.I program was concluding. Although an advisary committee wasn't used, much advice was gotten from selected sources as were experiences in the key action group.

2. Enrollment has been added in complete or almost complete blocks of farmers. These class units could be handled as class units for at least four or five years before being blended in with other classes of similar tenure. We noticed several advantages to the farmer and teacher by having educational work developed around the class units of families and farms a package of responsibility.

3. Experience has shown that farmers who are enrolled have sold the program to other farmers. Recruitment of future enrollment has become a matter of an instructor contacting farmers who already have an interest to talk about and a need for farm planning, organization, accounting, decision making and the latest in agricultural practices. Several farmers took neighbors to class who later were our class enrollees. We haven't specifically recruited enrollment since 1956-1957. We have avoided having to accept farm families who were "unknown" to us without turning down people who showed interest in enrollment.

4. Every class group has always had ten, eleven or twelve class sessions per year. At least ten of the sessions were always taught by the local teacher not an outside speaker. Local statistics indicate a definite correlation between class attendance and successful farm results. Class instruction has been based on principles, objectives, and needs of the farm families. Some parts of course of study guidelines from various sources were valuable while other parts were useless. An attempt to keep an eye on how the dollar of income was purchased to meet family goals and living standard of the people has always backgrounded teaching. Farmers have always gotten four to six visits per farm per year. Visits are counted per farm not per number of individuals on a farm. Thus a visit to a farm with two operators and two wives is one visit, not four visits to accumulate instructional hours in a report.

5. The format and system of farm business analysis used has been a key tool used in the teacher's instructional activity as well as the farmers decision making activity. In 1946 the coordinators revised the research format of farm record analysis used at the University of Minnesota to a more simple individual form business analysis. This simplified format, with the same end product, set the stage for much greater use of analysis as a tool of instruction in the case study approach to the individualistic nature of farms, farmers, and instructors.

The preparation of the individual farm business analysis by the teacher during the first two, three or possibly more years required the teacher to learn, interpret and apply the analysis tool and product to class and individual instruction. This resulted in positive involvment and communication between farmer, wife, teacher and, in many cases, credit agencies. This served to keep teaching people and teaching farm management in balance. Although it may be difficult to document, our experiences here were most valuable in keeping in tune with the economic, social and human factors involved in farm management education.

6. The teacher is usually the key to the success of most educational programs. Each teacher has planned his use of time within his interest, dedication and the future plans. Each teacher was responsible for his full time or half time job without much interruption from activities outside his job package.

The experiences of the coordinator in the local district or central area influenced the development of organization, the concepts and principles that for the most part controlled or eliminated factors or problems that may have been detremental to the program.

7. The combination of successful results on the part of farmers and an enrollment tenure of four-five years has provided two main values to us. (1) The value of time necessary to achieve results over a long period of time on a farm in contrast to the shorter period of time that we think we can teach farm management. (2) Long term enrollment tenure has provided us with a program status in our community and teacher experience we would not have gotten otherwise. These values may have offset the value of adding more new enrollment by decreasing the educational time given to long tenured enrollment. We have started a plan to extend further on the decreasing of time to tenured enrollment This may allow us to add new enrollment with present or additional staff as work load allows.

8. The elimination of dropuouts, the use of a longer tenured stable enrollment and sound educational program has set the stage for these areas of an expanded program at St. Cloud.

1. Farm management classes at three elementary centers outside of St. Cloud in the rural area.

2. A cooperative farm management program with school districts whose boundaries are contiguous to St. Cloud. (This could be a trade central program larger than our present program, larger than item one above but not part of the area program for the fifteen county area.)

3. A post adult program need for a very limited amount of educational and the services of farm records and their analysis.

4. The establishment of "enterprise classes" for those who may not be taken care of or want a full time management program.

CHANGES IN C RTAIN ECONOMIC FACTORS ON FARMS
IN THE ST. CLOUD F RM MANAGE ENT PROGRAM

May 1969

Robert Underwood - 26 Farms *	Total for 1968	Starting Year	The Change	Average For 1968	Average Starting	The Change
1. Total cash operating expenses	$ 398,250	279,185	119,065	15,332	10,748	4,534
2. Machinery Equip., R. Estate bought	168,056	71,136	96,920	6,470	2,739	3,731
3. Total cash farm purchases	$ 566,306	$[illegible]0,321	215,985	21,802	13,487	8,315
4. Total cash operating income	$ 589,199	416,126	173,073	22,684	16,021	6,663
5. Machinery, Equip., R. Estate sold	1,620	250	1,370	62	10	52
6. Total cash farm sales	$ 590,819	416,376	174,443	22,723	16,031	6,715
7. Net cash farm income (6 - 3)	$ 24,513	66,055	- 41,542	944	2,544	- 1,600
8. Return to capital and labor	244,680	129,254	115,426	9, 420	4,976	4,444
9. Labor earmings to operator	171,662	79,560	92,102	6,609	3,063	3,546
10. Farm capital investment	$1,460,283	941,549	518,734	56,221	36,2[illegible]	19,972
Ray Anderson - 38 Farms						
1. Total cash operating expenses	$ 572,946	313,644	259,302	15,077	8,254	6,823
2. Machinery, Equip., R. Estate bought	300,987	139,886	161,101	7,920	3,681	4,239
3. Total cash farm purchases	$ 873,933	453,530	420,403	22,997	11,935	11,062
4. Total cash operating income	$1,018,842	523,466	495,376	26,810	13,775	13,035
5. Machinery, Equip., R. Estate sold	28,396	4,983	23,413	747	131	616
6. Total cash farm sales	$1,047,238	528,449	518,789	27,557	13,906	13,651
7. Net cash farm income (6 - 3)	$ 173,305	74,918	98,387	4,560	1,971	2,589
8. Return to capital and labor	$ 490,050	230,435	259,615	12,895	6,064	6,831
9. Labor earnings to operator	$ 381,536	158,538	223,048	10,041	4,172	5,869
10. Farm capital investment	$2,290,707	1,319,672	971,035	60,279	34,728	25,551
TOTALS BOTH GROUPS, 64 FARMS						
3. Total cash farm purchases	$1,440,239	803,852	636,387			
6. Total cash farm sales	$1,638,057	944,825	693,232			
7. Total net cash farm income	$ 197,818	140,973	56,845			
8. Return to capital and labor	$ 734,730	359,689	375,041			
9. Labor earnings to operator	$ 553,248	238,098	315,150			
10. Total farm capital investment	$3,750,990	2,261,221	1,489,769			

Note: * Classes st rted in 1965 or 1966.
** Classes represent farms from four different classes since 1956.

VT 008 658
Multiple-Class Teaching Procedures Used in Small Group Experimental Business Education Classes.

New York State Education Dept., Albany. Bureau of Business and Distributive Education
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 64 19p.

*BUSINESS EDUCATION; *BUSINESS EDUCATION TEACHERS; *SMALL SCHOOLS; *MULTIGRADED CLASSES; *TEACHING METHODS; SMALL GROUP INSTRUCTION

A variety of teaching procedures were used in an experimental effort to broaden the business subject offerings and improve the quality of business education in several schools in New York state which employed 2 or less full-time business teachers. Some of these were: (1) utilizing correspondence instruction to increase the number of offerings, (2) developing more flexible schedules in order to take care of exceptional cases, transfers, and other problems, (3) developing the concept and utilization of noncertified people as school aids in order to provide assistance for teachers, principals, and other school personnel, (4) sharing educational services, and (5) developing multiple class instruction where two or more areas are taught to two or more different groups, in the same classroom at the same time by one teacher. Discussed in the document are: (1) advantages of multiple classes to pupils, and to administration and guidance, (2) learner guides, (3) some examples of multiple classes, (4) school aids, (5) supervised correspondence courses and materials, (6) considerations prior to experimentation, and (7) some hints to teachers. A selected bibliography is appended. (MM)

VT 008 658

ED039370

Multiple-Class Teaching Procedures Used in Small Group Experimental Business Education Classes

(A report of some experiments conducted in schools with less than two full-time business teachers)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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VT 008 658

This report was developed in cooperation with the Catskill Area Project in Small School Design.

The University of the State of New York
The State Education Department
Bureau of Business and Distributive Education
Albany, 1964

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3/5

Introduction

This is a report of some experimental efforts to broaden the business subject offerings and improve the quality of business education in several schools in the Catskill region of New York State which employ two or less full-time business teachers. This report of multiple-class teaching procedures summarizes the work of some experienced business teachers who, for the past several years, have volunteered to carry out planned educational experimentation under the sponsorship of the Catskill Area Project in Small School Design.

In most instances, the number of business subjects that can be offered in a secondary school is directly proportional to the number of full-time business teachers employed. This places a limitation on the educational offerings available to interested students in the smaller schools unless some way can be found to increase the subject offerings. While the school centralization movement in New York State has materially reduced the number of smaller schools, there still remain approximately 350 schools that employ two or less full-time business teachers. Unless some way can be found to broaden the subject offerings in these schools, the program available, particularly for realistic vocational business training, is likely to be quite limited when considered in terms of pupils with a wide range of career interests, aptitudes, and abilities.

A variety of teaching procedures was tried out in carrying on the educational experiments. Some of the more significant procedures were:

- Utilizing correspondence instruction to increase the number of offerings
- Developing more flexible schedules in order to take care of exceptional cases, transfers, and other such problems
- Developing the concept and the utilization of noncertified people as school aides in order to provide assistance to teachers, principals, and other school personnel
- Sharing educational services
- Developing multiple-class instruction where two or more areas are taught to two or more different groups, in the same classroom at the same time by one teacher

The experimental procedure which perhaps offers the greatest potential contribution for extending business education in the smaller schools is that of multiple-class teaching. While this is by no means an innovation, the experimentation carried out, perhaps for the first time, represents a type of teaching activity that was deliberately and carefully planned for

the secondary school level. In order to utilize effectively the multiple-class teaching-procedure, it has been found necessary to utilize to an increasingly greater extent a variety of human resources and some of the newer electronic and mechanical teaching aids. It is interesting to know that as many as 60 different multiple classes have been in operation at one time in the approximately 25 Catskill Area Project schools.

While this brochure is intended primarily to be an "idea stimulator" for the smaller schools, many of the suggestions included are equally applicable to small group instruction in the larger schools as long as the enrollment in multiple classes is kept somewhere near the optimum size of 15 pupils.

School personnel who plan to use the suggestions included in this publication (or variations of them) should first carefully review the section entitled, "Considerations Prior to Experimentation."

Several of the business teachers of the Catskill Area Project who conducted multiple classes have assisted in the preparation of this booklet. Their experiences are worthy of consideration by other business teachers who may be interested in similar experiments or try-out situations. These teachers are:

Regis Hammond, Downsville Central School
Marion Hoagland, Grand Gorge Central School
Sara Miller, Worcester Central School
Peter Parnell, Roxbury Central School
Mary Scott, Andrew S. Draper Central School, Schenevus

During the time that this booklet was being prepared, Margaret Deal and Lloyd A. Taylor, of the New Berlin Central School, met with the above teachers and made important suggestions.

Evelyn Hodgdon and Lyle E. Roberts, associates on the Catskill Area Project staff, also contributed valuable information regarding over-all purposes and philosophy.

Louis R. Rosettie of the staff of the Bureau of Business and Distributive Education served as a consultant to the business teachers experimenting in the Catskill Area Project and co-ordinated the efforts of the curriculum committee that prepared this brochure.

The staff of the Bureau of Business and Distributive Education would be pleased to learn of the reactions of local school personnel as to the contents of this brochure and of any experiments which they may conduct.

JOSEPH R. STROBEL
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JOHN E. WHITCRAFT
Chief
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What Are the Advantages of Multiple Classes to the Pupils?

Teachers who have been handling classes of this type list these advantages. The pupil:

1. Receives more individualized instruction.
2. Has a greater opportunity to develop initiative because he must take more responsibility for his own learning.
3. Takes a more active part in the evaluation of his work, thereby developing a greater degree of responsibility for his own learning.
4. Is able to progress at his own rate of speed.
5. Feels the need to develop better study habits.
6. Feels freer to participate in small group activities.

Special Considerations Regarding Multiple Classes

What Must the Teacher Do?

1. Adopt the philosophy that pupils can learn on their own, and de-emphasize the idea that learning takes place only under his direct supervision.
2. Accept the role of consultant and guide as opposed to lecturer and questioner.
3. Spend greater time in preparation.
4. Be even more versatile so that he can adapt to most situations readily and be available to help individuals as needed.
5. Prepare aids to enable pupils to go forward by self-direction.
6. Spend adequate time in orienting the pupils to this new classroom environment.

What May the Teacher Find Useful?

1. Use of long-term assignments—weekly or unit plan rather than daily.
2. Use of correspondence course materials.
3. Increased use of audio, visual, and electronic aids.
4. Allowing pupils to assist one another.
5. Assistance of school aide personnel.

What Must the Pupil Do?

1. Work for improved study habits.
2. Make better use of instructional materials.
3. Develop self-discipline so that time can be used to advantage.
4. Develop ability to work with other pupils.
5. Be able to assess his own strengths and weaknesses more accurately, and know when to ask for help.

What Instructional Materials and Facilities Are Desirable?

While no special equipment or facilities are actually needed, teachers have found that the use of the following types of helps has made working with multiple classes easier:

1. Duplicated learner guides (see page 14) or outlines containing summaries or highlights of units.
2. Weekly or unit assignments.
3. Tapes and records with work sheets to accompany them.
4. Listening devices—earphones enabling groups to listen while others work in another area.
5. Greater variety of materials for different levels of accomplishment.
6. Partitions for sectioning rooms.

Note: The teacher is the key. All the teaching aids in the world will not guarantee success unless the teacher wishes the system to succeed and is willing to make some changes from former teaching methods.

What Are Some Things To Avoid?

1. Going all out too soon—select an area that is adaptable to this technique.
2. Evaluating the entire experiment on the basis of one unit of work.
3. Letting pupils go forward on their own without covering basic fundamentals of subject matter.
4. Worrying about the time—it is all right to spend 35 minutes or a full period with one group occasionally.
5. Combining groups with a wide range in age (freshmen with seniors).
6. Enrollments which exceed the suggested optimum size of 15 pupils.

What Are the Advantages of Multiple Classes to Administration and Guidance?

Partial elimination of the alternation of courses aids in planning the pupil's 4-year program. In case of failure in a particular course, there is not a year's delay before it can be repeated. Now, with 18 credits required for graduation with a Regents diploma, business departments can probably expect increased enrollments and should be prepared to offer most courses each year. Subjects that would not ordinarily be offered at all because of insufficient demand can now be made available through multiple classes, thus making possible more sequences each year. Multiple classes also provide a method of handling transfer pupils because courses might not otherwise be offered in the school to which he transferred.

More efficient use of business classrooms, facilities, and equipment is made possible. Multiple classes also make the equipment available to a greater number of pupils.

The teacher's time is used more efficiently since multiple classes permit a more equitable pupil load and assist in the elimination of extremely small classes.

Learner Guides

A learner guide suggests materials, methods, and techniques that assist pupils in acquiring concepts, skills, factual material, and content.

A learner guide is intended to help pupils work independently.

A learner guide implies that the teacher . . .

1. Functions largely as a resource person and consultant.
2. Has over-all supervision of pupil-planning, timing, and use of the material.
3. Has direct face-to-face contact with the learner.

A learner guide may range from simple directions on the chalkboard for pupils to an extensive kit consisting of many kinds of materials, such as duplicated work sheets; teacher and commercially prepared tapes, discs, and belts; films and filmstrips; charts; programed lessons; and correspondence course materials.

A learner guide contains and provides comprehensive, flexible suggestions to assist the pupil in selecting work in keeping with his interests and abilities.

Samples of learner guides and certain related materials are included in loan packets which may be borrowed from the Bureau of Business and Distributive Education.

Some Examples of Multiple Classes

The examples of multiple classes which are described in this section are the ones that seem to illustrate best the most typical teacher-learner situations that were encountered by the business teachers of the Catskill Area Project during their experimentation. Other combinations of multiple business classes *not* discussed herein that *have been taught* successfully by teachers in the Catskill Area Project are:

Shorthand I, and shorthand II and transcription
Shorthand I, shorthand II and transcription, and personal typewriting
Typewriting I and personal typewriting
Introduction to business and typewriting I
Bookkeeping II and 12th-year vocational business practice
Shorthand II and transcription, and 12th-year vocational business practice

Business teachers may want to experiment with other multiple classes where local needs and pupil interests will be met. Some examples are:

Shorthand I and machine transcription
Shorthand II and transcription, and machine transcription
12th-year vocational business practice and machine transcription
Bookkeeping I and II
Distribution I and II

Bookkeeping and Business Arithmetic

Bookkeeping and business arithmetic are a combination that lend themselves to this type of classroom situation quite readily. A teacher in one of the project schools, using mimeographed guides for the pupils, has conducted a class of this type for a period of 3 years with equally good achievement by the pupils. One year two pupils were able to obtain credit for both courses, taking the business arithmetic Regents examination on a short-time basis.

The duplicated learner guides for bookkeeping call for the pupils to fill in answers on the sheets. They also provide the assignments for each chapter. The guides were designed to encourage and facilitate progress at the individual pupil's rate. The instructor also prepared a lesson tape for the 60-day, 6 per cent interest method, which has accompanying work sheets to be used by the pupils.

The pupils are encouraged to check their own work using the key. They decide for themselves whether they are ready to go to a new topic or whether they need additional practice problems on the current topic.

When the pupil feels he is ready, he requests test materials for the section on which he has been working. Minimum requirements have to be set, of course.

These multiple classes have had an average enrollment of 16 pupils.

Multilevel Business Law

Prior to the beginning of the school year. the teacher prepared learner guides for the pupils' use in business law. These guides outlined the main topics and principles of law to be covered in each unit. A variety of activities was presented in the learner guides in order to accommodate the expected levels of ability in the class. This multilevel class was organized into three groups: enriched. Regents, and modified. Actually, the guides were adaptable to individual use, and each pupil might do as many activities as he wished.

In planning the division of the class into three groups, the teacher first studied the record of each pupil. The teacher had taught many of the pupils in business courses in other years so he could determine fairly accurately the kind of work he might expect from each pupil. The teacher explained to the entire class that, since all of them were not taking business law for the same purpose, they would not all study the same books or do the same type of work. Since some people were interested in business law only as it might help them in meeting the problems of everyday living, they would study law with that thought in mind rather than with the Regents examination as part of their goal. Some would need to pass the business law Regents examination in order to satisfy the requirements for graduation; therefore, passing the Regents examination would necessarily become part of their goal along with the need of using business law for their own personal use.

A vocabulary list and a list of references which included the textbook were provided. The guide directed the pupils to read the textbook and at least one other reference. A series of assignments was listed, including case problems taken from various textbooks. Suggestions were also given for bulletin board displays, interviews at various business establishments, field trips, and discussions or skits that might be presented to the class. After the learner guides for the first topic in the unit were distributed, the teacher explained the important points to the entire class.

Some pupils then studied the reference of their choice while others read the textbook. Some pupils worked on the vocabulary list. The second day, after each pupil had studied the references, the pupils selected from the guides the assignments they would do. Some of them did the cases in the guides; some worked on the case problems in the text; others

worked in groups preparing bulletin board displays, planning panel discussions, or planning an interview with a local businessman.

The teacher set a minimum number of assignments which all pupils were expected to complete. Those pupils with lower than average ability would do the minimum. The pupils who were interested in securing Regents credit for business law were instructed by the teacher to do other activities in addition to the minimum. The enriched group would not do all the assignments completed by the first two groups but would select parts of each of those assignments plus other activities, such as outside reading on which they would report to the entire class, or more difficult and involved case problems. All these assignments were related to the same topic so that all pupils spent the same amount of time on each unit. It was not a question of preparing guides so that some pupils might finish the course in a shorter period of time but rather that the course content might be enriched for those pupils of outstanding ability and interest and, at the same time, be a course that would be interesting and meaningful to the pupils with less ability.

Short quizzes were given at the end of each topic, and full-period unit tests were given at the end of each unit studied. The same test was administered to all the pupils. Certain questions were designated as a minimum which all pupils were required to answer. An additional set of questions was to be answered by the pupils who were of Regents ability; and still another set of questions was presented to the enriched group, who would answer the minimum questions plus their own set.

Introduction to Business and Business Law

A multiple class of introduction to business and business law has also been conducted. Certain difficulties were encountered in this combination. The teacher felt that the following were drawbacks to the success of the class:

1. Both courses are of the discussion type.
2. Range in age was too great—the younger group did not work well independently.
3. Size of the groups was large—11 in one and 14 in the other.
4. Class had to be taught in a room other than the business room.

Acknowledging these difficulties, the results were as follows: Eight out of ten passed introduction to business—class average 75 per cent. All students passed the business law course—class average 77 per cent. Eleven out of twelve passed the business law Regents examination. One exceptional student took the Regents examination on a short-time basis and scored in the 90's.

Salesmanship and Typewriting

In planning for a multiple class in salesmanship and typewriting, one of the first things that had to be considered was room arrangement. The teacher had to arrange the furniture so that the sales group of seven pupils could hear each other above the nine typewriters. He had a screen (heavy dark green canvas, approximately 5 feet high) made that would slide between the two groups. This worked very well. It not only enabled the pupils to hear each other better, but also kept the sales group from watching the typing group. After the first week, however, the novelty of watching the typing group wore off.

During the first 2 weeks, the teacher spent almost all his time with the typewriting group. The sales group worked independently using learner guides and books that had been provided. These guides had been prepared prior to the opening of school. It helped a great deal to have these learner guides prepared ahead of time. They were based on three or four salesmanship books, booklets, and pamphlets in addition to the basic text. While the teacher worked with the typewriting group, the sales group looked up topics from these other books following the suggestions in the learner guides. There were not enough supplementary books for each pupil, so at times pupils would help each other and swap materials. While questions on the guide sheets as well as some in the text were discussed, the typewriting pupils would practice and complete work assigned them. The teacher was available to help individuals in each group as needed.

After the first few weeks, the typewriting group came into the room and immediately started to work on drill sentences for the first few minutes, during which time the teacher informed the sales group what they were to do. This sometimes was only a matter of continuing the work they had been doing. Then the teacher timed the typewriting group, gave any instructions, explained new work, and the like. If the sales group was at a point where it was ready to discuss questions, the typewriting group practiced lessons in their books. The teacher stood where he could observe the typewriting group while he worked with the other group. Occasionally, when the sales pupils were working on their own, the teacher spent almost the entire period with the typists.

Twelfth-Year Vocational Business Practice and Typewriting

When pupils were being scheduled for their fall classes, 25 registered for typewriting, and only 18 typewriters were available. The purchase of additional machines could not solve the problem because space and rooms were not available. Limiting the class to 18 pupils would not solve

the problem either, because of increasing enrollments in the years ahead. A multiple class of 12th-year vocational business practice (which is a multiple class in itself) and typewriting came into being to meet the needs of these pupils.

Because an orientation period is necessary for the 12th-year vocational business practice pupils, it will be to the teacher's advantage to prepare, before the opening of school, a list of the materials to be used throughout the course. This list may be duplicated and passed out to each of the 12th-year pupils. The materials mentioned should be available for the pupils to inspect and become acquainted with during the first week.

During the first few days, the orientation takes place in the pupils' laboratory period. This allows the teacher to carry on the teaching of the keyboard as he would in the regular typewriting class, because the 12th-year pupils will have begun their projects and can proceed. The same material is presented to the beginning typists in the multiple class as in a regular typewriting class.

When a typewriting pupil has difficulty with an exercise or a machine, in many instances, one of the 12th-year pupils can aid him. If the teacher is working with the typewriting group and a problem arises with one of the 12th-year pupils, one of the other 12th-year pupils may be able to aid his classmate without the teacher's being taken from the typewriting group.

From results shown thus far in the multiple group, it does not appear that the activity of the 12th-year group detracts from or hinders the progress of the beginning typists. It could be that the activity of the 12th-year group generates additional motivation in the typewriting group.

This type of multiple class is not intended to be a cure-all for accommodating class rosters, but it does look promising and challenging as a solution to some of the problems of scheduling and of meeting pupil needs.

Shorthand II and Transcription Plus Typewriting

Shorthand II and transcription plus typewriting make a good combination for multiple-class teaching. Both classes use the typewriter: one as a tool in transcription techniques, and the other for basic typewriting instruction. The shorthand II and transcription class meets for a double period. The first period is usually devoted to reading shorthand from the pupils' homework notes and to developing speed in taking dictation. The dictation, for the most part, is done by the teacher. However, recordings also may be used in repetitious exercises for building speed.

The second period of the shorthand II and transcription class is combined with the typewriting class. The multiple class is now arranged so that the shorthand pupils are seated in one area of the room, while tl

typewriting class is in another. A tape recorder, which is equipped with earphones, may be used for the shorthand pupils to take dictation for the day's transcription, or the dictation may have been given at the end of the first period. These possibilities allow the teacher to work with the typewriting class.

Activities common to both classes, such as care of the typewriter, changing the ribbon, use of the carbon, etc., allow for mutual demonstration techniques.

The teacher is available to help individuals in each group, as needed.

School Aides

The teacher of a multiple class may be assisted with some of the added duties through the services of a school aide. The amount of time the aide could spend with the teacher would, of course, depend upon the number of multiple classes being taught and the enrollment in these classes. Since the aide would probably not be a certified teacher, she would not assist in the actual instruction.

There are many clerical duties, however, that the school aide may perform, such as checking errors on typing papers, checking errors on shorthand transcription, errors on office typing practice sets (using key), and checking objective tests. In all these cases, the school aide merely indicates the error with a mark, and the teacher can then see at a glance the type of errors each pupil is making, plan for helping the pupil improve, and grade the paper.

The school aide may also mark report cards, make dictation belts for shorthand pupils, and supervise study halls. The school aide may assist the teacher by setting up audio-visual equipment, checking reference materials with the librarian, or gathering any other data the teacher may desire.

Supervised Correspondence Courses and Materials

One of the principal problems in teaching multiple classes is finding time to prepare material for the pupils that is worthwhile and is not just busy work. Supervised correspondence course materials may help a teacher, especially one who is just beginning a multiple class. These materials might be used in several ways:

1. As a supervised correspondence course—with the teacher in the room to aid pupils when necessary.
2. As supplemental material for the better pupils.
3. As drill and remedial work (depending on course) for slower pupils.

4. As an aid to the teacher in making lesson plans.
5. As a means of keeping the teaching load within reasonable bounds.

Two sources from which schools can obtain information concerning correspondence courses and materials are:

National University Extension Association, *Guide to Correspondence Study*. University of Minnesota. Minneapolis 14, Minn.

National Home Study Council. *Home Study Blue Book*. National Home Study Council. Washington 5, D. C.

Copies of these and several related publications are included in the loan packet entitled, "Materials for Use in Connection With Business Programs in the Small High School." This loan packet may be borrowed from the Bureau of Business and Distributive Education.

Considerations Prior to Experimentation

It is not suggested here that school districts hurriedly try out or adopt new practices merely because they are different or are claimed to hold promise. Changes must be made slowly with careful preparation of the faculty and of the community. Even then, it is to be preferred that work proceed on a trial basis in order that, at the end of a period of time, the school district may have some evidence on which to base a judgment as to whether or not the new practice is superior to the old.

Before deciding to attempt experimental classes similar to those described in this brochure, a teacher, along with his administrator and school guidance officer, should give consideration in terms of community need to all or some of the following questions.

1. What is the purpose of the experimental or try-out situation?
2. What is hoped to be accomplished?
3. Does it involve a change of content, method, or _____?
4. What is to be done?
5. How is it to be done?
6. How many pupils are involved?
7. Over what period of time?
8. Are there some controls to evaluate results?
9. What types of evaluations are to be used?
10. How is knowledge or skill to be tested?
11. What are the differences between the usual procedures and the experimental program?
12. Would the project be of value to business education generally if it were successful?
13. Does it prove (or substantiate) what is already known?
14. Is it usable in school situations other than the one in which it is being tried out?
15. Will it be recommended for schools of a certain size only?

Some Hints to Teachers Interested in Experimenting With Multiple Classes

1. In order to have some information for purposes of over-all evaluation at the conclusion of the experiment, business teachers may find it advisable to keep all or some of the following records:

   a. The time each pupil devotes daily to class work
   b. The time each pupil devotes daily to out-of-class work
   c. Number of days each pupil is absent
   d. Assignments and projects completed on schedule
   e. Appraisal of each pupil as to study skills and study habits
   f. Scores on intelligence, aptitude, and standard achievement tests (basic skills)
   g. Bases for end-point evaluations
   h. Comparative effectiveness of different learning devices and techniques used, such as. . . .
      (1) Printed materials
      (2) Audio materials
      (3) Visual materials
      (4) Other

2. Notify the Bureau of Business and Distributive Education in advance of the experiment, and request any assistance that the staff of the Bureau may be able to give.

3. Prior to starting the experiment, plan to visit one or more teachers who have carried on a multiple-class experiment.

4. If possible, obtain samples of learning guides that have been developed for use in similar multiple classes.

5. Borrow the loan packet available from the Bureau of Business and Distributive Education which contains materials that have already been developed.

6. Do not undertake such a project unless you believe in the idea and its possible advantages to the pupils.

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VT 008 666
Diversified Metals Occupations. Final Report.

Illinois State Board of Vocational Education and Rehabilitation, Springfield. Vocational and Technical Div.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Apr69 24p.

*PROGRAM DESCRIPTIONS; *METAL WORKING OCCUPATIONS; PROGRAM EVALUATION; *CURRICULUM; *TRADE AND INDUSTRIAL EDUCATION; *PROGRAM DEVELOPMENT; PROJECT TRAINING METHODS; OCCUPATIONAL CLUSTERS
ILLINOIS

This appraisal of a pilot study includes: (1) Introduction, (2) Organization, (3) Program Operation, (4) Evaluation Procedures, (5) Statistical Data, (6) Recommendations, and (7) Appendixes. The pilot program was conceived as a 2-year course, meeting a minimum of 550 minutes per week, 36 weeks per year, for a 3-year pilot study period. Major objectives of the diversified metals occupations program are: (1) to provide students with transferable skills for employment, (2) to provide students with competencies needed for a job cluster, (3) to cause an awareness of the broad skills and knowledge in metals, (4) to determine if a 2-year secondary level program is feasible, and (5) to provide an opportunity for vocational programs in schools of limited enrollment. Seventeen schools participated in the study. It was recommended that this program be approved as a regular vocational offering in trade and industrial occupations for Illinois high schools under the conditions as set forth by the Trade and Industrial Division of the State Board of Vocational Education and Rehabilitation. (GR)

VT 008 666

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DIVERSIFIED METALS OCCUPATIONS •

THE FINAL REPORT

AND EVALUATION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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APRIL 1969

State of Illinois
BOARD OF VOCATIONAL EDUCATION
AND REHABILITATION
Vocational and Technical Division
Springfield

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APPRAISAL OF PILOT DIVERSIFIED METALS OCCUPATIONS STUDY

I. Introduction

Trade and Industrial Education has traditionally been highly specialized, with course content selected for its contribution to the skills and knowledges of a single trade or occupation or closely related trades or occupations. This concept of preparation for employment has been effective, to a great degree, from the beginning of occupational training.

The Vocational Act of 1963 liberalized the former regulations and requirements for vocational programs, and also provided the opportunity for developing new and innovative vocational programs through experimental and demonstration projects and pilot programs. Following this liberalization in 1963, time and thought were given to the development of a somewhat different and more flexible program of instruction which could be tested and verified on a pilot basis. Mr. Eurus Stoltz, Chief of Trade and Industrial Education, sensed the expanding needs and development possibilities for such a pilot study and proposed a pilot program in the metals field to be called Diversified Metals Occupations. Possible areas of instruction were to include sheet metals, foundry, heat treating and tempering (Metallurgy), welding, and machine shop. Any three or more of these five units were acceptable as the basis of instruction.

The objectives of the Diversified Metals Occupations program may be stated as follows: (1) to provide the students with skills for employment which are also transferable from one situation to another, (2) to provide the students with skills and competencies required to perform in a "cluster" or "family" of closely related jobs, (3) to establish the fact that jobs in industry exist which require a broad coverage of skills and knowledges in the metals field, (4) to determine whether a two-year training program at the

junior-senior level can be devised which will provide training sufficient to lead to employment in any one or several of the areas of instruction, and (5) to provide to small and medium-sized secondary schools with adequate laboratory and shop facilities the opportunity to offer a vocational training program in trades and industry.

The D.M.O. pilot program was conceived as a two-year course, meeting a minimum of 550 minutes per week, 36 weeks per year, for a three year pilot study period. The program was initiated in the fall of 1966 and the three-year study was completed as of June 1, 1969.

II. Organization

Secondary schools which were invited to participate in the D.M.O. pilot study were very carefully chosen. Factors considered to be important to the evaluation of the study were: (1) a well-equipped unit shop metals laboratory, and (2) an instructor with several years of teaching in a unit metals shop. Twenty schools were contacted and invited to participate in the study. Each was visited by a Trade and Industrial supervisor who explained in detail the purpose, standards, benefits, implementation, and operation of the program to administrators and teachers. Proposals indicating a desire to participate in the pilot program were received from seventeen of the twenty originally contacted by the date set for closing the enrollment period.

The schools listed in Table I filed proposals (See Appendix for Proposal) and participated in the pilot study. Each school submitted a proposal (See Appendix for proposal), which set forth the details of program operation. Each school decided the three or more areas to be included in the program on the basis of need and laboratory facilities. Each school determined whether the pilot program would operate as a unit shop with all students in the same area at one time, or whether it would operate as a general

shop with several areas in action at the same time. Most schools decided to use the latter organization since equipment and space were limited in most situations. The fact that seventeen differing school shop situations were used as the testing ground for proving the program would indicate that a rather wide variety of physical situations were to report the relevancy of the program under varying conditions. Incidentally, these seventeen schools were geographically well distributed over the state (See Table II).

III. Program Operation

School enrollment in the seventeen participating schools varies from 273 at Marissa to 2,395 at Peoria Richwoods. The average enrollment is 914. A total of 15,541 students are enrolled in these 17 high schools. During the three-year pilot study, total enrollments in D.M.O. programs were: first year, 296, second year, 313, third year, 320; average enrollment per year, 310. A total of 943 students were enrolled in D.M.O. courses during the pilot study period.

As indicated earlier, schools were selected for participation in the pilot study which had facilities that lent themselves to the operation of three or more basic metalworking areas. Some were better equipped than others, but this variable was thought to be an advantage due to the wider situation exposure secured. Schools were not encouraged to up-grade their facilities during the three-year study, but several of them did. At least one school moved the metals shop to new quarters during the test period.

One of the desirable features of the Diversified Metals Occupations program is its adaptability to medium and small school situations which usually have only limited offerings in Trade and Industrial Education, or none at all. Nine of the seventeen schools operating the pilot program had at least one other Trade and Industrial program while eight had no other such

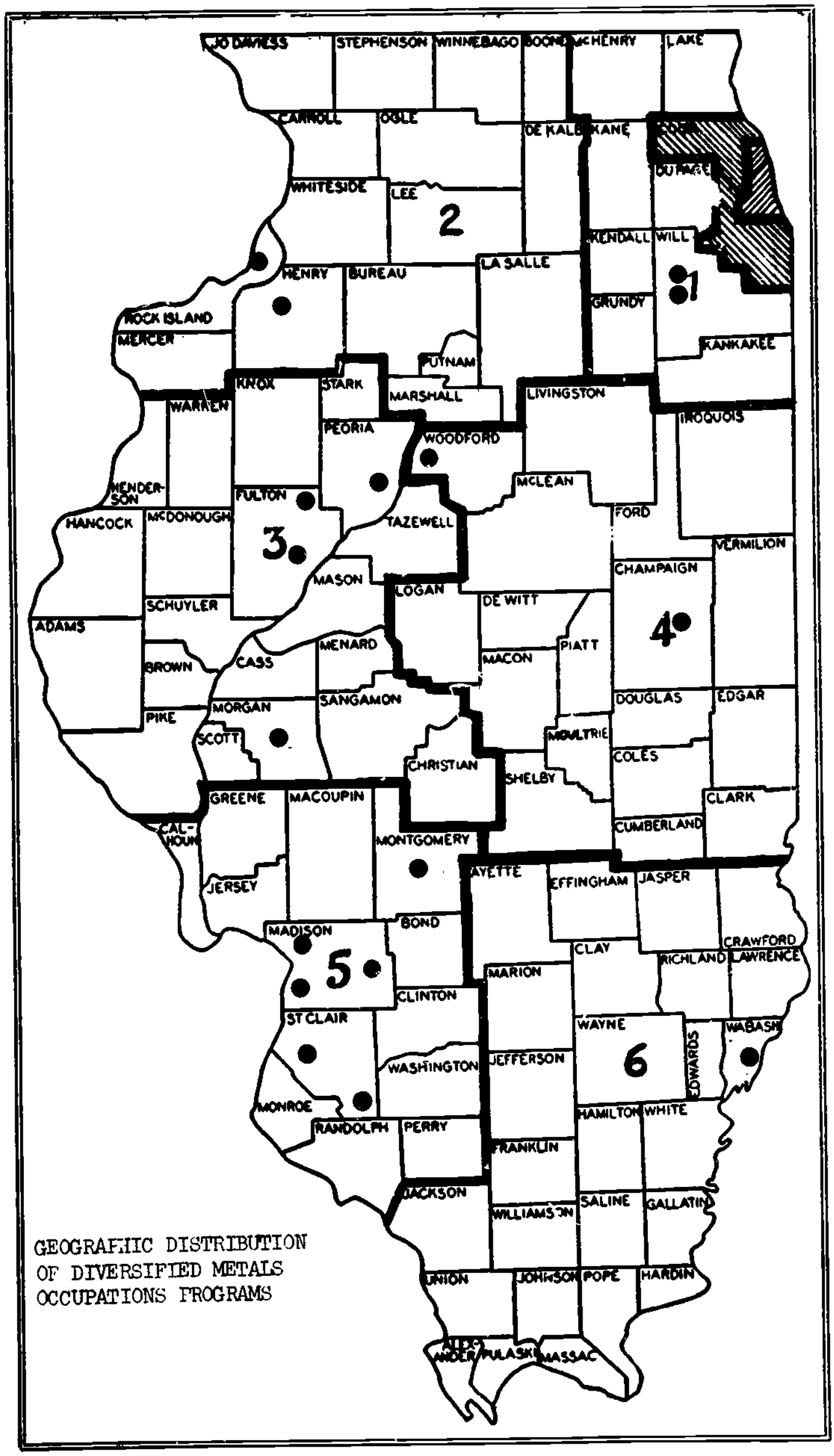
offering (See Table II). Only the three larger schools of the group (Lockport Central, Lockport West, and Urbana) had two other Trade and Industrial programs. The success of the D.M.O. program in schools which have not previously had vocational industrial programs indicates that it is a sound offering to initiate such programs into the schools.

SCHOOLS, TEACHERS, AND AREAS OF INSTRUCTION INCLUDED IN DIVERSIFIED METALS OCCUPATIONS PILOT PROGRAM.

TABLE NO. I

TOWN	SCHOOL	ENROLLMENT	Sheet Metal	Machine	Welding	Foundry	Heat Treating & Temperature	TEACHER
Bethalto	Comm. Unit H.S.	715	X	X	X	X		Virgil O. Vollmar
Dupo	Comm. Unit H.S.	494	X	X	X	X	X	Paul Stewart
Farmington	Comm. High Sch.	541	X	X	X	X	X	Ralph Fann
Geneseo	Comm. Unit H. S.	865	X	X	X	X	X	Ted McAvoy
Hillsboro	Comm. Unit H.S.	780	X	X	X		X	Dale Stretch
Jacksonville	Unit Dist. H.S.	1,436	X	X	X	X	X	Robert Allen
Lewistown	Comm. High Sch.	445	X	X	X	X	X	James Groutage
Lockport	Central H.S.	419	X	X	X	X	X	Frank Lundal
Lockport	West High Sch.	1,816	X	X	X	X	X	Richard Wunderlich
Madison	Comm. High Sch.	723	X	X	X	X	X	Olin C. Krueter
Marissa	Townhip High S.	273	X	X	X	X	X	Fred Mueller
Mt. Carmel	Comm. High Sch.	924	X	X	X	X	X	Philip Humphrey
Peoria	Richwoods H.S.	2,395	X	X	X	X		Donald Johnson
Port Byron	Comm. Unit H.S.	441	X	X	X			Philip Foster
St. Jacob	Triad High Sch.	599	X	X	X	X	X	Tony Yakos
Urbana	Unit Dist. H.S.	1,384	X	X	X		X	Jarrel Hofer
Washington	Comm. High Sch.	1,291	X	X	X	X	X	Richard Kerr

TABLE II



GEOGRAPHIC DISTRIBUTION
OF DIVERSIFIED METALS
OCCUPATIONS PROGRAMS

Standard procedure in Illinois is to set up vocational trade and industrial classes for a minimum of two clock hours per day or 550 minutes per week (except for Building Trades). This same time schedule was adhered to in the pilot study so that this variable would be controlled.

The pilot study was set up to cover a three-year period (September 1966 to June 1, 1969). It is felt that this three-year period is fairly typical of present-day industrial operation in Illinois. No extensive labor or management up-heavals have occurred, and it is believed the steady up-swing in job needs is typical of this decade. This would indicate that demands for workers so trained will continue to be about the same in the future as has been found in the past three years, except for some expected expansion.

SCHOOLS WITH PILOT DIVERSIFIED METALS OCCUPATIONS PROGRAMS HAVING REGULAR TRADE AND INDUSTRIAL PROGRAMS IN OPERATION DURING PILOT STUDY PERIOD (1966-69)

TABLE NO. III

SCHOOLS	Building Trades	Drafting	Auto Mechanics	Electricity Electronics	Cabinet Making	Industrial Cooperative
Bethalto				X		
Dupo		X				
Hillsboro		X				
Jacksonville						X
Lockport C.			X	X		
Lockport W.		X		X		
Marissa	X					
Mt. Carmel		X				X
Urbana					X	X

Schools participating in the pilot study were encouraged to provide instruction in areas of employment needs for industrial workers. Areas included should also be those which could be set up in a school shop in a fairly typical industrial situation. Most schools offered five metals areas, while a few offered four areas. Teachers set up their own rotation schedules to move students through the different areas. Students were permitted to select one area of specialization during the latter part of their senior year. This permitted deeper penetration in skills and knowledge in an area of their preference. This specialization was held to be necessary to provide greater skill in at least one area which would likely be the area of employment or further training at a later time.

In most cases, the instructors chosen were industrial arts teachers with several years of successful teaching in a unit metal shop. All had at least Bachelor's degrees in industrial education, and some had Master's degrees completed. A few of these teachers had completed industrial employment sufficient for vocational instructor approval, but most had less industrial experience than this. Consequently, teachers who lacked the required industrial experience were temporarily approved upon two conditions: (a) completion of required employment experience, and (b) completion of necessary professional courses usually required for vocational approval. Those teachers who had sufficient employment records were approved subject only to the professional courses.

In order that these seventeen teachers might begin their professional improvement, the Trade and Industrial Division set up an annual D.M.O. Conference consisting of eight to ten clock hours of professional instruction on matters from state forms to course organization and development. Two such conferences were held in Springfield during the past three years with good attendance and programs. In addition to the Annual D.M.O. Conferences in

Springfield, Illinois State University at Normal has sponsored a summer workshop specifically tailored to the needs of this group of teachers for skill training. Dr. Willard J. McCarthy, Metals specialist in Industrial Education at I.S.U., has been in direct charge of this summer workshop for a full time two-week period during the summers of 1967 and 1968. The workshop will be held again during the summer of 1969. The workshop has carried college credit for the teachers, as well as an allowance of employment experience for each teacher attending each summer.

A special effort has been made to provide professional courses within easy driving distance for these teachers in order that they might be working toward the completion of their professional course requirements for vocational certification. Several have completed at least one course, and some will be cleared for full approval this summer. Strong emphasis upon the completion of both employment experience and professional courses will continue from the Trade and Industrial Division.

Students selected for the D.M.O. pilot program were chosen on the basis of their interest, background, and job goals. An equal number of junior and senior students were enrolled from each school each year. All new students were juniors except for the first year. No special effort was made to set up standards of student selection which were different from the usual industrial vocational programs. In fact, the standards for D.M.O. participation are the same as regular standards for vocational students in other Trade and Industrial courses.

IV. Evaluation Procedures

An effort has been made throughout the three-year pilot period to secure as many different evaluations as possible on the program. Various approaches to evaluation should constitute a many-faceted approach which

should produce more comprehensive evaluations of the over-all program and within the program.

The organization and utilization of the local advisory council in participating schools is a requirement for all D.M.O. pilot programs. These are lay committees composed of community members who are knowledgeable in the metals occupations and who are willing to devote time and energy to this task. The advisory council, as the name implies, serves by advising the instructor, superintendent and board of education as to the effectiveness of the program, and ways and means whereby it might be improved. This evaluation is periodic and persistent, and serves as a stimulant to both instructor and school administration.

A second type of evaluation has been secured from school administrators as to the effectiveness of the pilot study. Supervisors regularly visit these programs and discuss the merits and weaknesses with school administrators during the visit. In this way, evaluations from these people has been secured as to the over-all usefulness of the pilot program in the total school curriculum.

Each year the Trade and Industrial Division has required each school administrator to renew his request to operate the pilot study for the next school year. In this way, the request for approval to operate another year can be interpreted as a favorable evaluation by the administrator and Board of Education.

The Trades and Industrial Division of the State Board of Vocational Education and Rehabilitation, which instituted the D.M.O. pilot study, had a definite responsibility for repeated evaluation as the program progressed. This was done in several ways. First of all, trade and industrial supervisors regularly visited these programs to establish, to some degree, the effectiveness of the programs. Supervisor evaluations included quality of instruction,

student attitudes and performance, instructional methods and techniques, course content with respect to local needs, equipment suitability, safety factors, and related instruction. The results of these evaluations were communicated to the school following each visit and also filed as a permanent part of that particular school file.

Special requests for information and reports were sent to the participating schools from time to time as the program progressed. The results of such questionnaires were tabulated and interpreted in the light of the overall pilot study objectives. Some of these tabulations and interpretations are included in this report. (See charts, Appendix)

FOLLOW-UP REPORT - DIVERSIFIED METALS OCCUPATIONS

TABLE NO. IV

Year	No. Grad.	To Military	Cont. Educ.	Employable	EMPLOYED: For which trained	%	EMPLOYED: Allied	%	EMPLOYED: Unrelated	%	Unemployed	%	Unknown	%
1967	124	19	21	84	25	30	24	29	26	31	2	2	7	8
					49 or 58.2%									
1968	149	17	27	112	38	34	22	21	43	40	0	0	9	9
					60 or 53.6%									

It is believed that the best possible evaluation of a vocational trade and industry program is the training of students for successful entry into the trade or for entering further training. An annual follow-up study of placement of students graduating from the pilot study has been conducted and the results summarized. See Chart No. IV for the follow-up report. It should be noted that the follow-up for 1967 showed that out of a total of 84 graduates available for employment, 25 graduates or 30% were placed in jobs for which trained, and 24 graduates or 29% were placed in related job occupations. This gives a total of 49 students out 84 or 58.2% placed in occupations for which trained or closely related to occupations for which trained. In the 1968 report, a total of 112 graduates were reported. Of this number, 38 or 34% were placed in jobs for which trained and 22 or 21% were placed in jobs closely related to the occupation for which trained. The 1968 report indicates that 53.6% of D.M.O. graduates were placed in jobs either for which they were trained or jobs closely related to such occupations.

The 1969 follow-up information will be compiled and added to the total three-year compilation, but will not be available for inclusion in this report. From the results of the two years for which statistics are available, it is evident that an unusually high percentage of graduates have been placed in occupations for which trained or in closely allied occupations. This fact alone justifies the D.M.O. program as being relevant to the task of meeting the manpower needs of the State of Illinois.

V. Statistical Data

Statistics necessary to provide information relative to the effectiveness of the D.M.O. program were gathered, compiled, and summarized for each year of the study. Basically, this information was secured from four different forms. These were designated as Form I, Form II, Form III, and Form IV.

Form I (see appendix) was used to gather specific information on the equipment available in the school for the D.M.O. program at the beginning of the pilot study. This form was also used the second year as a supplemental report on new equipment added. This information will be used in setting equipment standards for possible future D.M.O. programs, as a basis for recommendations on up-dating equipment, and for inventory purposes on pilot programs.

Form II (see appendix) has to do with Instructional Methods, and was sent in by each instructor each of the two first years of the program. The results of the study were used to emphasize the development and use of a detailed course of study by each instructor. Information also was secured on amount of time spent in each of the metals areas, rotation of students through the various areas, use of demonstrations, use of instruction sheets, use of visual aids, textbooks, references, and workbooks. Eye safety was also emphasized.

It was felt that some consideration should be given to a study of personal characteristics of the students enrolled in the D.M.O. program. Form III (see appendix) was designed for the purpose of gathering this type of information. A summary of the future plans of these students shows that practically all expect to graduate from high school; the greater percentage then plan to enter employment. A small number will attend a technical school, with greater numbers going on the junior college. A few plan to enroll in a four year college. Very few students showed interest in attending a college or university and becoming industrial education teachers.

In the attempt to appraise the attitudes of the D.M.O. students, it was felt that the information secured is highly subjective, therefore not reliable enough to be significant. Lack of care on the part of counselors and teachers in filling in the information was indicated. Incomplete returns

tended to negate any conclusions. It is believed that this part of the study does reveal a definite need for better counseling services for these programs. Vocational counselors with specific vocational orientation are needed rather than academic counselors.

The grade record study reveals, first of all, that by and large the D.M.O. students have attained only mediocre success in their academic endeavors. The typical student has averaged C or D, with a few grades of B scattered through the record. It is noticeable, however, that these students have done at least average and, in many cases, better than average in industrial arts. This would indicate that these students are not academically inclined, but that they do have ability in an area of their interest. Perhaps the most significant fact here is that these students have done for better in the D.M.O. courses than in any previous courses. The grade points are at least one point better in D.M.O. than in other subjects. In many cases, the D.M.O. grades were two points above the academic subject grades. This may lead to the conclusion that this type of training has motivated these boys to the point where their natural ability has been challenged and developed.

Schools which have operated pilot D.M.O. programs have administered from one to three standard tests to these students. Most all schools show the use of standard achievement tests (ITED predominatly). Perhaps a third of the schools administered the Kuder Interest Inventory to pinpoint student interests. In the aptitude category, the DAT test predominated in schools which used this type of inventory. The lack of complete and consistent information on the reports makes impossible and over-all summary of standardized test results. It is evident that greater emphasis should be placed upon the use of interest and aptitude tests in all schools praticipating in the pilot study.

Form IV (see appendix) was used each year to secure information on follow-up of D.M.O. students. Results of this follow-up are presented in Table IV later in this request.

VI. Summation

The 1963 Vocational Act provided the opportunity for pilot study programs based upon innovative concepts to be set up and tested as possible new directions for vocational instruction. As a result of this provision, the idea of a two-year program in metalworking which would provide skills and knowledge in at least three areas of metalwork was developed with 17 Illinois high schools participating. The overall objective of the program was to develop a wide range of skills and knowledge which is transferrable to a cluster of closely related metalworking jobs in industry, and to determine whether such occupational training can be successfully done in two years in high schools. The program was called Diversified Metals Occupation.

Seventeen Illinois high schools have completed a three-year pilot study of the D.M.O. program. These schools are either small or medium sized schools (average 914), most without other trade and industrial courses. They are well distributed over the state geographically.

Areas of instruction were chosen by the school (minimum of three) from the areas of sheet metal, welding, machining, foundry, and heat treating and tempering (metallurgy). Teachers were largely industrial arts teachers with strong metals backgrounds, usually approved conditionally with employment experience and professional courses to be completed. Opportunities both for industrial experience and course completion have been provided these teachers. Some are now fully approved.

Pilot study programs have been evaluated over the three-year period by local advisory groups, school administrators, Boards of Education,

the State Board of Vocational Education, and follow-up studies. The total result of these evaluations has been favorable, and the outlook is that the pilot D.M.O. program will be acceptable as a regular vocational high school program.

VII. Recommendations

In making final recommendations on the result of the three-year D.M.O. pilot study, severel facts were kept in mind:

1. The number of schools participating is sufficient to provide adequate statistics on program operation.

2. A good spread of geographical coverage was secured.

3. Program locations corresponded well with the industrially developed areas of the state.

4. Careful observation of program operation was made.

5. Various types of evaluations have been made.

6. Statistics show that the major objective of the pilot study, that of training students for employment in a family of occupations, has been done with a higher percentage of placement than regular trade and industrial programs have achieved.

The following recommendation is therefore made: All available information and statistics indicates that the Diversified Metals Occupations program should be approved as a regular vocational offering in trade and industrial occupations for Illinois high schools under the conditions as set forth by the Trade and Industrial Division of the State Board of Vocational Education and Rehabilitation.

VIII. Appendix

FORM I

VOCATIONAL DIVERSIFIED METALS OCCUPATIONS PROGRAM
TRADE AND INDUSTRIAL OCCUPATIONS SERVICE
VOCATIONAL AND TECHNICAL EDUCATION DIVISION

EQUIPMENT LIST

School _____ Date _____

Indicate number of available pieces of equipment. Add additional items that are not listed.

MACHINE TOOLS	NO.	WELDING	NO.	SHEET METAL	NO.
Lathes - 9"		Gas		Squaring Shear	
- 10"		Arc		Box & Pan Brake	
- 11"		Spot		Slip Roll	
- 12"		Exhaust System		Combination Machine	
- 13"				Soldering Furnace	
- 15"					
Mills - Vertical					
- Horizontal					
Shapers - 7"					
- 20"					
Drill Presser - Bench					
- Radial		FORGING-FOUNDRY HEAT TREATING	NO	MISC.	NO.
- Floor		Anvil		Machine Vises	
Grinders - Bench		Heat Treating Furnace		Arbor Press	
- Pedestal		Crucible Furnace		Metal Binder	
- Surface		Foundry Stations			
- Comb. Surface & Cutter		Exhaust System			
Power Cutting Saw					

FORM II

VOCATIONAL DIVERSIFIED METALS OCCUPATIONS PROGRAM
TRADE AND INDUSTRIAL OCCUPATIONS SERVICE
VOCATIONAL AND TECHNICAL EDUCATION DIVISION

INSTRUCTIONAL METHODS

School _____ Teacher _____

1. Has a detailed course of study been submitted to the Trade and Industrial Occupations Service, Springfield? _____.

2. Length of total time, in weeks, spent in each:

	Junior Year	Senior Year
a. Classroom - related instruction		
b. Sheet metal		
c. Welding		
d. Machining		
e. Forging and heat treating		
f. Foundry		
g. Choice of an area		

3. Are students rotated through each area in small groups? _____; in large groups? _____; as a class? _____.

4. Are all the demonstrations listed in your detailed course outline that are to be used in the instructional content? _____; If not, please list the important ones on the back of this form.

5. Check types of instruction sheets used: (1) information sheets _____; (2) planning sheets _____; (3) job sheets _____; (4) assignment sheets _____; (5) others (list) _____

6. Indicate type of visual aids used: film strips _____; films _____; models _____; templates and patterns _____; charts _____; others _____

7. Textbooks used: _____

Reference books used: _____

Work books used: _____

8. Are protective eye coverings used? _____; Is the equipment well guarded and zoned? _____.

9. Total number enrolled in program _____, Juniors _____, Seniors _____

FORM III

VOCATIONAL DIVERSIFIED METALS OCCUPATIONS PROGRAM
TRADE AND INDUSTRIAL OCCUPATIONS SERVICE
VOCATIONAL AND TECHNICAL EDUCATION DIVISION

PERSONAL STUDENT RECORD

Date _____

School _____ Address _____

Student's Name _____ Date of Birth _____

Sex _____ Grade in School _____

Home Address _____ Telephone No. _____

Father's Occupation _____ Mother's Occupation _____

Do You: (1) Expect to finish High School? _____
(2) Plan to enter employment? _____
(3) Plan to attend Technical School? _____
(4) Plan to attend Junior College? _____
(5) Plan to attend 4- year College? _____
(6) Plan to become an Industrial Education Teacher? _____

APPRAISAL OF ATTITUDES OF STUDENT

VOCATIONAL DIVERSIFIED METALS TEACHER					COUNSELORS				
ATTITUDES*	11th Grade		12th Grade		ATTITUDES*	11th Grade		12th Grade	
	Beg.	End	Beg.	End		Beg.	End	Beg.	End
Social					Social				
Educational					Educational				
Self-Concept (toward self)					Self-Concept (toward self)				
(toward Diversified Metals Program)					(toward Diversified Metals Program)				

* Indicate with a number 1. Good, 2. Average, 3. Poor.

PERSONAL STUDENT RECORD
Con't.

GRADE RECORD

Subject	9	10	11	12	Teacher's Comments re: Attitudes, behavior, ability, etc.
Math					
English					
Social Studies					
Science					
Ind. Arts					
Voc. Div. Metals					

STANDARD TEXT RESULTS (most recent)

	Name of Test	Date	Rank	Norms
Achievement				
Interest				
Aptitude				

Extra curricular activities:

9th Grade _____

10th Grade _____

11th Grade _____

12th Grade _____

Counselor's appraisal of student's general behavior:

_____

_____

_____

FORM IV

VOCATIONAL DIVERSIFIED METALS OCCUPATIONS PROGRAM
TRADE AND INDUSTRIAL OCCUPATIONS SERVICE
VOCATIONAL AND TECHNICAL EDUCATION DIVISION

PLACEMENT AND FOLLOW-UP

Student's Name _____

School _____ Date Graduated _____

Record of Employment After Termination
From Diversified Metals Program
First Year

Name and address of firm	Type of Work	Name of Supervisor or Foreman	Duration of Employment		Rate Per Hour	Weekly Salary
			Date Begin	Date Term.		

Student's Comments:

First Year: _____
Second Year: _____
Third Year: _____
Fourth Year: _____
Fifth Year: _____

Supervisor or Foreman's Comments:

First Year: _____
Second Year: _____
Third Year: _____
Fourth Year: _____
Fifth Year: _____

Trade and Industrial Education Service
BOARD OF VOCATIONAL EDUCATION AND REHABILITATION
405 Centennial Building
Springfield, Illinois

APPLICATION FOR APPROVAL OF A PILOT PROGRAM OF TRADE AND INDUSTRIAL EDUCATION

I. School or Agency _____ Name

_____ Address

II. Prepare this form in triplicate, and attach a separate detailed plan of the proposed Pilot Program to each copy. This proposal must include the following items.

A. Purpose and objectives.

B. How the Pilot Program is to be conducted, including methods, procedures, equipment, etc.

C. Personnel to be used such as administrators, teaching, evaluating, etc.

D. Timetable including starting and ending date.

E. Estimated budget for salary and travel.

III. Agreement

Approval for reimbursement from vocational funds is hereby requested for the purposes described in II above. This Pilot Program is intended to improve the quality of vocational education as it relates to the trades and industry, and to expand learning opportunity in Trade and Industrial Education.

_____
Responsible Agency Official

_____
Title

_____
Date

IV. Recommendation of Approval

Approval is hereby granted for the Pilot Program for the _____ _____ fiscal year as described above. Reimbursement will be made from state and/or vocational funds at the rate of 50% for expenditures within the limits of estimated costs in Section II above. Reimbursement beyond the estimated amount will be dependent upon availability of funds. Reimbursement will be made as follows:

_____

For any subsequent year this Pilot Program is to continue, a request for extension, showing developments and budget, shall be submitted.

Chief, Trade and Industrial Service	Director, Vocational Education
Date	Date
Chief, Research and Statistics	
Date	

VT 008 667
Lair, Lila M.
If You Are a Woman: Prospects and Implications Concerning the World of Work.

Northeastern Oklahoma A and M Coll., Miami
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Jul64 26p.

*WOMENS EDUCATION; *WORKING WOMEN; MANPOWER NEEDS; *EMPLOYMENT PATTERNS; *EMPLOYMENT OPPORTUNITIES; EMPLOYMENT TRENDS; SOCIOCULTURAL PATTERNS; PSYCHOLOGICAL NEEDS; EDUCATIONAL NEEDS; BIBLIOGRAPHIES

Studies of the Bureau of Labor Statistics show the following life patterns for women: Most unmarried girls will go to work at 17 or 18 unless they go to college. Most will marry within 3 or 4 years, but a majority of these will continue to work. With the first baby, most mothers will discontinue working until the youngest child is in school but will go back to work in their middle thirties and remain in the labor force for a substantial proportion of years to age 65. The introduction to this paper presents a brief glimpse of the psychological reasons why women go to work. Part I views the new life pattern of women and Part II discusses prospects for the future of women workers in the light of this new life pattern, concluding that women now have hundreds of occupations from which to select. Part III discusses educational implications and points out the necessity of establishing "tailor-made" educational and training facilities--as well as counseling services--for women. A bibliography includes 36 entries. (JK)

VT 008 667

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IF YOU ARE A WOMAN: PROSPECTS AND IMPLICATIONS CONCERNING THE WORLD OF WORK

by

Lila M. Lair, Librarian

Northeastern Oklahoma A. and M. College

Miami, Oklahoma

July, 1964

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VT008467

PREFACE

Much has been writter on the subject of women and their changing image in today's world, one article often contradicting another both in statistics and conclusion. But no one has denied that a major revolution has occurred in the United States concerning women in the world of work. There are more women than ever in the labor force--ranging from bulldozer operators to college presidents. Recent commencement speakers at women's schools and colleges have stressed this theme. Chancellor Murphy of the University of Kansas states that "the insatiable demands for intellectual activity of the next one-half century cannot be satisfied by the male segment of the population alone." "Wasted woman power may be a determining factor in our struggle for survival," declares Dr. Harry Gideonse, President of Brooklyn College. Dr. Eli Ginzberg in his book Human Resources: The Wealth of a Nation says that we have reached the point in our technological society where we must marshal all our human resources, including women. In view of all that the mass media is reflecting, the following questions become extremely significant. What will be the prospects in the U.S. for the future of women workers? What are the implications of entry by women into the work structure? In this paper, an effort has been made to find some of the answers to such pertinent questions. The introduction will briefly glimpse at

psychological reasons for women going to work: Part I will present a small view of the new life pattern of women. This background material is relevant to Part II which will discuss prospects in the U.S. for the future of women workers and Part III which will present implications of entry by women into the work structure. A critical summary will conclude the study.

IF YOU ARE A WOMAN: PROSPECTS AND IMPLICATIONS CONCERNING THE WORLD OF WORK

INTRODUCTION

"It is my thesis that the core of the problem for women today is not sexual. but a problem of identity, a stunting or evasion of growth perpetuated by the feminine mystique."[1] So says Betty Friedan and she defines mystique as the culturally approved feminine role of wife and mother--the housewife-mothers, who never had a chance to be anything else--the model for all women ... a religion ... a pattern by which all women must now live or deny their femininity.[2] Mrs. Friedan thus exposes "the problem that has no name," which presently haunts thousands of married women. She believes that women who "do not put forth, finally, that effort to become all that they have it in them to become will forfeit their humanity. A woman today who has no goal, no purpose, no ambition patterning her days into the future, making her stretch and grow beyond that small score of years in which her body can fill its biological function, is committing a kind of suicide."[3]

Much information upon the psychological reasons for

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[1]Betty Friedan, The Feminine Mystique (New York: Norton, 1963), p. 77.

[2]Ibid., p. 43.

[3]Ibid., p. 368.

women going to work is to be found in a recent s y based on interviews with 1,000 women and a similar numb. of men in different parts of the country. The author discusses these reasons under two categories: "the pull of the job" and "push of the home."[4] American women, particularly those who have been to college, are restless and dissatisfied. Periodicals are flooded with articles on the "disenchantment syndrome." On the other hand, the working wife is pictured as torn between her responsibilities at home and on the job and if she has children, she is said to feel guilty about neglecting them. Single women are described as fearful that they will find themselves out of the marriage market if they pursue a career or that jobs will unsuit them for marriage.

A woman's decision to accept or reject a job may hinge not only on her interest in the job itself but on her assessment of how it will affect her status as the person she wants to make sure she is. The modern woman must find new prestige values. Her proficiency in home arts is no longer important. Her status is derived in part from what her husband does, in part from the accomplishments of her children, and in part from what she does productively in the community. Eventually she begins to compare herself with the woman who seems to have acquired a higher order of sophistication--the woman who goes to work and gets paid for it.[5] Ashley Montagu says this is an

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[4]Amy Hewes, "Women Part-Time Workers in the United States," International Labour Review, LXXXVI (November, 1962), p. 443.

[5]Joseph D. Cooper, A Woman's Guide to Part-Time Jobs (New York: Doubleday & Co., 1963), p. 21.

attempt to achieve male statuses by playing male occupational roles while at the same time attempting to hang onto femininity.[6]

The whole idea of women's changing image seems new until one recalls that John Stuart Mill observed, in 1851, that "it is neither necessary nor just to make imperative on women that they shall be either mothers or nothing; or that, if they have been mothers once, they shall be nothing else during the whole remainder of their lives."[7]

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[6]Ashely Montagu, The Humanization of Man (New York: World Publishing Co., 1962), p. 182.

[7]Marguerite Wykoff Zapoleon, Occupational Planning for Women (New York: Harper & Bros., 1961), p. 29.

I. TODAY'S LIFE PATTERN FOR WOMEN

Over the past 70 years a vastly changed way of life has been evolving for women--a fact probably not yet widely taken into account. It means that women generally can no longer take it for granted that they will work just a few years before getting married and then settle down for a lifelong career of homemaking. And it is no longer a reasonable assumption that the only event that will return them to the labor force is the death of the husband or separation from him.

The facts suggest a much different kind of picture: Studies by the Bureau of Labor Statistics show the following life pattern: Most unmarried girls will go to work at 17 or 18 unless they go to college. Within three or four years most will marry but a majority will continue to work. With the first baby, most mothers give up their job and stay out of the labor market until the youngest child is in school. Then they go back to work when they are in the middle thirties. The tendency is for them to remain in the labor force for a substantial proportion of years to the age of 65.[8] One-half of all our women are only 32 when the youngest child of a completed family is in school and there still is forty years to live.[9]

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[8]U.S. Department of Labor, Occupational Outlook Handbook 1963-64, Bulletin No. 1375 (Washington: U.S. Government Printing Office, 1964), p. 13.

[9]Ruth Hill Useem, "Changing Cultural Concepts in Women's Lives," Journal of the National Association of Women Deans and Counselors, XXIV (June, 1961), p. 29.

Students marry earlier, have children at an earlier age and can expect to work outside the home for approximately twenty-five years.[10] Today, women represent 34.73 percent of the working population.[11]

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[10]Betty Jane Lloyd, "Womanpower--Key to Management Manpower Shortage," Personnel Journal, XLI (April, 1962), p. 181.

[11]U.S. Department of Labor, Major Occupation Group and Employed Persons--By Sex (data sheet distributed to 331 class by Dr. Harry J. Parker) April, 1964.

II. PROSPECTS IN THE U.S. FOR THE FUTURE OF WOMEN WORKERS

One of the most startling statistics of twentieth century America has been the increase in the number of women who work in paid employment. The Women's Bureau of the Department of Labor 1962 Handbook on Women Workers reports that about 36% of the 66.5 million women in the U.S.--roughly 24 million hold jobs. These figures reflect a steady growth since the turn of the century when only 5 million were employed. Today one out of every three workers is a woman.[12] Some experts say that in the future at least nine out of ten women are likely to work outside the home in the course of their lives. Estimates of population growth place the total at 226 million persons by 1975.[13] In the ten years from 1965 to 1975, the labor force is expected to increase by 15 million persons. Projected increase in the number of adult women in the labor force is placed at 4 million.[14] Women workers are expected to be concentrated most heavily in the Middle Atlantic and North Central regions and in California and Texas.[15]

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[12]U.S. Department of Labor, Women's Bureau, 1962 Handbook of Women Workers, Bulletin No. 285 (Washington: U.S. Government Printing Office, 1963), p. 3.

[13]U.S. Department of Labor, Occupational Outlook Handbook 1963-64, op. cit., p. 11.

[14]U.S. Department of Labor, Population and Labor Force Projections for the U.S. 1960-1975, Bulletin No. 1242 (Washington: U.S. Government Printing Office), p. 41.

[15]"Geographic Variation in the Occupations of Women," Metropolitan Life Statistical Bulletin, XLIV (June, 1963), p. 9.

Even more striking than the increase in numbers of women at work are two other facts: The increase in the number of older women at work and the number of married women at work.

OLDER WOMEN: In 1963 more than half of all women in the 45 to 54 age bracket were in paid employment.[16] By 1975, nearly half of all women between 35 and 65 will be working or looking for work.[17] In the years ahead, the highest rate will be among women 45-54. More than one out of two women falling in this age group in our population will be in the labor force.[18] The chances of returning to work in later adult life thus are very considerable.

MARRIED WOMEN: A Labor Department economist has declared that the rapid increase in the labor force participation of married women is the most significant employment trend in the country today. One third of America's more than 40 million married women are in the labor force. They represent one fifth of the nation's entire job-holding population--outnumbering the single female workers nearly three to one. The rush of married women for jobs is expected to continue.[19]

WOMEN PART-TIME WORKERS: In the decade 1965-1975, the

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[16]U.S. President's Commission on the Status of Women, American Women: Report, 1963.

[17]U.S. Department of Labor, Occupational Outlook Handbook 1963-64, op. cit., p. 14.

[18]Marguerite Wykoff Zapoleon, "Women's Work: Facts, Findings and Apparent Trends," Journal of the National Association of Women Deans and Counselors, XXIV (October, 1960), p. 43.

[19]"More Work for Mother," Management Review, LIII (January, 1964), p. 53.

increase in numbers of part-time workers will be almost 3.5 million persons. Projection into 1975 of the number of women who are likely to be employed on a part-time basis is 17.5 million.[20] In the coming decade, part-time professional, office, and sales jobs will grow the fastest. Temporary Help Services is a fast-growing industry which satisfies the short-term needs of employers. Offices are located in about 500 cities and towns throughout the country. The greatest opportunities in the future should lie in such short-age occupations.

PRINCIPAL OCCUPATIONAL TRENDS: A Wall Street Journal Survey of thirty college placement officials and fifty personnel executives from corporations indicate that more employers are considering women and there are more jobs to choose from.[21] The most clear-cut job trend is a mounting demand for female scientists, technicians, and mathematicians. Many companies are after all the women they can get in these categories. Recruitment of those with electronic, engineering, and physics degrees is being stepped up. Industrial Chemistry and metallurgy are other areas with increasing opportunities. Pharmacology and zoology are also demand fields. In a study of the career development of women who as high school seniors aspired to be scientists, it was found that one third of those who married are continuing some professional job activity and those

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[20]Cooper, op. cit., p. 271.

[21]"Jobs Closed to Women," Wall Street Journal, CLIX (February 1, 1962), p. 1.

with the higher degrees are the most likely to do this.[22] Only about 17% of the bachelor's and 7% of doctor's degrees in science are obtained by women.[23]

Projected needs for teachers are staggering; 1.7 million teachers will be needed in 1968-69. Shortages are already accumulating and there will be a need to draw more heavily upon older women college graduates. The demand is growing at the college level. Three fourths of the institutions surveyed by the National Education Association in 1958 felt that women should be welcomed in all teaching fields even engineering.[24]

The 1970 crop of professional nurses will fall far short and there will be a marked increase in the number of part-time nurses. Social work and library science are other areas in which workers cannot be trained fast enough. There is now a growing acceptance of women in jobs above the clerical level in finance, insurance, and banking. The sixties may see the greatest advances yet in the acceptance of more women into middle-management. The University of Michigan's all-female conference on management indicates that women are overcoming male prejudice.[25] This was the first all-female conference of this scope and it drew women from 19 states. A few were top

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[22]Harold A. Edgerton, "Women in Science Careers," Journal of the National Association of Women Deans and Counselors, XXV (June, 1962), p. 166.

[23]Zapoleon, op. cit., p. 44.

[24]Ibid.

[25]"Petticoats Rustle on Executive Ladder," Business Week (September 29, 1962), p. 51.

executives but most were middle management. Their positions ranged from bank and insurance company presidents to administrators for county agencies. The sponsors say that the percentage of women reaching top management is declining. A Michigan State University study indicates that only 3.8% of U.S. executives are women and while some doors are opening slowly--advertising, merchandising, publishing, new manufacturing fields that are not steeped in tradition, insurance, banking, and real estate--the doors of heavy industry are still tightly closed to female managers.

More women are going into market research and investments. The demand is large and constant in the fields of drafting and design, technical writing and illustration, and in the area of communications such as the technical aspects of transmission and production of radio and television programs.[26] There is wide use of technically trained women in programming computers. Women are showing small but significant gains in the fields of engineering, architecture, and medicine but have lost ground in law, theology, and dentistry.[27]

The girl who once thought only of a choice between salesgirl, teacher, nurse, stenographer, waitress, domestic, or garment-factory worker now has hundreds of occupations from which to select any number of possibilities and indications are that horizons will widen.

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[26]Jeanne Miller, "Don't Forget the Girls!" American Vocational Journal, XXXV (May, 1960), p. 10.

[27]Mabel Newcomer, "Women's Education: Facts, Findings and Apparent Trends," Journal of the National Association of Women Deans and Counselors, XXIV (June, 1961), p. 37.

III. IMPLICATIONS OF ENTRY BY WOMEN INTO THE WORK STRUCTURE

American women now outnumber men by about 3,000,000 and by the year 2000, the estimates are that there will be 5 million more women than men in the 65 years-of-age-and-over group.[28] Since women are marrying earlier and completing their families sooner, large numbers of them face at least 3 decades of life after 40 in which they will have to or want to work. By 1965, there will be 705,000 fewer men between the ages of 25 and 34, a result of the lower birth rate during the 1930's.[29] Available manpower is decreasing in the face of increasing needs for workers. These facts point to implications in the following areas:

EDUCATION: The responsibility of education becomes apparent when nearly 4,000,000 adult women have probably had less than 5 years of school. Less than half of all women 25 and over are high school graduates.[30] Girl students must therefore be prepared for their likely entry into the job world. They should be encouraged to develop abilities and choose careers in all fields not merely the traditional ones.

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[28]Beverly Benner Cassara (ed.), American Women: The Changing Image (Boston: Beacon Press, 1962), p. 52.

[29]Miller, op. cit., p. 10.

[30]"The American Woman: Today and Tomorrow: Jobs, Education, Income, Security, Role in the Home," Changing Times, XVIII (February, 1964), p. 42.

Women will study more mechanical and technical subjects and training in scientific areas will be intensified. Manipulatory skills and delicate precision work are in great demand because industry has learned that women in general have superior mechanical and computational skills.[31] Special training and vocational courses will be added as well. Although two-thirds of the nation's working women are in one of five occupations--clerical, teaching, nursing, semiskilled factory, and service, this is not necessarily the picture for tomorrow.[32]

Since the trend towards early marriage is expected to continue, high school boys and girls should be prepared for the eventualities of their lives regarding study and work for women.[33] Scholarships, student aid, evening and extension programs at both secondary and higher education levels and educational television are all possibilities. Educators now find that women are more educable after marriage so girls who marry should be encouraged to complete their education as soon as feasible.[34] The demand for such "split-level" education will become more prominent and the 1970's may witness many

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[31]John Henry Cutler, What About Women? (New York: Ives Washburn, Inc., 1961), p. 210.

[32]Guin Hall, "A New Look at Women and Vocations," American Vocational Journal (April, 1964), p. 25.

[33]Eva vB. Hansl, "Patterns in Womanpower: A Pilot Study," Journal of the National Association of Women Deans and Counselors, XXV (November, 1962), p. 86.

[34]Vivian H. Hewer and Gerhard Neubeck, "Attitudes of College Students Toward Employment Among Married Women," Personnel and Guidance Journal (February, 1964), p. 592.

changes in college programs for women.

It is increasingly noticeable that the mature woman is returning to school. In a study of the undergraduate evening student body at Hofstra University, it was found that they were more than half the students over 45.[35] Since older women are usually not free to attend regular classes, they will look for extension programs, home study courses, and refresher courses. Colleges and universities will expand their facilities and enrollments. The number of part-time study and employment opportunities will be improved and there will be more scholarships and fellowships for older women. They will also turn to the local vocational or technical school and the community college.

ECONOMY: New findings about the economic contribution of working wives to family income show that they supply about 40% of their family's total income when they work full time.[36] There were in March, 1962, some 40 million "husband and wife families"--87% of all families. In the past 10 to 12 years, rising averages of family income are associated with the increase in the number of married women at work. Many economists say that the two-earner family will tend to lessen the impact of recessions. If one spouse is out of work, the other provides the pay check.[37] Data compiled by the National Industrial

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[35]H. Lichtenstein and J. R. Block, "The "Middle-Aged" Co-ed in Evening Colleges," Adult Education, XIII (Summer, 1963), p. 235.

[36]Thomas R. Brooks, "Working Women," Dun's Review and Modern Industry, XXCII (August, 1963), p. 63.

[37]Alfred L. Malabre, "Working Wives: Rise of Married Women in Labor Force has Wide Economic Effects," Wall Street Journal, CLXII (October, 1963), p. 1.

Conference Board shows that the average two-earner family spends 25% more than the average one-breadwinner household. If women suddenly stopped working, there would be a net labor shortage of over 19.5 million jobs and the purchasing power of the families would plummet by at least $45 billion. The work of women will play an even greater part in the operation of the economy, in the maintenance of consumer purchasing power, and in the economic stability of millions of families.

DISCRIMINATION: A National Office Management Association survey in 1961, showed that over half of the 1,900 firms surveyed gave preference to male workers over female where both had equal qualifications.[38] A study of Federal employees showed that although women represent one-fourth of the total employment they are concentrated in the lowest five grades and are paid lower salaries than men for the same work.[39] A Civil Service study (part of a report of the President's Commission on the Status of Women) found discrimination against women in appointments and promotions. Civil Service examinations are open to all but hiring officers could specify men or women from those eligible. A new policy denies this right, except under unusual circumstances. The Fair Labor Standards Act, which went into effect only last month, will have a favorable effect on the employment of women. This act makes it illegal to pay

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[38]"Women on the Job," Management Record, XXIII (April, 1961), p. 25.

[39]Max F. Baer, "Uncle Sam's Women Workers," Personnel and Guidance Journal, XLI (November, 1962), p. 208.

women less than men for equal work. It is expected to push wages higher in industries not covered by the Act and Congress keeps adding to the list of industries which are covered.[40] Companies and Federal, State, and local agencies will review promotion possibilities for women, redefine responsibilities, compensation, and comparable titles. An important implication is the suggestion of the President's Commission in which test cases are to be brought to the Supreme Court to establish principles of equality for women in constitutional doctrine.

LABOR: Large numbers of women are in unorganized fields particularly white-collar jobs where unions have little success in organizing. Only one out of every seven women workers belongs to a union. Part-time workers are difficult to organize. During the next few years, labor is expected to work out a platform that will appeal to women in the labor force, for a shortage in skilled trades has been predicted.[41] This will tend to place women in a better position to bargain effectively for better pay and working conditions. State laws to protect women who want to join unions, as suggested by the President's Commission, is another likely development.[42]

COUNSELING SERVICES: Unless predicted trends are

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[40]"Fairer Wages for the Fair Sex," Business Week (June 6, 1964), p. 74.

[41]Seymour L. Wolfbein, "The Outlook for the Skilled Worker; Implications for Guidance and Counseling," American Vocational Journal, XXXVI (November, 1961), p. 27.

[42]"The American Woman: Today and Tomorrow: Jobs, Education, Income, Security, Role in the Home, op. cit., p. 45.

reversed, women will have to make more decisions than ever about their occupational roles and how these relate to their lives as a whole. All sorts of possible combinations of education-marriage-employment plans will need to be considered. As choices become more complex, more and better counseling services will be needed. Programs will be established to serve older women and that offer assistance in joint planning by couples.[43] Counselors and guidance workers will also need to rethink their counseling in view of the "two lives" of women. To counsel only for the "first life" is to fail to counsel and educate for the reality of later employment in the labor market.

AUTOMATION: Job patterns in the future may undergo great changes. The advantage should be on the side of women as needs for manual labor and exertion decrease and white-collar opportunities are expanded. Mechanized office processes will demand better trained clerical workers with special technical and mechanical skills.[44]

CHILD-CARE AND SPECIAL AGENCIES: The National Association for Nursery Education says membership has tripled in the past decade. Many more child-care centers will be needed. After-school and vacation activities will need supervisors. Special services such as meal preparation, clothes maintenance, and housekeeping will be developed instead of the use of domestics.[45]

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[43]Marguerite Wykoff Zapoleon, Occupational Planning for Women (New York: Harper and Bros., 1961), p. 231.

[44]Cooper, op. cit., p. 8.

[45]"The American Woman:, op. cit., p. 44.

CONCLUSION

Beneath the facts, prospects, and implications presented in this paper is an undercurrent concerning "the role of women." I believe that women have two roles--one inside the home and the other outside it. And the problem for most women is that of making a satisfactory combination of the two rather than being asked to decide, once and for all, on one or the other. Recognition of this fact is to be found in the Executive Order which established the President's Commission on the Status of Women. The Commission was charged with the responsibility of: ". . . developing recommendations for services which will enable women to continue their role as wives and mothers while making a maximum contribution to the world around them." Betty Friedan's The Feminine Mystique (a well-documented book) reinforces this assumption with the presentation of her new life plan which, in essence, encourages women to integrate a serious, lifelong commitment to society with marriage and motherhood (p. 368). Marguerite Zapoleon talks of the conflict between homemaking and work outside the home as being needless.[46] A fine article by Harvey Swados,[47] the whole of Cutler's What About Women and Cassara's American Women, especially the DeMille

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[46] Zapoleon, op. cit., p. 12.

[47] Harvey Swados, A Radical's America (Boston: Little, Brown & Co., 1962), p. 277.

article, substantiate this viewpoint.

That the traditional role is still the more accepted way of life is brought out in a study on the attitudes of college students toward employment among married women.[48] It was interesting to note that students see this as a belief they should accept which tends to bear out the influence of a Homemaking and Motherhood cult which is fostered by press and propaganda. Betty Friedan's analysis of women's magazines (Chapter Two) is certainly apropos in this respect--as well as devastating. Another interesting study of college women, pointed out that when it was proposed to them that married or not, they might possibly be working for twenty to thirty years of their lives, their reaction was one of dismay and disbelief.[49]

Regardless of the "role" that women choose to play, Hansl's Patterns in Womanpower offers evidence that a high quality of educated woman power is unused among women in their 30-plus years and that this supply could be activated to meet the demand for women workers that our economy needs, especially to relieve the shortages which threaten schools, libraries, health and welfare services. Our available manpower is decreasing in the face of an increasing need for workers just to feed, house, clothe, educate, and maintain the health of our expanding population.[50] If we add to this the people needed to produce the

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[48]Hewer, op. cit.

[49]Paul Heist, "A Commentary on the Motivation and Education of College Women," Journal of the National Association of Women Deans and Counselors, XXV (January, 1962), p. 56.

[50]Anna L. Rose Hawkes, "Changing Patterns in Women's Lives," Teacher's College Record, LXI (1959-60), p. 410.

consumer goods that we demand and the materials, equipment, and machines that our country must have to maintain its place in the world, then it is easy to understand why Dr. Eli Ginzberg, the National Manpower Council, and other government agencies are concerned about the wise use of all human resources. The Department of Labor and the President's Committee on Scientists and Engineers have also urged greater use of womanpower. Part II of this paper made predictions as to the future of women workers in the U.S. Projections to 1975 were set forth in order to indicate those prospects. What these statistics mean is that the new life pattern for women, as explained in Part I, will continue to be of great significance from the viewpoint of women as individuals and also from the human resources standpoint.

"The role of women" sometimes summed up in the phrase, "woman's place is in the home" is unfortunate in that it often is used as an excuse for not facing up to the problems and aspirations of more than half the human race. It can be used for not paying women full wages when they work; for discriminating against them in opportunities for jobs and for advancement; for discouraging high educational attainment; and for limiting occupational choices. One discrimination suffered a blow when the new Federal Equal Pay Act went into effect on June 11th. This act makes it illegal to pay women less than men for equal work. Although passage of the act represents a victory of principle, I believe that it will be ineffective. I base my conclusion on the facts presented in the article

"Fairer Wages for the Fair Sex" in which it is pointed out that "equality" may prove hard to find.

Facts presented under Part III, educational implications, point out the necessity of establishing "tailor-made" educational and training facilities, as well as counseling services, for women. I believe this is important because high intelligence in either sex is rare and it should be used to advantage. It is the exceptional women rather than the exceptional men that tend to be overlooked.

The modern-day exodus of women into the world of work should stimulate more research in the area of motivations for returning to the labor force as well as more research to study sex differences in education.

A splendid scholarly effort showing clear evidence of your endeavor

Should you have an extra copy of this paper I should be pleased to have it

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*VOCATIONAL EDUCATION; *STATE PROGRAMS; *EDUCATIONAL PROGRAMS; *SECONDARY EDUCATION; *PUBLIC SCHOOL ADULT EDUCATION
VIRGINIA

This publication was prepared to provide information about vocational education and its scope and development as a vital part of public education in Virginia. In addition to the regular vocational service areas, information is provided on area vocational technical schools and on manpower training services. In Virginia high schools, vocational courses are included as elective subjects, thus making it possible for pupils to take vocational offerings appropriate to their abilities and needs. The nature and composition of Virginia's labor force are changing; for example, a large majority of new workers under 25 and many women are entering the labor force. Automation and the advent of complex machines have created many new types of employment and have brought about the need for more technicians. In addition, skilled craftsmen and workers in many vital occupations must be trained through area vocational-technical schools and expanded adult programs. (CH)

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VOCATIONAL & TECHNICAL EDUCATION IN *Virginia...*

VT 008 680

Division of Vocational Education
State Department of Education
Richmond, Va. 23216

Agricultural Education

Business Education

Distributive Education

Home Economics Education

Industrial Education

Area Vocational-Technical Schools

Manpower Training

School Lunch

Surplus Property

FOREWORD

Virginia's program of vocational and technical education recognizes the needs of the individual and of society and thus contributes to a wholesome economy, satisfactory employment, and a high standard of living. By helping to prepare youths and adults to take their places in an expanding economy, vocational education makes an important contribution to industrial growth in the State.

The extent and nature of the offerings in any school are determined by the needs of pupils in relation to current conditions. In the high schools, vocational courses are included as elective subjects, thus making it possible for pupils to take those vocational offerings appropriate to their abilities and needs.

In today's world of work many well-trained young people are needed for jobs in business, industry, agriculture, merchandising, service occupations, and technical and health fields. Rapidly changing conditions and technological advances in business, industry, and farming demand more skills and more knowledge for employment in nearly all types of occupations.

The shift from rural to urban living has increased the need for training to meet necessary adjustments in modes of living and work. The great mobility of population often results in interrupted programs of education of many pupils of high school age and these pupils need special help in adjusting to new situations and preparing for new jobs.

The composition of the labor force also is changing. A large majority of new workers are under 25. Many women are entering the labor force. Automation and the advent of complex machines have created many new types of employment and have brought about the need for more technicians whose responsibilities lie between those of the skilled craftsman and the engineer. There has been an unprecedented demand for technicians in electronics, mechanical drafting and design, instrumentation, mechanical, civil, highway, and chemical technologies, and in other highly specialized fields. In addition to the need for technicians, skilled craftsmen and workers in many vital occupations must be trained through area vocational-technical schools and expanded adult programs.

This publication was prepared to provide information about vocational education, and its scope and development as a vital part of public education in Virginia.

Woodrow W. Wilkerson

WOODROW W. WILKERSON
SUPERINTENDENT OF PUBLIC INSTRUCTION

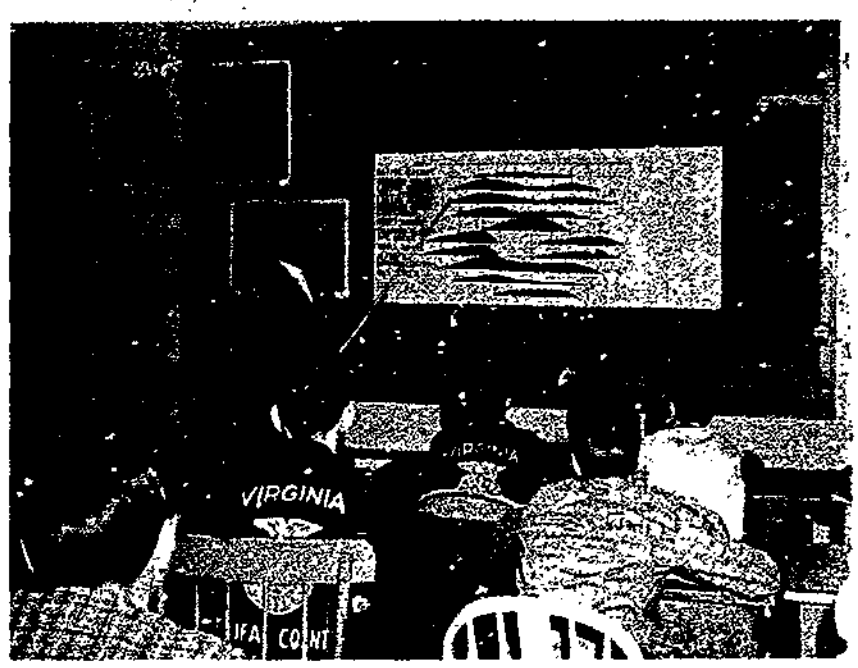
VOCATIONAL AGRICULTURE

In Virginia, the major objective of vocational education in agriculture in the public schools has been broadened to provide basic instruction for all agricultural occupations. The three segments of agricultural occupations now included in the broad field of agriculture are (1) production farming, (2) providing service and supplies for the farmer, and (3) processing and distributing the farmers' products. Approximately 40 percent of the nation's total labor force is engaged in these occupations.

To provide basic instruction in all phases of agriculture, many adjustments in the curriculum have been necessary to meet scientific and technological developments.

The producers, processors, and suppliers of farm goods and services must be well grounded in the sciences of soils, plants, and animals. In addition, they must have a working knowledge of mechanics, marketing, and distribution. To meet this need, the course content has been divided into basic units of instruction and lesson plans have been prepared for teaching these units. Classroom instruction is supplemented by supervised practice programs or supervised work experience conducted under the direction of the teacher of vocational agriculture.

The beginning student of vocational agriculture develops skills of a mechanical



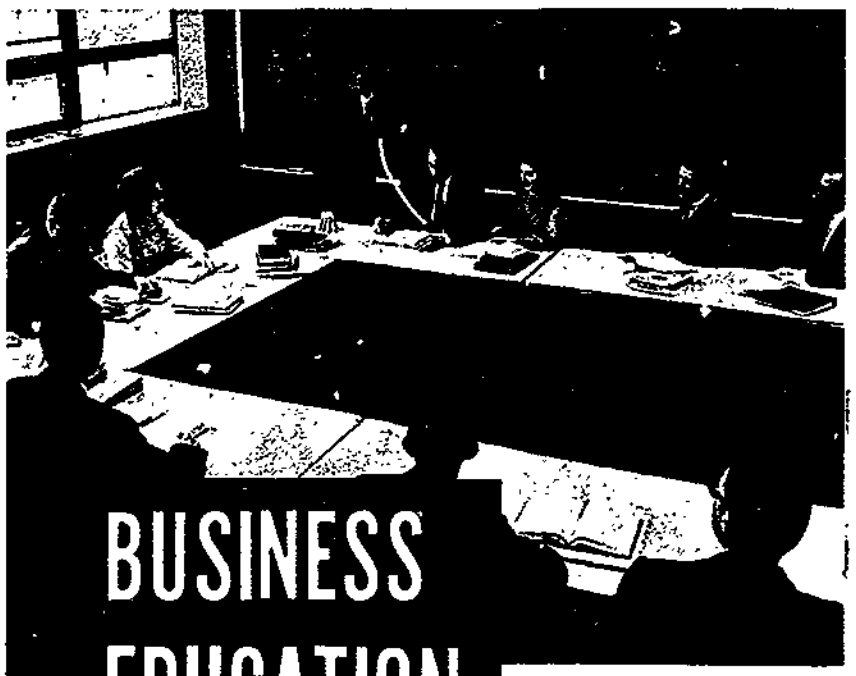
nature needed in agriculture. As the student progresses the course content in agricultural mechanics is directed more toward the needs of the farm operator. Instruction is provided in farm machinery operation and maintenance, farm power, farm electrification, and in the further application of skills already acquired.

Further modification in the high school program of vocational agriculture has been made to meet the vocational needs of rural youth who have limited or no facilities for farming. A general mechanics program has been designed for boys who generally expect to work in an industry related to agriculture. In this course more emphasis is placed on the development of mechanical abilities.

The vocational agriculture program is based on the belief that certain abilities can best be developed through systematic instruction and that an individual best develops leadership ability when he has leadership responsibility. The Future Farmers of America and the New Farmers of America were founded on this belief. These high school student organizations have become integral parts of the instructional program in vocational agriculture.

Educational programs in vocational agriculture for out-of-school youths and adults are directed toward providing training for those individuals already engaged in agricultural occupations. The course includes modern practices and procedures in farming and farm mechanics. Farm management also is emphasized.

During the next decade education in agriculture will face many challenges and many opportunities. As the population increases each farmer and prospective farmer will become more important. Even though the nation is becoming more urbanized the need for individuals who are trained in all phases of agriculture continues to increase. This means that programs in agricultural education must be designed to meet this need.



BUSINESS EDUCATION

Virginia's public schools serve the business needs of students and the occupational needs of students and employers of office personnel through a three-dimensional program of business education:

Offerings in basic business and economic understandings and the efficient use of business services.

Job preparation in business for those who have the aptitude and interest for a vocation in this employment field.

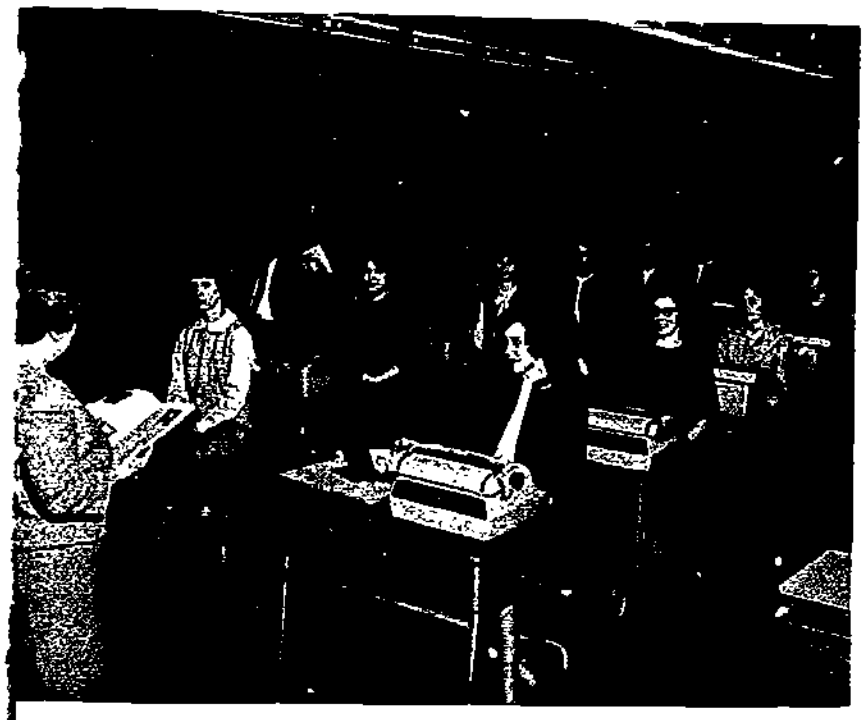
Continuing education and retraining of adults in office occupations.

The In-School Program

On the secondary school level, three curriculums are offered leading to office employment: clerical, stenographic, and, in large urban schools, bookkeeping. Basic business and economic information and occupational skills are inherent in the business subjects.

Service to Academic Students

Notemaking and typewriting for personal use offered during the school year and in



summer sessions meet the demand for more efficient communication skills among college-bound students.

Vocational Office Training

Vocational office training (VOT) is the cooperative part-time work training program in business education. During their senior year, students enrolled in this program are in regular in-school classes for a half day or more and continue their training in business offices in the community for part of the day. The business teacher-coordinator is responsible for coordinating learning activities in school and on-the-job. More than 90 percent of the VOT students are retained as full-time employees after graduation.

Impact of Automation

Instructional activities in data processing methods and materials are being developed to help students understand automation processes and to work effectively in offices having punch card or computer data processing systems. Pilot programs in the elements of data processing have been instituted.

INCREASES IN EMPLOYMENT IN VIRGINIA IN THREE OFFICE OCCUPATIONAL FIELDS

	1940	1950	1960
Bookkeepers and Accountants	13,283	12,598	16,038
Office Machine Operators	584	1,767	4,056
Typist-Stenographer-Secretary	16,506	33,926	53,481
Totals	30,373	48,291	73,575

Business and industry have constantly reported acute shortages in the clerical office labor force during the past 20 years. The Virginia Employment Service and U.S. Census reports continue to reflect severe shortages in all clerical jobs, especially data processing and stenographic positions.

Youth Leadership Training

Through the 135 local chapters of the Future Business Leaders of America, opportunities for leadership activities are provided for more than 4,000 boys and girls.

Adult Education

Short-term, post-high school courses in vocational business education are organized to meet specific needs for office employment for persons who have had some business education but who are deficient in certain office skills.

Full-time programs in business education for high school graduates and adults are offered at three vocational-technical schools. Vocational training in office occupations is available also for rehabilitation trainees at the Woodrow Wilson Rehabilitation Center.

Adult classes are provided in a number of school divisions and two colleges to: (a) prepare beginning office workers, (b) upgrade adult workers, and (c) train employed workers for new occupational duties.

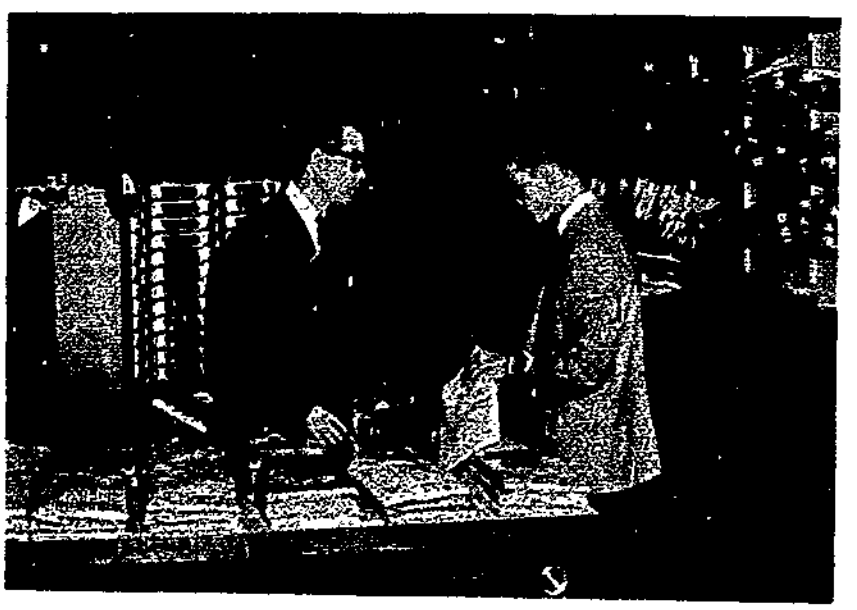
Courses also are being provided under the Manpower Development and Training Act for clerk-typists and clerk-stenographers.

DISTRIBUTIVE EDUCATION

Nothing happens in our economy until the product is sold. All of the goals set for higher production by agriculture and industry culminate in the sale to the consumer.

Distributive education (DE) is the vocational program which provides training for persons entering or already engaged in distributing goods and services to the public.

The development of shopping centers away from the traditional downtown areas, automation in industry, and competition for qualified personnel dictate that the distributor must utilize every possible means to keep himself abreast of the times.



Distributive education is designed to help meet the needs of management and of young people who enter the field of distribution. The public school serves as the framework through which this program will expand and develop in the future.

With increased employment opportunities in distribution in Virginia and throughout the nation, this program is constantly expanding to meet the educational needs of high school students as well as those adults who are already engaged in distributive occupations.

The In-School Program

Students who are interested in careers in distribution may select the distributive education program as a part of their high school curriculum. It is also an elective subject for the college-bound student as well as a terminal course for the high school graduate.

The success of the cooperative method of teaching depends on the student's placement in a distributive job where he can apply the instruction he receives in the classroom. Each student spends an average of 15 hours a week receiving classroom instruction and training on the job. Students begin at wages paid other beginning employees, and as they gain knowledg and experience and become more proficient their wages may be advanced. A recent five-year follow-up study in Virginia showed that over 54 percent of the DE students had remained in distributive occupations and 17 percent of this number had attained management or supervisory positions.

The DE preparatory program beginning at the sophomore year provides an opportunity to learn about careers in marketing and distribution previous to going on the job. The part-time cooperative training in the last two years of high school gives the working student career opportunities and training in many specialized fields such as food distribution, hardware,

petroleum, merchandising, or fashion. The DE program also plays a major role in training for the retail industry young people who have an agricultural background.

The Distributive Education Club

High school DE students have many common objectives and interests. Each DE student is a member of the local chapter of the Distributive Education Clubs of America (DECA). The teacher-coordinator serves as chapter advisor and organizes all club activities as an integral part of the classroom instruction in order to maintain the club as a co-curricular activity, providing experiences and training not otherwise available to the students.

The purposes of DECA are: (1) to develop a respect for education and marketing in distribution which will contribute to vocational competence, (2) to promote an understanding of and appreciation for the responsibilities of citizenship in our free competitive enterprise system, and (3) to develop leadership qualities.

The Adult Program

The distributive education adult program provides courses on three levels of training: employee, supervisory, and management. Undoubtedly, rapid changes in

methods of distribution will mean that more emphasis will be placed on distributive education in the next decade. Training will be needed for those who will advance to management positions in many new suburban branch operations. Training for supervisors of part-time employees will expand considerably as result of a 30 percent anticipated increase of this group in distribution. Many new and expanded service businesses, which are expected to increase by 25 percent within the next few years, will demand training to prepare those who will operate them. These are but a few of the expanding adult programs that will be in demand in the years ahead.

HOME ECONOMICS EDUCATION

Home economics education in the public high schools of Virginia is concerned with the application of knowledge to the job of homemaking and related occupations and with the growth of individuals as contributing members of families.

Courses offered in grades 8-12 include instruction in many phases of homemaking such as: maintaining family health; making homes liveable and attractive; managing income and other resources; selecting, preparing, and serving food for the family; selecting, making, and caring for clothing; guiding the development of young children in the family; and home care for the sick.

Besides providing instruction in the fundamentals of successful personal and family living, experiences in homemaking classes in high school may encourage pupils to continue their education in college for a variety of careers—home economics teacher, dietitian, home economist in business, and others.

For pupils who may not complete high school and for pupils who may not attend college, special courses provide preparation for entering gainful occupations which utilize home economics knowledge and skills. These occupations include: care of young children in day care centers or in homes; homemaking services; sewing services; food services; and aides to elderly and convalescent persons.

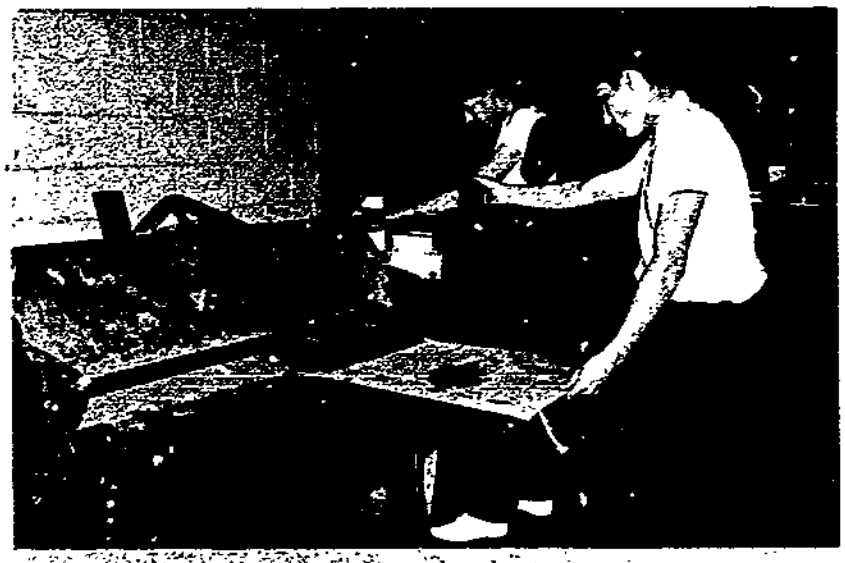
To enrich the offerings in home economics education in high school, membership in the Future Homemakers of America (FHA), a youth organization, is available to pupils enrolled in homemaking classes. As an integral part of the home economics

education program, FHA provides additional experiences to help pupils plan and carry out activities related to individual and family well-being.

Adult classes, an important part of the home economics education program in the high school, are available for persons who wish to work on homemaking problems of their own choice, to learn new skills in homemaking, or to develop competencies in wage earning occupations which utilize home economics knowledge and skills. These classes are taught either by the regular home economics teacher or by a special teacher employed as a member of the public school staff.

As part of the adult education program, the Young Homemakers of Virginia gives young adult homemakers an opportunity to continue their education with special emphasis on improving home and family living. As members of this organization, young homemakers not only increase their abilities in home living and management but also their abilities in assuming leadership roles in developing programs for strengthening homes and families.

INDUSTRIAL



EDUCATION

Industrial education describes all educational activities concerned with modern industry. It is a balanced program of studies and work experiences; its objectives are to explore industry and to produce competent workers. In the public schools of Virginia, it includes courses in trade and industrial education, technical education, and industrial arts education.

One consistent characteristic of the industrial education program is its ability to change to meet the needs of the era. A modern and complex technological society has increased the tempo of change resulting in unprecedented demands for new knowledge, techniques, skills, and understanding on the part of Virginia workers. The expanding industrial economy of Virginia and changes in the labor force present major challenges to industrial education. Productivity depends upon the ability to meet these

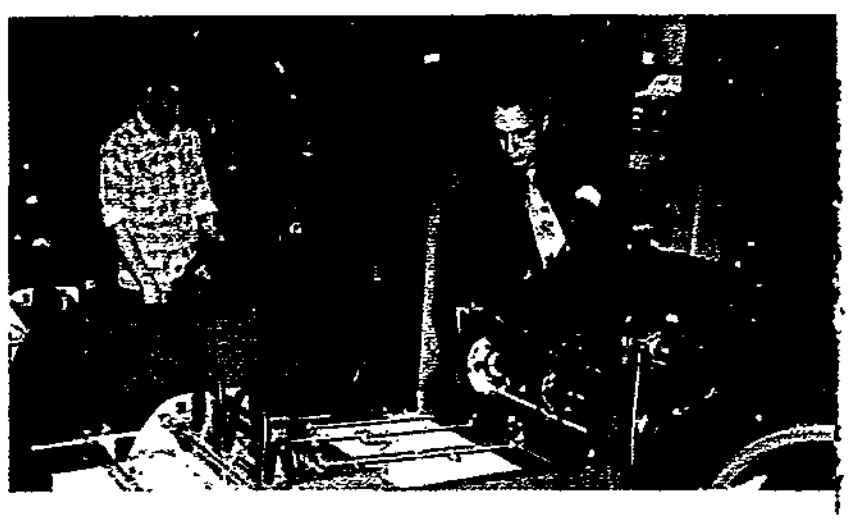
challenges. Without a constant supply of technically educated new workers, industrial economy cannot survive or grow.

The industrial education program involves two major levels of instruction: courses for high school youths and courses for out-of-school youths and adults.

Trade and Industrial Education

Trade and industrial education includes those educational activities especially designed to equip youths and adults for successful employment in industrial occupations. Two types of instruction are offered: (1) instruction to prepare persons for employment, and (2) instruction of a supplemental type for persons employed in industry. Trade and industrial education includes the following:

Day Trade Classes—These classes are for persons who desire training for trade or industrial employment. The training is comprehensive in nature, including instruction



in the manipulative skills, technical information, and related subjects which are needed by skilled and competent workers.

Major areas of instruction are auto mechanics, masonry, cabinetmaking, carpentry, drafting, electricity, electronics, needle trades, practical nursing, and printing. Day trade classes are offered in both high school and post-high school programs. In high school they are usually offered in the junior

and senior year for approximately 540 hours each year. This normally represents about one-half of the time spent each year in the regular school program.

Industrial Cooperative Training—This program is for high school juniors and seniors. Students 16 years of age or older attend school one-half of each school day and receive work experience in some industrial occupation the other half. To receive sufficient training in his selected occupation to enable him to sell his skills on a competitive labor market, the student usually enrolls in this program in both his junior and senior years, if possible. However, students enrolled for a one-year program only are encouraged to continue their training upon completing high school.

Although each student receives training in only one selected occupation, the program offers him a choice of employment objectives from a wide variety of industrial occupations. Systematic training is given on the job, and supplementary instruction related to the training is given in the high school.

Evening Trade Extension Classes—These classes are for employed workers who wish to increase their skills and knowledge in the trade or industrial occupations in which they are or have been engaged. For the most part, evening trade extension classes are short-term classes, varying from 30 to

250 hours. Related instruction for apprentices is provided through these classes.

Industrial plant training is available for employees and prospective employees in Virginia industries. Included are supervisory personnel development classes to upgrade and update foremen, supervisors, and other minor executives. Special preparatory classes also are organized to train new workers for specific skills.

Training classes also are available for public service employees such as firemen, policemen, surveyors, municipal managers, and building, plumbing, and electrical inspectors.

Technical Education

Virginia's advancing technology is having its effect on the employment of its citizens. Many jobs have become limited in number or have disappeared. Automation and the advent of complex machines have rapidly increased the skill scale. These changes, in turn, have created many new types of employment and have led to the development of technicians whose responsibilities lie between those of the skilled craftsman and the engineer. There has been an unprecedented demand for technicians, especially in electronics, drafting and design, mechanical, civil, highway and chemical technologies, and instrumentation. Although the demand for technicians varies with the type of industry, the ratio in some areas is as high as five technicians for each engineer.

Technical education in Virginia is designed for people who desire employment as highly skilled industrial technicians, engineering technicians, and professional assistants in the various fields of engineering. Pre-employment classes are offered in most of the area vocational-technical schools for those seeking employment. Technician-level training is also offered in several comprehensive high schools in the State, and technical extension classes are available to employed persons who wish to be upgraded and updated in their jobs.

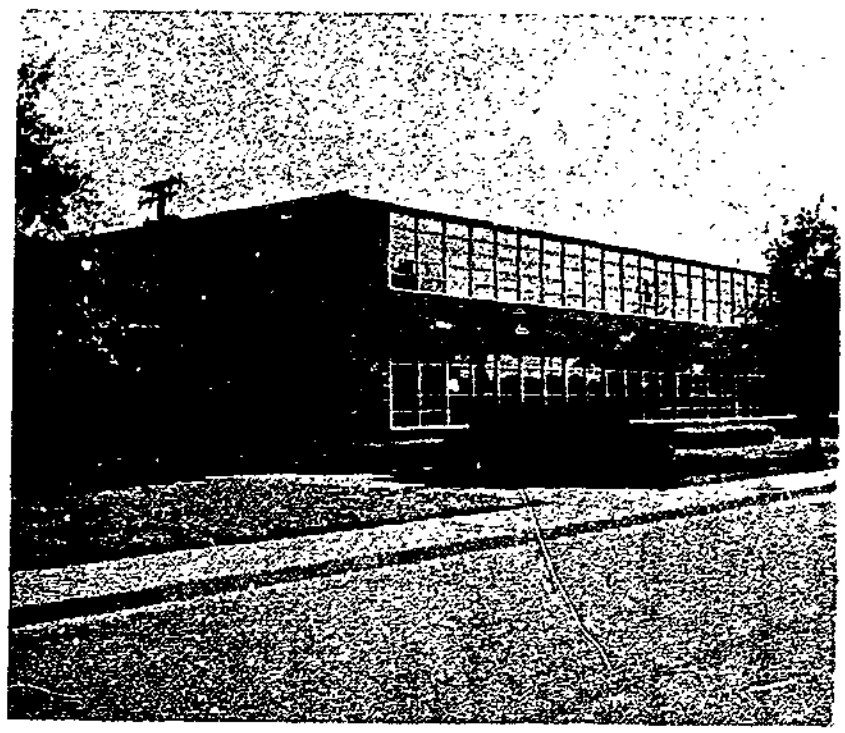
Industrial Arts Education

Industrial arts is a phase of general education which provides instruction and experience in the materials, processes, and products of industry. Learning comes through student activity with tools and materials, experimental project development, problem solving, and the application of science and mathematics to technology. Industrial arts prepares boys and girls for more effective living in a technological society.

Well organized laboratory experiences in the seventh, eighth, and ninth grades help students to develop a better understanding of their interests, abilities, limitations, and opportunities. The program provides practical experiences in the use of tools, machines, and experimental equipment and their application to modern materials and products of industry. Through such experiences the students are able to make adjustments that are essential to the intelligent selection, use, and maintenance of industrial products. In addition, they develop an appreciation for industry and the free-enterprise system. In senior high school more emphasis is placed upon the acquisition of knowledge and skills pertaining to technology and industry.

AREA VOCATIONAL-TECHNICAL SCHOOLS

Nine area vocational-technical schools offer full-time occupational training for out-of-school youths, high school graduates, and adults. Each school offers evening and other part-time classes for employed persons.



Although most full-time students live within commuting distance of the schools, qualified persons from all parts of the State may be admitted. Four of these schools have dormitories.

Five of the area vocational-technical schools are operated by local school divisions and four are operated under the supervision of State-supported colleges. Tuition fees vary depending upon such things as the school and the student's age, where he resides, and the type of course in which he is enrolled.

Enrollment is limited to persons 16 years of age or older. In all technical courses enrollment generally requires high school graduation, or its equivalent, with a prescribed background in science and mathematics. High school graduation, or its equivalent, also may be required in some trade courses. In most trade courses youths or adults who have attended high school and who have satisfactory aptitude scores will be admitted. Experience has shown that completion of industrial arts courses or appropriate vocational courses during high school contributes to the success of students pursuing vocational or technical courses on the post-high school level.

These schools offer two-year technical courses such as air conditioning and refrigeration, electricity, electronics, drafting and design, civil and highway technology, instrumentation, mechanical technology, nuclear electronics, and electronic data processing. One and two-year trade courses offered include aut body repair, auto mechanics, barbering, carpentry, cosmetology, diesel mechanics, drafting, electricity, machine shop, masonry, printing, practical nursing, and welding. Some schools offer business courses in secretarial science and accounting.

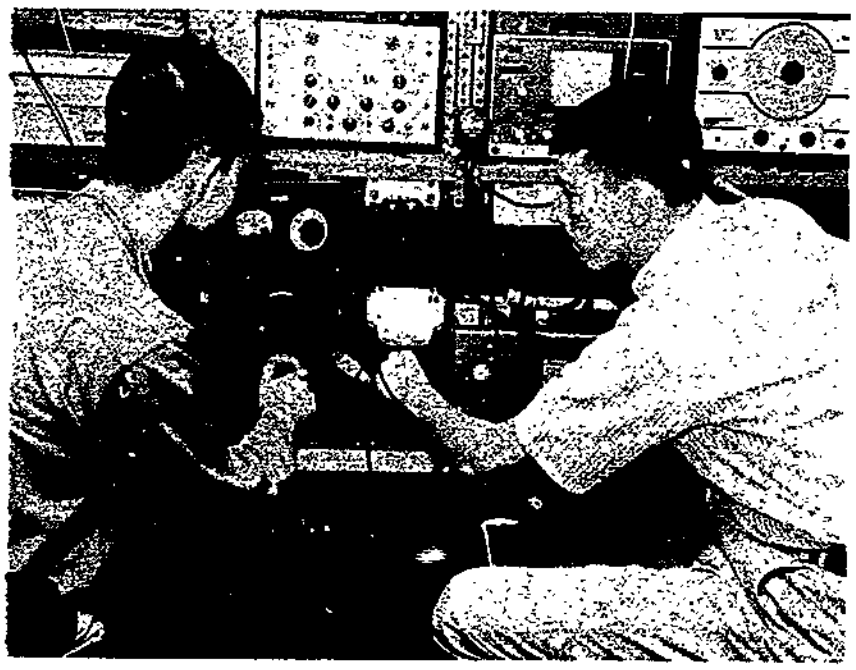
The names and locations of Virginia's vocational-technical schools are: Danville Technical Institute, Danville; New River Vocational-Technical School, Radford; Richmond Professional Institute School of Engineering Technologies, Richmond; Technical Institute of Old Dominion College, Norfolk; Virginia State College School of Industries, Petersburg; Virginia State College School of Industries, Norfolk; Washington County Vocational-Technical School, Abingdon; Wise County Vocational-Technical School, Wise; Valley Vocational-Technical School, Fishersville.

MANPOWER

The manpower training program provides training for individuals who are classified in one of the following categories: unemployed persons who cannot expect to secure full-time employment without special training; under-employed persons who cannot expect to secure full-time employment without special training; under-employed farmers whose annual incomes do not exceed $1,200; unemployed persons between the ages of 16 and 22. The program does not replace the need for existing vocational training but expands and broadens training programs available for workers in all recognized occupations.

Trainees are selected by the Virginia Employment Commission (VEC). Priority is given to those who are unemployed and who are heads of households. The interviewing and counseling of prospective trainees for determining their interests, suitability,

TRAINING SERVICE



and aptitude for job training is done by the VEC.

The Manpower Training Service, in cooperation with the VEC, identifies training needs and promotes and operates programs to help solve immediate and long-range manpower problems. Despite the fact that the skills of many Virginians are becoming obsolete, employment opportunities for trained workers are increasing. The major purpose of the program which is federally financed is to relieve unemployment caused by automation, shifts in market demands, foreign competition, and other economic changes.

The program of training includes: (1) providing assistance to school divisions in organizing curriculum guides and course outlines and in developing standards of occupational competency; (2) assisting school divisions in preparing budgets for proposed

training programs; (3) assisting school divisions in providing courses of instruction based on the recognized needs of the individuals who are to receive training; (4) periodic review and evaluation of training programs; (5) initiating steps to assure that training projects are formulated without delay and that the quality and adequacy of the training provided are consistently maintained.

Training is provided for immediate employment in numerous occupations such as automobile mechanics, bricklayers, clerk-stenographers, clerk-typists, diesel mechanics, electric appliance repairmen, electronic technicians, farm equipment mechanics, nurses' aides, plumbers, radio mechanics, sheet metal workers, and welders.

An Area Manpower Training Center recently started at Crewe, is the first vocational school in Virginia established solely for the training of youths not enrolled in a regular program of public education. Known as the Southside Vocational School, this center provides job-oriented—basic education for youths prior to their being trained for specific occupations. All who are enrolled must have been out of the regular school program for at least one year or must have been graduated from high school.

Other area manpower training centers are being planned. Locations for these additional schools will depend upon availability of facilities, employment opportunities, and the needs of youths in the area.

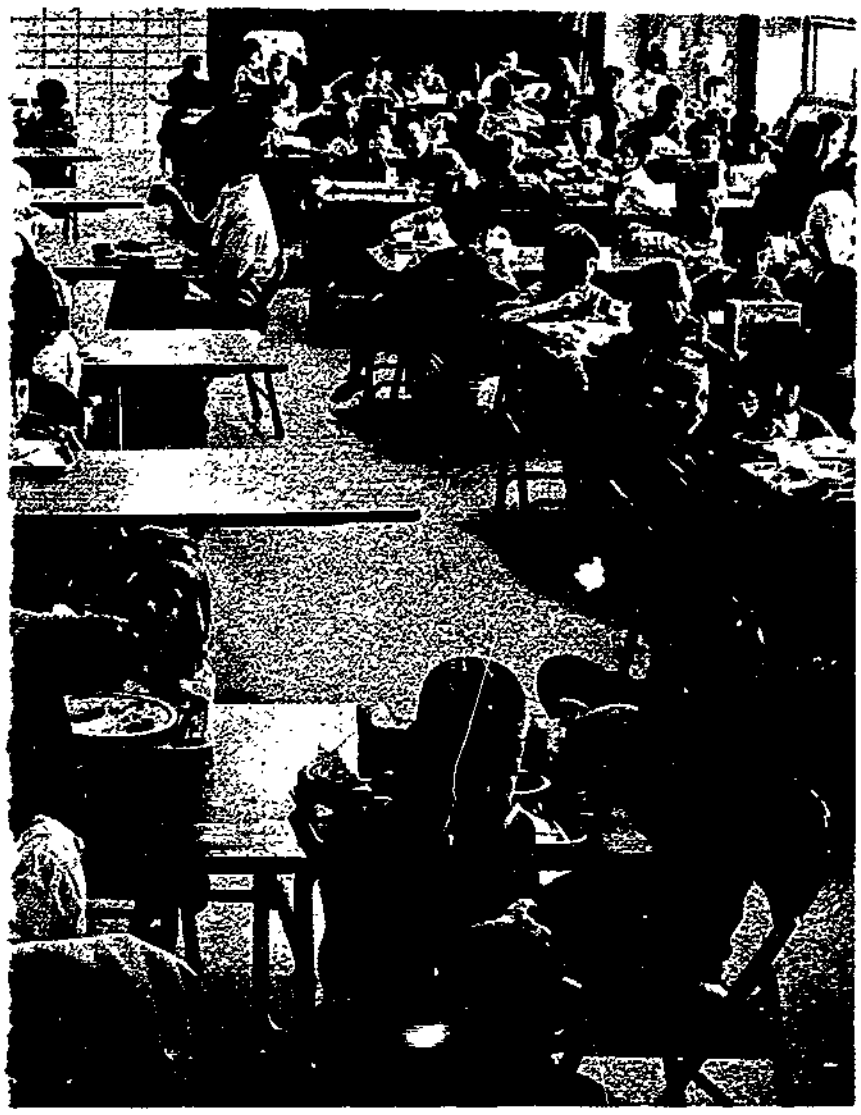
SCHOOL LUNCH PROGRAM

The school lunch program functions as an integral part of the school's educational experiences in nutrition, health, and citizenship, and supplements the efforts being made in homes to improve the nutritional status of pupils.

School lunch programs are operated in all school divisions in the State, yet each division decides the type of service or program which best meets the needs of its

pupils. Some schools operate their programs independently. Others participate in the National School Lunch and Special Milk Programs administered by the State Department of Education and accept commodity assistance provided through the Virginia Department of Agriculture.

The school lunch program provides opportunities for increased educational experiences. The lunchroom is being recognized more and more by administrators and teachers as an educational laboratory to enrich instruction in nutrition, citizenship, and other subjects. From time to time many classes assist in planning menus for the lunch program, which is of value in developing a better understanding of lunch standards.



Providing training opportunities for school lunch personnel is an important phase of program supervision. Credit courses are being offered in three State institutions to provide training in nutrition, food preparation, and management. Two statewide conferences of one week each are held annually for school lunch personnel. In addition, local training sessions lasting from one to four days are conducted by school lunch supervisors.

From 1946 to 1963 participation in the program has steadily increased. In 1946 average daily participation was 23 percent; in 1963 it was 48 percent. Ninety-four percent of the public school children in the State are enrolled in schools in which lunches are available.

SURPLUS

Following World War I, the 66th Congress recognized the value of making surplus property available to educational institutions in the United States and in November 1919, Public Law 91 was passed. A number of laws have been enacted since that time which have resulted in larger quantities and more types of surplus property being made available for educational institutions.

The Virginia State Educational Agency for Surplus Property—one of the services of the State Department of Education—is responsible for acquiring federal surplus property for Virginia and distributing it to eligible schools, hospitals, and civil defense agencies.

A tax-supported institution or agency may establish its eligibility by furnishing the State Agency with documentary evidence that it is tax supported and that it is a health or educational institution approved or accredited by a recognized board or association.

A non-profit institution may establish its eligibility by furnishing the State Agency with a photostatic copy of its tax-exemption certificate which shows that the institution is

PROPERTY

exempt from federal taxation under Section 101 (6) or the succeeding Section 501 (c) (3), of the Internal Revenue Code. A copy of documentary evidence also must be submitted to show that the institution is accredited or approved by a recognized board or association.

The authorized representative of an eligible institution or agency may obtain surplus property from the State Agency warehouse located at Byrd Field near Richmond. Property is allocated on a first-come, first-served basis. Service charges or fees are placed on items of surplus property by the State Agency as reimbursement for the costs involved in transferring the property. Any excess funds accruing from the operation of the program are redistributed to the participating institutions and agencies as reduced service charges or fees on future allocations.

The surplus property which is available for distribution consists of thousands of items needed in the instructional and maintenance programs in schools and by health units and civil defense organizations. Some institutions have equipped their laboratories and technical shops almost entirely from items that have been received through the surplus property program.

VT 008 683
Law Enforcement Education Directory, 1968-1969.

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International Association of Chiefs of Police, 1319 18th Street, N.W., Washington, D.C. 20036.
Pub Date - 69 16p.

*DIRECTORIES; *COLLEGE PROGRAMS; *LAW ENFORCEMENT; *POLICE

This directory of institutions offering degree programs in law enforcement is based on questionnaire data and other information. It lists 199 associate degree programs, 44 baccalaureate degree programs, 13 master's degree programs and five doctoral degree programs in the 50 states plus Guam and the Virgin Islands. The 234 programs are listed by state or territory and college, address, and type of degree. (EM)

VT 008 683

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LAW ENFORCEMENT EDUCATION DIRECTORY 1968-1969

U.S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT008683

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE, INC.
PROFESSIONAL STANDARDS DIVISION • WASHINGTON, D.C.

It is nonsense to state or to assume that the enforcement of the law is so simple that it can be done best by those unencumbered by a study of the liberal arts. The man who goes into our streets in hopes of regulating, directing or controlling human behavior must be armed with more than a gun and the ability to perform mechanical movements in response to a situation. Such men as these engage in the difficult, complex and important business of human behavior. Their intellectual armament–so long restricted to the minimum–must be no less than their physical prowess and protection.

The Commission recommends:

The ultimate aim of all police departments should be that all personnel with general enforcement powers have baccalaureate degrees.

A superior officer of any police department should certainly be conversant with the structure of our government and its philosophies. He must be well grounded in sociology, criminology and human relations in order to understand the ramifications of the problems which confront him daily. He must understand what makes people act as they do and what impact his actions in the performance of duty will have on them.

The Commission recommends:

Police departments should take immediate steps to establish a minimum requirement of a baccalaureate degree for all supervisory and executive positions.

REPORT BY THE PRESIDENT'S COMMISSION ON LAW ENFORCEMENT AND ADMINISTRATION OF JUSTICE
1967

This directory is prepared and distributed by

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE
1319 18TH ST., N.W., WASHINGTON, D.C. 20036

Law Enforcement Education Directory

1968 - 1969

GENERAL INFORMATION

This revised list of institutions offering degree programs in the law enforcement field is based upon questionnaires circulated by the IACP and other information available at the time of publication.

The Programs listed range widely in quality and inclusion in this directory does not constitute IACP endorsement or approval of any specific institution or program.

Higher education is designed to broaden the individual rather than to equip him with vocational skills. Students interested in preparing for a career in law enforcement should not be disturbed by the lack of a police science program in their locale. They may adequately prepare themselves for public service in any accredited institution of higher learning by selecting a liberal arts course of study which emphasizes the social and behavioral sciences.

Prospective students are advised to obtain details regarding fees, number of semester hours required, entrance requirements, etc., directly from the college of their choice.

NUMBER OF LAW ENFORCEMENT DEGREE PROGRAMS AVAILABLE IN THE UNITED STATES AND OUTLYING AREAS

	Associate Degree Programs (2-Year)	Baccalaureate Degree Programs (4-Year)	Master's Degree Programs	Doctorate Degree Program	Number of Separate Institutions
Alabama	2	0	0		2
Alaska	1	0	0		1
Arizona	3	2	0		5
Arkansas	0	0	0		0
California	58	6	6	2	65
Colorado	2	1	0		3
Connecticut	2	1	0		2
Delaware	1	0	0		1
District of Columbia	2	1	0		2
Florida	12	1	1	1	12
Georgia	4	0	0		4
Hawaii	1	0	0		1
Idaho	2	1	0		2
Illinois	11	1	0		11
Indiana	1	2	0		3
Iowa	5	0	1		6
Kansas	4	0	0		4
Kentucky	1	1	0		1
Louisiana	0	1	0		1
Maine	0	0	0		0
Maryland	3	0	0		3
Massachusetts	3	1	0		3
Michigan	8	2	1		11
Minnesota	0	0	0		0
Mississippi	0	1	0		1
Missouri	4	2	0		6
Montana	0	0	0		0
Nebraska	1	1	0		1
Nevada	2	0	0		2
New Hampshire	0	0	0		0
New Jersey	3	0	0		3
New Mexico	1	1	0		1
New York	11	1	2	2	12
North Carolina	2	0	0		2
North Dakota	0	0	0		0
Ohio	6	3	0		7
Oklahoma	0	2	0		2
Oregon	6	2	0		8
Pennsylvania	7	2	0		9
Rhode Island	1	1	0		1
South Carolina	0	0	0		0
South Dakota	0	0	0		0
Tennessee	1	1	0		1
Texas	10	1	1		10
Utah	2	2	0		3
Vermont	0	0	0		0
Virginia	4	1	0		4
Washington	7	1	1		7
West Virginia	0	0	0		0
Wisconsin	2	1	0		3
Wyoming	1	0	0		1
Guam	1	0	0		1
Virgin Islands	1	0	0		1
	199	**44**	**13**	**5**	**234**

PROGRAM LISTINGS BY STATE

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
ALABAMA			
Jefferson State Junior College	2601 Carson Rd. Birmingham (35215)	A.S. (Applied Sc.)	Law Enforcement
The Marion Institute	Marion (36756)	A.A., A.S. (Law Enf.)	Law Enforcement
ALASKA			
Anchorage Community College, University	1B20 W. Northern Lights Blvd. Anchorage (99503)	A.A. (Police Administration)	Police Administration
ARIZONA			
Arizona, University of	Tucson (B6001)	B.P.A., M.P.A. (Law Enf., Correcs.)	Public Administration
Cochise College	Douglas (B5607)	A.A. (Law Enf.)	Law Enforcement
Glendale Community College	Glendale (B5301)	A.A. (Law Enf.)	Cont. Education
Northern Arizona University	Flagstaff (B6003)	B.S. (Police Sc., Criminology)	Police Science and Administration
Phoenix College	1202 W. Thomas Rd. Phoenix (B5004)	A.A. (Police Sc.)	Police Science
CALIFORNIA			
Allan Hancock College	College Avenue Santa Maria (93454)	A.A. (Police Sc.)	Police Science
Antelope Valley College	3041 West Avenue & K Lancaster (93534)	A.A. (Police Sc.)	Technology
Bakersfield College	1B01 Panorama Drive Bakersfield (93305)	A.A. (Police Sc.)	Vocational-Technical Education
Barstow College	Barstow (92311)	A.A. (Law Enf.)	Law Enforcement
Cabrillo College	6500 Soquel Drive Aptos (95003)	A.A. (Police Sc.)	Police Science
California State College at Long Beach	6101 E. Seventh St. Long Beach (90804)	B.S. (Police Sc.) M.S. (Public Admn.)	Criminology
California State College at Los Angeles	5151 State College Dr. Los Angeles (90032)	B.S., M.S. (Police S.C., Criminalistics)	Police Science and Administration
California, University of	Berkeley (94720)	A.B., B.S. (Crim.) M.S., Ph.D.	Criminology
Chaffey College	5B85 Haven Avenue Alta Loma (91701)	A.A. (Police Sc.)	Police Sc.
Chabot College	25555 Hesperian Blvd. Hayward (94545)	A.A. (Police Sc.)	Police Sc.
Cerritos College	11110 E. Alondra Blvd. Norwalk (90651)	A.A. (Police Sc.)	Social Sc.
Citrus College	11B24 E. Foothill Blvd. Azusa (91702)	A.A. (Police Sc.)	Social Sc. Dept.
College of the Desert	43-500 Monterey Palm Desert (92260)	A.A. (Police Sc.)	Community Serv.
College of the Redwoods	1040 Del Norte Eureka (95501)	A.A. (Police Sc.)	Police Science
Compton College	1111 E. Artesia Blvd. Compton (90221)	A.A. (Police Sc.)	Police Science
Contra Costa College	2801 Castro Rd. San Pablo (94806)	A.A. (Police Sc.)	Police Science
De Anza College	Cupertino (95014)	A.A.	Law Enforcement
Diablo Valley College	Golf Club Rd. Concord (94523)	A.A. (Police Sc.)	Police Science

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
East Los Angeles College	5357 E. Brooklyn Ave. Los Angeles (90022)	A.A. (Police Sc.)	Police Science
El Camino Junior College	16007 S. Crenshaw Blvd. El Camino (90506)	A.A. (Police Sc.)	Police Science
Fresno City College	1101 E. University Ave. Fresno (93704)	A.S. (Police Sc.)	Police Science
Fresno State College	Fresno (93726)	B.S., M.S. (Law Enf. and Correcs.)	Criminology
Fullerton Junior College	321 E. Chapman Fullerton (92634)	A.A. (Police Sc.)	Police Science
Gavilan College	P.O. Box 126 Gilroy (95024)	A.A. (Police Sc.)	Police Science
Glendale College	1500 Verdugo Road Glendale (91208)	A.A. (Police Sc.)	Police Science
Grossmont College	8800 Grossmont College Dr. El Cajon (92020)	A.A. (Police Sc.)	Police Science
Hartnell College	156 Homestead Ave. Salinas (93901)	A.A. (Police Sc.)	Police Science
Imperial Valley College	Ira Aten Rd. & Hgwy. 111 Imperial (92251)	A.A. (Police Sc.)	Police Science
Long Beach City College	4901 E. Carson St. Long Beach (90808)	A.S. (Police Sc.)	Police Science
Los Angeles City College	855 N. Vermont Ave. Los Angeles (90029)	A.A. (Police Sc.)	Law and Police Sc.
Los Angeles Harbor College	1111 Figuroa Place - Wilmington (90744)	A.A. (Police Sc.)	Police Science
Los Angeles Valley College	5800 Fulton Avenue Van Nuys (91401)	A.A. (Police Sc.)	Police Science
Marin, College of	Kentfield (94904)	A.A. (Police Sc.)	Vocational Educ.
Mira Costa College	Barnard Drive Oceanside (92054)	A.S., A.A. (Police Sc.)	Police Science
Modesto Junior College	College Avenue Modesto (95350)	A.A. (Police Sc.)	Police Science
Monterey Peninsula College	Monterey (93940)	A.A. (Police Sc.)	Police Science
Mount San Antonio College	1100 N. Grand Ave. Walnut (91789)	A.A. (Police Sc.)	Police Science
Orange Coast College	2701 Fairview Rd. Costa Mesa (92626)	A.A. (Police Sc.)	Police Science
Palo Verde College	615 E. Hobsonway Blythe (92225)	A.A. (Police Sc.)	Police Science
Pasadena City College	1570 E. Colorado Blvd. Pasadena (91106)	A.A. (Police Sc.)	Police Sc., Engineering and Technology
Peralta Colleges	5714 Grove St. Oakland (94609)	A.A. (Police Sc.)	Police Science
Rio Hondo Junior College	11962 E. Florence Ave. Santa Fe Springs (90670)	A.A. (Police Sc.)	Police Science
Riverside City College	3650 Fairfax Ave. Riverside (92506)	A.A. (Police Sc.)	Police Science
Sacramento City College	3835 Freeport Blvd. Sacramento (95822)	A.A. (Police Sc.)	Service Occupations
Sacramento State College	6000 "J" Street Sacramento (95819)	A.B., M.A. (Police Sc.)	Government and Police Science
San Bernadino Valley Junior College	701 S. Mount Vernon Ave. San Bernadino (92403)	A.A. (Police Sc.) A.A. (Correcs.)	Police Science
San Diego Jr. Colleges	835 12th Ave. San Diego (92101)	A.S. (Police Sc.)	Police Science
San Francisco, City College of	Ocean Ave. at Phelan San Francisco (94112)	A.A. (Police Sc.)	Criminology
San Joaquin Delta Junior College	3301 Kensington Way Stockton (95204)	A.A. (Police Sc.)	Police Science

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
San Jose City College	2100 Moorpark Ave. San Jose (95114)	A.A. (Police Sc.)	Police Science
San Jose State College	San Jose (95114)	A.B. (Law Enf., Penology)	Law Enf. and Admn.
San Mateo, College of	San Mateo (94402)	A.A. (Police Sc.)	Police Science
Santa Ana College	1530 W. 17th St. Santa Ana (92706)	A.A. (Police Sc.)	Police Science
Santa Barbara City College	Cliff Dr. & Leadbetter Dr. Santa Barbara (93105)	A.A. (Police Sc.)	Vocational-Technical Education
Santa Monica City College	1815 Pearl St. Santa Monica (90406)	A.A. (Police Sc.)	Police Science
Santa Rosa Junior College	Santa Rose (95401)	A.A. (Police Sc.)	Police Science
Sequioais, College of the	Mooney Blvd. Visalia (93277)	A.A. (Police Sc.)	Police Science
Shasta College	Eureka Way Redding (96001)	A.A. (Police Sc.)	Police Science
Sierra College	Rocklin Road Rocklin (95677)	A.A. (Police Sc.)	Police Science
Solano College	Vallejo (94590)	A.A. (Police Sc.)	Law Enforcement
Southern California, University of	University Park Los Angeles (90024)	B.S., M.S., D.P.A. (Police; Corrects. Admn.)	Public Administration
Southwestern College	5800 Otay Lakes Rd. Chula Vista (92010)	A.A. (Police Sc.)	Police Science
Ventura College	4667 Telegraph Rd. Ventura (93003)	A.A. (Police Sc.)	Police Science
West Valley College	51 E. Campbell Ave. Campbell (95008)	A.A. (Police Sc.)	Police Science
Yuba College	Marysville (95901)	A.A. (Police Sc.)	Police Science
COLORADO			
Arapahoe Junior College	5900 S. Curtice Littleton (80120)	Assoc. in Applied Sc.	Police Science
Metropolitan State College	250 W. 14th Ave. at Civic Center Denver (80204)	B.S. (Law Enf., Police Sc.)	Police Science and Law Enforcement
Trinidad State Junior College	600 Prospect St. Trinidad (81082)	A.S. (Law Enf.)	Law Enforcement Administration
CONNECTICUT			
Manchester Community College	Manchester (06040)	A.S. (Police Sc.)	Law Enforcement
New Haven College	New Haven (06505)	A.S., B.S. (Police Sc. Admn.)	Law Enforcement
DELAWARE			
Brandywine Jr. College	Wilmington (19803)	A.S. (Police Sc.)	Police Science and Administration
DISTRICT OF COLUMBIA			
American University	Mass. & Neb. Ave., N.W. Washington (20006)	A.A., A.B. (Police Admn.)	Continuing Education
Washington Technical Institute	4100 Connecticut Ave. Washington (20008)	A.A. (Police Sc.)	Police Science
FLORIDA			
Brevard Jr. College	Cocoa (32922)	A.S.	Law Enforcement
Central Florida Junior College	P.O. Box 1388 Ocala (32670)	A.A. (Law Enf.)	Law Enforcement

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
Daytona Beach Junior College	Milligan Ave. Daytona (33451)	A.A. (Police Admn.)	Police Admn.
Florida Junior College At Jacksonville, The	Jacksonville (32207)	Assoc. in Sc.	Law Enforcement Technology
Florida Keys Jr. College	Key West (33040)	A.A., A.S.	Police Administration
Florida State University	Tallahassee (32306)	A.B., B.S., M.A., M.S.W., Ph.D., (Law Enf., Criminalistics)	Social Welfare
Junior College of Broward County	Davie Road Fort Lauderdale (33314)	A.A. (Law Enf.)	Law Enforcement
Miami-Dade Junior College	11380 N.W. 27th Ave. Miami (33167)	A.A., A.S. (Police Sc.)	Police Science and Criminology
Palm Beach Junior College	4200 Congress Ave. Lake Worth (33460)	A.S. (Law Enf.)	Law Enf. Prgm.
Pensacola Junior College	Pensacola (32504)	Assoc. in Sc.	Police Science
St. Petersburg Junior College	6605 - 5th Ave . N. St. Petersburg (33710)	A.A. (Police Admn.)	Police Administration
Tallahassee Jr. College	Tallahassee (32303)	A.A., A.S.	Law Enforcement
Valencia Jr. College	Orange County (32802)	A.A.	
GEORGIA			
Albany Junior College	2400 Gillonville Rd. Albany (31705)	A.A. (Police Admn.)	Social Science
Armstrong State College	Savannah	A.A. (Police Admn.)	Police Science
Georgia State College	33 Gilmer Road Atlanta (30303)	A.A. (Police Admn.) B.S. (being developed)	Police Adminiatration
DeKalb College	555 N. Indiana Creek Dr. Clarkston (30021)	A.S. (Police Sc.)	Police Science
HAWAII			
Honolulu Community College	874 Dillingham Blvd. Honolulu (96817)	A.S. (Police Sc.)	Police Science
IDAHO			
Boise College	1907 Campus Drive Boise (83701)	A.A., B.A. (Law Enf.)	Law Enforcement
College of Southern Idaho	1300 Kimberly Rd. Twin Falls (83301)	A.S. (Law Enf.)	Law Enforcement Training
ILLINOIS			
Black Hawk College	1001 16th Street Rock Island (61201)	A.A.	Law Enforcement
Carl Sandburg College	Galesburg (61401)	A.A.S. (Law Enf.)	Police Science Tech.
College of Dupage	Naperville (60540)	A.A. (Police Sc.)	Police Science Tech.
Danville Jr. College	2000 E. Main St. Danville (61832)	A.A.S.	Police Science
Illinois Central Junior College	East Peoria (61611)	A.A.S.	Police Science
Joliet Jr. College	Joliet (60432)	A.S.	Vocational-Technical Education
Loop Junior College	64 East Lake St. Chicago (60601)	A.A. (Law Enf.)	Law Enforcement
Rock Valley College	Rockford (61111)	A.S.	Technology
Southern Illinois University	Carbondale (62901)	A.A. (Law Enf.)	Corrections and Law Enforcement
Triton College	1000 Wolf Rd. Northlake (60164)	Assoc. in Science	Police Science Administration

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
University of Illinois at Chicago Circle	P.O. Box 4348 Chicago (60680)	B.A. (Criminal Justice)	Criminal Justice
William Rainey Harper College	34 W. Palatine Rd. Palatine (60067)	A.S. (Law Enf.)	Police Science
INDIANA			
Indiana State University	Terre Haute (47809)	B.A., B.S.	Criminology
Indiana University	Bloomington (47403)	A.B., B.S. (Law Enf.)	Police Administration
University of Evansville	P.O. Box 329 Evansville (47704)	Assoc. in Law Enf.	Law Enforcement
IOWA			
Area Ten Community College	Box 2068 Cedar Rapids (52406)	A.A.	Law Enforcement
Iowa Western Community College	923 E. Washington Clarinda	A.A.	Law Enforcement
North Iowa Area Community College	220 E. State St. Mason City	A.A. (Police Sc.)	Police Science
Southeastern Iowa Area Community College	Hwy 24 West Burlington (52601)	A.A. (Law Enf.)	Law Enforcement
State University of Iowa	Iowa City (52240)	M.A. (Law Enf. and Correcs.)	Sociology and Anthropology
University of Iowa	Iowa City (52240)	A.A. (Law Enf.)	Police Science
KANSAS			
Allen County Community Junior College	Iola (66744)	A.A. (Police Sc.)	Police Science
Cowley County Community College	125 S. Second St. Kansas City (64111)	A.A. (Police Sc.)	Vocational-Technical Education
Hutchinson Community Junior College	1300 N. Plum St. Hutchinson (64111)	A.A.S. (Police Sc.)	Vocational-Technical Education
Wichita State University	1845 Fairmount Wichita (67208)	Assoc. in Police Sc.	Police Science
KENTUCKY			
Eastern Kentucky University	Richmond (40475)	A.A., B.S. (Law Enf.)	School of Law Enf.
LOUISIANA			
Loyola University	New Orleans (70118)	B.A. (Criminology)	Evening Division
MARYLAND			
Community College of Baltimore	2901 Liberty Hghts. Ave. Baltimore (21215)	A.A. (Police Sc.)	
Essex Community College	Essex (21221)	A.A. (Police Sc.)	
Montgomery County Junior College	Takoma Park (20012) Rockville (20850)	A.A. (Police Sc.)	
MASSACHUSETTS			
Cape Cod Community College	Hyannis (02607)	A.A.	Criminology
Mount Wachusett College	Gardner (01440)	A.A.	Police Science
Northeastern University	360 Huntington Ave. Boston (02115)	A.A., B.S. (Law Enf. & Security)	Law Enforcement and Security
Worcester Jr. College	Worcester (01608)	A.A. (Police Sc.)	Police Administration
MICHIGAN			
Delta College	University Center (48710)	A.A. (Police Sc.)	Continuing Education

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
Flint Community Junior College	1301 E. Court St. Flint (48503)	A.A. (Police Sc.)	Law Enforcement
Grand Rapids Junior College	143 Bostwick Ave., N.E. Grand Rapids (49502)	A.A. (Public Safety)	Public Safety (Police Science)
Lansing Community College	419 N. Capitol Ave. Lansing (48914)	A.A. (Law Enf.)	Law Enforcement
Macomb County Community College	14500 Twelve Mile Rd. Warren (48093)	A.A.	Law Enforcement
Michigan State University	East Lansing (48823)	B.S., M.S. (Law Enf. Admn.)	Police Administration and Public Safety
Oakland Community College	Auburn Hills Campus 2900 Featherstone Rd. Auburn Hgts. (48057)	A.A. (Police Sc.)	Police Science
St. Clair County Community College	323 Erie Street Port Huron (48060)	A.A. (Law Enf.)	Law Enforcement
Schoolcraft College	18600 Haggerty Rd. Livonia (48151)	A.A. (Technology)	
Wayne State University	Detroit (48202)	B.S. (Police Admn.)	Police Administration
MISSISSIPPI			
University of Mississippi School of Business & Government	University (38677)	B.A. (Police Admn.)	Police Science
MISSOURI			
Central Missouri State College	Warrensburg (64093)	A.B., B.S. (Law Enf.)	Law Enforcement
Florissant Valley Community College	3400 Pershall Rd. Ferguston (63135)	A.A.S.	Law Enforcement
Forest Park Community College	3185 Gravois Ave. St. Louis (63118)	A.A.S.	Law Enforcement
Merramec Community College	959 S. Geyger Rd. Kirkwood (63122)	A.A.S.	Law Enforcement
Metropolitan Junior College District	3845 McGee St. Kansas City (64111)	A.A. (Police Sc.)	Police Science
University of Missouri	8001 Natural Bridge Rd. St. Louis (63121)	B.S. (Law Enf.)	Admin. of Justice.
NEBRASKA			
University of Omaha	60th and Dodge St. Omaha (68101)	A.A., B.S. (Law Enf. and Security)	Law Enforcement and Security
NEVADA			
Nevada Southern University	4505 Maryland Prky. Las Vegas (89109)	A.S.	General and Technical Studies
Nevada Technical Institute	Stead (89506)	A.S. (Law Enf.)	Law Enforcement
NEW JERSEY			
Ocean County College	Toms River (08753)	Assoc. in Applied Sc.	Law Enf. Option
Rider College	P.O. Box 298 Trenton (08602)	A.A. (Police Admn.)	Special Programs
Rutgers, The State University	77 Hamilton St. New Brunswick (08903)	A.S. (Police Sc.)	Law Enforcement
NEW MEXICO			
New Mexico State University	P.O. Box 487 University Park (88070)	B.S. (Police Sc.) A.A. (Police Sc.)	Police Science
NEW YORK			
Dutchess Community College	Poughkeepsie (121601)	A.A.	Police Science

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
Elmira College	Elmira (14901)	Assoc. in Applied Sc.	Evening and Summer Sessions
Erie County Technical Institute	Main & Youngs Rd. Buffalo (14221)	Assoc. in Applied Sc.	Police Science
Hudson Valley Community College	Troy (12180)	A.A.S. (Police Sc.)	Police Science
John Jay College of Criminal Justice	235 E. 20th St. New York (10003)	A.S., B.S. (Police Sc.)	Police Science
Mohawk Valley Community College	1101 Sherman Dr. Utica (13501)	A.A.S. (Police Sc.)	Police Science
Monroe Community College	410 Alexender St. Rochester (14607)	A.S. (Police Sc.)	Police Science
New York State University	Farmingdale, L.I. (11735)	A.A. (Police Sc.)	Police Science
New York University	New York (10003)	M.P.A., Doctor of Public Admn., Ph.D.	Law Enforcement
Onondaga Community College	700 E. Water St. Syracuse (13210)	A.S., A.A.	Police Science
Suffolk County Community College	533 College Rd. Selden, L.I. (11784)	Assoc. in Applied Science	Police Science
State University of New York	221 Ontario St. Albany (12203)	M.S., Ph.D. (Crim. Justice)	Criminal Justice
Westchester Community College	75 Grasslands Road Valhalla (10595)	A.A.S.	Police Science
NORTH CAROLINA			
Central Piedmont Community College	1141 Elizebeth Ave. P.O. Box 4009 Charlotte (23204)	Assoc. in Applied Sc.	Criminology and Police Science
Southwestern Technical Institute	Sylva (28779)	A.A.S.	Social Science
OHIO			
Clark County Technical Institute	Springfield (45505)	A.A.S.	Police Science
Cuyahoga Community College	2214 E. 14th St. Cleveland (44115)	A.A. (Law Enf.)	Law Enf. Admn. & Public Safety
Kent State University	Kent (44240)	B.A. (Law Enf. Admn.)	Political Science
Lorain County Community College	1005 N. Abbe Rd. Elyria (44035)	Assoc. in Police Sc.	Law Enforcement
University of Cincinnati	Cincinnati (45221)	A.S. (Police Sc.)	Police Science
University of Dayton	Dayton (45409)	Assoc. in Police Admn., B.S.S.	Political Science, Police Program
Youngstown University	410 Wick Ave. Youngstown (44503)	B.A. (Police Sc.) 2-year Certif.	Police Science
OKLAHOMA			
University of Oklahoma, The	Norman (73059)	A.B. (Political Sc.)	Law Enforcement Curriculum
University of Tulsa, The	Tulsa (74104)	B.S. (Police Sc.)	Sociology
OREGON			
Blue Mountain Community College	2410 N.W. Cerden Ave. Pendleton (97801)	Assoc. in Police Sc.	Vocational-Technical Division
Clatsop Community College	16th & Jerome Sts. Astoria (97103)	Assoc. in Police Sc.	Police Science
Lane Community College	Eugene (97405)	A.S. (Law Enf.)	Social Science
Portland Community College	Portland (97201)	A.S.	Social Science

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
Portland State College	P.O. Box 751 Portland (97207)	B.S. (Behaviorial Sc.)	Law Enforcement
Southern Oregon College	Ashland (97520)	B.A.	Law Enforcement
Treasure Valley Community College	650 College Blvd. Ontario (97914)	Assoc. in Police Sc.	Law Enforcement
Umpqua Community College	P.O. Box 967 Roseburg (97470)	Assoc. in Police Sc.	Vocational-Technical & Adult Education
PENNSYLVANIA			
Bucks County Community College	Newton (18940)	Assoc. in Police Admn.	Law Enforcement
Community College of Allegheny County	East Campus Monroeville (15146)	A.A., A.S. (Police Sc. & Admn.)	Police Science & Administration
Harrisburg Area Community College	3300 Cameron Street Road Harrisburg (17110)	A.S. (Police Sc. & Admn.)	Police & Public Administration
Indiana University of Pennsylvania	Indiana (15701)	A.A., B.A., B.S. (Crim., Law Enf.)	Law Enforcement
Lehigh County Community College	501 Hamilton St. Allentown (18101)	A.A., A.A.S. (Degree Programs being developed)	Police Science & Administration
Montgomery County Community College	612 Fayette St. Conshohocken (19428)	Assoc. in Applied Sc.	Police Science & Administration
Pennsylvania State University	University Park (16802)	B.S. (Law Enf. and Corrections)	Law Enforcement and Corrections
Temple University Community College	Cheltenham & Sedgwick Philadelphia (19122)	A.S.	Police Science and Administration
York Junior College	Country Club Road York (17405)	A.S.	Law Enforcement
RHODE ISLAND			
Bryant College	129 Hope St. Providence (02906)	A.S., B.S. (Law Enf.)	Law Enforcement
TENNESSEE			
Memphis State University	Memphis (38111)	A.A. (Law Enf.) B.A. (Sociology, Law Enf.)	Sociology
TEXAS			
Central Texas College	P.O. Box 848, Hgwy. 190 Killeen (76541)	Assoc. in Applied Sc.	Engineering Arts & Technology
El Centro College–of the Dallas Cty. Jr. College District	Main & Lamar Dallas (75202)	Assoc. in Applied Sc.	Police Science
Grayson County Jr. College	P.O. Box 979 Denison (75020)	A.A.	Law Enforcement
McLennan Community College	Waco (76703)	A.A.S.	
Odessa College	P.O. Box 3752 Odessa (79760)	A.A.S.	Vocational-Technical Education
San Antonio College	1300 San Pedro San Antonio (78212)	A.A.	Law Enforcement
San Jacinto College	8060 Spencer Hwy. Pasadena (77505)	A.A.	Police Administration
Sam Houston State College	Huntsville (77340)	M.A. (Law Enf.) B.A. (Law Enf.)	Law Enforcement
South Texas Junior College	1 Main Street Houston (77002)	A.A.	Police Administration
Tarrant County Junior College District	Fort Worth (76102)	Assoc. in Applied Sc.	Police Administration

Institution	Address (Zip Code in Parentheses)	Degree	For Information Contact Department of
Texarkana College	Texarkana (75501)	A.S. (Police Techn.)	Police Technology
UTAH			
Brigham Young University	Provo (84601)	A.A., B.S. (Law Enf.)	Government Services
University of Utah	Salt Lake City (84112)	B.A., B.S. (Sociology)	Sociology
Weber State College	Ogden (84403)	Assoc. in Sc.	Police Science
VIRGINIA			
Northern Virginia Community College	3443 S. Caryln Spring Rd. Bailey's Crossroads (22041)	A.S. (Applied Sc.)	Police Science
Old Dominion College	Norfolk (23508)	A.A. (Law Enf.)	Law Enforcement
Virginia Commonwealth University	901 W. Franklin St. Richmond (23220)	A.A., B.S. (Law Enf.)	Sociology
Virginia Western Community College	3098 Colonial Ave., S.W. Roanoke (24095)	Assoc. in Applied Sc.	Police Science
WASHINGTON			
Bellevue Community College	4333-A 128th Ave., S.E. Bellevue (98004)	Assoc. in Technology	Police Science
Clark College	1925 Fort Vancouver Way Vancouver (98661)	A.A. (Police Sc.)	Police Science
Everett Community College	Everett (98201)	A.A. (Law Enf.)	Vocational-Technical Education
Highline College	Midway (98031)	A.S. (Police Sc.)	Law Enforcement-Occupational Educ.
Seattle Community College	1625 Broadway Seattle (98109)	A.S.	Curriculum & Instruction Laboratory
Shoreline Community College	16101 Greenwood Ave., N. Seattle (98133)	A.A. (Police Sc.)	Vocational-Technical Education
Tacoma Community College	Tacoma (98465)	A.A.	Law Enforcement
Washington State University	Pullman (99163)	B.S., M.A. (Law Enf.)	Police Science & Administration
WISCONSIN			
Kenosha Technical Institute	3520 - 30th Ave. Kenosha (53140)	Assoc. in Law. Enf.	Law Enforcement
Milwaukee Institute of Technology	1016 North 6th St. Milwaukee (53203)	A.S. (Police Sc.)	Police Science Technology
Wisconsin State University	Platteville (53818)	B.S. (Police Sc.)	Police Science
WYOMING			
Casper College	125 College Dr. Casper (82601)	A.A. (Law Enf.)	Law Enforcement
U.S. OUTLYING POSSESSIONS			
GUAM			
College of Guam	P.O. Box EK Agana (96910)	A.A. (Law Enf.)	Police Science & Law Enforcement
VIRGIN ISLANDS			
College of the Virgin Islands	P.O. Box 1826 St. Thomas (00801)	A.A. (Police Sc.)	Continuing Education

GENERAL INFORMATION ON LAW ENFORCEMENT CAREERS

Police officers employed by federal, state and local agencies are charged with the responsibility of protecting life and property and preserving the peace. Although various agencies may be assigned to specialized fields of law enforcement their basic mission of public protection is common to all. Policemen and policewomen carry out the activities through which protection is achieved. These activities include preventive patrol, detection, arrest and prosecution of criminal offenders, traffic enforcement, juvenile work, and many other specialized enforcement tasks.

Police officers, on foot or motor patrol, are usually assigned preliminary investigation of crimes occuring in their areas. They will protect the scene of a crime, attempt to apprehend the offenders, and complete the necessary reports for follow-up action by detectives.

A limited number of policemen may be assigned to special investigative functions, such as vice control, intelligence and internal investigations.

Policewomen may perform a variety of duties, including some patrol work, especially in areas of high juvenile crime. Many departments use policewomen extensively in juvenile aid work, and to a lesser degree in records and communications and custodial duties.

The aspiring policeman or policewoman applicant, if successful, can anticipate filling a vital position in the community.

Many persons will depend on the ability of the policeman or policewoman to take the proper action in a variety of situations. A policeman capable of increased responsibilities or special duties will demonstrate these attributes while performing law enforcement tasks, and frequently may look forward to early recognition of his talents.

Law enforcement agencies generally base their recruiting standards on the following criteria:

Age and citizenship
Educational attainment
Physical condition
Personal attributes
Residency requirements

These criteria are used by police agencies at municipal, county and state levels.

Age and Citizenship

United States citizenship is required by all American law enforcement agencies. Age requirements are generally from 21 years to a maximum of 29 years. In some instances, young high school graduates may seek employment in certain departments which utilize "cadet" or trainee programs. Cadets perform clerical or other tasks which do not require sworn personnel for their performance. They are considered for employment as a police officer upon reaching their 21st birthday.

Educational Attainment

Practically all departments require successful completion of high school courses or certification through specific Armed Services Institute or other examinations. This requirement may be mandatory in some states, and some cities further specify some college training.

Applicants are generally not required to be trained in law enforcement subjects prior to their employment, but the applicant possessing advanced training in the police administration, criminology, or criminalistics fields may be reasonably expected to be better qualified for employment. The high school student aspiring to a career in scientific crime detection is advised to emphasize chemistry, physics, mathematics, and physical science courses of study. All law enforcement positions require ability to communicate ideas and findings.

Written examinations are usually a part of the selection process. The examination may determine "general knowledge," including current events, reading comprehension, analytical ability, and ability of self-expression. An intelligence quotient test may also be given with a stated minimum "IQ" to qualify for further consideration.

Physical Condition

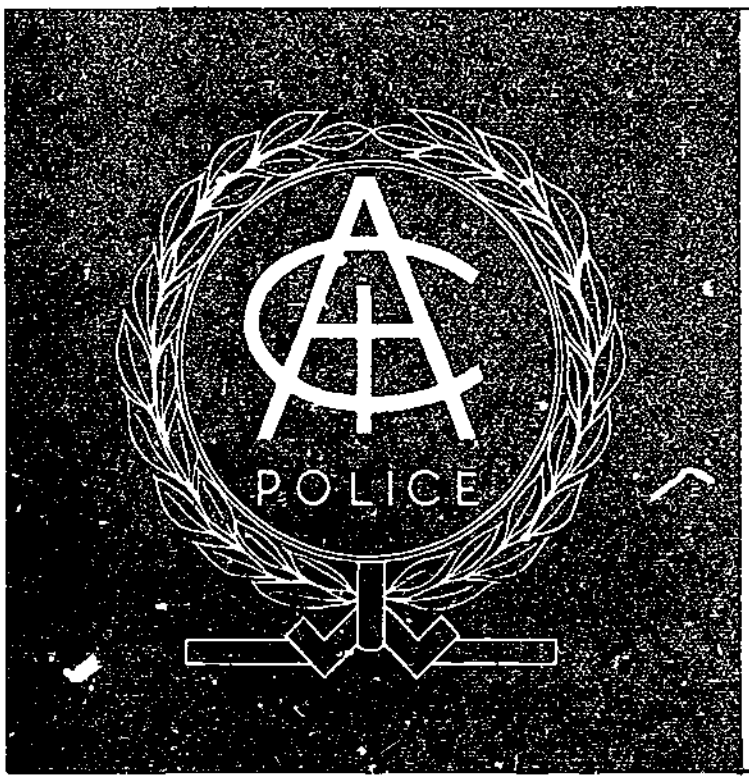
Police service at any level of government requires physically sound personnel. Severe physical exertion is occasionally required and the applicant, male or female, must possess the stamina to work for long periods of time without rest. Minimum medical standards have been established and are observed by most departments. Generally, any marked deformity, over-weight condition, or weak muscular development may result in disqualification. Hearing and visual acuity must be excellent; some departments permit corrective lenses to be worn. Color blind applicants are rejected.

Personal Attributes

All departments require applicants to be of good moral character, emotionally stable and mature. A criminal record is basis for rejection, and prior traffic violations may result in disqualification. Candidates are given a thorough background investigation which will indicate their integrity, initiative, sobriety, and industriousness. The applicant's conduct and habits will be evaluated. The department will require an oral examination, at which time the candidate's poise and ability of self-expression will be determined.

Residency Requirements

A growing number of departments at all levels of government are eliminating prior resident requirements of applicants. State residency may be specified prior to employment, but the trend is to invite applications from any area of the United States.



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VT 008 692
Work-Experience Education in Santa Barbara County High School Districts. An Evaluative Study.

Santa Barbara County Association of Work-Experience Educators, Calif. Evaluative Study Committee
MF AVAILABLE IN VT-ERIC SET.
Pub Date - May69 100p.

*WORK EXPERIENCE PROGRAMS; *HIGH SCHOOLS; *PROGRAM EVALUATION
*SANTA BARBARA COUNTY; CALIFORNIA

The purposes of the study were: (1) to describe the nature of the program, (2) to evaluate the purposes, procedures, and outcomes, (3) to identify problems, issues, and strengths, (4) recommend basic principles which should govern procedures involved in the continuance and improvement of the program, and (5) to evaluate the implementation of the recommendations of a 1961 study of similar nature. In October 1968, 1,747 questionnaires were sent to principals, counselors/coordinators, teachers, counselors, students, employers, and parents. Usable responses totaled 1,000. Programs had become more extensive than they were in 1960 and were generally recognized as valuable. Important deficiencies were insufficient supervisory visits to job stations and inadequate relationships between job and school experiences. Recommendations include: (1) organizing of effective advisory committees, (2) employing sufficient staff to direct the program and coordinate jobs, (3) classifying students in accordance with program type (exploratory, vocational, general), (4) providing an effective orientation program for 10th grade students, (5) providing related instruction for all students in the programs, (6) solving transportation problems, (7) increasing emphasis on vocational guidance prior to job placement, and (8) implementing a continuous public relations program. (JK)

VT 008 692

ED039370

WORK-EXPERIENCE EDUCATION IN SANTA BARBARA COUNTY HIGH SCHOOL DISTRICTS.

AN EVALUATIVE STUDY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Prepared by
The Evaluative Study Committee
Santa Barbara County Association of Work-Experience Educators

May, 1969

VT008692

M E M O R A N D U M

TO: The ERIC Clearinghouse on Vocational and Technical Education
The Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

FROM: (Person) Kenneth G. Densley (Agency) Research Coordinating Unit, Vocational Education Section, California State Department of Education
(Address) 721 Capitol Mall, Sacramento, California 95814

DATE: June 9, 1969

RE: (Author, Title, Publisher, Date) "Work-Experience Education in Santa Barbara County High School Districts, An Evaluative Study"; The Evaluative Study Committee, Santa Barbara County Association of Work-Experience Educators, 1969

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(2) Means Used to Develop Material:
Development Group P
Level of Group P
Method of Design, Testing, and Trial P

(3) Utilization of Material:
Appropriate School Setting P
Type of Program P
Occupational Focus P
Geographic Adaptability NA
Uses of Material P
Users of Material P

(4) Requirements for Using Material:
Teacher Competency P
Student Selection Criteria P
Time Allotment P

Supplemental Media --
Necessary NA)
Desirable NA) (Check Which)

Describe

Source (agency)
(address)

REPORT ON RETURNS

QUESTIONNAIRES	USABLE ADDRESSES	USABLE RETURNS	%
Principals	10	10	100
WEE Counselors/Coordinators	19	19	100
Teachers	533	268	50.3
Counselors		18	
Students	457	301	65.9
Employers	340	171	50.0
Parents	388	216	55.7
Totals	1747	1003	57%

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CHAPTER I

PURPOSE AND SCOPE OF STUDY

The need for improved vocational education and vocational guidance in American high schools was traced in Fielstra's Work Experience Education Program in Santa Barbara County High School Districts, Report of an Evaluative Study.[1] Dr. Fielstra's study, completed in 1961, is considered the foremost work in the evaluation of work-experience education. His study included only the five high schools which were in Santa Barbara County when the Santa Barbara County Work Experience Project was initiated in 1953. Since the fall of 1967 there have been nine high schools in Santa Barbara County--all operating programs of work-experience education.

In the spring of 1968, the Santa Barbara County Association of Work Experience Educators formed a committee for the specific purpose of evaluating the programs of work experience in the county. The committee chairman, Grady Kimbrell, and members Dean Anders and John Sharon met with Dr. Fielstra on the UCLA campus to formulate plans for the new study. It was decided to use essentially the same approach, questionnaires, and type of reporting as used in Dr. Fielstra's 1961 study in order to make comparisons of the status of work-experience in 1960 with that of 1968. This effort is thus a re-evaluation of Santa Barbara County Programs.

No attempt will be made to re-emphasize the need for improved vocational education and vocational guidance in this report. However, the changes in work-experience education--especially in growth and new opportunities--will be traced.

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[1]Clarence Fielstra, Work Experience Education Program in Santa Barbara County High School Districts, Report of an Evaluative Study, Rood Associates, Santa Barbara, California, 1961.

In Fielstra's evaluation, involvement groups responding to questionnaires included students, parents, school principals, teachers, and employers. School counselors also will have an opportunity to respond in this re-evaluation.

As in Fielstra's study, this work is concerned only with that part of the work-experience education programs in Santa Barbara County which provided school credit toward high school graduation for the students who participated in it.

Common purposes of both Fielstra's and the present study are:

1. To describe the nature of the work-experience education programs in Santa Barbara County High Schools.
2. To evaluate the purposes, procedures, and outcomes of the programs.
3. To identify problems and issues, as well as strengths, of the programs.
4. To recommend basic principles, which should govern procedures involved in the continuance and improvement of the programs.

In addition, the present study attempts to determine the extent to which Fielstra's 1960 recommendations have been implemented.

CHAPTER II

CHARACTERISTICS OF, AND CHANGES SINCE 1960 IN, WORK-EXPERIENCE EDUCATION IN SANTA BARBARA COUNTY HIGH SCHOOLS

The history of work-experience education in Santa Barbara County High Schools appears in a report[1] to the Rosenberg Foundation by Myron S. Olson, Professor of Education, University of Southern California, and at that time Consulting Director of the Work Education Project. That historical review was made available through the Santa Barbara County Schools Office.[2]

No attempt is made here to summarize that review. However, the following background statements from Work Education in Santa Barbara County[3] will help the reader understand the nature of work-experience education in Santa Barbara County:

What is Work-Experience Education?

Work-experience education in Santa Barbara County is a cooperative effort by the high school districts in the County and the citizens of the separate communities to give our young people the opportunity to discover their own vocational interests and aptitudes by doing "real" work in business, industry, and the professions. (Millions of dollars worth of equipment--that the school districts could never otherwise provide--is used by students participating in work-experience education.)

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[1]Myron S. Olson, Santa Barbara County High Schools Work Education Program (Unpublished Report to Rosenberg Foundation). Santa Barbara County Schools, 1955. Pp. 8-20.

[2]Santa Barbara County Schools, Historical Diary of the Work Education Program (Mimeographed). Santa Barbara County Schools, 1955. Pp. 1-13.

[3]Santa Barbara County Schools, Work Education in Santa Barbara County (Printed folder, not dated and not paginated).

Why Was It Started?

It was developed in answer to the need for teenagers to find employment to help them grow into mature, well-informed, responsible citizens. School administrators and leading citizens of Santa Barbara County joined together to provide this type of learning for our boys and girls of high school age.

How Did It Begin?

The programs began in February, 1953 (as the Santa Barbara County Work Experience Project) with a generous grant from the Rosenberg Foundation to support the first two years of study. A county Citizen's Advisory Committee was originally formed to accept the special funds, establish policies, and employ the research staff. Since February, 1955, it has been supported by the individual school districts.

What Are the Three Types of Work Experience Education?

1. Exploratory Work-Experience Education--is a program of work on school time, with school supervision and school credit, in a business, industry, or profession without pay. This program provides students with opportunities to observe and sample systematically a variety of conditions of work for the purpose of ascertaining suitability for the occupation being explored.
2. General Work-Experience Education--is a program designed to give teenagers experience in part-time paid employment, performed during school hours, with school supervision and school credit for work successiully accomplished. This gives the student experience in both "real" work which meets "real" standards and in learning the value of money which he earns. This type of work experience is not

directly related to the career for which the student is preparing.

3. Vocational Work-Experience Education--is a program of paid work directly related to the occupation which the student expects to enter and for which his courses in school are preparing him. This is a practical laboratory for the student's in-school occupational education.

What Are the Special Values of Work-Experience Education?

1. To the Student--they may:

   A. develop a sense of adequacy through being able to hold a job successfully

   B. develop the ability to assume responsibility, to get along with others on a job, and to follow directions

   C. develop an awareness of relationships between school subjects and demands of the"working world".

   D. make a wiser career choice due to employment experiences in several areas

   E. increase general information and salable skills

   F. earn an income to assist in meeting personal expenses of a full-time student.

2. To the School--it provides an opportunity to:

   A. relate academic training to job requirements

   B. utilize community facilities and resources for training purposes, thus making it possible for the school to provide training in fields that the school program could not otherwise provide

   C. keep abreast with developments in business and industry

   D. assist with vocational guidance.

3. To the Employer--it provides an opportunity:

   A. to hire carefully-selected, part-time help who may become permanent employees

B. to train future employees by use of the methods that the employer has found most effective for his operation

C. to hire part-time employees who are receiving additional training through related instruction at school.

4. To the Community--the organized approach to work-experience education has been received with great favor by the citizenry of Santa Barbara County. Young people have shown that they can be relied upon for really important work.

5. To the Future of Our Country--the educational climate today indicates an incipient awareness on the part of increasing numbers of people that living in the most advantageous vocational niche is one of the most critical of cultural aspects to man and society. Facilitating such advantageous placement is a responsibility of work-experience education.

How Are the Programs Organized?

Each school district's Program organization varies in accordance with the peculiar needs of the community. Each district employs a program administrator (director or coordinator) who is responsible for the organization and operation of the program. According to the size and needs of each district, assistant coordinators or counselors may be employed to place and supervise students. The Work-Experience Education Programs are school-centered as part of the educational program for each student and closely tied in with the employment service for the communities in general.

Who Is Eligible for Work-Experience?

According to the California Administrative Code, any student who has reached his fifteenth birthday may become eligible. However, most participants are sixteen or over and in grades eleven or twelve. Students may elect work-experience as any other elective, contingent upon their actually being placed.

How Many Students Participate in the Program?

The number of participating students varies according to student interest and local community needs, but the total number has increased every year since the original project began in 1953. During the 1967-1968 school year, 1713 students participated in the programs in Santa Barbara County.

How Much School Credit Is Given for Work-Experience?

Students receive five (5) units of credit (1/2 Carnegie Unit) per semester for ten (10) hours per week, successfully completed.

Specific Questions And Answers

In 1956, Santa Barbara County Schools published Questions and Answers on Work-Experience Education in Santa Barbara County. This was revised in 1967, and the following questions and answers from the latter publication provide additional pertinent background information:

Question 1. What added costs does this program entail?

Answer: There are added costs dependent upon the personnel required for placement and supervision (with one WEEP coordinator and 50 students, the transportation cost would run up to $300 per year); but the school gains the use of highly diversified community resources, all of which are too expensive for the school to duplicate. Although it would greatly increase the costs of instruction, it must be pointed out that with the release of students to work stations, you are reducing the regular staff load.

Question 2. A program like this does not run itself. What staff is required?

Answer: The size of the staff is determined by the number of students on work-experience education. The program should be directed by a coordinator whose job is to handle job relations, make placements, and supervise students. (See question 3 regarding coordinator-student ratio.) Adequate clerical assistance should be provided in any school operating a work-experience education program. The large number and variety of forms that are involved in a program of this type require this assistance.

Question 3. How many students should a coordinator handle?

Answer: It is generally agreed that, to assure adequate staff time for the operation of a work-experience education program, the assignment of a coordinator should not exceed, on a full-time equivalent basis, 75 students. In a beginning program, it is particularly important that the number of students in the ratio be reduced.

Question 4. What recommendations could be made with regard to initiating a Work-Experience Education Program?

Answer: We feel that placement in such areas as public libraries, county or city clinics, any city or county offices, etc. is a logical way to begin a program. An advantage of such placement is that political subdivisions of the State, i.e., city or county agencies are exempt from existing statutes regarding minimum wages.

Question 5. What type of cooperation have you had from the labor unions in your county?

Answer: Representatives of unions have served in an advisory capacity. It has been recognized by them that this is a part of general education and is not intended to replace adult labor in any way. Apprenticeship programs available to Work-Experience Education students are quite limited due to the supply and demand factor of union apprenticeship training programs. Some students have been placed in union offices.

Question 6. What has been the general reaction of the community?

Answer: Community reactions have been excellent. We have in most communities more exploratory stations for students than we have students available. We have contacted as many organized groups as possible and explained to them what the program includes. In almost every case, the reaction has been, "I wish I had had this when I was in school." The program has been an excellent springboard for the promotion of sound school-community relations.

Question 7. How much emphasis has this program received in relation to the total school program?

Answer: The schools have placed this program on a par with other courses in the curriculum. It has the same status as do the existing elective courses.

Question 8. Does this program have any specific implications for the present school curriculum?

Yes. We regard Work Experience Education as one test of the effectiveness of the curriculum. If students have difficulty in making adjustment to the

adult world when placed on jobs in which they have an interest, the question is logically raised as to whether or not the curriculum is meeting student and community needs.

Question 9. What evidence is there regarding the effectiveness of the program?

Answer: Since the inception of the program in 1953, a tremendous amount of subjective evidence has been collected and, currently, attempts to measure the program's value more objectively are being made. Several doctoral dissertations and master theses have been done under the direction of Dr. Myron S. Olson, University of Southern California. These studies throw light on such questions as: Legal aspects of the student placement (doctoral dissertation by John Ross)[1]; beginning employee qualifications (doctoral dissertation by Philip Ackley)[2]; an evaluation of the impact of the program on high school students (master thesis by Millard Fotter)[3]. After the Santa Barbara County program had been in operation for five years, an evaluation was made by Dr. Clarence Fielstra[4], Professor of Education, University of California, Los Angeles. This study is still available to interested parties.

Question 10. What other agencies are involved in a Work-Experience Education program?

Answer: Such governmental agencies as the State Employment Service, Welfare Departments, and the Labor Law enforcing agencies should be involved on a advisory basis. A cooperative climate among such agencies is necessary to ensure successful promotion of the Work-Experience Education Program.

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[1]John Griffin Ross, The Legal Aspects of Work-Experience Education Programs in California High Schools. Dissertation in partial fulfillment of the requirements for the degree of Doctor of Education, University of Southern California, June, 1955.

[2]Philip Jackson Ackley, Educational Implications Based on Beginning Employee Qualifications as Sought by Employers in One California County. Dissertation in partial fulfillment for the degree of Doctor of Education, University of Southern California, January, 1955.

[3]Millard Joseph Fottern, An Evaluation of the Impact of a Non-pay Supervised Work-Experience Education Program on High School Students of Santa Barbara County. A thesis in partial fulfillment of the requirements for the Master Of Science in Education, University of Southern California, January, 1956.

[4]Clarence Fielstra, op. cit.

The following questions from a guidance and counseling viewpoint are taken from Questions and Answers . . . , 1967:

Question 1. Who secures the openings for student placement?

Answer: The coordinator in the individual school.

Question 2. How does a student enroll in the program?

Answer: By direct application to the Work-Experience Education Program Coordinator or school counselors.

Question 3. How long does each placement last?

Answer: Length of placement varies according to the type of experience desired and nature of placement: 9 weeks is the average placement period for exploratory, but some students will stay in one location for a 36-week placement.

Question 4. How much time every day is spent on the program by the participating students?

Answer: From one to two periods or one to two hours; students are encouraged to take two periods in most programs.

Question 5. Are the students screened before placements?

Answer: Yes. We use all available school records and the services of the school counselors. We interview each applicant one or more times in order to determine whether or not the desired experience will be helpful to the student's vocational interest.

Question 6. Who supervises the pupils on the program?

Answer: The teacher-coordinator of the local school.

Question 7. How often are the students supervised and evaluated?

Answer: At least once every four weeks. When the student is first placed, the supervisor checks more frequently in order to insure proper student adjustment.

Question 8. How are the students evaluated?

Answer: A rating form has been developed which is filled out by the student's immediate supervisor on the job. The coordinator evaluates the student's performance. The student also is asked to evaluate his own experience.

Question 9. What safeguards are set up to prevent exploitation of the student?

Answer: Before a placement is made, the coordinator, the student, and the employer discuss experiences that the student will receive and a proposed time limit for these.

Question 10. What group counseling is done?

Answer: Each vocational unit taught in the school now develops the idea of Work-Experience Education. When students make out their tentative programs in the spring, those interested in the program are referred directly to the work-experience coordinator.

Question 11. Can a student take this training and still meet college and graduation requirements?

Answer: Yes. A student's schedule can be arranged to include a work-experience course in a college preparation program.

Question 12. It is true that once a student experiences some success in his placement, that he is apt to give up college for an immediate job?

Answer: So far, we have found the reverse to be true; the students see how little applicable training they have had and seek further education.

Question 13. Where does the gifted pupil fit into such a program?

Answer: The student who is truly gifted will find real challenge to his abilities. If the student expresses an interest in medicine, he can be placed with several different doctors in the community who will provide incentive for all the additional study he can handle.

Question 14. How about the special student (physical and mental retarded); where does he fit into the picture?

Answer: Teachers of special classes counsel, place, and supervise the students with special handicaps. The students' course of study is applicable directly to their work situation. The mathematics, English, and social studies are based upon their daily job environment. The special teachers are responsible for the total program of the special student.

Question 15. What records are kept?

Answer: Participating students receive credit and grades for their work; this information is a part of their permanent record cards. The rating cards can also serve as the basis for excellent job references should the student ever refer a future employer to the school. Record keeping varies from school to school.

Question 16. Are the schools offering any related courses for the students to take?

Answer: Most of the schools in the county are offering such courses as: graphic arts, electronics, drafting, secretarial subjects, automotive, food services, and agriculture. These courses are related to the type of employment the youth may hold.

Question 17. How is the student's work related to his classwork?

Answer: The work-experience education coordinator has as his responsibility the job of tying the two activities together through frequent interview with the employer and student and reports to counselors and classroom teachers.

Question 18. Will a student have to meet any basic requirements to be placed on the program?

Answer: There are no specific grade averages to be met. The coordinator makes every attempt to place the student in a work situation commensurate with his/her vocational interest. An effort is made to fit the student to the job.

Question 19. Do you work with any particular age or grade group?

Answer: For the most part, the program is for junior and senior students.

Question 20. Do you encounter any scheduling difficulties?

Answer: In the small high school (600) there is a problem in arranging classes to permit this activity. In the larger high schools, where there is broad elective pattern of courses, the problem is not as pressing.

Question 21. How many types of work-experience can a student have a year?

Answer: That depends entirely upon the type of experience desired by the student. Usually two or three may be completed.

Question 22. How much credit is granted?

Answer: Students receive one subject credit per semester for 10 hours work per work week on non-paid program and one subject credit for 10-20 hours work per week on paid program. This policy varies from district to district.

Question 23. What other agencies are available for placement of students with special needs (financial, emotional, physical)?

Answer: Neighborhood Youth Corp (in school--out of school), Vocational Rehabilitation Youth Opportunity Program, and the California State Employment Service are other agencies available for placement?

Purposes of the Programs

The foregoing information is indicative of some of the general purposes of work-experience education in Santa Barbara County. Fielstra, in 1959, believed that more specific statements of purpose would properly serve the purpose of his evaluation of work-experience education in Santa Barbara County. After an extensive review of the literature relevant to work-experience education in California--and particularly in Santa Barbara County--and after numerous interviews with personnel involved in Santa Barbara County's Programs, a set of seventeen statements of purpose was prepared.

Fielstra's set of statements of purpose was submitted to the principals of each of the high schools in the County in 1959. To facilitate the comparison of ratings of purposes in 1959 with those of 1969, the same set of statements of purpose was submitted to principals of each high school in the County for this evaluation. They were asked to check which of the statements of purpose were applicable to the program as operated in their schools and to make a second check if the statement was considered to be one of "greatest importance."

Table I indicates the mean number of checks given each statement by principals in 1959 and in 1969. The rank order of importance of each statement is also given.

TABLE I

PRINCIPALS' RATINGS OF PURPOSES OF WORK-EXPERIENCE EDUCATION

Statement of Purpose	Mean No. of checks Given* 1959	Rank Order 1959	Mean No. of checks Given* 1969	Rank Order 1969
a. To make wiser career choice	1.6	4.5	1.3	6.5
b. To learn what employment entails	1.2	10.0	1.2	9.5
c. To develop better understanding of the meaning of work	1.4	7.5	1.4	4.5
d. To make progress toward chosen occupational goals	1.6	4.5	1.2	9.5
e. To assume greater responsibility	1.6	4.5	1.6	1.0
f. To gain knowledge and attitudes necessary for successful performance	1.8	1.5	1.5	2.5
g. To acquire better work habits	.8	16.0	1.3	6.5
h. To learn how to get along with fellow workers and employers	1.2	10.0	1.2	9.5
i. To develop better personality and more poise	1.0	13.0	1.0	13.5
j. To augment financial resources	.8	16.0	.6	17.0
k. To make better school adjustment and avoid drop-out	1.2	10.0	1.1	12.0
l. To develop more appreciation of value of wages	.8	16.0	.7	15.5
m. To develop more appreciation and understanding of the relationship between formal education and job success	1.6	4.5	1.2	9.5
n. To explore the fields in which occupational interests lie and to determine suitability for these fields	1.8	1.5	1.5	2.5
o. To broaden understanding of the occupational world and of working conditions in the world of work	1.4	7.5	1.4	4.5
p. To develop better understanding of the community	1.0	13.0	.7	15.5
q. To make the transition from school to work	1.0	13.0	1.0	13.5

*One check indicated that item was considered to be statement of purpose; two checks indicated that the item was considered to be a statement of purpose of "great importance".

An examination of Table I reveals that, in 1969, the principals of participating high schools placed the statement of purpose of their Work-Experience Education Programs in nine groups in terms of importance.

The most important purpose according to their ratings was:

e. To learn to assume greater responsibility

The second most important purposes were the following:

f. To gain knowledge and attitudes necessary for successful job performance

n. To explore the fields in which occupational interest lies and to determine suitability for those fields

The third most important purposes were as follows:

c. To develop better understanding of the meaning of work

o. To broaden understanding of the occupational world and of working conditions in the world of work

The fourth most important purposes were these two:

a. To make wiser career choice

g. To acquire better work habits

The fifth most important purposes were the following four:

b. To learn what employment entails

d. To make progress toward chosen occupational goals

h. To learn how to get along with fellow workers and employers

m. To develop appreciation and understanding of the relationship between formal education and job success

The sixth most important purpose was:

k. To make better adjustment and avoid drop-out

The seventh most important purposes were:

i. To develop better personality and more poise

q. To make the transition from school to work

The eighth most important purposes were:

l. To dvelop more appreciation of the value of wages

p. To develop better understanding of the community

The least important purpose was:

j. To augment financial resources

Current Characteristics of Work-Experience Education Program

In order to supplement information contained in earlier mimeographed statements about the characteristics of work-experience education in the high schools of Santa Barbara County, answers to a number of pertinent questions were sought from the principals and work-experience coordinators of those schools. The questions asked and the responses given are reported below:

Selection and Eligibility of Students for Work-Experience Education Program:

Question 1. Students of what grade levels are eligible to enroll in your Work-Experience Education Program?

Response: 11th grade--8 schools; 12th grade-- 9 schools.

Question 2. To be eligible to enroll for Work-Experience Education must a student have any minimum grade average for his courses?

Response: Yes--1 school; No--8 schools.
Note: When a mimum average was required; it was a "C: average; but exceptions were reported made in light of other considerations of the student's total school program.

Question 3. To be eligible to enroll for Work-Experience Education must a student have reached a minimum age?

Response: Yes (16 years of age)--7 schools; No--2 schools.

Question 4. To be eligible to continue in a Work-Experience Education Program must a student maintain a minimum grade average?

Response: Yes--4 schools ("C" work or in line with ability); No--5 schools.

Question 5. To be eligible to continue in a Work-Experience Education Program must a student maintain any specified attendance record at school?

Response: Yes--. 9 schools (Perfect attendance, with absences only for illness, required).

Question 6. Who initiates a request that a student be enrolled for Work-Experience Education?

Response: Students-- 9 schools; Parents--1 school; Counselors-- 9 schools; Teachers--1 school.

Question 7. In placing Work-Experience Education students in jobs to what extent are the parents consulted?

Response: Regularly--5 schools; Sometimes--4 schools.

Question 8. In your Work-Experience Education Program, how are the jobs obtained for participating students?

Response: By the student--7 schools; by school employers--9 schools.

Administration and Supervision of the Work-Experience Education Program:

Question 1. What is the title of the person who directs your district's total Work-Experience Education Program?

Response: Director of Work Education--1 district; Work Education Coordinator--4 districts.

Question 2. What school personnel (titles) supervise your Work-Experience Education students?

Response: Work Education Coordinator--7 schools; Work-Experience Coordinator--2 schools.

Question 3. What is the total weekly allotment of time for supervision of your Work-Experience Education students?

Response: 100 hours--2 schools; 40 hours--2 schools; 25 hours--1 school; 10 hours--1 school; 7 hours--3 schools.

Question 4. How is work of students in the program checked upon?

Response: By phone calls from school coordinator to the employer-- 9 schools;

By written evaluations of student's work, prepared by employer-- 9 schools;
By school personnel visits to the student's place of work-- 9 schools;
By in-school interviews with the student--7 schools.

Question 6. How do you deal in the school with "related topics" of special interest to Work-Experience Education students?

Response: By having regularly scheduled "related classes" at school-- 2 schools; By having irregular group meetings--4 schools; By having topics specifically included in other courses--1 school By having individual interviews with the students of the school-- 9 schools.

Question 7. Does your Work-Experience Education Staff have office space, giving privacy for interviews with students?

Response: Yes-- 9 schools; No--0 schools.

Question 8. Is clerical help provided your Work-Experience Education Staff? To what extent each week?

Response: Yes, 20 hours of student help--2 schools, Yes, 10 hours--3 schools; Yes, when needed--2 schools; No--2 schools.

Question 9. What is the maximum number of periods of released school time you allow students for Work-Experience Education?

Response: 2 periods per day-- 9 schools.

Question 10. Is a written training agreement developed with the employer for each student who is placed in a Work-Experience Education job?

Response: Yes--4 schools; No--2 schools; For exploratory only--3 schools.

Question 11. How often is the work of each student rated (in writing) by the school coordinator?

Response: 2 times per semester--8 schools; None--1 school.

School Credit for Work-Experience Education

Question 1. What is the minimum number of units of credit per semester which may be earned by a student in Work-Experience Education?

Response: 5 units--7 schools; $2\frac{1}{2}$ units--2 schools.

Question 2. What is the maximum number of units of credit per semester which may be earned by the student in Work-Experience Education?

Response: 5 units--7 schools; 10 units--2 schools.

Question 3. What is the total number of semester hours of credit which a student may earn toward high school graduation through Work-Experience Education?

Response: 20 units--4 schools; 40 units--5 schools.

Question 4. How many hours of work per week must a student spend on Work-Experience Education to earn 5 units of subject credit?

Response: 10 hours per week--5 schools; 8 hours per week--2 schools; 5 hours per week--2 schools.

Question 5. Do any of your Work-Experience Education students earn monetary pay as well as high school credit for their participation in the program?

Response: Yes--7 schools; No--2 schools.

Characteristics of Student Participants

Dr. Fielstra's study of 1960 indicated that the percentage of male participants increased from 35 percent in 1955-1956 to 42 percent in 1959 and 44 percent in 1960. The data collected for this report shows that of the total participants during the second semester of 1967-1969, 47 percent were boys and 53 percent were girls. Dr. Fielstra surmised, in 1960, that fewer boys took part in work-experience education due to (1) fewer suitable jobs were available to boys than to girls. (2) boys are less mature as high school students, and (3) a greater percentage of boys were preparing for college entrance and had less time in their high school program for work-experience education. It appears that work-experience education is now

viewed as being relevant to the lives and needs of virtually all young people rather than only those going into full-time employment upon graduation from high school.

The ethnic make up of the participants in each district closely approximated the percentage of each group in the total enrollment, but there was some variance. Proportionately, students of oriental origin participated in these programs to a greater extent than other ethnic groups, followed by students of Mexican decent, Negro tudents, and whites.

Kinds of Jobs Students Have in Work-Experience Education

The kinds of jobs held by students participating in work-experience education vary from unskilled, routine tasks to more highly-skilled positions in support of professional activities. Table II indicates the participation on the various kinds of jobs in one medium-large high school.

TABLE II

JOBS HELD BY WORK-EXPERIENCE EDUCATION STUDENTS IN 1968
(In One Medium-Large High School)

Type of Job	Credit Gen.	Voc.	Expl.*
Assembler	3		
Architect Trainee			2
Baker Helper	1		
Box Boy	7	1	
Bus Boy	7		
Carpet Layer		1	
Clerk Steno		6	5
Clerk Typist	1	10	3
Cook	2		
Cosmotologist		3	
Counterman	7		
Counter Girl	1		
Crafts Worker	1		
Deliveryman	6		
Dental Assistant		1	12
Dishwasher	5		
Electronic Technician		1	
Engraver		1	
Florist Trainee	1	2	1
Funeral Director Trainee			1
General Office Clerk	1	5	2
Graphic Arts Assistant	2	1	
Grocery Clerk	4		
Groom	1		
Horse Trainer	1		

*Non-paid "exploratory" assignments

TABLE II Continued

Type of Job	Credit Gen.	Credit Voc.	Expl.*
Interior Decorator	1		
Janitor	5		
Kennel Assistant	1		1
Kitchen Helper	3		
Lab Assistant	1		2
Landscape Gardener	2	2	
Library Page	1		
Mail, Shipping Clerk	3		
Maintenance Worker	3	1	
Medical Assistant		1	1
Messenger	1		
Newswriter			1
Nurse Trainee			3
Nurse's Aide	3	2	
Nursery Helper (Botanical)	3		
Nursery School Trainee		1	
Orderly	4		
PBX Operator	1		
Phone Solicitor	2		
Photo Lab Assistant	1		
Printer's Helper			1
Radio, TV Trainee		1	
Receptionist		1	
Sales Girl	13	2	2
Salesman	2		
Service Station Attendant	4	2	
Shoe Repair		1	
Sign Maker		1	
Stock Boy	9		
Stock Girl	3		
Teacher's Aide	4		1
Tool & Die Maker		1	
Veterinary Trainee			3
Waitress	8		
X-Ray Trainee			1
Totals	129	48	42

*Non-paid "exploratory" assignments

Table III indicates the kinds of job stations to which students on the exploratory (non-paid) program are assigned in one large high school.

TABLE III

PLACEMENT OF STUDENTS ON "EXPLORATORY" (NON-PAID) JOB STATIONS
(Large High School, June 1968)

Job Station	Number Enrolled
Auto Body Repairman	2
Auto Mechanic Trainee	6
Biologist Trainee	1
Clerk Typist	12
Crafts Worker	1
Data Processing Trainee	7
Dental Assistant Trainee	10
Florist Trainee	2
General Office Clerk	5
Key Punch Trainee	2
Library Trainee	3
Medical Assistant Trainee	1
Medical Laboratory Trainee	1
Nursing Trainee	2
Photographer Trainee	1
Printer Trainee	1
Radio-TV Repairman Trainee	5
Recreation Worker Trainee	1
Teacher's Aide	24
Veterinary Trainee	2
Welder Trainee	1
X-Ray Trainee	1
Total	91

CHAPTER III

CRITERIA FOR EVALUATION

Numerous criteria were selected for use in evaluating work experience education in Santa Barbara County High Schools. Many of these were derived from a survey of related literature, and others were developed in preliminary interviews with school administrators, work experience education coordinators, teachers, lay members of the work experience education program advisory committee, employers, and high school students in Santa Barbara County.

Code Regulations

Basic to all other criteria were the regulations stated in the California Administrative Code.[1] The following regulations governing work experience education were approved by the California State Board of Education on July 10, 1958, and became effective on August 17, 1958:

Article 13.1. Work Experience Education

115.20. Approved Plan Required. Any program of Work Experience Education conducted by the governing board of a school district, hereinafter in this article called "the district," pursuant to Education Code Sections 10231 through 10237 shall conform to a plan adopted by the district and submitted to, and approved by, the State Department of Education. The plan shall set forth a systematic design of Work Experience Education whereby young people, while still enrolled in school, will gain realistic employment experience through part-time work. Among other things, the plan submitted shall contain the provisions:

(a) A statement that the district has officially adopted the plan subject to approval of the State Department of Education.

(b) A specific description of the respective responsibilities of the school, the pupils, the employer, and other co-operating agencies in the operation of the program

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[1]California Administrative Code, Article 13.1, Sections 115.20 through 115.26, Subchapter 1, Chapter 1.

(c) A statement that the district will:

(1) Provide appropriate and continuous guidance service to the pupils throughout their enrollment in the Work Experience Education Program

(2) Assign a sufficient number of qualified certificated personnel to direct the program and to coordinate jobs held by pupils with the school curriculum

(3) Make certain that work done by pupils is of a useful educational nature

(4) Ascertain, through the appropriate enforcement agency, that applicable federal, state, and local laws and regulations are followed

(5) Evaluate, with the help of the employer, work done by a pupil, award credit toward graduation for work successfully accomplished, and enter pertinent facts concerning the pupil's work on the pupil's cumulative record

(6) Provide necessary clerical and instructional services.

115.21. Classifications of Work Experience Education. Work Experience Education is a district-initiated and district-controlled program of education consisting of one or more of the following types:

(a) Exploratory Work Experience Education, having as its general purpose the vocational guidance of the pupil through affording him opportunities to observe and sample systematically a variety of conditions of work for the purpose of ascertaining his suitability for the occupation he is exploring. There is no intent to teach production skills of any kind

(b) General Work Experience Education, having as its purpose the supervised part-time employment of pupils with the intent of assisting them to acquire desirable work habits and attitudes in real jobs. The part-time job held by a pupil need not be related to the occupational goal of the pupil

(c) Vocational Work Experience Education, having as its purpose the extension of vocational learning opportunities for the pupil through part-time employment in the occupation for which his course in school is preparing him.

115.22. School Credit. The district shall grant to a pupil for the satisfactory completion of Work Experience Education credit in an amount not to exceed:

(a) In High School, a total of 40 semester periods made up of one or a combination of two or more of the following types:

(1) For Exploratory Work Experience Education: Five (5) semester periods for each semester, with a maximum of ten (10) semester periods earned in two semesters

(2) For General Work Experience Education: Ten (10) semester periods for each semester with a maximum of twenty (20) semester periods

(3) For Vocational Work Experience Education: Ten (10) semester periods for each semester with a maximum of forty (40) semester periods.

(b) In Junior Colleges, a total of 16 credit hours made up of one or a combination of two or more of the following types:

(1) For Exploratory Work Experience Education: Three (3) credit hours per semester with a maximum of one semester

(2) For General Work Experience Education: Three (3) credit hours per semester with a maximum total of six (6) credit hours

(3) For Vocational Work Experience Education: Four (4) credit hours per semester with a maximum total of sixteen (16) credit hours.

115.23. Pupil Qualifications. In order to qualify for participation in the Work Experience Education program, a pupil shall:

(a) Have attained a junior standing in high school or 16 years of age, except that, with specific authorization by the principal, individual pupils with exceptional need who are 15 years of age may be enrolled.

(b) Be a full-time pupil. For the purposes of this section a full-time pupil means one of the following:

(1) A legally indentured apprentice or a continuation pupil, regardless of the number of subjects or the secondary school in which he is enrolled

(2) A high school pupil enrolled in four or more subjects, including Work Experience Education as one of such subjects

(3) A junior college pupil enrolled in 12 or more credit hours, including the credit hours for work experience.

(c) Have, if a high school pupil, parental or guardian approval.

(d) Have the approval of the school guidance service to enroll in the Work Experience Education chosen

(e) Have a vocational or educational goal to which the Work Experience Education chosen will, in the opinion of the district, contribute.

115.24. Supervision. In carrying out its plan for Work Experience Education, the district shall, in addition to meeting the requirements of Section 115.20, provide sufficient services for initiating and maintaining work stations, for coordinating the program, and for supervising the pupils, including but not being limited to:

(a) On-the-job observation of the pupil

(b) Consultation with the employer

(c) Written evaluation of the student's progress

(d) Consultation with the student.

In the case of legally indentured apprentices, the requirements of this section shall not be deemed to prevent collaboration between the school administrators and the Joint Apprenticeship Committee in order to avoid duplication of supervisory services.

115.25. Records. The district shall maintain records which shall include:

(a) A record of the type of work experience in which each pupil is enrolled, where he is employed, and the type of job held

(b) A record of work permit issued if applicable

(c) The employer's report of pupil attendance and performance on the job

(d) The supervisor's report of his observations of the pupils

(e) The supervisor's report of his consultations with employers

(f) The supervisor's rating of each pupil, including grade.

115.26. Selection of Work Stations. In selecting and approving a work station for an individual pupil, the district shall observe the following criteria:

(a) The employer is in sympathy with the educational objective of providing work experience for the pupil

(b) The employer knows of the intent and purpose of the Work Experience Education Program .

(c) The work station offers a reasonable probability of continuous employment for the pupil during the work experience period for which he is enrolled

(d) The employer has adequate equipment, materials, and other facilities to provide an appropriate learning opportunity

(e) Over-all desirable working conditions prevail which will not endanger the health, safety, welfare, or morals of the pupil

(f) The employer will provide adequate supervision to insure a planned program of the pupil's job activities in order that the pupil may receive maximum educational benefit

(g) The employer, as required by law, will provide adequate compensation insurance

(h) The employer will maintain accurate records of the pupil's attendance.

TYLER'S RECOMMENDATIONS

Used also as criteria in the evaluative study reported in this monograph were pertinent recommendations which Henry T. Tyler presented at the conclusion of his study of work experience programs in California. Inasmuch as Tyler's report apparently had had marked influence on the California Administrative Code regulations presented in preceding pages, an overlapping of the two sets of "criteria" is evident. Following are the recommendations selected from Tyler's report:[1]

1. A work experience education program should be begun by the school only after careful planning, which should, preferably, include the utilization of representative community leaders as an advisory committee.

2. State Department of Education approval should be obtained before any local work experience education program is opened for enrollment.

3. In order to assure adequate staff time for the successful operation of work experience education, assignments of coordinators should not exceed, on a full-time-equivalent basis, 50 students for the exploratory-type high school program, and 72 students for a general work experience education program in high school or junior college. When a vocational

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[1]Henry T. Tyler, Report of the Study of Work Experience Programs in California High Schools and Junior Colleges. Secramento: Bulletin of State Department of Education, Vol. XXV, No. 3, July, 1956. Pp 120-122

work experience education program in either high school or junior college is coordinated by someone other than the vocational teachers, the coordinator, on a full-time-equivalent basis, should have no more than 72 students. During the initial stages of the growth of a work experience education program, the minimum daily time allocation to a coordinator for the promotion of such a program should not be less than two periods.

4. The person designated to direct a work experience education program should be given the title "Coordinator of Work Experience Education," unless, in a large operation the actual coordination of employment and school activities is performed by another individual. Moreover, the person who directs a school's work experience education program should be given recognition as a member of either the administrative or the guidance staffs.

5. Substantial amounts of well-qualified secretarial service, con_ensurate with the needed volume of work, should be provided work experience education personnel both in high school and junior college

6. The minimum age for eligibility to enroll in any type of work experience education should be 16.

7. Students in all three types of work experience education should be enrolled in a program that consists partly of classroom activities and partly of part-time employment (or career exploration, in the case of the exploratory type), which is viewed as the laboratory portion of the course

8. Any part-time employment that is to be used by a student for the laboratory part of a work experience education program should be investigated in person and approved by the school representative before the student's enrollment in the program is considered complete

9. Work permits and permits to employ should be used uniformly in all types of work experience education for students under 18

10. All federal, state, and local laws relating to working minors should be observed in work experience education

11. Work done by each student in work experience education should be carefully evaluated by the school's representative, we well as by the employer

12. Verification of employment hours reported by students should be by the employer's signature in all cases

13. Both in high schools and junior colleges, essential facts concerning work done by work experience education students should regularly by entered on students' permanent records

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14. Work experience education of both exploratory and general types should be administered through the guidance department of the school.

CALIFORNIA HANDBOOK QUESTIONS

A third set of "criteria" used in the study were taken from the California State Department of Education Handbook on Work Experience Education.[1] According to that volume, any evaluation of a work experience education program should obtain answers to the following questions:

Aims and Objectives

1. Does the plan of operation set forth the philosophy and objectives of the program?

2. Is the program evaluated periodically in terms of these objectives?

3. Are the objectives adjusted periodically as changes occur in the community?

Coordination

1. Does the coordinator's schedule provide sufficient time for coordination activities?

2. Does the coordinator use this scheduled coordination time only for coordinating purposes?

3. Does the coordinator plan his time carefully and develop a realistic schedule for coordination that he can follow?

4. Does the coordinator visit each training station at regular intervals and observe the student while he is on the job?

5. Do the employer and the coordinator work together in close cooperation?

6. Is there regular contact by the coordinator with the student's immediate supervisor in order to learn of the student's progress?

7. Does the coordinator keep a record of his daily coordination activities?

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[1]Handbook on Work Experience Education, Sacramento: California State Department of Education, 1965, Pp. 55-59.

8. Does the coordinator keep records of each student's performance and progress on the job?

9. Does the coordinator use the records of student performance and progress as a basis for both classroom instruction and conference with students?

10. Is there a regular evaluation by the coordinator and the employer of the student's progress on the job?

11. Does the coordinator have the personal leadership qualities necessary to unite effectively school and community groups in support of the program?

12. Does the coordinator participate actively in school and community activities?

13. Is the coordinator respected by the students and faculty?

Work Stations

1. Are employers carefully briefed concerning the purposes of the work experience education program and of the work station?

2. Are work stations selected on the basis of whether or not their facilities provide adequate work experience?

3. Does the work station provide an opportunity for well-organized, varied learning situations?

4. Are the legal requirements that are concerned with the employment of youth being met?

Classroom Instruction

1. Is the class carefully planned for in advance?

2. Does the classroom instruction include a variety of teaching methods and techniques such as conferences, lectures, films, panel discussions, student reports, and individual and group projects?

3. In the planning of instruction, is full advantage taken of community resources by such activities as providing visits to local firms and appearances of community leaders before the class?

4. Are the student's individual problems given attention?

5. Is information presented concerning the basic skills and attitudes that are common to all employment?

6. Does the instructor use suitable instructional materials in the classroom?

7. Are reports made by the employer and coordinator used as a basis for classroom instruction and conferences?

8. Are students given an opportunity to participate in the evaluation of classroom instruction?

The Advisory Committee

1. Has a general advisory committee made up of community representatives been appointed?

2. Does this committee meet regularly and function actively?

3. Has this committee been used to assist in the formulation of the philosophy and objectives of the program?

4. Has this committee been used to assist the coordinator in locating training stations?

5. Does the coordinator furnish leadership for the committee and plan the agenda for its meetings?

6. Are the school administrator and the coordinator actively involved in the operation of the advisory committee?

7. Does the committee give continuing advice and counsel to the coordinator?

Public Relations

1. Has the program been adequately publicized and promoted among various community organizations?

2. Have the objectives, philosophy, and operation of the program been publicized with the entire faculty in an effort to build genuine understanding?

3. Are the written objectives and operating procedures of the program made available or presented to parents of potential students?

4. Are the guidance counselors informed of the program and of its place in the total school program?

5. Is the program publicized periodically in community and school publications?

6. Is the program respected by the community, the school, and the parents?

7. Is there a well-planned program of public relations that includes the use of such media as newspapers, radio, television, movies and films, brochures and leaflets, talks to various community groups, and exhibits and displays?

Records and Reports

1. Does the coordinator have access to, and use, complete student records, including tests, grades, attendance and health records, and other available data?

2. Are suitable forms used for recording each of the various coordinating activities?

3. Does the coordinator prepare a record of his daily coordination activities and present it weekly or monthly to his school principal?

4. Does the coordinator keep systematic records of all the activities and the performance of each student on the job and in the related instruction classroom?

5. Is the student's job performance evaluated periodically by the employer?

6. Is the employer furnished with an evaluation device for use for this purpose?

7. Does the school maintain as part of the student's cumulative record complete information concerning the student's work experience education activity?

Student Follow-up

1. Is there an organized system of follow-up of each former student?

2. Are the findings of follow-up activities recorded and reported to the school administration, faculty, and advisory committee?

3. Is an effort made to adjust the work experience education program on the basis of findings of follow-up activities?

FIELSTRA'S RECOMMENDATIONS

Based on the conclusions reached by Fielstra, he recommended that the following principles be adhered to in the continuation of work experience education in the Santa Barbara County high school districts and in the

initiation of such a program in other high school districts:

1. Advisory committees should be organized in each high school district which has or is iniating, a Work Experience Education Program.

2. The services of a county-wide advisory committee should be utilized

3. Program development and operation should be guided by code regulations and by recommendations based on careful study

4. The term "Work Experience Education" should be used only in reference to a program in which students participate for school credit or for school credit and pay

   (Although students who are served by the school only to the extent of being "placed" in a job or of being given some follow-up" assistance while on a job cannot be considered a part of the Work Experience Education Program, such placement and follow-up service is a very valuable function of the school; and the time and effort given to it by school personnel should be fully recognized as a part of their professional load.)

5. Admission to the Work Experience Education Program should be limited to only those students for whom careful planning, supervision, and evaluation will be provided by school personnel and for whom the experience will have genuine educational value

6. Sound bases for the assignment of students to a given classification of Work Experience Education and for determining the ratio of on-the-job hours to semester periods of school credit which they may earn for participation in that classification must be developed and followed

7. Work Experience Education "agreement sheets" should be prepared and used for each kind of job open to students in the program

8. The Work Experience Education Program should be closely related to school counseling services and to State employment office services

9. The Work Experience Education Program should be coordinated with activities in the high school

10. The Work Experience Education Program should be related to the objectives of both general education and vocational training

11. Student orientation to the Work Experience Education Program should be provided in the tenth grade

12. Students in the Work Experience Education Program should be required to be in full attendance in all classes at school in which they are concurrently enrolled

13. Students in the Work Experience Education Program should be given on-the-job supervisory visits by school representatives at least once a month

14. Written evaluations of students in the program should be made by employers at least twice each semester

15. Adequate records regarding students' Work Experience Education should be retained in the permanent cumulative files of the high school

16. The ratio of students enrolled in the Work Experience Education Program to school personnel who coordinate and supervise the program should be held to a level which will assure greatest effectiveness in terms of time and effort expended by the coordinators and educational values gained by students

17. Adequate clerical service, office facilities, and means of transportation should be provided personnel who direct and coordinate the Work Experience Education Program

18. The responsibilities of Work Experience Education Program Coordinators should be clearly defined, and competencies to assume these responsibilities should be assured

19. A continuous program of interpretation regarding the Work Experience Education Program should be carried on

20. Periodic comprehensive evaluative studies should be made of a school district's Work Experience Education Program.

CHAPTER IV

PROCEDURES

Work-experience education programs in Santa Barbara County were carefully studied and evaluated by Dr. Clarence Fielstra[1] and his staff from July 1, 1959 to July 30, 1960. Dr. Fielstra made twenty recommendations relevant to the continuation and improvement of these programs, the last being "Periodic, comprehensive evaluative studies should be made of a school district's Work-Experience Education Program."

The idea of a re-evaluation of these programs in Santa Barbara County was discussed several times throughout the 1967-1968 school year in regular meetings of the Santa Barbara County Association of Work-Experience Educators. One with a special interest in this project was Mr. Fred Orr, Director of Special Coordination Services, in the office of the Santa Barbara County Superintendent. In May, 1968, at Mattei's Tavern in Los Olivas, volunteers of the County Association were called for to form an evaluative study committee which would be representative of every district in Santa Barbara County. Those volunteering to serve in this capacity were Dean Anders, Santa Ynez High School; Mitchell Daugherty, Lompoc Unified School District; Alma Heath, Carpinteria Unified School District; Omer Meeker, Santa Maria Joint Union High School District; Fred Orr, Santa Barbara County Schools' Superintendent's Office; Marilyn Pilgeram, Santa Barbara High School District; Pat Wenz, Santa Barbara High School; John Sharon, Santa Barbara County Schools' Superintendent's Office; and Grady Kimbrell, who served as chairman, Santa Barbara High School District.

This committee met in September of 1968 to determine what would be included and the approach that would be taken in this evaluation. These were outlined by the committee and later discussed with Dr. Fielstra in his office at UCLA. Dr. Fielstra agreed to be of whatever assistance necessary, and he concurred

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[1]Clarence Fielstra, op. cit.

with the committees recommendation that the same questions be asked of the same groups that were included in Fielstra's evaluation of 1959-1960. No copies of the original questionnaires were located, and it was necessary to develop new questionnaires based upon a careful analysis of the published report of the 1959-1960 evaluation. In addition to the original set of questionnaires, it was decided that school counselors and work-experience educators should have an opportunity to respond to appropriate questions relevant to the operation of the County's work-experience education programs.

In October, 1968, 1747 questionnaires were sent to principals, work-experience counselors/coordinators, teachers, counselors, students, employers, and parents. The students to whom these questionnaires were mailed composed a 50 percent random sampling of all students granted credit for work-experience education in the nine regularly participating high schools in the County. The employers' and parents' questionnaires were mailed to the employers and parents of the students included in the sample.

By December 9, 1968, a total of 1000 usable questionnaires had been returned. A meeting of the evaluative study committee was held on that day at the Security First National Bank in Solvang. The tabulation of the returns and a preliminary report consisting of about two-thirds of the final report were reviewed. Subsequent to that meeting, in January, Grady Kimbrell and John Sharon again met with Dr. Fielstra on the UCLA campus. Dr. Fielstra was asked to what extent his recommendations in the original report, published in 1961, had been implemented. These were later delineated in a written report and became Chapter VIII of this report. The final report was completed in May, 1969 and printed by the Santa Barbara County Superintendent's Office.

CHAPTER V

EVALUATION BY INVOLVEMENT GROUPS, CORRELATED WITH 1960 DATA

STUDENT EVALUATION OF WORK-EXPERIENCE EDUCATION

Student opinion concerning work-experience education was considered especially valuable in Fielstra's study, and it was likewise considered vital to the 1969 evaluation. A 50 percent random sample of students who received credit for work-experience education at each high school in Santa Barbara County during the 1967-1968 school year was selected for inclusion in the study. After checking addresses, 457 usable addresses were obtained and questionnaires were mailed to this group. Questionnaires were returned by 301 students, 66 percent of those sent.

The first question asked of students was, "Who located your job in the program?" According to their replies, students' jobs were located by school work-experience coordinators in 67 percent of the cases. Thirty percent of the students said that they found their own jobs, and 3 percent said "someone else" found their jobs for them. In 1960, 78 percent of the students said the school coordinator found their jobs for them; 21 percent said that they found their own jobs; and 1 percent said "someone else" found their jobs for them.

Student satisfaction with the jobs to which they were assigned was indicated by the answers to the question, "Were you satisfied with the kinds of jobs assigned to you in the program?" "Yes, I got the job I wanted" was checked by 94 percent of the students; 6 percent said they did not get the job they considered suitable. In 1960, 82 percent said they got the job they wanted.

Students were also asked, "Were working conditions--good lighting, good ventiliation, and adequate safety precautions--adequately supplied by the employer?" "Supervision and help were always available" was checked by 93 percent of the students. In 1960, 84 percent replied likewise.

Concerning the availability of supervision and help from the employer, students responded as indicated in Table IV.

TABLE IV

SUPERVISION AND HELP FROM EMPLOYERS

Degree of Supervision & Help	Percent Who Checked in 1960	in 1969
Supervision and help were always available	90	92
Supervision and help were sometimes available	6	8
Supervision and help were rarely available	3	0

The number of visits by school coordinators varied considerably from district to district and even between schools in the same district. Students were asked, "How often were you visited on the job by a school coordinator?" Their answers are indicated in Table V.

TABLE V

FREQUENCY OF ON-THE-JOB VISITS BY SCHOOL COORDINATOR

Frequency of Visits	Percent Who Checked in 1960	in 1969
Not at all	44	38
When placed on job only	13	4
When placed and one other time during semester	21	33
At least once each month	12	15
More than once a month	7	6

The former student participants were also asked, "From whom could you get help when problems developed in work-experience education?" They responded as indicated in Table VI.

TABLE VI

SOURCE OF HELP WHEN PROBLEMS DEVELOPED IN WORK-EXPERIENCE EDUCATION

Source of Help	Percent Who Checked in 1960	in 1969
The employer	77	62
The program coordinators	43	55
A teacher at school	17	9
A school counselor	12	7

Evaluation of Programs by Students

When former student participants were asked of how much value to them such participation had been, they responded as shown in Table VII.

TABLE VII

STUDENTS' RATING OF VALUE OF WORK-EXPERIENCE EDUCATION

Students' rating	Percent Who Checked in 1960	in 1969
Great value	60	73
Some value	36	24
Little or no value	3	3

Specific ways in which former student participants said they benefitted from work-experience education are given in Table VIII.

TABLE VIII

WAYS WORK-EXPERIENCE EDUCATION BENEFITTED STUDENTS

Kind of Help	1960 Percent of Students Who Reported	1960 Rank Order	1969 Percent of Students Who Reported	1969 Rank Order
a. To make wiser career choice	41	13	59	4
b. To learn what employment entails	62	1	56	7
c. To develop better understanding of the meaning of work	59	2.5	56	5.5
d. To make progress toward chosen occupational goal	51	8.5	48	8
e. To learn to assume greater responsibility	56	5.5	77	1
f. To gain knowledge and attitudes necessary for successful job performance	58	4	71	2
g. To acquire better work habits	56	5.5	56	5.5
h. To learn how to get along with fellow workers and employers	59	2.5	65	3
i. To develop better personality and more poise	43	12	49	10.5
j. To augment financial resources	30	15	26	16
k. To make better school adjustment and avoid drop-out	16	17	23	17
l. To develop more appreciation of the value of wages	31	14	35	14
m. To develop more appreciation and understanding of the relationship between formal education and job success	49	10.5	49	9
n. To explore the fields in which occupational interest lies and to determine suitability for those fields	51	8.5	49	10.5
o. To broaden understanding of the occupational world and of working conditions in the world of work	55	7	44	12
p. To develop better understanding of the community	26	16	34	15
q. To make the transition from school to work	49	10.5	42	13

Relationship Between Programs and School Curricula

Nearly one-half of the former participants said that if they had not enrolled in work-experience education while in high school, they would not have taken any other subject in its place. Table IX shows the percentages of students who said that they would have taken some other subject or subjects if they had not participated in the program.

TABLE IX

SUBJECTS STUDENTS WOULD HAVE TAKEN IF THEY HAD NOT TAKEN PART IN WORK-EXPERIENCE EDUCATION

Subjects Students Would Have Taken	1960 Percent of Students Who Reported	1969 Percent of Students Who Reported
No other subject	48	44
Business education	12	21
Foreign language	9	6
Science	8	8
Mathematics	4	10
Arts and crafts	4	12
English	3	3
Music	3	5
Mechanical drawing	3	2
Shop	3	6
Home economics	3	12

Students were asked, "How does the amount of time and effort required to earn credit in work-experience education compare with the amount of time and effort required to earn credit in 'regular' school subjects?" Their answers are indicated in Table X.

TABLE X

AMOUNT OF TIME AND EFFORT REQUIRED TO EARN CREDIT IN WORK-EXPERIENCE EDUCATION AS COMPARED TO THAT REQUIRED IN "REGULAR" CLASSES

Amount of Time	Percent Who Checked in 1960	in 1969
Less time and effort was required	19	23
About the same time and effort required	51	43
More time and effort required	23	34

Students were asked if "participation in work-experience education interfered seriously with other school work and/or with extra-curricular activities." Their responses are shown in Table XI.

TABLE XI

INTERFERENCE OF WORK-EXPERIENCE EDUCATION WITH OTHER SUBJECTS OR EXTRA-CURRICULAR ACTIVITIES

Kind of Interference Reported	Percent Who Checked in 1960	in 1969
Other school subjects suffered	2	3
Extra-curricular activities suffered	11	13
Both subjects and activities suffered	2	4
Neither subjects nor activities suffered	84	71
No response	1	10

The former student participants were also asked if "work-experience education problems were ever discussed in regular subjects." Their replies appear in Table XII.

TABLE XII

SUBJECTS IN WHICH WORK-EXPERIENCE EDUCATION PROBLEMS WERE DISCUSSED AT SCHOOL

Subjects	Percent Who Checked in 1960	in 1969
Business Education	23	23
English	10	10
Industrial Arts	7	6
Mathematics	6	1
Social Studies	20	16
Vocational Agriculture	1	1
Others	6	16

When asked to "check any of six general kinds of vocational guidance or assistance which you have been given while attending high school," the students replied as shown in Table XIII.

TABLE XIII

GENERAL KINDS OF VOCATIONAL GUIDANCE OR ASSISTANCE RECEIVED WHILE IN HIGH SCHOOL

Vocational Guidance or Assistance Received	Percent Who Checked in 1960	in 1969
1. Learning About Myself (My vocational interests, abilities, aptitudes, personality traits and occupational potential.)	44	56
2. Learning About the World of Work (Business and industrial organization, job opportunities, job requirements, entry jobs, etc.)	36	42
3. Making a Wise Vocational Choice (Determining my suitability for jobs, exploring alternate jobs and fields, weighing all applicable factors, etc.)	34	41
4. Preparing for Employment (Developing needed skills, techniques, attitudes, background.)	35	46
5. Getting a Job (Learning how jobs are filled, how to conduct one's self during an interview, how to apply, places to look.)	29	39
6. Advancing on the Job (Adjust, mature, and grow and secure advancement and promotion.)	27	30

FREE RESPONSE COMMENTS BY STUDENTS

In addition to responding to specific questions which were a part of the questionnaire, many students wrote additional comments regarding the operation of work-experience education in their high schools. Some of the comments were favorable toward the program, some were critical of it, and some suggested improvements.

Examples of comments which were favorable toward the program were:

"I wanted to write, and I got a job where I was writing--though it was trainee work. My interest in publications has been increased; the knowledge acquired in writing for a city newspaper has proved applicable and beneficial."

"Having at the time not wanted to join the program, and having been pushed into the matter by certain parents, I had a chip on my shoulder upon entry. Two days of being assisted by the school coordinator got me to liking the idea and eventually the program itself got me to adjust more easily to outside forces."

"Work-experience education gave me a scientific curiosity. We talked about the expanding universe, quasars, and the theory of the red shift. It amounted to a course in astronomy. I was also exposed more deeply to Albert Einstein's special and general theories of relativity."

"I feel I have learned more in work-experience education that will help me later in life than I have learned in high school classes."

"I was able to go into work-experience competition in 1967 at Santa Barbara City College and in 1968 at Allen Hancock College in Santa Maria. Having participated in this competition, I realized what one really goes through to get a job. I strongly think that this program could prevent students from dropping out of school. It gives them challanges to face in a field of interest which will affect them for the rest of their lives."

"I think you learn better from experience and that's the opportunity you get from work-experience education. I learned more from my participation than from any other class in my senior year. Also, the work-experience coordinators showed a willingness to help all their students as much as possible."

"I think it's the greatest. I wish the same program were available here at South Philadelphia High School. I was an assistant to a veterinarian. This was exactly the job I asked for, because of my great interest in animals. I feel the work-experience program gave me everything I asked for."

"I feel the work-experience program in high school is an important balance between the hard knocks of the outside world and school. I think academics tend to misconceive reality--keep up with work-experience education!"

"The experience I gained through my two years of work-experience will be valuable to me the rest of my life. I not only learned valuable skills but also gained friendship and understanding through my involvement with my job. I will always be grateful to the entire work-experience staff."

"Since I do not live at home, I found I had to work for the first time. I have to work now to support myself. It has shown me a great deal of responsibility. I have to meet the public at all times while working, and please them. My boss is about one of the nicest persons I could ever work for. Since he has done so much for me, I have put forth my best effort and was given a raise. In less than one month I will have been on my first job a year. Work-experience has given me the credit I need to graduate. I can gratefully thank the work-experience program for getting me a scholarship."

"Before I was in the work-experience program, I applied for jobs but never got one because of my lack of experience. I would be in a terrible spot now if I hadn't signed up for the Program. Now I can say I have had experience. In fact, the second job found for me worked into a full time job during the summer; and I am still working there. I'll be leaving soon for school in the San Fernando Valley. I think the program is great. I hope it helps others as much as it has helped me."

"From my point of view, the work-experience program is fabulous. I knew I wasn't going to be able to go to college, so I was going to have to make the most of high school. Because I needed to find a job immediately after graduation, and I knew the average worker spends one-third of his life at his job, I wanted to find a job I really liked. Through the work-experience program, I was able to pick out the work I did best and most enjoyed upon graduation. I knew just what I was looking for. I am now working for a public utility and one of the best-paying companies in the area. Despite the fact that people say how mature the young people of today are, I think we are still a generation of romantics. You visualize how things will be in your chosen profession, but there is nothing like getting out and trying your hand at it to confirm whether or not you are making the correct choice."

"During the time I participated in work-experience education, I tried three different jobs and found the job I had been interested in was not suitable for me; and I would have wasted two years taking college courses that would do me no good. I am now working for the dentist I worked with during my work-experience assignment, and I am fortunate to have found a job I really like."

"The work-experience program has given me the greatest asset a person can attain. It made me aware of the type of work I was cut out to do. It also helped me to attain my first summer job and taught me a sense of responsibility. Now that I have found my field, I am furthering my knowledge by enrolling in the dental assistant program at Allen Hancock College. This program has taught me to feel more at ease around new friends. It has also taught me how to support myself. I recommend this program to every senior. You learn by doing more effectively than from books, and it's easier for me to maintain and keep this information through experience. The work-experience program gives everyone an opportunity to select a job that suits him and also provides him with security."

"I feel that I gained tremendously by taking part in work-experience. I gained self-confidence, learned about child psychology, and had a ball while learning. My employer and I became close friends and still visit one another, exchange gifts, and I think our friendship will be life long. I am now attending college and enjoy it, but I miss working."

"I found out what it means to work for a living. If you don't believe it, take a look at my hands. After high school is over and Uncle Sam is through with me, I'm going to college. To hell with breaking your back in order to live."

Examples of comments which were critical toward the program were:

"Employers often work you harder than any one of the other employees."

"I feel the grading system is grossly warped. I received a 'C' because my employer, a janitor, was indignant when I could not stand his unjust accusations on my job quality."

"I liked work-experience, except that it limits the hours you can work."

"There were moments when there was nothing to do, so I found it boring."

"The work-experience personnel were helpful in locating a job for me; however, once I had it, it seemed they were too busy for discussing any problems related to the job. Fortunately, I didn't have any problems which needed their assistance."

"I thought I knew what I wanted to do, so I didn't ask for assistance. I found out I am interested in many areas; consequently, I am now very confused as to where I am going."

Examples of students' comments which incorporate or imply suggestions for improving the program:

"I believe I should have had more instruction in leadership or organization before starting the program--at least two or three hours. One is more effective if one knows what one is doing."

"I feel that the students should be at least 17 years old before participating in work-experience because most kids resent having to work when their friends are off having fun unless they are very mature for their age and would rather work and know what they want to do after graduation."

"I think those who participate in the work-experience program should get more school credit than in a regular class."

"Students should be made more aware of the responsibilities entailed in employment. Job applications and interview procedures should be taught in business education courses."

"I feel that my work-experience education taught me more than I will ever learn in a regular school class. It is a good program, and I got placed in an excellent job. My only suggestion is that more hours be allowed, or a plan started for junior honor students."

PARENT EVALUATION OF WORK-EXPERIENCE EDUCATION

The same questions used by Fielstra were used in this evaluation in order to make comparisons of parent attitudes in 1960 with those in 1969. The questionnaires were sent to parents of the students selected at random to be included in this study. Three-hundred eighty-eight questionnaires were mailed to these parents, and usable returns were received from 216 or 56 percent of them. The distribution of questionnaire returns was as follows:

Cabrillo High School	9
Carpinteria High School	27
Dos Pueblos High School	10
Lompoc High School	21
Righetti High School	28
San Marcos High School	36
Santa Barbara High School	55
Santa Maria High School	20
Santa Ynez High School	10

Relationship of Parents to the Programs

Responding to the question "To what extent are you acquainted with the work-experience education program?" in which their children were involved, 40 percent of the parents replied "well acquainted" with it; 55 percent said "somewhat acquainted" with it; and only 5 percent said "unacquainted" with it.

Evaluation of Programs by Parents

One of the questions asked of parents was, "Of how much value was your son's or daughter's participation in the Work-Experience Education Program?" Their

replies are indicated in Table XIV.

TABLE XIV

PARENTS' RATING OF VALUE OF WORK-EXPERIENCE EDUCATION

Rating	Percent Who Checked in 1960	Percent Who Checked in 1969
Of much value	76	80
Of some value	20	18
Of little or no value	2	2

Parents were also asked, "What do you consider the place of work-experience education in the total school curriculum?" Their replies are indicated in Table XV.

TABLE XV

PARENTS' RATING OF THE PLACE OF WORK-EXPERIENCE EDUCATION IN THE CURRICULUM

Rating	Percent Who Checked in 1960	Percent Who Checked in 1969
Essential part of total school curriculum	38	44
Useful adjunct or supplement to curriculum	60	56
Borderline activity; readily dispensable	2	0

Responding to questions concerning their opinions about the adequacy of supervision provided their children while participating in work-experience education, 45 percent of the parents replied that they believed that adequate supervision had been provided by the schools; 60 percent replied that they believed that adequate supervision had been provided by the employers with whom students were placed. Only 8 percent replied that they believed

inadequate supervision had been provided by the schools, and only 3 percent replied that they believed inadequate supervision has been provided by the employers with whom students were placed.

Ninety-five percent of the parents replied that they believed "desirable" working conditions were provided their sons or daughters while participating in work-experience education. Only 1 percent said they believed that the working conditions were not desirable, and 4 percent replied that they did not know whether they were desirable or not.

Responding to a question concerning the extent to which suitable jobs were available for their children while participating in work-experience education, 57 percent said there were enough; 27 percent said that there were not enough; and 16 percent said that they "did not know."

Parents were given a check list composed of the seventeen statements of purpose ascribed to work-experience education by the principals. They were asked "to check" the specific ways in which they believed that work-experience education had benefitted their sons or daughters. The percent of parents who checked each of the statements, with rank order of each statement, is given in Table XVI.

TABLE XVI

PARENTS' OPINIONS CONCERNING WAYS WORK EXPERIENCE EDUCATION HELPED THEIR CHILDREN

Statement of Purpose of Program	1960 Percent of Parents Who Checked	1960 Rank Order	1969 Percent of Parents Who Checked	1969 Rank Order
a. To make wiser career choice	62	9	58	9
b. To learn what employment entails	81	2	76	2
c. To develop better understanding of the meaning of work	73	4	68	5
d. To make progress toward chosen occupational goals	57	13	48	13
e. To learn to assume greater responsibility	83	1	78	1
f. To gain knowledge and attitudes necessary for successful job performance	78	3	74	4
g. To acquire better work habits	63	8	60	8
h. To learn how to get along with fellow workers and employers	70	5	75	3
i. To develop better personality and more poise	66	6	63	7
j. To augment financial resources	61	10	45	14
k. To make better school adjustment and avoid drop-out	27	17	30	17
l. To develop more appreciation of the value of wages	56	14	52	12
m. To develop more appreciation and understanding of the relationship between formal education and job success	59	11	65	6
n. To explore the fields in which occupational interest lies and to determine suitability for those fields	58	12	54	11
o. To broaden understanding of the occupational world and of working conditions in the world of work	64	7	56	10
p. To develop better understanding of the community	36	16	31	16
q. To make the transition from school to work	53	15	44	15

FREE RESPONSE COMMENTS BY PARENTS

In addition to responding to specific questions which were a part of the questionnaire, many parents wrote additional comments regarding the operation of work-experience education. Some of the comments were favorable toward the program, some were critical of it, and some suggested improvements.

Examples of comments which were favorable toward the program were:

"Work-experience education is a marvelous opportunity. It has helped my son in many ways, and I only hope that it is available in the years to come so that my other three children can participate and get the benefits my son did."

"My daughter is so impressed with the program that she has decided to become a teacher. I am sure that had she not been exposed to this through work-experience, she would not have chosen this field. She is now attending college in Minnesota"

"Joan is now in college, and her plans are to become a teacher. She was our third child on the work-experience program. Our son is now on this program, and it is working out well for him. He was undecided what course to follow and the work-experience program helped to make up his mind. He now is planning to enter college in the fall. Our oldest son took work-experience and is now a second year student in college."

"I consider the program extremely valuable for those young people who do not intend to continue their education or who plan to attend a trade school. In the case of my daughter, she has no interest in going to college and the opportunity of taking a job convinced her at least to go on to business school. She enjoyed her job very much and it helped her to decide that she liked secretarial work very much.

"I feel that work-experience education should be a part of the regular school curriculum. The students become more interested in the community, and it gives them a chance to know the community."

"Work-experience education gave my daughter the self-confidence and poise she badly needed, as well as finding the field she wanted to go into. She now has a good job which she likes very much."

"I feel that work-experience education is a must. It helps youth become self-sufficient and to accept responsibility."

"This has been a good experience for Louise. Besides teaching her the responsibility of being reliable, it has helped ease the financial burden at home."

"This program is outstanding. The experience my son gained made it possible for him to qualify for a U. S. Navy school."

"My daughter's job was highly satisfying. I can only say thank you for the work experience provided my daughter. Five or six years is a long wait for any young person to experience his goal. This gave her the stimulus to finish her education."

"We, the parents of George and John, are appreciative of this program. The worry of the gap from school dismissal to dinner time was greatly alleviated by this program. Both boys are pursuing the job assignments given them through the program---optician and horticulture. Thanks again from two grateful parents."

"As a potential veterinarian, work experience gave my son the insight into the operation of a veterinary hospital and his physical ability to cope with it. This is a very good program."

"Bob joined the navy upon graduation and is pursuing the same career. He has reported that his school work experience has been very helpful."

"Ann was placed in a hospital and worked in the office of the administrator. She enjoyed working there and has since enrolled in college in a medical assistant course. She chose this field due to her work-experience participation, and we are so pleased with her progress. She was able to 'pre-test her field' and received every consideration from the administrator."

"I cannot praise work-experience education too highly. I feel it is one of the most valuable programs in the schools. Both a son and a daughter have decided on their careers through this program. One determined that he should change from a veterinarian goal to that of a medical doctor and is now pursuing that at the University. Our daughter decided on special education for mentally retarded and is working toward a degree. My deep gratitude to you and the school system who make this possible."

"We feel this program was of great value to our daughter. She now knows what she wants to do and is seeking more education in college."

Examples of comments which were critical toward the program were:

"Work-experience should be better supervised. The employer will work a student far over the allotted hours. The student is afraid to complain because it might lead to dismissal and lack of school credit."

"The school coordinator for work-experience education should check out the employer more carefully to see that they understand the program."

"We feel that the school supervision was not as adequate this year as it has been in the past."

"I think more guidance should be provided by work-experience education and the employer."

PRINCIPALS' EVALUATION OF WORK-EXPERIENCE EDUCATION

In Chapter II of this report were stated the purposes of work-experience education as delineated by the principals of the high schools in Santa Barbara County. Specific areas of evaluation by the principals are reported here.

In response to the question, "What do you consider the place of the Work-Experience Education Program in the total school curriculum?" the principals replied as indicated in Table XVII.

TABLE XVII

PRINCIPALS' OPINION CONCERNING THE PLACE OF WORK-EXPERIENCE EDUCATION IN THE TOTAL SCHOOL CURRICULUM

Rating	Percent Who Checked in 1960	in 1969
Essential part of total school curriculum	80	90
Useful adjunct or supplement to curriculum	20	10
Borderline activity, readily dispensable	0	0

Principals were also asked, "How, in your opinion, does work-experience education benefit your school?" Their answers are indicated in Table XVIII.

TABLE XVIII

PRINCIPALS' OPINIONS CONCERNING WAYS WORK EXPERIENCE EDUCATION BENEFITS THEIR SCHOOLS

Ways Work Experience Education Benefitted School	Percent Who Checked in 1969
a. Provides an opportunity for the school to relate academic training to job requirements	80
b. Utilizes many community facilities and resources for training purposes and makes it possible for the school to provide training in fields that it could otherwise not provide	100
c. Increases the school's ability to hold students in school for a longer period of time	60
d. Provides assistance in occupational guidance	100
e. Enables the school to keep abreast with developments in the business world	60
f. Provides a direct avenue through which the school can meet community needs	60
g. Develops good school-community relations	70
h. Acquaints employers with the work that young people trained in the schools can perform	70

Other questions asked of principals were (1) "What are the major difficulties you encounter with your program?" and (2) "What recommendations, if any, would you make regarding your entire Work-Experience Education Program or regarding any part of it?" The principals said they encountered these difficulities:

Not enough time (6 principals)
Lack of transportation for students (6 principals)
Some students who desire to take the program are not dependable (3 principals)
No difficulties encountered (1 principal)

Recommendations for improving work-experience education were:

"Provide a central office index for better utilization of placement opportunities throughout the business community for students at each school in the district."

"More clerical assistance for work-experience education coordinators."

"Expand the program by adding more certificated personnel for supervision."

"More administrative time to expand the program."

WORK-EXPERIENCE COUNSELORS/COORDINATORS' EVALUATION OF WORK-EXPERIENCE EDUCATION

Those responsible for the organization and operation of work-experience education programs in the high schools of Santa Barbara County are variously entitled Director of Work-Experience Education, Coordinator of Work Education, and Work-Experience Counselor. These individuals, presumably the most knowledgeable on the field, were given the same questionnaires as were principals. Nineteen work-experience directors, coordinators, and counselors completed the questionnaire. Approximately half of these were certificated staff assigned part time to work-experience education and part time as teachers.

The first question asked of work-experience counselors/coordinators was, "What do you consider the place of work-experience education in the total school curriculum?" Sixteen, or 84 percent said that they believed it to be an "essential part of the total school curriculum." Three work-experience counselors/coordinators (all assigned to the program on a part-time basis) composed the 16 percent who said that they believed work-experience education to be a "useful adjunct or supplement to the total curriculum."

When asked their opinions regarding the benefits of work-experience education to the school, work-experience counselors/coordinators listed the following as the most significant benefits:

1. Utilizes many community facilities and resources for training purposes and makes it possible for the school to provide training in fields that it could not otherwise provide
2. Acquaints employers with the work that young people trained in the schools can perform
3. Provides assistance in occupational guidance
4. Increases the school's ability to hold students in school for a longer period of time
5. Develops good school-community relations
6. Provides an opportunity for the school to relate academic training to job requirements.

Selection and Eligibility of Students

Work-experience counselors/coordinators were asked, "Students of which grade levels are eligible to enroll in your work-experience education program?" In two schools only seniors were eligible. In five schools both juniors and seniors were eligible, and in three schools sophomores, juniors, and seniors were all eligible--but few sophomores were actually included in the program.

Only one school had a minimum grade average as a requirement for enrollment in work-experience education--a "C." However, several other schools required minimum grade averages to be placed on certain job stations in professional fields.

Except in unusual cases, of which there were few, students must have reached age 16 to enroll in work-experience education. Four of the schools seemed to be somewhat more lenient than others in making exceptions to the age requirement.

Work-experience counselors/coordinators were asked, "To be eligible to continue in work-experience education, must a student maintain a minimum grade average?" Only one school required that a minimum grade average must be maintained--a "C." Three other schools ordinarily operate under the plan that a student's grades must not drop after he enters work-experience education in order to continue.

Responding to the question,"Must a student maintain a specified attendance record to enter or continue in work-experience education," all work-experience counselors/coordinators indicated that, to some degree, good attendance is requisite to entering or continuing in the program.

Program Operation

All work-experience counselors/coordinators reported that in their schools the students were checked upon via phone calls to employers, written

evaluations prepared by employers, visits by school personnel to student's place of employment, and in-school interviews with students.

When asked, "On the average, how many supervisory contacts of any kind are made per work-experience student per semester?" the work-experience counselors/coordinators replied as follows: 5 schools--5 or more contacts; 4 schools--3 contacts; 1 school--1 or 2 contacts.

Based on the answers by work-experience counselors/coordinators concerning the amount of clerical assistance provided work-experience staff, four schools had no regularly assigned assistance at all. One school had clerical assistance for 10 hours per week, and five schools had clerical assistance for 20 hours per week.

Responding to a question on how often each student in work-experience education is rated in writing, the counselors/coordinators indicated that in 9 schools they are rated twice each semester. In one school they were not rated at all.

Work-experience counselors/coordinators were also asked, "What is the maximum number of credits per semester which may be earned by a student in work-experience education?" Their answers indicated that in 8 schools the maximum number of units per semester for such participation is 5 units (1/2 Carnegie Unit); in two schools, the maximum number was 10 units.

The number of hours per week that a student must spend on the program to earn 5 units also varied, with 8 schools requiring 10 hours per week in both "pay" and "non-pay" jobs. The two schools granting 10 units per semester required only 5 hours per week for 5 units.

Seven schools had programs for both "pay" and "non-pay" participation, and three schools had only the "exploratory" program for students on a "non-pay" basis.

COUNSELORS' EVALUATION OF WORK-EXPERIENCE EDUCATION

Although school counselors were not included in the evaluation by Fielstra, it was determined to include them in the 1969 evaluation of work-experience education. Eighteen counselors completed a questionnaire similar to the one distributed to work-experience counselors/coordinators.

Responding to the question, "What do you consider the place of work-experience education in the total schol curriculum?" 63 percent of the counselors said that they believed it to be an essential part of the total curriculum. Another 31 percent believed work-experience education to be a useful adjunct or supplement to the curriculum. Only 6 percent thought it to be a borderline activity, readily dispensable.

Asked their opinions regarding the benefits of work-experience education to the school, counselors listed the following as the most significant benefits:

1. Utilizes many community facilities and resources for training purposes and makes it possible for the school to provide training in fields that it could not otherwise provide

2. Provides assistance in occupational guidance

3. Increases the school's ability to hold students in school for a longer period of time

4. Acquaints employers with the work that young people trained in the schools can perform

5. Develops good school-community relations

6. Provides an opportunity for the school to relate academic training to job requirements.

Further delineation of counselors' opinions is included in the section on "Comparison of Educators' Evaluations."

TEACHER EVALUATION OF WORK-EXPERIENCE EDUCATION

Faculty evaluation of work-experience education was sought as a part of the total evaluative study. A questionnaire specifically designed for use by teachers was distributed to 533 teachers in the high schools in Santa Barbara County having such programs. The number of usable returns was 268, or 50 percent of those distributed.

Responding to a question regarding the extent to which they were acquainted with work-experience education in their high schools, teachers replied as indicated in Table XIX.

TABLE XIX

EXTENT TO WHICH TEACHERS WERE ACQUAINTED WITH WORK-EXPERIENCE EDUCATION

Extent of Acquaintance	Percent Who Checked in 1960	in 1969
Well acquainted	41	30
Somewhat acquainted	58	65
Unacquainted	1	5

Evaluation of Programs by Teachers

Teachers were asked, "On the basis of your knowledge of work-experience education, how valuable do you consider it to have been for students who have taken part in it?" Their answers are shown in Table XX.

TABLE XX

TEACHERS' RATING OF VALUE OF WORK-EXPERIENCE EDUCATION

Teachers Rating	Percent Who Checked in 1960	in 1969
Of much value	58	67
Of some value	39	31
Of little or no value	2	2

Teachers were also asked, "What do you consider the place of work-experience education in the total school curriculum." In Table XXI their answers are indicated.

TABLE XXI

TEACHERS' RATING OF THE PLACE OF WORK-EXPERIENCE EDUCATION IN THE CURRICULUM

Teachers' Rating	Percent Who Checked in 1960	in 1969
Essential part of total school curriculum	29	57
Useful adjunct or supplement	55	41
Borderline activity; readily dispensable	1[illegible]	2

Teachers were asked to "check" the specific ways in which they believed work-experience education "helps students who take part in it." This list given to them consisted of the seventeen statements of purpose which had previously been ascribed to the program by principals in Santa Barbara County. The percentage of teachers who checked each of the statements, and the rank order of each statement, are shown in Table XXII.

TABLE XXII

TEACHERS' OPINIONS CONCERNING HOW WORK-EXPERIENCE EDUCATION HELPS STUDENTS

Ways That the Program Helps Students	In 1960 Percent of Teachers Who Checked	In 1960 Rank Order	In 1969 Percent of Teachers Who Checked	In 1969 Rank Order
a. To make wiser career choice	85	2	58	9
b. To learn what employment entails	89	1	81	1
c. To develop better understanding of the meaning of work	79	6.5	70	4
d. To make progress toward chosen occupational goals	75	9	56	12
e. To learn to assume greater responsibility	80	5	80	2
f. To gain knowledge and attitudes necessary for successful job performance	84	4	71	3
g. To acquire better work habits	74	10	66	6
h. To learn how to get along with fellow workers and employers	79	6.5	65	7
i. To develop better personality and more poise	69	12	52	14
j. To augment financial resources	65	14	48	15
k. To make better school adjustment and avoid drop-out	61	15	53	13
l. To develop more appreciation of the value of wages	55	16	37	17
m. To develop more appreciation and understanding of the relationship between formal education and job success	77	8	59	8
n. To explore the fields in which occupational interest lies and to determine suitability for those fields	85	3	58	10
o. To broaden understanding of the occupational world and of working conditions in the world of work	72	11	57	11
p. To develop better understanding of the community	52	17	39	16
q. To make the transition from school to work	67	13	68	5

In response to the question, "How, in your opinion, does work-experience education benefit your school?" teachers answered as indicated in Table XXIII.

TABLE XXIII

TEACHERS' OPINIONS CONCERNING WAYS WORK-EXPERIENCE EDUCATION BENEFITS SCHOOLS

Ways Program Benefits School	In 1960 Percent of Teachers Who Checked	In 1969 Percent of Teachers Who Checked
a. Provides an opportunity for the school to relate academic training to job requirements	69	73
b. Utilizes community facilities and resources for training purposes and thus makes it possible for the school to provide training in fields that the school program could otherwise not serve	74	81
c. Increases the school's ability to hold students in school for a longer period of time	55	61
d. Provides assistance in occupational guidance	88	81
e. Enables the school to keep abreast with developments in the business and industrial world	47	34
f. Provides a direct avenue through which the school can meet community needs	62	47
g. Develops good school-community relations	78	70
h. Acquaints employers with the work that young people trained in the schools can perform	75	67

When asked, "To what extent has work-experience education had an effect on your courses or on the procedures used in them?" teachers replied as indicated in Table XXIV.

TABLE XXIV

EXTENT WORK-EXPERIENCE EDUCATION HAD ON COURSES AND TEACHING PROCEDURES

Extent	Percent Who Checked in 1960	in 1969
Much	5	11
Some	40	46
None	49	43

Teachers were also asked, "Which of the following effects has work-experience education had on your courses?" Their responses are shown in Table XXV.

TABLE XXV

TEACHERS' RATINGS OF EFFECTS OF WORK EXPERIENCE EDUCATION PROGRAM ON THEIR COURSES

Effects of Program on Courses	In 1960 Percent of Teachers Who Checked	In 1969 Percent of Teachers Who Checked
a. Provides motivation for additional interest in my course(s)	38	34
b. Provides basis for an entire unit of work in my course(s)	7	6
c. Provides some topics of problems for discussion	42	47
d. Provides additional opportunities for use of related audio-visual material	11	11
e. Provides basis for more use of related community resources	22	22
f. Provides basis for taking more educational trips or excursions	8	8

FREE RESPONSE COMMENTS BY TEACHERS

In addition to responding to specific questions which were a part of the questionnaire, many teachers wrote additional comments regarding the operation of work-experience education in their high schools. Some of the comments were favorable toward the program, some were critical of it, and some suggested improvements.

Examples of comments which were favorable toward the program were:

"I have had work-experience students as teacher aides and tutors for the last three years. They have been invaluable in making it possible to deal with individual student problems, such as teaching English to non-English speaking students, teaching Spanish-speaking students to write Spanish, tutoring the slower students, operating the language lab, etc. There has been an enormous increase in the student teachers' interest and desire to master the language he is tutoring."

"In my field (business education), the work-experience education program is extremely helpful. My students are often employed, and we discuss topics relating to employment frequently. Just last week the Work-Experience Coordinator and I planned a field trip to General Motors to observe their computers and learn about data processing equipment. The students who are on jobs are most anxious to improve their skills and see a definite need for our instruction. Work-experience education is an integral part of our students' total education."

"Work-experience education was one of the factors which inspired me to attempt individualized instruction in English."

"Without work-experience education my vocational physiology class would lose much of its effectiveness."

"I think work-experience is very good for the vocationally-oriented student. It helps him select a vocation and gives him training before applying for a job."

"I have visited the classrooms in which some of my students were working with elementary teachers. I was tremendously impressed with the great job these students are doing and with the responsibility they have been given within the classroom because of their abilities and interest. I certainly feel that this particular aspect of work-experience education is invaluable to students who at any time have considered teaching as a career."

"I teach students who feel that they are only marking time until they get out. Work-experience education brings them back into the classroom with a real desire to learn and progress. This alone is worth any small annoyance of having them called out of class for job interviews. Many of my former students are working in the community because of experience gained through work-experience education."

"I think that this is and has been one of our better programs. On the whole, I think the director and coordinators are among our most sincere and dedicated staff. These job experiences have been invaluable for many of our students."

"Work-experience education is a necessary part of business training and is closely correlated with the business department. It motivates students while they are still in school."

"The program is invaluable. Students praise it saying it makes school more meaningful and interesting. It helps them budget their time wisely. From what I have observed, the personnel have always been very competent and helpful."

"The businesses of the community are favorably impressed with the quality of students sent to them. This is reflected in the attitude of the entire community to the school. Students who have added responsibility tend to become more dependable in school work as well."

"I find that many students are only thinking if they are also doing. This really motivates them."

"The experiences gained through employment have obviously sparked awareness in students who have participated in work-experience education. Values learned through their training have affected their entire orientation to their school, their friends, and to their place in the world around them."

Examples of comments which were critical toward the program were:

"We don't have the follow-up which is very necessary."

"From where I sit, I see no connection between academic learning and work."

"I question whether students gain sufficiently wide enough experience in different career fields. In realistic concert with the tempo of the times, the 'education' in work-experience tends to become less important than the money involved."

"Better placement should take place. My photography students end up doing routine hospital work instead of working in the X-Ray department."

"Our school only participates in the exploratory program--which is too limited. It should be expanded to include the vocational and general programs."

"It seems to me that the program serves more as an employment service for high school students than as a service to educate them."

"This program is more trouble than it's worth."

Examples of teachers' comments which incorporate or imply <u>suggestions for improving the program</u>:

"The program could be improved with a strong follow-up program"

"I would like to see an enlarged program of technical classes and work-experience education so that the extreme academic orientation of the high school would be modified. The present emphasis on grades and college acceptability is, in my opinion, regretable."

"I would like to have more feedback from students and the work-experience office concerning the need for certain topics. Where are our weaknesses? Should we keep a senior math requirement?"

"This program should be better integrated into regular classwork by the teachers."

"More publicity about the program is needed. A greater attempt should be made to link jobs with applicable courses."

"The program should be expanded with the cooperation of the community to include a wider variety of work experience."

"The program should be extended to include a larger number of students."

"We need some kind of in-service program to make teachers, like myself, aware of the nature and philosophy of work-experience education."

"The program is not wide enough. Ideally, it should involve all students when they are either juniors or seniors."

"I feel that the program is very worthwhile; however, as our district increases, it is increasingly difficult for the supervisor to work with larger numbers of students. If the ratio of supervisor to students continues to increase, the program will lose its effectiveness. I feel a good ratio would be 60 students maximum for each supervisor."

"I think teachers should have more information regarding the program so they can incorporate material into the classroom that will be applicable. There simply is not enough publicity."

"The possibility of incorporating distributive education into the already highly successful work-experience program should be undertaken."

"This program should be expanded to include more sophomores and juniors. We provide little vocational education for many of our students that would truly benefit from this type of program."

COMPARISON OF EVALUATIONS BY EDUCATOR GROUPS

The lack of consistency in the evaluations by the educator groups responding to questionnaires is indicative of divergent opinions regarding the value to students of work-experience education; its benefits to the school; and, perhaps, levels of understanding of the program itself. A comparison of these groups' opinions appears in Table XXVI and Table XXVII.

TABLE XXVI

1969 OPINIONS CONCERNING THE PLACE OF WORK-EXPERIENCE EDUCATION IN THE TOTAL SCHOOL CURRICULUM

Place in Curriculum	Percent Who Checked			
	Principals	WE Coord.	Counselors	Teachers
Essential part of total curriculum	90	84	63	57
Useful adjunct or supplement	10	16	31	41
Borderline activity, readily dispensable	0	0	6	2

TABLE XXVII

1969 OPINIONS CONCERNING WAYS WORK-EXPERIENCE EDUCATION BENEFITS THE SCHOOLS

Benefits to School	Percent Who Checked			
	Principals	WE Coord.	Counselors	Teachers
a. Provides an opportunity for the school to relate academic training to job requirements	80	89	56	13
b. Utilizes many community facilities and resources for training purposes and makes it possible for the school to provide training in fields it could not otherwise provide	100	100	84	81
c. Increases the school's ability to hold students in school	60	95	75	61
d. Provides assistance in occupational guidance	100	95	75	81
e. Enables the school to keep abreast of developments in business	60	63	38	34
f. Provides a direct avenue through which the school can meet community needs	60	84	50	47
g. Develops good school-community relations	70	89	63	70
h. Acquaints employers with the work that young people trained in the schools can perform.	70	100	75	67

EMPLOYER EVALUATION OF WORK-EXPERIENCE EDUCATION

As a part of Fielstra's evaluation study of work-experience education in 1960, employers of participating students were sent questionnaires specifically designed for collecting employers' opinions concerning the program. To facilitate comparison of opinions in 1960 with those of 1969, the same questions were asked of 340 employers of students participating in work-experience education during the 1967-68 school year. The number of usable questionnaires returned was 170--or 50 percent of those sent.

Employers were asked, "In which of the following ways do you believe that work-experience education helps a student who takes part in it?" Their replies, both in 1960 and in 1969, are shown in Table XXVIII.

TABLE XXVIII

EMPLOYERS' OPINIONS CONCERNING WAYS WORK-EXPERIENCE EDUCATION HELPS STUDENTS

Ways the Program Helps Students	1960 Percent of Employers Who Checked	1960 Rank Order	1969 Percent of Employers Who Checked	1969 Rank Order
a. To make wiser career choice	78	6.5	59	11
b. To learn what employment entails	87	1	82	1
c. To develop better understanding of the meaning of work	85	2	76	4
d. To make progress toward chosen occupational goal	76	9	55	13
e. To learn to assume greater responsibility	77	8	77	3
f. To gain knowledge and attitudes necessary for successful job performance	81	3	81	2
g. To acquire better work habits	79	5	66	6
h. To learn how to get along with fellow workers and employers	78	6.5	72	5
i. To develop better personality and more poise	73	11	58	12
j. To augment financial resources	55	14	37	15
k. To make better school adjustment and avoid drop-out	42	16	34	16
l. To develop more appreciation of the value of wages	50	15	51	14
m. To develop more appreciation and understanding of the relationship between formal education and job success	74	10	66	6
n. To explore the fields in which occupational interest lies and to determine suitability for those fields	80	4	62	9
o. To broaden understanding of the occupational world and of working conditions in the world of work	67	13	60	10
p. To develop better understanding of the community	39	17	33	17
q. To make the transition from school to work	69	12	63	8

Responding to the question, "What do you consider the place of work-experience education in the total school curriculum?" employers answered as indicated in Table XXIX.

TABLE XXIX

EMPLOYERS' RATING OF THE PLACE OF WORK-EXPERIENCE EDUCATION IN TOTAL CURRICULUM

Employers Rating	Percent Who Checked in 1960	in 1969
Essential part of total school curriculum	43	52
Useful adjunct or supplement	47	46
Borderline activity; readily dispensable	6	2

Employers were asked, "In which ways has work-experience education been of value to you?" Their answers are indicated in Table XXX.

TABLE XXX

WAYS WORK-EXPERIENCE EDUCATION HAS BEEN OF VALUE TO EMPLOYERS

Ways Program Has Been of Value to Employers	1960 Percent of Employers Who Checked	1960 Rank Order	1969 Percent of Employers Who Checked	1969 Rank Order
a. Made available a valuable and carefully selected labor supply, and implemented recruitment from it	39	2	53	2
b. Helped train future full-time employees	63	1	63	1
c. Reduced costs resulting from excessive turnover	15	6.5	18	5
d. Resulted in improved production methods	18	5	15	7
e. Resulted in improved selling methods	7	8	3	12.5
f. Resulted in improved office procedures	19	4	17	6
g. Improved morale in the firm	15	6.5	22	4
h. Increased profits	6	9.5	7	10
i. Increased number of customers or clients	5	11.5	9	8
j. Improved public relations	30	3	31	3
k. Reduced absenteeism	6	9.5	8	9
l. Reduced accidents	2	14	3	12.5
m. Reduced absences due to illness	3	13	2	14
n. Reduced tardiness	5	11.5	6	11

Employers' Evaluation of Relationships with Schools

Asked if work-experience education had "resulted in a better understanding by you of the school, and a closer cooperation with it," 83 percent of the employers responding in 1969 said "yes." In 1960, 76 percent said "yes" to this question.

Employers were also asked if they felt "that the school expects too much of you with regard to training students, supervising them, and reporting on them." Of those responding in 1969, 98 percent said "no." In 1960, 93 percent said "no" to the same question.

Another question asked of employers was, "Do you believe that as part of work-experience education, students are receiving at school training which is specifically related to their work for you?" Their answers are indicated in Table XXXI.

TABLE XXXI

EMPLOYERS' OPINIONS CONCERNING RELATED TRAINING AT SCHOOL

Amount of Related Training	Percent Who Checked in 1960	in 1969
All needed training is given	18	16
Some is given but more is needed	49	55
Doubted if any related training is given at school	33	29

When asked, "Do you feel that adequate placement service (providing suitably qualified students for available jobs) was given by the school?" 90 percent of those responding in 1969 said "yes." In 1960, 69 percent said "yes" to this question.

Employers' Evaluation of Supervision

Employers evaluated the adequacy of supervision provided by the school as indicated in Table XXXII .

TABLE XXXII

EMPLOYERS' EVALUATION OF SCHOOL SUPERVISION OF STUDENTS IN WORK-EXPERIENCE EDUCATION

Adequacy of Supervision	Percent Who Checked in 1960	in 1969
Supervision is adequate and consistent	63	76
Supervision is barely adequate, should be improved	16	17
Supervision is inadequate or lacking	10	7

Employers were asked, "Do you feel that you, as an employer, have been able to provide adequate supervision for your work-experience education students." Of those responding in 1969, 94 percent said "yes." In 1960, 80 percent said "yes" to this question.

Responding to the question, "How often do you make written reports to the school on your work-experience education students," employers answered as indicated in Table XXXIII .

TABLE XXXIII

FREQUENCY OF WRITTEN REPORTS BY EMPLOYERS TO SCHOOL REGARDING WORK-EXPERIENCE EDUCATION STUDENTS

Frequency of Reports	Percent Who Checked in 1960	in 1969
Not at all	21	10
Once each semester	38	44
Twice each semester	18	30
Once each month	2	6
At irregular intervals	19	8

FREE RESPONSE COMMENTS BY EMPLOYERS

In addition to responding to specific questions which were a part of the questionnaire, many employers wrote additional comments regarding the operation of work-experience education. Some of the comments were favorable toward the program, some were critical of it, and some suggested improvements.

Examples of comments which were favorable toward the program were:

"I have worked with work-experience education girls for five or six years in two different places of employment. They live up to and surpass my expectations in industry and complete honesty in being to work on time and reporting to me if it is impossible to be here. The teachers with whom I have had contact have been more than kind and helpful and have taken time to learn of our work and goals so that I know they are very selective in finding employers as well as filling the positions."

"I have not had one bad experience with this program. I sincerely hope it will continue to the mutual benefit of student and community."

"I have been extremely pleased with the program in this area. In fact, we are beginning to depend to a certain degree on the fine help we have received as a result of having students in our midst."

"The exposure given these fine students in the occupation of their choice enables them to decide before additional education is taken whether they have chosen wisely. The calibar of all students assigned has been extremely high and does much to dispel the impression that teenagers are not responsible, well-educated members of society."

"We are excited about this program, as it does seem to give the student a chance to gain valuable experience in the business field to go along with his school training. By taking part in work-experience education. they seem to develop poise that should give them a jump when it comes to job interviews upon graduation."

"I feel that work-experience education is a wonderful part of the schools today. Not many students are sure what occupation they would like to follow after graduation, and of those that are sure there are many that change after working that particular profession. There is no better way to become familar with a profession than to work in it. I am sold on the work-experience education program as I participated in it seven years ago."

"This is a great program and I have recommended it to other small businessmen. All students have proven to be good, reliable workers."

"The last three students have been very cooperative and interested in the workings of the hospital. I believe it has been a benefit to all of us."

"I am whole-heartedly in agreement with the program and feel it contributed a great deal to the total education of the students, particularly those who have decided upon a general field for a vocation. I trust the program will continue and thank you for your cooperation."

Examples of comments which were <u>critical</u> toward the program:

"I have had some difficulty with students who do not have their own transportation getting to the office on a regular basis. Overall, it is a fine program that is beneficial to the student, school, and the businessman."

"I feel that the student referred to me for employment was not carefully screened. I found that her skills were very poor and was forced to terminate her after approximately five months."

"We feel that the work-experience education program is excellent, but feel a lack of communication between our firm and the schools. We hire a number of students but some of them are not under the work-experience education program, and we don't know which ones are and which ones aren't. We feel a better job of public relations should be done by the school."

"Students today do not seem to care if they work or not. We have to watch them as if they were small children. For us, work-experience does not work out very well. We might get one student out of every seven who work s out well. They are not worth a $1.65 to train them when you can get an older man for a $1.50 to a $1.75 an hour and they are not as much trouble to train."

Examples of Employers' comments which incorporate or imply <u>suggestions for improving the program:</u>

"More students should be encouraged to participate in work-experience education programs. We never seem to have enough of these young men and women at the school."

"It is only through this type of program that I feel the percentage of future professional photographers will be developed. More education in school in photography should be offered if possible."

CHAPTER VI

NEW OPPORTUNITIES IN CAREER FIELDS

In the ten years since the basic data for the Fielstra Report was gathered, many new occupations have appeared, and older ones have changed--both in their importance and frequency. Many of these changes have been reflected in the placement of students in the work-experience programs.

Today, manpower development is being crystallized into a new science through development of prediction techniques, studies of mobility and need for educational preparation, and an analysis of social factors which affect our economy.

Thus, on a smaller scale, the changes that occur in work-experience placement reflect these emerging occupations; and student involvement in the occupations they are considering as vocations becomes increasingly important.

A comparison of the occupational fields available in 1955 and 1968 in the Santa Barbara area for young people embarking on a career is significant. Since 1955, job opportunities have mushroomed in the fields of aero-research and manufacturing, printing and graphics, horticulture (with particular emphasis on orchid breeding), food wholesaling, furniture design, etc. Of particular note in 1968 are the 62 firms in research and development alone--Santa Barbara's justifiably proud "smokeless industries." There are twelve research laboratories . . . and a new industry has opened up in the manufacture of surfboards! By combining the information from the tables showing student placement in work experience from one medium-large high school in Santa Barbara, 1955 and 1968, it is interesting to note that there are 51 new job classifications, while 13 of the 1955 jobs are inactive. The 51 new job titles are included in a fourfold

increase of job assignments for the students: 55 placements in 1955, compared to 219 in 1968.

In most instances, both the number and the kind of jobs reflect a change in the type of experiences needed and available to work-experience students.

Table XXXV is a combination of 1955 and 1968 data on the placement in exploratory, or non-paid, job stations. This group of participants increased from 41 to 91, with 14 new positions and four old ones becoming inactive.

These tables are indicative of the trend to new fields, and show the expansion in the number of students involved in work-experience education.

Development of new technologies, and changes in the nation's economy, demand societal change as well. Former Secretary of Labor Willard Wirtz states that the average high school graduate will have to be re-trained at least three times during his working lifetime.[1] The only sensible hedge against human obsolescence is to make available a maximum opportunity for each youngster to participate in an experience of working--and to acquaint him with the fields of concentration required by today's industrial society.

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[1]Miller, Paul A., University Perspectives on Manpower, Seminar on Manpower Policy and Program, U.S. Department of Labor.

TABLE XXXIV

JOBS HELD BY WORK EXPERIENCE EDUCATION STUDENTS IN 1955 & 1968
(In One Medium-Large High School)

Job Classification	1955 Gen.	1955 Voc.	1955 Expl.	1968 Gen.	1968 Voc.	1968 Expl.
*Assembler				3		
*Architect Trainee						2
*Baker Helper				1		
-Bookkeeping Assistant			2			
*Box Boy				7	1	
*Busboy				7		
-Butcher Assistant			1			
*Carpet Layer					1	
*Clerk Steno					6	5
*Clerk Typist				1	10	3
*Cook				2		
*Cosmotologist					3	
*Counterman				7		
Counter Girl	1			1		
*Crafts Worker				1		
*Deliveryman				6		
*Dental Assistant					1	12
*Dishwasher				5		
-Dry Cleaning Assistant	2					
*Electronic Technician					1	
*Engraver					1	
-Farm Assistant			1			
*Florist Trainee				1	2	1
*Funeral Director Trainee						1
-General Office Assistant	2					
*General Office Clerk				1	5	2
*Graphic Arts Assistant				2	1	
*Grocery Clerk				4		
Groom	4			1		
*Horse Trainer				1		
*Interior Decorator				1		
Janitor	3			5		
*Kennel Assistant				1		1
*Kitchen Helper				3		
*Lab Assistant				1		2

-1955 job classifications now inactive (13)
*New job classifications (51)

TABLE XXXIV (Cont'd.)

Job Classification	1955 Gen.	1955 Voc.	1955 Expl.	1968 Gen.	1968 Voc.	1968 Expl.
*Landscape Gardener				2	2	
-Lawyer Assistant			1			
*Library Page				1		
*Mail, Shipping Clerk				3		
*Maintenance Worker				3	1	
-Mechanic Assistant	1		3			
*Medical Assistant					1	1
-Merchandising Assistant			1			
*Messenger				1		
*Newswriter						1
*Nurse Trainee						3
Nurse's Aide			5	3	2	
Nursery Helper (Botanical)	2			3		
*Nursery School Trainee					1	
*Orderly				4		
-Pantry Hand Assistant	1					
*PBX Operator				1		
*Phone Solicitor				2		
*Photo Lab Assistant				1		
*Physical Therapy Assistant			1			
*Printer's Helper						1
*Radio, TV Trainee					1	
-Ranch Hand	2					
*Receptionist					1	
Sales Girl	3			13	2	2
*Salesman				2		
-Secretarial Assistant			2			
Service Station Attendant	3			4	2	
*Shoe Repair					1	
*Sign Maker					1	
Stock Boy	5			9		
*Stock Girl				3		
Teacher's Aide			6	4		1
-Typist	1					
Tool & Die Maker					1	
-Usherette	1					
*Veterinary Trainee						3
Waitress	1			8		
X-Ray Trainee						1
Totals	32		23	129	48	42
	55			219		

-1955 job classifications now inactive (13)
*New job classifications (51)

TABLE XXXV

PLACEMENT OF STUDENTS ON "EXPLORATORY" (NON-PAID) JOB STATIONS
(Large High School, February, 1955 and June, 1968)

	February, 1955 Number Enrolled	June, 1968 Number Enrolled
Auto Body Repairman		2
Auto Mechanic Trainee		6
Biologist Trainee		1
Clerk Typist		12
Crafts Worker		1
Data Processing Trainee		7
Dental Assistant Trainee	1	10
Florist Trainee		2
General Office Clerk	8	5
Key Punch Trainee	5	2
Legal Secretary Assistant	1	
Library Trainee		3
Medical Assistant Trainee		1
Medical Laboratory Trainee	1	1
Nursing Trainee	5	2
Photographer Trainee		1
Psychologist Assistant (School)	2	
Printer Trainee		1
Receptionist Assistant	1	
Radio-TV Repairman Trainee		5
Recreation Worker Trainee		1
Sales Clerk	4	
Switchboard Operator	3	
Teacher's Aide	6	24
Veterinary Trainee	1	2
Welder Trainee		1
X-Ray Trainee	3	1
Totals	41	91

14 new positions
4 from 1955 no longer filled

CHAPTER VII

CONCLUSIONS

The common purposes of both Fielstra's and the present study were (1) to describe the nature of work-experience education programs in Santa Barbara County High Schools, (2) to evaluate the purposes, procedures, and outcomes of the programs, (3) to identify problems and issues, as well as strengths, of the programs, and (4) to recommend basic principles, which should govern procedures involved in the continuance and improvement of the programs. In addition, the present study attempted to determine the extent to which Fielstra's 1960 recommendations have been implemented. Because of the significance of the latter recommendations a separate chapter (chapter VIII) is devoted to this and was prepared by Dr. Fielstra in March, 1969.

The most significant findings relevant to the first three purposes stated above are incorporated in this chapter as supporting evidence of the conclusions stated. These conclusions were largely based upon the opinions expressed by involvement groups in response to questionnaires identical to those used by Dr. Fielstra in 1960. The remainder of the conclusions were based upon personal interviews with individuals within these involvement groups.

To the extent that the findings of this study are valid, the following conclusions seem justified:

1. THE WORK EXPERIENCE PROGRAMS IN THE HIGH SCHOOL DISTRICTS IN SANTA BARBARA COUNTY ARE SUCCESSFUL, GENERALLY RECOGNIZED AS HAVING GREAT VALUE, AND HAVE BECOME MUCH MORE EXTENSIVE SINCE LAST EVALUATED IN 1960.

Extensiveness of Program

During the 1967-1968 school year, approximately 30 percent of the senior classes in Santa Barbara County's High Schools participated in work-experience education. Seven of the County's nine high schools operated both "pay" and

"non-pay" programs. Two schools operated only the non-pay exploratory program. As would be expected, a larger percentage of the student enrollment participated in work-experience education in those schools which operated both types of programs. The number of students who participated each year is increasing each year and increasing at a faster rate than the total school enrollments. Work-experience education is perhaps the fastest growing program in the entire secondary curriculum. The number of students who receive credit toward graduation makes up approximately one-half of the number who participate due to the fact that in some schools many students either begin on a job too late to qualify for credit or take part on a "short-term" basis.

From 1955 to 1960, a significantly greater percentage of girls took part in the programs than boys. During the 1968-1969 school year, the percentage of girls participating in all programs had dropped to 53 percent. However, in the exploratory, non-pay program, three-fifths of the participants were girls.

Approximately three-fifths of the students enrolled in work-experience education received both school credit and pay for their participation, and two-fifths were participants in the exploratory program receiving school credit but no pay. The pay program has shown greater growth than the non-pay program since 1960. Both groups participate for ten hours a week for five units of credit in seven schools. In two schools only five hours per week are required for the same amount of credit.

Purpose of Program

The seventeen purposes originally attributed to work-experience education by principals in 1959 were ranked in the order of their importance according to the principals of the nine high schools in the county in 1969:

1.0 To assume greater responsibility

2.5 To explore the fields in which occupational interests lie and to determine suitability for these fields

2.5 To gain knowledge and attitudes necessary for successful performance.

4.5 To develop a better understanding of the meaning of work

4.5 To broaden understanding of the occupational world and of working conditions in the world of work

6.5 To make wiser career choice

6.5 To acquire better work habits

9.5 To develop more appreciation and understanding of the relationship between formal education and job success

9.5 To learn what employment entails

9.5 To make progress toward chosen occupational goals

9.5 To learn how to get along with fellow workers and employers

12.0 To make better school adjustment and avoid drop-out

13.5 To make the transition from school to work

13.5 To develop more appreciation of value of wages

15.5 To develop better personality and more poise

15.5 To develop better understanding of the community

17.9 To augment financial resources.

Place of Program in Curriculum

More than 98 percent (95 percent in 1960) of the parents, teachers, and students whose opinions were obtained considered work-experience education to be of "much" or "some" value. Furthermore, as in 1960, great majorities of the respondents (100 percent of the parents, 98 percent of the teachers, 100 percent of the principals, and 98 percent of the employers) considered the program to be an "essential" or "useful" part of the total school curriculum.

Dr. Fielstra stated in 1960, "It is probable that no other aspect of the total programs in the high schools--academic, non-academic, or extra-curricular--could have received such overwhelming and enthusiastic support from laymen,

educators, and students as the work-experience education program . . . . "This would seem to apply in 1969 as well.

Student Benefits From Program

Based upon opinions expressed by parents, teachers, employers, and students, the following purposes of work-experience education were those which were most often achieved by student participants:

1.0 To learn to assume greater responsibility

2.5 To learn what employment entails

2.5 To gain knowledge and attitudes necessary for successful job performance

4.0 To learn how to get along with fellow workers and employers

5.0 To develop better understanding of the meaning of work

6.0 To acquire better work habits

7.0 To develop more appreciation and understanding of the relationship between formal education and job success

8.0 To make wiser career choice.

School Benefits From Program

All of the principals and the majority of the teachers whose opinions were obtained expressed the belief that the high schools of the county gained a number of benefits as a result of work-experience education. These benefits are listed in rank order by teachers:

1.5 Provides assistance in occupational guidance

1.5 Utilizes community facilities and resources for training purposes and thus makes it possible for the school to provide training in fields that the school program could not otherwise provide

3.0 Provides an opportunity for the school to relate academic training to job requirements

4.0 Develops good school-community relations

5.0 Acquaints employers with the work that young people trained in the schools can perform

6.0 Increases the school's ability to hold students in school for a longer period of time.

Employer Benefits From Program

According to employers with whom work-experience education students had been placed, the greatest benefits to the employers themselves were those listed below, in order of ranking by employers:

1.0 Helped train future full-time employees

2.0 Made available a valuable and carefully selected labor supply, and implemented recruitment from it

3.0 Improved public relations

4.0 Improved morale in the firm

5.0 Reduced costs resulting form excessive turnover

6.0 Resulted in improved office procedures

7.0 Resulted in improved production methods

8.0 Increased number of customers or clients

9.0 Reduced absenteeism

10.0 Increased profits.

Non-interference of Program with Other School Work

More than 70 percent of the former participants in work-experience education said that their participation had neither interfered with other classes nor with extra-curricular activities; 13 percent said that extra-curricular activities were limited; and only 3 percent said other school courses suffered.

Strengths of Program

Dr. Fielstra, in 1960, stated: "The most outstanding strength of the program . . . has been the high quality of its leadership . . . ."[1] The compilation of data for this re-evaluation using Dr. Fielstra's format has been completed by the directors and coordinators themselves. Because of this, it seems inappropriate to comment specifically on the strength of leadership in this report.

Certainly, one of the most outstanding strengths of work-experience education in Santa Barbara County is its use of community resources. Millions of dollars worth of equipment and facilities, as well as immeasurable valuable human resources, have been made a part of the educational program through work-experience education.

Many parents, as well as some students, indicated that participation in work experience education had provided motivation to pursue additional formal education beyond high school. These programs seemed to be meeting their objective of relating academic training to job requirements.

One of the most important contributions by work-experience education is what it has done to show youth the importance of satisfying work in achieving human dignity. A man is identified by the work he does. Work is a way of life. It determines, to a large extent, our circle of friends; limits our interests; and sets certain boundries for our culture. A prime function of education, then, is to provide meaningful, significant experiences designed to best equip the individual for work in which he will be successful, and which will be properly challanging to him in accordance with his specific aptitudes, interests, and total personality. The extent to which work-experience education in Santa Barbara County had met this objective is perhaps the most outstanding strength of these programs.

2. THERE ARE SOME SHORTCOMINGS OR DEFICIENCIES IN THE PRESENT PROGRAMS OF WORK-EXPERIENCE EDUCATION.

Insufficient Conformance with State Requirements and Recommendations

Although the programs did generally comply with the requirements of the California Administrative Code, they were not in full compliance with regard to supervision of students at their job stations. Further, improper classification of students was found in some schools, such as wrongly classifying students on

a non-paid basis in private industry as "vocational."

Most of the recommendations in Tyler's Report of the Study of Work Experience Education Programs in California High Schools and Junior Colleges (July, 1956) were found to be complied with. The most notable exception was the violation of the recommendations which states: "assignements to program coordinators should not exceed 50 students on the "exploratory" program or 72 students in the "general" program, that substantial amounts of well-qualified secretarial services--comensurate with the needed volume of work--should be provided program coordinators, that the program should consist of classroom activity and part-time employment which is viewed as the laboratory portion of such school activity, and that the program should be administered through the guidance department of the school.

The program in the County, in general, did comply with the recommendations in the California Handbook on Work Experience Education (1965). Two major areas, however, were not in compliance: (1) the amount of supervision and staff assigned for this purpose were not adequate, and (2) there seemed to be a lack of coordination of the program with classroom instruction.

Negative Criticisms Made of Programs by Respondents

As was the case in the 1960 evaluation, overwhelming and enthusiastic support of these programs was found on the part of the great majority of parents, teachers, employers, and students (students were the most enthusiastic group). However, some "complaints" were voiced by some members of each group.

Fewer criticisms of the programs were made (as was the case in 1960) by parents than by other groups. Those parents who were critical seemed to be concerned that supervision was not adequate on the part of coordinators and that more guidance should be provided. Parents of non-participants sometimes felt that there was something wrong with the school programs because their children had not been placed though it had been requested.

Few negative criticisms were made by school counselors and teachers of vocationally-oriented classes. However, a number of complaints came from teachers of liberal arts or college-prep classes. Some of these teachers simply felt that the programs were more trouble than they were worth. One stated that he could see "no connection between academic learning and work." One constructive criticism which seems valid was the students should be provided with a greater variety of work activities. Others viewed these programs simply as placement services.

Very few of the employers contacted were critical of work-experience education. Those who were seemed to be concerned about such things as lack of dependable transportation available to students and, in some cases, a lack of communication between the school and the employer. Others were concerned about the lack of cooperative attitudes among students.

The students who expressed criticism indicated a need for more instruction in the "world of work" before placement: ". . . more instruction . . . more aware of responsibilities of employment . . . job applications and interview procedures should be taught . . . ."

Chief Deficiencies in Programs

Although some progress has been made, the most apparent deficiency in the work-experience education programs in Santa Barbara County remains the same as that in 1960: insufficient supervisory visits to job stations by coordinators. In 1960, 44 percent of the students responding said that the coordinator had not visited them on the job at all. The 1969 figure was 38 percent. It has been suggested that in some cases coordinators make calls, observe students from a distance, and confer with the student's on-the-job supervisor without the student becoming aware of the visit. Of all employers

responding in 1969, 76 percent said that the school's supervision was adequate and consistent. The figure was 63 percent in 1960. Even so, it is clear that more attention should be given to on-the-job visits by coordinators. The chief reason for the failure of coordinators to make more frequent on-the-job calls appears to be the assignment, in some schools, of an inordinate number of students per coordinator.

The 1960 evaluation revealed that some students enrolled in work-experience education worked only during the evenings and on weekends when coordinators were not on duty--making proper coordination impossible. This is no longer a problem as students are now a part of "credit" programs only if they are participating during hours in which coordinators are on duty. This is an improvement in the administration of programs.

The second chief weakness in the programs in the County appears to be insufficient relationship between job experiences and school experiences. An even greater percentage of employers than in 1960 now felt (84 percent) that more related classroom experiences should be available to students in these programs. Many recommended that all students enrolled in work-experience education be concurrently enrolled in a class of "common learnings." This was also a recommendation in 1960.

3. AS IN 1960, THERE IS MUCH SIMILARITY IN THE RECOMMENDATIONS MADE BY VARIOUS GROUPS FOR IMPROVING WORK-EXERIENCE EDUCATION IN SANTA BARBARA COUNTY HIGH SCHOOL DISTRICTS.

A number of "free response" recommendations were made by the groups responding relevant to improving programs of work-experience education. There was much overlapping of these recommendations by parents, teachers, employers, and students.

Parent Recommendations

The recommendations most frequently mentioned by parents were:

a. Expand the program to include all interested students

b. Provide more frequent supervision

c. Provide more guidance.

Teacher Recommendations

Teachers responding in the study most often made recommendations such as these:

a. Enlarge the program to include all students either as juniors or seniors

b. A strong system of follow-up is needed

c. A greater attempt should be made to link job activities with class activities

d. Begin vocational guidance at an earlier stage

e. Provide continuous information on the programs to the school faculties.

Employer Recommendations

Employers most often made such recommendations as these:

a. Expand the programs

b. Provide for a closer relationship between job experiences and class experiences

c. Provide for closer and more frequent supervision by coordinators

d. Provide classroom activities which will promote desirable attitudes.

Student Recommendations

The students who responded most often made the following kinds of recommendations:

a. Provide for one class of related instruction for all students who are enrolled for credit

b. Allow students to participate at an earlier age.

CHAPTER VIII

EXTENT OF IMPLEMENTATION OF 1960 RECOMMENDATIONS

OMMISSION SHEET

Chapter VIII will appear in this position in the report when it is completed.

CHAPTER IX

RECOMMENDATIONS

Based upon the conclusions reached in this evaluation, the following recommendations are made for the improvement of operating procedure for the programs of work-experience education in Santa Barbara County:

1. ADVISORY COMMITTEES SHOULD BE ORGANIZED AND MEETING SEVERAL TIMES A YEAR IN EACH DISTRICT.

Advisory committees for work-experience education serve as a means of communication, act as a sounding board for new ideas, and are often a valuable tool for good public relations. Such a committee should be representative of the school district it serves insofar as vocational fields, geographic area, and ethnic and social backgrounds are concerned. A committee of eight to twelve is probably large enough to be representative but not too large to be workable.

2. STRICT COMPLIANCE WITH STATE CODE REGULATIONS SHOULD BE MAINTAINED.

The California Administrative Code, Title V, Article 13.1, Section 115.20, Paragraph C2 states that each District must: "Assign a sufficient number of qualified certificated personnel to direct the program and to coordinate jobs held by pupils with the school curriculum." The "sufficient number" assigned to a full-time coordinator is interpreted by the California State Department of Education in its Handbook on Work-Experience Education (1965) as 50 to 75 students in exploratory programs and 75 to 100 students in general and vocational programs. Dr. Fielstra recommended a maximum load for a full-time coordinator of 46 to 60 students.

Assuming that (1) district program direction is not a responsibility of the coordinator assigned to the school, and (2) sufficient non-certificated personnel are assigned for clerical duties and assistance in placement, then a full-time coordinator might be expected to adequately coordinate the activities of 75 students

on the exploratory or vocational programs or up to 100 students on the general program.

3. CAREFUL ATTENTION SHOULD BE GIVEN IN CLASSIFYING STUDENTS INTO THE THREE TYPES OF WORK-EXPERIENCE.

Each of the three types of work-experience education (Exploratory, Vocational, and General) is related to the others, but each is distinctive in its primary objective. Greater care than in the past should be exercised in classifying the participants in each program. It is recommended that the following descriptions be used in classification:

Exploratory Work-Experience Education

Exploratory work-experience education is primarily a vocational guidance program. It provides opportunities for the student to systematically sample conditions of work in a variety of occupational fields. This provides a basis, through observation and supervised participation, for an informed career choice. The student receives school credit for successful participation.

Vocational Work-Experience Education

Vocational work-experience education provides specific occupational preparation for entry into selected vocations. The employment of a student is normally within the occupational area for which his vocational program at school is preparing him. If a student is not enrolled in a vocational education program, he may enroll in vocational work-experience education only if it is a matter of record that his occupational goal is that for which he is receiving on-the-job training through participation in vocational work-experience education. The student receives pay and school credit for successful participation.

General Work-Experience Education

General work-experience education provides maturing experiences for youth through supervised part-time employment as part of the total school program. This Program develops desirable attitudes and promotes understanding of the relationship between formal education and job success. This part-time work need not be related to the specific occupational goal of the student. The student receives pay and school credit for successful participation.

4. STUDENTS ENROLLED IN WORK-EXPERIENCE EDUCATION SHOULD BE VISITED ON THE JOB BY A COORDINATOR ONCE A MONTH.

To ensure proper coordination of school activities with on-the-job activities, it seems mandatory that the coordinator visit and observe each student on the job

at least once a month. Such visits may often be of brief duration, but they should be regular. Through such regular contact with the student's on-the-job supervisor, and observation of the student at the job station, difficulties can often be identified before they become too severe. Students assigned to exploratory job stations should be visited and observed at the job station even more frequently than once a month--especially when first placed.

5. AN EXTENSIVE ORIENTATION PROGRAM SHOULD BE PROVIDED FOR STUDENTS IN THE TENTH GRADE.

It is important to fully apprise students of the opportunities through work-experience education while in the tenth grade. This is especially true pertaining to the exploratory program. Dr. Fielstra's statement that, "The program can have relatively little influence on the retention of students if they don't get into it or don't even hear about it until they are juniors" still seems pertinent.

At some time during the tenth grade, all students should receive an orientation to the program either through an assembly or, preferably, through a special presentation to each history or English class.

6. A CLASS IN RELATED INSTRUCTION SHOULD BE PROVIDED FOR STUDENTS ON THE PROGRAM.

All students need instruction in selecting a career, appraising their own qualifications, where and how to look for a job, how to make application, developing appropriate attitudes, handling responsibilities, employment communication, how to terminate a job, and other information pertinent to employment in any job. These learnings may be appropriately handled in a class meeting once or twice a week throughout the year or every day for a semester, but unless students do meet regularly in such a class it is doubtful that their on-the-job experiences will have full potential meaning.

7. TRANSPORTATION SHOULD BE PROVIDED FOR STUDENTS ENROLLED IN WORK-EXPERIENCE EDUCATION WHO ATTEND SCHOOLS REMOVED FROM THE EMPLOYING COMMUNITY.

Students should not be precluded from participating in the program due to lack of transportation. Some of the County's high schools are located some distance from areas which offer employment. The students in these schools have a distinct disadvantage insofar as enrollment in work-experience education is concerned.

8. INCREASED EMPHASIS ON VOCATIONAL GUIDANCE PRIOR TO PLACEMENT ON A JOB STATION--ESPECIALLY ON THE EXPLORATORY PROGRAM--IS ESSENTIAL TO PROGRAM SUCCESS.

A primary purpose of work-experience education is to provide a sound basis for an informed career choice. This can only be served if adequate vocational guidance is provided students prior to their placement. A long-range program of in-service training, perhaps through utilizing the services of UC Extension, could better equip coordinators to perform this function. A close working relationship with the school's guidance counselors is also encouraged.

9. PROGRAM ADMINISTRATORS AND PERSONNEL SHOULD BE ACCORDED TITLES PROPERLY DESIGNATING THEIR RESPONSIBILITIES.

Work-experience educators charged with district-wide responsibility should be designated "Director" of Work-Experience Education; those assigned to the high schools for the purpose of "coordinating" in-school activities with job station activities should be designated "Coordinators" of Work-Experience Education; and those who perform in the duel role of "coordinator" and part-time teacher should be designated "Teacher-Coordinators." This is supported by the California State Department of Education's Handbook on Work-Experience Education (1965): "True work-experience education results only when . . . the school assigns qualified personnel to direct the program and to coordinate student jobs with school learnings." It is further referred to in the California Administrative Code, Title V, Section 115.20, Paragraph C2: "The district will assign a sufficient number of qualified certificated personnel to direct

the program and to coordinate jobs held by pupils with the school curriculum."

Dr. Norman Eisen in his doctoral dissertation entitled, Work-Experience Education in California High Schools writes:

> Every work experience educator should be accorded status as a school district administrator. In order to secure for the trainees and the program a respect which breeds excellence, it is imperative that approval of work experience education by the school board and administration be manifested in adequate salary, title, and facilities for the coordinator. The title, "Director of Work Experience Education" or "Work Experience Coordinator" properly connotes the responsibility. A twelve-month assignment, with a salary similar to that of a counselor at the building level, or an assistant principal for those with district-level assignments, is considered appropriate. Minimum facilities should include an assigned office where an interview in privacy may be conducted and a telephone within the office which is attended throughout the day by an adult secretary. Consistent with proper status is provision for an office budget and a mileage or automobile allowance.

10. A CONTINUOUS PROGRAM OF PUBLIC RELATIONS FOR THE PROGRAMS SHOULD BE MAINTAINED.

There is still some basic misunderstandings about work-experience education --even among faculty members in the high schools. Periodic presentations before faculties should be made to properly interpret the programs to teachers and other staff members. Similar presentations should be made whenever possible before civic groups and service clubs. Newspaper and magazine articles, special bulletins and reports, and other communications media should be utilized to effect desirable public relations.

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Snyderman, George S.
A Work Adjustment Center for Older Disabled Workers. Final Report.

Jewish Employment and Vocational Service, Philadelphia, Pa.
Rehabilitation Services Administration (DHEW), Washington, D.C.
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PHILADELPHIA

A work adjustment facility for disabled older persons with a variety of problems hindering their ability to adjust to previous work situations was utilized in this demonstration project. Six hundred persons 45 years of age and older were served; 386 males and 214 females. The clients were classified according to primary disability, that is, emotional, intellectual and personality; sensory; systemic; and multiple physical handicaps. The commonality among the groups was economic disadvantagement as evidenced by long periods of unemployment. Data on the 600 participants were examined by disability categories, age groupings, educational attainment, work experience, length of unemployment, and highest occupational level. Findings included: (1) Employer attitudes can be modified regarding age and a disability through appropriate approaches during placement negotiations, (2) Techniques for rehabilitation of older disabled workers should be applied differentially according to variables such as physical strength, tolerance for pressures, and motivation to achieve, and (3) The presence or absence of family ties frequently is a contributing cause for past vocational failures. (CH)

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FINAL REPORT

A WORK ADJUSTMENT CENTER FOR OLDER DISABLED WORKERS

Project RD-874

Grant Period April 1, 1962 to June 30, 1966

JEWISH EMPLOYMENT & VOCATIONAL SERVICE
1213 Walnut Street
Philadelphia, Pennsylvania 19107

VT 008 697

PREFACE

The involvement of the older worker in society and employment represents a long standing problem which has two major aspects. It has been demonstrated that many older people can continue to make contributions to the productive needs of the economy and, at the same time, sustain an active and independent role in society. Even those who have disabilities can work and participate in the social and work world. The alternative to vocational rehabilitation of older disabled persons would in many instances reflect an acquiescence to the deterioration and isolation of a segment of the population from the mainstream of life, with negative humanitarian and economic implications.

For the past twenty-five years the Jewish Employment and Vocational Service of Philadelphia has been engaged in the vocational development and rehabilitation of persons with a variety of handicaps. In recent years it has concentrated on particular groups with special problems which inhibit vocational adjustment. The importance of giving primary attention and effort to the growing population of older persons is obvious. It was with this implicit responsibility that the agency undertook this program of providing work adjustment services for older disabled persons. From the beginning of the program it was evident to the board and staff of the agency that a great deal was to be learned. The professional methods applied to younger disabled individuals had to be modified for the older group. A deeper understanding of the role of the older person, the particular variations in aspiration and competence and in prior work life history, presented particular dilemmas for the professional service. A further complication was the public awareness of and concern for the cultural separation of many disabled and impoverished people which, in a large measure, characterized the project population.

A great deal of information and understanding was available to JEVS from the Federation Employment and Guidance Service of New York, which initiated the proto-type program. The professional literature supplied much basic knowledge for us. Yet, we had to find our own paths in our own way, and therefore set about the program with an experimental attitude.

The report which follows is a product of the contributions of many agencies and individuals. We particularly owe much to the Vocational Rehabilitation Administration for its financial support and professional guidance. The Pennsylvania State Bureau of Vocational Rehabilitation in many respects was a co-worker in our project. Locally, health and welfare agencies of all kinds were involved with particular facets of the program. And, in particular, we owe much to FEGS for its pioneering effort, and to Jewish Occupational Council for its help in interchanging information with similar projects throughout the country. The job of supervising and coordinating the program was assigned to Dr. George S. Snyderman, who also prepared the progress and final reports.

Finally, we acknowledge with deep appreciation the support of the Federation of Jewish Agencies of Greater Philadelphia, which, with funds from the United Fund and the Allied Jewish Appeal Campaign of Philadelphia, enabled us to operate the basic rehabilitation program in-

to which this project was built.

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SIGNIFICANT FINDINGS FOR THE REHABILITATION WORKER

Six hundred disabled persons 45 years of age and older received vocational rehabilitation services from the Philadelphia Jewish Employment and Vocational Service. The services rendered were patterned after the demonstration and research program of the Federation Employment and Guidance Service of New York City. In addition to offering evaluation, adjustment and placement services, the Philadelphia program aimed at investigating the vocational rehabilitation possibilities of older disabled workers.

The population served in the Philadelphia program was younger than the FEGS population; fewer persons 65 and over were enrolled. However, a large proportion of the clients were disadvantaged culturally and alienated from their families and the community. Since many of these clients were successfully placed, it is probable that a program such as the Philadelphia one would even more successfully rehabilitate less disadvantaged older disabled persons. Additional findings which appear to be relevant for agencies attempting to provide services to the disabled population 45 and over were as follows:

1. Prime attention should be focused on the individual and his problem. Age is a secondary variable, and rehabilitation techniques should be geared to the person and not his age.

2. The presence or absence of family ties should be included as a rehabilitation variable because these are frequently contributing causes for past vocational failures.

3. Initially, most counselors have difficulty relating to older disabled clients. Staff training and frequent contacts with older clients usually helps dispel these difficulties.

4. Differential techniques and programs must be developed and utilized to reach and hold an older disabled population, particularly one which is also disadvantaged.

5. Techniques for rehabilitating and placing older disabled workers should be applied differentially according to such variables as physical strength, tolerance for pressures, motivation to achieve, etc.

6. Many older disabled clients lack a will to work. Counseling helps a large proportion of them to complete a rehabilitation program so they can be placed in competitive industry.

7. Counseling also helps older clients to eradicate depressed attitudes about their own abilities and employer practices.

8. Many older disabled clients compete most advantageously in occupations requiring quality and not quantity of output.

9. The large percentage of persons with long histories of unemployment were placed in competitive jobs, which suggests that this factor is not a primary one in determining feasibility for rehabilitation services.

10. Older disabled persons should be helped to realize that they may need to accept downgrading in order to begin working again. Counseling is useful in helping them accept the steps and decisions involved in getting and holding a job.

11. Many older disabled clients are beset with fears and anxieties for their future as workers and persons. Counseling helps them work through these difficulties and understand that their vocational objectives are different from the objectives of younger disabled clients.

12. Attitudes of older clients toward younger supervisors and counselors usually are not crucial considerations.

13. When older clients are integrated with younger clients on a one (1) to three (3) ratio, the older clients tend to become models.

14. The status needs of older disabled clients are satisfied by advancing them to coordinating and minor supervisory roles if the client's ability, social rapport and emotional integrity can justify it.

15. Clients who view the program as a rehabilitation process are more likely to complete it and enter competitive employment than clients who view it as a means of earning money.

16. Employer attitudes can be modified regarding age and disability through appropriate approaches during placement negotiations.

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I. INTRODUCTION

Background of Study

In recent years our society has shown a growing concern for the welfare of its older citizens. This concern prompted the forty-sixth annual meeting of the Governor's Conference in 1956 to state that older persons "should have equal opportunity, if physically able, t be gainfully employed and that physical and mental rehabilitation processes be made available to them and that if such services were not available including vocational training and retraining" steps should be initiated to make these services available. The conference specifically recommended that "program be developed to both treat and prevent disabilities resulting from chronic illness and 'mental disorders'." (The States and Their Citizens; A Report of the Governor's Conference; the Council of State Governments; Chicago, 1955).

Concomitantly, or perhaps as a result of the Governor's Conference, the U. S. Department of Labor conducted the Seven City Study to determine the status, the needs and the problems confronting persons 45 years of age and older. Among the significant findings were the following: Disabilities increase with age; i.e., from 1 in 10 persons under 45 to 1 in 4 persons over 45, and between 2 and 3 times as many older persons seeking work through the local offices of the Public Employment Service have definable disabilities as applicants in general. (An Analysis of Experience in Seven Labor Markets; BES #R-151; 1956; Counselors and Placement Services for Older Workers BES EL 52; 1956). Additionally, it was noted that many older persons were being excluded from the labor market.

A subsequent follow-up study in Philadelphia in 1957 by the Pennsylvania State Employment Service re-emphasized the findings of the Seven City Study, and noted the need for additional research, especially with older handicapped persons who were experiencing difficulty gaining employer acceptance.

Public interest has continued and increased. As recently as October 25, 1966, the Wall Street Journal reported that new federal legislation was directed at training older persons in other than classrooms, and that future research was to be directed at defining and clarifying problems surrounding the employability of the older person.

Despite continuing interest in the plight of the older handicapped worker, progress in their rehabilitation, though continuing, has been slow. Particularly, the so-called "hard core" cases which are usually characterized by voluminous medical, social, psychological, vocational records and sporadic work histories, indicate a need for intensive rehabilitation services which are often not really available. It is almost ten years since Klein (1957) characterized these handicapped persons as being fearful of work, lacking motivation, being unable to accept supervision or to relate to co-workers. Klein also stated that these negative personality characteristics were more handicapping than their definable physical or emotional disabilities.

Indeed, the psycho-social factors involved in the rehabilitation of older handicapped workers are a basic dilemma. Today's labor market is "lush" and fluid. An older person who cannot get and hold a

job is often handicapped by a psycho-social problem in addition to a physical disability, which deters him from competing in a society that is oriented to favor youth. His sense of rejection magnifie his physical disability and creates or reinforces a failure syndrome. Unless this failure syndrome is dealt with, psychological decay sets in and a host of mental health problems result.

So, the rehabilitation of many older handicapped persons requires the application of specialized skills and techniques before they can learn to deal with their problem. The Office of Vocational Rehabilitation recognized this need when it approved an application of, and awarded a four-year demonstration and research grant to the Federation Employment and Guidance Service of New York City to investigate the vocational rehabilitation possibilities of older disabled workers.

The FEGS program hypothesized that a highly differential program, tailored to the individual needs of the older handicapped person, might result in guide lines for similar programs in other geographic areas. A major focus was directed at developing and implementing an intensive and specialized placement service for older disabled workers. The following objectives were to be pursued:

1. The demonstration of feasibility of vocational rehabilitation.

2. The determination of appropriate techniques and conditions necessary to return the individual to competitive work.

3. The determination of the characteristics of successful and unsuccessful rehabilitants.

Approximately 70% of the persons served in the FEGS project were placed. Despite the fact that these older disabled persons had been regarded as unemployable by health, welfare and vocational agencies, the prototype program demonstrated that these oldsters could be rehabilitated by a guided and controlled work experience.

The Philadelphia Jewish Employment and Vocational Service was impressed by the results achieved by FEGS. They felt that further testing of techniques was warranted, not only for the disabled who were 60 years old and over, but also for disabled persons 45 to 60 years of age who were experiencing similar difficulties. It was assumed that this somewhat younger-older population would respond to vocational treatment, at least as well as the 60 and over group. A special study project might reveal specific differential benefits for older disabled workers by age category; i. e. 45 to 54; 54 to 64; 65 and over.

JEVS Interest in Older Disabled Workers

The Philadelphia JEVS was established in 1941 to provide intensive vocational evaluation, counseling, and job placement services to the occupationally handicapped. Shortly after its inception, it became evident that many occupationally handicapped persons could not adjust to jobs because of emotional and attitudinal problems.

The JEVS Work Adjustment Center was originally established in 1957 with community funds, because there was a need for a local facility to provide short term adjustment services for chronically unemployed emotionally handicapped persons, and because such services were not available in the Philadelphia area. On July 14, 1958, JEVS formally applied to the Office of Vocational Rehabilitation for a research and demonstration grant to deal with persons with emotional problems. This project was started on December 1, 1958, and ended on March 31, 1962. Services formulated under this grant continue with community support.

From its inception, the Work Adjustment Center dealt with persons of all age groups, including those over 45 years of age. The experience with this older group had been fragmented because many community agencies viewed them as not rehabilitatable because of age. The agency felt that, since the proportion of this age group had been increasing steadily, and since the Department of Health, Education, and Welfare and other official agencies were interested in alleviating the problem, it should develop a service program which would reach out to this population so that more information regarding differences in problems between the various age groups might be made available. It was also felt important to determine whether differential treatments could be developed for various age groups. For example, the significance of work tasks, of variation in wage payments, and of the work environment itself were subjects to be studied for relevance to the rehabilitation of older disabled workers. The extent to which variously handicapped persons 45 years of age and older are amenable to such a rehabilitation program was to be determined.

JEVS Work Adjustment Center and Community Position

JEVS receives its primary financial support from the Federation of Jewish Agencies of Greater Philadelphia, with funds from the United Fund and the Allied Jewish Appeal. Agency services are available to handicapped persons of all races and religions.

The men and women who comprise the Board of Directors are leaders in business, the professions, and in the civic and welfare community. The policies they establish focus vocational rehabilitation effort in those problem areas where the need is most acute, the services least available, and the techniques undeveloped. The work of the agency is integrated in the health and welfare fabric of Greater Philadelphia and the Commonwealth of Pennsylvania. Program guide lines are set in the Community Planning Department of the Federation of Jewish Agencies, the Health and Welfare Council, civic and communal planning groups, the Governor's Conference on the Employment of the Handicapped, and similar groups.

Professional services are coordinated with those offered by other health, welfare and educational agencies throughout the area. Within the past three years special projects have been conducted in partnership with the Pennsylvania Bureau of Vocational Rehabilitation, Pennsylvania State Employment Service, Philadelphia Council for Community Advancement, the Mayor's Manpower Utilization Commission, the Board of Education, U. S. Veterans Administration, State Office for the Blind, and the Family Service of Philadelphia. Cooperative services also are performed with the Temple Medical Center, Moss Rehabilitation Hospital,

Rebecca Gratz Club, Philadelphia Psychiatric Center, Norristown State Hospital, Philadelphia State Hospital, and other institutions and agencies concerned with the older handicapped worker.

The professional activities and interests of JEVS are broad and diversified. It is involved with practice and research in vocational rehabilitation, employment, education and training. The scope of interests are evident in the professional affiliations maintained: American Psychological Association, National Rehabilitation Association, American Personnel and Guidance Association, National Association of Sheltered Workshops, National Conference of Jewish Communal Service, and the Jewish Occupational Council.

JEVS provides one year interneships for doctoral students in Counseling, Psychology, and Rehabilitation Counseling in addition to practicum training for graduate students in Guidance and Counseling. In-service seminars are held weekly for staff and outside professional workers to strengthen professional skills.

Each year, several hundred visitors tour the Work Adjustment Center. They come from agencies in government and private welfare around the world. Visitors came from Australia, France, Canada, Germany, Great Britain, Israel, Tanzania. In addition, persons from virtually every State in the Union visited the Center during the lifetime of the project.

JEVS staff maintains a close and continuing contact with the Philadelphia labor market. Direct relationships with more than 1,500 employers and with the various trade and union organizations helped develop job opportunities for the oldsters in the program. These relationships also helped maintain work contracts from industry totaling approximately $150,000 each year. This provided work and wages for the disabled clients, including the oldsters who were in rehabilitation programs at the Center.

The Work Adjustment Center of JEVS occupied the eighth floor and a portion of the fourth floor of a large factory building at 533 North Eleventh Street. Some 19,000 square feet was used to rehabilitate disabled workers in various programs. Of this, approximately 5,000 square feet was set aside for older disabled workers.

This permitted work, evaluation and office space for the new project. Additional equipment such as work benches, chairs, sorting and packaging fixtures, tools for assembly and dissembly of electrical and mechanical appliances, typewriters, mimeograph and other office machinery, file cabinets, and office furniture were purchased for use of the staff and clients assigned to this project.

The shop was well lighted and, in addition to the above equipment, contained time clocks and freight and passenger elevators. The work area was laid out to permit individual or team work. A belt line was available for certain types of assembly work. Space was also allotted for counseling, academic remediation, clerical, storage, shipping and receiving. Accessibility to public transportation; i.e., trolley, bus and rail, minimized client absenteeism.

Production work was contracted from private industrial and com-

mercial firms. Typical work performed by older disabled clients included the following: Packaging such items as dry goods, auto parts and accessories, toys; sorting and counting metal, plastic articles; collating, counting, sorting and stapling pages for sample books; soft soldering; assembling or disassembling and testing of electric plugs; separating and salvaging small metal scraps, etc. Some clients were taught to use riveting machines, punch and drill presses, heat sealers, paper cutters, etc., as part of their work assignments. Some older women were able to "brush up" on their typing as they addressed advertising materials.

Review of the Literature

Earlier, we noted the growing concern for the welfare of our older citizens, especially those who are handicapped by physical, mental and emotional disabilities. The recognition of official activity is noted by Usdane (Sussman, 1965) in his review of persons served by State agencies supported by Vocational Rehabilitation Administration funds - 30 of every 100 persons served in 1964 were 45 years of age or older.

The plight of older persons has been attributed to a variety of causes, not the least of which is mandatory retirement systems which force persons to leave their jobs regardless of their ability to perform and their desire to continue to work. Swenson (1962) recommended flexible retirement programs so that older persons could continue to work as long as they were able, not only for economic reasons, but because the older person needed the stimulation from "familiar experiences - to assure a minimum of tension and concern about the terminal phase of life". Tartler, (Williams et al, 1963), point out that retirement marks a person as aged, and this mark means loss of status. Most persons do not retire because they are old and incapable, but because they are forced to by the social regulations in the world of work.

The Labor Force

Barron's study (1961) showed that half the older men who were no longer in the labor force had left for health reasons. For the population as a whole, three or four of every hundred had a long term chronic illness; for the age group 55 to 64 six out of every hundred; and for those 65 and over, seventeen of every hundred had such an illness. He also found that one third of all persons entering mental hospitals for the first time were 60 years of age and older.

Others stress the fact that older persons, handicapped and non-handicapped alike, are discriminated against by employers. Birren (1964) points out that in periods of high technical changes, such as we have been experiencing, older persons tend to be dropped from employment. Sheppard (1960), who studied the unemployment and re-employment experiences in the automobile industry of workers, stated unequivocally that the industry discriminated against persons over 40 years of age.

Attitudes Toward the Aging

The orientation of American culture has been related to the plight of people with problems. Hsu (1961) feels that many Americans, including scholars, have been so emotionally immersed in the absolute goodness of their own society that it has been hard for them to question

the basic values "even in scientific analysis". Linden (1957) noted that American culture has placed a premium on youth and vigor. Thus, if a significant portion of our population believes that age, in itself, creates a special social category which possesses specific characteristics, younger persons "react to older persons as though they (the older persons) did possess these characteristics, regardless of the truth of the matter" (Drake, 1958). Moreover, younger persons tend to regard a person as old at a specific chronological age, even though older persons frequently mention criteria other than age. And, persons who cite a chronological age as a criteria for aging "tend to accept more stereotyped views about older people and workers, and the lower the chronological age accepted as the beginning of old age the more stereotyped all the views (Tuckman and Lorge, 1953).

Apparently we have developed a sub-culture of aging wherein older persons interact more with persons who are aged than with younger people (Rose and Peterson (Ed.)1965). Barron (1961) feels that the aged, by virtue of their exclusion from work and other parts of American life, resemble a minority group. One of the results of this is they are forced to accept a life on the margins and,therefore, tend to identify themselves with the lower classes. Especially those older persons living in slums soon learn to accept a deteriorating environment which is devoid of help and hope (Reich and Stegman, 1966).

Poverty and the Aging

The relationship of disability and disease to poverty,and the position of the poor in the American class culture, is discussed by Rosen (1961). Yamanato & Goin (1965) find that variation in treatments accorded different classes stems from the failure of lower class persons to meet middle class standards of reliability and responsibility. The lower class persons respond best to concrete treatments directed at remediating an immediate problem and discussion about the nature of his disabilities. Ortale's generalization that older persons have good employment records "and usually can be considered to accept realistic job objectives---" (Muthard and Morris, 1961) is therefore not a universal truth. It is, in fact, completely erroneous with respect to much of the population served in the JEVS project.

Poverty, traditionally, has been defined as an economic phenomenon. It has dimensions such as alienation and isolation which cannot be resolved by money alone. When the older person is both economically and socially poor, his predicament is worse than the younger poor, for in our culture, there are few prospects for better times (Chen 1966). This is precisely why older persons constitute a large part of the downward mobile poor. (Riessman, et al, 1964). The tragedy is that American older persons were better off at one time in their lives.

Disability

Perhaps failure to understand and come to grips with the problem of our older disabled population stems from our inability to accept the fact that growing old is an inevitable concomitant to living. There is a "chasm between our perceptions of aging and the facts" (Kent 1965). The resultant emotionally laden atmosphere stimulates youth to victimize older persons, and employers to discriminate against them, and health and

social agencies to neglect their needs. And, since we know that many oldsters do have real disabilities, we tend to equate age with handicap. Too often there is a generalized belief that being old is synonomous with handicap.

Differential Aspects

The aging process has been discussed by a great many persons. Here it must suffice to note that, though there are differences in opinion regarding specific details about aging, there is general agreement that aging is a gradual process which affects people differently. Mittelman (Kaplan 1956); Leake (1960); Rogatz (1965); and Oberman (Muthard & Morris 1961) state that aging begins at birth and continues throughout life at different ratios in different individuals, producing major problems for one person in his early sixties, and for another not until he is seventy years of age or older. Birren (1964) points out that the person who adapts continually modifies his behavior over time thus aging successfully. He recommends that research be initiated to study internal habit systems which promote adaptation. Oberman (op cit) feels that one of the most important jobs of rehabilitation workers endeavoring to help older persons is "to reaffirm their conviction that the age of the individual does not relegate him to a preassigned role---". And, Schock (Ciba, 1955) believes that when we talk about aging we really have to talk about something that is aging, and this thing varies all the way from individual cells to total animals. But there is, according to Jones & Kaplan (Kaplan 1956) a dividing line between normal and psychotic aging whi ch is statistical and not abrupt.

What then is the nature and cause of older persons' difficulties? Do oldsters have problems because of physical, emotional, mental disabilities or cultural disadvantages, or are their problems due to some personality defects? There is evidence that persons accumulate defensive mechanisms throughout early life, and that the emotional disturbances of aging are culturally induced, (Linden 1954; 1956; Dohrenwend (1966) states that the evidence for conclusions like Linden's is not always clear. He suggests that a study be made of the relations of underlying personality defects, cultural and situational factors leading to the expression of psychological symptoms. The self concept of older persons was studied by Litman (1964), who found a direct relationship between the self concept and rehabilitation response; clients who maintained a positive self concept consistently responded well to treatment; those who did not, performed below expectations. Preston & Gudiksen (1966) attempted to measure self perception among older persons and found those who were indigent endorsed more negative and fewer positive statements than their middle and upper class contemporaries.

The true nature and extent of the older person's disabilities is on occasion masked because some are institutionalized, because communities are reluctant to provide adequate facilities for care, and not because they are mentally ill. (Tibbitts, et al, 1963). Personality and awareness of a defect may be as important as the degree of the defect because personality factors affect attitudes towards disabilities and success in coping with them. Bartlett (Ciba, 1955) notes that the healthier the personality in early life the less chance of failure to adjust to changed circumstances and capacities of advancing age.

Disengagement

Talcott Parsons (1958) correlates the sick role, and presumably the handicapped role, with social deviance; i.e., alienation and passivity. It is, he holds, a withdrawal from normal activities and an escape from responsibilities, even though for many types of illness and handicaps society does not hold the individual responsible for his deviance. Kassenbaum & Bauman (1965) have criticized the theory as it has been applied to older persons. Older sick and handicapped persons, they say, frequently tolerate a great deal of discomfort and pain without complaints because they associate their symptoms with aging, not illness. They recommend that the degree to which illness produces alienation and isolation be investigated. Yarrow (Williams, et al, 1963) noted that the isolation or fear of isolation which affects so many older persons depends on the environment in which they exist. Where there are close ties with friends or family, there is support and reduced isolation.

The Cumming & Henry (1961) theory of disengagement is an outgrowth of Parsons' sick role hypothesis. The proponents hold that ultimately persons knowingly and often willingly disengage themselves from various activities as they grow older. Individuals therefore gradually prepare themselves for the inevitable disengagement; i.e., death. They excluded the ill from their sample and denied that their theory rested on poor health. Maddox (1964) agrees that disengagement characterizes the average person older than 50, but says that there are many variations and that these must be specified. Havighurst, Neugarten & Tobin (Rose and Peterson, 1965) suggest that the psychological well-being which characterizes many oldsters is related to engagement not disengagement. Kent (1965) quotes Goldfarb to the effect that many older persons view the matter of disengagement more objectively than gerontologists. Kent feels that older persons often deliberately cut down activities to conserve their strength, and partly because they have no other choice - society excludes them from work and many other activities. Perhaps the most comprehensive criticism is by Rose (Rose & Peterson, 1965) who presents evidence that disengagement is not inevitable and does not appear in older persons who develop a group consciousness. And, says Rose, older persons do not necessarily look forward to disengaging themselves. Somewhat related is Litman's finding (1964) that older persons have a desire for independence and self care. The fact is many older persons continue to work successfully and enjoy their work even though they are less fit medically than many who give health reasons for being unemployed (Welford 1966).

Rehabilitation

The question as to the feasibility of rehabilitation for older persons is dealt with positively by Freidson (Sussman, 1965). Levenson & Green (1965) find that the critical variable for success on a job after rehabilitation is the interpersonal support of co-workers and supervisors and not familiarity with job duties and requirements. A study of 109 older persons in a rehabilitation center indicated that disabled older workers responded differently to urgings to participate in a rehabilitation program, depending on the motivation they were afforded by the structure. So, the presence of a disability is not the only or perhaps even a reliable guide for whether the older person can be rehabilitated and placed in a job. Attitudes of employees, availability of jobs, availa-

bility of training opportunities are variables which must be considered (Richardson & Weir, 1961). And, in a work situation, if the materials are made easy to understand and the learning conditions are good, older persons can learn them more readily than is commonly understood (Welford, 1966).

Placement

There are a number of points regarding the placement of older persons which appear germane:

1. Middle aged persons have difficulty securing employment, while older persons have difficulty avoiding retirement (Barron, 1961).

2. Craftsmen and professionals have fewer difficulties finding and holding jobs than the unskilled (Poorman, 1962).

3. Older persons have better opportunities with employers who do not have formal retirement and pension programs (Poorman, 1962).

4. No jobs are unsuitable, provided the conditions for performance match the older persons' capacities and abilities (CIBA, 1955).

5. Attempts should be made to place the older worker in a job with which he is familiar (Williams, et al 1963).

6. Do not segregate older persons from youth, but do not allow youth to set speed of work performed (Ibid).

Since the work determines a person's social status and provides a focus for much of his psychological functioning, it follows that disabled oldsters, away from work for long periods of time, need special vocational treatments as part of their total rehabilitation plan. One such treatment is provided by some sheltered workshops such as the one established by FEGS in New York City. Similar programs are described by Gellman & Friedman (1965), Brant (1961), Barshop (1959) and Meadow (1957). These programs use the shops as clinical tools to evaluate the disabled and provide individualized adjustment services. And, there is evidence that a measure of vocational adjustment can be achieved independent of total personality adjustment. All major disability groups can profit from workshop services if the staff is competent and interested (Rosenthal, 1966).

Placement, as already indicated, is an essential outcome of the rehabilitation process. In the past, however, many older handicapped persons were rejected for service as not feasible, because placement was not readily attainable. This is, perhaps, why Nagi (Sussman, 1965) cautions against the emphasis on placeability, especially in the screening process, even though placeability provides a tangible measure for agency accomplishment.

II. THE PROJECT PROGRAM

The JEVS program was a demonstration project involving the utilization of a work adjustment facility for disabled older persons with a variety of problems hindering their ability to adjust to a work situa-

tion.

Six hundred persons 45 years of age and older were served in the JEVS Work Adjustment Center; three hundred and eighty-six (386) were males and two hundred and fourteen (214) were females. The clients were classified according to primary disability; i.e., emotional, intellectual and personality; sensory; systemic; and multiple physical handicaps. Many clients had more than one disability. In addition, many were disadvantaged as evidenced by the fact they were or had recently been receiving public assistance, had long periods of unemployment, had scanty and poor work histories, had poor educational backgrounds, or were living alone with few contacts with relatives and friends. In most cases, several of these variables appeared in a combination, thus indicating that the client population was handicapped economically, socially and psychologically as well as by one or more of the disabilities listed above. The nature of these handicaps is discussed in detail under "Client Population" (Section III).

Some generalizations concerning the clients as a group are as follows: Many appeared to have "inadequate personalities"; the majority seem to have been unable to cope with the realities of life in American culture; most were poorly trained and had poor and fragmented work histories. Their educational and occupational lives were both characterized by a continuing failure to adjust.

In order to study the relationship between the presence of a disability, the data on the 600 older workers in the study were examined as follows:

1. Disability categores; i.e., emotional, personality, intellectual; sensory; systemic; multiple physical disabilities. It is noted that in most cases more than one disability was present.

2. Age groupings; i.e., 45-54; 55-64; 65 and over.

3. Educational attainment.

4. Work experience.

5. Length of unemployment.

6. Highest occupational level.

An attempt was also made to chart common social and psychological variables which might help counselors better define the underlying problems of the older disabled. Particular attention was focused on the failure or early termination cases to determine the nature and reason for failure.

Procedures and Techniques

The techniques and procedures used to help these clients is discussed in Section III. These are summarized as follows:

1. Intake by a rehabilitation counselor to determine whether

the client was feasible for intensive evaluation. The client was interviewed to explain the program to him and to gather psycho-social data. Reading and interest tests were used to assess the client's ability to read and handle arithmetic. A telebinocular was used to determine gross visual impairments and refer prospective clients with visual defects to a clinic for immediate help.

The client was taken on a tour of the Center so that he could better understand the total program. The psychologist or social worker arranged to interview an interested member of the client's family; i.e., spouse, sister, brother, etc., to explain the process and gain support. The psychologist evaluated the intake record to determine the level at which the client would begin and the client's need for and ability to take formal psychological tests. The referring agency was notified about the client's and the Center's decision.

2. Prevocational Evaluation. All clients began their program in this phase. The first two weeks were used to evaluate the client on graded work samples; i.e., work tasks in broad occupational categories, such as building maintenance, clerical, electrical repairing, sewing, wood finishing, etc., to determine his readiness for vocational treatments and the kinds of activities which would help him rehabilitate himself. To assure the accuracy of the findings from work samples, the clients were then evaluated on simple, non-threatening but real production work. The two types of evaluation elicited a composite picture of the client's status and his problem. The evaluating psychologist then estimated the client's upper limits of functioning and his suitability for an occupational area, if any. The psychologist prepared a summary report and arranged to move feasible clients to the adjustment phase of the program.

3. Personal & Work Adjustment Training was used to help the client deal effectively with the problems hindering his employability that had been exposed during the prevocational phase. Emphasis was placed on developing productivity, and the personal characteristics of "good" workers. As the client's personal adjustment improved, the occupational orientation was sharpened. Occupational orientation was made more concrete as the client's self confidence and ability to deal with personal problems improved. Industrial foremen manipulated the work and the environment, at the suggestion of attending psychologists, to stimulate the client to improve himself. Individual and group counseling were used to help the client deal with problems affecting his employability. Recommendations made during staff conferences determined the direction of each client's program. Throughout the entire program (14 weeks) the immediate needs of each client were considered, but primary emphasis was placed on stimulating him to accept and adapt to the realities of work in competitive industry.

4. Testing. In addition to work samples, clients were given reading, arithmetic and interest tests. Where indicated and feasible, tests of intelligence, aptitude, interest, achievement and personality were administered.

5. Counseling. Individual and group counseling were used to help the client become aware of his problems and personal resources, to mobilize his energies, learn to cope with problems and make vocational choices. Employment counseling was introduced near the end of the cli-

ent's program to help him learn how to get and hold a job.

6. Family Interviews & Casework. Family members or close friends were urged to visit the Center in order to secure their understanding and support, and to secure additional information about the client's social history. The case worker met with each client during the first week of his program to help him make full use of all the services available at the Center. The case worker consulted with the psychologist and arranged to refer the client for needed ancillary services.

7. Remediation was used to help the client raise his level of basic speaking, reading, and arithmetic skills.

8. Staff Review. Conferences were held to discuss the status of each client every two weeks. The conferees included the representatives of referring agencies, the professional staff of the Work Adjustment Center, and the vocational and employment counselors of the Jewish Employment and Vocational Service. This group set tentative vocational goals and placement objectives, indicated additional treatment necessary, and agreed on lines of responsibility.

9. Reporting. After the client completed three weeks of evaluation, the psychologist wrote a detailed narrative report regarding the client's status and progress. This report was presented at a staff conference, which determined next steps in vocational treatment and counseling.

A terminal report was written two weeks before the client completed adjustment training, summarizing client progress and improvement since evaluation, and recommending the type of employment the client should enter. This report was presented at a staff conference for agreement with or modification of the recommendations.

10. Records. Cumulative case records were maintained. These incorporated psycho-social and occupational data collected,beginning with intake and through the placement and follow-up process. Included were evaluation and production reports, summaries of staff observations and discussions, and a record of placement efforts and results. Written initial and final reports were prepared by JEVS psychologists and furnished to BVR counselors and the professional staff of other interested agencies.

11. Job Placement Process. Placement was the responsibility of JEVS employment counselors. The placement program included counseling interviews with the client around job finding, as well as individual job solicitation of and referral to prospective employers by the counselor.

12. Follow-up was the responsibility of the placement counselors. It continued for at least one year after the client was placed in a job. Until a placement was effected, the counselor saw the client in the JEVS office at least once each week, to solicit job opportunities for him and to ascertain whether he (the client) needed other services. Clients needing additional counseling were provided this service at the agency or the Center while efforts continued to develop a suitable job opportunity and placement.

The progress of each client was followed and assessed at the

end of one, three, six months and a year. Clients who lost their jobs returned for additional counseling and placement service. Several were accepted back into the Center and were given additional adjustment services.

Personnel Involved in the Older Worker Program

The personnel of the project consisted of twelve (12) persons directly involved with the adjustment program and several agency personnel who, though working with the clients, maintained primary duties in the JEVS. During the course of the program, there was some turnover of staff members. The list which follows includes only those who were with the agency when the project ended. They are as follows:

Project Director. Dr. Saul S. Leshner, Executive Director of JEVS, maintained final responsibility for all major decisions and for fiscal and personnel matters.

Project Supervisor. Philip Spergel planned and directed details of the project, including assignment, the training and supervision of staff.

Vocational Counselors. (Psychologists) Fred Stabene and Kenneth Moberg were responsible for intake and counseling interviewing, coordinating the individual client's program toward placement in competitive industry, maintaining contacts with other agencies, referring clients for ancillary services, and advising foremen when and how to manipulate the work environment in order to expedite adjustment to work.

Placement Counselors. William Smith and Lois Hitchner were responsible for preparing the client for actual placement in competitive industry, and for helping him achieve his vocational goal after completion of job adjustment training. These counselors also conducted follow-up activities with employers, clients and personnel of other agencies.

Psychologist. Ernest Rubinson reviewed processes for effectiveness, checked evaluations and adjustment training to assure that objectives were being achieved, and suggested new techniques to improve methods.

Workshop Supervisor. Terrance Berman was responsible for the planning layout and supervision of the production and business aspects of management.

Workshop Assistant. Edward Reese maintained production and work schedules and records. In addition, he supervised and evaluated clients in their performance of work tasks, and contacted industrial, commercial and other establishments to procure work contracts.

Bookkeeper. Lois Belavsky supervised the maintenance of financial records such as payroll, purchase, accounts receivable, tax records, etc.

Shipping & Stock Clerk. Irving Ackerman maintained stock and handled the receiving, storage and shipping duties.

Secretary. Iris Weiss devoted half of her time performing sec-

retarial and miscellaneous duties related to the project.

Porter. George Barr devoted half of his time performing janitorial duties and assisting the stock clerk.

In addition to the above, indirect staff functions were fulfilled by members of JEVS. Generally, the staff assigned to these functions were responsible for integrating the project with the other programs and services of JEVS. The staff members assigned were

Director of the JEVS Work Adjustment Center, David Yusem, who had indirect responsibility for the project and provided physical plant, and helped procure work contracts and materials appropriate to the needs of the clients.

Supervisory Psychologist, Irving Leshner, who applied professional consultation, supervision and support to the staff regarding professional techniques, procedures, policies and relations to other work adjustment programs.

Project Coordinator, Dr. George S. Snyderman (Special Projects Coordinator of JEVS), established and maintained broad contacts with community health and welfare efforts for older workers and handicapped persons, and related the work of the project to the on-going programs of the core agency and the Work Adjustment Center to insure integration with the evaluation, training and placement processes and the community's total program for the aging and the handicapped. He reviewed data and outcomes for inclusion in progress and other reports.

Community Relationships. JEVS professional services were coordinated with the services provided by other health, welfare and educational agencies in the Greater Philadelphia area. A partial list of agencies with whom JEVS was active was provided in Section I. It was noted that the Executive Director and other staff members serve as members and/or consultants to various community-wide committees such as rehabilitation, sheltered workshops, children and youth, community health, family problems, etc.

III. METHODOLOGY

Summary of Program

It has been noted in Section I that the project was designed to apply the knowledge, techniques and procedures developed by the Federation Employment and Guidance Service of New York City, and to demonstrate that disabled persons 45 years of age and older could be placed in competitive industry or sheltered employment following a guided and controlled work experience in a workshop setting. The Philadelphia JEVS project attempted to test out procedures, techniques and methodology, and to isolate specific differential factors in older disabled workers related to vocational adjustment. Thus, the extent to which variously handicapped persons 45 years of age and older were amenable to this rehabilitation program, and a differential work adjustment process in particular, were determined.

In general, the Philadelphia procedures were designed to pro-

vide an individually oriented program by maintaining a psychologically true work atmosphere, by providing intensive and varied professional supervision in a workshop program with the continuing counseling and placement programs of the Philadelphia Jewish Employment and Vocational Service. Variations from the FEGS procedures were necessary because of differences in population served, and because of differences in the orientation of the agencies themselves. These may be seen in our discussions of population and operating procedures which follow. It is emphasized, however, that both programs were predicated on the hypothesis that an older disabled person, if exposed to such a program, would assume the role and goals of a worker.

Client Population

The phrases "older disabled" or "older handicapped" worker are euphemisms which reflect a basic need of American institutions to cope with a growing problem - finding a way to rehabilitate disabled persons over 45 years of age and providing socially acceptable and useful work for them. Different meanings are attached to these terms by different people, including, in this instance, the older handicapped themselves. It is therefore reiterated that the JEVS program was made available to persons 45 years of age and older who had a definable physical, mental and/or emotional handicap, and who had been considered unemployable by the Bureau of Vocational Rehabilitation or other health, welfare and vocational agencies. Criteria for admission of a client to the program were the following:

1. Inability to function in a work situation despite a potential to do so.

2. Not immediately amenable to counseling or other normal vocational techniques.

3. Possessed a chronic disease but able to maintain a reasonable degree of remission under medical supervision.

4. Physically rehabilitated but unable to enter competitive employment because of emotional problems.

The population dealt with in this program was clearly socially disadvantaged in addition to being old and handicapped by various physical, emotional and mental disabilities. In most cases the individuals had lengthy histories of personal and social failure, often dating back to childhood and usually prior to the onset of the disability which made them unemployable within definitions under which most public and private agencies must operate. In virtually every case the physical disability was compounded by an emotional one. Similarly, no pure cases of retardation were found. The clients were, in fact, people with few resources to fall back on, such as economic, family and friends.

In this section is summarized the data which are most descriptive of the client population. Tables I to IX (Appendix) contain the statistics on which the following comments were based.

Initially 910 applicants were interviewed by JEVS intake psychologists. Few of these were individuals who referred themselves or

were referred by Golden Age clubs, private citizens or their own physicians. The majority, 487 (53%) of all referrals, came from the Department of Public Assistance; another 295 (32%) persons were referred by public and private agencies, hospitals and clinics. Thirty-three clients were in-patients, living in state hospitals, and it is considered that the JEVS Work Adjustment Center served as a form of day hospital for them. Twenty-five (25) of these clients were permitted to leave the hospital after they had spent several weeks in the program. The others did not leave the hospital until they had completed the JEVS program or had been placed in jobs.

This population did not constitute a sample of the "normal" American older worker. They were not recruited from Golden Age clubs, or by newspaper releases, radio and TV stories, etc. When they responded, the so-called emotionally normal person with some disabilities rejected the program. There were 210 such instances. Reasons given for not entering the program appear to be specious, but they may be considered as clues regarding the deep-rooted accompanying psychological disability which is a major deterrent to adjusting to work. Client reasons for not entering the program were as follows:

Not enough pay	68
Did not want to work in a factory-like environment	43
Were retired and therefore did not want or need work	27
Did not like the neighborhood in which the shop was located	18
Did not like the type of persons already in the shop	23
Were immediately employable but could not find work because of a variety of reasons, such as employer foibles, bad luck, etc.	31
Total...	210

One hundred applicants for the program were not deemed feasible by JEVS psychologists, because their need was primarily for medical and/or social services. Sixty-two of these were referred to hospital clinics and other community agencies. Thirty-eight refused referrals.

There was a steady increase in acceptance of referrals to services during each succeeding year of the program. This, we feel, was due to the gradual increase in knowledge about the new services in the community. The marked increase during the fourth year was due mostly to the employment of a social caseworker by the Work Adjustment Center. Sources of referrals were as follows:

Department of Public Assistance	487
Jewish Employment & Vocational Service	83
Bureau of Vocational Rehabilitation (Pa. & N.J.)	13
Hospitals and Clinics	45
Private Social Agencies	207
Public Agencies	43
Physicians	12
Golden Age Clubs	7

Private Citizens	4
Self-referral	9
Total...	910

Six hundered persons of the 910 entered the JEVS Work Adjustment Center (WAC) and received some type of vocational service. During any given time the population ranged from 25 to 65, of which 5 to 15 were in the pre-vocational evaluation section. During the last year the population averaged 51 clients at a given time.

Although government support of the program has been terminated, 26 older disabled persons are still being served at the WAC. Services to the older disabled are now part of the Center's on-going program.

Clients accepted were classified according to four general disability categories as follows:

1. Emotional, personality and intellectual
2. Sensory
3. Chronic systemic disease
4. Multiple physical disabilities

The classifications were based on medical, psychological and social data procured from other agencies, physicians, interviews and psychological tests (if indicated and feasible).

Three hundred and eighty-six, or slightly more than 64% of the clients served, were male; 214, or slightly less than 36%, were female. The proportions between the sexes were quite different than the FEGS sample - a smaller percentage of males was in the Philadelphia group.

Similarly, the Philadelphia population clients were somewhat younger. There were:

Males.....	132	(34%).....	Age Group 45-54
	214	(55%).....	Age Group 55-64
	40	(11%).....	65 or older
Total ..	386		
Females.....	67	(31%).....	Age Group 45-54
	127	(59%).....	Age Group 55-64
	20	(10%).....	65 or older
Total ..	214		

The type and degree of primary disabilities varied between the sexes. One hundred thirty-nine (37%) of all the males had an emotional personality or intellectual disability, as compared to 86 (40%) of the females. One hundred forty-nine (39%) of the males had multiple physical disabilities as compared to 73 (34%) of the females. Sixty-four (16%) of the males had a chronic systemic disease or disorder, as compared to 31 (14%) of the females; and 34 (8%) of the males and 24 (11%) of females had sensory handicaps.

The occurrence of a type of handicap varied between age groups. Although, for example, emotional, intellectual and personality handicaps were less frequently noted as a primary handicap in the 65 and older clients, they were often present as additional disabilities. Similarly, even though the younger clients were less likely to be handicapped by a sensory or systemic disorder or disease, these were sometimes present as additional handicaps. The additional handicaps are tabulated herein as follows:

Age Groups	Sex	Emotional Handicaps	Multiple Physical	Sensory	Systemic
45 - 54	M	22	15	5	6
	F	18	10	3	13
55 - 64	M	32	29	18	39
	F	46	18	31	57
65 or Over	M	17	13	15	3
	F	12	6	11	7

That JEVS was not dealing with clearly defined simple handicapped older persons becomes even more obvious from a review of the past work histories of the clients. These histories reveal an occupationally restricted past which was a forerunner, at least, to the present maladjustment. Fifty-four (9%) of the total group never held a job. One hundred forty-four (37%) of the males and 26 (12%) of the females never worked in a job at higher than an unskilled level. If the semi-skilled and service jobs are, from the point of training time and occupational status, combined with the unskilled, 254 (66%) of the males and 119 (55%) of the females are accounted for. Stated, more directly, we can conclude that well over half the population served never could acquire a real marketable skill because they had worked in menial, unskilled or repetitive jobs. A sizeable number had not held any type of job.

Only 3% of all the females ever acquired a skill. Virtually all the females were either non-white or foreign born and therefore never had an opportunity to acquire a skill. Most of them "left school early to go to work". Only 10% of the males had acquired a skill; they did not seem to have fared much better than the women in this respect, possibly for the same reasons. Almost 10% of the women had worked in a clerical occupation (usually at a comparatively low level); less than 3% of males worked in a clerical occupation. Most of the sales positions held by men were outside jobs usually referred to as canvassers; several had worked as grocery or delicatessen clerks. Virtually all the females had worked as "sales persons" in department or variety stores. There were eleven "professional" men in the sample: three physicians, two attorneys, three accountants, one engineer, one chemist, one teacher. Almost all of them had lengthy periods of institutionalization. The four female professionals included two teachers, one social welfare worker and one librarian. These women had been institutionalized. The twelve male supervisors were as follows: Eight foremen in factories, one supervisor of an hotel apartment maintenance crew, two office supervisors, one sales supervisor. All three female supervisors had worked as foreladies in factories.

Many of the men and women had had unsuccessful work lives. We have already noted that 9% of the total population never worked and that

66% of the males and 55% of the females never worked in what is generally termed a skilled job. When these facts are coupled with the data describing the longest length of time the clients stayed on any job, we found that 40% of the males and 44% of the females had never been able to hold a job for as much as a year. Once again we note that this failure to stay put in a job is symptomatic of a general failure to adjust to everyday life and to cope with the problems involved in the American labor market.

This is further underscored by an examination of the length of unemployment prior to acceptance into the JEVS program. Perhaps the most significant facts are that only 76 (12%) of the 600 cases had been unemployed less than 6 months, 93 (15%) had been unemployed 6 months but less than a year, and 334 (54%) had been unemployed one year or more. A small number had part-time or occasional jobs when they entered the program. These included domestic and service days work, baby sitting, circular distributing, truck unloading, etc.

It has been said that persons in this population were not expected to complete high school; especially those in the generation over 55 years of age were usually encouraged to "drop out of school, go to work, and help out at home". We have not examined the data for the "normal" older American population but would hazard a guess that the WAC clients far exceed the "normal" group with respect to the proportion of school dropout and failures - 7% of the 600 had no schooling at all; 48% did not complete more than elementary school (only 44 of 291 actually completed elementary school). Only 26 men and 17 women completed high school. The men seemed to have a better chance than the women to get post high school training - 36 as compared to 12 - received such training. The school experience (except for those who had graduated from high school or higher) was generally verbalized as unsatisfactory, frustrating and of no value.

Thus far we have described an older handicapped population, which has had an occupational past marked by failure. The questions we must ask are "what has been their family life and is this related to their employment problem?" To attack these questions we first tabulated data collected at the Center regarding marital status and living arrangements (Table VII), and found that 88 of the males between the ages of 45-54 (regardless of marital status) lived alone. One of these men had a tenuous family tie - his wife was being cared for by a daughter and he was only permitted to visit on occasion. The couple was actually, and probably permanently, separated. Four of the 39 single males lived with families - 2 with aged parents and 2 with brothers and sisters. Nineteen of 22 married males in this age group were living with their wives. Widowhood with this population appears to imply the same lack of family and friends that categorized the single men. Only one was living with a child (daughter). The others apparently had cut themselves off or had been cut off from their children.

The men who had been separated or divorced from their wives in all age categories appear to have had fewer ties. These and the other men may be said to have few if any social and personal contacts. The individual case records indicate that they lived in rooming houses, typically in run-down neighborhoods, detached from whatever community contacts there may have been available, such as churches, recreation

centers, settlement houses. Although American culture places a premium on friendship and togetherness, 253 of 386 men (75%) were alone in every sense of the word. Additional study of this population might reveal more about the nature of this problem.

Although many of the women (Table VIII) in the study were living alone, the proportion was only 42% as compared to the 75% of the men. This discrepancy may be accounted for by the fact that the children, family members and friends appear to have sided with the woman. As a matter of fact, this would appear to have been inevitable for,in many instances, the family disorganization followed the man's desertion. In case after case, we noted the fact that the women had reared the children with no assistance from the husband, who had been absent from the home for twenty or more years. In many instances the males did not really know where their families were.

When the length of unemployment by age and living arrangement is examined, it is clear that those living alone,regardless of age, sex and marital status, constituted more than 50% of all the clients; 50% of those who never worked; 59% of the clients who were unemployed a year or more; and 60% of the clients who were unemployed six months but less than a year. There would appear to be, therefore, a positive relationship between the social failures of those clients and their lack of employability.

These older persons were accepted into the Work Adjustment Center despite an occupational, personal and social history marked by a series of failures. The clients were characterized by feelings of inadequacy, inferiority and futility. By and large, their image of themselves as workers and functioning members of their community was poor. Many failures and few successes, distrust and fear of employers, were both causes and results of their inability to succeed in the labor market. These, together with their definable disabilities, are accentuated by the problems with which all aging persons in the United States must cope. The staff of the JEVS Adjustment Center was limited to helping the clients deal with those aspects of the problems which were vocational. Ancillary services were provided by other community health and welfare agencies.

Data Collection and Analysis

Demographic data was collected routinely on the standard application form of the JEVS Work Adjustment Center at intake. This form was placed in each client's folder, together with medical, social and psychiatric information collected from the referring and other agencies to which the client was also known. No tabulation of this data was made until the client was terminated by the staff at the Center, because it was likely that additional information would be posted as the client progressed through his program. Prior to termination, a final staff review report was placed in the client's folder. This summarized the client's problem at intake, the changes effected by the adjustment program, and indicated steps to be taken for referral to another agency or to a job.

The folder was then sent to a JEVS employment counselor at the agency proper. Prior to the first interview, various data such as demographic problems hindering adjustment reactions to adjustment services

were reviewed and tabulated by a research assistant. The employment counselor noted in each record client reactions to referrals, employer reactions to clients referred, results of referrals, and follow-up information. These were tabulated by the research assistant each week. Some of these tabulations are included in the appendix of this report.

The Project Coordinator reviewed the various tabulations semi-monthly with the Project Director, Project Supervisor and Supervising Psychologist to assure that there was a common understanding of the program, that proper data was being collected, and that service activities were being planned and carried out in accord with the design of the proposal.

The Project Coordinator had formerly been responsible for various older worker studies conducted by the United States Employment and the Pennsylvania State Employment Service in Philadelphia. The various staff members involved in the collection of data for this program were given three days of classroom training on the collection and interpretation of data. In addition, at least a semi-monthly review of data collection was given by the Supervising Psychologist or Project Supervisor to all staff involved in the program. This review was usually given in individual conferences.

Most of the staff involved in the supervision had at least completed preliminary examinations for a doctoral degree. Drs. Saul S. Leshner, Norman S. Olson and George S. Snyderman hold Ph. D. degrees. All three had had training and experience in the collection and interpretation of data. The counselors involved in the collection of data all had at least a Master's Degree in Counseling Psychology; several had passed preliminary examinations for a doctorate. The research assistant functioned as a statistical clerk. She possessed a Bachelor's Degree in Sociology and had several years experience tabulating data at JEVS. She was supervised directly by the Project Coordinator.

Preliminary and terminal case reports were examined by the Project Supervisor. His recommendations for changes in content and style were incorporated in the report prior to the staff conference. The Project Coordinator spot-checked individual case records periodically in order to make certain adequate narrative information was being kept on each client. Periodic meetings with the entire staff to discuss reporting of psychological information were held by the Project Director.

Problems Encountered

A number of problems were encountered at the beginning of the program. Many of these were unavoidable and could not be foreseen. A preparation period during which the staff could formulate the specific details of the general operating procedures and try them out on a sample of clients might have prepared them to better cope with problems. As the staff became oriented to dealing with older disabled persons, they learned to adjust procedures so as to help the maximum number to take a hand in their own rehabilitation.

Initially, recruiting of clients was slow and arduous. Contacts had to be developed with community agencies which customarily were engaged in the maintenance of older persons and not their rehabilitation.

Although the executives of community agencies were convinced, many months elapsed before the JEVS program could be introduced to the case workers, nurses and other professionals who were dealing directly with the older disabled.

Recruiting was stepped up when a social worker was added to the WAC staff. The social worker was better able to develop and maintain close liaison with the older client's family, friend; and take the first steps toward reintroducing him into the general community. She was, because of her past experience with mental health programs, able to secure referrals to the program and, at the same time, refer many clients for ancillary services which they needed but were not getting. She was able to use case assistants in a visiting program,which was designed to follow-up clients absent from the program,and to get many of them to return. This follow-up procedure reduced absenteeism to a minimum and added another dimension to the data on some of the clients.

Perhaps one of the most difficult problems was the lack of real feeling and involvement regarding the older handicapped on the part of the business community. Initially, news releases were placed in various trade and neighborhood papers; talks were given at meetings of employer and business groups. Although some interest was generated, at no time did the business community generally indicate a desire to offer training or job openings specifically for the older handicapped workers. The problem appears to be national in scope. For example, the last National Employ The Handicapped Week publicity materials appear to be almost completely directed at helping the younger person.

It must be noted that when the JEVS employment counselor attempted job solicitation, he usually could develop some job possibility to which the oldster could be referred. While this type of job development is good and necessary, it is costly. Increased costs may be seen in the following time comparisons with job solicitation for the under 45 years of age clients.

45 - 54	15%	longer	than	for	handicapped	25	-	44
55 - 64	35%	"	"	"	"	"		"
65 or Over	60%	"	"	"	"	"		"

JEVS interest in vocational rehabilitation as a developmental procedure received no assistance from the institutional training programs supported by MDTA. These programs were, for the most part, geared to the displaced unemployed, but readily trainable and younger head of the household, not the marginal or unemployable older lone person. Similar comments could be made about the on-the-job training programs sponsored by the U. S. Bureau of Apprenticeship Training. Some of the older workers were placed in jobs which permitted their training or retraining on an informal basis. These opportunities were developed by the JEVS employment counselors.

Procedures

1. Case Finding. Contacts were made with clinics, hospitals and social agencies to explain the JEVS Older Disabled Worker program, and define a method of referral which could best be used by the individual agency. In addition, the Project Coordinator addressed the counselors

in the various local offices of the Pennsylvania State Employment Service. The Project Supervisor initially, and later the social worker, arranged for groups of case workers and other professionals to meet and tour the Center. At these meetings the program and its achievements were discussed.

Feed-back on client behavior, problems and improvements was given to the referring agency routinely by the psychologists and the social worker. This made for better understanding with the agencies and a more closely coordinated plan of total service to the individual client.

2. Intake. Referrals to the Work Adjustment Center were received by a JEVS intake psychologist. Acceptance into the program was based on the psychologist's judgment regarding the client's readiness for evaluation and his willingness and ability to travel to and from the Center unaided each day.

A psycho-social history was compiled by the psychologist and social worker as a result of interviews with the client and a close relative; e.g., wife, husband, brother, sister, etc. Data furnished by the referring agency were included in the history. Each case was cleared through the Social Service Exchange, and data procured were also included in the client's history.

In addition, the psychologist asked each client to estimate his physical health. (Client estimates were later compared with medical reports). The psychologist administered a telebinocular screening to determine gross visual impairment. If severe impairments were revealed, the client was referred to the Wills Eye Hospital for examination, concomitantly with entering the program. Since inability to read was found to be handicapping for many of the older workers, the Gates Reading Survey Form I was administered to all clients at intake. The California Picture Interest Inventory was administered to clients reading below the fourth grade level. The Hackman-Gaither Interest test was administered to clients able to read at a higher level.

Intake also included a shop tour conducted by the intake psychologist, who explained the evaluation and the work adjustment processes and indicated the nature and possible benefits of the program to the client. If the client accepted the program, the intake psychologist notified the referring agency.

Clients who did not report after acceptance were followed up by a JEVS staff member. At least forty-five clients who did not report initially entered the program at a later date.

3. Prevocational Evaluation. When a client entered the program, the psychologist supervising this function evaluated the file record to determine the task level at which the client started and whether additional psychological testing was indicated.

While evaluation was incorporated into every phase of the project, the purpose and emphasis of evaluation changed as the client progressed through the program. Initial evaluation encompassed four or more weeks, and included situations wherein the client was observed and encouraged to test himself on work samples. This evaluation was concerned

mainly with determining readiness for vocational help and the kinds of activities that would be of value to him.

From information at hand, the psychologist decided the level and task category in which the client was to begin, and established a sequence of the tasks to be administered from selected industrial groupings. Whether the client started in one occupational area or another was determined by personal or aspirational considerations, or on a trial and error basis, to ascertain preferential work areas.

Before the client began each task, the evaluation assistant explained its nature and significance and gave detailed instructions on how to proceed. He observed the client as he worked on each task, lent encouragement, expressed those attitudes and demands agreed upon with the psychologist, and recorded times used to complete the task and behavior. If the client seemed able to function on higher levels than those assigned initially, this was discussed with the psychologist. The newly identified strengths, if persisting, were incorporated as a series of new assignments, and the client was transferred to a higher level of tasks. Similarly, adjustments were made if the level of tasks was too high. The client earned no money in this phase of the program.

Some clients progressed through work samples very rapidly and then tended to become bored if left on a fixed schedule. Others performed well on work samples but experienced difficulty adjusting to real work. To improve the accuracy of the final evaluation and enable the professional staff to examine and verify the results achieved on work samples, the client was placed on simple production tasks. He was required to be careful in task performance, to observe rules, be punctual, accept criticism and increased pressures, participate and communicate with other workers, and generally to meet progressively higher performance standards.

He was paid minimal wages and given automatic increments. These served as incentives for forming appropriate behavior patterns and, together with observing the client's reactions to pressures and more stringent regulations, they enabled the psychologist to evaluate the client's ability to improve in such areas as personal and social attitudes, neatness, precision of work tasks, persistence, learning and adaptability, etc.

Each client evaluated, then, generally spent approximately two weeks on work samples and two weeks on real production work. The actual time necessary to secure information which predicted ability to learn to work well and use vocational help varied from client to client. Some spent a few days on work samples and were evaluated on production tasks. Others spent four weeks on work samples and, even this time, had to be extended to secure a definite evaluation.

When the results of both types of evaluation were taken as a unit, the psychologist had a rounded picture of the client and knew if the client should proceed with a work adjustment program or whether he (the client) was immediately ready for skill training or placement, or whether the client needed a treatment other than vocational. Evaluation provided a reliable estimate of general and specific competencies and a prediction of the particular kind and level of vocational adjustability.

The kinds of skill areas in which evaluations were made were initially at a low level, but consistent with the limited social and educational background of the clients. As special abilities were revealed during the course of the client's work and personal adjustment program, attempts were made to test these out in the Center. The results were noted in the client's folder.

4. Personal and Work Adjustment Training. Evaluation was also inherent in and continued for the client in personal and work adjustment training. This process was used to help the client to mobilize energies, build tolerance for stresses in work situations, and use his competences for the selective activities that constitute work. Emphasis was placed on the development of productivity and those factors which make for a good worker role; i.e., persistence, ability to absorb pressures, neatness, concentration, acceptance of regulations, interpersonal relations, etc.

The process initially began in a benign and permissive atmosphere, which was changed gradually to the disciplined, structured environment commonly present in competitive industry. Initially, the objective was to promote personal adjustment to work in general, and to help the individual accommodate to the personal and social factors which, aside from production, are traits required by good workers. A generalized kind of personality integration was promoted. The variables emphasized, at this point, were related to the client's ability to observe rules and regulations, personal grooming, communication and behavior acceptable to peers and supervisors, and respect for authority.

Occupational orientation was gradually sharpened and made more concrete as the client's personal adjustment improved. His functioning was more selectively production-oriented in terms of how he performed assigned tasks, as contrasted with how well he related to the general orientation emphasized in the earlier diagnostic phases of the program. The variations treated in this phase were work tempo, task persistence, coordination and dexterity, self and peer competition in output, and quality and quantity in task performance.

This phase of the process was administered by a supervising psychologist, and controlled by rehabilitation psychologists and industrial work foremen. It was flexible process for those older disabled clients who were considered potentially employable after pre-vocational evaluation. The older clients were integrated with the other clients receiving adjustment services in order to accommodate them to working with other disability and age groups.

Immediate and direct supervision of clients was the responsibility of industrial foremen. They implemented the recommendations of the psychologists by altering the job and/or work environment, recognizing and bringing to the attention of the psychologist specific work problems, setting up jobs so they met contractor's standards. Simultaneously, they stimulated the client to use himself and his skills effectively. They applied realistic tests of quantity and quality to the work performed by the client.

Individual and group counseling were utilized when the client needed help to work through problems inhibiting his progressive adjust-

ment.

The following were some of the techniques used by the foremen:

a. Stressing Work of Good Quality. Prior to the client's assignment to the adjustment phase, the rehabilitation psychologist indicated to the foreman the specific duties that should be avoided by the client because of his physical or emotional disabilities. As the client developed greater competencies and tolerance, the duties were re-examined. But in all cases, the rehabilitation psychologist, not the foreman, generally indicated the types of duties and work environment to which the client was to be subjected. Clients who performed work incorrectly were required to ring out and re-do the work on their own time without receiving pay for the re-doing period.

b. Pacing. The clients were taught to pace themselves by informing and discussing with them their individual production for each job performed and each full day's work. Each client was given a specific amount of work to do in a specific time period so that, eventually, he understood what his "units per time" were. Pacing was sometimes helped by pairing the client with a faster co-worker or with a co-worker who paced himself well.

c. Emphasizing Production Speed. Speed was encouraged and increased when the foreman added gradually increased demands for productivity over a period of time. This raised the client's level of expectation for the achievement and minimized frustration. The rate of expectation was usually slightly higher than the worker was achieving, and was framed in terms of both quality and quantity.

d. Emphasizing Persistence. Persistence was found to be negatively correlated with the client's desire to move about, his need to rid himself of tensions, his boredom, etc. The foremen attempted to deal with these client reactions by encouraging him to try a little longer or work a little faster. Attempts were also made to find a work situation which accommodated to the client's limited ability to persist. For example, individuals who were too tense to operate effectively as sedentary workers were given non-sedentary work such as packing, shipping, freight, handling, etc. But this type of person continued also to be assigned to some periods of sedentary work so that he would gradually learn to cope with his tensions.

e. Stressing Productivity. Each client was encouraged to keep his own production record. Although the official production record was kept by the foreman, the accuracy with which the client kept his own record was one measure of the stability which he was achieving. Additionally, the foreman was required to interpret to each client how his specific tasks were important to the total production scheme and how the client was contributing to an efficient process. The foreman also encouraged the client to do a little better each time. As the client saw his productivity increase, he tended to accept the fact that he could produce greater quantities of work. He was introduced to social competition because his work was performed near others who were engaged in the same activities. Gradually the client was transferred to jobs previously found to be distasteful to him. Individual and group discussions with the foremen and psychologists were used to help the client carry over

previous successes to the less desirable jobs.

f. Stressing Attendance and Punctuality. A rigid but consistent attitude on the part of WAC personnel was adapted to help each client learn the meaning of attendance and punctuality. Time clocks were used to ring in and out in the morning, evening, breaks, and lunch time. Clients were docked for arriving late, or break time was reduced by the excessive time used on breaks. Individual and group counseling were included to help clients better accommodate to the need to be present and on time.

g. Stressing the Importance of Work Time. This was found to be related to attendance and punctuality. Clients who claimed illness but appeared to be malingering were allowed to rest in the infirmary. They were told to ring out. They received no pay for the time lost from production. The clients were thereby stimulated to use less and less "sick" time. The infirmary was useful in holding the client on the premises and in emphasizing the importance of responsibility to the job.

h. Teaching the Client to Work Efficiently. The foreman taught the client to systematize his movements before beginning to produce. Thus the client learned to use his energies without wasted motions; i.e., placing tools and materials so as to avoid excessive or awkward reaching.

i. Stressing Personal Responsibility. The client was required to call foreman personally and explain his reasons if he had to be absent from the Center. He was taught that only in exceptional instances could a family member, a friend, do this for him. This procedure was used to help clients assume personal responsibility for their attendance.

j. Building Tolerance for Work. Clients unable to tolerate a full day's work were allowed to work a part of a day. The time spent in the shop was increased gradually until such clients could tolerate a full day's work.

k. Stressing Group Goals. Deadline dates for completion of contracts which were imposed on the Center were interpreted to the clients as group goals. The foremen indicated to each client the part he had to play as a member of the group in meeting the new and increased pressures. The older clients often responded by tapping energies and resources which they had not displayed and thereby increased their productivity. Frequently this enhanced productivity was sustained after the emergency period.

Awkwardness in relating to co-workers and supervisors was often the basis for the older client's failure to become a good worker. The above techniques were usually not enough to effect the necessary changes. When these techniques were combined with environmental manipulations, many more clients were enabled to adjust. Procedures for manipulating work environment were instituted specifically and gradually after discussion between the psychologist and the foreman. The following types of manipulation were especially helpful:

a. Seating Arrangement. Most sedentary jobs were structured so that pairs of clients faced one another while working. This

type of seating encouraged interaction and reduced the sense of isolation. Talking eventually occurred and socializing during work hours was permitted as long as it did not interfere with productivity. As the client progressed in his ability to interact with peers, his seating arrangement was changed so that he was gradually introduced to different kinds of persons and different relationships.

b. Teamwork was used to encourage inter-personal relationships and further reduce feelings of isolation, which, in the case of many of the older clients, had been reinforced by previous years of living alone and having none but superficial social relationships. Several clients working together toward a goal often develop a feeling of common objective, and a desire to aid each other, which is translated into a rhythm of work.

c. Socialization. Properly organized socializing was used to reduce isolation. Clients were encouraged to spend their breaks and lunch periods together in the lounge areas.

d. Model Producers. Selected older workers were used to provide models to younger handicapped persons. As a result of a process of association and identification, the older clients' more stable attitudes toward work were introjected by the disturbed and unsocial younger clients. Gains in feelings of self-esteem and usefulness in both age groups were noted as they became more productive and as higher wages earned reinforced the process.

Most of the clients needed to be helped to learn to accept supervision, sometimes from a younger person. For this reason, levels of supervision were used, beginning with permissive attitudes and progressing to a highly demanding type of industrial foreman. All industrial foremen worked under the direct supervision of the Production Supervisor but were guided by a rehabilitation psychologist so that they knew when and how to introduce the controls and pressures. Weekly conferences were held by the Project Supervisor and the Production Supervisor with the foreman to discuss methodological problems and new supervisory techniques.

The psychologists were available to discuss client and foremen difficulties encountered during the day. This included modification of shop procedures and the manipulation of work environment so that the needs of the client were met.

Methods and procedures of each job were organized by the Production Supervisor. He devised and introduced necessary quality and quantity controls, and made certain that the work was ultimately performed and supervised in a manner consistent with competitive industry. The industrial foreman was responsible for implementing the procedures structured by the Production Supervisor and agreed to by the rehabilitation psychologist. Some of the supervisory techniques used at the Center with both older and younger clients included the following:

a. The degree, amount, and type of supervision to be given initially was based on the recommendations of the psychologist supervising the evaluation process. Thus, a client who had difficulties with supervision was initially exposed to a minimum amount of shifting from job to job because this involved too many contacts with foremen.

As the client developed more ability to accept supervision, further changes were made in the amount and type of supervision.

b. When it became necessary to shift a client because the work contract had been completed, another client was often used to instruct the older person in new tasks. This usually reduced some of the threatening aspect of the changes and gave the client-instructor an opportunity to see himself as capable of assuming an authoritarian role constructively. Some older clients became good cadre leaders with their peers and the younger clients.

c. Piece work rates motivated the client to increase productivity. The foreman was instructed by the psychologist to give or withhold increments, bonuses, etc. This method was used selectively when it was determined whether the giving or withholding of money aided the rehabilitation of the client.

d. Goals were raised when the foreman noted that the client was responding adequately. Increased goals were based on the behavior and productivity. The gradual increase was calculated to help the client continue his progress toward becoming an effective worker.

e. The foreman insisted that the client perform the work in the sequence and methods prescribed for the job. Clients developing alternate and sometimes better methods for performing a specific job were commended by the foreman for initiative but instructed to perform the work according to prior directions. This procedure enabled the client to learn to conform to prescribed patterns of work.

5. Testing. Many older clients resisted or could not respond to the usual psychological tests because these instruments were either foreign to their cultural development or contained too much reading matter or they (the clients) were too emotionally disturbed. The common approach to evaluation through psychological tests of ability and aptitudes failed to reveal the motivational forces which affect rehabilitation possibilities. Work samples, which had been clinically demonstrated as a useful technique for dealing with other age groups with occupational handicaps, were adapted for these clients and was found to be a more effective instrument than the usual psychological tests. Work samples utilized a simulated work situation and allowed the evaluation psychologist and his assistants to maintain a sustained observation of individual behavior on a variety of work tasks, so that the rate and degree of adjustability and the patterns of vocational behavior could be assessed. Work samples are discussed in detail later in this section. It is noted here that when this procedure was coupled with formal psychological tests, the psychologist was provided with comprehensive information upon which to determine the direction and nature of personal and work adjustment training. Except for reading, arithmetic and interest tests, most formal tests were administered only if necessary and feasible and if the client could tolerate them. In every instance, testing was performed over a period of days during the evaluation period; the client was not subjected to a full day of testing.

The following tests were administered most frequently, but selectively: Wechsler Adult Intelligence Scale, Flanigan Classification Test, Hackman-Gaither Interest Inventory, California Picture Interest

Inventory, Gates Reading Survey; Jastak Wide Range Achievement Test; Bender Gestalt Visual Motor Organization Test; Raven Progressive Matrices; General Aptitude Test Battery; Employment Aptitude Survey; Purdue Pegboard; Crawford Small Parts; The Informal Reading Survey; Horne Tree-Person; Rorschach Psycho-diagnostic Test; Hooper Visual Motor Organization Test.

6. Counseling. Individual and group counseling was provided throughout the process to help the clients mobilize their energies, learn to cope with interpersonal relations, and make vocational choices. Counseling dealt with personal difficulties which impeded the client's efforts to become a "good worker". It was always related to the work situation. When, for example, a foreman failed to foster the client's adaptation to work, the client was invited to discuss his problem privately with the psychologist. The problem was discussed in concrete, down-to-earth vocational terms. If this kind of discussion failed to help the client resolve his problem, the psychologist referred the client to the supervising psychologist who supplied a more personal, subjective discussion where the client could develop deeper insights. Clients who could not accept and use individual counseling were asked to attend group sessions at least once a week.

Group sessions were problem-centered and structured to accommodate five to eight clients of all ages who had similar problems. These sessions helped the clients develop insights by verbal interchange of similar problems and thinking through possible solutions. Peer influences supported and reinforced what gains emerged through individual counseling. The sessions also enabled the psychologist to identify particular attitudes to be expressed by foremen so they might restructure the work to get more favorable reactions from each client.

Vocational counseling was provided near the close of the client's program. It was oriented toward helping the client capitalize on the gains and growth resulting from working. Both individual and group vocational sessions were devoted to helping the client face and grapple with problems of choosing, entering upon and succeeding in a job. The final phase was directed at heightening the client's motivational level so that he could move toward a vocational goal and a specific entry job.

7. Family Interviews and Casework. On the day a client began his program, a letter was sent to a member of his family, or some other interested person, whose name the client had given at the intake interview. This letter was an invitation to call the supervising psychologist for an appointment. When the client's relative visited the Center, the psychologist or social worker explained the program,and the client's progress in the program was discussed. Seeing the client in the program and the environment in which he was being helped usually resulted in securing understanding and support for the program.

Interviews with relatives also served the secondary function of obtaining additional information about the family background; i.e., social, cultural, economic, health, behavior in the home and neighborhood. Such information was useful to the psychologists and counselors in understanding and helping the client.

Shortly before the client completed his program, another family

interview was held. The rehabilitation psychologist or the social worker conducted this interview. The primary purpose of the interview was to secure continuing support for the client while he was looking for a job, or had found a job. Among the items discussed was the client's progress, his new found strengths areas for additional improvement, recommendations for family supportive actions, etc.

Many of the clients had neither friends nor family. But those relatives and friends who were able to come to the Center showed a lively interest in what was happening to the client.

The caseworker met with each client during the first week of the program to clarify problems and answer questions, and help the client understand and make full use of all the services available at the Center. The case worker also sought out, and defined any problems which might hinder the client's rehabilitation as the client progressed through the program. She consulted with the rehabilitation psychologist responsible for the client's program. Thus there was joint planning for the client's total rehabilitation. The case worker arranged for referral of the clients to appropriate community health and welfare agencies, and through close liaison with these agencies, was able to feed back information affecting the client's adjustment.

8. Remediation. The results of tests administered to these clients as part of the intake procedures revealed a severe lack of educational achievement, especially in the basic reading skills and in arithmetic. Such under-achievement made it difficult to rehabilitate them for many jobs. Many did not have the reading and writing ability needed to complete a job application successfully; some were non-readers.

It was hypothesized (1) that a positive change in level of communication could be effected through a specially constructed remedial-type program for this type of population, and (2) that meaningful educational materials could be developed from the vocational and life experiences of the individuals who comprise this population.

The same instructor met each group for three sixty-minute sessions per week for at least eight consecutive weeks. The first and last weeks were utilized for pre and post testing, leaving about six weeks for actual instruction. At the close of the first week, an individual conference was held with each trainee to discuss the test results and to explain the purpose of the class sessions planned. Emphasis was placed upon the voluntary nature of their participation and the vocational orientation of the content of the subsequent activities. Clients who agreed to participate in the project were not paid for the time spent in remediation.

In addition to the screening tests administered at intake, the following measuring instruments were employed for instructional planning and placement: (1) an Informal Reading Inventory, modified for group use, to aid in accurate identification of the proper instructional reading level; (2) an Individual Word Recognition Test to determine the subject's word recognition and word analysis skills; (3) a Spelling Inventory; (4) a second standardized reading test to be administered under controlled conditions, and selected at a level of difficulty felt to be more appropriate for the trainee's current reading ability; the Coopera-

tive English Reading Comprehension Test, Lower Level, was used with Group A; the Stanford Achievement Test, Elementary or Intermediate Batteries, was used with Group B; (5) a Sentence Completion Test prepared at the Work Adjustment Center for use with the trainees; (6) the Buck House-Tree-Person Test. Alternate forms were employed.

A sequential development of skills was followed, using a systematic approach. Appropriate instructional needs were modified in accordance with the trainees' backgrounds, interests, and motivations. Each trainee progressed from mastery of easier skills to more difficult skills in prescribed order. A major guideline was to begin teaching at a level at which success was relatively assured for all trainees. This was adhered to throughout the instructional period for both groups.

Varied types of speech distortions and misarticulations were noted in oral discussion and re-reading. Practice in auditory discrimination was provided in each class session. Effective oral expression was emphasized in the context of the discussions. The oral language used within the group and in the lunchroom or shop became quite different. It is doubtful, however, that the positive transfer of the improved speech habits developed in class was effected in their speech outside of class within such a short period of time. A unit on social security proved enlightening to the group in general. Discussions often branched off into topics of general information and clarification of misinformation.

An anecdotal commentary of impressions gained by the instructor from the class sessions was compiled on a periodic basis. Comments and suggestions emanating from the professional and vocational staff members of the Center were also recorded. As these records were evaluated, modifications were made in the continuing instructional program.

Each person was taken individually for an experience-writing activity as frequently as possible. The stories were dictated to the instructor or into a dictaphone for later transcription, reading and editing. The trainees wrote about personal experiences and problems of personal concern. Such things as ambitions, family concerns, vivid memories, and feelings were freely recorded by most.

9. Staffing. Case conferences were used to determine the client's employability and formulate the most effective methods for facilitating his rehabilitation. The conference also fixed responsibility for carrying out recommendations. Depending on the length of stay in the program, each client was staffed formally at least once, and frequently twice or more. Additional formal and informal conferences were held to prescribe methods for dealing with current problems, review results of particular treatments, etc.

The initial staff conference was held during the client's third week in the program, usually after the pre-vocational evaluation period. This was attended by the supervising psychologist, the pre-vocational evaluation supervisor, the client's rehabilitation counselor, the social worker, and the representative of the agency which referred the client to the program. The basic question answered at this time was whether or not the client should be continued at the Work Adjustment Center. If, as a result of this conference, the client was retained in the program, the staffing then aimed at modifying his behavior so he could develop a

suitable worker personality. His vocational assets are enumerated as are his specific work problems. The group made recommendations regarding methods for strengthening the client's positive traits as well as dealing with his liabilities.

Some clients were terminated at the initial staffing because they were ready for competitive placement, or they were so severely unemployable that they were unable to use JEVS services. In the latter case, the client was referred, if possible, to an appropriate community agency which was equipped to deal with his particular problem. The client who was competitively employable was referred to the employment counselor at the Jewish Employment and Vocational Service, who attempted to place him.

A second case conference was conducted for clients remaining in the program. This conference was primarily concerned with determining specific vocational goals and dealt primarily with clients who, though originally deemed unemployable, were able to organize their personalities and mobilize their energies enough to be able to enter a job.

In the informal staffings the professional and industrial staff discussed particular client problems and progress, and determined the best way to handle specific incidents. These discussions clarified problem situations and provided immediate treatment solutions.

10. Reporting. A file was kept on each client which included psycho-social and occupational data furnished by other agencies, the psychological evaluation reports, production reports, and summaries of staff discussions and observations at the Center.

a. Reporting for the Intake Interview. When a client arrived at the Center for an intake interview, it was noted by the receptionist, who advised the referring agency that the client had kept his appointment. If the client failed to keep his appointment, the intake psychologist notified the agency worker. During the intake interview, the psychologist attempted to gather as much information about the youth as possible. Since many of the clients were defensive and non-committal, some of the material had to be obtained after the client had entered the program.

In addition to an application form, which listed identifying information and described psycho-social and educational history and problems, the intake psychologist used a supplemental data form to summarize highlights about the client's socio-economic history. Additional forms were used to help the client estimate his physical health, etc.

b. Reporting for Pre-vocational Evaluation. Usually, the client entered the evaluation phase of the program no later than two days after the intake interview. On the day he started, notice was sent to the referring agency. If the client did not report, the referring agency was also notified. From the time the client entered pre-vocational evaluation until his transfer to production evaluation detailed personal, psychological and vocational observations were recorded. For each task within each occupational area at each level of difficulty, starting, stopping, and total times were noted. The client was rated for both speed of performance and accuracy. In addition, behavioral observations such as punctuality, attendance, appearance, frustration, tolerance,

learning speed, psycho-motor activity, etc., were recorded. When the client finished the pre-vocational evaluation phase, a detailed summary check list was completed by the evaluation psychologist describing his overall behavior, enumerating vocational strengths and liabilities, and making recommendations for the next phase in the rehabilitation process. When the client moved into production evaluation, he was assigned to an industrial foreman. This foreman also received a transfer form,which was completed by the pre-vocational evaluation staff, describing the client in terminology that the foreman could understand.

c. Reporting for Production Evaluation. Both the foreman and rehabilitation psychologist kept detailed records of clients progress. Daily and weekly production reports were kept. These were included by the rehabilitation psychologist in charting the client's development. Progress reports were completed for each client periodically. When the client completed his program, the psychologist wrote a narrative report describing his development and recommending the type of job that was most feasible for him. Copies of this report were sent to the Jewish Employment and Vocational Service employment counselor and the case worker in the referring agency.

d. Case Files. Case records were compiled by the staff of Jewish Employment and Vocational Service containing all of the above documents and reports. These were forwarded to the employment counselor at JEVS for use in the placement process. The employment counselor added information regarding client reactions to the referrals, placement results and follow-up information.

11. Placement. Approximately two weeks before termination,clients who appeared likely to be employable were referred to the JEVS employment counselor at the agency's main office for placement services. Actual job development was started, whenever possible, in the client's presence. If a job possibility was elicited during the first session, the client was referred with appropriate suggestions as to the type of conduct most likely to result in his being hired. Usually this attempt at finding a job at first was not successful. The client was assured that rejections were to be expected in job finding and that efforts would continue until he was placed. The client was given an appointment to return for additional placement services.

Before the client was given a referral, the counselor talked with the prospective employer explaining the clients assets and the conditions under which the employer could best utilize the client. The job opportunity was explained to the client who was, at the same time, shown that he would be able to not only get the job but be successful in it. The client was told to report back to the employment counselor immediately if he lost the job.

12. Follow-through and Follow-up.

a. Follow-through was the technique used to assure that the client was securing the necessary individualized services so that he could achieve maximum rehabilitation. It was not only an evaluation process but it was also an ordering of additional needed services. It was an internal part of the service as it was performed.

b. Follow-up, on the other hand, was an after-the-fact technique. It was used after the client had completed his evaluation and counseling processes and was in a job. Its purpose was to determine whether he had made a satisfactory adjustment, whether the services given him during the course of the program were adequate, and whether he was continuing to develop vocationally and is maintaining his goals. It was, therefore, a technique which gave the counselors another opportunity to take additional corrective steps in behalf of the client who was not making a maximum adjustment. It was also helpful in evaluating the overall program and making changes in techniques and goals.

Follow-up and follow-through were used to secure information about (1) the reactions of the client to the work adjustment program; and (2) the reactions of the client to a job.

Since both processes were used before or after completing the program, it should be stated what is meant by adjustment. Adjustment was defined to mean the client's ability to meet physical, emotional and mental demands of a job which were consistent with his capacities, personality and development, and his continuing motivation for training and/or work. This means that studying the client's reactions to a work situation, to the supervisors in the work situation, and to the supervisors and the peers in the Center, would yield valuable data which could be used to rehabilitate older handicapped clients. These reactions are described and discussed elsewhere in this report.

Follow-through was incorporated into the counseling provided at the Center. A client's problem was dealt with as a work problem. The first level in the process was the industrial foreman who stressed work of good quality; taught the client to pace himself properly; emphasized persistence; and stressed productivity, attendance and punctuality, personal responsibility, and the group goals as the reality factors specific to being an efficient worker. When a client evidenced difficulty in any one of these areas, the foreman attempted to help him work out his problem. If the foreman failed, he referred the client to his rehabilitation counselor, who tried to help him understand and accept the problem so that he could deal more effectively with it.

The professional staff attempted to reach absentees by phone or mail. If after two attempts the client was not reached, a staff member visited the client in his home. Our experience with these older persons indicates that response on mail questionnaires was not rewarding. By far the most successful procedure was the personal visit. It was, however, extremely costly because of the number of "call backs" which had to be made. With an older disabled and disadvantaged population it is unlikely that the cost can be decreased significantly.

Methods Used for Evaluating Effectiveness of Procedures

The ultimate criterion of success in this rehabilitation program was job placement in the competitive labor market. It was hypothesized that, if a client was accepted into the program, he was feasible for a period of comprehensive pre-vocational evaluation. During the evaluation it was possible to confirm the hunches made at intake regarding the nature of the client's problem, as well as to assess his functional levels.

A prediction was then made regarding whether or not the client would respond to vocational treatments. This prediction was discussed and evaluated during a conference which was attended by JEVS staff members and professionals from other agencies. The following variables were most commonly enumerated as client difficulties: attendance, perseverance, production rate (quantity), quality, supervision, co-worker relationships, appearance, punctuality, frustration toleration, attention span, learning ability, transferability, organizational and planning skills, physical stamina (fatigue) and utilization of resources. The frequency and intensity of these factors were an indication of the individual's level of vocational pathology.

The degree to which the client was able to modify his negative behavior, as exemplified by any one of the above fifteen characteristics, was a measure or index of his employability. During the work adjustment training phase weekly foreman ratings and psychologist's monthly progress reports, with accompanying individual and group counseling sessions, served as the basic evaluation tools. Clients were given immediate feedback of their progress and/or lack of progress, perhaps even regression. Formal progress reports compiled by foreman and psychologists determined trainee promotions from one section to another. Thus, when a client modified his problem or problems, he was moved to a new section and foreman which was commensurate with his functioning. This narrowing between functional and potential performance was another indication of whether or not the client was improving. When a client reached a plateau of level of achievement beyond which he could not perform, this was a cue that termination from the program should be considered. At this point another staff conference was held at which possible fields and levels of employment were identified. Throughout the program, counseling was provided to support the client and to introduce vocational objectives. It was hypothesized that the facility with which a client was able to bring his aspirational levels into focus with his native resources was another criterion of success.

When field and level of employment were identified, placement activities were initiated. The interval between the client's termination and the time he reported on a job was considered crucial since deterioration could occur. To prevent regression, a transitional program was developed to maintain clients until a job placement was effected. The extent to which the client was able to continue his high level of performance on a three instead of a five-day-a-week basis was, in a sense, an assessment of the client's readiness for work. The ability of the client to handle referrals to employers and secure the prospective job was another indication as to how well adjusted he was; and finally, the ability of the client to work successfully in a job away from the Center was the real test of his adjustment and the vocational treatments accorded him.

Follow-up with the client and the employer at regular and set intervals checked the accuracy of all the previous assessments, enabled the staff to initiate program revisions, and assured continuing service to clients needing additional help.

In summary, various levels of supervision were able to evaluate the effectiveness of the program by observing client gains; by reading psychologists' and foremen's behavioral and production reports on specific clients, reviewing psychologists' interpretations of testing and

counseling sessions; listening to tapes of group sessions, and noting the level of discussion in staff conferences. Additionally, observations of persons from various disciplines and other agencies were an ingredient in the total evaluation process. As indicated above, the most crucial variable was present only after the client had left the Center for a job; i.e., whether he was functioning successfully on the job to the satisfaction of his employer. The JEVS placement service had been made available for as long as the client needed it. The total evaluation of client success, therefore, cannot be made at this time.

Work Sample Procedure

The concept upon which the JEVS work sample evaluation was based is that work tasks can be graded on a scale of psychological complexity and that the performance of more complex tasks demands a higher ego organization and integrity than lower level tasks. It was hypothesized that work sample performance would reveal occupational aptitude and personality functional factors reflecting personal and social competencies for work and potential for particular development and adjustment.

At the present time, the JEVS system of graded work samples, though progressively refined and improved over the years, is mainly a clinical instrument. One hundred and twenty-five work sample tasks are distributed in twenty broad occupational categories. These tasks are graded in five levels of difficulty and range from eliciting routine repetitive responses to problem-solving or abstract reasoning. Each task has tentative norms for competitive industry, sheltered employment and sub-marginal populations.

Tasks are scaled for measures of time and accuracy, and specify ratings of particular aptitudinal and personality variables which are present in the task performance. In addition, observations of social and work behavior during task performance and over the total evaluation period are recorded in brief descriptive or narrative form. Administrative instructions have been written for each task.

To improve consistency and reliability, each work sample was standardized in terms of the manner in which instructions were given to the clients. All evaluators instruct in the same way, using the same words verbatum.

JEVS psychologists are now attempting both to extend the range of work sample tasks and to standardize each. Normative data is being collected and the experimental design refined. Each sample is being scaled to establish ranges for time and accuracy. The average (mean) time of all these is computed. Good and poor time scores are plus one and minus one standard deviation respectively; excellent and very poor scores are plus two and minus two standard deviations respectively. For example, if, for the washer sorting task, the average time was thirty minutes and the standard deviation time five minutes, very poor time would be forty minutes, poor time thirty-five minutes, good time twenty-five minutes, and excellent time twenty minutes or less. It seems important to discriminate between the sexes for each work sample because combining the two could be misleading, since there appears to be a bi-modal distribution.

Another of the problems with which the psychologists are presently engaged is concerned with a rating of qualitative factors. Criteria are being written to define what constitutes "good" and "poor" performance. Using these criteria, observations should be more objective. For instance, reasons for failure such as negative attitudes, sloppiness of work, poor eye-hand coordination will be incorporated as the basis for a client being considered poor on any one sample. Consequently, rating definitions should be clear and counselors can be more objective regarding the clients ability to achieve an occupational aptitude pattern (OAP).

The ability of JEVS psychologists to predict OAP's is at best tentative. Present procedures used systematically, though clinically, appear to offer evidence that continued experimentation and research will produce an instrument which can provide statistically significant predictions. When this has been achieved, JEVS hopes to develop and publish a manual for use in replicating, administering, and interpreting standardized work samples for evaluative and predictive purposes with occupationally handicapped populations.

IV. RESULTS

Six hundred disabled older persons were given vocational rehabilitation services at the JEVS Work Adjustment Center during a four-year program ending June 30,1966. Data regarding the outcome of the program will be found in Tables X to XV of the Appendix. The following data are abstracted from the tables and the counselors' case records to render a concise picture of the most significant effects.

All 600 clients received an initial intensive vocational evaluation but only five clients could enter any kind of employment at the end of the evaluation period. Three of these five clients recently lost their jobs and are receiving counseling and placement services at JEVS. Three other clients were referred to MDTA courses by the Pennsylvania State Employment Service; two completed the training and have been placed by the State Employment Service. The other client failed to complete his training hecause of illness.

Three hundred and fifty-eight (approximately 60%) were recommended for personal and work adjustment training at the conclusion of the evaluation service; 229 (approximately 38%) were not feasible for further vocational services. Attempts were made to refer them to other agencies for physical, emotional and social adjustment services. Five other clients were in process at the writing of this report.

The severity and complexity of the older disabled worker's problems becomes more apparent when we examine the 229 persons who were not feasible for further vocational services after the evaluation period. One hundred and fourteen (50%) were referred to other agencies for health or social services. The balance included 46 who terminated themselves, 24 who refused referrals, 19 who were hospitalized, 21 for whom no services were available in the community, and 5 who died. Several of the persons who were hospitalized have recently returned to the agency for services. The results describing JEVS efforts on their behalf were incomplete and could not be tabulated at this writing.

Three hundred and fifty-eight persons (234 males and 124 fe-

males) needed and agreed to accept work and personal adjustment services. Two hundred and forty-six (69%) completed these services and obtained employment. Of all the placements, 86% were in competitive industry; excluding 69 jobs which the clients failed to hold at least three (3) months, JEVS counselors made 194 (92%) of the other 205 placements in competitive industry. These placements included some of the 69 clients who had failed to hold their first jobs. JEVS staff made 41 placements in sheltered settings.

Four males were referred to and entered MDTA training in the following courses: Maintenance men (2); Auto mechanic (1); Sewing machine repairman (1). One dropped out and is being counselled at JEVS; 2 completed their training and have been placed by the State Employment Service; 1 has not completed his training.

At the close of the program, 17 clients were awaiting placement; 10 were in treatment; 14 were hospitalized; 45 were unemployable; 10 completed the program but could not be reached in the follow-up; 9 refused placement services; and 3 died. Since the placement and follow-up process continues until the client has achieved adjustment, it is likely that additional clients will be placed, particularly from the following categories: awaiting placement, in treatment, hositalized, and, of course, the clients who lose their jobs.

Considerable effort was necessary to place the clients served. Rarely could the client be placed on the job orders which JEVS routinely procured. It was found that the most effective and economical technique was to develop a specific opening for each client. The average number of telephone calls expended for this purpose was eight. Although it was somewhat more difficult to develop an opening for women, a greater proportion of the women seem to have had a slightly better facility for retaining the job once they obtained it. Thus of 180 men placed, 130 (72%) were able to hold their jobs; of 94 women, 74 (79%) were placed and held their jobs.

It is noteworthy that during the past year there have been more unskilled jobs for men than women. Local labor market information suggests this to be the effect of the placement of war contracts in the area. It is considered that the situation for women "will be better during the next year" when jobs will be diluted and simplified. There will be an increasing number of trainee, unskilled and semi-skilled jobs available during the coming year. This should make the task of placing both older handicapped men and women somewhat less onerous.

When it was found that a particular client could not accommodate to the employer's hiring process, the JEVS placement counselor accompanied the client to the interview. Fifty-six such visits were made, both to facilitate the placement and also to help the individual client deal with his feelings of dependency without the support of the Center's psychological staff. To help clients maintain themselves in employment, additional counseling was provided at JEVS offices during the evening hours. During the final year of the program, 48 persons were seen once or more during the off hours.

Two hundred and five competitive placements (194 JEVS; 11 other sources) were examined to determine whether there were significant age

differentials (Table XII) which might yield clues for the rehabilitation of other older disabled persons. Placements were distributed as follows:

Age Range	% Placements
45 to 54	39
55 to 64	55
65 & Over	6

The above order of placement occurred regardless of sex and usually despite the nature of the disability. No firm explanation is offered regarding why more of the 55 to 64 age group were placed than the 45 to 54 age group. It is evident, however, that persons with emotional, personality and intellectual disabilities (regardless of age and sex) were placed more consistently than persons in other disability categories. More than half (51%) of all the placements presented problems of this nature. It may be that the difference was due to JEVS's long experience in counseling persons with emotional and intellectual disabilities. Sixty-three (63) males and 42 females in this category were placed. These constituted 48% and 56% respectively of the male and female placements.

Thirty-one percent of the clients placed had multiple physical disabilities. A somewhat higher rate of placements was made for this group of males; i.e., 34% as compared to 26% females.

The number of persons with sensory and systemic diseases served and placed was too small for us to draw firm conclusions. It does appear that, despite the limited data, the 45 to 54 age group may be the easiest age group to place; the 65 and over age group would probably present the greatest difficulty.

In Table II it is shown that unskilled and service persons constituted 41% of the sample. (This percentage does not include the 10 males and 4 females with no previous work history). The other occupational levels were: semi-skilled 22%; skilled 8%; clerical 9%; sales 8%; professional 3%; supervisory 3%. Placements effected indicate that many of the clients in the program were downgraded vocationally. (Table XIII) Placements are summarized as follows:

Occupational Category	% of Placements
Unskilled & Service	59
Semi-skilled	17
Skilled	4
Clerical	13
Sales	6
Managerial & Professional	1
Total ..	100

Downgrading occurred in both blue and white collar jobs. Even though there was a higher percentage of persons placed in clerical jobs, it should be indicated that 13 of the 18 jobs required no real skill or experience. Similarly, most of the sales jobs were in variety and small specialty stores. Another important finding was that few clients could

be placed in supervisory or professional jobs, mainly because they had not developed the internal strength to cope with the kinds of pressures involved. It was hoped that the experience gained in the low level jobs would motivate some of these older workers to widen their occupational horizons and move into more demanding vocational areas.

Generally, it was easier to place the clients who had recent work experience. (Table XV) Thus, it may be noted that only 21% of the 334 clients who had been unemployed one year or more were placed in competitive jobs. The fact that 35% of all the placements, however, were in the group which had been unemployed a year or more indicates that a concerted attempt was made to place the long term unemployed. An additional 25% of the placements were for clients who were unemployed at least six months. Added to the foregoing, this means that 124 (60%) of 205 placements were made with clients who were unemployed six or more months prior to their entrance into the program.

The Failure Cases

One hundred and fifty-five males and 95 females were deemed failure cases; i.e., they either dropped out or were terminated from the program for reasons other than hospitalization or death. Examination of the individual case records indicates that client reasons for the failure were often not accurate. For example, 57 males and 36 females stated they were leaving the program to seek or take jobs, yet follow-up revealed that only five found jobs.

The clients' reasons for dropping out were categorized as follows:

	Male	Female
1. To seek or take jobs	57	36
2. Disliked factory environment . . .	7	5
3. Disliked factory work	9	4
4. Disliked working around younger people	13	10
5. Would not be "bossed".	15	12
6. Could not do the work	14	9
7. Disliked co-workers	19	8
8. Could not get to work on time . . .	7	5
9. Thought shop wages would decrease relief grant . .	10	3
10. Wanted more time for self	4	3
Total ..	155	95

It may be concluded that the client's explanation of failure was mainly related to psycho-social causes which affect one's ability to deal with peers and authority figures, and the ability to adjust to the demands of the work setting. In general, the clinical observations of JEVS psychologists confirm this, though their comments may be more sophisticated and revealing of the basic behavioral dynamics which the client himself could neither perceive nor accept. There is a sizeable disparity in the first factor "to seek or take jobs" but this may be explained by the fact that it is usually socially acceptable in American

culture to say one is seeking a job than to face the ego threatening reality. Only the primary observations of the psychologist is listed in the following tabulation:

	Male	Female
1. To seek or take jobs	12	10
2. Poor self image	31	18
3. Inability to accept or deal with authority . .	19	14
4. Inability to relate to peers . .	22	16
5. Bizarre behavior	10	9
6. Hostile or aggressive behavior .	21	11
7. Overly compulsive	10	5
8. Inability to tolerate ordinary work pressures	16	3
9. Inability to mobilize self . . .	13	6
10. Chronic alcoholism	8	1
Total ..	155	95

V. IMPLICATIONS

The results achieved appear to point to the fact that many persons 45 and over who are disabled by emotional, personality, mental, physical and other disabilities, and who are further handicapped by a restricted social and cultural milieu, can be rehabilitated and placed in the competitive labor market. Rehabilitation, however, could not be achieved with the usual procedures. What appeared to have been useful with, and meaningful for older disabled persons were intensive periods of evaluation, personal and work adjustment training with real work, counseling (individual and group), remediation, intensive job development, individualized selective placement and follow-up employment counseling.

The techniques listed above had to be applied differentially to older persons because their problems varied widely. There were, for example, great variations between age groups with respect to physical strength, tolerances for pressures, etc. And, within age groups, the intensity of the handicapping problem depended on the effects of previous life history, personal and social needs and values of each person, as well as the common characteristics which individualized the persons in the sample. What appeared apparent was the fact that individual differences sharpen with age. It would, therefore, be a mistake to categorize the population as older workers based on chronological age. We may conclude that rehabilitation effort, therefore, should be geared to the individual with the age factor viewed as a social rather than a disabling factor per se.

Although recency of employment was a significant factor in the rehabilitation of many of the clients, the staff was able to place a large enough percentage of the clients who were unemployed six months or more, and some of the clients who had never worked. This suggests the need for further study of this factor. But even without this study, we would hypothesize that too much emphasis has been placed on recency of employment. It is likely that decisions made in the past regarding feasibility for rehabilitation services, based solely on recency of em-

ployment, or even recency plus chronological age, were often highly tenuous. We would propose the broadening of the rehabilitation counselor's experience and thinking so he can evaluate and combat the regression and deterioration which sometimes sets in with age. It appears that the older person who has been out of the labor market for a considerable period can benefit from an individualized rehabilitation program.

Older disabled persons were more readily threatened and, in a sense, had more fragile egos than younger persons with respect to maintaining secure futures. Ordinary difficulties tended to become aggravated by symbolism relating to decline and the waning competence of the older person. The stresses involved in vocational adjustment for the younger person who viewed himself as growing and gaining strength, usually did not apply in the self-percept of the troubled older person. A sound rehabilitation approach may require that the older person be given more emotional support to offset negative feelings.

There were some general differences between the three major age categories with respect to the client's reaction to services. The 45-54 age group usually considered themselves young enough to maintain themselves at optimal levels, but they adjusted to aging with difficulty because they were ambivalent. They were less willing to compromise vocational objectives despite the knowledge that their high aspirations tended to be somewhat unrealistic. The 55-64 year old disabled client usually had recognized the need to lower his occupational horizon in order to get started again. For this reason many were ready to accept immediately available job opportunities. The 65 and over group accepted almost any immediate opening because they wished to prevent further psychological and physical slippage. Actually, many persons in this age group could make the same improvements as the younger. What hindered their rehabilitation was a cultural attitude which warped the perception of the older individual as he regards himself, and the perception of the employer as he regarded the older worker.

Considerable effort was involved in the process of rehabilitating older workers. They needed considerable support at every stage of the process. Though often similar to the help given younger clients, it was often differentiated because of underlying psychodynamics, some of which have been already noted, while others are discussed later in this section.

Certain special techniques were successful in the placing of older disabled persons. These included numerous telephone calls to employers to develop a suitable job opening; the counselor's accompanying selected clients to the job to help them through the employer's hiring process; counseling in the off hours to provide the support many clients need in order to hold their jobs.

Especially those older clients, who tended to accept defeat docilely, needed to quickly learn that the sponsoring agency was a place they could get help with their problems even after they were employed. These techniques, usually implicitly incorporated in "selective placement", were mandatory for most older disabled persons served in the JEVS program.

The fact that the majority of all job placements were in the

55-64 age group has social as well as rehabilitation significance. It is this age group which is not eligible for social security benefits, and yet experieriences most discrimination because of age from employers. And it is this group which, even if it wished to retire, would find few if any of the recreational and educational programs that are available to persons 65 and over. It is perhaps for these reasons that clients in this age group were usually amenable to revision of their goals and acceptance of a job opportunity in order to get started again.

It is observed that most employers in Philadelphia seem to consider the over-65 persons as out of the labor market because they are eligible for social security benefits. Many employers consider the 65 year and older person as only able to do part-time work. There are, of course, employers who do consider the 65 year plus person on the basis of his ability to perform. The cost of locating such employers in terms of plant visits and telephone calls was generally three times as high as for those age 45-54, and twice as high as the 55-64 group.

As already noted, a considerable number of the persons served in the program had to be downgraded before they could be placed. Many of these really needed experience working again at any kind of suitable job. Lengthy or sporadic periods of unemployment usually meant that their skill was rusty and their tolerance for work was limited. A significant number of the clients had emotional problems which did not permit them to endure the stresses and pressures which a skilled occupation requires. Despite the age factor, some older persons in each disability category incorporated new strengths as a result of working and improved, just as the younger do, from meeting minimum standards of competitive industry. In time, these clients should be able to proceed to more skilled and demanding occupations.

Problems Encountered and Their Relationship to Rehabilitation Programs

Some of the procedural problems affecting the clients were discussed in Section III. Here we shall confine our observations to the comments of the psychologists and industrial foremen who were engaged with the clients. These summary comments may be applicable to other projected programs for older disabled persons.

1. Reaction to Type of Work. Although there were individual differences, the 65 and over group did poorly on jobs requiring good eye-hand coordination. However, the 55-64 and the 65 and over, even though less coordinated than those 45-54, maintained high performance standards in jobs requiring neatness and accuracy. This may reflect their anxiety to demonstrate their ability to do well. The 45-54 performed best on jobs requiring eye-hand coordination and speed.

All age groups were more adaptable and flexible with regard to new assignments than the rest of the younger shop population. The 55-64 clients were the most adaptable and flexible. It is suggested that handicapped persons older than 45 years of age may develop a great repertory of responsive behaviors. The pattern was most manifest in the 55-64 age group, possibly because adjustment demands lacked the hindrances of the irrealistic aspiration in the 45-54 age group, or the waning power and expectation of the 65 and over group.

2. Reaction to Supervision. The group as a whole required much less supervision and was better able to adapt to supervision than the younger clients in the Center. There were few incidents requiring suspension without pay or other disciplinary actions. Foremen stated that usually "talking to the older worker was enough because they either already had or quickly learned their responsibilities as workers". This ability to work with less supervision may be viewed as a function of maturity. But, when a problem occurred, the foremen tended to be stricter than they were with the younger clients. The foremen assumed that, since older clients had more experience, they "should know better" or "should know how to behave on the job". This conventional reasoning was a problem which was resolved when the chief psychologist held a series of group sessions with the foremen.

While there have been questions raised about the attitudes of older persons toward younger supervisors and psychologists, these attitudes were not a crucial factor in the JEVS rehabilitation process. The problem was reversed; it was necessary to train both the foremen and the counselors to deal directly with older persons without being affected by conventional feelings of subordination.

3. Reaction to Peers. When older clients were segregated, they tended to become overly loquacious about their past. Consequently, their productivity lagged. When one or even two older persons were placed with a young group, they tended to become overwhelmed by the exuberance and sheer animalism of the youth. The preferred mixture seemed to be one older to three younger persons. In such groups, the older persons were well motivated and seemed to draw vitality from the youth. The older persons often became models; they saw themselves in a paternal helping role. They set the pace and expressed views which helped the youth develop a more favorable attitude toward work.

4. Reactions to Money. Money was of symbolic rather than concrete significance for many older disabled clients, mainly as a sign of achievement and adequacy. Those clients who were overly concerned and obsessed with earnings, therefore, were apparently expressing a more fundamental psychological problem than those who treated money symbolically and less concretely. This may explain why those who were continually concerned with their production rates tended to view the program as a job and not a rehabilitation process. Those clients made minimal gains and usually had difficulty securing a job because they insisted on higher starting wages than were customary for the work they could perform. The client who, despite a plethora of economic problems, was able to allay some of his concrete and immediate needs was most apt to be placed and was most likely to hold the job.

Counseling had to be focused differently with each age group. Clients in the 45-54 age bracket generally were most concerned about their ability to earn wages; clients in the 54-64 group seemed to have been convinced that they were less desirable, and would meet more resistance then the younger persons; and clients in the 65 and over group seemed too willing "to accept any kind of wage".

Generally, all of the clients were somewhat concerned about their economic status, but the women tended to perceive their financial need as less important than the man. Particularly, men who were living

with their families perceived themselves as head of the household with responsibility for its financial support. Single women who were living alone were more concerned than women (married or single) living in family unites about their earnings and therefore reflected the same anxieties as the married males.

The client's attitude toward money was also reflected in how they used the wages earned at the Center. These clients were, in the main, accustomed to existing for extended periods of time on the barest of necessities, and few spent their wages recklessly. The women were somewhat less restrained in their spending. They bought an occasional "new" hat, dress, blouse, or pair of shoes, which, judging from the size and age of their wardrobe, were not luxuries. The men, on the other hand, rarely purchased a new item of clothing unless absolutely necessary.

The amount of money earned by these clients made it extremely difficult to save, but most of them attempted to set aside a portion of their salary. Clients over 65 were the most economical, perhaps because they were fearful of their future. Even though they needed to use some of their earnings for current medical expenses, they attempted to reserve a portion of their earnings to pay for future illnesses and other exigencies. This suggests that they feared decline and tried to protect against it.

5. Reaction to Status Needs. Many clients had high status needs as a kind of reaction formation to past failures. The rehabilitation procedure was directed at enlarging the client's responsibility and influence by giving the client real promotions in the form of work coordinating, cadre leading and other supervisory roles. This was predicated on the client's ability, the adequacy of his social rapport, and his maturity as a worker.

6. Reaction to Competition. The older disabled person was likely to be disadvantaged with regard to sustained energy expenditure, and an inability to compete in production work with younger persons. The nature of work competition, therefore, had to be perceived by the older client as relating to such variables as quality and evenness of output rather than quantity and speed.

Attitudes of Older Disabled Persons Affecting Rehabilitation

1. Client Attitude Toward Their Families. Clients who responded most favorably to the program had a happier image of their family; i.e., parent-child, husband-wife relationships were generally positive. Although they were at the moment in straitened circumstances, they did not project their difficulties on their family. The most maladjusted, on the other hand, were usually alienated from their family and friends, and viewed themselves as burdens with little to contribute to their families. Rejection by friends and family was often a concommitant to their alienation.

In general, the female maintained closer family ties than the male. This would seem to reflect her role as the basic homemaker. The male, either by choice or circumstances, was more apt to isolate himself from close family involvement. He apparently experienced frustration

and guilt over his failure as a breadwinner, and perceived himself as being less and less important in the family unit.

The group 55-64 years of age experienced considerable psychological conflict. Their families were less dependent on them in terms of emotional and financial income, but the men and women in this age group wanted to be involved with their children. The offspring, in many instances, were grown, married and no longer living in the home. These circumstances added to their existing difficulties. The 65 and over group appeared to be more resigned to their family position. They had had a longer period of time in which to accept their reduced status.

2. Client Reactions to Aging. Clients appeared anxious about and doubtful of their personal adequacy. They experienced increasing frustration with their declining capacities. As the individual became older, he often seemed to react intropunatively; i.e., he began to blame himself for everything that went wrong, felt unworthy, was depressed and withdrew. Some, however, were extrapunitive and projected their problems onto society, their families and their friends. Since these clients lived in a steadily contracting social world, they were gradually losing roles and friends. Increasing dependency and a failure to secure emotional support gave feelings of rejection to many.

The aging members of both sexes had lost considerable self confidence, and were experiencing downgraded psychological roles. Additionally, emotional rigidity and depressive reactions at times were apparent. However, although the male seemed more despondent over his reduced status, he seemed more earnest in approaching vocational rehabilitation. It was as if re-entry into the labor market would reinstate his self worth.

The female tended to be more hysterical and more concerned about physical health, voicing numerous somatic complaints. Despite this, they were more patient and more willing to accept small gains than the males. The males were more interested in obtaining full time jobs, even when not ready for competitive employment.

The group 45-54 was resistant to their changing role, and exhibited the personal adjustment difficulties of a younger rather than older population. They were more impulsive and less depressed than the groups 55-64 and 65 and over. The group 55-64 seemed to be most despondent. Clients 65 years of age and over were most resigned to their status, and seemed pleased to be part of a constructive program. The group 45-54 clearly perceived the program as rehabilitative,but were resentful and rather hostile toward society. They were most extrapunative. The most pervasive pessimism was observed in the group 55-64. It was as if they were suddenly struck with the traumatic insight that this was their last opportunity to "make it" as a competitive employee. They were unhappy, but they invested themselves in the program in an effort to gain the image of a worker. This may, in part, serve as an explanation for the project's success with this age group.

3. Client Attitudes toward Physical Health. There was a marked tendency to blame declining physical prowess for past vocational failures. Although, in many instances, poor health accompanied rather than caused failures, it is obvious that physical decline, especially

with respect to the 55-64 group, had serious psychological consequences. Clients most shaken by the onset of chronic ailments were those who valued strengths and vigor. Some clients also believed that their physical conditions were aggravated by the increasing anxieties of aging. However, another group of clients denied the existence of previously diagnosed organic disease. The best adjusted were most realistic about their physical health status. For the most part, all the clients looked to federal, state and local government programs for aid in maintaining their health.

The group 55-64 seemed to be caught in a paradox. On the one hand they were beginning to experience the chronic ailments accompanying the aging process, but were, on the other hand, reluctant to admit this, since to do so would be an indication of decline. But this resulted in anxiety which caused them to be preoccupied with somatic conditions. Fear of being unable physically to perform certain vocational duties tended to interfere with their actual performance. Individuals in this group tended to react either by denying any physical decline or the existence of chronic illness, or by overemphasizing the presence of a disease entity. Some clients attempted all activities and,when they failed, their already tenuous self image suffered; others were reluctant to try any activity that they perceived as being physically demanding. Successful attempts bolstered their self images. Individuals 65 years of age and over were most realistic about their health. They had already made adjustments to chronic illnesses and their basic concern was to maintain what health they possessed. They were anxious but their apprehension revolved around the financial aspects of medical care.

Women were considerably more concerned with their physical health than men, and were more prone to verbalize somatic complaints. Men tended to minimize their declining health status since,to emphasize their illnesses would draw attention to their reduced physical proficiency and hence deteriorated vocational role. Members of both sexes conveyed the impression that if they became more involved in meaningful activities such as work they would have less time to be preoccupied with somatic complaints.

It is interesting to note that there was no greater absenteeism due to illness in the group than in the shop population below 45 years of age. The age group 45-54 was still in relatively good physical health and were able to admit illness so long as it was not chronic. Again, their attitudes closely paralleled a younger population.

4. Client Attitudes toward Mental Health. Attitudes toward mental health varied from denial of psychological difficulties to preoccupation with emotional factors. Some clients freely admitted their personal problems and were willing to seek help; others were at the opposite end of the continuum. For the most part, the clients were not aware of the psychological factors causing their adjustment difficulties and consequently they did not utilize the resources avilable to them.

The women appeared to be more willing to discuss their emotional problems and also to accept help. Many of the men seemed to feel that the admission of an emotional problem was an admission of

weakness. The men, therefore, tended to be non-committal.

The clients aged 55-64 were least resistant to discussing their emotional problems, but constituted the group which experienced the greatest difficulty accepting help. They were generally more suspicious of accepting mental health referrals than was the group 45-54. Clients 65 and over were most receptive to mental health referrals; they seemed to have the most realistic attitude toward mental health.

5. Client Attitudes toward Interpersonal Relations. When the clients entered the program, they tended to remain on the periphery of the general shop population. Interaction, when it did occur, was usually limited to peers within their own age groups.

Women were less aloof and suspicious than men. They seemed to relate more easily and were more accepting of supervision. Men showed more competitiveness. This sometimes presented a problem, particularly when they attempted to compete with younger workers.

The group 45-54 was more responsive to interpersonal relationships and less reluctant to become involved in group situations. They were able to relate more easily with both younger and older populations, although they were suspicious of and threatened by individuals under 45. The 55-64 group was generally aloof and suspicious and tended to isolate themselves from close interpersonal involvement. The 65 and over group was cautious of involvement because of possible fear of rejection. They tended to respond to peers who accepted them despite age differences.

VI. SUMMARY AND CONCLUSIONS

It is evident that the population served was largely disadvantaged and therefore not representative of the handicapped American older workers. The positive results attained with this multi-problem population raise a number of questions which could be the subjects for other studies. For example:

a. Do older disabled workers generally wish to work, or is it mainly the failure, isolated older disabled person who is so motivated?

b. Why do the various community, health and social agencies appear resistant to referring older disabled clients to rehabilitation programs?

c. Would a follow-up study of clients rejecting the program yield useful information which would help structure future programs?

It appears that many older disabled persons really do not want to work. This accounts for the large number who had to be contacted before an adequate sample could be procured. Special techniques and programs had to be developed and utilized in order to reach handicapped persons 45 years of age and older. Other agencies had to be made aware of the fact that the rehabilitation program would contribute to the solution of dependency problems where social adjustment efforts alone might be ineffectual.

Lack of desire to work, as well as the presence of disabilities, also accounts for at least a portion of the clients who dropped out or had to be dropped from the program; i.e. 242 of 600. But most older persons who successfully completed the program were placed in and adjusted to jobs in competitive industry. Since most older clients had a number of handicapping conditions, it is reasonable to expect that rehabilitation would offer larger possibilities for the less disadvantaged older client.

The motivation of many older disabled workers to work was fragile. They needed considerable individual and group counseling to maintain their desire and eradicate erroneous beliefs about their own abilities and employer hiring practices. Mere recitation of statistics or exhortations had little effect on their attitude. Usually the individual's opinion did not change until he had been placed in a specific job.

Older disabled persons should be helped to understand that they may have to accept downgrading in order to begin to work. In many instances it can be expected that the initial placement will permit the client to test himself out in competitive situation, and be placed in a more demanding job when he has mobilized his personal resources. Counseling was useful in helping the client accept the steps involved in getting and holding a job.

Vocational rehabilitation for older as well as younger disabled persons, particularly those who have weak or no family ties, should be correlated with their personal and social adjustment outside of work. The presence or absence of family ties should be understood in the rehabilitation approach because they are frequently contributing causes for past vocational failures.

Techniques for rehabilitating and placing older disabled workers must be applied differentially. There were great variations between and within the three age brackets; i.e. 45-54, 55-64, 65 and over, with respect to such variables as physical strength, tolerance for pressures, motivation to succeed, etc.

Recency of employment was a significant but not the prime factor in the rehabilitation of the clients. A large enough percentage of persons with long histories of unemployment were placed to suggest that recency of employment may be unduly emphasized in determining feasibility for rehabilitation services.

Age was a secondary variable and major attention should be focused on the individual and his disability. When older handicapped persons were integrated with younger persons in a work group on a one (1) to three (3) ratio, the older persons tended to become models for the younger ones and were able to help them develop more favorable attitudes towards work. Rehabilitation techniques were geared to the disability and not to the age, but vocational objectives for older disabled persons were often different from the objectives of younger clients because of lower educational backgrounds, breakdown of family relationships, the presence of multiple handicaps, and different needs for occupational futures. For example, it may be expected that the basic vocational aspiration of the older worker is to sustain his employment level, as con-

trasted with younger persons who seek upward mobility. As later aging progresses, the work motivation more and more becomes that of combatting decline and dependency.

Older disabled persons, therefore, needed more support than the younger disabled because they were beset with fears and anxieties about their future as persons and workers. Since many tended to accept defeat docilely, they needed to learn that they had recourse to continuing professional help when necessary. Consequently, agencies engaged in the rehabilitation of older disabled persons should re-examine their operating procedures and plan programs for those clients who require service during the off hours.

The older persons served required less supervision and were better able to adapt to supervision than the younger clients in the JEVS Work Adjustment Center. Attitudes of the older workers toward younger supervisors and counselors generally were not crucial factors in the rehabilitation program after JEVS staff members were taught to deal directly with older persons without being affected by conventional feelings of subordination.

Money was of symbolic rather than concrete significance for many older disabled clients. Clients who were overly concerned with earnings tended to view the program as a job and not a rehabilitation process. Counseling and other remedial techniques had to be geared to dealing with the fears and anxieties which were the basis of acute concern about wages. Rejection of job possibilities by many older persons resulted from this over concern for money. Refusal of jobs requiring acceptance of downgrading and some loss of occupational status was a common factor among the 45-54 year old clients.

Status needs of the clients were satisfied by real promotions to work that incorporated coordinating, leading and minor supervisory roles when the client's ability, social rapport and maturity were adequate.

There was a wide variance in competitive spirit between individuals 45 years of age and older. Many of the clients were disadvantaged with regard to sustained energy, and therefore could compete most advantageously in occupational areas requiring quality rather than quantity of output.

Initially, most counselors had difficulty relating properly to older disabled clients. In addition to training, the counselors needed more frequent contacts with older persons, just as they (the counselors) needed more fluid contact with medical and social resources because of the greater incidences of chronic illness and social maladjustment.

TABLE 1 — CLIENTS ADMITTED - BY AGE, DISABILITY AND SEX — N=600

AGE	MALE					FEMALE					
	Emotional	Sensory	Systemic	Multiple	Total M	Emotional	Sensory	Systemic	Multiple	Total F	TOTAL M & F
45 to 54	72	9	3	48	132	34	6	10	17	67	199
55 to 64	61	5	51	97	214	45	16	16	50	127	341
65 and Over	6	20	10	4	40	7	2	5	6	20	60
TOTAL . .	139	34	64	149	386	86	24	31	73	214	600

TABLE 2 — CLIENTS ADMITTED - BY PREVIOUS OCCUPATIONAL LEVEL, AGE AND SEX — N=600

AGE	45 to 54		55 to 64		65 and Over		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
No Previous Work History	12	5	16	12	4	5	32	22
Unskilled	32	15	96	9	16	2	144	26
Semi-skilled	45	9	33	28	6	4	84	41
Skilled	13	2	18	5	10	0	41	7
Service	10	10	15	41	1	1	26	52
Sales	14	9	10	7	1	3	25	19
Clerical	4	15	7	22	0	3	11	40
Professional	2	1	7	1	2	2	11	4
Supervisory	0	1	12	2	0	0	12	3
TOTAL . .	132	67	214	127	40	20	386	214

TABLE 3

N=600

LENGTH OF LONGEST JOB - BY DISABILITY AND SEX (PRIOR TO INTAKE)

	Emotional Personality and Intellectual			Sensory			Chronic Systemic			Multiple Physical				
AGE:	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	TOTAL M	TOTAL F
No Work History:														
Male	12	3	2	4	1	1	3	2	1	2	1	0	32	
Female	7	4	0	1	1	0	1	1	2	4	1	0		22
Less Than One Year:														
Male	23	29	2	1	9	4	8	10	7	13	15	4	125	
Female	12	11	2	0	10	0	4	5	1	5	21	2		73
One Year to Three Years:														
Male	17	13	4	2	3	1	2	12	5	18	30	1	108	
Female	8	17	2	1	4	2	4	6	3	4	22	2		75
Three Years or More:														
Male	18	16	0	1	7	0	3	7	4	5	56	4	121	
Female	9	13	1	3	2	0	2	2	0	2	7	3		44
Totals Male	70	61	8	8	20	6	16	31	17	38	102	9	386	
" Female	36	45	5	5	17	2	11	14	6	15	51	7		214
GR. TOTALS	106	106	13	13	37	8	27	45	23	53	153	16	600	

TABLE 4 N=600

LENGTH OF UNEMPLOYMENT - BY AGE AND DISABILITY (PRIOR TO INTAKE)

	Emotional Personality and Intellectual			Sensory			Chronic Systemic			Multiple Physical			
AGE:	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	TOTAL
Never Worked	17	9	2	3	4	1	0	7	3	1	5	2	54
Part-time Job at Application	1	0	0	1	0	0	2	2	0	0	0	0	6
Occasional Job at Application	13	2	0	1	3	0	5	6	1	3	1	2	37
Less Than Three Months	4	7	0	2	2	1	2	7	0	8	1	1	35
Three Months to Six	6	8	1	3	2	2	1	6	2	4	5	1	41
Six Months but Less Than One Year	11	17	4	1	4	6	1	11	3	12	22	1	93
One Year or More	54	63	6	4	6	12	2	28	6	37	113	3	334
TOTAL . .	106	106	13	15	21	22	13	67	15	65	147	10	600

TABLE 5 MALE CLIENTS - BY EDUCATIONAL ATTAINMENT, DISABILITY, AGE N=386

AGE:	Emotional Personality and Intellectual			Sensory			Chronic Systemic			Multiple Physical			TOTAL
	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	
No Formal Schooling	5	2	1	4	3	3	1	1	1	7	1	0	29
Elementary or Less	32	38	1	3	2	7	2	29	6	18	67	3	208
Some High School	17	14	1	1	0	2	0	16	2	11	22	1	87
High School Graduate	6	3	0	1	0	4	0	2	1	5	4	0	26
Post High School (Trade or Commercial)	2	0	1	0	0	2	0	1	0	1	2	0	9
Some College	5	2	1	0	0	1	0	2	0	2	1	0	15
College Graduate	3	1	1	0	0	1	0	0	0	2	0	0	8
Professional School	2	1	0	0	0	0	0	0	0	2	0	0	5
TOTAL . .	72	61	6	9	5	20	3	51	10	48	97	4	386

TABLE 6 — FEMALE CLIENTS - BY EDUCATIONAL ATTAINMENT, DISABILITY, AGE — N=214

	Emotional Personality and Intellectual			Sensory			Chronic Systemic			Multiple Physical			
AGE:	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	TOTAL
No Formal Schooling	3	1	2	0	1	2	1	0	1	0	0	2	13
Elementary or Less	12	15	3	4	11	0	5	10	1	7	13	2	83
Some High School	10	23	1	1	3	0	2	6	2	4	36	1	89
High School Graduate	7	3	0	0	1	0	1	0	1	2	1	1	17
Post High School (Trade or Commercial)	1	2	1	0	0	0	0	0	0	1	0	0	5
Some College	0	0	0	0	0	0	0	0	0	1	0	0	1
College Graduate	1	0	0	1	0	0	1	0	0	1	0	0	4
Professional School	0	1	0	0	0	0	0	0	0	1	0	0	2
TOTAL . .	34	45	7	6	16	2	10	16	5	17	50	6	214

TABLE 7 N=600

LENGTH OF UNEMPLOYMENT - BY LIVING ARRANGEMENT

AGE:	45 to 54 (N=199)				55 to 64 (N=341)				65 and Over (N=60)				TOTAL
	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	
Never Worked	15	0	4	2	6	0	15	4	6	0	2	0	54
Part-time Job at Application	4	0	0	0	2	0	0	0	0	0	0	0	6
Occasional Job at Application	7	6	5	4	3	5	2	2	1	2	0	0	37
Less Than 3 Months	14	1	1	0	7	4	6	0	0	1	0	1	35
3 Months but Less Than 6 Months	8	2	1	3	11	6	3	1	4	1	1	0	42
6 Months but Less Than One Year	14	6	3	2	32	12	7	3	10	1	1	2	93
One Year or More	44	20	15	18	143	44	21	2	12	4	5	6	334
TOTAL . .	106	35	29	29	204	71	54	12	33	9	9	9	600

TABLE 8

N=386

LENGTH OF UNEMPLOYMENT - BY LIVING ARRANGEMENT (MALE)

AGE:	45 to 54				55 to 64				65 and Over				
	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	TOTAL
Single	29	0	6	4	66	0	16	2	3	0	1	1	128
Married	1	19	1	1	3	43	2	1	2	7	1	2	83
Widowed	12	0	4	3	22	0	2	1	12	0	1	2	59
Separated	43	0	3	2	47	0	0	1	3	0	0	1	100
Divorced	3	0	0	1	4	0	1	3	3	0	0	1	16
TOTAL	88	19	14	11	142	43	21	8	23	7	3	7	386

113

TABLE 9

N=214

LENGTH OF UNEMPLOYMENT - BY LIVING ARRANGEMENT (FEMALE)

AGE:	45 to 54				55 to 64				65 and Over				
	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	Lives Alone	Lives With Spouse	Lives With Family	Lives With Friends	Total
Single	6	0	5	4	12	0	17	2	3	0	1	1	51
Married	0	16	1	0	1	28	1	0	0	2	1	1	51
Widowed	1	0	2	3	16	0	3	2	4	0	1	0	32
Separated	10	0	4	6	24	0	5	0	2	0	1	0	52
Divorced	1	0	3	5	9	0	7	0	1	0	2	0	28
TOTAL . .	18	16	15	18	62	28	33	4	10	2	6	2	214

TABLE 10 DISPOSITION OF 600 CLIENTS AFTER PREVOCATIONAL EVALUATION

			Male	Female	Total
I.	Entered Employment	Total	3	2	5
	Competitive		2	1	3
	Sheltered		1	1	2
II.	Entered Training	Total	3	0	3
III.	In Process (Evaluation)	Total	2	3	5
IV.	Entered WAC	Total	234	124	358
V.	Not Feasible for Further Vocational Services	Total	144	85	229
	Unemployable, Referred to Other Agency		73	41	114
	Unemployable, No Other Services Available		11	10	21
	Refused Referral		12	12	24
	Terminated Self		29	17	46
	Hospitalized		16	3	19
	Deceased		3	2	5

TABLE 11

DISPOSITION OF CLIENTS AFTER PERSONAL AND WORK ADJUSTMENT SERVICES

N=358
(234 Male)
(124 Female)

		Male	Female	Total
I.	Placed (Competitive)			
	By JEVS	172	91	263
	Still Employed After 3 Months	98	66	164
	Follow-up Incomplete	24	6	30
	Did Not Hold Job 3 Months	50	19	69
	By Other Agencies	3	1	4
	By Self or Relative	5	2	7
	Total Placed	180	94	274
II.	Refused Placement Service	7	2	9
III.	Placed in Sheltered Employment	23	18	41
IV.	Entered Training	4	0	4
V.	Awaiting Placement	14	3	17
VI.	In Treatment	6	4	10
VII.	Hospitalized	9	5	14
VIII.	Unemployable	30	15	45
IX.	Deceased	2	1	3
X.	Could Not Contact in Follow-up	9	1	10

TABLE 12

N=205*

COMPETITIVE PLACEMENTS - BY AGE, SEX AND DISABILITY

	45 to 54	55 to 64	65 & Over	Total	45 to 54	55 to 64	65 & Over	Total
	MALE				FEMALE			
Emotional Personality & Intellectual	25	34	4	63	17	23	2	42
Sensory	4	3	2	9	3	2	0	5
Systemic	10	4	0	14	3	5	0	8
Multiple Physical Disabilities	9	31	4	44	8	10	2	20
TOTAL . .	48	72	10	130	31	40	4	75

* Excludes 69 cases who did not hold the job for 3 months; includes 36 cases on whom follow-up was not complete; includes 11 cases placed by other agencies, self or relatives.

TABLE 13 PLACEMENTS - BY OCCUPATION, AGE & SEX N=205*

	45 to 54		55 to 64		65 & Over		Total		
	M	F	M	F	M	F	M	F	TOTAL
Assembler (Mch. Shop)	0	0	3	0	0	0	3	0	3
Barber	1	0	0	0	0	0	1	0	1
Bookkeeper	0	1	1	1	0	0	1	2	3
Busboy, etc.	3	1	9	0	0	0	12	1	13
Clerk (no typing)	1	4	0	6	1	1	2	11	13
Clerk (typing)	0	3	0	2	0	0	0	5	5
Collating	0	2	0	1	0	1	0	4	4
Crafts (Misc. Skills)	1	0	5	0	0	0	6	0	6
Driver Sales	1	0	1	0	3	0	5	0	5
Gardener	1	0	2	0	1	0	4	0	4
Janitor, etc.	2	1	6	1	1	0	9	2	11
Light Factory Work	11	6	5	6	1	1	17	13	30
Machine Operator	7	2	3	4	0	0	10	6	16
Maintenance Mechanic	0	0	1	1	0	0	1	1	2
Messenger	0	0	4	0	1	0	5	0	5
Managerial	0	0	1	0	0	0	1	0	1
Orderly, etc.	0	2	5	3	0	0	5	5	10
Sales (Inside)	0	2	2	6	1	1	3	9	12
Sales (Outside)	2	0	1	0	0	0	3	0	3
Sewing Mach. Operator	0	3	0	4	0	0	0	7	7
Stock & Shipping	15	2	19	2	0	0	34	4	38
Waiter	2	2	2	3	0	0	4	5	9
Watchman	1	0	2	0	1	0	4	0	4
Total . .	48	31	72	40	10	4	130	75	205

* Excludes 69 cases who did not hold the job 3 months; includes 30 cases on whom follow-up was not complete; includes 11 cases placed by other agencies, self or relatives.

TABLE 14 PLACEMENTS - BY LENGTH OF UNEMPLOYMENT, AGE & DISABILITY N=205*

	Emotional Personality and Intellectual			Sensory			Chronic Systemic			Multiple Physical			
AGE:	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	45 to 54	55 to 64	65 & Over	TOTAL
Never Worked	6	4	1	1	1	0	0	0	0	1	3	0	17
Part-time Job at Application	1	0	0	1	0	0	2	0	0	0	0	0	4
Occasional Job at Application	8	2	0	1	1	0	5	0	0	2	1	1	21
Less Than 3 Months	3	5	0	1	1	1	2	0	0	3	1	1	18
3 Months to 6 Months	2	7	1	1	1	1	1	1	0	1	4	1	21
6 Months but Less Than One Year	8	16	2	1	0	0	1	2	0	4	18	1	53
1 Year or More	14	23	2	1	1	0	2	6	0	6	14	2	71
TOTAL . .	42	57	6	7	5	2	13	9	0	17	41	6	205

* Excludes 69 cases who did not hold the job 3 months; includes 30 cases on whom follow-up was not complete; includes 11 cases placed by other agencies, self or relatives.

TABLE 15 PERCENTAGE OF PLACEMENTS OF OLDER DISABLED PERSONS - BY LENGTH OF UNEMPLOYMENT

Length of Unemployment	Population	% Placed	% of Total Placements
Never Worked	54	18	8
Part-time Job at Application	6	68	2
Occasional Job	37	56	10
Less Than 3 Months	35	51	9
3 Months but Less Than 6 Months	41	51	10
6 Months but Less Than 1 Year	93	57	25
1 Year or More	334	21	35
Total . .	600	-	99+

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The bulletin was prepared to assist school administrators, architects, and home economics teachers to develop programs in high schools and joint vocational schools. Suggestions are appropriate for high school, post-high school, and adult programs. Separate sections concern (1) child care aid, training, (2) homemaker's assistant (home and community service aids, hotel-motel aids, and health service personnel) training, (3) food service training, and (4) clothing and home furnishings service training. Each section covers division of space, construction specifications, and equipment and supplies. Sample floor plans are included. A chart summarizes space and equipment cost for the various kinds of programs. (FP)

VT 008 871

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OHIO VOCATIONAL HOME ECONOMICS

SUGGESTED SPACE AND EQUIPMENT COST For JOB TRAINING PROGRAMS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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MARTIN ESSEX
Superintendent of Public Instruction
STATE DEPARTMENT OF EDUCATION
State of Ohio

JUNE 1967

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The Instructional Materials Laboratory
The Ohio State University
1885 Neil Avenue
Columbus, Ohio 43210

FOREWORD

This bulletin has been prepared to help school administrators, architects, home economics teachers, and others plan and develop programs in high schools and joint vocational schools. Facilities suggested are adequate for programs for high school youth, post-high school youth, and adults for employment in occupations utilizing home economics knowledge and skills.

The State Home Economics Education Supervisory Staff has contributed to the development of this bulletin. Mrs. Betty Mackey, Assistant Supervisor, was assigned to assist with the employment programs and was responsible for writing and preparing the materials. We appreciate her leadership in the development of this bulletin.

We greatly appreciate the interest and assistance given us by:

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Dr. Helene Heye, Professor, Division Chairman, Child Development, Ohio State University.

It is hoped that this bulletin will provide assistance and encouragement to school administrators in the development of high quality programs in education for gainful employment.

Margaret McEniry
Head State Supervisor
Vocational Home Economics

INTRODUCTION

Details for space and equipment as listed in this bulletin have been developed at an optimum level. This is not to be interpreted as minimum requirements. Some good pilot programs have been conducted with less space and equipment purchased for less money than what is suggested here. The teacher is the key to the success of any program.

The facilities suggested would provide for self-contained work experience opportunities within the school. In schools located where community business, industry, and service institutions can provide opportunities for cooperative on-the-job training stations, less equipment will be needed in the school. Enough equipment should be available to provide sufficient work experience for the students to become prepared for employment prior to job placement in the community. If job stations are not available throughout the year for all students, facilities within the school will need to be available to provide work experience opportunities for the interim periods.

A classroom with the usual furnishings, plus study carrels with plenty of study materials available, would serve the needs for related classes.

Details for programs training Child-Care Workers, Homemaker's Assistants, Food Service Workers and Clothing Service Workers are listed. A room equipped to train people in the area of Health Service would need a laboratory similar to the one for Homemaker's Assistants. The starred items in Chapter II indicate the equipment needed for Health Service Programs.

The facilities to train Home Furnishings Service Workers would be similar to the Clothing Service training laboratory. Specific types of power sewing equipment would be needed for upholstery, slipcover and drapery making.

If a diversified cooperative* or occupational** type program is initiated, a classroom with a demonstration area and some equipment may need to be provided within the school in addition to the usual classroom. Plenty of study materials should be provided in the classroom.

Estimated costs are based on purchase prices during 1966. All figures are in round numbers and can be useful only in setting up a budget. All item costs will vary with size, materials used, and company producing the equipment. All prices are subject to change. Prices are listed for equipment manufactured in or near Ohio wherever possible. Manufacturers' list prices were used with an inflationary safety factor included in most cases.

*Diversified cooperative - Students of average and above average ability working in two or more areas of home economics job training.

**Diversified occupational - Students of below average ability working in two or more different areas of home economics job training

Betty Mackey
Assistant Supervisor
Vocational Home Economics

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SUMMARY OF SPACE AND EQUIPMENT COST FOR JOB TRAINING PROGRAMS IN HIGH SCHOOL

Facilities should be planned to provide space and equipment needed for the local program plans and job analysis of occupations available for employment of graduates.

APPROXIMATE SPACE AND EQUIPMENT COSTS FOR A MAXIMUM OF THIRTY STUDENTS

Home Economics Program	Square Feet	Approximate Equipment Costs
Child Care	2,800 - 3,600 inside 2,400 outside	$5,400 Nursery School $4,000 - $5,000 Additional for kitchen facilities
Homemaker's Assistant	2,400	$6,800 - $7,620 Furnishings and equipment (Major appliances loaned to school) $2,000 Books, supplies, etc. $8,600 - $9,400 With major appliances purchased
Homemaking Aids for Rest Homes or Health Service Aids	Similar to Homemaker's Assistant Program Needs	
Food Service	2,540 plus classroom 3,540 total (Less space will be required if some facilities are shared with the cafeteria)	$12,000 - $15,000 If cafeteria equipment is available to training program $24,000 - $48,500 If separate from cafeteria
Clothing and/or Home Furnishings Service	2,850 - 3,050	$6,350 and up
Diversified Program (Cooperative or Occupational Work Experience)	A homemaking classroom with the usual classroom facilities plus limited equipment needed to develop skills in the occupations for which the program is planned and to direct learning in job areas.	

CHILD CARE AID AND/OR ASSISTANT PROGRAM

DIVISION OF SPACE	Square Feet
Outside play area adjacent to indoor area and on same level - 1/2 paved, 1/2 turf	2,400
Inside Nursery School play area,* 1st floor preferred (35 square feet minimum per child excluding storage, food preparation and toilet areas)	1,200
Observation Room equipped with a shelf and a one-way vision mirror that gives full view of the nursery school	300 - 750
Classroom space, separate from nursery school	600 - 800
Toilet area - Facilities all child size and height, privacy provided, 1 toilet and 1 lavatory for each 8 children	150
Isolation area	50
Kitchen area	200
Storage and office space (unless part of centralized ware house and offices)	300 - 450
Total Square Feet < Inside	2,800 - 3,600
Total Square Feet < Outside	2,400

CONSTRUCTION SPECIFICATIONS (Use demountable walls wherever possible.)

Two outside exits must be provided for the nursery school.

Clean, comfortable flooring; carpet on indoor play area except lunch area and arts and crafts center. (Radiant heat would provide a warm floor.)

Inside storage should be provided for outdoor play equipment.

Low lavatory inside entrance from play area.

Built-in storage cabinets closed for teacher supplies, open for toy storage.

Sound-proof walls and ceiling.

** Not more than 15, 3 to 4 year old children per group are recommended. A maximum of 30 high school students per section is recommended, but the local school may set a lower maximum enrollment (15 to 30).*

Voice amplification system to pick up child-teacher conversation within the nursery school. (A tape recorder could be used)

Lockers or built-in storage space for children's coats, etc. (Near the main entrance.)

Low drinking fountain, inside and outside.

Built-in kitchen unless a kitchen is available near the nursery school.

Adequate lighting.

Tinted glass, blinds or draperies to reduce glare.

Adequate ventilation - screens for windows if the room is not air conditioned.

The preferred location for the block corner is near the storage for outside equipment so the hollow blocks for both indoor and outdoor play may be stored there.

The area for developing manipulative skills could be placed adjacent to the doll corner. It should be near open shelves and have a table which could also be used for eating.

The toilet area should be easily accessible to the outdoor play area.

Personal towel and toilet article hooks or cubicles near bathroom.

The art area should be accessible to water.

Select sturdy tables with adjustable legs and chairs with 12 inch seat height for 3 and 4 year olds. (Chairs of different sizes may be selected.)

NURSERY SCHOOL FURNISHINGS AND SUPPLIES	Estimated Cost
Mats for children's rest period @ $8.00 each	$ 160.00
or	
Cots (for afternoon nursery) @ $13.50 each	270.00
Chairs and tables for fifteen children	
4 tables @ $40.00 and up to $55.00 each	
20 chairs @ $7.50 each	350.00
Piano (new); if used, less cost	650.00
Chalkboard and screens	25.00
Fixed easel (More than one may be desirable)	20.00

CHILD CARE AID AND/OR ASSISTANT PROGRAM
Nursery Furnishings and Supplies (Cont.)

	Estimated Cost
Bulletin board, peg board, or magnetic board	$ 25.00
Drying racks for art work	4.00
Food cart	25.00
Sheet blankets (purchase by yard and hem if cots are used)	30.00
Sheeting (purchase by yard and hem if cots are used)	15.00
Instructor's supplies: desk, books, file cabinet, music, paper, paints, crayons, scissors	700.00
Dishes, silver and trays for food service for 15 children	100.00
Childrens' books, 30 - 50	100.00
Bookcases	50.00
Child size book display rack	14.95
Record player	40.00
Records, 1 - 15	50.00
Carpet (or area rugs), washable preferred, (omitted in lunch area). Vinyl floor covering may be used.	250.00
Wardrobe shelving or lockers	300.00
Medicine cabinet	25.00
Shelving for toys	300.00
Cabinets for storage	380.00
Total	$ 3,883.95

(Kitchen, dishwasher, range, refrigerator, and cabinets are not included in this estimate. Allow an additional $4,000 - $5,000 if these facilities are needed.)

OUTDOOR PLAY EQUIPMENT

	Estimated Cost
Simple outdoor play swings, etc., small size	$ 250.00
Wagons (3) @ $9.00 each	27.00
Tricycles (4) varied sizes @ $15.00 each	60.00
Sleds (3) @ $10.00 each	30.00
Teeter-totter (outdoor)	48.00
Watering cans (2) @ $1.75 each	3.50
Snow shovels (4) @ $ .85 each	3.40
Basketball (1)	1.00
Wheelbarrows (2) @ $3.50 each	7.00
Shovel set (1)	1.00
Rakes (3) @ $1.65 each	4.95
Traffic signs (4) -- donated from local safety director	
Buckets (4)	1.75
Total	$ 437.60

INDOOR PLAY EQUIPMENT

House gym set (48 inches)	$ 90.00
Blocks and cart - different sizes and types (Well finished to prevent splintering)	300.00
Walking boards (2) different sizes @ $7.00 each	14.00
Racing boat (1)	3.00
Puzzles (8) @ $1.50 each	12.00
Pounding bench (1)	3.00
Landscape peg board (1 set)	2.50
Construction toys (Tinker Toy type)	3.00
Snap-it-on building blocks (1 set)	3.00

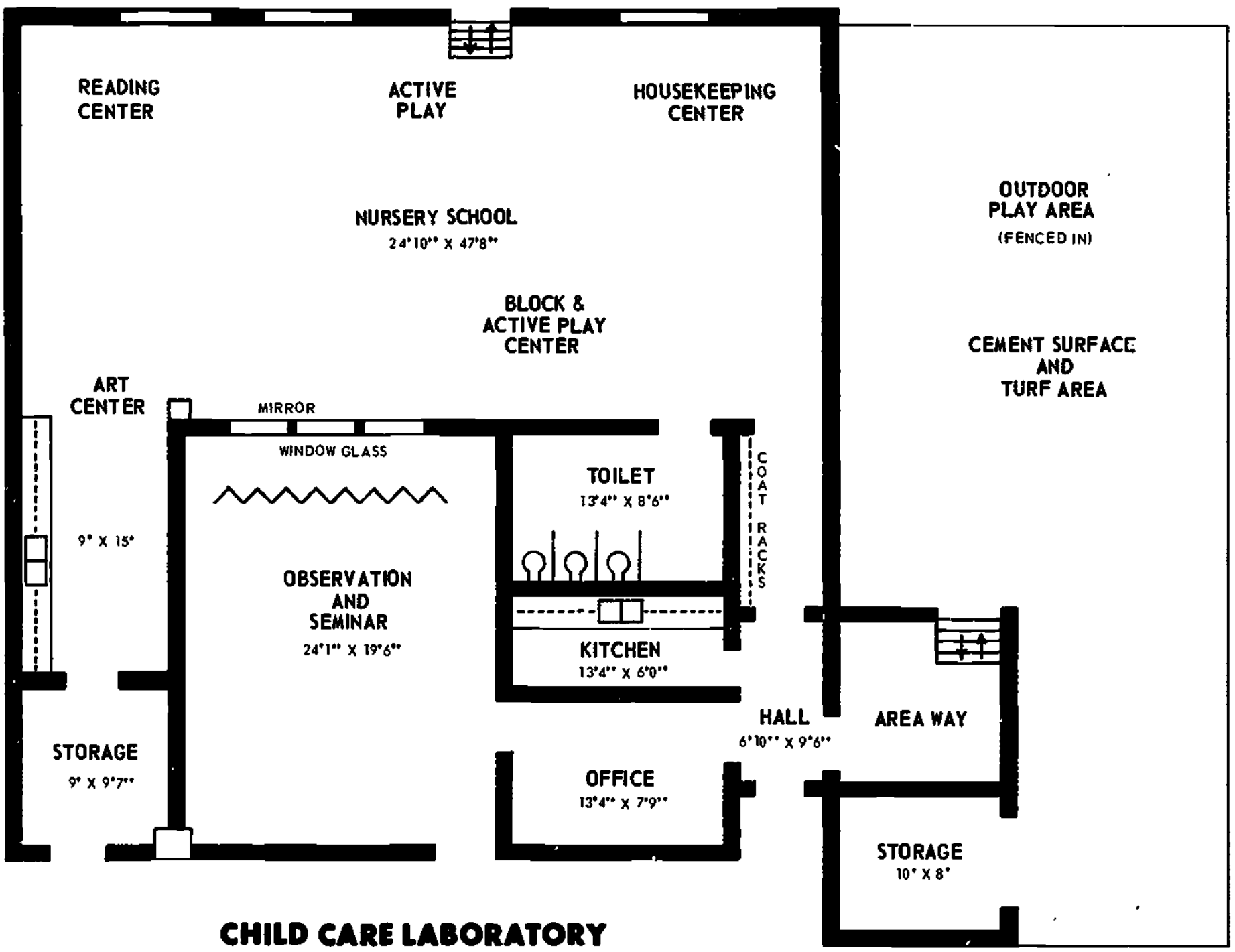
CHILD CARE AND/OR ASSISTANT PROGRAM
Indoor Play Equipment (Cont.)

	Estimated Cost
Hammer-Nail set (1 set)	$ 1.75
Play dishes and silverware (1 set)	1.98
Cooking pans (1 set)	5.00
Trucks (6) @ $10.00 - $15.00 each (Different sizes and types)	65.00
Bubble blowers (8)	2.00
Balls	2.00
Saw (1)	1.25
Hammer (1)	1.00
Tractor and trailer (1)	11.50
Train set (8 pieces)	85.00
Stove (1)	22.00
Rerrigerator (1)	23.00
Hutch cupboard (1)	29.00
Sink (1)	22.00
Doll bed (1)	11.00
Chest of drawers (1)	25.00
Doll high-chair (1)	3.00
Ironing board and iron (1) (sturdy wood ironing board)	10.00
Toy clock	5.00
Telephones (2) @ $1.00 each	2.00
Brooms (2) @ $ .60 each	1.20
Dish pan (1)	.25
Baking set (1)	2.00
Dolls (3) @ $5.00 - $10.00 each	20.00
Beehive (1) or playhouse	200.00

CHILD CARE AID AND/OR ASSISTANT PROGRAM
Indoor Play Equipment (Cont.)

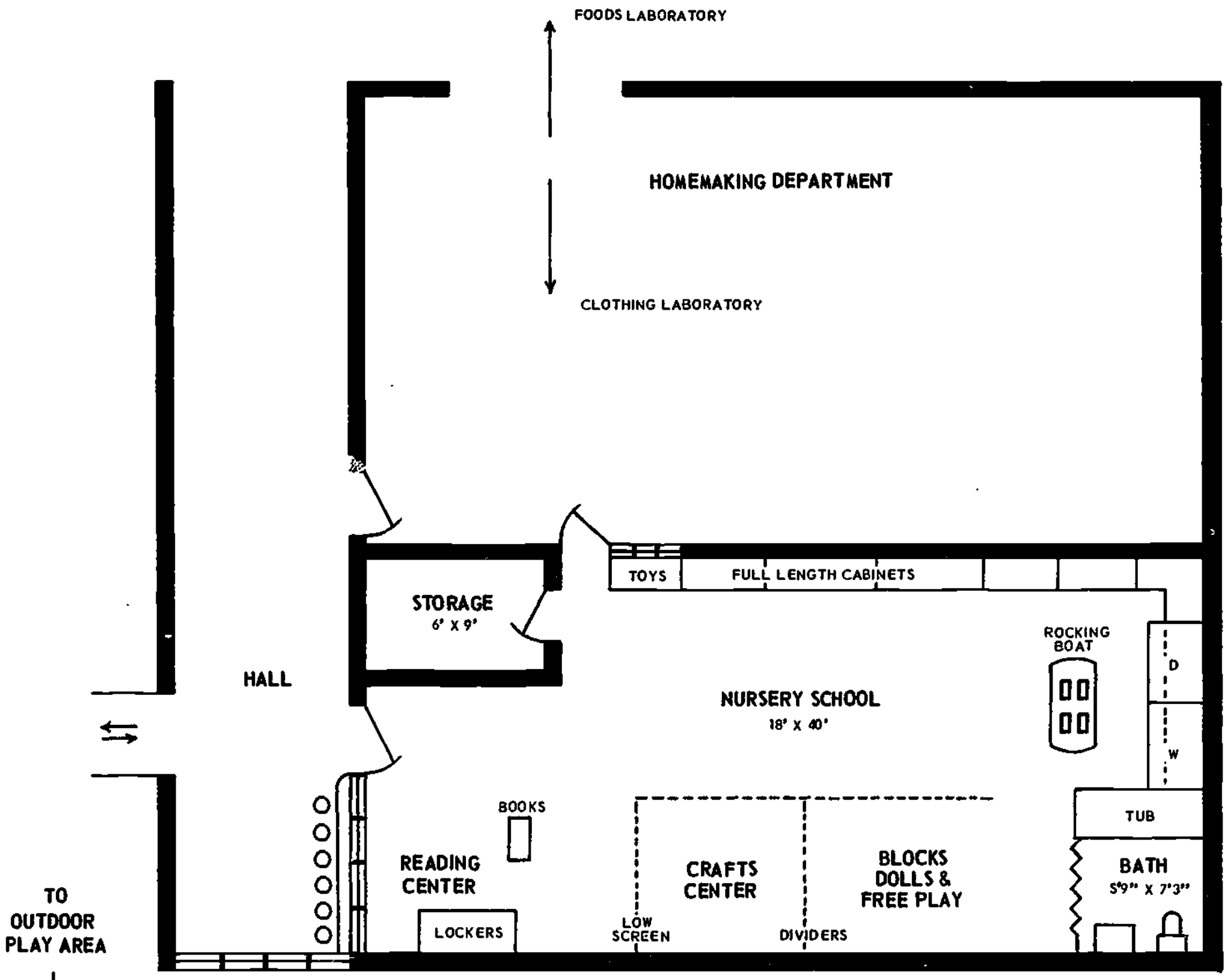
		Estimated Cost
Doll buggy (1)		$ 10.00
Workbench and vise (1)		38.00
Rocking rowboat (1)		25.00
Triangle musical instrument (1)		1.50
Rhythm sticks (6) @ $ .15 each		.90
Cymbals (2) @ $ .78 each		1.35
Jingles (3) @ $ .60 each		1.80
Tambourine (1)		1.35
	Total	$1,062.33
	Total for all equipment	$5,383.88
	Rounded figure	$5,400.00

The toys selected will vary with the ages of children and the available money and space.



CHILD CARE LABORATORY

Adapted from the floor plan at the Penta County Joint Vocational School. A separate classroom is also provided for related class work



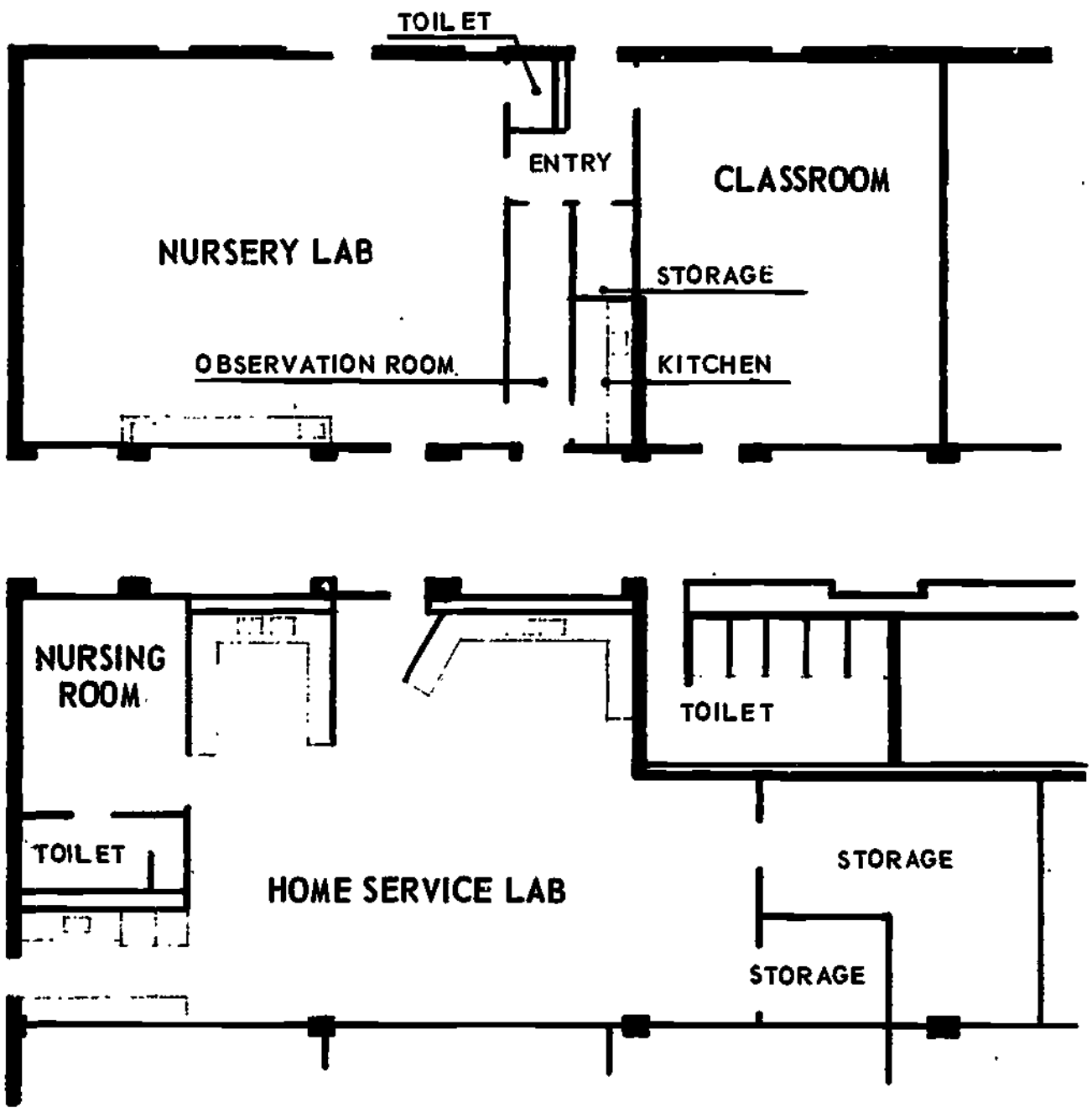
CHILD CARE AID LABORATORY

Morgan High School

McConnelsville, Ohio

The nursery school has been planned so that all equipment may be stored to arrange the room to train Home and Community Service Aids or Health Service Aids on alternate years with the Child Care training program.

10/11



NURSERY SCHOOL

HOME AND COMMUNITY SERVICE LABORATORY

The training kitchen is adjacent to the cafeteria kitchen and the food service laboratory at the top of the drawing is the dining room for sale of food produced in the training kitchen.

FOUR COUNTY JOINT VOCATIONAL SCHOOL

BUEHRER & STOUGH

ARCHITECTS & ENGINEERS

HOMEMAKER'S ASSISTANT(HOME AND COMMUNITY SERVICE AIDS, HOTEL-MOTEL AIDS, AND HEALTH SERVICE PROGRAMS) *

DIVISION OF SPACE

		Square Feet
*	Teaching area	700
	Home housekeeping area	250
*	Commercial housekeeping area	250
	Textiles area	100
*	Health service area (adjacent to the bath)	300
*	Bath	50
*	Kitchens (island type - 2)	235
*	Laundry	215
*	Walk-in storage (also storage related to each learning area should be part of each learning unit)	300
	Total Square Feet	2,400

CONSTRUCTION SPECIFICATIONS

Use demountable walls wherever possible.

* Arrange the area into learning units with equipment storage space and work experience space related to what will be taught in each unit. (One classroom that can be darkened.)

  A portable demonstration table with attached mirror should be provided.

  Wall and floor finishes need to be similar to home type surfaces in all areas except commercial housekeeping unit.

  Large samples of additional wall and floor surfaces, both hard and soft, may be fastened to portable frames for experience with varied types of cleaning agents and equipment on different surfaces.

  One or two additional separate classrooms for two sections on a two year program.

* Sinks, sorting table, storage area and laundry equipment in laundry area.

* Ample electrical housepower; enough heavy duty circuits and outlets to permit use of many appliances at one time.

  Two types of kitchens; one with portable type equipment and one built-in unit kitchen may be desirable.

**All starred items would be needed for programs that train Homemaking Aids in Nursing and Rest Homes or Health Service Aids.*

If the program is planned so that students will be trained only for employment in private homes, then area may be arranged to provide each room of a simulated home.

* The room can be planned so that it is flexible enough to offer different courses if learning centers and work experience space are adequate. One year Health Service Aids could be trained; another, Hotel and Motel Aids; and another strictly Homemaker's Assistant if portable units are provided in place of stationary built-in cabinets and equipment.

All electrical equipment in Ohio public schools must be grounded.

EQUIPMENT (LARGE)

	Estimated Cost
Demonstration table with mirror (portable)	$ 165.00
* Student tables and chairs (flexible) for 25 students	450.00
* Chalkboard and bulletin board type preferred	40.00
* Book shelves	50.00
Built-in cabinets and counter space in kitchen, laundry and bathroom areas. (Portable wherever feasible)	3,000.00
* Sinks -- double in kitchen, single in laundry	350.00
Dining and living room furnishings, if space and budget permits	1,000.00 - 1,800.00
Irons and ironing boards (3) @ $25.00 each	75.00
Sewing machines (3) @ $200.00 each	600.00
* Utensils, dishes, flatware, glassware, and linen for kitchen	400.00
* Water heater (booster)	100.00
* Roll-away bed (one or more) with cover	40.00

**All starred items would be needed for programs that train Homemaking Aids in Nursing and Rest Homes or Health Service Aids.*

	Estimated Cost
* Screens (2) @ $25.00 each	$ 50.00
* Hospital bed - hand operated type, mattress included	150.00
* Hotel cart (cleaning supply cart)	40.00
Total for Large Equipment	$6,510.00 - 7,310.00

SMALL EQUIPMENT FOR TEACHING HEALTH SERVICE

* General — $ 50.00

1 bed pan
2 bed rests
2 bed trays
12 blocks for raising bed (different sizes)
1 heating pad
1 hot water bottle
1 ice cap
1 enema bag

* Linen and Bedding — 210.00

3 bedspreads (cotton lightweight)
3 blankets
12 bath towels
12 hand or face towels
3 mattress protectors
6 pillows
12 pillowcases
10 cotton sheets (some fitted and some plain)
3 cotton draw sheets
1 waterproof sheet
12 wash cloths
3 wool blankets

* Miscellaneous — 50.00

5 basins (small, enamel)
5 drinking tubes
3 medicine droppers
5 pitchers (large)

**All starred items would be needed for programs that train Homemaking Aids in Nursing and Rest Homes or Health Service Aids.*

Small Equipment (Cont.)

	Estimated Cost
5 pressure rings	
1 stop watch	
12 fever thermometers (various types)	
3 trays (lap)	
1 home medicine cabinet with contents	
Books, supplies, cleaning and laundry supplies	
Total if Appliances Are Loaned to School	$6,820.00 - 7,620.00

ADDITIONAL COST IF APPLIANCES ARE PURCHASED

* Refrigerator - freezer (15 cubic feet)	$ 300.00
* Washer	275.00
* Dryer	225.00
Dishwasher (1 built in and 1 portable may be selected)	400.00
* Disposer	35.00
* Range (30" table top)	200.00
* Small appliances	100.00
* Sweepers (one tank type and one upright)	120.00
Scrubber and polisher combination (21 pound minimum)	100.00
Shampooer (carpet)	40.00
Total for Appliances	$1,795.00 and up
Total if All Equipment Is Purchased	$8,615.00 - 9,415.00
Rounded	$8,600.00 - 9,400.00

**All starred items would be needed for programs that train Homemaking Aids in Nursing and Rest Homes or Health Service Aids.*

DETAILS FOR EQUIPMENT TO TEACH HOUSEKEEPING PRACTICES (Private Homes)

No estimate of prices available

Furniture (part of estimated cost listed on Page 16)

Tables:
- 1 dining, to seat 8-10
- 1 coffee
- 3 end
- 1 drop-leaf (occasional)

3 lamps, floor and table
1 rug

Upholstered furniture:
- Sofa
- 2 chairs

Chairs:
- 8 dining
- 2 occasional
- 2 upholstered

1 buffet
1 serving cart
1 bookcase (may be built in)
1 bench or hassock

Household Tool Kit

1 carpenter rule
1 flower scissors
1 glass cutter

Hammers:
- 1 regular
- 1 tack
- 1 upholstery

1 paint scraper

Pliers:
- 1 regular
- 1 needle nose
- 1 plumb line

Putty knives:
- 1 narrow
- 1 wide

Screw drivers:
- 1 large
- 1 small

1 steel tape
Upholstery tack puller
Stapler (large carpet type)
1 T-square, metal
1 web stretcher
1 wire cutter
Variety of upholstery needles

Cleaning and Laundry Supplies

Various types as available locally

Accessories

Candle holders
Decorative items
Frogs, for flower arrangements
Pictures, framed

HOMEMAKER'S ASSISTANT
Details for Equipment to Teach Housekeeping Practices (Cont.)

Equipment

4 baskets for cleaning supplies
Brooms
2 buckets
2 dust pans
2 mops
Sponges
Chamois cloths

Miscellaneous

Dividers - various sizes and types for cupboards and closets

Fabrics and Textiles:
fabric swatches, 1/2 yd, in length
textile lengths, 1 yd. in length

Furniture cleaners and polishers

SUGGESTED MATERIALS TO USE IN PLANNING THE FURNISHINGS (Samples of all that are not part of permanent interior finishes may be provided)

(No estimate of prices available)

Wall Finishes

Plaster
Painted
Wall paper
Vinyl wall covering

Dry wall
Painted
Vinyl covering

Wood paneling

Marlite

Floor Finishes

Hardwood
Vinyl yard goods or tile (different grades)
Carpet - nylon, wool, acrilan, Herculon (various types of construction)
Ceramic
Asphalt tile
Inlaid linoleum (different grades)
Cork tile or Vinyl simulated cork

Suggested Materials to Use in Planning the Furnishings (Cont.)

Surface Finishes for Counters

Ceramic
Stainless steel
Formica

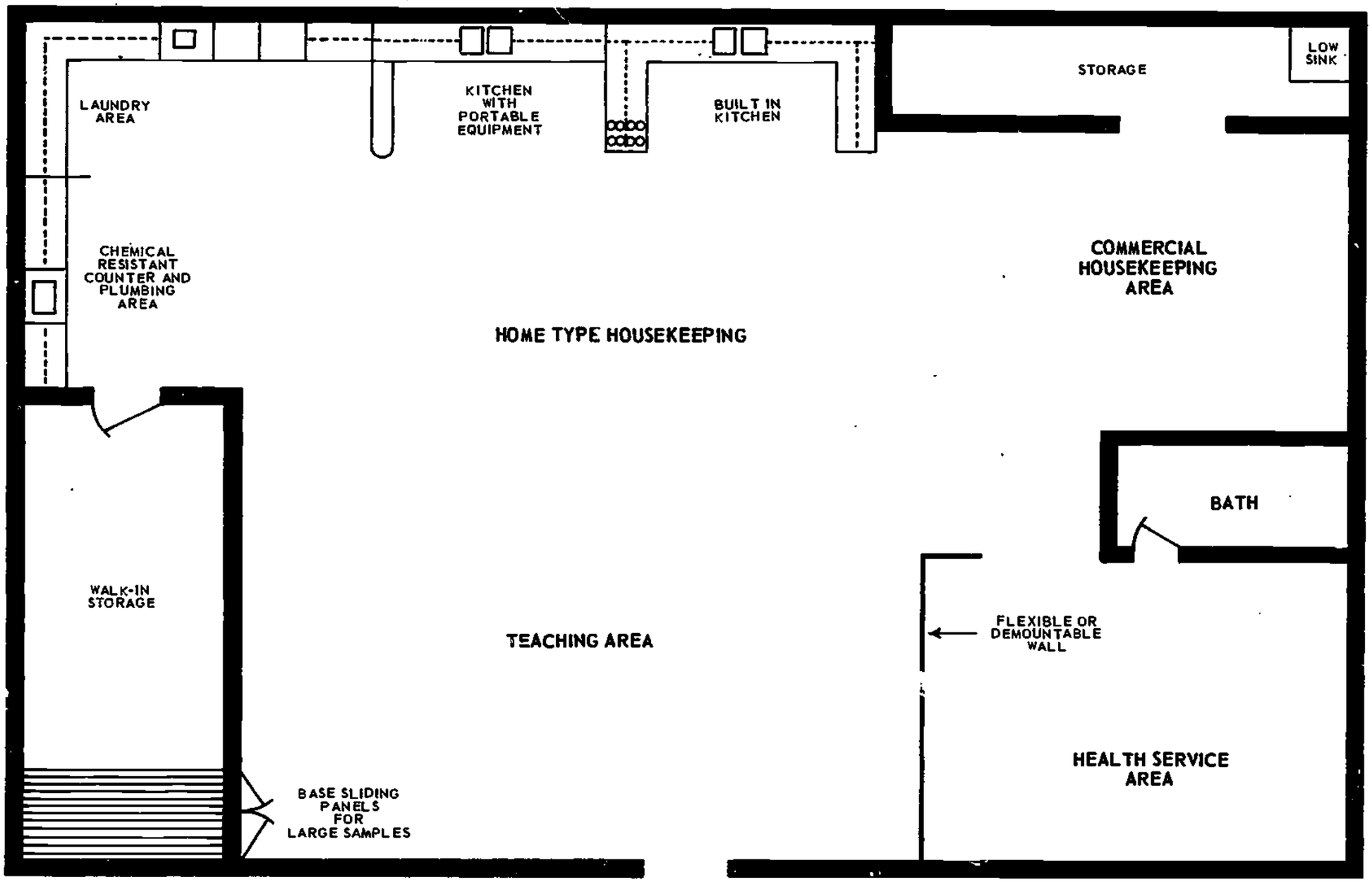
Furniture Finishes and Woods

Leather
Upholstered furniture fabric and vinyl sample coverings
Veneer and solid wood
Various kinds of woods and finishes
Various types of furniture construction
A variety of furniture styles selected to make a harmonious room when combined

Household Furnishings

Cooking utensils - a variety of types of materials as:
Stainless steel
Aluminum
Combination stainless steel and aluminum
Cast iron ware
Copper
Silicone coated pans
Pyrex

Dishes and silverware - a variety of materials and styles (formal and informal) as porcelain, plastic ware, pottery, glass, earthenware, ovenware, sterling, stainless steel, and plated silverware.



COMMUNITY and HOME SERVICES LABORATORY

Classroom space should be provided if there is more than one section of students.

FOOD SERVICE TRAINING CENTER (FOR BOYS AND GIRLS)*

DIVISION OF SPACE

	Square Feet
Foods laboratory (to provide work stations for 10-15 students)	1,440
Dining area or faculty dining room (related classroom part time) to accommodate approximately 40 persons at 14-16 square feet per person)	600
(Dry) storage of food supplies	200
Student locker room (girls) for approximately 25 students; restroom, shower, and lavatory	300
Student locker room (boys); restroom, shower, and lavatory (If boys will be taking the course)	300
Related classrooms - if enrollment requires more than one section or if it is a two year program	700
Total Square Feet	3,540

CONSTRUCTION SPECIFICATIONS (Use demountable walls wherever possible.)

Place this section on ground level if possible. If not, it should be readily accessible to receiving entrance, also elevator provided.

An outside entrance way to the dining area should be provided if the food service will be open to the public.

Kitchen should be on an outside wall or in a single story area so that exhaust fans can be installed.

The training kitchen should be located near the cafeteria kitchen so that some equipment may be utilized for both.

A dry storage room should have temperature and humidity controls and be equipped with locks.

Storage area for cleaning equipment and supplies must be provided.

**15-30 students may enroll in the course but assignments in the laboratory will need to be rotated with 1/3 - 1/2 of the class working in the laboratory at one time.*

SOME DEVELOPMENTS IN EQUIPMENT FOR FOOD SERVICE *

Cutting boards of rubber and tables with stainless steel tops are recommended for sanitary reasons.

Griddles, convection ovens, steam kettles and speed pressure steamers are being used for much of the food preparation formerly done on a range.

Some of the new kitchens are omitting potato peelers since there is an increased use of processed or partially prepared potatoes such as frozen, dehydrated, potato flakes and pre-peeled potatoes.

Glazed tile or ceramic tile are most often recommended for kitchen walls in institutions because they are more easily cleaned and do not react to cleaning chemicals.

Several types of hard surface floor coverings are suggested in the literature as suitable for an institutional food service kitchen. In Ohio, quarry tile is successfully used in many kitchens. Ceramic tile has also been recommended as suitable. If a resilient floor covering is preferred, seamless vinyl yard goods in a heavy gauge or troweled vinyl flooring has been suggested because it would eliminate crevices for dirt to collect. Asphalt tile and vinyl asbestos tile have been satisfactory in some institutional kitchens.

Equipment bearing the label N.S.F. indicates it has been approved by the National Sanitation Foundation and that it complies with the Foundation standards for sanitation.

All large pieces of equipment may be on casters which permits flexibility in arrangement and use and can be moved for cleaning or they must be firmly attached to floor or wall mounted.

Stainless steel equipment is more durable than that of other materials and should be used any place where equipment comes into contact with food or large amounts of water.

Equipment which can be used for several purposes is desirable for a food service instruction laboratory rather than individual pieces of equipment for each process; for example, a mixer with attachments for cutting, dicing, and slicing.

Select standard sized equipment whenever possible since fabricated equipment is more expensive.

**Ideas were partially reproduced from materials prepared by Ata Lee, Regional Representative, Home Economics, D/HEW - DVTE, Atlanta, Georgia.*

FOOD SERVICE TRAINING CENTER

SOME GUIDES FOR THE ARRANGEMENT OF EQUIPMENT IN A FOOD SERVICE INSTRUCTION LABORATORY *

Avoid having paths of travel cross in order to avoid accidents.

Major traffic aisles should be at least 5 feet wide. Three feet should be provided between work tables and equipment except for ovens or kettles where the aisle should be 3 1/2 - 4 feet to allow food trucks to pass in and out.

If the baking and salad supply areas are located next to each other, one refrigerator can serve both units.

The salad area should be located near the dining area with refrigeration provided for prepared salads.

The dishwashing area should be located near the dining area to avoid carrying soiled dishes across the kitchen and to make clean dishes accessible to the serving area.

The storage area for supplies is best located near the delivery entrance.

The laundry equipment and storage for cleaning supplies and trainees' lounge should be located away from the food preparation areas, without doors opening directly to the kitchen or dining room area.

Each work area should have a garbage can, preferably on casters, or dollies so as to be easily moved. Provisions should be made for washing and storing cans. (Or install garbage dispersal units.)

For teaching, some prefer to keep the center of the floor clear. This permits seating of students in front of the work areas for observing demonstrations. The instructor can see activities in all work areas without the obstruction of the cooking area in the center of the laboratory.

Overhead utensil racks should not be used and the space should be kept as free as possible permitting the teacher to see all work stations.

Both gas and electric appliances should be available for student use.

All electrical equipment must be grounded, with adequate heavy duty circuits used to provide a sufficient number of conveniently located outlets.

**Ideas from "Layout, Equipment and Work Methods" for school lunch kitchens and serving lines; Marketing Research Report No. 753 Agricultural Research Service, United States Department of Agriculture.*

FOOD SERVICE TRAINING CENTER

EQUIPMENT (MAJOR)

Starred items should not be duplicated in the training laboratory if available for student use in cafeteria kitchen.

Equipment is listed in areas of arrangement.

	Estimated Cost Low - High
* Dry Storage - closed room having built-in shelving with space planned to allow cleaning and convenient storage.	$
Shelving - Metal shelving will permit adjustability of space.	375.00
* Scales - platform type	50.00 - 150.00
* Bins - rubber or plastic, mounted on dollies	100.00 - 195.00
Storage Freezer - (reach-in) for training kitchen, (walk-in) for cafeteria	450.00 -1,850.00
Refrigerator - both freezer and refrigerator should be placed outside storeroom but adjacent to it where it is accessible to work areas. Reach-in refrigerator and freezer should be adequate for the training laboratory if a walk-in type can be shared with the cafeteria.	400.00 -1,675.00
* Trucks - Hand and/or platform	50.00 and up
* Dollies - round or square (2 or more) @ $35.00 each	70.00
* Supply carts with rimmed shelves, brakes, casters (each)	37.50 - 200.00
Demonstration table - portable, with mirror mounted, closed front and open shelves teacher side. Usable in each area.	165.00 - 700.00
Lockers and bench	900.00

FOOD SERVICE TRAINING CENTER
Equipment, major (Cont.)

Vegetable and Meat Area	Estimated Cost Low - High
Wall cabinets in each area as needed for storage of student utensils.	$300.00 - 800.00
* Portion scale	12.50 - 25.00
Work table (omit overhead rack so teacher can see all students)	250.00 - 1,250.00
* Small vegetable peeler - optional, depending on use of raw foods (15 lb. portable)	240.00
Range - six burners with double conventional ovens or:	425.00 - 750.00
One large oven or	(gas) (electric)
Two hot plates	300.00
Broiler	425.00 - 1,050.00
Griddle top range oven or cabinet base or small free standing	140.00 - 875.00
Hood over all cooking area with exhaust fan, filters and lights.	400.00 - 600.00
(Galvanized is cheaper to install but but more difficult to clean.)	400.00 - 600.00
Stainless steel - $1,300.00 - 2,500.00	
Deep fat fryer(s)	300.00 - 650.00
* Meat slicer (if necessary for type of food prepared)	150.00 - 630.00
Pressure pans - 2 sizes @ $12.50 each (family-type)	25.00
Pan rack - hung against a wall	200.00
* Steamer or steam jacketed kettle or combination (self-contained)	500.00 - 2,500.00
Refrigerator (small)	250.00 - 500.00

FOOD SERVICE TRAINING CENTER
Equipment, major (Cont.)

Vegetable and Meat Area (cont.)

	Estimated Cost Low - High
* Portable hot and cold serving cart or * Cafeteria serving counter $100 per linear foot equipped (separate facilities may be necessary) - 10 feet	$ 500.00 - 1,000.00 1,000.00 and up

Baking Area (for baking breads, pastries, and desserts)

Work table (60"), stainless steel surface is more sanitary than hardwood tops. Leave open space underneath for plastic, rubber or metal bins holding baking staples. Galvanized or aluminum base.	550.00 - 1,025.00
Built-in surface burners - 4 separated into 2 units	200.00
Ovens - double deck	450.00 - 1,025.00
Portable pan rack	200.00
Mobile bulk storage (portable bins) aluminum or plastic	40.00 - 150.00
Cooling racks for pies	50.00
Mixer with attachments (anodized aluminum is NSF approved). Mixer stand, if portable mixer is selected, included in price.	585.00 - 1,250.00
* Tilting steam kettle and stand (if needed). Smallest size available should be purchased.	1,000.00
* Scales - 25" spring	48.00
Small refrigerator - unless area is accessible to another refrigerator	200.00 - 425.00

FOOD SERVICE TRAINING CENTER
Equipment, major (Cont.)

Salad Area (for making salads, sandwiches, cold plates, beverages, juices, and ice cream service)

	Estimated Cost Low - High
Work table - stainless top (sink if needed)	$ 250.00 - 900.00
Refrigerated display case mounted on serving counter for salads and desserts - 4' (reach through if feasible) and/or a refrigerated cabinet for trays of setup salads.	400.00 - 900.00
Coffee urn - 50 cups	25.00
Coffee brewer	50.00 - 650.00
Serving counter, portable with shelves	250.00
Cutting boards with sanitized hard rubber tops 6 @ $9.00 each - 12" x 16"	54.00 - 200.00
* Toaster - institution type	65.00 - 130.00
* Sandwich grill (large)	175.00
* Butter cutter (pre-cut butter may be available)	16.00
Refrigerator - unless one for another area is close	200.00
* Ice cream cabinet (loaned, if possible)	
* Milk cabinet (loaned, if possible)	

Sanitation or Dish and Pot Washing Area

* Dishwashing machine with booster heater (smallest available)	1,000.00 - 2,100.00
* Dishwasher canopy - optional	300.00 - 400.00
Three compartment stainless steel sink for pots and pans with drainboards and sanitizer (Coved corners)	665.00 - 1,310.00

FOOD SERVICE TRAINING CENTER
Equipment, major (Cont.)

Sanitation or Dish and Pot Washing Area (cont.)

	Estimated Cost Low	High
* Dish scraping table	$ 250.00	
* Pre-rinse spray and sink with trays	400.00	
Disposal system, series of activated sludge, sewage plant, aeration and amoebic action to be disposed of through natural drainage	2,200.00 -	4,000.00
Garbage disposer	280.00 -	500.00
* Clean dish carts	250.00	
* Shelves or racks for storage of clean dishes or dish tables	500.00 -	2,000.00
Garbage cans to fit on dollies in each work area	12.00 -	18.00
Closed clean dish storage		
Broom, dust pan	2.50	
Floor brush	7.50	
Wet mop and pail (cleaning supplies from school warehouse)	27.00	

Serving Area (serving area should be adaptable to cafeteria, buffet, formal, family type and hospital service)

Dining room service: (The cost will vary with quality of each item and the number to be served)	300.00 -	500.00
Trays		
Dishes		
Glassware		
Silverware		

FOOD SERVICE TRAINING CENTER
Equipment, major (Cont.)

	Estimated Cost Low	High
Sanitation or Dish and Pot Washing Area (cont.)		
Pitchers Linens Roll baskets Salt and peppers Table linen		
Dish truck	$ 100.00	
Tables and chairs for seating 40 people	775.00 -	1,500.00
Tile or carpet floor covering	200.00 -	400.00
Tray stands (6)	120.00	
Waitress stands (2)	200.00 -	1,300.00
Pick-up cart - stainless (1)	45.00	
Supply island or serving counter (may not be necessary in a small operation)	500.00 -	2,600.00
Cash register	600.00	
Water station	60.00	
Laundry (unless linen supply service is preferred)		
Washer	200.00 -	400.00
Dryer	200.00 -	400.00
Total for Large Equipment	$ 22,847.00 -	47,599.00

FOOD SERVICE TRAINING CENTER

EQUIPMENT (MINOR)*

Some medium weight aluminum, stainless steel and some heavy aluminum, no chrome, tin or enamel.

	Estimated Cost
Pudding pans (3) 12 ' x 18"	$ 6.00
Roast pans (3)	20.00
Loaf tins (6)	23.00
Muffin tins (12)	80.00
Colander (1)	2.00
Pie pans (1 dozen)	12.00
Meat thermometers (3)	10.00
Sheet cake pans (10)	47.00
Dishpans (3)	25.00
Mixing bowl set (3, 5, and 8 quart), stainless steel or sanitized aluminum	40.00
Pastry brushes (2)	3.50
Vegetable brushes (2)	.30
Measuring cups (24), 1 cup, 2 cups, quart and gallon sizes	66.00
Dipper (1)	5.50
Biscuit cutters (6)	3.00
Wooden spoons 12" or other cook's spoons sets (6)	.90
Measuring spoons (6)	3.00
Gelatin molds (2 dozen)	1.50

**The numbers of each depends on the projected sizes of classes. The type of each is dependent upon the kind of food outlet.*

FOOD SERVICE TRAINING CENTER
Equipment, minor (Cont.)

	Estimated Cost
Spreaders (2)	$ 2.10
Pie knife (1)	1.60
Turner (1)	1.15
Ladles (4) 2, 4, 6, and 8 ounces	5.40
Fry pans (12) different sizes	60.00
Containers (12) different sizes	7.00
Strainer (1)	.90
Timer (1)	3.75
Tongs (3", 6", 9", 12")	4.00
Spatulas (6)	12.00
Solid spoons (3)	3.00
Slotted spoons (1)	.85
Perforated spoons (2)	1.85
Bottle opener (1)	.80
Corkscrew (1)	.40
Grater (1)	2.00
Rotary egg beaters (4)	10.00
Piano wire whip (6) @ $2.50 each	15.00
French whip (6) @ 2.50 each	15.00
Kettles (2), 3 gallon capacity, stainless steel, (aluminum cheaper)	30.00
Sauce pans (2) 2 1/2 quart stainless steel	22.00
Stock pots (2) 3 gallon capacity, stainless steel (aluminum cheaper)	42.50

FOOD SERVICE TRAINING CENTER
Equipment, minor (Cont.)

	Estimated Cost
Double boilers (2)	$ 47.00
Iron skillet (1) 20" size	15.00
Baking dishes (6)	5.50
Ice cream scoops (3)	10.80
Flour sifters (2)	6.80
Funnels (2)	3.00
Turners (2), different types	3.00
Rolling pins (6)	18.60
Poultry shears (2)	6.20
Trays (6)	20.00
Rubber scrapers (12)	4.50
Knife sharpener or purchase as attachment to mixer	12.70
Pastry cloths (6)	6.00
#2 Can opener (1)	10.00
#3 Grinder (1)	8.00
Cleaver (1)	1.50
Slicer, cheese (1)	3.00
Boning knives (2)	3.00
Cook's forks (3)	10.00
Steel forks (2)	5.40
Apple corers (2)	1.10
Chopping knives (2), French or chef	2.10
Ash trays (12)	1.25
Paring knives (6)	3.00

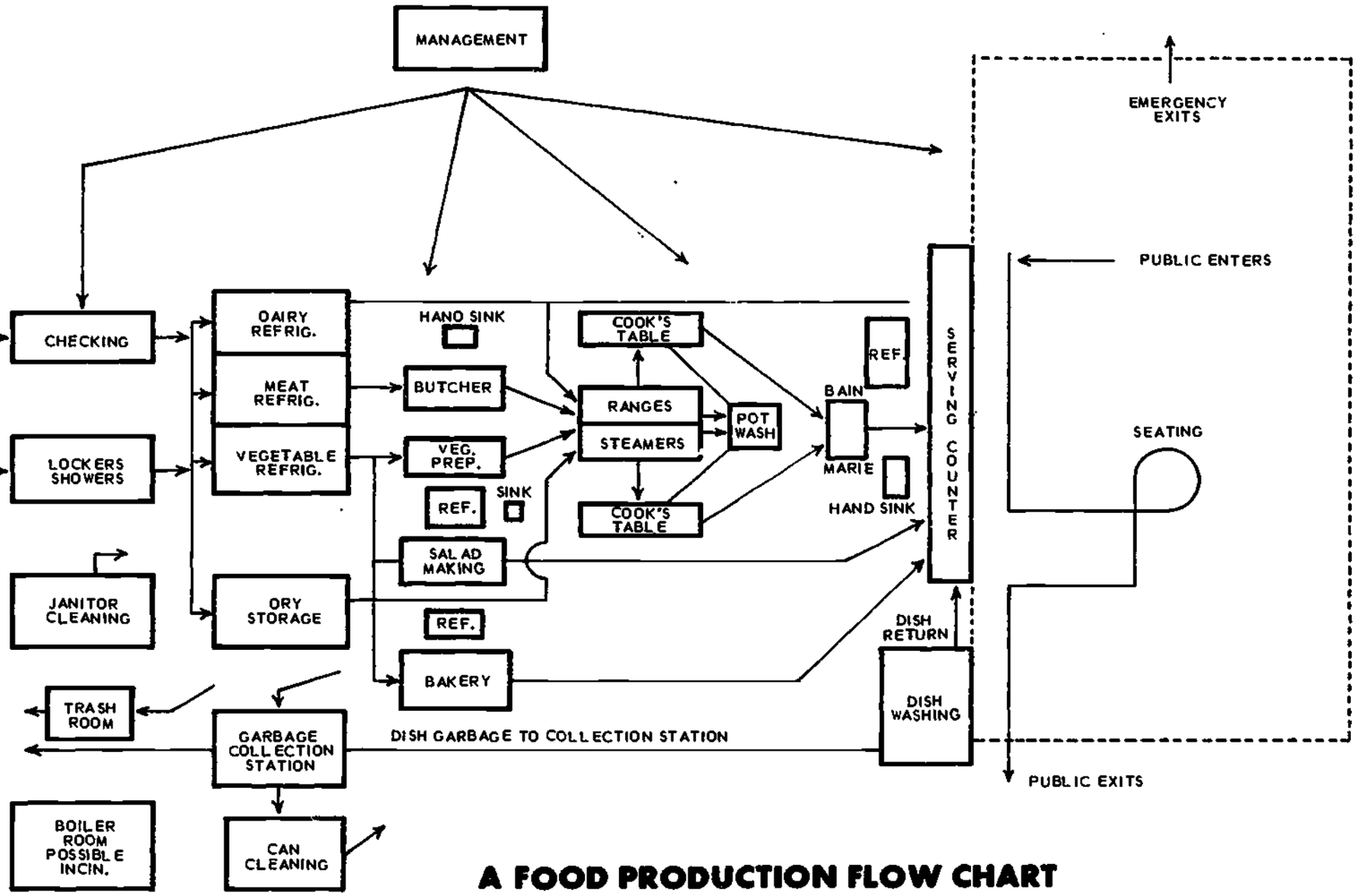
FOOD SERVICE TRAINING CENTER
Equipment, minor (Cont.)

	Estimated Cost
Plastic water pitchers (8)	$ 10.80
Pot pie pans (1 dozen)	7.30
Custard cups (1 dozen)	3.75
Sauce pans (12) for small quantity use in at least 2 sizes	60.00
Total for small equipment	879.30
Total for all equipment	$23,726.30 -48,478.30
Rounded Figure	$24,000.00 -48,500.00

Desk, teaching supplies, file cabinet, chalk board and peg or magnetic board.

Additional equipment if operation permits

Ice-making machines
Convection oven
Pastry machine
Soda fountain equipment
Pressure fryer
Infra red heat lamps
Closed circuit television and facilities to produce video tape recordings.
Steamer, "jet" type

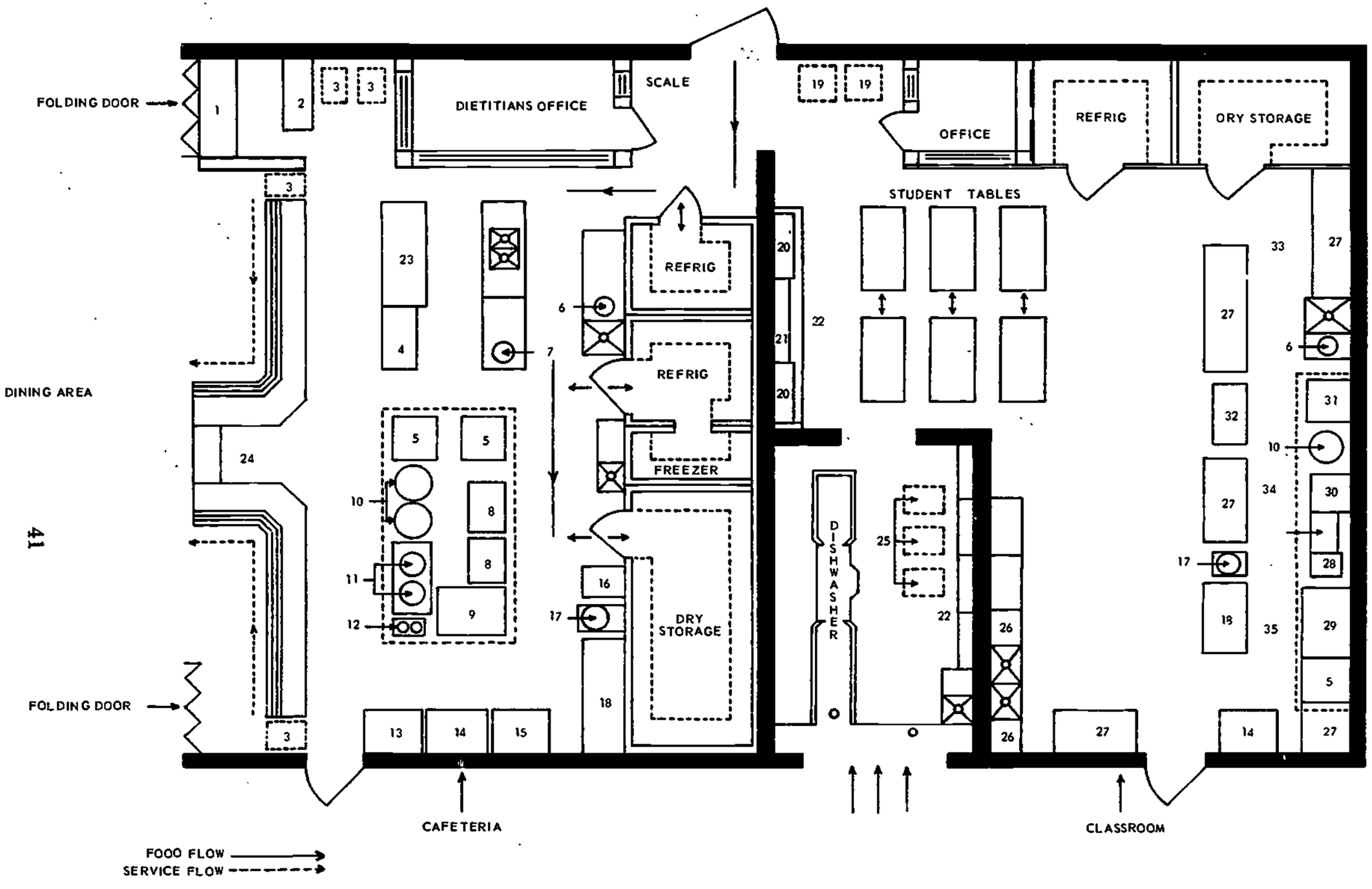


A FOOD PRODUCTION FLOW CHART

An example of a flow chart that should be developed for a food service operation A planned flow chart would be helpful as the layout is planned and equipment selected for a food service training laboratory. A straight line work flow with a minimum of crisscross of traffic is desirable. A minimum of walking decreases the man hours of work required per meal

TOURIST AND RESORT SERIES · Coop. Ext. Service, Exp. Station, School of Hotel, Restaurant and Institution Mgt . Michigan State University, East Lansing, Michigan.

No.	Qty.	Item	
1	1-	Snack Bar	
2	1-	Back Bar	
3	4-	Dish Rack	
4	1-	Pass Thru Ref.	
5	3-	Convection Oven	
6	2-	Peelers	
7	1-	Portable Slicer	
8	2-	3 Compartment Ovens	
9	1-	3 Deck Oven	
10	2-	Steam Kettles	
11	1-	Tilting Kettle	
12	1-	Hot Plate	
13	1-	Dessert Table	
14	2-	Cooking Rack	
15	1-	Cooling Rack	
16	1-	Proof Box	
17	2-	Mixer	
18	2-	Baker's Tables	
19	2-	Cart	
20	2-	Library	
21	1-	Blackboard	
22	2-	Dish Storage	
23	1-	Salad Prep.	
24	1-	Cashier Station	
25	1-	Portable Dish Rack	
26	2-	Drain Board	
27	5-	Work Table	
28	1-	Fryer	
29	1-	Bake Oven	
30	1-	HT Range	
31	1-	Steamer	
32	1-	Refrigerator-Freezer	
33	1-	Vegetable Prep. Area	
34	1-	Main Prep. Area	
35	1-	Baker's Prep. Area	

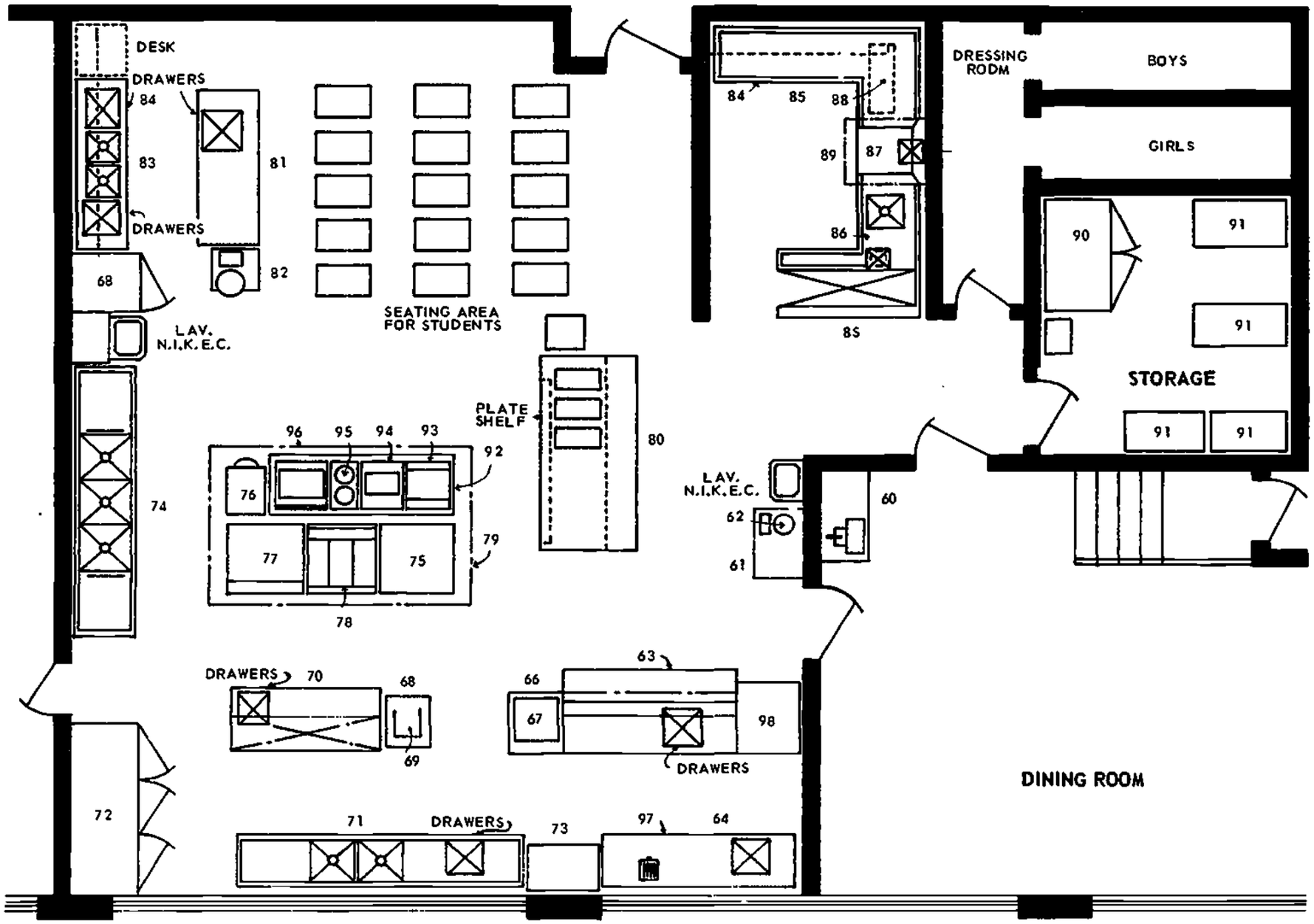


A Suggested Plan For a Food Service Laboratory

ADJACENT TO A CAFETERIA KITCHEN

Compliments of Boomar, R , Moser, W , United Gas-Improvement Co

No.	Qty.	Item	Description
60	1-	Waitress Station	Custom Built
61	1-	Urn Stand	Custom Built
62	1-	Coffee Maker	Jet-O-Matic #A-35-3G
63	1-	Salad Preparation Table	Custom Built
64	1-	Work Counter	Custom Built
65	1-	Refrigerator	Koch #M-15 Portable
66	1-	Slicer Stand	Seco #MX-29-T Portable
67	1-	Slicer	Hobart #1612
68	1-	Mixer Stand	Seco #MX-29-T Portable
69	1-	Mixer	Hobart #AS-200
70	1-	Bakers Table & Bins	Custom Built & Union Steel #UT-625
71	1-	Bakers Table & Sink	Custom Built
72	1-	Refrigerator	Koch #M-3S Portable
73	1-	Pan Rack	Seco Main-Line #ML-2436-5L
74	1-	Utensil Sink Assembly	Custom Built
75	1-	Convection Oven	Blodgett #EF-111 Portable
76	1-	Steamer & Portable Stand	Market Forge #ST-E & Custom Built
77	1-	Broiler	By Owner
78	1-	Range	By Owner
79	1-	Canopy	Custom Built
80	1-	Serving Counter	Custom Built
81	1-	Work Table	Custom Built
82	1-	Kettle & Stand	Greon #T3B-4-20 #TS-G Portable
83	1-	Work Counter & Sinks	Custom Built
84	2-lts	Wall Cabinets	Geneva #HW3-3030
85	1 st	Dish Tables	Custom Built
86	1-	Disposer	National #34B-NC
87	1-	Dishwasher	Toledo #TKM-27 Automatic
88	1-	Booster Heater	Thrush #320
89	1-	Canopy	Custom Built
90	1-	Freezer	Koch #MF-25 Portable
91	4-	Store Room Shelving	Metro Ezecta Shelf
92	1-	Portable Stand	Custom Built
93	1-	Griddle	G.E. #CG20A
94	1-	Fryer	G.E. #CK20
95	1-	Hot Plate	G.E. #CH20
96	1-	Char Broiler	Wells #B-40
97	1-	Toaster	Toastmaster #I-D2
98	1-	Heated Food cart	
99	1-	Griddle	Anetes SS-28-2
100	1-	Fryer	Anetes GGS-14-3
101	1-	Hot Plate	Anetes HP2-2



FOOD SERVICE TRAINING LABORATORY and DINING ROOM
Penta County Joint Vocational School

This laboratory and dining room serves for both the high school and technical food service programs. The school cafeteria and kitchen are on the second floor above the training laboratory so that most of the institutional type equipment is provided in both places

A SUGGESTED PLAN FOR A FOOD SERVICE TRAINING LABORATORY DONE
FOR
MICHIGAN STATE UNIVERSITY

Criticisms of the plan include:

There are some good ideas; however, reach-in refrigeration units are considered adequate for training kitchens.

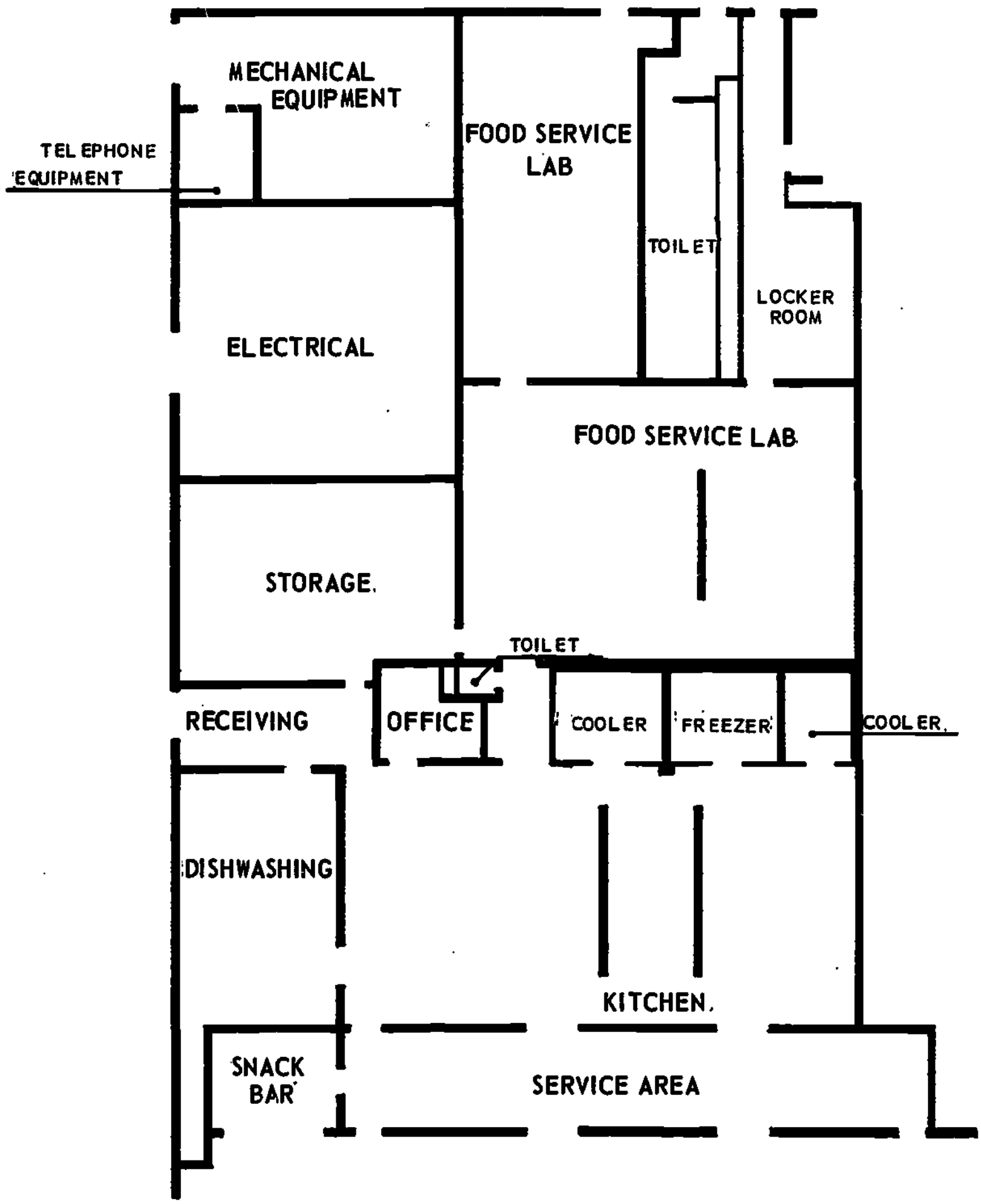
The office space could be placed in centralized office carrels rather than inside the kitchens.

A classroom needs to be provided for related instruction.

A dining room separate from the main dining area should be provided for service to special groups.

The hallway from the dining area to the scullery would need to be part of the kitchen areas and not a public area for flow of traffic.

A demonstration table with a mirror needs to be provided in the teaching area of the training kitchen.



FOOD SERVICE FACILITIES

FOUR COUNTY JOINT VOCATIONAL SCHOOL

CLOTHING SERVICE AND/OR HOME FURNISHINGS SERVICE

	Square Feet
DIVISION OF SPACE	
Laboratory	1,400
Fitting room	200
Classroom	800 - 1,000
Walk-in storage and office (unless provided for in centralized area)	450
Total Square Feet	2,850 - 3,050

CONSTRUCTION SPECIFICATIONS

The room should be well lighted.

Built-in storage space should be provided for sewing supplies, and garments in construction.

Water should be available.

Ample housepower with adequate, carefully placed electrical outlets.

Space needs to be planned for the storage and use of pressing facilities.

A full length three-way plate glass mirror should be provided. This may be built in or mounted on cabinet doors.

EQUIPMENT	Estimated Cost
Sewing machines - home type 10 @ $200.00 each	$2,000.00
Power machines - to do each type of construction (2 - 8 machines) Examples:	
1 ultra speed lock stitch, single needle	465.00
1 high speed blind stitch (others to be added as needed with an estimate of approximately $500 - $1400 per machine)	540.00

CLOTHING SERVICE AND/OR HOME FURNISHINGS SERVICE
Equipment (Cont.)

	Estimated Cost
High cutting tables - 36" height	$ 200.00 and up
Cork top on part of table surface @ $1.90 per square feet. (40 square feet)	76.00
6 Ironing boards (portable)	66.00
2 Sleeve boards	10.00
Pressing tools - beater, point press, shoulder shaper, needle board, seam board or roll.	15.00
2 Steam irons (or more for large classes)	30.00
Power press (if necessary for the training program)	1,500.00*
Steam press (upright)	75.00
3 Full size dress forms @ $52.50 each. (1 junior, 1 misses, 1 half size)	157.00
6 Half scale forms @ $24.50 each. (1 per student may be needed)	147.00
Textile samples	25.00 - 200.00
Books and teaching supplies	800.00
Teacher's furniture: file, storage cabinets, and student classroom furniture	500.00
Electric knife, straight blade	600.00
Electric shears	7.95
Drafting and pattern-making equipment for 20 students - one per student of each item. (The needs will be determined by program content and the type of skills to be developed.)	
T squares @ $1.75 each	35.00
Mechanical drawing compasses and pens $5.25 each	105.00

*Not included in total estimate.

CLOTHING SERVICE AND/OR HOME FURNISHINGS SERVICE
Equipment (Cont.)

	Estimated Cost
Architectural triangular rulers @ $ .57 each	$ 11.40
Curved flexible plastic rulers @ $1.69 each	32.00
French curves @ $ .47 each	7.40
Triangles (30-60°) @ $ .50 each	10.00
Drawing boards (45°) @ $ .60 each	12.00
18" x 24" @ $2.89 each (attach wedges under the boards to tilt the boards up at the back).	57.50
Samples of various drapery and curtain rod hooks and construction materials	50.00
Upholstery tools (The needs will be determined by program content and the type of skills to be developed.)	200.00
Magnetized tack hammer	
Tack puller	
Webbing stretchers	
Cushion stuffers	
Assorted curved and straight mattress needles	
Finishing and refinishing equipment (The needs will be determined by program content and the type of skills to be developed.)	100.00
Assortment of finish removers	
Assortment of finishes	
Assortment of brushes	
Sand paper	
Steel wool	
Pumice stone	
Hand sanders	
Scrapers	
Putty knives	
Total	$6,334.25
Rounded	$6,350.00

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VT 008 912
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Ohio State Dept. of Education, Columbus. Div. of Vocational Home Economics
MF AVAILABLE IN VT-ERIC SET.
Ohio Trade and Industrial Education Service, Instructional Materials Laboratory, The Ohio State University, 1885 Neil Avenue, Columbus, Ohio 43210 ($1.50).
Pub Date - 64 62p.

*EDUCATIONAL FACILITIES; *HOME ECONOMICS EDUCATION; *SPACE UTILIZATION; *FACILITY GUIDELINES; EDUCATIONAL EQUIPMENT; CLASSROOMS

Information is provided for teachers, administrators, and architects in planning space and facilities for home economics departments. Underlying principles of space and facility planning are the goals, values, and standards of home economics, the groups to be served, social change, and trends in education. Educational trends with implications for space and equipment are: (1) more student experimentation, (2) decision making, (3) encouragement of creativity, (4) independent study, (5) flexible class periods and sizes, (6) provisions for adult education in out-of-school groups, (7) community involvement, (8) team teaching, and (9) new designs in school buildings. Planning procedures, location and arrangement of space, activity or work centers, storage, equipment and furniture are described and illustrated with photographs, plans and line drawings. Resource materials are included in the document. (FP)

VT 008 912

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GUIDE

FOR PLANNING

THE HOME ECONOMICS DEPARTMENT

MARTIN ESSEX
Superintendent of Public Instruction
Division of Vocational Home Economics
State Department of Education
65 South Front Street
Columbus, Ohio 43215

October, 1964 - Reprint-1967

VT 008 912

Foreword

The information in this bulletin will be of value to architects, administrators and Home Economics teachers in planning space and facilities for Home Economics departments. Much of the material for the bulletin resulted from a workshop held at Ohio State University in June, 1963.

Acknowledgment is due Miss Grace Beckwith, Assistant State Supervisor of Vocational Home Economics, for preparing the publication and for her presentation of educational trends in department planning.

Appreciation is expressed to all program participants and consultants for their ideas and suggestions that serve as the basis for this bulletin:

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Other information was gained through visiting Home Economics departments, consulting teachers, architects, and State Department personnel. Illustrations and department plans were made possible through contributions from various schools.

Margaret McEniry, Head
Home Economics Education
Division of Vocational Education
State Department of Education

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CREDIT FOR ILLUSTRATIONS

Clothing Construction Work Centers: Troy High School, Troy, Ohio; and Clothing Laboratory, Ohio State University

Demonstration Centers: General Crawford High School, North Robinson, Ohio

Sliding Chalkboard on Storage Cabinet: Clothing Laboratory, Ohio State University

Storage Near a Teaching Center: Hayes High School, Delaware, Ohio

Space Savers: Talawanda High School, Oxford, Ohio

PART I

UNDERLYING PRINCIPLES IN PLANNING SPACE AND FACILITIES

The Home Economics program is the basis for planning space and facilities for the Home Economics department.

The major goal of Home Economics is to prepare youth and adults for responsibilities of homemaking and family life, and in some instances, to provide knowledge and skills necessary for home and community services occupations.

Since the major goal is training for home and family life. the learning experiences provided in the program help individuals to acquire skills in managing a home and in performing household tasks. as well as to develop attitudes and values necessary for satisfying family life.

The program includes the following phases:

* Foods and nutrition; selection, preparation, care and storage

* Clothing and textiles; selection, care and construction

* Care and guidance of children

* Housing, home furnishings and equipment; selection and care

* Personal, family, and community relations

* Management of personal and family resources, and consumer education

Initial planning for the Home Economics department should provide the space and facilities needed for teaching all phases in the Home Economics program.

Present Home Economics programs mirror the changes in family life today. Changing patterns in family living, therefore, prompt greater emphasis on family relationships, child development and growth, consumer problems, nutrition, and management. With less emphasis on skills and more emphasis on these relationships and management within the home, the facilities needed for carrying out today's Home Economics program will include space and equipment for non-laboratory as well as laboratory activities.

Some programs for gainful employment in Home Economics are focused on instruction in the subject matter areas that qualify individuals to engage in home and community service occupations.

The arrangements for kinds of space and facilities needed for programs on gainful employment will be influenced by the type of course offerings.

The Home Economics department furnishes a pleasing home-like atmosphere, but at the same time provides an environment for learning.

Although a pleasing home-like atmosphere stimulates an interest in making homes attractive and livable, school rooms are different from home situations. A school needs greater formality because of the large number of pupils in a class, and the time limitations of a class period. The Home Economics department should be a place for pupils to learn how to learn.

The space and facilities in the Home Economics department need to relate to the standards of living attainable in the community.

Although there is a need to look to the community for selection of furniture and equipment for the Home Economics department, the homes in the community must not necessarily be used as a model in planning. Wide diversities are found in standards of living in present day communities; therefore, no one pattern can be designed to fit all situations.

There is a need to look beyond the community because Home Economics teaching today requires modern equipment for modern methods, and the facilities in the department should reflect developments in types of equipment and furnishings. Variety in kinds of furniture and equipment and materials used in the department provide opportunities for pupils to gain information and experiences that will help them in making sound choices in their own homes.

Flexibility is the key word in planning space and facilities for the Home Economics department.

Technological changes make it virtually impossible to keep up to date; thus, flexibility in planning facilities is the best key so far.

Permanently fixed walls and permanently fixed equipment make it difficult - and expensive - to adapt to the new and the different. The use of large free areas and equipment that is movable and multi-purpose in use allows for change in the use of space and for getting maximum use of the department.

The Home Economics department is planned and equipped to serve the needs of the various groups in the community.

The use made of the Home Economics department will determine space and equipment needed. In planning a department, possibilities for meeting the needs of the following groups should be considered:

* Pupils in the regular homemaking program

* Pupils wanting specialized instruction in separate classes

* Pupils in special education classes, and potential drop-outs who need longer periods of time for instruction

* Pupils developing skills in gainful employment in home-related and community-service occupations

* Seventh and eighth grade pupils

* Adults enrolled in adult or parent classes

* Special teachers or leaders using facilities for Home Economics classes, such as adult and job training classes

Space and facilities for the Home Economics program can be extended through the use of community resources.

The classroom laboratory need not be the sole source of learning in Home Economics. This means that department planners should evaluate community resources as to their availability and utilization. Wise use of community resources may mean a saving of space and money for equipment. For example, equipment for home nursing and/or play school may be available from an outside source and borrowed for these particular learning activities.

Trends in Education will influence space and equipment in Home Economics departments

The Home Economics department needs to keep pace with modern-day changes in education in order to maintain a quality program. In planning a department, consideration should be given to new trends in education and new designs in building which may affect space and equipment requirements both now and in the future. On the following page are listed some of the apparent trends in education with implications for Home Economics.

MODERN TRENDS IN EDUCATION

WITH IMPLICATIONS FOR SPACE AND EQUIPMENT IN HOME ECONOMICS

TRENDS IN EDUCATION

More student experimentation to develop scientific thinking

More practices for students in decision-making for wise consumption

Encouragement of creativity in thinking and doing

Independent study with special projects of an individualized nature

Longer or shorter class periods than usual, and classes larger in size

More provision for adult education and out-of-school groups

Greater mutual exchange with the community

Team teaching

New designs in school buildings such as windowless walls in air-conditioned buildings, unusually shaped rooms

IMPLICATIONS

Flexibility in use of space

Multi-purpose furnishings that will facilitate flexible and varied use of space

Greater variety of instructional materials to develop thinking, as well as skills

Library facilities in each classroom

Storage for instructional facilities, other than foods, and clothing greatly increased

New arrangements of space and equipment due to new designs in school buildings

PART II

PLANNING THE HOME ECONOMICS DEPARTMENT

The Home Economics Teacher's Responsibility

The Home Economics teacher is in the best position to know what is required to accomplish the desired goals of the program. She must be aggressive enough to ask for what is needed to do the job well. Both experienced and inexperienced teachers know the program and although the inexperienced teacher may lack teaching experience, and cannot make extensive decisions as to facilities, both have a contribution to make. The Home Economics teacher should know and be able to explain why a certain allocation of space is required.

As soon as the need for new facilities becomes evident, the administrator should involve the Home Economics teachers in program and educational specifications development.

The four steps in planning are:

* Program planning stage
* Preliminary planning stage
* Large-scale layout stage
* Working drawings or contract document stage

If a teacher's contributions are to have value, she must have sufficient background and be involved in the earliest stage of the planning process. A starting point is an evaluation of present facilities in the light of present and future needs. Students participating in the evaluation may also bring out good ideas for department needs.

Visiting new departments furnishes worthwhile suggestions but ought not be done prior to the definition of the school's program in Home Economics. A word of caution is necessary, however. The facilities in departments visited need to be considered in terms of the contributions they make to education for homemaking, rather than reflecting personal likes and dislikes of the teacher. The Home Economics teacher must also realize there are other programs which must be housed within the budget.

An important step is to involve key people in the community. Lay persons interested in the Home Economics program may be invited to meet with the teacher. The Home Economics teacher must be prepared to present a picture of her program by explaining the needs and interests of her pupils and the content and objectives of Home Economics. This council may prove very helpful in promoting creative thinking concerning present and future needs of the department.

Bulletins on equipment, storage, and materials from equipment companies, and professional magazines offer valuable helps in planning. Securing these materials in the early stages of planning so that they may be assembled for future reference is a necessary step. (See appendix for references.)

Professional assistance in planning may also be secured from the State Department, Vocational Home Economics. For best results requests for help should be made in the initial stages of planning.

Other professional people to contact are specialists in Home Economics and Teacher Education from State Universities.

Writing Educational Specifications

The major responsibility for a new school falls on the architect, the school administrator, and the Board of Education. In some schools an educational consultant is brought in to work with the architect, administrator, and instructional staff to serve as an advisor to the architect and Board of Education.

The responsibility of the Home Economics teacher is to supply the information as to program function and facilities desired to the persons responsible for planning. This information should be presented in the form of educational specifications that provide the architect with a clear description of the Home Economics program together with the facilities needed and types to be provided.

The specifications should furnish a basis for working drawings for the architect. They need to be in sufficient detail and should not leave any unanswered questions of an educational nature to the architect.

The following is a suggested outline of the content in educational specifications for Home Economics:

I. The Home Economics Program

   A. Statement of philosophy of Home Economics (This statement should be closely related to the local situation.)

   B. Curriculum
      1. Purposes
      2. Phases of Home Economics offered
      3. Special emphasis given to certain phases of the program
      4. Learning experiences or activities included
      5. Length of program

   C. Age groups to be served

   D. Maximum class size (Begin with a class of 24 people)

E. Number of teaching stations needed for projected total school enrollment

II. General Requirements

A. Space
1. Number and types of rooms (Teaching stations included)
2. Approximate amount of space in terms of the square feet of rooms (Indicate any special combinations of rooms)
3. Phases of Home Economics to be offered in each area or room (Include activities to be carried out)
4. Space for work or activity centers (Ex. Unit kitchen: the number of square feet of floor space and the lineal counter space)
5. Possibilities for dovetailing use of space within a room (Multi-purpose use of space)
6. Storage space in each room or area for student supplies, equipment, and instructional materials
7. Chalk board, tack board in each teaching station

B. Location
1. Preferred location of department
2. Preferred location of storage
3. Preferred location of teachers' work center or office
4. Electrical outlets

C. Utility Services
1. Electric, gas, and water
2. Electrical equipment for present and future needs
   a. Designate heavy-duty wiring and location of use
   b. Designate small-appliance wiring and location of use
   c. Circuits needed for appliances
3. Plumbing for present and future needs
   a. Desirability of running water in each room

III. General Details

A. Color for walls, cabinets in kitchens

B. Types and finishes for cabinets

C. Materials for work surfaces

D. Desirable arrangements for kitchens

E. Preferred floor finishes

F. Provision for use of teaching aids such as projects or television

G. Display case (location and size)

PART III

LOCATION AND ARRANGEMENT OF SPACE FOR HOME ECONOMICS DEPARTMENT

Location

A desirable place for the Home Economics department is on the ground floor, preferably near an outside entrance. This location offers these advantages:

* Convenient delivery of supplies

* Easy installation and removal of large equipment

* Accessibility for adult classes and non-school groups

* Less distraction for other classrooms, when the department is used for play groups or other organizations during the day

The new concepts of good location place the Home Economics department in the main school building. Here, the department may well be near rooms housing related areas to facilitate integration of subjects. For instance:

* Adjacent to the social studies classrooms, if family life is emphasized in the Home Economics department

* Near the science laboratories, if science principles are to be integrated intensively with Home Economics

* In the arts center, if the departments of Art and Home Economics are to work closely together

* Adjacent to or near the cafeteria, if food preparation is directed toward training for food service

* In the vocational wing, if special emphasis is given to occupational training for home-related jobs

The specific location will be determined by the philosophy of the school, and by the emphasis given to the Home Economics curriculum.

Rooms adjacent to each other in the Home Economics department tend to unify the program and to promote the use of the facilities. When two or more teachers share the department, such a grouping allows for easy communication, sharing of equipment, and exchanging rooms with other staff members. In large schools with several rooms, rooms on both sides of the corridor make a more compact department than if a row of rooms is arranged the full length of the corridor.

Space Requirements

Factors to consider in planning space and facilities for the department:

* The program offered (see page 2)

* The groups served (see page 4)

* Potential student enrollment in Home Economics (based on projected school enrollment). Twenty-four students is a recommended class size. However, in view of increasing high school enrollments, classes (especially in large metropolitan areas) may be as high as 30-36 pupils. New educational trends (team teaching) indicate that classes in the future may vary in size. Some may be as high as 100 while other classes may have only fifteen pupils.

* Provisions for expansion should be considered at the beginning of the building program. Plans for taking care of increased enrollments in the Home Economics department may be through (1) arranging some of the adjacent classrooms so that they can be easily converted to a part of the department when necessary or (2) location of the department so that when future additions are made to the building, the space for the Home Economics department may be extended.

* Activities - An important step in determining space requirements for the Home Economics department is to think through the kinds and amount of space needed for the activities that will take place in the Home Economics classes.

The starting point is to list the activities for each phase of Home Economics that is a part of the program. After a list is made, consider the following questions in planning kinds and amount of space needed for these activities:

- What kind of things can be done just as well with large numbers of students as with small?

- In what kind of activities would a total class participate?

- For what kind might several classes be combined?

- For what kind of activities would individual work stations be needed?

- Should these be for quiet study and reflection or for active work with equipment?

FACILITIES FOR CARRYING OUT ACTIVITIES IN THE HOME ECONOMICS PROGRAM

Activity	Potential Groupings	Facilities Needed
Discussion	Either large or small groups, individual students (with teacher)	Non-laboratory. Students seated comfortably at tables or tablet-arm chairs; teaching centers provided.
Observation - demonstrations, films, movies, TV, children at play	Either large or small groups, in some cases individual students	May be either laboratory or non-laboratory depending on activity. (Space adequate for group observing and for equipment and individuals carrying out activity.)
Reading, Studying, and Writing	Either large or small groups, in some cases individual students	Non-laboratory. (Chairs and tables or tablet-arm chairs.)
Dining and Hospitality-serving meals and foods for special occasions	Either large or small groups	Laboratory. Facilities for serving food—tables and chairs, unit kitchens.
Individual Foods and Meal Preparation	Small groups	Laboratory. Unit kitchens.
Clothing Construction	Either large or small groups	Laboratory facilities. (See Clothing.)
Experimentation - textile study, furniture arrangement, kitchen arrangement, care of fabrics, study of household equipment	Individual or small groups	Laboratory facilities. Laundry, unit kitchens, sink in clothing laboratory, equipment in department (stoves, etc.)
Teacher-Pupil Conferences	Individual or small groups	Space for privacy

- Which activities would require small groups working together?

- What size might these groups be?

- To what extent are laboratory facilities required?

- Which activities can be carried out in non-laboratory rooms?

* Flexibility

  - Large free areas available for total class experiences, but adaptable for certain small group experiences.

  - No small permanently walled-in areas.

  - A minimum of fixed installations extending into the room.

  - Areas of the room adaptable to teaching more than one unit and to using different methods of teaching. A rectangular room, 28-30 feet wide, allows for revamping or relocating some equipment to accommodate various learning experiences.

Arrangement of Space

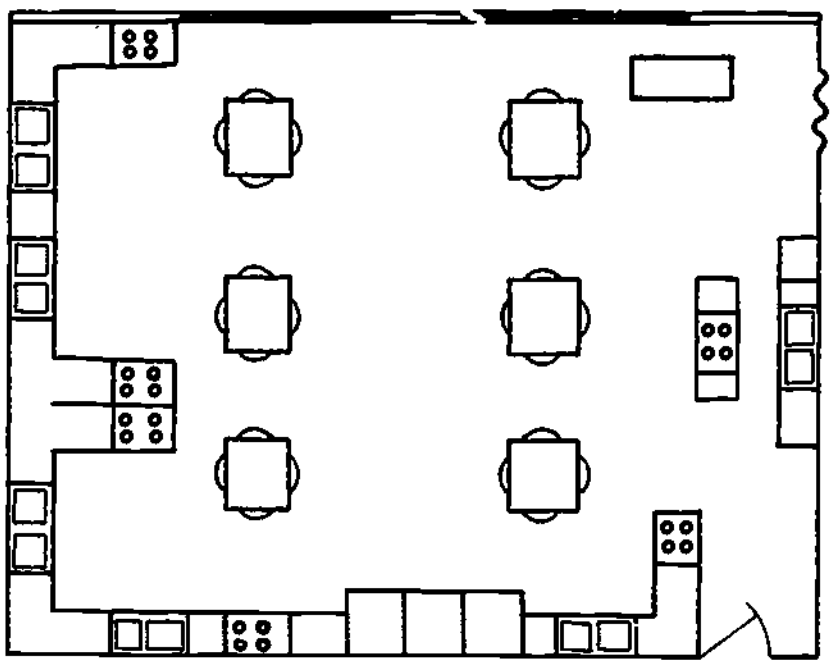
There are certain basic areas that constitute every Home Economics department. These areas are primarily equipped for specific activities in the program, such as the foods area, the clothing area and the family living area.

Although an area is planned for teaching a particular phase of homemaking, the space should be sufficiently flexible to allow for instruction in other phases. For example, in an area designed for clothing, consumer education, family relations, child care and management might be taught. Illustration I and II show flexible use of space in Foods and Family Living Classrooms.

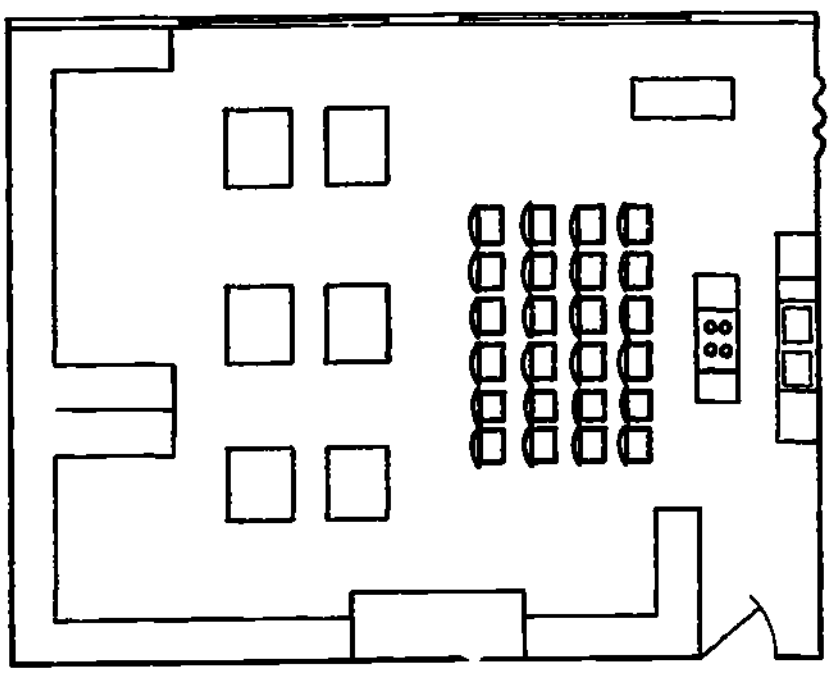
These basic areas in the Home Economics department may include two or more work and/or activity centers. The following centers are important in any department: the food preparation center; the demonstration centers; the clothing center; the laundry center; the teacher's work center; the storage center; and the living center.

The Home Economics department may consist of one, two, or more rooms. Regardless of the arrangement, the space should be provided in the Home Economics department for carrying out a comprehensive Home Economics program. When courses in wage earning are offered, special facilities needed must also be given consideration.

MULTI-PURPOSE USE OF FOODS CLASSROOM



Food preparation, meal service, and discussion

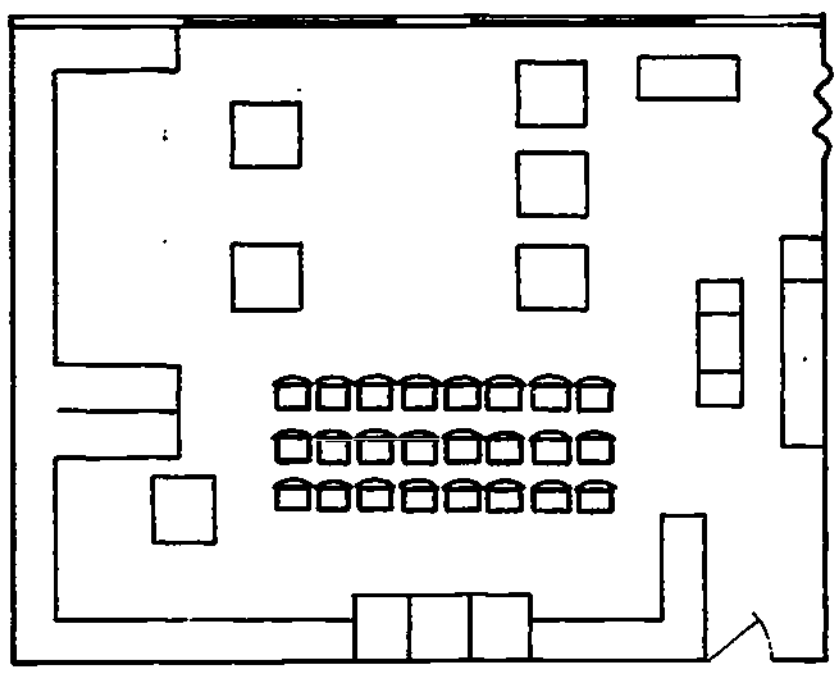


Food demonstration

Diagrams show the use of the same floor space for four different activities.

* Food Preparation
* Meal Service and Discussion
* Food Demonstration
* Laundry Demonstration

NOTE: Arrangement of equipment frees the center floor space.



Laundry demonstration

ILLUSTRATION I

The All-Purpose Room

The all-purpose room is planned and equipped to provide instruction in all areas of homemaking. This room is best suited for an activity program and is more adaptable to the junior high school level. A single all-purpose room is for a one-teacher department; a two-teacher department may have two all-purpose rooms. This arrangement is the most expensive but has certain advantages. Scheduling is simplified and each teacher has full responsibility for her own classroom.

<u>For effective use, the all-purpose room must be:</u>

* Large enough for instruction in all phases of the Home Economics program

* Planned for multi-purpose use

  - Same space used for teaching more than one phase of Home Economics (Example: Space used for meal service used for class discussion and clothing construction)

  - Furniture and equipment serve a dual purpose (Example: same table used for meal service, sewing and study)

  - Movable storage cabinet (36" high) used for room dividers and additional work surface as well as storage

* Space is organized so that the activities in the work centers can be easily supervised

* Planned for adequate storage space. The limited wall area makes it virtually impossible to include enough wall cabinets. Therefore, a walk-in storeroom is desirable for sufficient storage.

* Planned to accommodate classes of 24 pupils

* Provided with chalkboard and tackboard. Chalkboard is accessible to the teaching center

MULTI-PURPOSE USE OF SPACE IN FAMILY LIVING CLASSROOM

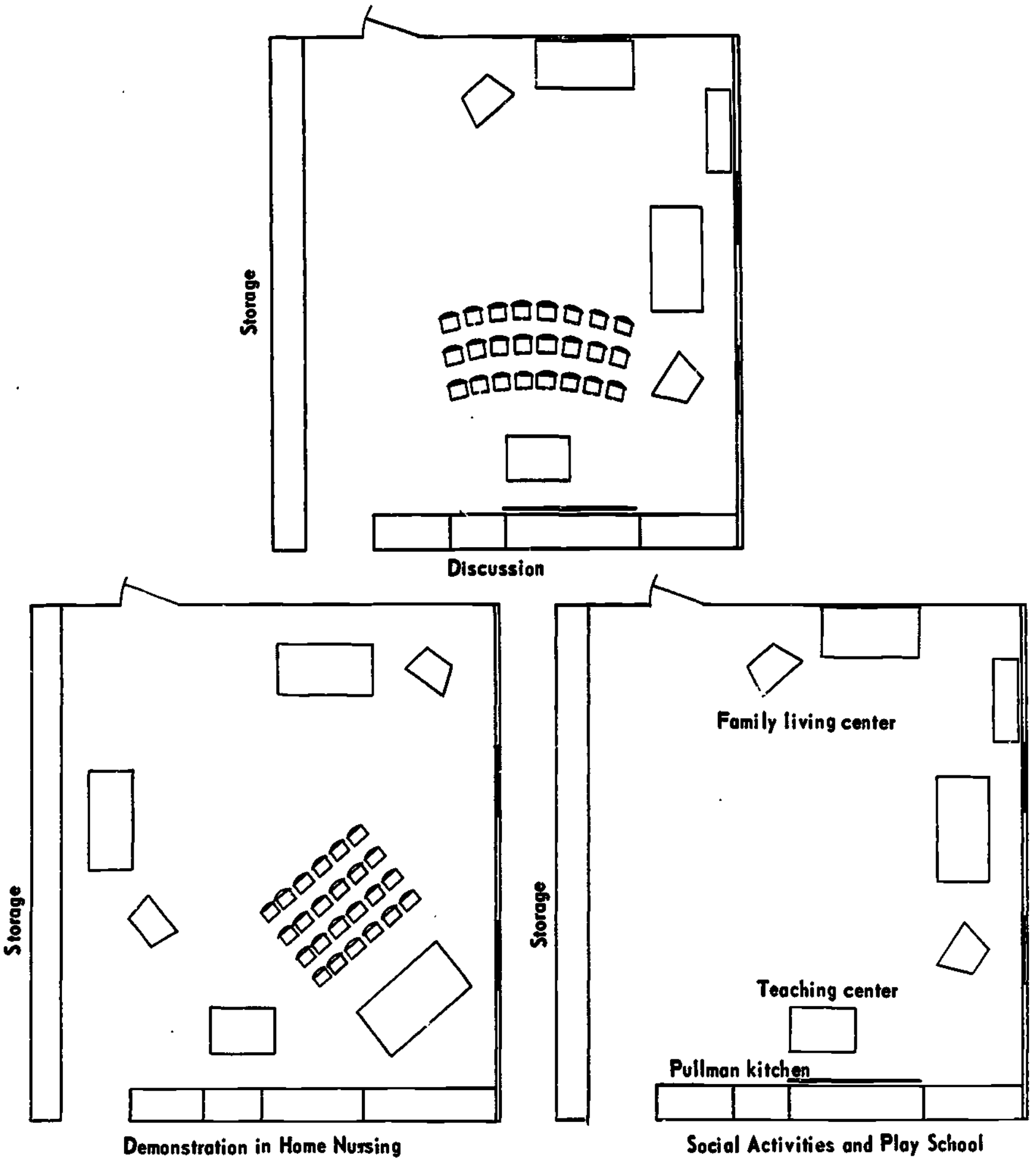


ILLUSTRATION II

The above diagrams show the use of the same space in a family living classroom for four different activities. They are:

* Discussion using tablet arm chairs
* Demonstration in home nursing using a hospital bed and tablet arm chairs
* A playschool
* Social activities

Part of the storage along the wall is low and is used for books, toys, and other small play school equipment. Room is of sufficient size to allow for playschool activities and observations.

The Multi-Purpose Room

The multi-purpose room is designed for instruction in two or more phases of Home Economics.

A department may have two or more multi-purpose rooms with one or two teachers. In a two-teacher department, the rooms are shared co-operatively by exchanging rooms for units of teaching.

The most common arrangement for a (two multi-purpose rooms) department is: one room for teaching foods, nutrition, management, and laundry and another room for teaching the rest of the home economics program.

Another combination for a (two multi-purpose rooms) department is: one multi-purpose laboratory planned and equipped for teaching the skills--food preparation, clothing construction, and laundry. The other room is designed to teach the part of the program that does not require laboratory facilities. A hospitality center is included in the room for social activities.

A Three or More Room Department

Departments of three or more rooms may include various arrangements such as the following:

* One room for foods, nutrition, and laundry management

* One room for clothing

* One room for teaching child care and development, family relations, management, home nursing, and home furnishing. Includes a home living center.

* In addition to the room arrangements previously described, some Home Economics departments may include auxiliary space which can be one or more of the following:

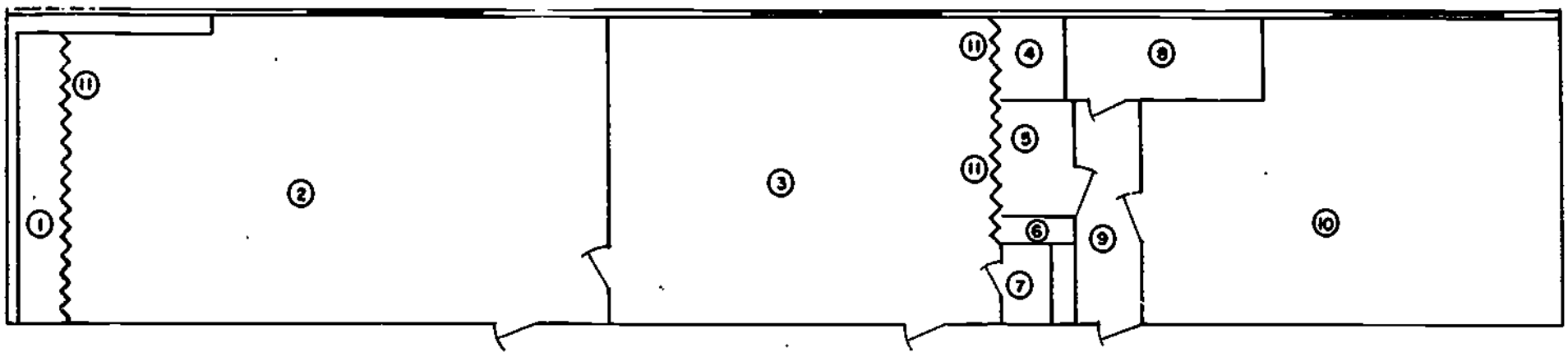
  - Teacher's office

  - Workroom

  - Combination teacher's office-workroom

High schools with large enrollments may need rooms for instruction in specific phases of the program in addition to the multi-purpose rooms previously described, for example:

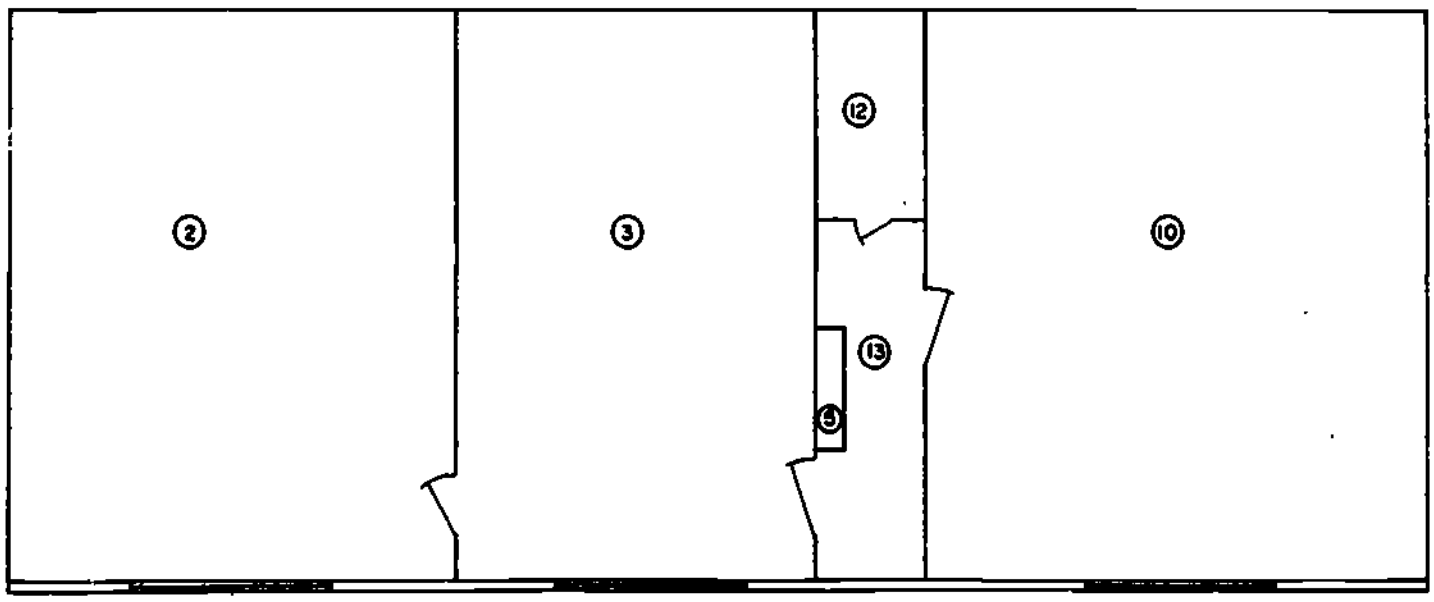
LAYOUT FOR 3 ROOM DEPARTMENT WITH AUXILIARY SPACE (3 TEACHING STATIONS)



Rutherford B. Hayes High School, Delaware

RUTHERFORD B. HAYES HIGH SCHOOL - Three-or four-teacher department with three teaching stations. Auxiliary space of office, workroom, and pullman kitchen makes possible the continuous use of classrooms. The workroom may be separated from the clothing area and used for makeup work by pupils or preparation of lessons by teachers. Pullman kitchen may be used for preparation of refreshments for social activities and preparation for a food demonstration.

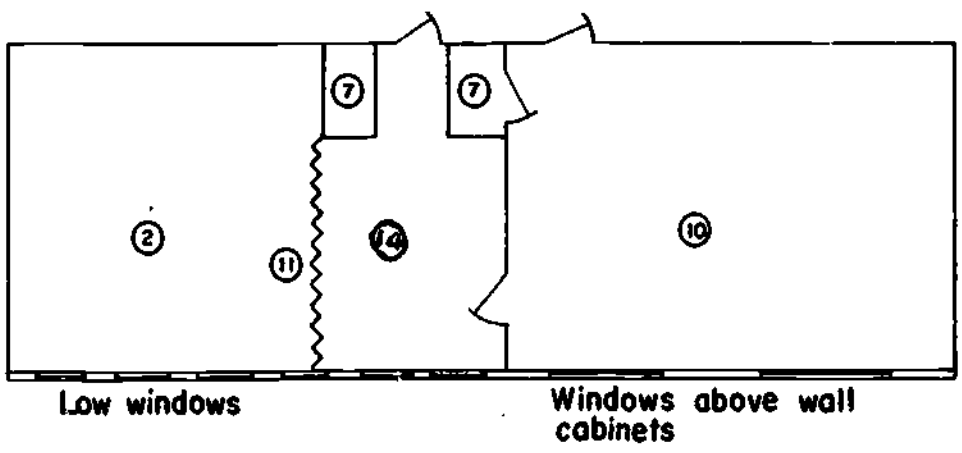
LAYOUT FOR 3 ROOM DEPARTMENT WITH FOYER



Canton Local High School, Canton

CANTON LOCAL HIGH SCHOOL - Three teaching stations. The foyer or entry affords access to the foods and family living classrooms and has storage space for pupils' books and aprons and a general storage cabinet. Pullman kitchen makes possible preparation of food for social activities and makes possible the use of family living room for community activities without interruption of activities in the foods room.

LAYOUT FOR 2 ROOM DEPARTMENT



Hilliard High School, Hilliards

1. Workroom and fitting room
2. Clothing classroom
3. Family living classroom
4. Walk in storage
5. Pullman kitchen
6. Laundry unit
7. Storage
8. Office and workroom
9. Entrance
10. Foods classroom
11. Wooden folding door
12. Girls lavatory
13. Foyer
14. Family Living Center

HILLIARD HIGH SCHOOL - One-or two-teacher department with two teaching stations. Combined clothing and family living center separated by modern folding door in a multi-purpose classroom.

ILLUSTRATION III

FLEXIBLE USE OF SPACE

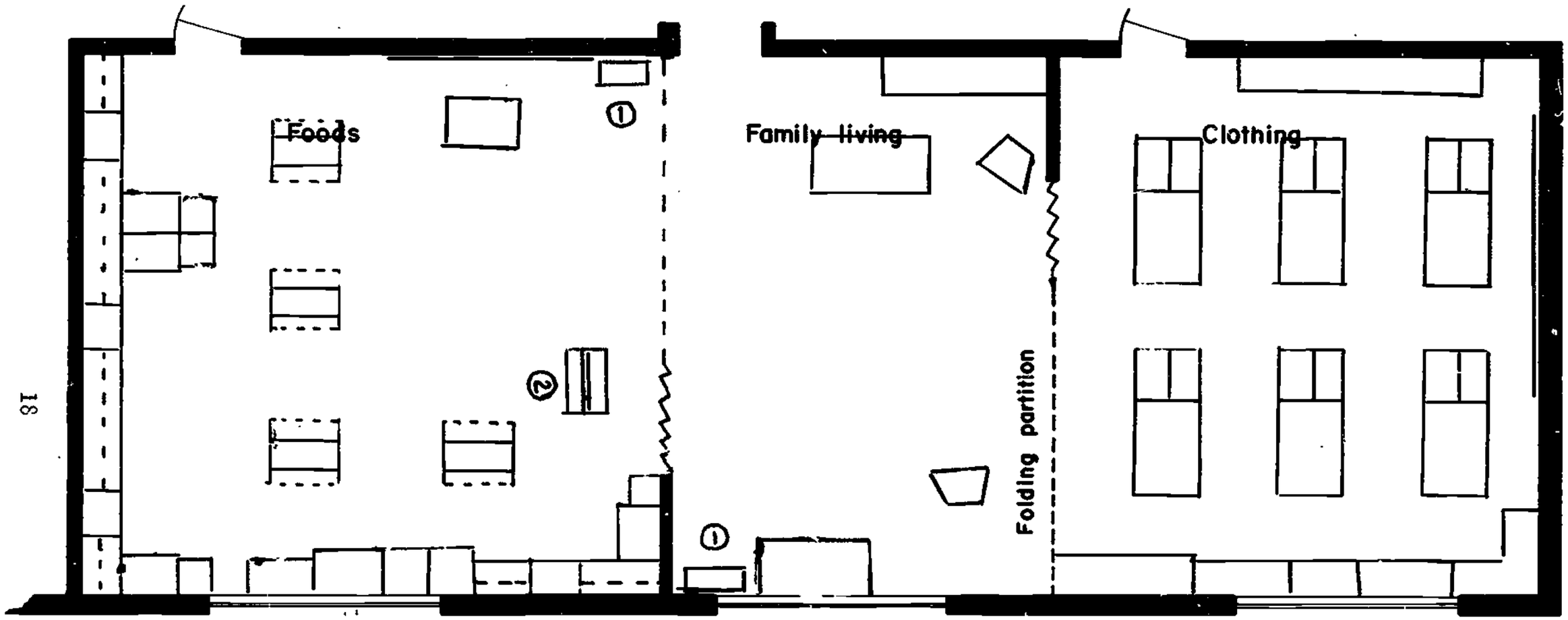


ILLUSTRATION IV

Folding door and movable partition make possible the use of space in family living and clothing room for large and small group meetings. Each area can be used alone or the entire space within two rooms can be made available. Peripheral arrangement of fixed equipment frees center floor space. Use of mobile bookshelves (1) and movable demonstration unit (2) increases flexibility in the use of the department.

* All purpose Homemaking room - designed and equipped specifically for teaching Home Economics to pupils in special education classes

* In child development, a nursery school

* In home furnishings, a special room for teaching home decoration, remodeling furniture, slipcovering, and making draperies

A Forward Look in School Planning is the Use of one Large Space for the Home Economics Department

Rather than rooms of fixed size, greater versatility is offered by using movable partitions, non-load-bearing walls or folding doors to divide the space in the department into large or small areas as needed to accommodate changing patterns in programs, in scheduling, or in enrollments.

Illustration IV shows a plan with flexible use of space. In this plan, the center area is free, and movable partition and folding door are used to adapt space for various needs. The space may become one large area, the three areas may be used separately, or the center area may be combined with either side.

PART IV

GENERAL FEATURES OF ACTIVITY OR WORK CENTERS IN THE HOME ECONOMICS DEPARTMENT

CHILD CARE AND DEVELOPMENT

Activities

Observation of children, a playschool (optional), study, reports, discussion, demonstrations, observation of films and filmstrips, and experience in feeding and clothing the child.

Location and Space

Either a family living classroom or a clothing multi-purpose room is a desirable place for the study of child care and development, and the observation of children. Both settings may be easily converted into a playschool or used for observation of children by merely clearing the floor space needed for these two activities.

If possible locate the child care area near toilet facilities and accessible to an outside entrance.

Facilities

The furnishings and equipment used for class discussion, study, and demonstration in family living or clothing area are needed.

If a playschool is part of the program, the following teaching materials are desirable: phonograph and records, tape recorder, easel, books, blunt scissors, paper, paste, crayons, modeling clay, films, toys illustrating each developmental stage in child growth, low hooks for teaching child to hang up coat.

Other equipment that is desirable, but that may be borrowed: low tables and low chairs or stools, wheel toys, blocks, life-sized doll, bathinette, collapsible basket.

Storage

Regardless of location, adequate storage is necessary. Low cabinets with removable doors may be used for a temporary depository of books, toys, etc. and may be available for other purposes later. Additional storage space may be supplied by a tall cabinet in the room for teaching materials. Walk-in storage adjacent to the space in the classroom used for the playschool may be used for the bulky equipment and for supplies when not in use. (Care should be taken not to tie up too much shelf space with materials used in the playschool. Much of this equipment may be borrowed when the school is in session so that only temporary space is needed.)

CLOTHING AND TEXTILES

All phases of clothing, including clothing selection, care, construction, and personal grooming.

Activities

Discussion, observation of films, demonstrations, study, experimenting with textiles, colors and fabrics, construction of garments (which includes sewing, pressing and fitting), and hand laundry.

Space

Flexibility is important. All equipment and furnishings should be selected with the thought that the facilities will be used for activities other than clothing construction. Sewing machine tables (self-contained units) are undesirable because they limit the use of floor space. In general, furniture that can be arranged and organized to carry out the wide variety of activities mentioned above should be selected.

In some cases, space for teaching clothing is a multi-purpose room designed and equipped mainly to teach clothing construction, selection, and grooming. In other departments the multi-purpose room used for clothing has an alcove or recessed area or an extension for a family living center. The arrangements will depend upon the number of teachers and the space allowed for the department and the size of classes. When an all-purpose room is used, the space for teaching clothing may be used inter-changeably for teaching other phases of Home Economics. (Generally approximately 1,000 square feet is considered to be a minimum space requirement for a multi-purpose room used for clothing.)

Clothing Construction Area

Equipment for clothing construction arranged in relation to point of use prevents congestion in the room. Possibilities for arrangement of sewing equipment are:

* A unit arrangement of equipment that includes a table (work surface) for four students, and two sewing machines adjacent to the table, with pressing facilities nearby, confines sewing activities within a limited area and promotes good work habits.

Pressing Equipment

Pressing facilities include steam irons, two portable ironing boards, a skirt board, sleeve board, and pressing hams. Allow one pressing area for each 8 students. Cabinets for pressing equipment may be distributed around the room and still be strategically near the work tables. Compartments for storing irons should be lined with asbestos.

Folded portable and adjustable ironing boards are 62-1/2" x 15" x 4". The storage cabinet is 24" deep.

Instructional Facilities

Bulletin, peg, and chalkboards are all important in the clothing room. Although fixed rather than portable boards are preferable, when wall space is not available, provide portable facilities. A teacher's desk and filing cabinet will also be needed.

Storage

* Tote Trays: Plastic tote trays that fit into especially designed cabinets (48" or 36") and into work tables when in use, provide an orderly arrangement for students' materials and equipment. To plan total number of trays needed, estimate the number of students taking clothing construction at one time, plus several trays for class projects that require storage.

  The maximum height of storage for the tote trays in cabinets is 60". The approximate size of the tote trays is 19-1/2" x 13-1/2" x 14-1/2" or 17-1/2" x 15" x 5".

* Wardrobe: Cabinets equipped with adjustable rods and fixed shelves provide storage for garments completed or under construction. Allow 2 inches for each garment in estimating the amount of storage space needed.

* General: Cabinets are needed for the storage of teaching aids, books, illustrative materials, swatches of materials, film strips, additional sewing supplies, and extra equipment. Increased emphasis on consumer problems brings a need for more storage than was formerly considered necessary. Many times materials used require only temporary storage. Part of the storage in a clothing room can be supplied through movable cabinets 36" in height. These cabinets, multi-purpose in use, can be moved to different parts of the room for cutting surfaces or for dividing the room into different work stations. When not in use, these cabinets can be pushed into walk-in storage or used for storage of project materials in child care, home furnishings, etc.

* Another arrangement may be a pull-out machine located in a cabinet 36" high along the wall in the sewing area. A cabinet on one side of the sewing machine has storage for skirt board and sleeve board and other pressing supplies. Another cabinet, on the opposite side, furnishes storage for tote tray and needed sewing supplies. The counter top of the cabinet and a table adjacent to the machine may be used for cutting and sewing. In some cases a pull-out board in one of the cabinets supplies the necessary work surface.

A minimum of 5 feet between tables permits students to pull out chairs and be seated without bumping each other and permits the teacher to supervise. Each sewing machine and chair requires a minimum of 3 feet.

Dressing and Fitting Area

Space for fitting should be a part of the total clothing area, rather than a separate area, so that fitting can be easily supervised by the teacher and observed by the class. Full-length mirrors in triplicate arrangements on cabinet doors or on walls or a movable triple mirror, offer the best solution to fitting problems because they facilitate seeing the garment from all sides. To make sure that girls being fitted cannot be seen by passers-by in the corridor, a folding door or a screen or other device gives necessary privacy.

Grooming Area

A separate grooming area in the department is a questionable expenditure of space and money. Grooming can be taught effectively by using the sink plus the full-length mirrors in the clothing room. If a demonstration unit is available, the overhead mirror can be used more effectively for demonstration purposes than the mirror in the grooming unit.

The cabinet base for the sink furnishes storage for grooming supplies and materials.

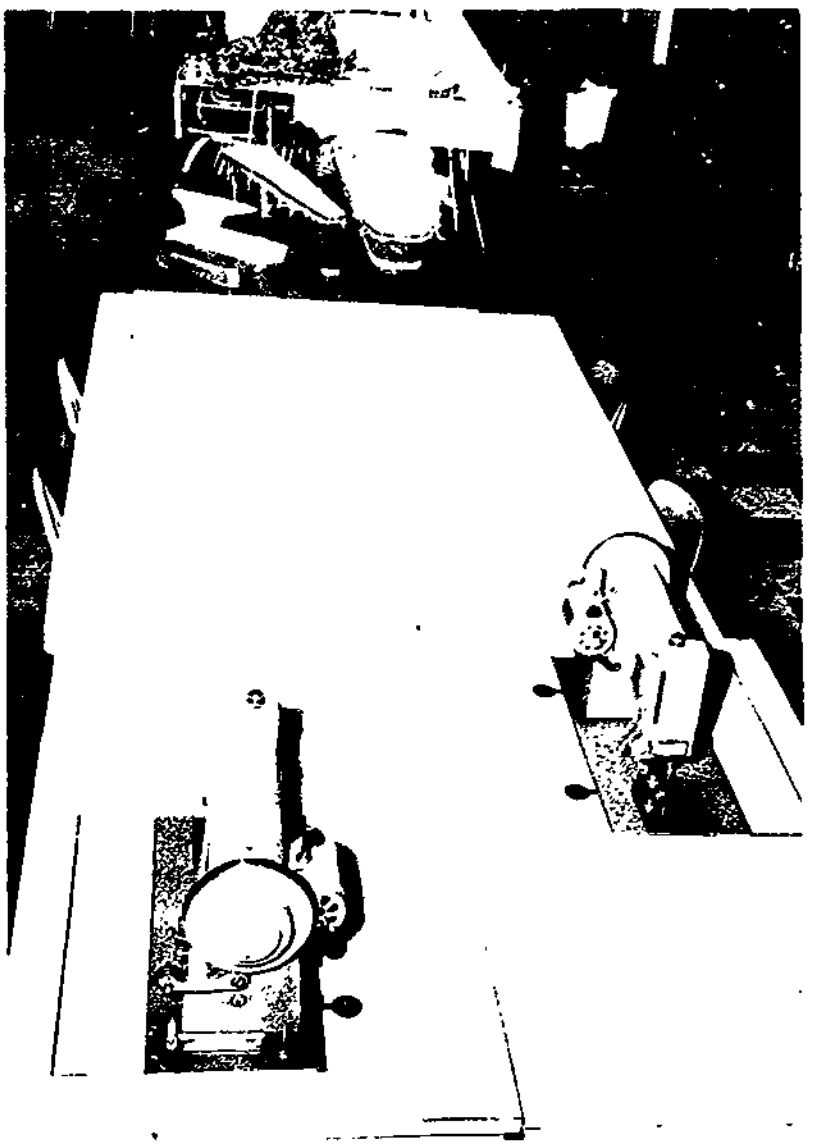
Furnishings and Equipment

The table most suitable for the clothing center is 30" high (40"x60"), with ample knee space when tote trays are in place and with work space sufficient for 4 students. Additional cutting surface can be obtained through the use of cabinets 36" high, folding sewing tables, or portable tops that can be used to enlarge the table and stored when not in use.

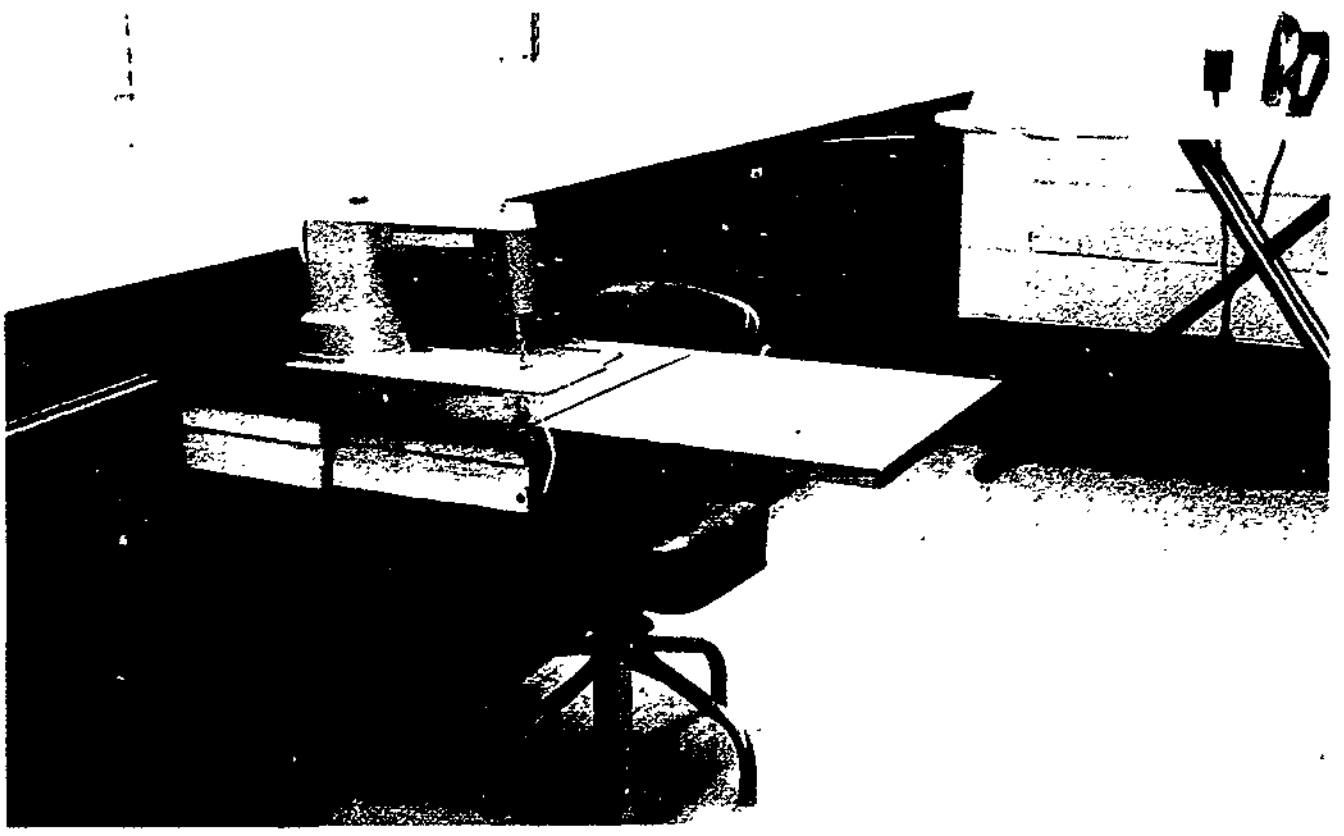
Sewing machines (one machine for two girls is recommended) may be regular cabinet type; pull-out machines in wall cabinets; portable machines that may be stored and brought out as needed. Sewing machines are the following sizes:

	Width	Length
Electric, closed	16-1/4" - 19-5/8"	34-1/2" - 43-3/4"
open	16-3/4" - 17-5/8"	43-3/4" - 46-1/4"
Pull-out, open		38"

CLOTHING CONSTRUCTION WORK CENTERS



Unit organization of equipment, table sewing machines and pressing equipment. Pressing equipment is a part of the work center.



Pull-out sewing machines located along wall underneath window with pressing facilities nearby.

ILLUSTRATION V

SUGGESTIONS FOR EQUIPMENT FOR CLOTHING LABORATORY

Small Equipment

* Irons - dry and steam, combination preferred, one iron per ironing board
* Buttonholers - 2 or 3 per class
* Point Presser
* Pressing hams - one for each pressing center
* Pounder
* Pressing cloths
* Sleeve boards - two
* Skirt board - one or two
* Scissors - number depends upon whether the pupils have their own or are furnished by the school. If school owns them, need two pairs for each group of four or six
* Pinking shears - one pair for each group of four or six
* Hem markers - three or four per class
* Yardsticks and rulers - four or six per class
* Tape measures
* Tracing paper, tracing wheels, chalk

Miscellaneous Equipment

* Fabric swatches - one-half to one-yard lengths
* Fitting shells - desirable but not necessary
* Illustrative materials on clothing buymanship and construction
* Teaching aids - films, slides and film strips relating to clothing, pamphlets, charts and posters on clothing buymanship and construction processes
* Supplies and equipment for teaching cleaning and repair of clothing

Grooming Equipment

* May be brought when needed

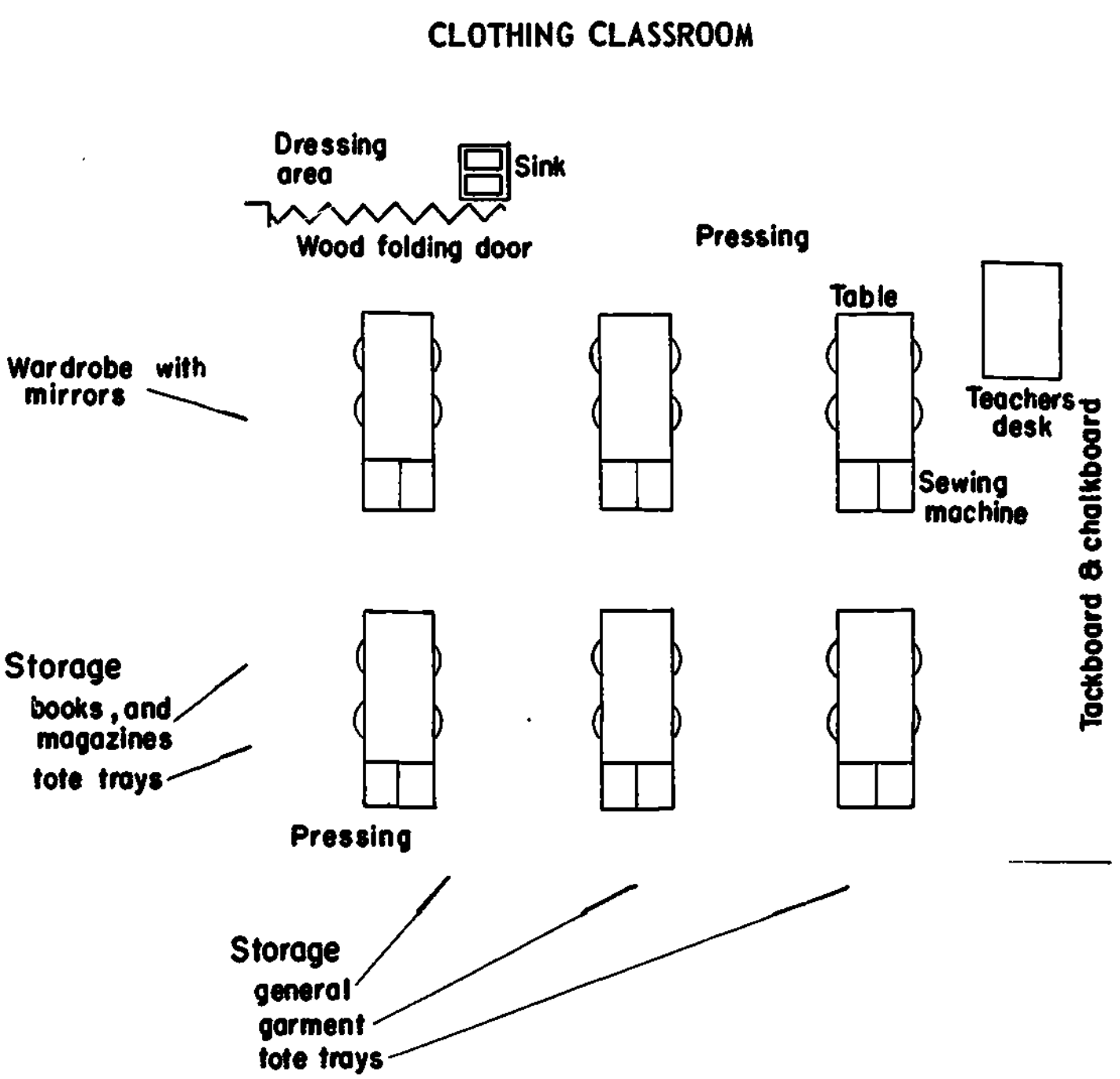


ILLUSTRATION VI

The above diagram illustrates the following features in relation to arrangement of equipment and furnishings:

* Fitting and dressing area adjacent to each other
* Sink located near triple mirror may be used in demonstrations on grooming
* Space for fitting is a part of the total area
* Unit arrangements of equipment for sewing
* Pressing centers located in relation to work centers
* Tote trays in two locations
* Wardrobe and garment storage in two locations
* Instructional features include the teaching center, storage for books and magazines, and a chalk board
* Use of a folding door to insure privacy

DEMONSTRATION CENTERS

Demonstrations are used in teaching all phases of Home Economics. Therefore, it is important to plan space for demonstration purposes within the foods, clothing and family living areas. Equipment that is movable makes it possible to give a demonstration in more than one of the areas in the Home Economics department.

Basic Requirements for a Demonstration Center

* Seating is accessible for entire class
* Seating arrangement provides good visibility
* Supplies and equipment are within reach of the demonstrator
* Chalk board is adjacent to or within the demonstration center

Facilities for demonstrations

* A special demonstration unit which is a movable base cabinet equipped with either a fixed or removable mirror. The cabinet has space for storing supplies and equipment used in demonstrating. A removable mirror makes possible the use of the base cabinet for purposes other than demonstration. The mirror can be stored, and the cabinet may be a part of a unit kitchen and furnish additional work space and storage or it may be used for general storage purposes.
* A unit kitchen with either a peninsular or island arrangement serves as a good food demonstration center. Either arrangement provides good visibility and allows the demonstrator to face the class while working. When a unit kitchen is used for both laboratory and demonstration purposes, duplication of equipment and utensils is desirable.
* Unit organization of table, sewing machine, and pressing equipment for demonstrations in clothing construction prevents wasted time and motions. The height of the table used should permit the demonstrator to sit while working. A reflecting mirror mounted on the table also gives good visibility.

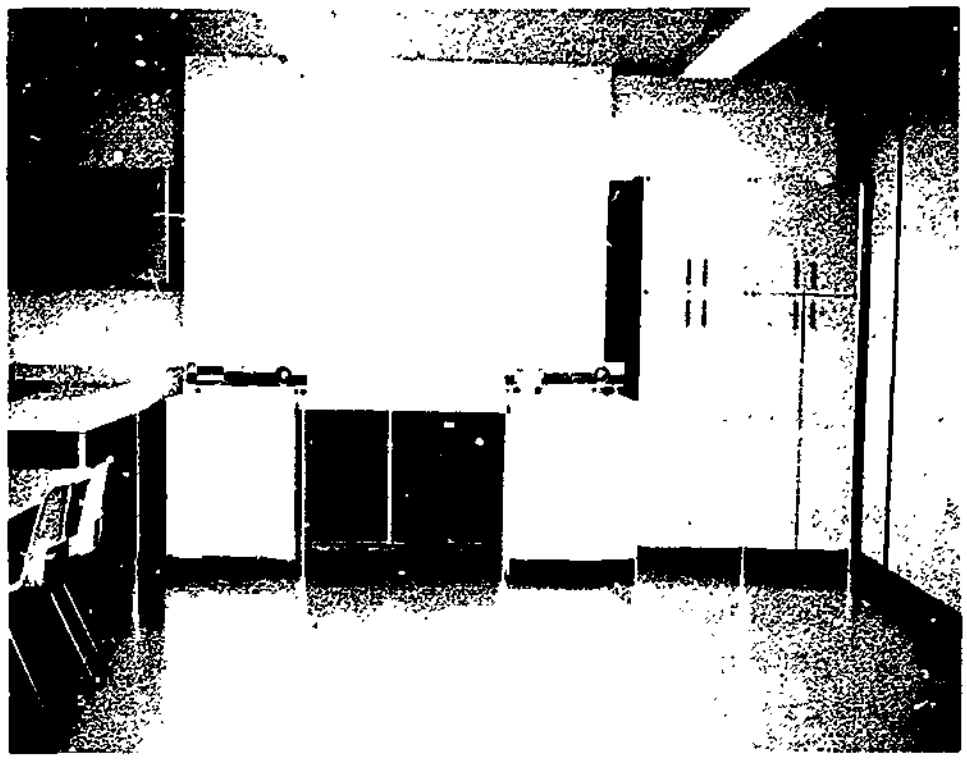
FAMILY LIVING

Home furnishings, home nursing, home management, child care, family relations, hospitality.

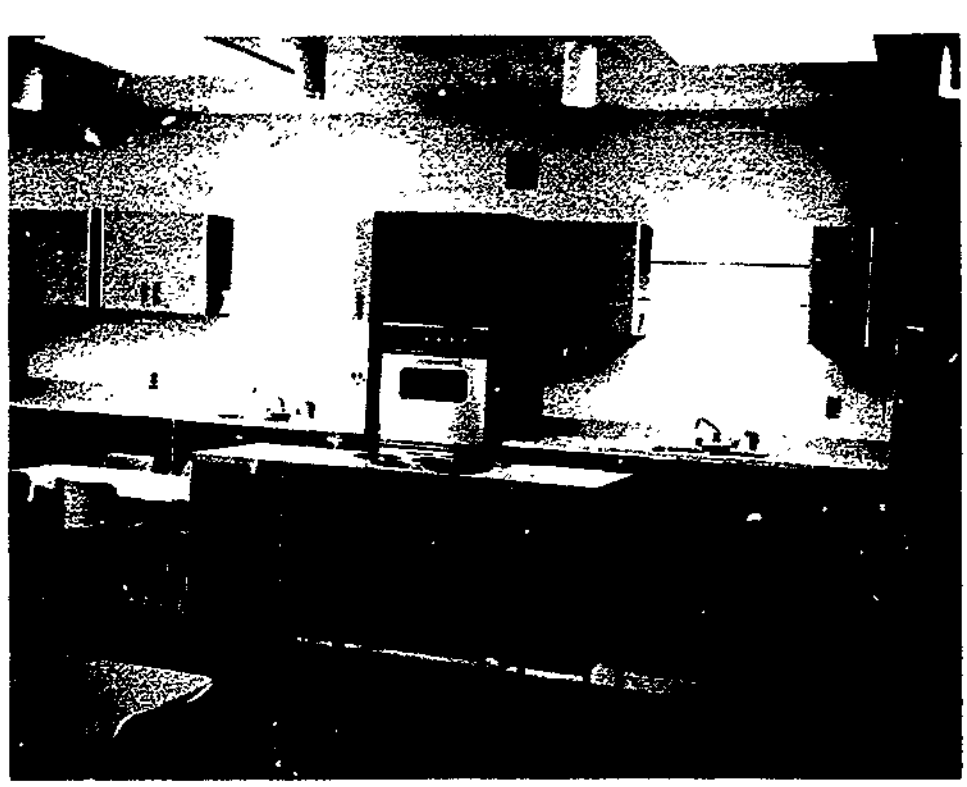
Activities

Discussions and demonstrations, selection, care and arrangement of furniture, play school, observation of children, and social activities.

DEMONSTRATION CENTERS



Laundry



Foods

ILLUSTRATION VII

The above demonstration centers have the following features:

* Seating accessible for entire class
* Good visibility
* Demonstrator may face class

Other activities may be teacher-pupil conferences, observation of films and film strips, individual make-up work, student committee meetings (depending upon school policy), community group meetings, and meetings of family life classes in adult education.

Space

The family living center may be:

* An alcove or recessed area in the clothing area
* A separate extension beyond the clothing area
* A separate room

A multi-purpose room used for both clothing and a family living center should feature flexible use of space and equipment. Equipment that can be easily moved and is multi-purpose in use may be used over and over again in different activities. A modern folding door separating the clothing area and family living center makes versatile use of available space. With the door open, the room becomes one large area; with the door closed, two separate spaces are available for use at the same time.

A separate room used for teaching family living is planned only for large teaching centers, where two or more teachers are employed. Justification for a separate family living classroom is based on enrollment, the number of teaching stations needed and the use made of the room. When a family living center is a separate room, it should be planned for multi-purpose use and should be large enough to accommodate classes of at least 24 students for discussion and observation.

As well as serving as a hospitality center for the Home Economics department, it furnishes space for teaching care and arrangement of furniture, for a play school, and for discussion classes in child development, personal and family relations, and home nursing.

Continuous use is possible through using this room for informal groups, such as committee meetings, teacher-pupil conferences, adult education meetings, student make-up work, and as a center for social activities in the department and the school.

Facilities

Furniture and furnishings should create a home-like atmosphere. A sofa and chairs, or similar seating arrangement may be used. End tables, lamps, planters and other accessories help to make the room more attractive. Some pieces of furniture may be dual-purpose, such as sewing machine in an attractive cabinet, a drop-leaf table, book shelves, and teacher's desk.

Facilities are needed for teaching units in child development, personal and family relations, and home furnishings, as well as for clothing, when the family living and clothing areas are included in one room.

Folding tablet-arm chairs for discussion classes may be stored either in the room or nearby when not in use. Folding tables may be useful to supplement space for work and study. A teacher's desk, chalkboard, bulletin board, and a file are needed for the teaching center.

A pullman type kitchen within the area is advantageous, providing facilities for social activities without interrupting regular classes.

Storage

Storage cabinets for the family living center should include:

* 36" - 48" cabinet (general storage - number will depend upon class enrollment)

* 36" - 48" cabinet (includes file cabinet, storage for charts and other illustrative material)

* 36" - 48" cabinet (for materials used in teaching home furnishings. The need for this cabinet will depend on the units taught in home furnishings and available space in the walk-in storeroom)

* 48" cabinet (for home nursing supplies)

* 24" Cabinet (for cleaning supplies)

* 24" teacher's cabinet

* Space for child care and development supplies (see page 21)

The number and type of cabinets depend on the space available, the program taught, and the use made of the room. Some cabinets may be used for dual purposes. Location of walk-in storage near this area eliminates the use of some wall cabinets. Open shelves near the entrance for pupils' books help in keeping the room orderly.

FOODS AND NUTRITION

Foods, nutrition, laundering, and certain phases of management (selection of equipment, kitchen arrangements)

Activities

Preparing and serving meals on a family basis, preparing specific foods, preserving foods (canning and freezing, depending upon the community), preparing and serving foods

for special occasions (depending upon facilities provided in the school), caring for food, use and care of laundry equipment, class discussions, demonstrations, and observation of films.

Space

Flexibility in the use of space and the arrangement of equipment is highly desirable. Free areas available in the center of the room for total class experiences as well as small groups need to be planned. A peripheral arrangement with a minimum of fixed equipment extending out into the room promotes flexibility and frees center floor space.

Teacher visibility is better when upper cabinets do not extend into the room as dividers. Permanently walled-in areas within the room limit flexible use of space.

It is estimated that approximately 1200 square feet is needed for teaching the above activities in the foods classroom.

The amount of space needed for unit kitchens in the foods area will depend on the number of pupils in the largest class and the way the class is organized to work. If part of the class is engaged in food preparation and part in related activities, the number of unit kitchens needed will be less than when all students in the class are preparing foods at the same time.

Unit Kitchens (4-6 recommended)

Each unit kitchen is arranged similar to a home kitchen, with sink, range, base and wall cabinets, and table and chairs. Ten to twelve lineal feet of work surface, excluding sink and stove are recommended.

Appropriate storage of utensils, linens, staples for preparing and serving family meals will be supplied in each unit kitchen. Wall cabinets should be placed in relation to work centers. Each unit kitchen should include a sink center, a range center, and a mixing center. Research by Mildred Moore from the University of Illinois recommends the desirability of two mixing centers. Two centers makes it possible for four girls to work without interference and to avoid delay in getting out necessary equipment and supplies.

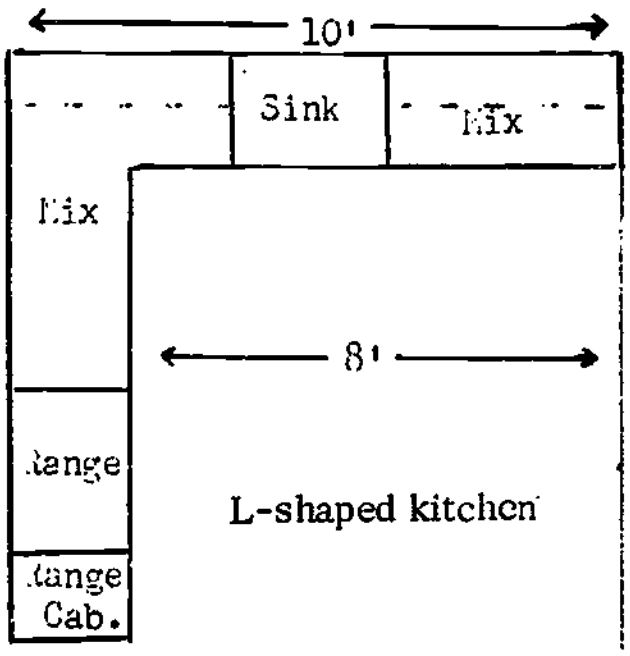
The following linear measurements for the different work centers are recommended by Moore:

* Range center - an 18" base cabinet (preferably at left of range)
  A range

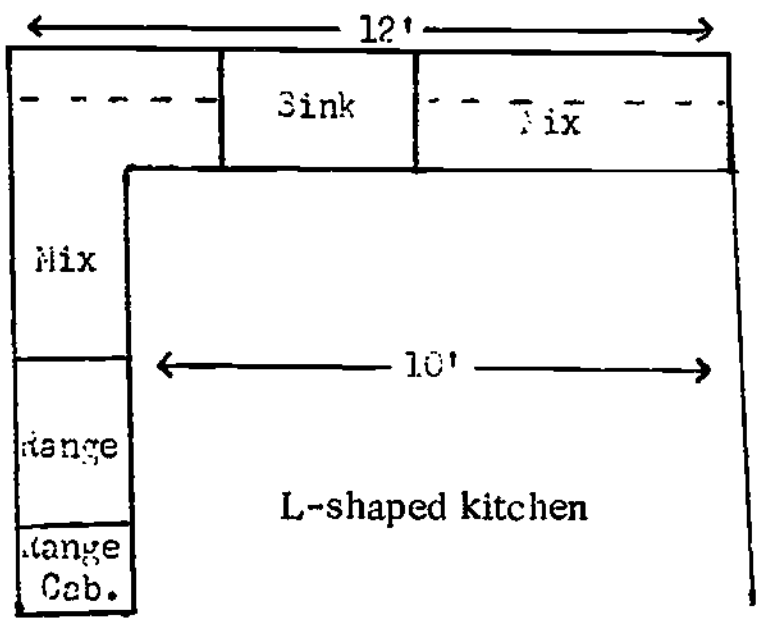
* Sink center - a 32" cabinet with double sink
  An 18" right sink base cabinet
  a 24" left sink unit

* Two mixing centers - (at either side of the sink preferable)
  An 18" base cabinet
  A 24" base cabinet

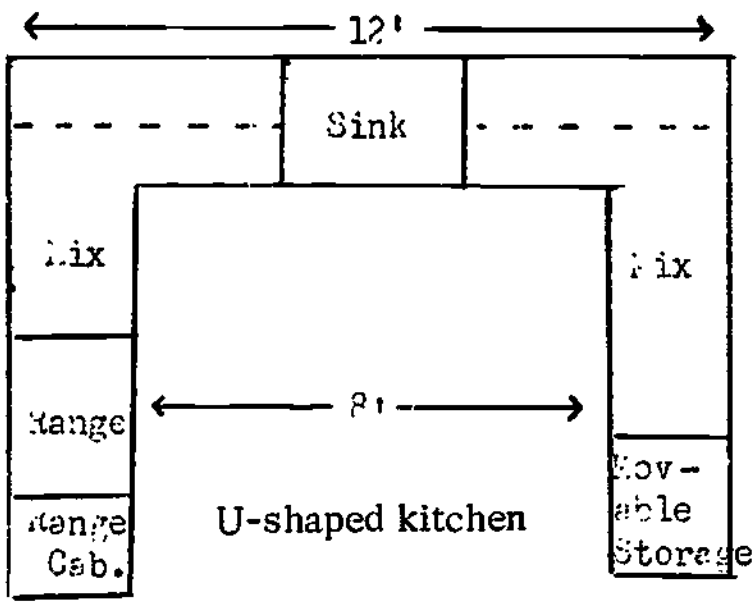
KITCHEN ARRANGEMENTS USING RANGE



L-shaped kitchen



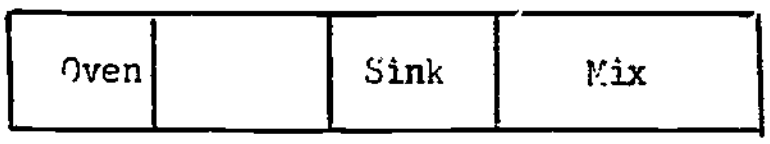
L-shaped kitchen



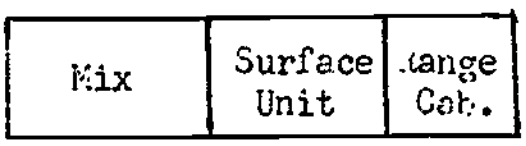
U-shaped kitchen

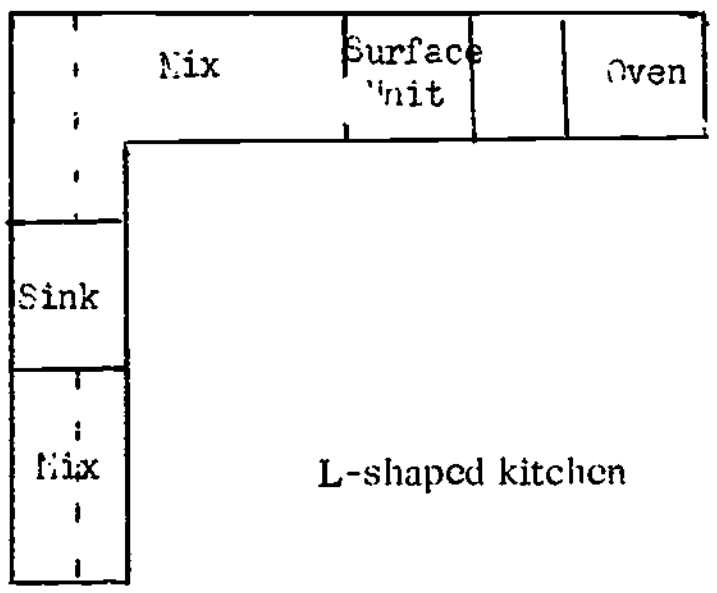
ILLUSTRATION VIII

KITCHEN ARRANGEMENTS WITH BUILT-IN OVEN



Corridor kitchen





L-shaped kitchen

ILLUSTRATION IX

Diversification in unit kitchens through use of a variety of cabinet and counter materials, different range models, different fuels, and various kitchen arrangements provide opportunity to learn kitchen planning as well as use, care and selection of equipment. One unit kitchen might be equipped as an appliance center with a control panel installed for operating the following electrical appliances; fry pan, sauce pan, portable oven, and dishwasher.

A unit kitchen that is used mainly for demonstrations should have a disposal unit, a dishwasher, with a chalkboard, tackboard, and refrigerator nearby.

Unit Kitchen Arrangements with Built-In Units and Ovens

Locating built-in ovens:

* Put the built-in oven where it will not interfers with continuous counter work surface. It may be, but need not be, in the continuous work counter area.

* Allow counter space next to the oven.

* Oven and surface units may be vented from a location on an inside or outside wall. It is less expensive to vent from an outside wall location.

A built-in oven should be installed so the top of the oven door is two to three inches below the elbow.

Build cabinets above a built-in oven 22" to 24" deep. It is difficult to reach into a 12" deep cabinet above a built-in oven if it is set back against the wall.

Pull-out shelves in base cabinet below oven are convenient for storage of small appliances or large utensils.[1]

Equipment and Furnishings

Furnishings and equipment needed:

* Double bowl sink in each unit kitchen

* Ranges - gas and electric, varying sizes and types

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[1] Longbotham, Marion, and Bailey, Katherine, "Planning Your Kitchen," Circular 622, University of Wisconsin Extension Service, College of Agriculture, Madison, Wisconsin, December, 1962.

* Base and wall cabinets for each unit kitchen (See storage). In planning unit kitchens, the following linear measurements are recommended:

Base Cabinet		Wall Cabinets	
Width	24"	Width	12"
Toe Space	3"-4"	Clearance above counter .	14"-15"
		Width of door	12"-14"

* Ten to twelve linear feet work surface exclusive of sink and range

  - Counter space per pupil (linear) 30"
  - Height of work surface 32-36"

* Garbage disposal and dishwasher should be in at least one unit kitchen

* Clearance of at least 14" between base and wall cabinets. Average height of base cabinet is 36". Pull-out shelf at 32-1/2" from floor is desirable.

* Tables and chairs - Movable tables that can be used for meal service and lend themselves to both small and large group arrangement for discussion and other activities make the room flexible. A table 36" x 60" serves six people. The recommended height is 29" - 30" high. Tables may have drop leaves but should be movable with undue effort.

* One or two refrigerators (usually one refrigerator is allowed to each three kitchens, depending on size of class and amount of storage needed for perishable foods).

* Freezer (depends on amount of food preservation taught and storage needs for frozen foods) or combination refrigerator-freezer.

* Ten lineal feet of chalkboard and 8-10 feet of pegboard.

Storage Needs (Other than in the unit kitchens)

Facilities will be needed in the foods classroom for storage:

* 24", 36" or 48" tall cabinet, depending upon amount to be stored (for extra supplies and equipment, additional china, glassware, and silver needed for special occasions)

* 36" base cabinet (for small electric appliances not stored in unit kitchens)

* 24" cabinet (for pupils' aprons)

* Bookshelves 12" deep with nine books stored for each linear foot (for pupils' books)

* 18" - 24" cabinet (for cleaning supplies)

* 24" - 36" base cabinet (for laundry supplies)

Central location of storage cabinets will save time and energy of both students and teacher. Facilities for storing pupils' books and aprons near the entrance avoid congestion and wasted time at the beginning and end of a class period.

HOME FURNISHINGS AND HOUSING

* Selection, arrangement and care of furniture and furnishings

* Care and maintenance of the home

* Renovation of furniture

Activities

* Experimenting in arrangement of furniture, furnishings and accessories

* Experimenting in developing household skills

* Comparing features in selection of furniture and furnishings

* Giving demonstrations

* Making accessories for the home

* Upholstering, slipcovering, refinishing furniture (these activities are more appropriate for adult classes, classes in occupational training, or special interest classes in interior decoration)

* Having class discussions

Space and Location

* This area is best located in the family living center. (See page 15)

* Other locations may be a clothing room or a classroom. The use of these rooms for teaching home furnishings requires much improvising to supply the necessary teaching aids and facilities.

* When located in a family living center, wall space is needed for placement of furniture and arrangement of accessories to teach room decoration.

* Flexible arrangement of equipment and furnishings in the room or area for:

  - Experimentation in arranging furnishings and furniture
  - Doing comparative studies of furniture and furnishings
  - Upholstering and slip covering

* Special care must be taken to protect furniture and floors when space in the room is used for refinishing furniture

* A workroom or a combination workroom and storeroom especially equipped for refinishing is desirable if other facilities in the school are not available

Facilities

* Furniture and furnishings that are part of the family living center

* Accessories such as lamps, pictures, vases, and other decorative objects

* Movable panels to serve as backgrounds for experimentation with wallpaper, paint, and wall hangings

* Samples of floor coverings

* Swatches of drapery fabrics and curtain materials

* Cleaning equipment suited to the furnishings and equipment that can be stored on shelves, racks, and hooks

* Supplies for refinishing and upholstering furniture (if needed)

* A large movable peg-board panel, to which shelves can be attached, is an excellent teaching aid in home furnishings and may serve as a screen or divider

Storage

* A storeroom or storeroom-workroom adjacent to the teaching area is desirable when upholstering, slipcovering and refinishing of furniture are included in the program

* Movable storage cabinets facilitate use of necessary supplies and materials (can be stored in storeroom when not in use)

* Wall cabinets for storage of necessary materials are needed if storeroom facilities are not available

* A work bench with storage cabinet may be desirable if furniture renovation is taught extensively

HOME NURSING

* Home care of the sick

* Safety

Activities

Demonstrations, discussions, pupil learning experiences in making bed, caring for a patient in bed, preparation of a sick tray, and making articles for use in care of the sick.

Space

Taught in the family living classroom, family center in the clothing classroom, or health center in the school.

Equipment

Some equipment may be available in the department. Sometimes equipment such as a hospital bed may be borrowed for temporary use.

* Bed - one roll-away or the day-bed used in the living center

* Blocks - four, to raise the height of the bed

* Bed linen - four sheets, four pillowcases, one blanket, one mattress pad

* Towels and washcloths - two or three of each

* Pillows - two, or more if a back rest is not provided

* Laundry bag - one

* Chairs - one straight-back, one easy chair

* Table - one bedside type

* Tray and dishes - for serving a patient in bed

* Sickroom supplies - such as a hot-water bag, icecap, washbasin, pitcher, pail, clinical thermometer, drinking glass, drinking tube, and waste container

* Medicine cabinet - equipped with first aid supplies, such as adhesive tape, bandages, cotton, antiseptic for cuts and scratches, and application for burns

Storage

Storage for linen, sickroom supplies and a roll-away bed (if used) may be in wall cabinets. A walk-in store room, when available, affords the best storage for large pieces of equipment such as a hospital bed and other sickroom supplies.

LAUNDRY AREA

Uses of Laundry Center

* Teaching
  - Selection and care of laundry equipment
  - Care of fabrics
  - Teaching principles of laundry procedure
* Service
  - Care of department linens, aprons, etc.

Activities

* Demonstrations
* Class experiences in actual use of laundry equipment
* Experiences in ironing and laundering to develop household skills, as training for household employment

Location and Space

The laundry area may be found in several different locations. Most commonly located in a foods classroom, often between foods and clothing laboratories as a separate unit, or incorporated into one of the unit kitchens (sink and work surface of unit kitchen used as laundry unit)

* Other possible locations are:
  - Clothing classroom (located near sink in room)
  - Family living classroom, if it has a home management area with a sink
* Regardless of location, the laundry center must offer adequate space for class demonstrations

* A separate room with 250-300 square feet of floor space may be practical only when training for household employment is part of the curriculum

* Laundry unit should have four work centers (preparation, washing, drying, ironing) arranged to form a continuous production line, if possible

Facilities

* Washer, dryer, or a combination washer-dryer, sink, and counter space for sorting and stain removal, and base and/or wall cabinets for storage of laundry supplies

* Equipment for ironing should be accessible - either a part of the laundry center or nearby

* Sufficient water pressure and adequate hot water

* Dryer installed so that students do not have to reach around open door to shift clothes from washer to dryer

* Equipment that can be serviced in local community

TEACHING CENTER

Each classroom needs a work center for the teacher, located in a focal point that makes supervision possible in any part of the room. The center includes a teacher's desk, one or two chairs, a filing cabinet, and a cabinet to store teaching materials, such as charts, audio visual aids, books, etc.

Adjacent to, or within, the teaching center, include a chalkboard (10-13 lineal feet). Plans for chalkboard space when wall space is at a premium are:

* Sliding chalkboard located on wall - a track along the upper wall that allows a channel chalkboard to be hung as needed, may also be used for bulletin boards, charts and posters

* Sliding chalkboards that double as doors, or storage unit used for instructional materials in teaching center

Separate Office Area

For schools with large enrollments and teachers sharing classrooms cooperatively, a separate office space or a combination office-workroom makes possible the continuous use of classrooms for teaching.

The office area should provide space for the teachers to do lesson planning and have conferences. Furniture includes a desk, conference table, chairs, book shelves, a work table, and storage cabinets.

Combination Office - Workroom

To make best use of the department, a combination workroom-office or a separate workroom may be desirable when there are three or more teachers and there is a large enrollment in Home Economics. Uses made of this auxiliary space are:

* Conference room for students who need individual or group help
* Consultation room with other teachers
* Workroom for preparation of teaching materials
* Storage facilities for illustrative materials such as film strips, flannel boards, etc.
* File space for student home experiences

Facilities will depend on use made of the space and may include:

* Equipment such as a sink, refrigerator, range-top, counters and cabinets (if used for hospitality or for preparation for foods demonstrations)
* Portable sewing machines and sewing supplies
* Storage space for a variety of activities
* Space and equipment provided for the development of bulletin board displays and charts, demonstrations, laboratory preparation, experimentation and the like
* Tool panel for equipment and supplies for furniture projects

Location

If an office is used with multi-purpose rooms, it should be accessible from either room or the main corridor.

A workroom, when included in a department, may be separated from the main rooms by folding doors. When opened, this should become part of the instructional area as a demonstration center, an extra unit kitchen, or additional space for clothing construction.

PART V

STORAGE

Storage is so important to the successful operation of a homemaking department that it deserves careful study and planning. Not only does well planned storage achieve better use of the department, but it will also provide a desirable teaching situation. Storage aids in creating an effective setting for teaching management and furnishes opportunities for improving housekeeping practices.

Unfortunately these mistakes in storage are all too frequent:

* In the effort to duplicate a homelike atmosphere, storage fails to meet the needs of a homemaking department.

* Storage is not related to the total needs of the department. For example, provisions are made for kitchen storage, while other storage needs are neglected resulting in an unbalanced arrangement.

* Storage is unrealistic and is not planned in relation to use.

* The percentage of space used for storage is too large in proportion to the total space of the room,

* Over-elaborate and too expensive installations result in a waste of money.

* Storage is not tailored to fit needs of individual department.

The purpose of storage is more than an array of beautiful cabinets. Good storage:

* Protects objects to be stored

* Hides unsightly objects

* Contributes to energy saving

* Provides flexibility in use of space

* Provides for future changes

Storage is an individual matter. Architects, administrators, and teachers who are responsible for planning storage will need to envision:

* Activities to be included (supplies and visual aids needed)

* Supplies that need a good deal of storage space

* Use of department for adult classes and community meetings will influence storage needs

* Height and reach of individuals using storage

* Program in Home Economics (storage needs for all areas)

* Persons or groups (small or large groups) using storage (for example, the amount of equipment and storage needed for 24 pupils preparing food at one time)

Storage facilities may be provided in two ways:

* Wall or free-standing cabinets that store small or medium equipment at point of use

* Walk-in storeroom and/or pantry that stores bulky articles and large equipment

Storerooms must be carefully planned and organized for efficient and effective storage. Shelving along storeroom walls is necessary to provide complete utilization of space. Storerooms afford the best means for storing:

* Equipment for play schools and home nursing

* Supplies and equipment used in teaching consumer education, home furnishings, clothing and other units

* Portable screens, portable bulletin and chalk boards

* Movable storage cabinets

* Furniture in process of being refinished

* Seldom-used articles

Although storage in Home Economics departments needs to be tailored to fit the needs of each individual school, there are certain basic considerations important for all departments:

Wall Cabinets

* Adjustable shelves and movable partitions

  - Eliminate need for stacking
  - Make all articles accessible
  - Make economical use of total space within cabinet
  - Make space adaptable to different sizes and shapes of articles

* Easily adaptable cases

  - Stock units (cabinet frames) in various sizes can be adapted to a wide range of needs. For example, file drawers and a book compartment can be incorporated in a cabinet in one school, and for another, installation of the same type cabinet may contain a cleaning closet or ironing board compartment

* Movable cabinets (36" high)

  - Serve as storage for teaching materials that can be brought out as needed and stored when not in use
  - Can be placed as room dividers to separate certain areas
  - Cabinet with counter surface can be shifted from unit kitchen to various positions for use as a display counter, demonstration unit, or cutting area in clothing construction

* Heights

  - A height of 72" for the surface of the top shelf is the limit of comfortable reach for a person of average height
  - 36" is standard for counter tops. Different levels of work surfaces can be accomplished by pull-out shelves to accommodate short pupils and to use in mixing. 14" is usually enough clearance between wall cabinets and working surfaces

* Accessibility

  - Slant front, wall hung cabinets (bottom shelf 5-1/2"-6" deep; top shelf 9-1/2"-10" deep, so that top shelf extends farther out over the counter than the bottom shelf), step shelves, half shelves, files for knife and pan storage, revolving shelves, or shelves on doors for accessible corner storage
  - Peg-board on wall at end or back of counter for hanging much-used equipment

* Ease of cleaning

  - Smooth, even surfaces, free from cracks or spaces
  - Use of grooves rather than dowels
  - Raised floor in reach-in closet
  - Cabinets with dust-proof and insect-proof lining in backs, sides and tops
  - Well-fitted doors

Safety

* Upper cabinet doors, if hinged on one side should be open all the way back and not be more than 12" - 14" wide

* Cabinet doors should leave 18" free passage when open

* Storeroom on level with room

* Adequate light for interior of cabinet or closet

* Interior of closet finished in light color

Location

* Locate storage cabinets so that they do not obstruct the view of any part of the room. Storage cabinets located close to areas of use saves time and energy in the room. Congestion in the classroom may be avoided by not locating storage in one place in the room

* Provide closed shelving for articles that need to be protected and are little used, or may detract from the appearance of the room. Open shelves for frequently used items, such as books

Guides for Using Storage

* Make a list of supplies and teaching materials to be stored and classify to use:

  - Permanent storage (files, records, etc.)
  - Occasional or seasonal
  - Frequent usage

* Plan space best adapted to the purpose. Use every means to avoid the need for stacking, reaching, stooping, and other annoyances

* Organize equipment into work or activity centers so that all articles needed to complete an activity are in one place

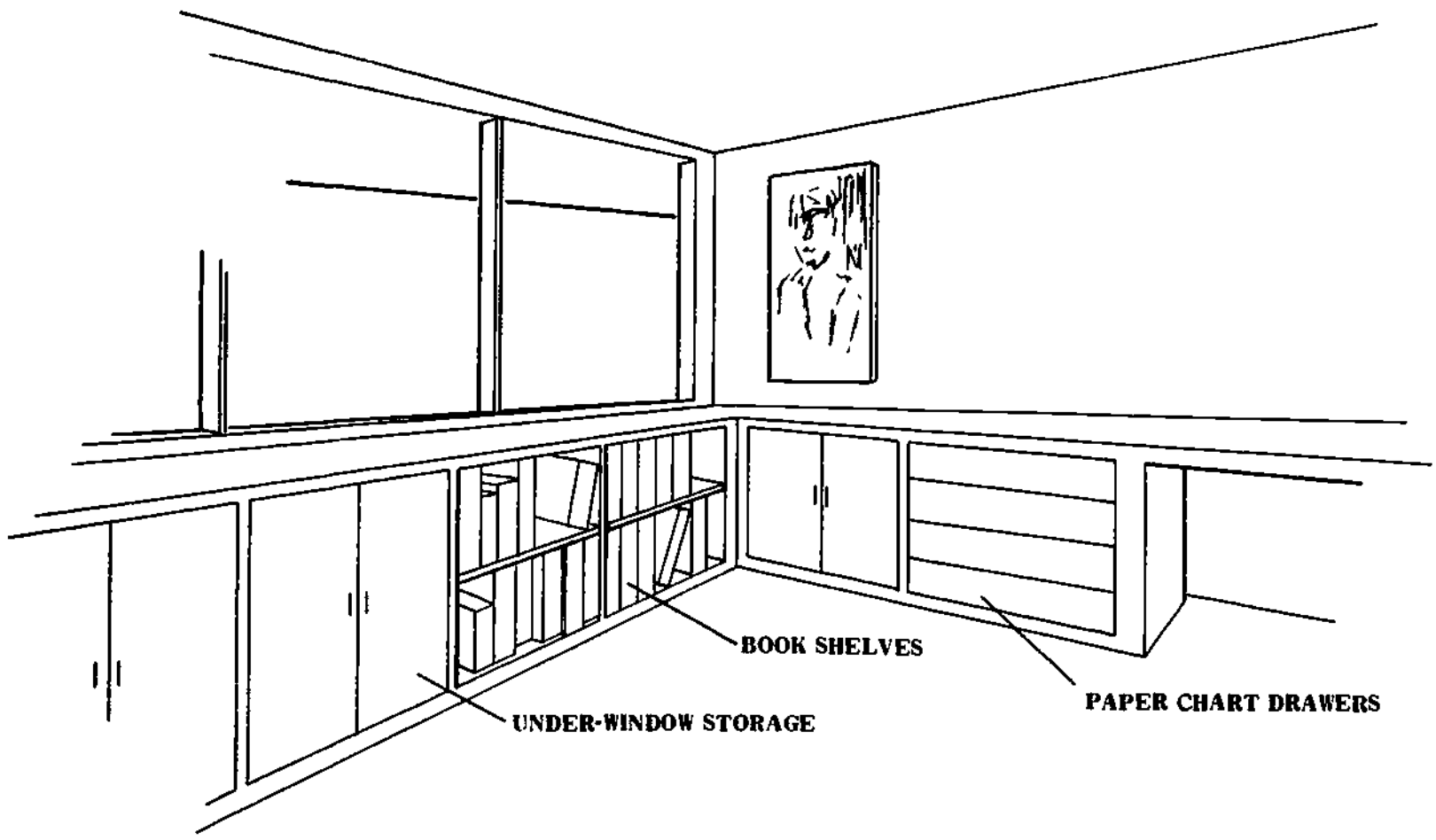
* Plan so that all stored articles are easily seen, and may be removed without removing another item

* Allow for changing usage

Store in Areas of First Use

* Supplies and equipment placed as close together as practical

* Space should be provided at each work center for storage of supplies, utensils and tools used at that center



STORAGE

Illustrates the possibilities of the use of space underneath windows for storage. The extent to which space can be utilized under windows will depend upon the heating system.

ILLUSTRATION X

The sliding chalkboard mounted on the storage cabinet provides a chalkboard for the teacher's use as well as storage for books and teaching supplies.

PART VI

EQUIPMENT AND FURNITURE

Pointers for selection of furniture and equipment for the Home Economics department:

* Visualize needs for equipment and furniture in relation to the program and the individuals using the department

* Make a complete plan for purchasing all equipment and furnishings even though all equipment cannot be purchased the first year

* Make a plan for arrangement before selection

* Consider standards attainable by the majority of those using the facilities

* Select furniture appropriate for the room for which it is to be used

* Plan for flexibility in the use of furniture and equipment

* Consider cost, keeping in mind best values in relation to money spent. Built-in's and special features cost more than stack furniture or equipment

General Characteristics of School Equipment or Furniture

* Is usually wood, metal or plastic

* Should be durable, mar-proof, strong, simple and well-designed

* Should be light weight, noiseless, and easily moved

* Should be economical and suited to the particular school

* Should be multi-purpose in use as much as possible

Desirable Features of Tables and Chairs

* Tables are movable and lend themselves to small group use or may be pushed together for discussion

* Are stackable

* May have drop leaves at each end to conserve space when not in use

* Have square corners so that they can form larger units when needed for discussion groups

* Have a durable surface

* Are multi-purpose in use

* Chairs are comfortable and promote good posture (seat 16-18" from floor)
* May be stackable, thus using less space
* Are movable and designed for flexible arrangement
* Do not produce noise
* May have tablet arm for taking notes
* Mobile cabinets (36" high) provide additional work surface
* Movable book carts
* Movable demonstration tables
* Bookcases and display boards used as movable room dividers forming side alcoves as needed
* Stackable storage cabinets
* Adjustable heights of working surfaces (base cabinets and tables)
* Colors and finishes keyed to lighting factors in the room
* Trapezoidal, semi-circular, and round tables. These can be grouped together or arranged in hollow squares, semi-circles, or serpentines
* Desks that come in any number of sizes and shapes

Measurements that May Be Helpful in Planning Work Centers

Roll-away bed . . . 40x46x24"

Storage cabinets
- Maximum height . . . 84"
- Maximum depth . . . 24"
- Maximum depth of wall cabinets . . 12"

Book shelves
- Minimum depth . . 10-12"

Storage cabinets for chairs
- Width (minimum) . . 36"
- Height of unit . . . 40"

Files, standard letter size
- Depth . . . . . 24"
- Legal size . . . . 12"

Magazine shelves
- Width . . . . . 24"

Chalk board . . . 10-12 lineal feet

Tack board . . . . . 8 lineal feet

Aisle space
- In front of general storage cabinets . . . . 4 lineal feet
- Space around tables for meal service and clothing . . 5 feet

Washer and dryer, side by side . . . . . 5'6"

Child care cabinets (toys for indoor play)
- Width . . . . . 36-48"
- Height . . . . . 36"

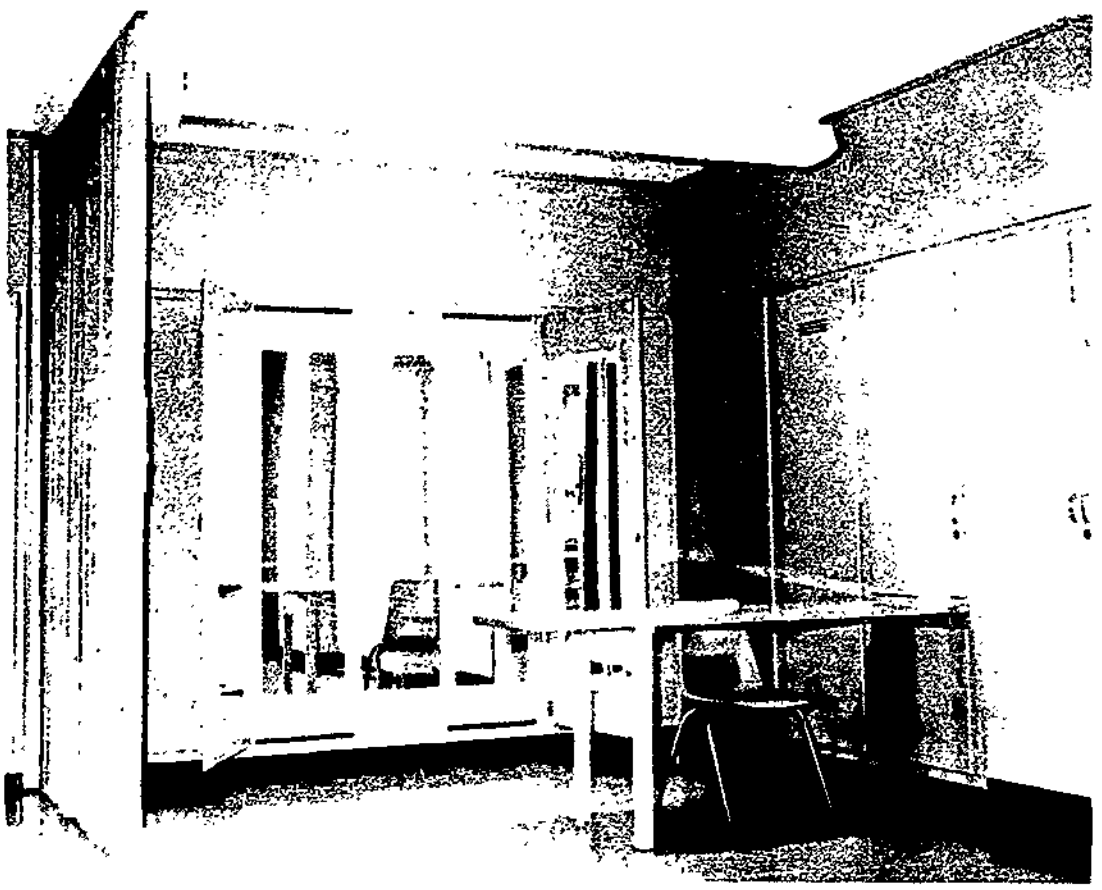
Folding tables for cutting
- In use . . . . 40 x 72 x 36"
- Folded . . . 20 x 72 x 4"

STORAGE NEAR A TEACHING CENTER

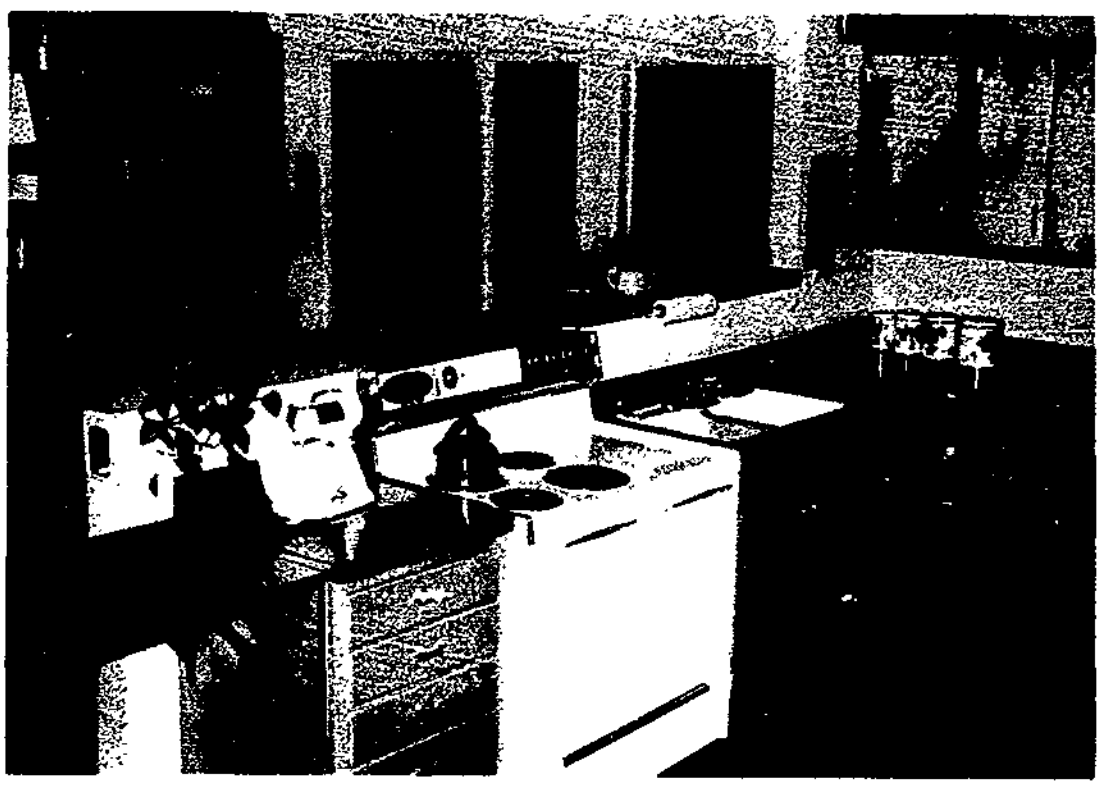
Storage near the teaching center includes files, space for magazines and charts, and a cabinet with four doors and pull-out shelves is used for book storage and other teaching supplies.

Furniture, furnishings, and equipment create a home-like atmosphere but at the same time provide a setting for learning. Use of drop leaf harvest table and pull-out sewing machines make possible the multi-purpose use of floor space.

ILLUSTRATION XI



Built-in table in a workroom adjoining the clothing laboratory. Folding wooden door makes it possible to combine the space with the clothing room or use as a separate area for individual work.



Drop leaf on cabinet increases work surface in unit kitchen.

ILLUSTRATION XII

CHARACTERISTICS OF MATERIALS USED FOR COUNTER SURFACES AND FLOORS

Characteristics	Inlaid Linoleum	Melamine Laminated Plastic	Polyester Laminated Plastic	Stainless Steel	Ceramic Tile	Vinyl Plastic	Asphalt Tile	Rubber Tile	Wood
I. Suitability for Counters									
Floors above grade									
Floors below or on grade									
II. Resistance to Stain - Acid - Alkali	good	excellent	excellent	excellent	excellent	excellent*	poor	fair	good
Heat	poor	good	fair	excellent	excellent	poor	poor	good	good
Cigarette burn	fair	good	good	excellent	excellent	poor	poor	poor	poor
Heavy impact	fair	poor	poor	poor	poor	fair	poor	excellent	fair
Color change by sunlight	fair	excellent	excellent	excellent	excellent	excellent	fair	fair	good
Moisture absorption	poor	excellent	excellent	excellent	excellent	good*	excellent	fair	poor
Cutting	fair	poor	poor	good	excellent	fair	poor	fair	poor**
Abrasion	poor	excellent	good	excellent	excellent	fair	fair	poor	fair
Grease and Oil	fair	excellent	excellent	excellent	excellent	excellent	poor	poor	good
III. Resilience	good	poor	poor	poor	poor	poor	fair	excellent	fair
IV. Quietness on Contact	good	good	good	good	poor	good	fair	excellent	poor

*Vinyl from one manufacturer has a special backing which is unaffected by moisture and alkali.

**Though resistance of woods to knife cuts is poor and appearance of counter is damaged, wood is the best material for a cutting block because it does not dull knives as much as other materials.

PART VII

ADDITIONAL FEATURES

Atmosphere in the Home Economics Department

The Home Economics department should be attractive and homelike without sacrificing efficiency or a workmanlike atmosphere. To insure harmony, all colors should be planned as an ensemble. The same art principles as in a home can be applied. Remember that intensity and value are just as important as hue in the selection of background colors. Since all departments are planned for both daytime and evening use, colors should be tried out under both lighting conditions to insure best effects.

Architects contend that the color plan for any department should be selected in accord with the general character of the building, rather than following the personal preferences of one or two persons. Since the planning of Home Economics quarters is a long-range program, it is important to use the architect's professional skill and work with him in the selection of color and theme for the department's walls and floor. The furnishings and furniture for the rooms may be planned around this background.

LIGHTING

Light control in the classroom should insure the pupils' comfort as well as efficiency. Specialists recommend as an absolute minimum an illumination of 50-foot candles for classrooms. For sewing on dark materials, more light is needed. The illumination in the foods and clothing rooms should meet the standards of the building codes for these particular rooms. Although it is recommended that lighting be primarily controlled by electrical means, the control of natural light should also be considered. Equipment should be arranged so that pupils do not face the light while carrying on visual activities. Natural lighting in the classroom should be controlled by the following means:

* Drapes
  - Effectively eliminate distracting light
  - Mounted so that they are easily manipulated
  - Easily cleaned
  - Durable and resistant to fading
  - Occupy minimum wall and window space when not in use
* Shades
  - Easy to clean
  - Trouble-free system of raising and lowering
  - Effectively eliminate outside light

Special requirements for lighting may be:

* Over the sink
* Counter area
* Under cabinets
* Demonstration area
* Above bulletin board

FLOORS

Rooms where food service and laundering are done require special consideration. They must be greaseproof and not snow stain and should be easily cleaned.

Floor materials being used in Home Economics departments are usually asphalt tile or plastic. (See chart for use)

COUNTER SURFACES

In selection consider: (Also refer to chart for use)

- Cost
- Suitability
- Resistance to stain
- Resistance to heat
- Resilience
- Quietness to contact
- Color

WIRING

Start the planning for wiring needs in the Home Economics department with a list of electrical equipment and appliances to be used and their general location. Plans for electrical requirements should take care of both present and future needs. The number of electrical appliances used in the Home Economics department will no doubt be increased. The use of teaching machines, television, and audio-visual aids will also add to the need for more current in the future. Therefore, it is important to plan for a generous amount.

The architect needs to be informed concerning electrical and circuit needs for the department. The following suggestions for wiring may be helpful:

* For safety's sake, circuits in the Home Economics department should be controlled by circuit breakers.

* Outlets on all sides of the room should be provided.

* Location of outlets will depend upon the use made of them. In unit kitchens, outlets are placed 10-12 inches above the work surface.

* Provide one double outlet for plug-in appliances in each unit kitchen. Each single outlet for plug-in appliances should have an individual circuit and be protected by its own circuit breaker.

Following is a chart showing suggested distribution of circuits: [1]

Types of Circuits	To Provide Power for	Minimum number and Size of Circuits	Capacity of Each Circuit
General purpose circuits	Lighting and convenience outlets	One 15-amp circuit for each 375 sq.ft. (No. 14 wire)	1800 Watts
		One 20-amp circuit for each 500 sq.ft. (No. 12 wire)	2400 Watts
Small appliance circuits	Convenience outlets serving 120-volt small appliances	Two 2-wire circuits or	2400 Watts
		One 3-wire circuit	4800 Watts
Special purpose Circuits	One piece of major 120- or 240-volt equipment	One for each piece of equipment	Depends on individual appliance

[1] The National Wiring Bureau, "Full Housepower--Efficient Electricity in the Home," Teachers Library, Inc., New York, New York.

Appliances (230 volts)

electric range
built-in oven
surface unit
electric washer and dryer (combination)
electric dryer
electric water heater

Appliances (115 volts)

irons (steam and dry)
washer
toaster
portable oven
food waste disposal
french fryer, sauce pan, etc.

SMALL EQUIPMENT FOR FOOD PREPARATION

I. Equipment to be located in a unit kitchen for the use of four girls.

A. Basic equipment

Cannister set
2 sets of mixing bowls (nests of 3 or 4)
3 or 4 straight side saucepans (1-1/2 qt., 2 qt., 2-1/2 qt.)
1 cast iron or cast aluminum skillet with lid (11")
1 casserole (1-1/2 qt.)
2 layer cake pans (8")
2 pie pans (8")
2 muffin pans
2 cookie sheets
1 loaf pan (metal or glass 10 x 6")
1 pancake turner
2 paring knives
1 slicing knife
1 floating blade knife (potato peeler)
1 wide spatula
2 small spatulas (4" blade)
2 cooking forks
1-2 rubber scrapers
1-2 pastry blenders
2 cooling racks
1-2 flour sifters
1 strainer (wire mesh)
1 set biscuit cutters
2 sets measuring spoons
2 glass measuring cups
2 wooden spoons or 1 set
1 large spoon with slotted bowl
1 grater
2 rolling pins
4-6 custard cups
1-2 serving trays (12"x15")
2-4 teaspoons
2-4 tablespoons
Salt and pepper container
Refrigerator dishes
1-2 rotary egg beaters
Pot holders
2 dish cloths
4 dish towels
1 dish drainer
1 vegetable brush
1 pot scraper
1-2 cutting boards

B. Suggested equipment which can be added in the unit kitchen

Kitchen shears
Tubular cake pans
Casserole of a different size
Wire whip
Tea pot
Pastry brush
Bottle and jar opener
Potato masher
Portable mixer
Double boiler (each part usable as a saucepan)
Pint glass measuring cup (this may be substituted for one of the one cup glass measuring cups)
Juice reamer
Glass baking dish (13")
Tongs
Pastry cloth
Blending fork (may be substituted for one of the pastry blenders)
1 small skillet

Here are some questions which may help you decide which of the above items to have available in each unit kitchen rather than in general storage.

1. Will the item of equipment save time and energy if located in the unit kitchen?

2. Will the item of equipment be used frequently?

3. Is the space available to store the additional items of equipment in the unit kitchen?

4. Can the additional cost of having the item of equipment in the unit kitchen be justified?

II. Equipment for food preservation

The amount and kind of equipment needed for teaching food preservation will vary with the local situation. The following are some kinds of equipment which may be needed:

Various types of containers and packaging materials for freezing
Wire baskets for blanching
Water bath canner with a rack
Pressure cooker
Glass jars
Jelly glasses
Jelly strainer
Tongs for handling jars

III. Meal service for each unit kitchen

A. Basic equipment

6 dinner or luncheon plates
6 salad plates
6 bread and butter plates
6 cups and saucers
6 soup or cereal bowls
1 medium platter
2 vegetable dishes
1 set salt and pepper shakers
6 water glasses
6 juice glasses
place mats
1 pitcher
6 teaspoons
6 soup spoons
1 butter knife
3 tablespoons
1 sugar shell
1 cream pitcher
1 sugar bowl
6 knives
6 forks
6 salad forks

B. Items which can be added for meal service and for use in special activities in food preparation

Linens
Silver
Serving dishes
Relish dishes
Jelly dishes
Large glass plates
Punch bowl and cups
Containers for centerpieces

IV. Equipment to be located in General Storage for the use of the entire class

A. Basic Equipment

Each item of equipment listed in Section I under part B should be a part of the basic equipment for use of the entire class if it is not included in each unit kitchen.

Large kettles (over 3 quarts)
1-2 colanders
Food mill (at least one)
Food chopper (at least one)
Standard mixer (at least one)
Large spoons
Wall can opener (number depending upon class size)
Coffee maker (at least one)
Tea kettle (if needed for heating water)
Paper towel dispenser
1-2 roasters (different sizes)
Shredder (at least one)
Cookie press (at least one)
Meat thermometer
1 or more candy thermometers
Butcher knife or chef's knife
Serrated knife (8" blade)
Large bowls (over 3 quarts)
Ladles
Wide mouth funnel
Food grinder (at least one)

B. Equipment which can be added to the general laboratory equipment

Carving set
Cake decorator
Pressure saucepan
Cheese cutter
Apple corer
Scales
Nut chopper
Quart measuring cup
Griddle
Waffle iron
Knife sharpener
Large coffee maker
Pie decorator
Grapefruit knives
Electric skillet
Deep fat fryer

The above equipment list is a suggested one and items of equipment from this list can be added if there is sufficient need for such equipment. Selection of equipment from this list will depend upon:

1. Suitability and efficiency of item in relation to use.

2. Cost of item in relation to use and need.

3. Opportunities for additional learning experiences in food preparation which item of equipment can provide. (For example, the electric skillet may be useful in teaching use and care of small appliances in food preparation.)

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1. American Vocational Association. Developing Educational Specifications for Vocational and Practical Arts Facilities, AVA, 1010 Vermont Ave., N.W., Washington 5, D. C.

2. Educational Facilities Laboratories Publications, Educational Facilities Laboratories Inc., New York 22, New York.

3. U. S. Department of Health, Education and Welfare, Office of Education, U. S. Printing Office, Washington 25, D.C.

   Administrative Facilities in School Buildings
   The Secondary School Plant, An Approach for Planning Functional Facilities
   Designing Elementary Classrooms, Special Publication No. 1
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Planning Bulletins for Home Economics Departments

1. Space and Equipment for Homemaking Programs. Misc. No. 9: Health, Education and Welfare, Washington 25, D.C.

2. A Guide for Planning Specialized Departments for High Schools in Iowa Bulletin No. 127-1. Iowa State College, Ames, Iowa.

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2. Small Homes Council-Building Research Council, University of Illinois.

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   Cabinet Space for Kitchen
   Kitchen Planning Standards

3. Ohio State University, Agricultural Extension Service. Columbus, Ohio.

   Plan Your Kitchen, Bulletin 279
   More Space in Your Kitchen
   Cupboard

4. Ohio Agricultural Experiment Station, Wooster, Ohio. Work Counter Surface Finishes.

5. U. S. Department of Agriculture, Beltsville Energy-Saving Kitchen. Leaflet No. 418. U.S. Government Printing Office, Superintendent of Documents, Washington 25, D.C.

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7. Institute of Agricultural Sciences. Planning your Workroom. State College of Washington, Pullman, Washington. Bulletin 320.

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2. Burton, W. H., Kimball, K.B., Wing, R.L., Education for Effective Thinking. New York: Appleton-Century-Croft, Inc. 1960.

CATALOGS FROM EQUIPMENT COMPANIES

1. Bavinco Manufacturing Company, Catalogs 59 and 60. Buffalo 11, New York.

2. Geneva Modern Kitchens. Geneva, Illinois.

   Geneva Home Arts Equipment
   Geneva Arts and Crafts Casework
   Geneva Food Laboratory Casework

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This study deals with the process by which the Mon-Yough Community Action Committee, Incorporated, was organized and developed between 1964 and 1966. In its 2 years the committee has become the center of the "war on poverty" in the region, both by supporting and coordinating existing institutions and by important activities of its own. The goals of the committee were to: (1) ascertain the needs of the poor and devise regularized means for meeting these needs, (2) identify groups for whom programs are necessary, (3) coordinate activities of existing organizations, (4) engage in compensatory activities to supplement the work of other organizations, and (5) provide employment in positions to be created with the authorization of programs. The process and problems of organization, the objectives and actvities of the committee and the economic and demographic profile of the Mon-Yough region are discussed in detail. (JK)

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A COMMUNITY ORGANIZES FOR ACTION:

A CASE STUDY OF THE MON-YOUGH REGION IN PENNSYLVANIA

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PREFACE

This study was one phase of a project on "Research, Development, and Demonstration in Adult Training and Retraining" which was financed by the United States Office of Education. The entire study was conducted under the auspices of the Institute for Research on Human Resources of The Pennsylvania State University. The views expressed herein represent those of the authors and in no way reflect the views of any governmental agency. Grant N. Farr, Head, Department of Economics, The Pennsylvania State University, assisted in the over-all planning and direction of the study.

The authors of this report, Robert W. Avery and Herbert A. Chesler are affiliated with the University of Pittsburgh, in the Departments of Sociology and Economics, respectively.

Final responsibility for the entire project and this report rests with the project director.

Many persons from various government agencies, universities, and private organizations contributed formally and informally to the conduct of the project and to the achievement of its objectives. They are too numerous to mention. However, a specific reference should be made to the work of John H. Marvin, who was associated with the project staff during the early phases of the project. He contributed significantly to the organization of a community action program in the Mon-Yough Region of Allegheny County and to the stimulation of research in the area. Various members of the staff of the Institute for Research on Human Resources also contributed, in many ways, to the end result. None of these is to be held responsible for any views expressed.

Jacob J. Kaufman
Project Director

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1

INTRODUCTION

This study deals with the process by which the Mon-Yough Community Action Committee Inc., (MYCAC) was organized and has developed between 1964 and 1966. The formation of MYCAC and its activities after its inauguration have provided the bases for a study of the feasibility and effectiveness of a community action program in an area of numerous relatively small communities with close economic and social linkages, whose economic base has been adversely affected, but whose traditions have never included significant political cooperation in meeting common problems. Chapter 2 describes and analyzes the relevant events in the process of organizing, the major problems encountered, and the responses to those problems. Chapter 3 analyzes the objectives and activities of MYCAC. Chapter 4 sets forth the economic and demographic profile of the Mon-Yough Region.

In common with Allegheny County, in which it is largely contained, the Mon-Yough Region is heavily industrial, dependent upon steel production for its principal livelihood. As changes have occurred in the economic arrangements in the steel industry, these have been reflected in the entire economic and social fabric of southwestern Pennsylvania.

However, the Mon-Yough Region differs markedly from the rest of Allegheny County in several respects. (1) The rate of population growth in Mon-Yough has been less than that for Allegheny County as a whole. (2) The average age of its population has risen. Between 1950 and 1960 the number of persons 45 years and over rose by more than 5 percent; those in the age group 19 years and younger rose by more than 3 percent. However, those in the age group 20-44 years declined by one-fifth, substantially higher than the one-eighth decline for Allegheny County. (3) Mon-Yough in 1960 had a smaller proportion of non-whites (7.6 percent) in its population than did Allegheny County (8.3 percent). The proportion of Pittsburgh's population in the non-white category was almost double that of Mon-Yough. In fact, most of the non-whites in the County are concentrated in a few neighborhoods in Pittsburgh. (4) In the post-World War II period the Mon-Yough area has had a concentration of its economic base as markets for steel have been penetrated by foreign competitors and as technology has been adopted in other steel producing areas in the United States, leaving the mills in Mon-Yough older, higher cost producers highly

sensitive to small fluctuations in the demand for steel. (5) The Mon-Yough Region has never possessed a political tradition of cooperation among its component communities.

In this setting, the impulse to create MYCAC slowly took shape in the early 1960's, spearheaded by the United Steelworkers of America (USWA). By 1964 the passage of federal legislation, designed to apply to some of the problems of regions like Mon-Yough, provided the stimulus to attempt a formalization of a community action agency in these localities. When it became apparent that the area by itself lacked the resources and expertise necessary to such a task, The Pennsylvania State University eularged its scope of participation in that endeavor when it was agreed (between the University and the U. S. Office of Education) to test the extent to which the University could act as a change agent by supplying a person to act with the local participants in seeking a basis for a viable and permanent community action organization. In addition, the University was to continue to study and analyze the process by which the community worked toward organization by community action.

In this study the evolution of community action in Mon-Yough is conceived as a synthesizing process in which parts of other existing organizations are recruited and merged to form a synthetic organization (MYCAC). The future character of a community action organization is hypothesized to be contingent upon the nature of the components which are drawn into synthesis and their eventual goodness of fit. The participants in the new organization, though members of other existing organizations, presumably agree to participate in forming a new institution because its objectives converge with commitments which these people are already serving. An ideally synthesized organization, then, can most readily grow in a setting where its mission is a generalization of the more specific goals of an array of diverse organizations. In consequence this idealized organization would stand in a complementary relation to each of many other organizations in that each would facilitate the work of the other through cooperation and common membership. As a generic class, synthetic organizations are in principle equipped to attain goals of broader scope than are any of the component organizations which contribute to them.

In practice, of course, the state of perfection embodied in this idealized conception is seldom approached. Nevertheless, the idealized form provides a useful benchmark against which the experiences of the organizers in Mon-Yough can be compared.

It is convenient to distinguish four phases in the history of MYCAC:

1. The Aspirational period, which was the early period when a handful of people, including some in the USWA, defined the

region's essentially economic problem, diagnosed Mon-Yough as the victim of a progressive disease of growing unemployment and underemployment, and set forth aspirations which would bring about its recovery. The founders operated from the conviction that the region could only be revived to the extent that its poorer families could be assured of opportunities for work, education, and full access to the cultural resources of 20th Century America.

2. The Mobilizing period took form as the aspirations became fixed and the number of committed individuals and groups slowly grew.
3. The Formalizing period, whose beginning was marked by incorporation of MYCAC in early 1965, gave additional impetus to the mobilizing work and provided a mechanism within and through which mobilizing could be accomplished.
4. Synthesizing was the final phase. The synthetic process had really commenced earlier but was given special stimulus in November 1965 when MYCAC received its first federal grant, and in the following month when a fulltime Director was appointed and the assembling of a staff began. In August 1966 MYCAC received OEO approval for its conduct and administration grant which will support it through August 1967.

The task of achieving internal cohesion among the individual members of MYCAC has proceeded relatively smoothly. One reason for this lack of internal disharmony comes from the role and activities of the "change agent," the University researcher who participated from the early stages. In fact performing the functions of a Director, he helped develop support for MDTA programs and for community action, worked closely with the Bureau of Employment Security, assisted in the recruitment and selection of a Director for MYCAC, and helped to steer activities away from potentially explosive issues for which he had developed a sensitivity in his role of disinterested "outsider." As a consequence of the intervention of this "change agent" MYCAC was created and sent into its formalizing phase with a minimum of internal friction among its members.

The movement toward synthesis has been confronted with two kinds of difficulties: (1) the relative dearth of appropriate organizations which might naturally join community action in Mon-Yough; and (2) the double requirement that MYCAC relate its activities "downward" with those of local community action committees and "upward" with those of the Allegheny County Community Action Program.

The dearth of complementary and supportive agencies such as universities, research institutes, public and private social agencies, employ-

ment agencies, churches, associations benefitting handicapped groups, and many others has been a serious problem. It has meant the relative absence of the talents of professional specialists capable of being utilized by the community action program to provide advice and services available in large cities.

The second problem—that of the role of MYCAC in the entire structure of community action programs in the area—has only been partially met. Unlike most community action programs under the Economic Opportunity Act, MYCAC is not associated with a geographical area which is also a single political unit. Its 31 municipalities are not united save through the fact that they all lie within Allegheny County. Inter-community endeavor is a new experience for most of them. Thus, MYCAC from the beginning has had the major task of enlisting support from these separate communities, each of which could participate in the "war on poverty" without associating with MYCAC. Furthermore, by 1965 Allegheny County had already formed an organization to construct programs for the entire County (except Pittsburgh). MYCAC then has had to justify its status both to its prospective constituents and to the County organization. Obviously this has been fertile ground for possible jurisdictional disputes.

In general, this problem thus far has been reasonably met by some ingenious and imaginative activities. With regard to its local constituencies, MYCAC has operated at various levels. It has made fruitful and durable contacts with political leaders in the localities, acquainting them with the problems to which MYCAC is directed and the proposed programs for combatting them. It has sought to enlist the support of individuals and institutions. It has provided contact and facilities for the poor. With regard to its relationships to the Allegheny County organization, an agreement was reached in December 1965 that MYCAC would forward its proposals for grants through the Allegheny County Committee for review, either for forwarding to Washington with a favorable recommendation or for return to MYCAC with suggestions for revisions. This distance between MYCAC and the County has not become institutionalized into alienation. A step toward fuller accommodation has been made by the addition to each board of one member from the other board. This type of synthesis, brought about by common membership, also is occurring between MYCAC and the emerging community action committees in several Mon-Yough communities. Thus far, at both levels the leaders seem to view the cause of disagreement to be inadequate or non-existent channels of communications, not the personalities and willful behavior of the opposition. So long as this continues, the possibilities of amicable and constructive resolution of potential conflict are enhanced.

MYCAC has sought to enlist support for community action on the grounds that the region as a whole can hope to prosper if its poor residents are rescued from sub-standard social, economic, and educational conditions. Thus far, the USWA (the most influential union in the area) has endorsed MYCAC by financial contributions and through the efforts of members who are active in MYCAC. The same cannot be said of the business community. Business leaders are more problematical. They have not yet contributed substantial support, financial or moral.

As MYCAC has moved toward fuller synthesis, a series of objectives has come to be recognized. Though these objectives did not evolve by any official process of discussion and collective decision within MYCAC, they have nevertheless come to be commonly understood through the kinds of activities in which MYCAC engages or proposes to engage. The objectives are as follows:

1. to ascertain the needs of the poor of the region and to devise regularized means for meeting these needs;
2. to identify different groups among the poor for which it may be necessary to develop different programs;
3. to coordinate activities of existing organizations which seek to serve the poor;
4. to engage in compensatory activities which would supplement work undertaken by other organizations which have been unable to do this work adequately;
5. to provide employment for some of the poor in positions which will be created when programs are authorized.

In pursuit of these objectives, MYCAC has engaged in varied activities and programs. At least one major hurdle seems to have been negotiated successfully: The Committee is now regarded as *the* locus of the "war on poverty" in Mon-Yough. It has sought and established working contacts with the "poor." Though MYCAC lacks the kind and quality of services to the poor found in large metropolitan areas, it has enjoyed some successes. Among its activities in support of existing institutions to serve the poor, the following are notable:

1. From the beginning its founders have worked closely with the local Employment Service Office, assisting in the preparation of proposals for training programs subsequently funded by MDTA.
2. The founders were instrumental in initiating an evening school to give adult drop-outs an opportunity to finish high school. Related but separate is an experiment being conducted in McKeesport by

The Institute for Research on Human Resources of the University to study the effects of a program in both academic and vocational curricula upon young high school drop-outs.

3. Headstart programs were publicized, explained, and supported when those programs were initiated.
4. Communication was established with the clergy in the area explaining the existence of MYCAC and inviting a coordination of efforts.
5. Though some social agencies are active in Mon-Yough, many are not represented at all. The following operate in Pittsburgh, requiring travel by Mon-Yough clients if they are to participate in these programs: Bureau of Vocational Rehabilitation, the Pennsylvania Association for the Blind, Child Welfare of Allegheny County, Allegheny County Adult Welfare Service, Legal Aid Society, the Pittsburgh Child Guidance Center, the Pittsburgh Hearing Society, and the Veterans Administration. MYCAC has offered gratis its presently vacant offices to any agency willing to fill it with a professional person who can provide direct service. Thus far, the Association for the Blind has accepted this invitation.
6. In an unplanned way, arising from MYCAC's contacts on both sides of the labor market, the Committee has come to function as a placement service in bringing employer and potential employee together.

In addition to these activities of MYCAC in support of existing institutions, there have been some steps taken which are designed to be innovative in Mon-Yough. Though the services embodied in these activities are commonplace in large metropolitan areas, they have been absent in Mon-Yough. Some of the more important are summarized below:

1. MYCAC has recognized the lack of a community center which is multi-functional and "total" in meeting the needs of its clients. A proposal to establish such a center for nine communities is currently pending with the OEO.
2. MYCAC has proposed the establishment of a Pre-Vocational Opportunity Center for the Handicapped which would include a rather complete array of special programs for the handicapped persons of the area.
3. In addition to the counseling which MYCAC furnishes to persons referred to its office, it will also maintain an information and referral center for persons in need of specific service available in the community.

4. A proposal has been submitted for a program to identify potential high-school dropouts and to intervene with means to discourage the potential from becoming a reality.
5. MYCAC has taken the initiative in arranging to utilize VISTA workers assigned to housing projects to participate in programs of play and recreation for children resident in public housing projects, programs which are under the supervision of the McKeesport Recreation Department.
6. MYCAC is interested in participating in a research project currently under consideration by the Institute for Research on Human Resources and some of the major steel producers of the area. The study proposes to examine in detail the phenomenon of intermittent unemployment of steel workers with an eye to the feasibility of programs of training for workers to be displaced in steel mills, in advance of their layoff.

Some general observations regarding MYCAC are pertinent. The emergence of this organization into a working mechanism with a charter to promote and initiate change is a realized fact. The admitted scepticism and dubiousness of the observers, which were present throughout most of their relationship with the events that unfolded in the Mon-Yough Region, now are gone. The full synthesis, however, has not yet been accomplished, and is not likely to be until the elite agents of the Region's political and business leadership take steps to affirm positively their willingness to both participate in and support the role of MYCAC. However, the second necessary condition of success seems to have been fulfilled, namely that the organization identify and relate its goals to the needs of that segment of the population which it wishes to represent, in this instance the poorer families of the region.

2

COMMUNITY ACTION IN THE MON-YOUGH REGION: A STUDY IN ORGANIZATIONAL SYNTHESIS

A. INTRODUCTION[1]

The earnest national effort to eradicate poverty has engraved uneasy images upon the American mind. The urban ghetto, the submarginal farmer and the migratory laborer symbclize conditions which stand as the foes of the war on poverty. Poverty in the smaller cities and towns is less easily dramatized and therefore may receive less attention than that which is concentrated in the decaying slum or suggested by the rural shack. In the intersticies lie very many towns, most of which have their poor. Some of these towns are isolated and dispersed, while others fall into natural clusters, related to each other by a common dependence upon the same economic activity.

One such cluster occupies the southeast portion of Allegheny County. Its communities are strung along the Monongahela and Youghiogheny River valleys, extending upward and away from the rivers over an abrupt and uneven terrain. Crowding the banks of these rivers are the elongated mills which give the region its essential character and most of its wage-earners their employment. The remembered past, the present and the foreseeable future of the Mon-Yough (pronounced Mon-Yock)

1. This study has been carried out principally by the two writers but also through the participation and cooperation of very many others. The two authors, together with the "university researcher" referred to, have, since December, 1964, acted as participant observers with and of the people and the events described in the report. They have been provided with constant access to documents, records, offices, formal meetings, conferences, and many informal conversations. They have sought to be present not continuously, but often enough to serve the double purpose of accurate description of significant actions, and of construction of an analytic scheme ("the synthetic process") which could be developed to the point at which it would yield hypotheses for the study of the evolution of organization for community action.

To acknowledge by name the debt owed by the authors to everyone who made this study possible would be to identify persons who might not wish to have their work publicized, particularly under the interpretations of it which are given in the report. The authors are nonetheless grateful for the privileges which have been extended to them.

area pivot around steel. Productivity in the mills and prosperity for the region's families are locked into nearly a one-to-one relation. A strike, a shutdown, or a cutback is immediately felt.

Despite the fact that this corner of Pennsylvania no longer holds a pronounced advantage over the rest of the country in the production of steel—its juxtaposition to stores of coal having been overcome both by removal of much of the coal and by the use of other forms of power—there is little expressed feeling of apprehension about the decline or death of steel production in the valleys.[2] On the other hand there are signs—usually not unambiguous to be sure—that this may be the hard fact of the future. Steelworkers have known periods of unemployment in the past when the market for their product was depressed. They see new mills being erected elsewhere, but not at home. But they have also known revivals; a mill will close or will be reduced to two shifts but will return after a time to full operation. Thus they are not inclined to plan now for the worst eventuality, and perhaps are not even disposed to contemplate it. As one long-time resident put it: "As long as the smoke keeps coming out of those stacks, we're all right."

A few others not quite so intimately affected have another opinion. They accept as basic premise that over the next generation steel will lose much of its importance in the area. Vigorous foreign and domestic competition will make its production in these valleys steadily less profitable, and unemployment will mount as mills close and as jobs are "absorbed" through automation. Representatives of the steel companies themselves do not endorse this view, even privately. But at least one of them has conceded that the future is uncertain, and that it is possible that changing conditions in the marketplace may force some closings.[3]

It was through these circumstances that residents of the Mon-Yough Region saw the evolution of the design for a "great society." One of its harbingers, the Manpower Development and Training Act, was sponsored in the House by the area's Congressional representative. This occurred during the early portion of the present period of steadily increasing national productivity, at a time when Mon-Yough was still—as it is not now—designated as a depressed economic area. The Economic Opportunity Act followed to create the possibility for collective effort to deal both with then-existing poverty and unemployment as well as to construct machinery to cope with the human problems which would inevitably arise in the event of the loss of jobs in the mills.

2. That is, there is little spontaneous expression of this apprehension. That there is much concern held below this surface is evidenced by the anxious sentiments collected by a newspaper reporter in response to his direct questions about the futures of citizens in the region. *cf. The Wall Street Journal*, June 27, 1966, p. 1.

3. Personal communication.

Not more than a handful--a score at the most--of the people who were in a position to link the services offered by the Economic Opportunity Act with the problems of the whole region moved to act, at least in the first months following its passage. One of these who felt most strongly that the region had already begnn to follow a generally downward course was neither a resident of it nor an employee within it. Nonetheless his position in the headquarters of the United Steelworkers of America gave him a stake in it and some leverage to do something about it. He personally conducted a "save Mon-Yough" campaign by knocking on doors in Washington and in nearby universities, by alerting officials to provisions of the bill well before it became law, and by discovering in a district office of his union several men who saw the problem and the opportunity as he did, and who were ready to go to work.

This USWA official was also instrumental in urging several professors at The Pennsylvania State University to consider Mon-Yough as a prime area for their research on manpower problems. A contract between the United States Office of Education and The University was entered into and The Institute for Research on Human Resources assumed responsibility for the work which leads to this report.

The events which have unfolded in the intervening three years, in the wake of this initial recognition and impetus, form a natural history of the development of organizations for community action.

It is convenient to recognize four phases in this history, though it is important to emphasize that the phases were not as sharply demarcated from each other as the following labels may imply: (1) Aspirational, (2) Mobilizing, (3) Formalizing, and (4) Synthesizing.

The first in this list designates the early period when a handful of people, including some in USWA, defined the Region's essentially economic problem, diagnosed Mon-Yough as the victim of a progressive disease (increasing numbers of unemployed and underemployed), and set forth aspirations which would bring about its recovery. Even though "community action" was not then a by-word (as it became later in the wake of the passage of the Economic Opportunity Act), the founders were firm in their ideological conviction that the Region could only be revived to the extent that its poorer families could be assured of opportunities for remunerative work, for adequate education, and generally for full access to the cultural resources of 20th century America. No single point in time separates the aspirational phase from the second or mobilizing stage, for almost as soon as aspirations had become fixed, the founders began to increase their number of committed citizens by endeavoring to mobilize individuals and groups to their cause. This was a slow and gradual process which did not cease in early 1965 with the incorporation of the Mon-Yough Community Action Committee.

Incorporation, marking as it did the beginning of the Formalizing period, gave additional impetus to the mobilizing work and provided a mechanism within and through which mobilizing could be accomplished. Mobilizing was a necessary pre-condition for the final phase, Synthesizing, which will presently be discussed in detail. The synthetic process had really commenced somewhat earlier, but it was given special stimulus in November, 1965, when the Mon-Yough Community Action Committee (MYCAC) received its first Federal grant, and in the following month when a full-time director was appointed, and a staff hired.

This chapter captures, it is hoped, the most salient features of the history of this community action and is presented as a case study.

B. THE PROCESS OF SYNTHESIZING

Community action, by its very nature, is a synthesizing process.[4] On its face it is composed of individuals, distributed over an array of committees which are responsible to an executive group or board. It may or may not have a paid staff. The people who are involved ordinarily bring a reservoir of public spirit to their task which is guided by their commitment to the ideological goals of the action itself. The impression which is created is that their organization grows naturally, even spontaneously, out of the common interest in community betterment shared by the individuals. While this may be true enough as a generalization, it is nevertheless an insufficient description. Many of the participants do not act solely as individuals. They typically also hold other positions in their community in ongoing organizations of various types: political, business, religious, charitable, educational, etc. The new roles which they accept in community action will likely be infused with some of the purposes for which they are already working in their other memberships. Thus while they may not be officially designated representatives of any organization or constituency, they do introduce into their new collective effort many of the diverse interests which they are elsewhere pursuing. It may even be that they see the nascent organization as an opportunity to further the realization of these interests, this being a sensible and consistent ground on which they might be attracted to join in community action in the first place.

While this way of viewing the matter may smack of opportunism, an attempt to capture for one's own use a fledgling organization which

4. For an earlier statement and application of this concept, see James D. Thompson and Robert W. Hawkes, "Disaster, Community Organization, and Administrative Process," in George W. Baker and Dwight W. Chapman, editors, *Man and Society in Disaster*, Basic Books, New York, 1962, p. 268 et seq.

has not yet settled upon its own structure and specific goals, this is not a necessary implication. It is possible that the general mission which occasioned a call for community action in the first place is congruent with the special aims of many separate organizations, though beyond the reach of any single one. In this event it is equally opportunistic for the original sponsors of the new organization to seek the involvement of such people. By so acting, the sponsors may hope to attract not only the motivational resources of many individuals, but the cooperation and perhaps some of the resources of their other organizations as well. In time a community organization which has been composed of parts of existing organizations actually becomes a synthesis of all of them. It is in this sense that community action, as it progresses, may be viewed as a growing synthesis of already present materials.

While this is an idealized conception, it is nonetheless useful for it supplies a baseline against which the effort to organize the Mon-Yough Region may be compared. The idea of a synthetic organization invites attention to numerous questions which are germane but might be overlooked. It immediately suggests an inventory of present organizations to ascertain which of them might have legitimate reason to lend support and energy to a new enterprise. On the other side it sensitizes planners to that category of organizations which have ends in contradiction to those of the planners. It also permits identification of the residual group of organizations which would simply be indifferent to the new aims. With this initial mapping in hand, the sponsors may then proceed to assess the distribution. Does the first group of potentially friendly organizations show promise of being congenial to each other as well as to the planned action? Are they collectively strong enough to overcome or neutralize the resistance of the second group? Are there steps which can be taken to convert indifferent organizations in the third group into willing participants? This query raises the possibility that a newly formed organization may provide machinery for the *indirect* enhancement of goals of existent organizations. Even though there might seem to be no common element between a profit-seeking business firm and a poverty-reducing community organization, it might be demonstrable to the first that the second may incidentally alter their common environment in ways which contribute to the profitability of the firm.

What is ultimately sought, according to this idealized conception, is a synthetic organization which unites the mobilizable components of organizations with similar goals, while protecting itself against dictation by one or a few of these organizations, all the while preserving the integrity of its own mission. It should be clear from this prescription that no real organization could achieve this state of perfection. Organi-

zations which participate in the synthesis through their members will exert control, and in uneven amounts. Goals and purposes of the participants which in the abstract seemed to be congruent will not always coincide when concrete issues are posed. Since the general mission will necessarily take on more refined meaning in the light of specific actions decided upon by the synthetic organization, there will be occasional and possibly constant tension between the hopeful phrases describing the mission, and the meaning of the consequences, of the organization's action. At critical points this tension, which normally inspires constructive discussion about goals, may become great enough to arouse destructive accusations of willful compromise of these goals. In these circumstances the organization may well have to make a trying decision between an alteration of its goals and the defection of an important member.

A synthetic organization, as any other, will move through its phase of initial growth to the stage at which its structure, its procedures and its operating goals do indeed become relatively fixed, institutionalized. Institutionalization is doubly faceted. Because it links rationally established routines with the valued goals which these routines serve, it tends to suffuse these routines themselves with the intrinsic meaning attached to the values, thus making the routines difficult to change without seeming to do violence to the values. At the same time institutionalization provides the foundation for regularity and predictability. It not only channels the motivation of members, but also supplies normative justification for this channeling, at once reducing uncertainty and surrounding prescribed actions with a sense of essential rightness. The perfectly institutionalized organization then has no trouble eliciting cooperation from its members, but it is fearfully vulnerable to changes in its environment that would force it to adapt by revising its goals and procedures.

C. HISTORICAL BACKGROUND OF COMMUNITY ACTION IN MON-YOUGH

The Mon-Yough Community Action Committee has not yet reached the point at which it could become settled into an institutionalized form; it is still in an early phase of its development. Created as an independent, non-profit corporation in early 1965, it passed through its formalizing phase as a committee composed of volunteers who were drawing plans for their permanent organization. This was officially inaugurated in December of that year with the receipt of a grant of $27,997 from the Office of Economic Opportunity, supplemented by

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local contributions from the United Steel Workers of America ($2500) and several of the municipalities in the region. This grant provided for the employment of a small staff (a director, an associate director, two secretaries and an aide) and the acquisition of office space and equipment. The grant guaranteed support for the organization through June, 1966, by which time proposals for specific programs to reduce poverty in Mon-Yough would have to be designed, approved and financed through further grants in order to insure the continuance of MYCAC. Thus for the first time the organization was in day-to-day operation. This report reviews the organizational aspects of its effort and, without assigning praise or blame, describes the character of the principal problems which MYCAC has been obliged to confront and to try to solve.

In the aspirational period, before MYCAC was formed or even conceived, there had been a brief history of community action in Mon-Yough directed mainly toward the problems of unemployed and unskilled workers. In the wake of the passage of the Manpower Development and Training Act (sponsored by the congressman representing the Mon-Yough Region) a local MDTA advisory committee had been appointed, chaired by an official of the USWA. This committee, acting in cooperation with the director of the local office of the Bureau of Employment Security and his staff, had been instrumental in planning and requesting federal support for several courses through which people in the area were given vocational training or retraining.

While these conventional programs met, at least in part, a need made more urgent by the area's depressed economic condition at that time, they did not reach to the core of what the committee believed to be the fundamental deficiency of many adults in the region, viz., their lack of the fundamental skills provided by public education. These people had been "drop-outs" before the word was popularized and had come to stand for a national problem. Though MDTA made no explicit provision for general education as an appropriate area for manpower training, the Mon-Yough group was able to secure authorization for such a program under Title I of the Act, defining its plan as a research and demonstration project. Thus in 1964 an evening course in secondary education was conducted which gave high school equivalency certificates to those who completed it.

As the bill to fight poverty was being discussed in Congress, the MDTA advisory committee began to widen its horizons and, by the end of 1964, had begun to consider ways in which the Mon-Yough Region could effectively initiate programs which would fall under the Economic Opportunity Act. In December of 1964 this committee, now calling itself the Mon-Yough Community Action Program Advisory

Committee[5] sponsored an area meeting which brought the Under Secretary of the Department of Health, Education and Welfare, and several other federal officials, to McKeesport for two days. The subsequent report which this informal committee delivered to municipal officials and interested citizens throughout the region commented upon the themes stated by these visitors and looked forward to the future:

> ". . . The import of their messages was that the local community must assume local initiative if it is to benefit from the anti-poverty legislation.
>
> More than one speaker indicated that many of the communities in Mon-Yough were too small to mount programs that would meet area needs. Cooperation is essential, but the multiplicity of governmental units in the Mon-Yough area makes it imperative to obtain a full-time professional coordinator familiar with the needs and available resources.
>
> The coordinator would operate in close cooperation with . . . the Allegheny County Director of Economic Opportunity. Since (he) is nominally responsible for carrying the program to 128 communities in Allegheny County, th· Advisory Committee believes that any move to provide (him) with assistance will be welcomed. In no way is it the intent of the Committee to interfere with or slow down either the County Commissioners' program or those now und rway in Mon-Yough area communities.
>
> Ii the proposal to establish a full-time professional position responsible to the Mc ı-Yough Community Action Committee meets with the approval of governmental leaders of the Mon-Yough area communities, then it is the intent of your Advisory Committee to process incorporation papers and the request for professional staff as rapidly as possible."[6]

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5. There is no stipulated procedure whereby responsibility for organizing a community, for the purpose of securing funds under the Economic Opportunity Act, is officially vested in one person or group. Any citizen who is minded to may seek to collect others into a committee and go to work. Eventually, of course, a committee must receive recognition from the Washington Office of Economic Opportunity, and such recognition is understood to be contingent upon the representativeness of the committee, particularly with respect to the group which the Act is intended to benefit: the poor. In the present case the Mon-Yough MDTA Advisory Committee had been encouraged to take initial steps toward broader community action by the Mayor of McKeesport
6. This is an excerpt from pages 8 and 9 of "A Proposal for a Mon-Yough Area Community Action Program" which was transmitted by the Chairman of the Mon-Yough Community Action Program Advisory Committee under a cover letter dated January 25, 1965.

This passage indirectly highlights one problem of the mobilizing phase which was, and continues to be, difficult to overcome: the necessity for many community action workers to comprehend the very complex organizational situations and working procedures imposed upon the Mon-Yough committee. In addition to the effort required to understand the relevant provisions of the legislation, it was necessary for workers to separate the functions of the MDTA Committee and the Mon-Yough Community Action Committee, and further to keep distinct the different missions of the County Committee, the Mon-Yough Committee and the local committees in some of the municipalities. Since all of these organizations were beginning work at about the same time and therefore could not use past accomplishments as concrete illustrations of their purposes, they were constrained to state their goals in general, and therefore rather ambiguous, terms. It was especially trying for Mon-Yough sponsors to have to explain these intricacies to each new person from whom cooperation was sought or participation requested. It would be understandable if some prospective volunteers were discouraged from participation because they misunderstood these arrangements or could not understand why they were so complicated.

In the spring of 1965 this temporary advisory committee was transformed, through incorporation as a private and not-for-profit organization, into the Mon-Yough Community Action Committee, Inc. Since its bylaws provided that each of the 31 constituent communities in the region should appoint one member to the Committee, there was little overlap between the composition of the new and old committees. However, MYCAC's elected officers had all been active during the earlier formative months, and the MYCAC president represented continuity with the work of earlier years for he had been, and continued to be, the chairman of the MDTA advisory committee. Thus the work of the mobilizing period carried community action directly into its formalizing stage.

With incorporation completed, MYCAC turned to the task of establishing itself on a permanent basis. First it urged each municipality to pass a resolution in its council officially recognizing MYCAC as the regional agent to coordinate community action, and to contribute $75 or $100 (depending upon whether its population was less or more than 10,000) to MYCAC. The USWA had already pledged $2500 to MYCAC. This together with the local contributions would provide $3000 which was needed for MYCAC's ten percent share of the approximately $30,000 which would underwrite the permanent organization for the first eight months of its life. MYCAC would be able to move forward from a committee composed of volunteers which met monthly to an organization with a salaried staff which would be in daily operation,

as soon as it could write its proposal for a program development grant, receive approval for that grant both from the County Office and from Washington, and hire its people.

These actions consumed all of the months from the spring through late fall of 1965. Approval by the County Committee was delayed by that Committee's request that MYCAC add members to its board who were poor. This necessitated a revision of the bylaws permitting the Board to appoint people who had not been nominated by local municipalities. (It seemed unrealistic for MYCAC to require some of its communities to be represented by people who were poor, while others were given free choice.) The question of the relationship between MYCAC and the County Committee, which is discussed below, could not be settled in one meeting of representatives of the two bodies. Before agreement was finally reached on guidelines which would regulate this relationship, both groups appealed to the Office of Economic Opportunity in Washington. The subsequent exchanges of correspondence along the lines of this triangle continued until September, when the County Office of Economic Opportunity forwarded to Washington the MYCAC request for a program development grant. Because this application was not prepared in full accordance with established procedures it was returned to MYCAC for a final rewriting, with the result that it was not until the first of December that money was made available and the assembled staff could commence work.

The account so far records the chronology of official events in the formation of MYCAC but it neglects what the participants themselves would call the "real work" of organization-building. At least in the Mon-Yough valleys people did not move spontaneously to cooperate, even with the incentive of a 90 percent offer from the federal government. Communication about this opportunity through conventional channels is slow and unreliable. Even when it is efficient it is ordinarily insufficient because responsibility to respond to it has not been institutionalized. Those who would be the beneficiaries of the action, the poor, are among the last to become acquainted with the opportunity. In any case they lack experience in the tactics of collective organization and the bureaucratic ways of appealing to, and working through, a federal agency. Public officials were free to involve themselves or not, as they chose, and in Mon-Yough there were some who made the first decision and others who made the second.

In consequence it fell to the earlier advisory committee, and later to MYCAC (which meant, for the most part, its officers) to employ the telephone and the written communication, but mainly the voice in face-to-face contact with myriad mayors, councilmen, school officials, businessmen, representatives of voluntary associations (such as the YWCA,

the Mon-Yough Association for Retarded Children and the NAACP), and very many individuals (such as the director of the regional Bureau of Employment Security and the director of the area's industrial development organization) to gain at least the tacit, if not the active, support of segments of all of the communities which might be affected by MYCAC's work. Nor is this list exhaustive. To it should be added the director and members of the County Committee, the members of the various local community action committees which were being formed through the period, officials in Harrisburg and in Washington, staff members and occasionally officers of the USWA, and—by no means least—the area's representative in Congress and members of his staff. Had it not already been well-known that an informal process of communication and persuasion is indispensable to organization-building, the Mon Yough experience would have sufficed to prove the point.

Through the winter, spring, and summer of 1965 this informal process was carried forward by someone whose original mandate did not call for this at all. One researcher on the staff of the Institute for Research on Human Resources had been assigned to assist the MDTA advisory committee and the Bureau of Employment Security in their work of planning new training programs. Almost imperceptibly his role was altered by the pressure of events and by his own inclination. Developing support for new MDTA programs, and making institutional arrangements for them, was so closely akin to the matter of organizing the region to confront its poverty that it would have been difficult for this researcher to confine himself to the first and to ignore the second. In time he became accepted and rather well-known as a proponent of MYCAC. Despite this involvement, he retained his principal status as an "outsider from a University," making it more possible for him to assure any who were apprehensive that he was not acting for any special interest group within the community.

A detailed account of his day-by-day activities, contained in a diary which he kept, affirms that "informal organizing" occupied most of his daylight hours on Monday through Thursday of every week (when he was on "detached service" in McKeesport; on Friday he returned to State College to teach his course), and very many of his evenings as well. On an "average" day he might spend the morning in the headquarters office of an oil company, seeking their technical advice and their assurance of opportunities for employment for men who would be trained as service station attendants in an MDTA program. In the afternoon he might sit down in a borough hall with councilmen, appraising them of the opportunities in the Economic Opportunity Act and urging them to contribute money and at least one person to MYCAC. In the evening he might speak to the members of a union local, imploring

them to press their municipal councils to enlist in the war on poverty.

As MYCAC evolved it became apparent to some that this researcher was the logical person to become the director as soon as that position could be created; he was virtually doing the director's work without the title. He might have been offered the position had he wanted it, but he did not. He did, however, take a leading part in the search for and selection of a director, and in so doing was able to supply essential continuity to MYCAC.

In thinking about who the first director should be, he was guided by many hints and cues he had inadvertently gathered in the course of his informal organizing. To select a person from the Region would necessarily mean selecting that person from one of the 31 communities. He wished to avoid any feeling that one community had been "favored," particularly if that community should turn out to be McKeesport. (Through all of this history many participants have been sensitive to the possibility that smaller communities might come to see MYCAC as being dominated by its largest city). The matter would be solved, he believed, if a qualified outsider could be found.

His contemplation also led him to consider whether the director should be white or Negro. The fact that many large cities, including neighboring Pittsburgh, had appointed a Negro to this position had already defined this issue. Further, there was sentiment among some Negroes in Mon-Yough that, because the national war on poverty had been conceived as a "program for Negroes," a Negro should be selected. On the other hand his hints and cues had told him that some of the community support he had already generated might be jeopardized if a Negro were made director. In illustration, he had been told by an official in one municipality that "some of the council members here are suspicious of this poverty war. They don't like the idea of a program directed to the benefit of just one group." (In context, the reference was unmistakeably to Negroes).

Instead of being swayed by the "pressure" on one side or the other, this researcher retained an open mind, consulted with many individuals and groups including the MYCAC officers, and including also the local leaders of the NAACP. As it happened two of these NAACP leaders were social workers and were also active in MYCAC. They, and one white social worker, had wide acquaintance with other members of their profession in the County and were able to identify, rather quickly, one community worker in Pittsburgh who presented the professional qualifications desired by MYCAC. Though white, his known ability and his personal attributes (he had worked closely with one of the Negro social workers) made him acceptable to the Negro leaders. His willingness to take the position made the remainder of the selection

process automatic and routine. The MYCAC Board approved his appointment and the question of the color of his skin was never publicly discussed.

The organizing work of this university researcher throws into relief some of the characteristics of the social "change agent." Being himself uncommitted to any side of a local issue which might divide its citizens, he could be trusted by all. By showing through his own actions that he would not betray confidences, he was able (or so it surely seems to the writers) to learn the "real" interests and private sentiments of very many people. Then by guiding a whole organization, through his close relation to its officers, away from issues which might be explosive, he was able to set it on a course which all members could readily accept. Whether, in the ultimate judgment which might be made on this matter, this accomplishment is an absolute good is for someone else to decide. What can be said here is that, as a consequence of the intervention of this "change agent," MYCAC was created and sent into its formalizing phase with a minimum of internal friction among its members. Disharmony has been so conspicuous by its absence that an observer, mindful of the intramural struggles which have marked the organization of community action committees in other areas, might find MYCAC board meetings almost dull.

"Informal organizing" has also been an almost constant preoccupation of the Director and Associate Director of MYCAC. After opening their office in December, 1965, they had just seven months to generate plans and programs sufficiently attractive to local citizens and to OEO officials to warrant further contributions from each in the one-to-nine ratio.

To accomplish this the new director first interviewed many candidates for his staff, eventually selecting a social worker as associate director (Negro), two secretaries (one Negro, one white), and one young military veteran and graduate of an MDTA program as office aide (Negro). The staff then moved along several lines simultaneously. Some of these (assisting individual communities to form their community action committees, seeking the participation of people as volunteers for MYCAC, consolidating relations with municipal officials and organizational leaders generally) were continuations of the earlier efforts of the University researcher and MYCAC's officers. Others had not been attacked systematically before the staff arrived (ascertaining the needs of the poor in Mon-Yough, inventorying the professional services available which might be integrated into MYCAC programs, and the preparation of proposals for programs which would serve the poor). This last task was urgent. If not completed by early May, 1966, there would not be enough time for processing and review

of its applications in other headquarters before the money would stop at the end of June.

In April, MYCAC sent forward its request for a conduct and administration grant to provide funds for its staff and office, following this in May with applications for two programs, one of which would open community centers for the poor in several Mon-Yough communities, while the other would identify potential drop-outs among high school youths and attempt to deter them through part-time jobs and the services of social case workers.

As this report is being written in August, MYCAC has received OEO approval for its conduct and administration grant which will support it through August, 1967. The program for drop-outs has been deferred and the proposal for community centers, now approved by the County, has been sent to Washington.

D. MOVEMENT TOWARD SYNTHESIS IN MYCAC

If the task of achieving internal cohesion among its individual members has proceeded smoothly, the complementary problem of establishing synthesis has been more difficult, mainly because of (1) the relative dearth of appropriate organizations which might naturally join community action in Mon-Yough and (2) the double requirement that MYCAC relate its activities "downwards" with those of local community action committees and "upwards" with those of the County Committee.

Comparable organizations in very large cities have been able to attract services and contributions of an extended array of professional specialists drawn from public school systems, university faculties, research institutes, public and private social agencies, employment agencies, churches, associations benefiting handicapped groups, and many others. *Their* synthesized organizations are in large part an amalgam from all of these and more. Mon-Yough, for its population (more than a quarter of a million in 1960), has a relatively small complement of such ancillary organizations, and what they have are understaffed in relation to regional need and limited in their financial support. For example, there is only one college in the Region, a branch of The Pennsylvania State University. There is one facility addressed to the needs of retarded people, a workshop which uses one floor of a McKeesport building, but it can accommodate at most 20 people. One regional office of the state employment service is available to Mon-Yough residents seeking jobs or new jobs. While representatives from these and various other service organizations generally expressed in-

terest in MYCAC and occasionally came to its meetings or took part in its activities, there was only one person (aside from officers and members of the Board and committees) in the category of those whose professional advice would be useful to MYCAC who, from the beginning, regularly came to Board meetings. She was a social worker who recognized that an organizing committee of laymen might be able to use the counsel of a professional. She was not even a resident of Mon-Yough, and has since moved away from the area. The presence of just this one person symbolized the absence in Mon-Yough of specialists whose professional commitment would lead them to become engaged in a community endeavor which depended for its success upon expertise which they possessed.

In the above list of kinds of organizations which might become active partners in MYCAC there is one which, of necessity, is as well represented in Mon-Yough as it is everywhere else: the public schools. This is also the organization which again, of necessity, has much first-hand experience with poverty through its teaching of children from low-income families. Its professional staff members might be expected to volunteer in numbers to place their special knowledge in the service of MYCAC. Several Mon-Yough school districts did sponsor Head-start programs in the summer of 1965, MYCAC's board includes two school teachers, and at least one other school teacher is active in its work.

The second of the two enumerated problems which made synthesis difficult points to the most persistent challenge which MYCAC has faced, a challenge which was imbedded in the conditions which surrounded its birth. Unlike most of the community action organizations spawned by the Economic Opportunity Act, MYCAC is not associated with a geographic area which is also a single political unit. Though the Mon-Yough region has a somewhat unified character because of its general dependence upon the steel industry, its 31 municipalities are not united save through the fact that they all lie within Allegheny County. History has not required them to join in common enterprises, so that inter-community endeavor is a new experience for most of them. From the beginning MYCAC needed not merely to elicit support for its goals and programs, it was compelled also to convince people in these separate communities that they should enlist and cooperate with each other at all.

The matter was complicated by the fact that it was possible for each community to participate in the war on poverty without associating with MYCAC. Under the Act any community may form its own organizations which would construct programs for the entire county (with the exception of Pittsburgh). MYCAC then had to justify its status

both to its prospective constituents and to the county organization.

It did so on the same ground which had led the original sponsors to decide that Mon-Yough shared a set of problems which differed from those in much of the remainder of the county, but which would almost certainly not be resolved by the region's municipalities were it left entirely to their separate initiatives. To these early planners Mon-Yough was a natural area for cooperative work. Its total population was large enough to warrant programs of an intermediate nature (such as adult education) for which there seemed to be a need but which no single community could afford by itself. As an organization interstitial between the community action committees of the individual communities below it, and the county committee above it, MYCAC commenced operation as a multifunctional entity. Its ideology in behalf of the future of the Mon-Yough region defined its primary mission. But its peculiar juxtaposition to similar organizations above and below it dictated that it develop some terms of accommodation with these neighbors so that their goals would be mutually facilitated. Obviously this was fertile ground for self-defeating jurisdictional disputes.

Attention to this matter commenced in the mobilizing phase and has continued to occupy members up to the present. In late 1964 when MYCAC was being initially planned, a nucleus of interested people from Mon-Yough had been formed. Among the first to be consulted were people from the two cities in the region which had already formed their local committees, McKeesport and Clairton. These two committees were then preparing applications for Neighborhood Youth Corps programs; their representatives to Mon-Yough found their respective purposes to be complementary. In time some of the other communities appointed their own local committees also, with encouragement from MYCAC which saw these as necessary building blocks for its own foundation. A mutual understanding evolved which amounted to an agreement that MYCAC would not plan to locate any of its facilities in municipalities without the prior approval and cooperation of that municipality's committee. MYCAC also offered the services of its staff to aid in the drafting of local proposals over which MYCAC would not have supervisory responsibility. In 1966 the MYCAC director and associate director spent very many evenings attending meetings of these committees, assisting them with their formation and organization.

In this "extra-curricular" work the directors were actually forwarding the informal process of organizing which had been set in motion by the university researcher, who had since moved on to a new job. While they were able to profit in part from the organizing momentum which he had begun, they did have to establish themselves in everyone's eyes as the legitimate leaders of the still-new organization. Also their arrival

and his departure coincided with the fall municipal elections of 1965 which brought several new men into mayorships and councils. In these instances it was necessary for the directors to acquaint these people with MYCAC's mission and with its complicated organizational status (previously noted), and then to attempt to show these public officials that MYCAC possessed the potential to ameliorate the chronic problems of their poorest citizens.

Their task of gathering support was normally defensive rather than offensive. They did not need to secure open endorsement and active participation (though this was welcome and in a few cases did occur) as much as they required the assurance that they would not be confronted with opposition. As they proceeded with this work they discovered that they did not have to negotiate with "power structures" or ruling elites in their communities. If such existed in Mon-Yough's towns, their leaders apparently did not view MYCAC either as a threat or as an opportunity, for no one in any of the communities came forward to attempt to dictate terms on which MYCAC's presence would be accepted, nor did they try to exact favors nor exert influence upon MYCAC's plans or programs. When and if MYCAC matures to the point where it is a significant employer, with larger numbers of people working for it and receiving its services, it may well become recognized as a target for influence and as a potential political force ("potential" here should be underscored, for MYCAC's leaders have no political goals for it and have so far been able to maintain its apolitical status), but it is not that now.

By attending first to their relations with political leaders, the directors were clearing the ground for a kind of cooperation they knew they would need later, and have since gained in many communities. They were always conscious of the fact that any program could be stymied if they could not provide the ten percent contribution from local resources, and MYCAC by itself had none at all save staff, office space and equipment. The request for small contributions ($75 from towns with less than 10,000 people, $100 from the rest) had resulted in a modest fund, but the fund-raising experience had been difficult enough to convince MYCAC that it could not depend upon these sources for the much larger contributions it would need to subsidize its share of substantive programs.

In consequence the directors alerted themselves to an alternative: the substitution of facilities "in kind" in lieu of cash. These items are scarce, too, since they are not without their economic value, but what there are of them are likely to be at the disposition of municipal councils and school boards. As it happened, the directors had quickly identified the absence of community centers as one of the most patent

deficiencies throughout Mon-Yough. Many of their early meetings with citizen's groups from individual communities revealed present and felt needs for such versatile institutions.

When this match between the directors' diagnosis and the communities' complaints occurred, the ongoing work of gaining good will from public officials and others paid off. In eight localities the latter were agreeable to the free use of available space (e.g., in churches, schools and public housing authority buildings), which MYCAC then had evaluated as rental property. The total value proved more than enough to make up the local contribution for MYCAC's first program for community centers which would sprout up all over the region. Before the end of July a proposal for these was written, was approved by the County Committee, and was submitted to OEO.

What had made it possible for MYCAC to conclude its first phase of informal organizing with the design for this regional program was the measure of synthesis it had been able to achieve with many of its communities. The eight communities participating in this venture (to open community centers) had all been carefully drawn into MYCAC's operation. All of these communities' representatives on MYCAC's Board were also leading members of their local community action committees. What is remarkable about these leaders, whose actions in two places were contributing to the process of synthesis, is that they were not themselves "poor," but would be considered "middle class." They could and did work together with poor people and they could and did (with the encouragement of continuing advice and assistance from MYCAC's directors) carry out informal surveys of the needs of the poor in their own communities. Without such middle class "synthesizers" it is certain that MYCAC's small staff could not have moved as quickly, and doubtful whether they could have moved far at all in constructing programs which would mesh with community needs. These first seven months, then, confirm what MYCAC's original planners had sensed, though in an abstract way. In order to reach people who are dispersed in small and widely scattered groups, it is necessary for an organization with at least two levels (more will probably evolve in the future) to be created. Eventually face-to-face relations have to occur between the server and the served, and this cannot be the work of a regional committee.

In part the relations presently existing between the local community action committees and MYCAC are similar to the relation between MYCAC and the County Committee. (Taken together all of these constitute an informal hierarchy, informal because initiative is supposed to come from the community, rather than being imposed downwards). The total proposal for the community centers includes a

separate proposal from each participating community, written by each local committee (again with the consultation of the directors of MYCAC) and reflecting its peculiar circumstances (a "golden age" facility in one aging community, recreational opportunities for the children of densely populated housing projects, etc.). If these projected centers become growth points for more extended programs in these communities, as it is anticipated they will, then more "organizational levels" will emerge between each local community action committee and the ultimate recipients.

As one peers ahead into the future of MYCAC on the assumption that it and its subsidiaries will grow, it is easy to imagine that it could become little more than a communication link, passing OEO instructions downwards and processing grant applications upwards. If such should occur, it might very well become dispensable, particularly if it should be viewed as a "bottleneck" or impedance. If MYCAC does follow this course, a future historian may comment that it had served its purpose once organization building had been essentially completed, but that it afterward had lost its function.

The visible forces presently at work do not foretell this outcome. MYCAC's distinctive ideology, which justifies its primary concern with the economic future of the steel-dominated Mon-Yough valleys, cannot be easily assumed either by the County or the individual municipality. As long as this ideology lives and holds meaning for the people of the valleys, there will be a role for MYCAC. Whether MYCAC will continue to make its presence felt in the burgeoning synthesis it is creating depends of course upon the leadership it is able to exert, but also upon the firm synthesis of its elements and levels. This is the factor which holds promise for the future. Many people are not confining themselves to one level, but instead work at several simultaneously. Organizationally this is a useful defense against the possibility of alienation between levels, the protest that "they" don't understand "us."

Relations with the Allegheny County Committee followed a somewhat different course. Its director, had attended two meetings of the MYCAC group, during the formalizing and later the synthesizing periods. MYCAC leaders and the university researcher conferred frequently then and later with the County Director, with their conversations culminating in a written agreement in December, 1965. This agreement stipulated that all MYCAC proposals for grants to be funded from Washington would be forwarded through the County Committee. In its turn the County Committee would review the proposals within a ten-day period, either forwarding them to Washington with a favorable recommendation or returning them to MYCAC with suggestions for revision. In the latter event MYCAC retained the option to request

consideration of them in the Economic Opportunity Office in Washington, even without the sanction of the County Committee.

In the meantime the County Committee had the forbidding task of creating some measure of unification of all the 128 municipalities of the County outside of Pittsburgh. To make this somewhat more manageable this Committee divided the County into three districts, one of which approximately coincided with the boundaries of Mon-Yough. Each of these districts became the province of one member of the County Committee staff. At this juncture a step which might have been taken to weld a close working relation between MYCAC and the County Committee was not, nor was it seriously considered. The County Committee might have ceded general jurisdiction for the Mon-Yough Region to MYCAC, instead of setting up its separate district office.

Such a move would have required concessions from both organizations. MYCAC would have had to surrender even more of its autonomy than it subsequently granted in the written agreement, while the County Committee would have had to yield at least some of its responsibility for the initiation of requests for programs from MYCAC. On the other hand there were foreseeable gains from such an arrangement since MYCAC, as a creation of Mon-Yough citizens, would be doing for the County organization what that organization would otherwise have to construct the machinery to do for itself. And with a closer relation to the County, MYCAC could have expected that it could more readily coordinate its plans with those developing elsewhere in the County while also securing the benefit of the informal advice—and accruing experience—of the staff members of the County Committee.

The fact that this merger was not achieved seemed for a time to be a critical non-event in MYCAC's history. Its importance was underscored by the actions taken by the County Committee in the spring, 1966, on proposals forwarded to it by MYCAC. The first of these, an application for a conduct and administration grant which would finance the office and staff for a further year, was sent on to Washington after it had been turned back once to MYCAC for some budgetary revisions. (It is this grant which has since been approved.) Two subsequent proposals for specific program grants were transmitted to the County in May and were there judged to be inadequate in one respect or another. This verdict left MYCAC with insufficient time to redraft and resubmit, and at the time made MYCAC's future somewhat doubtful. Its leaders feared that Washington officials, seeing no proposals for concrete programs, might be disinclined to continue to subsidize an organization which had not yet reached the poor.

Had MYCAC been integrated more nearly into the County organization so that the two were joined in effective synthesis, members of *both* groups would probably have been induced to acquire more of an investment than either did in the work that the other was assaying. In specific terms the County Committee would have begun to identify MYCAC's success with its own, and vice versa. Its leaders would have been no more inclined than MYCAC's to permit a situation to develop in which they would feel compelled to interpose a veto at the possible expense of the demise of MYCAC. In practice it probably would have assigned one of its county staff to work closely with MYCAC's program drafters, so that the County would have been constantly advised about forthcoming MYCAC actions and would have been in a position to be relatively certain that no proposals would come before it which it would not be able to approve.

The absence of such synthesis meant that each organization retained its distinctive identity; no one regarded the two as parts of a still larger organization. Organizational circumstances conspired to make it more natural to see the two as competitors, at least as far as the Mon-Yough Region was concerned. Thus when the County Committee reviewed MYCAC's first proposals, it did not see its *own* future at stake as much as it would have if MYCAC had been a more synthesized part of the whole. For MYCAC's part, when it drew its proposals, it did so without knowing whether its plans did or did not mesh with plans which the County organization was preparing independently.

As it happened, one of the proposals which MYCAC submitted in May was virtually a duplicate of a program which the County was designing; thus the County Committee discouraged this proposal from MYCAC.

This distance between MYCAC and the County has not become institutionalized into alienation, however. It is in the process of being overcome through a now-developing synthesis between the two. Each had added to its Board one member from the other's Board. It is altogether possible that this step created an atmosphere within the County organization which made it more likely that MYCAC's proposals would be acted on favorably there. At least the second occurred in the wake of the first.

A critical period such as this can be illuminating for an observer. It becomes clear that the resolution which is sought between "competing" organizations depends very much upon the "practical theory" which the participants themselves use to explain how they came into their predicament. In general two types of such theories are available. One can believe that the personalities and willful behavior of one's "opponents" are at fault, in which case the remedy is to try to gain

access to some pathway of influence which will persuade opponents to alter their behavior. A second theory would fix responsibility for the problem upon the *relations* between the disagreeing groups, pointing, for example, to inadequate or non-existent channels of communication as the causative factor.

The use of the first theory and its remedy is very likely to intensify competitive feelings and to encourage personal animosities. When sources of influence are appealed to, the consequence can be a struggle which will be decided in favor of the party best able to mobilize power in its own behalf. Before this point is reached each party may exhaust enough of its scarce resources to injure its chances of realizing its primary mission.

MYCAC and the County Committee, at least for the time being, are operating with the second theory. It remains to be seen whether the step they are jointly taking will prove to be workable, but in principle it promises to establish a closer synthesis. A joint committee, composed of equal numbers of people from the County Board and from MYCAC's Board, and including both directors from the two, will meet periodically to discuss MYCAC's plans. This liaison group will assess MYCAC programs before MYCAC acts upon them officially, with the intention of designing them in such a fashion that their smooth passage through both boards will be assured insofar as this is possible. The fact that members of this synthesizing committee also sit on the respective boards should mean that each MYCAC proposal will have its spokesmen in both places where decisions are taken.

In retrospect what has occurred is that three quasi-independent organizations, the County Committee, MYCAC, and the local community committees, have been woven together through many synthesizing actions so that they now resemble somewhat a modern bureaucracy. If the synthetic process progresses further along the lines it has so far taken, all of these organizations might become bound into a unitary bureaucracy. The consequence of such an eventuality would be to blur the separate identities which each has so far established for itself. Alternatively, synthesis may be arrested short of the point of full bureaucratization, thus preserving the distinctiveness of each, and allowing each to pursue its somewhat different mission. This kind of organizational development is new enough so that a prediction about what will happen is tenuous at best. However, one factor recommends itself as a possible determinant of the future course. If each of the three organizations crystallizes its individual ideology and makes it meaningful to its own members (which is to say that each ideology would be accepted as true and would become itself a motivating force to attract and to hold members), then a rather high degree of synthesis might be compatible with continued organizational separateness.

E. SYNTHESIS AND IDEOLOGY

At several points in this report MYCAC's ideology has been mentioned, in the first instance at the point of defining an aspiration for Mon-Yough. MYCAC came into being primarily because several individuals believed the Mon-Yough valleys to be the locus of economic decay. The very title which they attached to their infant fixes the attention of members and the public upon this Region and its common problems. Even the prosperity of the intervening years since the founders first shaped their plans has not diluted fears about the Region's future (cf. the *Wall Street Journal* article, cited above). For though unemployment is not now a severe problem in the Region, one McKeesport mill was cut back temporarily in late 1965, and at about the same time a steel company announced the closing of its mill in Donora, which lies just outside the Region. Many have doubtless wondered whether Donora will be repeated in Mon-Yough. There is, then, a basis in reality for the negative ideological theme that what no resident wants to happen may happen.

An ideology which is purely negative in the beliefs it fosters is not very likely to motivate anything other than despair. Such an attitude is hardly serviceable for MYCAC. Gradually, however, a positive complement has been evolving which asserts, in simplest terms that the Region as a whole can hope to prosper if its poorer people are rescued from sub-standard social, economic and educational conditions. (The writers are not asserting that this proposition is true, but are only discussing the probable consequences if it is *believed* to be true). Insofar as MYCAC's future is concerned there are two groups whose acceptance of this ideology seems important: the labor unions and the business community.

The USWA, the most prominent union in the Region, has effectively demonstrated its endorsement through its members who are active in MYCAC, and through its initial financial contribution. Business leaders, particularly of the giant corporations in the valleys, are more problematic. Most of them do not live in the Region because the headquarters of these corporations are located elsewhere. Even some whose offices are in the mills and factories have chosen to reside outside the Region. These facts might seem to make them modern-day counterparts of the "absentee owners" of the past, who were known well for their exclusive interest in the profits they could extract from a community.

The MYCAC directors and The Pennsylvania State University researchers have, separately and together, appealed to many of these leaders on the general ideological grounds described above. The results so far are conclusive on one point. These men are not to be com-

pared with absentee owners. They are quick to explain that their corporations are heavily taxed, and that through this channel their businesses are the major subsidizers of municipal activities. In at least one case one company provides more than half of its town's tax revenue.

Aside from this the responses to these appeals have been various. A few businessmen have plainly said they do not believe in the poverty program. Some others have confessed perplexity. On one hand they say that they oppose the "Great Society" on principle; they have always believed that a government should not try to do for its citizens what those citizens are better able, and better advised, to do for themselves. They rather resent that they must pay taxes to support programs which are the antitheses of their personal beliefs. On the other hand they have learned from their experience in the valleys that their business cannot continue to prosper where *community* problems such as inadequate transportation, inefficient school systems and deteriorating housing and retail sections are ignored. They can see that self-interest is intertwined with community interest when prospective employees are deterred by sub-standard schools, or even by the fact that they would have to drive to work along miles of narrow, cobblestone streets, through clusters of urban slums. This experience has not been so compelling that they are ready to throw their weight—and money—into such an organization as MYCAC. But their mood indicates that they know something must be done, and that is beyond the capacities of their corporations to do it by themselves. One in this group has provided office space for MYCAC and another has donated equipment to fill it. Other are pondering whether they should become active participants in MYCAC. Perhaps they are waiting to see how much it can accomplish in its early growth.

If the business community does become visibly synthesized into MYCAC, it will virtually guarantee MYCAC's foreseeable future, for the corporations and USWA are the obvious sources of large sums for MYCAC's ten percent share. Such access to cash would mean that MYCAC and the individual communities would have a wider range of programs from which to choose; they would not be restricted to programs for which they could secure services and facilities "in kind." But such a synthesis would surely encounter other problems before it could be firmly institutionalized. One of the first of these is implied by the question: Can these businessmen and labor leaders work in joint harness toward *community goals* when each has been conditioned to regard the other as his *economic* antagonist? No less important would be the query: How would power and influence be redistributed within MYCAC if these two groups were strongly represented on its Board? One would anticipate that MYCAC's ideology would be placed in some

strain under these circumstances. It is the essence of an ideology that it justifies a collective goal by asserting that collective success means enhancement of the perceived self-interest of an organization's subgroups and members. If this were simply accepted on its face there might be little strain. However, ideologies are subject to change, and powerful groups on MYCAC's board would be able to revise MYCAC's goals and ideologies *toward* their interests should they see any difference between the two. The fact that they would hold the purse might induce others to acquiesce, perhaps without even realizing that any change was occurring.

These are merely possibilities; they may never come to pass. But whatever does take place as MYCAC moves on into its future should be explicable on an analysis of the interaction between the course of its synthesizing processes, and the elaboration of its ideology. It *is* this interaction which makes MYCAC a laboratory of continuing interest to the student of community organization.

3

THE OBJECTIVES AND ACTIVITIES OF THE MON-YOUGH COMMUNITY ACTION COMMITTEE

A. GOALS FOR COMMUNITY ACTION

Like many another community action organization, MYCAC began its existence with general objectives which had already been laid down for it in the Economic Opportunity Act. While the statute provided guidelines, it was left to MYCAC to interpret these in the light of the particular history and present needs of the region for which it had assumed responsibility. Moreover, MYCAC itself had a history, even though it had no official predecessor. Many of the people who became its members had been working together and separately on a variety of tasks which were pertinent to MYCAC, and they saw MYCAC as a natural vehicle for continuing, and broadening, work which they had already been doing. In consequence the initial goals of the new organization necessarily reflected and were shaped by the several goals of the membership. In general terms these can be phrased as follows:

1. To ascertain the needs of the poor of the Region and to devise regularized means for meeting these needs.
2. To identify different groups among the poor for which it may be necessary to develop different programs.
3. To coordinate activities of existing organizations which seek to serve the poor.
4. To engage in compensatory activities which would supplement work undertaken by other organizations which have been unable to do this work adequately.
5. To provide employment for some of the poor in positions which will be created when programs are authorized.

It is noteworthy that these goals were not established by any official process of discussion and collective decision within MYCAC. While it is commonly supposed that every organization commences its life by deliberating the question of what its goals should be, thereby creating for itself a charter containing a permanent statement of its mission, the

MYCAC membership attended to this task only in very general terms. Article II of their by-laws announces that:

> "The purposes for which the Corporation is formed are: To assist communities in the Monongahela-Youghiogheny River Valley area in availing themselves of the provisions of the Economic Opportunity Act of 1964, in general dealing with problems of the underprivileged, disadvantaged, unemployed, and undereducated people residing in this area, and in carrying out program appropriate thereto."

It may very well have been functional for MYCAC to bypass a more precise and detailed statement of its mission. The nucleus which founded it in 1965 could not then have foreseen all the opportunities—and the constraints—which its environment would present to it during its first years. An overly narrow description of its aims might have meant the foreclosure of possibilities which otherwise would have been attractive to it. In particular, it might have become known to the residents of the area as a limited purpose organization, specializing in but one or a few of the various approaches which can be taken to attack the problem of poverty. Instead, as the sign on its building in McKeesport now proclaims: The Mon-Yough Community Action Committee, Inc. (provides a) "Gateway to Opportunity." In consequence of this general slogan and the rather unrestricted image which it implies for MYCAC, many curious people with a great range of problems have walked in from the street to discover what it is that MYCAC can do. Through these inquiries the staff has become more acquainted with some of the quite individualized needs of its neighbors and has decided to assign one person to the work of counseling people who bring their problems to its office.

In the absence of any open discussion in meetings of the Board of Directors concerning the more particular goals which MYCAC should pursue in order to carry out its mission, there is room to ask whether the organization really does have such goals, whether it is not perhaps directionless. Such a supposition is false. MYCAC presents another instance of a familiar phenomenon in formal organizations, that of the achievement of substantial consensus on large questions through informal means. In addition, the fact that several members had previously worked together in planning MYCAC meant that a foundation of agreement had already been established. As a result questions which were formally brought before the Board, concerning the proposals for serving the poor which MYCAC would sponsor, rarely elicited argument or even mild opposition. Because the staff had sounded out most of the members before each proposal was submitted, its plans were

usually ratified quickly. The superficial impression of "goallessness" then, is deceiving. It ignores the extensive conversations which continually take place behind the scene, and indeed constitute a major portion of the daily round of work of staff members. Through these manifold informal channels the staff is able to uncover negative sentiment before its plans become hardened into programs, and to secure essential agreement through either persuasion or compromise before the time at which it needs formal approval to proceed.

The five goals in the above list, then, have not been copied from any document, but have been inferred from observation of MYCAC's early activities, as well as from many statements which members have made informally, (in which the speaker would normally take it for granted that one or another of the items in the list was a proper object for organizational concern). The first goal, for example, was activated in the first month of MYCAC's existence when one staff member was assigned to interview residents of poorer sections on their doorsteps. So natural did this move seem that it required little discussion (with the exception of technical consultation to construct the interview schedule). With respect to the second goal there has been no attempt in Board meetings to name the groups which will be the principal beneficiaries of MYCAC's work, beyond what had already been stipulated in the by-laws. Nevertheless inspection of proposed programs makes plain that some groups have been identified, and they include (in no particular order of priority) older people, especially those who have retired; youth, especially of the late adolescent years; high school drop-outs whose lack of education has placed a job ceiling on their careers; workers in prime working age who face displacement; the social disadvantaged, most notably Negroes; and the physically handicapped.

MYCAC's brief history already attests to the proposition that the real goals of an organization are more a product of that organization's environment than they are of the rational calculations of the membership. Since such calculations (whether reached openly or, as in MYCAC's case, through original silent consensus) are ordinarily premised upon perceptions of the environment, it follows that goals can best be understood when they are seen against their environmental setting. It is in order, then, to review some of the salient features of MYCAC's setting, including its recent history.

Though the Economic Opportunity Act has become distinctively identified as *the* agent for the prosecution of the "war on poverty," many of the local activities which the Act sponsors are not new to the American scene. In practice many of them turn out to be extensions of work which had been going on for some time. The difference between a city such as Pittsburgh and a Region like Mon-Yough lies in the fact

that services to the poor, through both private and public organizations, are much further developed in a densely populated city than they are in a more sparsely populated region. In the former the poor are more numerous, more segregated, and more visible to political leaders who thus become sensitized to them because of their potential political influence, if for no other reason.

While this clustering of the poor occurs also in Mon-Yough, particularly in its larger cities, it is not so pronounced and the clusters are not so large as to present an image of political power. It is thus not surprising that the scattered poor in Mon-Yough have been relatively deprived of community services in the past. Leaderless, they have lacked a channel through which they could apply the pressure which would make their manifold needs known; they have not constituted a political force.

It would be false to assert that agencies which serve the poor are altogether absent in Mon-Yough. The list is actually rather lengthy, as the following partial inventory shows. In addition to the Bureau of Employment Security and the Department of Public Assistance, which have regional offices in McKeesport, the Red Cross, the YMCA and YWCA, the Salvation Army, Visiting Nurse Association, Family and Children's Service, the Lions Club, Planned Parenthood Association, the United Cerebral Palsy Association and the Mon-Yough Adult Retarded Center are all present. What is conspicuously absent, however, is an institution which is "total" in the sense that it endeavors to concern itself with the individual not as a "client" or "patient" but as a whole person. MYCAC's response to this patent need for a "total" institution is a proposal which would establish nine community centers in Mon-Yough. The specific plans for these are reviewed in the third section of this chapter, which contains a discussion of the several ways in which MYCAC is already an innovative force in the region. The following section looks at MYCAC as an organization which supplements the work of existing institutions.

B. MYCAC ACTIVITIES IN SUPPORT OF EXISTING INSTITUTIONS

Perhaps one reason why MYCAC has been able to settle into its corner of Allegheny County without arousing local opposition lies in the fact that it simultaneously looks backward to the past and forward to the future. Its perspective includes the past in the sense that its staff has taken stock of previously available services to the poor, with the result that some of its work augments these services, compensating for the fact that they have been less adequate than those normally found

RECORD OF TRAINING PROGRAMS IN MON-YOUGH

PROGRAMS: *Completed*
OFFICE: *McKeesport*

Name of Course	Weeks of Training	Starting Date	Completion Date	Trainees Referred	Trainees Completed	WORKING Rel.	WORKING N/Rel.	Not Working
School Bus Driver	12	7- 1-63	9-24-63	15	11	1	6	4
Electronics Mechanic	50	9- 5-62	8-30-63	28	16	7	0	1
Electronics Mechanic	50	1- 7-63	1-10-64	27	18	8	0	0
Office Machine Serviceman	34	8- 6-63	4-18-64	27	12	3	5	4
Mgr. Dept. Ret. Trade	50	7- 1-63	7- 3-64	41	12	1	7	4
Draftsman, Detailer	50	7- 1-63	7- 3-64	25	17	6	7	4
Mach. Opr. General	50	7- 1-63	7- 3-64	25	16	7	9	10
Fitter—Layerout	39	9- 9-64	6-12-64	25	14	0	12	2
Academic—Mon-Yough	50	6-24-63	6-12-64	108	48	5	30	1
Cabinet Maker PA-J-8	50	10-14-63	10-23-64	14	12	12	0	0
Upholsterer	50	2-24-64	2-19-65	23	12	9	0	0
Clerk-Typist Male	20	9-28-64	2-25-65	34	20	9	1	0
Auto Body Repairman	38	10- 5-64	6-30-65	31	13	8	2	4
Auto Body Repairman	40	8-31-64	5-28-65	25	15	8	2	5
Auto Mechanic	39	8-17-64	5-19-65	31	14	9	0	5
Office Machine Serviceman	36	10-26-64	7-19-65	25	29	0	8	8
Woodworking Mach. Op.	25	12- 1-64	5-21-65	25	25	25	0	0
House Repairman	50	8- 3-64	7-30-65	19	7	2	0	0
Auto Mechanic	50	8- 6-64	8-13-65	25	12	5	0	0
Auto Mechanic	50	8-17-64	8-13-65	28	9	4	0	0
Diesel Mechanic	50	11- 2-64	11-29-65	117	41	7	0	0
Clerk Typist—Male	20	7-12-65	12- 3-65	34	13	5	6	0
Mach. Opr. General	38	1- 4-65	9-24-65	73	17	7	9	0
Upholsterer II	50	5-10-65	5- 9-66	24	11	0	0	0
Clerk Stenographer (Ref.)	31	4-14-65	4-14-66	35	19	5	0	0

RECORD OF TRAINING PROGRAMS IN MON-YOUGH (Continued)

PROGRAMS: *On-Going and Just-Completed*

OFFICE: *McKeesport*

Name of Course	Weeks of Training	Starting Date	Completion Date	Trainees Referred	Trainees Completed	WORKING Rel.	WORKING N/Rel.	Not Working
Machine Opr. General	40	10-11-65	7-18-66	32	9	9	0	0
Auto Body Rep. Metal	40	9-12-65	6- 8-66	21	10	1	0	9
Auto Mechanic Entry	39	9-27-65	6-25-66	26	11	2	2	7
Draftsman, Detailer	41	3- 7-66	12-16-66	26				
Diesel Mechanic	50	2-28-66	2-24-67	53				
Cabinetmaker (Entry)	25	4-25-66	10-21-66	25				
Mixer (Powder Metal)	13	3-21-66	6-17-66	1				
Presser (Powder Metal)	13	3-21-66	6-17-66	1	1	1	0	0
Furnace Operator	13	3-21-66	6-17-66	1	1	1	0	0
Punch Press Operator	13	3-21-66	6-17-66	1	1	1	0	0
Finish Operator	17	3-21-66	7-15-66	1	1	1	0	0
Inspector	17	3-21-66	7-15-66	1	1	1	0	0
Airplane Mechanic (Air Trans. Aircraft Mfg.)	58	5- 6-66	6-17-67	1				
Barber (Per. Ser.)	38	5- 2-66	1-20-67	1				

Data supplied by McKeesport Employment Office of the Bureau of Employment Security, July 28, 1966

in a metropolitan center. These are the principal ways in which MYCAC is carrying out its supplementary function:

1. Through most of the mobilizing and formalizing phases, two of the founders (the present president and a researcher on the staff of the Institute for Research on Human Resources at The Pennsylvania State University) actively assisted the local employment office in preparing proposals for training programs which were subsequently funded according to provisions of the Manpower Development and Training Act. As the accompanying table shows, there have been, or are in being, 39 vocational programs with a respectable record of completions. Particularly during the past year it is clear that trainees have been able to find employment, though not always in the specialty for which they were trained. MYCAC staff have continued to benefit from this close working relation with the Bureau of Employment Security. It is the opinion of the Bureau's director that MYCAC can assist the work of his office materially by improving the level of *general* education of the unemployed in Mon-Yough. A persistent source of frustration for the Bureau is the job-seeker whose command of written and spoken English is so limited that he can really qualify only for routine jobs which require mainly physical strength and endurance (the very jobs which are prime candidates for elimination by machines).

2. MYCAC itself shares this interest in the upgrading of educational level. Early in the mobilizing period the eventual founders of MYCAC had made a head-on attack upon this problem by initiating an evening school to give adult drop-outs a second chance to finish their high school education. MDTA seemed to them to be an appropriate vehicle through which this might be funded, so they prepared an application for this purpose. To the advice given by Washington officials that "general education did not constitute preparation for a specific occupation and therefore was excluded by the Act," the Mon-Yough people asserted that vocational training *without* the cultivation of basic skills meant that those with little education would either be ineligible for training or would be unable to profit maximally from it. Apparently they argued well. MDTA administrators initially approved the plan under the guise of a "research and demonstration program" which was permitted under the Act. In the end this decision was partially reversed and the monies for research were never appropriated, though the students were enrolled and most completed the course, which was concluded with a graduation ceremony. According to the account

of the sponsors, this program scored visible human successes. It revived dormant capacities for getting and using knowledge and created in many students (over a great range of ages) an interest and a hope which was gratifying to everyone.

Since 1963 these same sponsors have sought to establish adult education in Mon-Yough on a permanent footing. These efforts are continuing now as the MYCAC staff searches for a way to incorporate such general schooling in an acceptable community action proposal.

It is pertinent to note that a separate experiment, conducted in McKeesport by the Institute for Research on Human Resources, is presently studying the effects of an experimental program in both academic and vocational curricula upon high school dropouts. These students are receiving just the education which MYCAC would like to make available to all who need it. While this experiment is necessarily limited in the number of students it can train, it has the incidental effect of keeping alive the hope that something equivalent to it can be a permanent institution, an extension of the local public school systems which these systems have not been able to afford for themselves.

3. The MYCAC founders were also instrumental in communicating to various communities the OEO plans for Headstart programs in the summer of 1965. Since these plans were not announced until the spring of that year, and because of the novelty of the notion that a four-year-old child from a poor family might "go to school during the summer," it was vital for someone who was familiar with the purpose of the program, and the mechanics of asking and getting approval, to give personal advice to community leaders in order to induce them to act quickly. The University researcher did this. The MYCAC staff now is not directly involved with the Headstart program because the Allegheny County Committee has begun a more comprehensive program in Early Childhood Development which supersedes Headstart. Though MYCAC carries no responsibility for this program either, it has established a working relationship with the County supervisor for its Region so that it can make referrals to this program.

4. One of the steps taken by the MYCAC director early in the synthesizing stage was to communicate with ministers, priests and rabbis by letter, informing them of the presence of a new organization and inviting discussions looking toward coordination of efforts. Responses to the letter were sparse, though several indicated interest. Later in personal conversations with many clergy-

men the Director learned that there was more than a little interest within this group to engage in collective programs aimed at the poor. What was conspicuously lacking was a leader with sufficient time to devote to organizing and motivating this group. The Director himself hopes to turn to this problem as soon as his first programs are under way.

5. Though, as already indicated, some social agencies are active in Mon-Yough, many are not represented at all. The following, which maintain facilities in Pittsburgh, must proceed on the premise that residents of Mon-Yough will come to the central city to make use of their services: The Bureau of Vocational Rehabilitation, the Pennsylvania Association for the Blind, Child Welfare of Allegheny County, Allegheny County Adult Welfare Service, Legal Aid Society, the Pittsburgh Child Guidance Center, the Pittsburgh Hearing Society and the Veterans Administration. The heads of some of these groups recognize that it is difficult for some of their clients to make even this relatively short trip (12 miles) frequently, but lack the resources to open branch offices closer to their users. The MYCAC staff has moved to improve this situation by offering gratis its presently vacant offices (three or four) to any agency which is willing to fill it with a professional person who can provide direct service. So far the Association for the Blind has accepted this invitation and has promised to assign a staff member to Mon-Yough within the next month.

6. In one further area MYCAC has moved, at least temporarily, to augment available services. Originally the organization had no intention of becoming itself an employment agency, but it has become so on a small scale as a by-product of its informal organizing activities. In this instance the Director had approached many business leaders in the large corporations which have plants in the Region, inviting them to participate in and to contribute to MYCAC. In the course of these conversations the director came to know several personnel managers, a few of whom began to inquire whether MYCAC might have names of people seeking industrial employment. When given an affirmative answer, the managers immediately supplied specifications for their vacancies, the Director placed a sign in his office window announcing these vacancies, and a small stream of men soon began coming into the office to get more information. Those with the requisite qualifications were referred to employers, and for a period at least MYCAC was placing one or two persons a day in jobs.
It is probable that the present state of high employment, created

by the heavy demand for steel both from other companies and from defense plants, has made it possible for MYCAC to become a matchmaker of men and jobs. Indeed the Director has already begun to wonder how MYCAC's reputation will be affected when (or if) the current prosperity slackens and jobs become scarcer while job-seekers become more numerous. He is naturally anxious that MYCAC should not create the firm expectation that it can satisfy the needs of the unemployed. He has even sought to transfer the "credit" for his placements to the local employment office, but has discovered that bureaucratic procedures prevent this. (As it happens MYCAC has not been filling jobs which the McKeesport Employment Office had not been able to fill; these jobs had previously been listed in the Pittsburgh office, and had not been transmitted to the McKeesport office.) Still this is undeniably an added service both to employers and prospective employees, and in a time of relatively plentiful jobs it seems very functional to open an "adjunct" employment office.

It is also plain that in assisting these employers, MYCAC is doing a favor which will not be detrimental to its chances to secure future favors from these business firms.

This resume of six ways in which MYCAC is compensating for the fact that services already available are not extensive enough to meet the demand for them has necessarily included some activities which have no precedents in the Region. While it is difficult to draw a consistent line between what is old but inadequate, and what is altogether new, the following paragraphs will summarize the on-going and planned work which is relatively innovative in Mon-Yough. The reason for separating the discussion into these two parts is to underscore the degree to which Mon-Yough (and no doubt many other similar "non-urban, non-rural" areas) lags behind the urban frontier in bringing to its citizens opportunities which are already institutionalized in large cities. Even many, perhaps most, of the projects in the following list are new only to Mon-Yough but not to many other places.

C. MYCAC ACTIVITIES WHICH ARE INNOVATIVE IN MON-YOUGH

1. To the MYCAC staff the most far-reaching of its new endeavors is the multi-functional community center which was discussed briefly above.

It first of all supplies elbow room – play space for children and quarters for meeting. Secondly, it can be the locus for whatever special-

ized counseling services may be lacking in an area, such as employment, education, legal and the like. Perhaps most important, however, it serves the incidental purpose of creating *primary* relationships between users of the center and members of its staff.* Where primary relations are firmly instituted, the people involved in them incur personal obligations which transcend the conventional deferences which strangers accord to each other. They know each other intimately, their problems are not privatized but shared, and an ethic of mutual aid evolves which makes it a matter of *self*-interest to try to further the interests of those with whom one has primary ties. It is immaterial to note that this does not always occur in community centers. Here as elsewhere bureaucracy can intervene to separate "staff" from "clients" so that the former become "leaders of games" and "enforcers of rules" while the latter are seen as "members of groups" or worse, "potential troublemakers." The point is that the modern community center, almost alone, is *the* institutionalized location where poor people are not supposed to be dealt with in stereotypical terms, or as "members of categories." Rather, the community center is the place where leaders have presumably been trained to meet the poor as individual, unique persons. It is also the place where one can find people who are at home in the larger society and who therefore "have contacts," that is, are closely acquainted with a complex power structure and know how to use it, or at least have access to it. In this ideal version the community center is not simply a "center for a community," it is a community within itself, held tightly together through a web of primary relations among members, and between members and staff.

A center such as this is a familiar landmark in metropolitan America, standing as a reminder of a long-standing tradition which commenced with the settlement house of the 19th century. It is almost unknown in Mon-Yough. Of course some churches and some voluntary associations maintain programs which in some respects resemble the community center, but these are usually maintained for their members, and are not focused upon the amelioration of the special deprivations of the poor. Thus while the community center may seem to be almost a new invention to people in Mon-Yough who are living on the economic margin, in fact the nine anticipated centers wonld only bring to these people what their counterparts in urban slums have come to take almost for granted.

In framing its request for funds to the Office of Economic Opportunity in Washington, MYCAC described its plan as follows:

* "Primary relationship" is here used in the socialogical sense to distinguish it from secondary relationships which are impersonal and involve only a limited part of one's personality.

"Traditionally, most large metropolitan areas have provided for their needy by utilizing the Settlement House, the Community Center or the State, Federal or private agency designated to provide Health and Welfare services.

"However, in the Mon-Yough River Valley these facilities in no way or form exist. A co-ordinated effort such as projected here, of nine centers operating in co-ordination with the support and cooperation of a C.A.A. central operation will constitute an opportunity network through which the Mon-Yough Community Action Committee, Inc., can channel existing resources into better relationships with the outlying poverty pockets of the area, can recognize and define unmet human needs and reasons for them, and can effectively help deprived neighborhoods plan and execute improved and new programs for self development.

"There will be a totality of co-ordination among the nine centers and the total additional projects being worked on for future funding, i.e., Handicapped Opportunity Center, Basic Adult Education, Work Experience for Teenagers, etc.

"In our River Valley social interaction is extremely limited and voluntary collective efforts are a rarity. Physical and psychological disorders are common and services are inadequate to the demand. Existing social service agencies are providing services; however, there is a long span of time when no adequate emergency service is available. Churches, the Department of Public Assistance, the Employment Service and a few local organizations provide the resources that must provide for an area population as large as the Metropolitan City.

"If we look at poverty *per se* we see it as a condition of unmet needs with its roots set in a network of social ills that include racial discrimination, inadequate education, poor health and sub-standard housing. Sickness, frustration, low employment, lack of proper diet, children living with no parents and no real identification of parents, poor housing and lack of decent clothing all constitute forms of deprivation that are transmitted to subsequent generations continuing the cycle of poverty.

"To shatter these feelings of inadequacy, hopelessness, low self image, acceptance of failure, and create a feeling of worth, of dignity, of decency, must grow not only with an adequate income and better living conditions, but by the motivation of being accepted of being a part of, of meeting other men on equal terms.

"The concept of the Community Centers pre-suppose its establishment in a populated, deprived, ghetto section of an urban metropolis. Around this nucleus of programs, activities and operation live the clients for which it was designed to help. The remainder of the com-

munities lie beyond the fringe area and only reaches in to help and then withdraws, leaving the area to work out problems and set standards which are often oriented to the ability of the deprived individual, thus movement is very slow, support erratic and achievement very minimal.

"Because of geographic area, population and the location of the poor of the Mon-Yough area, the Community Center must take on a different role and within its operation lies the true means of projecting the deprived person with help, support and training into the mainstream of community life, so he becomes an integral part of an interaction that can only benefit him and strip away his poverty identification.

"In our area we have the hidden poor, for no agencies really identify him, no group, private or public acts to help him or to meet his needs. Existence takes place at a very low level in a hidden apartment, in a river patch of dilapidated houses, or in an unworked farm or cluster of homes. How to reach, train, integrate, employ and involve this person with his neighbor then becomes the role of the Community Center. In this particular situation, the Center through its local CAP groups, its local coordination and its program must provide the help, the security, the support that normally a friend, or a family relation provides in an emergency. Employment, direction, support, training, status, trust, security, a knowledge of being a part and finally a chance to participate and help oneself and one's peers then becomes the operational function of all Centers.

"The Centers will be situated in strategic areas and will cover the entire area. These are: Elizabeth Boro Center (serving Elizabeth Boro, Elizabeth Township, Forward Township, Lincoln Boro and West Elizabeth), Port Vue Center (serving Port Vue, fringe areas of McKeesport and fringers of Lincoln and Liberty Boro), Dravosburg Center, Glassport Center, McKeesport Center (serving to public housing areas Harrison and Crawford Village), Pitcairn Center, Wall Center and Crestas Terrace Center.

"The immediate beneficiaries of this proposal will be the 99 low income persons who will be trained and employed to operate the neighborhood centers and those community action programs ready for activation and the 1200 low income residents of the area already affiliated with the local neighborhood organizations. The total beneficiary group will eventually consist of all the low income, culturally deprived, under educated, medically unserved, poorly housed, vocationally inadequate, and socially alienated residents of the Mon-Yough area.

"The immediate purpose of this proposal is to establish a neighbor-

hood center in each of the Mon-Yough nine poverty target areas and to provide such additional Mon-Yough Community Action Committee headquarters staff as is necessary to insure continued neighborhood organization, local leadership development, resident participation in planning, and the establishment of effective self-help community action programs at the top level.

"It is anticipated that these neighborhood centers, by providing accessible local community action operations sites, will reinforce existing resident community action efforts as well as bring about an expansion of these existing efforts to include those other low income area residents not yet involved.

"It is important to note that the nine projected centers not only provide the basis for this proposal, but are the articulated preferences and decisions of nine established neighborhood organizations properly representative of those to be served. Operations sites have been selected by those most qualified to determine accessibility, and program specifics are the result of low-income resident determination of priority needs. Eight of the local organizations are in the process of qualifying for Allegheny County CAA recognition; the ninth (Elizabeth Borough) has already received this.

"It is again important to note: the 99 low income non-professional residents projected for training and employment by this project will be recruited and selected by the local neighborhood organizations, will receive all basic training and orientation based on the philosophy and methodology of Frank Riessman-Arthur Pearl *(New Careers for the Poor)* and the on-the-job experiences will be so phased as to ensure progressive human service skills development. The curriculum used will constitute a core training program around which more specialized program and human service skills can be gradually developed to meet the individual program needs of each neighborhood center as it reaches the readiness level of community action programming."

2. It may be noted that the list of organizations without offices in Mon-Yough includes several which specialize in treating the various handicaps which humans inherit or acquire, and which interfere with normal functioning. To confront and extend this range of problems head-on, MYCAC has chosen for its second program the opening of a Pre-Vocational Opportunity Center for the Handicapped. Though this program has not yet received approval from OEO, both it and the proposal for Community Centers have been endorsed by the Allegheny County Committee and are presently being reviewed in Washington. This opportunity center would carry Mon-Yough services in its field

from very modest beginnings to a rather complete array of special programs, designed to supply the handicapped person with most of the resources which technology and human ingenuity can impart to him. At the present time there is a Mon-Yough Employ the Handicapped Committee, and a Mon-Yough Adult Retarded Center, but both are underfinanced and understaffed. Again it is appropriate to quote from the MYCAC proposal to convey both the substance and the tenor of their purpose:

"The handicapped person like the lepers of olden days are rejected, isolated and subjected to a stigma that could easily be eliminated under proper conditions. Resistance to association or employment is not due to their lack of education, lack of knowledge, lack of enthusiasm or lack of physical or mental ability to perform certain tasks. The resistance is simply because the person is handicapped and society has not been educated to the untapped reservoir of skills and resourcefulness that is lying dormant. Thus the handicapped person is denied the opportunity to become a self-sustaining citizen who can take his place in a family and in community life in their efforts to associate, socialize, obtain employment and become a part of, frequently this causes a handicapped person to lose all confidence in themselves and their community. Often this causes them to withdraw and this in itself causes a type of handicap and an additional problem.

"The area served by the Mon-Yough Employ the Handicapped Committee is particularly hard with such resistance on the part of the employer. Jobs in this area are predominantly in heavy industry. Such employers usually reject handicapped applicants because "they build up seniority and may bid in a job on which they would be a hazard to themselves and others." The resistance of the employers in this area to hiring handicapped applicants is apparent from the fact that, during the year 1964, the McKeesport Office of the Bureau of Employment Security succeeded in placing 42% of their total new applicants in jobs. In this same period this same office succeeded in placing only 25% of the new handicapped applicants. Many additional non-handicapped applicants were recalled to their old jobs or they found jobs on their own. This is generally not true with the handicapped applicant. They represent the hard core of unemployed persons, whose only or main drawback is that they have a disability, even though this disability does not interfere with their performance of the job they seek.

"At the end of 1964 there were 395 handicapped persons with active applications in the files of the State Employment Service in McKeesport. There is an additional 350 to 400 handicapped persons

in this area who are being rehabilitated in mind or body by the Bureau of Vocational Rehabilitation. They will soon be entering the labor market. When we consider the other handicapped persons, who for one reason or another, are not registered with either of these bureaus, we would conservatively estimate that there are over 1000 handicapped persons in this area that want employment and are entitled to jobs and need help.

"The solution for this dilemma then exists in the establishment of a center to provide opportunities for education, training and socialization for all area handicapped. Not only will the handicapped person hopefully develop, but the public in general and business in particular will develop a new approach or outlook concerning this neglected part of our community.

"It is intended that this proposal to establish and operate a Mon-Yough based Pre-Vocational Opportunity Center for comprehensive self-help therapeutic and job placement opportunities will constitute a mechanism through which personalized data concerning the disabled residents of the area and their situation can be collected, collated, and evaluated for improvement of existing services and the initiation of new programs for maximum care, treatment, and prevention of disabling conditions in the low-income population. It is also expected that this Community Action Program, by mobilizing and involving voluntary agencies, private agencies, public agencies, and members of the local community, will constitute a vehicle for the development of a local consensus for the future planning and execution of an effective local system of co-ordinated services to improve the living and vocational status of the area's disabled residents.

"These categories of low-income disabled persons will benefit directly from this program. The primary target will be those low-income disabled persons presently not receiving service and/or rejected for service by existing rehabilitation agencies. The County Board of Assistance Permanently Disabled category, Blind pension recipients, Bureau of Vocational Rehabilitation ineligibles, State Office for the Blind ineligibles, Old Age pension recipients, the inactive caseload lists of private agencies, secondary public school educable and trainable students about to be released or already at large in the community, and any other low-income subnormally functioning persons who can be reached via private and public institutions, individual medical practitioners, church groups, service clubs, etc., will be sought out for participation. Mass media and word of mouth techniques will be specifically adapted for this purpose.

"The secondary target group of beneficiaries will consist of those disabled persons presently active on the caseloads of existing rehabili-

tation and employment agencies, but for whom employment has not yet been found. The Bureau of Employment Security Office, the Bureau of Vocational Rehabilitation, the State Office for the Blind, institutions with disabled patients ready for release, and private agencies will be the recruitment sources for this group. They will be provided with self-help vocational training and work experience opportunities for employment in existing job vacancies and will also be encouraged to prepare for new entry career positions in the Center as sub-professional rehabilitation aides and special human service technicians. The Center based work experience will be progressive and will include continual educational and training opportunities for upgrading of skills and career development in human service occupations from sub-professional to para-professional to professional status when possible. It is estimated that in the Mon-Yough area according to BES figures 2/22/66, 410 persons are available for recruitment. The third group will consist of individuals currently on the roles of agencies (Cerebral Palsy, Multiple Sclerosis, Blind) who need a socialization, rec ation experience outside of the home. This would constitute the development of a scheduled type of programming co-ordinated with existing rehabilitation staff of existing agencies who will be encouraged to refer to the Center those disabled persons not considered ready to benefit from traditional rehabilitation procedures but for whom the Center might provide pre-rehabilitative support and therapy."

The philosophy that underlies this plan is substantially similar to that which undergirds the proposed Community Center: By centralizing an array of services in one location, it becomes possible for a staff to concern itself with all facets of an individual's person, to treat the individual as a total human being.

3. In addition to the counseling which MYCAC staff will offer to people who are referred to its office, it will also maintain an information and referral center. There is no single, widely-known place in Mon-Yough where someone can take a problem with the assurance that he will be told what agency has been designed to supply the service he needs. This will be remedied as MYCAC gradually becomes visible as a source of comprehensive information regarding all welfare services, public and private.

4. Aside from the efforts of school teachers and administrators, there is no single-minded institution which attempts to identify potential high school drop-outs and to intervene with means to discourage the potential from becoming a reality. Because such students are ordinarily from low-income families, and because their early departure from school tends to breed into them an expectation of low-income for them-

selves, thus perpetuating poverty from generation to generation, MYCAC has decided to ask for funds to keep this group in school as long as possible.

It did submit a proposal entitled "Project 44," which would create part-time jobs for such students which they perform out of school hours. This economic inducement together with particularized counseling, they felt, would prevent many young people from making a decision they would probably regret later but would then be unable to undo. As it happened, this proposal was returned to MYCAC by the Allegheny County Committee on the ground that that Committee was planning a somewhat similar program and could not approve another which would duplicate its own in the same region. The MYCAC staff is now redesigning its program to make it entirely distinct and separate, while still addressing it to the same problem.

5. The McKeesport Recreation Department has, within the limits of its budget, administered programs of organized play for children in its two densely populated public housing projects. (These programs have already been supplemented by the leadership given by one MYCAC staff member and by several volunteers, who are organizing programs in these housing projects during hours of the day when the City program is not in operation.)

What is novel in MYCAC's approach to this problem is its request to have several VISTA workers assigned to the housing projects. VISTA itself is very little known in Mon-Yough; it has no workers in the region. Rather than viewing their job as a way to get sustenance, VISTA people have to be dedicated; they are secular missionaries. They are usually college students, or recent graduates, whose capacities command much more in the labor market than the small remuneration they receive. To the youth of these housing projects they would bring a spirit and a zeal which would almost certainly implant or reinforce ideals which do not readily thrive by themselves in such settings. This is a case where MYCAC would have no continuing responsibility for the VISTA workers, who would instead be responsible to the VISTA organization itself. MYCAC's role is that of the initiator. It has defined the problem and has made an official request for workers to VISTA headquarters.

6. Community Action programs themselves are entirely new to Mon-Yough, whether in the form of OEO sponsored organizations or spontaneously formed groups. In the past, with the exception of a few special purpose campaigns, Mon-Yough residents have had to look to "city hall" for action when they have been beset by problems requiring collective, cooperative action. Even when municipal officials have been sympathetic, they have often been restricted in what they can legally and feasibly do.

Both the founders and the present MYCAC staff have worked persistently to urge and persuade the individual municipalities to form their own community action committees. In some cases they have succeeded (namely, in those where MYCAC hopes that Community Centers will soon be sprouting), while in others the apathy is still too great and local leadership has not yet emerged. It is the confident expectation of the Director that when community centers suddenly appear in nine localities, people in the remaining towns and boroughs will appreciate what their inaction has cost them and will want the same for their own. Having learned how to prepare the application for such a Center, MYCAC is ready to send through supplemental requests for more Centers as rapidly as local communities can organize themselves and appeal to MYCAC.

7. MYCAC's final plan is more a diffuse hope than a crystalized program, for it looks to the massive problem of the declining economy, the very problem which led the early sponsors to single out Mon-Yough as a Region demanding concentrated effort. Of course it is beyond MYCAC's capacity to revive the present economic base or to attempt to replace it with another, but it is not beyond its capability to persevere in the task of prodding others who can do something about this to work away at it. Especially it can become an active agent in the matter of searching for solutions to some of the more immediate manifestations of this long-term process of economic diminishment.

One of these manifestations is already clear. It is occasioned by the fact that steelworkers who are laid off when plants are cut back or shut down naturally turn to the labor market for new employment, but they are not relatively attractive employees. Any potential employer of them cannot usually offer them new jobs which are at the same level of skill and pay as their former ones. Thus they know very well that as soon as mills reopen, their steelworker-turned-employee will return to steelworking; he does not wish to jepardize his seniority. Futhermore when there is a sharp reduction in the work force of a mill, the repercussions are immediately felt in the local shops and stores; non-mill jobs become less plentiful. There is true irony in this dilemma. MDTA was partly inspired by men who envisioned the steady replacement of men by machines, especially in the steel industry. The bill was sponsored in the House of Representatives by the Representative from Mon-Yough, himself a former steelworker. It is an altogether appropriate Act for someone who is permanently deprived of his former occupation for it retrains him for an entirely new career.

But it gives little help to the steelworker who suffers not (or believes he suffers not) from permanent unemployment in his original line, but rather from "stuttering unemployment." Experience has told him that

it is probably just a matter of time until he is called back, and he pins his hopes and expectations upon this eventuality. In the meantime he will "make do," but he does not see an MDTA program as being an answer to his problem. The disease of "stuttering unemployment" is apparently endemic to a Region with Mon-Yough's economic characteristics, and may become epidemic if the pessimistic prophets are proved correct.

MYCAC's approach to this is to join the Institute for Research on Human Resources in a research venture. Leaders of some of the steel and other companies in the area have been asked whether they would permit a study of the problem of the potential displacement of workers, under the condition that the layoffs would be made known well in advance of the fact, and the affected workers would also be identified. From this point the task will be one of collectively searching for appropriate work for these workers, and of preparing them psychologically for either a permanent or temporary change. The problem has been so little-studied that the most effective research approach to it has not yet been decided. But MYCAC is lending its support to this pioneering endeavor since all parties—business, labor, and university researchers—agree that the effort of finding an acceptable solution is justified; the absence of a satisfactory solution is deleterious to all.

D. MYCAC IN PERSPECTIVE

1. The Environment

The Mon-Yough Region differs markedly from the rest of Allegheny County in several respects which are pertinent to the movers and shakers in community action programs.

Dominating all other facts is the heavily industrial character of the two river valleys and the nearby municipalities. Dependence upon steel means that changes in this industry have immediate impact upon the families of the region. It is hardly surprising, then, that the decreasing ratio of men to machines in this industry through the decade of the '50's was accompanied by a *relative* decline in the rate of growth in the population of the Region. Though there was a small increase of less than one percent from 1950 to 1960, this stands in clear contrast to the seven and one-half percent increase which occurred for all of Allegheny County. Relative to the rest of the County, Mon-Yough lost population.

Also through the same period the Region, in common with the rest of the County, saw an aging of its population. In 1960 31.3 percent of its people were 45 or above, more than a five per cent increase in this age

group since 1950. Similarly there was a rise of 3.5 per cent (to 35.9) in the group aged 19 and below, reflecting the general upward movement in the birth rate after World War II. Of necessity these increases imply a decrease in numbers in the group from 20-44, which is also not unusual. However, Mon-Yough experienced a sharper loss in this prime group than did the County as a whole. Mon-Yough showed a decline of 21.1 per cent (in absolute figures, more than 23,000 people) while Allegheny County dropped by 12.2 per cent in this age group. It is probably accurate to infer from this that Mon-Yough's deficit in the 20-44 group is not simply the resnlt of the natural aging process, but of outward migration as well. This is consistent with the very evident fact that the Pittsburgh metropolitan area, and the Mon-Yough portion of it in particular, lost ground to many expanding sections elsewhere in the country. It could not complete with these in the number and kind of employment opportunities which it conld offer to its youth who were entering the labor market for the first time. Many of them apparently moved out of the Region, in rather larger numbers than those who moved into it.

With respect to the non-white segment of the population, there was a moderate increase both in Mon-Yough and throughout the County, such that in 1960, 7.6 per cent of the Mon-Yough population was non-white, with the comparable figure for the County being 8.3 per cent. These numbers mask an important difference occasioned by the fact that most of the non-whites in the County are concentrated in a few neighborhoods in Pittsburgh. Mon-Yough's percentage non-white is only about half that of Pittsburgh's, and Pittsburgh's in turn is small in comparison to Washington D. C., Detroit, Chicago, etc. Still this does not mean that Mon-Yough's non-whites (which essentially means Negroes) are so few in number as to be inconsequential to community action organizations. Indeed if one takes the perspective which is developed in the following paragraphs, it can be shown that there is an intimate linkage between the racial composition of a town in Mon-Yough, its tendency to grow or decline, the prosperity of its families, and their level of education. The value of this perspective lies mainly in its demonstration of the interdependence of these demographic, economic and educational variables, suggesting that fundamental change (such as the eradication of poverty) cannot be accomplished when remedial efforts are concentrated on but one of these factors, to the exclusion of the others.

This perspective is comparative. It moves the level of discussion from "Mon-Yough in relation to Allegheny County" which has been used above to "the relation of Mon-Yough's municipalities to each other." There are 31 such local units, but only 19 of these are relevant for this

new perspective. Twelve have been set aside because each has less than 50 non-whites. (These numbers are so small as to render suspect any conclusions based upon them.) The 19 remaining Mon-Yough communities each had more than 50 non-whites according to the 1960 census.

This perspective considers these 19 municipalities and asks: Are there discernible relationship among their patterns of growth (or decline), their racial compositions and the changes in these compositions, the educational levels of their populations and the incomes of their families? Answers are provided by appropriate analysis of data contained in the tables in Appendix A. Since the inquiry is directed toward comparison of these 19 with each other, each of the five listed variables was converted into a rank-order. This permitted each community to be given a rank (from 1 to 19) on each of the variables, making possible the computation of a rank-order coefficient of correlation between each pair of variables. The resultant coefficients, contained in this table, reveal a pattern of association which ranges (with but one exception) from moderate to very strong.

Several of these relations are well-known and require little comment. It is not surprising that the fastest growing communities tend to have the smallest proportion of families with small incomes (−.93) and the largest proportion of people who have completed high school (.76). In keeping with this, the communities with the greatest percentage of low-income families also tend to have smaller percentages who have at least finished high school (−.84).

The remaining two variables measure different aspects of a community's racial composition. One of these variables is static: Percentage of population which is non-white simply indicates the proportion of the total which was non-white in 1960. The other is dynamic: Percentage change in non-white proportion of total population measures the *relative* change which occurred through the decade of the '50's. Of the two, the dynamic variable is more closely associated with the other three than is the static one (though the dynamic and static variables are also rather highly related to each other: (.62). This suggests that, for example, if one knows the direction and degree of a community's general change in population, he can probably make a more accurate estimate about the tendency of its non-white population to become more or less prominent (—.80) than he can make about its relative prominence at one point in time (—.48). It also says—and this is especially pertinent for planners of community action—that growing communities in Mon-Yough tend to have decreasing proportions of non-whites, and declining communities tend to have increasing percentages of this group.

Patterns of Association among Population Change, Racial Composition, Change in Racial Composition, Family Income and Educational Level in 19 Mon-Yough Communities

	Rank Order of: Percentage of Families with less than $3000 income (1960)	Percentage of population which is non-white (1960)	Percentage change in non-white proportion of total population (1950-1960)	Percentage of population which finished high school (1960)
Rank Order of:				
Percentage change in population (1950-1960)	−.93***	−.48**	−.80***	.76***
Percentage of families with less than $3000 income (1960)		.42*	.78***	−.84***
Percentage of population which is non-white (1960)			.62***	−.17
Percentage change in non-white proportion of total population (1950-1960)				−.48**

Figures are Spearman rank order correlation coefficients.
Probability levels: *.05 **.02 ***.01

Thus, even in a region which is itself declining, there are internal changes and variations which fall into a rather tight pattern. To put the matter more concretely, in Mon-Yough low income groups tend to become more prominent (in percentage terms) in communities which are losing population and which have relatively large numbers of people with low levels of formal education. For well-known reasons, Negroes as a group receive less education and lower incomes than do whites as a group. It is probably the case that, in some measure, the Negro populations in these declining communities are contributing to the larger percentages on the income and educational variables. This cannot be ascertained directly, because census breakdowns do not give detailed information about income and education for non-whites. Nevertheless, from what is known there is room for some doubt about

this interpretation. If Negroes by themselves were accounting for the bulk of low-income families and depressed educational levels, the static variable should be rather strongly related to income and to education. But it is not. In fact, these two coefficients are the weakest in the table. One of them, the relation between the percentage non-white in 1960 and the percentage with a high school education was so small (−.17) as not to reach statistical significance; here there may be no association at all.

It may be useful to illustrate the general pattern shown in the table by comparing three Mon-Yough communities, two of which fell near opposite ends on the five rank-orders and one which stood approximately in the middle. The first row in the following table shows that White Oak grew rapidly during the decade, holding the second rank position on this variable; McKeesport lost 9.7 per cent and stood in 11th position; while Braddock, which lost more than 25 per cent, was 17th in the order, two ranks above the bottom.

More than any other Mon-Yough community, White Oak qualifies as a "middle class suburb." Like many others in this category, it expanded during the fifties, moving from about 6000 to slightly more than 9000. Its small non-white population of 63 in 1960 had actually grown by 16 during the period, but this increase was so overshadowed by its total growth that the percentage of non-whites in its total actually

Ranks and Percentages for Three Mon-Yough Municipalities on Five Variables: Population Change, Income, Racial Composition, Change in Racial Composition and Education

	White Oak		McKeesport		Braddock	
	Rank	Percentage	Rank	Percentage	Rank	Percentage
Change in Population (1950-60)	2	46.9	11	−9.7	17	−25.2
Families with less than $3000 income (1960)	17	8.3	7	19.6	2	25.6
Non-white population (1960)	19	0.5	7	7.9	2	23.6
Change in non-white proportion of total population (1950-1960)	15	−0.3	13	0.2	1	7.2
Finished high school (1960)	1	51.4	7	31.4	17	26.0

declined by a small amount. More than half of its residents who have reached the age of 25 have completed high school, and its "poverty problem" is not of great magnitude (8.3 per cent of its families are in the low income group).

McKeesport by any standard is a heavily industrial city. Because it stands at the confluence of the Monongahela and the Youghiogheny Rivers, and because it is the largest city in the Region (45,589 in 1960), it functions also in some degree as a service, trading and transportation center for other Mon-Yough communities. Even though it is within commuting distance of Pittsburgh (40 minutes from the business district) it has not been developed or redeveloped to accommodate urban workers seeking suburban dwellings and space; only 6.5 per cent of its employed residents work in Pittsburgh (Appendix A, Table XIIIa). In consequence its population dropped by almost ten per cent between 1950 and 1960, while its proportion of Negroes rose slightly. Because of its absolute size, McKeesport already has the second largest (Clairton has more) number of Negroes in the area; these people are mainly concentrated in and around one public housing project on the north bank of the Youghiogheny River. If the changes noted during this decade should continue along a linear trend, McKeesport will diminish in total population at the same time that its Negro segment will grow both absolutely and proportionately.

This pattern is much more marked in Braddock, which is closer to Pittsburgh but has even less capacity to hold its population. Losing more than a quarter of its population through the ten-year span, it also showed the largest gain in its percentage of non-whites (an increase which was absolute as well as proportionate). More than one-fourth of its families received less than $3000 in 1960, and ouly 26 per cent of its adult residents had gone as far as high school graduation.

There is an instructive if not altogether welcome lesson in these comparisons. The very communities with the gravest problems of poverty are also the ones which seem to be steadily *losing* the resources which are most desperately needed to cope with the problems. On the other side of the coin, the localities which are gaining the most important of these resources—people—and which show the highest levels of education are those where these problems are relatively less urgent. Fighting poverty takes money, and in Mon-Yough even the modest ten per cent share required for participation in Federal programs is very formidable, whether it is to come in the form of cash contributions by citizens, from local governments through their capacities to levy taxes, or by services or facilities in kind. White Oak, with more than half of its families in the "$7000 and over" bracket, is in a strong position to reduce poverty within its boundaries, but it has little

poverty to reduce (Appendix A, Table XII). But in Braddock less than 20 per cent are in the high income class, while more than 25 per cent received incomes in 1960 which put them in the "poor" category by even the most conservative criterion ($3000).

These sharp and ironic contrasts underscore the fundamental justification for the creation of the Mon-Yough Community Action Committee, Inc., and specifically for the emerging (though still problematic) "synthetic organization" which it is nurturing and strengthening. These organization aspects are discussed in the following section.

2. The Organization

The formulation of the plan, the emergence of the organization, and the earliest activities of the Mon-Yough Community Action Committee have been described and discussed. The emergence of this organization into a working mechanism with a charter to promote and initiate change is a realized fact; the admitted scepticism and dubiousness of the observers, which were present throughout most of their relationship with the events that unfolded in the Mon-Yough Region, now are gone. In their place is the belief that MYCAC's experiences demonstrate that "it can be done."

MYCAC is now an operating organization; it has, at least to the satisfaction of the Washington personnel who are responsible for deciding about the future of community action committees, justified its existence and eligibility for continued government support. Also, implicit in the renewal of its conduct and administration grant, is the fact that the synthesizing process has been accomplished. However, the full synthesis has not been accomplished; but, one must no longer hesitate to suggest that an incomplete synthesis may constitute a necessary condition for the fulfillment of organization-realization.

The full-synthesis probably will be achieved when the elite agents of the Region's political and business leadership take steps to affirm positively their willingness to both participate in and support the role of MYCAC. At this point the political segment of the Region's power structure has remained indifferent: the business leadership has provided token support, and the extent of future union support is to be determined. Noteworthy throughout the entire organizational effort has been the absence of any direct and manifest hostility to the idea and the formalization of the community action committee from the political and business leadership and this, perhaps more than anything else, has engendered the necessary climate of environmental permissiveness that was needed to effect the partial synthesis.

Essentially, a climate of environmental permissiveness may be re-

garded as one of two necessary conditions that need be satisfied if a community action committee is to succeed in the evolution from an idea to a concretized organization. The second condition is that the organization identify and relate its goals to the needs of that segment of the population which it wishes to represent and service. This condition appears to have been satisfied. The degree of its fulfillment is directly related to the relevant public's responsiveness to the working philosophy of the organization, where the latter is communicated and manifested through the activities of the organization.

The activities of MYCAC, having their origin in the diffused purview of its administrative-mission, are multi-dimensional. The efforts of this community action organization, in the narrowest interpretation, are directed toward promoting and affecting change. However, in the broader interpretation, the operation and activities have as their foci the individual, the organic vested interest groups, the formal bureaucratic private and public institutionalized agencies, and the general social-political-economic milieu of the total environment in which people live and work. In essence, it is the task of MYCAC to reshape and weld anew the sinews of personal attachment and commitment to community life and progress as it (simultaneously) assumes and fulfills the role of a "nerve center." That is, MYCAC is responsible for integrating the frayed edges of the social fabric into a meaningful and operationally pliable cloth.

This is not an insurmountable task, but it is not a simple or readily attainable task. The community action organization is people-oriented. It, more than any other institution or organization, has to fashion a product from the rawest and least malleable of all resources—the human being, a resource that is not without the energy to resist change and to articulate its discontent with any attempt to transform it into a new shape and form. The result of the process of people-transformation should, under the most favorable circumstances, appear as a viable and more productive human resource whose talents have no opportunity-limits other than those imposed by social attribution.

It is axiomatic to assert that human beings cannot be manipulated freely; it equally may be axiomatic to assert that the environment which provides the framework within which human talent develops will rarely subscribe to the very broad and sometimes undefined goals and objectives of a people-oriented undertaking with a voluntary and purposively demonstrative expression of commitment to the task. If one accepts these as basic propositions, one also ought to recognize their implications for the role-execution of the Mon-Yough Community Action Committee.

With reference to the accomplishments that MYCAC may expect

from its activities, it is suggested that all substantive results will follow once and after its clients become awakened to a consciousness of unlimited opportunities for the development and the exercise of their capabilities. In other words, a principal prerequisite for all activities that MYCAC hopes to sponsor is a motivated client. Economic poverty and emotional despair are conditions of the body and the mind to which human beings may inure themselves; not because of lethargy and not entirely because of ignorance, but perhaps because of an effete optimism that ultimately produced a state of hypnotic immobility and, subsequently, at least to the casual observer, an attitude of defensiveness and indifference. Neither attribute is desirable, for they militate against effective action or response to a promise merely of assistance.

Our observations of the MYCAC operation indicate that the presence of this organization may have catalyzed these attributes, and transformed them into positive aggressiveness. Clients have been seeking-out the staff of MYCAC for advice, guidance, and even employment with a renewed confidence as they circumvent the traditional agencies of assistance. It matters little that MYCAC is inadequately prepared to cope with the unexpected demands that are being made upon it by individual members of the Region and that it often is unable to offer a realization of the individual's expectations. What is important, if not of very great social significance, is MYCAC's "total person" approach to the individual. This, together with the absence of vested interest and bureaucratic restraints which otherwise foster caution over action, appears to have created a climate for inter-personal communication and trust that might be lacking in other relationships these clients may have experienced.

The clients exist. In its very brief life MYCAC has managed to extend and to communicate its action-oriented philosophy to the poor and disadvantaged residents of the Mon-Yough Region. Evidence of this success is not limited to the fact that individuals have taken the initiative by presenting themselves at MYCAC's door. Additional evidence of the spontaneity surrounding this community action organization *and* the latent forces which it seems able to energize is provided by its entry and welcome reception into the area of recreation for the youth of the Region. Here, as previously explained, the Mon-Yough Community Action Committee acted to fill a gap in the ordinary services that citizens are accustomed to receive from their municipal authority. Noteworthy in this instance is not what some may cite as an untoward usurpation of a sphere of government, instead it is the refreshing fact that citizens in need *came* to MYCAC and were able to secure a result. This, then, is regarded as evidence to support the contention that individuals will organize themselves to bring MYCAC to their doors.

With reference to the environmental framework and its impact upon the community action organization's activities, one cannot overstate the contribution which the diverse (hopefully, not disparate) individual and organizational elements of the Region must make to ensure the ultimate success of the effort to help the poor as they try to help themselves. In the aggregate, it is necessary for the community to become aware and sensitized to the problems of the poor. From a micro-scopic analysis the inescapable conclusion emerges: MYCAC, or a similar organization, must demonstrate both a willingness and a capacity to co-ordinate its activities with the extant and more traditional institutions; also, it must be willing to play a complementary role; and, not the least in importance, it must accept the responsibility for innovating creatively and constructively whenever it is deemed necessary.

In other words, although MYCAC is essentially an organization created to identify and to reflect the needs of the poor and while it must permit the poor to participate in the development of a community action program, it must overcome the burden presented to it by the environment in which it seeks to operate. It must restructure attitudes present in the environment to generate the forces that lead to its unqualified acceptance in the community. At the same time, it must lead, push, pull, and perhaps cajole the entire resources of a community towards the development and the implementation of a comprehensive and integrative campaign against the destructive forces of human impoverishment.

Surely, this amounts to an overwhelming task. It is especially so when one recalls the earlier prescription, now stated explicitly: a successful and continuously effective community action organization is deemed probably only so long as the organization retains its independence and in the process of prosecuting its mission remains an apolitical institution.

The description of MYCAC's relations with its environmental givens, and the chronicle of its origin and organizational structure serve to illustrate how the institutionalization of a synthetic organization ought to evolve. It may have occurred by accident, but it is more likely that the initial success of MYCAC—in the formative stage—is a reflection of its leaderships' conscious determination to succeed and their sensitivity to the needs of the extant and competing social service agencies in the Region. The latter is evidenced by the participatory role that MYCAC extends to such organizations, by the overlapping membership on its Board of Directors and its Advisory Committee, and by its respect of jurisdictional lines in general.

The MYCAC proposals, either the ones submitted to Washington

or in the pre-submission stage of development, are consistent with the broad objectives of a people-oriented effort which is directed toward ameliorating (if not eliminating) personal poverty. These efforts, and they take a variety of forms, are designed to help the old, the young, the teenager, and the unemployed or the marginally employed husband of a young and growing family. These are the persons that need to be helped in a small and economically stagnant area, an area facing the prospect of inevitable decline and one in which the poor population is largely unable to help itself or to expect significant assistance from traditional sources of aid.

Through MYCAC, as it should be with other community action organizations, the emphasis is directed primarily upon the individual; to secure the necessary restructuring of his attitudes, and to enable the development of his capabilities so as to improve the probability that such an affected human being will afterwards better be able to "help himself." Of course, the given community, will derive considerable benefits from the achieved transformation.

Is the success of MYCAC assured? Is the success inevitable? These are two legitimate questions that ought to be considered, particularly when the basic issue is concerned with a public policy question: ought the federal government subsidize and sustain community action programs; have all the alternatives been examined and evaluated?

This is not the place to treat these questions, but it seems incumbent to generalize in order to place all that has been said about MYCAC and community action in proper perspective. Therefore, it may be left to others the task of measuring and assessing the technological efficiency of the community action alternative. However, the following observations seem pertinent:

1. The "input" provided by the community action committee, as it seeks to effect the process of people-transformation, is education. In the broadest construction of this word, it has the responsibility for collecting and disseminating information about opportunities that will permit the "poor" to maximize their intake of socio-economic welfare services that are available in their communities; it must contribute to improving the efficiency with which such services are dispensed; it must make the total community and the designated recipients of community action services cognitively aware of the opportunity, the need, and the possibility of cooperating to ameliorate effectively personal poverty through thorough diagnosis and appropriate action; it must develop and also implement action projects to demonstrate that the process is both accomplishable and worthy of support;

2. The "method" used by the community action committee is really a micro application of public investment to enlarge the capitalized value of the human resource. This end is achieved either through immediate job-placement or through an alteration of the future rate of discount that is used to capitalize the value of a producing resource. The latter end is achieved through a variety of methods, but four of the most obvious are identified because of their direct relevance to the understanding of community action: extending of the human beings' own time horizon; increasing the number of years of productive services that he may actually render; by personal upgrading, which thereby transforms the nature of the human being's resource state; and, by reducing the costs and the associated risks attached to his employment status, as perceived by an employer;
3. The "result" of the means and the method should be recognized for what it is: a contribution to the future in the form of an expected enlargement of the individual's productive capabilities, the realization of which is contingent upon other investments and economic developments that will provide the assurances needed for a full utilization of human resources and less waste in their current uses.

The principal implication of these observations is to suggest that the contribution which an organization such as MYCAC can be expected to make to the elimination of poverty is limited, at least within a given community. The national or aggregate impact from an interaction of a multitude of individual community action committees is likely to be greater than each one's own effect in its own area.

4

THE MON-YOUGH REGION: A DEMOGRAPHIC AND ECONOMIC PROFILE

The Mon-Yough Region consists of 31 politically autonomous communities in the South-Eastern section of Allegheny County. These communities border upon the City of Pittsburgh directly and extend to the east and the south of the City. They comprise a contiguous geographic bloc and are characterized as much by diversity as they are by uniformities with respect to their economic and demographic features.

This profile of the Mon-Yough Region, and the individual communities within it, has been prepared (a) to acquaint the population of the Region with the characteristics of the area in which they live; (b) to give direction to members of the Mon-Yough Region who are concerned with the state of poverty that exists in the area, and who may wish to secure freedom from or to protect themselves against poverty by availing themselves of the services that can be obtained through community action activities; and (c) to indicate the implications for community action.

The focus of the study is upon the people who reside in the Region. Their demographic and economic characteristics are described, and the implications which these characteristics have for the design and implementation of anti-poverty programs are discussed. Although the communities must accept the ultimate responsibility for improving their economic and social welfare and for making the decisions about programs and the priority which such programs are to receive, this report does identify the communities which appear to be most urgently in need for help from the offices of the community action program. The study also identifies some of the problem-areas in which community action programs might be undertaken.

Finally, this study shows a community action organization that it is possible to both inventory and interpret meaningfully the salient characteristics of an area by relying upon relatively simple and most readily available data—i.e., publications of the federal and state governments. Indirectly, this profile should engender an appreciation for

data among community action leaders to identify and justify their proposals and programs for action; it should sharpen their appetite for more information about their areas and the people they are to service; it should stimulate them to maintain data on their own projects for use in program evaluation analysis; and it should encourage them to request that other agencies, with access to relevant data, maintain and loan to them all information that may be needed in preparing and justifying the campaign against poverty.

These facts, and their analysis, reflect the economic and social problems and needs of the Mon-Yough Region and point to the need for community action.

A. POPULATION AND POPULATION CHANGE

Table I of Appendix A shows the size of the population within each community for the years 1950 and 1960, as of April 1. The Table shows, also, the percent of change in the population of each community on a 1950 base.

1. Highlights:

A. Examination of the Table reveals that 11 communities had experienced an increase of population while 20 communities of the Region had decreased in populatic ..

1. In absolute terms, the City of McKeesport experienced the largest population decrease. Its 1960 population was 4.9 thousand less than its population of 1950.

2. The population of Braddock declined by slightly more than four thousand, and the population of Duquesne and Homestead declined by approximately 2.5 thousand.

B. Of the 11 communities whose population increased, West Mifflin experienced the largest gain. Its population rose by 9.3 thousand. This community was followed, in descending order of population increase, by Elizabeth Township, North Versailles, White Oak, Liberty, Port Vue, West Homestead, Munhall, Braddock Hills, Forward Township, and East McKeesport.

C. In percentage terms, the communities of Rankin, Glassport, and Braddock were the largest losers of population. In each the 1960 population was 25 percent smaller than the 1950 population.

1. East Pittsburgh, Versailles, Wall, and Wilmerding lost between 18 and 22 percent of their 1950 population.

2. Population decreases between 10 and 15 percent were experienced by Duquesne, Turtle Creek, Lincoln, and North Braddock.

D. The largest rate of population increase took place in Liberty. The 1960 population of this community was 2½ times greater than its size in 1950.

1. The population increases of West Mifflin, White Oak, Elizabeth Township, and North Versailles ranged from 51.7 percent to 38.3 percent.

2. The communities of West Homestead, Port Vue, and Braddock Hills experienced population increases of 27.6, 25.3 and 22.8 percent respectively.

3. The other communities, with more population in 1960 than in 1950, were East McKeesport, Forward Township, and Munhall. The respective percent of increase was 9.4, 9.3, and 5.3.

E. In the decennial period 1950–1960, the aggregate population of the Mon-Yough Region remained almost constant; the population of Allegheny County, of which the Region is a part, increased by 7.5 percent.

In 1950 the Region constituted 17.7 percent of the County's total population, whereas in 1960 the Region's share of the County's total population was 16.6 percent.

1. Within the Mon-Yough Region, itself, the City of McKeesport's share of population declined from 33.3 percent in 1950 to 27.9 percent in 1960.

2. In 1950, the 10 communities with the largest Mon-Yough population constituted 69 percent of the total number of persons residing in the Region. In 1960, the share of the Region's population residing in the 10 largest communities was still 69 percent.

However, the rank-ordering of the top ten communities did not remain the same. Also, the composition of the top ten communities did not remain unchanged. North Versailles moved into the top ten, and Homestead moved out.

2. Implications:

A. The data presented in Table I are *not* sufficient to enable an identification of particular problem areas, suitable for community action programs, that may exist within any community. Furthermore, they are *not* adequate guides for establishing a priority listing when funds are to be allocated for implementing community action programs under the aegis of a Mon-Yough Region effort. Similarly, the levying of assessments to finance Mon-Yough programs ought *not* to be determined solely on the basis of population size.

B. The data *do* serve to suggest that the Mon-Yough Region is made-up of two distinctly different types of communities: growing ones and declining ones. More precisely, the growing community most likely is

experiencing either a relative expansion in general employment opportunities or experiencing an increase in the income level of its population which is independent of any changes in the employment structure within the community. Of course, both phenomena may be interacting simultaneously. The declining community, on the other hand, most likely reflects a declining employment-opportunity structure within its local economy.

C. Also, the data serve to suggest that the Mon-Yough Region's ability to influence the direction and tenor of county-level decision-making declined from 1950 in relation to the entire County subdivisions—when political influence is related to population.

This slight diminution in Mon-Yough's intra-County political strength becomes more pronounced if the City of Pittsburgh is excluded from the County. That is, in 1950 the Mon-Yough Region constituted 32 percent of the total County-less-Pittsburgh population and only 26 percent of the comparable 1960 population.

Now, since the City of Pittsburgh is excluded from the anti-poverty program for the County, this provides some justification for the creation of the Mon-Yough Community Action Committee to deal with the particular, and perhaps unique problems confronting each individual community or the Region as a whole.

B. AGE STRUCTURE OF THE POPULATION

Tables II, III, and IIIa of Appendix A, deal with the age structure of the total population in each community, for the Mon-Yough Region, and for Allegheny County. Table II shows the number of persons in each area, grouped by selected ages, for 1950 and 1960. Table III shows the percentage distribution of each community's population by the selected age group. Table IIIa, derived from Table II, shows the decennial percent of change in the size of each age group.

Each entry in Table IIIa may be interpreted as a measure of the speed with which the changes in the age composition of the population for each community had taken place from 1950 to 1960. Also, the data presented in Table IIIa describe the rates of change which *should have taken place* in each community's supply of special services and facilities for persons within the selected age groups (especially for the group 19 years and under and the group 65 and over) *if the level of per-capita output of such community-provided services was to remain constant* —i.e., equal to what it was in 1950.

1. Highlights:

A. The proportion of persons age 65 years and older in the Mon-Yough Region increased 2.4 percent between 1950 and 1960. This increase was *larger* than the increase for the County.

1. Twenty-eight communities within the Region experienced an increase in the proportion of persons age 65 and over.

Three communities—Braddock Hills, Elizabeth Township, and West Homestead—experienced slight decreases.

2. In nineteen of the communities, the increase in the proportion of "senior citizens" was greater than the average increase that took place in the Region.

Excluding Trafford, the greater portion of which lies outside of the Region, the largest increases in the proportion of persons age 65 and over occurred in West Elizabeth and Duquesne. In each, the proportion of senior citizens in the total population increased 5 percent. Increases ranging from 4 to 5 percent were experienced by Rankin, Wall, Homestead, Wilmerding, and East Pittsburgh.

B. The average change in the Region's share of persons age 19 years and under was an increase of 3.5 percent. This increase was *less* than the increase for the County.

1. The number of younger persons, expressed as a percent of each community's total population, increased in 27 communities.

The four communities that experienced a decrease in the proportion of younger persons were Liberty, Trafford, Whitaker, and Dravosburg.

2. In seven communities, the increase equalled or exceeded the average increase experienced by the Region. The largest increase occurred in West Homestead—in this community the proportion of its population age 19 and under increased from 29.9 percent in 1950 to 37.0 percent in 1960. The other six, arranged in descending order of increase, were: Lincoln, Port Vue, Elizabeth Township, Munhall, Duquesne, and Rankin.

C. There were six communities which experienced an increase in *both* the younger and the older age groups that exceeded the increases for the Region. These were: Duquesne, Lincoln, Munhall, Rankin, Trafford, and Whitaker.

In only one community, Lincoln, was the increase in the relative proportion of younger persons and older persons greater than the increases for the County.

D. An examination of the change in the proportion of the number of persons age 45 to 64 years shows the Region to have experienced a greater increase than the County. In the Region, persons in this age group comprised a larger share of the total population in 1960 than

they did in 1950–the increase was 2.5 percent. The corresponding increase for the County was less than half of one percent.

1. In 28 communities the relative share of total population between the ages of 45 to 64 years increased from 1950 to 1960. In 13 communities, the increase exceeded the average increase for the Region. The largest percentage shifts occurred in Braddock Hills (6.6), Whitaker (5.7), Dravosburg (3.8), Trafford (3.8), and East McKeesport (3.6).

The three communities in which the proportion of persons between the ages of 45 and 64 years declined were White Oak, West Elizabeth, and West Homestead.

E. The direction of change associated with the structural shifts in the proportion of total population between the ages of 20 to 44 years was the same for the County, the Region, and each community within the Region–the proportion of the population in this age group decreased from 1950 to 1960. The decrease for the County was 7.3 percent; the decrease for the Region was 8.9 percent. That is: in 1950 persons between these ages constituted 39.9 percent of the County's population and 41.2 percent of the Region's population, but in 1960 the proportions declined to 32.6 percent and 32.3 percent respectively.

1. In fourteen of the communities, the decline in the proportion of persons between the ages of 20 to 44 years within the total population exceeded the decrease experienced by the Region as a whole.

In seven communities the decline exceeded 10 percent. The greatest decrease occurred in Glassport–the share of total population occupied by this age group in 1960 was 13.8 percent less than it was in 1950. The other six communities in which the decline exceeded 10 percent for this age group, arranged in descending order, were: Munhall, Port Vue, Clairton, McKeesport, Lincoln, and Homestead.

F. A consolidation of the age group 20 to 44 years with the age group 45 to 64 years embraces that component of a community's population which is most likely to be engaged in productive activities.

In every area–County, Region, and each community–the proportion of population between the ages of 20 to 64 years was lower in 1960 than it was in 1950.

1. In the County, the proportion of total population in this "productive" age group declined from 61.6 percent to 54.7 percent. The comparable figures for the Mon-Yough Region were 60.6 percent and 54.4 percent.

2. For the individual communities within the Region, the range of the decline was from less than one percent in Liberty to 13.0 percent in Glassport.

In sixteen communities, the decline in the proportion of popula-

tion between the ages of 20 to 64 years was greater than the average decline in the Region. These communities, arranged in descending order, were: Glassport, Munhall, Port Vue, McKeesport, Clairton, Lincoln, West Elizabeth, Rankin, North Braddock, Wall, Homestead, Braddock, Duquesne, North Versailles, and West Homestead.

2. Implications:

A. The structural changes in the age distributions for the communities of the Mon-Yough Region assume great significance when viewed from the perspective which emphasizes the maintenance and the development of human resources. It is readily apparent that the Region, between 1950 and 1960, has aged. Not so apparent, but not to be overlooked, is the trend that is revealed by the data. That is, with respect to the age structure of the communities it should be expected that the population will continue to age.

The Region's population of persons within the most productive age group (20 to 44 years) declined sharply in the decennial period. This is probably the result of a net outward migration of productive talent from the Region. This, however, is not the sole cause for the relative aging of the population. It is certainly a contributing factor, but there were significant increases in the absolute number of persons age 65 years and over in the communities and in the Region as a whole.

1. The increase in the number of older persons, ones who no longer can be expected to be active participants in the labor market, suggests that every community should expect to be called upon to increase the supply of geriatric social welfare services it offers to its population—ranging from health care to recreation to provisions for income maintenance.

2. Such services are largely provided by and subsidized through County and State agencies, but the higher rate of increase for this component of total population which prevails in the Region, as contrasted with developments in the County, suggests that the Region's problems might be coped with more efficiently and effectively if programs were developed and administered at the local level.

B. In contrast with the developments in the County, the Mon-Yough Region has suffered a disproportionately greater decrease in the number of persons between the ages of 20 to 44 years and experienced a greater rate of increase in the population between the ages of 45 to 64 years. The net consequence of these changes is to make the problems of the Region different from the problems of the County. It must be stressed that the difference, however, should be regarded as one of degree and not as one of type.

1. The net outward migration of persons from the Region, as well as from the County, may have reduced or eliminated much of the social and economic adversity that otherwise would have prevailed in the area between 1950 and 1960. In fact, it may have even concealed or diverted attention from any economic impoverishment that may exist in the area. Now, however, the Region can no longer place as much reliance upon migration as a mechanism for inducing community adjustment to economic adversity as may the County.

Furthermore, given that occupational and industrial mobility tend to decline with age, it may be said that the Region can no longer place much reliance upon mobility to assure itself that individuals will be less vulnerable and better able to combat unemployment and economic deprivation by taking advantage of opportunities that may exist in the local economies or outside of them.

2. Now, since institutionalized help is recognized as a socially legitimate medium through which individuals may be assisted and prepared to grapple with the vicissitudes of an uncertain economic environment, it may be said that the communities of the Mon-Yough Region require greater and more immediate help than does the rest of the County.

Again, this is an instance in which the identification of needs and the necessary coordination of efforts is likely to be efficiently and effectively accomplished through local initiative and administration.

3. An obvious result of the changes in the age structure of the population is that the Mon-Yough Region's pool of available manpower has been significantly diminished. In the short-run, where this is the consequence of supply adjusting to changes in the demand for labor, this result is deemed desirable. However, in the longer-run the paucity of manpower in the prime years of working life may redound to the disadvantage of the Region if the expansion of industrial activity is made contingent upon an available pool of labor.

The communities of the Region can do little to hold its younger persons captive in anticipation of an improvement in the relative economic opportunities afforded them in the Region. Still, efforts can be directed toward developing the talents and expanding the industrial viability of the new entrants into the labor market. It matters little that market incentives may draw such persons away from the Region's economy; of greater importance is that the Region develop the facilities and demonstrate its ability to provide industry with qualified workers so that when the demand is made it will be satisfied.

C. THE NON-WHITE POPULATION

Tables IV through VII of Appendix A present data dealing with the non-white component of the total population in the areas under study.

Table IV shows the number of non-whites in the Region and in each of the communities for the years 1950 and 1960. Data for the County are also presented. In addition, the Table shows the non-white population as a percent of the total population for each of the selected years in the given areas.

1. Highlights:

A. The proportion of non-whites in the Mon-Yough Region and in Allegheny County increased from 1950 to 1960.

1. In both 1950 and 1960, the proportion of non-whites in the Region's population was lower than the proportion of non-whites in the population of the County.

2. If the City of Pittsburgh is excluded from the County, the proportion of non-whites in the County is reduced from 8.3 percent in 1960 to 3.3 percent. This contrasts sharply with the Region's racial structure in 1960. The proportion of the Region's total population that was classified as non-white by the Census was 7.6.

With Pittsburgh excluded, 61.4 percent of the non-whites living in Allegheny County resided in the Mon-Yough Region.

B. In 1960, for seven Mon-Yough communities the proportion of non-whites in the total population exceeded the average for the Region. In six of these communities, the proportion of non-whites in the total population was greater than the County's average.

The six communities were: Rankin, Braddock, Clairton, Homestead, Duquesne, and Braddock Hills. The seventh community was McKeesport.

1. In six communities, the non-white component of total population made-up from 5.0 percent to 7.6 percent of the 1960 population.

These communities are: North Braddock, North Versailles, Elizabeth, West Mifflin, Forward Township, and East Pittsburgh.

2. In one-third of the Mon-Yough communities less than one percent of the 1960 population was classified as non-white.

These communities are: Whitaker, Lincoln, East McKeesport, Munhall, White Oak, Glassport, Turtle Creek, Pitcairn, Dravosburg, and the portion of Trafford defined as within the Mon-Yough Region.

C. Although the proportion of non-whites in the total population increased from 1950 to 1960 for the Region as a whole, there were thirteen communities in which this general change did not occur.

1. In eight communities the change in the racial structure of the population was such that the proportion of non-whites in the total population was lowered.

The largest decreases occurred in Braddock Hills and West Elizabeth. In both, the proportion of non-whites decreased 5.4 percent. In Elizabeth Township and West Mifflin the proportion of non-white persons to the total population decreased 2.2 and 2.0 percent, respectively. In Lincoln, Forward Township, White Oak, and Glassport the non-white component of the total population decreased less than one percent from 1950 to 1960.

2. Non-whites as a percent of total population remained the same for 1950 and 1960 in five communities: Dravosburg, Pitcairn, Trafford, Turtle Creek, and West Homestead.

D. In seven communities, the increase in the proportion of the non-whites in the total population from 1950 to 1960 was greater than 3 percent.

This occurred in Braddock (7.2), Duquesne (5.3), Rankin (4.9), Homestead (4.7), Clairton (4.5), East Pittsburgh (3.4), and North Braddock (3.2).

2. Implications:

A. *General Statement of Values.*

If all persons were homogeneous with respect to racial attributes there would have been no need to accord special consideration to the non-white component of the Mon-Yough population. Similarly, even if there were an absence of homogeneity with respect to racial attributes there would be no reason to focus upon the non-white component of the population *if* (and ouly if) one could be assured with certainty that the given social system did not contain elements of racial discrimination.

Without becoming concerned with documenting the presence or absence of racial-prejudice in any of the communities of the Mon-Yough Region, it appears reasonable to believe that the consequences of history will have left its legacy in the Region. This is to suggest that the social, economic, and political status of the non-white population can be assumed to have been subordinated to the interests of the white majority. Furthermore, it probably is not unreasonable to assume that the non-white population's opportunities for social and economic progress are more limited than the range of opportunities afforded to the white population in general.

A community action program ought to be color-blind. In fact, it should be person-blind. The community action program should concern itself with the task of ultimately achieving a reconstruction of the opportunity-spectrum; it ought to attack the correlates of poverty, if not the

causes of impoverishment, irrespective of race, religion, ethnic origin and orientation. The "clients" of the community action program should be "solicited" from the entire community; the design and implementation of a community action program, a priori, should neither accord preference to nor place in a position of priority the needs of one element in a community to the exclusion of others with similar needs.

B. *Real Considerations*

It must be conceded that the racial composition of a community should be considered by the leaders of the community action program. Also, the rate of change in the racial structure of the community is a variable that should not be ignored—particularly when the adequacy of existing services is to be assessed.

Since the typical community action program is essentially a composite arrangement of independent and specific problem-oriented efforts directed toward "helping" and "rehabilitating" those who are largely unable to cope personally with their environment, it seems likely to expect instances in which the given activity will emerge as one that has its origin in the special and urgent "needs" of a single segment of the total population.

In other instances the objective of the program may not have its origin in the problems so uniquely associated, and the client-scope will be general. However, unless it is assumed that the incidence of poverty is the same for the white and non-white components, one should expect to encounter a racial-mix among the program's participants which is different from the racial-mix of the total population.

The Census data from which this report is assembled do not permit a cross-classification of the economic and demographic characteristics with the race of the population for the Mon-Yough communities. As a result, no definite statements may be made to identify the "poor" who will expect to receive aid from the community action programs by their racial character. However, the following generalizations are offered to the leaders of the community action programs of the Region: (1) in communities with a relatively large non-white population it seems reasonable to expect that the non-white persons will constitute a significant proportion of the membership involved in any undertaking; (2) when the non-white component of the total population constitutes a significant proportion of the community's population it seems reasonable to suggest that some programs will be necessary to help this segment solve its own, unique problems.

In essence, the leaders of the community action program are being directed toward giving consideration to the racial structure of their communities for two principal purposes. First, to better identify the prospective clients and types of activities which may be necessary

in each community. Second, to recognize that the expenses involved in the design and implementation of any program is likely to be a function of the racial-mix present in any activity.

C. *Additional Considerations.*

It is possible for the community action leaders to acquire a greater appreciation for and understanding of the racial-mix factor, as a variable that deserves attention in the war against local poverty, if the changes in the racial structure of the given communities are analyzed. An explanation, in aggregate terms, is presented to further enable the community action leaders to identify the communities and the problem-areas which may require special consideration. However, an analysis in terms of cause and effect relationships is not offered. The presentation is limited to the communities in which the non-white proportion of total population exhibited the greatest change.

1. In Clairton, Braddock, Duquesne, and McKeesport the proportion of non-whites in the total population increased from 1950 to 1960. This increase is the consequence of an absolute increase in the number of non-white persons residing in each community *and* an absolute decrease in the size of the total population in each community.

2. In North Versailles the relative increase in the non-white component of the total population was contemporaneous with an increase in the total population of each community. In other words, the increase in the number of non-whites persons was proportionately larger than the increase in the number of white persons.

3. In Rankin and Homestead both the non-white population and the total population decrease in absolute size between 1950 and 1960. However, the non-white component of the total population was relatively larger in 1960 than it was in 1950. This change in racial structure is a reflection of the difference in the rates of decrease for the non-white and the white components—viz., in each community the net-outward movement of white persons was relatively greater than the net-outward movement of non-white persons.

4. In Elizabeth Township, Forward Township, and Braddock Hills the proportion of non-whites in the total population declined between 1950 and 1960. In each of these communities there was an absolute decline in the number of non-white persons *and* a contemporaneous increase in the size of the total population.

5. In West Elizabeth the non-white component and the total population declined in absolute size. In this community, the rate of net-outward movement of the non-white component exceeded the rate of net-outward movement of the white component; accordingly, the proportion of non-whites to the total population was reduced between 1950 and 1960.

6. In West Mifflin the non-white population and the total community population increased from 1950 to 1960. However, the proportion of non-whites in the West Mifflin population declined from 1950 to 1960. This relative decline is due to the fact that the rate of increase in the white component exceeded the rate of increase in the non-white component.

Tables V and VI present data on the age structure of the non-white population in each of the communities for 1950 and 1960. The first Table shows the absolute number of non-white persons in the four selected age groups; the second Table shows the percentage distribution of the non-white population by age group for each community.

The examination of the Tables is limited to the 13 communities whose 1960 non-white population comprised at least 5 percent of the total population. The focus of the examination is to identify the major structural shifts that occurred in the age distribution of the non-white population in the selected communities.

3. Highlights:

A. In ten communities, the proportion of the non-white population in the "senior citizen" group, age 65 years and over, is seen to have increased from 1950 to 1960. The most striking increases occurred in West Mifflin, Braddock Hills, and Homestead. The respective increases in relative share for these communities were 10.8, 7.8, and 6.8 percent.

1. In two communities, Duquesne and East Pittsburgh, the percent of non-white persons in the senior citizen category appears to have remained virtually constant. That is, in both communities the percent of senior citizens in the non-white population is shown to have decreased by less than one percent in the decade.

2. The percent of non-white persons age 65 years and over in Elizabeth's non-white population *decreased* from 14.2 percent in 1950 to 10.7 percent in 1960.

B. In ten communities, the relative share of younger persons, age 19 years and under, in the non-white population is shown to have increased. In East Pittsburgh, Forward Township, and Duquesne are found the most striking increases. The respective increases in the relative share for this age group in the three communities were 16.6, 12.1, and 8.2 percent.

1. Representation of this age group in the total non-white population of Elizabeth, Braddock Hills, and North Versailles declined between 1950 and 1960. The respective declines for these communities were 16.6, 5.8, and 1.2 percent.

C. In each of the thirteen communities the proportion of the non-white population between the ages of 20 to 44 years declined, relative

to the total non-white population of each town.

1. The largest decreases were observed in Forward Township and East Pittsburgh. In each, the percent of non-white persons in this age group, relative to the total non-white population, declined more than 10 percent during the decade.

2. The smallest decreases occurred in North Braddock, North Versailles, West Mifflin, and Duquesne. In each of these communities the representation of non-white persons between the ages of 20 to 44 years in the total non-white population declined by less than 4 percent.

D. With respect to the interval from 20 to 64 years of age, it is to be seen that the proportion of the non-white population within this group relative to the total non-white population declined in every one of the 13 communities.

1. In Forward Township, East Pittsburgh, Elizabeth, and Homestead the representation of this age group in the total non-white population declined more than 10 percent.

2. In Braddock Hills, North Versailles, and West Mifflin the decline of this group—the persons most likely to be active participants in the labor market—was no greater than one percent.

4. Implications:

A. The non-white population of the selected communities has aged between the period 1950 to 1960. Furthermore, it has been noted that the proportion of the non-white population most likely to be active and full-time members of the labor force has declined in every one of the selected communities. An aging population, accompanied by a decline in the proportion of persons in the most productive age groups, implies that the non-white population has become more dependent upon external or community-sponsored agencies for its support and maintenance.

B. The increase in the relative share of persons 19 years of age and under which occurred in most of the communities does not materially affect the conclusion that the non-white population has become more dependent upon the availability of social welfare assistance. In fact, since persons in this age group are hardly self-sufficient, it strengthens the contention of increased dependency.

1. The increase in the proportion of dependent persons, in the younger age categories, among the non-white populations in the Mon-Yough Region is likely to have challenged the opportunities which each community affords to the non-white, new entrant into the labor market.

2. Furthermore, the educational attainment levels and the quality of vocational preparation which such new entrants bring with them, as credentials attesting to their "employability" assume great importance

as variables likely to determine the economic and social success of these youths.

C. It appears reasonable to suggest that the community action committee's leadership should concern themselves with investigating the status of the non-white youth and the non-white aged in each of the communities to determine if their problems (assuming there are some) differ in degree or in kind from those associated with the white population. This undertaking is deemed especially necessary if it is believed that the problems of the non-white population do differ from the white population's problems, and that the expression of their problems has not been articulated.

Table VII shows the number of non-white persons per thousand white persons, by age group, in the communities of the Mon-Yough Region. The data are presented for 1950 and for 1960. This Table allows the decennial changes in the age and racial structures of the total population to be compared directly.

5. Highlights:

A. *The Situation in 1960*

1. The ten communities with the highest number of non-whites per 1000 whites in the youngest age group, 19 and under, arranged in descending order are: Rankin, Braddock, Clairton, Homestead, Duquesne, McKeesport, Braddock Hills, North Braddock, East Pittsburgh, and North Versailles.

The range is from 630 non-whites per 1000 whites in Rankin to 83 non-whites per 1000 whites in North Versailles.

There are eleven communities having less than 10 non-white persons per 1000 white persons in this age group. In alphabetical order, they are: Dravosburg, East McKeesport, Glassport, Lincoln, Munhall, Pitcairn, Port Vue, Trafford, Turtle Creek, Whitaker, and White Oak.

2. The ten communities with the highest ratio of non-white persons per 1000 white persons in the age group 20 to 44 years, arranged in descending order are: Rankin, Clairton, Braddock, Homestead, Duquesne, North Braddock, Braddock Hills, McKeesport, North Versailles, and Elizabeth.

The range is from 448 non-whites per 1000 whites in Rankin to 55 per 1000 in Elizabeth.

In ten communities, there are less than 10 non-white persons per 1000 white persons in this age group. In alphabetical order, they are: Dravosburg, East McKeesport, Glassport, Lincoln, Munhall, Pitcairn, Port Vue, Trafford, Turtle Creek, West Elizabeth, Whitaker, and White Oak.

3. The ten communities with the largest number of non-whites per

1000 whites in the age group of 45 to 64 years, in descending order, are: Rankin, Braddock, Clairton, Homestead, Braddock Hills, Duquesne, McKeesport, North Versailles, North Braddock, and Forward Township.

The range is from 526 non-whites per 1000 whites in Rankin to 54 per 1000 in Forward Township.

In ten communities, there are less than 10 non-white persons per 1000 white persons in the age group of 45 to 65 years. In alphabetical order, they are: Dravosburg, East McKeesport, Glassport, Lincoln, Munhall, Pitcairn, Port Vue, Trafford, Turtle Creek, and White Oak.

4. The eleven communities with the highest ratio of non-whites per 1000 whites in the "senior citizen" category, 64 years and over, are: Rankin, Braddock Hills, Braddock, Homestead, Clairton, Duquesne, North Versailles, Forward Township, East Pittsburgh, Elizabeth, and Elizabeth Township.

The range is from 357 in Rankin to 50 per 1000 in both Elizabeth and Elizabeth Township.

The ten communities in which the ratio is less than 10 per 1000 are: Dravosburg, East McKeesport, Glassport, Lincoln, Munhall, Pitcairn, Port Vue, Trafford, Turtle Creek, Wall, and White Oak.

B. *The Decennial Changes*

1. In eight of the 13 communities in which the non-white population represented at least 5 percent of the total population, the number of non-white persons per 1000 white persons increased throughout the four age groups. This occurred in Braddock, Clairton, Duquesne, East Pittsburgh, Homestead, McKeesport, North Braddock, and Rankin.

In North Versailles the ratio increased in three of the age groups; it remained constant in the age group of 19 years and under.

In the main, these communities are the ones in which the ratio of non-white to white persons were found to be the highest in 1960.

2. In Braddock Hills, another one of the communities with a high ratio of non-white persons per 1000 white persons in every age group for 1960, the number of non-whites per 1000 whites declined in three age groups from 1950 to 1960. The ratio increased ouly in the age group of 65 years and over.

3. In West Mifflin, one of two communities in which the proportion of non-whites in the total population declined from 1950 to 1960 while still remaining at or above 5 percent, the number of non-whites per 1000 whites declined within every age group.

6. Implications:

A. Since many activities either initiated or sponsored by the community action leaders will be directed toward ameliorating the economic and social distress of persons within broadly defined age groups,

it is suggested that Table VII be used to identify the most likely instances in which the racial-mix of a given group will probably affect the nature and degree of demands that will be made upon any program for the given age group. Also, the data presented in Table VII may be used to identify the instances in which the needs of the non-white population might be different from the needs of the white population, once a program is decided upon for a given age group.

Table VIIa shows the number of persons under 5 years of age living in each of the communities in 1950 and 1960. This is the pre-school age population. The Table also shows the racial structure of the pre-school age population; it presents the percent of non-white children in each community for 1950 and 1960.

7. Highlights:

A. The number of pre-school age children increased in 12 communities between 1950 and 1960.

1. The largest absolute increase occurred in West Mifflin. In this community, there were 1,048 more children under 5 years of age in 1960 than there were in 1950.

2. The other communities which experienced an increase in the number of pre-school age children are, in descending order: Elizabeth Township, North Versailles, West Homestead, Munhall, White Oak, Liberty, Duquesne, Port Vue, Forward Township, Lincoln, and Trafford.

B. In the remaining communities, the number of pre-school age children declined from 1950 to 1960.

C. In three communities—Rankin, Braddock, and Clairton—the percent of non-whites in the 1960 population of children under 5 years of age exceeded 25 percent.

There were five other communities in which the percent of non-white children exceeded the average for the Region: Homestead (19.8), Duquesne, East Pittsburgh, McKeesport, and North Braddock (9.8).

D. In terms of changes in the racial structure of the pre-school population, there were 17 communities in which the percent of non-white children *increased* from 1950 to 1960.

There were four communities in which significant increases occurred, namely: Braddock, Clairton, East Pittsburgh, and Homestead. In each, the increase in the proportion of non-white children exceeded 5 percent; the largest increase was in Braddock.

1. There were 10 communities in which the percent of non-white children in the pre-school age population *declined* from 1950 to 1960. In these communities, with the exception of West Elizabeth, the changes in racial structure were not significant—i.e., less than 5 percent.

In West Elizabeth the percent of non-white children declined from 12.3 percent in 1950 to 1.9 percent in 1960.

2. In Dravosburg, Pitcairn, Trafford, and Whitaker there were no non-white children of pre-school age in 1950 and in 1960.

8. Implications:

A. In general, the quality of primary school education must receive consideration in every community—irrespective of changes in their enrollment and irrespective of the size of their student group. However, communities with an expanding enrollment must simultaneously provide the facilities that are necessary to accommodate the additional students.

It follows, that such communities are at a disadvantage relative to the communities in which primary school enrollment is decreasing. That is, the cost-burden associated with maintaining and improving levels of quality will be greater for the communities in which school enrollment is increasing. (This assumes an absence of economies of scale.)

B. The tasks of providing and financing public programs for securing pre-school acculturation is likely to be more urgent and greater in both the communities with a relatively high proportion of non-white children of pre-school age, and in communities in which the representation of non-whites in the relevant population is increasing.

D. POPULATION ETHNICITY

Table VIII of Appendix A, presents data to describe the ethnic character and structure of each communi'y's population in 1960. The first two columns are measures of the relative size of the ethnic component; the third and fourth columns are measures of the homogeneity of the ethnic component, in terms of the relative representation of persons with an East-European reference.

1. Highlights:

A. There are seven communities in which the percent of population classified as "foreign stock" is at least 40 percent, namely: Duquesne, Glassport, Munhall, North Braddock, Wall, Whitaker, and Wilmerding.

1. Dravosburg is the community in which the percent of the total population considered to be "foreign stock" is the smallest. In this co. munity, approximately one-fifth of the persons are so classified.

2. The percent of population classified as foreign stock is highest in Wall—47.2 percent.

B. The percent of "foreign born" persons in the population ranges from a low of 2.4 percent in Lincoln to a high of 15.2 percent in Wall. (The Mon-Yough portion of Trafford has no foreign born persons.)

1. In addition to Wall, only two communities have a foreign born component which exceeds 10 percent of their population: Duquesne and Wilmerding. The figure for each community is 10.8 percent and 10.4 percent, respectively. In five other communities, however, the proportion of population that is foreign born approximates 10 percent; namely: East Pittsburgh, Homestead, Munhall, Rankin, and Whitaker.

2. In Braddock Hills, Dravosburg, East McKeesport, Elizabeth, Forward Township, Lincoln, North Versailles, and White Oak the foreign born constitute less than 5 percent of the total population.

C. The community in which the influence of the foreign born persons upon the character of the ethnic component of the population is apt to be greatest is Wall. In this community, 32.2 percent of the total ethnic component is comprised of foreign born persons.

1. In Clairton, Duquesne, East Pittsburgh, Homestead, Pitcairn, Rankin and West Elizabeth the persons of foreign birth constitute from 25 to 30 percent of the total ethnic component present in each community.

2. The communities with the lowest percent of foreign born persons in their total ethnic component are Lincoln, Elizabeth, and White Oak. The figures are 11.8, 13.6, and 14.2, respectively.

D. In Port Vue and Rankin the proportion of the total ethnic component with a possible East-European reference/orientation is 62.6 and 63.6 percent, respectively.

1. In Liberty, Munhall, Wall, and Whitaker the proportion of the total ethnic component with a possible East-European reference/orientation lies between 50 and 60 percent.

In eight of the communities this element constitutes from 40 to 50 percent of the total ethnic component: Braddock, Dravosburg, Duquesne, Glassport, Homestead, McKeesport, West Homestead, and West Mifflin.

2. The East-European influence is lowest in West Elizabeth; less than 6 percent of this community's total ethnic component has its origin or immediate ancestry in Eastern Europe.

2. Implications:

A. The Mon Yough Region, taken as a whole, has a larger share of foreign stock and foreign born persons in its population than does Allegheny County. However, in spite of the greater total representation of a foreign influence and heritage, the Region does not have a larger share of first-generation Americans within its total population of per-

sons classified as foreign stock. On the other hand, it is to be noted that the Region's ethnic component is more homogeneous than the County's ethnic component. This is based upon the difference which obtains in the percent of East-Europeans represented in the total ethnic population of each area.

B. It is suggested that the presence of a "significant" ethnic component within a community may serve as a vehicle through which a community action program might obtain support and promote the dissemination of information that is favorable to its objectives.

It would behoove the community action program to assess and appraise the contribution which the ethnic components of the communities in the Mon-Yough Region might provide for the program's success.

The size and homogeneity of the ethnic component constitute the parameters within which the influence of ethnicity could be assessed and appraised.

E. EDUCATION

Table IX of Appendix A shows the educational attainment levels of adults, persons 25 years of age and older, in the communities of the Mon-Yough Region. The entries show the number of persons, from the 1960 population, who have attained the stated levels of formal education or their equivalents.

1. Highlights:

A. Of the total number of persons 25 years of age and older in Allegheny County, 11.3 percent reside in the Mon-Yough Region. This provides the reference against which the level of adult education in the Region is to be compared and assessed.

1. The Mon-Yough Region contains 13.1 percent of all persons 25 years of age and older in Allegheny County who possess less than an eighth-grade education.

2. With respect to the number of persons having completed from eight to eleven years of school, the Mon-Yough Region contains 11.7 percent of the total number of such persons in the County.

3. The Region's share of the County's adult population that has completed high school is 11.5 percent—this excludes all persons with more than a high school education.

4. Of the total population of persons in Allegheny County who have earned from one to three years of college training, only 8.7 percent reside in the Mon-Yough Region.

5. Among the total number of college graduates in the adult population of the County, the number residing in the Mon-Yough Region comprises only 5.6 percent.

B. When the adult population of the County is adjusted by the exclusion of the total number of persons age 25 years and older who reside in the City of Pittsburgh, the Mon-Yough Region contains 15.3 percent of the adjusted County adult population. This provides a second reference point, if not a more meaningful one since the County and City of Pittsburgh each have independent anti-poverty programs, for assessing the level of adult education that prevails in the Mon-Yough Region. Accordingly, of the total number of adults in the County-less-Pittsburgh area who have completed the given number of school years:

1. The Region has 18.3 percent of those with less than an eighth grade education; 11.7 percent of all persons with eight to eleven years of school; 14.8 percent of all high school graduates; 11.3 percent of those with some college training; and 7.3 percent of the college graduates.

2. Using high school completion as a "cut-off" point, the Mon-Yough Region contains 17 percent of adults in the County-less-Pittsburgh area who have attained less than a high school education; it contains 12.9 percent of all persons with a high school education or more.

2. Implications:

A. The educational attainment level of the adult population in the Mon-Yough Region is lower than the average level in the County. When the City of Pittsburgh is excluded, the difference in educational attainment levels between the Region and the remainder of the County's area becomes more disparate.

B. In terms of the reference points, the Mon-Yough Region has *more* than its proportionate share of adults with less than a high school education; it has *less* than its proportionate share of persons with a high school education or more.

C. The differences in educational attainment levels indicate that the need for adult-remedial education is greater in the Region than in the County as a whole. This leads to the suggestion that the Mon-Yough Region may wish to give greater emphasis and accord higher priority to eliminating basic educational deficiencies than might be expected of the County.

Table X of Appendix A, shows the percent distribution of the educational attainment level, in years of school completed, for the adult population in each community. Data are presented for 1950 and 1960.

3. **Highlights:**

A. *The Situation in 1960*

1. With respect to the percent of the adult population having completed 7-or-less years of school, the range extends from 15.1 percent in White Oak to 39.4 percent in Wall.

In seven other communities, in addition to White Oak, the percent of the adult population with no more than 7 years of schooling was less than 20 percent of the total. In ascending order, they are: East McKeesport, North Versailles, West Mifflin, Dravosburg, Braddock Hills, Liberty, and Munhall.

There are five communities in which 30 percent or more of the adult population had no more than 7 years of schooling. In descending order, they are: Wall, Rankin, Braddock, Duquesne, and East Pittsburgh.

2. With respect to the percent of the adult population having completed from 8 to 11 years of school, the range extends from a low of 33.5 percent in White Oak to a high of 51.2 percent in the Mon-Yough portion of Trafford.

The seven communities which follow White Oak, in ascending order, are: Elizabeth, Clairton, Duquesne, Glassport, Rankin, Braddock Hills, and East McKeesport. The range for these seven communities extends from 34.9 percent in Elizabeth to 38.0 percent in East McKeesport.

There are five communities in which 45 percent or more of the adult population had completed from eight to eleven years of school. In descending order, they are: Trafford, Versailles, West Elizabeth, Forward Township, and Whitaker.

3. The community with the lowest percentage of its adult population having less than a high school education was White Oak: 48.6 percent. This means that 51.4 percent of this community's adult population in 1960 had, at least, a high school education.

The community with the highest percentage of its population having less than a high school education was Wall. In this community, 82.5 percent of all persons 25 years of age and over had completed less than 12 years of school. This is equivalent to saying that 17.5 percent of the adult population in Wall had, at least, a high school education.

4. The 10 communities that rank low in respect to the proportion of adult population with at least a high school education were, in ascending order: Wall, Port Vue, Whitaker, Forward Township, Braddock, Rankin, West Elizabeth, Versailles, East Pittsburgh, and McKeesport. In the tenth, McKeesport, 31.4 percent of the adult population were at least graduates from high school.

5. The proportion of college graduates in the adult populations of the Mon-Yough communities is low. Representation of college graduates is highest in White Oak; 9.2 percent of all persons 25 years of age and over in this community, in 1960, were college graduates. In four other communities—Elizabeth, Munhall, Elizabeth Township, and East McKeesport—the proportion of college graduates is over 5 but less than 6 percent. The figure is below 5 percent for the remaining communities within the Region.

B. *Changes Between 1950 and 1960*

1. Between 1950 and 1960 there was an upward shift of the educational attainment level in the adult population of the Mon-Yough Region below the college level.

In 27 communities the proportion of persons age 25 years and over with less than an eighth-grade education decreased.

East Pittsburgh, Elizabeth, Pitcairn, and Turtle Creek are the exceptions to this change. In each of these communities, the proportion of the adult population with less than an eighth-grade education increased between 1950 and 1960.

a) In every community, excepting Elizabeth, the proportion of the adult population having completed at least 12 years of school was increased from 1950 to 1960. In Elizabeth, the proportion remained approximately the same.

b) In 24 communities the proportion of the adult population with more than a high school education either increased, but only slightly, or stayed the same. Braddock, Elizabeth, Trafford, Versailles, Wall, Whittaker, and Wilmerding are the seven communities in which the proportion of persons in the adult population with some college training (1 to 3 years) decreased.

c) In 18 communities the proportion of college graduates in the adult population decreased.

4. Implications:

A. The educational attainment level of the adult population within the communities of the Mon-Yough Region was improved from 1950 to 1960. This improvement is reflected by the increase in the proportion of the adults who completed from 8 to 12 years of school; it is particularly reflected by the increase in the proportion of adults who had completed or gained the equivalent of a high school education.

In the main, there appear to be two factors that are principally responsible for this improvement. First, one may posit that each community shared in the national trend of increasing years of schooling completed by persons entering the adult population. Second, the natural decrease of older persons—among whom the average educational attain-

ment level is likely to be relatively low–further contributes to the increase in the general educational attainment level of a community.

It follows from this that one should expect the greater proportion of any group of persons characterized as having a "low level of education" to be older persons. In particular, this reasoning permits one to offer the following generalization: given the total adult population of persons between the ages of 25 years to 64 years, persons normally expected to be committed to a high degree of participation in the labor force, the average level of educational attainment associated with any age group selected from this range will be declining as the age of the group increases. If nothing else, this implies that older persons in the labor force (those between the ages of 45 to 64 years) will be at an increasing disadvantage when competing for *new* employment positions against an increasing number of younger and better educated persons.

B. Of the total number of communities in the Mon-Yough Region, there were *five* in which the older members of the labor force appear as least likely to be competitive with younger persons–if educational attainment is an attribute that is associated with success in the market place for new jobs. These communities–Forward Township, Glassport, Turtle Creek, West Homestead, and Whitaker–are the ones in which the proportion of older workers in the total population of adults is high; these are, also, the communities in which the average educational attainment level of the adult population is low.

Thus, these are the communities which should receive high priority in any adult remedial-education program that might be undertaken in the Region.

1. The five communities were identified by matching the communities in which the proportion of the adult population possessing less than a high school education was greater than the average for the Mon-Yough Region *with* the communities in which the proportion of the older population of labor force age exceeded the average for the Region.

a) In the Region, 64 percent of all persons 25 years of age and over had attained less than a high school education. In each of the five communities, this proportion was greater.

b) In the Region, 71 percent of the population of persons between 20 to 64 years of age were between the ages of 45 to 64 years. In each of the five communities, this proportion was greater.

F. INTER-PERSONAL DEPENDENCY AND FAMILY INCOME

Table XI of Appendix A, presents a total population dependency ratio; a ratio of dependency for the white component of the population;

and a ratio for the non-white component of the population. The data are presented for the years 1950 and 1960. In addition, the Table shows the labor force dependency ratio in 1960 for each community—irrespective of race.

The *population dependency ratio* is obtained by dividing the total population under consideration by the number of persons in the relevant population who are between the ages of 20 to 64 years. The measure obtained shows the number of persons whose support is likely to be derived from someone's participation in the labor market. The ratio assumes that all persons between 20 and 64 years of age are the sole participants in the labor force; it assumes that persons age 65 years and older are not in the labor force; and, it does not consider the possibility of a person's support being derived solely from retirement annuities, property income, or public assistance. Furthermore, it assumes that persons under 20 years of age are neither capable of fully supporting themselves nor full-time members of the labor force.

The *labor force dependency ratio* differs from the population dependency ratio. It is a measure which shows the number of persons in the total population that are dependent for support on the actual number of persons who are labor force participants. (A labor force participant is at least 14 years of age; employed and unemployed persons are included.)

1. Highlights:

A. The population dependency ratio for the total population was higher in 1960 than in 1950 for every community.

1. A comparison of the 1960 and 1950 figures shows an increase of 25 or more persons dependent for their support upon every 100 possible labor force participants in eleven communities: Port Vue, Glassport, Lincoln, West Elizabeth, Munhall, Clairton, Wall, White Oak, Rankin, North Braddock, and McKeesport. The communities are presented in descending order.

2. The six communities with the highest population dependency ratios in 1960 were, in descending order: Port Vue, Wall, West Elizabeth, Lincoln, and Liberty and Clairton.

B. The population dependency ratio for the *white component* of each community's population increased in 30 communities between 1950 and 1960. The exception was Braddock Hills. In this community the population dependency ratio declined from 1.90 in 1950 to 1.89 in 1960.

1. There was an increase of 25 or more dependent persons per 100 possible labor force participants in the following communities: Port Vue, Glassport, West Elizabeth, Clairton, McKeesport, Lincoln, Munhall, White Oak, North Braddock, and Wall.

2. The five communities exhibiting the highest white, 1960 dependency ratios were, in descending order: Port Vue, West Elizabeth, Wall, Lincoln, and Liberty.

C. There are 15 communities with a non-white population of 100 or more persons, both in 1950 and 1960. Where the non-white population is less than 100 in either year, changes in the dependency ratio are not deemed meaningful. Thus, the communities which qualify for examination are: Braddock Hills, Braddock, Clairton, Duquesne, Elizabeth, Elizabeth Township, Forward Township, Homestead, McKeesport, North Braddock, North Versailles, Rankin, West Homestead, West Mifflin, and Wilmerding.

In each of these communities the non-white population dependency ratio was increased between 1950 and 1960.

1. In West Homestead, Forward Township, West Mifflin, Elizabeth, Wilmerding, Braddock, Rankin, Homestead, McKeesport, and Clairton there was an increase of 25 or more non-white persons dependent upon every possible 100 non-white labor force participants. The listing of communities is in descending order of increase.

a) In West Homestead the increase was 72 dependents per 100; in Forward Township the increase was 69 dependents per 100.

b) In eight of these communities (McKeesport and Clairton being the exceptions), the increase in the non-white dependency ratio was greater than the increase in the dependency ratio for the white component of the given communities.

2. In six of the 15 selected communities, the 1960 non-white dependency ratio was 2.00 or higher. In descending order, they were: Forward Township, West Mifflin, Elizabeth, North Versailles, and Elizabeth Township. In each of these communities the non-white dependency ratio exceeded the ratio for the white component of the population.

a) In fact, the non-white dependency ratio for 1960 exceeds the white dependency ratio for 1960 in almost every community within the Mon-Yough Region. Given the communities for which data were available, it is to be seen that only in Glassport, Liberty, Whitaker, and Wilmerding does the ratio for the non-white component lie below the ratio for the white component.

D. An examination of the *labor force* dependency ratios for 1960 shows an average for the Region which is greater than the average for the County.

1. In thirteen communities the labor force dependency ratio exceeded the average for the Region.

Table XII of Appendix A, shows the distribution of family income, by three broad classes, for 1960. The Table shows the number of family

units in each community and the percent which this number represents of all family units in the community, as distributed among the three income classes. The income figure includes personal, business, and government transfer payments as well as income earned from the family's participation in the market place. The income figure applies to the calendar year 1959, but the composition of families relates to April 1960.

> "A family consists of two or more persons living in the same household and related to one another by blood, marriage, or adoption; all persons living in one household and related to one another are considered as one family."
>
> "Family income represents, as a single amount, the combined income of the head of the family and all other members of the family 14 years old and over. . . . The figures represent the amount of income received before deductions for personal income taxes, social security, bond purchases, union dues, etc."

Assuming the availability of a national or regional poverty standard, adequate family maintenance and family sufficiency is a function of the size of the family unit, the number of wage earners and property owners contributing to the family's support, and the total income accruing to the family unit. If personal tastes and price level fluctuations are ruled out, the relevant criterion for assessing the incidence of poverty in a community, given that the family constitutes the basic social and economic unit of analysis, is the average annual per capita family income. To be particularly relevant for inter-family comparisons, this criterion must not include money receipts that have their source in public assistance payments. Also, money receipts which accrue to the family unit from its members' participation in the market place that is induced by the unit's economic deprivation ought to be excluded. Furthermore, the gross income figure for the family unit ought to reflect only the relatively permanent and "socially" expected contributions of persons fully-committed to the market place. This is to suggest that the income earned and contributed to the family unit as a result of the "casual" employment of youths and the aged should be excluded when measuring the incidence of poverty among family units in a community.

The incidence of poverty in the Mon-Yough Region, either in terms of the number of families or the number of persons in each community, cannot be deduced from the data presented in Table XII.

The Table permits an identification of the communities in which the incidence of family poverty is *likely* to be high, however. It seems reasonable, as an approximation to the desired end, to suggest that the incidence of family poverty is high in communities where a high per-

centage of the family units have less than an annual money income from all sources that is below $3,000. However, it needs to be emphasized, that *this* family income level is not an adequate criterion for determining the incidence of poverty—e.g., (1) poverty may exist in the family unit with more than $3,000 gross income per year, and (2) poverty may not exist in a family unit with gross income of less than $3,000 per year,

A. If the poverty communities are identified by using, as a benchmark, the percent of the total families in Allegheny County who live outside the City of Pittsburgh and have less than $3,000 of gross income it is found that 20 Mon-Yough communities are *likely* to have a high incidence of poverty among their families.

If the benchmark for identification is the entire County, then 19 communities are likely to have a high incidence of poverty among their families.

If the benchmark is provided by the figure for the Region itself, then 16 communities emerge as the ones with a high incidence of poverty among their families.

1. There are seven Mon-Yough communities in which the number of families with income of less than $3,000 per year (1959) constitutes more than 20 percent of the total number of families in each community. In descending order, they are: Rankin, Braddock, Wall, West Elizabeth, East Pittsburgh, Homestead, and North Braddock.

B. A broadening of the poverty level for families to include the percent of families with income that is less than $7,000 per year yields the following:

There are 30 communities in which the percent of total family units with less than $7,000 per year exceeds the percent for the area described as Allegheny County-less-Pittsburgh;

There are 29 communities in which the percent of total family units with less than $7,000 per year exceeds the percent for Allegheny County;

There are 20 communities in which the percent of total family units with less than $7,000 per year exceeds the average for the Mon-Yough Region.

1. There are six Mon-Yough communities in which the number of families with income of less than $7,000 per year (1959) constitutes 75 percent or more of the total number of families in each community. In descending order, they are: Wall, Braddock, West Elizabeth, Rankin, the Mon-Yough portion of Trafford, and North Braddock.

2. Implications:

A. The data presented in Tables XI and XII, when related to one another, allow a more accurate specification of the communities which

are likely to have a high incidence of poverty among their family units than is possible to infer by taking them into consideration separately.

Where the population dependency ratio is high, a large average family size may be inferred. Now, if there is a large proportion of families with "low" annual income in any community *and* if the average family size in the community is large, it becomes reasonable to suggest that this is a community in which the incidence of family poverty is relatively high.

B. A comparison of the 15 communities having high population dependency ratios with the 15 communities having a large proportion of their families with less than $3,000 annual income identifies seven communities in which the incidence of family poverty is likely to be high. They are: Braddock, Clairton, McKeesport, North Braddock, Rankin, Wall, and West Elizabeth.

C. If the income range is extended to the $7,000 annual income limit, *the same seven communities plus Elizabeth and Forward Township become identified as the communities within the Mon-Yough Region in which the incidence of family poverty is deemed relatively high.*

G. ECONOMIC DEPENDENCY

Table XIII of Appendix A, shows how the employed persons in each community were distributed among three types of employment arrangements in two major sectors of economic activity--public and private. The persons employed in the public sector are employees of governmental units (Federal, State, City, etc.) who work for wages or salaries. The persons employed in the private sector are either wage and salary workers, self-employed with a residual claim against the profits of their establishments, or unpaid family workers of the self-employed.

Table XIIIa of Appendix A, shows the percent of the employed labor force, within each of the communities, that work in the City of Pittsburgh. This does not imply that all of the remainder of the Mon-Yough labor force work within the Region.

Persons employed as wage and salary workers in private industry may be regarded as the most dependent members of a community's labor force. The continuation of this type of employment arrangement, irrespective of any seniority rights, is contingent upon variations in the level of industrial activity, the state of industrial technology, and other economic forces which are largely beyond the personal control of the individual wage and salary worker. The government employee, also a wage and salary worker, enjoys a measure of employment security that is greater than that of the private wage and salary worker. This is so, because the variability of employment is largely a political decision and

less likely to be the resnlt of fluctuations in the level of demand for government services that have their origin in market forces.

The economic security of the self-employed, measured either in terms of earnings or in terms of the probability attached to the expected duration of the enterprise's life, may be no greater than that of the private wage and salary worker. However, the relevant distinguishing characteristic is that the self-employed is a relatively independent person; he has greater personal control over his environment than does the wage and salary worker in private industry or the wage and salary worker of the governmental unit. The unpaid family worker is of no special significance—he constitutes a very small proportion of the labor force, and his participation in the labor force is often not motivated by the necessity to support other persons.

1. Highlights:

A. A comparison of the sector-distribution of employed persons in the Region with the County reveals that the Region's labor force is more dependent than the County's labor force. The Region's labor force is slightly more concentrated in the private sector, but more than a slight difference exists between the proportion of the Region's labor force employed as wage and salary workers in private industry than is found to obtain in the County as a whole.

B. There are 20 communities in which the percent of persons employed as wage and salary workers in private industry is equal to or greater than the average for the Region.

1. The 10 communities with a high percent of persons in the wage and salary class within private industry are, in descending order: Wall, Braddock Hills, North Braddock, Glassport, Turtle Creek, West Mifflin, East Pittsburgh, Braddock, Port Vue, and Homestead. (Trafford portion of the Region is excluded.)

In Wall, Braddock Hills, and North Braddock the percent of employed persons classified as wage and salary workers in private industry is 90 percent or more.

2. The two communities with a low percentage of workers classified as wage and salary employees of private industry are West Elizabeth and White Oak. The figures are 78.7 percent and 80.3 percent, respectively. These are the only communities in which the figure lies below the average for Allegheny County.

C. It is apparent, from the data contained in Table XIIIa, that employment in Pittsburgh is mainly a function of the community's distance from the City. The employment-status of these workers is not directly affected by changes in the level of industrial activity that are confined to the Mon-Yough Region.

2. Implications:

A. According to the argument presented, it follows that the higher is the proportion of a community's labor force that is engaged as wage and salary workers in private industry the greater is the *probable* vulnerability of this community to higher rates of unemployment. In unqualified terms this statement of an expected relationship between high labor market dependency and high unemployment rates is to be regarded as a mere suggestion; posited only for the purpose of "narrowing-down" the range of communities in which the activities of community action to prevent and ameliorate economic impoverishment are likely to be most necessary.

More will be done with the data presented in Table XIII after the presentation of the Highlights of Tables XIV, XV, and XVI. See Implications.

Tables XIV, XV, and XVI of Appendix A, show the occupational classifications of the employed labor force in 1960. The first shows the occupational distribution of the total labor force that was employed and that reported an occupation; the second shows the occupational distribution for employed males; the third shows the occupational distribution of employed females. Table XIVa shows the absolute size of the employed labor force for each community in 1960; the data are presented by sex.

The occupational profile of the employed labor force, it must be noted, is largely a reflection of the labor-input requirements and the level of employment in industry prevailing in the labor market for the Mon-Yough Region at the time of the Census enumeration. The occupational profile may be used to draw inferences about the quality of the labor force in each community. One may generalize about the personal attributes of educational attainment levels, industrial training, and vocational experience that are likely to be correlates of a given occupational class.

3. Highlights:

A. *Total Labor Force*

1. The professional and managerial group comprises the best educated and trained component of the labor force. The incidence of unemployment is lowest for this class of workers; the duration of unemployment for a person in the professional and managerial class is likely to be shortest.

The communities with a relatively high percentage of professional and managerial workers are, in alphabetical order: Dravosburg, East McKeesport, Elizabeth, Elizabeth Township, Liberty, Munhall, Pitcairn, West Elizabeth, and White Oak. In each, more than 15 per-

cent of the employed labor force who reported an occupation were classified as members of this group.

2. The sales and clerical group is more likely to be composed of persons who have completed at least eight years of school. However, there is likely to be a high proportion of high school graduates within this group. In terms of employment stability, this segment of the white-collar labor force is likely to be less subject to unemployment than the members of the blue-collar labor force and the incidence of long-term unemployment is likely to be less for this group than it is for the blue-collar.

The communities in which the proportion of sales and clerical workers exceeds 25 per cent of the employed labor force are, in alphabetical order: Dravosburg, East McKeesport, Elizabeth, Munhall, and Wilmerding. (Trafford is excluded.)

3. The craftsmen are the best trained and best educated members of the blue-collar labor force. They have the most stable employment pattern of all blue-collar workers, and they are least likely to experience periods of long-term unemployment among the total blue-collar labor force. Their annual earnings are generally higher than those of the sales and clerical group; and the proportion of primary workers (heads of families or households) is likely to be greater in this group than among the sales and clerical workers.

The communities in which the proportion of craftsmen exceeds 25 percent of the employed labor force are, in alphabetical order: Elizabeth Township, Forward Township, Liberty, West Mifflin, and Whitaker.

4. The operatives, service workers, and laborers are the members of the labor force who are likely to be the least educated and least trained. Workers in these groups are the ones that are likely to experience the most frequent periods of unemployment; also, the incidence of long-term unemployment is likely to be highest for these groups. Furthermore, in contrast to all other occupational groups, the socio-economic status of operatives, service workers, and laborers is likely to be low in any community.

There are seven communities in which the proportion of the employed labor force classified as operatives, service workers, or laborers exceeded 45 percent. In alphabetical order: Braddock, East Pittsburgh, Forward Township, Lincoln, North Braddock, Rankin, and Wall.

B. *Male Labor Force*

1. In Braddock, Lincoln, North Braddock, Rankin, and Wall more than 50 percent of the employed males were classified as being operatives, service workers, or laborers.

C. *Female Labor Force*

1. In Rankin, 35.5 percent of all employed females were classified as white-collar workers. This was the lowest.

The community with the highest proportion of female white-collar workers was White Oak. In this community, 80 percent of its employed women were white-collar workers.

4. Implications:

A. The occupational structure of the labor force in any community is largely outside of the control of the community action leadership. However, a community action program may be undertaken to enable particular individuals or groups of individuals to qualify for lateral movement or for up-grading within the hierarchy-of-skills that exists in the given labor market or in markets outside the Region. As such, it is very likely that one principal client-type who may solicit the assistance of a community action program or who may be sought-out by a community action undertaking will be from the lowest position of the hierarchy-of-skills.

Thus, it may be said that the need for and the demand for the services of a community action program are likely to be high in communities with a high proportion of its labor force in the operative, service worker, and laborer classifications. These are the workers with the greatest vulnerability to the uncertainties of economic change. They are the most economically dependent persons in the labor force of a community; they are most likely to constitute a significant proportion of the unemployed in any community, and they are probably the ones that are least capable of "financing" themselves through periods of unemployment without great difficulty.

1. By matching the communities with a high percentage of their total labor force in these occupational classes against the listing of communities in which a high proportion of the labor force was employed as wage and salary workers in private industry, it becomes possible to identify *the communities in the Region in which labor force dependency is highest. The eight communities that are so designated, in alphabetical order, are: Braddock, East Pittsburgh, Glassport, Homestead, North Braddock, Rankin, Turtle Creek, and Wall.*

B. The professional and managerial group, together with the sales and clerical group, constitutes the white-collar labor force. This is the group that is likely to enjoy a relatively high socio-economic position in a community. Also, this is the group that is probably the most capable of formulating and articulating its points of view concerning the state of poverty which it may believe exists within the community. Communication between members of this group and the community action leaders is going to be high.

Paradoxically, their conception of community "needs"—with respect to the elimination or prevention of poverty in the community—is likely to be different from the conceptions of poverty among the blue-collar segment of the community, the ones with probably the greatest need-state. This is the group that is least able to formulate and articulate points of view about poverty, in general or in particular. The white-collar group is likely to be community-oriented; their picture of poverty will focus upon deficiencies of facilities in the community, and not upon the personal needs and problems of the more economically dependent.

Thus, the community action leaders of the Mon-Yough Region are advised to evaluate carefully the recommendations which they may receive from the various communities they are to serve. Furthermore, the community action leaders of the Region are advised to develop and to encourage the use of a communication-network that will give to the less articulate an opportunity for expression of their needs. Also, the community action leaders of the Region should take the initiative in studying and ascertaining the need for anti-poverty projects that may be necessary in the Region as a whole or in a single community within the Region.

H. THE INDUSTRIAL ENVIRONMENT

Table XVII of Appendix A, shows how employees of the manufacturing sector are distributed among the major industry groups within the sector and which are located in the Mon-Yough Region. The employment figures reflect the total volume of employment that is offered by manufacturing firms located in the Region. It must be noted, however, that all persons from the Mon-Yough communities who are employed in manufacturing are not necessarily employed by the firms that are located within the Region. The data are presented for 1963, 1960, 1957, and 1930.

Table XVIIa of Appendix A, shows how the total number of manufacturing firms that are located within the Region are distributed among the major industry groups, for the years 1963, 1960, 1957, and 1930.

1. Highlights:

A. The current volume of employment offered by the manufacturing sector represents from 60 to 65 percent of the total labor force in the entire Mon-Yough Region.

1. The absolute number of jobs available in manufacturing has declined steadily from 1957. From this, given the large net outward-migration of persons of labor force age from the Region, one may infer

that the proportion of the labor force that finds employment in manufacturing has been declining.

B. The principal manufacturing employer is the primary metals industry. It accounts for over 50 percent of all current jobs in manufacturing activity going on in the Region. This industry's position of dominance extends throughout the period for which the data are presented.

1. In 1963 there were 12 firms engaged in the primary metals industry; this represents 7 percent of all the manufacturing employers located in the Region.

C. The second largest source of employment in manufacturing is provided by the electrical machinery industry. This industry accounts for about 20 percent of all manufacturing jobs in the Region.

1. In 1963 there were 4 firms engaged in the production of electrical machinery; this represents less than 3 percent of all manufacturing employers in the Region.

D. The metal-dependent industries—firms whose locations in the Mon-Yough Region result from the presence of the primary metal producers—provide employment for approximately 40 percent of the persons involved in manufacturing activities. This pattern of employment has been relatively stable during the 33-year period for which data are presented.

E. In the aggregate, the metal industries employ more than 90 percent of the manufacturing labor force at work in the Region.

This means that the metal industries' employment volume is about equal to 60 percent of the total size of the labor force in the entire Mon-Yough Region. This pattern has been unaltered from 1963.

2. Implications:

A. Manufacturing is the principal source of employment for a major portion of the Mon-Yough labor force. The manufacturing activity is highly concentrated within a single type of industry, and there is a particular lack of industrial diversification in the Region. Furthermore, in addition to employment concentration the employment status of persons in the manufacturing sector of the Region is greatly contingent upon the decisions of a relatively small number of employers.

The industrial environment constitutes a given to the community action leaders. Events within the industrial environment are largely outside of the influence of community action programs, but the nature of the environment has important implications for the community action program. First, the community action leaders are advised to establish a communication-network with the dominant firms operating in the manufacturing sector. This should enable the community action pro-

gram *to plan activities* that would be needed as a response to untoward economic changes, and *to reduce* the economic and social dislocations that are associated with such changes with a minimum of delay.

Second, the community action leaders are advised to secure the cooperation of employers and *new* employers in the Region to better plan and prepare for the effective utilization of the Region's manpower. It is by keeping informed about the prospective changes in the demand for labor that the community-action programs can be expected to make a significant contribution to the prevention of economic and social dislocation within the Region. In line with this objective, then, the community action leaders are urged to establish and to maintain contact with all organizations that are involved with changing the structure of the Region's economic environment.

APPENDIX A

TABLE I

POPULATION AND POPULATION CHANGE BY COMMUNITY

Community	1960	1950	Change	% Change
Braddock Hills	2,414	1,965	+ 449	+ 22.8
Braddock	12,337	16,488	— 4,151	— 25.2
Clairton	18,389	19,652	— 1,263	— 06.4
Dravosburg	3,458	3,786	— 328	— 08.7
Duquesne	15,019	17,620	— 2,601	— 14.8
E. McKeesport	3,470	3,171	+ 299	+ 09.4
E. Pittsburgh	4,122	5,259	— 1,137	— 21.6
Elizabeth	2,597	2,615	— 18	— 00.7
Elizabeth Twp.	14,159	9,978	+ 4,181	+ 41.9
Forward Twp.	4,692	4,292	+ 400	+ 09.3
Glassport	8,418	8,707	— 289	— 03.3
Homestead	7,502	10,046	— 2,544	— 25.3
Liberty	3,624	1,467	+ 2,157	+147.0
Lincoln	1,686	1,900	— 214	— 11.3
McKeesport	45,489	50,402	— 4,913	— 09.7
Munhall	17,312	16,437	+ 875	+ 05.3
N. Braddock	13,204	14,724	— 1,520	— 10.3
N. Versailles	13,583	9,821	+ 3,762	+ 38.3
Pitcairn	5,383	5,857	— 474	— 08.1
Port Vue	6,635	4,756	+ 1,879	+ 25.3
Rankin	5,164	6,941	— 1,777	— 25.6
Trafford	140	154	— 14	— 09.1
Turtle Creek	10,607	12,363	— 1,756	— 14.2
Versailles	2,297	2,484	— 187	— 07.5
Wall	1,493	1,850	— 357	— 19.3
W. Elizabeth	921	1,137	— 216	— 19.0
W. Homestead	4,155	3,257	+ 898	+ 27.6
W. Mifflin	27,289	17,985	+ 9,304	+ 51.7
Whitaker	2,130	2,149	— 19	— 00.9
White Oak	9,047	6,159	+ 2,888	+ 46.9
Wilmerding	4,349	5,325	— 976	— 18.3
Mon-Yough	271,085	268,745	+ 2,340	+ 00.8
Allegheny County..	1,628,587	1,515,237	+113,350	+ 07.5

Source: U.S. Census

TABLE II
AGE DISTRIBUTION OF THE POPULATION BY COMMUNITY

Community	1960				1950			
	19–	20–44	45–64	65+	19–	20–44	45–64	65+
Braddock Hills	977	808	466	163	736	811	250	168
Braddock	4,373	3,866	2,821	1,306	5,271	6,720	3,413	1,114
Clairton	6,954	5,398	4,044	1,515	6,773	8,119	3,735	976
Dravosburg	1,197	1,083	833	245	1,315	1,550	691	230
Duquesne	5,061	4,785	3,631	1,751	5,282	7,250	3,873	1,174
E. McKeesport	1,191	1,108	832	339	1,008	1,230	679	279
E. Pittsburgh	1,335	1,260	1,064	463	1,525	2,056	1,210	381
Elizabeth	857	801	601	338	790	969	595	259
Elizabeth Twp.	5,559	4,855	2,786	958	3,530	3,926	1,826	696
Forward Twp.	1,944	1,575	839	334	1,669	1,656	693	274
Glassport	3,087	2,829	1,790	712	2,970	4,127	1,786	565
Homestead	2,171	2,278	1,953	1,009	2,776	4,071	2,355	864
Liberty	1,448	1,170	686	181	634	535	227	71
Lincoln	707	592	266	121	683	868	268	81
McKeesport	14,957	13,398	11,136	5,438	14,948	20,394	11,808	4,311
Munhall	5,664	5,563	4,216	1,867	4,748	7,311	3,761	1,296
N. Braddock	4,586	4,102	2,753	1,332	4,860	6,007	2,844	967
N. Versailles	5,412	4,757	2,490	696	3,664	4,250	1,604	482
Pitcairn	1,762	1,732	1,253	635	1,771	2,257	1,353	475
Port Vue	2,708	2,215	1,090	356	1,670	2,176	706	161
Rankin	1,923	1,635	1,074	532	2,338	2,849	1,378	378
Trafford	43	51	29	17	51	70	26	7
Turtle Creek	3,822	3,407	2,414	954	4,224	4,949	2,424	763
Versailles	752	741	532	281	746	1,014	505	218
Wall	570	460	291	172	648	720	359	123
W. Elizabeth	340	287	176	118	381	433	236	87
W. Homestead	1,537	1,494	823	300	975	1,329	693	255
W. Mifflin	10,997	9,838	5,176	1,278	6,715	7,670	2,823	776
Whitaker	693	694	545	198	706	875	428	139
White Oak	3,270	2,975	2,115	697	2,070	2,455	1,612	355
Wilmerding	1,389	1,356	1,054	550	1,532	2,182	1,145	437
Mon-Yough	97,275	87,472	59,779	24,856	87,018	110,828	52,147	18,362
Allegheny County	580,865	531,413	360,393	155,916	463,416	605,177	328,581	118,063

Source: U.S. Census

TABLE III
PERCENTAGE AGE DISTRIBUTION OF THE POPULATION BY COMMUNITY

Community	1960				1950			
	19–	20–44	45–64	65+	19–	20–44	45–64	65+
Braddock Hills	40.5	33.4	19.3	06.8	37.4	41.3	12.7	08.5
Braddock	35.4	31.3	22.9	10.6	32.0	40.8	20.7	06.8
Clairton	37.8	29.4	22.0	08.2	34.5	41.3	19.0	05.0
Dravosburg	34.6	31.3	24.1	07.1	34.7	40.9	18.3	06.1
Duquesne	33.7	31.9	24.2	11.7	30.0	41.1	22.0	06.7
E. McKeesport	34.3	31.9	24.0	09.8	31.8	38.8	21.4	08.8
E. Pittsburgh	32.4	30.6	25.8	11.2	29.0	39.1	23.0	07.2
Elizabeth	33.0	30.8	23.1	13.0	30.2	37.1	22.8	09.9
Elizabeth Twp.	39.3	34.3	19.7	06.8	35.4	39.3	18.3	07.0
Forward Twp.	41.4	33.6	17.9	07.1	38.9	38.6	16.1	06.4
Glassport	36.7	33.6	21.3	08.5	34.1	47.4	20.5	06.5
Homestead	28.9	30.4	26.0	13.4	27.6	40.5	23.4	08.6
Liberty	40.0	32.3	18.9	05.0	43.2	36.5	15.5	04.8
Lincoln	41.9	35.1	15.8	07.2	35.9	45.7	14.1	04.3
McKeesport	32.9	29.5	24.5	12.0	29.7	40.5	23.4	08.6
Munhall	32.7	32.1	24.4	10.8	28.9	44.5	22.9	07.9
N. Braddock	34.7	31.1	20.8	10.1	33.0	40.8	19.3	06.6
N. Versailles	39.8	35.0	18.3	05.1	37.3	43.3	16.3	04.9
Pitcairn	32.7	32.2	23.3	11.8	30.2	38.5	23.1	08.1
Port Vue	40.8	33.4	16.4	05.4	35.1	45.8	14.8	03.4
Rankin	37.2	31.7	20.8	10.3	33.7	41.0	19.9	05.4
Trafford	30.7	36.4	20.7	12.1	33.1	45.5	16.9	04.5
Turtle Creek	36.0	32.1	22.8	09.0	34.2	40.0	19.6	06.2
Versailles	32.7	32.2	23.2	12.2	30.0	40.8	20.3	08.8
Wall	38.2	30.8	19.5	11.5	35.0	38.9	19.4	06.6
W. Elizabeth	36.9	31.2	19.1	12.8	33.5	38.1	20.8	07.7
W. Homestead	37.0	36.0	19.8	07.2	29.9	40.8	21.3	07.8
W. Mifflin	40.3	36.1	19.0	04.7	37.3	42.6	15.7	04.3
Whitaker	32.5	32.6	25.6	09.3	32.9	40.7	19.9	06.5
White Oak	36.1	32.9	23.4	07.7	33.6	39.9	26.2	05.8
Wilmerding	31.9	31.2	24.2	12.6	28.8	41.0	21.5	08.2
Mon-Yough	35.9	32.3	22.1	09.2	32.4	41.2	19.4	06.8
Allegheny County	35.7	32.6	22.1	09.6	30.6	39.9	21.7	07.8

Source: U.S. Census

TABLE IIIa

RATE OF POPULATION CHANGE FROM 1950 TO 1960 BY AGE GROUP AND BY COMMUNITY

Community	19—	20–44	45–64	65+
Braddock Hills	+ 32.7	— 00.4	+ 86.4	— 03.0
Braddock	— 17.0	— 42.5	— 17.3	+ 17.2
Clairton	+ 02.7	— 33.5	+ 08.3	+ 55.2
Dravosburg	— 09.0	— 30.1	+ 20.5	+ 06.5
Duquesne	— 04.2	— 34.0	— 06.2	+ 49.1
E. McKeesport	+ 18.2	+ 09.9	+ 22.5	+ 21.5
E. Pittsburgh	— 12.5	— 38.7	— 12.1	+ 21.5
Elizabeth	+ 08.5	— 17.3	+ 01.0	+ 30.5
Elizabeth Twp.	+ 57.5	+ 23.7	+ 52.6	+ 37.6
Forward Twp.	+ 16.5	— 04.9	+ 21.1	+ 21.9
Glassport	+ 03.9	— 31.5	+ 00.2	+ 26.0
Homestead	— 21.8	— 44.0	— 17.1	+ 16.8
Liberty	+128.4	+118.7	+202.2	+154.9
Lincoln	+ 03.5	— 31.8	— 00.7	+ 49.4
McKeesport	+ 00.1	— 34.3	— 05.7	+ 26.1
Munhall	+ 19.3	— 23.9	+ 12.1	+ 44.1
N. Braddock	— 05.6	— 31.7	— 03.2	+ 37.7
N. Versailles	+ 47.7	+ 11.9	+ 55.2	+ 44.4
Pitcairn	— 00.5	— 23.3	— 07.4	+ 33.7
Port Vue	+ 62.2	+ 01.8	+ 54.4	+121.1
Rankin	— 17.8	— 42.6	— 22.1	+ 40.7
Trafford	— 15.7	— 27.1	+ 11.5	+142.8
Turtle Creek	— 09.5	— 31.2	— 00.4	+ 25.0
Versailles	+ 00.8	— 26.9	+ 05.3	+ 28.9
Wall	— 12.0	— 36.1	— 18.9	+ 39.8
W. Elizabeth	— 10.8	— 33.7	— 25.4	+ 35.6
W. Homestead	+ 57.6	+ 12.4	+ 18.8	+ 17.6
W. Mifflin	+ 63.8	+ 28.3	+ 83.4	+ 64.7
Whitaker	— 01.8	— 20.7	+ 27.3	+ 42.4
White Oak	+ 58.0	+ 21.2	+ 31.2	+ 96.3
Wilmerding	— 09.3	— 37.9	— 07.9	+ 25.9
Mon-Yough	+ 11.8	— 21.1	+ 14.6	+ 35.4
Allegheny County	+ 25.3	— 12.2	+ 09.7	+ 32.1

Source: U.S. Census

TABLE IV
NON-WHITE POPULATION BY COMMUNITY

Community	1960 # of Non-Whites	1960 %	1950 # of Non-Whites	1950 %
Braddock Hills	258	12.0	341	17.4
Braddock	2,908	23.6	2,679	16.4
Clairton	4,033	21.9	3,410	17.4
Dravosburg	2	00.1	1	00.1
Duquesne	2,148	14.7	1,649	09.4
E. McKeesport	13	00.6	13	00.4
E. Pittsburgh	205	05.0	82	01.6
Elizabeth	150	05.9	127	04.9
Elizabeth Twp.	445	03.3	544	05.5
Forward Twp.	222	05.0	232	05.4
Glassport	21	00.3	44	00.5
Homestead	1,361	18.4	1,380	13.7
Liberty	49	01.8	18	01.2
Lincoln	7	00.6	25	01.3
McKeesport	3,494	07.9	2,684	07.7
Munhall	39	00.6	60	00.4
N. Braddock	960	07.4	721	04.2
N. Versailles	891	07.0	585	06.0
Pitcairn	4	00.1	5	00.1
Port Vue	3	01.0	15	00.3
Rankin	1,759	34.0	2,019	29.1
Trafford	0	00.0	0	00.0
Turtle Creek	10	00.1	14	00.1
Versailles	55	02.6	58	02.3
Wall	58	04.6	65	03.5
W. Elizabeth	17	01.9	83	07.3
W. Homestead	161	04.0	131	04.0
W. Mifflin	1,463	05.4	1,334	07.4
Whitaker	17	00.7	13	00.6
White Oak	63	00.5	47	00.8
Wilmerding	121	02.9	121	02.3
Mon-Yough	20,937	07.6	19,471	07.0
Allegheny County	135,824	08.3	113,762	07.5

Source: U.S. Census

TABLE V
AGE DISTRIBUTION OF THE NON-WHITE POPULATION
BY COMMUNITY

Community	1960 19–	20–44	45–64	65+	1950 19–	20–44	45–64	65+
Braddock Hills	93	64	72	29	143	105	78	15
Braddock	1,287	871	587	192	982	995	643	88
Clairton	1,840	1,219	816	158	1,345	1,355	612	78
Dravosburg	0	1	1	0	1	0	0	0
Duquesne	1,007	803	377	170	638	678	289	45
E. McKeesport	6	4	3	0	6	6	0	1
E. Pittsburgh	114	46	38	7	32	28	19	3
Elizabeth	64	42	28	16	33	48	28	18
Elizabeth Twp.	179	133	86	46	214	165	139	26
Forward Twp.	111	46	43	22	88	72	57	15
Glassport	5	8	5	3	15	15	10	4
Homestead	438	436	318	108	398	549	356	77
Liberty	25	14	8	2	10	5	2	1
Lincoln	5	2	0	0	12	7	6	0
McKeesport	1,576	1,022	741	155	1,034	1,036	511	93
Munhall	15	7	10	5	22	14	15	9
N. Braddock	409	328	158	61	286	253	149	35
N. Versailles	417	259	163	52	281	187	94	23
Pitcairn	1	2	1	0	2	3	0	0
Port Vue	0	0	2	1	4	3	6	2
Rankin	743	506	370	140	759	762	428	80
Trafford	0	0	0	0	0	0	0	0
Turtle Creek	3	4	1	2	4	3	4	3
Versailles	32	8	9	5	28	10	10	10
Wall	33	11	13	1	24	27	13	1
W. Elizabeth	5	2	6	4	48	23	11	1
W. Homestead	84	38	29	9	51	37	41	6
W. Mifflin	687	486	248	42	619	487	200	27
Whitaker	1	4	9	3	0	6	6	1
White Oak	25	18	18	3	20	13	11	3
Wilmerding	46	29	33	13	43	39	37	2
Mon-Yough	9,251	6,412	4,193	1,249	7,142	6,931	3,775	667
Allegheny County	54,535	43,463	28,272	9,554	39,432	44,296	24,256	5,778

Source: U.S. Census

TABLE VI
PERCENTAGE AGE DISTRIBUTION OF THE NON-WHITE POPULATION BY COMMUNITY

Community	1960				1950			
	19–	20–44	45–64	65+	19–	20–44	45–64	65+
Braddock Hills ..	36.1	24.8	27.9	11.2	41.9	30.8	22.9	04.4
Braddock	44.3	30.0	20.2	05.5	36.6	37.1	24.0	03.3
Clairton	45.1	29.9	20.0	05.0	39.4	39.7	17.9	02.3
Dravosburg	00.0	50.0	50.0	00.0	100.0	00.0	00.0	00.0
Duquesne	46.9	37.4	17.6	01.9	38.7	41.1	17.5	02.7
E. McKeesport ..	46.2	30.8	23.0	00.0	46.2	46.2	00.0	07.6
E. Pittsburgh ...	55.6	22.4	18.5	03.5	39.0	34.1	23.2	03.4
Elizabeth	42.6	28.0	18.7	10.7	26.0	37.8	22.0	14.2
Elizabeth Twp. ..	40.2	29.9	19.3	10.6	39.3	30.3	25.5	04.8
Forward Twp. ..	50.0	20.7	19.3	10.0	37.9	31.0	24.6	06.5
Glassport	23.8	38.1	23.8	14.3	34.1	34.1	22.7	09.1
Homestead	32.2	32.0	23.4	12.4	28.8	39.9	25.8	05.6
Liberty	51.0	28.6	16.3	04.1	55.6	27.8	11.1	05.6
Lincoln	71.4	28.6	00.0	00.0	48.0	28.0	24.0	00.0
McKeesport	45.1	29.3	21.2	04.4	38.5	38.6	19.0	03.5
Munhall	38.5	17.9	25.6	18.0	36.7	23.3	25.0	15.0
N. Braddock	42.6	34.2	16.5	06.7	39.6	35.1	20.7	04.9
N. Versailles	46.8	29.1	18.3	05.8	48.0	32.0	16.1	03.9
Pitcairn	25.0	50.0	25.0	00.0	40.0	60.0	00.0	00.0
Port Vue	00.0	00.0	66.6	33.4	26.7	20.0	40.0	13.3
Rankin	42.2	28.8	21.0	08.0	36.7	37.7	21.2	04.0
Trafford	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0
Turtle Creek	35.0	25.0	10.0	20.0	28.6	21.4	28.6	21.4
Versailles	58.2	14.5	16.4	10.9	48.3	17.2	17.2	17.2
Wall	56.9	19.0	22.4	01.7	36.9	41.5	20.0	01.5
W. Elizabeth	29.4	11.8	35.3	23.5	57.8	27.7	13.2	01.2
W. Homestead ..	52.2	23.6	18.0	06.2	38.9	28.2	31.3	04.6
W. Mifflin	47.0	33.2	17.0	12.8	45.8	36.1	14.8	02.0
Whitaker	05.9	23.5	52.9	17.7	00.0	46.2	46.2	07.6
White Oak	39.7	28.6	28.6	03.1	42.5	27.7	23.4	06.4
Wilmerding	38.0	24.0	27.3	10.7	35.5	32.2	30.6	01.7
Mon-Yough	44.2	30.6	20.0	05.2	38.6	35.6	22.4	03.4
Allegheny County	40.2	32.0	20.8	07.0	34.7	38.9	21.3	05.1

Source: U.S. Census

TABLE VII
NON-WHITES PER 1000 WHITES BY COMMUNITY

Community	1960				1950			
	19—	20–44	45–64	65+	19—	20–44	45–64	65+
Braddock Hills	105	086	183	216	241	149	453	098
Braddock	417	291	263	172	229	174	232	086
Clairton	360	292	253	116	248	202	196	087
Dravosburg ..	000	001	001	000	001	000	000	000
Duquesne ...	248	202	116	108	137	103	081	040
E. McKeesport	005	004	004	000	006	005	000	004
E. Pittsburgh.	093	038	037	061	021	014	016	008
Elizabeth	081	055	050	050	044	052	049	075
Elizabeth Twp.	033	028	032	050	065	044	082	039
Forward Twp.	061	030	054	071	056	045	090	058
Glassport	002	004	003	004	005	004	005	007
Homestead ..	253	237	194	120	167	156	178	098
Liberty	018	012	012	011	016	009	009	014
Lincoln	007	003	000	000	018	008	023	000
McKeesport ..	118	080	071	029	074	054	045	022
Munhall	003	001	002	003	005	002	004	007
N. Braddock..	098	087	061	048	063	044	055	038
N. Versailles..	083	056	070	080	083	046	062	050
Pitcairn	001	001	001	000	001	001	000	000
Port Vue	000	000	002	003	002	001	009	013
Rankin	630	448	526	357	481	365	451	268
Trafford	000	000	000	000	000	000	000	000
Turtle Creek..	001	001	001	002	001	001	002	004
Versailles	044	011	017	018	039	010	020	048
Wall	061	024	047	006	038	039	038	008
W. Elizabeth.	015	007	035	035	144	056	049	012
W. Homestead	058	026	037	031	053	029	063	024
W. Mifflin ...	066	052	050	034	102	068	076	036
Whitaker	002	006	017	015	000	007	014	007
White Oak ..	008	006	008	004	010	005	007	009
Wilmerding ..	034	022	032	024	029	018	033	005
Mon-Yough ..	105	079	075	053	089	067	079	038
Allegheny County	104	089	085	065	093	079	080	051

Source: U.S. Census

TABLE VIIa
CHILDREN UNDER 5 YEARS OF AGE

Community	Total Population Under 5 Years of Age 1960	1950	Non-Whites Under 5 Years Per 1000 Whites under 5 1960	1950
Braddock Hills	255	260	094	135
Braddock	1,111	1,652	475	200
Clairton	2,052	2,069	427	238
Dravosburg	295	364	000	000
Duquesne	1,731	1,641	220	156
E. McKeesport	236	301	012	010
E. Pittsburgh	367	522	129	028
Elizabeth	237	247	068	051
Elizabeth Twp.	1,569	1,083	054	060
Forward Twp.	556	512	082	076
Glassport	869	896	002	003
Homestead	614	833	248	175
Liberty	402	281	020	014
Lincoln	209	200	000	010
McKeesport	4,056	4,711	123	072
Munhall	1,591	1,409	002	004
N. Braddock	1,393	1,537	109	052
N. Versailles	1,635	1,322	067	060
Pitcairn	488	551	000	000
Port Vue	764	692	000	001
Rankin	503	676	634	519
Trafford	019	014	000	000
Turtle Creek	1,106	1,298	001	002
Versailles	211	233	029	036
Wall	141	188	060	039
W. Elizabeth	105	130	019	140
W. Homestead	550	286	054	040
W. Mifflin	3,168	2,120	065	086
Whitaker	185	195	000	000
White Oak	843	720	006	010
Wilmerding	369	528	031	025
Mon-Yough	29,640	27,471	100	084
Allegheny County ..	172,477	146,622	107	090

Source: U.S. Census

TABLE VIII
PERCENTAGE OF FIRST AND SECOND GENERATION MEMBERS OF THE POPULATION BY COMMUNITY
1960

Community	Foreign Stock*	Foreign Born**	Foreign Born as % of Foreign Stock	East European as % of Foreign Stock
Braddock Hills	31.4	04.7	15.1	37.4
Braddock	34.0	08.4	24.8	49.0
Clairton	29.1	07.9	27.2	29.8
Dravosburg	20.2	03.0	15.1	42.0
Duquesne	41.7	10.8	25.9	40.0
E. McKeesport	24.5	04.4	15.7	30.0
E. Pittsburgh	39.4	09.9	25.0	37.8
Elizabeth	22.2	03.0	13.6	18.5
Elizabeth Twp.	27.6	04.9	17.8	28.1
Forward Twp.	25.5	02.5	14.7	24.0
Glassport	43.0	09.3	21.6	45.5
Homestead	36.5	09.8	26.8	45.7
Liberty	29.9	05.2	17.5	53.6
Lincoln	20.5	02.4	11.8	36.7
McKeesport	36.5	09.0	24.8	41.3
Munhall	42.7	09.9	23.1	50.9
N. Braddock	40.0	09.2	22.9	39.6
N. Versailles	28.1	04.3	15.4	38.6
Pitcairn	22.6	05.8	25.5	14.1
Port Vue	36.2	05.9	16.4	62.6
Rankin	36.5	09.9	27.1	63.6
Trafford	20.7	00.0	00.0	13.8
Turtle Creek	28.7	06.2	21.5	17.4
Versailles	35.0	06.8	19.4	34.3
Wall	47.2	15.2	32.2	51.1
W. Elizabeth	25.0	06.3	25.2	05.2
W. Homestead	36.0	07.8	21.8	47.1
W. Mifflin	33.1	05.1	15.4	49.3
Whitaker	42.4	09.9	23.2	58.5
White Oak	30.8	04.4	14.2	39.1
Wilmerding	41.8	10.4	24.8	21.2
Mon-Yough	34.2	07.5	21.9	40.9
Allegheny County ..	29.3	06.5	22.3	30.1

Source: U.S. Census
* Includes 1st and 2nd generations
** Refers to 1st generation or immigrants

TABLE IX

EDUCATIONAL ATTAINMENT IN YEARS OF THE 25 YEARS AND OLDER POPULATION BY COMMUNITY, 1960

Community	0–7	8–11	High School	1–3 Coll.	4+ College
Braddock Hills ..	260	560	464	65	47
Braddock	2,333	3,031	1,584	123	176
Clairton	2,864	3,758	2,778	574	460
Dravosburg	362	885	616	106	70
Duquesne	2,835	3,370	2,216	392	299
E. McKeesport ..	326	783	711	136	106
E. Pittsburgh	790	1,013	615	75	79
Elizabeth	360	548	478	97	88
Elizabeth Twp. ..	1,641	3,073	2,439	431	408
Forward Twp. ..	672	1,139	556	60	54
Glassport	1,424	1,835	1,033	455	99
Homestead	1,296	1,961	1,288	171	174
Liberty	405	810	724	90	27
Lincoln	202	386	241	56	17
McKeesport	7,738	11,605	6,466	1,409	989
Munhall	2,136	4,152	3,117	750	563
N. Braddock	1,782	3,191	2,186	432	119
N. Versailles	1,266	2,900	2,568	399	264
Pitcairn	697	1,321	1,062	173	80
Port Vue	752	1,454	1,179	138	119
Rankin	1,131	1,101	641	54	52
Trafford	17	42	23	0	0
Turtle Creek	1,311	2,680	1,770	260	167
Versailles	355	655	351	41	15
Wall	329	360	139	3	4
W. Elizabeth	134	242	111	19	20
W. Homestead ..	573	953	691	83	68
W. Mifflin	2,653	6,048	5,120	708	527
Whitaker	384	592	280	33	21
White Oak	822	1,822	1,813	485	499
Wilmerding	685	1,139	748	98	50
Mon-Yough	38,535	63,359	43,998	7,813	5,661
Allegheny County	294,901	540,010	383,147	89,625	101,042

Source: U.S. Census

TABLE X
PERCENTAGE DISTRIBUTION OF EDUCATIONAL ATTAINMENT IN YEARS OF THE 25 YEARS AND OLDER POPULATION BY COMMUNITY

Community	1960					1950					
	0–7	8–11	12	1–3 Coll.	4+ Coll.	0–7	8–11	12	1–3 Coll.	4+ Coll.	Not Reported
Braddock Hills	19.3	37.9	34.5	04.8	03.5	35.5	37.9	19.2	00.9	05.1	01.4
Braddock	32.2	41.8	21.9	01.7	02.4	40.4	34.2	18.9	02.6	02.6	01.3
Clairton	27.5	36.0	26.6	05.5	04.4	29.2	37.1	23.0	04.9	04.7	01.1
Dravosburg	17.8	43.4	30.2	05.2	03.4	20.5	43.6	26.6	03.0	04.4	01.9
Duquesne	31.1	37.0	24.3	04.3	03.3	36.8	36.0	20.1	02.6	03.6	00.9
E. McKeesport	15.8	38.0	34.5	06.6	05.1	18.3	39.5	28.0	06.6	06.0	01.6
E. Pittsburgh	30.7	39.4	23.9	02.9	03.1	27.0	43.4	22.8	03.2	01.6	02.0
Elizabeth	22.9	34.9	30.4	06.2	05.6	19.7	35.0	30.6	06.4	06.1	02.2
Elizabeth Twp.	20.5	38.5	30.5	05.4	05.1	32.2	40.7	17.2	05.2	03.5	01.2
Forward Twp.	27.1	45.9	22.4	02.4	02.2	41.6	39.8	13.3	01.8	01.1	02.4
Glassport	29.4	37.9	21.3	09.4	02.0	35.3	36.9	20.9	04.2	02.2	00.5
Homestead	26.5	40.1	26.3	03.5	03.6	31.8	37.2	21.6	04.1	03.1	02.2
Liberty	19.7	39.4	35.2	04.4	01.3	37.2	42.6	13.5	04.0	02.7	00.0
Lincoln	22.4	42.8	26.7	06.2	01.9	26.3	42.3	22.5	05.2	02.8	00.9
McKeesport	27.4	41.2	22.9	05.0	03.5	31.5	37.6	20.5	04.1	04.2	01.1
Munhall	19.9	38.7	29.1	07.0	05.3	26.2	37.3	24.2	06.0	05.1	01.2
N. Braddock	23.1	41.4	28.4	05.6	01.5	34.5	37.0	22.4	01.7	01.6	02.8
N. Versailles	17.1	39.2	34.7	05.4	03.6	21.9	41.8	27.4	04.4	02.7	00.8
Pitcairn	20.9	39.6	31.9	05.2	02.4	19.2	43.2	27.4	04.1	03.6	02.5
Port Vue	20.6	39.9	32.4	03.8	03.3	28.7	42.5	21.1	04.5	02.5	00.7
Rankin	38.0	37.0	21.5	01.8	01.7	45.3	29.9	19.5	02.4	00.9	02.0
Trafford	20.7	51.2	28.0	00.0	00.0	33.3	42.9	19.0	04.8	00.0	00.0
Turtle Creek	21.2	43.3	28.6	04.2	02.7	20.2	43.0	28.4	04.2	03.3	00.9
Versailles	25.0	46.2	24.8	02.9	01.1	27.8	45.5	20.4	03.7	02.3	00.3
Wall	39.4	43.1	16.6	00.4	00.5	50.7	34.3	12.2	01.4	00.9	00.5
W. Elizabeth	25.5	46.0	21.1	03.6	03.8	30.2	40.3	20.9	03.1	03.9	01.6
W. Homestead	24.2	40.2	29.2	03.5	02.9	35.0	39.8	19.1	02.9	02.7	00.5
W. Mifflin	17.6	40.2	34.0	04.7	03.5	26.3	42.4	23.2	04.6	02.7	00.8
Whitaker	29.3	45.2	21.4	02.5	01.6	33.9	43.1	14.5	05.3	02.0	01.2
White Oak	15.1	33.5	33.3	08.9	09.2	18.2	36.0	30.0	07.7	07.4	00.7
Wilmerding	25.2	41.9	27.5	03.6	01.8	26.7	36.8	24.8	05.2	05.3	01.2
Mon-Yough	24.2	39.7	27.6	04.9	03.6	30.1	38.4	22.2	04.4	03.6	01.3
Allegheny County	20.9	38.3	27.2	06.4	07.2	25.5	36.9	20.0	06.1	08.4	03.1

TABLE XI
DEPENDENCY RATIOS BY COMMUNITY*

Community	Population 1960 total	1960 white	1960 non-white	Population 1950 total	1950 white	1950 non-white	Labor Force 1960
Braddock Hills	1.89	1.89	1.90	1.85	1.90	1.86	2.76
Braddock	1.84	1.80	1.99	1.63	1.63	1.64	2.40
Clairton	1.95	1.94	1.98	1.66	1.64	1.73	2.80
Dravosburg	1.80	1.77	N.A.**	1.69	1.69	N.A.	2.47
Duquesne	1.78	1.78	1.82	1.58	1.57	1.71	2.69
E. McKeesport	1.79	1.79	1.86	1.66	1.66	2.17	2.48
E. Pittsburgh	1.77	1.75	3.80	1.61	1.60	1.74	2.66
Elizabeth	1.85	1.84	2.14	1.67	1.67	1.67	2.74
Elizabeth Twp.	1.85	1.85	2.03	1.73	1.73	1.79	2.87
Forward Twp.	1.94	1.92	2.49	1.83	1.83	1.80	3.09
Glassport	1.82	1.82	1.62	1.47	1.47	1.76	2.60
Homestead	1.77	1.77	1.81	1.56	1.57	1.52	2.45
Liberty	1.95	1.95	1.53	1.93	1.92	2.57	2.94
Lincoln	1.97	1.96	N.A.	1.67	1.67	1.92	3.00
McKeesport	1.83	1.82	1.98	1.57	1.52	1.73	2.65
Munhall	1.77	1.77	2.29	1.48	1.48	2.00	2.61
N. Braddock	1.93	1.92	1.98	1.66	1.66	1.79	2.74
N. Versailles	1.87	1.86	2.11	1.68	1.66	2.08	2.78
Pitcairn	1.80	1.80	N.A.	1.62	1.62	N.A.	2.59
Port Vue	2.01	2.01	N.A.	1.65	1.65	1.67	2.73
Rankin	1.91	1.86	2.01	1.64	1.62	1.70	2.74
Trafford	1.73	1.73	N.A.	1.60	1.60	N.A.	2.33
Turtle Creek	1.82	1.82	2.00	1.68	1.68	2.00	2.64
Versailles	1.80	1.79	3.24	1.64	1.62	2.90	2.54
Wall	1.99	1.97	2.42	1.71	1.72	1.63	2.94
W. Elizabeth	1.99	1.99	2.13	1.70	1.66	2.44	2.95
W. Homestead	1.79	1.78	2.40	1.61	1.61	1.68	2.65
W. Mifflin	1.82	1.81	1.99	1.68	1.70	1.50	2.71
Whitaker	1.72	1.72	1.31	1.65	1.65	1.08	2.65
White Oak	1.78	1.78	1.75	1.51	1.51	1.96	2.69
Wilmerding	1.80	1.80	1.95	1.60	1.60	1.59	2.51
Mon-Yough	1.84	1.83	1.97	1.65	1.64	1.82	2.72
Allegheny County	1.83	1.82	1.89	1.62	1.62	1.66	2.63

Source: U.S. Census

* Dependency Ratio = total population/persons 20-64 years. Labor Force D.R. = total population/labor force.

** Not calculated in communities with 10 or less non-whites.

TABLE XII
FAMILY INCOME BY COMMUNITY
1960

Community	$2999 and under #	$2999 and under %	$3000-$6999 #	$3000-$6999 %	$7000 and over #	$7000 and over %
Braddock Hills	47	07.8	359	59.7	195	32.5
Braddock	775	25.6	1,655	54.7	597	19.7
Clairton	796	17.1	2,657	57.0	1,205	25.9
Dravosburg	111	11.2	534	53.8	347	35.0
Duquesne	691	17.7	2,055	52.6	1,164	29.7
E. McKeesport	117	12.3	488	51.3	346	36.4
E. Pittsburgh	249	22.9	535	49.3	301	27.8
Elizabeth	111	15.2	403	56.3	215	28.5
Elizabeth Twp.	410	11.0	1,928	51.9	1,377	37.1
Forward Twp.	187	15.9	656	55.9	330	28.2
Glassport	372	16.7	1,238	55.5	619	27.8
Homestead	426	21.4	1,047	52.6	519	26.0
Liberty	69	07.0	547	55.6	367	37.4
Lincoln	48	11.0	239	54.7	150	34.3
McKeesport	2,365	19.6	6,417	53.3	3,257	27.1
Munhall	495	10.5	2,280	48.3	1,943	41.2
N. Braddock	730	20.9	1,928	55.2	837	23.9
N. Versailles	343	09.8	1,869	53.6	1,278	36.6
Pitcairn	264	18.2	782	53.9	405	27.9
Port Vue	157	09.3	1,033	61.1	501	29.6
Rankin	349	27.8	629	50.1	277	22.1
Trafford	0	00.0	27	77.1	8	22.9
Turtle Creek	412	14.5	1,536	54.0	894	31.5
Versailles	113	18.4	325	52.9	176	28.7
Wall	87	24.0	209	57.6	67	18.4
W. Elizabeth	59	23.6	139	55.6	52	20.8
W. Homestead	119	11.0	587	54.3	375	34.7
W. Mifflin	507	07.2	3,788	53.6	2,773	39.2
Whitaker	105	17.6	305	51.1	187	31.3
White Oak	206	08.3	993	40.1	1,279	51.6
Wilmerding	191	16.3	639	54.5	343	29.2
Mon-Yough	10,911	15.3	37,827	53.2	22,384	31.5
Allegheny County	57,480	13.7	194,040	46.3	167,390	40.0
County less Pittsburgh	29,463	11.0	120,599	45.1	117,014	43.8

Source: U.S. Census

TABLE XIII
INDUSTRY SECTOR OF EMPLOYED PERSONS PRIVATE AND PUBLIC, 1960

Community	Total Employed	% Wage & Salary	% Self emp.	% Unpaid Family Workers	Sector % govern-ment
Braddock Hills ...	823	91.6	03.2	—	05.2
Braddock	4,054	88.6	04.1	00.5	06.8
Clairton	6,002	87.0	03.9	00.5	08.6
Dravosburg	1,293	87.9	04.3	—	07.8
Duquesne	5,075	87.4	05.3	00.4	06.9
E. Mckeesport ...	1,324	85.1	05.5	00.3	09.1
E. Pittsburgh	1,451	88.8	03.6	—	07.6
Elizabeth	882	84.1	10.1	00.5	05.3
Elizabeth Twp. ...	4,620	86.4	06.7	00.2	03.7
Forward Twp. ...	1,392	84.8	07.5	00.2	07.5
Glassport	2,960	89.0	06.5	00.9	03.6
Homestead	2,844	88.4	04.1	00.2	07.3
Liberty	1,177	87.5	06.0	00.6	05.9
Lincoln	526	87.5	07.4	—	05.1
McKeesport	15,538	85.9	06.0	00.5	07.6
Munhall	6,307	88.1	04.7	00.2	07.0
N. Braddock	4,440	90.0	04.6	00.1	05.3
N. Versailles	4,515	88.2	04.7	01.0	06.1
Pitcairn	1,936	84.4	07.5	—	08.1
Port Vue	2,276	88.5	04.1	00.2	07.2
Rankin	1,677	88.1	04.3	—	07.6
Trafford	60	100.0	—	—	—
Turtle Creek	3,765	89.0	04.3	00.4	06.3
Versailles	858	86.2	03.1	02.1	08.6
Wall	458	94.1	02.4	—	03.5
W. Elizabeth	287	78.7	05.9	01.5	13.9
W. Homestead ...	1,534	87.5	04.4	00.5	07.6
W. Mifflin	9,428	88.8	03.4	00.1	07.7
Whitaker	751	88.3	06.1	—	05.6
White Oak	3,201	80.3	12.8	00.8	06.1
Wilmerding	1,620	83.5	06.4	—	10.1
Mon-Yough	92,974	87.4	05.3	00.2	07.1
Allegheny County.	577,613	83.1	06.9	00.4	08.5

Source: U.S. Census

TABLE XIIIa

PERCENT OF EMPLOYED LABOR FORCE WORKING IN PITTSBURGH, 1960

Community	% Work in Pittsburgh
Braddock Hills	23.1
Braddock	12.1
Clairton	06.6
Dravosburg	11.1
Duquesne	10.1
E. McKeesport	11.0
E. Pittsburgh	07.2
Elizabeth	04.5
Elizabeth Twp.	08.6
Forward Twp.	04.6
Glassport	05.8
Homestead	21.0
Liberty	05.1
Lincoln	04.8
McKeesport	06.5
Munhall	22.1
N. Braddock	10.2
N. Versailles	12.3
Pitcairn	07.6
Port Vue	06.4
Rankin	20.0
Trafford	06.7
Turtle Creek	11.5
Versailles	05.6
Wall	11.8
W. Elizabeth	07.0
W. Homestead	21.8
W. Mifflin	19.4
Whitaker	07.3
White Oak	11.9
Wilmerding	11.9
Mon-Yough	11.9
Allegheny County	45.5

Source: U.S. Census

TABLE XIV
OCCUPATIONAL CHARACTERISTICS OF THE EMPLOYED LABOR FORCE (in percentages)
1960

Community	Professional & Managers	Sales & Clerical	Craftsmen	Operatives	Service & Labor	Not reported
Braddock Hills	13.9	24.1	18.0	22.0	19.1	03.0
Braddock	09.0	19.2	16.3	22.8	28.3	04.3
Clairton	13.2	20.0	20.7	17.3	25.3	03.6
Dravosburg	19.2	26.4	22.5	16.1	14.5	01.2
Duquesne	14.0	22.5	20.7	17.7	21.2	04.0
E. McKeesport	15.7	27.2	16.1	20.7	15.0	05.4
E. Pittsburgh	12.1	23.5	16.1	22.5	22.9	03.0
Elizabeth	18.8	31.0	17.3	14.6	16.9	01.4
Elizabeth Twp.	16.2	18.5	25.5	20.3	16.6	02.8
Forward Twp.	11.1	12.0	30.0	27.7	18.3	00.9
Glassport	13.6	22.2	18.3	21.5	19.3	05.1
Homestead	12.3	23.7	18.3	16.1	25.7	03.9
Liberty	18.9	18.9	27.1	19.7	13.4	02.0
Lincoln	09.5	16.2	23.0	27.4	22.6	01.3
McKeesport	14.5	23.0	16.6	19.2	11.9	05.1
Munhall	16.4	25.5	22.8	17.0	13.3	05.0
N. Braddock	08.1	23.6	19.0	26.8	20.4	01.8
N. Versailles	14.5	22.2	21.0	23.1	10.4	02.8
Pitcairn	15.3	20.4	22.4	20.2	17.1	04.5
Port Vue	13.8	24.3	22.9	22.1	14.3	02.5
Rankin	07.9	15.9	15.0	23.1	31.1	06.4
Trafford	06.7	35.0	00.0	31.7	13.3	13.3
Turtle Creek	11.7	24.4	17.3	25.1	10.0	04.6
Versailles	11.1	21.9	23.7	21.1	18.6	03.6
Wall	03.3	23.1	17.7	29.7	19.0	07.2
W. Elizabeth	19.2	18.1	16.0	20.9	21.6	04.2
W. Homestead	08.6	23.7	23.7	17.1	25.5	01.5
W. Mifflin	12.3	22.7	27.6	19.8	16.0	01.0
Whitaker	09.3	22.8	28.5	17.4	18.6	03.3
White Oak	25.6	22.9	20.9	15.4	11.4	03.9
Wilmerding	11.8	28.8	10.4	20.9	19.6	08.5
Mon-Yough	13.7	22.5	20.6	20.2	19.4	03.7
Allegheny County	20.5	25.8	15.5	15.2	18.3	04.6

Source: U.S. Census

TABLE XIVa
SIZE AND SEX DISTRIBUTION OF THE EMPLOYED LABOR FORCE (Absolute Numbers)

1960

Community	Total	Males	Females
Braddock Hills	823	615	208
Braddock	4,054	2,804	1,250
Clairton	6,002	4,472	1,530
Dravosburg	1,293	930	363
Duquesne	5,075	3,663	1,412
E. McKeesport	1,324	910	414
E. Pittsburgh	1,451	986	465
Elizabeth	882	630	252
Elizabeth Twp.	4,620	3,607	1,013
Forward Twp.	1,392	1,137	255
Glassport	2,960	2,094	866
Homestead	2,844	1,937	907
Liberty	1,177	982	195
Lincoln	526	441	85
McKeesport	15,538	10,857	4,681
Munhall	6,307	4,490	1,817
N. Braddock	4,440	3,216	1,224
N. Versailles	4,515	3,431	1,084
Pitcairn	1,936	1,406	530
Port Vue	2,276	1,673	603
Rankin	1,677	1,181	496
Trafford	60	39	21
Turtle Creek	3,765	2,665	1,100
Versailles	858	606	252
Wall	458	332	126
W. Elizabeth	287	196	91
W. Homestead	1,534	1,161	373
W. Mifflin	9,428	7,118	2,310
Whitaker	751	564	187
White Oak	3,201	2,495	706
Wilmerding	1,620	1,056	564
Mon-Yough	92,974	67,694	25,380
Allegheny County	577,613	403,438	174,175

Source: U.S. Census

TABLE XV
OCCUPATIONAL CHARACTERISTICS OF EMPLOYED MALES BY COMMUNITY (in percentages)
1960

Community	Professional & Managers	Sales & Clerical	Craftsmen	Operatives	Service & Labor	Not reported
Braddock Hills	14.6	16.8	24.1	23.3	18.3	02.9
Braddock	06.9	11.2	23.0	27.5	28.4	03.0
Clairton	11.6	10.9	27.5	21.6	24.9	03.5
Dravosburg	19.2	13.9	30.0	21.2	14.3	01.4
Duquesne	11.6	12.5	28.1	22.8	21.2	03.8
E. McKeesport	13.4	18.7	22.1	28.0	15.0	05.8
E. Pittsburgh	12.2	13.1	22.4	28.3	21.1	02.9
Elizabeth	19.6	18.3	23.8	19.8	17.3	01.2
Elizabeth Twp.	16.2	10.3	32.5	24.1	15.1	01.8
Forward Twp.	08.9	06.0	36.1	31.3	16.6	00.7
Glassport	13.3	11.8	25.9	26.5	18.9	03.6
Homestead	09.3	13.8	26.3	20.6	26.2	03.8
Liberty	19.1	13.9	32.5	22.8	10.6	01.1
Lincoln	07.7	07.7	27.4	31.7	23.8	01.7
McKeesport	13.0	12.9	23.5	24.4	21.1	05.1
Munhall	15.5	14.5	31.9	21.3	12.7	04.1
N. Braddock	08.2	13.1	25.6	31.5	20.6	01.0
N. Versailles	14.9	13.1	27.6	28.2	13.1	02.2
Pitcairn	15.4	12.6	30.5	25.6	12.5	03.4
Port Vue	12.8	14.0	30.4	27.4	14.0	01.4
Rankin	07.7	11.1	21.3	25.0	27.9	07.1
Trafford	10.3	20.6	—	48.5	10.3	10.3
Turtle Creek	11.5	13.8	23.8	31.6	16.7	02.6
Versailles	09.7	12.1	32.8	26.4	15.0	03.0
Wall	03.6	05.7	24.4	35.8	22.9	07.6
W. Elizabeth	19.9	04.1	23.5	30.6	15.8	06.1
W. Homestead	08.2	15.9	30.7	22.1	21.7	01.4
W. Mifflin	12.6	12.4	36.1	23.8	14.5	00.6
Whitaker	08.1	13.3	37.2	21.8	15.8	03.8
White Oak	26.2	13.3	26.5	19.0	10.8	04.2
Wilmerding	10.9	16.7	15.2	26.8	20.7	09.7
Mon-Yough	13.0	12.7	27.8	24.9	18.4	03.2
Allegheny County	21.6	17.0	21.8	18.7	16.8	04.1

Source: U.S. Census

TABLE XVI
OCCUPATIONAL CHARACTERISTICS OF EMPLOYED FEMALES BY COMMUNITY (in percentages)
1960

Community	Professional & Managers	Sales & Clerical	Craftsmen	Operatives	Service & Labor	Not reported
Braddock Hills	11.5	45.7	—	18.3	21.1	03.4
Braddock	20.2	37.5	01.3	12.2	28.2	00.6
Clairton	17.9	46.6	00.6	04.5	26.3	04.1
Dravosburg	19.0	58.4	03.3	03.0	15.1	01.2
Duquesne	19.9	48.4	01.4	04.4	21.2	04.7
E. McKeesport	20.7	50.3	02.9	04.6	14.7	06.8
E. Pittsburgh	11.8	45.4	02.5	10.1	26.7	03.5
Elizabeth	16.7	62.7	01.2	01.6	15.9	01.9
Elizabeth Twp.	16.4	47.8	00.7	06.8	22.3	06.0
Forward Twp.	21.2	36.8	03.1	11.4	25.9	01.6
Glassport	14.4	47.3	—	09.5	20.3	08.5
Homestead	18.8	45.6	01.3	06.3	24.4	04.6
Liberty	18.5	44.1	—	04.1	27.7	05.6
Lincoln	18.8	60.0	—	04.7	16.5	—
McKeesport	18.1	46.3	00.7	07.2	22.6	05.1
Munhall	18.6	52.4	00.2	06.5	15.2	07.1
N. Braddock	08.0	51.4	01.6	14.6	20.4	04.0
N. Versailles	13.1	51.0	00.7	07.0	26.1	02.1
Pitcairn	15.5	40.8	00.8	06.0	29.3	07.6
Port Vue	16.8	52.8	02.2	07.5	15.4	05.3
Rankin	08.3	27.2	—	18.5	38.8	07.2
Trafford	—	62.0	—	—	19.0	19.0
Turtle Creek	12.4	50.3	01.4	09.4	20.6	05.9
Versailles	14.3	43.2	01.6	08.3	27.4	05.2
Wall	02.4	69.0	—	13.5	08.7	07.4
W. Elizabeth	17.5	48.4	—	—	34.1	—
W. Homestead	09.6	48.1	01.9	01.3	37.2	01.9
W. Mifflin	11.7	54.4	01.3	07.5	22.2	02.9
Whitaker	12.8	51.4	02.1	04.3	27.3	02.1
White Oak	23.1	56.8	01.1	02.4	13.6	03.0
Wilmerding	13.5	51.4	01.4	10.0	17.7	06.0
Mon-Yough	15.7	48.4	01.0	07.6	22.4	04.9
Allegheny County	18.0	46.5	01.0	07.1	21.6	05.8

Source: U.S. Census

TABLE XVII
CONCENTRATION OF MANUFACTURING EMPLOYMENT, BY MAJOR INDUSTRY IN MON-YOUGH
(in percentages)

Industry	SIC Code	Year 1963	1960	1957	1930
Food and Kindred Prod.	2000	02.3	02.2	01.8	03.2
Apparel & Related Prod.	2300	00.1	00.1	00.1	00.2
Lumber & Wood Prod.	2400	00.2	00.2	00.2	00.3
Furniture & Fixtures	2500	00.3	00.3	00.3	00.0
Paper & Allied Prod.	2600	00.1	00.1	00.1	00.0
Printing, Publishing & Allied Prod.	2700	00.5	00.5	00.4	00.4
Chemicals & Allied Prod.	2800	01.0	00.6	00.7	00.2
Petroleum & Coal Prod.	2900	00.1	00.1	00.0	01.3
Rubber & Misc. Plastic Prod.	3000	00.1	00.1	00.0	00.0
Stone, Clay & Glass Prod.	3200	01.2	01.1	00.7	04.8
Primary Metal Prod.	3300	54.2	54.3	57.0	32.4
Fabricated Metal Prod.	3400	07.0	05.5	04.5	20.3
Machinery, Except Electrical	3500	05.0	05.9	05.6	00.1
Electrical Machinery	3600	18.6	19.5	18.3	28.5
Transportation Equipment	3700	09.2	09.7	10.4	08.3
Instruments & Related Prod.	3800	00.1	00.1	00.1	00.0
Misc. Manufactures	3900	00.1	00.1	00.1	00.1
		N=59,066	N=67,078	N=80,946	N=70,430

Source: Industrial Directory of the Commonwealth of Pennsylvania (1965, 1963, 1958, 1931), issued by the Pennsylvania Bureau of Statistics.

TABLE XVIIa
DISTRIBUTION OF MANUFACTURING FIRMS
IN THE MON-YOUGH REGION
(in Percentages)

Industry	SIC Code	Year 1963	1960	1957	1930
Food & Related Prod.	2000	22.0	25.0	30.9	33.2
Apparel & Related Prod.	2300	01.2	01.2	02.4	13.3
Lumber & Wood Prod.	2400	03.0	02.4	03.6	06.6
Furniture & Fixtures.	2500	04.8	05.4	01.8	00.0
Paper & Allied Prod.	2600	01.2	01.8	00.6	00.0
Printing, Publishing, & Allied Prod.	2700	10.7	10.1	11.5	10.4
Chemicals & Allied Prod.	2800	03.0	03.6	04.2	02.1
Petroleum & Related Prod.	2900	00.6	00.6	00.0	03.3
Rubber & Misc. Plastic Prod.	3000	01.2	01.8	00.0	00.0
Stone, Clay & Glass Prod.	3200	07.1	07.1	05.5	11.2
Primary Metal Prod.	3300	07.1	06.5	07.9	03.3
Fabricated Metal Prod.	3400	19.0	17.3	15.2	10.0
Machinery, Except Electrical	3500	11.9	09.5	09.7	01.2
Electrical Machinery.	3600	02.4	03.0	01.8	00.4
Transportation Equipment	3700	02.4	03.0	02.4	04.1
Instruments & Related Prod.	3800	00.6	00.6	00.6	00.0
Misc. Manufactures	3900	01.8	01.2	01.8	00.8
		N = 168	N = 168	N = 165	N = 241

Source: Industrial Directory of the Commonwealth of Pennsylvania (1965, 1963, 1958, 1931), issued by the Pennsylvania Bureau of Statistics.

INSTITUTE FOR RESEARCH ON HUMAN RESOURCES
THE PENNSYLVANIA STATE UNIVERSITY

The Institute for Research on Human Resources was organized in November 1964 for the general purpose of conducting research in the way in which society invests in human resources.

In its work the Institute calls on many disciplines which cross both college and departmental lines, including such disciplines as economics, education, psychology, sociology, and political science. Increased emphasis on interdisciplinary research is anticipated as the research program broadens.

The work of the Institute is supported by the Commonwealth of Pennsylvania and various federal agencies, including the U.S. Office of Education and the U.S. Department of Labor, the Pennsylvania Department of Public Instruction, and various private foundations.

The Institute has conducted a series of research seminars in a variety of areas, such as public assistance and health services manpower, for the purpose of delineating potential areas for research.

Its publications include:

Research, Development, and Demonstration in Adult Training and Retraining, The Pennsylvania State University, September 1966. by Jacob J. Kaufman, Grant N. Farr, and John C. Shearer.

The Role of the Secondary School in the Preparation of Youth for Employment, The Pennsylvania State University, February 1967. by Jacob J. Kaufman, Carl J. Schaefer, Morgan V. Lewis, David W. Stevens, and Elaine W. House.

A Community Organizes for Action: A Case Study of the Mon-Yough Region in Pennsylvania, The Pennsylvania State University, July 1967. by Robert W. Avery and Herbert A. Chesler.

The Development and Utilization of Human Resources: A Guide for Research, The Pennsylvania State University, July 1967. by Jacob J. Kaufman, Grant N. Farr, and John C. Shearer.

A Developmental Program for an Economic Evaluation of Vocational Education in Pennsylvania, The Pennsylvania State University, June 1966. by Ernst W. Stromsdorfer.

The Issues, Evaluation, and Potential of Vocational Education in Pennsylvania, The Pennsylvania State University, October 1967. hy Jacob J. Kaufman and Morgan V. Lewis.

An Analysis of the Comparative Costs and Benefits of Vocational Versus Academic Education in Secondary Schools, The Pennsylvania State University, October 1967. by Jacob J. Kaufman, Ernst W. Stromsdorfer, Teh-wei Hu, and Maw Lin Lee.

U. Ed. 7-592

VT 008 999
Research, Developmental-Pilot, and Training Projects in the Field of Technical Education.

Office of Education (DHEW), Washington, D.C. Div. of Adult and Vocational Research
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 66 50p.

*TECHNICAL EDUCATION; *RESEARCH NEEDS; *RESEARCH PROJECTS; *FEDERAL AID; *EDUCATIONAL RESEARCH; POST SECONDARY EDUCATION; RESEARCH REVIEWS (PUBLICATIONS); ABSTRACTS; PROGRAM DESCRIPTIONS; INFORMATION DISSEMINATION; DEVELOPMENTAL PROGRAMS; PILOT PROJECTS; EDUCATIONAL PROGRAMS
VOCATIONAL EDUCATION ACT OF 1963

Problem areas in technical education for which further research and development are needed, and funded projects impacting, either wholly or partially, on 2-year technical education programs at the postsecondary level are identified. A list of research, developmental-pilot, and training projects considered necessary in the field of technical education includes the impact of the changing labor market, appropriate physical facilities, teaching methods and instructional innovations, the impact of changing engineering education at the university level, appropriate curriculums, the continuous updating of instructional staff in technical education, the development of cooperative programs with industry, placement and follow-up of graduates, the appropriate structuring and utilization of advisory committees, and the problem of upgrading employed technicians. Where possible, related funded research projects are identified with each problem area. One-page project summaries for each of 44 federally funded projects impacting on postsecondary technical education programs are attached. (CH)

VT 008 999

ED039370

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Bureau of Research
Division of Adult and Vocational Research (DAVR)

RESEARCH, DEVELOPMENTAL-PILOT, AND TRAINING PROJECTS IN THE FIELD OF TECHNICAL EDUCATION

At the U. S. Office of Education's Fourth National Clinic on Technical Education, held in Chicago in October 1965, Mr. Theodore A. Koschler, Vice President of the American Technical Education Association, described several critical problem areas in which research and development is needed. These problem areas are summarized below, along with an indication of DAVR-sponsored projects which are already underway in each problem area.

1. Research is needed into the impact of the changing labor market on programs of technical education. As automation progresses, how many payroll positions for which we are now training technical personnel will be eliminated? What numbers and types of personnel should we be training for the emerging technologies, such as those in the health services, numerical control of machines, cryogenics, automated typesetting, instrumentation, rocket power, and lasers? (DAVR projects EO-146, ERD-493, and ERD-5-8266 represent research efforts in this problem area.)

2. Research is needed on appropriate physical facilities for technical education. Several States have large building programs underway and many more are in the planning stages. When these facilities are completed, we will have to use them for many years. How can we insure adequate buildings, up-to-the-minute equipment, and ample service facilities? (DAVR projects ERD-111 and ERD-481 represent developmental efforts in this problem area.)

3. Research is needed to determine which teaching methods and instructional innovations are best suited to the training needs of technical education programs. To what extent can technical education benefit from programmed instruction, computer-assisted instruction, large class sizes, special groupings, and special instructional aids? (DAVR projects ERD-199 and ERD-6-8254 represent efforts in this problem area.)

4. Research is needed into the impact of changing engineering education at the university level on the requirements for the training of technicians. As the training of engineers moves into more theoretical and scientific realms, what effects will this have on the types of training needed for supporting technicians? (DAVR has not yet received any proposals for research in this problem area.)

VT008999

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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5. Research is needed on appropriate curriculums for technical education. To what extent should special courses and new subjects be added to existing technical education curriculums, and to what extent should whole new curriculums be established? What are the implications of research and development methods as practiced by industry and government; and how can these be reflected in technical education curriculums? (DAVR projects ERD-048, ERD-201, ERD-207, and ERD-393 represent efforts in this problem area.)

6. Research, development, and training programs are needed for the continuous updating of the instructional staff in technical education. What can be done to insure that the knowledge and competence of the instructional staff keeps pace with new technological developments? (It is in this problem area that DAVR has sponsored the largest number of projects to date. Summer institutes were sponsored in 1965 under projects ERD-025, ERD-050, ERD-096, ERD-104, ERD-208, ERD-226, ERD-269, ERD-270, ERD-271, and ERD-373. Additional summer institutes are scheduled for 1966 under projects 6-2040, 6-2073, 6-2142, 6-2156, 6-2203, 6-2211, 6-2258, 6-2278, and 6-2332.)

7. Research is needed on the development of cooperative programs with industry for the training of technicians. To what extent can we utilize existing industrial and scientific facilities in the community for training purposes, rather than equipping expensive shops and laboratories within the school plant? (DAVR has not yet received any proposals for research in this problem area.)

8. Research is needed on the feasibility of contracting for building space, laboratories, equipment, and personnel needed for highly specialized training of a short-term nature. By utilizing the contract technique, can we effectively secure training facilities for a variety of costly training programs and enable technical education to provide specialized short-term training without incurring heavy capital expenses? (DAVR has not yet received any proposals for research in this problem area.)

9. Research is needed in the area of placement and followup of the graduates of technical education programs. Can we develop new and more effective techniques in this area? (DAVR has not yet received any proposals for research in this problem area.)

10. Research is needed on the appropriate structuring and utilization of advisory committees for technical education. Is a local advisory committee adequate for our present-day needs? Or has the time arrived when the community served by a given technical education program may include the whole State, or even the whole nation? What implications would this hold for the establishment and use of advisory committees? (DAVR has not yet received any proposals for research in this problem area.)

11. Research and development is needed on the problem of upgrading of employed technicians. What are the dimensions of this problem and how can we most effectively approach it? (DAVR has not yet received any proposals for research in this problem area.)

It should be noted that in addition to the projects mentioned above, DAVR is sponsoring fifteen other projects in various important areas of concern to technical education. Attention is being given to the whole problem area of student personnel, including factors involved in the selection and guidance of technical students. (DAVR projects HRD-051, HRD-117, HRD-168, HRD-413, ERD-236, ERD-5-0012, and ERD-6-8255 represent research and developmental efforts in this problem area.)

Special attention is being given to the problem of remediation for disadvantaged students who are desirous of pursuing studies in technical education. (DAVR projects ERD-279 and ERD-553 represent efforts in this direction.

Under project ERD-144, research is being done into the feasibility of utilizing performance tests to measure the competence of instructors in technical education. Researchers under project HRD-357 are exploring the possibility of utilizing retired military technicians to fill teaching positions in civilian technical education programs. Under project 6-1888, a series of five leadership development institutes in technical education will be conducted, aimed at providing better leadership, administration, and supervision of the rapidly expanding technical education programs across the country.

Efforts are being made under project ERD-455 to document and evaluate the steps in establishing a two-year technical college by critical path planning methods. This application of PERT techniques to the actual planning and development of a new technical education institution should provide realistic guidelines for administrators who might be called on to establish similar two-year colleges and technical institutes in the future.

And finally, an effort being made at the Massachusetts Institute of Technology under projects HRD-245 and ERD-248 should be mentioned. This broad study, which is attempting to re-examine the entire structure of occupational, vocational, and technical education in the United States, should result in recommendations of considerable import to technical educators.

S. C. High - 3/15/66

List of Projects Impacting Either Wholly or Partially on Two-Year Technical Education Programs at the Post-Secondary Level

(45 projects)

EO-146

HRD-051
HRD-117
HRD-168
HRD-245
HRD-357
HRD-413

ERD-025
ERD-048
ERD-050
ERD-096
ERD-104
ERD-111
ERD-144
ERD-199
ERD-201
ERD-207
ERD-208
ERD-226
ERD-236
ERD-248
ERD-269
ERD-270
ERD-271
ERD-279
ERD-373
ERD-393
ERD-455
ERD-481
ERD-493
ERD-553
ERD-5-0012
ERD-5-8266
ERD-6-1888
ERD-6-2040
ERD-6-2073
ERD-6-2142
~~ERD-6-2156~~
ERD-6-2203
ERD-6-2211
ERD-6-2258
ERD-6-2278
ERD-6-2332
ERD-6-8254
ERD-6-8255

Note: A one-page summary of each project is attached herewith. The project summaries are arranged in the order listed above.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-050-65
Contract OE-5-85-032

TITLE: A Two Week Summer Institute (Advanced I) for In-Service Technical Instructors

PRINCIPAL INVESTIGATOR: Dr. Milton E. Larson, Department of Vocational-Technical Education

INSTITUTION: Rutgers - The State University, New Brunswick, New Jersey

FEDERAL FUNDS REQUESTED: $5,837

DURATION: *Beginning, May 1, 1965 Ending, August 31, 1965.

Objectives: To conduct an advanced institute (build on an elementary one held last summer) for upgrading technical instructors in the principles of industrial instrumentation. This will include study of methods and instruments commonly used for measurement in industry, and of physical measurement concepts. Instrumental methods will be applied to industrial problems.

Procedures: Approximately 30 teachers of technical courses in technical institutues, community colleges and comprehensive high schools will be selected from all areas of the Nation. Instruction will consist of classwork, laboratory work and field trips to typical industrial firms in the vicinity of Rutgers University. Institute staff will be drawn from Rutgers University, the New Jersey State Department of Education, and private industry. Evaluation will be based on student evaluation, consultants' appraisals, and a follow-up study of the participants during 1966.

*A short term authorization of $2,000 was made on May 1, 1965, to initiate project work during the period of contract negotiations.

DESCRIPTION - PROJECT #051
Division of Adult and Vocational Research
U.S. Office of Education
Washington, D.C.

TITLE: Comparison of Successful and Unsuccessful Junior College Students

INVESTIGATOR: Ronald G. Taylor

INSTITUTION: Ferris State College
Big Rapids, Michigan

DURATION: September, 1965 to December, 1967

OBJECTIVES: This study will determine the interests and ability levels of students entering two-year collegiate or technical programs and will then examine the variations in these levels among students (1) who are in different programs; (2) who complete their courses of study; (3) who change to other programs; and (4) who discontinue their education altogether. It is hoped that the research will help to point up areas in which guidance and counseling systems can be improved.

PROCEDURES: Standaridized tests will be used to measure the interests and abilities of junior-college freshmen. The subjects will be followed through their two years of training, and their initial differences will be analyzed in the light of their eventual choice of program and occupation.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Education

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - HRD-117-65
Contract No. OE-5-85-020

TITLE: Study of Environmental Differentials of Occupational Programs in Public Junior Colleges

PRINCIPAL INVESTIGATOR: Dr. Vernon L. Hendrix, Assistant Professor, School of Education

INSTITUTION: Regents of the University of Minnesota, Minneapolis, Minnesota

FEDERAL FUNDS REQUESTED: $16,259

DURATION: Beginning, September 1, 1965. Ending, August 31, 1969.

Objectives: The objective of this study is to define factors related to the success or failure of vocational training programs in public junior colleges in terms of programs and characteristics of students. Environmental, social and psychological influences and their interactions will be examined for this purpose.

Procedures: A sample of junior colleges having little or no occupational programs and others having larger occupational programs will be analyzed to find the differences which might exist in the behavior of occupational students relative to the vocational programs. The sample will be as representative as possible of public junior colleges in the United States. Environmental measurements and various data gathered from faculty, students and the community will be analyzed to determine differences in the behavior of occupational students in the sample of colleges.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c)

PROJECT SUMMARY - HRD-168-65
Contract No. OE-5-85-064

TITLE: Identifying Successful Technical Students in Junior Colleges

PRINCIPAL INVESTIGATOR: Charles Joseph Turner, Counselor

INSTITUTION: Central Florida Junior College, Ocala, Florida

FEDERAL FUNDS REQUESTED: $14,919

DURATION: *Beginning, June 1, 1965. Ending, September 30, 1966.

OBJECTIVES: To determine which students might have been successful (instead of failing) if they had chosen technical programs instead of college preparatory courses. This investigation will attempt to select potentially successful students in transfer programs at Central Florida Junior College.

PROCEDURES: Personal data, test scores and past performance will be analyzed to predict success of students in different programs. Standard statistical techniques will be used to determine the value of prediction, and to examine differences among members of each program.

*Confirmation of letter contract dated 6/1/65

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P. L. 88-210, Sec. 4(c))

PROJECT SUMMARY - HR-245-65
Contract No. OE-5-85-135

TITLE: A Summer Study of Occupational, Vocational, and Technical Education

PRINCIPAL INVESTIGATOR: Dr. Nathaniel H. Frank, Professor of Physics

INSTITUTION: Massachusetts Institute of Technology, Cambridge, Mass.

TOTAL FEDERAL FUNDS REQUESTED: $369,687

DURATION:* Beginning, June 1, 1965. Ending, January 31, 1966.

OBJECTIVES: The long-range objective is planning the initiation of a fresh pattern of educational reform for the whole area of occupational, vocational, and technical education. The more immediate task of the summer study is to initiate the creation of new materials and learning aids for an appropriate segment of the spectrum of occupational education. In carrying out this task the study group will engage in activities such as (a) examining projected labor requirements in terms of vocational and technical skills, (b)formulating sequential patterns of occupational and vocational education in which basic understanding stands on an equal footing with manipulative skills, (c) studying the spectrum of professional skills required in post-high school education along with their rates of change and their relations to local conditions and needs, (d) considering means of intensifying the role of working with materials as a common learning aid at the elementary school level to provide multiple opportunities for optimum educational progress by all students (This will be done in the spirit of current curriculum reform and the development of plans for coupling vocational, occupational, and traditional educational curricula at the secondary school level), (e) looking at the crucial question of the public's attitude toward occupational and vocational education, and (f) discussing what can be done to reform adult education.

PROCEDURES: Some 60 participants drawn from the best talent available in a wide range of activities will meet for six weeks. In addition, a number of experts will be called in as consultants for shorter periods of time. This will be followed by a less intense, continuing program to consolidate the findings of the six-week study and to start carrying out such educational reform as is agreed on by the summer study participants. Representation (national and possibly international) for the project will be sought from groups and organizations such as the following: Engineers doing teaching and research at the college level, organized labor, industry and business, public and private school vocational educators (secondary and post-secondary), industrial arts educators, economists and political scientists, private foundations concerned with vocational education, public education agencies (Federal, State and local), and persons specifically involved in vocational reform efforts now underway, e.g., in the cities of Newton and Quincy in Massachusetts; Allentown, Pennsylvania, and Jefferson County, Colorado.

*Confirmation of letter contract dated June 1, 1965.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research
Washington, D. C. 20202

"Vocational Education Act of 1963
(P.L. 88-210, Section 4(c))

PROJECT SUMMARY - HRD 357-65 (5-0147)

TITLE: A Study of Potential Utilization of Retiring Military Personnel in Vocational and Technical Education Programs

INVESTIGATOR: Malcolm Richland, Human Factors Scientist

INSTITUTION: System Development Corporation
Santa Monica, California

DURATION: Beginning January 1, 1966 Ending December 31, 1966

TOTAL FEDERAL FUNDS REQUESTED: $124,401

Objectives:

(a) To determine what occupational and/or instructor skills currently available in the armed services are compatible with civilian occupational skills now needed.

(b) To determine area needs for vocational education teachers and other support personnel.

(c) To identify military personnel that are currently being retired from active service, those persons who might be available for utilization in secondary and post secondary vocational and technical education programs.

(d) To develop a method for fitting the occupational and instructional skills and experience of retiring military personnel to available job opportunities indicated by vocational education agencies.

Procedures: A questionnaire and interview survey will be conducted among a sample of retiring military personnel in order to identify their technical specialties, educational backgrounds, and interest in a teaching career. Guidance officials at military installations will also be interviewed to find out what counseling about second carrers is now being or might be offered. In addition, State vocational agencies and technical training schools will be asked about their specific requirements for instructors. The information will be analyzed and correlated so that potential teachers can be matched with available jobs and so that the basis for a permanent, large-scale matching system may be established.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research
Washington, D. C. 20202

"Vocational Education Act of 1963
(P.L. 88-210, Section 4(c))

PROJECT SUMMARY - HRD 357-65 (5-0147)

TITLE: A Study of Potential Utilization of Retiring Military Personnel in Vocational and Technical Education Programs

INVESTIGATOR: Malcolm Richland, Human Factors Scientist

INSTITUTION: System Development Corporation
Santa Monica, California

DURATION: Beginning January 1, 1966 Ending December 31, 1966

TOTAL FEDERAL FUNDS REQUESTED: $124,401

Objectives:

(a) To determine what occupational and/or instructor skills currently available in the armed services are compatible with civilian occupational skills now needed.

(b) To determine area needs for vocational education teachers and other support personnel.

(c) To identify military personnel that are currently being retired from active service, those persons who might be available for utilization in secondary and post secondary vocational and technical education programs.

(d) To develop a method for fitting the occupational and instructional skills and experience of retiring military personnel to available job opportunities indicated by vocational education agencies.

Procedures: A questionnaire and interview survey will be conducted among a sample of retiring military personnel in order to identify their technical specialties, educational backgrounds, and interest in a teaching career. Guidance officials at military installations will also be interviewed to find out what counseling about second carrers is now being or might be offered. In addition, State vocational agencies and technical training schools will be asked about their specific requirements for instructors. The information will be analyzed and correlated so that potential teachers can be matched with available jobs and so that the basis for a permanent, large-scale matching system may be established.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-025-65
Contract No. OE-5-85-024

TITLE: An Eight Week Summer Training Program to Upgrade Subject Matter Competency of High School Drafting Teachers in Advanced Graphics, Statics, and Applied Mathematics

PRINCIPAL INVESTIGATOR: Dr. Jerry S. Dobrovolny, Head, Department of General Engineering

INSTITUTION: University of Illinois, Urbana

FEDERAL FUNDS REQUESTED: $44,479

DURATION: *Beginning, May 1, 1965 Ending, December 31, 1965

Objectives: To provide basic subject matter training in technical mathematics, advanced graphics, and statics to selected high school drafting teachers. This basic training will enable the participants to pursue additional training to qualify for teaching more advanced high school and post-high school courses in drafting and design.

Procedure: An eight-week experimental summer institute will be offered consisting of courses especially designed to meet the needs of drafting teachers in the fields of mathematics, graphics and statics. In addition bi-weekly seminars will be held to discuss some of the problems associated with vocational and technical education. The participants will be recruited from the nation as a whole on the basis of their demonstrated need for subject matter upgrading and their expressed desire to move into more advanced teaching assignments in the field of machine design technology. The evaluation phase of the program will determine whether selected high school drafting teachers can be motivated to upgrade themselves to qualify for a higher level of teaching responsibility, and thus provide a source of personnel to staff advanced technical education programs.

*A short term authorization of $10,000 was made on May 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Vocational and Technical Education
Washington, D.C. 20202

OCCUPATIONAL RESEARCH AND PLANNING PROGRAM
(P.L. 88-210, Section 4(c))

PROJECT SUMMARY - No. ERD-048-65

TITLE: A Survey of Experience to Date in Vocational Training Programs for Library Technicians.

PRINCIPAL INVESTIGATOR: John L. Martinson, Research Fellow

INSTITUTION: Institute for Advancement of Medical Communication, Bethesda, Maryland

TOTAL FEDERAL FUNDS REQUESTED: $7,533

DURATION: *Beginning, May 21,1965. Ending, September 30, 1965.

Objectives: To obtain from institutions which have developed training programs for library technicians data on courses offered, enrollment, and the employment status of graduates; and to compile the data in a format which will facilitate future research on the broader aspects of curriculum planning, recruitment, placement, and the development of evaluation techniques. The proposed compilation is intended for adminstrators who plan to start similar training programs, and for students, vocational counselors and potential employers who lack information about existing programs.

Procedures: Site visits will be made to institutions which offer vocational training for library personnel. A relatively small number of institutions offer this training, and it will be possible to include almost the total number. Data will be collected through interviews with teachers, students, graduates, administrators and employers. Administrators and employers will also be asked to give their views on the problems and future prospects of these programs.

*A short term authorization of $3,000 was made on April 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-050-65
Contract OE-5-85-032

TITLE: A Two Week Summer Institute (Advanced I) for In-Service Technical Instructors

PRINCIPAL INVESTIGATOR: Dr. Milton E. Larson, Department of Vocational-Technical Education

INSTITUTION: Rutgers - The State University, New Brunswick, New Jersey

FEDERAL FUNDS REQUESTED: $5,837

DURATION: *Beginning, May 1, 1965 Ending, August 31, 1965.

Objectives: To conduct an advanced institute (build on an elementary one held last summer) for upgrading technical instructors in the principles of industrial instrumentation. This will include study of methods and instruments commonly used for measurement in industry, and of physical measurement concepts. Instrumental methods will be applied to industrial problems.

Procedures: Approximately 30 teachers of technical courses in technical institutues, community colleges and comprehensive high schools will be selected from all areas of the Nation. Instruction will consist of classwork, laboratory work and field trips to typical industrial firms in the vicinity of Rutgers University. Institute staff will be drawn from Rutgers University, the New Jersey State Department of Education, and private industry. Evaluation will be based on student evaluation, consultants' appraisals, and a follow-up study of the participants during 1966.

*A short term authorization of $2,000 was made on May 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-096-65

CONTRACT NO. OE-5-85-082

TITLE: Industrial Technical Writing Teacher Education Institute

PRINCIPAL INVESTIGATOR: Dr. Herman M. Weisman, Chairman

INSTITUTION: Colorado State University

FEDERAL FUNDS REQUESTED: $38,448

DURATION: *Beginning, June 1, 1965. Ending, August 31, 1965

Objectives: To provide technical education teachers with specific guidelines for qualifying their students to communicate technical data and to prepare technical reports.

Procedures: The first two weeks of the three weeks institute will consist of intensive course work designed to give participants awareness of the technical communications field, and to extend their skills in communication techniques. Daily class periods will cover such aspects as: The Expanding Role of Communications and Information in Our Technological Society; Scientific, Business, Trade, and Technical Publications; Mass Media; Industrial and Technical Advertising; and Oral Technical Communications. Principles covered in course work will be put into practice in daily laboratory periods. The third week will be devoted to the Colorado State University Eighth Annual Institute in Technical and Industrial Communications, which will expose participants to this country's ablest technical communications practitioners and authorities, and provide opportunities to examine how current problems in the field are met.

*A short term authorization of $19,500 was made on June 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-104-65
Contract No. OE-5-85-039

TITLE: Summer Institutes in Fluid Power Education for Teachers of Vocational and Industrial Education

PRINCIPAL INVESTIGATOR: Mr. Frederick W. Lamb, Program Coordinator

INSTITUTION: Fluid Power Society, Thiensville, Wisconsin

FEDERAL FUNDS REQUESTED: $234,043

DURATION: *Beginning, June 1, 1965 Ending, July 31, 1966

Objectives: To develop qualified teachers and suitable instructional units for the secondary and post-secondary levels to meet the increasing demand in this field and to overcome the serious shortage of personnel trained in fluid power education.

Procedures: The Fluid Power Society will coordinate the planning, staffing, and content of five institutes. The content of each institute will include: (1) basic theory of fluid power and its applications in modern society; (2) a study of types, functions, and characteristics of each component (cylinders, pumps, motors, valves, etc.); (3) circuit design and analysis of fluid power systems, and (4) seminars in teaching fluid power. The Institutes will be conducted at Los Angeles State College Trenton State College, Tuskegee Institute, Wayne State University, and the University of Minnesota (Duluth Branch). It is expected that approximately 170 enrollees will be in attendance at the five Institutes.

*A short term authorization of $100,000 was made on June 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-111-65
Contract No. OE-5-85-043

TITLE: Development of a Technological Center for Keeping Vocational Teachers Updated in Their Fields

PRINCIPAL INVESTIGATOR: Mr. Milton E. Larson, Technical Advisor, Graduate School of Education

INSTITUTION: Rutgers, The State University, New Brunswick, New Jersey

FEDERAL FUNDS REQUESTED: $24,194

DURATION: Beginning, May 1, 1965. Ending, December 31, 1965.

Objective: To devise a teacher technology center for keeping vocational-technical teachers updated in their field of technology, as well as abreast of new pedagogical developments.

Procedures: Consultants will meet as a task force in a workshop environment to develop: (1) educational specifications for a vocational-technical teacher technology center, (2) architectural and engineering preliminary plans, (3) the outline of engineering specifications. The end product will become the basis for implementation through refinement of the design and engineering specifications and possible construction of the facility.

* Confirmation of letter contract dated May 1, 1965.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-144-65
Contract No. OE-5-85-051

TITLE: Performance Tests of Instructor Competence for Trade and Technical Education

PRINCIPAL INVESTIGATOR: Dr. W. James Popham, Assistant Professor
Department of Education

INSTITUTION: University of California, Los Angeles, California

FEDERAL FUNDS REQUESTED: $22,517

DURATION: *Beginning, May 1, 1965 Ending, September 30, 1967

Objectives: To develop a performance test in which the instructional objectives are already given and thus are the same for all instructors. This will enable a realistic comparison to be made of achievements of teachers who are striving to accomplish common instructional objectives. Performance tests will be developed and tried out in two areas: electronic technology, and auto mechanics and diesel engines.

Procedures: Performance tests will consist of three-week resource units containing many suggested teaching activities, resources, etc., from which an instructor may prepare an extended instructional plan for a particular class. The teacher may decide upon his own means, but the instructional ends will be specified. An index of the instructor's proficiency will be based on the performance of his class. Student test data will be analyzed by appropriate statistical methods.

*Confirmation of letter contract dated May 1, 1965

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963

Project Summary - ERD-199-65
Contract No. OE-5-85-074

TITLE: Experimentation with Computer-Ass sted Instruction in Technical Education

PRINCIPAL INVESTIGATOR: Dr. Harold E. Mitzel, Professor of Psychology and Education, and Dr. George L. Brandon, Head, Department of Vocational Education

INSTITUTION: The Pennsylvania State University
University Park, Pennsylvania

FEDERAL FUNDS REQUESTED: $165,080

DURATION: *Beginning June 1, 1965 Ending, May 31, 1969

Objectives:
1. To evaluate computer-assisted instruction;
2. To prepare curriculum materials for computer-assisted instruction of post-high school students in communication skills, technical mathematics and engineering science, and
3. To train and inter-disciplinary group of individuals to prepare materials and to do research on computer-assisted instruction in technical education.

Procedures: One professional team will prepare and test curriculum materials for three core subjects in technical education. A second team will relate its work to the curriculum team in doing research on fundamental questions about computer-assisted instruction, such as variations in program branching, types of learner feedback, and patterns of visual and auditory stimulus. Advanced graduate students from the disciplines of educational psychology, occupational education, speech, mathematics, and science education will assist with the project and receive training in computer-assisted instruction. An inter-disciplinary committee will advise on curriculum and computer usage.

*Confirmation of letter contract dated June 1, 1965

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-201-65
Contract No. OE-5-85-076

TITLE: Developmental Program in Animal Science

PRINCIPAL INVESTIGATOR: Dr. W. S. Stone, Professor of Animal Science

INSTITUTION: State University of New York, Delhi, New York

FEDERAL FUNDS REQUESTED: $58,077

DURATION: *Beginning, June 1, 1965 Ending, November 30, 1969

Objectives: To develop and evaluate a revised curriculum for preparing young men and women for a cluster of technical occupations ancillary to the veterinary, biological and medical professions. Specifically, this program in animal science will offer preparation in assisting veterinarians in animal care, in surgical procedures and clinical practices in research, in supervising in vivariums, and in inspection in quality food control.

Procedures: Course content for a two-year program in animal science will be determined, and equipment and facilities will be recommended by the instructional staff, in consultation with the New York State Veterinary College, the American Veterinary Medical Association, and The Animal Science Advisory Council, representing animal care personnel, health departments, and manufacturing, chemical and pharmaceutical houses. The revised curriculum will be used with the classes entering Delhi Agricultural and Technical College in 1965, 1966 and 1967. Evaluation of the curriculum will be made by the graduates themselves and by their employers.

*A short term authorization of $20,000 was made on June 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-207-65
Contract No. OE-5-85-079

TITLE: Technical Training for Industrial Radiographers

PRINCIPAL INVESTIGATOR: Dr. H. D. Bearden, Director, Texas Engineering Extension Service

INSTITUTION: Texas A & M University, College Station, Texas

FEDERAL FUNDS REQUESTED: $67,001

DURATION: Beginning, June 1, 1965. Ending, August 31, 1966.

Objectives: The primary objective is to train qualified individuals in the safe use of radiation producing equipment and of radiation materials in the inspection of parts and materials, including practical applications of radiographic techniques, film exposure, processing and evaluation. The ultimate aim is to produce competent industrial radiographers who can meet the requirements for a license.

Procedures: A training facility will be established for the teaching of related theory and practical problems. Two student groups will be enrolled. The one week interval between groups will be used to revise instructional materials. The final month will be devoted to preparing a guide and editing curriculum materials for publication and distribution.

* Confirmation of letter contract dated June 1, 1965.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-208-65
Contract No. OE-5-85-085

TITLE: An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing

PRINCIPAL INVESTIGATORS: Dr. Forest C. Carter, Colorado State University, Fort Collins, Colorado

FEDERAL FUNDS REQUESTED: $49,771

DURATION: *Beginning, June 1, 1965. Ending, December 31, 1965.

Objectives:

1. To retrain teachers with a minimum of three years teaching experience in business or office education for teaching of newly emerging business electronic data processing and computer programming.

2. To assist with the development of knowledge and skill needed to prepare computer programmers and/or application analysts.

3. To develop course materials and guidelines for future programs.

Procedures: Five institutes for retraining office education teachers for teaching business electronic data processing will be offered to serve the needs of five areas of the United States. Thirty-five participants will be selected for each institute from those currently employed as teachers of business or data processing and who are recommended by State Directors of Vocational Education. Those participating in an institute for the first time will study introductory courses in data processing and use of computers. Those who have previously enrolled in an institute will study business systems, advanced programming and will have supervised field experience in data processing. A seminar in the philosophy and principles of vocational and technical education will be offered for all students.

*Confirmation of letter contract dated June 1, 1965.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-226-65
Contract No. OE-5-85-085

TITLE: An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing

PRINCIPAL INVESTIGATOR: Mr. Theodore A. Koschler, Miami-Dade Junior College

INSTITUTION: Miami-Dade Junior College, Miami, Florida

FEDERAL FUNDS REQUESTED: $21,685

DURATION: *Beginning, June 1, 1965 Ending, August 31, 1965

Objectives:
1. To retrain teachers with a minimum of three years teaching experience in business or office education for teaching of newly emerging business electronic data processing and computer programming.
2. To assist with the development of knowledge and skill needed to prepare computer programmers and/or application analysts.
3. To develop course materials and guidelines for future programs.

Procedures: Five institutes for retraining office education teachers for teaching business electronic data processing will be offered to serve the needs of five areas of the United States. Thirty-five participants will be selected for each institute from those currently employed as teachers of business or data processing and who are recommended by State Directors of Vocational Education. Those participating in an institute for the first time will study introductory courses in data processing and use of computers. Those who have previously enrolled in an institute will study business systems, advanced programming and will have supervised field experience in data processing. A seminar in the philosophy and principles of vocational and technical education will be offered for all students.

*Confirmation of letter contract dated June 1, 1965

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-236-65
Contract No. OE-6-85-059

TITLE: Developing a Program of Student Personnel Services for Area Vocational-Technical Schools

PRINCIPAL INVESTIGATOR: James E. Bottons, Supervisor of Vocational Guidance

INSTITUTION: Division of Vocational Education, Georgia State Dept. of Education, Atlanta, Georgia

FEDERAL FUNDS REQUESTED: $42,043

DURATION: Beginning, October 1, 1965 Ending, November 30, 1967

Objectives:
1. To plan and establish a systematic and effective program of student personnel services in the Georgia Area Vocational-Technical Schools that will enable the schools continuously to achieve their objectives under changing conditions of the population and economy.
2. To make available to other States the materials developed and the experience gained from this state-wide program in Georgia.

Procedures:
1. Survey the needs for student personnel services in Area Vocational-Technical Schools as perceived by administrators, faculties, and students.
2. Evaluate the scope and quality of the present arrangement of services designed to meet these needs in Area Vocational-Technical Schools.
3. Develop an operational policy statement for student personnel services in Area Vocational-Technical Schools.
4. Develop and describe a basic program of student personnel services and a plan for initiating the program in the Area Vocational-Technical Schools (recruitment, admission, personnel records, orientation, information, counseling, job placement, and follow-up).
5. Devise and initiate a plan to work with the Department of Labor in developing a systematic job placement program.
6. Initiate the development of a series of in-service meetings to help counselors implement the program of student personnel services.
7. Encourage personnel to establish a special study committee in each Area Vocational-Technical School region where enrollment is a problem.

8. Develop a systematic program of records, follow-up, placement, compilation of characteristics of students, admission, and annual reports to be made to the Georgia State Department of Education.
9. Disseminate the Georgia experience to other States through published reports, presentations at national professional meetings, articles in professional journals, and first hand observational tours for interested school officials from other States.

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Washington, D.C. 20202

OCCUPATIONAL RESEARCH AND PLANNING PROGRAM
(P.L. 88-210, Section 4(c))

PROJECT SUMMARY - ERD-248-65

TITLE: Conference to Develop the General Pattern of Activities for a Vocational Education Summer Study Program"

PRINCIPAL INVESTIGATOR: Dr. Nathaniel H. Frank, Professor of Physics

INSTITUTION: Massachusetts Institute of Technology, Cambridge, Massachusetts

FEDERAL FUNDS REQUESTED: $24,719

DURATION: Beginning, April 22, 1965. Ending, June 30, 1965.*

Objectives: To develop the general pattern of activities for a Vocational Education Summer Study Program to be sponsored by the Massachusetts Institute of Technology, and to recruit from among the conference participants the best available people for the study. The basic purposes of the Summer Study Program are to generate new ideas in the field of vocational education, and to tackle the problem of generating new ideas as one which is fresh and new, forgetting or largely ignoring current practices.

Procedures: Approximately 100 conferees, representing all areas of the United States and several foreign countries, will be invited to the two day session. The following groups will be represented: organized labor; engineers doing teaching and research at the college level; industry and business; professionals in public and private secondary and post-secondary technical institutions; economists and political scientists; Federal, State and local public education agencies; and communities in which vocational education reform efforts are now underway.

*A short term authorization of $12,500 was made on April 22, 1965, to initiate project work during the period of contract negotiation.

U. S. DEPARTMENT OF HEALTH, EUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Section 4(c)

PROJECT SUMMARY - ERD- 269-65

TITLE: An Eight Week Summer Institute Training Program to Retrain in Office Education Teachers for Teaching Business Electronic Data Processing

PRINCIPAL INVESTIGATOR: Mr. I. E. Valentine, Assistant Director, Department of Community Colleges

INSTITUTION: North Carolina State Board of Education, Raleigh, North Carolina

FEDERAL FUNDS REQUESTED: $43,667

DURATION: Beginning, July 20, 1965. Ending, August 31, 1965.

Objectives:

1. To retrain teachers with a minimum of three years teaching experience in business or office education for teaching of newly emerging business electronic data processing and computer programming.

2. To assist with the development of knowledge and skill needed to prepare computer programmers and/ or application analysts.

3. To develop course materials and guidelines for future programs.

Procedures: This eight week institute for retraining office education teachers for teaching business electronic data processing will be offered to serve the needs of the area. Thirty-five participants will be selected from those currently employed as teachers of business or data processing and who are recommended by the State Director of Vocational Education Those participating in the institute for the first time will study introductory courses in data processing and use fo computers. Those who have previously enrolled in an institute will study business systems, advanced programming and will have superivsed field experience in data processing. A seminar in the philosophy and principles of vocational and technical education will be offered for all students.

* A short term authorization of $4,000 was made on June 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD 270-65
Contract No. OE-5-85-097

TITLE: An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing

INVESTIGATOR: Mr. William E. Breese

INSTITUTION: Wisconsin Institute of Technology, Milwaukee, Wisconsin

DURATION: *Beginning, June 1, 1965 Ending, August 13, 1965

FEDERAL FUNDS REQUESTED: $47,251

Objectives:

1. To retrain teachers with a minimum of three years teaching experience in business or office education for teaching of newly emerging business electronic data processing and computer programming.

2. To assist with the development of knowledge and skill needed to prepare computer programmers and/or application analysts.

3. To develop course materials and guidelines for future programs.

Procedures: This project is one of five institutes for retraining office education teachers for teaching business electronic data processing offer to serve the needs of five areas of the United States. Thirty-five participants will be selected for each institute from those currently employed as teachers of business or data processing and who are recommended by State Directors of Vocational Education. Those participating in an institute for the first time will study introductory courses in data processing and use of computers. Those who have previously enrolled in an institute will study business systems, advanced programming and will have supervised field experience in data processing. A seminar in the philosophy and principles of vocational and technical education will be offered for all students.

*A short term authorization of $11,000 was made on June 1, 1965, to initiate project work during the period of contract negotiations.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY -ERD-271-65
Contract No. OE-5-85-096

TITLE: An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing

PRINCIPAL INVESTIGATOR: Dr. Norman E. Watson

INSTITUTION: Orange Coast Jr. College District, Costa Mesa, Calf.

FEDERAL FUNDS REQUESTED: $45,020

DURATION: *Beginning, June 1, 1965 Ending, August 31, 1965

Objectives: 1. To retrain teachers with a minimum of three years teaching experience in business or office education for teaching of newly emerging business electronic data processing and computer programming.
2. To assist with the development of knowledge and skill needed to prepare computer programmers and/ or application analysts.
3. To develop course materials and guidelines for future programs.

Procedure: This project is one of five institutes for retraining office education teachers for teaching business electronic data processing offered to serve the needs of five areas of the United States. Thirty-five participants will be selected for each institute from those currently employed as teachers of business or data processing and who are recommended by State Directors of Vocational Education. Those participating in an institute for the first time will study introductory courses in data processing and use of computers. Those who have previously enrolled in an institute will study business systems, advanced programming and will have supervised field experience in data processing. A seminar in the philosophy and principles of vocational and technical education will be offered for all students.

*Confirmation of letter contract dated June 1, 1965.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD279-65
Contract No. OE-6-85-002

TITLE: PREP--Program for Recovering and Extending Potential for High School Underachievers Seeking Entrance at a Regional Community College

PRINCIPAL INVESTIGATOR: Mr. John J. Shea, Ed. D., Candidate and Teaching Fellow, School of Education

INSTITUTION: Greenfield Community College, Greenfield, Massachusetts

FEDERAL FUNDS REQUESTED: $4,659

DURATION: *Beginning, July 1, 1965. Ending, June 30, 1966.

Objectives: 1. To determine if a Planned Summer Remedial Program (PREP) can prepare identified high school graduate-underachievers for success in a two-year terminal program.

2. To determine whether personal-vocational counseling will have a differentiating effect on this student goal achievement.

3. To determine through followup procedures the degree to which both the remedial program and the underachievers have been successful.

Procedures: The 40 participants selected from public schools in three Massachusetts counties will be screened to determine that they have been unsuccessful college applicants. These persons will be voluntarily enrolled in the PREP program at Greenfield Community College for a seven-week remedial program and will be guaranteed admission to this college as full-time students for the fall semester. Pre-test and post-test objective data will be collected on each participant. Twenty of these students will be selected in random manner for internal personal vocational counseling. Test scores of the 40 PREP participants will be compared at the end of the first semester with the pre-test and post-test scores of a randomly selected group of successful two-year terminal students.

*Confirmation of letter contract dated July 1, 1965.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-373-65
Contract No. OE-6-85-011

TITLE: Industrial Instrumentation Technology for Instructors in Junior Colleges and Technical Institutes.

PRINCIPAL INVESTIGATOR: Dr. Austin E. Fribance, Professor
Mechnical Department

INSTITUTION: Rochester Institute of Technology, Rochester, New York

FEDERAL FUNDS REQUESTED: $20,595

DURATION: *Beginning, July 1, 1965 Ending, August 31, 1965

Objectives:
1. To assist faculty members of electronics or physics departments of junior colleges or post high school technical institutions in improving their technical competencies in the area of industrial instrumentation.
2. To evaluate the program to provide prospective teachers of industrial instrumentation with both the basic knowledge and the principles involved in the presentation of instrumentation at the level set by Instrumentation Technology (OE-80033).
3. To evaluate the use of new laboratory equipment to promote the teaching of (a) basic concepts and (b) the relatively few fundamentals which are involved.

Procedures:
1. Approximately twenty (20) enrollees will be selected from persons who are now employed as teachers of electronics or physics in technical institutes or junior colleges and whose home institutions plan to offer courses in instrumentation and automatic control.
2. One full-time professor and six guest lecturers will provide the enrollees with six weeks of training, including both lecture and laboratory sessions.
3. The various aspects of the training program will be evaluated by the enrollees and the lecturers as well by an external committee from the Instrument Society of America.

*Confirmation of letter contract dated July 1, 1965

U. S. DEPARTMENT OF HEALTH,EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY -ERD-393-65
Contract No. OE-6-85-043

TITLE: A Study of the Aviation Mechanics Occupation

PRINCIPAL INVESTIGATOR: DR. David Allen

INSTITUTION: Division of Vocational Education
University of California, Los Angeles, California

FEDERAL FUNDS REQUESTED: $195,990

DURATION: Beginning, October 1, 1965 Ending, March 31, 1967

Objectives:
1. To investigate the technical knowledge and manipulative skills of aviation mechanics as required by the aviation industry.
2. To investigate ways of implementing required skills and knowledges into the aviation mechanic's curriculum.
3. To train aviation mechanic instructors to use instructional materials developed through the findings of this study.
4. To test the effectiveness of the innovated curriculum, using the specially designed instructional materials.

Procedures:
1. Surveying the aviation industry to identify the industrial requirements for the aviation mechanic and to establish manipulative skills and technical knowledge that must be included in the aviation mechanic curriculum.
2. Identifying the educational attainment level for each manipulative skill and technical knowledge topic.
3. Developing an appropriate aviation mechanic curriculum and special instructional materials on the basis of the results of the first two steps.
4. Training selected teachers who will participate in experimental programs for testing the new instructional materials.
5. Making a preliminary evaluation of the effectiveness of the innovated curriculum and the specially designed instructional materials by conducting two four-week experimental programs.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-455-65
Contract No. OE-6-85-028

TITLE: Documenting and Evaluating the Steps in Establishing a Two-Year Technical College by Critical Path Planning Methods

PRINCIPAL INVESTIGATOR: Dr. George H. Hieronymus, Assistant for Planning and Development

INSTITUTION: The Northern Virginia Technical College, Fairfax, Virginia

FEDERAL FUNDS REQUESTED: $7,430

DURATION: Beginning, October 1, 1965 Ending, March 31, 1966

Objectives:

a. To test and evaluate the usefulness of a formal, structured system of program development and planning in the establishment of a technical college, following Program Review and Analysis Techniques (PERT) and Critical Path Procedure.
b. To prepare and publish a documented record of the findings resulting from this pilot program for the guidance of educators and concerned executives throughout the United States.
c. To improve the planning and programming phases of the establishment of the Northern Virginia Technical College, as a prototype college for the State of Virginia.

Procedures:

a. Planning already completed will be charted and recorded, using the Critical Path Procedure as structured in PERT.
b. All principal events and steps in the planning and development of the College will be projected, using both narrative and graphic description.
c. A history of all phases of planning will be kept. Progress will be analyzed and steps and methods will be evaluated.
d. A report will be prepared which will document the events, steps, and procedures followed, and which will summarize evaluation of the planning procedures followed.
e. The report will be reproduced and disseminated following the guidance of the U. S. Office of Education.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-481-66
Contract No. OE-6-85-038

TITLE: Design for the Future: Spaces in Area Vocational Schools

PRINCIPAL INVESTIGATOR: Professor, James D. MacConnell, School of Education

INSTITUTION: Stanford University, Stanford, California

FEDERAL FUNDS REQUESTED: $45,515

DURATION: Beginning, October 1, 1965 Ending, February 28, 1966

Objectives: To conduct a training program for principal state vocational education administrative officers who will plan facilities for future vocational education programs.

Procedures: Leading vocational educational administrators from each state will be invited to attend a three (3) day training program for understanding, planning and utilizing vocational education facilities.

The program will focus on the educational implications for area vocational schools, facilities implications for area vocational schools, and the architectural implications with emphasis on flexibility and functionality. The program will include presentations by educators, consultants, and architects who have been eminently successful in the vocational education field and in planning school facilities.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - ERD-493-66
Contract No. OE-6-85-032

TITLE: A Curriculum Development Program for a Paramedical Education Center

PRINCIPAL INVESTIGATOR: Bill J. Fullerton, Professor and Chairman of Department of Secondary Education

INSTITUTION: Arizona State University, Tempe, Arizona

FEDERAL FUNDS REQUESTED: $8,471

DURATION: Beginning, November 15, 1965 Ending, May 14, 1966

Objectives: To examine existing paramedical curriculums and to design new curricula based on the changing requirements of paramedical care to be taught in a closely integrated educational program.

Procedures: A workshop of faculty and administrators from high school, junior college, university and hospital paramedical education programs representing the seven major institutions in the Phoenix area, and representing all major medical and paramedical groups, will be established. Members of the workshop will gather curriculum data, make detailed analyses of course content, identify common courses, prepare guide lines for the integration of paramedical education programs with common courses, and prepare a spectrum of all curricula for the programs included to identify commonalities and extent of overlap.

Proposal No.
ERD-553

PROPOSAL SUMMARY

TITLE: An experimental Program to Develop a New Junior College Level Curriculum in Industrial Technology for Disadvantaged Youths.

PRINCIPAL INVESTIGATORS: Manuel Stillerman, Professor of Engineering Technologies; and Milton Lowens, Lecturer

INSTITUTION: Bronx Community College of the City University of New York, Bronx, New York

FEDERAL FUNDS REQUESTED: $45,000

DURATION: Beginning, February 1, 1966 Ending, August 31, 1966

Objectives: 1. To study and formulate a comprehensive structure for the organization and operation of an experimental junior college level program in industrial technology for disadvantaged youths.

2. To secure expert consultative assistance from appropriate university and other sources to help in achieving the above.

3. To develop complete and fully-detailed plans for the curriculum, the operational procedures, and the research and evaluation activities of the experimental program.

4. To identify and make provision for the specific preparatory steps (including recruitment of students and staff, location of suitable space, layout and design of special laboratories, organization of library, tutorial center, and other special facilities) that will be required to bring the experimental program into operation.

Procedures: 1. Assemble and organize a planning team, including the principal investigators, the project staff, and a group of expert consultants from appropriate university and other sources.

2. Develop a comprehensive structure and fully-detailed plans for the organization and operation of the experimental program.

3. Seek suitable financial support for carrying out the experimental program.

4. Make preparations, with the planning team as a nucleus, for bringing the experimental program into operation smoothly and promptly at the appropriate time.

U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
Division of Adult and Vocational Research

PROJECT SUMMARY - 5-0012-2-32
Contract No. OE-4-10-016

TITLE: The Influence of Industrial Arts Experience on Grades Earned in Post High School Trade and Technical Curriculums

PRINCIPAL INVESTIGATOR: Dr. Jerome Moss, Jr., Professor, Department of Industrial Education

INSTITUTION: University of Minnesota, Minneapolis, Minnesota

FEDERAL FUNDS REQUESTED: $18,089

DURATION: Beginning, July 1, 1963 Ending, November 30, 1965

Objectives: The primary purpose of the proposed study is to estimate the influence of industrial arts experience, as part of a pattern of senior high school preparation, on grades earned in selected post-high school skilled and technical curriculums. A concomitant objective will be to investigate the predictive efficiency of extra-high school factors which logic and limited research indicate are related to scholastic achievement in those post-high school curriculums.

Procedures: All the high school graduates (except those previously enrolled in high school vocational-industrial programs) who enter eight skilled and technical curriculums at Dunwoody Industrial Institute, between September-November 1963, will constitute the sample. Information about senior high school preparation, and about extra-high school factors (predictive of grades earned but unrelated to specific high school preparation) will be gathered from the sample. The extra-high school factors will be utilized to predict grades within four clusters of the eight post-high school curriculums. The difference between actual grades earned and predicted grades (residual) within each cluster will be attributed primarily to the influence of specific senior high school preparation.

The sample will be classified in a series of four, two-factor designs. Post-high school curriculum cluster will constitute one factor in all designs. Amount, type, grades earned in, and nature of senior high school industrial arts will each serve as a second factor in one of the four designs. Within the framework of each design tests for differences among groups will be made using residual scores as the criterion (factorial ANOV). In the same four designs the mean number of semesters taken in various high school subject areas (excluding industrial arts) will be tested for dissimilarities among patterns of preparation (chi-square). Statistically significant differences among residual averages will be interpreted in terms of the relative effectiveness of the various senior high school course patterns to prepare the sample for the occupational curriculum clusters.

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
Division of Adult and Vocational Research

PROJECT SUMMARY - 5-8266-2-32
Contract No. OE-6-10-007

TITLE: A Study of Recommendations for Technical Education Curricula

PRINCIPAL INVESTIGATOR: Joseph P. Arnold, Assistant Professor of Technical and Applied Arts

INSTITUTION: Purdue University, Lafayette, Indiana

FEDERAL FUNDS REQUESTED: $5,698

DURATION: Beginning, July 1, 1965 Ending, December 31, 1965

Objectives: The objectives of this study are: (1) to assess the recommendations of management personel in manufacturing about post high school technical curricula content, (2) to compare recommendations made by management representatives with those of technicians employed in the same installations, (3) to identify a core of courses which management agrees is desirable for most post high school technical curricula, and (4) to present the findings in a way which will prove useful to advisory committees and curriculum planners.

Procedures: The study involves securing data from three management representatives from each of fifty companies employing technical personnel and having 200 or more employees. A highly structured personal interview will be held with the 150 management respondents to collect data on their educational background, job history, and present managerical responsibilities. These data will be needed to establish and test variables which will undoubtedly influence the curricular recommendations made.

Management respondents will also be asked to sort a deck of 90 courses content cards into three categories: related, somewhat related, and unrelated to technicians job performance. The results of this sort will be analyzed to determine whether general or specialized courses are more frequently cited as being related to job performance. The data gathered from both the interviews and card sorts will be subjected to sophisticated statistical treatment in order to meet the project objectives.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4 (c))

PROPOSAL SUMMARY - 6-1888-3-32

TITLE: National Leadership Development Institutes in Technical Education

PRINCIPAL INVESTIGATOR: Calvin J. Cotrell, Specialist in Technical Education

INSTITUTION: The Ohio State University, Columbus, Ohio

FEDERAL FUNDS REQUESTED: $142,879

DURATION: Beginning, April 15, 1966 Ending, February 15, 1967

Objective: The purpose of this project is to conduct a series of five leadership development institutes in technical education at five geographically dispersed institutions employing a consortium concept wherein one agency serves in a coordinating capacity for involving a wide range of resources in designing the program, obtaining support, collecting and preparing the teaching materials, preparing the staff, evaluating the program, writing the report, disseminating information, following up participants and maintaining liaison with the host institutions to encourage continuation of training and research efforts.

Procedures:

1. Two hundred leaders in technical education, nominated for participation by their respective State and local administrators and selected by a screening committee on the basis of existing responsibility and demonstrated potential, will be invited to prepare for and participate in one of five training institutes held at sites also selected on the basis of recognized strength in program, personnel and research resources. The participants, by nature of their selection for and training at the institutes, will provide an ever-widening ripple effect in leadership development.

2. The Center for Vocational and Technical Education at The Ohio State University, providing the project coordination, will capture the best available from the existing pool of technical education knowledge, build upon this to develop training materials, prepare institute staff, and add to the literature available for dissemination to the field.

3. Each institute will be of two weeks duration. The institutes will be conducted at the University of Florida, Rutgers University, the University of Illinois, Oklahoma State University, and Colorado State University.

4. Evaluation based upon the institutes objectives is designed: (1) To determine participants' gain in knowledge acquired, ability to apply and utilize knowledge gained, degree of leadership skill demonstrated, satisfaction with the content, presentations, and operation of the institutes, and (2) to assess the effectiveness of a consortium approach for implementing training programs, but also as a technique for the preparation of staff and materials, followup of participants and institutional liaison for promoting expansion efforts in research and development activities.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - 6-2040-3-32

TITLE: Summer Institute to Train Data Processing Teachers for the New Oklahoma State-Wide Computer Science System

PRINCIPAL INVESTIGATOR: Arthur Lee Hardwick, State Supervisor

INSTITUTION: Division of Technical Education, State Board for Vocational Education, Stillwater, Oklahoma

FEDERAL FUNDS REQUESTED: $51,789

DURATION: Beginning, April 15, 1966 Ending, September 15, 1966

Objectives:

1. To establish criteria for measuring an individual's aptitude interests, and ability for teaching Data Processing Technology in post-high school technical education programs.

2. To establish and define specific requirements for admission of applicants to a teacher training institute.

3. To conduct a summer institute for the preparation of post-high school Data Processing Technology teachers. Twenty of these teachers will be selected from Oklahoma to staff the Oklahoma state-wide computer science system, and fifteen of the teachers will be selected from other states to staff local programs in their states.

4. To develop, among prospective Data Processing teachers, a practical philosophy of Technical Education and an understanding of the technician's role in an automated and industrialized society.

Procedures:

1. Contact personnel in industry and education seeking advice and guidance for developing criteria for teacher participants.

2. Employ consultants in the field of education to develop and define admission requirements.

3. Employ instructional staff to conduct institute and to develop instructional material.

4. Ten-week summer institute to train teachers in the field of data processing technology to staff the new Oklahoma state-wide computer science system and to serve other states's instructional personnel in this field will be conducted.

5. To emphasize the practical philosophy of Technical Education for the participants and to develop an understanding for the technician's role in industry and society.

6. To develop and disseminate teaching materials to be used by the data processing teachers during the school year.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4 (c))

PROPOSAL SUMMARY - 6-2073-3-32

TITLE: Pilot Vocational Teacher Training Institute in Dental Assisting, Summer 1966

PRINCIPAL INVESTIGATOR: Dr. Kenneth E. Wessels, Secretary, Council on Dental Education, American Dental Association, Chicago, Ill.

INSTITUTION: School of Dentistry, University of Detroit, Michigan
School of Dentistry, University of North Carolina

FEDERAL FUNDS REQUESTED: $50,000

DURATION: Beginning, April 15, 1966 Ending, October 31, 1966

Objectives: 1. Define and interpret principles, objectives, and theories underlying education programs focused on teaching dental assisting.

2. Develop individual competencies in the selection, organization, presentation of subject matter content; evaluation of student achievement; and effective use of audio-visual teaching aids.

3. Develop understanding of the organization and administration of a dental assistants program, and the role of an assistant within the profession.

Procedure: Conduct two vocational teacher training summer institutes; four weeks in length; for 45 graduates of accredited dental assistants programs. Participants will be limited to graduates having less than five years of teaching experience who plan to teach. An intensive specialized course will be conducted in which approximately one-half of the subject areas are devoted to professional education deemed essential to successful teaching in Community and Junior College programs in Dental Assisting. The remaining subject areas will relate to the role of the teacher in curriculum development and coordinating the total program.

The section on professional education in the National Teachers Examination will be used as a pretest and post-test evaluation tool. A practical examination will be required in which the knowledge and skills identified by the Council on Dental Education will be the areas of consideration. An opinion survey relating to the training program will be conducted among the participants. The findings from these procedures will provide one basis for planning and structuring future training programs, and will help to define areas of weakness in which the trainees desire increased knowledge and skill.

U.S. Department of Health, Education, and Welfare
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROJECT SUMMARY - 6-2142-3-32

TITLE: An Eight Week Summer Institute Training Program to Train Instructors of Instrumentation Technology

PRINCIPAL INVESTIGATOR: Frank J. Ziol, Associate Professor

INSTITUTION : Pasadena City College, Pasadena, California

FEDERAL FUNDS REQUESTED $ 30,030

DURATION: Beginning, April 15 1966 Ending, August 31, 1966
(4½ months)

Objectives:

1. To assist present or future faculty members of technical institutes or junior colleges in preparing themselves to teach Physics for Instrumentation, Mathematcis, Measuring Principles (Mechanical) and Electrical Circuits, AC and DC, from the first year of the Instrumentation Technology Curriculum as suggested in the presently available guide. (United States Office of Education-- OE 80033).

2. To instruct teachers in the effective use of the Instrumentation Technology Curriculum Guide.

Procedure:

An Eight Week Training Program will be presented at Pasadena City College to prospective teachers of courses in Instrumentation Technology. This program will consist of courses with content designed to meet the needs of the teachers for the first two semesters outlined in the Instrumentation Technology Guide U.S.O.E. Publication, OE80033. Topics to be considered include the mathematics, physics, and electronics related to instrumentation; mechanical measuring principles; and instrument shop practices. The program will feature lecture, seminar, and laboratory sessions. Outside guest lecturers will be employed to present special topcis of interest. Field trips will be made to observe instrument manufacture and use. Successful completion of the courses may entitle the participant to receive credit from California State College at Los Angeles.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROPOSAL SUMMARY - 6-2203-3-32

TITLE: Operation of Summer Institutes on Fluid Power Education for Teachers of Vocational and Technical Education

PRINCIPAL INVESTIGATOR: Theodore Pearce, Executive Vice President

INSTITUTION: Fluid Power Society, Thiensville, Wisconsin

FEDERAL FUNDS REQUESTED: $47,553.00

DURATION: Beginning, April 15, 1966 Ending, September 15, 1966

Objectives:

1. The long range objective is to help overcome the shortage of trained personnel in the rapidly growing field of fluid power.

2. The immediate objective is to provide summer training for vocational and technical teachers in order to prepare them for organizing and teaching courses in fluid power in their home institutions.

Procedures:

1. The Fluid Power Society will coordinate the planning, selection of trainees, staffing, content, administration, and evaluation of five summer institutes on fluid power education during the summer of 1966.

2. The institutes will be conducted at Trenton State College(New Jersey), Hampton Institute (Virginia), Wayne State University (Michigan), Bradley University (Illinois), and Los Angeles State College (California). It is expected that a total of one hundred vocational and technical teachers will be enrolled in the five institutes.

3. The institutes will involve lectures, demonstration, laboratory experiences, seminars, group assignments, and field trips. Each institute will have a director, a full-time instructor, and a series of guest lecturers from industry who will speak on selected topics.

4. The content of each institute will include (a) basic theory of fluid power and its application in modern society, (b) a study of types, functions, and characteristics of each component (cylinders, pumps, motors, valves, etc.), (c) circuit design and analysis of fluid power systems, and (d) seminars in the teaching of fluid power and curriculum development.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROPOSAL SUMMARY - 6-2211-3-32

TITLE: An Eight-Week Summer Institute Training Program to Train Instructors of Instrumentation Technology

PRINCIPAL INVESTIGATOR: Delbert A. McKee, Assistant Professor

INSTITUTION: State University of New York, Agricultural and Technical College Morrisville, New York

FEDERAL FUNDS REQUESTED: $29,000

DURATION: Beginning, April 15, 1966 Ending, September 15, 1966

Objective:

To assist present or future faculty members of technical institutes or junior colleges in preparing themselves to teach Physics for Instrumentation, Mathematics for Instrumentation, Measuring Principles (Mechanical), Instrument Shop Practices, and Electrical Circuits from the first year of the Instrumentation Technology Curriculum as suggested in the presently available U.S.O.E. Guide (OE-80033).

Procedure:

1. An eight-week training program will be presented at the State Agricultural and Technical College at Morrisville, New York, to twenty (20) prospective teachers of courses in Instrumentation Technology.

2. The training program will consist of courses with content designed to meet the needs of the teachers for the first two semesters as outlined in the Instrumentation Technology Guide (OE-80033). Topics to be considered include the mathematics, physics, and electronics related practices. The program will feature lecture, seminar, and laboratory sessions. Outside guest lecturers will be employed to present special topics of interest, and field trips to observe instrument manufacture and use will be made.

3. Evaluation of the training program will include an analysis of the reactions of the trainees and their employers as to the value of the training received.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4(c))

PROPOSAL SUMMARY 6-2258-3-32

TITLE: An Institute for Home Economics Teachers on Initiating, Developing, and Evaluating Programs at the Post High School Level to Prepare Food Service Supervisors and Assistants to Directors of Child Care Services

PRINCIPAL INVESTIGATOR: Dr. Aleene A. Cross, Head, Home Economics Educ.

INSTITUTION: University of Georgia, Athens

FEDERAL FUNDS REQUESTED: $26,323

DURATION: Beginning, April 15, 1966 Ending, September 15, 1966

Objectives: The major purpose will be to conduct an institute designed to provide information and develop some ability in initiating, developing, and evaluating programs for training workers in selected occupations utilizing Home Economics knowledge and skills. Specifically these programs will be for training food service supervisors and assistants to directors of group care situations for children, offered at the post high school level. A planned outcome will be suggested program materials and instructional aids that may be used not only by participants but also by others who teach in such programs or have the responsibility for initiating and supervising programs. Participants will be 33 teachers, teacher educators, and supervisors from twelve southern states. Each state group will serve as a team to assist others in their respective states in developing such programs.

Procedures: The content will consist of three related phases which are:

Phase I: Instruction in procedures for initiating and organizing occupational education programs, and in up-to-date course content in child care and food service for the post high school level. Phase II: Development of materials and instructional aids for occupational courses for preparing child care assistant directors and food service supervisors to be taught at the post high school level. Phase III: Instruction in methods of evaluating occupational education courses and development of devices to be used with child care and food service trainees.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4 (c))

PROPOSAL SUMMARY - 6-2278-3-32

TITLE: Coordination, Administration, and Evaluation of Summer Institutes on Fluid Power Education for Teachers of Vocational and Technical Education

PRINCIPAL INVESTIGATOR: Theodore Pearce, Executive Vice President

INSTITUTION: Fluid Power Society, Thiensville, Wisconsin

FEDERAL FUNDS REQUESTED: $20,000

DURATION: Beginning, April 15, 1966 Ending, July 15, 1967

Objectives:

1. To coordinate five summer institutes on fluid power education for teachers of vocational and technical education during the summer of 1966.
2. To provide the necessary administrative services for the institutes, including consistency in selection of trainees and instructional staff, development and utilization of uniform course content, allocation of specialized laboratory equipment to the various institutes, and obtaining of instructional materials, guest lecturers and other forms of cooperation from industry.
3. To conduct in-depth evaluation of the institutes in terms of immediate results with the trainees and long range effects on the development of fluid power courses in their home institutions.

Procedures:

1. The Fluid Power Society will coordinate the planning, selection of trainees, staffing, content, and administration of summer institutes on fluid power education, located at Trenton State College (New Jersey), Hampton Institute (Virginia), Wayne State University (Illinois), and Los Angeles State College (California).
2. The Fluid Power Society will organize an evaluation committee, composed of educational and industrial leaders, to evaluate the summer institutes in depth. Factors to be evaluated will include quality and effectiveness of instruction, amount of cooperation from industry, and long range effects of the summer institutes in terms of new courses in fluid power organized by the trainees in their home institutions.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
Division of Adult and Vocational Research

Vocational Education Act of 1963
(P.L. 88-210, Sec. 4 (c))

PROJECT SUMMARY - 6-2332-3-32

TITLE: An Eight Week Seminar in an Introduction to Numerical Control on Two- and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors.

PRINCIPAL INVESTIGATOR: Arthur Carlson and Milton Boldt

INSTITUTION: Milwaukee Vocational Technical and Adult Schools, Milwaukee, Wisconsin

FEDERAL FUNDS REQUESTED $91,990

DURATION: Beginning April 15, 1966 Ending, October 15, 1966
(6 months)

Objectives:

1. To train instructors of the machine tool and related areas of training in the basic elements of numerical control technology; to assist in the dissemination of knowledge and skills essential to the instruction of numerical control machine tool operation on a national level; to aid instructors in organization and development of instructional material; and, to prepare instructors for the organization and development of local instructor training institutes.

Procedure:

The eight week seminar is designed to assist teachers to develop knowledge and skill essential for teaching the operation of numerically controlled machine tools in the vocational and technical schools of mid-western United States.

Instructional content will include hydraulics and pneumatics, electronics; drawing interpretation and preparation; machine technologies and numerical control procedures; part programming; part processing; and manufacturer's in plant instruction.

Teachers will attend a total of 280 hours of class during the eight week term. Evening lectures will be provided by experts who are unavailable during daytime hours.

This seminar is expected to be the first of a series over the nation which will result ultimately in vocational and technical schools providing the training facilities for numerical control programmers machine operators, and maintenance workers.

Proposal No.
6-8254-1-32

PROPOSAL SUMMARY

TITLE: Preliminary Investigation of Communication-Linked Techniques for Off-Campus Teaching of Vocational and Technical Subjects.

PRINCIPAL INVESTIGATOR: Alexander Schure, President

INSTITUTION: New York Institute of Technology
Old Westbury, L. I., New York

TOTAL FEDERAL FUNDS REQUESTED: $7,500

DURATION: Beginning, March 1, 1966 Ending, May 31, 1966

Objectives: 1. To perform a preliminary literature survey on various elements of a model Communication-Linked Classroom System, including methodology, equipment, physical facilities, economics, programmed and other curricular meterial, psychological factors, student population, and academic organization.

2. To determine an appropriate structure and suitable procedures for a comprehensive survey and evaluation of actual experience in the United States in the operation of various elements of the Communication-Linked Classroom System in academic institutions, in industrial and commercial organizations, and in governmental agencies (including DOD and NASA).

3. To prepare a detailed plan for the actual execution of such a comprehensive survey and evaluation.

Procedures: 1. Perform the literature survey as noted above.

2. Organize a team of New York Institute staff personnel, and a special panel of outside consultants, including specialists in engineering systems, programmed instruction, psychology, educational evaluation, and vocational-technical education.

3. Prepare a detailed plan for the actual conduct of a comprehensive survey and evaluation of the current "state of the art" of the various elements involved in a model Communication-Linked Classroom System.

Proposal No.
6-8255-1-32

PROPOSAL SUMMARY

TITLE: The Development and Testing of Instruments and Procedures for a Study of Student Selection Practices in Technical Education Programs.

PRINCIPAL INVESTIGATOR: George B. Whitney
Professor of Engineering Technologies

INSTITUTION: The American Technical Education Association, Inc.
Delmar, New York

FEDERAL FUNDS REQUESTED: $8,250

DURATION: Beginning, February 15, 1966 Ending, July 15, 1966

Objective: The objective of this project is to develop suitable procedures and appropriate interview forms and data collecting instruments for use at a later date in a large-scale study of the student selection practices, admissions policies, and follow-up activities of some forty selected technical education institutions, with a view to identifying current practices that are effective in insuring the education of all prospective technical education students to the maximum of their potential, including educationally or socially deprived youth as well as well-prepared students of high ability.

Procedures: 1. The project director and the project consultants will develop appropriate procedures and instruments on a tentative basis.

2. The principal investigator and the research assistant will test the tentative procedures and instruments by actually trying them out in five selected post-secondary technical education institutions. Careful records will be compiled regarding the effectiveness of the procedures and of the individual items in each instrument.

3. The project staff and the project consultants will revise and refine the procedures and instruments on the basis of the experience gained in Step No. 2 above.

4. The final version of the procedures and instruments will be prepared.

5. A final report will be produced in multiple copies. The final report will: (a) summarize the findings in the five pilot institutions involved in this project, and (b) present the refined procedures and instruments recommended for later use in a large-scale study of forty or more technical education institutions.

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Division of Comprehensive and Vocational Education Research (DCVER)
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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Groundsman - Gardner for Special Class Students (Educable Mentally Retarded Youth)	G. Roy Nicholaysen Oakland Unified School District Oakland, California	5-0178 ED 010 280 MF: 25¢ HC: $1.32
Summer Institute of Industrial Instrumentation Technology	Austin E. Fribance Rochester Institute of Technology Rochester, New York	5-0179 ED 003 495 MF: 25¢ HC: 48¢
Workshop for Administrators of Vocational Home Economics Training Program in Wage-Earning Occupations	Ann Bunton Texas Technical College Lubbock, Texas	5-0180 ED 003 098 MF: 25¢ HC: $1.56
An Investigation and Development of the Cluster Concept as a Program in Vocational Education at the Secondary School Level (Four-Part Report)	Donald Maley University of Maryland College Park, Maryland	5-0183 ED 010 301 MF: 75¢ HC: $5.40
New Directions in Vocational Guidance	Phyllis C. Wilson City University of New York New York, New York	5-0184 ED 003 099 MF: 50¢ HC: $4.68
Vocational Education and Inter-governmental Fiscal Relations in the Postwar Period	Bruce F. Davie Philip D. Paterson, Jr. Georgetown University Washington, D. C.	5-0185 ED 010 642 MF: 50¢ HC: $5.00

Scientific Secretary Training Program Development	John Swenson University of Colorado Boulder, Colorado	5-0188 ED 020 439 MF: $1.25 HC: $12.36
The Application of the Judgmental Procedure to Vocational and Practical Arts Education	Rutherford E. Lockette Trenton State College Trenton, New Jersey	5-0190
The Validation of Education Systems Packages for Training of Depressed Area Students	Don Bushnell The Brooks Foundation Santa, Barbara, Calif.	5-0192 ED 010 014 MF: 25¢ HC: $1.64
National Seminars for Research in Vocational Education - 1965	William J. Schill University of Illinois Urbana, Illinois	5-0199 ED 003 489 MF: 50¢ HC: $2.84
Supply and Demand Factors Affecting Vocational Education Planning	Edward A. Podesta Stanford Research Institute Menlo Park, California	5-0208 ED 010 305 MF: 75¢ HC: $6.12
Center for Research and Leadership Development in Vocational and Technical Education	Robert E. Taylor Center for Research and Leadership Development in Vocational & Technical Education Ohio State University Columbus, Ohio	5-0212 ED 014 549 MF: 75¢ HC: $6.96
A Sequential Curriculum in Language, Reading, and Composition (Oral and Written) Grades Seven through Twelve	Albert R. Kitzhaber University of Oregon Eugene, Oregon	5-0366 ED 015 895 MF: 75¢ HC: $5.64
[illegible] of Dropout Statistics of the [illegible] Dropout Research and Action [illegible]	Earl R. Burrows Colorado State Department of Education Denver, Colorado	5-0430 ED 003 102 MF: 75¢ HC: $5.32
Program to Extend Curriculum Materials in English for the Able to a Wider Student Group	Robert C. Slack Carnegie-Mellon Univ. Pittsburgh, Pa.	5-0516 ED 016 664 MF: 25¢ HC: 72¢
The Conservation of Energy Concept in Ninth Grade General Science	William Shockley Paul D. Hurd Stanford University Stanford, California	5-0557

Project PREP - A Program for Recovering and Extending Academic Potential for High School Underachievers Seeking Entrance at a Regional Community College	John J. Shea Greenfield Community College Greenfield, Mass.	5-0569 ED 010 120 MF: 25¢ HC: $2.04
High School Self-Evaluations and Curriculum Change	Vynce A. Hines William M. Alexander University of Florida Gainesville, Florida	5-0576 ED 017 971 MF: 50¢ HC: $5.12
A Follow-Up Normative Study of Negro Intelligence and Achievement	Wallace A. Kennedy Florida State University Tallahassee, Florida	5-0621 ED 003 492 MF: 75¢ HC: $7.48
Development of Economics Curricular Materials for Secondary Schools	Meno Lovenstein Edward J. Furst Robert E. Jewett Elizabeth S. Maccia Ohio State University Columbus, Ohio	5-0672 ED 014 430 MF: $3.50 HC: $36.68
An Assessment of Three Foreign Language Teaching Strategies Utilizing Three Language Laboratory Systems	Philip D. Smith. Jr. West Chester State College West Chester, Pa.	5-0683 ED 021 512 MF: $1.00 HC: $9.24
Effects of Age, Social Status, Sex, and Race Upon the Understanding of Word Meanings Independent of Sentence Context	Walter H. Crockett Clark University Worchester, Mass.	5-0697 ED 010 381 MF: 25¢ HC: $1.48
A Project for the Planning of One-week Workshops in Evaluation Research for State and City Department of Education Personnel	Charles N. Seashore National Training Labs Washington, D. C.	5-0699 ED 010 230 MF: 25¢ HC: $1.12
High School Dropouts: Fate- Future- Identification	Ralph O. Gallington Southern Illinois Univ. Carbondale, Illinois	5-0700 ED 010 018 MF: 25¢ HC: $2.12
Unified Academic and Professional Experiences in Language and Writing for the Preparation of Secondary School Teachers of English	Daniel Rider Michigan State Univ. East Lansing, Michigan	5-0804 ED 016 674 MF: 75¢ HC: $6.68
Production of a Motion Picture for the In-Service Training of Teachers in Problems of Human Relations in Teaching Socio-Economically Disadvantaged	Henry S. Breitrose Janet V. Voelker Stanford University Stanford, California	5-0866 ED 013 277 MF: 25¢ HC: 96¢

Short Course for Counselors on Vocational and Technical Training and Opportunities	Fred D. Holt University of Georgia Athens, Georgia	5-0875 ED 003 108 MF: 50¢ HC: $3.88
The Center for Research, Development, and Training in Occupational Education	Selz C. Mayo John K. Coster North Carolina State University at Raleigh Raleigh, North Carolina	5-1005 ED 012 344 MF: 25¢ HC: $1.64
A Pilot Study of Personality Factors Related to Occupational Aspirations of Negro College Students	Lawrence W. Littig Howard University Washington, D. C.	5-1021 ED 003 521 MF: 25¢ HC: $1.88
Effects of Modern and Conventional Mathematics Curricula on Pupil Attitudes, Interests and Perception of Proficiency	James J. Ryan Minnesota State Department of Education Saint Paul, Minnesota	5-1028
A Comparison of Techniques for the Solution of Similar Educational-Vocational Problems of Disadvantaged Youth in Great Britain and the U. S.	Dr. Robert L. Gibson Dr. Nicholas A. Fattu Indiana University Bloomington, Indiana	5-1163 ED 016 791 MF: 75¢ HC: $6.12
Conference on the Citizenship Education of the Young Worker	Alan F. Westin Center for Research and Education in American Liberties Columbia University New York	5-1164
Design for the Future: Spaces in Area Vocational Schools	James G. MacConnell Stanford University Stanford, California	5-1165 ED 010 264 MF: 25¢ HC: $1.08
A Curriculum Demonstration for Drop-out-Prone Students	Charles V. Matthews Southern Illinois Univ. Edwardsville, Illinois	5-1166
An Investigation of the Training and Skill Requirements of Industrial Machinery Maintenance Workers (Vol. I & II)	Frank Lynn Midwest Institute for Research and Training Chicago, Illinois	5-1201 ED 016 832 MF: 50¢ HC: $4.56

Conference to Establish Guidelines for Research in Office Education	J. E. Gratz Shippensburg State College Shippensburg, Pa.	5-1202 ED 010 394 MF: 50¢ HC: $3.36
Vocational Aspects of Counselor Education	Carl McDaniels George Washington University Washington, D. C.	5-1208 ED 010 016 MF: 50¢ HC: $4.04
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A Study in Communication between High School Teachers of Vocational Agriculture and Socio-Economically Disadvantaged Youth by the Use of the Semantic Differential	Lloyd J. Phipps University of Illinois Urbana, Illinois	5-1215 ED 010 181 MF: 75¢ HC: $5.92
Conference on Implementing Career Development Theory and Research through the Curriculum	David Tiedeman National Vocational Guidance Association Washington, D. C.	5-1304 ED 010 182 MF: $1.00 HC: $8.20
A Training Program for Selected Home Economists to Train Adults and Older Youth for Homemaker Service Responsibilities	Charlene L. Detro Louisiana State Univ. Baton Rouge, Louisiana	5-1315 ED 015 259 MF: $1.00 HC: $10.76
Status of Curriculum Development in the Field of Commercial Food at the Non-Baccalaureate Level	Mildred B. Barnard Hilda Watson Gifford Council on Hotel, Restaurant and Institutional Education Ithaca, New York	5-1316 ED 016 073 MF: 75¢ HC: $6.68
Development of a Film on Homemaker Services for Interpretation to the Public and Training Professional and Nonprofessional Personnel	Alberta Jacoby Mental Health Film Board, Inc. New York, New York	5-1318 ED 016 074 MF: 25¢ HC: 40¢
A Study of a New and Dramatic Approach to Vocational Guidance through the Use of Exhibits and Displays	George A. Walsh National Educational Industrial Foundation Philadelphia, Pa.	5-1323 ED 003 107 MF: 25¢ HC: $1.24

Community College Health Careers Project: Phase II - Teacher Preparation	Muriel Ratner University of the State of New York State Education Dept. Albany, New York	5-1328 ED 019 505 MF: 25¢ HC: 88¢
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A Study of Educational Activities Within Business and Industry in Richmond, California	John A. McClure University of California Berkeley, California	5-1364 ED 015 353 MF: 50¢ HC: $4.04
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Development of a Junior High School Instrument for Appraising Social Readiness for Employment	Vivian Edmiston Todd Zelpha Bates California State College at Long Beach Long Beach, California	5-8462 ED 013 467 MF: 50¢ HC: $3.44
The Advanced Degree and Vocational-Technical Education Leadership (A Symposium)	Carl Schaefer Rutgers, The State University New Brunswick, N. Jersey	5-8464 ED 010 015 MF: 25¢ HC: $2.40
An Exploratory Study of Knowledges on Child Development and Guidance Needed by Mothers and Workers in Occupations Related to Child Care	Ruth E. Whitmarsh University of Illinois Urbana, Illinois	5-8465 ED 010 071 MF: 75¢ HC: $5.48
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Utility of Educational Television in Meeting the Informational Needs of the Disadvantaged	Harold Mendelsohn University of Denver Denver, Colorado	6-1231
Summer Program for Updating the Technical Competency of Teachers of Industrial Subjects	Ralph C. Bohn San Jose State College San Jose, California	6-1423 ED 012 348 MF: $1.50 HC: $14.44
Western States Regional Conference of Occupational Research Coordinating Personnel	Bill Wesley Brown Arizona State College Flagstaff, Arizona	6-1428 ED 003 104 MF: 50¢ HC: $2.76
[illegible] for Supervising Teachers in Agricultural Occupations from Eleven Western States	Earl E. Julson Colorado State Univ. Fort Collins, Colorado	6-1455 ED 010 429 MF: 50¢ HC: $3.52
The Development of Pre-Vocational Education Literacy Courses for Use with Computer-Assisted Instruction of Disadvantaged Youths and Adults	Edward K. Hankin Edwin H. Smith Timothy A. Smith Florida State University Tallahassee, Florida	6-1458

A Curriculum Development Study of the Effectiveness of Upgrading the Technical Skills of Educationally Disadvantaged Union Members	Frank Evans Negro American Labor Council Region IV Cleveland, Ohio	6-1484 ED 010 430 MF: 50¢ HC: $3.28
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Summer Writing Conference to Continue Development of Materials in Expression of Ideas (English) and Quantitative Thinking (Mathematics) to be Used in Pre-College Centers for Students from Low-Income Families	Educational Services Inc. Curriculum Resources Group 55 Chapel Street	6-1700 ED 015 177 MF: 75¢ HC: $5.88

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Vocational-Educational Information Workshop for Rural Guidance Workers, August 1966	K. Norman Severinsen Western Illinois Univ. Macomb, Illinois	6-2208 ED 015 042 MF: 50¢ HC: $4.16
Guidance Counselor Institute for Health Careers	Philip P. Morgan United Hospital Funds of New York New York, New York	6-2209 ED 012 342 MF: $1.00 HC: $9.00
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National Leadership Development Seminar for Vocational-Technical Education Personnel	H. H. London University of Missouri Columbia, Missouri	6-2236 ED 010 597 MF: 25¢ HC: $2.08
The Fluid Power Institutes: Tested Procedures for Introducing Emerging Technologies; 1966	Gerald Baysinger Fluid Power Society Thiensville, Wisconsin	6-2278 ED 016 130 MF: $1.25 HC: $11.60
The Preparation of Curriculum Materials and the Development of Teachers for an Experimental Application of the Cluster Concept of Vocational Education at the Secondary Level	Donald Maley University of Maryland College Park, Maryland	6-2312 ED 016 841 MF: $1.25 HC: $12.32
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Teaching Adults Via Tele-Lecture and Electrowriter (Victor Electronic Remote Blackboard)	Lily Edelman B'nai B'rith Commission on Adult Jewish Education Washington, D. C.	6-8583 ED 016 081 MF: 50¢ HC: $2.40
A Comparative Analysis of Electronic Content in Public Post-High School Technical Institutes and Electronics Technology Requirements of Industry	Richard J. Vacek Mississippi State University State College, Miss.	6-8590 ED 015 302 MF: 50¢ HC: $3.72

A Pilot Study to Develop and Determine the Feasibility of a Packaged Materials Program for Teaching Reading and the General Development Area of Adult Basic Education	Edwin H. Smith Florida State University Tallahassee, Florida	6-8675 ED 016 156 MF: 50¢ HC: $3.84
Planning Project for the Teaching of Asian Studies in New England Secondary Schools	Allan B. Cole Tufts University Medford, Massachusetts	6-8711 ED 018 440 MF: 25¢ HC: $1.24
Career Simulation for Adolescent Pupils	P. Marvin Barbula Stephen W. Issac Department of Education San Diego County San Diego, California	6-8744 ED 016 268 MF: 25¢ HC: $2.00
Development and Evaluation of Instructional Units for Teaching Profit-Maximizing Principles in Vocational Agriculture	Richard L. Barker Ohio State University Research Foundation Columbus, Ohio	6-8763 ED 014 552 MF: 75¢ HC: $7.32
A Proposal for the Development of Materials of Instruction for a General Mathematics Curriculum in Grade Nine	Dr. Paul V. Rogler Wilmington Public Schools Wilmington, Delaware	6-8786
Publication of Two Manuals Describing the Techniques in the Establishment of Career Information Services	Roland Darling Northeastern University Boston, Massachusetts	6-8801
Equal Employment Opportunities: Selected Papers and Annotated Bibliographies	Gordon C. Barhydt Louis A. Ferman Institute of Labor and Industrial Relations University of Michigan Ann Arbor, Michigan	6-8854 ED 016 068 MF: 75¢ HC: $6.72
An Evaluative Study of Teacher Constructed Test Items for BSCS Biology	Dr. George C. Turner Mr. Vergil Hettick California State College Fullerton, California	6-8919 ED 018 371 MF: $1.25 HC: $13.56
Communication Concepts for Developing Increased Competence Among Cooperative Extension and Vocational Agricultural Educators in Improving Educational Change	Robert W. McCormick Ohio State University Columbus, Ohio	6-8932
Clusters of Tasks Associated with Performance of Major Types of Office Work (Partial Final Report)	Edward A. Perkins, Jr. Washington State Univ. Pullman, Washington	7-0031(a) ED 018 665 MF: $1.00 HC: $8.48

The Development and Testing of a Polysensory Instructional System for Teaching Knowledge and Skills Associated with the Use of Expandable Polystyrene Plastics (Partial Final Report)	Dale LeRoy Nish Washington State Univ. Pullman, Washington	7-0031(b) ED 019 512 MF: 50¢ HC: $2.72
The Development and Testing of an Experimental Polysensory Self-Instructional System Designed to Help Students Acquire Basic Electrical Occupational Competencies (Partial Final Report)	Edwin K. Hill Washington State Univ. Pullman, Washington	7-0031(c) ED 021 141 MF: 50¢ HC: $2.08
Clusters of Tasks Performed by Washington State Farm Operators Engaged in Seven Types of Agricultural Production (Partial Final Report)	Gilbert A. Long Washington State Univ. Pullman, Washington	7-0031(d) ED 021 067 MF: 50¢ HC: $3.56
Audio Visual Instructional Materials for Distributive Education - A Classified Bibliography (Partial Final Report)	Jerry C. Levendowski Washington State Univ. Pullman, Washington	7-0031(e) ED 022 045 MF: 50¢ HC: $4.56
The Subprofessional from Concepts to Careers	Edith F. Lynton National Commission on Youth Employment 145 E. 32nd Street New York, New York	7-0095 ED 017 945
Development of Post High School Wage-Earning Programs in Home Economics Education Utilizing the Resources Guide: Care and Guidance of Children	Ruth J. Dales Anna G. Buis Florida State University Tallahassee, Florida	7-0382
Vocational-Technical Education Leadership Development Seminar	H. H. London University of Missouri Columbia, Missouri	7-0417 ED 017 680 MF: 50¢ HC: $2.48
Computer-Aided Drafting and Design - Summer Institute	Alexander G. Korpheales Miami-Dade Junior College Miami, Florida	7-0435 ED 016 859 MF: $1.25 HC: $12.00
Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education	James N. Harris Austell O. Sherard Tuskegee Institute Tuskegee, Alabama	7-0444 ED 017 727 MF: 75¢ HC: $7.16
Pre-Service Education of Office Occupations Teachers	Dolores Kilchenstein Texas Technical College Lubbock, Texas	7-0450 ED 019 476 MF: 50¢ HC: $3.32

National Seminar to Improve the Use of Youth Organizations in Vocational Education as Teaching Devices	George L. Luster University of Kentucky Lexington, Kentucky	7-0494 ED 016 869 MF: 75¢ HC: $7.44
A Summer Institute for the Improvement of Technical Teacher Education Programs	Joseph P. Arnold Richard C. Erickson Purdue University Lafayette, Indiana	7-0528 ED 017 729 MF: 75¢ HC: $5.56
A Clinical Workshop in Mental Health and Psychiatric Nursing for Instructors in Schools of Practical Nursing	Carl F. Lamar University of Kentucky Lexington, Kentucky	7-0544
Medical Laboratory Assistant Teacher Education Institute - Pilot Program	Rex D. Couch National Committee for Careers in Medical Technology Washington, D. C.	7-0635 ED 021 064 MF: 50¢ HC: $4.44
Materials and Structural Design Seminar for Vocational-Technical Schools	J. Clark Davis University of Nevada Reno, Nevada	7-0658 ED 016 112 MF: 50¢ HC: $4.52
An Evaluation of a Summer Institute to Train Instructors of Instrumentation Technology	Karl B. Schnelle, Jr. Instrument Society of America Pittsburgh, Pa.	7-8021 ED 016 129 MF: 50¢ HC: $2.40
The Relative Effectiveness of Supplementing Programmed Instruction with Blocked Versus Spaced Review	James Arnold Scanlon Frederick K. T. Tom Cornell University Ithaca, New York	7-8068 ED 013 538 MF: 25¢ HC: $1.84
Differences in Some Initial Attitudes of Students Who Complete and Students Who Drop Out in the Wellesley, Massachusetts Adult Education Center	Rosemary C. Hurkamp Boston University School of Education Boston, Massachusetts	7-8073
Trial and Testing of an Experimental Guidance Curriculum	Vivian S. Sherman American Institutes for Research Palo Alto, California	7-8091 ED 020 554 MF: 75¢ HC: $5.52
A Symposium on Educational Research (Concepts, Strategies, and Priorities for Research in Educational Manpower)	Don Davies National Education Association Washington, D. C.	7-8207 ED 013 778 MF: 50¢ HC: $2.92
Exploration of Simulation as a Retirement Education Technique	Norman Sprague Employment and Retirement Program National Council on the Aging, Inc. New York, New York	7-8249

Facilitation and Interference in the Older Adult Learner	Thomas J. McCrystal Xavier University Cincinnati, Ohio	7-8314 ED 019 605 MF: 25¢ HC: $1.28
A Regional Institute to Aid Improvement of Instructional Practices, Materials and Student Experiences for Coordinators and Instructors of Vocational Orientation Programs	Margaret Blair Harold R. Seltzer State Department of Education Division of Vocational Education Trenton, New Jersey	7-8400 ED 019 507 MF: 25¢ HC: $2.36
Initial Feasibility Study for Exploration of Three U. S. Air Force Course Materials for Adaptation to Civilian School Systems	James H. Straubel Michael Nisos Aerospace Education Foundation 1750 Pennsylvania Ave. Washington, D. C.	8-8018 ED 020 348 MF: 25¢ HC: $1.20

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Office of Education
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Division of Comprehensive and Vocational Education Research (DCVER)
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DCVR PROJECTS RELATED TO THE "CLUSTER CONCEPT" IN VOCATIONAL EDUCATION

A. Studies by Professor Donald Maley at the University of Maryland:
(These studies have dealt with three clusters of occupations: The electromechanical installation and repair cluster, the construction cluster, and the metal forming and fabrication cluster.)

Project Number	ED Number	Microfiche Price	Hard Copy Price
5-0183	010-301	$ .75	$ 5.40
5-0183	010-302	$1.25	$11.24
5-0183	010-303	$1.25	$11.36
5-0183	010-304	$1.25	$11.24
6-2312	016-841	$1.25	$12.32
6-2312	016-842	$ .75	$ 6.36
6-2312	016-843	$ .75	$ 7.20
6-2312	016-844	$ .50	$ 5.08
7-0653	022-965	$1.75	$17.60

B. Studies by Professor Gordon McCloskey at Washington State University:

Project Number	Occupational Areas	ED Number	Microfiche Price	Hard Copy Price
5-0046	Electronic Technology	010-655	$ .50	$2.84
5-0046	Office Occupations	010-656	$ .50	$2.92
5-0046	Retailing Occupations	010-657	$ .50	$4.68
5-0046	Building Trades	010-658	$ .75	$7.36
5-0046	Vocational Mathematics	010-659	$ .25	$ .60
5-0046	Food Service Occupations	010-660	$ .25	$ .80
5-0046	Child Care Occupations	010-661	$ .25	$ .88
7-0031	Child Care Occupations	021-066	$ .25	$1.76
7-0031	Farming Occupations	021-067	$ .50	$3.56
7-0031	Office Occupations	018-665	$1.00	$8.48
7-0031	Retailing Occupations	023-911	$ .50	$3.65
7-0031	Allied Health Occupations	022-958	$ .50	$4.36

C. Study by Professor William J. Schill and Joseph P. Arnold at the University of Illinois: (This study dealt with a cluster of occupations including electronic technology, chemical technology, mechanical technology, electro-mechanical technology, electro-chemical technology, and chemical-mechanical technology.)

Project Number	ED Number	Microfiche Price	Hard Copy Price
CRP-2048	001-172	$ .75	$7.25

D. Study by the American Institutes for Research and the Quincy, Massachusetts public school system:

Note: This study, Project No. 5-0009, is still in progress and no final reports are as yet available from the ERIC system. However, descriptions of the project activities are available from the U.S. Government Printing Office under Catalog No. FS 5.280:80050 (price 10 cents) and Catalog No. FS 5.280:80047 (price 30 cents). This project deals with eleven clusters of occupations: Power mechanics, metals and machines, electrical-electronic, computer data processing, general piping, general woodworking, graphic and commerical arts, business and office jobs, health occupations, food preparation and home economics.

CC

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DCVR Projects Related Wholly or Partially To Community Colleges and Technical Institutes

During the period from July 1, 1964, to June 30, 1968, DCVR initiated a total of 116 projects related wholly or partially to community colleges and technical institutes. These projects are itemized on the attached list.

If a project is identified only by a project number (for example: 5-0126), the project activities are still underway and, of course, the final report is not yet available from the ERIC System.

If a project is identified both by a project number and by an ED number (for example: ED 016 074) the project activities have been completed and the final report is now available at the output end of the ERIC System. For such projects, the cost of a reproduced copy of the final report is shown, both for microfiche (MF) and hard copy (HC).

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DCVR Projects Related Wholly or Partially To Community Colleges and Technical Institutes

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0004	W. James Popham University of California Los Angeles, California	Performance Tests of Instructor Competence for Trade and Technical Education
5-0012 ED 012 324 MF: 25¢ HC: $1.52	Jerome Moss, Jr. University of Minnesota Minneapolis, Minnesota	The Influence of Industrial Arts Experience on Grades Earned in Post High School Trade and Technical Curriculums
5-0018 ED 003 522 MF: 50¢ HC: $2.72	Milton E. Larson Rutgers, The State University New Brunswick, New Jersey	Development of a Technological Center for Keeping Vocational Teachers Updated in Their Fields
5-0019 ED 012 396 MF: $1.25 HC: $12.68	Frederick W. Lamb Fluid Power Society Thiensville, Wisconsin	Summer Institutes in Fluid Power Education for Teachers of Vocational and Industrial Education
5-0028 ED 003 110 MF: 25¢ HC: $2.00	Forest C. Carter Colorado State University Fort Collins, Colorado	An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing
5-0029 ED 003 096 MF: $1.00 HC: $8.96	Theodore A. Koschler Miami-Dade Junior College Miami, Florida	An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0030 ED 003 100 MF: 25¢ HC: $1.56	I. E. Valentine State Board of Education Raleigh, North Carolina	An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing
5-0033 ED 003 094 MF: 25¢ HC: 64¢	John L. Martinson Institute for Advancement of Medical Communication Bethesda, Maryland	A Survey of Experience to Date in Vocational Training Programs for Library Technicians
5-0035	Harold E. Mitzel and George Brandon The Pennsylvania State University University Park, Pennsylvania	Experimentation with Computer-Assisted Instruction in Technical Education
5-0040 ED 010 499 MF: 25¢ HC: 96¢	William E. Breese Wisconsin Institute of Technology Milwaukee, Wisconsin	An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing
5-0041 ED 003 091 MF: 25¢ HC: $2.20	Norman E. Watson Orange Coast Jr. College District Costa Mesa, California	An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing
5-0042 ED 015 271 MF: $1.50 HC: $16.16	H. D. Bearden Texas A & M University College Station, Texas	Development of a Technical Training Program for Industrial Radiographers
5-0062 ED 003 092 MF: 25¢ HC: $2.00	Milton E. Larson Rutgers, The State University New Brunswick, New Jersey	A Two Week Summer Institute on Industrial Instrumentation for In-Service Technical Instructors

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0071	W. S. Stone State University of New York Delhi, New York	Developmental Program in Animal Science
5-0073 ED 021 781 MF: 25¢ HC: $1.16	Jerry S. Dobrovolny University of Illinois Urbana, Illinois	An Eight Week Summer Training Program to Upgrade Subject Matter Competency of High School Drafting Teachers in Advanced Graphics, Statics, and Applied Mathematics
5-0093 ED 003 093 MF: 50¢ HC: $3.24	Herman M. Weisman Colorado State University Fort Collins, Colorado	Teacher Education Institute on Technical Writing
5-0116 ED 021 127 MF: 75¢ HC: $6.60	Ronald G. Taylor Ferris State College Big Rapids, Michigan	Comparison of Successful and Unsuccessful Junior College Students
5-0119 ED 010 501 MF: 25¢ HC: $1.84	Charles Joseph Turner Central Florida Junior College Ocala, Florida	Identifying Successful Technical Students in Junior Colleges
5-0120	Vernon L. Hendrix University of Minnesota Minneapolis, Minnesota	Study of Environmental Differentials of Occupational Programs in Public Junior Colleges
5-0144	F. Kendrick Bangs University of Colorado Boulder, Colorado	Curricular Implications of Automated Data-Processing for Educational Institutions

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0147 ED 010 593 MF: 75¢ HC: $5.84	Malcolm Richland System Development Corporation Santa Monica, California	A Study of Potential Utilization of Retiring Military Personnel in Vocational and Technical Education Programs
5-0148	Howard Nelson University of Minnesota Minneapolis, Minnesota	Characteristics of Full-Time Students in Post Secondary Trade Courses
5-0154	Antoinette Ryan Blue Mountain Community College Pendleton, Oregon	Improvement of Vocational Decision Making in the Community College
5-0158 ED 012 372 MF: 50¢ HC: $3.96	Maurice W. Roney Oklahoma State University Stillwater, Oklahoma	Development of Curriculum Guide in Electro-Mechanical Technology
5-0160	James E. Bottoms Georgia State Department of Education Atlanta, Georgia	Developing a Program of Student Personnel Services for Area Vocational-Technical Schools
5-0170 ED 010 020 MF: 50¢ HC: $3.20	George H. Hieronymus Northern Virginia Technical College Fairfax, Virginia	Documenting and Evaluating the Steps in Establishing a Two-Year Technical College by Critical Path Planning Methods
5-0174	Edward V. Schten University of Wisconsin Madison, Wisconsin	State and Local Governments as Employers of Youth Trained in Vocational-Technical Schools

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0175 ED 016 845 MF: 75¢ HC: $6.48	Austin E. Fribance Technical Education Research Center Cambridge, Massachusetts	Development of a Curriculum Guide in Bio-Medical Equipment Technology
5-0179 ED 003 495 MF: 25¢ HC: 48¢	Austin E. Fribance Rochester Institute of Technology Rochester, New York	Industrial Instrumentation Technology for Instructors in Junior Colleges and Technical Institutes
5-0189	David Allen University of California Los Angeles, California	A Study of the Aviation Mechanics Occupation
5-0569 ED 010 120 MF: 25¢ HC: $2.04	John J. Shea Greenfield Community College Greenfield, Massachusetts	PREP--Program for Recovering and Extending Potential for High School Underachievers Seeking Entrance at a Regional Community
5-1165 ED 010 264 MF: 25¢ HC: $1.08	James D. MacConnell Stanford University Stanford, California	Design for the Future: Space in Area Vocational Schools
5-1319	Durwin M. Hanson North Carolina State University Raleigh, North Carolina	The Development of Achievement Measures for Trade and Technical Education
5-1328 ED 019 505 MF: 25¢ HC: 88¢	Robert E. Kinsinger University of the State of New York Albany, New York	A Community College Health Careers Project to Develop and Strengthen Education of Health Service Technicians

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-1336 ED 012 830 MF: 50¢ HC: $4.64	Manuel Stillerman Bronx Community College of the City University of New York Bronx, New York	An Experimental Program to Develop a New Junior College Level Curriculum in Industrial Technology for Disadvantaged Youths
5-8371 ED 016 064 MF: 75¢ HC: $5.60	Joseph P. Arnold Purdue University Lafayette, Indiana	A Study of Recommendations for Technical Education Curricula
5-8398 ED 010 190 MF: 75¢ HC: $6.88	Bill J. Fullerton Arizona State University Tempe, Arizona	A Curriculum Development Program for a Paramedical Education Center
5-8464 ED 010 015 MF: 25¢ HC: $2.40	John L. O'Brian Rutgers - The State University New Brunswick, New Jersey	The Advanced Degree and Vocational-Technical Education Leadership (A Symposium)
6-1489	Douglas M. Fellows Ward Technical Institute University of Hartford Hartford, Connecticut	Experimental Curriculum for Electro-Mechanical Technicians in Computer and Business Machines Technology
6-1888 ED 011 932 MF: 75¢ HC: $6.32	Calvin J. Cotrell Ohio State University Columbus, Ohio	National Leadership Development Institutes in Technical Education
6-2015 ED 019 508 MF: 50¢ HC: $2.68	Louis J. Kishkunas Pittsburgh Board of Public Education Pittsburgh, Pennsylvania	Pittsburgh Technical Health Training Institute Demonstration Project

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-2040 ED 010 666 MF: $1.00 HC: $8.40	Arthur Lee Hardwick Division of Technical Education State Board for Vocational Education Stillwater, Oklahoma	Summer Institute to Train Data Processing Teachers for the New Oklahoma State-Wide Computer Science System
6-2142 ED 010 433 MF: 25¢ HC: $1.44	Frank J. Ziol Pasadena City College, Pasadena, California	An Eight Weed Summer Institute Training Program to Train Instructors of Instrumentation Technology
6-2166	David F. Shoatz University of Rhode Island Kingston, Rhode Island	A Vocational-Technical Institute Developmental Program in Commercial Fisheries
6-2193 ED 012 790 MF: $1.00 HC: $9.80	John P. Decker Arizona Health Services Education Association Phoenix, Arizona	A Functional Analysis of Paramedical Occupations as a Foundation for Curriculum Development
6-2203 ED 016 113 MF: 25¢ HC: 88¢	Theodore Pearce Fluid Power Society Thiensville, Wisconsin	Operation of Summer Institutes on Fluid Power Education for Teachers of Vocational and Technical Education
6-2211 ED 011 973 MF: 25¢ HC: 52¢	Delbert A. McKee State University of New York Agricultural and Technical College Morrisville, New York	An Eight-Week Summer Institute Training Program to Train Instructors of Instrumentation Technology
6-2238	Louis W. Kleine New Mexico State University University Park, New Mexico	Development and Testing of an Experimental Mobile Instructional Facility for Applied Courses in Engineering Technology

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-2258	Aleene A. Cross University of Georgia Athens, Georgia	An Institute for Home Economics Teachers on Initiating, Developing, and Evaluating Programs at the Post High School Level to Prepare Food Service Supervisors and Assistants to Directors of Child Care Services
6-2278 ED 016 130 MF: $1.25 HC: $11.60	Theodore Pearce Fluid Power Society Thiensville, Wisconsin	Coordination, Administration and Evaluation of Summer Institutes on Fluid Power Education for Teachers of Vocational and Technical Education
6-2329	E. C. Merrill and Wendell H. Russell University of Tennessee Knoxville, Tennessee	An Experimental Pre-Service and In-Service Program for Training of Vocational and Technical Teachers
6-2332 ED 017 726 MF: 25¢ HC: $1.80	Arthur Carlson and Milton Boldt Milwaukee Vocational Technical and Adult Schools Milwaukee, Wisconsin	An Eight Week Seminar in an Introduction to Numerical Control on Two-and Three-Axis Machine Tools for Vocational and Technical Machine Tool Instructors
6-2336	Hugh G. Wales University of Illinois Urbana, Illinois	A Research and Developmental Program for Training in Micro-Precision Skills
6-2355 ED 021 556 MF: 50¢ HC: $4.16	Peter G. Meek National Health Council New York, New York	American Association of Junior Colleges-National Health Council Committee on Health Technology Education
6-2357	William F. Lawrence State University of New York Plattsburgh, New York	Planning to Accomplish Research and Program Development Tasks for an Experimental Two-Year Vocational-Technical Community College

Project Number, ED Number and Price	Principal Investigator and Institution	Title
6-2437	Lewis E. Wall Colorado State University Fort Collins, Colorado	A Study of the Effectiveness of Federally Supported Business Data Processing Summer Institutes
6-2444 ED 016 079 MF: 50¢ HC: $4.00	Forbes W. Pollian Indianapolis Hospital Development Association Indianapolis, Indiana	Feasibility of a Systematic Study of Manpower Requirements and Educational and Training Programs of Selected Health Occupations
6-2652 ED 011 052 MF: 25¢ HC: $1.88	A. R. Baralt, Jr. University of Detroit Detroit, Michigan	Pilot Vocational Teacher Training Institute in Dental Assisting, Summer 1966
6-2653 ED 010 334 MF: 50¢ HC: $3.16	Roger E. Barton University of North Carolina Chapel Hill, North Carolina	Pilot Vocational Teacher Training Institute in Dental Assisting, Summer 1966
6-2662 ED 010 335 MF: 50¢ HC: $3.44	Howard Sidney Agricultural and Technical College State University of New York Cobleskill, New York	A Training Institute for Teachers of Technical Programs in Agriculture.
6-2664	Grace L. Mangle State Department of Education Boston, Massachusetts	A Conference on New Educational Curricula for Sub-Professional Personnel in the Health Services
6-2840	J. M. Cummings New Jersey State Department of Education Trenton, New Jersey	Development of Multi-Media Programmed Instructional Materials for the Training of Law Enforcement Officers

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-2851	William J. Schill University of Illinois Urbana, Illinois	Work - Study Programs; Conduct and Consequences
6-3003	J. K. Little and others University of Wisconsin Madison, Wisconsin	An Evaluation of Effectiveness of Vocational and Technical Education in the United States
6-8254 ED 011 971 MF: 75¢ HC: $6.04	Alexander Schure New York Institute of Technology Old Westbury, L. I., New York	Preliminary Investigation of Communication-Linked Techniques for Off-Campus Teaching of Vocational and Technical Subjects
6-8255 ED 011 972 MF: 25¢ HC: $1.96	George S. Whitney American Technical Education Association, Inc. Delmar, New York	The Development and Testing of Instruments and Procedures for a Study of Student Selection Practices in Technical Education Programs
6-8302	Milo E. Van Hall Agricultural and Technical College Alfred, New York	A Comprehensive Project to Develop a Complete Curriculum in the Area of Medical Records Technician
6-8303 ED 010 075 MF: 25¢ HC: 56¢	Milo E. Van Hall State University of New York Alfred, New York	Conference on Methods of Increasing Student Achievement in Technical Preparatory Programs
6-8320 ED 017 722 MF: 75¢ HC: $6.12	Arthur K. Jensen Clemson University Clemson, South Carolina	An Improved Procedure for Producing Overhead Transparencies for Vocational Education

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-8327 ED 019 477 MF: 50¢ HC: $3.28	Wilmot F. Oliver Rutgers - The State University New Brunswick, New Jersey	An Evaluation of Information Feedback Effectiveness with Teachers
6-8420 ED 013 644 MF: 25¢ HC: $1.96	John Warren Hokanson University of California Berkeley, California	Individual Characteristics and Their Relationship to Achievement in Junior College Vocational Students
6-8498 ED 014 569 MF: $1.00 HC: $8.88	Ernest H. Dean Utah Trade-Technical Institute Provo, Utah	Implications of Vocational Education for Plant Site Location
6-8590 ED 015 302 MF: 50¢ HC: $3.72	Richard J. Vasek Mississippi State University State College, Mississippi	Analysis of Electronic Technology Curriculum Content in Public Post High School Technical Institutes and Employer Requirements
6-8810	Ronald K. Edwards Michigan State University East Lansing, Michigan	Effects of Mechanically Forcing Copying Speeds on the Learning of Elementary Gregg Shorthand
7-0074	John L. Feirer Western Michigan University Kalamazoo, Michigan	Development of Junior-Community College Curricula for Future Teachers of Industrial Education
7-0048	Leland L. Medsker University of California Berkeley, California	Problems and Issues in Accreditation by Specialized Agencies of Vocational-Technical Curricula in Post Secondary Institutions

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
7-0095	Edith Lynton National Committee on Employment of Youth New York, New York	Concepts and Practices in the Education, Training and Utilization of Subprofessional Workers
7-0192	Randy H. Hamilton Institute for Local Self Government Berkeley, California	Municipalities as a Model for New Careers and Re-Direction of Vocational-Technical Education Programs
7-0313	J. Paschal Twyman and James Potchen Technical Education Research Center, Inc. Waco, Texas	Development of Career Opportunities for Technicians in the Nuclear Medical Field
7-0329	Dietrich Reitzes YMCA of Metropolitan Chicago Chicago, Illinois	Social Service Aide Project for the Education and Training of Subprofessionals
7-0382	Ruth J. Dales and Anne G. Buis Florida State University Tallahassee, Florida	Institute on Post-High School Programs in Home Economics Education Utilizing the Resource Guide Care and Guidance of Children
7-0435 ED 016 859 MF: $1.25 HC: $12.00	Alex G. Morphonios Miami-Dade Junior College Miami, Florida	Computer-Aided Drafting and Design - Summer Institute
7-0452	Aaron J. Miller Ohio State University Columbus, Ohio	Program Development Institutes in Technical Education

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
7-0463	L. C. Alexander Marquette University Milwaukee, Wisconsin	Teacher Training Institute in Dental Assisting
7-0528 ED 017 729 MF: 75¢ HC: $5.56	Joseph Arnold Purdue University West Lafayette, Indiana	A Summer Institue for the Improvement of Technical Teacher Education Programs
7-0544	Carl F. Lemar University of Kentucky Lexington, Kentucky	A Clinical Workshop in Mental Health and Psychiatric Nursing for Instructors in Schools of Practical Nursing
7-0558	H. E. Davis Georgia State College Atlanta, Georgia	A Two-Week Institute to Improve and Develop Content, Format and Procedures for Vocational and Technical Education Public Information Programs
7-0635	R. W. Coon National Committee for Careers in Medical Technology Washington, D.C.	Medical Laboratory Assistant Teacher Education Institute - Pilot Program
7-0654	Doris L. Berryman New York University New York, N.Y.	Development of Educational Programs for New Careers in Recreation Services for the Disabled
7-0658 ED 016 112 MF: 50¢ HC: $4.52	J. Clark Davis University of Nevada Reno, Nevada	Materials and Structural Design Seminar (An Overview for Vocational School Facility Planning)

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
7-0773	Ralph E. Bender Ohio State University Columbus, Ohio	Agricultural Occupations Program Development in Area Vocational Schools
7-0822	Francis Tuttle State Board for Vocational Education Stillwater, Oklahoma	Summer Institute to Train Data Processing Teachers for the New Oklahoma State-Wide Computer Science System - Phase II
7-0973	Roy W. Dugger and Edmund P. Garvey Technical Education Research Center, Inc. Waco, Texas	Development and Evaluation of Educational Programs in Bio-Medical Equipment Technology
7-1059	John W. Sullivan Association for Educational Data Systems Washington, D.C.	The Relationship of ADP Training Curriculum and Methodology in the Federal Government
7-8021 ED 016 129 MF: 50¢ HC: $2.40	Karl B. Schmelle, Jr. Instrument Society of America Pittsburgh, Pennsylvania	An Evaluation of a Summer Training Program for Instructors of Instrumentation Technology
7-8374	Edward Jakabauskas Iowa State University Ames, Iowa	Demonstration of Research-Conference Procedures for Estimating Health Manpower Requirements and in Evaluating Educational and Training Programs for Selected Health Occupations in Non-Metropolitan Areas
7-9000	D. G. Lewis General Learning Corporation Washington, D.C.	A Feasibility Study of a Central Computer Facility for an Educational System

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
7-9001	J. L. Stone International Business Machines Corporation Washington, D.C.	Feasibility Study for a Remote-Terminal, Centralized Computer System
8-0008	Howard Sidney Agricultural and Technical College Cobleskill, New York	Methods of Teaching Agricultural Occupations in Community Colleges and Area Vocational Schools
8-0042	James D. Piper Portland Cement Association Chicago, Illinois	Development and Evaluation of a Concrete Technology Curriculum (Phase I)
8-0219	Maurice W. Roney Technical Education Research Center, Inc. Waco, Texas	Development and Evaluation of Educational Programs in Electro-Mechanical Technology
8-0301	James H. Straubel The Aerospace Education Foundation Washington, D.C.	The Evaluation of Three U.S. Air Force Instructional Systems Within Civilian Education
8-0384	Aaron J. Miller Ohio State University Columbus, Ohio	National Program Development Institutes in Technical Education
8-0446	Alexander Schure New York Institute of Technology Old Westbury, L. I., New York	Development of a Multi-Media Course in Physics for the U.S. Naval Academy

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
8-0447	J. Sterling Livingston Sterling Institute Washington, D.C.	Development of a Multi-Media Course in Economics for the U.S. Naval Academy
8-0448	Donald T. Tosti Westinghouse Learning Corporation Bladensburg, Maryland	Development of a Multi-Media Course in Leadership for the U.S. Naval Academy
8-0460	Lewis D. Holloway University of Iowa Iowa City, Iowa	Teacher Education Institute for New Health Occupations Education Teachers
8-0491	Roy W. Dugger Technical Education Research Center, Inc. Waco, Texas	Development of Generalizable Educational Programs in Laser and Electro-Optical Technology
8-0556	George Parkinson Milwaukee Technical College Milwaukee, Wisconsin	Evaluation of Residential Schools and Essential Factors which Contribute to Their Operation
8-0627	Melvin L. Barlow University of California Los Angeles, California	Development and Validation of Instructional Programs for the Allied Health Occupations
8-0688	Anna L. Hyer National Education Association Washington, D.C.	Manpower and Instructional Media: A Study of Jobs, Personnel, and Training

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
8-0714	Cleveland L. Dennard Washington Technical Institute Washington, D. C.	Individualized Youth Education for Careers in Criminal Justice
8-0715	J. Douglas Grant New Careers Development Organization Oakland, California	Development of New Careers Ladders, with Appropriate Education Components, in the Administration of Justice
8-8018	James H. Straubel Aerospace Education Foundation Washington, D. C.	Feasibility of Adapting Three Air Force Courses for Civilian Use
8-8052	Eli E. Cohen National Committee on Employment for Youth New York, New York	A Project for Abstracting and Popularizing "The Subprofessional: From Concepts to Careers"
8-9011	Herbert S. Bright Computation Planning Inc. Bethesda, Maryland	A Single Integrated Central Computer System for Secondary and Junior College Institutions

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IV DCVR Projects Related to Curriculum Development

During the period from July 1, 1964 to June 30, 1968, DCVR initiated a total of 76 projects related to curriculum development. These projects are itemized on the attached list.

If a project is identified only by a project number (for example: 5-0126), the project activities are still underway and, of course, the final report is not yet available from the ERIC System.

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Prepared: 5/19/69

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DCVR PROJECTS RELATED TO CURRICULUM DEVELOPMENT

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0005	Harry A. Becker Norwalk Board of Education Norwalk, Conn.	A Pilot Project to Develop a Program of Occupational Training for School Alienated Youth
5-0009	F. Coit Butler American Institute for Research Pittsburgh, Pa.	Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School
5-0022	Gene M. Love Pennsylvania State University University Park, Pa.	Development and Evaluation of Instructional Units in Ornamental Nursery, Floriculture and Turf Occupations for the Northwestern United States
5-0026 ED 010 019 MF: 25¢ HC: $2.16	June Cozine Oklahoma State University Stillwater, Okla.	Approaches in Assessing Needs for, Content of, and Factors to Consider in Offering Home Economics Courses for Gainful Employment
5-0031 ED 010497 MF: 50¢ HC: $4.12	Robert E. Taylor The Ohio State University Columbus, Ohio	Improvement of Curricula for Teaching Non-Farm Agricultural Occupations

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0037 ED 016 850 MF: 75¢ HC: $5.36	William F. Stover Ohio Trade and Industrial Education Service Columbus, Ohio	Using the Printing Trade as a Pilot Area for the Development of a National Vocational-Technical School Achievement Testing Program
5-0042 ED 015 271 MF: $1.50 HC: $16.16	H.R. Bearden Texas A&M University College Station, Texas	Technical Training for Industrial Radiographers
5-0059 ED 013 949 MF: 25¢ HC: $1.62	Edward R. Towers Ohio State University Columbus, Ohio	An Industrial Arts Curriculum Project for the Junior High School
5-0061 ED 017 689 MF: 50¢ HC: $4.76	John Dailey The George Washington University Washington, D.C.	Development of a Curriculum and Materials for Teaching Basic Vocational Talents
5-0063 ED 016 075 MF: 25¢ HC: $2.00	Elliott D. Becker School District 549C Medford, Oregon	Revised Instructional Program for "Slow Learners" to Improve Their Job Placement
5-0071	W. Stone State University of N.Y. Delhi, N.Y.	Developmental Program in Animal Science
5-0090 ED 010 368 MF: 25¢ HC: $1.80	Elizabeth Simpson University of Illinois Urbana, Illinois	The Classification of Education Objectives, Psychomotor Domain

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0115	Lloyd Benham Hudson Public Schools Hudson, Ohio	Experimental and Developmental Study of a Four-Year Comprehensive Vocational Education Program
5-0129	Margaret McKinley and Hester Chadderdon Iowa State University Ames, Iowa	Curriculum Development and Training Program for Food Service Employees
5-0158 ED 012 372 MF: 50¢ HC: $3.96	Maurice W. Roney Oklahoma State University Stillwater, Okla	Development of Curriculum Guide in Electro-Mechanical Technology
5-0161 ED 022 911 MF: 75¢ HC: $6.40	Harold R. Cushman Cornell University Ithaca, N.Y.	The Development and Improvement of Directed Work-Experience Programs in Expanded Vocational Education Offerings in Agriculture at the Secondary Level
5-0163 ED 023 207 MF: 25¢ HC: $1.35	Marvin C. Grcalla Oakland Unified School District Oakland, Calif.	A Pilot Project in Curriculum Development for "Work Experience" and "Occupations" Courses for Educable Mentally Retarded Students
5-0165 ED 013 122 MF: 50¢ HC: $4.92	Naomi LeB. Naylor Southern Illinois University Edwardsville, Ill.	Curriculum Development Program for Preschool Teacher Aides
5-0166	Lucy Crawford Virginia Polytechnic Institute Blacksburg, Va.	A Competency Pattern Approach to Curriculum Construction in Distributive Teacher Education

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0171 ED 010 161 MF: 75¢ HC: $6.44	John L. O'Brian Rutgers, The State University New Brunswick, N. J.	The Development of a Master Teacher Training Curriculum for Teachers of Occupational Level Training Programs
5-0175 ED 016 845 MF: 75¢ HC $6.48	Austin E. Fribance Technical Education Research Center Cambridge, Mass.	Development of a Curriculum Guide for Bio-Medical Equipment Technology
5-0183 ED 010 301 MF: 75¢ HC: $5.40	Donald Maley University of Maryland College Park, Md.	An Investigation and Development of the Cluster Concept as a Program in Vocational Education at the Secondary School Level
5-0188 ED 020 439 MF: $1.25 HC: $12.34	J. N. Swanson University of Colorado Boulder, Colo.	Scientific Secretary Training Program Development
5-0189	David Allen University of California Los Angeles, Calif.	A Study of the Aviation Mechanics Occupation
5-0191	Robert A. Walker Minneapolis Rehabilitation Center, Inc. Minneapolis, Minn.	The Development of Specialized Educational Programs for Poor Learners for Use in Non-Educational Settings
5-0192 ED 010 014 MF: 25¢ HC: $1.64	Don D. Bushnell Brooks Foundation Santa Barbara, Calif.	The Development and Evaluation of Educational Systems Packages for the Occupational Training of Depressed Area Students in Five Basic Subject Areas

Project Number ED Number, and Price	Principal Investigator and Institution	Title
5-0749	Lassar G. Gotkin New York Medical College New York, N. Y.	The Development of a Beginning Reading Skills Program
5-1203 ED 022 056 MF: $2.25 HC: $24.52	Robert L. Darcey Ohio University Athens, Ohio	An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes
5-1316 ED 016 073 MF 75¢ HC $6.68	Hilda Watson Gifford Council on Hotel, Restaurant and Institutional Education Ithaca, N. Y.	Status of Curriculum Development in the Field of Commerical Foods on the Non-Baccalaurate Degree Level
5-1319	Thomas S. Baldwin University of Illinois Urbana, Illinois	The Development of Aptitude and Achievement Measure for Trade and Technical Education
5-1327	Charles E. Peck University of Washington Seattle, Wash.	Survey to Determine Appropriate Occupational Training Programs in the Field of Distribution and Marketing at Various Levels of Education
5-1335	G. E. Henderson University of Georgia Athens, Ga.	The Development and Evaulation of Teaching Texts:"Operation, Maintenance, and Repair of Air Cooled Gasoline Engines"
5-1336 ED 012 830 MF: 20¢ HC: $4.64	Manuel Stillerman Bronx Community College Bronx, New York	Operation Giant Step: Research in a New Remedial Program and Community College Industrial Technology Curriculum For the Disadvantaged

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-8267 ED 003 851 MF: 09¢ HC: $1.00	Raymond B. Russell Kansas State Teachers College Emporia, Kansas	Development of a Programmed Text in Salesmanship for Feasibility Testing
5-8271 ED 022 022 MF: 75¢ HC: $5.44	Kay M. Howell Michigan State University Lansing, Michigan	Teaching Vocational and Citizenship Education in Social Studies
5-8277 ED 010 256 MF: 50¢ HC: $4.40	Patsy McMurtrie San Francisco State College San Francisco, Calif.	Development and Evaluation of a One-Semester Stenographer Course: Phase One of a Two-Phase Program
5-8371 ED 016 064 MF: 75¢ HC: $5.60	Joseph P. Arnold Purdue University Lafayette, Inc.	A Study of Recommendations for Technical Education Curricula
5-8398 ED 010 190 MF: 75¢ HC: $6.86	Bill J. Fullerton Arizona State University Tempe, Ariz.	The Identification of Common Courses in Paramedical Education
6-1458 ED 024 763 MF: 75¢ HC: $8.95	E. Smith and Others Florida State University Tallahassee, Florida	The Development of Pre-Vocational Education Literacy Courses for Use with Computer-Assisted Instruction of Disadvantaged Youths and Adults
6-1484 ED 010 420 MF: 50¢ HC: $3.28	Frank Evans Negro American Labor Council Cleveland, Ohio	A Curriculum Development Study of the Effectiveness of Up-Grading the Technical Skills of Educationally Disadvantaged Union Members

Project ED Number, and Price	Principal Investigator and Institution	Title
6-1489 ED 022 926 MF: 50¢ HC: $4.68	Douglas M. Fellows Ward Technical Institute Hartford, Conn.	Experimental Curriculum for Electro-Mechanical Technicians in Computer and Business Machines Technology
6-1659 ED 023 913 MF: 50¢ HC: $5.10	Meredith Crawford George Washington University Washington, D.C.	The Design and Evaluation of Vocational-Technical Education Curriculum Through Functional Job Analysis
6-2159 ED 011 974 MF: 25¢ HC: $2.28	Stephen A. Konz Kansas State University Manhattan, Kansas	Work Instruction Programs for Food Industry
6-2166	David F. Shontz and Andreas Holmsen University of Rhode Island Kingston, R.I.	A Vocational Technical Institute Developmental Program for Commercial Fisheries
6-2238	Louis W. Kleine New Mexico State University University Park, N.M.	Development and Testing of an Experimental Mobile Instructional Facility for Applied Courses in Engineering Technology
6-2312 ED 016 841 MF: $1.25 HC: $12.82	Donald Maley University of Maryland College Park, Md.	The Preparation of Curriculum Materials and Development of Teachers for an Experimental Application of the Cluster Concept of Vocational Education at the Secondary Level
6-2336 ED 022 927 MF: $1.00 HC: $10.18	Hugh C. Wales University of Illinois Urbana, Ill.	A Research and Development Program for Training in Micro-Precision Skills

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-2355	Carol Kahler National Health Council New York, N.Y.	Investigation to Produce Guidelines for Health Technology Program Planning
6-2664	Grace Nangle State Department of Education Boston, Mass.	A Conference on New Educational Curricula for Sub-Professional Personnel in Health Services
6-2777	Donald D. Buchnell Brooks Foundation Santa Barbara, Calif.	The Production and Validation of Education Systems Packages for Occupational Training of Depressed Area Students
6-2840	John M. Cummings State Department of Education Trenton, N.J	Development of Multi-Media Programmed Instructional Materials for the Training of Law Enforcement Officers
6-8302 ED 024 779 MF: 50¢	Robert Cove State University of New York Alfred, N.Y.	A Comprehensive Project to Develop a Complete Curriculum in the Area of Medical Records Technician
6-8763 ED 014 552 MF: 75¢ HC: $7.32	Richard Barker Ohio State University Columbus, Ohio	Development and Evaluation of Instructional Units for Teaching Profit-Maximizing Principles in Vocational Agriculture
7-0074	John L. Feirer Western Michigan University Kalamazoo, Mich.	Development of Junior-Community College Curricula for Future Teachers of Industrial Education
7-0211	Peter G. Haines Michigan State University East Lansing, Mich.	Continuation of a Developmental Vocational Education Research and Teacher Education Program Based on a Clinical Concept

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
7-0655	Wallace W. Douglas Northwestern University Evanston, Illinois	English Curriculum Study and Dissemination Center
7-0758	Edgar Person University of Minnesota Minneapolis, Minn.	Development and Demonstration of Innovations in Adult Agricultural Education
7-0773	Ralph Bender Ohio State University Columbus, Ohio	Agricultural Occupations Program Development in Area Vocational Schools
7-0853	Donald Maley University of Maryland College Park, Md.	Implementation and Further Development of Experimental Cluster Concept
7-0973	Roy W. Dugger Technical Education Center, Inc. Waco, Texas	Development and Evaluation of Educational Programs in Bio-Medical Equipment Technology
7-1223	F. Harry Huffman Ohio State University Columbus, Ohio	A Planning Study to Determine the Feasibility of Developing a New Business and Office Education Curriculum
7-1323	Rowan C. Stutz Western States Small School Project Salt Lake City, Utah	Development and Evaluation of Experimental Integrated Career Development Curricula for Isolated Small Schools
8-0042	Howard C. Wiechman Portland Cement Association Chicago, Ill.	Development of Course Content and Teaching Guides for a Total Curriculum in Concrete Technology
8-0157	Alexander Schure N.Y. Institute of Technology New York, N.Y.	A Computer Managed System for Individualizing and Optimizing Education

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
8-0219	Roy W. Dugger Technical Education Research Center, Inc. Waco, Texas	Development and Evaluation of Education Programs in Electro-Mechanical Technology
8-0301	James H. Strobel Aerospace Education Foundation 1750 Pennsylvania Avenue, N.W. Washington, D.C.	The Evaluation of Three U.S. Air Force Instructional Systems within Civilian Education
8-0334	Bruce W. Tuckman Rutgers-The State University New Brunswick, N.J.	Study of Curriculum for Occupational Preparation
8-0414	Frank W. Lanham Ohio State University Columbus, Ohio	Development of Performance Goals for a New Office and Business Education Learning System
8-0446	Alexander Schure New York Institute of Technology New York, N.Y.	Development of a Multi-Media Course in Physics for the U.S. Naval Academy
8-0447	J. Sterling Livingston Sterling Institute Washington, D.C.	Development of a Multi-Media Course in Economics for the U.S. Naval Academy
8-0448	Donald T. Tosti Westinghouse Learning Corp. Bladensburg, Md.	Development of a Multi-Media Course in Leadership for the U.S. Naval Academy
8-0457	Alan F. Westin Columbia University Teachers College New York, N.Y.	Development of Objectives for Citizenship Education
8-0627	Melvin L. Barlow University of California Los Angeles, Calif.	Development and Evaluation of Instructional Programs for Allied Health Occupations

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
8-0653	Marilyn Wendt Bloomfield Hills, Michigan, School District Bloomfield Hills, Mich.	A Study to Design, Develop, Implement, and Revise Specific Measurable Performance Objectives to Serve as a Model to Individualized Instruction For Secondary Schools
8-0714	Cleveland L. Dennard Washington Technical Institute Washington, D.C.	Individualized Youth Education for Careers in Criminal Justice
8-8018	James H. Straubel Areospace Education Foundation Washington, D.C.	Feasibility of Adapting Three Air Force Courses for Civilian Use

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DCVR Projects Related to the DISADVANTAGED

During the period from July 1, 1964, to June 30, 1968, DCVR initiated a total of fifty-four projects related to the disadvantaged. These projects are itemized on the attached list.

If a project is identified only by a project number (for example: 5-0126), the project activities are still underway and, of course, the final report is not yet available from the ERIC System.

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DCVR PROJECTS RELATED TO THE DISADVANTAGED

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0006	Theodore K. Steele New York Institute of Technology New York City	Experimental Program for Training and Re-Training of Older Workers, Unemployed Youths, and Disadvantaged Sections of the Population
5-0050	Nicholas H. Borata Dade County Public Schools Miami, Florida	Learning Laboratory to Teach Basic Skills in a Culturally Deprived Area
5-0057 ED 003 095 MF: $1.00 HC: $10.20	Paul M. Hodgson Delaware State Department of Public Instruction, Vocational Technical Division Dover	Teacher Education for Rural Low Achieving Disadvantaged Junior High School Students
5-0091 ED 010 069 MF: 75¢ HC: $5.72	Grace M. Henderson Pennsylvania State University	Conference on Home Economics Program Development for Disadvantaged Youth and Their Families
5-0124 ED 010 074 MF: 50¢ HC: $2.72	Thomas J. Sweeney University of South Carolina, Columbia South Carolina	A Developmental Program for Vocational Counselors Directed Toward Serving Disadvantaged Youth More Effectively

D

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0125	Lloyd J. Phipps University of Illinois, Urbana	Improved Opportunities for Disadvantaged Youth Through Vocationally Oriented Education
5-0145 ED 003 494 MF: 50¢ HC: $3.48	C. R. Jeffery Washington School of Psychiatry Washington, D.C.	Preparation of the Disadvantaged for Vocational Training
5-0146 ED 011 970 MF: 50¢ HC: $3.00	John Earp Cornell University Ithaca, New York	Post High School Migration and Vocational Choice Patterns of Students From an Economically Depressed Area
5-0156	Sara Blackwell Cornell University	Anxiety, Disorientation, and Isolation and Their Effects on Disadvantaged Youth in Upper New York State
5-0167 ED 019 506 MF: 50¢ HC: $4.80	Marjorie East Pennsylvania State University, University Park, Pennsylvania	An Experience with the Life and Work of the Disadvantaged for the Pre-service Education of Home Economics Teachers
5-0192 ED 010 014 MF: 25¢ HC: $1.64	Don D. Bushnell Brooks Foundation Santa Barbara, California	The Development and Evaluation of Educational Systems Packages for the Occupational Training of Depressed Area Students in Five Basic Subject Areas (Pilot Phase)

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0197	Ruth Dales Florida State University Tallahassee, Florida	Factors Related to Educational and Occupational Aspirations of Early Adolescent Males from Culturally Deprived Families
5-0243	Paul Lawrence, Auxiliary Enterprises, Inc. California State College Hayward, California	Establishment of Three Centers to Improve the Preparation of Teachers of Culturally Disadvantaged Students, Emphasizing Technical Vocational Education
5-0866 ED 013 277 MF: 25¢ HC: 96¢	Henry S. Breitrose Stanford University	Production of a Motion Picture for the Inservice Training of Teachers in Problems of Human Relations in Teaching the Socioeconomically Disadvantaged
5-1006	Edgar C. Epps University of Michigan Ann Arbor, Michigan	Family and Achievement: A Proposal to Study the Effect of Family Socialization on Achievement Orientation and Performance Among Urban Negro Americans
5-1163 ED 016 791 MF: 75¢ HC: $6.12	Robert L. Gibson Indiana University Foundation Bloomington, Indiana	A Comparison of Techniques for the Solution of Similar Educational-Vocational Problems of Disadvantaged Youth in Great Britain and the United States

D

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-1215 ED 010 181 MF: 75¢ HC: $5.92	Lloyd J. Phipps University of Illinois Urbana, Illinois	A Study in Communication Between High School Teachers of Vocational Agriculture and Socioeconomically Disadvantaged Youth by Use of the Semantic Differential
5-1336 ED 012 830 MF: 50¢ HC: $4.64	Manuel Stillerman Bronx Community College of the City University of New York Bronx, New York	An Experimental Program to Develop a New Junior College Level Curriculum in Industrial Technology for Disadvantaged Youths
6-1231	Harold Mendelsohn University of Denver Denver, Colorado	Utility of Educational Television in Meeting the Informational Needs of the Disadvantaged
6-1458	E. Smith, E. Hankin & T. Smith Florida State University Tallahassee, Florida	The Development of Pre-Vocational Education Literacy Courses for Use With Computer Assisted Instruction of Disadvantaged Youths and Adults
6-1484 ED 010 430 MF: 50¢ HC: $3.28	Frank Evans Negro American Labor Council Cleveland, Ohio	A Curriculum Development Study of the Effectiveness of Up-Grading the Technical Skills of Educationally Disadvantaged Union Members

D

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-1936 ED 016 096 MF: 50¢ HC: $4.28	P. G. Garrett University of Missouri Columbia, Missouri	Interdisplinary Approach to Preparing Home Economics Leaders for Emergining Programs Serving Disadvantaged Youth and Adults
6-1831 ED 016 097 MF: $1.00 HC: $3.56	Donald A. Sommerfeld Muskegon City Public Schools Muskegon, Michigan	An Evaluation of Vocational Education for Disadvantaged Youth
6-8162 ED 015 225 MF: $50¢ HC: $2.60	Marcia Halvorsen Spelman College Atlanta, Georgia	An Analysis and Interpretation of Data on the Social Characteristics of Residents of "Vine City", an Urban Negro Slum.
6-2777	Donald D. Bushnell Brooks Foundation Santa Barbara, California	The Production and Validation of Education Systems Packages for Occupational Training of Depressed Area Students
5-0171 ED 010 161 MF: 75¢ HC: $6.44	John L. O'Brian, Rutgers, The State University New Brunswick, New Jersey	The Development of a Master Teacher Training Curriculum for Teachers of Occupational Level Training Programs
5-0005	Harry A. Becker Norwalk Board of Education Norwalk, Connecticut	A Pilot Project to Develop a Program of Occupational Training for School Alienated Youth

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0003	Frank D. Screnson Quincy Youth Development Commission and the Quincy Public Schools Quincy, Illinois	A Demonstration Training Program for Potential School Dropouts
5-0050	Nicholos Borota Central District Dade County Public Schools Miami, Florida	Learning Laboratory to Teach Basic Skills in a Culturally Deprived Area
5-0063 ED 016 075 MF: 25¢ HC: $2.00	Elliott D. Becken School District 549C Medford, Oregon	Revised Instructional Programs for "Slow Learners" to Improve Their Job Placement Opportunities
5-0114	Robert H. Zeller State Department of Public Instruction Springfield, Illinois	Use of a Mobile Vocational Guidance Unit--A Pilot Project
5-0187	Raymond V. Nord Minneapolis Public Schools Minneapolis, Minnesota	A Pilot Study of a Work Opportunity Center
5-0196	R. L. Kahn University of Michigan Ann Arbor, Michigan	Study of Youth in High School, at Work and Unemployed
5-1170	Archibald O. Haller College of Agriculture University of Wisconsin Madison, Wisconsin	Development of Instruments to Measure the Relation Between Expectations of Others and Levels of Educational and Occupational Aspiration of Youth

D

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-1312	Winthrop R. Adkins Sidney Rosenberg Paul Sharar Timothy P. Dineen Training Resources for Youth, Inc. Brooklyn, New York	Project TRY
6-8902	Leland J. Winger Utah State Board for Vocational Education Salt Lake City, Utah	The Application of a Special Counseling Technique to Maladjusted Under-Achievers
6-2958 ED 010 620 MF: 50¢ HC: $4.40	Harry Handler Los Angeles Unified School Los Angeles, California	Occupational Training Centers for 16-18 Year-Old Youth
6-8576 ED 016 095 MF: 75¢ HC: $7.48	Robert J. Gregory Syracuse University Syracuse, New York	The Application for Employment and for Seeking Success among Educable Mentally Retarded Youth
6-1136	Don A. Brown State University of New York	A Literacy Program for Adult Illiterates
6-8[illegible]5 ED 016 156 MF: 50¢ HC: $3.84	Edwin Smith Florida State University Tallahassee, Florida	A Proposal for a Pilot Study to Develop and Determine the Feasibility of a Packaged Materials Program for Teaching Reading and the General Development Area of Adult Basic Education

D

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-8902	Leland J. Winger State Board for Vocational Education Oquirrh School Project Salt Lake City, Utah	The Application of a Special Counseling Technique to Maladjusted Under-Achievers
7-0527	Carl Lamar University of Kentucky Lexington, Kentucky	Seminar for Supervisors and Teacher Educators for Persons with Special Needs
7-8456	David S. Coltrane North Carolina Governor's Good Neighbor Council	Raleigh-Durham Area Vocational Guidance Institute for Counselors of Minority Youth
8-0035	Robert Alan Rosenthal Harvard Graduate School of Education Cambridge, Massachusetts	Pathways to Identity: The Development of Aspirations and Values in Urban Negro Adolescents
8-8049	Allen Stewart The Bridge Warrenton, Virginia	Institute on Intercultural Understanding for Secondary School Teachers
6-3049	Julia Dalrymple The Ohio State University Columbus, Ohio	The Efficacy of Home Economics Courses Designed to Prepare Disadvantaged Pupils for their Homemaker-Family Member Role and the Dual Roles of Homemaker and Wage Earner-Part C

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-3050	Helen Y. Nelson Cornell University Ithaca, New York	The Efficacy of Home Economics Courses Designed to Prepare Disadvantaged Pupils for their Homemaker-Family Member Role and the Dual Roles of Homemaker and Wage Earner-Part B
7-0006	Phyllis K. Lowe Purdue University Lafayette, Indiana	The Efficacy of Home Economics Courses Designed to Prepare Disadvantaged Pupils for their Homemaker-Family Member Role and the Dual Roes of Homemaker and Wage Earner-Part A
8-0714	Cleveland L. Dennard Washington Technical Institute Washington, D.C.	Individualized Youth Education for Careers in Criminal Justice
8-0748	Thomas F. Zuck Compton Union High School 417 Alondra Blvd. Compton, California	Development of a Curriculum Designed to Prepare Disadvantaged Persons of the Compton High School Area for Employment in Health Occupations
8-0844	Thomas C. Rosica The School District of Philadelphia Philadelphia, Pennsylvania	Summer Work-Study Program on Urban Problems for Secondary School Youth from Inner City Communities
8-0556	George A. Parkinson Milwaukee Technical College 1015 North Sixth Street Milwaukee, Wisconsin 53203	Evaluation of Residential Schools and Essential Factors Which Contribute to their Operation

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
8-0686	Mr. William Waterman United Planning Organization 1100 Vermont Avenue, NW. Washington, D.C.	Neighborhood Youth Development Program
8-0888	The Research Council of the Great Cities Program for School Improvement 4433 West Touhy Avenue Chicago, Illinois	Pilot Program for Veterans in Public Service (VIPS)

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DCVR Projects Related to Evaluation

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DCVR PROJECTS RELATED TO EVALUATION

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0002 ED 010 013 MF: 50¢ HC: $3.32	Roy W. Roberts University of Arkansas Fayetteville, Arkansas	Contribution of Vocational Education to Actual Occupations of Former Homemaking Students
5-0007 ED 010 495 MF: $1.00 HC: $10.24	Jacob Kaufman Pennsylvania State University University Park, Pennsylvania	Research, Development and Demonstration in Adult Training and Retraining
5-0017	William G. Loomis State Department of Education Division of Community Colleges and Vocational Education Salem, Oregon	A System for Planning, Implementing and Evaluating Vocational Education
5-0060	Jacob Kaufman Pennsylvania State University University Park, Pennsylvania	An Experimental Program to Compare Education Versus Training for Young School Dropouts
5-0066 ED 003 491 MF: 75¢ HC: $7.20	J. Kenneth Little University of Wisconsin Madison, Wisconsin	Conference on Occupational Data Requirements for Education
5-0069	John K. Coster University of Nebraska Lincoln, Nebraska	An Experimental Evaluation of Approaches to Preparing High School Students for Agricultural Occupations Other than Farming

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0085	David C. Bjorkquist Pennsylvania State University University Park, Pennsylvania	Effects of Field and Job Oriented Technical Retraining on Manpower Utilization of the Unemployed
5-0127 ED 010 011 MF: 25¢ HC: $1.52	Harold A. Edgerton Performance Research, Inc. Washington, D.C.	Statistical Prediction of Training Program Success
5-0172 ED 010 296 MF: 75¢ HC: $5.32	Arthur J. Corazzini Princeton University Princeton, New Jersey	Economic Effects of Vocational Education in Worcester, Massachusetts
5-0177	Edgar A. Persons University of Minnesota Minneapolis, Minnesota	An Economic Study of the Investment Effects of Education in Agriculture
5-0185 ED 010 642 MF: 50¢ HC: $5.00	Bruce F. Davie Georgetown University Washington, D.C.	Vocational Education and Intergovernmental Relations in the Postwar Period
5-0208 ED 010 305 MF: 75¢ HC: $6.12	Edward A. Podesta and Harry V. Kincaid Stanford Research Institute Stanford, California	Supply and Demand Factors Affecting Vocational Education Planning
5-0430 ED 003 102 MF: 75¢ HC: $5.32	Earl R. Burrows Colorado State Department of Education Denver, Colorado	Analysis of Dropout Statistics in Selected Colorado School Districts

E

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-1190	Jacob Kaufman Pennsylvania State University University Park, Pennsylvania	An Analysis of the Comparative Cost and Benefits of Vocational Versus Academic (High School) Education
5-1325	Mary Jean Bowman University of Chicago Chicago, Illinois	A Theoretical and Empirical Analysis of Vocational Preparation in Japan
5-1333	Helen Nelson Cornell University Ithaca, New York	Evaluation of Student Teaching in Home Economics
5-1337	Harry V. Kincaid Stanford Research Institute Menlo Park, California	A Preliminary Evaluation of Pre-Technical Programs in Secondary Education
5-1363 ED 019 511 MF: $1.00 HC: $8.80	John L. Coffey and E. E. Slaster Battelle Memorial Institute Columbus, Ohio	Evaluating the Efficiency and Effectiveness of Self-Instructional Methods for Selected Areas of Vocational Education
5-8268 ED 010 011 MF: 25¢ HC: $1.52	Elisabeth N. Sutton Florida State University Tallahassee, Florida	Analysis of Research on Selected Aspects of Evaluation in Adult Education
5-8461 ED 010 072 MF: 25¢ HC: $1.68	Laura Sharp Bureau of Social Science Research, Inc. Washington, D.C.	Identification and Evaluation of Research Information on Occupational Training and Its Results
5-8466 ED 013 362 MF: 50¢ HC: $3.00	J. Chester Swanson University of California Berkeley, California	Identification and Development of Instruments for a Study of State Vocational-Technical Education Agencies and Their Influence upon Local Programs

E

Proposal Number, ED Number, and Price	Principal Investigator and Institution	Title
6-1659	Meredith Crawford George Washington University Washington, D.C.	The Design and Evaluation of Vocational-Technical Education Curricula through Functional Job Analysis
6-1746	Roger S. Cannell and Arnold Kotz Stanford Research Institute Menlo Park, California	Conference on Planning and Programming of Vocational Education
6-1831 ED 016 097 MF: $1.00 HC: $8.56	Donald A. Sommerfeld Muskegon City Public Schools Muskegon, Michigan	An Evaluation of Vocational Education for Disadvantaged Youth
6-2414	Max W. Eninger American Institute for Research Pittsburgh, Pennsylvania	A National Survey: High School and Student Characteristics, and Their Relationships to the Occupational and Post-High School Educational Experiences of T&I Vocational Course Graduates
6-2437	Lewis E. Wall Colorado State University Fort Collins, Colorado	A Study of the Effectiveness of Federally Supported Business Data Processing Summer Institutes
6-3003	J. K. Little and Gerald G. Somers University of Wisconsin Madison, Wisconsin	An Evaluation of Effectiveness of Vocational Education and Technical Education in the United States
6-8087 ED 022 190 MF: 50¢ HC: $2.52	Merle Ohlsen and J. Don Boney University of Illinois Urbana, Illinois	An Evaluation of a Counselor Education Program Designed for Prospective Elementary School Counselors Enrolled in 1965-66 NDEA Institute

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-8224	W. L. Hansen and Burton Weisbrod University of Wisconsin Madison, Wisconsin	Seminar on the Economics of Education: Investment Decisions and Contributions to Income and Economic Growth
6-8355 ED 016 083 MF: 50¢ HC: $4.24	Bruce Tuckman Rutgers-The State University New Brunswick, New Jersey	The Development of Procedures for Evaluating Vocational Pilot Programs
6-8503 ED 018 524 MF: 75¢ HC: $5.36	Sidney Rosenberg and Winthrop R. Adkins YMCA of Greater New York New York, New York	A Design for Action Research at Project TRY
6-8590 ED 015 302 MF: 50¢ HC: $3.72	Richard J. Vasek Mississippi State University State College, Mississippi	A Comparative Analysis of Electronic Content in Public Post-High Programs and the Technical Requirements of Industry
7-0048	LeLand L. Medsker University of California Berkeley, California	Problems and Issues in Accreditation by Specialized Agencies of Vocational-Technical Curricula in Post Secondary Institutions
7-0968	Harold Byram Michigan State University East Lansing, Michigan	Five State Try Out and Demonstration Program to Determine the Generalizability of an Evaluation System for Local Programs of Vocational and Technical Education
7-1327	Allen Lee Teaching Research Division Oregon State System of Higher Education Monmouth, Oregon	Improvement and Development of the Organization and Administration of Vocational-Technical Education

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
7-8021 ED 016 112 MF: 50¢ HC: $4.52	Karl B. Schnelle, Jr. Instrument Society of America Pittsburgh, Pennsylvania	An Evaluation of a Summer Institute to Train Instructors of Instrumentation Technology
8-0066	Chester Swanson University of California Berkeley, California	Leadership Role, Functions, Procedures and Administration of Vocational-Technical Education Agencies at the State Level
8-0158	Malcolm M. Provus Pittsburgh Public Schools Pittsburgh, Pennsylvania	Development and Validation of a Program Evaluation Model for a Large City School System
8-0232	Keith Goldhammer Oregon State University Corvallis, Oregon	An Analysis of the Research Coordinating Unit Program
8-0245	Fred C. Adams Western Association of Schools and Colleges Burlingame, California	Development of New Techniques and Procedures for Evaluating Elementary and Secondary Schools
8-0264	Herbert J. Klesling Indiana University Bloomington, Indiana	A Study of Cost and Quality of New York School Districts
8-0301	James H. Straubel The Aerospace Education Foundation Washington, D.C.	The Evaluation of Three U. S. Air Force Instructional Systems Within Civilian Education

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
8-0348	Gary R. Smith Utah State University Logan, Utah	Workshop on Planning, Implementing and Evaluating Balanced Programs in Distributive Education
8-0367	Dr. Joseph H. McGivney The Center for Vocational and Technical Education The Ohio State University Columbus, Ohio	National Development Institute in Planning, Programming, and Budgeting Systems
8-0398	Dr. Allen Lee Oregon State System of Higher Education Monmouth, Oregon	Program Planning, Budgeting and Evaluation Institute
8-0481	Eaton H. Conant University of Oregon Eugene, Oregon	An Analysis of Comparative Costs and Benefits of Non-Professional Aide Programs in School Districts
8-8055	Ralph LoCascio New Jersey State Department of Education Trenton, New Jersey	Development of a Model Planning, Programming, and Budgeting System for Vocational Education at the State Level
ED 016 077 MF: 25¢ HC: 88¢	Bruce Davie Georgetown University Washington, D.C.	Using Benefit-Cost Analysis in Planning and Evaluating Vocational Education

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DCVER PROJECTS RELATED TO THE HEALTH OCCUPATIONS

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
5-0039	Barbara L. Tate National League for Nursing New York, New York	Identification of Characteristics of Practical Nursing Students For Use in Guidance and Selection
5-0126	Robert M. Tomlinson University of Illinois Urbana, Illinois	A Longitudinal Study of Practical Nursing
5-0175 ED 016 845 MF: 75¢ HC: $6.48	Austin E. Fribance Technical Education Research Center Cambridge, Massachusetts	Development of a Curriculum Guide in Bio-Medical Equipment
5-1318 ED 016 074 MF: 25¢ HC: 40¢	Alberta Jacoby Mental Health Film Board, Inc. New York, New York	Development of a Film for Interpretation and Training for Homemakers Service
5-1328 ED 019 505 MF: 25¢ HC: 88¢	Robert E. Kinsinger The Board of Regents of the University of the State of New York Albany, New York	A Community College Health Careers Project to Develop and Strengthen Education of Health Service Technicians
5-8398 ED 010 190 MF: 75¢ HC: $6.88	Bill J. Fullerton Arizona State University Tempe, Arizona	A Curriculum Development Program for a Paramedical Education Center

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-1685 ED 013 361 MF: 50¢ HC: $2.04	Francis Lindaman National Association for Mental Health New York, New York	Mental Health Association Staff Training Conference
6-2015 ED 019 508 MF: 50¢ HC: $2.68	Louis J. Kishkunas Pittsburgh Board of Public Education Pittsburgh, Pennsylvania	Pittsburgh Technical Health Training Institute Demonstration Project
6-2129 ED 015 391 MF: 25¢ HC: $2.16	Annie L. Crawford Southern Regional Education Board Atlanta, Georgia	Nursing for Professional Nurse Educators in Practical Nurse Schools
6-2193 ED 012 790 MF: $1.00 HC: $9.80	John P. Decker Arizona Health Services Education Association Phoenix, Arizona	A Functional Analysis of Paramedical Occupations as a Foundation for Curriculum Development
6-2209 ED 012 342 MF: $1.00 HC: $9.00	Philip W. Morgan United Hospital Funds of New York New York, New York	Guidance Counselor Institute for Health Careers!
6-2355 ED 021 556 MF: 50¢ HC: $4.16	Peter G. Meek National Health Council New York, New York	American Association of Junior Colleges-National Health Council Committee on Health Technology Education
6-2444 ED 016 079 MF: 50¢ HC: $4.00	Forbes W. Polliard Indianapolis Hospital Development Association Indianapolis, Indiana	Feasibility of a Systematic Study of Manpower Requirements and Educational and Training Programs of Selected Health Occupations

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
6-2652 ED 011 052 MF: 25¢ HC: $1.88	A. R. Baralt, Jr. University of Detroit Detroit, Michigan	Pilot Vocational Teacher Training Institute in Dental Assisting, Summer 1966
6-2653 ED 010 334 MF: 50¢ HC: $3.16	Roger E. Barton University of North Carolina School of Dentistry Chapel Hill, North Carolina	Pilot Vocational Teacher Training Institute in Dental Assisting, Summer 1966
6-2664	Grace L. Nangle Massachusetts State Department of Education Boston, Massachusetts	A Conference on New Educational Curricula for Sub-Professional Personnel in the Health Services
6-8302	Milo E. Van Hall Alfred Agricultural and Technical College State University of New York Alfred, New York	A Comprehensive Project to Develop a Complete Curriculum in the Area of Medical Records Technician
7-0313	J. Paschal Twyman James Potchen Technical Education Research Center, Inc. Waco, Texas	Development of Career Opportunities for Technicians in the Nuclear Medical Field
7-0463	L. C. Alexander Marquette University Milwaukee, Wisconsin	Teacher Training Institute in Dental Assisting
7-0544	Carl F. Lamar University of Kentucky Lexington, Kentucky	A Clinical Workshop in Mental Health and Psychiatric Nursing for Instructors in Schools of Practical Nursing

Project Number, ED Number, and Price	Principal Investigator and Institution	Title
7-0635 ED 021 064 MF: 50¢ HC: $4.44	R. W. Coon National Committee for Careers in Medical Technology Washington, D. C.	Medical Laboratory Assistant Teacher Education Institute - Pilot Program
7-0654	Doris L. Berryman New York University Washington Square New York, New York	Development of Educational Programs for New Careers in Recreation Services for the Disabled
7-0973	Roy W. Dugger Edmund P. Garvey Technical Education Research Center, Inc. Waco, Texas	Development and Evaluation of Educational Programs in Bio-Medical Equipment Technology
7-8374	Edward Jakabauskas Iowa State University Ames, Iowa	Demonstration of Research-Conference Procedures for Estimating Health Manpower Requirements and in Evaluating Educational and Training Programs for Selected Health Occupations in Non-Metropolitan Areas
8-0056	Robert Nathan Associates, Inc. Washington, D. C.	Study of the Transferability of Military Trained Medical Personnel to the Civilian Sector
8-0301	James H. Straubel The Aerospace Education Foundation Washington, D.C.	The Evaluation of Three U.S. Air Force Instructional Systems Within Civilian Education
8-0408	Marie P. Meyer Rutgers - The State University New Brunswick, New Jersey	Workshop on Program Development for Training Homemaker-Home Health Aides

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Project Number, ED Number, and Price	Principal Investigator and Institution	Title
8-0460	Lewis D. Holloway The University of Iowa Iowa City, Iowa	Teacher Education Institute for New Health Occupations Education Teachers
8-0627	Melvin L. Barlow University of California at Los Angeles Los Angeles, California	Development and Validation of Instructional Programs for the Allied Health Occupations
7-0031 ED 022 958 MF: 50¢ HC: $4.36	Robert J. Wallenstein Washington State University Pullman, Washington	Knowledges Commonly Useful in Twelve Allied Health Occupations
8-8018	James H. Straubel The Aerospace Education Foundation Washington, D.C.	Feasibility of Adapting Three Air Force Courses for Civilian Use

VT 009 392
Brooker, George R.
Proposed Content of Agricultural Machinery Technology Curriculum for Four-Year Colleges and Universities.
Doctoral Series 11.

Arkansas Vocational Education Research Coordinating Unit, Fayetteville
Arkansas State Dept. of Education, Little Rock. Div. of Vocational Education
Arkansas Univ., Fayetteville. Coll. of Education
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*AGRICULTURAL MACHINERY; *ENGINEERING TECHNOLOGY; *CURRICULUM; *AGRICULTURAL TECHNICIANS; DOCTORAL THESES; COLLEGES; UNIVERSITIES; EMPLOYER ATTITUDES; INDUSTRIAL TECHNOLOGY; LITERATURE REVIEWS; BIBLIOGRAPHIES; QUESTIONNAIRES
UNIVERSITY OF ARKANSAS

The purpose of this study was to construct a curriculum for training agricultural machinery technicians and to select the most desirable content for specific agricultural machinery courses for 4-year colleges and universities. The data were secured by surveying a stratified random sample of 50 agricultural machinery manufacturers and distributors. The 46 responses were tabulated to determine the most desirable courses and course content. Agricultural consultants displayed considerable agreement in their selection of college courses to train agricultural machinery technicians. There was significant agreement among the industrial consultants concerning the value of various machines in agricultural machinery courses. It was recommended that the courses with the highest mean scores as rated by industrial consultants be adopted as logical choices within the framework of each institution's requirements. A course in technical writing was suggested as valuable, even though it was not included in the questionnaire. This D.Ed. dissertation was submitted to the University of Arkansas. (DM)

VT 009 391

ED039370

Doctoral Series 11 January, 1970

PROPOSED CONTENT OF AGRICULTURAL MACHINERY TECHNOLOGY CURRICULUM FOR FOUR-YEAR COLLEGES AND UNIVERSITIES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A summary report of a dissertation by the same title
submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education

By

George R. Brooker, M.Ed.
Kansas State College of Pittsburg, 1957

Published by the Arkansas Research Coordination Unit
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In Cooperation with the State Department of Education,
Division of Vocational Education
and
The University of Arkansas
College of Education
Department of Vocational Teacher Education

VT 009 392

Foreword

This study proposing the content of an agricultural machinery technology curriculum for four-year colleges and universities has evolved because of a rapid increase in agricultural mechanization. An extreme shortage of trained personnel has developed in this area. Inasmuch as a commonly stated purpose for state curriculum materials involves helping local teachers to up-grade and up-date their programs, and since research by eminent leaders has demonstrated that local programs are not up-to-date, a close look at this publication seemed appropriate.

One major objective of the Arkansas Research Coordination Unit for Occupational Education is to disseminate findings of research and related activities in vocational and technical education to interested agencies and individuals within and outside the state.

Gratitude is expressed to Dr. Marion E. Maddox, Chairman of the student's Graduate Committee in the College of Education, University of Arkansas for his assistance and guidance in the preparation of this publication.

Harold W. Moore

Associate Director

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CHAPTER I

INTRODUCTION

With the rapid increase in agricultural mechanization there has developed an extreme shortage of trained personnel in this area. The machinery of modern agriculture is usually large in size, high in cost, and complex in structure, but modern agriculture could not exist without it. This phenomenal growth has placed great emphasis on training programs which can provide the technical personnel to operate, sell, adapt, produce, and maintain these machines.

The complexity of modern agricultural machinery has opened a whole new field of employment for personnel with a college degree, or background in modern agriculture, a thorough understanding of engines and machinery, and a knowledge of good business management. Numerous agricultural equipment manufacturers have expressed interest in obtaining personnel with this type of background. The objective of this study was to develop a training program capable of producing personnel qualified to fill this need.

The content of such a curriculum on the technician level is such that it provides a complete understanding of, not only the agricultural machinery area, but the allied areas as well. In actual applications, the agricultural mechanisms are inseparably linked to the fields of electricity, metals, electronics, hydraulics, and production techniques.

These close ties make it mandatory that the agricultural machinery technicians have a broad background of industrial experience to enhance their ability in this field.

Since this is a program which leads to the Bachelor of Science degree, all of the general education requirements must be met. Extreme care must be exercised in the selection of these courses so the student will enroll in those courses that will prove most valuable to him.

The area of business administration and management is also important to the graduate. A knowledge of the intricate workings of a modern business is essential to anyone who hopes to be successful in today's competitive industrial environment. In the final analysis, a degree granting program of this type could honestly be called "pre-management" because the person with initiative, ability, and a college degree will not long remain in the lower levels of a salaried employee.

The curriculum was planned with these factors in mind to enable it to do the best possible job of providing a worthwhile and meaningful group of experiences for the student enrollee.

Statement of the Problem

The purpose of this study was twofold. First, to structure a curriculum that was most beneficial to the Agricultural Machinery Technician and second, to locate the most desirable content for the specific agricultural machinery courses.

Need for the Study

The rapid increase in agricultural mechanization has given rise to many new programs to train personnel to fill the new employment opportunities which it produced. Clary reported that in 1965 there were 59 different programs in 25 different institutions for the training of agri-

cultural technicians.(9) Very few of these, however, are Baccalaureate Degree programs and none was located with the same specific objective as this study.

The graduates of this proposed program will possess a high degree of mechanical skill in the servicing and repair of machinery. They should be able to perform the same operations as a skilled mechanic with a complete knowledge of the principles around which the machine was built. They should have a strong background of business administration and related technical courses to promote understanding of production and management problems. They should be well qualified to fill positions such as, field representative, production supervisor, quality control supervisor, sales representative, field trouble shooter, and research and development technician.

The necessity for high levels of training and skill to enter and advance in off-farm agricultural occupations in the sales and management area was emphasized by Love in his study of agricultural competency factors.(28) Burton found a strong need for more competent agricultural salesmen and more technical training in agricultural mechanics.(8) Douglas found that 24% of the off-farm agricultural occupations needed technical college level training.(12) Soper found that agricultural field men needed higher levels of skill than agricultural mechanics and they should keep up to date on machinery and farm practices.(38) The two-year agriculture machinery technician program has achieved some popularity in recent years and is offered as a supporting area in many of our leading agricultural colleges and universities and also in community and junior colleges but their objectives differ from a four-year program.

The two-year technician program has as its objectives the development of high degrees of skill in the servicing, adjustment, and operation of agricultural machinery. The areas outside of this field, by necessity, must be limited to those courses which contribute directly to comprehension and success in the major field. The two-year type program cannot develop, in depth, such supporting areas as business administration, economics, physical science, and industrial education. The result is that a graduate of these programs may find that he is handicapped in promotion to those positions which require the baccalaureate degree, and many management positions carry this requirement. Four-year industrial technology programs are quite common in many areas of industrial endeavors, and most of them have strong programs of management training along with their technical curricula. One of the intentions of this study was to determine which of these technical courses could be profitably utilized in a training program for agricultural machinery technicians. An institution which already has a strong technical program should be able to expand their offerings in this direction with a minimum of additional classes, faculty, and facilities.

Possible fringe benefits of this study are that programs constructed on its guidelines would prove useful as in-service training programs for agriculture teachers who desire to develop or update their competencies in the agricultural machinery field. The study could also prove helpful to technical schools that are interested in establishing or upgrading their programs in this specific field by providing current data which reflects the opinions and needs of the agricultural machinery industry.

High school counselors might also find the study useful by providing information to them that would be helpful in their guidance of

students that express interest in or display talent in this occupational field.

Limitations of the Study

The scope of this study was limited to obtaining a sample of opinions of selected American agricultural machinery manufacturers or distributors and compiling these findings in the development of a training program which would most nearly meet the machinery technician needs of that particular industry. The study was concerned only with those materials and skills which were most likely to have a significance influence on the success of an agricultural machinery technologist.

Definition of Terms

Agricultural Machinery Technician: One whose primary job involves the implementation of engineering function into industrial reality in the production, sales, or servicing of agricultural machinery.

Engineer: One whose activities may be characterized as interpretating scientific content for practical usage.

Field Representative: A manufacturer's agent whose prime responsibility is to assure customer satisfaction in the operation or performance of his product.

Fluid Power: That area dealing with the transmission of energy through fluids (liquids or gases) under pressure.

Hydraulics: The transmission of energy through liquids under pressure.

Hydro-pneumatic: The generation of hydraulic pressure by the application of compressed gases.

Pneumatics: The transmission of energy through compressed gases.

Production Supervisor: One who supervises the assembly or construction of an industrial product or some part of an industrial product.

Quality Control Supervisor: One whose primary responsibility is to see that minimum quality standards of production are met.

Technician: One whose activities deal with the implementation of the engineering function into industrial reality.

Technology: The inclusive term applied to the total general educational, professional, and technical information that make up a technical field.

Block: A logical grouping of courses or machines which go to make up a subject area or division of an area.

Industrial Consultant: A person from the agricultural machinery manufacturing industry who is knowledgeable of the training requirements of agricultural machinery technicians.

Mean Score: The average score.

Grand Mean: The average mean score.

Standard Deviation: A calculated unit of variance from the mean or grand mean.

Chi Square Test; A non-parametric test of significance utilizing the formula $\frac{(o-e)^2}{e}$

Hypothesis

A significant amount of agreement will be found among agricultural machinery manufacturers as to the course selection and course content of a curriculum for use in training agricultural machinery technicians.

Procedure

The basic curriculum was developed by dividing the critical educational areas into blocks of proposed courses. These blocks contained most of the common classes offered in that area. Each class was given a five-point rating scale and when combined these make up one of the two parts of the questionnaire.

The second part consisted of blocks of agricultural machines divided according to purpose or function. These were also given rating scales to evaluate their importance for inclusion into specific agricultural courses. A five-point rating scale was used for both parts of the questionnaire.

A group of industrial consultants representing a stratified cross-section of agricultural machinery manufacturers was used to rate the value of each of the variables in the questionnaire. These consultants held positions of responsibility within their companies and were knowledgeable of the qualifications of agricultural machinery technicians.

The final selection of classes and course content was determined by the overall rating which each variable received from the compiled questionnaires.

The statistical treatment of this data is covered in the following sections.

Assumptions

1. The inventory instrument was assumed to be sufficiently adequate to ascertain the needs of the agricultural machinery industry.
2. The judgment of the Industrial Consultants' was a satisfactory basis for selection of courses and course content.
3. The sample was adequate for the population studied.

Organization of the Study

Chapter I introduces the problem, outlines the scope of the study, and describes the procedure to be followed.

Chapter II includes a brief review of the literature relevant to the study.

Chapter III describes the collection and treatment of the data, and presents the findings of the research.

Chapter IV includes a summary of the study, lists conclusions and recommendations, and makes suggestions for further study.

CHAPTER II

REVIEW OF RELATED RESEARCH

The field of technician training is a relatively new one and the type program for training agricultural machinery technicians is one of the newest of all. The demand for this type of technician was created by the increased complexity, cost, and popularity of agricultural machinery. In his study of Minnesota farms, Sandahl found that during the ten-year period prior to 1960, the number of tractors increased 50%, combines 245%, corn pickers 111%, and pickup balers 780%.(37) The servicing of this growing family of machines, placed great strain on existing training programs. The result has been a rapid increase in programs, to produce qualified personnel to fill the need. Clary, in 1965, found 28 states planning new programs.(9) Most of these existing and planned programs are of the two-year of Associate of Arts type. Programs of this type are found at Alfred Agriculture and Technical College at Alfred, New York; Hutchinson Junior College at Hutchinson, Kansas; Michigan State University at East Lansing, Michigan; and many other institutions of learning.

Since this type program is relatively new, few studies have been made that pertain to a four-year agricultural machinery technology and most are supportive in nature. The study by Larson revealed that training in farm power and machinery on the college level was found inadequate.(25) The study by Lechner found that twelve areas had been rated as "very important" but training had not been adequately provided in present training programs.(26) The top ranked item was maintaining and repairing tractors and engines.

Soper, in his study of the abilities needed by young men employed by farm machinery dealers, found that the manager, assistant manager, and salesmen need to have an understanding of production agriculture as well as of the farm machinery business.(38)

Love found in his study of competencies needed to enter and to advance in off-farm occupations that managers needed high levels of competency in agricultural mechanics to enter and to advance in this job title group.(28) Salesmen needed high levels of competency in agricultural mechanics to enter and to advance in their field as did parts managers. Bookkeepers needed only low levels of competency in agricultural mechanics to enter their field but it increased to medium levels to advance. Mechanics needed medium levels of competency in agricultural mechanics to enter their field but this factor increased to high levels to advance.

Gentry, in his study, had findings similar to Love's and concluded that with the exception of mechanical competencies, little similarity was observed between competencies needed for farming and those needed for employment in off-farm agricultural occupations.(19)

In the study of curriculum needs made by Douglas, it was found that fifty percent of the off-farm agricultural occupations required a high school education while twenty-four percent needed either technical or college level education.(12) He also concluded that in-service training programs need to be considered for teachers of agriculture to acquaint them with the educational requirements of the non-farm agricultural occupations.

In Burton's study he found that there was a need for training in salesmanship of agricultural equipment and also a need for more technical training in agricultural mechnnics.(8) He found that automotive type personnel did rather poorly in some similar agricultural occuaptions.

Longhurst, in his study, recommended to teacher training institutions that more training should be given in courses on machinery maintenance, adjustment, and repair.(27)

The study by Sandahl had findings similar to Longhurst's in regard to agricultural machinery courses and also found a real need for revision in these courses.(37)

In support of in-service training in agricultural mechanics of agricultural teachers are studies by Annis, Hartzog, and Watkins.(3, 21, 55) They found that greater emphasis should be placed on agricultural mechanics in the agriculture curriculum. In order to promote these improvements, teachers need to be retrained and the teacher training institutions need to update their facilities and training programs so graduates will be better prepared to meet the needs of the agricultural industry.

The need for personnel in the off-farm technical agricultural occupations was stressed by Michigan State University's Teaching Report.(11) They found that each graduate had at least ten good positions to choose from at salaries which ranged from $7200 to $9600 per year. These were not agricultural machinery technicians but they were in occupations of a similar type with the same number of years of preparation which led to the Baccalaureate Degree in Agricultural Mechanization.

This demand has given rise to the four-year Agricultural Mechanization programs found at The Pennsylvania State University, Michigan State University, and the University of Arkansas.

These programs are broad in their coverage of the agricultural field for they include soil conservation, farm buildings, rural electrification, and food processing. It becomes obvious that their objectives are quite different than this study.

CHAPTER III

COLLECTION, PRESENTATION, AND ANALYSIS OF DATA

Selection of the Industrial Consultants

The selection of Industrial Consultants was achieved by first stratifying the samply into three division. These divisions were: 1. Tractors over 15 drawbar horsepower, 2. Tractors under 15 drawbar horsepower, and 3. Allied agricultural implements. The size of each division was determined by its percentage of the gross sales of agricultural machinery using the latest available sales statistics. In this study, division 1. represents 39.4% of the sample, division 2. represents 7.6%, and division 3. represents 53.0%.

The Product File of Tractor and Implement Magazine was used as the source in selecting the sample. From its listings the three sample divisions were extracted utilizing a table of random numbers with numbers assigned to each manufacturer.

It was felt that a sample stratified and selected in this manner would be representative of the employment potential of the agricultural machinery industry and be reasonable random and free of bias.

The size of the sample in this study was limited by sample stratification. Only twenty manufacturers of strata division one, (tractors over 15 drawbar horsepower), could be located and this strata was to represent approximately forty percent of the sample. This limited the sample size to fifty but did maintain the perspective of employment potential in the agricultural machinery industry. A complete listing of the sample can be found in the appendix of this study.

Collection of Data

The first mailing of questionnaires was made on April 10, 1969. Sixty percent of the questionnaires were returned within three weeks. On May 1, 1969, a follow-up was mailed to the forty percent not returned by that date. This follow-up resulted in the return of an additional thirty-two percent of the questionnaires. The overall returns was ninety-two percent of the original sample. The high percentage of the questionnaires returned was indicative of the interest of manufacturers in the development of this type of training program.

Treatment of Data

The questionnaire responses of the industrial consultants were compiled in the following manner:

The one-to-five rating scale responses were computed to determine the mean for each variable. The variables with the highest mean scores were the logical selection within the limits of the inherent stratification of the curriculum. Three factors were considered in making the final selection of variables: 1. Since the curriculum requirements for the Baccalaureate Degree are fixed by the school, these must be met, 2. Since the agricultural manufacturers represent the future employers of the graduates, their needs should be met, and 3. The individual students' needs are also important and should be considered.

The specific content of agricultural courses was determined by computing the standard deviation of the consultants' ratings of the agricultural blocks. The most desirable units for inclusion in agricultural courses were those that lie above one standard deviation below the mean

rating score. Those scores that lie below this point could be considered for further specialized courses or expansion of the program.

A Chi-Square test of significance was used to indicate if study findings differed significantly from normal probability distribution.

Study Findings in The Selection of College Courses

In this section of the questionnaire the college courses that might contribute to the success of an Agriculture Machinery Technician were divided into their logical groupings and each was assigned a 1 to 5 rating scale. The responses were tabulated by multiplying the number of responses by their position on the rating scale. The mean score was computed by dividing the summation of these weighted scores on each course by the number of respondents on that course.

The ranking of these courses according to their mean scores should be a valid criteria of their value in an agriculture machinery technician curriculum according to the best judgement of the Industrial Consultants.

The actual selection of courses will be governed by curriculum requirements of each particular school. In order to qualify for the Baccalaureate Degree, the courses must be selected within the accreditation framework. Examples of curriculum construction and recommendations will be found in Chapter 4.

The Chi-Square test of significance indicated that the findings of this study were significant at the .05 level of significance. This level of significance indicates that the Industrial Consultants were generally in agreement on the value of machines in agricultural machinery courses.

A description of the findings of this study for each block of courses is contained in the following units.

Automotive Technology Block

The automotive technology area was included in the sutdy for the benefit of those schools that already have strong automotive technology programs and are interested in expanding into the agriculture machinery area. These courses reflect the common offerings in the automotive field and the high mean scores that they received on this study indicates that they would also be of considerable value to the student in an agricultural machinery technology program.

A listing of these automotive courses and their mean scores follows. The courses are ranked according to their indicated value to agricultural machinery technicians.

	Course Title	Mean Score
1.	Diesel Engine Diagnosis and Service	4.412
2.	Engine Diagnosis and Overhaul	4.324
3.	Transmissions and Differentials	4.265
4.	Fuels and Lubricants	4.212
5.	Automotive Electrical Equipment	4.029
6.	Automotive Fundamentals	3.972
7.	Small Engine Diagnosis and Service	3.943
8.	Shop Planning and Management	3.758
9.	Brake and Front End Suspension Systems	3.170
10.	Advanced Principles of Prime Movers	3.118

Business Administration Block

The findings of this study indicate that some of the courses in this block are of considerable value in training agricultural machinery technicians. Courses in business organization and management were indicated to be of greater value that most of the operational or skill-type business courses.

TABLE I

Agricultural Industry Consultants' Mean Value-Rating of the Automotive Technology Block

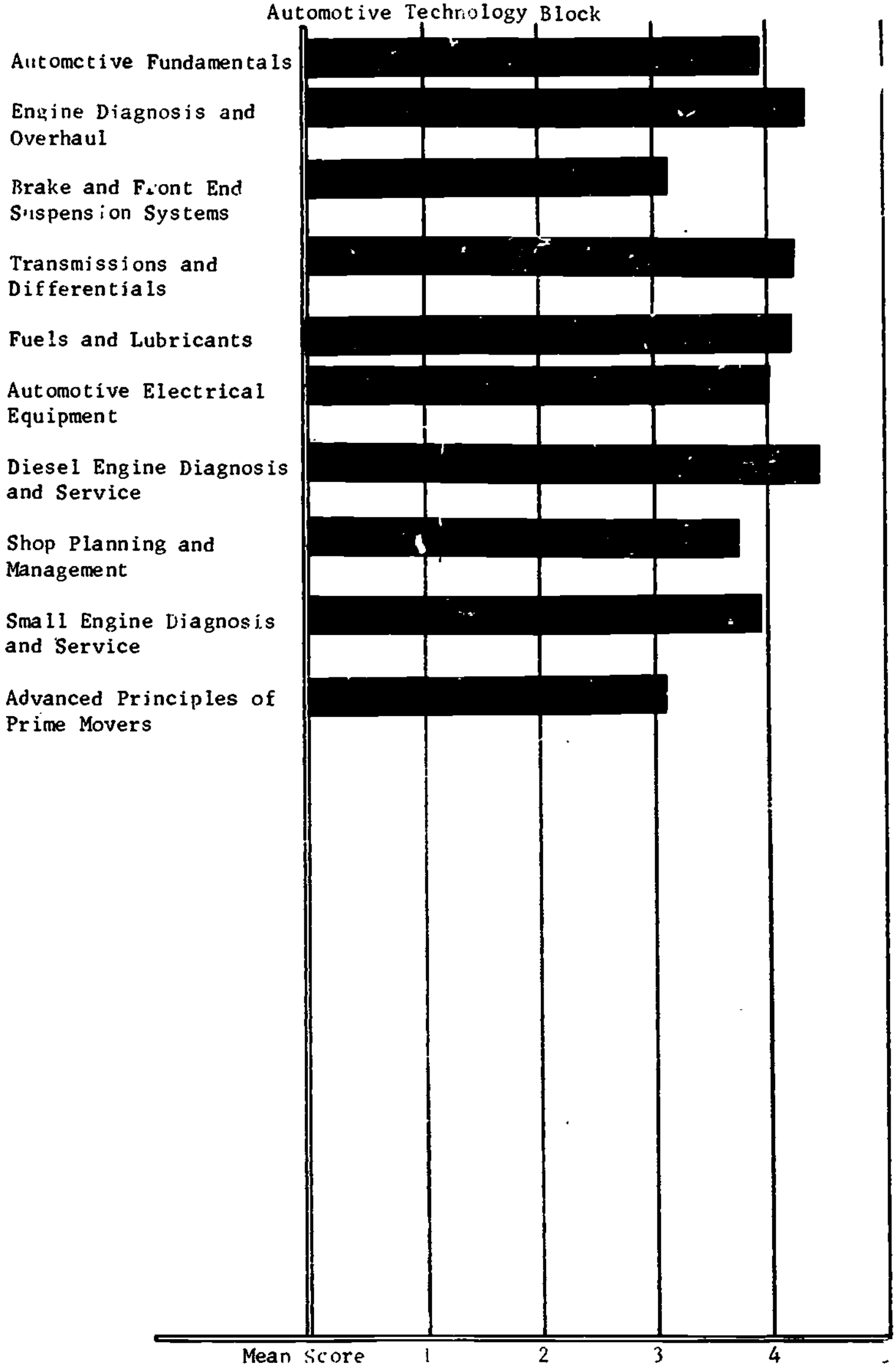
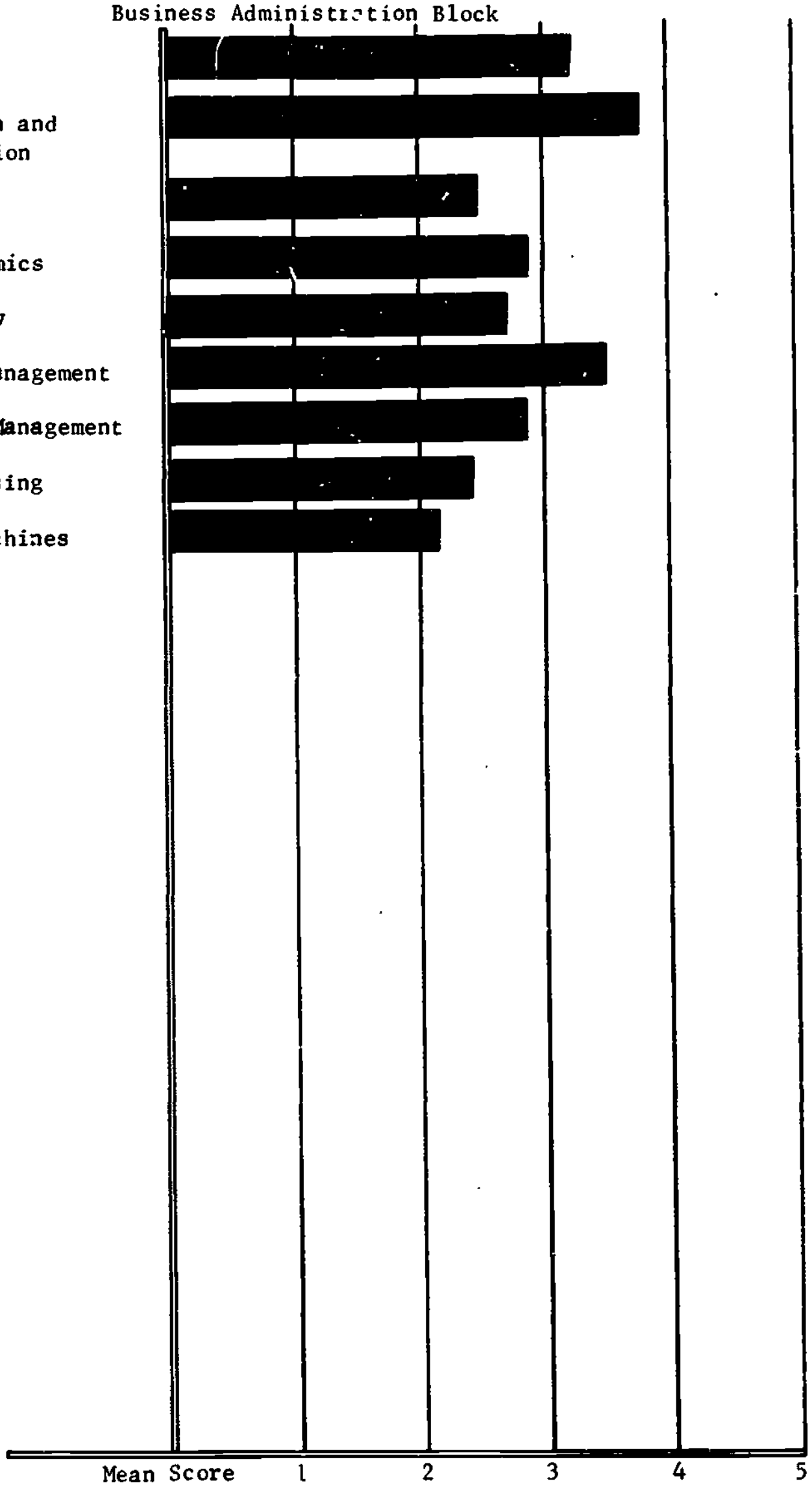


TABLE II

Agricultural Industry Consultants' Mean Value-Rating of the Business Administration Block



A listing of these business courses and their mean scores follows. The courses are ranked according to their indicated value to agricultural machinery technicians.

Course Title	Mean Score
1. Organization and Administration	3.742
2. Personnel Management	3.500
3. Accounting	3.236
4. Labor Economics	2.879
5. Production Management	2.844
6. Business Law	2.781
7. Typing	2.472
8. Data Processing	2.412
9. Business Machines	2.182

Mathematics Block

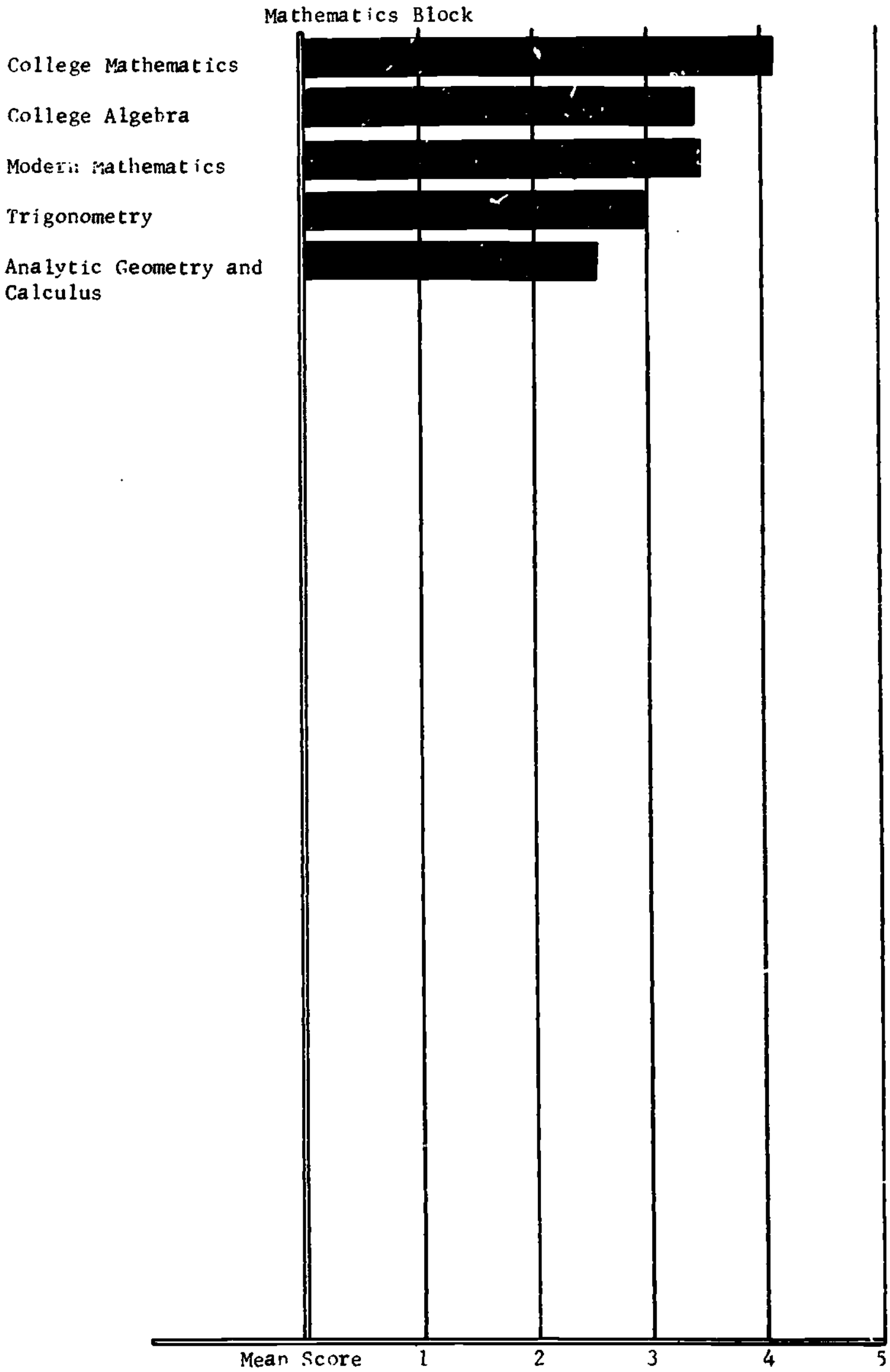
According to the findings of this study, some courses in this block are of considerably greater value to agricultural machinery technicians than other courses. The findings reveal that a student preparing to enter this field will find College Mathematics the most valuable course to select. The information in this study is indicative of the type of work which the technician is expected to perform in industry.

A listing of these mathematics courses and their mean scores follows. The courses are ranked according to their indicated value to agricultural machinery technicians.

Course Title	Mean Score
1. College Mathematics	4.094
2. Modern Mathematics	3.483
3. College Algebra	3.400
4. Trigonometry	3.000
5. Analytic Geometry and Calculus	2.586

TABLE III

Agricultural Industry Consultants' Mean Value-Rating of the Mathematics Block



Natural Science Block

The findings of this study indicate that two of the courses listed would be of considerably greater value to agricultural machinery technicians than other courses in the block. Soil Science and Physics are obviously the logical choices if only two courses are to be selected.

A listing of these natural science courses and their mean scores follows. The courses are ranked according to their mean value to agricultural machinery technicians.

Course Title	Mean Score
1. Soil Science	3.636
2. Physics	3.594
3. Chemistry	3.000
4. Conservation of Renewable Resources	2.839
5. Climatology	2.656
6. Geology	2.626
7. Botany	2.531
8. Biology	2.438
9. Rocks and Minerals	2.141
10.5. Bacteriology	2.094
10.5. Zoology	2.094
12. Genetics	1.806

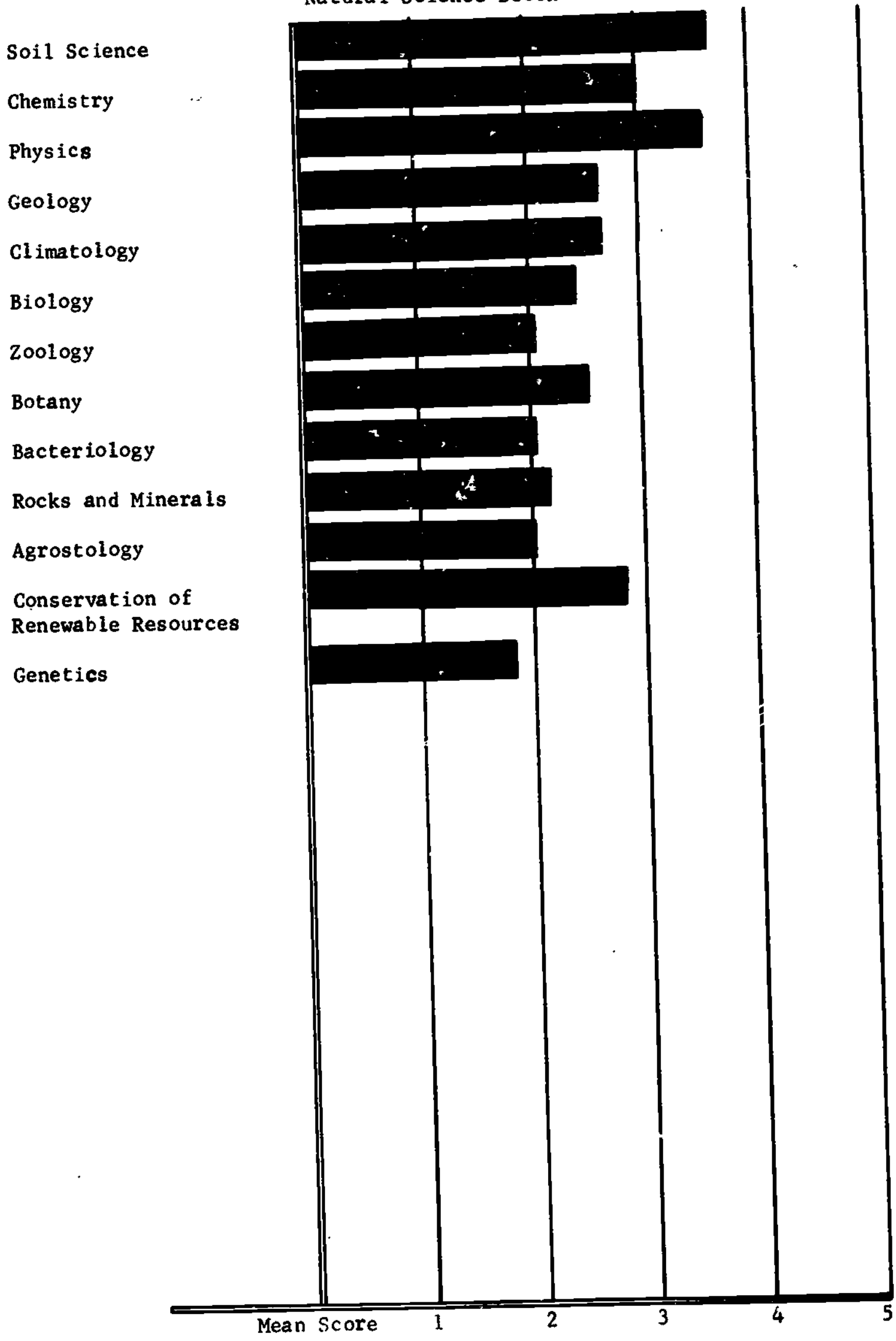
Social Science Block

According to the findings of this study, the Industrial Consultants placed greater value on those courses dealing with economics, banking, and problems of labor than other courses in this block. These three areas received considerably higher value-ratings.

A listing of these social science courses and their mean scores follows. The courses are ranked according to their mean value to agricultural machinery technicians.

TABLE IV

Agricultural Industry Consultants' Mean Value-Rating of the Natural Science Block



Course Title	Mean Score
1. Economics	3.531
2. Labor Problems	3.161
3. Money and Banking	3.032
4. Public Finance	2.677
5. Legislative Procedure	2.194
6.5. Parliamentary Procedure	1.969
6.5. Political Science	1.969

Related Technical Courses Block

A wide diversity of value-ratings on the courses within this block was revealed. Mean scores ranged from as high as 4.647 to as low as 2.156 on the five-pcint rating scale. Careful selection of related technical courses is in order if the curriculum is to be of maximum value to the enrollees and to their future employers.

A listing of these related technical courses and their mean scores follows. The courses are ranked according to their indicated value to agricultural machinery technicians.

Course Title	Mean Score
1. Hydraulics	4.647
2. Machine Tools	4.382
3. Welding	4.324
4. Industrial Safety	3.972
5. Electricity	3.971
6. Sheet Metal	3.941
7. Pneumatics	3.848
8. Drafting	3.824
9. Electronics	3.424
10. Foundry	3.382
11. Technology of Metals	3.286
12. Industrial Design	3.235
13. Trade and Job Analysis	3.818
14. Basic American Industries	2.636
15. Jig and Fixture Production	2.629
16. Process Instrumentation	2.618
17. Tool and Die Production	2.324
18. Wood Technology	2.156

TABLE V

Agricultural Industry Consultants' Mean Value-Rating of the Social Science Block

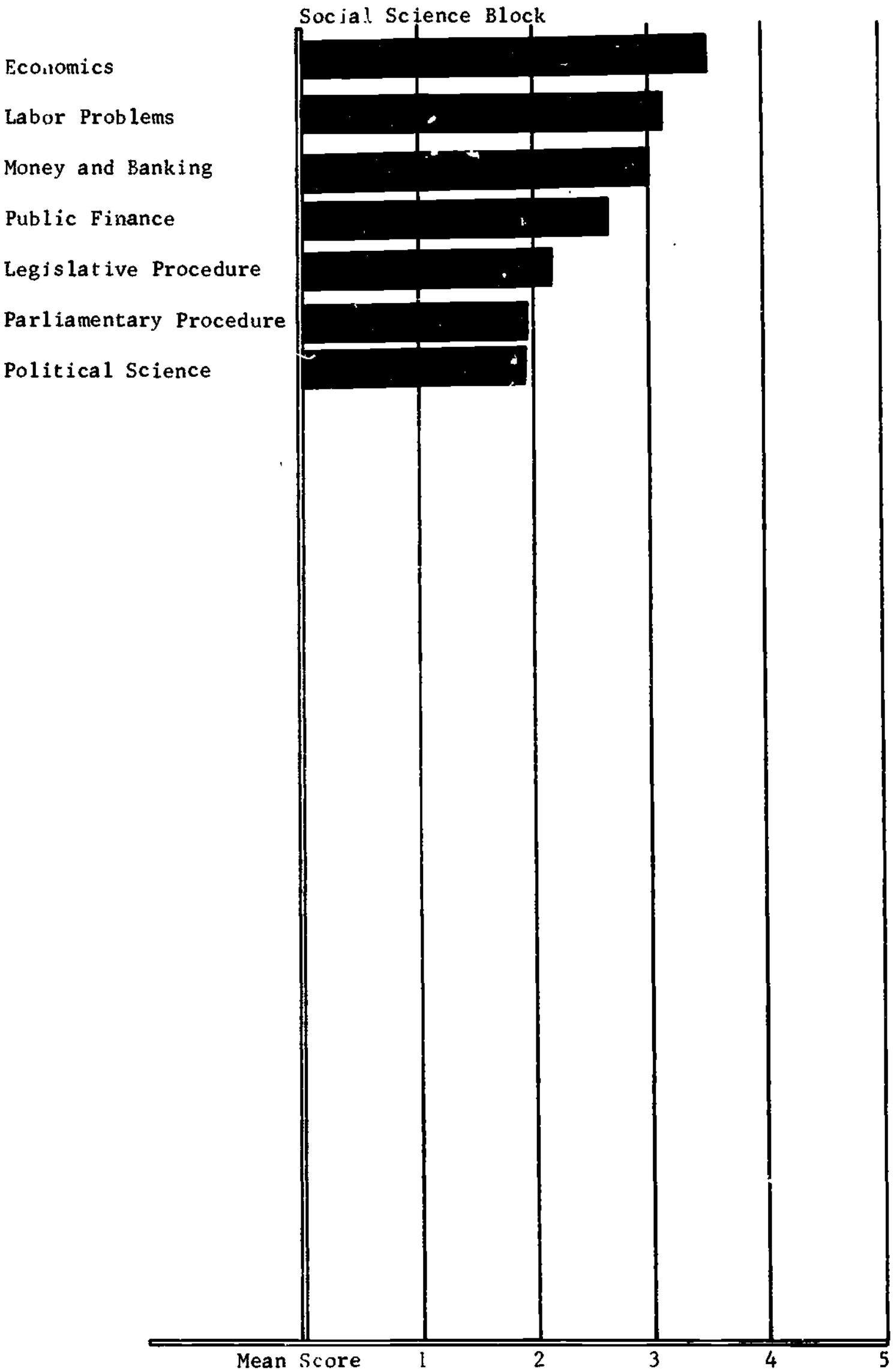
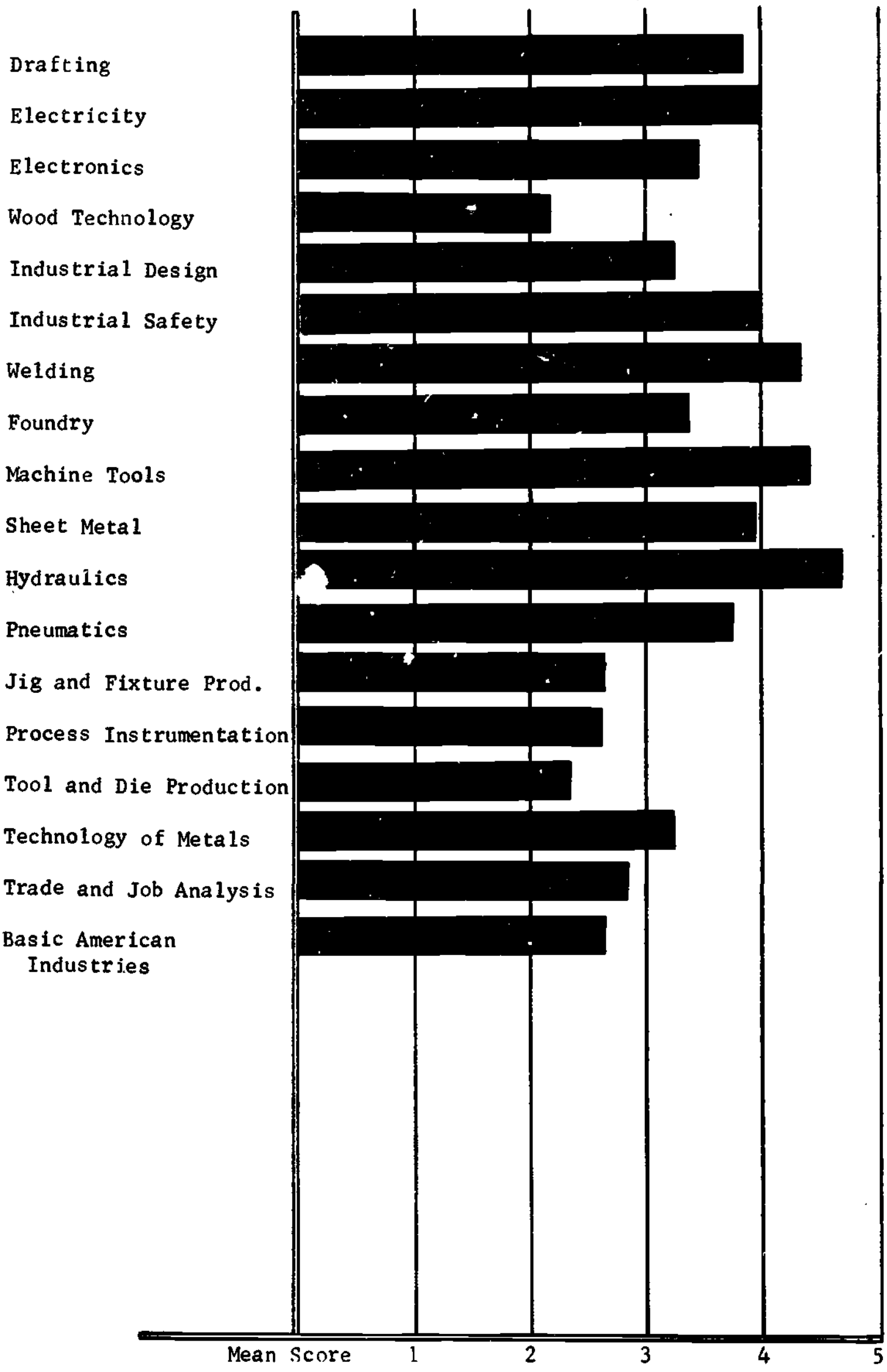


TABLE VI

Agricultural Industry Consultants' Mean Value-Rating of the Related Technical Courses Block



Study Findings in the Selection of Content for Specific Agricultural Machinery Courses

In this section of the questionnaire, the common agricultural machines were grouped according to their basic function or purpose. Each machine was assigned a five-point rating scale and the Industrial Consultants' were requested to rate their value for inclusion as instructional units in agricultural machinery courses.

The mean score was computed for each machine as in the previous part of the questionnaire. In addition to this the standard deviation was computed for each of the machine groups. This was done using the standard formula for a sample calculation of standard deviation. These two figures, the mean score and the standard deviation, give a valid criteria for ranking the machines according to their instructional value and establishing limits for course inclusion. Specific applications are explained in Chapter 4.

A description of the findings of this study for each block of machines is contained in e following units: (The line indicates the lower limits for inclusion.

Planting and Tillage Equipment Block

The Industrial Consultants' value-ratings of the equipment in this block was used to determine if machines were to be included in specific agricultural machinery. Those courses which lie above one standard deviation below the mean of the block were considered of sufficient value to justify inclusion. The grand mean is 4.0177, and the standard deviation is .027. One standard deviation below the mean is 3.990, and this is the lower limit for inclusion in agricultural machinery courses.

A listing of this equipment and mean scores follows: The equipment is ranked according to its value to agricultural machinery courses.

	Equipment	Mean Score
1.	Disk Harrows	4.433
2.	Disk Plows	4.323
3.	Moldboard Plows	4.207
4.	Grain Drills	4.192
5.	Chisel and Subsurface Plows	4.186
6.	Spring Tooth Harrows	4.165
7.	Sorghum, Peanut, and Pea Planters	4.111
8.	Multiple Use Drills	4.037
9.	Sub-Surface Tillage Tools and Field Cultivators	4.036
10.5.	Cotton Planters	4.000
10.5.	Rotary Plows	4.000
12.	Spike Tooth Harrows	3.800
13.	Land Rollers and Pulverizers	3.714
14.	Potato Planters	3.448
15.	Transplanting and Plant Seeding Machines	3.393
16.	Grass-Sprig Planters	3.346
17.	Beet and Bean Planters	3.250

Harvesting Equipment Block

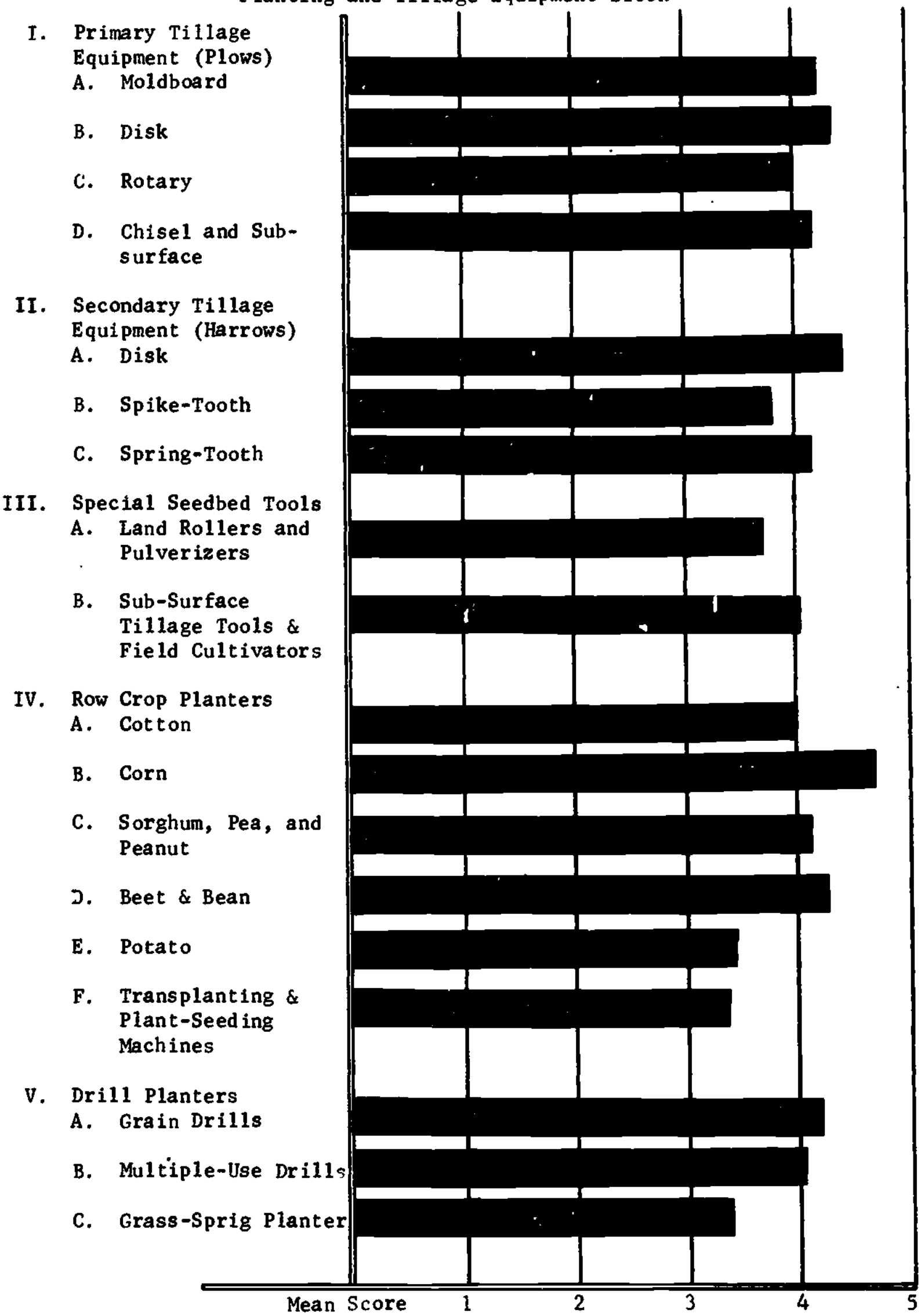
The Industrial Consultants' value-ratings of equipment in this block has a grand mean of 3.878 with a standard deviation of .052. One standard deviation below the grand mean is 3.826, and this is the lower limit for inclusion in agricultural machinery courses.

A listing of this equipment and its mean score follows. The equipment is ranked according to its value to agricultural machinery courses.

	Equipment	Mean Score
1.	Combines	4.750
2.	Corn Harvesters	4.483
3.	Field Choppers	4.406
4.	Mowing Machines	4.250
5.	Forage Blowers	4.188
6.	Pickup Balers	4.125

TABLE VII

Agricultural Industry Consultants' Mean Value-Rating of the Planting and Tillage Equipment Block



Equipment	Mean Score
7. Side Delivery Rakes	4.097
8. Hay Conditioners	4.063
9. Windrowers	4.000
10. Cotton Harvesters	3.906
11. Grain Augers and Conveyors	3.875
12. Bale Loaders	3.645
13. Potato Diggers	3.290
14. Vegetable Pickers	3.250
15. Peanut Harvesters	2.900

Weed and Pest Control Equipment Block

The Industrial Consultants' value-rating of equipment in this block has a grand mean of 3.610 with a standard deviation of .048. One standard deviation below the grand mean is 3.562, and this is the lower limit for inclusion in agricultural machinery courses.

A listing of this equipment and its mean score follows. The equipment is ranked according to its indicated value to agricultural machinery courses.

Equipment	Mean Score
1. Hydraulic Sprayers	4.179
2. Hydro-Pneumatic Sprayers	3.964
3. Blower Sprayers	3.929
4.5. Flame Application Equipment	3.379
4.5. Orchard Dusters	3.379
6. Electronic Dusters	3.148
7. Aircraft Dusters	3.036
8. Aircraft Sprayers	3.017

Irrigation Equipment Block

The Industrial Consultants' value-rating of equipment in this block has a grand mean of 4.018 with a standard deviation of .032. One standard deviation below the grand mean is 3.983, and this is the lower limit for inclusion in agricultural machinery courses.

TABLE VIII

Agricultural Industry Consultants' Mean Value-Rating of the Harvesting Equipment Block

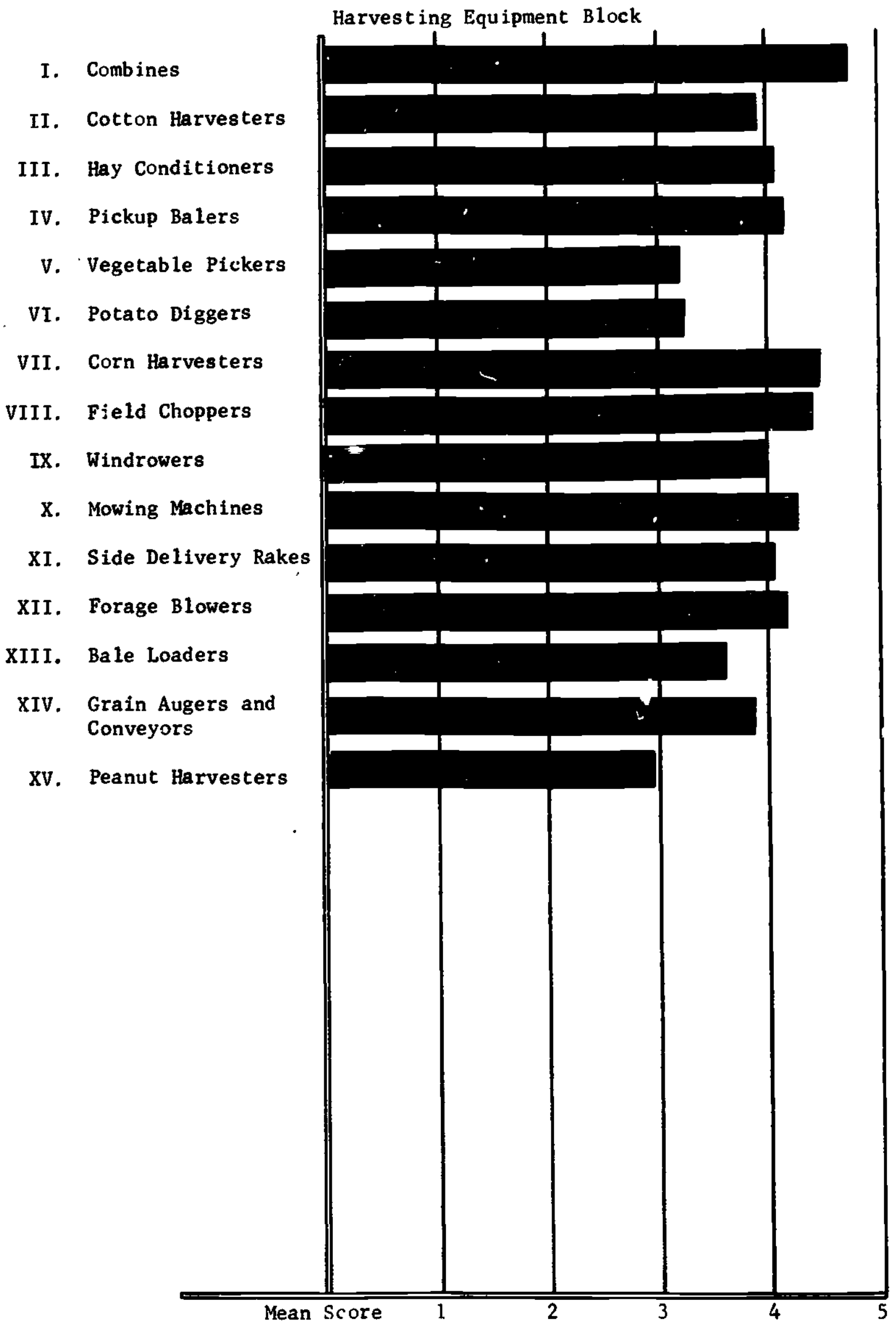
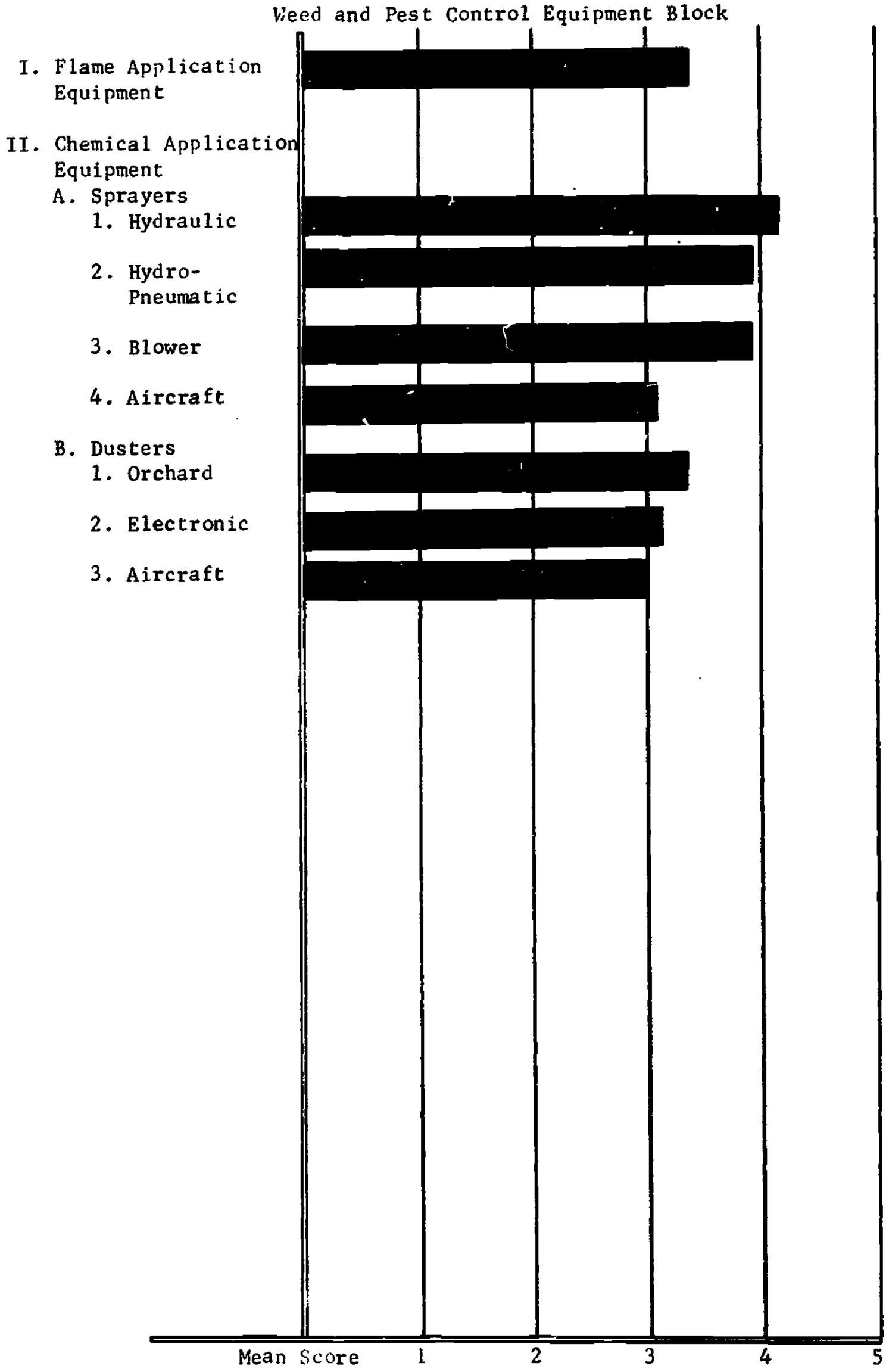


TABLE IX

Agricultural Industry Consultants' Mean Value Rating of the Weed and Pest Control Equipment Block



A listing of this equipment and mean scores follows with the equipment ranked according to its value to agricultural machinery courses.

Equipment	Mean Score
1. Pumps and Pump Drives	4.400
2. Sprinkler Systems	4.167
3. Power Units	4.063
4. Self Propelled Sprinklers	3.938
5. Land Levelers	3.548

Farm Power Equipment Block

The value-rating of equipment in this block by Industrial Consultants has a grand mean of 4.530 with a standard deviation of .048. One standard deviation below the grand mean is 4.482 and this is the lower limit for inclusion in agricultural machinery courses.

A listing of this equipment and its mean score follow. The equipment is ranked according to its value to agricultural machinery courses.

Equipment	Mean Score
1. Diesel Engines	4.875
2. Wheel Type Tractors	4.833
3. Gasoline Engines	4.719
4. Four-Wheel Drive Type Tractors	4.517
5. Track Type Tractors	4.300
6. Liquified Petroleum Engines	3.968

TABLE X

Agricultural Industry Consultants' Mean Value-Rating of the Irrigation Equipment Block

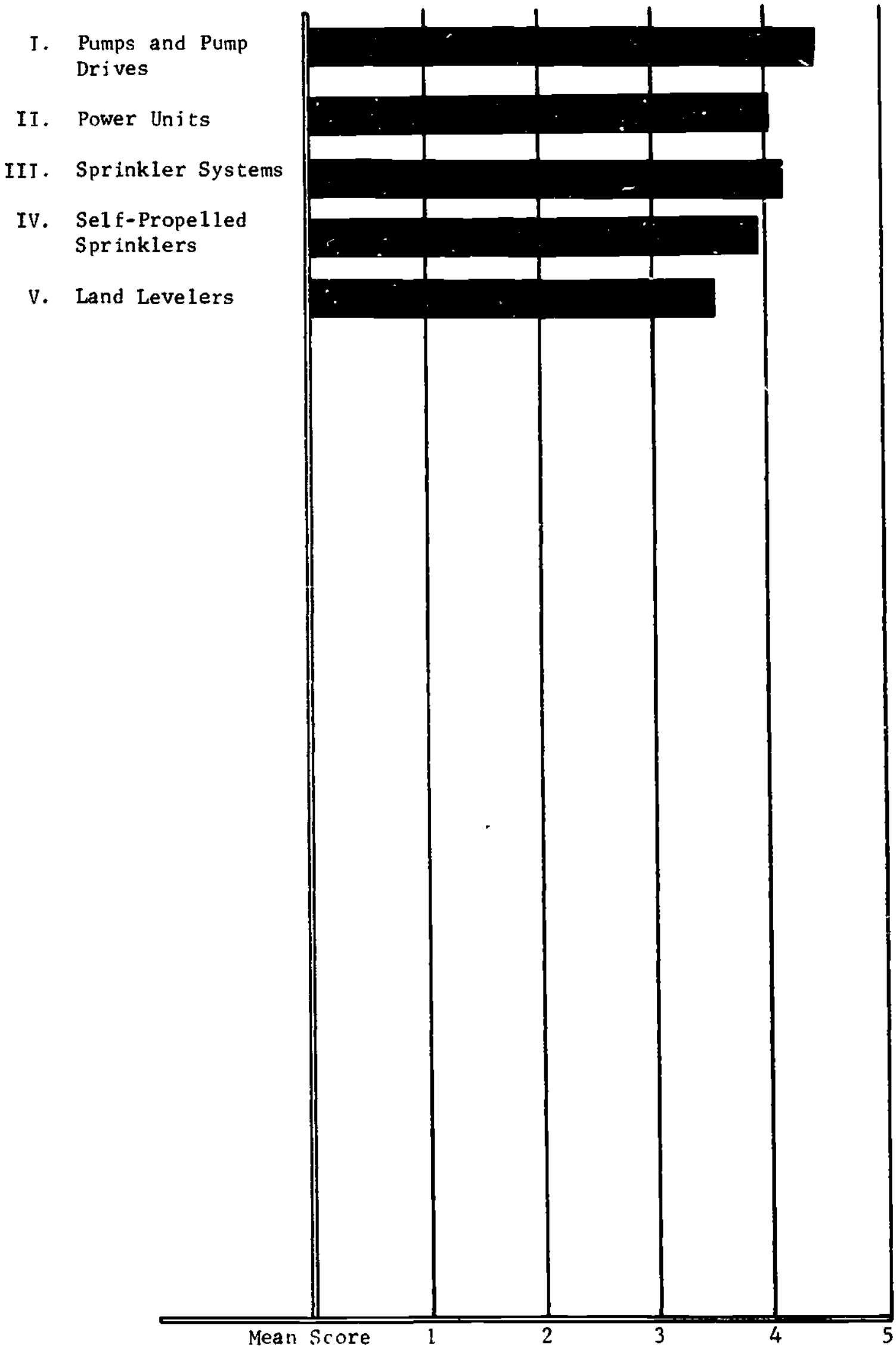
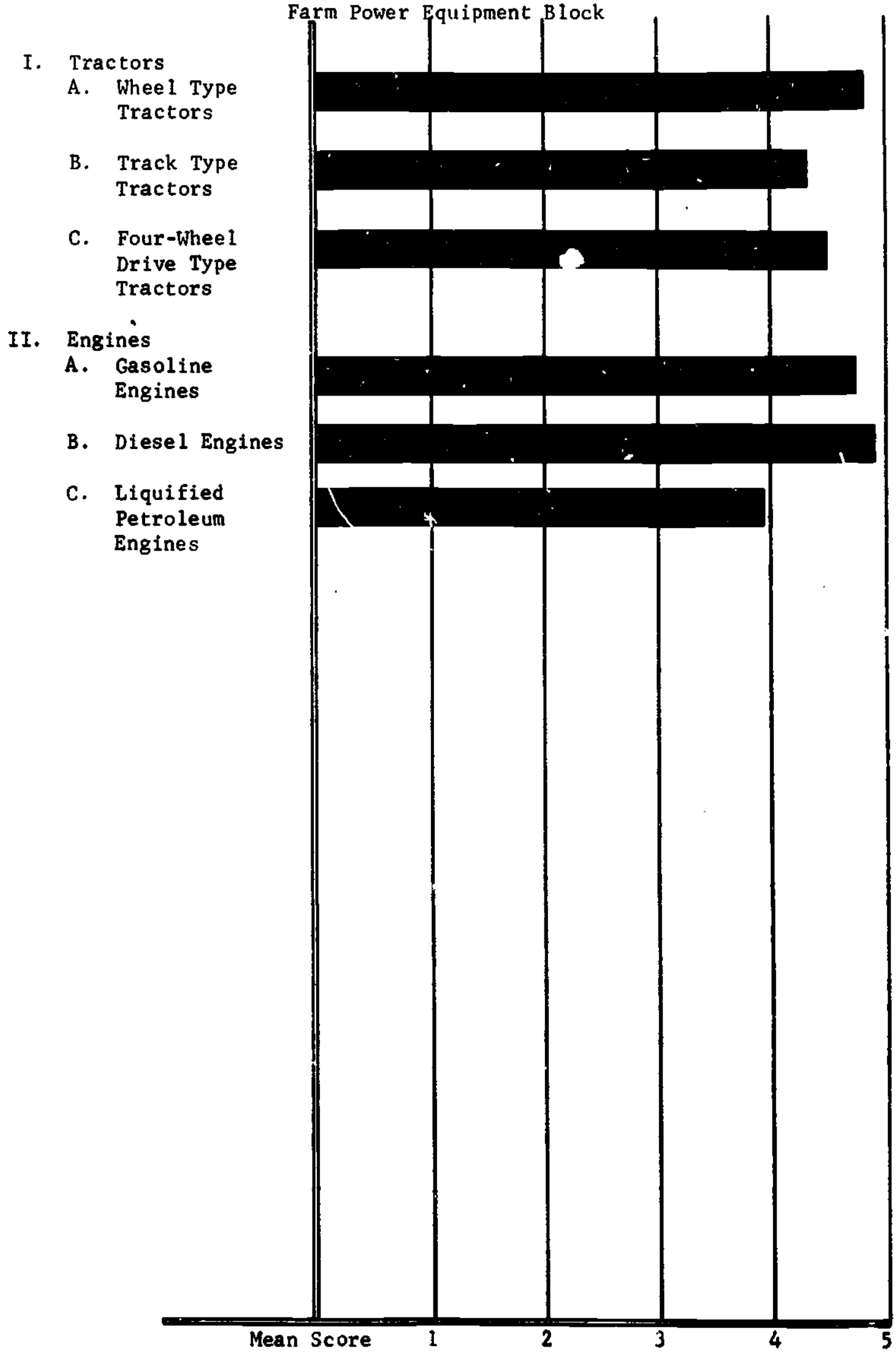


TABLE XI

Agricultural Industry Consultants' Mean Value-Rating of the Farm Power Equipment Block



CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to construct a curriculum of courses that would be of greatest value in training agricultural machinery technicians and to select the most desirable content for specific agricultural machinery courses for four-year colleges and universities.

The data for this study was secured by surveying a stratified random sample of agricultural machinery manufacturers and distributors. The responses from the questionnaires were tabulated to determine the most desirable courses and course content.

The review of the literature is mostly supportive in nature. No identical studies were located. Many studies were located which showed the need for additional college-level training in agricultural machinery. Interviews with executives of major machinery manufacturers revealed that a training program of this type was long overdue. This type of program could fill an indicated need for in-service training of agricultural teachers in the area of agricultural machines as several studies indicated this need.

Conclusions

According to the findings of this study, the following conclusions were formulated:

1. The Agricultural Consultants displayed considerable agreement in their selection of college courses for the curriculum to train agricultural machinery technicians. Wide variations in mean scores were found in all areas sampled.

2. There was significant agreement among the Industrial Consultants concerning the value of the various agricultural machines in agricultural machinery courses. A Chi-Square test for significance indicated that the results were significant at the .05 level of significance.

Recommendations on Selection of College Courses

On the basis of data collected and reported in this study, the following recommendations on selection of college courses appear feasible:

1. The courses with the highest mean scores in each block should be the most valuable to agricultural machinery students and, therefore, are the logical choices within the framework of each institution's requirements.

2. In addition to the courses listed in the questionnaire, a course in technical writing would be valuable in the curriculum. This recommendation was made on the basis of suggestions made by Industrial Consultants. (See Appendix F)

The Curriculum requirements of a typical four-year college with a strong technical program is shown in Table XII. The application of the findings of this study in planning an agricultural machinery program is shown in Table XIII. A program planned in this manner should be of maximum value to the enrollee and he, as a graduate, should be of maximum value to his future employer.

Recommendations on Content of Specific Agricultural Machinery Courses

On the basis of the data collected and reported in this study, the following recommendations appear to be feasible:

1. If the institution already has a strong automotive and industrial education program to build on, the addition of the three courses presented in Tables XIV, XV, add XVI should meet the needs of most students and equip them for successful entry into this field.

2. If the institution does not have a strong automotive or industrial education program it will be necessary to either develop these programs or expend considerable more time developing an adequate background of understanding and theory for their students.

TABLE XII

GENERAL REQUIREMENTS FOR THE BACCALAUREATE DEGREE IN TECHNOLOGY

I.	Communications Area		9 Hrs.
	A. English Composition I	3 Hrs.	
	B. English Composition II	3 Hrs.	
	C. Basic Speech	3 Hrs.	
II.	Humanities Area		8 Hrs.
	A. Literature	3 Hrs.	
III.	Natural Science Area		10 Hrs.
	A. Biological Science	5 Hrs.	
	B. Physical Science	5 Hrs.	
IV.	Social Science Area		10 Hrs.
	A. History	3 Hrs.	
V.	Mathematics Area		3 Hrs.
VI.	General Psychology		3 Hrs.
VII.	Health Area		4 Hrs.
VIII.	Business Administration		9 Hrs.
IX.	Technical Courses and Electives		68 Hrs.
	Total Hrs.		124

TABLE XIII

CURRICULUM FOR TRAINING AGRICULTURAL MACHINERY TECHNICIANS

I.	Communications Area		9 Hrs.
	A. English Composition I	3 Hrs.	
	B. English Composition II	3 Hrs.	
	C. Basic Speech	3 Hrs.	
II.	Humanities Area		8 Hrs.
	A. Literature	3 Hrs.	
	B. Humanities Electives	5 Hrs.	
III.	Natural Science Area		12 Hrs.
	A. Biological Science	6 Hrs.	
	1. Conservation of Renewable Resources	3 Hrs.	
	2. Botany	3 Hrs.	
	B. Physical Science	6 Hrs.	
	1. Soil Science	3 Hrs.	
	2. Physics	3 Hrs.	
IV.	Social Science Area		12 Hrs.
	A. History	3 Hrs.	
	B. Economics	3 Hrs.	
	C. Labor Problems	3 Hrs.	
	D. Money and Banking	3 Hrs.	
V.	Mathematics Area		3 Hrs.
	A. College Mathematics	3 Hrs.	
VI.	General Psychology		3 Hrs.
VII.	Health Area		4 Hrs.
	A. Physical Education or ROTC	4 Hrs.	
VIII.	Business Administration Area		9 Hrs.
	A. Accounting	3 Hrs.	
	B. Organization and Administration	3 Hrs.	
	C. Personnel Management	3 Hrs.	
IX.	Technical Courses and Electives		64 Hrs.
	A. Hydraulics	3 Hrs.	
	B. Machine Tools	3 Hrs.	
	C. Welding	3 Hrs.	
	D. Industrial Safety	3 Hrs.	
	E. Engine Diagnosis and Overhaul	3 Hrs.	
	F. Diesel Engine Diagnosis and Overhaul	5 Hrs.	

G.	Transmissions and Differentials	3 Hrs.
H.	Fuels and Lubricants	3 Hrs.
I.	Electricity	3 Hrs.
J.	Automotive Electrical Equipment	5 Hrs.
K.	Automotive Fundamentals	3 Hrs.
L.	Small Engine Diagnosis and Overhaul	3 Hrs.
M.	Drafting	3 Hrs.
N.	Sheet Metal	3 Hrs.
O.	Planting Tillage and Chemical Application Equipment	3 Hrs.
P.	Harvesting Equipment	3 Hrs.
Q.	Farm Power and Irrigation Equipment	3 Hrs.
R.	Elective Courses	9 Hrs.
	1. Technical Writing (Suggested elective)	

TABLE XIV

AGRICULTURAL MACHINERY COURSE NO. 1
COURSE CONTENT

Planting, Tillage and Chemical Application Equipment

I. Primary Tillage Equipment (Plows)
   A. Moldboard
   B. Disk
   C. Rotary
   D. Chisel and Subsurface

II. Secondary Tillage Equipment (Harrows)
   A. Disk
   B. Spring-Tooth

III. Special Seedbed Tools
   A. Sub-Surface Tillage Tools and Field Cultivators

IV. Row Crop Planters
   A. Cotton
   B. Corn
   C. Sorghum, Pea, and Peanut

V. Drill Planters
   A. Grain Drills
   B. Multiple-Use Drills

VI. Chemical Application Equipment
   A. Hydraulic Sprayers
   B. Hydro-Pneumatic Sprayers
   C. Blower Sprayers

TABLE XV

AGRICULTURAL MACHINERY COURSE NO. 2
COURSE CONTENT

Harvesting Equipment

I. Combines

II. Cotton Harvesters

III. Hay Conditioners

IV. Pickup Balers

V. Corn Harvesters

VI. Field Choppers

VII. Windrowers

VIII. Mowing Machines

IX. Side Delivery Rakes

X. Forage Blowers

XI. Grain Augers and Conveyors

TABLE XVI

AGRICULTURAL MACHINERY COURSE NO. 3
COURSE CONTENT

Farm Power and Irrigation Equipment

I. Tractors
   A. Wheel Type Tractors
   B. Four-Wheel Drive Type Tractors

II. Engines
   A. Gasoline Engines
   B. Diesel Engines

III. Irrigation Equipment
   A. Power Units
   B. Pumps and Pump Drives
   C. Sprinkler Systems

Recommendations for Further Study

1. A study should be made to develop a plan of coordination with area high schools who prepare students for entry into this program.

2. A study should be made to develop detailed courses of study for each of the agricultural machinery courses.

3. A similar study should be made among agricultural educators to compare their value-rating with those of industry to detect wide variations in emphasis.

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APPENDIX A

QUESTIONNAIRE FOR SELECTION OF MOST DESIRABLE COURSES

QUESTIONNAIRE FOR THE DEVELOPMENT OF A CURRICULUM FOR AGRICULTURAL MACHINERY TECHNOLOGY

Please rate the following courses as to their value for inclusion into the curriculum for training Agricultural Machinery Technicians. Circle the number that, in your opinion, most nearly describes the course's value.

5 of great value to agriculture machinery technicians
4 of moderate value to agriculture machinery technicians
3 of some value to agriculture machinery technicians
2 of little value to agriculture machinery technicians
1 of insignificant value to agriculture machinery technicians

Automotive Technology Block

Automotive Fundamentals	5	4	3	2	1
Engine Diagnosis and Overhaul	5	4	3	2	1
Brake and Front End Suspension Systems	5	4	3	2	1
Transmissions and Differentials	5	4	3	2	1
Fuels and Lubricants	5	4	3	2	1
Automotive Electrical Equipment	5	4	3	2	1
Diesel Engine Diagnosis and Service	5	4	3	2	1
Shop Planning and Management	5	4	3	2	1
Advanced Principles of Prime Movers	5	4	3	2	1

Business Administration Block

Accounting	5	4	3	2	1
Organization and Administration	5	4	3	2	1
Typing	5	4	3	2	1
Labor Economics	5	4	3	2	1
Business Law	5	4	3	2	1
Personnel Management	5	4	3	2	1
Production Management	5	4	3	2	1
Data Processing	5	4	3	2	1
Business Machines	5	4	3	2	1

Mathematics Block

College Mathematics	5	4	3	2	1
College Algebra	5	4	3	2	1
Modern Mathematics	5	4	3	2	1

Trigonometry	5	4	3	2	1
Analytic Geometry and Calculus	5	4	3	2	1

Natural Science Block

Soil Science	5	4	3	2	1
Chemistry	5	4	3	2	1
Physics	5	4	3	2	1
Geology	5	4	3	2	1
Climatology	5	4	3	2	1
Biology	5	4	3	2	1
Zoology	5	4	3	2	1
Botany	5	4	3	2	1
Bacteriology	5	4	3	2	1
Rocks and Minerals	5	4	3	2	1
Agrostology	5	4	3	2	1
Conservation of Renewable Resources	5	4	3	2	1
Genetics	5	4	3	2	1

Social Science Block

Economics	5	4	3	2	1
Labor Problems	5	4	3	2	1
Money and Banking	5	4	3	2	1
Public Finance	5	4	3	2	1
Legislative Procedure	5	4	3	2	1
Parliamentary Procedure	5	4	3	2	1
Political Science	5	4	3	2	1

Related Technical Courses Block

Drafting	5	4	3	2	1
Electricity	5	4	3	2	1
Electronics	5	4	3	2	1
Wood Technology	5	4	3	2	1
Industrial Design	5	4	3	2	1
Industrial Safety	5	4	3	2	1
Welding	5	4	3	2	1
Foundry	5	4	3	2	1
Machine Tools	5	4	3	2	1
Sheet Metal	5	4	3	2	1
Hydraulics	5	4	3	2	1
Pneumatics	5	4	3	2	1
Jig and Fixture Production	5	4	3	2	1
Process Instrumentation	5	4	3	2	1
Tool and Die Production	5	4	3	2	1
Technology of Metals	5	4	3	2	1
Trade and Job Analysis	5	4	3	2	1
Basic American Industries	5	4	3	2	1

APPENDIX B

QUESTIONNAIRE FOR SELECTION OF MOST DESIRABLE CONTENT OF AGRICULTURAL COURSES

AGRICULTURAL MACHINERY BLOCK

Please rate the following machines as to their value for inclusion as instructional units in specific agricultural machinery courses by circling the number. The values of the ratings are:

5 of great value to agricultural machinery technicians
4 of moderate value to agricultural machinery technicians
3 of some value to agricultural machinery technicians
2 of little value to agricultural machinery technicians
1 of insignificant value to agricultural machinery technicians

Planting and Tillage Equipment

I.	Primary Tillage Equipment (Plows)	
	A. Moldboard	5 4 3 2 1
	B. Disk	5 4 3 2 1
	C. Rotary	5 4 3 2 1
	D. Chisel and Subsurface	5 4 3 2 1
II.	Secondary Tillage Equipment (Harrows)	
	A. Disk	5 4 3 2 1
	B. Spike-tooth	5 4 3 2 1
	C. Spring-tooth	5 4 3 2 1
III.	Special Seedbed Tools	
	A. Land Rollers and Pulverizers	5 4 3 2 1
	B. Sub-surface Tillage Tools and Field Cultivators	5 4 3 2 1
IV.	Row Crop Planters	
	A. Cotton	5 4 3 2 1
	B. Corn	5 4 3 2 1
	C. Sorghum, Pea, and Peanut	5 4 3 2 1
	D. Beet and Bean	5 4 3 2 1
	E. Potato	5 4 3 2 1
	F. Transplanting and Plant-Seeding Machines	5 4 3 2 1
V.	Drill Planters	
	A. Grain Drills	5 4 3 2 1
	B. Multiple Use Drills	5 4 3 2 1
	C. Grass-Sprig Planter	5 4 3 2 1

Harvesting Equipment

I.	Combines	5 4 3 2 1
II.	Cotton Harvesters	5 4 3 2 1
III.	Hay Conditioners	5 4 3 2 1
IV.	Pickup Balers	5 4 3 2 1
V.	Vegetable Pickers	5 4 3 2 1
VI.	Potato Diggers	5 4 3 2 1

VII.	Corn Harvesters	5	4	3	2	1
VIII.	Field Choppers	5	4	3	2	1
IX.	Windrowers	5	4	3	2	1
X.	Mowing Machines	5	4	3	2	1
XI.	Side Delivery Rakes	5	4	3	2	1
XII.	Forage Blowers	5	4	3	2	1
XIII.	Bale Loaders	5	4	3	2	1
XIV.	Grain Augers and Conveyors	5	4	3	2	1
XV.	Peanut Harvesters	5	4	3	2	1

Weed and Pest Control Equipment

I.	Flame Application Equipment	5	4	3	2	1
II.	Chemical Application Equipment					
	A. Sprayers					
	1. Hydraulic	5	4	3	2	1
	2. Hydro-Pneumatic	5	4	3	2	1
	3. Blower	5	4	3	2	1
	4. Aircraft	5	4	3	2	1
	B. Dusters					
	1. Orchard	5	4	3	2	1
	2. Electronic	5	4	3	2	1
	3. Aircraft	5	4	3	2	1

Irrigation Equipment

I.	Pumps and Pump Drives	5	4	3	2	1
II.	Power Units	5	4	3	2	1
III.	Sprinkler Systems	5	4	3	2	1
IV.	Self-Propelled Sprinklers	5	4	3	2	1
V.	Land Levelers	5	4	3	2	1

Farm Power Equipment

I.	Tractors					
	A. Wheel Type Tractors	5	4	3	2	1
	B. Track Type Tractors	5	4	3	2	1
	C. Four-Wheel Drive Type Tractors	5	4	3	2	1
II.	Engines					
	A. Gasoline Engines	5	4	3	2	1
	B. Diesel Engines	5	4	3	2	1
	C. Liquified Petroleum Engines	5	4	3	2	1

APPENDIX C

LISTING OF THE SAMPLE OF SELECTED AGRICULTURAL MANUFACTURERS

SELECTED AGRICULTURAL MANUFACTURERS

Caterpillar Tractor Company	Peoria, Illinois
Allis - Chalmers	Milwaukee, Wisconsin
Minneapolis - Moline	Hopkins, Minnesota
Ford Motor Company - Tractor and Implement Division	Birmingham, Michigan
Massey - Ferguson Incorporated	Kansas City, Kansas
John Deere Company	Kansas City, Missouri
J. I. Case Company	St. Louis, Missouri
Oliver Corporation	Chicago, Illinois
International Harvester Company	Kansas City, Kansas
Deutz Diesel Corporation	Woodside, New York
Dimco Manufacturing Company	Fargo, North Dakota
Steiger Manufacturing Company	Red Lake Falls, Minnesota
Tradewings Incorporated	Tacoma, Washington
F W D Wagner Corporation	Portland, Oregon
B M C - Nuttfield - Farm Machinery Department	Waynesboro, Pennsylvania
Long Manufacturing Company	Tarboro, North Calolina
Lister Blackstone Incorporated	Woodside, New York
N. P. Nelson Incorporated - Tractor Shovel Division	Clifton, New Jersey
Hagi Manufacturing Company	Clarion, Iowa
Versa - Tractor	Plainview, Texas
Pennsylvania Lawn Products Company	Waynesboro, Virginia
Gravely Tractor Division	Dunbar, West Virginia
Jacobsen Manufacturing Company	Racine, Wisconsin
Simplicity Manufacturing Company	Prot Washington, Wisconsin
Wheelhorse Products Incorporated	South Bend, Indiana
M and W Manufacturing Company	Gibson City, Illinois
Winpower Manufacturing Company	Newton, Iowa
Avco New Idea	Coldwater, Ohio
Gehl Company	West Bend, Wisconsin
Brillion Iron Works, Incorporated	Brillion, Wisconsin
Waldon Manufacturing Company	Fairview, Oklahoma
New Holland Manufacturing Company	New Holland, Pennsylvania
Richardson Manufacturing Company	Cawker City, Kansas
Western Land Roller Company	Hastings, Nebraska
Owatonna Manufacturing Company	Owatonna, Minnesota
Char - Lynn	Eden Prairie, Minnesota
Continental Belton Manufacturing Company	Belton, Texas
Fox River Tractor Company	Appleton, Wisconsin
Papec Machine Company	Shortsville, New York
Lundell Manufacturing Company	Cherokee, Iowa
Buffalo Turbine Agriculture Equipment Company	Gowanda, New York

Matthews Company	Chrystal Lake, Illinois
Harris Harvester Company	Fresno, California
Stam Manufacturing Company	Watseka, Illinois
Farmhand Incorporated	Hopkins, Minnesota
H. D. Hudson Manufacturing Company	Shawnee Mission, Kansas
Kansas City Tractor and Implement	North Kansas City, Missouri
Hesston Manufacturing Company	Hesston, Kansas
Dempster Manufacturing Company	Beatrice, Nebraska
Klughartt Machine Company	Kansas City, Missouri

APPENDIX D

COVER LETTER MAILED WITH QUESTIONNAIRE

UNIVERSITY OF ARKANSAS
FAYETTEVILLE

DEPARTMENT
VOCATIONAL TEACHER EDUCATION

April 10, 1969

We are presently engaged in the development of a four-year, college-level program to train agricultural machinery technicians. In order to make this program as effective as possible, we are surveying a selected sample of agricultural machinery manufacturers to determine what skills and training are most desirable for this type of personnel. It is generally agreed that the agricultural machinery technician should have a strong background of agricultural experience, a high degree of mechanical ability, a knowledge of business and its administration, and the general education courses necessary to obtain proper social adjustment and a baccalaureate degree.

This study has two purposes: (1) the determination of courses in a college curriculum that will be most pertinent; (2) the determination of the content for agricultural machinery courses to make them as beneficial as possilbe to the student and his future employer.

It would be greatly appreciated if you would complete the enclosed questionnaire and return it to us at your earliest convenience. We would welcome any comments and suggestions that you might make concerning this program.

Thank you for your cooperation.

Sincerely,

George R. Brooker
University of Arkansas

APPENDIX E

LISTING OF THE VARIABLES AND THEIR MEAN SCORES

STUDY FINDINGS IN THE SELECTION OF COLLEGE COURSES

Course Title	Mean Score
Automotive Technology Block	
Diesel Engine Diagnosis and Service	4.412
Engine Diagnosis and Overhaul	4.324
Transmissions and Differentials	4.265
Fuels and Lubricants	4.212
Automotive Electrical Equipment	4.029
Automotive Fundamentals	3.972
Small Engine Diagnosis and Service	3.943
Shop Planning and Management	3.758
Brake and Front End Suspension Systems	3.170
Advanced Principles of Prime Movers	3.118
Business Administration Block	
Organization and Administration	3.742
Personnel Management	3.500
Accounting	3.236
Labor Economics	2.879
Production Management	2.844
Business Law	2.781
Typing	2.472
Data Processing	2.412
Business Machines	2.182
Mathematics Block	
College Mathematics	4.094
Modern Mathematics	4.483
College Algebra	3.400
Trigonometry	3.000
Analytic Geometry and Calculus	2.586
Natural Science Block	
Soil Science	3.636
Physics	3.594
Chemistry	3.000
Conservation of Renewable Resources	2.839
Climatology	2.656
Geology	2.626
Botany	2.531
Biology	2.438

Course Title	Mean Score
Rocks and Minerals	2.194
Zoology	2.094
Bacteriology	2.094
Agrostology	2.033
Genetics	1.806
Social Science Block	
Economics	3.531
Labor Problems	3.161
Money and Banking	3.032
Public Finance	2.677
Legislative Procedure	2.194
Parliamentary Procedure	1.969
Political Science	1.969
Related Technical Courses Block	
Hydraulics	4.647
Machine Tools	4.382
Welding	4.324
Industrial Safety	3.972
Electricity	3.971
Sheet Metal	3.941
Pneumatics	3.848
Drafting	3.824
Electronics	3.424
Foundry	3.382
Technology of Metals	3.286
Industrial Design	3.235
Trade and Job Analysis	2.818
Basic American Industries	2.636
Jig and Fixture Production	2.629
Process Instrumentation	2.618
Tool and Die Production	2.324
Wood Technology	2.156

STUDY FINDINGS IN THE SELECTION OF CONTENT
FOR SPECIFIC AGRICULTURAL MACHINERY COURSES

Course Title	Mean Score
Planting and Tillage Equipment Block	
Disk Harrow	4.433
Disk Plow	4.323
Moldboard Plow	4.207
Grain Drills	4.192
Chisel and Subsurface Plow	4.186
Spring-Tooth Harrow	4.185
Sorghum, Pea, and Peanut Row Crop Planter	4.111
Multiple Use Drills	4.037
Sub-Surface Tillage Tools and Field Cultivators	4.036
Rotary Plow	4.000
Cotton Row Crop Planter	4.000
Spike-Tooth Harrow	3.800
Land Rollers and Pulverizers	3.714
Potato Row Crop Planter	3.448
Transplanting and Plant-Seeding Machines	3.393
Grass-Sprig Planter	3.346
Beet and Bean Row Crop Planter	3.250
Harvesting Equipment Block	
Combines	4.750
Corn Harvesters	4.483
Field Choppers	4.406
Mowing Machines	4.250
Forage Blowers	4.188
Pickup Balers	4.125
Side Delivery Rakes	4.097
Hay Conditioners	4.063
Windrowers	4.000
Cotton Harvesters	3.906
Grain Augers and Conveyors	3.875
Bale Loaders	3.645
Potato Diggers	3.290
Vegetable Pickers	3.250
Peanut Harvesters	2.900
Weed and Pest Control Equipment Block	
Hydraulic Sprayer	4.179
Hydro-Pneumatic Sprayer	3.964
Blower	3.929
Flame Application Equipment	3.379

Course Title	Mean Score
Orchard Duster	3.379
Electronic Duster	3.148
Aircraft Duster	3.036
Aircraft Sprayer	3.017
Irrigation Equipment Block	
Pumps and Pump Drives	4.400
Sprinkler Systems	4.167
Power Units	4.063
Self-Propelled Sprinklers	3.938
Land Levelers	3.548
Farm Power Equipment Block	
Diesel Engine	4.875
Wheel Type Tractor	4.833
Gasoline Engine	4.719
Four-Wheel Drive Type Tractor	4.517
Track Type Tractor	4.300
Liquified Petroleum Engine	3.968

APPENDIX F

COMMENTS OF THE INDUSTRIAL CONSULTANTS RELATIVE TO THIS STUDY

COMMENTS OF INDUSTRIAL CONSULTANTS

"Your planned program is very exciting as it is something this country has needed for years. Some of the existing trade schools are a great help, but they fall short of what is required for the service manager or director of field services."

"I personally feel this will be a good course for the school to conduct, for the agricultural field is very broad and it is not a fluctuating business like in some other areas."

"The main problem we have with young people today is with their communicative ability. This involves report writing and making oral presentations. It makes no difference how intelligent a person is; if he can't clearly describe his thoughts and ideas he usually fails within our organization."

"Business report writing and public speaking should be included as required courses as they are vital to a successful career. In our business, a good mechanical aptitude also is vital, but you seem to have this area well covered."

"The undersigned believes that a semester of public speaking and a comprehensive course in essay writing or composition including spelling and sentence structure is very essential today."

"We also feel that a short course in Psychology which would relate to the handling of people, would be valuable. Today a supervisor, to be able to utilize manpower, must have the ability to recognize the strong points and weaknesses of the personnel with whom he works."

"We would like to suggest that some course be offered in crop drying and servicing of the equipment used in crop drying installations. This is a large field now and is growing rapidly, and it is our experience that very few people are trained to maintain and service this equipment. We feel that some consideration should be given along these lines."

"We would certainly stress diesel engine diagnosis and service as being of great value to agricultural machinery technicians, particularly in view of the increasing trend toward the use of diesel in most of this equipment."

"Practical experience is needed more than theory."

"Few salesmen have the ability to express themselves, particularly when placed in front of even a small group of people. Today's selling and sales training does involve group tactics. The practice of drawing word pictures is, of course, basic selling."

"In American business, we need people who will accept responsibility and carry that load gracefully."

"The Business Administration block on your questionnaire looks very good, and most of the Social Science block would be helpful."

"In addition to the technical training they get, I would certainly be in favor of seeing a well-rounded individual applying for a job showing interest, aptitude, and a sincere desire to take on the responsibility necessary to operate today's business."

"What about technical writing."

"Very interesting."

APPENDIX G

EXPLANATION OF CHI-SQUARE TEST SCORES

EXPLANATION OF CHI SQUARE TEST SCORES

$$X^2 \text{ (chi square)} = \frac{(fo - fe)^2}{fe}$$

Four degrees of freedom are used. According to the table of critical values of chi square P = 13.28 at the .01 level.

Example:

Farm Power Equipment Block

Value of wheel type tractors as contest for specific agricultural machinery courses

Rating Scale Values	5	4	3	2	1
Observed (fo)	27	10	1	1	1
Expected (fe)	8	2	8	8	8
(fo - fe)	19	2	7	7	7
$(fo - fe)^2$	361	4	49	49	49
$\frac{(fo - fe)^2}{fe}$	45.13	.5	6.13	6.13	6.13

$$\sum \left[\frac{(fo - fe)^2}{fe} \right] = 60.66$$

Panel responses in many cases were very low for specific categories due to the fact that the tentative criteria were highly selective in nature. Some authorities recommend combining cell frequencies. However, since this test was used merely to select the most important items, no attempt was made to combine cell frequencies.

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*SPEECHES; BIBLIOGRAPHIES; *INDUSTRIAL ARTS; *RESEARCH REVIEWS (PUBLICATIONS); PHILOSOPHY; OBJECTIVES; MASS MEDIA; TEACHING METHODS
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This paper is a summary of those aspects of the second edition of "Review and Synthesis of Research in Industrial Arts Education" which dealt with the history, philosophy, and objectives of industrial arts and with the instructional media and methods of research. Doctoral dissertations, journal articles, reports of funded research, and staff studies which were included in the ERIC system were reviewed for inclusion. A number of noteworthy studies dealing with value-laden questions appeared during the 3-year period. These are: (1) historical works published by Barlow, Luetkemeyer, and Sredl, (2) philosophical studies published by Kagy, Svendsen, Miller, Pratzner, and others, (3) studies about specific objectives of industrial arts, and (4) research on methods of teaching. Other areas where studies exist are: (1) programed instruction, (2) use of various combinations of television, films, filmstrips and slides, (3) instructional systems, (4) studies dealing with creativity, and (5) manipulative performance studies. Researchers are encouraged to move toward a goal of providing sound, empirically based guidelines for the selection of optimum teaching procedures for specific learning situations. The research review is available as ED 034 898 (Research in Education, April 1970) or VT 010 109, to appear in a subsequent issue of ARM. A related document is VT 010 111, in this issue. (GR)

VT 010 110

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ED039370

Industrial Arts Research: History, Philosophy, Objectives, Media, and Methods 1966-1968[1]

Daniel L. Householder
Purdue University

The Second Edition of the Review and Synthesis of Research in Industrial Arts Education covered the literature during the period, 1966-1968. This paper is an attempt to summarize those aspects of that publication which dealt with the history, philosophy, and objectives of industrial arts and with the instructional media and methods research. It should be noted that the authors of the review concentrated their efforts on doctoral dissertations, journal articles, reports of funded research, and staff studies which were included in the ERIC system. As a result, it is quite possible that important research was overlooked because it was not widely available.

A number of noteworthy studies dealing with value-laden questions appeared during the three-year period. Outstanding historical works were published by Barlow, Luetkemeyer, and Sredl. The profession has demonstrated a new interest in its history as evidenced by the rapid appearance of these publications. In addition, a number of historical studies in industrial arts dealt primarily with problems of local interest.

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1 Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 7, 1969.

To be of the greatest value, historical research should attempt to answer perplexing questions. Historical research in industrial arts is now approaching a position where researchers investigate critical problems areas and seek to establish causal relationships which will help to explain potential solutions to those questions. We should continue to move away from social bookkeeping as a type of research and seek to study carefully selected and delimited problems which require historical evidence for their solutions.

Philosophical Studies

Recent studies dealing with the philosophical foundations of industrial arts have explored both traditional doctrines and novel viewpoints. The educational implications of technology and science have been emphasized in a number of studies. Kagy emphasized the importance of including opportunities for creative expression as a part of industrial arts. Svendsen urged the use of the term "liberal education" to characterize the conceptual structure underlying industrial arts.

Perhaps the mainstream of philosophical discourse in recent years has emphasized one major purpose for industrial arts: the interpretation of modern industry as a part of general education. Another distinct theme in the literature emphasized a multitude

of functions for industrial arts. Miller, for instance, indicated five primary functions: interpretative, exploratory, technical competence, preparatory, and supplementary.

Pratzner and others have emphasized the occupational contribution which industrial arts courses could or should provide for students. Perhaps this is the most likely direction which future philosophical research may take. Certainly it is difficult at this time to evaluate the contribution which industrial arts should make to the development of occupational competence. The 1968 Amendments to the Vocational Educational Act of 1963 make it imperative for industrial arts to clarify its purposes and to do so with all deliberate speed.

Objectives

Researchers continue to exhibit interest in research dealing with the attainment of the objectives of industrial arts. While the profession is not yet unanimous in its beliefs about specific objectives, there is evidence to indicate that a fairly high degree of consensus does exist. What is lacking at this point is research which would indicate how the profession might go about restructuring the order of priority which is given to the respective objectives. As industrial arts develops new objectives and seeks to give them priority, it is necessary to change the

commitment to existing objectives. At this point, one may note that the customary emphases upon habits of orderly performance and upon shop skills and knowledge does not in fact conform well to the dominant themes which have been stressed in the philosophical literature: the understanding of American industry and the contribution of industrial arts to pre-vocational competence. We are left, to some degree at least, with a conflict of puposes which research could perhaps help us resolve.

Instructional Media and Methods

Researchers in industrial arts have continued to devote substantial efforts to research on methods of teaching. Typical studies have compared the relative effectiveness of two or more methods of teaching a specific segment of cognitive content. Such research efforts have the potential to contribute significantly to the professional efforts of the classroom teacher - at least that is the first impression which would be received by the naive observer. However, when one examines the output of the research, one is appalled by the lack of consistent, directional findings. The fact is that the substantial research activities which have occurred have not yet developed a body of knowledge which would guide the industrial arts educator in selecting a method of teaching or instructional technique for a

specific situation.

Programed instruction has received widespread attention in all areas of education; industrial arts researchers have begun to evaluate its effectiveness for use in their subject matter area. While the weight of the available evidence indicates that programed instruction is an effective method of teaching, there is not enough evidence to give one assurance that programs are the best choice for any particular need. It would appear that programs may be used with caution in most classes. Considerably more action research in the classroom is needed to help industrial arts educators identify ways in which programed instruction may be used most wisely.

Television, films, filmstrips, and slides have been used in various combinations to teach a variety of content in industrial arts research. It would appear that video tape recordings offer considerable promise to the teacher. We do not, however, have adequate guidelines to assist in the selection of appropriate content for video tape recordings. Research utilizing films, slides and tape recordings has advanced to multi-media presentations involving not only cognitive content but manipulative operations as well. Here again the results are promising but not definitive.

As multi-media usages become more common, industrial arts researchers are beginning to experiment with instructional systems. Perhaps the best example is that of electricity/electronics. A number of manufacturers have provided instructional systems for teaching in this field but these systems have rarely been compared in terms of their effectiveness.

The systems approach to instruction in industrial arts complicates the selection of research problems dealing with media and methods. Comparative studies are of little value unless one can use appropriate criterion measures. These, of course, depend upon similar behavioral objectives for the respective treatments being studied. As a consequence of the diversity of systems, it has been difficult for researchers to obtain effective concrete evidence comparing instructional systems.

Several recent studies dealt with creativity, its stimulation, or its assessment; many of these were reviewed by Hahn. Creativity is an extremely complex process, one which is not easily studied. In view of the overwhelming evidence that creativity is not a uni-demensional trait, a great deal of additional experimentation is necessary before a curriculum can be developed and teaching methods selected to insure that creativity will be stimulated rather than inhibited.

Relatively little industrial arts research has dealt with manipulative performance. Clark provided evidence that practice was effective in developing manipulative ability in bending electrical metallic tubing. Ellis found that students who learned drafting by the workbook method developed higher skills in drafting than those who learned by the construction method. It is noteworthy that investigation into the teaching of manipulative activities has begun only recently. It is imperative that additional effort be directed toward the development and validation of an adequate taxonomy of educational objectives in the psychomotor domain. Since there are no data on the comparability of the various manipulative skills, it is impossible to generalize from the findings of one study to other instructional areas. If it were possible to provide a taxonomy which would permit generalization, this would be of considerable value to the classroom teacher as he consults the findings of researchers.

Industrial arts researchers have been interested in the consequence of variations in the specificity of direction and control of the learning process. In some instances, these have been contrasts of direct-and-detailed methods with directed discovery methods of teaching. There appears to be a complete range of possible learning conditions ranging from the least structured,

pure discovery situation, to the highly structured, completely directed and teacher-dominated situation. The experimental evidence which has been obtained so far does not indicate clear-cut superiority for any level of detail in the teaching process.

There has been some demonstrated interest in identifying the external determinants of achievement in industrial arts. Bortz investigated the effectiveness of the use of measures of physical maturity as predictors of succes in junior high school industrial arts. Erickson studied relationships between visual-haptic aptitudes and achievement in drawing. Daines found that students who took power mechanics tests which had low difficulty levels actually demonstrated higher informational achievement during the course than students who received difficult tests. These provocative findings suggest the need for studies of the interaction of external variables with the teaching learning process.

Summary

The reviewer of the research in media and methods quickly notes that there have been few replications of studies in this area. Further, the findings of apparently similar studies have frequently been contradictory. As a consequence, the profession is obligated to withhold judgement until the evidence is much more persuasive than it is at the present time. In addition,

the selection of research problems should proceed in a coherent, organized pattern which would relate the studies to a theoretical structure and to other research efforts. If helter-skelter problem selection continues, there can be no reasonable hope for the identification of critical learning variables. Research on instructional media and methods in industrial arts has the potential to be of immense value to the classroom teacher. As improved research techniques are applied to a concerted study of carefully selected problems it should become possible to provide sound, empirically based guidelines for the selection of optimum teaching procedures for specific learning situations. That this is not yet the case should not be surprising. Researchers should, however, attempt to move toward this goal.

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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

Studies published between 1966 and 1968 were searched in order to provide a summary of the recent literature which is representative of the strengths and weaknesses of recent research efforts in industrial arts. The most important trend in these studies has been the recent emphasis on the development and evaluation. Other trends are: (1) Research is becoming more sophisticated, (2) Research is moving from a data-collecting to a data-utilizing realm, (3) Research studies are rapidly moving from reportorial collections of numbers and percents to studies that attempt to use the information collected for prediction, and (4) There is increased concern for the development of research competency. A predominance of "one-shot" studies gives rise to serious pessimism about the generalizability of the findings reported in the literature. Moreover, the profession has not developed a pool of research specialists, and the few who do exist are committed to curriculum research, which is only one identifiable area. The research review referred to in this paper is available as ED 034 898 (Research in Education, April 1970) or VT 010 109, to appear in a subsequent issue of ARM. A related document is VT 010 110, in this issue. (GR)

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INDUSTRIAL ARTS RESEARCH: CURRICULUM, ADMINISTRATION AND SUPERVISION, AND TEACHER EDUCATION[1]

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OFFICE OF EDUCATION

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INTRODUCTION:

This paper will deal with the studies of curriculum, administration and supervision, and teacher education in industrial arts that have been published between 1966 and 1968. This recent literature has been characterized, in general, by theoretical, speculative, and descriptive studies. This trend, no doubt, reflects the current state-of-the-art in these areas. This is not to say that the studies lack quality. The recent literature has been filled with quality studies that have important implications for future research in these areas. Perhaps the most important trend in these studies has been the recent emphasis on the development of theoretical models that can serve as an aid in program development and evaluation.

No attempt will be made here to discuss all of the recently completed studies. Neither time nor common sense will permit this type of approach in analyzing the recent literature of industrial arts. The risk of sin by omission that was an important factor in selecting entries for the Review and

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[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 7, 1969.

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Synthesis of Research in Industrial Arts Education (Second Edition) becomes an even greater factor in this paper. The purpose of this paper is to provide a broadly based summary of the recent literature which is representative of the strengths and weaknesses of recent research efforts in industrial arts.

CURRICULUM:

The three years covered by this review have probably produced more recommendations for curriculum revision than any other similar period in the history of industrial arts. It surely has been a period in which the most money has been expended in attempts to improve and modify the industrial arts curriculum. Anyone can pick a number between four or five and twenty and get someone else to agree that that is the number of current curriculum revision projects in industrial arts. The problem is that very few of these studies have produced "hard copy" that is generally available for review and use by people outside the projects. There are adequate reasons for retaining these materials from general circulation. The premature release of tentative and untried materials would defeat the purpose of attempting to improve instruction through careful development, evaluation, and revision. It does, however, create serious problems for anyone trying to review recent work in

industrial arts curriculum.

There is an important trend in both the funded and unfunded curriculum revision efforts that do appear in the literature. Most of the recent curriculum studies have spent a great deal of time developing theoretical models which can serve as a basis for curriculum development and course construction. The American Industry (Nelson, 1967) "ball of string" and the Industrial Arts Curriculum Project (Towers, 1966) "pile of blocks" models have become so ubiquitous that it is almost impossible to be professionally active and not have encountered these models in either the literature or at a conference or convention.

Model building as a basis for curriculum development and content selection has not been limited to funded curriculum efforts. Several noteworthy attempts have been made to develop and test taxonomies that will facilitate content selection in industrial arts. Doctoral dissertations by Kicklighter (1967) and Hauenstein (1966) signal a new era for content selection dissertation studies. Both of these studies included a multiple level taxonomy which has content samples for each level.

The studies already specifically mentioned another large group of studies in the general area of curriculum have another common theme. A large number of curriculum workers are urging

the adoption of multiple-analysis procedures. The exact uses recommended for multiple analyses vary widely. One group of recommendations is that multiple analyses make synthesis possible. Others urge that instructional units be subjected to multiple analyses to be sure that the content is appropriate both within and between systems.

The rise in logically derived, multiple-level models for curriculum development and content selection have resulted in a "new look" in the instructional material that follows these curriculum efforts. This new look is perhaps most dramatic when these studies are compared with the content selection studies that use opinion gathering and consensus information as a content selection base. One definite advantage of the newer curriculum building efforts is that they should become more amenable to evaluation than has been the case with other methods. The emphasis on uniform levels of specificity across content is another important step toward meaningful evaluation. This, of course, makes it easier to make future modifications in both content and method to enhance the educational program. This type of work is vital if media and methods studies are to have any real meaning.

ADMINISTRATION AND SUPERVISION:

There have been a limited number of studies in the area of administration and supervision of industrial arts. Several of these studies, however, point to an increasing research sophistication in industrial arts. The dominant theme of the studies in this area has been the identification of conditions that make prediction possible. The emphasis, of course, has been on areas vital to the administrater but there is a definite trend toward predictive rather than descriptive studies.

Meosky (1967) studied the relationship of personality and teaching success. None of the personality variables used succeeded in predicting success. His study and one by Margulies (1968) reported successful prediction when supervisors ratings are used.

District-wide cost figures were used to develop an industrial arts cost prediction formula. Heath (1967) reported success in the development of a formula that would not only predict the cost of student contact hour per year but would also provide information regarding the cost variation within industrial arts offerings.

TEACHER EDUCATION:

Studies dealing with industrial arts teacher education covered a broad range of topics. The large amount of literature

during the period of this review probably reflects the dominant interest in teacher education by those who publish in the area of industrial arts.

Many of the same interests and emphases that were evident in other types of research literature were of concern to researchers in teacher education. For example, Sedgwick (1966) developed a two-dimensional model to guide planning of an undergraduate teacher education program. One dimension of the model was the source of the recommending authority (opinions/empirical data). The other dimension was extent of modifiability (modifiable/not modifiable) of student behavior. The model was used to propose an undergraduate teacher education program based on modifiable behavior patterns.

Content selection and evaluation procedures were a consistent concern for researchers. Many of the studies (Hoover, 1967; Singletary, 1968; Gerber, 1966) were concerned with the extent to which teacher education duplicated the techniques used in industry. These survey and opinion studies, quite predictably, revealed that undergraduate technical courses in general did not adequately cover the content in the same way and with the same emphasis that they received in industry.

Opinion survey results also indicated general agreement re-

garding the inclusion of technical content at the master's degree level. This research (Spence, 1966; Gavin, 1968) indicated a greater concern for content dealing with new methods, materials, and approaches to industrial arts. This is in marked contrast to the concern for undergraduate course content in woodworking and metalworking.

Two different approaches to teacher education using the facilities and experiences of industry were reported. Sredl (1966) reported the results of a program for in-service drafting teachers that included actual work experience in three different firms. Another program (Hastings and others, 1967a, 1967b) used a classroom orientation, six weeks of industrial observation and a two week curriculum workshop. The workshop developed instructional materials based on the experiences of the participants during their industrial observations.

The chronic shortage of industrial arts teachers has stimulated a good deal of research in this area. Three studies (Foley, 1967; Ressler, 1966; Anderson, 1966) report consistent results. In general, these studies indicate that the secondary school industrial arts teacher is the most effective recruiter. Data reported by Ressler (1966) indicate that the most successful industrial arts recruiter is likely to be an older, professionally active,

academically well prepared career teacher. Poor recruiters tend to be young, inexperienced teachers and teachers with emergency certification.

SUMMARY AND CONCLUSIONS:

This reporter has had the unique opportunity of being involved in both the development of this Review (Householder & Suess, 1969) and as co-chairman of the first National Conference on Research in Industrial Arts (Suess, 1969) within the past year. These exposures to the state-of-the-art of industrial arts research leave a mixed feeling of optimism and pessimism.

Optimistically, the profession is rapidly improving its research sophistication. Research is increasingly moving from a data-collecting to a date-utilizing realm. The research studies are rapidly moving from reportorial collections of numbers and per cents to studies that attempt to use the information collected for prediction. Another important trend is toward increased concern for the development of research compentency as a result of advanced graduate study. The large number of studies that have included model building and concern for uniform levels of specificity reflect this increased sophistication.

The attempts made by several researchers to conduct studies

that permit prediction is noteworthy. Prediction is never really possible when the information used for predication is collected at only one time under one set of conditions. None of the studies included in the entire Review was a replication study. The predominance of "one-shot" studies, generally conducted as part of advanced degree requirements, give rise to serious pessimism about the generalizability of the findings reported in the literature.

Any review of research in industrial arts leads to the inevitable conclusion that the profession has not developed a pool of research specialists. The small pool of full-time researchers in industrial arts are all committed to curriculum research. This area is undeniably important, but to have it the only area of identifiable concentration gives rise to concern for the balance of the research output of the profession.

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Wenrich, Ralph C.
What Research Has to Say On: Organization and Administration of Vocational and Technical Education.

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On the basis of work done in the preparation of "Review and Synthesis of Research in Administration of Vocational and Technical Education" (Ohio State University, Columbus, Center for Vocational and Technical Education, 1970, available as VT 010 173), the author reviews and critiques research on administration in vocational education. Major topics are: (1) policy-making and long-range planning, (2) the role of the states, (3) program planning, (4) organizing for administration, (5) staffing vocational and technical programs, (6) financing vocational education, (7) evaluating vocational education, and (8) school-community relations. The author states that what research has to say about administration of vocational education is disappointing, but he points out the following reasons for optimism: (1) Vocational educators are developing competence in research and the right questions are being asked, (2) The competence of people in related disciplines is being used, and (3) Some larger institutions are assembling clusters of people as an interdisciplinary basis to tackle complex questions which need to be researched. Directions for the future must include a research based upon what is known about organization and administration in general with specific applications to problems of vocational and technical education. (JK)

VT 010 174

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Presentation to be made at the
AVA Convention
Boston, Massachusetts
December 6, 1969
Ralph C. Wenrich, Professor
The University of Michigan

What Research Has to Say On:

Organization and Administration of Vocational and Technical Education

Although I have just recently worked through most of the research in administration of vocational and technical education done during the period 1963 through 1968 (in preparing a manuscript for Review and Synthesis of Research in Administration of Vocational and Technical Education), I can report only on what this research has to say to me. If you were to read the same research reports, they might have a totally different message for you.

Neither the published report, nor this paper, will deal with organization and administration of the special fields in vocational education; such research is reported in the reviews and syntheses covering the special fields.

During the preparation of the manuscript for the Review, there were many times when I had to resist the temptation to editorialize; I assume this paper to be my opportunity to express personal opinions, criticisms, and even biases, and at the same time, report some of the findings.

On Policy-Making and Long-Range Planning

For administrators of vocational and technical education to effectively deal with the problems and issues of our times, they must have a thorough understanding of the complex, intricate and changing social and economic environment in which vocational education must operate if it is to be effective.

The Panel of Consultants on Vocational Education (headed by Ben Willis), produced a number of reports, including Education for a Changing World of Work (1963), which provided the local administrator with data useful in long-range program planning.

VT010174

Grant Venn's report for the American Council on Education, Man, Education and Work (1964), helped to develop our national policy which is now being adopted as state and local policy in many areas of the United States.

The National Advisory Council on Vocational Education (headed by Martin Essex) in their report, Vocational Education - The Bridge Between Man and His Work (1968), made recommendations most of which had to do with Federal legislation and organization and administration on the Federal level. Many of these recommendations have already been implemented through the 1968 Amendments to the Vocational Education Act of 1963.

Dale Draper in his report for the National Association of Secondary School Principals, titled Educating for Work (1967), devoted a section to the administration of vocational education. The conclusions included several of special interest to administrators: (1) the public educational system has a basic obligation to aid the preparation of all youth for effectiveness in the world of work, (2) the development of vocational competence involves much more than what is generally called occupational, vocational or technical education, and (3) schools must build a greater range of resources and capabilities into their programs to provide instruction and services needed by the range of students now in school. The report favored the comprehensive high school and indicated that if as many students became involved in vocational education as studies indicate could profit from this kind of preparation the dynamics of secondary education would be different. "If, for example, 50 percent of the students in high school were in vocational education, the budget, space, and faculty requirements for vocational education would be somewhat more than half of the totals needed by the school. Schools with a large component of vocational education would be institutions considerably different from the conventional secondary school."

Numerous other studies have contributed to the formulation of national policy, but Hamlin called attention to the fact that major policy actions taken in 1917 and again in 1963 (46 years apart) were both preceded by reasonably adequate study; he also pointed out that policy-making needs continuous attention and that policy-development has had more attention on the national level than it has had on state and local levels.

Many studies have been done which provide manpower data useful in long-range planning; the annual Manpower Report of the President prepared by the U.S. Department of Labor, is an example. Perhaps the most significant work in this area is being done by the National Planning Association (Center for Priority Analysis) through a research project directed by Leonard Lecht and John Teeple titled, "Identifying Priority Areas for Planning in Vocational-Technical Education." Studies are being done of projected career openings in social welfare, education, health, transportation, urban development, space and research and development occupations with specific implications for priorities in vocational-technical education.

On the Role of the States

The role of the states in the administration of vocational and technical education has become much more prominent and the amount of research relevant to this area is just one indication of this fact. As new Federal programs are inaugurated, and increased Federal funds are made available for the preparation of youth and adults for the world of work, we can expect that the role of state departments in general, and vocational divisions in particular, will continue to expand. The role of the state departments must not only expand but must also respond constructively to the technical, social, political and economic forces of our society.

The research assesses these forces in relation to the role of the state departments of education with a view toward making this component of the Federal-state-local partnership a more effective unit.

Rice and Toth, working through the Center at Ohio State, and Swanson and others at the University of California at Berkeley have done some significant nation-wide studies of state administration. They determined that the primary emphasis was on compliance (checking and regulating) and the secondary consideration was change and leadership; these, they thought, should be reversed. They also discovered marked differences in the role perception of personnel in state divisions of vocational education as compared with the perceptions of others outside the department, particularly personnel from local school districts.

On Program Planning (State and Local)

While manpower data useful in program planning should be gathered on the Federal level, even these data must be (and generally are) analyzed and disseminated in a form which will make them available (and hopefully useful), to program planners on the state and local levels. In addition, many states have done their own studies of manpower needs and other conditions which are relevant to program planning. New York, Michigan, Missouri, Florida, and Oregon are among the states which have done some formal studies of manpower conditions and needs.

Somers (1968) found that the vocational educator's response to the dynamic changes in the labor market has been "sluggish and inadequate." However, he felt that economists and employment experts must share some of the blame because the labor market data provided for the use of educators has seldom been adequate either in quality or quantity; nor has it been provided in the form required by educational planners.

The Panel of Consultants in 1963 recognized the fact that the vocational education system was removed from the dynamics of the labor market; they emphasized closer correlation between occupational education and employment possibilities which resulted in the provision in the Vocational Education Act of 1963 which requires collaboration of vocational education and local employment agencies.

Some program planning can and should take place on the state level, but instructional programs must also be geared to local and area needs and conditions and, therefore, the major responsibility rests with local and area administrators. Hundreds and perhaps thousands of area studies have been made of manpower needs and conditions. There is a wide range of methods used in these studies and many of them had, as their primary purpose, the "involvement of laymen, with a view toward gaining their support for expanded vocational-technical programs. Nevertheless, many local and area studies have produced data essential in sound planning of vocational programs.

The research literature includes very few studies dealing with specific local programs. This should not be interpreted to mean that we are not experimenting with new and innovative programs; it may mean that such programs are being evaluated by other than objective measures or it may be that persons experimenting with new and innovative programs are too busy to write about them. In any event, there is a dearth of literature describing experimental programs which have been subjected to objective evaluation.

A number of studies having to do with procedures or techniques useful in program planning are worthy of mention. Several researchers developed models or procedures for gathering information as to need for programs in a particular local situation - Shibata, Cromer, Hendricks and Lockette did such studies but Lockette experimented with the "judgemental process" involving

personnel from the state department, state colleges and local teachers, administrators, and lay leaders in a process of personal involvement and interplay of personalities; he also used the Program Evaluation and Review Technique (PERT) to describe the process. McKee also used the PERT system in establishing a technical college in 100 days.

Oakford and Allen report a three-year experimental program to determine the desirability of modular scheduling for comprehensive and vocational schools and to investigate the impact of such scheduling. The results were mostly positive with one possible exception; disciplinary problems increased at first but later subsided.

On Organizing for Administration

The act of organizing (or reorganizing) the administrative structure of a school or school system is an important function of administration which is often neglected. Any organization should be examined critically from time to time and the structure realigned whenever the goals of the organization could be more effectively and efficiently achieved by so doing. Reorganization on the Federal level has occurred frequently during recent years but basic changes in administrative structure for vocational education on the state and local levels have come more slowly. One reason may be that we have little research information on which to base structural changes.

The role of the Federal government has shifted from primary emphasis on the gathering of statistics and the administration of the Federal acts to one of leadership. Incidentally, the concern about Federal control is considerably less than it was years ago; Cardozier found that the amount of control the U.S. Office of Education can command depends upon how much state and local administrators are willing to allow. The role of state departments of education is

also shifting from the performance of regulatory functions to that of exercising leadership. These and other changes in roles required changes in structure.

One of the most significant studies of the organization of vocational and technical education as it relates to a particular state was that done by Schaefer and Kaufman (1968) in Massachusetts. They recommended that the 30 regional vocational-technical schools currently being planned (including those now operating) become state operated Institutes for Educational Development. Four of these Institutes should be located in the large metropolitan areas and every boy and girl in the Commonwealth should be within 30 miles of an Institute. The report advocated that students remain under the control of their local high schools for all purposes except their specialized vocational and technical course work. The researchers saw these advantages in this arrangement: (1) cost of the Institutes is shared equally by all taxpayers, (2) opportunity for occupational education becomes equalized, (3) curricula can be developed through state-wide planning, (4) educational leadership and teacher competency can be centrally regulated, (5) a substantial program of adult (non-degree) offerings can be more precisely planned. The plan also recommended a revitalized Careers Development Curriculum for the great mid-group of students in neighborhood high schools who are held back by social-economic backgrounds or who lack interest or talent in purely academic or purely vocational pursuits. The Careers Development Curriculum would be non-graded, to prepare for a cluster of occupations and should be elected by students from grades 9 to 12. The specialized programs in the Institutes would be available only to 11th and 12th grade students, and it is anticipated that no more than ten percent of the secondary school students would participate in these programs.

Perhaps the most significant aspect of the plan recommended for Massachusetts was the organization within the State Department of Education. It was recommended that the Careers Development Curriculum be under the general supervision of the state's Associate Commissioner of Curriculum and Instruction and be administered by a separate Bureau of Careers Development, this bureau to be headed by an educational generalist. It was further recommended that the present Bureau of Vocational Education be reconstituted as a Division of Manpower, Research and Development to be administered jointly by the State Department of Education and the State Department of Labor. The Director of the Division of Manpower, Research and Development would report to the Commissioner of Education for operational and developmental activities and to the Commissioner of Labor for research activities. The Division of Manpower, Research and Development would have a legally designated advisory committee appointed by the Governor and representing industry, business, labor, education, the behavioral sciences, and the Federal government, and the Director of the Division would serve on the staffs of both the Commissioners of Education and Labor as assistant commissioner to each.

Quite a few other states have developed state-wide plans and the administrative structure to implement them. Colorado has developed a master plan for the coordinated development of community colleges and occupational education. The plan calls for the state to be divided into seven community college administrative areas and seven occupational planning programming areas and that these areas be established as the basis for area vocational school systems. The Minnesota Research Coordinating Unit has done a study for the State Board for Vocational Education; a geographical distribution of area vocational-technical schools to service the state was based upon population density and mobility, as well as present and projected student

enrollments. Ohio, Michigan, Virginia, Kentucky, Illinois, Hawaii and Pennsylvania are among the many states which have done studies dealing with a state structure for the purpose of providing more effective vocational programs for youth and/or adults.

The concept of providing specialized occupational education on an area basis is encouraged by Federal policy and Federal legislation and there has been much research activity dealing with the need for area schools and area programs. Several studies, one by Burns, investigated the factors governing the establishment and operation of area vocational-technical schools and programs. On the basis of data gathered from 42 state directors of vocational education and 278 local directors of area vocational-technical schools and programs in these 42 states, he concluded that $78 million of taxable wealth in the geographical area, with a minimum of 6,500 high school students would be sufficient to successfully establish and operate a vocational-technical school or program in Mississippi. He also concluded that no area program should be established until the support of roughly 75 percent of the industries in the area was assured, about 40 percent of the students expressed an interest in the training to be offered and approximately 75 percent of the voters approve the project. He also recommended that the geographic service area should fall within a radius of 48 miles for a rural community, 36 miles for a suburban community and 27 miles for a city.

Guditus attempted to develop a rationale for the area vocational (technical) school. He concluded that the area vocational school, as presently conceived, is adequate for meeting some current needs, but its functional role is transitional; it will serve the needs until occupational, vocational and technical education are provided by truly comprehensive secondary schools and truly comprehensive community colleges. He also concluded that there is no unified

plan for developing vocational-technical education in Pennsylvania and that very similar purposes are undertaken by various competing institutions.

Several researchers have examined the internal administrative structures of comprehensive community colleges. Whitney studied the roles and relationships of the chief vocational-technical education administrator in public two-year colleges in relation to the patterns of administrative structure of two-year colleges offering occupational curricula. Of the 255 chief vocational-technical education administrators who responded, six percent were first-level administrators (president or dean of the college), 45 percent were second-level, 44 percent were third-level and five percent were fourth-level administrators. Administrators were working under 137 different titles predominantly containing either the word "dean" or "director." Eight administrative organizational patterns were identified ranging from those in which the chief vocational-technical administrator and the president were one and the same, to those in which the chief vocational-technical administrator was a coordinator with only staff authority. The largest percentage of colleges were organized so that the chief vocational-technical administrator reported directly to the president and had parallel status with the dean or director of the academic program. Fielding did a similar study and concluded that the dean or director of vocational education in the public junior college should report at the first-level. Gates did a study which produced similar findings.

Heger did a study of certain properties of school organizations as they relate to change in vocational programs. He found that the more hierarchical the structure of an organization, the more likely is change; also, the more functional the dynamic interplay of sub-groups, the more likely is change. Kazanas studied the formal administrative structure of 76 larger comprehensive high schools in Michigan as it relates to vocational and technical education.

High schools are generally organized by departments, each of which has a subject-matter orientation; such schools are classified as "process-based." High schools which are organized on the basis of goals or purposes of education are classified as purpose-oriented or "purpose-based." The researcher hypothesized that the extent to which the formal administrative structure helps the vocational and technical education program in meeting its objectives is significantly higher in the purpose-based than in the process-based school organization. Although he found no schools which were totally organized on the basis of purpose, he found many whose vocational purposes were recognized in the structure for admininstration. There was a significant relationship between those schools which reflected this purpose orientation in their organization and the achievement of vocational objectives.

Mason studied the organization for administration of vocational education in Michigan high schools. He found that those schools whose vocational programs were thought to be more effective had delegated more authority for decision-making to the director of vocational education.

Shaffer and I studied 106 large high schools in Michigan to determine the principal's perceptions of the roles of persons charged with the responsibility for leadership in the development of occupational programs in high schools. We were interested in determining how high school principals would use an assistant principal who would be assigned the responsibility for developing programs for employment-bound youth. The areas of responsibility which principals would assign, ranked in order, were (1) pupil personnel functions, (2) school-community relations, (3) instructional program development, (4) business functions, and (5) teacher personnel functions.

The fact that I have spent so much time reporting on research which has to do with organization for administration reveals a bias. I feel that

the structure of the organizations in which we operate vocational-technical programs is much more important than we have assumed. I am especially concerned about the internal administrative structures of comprehensive high schools and comprehensive community colleges. Newly created schools or colleges tend to design structures which will facilitate the achievement of the organizations' objectives. But educational institutions which were created years ago for the purpose of preparing youth for college and have since become (in theory at least) multi-purpose institutions, need to examine and revise their administrative structures. John W. Gardner in an article titled "How to Prevent Organizational Day Rot" discussed the need for a fluid internal structure which is continuously adapted to the purposes of the organization. If we really want to make our college-preparatory-high-schools and college-transfer-community-colleges comprehensive we must help them design new structures which will enable them to become multi-purpose institutions.

On Staffing Vocational and Technical Programs

Several studies have been done which look to the military services as a source of teachers. Richland and Rosove explored the feasibility of developing a computerized system to match retired military personnel to job vacancies in vocational and technical education. Hensel investigated enlisted men separating from the military services as a source of teachers and found that those who had 13 or more years of education prior to military service were the group most interested in teaching. The percentage of men interested in teaching increased consistently as rank increased. He concluded that the military services are a good source of teachers, especially in the electrical and mechanical fields.

The relationship of occupational experience, teaching experience, college education and technical training to rated effectiveness of teachers was researched by Musgrove. Positive relationships were found between occupational experience and teacher effectiveness based on teachers' self-evaluations (but not on the basis of supervisor or student ratings) and between amount of teaching experience and teacher effectiveness based on supervisor ratings (but not on the basis of student ratings and teachers' self-evaluations). Negative relationships were found between the amount of college education and teacher effectiveness based on both student ratings and teacher self-ratings (but not on the basis of supervisor ratings). Messerschmidt examined practices used by community colleges in Michigan to recruit, hire and prepare part-time instructors in vocational-technical education. He found (1) that the primary source of part-time instructors was local business and industry, (2) that attempts to use retired industrial and military personnel were not successful and (3) that the supply and demand appeared to be growing at similar rates.

Staffing state administrative and supervisory positions was researched by Rice, who studied professional personnel policies, practices and requirements within state divisions of vocational education with a view toward upgrading such personnel and by Magiscs, who examined the change orientation of state supervisors; Magisos found that the more dynamic supervisors had more formal education, more college degrees, more returns to college after entering professional education and a higher perception of their own salaries in relation to the salaries of others throughout the nation.

Staffing administrative positions on the local and intermediate district levels was researched by Law, Stanger, and Edmunds; they helped to define the roles and responsibilities of vocational administrators on these levels.

Two experimental programs for the training of leadership personnel in administration of vocational and technical education were reported by Law (to prepare administrators for the area centers in the State of New York) and by Wenrich and Hodges (to prepare local administrators for the State of Michigan). The latter program was evaluated by Wenrich and others who found that impressive gains had been made in the leadership behavior of persons completing the program.

The preparation of administrators for vocational and technical education through an advanced degree program was investigated by Schaefer. He described the "new breed" of vocational administrator as one who is knowledgeable about counseling and guidance, labor economics, social psychology and group dynamics, the sociology of work, industry and minority groups, labor-management relations, industrial organization, industrial training, facilities and concepts of vocational education.

Vocational and technical education on the Federal, state and local level is a part of the larger system of public education. The development of vocational education in any state or in any local school district is determined to a large extent by the attitudes, values, education and work experience of the general school administrators with whom the vocational education administrator must work. Probably the most significant research in this area has been done at the University of Nebraska. Krepel did a study in which he prepared a descriptive analysis of the relationship which exists between Nebraska administrators and vocational education. He recommended that since the attitudes of administrators toward vocational education tend to be lower than toward academic areas that training materials related to the values of vocational education be prepared and used in the preparation programs for administrators and that special attention be given small school administrators in order to raise their level of cognition as related to vocational and technical education.

Another study done at the University of Nebraska by Colgan was designed to develop an objective examination in order to measure the knowledge of superintendents and principals in the area of vocational education needs and programs. He discovered that instruction is available on a very limited basis in the area of vocational and technical education and that administrators want to know more about these matters.

Recognizing the fact that the general school administrator frequently has an inadequate background for effective leadership of vocational-technical programs, Sybouts developed a training program through the use of simulated materials (in-basket technique). He found these simulation materials especially useful in changing attitudes of general school administrators.

On Financing Vocational Education

Relatively little research has been done on financing vocational and technical education. Research in the nature of cost-benefit and cost-effectiveness analyses were not included in my Review because they are included in another review on the economics of vocational education.

The role of the Federal government in financing vocational education was studied by Penn who found that (1) the primary impetus behind initial Federal aid was a mandate by the American people for a more practical and useful educational system, (2) effective relationships exist between Federal, state and local agencies responsible for the administration of vocational programs, and (3) the states show a high degree of individuality in their spending patterns and trends relative to vocational education programs. Davie and Patterson also investigated inter-governmental fiscal relations as they pertain to vocational education. They concluded that significant changes in allotment procedures can be made which will better meet national education objectives and that no significant relationship existed between changes in

Federal expenditures and changes in state-local expenditures for vocational education.

It is generally recognized that the cost of most vocational and technical education programs is higher than the cost of most academic programs. One justification frequently used for special financial support for vocational education has been this differential in costs. Anderson did a study to find the relationship of the unit costs of special vocational and technical curricula in comprehensive junior colleges to the unit costs of liberal arts and transfer curricula. He found that the majority of the vocational and technical curricula cost more per student than the transfer curricula in the same institution. The average cost ratios found for eight types of vocational and technical curricula are as follows: applied arts, 1.76; engineering technologies, 1.95; business and office occupations, .95; health and medical occupations, 1.49; industrial technical occupations, 1.52; dietetics and home economics occupations, 1.21; and public service occupations, .96. This study included only junior colleges which had been in operation for a minimum of five years and, therefore, does not reflect the "start up" costs of initiating and developing vocational and technical programs.

On Evaluation of Vocational Education

Vocational and technical education is being evaluated constantly by two groups in particular - the product and the employer of the product - but a more formal type of evaluation is a function of administration. Many local administrators have used a variety of systematic procedures for the purpose of evaluating their vocational and technical programs. It was not within the purview of my Review to report on such local evaluative studies;

instead, researches having to do with techniques and procedures were reported, and a selected sample of national, regional and state evaluative studies were also reviewed.

Byram studied evaluation systems for local programs of vocational-technical education. His purpose was to make the maximum use of local personnel, local resources, consultant leadership and related professional assistants in the further development and trial of a system of evaluation. Byram and McKinney have produced a manual on evaluation of local vocational education programs for administrators, teachers and citizens, which is based upon Byram's earlier research.

Frequently used as a method of evaluating programs is to determine the extent to which those students who complete a vocational program are successful in finding employment. Harris (1967) developed a model for statewide information storage and retrieval system for reporting job placement data for persons trained in the California public schools.

Two evaluative studies of high school programs involving national samples have been completed. The first of these by Eninger concerned itself with the product of high school level vocational education programs in the United States. The investigator surveyed trade and industrial graduates selected from 50 vocational schools and 50 comprehensive high schools and then compared their careers with those of 3,500 general course graduates from the same comprehensive schools. It was shown that after two, six and eleven years out of school, the vocational graduates, when compared with general course graduates who did not go to college, had greater accumulated earnings, greater employment security, greater job satisfaction and comparable job mobility. Furthermore, the vocational course graduates found full-time jobs substantially sooner than the

general course graduates. A comparison of vocational and academic graduates without a college education revealed no difference in conversational interests, leisure-time activities and affiliation with community organizations. Fifteen percent of the vocational graduates went to college and 42 percent reported having had some type of formal post-high school education.

More recently Eninger has evaluated the process of high school level vocational education in the United States. He found that the relatedness of the first job to the occupation studied is the keystone criterion variable because those who enter occupations the same as (or highly related to) the occupation studied do better on the average than those who entered unrelated occupations. The most fruitful areas for school efforts to improve their percentage of graduates placed into the field for which trained are (1) improvement in school placement services and (2) improvement of the percentage of "recommendable" graduates by matching the capabilities of the course applicant with the requirements for course success and by transfer of students who cannot meet course requirements to a more suitable course or early remedial efforts.

Another large-scale study aimed at assessing vocational-secondary school programs and determining the extent to which they are meeting the needs of the students and the communities was conducted by Kaufman and others. The investigators concluded that (1) small communities (25,000-100,000) had the best overall vocational programs both in quality and in the proportion of students enrolled, (2) weaknesses found were failure to develop programs for those students who could not benefit by present offerings, poor guidance programs and insufficient use of advisory committees, (3) few advantages were found in the job experiences of graduates

of any one of the three curricula--vocational, general and academic, (4) the interviews of graduates from the two types of schools - comprehensive and vocational - did not support the claims frequently made; that is, that graduates of vocational schools are better prepared or more successful in their first jobs. The researches also found that both Negro and white vocational graduates thought they were better prepared for employment than academic and general curricula graduates. For example, Negro males who graduated from a vocational curriculum perceived that they were relatively "better off" than the Negro graduates of other curricula.

McCleary did a nation-wide study to determine how high schools can better prepare students for the vocational demands of a technological society. He concluded that in high school vocational programs (1) the range of opportunity and choices open to students is limited, particularly for low-ability students, (2) the number of students enrolled is unrealistically low, (3) systems developed to screen students for admission to courses are fragmentary in use and based on too few criteria, (4) opportunities for on-the-job work experience and employment in field of training after completion of courses generally do not comply with present day needs, (5) agreement and/or sustaining evidence is lacking to support any one mode of organization, (6) community agencies and lay individuals are used in a variety of ways and contribute to programs' success and (7) programs depend heavily upon special funds.

An in-depth study was conducted by Kaufman and Lewis in three selected cities to determine recommendations for improvement of vocational education. Some of the principal findings were: (1) most students entered the world of work without specialized occupational training, (2) enrollment in vocational programs was higher when students were taught in comprehensive

schools, (3) an imbalance existed between high school enrollments in vocational programs and local labor market composition, (4) vocational education in the smaller cities was altered so as to more closely match the needs of the local labor market, (6) vocational graduates had greater employment stability, received more rapid increases in earnings, and received higher average monthly earnings, (7) extra earnings of the vocational graduates justified the cost of their education, and (8) less than one-half of the male graduates obtained jobs that were directly related to their training. The researchers recommended that: (1) programs in broad general skills with general applications be developed, (2) programs be aimed at the large proportion of students who see little relevance in either vocational or academic curriculums, (3) vocational education bring meaning and interest to the learning experience, (4) opportunity be provided for employment exploration and familiarization as an integral part of the curriculum, and (5) vocational guidance be expanded.

On School-Community Relations

The need for a closer working relationship between the world of work and the schools is generally recognized. The school administrator, in order to operate an effective vocational-technical program, must have one foot firmly planted in the community and the other in the schools. From the time occupational education first became a part of the public school program, vocational administrators have looked toward industry for counsel and advice concerning the development and content of vocational offerings. All too frequently this relationship with business and industry has been limited to a rather ineffectual use of advisory committees.

The most extensive study of industry participation and involvement in vocational and technical education programs was done by Burt. It is impossible

to adequately review this extensive work here. The investigator found that there was general unanimity among educators and industry leaders regarding the desirability and mutual benefits to be derived through cooperative effort in the development and conduct of the vocational and technical education program offerings of local schools and school systems. Burt points out that while the literature about industry-education cooperation recommends the use of advisory committees, it is concerned almost entirely with the use of formally organized advisory committees to achieve the desired cooperative participation of industry; furthermore, there is only an occasional reference to the utilization of specially assigned school staff for industry-liaison purposes, and hardly any attention to the fact that cooperation may be effected through informal arrangements between industry and school representatives. He then lists and discusses the major services provided by industry for vocational and technical education programs. In the last section of the report, the investigator presents the organizational structures and instrumentalities utilized by both educators and industrialists in their efforts to achieve local industry-education cooperation.

The organization and effective use of advisory committees was also studied by King. King felt that education and industry must share the responsibility of training the work force vital to the nation's economy and that while advisory committees have been useful in meeting this responsibility on the state and national levels, there is a need for more extensive and effective use of such committees on the local level.

Carlson did a study of the functions and activities of lav advisory committees for selected junior college vocational programs. He concluded that committees should be encouraged to evaluate their services on the basis of their goals and that clear lines of communication between the college and lay committees should be maintained at all times.

A study was completed by Bessire to determine the extent to which the vocational training program in a community college in California had been responsive to the occupational training needs of its community and to the expressed vocational interests of its students. The investigator found that even though the college was concerned about satisfying the training demands of its community and the interests of its students, it had done so only to a limited degree. A principal recommendation was that additional administrative leadership be provided to insure a more systematic approach to curriculum development and to maintain a closer relationship with employers in the community. McGowan, in an effort to establish more meaningful relationships between business, industry, and the public schools, did a survey of nine major employers in California to gather data concerning entry level jobs for which it was difficult to find employees. He included in his report suggestions for improving vocational education through involvement of business, industry, and the schools. He recommended that there be set up clearing houses for vocational information and materials which might be used for both training and guidance purposes; and further, that there be established a vocational education council for each county consisting of representatives from business, industry and labor.

A Look Ahead

At this point you may feel, as I felt after scrutinizing over 200 individual research efforts in this area, that what research has to say about administration of vocational and technical education is disappointing. But we can be optimistic. The research which has been done during the six years covered by my Review is a great improvement over that done previously. Vocational educators are developing competence in research and we are learning

how to ask the right questions to be researched. We are using the competence of people in related disciplines, especially in the behavioral sciences. We are assembling, in a number of our larger institutions, clusters of people, on an interdisciplinary basis, who can tackle the tough and complex questions which need to be researched as opposed to the relatively simple problems generally used as topics for Ph. D. dissertation research.

If vocational education is to exert its full impact upon the social and economic needs of our nation and its people, it will be necessary for persons in policy-making and program-planning roles to have a better understanding of the functions of administration as they relate to vocational and technical education. This suggests the need for research which is based upon what we now know about organization and administration in general, but with specific applications to the problems of organizing and operating vocational and technical education programs. Furthermore, it suggests that the leadership in the administration of vocational-technical education needs to discover more effective ways of adapting programs and processes to the rapidly changing conditions and needs of our society.

VT 010 176
Whinfield, Richard W.
Review and Synthesis of Research on Placement and Follow-Up of Vocational Education Students.

MF AVAILABLE IN VT-ERIC SET.
Pub Date - 6Dec69 11p.; Presentation made at the Annual American Vocational Association Convention (63rd, Boston, Mass., Dec. 6, 1969).

*LITERATURE REVIEWS; *GRADUATE SURVEYS; *VOCATIONAL EDUCATION; *FOLLOWUP STUDIES; *SPEECHES; PLACEMENT; PROGRAM EVALUATION; WORK EXPERIENCE; SECONDARY EDUCATION; POST SECONDARY EDUCATION; ADULT EDUCATION; SPECIAL PROGRAMS; COST EFFECTIVENESS; METHODOLOGY; BIBLIOGRAPHIES
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This presentation addresses the rationale, methodology, findings, and conclusions of a recent review and synthesis of research on placement and follow-up of vocational education students. The review includes research published during a 5-year period, beginning in 1965. The follow-up studies are categorized as follows: (1) administrative reports--information gathered to describe the occupational status of graduates of specific educational programs, (2) comparative studies--comparisons of graduates of various types of educational programs, and (3) cost-benefit studies which refine the analysis of occupational education. In general, the type of information sought through follow-up studies includes type of job, relation of job to training, student satisfaction, wages, placement, unemployment, employment stability, geographic and occupational mobility, and continuing education. The follow-up technique as a tool for vocational education program improvement and evaluation is in need of further refinement and incorporation into larger models of evaluation; however, it has the potential of becoming one of the most useful tools available. The review of research discussed in this presentation is available as VT 010 175, which will appear in a subsequent issue of ARM. (CH)

VT 010 176

ED039370

A Report of

"REVIEW AND SYNTHESIS OF RESEARCH ON PLACEMENT AND FOLLOW-UP OF VOCATIONAL EDUCATION STUDENTS"[1]

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This is a review of research being done with the follow-up technique. It summarizes the needs for findings, and the future use of these studies.

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VT010176

[1]Presentation made at The 63rd Annual American Vocational Association Convention, Boston, Massachusetts, December 6, 1969.

A REPORT OF REVIEW AND SYNTHESIS OF RESEARCH ON PLACEMENT AND FOLLOW-UP OF VOCATIONAL EDUCATION STUDENTS

Why the sudden interest in follow-up studies? Why does ERIC ask for a review of recent follow-up studies? Why does the U. S. Office require an annual follow-up report of vocational graduates from each state? Why have economists, sociologists and others suddenly expressed a curiosity about the vocational student?

This interest is not simply curiosity. Nor is it simply to build a case for additional governmental appropriations. These may be two good reasons, but the interest comes from much deeper factors related to the educational policy of this country.

Some call it an educational revolution. Contrary to the common belief that the American people have always recognized education to be "the corner stone of Democracy," our founding fathers actually failed to include public education as a fundamental responsibility of government. Even Ben Franklin, for all of his perception about education, was essentially concerned with education of an elite. But today, the concept of "education for all, to the maximum of one's ability," is being accepted, as a fundamental concept inherent in a democratic society, and significantly, that educated people represent the <u>greatest</u> single resource of a country.

In accepting this belief and recognizing a variety of social problems, some of which have their roots in the educational system (the increasing gap between poverty and affluence may in part, be due to different educational achievement or opportunity), places education in a critical posture; education is not only expected to cease contributing to the social problem, but is expected to solve a variety of other problems. No longer is it sufficient to point to increasing percentages of high school age students completing high school. No longer can

we give a generalized relationship between level of education and income.

Questions which are now being raised stem from 1) a concern for the dollar return on the investment in education, 2) the importance of education to the individuals in our society, and 3) the importance of education in solving local, state, national and international problems.

The prominence of education in our society requires much more than a quantitative assessment. It requires deep, penetrating inspection of all phases of its purpose, operation and results. This calls for a massive evaluative effort with educators on the forefront of that effort. Unfortunately, we have not developed the basic tools for such an effort, but the tools are emerging; found in other social sciences, in scientific research, in demonstration and exploration. And the follow-up study is a potentially useful tool.

A parallel to educators use of the follow-up can be seen in business and industry with their product evaluation. The cost-benefit analysis, which is rooted in the economy utilizes the follow-up study as a part of a product-investment ratio, designed to measure profit in business and industry. But using these techniques in education require a different perspective since there is no agreed on "profit." The outcome of education can probably be measured in dollars, but this is only one desired outcome--and perhaps a relatively minor one. Leadership, production, service, happiness and health are probably all more important than dollars. But at the moment we can measure dollars, but we can't measure these other "profits" in a neat definitive way--but we are trying.

It is indeed interesting to note that as questions are raised and evaluations are sought relative to education, that vocational education is being challenged more than any other segment of the "educational establishment."

(This may be a misconception resulting from my own narrow perception) but it is not an illogical challenge. There are many reasons for this challenge; 1) the increasingly large federal investment in vocational education, 2) the apparent direct measurable relationship between the labor force and vocational education, 3) the apparent relationship between economics and vocational education (making it presumably, easier to study), 4) the perception that vocational education has the potential to help in a major way to solve some pressing social problems related to the economy and society--primarily though not exclusively poverty.

A logical starting point in evaluation of education is the "product" or student, and his or her subsequent experiences--information obtained in follow-up studies--a major tool of evaluation.

What is the present accessment of follow-up studies conducted to date? In his "Review and Synthesis of Research on the Placement and Follow-up of Vocational Education Students," J. Kenneth Little states:

> "Follow-up studies of graduates of vocational education programs, if carefully planned and executed, can provide an important base of information to educational planners and administrators. Where coupled with appropriate economic analysis this type of information can point the way to improved decision making by governments and institutions on questions of priority among types, levels and fields of education and training programs. There is considerable distance, however, between the present condition as revealed by the studies here reviewed and the achievement of the goals desired."*

Dr. Little catagorizes the types of follow-up studies as: 1) administrative reports--information gathered to describe the occupational status of graduates of specific educational programs; 2) comparative studies--studies designed to compare graduates of differing types of educational programs in the same school, or within samples of school in the same state, or within samples of schools

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* Underline - authors

drawn from many states; 3) cost-benefit studies refine the analysis of occupational education, developing the types of information and research techniques to establish the effectiveness of vocational education.

The level of expertise and sophistication, according to Dr. Little, increases in the order named. He does not say, however, that sophistication and meaningful results are synonomous. But it is clear that simple quantitative or descriptive studies have limited usefulness for policy or decision making.

But in spite of the gap between practice and desire, there are certain useful pieces of information resulting from follow-up studies.

First of all, the list of studies reviewed by Dr. Little are not all inclusive. It does not, for example, report all the follow-up studies being done by state departments. It does not include large numbers of studies done in specific schools, many of which are unpublished. But 101 studies were reviewed and summarized.

There have been few follow-up studies which dealt with vocational education on a national basis. The Center for Studies in Vocational-Technical Education is presently completing a national follow-up study of vocational students at the high school, post-high school (non-college) and junior college level in six program areas (T & I, Ag, D.E., B.E., Technical, and Health). No reports of the findings of this study have been released as yet.

The U.S.O.E. has been gathering follow-up data since the Vocational Education Act of 1963. In 1966 they found 80% of those available for employment were in specific occupations for which trained or related experience, as follows: Ag 67%; Home Ec 76%; Distributive 78%, Trade and Industrial 80%, Office 81%, Technical 90%, Health 92%. Four percent were unemployed, 23% had continued full-time scholars; and 8% had entered the armed service. But this report does not separate graduates by level, or men from women.

A study completed by Eninger (The Process and Product of T & I Education) is one of the few studies dealing with a wide geographic area. He used 100 schools, each with three or more courses in Trade and Industrial courses and followed up graduates, (vocational, general, and academic) with mail questionnaires.

Kaufman studied 5,000 graduates of vocational, academic and general curricula from 28 schools in nine cities in Ohio, Pennsylvania, Maryland, and New Jersey. Employees and union officials were also interviewed.

Mallinson studied 340 non-college bound vocationally oriented from 11 communities in Illinois, Indiana, Michigan and Ohio and compared them to a matched group of college bound students.

Smaller regional (partial state) studies have been conducted by Kaufman in Eastern Pennsylvania, Young in Eastern Iowa, Olien and Donohue in selected Minnesota schools. Whinfield and Little have just completed a study of Wisconsin vocational school graduates. Other studies were found for Colorado, New Mexico, Missouri, Connecticut.

A large number of school system follow-up studies are reported in the literature and a number of studies of special curriculum on special groups of students were reported and identified.

What kinds of information are these studies reporting? There is a general consistancy to the type of information sought in most studies. These are:

1. What kinds of jobs do students take and how closely related are these jobs to the curriculum?
2. How satisfied are students with their vocational program?
3. How much money do vocational students earn?
4. How do vocational students get jobs?
5. How much unemployment exists for vocational graduates?
6. How stable are the employment experiences of vocational students?

7. How satisfied are students with their jobs?
8. What is the job mobility of vocational graduates?
    a. geographically
    b. occupationally
9. What further education do students experience?
10. Increase part-time education as get older.

This, by no means, is the only information gathered. Each study has unique goals and a wide variety of information is sought and obtained. For example, Little and Whinfield tried to measure the relationship between hobbies and curriculum choices. Other researchers have attempted to measure attitudes, motivation and a wide variety of other variables.

A quick summary of the findings related to these general questions are as follows:

1. Reports generally show vocational graduates have a high tendency to enter occupations for which they were trained, or enter highly related occupations. However, the figures fluctuate, and are open to question because of 1) varying definitions of "related" occupations; 2) the difficulty of interpreting these figures in qualitative terms. For example, how many graduates in "occupations for which trained" might have achieved better had they had been in another vocational program, or no vocational program at all?
2. Graduates tend to be satisfied with their vocational education, but not significantly more than other graduates are satisfied with their general education.

3. The measurement of income is a highly suspect measure, but there are indications that vocational graduates tend to earn more money, and advance in their jobs better than non-vocational (excluding college graduates). But other studies found this not to be true (Corazzini, Whinfield).
4. Friends and relatives are the most important influence in job getting. School placement has been reported as most important by as many as 25% of the graduates. At least half obtain jobs by their own devices--no agency involvement. (Kaufman). This varies a good deal. A generalization may be that where the number of graduates is small and in limited supply the placement record is high.
5. Vocational graduates generally show a lower unemployment record, and a higher job stability than non-vocational graduates from high school and post-high school programs.
6. Vocational students show a high job satisfaction, but it is not clear whether or not this is higher than for non-vocational graduates.
7. Vocational graduates are not as geographically mobile as are college-going youth. Studies report up to 90% of the vocational graduates staying in the community in which they went to high school. A generalization seems to be the greater amount of education the more mobility.
8. Vocational graduates are less likely to continue their formal education than non-vocational graduates. However, they are more likely to continue their education than non-vocational students who go directly to work from high school. Their involvement in part-time education increases with occupational experience.

This kind of information is being obtained for almost all program areas, as well as the broad field of vocational education. However, almost no studies were found in homemaking wage-earning occupations, limited numbers of studies were reported in technical education and in health occupations.

These studies are generally directed at the explicit goals of curricular-centered vocational education, the preparation of persons for employment. The general observation would seem to be that graduates of vocational programs do, to a large extent enter and tend to stay in the employment areas for which they were trained.

Manpower Development and Training Programs have been subjected to considerable research with the general conclusion that the program upgrades the work skills of the trainees; decrease the number unemployed and most placements are in satisfying jobs. There is considerable disagreement on the percentage of MDTA students employed and their persistance.

Correctional institutions vocational programs have only recently been directing research at the relationship between education, employment and recidivism. Beside curricular related studies, some studies have reported on sociological characteristics.

Kaufman et. al. discuss differences between black and white graduates, observing that "the black graduate does not receive the same level of compensation on the first job, either at inception or thereafter as does his white counterpart."

Early leavers have been studied frequently. At least one study (Combs and Cooley) showed that full-time employment rates, salary levels, occupational training after leaving school, for boys, were similar for graduates and non-graduates (non-graduates having been in the labor market longer). Another study

of post-high school early leavers (Whinfield) found no significant difference in income between graduates and non-graduates, but a significant difference in occupational prestige of the job and potential for increased incomes.

But the question is asked -- "granted, vocational education has a direct and positive relationship to employment, is it worth the added cost?"

A few cost benefit studies of some rather high level of sophistication indicate that (as Kaufman puts it) the added investment is "probably" worth it (quotes are author's). But this is a highly generalized statement. Peterson, setting up a formula for length of time for employee to recuperate the losses he experiences in unemployment during training, and the added cost of post-high school education shows a high degree of difference dependent on occupations. Hydrolic Power Technicians can recuperate their loss in as little as five years. Graduates of post-high school secretarial courses cannot, in a lifetime recover the lost income and increased costs.

Cost Benefit Studies also look at the differences in social and other behavioral patterns, a neglected part of other follow-up studies. The few studies dealing with these social and attitudinal characteristics do not show the vocational student to demonstrate any significantly different behavior than other students (H.S. and P.H.S.).

While it is useful to learn what happens to vocational students, and to compare their occupational achievements to other groups, there are several voids in our knowledge. We have done little to study the sociological and psychological characteristics of former vocational students and to relate these to vocational educational experience; to compare these characteristics to other groups of students, or to evaluate the vocational education relationship to these characteristics.

We have not explored the relative success of vocational graduates to non-vocational graduates in the same jobs.

Nor have we made a very strong effort to measure the quality of vocational education programs (are some experiences better than others? Are some actually detrimental?)

We are just beginning to realize the potential value of the follow-up study, to develop the techniques for valid responses to overcome some obstacles inherent in the process. Excellent models of evaluation are incorporating follow-up studies as important components of a total evaluation system. Follow-up studies are, as stated early in this paper, one tool for studying and improving vocational education. As it is refined as a technique it has the potential of becoming one of the most useful tools we can have for evaluation and improvement of vocational education.

In conclusion, a quote from Dr. Little's report states:

> "Despite the inadequacies and deficiencies of the follow-up studies, certain findings seem to constitute a refrain. The vocational-technical education programs are serving important parts of our population in ways that these people would not be helped without them. Those who move directly to jobs from such training have an advantage in earnings, not always great, but still an advantage over their untrained cohorts. Most persons like their jobs, and the vocationally trained persons are especially satisfied if they find jobs for which the specifically prepared. The great majority of vocationally trained high school graduates obtain employment in or near the communities in which they attended school. Graduates obtain their jobs primarily from their own efforts or by the help of friends or relatives; secondary schools, teachers and counsellors, are typically not credited with being greatly helpful to students moving to jobs rather than to colleges.
>
> "There is considerable variation in the occupational careers of graduates in the several fields of training. These variations are frequently associated with variations in the labor market. In general, graduates from the fields which emphasize post-high school training show a clear advantage over graduates of high school programs. In fact, the very completion of a diploma, certificate, or degree program seems to be the key factor. This fact points to the role of employment practices, with emphasis on paper credentials, as a strong element in determining occupational placement. Although the findings are contradictory, the preponderance of evidence is that vocational education programs are probably worth their cost. But this conclusion does not blanket in all vocational programs, in all places, or in all fields. The injunction is to find definitive answers to such effectiveness within more educational systems and programs.

"This review closes with a quotation from the report of the Advisory Council on Vocational Education, 1968:

> 'Effective occupational preparations is impossible if the school feels that its obligation ends when the student graduates. The school, therefore, must work with employers to build a bridge between school and work. Placing the student on a job and following up his successes and failures provides the best possible information to the school on its strengths and weaknesses.'

"If this review stimulates more and improved studies of the vocational education product it will have achieved a good purpose."

VT 010 298
Abstracts of Papers Reporting on Development Projects in Vocational-Technical Education.

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*VOCATIONAL EDUCATION; RESEARCH PROJECTS; *INFORMATION RETRIEVAL; *INFORMATION DISSEMINATION; *EDUCATIONAL RESEARCH; EXPERIMENTAL CURRICULUM; *COMPUTER SCIENCE; COMPUTER STORAGE DEVICES
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

These seven reports on developmental projects in vocational and technical education were chosen from a much larger number of papers submitted in response to a call for papers published in various journals. They were primarily selected for their excellent quality and the importance of their themes or problem areas to the profession. They include: (1) "Industrial Arts Curriculum Project: A Progress Report" by H.J. Sredl, (2) "Interim Report on Graduates of the American Industry Secondary School Courses" by O. Nelson, (3) "Progress Report on the Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School" by J.W. Ullery, (4) "Development and Utilization of a Computerized Information Retrieval System for the ERIC Information System" by R.C. Evans, Jr., and W.J. Brown, (5) "Project Dissemination: A Computer Based Information Retrieval System" by Smith, Wheeler, and Rosse, (6) "A Pilot Program for the Development of State Vocational-Technical Education Information Dissemination Systems" by J. Magisos, and (7) "The VOED Systems: a Computerized System for Obtaining, Analyzing, and Reporting Vocational and Occupational Education" by D.H. Ahl. (CD)

VT 010 298

ED039370

Abstracts of Papers Reporting on Development Projects In Vocational-Technical Education

Presented to

Research Section
New and Related Services Division
American Vocational Association

Boston, Massachusetts

5-10 December 1969

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VT010298

COMMENT

These seven reports on development projects in vocational and technical education were presented as one of a set of three sessions. This session on development projects and the companion sessions on research and on evaluation were constructed from a much larger number of papers submitted in response to a call for papers published in various journals.

As chairman of the session on development projects, it was my duty to select that subset of papers which would meet the highest quality standard, center on one or two themes or problem areas of importance to the profession, and require no more than two and one-half hours for presentation. This potentially impossible task turned out to be easy, but frustrating. Satisfaction of the first criterion was ensured by the authors; the quality of most submitted papers was gratifyingly high. The second criterion was satisfied by luck, or some other unknown combination of mysterious forces, which concentrated many papers in two areas: curriculum and information systems. The third criterion (the only one requiring significant effort by the chairman) was the source of frustration since it permitted only one-third of the submitted papers to be included on the program.

It is my hope that the excellent results from this first call for papers will encourage us to continue it as a method for developing AVA programs and, thus, to encourage the membership in their efforts to conduct and report significant research, development and evaluation projects.

Edward J. Morrison, Chairman

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Industrial Arts Curriculum Project: A Progress Report

Henry J. Sredl
University of Illinois

The Industrial Arts Curriculum Project (IACP), a program interpreting modern industrial technology to youth, is presently being evaluated and demonstrated in 34 schools in nine states; more than 7,000 pupils and 60 teachers are participating in the IACP program on a daily basis. The program originated in 1965 at The Ohio State University and the University of Illinois and includes a two-year sequence of study for junior high school age youth.

Man reshapes and services his physical world through two broad fields, construction and manufacturing. It is through study of these sub-elements of industry that students learn how man plans, organizes, and controls men, materials, and processes to produce such items as bridges, buildings, automobiles, furniture, roads, clothing, appliances, and utilities. The first year's course exemplifies man's managed production system which produces and services society's constructed projects and is titled, "The World of Construction." The second year's course exemplifies man's managed production system which produces and services society's manufactured products. This course is called "The World of Manufacturing." Students use tools, materials, and techniques to produce products that are representative, in principle, of man-made products produced in a factory or on a construction site. Students are introduced to the increasingly important "service" aspect of industrial technology by servicing the goods they produce.

IACP materials are currently being used in schools which are part of either a Field Evaluation Center or a Demonstration Center. Field Evaluation Centers fulfill the role of systematically testing and evaluating the developing instructional system over a three-year period according to IACP guidelines. Instructional materials are revised every year on the basis of the feedback provided by the Field Evaluation Center pupils, teachers and administrators. "The World of Construction" is presently in its third year of evaluation; "The World of Manufacturing" is in its second year of evaluation. While the Field Evaluation Centers are fulfilling their role in testing and evaluating the instructional

system, there is a definite need to establish demonstration programs throughout the country to determine how IACP materials can be adapted to meet the educational and social needs of the citizens of each state and local school system. Schools which are a part of a Demonstration Center evaluate the instructional materials according to local needs and serve as places for teachers, administrators, parents, and other interested individuals or groups to more closely examine the IACP program.

Field evaluation of the IACP program is scheduled for completion in 1971. "The World of Construction" may be available for use in the fall of 1970; "The World of Manufacturing" will be available one year later. The IACP staff welcomes inquiries from schools interested in establishing an IACP demonstration program for the 1970-71 school year.

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Interim Report on Graduates of the American Industry Secondary School Courses

Orville Nelson
Stout State University

The American Industry Project completed four years of developmental work on its secondary school courses in May, 1969. At this time there was a sufficient number of high school graduates who had been enrolled in one or more American Industry courses to warrant a follow-up study.

A questionnaire was designed to gather information on the effect the study of American Industry had on educational and occupational plans and selection of a specific vocation. In addition, data were obtained on job satisfaction and the individual's perception of the influence industry has on his life. Specific information on the contents and learning activities utilized in the American Industry courses were also collected.

Approximately seventy-five percent of those contacted responded. Overseas assignments in the Armed Services caused some of the non-response problems. The response rate was equal in the American Industry and control groups.

Analysis of the completed follow-up forms indicated that the American Industry students made frequent mention of the impact this

course had on their vocational decisions. In contrast, the control group students listed significantly fewer remarks about the influence high school courses had on their vocational choices.

The effects of the study of American Industry were observed in a wide range of occupational choices. One young man, for example, decided to pursue a college degree in marketing as the result of his American Industry experiences. In another instance, the study of American Industry encouraged a young lady to enter production work in industry. A majority of the American Industry students also commented that the study of American Industry improved their understanding of industry.

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Progress Report on The Development and Evaluation of an Experimental Curriculum for the New Quincy (Mass.) Vocational-Technical School

J. William Ullery
American Institutes for Research

Project ABLE is the code name for the Quincy-AIR experimental vocational curriculum effort. The purpose of Project ABLE is to provide every student not on the college preparatory program with an opportunity to achieve competence in each of three areas: (1) Skills and knowledges in a chosen field of work; (2) The individual's role as a citizen; and (3) Independent pursuit of self-fulfillment and new learning.

The principal goal of the project has been to demonstrate increased effectiveness of instruction that derives content from explicit analysis of desired behavior after graduation. Rather than taking a total body of knowledge and drawing content from it, curriculum is being defined by what technology and industry need for job success. Subordinate objectives embodied in this plan are the following: (1) Development of educational objectives; (2) Derivation of curriculum requirements; (3) Description of needs for prerequisite learning; (4) Effecting changes in student viewpoints; (5) Individualizing instruction; (6) Student evaluation; and (7) Program evaluation.

A curriculum has been designed in topic form to provide for comprehensiveness and also flexibility of coverage for each of the vocational areas. An important step was the development of performance measures tied to the objectives of instruction. Methods of instruction were devised in demonstration areas to make possible

individualized student progression and selection of alternative programs. A plan was developed for conducting program evaluation. Follow-up of outcomes after graduation is an important part of the evaluation of the project and is being planned at this time. Some of the objectives detailed have been met. Others have yet to be completed. Project ABLE, now in its fifth year, was an ambitious undertaking and the goals were unrealistic for the time period identified and the monies appropriated. (The problems relating to the development and implementation of a vocational curriculum have been documented in a technical report.) Development was to have taken place in 11 job families (or perhaps 20 to 30 sub-families) for grades 10-14, four academic areas, a junior high guidance program and prerequisite instruction for junior high students. The guidance program has been completed and is presently undergoing validation. Curriculum products are available in electronics, power mechanics, general woodworking, and four academic areas. Demonstration pilot programs are operational and open to visitors. Technical reports on each of the areas are available and have been submitted to ERIC.

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Development and Utilization of a Computerized Information Retrieval System for the ERIC Information System

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This paper discusses the development and field-testing of a computerized information retrieval system used to search ERIC. The retrieval system was developed and implemented cooperatively by the Center for Occupational Education at North Carolina State University, the North Carolina Science and Technology Research Center, the North Carolina Occupational Research Unit, and ERIC Central who provided the tapes.

The SEARCH system is currently in operation at the Center for Occupational Education on a pilot basis. The mechanics of the system require a researcher to submit a list of key words relevant to the topic of the search. The search mechanism allows the

researcher the capability of planning a strategy using negations, unions, and intersections of key work terms. The computerized information system then searches the documents in RIE and prints out ED accession numbers and titles. Total costs per search have been approximately six dollars including personnel, direct computer cost, and indirect systems cost.

The paper will present the results of field-testing the system with Center for Occupational Education staff, selected graduate students, and clientele served by the Occupational Research Unit.

Plans will be discussed for developing a more comprehensive information retrieval and dissemination service with the Center for Occupational Education exploring national and regional needs and the Occupational Research Unit concentrating on state needs.

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Project Dissemination: A Computer Based Information Retrieval System

Brandon B. Smith
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Since the development of the ERIC system, the cumulative volume of vocational research information has grown to the point where the problem of efficiently handling and disseminating information has become critical. In an attempt to meet the increasing informational demands of various user groups in Minnesota, the Minnesota Research Coordinating Unit has developed a computerized information retrieval system. This system is one part of a long-range plan which is designed to (a) improve the efficiency-effectiveness of processing and disseminating the growing volume of research-research related information, and (b) stimulate the conduct of research and development through a continuous, systematic process of dissemination feedback.

The computerized information system was planned and developed in three phases, each of which is briefly described.

Phase I: Planning

Phase I was predicated on the basic problem of improving the efficiency-effectiveness of information handling and included the development of the rationale and specifications of the system. The system must be (a) flexible, (b) consistant with the ERIC system and proposed plans, and (c) comprehensive enough to accommodate the continued and anticipated growth of dissemination services. Procedures for ordering, processing, coding and storing information were made, together with the proposed plan for developing a computer information system capable of using keyword descriptors to locate specific documents.

Phase II: Developing and Implementing

A series of high speed computer programs and subprograms were developed and had the capability for storing and retrieving large quantities of both bibliographic and abstract information from magnetic tapes. Besides retrieving information from magnetic tape, additional requirements of the system called for (a) periodically updating (adding) information, (b) periodically removing and replacing information and (c) continually checking for the alphabetic order of documents.

The system, as developed, has the capability to search an entire textual record (bibliographic reference) abstract-resume and/or combinations of keyword descriptors for the purpose of (a) developing author and comprehensive cross referenced subject matter catalogues, (b) conducting general problem area searches, and (c) conducting specific individual problem searches on selected keywords and/or keyword combinations.

Phase III: Operating and Evaluating

Procedures were developed to encourage Minnesota educators to make use of the system by requesting either information on a general or specific subject (problem area). Requests for information can be filled in less than a day with a plan for obtaining immediate feedback information for the evaluation procedure.

Conclusion

While the system is designed specifically for the Minnesota Research Coordinating Unit research library and the computer programs are peculiar to the CDC-6600 computer, the basic procedures and concepts of information storage, retrieval and dissemination are generalizable to many other research agencies-libraries both within or outside the field of vocational education. Information about the purpose and operation of the system is available by request.

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A Pilot Program for the Development of State Vocational-Technical Education Information Dissemination Systems

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Six state vocational education research coordinating units (RCU's) have been designated as participants in a pilot program for the development of information dissemination systems. The states (i.e., California, New Jersey, New York, Oklahoma, Pennsylvania, and Wisconsin) were invited to participate upon the basis of their application to engage in the program, the specific objectives of which are to:

1. Develop an exemplary information dissemination system in several cooperating states;

2. Evaluate the effectiveness of an information dissemination system in varied settings;

3. Evaluate the effectiveness of ERIC and VT-ERIC products and strategies;

4. Identify and analyze the nature of the user, his problems, and needs; and

5. Demonstrate the efficacy of procedures prescribed for planning, operation, and evaluation of an information dissemination system.

The conception of the program was an outgrowth of previous activities by staff of the ERIC Clearinghouse on Vocational and Technical education (VT-ERIC) and RCU personnel. The central purpose of the program is the eventual development of a multi-level network of information dissemination systems which will meet information needs arising from the critical needs of users on an interpersonal basis.

The VT-ERIC staff and an ad hoc committee of RCU personnel had developed, during the preceding year, a Guide for a State Vocational-Technical Education Dissemination System. Steps in the development of the Guide included: inputs by committee members, staff

editing, review in regional RCU meetings general review by RCU personnel, technical review by information scientists, and intensive revision by committee and staff. The Guide will provide the staffs of the pilot RCU's with a pattern by which they may plan, operate, and evaluate their information dissemination activities.

Specific pilot program activities will include planning conferences, consultative visits by VT-ERIC staff, specific projects (e.g., user analysis, product evaluation), and evaluation of the effort. Successful development of several operating models will lead to diffusion of appropriate systems throughout other states in concert with the total system under development for education.

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The V.O.E.D. System: A Computerized System for Obtaining, Analyzing and Reporting Vocational and Occupational Education

David H. Ahl
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The V.O.E.D. System is a computerized system for collecting, analyzing and reporting vocational education data needed for state and local level program planning and evaluation. The system was developed for the Pennsylvania Department of Education by Educational Systems Research Institute which has been contracted to apply the system for a two-year period.

The V.O.E.D. System consists of three phases. Phase I involves an optical scanner form which is completed by schools throughout the state. Occupational curriculum offerings, grade enrollments and other basic school data are reported. These forms are used to produce a state-wide occupational directory and growth report by school, school district, county, labor market and region. These reports will provide data to answer questions about the adequacy of vocational education growth relative to student needs and labor market requirements. The reports are of greatest value to school counselors and educational planning personnel.

The second phase of the system consists of an optical scanner form filled out by individual students. In addition, teachers enter brief student ratings. These forms are used to produce a report describing the annual output of each type of occupational

curriculum. The report will also provide some basic information as to the academic and occupational competence of vocational graduates.

The student information collected in Phase II is used to prepare a mailing to all vocational students of a follow-up survey questionnaire. This questionnaire goes out one year after graduation and provides information about former students' experience in employment. Data are collected about the time required to get a job, relatedness of job to vocational course taken, earnings, job satisfaction, mobility, and other information. These data are merged with data from Phase II to produce an Occupational Student Follow-up Survey Report and an Occupational Program Planning and Evaluation Report.

During the first year of V.O.E.D. operations covering 1968 graduates, 12,000 students were processed. Full-scale operations in 1969 will cover roughly 24,000 students. The optical scanner forms coupled with computerized processing is designed to be economical and flexible yet provide timely and meaningful reports.

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VT 010 305
Paulter, Albert J.; Schaefer, Carl J.
Review and Synthesis of Research in Trade and Industrial Education.

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*SPEECHES; *TRADE AND INDUSTRIAL EDUCATION; *RESEARCH REVIEWS (PUBLICATIONS); *SYNTHESIS; MANPOWER NEEDS; EMPLOYMENT OPPORTUNITIES; CURRICULUM DEVELOPMENT; EDUCATIONAL PROGRAMS; INSTRUCTIONAL MATERIALS; LEARNING PROCESSES; STUDENT PERSONNEL SERVICES; EDUCATIONAL ADMINISTRATION; SUPERVISION; EDUCATIONAL FACILITIES; TEACHER EDUCATION; EVALUATION
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This speech is based on "Review and Synthesis of Research in Trade and Industrial Education," which is primarily concerned with findings and research conducted from August 1966 to April 1969. It provides an overview of the research reports included in that document, grouped in the following areas: (1) Manpower Needs and Employment Opportunities, (2) Curriculum Development, (3) Educational Programs, (4) Instructional Materials and Devices, (5) Learning Processes and Teaching Methods, (6) Student Personnel Services, (7) Facilities and Equipment, (8) Administration and Supervision, (9) Teacher Education, and (10) Evaluation. The review and synthesis is available as VT 010 304 appearing in Research in Education, May 1970. (GR)

VT 010 305

ED039370

(C1)

REVIEW AND SYNTHESIS OF RESEARCH IN TRADE AND INDUSTRIAL EDUCATION

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Paper Presented At

NAITTE Research Program
American Vocational Association
Boston, Massachusetts
Sunday, December 7, 1969

VT010305

The second and final draft of our manuscript entitled, Review and Synthesis of Research in Trade and Industrial Education consisted of ninety-seven (97) double-spaced typewritten pages. Two-hundred and seventeen (217) sources are listed in the bibliography and reviewed in the manuscript. This second and final draft is the one that will be published by The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University, Columbus, Ohio.

Although two-hundred and seventeen (217) sources are indicated in the bibliography, I dare say that some three-hundred (300) to three-hundred and fifty (350) abstracts were presented to the authors for consideration in the review. Special thanks is due to Mr. Clifford Easton, NDEA Fellow in the Department of Vocational-Technical Education, for his assistance in reviewing the research studies and literature, and provided the abstracts.

The first generation review of this publication was written by Tuckman and Schaefer and contained research findings primarily for the years 1962-1966. The second generation review was primarily concerned with the findings and research conducted from August 1966 to April 1, 1969.

Many of the studies and research reports reviewed were conducted by people in this very room. It is not our intent in the limited time available to review studies and mention names of various researchers. We assume that you will want to obtain the full set of reviews published by the Center and review in depth the state of the art, so to speak. We will attempt to carry on a form of interplay, or dialogue, which may be useful for your consideration for further research efforts. We will cover the major topics as presented in the review.

SCHAEFER - Manpower Needs and Employment Opportunities

1. When one attempts to assess the research endeavor in the manpower needs area -- especially an educator, he is apt to get embroiled in the dilemma between the needs of the individual and that of employment opportunities. To this end, more will be said as our report progresses. Here, we are talking about employment opportunities.
2. To the vocational educator, it is a must that he know something about up-to-date manpower requirements. This is not saying he should be an unqualified expert. It is saying that he must have a

source of information as to jobs and job trends.

3. The literature argues hard and long for a system of manpower projections, the establishment of a data bank, and an improved method of collecting and disseminating job information. No adequate system has yet been found.

4. For the first time, it appears that a substantial amount of work is being done in obtaining employee characteristics (educational and demographic) on rather large samples (as brought about by MDTA and other such programs).

5. Youth still pose a special problem in regards to employment opportunities and according to the United States Department of Labor, there are still 27.5 million workers without a high school diploma.

6. Women, too, came into their fair share of the employment spotlight. The lack of recruitment of girls into T & I programs is a topic needing study.

7. But, when it is all said and done, the United States Department of Labor is looked to for the hard data and studies related to manpower and employment.

PAUTLER - <u>Curriculum Development</u>

1. The rapid increase in post-high school occupational

programs has created some articulation problems between them and secondary level programs. We are in need of studies that will lead to articulated curriculum development efforts involving the secondary and post-secondary institutions.

2. The research in past years reflects many different types of programs used to provide vocational-technical education. What now seems needed is some type of evaluation to determine which type of program is best. What are the short range and long range advantages to the student of each type of program. Evaluative studies to determine the success or failure of the various approaches seem to be lacking.

3. A study to determine curriculum accountability seems to be needed at this time. In my travels, it is seldom that I visit a school that has a curriculum coordinator on the staff. We could learn a great deal from our friends in the Association for Supervision and Curriculum Development regarding curriculum development and supervision.

4. The entire idea of performance or behavioral objectives seems worthy of added research in the

area of T & I education. What assistance can we offer the shop teacher who must, if research is to be valuable, apply the findings on the firing line?

SCHAEFER - Educational Programs

1. The myriad of occupational educational programs -- in-school, retraining, job corps, etc. -- has led to substantial confusion, fragmentation, and duplication of efforts. The research thus far leaves more unsaid than said.
2. Attaining program objectives and stated goals is still a game of chance and we appear a long way off from implementing and testing models such as advocated by Frank's (M.I.T.) Summer Study on Occupational and Vocational and Technical Education and Maley's cluster conceptional framework.
3. If educational programs are to be concocted -- an art which seems rather successfully practical and recorded in the literature by vocational practitioners, more has to be built into the process to attest to their success. The cost-benefit analysis appears to be called for at the conception of

new program ideas. The work of Kaufman, Corazzini, and others, has not hurt vocational education in this respect and must be replicated in more situations.

4. Finally, educational program development appears to be caught in the dilemma of student need orientation vs. manpower needs. That is to say, from whence we start -- the needs of the human being or the opportunities (realistic) that are available to manpower resources. As educators first, and manpower delivery experts second, we cannot let program studies become too one-sided either in quantity or quality.

PAUTLER - Instructional Materials and Devices

1. T & I education programs, because of the varied nature, should be one of the chief users of instructional materials and devices. Yet, many vocational-technical schools are sorely lacking such audio-visual hardware and software. What is the attitude of vocational school administrators toward such equipment? Is their attitude consistent with the availability of both software and hardware in

their schools? What is the teacher attitude toward audio-visual equipment? It makes little sense to push A-V in teacher education programs unless the equipment is available in the local schools.

2. More studies, with other media devices, should be conducted along the lines of the two-year assessment of micro-teaching conducted by the staff at the Center at Ohio State. A wide range of some ten (10) sub-studies were conducted as a part of the total research effort.

3. Research evidence is lacking to determine the relative effectiveness of the various instructional materials and media as related to T & I education. A number of research studies such as the micro-teaching assessment, should be conducted dealing with media suitable to T & I educational programs.

SCHAEFER - Learning Processes and Teaching Methods

1. A question can be raised whether we have learned all there is to about teaching methods and learning theory. In fact, I sometimes feel we aren't using half of what we already know, especially as

evidenced by college professors.

2. The literature indicates that studies dealing with T & I and learning processes and teaching methods are extremely limited. The work of Allen in terms of micro-teaching and flexible scheduling are well known.

3. Little has been done in the area of attitudinal change although an effort seems to have been made in ascertaining the value of directive vs. non-directive teaching. Tuckman and Brenner have led in these attempts.

PAUTLER - Student Personnel Services

1. The review of research dealing with Student Personnel Services uncovered many studies of value to T & I education programs. Many of the studies reported should prove to be of value to student personnel service staff in T & I education programs.

2. One item of major importance seems to be the fact that the type of work experiences industry-bound students are likely to have is not included in the counselor's background. However, research evidence seems to be lacking to indicate if such experiences

make one a more effective counselor of T & I students. Perhaps, research efforts should be expanded in this area of endeavor.

SCHAEFER - Facilities and Equipment

1. I would like to think we know a good deal about facilities and equipment since the need for vocational school buildings is high on our priority list.
2. If this is the case, one would not be surprised then, to find a good deal of literature on this aspect. And this seems to be the case. Besides the AVA Journal, School Shop and IAVE have all made a sincere attempt to disseminate floor plans, models, and equipment lists. What seems to be lacking is a comprehensive cataloging of all such available materials and ideas.
3. Far too little actual research or fact finding type studies have been conducted, however.

PAUTLER - Administration and Supervision

1. Evaluation of some of the leadership development programs seems essential at this time. Much has been written on leadership development but now

seems the appropriate time to evaluate some of the programs that prepare T & I administrators.

2. With the projected growth in enrollment in vocational education, a good, hard assessment of the essential characteristics of T & I administrators and supervisors seems essential. What common experiences both within and outside of the classroom are necessary?

3. What types of in-service programs should be conducted to assure a ready supply of supervisors and administrators at the local, state and national levels?

4. To what extent are internship and externship experiences available to T & I personnel? Of what value are such experiences?

SCHAEFER - Teacher Education

1. Teacher education is a topic close to my heart. The literature reports that forecasts of demand for T & I teachers shows considerable consistency. Is there a demand for teachers or do we delude ourselves in thinking that we can hire adequate and competent tradesmen right off the street?

2. What states have or are now making adequate projections and plans to have an ample supply of T & I teachers by 1975? What role should, or could, occupational competency examinations play in meeting: (a) teacher certification and (b) college credit? How do we keep T & I teachers up-to-date in a technological sense? Those are but some questions that haven't been studied nor answers found for over the many years.

SCHAEFER - Evaluation

1. The topic of evaluation is only now coming into focus. As vocational educators, we have been so busy doing and carrying out, that the end product and its value has only been treated in an off-handed manner.
2. The familiar follow-up study method just isn't enough to attest to program success. This is not to say it doesn't have a place in the evaluative process, but it has been definitely over-used without recognizing its real potential -- one of a longitudinal nature.
3. Cost-benefit studies have been mentioned earlier

and the case study certainly should play an increased role in the evaluative process. Regional accrediting and pilot projects have their place. The tying together of behavioral objectives with evaluation outcomes appears the most promising work for the future.

In closing, let me say for Al Pautler and myself, it has been exciting to follow through with the T & I research endeavor. But the hard, cold facts of the matter are that your job -- the researchers in our field -- is far from being done.

VT 010 307
Phillips, Donald S.; Briggs, Lloyd D;
Research in Technical Education.

MF AVAILABLE IN VT-ERIC SET.
Pub Date - 6Dec69 12p.; Paper presented at the Annual American Vocational Association Convention (63rd, Boston, Mass., Dec. 6, 1969)

*VOCATIONAL EDUCATION; *SPEECHES; *TECHNICAL EDUCATION; *EDUCATIONAL RESEARCH; MANPOWER NEEDS; EDUCATIONAL PROGRAMS; CURRICULUM DEVELOPMENT; STUDENT PERSONNEL SERVICES; EVALUATION; EDUCATIONAL ADMINISTRATION; TEACHER EDUCATION; LEARNING PROCESSES; TEACHING METHODS; EDUCATIONAL FACILITIES; *RESEARCH REVIEWS (PUBLICATIONS); SYNTHESIS
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This speech, based on "Review and Synthesis of Research in Technical Education" for the year of 1966-1968 provides an overview of the research studies chosen for that publication, grouped according to the following outline: philosophy, manpower needs, educational programs, curriculum, student personnel services, evaluation, administration and supervision, teacher education, learning processes and teaching methods, instructional materials and devices, facilities, and research. The complete document is available as VT 010 306 appearing in Research in Education, May 1970. (GR)

VT 010 307

ED039370

(C1)

RESEARCH IN TECHNICAL EDUCATION*

This paper is based upon a "Review and Synthesis of Research in Technical Education" for the years of 1966-1968 prepared by Professor Lloyd Briggs and Donald Phillips for the Ohio State University's Center for Vocational and Technical Education. Dr. Milton Larson prepared a similar paper for the years prior to 1966.

In preparing the paper we chose to cite a number of publications which were not research reports. Our aim was to include materials that serve to identify problem areas in which research studies are needed. In making the review we attempted to secure materials from several sources; however, the primary source was the ERIC system. This system greatly simplified the task of identifying and securing materials for the review.

Let me hasten to point out that, while we sought information from several sources, we do not contend that the review is comprehensive. In fact, we limited the review to materials that relate rather specifically to technical education. By doing this it was hoped that we could present a concise picture of the status of research in this area. This means, however, that research from other disciplines, such as the behavioral sciences, is not treated in the paper.

To facilitate the review and synthesis, research studies were grouped according to the following outline: Philosophy, manpower needs, educational programs, curriculum, student personnel services, evaluation, administration and supervision, teacher education, learning processes and teaching methods, instructional materials and devices, facilities, and research. As always, we encountered problems in classifying the studies. Several studies contain information relative to more than one of the topics, and there is a considerable

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VT010307

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*This paper was prepared by Donald S. Phillips and Lloyd D. Briggs of the Technical Education Department, Oklahoma State University. Paper presented at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 6, 1969 to the Technical Education Division.

interrelationship among the categories.

Before treating each of the areas separately, let me point out that in making the review we viewed technical education as a level of education rather than as a type of education. This means that technical education programs are to prepare persons for employment in occupations between skilled workers and professionals. Using this definition, we reviewed studies from several areas. Now let us turn to a discussion of the several topical areas.

Philosophy: Technical education in the United States, born in private schools outside the educational mainstream, is becoming recognized as an important function of public education. Yet there are still many philosophical questions about its rightful role in the public education system.

Elizabeth M. Ray (1968) has reviewed the literature relative to the "Social and Philosophical Framework" for Vocational, Technical, and Practical Arts Education. In summarizing the review and looking to the future, Dr. Ray concludes that the future status of vocational education is contingent on two major considerations. First: "The field of vocational education must itself respond to the demand for a quality product." The second consideration relates to the observation that the framework for vocational education has tended to be and is presently more responsive to political and economic factors than to philosophical positions. In her words: "If there is validity to the argument that vocational education belongs in the mainstream of education, then the justifications are social, psychological, and cultural." It seems to me that this observation also applies to technical education.

While the role of research in the development of a philosophical framework can be debated, it seems that questions such as: What are the educational needs of a free industrial society? Who should be educated, to what extent, and by whom? What new skills and abilities are needed? are questions which should be explored.

Manpower Needs: A number of studies dealing with the identification of technical manpower needs at the local, state, and national level have been reported during the last decade. While studies of this type have proved useful for identifying trends and calling attention to educational needs, their value for planning educational programs has often been limited. One of the limitations of these studies relates to the well known problem of defining and identifying technical occupations. This problem affects the study results in at least two important ways: (1) accuracy of the demand data and (2) usefulness of the data for curriculum planning. Possibly the most serious limitation of manpower studies is the time element. In general, the time required for the educational system to respond to an identified need is quite long; therefore, for maximum usefulness, manpower demand projections must be made for a period of several years. This presents serious problems. As the forecast horizon or period of time to which the forecast applies is increased, the forecast accuracy is reduced, thus reducing the value of the information for educational planning and policy making.

In their review of the literature relative to manpower supply and demand, Kaufman and Brown (1968) caution: "a forecast can seldom be more than a very sophisticated and knowledgeable guess about the future, and so should be treated as an approximate guideline." Since it is extremely difficult to make accurate long-range projections of manpower demand, it would seem that considerable effort should be devoted to reducing the response time of the educational system.

Educational Programs: Most of the studies which were classified under this heading are surveys dealing with program offerings in various types of institutions or in some program area. The studies reviewed document the rapid growth of technical offerings during recent years.

The growth of offerings and plans for continued expansion of technical offerings by junior colleges was documented by Smith (1966). Data for this

study were collected from some 208 junior colleges.

Less-than-baccalaureate technical offerings at four-year colleges and universities were studied by Martin (1967). Information relative to program offerings was collected from 282 institutions from throughout the United States. These data reveal that 40 percent of the institutions offer less-than-baccalaureate level technical programs. One rather interesting finding was that institutions with enrollments of 10,000 or more tended to offer more technical programs than did institutions with enrollments of less than 10,000.

Student Personnel Services: In recent years considerable attention has been devoted to the development of theories relative to career development. In summary to a review of the literature in this area Tennyson (1968) expresses optimism concerning the beginning which has been made toward establishing or contradicting, by empirical means, the fundamental assumptions on which the theory of vocational development rests. The reviewer states that, while much of the contemporary work falls short in important respects, an impressive body of knowledge about vocational development and behavior has accumulated. A great deal, however, remains to be done in translating the theory into practice.

Studies dealing specifically with technical students tend to fall into three categories: guidance, student characteristics, and prediction. Most studies dealing with guidance of technical students indicate that very little effective work is being done in this area. One important reason seems to be the lack of information relative to educational opportunities.

The number of studies dealing with student characteristics is quite limited, and there is still much speculation about the kinds of individuals these students are. Unfortunately, much of the speculation deals less with what the students are than with what they ought to be. Although limited number, these studies tend to show that technical students have identifiable characteristics which should be considered when planning educational programs.

Two studies dealing with transfer students have found that students who originally enroll in baccalaureate or college transfer programs are not apt to transfer to technical programs at the same institution. Taylor and Hecker (1967) found that students who are not successful in the program they select upon initial enrollment tend to withdraw from college rather than change to another curriculum. This was true despite the extensive range of alternative programs and counseling facilities that were available to the students in the situation studied.

Several studies have been concerned with predicting success in technical programs. A number of factors, such as socioeconomic status, high school grades, and standardized test scores, have been found to correlate with success in technical programs. However, none of the studies reviewed produced results that promise to make significant contributions in counseling students.

Evaluation: Evaluation of educational programs, which has recently taken on added importance in technical education, is a very complex process. While few would argue with the need for and importance of evaluation, a great deal of debate can be generated about the methods and processes used in evaluation. Based on their review of the literature relative to program evaluation for the period of 1962-1968, Coster and Ihmen (1968) conclude that a start toward more rigorous evaluation has been made, but a great deal remains to be done.

Student success in obtaining employment and progressing in the world of work has been one of the primary evaluation techniques used in vocational and technical education. The use of follow-up studies as an evaluation technique was studied by Sharp and Krasnegor (1966) who recommend the follow-up study as an evaluation technique. These authors, however, call attention to the need for more explanatory studies. The most serious gap in follow-up information was found at the post-high school level for persons trained in technical institutes and junior colleges.

Development of guidelines and criteria for accrediting technical programs has become increasingly important as program enrollments have increased. Yet little research has been devoted to this area. Messersmith and Medsker (1969) conducted a study of accreditation by specialized agencies of vocational-technical curricula in post-secondary institutions. Like many other studies, this one raises a number of significant questions which should be investigated. An important consideration in program accreditation centers around the role of general education. While opinions regarding the value of general education abound, few research data are available. In view of the many assumptions regarding the value and importance of general education, it is somewhat surprising that few if any studies dealing with the development of meaningful general education experiences for technical students are reported in the literature.

Administration and Supervision: The rapid expansion of technical education offerings in a variety of institutional and organizational settings has increased the need to develop viable and efficient administrative organizations. After reviewing the literature relative to this topic, it seems that the most appropriate conclusion is that much remains to be done.

Studies dealing with articulation between post-secondary technical programs and four-year institutions show considerable diversity among institutions relative to acceptance of transfer credit from technical programs. These studies have done more to identify a significant problem than they have to pose solutions.

Curriculum: Planning and developing technical curricula involves considerations and problems that are not generally required in other areas of education. Because of this, curriculum development has been a major factor in the expansion of technical education offerings. To aid educational planners in developing quality programs, a number of curriculum guides have been published by the USOE,

the American Association of Junior Colleges, and several state departments. These guides have generally been developed by individuals who have been involved in planning and operating successful on-going technical programs.

A major task in building technical curricula is the identification of the knowledges and skills required for successful employment in the technical occupation. Several studies have been devoted to analyzing technical occupations. Schill and Arnold (1965) sought to determine the content most appropriate for preparing technicians in each of six technical occupations in the manufacturing area. The purpose of the project was to study the feasibility of minimizing extraneous and repetitious curriculum content by developing programs which are complementary rather than redundant.

Studies dealing with the development of technical curricula in the areas of business, health, agriculture, and police science are also reported in the literature.

Emerging technologies are the topic of considerable concern in today's rapidly changing society. Studies by Koney (1966) and the Technical Education Research Center (1967) have sought to document the need for technicians in the areas of electromechanical technology and bio-medical equipment technology. These studies also identified knowledge and skills that employers deem necessary for successful employment in these occupations.

Teacher Education: Growth in the numbers and kinds of technical programs and increased student enrollments have created demands for large numbers of technical teachers. Several studies have sought to document the need for technical teachers and other studies have been directed toward the problems of teacher supply and recruitment.

Since the teacher shortage has been well identified, it is somewhat surprising that so little research on teacher education is reported in the literature. Miller (1967) recognizing the need for research in this area, developed a model

to assist in the design and implementation of research in technical teacher education. Moss (1967) has also made a contribution to this area by his review of literature relative to teacher education in vocational and technical education. An important part of this work is the model for classifying studies that have been done, for showing interrelationships among them, for uncovering gaps in our knowledge, and thus for research planning.

Several institutes have been devoted to improving the competencies of technical teachers. Summaries from a number of these are reported in the literature.

Learning Processes and Teaching Methods: Few researchers in technical education have given attention to basic research studies in the areas of teaching and learning. The limited number of studies cited in this section were primarily concerned with the use of instructional devices of various kinds. Studies dealing with the selection and use of programmed instruction and multi-media approaches are reviewed. While much remains to be done, it is encouraging to see that a start is being made.

A project conducted at the Pennsylvania State University (Mitzel and Brandon, 1966) has dealt with the use of computer-aided instruction in technical education. This type of instruction utilizes prepared material administered under computer control. The objectives of the study are to compare CAI with other educational strategies, to prepare appropriate instructional materials, and to prepare teaching personnel for using the system. This type of instruction holds considerable potential for improvements in technical education; however, a great deal of research and development work remains to be done before the potential benefits can be realized.

Facilities: Adequate educational facilities are basic to good technical education. To be effective, most technical programs require more extensive and more specialized laboratories and general plant facilities than do other

types of educational programs. Consequently, a higher degree of organized planning is necessary for their development. Unfortunately, little definitive research has been conducted to establish criteria for effective facility planning.

Most of the reports relative to this topic are planning guides which present general guidelines for use in planning educational facilities. These guides should prove valuable to the many individuals who are currently involved in planning educational facilities.

Research: The panel of consultants on vocational education suggested that research in vocational and technical education falls far short of meeting current needs. Possibly the major reason for this criticism is that only in recent years has the potential value of research findings for solving operational problems been recognized. Prior to 1963, most research in technical education was conducted by graduate students and had little influence on program planning and operation. Even after the 1963 Act, research has had little impact on program development. Again, several reasons could be cited for this observation.

The 1968 Advisory Council on Vocational Education expressed concern about the nature and value of research. One of the most frequently heard criticisms of research has been the lack of tangible evidence of its impact upon educational programs. One reason for this lack of impact may relate to the traditional view of research which sees the research process as one of generating new knowledge and of revising generally accepted conclusions in light of new evidence. It may be that viewing research in its most generic sense, as a function--a function of program planning and development, will result in its having more effect upon program development. Under this view, research can assist in (1) setting goals, (2) developing procedures to reach those objectives, and (3) thoroughly testing products such as curriculum materials before they are disseminated for use in operational settings.

Another factor which has influenced research in technical education has been the shortage of trained researchers in this field. A number of conferences, institutes, and seminars have been devoted to improving research competencies, identifying research needs, and developing research strategies. Also, several studies dealing with the determination of research priorities are reported in the literature.

Summary: In summary, it is exciting to review the significant developments which have occurred in the field of technical education during the three-year period covered by this review. Enrollments have grown, new programs have been developed, and research activities have multiplied. Also, several institutions have expanded their technical education offerings, other institutions have begun to offer technical education programs, and the concept of technical education has broadened to encompass programs in areas other than engineering. Growth and expansion during this period may possibly have been greater than during any other three-year period. This growth has brought about an increased need for research and development in the field of technical education.

Practitioners looking to research for solutions to operational problems may be disappointed since the reported research offers relatively little to aid in the immediate solution of persistent problems. In general, much of the reported research suffers from deficiencies in design and methodology. Some researchers have forged ahead without giving proper attention to sound research design, resulting in findings that have only limited generalizability. In other cases, information for proper evaluation of findings within the framework of acceptable research design is not reported. In some instances, results are reported in such a manner that it is difficult for the reader to identify results or conclusions.

Several descriptive research studies are reported. These studies, in general, have limited value beyond the situation in which they were conducted.

In some studies the researcher was attempting to describe a rapidly changing scene. Consequently, it was difficult to draw conclusions or make recommendations.

Questionnaires and opinionnaires were used in a number of studies. Information relative to the development and validation of these instruments is often limited or not reported.

Development and demonstration projects hold considerable potential for producing information that has immediate application in operational situations. Results of such projects may provide information, materials, or techniques which will aid in improving the efficiency and effectiveness of educational programs. There are disappointingly few studies of this type reported in the literature.

A number of research studies have dealt with small segments of large problems and have tended to be terminal in nature. One of the major reasons for this is that research is often funded on a project basis for specific period of time. A few longitudinal and multi-phase studies (Mitzel and Brandon (1966), Hoyt (1968), and Kinsinger and Ratner (1966)) are reported. While the results to date do not warrant conclusions, these studies are dealing with important areas of concern and should produce significant knowledge.

While the amount of significant research in technical education is still quite limited, there are, however, many encouraging developments. Research provisions of the Vocational Education Act of 1963 have served as a stimulus to research activities in technical education. Several studies supported under the provisions of this Act are currently reported; however, it is possible that the full impact has not yet been realized. It is still too early to evaluate the effectiveness of recent efforts to expand and improve research in technical education. It is hoped, however, that the fruits of these efforts will make significant contributions to the important field of technical education.

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Three addresses given at the 63rd Annual Vocational Convention, Industrial Arts Education Division of the American Vocational Association, are grouped in this document. They include: (1) "Educational Considerations in Making Industrial Arts Relevant" by G.W. Ketcham, (2) "Industrial Arts Research: Curriculum, Administration and Supervision, and Teacher Education" by A.R. Suess, (3) "Industrial Arts Research: History, Philosophy, Objectives, Media, and Methods 1966-1968" by D.L. Householder, and (4) "National Association of Industrial and Technical Teacher Educators, Research Committee Report," by C.J. Cotrell, Chairman. (DM)

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Speeches Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 6, 7, 1969

Industrial Arts Education Division

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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EDUCATIONAL CONSIDERATIONS IN MAKING INDUSTRIAL ARTS RELEVANT[1]

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To be relevant a discipline or body of knowledge must have a logical connection or relationship to the matter or problem under consideration. Social, economic and political expectations and pressures will and are demanding educational programs that are relevant to the problems of an alarmed and demanding society.

Educators must realize that the "changing society" glibly referred to in the past has become a dynamic, fearful and rapidly changing social and technological phenomena which in itself challenges the educational theories and methods now practiced at all levels. Obsolescence will most certainly overtake many of the so-called "facts and procedures."

If educators are to realistically face the task of helping children and youth to learn to "adjust to and live in" a society that is vastly different from that of the past and even the present, then they must recognize, develop and accept new approaches to the educational process in a society whose problems we cannot anticipate let alone solve.

Making industrial arts relevant requires a thorough understanding of the total educational program and recognition of the fact that industrial arts is an important part of that total program.

Education has a responsibility to provide environmental experiences which

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 6, 1969.

will encourage and promote both group and individual learning actions which will develop the knowledges, skills, habits and attitudes necessary for positive participation as members of society. Educational programs should be based upon both the common needs and the special needs of the individual and the community to be served.

Everyone, on a personal basis, has physical, mental, emotional and social concerns and needs in terms of growth and development. To attempt to provide an educational program related to these concerns and needs a total educational experience should provide for both types of major needs.

All youth have "common needs." These needs are basic to the development of a fully functioning individual as an active member of a democratic society. These basic or fundamental needs include:

1. The need for the development of good English usage or language arts which will include listening skills, writing skills, speaking skills and interpreting skills;
2. The need for the development of basic mathematical skills in fundamentals of arithmetic for everyday living;
3. The need for basic skills and knowledges in the area of science. All youth should have at least a minimum contact with various phases of what is often termed "earth" or"environmental" science which usually includes meteorology, geology, astronomy and oceanography;
4. The need for the skills of civic competence which will help him understand his responsibilities as a member of a democratic society. The development of an individual who will have the desire "to know, to care and to do," in civic affairs;
5. The need for a meaningful program in health and physical education;

6. The need for basic elements of home and family living; foods and nutrition, care of clothing, home nursing, child care, good grooming, home management and family problems;
7. The need for cultural understandings and knowledges of the aesthetic characteristics of our society including experiences in art, music, drama, crafts, literature and nature;

and finally, and of special interest to us,

8. The need for vocational experiences and understandings. In this instance the term vocational is used in its broadest sense. It is still, probably the most neglected and misunderstood phase of the so-called "general education" program.

This need might well be classified as vocational orientation or exploration for all students involving a wide sampling of activities in such major categories as agriculture, business, industry and the professions. From this point of view preparation for college is but one phase of the broad vocational offering of a comprehensive school program, although some of our academically-minded friends would not like such an interpretation. To far too many liberal arts educators vocational means anything below the so-called professional level. Exploration and orientation in all areas of this introductory level should include: occupational information, basic elementary skills, experiences and activities designed to develop an appreciation and understanding of the inter-dependence of vocational areas in the world of work.

These then represent the common needs of all individuals living in a technological and democratic society and reflect the basic elements needed in any truly comprehensive educational program. It is important that industrial educators understand these needs and recognize the opportunities for enriching their own programs through activities associated with them.

In addition to these common needs, all youth have specialized needs which can only be satisfied through the flexibility and breadth of specialized programs designed to meet these needs.

It is important to note that at this point reference is made to industrial education in its broadest meaning. Intensive vocational education of the narrow, single occupational type has often been mistaken for the needs of the unsettled and confused youth. In terms of present day and the projected technological changes, it is important that both industrial arts educators and those responsible for industrial-technical education work together in a united effort to adjust their programs to the ever-changing needs of youth.

Industrial Arts is recognized as that part of a total educational program for all youth which is concerned with the development of a practical understanding and appreciation of today's industrial and technological society.

Opportunities for learning are provided through experiences in planning, using tools and materials, performing processes in the production of useful articles, servicing industrial products and experimenting in activities related to the science of industrial and technical problems of the world today.

Relevance as an educational issue raises questions concerning the value and practicality of what is being taught. To be relevant the content and the methods must be dynamic, significant and meaningful in terms of the needs of the individual and the needs of a changing society.

Acceptable objectives for industrial arts include those related to the study of industry, the development of problem-solving skills, the discovery of talent, and the development of a degree of skill in the safe use of the more common tools and machines. Such objectives are not in conflict with the need for an individualized and functional approach to the teaching of Industrial Arts.

To give further meaning to such objectives considerable stress should be placed upon three vital factors for major emphasis with each individual.

The first would be Attitudes: toward work; toward rules and regulations; towards fellow-workers and toward his environment and his place in society.

The second and closely allied with the first would be Habits: of work; of dress; of procedure; of safety and of general usefulness in everyday living.

The third, and perhaps the most meaningful would be Problem Solving Techniques and Abilities: to identify a problem and then think through and develop potential procedures for solution in a logical fashion and finally apply and modify those procedures in an honest effort to solve the problem.

In the development of an industrial arts program that has relevancy to the objectives mentioned and the individualized factors to be stressed, I would base the entire development on three broad centers of human concern and interest related to the complexities of technology.

The first, I would call the world of work or occupational orientation; the second, the world of living or consumer competency; and the third, the world of play or leisure time activity. All three are obviously interrelated but all three represent the major centers of concern and interest of all. They also involve identifiable problems requiring a degree of industrial and technical competency and knowledge for solution.

All references to the relevancy of the industrial arts pro am must eventually be identified with the need for curriculum content change. It must be a dynamic and flexible curriculum rather than fixed and static.

It must be student-centered rather than teacher and/or subject matter centered.

It must deal with real, functional and meaningful problems and activities

in terms of the individual and the community.

Relevancy also means the establishment of a broad basic approach to the understanding of industry and technology through industrial arts education. As an initial step in the formalized program at grade levels 6, 7 and 8 it will have greater significance and potentiality if a more realistic approach is used.

Such an approach should consider three major categories of interpretation and curriculum development.

1 - Production

(material processing)

a - Construction (all forms of structures)

b - Manufacturing (the fabrication of useful products through custom and/or line production methods.)

c - Material Testing (of natural and man-made materials, assemblies and finishes).

2 - Power

(useful energy)

The development of a basic understanding of all major forms of energy sources and their practical application to useful products and services of industry and technology through:

a - Electronics

b - Fluidics

c - Mechanics

d - Instrumentation

3 - Graphics

(visual communication)

a - Research and Planning

b - Sketching and Drafting

c - Printing (Relief, Intaglio and Lithography)

d - Photography

Such a program should constitute a significant part of the educational program for all students at the middle school level.

As outlined above the more formalized industrial arts offerings should begin at the middle school level and extend through all levels of the high school. The total structure of the formalized program offered for all youth should be visualized as a broad based pyramid with a four-level approach to the apex.

The first level as previously outlined is generally a required experience for all boys although every effort should be made to include girls in the program. Students should have exploratory experiences in all of the major categories available in the school.

For those who have indicated an interest in industrial and technical areas, the second level of the pyramid type of organization should be made available during both the ninth and tenth grades of secondary education. During these two years every student in this group should have experiences in all of the available areas with considerable emphasis on occupational orientation.

At Level three (the eleventh grade) each student should be encouraged to select two of the various areas for further study and concentration. The selection of areas should be based upon the demonstrated interest and ability indicated in the individual's ninth and tenth grade record and on the recommendations of his teachers.

Specialization or an in depth study in one area or unit of an area should be encouraged during the twelfth grade program at level four. The selection of a particular area or unit should again be based largely upon previously demonstrated interest and ability.

The advantages of the pyramid approach to a program for youth is the fact

that it establishes a firm occupational orientation base; gives opportunity for the development of desirable attitudes and habits which will be useful in any area and finally assists a youth to identify his strength and weakness and then concentrate on further development in a particular area of interest and ability.

While this approach is designed to more effectively meet the needs of the students whose primary interest is in this field, Industrial Arts can and should provide a variety of opportunities for others who may wish to elect one or more of the areas on a more limited time basis.

This is more than an implication that industrial arts can serve many groups, it is a challenge and a charge that industrial arts educators along with all others must begin to think in terms of self evaluation and accountability in relation to the needs of those to be served.

Obviously there is need for curriculum change in many quarters but the dilemma facing many industrial arts teachers who wish to change is "what direction should be taken, what changes should be made?" Any good educational program is constantly changing and adjusting to the needs of the individual and his changing environment but there is serious question in the minds of many as to how much of the highly philosophical proposals now flowing from institutions of higher learnings represent true leadership and how much represent untried and impractical theory riding high on a good publicity program.

Certainly pilot programs based upon new approaches to proposed curriculum change should be encouraged and evaluated but caution is needed in the misinterpretation of experimentation and pilot efforts as acceptable directions and trends. One nationally recognized educational leader who is not from the field of Industrial Arts is quoted thusly, "There is a strong possibility that industrial

arts theorists will outdistance practical thinkers in the rush to bring sophistication to the field."

If industrial arts is to be relevant its exponents must be concerned with many of the changes taking place around them. The alert industrial arts educator will become aware of his own need for problem solving techniques which will take advantage of the practical elements in new programs, flexible and modular scheduling, interdiscipline approaches to curriculum design, the changing role of the teacher and the problem versus the project, to mention but a few.

The flexible, modifiable and dynamic industrial arts program which is developed on the basis of the changing needs of the individual and the community in the total educational spectrum will be relevant and will make a significant contribution to the future of a democratic society.

INDUSTRIAL ARTS RESEARCH: CURRICULUM, ADMINISTRATION AND SUPERVISION, AND TEACHER EDUCATION[1]

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INTRODUCTION:

This paper will deal with the studies of curriculum, administration and supervision, and teacher education in industrial arts that have been published between 1966 and 1968. This recent literature has been characterized, in general, by theoretical, speculative, and descriptive studies. This trend, no doubt, reflects the current state-of-the-art in these areas. This is not to say that the studies lack quality. The recent literature has been filled with quality studies that have important implications for future research in these areas. Perhaps the most important trend in thise studies has been the recent emphasis on the development of theoretical models that can serve as an aid in program development and evaluation.

No attempt will be made here to discuss all of the recently completed studies. Neither time nor common sense will permit this type of approach in analyzing the recent literature of industrial arts. The risk of sin by omission that was an important factor in selecting entries for the Review and

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[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 7, 1969.

Synthesis of Research in Industrial Arts Education (Second Edition) becomes an even greater factor in this paper. The purpose of this paper is to provide a broadly based summary of the recent literature which is representative of the strengths and weaknesses of recent research efforts in industrial arts.

CURRICULUM:

The three years covered by this review have probably produced more recommendations for curriculum revision than any other similar period in the history of industrial arts. It surely has been a period in which the most money has been expended in attempts to improve and modify the industrial arts curriculum. Anyone can pick a number between four or five and twenty and get someone else to agree that that is the number of current curriculum revision projects in industrial arts. The problem is that very few of these studies have produced "hard copy" that is generally available for review and use by people outside the projects. There are adequate reasons for retaining these materials from general circulation. The premature release of tentative and untried materials would defeat the purpose of attempting to improve instruction through careful development, evaluation, and revision. It does, however, create serious problems for anyone trying to review recent work in

industrial arts curriculum.

There is an important trend in both the funded and unfunded curriculum revision efforts that do appear in the literature. Most of the recent curriculum studies have spent a great deal of time developing theoretical models which can serve as a basis for curriculum development and course construction. The American Industry (Nelson, 1967) "ball of string" and the Industrial Arts Curriculum Project (Towers, 1966) "pile of blocks" models have become so ubiquitous that it is almost impossible to be professionally active and not have encountered these models in either the literature or at a conference or convention.

Model building as a basis for curriculum development and content selection has not been limited to funded curriculum efforts. Several noteworthy attempts have been made to develop and test taxonomies that will facilitate content selection in industrial arts. Doctoral dissertations by Kicklighter (1967) and Hauenstein (1966) signal a new era for content selection dissertation studies. Both of these studies included a multiple level taxonomy which has content samples for each level.

The studies already specifically mentioned another large group of studies in the general area of curriculum have another common theme. A large number of curriculum workers are urging

the adoption of multiple-analysis procedures. The exact uses recommended for multiple analyses vary widely. One group of recommendations is that multiple analyses make synthesis possible. Others urge that instructional units be subjected to multiple analyses to be sure that the content is appropriate both within and between systems.

The rise in logically derived, multiple-level models for curriculum development and content selection have resulted in a "new look" in the instructional material that follows these curriculum efforts. This new look is perhaps most dramatic when these studies are compared with the content selection studies that use opinion gathering and consensus information as a content selection base. One definite advantage of the newer curriculum building efforts is that they should become more amenable to evaluation than has been the case with other methods. The emphasis on uniform levels of specificity across content is another important step toward meaningful evaluation. This, of course, makes it easier to make future modifications in both content and method to enhance the educational program. This type of work is vital if media and methods studies are to have any real meaning.

ADMINISTRATION AND SUPERVISION:

There have been a limited number of studies in the area of administration and supervision of industrial arts. Several of these studies, however, point to an increasing research sophistication in industrial arts. The dominant theme of the studies in this area has been the identification of conditions that make prediction possible. The emphasis, of course, has been on areas vital to the administrater but there is a definite trend toward predictive rather than descriptive studies.

Meosky (1967) studied the relationship of personality and teaching success. None of the personality variables used succeeded in predicting success. His study and one by Margulies (1968) reported successful prediction when supervisors ratings are used.

District-wide cost figures were used to develop an industrial arts cost prediction formula. Heath (1967) reported success in the development of a formula that would not only predict the cost of student contact hour per year but would also provide information regarding the cost variation within industrial arts offerings.

TEACHER EDUCATION:

Studies dealing with industrial arts teacher education covered a broad range of topics. The large amount of literature

during the period of this review probably reflects the dominant interest in teacher education by those who publish in the area of industrial arts.

Many of the same interests and emphases that were evident in other types of research literature were of concern to researchers in teacher education. For example, Sedgwick (1966) developed a two-dimensional model to guide planning of an undergraduate teacher education program. One dimension of the model was the source of the recommending authority (opinions/empirical data). The other dimension was extent of modifiability (modifiable/not modifiable) of student behavior. The model was used to propose an undergraduate teacher education program based on modifiable behavior patterns.

Content selection and evaluation procedures were a consistent concern for researchers. Many of the studies (Hoover, 1967; Singletary, 1968; Gerber, 1966) were concerned with the extent to which teacher education duplicated the techniques used in industry. These survey and opinion studies, quite predictably, revealed that undergraduate technical courses in general did not adequately cover the content in the same way and with the same emphasis that they received in industry.

Opinion survey results also indicated general agreement re-

garding the inclusion of technical content at the master's degree level. This research (Spence, 1966; Gavin, 1968) indicated a greater concern for content dealing with new methods, materials, and approaches to industrial arts. This is in marked contrast to the concern for undergraduate course content in woodworking and metalworking.

Two different approaches to teacher education using the facilities and experiences of industry were reported. Sredl (1966) reported the results of a program for in-service drafting teachers that included actual work experience in three different firms. Another program (Hastings and others, 1967a, 1967b) used a classroom orientation, six weeks of industrial observation and a two week curriculum workshop. The workshop developed instructional materials based on the experiences of the participants during their industrial observations.

The chronic shortage of industrial arts teachers has stimulated a good deal of research in this area. Three studies (Foley, 1967; Ressler, 1966; Anderson, 1966) report consistent results. In general, these studies indicate that the secondary school industrial arts teacher is the most effective recruiter. Data reported by Ressler (1966) indicate that the most successful industrial arts recruiter is likely to be an older, professionally active,

academically well prepared career teacher. Poor recruiters tend to be young, inexperienced teachers and teachers with emergency certification.

SUMMARY AND CONCLUSIONS:

This reporter has had the unique opportunity of being involved in both the development of this Review (Housenolder & Suess, 1969) and as co-chairman of the first National Conference on Research in Industrial Arts (Suess, 1969) within the past year. These exposures to the state-of-the-art of industrial arts research leave a mixed feeling of optimism and pessimism.

Optimistically, the profession is rapidly improving its research sophistication. Research is increasingly moving from a data-collecting to a date-utilizing realm. The research studies are rapidly moving from reportorial collections of numbers and per cents to studies that attempt to use the information collected for prediction. Another important trend is toward increased concern for the development of research compentency as a result of advanced graduate study. The large number of studies that have included model building and concern for uniform levels of specificity reflect this increased sophistication.

The attempts make by several researchers to conduct studies

that permit prediction is noteworthy. Prediction is never really possible when the information used for predication is collected at only one time under one set of conditions. None of the studies included in the entire Review was a replication study. The predominance of "one-shot" studies, generally conducted as part of advanced degree requirements, give rise to serious pessimism about the generalizability of the findings reported in the literature.

Any review of research in industrial arts leads to the inevitable conclusion that the profession has not developed a pool of research specialists. The small pool of full-time researchers in industrial arts are all committed to curriculum research. This area is undeniably important, but to have it the only area of identifiable concentration gives rise to concern for the balance of the research output of the profession.

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Industrial Arts Research: History, Philosophy, Objectives, Media, and Methods 1966-1968[1]

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The Second Edition of the Review and Synthesis of Research in Industrial Arts Education covered the literature during the period, 1966-1968. This paper is an attempt to summarize those aspects of that publication which dealt with the history, philosophy, and objectives of industrial arts and with the instructional media and methods research. It should be noted that the authors of the review concentrated their efforts on doctoral dissertations, journal articles, reports of funded research, and staff studies which were included in the ERIC system. As a result, it is quite possible that important research was overlooked because it was not widely available.

A number of noteworthy studies dealing with value-laden questions appeared during the three-year period. Outstanding historical works were published by Barlow, Luetkemeyer, and Sredl. The profession has demonstrated a new interest in its history as evidenced by the rapid appearance of these publications. In addition, a number of historical studies in industrial arts dealt primarily with problems of local interest.

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1 Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 7, 1969.

To be of the greatest value, historical research should attempt to answer perplexing questions. Historical research in industrial arts is now approaching a position where researchers investigate critical problems areas and seek to establish causal relationships which will help to explain potential solutions to those questions. We should continue to move away from social bookkeeping as a type of research and seek to study carefully selected and delimited problems which require historical evidence for their solutions.

Philosophical Studies

Recent studies dealing with the philosophical foundations of industrial arts have explored both traditional doctrines and novel viewpoints. The educational implications of technology and science have been emphasized in a number of studies. Kagy emphasized the importance of including opportunities for creative expression as a part of industrial arts. Svendsen urged the use of the term "liberal education" to characterize the conceptual structure underlying industrial arts.

Perhaps the mainstream of philosophical discourse in recent years has emphasized one major purpose for industrial arts: the interpretation of modern industry as a part of general education. Another distinct theme in the literature emphasized a multitude

of functions for industrial arts. Miller, for instance, indicated five primary functions: interpretative, exploratory, technical competence, preparatory, and supplementary.

Pratzner and others have emphasized the occupational contribution which industrial arts courses could or should provide for students. Perhaps this is the most likely direction which future philosophical research may take. Certainly it is difficult at this time to evaluate the contribution which industrial arts should make to the development of occupational competence. The 1968 Amendments to the Vocational Educational Act of 1963 make it imperative for industrial arts to clarify its purposes and to do so with all deliberate speed.

Objectives

Researchers continue to exhibit interest in research dealing with the attainment of the objectives of industrial arts. While the profession is not yet unanimous in its beliefs about specific objectives, there is evidence to indicate that a fairly high degree of consensus does exist. What is lacking at this point is research which would indicate how the profession might go about restructuring the order of priority which is given to the respective objectives. As industrial arts develops new objectives and seeks to give them priority, it is necessary to change the

commitment to existing objectives. At this point, one may note that the customary emphases upon habits of orderly performance and upon shop skills and knowledge does not in fact conform well to the dominant themes which have been stressed in the philosophical literature: the understanding of American industry and the contribution of industrial arts to pre-vocational competence. We are left, to some degree at least, with a conflict of puposes which research could perhaps help us resolve.

Instructional Media and Methods

Researchers in industrial arts have continued to devote substantial efforts to research on methods of teaching. Typical studies have compared the relative effectiveness of two or more methods of teaching a specific segment of cognitive content. Such research efforts have the potential to contribute significantly to the professional efforts of the classroom teacher - at least that is the first impression which would be received by the naive observer. However, when one examines the output of the research, one is appalled by the lack of consistent, directional findings. The fact is that the substantial research activities which have occurred have not yet developed a body of knowledge which would guide the industrial arts educator in selecting a method of teaching or instructional technique for a

specific situation.

Programed instruction has received widespread attention in all areas of education; industrial arts researchers have begun to evaluate its effectiveness for use in their subject matter area. While the weight of the available evidence indicates that programed instruction is an effective method of teaching, there is not enough evidence to give one assurance that programs are the best choice for any particular need. It would appear that programs may be used with caution in most classes. Considerably more action research in the classroom is needed to help industrial arts educators identify ways in which programed instruction may be used most wisely.

Television, films, filmstrips, and slides have been used in various combinations to teach a variety of content in industrial arts research. It would appear that video tape recordings offer considerable promise to the teacher. We do not, however, have adequate guidelines to assist in the selection of appropriate content for video tape recordings. Research utilizing films, slides and tape recordings has advanced to multi-media presentations involving not only cognitive content but manipulative operations as well. Here again the results are promising but not definitive.

As multi-media usages become more common, industrial arts researchers are beginning to experiment with instructional systems. Perhaps the best example is that of electricity/electronics. A number of manufacturers have provided instructional systems for teaching in this field but these systems have rarely been compared in terms of their effectiveness.

The systems approach to instruction in industrial arts complicates the selection of research problems dealing with media and methods. Comparative studies are of little value unless one can use appropriate criterion measures. These, of course, depend upon similar behavioral objectives for the respective treatments being studied. As a consequence of the diversity of systems, it has been difficult for researchers to obtain effective concrete evidence comparing instructional systems.

Several recent studies dealt with creativity, its stimulation, or its assessment; many of these were reviewed by Hahn. Creativity is an extremely complex process, one which is not easily studied. In view of the overwhelming evidence that creativity is not a uni-demensional trait, a great deal of additional experimentation is necessary before a curriculum can be developed and teaching methods selected to insure that creativity will be stimulated rather than inhibited.

Relatively little industrial arts research has dealt with manipulative performance. Clark provided evidence that practice was effective in developing manipulative ability in bending electrical metallic tubing. Ellis found that students who learned drafting by the workbook method developed higher skills in drafting than those who learned by the construction method. It is noteworthy that investigation into the teaching of manipulative activities has begun only recently. It is imperative that additional effort be directed toward the development and validation of an adequate taxonomy of educational objectives in the psychomotor domain. Since there are no data on the comparability of the various manipulative skills, it is impossible to generalize from the findings of one study to other instructional areas. If it were possible to provide a taxonomy which would permit generalization, this would be of considerable value to the classroom teacher as he consults the findings of researchers.

Industrial arts researchers have been interested in the consequence of variations in the specificity of direction and control of the learning process. In some instances, these have been contrasts of direct-and-detailed methods with directed discovery methods of teaching. There appears to be a complete range of possible learning conditions ranging from the least structured,

pure discovery situation, to the highly structured, completely directed and teacher-dominated situation. The experimental evidence which has been obtained so far does not indicate clear-cut superiority for any level of detail in the teaching process.

There has been some demonstrated interest in identifying the external determinants of achievement in industrial arts. Bortz investigated the effectiveness of the use of measures of physical maturity as predictors of succes in junior high school industrial arts. Erickson studied relationships between visual-haptic aptitudes and achievement in drawing. Daines found that students who took power mechanics tests which had low difficulty levels actually demonstrated higher informational achievement during the course than students who received difficult tests. These provocative findings suggest the need for studies of the interaction of external variables with the teaching learning process.

Summary

The reviewer of the research in media and methods quickly notes that there have been few replications of studies in this area. Further, the findings of apparently similar studies have frequently been contradictory. As a consequence, the profession is obligated to withhold judgement until the evidence is much more persuasive than it is at the present time. In addition,

the selection of research problems should proceed in a coherent, organized pattern which would relate the studies to a theoretical structure and to other research efforts. If helter-skelter problem selection continues, there can be no reasonable hope for the identification of critical learning variables. Research on instructional media and methods in industrial arts has the potential to be of immense value to the classroom teacher. As improved research techniques are applied to a concerted study of carefully selected problems it should become possible to provide sound, empirically based guidelines for the selection of optimum teaching procedures for specific learning situations. That this is not yet the case should not be surprising. Researchers should, however, attempt to move toward this goal.

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NATIONAL ASSOCIATION OF INDUSTRIAL
AND TECHNICAL TEACHER EDUCATORS

Research Committee Report*

by
C. J. Cotrell, Chairman

The research committee activity for the past year has been a joint effort among three agencies -- The research committees of ACIATE and NAITTE and ERIC-VT. Two products are being developed (1) abstracts of industrial education studies which are being prepared for distribution by Dave Jelden, Colorado State College and jointly sponsored and financed by ACIATE and NAITTE, and (2) 1969 listing of doctoral and staff studies by NAITTE.

Dissertations are currently being identified primarily through the results of a periodic request and reminder by Roy Butler (Acquisitions Specialist in ERIC-VT, The Center for Vocational and Technical Education, The Ohio State University). Thirty-eight institutions are currently cooperating with the industrial and technical education research information retrieval effort. As copies of dissertations and abstracts are sent to ERIC-VT, copies of the abstracts are supplied to the chairmen of the ACIATE and NAITTE Research Committees.

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*A presentation to the Executive Committee of NAITTE during the AVA Convention in Boston, Massachusetts, December 5-10, 1969.

PRELIMINARY LISTING
OF
1969 RESEARCH STUDIES
IN
INDUSTRIAL AND TECHNICAL EDUCATION

Seventy studies completed in 1969 which have been identified by the research committee are listed in the following pages under two headings (1) doctoral studies and (2) staff studies. No effort has been made to categorize or classify the research; therefore, the health occupations, industrial arts, trade and industrial, and technical education studies have been listed alphabetically by author.

Abstracts of all dissertations sent to and processed by ERIC-VT will be available in Abstracts of Research and Related Materials (ARM) and through the compilation of industrial and technical education abstracts being prepared by Dave Jelden. Abstracts for those dissertations not processed by ERIC-VT (primarily those completed prior to 1968) will be available only through Dave Jelden. Copies of most dissertations may be obtained from University Microfilms, Inc., Ann Arbor, Michigan.

Abstracts of staff studies listed in the bibliography may be found in ARM and RIE (Research in Education). Citations of available ERIC publications and VT and ED document numbers have been provided to assist the researcher in locating abstracts and information on availability of microfiche and hard copy from the ERIC Document Reproduction Service.

The listing of 1969 studies is not complete and we need your assistance. If a study relevant to health occupations, industrial and technical education was completed by you or members of your institution and not listed in this preliminary report, you are urged to notify the chairman of the research committee immediately and supply bibliographical data for this report and materials essential for listing the document in the ERIC publications (ARM and RIE).

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Technical Education
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*INDUSTRIAL ARTS; CONFERENCES; *SPEECHES; *PROGRAM DESCRIPTIONS; CURRICULUM DEVELOPMENT; *HANDICAPPED STUDENTS; *EXCEPTIONAL (ATYPICAL); INNER CITY; EDUCATIONALLY DISADVANTAGED
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

A group of addresses given at the 63rd Annual Vocational Convention, Industrial Arts Education Division of the American Vocational Association, are grouped in this document. They include: (1) "Basic Mechanics: An Approach to Industrial Education for the Disadvantaged Inter-City Youth" by L.R. Miller, (2) "Making Industrial Arts Relevant for the Culturally Disadvantaged Youth" by T.U. Meirs, (3) "Industrial Arts Can Meet the Needs of the Academically Talented Lexington High School Student" by L.V. Gittzus, (4) "Providing for the Needs of Gifted Students in Mechanical Drawing" by D.V. Gearan, (5) "The World of Construction Meeting the Needs of the Culturally Disadvantaged Youth" by S.A. Tillman IV, (6) "Innovative Federal and State Funded Industrial Arts Programs" by H. Krane, and (7) "Innovative Industrial Arts Programs for the Orthopedically Handicapped and Mentally Retarded Students in New York City Schools" by E. Haug. (CH)

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Speeches Presented at the

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BASIC MECHANICS: AN APPROACH TO INDUSTRIAL EDUCATION FOR THE DISADVANTAGED INTER-CITY YOUTH[1]

Larry R. Miller

Teacher of Basic Mechanics
Roosevelt Junior High School
Columbus, Ohio

As my part in the program, I will attempt to describe and analyze Basic Mechanics, a junior high school course in the Columbus, Ohio Schools designed especially for the inter-city schools. Originally Basic Mechanics was conceptualized with a two fold purpose: 1) to offer a variety of experiences to pupils classified as "early leavers" or non-verbal learners directed towards helping them develop knowledge and skills for securing entry jobs in service occupations and 2) to enrich the junior high school industrial arts offerings to include exploratory experiences in power mechanics and electricity. In the four years of operation the course has been synthesized and revised into a unique contribution in the education of the inter-city youth of Columbus. A description of the development, present status, and subjective evaluation of Basic Mechanics will be the central focus of this paper.

Basic Mechanics first became a reality in Columbus four years ago at Linmoor Junior High School. Under the co-ordination and direction of the Supervisor of Industrial Arts, Joseph E. Zupancic, eight of the thirty-three junior

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

high schools in Columbus now have this program. All eight schools are classified as inter-city or priority schools for the socially disadvantaged children. Although the purpose of the program is similar in each school, the structure is flexible so as to allow the administration of each school to uniquely fit the course into its overall educational program. Therefore the remainder of this presentation will be focused on Basic Mechanics at Roosevelt Junior High School, where I teach.

As a point of departure in describing Basic Mechanics, mention should be made of the students that make up both Roosevelt Junior High School and the specific course. The total student body numbers about 1,000 which comprises grades seven, eight, and nine. The ratio is approximately six to four, of black to white students. Based on the eighth grade testing program the academic aptitude of the student body is considered normal. However Achievement test scores in reading, language, and arithmetic show that the average student is approximately two grade levels behind in the eighth grade based on nationally established norms.

In the school curriculum, Basic Mechanics is an elective 9th grade course for boys. However, students enrolled in special programs for the educable mentally retarded are not eligible. After electing the course, students are screened by the guidance personnel before actual placement. The criteria consists of past academic records and a test

battery administered at the 8th grade level. Using this criteria, priority is given to those students with the least success in academic work. In this respect the classes can best be described as being homogenious in that they are comprised of those students which are viewed as the least likely to succeed in academic achievements.

Objectives. To meet the needs of this type of student the following general aims are posed. Experiences in Basic Mechanics will:

1) stimulate interest in and demonstrate the importance of school experiences through making practical application of mathematics, science, and communication skills.

2) provide information and guidance in occupational and industrial employment opportunities.

3) help pupils develop self-understanding in order that they may become good workers and good citizens.

4) enable pupils to learn to work safely and co-operatively with others.

5) help pupils learn a variety of fundamental maintenance skills related to servicing and repair.

From a more practical standpoint the aims of Basic Mechanics as a part of the curriculum at Roosevelt Junior High School can be divided into two general purposes. These purposes are 1) to reduce the dropout rate and 2) to encourage the potential dropouts to enter high school.

The following series of slides have been prepared so that one may better understand Basic Mechanics at

Roosevelt Junior High School in an attempt to illustrate these aims. The practical application of the aforementioned objectives can perhaps be best demonstrated in this manner. The shop is equipped with twenty four work stations. Roosevelt has a pupil mobility rate of approximately 15 per cent, therefore the optimum number of students initially enrolled in each class is twenty. This allows the guidance personnel some degree of flexibility in scheduling midyear transfers.

Pictured at the back of the room is the tool panel. The tools for the most part are small hand tools such as wrenches, sockets, screwdrivers, etc. This type of equipment is definitely an advantage financially when compared with the cost of equipment in the general metals and general woods industrial arts shops at Roosevelt.

A view of the other end of the laboratory can be seen here. Note that the only stationary power equipment consists of a drill press and grinder. The room measures 66 by 28 feet which gives approximately 1800 square feet.

In addition two auxiliary rooms are included. Through the open door at the end of the room is an engine test room of about 200 square feet. The room on the other side of the closed door is used for storage. However the 150 square feet of floor space found in the room is much too small for the storage required by the activities presently included in the course structure. With this exception however, I consider the facilities ideal for Basic Mechanics

as it is so structured at Roosevelt.

Textbooks as such are not used. However various types of reference volumes are available. Pictured here are some of theeemaster manuals used in servicing small engines and appliances. Catalogs of varéous nature are also used extensively. I believe that if the disadvantaged student is going to utilize reading materials, the materials must be fitted for an immediate practical application. For example if a student needs to know the meaning of a worH, he uses a dictionary. If he is repairing a toaster, he reads andappliance repair manual for instructions. If he wants to purchase a bolt, he finds the cost in a general hardware catalog. The instruction manual that accompanies a magnito analyser is an excellent example of reading materials that have practical application. In this way the pupils are more eager in trying to comprehend what they are reading.

Course Content. Basic Mechanics is an activity centered program. To insure that the disadvantaged student will have a successfull experience, I am of the opinion that these activities must be well planned and structured.

Activities centered around orientation to equipment, procedures, and rules make up the first three weeks of the year. Following this, the content area of power mechanics is undertaken. Activities culminate in this area with the students overhauling small gasoline engines. As a series of activities, these are ideal learning experiences in that

they are both rewarding and motivating to the disadvantaged student.

Small engines are donated by several repair shops located around Columbus. These are then torn down by the students and rebuilt if the repair costs can be kept under five dollars. If repair estimates are higher than this the good parts are salvaged and the remainder discarded. When a student gets an engine to operate correctly, the engine becomes his property. On the overahul, as with most of the activities, the students work in two man teams. Thus in an average size class, there are ten separate activities or projects being carried out.

The wide variety of jobs to which the students are exposed in engine maintenance and repair are positive factors in assuring a successfull experience. Activities such as washing parts, lapping valves, setting the points, checking valve clearance, torquing head bolts and cleaning carburetors are relatively easy activities and therefore can be done by most students without complex teaching proceedures.

Basic Electricity is another major content area in which the pupils work. Circuitry and the use of schematics are first taught with the aid of the circuit board. Approximately 50 different circuits are hooked up by each team. Following this each pair designs and tests twenty additional circuits of their choice.

The students are responsible for the upkeep and repair of equipment. Shown here is a student checking out a J.E. Experimenter which is a commercial learning kit for electricity and electronics. Activities are initiated on these after the students have successfully completed the circuit board activities. Most of the activities involving the circuit board and the J.E. Experimenter are individualized to the point that it allows each team to work according to their own abilities and learning rate.

House wiring and repair is a part of the electricity unit. However, the student's abilities and interests in this area determines the depth and scope of activities chosen. For example one team may elect to choose diversified activities in house wiring while another team will do only the basic or fundamental problems.

Included also in the course structure is appliance maintenance and repair. The General Electric service center in Columbus furnishes a large number of appliances for this unit. Several other dealers furnish lesser amounts. The basic requirement in this unit is for each team to disassemble, reassemble, test, and analyse the trouble in an iron and one other elective type of appliance. Shown here is a boy completing a requirement by adjusting an iron thermostat. Due to the relative expense of repairs as compared to the total worth of the item, few repair parts are purchased. However it is a meaningful activity despite this limitation. Excellent reading experiences are involved

in that service manuals outline the correct procedure for disadsembly, reassembly, and testing.

Some activities such as appliance and engine maintenance take considerable time and effort. However several short term activities are also included. A typical activity of short duration is the one pictured which is the study and assembly of a battery.

In addition to the team activities described, class activities are also undertaken. Included are mass production activities, laboratory maintenance, and custodial duties. All the periodical laboratory maintenance and cleaning is done as a class activity. In addition a variety of projects around the school are incorporated into class activities. Good leadership and cooperation attitudes are important aspects of this type of activity.

Evaluation. Through the series of slides, I have attempted to picture the facilities and some of the activities that make up Basic Mechanics. Teacher effectiveness, administrative awareness, and faculty cooperation are also factors which influence the total program. An objective evaluation of the factors influencing the program is not available. However from a personal point of view there are several factors which both strengthen and hinder the education of the disadvantaged youth which are enrolled in Basic Mechanics.

A severe limitation of the program is that it is of only one year duration. Upon entering the 10th grade,

students find that programs of similar activity levels and of exploratory nature are not available. In Basic Mechanics the complexity of the experiences are geared to each student to give him the needed successful experiences. Once the students enter high school however this is seldom the case. Instead they are once again subjected to activitie. that are based on assumptions that they have been exposed to certain prior experiences and the rewards concomitant. The fact remains however that the average disadvantaged student at Roosevelt is two years behind at the 8th grade level. This does not change dramatically by the time they have reached the 10th grade.

A second limitation is the fact that funds for effective planning, research, and development activities are not available. It would seem that by establishing a cost benefit analysis system, available monies and human efforts could be more wisely utilized toward helping the disadvantaged. In addition ongoing research activities could be established that would provide the data or feedback necessary in revising a program to make it more effective.

There are several assets that deserve mention, noneof which are unique in and of themselves. When combined however they prove to be an effective driving force behind Basic Mechanics.

The facilities and course structure are flexible enough to take into account the variable factors connected with the school setting, the abilities and limitations of

the teacher, and most of all the needs and interests of the pupils. The tools and equipment needed inmmost mechanics and maintenance situations are readily available. Also large expensive stationary equipment, as found in many school shops, is not required. Therefore the available space is effectively utilized in many different ways.

The program is received well by the school community. This is headed by an effective and enthusiastic administrative staff which provides the functional support needed to provide a quality education. In connection with this is the effective class size of twenty which is a workable number to deal with in a laboratory situation.

Regular inservice meetings are another factor. The meetings are held at the various schools so that each of the eight teachers involved have the opportunity to view the other facilities. Through these sessions, ideads, problems, and innovations are brought forth. In this way the meetings aserve as a catalyst in bringing about effective programs.

In summary I believe that to have successful learning experiences, the activities must be meaningful. Without experiencing what it means to be disadvantaged, the teacher too often plans irrelevant, undesirable, or meaningless activities. Potentially, many kinds of activities will achieve a given educational objective. However few activities meet the constraints of available facilities, equipment, and supplies and yet remain flexible enough to provide motivation

to the students who have spent eight years learning "how to fail" in school. In conclusion I believe that the key factors in the success of programs for the disadvantaged students evolve around the selection and structuring of activities. Basic Mechanics as a program is a means toward this end.

MAKING INDUSTRIAL ARTS RELEVANT FOR THE CULTURALLY DISADVANTAGED YOUTH[1]

Thomas U. Meirs

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It is the purpose of this paper to discuss: (1) Introduction; (A) Brief description of Trenton, New Jersey, a changing city; (B) Profile of the culturally disadvantaged Trenton youth; (2) Industrial Arts Curriculum Project Manufacturing; (A) Advantages of this program for the disadvantaged youth; (B) Changes in teaching methods necessary to meet the needs of the disadvantaged youth; (3) A look to the future; (A) Meeting other needs; (B) After junior high school, what?; (4) Summation.

[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

MAKING THE INDUSTRIAL ARTS RELEVANT FOR THE CULTURALLY DISADVANTAGED YOUTH

Presentation

The junior high school World of Manufacturing program of the Industrial Arts Curriculum Project of the Ohio State University.

By

Thomas U. Meirs, Teacher

American Vocational Association Convention
Boston, Massachusetts

December 7, 1969

1969 American Vocational Association Convention,
Boston, Massachusetts

Meeting: Making Industrial Arts Relevant for Youth with Special Needs

Session: Concurrent Session #1 - Culturally Disadvantaged Youth

Time: Sunday, December 7, 2:00 - 3:00 p. m.

Type: Presentation of the Ohio State University's Industrial Arts Curriculum Project - "The World of Manufacturing"

Program Chairman: Dr. James J. Buffer

Speaker: Thomas U. Meirs, Teacher

Presentation:

1. Introduction:
   - A. Brief description of Trenton, N. J., a changing city.
   - B. Profile of the culturally disadvantaged Trenton youth.
2. Industrial Arts Curriculum Project Manufacturing:
   - A. Advantages of this program for the disadvantaged youth.
   - B. Changes in teaching methods necessary to meet the needs of the disadvantaged youth.
3. A look to the future:
   - A. Meeting other needs.
   - B. After junior high school, what?
4. Summation:

1. INTRODUCTION:

A. A BRIEF DESCRIPTION OF TRENTON, NEW JERSEY, A CHANGING CITY.

Trenton, the capitol of New Jersey has undergone vast changes during the past ten years. Centrally located between New York and Philadelphia, this traditionally industrial city is famous for its nationally known brands of pottery and rubber products and automotive hardware. Several of the industries which have provided jobs for the Trentonians have moved to other areas of the state due to a rising tax structure and increasing labor costs.

As is the case throughout the country, the more affluent residents are moving to the suburbs. The diminishing population is being partially replaced by people from lower socio-economic levels. Some of these people are non-English speaking which complicates their problems. Some have come from agricultural rather than industrial areas of the country where they were led to believe that Trenton was a land of milk and honey. Many lack a formal education. Unfortunately they also lack the qualifications for anything but menial occupations, and as a result, they often end up on the relief rolls.

B. PROFILE OF THE CULTURALLY DISADVANTAGED TRENTON YOUTH.

Their children have been uprooted and thrust into a totally new environment. In some families, there is no father and in many families the mother works. There is little or no home life. The children often eat on the run and sleep two or more to a bed in an unheated house.

There are few church ties and there is little or no religious training. Living in overcrowded conditions, they have difficulty in respecting the personal rights of others. Having very little of their own, they lack respect for public and private property. Poor examples at home are not condusive to accepting responsibilities.

2. INDUSTRIAL ARTS CURRICULUM PROJECT MANUFACTURING:

A. Advantages of this program for the disadvantaged youth.

The traditional metal shop program was sufficient to meet the needs of Trenton students ten years ago because it offered a broadening exploratory experience. It especially provided them with the knowledge and skills useful in the recreational activities conducted in the home workshop and provided a fair picture of industry as it formerly existed.

The changes in the population and advances in industry have necessitated a change in Industrial arts in order to make the subject relevant.

The Industrial Arts Curriculum Project of the Ohio State University has identified three objectives of Industrial Arts. They are:

1. Enables students to understand the concepts, principles, generalizations, problems, and strategies of industrial technology.

2. Encourages an interest in and an appreciation for industry as that element of the economic system that provides industrial material goods for the satisfaction of human wants.

3. Provides knowledge and skills that will be useful in life situations of occupational, recreational, consumer, and socio-cultural significance.

The Industrial Arts Curriculum Project has also identified ten objectives of the World of Manufacturing. They are:

1. Place manufacturing technology in the broader context of industrial technology and all of technology.

2. Be aware of the history, present character, and future of the manufacturing phase of industry.

3. Appreciate, understand, and perform selected management practices in planning, organizing, and controlling as they relate to manufacturing production systems.

4. Appreciate, understand, and perform selected personnel practices of hiring, training, working advancing, and retiring as they relate to a managed production system in manufacturing.

5. Appreciate, understand, and perform selected production practices in pre-processing, processing, and post-processing or servicing as they apply to manufacturing production practices.

6. Appreciate and understand the interrelationships within and between management, personnel, and production practices.

7. Appreciate and have some understanding of manufactured products and the tools and materials utilized in their manufacture.

8. Utilize the knowledge and skills of manufacturing management and production to investigate factors involved in the manufacture of representative products.

9. Develop an awareness of vocations in manufacturing industries.

10. Develop responsible and safe work attitudes and the ability to function as a member of a group.

In satisfying these objectives, this program meets the needs of today's students. The following slide presentation of the program is a brief description of how these objectives are met.

S-1 In this course on manufacturing technology the students study management, personnel, and production as a part of manufacturing. The purpose of this slide presentation will be to briefly describe some of the laboratory activities that they are engaged in throughout the course.

S-2 For the first few days, they study the beginning of manufacturing.

S-3 In the laboratory they produce objects of clay using hand manufacturing techniques.

S-4 They then mass-produce products of clay, using modern production techniques, and compare mass production with hand manufacturing.

S-5 Using soft wire, they hand-form a coat hanger.

S-6 They then use assembly-line techniques to mass-produce this coat hanger.

S-7 During the tenth class session they play a game, to introduce them
S-8 to many of the terms that they read about in their text and use in class.

S-9 On about the 14th day of class they begin a unit on research.

S-10 They retrieve information from catalogs and other sources; . . .

S-11 test the strength of various materials, . . .

S-12 and test the bonding strength of adhesives.

S-13 During the fourth week of the course they learn about computers.

S-14 They program information onto Port-A-Punch cards; . . .
S-15

S-16 and receive printout of this information from a computer.

S-17 Throughout the course, they are tested to determine their understanding of the concepts of manufacturing technology.

S-18 About the 23rd day of the course they study the elements of design by manufacturing, by designing a product of leisure footwear.

S-19 They retrieve information, . . .

S-20 create rough sketches, . . .

S-21 refine these sketches, . . .

S-22 construct three dimensional mock-ups, . . .

S-23 and paint and decorate these mock-ups.
S-24

S-25 They then obtain the approval of management on the design.

S-26 After a unit on product design they are introduced to a unit on engineering. The product they engineer in preparation for production is a helicopter.

S-27 They begin by making working drawings of the helicopter
S-28 design; . . .

S-29 from these drawings they build a production prototype and . . .

S-30 test this prototype to determine if it is operational.

S-31 On about the eighth week of the course, they begin the production of a set of salt and papper shakers.

S-32 They plan for this production by studying the tool operations necessary to produce the salt and papper shaker product.

S-33 They determine the time necessary to perform each hand tool operation.

S-34 Machine operations are also timed.

S-35 They then build a conveyor-belt system which will be used to
S-36 transport materials from station to station.

S-37 Each student works at a bench or machine and the conveyor belt is used to transport materials to him in the production of the salt and pepper shakers.

S-38 Portable power tools, jigs, and fixtures are designed and used in the production.

S-39 A finishing operation completes the production of the salt and pepper shakers.

S-40 After the production of the salt and papper shakers is complete, they take part in activities dealing with hiring and training.

S-41 They study the occupations involved in manufacturing, by classifying employment listings from newspapers.

S-42 Activities dealing with quality control are performed in the laboratory.

S-43 They also study the various methods of harnessing energy from nature.

S-44 They study the process of extracting materials by simulating an underground liquid deposit.

S-45 They also separate raw materials to size by screening.

S-46 Toward the end of the first semester, the production of standard

stock from raw materials is reviewed in a series of story days. In studying the Story of Primary Metal Products, they cast lead into ingots.

S-47 They then roll these ingots into plate or sheet stock, (standard stock).

S-48 In the Story of Textile Mill Products, they refine, comb, and spin bolls of cotton into strands of fiber.

S-49 In the Story of Petroleum Products, they refine oil by filtering,
S-50 magnetic separation, and siphoning.

S-51 The second semester of manufacturing technology deals with forming standard stock into components by forming and/or separating processes. Here molten metal is being formed to shape in a two-piece sand mold.

S-52 The mold is opened and the cast part is removed.

S-53 Materials can also be formed by compressing and stretching them around a fixed die.

S-54 Fcam material can also be formed into an open mold, as shown in this demonstration.

S-55 They also have the opportunity to manufacture brick in a one-piece mold.

S-56 After the mold is removed, the cast brick remains.

S-57 Materials are separated to shape either from a previous forming operation or from standard stock. Here standard-stock felt is being sheared to size in producing a pennant.

S-58 Stencils, which will later be used in combining, are being sheared in this activity.

S-59 Materials may also be separated by unique new processes. Here the process of electrical-discharge machining is being demonstrated.

S-60 After components are made by forming and/or separating, they are combined into subassemblies or final assemblies, In this activity they combine components by fusion bonding.

S-61 Here spot welding is used to combine components.

S-62 In this activity ink is coated onto the pennant sheared to size on a previous day.

S-63 All the components of the pennant are combined by mechanical fastening. to produce a finished product.

S-64 Halfway through the second semester they again have story days, for the purpose of reviewing and pulling together the materials they have already covered.

S-65 The Story of the Telephone illustrates the various parts of the phone and the stages of production which they follow - - from standard stock, to components, to final assemblies.

S-66 In studying printed products, they have the chance to print a booklet.

S-67 On the day titled "The Story of Rubber Products," they make
S-68 balloons using a latex compound and coagulant.

S-69 About two thirds of the way through the second semester, they organize a manufacturing corporation to produce a high-intensity desk lamp. In the manufacture of this lamp they use much of the knowledge of manufacturing technology they have learned earlier in the year.

S-70 After the corporation has been formed, stock is issued.

S-71 Prototypes of the high-intensity lamps are then designed.

S-72 Jigs and fixtures for producing the lamp are made.

S-73 Components for the base of the lamp are sheared to shape.

S-74 Chip-removal operations are performed, using the drill press.

S-75 The components are formed to shape on a sheet metal brake . . .

S-76 and spray-painted in a finishing operation . . .

S-77 and the final assembly of the lamp is made.

S-78 After the lamps have been manufactured, operation and service
S-79 manuals are printed and later packaged with the lamp.

S-80 The End.

B. CHANGES IN TEACHING METHODS NECESSARY TO MEET THE NEEDS OF THE DISADVANTAGED YOUTH.

Changes in methodology are necessitated by teaching this type of program and by the unique problems encountered, such as the average

eighth grade Trenton students reads at a 4.3 level which is equivalent to what a fourth grade student reads in November on a national scale. The Manufacturing textbook and laboratory manual have been rated at 8 plus, which means eighth grade material plus the technical terms necessary to the subject. The best way to overcome this obstacle is for the teacher to "get down to the nitty-gritty" and do some real teaching. Poor study habits, often developed in rebellion to, or lack of interest in other subject areas must be overcome. Because this program utilizes classroom work in addition to the laboratory activities usually associated with Industrial Arts, class control can be a real problem especially to the inexperienced teacher. Group work plays an important part in this program. Students must be helped to work together for common rather than individual goals. Experts have found that role-playing provides meaningful learning experiences for many students. The techniques of conducting a role-playing situation must be carefully learned. Keeping abreast of the latest developments in industry is most important. Finally, the ability to be flexible and innovative is a prerequisite to success.

3. A LOOK TO THE FUTURE:

A. MEETING OTHER NEEDS.

Eighth graders are usually at the age of puberty and suffer from the accompanying problems and confusions which are not left in the hall

when they enter the classroom. As professional educators and human beings, teachers must answer questions, offer advice, provide guidance, and above all, set good examples of maturity and morality. Having a Bible available to all students at all times is uncommon in most industrial arts shops. It does not violate the constitutional rights nor the state laws of New Jersey, but the subtle advantages are concrete.

If the present trend of using innovative programs continues, the traditionally trained teacher will be as obsolete as the horse and buggy. Student reachers can and have been successfully trained in the Industrial Arts Curriculum Project programs. Some teacher training institutions have already made appropriate changes in their undergraduate programs.

B. AFTER JUNIOR HIGH SCHOOL, WHAT?

By the eighth grade, most students are thirteen or fourteen years old. Through not being promoted, a child may lose a year and be fifteen years old in the eighth grade. In moving from one state to another, some school boards put a child in a grade according to his achievement rather than his age. Thus, he may lose another year and be sixteen in the eighth grade. Since New Jersey state law provides compulsory education only to age sixteen, a disallusioned student might very well quit school after the eighth or ninth grade and seek employment. Sometimes this is necessitated by a lack of funds in the family. Unfortunately, this puts another untrained person in the labor field. A recent study shows that a student who has completed the Construction and Manufacturing courses has a skill development equal to a student who has taken the traditional

industrial arts courses. In addition he has a body of knowledge which far exceeds that of the traditionally trained student. It is hoped that the Construction and Manufacturing programs will supply enough interest for the student to want to complete high school and possibly undertake post-high school work. Findings and results on these long range goals can not be offered here because the Industrial Arts Curriculum Project is too new.

4. SUMMATION:

Making industrial arts relevant for youth with special needs, especially the culturally disadvantaged requires two things: a worthwhile program and a teacher who cares about his students. One without the other is a waste. Adopt a worthwhile program, and "give a damm".

INDUSTRIAL ARTS CAN MEET THE NEEDS OF THE ACADEMICALLY TALENTED LEXINGTON HIGH SCHOOL STUDENT[1]

Leo V. Gittzus

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Lexington Public Schools
Lexington, Massachusetts

It is my intention this afternoon to present some of the background involved in planning and effecting the often individualized programs we have for the academically talented student at Lexington High School. At times it seems to me that perhaps the individual development of all our students could warrant a re-organization of their experiental contacts in Industrial Arts to give them opportunities similar to those I shall mention as designed for the talented student.

The Lexington Senior High School students have had an Industrial Arts exploratory experience in five rather broad industry related environments during their junior high school years. They had an opportunity to study in the areas of drawing and design, metals, wood, plastics and electricity - electronics. Generally, many of the students at the high school will persue for a year or two, Industrial Arts courses with a rather similar means for attaining their objectives. It seems to me that it is usually at the end of the sophmore year our Industrial Arts courses seemed to lose their real challenge for the academically talented youth. To continue the student's desire to plan and discover for himself we at Lexington are now offering them three major avenues, (1) pre-engineering types of programs, (2) research and

[1] Presentation made at the 63rd Annual Vocational Convention, Boston, Massachusetts, December 7, 1969.

independant study programs, (3) the "Education Without Walls" program. In addition, to these individualized programs we have a number of academically talented students fitting into our "regular" courses, but whose educational development is met within the regular course through a multi-level organization of the tasks challenging them.

To comment further on the three avenues open to these students let me give this brief description of them.

The pre-engineering types of programs are three different courses. (1) A "Pre-engineering Laboratory Experience" gives the student an opportunity to test, design, process, experiment and evaluate materials, designs and equipment in four Industrial Arts areas during a school year. Each student spends a quarter of a year in the following laboratories: electronics, metals, wood and power conversion and technology. (2) The "Pre-engineering Drafting" course is designed especially for the student interested in attending an engineering college. Here a student is challenged with equaling in one year the studies similar to an average high school student completes in two courses and in addition he or she tries his hand at machine designing and plotting some basic problems in numerical control drafting. (3) A third course he or she may follow is for the mathematically "bent" student. This is the course in "Engineering Graphics and Graphic Science" mentioned by a previous speaker.

Our "Research and Independent Study Program" permits the student to study in depth any area, topic, experiment, etc.

related to industry and technology. The student must be first accepted to the program by first subbmitting to his advisor and the department head, an outline of his plans for tbe study he will be undertaking. His meetings with his advisor are usually once a week or once every two weeks. He may use the Industrial Arts facilities at anytime during the school day and may visit libraries, engineers, architects, industry and any other community resources he finds needed to complete his course or study. Here are a few of the topics that have been undertaken by these students; "Amplitude Modulated Communications", "The Development of Design In American Industry", "A Student's View of Designing A Comprehensive High School", "Pulse Line Networks and Pulse Oscilators For Strob-lights", "Construction of A Gas Laser", "Graphic Designing With A Computer", "Designing Duncan Phyfe Furniture," etc.

The "Education Without Walls" program at Lexington High School is an interdisciplinary approach involving 90 seniors at present. Students in this program deal with broad topics or systems, such as, "Man and His Relation to His Environment", or "Serving Man's Needs at the Local Level, National Level and the World Level", or "Man's Adjustment to Occupational Goals", etc. Several students from this program are presently in our industrial arts areas making a short concentrated study or "mini-course" of a particular topic that is of immediate need or interest to them. Some topic examples are; "A Study of a House Under Construction," "Procedures for Gasoline Engine Tune-ups," "How To Be An Industrial Arts Teacher's Aid," "Control of Polutants From The Internal Combustion Engine," Understanding the Application Of OHM's Law," etc. These

courses are all short term courses of a few weeks in length or of one term in length. The variety of topics related to the program's aims are innumerable. In a second part of this program students may attend a regular class during demonstrations and lectures but, because of other program scheduling conflicts, thier laboratory work is arranged at times cinvient for the instructor.

If we believe as Dr. Jerome Bruner of Harvard University suggests that ".....the act of learning" involves ".....three almost simultaneous processes,"* (1) the acquisition of information, (2) the process of manipulating knowledge to make it fit new tasks or transformation and (3) determining whether we have properly used this information or evaluation, students involving themselves in these industrial arts programs suggested will find them relevent.

* The Process Of Education, Jerome S. Bruner, Harvard University Press, 1963. Pgs. 48 - 49.

PROVIDING FOR THE NEEDS OF GIFTED STUDENTS IN MECHANICAL DRAWING[1]

Donald V. Gearan

Teacher of Mechanical Drawing
Head of Industrial Arts and Dean of Students
Weston High School, Weston, Massachusetts

The area of Mechanical Drawing, perhaps more than any other in Industrial Arts, has served the needs of a truly broad crossection of the school population for many years. First, we have programs designed to prepare students to enter the drafting profession. Emphasis here is on development of manipulative skills, understanding of basic projection theory, appreciation for accuracy and drawing technique, and some peripheral technical knowledge. Other programs give students preparing for the trades or for industrial jobs a more basic course. Drafting techniques are not stressed, but ability to read diagrams and drawings and to sketch simple plans is adequately covered. A few programs have been developed that aim at preparation of students planning to enter engineering colleges. The attempt here has been to acquaint the student with some basic understandings about drawing so that they can stand the rigors of rather demanding college drawing programs.

But then, along came the space race, and a complete revamping of mathematics, science and engineering curriculum at all levels.

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[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969

The engineer of the future was destined to be more the scientific and theoretical thinking type than his predecessor. He became too valuable to sit behind a drawing board making diagrams of how to put things together. The explosion of technical knowledge required that he specialized in a sophisticated phase of engineering often with little time left for how to draw. Yet, he still had to be able to represent his ideas and solve graphical problems. Engineering Drawing courses at the college level, as a result, were reduced and synthesized to the point where they were so theoretical they were renamed Graphic Science. The emphasis in these courses was placed on the use of drawing in problem solving and design assistance rather than just communication.

High School programs reacted to these changes also. Because the draftsman would be taking over much of the more sophisticated drawing that the engineer once did, his training had to become far more specialized. Realizing that this would not be practical within the time limits of a high school mechanical drawing program, many new post-graduate technical schools appeared to fill the need. The high school programs then reverted to broad preparation for later specialization for this group of students. The needs of the pre-engineering student took on an aspect of "the last chance" to develop a usable level of graphical communication skill and an introduction to a new subject Graphic Science. In addition, because specialization in the Engineering College was coming sooner, there developed a need to explore the various fields of engineering so that a choice could be made on some intelligent basis, rather than whim or romance. The students must be helped to view their

own strengths, weaknesses and interests in relation to this important choice.

Other than placing an increased emphasis on career guidance, most mechanical drawing teachers in comprehensive high schools have not changed the approach used in their courses designed for preparing students for the trades or technical drafting schools. They may be teaching it better, with more use of varied educational media, and with perhaps slightly different time allocations, but they are not doing anything really new.

But teachers who have tried to provide realistic and progressive programs for the engineering bound student have had their horizons lifted. By involving themselves in a process of reeducation to meet this specific challenge, they discovered other fields of education that relate closely to the drawing area. Vector analysis problems in physics could be done more effectively, much quicker and with adequate accuracy on the drawing board. IN addition, the drawing board methods allowed for more sophisticated arrangements of these problems without becoming overburdened with mathematical formula. As a bonus, they found that many more students could now grasp technical concepts that heretofore they resisted because the mathematical formula required abstraction beyond their capacity.

The study of graphical mathematics was another area never considered before teachers started to retool themselves. Opportunities for integration with the higher level mathematics classes were now possible. Graphical calculas is new to the drawing teacher as a field of knowledge and to the mathematics teacher as a new and exciting and quite acceptable method for teaching the basic

concepts involved in the system.

The use of nomography and various types of logarithmic scales and charts in the analysis of experimental data has foundation in the drawing room and application in several other departments. The new emphasis on student run polls and studies in Social Studies opens new avenues of integration.

How then do you get gifted students into the drawing room? I guess the answer really lies in the attitude of the teacher toward change. If he is afraid to tackle Descriptive Geometry as an approach to projection theory for the more capable students, he will drive them away with the old mutilated block. If he does not take the initiative to look for methods to integrate his program with other subjects in the school that have the gifted students, then they will see no challenge in his drawing room. If he does not relate the knowledge that he can impart to the realities of current educational thought and modern industrial technology, then the top students will see no relevancy in his program to their needs or aspiration level.

Naturally, none of this is possible unless the teacher is qualified to teach this type of program. Graduate courses are available, textbooks are coming on the market and good working programs are around to look at. The biggest thing that we are waiting on to effect a complete ingestion of this type of program in our schools is the willingness of the teachers to put forth the effort to adequately prepare themselves.

Beyond a qualified staff and a more challenging program in

general, something else is necessary to meet the needs of the gifted students. Just as other departments of todays best schools are organizing their schedules, classes and programs to provide for individualized instruction, so must we in Industrial Arts. I know of no other subject area in which the full potential of this concept can be better met than in our shops and drawing rooms.

To make this work, two things must happen. First, we must get over our hang-ups on meeting prescribed curriculum goals that are expressed in terms of knowledge imparted and look for ways to open new vistas of interest areas of our students. We must find ways of turning them on to the exciting, constantly changing and dynamic technological world around us. Second, we must change any organizational or administrative barriers that get in the way. Classes need to be small enough both to enable the teacher to provide for individual instruction and to provide space for the student in other subject classes to come in to work on a graphics related problem. The school itself should not be so tightly organized that the student must wade through waves of bureaucratic structure in order to just get in the drawing room. The open laboratory or resource center concept should also apply to the drawing room.

Finally, I guess it is necessary to point out, that what really makes this kind of program work at all is an educational atmosphere where enthusiasm reigns. Where that is happening, you will find a dynamic, innovative teacher going about his business knowing exactly what he is doing and many gifted students drawing and learning.

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THE WORLD OF CONSTRUCTION MEETING THE NEEDS OF THE CULTURALLY DISADVANTAGED YOUTH[1]

Sheadrick A. Tillman IV

Teacher of Industrial Arts and
Field Evaluator for the Industrial Arts Curriculum
Project, Mount Vernon Elementary School
Chicago, Illinois

Sociologists, psychologists, and educators have often, with the best intentions, documented the problems associated with the growth of ghetto areas of our large cities. They speak of the lower-class student only in negative terms. They say that ghetto youths are "culturally disadvantaged" seemingly suggesting that they have no culture, no cultural heritage, no inherent value system or that their value system is inferior and inadequate. Attempts to analyze and explain their existence has often resulted in talking in circles: i.e. bad housing, high unemployment, broken families and the lack of a relevant education result in being disadvantaged and being disadvantaged results in bad housing, high unemployment, etc. This vicious circle, if not broken and solved can eat away at society as we know it today like a malignant cancer.

The purpose of my presentation is to demonstrate how the World of Construction course of the Industrial Arts Curriculum Project presents itself as a total educational package made relative to the needs of a "culturally disadvantaged" youth.

[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

The World of Construction is a comprehensive and innovative one-year junior high school course in construction technology. Its instructional system is designed to prepare students for enlightened citizenship and to provide educational-occupational guidance for the World of Work. Through the efforts of enlightened educators, this project and its materials are being introduced to reinforce student attempts to improve their knowledge and skills. Let us look briefly into the apparent needs of the disadvantaged youth. The need for:

Concrete Materials . . . Disadvantaged students tend to operate more effectively with two and three dimensional materials which they can handle, manipulate and otherwise relate to at the sensory level.

Relating to Personal Experiences . . . Relating to the time-worn expression "take them where they are" begins by knowing first-hand the neighborhood and parts of the community in which the disadvantaged student lives.

Maximum opportunity for participation . . . "Every pupil response" techniques are encouraged, but themass oral response should be used sparingly.'

Structure . . .Classroom management involves "structuring" the procedural activities in which the class is engaged.

To measure the possibilities of a "culturally disadvantaged" youth at present would show, that with rare exceptions, the ghetto child has no path to success outside of a public school education. Al long as the white, middle-class school is the only way for him

to develop his talents and win a secure job, we, the educators owe him a chance to attain optimal fulfullment. This is where the World of Construction directs itself, not specifically toward rehabilitating the disadvantaged youth, but toward appealing to his individual differences in values, abilities and his immediate environment. It gives him a chance to express himself by relating to his everyday experiences.

In day-to-day experiences with the World of Construction and the "disadvantaged youth" I have found that the lower-class child learns more quickly when given a material incentive than when given a non-material one. On the other hand, ghetto children have never been shown to be less curious, interested or excited about learning than other children. But somewhere between the misery of his home environment and the remoteness of his school environment he becomes lost. The task of I.A.C.P is to make sure that he does not become lost, but finds himself and attains the realization that he must be unpretentious and continuously in touch with reality.

Researchers report that the "disadvantaged" child shows evidence of drive but its direction and goals may not be complementary to academic achievement. Goals for these children tend to be more self-centered, immediate and utilitarian.

In stating the position of the World of Construction in relation to the needs of the "disadvantaged youth", I've found that this educational program combats the frustration of continual failure in an educational system that has neglected to meet the

special needs of the disadvantaged through three domain objectives, cognitive, affective and career. By visually showing these objective domains, you will be able to discern the potential of the project.

First, the cognitive objectives stress:

1. active learning for greater student participation.
2. realistic concepts appropriate to the experience background of the learners.
3. sequential skills programmed to assure small increments of progress with proper reinforcement.

Second, the affective objectives stress:

1. self-awareness and positive concepts.
2. a sense of connectedness between himself and society.
3. to foster appropriate modes of emotional expression.

Third, the career objectives stress:

1. an understanding of economics as it relates to the World of Work.
2. safe work attitudes and the ability to function as a member of a group.
3. the necessary knowledge to attain work proportionate with his ability.
4. opportunities for limited career exploration through simulated job experiences.

In conclusion, I hope that it is felt that the World of Construction can make it possible for school work to become relevant in the life of the disadvantaged youth by aiming its course

content to deal with certain concrete examples, problems, issues and events of today. Many of these children come to school with little experience upon which to predicate future success. Therefore, from Ohio States' research into this experimental industrial arts program it is possible to isolate a few characteristics common to utilizing this project with the greatest degree of success. Generally, it can be said that "disadvantaged students" respond most favorably to course content which:

1. creates interest through dynamic and vital information, purposes and subjects;
2. begins to show his ability relative to the World of Work;
3. enhances the student's self-image in relation to the world of construction;
4. presents a view of life which is at once purposeful, hopeful, and honest!

and finally,

5. is relevant to the lives of the students before, during and after school hours.

Making Industrial Arts Relevant

In New York City

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PRESENTED AT THE A.V.A. CONVENTION
BOSTON, MASS.
December 7, 1969

-:-

Afternoon Session
2:00 p.m. - 3:30 p.m.

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PROGRAM

An Overview of the Involvement of
Industrial Arts in Special Education
Mr. Herbert Siegel, Director of Industrial Arts
New York City Schools

Innovative Federally and State Funded
Industrial Arts Programs
Mr. Harry Krane, Supervisor of Industrial Arts
New York City Schools

INNOVATIVE FEDERAL AND STATE FUNDED INDUSTRIAL ARTS PROGRAMS

Harry Krane, Supervisor of Industrial Arts

The Industrial Arts Department of the Board of Education of the City of New York prepared many proposals which would be of great value to various groups of students and teachers. After delineating the problems, projected solutions were developed as demonstration projects to meet the unique needs of our student population.

The following are a few of these programs:

1. Locally Oriented In-Service Programs (L.O.I.S.) were implemented, such as "Industrial Arts for Career Guidance," "Interrelationships of Industrial Arts With Academic Subjects" and "Methods of Teaching the Industrial Arts", in which teachers were paid $9.00 for each 3 hour session while the instructor received $11.25 per hour.

2. The Career Guidance Program grew out of a deep concern for the many students who were over-age, frustrated, retarded in most school subjects and indifferent to education. It was hoped that, with specialized and intensive guidance and a curriculum centered around the world of work, these pupils would remain in school and be infused with a desire to set higher educational goals for themselves.

Areas of Industrial Arts involvement include:

a). Individual projects and basic skills in the General Construction and Repair Unit
b). Building Construction including foundation platforming, wall framing, sheathing, electrical wiring, window and door constructing and installing and plumbing.
c). Power Mechanics involving the lawn mower and single cylinder engine, etc.
d). In-Plant Printing, exploring spirit, mimeograph and offset duplicating processes, use of headliner, platemaker, collator, binders and allied activities.

In order to teach basic skills in the publications field, specialized equipment was provided for training disturbed and retarded youths. These Publications Shops have been introduced in the Manhattan Occupational Training Center, Richmond Occupational Training Center, League School for the Severely Emotionally Disturbed, Livingston School for the Emotionally Distrubed Girls - Grades 9,10,11.

3. In addition, a Graphic Arts Dark Room has been designed and installed at the Castle Hill J.H.S. in the Bronx.

Other innovative programs include "The Industrial Arts Enterprise Experience" wherein students establish and operate their own manufacturing business, the "Elementary School Industrial Arts Mobile Learning Center" to provide motivation for learning while experiencing the world of work, a "Basic Job Readiness Skills Training Program for Mentally Retarded" providing correlated employment, "Industrial Arts for the Visually Handicapped" as well as

a comprehensive "Innovative Equipment Program" for the main stream of the student population.

Every program involved pre-planning, shop layouts and design, specifications for equipment tools and materials, as well as scope of course and pupil involvements.

Evaluation of these programs is an integral part of the total supervisory function of the Industrial Arts Department Staff.

Making Industrial Arts Relevant

In New York City

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PROGRAM

An Overview of the Involvement of
Industrial Arts in Special Education
Mr. Herbert Siegel, Director of Industrial Arts
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Innovative Industrial Arts Programs for the
Orthopedically Handicapped and Mentally
Retarded Students in New York City Schools
Mr. Eugene Haug, Supervisor of Industrial Arts
New York City Schools

The provisions of the "Vocational Amendments of 1968", Public Law 90-576, provide funds for the establishment of skill training programs for the handicapped who are students enrolled in elementary and secondary school grades.

The layout presented here is designed as an industrial arts shop to be installed in a secondary school to service orthopedically handicapped and mentally retarded students. A study of the equipment suggested will reveal facilities for ceramics, graphic arts publications, general industrial work and woodwork. All equipment has been carefully selected for handicapped students to meet the following objectives:

1. To develop basic muscular coordination and skills
2. To allow for the creative expressions of each student
3. To provide an atmosphere of industry and purposeful activity in the classroom.
4. To teach handicapped students how to work cooperatively.
5. To correlate shop activities with academic studies
6. To give handicapped students a means of success through the making of useful projects
7. To prepare handicapped students for future employment in institutional sheltered workshops
8. To teach school, home and industrial safety practices.

The most completely equipped area of the shop is in ceramics. Special attention has been given to industrial type machines to allow for repetitive production experiences as well as individual projects. In the publications unit, in-plant printing activities are planned with equipment for printing, collating and binding written material as a service to the school and community non-profit organizations.

The general industrial unit of the shop is planned to simulate sheltered workshop conditions for trainable students. A portable variable speed belt conveyor, plastics engraving machine and portable magnetic drill press are included. An industrial "punchin" time clock and card rack is installed to stress the importance of time.

The woodworking area is intended as a supportive activity. With the use of simple hand tools, basic skills, creative activities and mass production activities may be taught. Fixtures for use in the other areas of the shop, and projects combining wood, metal, plastics and ceramics can be assembled and finished here.

A representative list of initial tools for a general industrial shop is attached to this report.

The estimated total cost of equipment for this shop is $20,000.00.

42'-0"

26'-0"

WINDOWS

WINDOWS

Ceramic Kiln 18" x 18" (22)

(23) Potters Wheel

(51) Jig Saw

Finishing Bench (24) (25)

Laboratory Press

Tool Cab. (26)

Storage Cab. (13)

(29)

(31) (30)

Machine Vise (27)

Magnetic Drill Press

Clay Bin (21)

Drying Cab. (20)

Muller Mixer (18)

Ball Mill (19)

Pug Mill (17)

(16)

Spray Booth (15)

Damp Cab. (14)

Stor. cab. (13)

(48) Woodworking Bench with 4 Vises. Locker Base... 33" High (50) (48)

(48) Stools (48)

(48) Woodworking Bench w/4 Vises Locker Base 29" High (49) (48)

(48)

Cart (42)

(47) Portable Belt Conveyer 30"x60" with 6 Posture Chairs

Cart (42)

(46) (46) (53) Engraving Machine

6 Mobile Wheel-chair Worktables 32" x 36"

(46) (46) (46) (46)

Woodworking Vise

2Dw. File cab. (4)

Teachers Demo. Bench (3)

(7)

Chalkboard (1)

Pedestal Grinder (5)

Machine Vise

Audio-Visual Screen Mtd. (2)

Teachers Desk (8)

Display cab. (9)

Sink w/ Drink Fountain (6) D. F.

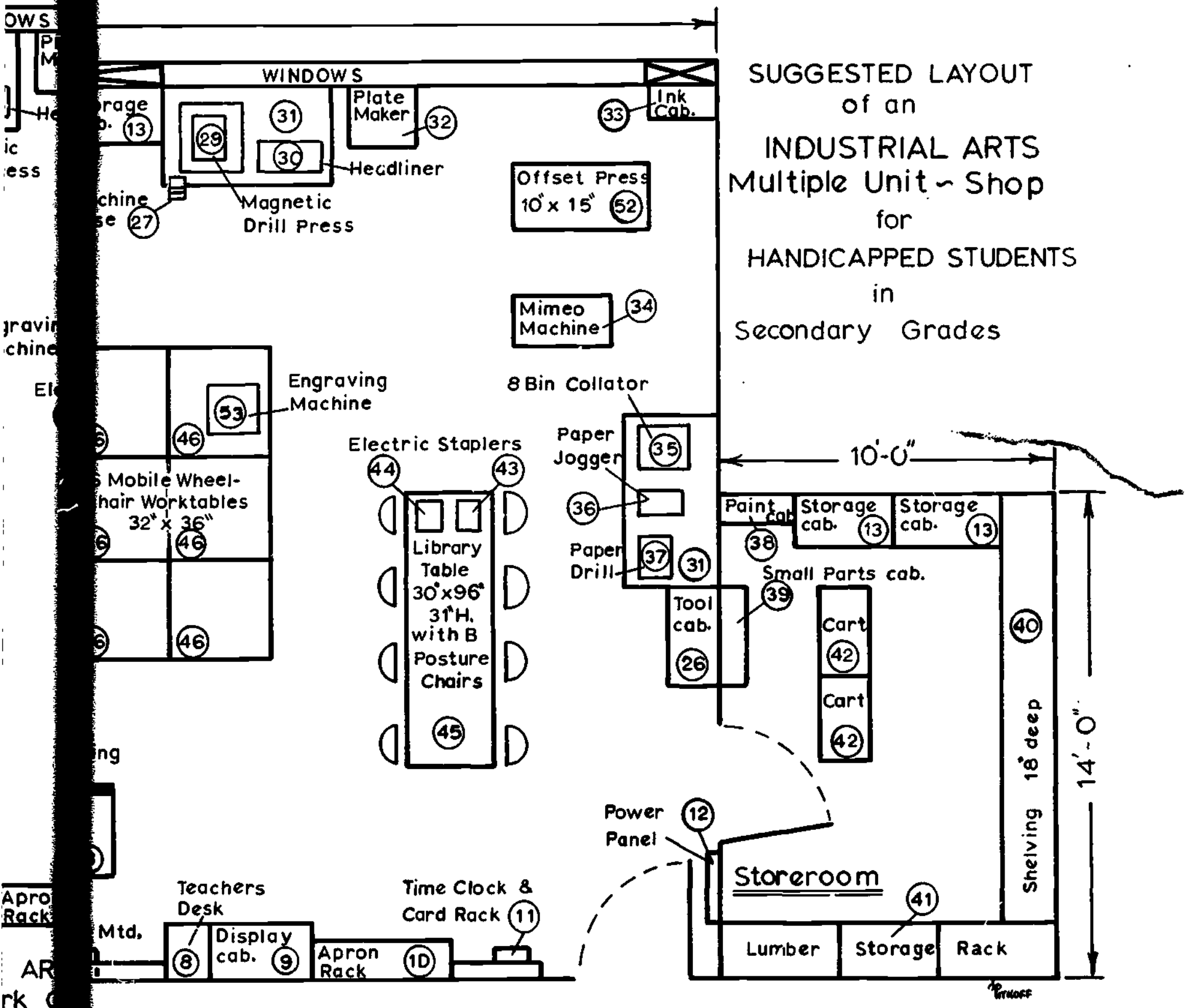
HALLWAY

INDUSTRIAL AR

New York C

HERBERT SIEGEL

SUGGESTED LAYOUT of an INDUSTRIAL ARTS Multiple Unit - Shop for HANDICAPPED STUDENTS in Secondary Grades



INDUSTRIAL ARTS DEPT.
New York City
HERBERT SIEGEL, Director

AUGUST,,,1969
SCALE... 1/4" = 1'-0"
Designed by: EUGENE F. HAUG

Suggested Layout of an Industrial Arts Multiple Unit Shop for Handicapped Students in Secondary Grades.

Shop Size: Forty Two feet long by twenty six feet wide with a ten foot by fourteen foot storeroom. (1½ standard size classroom units)

Shop Equipment as Listed on Attached Layout

Reference Number	Quantity	Description
1	1	Chalkboard, standard height, 8 ft. long
2	1	Audio-Visual screen, wall mounted
3	1	Teachers demonstration bench, cabinet base, maple top 60"lx30"w with machinists and woodworking vise mounted.
4	1	Filing Cabinet, 2 drawer, legal size
5	1	Pedestal grinder, with dust collector
6	1	Wash sink, 4 ft. with drinking fountain and knee control faucet valves
7	1	Teachers stool, 24" high
8	1	Teachers locker, 18"x15"
9	1	Display Cabinet, 18"x36"
10	1	Apron rack, 48"l with hat shelf and 16 hooks
11	1	Student time clock and card rack
12	1	Electric power panel with electrical service to all equipment as required
13	4	Storage cabinet, 18"x36"x72"h
14	1	Damp cabinet, 18"x36"x84"h
15	1	Ceramic spray booth 30" deep with compressor and accessories
16	1	Ball mill
17	1	Pug mill
18	1	Muller mixer
19	1	Ceramic work bench with cabinet base and maple top 36"x108"x31"h.
20	1	Drying cabinet, 18"x36"x84"h
21	1	Portable clay bin, 24"x28"x18"h
22	1	Ceramic Kiln, 18x18 on stand
23	1	Potters wheel, Amaco sit down model
24	1	Labratory press, 12"x12"
25	1	Finishing bench, stainless steel top, 24"x72" and paint cabinet base
26	2	Cabinet tool, 18"x36"x72"h
27	1	Steel plate, 1/8"24"x24" bench mounted
28	1	Portable drill press, magnetic base
29	1	Steel plate, 1/8", 24" x 24" bench mounted
30	1	Varityper photographic headliner

Reference Number	Quantity	Description
31	2	Occupational therapy hydraulic workbench, adj. height, maple tope 36" x 60"
32	1	Offset platemaker
33	1	Ink cabinet, 12"x24"x64" h.
34	1	Gestetner mimecgraph on stand
35	1	Electric collator, 8 bin
36	1	Electric paper jogger
37	1	Paper drill, table model
38	1	Paint storage cabinet, 12"x24"x65"h
39	1	Small parts cabinet, 12"x36"x84"h.
40	1	Steel shelving, ceiling height, 18" deep
41	1	Lumber storage rack
42	4	Portable stock cart, 18"x30"L
43	1	Electric stapler, single head
44	1	Electric stapler, double head
45	1	Library table, 30"x96"x31"h. with 8 posture chairs
46	6	Mobile wheel chair work tables, adj. height formica top, 30"x60"
47	1	Portable belt conveyor, variable speed, 30" wide x 60" long with 6 posture chairs
48	8	Stools, students, 18"h
49	1	Woodworking bench, maple tope 54"x60"x29" high with student locker bases and 4, 7" woodowkring
50	1	Bench same as #49 33"high
51	1	Jig saw with stand 27" high
52	1	Offset duplicator, 10"x15" with accessories
53	1	Plastics engraving machine

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Speeches Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 7, 10, 1969

Industrial Arts Education Division

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
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Facilities are available for a comprehensive study of technology. Equipment for machining metals include a horizontal-vertical milling machine, a surface grinder, production type drill, metal shearing and forming machine, and lathes. The hot metals area include light foundry casting, heating treating, and oxyacetylene welding and cutting, shielded arc welding and TIG welding.

Plastic equipment includes injection molding, machine vacuum forming, and a variety of laminating and casting devices. Wood equipment is available to do all milling and fabrication and include a surfacer, jointer, saws, sanders, and drill press. Finishing techniques include coating, spraying and plating.

The heart of the program is the testing laboratory which enables the student to achieve an understanding of the materials which are the building blocks of today's world.

Investigation of the properties of materials are made with a wide range of instruments such as the strain indicator which is used to determine stress and strain. This is a very sensitive instrument and gives meaning to the concept of minute deformation of materials.

The Polariscope provides a very interesting explanation of lines of force and stress and strain of materials in models of structural parts in optical form.

Investigation of the properties of materials such as tensile strength, compressibility, shear, and modulas of elasticity are made with the aid of the universal testing machine.

The Wilson Rockwell Hardness tester gives an accurate experience in testing the hardness of metals. This unit is being equipped with special

accessories to determine relative hardness of other kinds of materials.

The study of metallurgy is aided greatly by the addition of a very fine metallograph. The unit is equipped with both a Polaroid and 35mm color camera. This enables the student to make studies of the grain structure of metals and to photograph welds, bonds, and impurities of the materials he is using for other purposes.

The metallurgical microsections are prepared on the grinder polisher before etching and observation. Weld cracks in exotic materials such as titanium which are invisible to the unaided eye are recorded for further study and possible solutions. Impurities such as coke in cold roll steel provides an opportunity for the student to gain a real understanding of the grades of steel and other metals.

The importance of materials testing is evident in today's exacting technologies. The theme of testing is carried all the way from space research to commercial television to children's toys. This then is why this laboratory is such a vital part of the total program.

The syllabus for the first year course was written in 1966, and at present being evaluated by use in the classroom. The syllabus will be revised to incorporate all the equipment and materials which have been introduced into the program within the last two years.

The course Materials Fabrication was given the state course title "Industrial Materials and Processes" and abbreviated In. Mp. 1, 2, 3. The code number is 8663 for the course In. Mp. 1. This represents one of the most recent additions of a course on the state level in Florida in the field of Industrial Arts.

The syllabus is a guide which helps the students understand technology by directing them through the course and by providing broad concepts and stimulating inquisitiveness about the materials, processes and fabrication techniques of today.

The syllabus is divided into three (3) broad concepts: (1) mat' ials; (2) processes; and, (3) fabrications.

MATERIALS

The first section on Materials provides for a foundation by studying fundamental concepts. This involves the understanding of length, mass, and time. The fundamental mechanics of these three concepts provides for measuring and controlling our physical universe.

Problem solving is stressed throughout the syllabus and as we previously stated, testing is the heart of the syllabus and the program.

PROCESSES

The second section i s the study of processes. In this syllabus a process is defined as "affecting a piece of material to change it, or its properties, or to prepare it for change by a fabrication technique." Processes may also be defined as the affect upon any material caused by the expenditure of energy. The four basic processes covered are: (1) chemical; (2) electrical; (3) thermal; and (4) mechanical. Two or more of these processes may be employed simultaneously to produce some desired effect or change of properties. When this is done it is referred to as combination process.

Thermal processes or the change of thermal energies are studied with the aid of the high-low termperature test chamber which enables the students to study properties of materials at various temperatures from 400°F to ambient, or

from ambient to -100°F.

FABRICATION

The third section of fabrication is concerned with the great variety of ways in which materials can be made into desired objects. That is, "Fabrication Techniques." Four techniques are covered: (1) forming; (2) machining: (3) joining; and, (4) finishing.

THREE LEVELS

The syllabus is written on a three level structure, that is, there are three levels of experiences for the students to choose if they wish. Level 1 is required of all students before proceeding to levels 2 and 3.

Level 1 involves experiences such as measurement which are simple and require a minimum amount of time to gain understanding of the concept involved. On level 1 the student has no difficult or time consuming tasks and the student is readily able to achieve the concept. This achievement is insured by providing such aids as prepared specimens, visual aids, and instructions, student assistance and individual instruction when necessary. It is anticipated that the entire first level will require no help from the instructor, thus leaving him available to give individual assistance on the second and third levels.

Level 2 is more demanding and is not required for any student to complete satisfactorily. If, however, the student becomes interested and desires to study the concept, device, or technique further it is possible to do so. Activities such as mold construction and casting are included in level 2.

Level 3 involves a study in depth and is available to students who are willing to pursue much of the work on an individual basis. Outside activity and self directed research are an important part of level 3. The feasibility of using

liquid carbon dioxide as model launching propellant and device is one example.

Individual instruction is a vital part of the program and is necessary to achieve success in the program as it is established. Since level 1 is programmed in such a manner as to permit the students to proceed through at their own rate and levels 2 and 3 may be pursued at the students own request. It is necessary that the student's evaluation be made at the time it would benefit them most.

THE PROGRAM IN ACTION

The student has available a great many experiences in the three sections of the syllabus. In the first section on materials such things as measurement are stressed. The student is given an opportunity to make measurements with micrometers, calipers, scales, surface plates, and balances.

The concept of measurement involves two main aspects, the fact that all of our physical universe can be measured in one way or another and that measurement today is a very precise and accurate science and such precision is essential to modern technologies.

In the second section on processes, concepts of thermal effects on materials are studied and the student is given an opportunity to learn the basic concepts through a variety of media from heat treating and tempering of steel to the thermal effect on thermoplastics and plastic foams.

Considerable time is spent on the fabrication section because it requires techniques and equipment of a great variety.

Forming techniques are those such as forming, molding, casting, and special forming. Explosive forming and investment or centrifugal casting are included to give the widest range of concepts possible.

Machining techniques such as sawing, planing, drilling, abrading, milling and lathing are stressed. The techniques of machining include not only metals and woods, but such materials as glass, rock and exotic materials. Titanium, an exotic space age metal, is included in the materials used by the student in order to help him learn about the difficulties encountered in fabricating with this kind of material.

Joining of materials is one of the important concepts and a wide range of techniques for joining materials of many different properties are covered. Such techniques as soft soldering, hard soldering, brazing and welding are available to give a good comprehension of the joining techniques in metals. The four categories of joining are: (1) mechanical; (2) cold adhesives; (3) hot adhesives; and, (4) fusion.

The four major joining categories could be reduced to the following three: (1) mechanical linkage; (2) adhesion; and, (3) cohesion. The mechanical linkage category of joining is common and includes nails, screws, bolts and similar devices. The adhesion method is by bonding or, as commonly called, glueing, materials together with some type of adhesive material. Cohesion or fusion is the actual flowing together of the materials in molecular form as illustrated by the series on TIG welding.

Finishing explains the three major techniques by which materials may be finished; mechanical, coating, and plating. In the mechanical technique materials may be sanded, rubbed, buffed and polished. The coating techniques include brushing and spraying. Five types of spraying equipment are available from the smallest air brush to a heavy duty pressure system. The techniques of coating are demonstrated by electro-plating.

The reference library contains a wide selection of information and with the lecture/demonstration area the program of materials fabrication is integrated with the other areas of drafting which provides both architectural and engineering graphics.

Graphics is an important area of technology and is provided by an outstanding laboratory.

Electronics is offered in a well equipped laboratory and the electronics communications laboratory provides live experiences in this important field.

Together, these laboratories and their programs provide the study of one of man's most important fields of endeavor.

Making Industrial Arts Relevant - Some Exemplary Programs
9-11:30 a.m., December 7, 1969
Gallington-Yadon: An Abstract

Materials Fabrication at Plantation High School is innovative in that it presents a facet of Industrial Arts often overlooked. The heart of the program is the testing laboratory. This facility enables the student to find out for himself why materials fail or endure. All types of fabrication are studied and all types of machining processes, including forming, are investigated. Some operations strengthen, others weaken, materials used in the manufacture of durable goods.

The theme of testing is applied in a wide spectrum of industrial fabrication, from space engineering down to the development of durable children's toys. Sophisticated testing machines and devices are used. Typical manufacturing procedures and machines are featured.

Materials are the foundation of the program. The second section of the program is Processes. Finally, Fabrication is the culmination where materials and processes are put to the test of interrelating. Through each step, testing is the key. In each level, questions which follow are answered for the student.

Materials: Are the materials suitable in raw form?

Processes: Has the work (cutting, drilling, bending, twisting, hardening, tempering, annealing, fitting, etc.) changed the character of the material, making it unfit for fabrication?

Fabrication: Does the final interrelating of parts and joining (soldering, welding, gluing, bolting, finishing coats, etc.) change the character of component parts, making them unfit for their function?

Durable goods manufactured for human consumptions are only as durable as their component parts. To manufacture reliable products today, testing and quality controls must become an integral part of the enterprise.

Making Industrial Arts Relevant

In New York City

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PRESENTED AT THE A.V.A. CONVENTION
BOSTON, MASS.
December 7, 1969

-:-

Morning Session
9:00 a.m. - 11:30 a.m.

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PROGRAM

Industrial Arts in New York City
Mr. Herbert Siegel, Director of Industrial Arts
New York City Schools

Industrial Arts in the Elementary Schools
and the Mobile Learning Center
Mr. Harry Krane, Supervisor of Industrial Arts
New York City Schools

WHAT IS INDUSTRIAL ARTS EDUCATION?

"Industrial Arts is the study of technology; its history growth and development in terms of industrial organization, materials, occupations, products, processes and related problems. It is a curriculum area in general education in which boys and girls may create, experiment, design and plan while dealing with issues and problems related to technology. It helps every student to prepare for living in an industrial democracy and provides a foundation for specific occupational and educational opportunities."

WHAT IS INDUSTRIAL ARTS IN THE ELEMENTARY SCHOOL?

Harry Krane, Supervisor of Industrial Arts.

Industrial Arts can contribute to the Elementary School Educational Program through its unique subject content, methods and techniques.

It can serve as a vehicle of enrichment as well as making the abstract more meaningful, educating the senses and the intellect and producing a means for fulfilling the universally accepted goals of education.

It can enhance the other academic disciplines, provide motivation for the improvement of reading skills, oral expression and group participation. It can add to the development of motor skills and coordination.

Industrial Arts provides occupational orientation for the world of work which the child will ultimately face.

This can be achieved by providing tangible first-hand experiences concerning tools, materials, processes and occupations of industry directly related to units of study in the elementary school curriculum.

Concern for the need for improving the reading skills of young, disadvantaged children in our public schools led to experimentation with an approach involving the unique, self-motivating factors inherent in Industrial Arts.

By capitalizing on the informal setting of an Industrial Arts experience, children can be motivated towards greater effort, thus making school more interesting and meaningful.

In many cases, the opportunities for success and satisfaction derived from the Industrial Arts activities can make a significant contribution towards the development of a positive self-image in the child.

This can be achieved by-

1. creating a physical plant with tools, equipment, materials and supplies necessary for safe and effective implementation of the program.
2. assigning a carefully selected, highly qualified and duly licensed Industrial Arts teacher
3. providing for a consultant type and/or scheduled program of pupil/teacher participation.
4. providing for effective articulation with all the classroom teachers and supervisors in the school
5. providing for effective planning, research, preparation, innovation and pre-service teacher-training
6. providing sufficient funds for the growth and development of the program

In cooperation with the classroom teacher, as a result of conferences, pre-planning and instructional classroom visits, the Industrial Arts Consultant arranges blocks of time for the implementation of the proposed activity.

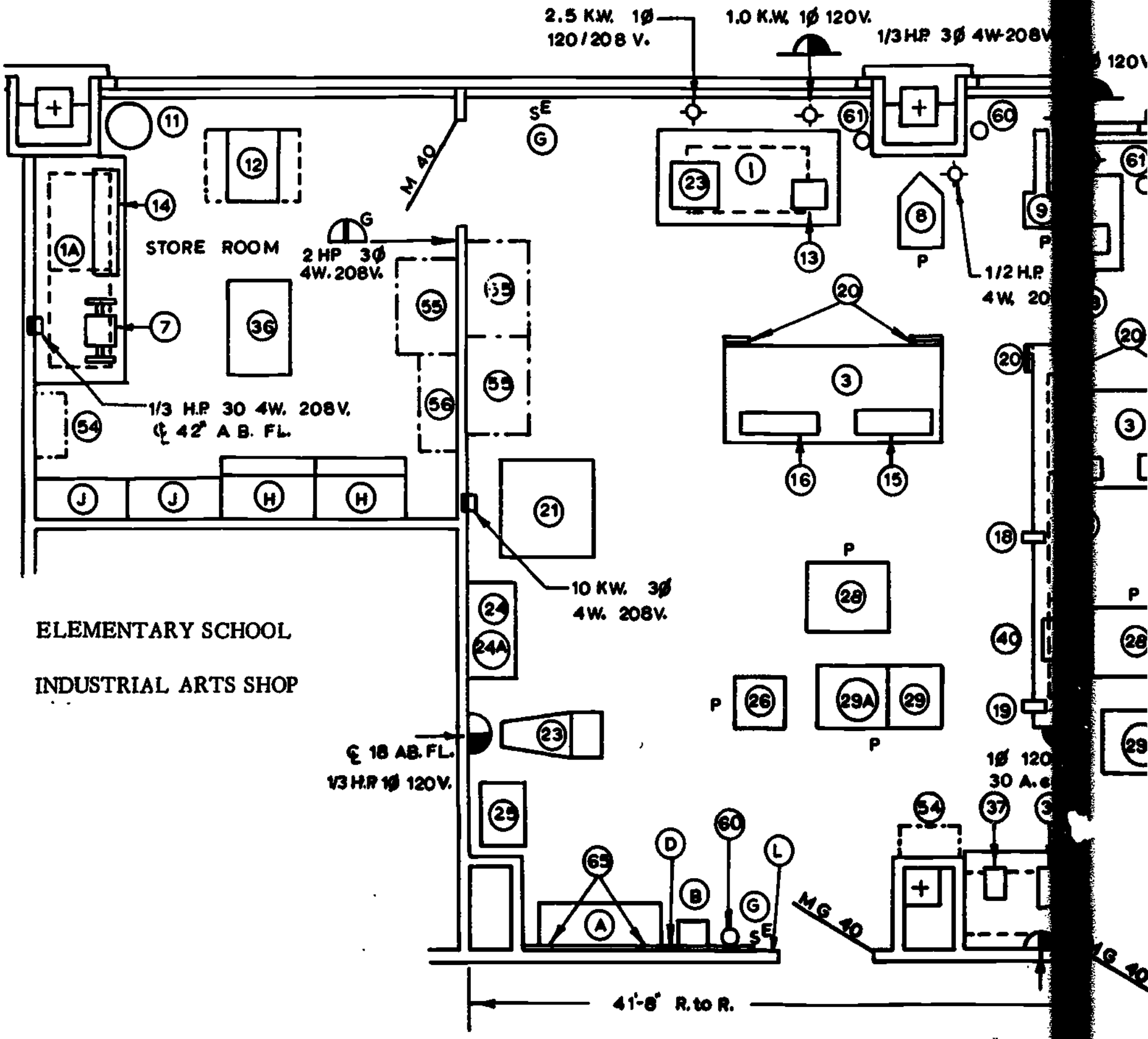
The time block may be as short as ½ hours per day. The activity may extend for several days, weeks or any specified number of sessions required.

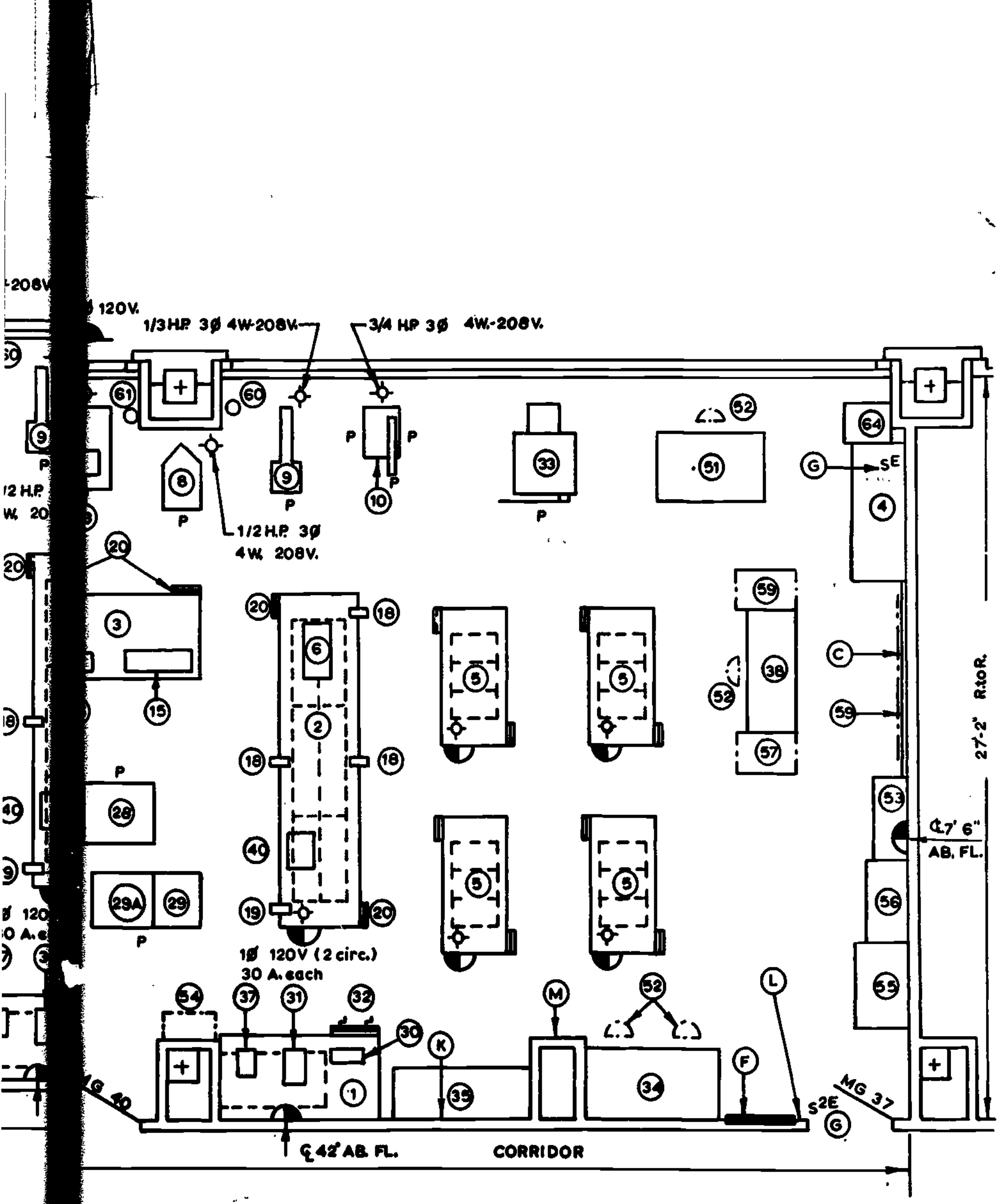
This technique provides for a more effective means of meeting the needs of the pupils at the most propitious moment.

Several special circumstances may create a need for scheduled programming. Such classes as Individual Guidance, Junior Guidance, C.R.M.D. and Physically or Visually Handicapped may be assigned to the shop on a more regular basis.

ELEMENTARY SCHOOL

INDUSTRIAL ARTS SHOP




120V.
1/3 H.P. 3ø 4W-208V.
3/4 H.P. 3ø 4W.-208V.
1/2 H.P. 3ø
4W. 208V.
1ø 120V (2 circ.)
30 A. each
CORRIDOR
℄ 42" AB. FL.
℄ 7' 6"
AB. FL.
27'-2" R.to R.
MG 40
MG 37
S2E
SE

ELEMENTARY SCHOOL INDUSTRIAL ARTS SHOP

NO.	SHOP EQUIPMENT DESCRIPTION	REF. NO.	QTY.	CONTR.
1.	Work Bench, Cabinet Base 36"x72"	12.04	2	G.C.
1A.	Work Bench, Cabinet Base 36"x84"	12.04	1	G.C.
2.	Work Bench, Cabinet Base 36"x144"	12.04	1	G.C.
3.	Work Bench W/Shelf 36"x84"	12.06	1	G.C.
4.	Glue Bench 24"x60"	12.09	1	G.C.
5.	Woodowrking Bench, 2 position locker base 30"x60"	12.15	4	G.C.
6.	Power Station w/locking cover (wired with rigid conduit)	12.27	1	S.E.
7.	Tool grinder, Bench Type w/chisel attachment	12.30	1	S.E.
8.	Drill Press, 15" Floor Type	12.37	1	S.E.
9.	Jig Saw, on stand	12.42	1	S.E.
10.	Belt & Disc Sander	12.45	1	S.E.
11.	Wet Dry Vacuum Cleaner	12.46	1	S.E.
12.	Circular Saw w/dolly	12.50	1	S.E.
13.	Laboratory oven	12.219	1	S.E.
14.	Squaring Shear, Bench Type 24"	12.67	1	S.E.
15.	Box and Pan Brake, Bench MTD	12.70	1	S.E.
16.	Stake Plate, Bench Type	12.85	1	S.E.
17.	Stake Set, Art Metal (Not Shown)	12.87	1	S.E.
18.	Machinist Vise, Fixed Base	12.90	3	S.E.
19.	Machinist Vise, Swivel Base	12.92	1	S.E.
20.	Woodworking Vise	12.96	4	S.E.
21.	Kiln, Ceramic 18"x18"x18"	----	1	Elec.
22.	Kiln, Enameling 8"x10"x4"	----	1	Elec.
23.	Potters Wheel w/jiggering outfit	12.106	1	S.E.
24.	Drying Cabinet	12.107A	1	S.E.
24A.	Damp Proof Cabinet	12.108A	1	S.E.
25.	Clay Storage Bin (Portable)	12.109A	1	S.E.
26.	Wedging Table	12.110	1	S.E.
27.	Banding Wheels (not shown)	12.111	2	S.E.
28.	Proof Press & Cabinet	12.120	1	S.E.
29.	Pilot Press	12.121	1	S.E.
29A.	Type Cabinet & Accessories	12.122A	1	S.E.
30.	Standing Press	12.125	1	S.E.
31.	Stamping Machine	12.126	1	S.E.
32.	Hand Bookbinding Unit	12.134	1	S.E.
33.	Paper Cutter	12.135A	1	S.E.
34.	Planning Center 30"x60"	12.137A	1	S.E.
35.	Tool Storage Cabinet (General Shop) w/tools	12.139A	1	S.E.
36.	Stock Cart (Mobile)	12.143	1	S.E.
37.	Rubber Stamp Vulcanizing Press	12.152	1	S.E.
38.	Teachers Demonstration Bench	12.201	1	S.E.
39.	Folding Work Bench w/ tools (Not Shown)	12.202	4	S.E.
40.	Orbit Vacuum Former (Portable)	12.203	1	S.E.

ELEMENTARY SCHOOL INDUSTRIAL ARTS SHOP

NO.	FURNITURE DESCRIPTION	REF. NO.	QTY.
51.	Teachers Desk 30"x48"	97-0613	1
52.	Chairs 18"h.	97-2618	4
53.	Display Cabinet (36"wx16"dx78"h)	96-4692	1
54.	Paint Cabinet (24"wx12"dx66"h)	96-4700	2
55.	Storage Cabinet (36"wx24"dx78"h)	96-4618	4
56.	Storage Cabinet (36"wx18"dx78"h)	96-4612	2
57.	Filing Cabinet, 2 dwr Legal	96-6620	2
58.	Waste Disposal can (not shown)	70-2035.25	1
59.	Projection Screen Mtd Above Chalkboard	96-2520	1
60.	Fire Extinguisher	96-2022	2
61.	Asbestos Blanket	96-1300	1
62.	Stool, 18" H. (not shown)	97-2518	8
63.	Stool, steel swivel (not shown)	97-3808	1
64.	Teachers Locker	96-4420	1
65.	Towel Dispenser	70-4172	2

	CONSTRUCTION FEATURES	CONTR.
A.	Sink, 48" long w/2 soap dispensers	P & D
B.	Drinking Fountain	P & D
C.	Chalkboard w/display board and map rail over	G.C.
D.	Display Board to cover all exposed wall area 18" & wider	G.C.
E.	Electrical outlets as shown (see symbols)	Elec.
F.	Electrical Panel	Elec.
G.	Emergency stop switches as shown	S.E.
H.	Open Steel Shelving	G.C.
J.	Lumber Rack	G.C.
K.	Clock	Elec.
L.	T.V. Outlet	Elec.
M.	Intercom Telephone	Elec.
N.	Provide Sprinkler System for entire shop and store room	H & V

GENERAL NOTES

Reference numbers in shop equipment list are takenfrom the office of School Buildings January 1965 Edition and subsequent amendments.

Reference numbers in furniture list are taken from the Bureau of Supplies furniture list of 1964

Where manufacturers names and catalog numbers are listed, they indicate quality and size of item only. Approved equal items of other manufacturers will be accepted.

P indicates operating position

THE INDUSTRIAL ARTS MOBILE LEARNING CENTER

Harry Krane, Supervisor of Industrial Arts

Most parochial schools on all grade levels and almost all public elementary schools do not provide Industrial Arts programs, with all the concommitants, for their pupils. Consultations will all concerned, including educators, administrators, community representatives, local school board members, legislators, et al, indicated a need for this innovation.

Implementation of the Industrial Arts Mobile Learning Center would-

provide an opportunity for pupils to obtain instruction in the knowledges and skills inherent in this first experience with the tools of the world of work

provide an opportunity for pupils to gain experience in the manipulation of the materials and equipment of our technological society through the experimentation, creativity, enrichment and innovation offered.

provide pupils with the opportunity to apply and make relevant their academic and theoretical learnings in a concrete way by means of constructing projects related to Science, Mathematics, Social Studies, Language Arts, etc.

encourage pupils to develop new interests and abilities which may give direction to further education

provide occupational information, develop an appreciation of good workmanship and intelligent consumer attitudes

Provide pupils with experiences and instruction which will enable them to make simple home repairs and develop worthwhile leisure time activities.

A proposal was submitted by Mr. Harry Krane, Supervisor of Industrial Arts, in conjunction with Mr. Herbert Siegel, Director of Industrial Arts, via Dr. Max B. Meyers, District Superintendent of District 18 in Brooklyn, New York to the E.S.E.A. Title 111 office of the Board of Education.

Mr. Krane was selected to serve on the Project Development Board of Umbrella 2, a school/ community interaction group. This group was persuaded to allocate funds for the purchase of the mobile unit.

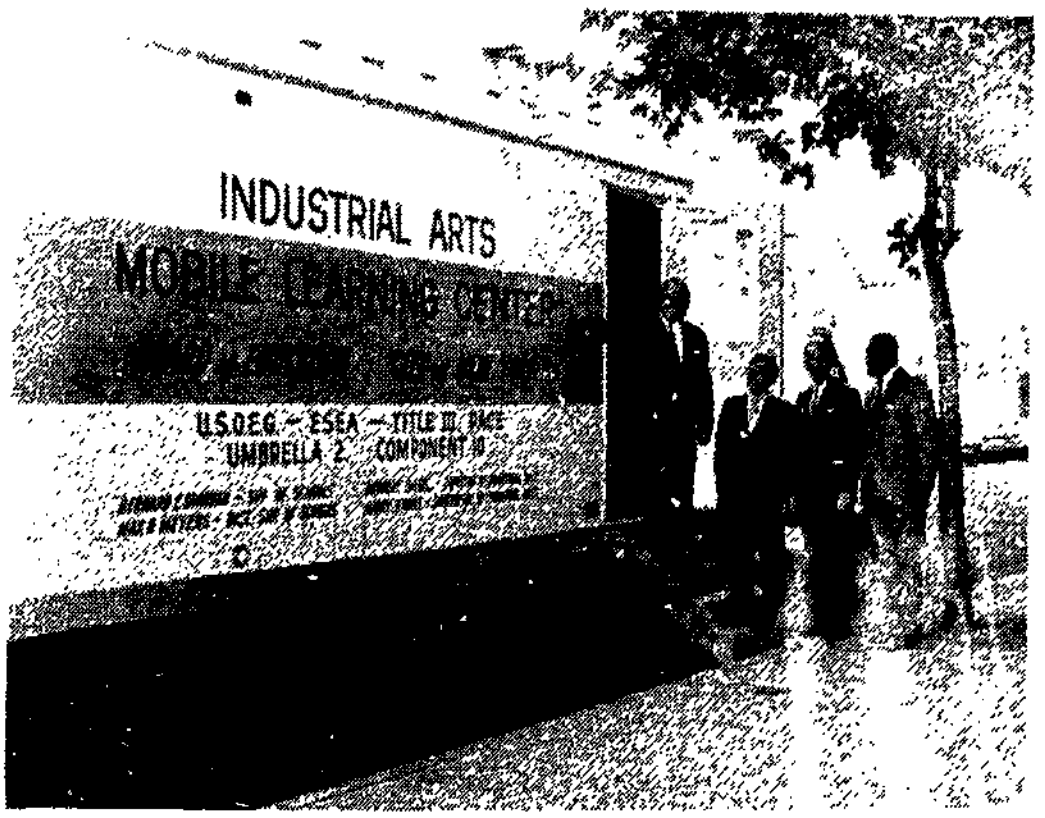
Additional funds were secured via proposals through The New York State Urban Education Office and the New York City Board of Education.

Plans were developed in conjunction with the AVID Corp. of East Providence, Rhode Island in keeping with the philosophy of Elementary School Industrial Arts and the various building, electrical, safety and motor vehicle codes.

Structured sequences were followed from the initial specifications to awarding the contract. The many responsibilities for further research and development were delegated to the proper agencies.

Among these responsibilities were-

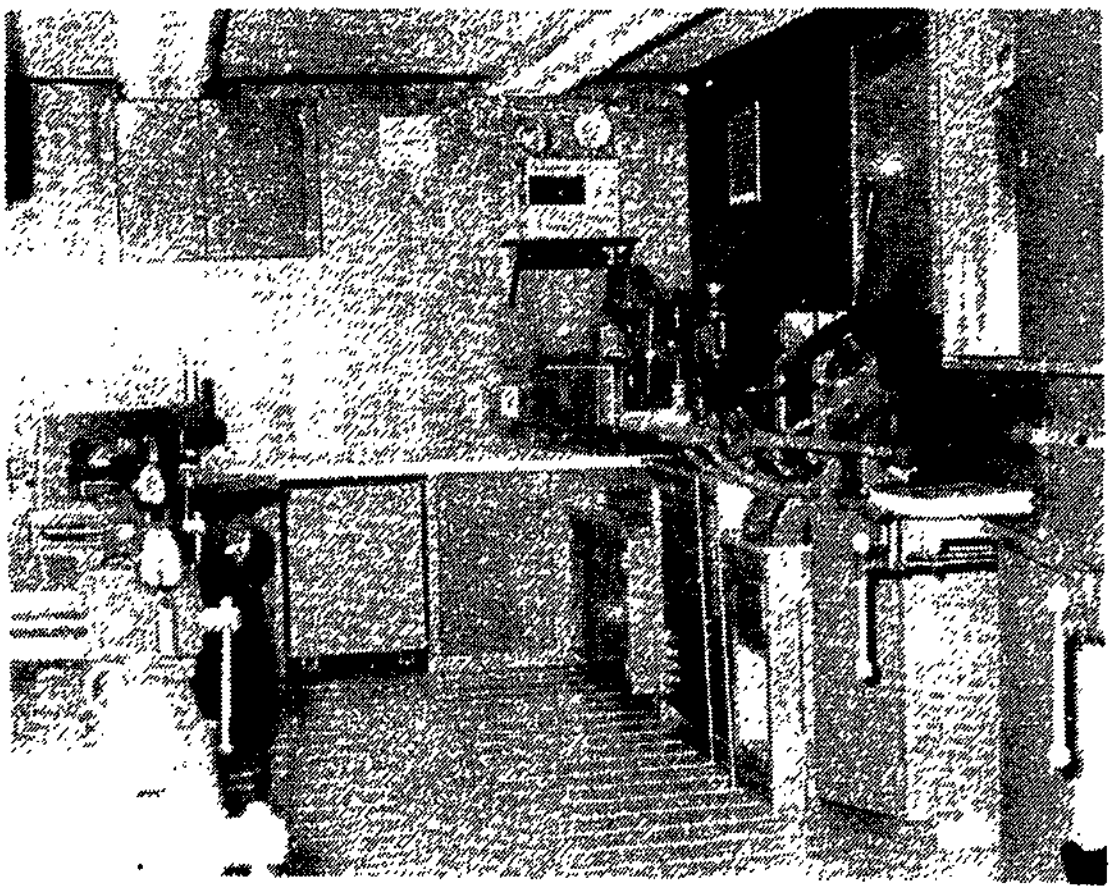
proper legal procedures for implementing the contract
insurance authorization, vehicle registration, wide-load traffic and parking authorizations
survey of community for garage, arrange for gasoline and oil, service and maintenance
arrange payroll routines after employing the trailer-truck driver, educational assistance and teacher
arrange for implementation in non-public schools
prepare for articulation with the schools and personnel to be served
provide pre-service and in-service teacher, assistant and driver training
provide curriculum materials, direction and supervision
prepare requisitions for materials, tools, supplies and equipment
prepare and implement evaluation procedures



Introducing the Mobile Learning Center to the Community are (left to right) Mr. Herbert Siegel, Director of Industrial Arts, Mr. Harry Krane, Supervisor of Industrial Arts and Component Developer, Dr. Max B. Meyers, District Superintendent and Mr. Rufus Preston, Vice Chairman of Local School Board of District 18.

Mr. Herbert Siegel, Director of Industrial Arts, discussing project ideas from the newly developed curriculum bulletin.

The front half of the Mobile Unit contains work benches, teacher demonstration unit, electricity-electronics panel and other relevant equipment.



The rear half of the Mobile Unit contains the power equipment, kiln, sink, graphic arts area and other essential equipment

Making Industrial Arts Relevant

In New York City

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PRESENTED AT THE A.V.A. CONVENTION
BOSTON, MASS.
December 7, 1969

-:-

Morning Session
9:00 a.m. - 11:30 a.m.

**

PROGRAM

Industrial Arts in New York City
Mr. Herbert Siegel, Director of Industrial Arts
New York City Schools

Innovative Industrial Arts Equipment
Mr. Eugene Haug, Supervisor of Industrial Arts
New York City Schools

GUIDELINES FOR THE SELECTION OF INNOVATIVE EQUIPMENT FOR USE IN THE INDUSTRIAL ARTS SHOPS IN NEW YORK CITY SCHOOLS

Eugene Haug, Supervisor of Industrial Arts

This report is written as an analysis of the accepted subject areas in industrial arts programs in New York City Schools for the purpose of identifying appropriate innovative equipment for use in the various shops. A brief description of the innovative phases of each subject area will be given followed by a list of those processes for which innovative equipment should be supplied.

While the philosophy and objectives of industrial arts remains the same, its tools, materials and equipment are constantly changing. This is as it should be since an important purpose of industrial arts is to reflect American industry which itself is advancing at a rapid pace. This report is not intended to replace the skills presently being taught successfully but to apply them in keeping with our changing technology.

WOODWORKING

Comment: Because of its availability and ease of fabrication, wood has been the most popular material in industrial arts. Much of the industrial arts curriculum subject matter stems from operations and processes in woodworking. These basic operations are still necessary but the change in emphasis should be toward their application through a machine process. The general acceptance of machine processes outside the school, a limitation of pupil time in the shop activity, requirements for increased project versatility and production and the need to provide success for students at all ability levels demands that immediate attention be given to the mechanization of hand woodworking skills.

Innovative Processes:

1. Power driven hand planes, saws, routers, drills and sanders.
2. Wood laminating
3. Speed fasteners
4. Electric hand glueing
5. Spray finishing
6. Electric wood polishing
7. Wood turning lathe duplicators

METALWORKING

Comment: Metal is the most obdurate material commonly used in industrial arts and the worker requires a greater variety of tools for its fabrication. The modern metal shop should provide faster and easier methods for shaping and fastening metal. It should offer as many metal working processes as found in industry within the safety requirements of the school shop.

Innovative Processes:

1. Spot Welding
2. Centrifugal casting
3. Combination lathe and milling machines
4. Rivet guns
5. Bending Jig
6. Electric Soldering
7. Metal Etching (dry point)

GRAPHIC ARTS

Comment: Current practices in business and industry require a rapid production and distribution of published material. The graphic arts has been influenced by this trend and is responsible to give students an insight into industrial publications procedures. The offset duplicator and its supportive equipment has become an integral part of graphic arts and has allowed the use of the electric typewriter as a faster method of producing the printed page than hand composition Improved methods of collating and binding have also been added.

Innovative Processes:

1. Offset duplication
2. Offset platemaking
3. Photographic headlining
4. Half tone photography
5. Photographic development equipment
6. Light table
7. Punch and binding units
8. Electric collators
9. Paper drilling
10. Paper jogging
11. Label printing
12. Folding and inserting
13. Electric stapling

ELECTRICITY

Comment: The electricity shop was the first to receive the impact of the tremendous changes caused by the widespread use of electricity and electronics in American industry. Lamp wiring and bell circuitry has given way to projects and exercises in electronics test equipment, radio television and telephon . The greatest challenge for the teacher is to provide electronics projects and activities within the sometimes limited understanding of immature pupils. To accomplish this the teacher needs operating electronics equipment, test equipment and prepared circuit boards to demonstrate principles.

Innovative Processes:

1. Individual work stations with test equipment
2. Short wave radio
3. Closed circuit television
4. Telephonics
5. Circuit demonstration boards

CERAMICS

Comment: The ceramics shop has the advantage of using clay which is inexpensive and easily formed by hand or machine. This makes ceramics suitable for the training of basic muscular movement in the very young or handicapped, for the encouragement of the creative and artistic in sculpture and pottery decoration and for the demonstration of involved industrial processes such as casting, moulding and extruding. In an innovative ceramics program the industrial phases of the subject should be emphasized. Equipment which simulates industrial processes will serve to reflect current practices outside the classroom and increase the productivity of the shop.

Innovative Processes:

1. Extruding
2. Jiggering
3. Turning
4. Production tunnel kiln firing
5. Casting and moulding

CRAFTS

Comment: The crafts shop is a multiple unit activity involving operations and processes carefully selected from the various established unit shop. It is not a "catch all" shop but one designed to meet the needs of a particular student group. A variety of tools and materials are used to teach basic skills, avocational activities and give instruction in projects correlated with academic areas of learning. This shop is applicable on any grade level and is particularly useful for providing muscular therapy for retarded and physically handicapped students. The innovative equipment for the crafts shop would include any of the equipment selected from the lists given for the unit shops plus the special equipment which might be needed to teach shopwork to handicapped students. Examples of these are:

1. Portable machinists vises
2. Engraving machines
3. Key making machines
4. Drafting tables for bedridden students
5. Variable height workbenches for students confined to wheelchairs

PLASTICS

Comment: Plastics is the most recent addition to the subject areas in industrial arts. It may be offered as a unit shop activity or as a part of the wood, metal or crafts shop. Plastics involves the use of the same operations and tools used for wood and metal and permits bending and forming methods not possible with these materials.

Innovative Processes:

1. Drape moulding
2. Extrusion moulding
3. Injection moulding
4. Pressure and vacuum forming
5. Rotational moulding
6. Plastics assembly methods
7. Metalwork machinery for plastic dies

MECHANICAL DRAFTING

Comment: As the field engineering and design grows, demand is placed on production drafting rather than on drawing detail and lettering skills. In the industrial arts the aim is to prepare the student for production methods as well as teaching engineering concepts. It follows that the innovative equipment for drafting would be selected to make accurate drawing faster and easier and illustrate the more abstract concepts in drafting.

Innovative Processes:

1. Overhead projection
2. Single concept film projection
3. Lettering guides
4. Copying machines
5. Exploded view charts
6. Electric erasers and pencil sharpeners

TRANSPORTATION

Comment: Transportation shop is offered on the high school level to teach those concepts and practices which will make the student an intelligent and safe operator of power equipment. This includes the ability to perform first line maintenance procedures on land and water machines. The innovative equipment useful for this shop is that which illustrates and tests automotive and power boat systems, teaches typical power troubles and shows safety methods.

Innovative Processes:

1. Safety test equipment
2. Driver response training
3. Automotive principles demonstration boards

MAKING INDUSTRIAL ARTS RELEVANT:
SOME EXEMPLARY JUNIOR HIGH SCHOOL PROGRAMS

TOPIC:
"Implementing Industrial Technology
In Grades 7-9 In Florida"

PRESENTED BY:

Marion A. Brown
Supervisor, Industrial Arts Education
Orange County, Florida

December 7, 1969
Boston Convention - AVA

Session Chairman
Leslie H. Cochran

IMPLEMENTING INDUSTRIAL TECHNOLOGY IN GRADES 7-9 IN FLORIDA

Man has been on earth for a period of time estimated somewhere between 600,000 and more than one million years. For more than 99% of this time, man lived in the Stone Age, so called because stone was the principal material used for making tools. Man's unique ability as a toolmaker and builder and his rational and creative nature enabled him to attain his position of dominance in the animal kingdom.

Early man was a food gatherer and necessarily nomadic. When he discovered agriculture and animal husbandry, he settled in one place. With a permanent habitat, families grew in size and clustered together to form communities and cities. Some men, not needed to produce food, were permitted to develop their talents in other directions. Thus, the metallurgist, potter, artist, medicine man, and the like appeared, and each developed techniques and skills by which he could produce goods or services.

As time evolved, civilized man created "education" as an institution to facilitate the transmission of his techniques and skills, or his culture, to his offspring.

It is generally agreed that education deals with the knowledge that has accumulated through the years. Education is more important today than it was yesterday, because of advanced knowledge. Education will be more important tomorrow than it is today because of the knowledge gained today.

This has been exemplified by learned people who state that knowledge can be "blocked." Any particular block of knowledge would fit into a period of time. If this block of knowledge with its period of time were compared to the previous block of knowledge, the time of the previous block would be the square of the present block period- In other words, knowledge is gaining at a pace equal to the square of that of the previous block of knowledge.

As the need for change within this educational institution becomes evident, changes are made, but slowly. A humanistic element was added to education a century or more ago to enable the child to adjust to his social environment. Around the turn of this century, developments in science led to the introduction of a scientific element in our schools which enables children to understand and adjust to their physical environment. Paralleling the scientific development has been the most remarkable industrial-technological development the world has seen. Schools, however, still fail to

reflect our industrial-technological heritage.

Knowledge can be subdivided into three areas - science, technology, and humanities. Science deals with what is found in nature; technology deals with the changes man makes in his material world; the humanities are concerned with the values of man. Science deals with what is; technology deals with what will be; and the humanities deal with what ought to be. Others will say: Science is; Technology uses; Humanities result.

The technologist is one who finds new ways of using the knowledge of science. We call these men inventors. Some have stumbled upon their inventions; others have spent long periods of time in methodical work, either individually or in groups, conceiving of something useful.

Manufacturing, a prime user of technology, is an institution commonly called "industry." Since industry plays such an important role in our lives, it has found a place in our educational program. For the past six decades, this phase of education has been called "industrial arts." In recent years the term "industrial technology" has been applied to a new form of industrial arts.

Some of the skills, methods and techniques used in the old industrial arts will continue to be used in the new, but new developments have made a new approach to a study of industry and its technology mandatory. Commissioner of Education John W. Gardner referred to the essence of this new approach in the November-December 1962 issue of THINK Magazine when he stated:

> "If we indoctrinate young people in an elaborate set of fixed beliefs, we are ensuring their early obsolescence. The alternative is to develop skills and habits of mind which will be the instruments of continuous change and growth on the part of the individual."

Industrial Arts is the school subject that purports to provide a study of industry and its technology. The fact that this subject has, in general, failed to accomplish its mission is no secret. Several large-scale research studies are today helping to focus industrial arts on its important role in education. While these studies are not complete, sufficient information and evidence exists that the nature and purpose of industrial arts in contemporary education may be identified.

Industrial Arts may be defined as the study of industry and its technology for purposes of general education. It deals with the origins and development of industry; the tools, materials, processes, products, opportunities, organization, and problems involved in converting the earth's natural resources into man's material welfare. It involves the student in creating, designing, experimenting, inventing, constructing, and operating with industrial tools, materials, processes, and products.

Industrial Arts serves the same general purposes of the school as do other subjects, but its unique purposes are:

1. To develop insights and understandings of industry and its technology in our culture.
2. To discover and develop the interests and capabilities of students in technical and industrial fields.
3. To develop the ability to use tools, materials, and processes to solve technical problems involving the applications of science, mathematics, and inventiveness.

Course content for industrial arts is obtained by analyzing the manufacturing, construction, communication, transportation, power, service, research, and management categories of American industry. This analysis, made in terms of the technical, occupational, consumer, cultural and social functions of industrial arts, reveals the body of knowledge, principles, concepts, and behavior that constitute this discipline. Some of the behavior elements revealed by this analysis may be identified as competencies or "saleable skills" required for a happy, useful and successful life in our technological culture. They may be represented as follows:

To develop the ability to:

analyze	compute	install	design
study	construct	cooperate	create
plan	interpret	depict	develop
judge	operate	assemble	schedule
describe	disassemble	shape	display
demonstrate	repair	adjust	define
organize	text	invent	procure
read	experiment	engineer	control

These behavior skills should be the outcomes of each and every phase of education. They are tangible, measurable competencies with perpetually marketable values. Research supports the fact that industrial arts is one of the better means for developing such competencies. Other subjects can, and should, develop these characteristics also.

The school program must provide a variety of course and subject offerings to meet the various needs, interests, and capacities of youth. Because ours is an industrial-technological culture, the school program must reflect this characteristic. Furthermore, and even more importantly, the industrial arts program in a school must definitely reflect this aspect of our time and heritage.

In Florida, industrial technology is seen as encompassing a body of knowledge that should be included in the general education of all boys and girls. At the junior high school level this may be provided in classrooms and laboratories designed for this purpose. It should introduce young people to this aspect of their cultural heritage and aid them in learning of their interests and capabilities in the technical and industrial fields.

The Orange County (Florida) program presents an interpretation of the above philosophy for grades 7, 8, and 9. It provides three courses of study designed to attain the unique objectives of this subject in each grade.

A one semester course in Communications is provided for the 7th grade. It introduces the student to the ways and means by which man has employed and developed technology to aid him in better communicating ideas and information. It places the traditional technical subjects of drafting, printing, photography, and electronics in a new context. Instead of attempting to develop skills in the technical areas, this course attempts to develop understanding of the changes man has introduced into his capacity for communication. Opportunities for experimenting, creating, inventing and the like, and for developing greater understanding are provided through a variety of student activities. These student activities include drawing, printing, rubber stamp, silk screen, photography, and electronics.

A second one semester course in Manufacturing is provided for the 8th grade. It introduces the student to the ways and means by which man obtains and changes the natural resources of the earth to produce his material welfare. It combines the traditional materials (wood, metal, etc.) oriented courses into an approach that helps the student understand how products are designed, engineered, produced, and marketed.

It makes no difference what the raw material is (wood, metal or plastics), there are certain operations that must be made in making something useful from the raw material. These operations are (1) subtraction, (2) shaping or forming, and (3) addition. After the useful item has been made, it must be sold, it must be packaged for shipment, and transported to the buyer. There must be some form of accounting to determine what the sale price will be. We live in a business society which is based on profits. There are

rewards and responsibilities for each and every phase of our manufacturing industry.

This approach is used in several school systems. Industry approves of this approach; they even finance an extracurricular activity called "Junior Achievement" which is similar to this program.

The third course of study is for a full year ninth grade study of Power Technology. Some may call this transportation, but transportation is only one user of power. The program we are proposing introduces the student to the ways and means by which man has harnessed energy to produce power to make his work easier and to move himself and the things he produces.

This "Power" course of study covers the sources of power, how it is stored, how it is measured, how it is controlled, how it is distributed through hydraulics, pneumatics (fluidatics), electricity, electronics, and combustion (internally and externally).

We live in an industrial society. There is room in an industrial society for everyone, and everyone has a place. It is left up to an individual to find his or her place in that industrial society. Through this program it is our desire to help boys and girls find their place in the society in which they live.

For a new program to be a success, it must be understood and/or accepted by the ones who will be using it. This program is one that follows measurable objectives stated in behavioral terms. This program is being implemented in Orange County, Florida. This program is workable. It is a program that follows the philosophy of the Florida State Department of Education, a program that sets an example for filling a void that has long needed to be filled, a program that will give boys and girls a variety of experiences similar to those used in our industrial-technical world, a program that will help boys and girls find themselves in the world of work, and a program that will show them there is a place in society for everyone and everyone is important in his place.

MAKING INDUSTRIAL ARTS RELEVANT:
SOME EXEMPLARY JUNIOR HIGH SCHOOL PROGRAMS

TOPIC:
"The Eighth Grade Line
A Creative Approach to Mass Production"

PRESENTED BY:

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Industrial Arts Department
Thomas W. Pyle Junior High School
Bethesda, Maryland

December 6, 1969
Boston Convention - AVA

Session Chairman
Leslie H. Cochran

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An Introduction to Industrial Arts in the Montoomery County Public School System

Industrial Arts is considered a significant part of general education. It provides students an opportunity to learn about the theoretical and practical elements of our society.

WHAT IS INDUSTRIAL ARTS?

Industrial Arts, as a curriculum area, is defined as those phases of general education which deals with industry, its organization materials, occupations, processes, and products--and with the problems resulting from the industrial and technological nature of our society.

WHAT IS THE SIGNIFICANCE OF INDUSTRIAL ARTS?

Industrial Arts is considered a significant part of general education that enables the student to get a working knowledge about the theoretical and practical aspects of industry and of our technological society. The students will study the following:

1. Mans technological achievements
2. Industrial organization and occupations
3. Industrial manufacturing processes
4. Social and economical problems

INDUSTRIAL ARTS IS MOVING AHEAD!

We, in Industrial Arts, are finding it necessary to move in the following direction:

FROM	TO
1. The group	The individual
2. Memory	Inquiry
3. Stimulus--response	Organized psychology
4.. Spiritless climate	Zest for learning
5. Repetition	Spiral reinforcement
6. Teaching is telling	Teaching as a creative art with a scientific basis

INDUSTRIAL ARTS DEVELOPS RESPONSIBLE CITIZENS

Our student-centered activities take advantage of the following:

1. the integration of mathematics, science, communications, and the social sciences into the Industrial Arts activities,
2. the maximum use of the community resources extending from the total school to the state, national and even international sources,
3. the use of a wider range of reading materials at all levels of difficulty and sophistication,
4. the extensive use of inquiry, problem solving and experimentation in the arriving at solutions and procedures to follow,

5. the effective and meaningful use of "role playing" as a technique for greater student involvement and direction by the student,
6. the extensive use of a broad range of student activities that go far beyond the making of objects; the contriving of activities and experiences that will permit a diversity of involvement, a greater display of talents, and a greater use of the individual's special abilities and; finally,
7. the development of experiences in keeping with the behavioral characteristics and developmental tasks of youth. [2]

THE PURPOSE OF INDUSTRIAL ARTS

1. To develop an understanding of industry, its organization, problems, products, processes and contributions.
2. To develop desirable social relationships and provide experiences consistent with the social needs of youth.
3. To develop a greater sophistication in the area of consumer knowledge and habits and understandings.
4. To provide experiences directed toward more effective vocational planning and pursuit on the part of the individual.
5. To provide experiences directed toward more effective avocational planning and pursuit on the part of the individual.
6. To develop an understanding of the nature and role of industry in the culture.
7. To provide exploratory experiences aimed at the personal, social and intellectual development of the individual.
8. To develop value patterns and appreciations consistent with the needs of a citizen in a highly industrialized democratic society.
9. To develop people capable of problem solving and self-reliance.
10. To develop the creative abilities of people.
11. To develop maipulative skills in the use of tools, equipment and materials of industry.
12. To provide for experiences in democratic living.

A Point of View

The material you have seen and the booklet you now hold represent the efforts of the Montgomery County Public School System, Thomas W. Pyle Junior High and the Industrial Arts Department at the University of Maryland in developing a program designed to make Industrial Arts a "Study of Industry and Technology for Contemporary Man." This is a junior high school program designed for the eighth grade student.

It was felt that a junior high school Industrial Arts program should be based upon the idea of a total program that develops students and not things. The activities should be developmental and should be related to what preceeds as well as what follows the Junior High School. [3]

But, more importantly, the educational processes involved must be directly related to what the individual is trying to accomplish during his eighth year of school. [4]

This represented an interesting challenge for the educators involved in developing a meaningful student-centered activity.

This challenge has been met. The displays of student work is tangible evidence that Industrial Arts is expanding and that it is a meaningful part of general education.

The Scope of the Line Production Method

The Line Production Unit is an eight week experience at the eighth-grade level and is designed to acquaint students with a study of contemporary industry.

The Line Production Method permits the student to study the ways in which contemporary industry organizes men, materials and machines into a common endeavor.

It also involves the study of the occupations related to the areas of management and labor within industry.

The Unit also permits a study of the methods in which machines and materials are used by industry in the preparation and production of commodities in large quantities as typified by the mass production industries.

Within the scope of the Unit, the program makes use of the following concepts in developing knowledgeable students:

1. The organization of industry
2. Productivity
3. Occupational opportunities
4. Mechanization
5. Automation and cybernetics
6. Labor-management relations
7. The financial structure of industry
8. The changing role of the individual in industry

The Organization of the Line Production Unit

If we view Industrial Arts as an intellectual and manipulative discipline that will prepare youth for a material culture dominated by technology, it seems obvious that they must understand their material heritage and the inventiveness that exists in American industry today. Since Industrial Arts has as its purpose the interpretation of industry, it is important that the processes of industry be studied. Mass production as a means of producing goods and services through a unique arrangement of people, materials and machines, is a basic process and a basic element of our modern industrial society.

One educational experience involved in the Line Production Unit entails the formation of a company, with each member of the class selecting a role representative of management (Production Engineer, Design Engineer, Safety Engineer, Quality Control Manager, etc.). The function of management is to study, design, propose and direct the manufacture of a quality product.

> The role-playing involvement is a major factor in the Line Production Unit. It provides for a wider interpretation of the organization, procedures, problems and contributions of industry. This role-playing activity enlarges the realm of student participation in keeping with his interests, aspirations, and capabilities. It also establishes the setting for the exercize of authority, responsibility, and leadership on the part of the student. The social interaction and peer culture relationships make this personnel organization an invaluable component of the total process. 6

After the company has been formed, the selection of the project must be made in lieu of certain limitations. Some of them being 1) does the project have a useful purpose, 2) can it be made with standard equipment and tools, 3) does it lend itself to mass production methods; and, 4) are the students interested in the project.

Following the selection of a product from the designs and sketches of several different product possibilities, a prototype or model is constructed. This is submitted to the group for further analysis of its design and construction.

After the product has been broken down and analyzed into various operations, the significance of jigs and fixtures, and other holding devices can be introduced as aids to production. Other factors such as production casts, proposed selling prices, and profits can also be examined during this phase.

Further, steps in the production cycle would involve the breakdown of various production jobs, the flow of materials during parts manufacture, assembly line routing and flow, finishing, inspecting, packaging, distribution and selling. During the actual phase of production, students step out of the role of "management" and assume the role of "worker" on the assembly line. This provides for the students direct social and technical experience as they learn to work together with tools, materials and machines in manufacturing a quality product.

> It must be understood that this is a student-centered and student-level activity. The items that are produced are the result of student ingenuity, planning, construction, problem solving, social interaction and the application of resourcefulness on the part of the class and not that of the teacher.
>
> The teacher assumes the role of a counsellor and guide and takes the responsibility of setting up the Unit as an experiential opportunity involving organization, economics, planning, designing, public relations, tooling-up, quality control, tool and machine use, safety, craftsmanship and labor relations. The steps indicated in the production cycle are definitely not a case where the teacher does the planning, jig making and problem solving. This is a student-enterprise with the success of the Unit dependent upon their ingenuity and resourcefulness in organization and problem solving and their manipulative skills in carrying out their assigned duties. 7

Following production, another educationally-rewarding phase of the program results when students express their learning experiences in discussion groups. This is where the engineer's concluding report on production efficiency, the production foreman's report on human relations problems, packaging and shipping, and the business manager's report on the production costs, sales, investments and profits are made to the class.

Behavioral Outcomes

The experiences utilized in this Unit have specific behavioral outcomes. The activities in the Line Production Unit enable the student to:

1. Describe the evaluation of industry from crafts to line production.
2. Describe the importance of interchangeable parts, assembly line, flow of materials, and specialization.
3. Identify common items that have been line produced.
4. Design a product for possible production.
5. Present his design to the class for critical evaluation.
6. Discuss the scope of industrial positions.
7. Work as a committee member.
8. Play the role of an executive in an industrial organization.
9. Play the role of a laborer on a line.
10. Construct a pilot model of a product.
11. Analyze the product regarding design, function and consumer appeal.
12. Identify the importance of jigs and fixtures.
13. Construct and design jigs and fixtures.
14. Describe the function of the financial, manufacturing and merchandising divisions of an organization.
15. Analyze the pilot run to determine "battlenecks" and "bugs."
16. Visualize the significance of quality and accurate work.
17. Work from a common plan to produce identical products.

An Overview

The new ideas and concepts brought forth and their relevance is best summed up by Dr. Maley, Professor and Head of the Industrial Arts Department at the University of Maryland. Dr. Maley said:

"It is of vital importance that the teacher be a "manager of education" and not just a dispenser of facts. The teacher's role should center around those actions that promote maximum student growth and development through stimulation, guidance, evaluation and facilitation.

The development of the "art of learning to learn," of resourcefulness, problem solving, and self-dependency should be encouraged. The process by which one gets his answers remains a matter of central focus. And even more fundamental than its acceptance of plaudits, the program has focused on an "experiential laboratory for people" concept. It has emphasized the individual's role as well as his differences in his engagement in the learning process. It has put the process of self-education ahead of teaching-as-telling to the extent that the process whereby the answer is obtained is more important than the answer that is achieved. It is based upon a concept of education through inquiry rather than the memorization of isolated facts." [8]

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"A NEW INDUSTRIAL ARTS - INDIVIDUALIZING INSTRUCTION"*

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With the amount of scientific and technical information doubling every thirteen to fifteen years, the world we live in is becoming increasingly complex. This rapidly expanding knowledge is causing a demand for new skills and for skilled persons and persons skilled in new ways.

With the demands of today's world of work are changing, there is a declining need for blue - collar workers (the tradesmen and manually skilled) and a resulting increase in the number of white - collar workers. Our early industrial system needed only a small number of people with advanced technical skills. Most colleges and universities prepared their students for the learned professions - medicine, law, church, veterinary, etc. The society functioned with few skilled and professional men and a wide base of unskilled workers. (3, P. 238)

Today, modern technology has opened the way for, and demanded, a massive shift from workers who are unskilled or possess only limited skills. The white - collar worker is in great demand with a lesser need for the scientist, the engineer, and the planner.

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*Presentation made at the American Vocational Association Convention in Boston, Massachusetts on December 7, 1969.

There is also a continually decreasing need for those persons qualified only for muscular and repetitive tasks who are readily replaced by machines.

This rapidly changing world is causing a changing and generally increasing educational and training prerequisite for getting and holding on to a job. Education is rapidly becoming the process which helps the individual understand the inevitable changes which are going to occur during his lifetime. He must be able to relate what he has been taught and what he is called upon by his environment to do. More and more, formal education, and particularly the high school, will take on the job of imparting, not necessarily vocationally specific knowledge, but, for large segments of our population, basic training in basic processes and industrial concepts which form the foundation upon which future growth and adaptation to change will be built. (10, P. 22)

Using the above rationalle, many writers today are discussing the impact of our technological society on education. One of these, Daniel S. Parkinson of Miami University in Ohio, in discussing changes taking place in the American Society, listed four which have particular relevance for the classroom teacher: (1) increasing urbanization, (2) increasing complexity of the job market, (3) increasing standardization and impersonalization of large parts of life and (4) increasing number of children with whom the school achieve only a very limited degree of success. (8, P. 21) The last three of these have particular importance to this discussion.

The increase in the complexity of the job market and the increasing standardization and impersonalization of life are tied very closely to the rapid increase in the total quantity of knowledge available to be taught and learned. The increase in quantity alone that high school students will need to know may be expected to continue indefinitely. This is a long term change with those things thought most important today very possibly being placed in a subordinate position in the near future.

With this in mind, it seems logical that high school students not master only specific bodies of knowledge and skills but, rather, develop the flexibility of mind and personality which will allow them to function in a changing society.

In answer to these, and many more related characteristics of our contemporary society several movements are appearing which seem very important for high school industrial arts. The basis for one of these is the realization of each student as an individual - a person different from all others; with different motives, drives, interests, and aptitudes; and most important, though often overlooked, a different learning style.

This leads me to the inderlying theme of my presentation and the drive behind the industrial arts program in the Warrensville Heights High School, - that of teaching each student as an individual or, if you will, individualizing instruction. It is through an educational program that recognizes individual student differences and gears learning to these differences that the high school will become more relevant. Our students want to be allowed to "do their thing". Though it often seems otherwise, they also want an education-but they want an education that is relevant and meaningful.

Our schools attempt to produce free, reasoning persons capable of making reasonable decisions, who understand their cultural heritage, and who are able to live compassionately with their fellow man. But our society, and the schools which perpetuate it, chastize those students who, through reasoning, disagree with long held tenets; of practices. (6, P. 23)

Let me hasten to assure you that I am not advocating a laissez faire type of program as I am obviously not advocating an autocratic organization. I am saying that what is needed is the establishment of a democratic atmosphere in the classroom, with mutual planning and sharing, with direction instead of force; but never so permissive as to give students more freedom than they can handle.

Industrial Arts, with its unique techniques, when conceived as an integral part of comprehensive education rather than as an end in itself, can function very well in matching and meeting individual learning styles. When students are being taught more as individuals amd less as a mass of people (all alike) many of the traditional education methods must be challenged and possibly revised or even discarded. To hang on to these "sacred cows" is to kill off individualization.

Trump has noted five changes that are essential to individualize pupil learning: "independent study (what the pupils do when the teacher stops talking); provisions for continuous progress (encouraging each student to progress at his own ability level); fostering interpersonal relationships, small group discussions among students; evaluating each student on his own merits or, individualized evaluation; and providing for each student to relate to a teacher that is good for him." (9, P. 2)

This brings us to the point where we must "put our money where our mouth is." It is good to put forth these ideas and say how good they are, but they must be put into practice before students can benefit from them. The comments that follow will serve two purposes; to point out several procedures that can be implemented to individualize instruction and to point out how these are being attempted in the industrial arts program at Warrensville Heights. I will use illustrations from our programs as I discuss the procedures, and indicate, as best as I can as a non - objective insider, some degree of success as I see it now.

Textbooks as a singular source of information and structuring agent for student study are no longer valid. Books are still important but they now become resource material. Instead of a copy of a book for each student we have many books giving a broad review of a given field. In some cases multiple copies of a book are used, but only when the book is used heavily by the students. These books now become a part of a large data bank which also contains a collection of technical periodicals, and audiovisual materials for student use including slides, filmstrips, and single concept loop films. Also included under this data bank concept are persons from the community, teachers in the school and, actually, the industrial arts teacher(s). Programmed learning materials find their place here as the need increases for a wide diversity of materials that can be used by one person to satisfy a personal need.

To date we have not been able to implement this in its entirely. To get maximum use from our resource area we feel that adult supervision and guidance is needed to help students use the materials most effectively.

This may come about soon as we explore the possibility of using paraprofessionals in roles such as this.

It is obvious that the role of the teacher in an individualized learning situation, will be different from that which we now practice. The teacher is more of a resource person and guide to student effort than a regurgitator of previously learned facts.

The traditional tradesman or jack-of-all trades, industrial arts teacher now becomes a generalist, more scientist and technologically competent resource person than craftsman. The teacher, man or woman, must allow students to learn in their individual learning styles; possibly failing, but learning more in the process. The students must be given the opportunity to work on their own. Only in this way will they have a chance to achieve at their own rate of development. Only in this way can the teacher encourage and promote the value of individual differences, and develop in each student a sense of responsibility for his own learning.

This brings with it the need for a different role for the educator. First, the mechanics and daily routine of machine operation, maintenance, and numerous related chores that we must perform every day in the industrial arts labs can be partially assumed by a person trained specifically for the job. This technician, as I choose to call him, works in a complementary role with the teacher. The teacher is released to work closely with individual students as they attempt to solve their problems. The interpersonal relationship developed here are very valuable to student growth. Individualized guidance and evaluation now become possible and students can begin to relate to a teacher that is good for them.

As mentioned above, we are just now looking at the paraprofessional as the technician working with the educator. We are attempting to build in as many personal teacher - student relationships as possible through conferences and one-to-one sessions where goals, ambitions, accomplishments, evalution, etc. are discussed. With only limited trial of this and without the paraprofessional, we feel that student attitudes are improving. We are also gathering a lot of data about the needs, desires, and concerns of students which will have a definite affect on our future program.

Our students are being encouraged to work in the Industrial Arts areas of their choice and to do work that interests them, which is consistent with our desire to individualize instruction. In our labs is found a wide diversity of work in progress, with it quite possible that no tow students are working on the same probelm. When you have sixteen individuals, each working on a personal problem, it is very unlikely that many would be interested in the same thing or that many would be progressing at the same rate.

In line with this we have eliminated the organization of classes by grade or skill level. Our tenth, eleventh, and twelth graders are in the same classes; which means that the classes include students with varying degrees of background all working together. It would seem that we have a very uncontrolled and disorganized situation, and I am sure that in many cases there is apparent chaos. But, when you consider the goal of individualized instruction it doesn't matter who is in the class if you are treating each student as an individual.

Control is accomplished through student organization with the students responsible for the orderly operation of the class under the guidance of the teacher who is still the adult, guiding influence in the class.

Students need to be involved in and to assume a responsibility for their own learning experiences. Active student participation is necessary for quality education. This student involvement creates an atmosphere of meaningful personal experiences which make their education relevant and realistic. They need to make learning work for themselves. They also must have a need to think for themselves.

An example can be found in our Visual Communications lab whcih houses a complete offset printing facility and three darkrooms for various photographic operations including process photography to the offset printing. Classes here include the three grade levels, both boys and girls. Interest varies, with students persently working in black and white and color photography, scree process, and offset printing.

Instead of the more traditional step-by-step sequential study of the various phases of offset printing, the students were allowed to break up into groups, or work individually. They selected a probelm and began toward its completion. These problems were students developed, with students values paramount and, therefore, carried a high degree of student involvement. Once the student selected his problem, approaches to its solution were outlined, and he began working. Several groups chose to make questionnaire studies and print the results for distribution to their humanities classes. These covered topics including the Vietnam War, the Moratorium, student use of drugs and alcoholic beverages.

One girl is printing a booklet explaining gymnastics, using her own illustrations and descriptions of various exercises. Several students are interested only in photography and their work includes experimental photography, copying methods, photo essays, and color photography.

In general, no specific instruction is given until a student or group of students has need for it. This contributes to a climate of relevance with students engaged in activities that are realistic and meaningful to them. This same general procedure is being used in all classes in the department in varying degrees.

Another concern in our department, and school system, is implementing as much interdepartmental work as possible. In industrial arts we are working very closely with the art and humanities departments. The science department also has many possibilities for interdepartmental work but little has been done in the area at this time. The previously mentioned work being done in our visual communications area is an example of interdepartmental work with humanities. The students who were interested in the current controversy concerning the Vietnam War worked with their humanities teacher in the writing of historical material on the war and then printed this into a booklet for distribution to their class. This resulted in a printing job that had some meaning and relevance to the student.

Our work with the art department includes the sharing of teachers, joint sponsorship of exhibits of student work and writing and publication of a student book of original writing, art work, and photo essays. In the Spring of 1968, humanities, art, and industrial arts jointly sponsored a Spring Arts Festival where artists of all kinds were brought into the school over a period of several weeks. Included was a sculptor who worked in cast bronze.

He used the lost pattern process using a styrofoam pattern and made a bronze casting from it in our foundry area.

We are also concerned with inra-departmental work by students where they are encouraged to work in several of the industrial arts labs and with different teachers. Examples of this can be found in the drafting room where, any industrial arts students can go to do any drafting and design work relating to the problem they are exploring. Students who are interested in making printed circuits for electronics spend some time in the darkrooms in the visual communications lab. Students working in welding spend time in the research and development lab studing and testing their welds on the universal tester and the metallurgical microscope.

The term "A New Industrial Arts" as used in the title of this presentation is one that was adopted several years ago from the writings of Delmar Olson. Its use has caused many questions as to whether we really had a new industrial arts or not. The answer to this lies partly in the questioner. For the person whose teaching is similar to some of the procedures I have described, there is possibly nothing new. For the teacher who relies heavily on the core projects, or whose concern is the production of a better pump lamp, the industrial arts just described is new.

Industrial Arts in the role of interpreter of technology is new. (7, P. 1) The means by which it achieves its role includes certain carry-overs from the past and adds to this the methodology which frees the student to think and express ideas the like of which are not at all customary.

The curriculum has undergone an expansion and extension with major loosening-up so that the student himself can actually design his own experiences, and in that sense, students design the curriculum details within the master plan of the program.

The phase of the curriculum in which the study of man and technology with its social, economic, political, cultural, and educational impact on him is by no means traditional. The interdisciplinary approach mentioned here promises to reveal dimensions of industrial arts not before recognized.

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ASSIGNED TOPIC: MAKING INDUSTRIAL ARTS RELEVANT: AN EXEMPLARY SENIOR HIGH PROGRAM[1]

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Instructor

Evanston Township High School
Evanston, Illinois

[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

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Assigned Topic: "Making Industrial Arts Relevant: Some Exemplary Programs - Senior High Programs"

Introduction

We have been asked to describe to you a program for freshmen at Evanston Township High School which we call Functions of Industry. I will tell you about how we got started in this program and about how we have changed organizational procedures as we have found better ways of doing things. Allen Gableson, a teacher in the program, will tell you in more detail about the daily workings of the current program. We will show you a brief slide presentation and conclude with a discussion about problems which we have faced and what we have done about them.

E.T.H.S. Organizational Structure

Evanston Township High School currently has an enrollment of around 5,500 and should peak out about 6,000 in a couple of years. We have four separate schools on the same campus, each with its own administration and with its own teaching staffs in English, Science, Social Studies, Mathematics, and Foreign Language. All other departments, including Industrial Arts, are singular and serve all four schools.

This transparancy shows a model of our campus as it looks after the completion of a recent building program which involved extensive remodeling and new construction. (Identify buildings).

In the Industrial Arts Department we have unit facilities for Graphic Arts, Power Mechanics, Woods, Metals, Electricity-Electronics, and a Multi-Purpose facility for the Functions of Industry program. We also have three Technical

Drawing rooms and rooms for our Work Experience classes.

Freshman Exploratory Course

For many years incoming freshmen at E.T.H.S. have been required to choose one of five survey courses. These were, and are, offered by the departments of Fine Arts, Speech Arts, Music, Home Economics, and Industrial Arts. Until 1965 the freshman survey course offered in Industrial Arts consisted of rotation through the areas of Woods, Metals, Graphic Arts, Electricity-Electronics, Power, and Drawing. Students in Drawing made plans for wood and metal projects which they subsequently constructed in other areas, but otherwise there was little correlation between the areas.

In 1964 department members began making plans for an impending building program. It was decided to plan first for curriculum revision and secondly for building additions and renovations, on the assumption that facility form should follow curriculum function.

One phase of the curriculum revision had to do with revamping the freshman exploratory course. Dr. Jacob Stern from the U. of Illinois worked with us as a curriculum consultant and met with department members for a few times in the spring of 1965. Some basic premises were agreed upon. Industry was defined as that social institution which provides goods and services that man needs; it was divided into the major activity areas of goods-producing and goods-servicing. The goods-producing industries were divided into a number of closely related functions. By studying the selected functions of industry and by exploring their interrelatedness, it was hoped that students would be able to see the unity and wholeness of modern industry.

Functions of Industry - 1965--1968

These premises were used to initiate an experimental program in the 1965

summer school involving four teachers and ninety incoming freshman boys. A contract to mass-produce over 200 trophies for the regular-year boy's intramural athletic program was the basis for the first summer's work. From its inception the program has continued through five summer school sessions and we are currently in the fifth regular-school year. Changes and refinements have taken place as experience has been gained and innovations have been made.

(Transparancy) Up through the 1967-1968 school year students were rotated in the first semester through the six previously-mentioned unit areas, plus one added area, with exposure to tools, processes, and materials as they pertained to the goods-producing functions of industry. The seventh teacher added to the rotation sequence had the responsibility of dealing with the functions of research and development and management, and of providing continuity for the program.

(Transparancy) In the second semester students chose the area in which they wanted to specialize, they organized a manufacturing company, which they decided to call General Engineering and Manufacturing Company, or G.E.M. Company, and they mass-produced saleable products. Product manufacture was carried out largely in the woods and metals areas, where students had experiences with jig and fixture design, production planning, time and motion study, and quality control. Drawing and Graphic Arts were combined organizationally to carry out graphic communications functions, with the responsibility for the design and development of the products to be manufactured, for the editing and printing of a company newsletter, for the printing of such company devices as inspection tags, job application forms, and letterheads, and for designing and making the packaging unit for the manufactured product. Electricity-electronics and power mechanics were combined into a power technology area, where students did such things as design and construct a mechanized conveyor for the final

assembly line and devise a photo-electric cell parts counter for production line tabulation.

Current Program

During the 1968-1969 school year we made some major changes. The course was taught by a three-man team, two members of which were new to our school, in a new multi-purpose facility which was specifically planned for the program. Coordination of seven teachers in seven separate areas, with each teacher devoting 1/3 of his scheduled class time to this program, had been very difficult, and it was thought that the three-man team approach would be easier to coordinate. Because of growing student enrollments, however, it was also necessary at this time to assign five of the seven teachers to full teaching loads in unit facilities in their areas of specialization.

Equipment for the multi-purpose facility was selected for qualities of flexibility and mobility so that it is possible to set up flexible production and assembly lines in order to simulate specific functions fo industry. Almost all activity functions take place in this area in groups of 24 or less. Once a week each student also meets in a large group of 72 or less students.

Allen Gableson now will explain in more detail about this present arrangement. Al did his student teaching with us while enrolled at the U. of Illinois during the 1967-1968 school year. Part of his student teaching assignment was in the Functions of Industry program. He has been a member of the three-man team for the past two years and has shown the kind of leadership and innovativeness which are the essential factors needed to move a program of this type.

The freshman Functions of Industry course presently consists of three meetings per week in which the student is given a lecture, and has two laboratory sessions. This year there are approximately 300 students enrolled in the program. These students are divided into twelve small sections for lab activities. Each of the lecture or large group sessions consists of three of these smaller groups. All of the large group sessions fall on one day. The two remaining sessions will be used for lab activity or classroom discussion. (Show Schedule)

Due to modular scheduling, as seen on this transparency, students do not always meet at the same time during the week. (Discuss student schedules)

Team teaching approach

The team teaching approach is used for this program. By having each of the instructors involved with all of the large group sessions we are able to use each of the instructors effectively and in his stronger area. One of our main objectives for this course is to enhance the student's understanding of functions of industry and technology through his participation in a simulated manufacturing environment.

Material presented in large group meetings is aimed toward providing the student with information about the functions of industry. The filmstrip series called "Industry in 20th Century America," dealing with such topics as Production Engineering, Quality Control, Plant Engineering, Manufacturing and Industrial Engineering has been helpful in presenting this information.

The Product and Student Involvement

Let me explain how the product is used in this type of program. This transparency shows the first product we have manufactured during the school

year. Students are able through previously developed machine jigs and fixtures to produce a product without really understanding why or how these tasks are used in relation to the total product. As we progress through the year, the students are given additional information thus enabling them to begin to understand what part each of their tasks play in the manufacturing of the finished product.

There is a basic philosophical difference between our program and a traditional project-oriented program. We introduce tools, processes, and materials only as they pertain to the function being dealt with at a given time.

Let's take a look at this desk caddy for example. (Show overhead with initial film) Shown here is a product constructed of wood, metal, and including graphic arts. On either side of the sketch are the different design, construction, set-up, and marketing activities that are involved in its production. Suppose this product was to be used as the first product of the year. Shown here are those activities that might be done by the students. As you can see, this involved basically manipulative tasks. As the year progresses, the student has been introduced to some of the materials available and some of the processes of manufacturing and has had some instruction in the area of marketing. Using the same example, we can now see how it may be used as the second product that the students manufacture. (Show second overlay) The student involvement has now increased to include areas such as determining the materials to be used and some of the machine set-ups needed to process these materials. If this desk caddy was to be used as a final product of the year, our aim would be total student involvement from the initial planning of the product through its completion. Hopefully the instructor will be used merely as a resource person.

Large Group Activities

One purpose of the large group session is to introduce new concepts. By discussing the available methods; of fastening or cutting for example, we allow the student to look into the many design possibilities open to him in planning the product.

After the students have been exposed to many of the different concepts and organizational components of the manufacture, they form a company for the production of one of the products. The students elect a board of directors and are split into the various departments of the organization. This activity takes place during the large group sessions while in the small groups all of the students are involved with manufacturing.

Nearing the end of the year, the class designs and develops a product that will be manufactured by next year's students. An example of this might be a trophy which is produced annually for the boys intramural program. By having the students design and develop this trophy in the preceding year, we are able to fulfill our product commitment early in the following school year.

Slide Presentation

At this time I would like to show you a slide presentation we have prepared which should tie together many of the things we have been discussing. In it you will see the desk caddy, the trophy and some of the other products we have manufactured. After viewing this short presentation, Mr. Clanton and I would like to share with you some of the ways that we have solved the kinds of problems that are not typical of a traditional program.

(Show slide presentation)

Problems Encountered

All of you have had the experience of listening to presentations of this type where the impression is given that everything is operating with the utmost efficiency and that all problems have been solved. Our presentation perhaps has sounded that way. We would be dishonest if we left that impression with you. It might be helpful if we discussed some of the problems which we have faced and how we have attempted to resolve some of them. I have been associated with the program since its inception but I have never been a participating teacher. These problems, therefore, are primarily from the viewpoint of a department supervisor.

Shortage of Relevant Software

First, the books, audio-visual materials and other forms of software which are needed for a different approach of this type are not available in a conveniently accessible form. It has been necessary for our teachers to develop almost all of their own materials, which in itself can be a most difficult problem. We are fortunate in our school in having an administration which strongly encourages curricular innovations and has been willing to pay for same. Last summer, for example, Allen Gableson and another member of his team were reimbursed to develop materials for the course. This was money well spent. We still have a long way to go in the development of such materials, however.

Static Teacher Training Programs

A second factor is the lack of in-depth experience with the newer kinds of Industrial Arts programs at the teacher training level. The vast majority of the current college Industrial Arts graduates are coming out with the same kinds of experiences which I received at the undergraduate level too many years ago. Some teacher training institutions do not even expose their students to the existence of the current collegiate-level programs which are aimed toward real innovative curriculum revision.

Until colleges make major changes on a widespread scale we will continue to build sameness, into secondary school programs. Teachers will continue to teach as they have been taught. We are beginning to see some colleges making fine contributions, and the evidence would indicate that this movement will continue to expand rapidly.

Personnel Problems

A third factor has to do with participating teachers.

A program of the type which we have been describing will be medicore or successful in direct proportion to the enthusiasm and innovativeness of the teachers involved. We have had nine teachers in our program since it was started in 1965, with only one of the present three-man team being in the original group. As previously stated, five of the nine who have been involved are still in our department and a sixth has been promoted to an administrave position in our school. The attidude of these people has varied from conditional acceptance with limited enthusiasm to total acceptance with high enthusiasm. With our present team approach, as with all team-teaching efforts, success is dependent upon maximum utilization of the strengths of each team member and to the ability of members to work together toward a common goal. We are making progress in that respect.

An integral part in the coordination of individual teacher efforts is the weekly time when the team meets to plan ahead. The meeting time is computer-scheduled into each teacher's program along with all other aspects of flexible modular scheduling.

Innovative programs must have a nucleus of innovative personnel. The dilemma which we have faced, a dilemma which surely is common to all good programs in education, has to do with the retention of the teacher-leaders

who make new programs run. It is a fact of life that such leaders are ambitious and are motivated toward internal promotions or toward better paying positions with more responsibility. The void left with such a promotion is one which becomes increasingly hard to fill as Industrial Arts teachers become more scarce.

Summary

From the viewpoint of a department supervisor, the kinds of problems which we have discussed are sufficient to make one think twice before becoming involved in anything which deviates very far from the traditional. It is much easier to maintain the status-quo. Hard to avoid, however, is the fact that the changing technology has had a tremendous impact upon modern industry. If industry really is that social institution which deals with products and services, if the primary objective of Industrial Arts is to teach about industry, then the traditional Industrial Arts program which perpetuates age-old patterns has not kept pace. We do not claim to have the answer or even an answer. We do, however, think that we are making an effort and that we are moving in a right direction, and that these are essential steps for progress.

Mr. Gableson will tell you briefly about some of the problems which he has faced and will make some concluding remarks.

"Tell it like it is" seems to be the theme of most groups and presons having something to say these days, so keeping up with the times, I would like to share with you some of the things that we found as problems in working with our present program.

Coordination of Lab Activities

One problem is the coordination of activities in the lab. When the classes are split up into companies for the manufacturing of the selected product, it is imperative to keep each classes' production separate. If each class is producing a certain number of units, do you share the same jigs and fixtures, or does each class take care of its own equipment? Should each class be responsible for creating its own production schedule, or should the classes merely manufacture predetermined numbers of the product? These are a few of the questions we are still trying to answer. Some of the solutions make the teaching job easier for the instructor, however limit the scope of the student's involvement within the activities of the class. We are thinking of possibly having each of the companies manufacturing separate products entirely but problems in the area of storage and jigs and fixtures would surely arise.

Overproduction

When the program was taught by seven teachers in unit facilities and most of the manufacturing took place in the woods and metals areas, it was merely able to produce the amount of products needed for the production run. Currently, with all students involved in production, our manufacturing capabilities have multiplied so that presently with 12 small group sections meeting twice a week an efficiently planned product can be turned out in great numbers unless there are some definite restrictions placed on the numbers produced by each class. An example could be a base for the trophy.

One student on the circular saw can cut approximately 35 bases in one hour. The twelve sections have the potential for producing 420 bases. This product calls for approximately 250 units. As you can see, circular saw operations are less than an hour per class if each class is to work on this machine. Unless the product can be used for a high production run, many of the students will not be involved in activities relating to the production.

Summary

What we have tried to do this morning is to present our program in such a manner that you might be able to see how it was formed as a series of unit shops involving seven teachers through its present state by having three teachers working as a team and using the same lab for all of the classes. We have tried to give you some of our philosophy as to how such a program might and could function as well as giving you a realistic view of some of the problems that might be encountered when trying to establish such a program on your own.

MAKING INDUSTRIAL ARTS RELEVANT:
SOME EXEMPLARY JUNIOR HIGH SCHOOL PROGRAMS

TOPIC:
The Industrial Arts Curriculum Project (IACP)

PRESENTED BY:

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Session Chairman
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The Industrial Arts Curriculum Project

The Industrial Arts Curriculum Project (IACP) is a joint venture of The Ohio State University and The University of Illinois to develop an industrial arts program for junior high schools. This program is financed by the U.S. Office of Education and supported by both labor and industrial organizations.

The IACP staff spent about 18 months doing intensive research and meeting with leaders from education, business, labor, and industry to formulate a rationale for the study of industry. One of the first tasks was to define industry and industrial arts. A working definition of industry was found to be "that subcategory of the economic institution that changes the form of materials in response to man's wants for goods!" [1] It logically follows, then, that "industrial arts is an organized study of the knowledge of techniques used in construction and manufacturing or industry." [2]

These two broad catagories of construction and manufacturing are the only ways in which man changes the form of our raw materials and adds value to these materials. A study of the man-made world will do for the students what science does with the natural world.

If we look at the traditional industrial arts courses of metalworking, woodworking, drafting, printing and etc., we discover that we are teaching various craft trades which were very appropriate a few decades ago. However, the study of these craft-orientated trades is very limited in providing youth with a chance to gain insight into the man-made world or industry.

During this first 18 months, a complete rationale was written for the study of industry. If we examine this rationale we will find that the staff among other things:[3] (Show slides on rationale)

1. Examined the "Present Trends in Industrial Arts"
2. Studied the "Basic Social Institutions"
3. Explored the "Elements of the Economic Institutions"
4. Produced a "Material Production Continuum"
5. Developed the "First Order Matrix of Industrial Technology"
6. Then broke this down to "Second Order Matrix of Industrial Technology"
   a. "Affecting humans"
   b. "Affecting materials"
7. These elements were further broken down into "Third Order Matrixes"

Based on this Rationale a two-year sequence of study was developed for the study of industry. The first-year course is entitled, "The World

of Construction," in which the students study the managed-personnel-production system of how any type of structure is produced on a site. These structures include roads, bridges, dams, tunnels, houses, sky scrapers, and etc.

In the second-year course, "The World of Manufacturing," the students study the managed-personnel-production system which produces products manufactured in a plant. Thus, in the two-year sequence, the students will study how man changes the form of and adds value to our raw materials.

To study the concepts of these two broad areas, it was necessary to prepare specially designed textbooks, laboratory manuals, and teachers' guides. The materials for the textbooks were written by experts in the various fields and then grade leveled by editors and junior high school teachers. The students use these textbooks for out-of-class preparation. During their laboratory time, the students use a specially-prepared laboratory manual to guide experiences which reinforces the concepts learned from the textbook. These laboratory manuals were developed by junior high school teachers of industrial arts.

The teachers' guide is the key to the operation of these programs. This guide may be considered as a composite of the daily lesson plans in great detail. It is so developed to include the daily objectives, time schedules, equipment and supplies needed for the day, an overview of the day's teaching, a lecture or demonstration, a discussion, suggestions for laboratory activity management, and safety precautions. It has been found that by using the teachers' guide, almost any teacher of industrial arts can successfully instruct students in this program.

Several devices have been adopted to evaluate this program. Probably of the most value is the classroom teacher's evaluation and feed back of the daily materials presented. Each day the teacher marks copy and once a week joins with the other teachers and director in a field center to evaluate and suggest improvements in all the materials. The students take ten scheduled tests of approximately 25 multiple-choice questions to evaluation the behavorial objectives. Other evaluative devices include interviews with administrators, questionnaires to parents, responses from advisory boards, and visitors' opinions. All of this feed back data has provided guide-lines for revising the materials.

This is the third and final trial year for "The World of Construction". These materials will be printed and be ready for adoptions or adaptions in the junior high schools by September 1971.

Now that we have examined the background of the Industrial Arts Curriculum Project, let us examine some of the learning experiences in "The World of Construction!"

Cognitive and Motor Skills

Surveying and mapping land surfaces
Designing structures
Engineering structures
Sketching plans, elevations, sections of structures
Sketching wiring, heating, cooling, ventilating, plumbing plans

Writing specifications
Estimating costs, quantities, work
Preparing bids
Scheduling construction operations
Setting grade stakes, batter boards, lines
Building wood frames
Setting steel reinforcement
Mixing, placing, finishing concrete
Laying block and brick
Rigging, placing assembling, fastening, aligning steel frames
Laying out, sawing, assembling, fastening, aligning wood frames
Applying siding and roofing
Installing electrical wiring systems
Installing sheet metal duct systems
Installing plumbing systems
Installing insulation
Applying drywall materials
Plastering
Installing floor tile and ceiling tile
Painting
Fitting moldings and trimwork
Demolishing and salvaging
Maintaining, repairing, altering structures
Planning, contracting, building, landscaping a model house

Experiments

Efficient practices of clearing and earthmoving
Efficiency with tools, techniques, personnel, materials
Analyzing soils and effects upon structure stability
Correlating foundation design with soil types
Stabilizing undercut foundations of buildings

Role-Playing Activities

Contracting
Hiring personnel
Setting working conditions
Solving grievances
Mediating and arbitrating
Striking, negotiating
Transferring ownership
Decision-making in community planning
Selecting construction sites, based on predetermined criteria
Filling in legal documents, e.g., offer to purchase, contracts, deeds, morgages

Other Group Activities

Organizing the class and establishing procedures
Examining career patterns in construction industries

Now Mr. Muller will show a series of slides illustrating some of the following learning experiences from "The World of Manufacturing"

Cognitive and Motor skills

- Identifying consumer wants
- Retrieving data
- Processing data
- Designing products
- Making three-dimensional models
- Designing power elements
- Making working drawings
- Building production prototypes
- Technical writing and illustrating
- Automating processes
- Measuring work
- Estimating costs
- Operating quality-control systems
- Supplying equipment and materials
- Preparing raw materials
- Making industrial materials
- Making standard stock
- Establishing accident-prevention programs
- Material forming; casting, molding, compressing, stretching, conditioning
- Material separating; shearing, chip removing, less traditional processes
- Combining components; mixing, coating, bonding, mechanical fastening
- Combining subassemblies
- Packaging
- Servicing manufactured products; installing, maintaining, repairing, altering

Experiments

- Metal fatigue
- Using the computer
- Harnessing energy
- Securing raw materials

Role-Playing Activities

- Obtaining design approval of management
- Hiring, training, advancing
- Solving management-labor problems
- Forming a corporation
- Forecasting sales
- Capitalizing and estimating profits
- Keeping records
- Selling and distributing
- Dissolving a corporation

Other Group Activities

- Designing and engineering a product

Other Group Activities continued

Planning production
Planning processes
Installing production-control systems
Establishing quality controls
Producing goods

Further information in this project may be had by contacting either Dr. Donald G. Lux or Dr. Willis E. Ray, Co-Directors, Industrial Arts Curriculum Project, The Ohio State University, 1712 Neil Avenue, Columbus, Ohio 43210.

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2. Industrial Arts Curriculum Project, Teacher's Guide; The World of Construction, Page v

3. Towers, op. cit., pps. 154-164

IMPLEMENTATION OF THE TECHNOLOGY FOR CHILDREN PROJECT[1]

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[1]Presentation made at the 63rd Annual Convention in Boston, Massachusetts, on December 7, 1969

The Technology for Children Project staff is a six-man team within the Division of Vocational Education in New Jersey's State Department of Education, and is a function of the Bureau of Occupational Research Development. The Project aims to give children a look at the world of work through hands-on-experiences, and to enhance learning in the normal disciplines by capitalizing on student interest. All effort is directed toward making learning in the elementary school meaningful to children, and toward forming correct attitudes about vocational education.

Funding: In 1966, The Ford Foundation awarded a $166,000. grant to the New Jersey State Department of Education's Division of Vocational Education, to provide salaries for a six-man professional team and to provide clerical assistance for a three-year period. The initial grant expired in October, 1968, and was followed by the awarding of a second three-year funding in the amount of $304,000. The first year of the second funding period will end this month. New Jersey State Aid funds expended on the Project during the initial grant period, more than exceeded the amount of the grant. During the present phase, it is anticipated that a combination of both state and federal funds will be expended in an amount doubling that of the second grant.

Participation Status: Currently, 120 teachers from 60 schools in 40 New Jersey school districts are participants in Technology for Children. The Project is growing at a rapid rate. For the first time in its three and one-half years, the Project was forced to refuse local district applications for assistance in initiating new programs. Initially, the staff was confronted with the problem of recruiting each teacher and convincing each administrator that participation would be a correct move for their school. Selling the Project remains an important function of staff members, but the task has become simplified through the efforts of enthusiastic participating teachers and administrators. The cooperative support between Project and participant has made it possible for interested teachers and administrators to visit classrooms and see Technology for Children

implemented. Many participating teachers have influenced others to become involved.

Teacher Training: Most teachers trained by the Technology for Children Project have had little experience with tools, materials and technological activities. There are exceptions to this generalization, such as one teacher of fifth-grade children who purchased a color television set in kit form, then assembled and calibrated it by herself. There are other exceptions, but normally a simple broken hack-saw blade can cause a rather serious problem for a new participating teacher. Immediately, the teacher is faced with having to reassemble the tool, and secondly the teacher must locate a local source for purchasing hack-saw blades. This raises the question of school purchasing procedure. These are simple problems and can usually be dealt with quickly and easily. There are many things that could and should become a part of the Project's teacher training program. The preceding illustrated a need for familiarity with tools, materials and school purchasing procedure.

All participating teachers have been furnished with a set of hand tools and a tool cart, valued at approximately $700., upon completion of their training. At first sight, an unfamiliar teacher's reaction to it is usually a momentary panic when considering the thought of having the tools in his classroom. The panic intensifies as the teacher examines the variety of sharp cutting edges which will eventually be exposed to his children. Safety becomes an important concern to trainees early in their involvement with Technology for Children. Participants are given a manual, Recommended Procedures for Safety in the Use of Hand Tools, which was developed by the staff specifically for beginning implementation. The Project staff shares the philosophy that safety is a matter of common sense and planning which should neither be over-dramatized, nor treated lightly. General recommendations are made by the staff to assist new participants in establishing safety procedures as they begin implementation with their children.

A variety of ways have been used by the Project to train teachers. One successful method has been the Summer Institutes of Technology. Four such sessions have been conducted by the Project, one each for the past four summers. The Institutes have been six weeks in duration, and have each prepared approximately twenty-five new teachers. A college course was used on a trial basis and a short-term workshop was used also. Each of the methods mentioned have worked and each to a different degree of success, which appeared to be directly related to the amount of time teachers were involved in the training.

The Project is currently involved in training teachers in a mid-year session which is designed to permit immediate implementation with children and provide an extended follow-through in support of the teachers. Specifically, forty new teachers have been processed through Phase A of a two-phase program. Phase A was a three-day, released-time undertaking in which new participants spent one day with the Technology for Children Project staff members, a second day as an apprentice to one of the experienced teachers in their classroom and the final day back with the staff in the Project's Florence Center. Phase A was intended to provide teachers with hands-on-experiences, safety instruction and a look at an experienced Project teacher's implementation (as opposed to talking about it). Immediately following the three-day, full-time workshop, teachers are provided with tools and tool carts to take back to their schools. Phase B will be implemented through a series of weekly regional meetings designed to help the participants to solve individual problems, to share ideas, to learn more about the world of work and to build their confidence in what they are attempting to do. Phase B will begin shortly.

<u>The Curriculum</u>: Beginning Technology for Children Project teachers are faced with having a new program in their classrooms and with all of the organizational problems that accompany change. Innovation, although desired, is difficult to accomplish under these circumstances. Quite often, implementation

is uphill work initially. A survey of the Project, completed one year ago, indicated that only 27% of an average, participating student's time was spent on technological activities. The term, "technological activities", was defined to include the planning phase, the implementation and resulting follow-through activities. The same study revealed that little implementation occurred during the first month of school. Based on regular classroom visitations, the Project staff agreed that assistance was essential in the form of structured curriculum materials which would help teachers to begin implementation, and tc help experienced teachers to implement in unfamiliar or new areas. With this in mind, the staff set up a design criteria for the development of the Project's curriculum materials as follows:

> To prepare four areas of curriculum materials to serve the four major disciplines found in the State's elementary schools
>
> To develop seven levels of materials, as most New Jersey elementary schools are kindergarten through six grade
>
> To highly structure the materials, in order to give novice implementors confidence
>
> To design open-ended activities, thus permitting innovation to occur

The result was the development of a series of forty-seven Learning Episodes, geared toward the four disciplines on seven grade levels as specified by the design criteria. The highly structured Episodes provided the beginning technology teacher with an idea for implementing a technological activity, lists of the materials and equipment needed to implement, local sources from which the materials might be obtained, a cost estimate, and an outline with illustrations of the step-by-step procedures. One final addition to each Episode is an option sheet which identifies some of the possible places where innovative teachers and children may branch off into related pursuits as desired.

The newly designed Episodes are currently being tested. All Project teachers received a complete set and were asked to report problems encountered

and to give critical comments. Teachers have been encouraged to make use of the lesson-plan-like Episodes in the best way, to suit their individual needs. After only three months use, reports have indicated that some teachers are following the structure closely and others are either using them as reference materials, or as a source of ideas from which innovation might develop. The Episodes have been well received by participants.

Kinds of Implementation: As previously stated, every Technology for Children Project teacher, in the past, received a tool panel at the conclusion of the training period. It would be a mistake to assume that all Technology for Children activities are related entirely to the tool panel. Our children are involved in many kinds of pursuits, including the writing and staging of television programs in which the children are the authors, set builders, costume makers, cameramen, directors and critics. Children here become deeply involved in what they are doing. Observing a child's reaction to seeing his own image on television tape as it is replayed, is interesting. For the first time, many children are able to see themselves as others do and notice things such as posture, speech and grooming. Children become critical of themselves and others, and strive toward a higher degree of perfection. There has been an Episode written about a television production and it is now in the hands of all participating teachers. The Project has four closed circuit TV's which include a monitor, camera, tripod and tape-recorder which are made available to participating teachers on a rotating schedule, at their request.

Another activity in which the Project children have been recently engaged, is inventing and building musical instruments. One teacher of sixth graders posed this problem to her class: "Invent and build a musical instrument on which the scale can be played." One further requirement was that each child learn and play a simple song on the instrument, then perform for the class. All work was to have been done in school. The results were fantastic. Flutes, guitars, banjos, a gut

bucket, xzylophones and many other inventions were developed. One child worked out a system to resemble a piano where upon hitting a key, a hammer flipped which in turn, hit a string, causing sound. Another child made a music box by gluing sheet metal tabs to a fruit juice concentrate can, which when rotated on a shaft picked out "Mary had a Little Lamb", from previously set and tuned strings. The timing and tuning were beautifully done. What did the children learn from this: A good question which may be answered partially by saying a variety of things. Each child created and solved many technical problems in his task, and in the process, it would be logical to assume that each child learned major concepts about music vibration and sound. Perhaps the children weren't aware of the fact that they were learning about sound while it was happening. Perhaps their teacher even had to call this observation to their attention or ask, "What makes the sound go higher or lower?" A concept was learned by these children through doing a thing, rather than talking about it. They created sounds, changed them and controlled them and, in the process, learned about them.

Teacher Support: Participating teachers receive backing from the Project continuously in a variety of forms. By training teachers and furnishing tools and Episodes for use with their children, a beginning is made. To abandon them at this point would be risky, and steps have been taken to provide further help in a number of different ways. A newsletter containing news of accomplishments, ideas from other classrooms, and articles of general interest and concern to Project teachers, is prepared and distributed on a monthly basis. Teachers are encouraged to request assistance when needed. The six-man staff spends a good amount of time in helping teachers solve problems ranging from construction difficulties to classroom management.

A local school district has given the Project use of an abandoned two-room school which has been converted by the staff to serve a variety of needs.

Teachers have been trained there, materials and ideas have been developed there, and all the Project's technological materials are stored there when not in use. The Florence Center, as it is called, enables the Project to lend items to teachers for use with their children which are not practical for individual schools to have on hand. For the past school year and the present one, closed circuit TVs have been on loan to teachers for two-week periods of time. These are intended specifically to be used and handled by children. Contrary to expectations, repairs have been infrequent and maintenance cost low. Many other items are available to be borrowed, including a variety of plastic-working equipment, a portable foundry, graphic arts equipment of various kinds, photographic equipment and a selection of gadgets which would be impossible to name.

One idea developed in the Florence Center, resulted from an effort to construct a portable darkroom which could be taken from school to school. To demonstrate how a camera works, the darkroom was made into a big camera into which children could climb and see what happened when the shutter opened. The big camera was made to operate interchangeably with either a pin hole opening or with a variety of lenses. Since it was both a camera and a darkroom which could take and process pictures, it was dubbed the "Technology for Children Project Swinger". Children using "The Swinger", could clearly see the effect of a lens compared to that of a pin hole opening. After this experience, an adjustable camera is no longer such a mystery.

Since the beginning of the Project, in-service workshops have been organized and conducted, giving participants an opportunity to get together. The staff makes use of the opportunity to relate current information and participants are called upon to share new ideas. Hearing colleagues describe their classroom activities has been both exciting and inspiring to other participants. Opportunities to contribute to the Project are very important to participating teachers who take great care and pride in their efforts.

Evaluation: As a part of their instruction, the first teachers to be trained by the Project maintained anecdotal records of children being taught by a master elementary teacher and a master Industrial Arts teacher. The master teachers stocked a classroom environment with a wide variety of technological things for children to manipulate and explore, then encouraged them to do so. The master teachers role was that of stimulator or catalyst rather than teacher. During the final week of the six-week Summer Institute, each teacher was asked to abstract his anecdotal record by selecting one major discipline, such as math, and list each time the student he observed encountered that discipline. The records indicated that even without a pre-conceived curriculum, extensive encounters with the four major disciplines resulted from exploring the technological environment and pursuing technological activities.

A partial evaluation conducted by a former staff member comparing attitudes of control and experimental groups of children toward school and toward the classroom environment, resulted in the following findings:

> No significant difference was found between control and experimental groups in attitude toward school
>
> Significant difference was found in favor of the experimental group toward the classroom environment
>
> More group oriented activities were conducted in the experimental classrooms
>
> More manipulative activities were conducted in the experimental classrooms

The same group of children were administered the Russell Sage Social Relations Test which produced the following findings:

> No significant difference was found between control and experimental groups in the level of skill in cooperative group planning procedures. (There was a slight tendency for the experimental group to develop higher level plans)
>
> No significant difference was found between control and experimental groups in the level of skill in cooperative group action

Significant difference was found in favor of the experimental group in the amount of participation in the operation stage of problem-solving

The anecdotal records, the letter writing experience and the study of group problem-solving ability do indicate the direction of the Project has been positive, but does not answer the main question that exists in the minds of parents, teachers, administrators and board members. That question is...will a child do better in math, language arts, science and social studies as a result of having participated in Technology for Children? The Project is currently involved in a quasi-evaluation using the experimental-control technique which is geared toward answering that question. The study will compare results of tests administered recently by the local schools as a part of their normal routine, with a post test score which will be administered in cooperation with the Project. In addition, pre and post comparisons will be made of narrative reports on children. This study will be conducted only on fourth, fifth and sixth grade levels, and is scheduled for completion early in 1970.

Technology for Children is intended to develop good attitudes toward the world of work, and enhance learning in the elementary school. Children involved in hands-on-experiences and technological activities are engaging in multi-sensory learning automatically. Open-ended activities of this nature cause children to seek answers which make it necessary for them to communicate, research and solve problems. Technological activities contribute to making education relevant for children and enhancing their learning. The world of work is inter-woven throughout.

EMERGENCE OF FLUID POWER TECHNOLOGY AND THE DESIGN OF INSTRUCTIONAL EQUIPMENT AND MATERIALS FOR CLASSROOM USE[1]

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It is the purpose of this paper to (1) point out differences between learning, teaching and training; (2) show the significance of the high cost, low bid expenditure; and (3) emphasize the necessity of a student learning by the "dirty-hands" approach, to compete with his inadequacies at the time of entering vocational and technical schools.

[1] Presentation made at the Fluid Power Seminar for Teachers, 63rd Annual Vocational Convention in Boston, Massachusetts, on December 10, 1969.

I. EMERGENCE OF FLUID POWER TECHNOLOGY AND THE DESIGN OF INSTRUCTIONAL EQUIPMENT AND MATERIALS FOR CLASSROOM USE

It is pertinent for you to ask and for us to explain why we (Scott) presume to address you. To answer this question we have placed on your chair a few pieces of literature describing the education systems we produce. As for myself . . . well, as Division President of Scott's Engineering Sciences Division, it's my job to see to it that we develop efficient education systems, produce them economically, and keep you informed about them. Consequently, both the company and I, personally, are deeply concerned and involved in "Fluid Power Education Hardware."

Perhaps the most significant thing to note in this year's AVA Convention is the simple fact that today we have Fluid Power Education Hardware . . . have it in the market place, offered competetively. As, no doubt, you have already noted, there were seven companies exhibiting such hardware on the floor at this canvention.

This, gentlemen, is something of an achievement and I think that both the educational community and the educational hardware industry have good reason to be proud . . . educators, for the recognition they have accorded to industry's need for personnel who are knowledgeable in the field of Fluid Power . . . educational hardware manufacturers, for the enterprise they have shown in developing hardware adapted to the special requirements of the educator who is faced with the task of developing comprehension of fundamentals by ever growing numbers of pupils who have less and less time available for learning.

Yes, gentlemen, together we have all taken a giant step ahead. However, I would like to state categorically and here and now that this is a first step only. Let me be specific.

In the first place, I am sure that everyone in this room will agree that there is a

fundamental difference between "training" and "education" . . . and that we must concern ourselves with both. Industry needs, and educators must find, ways to provide personnel with the following skills:

1. The ability to maintain fluid power and control devices in operation after installation in plant or field equipment.
2. The ability to install, service, repair and modify fluid power and control devices.
3. The ability to recognize . . . or detect . . . power or control conditions and situations where hydraulic or pneumatic equipment is applicable and who have the further ability to apply available hardware properly.
4. The ability to invent and create entirely new types of fluid power or control devices or systems.

Most of you will agree, I am sure, that providing personnel with the first two of these skills, i. e. (1) equipment maintenance and (2) equipment installation, repair and service is largely a matter of "training". . . primarily motor skills. On the other hand, the second two skills call not only for "training" but also for "education".

Obviously, it isn't all that simple. The dividing lines between these categories of skills blur. What's more, personnel being "trained" or "educated" in any of these skills must be given sufficient knowledge and facility to cope with future developments in hardware and theory as they come along five, ten or more years after formal schooling is completed.

Gentlemen, hand in glove with these considerations is the matter of economics. No school has unlimited funds. Any piece of equipment you buy must compete with other types of equipment for the availability and facility dollars. It behooves those of us in the

educational hardware industry who are interested in supplying Fluid Power Education Hardware to come up with equipment which not only satisfies the requirements I have outlined but also takes the smallest possible slice out of your available equipment dollars.

It is this reasoning that lies behind the fact that our company develops, manufactures and sells "Learning Systems" for vocational, technical and engineering education -- NOT teaching machines, demonstration apparatus, toys or games.

Learning systems provide a "dirty-hands" experimental approach to education that works from the student up to the teacher - - - it is highly motivational, self-adjusting to the individuality of each student. Teaching machines work from the teacher down to the student - - - use knowledge "frozen" into the machine and inherently rigid; motivation is external to the unit.

Before we go further, we should all know how we define a true "learning system". We believe a "learning system" must be a product (hardware plus software) that:

1. Is movable, portable, storable (not fixed in place so that they become monuments in the school).

2. That need not be precise in their experimental results if to obtain preciseness makes them more costly.

3. That they are so open-ended that a student or educator can, by his own creativity or ingenuity, originate experiments beyond the software.

If a product can do all these things, we know that the product then can place students into situations from which they can only escape by "learning"; thus placing teachers in situations from which they can only escape by "teaching".

From the viewpoint of educational economics - - - the relevancy of the Fluid Power hardware to today's educational problem is simple --- they must provide a means to educate more students faster and at lower initial cost than traditional methods.

Right now the major gap between education and industry is that the young man coming out of school is not familiar with Fluid Power Hardware and totally lacks the knowledge and ability to make a circuit work. A good part of the reason is because the wrong (low bid) hardware is used by education.

Speaking of bids and low bids, you all know that we did not low bid ourselves to the moon landings. In relation to the dollars involved in other national commitments, the moon venture was "high-bid".

In relation to the state-of-the-art advances while perusing the moon landing, (teflon, propulsion systems, new metals, etc.) which are applicable for our total population, (flexibility and application) or multi-industrial usage, the prorated cost, in terms of application areas, the moon effort made the venture a low cost investment in raising our standard of living.

If you consider the individual instruments or components that were purchased for the systems that made the moon shot possible, they were certainly procured on a "low-bid" basis - but only after the specification standards had been raised to the point where the low cost commercial items could not compete in meeting the objective requirements. This resulted in a "high cost", "low-bid" purchase on a competitive specification basis.

Therefore, when the dollars involved in acquiring Fluid Power Hardware products place you in a "high bid" situation when compared to the dollars committed for other educational programs (Arts & Sciences, etc.) or maybe even other areas of technical education, make sure the hardware can stand the ultimate test of superiority in perform .nce, service, concept and specification.

When the facility flexibility, and multi-departmental usage of hardware systems is considered, the high cost product, prorated over the multi-departmental application,

makes "bench top" learning a low cost investment in facility and program flexibility.

If individual systems or components are to be evaluated for implementation into a curriculum, then everyone should be cognizant of the higher standards and specifications of the products which create a high-cost environment that is subject to low-bid techniques only if the competition can meet the specifications:

1. Software coordinated open-endedness.
2. Longer product warranty.
3. Fullest range of experimental capabilities.
4. Fullest range of construction and component specifications.
5. Portable or mobile features to insure facility flexibility.

To illustrate further, let me point out that we do not trust our health to low-bid medicine. The general practitioner may diagnose and prescribe medicine for certain heart ailments - but the specialist will certainly perform the transplant. Have you thought about the associated price tags?

In some respects, the chiropractor imitates the function of a doctor - and serves a useful purpose. At least until a particular patient requires internal treatment as well as external manipulation - then the chiropractor's capabilities are not open-ended for the need.

There are certainly many pieces of hardware that can be generally used in an educational program. For the most part, "hardware" is possive - not functional in terms of student involvement. It is only through a specialized system designed for educational purposes, and augmented with comprehensive software that the student is stimulated to learn and experience the "thing" under study.

Yes, specialists do cost money; therefore, we must be careful in trusting our

education to "low-bid" techniques.

Only insofar as we want to jeopardize the success of our educational programs. If identifiable skill levels are our educational objectives, then certainly there are system or component specifications that can help insure success. Let us recognize the importance of these specifications in meeting our objectives. Set these specifications out as the standards. If more than one manufacturer can meet the requirement, then we foster free and competitive enterprise in a true sense of the concept.

"Low-bid" is to education as chiropractor is to doctor. It applies up to a point; that point being when we cease to train people and begin allowing them to "learn by doing" so they become free and independent thinkers. You can train a wild animal - certainly man the animal deserves more. There are many passive hardware components that can be bought on a "low-bid" basis with the objective of training, but let's admit - education is a "high-cost" environment. To rationalize the environment as adaptable to "low-bid" procurement is a fallacy. To accept competitive specifications on a "low-bid" basis is both real and in keeping with the American free-enterprise system.

There is one other very important factor that is not tied in as often as I would like it to be. It is the understanding of you, the educator, that the student when you get him has been taught how incompetent he is.

A student entering a vocational school today has for twelve years been told how inadequate he is. Seldom did any teachers emphasize and build upon what the student did right. The teacher always was looking for one thing in every examination taken -- errors.

The student went to elementary school for six years to overcome his ignorance. This qualified him for two years of junior high to continue overcoming his ignorance.

This in turn entitled him to four more years of overcoming his ignorance in high school.

After spending twelve years in a system which assumes his ignorance and emphasizes his errors, it is quite understandable that he feels incompetent. After twelve years of exposure to teachers who assume that only they know enough to make important contributions to the classroom, it is quite understandable that when you get this boy, he finds it difficult to take the initiative from you.

My point is that when you obtain students who are generally at a loss to take the initiative, it is imperative that you, the vocational educator , put him into a situation where he can only escape by "learning" ... getting involved ... doing it himself.

When students have an opportunity to "learn by doing" some amazing things happen - one important thing would be - - again, my opinion - - less power and demonstration movements in those schools who were involved in the "learn by doing" concept.

The teaching profession at all instructional levels has long been confronted with the problem of effectively developing the learning and creative thought processes of students. The basic and time-worn approach to education has been embodied in the demonstration-lecture system, basically involving the imposition of the knowledge of the instructor onto the student.

The conventional demonstration-lecture approach or "force feeding" of a group of students by an instructor involved several acknowledged shortcomings. First, each of the students in a lecture group are carried at the instructional poce of the teacher with virtually no concessions made for individual students who are unable to grasp the subject matter at the teacher's pace and with no inducements made for the more rapid advancement of individual students capable of digesting material at a more rapid rate. Second,

the lecture system does little to encourage learning or learning how to learn by individuals in the group. The knowledge of the instructor is directed to the students, as a group. This knowledge is imposed upon each student, absorbed or digested by some and lost to others. The long range result of the lecture system is to essentially foster the mediocrity of the entire student group.

In the imposed knowledge approach to education, the use of hardware is frequently employed to demonstrate various phenomena. This hardware may take the form of rudimentary devices or sophisticated precision laboratory equipment. However, regardless of the nature of the aid used in teaching demonstrations, the individual student is permitted only to observe that which is demonstrated. He has virtually no opportunity to pursue personal inquiries or understanding of that which is being demonstrated because the apparatus wos not specifically designed for such use. The student is, in effect, isolated from the full development of his mental processes in relation to the aid before him at his own rate and under his own mode of learning.

At the Fourth Annual Conference and Exposition on Education and Training, August 12-15, 1968, in New York City, the following comments were made by speaker, Harry A. Becker, superintendent of schools in Norwalk, Connecticut:

> "There is considerable knowledge about how teachers spend their time. The larger part of the school day--about 60%-- is spent in giving information. Much of the rest of the time teachers spend with pupils, is used for an assortment of clerical, housekeeping and monitorial duties. Assuming thot this information is accurate, there is little time remaining for other duties. . . When the present use of teacher time is analyzed, the following conclusions are very clear: Much of the work and services now performed by teachers would be done as well or better by other personnel with less training or could be provided technologically by the use of available equipment."

The basic shortcomings of the demonstration-lecture system of education and the physical material used for demonstrative purposes in such systems have led us to the development of educational equipment that is designed to serve not as visual or teaching aids but direct aids to "learning". Our systems, therefore, are designed to help students, individually, to learn how to learn. Our systems will improve, simplify and accelerate the learning process of individual students in accordance with his individual ability to absorb. Our systems will also enable the individual to utilize to the fullest, his undirected creative talents and ingenuity in dealing with the individual systems and to apply the developed learning techniques.

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Kraft, Richard H.P., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 9, 1969).

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This document is comprised of four speeches presented at the 63rd Annual Convention of the American Vocational Association. Dr. Richard Kraft spoke on "Cost-Effectiveness Analysis of Vocational-Technical Education Programs," as related to the Florida public school system. Four members of the Department of Vocational Education at Pennsylvania State University (Impellitteri, Kapes, Sievent and Wiersteiner) conducted a cooperative study on the "Factors Related to the Occupational Values and Vocational Maturity of a Selected Sample of Ninth Graders." Frank C. Pratzner gave a speech on "Discriminating Between the Technical Associative Conceptual Structure of Workmen Within and Between Occupations" and Paul G. Larkin and John B. Teeple of the National Planning Association presented a speech on "National Goal Research and Occupational Education: Planning Implications for Community Colleges and Technical Institutes." (BC)

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Research Section

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and Adult Education
Tallahassee, Florida

ABSTRACT

Cost-Effectiveness Analysis of Vocational-Technical Education Programs

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Florida State University
November 1969

A. Problem

One of the major problems within the Florida Public School System is estimating and projecting the capital and operational costs of educational programs. This problem is due, mainly, to the financial accounting and budgeting systems which are oriented to the fiscal appropriation structure for management control purposes rather than toward educational program accounting. Most school districts find it appropriate and necessary (by statute) to use organizational and object class categorizations (such as personnel services, maintenance, etc.) for a financial reporting and budgeting system.

In view of increasing student enrollments, increasing demands by employers for their occupational skills, and the necessity of allocating scarce educational resources, several important questions are raised.

1. Do the existing vocational-technical education programs provide positive cost-utility relationships?

2. Can a cost-effectiveness analysis be used to develop optimum utilization models in terms of human resources (staff) and space facilities?

3. Can a cost-utility analysis be an effective technique for educational planners at local school system level to use as a conceptual tool to develop a planning, programming, budgeting system?

B. Objective and Design

The purposes of this study were threefold: first, to examine the public and private costs and utility aspects of selected vocational-technical education programs offered by two area vocational-technical schools; second, to develop formulae which can be used by educational administrators for planning optimum allocation of staff, facilities, finances, and other resources, and, third, to

provide the basic conceptual tools for future implementation of a planning, programming, budgeting system (PPBS).

The study examined social and economic factors in the following areas:

1. the degree to which graduates of selected vocational-technical programs assume occupational earning levels in business and industry for which the objectives or the programs were designed;

2. the public and private economic costs per student of the programs;

3. the cost-utility model as a conceptual tool for the design and implementation of a planning, programming, budgeting system.

Two aspects of utility were considered: (1) The utility of programs in terms of monetary return on investment to the public or society; and (2) private monetary returns to an individual graduate of the programs.

The final sets of calculations involve the computing of cost-utility ratios between: (1) Private costs and utility (CU_{pr}); and (2) Public costs and utility (CU_{pb}).

C. Findings

Private Rate of Return. The 1968 graduate of selected programs (Electronics Technology) has invested approximately two years of foregone earnings and direct costs totaling $5815. In return he received average earnings of $2313 greater than he would have had he continued as an unskilled manufacturing worker.

These two factors are used in the computation of a cost/utility ratio which yields a figure useful for comparison of the program's relative effectiveness over previous years and relative utility value, limited to the monetary aspects, with other educational programs. The 1968 graduate yields a cost-utility ratio of 2.51. This ratio number is also equivalent to the number of years it will take the graduate to receive a return of $5815 or "total return" on his investment. This rate of return assumes that the graduate has no further increases in earnings during the 2.5 year period following his graduation. Since this is a rather weak assumption in that the graduate will more likely receive pay raises during this time, the rate of return is probably conservative.

Public Rate of Return. The return to the public on its investment in vocational-technical education programs was also raised as a question for investigation in this study.

The public (or society) invested $1597 over a period of two years in a 1968 graduate's program. For this investment the public received in the form of additional taxes paid by the graduate during his first year of employment $548. The cost-utility ratio indicates a period of less than three years in which the graduate will return society's investment of $1597, assuming that the graduate has no increase in earnings during this time period. Again this assumption

being unlikely, it would be expected that the graduate will return the investment to the public in an even shorter period of time. The public rate of return of 34.3% is also based on the first year earnings after graduation.

Another important result of the research was the verification of the theory that cost-effectiveness procedures allow the forecasting of the costs of new programs over a period of years. Many mistakes have been made in the past because of a failure to take into account the cost, in future years, of programs that are attractive superficially, but that, eventually, prove to be bad educational investments.

Cost-effectiveness procedures can be valuable in comparing the benefits that may accrue from the more efficient utilization of vocational-technical school facilities by use of the facilities after hours for adult education or other programs, or through the lengthening of the present school year.

A conclusion of direct relevance to PPBS is that cost-effectiveness analysis can become a tool in manpower planning. The author is a firm advocate of manpower planning and the rational adaption of our system of education and training to the needs of the economic system. It seems absurd to invest, annually, more than $48 billion in human capital without asking whether, from an economic standpoint, this money could not be allocated more efficiently. (This should not be interpreted as asserting that the only criterion to be used is the investment or productivity criterion.)

It should be emphasized that vocational-technical area schools must begin keeping cost data and pertinent information which relate to productivity in education. The data should be kept at the school level. Only then can comparisons between alternative vocational-technical programs or courses become routine procedures.

The extent to which the author has refined program cost analysis makes it unfeasible to implement manual methods--especially the assignment of facility, furniture, and equipment depreciation costs--to a given program course. It should prove extremely helpful to introduce and to rely on electronic data processing systems to perform cost studies.

D. Conclusions

Concerning the interpretation of the training-earnings profiles which have been constructed, it can be said that they have two noteworthy implications for administrators and top-level decision-makers in vocational-technical education.

A. The private rate of return on "educational investment" in vocational-technical education in Florida is astonishingly high;

B. all (public) cost-utility ratios (c/u) indicate a positive rate of return.

If monetary indices are accepted as a measure of effectiveness, then, given the excellent performance of graduatescof area vocational-technical schools in the labor market, extra public funds should be distributed toward vocational-technical education in order to maximize private and public benefits. If educational decision makers are really concerned with earnings, employment, and maximizing benefits, then the expansion of training in vocational-technical area schools throughout Florida should be given high priority.

Factors Related to the Occupational Values and Vocational Maturity of a Selected Sample of Ninth Graders

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Presented at:

The American Vocational Association Convention
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Background of the Study

Vocational behavior viewed developmentally provides one of the most intriguing areas of investigation which have immediate relevance to vocational education. Since Ginzberg et.al. in 1951 introduced the notion of vocational behavior as a developmental process a number of conceptual frameworks have been formulated in an attempt to explain this process. Notably, those frameworks which enjoy the greatest popularity are those which were formulated and validated upon groups of primarily the academically-oriented adolescent and/or adult. Primary examples in this category are those of Super et.al. at Columbia Teachers College, Holland at the American College Testing Program, Roe and Tiedeman et.al. at Harvard, and Lohnes et.al. at Project Talent and University of Buffalo.

To test some of the major hypotheses growing out of these frameworks an eleven-year longitudinal study has been initiated by the Department of Vocational Education at Penn State. The rationale for this investigation rests upon the assumption that in order for there to be valid interpretation of these theoretical frames for vocational education, student samples representing a wide range of interests, abilities, family status and occupational aspirations must be selected for validation purposes. As the first step toward this end between January and July 1969 a variety of data describing many characteristics of about 1200 students enrolled in the ninth grade at three junior high schools in Altoona, Pennsylvania was collected. These data included: sex; age; choice of course of study for 10th, 11th and 12th grades; tentative occupational choice, both ideal and realistic; tentative plans for college; scores for each of the nine aptitudes of the General Aptitude Test Battery; vocational maturity score

based on Crites' Vocational Development Inventory; scores for each of seven occupational values as measured by the Occupational Values Inventory (Interest and Satisfaction; Demand; Salary; Personal Goal; Prestige; Advancement; and Preparation and Ability); teachers' grades attained in eighth and ninth grades; father's and mother's occupational and educational level; socio-economic level of the family; and a variety of other biographical and psychological data.

A plan has been developed to follow these youngsters during a ten-year period during which additional educational, psychological, biographical, job satisfaction and performance, job mobility and occupational pattern data will be collected. Generally, it is envisioned that a variety of developmental hypotheses may be tested throughout the duration of the follow-up. A second group of ninth graders from another Pennsylvania city, of similar size and character has been selected as part of the total study. Similar data will be collected for this group as the Altoona group. The purpose of the ten-year follow-up of the second group is to validate hypothesis tests performed on the first group.

These investigators feel that one of the more interesting areas for exploration within the developmental framework of the total study is that of vocational maturity. The first explicit statement of this concept was made by Super in 1955, and he defined it as, "the place reached on the continuum of vocational development from exploration to decline (Super, 1955)." There were five dimensions along which Super hypothesized vocational maturity could develop: orientation to vocational choice; information and planning; consistency of vocational choice; crystallization of traits; and wisdom of vocational choice.

Since Super presented the first formal description of the concept several investigators have explored the five dimensions of vocational maturity (Nelson, 1956; Crites, 1965; Gribbons and Lohnes, 1968). The little empirical evidence available suggests that there is some substantiation to the concept and also to its multidimensionality. There exists little empirical evidence to validate the concept of vocational maturity because of the nature of the research essential to test it--longitudinal studies. The refinement of developmental frameworks can only be done through longitudinal research. One of the major purposes of the programmatic effort described in this first section is to generate and test developmental hypotheses originating from vocational psychologists and sociologists.

The Problem

The purpose of the study reported herein was to apply the concept of vocational maturity in a real school situation, and attempt to discover those factors related to it. If one were to hypothesize as to the differential vocational maturity scores between specified groups of the ninth grade pupil population one might propose:

1. Sex is unrelated to vocational maturity, since Crites (1965, p. 23) has written, "Evidently, sex is not a very significant factor in the maturation of these verbal aspects of vocational maturity."
2. Those who elect to enter a three-year vocational or technical curriculum in grades 10-12 should be more vocationally mature than those who do not since they have made an occupationally relevant commitment, whereas the other ninth graders have not. Super's five dimensions of vocational maturity describe the kinds of activity which should be

undertaken by a youngster who makes such an occupationally relevant commitment, of which other students may not even be aware.

3. Those students who have plans to attend college should be less vocationally mature than those who have no college plans since the former may be able to postpone occupationally relevant commitments for at least four more years.
4. The more intelligent students should be less vocationally mature than those of lesser intelligence, since the former are more apt to seek out an abstract life style, unsuited to early consideration of vocational commitment.

The investigators, aware of the paucity of empirical evidence currently available to support these hypotheses, chose to explore in a linear regression model, which of the factors above were related to vocational maturity as measured by the VM score of Crites' Vocational Development Inventory (Crites, 1965).

Procedures

The statistical technique utilized in the analysis of the data was the multiple linear regression procedure described by Hallberg (1968). One of the major advantages of the multiple linear regression model is the feature of partialling out the effects of k-1 independent variables, resulting in the isolation of the unique contribution to the dependent variable made by the kth independent variable. In addition to the independent variables mentioned previously (sex, college/non-college, vocational/non-vocational, and intelligence), father's education was also included. The dependent variable was, to repeat, the VM score of the Vocational Development Inventory.

Of the approximately 1200 ninth graders in the original sample, 969 were retained for the first analysis (the total group). Based upon the results of the total group analysis, two other separate analyses were run, one for males only (N=486), and the other for females only (N=483). The observed mean General Aptitude Test Battery General Ability score attained by the group was 94.67, about average when compared to ninth grade norms. The mean VM score for the group, however, fell at about the mean for eighth graders in the norm group (Crites, 1965, p. 24). Crites reports a mean VM score for eighth graders of 35.07 and for ninth graders of 36.50. The mean VM score for this Altoona sample was 35.08.

Results

1. Analysis of total sample. Of the five independent variables intelligence as measured by GATB G, college/non-college and sex were statistically significant predictors of VM score (corrected multiple R of .47). The more intelligent youngster obtained the higher VM score, intelligence contributing approximately 50 per cent of the predictable variance in VM score. Females scored higher than males, sex contributing about 20 per cent of the predictable VM score variance. Youngsters who stated a preference to attend college scored higher than those who did not, college/non-college contributing about 10 per cent of the predicatable VM score variance.

2. Analysis of females only. College/non-college and intelligence were the only statistically significant contributors to the girls' variance in VM score. The more intelligent girls obtained the higher VM scores, and those who indicated a preference to attend college scored higher than those who did not. Intelligence contributed 55 percent of the predictable VM score variance (corrected multiple R of .43), and college/non-college contributed about 15 percent.

3. Analysis of the males only. As in the second analysis, intelligence and college/non-college were statistically significant contributors to the prediction of VM scores. The regressions were found to be in the same directions as #2 for each of the variables, the corrected multiple R being .49. GATB G accounted for approximately 60 percent of the predictable variance in the VM score for the boys, and college/non-college accounted for about ten percent.

Discussion

Based upon the results of the concurrent data analyses performed in this study there are several interesting areas to be explored over time--will the college/non-college relationship to VM score change over time (and if so, in what direction?); in being exposed to occupationally relevant courses of study, will the rate of vocational maturity for the vocational youngsters increase?

As an initial look at the 1969 Altoona group of ninth graders, this study should act as a basis for generation of hypotheses. To the degree it assists in the formulation of reasonable developmental hypotheses it will contribute substantially to the programmatic effort described previously.

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DISCRIMINATING BETWEEN THE TECHNICAL ASSOCIATIVE CONCEPTUAL STRUCTURE OF WORKMEN WITHIN AND BETWEEN OCCUPATIONS

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The Problem

One year ago, at the last AVA Convention, my former colleagues Dr. Jerone Moss and Dr. Brandon Smith of the Minnesota Research Coordinating Unit in Vocational Education reported on the first two studies in a programmatic effort to develop an empirical procedure for identifying and determining the structure of technical concepts possessed by selected workers.

The study I am reporting today is the third study in the series designed to test the empirical procedures utility for identifying the technical conceptual structure which discriminated between groups of workmen in the radio communications repair occupation who performed similar on-the-job tasks at different levels of proficiency. The associative procedure was also used to determine differences between workmen in the radio and television repair occupation and the radio communications repair occupation, two different but closely related occupations, and to identify a common or composite conceptual structure for combined groups of workmen from the two related occupations. This study, the third in a series of three studies, was predicated upon a free association methodology which was developed and used by the first two studies to identify the technical associative conceptual structures of groups of flexible and inflexible radio and television repairmen.

Underlying the series of studies was the need for techniques to accurately and precisely identify the cognitive competencies actually required for satisfactory job performance. A methodology for curriculum content identification and organization should eliminate or greatly reduce the subjective, inferential, and introspective aspects of techniques currently being employed for curriculum development. An estimate of the accuracy or precision of an objective methodology should be reflected in

identical or very similar results when two independent attempts are made to analyze occupations and organize content.

Rationale

The associative theory of verbal behavior espoused by James Deese at Johns Hopkins University, Bertram Garskof and John Huston at the University of Michigan, and Paul Johnson at the University of Minnesota provided the rationale for the series of studies. A basic premise of the associative theory is that an individual's cognitive domain is composed of many systems or substructures, each substructure representing the associative relationships among particular concepts. Concepts are publically represented by words. That is to say, terms or words can be viewed as verbal labels for underlying concepts.

One of the conceptual substructures for workmen is their technical conceptual structure. This technical conceptual structure, representing the body of knowledge for an occupation, is composed of concepts, which are the psychological meanings of the things, processes and units of measure of the occupation. An individual's technical conceptual structure is an integrated network of concepts. The position of a particular concept in the structure is dependent upon its functional relationship to other concepts.

Appendix 1 is an illustration of a technical conceptual structure. This conceptual map was developed by our empirical process. Each circle represents a technical concept and the word in or next to the circle is the symbol the workers use to label the concept. Note that the map is a hierarchical arrangement of progressively differentiated concepts. The circles at the bottom of the structure represent relatively low

level, specific concepts, while circles at higher levels represent higher-order, more inclusive concepts which subsume the common meanings of the concepts beneath them. The single concept at the peak of the structure is the highest-order, most inclusive concept possessed by a particular group of workers.

The source of data for technical conceptual maps are workmen performing satisfactorily in an occupation and who have acquired the verbal tags for identifying their technical concepts. The way in which this source of data has been accessed is throught the use of a free-association instrument which is used to elicit the associative meaning of technical concepts.

Note in the illustration (Appendix 2) that the associative meaning of a concept is defined as the total free associative response distribution which is elicited by a given stimulus word. The response words given first in the list represent concepts closer to the stimulus word-concept in associative meaning and in the individual's conceptual structure than responses given later. Closeness, proximity, or associative relatedness between any two concepts can thus be determined by a tabulation or collating procedure used on the two response distributions elicited by two stimulus word-concepts. The tabulation procedures can be used on a response distribution given by an individual, or one given by a group. The result, in either case, is an index of the relative amount of overlap between response distributions to the two concepts. The greater the overlap or similarity between the free response distributions, the greater the associative relatedness of the concepts, and the closer they are in the conceptual structure. Identical response distributions will thus be

obtained only for two identical stimulus word-concepts, or if two stimulus word-concepts are psychological synonyms and appear in the same conceptual environment.

The technical vocabulary and technical concepts of an occupation can be determined through repeated administrations of a free association instrument. Each time the instrument is administered, new responses are obtained and these are added to the list of stimulus word-concepts prior to the next administration of the instrument. The procedure, if continued, will identify all of the major technical, word-concepts in an occupation.

An associative structure of technical concepts can be generated, using the free association instrument, for an individual or for a group, by calculating a matrix of associative relatedness measures between all possible pairs of word-concepts used as stimuli in the free association instrument. The complex structure of concepts revealed in the matrix can be simplified by various types of multidimensional solutions to identify higher-order, more inclusive concepts (i.e., concepts which subsume the common meanings of lower-order concepts).

To summarize, then, we believe:

1. that free association techniques can be utilized to empirically and objectively identify the associative meaning--the distribution of free response words elicited by stimulus words--for technical concepts in an occupation;
2. that the associative relatedness in the meaning of technical concepts can be estimated by an index of the amount of overlap in response distributions to pairs of technical word-concepts used as stimuli;

3. that an associative structure of technical concepts can be generated, using a matrix of overlap indices, which is a hierarchically arranged, progressively differentiated and integrated network of word-concepts and sets of word-concepts in an occupation; and
4. that this technical conceptual strucutre, or map, has utility for curriculum development because it represents the cognitive goals of instruction and provides clues regarding the sequence of instruction.

Methodology

The population of workers in the three studies consisted of customer service repairmen who were (a) journeymen workers with at least three years of trade experience, (b) removed from formal training for at least two years, and who were currently employed in one of the large firms in the Minneapolis-St. Paul area which (c) had comparable facilities, operating procedures, and salary schedules, and (d) employed at least nine other workers on the same payroll job. Firms and workers were identified, and the associative data were obtained at one time for all three studies to insure identical conditions and facilitate within and between occupation comparisons.

A worker identification form was developed and used by immediate work supervisors to define "flexible" and "inflexible" workmen and to select from the population a purposive sample of four flexible and four inflexible workers. "Flexible" workers were defined as those who satisfactorily performed a greater variety of repair tasks. "Inflexible"

workers performed the fewest variety of these tasks. Flexible workers were those who would be called upon to repair the most novel, unusual or complex jobs during the course of a work day. Inflexible workers, on the other hand, were those least likely to be choosen for these types of jobs. Background information on the workers in both the radio-TV and radio communications samples revealed that they were very similar in terms of age, length of occupational experience, and in amount, kind and recency of vocational training.

A sample of 184 major technical words was randomly selected from a larger stratified population of technical words. Of the sample of 184 major technical words, 131 were common technical words to the radio and television and radio communications occupations. Twenty of the general technical words were randomly selected for retest purposes. The total sample of words (N=184) was randomly arranged in four ways to create four pairs of free association test booklets. The pairs of booklets were administered to pairs of flexible and inflexible workers in the same firm in two, two-hour test sessions on successive days. A tape recorder, with a signal tone replicated at one minute intervals, was used to control the response time per stimulus word.

The responses to each word by the four workers in each group were then combined. In this "pooling" process, only the responses given by two or more workers in the group were retained. Thus, the "pooled associative meaning" given to each stimulus word by each group eliminated individual, idiosyncratic responses; it resulted in a relatively unbiased, salient, agreed-upon, rank-ordered associative meaning for each stimulus word.

The majority of calculations in the two studies used a statistic called the Relatedness Coefficient. The RC is a measure of the extent to which two response distributions overlap; it is therefore a measure of the associative relatedness of two concepts. The size of the RC measure is inversely proportional to the psychological distance between the two concepts; an RC of .00 means no associative relatedness and an RC of 1.00 indicates that the associative meanings of the two concepts are identical.

RC measures were first calculated between the pooled response distributions given by both groups of workers to two repeated administrations of twenty identical stimulus words, in order to estimate the reliability of free association responses.

The RC statistic was then used to calculate measures of associative relationship between all possible pairs of pooled response distributions to the 184 stimulus words within both the flexible and the inflexible worker groups. This resulted in two 184 x 184 associative structure matrices which provided the basic data for identifying the conceptual structure of each group.

The associative structure matrices were reduced to simple hierarchical structure by principle component - varimax factor analysis solutions. A series of first and higher order associative matrices were systematically identified and factor analyzed until it was no longer possible to reduce the number of higher-order, independent concepts through factoring. In this manner, hierarachical associative conceptual structures were identified for each group of workers.

The label for each higher-order concept was identified by an internally consistent method using as a base the pooled associative meanings of stimulus word-concepts. In theory, if a higher-order concept

has a label, and the initial stimulus word list was exhaustive, the pooled associative meaning of one or more stimulus words would match the associative meaning of the higher-order concepts in the structure. The label for the higher-order concept would then be that stimulus word or words which most closely matched it in pooled associative meaning. Finally, RC measures were used to compare the pooled associative meanings possessed by the two groups of workers for the same stimulus words.

In the first study of this series (an unpublished study by Moss and Pucel) the associative conceptual structure of technical concepts possessed by flexible radio and television repairmen was identified and the reliability and face validity of the data obtained by the free association procedure was assessed. The second study in the series (an unpublished doctoral dissertation by Brandon Smith, 1968) developed the associative conceptual structure of inflexible radio and television repairmen and compared the flexible and inflexible structures to test the sensitivity and further estimate the reliability and validity of the free association procedure. This, the third study, replicated the first two studies and identified the associative conceptual structures of flexible and inflexible radio communications repairmen, compared the associative structures of flexible workers in the two related occupations, and identified a composite associative conceptual structure based upon highly similar associative meanings for stimulus words common to both groups of flexible workers.

Results

The following conclusions are based upon the data provided by this study. Because of the exploratory nature of the study, these conclusions

are limited by (a) the particular purposive sample of workers selected; (b) the particular set of stimulus words selected; and (c) the operational procedures used to define associative meaning and associative structure.

Replication of Prior Studies

First, the procedures and findings of the first two studies were replicated in this study.

1. There were forty-four stimulus word-concepts, out of a total of 184, for which the associative meaning of flexible and inflexible radio communications workers sampled in this study were considered significantly different (at the .05 level).
2. There were significant differences between the two groups of workers in the average length of their response distributions to the technical words used as stimuli. On the average, flexible workers gave a greater number of total responses, and a greater number of different responses than the inflexible workers. There was also a significant difference in the average amount of agreement among the responses given by the flexible and inflexible workers; the flexible workers agreed more (longer pooled response distributions) than the inflexible workers.
3. There was a significant difference between the two groups of workers in the size and usage of their technical associative vocabularies. Flexible workers possessed a proportionately larger technical vocabulary than inflexible workers in relation to their respective total pooled responses. Twenty-two words were identified as being used in disproportionate ways by the groups. (The practical significance of this finding was reflected in the associative conceptual organization of the respective groups of workers.)

4. There were visible differences between the two groups in the manner in which they organized concepts (Appendix 4). The associative conceptual structure of the inflexible workers, shown here on the bottom, was smaller than the flexible workers; (63 compared to 77 different technical clusters) it was organized at a lower level of conceptual abstraction than flexible workers; (three versus four hierarchical levels of conceptual clusters) it was less precisely delineated and less balanced.
5. The technical conceptual structures for flexible and inflexible radio communications workers appeared to be only slightly different in face validity as determined by the judgment of electronic experts.

Both structures appeared to be technically sound and logically defensible according to the experts, but the structure of flexible workers emphasized technical concepts related to the "transmission" aspects of radio communications repair (typically considered the more difficult tasks to repair), while the structure of inflexible workers appeared to emphasize the "receiving" aspects of radio communications repair. The structures, therefore, seem to reflect differences in levels of technical proficiency of the two groups of workers. While both structures were considered incomplete, this was expected because of the limited stimulus word list used in the study.

Comparison of Workers Across Occupations

Second, the flexible workers were compared across occupations:

6. Thirty-five stimulus word-concepts (approximately twenty-seven percent) of the sample of 131 common words were significantly different in associative meaning for flexible workers in the two related occupations (at the .05 level).

7. There were significant differences between the two groups of flexible workers in the average length of their response distributions to common technical stimulus words. On the average, flexible radio communications workers gave a greater number of different responses, and agreed more in associative meaning, than the flexible radio and television workers.
8. There were significant differences between groups of flexible workers in the size and usage of the common technical vocabulary. Flexible radio communications workers possessed a proportionately larger technical vocabulary in relation to their total pooled responses. Twenty-one words were used in disproportionate ways by the two groups of flexible workers.
9. There were visible, although fine, differences between flexible workers in their technical associative conceptual structures (Appendix 5). The associative structure for radio communications workers, shown here as the top structure, was larger (77 compared to 60 different technical clusters) than the associative structure of radio and television workers. In general, both groups of flexible workers appeared to have balanced, closely interrelated, hierarchical networks of technical clusters.
10. The major portion of the technical clusters in the two associative structures were labeled differently and had different associative meaning for each group. Technical experts agreed that both structures were theoretically consistent and logically defensible.

Identification of a Composite Associative Structure

11. There was significantly high similarity in the associative meaning of common technical word-concepts for flexible workers in the two occupations. Forty-one of the 131 common technical word-concepts were significantly similar in associative meaning for flexible workers.

12. A single, composite associative conceptual structure for the combined groups of flexible workers was identified (Appendix 6). The composite structure consisted of a total of seventeen technical clusters hierarchically organized into three levels with a single subsuming third order technical cluster.

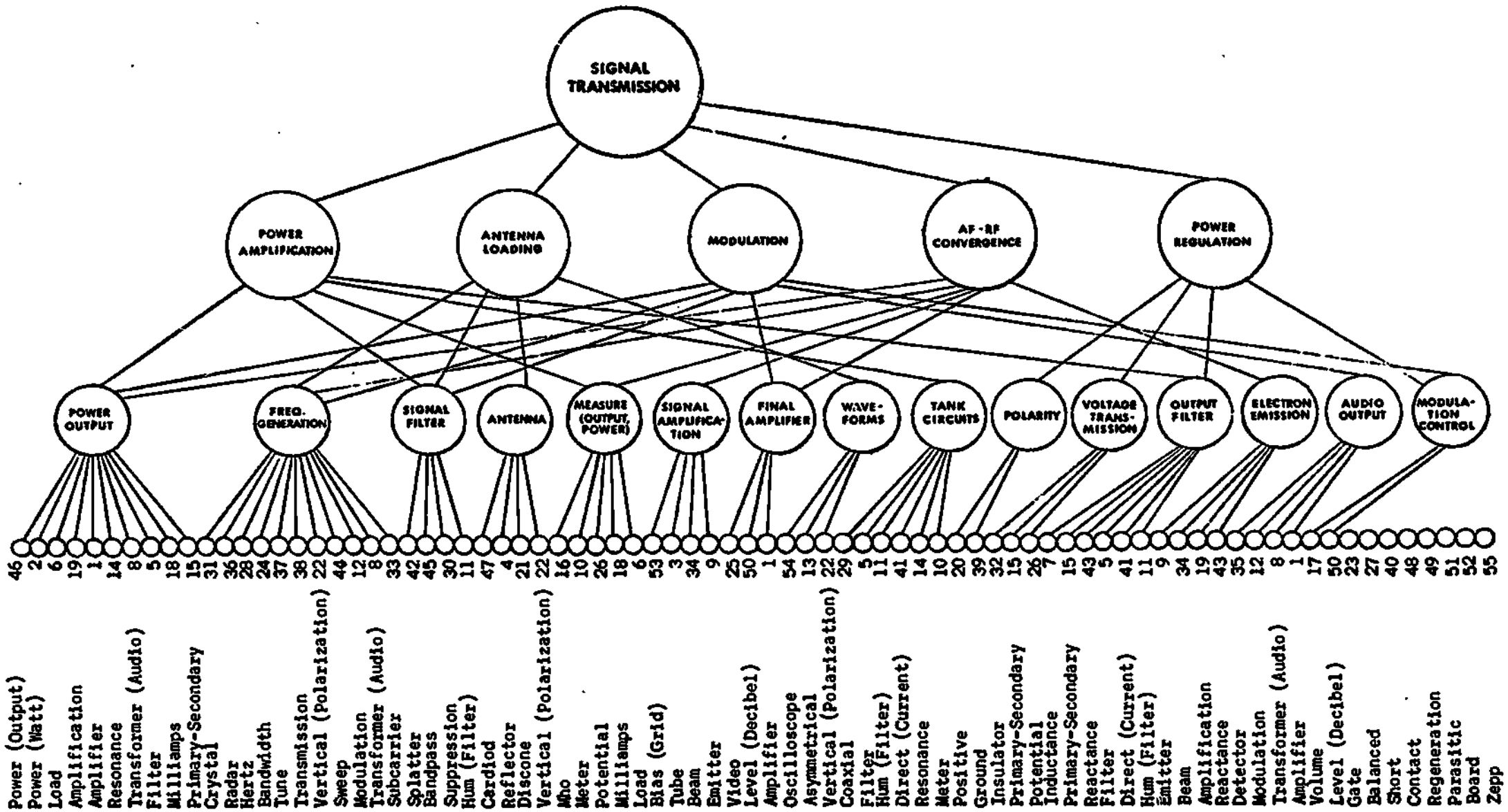
13. The composite associative conceptual structure appeared to be a logical and technically consistent network of concepts. Electronic experts felt that the composite structure represented clusters of concepts common to the two related occupations at a more general and more abstract level. The experts agreed that the composite structure did not logically draw concepts from any particular part or level of the separate structures for flexible workers, but rather integrated concepts from all levels and parts of both structures. The composite structure was considered incomplete, but this was anticipated because of the delimited list (41 words) of highly similar word-concepts used to generate the structure.

This study was one in a series of exploratory studies to develop and begin to test an empirical procedure for identifying technical associative conceptual structure. While the findings of the study are limited by the sampling of both stimulus words and workers, the results indicate that the associative procedures are both sensitive to differences

in cognitive behavior and capable of providing valid and reliable data. The replication of the second study in the series demonstrated the sensitivity of the procedure to detect differences in the associative meaning and organization of technical concepts between workers in the same occupation and between workers in different but related occupations. In general, the associative structures of flexible workers in two different but related occupations appear to be more alike than the associative structures of flexible and inflexible workers in the same occupations. The major point is that the procedure did reveal significant and practical cognitive similarities and differences between groups with fine, but important performance similarities and differences. Although a causal relationship between associative conceptual structure and performance was not shown by the study, it does seem reasonable to conclude that conceptual structure influences job performance, and is capable of identifying psychological commonalities between related occupations.

APPENDIX 1

The Labeled Technical Conceptual Structure of Stimulus Concepts
For A Group of Flexible Radio Communications Equipment Repairmen



APPENDIX 2

DIRECTIONS

You will be given a key word and you are to write down as many other words which the key word brings to mind as you can. These other words which you write down may be things, places, ideas, events, or whatever you happen to think of when you see the key word.

For example, think of the word, KING. Some of the words which KING might bring to mind are written below:

KING	Queen
KING	Cole
KING	Ruler
KING	Sky
KING	Kingdom
KING	England
KING	Imperial
KING	Kingfish

No one is expected to fill in all the spaces on a page, but write as many words as you can which the key word brings to mind. Be sure to think back to the key word after each word you write down because the test is to see how many other words the key word makes you think of. A good way to do this is to repeat the key word over and over as you write.

APPENDIX 3

SUMMARY OF KEY WORDS

ASSOCIATIVE MEANING - total distribution of free response words elicited by a given stimulus word.

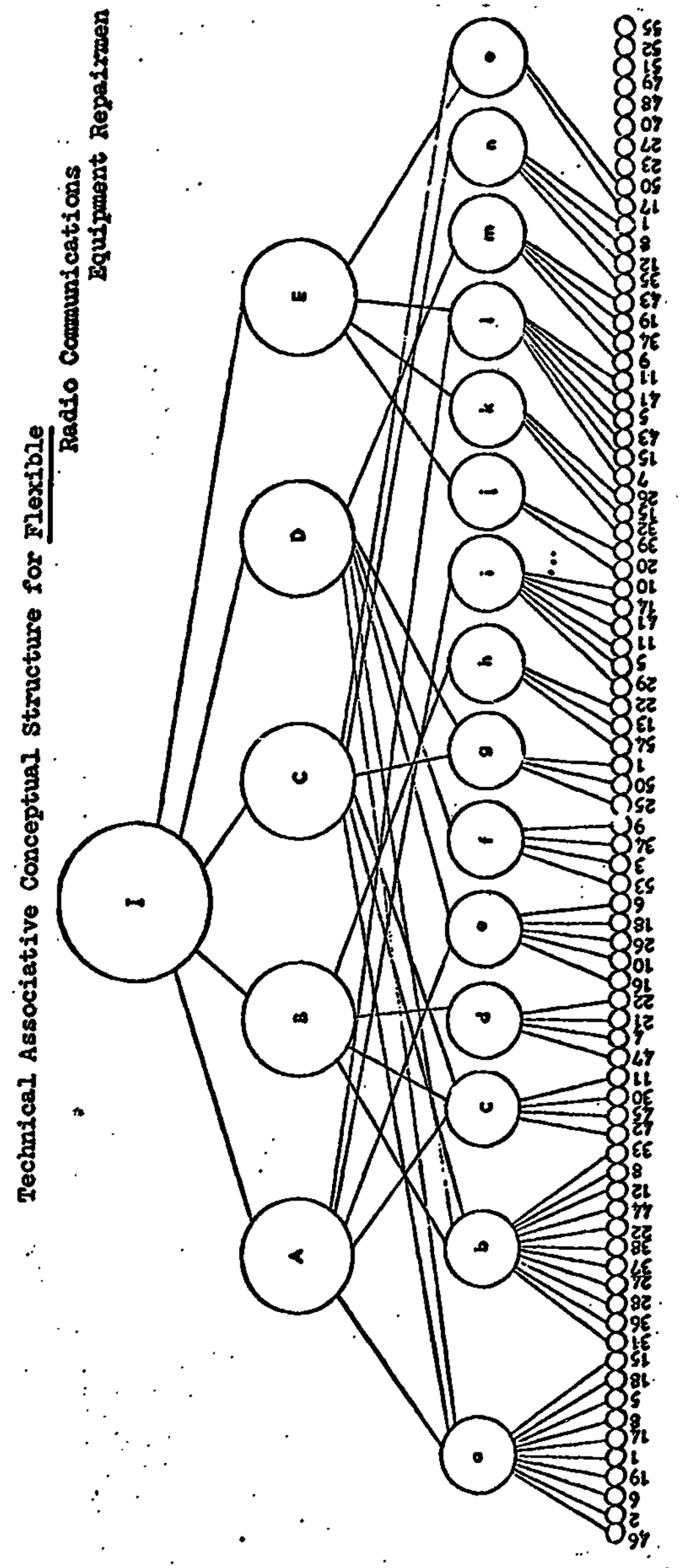
RELATEDNESS - an index of the amount of overlap between two or more response distributions elicited by two or more stimulus word-concepts.

STRUCTURE - a network of concepts and sets of concepts integrated or arranged on the basis of the relative amount of overlap in associative meaning.

Technical Associative Conceptual Structure for Inflexible

Radio Communications

Equipment Repairmen

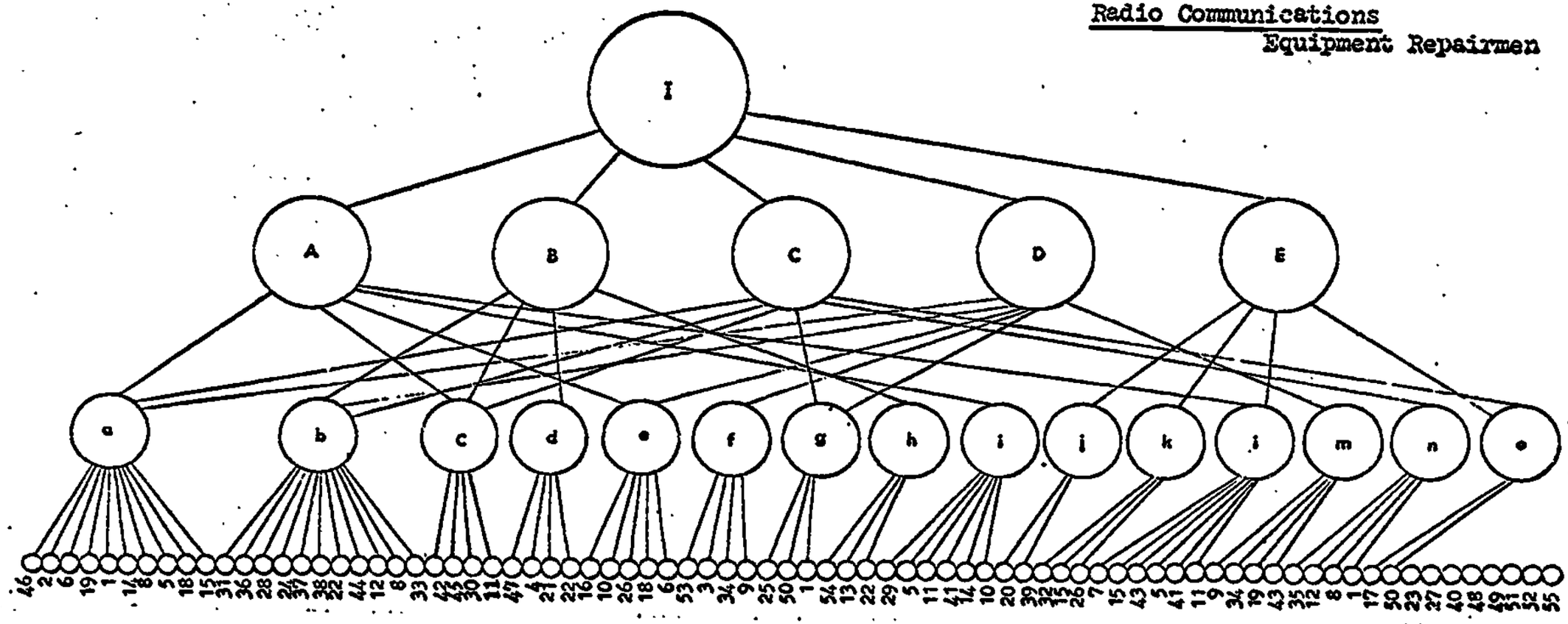


Technical Associative Conceptual Structure for Flexible

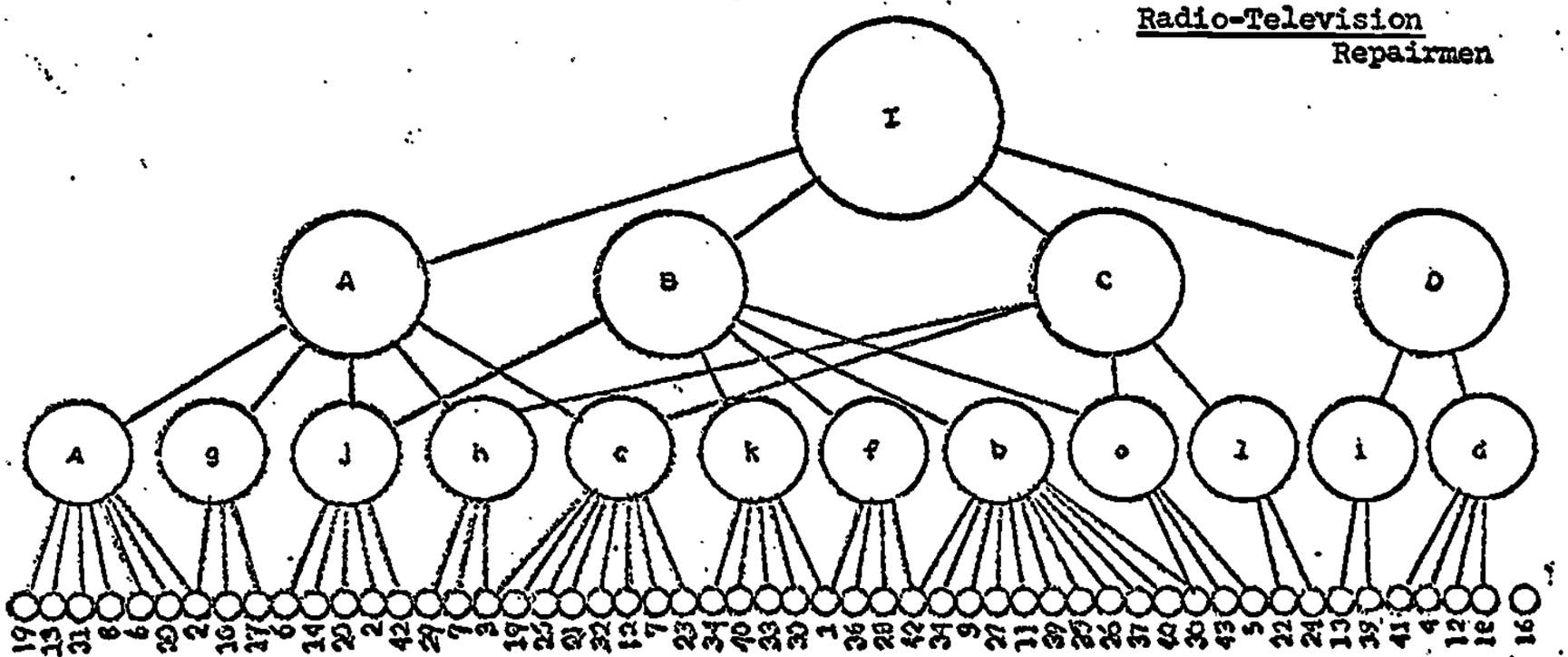
Radio Communications

Equipment Repairmen

Technical Associative Conceptual Structure for Flexible
Radio Communications
Equipment Repairmen

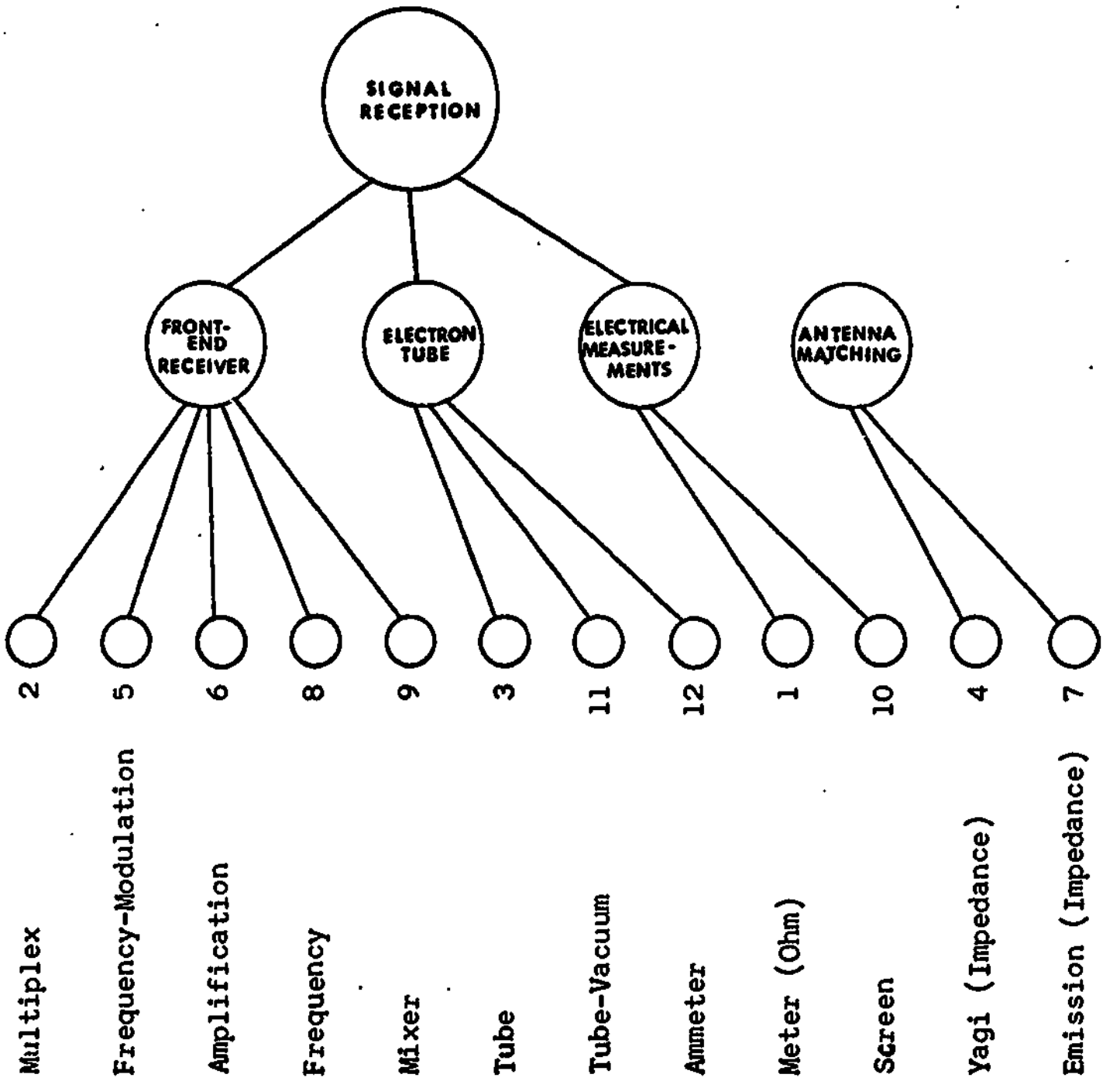


Technical Associative Conceptual Structure for Flexible
Radio-Television
Repairmen



APPENDIX 6

The Composite Technical Associative Structure of Common Stimulus Word-Concepts for Flexible Workers in Two Occupations



NATIONAL GOALS RESEARCH AND OCCUPATIONAL EDUCATION: PLANNING IMPLICATIONS FOR COMMUNITY COLLEGES AND TECHNICAL INSTITUTES[1]

by

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and

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National Goals Research and Occupational Education

Planning Implications for Community Colleges and Technical Institutes

(ABSTRACT)

Our nation's expanding population, increasing family incomes, and rising levels of educational achievement suggest greatly expanded employment demand in the decade ahead, new configurations of employment opportunity, and a marked increase in the need for occupational training programs at the post secondary level. More jobs and new kinds of jobs will be increasingly available to those trained in the occupational education programs of the nation's junior and community colleges and technical institutes. National goals research analyzes projected employment patterns in terms of the goals which we as a nation wish to achieve by 1975, and permits the derivation of implications for planning community college and technical institute programs in a manner which is at once new, imaginative, and scientific.

The priority we place on differential national goals will affect our need for specific types of manpower, and will thus provide a frame of reference for determining the character of occupational education in institutions of learning beyond the high school. National goals in the 1970's are expected to generate employment that will triple the number of technicians and double employment in health occupations between 1964 and 1975. Such growth illustrates anticipated enrollment gains in selected occupational education programs, and underlines some of the directions in which occupational preparation ought to go in the nation's cities. Administrators responsible for planning are thus provided with a map against which to chart program revision priorities and future resource allocations.

NATIONAL GOALS RESEARCH AND OCCUPATIONAL EDUCATION: PLANNING IMPLICATIONS FOR COMMUNITY COLLEGES AND TECHNICAL INSTITUTES

The future of occupational education in the nation's community colleges and technical schools does not depend simply on a healthy economy and continuing trends. Trends can tell us the numbers likely to be employed, their income, educational levels, and their advancing levels of technology. But trends do not tell us how we are likely to spend our discretionary money, what we will do with our education, or where we will apply our technology. To answer these questions, we must look at our goals and priorities.(1) We decide to buy a new car, or to send our children to camp, change jobs and spend our personal resources to obtain given ends, though we may not be particularly conscious of the process. Similarly, we as a nation spend our resources the gross national product, for better health care, rapid transit systems, more military hardware, or bigger social welfare programs to obtain certain national goals or objectives. In the broadest sense, these goals demonstrate values which have shaped our national tradition, and are basically qualitative in nature. They include concern for the dignity and welfare of the individual, the democratic process, and expansion of our opportunity

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(1) Lecht, L., Goals, Priorities, and Dollars: The Next Decade, The Free Press, New York, 1966. Chapter 1 gives a detailed description of goals analysis.

and freedom. These values affect the specific national objectives we elect to pursue, and the methods we will use to achieve them. More specific national objectives can be described in quantitative terms. On the basis of the resources we have been allocating to various goal areas and the resources a higher priority would require, we can estimate the costs in terms of dollars and manpower to achieve alternative priority objectives for a future pericd of time. A ten-year period usually proves to be a useful and manageable time-frame.

There is considerable agreement concerning the national objectives, although our pluralistic society encourages widespread difference of opinion as to relative priorities. Consensus concerning our objectives was illustrated by the work of the Eisenhower Commission on National Goals in 1960. Fifteen goals identified included improving the health, education and general welfare of American citizens, rebuilding our urban environment, expanding and modernizing our transportation system, maintaining national security, and safeguarding our natural resources.(2) To these the Kennedy Administration added the space exploration goal (see Table 1). The costs required to achieve all of our feasible goals by 1975 exceeds our expected manpower pool and financial resources. Achieving all of our aspirations would require 300 billion more dollars and over 13 million more employed people than our estimates indicate we will have available.

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(2) Lecht, L., Goals, op. cit., Chapter 1.

(3) Lecht, L., Goals, op. cit, Chapter 1, p. 27.

Table 1

Expenditures for National Goals

National Goal	Annual Expenditures (in billions of '62 dollars) 1962	Projected 1975
Consumer expenditures & savings	357	660
Private plant & equipment	49	152
Urban development(a)	64	130
Social welfare(a)	38	92
Health(a)	32	85
Education(a)	29	82
Transportation(a)	35	75
National defense(a)	51	67
Housing(a)	29	62
Research and development(a)	17	39
Natural resources(a)	6	17
International aid	5	12
Space(a)	3	9
Agriculture	7	9
Manpower retraining	.1	3
Area redevelopment	.3	1
TOTALS	725	1495

(a) Goals included in this study.

Though we shall not have the resources to achieve all of our aspirations in the next decade, we shall be able to do more than we are doing today. Discretionary resources which we can allocate among goals give us a choice, and our choices will be the equivalent of priority decisions regarding objectives. Establishing priorities among objectives is not a mere central planning function. Priorities are established in resource allocation when citizens spend their disposable income, when businessmen invest in new plant or new products, and when elected representatives authorize local, state, and federal spending.

Spending for national objectives generates employment. The nature of this demand for manpower will vary with national objectives. If we put a high priority on health, employment for doctors, nurses and medical technicians will expand. Universal education for 3-5 year olds would increase our need for teachers. But if we keep health and education programs at their current level and commit our discretionary resources to urban development objectives instead, we will stimulate employment for blue collar workers. The priorities we assign to objectives will influence employment demand, and, therefore, the types of trained manpower the nation requires.

The national estimates of employment demand expressed here cannot be translated directly into planning targets for occupational education for a number of reasons. First, employment demand in the local area of the community college or technical institute, where the educational planning decisions must be made and to which they must be appropriate, varies considerably from national norms. The local circumstances are always unique. Secondly, there are many other types of education and training institutions besides junior colleges and technical institutes which provide occupational preparation, and these must be taken into account together with variability of demand. In 1965, it was estimated that publicly supported occupational education programs provided pre-employment training for only five million individuals, or only one out of every six of the total number of trainees (see Table 2 for details).

Table 2

Estimated Vocational Training Outside the Formal Educational System, 1950, 1965, and Projected 1975[a]
(in millions of enrollments)

Training Institution	Enrollments in 1950	1965	1975
Professional & technical training	3.5	7.8	20.7
Company schools	6.0	7.2	19.9
On-the-job training	2.0	4.5	6.1
Correspondence schools	1.5	2.4	3.2
Armed forces	2.0	2.6	3.0
All others	0.3	0.5	0.9
TOTAL	15.3	25.0	53.8

(a) Cohen, W.J., "Education and Learning," in Annals of the American Academy of Political and Social Science, September, 1967, Table 2, p. 84.

The pursuit of national goals in the 1970's will occur in an environment characterized by an expanding population, rising levels of educational attainment and increasing professionalization of the labor force. The total population of the United States will be growing faster in the 1970's than it did in the 1960's. By 1980, our population is projected to be over 240 million -- a 17% increase in 10 years. The most rapid growth will be in the 25-34 year age group, the group of persons just getting established in employment careers.[4]

The civilian labor force will increase from 77 million in 1965 to over 92 million in the mid-1970's. This workforce will have a higher

(4) Manpower Report of the President, 1968, U.S. Department of Labor, April, 1968, Appendix Tables E, 2 and 3.

median level of educational attainment. In 1952 the median for persons over 18 years of age was 10.9 years of education. By 1967, this educational attainment level had risen to 12.3 years. In the next decade, the majority of high school graduates will be receiving some form of higher education.(5)

Long term trends in the labor force will continue in the next decade, increasing the number of jobs requiring post-secondary education for entry. The multiplying applications of new technology will increase the demand for some occupations more than others. Increased use of business data processing will make office machine operators a fast growing clerical occupation; the expansion of programs in oceanography and communications will also make natural science and engineering technicians a fast growing occupation. The average growth rate of civilian employment between 1964 and 1975 will be 25% (see Table 3). But professional and technical workers will increase by 45% in this period and clerical workers by 38%.(6) This development will have important consequences for community colleges. Overall, professional and technical occupations will be growing nearly twice as fast as craftsmen and operatives occupations, although these and other ratios reported could be considerably affected by the national objectives we elect to pursue.

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(5) Ibid., Appendix Table B-9.

(6) Based on Lecht, L., Manpower Needs for National Goals in the 1970's, Frederick Praeger; New York, 1969, Appendix Table B-3.

Table 3

Occupational Patterns in the Nation's Employment
1964 and 1975

Occupational Category	Distribution of Total Employment (in percent) 1964	1975	Percent Increase in Number Employed 1964-1975(a)
Professional & technical	12.2	14.2	45
Managers, officials & proprietors	10.6	10.7	26
Clerical	15.2	16.8	38
Sales	6.3	6.0	19
Craftsmen & foremen	12.8	12.2	19
Operatives	18.4	16.6	13
Private household	3.3	3.3	23
Service	9.9	11.3	43
Farm	6.3	4.0	-22
Laborers	5.2	4.9	18
TOTAL	100.0	100.0	25

(a) Since overall employment will increase by 25% between 1964-1975, a slight decrease in the percent of total in an occupational category can still be accompanied by an increase in number employed in that category.

Source: Based on Lecht, L., Manpower Needs, op. cit., Appendix Table B-3.

These general socioeconomic trends in our society are important determiners of employment supply and demand in the next decade. Of equal importance however are the priorities we assign to the objectives we wish to achieve. Viewing the future in terms of our goals allows us to identify long term employment potentials in time for the educational system to adapt its programs to anticipated employment needs. The approach differs from the trends analysis approach employed by the Department of Labor because it assumes changes in our priorities are probable. Hindsight now tells us

that a major recruitment campaign and program of expansion in training in health occupations should have accompanied the passage of Medicare and Medicaid legislation. In this case a national goal was defined, funds allocated and employment needs expanded without associated preparation of the labor force to fill the jobs. In a growing economy whose practices and institutions are subject to technological and social change, consciousness of our emerging national objectives can indicate the scope of necessary future efforts to train skilled manpower.

Employment figures based on widely varying goal expenditures can perhaps be fairly compared in terms of employment generated per billion dollars of final demand expenditures (see Table 4). A billion dollars spent on health and education combined created more total employment in 1962 than the same amount spent on transportation, urban development or social welfare. In transportation and urban development, high capital equipment costs reduce the employment impact of expenditures as compared to service-oriented activities in health and education. In social welfare, the lesser employment impact of equal expenditures results from the large portion of these expenditures which take the form of direct payments and do not therefore create employment for those providing social services.

Table 4

Estimated Manpower Requirements Per Billion Dollars of Final Demand Expenditures[a] (thousands of employees required)

Goal	1962	1975
Health & education	147.7	102.9
Social welfare	122.4	92.7
Transportation[b]	112.6	80.1
Research & development	134.1	110.6
Urban development	122.9	93.2

(a) In 1962 dollars.
(b) Does not include manpower to operate and maintain transportation vehicles.

Source: Lecht, L., Manpower Requirements, op. cit., Appendix Table 14.

The level of trained manpower to achieve various national objectives also varies considerably with differential objectives (see Table 5). This has important implications for junior and community colleges and technical institutes. Placing a high priority on health or education goals would expand opportunities in professional and service occupations, and only 4% of the employment generated by pursuit of these goals will be for blue collar workers. By contrast, a high priority for transportation or urban development objectives would provide many more blue collar jobs. Research-and-development and social welfare goals involve a more even employment distribution across major categories.

Table 5

Distribution of Employment by Occupational Group in 1975 for Selected Goals[a]
(in percent)

Occupational Category	Health[b]	Education[b]	Social Welfare	Transportation[c]	Research & Development	Urban Development
Professional & technical	42	64	17	10	36	9
Other white collar	16	15	34	29	20	28
Blue collar	3	4	26	56	39	58
Service & farm	39	17	23	5	5	5
TOTAL	100	100	100	100	100	100

(a) Refers to GNP growing at an annual rate of 4.5% between 1964 and 1975.
(b) Direct employment only.
(c) Includes manpower to operate and maintain transportation vehicles.

Source: Based on Lecht, L., Manpower Requirements, Appendix Table 5A.

Educational achievement will be higher for those goals requiring a higher percentage of professional and technical workers, but will rise whichever goals we pursue. College training will be increasingly necessary by 1975. It is anticipated that there will be particular shortages of professional and technical workers in a number of fields, which may increase employment opportunities for paraprofessionals.

Of all the job openings projected annually for the decade ahead for which education in community colleges and technical institutes is directly relevant, over a million will occur yearly in 16 major occupations (see Table 6). By 1975, all of these occupations will employ persons whose median level of educational attainment will be more than 12.0 years. This implies some level of post-secondary occupational training for many new entrants to the job market. Technicians, nurses and real estate or insurance salesmen are outstanding examples. But all sixteen occupations are characterized by a median level of educational attainment in excess of 12.0 years, and will therefore in many instances reflect a requirement of employers for some formal training beyond the high school diploma.

Implications for Junior College Planning

Planners of occupational training programs for junior and community colleges in the 1970's will need to be aware of those occupations with large expected employment demand as well as those occupations with a projected rapid growth rate. While the occupations characterized by large employment demand will tend to call for correspondingly large-scale training programs, rapidly expanding occupations will exert a pressure for more intensive and more sensitive planning. Fast-growth program areas will also call for more abundant lead-time in planning, lest there be a default in the preparation of sufficient manpower to meet the known requirements because essential program components such as teachers or curricula are not currently available.

Table 6

Annual Job Opportunities in the 1970's by Level of Median Educational Attainment

Occupational Category	Median Level of Educational Attainment: 1975	Annual Job Openings 1966-1975 (in thousands)
Nurse, professional	13.5	73
Technician, medical & dental	13.2	21
Technicians, general	12.8	55
Sales, insurance & real estate	12.8	26
Technicians, electrical & electronic	12.7	34
Secretaries & stenographers	12.6	249
Bookkeepers	12.5	87
Office machine operators	12.5	55
Policemen	12.5	29
Sales, general	12.4	70
Barbers & cosmetologists	12.2	48
Practical nurses	12.2	47
Electricians	12.2	35
Sales, retail	12.1	107
Mechanics, general	12.1	104
Attendants, hospital	12.1	99

The largest occupational area listed in Table 6 includes secretaries, stenographers and typists. But this is not the area which demands renewed emphasis in junior and community college programs. There are many sources of training for secretarial and clerical positions, including high school and proprietary school courses. Of greater urgency, if we as a nation are to achieve our higher goal aspirations in health and social welfare and apply new technologies, is the expansion of junior college occupational programs related to these goals. The need for personnel in health occupations will double in the next decade. There will be annual job openings for more than 100 thousand practical or professional nurses. Two year programs leading to associate degrees for nurses will

have to expand rapidly to meet such needs. Programs for medical and dental technicians engaged in tasks related to the diagnosis and treatment of patients will also be needed to prepare workers for a job market that will be increasing by 50% in the decade ahead.

New applications of scientific and engineering technologies in the chemical and physical sciences and in electronics will make related technician occupations one of the most rapidly growing major occupational fields in the 1970's. The employment of electronic and electrical technician experts will triple in the decade culminating in 1975. There were five jobs for every federally supported graduate of technician training programs in 1967.(7) Moreover, employment opportunities for technicians are expanding in technical service corporations and in state and local governments. Eighty thousand jobs will open annually for technicians in the early seventies, and a major proportion of those who get these jobs will probably be prepared in junior and community college programs.

Among occupations with a pronounced human service orientation, several stand out for which training programs have only recently been initiated in junior and community colleges. Social welfare assistants, teacher assistants, and library assistants are typical of this group. Employment opportunities in these occupations will increase rapidly during the 1970's. Providing trained personnel for this kind of work through junior and community college programs will help us to achieve our aspirations

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(7) Unpublished data from U.S. Office of Education.

in education and improve the quality of life for all our people. Paraprofessional opportunities in social welfare are direct ways of helping people to help themselves, and such programs will be in great demand in urban community colleges. It also seems reasonable, however, that a great number of high school graduates in suburbia, particularly girls with no immediate wish to enroll for four year college programs, will be attracted by semiprofessional work in the social sciences, in such roles as social worker assistant, teacher assistant, or educational technician.

If the current emphasis on law and order continues, new community college courses relevant to these objectives will be in increasing demand. Between the mid-1960's and the mid-1970's, job openings in this field will increase by over 50 percent at the very least, and may double. The training program which can be offered in the urban community college constitutes at once a service to the community and to youth who want more responsible jobs. The community college would be doing its share in upgrading the status of law enforcement officers by enhancing their level of attainment of education and training. In 1967, federal funds helped train only one out of every 30 new policemen. Federal programs can be counted upon for more support of students destined to enter the protective services, including firemen as well as policemen, in the decades ahead.

The continuing need for high level sales personnel and office machine operators suggests the desirability of maintaining at least the current level of training effort related to these fields. Course options in the

business and commercial departments of junior colleges will have to be continually updated, however, to keep up with the pace of change to automatic data processing methods in business. Insurance and real estate sales skills will be affected by population trends, increasing family incomes, and by the level of achievement of national goals in health and construction. Office machine personnel will be affected by continuing developments in equipment technology and in the organization of management systems.

The junior or community college will face a continuing challenge in the 1970's to meet the educational needs of previously "left out" populations. An implication of the social forces at work in our nation, particularly in our cities, is that in some occupations employment opportunity will increase more rapidly for nonwhites than for whites. It can be anticipated that correlative training will be needed and wanted. Outstanding examples of occupational areas in which the junior or community college will be under particular pressure to train nonwhites are the following: teacher assistants, social welfare assistants, electronic technicians, professional nurses, and policemen and firemen. In order to fulfill education and training responsibilities like these, junior colleges will look for assistance to the Vocational Education Legislation of 1968. Federally funded cooperative programs with local employers, for example, could enable students to follow a series of education and training steps spread out over time, thus enabling the student to progress under less pressure and the college to serve a greater number of individual students, in effect multiplying the utility of educational facilities available.

Post-secondary Technical Training

A number of occupations require no formal college education but usually call for some degree of training beyond the high school diploma. These occupations might require a standard certificate, as in the case of the licensed practical nurse or barber, or may simply reflect a pattern of hiring preferences shown to those who have formal training. Most training programs associated with such occupations are less than two years in length. Some are as short as two to four weeks in duration. Increasing manpower demands in occupational areas at this level will have their greatest impact on the post-secondary vocational schools and proprietary training institutions of the mid-1970's. Many who prepare for secretarial or stenographic positions will receive their initial training in schools such as these.

Annual job openings in ten major occupations that fit this description will be in excess of 650 thousand in the next decade. These jobs can be conveniently discussed in four classifications: health services, distributive occupations, office occupations, and craftsmen. Within these groupings, the fastest growing occupations will be in the health services field. To cite an example, the need for hospital attendants employed as nurses' aides, psychiatric aides, and community health aides will double in the next decade. While few of the 100 thousand aides required annually are currently being trained outside the hospital, it is anticipated that an increasing proportion of nurses' aides will have to take preparatory formal coursework in or after high school if

they are to be expected to qualify for acceptance in the light of the rising general levels of educational attainment. Forty percent of the current demand for practical nurses is being met by training programs using federal funds and leading to a formal licensing procedure. The greater availability of programs like these in secondary and post-secondary non-collegiate urban institutions would increase the educational and employment opportunities of those who are educationally or socially disadvantaged and who aspire to careers in the health services.

No immediate expansion of training programs for office occupations and distributive occupations is now in order. Secondary and post-secondary programs operating under public funding are currently graduating at least one person for every two jobs in these categories, and a growth rate of these occupations between 6 and 12 percent suggests that no expansion of related training programs is needed.

If we are to achieve our national objectives in urban development and transportation, however, there will be an increasing demand for skilled craftsmen in such positions as airplane mechanics, airconditioning mechanics, radio and TV repairmen, electricians, plumbers, and other building tradesmen. Employment opportunities in occupations such as these will total more than 150 thousand annually. The increasing complexity of aircraft and automotive equipment, and major home appliances suggests that post-secondary programs will be increasingly utilized to prepare repairmen for these jobs.

Employment for workers in mechanical trades related to construction will increase by as much as 50 percent in the next decade if we are to

achieve our national objectives concerned with the rebuilding of our cities, and with the provision of adequate housing for our expanding population. In 1967, federally funded programs in vocational-technical education graduated only one student for every ten anticipated job openings in this area. In addition to the increasingly organized nature of large-scale construction ventures, the use of new materials and the increasing variety of job opportunities for planning and managing construction work imply a need for the expansion and modernization of occupational preparation in these areas in the years ahead. Carpenters, brickmasons, electricians and plumbers represent key occupations due for renewed emphasis.

The non-collegiate post-secondary school also has a role in the training of technicians to meet the nation's manpower needs. Since, however, the technician of tomorrow who has more advanced education is likely to be hired or promoted the more readily, non-collegiate technician training programs should be designed the more selectively with regard to the job market and the interests of the individual student. In some instances these programs can be coordinated with junior college programs, in other instances they may either complete or fill in important gaps, and in still other instances it would be in the greater long-range interests of the student to do his course of studies in the local junior or community college. In spite of the need for articulation, it is anticipated that the transfer of academic credits from non-collegiate to collegiate institutions will not yet be working smoothly by the mid-1970's.

The results of national goals research mean that planners of occupational education programs at the nation's community colleges and technical institutes now have available a map in the form of alternatives for the future. The grids of this map will enable administrators more thoughtfully to chart their own program revision priorities, and future resource allocations. Such planners should start to look toward the larger future of the institutions and students they serve in the light of this context.

VT 010 414
Evans, Robert, And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 10, 1969).

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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This document contains six speeches presented at the 63rd Annual Convention of the American Vocational Association on December 10, 1969. "The Development and Utilization of Search: A Computerized System for Retrieving Publications in the ERIC Files" was presented in three parts by Mr. Robert Evans, Dr. William Brown, Jr., and Dr. Vester Mullholland. A progress report on "Project ABLE" (development and evaluation of an experimental curriculum for the New Quincy Massachusetts Vocational-Technical School) was given by J. William Ullery, project director. A third speech by David H. Ahl concerned the "V.O.E.D. System: A Computerized System for Obtaining, Analyzing and Reporting Vocational and Occupational Education Data to the Pennsylvania Department of Education." Other speeches were "Industrial Arts Curriculum Project: A Progress Report" by Henry J. Sredl, "Project Dissemination: A Computer Based Information Storage and Retrieval System" by B. Smith, D. Wheeler, and R. Rosse, and "A Pilot Program for the Development of State Vocational-Technical Education Information Dissemination Systems" by Joel H. Magisos. (BC)

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Speeches Presented At The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 10, 1969

Research Section

VT010414

The Development and Utilization of SEARCH: A Computerized System for Retrieving Publications in the ERIC Files

Presented at the Annual
American Vocational Education Convention
December, 1969

PART 1: The Technological Development of the SEARCH System
by Mr. Robert Evans, Research Assistant
Center for Occupational Education
North Carolina State University

PART 2: Access and Utilization of the SEARCH System
by Dr. William J. Brown, Jr.
Director of Research
North Carolina State Department of Public Instruction

PART 3: Position Paper, Dissemination Policies and Procedures
by Dr. Vester Mulholland, Special Assistant
Division of Research and Planning
North Carolina State Department of Public Instruction

INTRODUCTION

The idea for a computerized search system which retrieves accession data and titles of publications is not new by any means. The DATRIX (Direct Access to Reference Information) system and NASA's Scientific and Technical Information System are examples of operational systems which provide computerized search services. ERIC Central has plans to implement an on-line, remotely accessed search system for the ERIC network of clearinghouses and users. Although plans for searchir the ERIC files have been developed and endorsed by both ERIC Central, the ERIC Clearinghouses, and researchers in general, we were still without a computerized search system at last year's AVA. Believing that the development of such a system wa only a matter of time (and additional budget allocations), the Occupational Research Unit undertook the task of developing an interim system for searching our microfiche files which pertained to occupational education. We developed several ingenuous schemes for searching our files, each of which required more resources than a manual search using the RIE annual indexes. At this point, we reverted to the time honored procedure of calling on resource persons who were experts in the technologic aspects of data retrieval. Thus, any credit which we receive for the development of a computerized search system must be in terms of coordinating and linking the resources of ERIC Central, the Center for Occupational Education, and the Science Technology Research Center which is located in the Research Triangle.

With this background, let me describe what we have developed. The entire ERIC files have been transferred from the magnetic tapes used in printing RIE and stored on a disk pack at the Triangle University Computing Center (hereafter called TUCC). These files can be searched by computer using keywords to direct the search. The keywords are any words in the ERIC thesaurus and they can be used to direct the search process through a logic of intersections, conjunctions, and/or negations.

At this point, I want to let Mr. Bob Evans, a research assistant for the Center for Occupational Education at North Carolina State University describe the SEARCH system in detail, explain exactly how it was developed, and report on the preliminary evaluation of the system. After Mr. Evans' report, I will describe the present utilization of the SEARCH system and project some of the plans which we have for its future expansion.

Co-presenters:

Robert C. Evans, Jr., Graduate Research Assistant and Manager of SEARCH Retrieval System
Center for Occupational Education
North Carolina State University at Raleigh
Raleigh, North Carolina 27607

and

William J. Brown, Adjunct Professor in Agricultural Education and Director of the Division of Research, State Department of Public Instruction
Raleigh, North Carolina 27601

The Development and Utilization of a Computerized Information Retrieval System for the ERIC Information System.[1]

Abstract:

This paper discusses the development and field-testing of a computerized information retrieval system used to search ERIC. The retrieval system was developed and implemented cooperatively by the Center for Occupational Education at North Carolina State University, the North Carolina Science and Technology Research Center, the North Carolina Occupational Research Unit, and ERIC Central who provided the tapes.

The SEARCH system is currently in operation at the Center for Occupational Education on a pilot basis. The mechanics of the system require a researcher to submit a list of key words relevant to the topic of the search. The search mechanism allows the researcher the capability of planning a strategy using negations, unions, and intersections of key work terms. The computerized information system then searches the documents in RIE and prints out ED accession numbers and titles. Total costs per search have been approximately ten dollars including personnel, direct computer cost, and indirect systems cost.

The paper will present the results of field-testing the system with Center for Occupational Education staff, selected graduate students, and clientele served by the Occupational Research Unit.

Plans will be discussed for developing a more comprehensive information retrieval and dissemination service with the Center for Occupational Education exploring national and regional needs and the Occupational Research Unit concentrating on state needs.

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts, December 10, 1969.

The idea for a computerized search system is not new by any means. The DATRIX (Direct Access to Reference Information) system and NASA's Scientific and Technology Information System are examples of operational systems which provide computerized search services. Central ERIC has plans to implement an on-line, (Real time) remotely accessed search system for the ERIC network of clearinghouses and users. Although plans for searching the ERIC files have been developed and endorsed by Central ERIC, the ERIC Clearinghouses, and researchers in general, we were without a computerized search system at last year's AVA.

We are pleased to announce that this is no longer the case. This past spring the Center for Occupational Education at Raleigh with the N. C. Occupational Research Unit secured the assistance of information retrieval specialists at the Science and Technology Research Center (STRC) located in the N. C. Research Triangle Park. STRC, with support from NASA and the State of North Carolina, operates a Regional Dissemination Center to search: the 4000,000 documents in the NASA file, the Department of Defense unclassified unlimited report collection, and other smaller files. STRC felt that they would be able to provide us with a software package that would allow the researcher to use keywords and descriptors to logically search the entire ERIC file and receive as output the ED accession numbers and titles which satisfy his logic. The RIE tapes were borrowed from Central ERIC (by the NCORU) in May and the system was operational by the middle of June. Therefore, with the cooperation of the Center, the N.C.O.R.U., STRC, and Central ERIC (who loaned the tapes) plus a modest investment by the Center for Occupational Education at Raleigh, a flexible information system on the entire ERIC file was made operational in one month!

We have been operating the system on a pilot basis since the last of August. The two previous months were used for experimentation and development of an operating procedure. We have run eighty searches thus far and forty of these have been in the pilot stage. Based on 70 searches, there have been 85,232 postings searched with 5,053 hits (hits are solutions to the logic equation). This would represent a reduction of about 93% of the information required in literature review. The searching portion of the program required an average of 46.35 seconds of the 360-75 (based on 52 searches). The titles portion of the program, which prints accession numbers and a 100 character title, requires an average (based on 49 searches) of 20 seconds of the 360-75. Minimum search time at present is almost 25 seconds and minimum title's time is near 10 seconds. Cost on the 360-75 is about 12¢ per second. Therefore, minimum computer cost for a search with titles is $4.20 and the average computer cost for a search with titles has been about $8.00. Because of the relatively low usage of the system, we have been able to keep labor costs at a minimum since those people operating the system can do so without neglecting their other responsibilities. Additional overhead expenses include: updating (so far, this has been semiannual, but we hope to improve this in cooperation with Central ERIC), printing of dictionaries, disk pack rental, and 1050 system rental. At present, we are able to offer the service to outside users at the rates quoted in your material. We feel that these figures represent a true minimum because of the efficiency of the computer, the programs, and our own operating procedure.

Figure 2 represents the SEARCH retrieval system. Job inputs are teleprocessed from the IBM 1050 data processing system at the Center to the Triangle Universities Computing Center (TUCC) at Research Triangle Park. TUCC, which is jointly operated by North Carolina State University, University of North Carolina at Chapel Hill and Duke University, has an IBM 360-75. The complete ERIC file of titles and abstracts is physically located on a disk pack at TUCC. The job output is teleprocessed back from TUCC to the Center in Raleigh. There are two basic options to the SEARCH user. The first involves sending the Center a carefully worded statement of the researcher's particular interest. For example: "What evaluation studies have been conducted to assess the values and benefits of a non-graded system of vocational training." The second option allows the researcher to plan his own logic for the search rather than have one of our staff plan the logic for him as would be the case with the first option. The sample searchers included in your package, were planned by the researchers themselves. Since the process that the staff member or researcher goes through is the same, it will be described as if the researcher were operating the second option.

Using a form like "Request for Machine Search Number ____" the user gives a search title which includes his last name and initials followed by a descriptive title. The statement of the problem should describe whether accession numbers only are wanted and any special instructions such as billing or mailing addresses. The reference code is a device to make the logic statement simpler. It consists of assigning A for 1st term; B for 2nd term, etc. The catalog term is the EXACT spelling (even if misspelled or missing letters) and spacing of the terms as

in the dictionary. The number of postings is the frequency which that term has been used as a descriptor. After all terms have been entered, the number of postings is totaled. Finally, the logic for the search is indicated. The user has three operators which he can use in a logical equation that combines descriptor terms--terms which he has gotten from an ERIC dictionary or thesaurus. These operators are: union--EITHER (term 1) OR (term 2); intersection--(Term 1) AND (term 2); and negation--not (term 1). That is, A + B (A union B) yields reports with either term A or B used as descriptors. A • B (A intersection B) yields reports with both term A and Term B used as descriptors. The information search operator checks the request for possible errors, prepares a program for the search, transmits the program on the IBM 1050, receives the output at the 1050 terminal and sends the results to the researcher. The entire process takes only five to thirty minutes of the researcher's time.

We feel that it is too expensive and unrealistic to operate the system in the real time mode. Therefore, we operate in the remote job entry mode where jobs are completed by the computer on an approximate first come, first serve basis (actually dependent on the type job, amount of time required to process it, and whether special equipment has to be mounted). This procedure usually gives us return within 4-6 hours, therefore, we feel that the researcher can be sent his results within twenty-four hours after we receive his request form.

The user also has an additional option which allows him to search only those time portions of the file in which he is interested. He might

use this option to get an update of titles added to the file since his last search.

In our evaluation plans for the pilot SEARCH system, we have sent to the user an evaluationform approximately three weeks after he receives his SEARCH output. At present we have sent out only twenty of the forms and have received eight returns. A second follow up to non-respondents has been mailed this week. Although the returns are too few for firm conclusions, we feel they are representative. To summarize the returns, (see Appendix A) the system itself has been very well received. From 20-25% of the titles in the hit list were what the researcher wanted. He followed up the search by reading 15-30% of the hit list abstracts and reviewed or ordered the complete report for 8% of the hit list. Those with experience in the area, felt the ERIC file is "slightly above average" in its coverage of the area of their interest. The searches are being used by graduate students, administrators, project directors, and RCU personnel for project research, thesis research, general information, administrative assistance and background material for articles. The average user feels the SEARCH output does a good job of meeting his needs. Suggestions for improvement include increasing the data base (a criticism of ERIC itself) and supplying the user with abstracts for his hit list if he wants them (at present, we feel the time and cost to our staff is too great).

In conclusion, we have found the SEARCH system is doing an excellent job on the ERIC file at a cost which is extremely reasonable when contrasted to the savings of man hours for the professional researcher.

If we can be of assistance to you in performing a search or conducting a workshop with a demonstration of the SEARCH system, please feel free to write or call:

SEARCH
Center for Occupational Education
North Carolina State University
Raleigh, North Carolina

919-755-2493; 2494; 2496

Dr. Brown who represented the interests of the ORU in the development of SEARCH will now discuss the utilization of the retrieval system.

Access and Utilization of the
SEARCH System
by
William J. Brown, Jr.

The output from the SEARCH system consists of ED accession numbers and titles of all publications in the ERIC system which are related to a particular area of interest. The area of interest is described to the computer by using keywords from the thesaurus.

The utilization of the SEARCH system presents at least two problems which requir attention at this time. The first problem is focused upon how to make the computerize system for searching the ERIC files accessible to people who are now users or at least potential users of the current system. This involves developing an awareness that the system is operational and can be utilized through one of three groups - the Center for Occupational Education at North Carolina State University, the Occupational Research Unit and the Research Information Center of the North Carolina State Department of Public Instruction, and the Science Technology Research Center in the North Carolina Research Triangle. The Center for Occupational Education is currently operating the SEARCH system on a self-sustaining, cost basis which varies according to the amount of service which a user requires. The Center will print-out an up-dated dictionary of keyword terms and instructions for preparing the search for approximately $10.00. With this information and some staff training, a researcher could prepare his own logic and program control cards for the search. If this approach were taken, the search could be conducted for the cost of a terminal access to TUCC and the cost of the actual computing time utilized. (The computer cost varies from search to search but generally averages about 60 seconds at 12¢ per second totaling $7.20 per search.)

If the user developes his own keyword list and logic for the search, the cost is a flat $4.00 per search plus computer cost. If the user wishes to submit a carefully worded statement describing the area of interest, a SEARCH technician will develop

the proper keywords and logic, prepare the control cards and submit the job for a flat rate of $5.00 per search plus computer cost.

The Research Information Center and the Occupational Research Unit at the North Carolina State Department of Public Instruction provide this service to staff members and to local educational agencies at no cost to them. Current operating budgets are subsidizing these searches in order to develop an awareness of the potential utility of this service. All searches relating to occupational education are being channeled through the Occupational Research Unit during this field-testing period in order to get an indication of the extent and nature of the demand.

The Science Technology Research Center in the North Carolina Research Triangle is offering the SEARCH service for a flat rate of $15.00 with the user providing a clearly worded statement describing the area of interest.

The development of a moderately priced, effective, quick, and simple to operate computerized system for searching the ERIC system is a substantial technological step forward. It has been made possible by the cooperative efforts of many people and at relatively small out-of-the-pocket expense. The technologist has made his contribution to the system and provided us educators with the necessary hardware to develop a comprehensive research dissemination system. We can fault no one but ourselves if SEARCH is not used to meet the many diverse needs of the educational researchers, the administrator and the instructional practitioner.

The second problem in effectively utilizing the SEARCH system is its integration into a comprehensive system of research dissemination. Quite frankly, we, in North Carolina have taken a few small steps in developing a dissemination system which utilizes a computerized search service. These steps have been exploratory by design until a greater appreciation of the problem at hand is achieved and its potential for service both statewide and nationwide is fully realized. Since we "kind of slipped into" the development of an effective means of searching the ERIC

files, we found ourselves in a potential "tiger by the tail" situation without a clear-cut design on how we should function in relation to in-state versus out-of-state users and users who are occupationally oriented versus those who are in other disciplines. To date, the State Department of Public Instruction has provided the SEARCH service to staff members and to a limited degree to local educational agencies. One professional staff position has been added to the Research Information Center to handle search inquiries and to furnish copies of the bibliographical output to users. Facilities are available for the duplication of microfiche as these are requested. Although this bibliographical service is quite valuable, especially to researchers, it is evident that a total research dissemination program will have to be developed if research is to be utilized and not merely retrieved.

Developing a State-Wide Research Dissemination System

Developing a system of research dissemination requires the careful delineation of what research dissemination is and what it proposes to do. Many people discuss the difficulty of getting research findings into use with the implication that adequate research dissemination offers the solution for implementing research. This definition of dissemination would seem to encompass almost all the stages in the diffusion process moving from awareness through adoption. I feel that such a definition is too broad and improperly identifies the research disseminator's task. It seems more reasonable to say that a research disseminator's task is to serve as a facilitator between the producer of research and the persons or systems responsible for further development and implementation of research.

The research disseminator's task may well vary according to the audience group. A bibliographical search may be adequate for the research producer who would prefer to review and synthesize the original documents himself. On the other hand, the same bibliographical service for administrators and teachers may be next to useless because of inadequate time, resources, and expertise in interpreting the studies. Research findings will have to be "re-packaged" for most consumers

in order to meet their particular needs. Thus, the research disseminator must give high priority to determining who his audience groups are, what their particular problems are, and how can research be presented in the most meaningful manner. It may well be that teachers need to be aware of selected research findings in areas of interest regardless of the fact that awareness alone seldom induces a change in the system but instead sets the stage for change to occur. If this is true, a "newsletter type" publication with capsule generalizations drawn from research may be the vehicle to serve the general awareness function.

The form for research dissemination to program planners may be quite different. These people may need to have research in an area of special interest reviewed with the highlights of the study presented for their consideration. These reviews would reflect what has been tried previously and what is known generally about an ar If further information is desired, the program planners can review the entire docume before proceeding with planning efforts.

A key prerequisite for implementing an effective research dissemination system is to determine what is to be done, what resources are needed, and in the case of limited resources, what priorities should be given to various phases of the system. In our state, the responsibility for developing a research dissemination system has assigned to a professional staff member with the help of task force committees as an "idea" generating group. Guidelines for developing a research dissemination system are being reviewed and gleaned for activities which can be implemented immediately and for those activities which should be medium and long-range goals. The first document produced by this group is attached and reflects the direction in which the State Department of Public Instruction is proceeding. The task of implementing a truly effective system of dissemination remains to be accomplished by those who have the vision to see what is needed and have the support to muster the necessary resources for doing the job. Perhaps, in a year or so we can report that progress has been made in research dissemination and that there is an interface between research producers and research consumers rather than a "knowledge gap". Thank you!

NORTH CAROLINA STATE UNIVERSITY | AT RALEIGH

CENTER FOR OCCUPATIONAL EDUCATION
RESEARCH-DEVELOPMENT-TRAINING

COMPUTER ASSISTED

RESEARCH IN EDUCATION

The Center for Occupational Education in Raleigh is offering the resources of its computerized ERIC information file to educators. The ERIC file contains reports from all areas of education which may be used for assistance in a current awareness or in-depth literature review.

For less than $10, the Center will conduct a computer search for materials pertinent to the researchers field of interest in 21,000 ERIC reports of research collected by the 19 clearinghouses in the ERIC system. A listing of ERIC accession numbers and titles will be mailed within 24 hours after receipt.

Local researchers estimate that to find the literature located through a single computer search would require as much as three weeks using conventional manual searching techniques.

Rates for the ERIC search are:

A. Category I Search - $4.00 + computer cost.

These searches are prepared by the user with the aid of a dictionary of descriptors and a thesaurus of ERIC descriptors. The researcher can plan his own logic for the search.

B. Category II Search - $5.00 + computer cost.

These searches are prepared by our staff based on a carefully worded statement of the researchers particular interest.

C. Dictionaries and directions for preparing Category I searches are available at the Center, most libraries, or through the mail for $10.

For further information contact:

SEARCH
Center for Occupational Education
North Carolina State University
1 Maiden Lane
Raleigh, North Carolina 27607

Telephone: 919 755-2493

THE UNIVERSITY OF NORTH CAROLINA, William Friday, President, comprises: *North Carolina State University at Raleigh, the University of North Carolina at Chapel Hill, the University of North Carolina at Greensboro, and the University of North Carolina at Charlotte.*

REQUEST FOR MACHINE SEARCH NUMBER _____

SCHOOL CODE: _____ ENGINEER: _____ DATE: _____ TIME: _____

SEARCH TITLE: _____

STATEMENT OF PROBLEM: _____

DESCRIPTIVE TERMS

REFERENCE CODE	CATALOG TERM	NUMBER OF POSTINGS

LOGIC:

REQUEST FOR MACHINE SEARCH NUMBER ER0063

SCHOOL CODE: COE ENGINEER: Childers DATE: 10/27/69 TIME: 11:00

SEARCH TITLE: MORGAN-B THEORIES, MODELS, AND METHODS OF INSTRUCTION

STATEMENT OF PROBLEM: Bill on NCS. PSY. G0662

DESCRIPTIVE TERMS

REFERENCE CODE	CATALOG TERM	NUMBER OF POSTINGS
A	MODELS	414
B	CONCEPTUAL SCHEMES	54
C	OPERATIONS RESEARCH	76
D	TEACHING MODELS	41
E	THEORIES	90
F	TEACHING METHODS	1133
G	TEACHING SKILLS	47
H	TEACHING TECHNIQUES	845
I	TEACHING PROCEDURES	142
J	EDUCATIONAL STRATEGIES	113
K	INSTRUCTION	324
L	INDIVIDUAL INSTRUCTION	330
M	LARGE GROUP INSTRUCTION	28
N	INSTRUCTIONAL DESIGN	83
O	INSTRUCTIONAL TECHNOLOGY	238

LOGIC: TOTAL: 3958

(A+B+C+E). (F+H+I+J+K+L+M+N+O) +G+D

CODE NUMBER COE
PREPARED BY CHILDERS
10/27/69

THE HIT LIST FOLLOWS

ED-001425 ADAPTING TEACHER STYLE TO PUPIL DIFFERENCES, TEACHERS FOR DISADVANTAGED CHILDREN
ED-001682 TOWARD A PRESCRIPTIVE THEORY FOR TEACHING THE DISADVANTAGED. (TITLE SUPPLIED).
ED-002490 THE DEVELOPMENT AND NATURE OF OPERATIONS RESEARCH AND ITS RELEVANCE TO EDUCATIONAL-MEDIA RESEARCH.
ED-003449 TOWARD A MODEL OF TEACHER DECISION-MAKING IN AN URBAN CLASSROOM.
ED-003808 THE THREE R'S PLUS OR A NEW APPROACH TO EDUCATION'S PROBLEMS.
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ED-011939 PSYCHOLOGICAL CONCEPTIONS OF TEACHING.
ED-011959 A PROCEDURAL AND COST ANALYSIS STUDY OF MEDIA IN INSTRUCTIONAL SYSTEMS DEVELOPMENT. PARTS A AND B.
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ED-012376 A REPORT OF CONFERENCE ON STRATEGIES FOR EDUCATIONAL CHANGE (WASHINGTON, D.C., NOVEMBER 8-10, 1965).
ED-012519 COST-BENEFIT ANALYSIS OF EDUCATION.
ED-012617 INSTRUCTIONAL QUALITY CONTROL SYSTEMS.
ED-012818 PSYCHOLOGICAL AND EDUCATIONAL FACTORS IN TRANSFER OF TRAINING, PHASE 1. QUARTERLY REPORTS 2 AND 3.
ED-012819 PSYCHOLOGICAL AND EDUCATIONAL FACTORS IN TRANSFER OF TRAINING, PHASE 1. QUARTERLY REPORT 5.
ED-012820 PSYCHOLOGICAL AND EDUCATIONAL FACTORS IN TRANSFER OF TRAINING, PHASE 1. QUARTERLY REPORT 6.
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ED-013205 THE USE OF STATIC AND DYNAMIC MECHANICAL MODELS IN TEACHING ASPECTS OF THE THEORETICAL CONCEPT, THE
ED-013214 MANUAL OF LECTURE DEMONSTRATIONS, LABORATORY EXPERIMENTS, AND OBSERVATIONAL EQUIPMENT FOR TEACHING E
ED-013228 CLINICAL RESEARCH--A TWO-WAY STREET BETWEEN RESEARCH AND PRACTICE.
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ED-017798 THE TECHNOLOGY OF MILITARY TRAINING.
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ED-018264 THE COGNITIVE ENVIRONMENTS OF URBAN PRE-SCHOOL CHILDREN. MANUAL OF INSTRUCTIONS FOR ADMINISTERING
ED-018265 THE COGNITIVE ENVIRONMENTS OF URBAN PRE-SCHOOL CHILDREN. MANUAL OF INSTRUCTIONS FOR ADMINISTERING
ED-018267 THE COGNITIVE ENVIRONMENTS OF URBAN PRE-SCHOOL CHILDREN. MANUAL OF INSTRUCTIONS FOR ADMINISTERING

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ED-018410 ENGLISH LANGUAGE ARTS IN WISCONSIN, A SEQUENTIAL GROWTH CURRICULUM IN ENGLISH LANGUAGE ARTS FOR
ED-019224 MICRO-TEACHING, A DESCRIPTION.
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ED-020673 INSTRUCTIONAL SYSTEMS DEVELOPMENT--A DEMONSTRATION AND EVALUATION PROJECT. FINAL REPORT.
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ED-026302 SPECIFICATIONS FOR A COMPREHENSIVE UNDERGRADUATE AND INSERVICE TEACHER EDUCATION PROGRAM FOR ELEMEN
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ED-026317 APPENDIX L. A SEQUENCE FOR THE PRACTICUM.
ED-026320 APPENDIX O. THE HUMAN RELATIONS SCHOOL.
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ED-026349 STRUCTURED PRACTICE IN PREPARING SCHOOL PERSONNEL; A GUIDE TO SELECTED DOCUMENTS IN THE ERIC COLLECT
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ED-028146 TRAINING FOR NEW CAREERS AND ROLES IN THE AMERICAN SCHOOL.
ED-028279 VOCATIONAL EDUCATION AND TECHNICAL TRAINING. CONDENSED TASK REPORT. PART I.

THERE ARE 159 HITS IN THIS SEARCH
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RELEASE 14.18

INDUSTRIAL ARTS CURRICULUM PROJECT: A PROGRESS REPORT[1]

Henry J. Sredl

Associate Professor and Assistant Director,
University of Illinois Division,
Industrial Arts Curriculum Project,
University of Illinois, Urbana, Illinois 61801

The Industrial Arts Curriculum Project (IACP), a program interpreting industrial technology to youth, originated in 1965 at The Ohio State University and the University of Illinois through a grant from the United States Office of Education.

Man reshapes and services his physical world through two broad fields, construction and manufacturing. Man's raw materials come from one of two sources; the materials are either of genetic origin (things grown or biologically reproduced) or of extractive origin. The students in the Industrial Arts Curriculum Project learn how man takes things grown or reproduced and/or things extracted and how he changes these materials, through manufacturing or construction practices, or a combination of both to provide the consumer with needed economic goods and services. It is through the two sub-elements of industry, construction and manufacturing, that man plans, organizes, and controls men, materials, and processes to produce such items as bridges, buildings, automobiles, furniture, roads, clothing, appliances and utilities.

IACP consists of a two-year sequence of study for junior high school age youth. The first year's course exemplifies man's managed production

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[1] Presentation made at the 63rd Annual American Vocational Association Convention, Boston, Massachusetts, December 10, 1969.

system which produces and services society's manufactured products. This course is called, "The World of Manufacturing." Students use tools, materials, and techniques to produce products that are representative, in principle, of man-made products. Students are introduced to the increasingly important "service" aspect of indudustrial technology by servicing the goods they produce.

During the present school year the IACP is being evaluated and demonstrated in 34 schools in 9 states; more than 7,500 pupils and 65 teachers are participating in the IACP program on a daily basis. Field Evaluation Centers fulfill the role of systematically testing and evaluating the developing instructional system over a three-year period according to IACP guidelines. Instructional materials are revised every year on the basis of the feed-back provided by the Field Evaluation Centers' pupils, teachers, and administrators. "The World of Construction" is presently in its third year of evaluation; "The World of Manufacturing" is in its second year of evaluation. While the Field Evaluation Centers are fulfilling their role in testing and evaluating the instructional system, there is a definite need to determine how IACP materials can be adapted to meet the educational and social needs of the citizens of each state and local school system. Schools which are a part of a Demonstration Center evaluate the instructional materials according to local needs and serve as places for teachers, administrators, parents, and other interested individuals or groups to more closely examine the IACP program. I might add that the Field Evaluation and Demonstration Centers are strongly advocating a continuing IACP program after the "trial" period.

Participating school systems are spread across the United States from the east coast to the west coast and from the north to the south. Cities involved include Long Beach, Reno, Austin, Chicago, Evanston, Urbana, Cincin-

nati, Columbus, Parma, Pittsburgh, Newark, Trenton, New Brunswick, and Miami (Dade County).

I'm certain that many of the members of the audience are interested in knowing more about the day-to-day classroom activities. The next part of this presentation will sample IACP from the students' and teachers' points of view.

The World of Construction is a fascinating world, a world of dams, bridges, highways and buildings. Designing and building these structures involves a wide range of tools, materials, and processes. Obviously, not all of this world can be brought into the classroom. However, basic concepts of the construction industry can be taught in the classroom.

During the first third of the school year in "The World of Construction" students analyze management and personnel practices and participate in related activities. In a simulated situation, IACP students learn the principles of topographical surveying. Student surveys provide the data for maps, grids, and profile charts, which project engineers and architects need in designing a project. Site plans are studied to determine which are the most efficient practices for removing and/or salvaging various obstacles.

Steel superstructures play an important part in the construction of tall buildings and in IACP, students learn the principles of erecting steel frames in this laboratory activity. These boys have constructed a jennywink boom, to hoist structural members into place. Included in this activity are rigging and other standard ironworking practices, including safety precautions.

IACP laboratory activities are designed so that all students participate in actual practices. Some activities are designed for "teams" of students where each student has a function; other activities are designed to be completed by individuals. Regardless of the unit under study, student activity is an integral part of the IACP program.

Wood framed structures are studied and this work crew, over a period of days, has constructed a wall section which is now raised into place, plumbed, and secured into position. This wall section is part of a module representing an entire structure.

Periodically throughout the course, students role-play various situations taken from the world of work. Here students are solving a grievance problem, following conventional construction industry labor-management practices. Throughout construction students work with the tools and materials representative of the particular area under study.

The final part of the year concentrates on synthesizing what students have learned. Each student plans and builds his "ideal structure." This structure may be a bridge, skyscraper, or residential dwelling. Teams of students compete in using their knowledge of construction technology in planning cities and regions. Future citizens make decisions which affect their environment.

The structure of the second year of study, "The World of Manufacturing," is similar to the first year in that students analyze and then synthesize practices related to man's managed production system which produces and services goods in a plant. In one of the first problems presented, students design and produce a product individually and then organize to mass-produce the same product in teams. The product in this case is a coat hanger and the first day's activities have results that look something like this. In a very short time students realize the advantages of production line techniques. On about the 14th day of class, students begin a unit on research. They learn about information retrieval and participate in, among other things, testing the strength of various materials.

As the semester progresses, the students learn about computers and data

processing. They program information onto port-a-punch cards and receive printout of this information from a computer. A research and development problem is presented during which pupils study the elements of design in manufacturing. These students face the same problems industrial product designers face daily. . . they retrieve information, create rough sketches, refine these sketches and construct three dimensional mock-ups. Subsequent weeks take students through activities focusing on engineering the product and tooling up for production. During this period pupils are involved with building a conveyor-belt system which will be used to transport materials from station to station. During the last third of the second semester, pupils organize a manufacturing corporation to produce a high-intensity desk lamp. This activity synthesizes the practices studied prior to this time. The completed products are packaged with pupil developed operation and service manuals.

Due to the limitation of time, the slides you have seen were selected from a series of over 160 depicting different laboratory activities in the IACP. I hope they strongly conveyed the fact that the IACP involves students in activity focusing on man's practices which provide him with his economic goods and services.

The IACP is presently in an important phase of development and transition. According to the original schedule, "The World of Construction" will complete its third and final year of field evaluation by June, 1970. By the end of this calendar year, 1969, a publisher will be selected to further refine and make commercially available the IACP program to schools seeking to participate in it.

The IACP is at this time, attempting to identify school systems interested in establishing demonstration programs for the school year 1970-71. Sum-

mer institutes to prepare IACP teachers will be available as teacher preparation is an integral part of the IACP program.

I realize that I have covered much material in this twenty-minute period and that many of you probably have questions regarding the program and how school systems may go about implementing the IACP. To answer general questions, a number of materials may be picked up after this program. Among these is a model proposal schools may use to obtain funds for the support of a demonstration program, a brochure describing the IACP and a booklet delving a little deeper into the rationale behind the IACP. I also have available for examination some of the instructional materials currently used in the program.

I will remain after the program to meet with individuals interested in the IACP.

On behalf of the entire IACP staff, I thank you.

THE V.O.E.D. SYSTEM: A COMPUTERIZED SYSTEM FOR OBTAINING, ANALYZING AND REPORTING VOCATIONAL AND OCCUPATIONAL EDUCATION DATA TO THE PENNSYLVANIA DEPARTMENT OF EDUCATION[1]

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INTRODUCTION

The V.O.E.D. System is a computerized system for collecting, analyzing and reporting vocational education data needed for state and local level program planning and evaluation. The system was developed for the Pennsylvania Department of Education by Educational Systems Research Institute which has been contracted to apply the system for a two-year period.

The V.O.E.D. System consists of three phases (Exhibit 1). Phase 1 involves an optical scanner form which is completed by schools throughout the state. Occupational curriculum offerings, grade enrollments and other basic school data are reported. These forms are used to produce a state-wide occupational directory and growth report by school, school district, county, labor market and region. These reports will provide data to answer questions about the adequacy of vocational education growth relative to student needs and labor market requirements. The reports are of greatest value to school counselors and educational planning personnel.

The second phase of the system involves in-school data on individual students including course enrollment, grades, tests and teacher ratings. These data are used to produce a report describing the annual output of each type of occupational curriculum. The report will also provide some basic information as to the academic and occupational competence of vocational graduates.

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[1]Presentation made at the 63rd Annual American Vocational Association Convention, Boston, Mass., December 10, 1969.

The student information collected in Phase 2 is also used to prepare a mailing to all vocational students of a follow-up survey questionnaire. This questionnaire goes out one year after graduation and provides information about former students' experience in employment or further education. Data are collected about the time required to get a job, relatedness of job to vocational course taken, earnings, job satisfaction, mobility, and other information. These data are merged with the in-school data to produce an Occupational Student Follow-up Survey Report and an Occupational Program Planning and Evaluation Report.

During the first year of V.O.E.D. operations covering 1968 graduates, 12,000 students were processed. Full-scale operations in 1969 will cover roughly 24,000 students. The optical scanner forms coupled with computerized processing is designed to be economical and flexible yet provide timely and meaningful reports.

Since several earlier papers have covered the information retrieval and dissemination aspects of information handling systems and since Dr. Walter Arnold, at another session, is covering the interpretative aspects of the V.O.E.D. system, this paper will be largely confined to the information acquisition facets of the V.O.E.D. system, particularly individual student information in Phases 2 and 3.

SYSTEM DESCRIPTION

In Phase 1, optical scanner forms are sent to each school across the state. (Exhibit 2) The school then distributes these forms to the teachers who report the pertinent data on course enrollment by grade. These forms are then collected by the schools, returned to ESRI, and a state-wide occupational directory is produced. (Exhibit 3) This directory reports course enrollment by school, school district, county labor market and region. By comparing the current computer tape with this information to the year-ago tape, a growth report can be produced. (Exhibit 4) This report indicates whether schools are responding to the

labor needs and provide guidance to school and curriculum planners. This phase of the system more or less stands alone from Phases 2 and 3 which deal with the individual student.

Optical scanner forms sent to the schools for completion by students provide the data input to Phase 2 of the system. (Exhibit 5) On these forms, all students record their name, address, curriculum, and grades. Teachers add brief ratings of the students on several categories. School personnel then add IQ scores and achievement test scores. These forms are then run thru an optical scanner and punch cards produced which are put on magnetic tape. One year later, when it is time for the follow-up survey, this tape is sorted by zip code and 3 sets of pealable address labels are produced.

In the follow-up survey, Phase 3, the address labels are affixed to questionnaires, again an optical scanner form. (Exhibits 6a, 6b) The portion of the form with the label and instructions will be removed before reading in the scanner. The first mail-out to the students contains a questionnaire, cover letter from one of our staff and a return envelope. Roughly 15 to 20 percent of the graduates respond to this first mailing. As returns come in, the address labels for responding students are removed from the second and third sets of labels. An alternative procedure is to optically scan the questionnaires upon receipt and produce a set of punch cards. This deck would then be compared to the master tape and labels for the second mailing produced for non-respondents only. Due to a variety of data handling problems, it was decided that the simplified manual approach was more desirable.

A second mailing goes out some two to three weeks after the first one. This is the time when the response rate almost reaches a plateau. In the second mailing, again the questionnaire, return envelope and a cover letter are enclosed. This time the cover letter is from the president of ESRI or some figure in authority. Response to this mailing is generally 12-17 percent.

Two or three weeks later a third mailing goes out using the local school district or school letterhead if possible. Otherwise a humorous approach is used with the possibility of a monitary prize. The third and fourth mailing, if one is used, have to be fitted to the individual situation. For example, the reason for a low response in Birmingham among blacks may be due to their inability to follow the instructions and questions correctly whereas a low response in Newark might be due to disenchantment and apathy. Response to a third mailing varies widely. In one study, an offer of $1.00 elicited a 16% response while in another study, a third letter elicited only an additional 4%. A total response of 40-50% is typical for a well-constructed study with a lengthy questionnaire.

From the various pilot studies and main surveys completed by ESRI one can state a number of rules for obtaining data by mail from former students:

1. Obtain the most up-to-date address possible. Transcripts and other records are somewhat unreliable compared to getting an address from the student himself just before he is about to leave school. Obtain zip code if at all possible; the saving in postage rate is substantial.

2. Use the simplest possible questionnaire format. A preferred questionnaire is one which presents only a few questions to the student at a time with no skip or "go to if" instructions.

3. If the universe is to be sampled, include a greater proportion of minority group members. The response rate of whites is from 1.3 to 3 times that of blacks.

4. The appeal in the cover letter should be as short and simple as possible.

5. The study should use the lowest local level possible. For example, for a study of Pittsburgh students, a letter from Pittsburgh to be returned to Pittsburgh will get a higher

response than a questionnaire to be returned to the state Department of Education in Harrisburg. In turn, the response to Harrisburg will be higher than to a city outside of Pennsylvania.

6. Use a different approach on all the mailings, for example, authoritarian, humorous and peer-group. A thread of continuity must be continued, but this way, if authority turns a student off, you have a chance with another approach on a later mailing.

7. A special appeal to minority groups sometimes helps. This rule is very sensitive and must be carefully applied. For example, an appeal from Roy Wilkins to blacks might turn off more students than a letter from a neutral or unknown white.

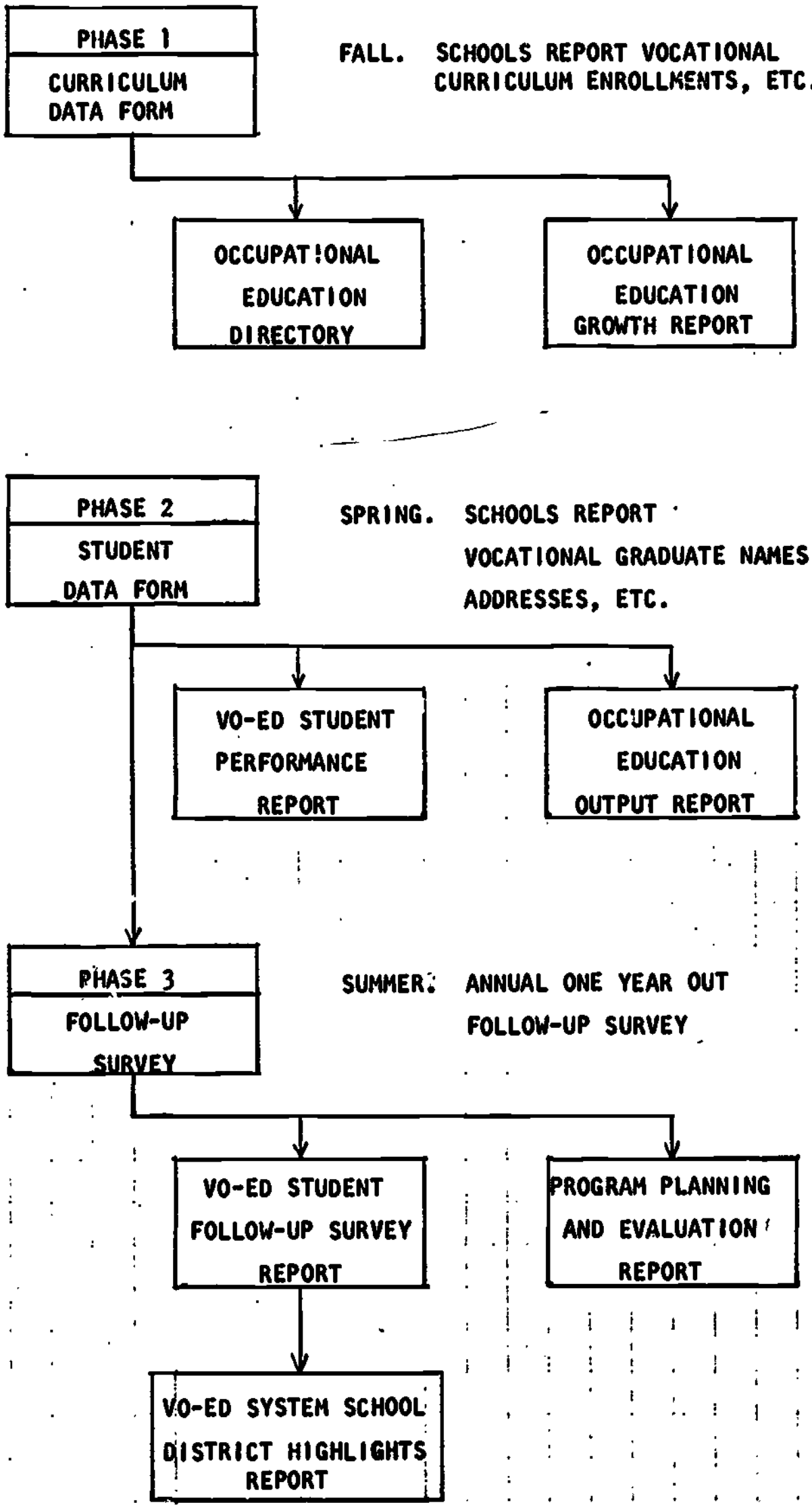
8. If all else fails, use money. A dollar works better than a chance for a prize. Minority groups respond more favorably to money than whites. In an identical mailing, the response of blacks to an offer of $1.00 was 10 times that of a letter alone.

When all the responses are in, generally 4 weeks or so after the last mailing, the questionnaires are checked by hand for faulty answers, use of pen, tears, etc. They are then put through the optical scanner and punch cards are generated. These cards are put on computer tape. This tape is then merged with the previous student data tapes containing the in-school data. This final merged tape then serves as a comprehensive data bank for many types of reports as well as an inquiry system.

From the master tape a standard follow-up survey report is produced (Exhibits 7,8). In addition, in-school data can be correlated with data about the world of work. Are there factors in school which predict how well a student will make out on the job? Do students feel well prepared for work? How long does it take students in different courses to get a job? These and many other questions can be answered to aid in more effective occupational program planning and evaluation.

EXHIBIT 1

PHASES AND PRODUCTS
of the V.O.E.D. System



THE V.O.E.D. SYSTEM

CURRICULUM DATA FORM 1

EXHIBIT 2

SECONDARY SCHOOL VOCATIONAL PROGRAMS ONLY

(See Reverse Side for Item Instructions and Definitions)

1 SCHOOL ID NUMBER	2 CURRICULUM CODE
6 5 2	0 9 5

PRINT/TYPE SCHOOL NAME BELOW ▼ A. Lincoln H.S.

PRINT/TYPE COURSE TITLE BELOW ▼ Graphic Arts

PLEASE ANSWER THESE QUESTIONS ABOUT THE COURSE REPORTED ON THIS FORM. THANK YOU.

3 NEW COURSE	4 COURSE DURATION	5 CLASS SECTIONS	6 GRADE MIXING	7 CO-OP OPP'TY	8 SHOP/LAB FACILITIES	9 FACIL. DAY USE	10 FACIL. NIGHT USE	11 MAX. WORK STA'NS OR PUPIL CAPACITY
WAS THIS COURSE OFFERED FOR THE FIRST TIME THIS YEAR AT THIS SCHOOL? ☐ YES ☐ NO	HOW LONG IN YEARS DOES IT TAKE TO COMPLETE COURSE?	HOW MANY CLASS SECTIONS ARE USED TO INSTRUCT DAY H.S. PUPILS (ALL GRADES)?	ARE PUPILS FROM DIFFERENT GRADES MIXED IN THE SAME CLASS SECTIONS? ☐ YES, ALL ☐ YES, SOME ☐ NO	IN WHAT GRADE DOES A CO-OP (SUPERVISED) OPPORTUNITY FIRST OCCUR? ☐ NONE ☐ 9 ☐ 10 ☐ 11 ☐ 12	HOW MANY SHOPS AND/OR LABORATORIES ARE USED FOR THIS COURSE THIS YEAR?	HOW MANY HOURS PER DAY, ON WKLY. AVERAGE, DOES COURSE USE SHOP/LAB FACILITIES?	HOW MANY NIGHTS PER WEEK IS THE COURSE SHOP/LAB USED FOR ADULT INSTRUCTN.	WHAT IS THE MAXIMUM WORK STATIONS OR PUPIL CAPACITY THAT CAN BE INSTRUCTED IN ONE SECTION, GIVEN PRESENT FACILITY? (SEE INSTRUCTIONS FIRST)

12 ▼ 9th GRADE — IF COURSE IS NOT OFFERED IN THIS GRADE, MARK BOX ▶ ☐

TOTAL COURSE ENROLLMENT FOR GRADE 9	ENROLLMENT BREAKDOWN FOR GRADE 9													
	MALE						FEMALE							
	WHITE		BLACK		OTHER*		WHITE		BLACK		OTHER*			

13 ▼ 10th GRADE — IF COURSE IS NOT OFFERED IN THIS GRADE, MARK BOX ▶ ☐

TOTAL COURSE ENROLLMENT FOR GRADE 10	ENROLLMENT BREAKDOWN FOR GRADE 10													
	MALE						FEMALE							
	WHITE		BLACK		OTHER*		WHITE		BLACK		OTHER*			
1 5 8	5 1		4 9		0 3		3 0		2 5		0 0			

14 ▼ 11th GRADE — IF COURSE IS NOT OFFERED IN THIS GRADE, MARK BOX ▶ ☐

TOTAL COURSE ENROLLMENT FOR GRADE 11	ENROLLMENT BREAKDOWN FOR GRADE 11													
	MALE						FEMALE							
	WHITE		BLACK		OTHER*		WHITE		BLACK		OTHER*			
1 0 0	4 2		1 2		0 0		2 3		2 3		0 0			

15 ▼ 12th GRADE — IF COURSE IS NOT OFFERED IN THIS GRADE, MARK BOX ▶ ☐

TOTAL COURSE ENROLLMENT FOR GRADE 12	ENROLLMENT BREAKDOWN FOR GRADE 12													
	MALE						FEMALE							
	WHITE		BLACK		OTHER*		WHITE		BLACK		OTHER*			
1 0 3	4 0		1 4		0 0		2 3		2 6		0 0			

*Includes Orientals, Mexican-Americans, Latin-Americans, Puerto Ricans and other minority groups, excluding Blacks.

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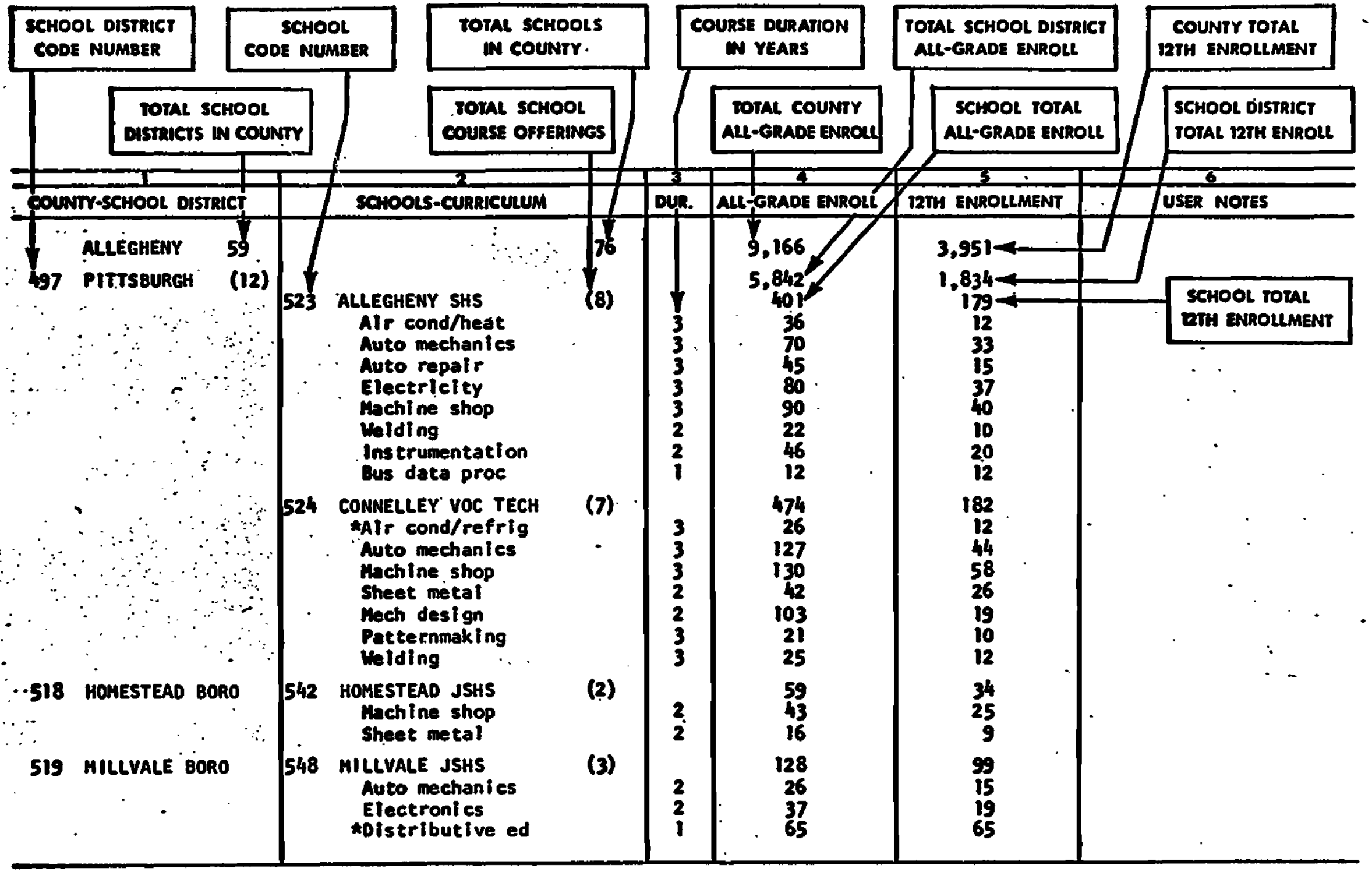
OPTICAL SCANNING CORPORATION • UTILITY FORM 0324



* - Indicates first-time offering

EXHIBIT 3 - ILLUSTRATION OF THE DIRECTORY PRINTOUT

PROGRAM / CURRICULUM	FINAL YEAR ENROLLMENT GAIN (LOSS): NUMBER AND PERCENTAGE											
	PENNSYLVANIA		EAST		PHILADELPHIA		CENTRAL		WEST		PITTSBURGH	
	N	%	N	%	N	%	N	%	N	%	N	%
TRADE AND INDUSTRIAL												
Airconditioning/heating												
Aircraft mechanics												
Appliance repair												
Auto body repair												
Auto mechanics												
Building maintenance												
Carpentry												
Commercial art												
Cosmetology												
Diesel mechanics												
Drafting												
Dressmaking												
Electric motor repair												
Electrical trades												
Food trades												
Foundry												
Laundry-presser												
Machine shop												
Masonry												
Metal trades												
Mill/cabinetry												
Mine maintenance												
Musical instrument repair												
Painting/decorating												
Patternmaking												
Plumbing												
Power sewing												
Printing												

EXHIBIT 4 - GROWTH(DECLINE) 12TH GRADE ENROLLMENTS IN LISTED CURRICULA FOR EACH FIELD SERVICE REGION AND PENNSYLVANIA

PENNSYLVANIA OCCUPATIONAL STUDENT INFORMATION FORM EXHIBIT 5

-1968 OCCUPATIONAL COURSE GRADUATES ONLY

INSTRUCTIONS: 1. Print the first name initial (FI), middle name initial (MI), and full last name in the top row of blocks below. 2. Do the same for address, city and zip code. Skip spaces between words or between words and numbers in the address. 3. Then, go down each column and make a heavy black pencil mark **neatly** in the box which matches the letter or number printed at the top of each column. Avoid letting your mark extend beyond the box being marked.

EXAMPLE

J J D O E

FI MI

- Use #2 Lead Pencil
- Be Sure Each Mark is Black
- Erase Completely All Incorrect Marks
- Do Not Fold

T L B R O W N

FI MI ← LAST NAME

1 3 6 0 S H A D Y A V E N U E

ADDRESS

S E N E C A

CITY

P A

STATE

1968 STUDENT FORM

(1969 and later versions have space for student test, grade, and rating data.)

STUDENT I.D. NO.

6 5 2 0 9 5 0 1

SCHOOL | COURSE | STDT

ATTENTION: The Data Form can not be used without the correct Student I.D. No. →

1. The 3-Digit School Code Number is on the **School** Envelope. Record the number above and below the word **School**.
2. The 3-Digit Course Code Number is on the **Course** Envelope. Record the number above and below the word **Course**.
3. The 2-Digit **Student** Number is obtained by assigning each completed form (student) within the course a consecutive number, starting with 01, 02, 03, 04, 05, 06, 07 and so on. Record the number above and below "**STDT**".

◀ PLEASE CHECK TO MAKE SURE THAT THE SCHOOL–COURSE–STUDENT NUMBERS ARE CORRECTLY RECORDED. THANK YOU.

1 6 3 4 6

ZIP CODE

PLEASE CHECK TO MAKE SURE THE ADDRESS IS CORRECT FOR MACHINE READING

THANK YOU

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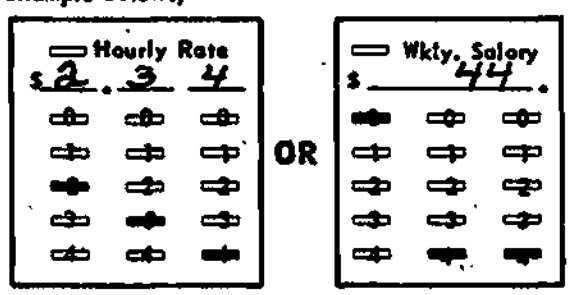
GENERAL INSTRUCTIONS

The questionnaire contains questions about your job and education experiences since high school. Please answer all questions that apply to you. Use a SOFT LEAD PENCIL to mark your answers. Do not use a ball pen. The questionnaire-reading machine reads only soft lead pencil marks.

SPECIAL INSTRUCTIONS

1. Answer each question as follows:
   - Read the question completely and carefully.
   - Read all answer alternatives.
   - Decide which answer fits you best.
   - Make a heavy pencil mark in the box at the left of the answer selected by you.
2. Mark only ONE answer for each question unless the question says you may mark more than one.
3. Several questions require a number answer. For example, your present job hourly rate OR weekly salary is requested. Suppose you had an hourly rate of $2.34. You would first write your hourly rate and then record it for machine reading by marking the correct numbered boxes. (See left example below.)



OR, if you are on salary, first write your weekly salary (dollars only) and then mark the correct numbered boxes. See the above example at the right. It shows how a wkly. salary of $44 is recorded. ALWAYS MARK THE FIRST COLUMN «0» BOX IF YOUR SALARY IS LESS THAN $100. See example.

4. Some answers call for SKIPPING questions. Where that is the case, be sure to SKIP to the correct next question.
5. Be sure to record your Student I.D. Number on both sides of the questionnaire. See reverse side for instructions on how to do this.
6. USE SOFT LEAD PENCIL ONLY.

THANK YOU

UTILITY FORM 8336 — OPTICAL SCANNING CORPORATION

ABOUT AFTER HIGH SCHOOL

1. WHICH CAME FIRST AFTER H.S.? (EXCLUDE TEMPORARY SUMMER JOB)
   - ☐ Employed full-time
   - ☐ Self-employed
   - } Skip to Q. 3
   - ☐ Full-time college
   - ☐ Full-time school (not college)
   - ☐ Military service
   - ☐ Marriage and home career
   - ☐ None of above applies

2. HAVE YOU EVER HELD A FULL-TIME CIVILIAN JOB SINCE HIGH SCHOOL? (EXCLUDE TEMPORARY SUMMER JOB)
   - ☐ Yes
   - ☐ No → Skip to Q. 23

YOUR FIRST FULL-TIME JOB

3. HOW SOON AFTER HIGH SCHOOL DID YOU BEGIN YOUR FIRST F-T JOB?
   - ☐ Immediately
   - ☐ About 1 wk.
   - ☐ About 2 wks.
   - ☐ About 3 wks.
   - ☐ About 4 wks.
   - ☐ About 2 mos.
   - ☐ About 3 mos.
   - ☐ About 4 mos.
   - ☐ About 5 mos.
   - ☐ More than 5 mos.

4. HOW DID YOU GET YOUR FIRST FULL-TIME JOB AFTER HIGH SCHOOL?
   - ☐ On my own, without anyone's help
   - ☐ Private employment agency
   - ☐ State employment agency
   - ☐ Thru parents or relative
   - ☐ Thru personal friend
   - ☐ Already had job with employer
   - ☐ Thru vocational teacher
   - ☐ Thru school counselor
   - ☐ Thru school placement service
   - ☐ Other than above

5. UPON LEAVING HIGH SCHOOL, DID YOU WANT WORK IN THE OCCUPATION STUDIED THERE?
   - ☐ Yes → Skip to Q. 8
   - ☐ No → Go to Q. 6

6. IF NOT, WHAT WAS THE MAIN REASON FOR NOT WANTING A JOB IN THAT FIELD?
   - ☐ Didn't think I learned enough
   - ☐ Instructor advised against it
   - ☐ Decided I didn't like the work
   - ☐ Found out the pay was too low
   - ☐ Had a job offer in another field
   - ☐ Develop
   - ☐ Other re

7. WHEN DID YOU FIRST DEC… DID NOT WANT TO FOLLO…
   - ☐ Shortly before leaving high…
   - ☐ About six months before
   - ☐ About one year before
   - ☐ About two years before
   - ☐ Never really planned to d…

8. WHAT TYPE OF WOR… YOUR FIRST FULL-TIM… SCHOOL? GIVE THE TI…
   Auto mechanic, Secretar…

9. HOW RELATED WAS YO… YOUR H.S. OCCUPATIO…
   - ☐ Same as that studied
   - ☐ Highly related
   - ☐ Slightly related
   - ☐ Completely unrela…

10. HOW WELL D… PARE YOU…
    - ☐ Excel…
    - ☐ Well…
    - ☐ No…
    - ☐ Po…

11. WH… TH…
    - ☐ Tr…
    - ☐ No…
    - ☐ Be…
    - ☐ Ea…
    - ☐ Di…
    - ☐ Ins…
    - ☐ Not…
    - ☐ Didi…
    - ☐ Rea…

12. DID Y… DENC…
    - ☐ No…
    - ☐ Yes…
    - ☐ Yes…

13. HO…
    - ☐ …llege) } Skip to Q. 22
    - ☐ …g for work
    - ☐ …ot looking for work

…ths …ight.

YOUR … EMPLOYER?

…e …ne

…tions

…TATUS BELOW.

Go to Q. 19

PRESENT FULL-TIME JOB

…ATISFIED ARE YOU WITH YOUR …NT JOB?
- ☐ Dissatisfied
- ☐ Very dissatisfied

WHAT ARE YOUR PRESENT GROSS EARNINGS (BEFORE DEDUCTIONS)?

OR

- ☐ HOURLY RATE $___.___ ___
- ☐ WKLY. SALARY $_____.

TRANSFER FOR MACHINE READING

21. HOW RELATED IS YOUR PRESENT JOB TO YOUR H.S. OCCUPATIONAL COURSE?
    - ☐ Same as that studied
    - ☐ Highly related
    - ☐ Slightly related.
    - ☐ Completely unrelated

22. SINCE YOUR FIRST JOB, HOW MANY WEEKS WERE YOU WITHOUT A FULL-TIME JOB WHILE AVAILABLE AND LOOKING FOR WORK?
    - •About ___ ___ weeks

THEN TRANSFER FOR MACHINE READING.
(Record none as 00)

ABOUT YOU AS A PERSON

23. I AM:
    - ☐ Male
    - ☐ Female

24. I AM:
    - ☐ Single
    - ☐ Married

25. I AM:
    - ☐ Black
    - ☐ White
    - ☐ Other

STUDENT I.D. NUMBER

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EXHIBIT 6a
STUDENT QUESTIONNAIRE
Side 1

EDUCATION AFTER HIGH SCHOOL

26. PLEASE INDICATE WHAT ADDITIONAL EDUCATION OR TRAINING YOU HAVE HAD SINCE H.S. MARK YOUR ANSWER FOR EACH OF THE KINDS OF EDUCATION OR TRAINING LISTED BELOW.

- •No, never attended
- •Yes, now attending
- •Yes, completed
- •Yes, dropped out

	No, never attended	Yes, now attending	Yes, completed	Yes, dropped out
2-year college	▭	▭	▭	▭
4-year college	▭	▭	▭	▭
Private trade school	▭	▭	▭	▭
Public trade school	▭	▭	▭	▭
Business school	▭	▭	▭	▭
Military service school	▭	▭	▭	▭
Company school	▭	▭	▭	▭
Correspondence school	▭	▭	▭	▭
Apprentice program	▭	▭	▭	▭
On-the-job training	▭	▭	▭	▭

27. HOW RELATED WAS (IS) YOUR POST-H.S. EDUCATION TO YOUR H.S. OCCUPATIONAL COURSE?

- ▭ No post-high school education → Skip to Q. 29
- ▭ Same occupation
- ▭ Highly related occupation
- ▭ Slightly related occupation
- ▭ Completely different occupation

28. WHAT WAS (IS) THE MAIN PURPOSE OF YOUR POST-HIGH SCHOOL EDUCATION?

- ▭ Complete a college education
- ▭ Advancement in present field of work
- ▭ Preparation for new field of work
- ▭ General self-development

29. WHAT WERE SOME REASONS THAT YOU DID NOT GO TO COLLEGE? MARK ALL THAT APPLY.

- ▭ Not applicable, attended college
- ▭ Not interested in college education
- ▭ Preferred to get a job
- ▭ Grades were not high enough
- ▭ Not accepted in college of choice
- ▭ Lacked money to go to college
- ▭ Decided to get married
- ▭ Entered military service

30. MARK EDUCATION SOURCE WHICH YOU DEFINITELY PLAN TO ATTEND WITHIN THE NEXT YEAR.

- ▭ No such plans
- ▭ 2-yr. college
- ▭ 4-yr. college
- ▭ Business school
- ▭ Company school
- ▭ Private trade school
- ▭ Public trade school
- ▭ Correspondence school
- ▭ Apprentice program
- ▭ Other than above

31. ARE YOU FAMILIAR WITH SCHOLARSHIP & LOAN OPPORTUNITIES OFFERED BY STATE OF PA.?

- ▭ Yes
- ▭ No

PRESENT TRAINING NEEDS

32. HOW WOULD YOU RATE YOURSELF ON EACH OF THE BASIC SKILLS OR KNOWLEDGE BELOW?

	Excellent	Good	Inadequate	Poor
Manual job skills	▭	▭	▭	▭
Practical job knowledge	▭	▭	▭	▭
Theoretical job knowledge	▭	▭	▭	▭
Mathematical skills	▭	▭	▭	▭
Writing skills	▭	▭	▭	▭
Speaking skills	▭	▭	▭	▭
Reading skills	▭	▭	▭	▭
Clerical skills	▭	▭	▭	▭
Personal relations skills	▭	▭	▭	▭
Supervisory skills	▭	▭	▭	▭

33. HOW ESSENTIAL IS EACH BASIC SKILL OR KNOWLEDGE LISTED BELOW FOR YOUR PRESENT JOB? (SKIP TO Q. 34 IF NOT NOW EMPLOYED)

- •Not essential
- •Sometimes essential
- •Frequently essential
- •Almost daily essential

	Not essential	Sometimes essential	Frequently essential	Almost daily essential
Manual job skills	▭	▭	▭	▭
Practical job knowledge	▭	▭	▭	▭
Theoretical job knowledge	▭	▭	▭	▭
Mathematical skills	▭	▭	▭	▭
Writing skills	▭	▭	▭	▭
Speaking skills	▭	▭	▭	▭
Reading skills	▭	▭	▭	▭
Clerical skills	▭	▭	▭	▭
Personal relations skills	▭	▭	▭	▭
Supervisory skills	▭	▭	▭	▭

34. INDICATE WHETHER YOU NEED ADDITIONAL TRAINING IN EACH BASIC SKILL BELOW. MARK BOX AT FAR RIGHT IF YOU WOULD TAKE SUCH TRAINING, GIVEN OPPORTUNITY IN YOUR AREA

	Yes	No
Manual job skills	▭	▭
Practical job knowledge	▭	▭
Theoretical job knowledge	▭	▭
Mathematical skills	▭	▭
Writing skills	▭	▭
Speaking skills	▭	▭
Reading skills	▭	▭
Clerical skills	▭	▭
Personal relations skills	▭	▭
Supervisory skills	▭	▭

35. DO YOU KNOW OF ANY TRAINING IN YOUR AREA THAT WOULD M

- ▭ Yes
- ▭ No

in the box that h column.

NOTE HEAVY MARKS

H sides of the

NUMBER

MAKE A HEAVY MARK

UTILITY FORM 5889

OPTICAL SCANNING CORPORATION

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EXHIBIT 6 b
STUDENT QUESTIONNAIRE
Side 2

ANNUAL SURVEY OF PENNSYLVANIA FORMER STUDENTS

Dear Former Student:

All Pennsylvania schools are cooperating in the annual survey of former students. The purpose is to learn how Pennsylvania students have fared in the world of work and/or continuing education during the first year after high school. Such information will help to improve the quality of secondary school education in our state. It will also tell us whether more must be done to help former students find better jobs or to improve their opportunity for higher education.

Please complete this questionnaire. Then, return it in the postage-paid envelope that came with the questionnaire.

All information is strictly confidential. All questionnaires are destroyed once your answers have been added to those of other Pennsylvania students.

Please read the inside instructions carefully before trying to answer the questions. Thank you.

Sincerely yours,

J. W. Struck

State Director of Vocation Education

If the label address is incorrect, please give correct address below.

Street _____

City _____

State _____

ATTENTION PARENTS: If your son or daughter is in military service, please check the box below, and return blank questionnaire in the enclosed envelope.

▭ Military Service (address above)

Q	SURVEY QUESTIONS AND ANSWERS	TRADE AND INDUSTRIAL PROGRAM GRADUATES											
		PENNA		EAST		PHILA		CENTRAL		WEST		PGH	
		N	%	N	%	N	%	N	%	N	%	N	%
1	WHICH CAME FIRST AFTER HIGH SCHOOL? Employed full-time Self-employed Full-time college Full-time school (not college) Military service Marriage and home career None of the above applies												
2	HAVE YOU EVER HELD A FULL-TIME JOB? Yes No												
	ABOUT THEIR FIRST JOB												
	HOW SOON DID YOU BEGIN YOUR FIRST JOB? Had job About 1 week About 2 weeks About 3 weeks About 4 weeks About 2 months About 3 months About 4 months About 5 months More than 5 months												
4	HOW DID YOU GET YOUR FIRST FULL-TIME JOB? On my own, without anyone's help Private employment agency State employment agency Thru parents or relative Thru personal friend Already had job with employer												

EXHIBIT 7 - TRADE AND INDUSTRIAL PROGRAM GRADUATES: QUESTIONNAIRE RESPONSE ANALYSIS BY STATE AND FIELD SERVICE REGIONS

OCCUPATIONAL CURRICULA COMPLETED BY GRADUATES	RACE	BASIC MEASURES: SEE NUMBER CODE BELOW*																			
		1		2		3		4		5		6		7		8		9		10	
		N	M/%	N	M/%	N	M/%	N	M/%	N	M/%	N	M/%	N	M/%	N	M/%	N	M/%	N	M/%
ALL TRADE & INDUSTRIAL	White Black																				
Air conditioning/heating	White Black																				
Aircraft mechanics	White Black																				
Appliance repair	White Black																				
Auto mechanics	White Black																				
Building maintenance	White Black																				
ALL TECHNICAL OCCUPATIONS	White Black																				
Architectural design	White Black																				
Architectural technology	White Black																				
Chemical technology	White Black																				
Civil technology	White Black																				
Electrical technology	White Black																				

* 1 - Mean weeks to first job
2 - Mean miles moved for first job
3 - Mean relatedness of first job
4 - Mean first job starting hourly rate
5 - Mean satisfaction reported for first job
6 - Mean relatedness of present job
7 - Mean present job hourly rate
8 - Percentage increase in hourly rate
9 - Mean satisfaction reported for present job
10 - Percentage employable time employed

EXHIBIT 8 - BASIC MEASURE COMPARISON OF WHITE AND BLACK GRADUATES BY TYPE OF OCCUPATIONAL CURRICULUM AND PROGRAM

PROJECT ABLE

DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL

(Contract No. OE-5-85-019 Project No. 5-0009)

PROGRESS REPORT

by
J. Wm. Ullery
Acting Project Director

Presented at the 63rd Annual Convention of the
American Vocational Association

10 December 1969

Boston, Massachusetts

Quincy Public Schools
American Institutes for Research

Project ABLE, Quincy VOTEC School, Quincy, Mass. 02169

INTRODUCTION

The principal goal of Project ABLE is to demonstrate increased effectiveness of instruction that derives content from explicit analysis of desired behavior after graduation. Rather than taking a total body of knowledge and drawing content from it, each curriculum is defined by what technology and industry need for job success. Subordinate objectives embodied in this plan are the following:

(1) Development of educational objectives. The intent here is to identify the behaviors which are desired of the student when he has completed a particular course of instruction. Education has no meaning in the abstract--objectives need to be stated in specific operational terms. While emphasizing the vocational area of educational goals, the goals include the development of individual attitudes toward work, habits of work, and standards of excellence.

(2) Derivation of curriculum requirements. Curriculum needs are described in terms of topics within each "subject" and are placed in an instructional sequence which takes prerequisite knowledges systematically into account. Each learning sequence is in the curriculum because it must be there if the student is to be competent and the justification for its presence can be demonstrated on the basis of relevance to a vocationally-oriented educational goal. Project ABLE, by analyzing the requirements of many jobs within each vocational area for common and related skills, attempts to provide education in the skills and knowledges which are common to a variety of occupations. This should minimize the amount of "new" training that might result from job change or because of opportunities opening up in related areas. This should also provide the flexibility needed to accomodate to changes in demands of the technology.

(3) Description of needs for prerequisite learning. The elaboration of a new curriculum is intended to make possible the specification of prerequisite knowledges to be acquired in junior high years of schooling, including the kinds of student preparation which might be gained in industrial arts and other basic areas of instruction. The aim is the development of broad exploratory programs in the junior high grades to prepare students for productive educational and vocational careers.

(4) Effecting changes in student viewpoints. A most difficult task facing any student and his family is that of choosing realistic life goals and the educational path to those goals. The pressures of our society have been directed toward college attendance, while trade school courses have often been relegated to second-class status. Project ABLE includes preparation of an organized program for assessing each student's abilities and interests and for helping him and his family evaluate them over a wide range of occupations. This involves the inservice training

of junior high school guidance counselors and the provision of materials and information for junior high students.

(5) Individualizing instruction. It has been demonstrated repeatedly that individuals differ with respect to their abilities. The traditional classroom has not made sufficient provision for these individual differences, but with increasing frequency, especially at the elementary level, schools are changing to individualized study programs. Project ABLE incorporates the concepts of individualized instruction by providing a framework which will allow for maximum flexibility of student progression through a course. Learning is a process guided by the teacher, rather than by forcing facts into students. A student's achievement is the standard of his learning progress, and, at the same time, a primary source of his motivation. The student is given a set of objectives which tell him all the things he is expected to be able to do after completing an assignment. The key feature is, however, that students do the learning largely on their own and student-teacher interactions are not restricted to lectures and group demonstrations.

(6) Student evaluation. Appropriately derived topic objectives lead directly to measures of student performance. It is desired here that all "units" of instruction have performance measures which are available to the student, to instructors, and to guidance counselors. These proficiency tests are an essential and integral part of individualized instruction, and they contribute to making the student evaluation file a clear history of learning achievement. Emphasis in this testing is on attainment of goals, rather than upon differentiation of students into "good" or "poor", and to provide directions for future effort on the part of the student.

(7) Program evaluation. A comprehensive program of evaluation includes objective measures of immediate outcomes, as well as the foundation of techniques for the later collection of follow-up data on educational outcomes after graduation. Student evaluations yield many of the basic data for program evaluation; this requires systematic recording and storing of indicators of student experience and performance. A second feature is establishment of techniques for following up the student at periodic intervals to collect information on employment, job success, and career progression at intervals after graduation. Systematic information of this sort will constitute the basis for program evaluation in terms of its long-range effects.

A vocational area behavioral analysis approach to specification of course and topic objectives stated in terms of performances required for job execution distinguishes the learnable skills and knowledges generalizable across several jobs within the occupational group. Given training in those skills and knowledges common to a variety of occupations, the student-graduate should have a greater flexibility in shifting with changes in industry.

There is opportunity for increasing specialization, but it is built upon a broad base of more general competence within the vocational area.

The development includes a planned set of training levels of specific education within each area, requiring a range of preparation times designated by jobs (or job clusters). The domain of jobs in an occupational group has been structured to reflect the progression of skills inherent in those jobs. Selection of jobs to represent the area reflects the levels involved so that there are clear points of demarcation where a student can attain certified competence up to the level commensurate with his individual abilities. This concept of multiple exits at various training levels will provide specific usable skills for each student regardless of the time he chooses to terminate his full-time school activity.

PROCEDURE

The procedure began with the collection of vocational information for representative jobs in eleven different vocational areas. Analysis was then made of the performances required for job execution, resulting in descriptions of essential classes of performance which need to be learned. On the basis of that information, a panel of educational and vocational scholars recommended objectives for a vocational curriculum which incorporated the goals of (1) vocational competence; (2) responsible citizenship; (3) individual self-fulfillment. (See Figure 1.) A curriculum was then to be designed in topic form to provide for comprehensiveness and also flexibility of coverage for each of the vocational areas. Guidance programs and prerequisite instruction to prepare junior high students were also to be designed. Selection of instructional materials, methods, and aids, and design of materials, when required, were undertaken. An important step was the development of performance measures tied to the objectives of instruction. Methods of instruction were devised to make possible individualized student progression and selection of alternative programs, and teacher-training materials were to be developed to accomplish inservice teacher education of Quincy school personnel. A plan is under development for conducting program evaluation not only in terms of the formative developmental stages, but also in terms of continuing follow-up of outcomes after graduation.

The goals for Project ABLE were quite ambitious. The design was, and still is, described as "exciting". However, the project has not been entirely successful in the accomplishment of its major tasks. Some notable progress has been achieved and should be recognized.

Project ABLE
VOCATIONAL EDUCATION AND ITS GOALS

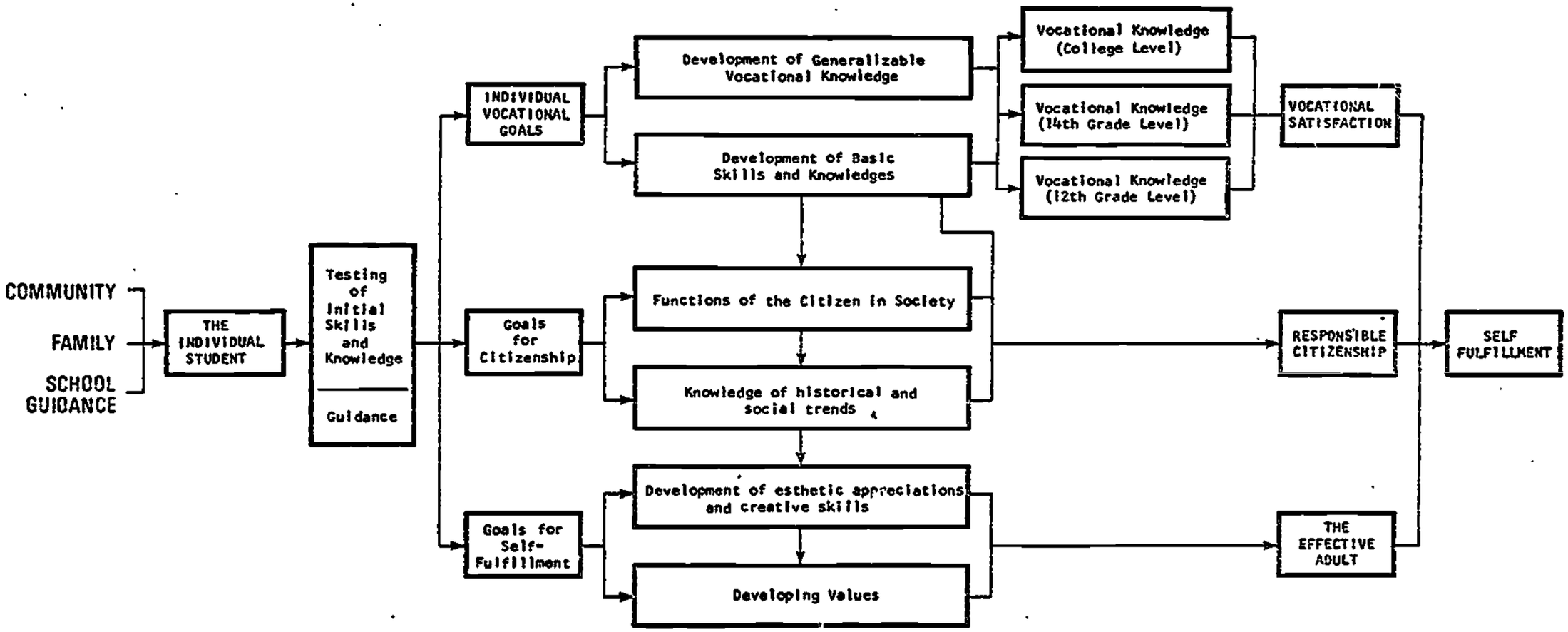


Figure 1.

PROBLEMS

The original goals of the Project called for: (1) curriculum development in 11 vocational families (which probably break out into some 25 to 30 subgroups) at 5 grade levels (10th through 14th); (2) curriculum development in 4 academic areas at 3 grade levels for a projected enrollment of over 1,000 students; (3) a program of "prerequisite instruction" for the junior high schools; and (4) a junior high guidance program for nearly 4,000 students in grades 7, 8 and 9. A behavioral analysis was to be done for each curriculum area, including a job description and task analysis for the vocational programs. Derivation of behaviorally stated objectives in topical form was to have been a major activity. Furthermore, the project was to develop and implement programs of individualized instruction, and then demonstrate increased effectiveness of such methods and instruction. All areas were to be demonstration programs. In addition, commitment was made to develop an evaluation program for vocational schools which included not only end-of-year examinations, but also the continuing follow-up of outcomes after graduation. The development of performance measures tied to the objectives of instruction were also a part of the project tasks. One other proposed activity was to develop teacher-training materials and conduct an inservice training program which would prepare Quincy staff to do all the things described above. Such objectives and tasks were to be accomplished with some $600,000 in Federal funds over a period of four years (the fifth year was scheduled for program and project evaluation) and a sizable Quincy contribution.

The opening of the new Quincy Vocational-Technical School building and simultaneous introduction of an experimental program presented insurmountable problems. The superimposition of the two innovative activities multiplied the problems inherent to both. Job and task analysis, behavioral objectives and curriculum development of the type proposed for Project ABLE were relatively new for public education. Consequently, a great variety of problems previously unanticipated placed the project on a very slow pace. Important also is the fact that the original plans called for the development of learning units which were to be supported by appropriate commercially available texts and references. It was expected that such available resource materials would fit the needs of topic objectives and, therefore, little development of new materials was anticipated. Such was not the case. Most published material does not lend itself to the topic objectives derived from a truly behavioral analysis. The lack of funds, however, did not allow for adequate development of such materials in all areas.

The analysis in itself, of problem areas, can be an important outcome or product of innovative experimentation. The Project ABLE staff has documented such an experience in the Eighth Quarterly Technical Report, AIR: March 1968, which describes the problems encountered while designing, developing, and implementing an ex-

perimental curriculum For example, the willingness of the teaching staff to participate in a change was identified as a major area of concern and reinforced the notion that a firm conviction to the new goals and methods ought to precede any new program of instruction. Furthermore, the preparation of instructors to operate effectively under the new learning conditions was found to be of utmost importance to an administration attempting to implement new programs. The establishment of a basis for assigning priorities in a complex school system was also found to be a major problem.

In the preliminary tryout phase of the proposed study, all individuals and classrooms, as in Quincy, may not be involved. As the "new" is being introduced gradually over a period of years, the problems normally associated with maintaining an efficient operating school system may be compounded. Even with intensive and comprehensive orientation to the new procedures and products, the day-to-day problems which administration, faculty, and students must face and solve still remain. Thus, the establishment of priorities becomes a critical activity. Additional human resources and funds do not always provide the solution. It is difficult to foresee all contingencies.

The organization of a school system to accommodate different learning situations was also discussed in the report. For example, a number of problems arise when a new curriculum does not entirely replace the old one. The school then has the problem of administering two entirely different approaches or systems of learning. The difficulty is further compounded when the two curricula are not compatible in terms of scheduling, learning materials, and teacher preparation. Furthermore, when a new curriculum which has little rigid control over student time and location is introduced, students and instructors often have some difficulty adjusting to it. Different responsibilities for learning are placed on the student and on the instructors.

The availability of materials to support learning experiences poses another challenge. Shortages of materials, learning aids, and other educational support seem to be an inherent problem in all educational systems. In a school system which introduces a new curriculum, the problem becomes more acute because the new situation requires more and different support (usually more expensive) than the old. The problem is increased when individualized materials are adopted by the system. First, the amount of materials is so great in number and bulk that it creates storage and distribution problems. Second, since the materials differ substantially from those used in previous years, both the instructors and students must be trained in their application and use.

There is a definite need to plan every detail and anticipate every contingency when introducing new learning materials into an educational system. Better use of systems analysis and program evaluation and review techniques (PERT) is essential. Prepa-

ration of instructors in the administration of these materials and keeping records of student performance and characteristics of materials is needed. Even with unlimited resources and complete flexibility within a school system regarding faculty, students, and the scheduling of classes, the problems of curriculum implementation would still exist. In most cases, a school must adopt new techniques within an existing structure that imposes restrictions and constraints. The introduction of new approaches often demands considerable rearrangement and reorganization of staff, students, and physical facilities.

Transforming teachers into writers and curriculum developers was not generally successful, however, there have been some notable exceptions. They were assigned to the project on a part-time basis which, in itself, created an awkward situation. Most teachers had difficulty in working with and preparing behavioral objectives. The derivation of proficiency measures and instruments seemed most difficult. Organizing skills and knowledges by job hierarchies and levels presented many problems--most developers tended to follow traditional textbook style and content sequences.

Staff turnover and personnel changes for both Quincy and AIR seriously affected their ability to meet contractual obligations and stated goals (not to mention the myriad of other problems which were, in themselves, major hurdles). Frequent changes in key administrative personnel were most disruptive. Conditions typified by a highly mobile research community were additional factors in staffing and personnel relationships.

It was clearly the intent of the initiators of Project ABLE to forge a new bond of cooperative working relationships in the development and implementation of innovative programs for vocational education. Fortunately, the early recognition of problem areas and a restructuring of project activities has produced encouraging progress, and some notable accomplishments.

PROGRESS

As the developmental problems became evident in this new and ambitious undertaking, steps were taken, with the cooperation of USOE, to scale down the size of the commitment. Over a period of two years, pilot programs emerged through attempts to place problem solving and development on a more manageable basis. As a result, a number of curricula were prepared and implemented. Some are now nearing completion. Excluding the guidance program, over 6,400 pages of curriculum materials have been developed for testing with Quincy students.

Figure 2 depicts the stage of progress for each of the areas under intensive development. Related to Figure 2 is the flow chart of developmental processes depicted in Figure 3. Note that the emphasis is given to testing and evaluation. An example of the evaluation methods applied during the formative stages of curriculum development is provided in the Twelfth Quarterly Technical Report on the Power Mechanics Curriculum. Since there are no graduates as yet, follow-up is a plan of the future. Note also that time by phase or stage of development is not identified. This is because man-hours and time-lines by phase and area are subject to many variables. For example, quality of development is not uniform among the various programs. Therefore, the effort required during the test-revise-retest cycles will vary in relation to the problems of implementation and revision (in addition to other factors which must be taken into account). Unfortunately, several of the curriculum areas may never advance beyond the test-revise-retest cycle presently shown.

Since a major goal of Project ABLE was to individualize instruction, the criteria identified in Figure 4 must be analyzed closely. As can readily be seen, by comparing the progress chart to the requirements of an individualized instructional system, neither Quincy nor Project ABLE (nor any other school system in this country at the present time) are at the operational stage of "individualized instruction". However, some important components have been advanced by Project ABLE and other groups. Computer supported efforts such as those being developed by Project PLAN (AIR and Westinghouse Learning Corp.) may well bring about rapid development in this area.

To briefly highlight each area, it should be noted that the guidance program is now in its second full year of operation. This effort has serviced nearly 4,000 junior high students each year with a limited objective program focusing on career decision making. The entire set (and a sizeable set at that) of materials has been submitted to ERIC. Included were two technical reports describing development and initial testing. The initial tests have revealed some problems which can be modified without extensive revision. It has also been determined that the reading

PROJECT ABLE PROGRESS CHART

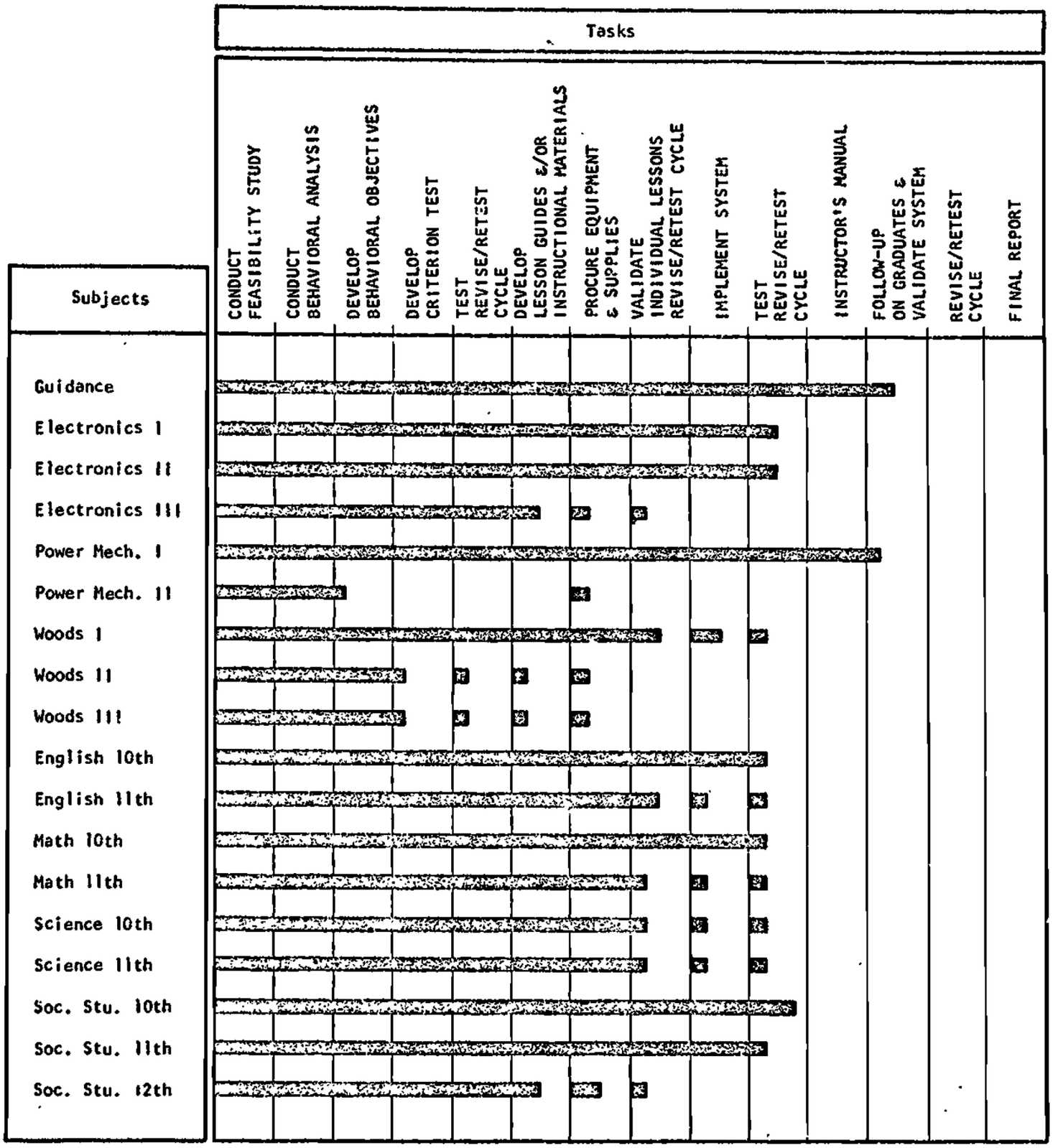


Figure 2.

PROJECT ABLE

FLOW CHART OF TRAINING SYSTEM DEVELOPMENT PROCESS

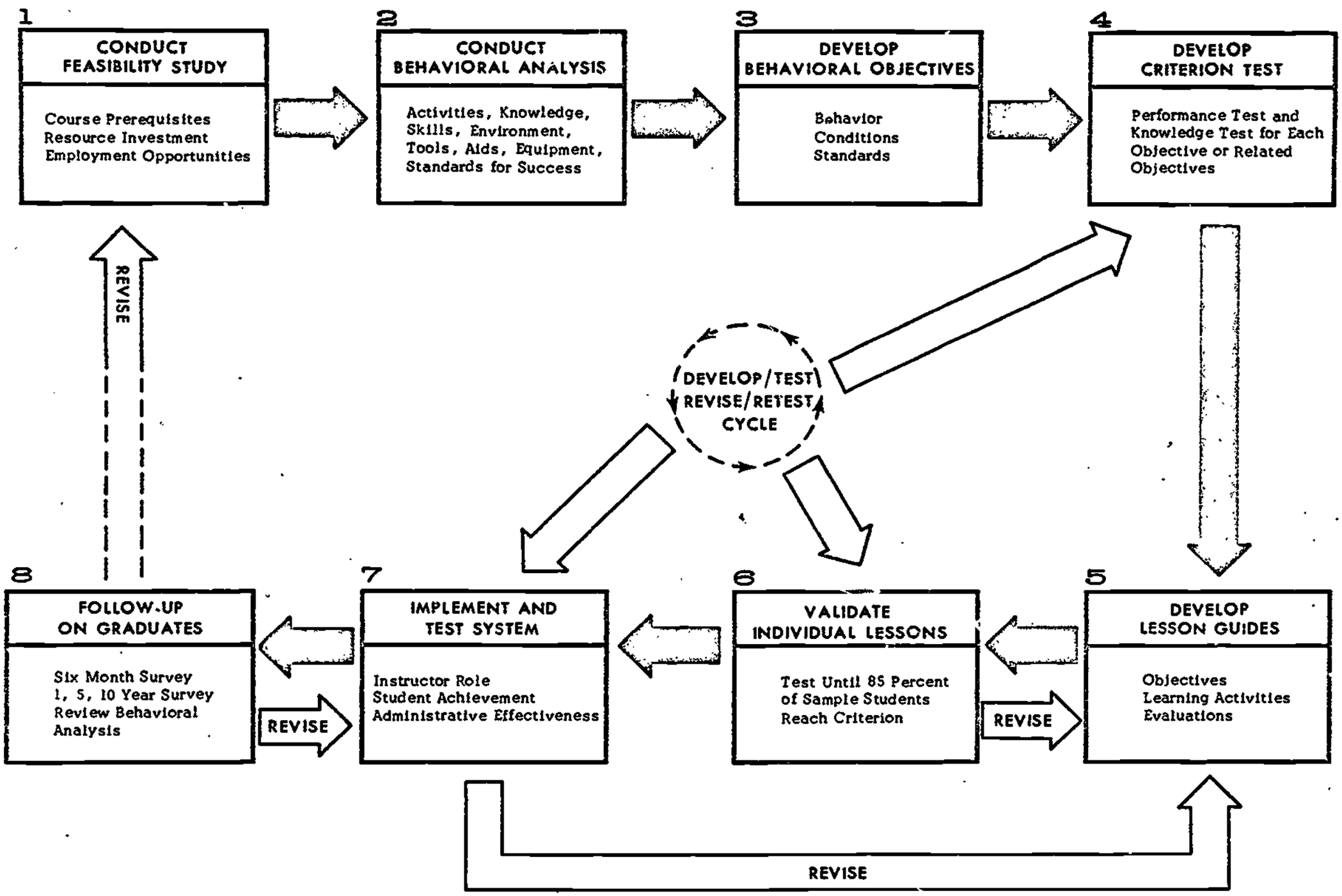
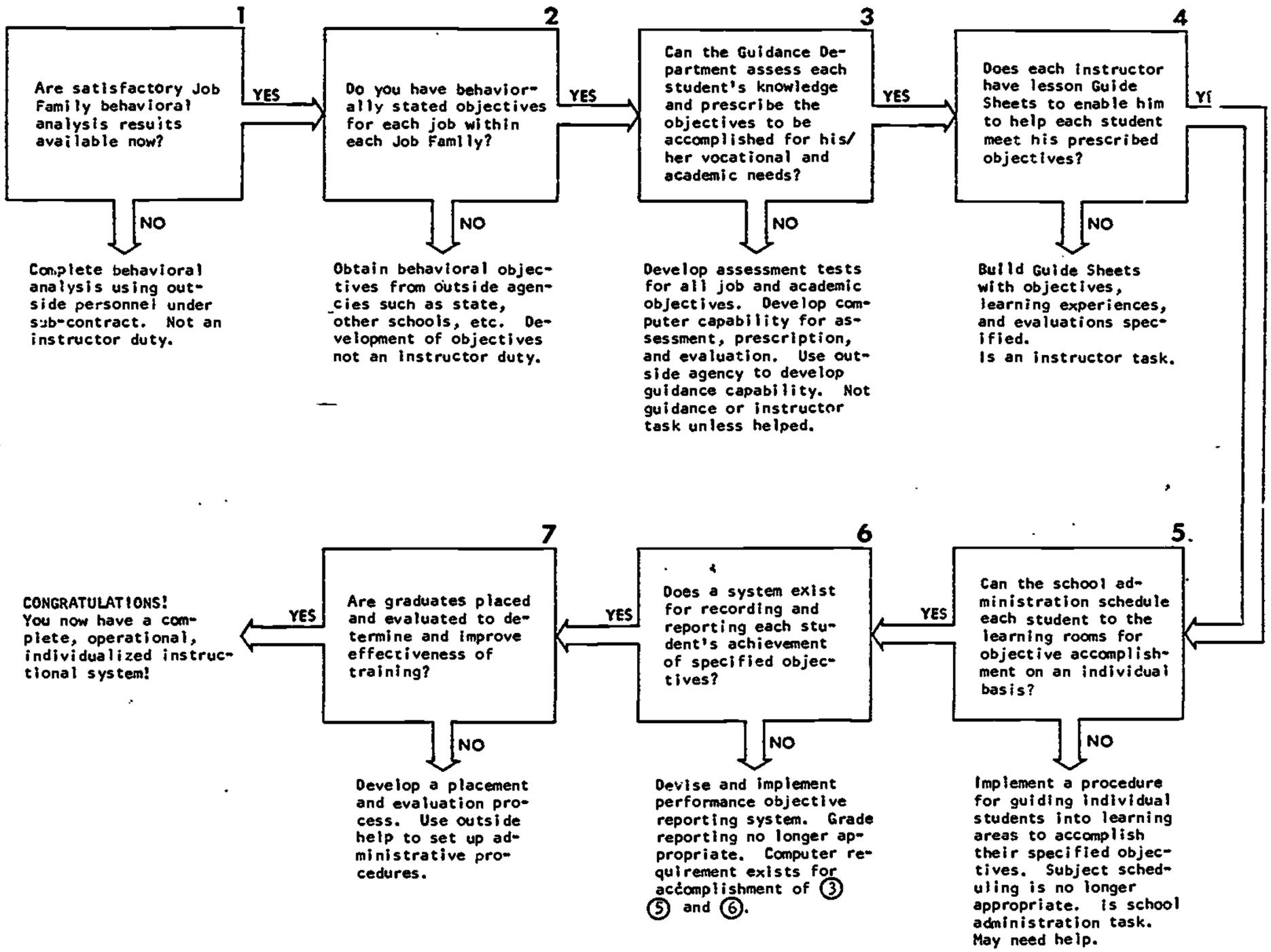


Figure 3.

Figure 3.



NOTE: 1-7 should be accomplished concurrently. 4 is the keystone. Attempts at implementing 3, 5, and 6 without 4 fully operational will result in chaos.

Figure 4.

G.NEIFING J.NICASTRO

level is too high. Therefore, some editing will be required. A research report on a pre and post test of experimental and control groups will be submitted to USOE late January or February. A modified version of the guidance program was successfully implemented and tested at the Clinton, Iowa Job Corps Center.

Development of the first two training levels (grades 10, 11, and for some students, grade 12) in electronics should be complete by the summer of 1970. The program is now operational and services all electronics students (106) in grades 10 through 12. Although, the learning materials (nearly 1,300 pages) have undergone two or more tests, some modifications will be required. Student guide sheets have been prepared listing the objective, an overview, optional references including a highly structured set of materials developed by ABLE, evaluation activities, training aids and equipment, etc. Performance evaluation instruments seem to be the only essential component not adequately developed.

General woodworking must undergo extensive revision of written materials. However, in the interim, the major focus will be on student guide sheets with well developed performance evaluation instruments. Effective evaluation of this program will not be possible until such development is completed. On the other hand, this area is typified by an exceptionally clean set of behavioral objectives. The training aids are complete and the shop program functioning quite well. All 10th grade students (26) are serviced by Project ABLE in this area.

Figure 4.

The first level Power Mechanics program (automotive mechanics, marine, and small engine related occupations) is the most advanced instructional system now operated by Project ABLE. However, it services only the 10th grade students (36). The materials have been printed in an attractive form, all training aids and multi-media materials are in place and operational, and an instructor's manual and technical report prepared and disseminated. The report has been released to ERIC and distributed to each of the 19 ES'70 school systems (Educational Systems for the 70's is a network of school systems organized for the purpose of improving education. Information can be obtained from the Quincy school system.) Proposals are being prepared for the dissemination and field testing of the instructional system and for the development of the second level program.

One of the more important outcomes of Project ABLE is the hundreds of behavioral objectives which have been prepared in the vocational areas. Complete sets have been released to the RCU of Massachusetts and the Instructional Objectives Exchange at UCLA. The objectives are keyed to tasks which in turn are ranked on a hierarchy of job skills and levels. More important, the objectives are generalizable to several hundred occupations which were clustered by job families.

Development of the academic support programs has proceeded more rapidly in some areas than in others. Each program is being tested at grades 10 and 11 with approximately 20 students per class. A major feature of each of the academic curricula, in addition to the method of individualized instruction, is the "decentralized resource center". In an attempt to increase student motivation, improve program effectiveness and relevancy, and bring about a closer relationship between the academic program and the vocational areas, numerous resource materials and alternative texts (alternative to the highly structured core type materials developed by ABLE) have been placed in the classroom. The obvious emphasis here is on flexibility and accessibility to many materials appropriate to vocational related studies.

To further improve on the critical integration of vocational and academic studies, the academic teachers have been given release time to visit shops, develop their resource areas, and to improve their instructional materials. At this point, it should be noted that Quincy may soon be able to prescribe for each individual, his learning requirements and activity. Computer capability through Project PLAN, the availability of behavioral objectives for the vocational and academic areas, and the accumulated data on each student from the time he enters school may well spell "breakthrough" in what now is described as a major concern--the effective and appropriate integration of academic and vocational studies.

Further developmental work in academic areas cannot be undertaken by Project ABLE. However, similar activities are in progress among other ES'70 school systems with Title III funds for each of the academic areas. Complete sets of draft materials and materials which have not been finalized in the testing process, have been selectively disseminated to such projects. It is expected that Quincy and the other network members will benefit in many ways from such cooperative efforts. Hopefully, the public interest will be protected with some significant returns from the initial research and development investment.

To conclude this section, it should be noted that Project ABLE is a demonstration project. All classes are open to visitation. All materials and reports are organized and available for inspection. Furthermore, all technical reports have been submitted to ERIC. This material should prove extremely valuable to curriculum development projects with goals similar to those presented for ABLE. A study table is maintained in the ABLE offices and has been used by hundreds of visitors over the past four years. As an additional point of information, the Schedule of Work for the final term of project activity is included in Figure 5.

PROJECT ABLE

SCHEDULE OF WORK

PHASE	YEAR 5 (11 Months)											YEAR 6 (6 Months)					
	1969			1970								1970				1971	
	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.
I	ELECTRONICS DEPARTMENT - Implement & Evaluate																
II	POWER MECHANICS - Implement & Evaluate																
III	GENERAL WOODS - Implement & Evaluate																
IV	4 ACADEMIC AREAS @ Grades 10 & 11 - Implement & Evaluate																
V	GUIDANCE - Operational																
VI	Career Devel. Invent.																
VII		Prep. AVA															
VIII				Manual-Initial Devel. & Evaluation Cycle													
IX									Manual for Long-Term Evaluation								
X												Manual and Technical Reports for Each Area					
XI										Contract -Year 6							
XII																Final Report	

Figure 5.

AN EXPERIMENTAL PROGRAM

Submitted to the U. S. Commissioner of Education
Under the Provisions of Section 4(c) of
the Vocational Education Act of 1963
(Contract No. OE-5-85-019 Project No. 5-0009)

Project Title	:	DEVELOPMENT AND EVALUATION OF AN EXPERIMENTAL CURRICULUM FOR THE NEW QUINCY (MASS.) VOCATIONAL-TECHNICAL SCHOOL	
Applicant	:	Quincy Public Schools Coddington Street Quincy, Mass. 02169 Tel: (617) 471-0100	American Institutes for Research 135 N. Bellefield Ave. Pittsburgh, Pa. 15213 Tel: (412) 683-7600
Initiated by	:	Maurice J. Daly Asst. Supt. for Vocational-Technical Education Quincy Public Schools	Robert M. Gagné (Formerly) Director of Research American Institutes for Research
Principal Investigator (Formerly)	:	Robert M. Gagné	
Submitted by	:	Robert E. Pruitt (Formerly) Superintendent Quincy Public Schools	John C. Flanagan President American Institutes for Research
Duration	:	Beginning 1 January 1965	Ending 28 February 1971

- - - - - - - - - - - - - - - - - - - -

Policy Board :

Quincy:

Dr. Lawrence P. Creedon, Superintendent
Mr. William L. Phinney, Asst. Supt. for Instruction
Mr. Maurice J. Daly, Asst. Supt. of Vocational-Technical Education

AIR:

Dr. Melvin Rudov, Asst. Director Pittsburgh Office
Dr. Krzysztof W. Flizak, Director Vocational Training Research

Project Director (Acting) : J. William Ullery, Associate Research Scientist, AIR

Project Coordinator : J. S. Nicastro, Quincy

Figure 5.

A PILOT PROGRAM FOR THE DEVELOPMENT OF STATE VOCATIONAL-TECHNICAL EDUCATION INFORMATION DISSEMINATION SYSTEMS[1]

Joel H. Magisos

Information Specialist
ERIC Clearinghouse, The Center for Vocational and Technical Education
The Ohio State University

Personnel from vocational-technical education research coordinating units (RCU's) in seven states have been cooperating with the staff of the ERIC Clearinghouse on Vocational and Technical Education (VT-ERIC) at The Ohio State University in a pilot program for the development of state vocational-technical education information dissemination systems. The central purpose of the program is the eventual development of a multi-level network of cooperating state systems with capability of meeting, on an interpersonal basis, the information needs which arise from the critical problems of vocational-technical educators. For the current year, emphasis has been upon development of exemplary models, analysis of target audiences, and evaluation of information products.

Antecedents of the Program

Antecedents of the program have included initial establishment of the Educational Resources Information Center (ERIC), activities of VT-ERIC, and work of an *ad hoc* committee of RCU personnel.

The Educational Resources Information Center (ERIC) was established in the U. S. Office of Education in 1966 to develop a national information

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[1]Presentation made to the Research Section of the New and Related Services Division of the 63rd Annual American Vocational Association Convention in Boston, Massachusetts on December 10, 1969.

system for American education. The present configuration of this system now includes the central coordinating staff in USOE, nineteen specialized clearinghouses, three major contractors (i.e., ERIC Facility, ERIC Document Reproduction Service, and the CIJE publisher), and the Government Printing Office. By the end of 1968, several ERIC publications had been instituted, 17,341 documents had been cited in publications issued by ERIC, and 7,233,000 microfiche had been sold by EDRS.[1]

One of the clearinghouses, VT-ERIC, specifically serves vocational and technical education and related areas such as industrial arts education, manpower economics, and occupational psychology. Acquisition, processing, and input of vocational-technical education materials to ERIC publications and initiation of VT-ERIC publications were the major emphases of the clearinghouse at first. Development of strategies for dissemination of the information received high priority from the first, however.

A conference of research coordinating unit personnel was held in the Fall of 1967, during which several tasks were identified, namely:

1. Acquisition of materials for ERIC
2. Dissemination of ERIC and VT-ERIC materials
3. Education of information users
4. Analysis of information
5. Service to users and user groups

Following the conference, an ad hoc committee of RCU personnel was formed to work with the staff of VT-ERIC on development of guidelines for providing information services in the states. The inputs of this ad hoc committee, editing by VT-ERIC staff, review by RCU personnel, technical

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[1]"ERIC and Its Services," Centergram, Volume 4, No. 6, June 1969, p. 1.

review by information scientists, and intensive revision by committee and staff resulted in a Guide for a State Vocational-Technical Education Dissemination System. A preliminary edition was widely distributed, but further revision will be made before publication. In fact, periodic revisions are planned.

The ad hoc committee recommended the establishment of a pilot program to further develop and test the concepts in the Guide.[1] Applications for participation in a pilot program were solicited and considered upon the basis of criteria suggested by the committee, such as the RCU's location, interest, potential impact, organizational structure, available resources, and willingness to follow a plan. With one change early in the program, the states now involved include California, New Jersey, New York, Nevada, Oklahoma, Pennsylvania, and Wisconsin. Four of the states have the benefit of experience on the ad hoc committee which developed the Guide. Each state brings to the program its unique problems and solutions. Some have provided information services on a systematic basis for some time, while others are just beginning.

Rationale for a Pilot Program

The basic rationale for this pilot program is rooted in the mission of vocational-technical education, the mission of information systems, the needs of potential system users, and the roles of the RCU and VT-ERIC.

The need for a state information dissemination system for vocational-technical education was cogently stated in the Research Handbook for

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[1] Wilson, Celianna I. and Magisos, Joel H. (Editors), Guide for a State Vocational-Technical Education Dissemination System (Preliminary Edition), Columbus, ERIC Clearinghouse, The Center for Vocational and Technical Education, The Ohio State University, March 1969, 73 pp.

Vocational-Technical Education in a specific recommendation that:

> Every state should institute a multi-level technical information center equipped with access to national document collections and research tools.[1]

This handbook, the product of a national USOE-sponsored conference on research, puts heavy emphasis upon the coordination and dissemination of research findings in each state.

The mission of an information dissemination system is generally the transfer of information, a function which it performs without placing value on information. This is not to say that it is a passive role. On the contrary, it is a role which requires analysis of target audience needs, amassing of information which meets these needs, management of information, development of vehicles for transfer of information, and interpretation of information for specific purposes. Such information dissemination systems exist, the most obvious one for education being ERIC. ERIC and its clearinghouses provide a national locus for amassing and managing information, and providing vehicles for its transfer. Because of its huge, complex target audience, however, the national level of such a system cannot adequately carry on the target audience analysis necessary to effective interpretation of information. Nor can the national level of a system successfully provide the interpersonal service which is necessary to effective information transfer.

Research coordinating units are possibly the most logical agency to assume the information dissemination function for vocational-technical education in each state. Though beset by the dilemma of role assumption

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[1] Hull, William L. et al, Research Handbook for Vocational-Technical Education, Stillwater, Oklahoma: Research Coordinating Unit, Oklahoma State University, July 1969, p. 33.

during the initial period of their existence, RCU's have been credited with a major success in systematic information storage and retrieval.[1] Citing certain deficiencies, the Goldhammer RCU program evaluation report recommended further development of usable techniques, definition of roles, and development of channels of dissemination.[2] Because of a unique position in the vocational-technical education community, the RCU has the opportunity to be both an agent for change and a disseminator of information, functions which can be complementary.

From the standpoint of the staff of VT-ERIC, the RCU is in a key position to provide the linkage between VT-ERIC and the potential user of information.

The Guide for a State Vocational-Technical Education Dissemination System, previously cited, represents a model. As an innovation, it must pass through the several stages from awareness to final adoption or rejection. The pilot program was conceived as a logical step in the orderly diffusion of a complex and innovative idea. The pilot stage is basically an opportunity for evaluation and trial. Though the personnel of VT-ERIC would have preferred to assist all states with equal intensity, mere logistics dictated the chosen approach of working more intensively with a few cooperating states.

Purposes and Objectives

As stated at the outset, the central purpose of the pilot program is the eventual development of a multi-level network of state systems

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[1]Goldhammer, Keith et al, Research Coordinating Unit Program Evaluation. Corvallis, Oregon: Center for Educational Research and Service, Oregon State University, March 1969, pp. 59-62.

[2]Goldhammer, ibid., pp. 66-68.

capable of meeting needs of vocational-technical educators on an interpersonal basis. At a more immediate and practical level, the purpose of the pilot program is to test the effectiveness of the aforementioned Guide.

Exemplary Information Dissemination Systems

The first specific objective of the program is to develop exemplary information dissemination systems in several cooperating states. Pilot program RCU personnel are endeavoring to be exemplary in their information dissemination efforts and, to this end, they have stated very specific objectives. Visitation by VT-ERIC staff and participation in workshops contribute to achievement of these specific objectives, as well as provide VT-ERIC with valuable feedback.

RCU's in Veried Settings

Another objective of the program is study of the effectiveness of information dissemination systems in varied settings. Both common and unique problems have already been identified in states which vary so greatly in population as do New York and Nevada. Two RCU's are located in a university setting. Of those located in state departments of education, one is located in the research arm of the department. Others are in the state division of vocational education. These differences, along with the varied backgrounds and independent spirit of participating personnel, permit observations across a broad spectrum and insights from several perspectives.

Evaluation of ERIC and VT-ERIC Products

Evaluation of the effectiveness of ERIC and VT-ERIC products such as Research in Education, AIM, ARM, and the Review and Synthesis of Research series provides another objective for the program. This evaluation will result from the candid feedback of participating personnel and data-gathering in a target audience study to be mounted by participants.

Analysis of the Target Audiences

A fourth objective of the program is to identify and analyze the nature of the information user, his problems and needs. This objective is being met with a rather ambitious plan to survey a sample of the 58,000 potential users of the system in six of the seven states. The target audience had been divided into seven defined categories, namely administrators, counselors, local directors, researchers, supervisors, teacher educators, and teachers. RCU personnel have estimated populations for each category and participated in sampling design and instrument construction. A consultant to the project and other staff members at The Center for Vocational and Technical Education advised the project at various stages.

The objectives for the target audience study are to describe selected characteristics of target audience categories; determine information seeking and receiving behavior of study subjects; and determine differences in behavior between categories and individuals with selected characteristics. Incidental to these objectives, an assessment of the adequacy of information sources, products, and services should be possible.

Demonstration of Procedures

A fifth objective of the pilot program is to demonstrate the efficacy of the procedures prescribed in the Guide for planning, operating, and evaluating a state information dissemination system. The Guide was never regarded as a final solution, but as a tentative document with a self-correcting feature, just as it carries a recommendation that state information dissemination personnel cycle their activities. The Guide will be superceded by a revision or another device upon the basis of experience in pilot states and other settings.

Pilot Program Activities

As recommended in the Guide, one RCU is having experience with its first ad hoc advisory committee. Another RCU has implemented 26 decentralized information sub-centers. At least one RCU director is serving on an interagency committee to plan an information dissemination system for all of education in his state. Still another RCU has contracted with a university to design a model for its system. Each RCU is providing some information services to vocational-technical educators, while trying to determine ways in which to become more effective.

Pilot program RCU personnel have met in Columbus on two occasions for intensive work toward meeting the objectives of the program. They met again in Boston last week in order to plan final details for their cooperative target audience study. It has been necessary for both the ERIC Clearinghouse on Vocational and Technical Education and the participating RCU's to allocate considerable resources to the program, the "pay off" for which should be greater effectiveness both in the near and distant future.

Conclusion

In conclusion, the pilot program for the development of state vocational-technical education information dissemination systems involves seven state research coordinating units and the ERIC Clearinghouse on Vocational and Technical Education. Its general purpose is the improvement of document-based information services for vocational-technical education through a multi-level network of state systems linked to the national system. The specific objectives of the program support both the improvement of the Guide for a State Vocational-Technical Education Dissemination System and the diffusion of its recommendations among all states. The results of the pilot program will be available to others in at least three forms -- exemplary programs in pilot states, an improved Guide, and reports of the project.

PROJECT DISSEMINATION:

A COMPUTER BASED INFORMATION STORAGE AND RETRIEVAL SYSTEM[1]

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INTRODUCTION

Computers have been used successfully by researchers to investigate a wide range of complex problems which, because of the speed and storage capacity of computers, would otherwise have been impossible. Since the development of the ERIC system, attempts have been made to extend the application of computers to the problems of dissemination. As the volume of research information continues to accumulate, state and local agencies will be encouraged (if not forced) to seek more efficient ways to process and disseminate large quantities of information. One possible solution to this problem is developing or adopting a computerized information system.

In an attempt to meet the increasing demands for research information in our State, the Minnesota Research Coordinating Unit for Vocational Education has developed a computer based information storage and retrieval system. This system is one part of a long range plan to stimulate and facilitate the conduct of research and development through the process of dissemination and feedback.

The two major goals of the system are to (a) improve the efficiency of processing large quantities of research information and (b) improve the accessibility of research information currently available in the research library.

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[1]Presentation made at 63rd Annual Vocational Convention in Boston, Massachusetts on December 10, 1969.

The purpose of this paper is to briefly disucss the characteristics of our system. While certain technical aspects of the system may be peculiar to the University of Minnesota computer facilities, the basic concept of information storage and retrieval are generalizable.

The system was planned and developed in three phases: (a) Phase I established the rationale and procedures; Phase II developed the appropriate computer programs; Phase III produced plans to operate, maintain and evaluate the system. Phase I and II have now been completed and Phase III has been operational for about two months.

PHASE I: PLANNING

The rationale for planning the system was predicated on the assumption that high speed electronic computers could perform many of the routine, time consuming tasks typically assigned to clerical and/or professional personnel. This suggests, that as a result of the computerized system, clerical and professional staff will have more time to devote to the problems of dissemination.

The types of tasks which the computer performs in our system include: (a) storing bibliographic references alphabetically on magnetic tapes, (b) cross-referencing documents according to subject matter, keyword descriptors, (c) providing printouts of bibliographies to replace the current card catelogue system, and (d) conducting specific problem searches for individuals and/or user groups.

Procedures:

The procedures used by the ERIC system served as the general model for identifying, coding and classifying each research document. An Accession number is assigned to each document (i.e. ED 000111, RS 000111 or MF 000111) and each

document is classified according to the most relevant keyword descriptors.

Appendix A is a sample of the form used to process each document to be included in the system. Clerical personnel use it to type bibliographic information; information specialists use it to code and classify documents according to a set of predetermined major and minor keyword descriptors; key punch operators use it as a format to punch bibliographic information on computer cards. The design of the form represents an attempt to (a) standardize the procedure of processing information, (b) eliminate clerical errors and (c) minimize the time required to process each document.

PHASE II: DEVELOPING COMPUTER PROGRAMS

A series of three high speed computer programs called UPDATE, SEARCH and NEAT were developed to be used with the CDC 6600 computer. Each program "reads" alphanumeric characters as sets of textual words in free field (no format); non alphanumberic characters denote the end of a word. A word is, therefore, defined as a continuous sequence of alphanumeric characters.

Program Update:

The major purpose of program UPDATE is to store bibliographic information on magnetic tapes and periodically update the master library tape by alphabetically merging new information with informatinn already in storage. Operationally, program UPDATE performs four tasks:

- (1) it "reads" bibliographic information from either computer cards or magnetic tape and stores the information on magnetic tapes;
- (2) it merges (adds) references alphabetically with references already in storage
- (3) it deletes (removes) references from the master library tape
- (4) it indicates references out of alphabetic order.

Appendix B is an example of the printout which is received as a result of merging references when some of them are out of alphabetic order. The printout also provides information about the total number of references in the system.

Appendix C is a sample of the control system for removing information from the master tape and adding new information to the tape. "Updating" and "jerking" operations can be performed simultaneously or separately. Each reference on the master tape is "matched" against each of the references to be "JERKED" until a match is found, then the reference is deleted from the system.

Program Search

The purpose of program SEARCH is that of high speed retrieval of reference listings and/or other textual information according to specified verbal content (e.g. keyword descriptors or phrases). It has a simple, flexible, and general control system which is capable of seeking out any alphanumeric content, textual information, or keyword descriptor appearing in a reference listing.

The basic concepts of set algebra are implicit in the control system; sets and subsets may be defined on the basis of the references in the universe which either contain or do not contain certain combinations of keyword descriptors. Searches can be done by defining a set as (a) a single keyword (e.g. curriculum) or (b) a combination of several keywords, or keyword phrases (e.g. Post secondary, evaluation, dropouts).

The capability of program SEARCH makes it possible to use the computer to (a) cross-reference documents according to keywords, (b) acquire author and subject matter (keyword) printouts for the card catalogue system and (c) provide individuals with printouts dealing with a specific problem.

The control system for operating program SEARCH is quite simple and requires neither sophisticated skills in set algebra or computer programming. Appendix D illustrates the control system and various options of program SEARCH.

SET 1 is an AND search involving a combination of a keyword and a keyword phrase. Both words must appear in the same reference listing. SET 2 is an OR search involving three descriptors which are synonyms for the same instructional process. If ANY one of the phrases appears in a reference, the elementary conditions of SET 2 are met. SET 3 is an AND search, which is defined as a subset of a previously defined set (SET 2) and the NOT option is used to eliminate all the references from SET 2 which, in this case, pertain to agriculture.

A total of six (6) searches can be conducted simultaneously. With the current computer facilities and the number of references on the master library tape, it tapes approximately 15 seconds of central processing (CP) time to conduct six (6) searches at a cost of approximately $1.00 per search. This includes cost for paper and PP time.

Program Neat

Program NEAT is an output program which controls the format-spacing of computer printouts. The purposes of controlled format-spacing are to (a) improve the readability of computer printouts and (b) facilitate the process of making 8 1/2 x 11 reproductions of bibliographies directly from computer printouts. Appendix E shows a sample of the printout received after conducting a search.

PHASE III: OPERATING AND EVALUATING THE SYSTEM

The system has been operating for about two months under the control of one (1) full-time secretary and one (1) half-time information specialist. They select, order and process all information, as well as operate and evaluate the computer system.

Currently, the operating system and services consist of (a) building a

master library tape which contains about 4000 reference listings, (b) developing a card catalogue system consisting of about forty-five (45) computer printouts, and (c) conducting individual searches for University staff and graduate students.

A system has been developed for individuals to request and evaluate problem searches. An individual completes an "Application for Library Search" form (Appendix F) which is used to select appropriate keyword descriptors. An evaluation form (Appendix G) and a self addressed envelope is given to the individual at the same time as the computer printout. Appendix H shows a sample of the form used to record information about library searches and evaluations. This information provides data for making subsequent revisions in the system.

Future plans for dissemination include: (a) encouraging educators throughout the State to make application for library searches, (b) supplying various user groups with selected bibliographies of relevant research materials, and (c) duplicating and disseminating microfiche and/or hardcopy materials to educators throughout the State.

Summarizing, the Minnesota Research Coordinating Unit for Vocational Education has developed a computerized information storage and retrieval system to facilitate the conduct of research and development activities in the State. It was purposely designed to improve the efficiency and effectiveness of handling large quantites of information and to make library materials readily accessible to a wider range of individuals and/or user groups. The system is simple to operate, and seems to be sufficiently comprehensive to accommodate the anticipated accumulation of research materials.

In conclusion, it seems safe to say that, while the computerized system has greatly facilitated out dissemination efforts, considerably more more needs to be done in learning how to maximize its potential. As is so often the case, human ingenuity lags far behind computer technology.

APPENDIX A

MINNESOTA RCU LIBRARY CODING FORM

RS 002009 Rosen, Julius. Job Values of Educationally Disadvantaged Students. New York: City College of the City of New York, 1968.

KEYWORDS: (Begin New Card)

Note: Shaded area represents necessary blank columns.

KEYWORDS

All Circled Words From This Section

(EDUCATIONAL FIELD)	(POPULATION)	(PROBLEM AREA)	(PROBLEM AREA cont.)
General Vocational,	Preschool,	Philosophy-Object,	International,
Agriculture,	Elementary,	Administration-Sup,	Review-Bibliograph,
Business-Office,	Junior High,	Facilities-Equip,	Conference Report,
Distributive,	Senior High,	Curriculum,	
Health,	Post High,	Instruction,	
Home Economics,	College,	Learning Theory,	
Ind. Ed.-Ind. Arts,	Adult,	Guidance-Counseling,	
Technical,		Evaluation,	
Trade-Industrial,	Teacher,	Tests-Measure,	
Sociology,	Minority,	Statistics,	
Psychology,	Disadvantaged,	Legislative,	(RESEARCH REPORT)
Economics,	Dropout,	Manpower,	
General Education,	Gifted,	Technology,	Research

All Words From This Section

Educationally Disadvantaged

Work Values

Job Values

APPENDIX B

PROGRAM UPDATE

```
ALPHA-CHECK--..RS 001235  DEPARTMENT OF VETERANS BENEFITS, THEY RETURN TO WORK.  WASHINGTON:
ALPHA-CHECK--..ED 022035  FERMAN, L. A. AND AIKEN, M., MOBILITY AND SITUATIONAL FACTORS IN
ALPHA-CHECK--..ED 017743  LAW, GORDON F., RESEARCH VISIBILITY.  VOCATIONAL EDUCATION IS
ALPHA-CHECK--..RS 001739  MCQUEEN, ROBERT, THE ROLE OF VOCATIONAL-TECHNICAL EDUCATION AND THE
ALPHA-CHECK--..ED 012656  PETERSON, MILO J., VOCATIONAL EDUCATION AT THE HIGH SCHOOL LEVEL,
ALPHA-CHECK--..RS 000355  MINNESOTA DEPARTMENT OF EMPLOYMENT SECURITY, MANPOWER SURVEY:  WHEREF
ALPHA-CHECK--..RS 001237  PRESIDENT>S COMMISSION ON THE STATUS OF WOMEN, REPORT OF THE
ALPHA-CHECK--..RS 001304  REID, CHRISTOPHER AND MACLENNAN, DONALD W., RESEARCH IN
ALPHA-CHECK--..ED 019442  SAN FRANCISCO CITY COLLEGE, EXPERIMENTAL SUMMER PROGRAM FOR HIGH
ALPHA-CHECK--..ED 018671  STATE UNIV. OF NEW YORK, OSWEGO COLLEGE AT OSWEGO, FIELD STUDY IN
ALPHA-CHECK--..ED 019472  SWEANEY, H. P., THE DEVELOPMENT AND DEMONSTRATION OF UNIFIED
ALPHA-CHECK--..ED 015961  THOMPSON, WENDA, A SELECTIVE BIBLIOGRAPHY ON NEW MEDIA AND THE
ALPHA-CHECK--..ED 019401  U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, EDUCATION AND
ALPHA-CHECK--..ED 016099  VAN ERDEWYKI, ZENO M., VARIABLES RELATED TO PERSISTENCE, TRANSFER
ALPHA-CHECK--..ED 017937  ZWEIBELSON, I., EVALUATION ATTITUDES,  WASHINGTON:  AMERICAN

PROCESSING COMPLETED-----
    NO.RECORDS FROM INPUT   =  974
    NO.RECORDS FROM OLDTAPE= 2469
    NO.JERKED  FROM OLDTAPE=    0

NO.RECORDS TO NEWTAPE= 3442
```

APPENDIX C

7/8/9

..JERK (OR JERKS)

..RS 000935 KRANZBERG, MELVIN. TECHNOLOGY AND CULTURE: DIMINSIONS FOR

..ED 016849 GRINDER, ROBERT E. STUDY OF THE INFLUENCES OF THE FATHERS JOB

..MF 000023 KERWOOD, ROBERT V. SELF-INITIATED EVALUATION OF STATE

..ED 101615 PADFIELD, HARLAND AND MARTIN, WILLIAM E. FARMERS, WORKERS, AND

7/8/9

..ED 001999 WINICK, CHARLES. TRENDS IN HUMAN RELATIONS RESEARCH. NEW YORK: ANTI-DEFAMATION LEAGUE OF BNAI BRITH, 1955.

KEYWORDS: SOCIOLOGY, REVIEW-BIBLIOGRAPH, RESEARCH, INTERGROUP RELATIONS.

..RS 000746 SHOEMAKER, LOUISE P. PARENT AND FAMILY LIFE EDUCATION FOR LOW INCOME FAMILIES. WASHINGTON, D.C.: U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, 1966.

KEYWORDS: HEALTH, SOCIOLOGY, ADULT, DISADVANTAGED, PHILOSOPHY-OBJECT, FAMILY LIFE EDUCATION, LOW INCOME.

7/8/9

6/7/8/9

APPENDIX D

```
. . SET 1 AND
    CURRICULUM
    DISTRIBUTIVE EDUCATION
. . MESSAGE - - I WANT TO HAVE THE COMPUTER LOCATE ALL THE REFERENCES
    STORED ON MAGNETIC TAPE WHICH CONTAIN BOTH OF THE KEYWORD
    DESCRIPTORS -- CURRICULUM AND DISTRIBUTIVE EDUCATION.
. . WRITE SET 1
. . SET 2 OR
    PROGRAMMED INSTRUCTION
    PROGRAMMED LEARNING
    COMPUTER ASSISTED INSTRUCTION
. . MESSAGE -- I WANT THE COMPUTER TO LOCATE ALL THE REFERENCES WHICH
    CONTAIN ANY ONE OF THE ABOVE LISTED KEY WORD PHRASES SINCE THEY ARE
    SYNONYMS FOR THE SAME INSTRUCTIONAL PROCESS
. . WRITE SET 2
. . SET 3 AND
    SET 2
    NOT AGRICULTURE
. . MESSAGE -- BECAUSE I DO NOT WANT TO SEARCH THE WHOLE TAPE AGAIN AND
    BECAUSE I WANT INFORMATION ON PROGRAMMED INSTRUCTION BUT NOT AGRICULTURE,
    I WILL DEFINE A SET IN TERMS OF A PREVIOUSLY DEFINE SET AND USE THE
    --- NOT --- OPTION ---
. . WRITE SET 3
```

APPENDIX E

..ED 002665 UNIVERSITY OF THE STATE OF NEW YORK (THE), THE STATE EDUCATION DEPARTMENT. SELECTED READING ON PROGRAMED LEARNING. ALBANY, NEW YORK: THE UNIVERSITY OF NEW YORK, THE STATE EDUCATION DEPARTMENT, 1963.
KEYWORDS: INSTRUCTION, TECHNOLOGY, CONFERENCE REPORT, RESEARCH, PROGRAMED INSTRUCTION.

..RS 000759 UNIVERSITY OF TEXAS, QUARTERLY PROGRESS REPORT ON RESEARCH AND DEVELOPMENT CENTER BUREAU NO. 5-0249. UNIVERSITY OF TEXAS, 1966.
KEYWORDS: TEACHER, PHILOSOPHY-OBJECT, INSTRUCTION, RESEARCH, RESEARCH AND DEVELOPMENT CENTERS, INDIVIDUALIZED CURRICULUM, ANNUAL REPORTS.

..RS 001450 VAN TASSEL, CAROL=EDITOR=, GUIDELINES FOR PROFESSIONALS WORKING WITH PERSONS WITH SPECIAL NEEDS DEVELOPED FROM THE SEMINAR FOR SUPERVISORS AND TEACHER EDUCATORS OF TEACHERS OF PERSONS WITH SPECIAL NEEDS. UNIVERSITY OF KENTUCKY - RCU, 1967.
KEYWORDS: GENERAL VOCATIONAL, TEACHER, DISADVANTAGED, ADMINSTRATION-SUP, INSTRUCTION, SPECIAL EDUCATION TEACHERS, SUMMER INSTITUTES.

..ED 010091 WALLACE, RICHARD C., THE ABILITY OF CERTAIN PUPILS TO UNDERSTAND AND APPLY SELECTED CONCEPTS AND GENERALIZATIONS IN GEOGRAPHY. CHESTNUT HILL, MASSACHUSEITS: BOSTON COLLEGE, 1966.
KEYWORDS: GENERAL EDUCATION, ELEMENTARY, INSTRUCTION, LEARNING THEORY, RESEARCH, CONCEPT TEACHING, CONCEPT FORMATION, SOCIAL STUDIES.

..ED 010390 WALLEN, NORMAN E., RELATIONSHIPS BETWEEN TEACHER CHARACTERISTICS AND STUDENT BEHAVIOR--PART III. SALT LAKE CITY, UTAH: UNIVERSITY OF UTAH, 1966.
KEYWORDS: GENERAL EDUCATION, ELEMTARY, TEACHER, INSTRUCTION, EVALUATION, RESEARCH, STUDENT BEHAVIOR, STUDENT-TEACHER RELATIONSHIP.

..RS 001139 WATKINS, JAMES F., PROPOSAL FOR ESTABLISHMENT OF PROTOTYPE OCCUPATIONAL AND RESEARCH DEVELOPMENT COORDINATING UNIT - FINAL REPORT. HELENA, MONTANA: MONTANA STATE DEPARTMENT OF PUBLIC INSTRUCTION, 1967.
KEYWORDS: GENERAL VOCATIONAL, RESEARCH, RESEARCH COORDINATING UNITS, PROGRAM DEVELOPMENT, PROPOSALS.

..RS 001472 WELLS, RICHARD D. AND HEWLETT, H. ROBERT, HOOSIER VOCATIONAL HORTICULTURE. INDIANA STATE DEPARTMENT OF PUBLIC INSTRUCTION, DIVISION OF VOCATIONAL EDUCATION, 1967.
KEYWORDS: AGRICULTURE, CURRICULUM, CURRICULUM GUIDES.

..RS 000704 WENDT, PAUL R., AUDIOVISUAL INSTRUCTION. NATIONAL EDUCATION ASSOCIATION, 1966: 2 COPIES.
KEYWORDS: INSTRUCTION, TECHNOLOGY, RESEARCH, AUDIOVISUAL INSTRUCTION.

..RS 001043 WOLD, KENNETH M. AND GREEN, DONALD G., ESTABLISHMENT OF AN OCCUPATIONAL RESEARCH AND DEVELOPMENT COORDINATING UNIT FOR THE STATE OF IOWA. DES MOINES, IOWA: DEPARTMENT OF PUBLIC INSTRUCTION, 1967.
KEYWORDS: GENERAL VOCATIONAL, RESEARCH, RESEARCH COORDINATING UNITS, RESEARCH AND DEVELOPMENT CENTERS.

..RS 000707 WRIGHTSTONE, J. W., CLASS ORGANIZATION FOR INSTRUCTION. NATIONAL EDUCATION ASSOCIATION, 1966: 2 COPIES.
KEYWORDS: INSTRUCTION, RESEARCH, CLASS ORGANIZATION.

APPENDIX G

Evaluation of Library Search

Recently you requested the Minnesota Research Coordinating Unit in Vocational-Technical Education to conduct a library search for you dealing with the area of:

_____

_____

The keywords you indicated would be most helpful to identify and locate references were:

_____ _____

_____ _____

_____ _____

Questions

1. Was the bibliography comprehensive (Complete)?

_____yes _____no

2. Was the material in the bibliography relevent to your specified area of interest?

_____yes _____no

3. Were you able to acquire copies of the materials listed on the bibliography?

_____yes _____no (If yes, in what form was the material)

_____Hard Copy

_____Microfilm

_____Microfiche

4. How could either the comprehensiveness or relevance of the search have been improved?

_____

_____

_____

_____

5. Do you think you will be requesting additional library searches in the near future?

_____yes _____no

APPENDIX H

RECORD OF REQUESTS FOR LIBRARY SEARCHES

NAME - ORGANIZATION	EDUC. POSITION	DATE REC'D.	USE OF SEARCH	CP TIME	PP TIME	NO. PGS.	KEYWORD DESCRIPTIONS	DATE REQ. FILLED	# DAYS TO FILL REQUEST	EVALUATION				
										#1	#2	#3	#4	#5

VT 010 415
McDowell, L.C., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 8-9, 1969).

American Vocational Association, Washington, D.C. Industrial Arts Education Div.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Dec69 54p.

*INDUSTRIAL ARTS; *SPEECHES; TECHNICAL EDUCATION; *TEACHER EDUCATION; *CONFERENCES; PROGRAM DESCRIPTIONS
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This grouping of addresses given at the 63rd Annual Vocational Convention, Industrial Arts Education Division of the American Vocational Association, includes: (1) "Trade and Industrial Teacher Education in the 1970's" by L.C. McDowell, (2) "Undergraduate Teacher Education for Industrial Arts Personnel for the 1970's" by W.P. Spence, (3) "Technical Teacher--1970's; A Proposed Program" by C.O. Whitehead, (4) "Graduate Education in Industrial Arts During the Seventies" by D.W. Morgan, and (5) "A Guide to Improving Instruction in Industrial Arts--A Rationale for Its Use" by F.D. Kagy. (GR)

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Speeches Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 8-9, 1969

Industrial Arts Education Division

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Trade and Industrial Teacher Education in the 1970's[1]

Today, we're talking about T & I teacher education in the '70's and I haven't finished what I started out to do in the '60's. I'm wondering whether this means the '60's should be forgotten or try to do in the '70's what was planned for the preceeding decade.

It's a case of "Stop the world; I need to get off here." This would be the easy way out if it were possible, but sad as it might be it's a case of "ready or not, here it comes."

To conjecture on the future, one person's forecast is about as reliable as another's. In fact, that's the reason I accepted Joe Reed's invitation to make this presentation--no one here, at this time, can prove what I say is wrong and if I make it general enough in content it will surely prove correct. I suppose it might be like an old Roman general who consulted the Oracle of Delphi to get a prediction on the outcome of the impending battle if he led his army across the Rubicon River. You will remember the Oracle stated that a great army would be defeated. Thinking this meant the opposing army, the general went across with his army only to have it defeated. My statements need to be as broad as the Oracle's prediction so that when I look back on what I've said, I can say I told you so.

Or, I could be a little more specific, like the weather man, and give a percentage of probability that something will take place. If the prediction takes place it falls within a range of probability.

The time which has been allocated to me surely is not sufficient to conjecture on all aspects of teacher education, so if some are not mentioned this doesn't mean they are not important.

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[1]Presented by L.C. McDowell at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 8, 1969.

As you know it's quite difficult to get agreement on the importance of something that's already past. Maybe its even more difficult to get agreement on a forecast of events that will take place in the future but that's what I have attempted to do. I suppose this would fall in the category of "collective prediction." (That sounds like a 10-dollar term that a statistician would use.) The validity of collective prediction probably should be greater than a single person's forecast. With this thought in mind, I set down a list of thirteen statements that I thought was pertinent to T & I teacher education. Copies of these statements were sent to eighty chairmen of heads of T & I teacher education institutions in fourty different states. These persons were asked to note the extent of their agreement or disagreement on a Likert-type scale on each of the statements. I tried to play the role of a true researcher and hold no brief for any of the statements although one respondent stated that he thought I was showing a bias (in which direction I don't really know).

Of the eighty lists of statements sent out, 76 were returned--a percentage of 95 percent. Four apparently are still being pondered over. I made no attempt to treat the responses, statistically, and I doubt that any such treatment would be meaningful. At least though the answers give some indication of what T & I teacher educators prophesy for 1970.

The answers to the first statement, "More emphasis will be placed on all aspects of vocational teacher education during the 1970's" indicates that we're going to really do some peddling if we are to keep from getting buried under the needs. There was stronger agreement with this statement than any of the other statements. Seventy-three of the 76 respondents either strongly agreed or agreed, only two disagreed. It

would seem, then, that we will be in a seller's market during the '70's. My hope is that we can meet these needs and that we can play the part in vocational education which the answers to this statement would iniciate we can play.

The next statement may give a little consternation to some of us in T & I teacher education, especially if we tend toward "purism." Some of the respondents indicated this when they wrote on their questionnaire that they thought this was the way things were going although they regretted it. Almost eighty percent of the group believed T & I teacher education programs would tend to merge into a more general vocational teacher education program during the 1970's.

One or two of the respondents apparently didn't understand the meaning of the statement as they indicated that T & I teachers were already considered "vocational" teachers in their states.

The next statement "Academic requirements for initial employment of T & I teachers will be significantly higher during the 1970's", was answered more positively than negatively though it surely was not unanimous. Only two respondents strongly disagreed but 22 were in general disagreement. Sixty-seven of the group predicted the statement would be true. Twenty-two percent were "strong" in agreement.

It may be necessary to take some responses with grain of salt in that they may tend to reflect more of the individual's personal desire rather than what he believes the future will be. Though, as I stated previously, many of the respondents indicated what they believed the future would bring even though they didn't like it.

I think the responses to the fourth statement were rather interesting. Many T & I teacher educators with whom I have talked seem to do

most or all their work on campus. In this statement the respondents seem to think the circuit-riding teacher trainer will become more popular. In fact 72 percent of them agreed that it would be--of this group 27 percent were in strong agreement. However, twenty-one percent didn't think so. I think we could say, at least, that itinerant teacher training is still a very real and vital part of T & I teacher education and according to our respondents there will be more of it during the 1970's.

The next statement, "Associate degree programs designed to prepare T & I teachers will greatly increase during the 1970's," brought more "no opinions" than any of the other statements. Twelve percent wouldn't go out on the limb on this. Twenty-seven percent turned thumbs down on this as a possibility for the next decade, but 60 percent agreed the A. A. degree was the coming thing for the '70's. This prediction tends to agree with that voiced in Statement #3 relative to increase in academic requirements for T & I teachers.

In the next statement "Baccalaureate programs designed for preparing trade and industrial teachers will increase significantly during the 1970's," the same general thinking exists that academania will gain in T & I teacher education during the 1970's. As you can see there is more agreement with this statement than with the previous statement. Almost 87 percent responded positively while only 13 percent didn't think baccalaureate programs would increase. It's interesting to note that all respondents had an opinion on this statement, the only instance in the survey where everybody had an opinion.

The idea of proficiency examinations seems to be snow-balling throughout the country. Even though in a few states it's old hat, many states are just beginning to roll with them. The importance associated with

these exams is reflected in the next two statements.

The first, "Occupational proficiency examinations will play a significantly larger role in employing trade and industrial teachers during the 1970's," was pretty well agreed with. In fact, 76% of the respondents thought this would be the case. Forty percent of this group "strongly" agreed. This statement registered the second most "strong agreements" of all the statements. Four people had no opinion on the question and 14 disagreed, one of whom strongly disagreed.

The next statement, also relative to proficiency examinations was stated negatively. I was attempting to see if the respondents were in a rut with their answers and I readily saw that this was not the case. They jumped on it with both feet. The statement, "During the 1970's the use of occupational proficiency examinations for granting college credit will become less popular," brought disagreement by 77 percent of the group, in fact, 40 percent of these strongly disagreed. With the apparent increase in the use of these exams it seems that there is a mandate that they be well designed and that their results be valid and reliable or else the apparent trend will reverse itself and the advantages which T & I teacher educators and T & I teachers have gained in this area will be lost.

Statement 9 indicates there might be a trend toward a change in thinking on occupational experience requirement for teacher certification. I know this is hallowed ground on which I am treading even by submitting such statement. There is a probability that if some states lowered these requirements the figure would still exceed that now required by other states. Maybe the increased use of proficiency examinations as indicated in Statement #7, would tend to compensate for a relaxing of

the regular lunch-box type of experience. As you can see, 58 percent of the respondents were in agreement on the statement. You can also see that 40 percent did not agree. So, there surely is a lack of significant agreement on the matter. Two persons decided not to get their feet wet on this one.

I think there's one thing on which we could agree--and that is--we are not likely to throw away work experience as a requirement for certification, at least not during the 1970's.

The answers to the next statement--"The new T & I teacher of the 1970's will tend to be more academically inclined and less job oriented" might tend to be in disagreement with former statements in which respondents said degree programs would be much on the upswing in preparing T & I teachers. In fact 55 percent disagreed with this statement; 76 percent of these who disagreed were in "strong disagreement." Forty percent of the respondents thought the statement was right. For a while I thought I knew which way things were heading, but now, I'm not so sure. Maybe we'll have more teachers in the '70's with more degrees and at the same time they will be more job oriented and I suppose we wouldn't complain about that.

The next statement states that "Emphasis on providing for the needs of the disadvantaged will cause T & I teacher education curriculums to lean more heavily toward courses in the behavioral sciences during the 1970's." Fifty-four of the 76 respondents agreed while 14 disagreed. Eight persons had no opinion one way or the other. I suppose this would tell us that a large majority is thinking along the lines of providing training in courses that will increase the teachers' understanding and ability to be more effective with a group that is of national concern. It would seem that this approach in T & I teacher education curriculums

would be a sound one. We may find it to be of advantage in working with persons not of the disadvantaged group.

It appears that research among T & I teacher educators during the 1970's will be the "in" thing. Seventy-five percent of the respondents thought so when they agreed that "Trade and industrial teacher educators would increasingly engage themselves in research during the 1970's." I think it is interesting to note that of the 57 who were in agreement on this statement only seven were in "strong agreement," which might indicate that there was a "little tongue in cheek" when they answered. Fifteen persons didn't agree. So, maybe research activities will not occupy as much of the T & I teacher educators time as many would like to have it.

The last statement, "Small groups of states will increasingly cooperate with each other in meeting many of their needs in trade and industrial teacher education during the 1970's," brought about an overwhelmingly positive vote. Sixty-one of the 76 respondents thought this would take place. Only eight didn't think so. Seven had no opinion. This trend will likely come about as a result of need for certain instructional materials, competency examinations, resource persons, etc. that are common to a particular group of states. I know that this kind of cooperation would not be an entirely new concept because I can remember approximately 18 years ago people from Ohio, West Virginia and Kentucky were meeting three or four times a year in attempting to solve mutual problems.

I have a strong suspicion that small groups of states working together through their own desires and mutual consent will accomplish more in finding answers to their questions than they will through national or inter-regional meetings.

Now that we have these projections for T & I teacher education for the 1970's how should the individual T & I teacher educator react? That's simple--he'll react the way he individually sees the situation; the way he predicts that things will take place. It's like some of those horse races we have down in Kentucky. You can get all kinds of odds that a horse will win; you'll know his linage all the way back to the ones that Noah took on the ark, you'll know his jockey, his trainer, the farm from which he comes, whether he's a mudder or not, and by every reason you can think of, you can predict that he will win. But instead of betting the horse with this kind of objective information in mind a fellow will walk up to the window and lay down his last penny on a nag whose name just happens to be the same as that his mother-in-law's. So--I can only predict that T & I teacher educators will reserve the right to act independently to meet T & I teacher preparation needs as they see them during the 1970's.

I suppose that the only thing we can be sure of for the next decade is that it's going to happen, (maybe). But we really won't know what it will look like till its here.

Teacher Education in the 1970's

Directions: Place a check (✓) in the column at the right that most nearly indicates your feeling about each of the following statements.

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
1. More emphasis will be placed on all aspects of vocational teacher education during the 1970's.	54	19	2	0	1
2. Many trade and industrial teacher education programs will tend to merge into "vocational" teacher education programs during the 1970's.	24	36	7	3	6
3. Academic requirements for initial employment of trade and industrial teachers will be significantly higher during the 1970's.	17	33	22	2	2
4. Itinerant teacher training in trade and industry will tend to increase during the 1970's.	15	40	12	4	5
5. Associate degree programs designed for preparing trade and industrial teachers will greatly increase during the 1970's.	13	13	15	6	9
6. Baccalaureate programs designed for preparing trade and industrial teachers will increase significantly during the 1970's.	29	37	9	1	0
7. Occupational proficiency examinations will play a significantly larger role in employing trade and industrial teachers during the 1970's.	24	34	13	1	4
8. During the 1970's the use of occupational proficiency examinations for granting college credit will become less popular.	4	13	34	23	3
9. The number of years of occupational experience required to qualify for initial trade and industrial teacher certification will tend to be lowered during the 1970's.	12	32	25	5	2
10. The "new" trade and industrial teacher of the 1970's will tend to be more academically inclined and less job oriented.	7	23	32	10	4
11. Emphasis on providing for the needs of the disadvantaged will cause the trade and industrial teacher education curriculums to lean more heavily toward courses in the behavioral sciences during the 1970's.	11	43	12	2	8
12. Trade and industrial teacher educators will increasingly engage themselves in research during the 1970's.	7	50	12	3	4
13. Small groups of states will increasingly cooperate with each other in meeting many of their needs in trade and industrial teacher education during the 1970's.	14	47	7	1	7

UNDERGRADUATE TEACHER EDUCATION FOR INDUSTRIAL ARTS PERSONNEL FOR THE 1970'S [1]

William P. Spence, Dean
School of Technology
Kansas State College
Pittsburg, Kansas

I look forward to the developments in industrial arts teacher education in the 1970's. I believe it will prove tc be a period of dynamic growth and change. Industrial arts will emerge from this period with strength and purpose exceeding anything it has enjoyed at any time in the past.

How will this decade influence the preparation of industrial arts teachers? In the future industrial arts teacher education will be more closely related to industry. The curriculum will emphasize elements such as the total concept of materials and their uses, manufacturing processes, social and economic problems related to the emerging, evolving technology, the conversion of energy, communications, and other such major categories. This will mean that many of the existing industrial arts laboratories in our colleges and universities will have to be rebuilt and re-equipped to offer the experiences needed.

The college teachers now staffing industrial arts teacher education departments will have to somehow re-orient their thinking and secure additional educational and industrial experience. They need an understanding of the total element commonly called "industry." They need a knowledge of sciences, economics and sociology. They need to know that they can teach many things without making a "take home" project. The technology of educational media will become common place in industrial arts laboratories.

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Mass., on December 8, 1969.

It appears obvious that the skill building activities forming the core of most industrial arts teacher education programs must give way to a program that can transmit to the student what our scientific-technological system is like. I am not saying that skill development is to be discarded. It must receive reduced emphasis so other equally important or possibly more important elements can emerge. The craft oriented, materials oriented age of industrial arts is gone and this must be recognized by teacher educators.

In the 1970's, industrial arts teacher education is going to have to meet the objectives it has set forth for years. In many places we have never attained the objectives set forth by the early leaders of the industrial arts movement. We memorize our objectives and can repeat them on a test or master's examination, yet somehow they slip away when we get to the classroom.

Industrial arts has many unique characteristics. It can make a major contribution to the education of all youth. On the undergraduate teacher education level we have failed to get our graduates to see "beyond their machines." I believe the most striking example of this failure is brought out by the Vocational Education Amendments of 1968. Here we have federal funds granted to vocational educators to offer broad occupationally orientation programs to sophisticate young people about the industries and enterprises in which they will one day work. A cursory examination would make you feel that this will someday replace industrial arts. Currently this discussion might be termed the "big debate." I suggest you read the special report on this in the October, 1969, Industrial Arts and Vocational Education magazine. You may then go home and seriously study the curriculum you offer your undergraduate industrial arts majors. To strengthen this urge I am going to quote a few of the

statements made in the article:

> Dr. Leon P. Minear, Director, Division of Vocational and Technical Education, U.S. Office of Education: "Vocational education is closely identified with the mainstream of general education."
>
> Ray Nord, Director of Vocational Technical and Industrial Education, Minneapolis Public Schools, Minnesota: "Occupational education up through the junior high school program is general education."
>
> Dr. Byrl Shoemaker, State Director of Vocational Education, Ohio: "It (occupational education) is not duplication of (industrial arts), but it will involve industrial arts, its leadership, its expertise. Vocational education will not take over industrial arts or replace it, but will attempt to involve it in a total program."
>
> Dr. Ralph Steeb, State Consultant for Industrial Arts, Florida: "Duplication (between industrial arts and occupational education) is entirely possible. Cluster programs duplicate many of the general unit shop courses which have long been taught as industrial arts."

As so the debate has begun. Industrial arts education departments had better get acquainted with this federal program. They had better get acquainted with the State Supervisors of Vocational Education. This certainly is going to influence undergraduate industrial arts teacher education in the 1970's. Of special importance is the answer to the question, "who is going to prepare these new occupational teachers?"

Do you think this vocational occupational program would have developed if industrial arts was meeting its objectives?

Since it appears that all industrial arts teachers are going to be involved with materials of all kinds and the testing of materials, the mathematics and science courses offered in the 1970's need examination. Perhaps the traditional math, chemistry and physics courses offered for general education credit or as the first course in a math, chemistry or physics major do not meet the needs. Perhaps science courses stressing the applications and use of the theory should be offered the industrial arts majors in the 1970's. The same statement could be made for courses in algebra, trigonometry and elementary calculus. We know these courses are of greater value to our students if they are taught practical uses and applications. I am not advocating a watered down course for teachers, but careful consideration of the value of the material taught and how this material can be used.

The more one reads in industrial magazines the more one realizes that the computer has taken a firm command of much of our industrial operation. In the future the reliance on computers is going to increase to the point that we will be very dependent upon them at all levels of life. Industrial arts teacher education must give all their majors an orientation to computers. This will become a standard, accepted part of the curriculum of the 1970's.

In the 1970's industrial arts education will realize it has for years occupied an important place in the school. It can offer youth many unique experiences not offered in any other area in the school. It will no longer be on the defensive. It will not longer feel it must be justified as a part of the school curriculum. This positive attitude must be generated in teacher education programs. For many years, even on the campus, industrial arts educators have felt

a bit inferior. This day is gone, especially if the curriculum offering is changed to meet the needs of the public schools. If we understand the technology of today and equip our labs to teach it and stop running vocational shop classes our image will change in the next 10 years. Certainly the courses we should be offering are as sophisticated and complex as any area on the campus. Our teacher educators should be able to communicate with the math and science faculty, with the professional educator, and with the economist or sociologist. A lot is expected of an industrial arts teacher educator. However, we expect a lot from the public school industrial arts teacher.

A study of occupations has long been claimed as a part of the role of industrial arts. Yet in teacher education we seldom relate any of our course time to this topic. We teach about metals as a material and how it is processed. Who does this work is seldom explained. How you prepare for employment in a particular occupation or cluster of occupations is not taught. This will receive increased emphasis in the 1970's.

Those in teacher education will need to change some of the textbooks we are using. How up-to-date is the technical content? Does the book have something that invites experimentation or problem solving? Does the book relate the area it covers to the total industrial scene? Perhaps in the 1970's we will be using a new kind of book. The changes that appear ahead are not yet reflected to any great extent in the textbook form. There is much writing ahead in the area of industrial arts textbooks. Actually, I believe our publishers are ready to move ahead of the profession, yet they must hold back. They cannot afford to produce materials for which the profession is not yet ready. The books they produce must sell now -- today.

The research now underway will have a great influence on industrial arts teacher education. I am referring to projects such as the Stout State University American Industry Project, The Industrial Arts Curriculum Project operated by the Ohio State University and the University of Illinois, and the Enterprise: Man and Technology sponsored by Southern Illinois University. The results of these and other similar projects will have a profound influence on teacher education in the future. I cannot say which program will emerge as the most commonly accepted one. Rather, I would expect a gradual merging over the years of the successful elements of all these programs. Certainly regional factors will enter into the picture in the future just as they do today.

I believe the time is ripe for a closer bond between industrial arts, and trade and technical education. Somehow, sometime these areas must drop their fences, look at the job to be done and get on with it. It appears that youth in the elementary school need to be exposed to the world of work and the relationship between the sciences, humanities and applied science. Industrial arts educators have struggled for years to get this done. Since federal money was not available success is spotty.

Everyone agrees that all junior high school youth must have the opportunity to explore industry and to find their talents and interests. Industrial arts has, for years, had a strong nationwide program of this type. Now federal funds are available to develop what appears to be a parallel program.

The senior high industrial arts program tends to permit students to explore their interests and talents in some depth and in a more limited area of industry than the junior high school program. This is expensive education. It does not prepare youth for employment on purpose. Some parents and school boards do not

understand it. Now federal funds are available to provide a competitive program. In the 1970's I would expect to see a tremendous battle develop over the right to maintain the fences we have built. This is why I say the time is ripe for a closer bond. Maybe it will take a major eruption to enable this to happen. Maybe the names "Industrial Arts" and "Trade and Industrial Education" will have to be dropped and we all join together under a generic term, such as the old umbrella term "Industrial Education." Some are advocating the use of the term "Industrial Technology" for this purpose. The same situation exists now in other areas such as Home Economics and Business Education. If such a philosophy prevails in the 1970's, it will certainly influence teacher education.

In summary, I have tried to present to you some of the things I see emerging for industrial arts teacher education in the 1970's. Exactly what will develop and be accepted is, of course, unknown. There is one things we do know for certain -- Industrial Arts Teacher Education for the 1970's must change -- and do so rapidly.

TECHNICAL TEACHER - - 1970's

A PROPOSED PROGRAM

A Paper for:

AVA Convention, Boston
NAITTE Program
December 8, 1969

Written by:

Charles O. Whitehead,
Director
State Technical Institute
at Memphis

The difference between an engineer of today and the skilled engineering technicians, or a scientist and a scientific aid, as a dean of an engineering college stated recently, is about twenty years. The engineering or scientific technician is doing today what constituted the major functions of engineers and scientists of twenty years ago.

The doubling of scientific knowledge every ten to twenty years leaves little time for the engineer to practice every-day applications of engineering science and resulted in the elimination of laboratories and courses in applications engineering, heretofore an integral part of his preparation for a career as an engineer.

This change created a serious shortage of personnel in the laboratories of research and industry and in the manufacturing plant, capable of applying established engineering principles and scientific facts, and resulted in the development all across this nation of a new institution. The "Technical Institute", the function of which is to train what might properly be called "application engineers" or persons who are trained to make the day to day applications of established engineering and scientific principles, rather than research or development designed to extend knowledge in these fields, is this new institution.

It is only the critical shortage of personnel with the competencies necessary to perform practical engineering or scientific application that justifies the existence of the technical institute as an integral part of our state and national educational program.

It is in the context of the above that we must and have developed the curricula of the technical institutes across the country, and capable instructors must be trained to man them.

9-15-69

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[1]Presentation to be made at the 63rd Annual Vocational Convention in Boston, Massachusetts, December 8, 1969.

Technical Teacher -- 1970's, Charles O. Whitehead

Most of the teachers in these programs up to now have come from disciplines other than engineering technology or education. Engineers, mathematicians, scientists, and industrial or military trained technicians have been used because of the very limited sources of trained technical instructor personnel.

Actually, no single one of these possesses the necessary qualifications to make an outstanding teacher in a program of scientific or engineering technology. I hasten to add that some of these, after lengthy involvement, formal education, and in-service training, have done excellent jobs.

The technical teacher, if we are to achieve our objectives, must have competencies in:

a. The use of algebra and trigonometry as tools in developing ideas that make use of scientific and engineering principles. Many programs require applied mathematics through analytical geometry and calculus.

b. The practical application of physical and biological science principles, depending upon the technical field.

c. The materials used and the processes of industry.

d. His field of specialization and facility in the practical applications of scientific and engineering principles applicable to his field.

e. Communications, orally, graphically and in writing, especially with the engineer or scientist with whom he is associated, and the technician he is to educate.

f. The application of the principles of economics and industrial relations in industry.

g. Teaching effectively at the technical level.

In keeping with the above, we propose a program of up to seven quarters or five semesters, with graduation from an approved associate degree-granting technical institute (or similar) as a prerequisite for entry. A suggested program is as follows:

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Technical Teacher - - 1970's, Charles O. Whitehead

SUGGESTED PROGRAM

FOR B.S. DEGREE IN TECHNICAL EDUCATION

ENGINEERING TECHNOLOGIES

	Credit Hours		% of Total
1. Technical Courses			
*Specialized Technical Courses	30 sh		
*Related Technical Skills	10 sh		
Advanced Technical Courses	15 sh		
		55 sh	41.7%
2. Mathematics			
*Algebra & Trigonometry	5 sh		
*Analytic Geometry & Calculus	5 sh		
Calculus, Differential Equations	5 sh		
		15 sh	11.4%
3. Science			
*Physics	8 sh		
*Chemistry	6 sh		
		14 sh	10.6%
4. Technical Education			
Technical Education	9 sh		
Methods of Teaching Technical Education	3 sh		
Practice Teaching (Technical Education) or Internship	6 sh		
		18 sh	13.6%
5. General Education			
*English	6 sh		
Literature	6 sh		
*Social Studies	9 sh		
		21 sh	15.9%
6. Electives		9 sh	6.8%
TOTAL.....		132 sh	100.0%

*Indicates possible transfer credits from an accredited Technical Institute or Community College.

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Technical Teacher - - 1970's, Charles O. Whitehead

EXAMPLES OF RECOMMENDED UPPER DIVISION COURSES IN ENGINEERING - SCIENCE - TECHNOLOGY FOR B.S. DEGREE IN TECHNICAL EDUCATION

	Semester Hours
CHEMICAL MAJOR	
Advanced Inorganic Chemistry	4
Physical Chemistry	9-12
Advanced Organic Chemistry	6
Qualitative Organic Chemistry	3
Organic Preparations	6
CIVIL MAJOR	
Inorganic Chemistry	8
Theory of Structures	3
Structural Design	6
Soil Mechanics	8
Foundation Engineering	3
Hydrology	6
Water Supply and Sanitation	6
Highway Engineering	6
ELECTRICAL MAJOR	
Introductory Network Theory	6
Thermodynamics	3
Engineering Mechanics: Statics and Dynamics	6
Control Systems	6
Electric Fields	6
Intermediate Network Theory	6
Engineering Materials	6
Electrical Engineering Problems	3
Energy Conversion	6
Power Systems	6
ELECTRONIC DATA PROCESSING - BUSINESS OR SCIENTIFIC	
Introduction to Algorithmic Processes	4
Information Structures	4
Algorithmic Languages and Compilers	4
Constructive Logic	4
Real Time Communications Concepts	4
Total Information Systems Design and Analysis	4

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Technical Teacher - - 1970's, Charles O. Whitehead

ELECTRONIC MAJOR	
Introductory Network Theory	6
Thermodynamics	3
Engineering Mechanics	6
Communication Engineering	3
Microwave Systems	4
Computer Engineering	6
Intermediate Network Theory	6
Engineering Materials	6
Control Systems	6
INSTRUMENTATION MAJOR	
General Chemistry	6
Statics and Strength of Materials	6
Fluid Mechanics	6
Thermodynamics	6
Applied Theory of Transducers	3
Electronic Circuit Analysis	4
Nuclear and Analytical Measurements	3
Digital Techniques and Programming	5
Control Theory and Feedback Systems	5
MECHANICAL MAJOR	
Industrial Organization and Management	3
Fluid Mechanics	4
Thermodynamics	8
Heat Transfer	4
Quality Control and Time Study	4
Plant Layout	4
Industrial Plastics	4
Internal Combustion Engines	4
Heating and Air Conditioning	4
Power Plants	4
Mechanical Measurements	4
Advanced Strength of Materials	4
Field Experience (Seminar)	3

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Technical Teacher - - 1970's, Charles O. Whitehead

SUGGESTED PROGRAM

FOR M. S. DEGREE IN TECHNICAL EDUCATION

A graduate program in Technical Education should consist of two distinct areas of study. These are: (1) Professional Education Courses that are directly related to the field of Technical Education, and (2) Technical Specialties, Technical Skill and Science courses related to the planned field of technical teaching. The breakdown and course examples are as follows:

1. Professional Education Courses .....12 shs
2. Technical Courses..... 9 - 12 shs
3. Electives, as approved by advisor..... 9 - 12 shs

Examples of Courses

Professional Education

Foundations of Technical Education. (3)

A study of occupational shifts resulting from recent advances in science and technology. The changing nature of the labor force, economic and sociological implications of automation and various contemporary sources of power. Attention will be given to the educational programs needed to meet technical and skilled manpower requirements. A study of the development of technical education and its function, philosophy, trends and types of technical education programs.

Technical Education Program Planning. (3)

Program and curriculum development in technical institutes, junior colleges and area vocational-technical schools. Problems of college students and their adjustment to college-level industrial and technical subject-matter. Professional problems, ethics and advancement of the technical teacher. A detailed study of curriculum design including the interrelationship of mathematics, science and technical courses in technical curriculums. Selection and arrangement of teaching content, methods, and preparation of assignments.

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Administration and Layout of Technical and Vocational Facilities. (3)

The functions of administration and supervision; problems involved in the organization and operation of technical and vocational programs. For administrators, supervision of vocational-technical education, and those wishing to prepare for such positions. Principles and practices underlying the planning and designing of shops and laboratories in industrial and technical education.

Measurements and Evaluation of Products, Skills and Technical Knowledge. (3)

Criteria and instrument development, testing techniques and appraisals. Special emphasis given to the principles and methods of evaluation of progress in laboratory and construction of pertinent and effective evaluative devices.

Instructional Aids for Technical Education. (3)

Construction and use of teaching aids for technical subjects. A study of manufactured aids and the production of non-commercially available aids to facilitate comprehension of industrial processes and technological principles involved. Emphasis will be given to visuals, mock-ups, working models, and other such aids.

History and Philosophy of Technical Education. (3)

The historical development of technical education; types of programs, philosophies, and trends as related to the total educational program.

Curriculum Building in Technical Education. (3)

Theoretical background and experimental approach to curriculum improvement in post-secondary programs.

Current Trends and Issues in Technical Education. (3)

Investigation of current laboratory arrangements, materials, supplies and methods in instruction comaptible with the technical education program.

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Research in Technological Education. (3)

Analysis of the materials, methods, and techniques of research available in technical education. Emphasis on the design, investigation, and reporting of research studies relating to technology and technical education.

Studies in Applied Technology. (3)

A course designed to encourage field research where theory learned in class is applied to a selected problem existing in industry or technical education. Emphasis is placed upon the scientific approach to solving a given problem. Internship with report and evaluation may be substituted for the inexperienced teacher.

Technical Courses

Advanced Mechanical Design. (3)

Advanced environmental architecture correlated with the practical design of utility plants and structures will be studied in relation to isolated self-contained industrial plants.

Architectural Graphics. (3)

Techniques of contemporary presentation applicable to architectural design with emphasis on advanced perspective and delineation. Computer applications and calibration table will be utilized for theoretical procedures. Practical problems will be utilized to develop the creative capacities of mature students.

Problems in Architectural and Construction Technology. (3)

Study and research of specialized problems in creating up-to-date structures and developing efficient construction methods. Project work oriented to the individual student in advanced areas of architectural or construction technology.

Foundation Technology. (3)

General principles of foundation design including loads, factors of safety, economics and preliminary planning of structures. General phases of design of piling, grade beams, floating slabs and methods of construction.

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Soil Technology. (3)

The study of soils; consoldiation, settlement, displacement and compaction. Pile supporting strength; principles of earthwork, foundations and paving problems, soil test and test reports. Soil mechanics in this course is primarily related to buildings and structures other than bridges.

Theory of Structural Technology. (3)

Study of theory of design applicable to structural systems. Use of design concepts utilizing geometric forms such as hyperbolas, parabolas and concepts based on free form or structural system. The inter-relationship of construction materials and economic factors are also of consideration in this course.

Advanced Structural Design Technology. (3)

Mathematical and analytical considerations of contemporary structural systems and the materials utilized therein.

Advanced Technology of Circuit Analysis. (3)

Practical application of network theorems to the solution of circuit problems in the domain of time and frequency.

Technological Applications of Computer Science. (3)

Construction of algorithms, flow charting, and use of procedure-oriented languages in solving problems from technology; survey of special applications of computers in the area of technology.

Precision Measurements. (3)

Review of electronic fundamentals and circuits precedes study of sensors, servos and analog devices, and the combination of these and other components into measuring instruments.

Technology of Electronic Communications Systems. (3)

Engineering and economic aspects in the design and operation of publicly and privately owned communication systems.

Advanced Microwave Techniques. (3)

Further investigation into lines, wave guides, oscillators, mixers and amplifiers operating in the microwave spectrum, emphasizing advanced techniques of testing and measuring performance of components and systems.

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Technology of Digital Communications. (3)

Applications of communications systems of the transmission of digital information. Laboratory study of pulse modulation, error detection and wave shaping circuits.

Space Communications Technology. (3)

Instrumentation and techniques of electronic observation and tracking of meteors, the sun, moon and other planets as signal sources or reflectors, and the employment of man-made earth orbiting devices for these purposes in long distance communications.

Advanced Digital Circuit Technology. (3)

Technology of logic circuits, counters and memory devices as used in modern digital computer systems. Practical measurement and maintenance techniques as applied to actual computer devices.

Analog and Hybrid Computers. (3)

Technology of computer elements, problem preparation and representative solutions of physical problems.

Problems in Electronics. (3)

Individual study in any field covered by senior undergraduate courses or graduate courses as approved by advisor.

Industrial Drafting. (3)

A study of pictorals to include axonometrics, obliques, and perspectives. The theory of shades and shadows will be explored and special emphasis given to applications of these topics to industrial drafting room practices.

Product Design and Development. (3)

A course dealing with the various stages of design, development and production. The student will be required to work as a team member to produce a complete set of working drawings and a prototype of some functional object. Study of computer graphics and the application therein.

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Technical Illustration. (3)

A study of the various media used by the technical illustrator to produce camera-ready art. The student will be required to display proficiency and mastery in the use of pen and ink illustrations.

Spherical Projections. (3)

A survey of the various map forms to include cylindrical, conical and azimuthal spherical projections.

Studies in Technical Presentations. (3)

An analysis of the importance of charts, graphs, pictures and other media coupled with the impact of color when used in teaching and making public presentations. The need for neat, accurate, and attractive visuals is stressed through laboratory presentations.

Jig and Fixture Design. (3)

A survey of the commercial standards, principles, practices and tools of jig and fixture design. The student will be given project and design work to acquaint him with the types of jig and fixture design.

Machine Design. (3)

A course dealing with standard machine parts, sub-assemblies, and design problems. Each student will be required to design at least one simple machine.

Tool Design. (3)

An introduction to the design and layout of cutting tools, gauges and similar tools. Mass production techniques are considered.

Design Problems. (3)

A consideration of advanced drafting room practice. The student makes application of his knowledge of mathematics, science and drawing.

Production Problems. (3)

An introduction to cost estimation, production activities, and quantitative analysis. The use of blueprints through the course will provide practical experience in visualization and interpretation.

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Problems in Graphics. (1-4)

An intensive study of selected topics in design or drafting. Individual student initiative will be rigorously stressed.

Production and Inventory Control. (3)

The planning and control of inventory and production by means of statistical analysis of problems, simulation techniques, and mechanized execution of inventory and production control functions.

Advanced Motion and Time Analysis. (3)

Advanced methods in time and motion study, balancing operations; learning curves, work sampling, memomotion and chronocyclegraph studies, fatique effects, determination and application of elemental time data, statistical methods of time study.

Advanced Factory Layout and Materials Handling. (3)

A study of the redesign or renovation of existing or addition of new plant facilities, flow patterns, machine selection and location, estimate of unit costs, estimate of capital requirements.

Advanced Quality Control. (3)

Advanced statistical methods applied to quality control problems, significance tests, correlation analysis, sequential sampling, analysis of variance, design of experiments, principles of reliability.

Production Processes. (3)

A coordinatedstudy of manufacturing processes and equipment, operation sequence planning, economic aspects of equipment selection, tooling and processing a product from product design to final assembly for quantity production.

Problems in Manufacturing. (3)

A study of specific manufacturing problems with emphasis on solution development for an actual manufacturing situation. Problems will be selected through agreement of advisor and student.

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Thermal Power. (3)

Power plants and equipment. Gases and stema. Fuels and combustion. Turbines, boilers, condensers, pumps. Heat exchangers.

Heating, Ventilating and Air-Conditioning. (3).

Refrigeration, cycles, compressors, heat flow, meters, controls, refrigerants, piping. Psychrometric charts. Heating systems.

Fluid Technology. (3)

Pressure, head, force, displacement, velocity, flow rate and continuity. Conservation of energy. Applications, orifices, nozzles, tubes and flow devices. Flow in pipes including losses. Compressible fluids.

Fluid Power Technology. (3)

Historical background. New concepts; remote control and applications of fluid power. Hydraulic power distribution and control. Pneumatic power, components, control, use.

Internal Combustion Engines. (3)

Principles of operation of gasoline and diesel engines and associated components.

Machine Tools. (3)

Design fabrication and operation of tools and equipment in industrial and manufacturing operations.

Graduates will be required to complete one course in statistics and one course in research problems with a thesis or report. Also, written and oral comprehensive examinations will be given during the semester in which the student plans to graduate.

Admission of students to the graduate program in Technical Education will be required to present eighteen or more semester hours of college credit in the technical field in which he is teaching or proposes to teach. No undergraduate or graduate level education courses shall be required for admission or as prerequisites to the Technical Education courses listed above.

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3. Moss, Jerome, Jr., "Prepare Teachers of Technical Curriculums," Technical Education News, McGraw-Hill, June, 1962.

4. Roney, M. W., "Summary of Technical Teacher Education Programs", Technical Education News, McGraw-Hill, 1966.

5. ASEE, "Characteristics of Excellence in Engineering Technology Education", 1962.

6. USOE, "Criteria for Technician Education", OE 80056, 1968.

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GRADUATE EDUCATION IN INDUSTRIAL ARTS DURING THE SEVENTIES[1]

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It would certainly be much easier to make this presentation if I had the power to look into the future and see the profound events which probably lie ahead of us during the decade of the seventies. Certainly many changes will take place in our basic society as well as in the technology which supports and leads us down the path of industrial and social evolution. Perhaps some indication of future happenings can be discerned by looking at past developments that have influenced industrial arts.

When the effects of the federal legislation known as the Smith-Hughes Act hit the public schools it almost spelled doom for the teaching of industrial arts. Those school districts that believed in providing some type of "education for work" grabbed the opportunity to obtain federal funds to help them educate their youth for employment. The recent legislation, known as the 1968 Vocational Amendments, has a similar potential of replacing those industrial arts programs in the secondary school that have developed into what has been described by many industrial arts leaders as "specialized education." Certainly four years of drafting, woodworking, electronics, auto mechanics, etc. cannot be classified as general education desirable for all.

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[1]Presentation made at the 63rd Annual Convention of the American Vocational Association (Second General Session of NAITTE) in Boston, Massachusetts on December 8, 1969.

These programs are primed for possible inclusion into the area known as vocational or occupational education under the 1968 Amendments. Even some of the programs in high schools that are classified as exploratory for the purpose of assisting individuals in the making of informed and meaningful occupational choices might be included under the occupational umbrella for the purpose of obtaining additional funds from federal and state governments. Even if the exploratory programs retain a separate identity and are included in a well integrated system of "total education" there is the distinct possibility that the philosophy may become more vocational if they are considered to exist only for the purpose of preparing students for vocational choices.

I personally feel that industrial arts has a very important place in an integrated program of general education and preparation for occupational proficiency. Industrial arts, however, will have to meet its long stated objective of being "general education" and forget about trying to be "specialized education." The 1968 Vocational Amendments have clarified the purpose of industrial arts by making specialized education eligible for federal support and thus, in reality, becoming occupational education. Industrial arts should now devote its total effort to do what it has always claimed to do--enrich the general education of children living in a technological society.

A second thing that will probably cause a change in graduate education is the many new plans or methods for teaching industrial arts currently under development at various universities. If the respective universities develop distinct philosophies with regard to their new or modified industrial arts programs, it could easily lead to change in preparation of graduate students. As an example, Southern Illinois University no longer prepares traditional industrial arts teachers, but has created a new program called Enterprise: Man and Technology. The program is specifically designed to prepare teachers

for occupational education. If these changes lead to the necessity of employing only staff members who have a similar type of preparation, then industrial arts graduate education may become mediocre or crippled like animals do when too much inbreeding is allowed. Recently at the Mississippi Valley Industrial Arts Conference one report provided a list of 22 industrial arts innovative curriculum programs. They are as follows:*

1. American Industry Project - Stout State University
2. The Industrial Arts Curriculum Project - Ohio State University
3. A Study of Industry and Technology (The Maryland Plan) - University of Maryland
4. Orchestrated Systems Approach to Industrial Education - Indiana State University
5. Enterprise: Man and Technology - Southern Illinois University
6. The Partnership Vocational Education Project - Central Michigan University
7. Functions of Industry - Wayne State University
8. Industriology - Wisconsin State University, Platteville
9. The Georgia Plan for Industrial Arts - Georgia Southern College
10. Industrial Arts Technology: A Study of American Industry - Gorham State College
11. Visual Communication Education (VISCOED) - Western Washington State College
12. The Correlated Curriculum Project - New York City
13. Interdisciplinary Vocational Education - Kansas State University, Manhattan
14. The Richmond Plan - San Francisco State College
15. Crafts as a Vocation - Eastern Kentucky University
16. Occupational, Vocational, and Technical Program (OVT) - Pittsburg Public Schools

*Compiled by Dr. Charles A. Bunten

17. Training for Families of Skills (Project ABLE) - Quincy, Mass. Board of Education

18. The Alberta Plan - University of Alberta

19. The Galaxy Plan - Wayne State University

20. Industrial Arts and Technology - North Carolina State University

21. Study of Technology in a Systems Approach of Industry - Eastern Illinois University

22. Man and Technology - West Virginia University

One of the better known innovative movements, Stout State University's American Industry Project, has educational programs in progress at both the bachelor and master levels to prepare individuals to teach their conceptual approach. Another of the better known new methods is the Industrial Arts Curriculum Project from Ohio State University. One of their regional centers is located in Texas under the direction of Dr. Donald Clark. He is finding that it is necessary to hold special training sessions for experienced industrial arts teachers when their school districts agree to try the IACP method.

I feel that the profusion of innovative practices which are developing is an indication within the profession that changes are necessary. Even though there has been a general reluctance within the profession to make changes, the new programs indicate that a number of teachers and administrators have been willing to attempt the process of change in an effort to provide more realistic education. Apparently they have felt the increasing pressures from within the profession as well as those coming from many segments of society.

Another factor that is certain to change graduate education in the future is the ever increasing influence of a technological society which

expects and requires those with higher degrees to know something and be able to do something with regard to the many new industrial processes. Certainly some of our present industrial arts teachers are not qualified to work with or teach many of the relatively common industrial practices. Considerable information and related skills are still foreign for many public schools.

It seems to have been traditional in our graduate schools that industrial arts skill preparation and technical courses were second-class material and certainly not fitting for individuals working toward a doctorate in industrial education. There has been, however, something magical about College of Education courses that made them first-class information for the doctoral student and without which the student would seem be a complete failure. We in industrial education have also perpetuated the so called methods classes at the B.S., M.S., and doctorate levels. You see it hasn't always been necessary to have technical competence if you had enough methods courses on your transcript. The fallacy in this line of thinking becomes astoundingly apparent, however, when you are assigned to teach a technical course where the students have a better technical background than you do. Certainly if we are to meet the challenge of our modern society we must realize that changes need to be made even if some teacher with vested interests in a class has to modify his yellow notes and exams.

Why has it been that graduate students in industrial arts have not been able to take part of their major, or a supporting area of courses, in a technology program which really supports their teaching area, whether or not they happened to be under the same administrative head? Recently at Texas A&M University we had a reorganization in the old Industrial Education Department. The teacher training courses, B.S., M.S., and Ed.D. levels were realigned in

the College of Education as the Department of Industrial Education. The B.S. options in Industrial Distribution or Industrial Technology and the new M.S. degree options in Industrial Technology, Industrial Safety or Industrial Hygiene remained in the College of Engineering as the Department of Engineering Technology. Now that this change has been made and the graduate program is under a different administrative head, the graduate students in industrial arts can take a supporting area in the Engineering Technology Department. What magical change has happened to the technology courses? Why can a graduate student now obtain a good practical supporting area when earlier the classes were considered second-class and unworthy of graduate study? The traditional academic answer to this question isn't justifiable if we open our eyes to the world of reality. Therefore, graduate education in industrial arts must break with tradition and recognize that technical skill courses can be just as "professional" as the traditional "professional courses".

Educators for many years have been aware of individual differences among students and the advisability of providing different and varied learning experiences to fit the needs of each student. A close study of the principles of psychology also reveals that differences among individuals become greater as they advance through school. If this is a fact, then those individuals attending graduate schools have many varied interests and needs.

The expected increase in the number of people requesting college work at the master and doctorate levels may assist us in designing course requirements to suit the needs of the individual students. With an increase in enrollment there can be a broadening of course offerings, not only in industrial education but, throughout the graduate college.

Certainly, as we move into the seventies, it will be necessary to provide greater flexibility in the master and doctoral programs. Degree plans must

be tailored to meet the needs of individual students. It should no longer be necessary for each student to fit a pre-determined mold and come out with exactly the same course requirements. This does not infer that the program will be any easier, but that it will be a more interesting and rewarding experience. Individual students will need an increased amount of guidance and counseling to select those learning experiences which will best prepare them for productive employment.

The increased relevancy in course work should cause both teachers and students to become deeply involved in the teaching-learning process. New and improved methods of teaching, greater use of audio-visual aids, and different procedures for learning should be but a few of the results of more meaningful education. Greater emphasis on information related to the world of work will, or should, place a premium on a person's ability to think critically and creatively.

Numerous articles have been written during the last decade expressing various concepts of relief for the overworked teachers. These range from the team approach, with paraprofessional help, to classroom assistants for each individual teacher. All of these ideas have some merit and would certainly be beneficial if adopted. However, very few American teachers have received any relief from assistants or from paraprofessionals. The teachers, unfortunately, are still burdened with the same problems that have existed for many years.

Since no real assistance has been provided for the majority of teachers, another approach may be necessary. Many of our larger consolidated schools and universities are using computerized registration which indicates that the schools either have a computer themselves or have access to one. In keeping with this concept, and in an effort to simplify and reduce the administrative time required of all teachers, it will be necessary during the seventies to

computerize many of the things we have traditionally done by hand. Computerized record keeping, scheduling procedures and even compiling grades for students will become not only common place but necessary if the teachers, who are in short supply, plan to meet the demands of an expanded student body. We are at present using or planning to use these procedures in our department at Texas A&M University.

Since increased data processing and computerization is occurring right now in industry, government, and at many major universities, it should be readily apparent that graduate students will need to be familiar with these processes. This should be no great imposition for graduate students since most of our graduate programs are already requiring graduates to be competent in statistics and research methods. All we need to do is go another step and teach them how to use these efficient machines to perform the tedious and time consuming work.

Above all, the seventies should be extremely interesting and challenging to those who welcome new opportunities to further develop their personal skills and experience new social and technological developments. This country is at a new horizon of exploration in both space and technology. Numerical controlled machines and automation are rapidly changing the techniques of production. Even greater achievements are possible when man uses the computer to help solve technical problems and to direct banks of machines to produce the desired parts. Industrial arts is needed more than ever before to interpret the great industrial complexes that most people never see. Only graduate students, properly prepared, will be capable of directing an educational program as important and necessary as industrial arts will be during the seventies.

A GUIDE TO IMPROVING INSTRUCTION IN INDUSTRIAL ARTS

"A RATIONAL FOR ITS USE"

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Presented at
63rd Annual American Vocational Association
Convention
Boston, Massachusetts
December, 1969

My assignment for this program is to try and show you how one area of industrial arts is attempting to make use of the "Guide to Improving Instruction in Industrial Arts".

I have chosen the Graphic Arts Area as a basis for my discussion.

The first step in the process was to take the major headings from the general structure for industrial arts education and develop the industrial concept, description and content under each of these headings for graphic arts.

This has been done and this material appears in the guide as an example area.

Before we go further with our discussion on this let me point out that two assumptions had to be made.

1. That the guide outline does contain the outline of content material that makes up the knowledge of industrial arts.
2. That the concepts, descriptions and content of the graphic arts material is the material that should be taught in this area.

From this we must now accept a description of what industrial arts is:

> Industrial arts involves the study of man and technology interacting with all aspects of his society, including the economic, geographical, mathematical, scientific and social psychological. Industrial arts now embodies humanistic and social dimensions of man's technical activities and their implications for contemporary American Society.

We must also accept the goals listed in the guide as the goals we wish to accomplish in our program.

1. Develop an insight and understanding of industry and its place in our culture.
2. Discover and develop talents, aptitudes, interests, and potentialities of individuals for the technical pursuits and applied sciences.
3. Develop an understanding of industrial processes and the practical application of scientific principles.
4. Develop basic skills in the proper use of common industrial tools, machines, and processes.
5. Develop problem-solving and creative abilities involving the materials, processes, and products of industry.

With acceptance of the statement of industrial arts and the goals we plan to achieve plus the assumption that the content in the guide is the material to be taught, we can proceed to put this material into teachable form.

Traditionally industrial arts has been an activity subject. As a profession, the industrial arts teacher believes that the most meaningful and long lasting learning takes place through activity. Industry and technology imply activity, the production of goods and services through the use of the applied sciences. If man did not want or have need for something, the technology would not have been developed nor would man have developed the social institution "industry" to organize the making of the goods or services requested.

My model for the development of the instructional units is in the shape of a pyramid made up of a series of blocks. Each block will represent a unit of instruction.

As shown in the illustrations, figure 1 represents the total study of graphic arts or graphic communication. Figure 2 represents a layer of instruction that makes up the general areas necessary to the smooth functioning of the graphic arts industry. Figure 3 shows one unit being singled out of the layer. Figure 4 is the block representing one of the general units of the course or program.

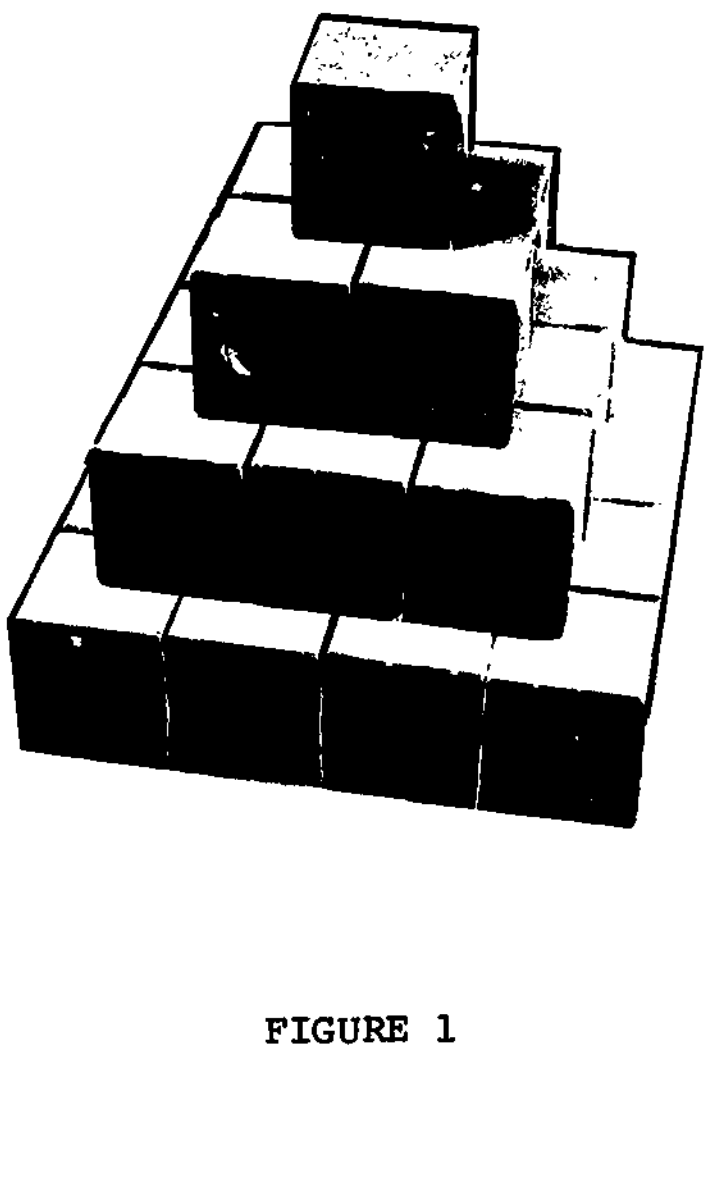


FIGURE 1

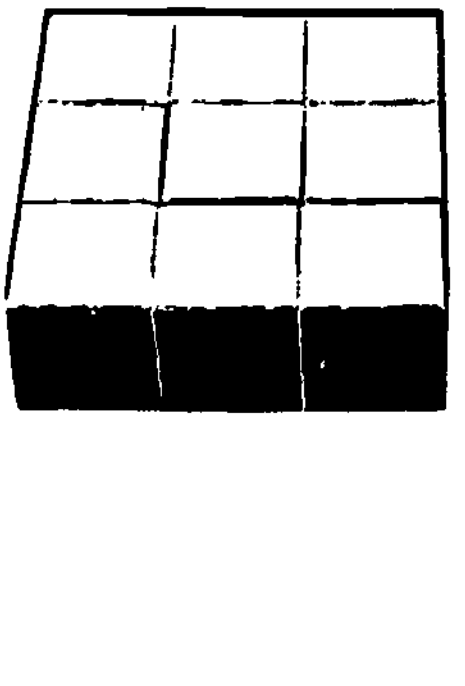


FIGURE 2

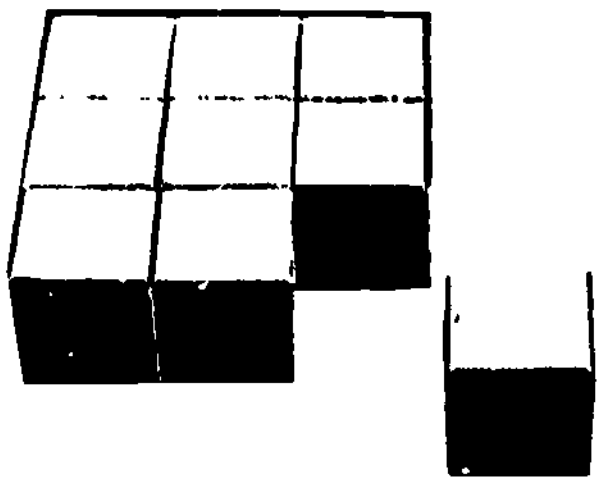


FIGURE 3

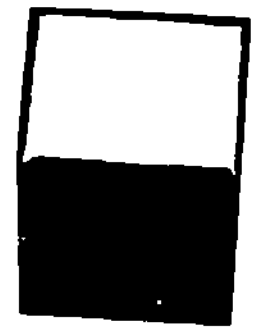


FIGURE 4

The next task was to identify the layers of instruction as to their importance to the industrial arts program and to graphic arts instruction.

Because industrial arts, as a discipline deals with the production of goods and services, the modification of materials into useful forms, the base layer of the program should deal with the manufacturing operations. It is here that the student learns about the basic processes by which the graphic arts industry produces the myriad of printed matter that is so necessary in our complex society.

The additional layers of instruction are then identified from the content developed in the guide. The various layers of instructional material are shown in figure 5.

FIGURE 5

It is here that the pyramid effect of the model will begin to take shape. Those areas that are most closely associated with the production aspects of graphic arts are shown closest to the base. This is not to imply that any of these layers have degrees of importance. Each layer is essential to the successful operation of an industrial establishment. I want to emphasize that industrial arts has its major responsibility on the manufacturing level. This we have done quite well in the past. Industrial Arts needs to improve its program in showing and teaching the relationship to other layers in the model.

The layers progress upward from the manufacturing base toward the top block of industrial manager.

The base layer for graphic arts includes the manufacturing operations necessary to the production of the printed products. Figure 6 shows the major curriculum units.

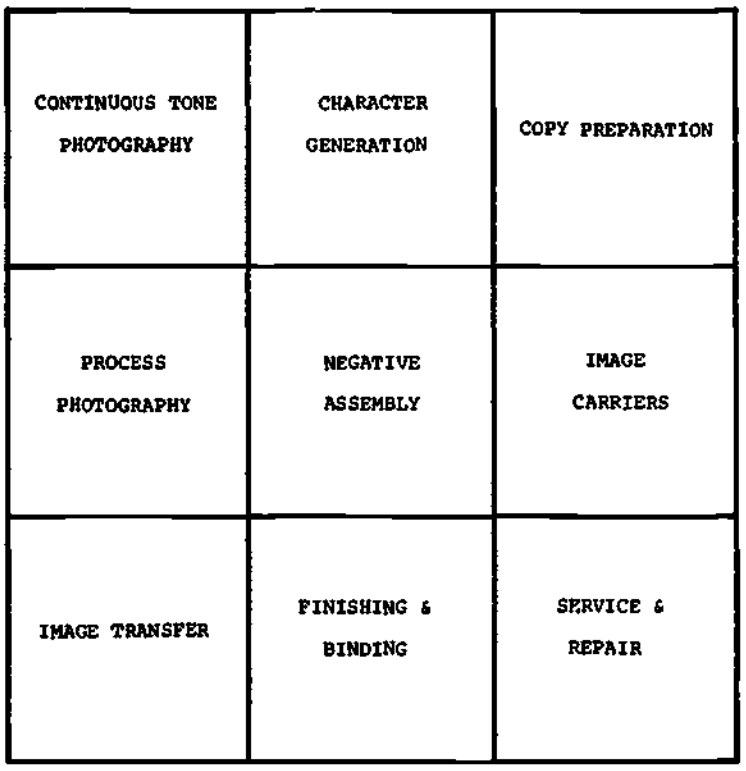
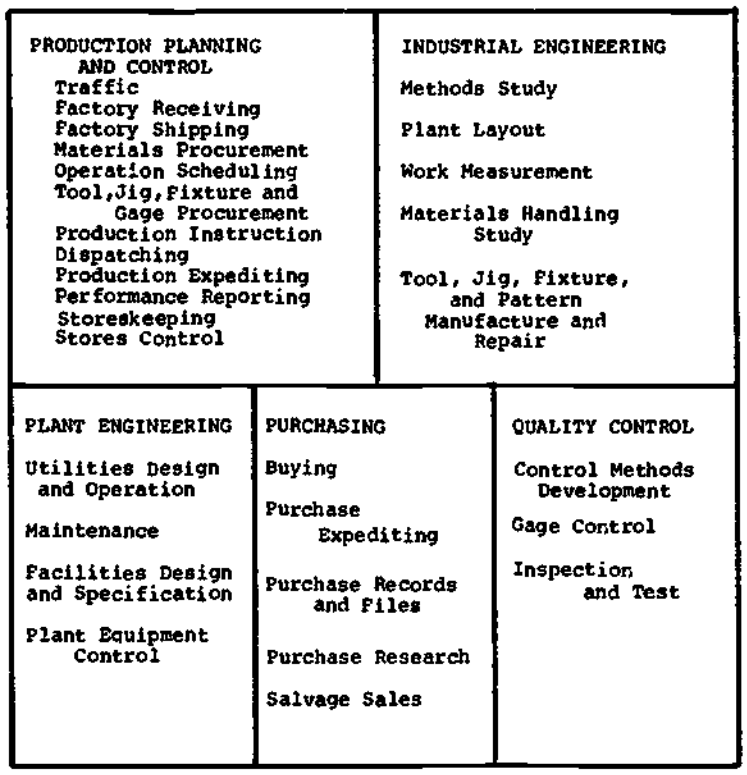


FIGURE 6

You will notice that the old graphic arts blocks often found in graphic arts classes are not shown such as relief, offset, intaglio, etc. The blocks now represent the basic processes necessary to complete the printed piece by any of the modern graphic arts processes.

The other layers of instruction are shown in the next few illustrations.

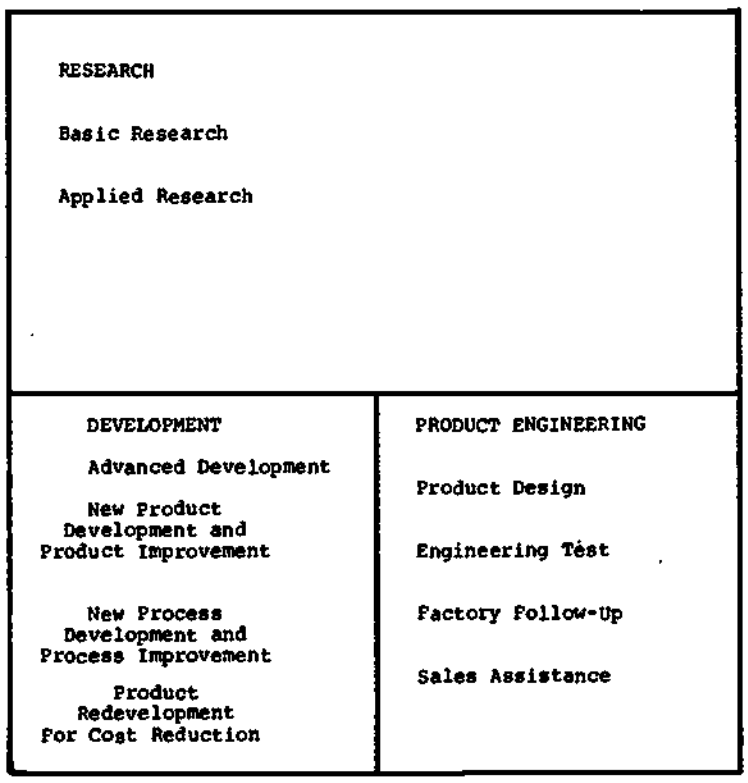
Figure 7 shows the instructional units in Production Management.



Production Management

FIGURE 8

Figure 8 represents Research and Development.

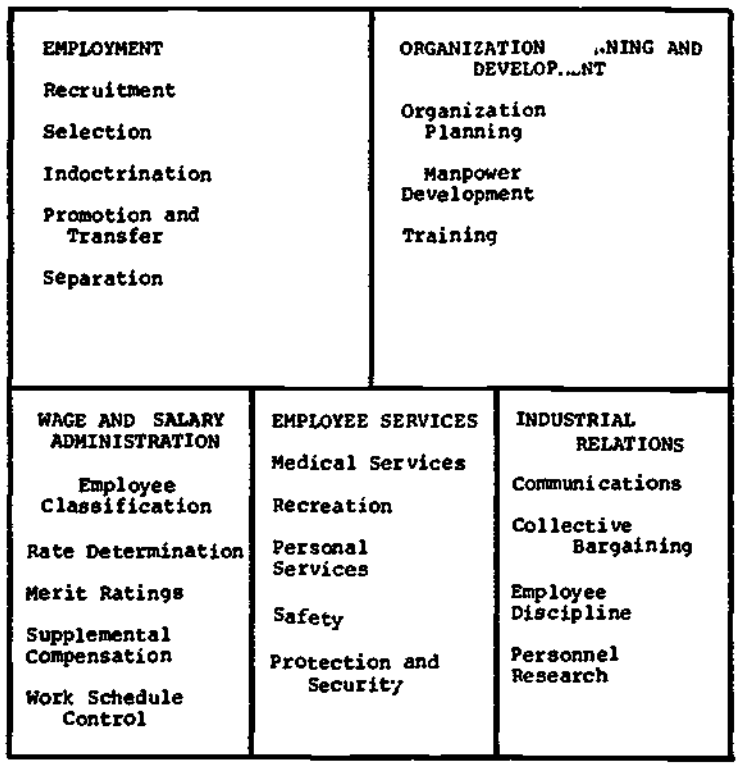


Research and Development

FIGURE 8

It might be well to remind you that the content of these blocks come from the guide material.

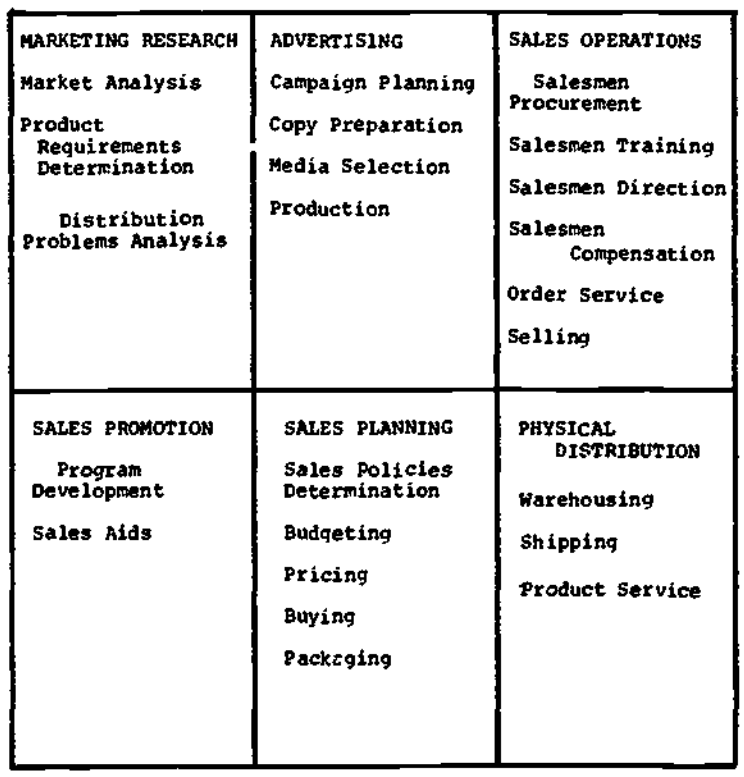
Figure 9 shows the block of instruction in personnel administration.



Personnel Administration

FIGURE 9

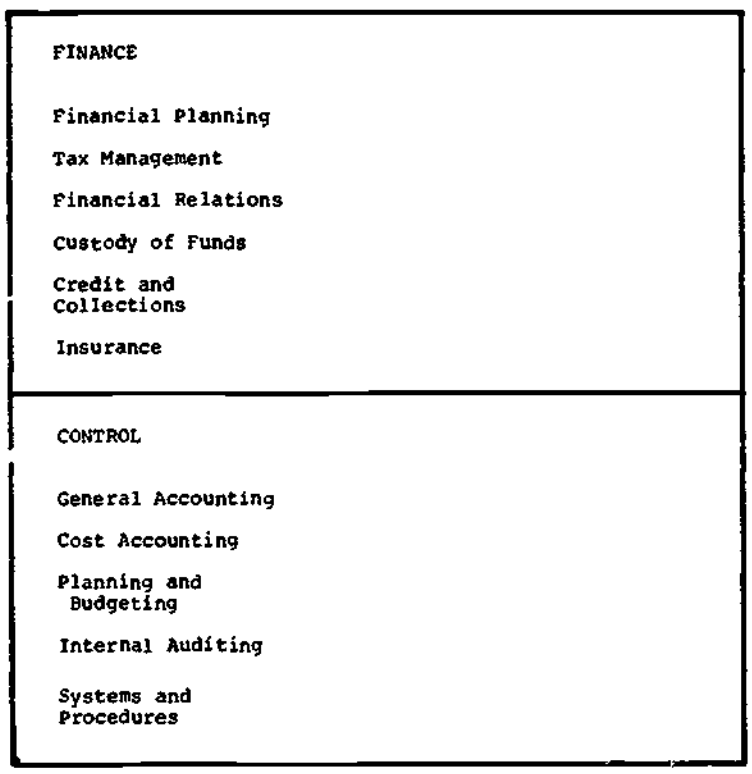
Figure 10 covers the instruction in the Marketing Area.



Marketing

FIGURE 10

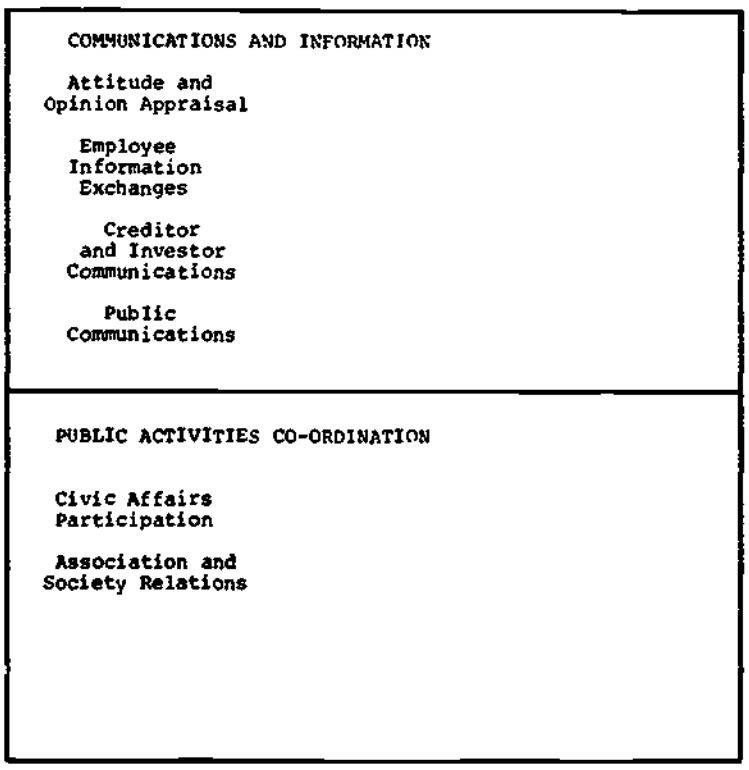
Figure 11 looks at the units necessary for instruction in Finance and Control.



Finance and Control

FIGURE 11

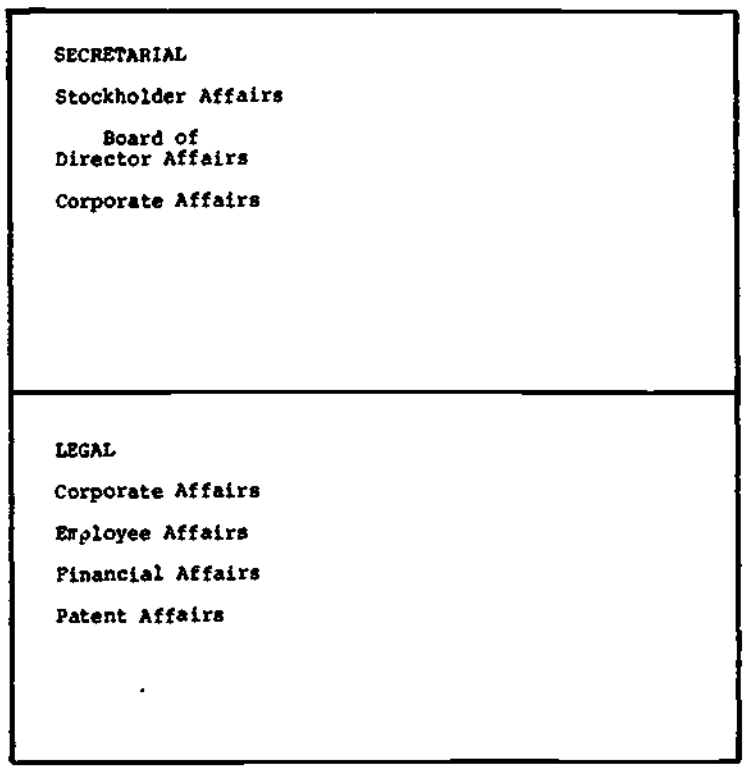
The next illustration covers the External Relations, Figure 12.



External Relations

FIGURE 12

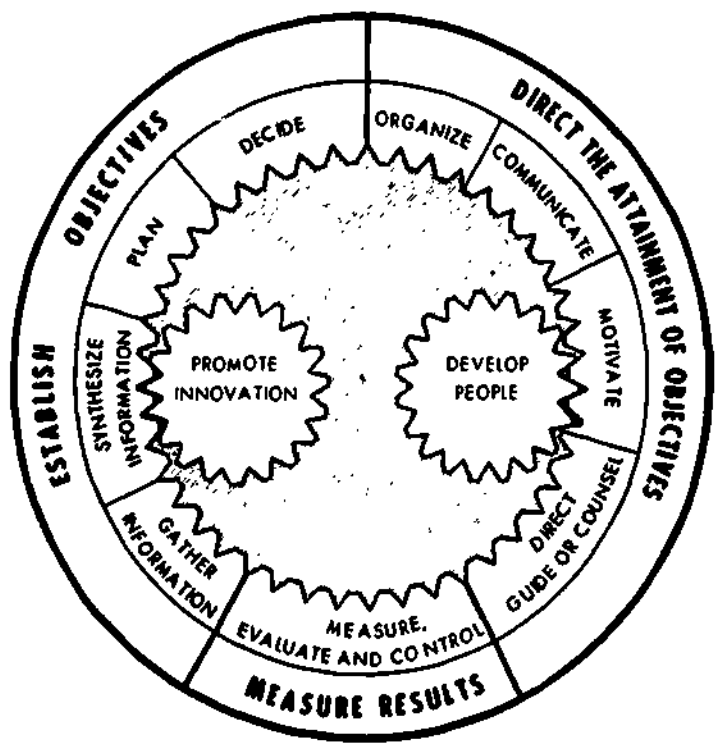
Secretarial and Legal units are shown in Figure 13.



Secretarial and Legal

FIGURE 13

The final illustration of the pyramid is shown in figure 14 representing the functions carried on by Top Management.



Management

FIGURE 14

As we continue in the development of the guide material into teaching units, I would like you to look at Figure 15. This illustration represents a single block of instruction.

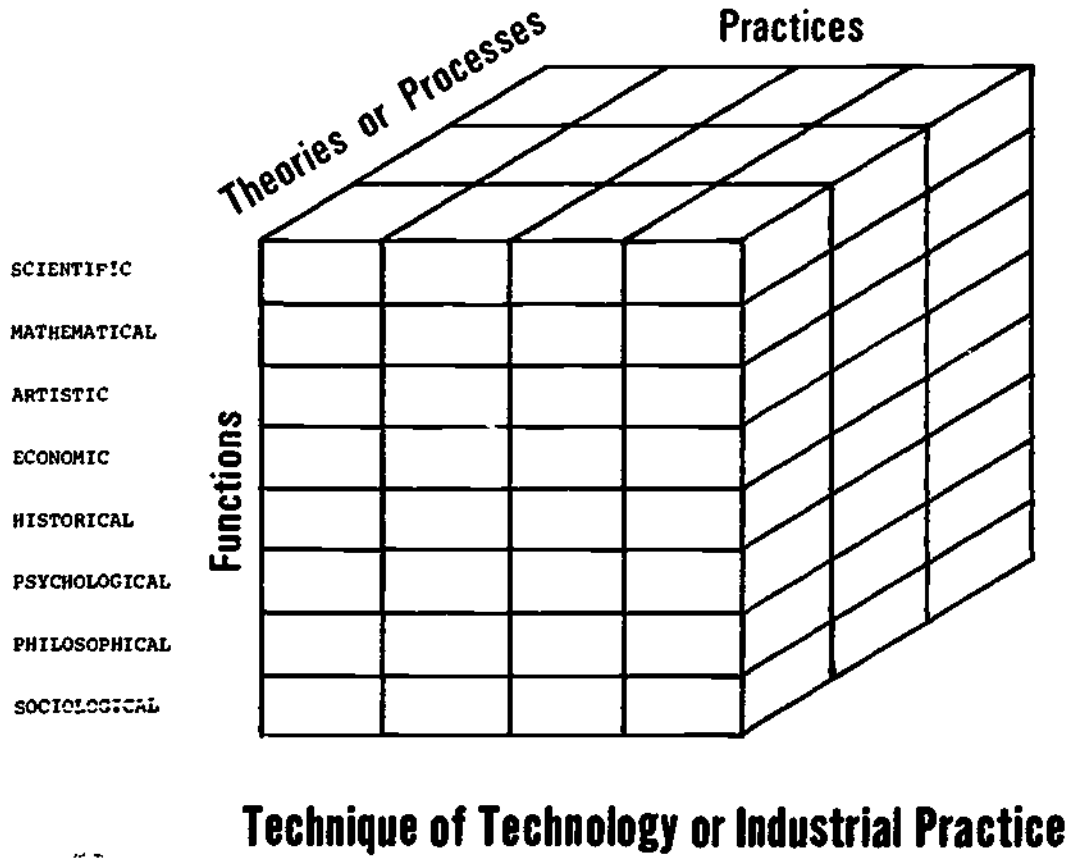


FIGURE 15

The block has an axis that represents the industrial or technological practice. The second axis represents the process or the theory of the practice and the third axis represents the functions necessary to the concept development.

I am sure that these blocks I have shown could have a much finer breakdown of content than I have given in the representative illustrations. The functions represented in the single block on the third axis could have additional layers.

Let us go back to Figure 15 and further discuss what I have in mind in the development of the teaching content. The block I have shown could represent from the manufacturing layer Process Photography. A theory or process from this block could be halftoning. Theories within this area The pin hole theory 1886, Ives; The diffraction theory 1894, Levy; and The penumbral shadow theory in 1896 by Deville. The latest theory is the contact screen and the vailed dot. Practices include camera operation, developing techniques, exposure controls, etc. To accomplish the actual production of a halftone negative requires the operator to know certain chemical and physical principles, mathematical techniques. Artistic feeling is necessary if the end result is to produce a desired result. This could be expanded to include all of the functions listed as well as others.

The instructor developing his teaching units will give emphasis to these various function according to the level of student and to the level of the particular course.

This same thorough process could be followed throughout each of the blocks of instruction.

As we progress higher on the pyramid, less detailed instruction is developed and more of the relationships to the manufacturing operations are covered.

In order to place this content into a workable set of classes for the classroom teacher, I would like to suggest the arrangement shown in Figure 16.

This triangle is divided into three levels of instruction. The top is rounded to suggest that you never reach the top, for as we gain new knowledge in the field we must continue to study and keep up with the changes. There is no such thing as terminal education.

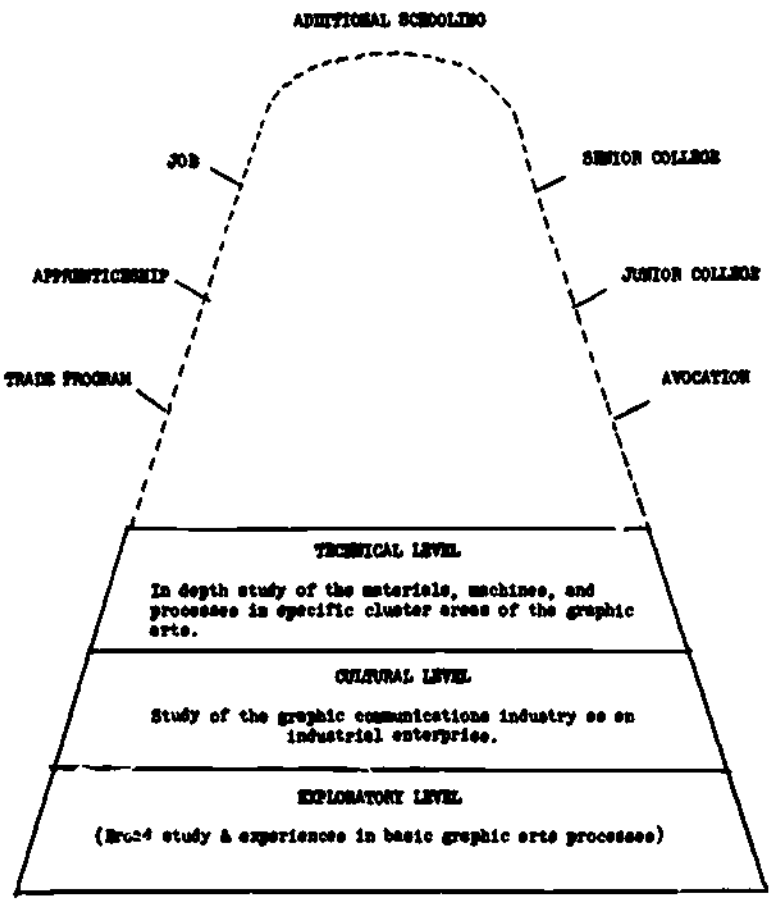


FIGURE 16

The first exposure to the subject area at level 1 is an exploratory experience. The student should be offered a broad study of the basic graphic arts processes. Emphasis would be on the Manufacturing and Production Management layers of the pyramid.

The second level course would be approached as a study of the graphic communication as an industrial enterprise. It would be in this course that we try to tie in all of the layers of the pyramid. Study should include the effects of the technology upon the individual and on the society. It is after instruction on level 1 and level 2 that the student should have insight as to the opportunities available to him to make a career in graphic arts, or whether be will remain a consumer and user of its products and seek a career in another field.

The classes offered on the third level should be of technical depth. The student should be allowed to study in depth in areas of his interests. An example would be a student interested in science and math as well as graphic arts might wish to do some experiments with processes or materials. Another student with a strong interest in mechanics may wish to concentrate in composing machine or press operation.

A student with continued interest could then move on into a trade program at the vocational school, while others may wish to follow one of the other routes suggested on the triangle.

I believe this approach can be a basis for a thorough, informative and meaningful program in industrial arts. It meets the goals set out by the guide, and includes the content suggested by the guide. It provides a more relevant program in the study of industry to meet the needs of individuals who will have to take their place in our complex technological and industrially oriented society.

VT 010 416
Schaefer, Carl J., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 6, 7, 8, 1969).

American Vocational Association, Washington, D.C. Research Section
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*CONFERENCES; *VOCATIONAL EDUCATION; *SPEECHES; *RESEARCH
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

The following speeches were presented to the research division of the 63rd Convention of the American Vocational Association in December 1969: (1) "A Plan for Occupational Education in Massachusetts," by Carl J. Schaefer and Jacob J. Kaufman, (2) "Project Mini-Score: An Interim Report 1966-69" by David J. Pucel and Howard F. Nelson, (3) "What Research Has to Say On: Organization and Administration of Vocational and Technical Education" by Ralph C. Wenrich, (4) "Review and Synthesis of Research on Placement and Follow-Up of Vocational Education Students" by RIchard W. Whinfield, (5) "Manpower Research--Its Relation to Vocational Education" Howard Rosen, (6) "Project Improve: the Development of a State-Operated Evaluation System," by Jerome Moss and others, and (7) "Three Aspects of Evaluation Methodology" by Ying E. Chuang; and "Program Evaluation and Research Designs" by Gordon Welty. (BC)

VT 010 416

Speeches Presented at The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 6, 7, 8, 1969

Research Section

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A PLAN FOR OCCUPATIONAL EDUCATION IN MASSACHUSETTS

By

Carl J. Schaefer[1] and Jacob J. Kaufman[2]

A Paper Presented at the Annual Meetings
of the American Vocational Association
Boston, Massachusetts, December 6, 1969

In a recent speech, the U. S. Commissioner of Education, James E. Allen, stated that "public education as it now functions in much of our country no longer has the full confidence of the people in its ability to satisfy their needs and aspirations."[3] He recognizes that some of the criticism may not be justified and, even if justified, the factors behind the lack of confidence is beyond the direct control of the educational system, such factors including "poverty, ghetto patterns, discrimination, general economic

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[1]Professor and Chairman, Department of Vocational-Technical Education, Rutgers University.

[2]Director, Institute for Research on Human Resources, and Professor of Economics, The Pennsylvania State University.

[3]Speech before the Annual Meeting of the Council of Chief State School Officers, November 17, 1969, p. 1.

conditions, etc."[4] However, in his judgement, educators do have control over how they react to this dissatisfaction. Commissioner Allen suggests that "we must be willing to abandon old arguments which too often are based on beliefs and emotions with little basis in fact; to think of education more broadly than in terms of schools and our profession; to be prepared to experiment with drastically different concepts and practices; to introduce scientific discipline into planning, evaluation and management of educational programs."[5] Finally, he establishes three broad goals: The improvement of American education and increasing its relevance; the solution of the problem of the education of the disadvantaged; and the increase in and redistribution of the resources allocated to education.

To a large extent the philosophy behind the Report on Occupational Education for Massachusetts, which was prepared for The Massachusetts Advisory Council on Education, reflects a similar approach, even though it antedated Commissioner Allen's speech by 18 months.

The studies of occupational education in Massachusetts were based on visits to a large number of schools throughout the Commonwealth, the conduct of a seminar to which professionals from the various disciplines presented their thoughts on vocational education, mail questionnaires to graduates and private trade schools, consultations with experts in the area and a variety of special studies conducted on such subjects as teacher education, the use of educational media, regional community colleges, and the occupational requirements of Massachusetts.

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[4] Ibid., italics added.

[5] Ibid.

Too often studies of vocational education in certain communities and states tend to stress the need to train more youth in certain skills and to meet the needs of industry. And the usual recommendation is "more money." The Massachusetts Study operated under a different framework.

First, it was recognized that only a small proportion of high school youth was being served by vocational education and that the largest group--40 to 60 percent--do not find either the academic or vocational curriculum relevant to their aspirations, needs, and interests. These students are generally enrolled in what is commonly referred to as the general curriculum.

Second, it was pointed out that the current allocation of all educational resources was not in alignment with the needs of the students and a reallocation of these resources is essential.

Third, if the groupings of students and their proportions are correct, then the curricula must be re-examined for the academic, vocational, and general curricula students.

Fourth, curriculum changes, which will be described below, require a radical change in the organizational structure in both the secondary schools and the state administration.

Fifth, these curriculum changes required the development of new programs to train (or retrain) administrators and teachers.

Finally, it was essential that the state assume a larger role in the financing of education. (Interestingly, recent reports in Texas and Michigan make a similar recommendation.)

In the limited time available it is, of course, impossible to set forth all of the recommendations in the Massachusetts Report. Some of the more important will be presented in brief form.

Probably the most important recommendation was that which called for the establishment of a Careers Development Curriculum to meet the needs of the 40 to 60 percent of the high school population who have so-called "special needs" and for whom both the academic and vocational curricula are inadequate. This curriculum should be non-graded, should involve an occupational cluster, and should be elected by students from the ninth grade through the twelfth grade. It should be conducted in the neighborhood or comprehensive schools. The teaching style will be that of team teaching in which the cluster teacher acts as a catalyst through which the academic subjects will be meaningful.

What if certain students reveal talents which make them eligible for the more traditional vocational curriculum? For this group of students (5 to 10 percent) it was recommended that regional Institutes for Educational Development be established for the eleventh and twelfth years. It is possible that students originally enrolled in the Careers Development Curriculum might transfer to the institutes if they show an interest and ability. The comprehensive school can send its students to such institutes, recognizing, however, the importance of carefully integrating the educational programs of both the "sending" and "receiving" schools. This type of integration has been seriously lacking today.

Another significant recommendation was in the area of financing. It was urged that the state reimbursement formula be adjusted so that

the comprehensive schools which institute a Careers Development Curriculum receive additional funds. It was our judgement that the way to achieve change was through a system of incentives and that schools should be rewarded for change. In addition, it was recommended that the Commonwealth assume full financial responsibility for the regional Institutes, recognizing the broader geographic area usually served by vocational education.

With respect to the allocation of resources, the Report stated that there was a tendency to ignore the basic needs of large groups of students in the urban areas. It would appear that no system of priorities had been established concerning the construction of schools designed to help those youngsters who, as referred to above, find their education not meaningful. It is precisely in the highly urbanized areas where the Careers Development Curriculum could play a significant role in the education of youngsters. This type of curriculum, if developed adequately, would still maintain options for youngsters who could move in any direction from an educational point of view.

With respect to the administration of occupational education in Massachusetts, it was recommended that, at the state level, a separate Bureau of Careers Development be created and be generally responsible for the Careers Development Curriculum. It was further recommended that the present Bureau of Vocational Education be reconstituted to become a Division of Manpower, Research, and Development and be administered jointly by the State Department of Education and the State Department of Labor. The importance of establishing such a Division reflects

the great emphasis placed, in the Vocational Amendments of 1968, for the coordination of the supply and demand for skilled workers. To date, our experience has been that the schools which are attempting to develop appropriate vocational programs are carrying on this activity without the coordination and cooperation of the Departments of Labor in the various states who presumably have knowledge of the skill needs of those states.

The Massachusetts Study also concerned itself with teacher education and post-secondary education. But these issues are not being discussed because of limited time.

It is now 18 months since the report was issued. Two questions arise: To what extent, if any, would we change the general philosophy and recommendations of the report? To what extent, if any, have the recommendations been followed?

The investigators find that the philosophy and recommendations are consistent with the Report of the Vocational Advisory Council which evaluated the results of the Vocational Education Act of 1963. They are consistent with the basic intent of the Vocational Amendments of 1968. They are consistent with the general thinking of various educational leaders.

Have the recommendations been put into effect? To our knowledge, the answer is in the negative. Hopefully, at this session we shall have an opportunity to explore the general philosophy and recommendations of the Massachusetts Study with local school administrators and others in order to explore this question further.

Note: The full report is titled "Occupational Education for Massachusetts" and is available for $6.45 and may be purchased from the Public Documents Division, Secretary of State's Office, Room 116, The State House, Boston, Massachusetts 02133.

Project MINI-SCORE:[1] An Interim Report 1966-1969

by

David J. Pucel[2]
and
Howard F. Nelson

A paper presented at the
American Vocational Association Convention
Boston, December 7, 1969

BACKGROUND

If one reads current reviews of the literature concerned with counseling vocational students, (Ghiselli 1966, Prediger 1967) it becomes apparent that little integrated research has been done to assess the interrelationships among various measures of abilities and needs and how these measures may be used effectively in the vocational counseling process when dealing with many different training programs assumed to prepare persons for different occupational families.

Project MINI-SCORE, a six year project funded by the U.S. Office of Education, is being conducted by two staff members of the Department of Industrial Education, University of Minnesota. The Project started in 1966 with the primary purpose of identifying criteria which are useful to counselors and others in admitting and counseling post-high school vocational-technical students as they seek to pursue specific vocational-technical curricula. Data are gathered through comprehensive measurement of basic competencies and selected characteristics. The data will be analyzed to determine which and how much of each element is useful to the process

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[1]Project MINI-SCORE (Minnesota Student Characteristics and Occupationally Related Education) was formerly known as the Area School Student Selection Project. Project MINI-SCORE is funded by the U.S.O.E. Project No. HRD5-0148.

[2]Dr. Pucel is Assistant Professor and Project Director, Dr. Nelson is Professor and Chairman and Principal Investigator in the Department of Industrial Education, University of Minnesota.

of counseling and admitting applicants to the full time vocational-technical courses offered in the area vocational-technical schools of Minnesota.

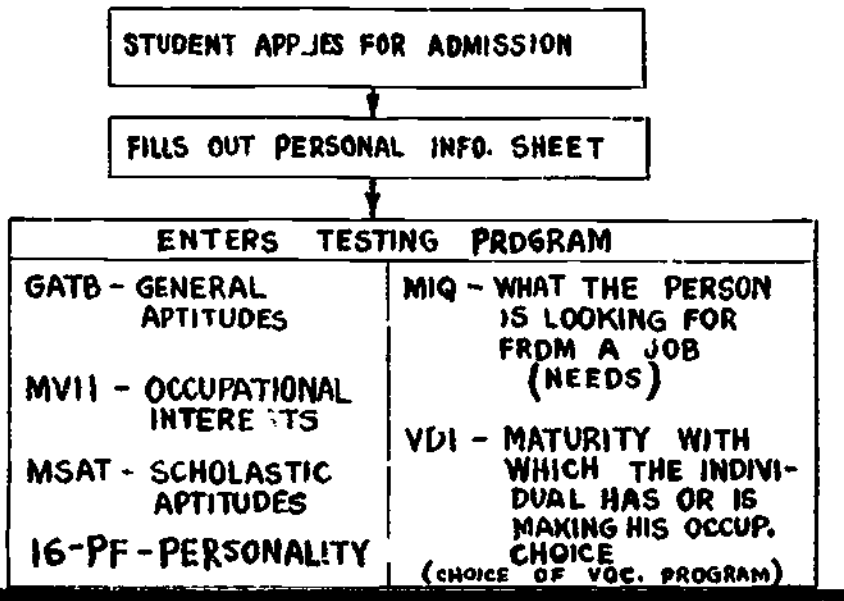
The project was divided into four overlapping phases (See FIGURE I). Phase one involved testing all applicants to the full-time, day trade programs conducted in the area vocational-technical schools of the state of Minnesota during the period from September 1, 1966 through October 1, 1968. Data were gathered from all applicants to the 63 relatively homogeneous groups of training programs offered, making a total of about 17,500 applicants. The data gathering instruments consisted of: (1) a personal information sheet, (2) the written portions of the GATB (Form B), (3) the Minnesota Vocational Interest Inventory (MVII), (4) the Minnesota Importance Questicnnaire (MIQ), (5) the Sixteen Personality Factors Questionnaire - Form C (16-PF), and (6) the Vocational Development Inventory (VDI). Minnesota Scholastic Aptitude Test (MSAT) scores were obtained from the Minnesota Statewide Testing Program office since virtually all high school students in Minnesota take the test during their junior year. A listing that the scales used in each of these instruments can be found in TABLE IV. These data gathering instruments were selected to make up the battery because it was felt that they were measures of most of the factors which people have related to vocational choice.

Phase two of the project involves keeping accurate records on each of the individuals tested to determine what happens to them after testing. For example, are they accepted in an area vocational-technical school or are they rejected? If accepted, do they leave the program before completion or do they graduate? To date such data has been gathered on about 7,000 people who were originally tested and admitted to the schools.

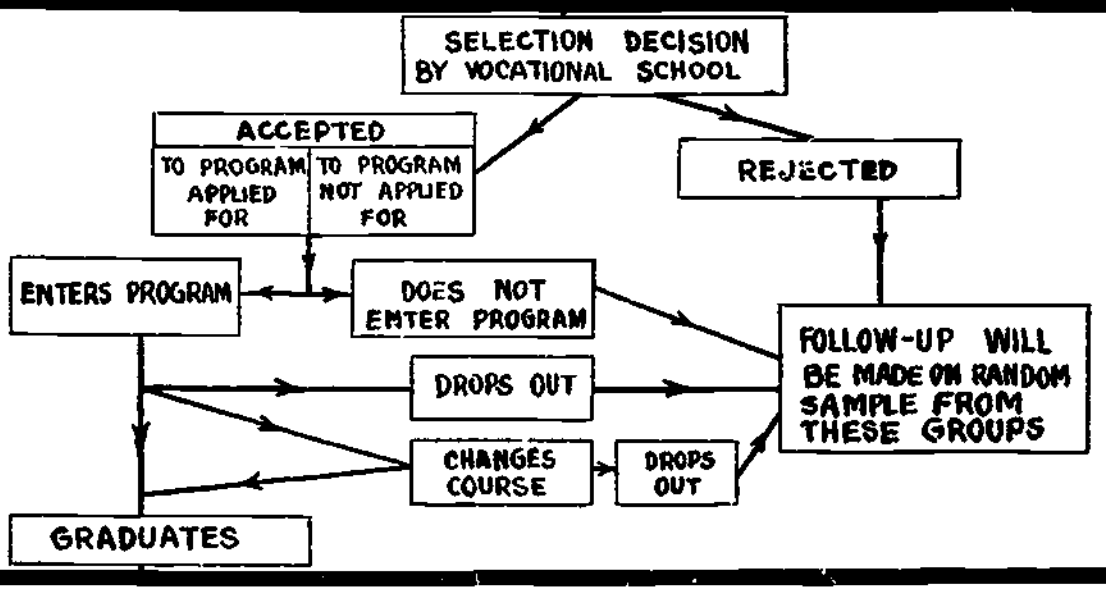
The follow-up or Phase three of the project occurs twelve months after students graduate from one of the full-time programs of the area vocational-technical schools. These students as well as their employers are contacted to determine the extent to which they have become successful employees. Although the follow-up has

PATH OF STUDENTS THROUGH PROJECT MINI-SCORE

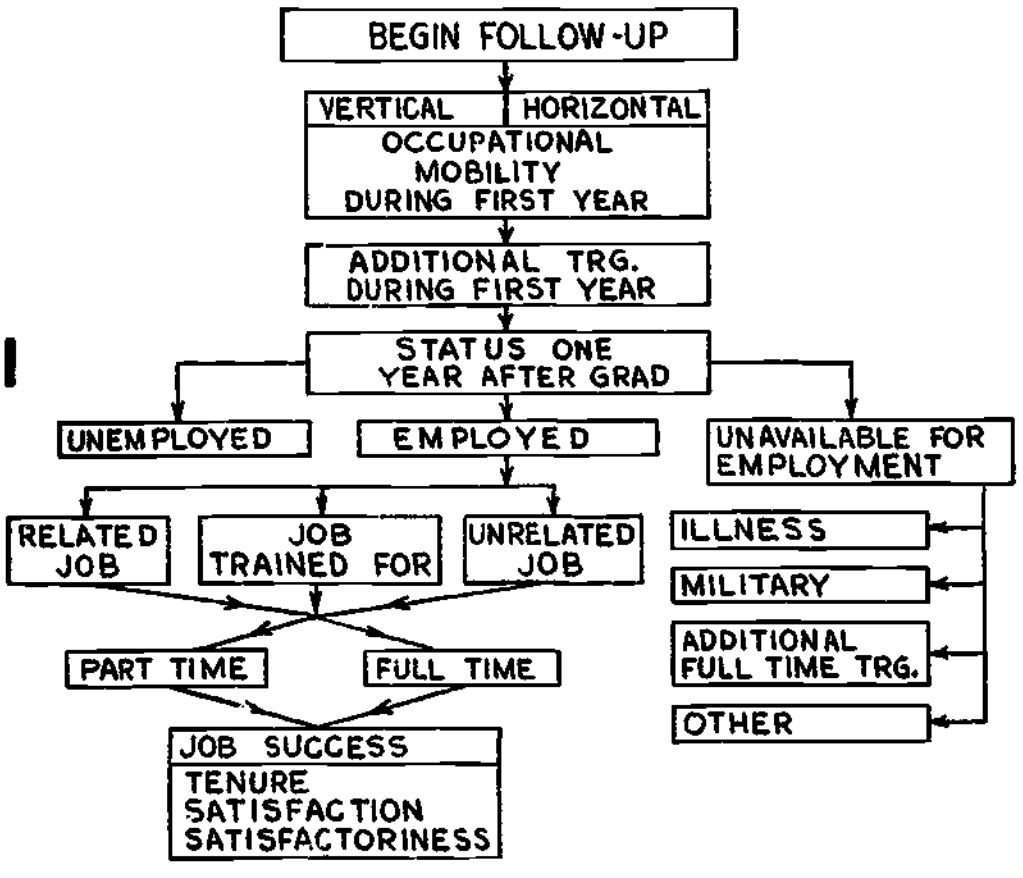
Phase I



Phase II



Phase III



Phase IV

DATA ANALYSIS AND WRITING FINAL REPORT

only been underway for a short time, about 3,000 sets of data have already been processed.

Phase four of the project will provide for the analysis of the data and writing the final report.

DESCRIPTION OF PROJECT DEVELOPMENT

Upon receiving approval of the proposed project, systems had to be developed for operationalizing the objectives of the project. Counselors were identified by the directors of each of the cooperating schools to help with the testing phase. Each of the post high school area vocational-technical schools established its own testing program designed to test all applicants. Some schools tested monthly, some bi-monthly and so on. Upon applying to one of the cooperating schools, students were asked to report to the nearest school for testing. The Project financed the personnel and materials costs associated with the testing. All test data were sent to the Project office in the Department of Industrial Education, University of Minnesota. All tests were scored by the test publishers according to special scoring contracts and the test data were returned on IBM cards which had consistent formats. These data were then stored in the project office.

In some cases, certain schools throughout the State were using the General Aptitude Test Battery as one aspect of their admissions program prior to the start of the project. Therefore, the GATB data gathered through the Project were shared with those schools requesting it to avoid duplication of effort. To some degree, the GATB data may have been contaminated because in some cases selection was being done on the GATB variables being investigated. However, this cooperative arrangement was a necessary condition for Project acceptance. No test data other than the GATB data were shared with the cooperating schools. Along with sharing GATB data with the schools gathering the data, a system was established to share data between schools. The schools agreed to test persons for other schools; a person

wanting to apply to any school in the State could be tested at the nearest school. Since the Project office had data on all applicants, it was possible to distribute listings of persons applying anywhere in the State to all schools, thus identifying those people were already tested. If a person applied to a school other than the one he was tested at he could request his GATB data be sent to that school if the school required it. In this way the data were not only efficiently stored, but it could be effectively shared.

Systems were also developed to edit and "clean-up" the data as it was returned in the form of IBM cards to the Project office. Initial attempts to deal with the data by hand and IBM card sorter soon proved impractical and far too inaccruate. Therefore, a fully computerized system of editing and magnetic tape storage of the data was developed and operationalized. Since that time all data handling has been done with the computer which guarantees accuracy and reduces costs.

On July 1, 1968, the follow-up system was put into operation. All graduates from the cooperating schools were followed up one year after graduation as were their employers. These data were also centrally stored at the Project office. To date, 85 per cent of the students returned their follow-up instruments and 96 per cent of their employers returned theirs.

The basic follow-up procedure is as follows. One year after graduation, each of the students were sent a pre-letter indicating that they would be receiving a follow-up questionnaire. One week after the pre-letter, each student was sent the four page follow-up questionnaire printed on green paper, a personalized cover letter, a return addressed stamped envelope, and a one cup package of instant coffee. The pre-letter and other follow-up techniques used were based on a project study related to optimizing follow-up returns which will be discussed in more detail in a later section of this report. This follow-up procedure proved to be the most effective of all those attempted. The questionnaire was designed to gather data on additional training since graduation, employment status, work history since graduation

(including the name and address of each of his supervisors on each job he had), salary data, and his job satisfaction. The person's job satisfaction was measured by the Minnesota Satisfaction Questionnaire.[1] A second follow-up was sent to those who did not return their questionnaires. Later procedures were followed to gain responses from those who did not respond to either the first or second follow-up attempts. Addresses were checked through the Minnesota Drivers License Bureau, the Minnesota Drivers License Plates Bureau, the schools the students graduated from, and phone calls to parents.

The information the students provided concerning the name and address of their immediate supervisor on the job was used during the employer follow-up. The supervisor was contacted and asked to return a questionnaire concerning the student. The questionnaire assessed the satisfactoriness of the student from the employer's point of view. These data were gathered through the Minnesota Satisfactoriness Questionnaire.[1] The questionnaire was accompanied by a personalized letter and a return addressed stamped envelope. These data were then coded, punched on IBM cards and edited with the computer. When sufficient data have been gathered, the test data gathered prior to enrollment will be investigated to determine whether or not it will be useful in predicting success on the job.

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[1]Both instruments have been developed and standardized over eight years of research by the Work Adjustment Project, Industrial Relations Center, University of Minnesota. This project uses the following definitions.

"Satisfaction indicates work adjustment as viewed by the individual, i.e., the employee, while satisfactoriness presents work adjustment from the employer's viewpoint. Measures of satisfaction reflect the individual's evaluation of his work environment (i.e., his working conditions, his 'boss,' his compensation, his coworkers, etc.) The individual has certain expectations concerning the work environment and a set of 'work' attitudes which presumably grow out of, and are affected by the fulfillment or non-fulfillment of his expectations. These attitudes constitute the individual's evaluation of his work environment, i.e., his satisfaction. Optimal work adjustment from the individual's point of view would thus be when the individual evaluates his work situation as 'satisfying.'

From time to time, the employer evaluates the employee's performance as a check on the employee's activity and as a means of attaining his (the employer's) goals. The employee is judged 'satisfactory' if he conforms to these requirements and 'unsatisfactory' if he fails to conform."

Minnesota Studies in Vocational Rehabilitation: XIII. The Measurement of Employment Satisfaction, Bulletin 35, May 1962.

Since the project began in 1966, a number of research efforts have been completed. Most of them dealt with developing an effective operating system or gathering data which was necessary for making operational decisions. Another group of research efforts dealt with investigating methods of data analysis to determine which methods are both logically sound in relation to the goals of the Project and have the greatest potential for yielding results. It soon became apparent that few people have ever attempted to develop an efficient generalizeable operating system.

Due to an inability to locate people in the behavioral sciences with sufficient background in computerized data handling, people from business and the sciences had to be identified and members of the Project staff undertook the task of assimilating information from persons in many fields who were not acquainted with educational problems and synthesizing a workable system. The Project staff then had to become proficient in operating the system.

Attempts at investigating the relative usefulness of various statistical analysis techniques in dealing with the problem were also revealing. Some of these attempts will be described later.

RESEARCH EFFORTS USING APPLICANT DATA

Some of the more formal research efforts are discussed below in relation to the questions they were intended to address. Three preliminary analyses of the data were conducted to get an initial "feel" for the data. The first preliminary analysis (Nelson and Pucel, 1967) was done to gather descriptive data on the type of people applying to the post high school area vocational schools of Minnesota.

What Type of People Apply to the Area Vocational-Technical Schools of Minnesota?

The population used in this analysis was 6,400 applicants to the 24 cooperating Area Vocational-Technical Schools of Minnesota during the period from October 1, 1966 to July 1, 1967. The first analysis indicated that about 69% of the applicants were 18 years of age or under, 23% were between 19 and 21 and 8% were over 21 years

of age. About 57% of the applicants were boys and 43% were girls. Most, 92.5%, of the applicants were high school graduates, 7% had between 9 and 11 years of education and only 0.5% had eight years or less. About 93% had no dependents and only 7% were married. About 43% of the applicants indicated they had some prior high school vocational preparation and 4% indicated they had prior post-high school vocational training. About 77% indicated that they had no previous work experience related to the program they wished to enter although about 57% indicated they had unrelated work experience.

The findings of the first analysis indicated that many girls as well as boys apply for admission to the area vocational schools of Minnesota. They are well educated, most of them are high school graduates and they typically apply immediately after high school. Few are married and few are supporting other dependents. Many of them have had some work experience and indicated that they had some form of vocational training in high school.

How Independent are the Measures Derived From the Test Battery?

The population used in both the second and third preliminary analyses consisted of 1,391 students newly enrolled during the fall of 1966 in one of eighteen different vocational-technical curricula at the Minnesota Area Vocational-Technical Schools. Table I lists the curriculum groups used in the analyses and the number of subjects in each group.

The second preliminary analysis (Pucel and Nelson, 1967) investigated the intercorrelations that existed between measures derived from the seven different instruments used in the project. The second also investigated whether or not each measure individually could differentiate between a group of individuals entering one program and groups of individuals entering other programs. The answers to each of the questions raised in the second analysis were encouraging. All of the instruments appeared to be measuring relatively independent variables and each was capable of

significantly differentiating at least two of the 18 different curriculum groups at the .05 level as measured by a two-sample T-test.

The criterion used to judge whether or not two factors measured by two different instruments were relatively independent was a correlation of .55. A correlation of .55 between two sets of scores indicates that the two measures have 30.25% common variance; or conversely, 69.75% of what each measures is independent of the other. For purposes of the preliminary analysis, approximately 70% non-overlap or independence was judged to be sufficient to indicate that two measures were relatively independent.

TABLE I

Population Used For
Second and Third Preliminary Analyses

Curriculum	N	Curriculum	N
1. Practical Nursing	67	10. Mechanical Drafting and Design	52
2. Data Processing	45	11. Sales	31
3. Secretarial Training	247	12. Power and Home Electricity	51
4. Electronics	56	13. Printing and Graphic Arts	25
5. Cosmetology	33	14. Carpentry	47
6. Accounting	164	15. Machine Shop	80
7. Clerical Training	167	16. Automotive	139
8. Architectural Drafting	41	17. Agri-Technology	29
9. Fluid Power Technology	30	18. Welding	87
		TOTAL	1,391

A review of a sample of four of the eighteen correlation matrices indicated that none of the factors measured by one instrument correlated above .55 with factors of another instrument except the Minnesota Scholastic Aptitude Test Score and

the GATB Verbal Aptitude Score. A review of the correlation between these two scores for each of the eighteen curricula indicated that they correlated above .55 for seven curricula. Although these two scores appear to be somewhat related, the relationship did not appear consistent enough to reject either instrument. Therefore, both were retained in the test battery.

Do Persons Enrolling in Different Vocational Programs Possess Traits in Common?

A third preliminary analysis of the data investigated the commonalities between groups enrolled in different vocational programs with respect to interests, aptitudes, job needs and personality factors.

Profiles for each of the eighteen curricula were constructed using standard scores for each of the multifactor instruments used in the project (MVII, 16-PF, MIQ and GATB). A combined profile was also constructed for each curriculum using all of the scales on all of the instruments indicated above. The commonalities between the profiles were determined by using DuMas coefficient of profile similarity.* By inspection, profiles were then grouped on the basis of profile similarity coefficients. Each of the curriculum groups were randomly assigned a number before the profile coefficients were computed and the groups constructed. After all groupings were constructed for each instrument and the combination of instruments, the numbered curricula were translated back to names. The above procedure was used in an attempt to eliminate the bias which might occur during grouping because the persons involved in constructing the groupings might have stereotyped notions about the occupations.

The following curricula were grouped together using data obtained from the different instruments used in the project.

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*A discussion of this technique as well as alternative techniques can be found in the book, Multivariate Statistics for Personnel Classification (Rulon, Tiedeman, Tatsuoka, and Langmuir, 1967.)

1. General Aptitude Test Battery (seven aptitude scores obtained from written portions).

   a. GROUP 1

      Electronics
      Power and Home Electricity

   b. GROUP 2

      Architectural Drafting
      Fluid Power Technology
      Data Processing

   c. GROUP 3

      Carpentry
      Automotive
      Printing and Graphic Arts
      Mechanical Drafting and Design
      Welding
      Sales
      Machine Shop

   d. GROUP 4

      Practical Nursing
      Cosmetology
      Agri-Technology
      Clerical Training
      Secretarial Training
      Accounting

2. Minnesota Vocational Interest Inventory (nine homogeneous scales).

   a. GROUP 1

      Electronics
      Printing and Graphic Arts
      Power and Home Electricity
      Architectural Drafting
      Welding
      Machine Shop
      Automotive
      Carpentry
      Mechanical Drafting and Design
      Fluid Power Technology
      Agri-Technology

   b. GROUP 2

      Practical Nursing
      Sales
      Accounting
      Clerical Training
      Data Processing
      Secretarial Training
      Cosmetology

3. Sixteen Personality Factors Questionnaire (16 personality factors scales).

   a. GROUP 1

      Mechanical Drafting and Design
      Fluid Power Technology
      Data Processing

   b. GROUP 2

      Electronics
      Power and Home Electricity
      Printing and Graphic Arts
      Architectural Drafting
      Agri-Technology

   c. GROUP 3

      Carpentry
      Automotive
      Welding
      Machine Shop

   d. GROUP 4

      Practical Nursing
      Cosmetology
      Clerical Training
      Secretarial Training
      Accounting

   e. GROUP 5

      Sales

4. Minnesota Importance Questionnaire (thirty needs scales)

a. GROUP 1

Electronics
Data Processing

b. GROUP 2

Architectural Drafting
Agri-Technology

c. GROUP 3

Power and Home Electricity
Carpentry
Automotive
Machine Shop
Welding
Fluid Power Technology

d. GROUP 4

Practical Nursing
Cosmetology
Clerical Training
Secretarial Training
Accounting

e. The following programs did not fall into any groupings.

Printing and Graphic Arts
Mechanical Drafting and Design
Sales

Based upon the combined profiles using all of the scales of the above instruments, the following clusters were found. The total number of dimensions in each profile was 62.

a. GROUP 1

Electronics
Data Processing

b. GROUP 2

Power and Home Electricity
Carpentry
Automotive
Machine Shop
Welding
Fluid Power Technology
Architectual Drafting
Mechanical Drafting and Design
Agri-Technology
Printing and Graphic Arts

c. GROUP 3

Practical Nursing
Cosmetology
Accounting
Clerical Training
Secretarial Training
Sales

Based upon the above curriculum groupings derived from profile comparisons by test as well as for the combination of the tests, some curricula consistently grouped together. The groups derived from the comparison of the combined profiles appeared to represent a summary of all of the profile groups derived from the individual tests. The curricula appeared to consistently group in terms of trade and industrial curricula and business and social service curricula.

Essentially the same curricula clustered together regardless of the test used except for sales and agri-technology. This suggests that individuals in the groups

are similar on many dimensions. They have similar needs, interests, abilities, and personalities as defined by the instruments used in this study. This does not mean that they are identical. Curricula within a group have profiles more similar to curricula in the group than they do to curricula outside the group.

RESEARCH EFFORTS USING GRADUATE DATA

As with the preliminary analyses of the applicant data, the first analyses of the data pertaining to graduates were undertaken to answer some key questions. The first question addressed the comparability of the area vocational school graduates with other populations.

How do the area vocational-technical school graduates compare with other selected school populations in the State of Minnesota?

A partial answer to this question was available by analyzing MSAT (Minnesota Scholastic Aptitude Test) scores. The Minnesota Statewide Testing Program is administered in most of the high schools in the State of Minnesota. As part of this program, the MSAT is administered during the junior year of high school. The Minnesota Statewide Testing program office provided data on the group of students tested during the 1963-64 high school year. Most of the persons graduating from selected programs of the area vocational schools during the 1967-68 vocational school year were part of this group as well as most of the entering freshmen of the Minnesota state college system during the Fall of 1966.

Table II summarizes the data on the comparable high school juniors, selected groups of area vocational-technical school graduates and entering state college freshmen. Both the state college freshmen and the area vocational-technical school graduate groups appear to be different, based on mean scores, from the total school groups as measured by the MSAT. The state college groups have higher mean scores than the high school group and most vocational graduate groups appear to have lower mean scores.

TABLE II

Comparison of Minnesota Scholastic Aptitude Test Scores of High School Jrs. (1964), State College Entering Freshmen (1966) and Area Vocational-Technical School Graduates (1967-68)

	N	MEAN	STD. DEV.
H. S. Juniors* (1963-64)			
Total Grp.	62434	34.40	14.70
Males	31431	33.40	14.50
Females	31003	33.50	14.90
State College Fresh.*			
Total Grp. (1966)	6288	37.30	12.10
Males	3489	35.10	11.40
Females	2799	40.00	12.50
Area Vocational-Tech. School Graduates (1967-68)			
Automotive	155	25.24	9.68
Carpentry	62	25.37	8.21
Machine Shop	63	24.14	9.11
Mech. Drftg. & Design	83	29.52	8.86
Power & Home Electricity	67	26.28	9.13
Welding	101	23.10	8.25
Accounting	166	29.19	10.46
Clerical	206	25.61	9.26
Cosmetology	114	27.57	9.89
Prac. Nursing	216	33.56	11.03
Secretarial	304	32.00	10.27

*These data were furnished by the Minnesota Statewide Testing Program

The descriptive data provided by the MSAT records tends to imply that the area vocational schools and the state colleges are dealing with two different but overlapping populations.

Are there measurable differences between graduates of different vocational programs on the factors measured by the instruments used in the Project?

The ultimate question which the Project must answer is whether or not persons who complete different vocational programs and are later successful on the job differ on the factors which were measured when they applied to the programs. An interim question is whether or not the graduates of these programs differ. In order to address this question, the graduates of seven curricula primarily attended by males and five curricula primarily attended by females were selected as the groups which were compared on each of the variables measured to try to locate significant differences using one way analyses of variance. The data were obtained from students who were accepted to and graduated from programs offered in the cooperating post-high school area vocational-technical schools of Minnesota during the period from September 1, 1966, until June, 1968, on whom data had been reported and processed at the time of the study. The male groups and the female groups selected were selected because each had at least 65 graduates at the time of the study. One way analyses of variance were run between the male groups and the female groups separately to determine the power of each of the variables to discriminate between curricula in both groups. The curriculum areas investigated as well as the number of graduates in each group are presented in TAPLE III. TABLE IV summarizes the discrimination power of each of the variables. All of the part scores obtained from the written portions of the GATB significantly differentiated both the male curricula and the female curricula at the .05 level or above. The same was true for the MVII homogeneous keys except for the food service key which did not significantly differentiate the male curricula. Reference to TABLE IV shows that seven out of the sixteen scales of the 16-PF significantly differentiated the male curricula

TABLE III

Curriculum Area Investigated

CURRICULUM	NO. OF GRADS.
MALE	
Power and Home Electricity	71
Carpentry	69
Automotives	171
Mechanical Drafting and Design	91
Machine Shop	71
Welding	114
Accounting - Male	92
FEMALE	
Practical Nursing	256
Cosmetology	120
Clerical	222
Secretarial	323
Accounting - Female	96

at the .05 level or above and that twelve of the sixteen scales differentiate the female curricula at the same level. The VDI significantly differentiated both the male curricula and the female curricula at the .05 level or above. The groups of male graduates were significantly different on nine of the thirty MIQ scales and the female graduate groups were significantly different on 25 of the scales.

These data tend to indicate that vocational graduates from different curricula do differ on the factors measured by the instruments used in the Project. Examination of the number of scales which significantly differentiated among the male groups and the female groups seems to imply more heterogeneity among the types of people who graduate from the female occupations reported in this investigation than among those who graduate from the male occupations reported. A finer breakdown of the analysis of variance data will be reported soon in a future detailed publication of that specific study.

TABLE IV

A Summary of the Ability of the Variables Used in the
Project to Discriminate Among Primarily Male and Primarily Female Occupations

TEST	MALE GRADS (7 groups) F(.01=2.82, .05=2.10) df=6,672	FEMALE GRADS (5 groups) F(.01=3.34, .05=2.38) df=4,1012
GATB PART SCORES		
Part 1-Name Comp.	**9.87	**3.34
Part 2-Computation	**18.02	**19.88
Part 3-3-Dim Space	**7.22	**3.78
Part 4-Vocabulary	**11.47	**19.34
Part 5-Tool Matching	**4.36	**10.95
Part 6-Arith. Reason.	**12.28	**17.09
Part 7-Form Matching	**5.23	**3.69
Part 8-Mark Making	**7.12	*3.04
MVII HOMOGENEOUS KEYS		
H-1 Mechanical	**83.17	**8.14
H-2 Health Service	**3.92	**237.67
H-3 Office Work	**227.24	**214.86
H-4 Electronics	**52.13	**20.69
H-5 Food Service	1.34	**18.83
H-6 Carpentry	**38.00	**3.38
H-7 Sales-Office	**21.93	**30.40
H-8 Clean Hands	**38.11	**48.13
H-9 Outdoors	**34.63	**5.22
16-PF		
A-Reserved	**6.46	**14.28
B-Less Intelligent	**7.48	**4.73
C-Emotional	1.01	**3.83
E-Humble	.44	.44
F-Sober	1.01	**3.41
G-Expedient	1.11	1.03
H-Shy	1.34	**10.35
I-Tough Minded	**3.45	*3.25
L-Trusting	1.23	*3.04
M-Practical	**3.45	*2.63
N-Forthright	.97	2.20
O-Placid	**2.89	1.70
Q1-Conservative	*2.81	**9.74
Q2-Group-Tied	*2.50	*3.14
Q3-Casual	.70	**14.71
Q4-Relaxed	1.37	**7.65

TEST	MALE GRADS	FEMALE GRADS
MIQ		
Ability Utilization	1.52	**3.50
Achievement	1.40	**8.27
Activity	*2.65	**5.76
Advancement	**4.64	**64.48
Authority	1.37	**3.35
Comp. Pract. & Policy	1.96	*3.05
Compensation I	1.29	**16.62
Co-Workers	1.12	**4.37
Creativity	1.56	**33.77
Independence	**4.44	**14.06
Moral Value	.38	*2.55
Recognition	.26	**23.19
Responsibility	*2.50	**12.22
Security	*2.37	2.06
Social Service	**5.24	**66.26
Social Status	.71	**14.77
Supervision (Hum. Rel.)	.71	2.37
Supervision (Technical)	1.68	1.46
Variety	**4.53	*2.88
Working Conditions	.24	**8.59
Work Challenge	.92	**11.92
Company Image	*2.11	*2.50
Organization Control	*2.34	**21.20
Feed Back	1.55	2.24
Physical Facilities	1.62	**6.64
Work Relevance	1.28	.64
Company Prestige	1.26	**6.15
Company Goals	.66	*2.98
Closure	1.39	**4.20
Compensation II	1.52	**8.19
VDI SCORE	*2.40	**25.84

**Significant at the .01 Level

*Significant at the .05 Level

How can data which differentiates graduates from different programs be summarized for counseling purposes?

The analysis of variance data reported above are certainly very valuable but do not provide a counselor with much insight as to how to summarize the data for counseling purposes. Therefore, normative data were developed using the General Aptitude Test Battery Data and the Minnesota Vocaticnal Interest Inventory homogeneous key data for the groups identified above. These two instruments were selected because both were more widely used than any of the other instruments used in the Project at the time in the State of Minnesota and because all of the GATB scales and all but one of the MVII scales significantly differentiated both the male and female groups studied.

The most effective method of reporting the data to counselors is often debated, therefore, the original normative data publication, "General Aptitude Test Battery (B-1002 Form B) Training Success Norms," (Pucel and Nelson, 1969) presented the data in four different forms. Three of the four forms were different types of tabular information and the fourth was a method of reporting profiles. The three forms of data presented in tables were percentiles, stanines and centours. The profiles were bar profiles representing the GATB aptitude scores. A more detailed description and suggestions for using each method are reported in the publication. Feedback from the counselors who utilized the normative data suggested that most of them found the profiles to be most effective in counseling. Therefore, the second norms publication, "Minnesota Vocational Interest Inventory Training Success Norms," (Pucel and Nelson, 1969) contained only data in profile form. Although both the GATB data and the MVII data were able to differentiate both male and female curricula at a statistically significant level, the profile differences among the curricula on the MVII keys are much more pronounced than those of the GATB factors. However, both sets of profiles appear to be useful counseling aids.

Currently normative data are being prepared pertaining to both instruments on seven additional occupational groups: electronics, printing and graphic arts, farm equipment mechanics, aircraft mechanics, agri-technology, sales and data processing. These data will soon be available as supplements to both the GATB and the MVII normative data.

Even though counselors have been finding the profiles useful as counseling aids, they too are difficult to interpret. If data on the seven GATB aptitudes obtained of the written portions of the battery and the nine MVII homogeneous keys are presented to a counselor in the form of profiles, and he is asked to counsel many people in terms of many different occupations, he is faced with an almost impossible task. Therefore, more sophisticated methods of summarizing the data were sought.

Using the population defined above, the centour method of determining the similarity of the profiles of individuals to the profiles of groups of successful graduates from six of the seven primarily male occupations was investigated. The only curriculum group not included was accounting-males.

(Rulon, et al, 1967) in their book Multivariate Statistics for Personnel Classification, have elaborated on the method which results in one score that summarizes the similarity of a person's score pattern to the score patterns of successful persons in different occupations using any number of normally distributed variables. The method is based on the assumption that the persons who have the highest probability of success in a given occupation are those who are most similar to the average successful person in that occupation. Therefore, one will predict which persons will be successful in a given occupation correctly most often if one predicts on the basis of the "average" or most "typical" person who is actually successful in that occupation. Such an assumption implies that if an individual possesses more of a given trait than a group of persons successful in the occupation he will be just as unlikely to be successful in the occupation as an individual who has too little of the trait.

The following example drawn from Project MINI-SCORE data will attempt to show the effectiveness and efficiency of using the centour method. These data are more fully reported in the article, "The Centour Methodology Applied to Vocational Student Counseling and Admission" (Pucel, 1969). Data were gathered on each individual at the time of application to the area vocational-technical schools using the seven General Aptitude Test Battery written aptitudes and the nine Minnesota Vocational Interest Inventory homogeneous scales. The criterion used to define the successful group in each occupation was whether or not persons graduated from the program. (On-the-job success criteria data are now being gathered to determine how satisfied and satisfactory these individuals are, but these data were not available at the time of this study.)

With the aid of the computer, the matrix of score combinations was developed and stored for each curriculum. Persons successful in each occupation were then scored against their own matrix as well as each of the other five matrices.

The computer output for each individual consisted of his sixteen raw scores as well as his centour score relative to each occupation (See Table V). The asterisk indicates the curriculum group of which the individual was a member. The data presented in Table V is in a form usable by vocational counselors and persons in charge of admissions to vocational programs. The raw scores are available to interpret scores using traditional methods. The centour scores can be used by counselors to give persons an indication of how similar their score patterns are to successful persons in different occupations. Admissions officers can establish centour cut-off scores for different training programs based on persons successful in different occupations.

John Doe took the tests prior to entering the vocational school, enrolled in the carpentry program and was later successfully graduated. When he was scored against successful persons in each of six occupations, he achieved the centour scores in Table V. The table indicates that John actually got a higher centour score in carpentry than in any of the other five areas.

TABLE V

Sample Computer Output for an Individual

NAME Doe, John DATE 9/30/67

	GATB							MVII								
Raw Scores	G	V	N	S	P	Q	K	H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9
	107	95	105	120	113	107	97	16	3	3	7	4	11	2	4	10

CURRICULUM	CENTOUR SCORE
Power and Home Electricity	1
*Carpentry	92
Automotives	41
Mechanical Drafting and Design	34
Machine Shop	31
Welding	40

If successful persons in each of the six occupations were <u>not</u> different on some of the 16 variables being measured, one would expect that one-sixth of the carepenter would fall into each of the six occupations. In other words, only one-sixth of the people in each of the six areas would have their highest Centour score in the area from which they graduated.

Table VI shows, however, that successful persons in each of the occupational areas can be differentiated. Using the highest centour obtained as the basis for classification, Table VI indicates that the percentage of correct classifications range from 73% for power and home electricity to 37% for machine shop, with most areas around 60%.

TABLE VI

Percentage of Graduates Classified Correctly Using the Highest Centour Score

	Total No. of Grads.	Actual Per Cent	Expected Per Cent
Power and Home Electricity	71	73%	16.7%
Carpentry	69	55%	16.7%
Automotives	171	58%	16.7%
Mechanical Drafting & Design	91	65%	16.7%
Machine Shop	71	37%	16.7%
Welding	114	61%	16.7%

The main advantages of using the centour method are obvious. Any number of normally distributed variables can be used as long as they are related to the criterion. The data from these variables can be synthesized by a computer to provide one score which reflects the similarity of an individual on the variables measured with members of a designated group or groups. The methodology, therefore, overcomes most of the problems of trying to interpret ambiguous profiles while providing an easily interpretable score.

Are the factors measured by the instruments used in Project MINI-SCORE useful in the process of predicting if persons will graduate or drop from given curricula?

Another problem facing persons concerned with vocational counseling is whether or not it is possible to predict if persons will successfully complete or drop out of a given curriculum. Persons successful in different curriculums could possibly be different but there may not be any perceptable differences between those who enter and graduate and those who enter and drop from a given curriculum. The study of the centour method referenced above also addressed this question. Drop outs from each of the six curriculum areas were scored in reference to the successful graduate

groups for each of the six areas. Again, the highest centour score obtained was used to classify the drop outs.

Table VII shows how drop-outs from the six areas would have been classified. More than half of the drop-outs received a higher centour score in an area other than the one in which they were enrolled and eventually dropped out of. In other words, not only would most of the vocational graduates have been counseled toward the program they graduated from as indicated earlier, but most of the drop-outs would have been counseled away from the programs they dropped out of.

TABLE VII

Percentage of Drops Who Would Have Been Classified Differently Based on the Highest Centour Score

	Total No. of Drops	
Power and Home Electricity	45	60%
Carpentry	31	94%
Automotives	136	60%
Mechanical Drafting and Design	68	51%
Machine Shop	61	66%
Welding	43	66%

Such high percentages of correct classifications are very unusual when attempting to classify in terms of six occupations. One must be cautioned, however, that in the above example no attempt has been made at cross-validation. Eventually, the findings presented here will be cross-validated on new samples.

Besides investigating the ability of the centour method to differentiate successful graduates from drop-outs, multiple regression techniques were investigated. Four programs were selected to be studied. The two primarily female programs were practical nursing and secretarial training, and the two primarily male programs

were automotives and welding. All four groups were the same as those used in the centour study and in the construction of the profiles. Each multifactor instrument employed in the Project was used to predict the criterion graduation versus dropping out of a program. These data are summarized in Table VIII.

In all four occupations the 16-PF and the MIQ did the best job of predicting. This may be due to the fact that selection for the programs was done using some measures of ability and persons expressed their interest in the programs. However, little information was available pertaining to job needs and personality dimensions at the point of selection. Therefore, since both the graduates and the drops were selected to enter, one would not expect large differences on the MVII and GATB but one would expect possible differences on the MIQ and 16-PF.

However, although the MIQ and 16-PF predicted to a greater degree than the MVII or GATB the best prediction (Welding-MIQ) accounted for only 23% of the variance which is not impressive. Also, the logic presented above to explain the relative inability of the GATB and MVII to predict is contradicted by the results of the centour study. The centour data appeared to reflect a much greater ability to discriminate potential drop outs than the regression data. However, direct comparisons are difficult because the two techniques are founded on different statistical procedures. This inconsistency lead to a further detailed investigation of the logic of the two techniques. It soon became apparent that procedures developed for predicting success, as defined by grades, in college were not appropriate for predicting on-the-job success.

When one is predicting grades it is very logical that measures of scholastic ability, intelligence and related variables will linearly relate. In other words, as these abilities increase grades are likely to increase. Therefore, multiple linear regression or similar methods prove to be effective. However, when on-the-job success criteria are used this linear relationship does not usually hold. Increases in basic ability show an increase in success to a point but increases in

TABLE VIII

THE ABILITY TO PREDICT GRADUATION VERSUS
DROPPING OUT OF A PROGRAM USING THE MULTI-FACTOR
PROJECT MINI-SCORE INSTRUMENT DATA

Instrument	Practical Nursing			Secretarial Trg.			Automotive			Welding		
	No. Var.	R	R^2	No. Var.	R	R^2	No. Var.	R	R^2	No. Var.	R	R^2
GATB part scores	8	.135	.018	8	.175	.031	8	.209	.044	8	.141	.020
GATB aptitude scores	7	.143	.020	7	.135	.018	7	.197	.039	7	.142	.020
16-PF	16	.232	.054	16	.253	.064	16	.299	.089	16	.254	.065
MIQ	30	.311	.097	30	.315	.099	30	.371	.137	30	.475	.226
MVII (Homo-keys)	9	.148	.022	9	.200	.040	9	.196	.038	9	.190	.036
	No. of Grads=256 Drops=23			No. of Grads=323 Drops=74			No. of Grads=171 Drops=136			No. of Grads=114 Drops=43		

ability past that point tend to show a decrease in success. In other words, people can have too much ability as well as too little ability to be successful on a given job.

This reasoning has been adopted and will be investigated further in current and future studies. Certainly this reasoning appears appropriate for ability measures but it is still not clear why the MVII measures have responded in a similar way. Centour analyses are currently underway using the MIQ and 16-PF data to determine if a similar relationship exists between multiple regression analyses and centour analyses of these data.

RESEARCH EFFORTS RELATING TO FOLLOW-UP

Because Project MINI-SCORE was founded upon the objective of determining whether or not the instruments being investigated would predict on-the-job success, the follow-up portion of the Project to gather on-the-job success criteria is crucial.

What procedures can be developed to optimize vocational student follow-up returns?

By the summer of 1968, the first groups of 1128 graduates had been graduated for one year. Because of the large scale of the total follow-up, it was decided to use this initial group to test various procedures to maximize the percentage of mailed questionnaire returns. It was also decided to analyze the response patterns to gain information regarding the characteristics of respondents and non-respondents, with the particular aim of identifying as early as possible potentially "reluctant" groups which would require special follow-up strategies. The resulting study and publication "Questionnaire Follow-up Returns as a Function of Incentives and Responder Characteristics", (Pucel, Nelson and Wheeler, 1969) is briefly summarized below.

The questions examined in the study were:

1. Are there differences in total questionnaire returns among 11 groups who receive different incentives to encourage them to return the questionnaire?

2. Are there differences between groups that receive different numbers of incentives in terms of the amount of returns per period of time from when the questionnaire is mailed to the student and when it is returned?

3. What is the influence of the number of incentives upon the overall amount of returns?

4. Does the sex of the subject affect the probability of responding?

5. Does the occupational skill level of the subject affect the probability of responding?

Treatments

The treatments for the 11 groups were as follows:

1. Control group - no incentive - regular questionnaire and cover letter. The regular questionnaire consisted of sections on additional training since graduation, employment information including a work history and job satisfaction. The cover letter briefly explained the intent of the follow-up and how important it was to the success of the project that the questionnaire be completed and returned.

2. Pencil group - one incentive - a short pre-sharpened pencil, a so-called "golf" pencil, inscribed with the phrase, THANKS/UNIVERSITY OF MINNESOTA, was included with the regular questionnaire. The cover letter was essentially the same as the standard cover letter except for a brief reference to the enclosed pencil.

3. Coffee group - one incentive - a "cup size" packet of instant coffee and the regular cover letter altered slightly to note the enclosed coffee was included with the regular questionnaire.

4. Colored questionnaire group - one incentive - this treatment was identical to the control group, except the questionnaire itself was printed on light green paper.

5. Pre-letter group - one incentive - the questionnaire and cover letter mailing was identical to the control group. However, one week prior to the mailing of the questionnaire, a letter was sent to each person in the group indicating that they would be asked to help with the study and that a questionnaire would soon be sent to them.

6. Pencil and colored questionnaire group - two incentives - this combined treatments 2 and 4.

7. Pencil and pre-letter group - two incentives - this combined treatments 2 and 5.

8. Pencil, colored questionnaire and pre-letter group - three incentives - this combined treatments 2, 4 and 5.

9. Coffee and colored questionnaire group - two incentives - this combined treatments 3 and 4.

10. Coffee and pre-letter group - two incentives - this combined treatments 3 and 4.

11. Coffee, colored questionnaire and pre-letter group - three incentives - this combined treatments 3, 4 and 5.

The population consisted of 1128 graduates from the twenty-four Minnesota Area Vocational-Technical Schools taking part in Project MINI-SCORE who had graduated 12 months prior to this study for whom data had been reported. They represented 26 different trade areas ranging from practical nursing to clerical training and from electronics to welding. These graduates were the first of the Project MINI-SCORE students available for follow-up. One possible limitation should be noted: because they are the first graduates, it is probable that this initial group represented the shorter-term vocational programs of the total vocational offerings. The population of 1128 post-high school vocational school graduates was randomly divided into eleven groups of 100 each to receive a follow-up questionnaire. Each of the eleven groups received a different follow-up treatment.

It was found that the overall percentage of returns varied from a low of 42.4 per cent for the group with no special treatment to a high of 62.5 per cent for one group with three different incentives. (See TABLE IX). A chi-square test found the differences in percentage of returns to yield a chi-square value of 6.62 ($.70 < P < .80$). It is interesting to note, however, that the differences were in the expected direction, and that the range between the response rate of the control group (the lowest) and the pencil, colored questionnaire and pre-letter group (the highest) was 20.1 per cent.

The response rates elicited to the treatments grouped according to the four different number of incentives (incentive clusters zero - three) were found to be different with a X^2 of 5.69 ($.10 < P < .15$). (See TABLE X).

Time interval analysis showed the greatest response for all groups to be near the end of the second week after the questionnaire was sent which is similar to what Orr and Neyman (1965) found relative to Project TALENT questionnaire returns.

TABLE IX

OVERALL RESPONSE PER TREATMENT GROUP

	Number Retuned	Percentage[1] Returned
Group 1 (control)	42	42.4
Group 2 (pencil)	52	56.7
Group 3 (coffee)	48	49.5
Group 4 (color)	49	49.5
Group 5 (pre-letter)	50	49.5
Group 6 (pencil and color)	51	52.6
Group 7 (pencil and pre-letter)	56	57.1
Group 8 (pencil, color and pre-letter)	60	62.5
Group 9 (coffee and color)	55	56.6
Group 10 (coffee and pre-letter)	53	53.5
Group 11 (coffee, color and pre-letter)	60	61.9

TABLE X

AVERAGE PERCENTAGE RETURN
PER NUMBER OF INCENTIVES

Number of incentives

	0	1	2	3
Percentage Return	42.4%	51.3%	55.0%	62.2%

The data indicated that as the number of incentives increased, there was a decrease in the length of response time.

In terms of sex, females responded much better overall than males -- 60.2 per cent for females, 41.8 per cent for males. Interestingly, although the number of incentives seemed important in stimulating responses from both sexes, it appeared much more important for males than for females. Of the males, only 30.0 per cent in the zero incentive category returned their questionnaires, while 56.9 per cent

[1]All percentages reported throughout the study are calculated after subtracting from the original 100 per group the number of questionnaires per group undelivered because of insufficient address. The problem was to study the effectiveness of incentives. Therefore, if the questionnaire did not reach an individual the incentives had no possibility of being effective. No group had more than three questionnaires returned because of insuffiecient address.

of those in the three incentive category returned their questionnaires (a range of 26.9 per cent). For the females, the figures are 48.5 per cent in the zero incentive category and 65.9 per cent in the three incentive category (a range of 17.4 per cent).

An attempt was made to determine response rate differences among occupational clusters. As the skill level increased, the number of returns tended to increase. Although this difference is certainly partially due to sex, these findings tend to support those of Orr and Neyman who reported that response rate is positively correlated with aptitude. There is also a tendency for the response rate to increase as the number of incentives increases for all three occupational clusters for both sexes.

After the four week period of the questionnaire study, regular follow-up procedures were resumed. All eleven treatment groups received the same second follow-up procedure consisting of the mailing of another cover letter and a green colored questionnaire. By eight weeks after the beginning of the study, the total response was 76.1 per cent. It is interesting to note that the proportion of previously unreturned questionnaires which were returned after the second follow-up continued to favor those treatments with greater numbers of incentives as shown in Table XI.

TABLE XI

PERCENTAGE OF PREVIOUSLY UNRETURNED QUESTIONNAIRES RETURNED AFTER THE SECOND FOLLOW-UP

Orginal Groups (Number of Incentives)

0	1	2	3
43%	49%	49%	53%

At this point, addresses of the non-respondents were checked through such sources as the Minnesota Drivers License Bureau, the Minnesota Drivers License Plates Bureau, and local telephone directories. Fourteen weeks after the beginning of the

follow-up, the overall response rate was approximately 82 per cent. Male response rate was 75.3 per cent and female rate 84.8 per cent.

There is little doubt that follow-up returns can be increased substantially by increasing the number of incentives and, therefore, the novelty of the follow-up procedures.

As indicated in the section of this report on project development, the follow-up procedure which was adopted on the basis of this study was the pre-letter, colored questionnaire, and coffee treatment. Similar procedures are also used with employer follow-up which has been yielding a return rate of about 96 per cent.

What Happens to Graduates of the Minnesota Area Vocational-Technical Schools?

By July, 1969, data were available on 1241 persons who graduated from one of 43 of the more than 60 curriculum areas offered in the post-high school area vocational schools of Minnesota during the period from June, 1967 to July, 1968. This group was used in a study to determine what happens to graduates of the Minnesota area vocational-technical schools. The data reported here are more fully presented in the report, "What Happens to Graduates of Minnesota's Area Vocational-Technical Schools?" (Pucel and Nelson, 1969). All of these persons were followed up at least one year after they completed their respective vocational programs. Four hundred eighty-eight persons were males and 753 were females. Each person was sent the follow-up treatment described in the previous section which they completed and returned. It is important to note that the 1241 people represented the 85 per cent of the original group followed-up that returned the questionnaire.

Several specific questions were addressed in this study in terms of the total population and by sex:

1. What was the employment status of the graduates after one year? (Were the graduates employed in a related or unrelated occupation, unemployed or unavailable for employment?)

2. If graduates were employed, were they employed full or part-time?

3. If graduates were unavailable for employment, why were they unavailable?

4. Did graduates take part in additional training since graduation?

5. How many different jobs did graduates have since graduation?

6. Did graduates experience formal advancement since graduation?

7. Would graduates choose the same training programs if they could start again?

Each of the specific questions are discussed below with data relating to each of them.

The question of employment status was viewed from two different perspectives, one of a narrow definition of job relatedness to training programs and one of a broader definition. The narrow definition specified that the person be employed in the specific occupation for which trained in order for his job to be termed related to training. The broader definition only required that the student be employed in the specific occupation or a similar occupation. For example, using the narrow definition a person who graduated as an auto mechanic and became a diesel mechanic would be classified as being employed in an occupation unrelated to training. Using the broad definition, he would be classified in an occupation related to training. In both cases, a person was classified as unemployed if he wished to become employed but could not find employment and a person was classified as unavailable for employment if he voluntarily or involuntarily was not available.

Fifty-two per cent of the male graduates were employed one year after graduation, 81 per cent of the female graduates and 70 per cent of the total group. At first impression, 52 per cent for males appears low but this is explainable as one later examines the reasons why 45 per cent of the males are unavailable for employment. Only 3 per cent of the males were classified as unemployed using the definition specified earlier, 9 per cent of the females and 7 per cent of the overall group.

An examination of the differences between how many persons were classified "related" using the narrow and broad definitions indicated that only 3 per cent of

the males and 15 per cent of the females were employed in jobs which were closely related to the training program they undertook but not identical to it. Ninety-five per cent of the employed males, 93 per cent of the employed females and 94 per cent of the total employed group were employed full-time.

Table XII summarizes the reasons why the persons were unavailable for employment.

TABLE XII

REASONS FOR UNAVAILABILITY

CATEGORY	MALES N = 224	FEMALES N = 70	TOTAL N = 294
Military	83%	3%	64%
Further Trg.	15%	17%	15%
Illness	1%	1%	1%
Other	1%	79%	20%

As one can see, 83 per cent of the males who were unavailable for employment were in the military which accounts for most of the 45 per cent unavailable for employment. Of the 10 per cent of the females unavailable for employment, 79 per cent were in the "other" category which includes pregnancy and housewives. About 15 per cent of both males and females who were unavailable for employment were unavailable due to further education.

Table XIII summarizes the amount of additional training the 1241 people in the population took part in during the year following graduation. Fifty-three per cent of the males, 24 per cent of the females, and 36 per cent of the total group received additional training. Of those receiving additional training, most of them received either on-the-job or specialized military training. It is expected that the per cent reported for specialized military training may be low because some persons in

the military failed to respond to the question. It is interesting to note that some persons took part in three different types of training during the year following graduation from the vocational programs.

TABLE XIII

ADDITIONAL TRAINING AFTER GRADUATION

CATEGORY	MALES** N = 488	FEMALES*** N = 753	TOTAL* N = 1241
None	47%	76%	64%
On-The-Job	16%	11%	13%
Public Voc. Sch.	4%	2%	3%
Priv. Voc. Sch.	1%	0%	.3%
Jr. or Sr. Coll.	5%	4%	4.7%
Apprenticeship	6%	2%	4%
Spec. Military	17%	1%	7%
Other	4%	4%	4%

*Sixty-four people had two additional types of training and 11 had three types.
**Forty-nine males had two additional types of training and 6 had three types.
***Fourteen females had two additional types of training and 5 had three types.

Sixty-one per cent of those who had been employed during the year held one job, 30 per cent held two jobs and 9 per cent held three jobs. In light of the fact that one would not expect persons to advance very rapidly during their first year 23 per cent is reasonable.

Seventy-nine per cent of those who responded to the question said they would take the same training program over again if they could start again.

The data summarized in this report indicated that the Minnesota area vocational-technical schools are doing a fine job of preparing persons who not only initially

become employed but who persist. If those persons who enter the military or receive additional training which make them unavailable for employment are disregarded, 83 per cent of the females were employed after one year and 95 per cent of the males.

FUTURE PLANS

During the first three years the Project MINI-SCORE staff have been primarily occupied with the development of systems and the investigation of techniques to be used in relating the data gathered during the testing phase to on-the-job success. The studies which have been done have been cumulative and have resulted in the establishment of methods which the Project staff feels are workable. The results of these studies have also been very encouraging in terms of supporting the belief that differences do exist between groups of people who enter and graduate from different vocational-technical programs as measured by the instruments used in Project MINI-SCORE.

Data are now becoming available in sufficient quantity to apply these methods to predicting on-the-job success which should result in information which will be useful in the future for the counseling of vocational students.

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Boston, Massachusetts
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Ralph C. Wenrich, Professor
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What Research Has to Say On:

Organization and Administration of Vocational and Technical Education

Although I have just recently worked through most of the research in administration of vocational and technical education done during the period 1963 through 1968 (in preparing a manuscript for Review and Synthesis of Research in Administration of Vocational and Technical Education), I can report only on what this research has to say to me. If you were to read the same research reports, they might have a totally different message for you.

Neither the published report, nor this paper, will deal with organization and administration of the special fields in vocational education; such research is reported in the reviews and syntheses covering the special fields.

During the preparation of the manuscript for the Review, there were many times when I had to resist the temptation to editorialize; I assume this paper to be my opportunity to express personal opinions, criticisms, and even biases, and at the same time, report some of the findings.

On Policy-Making and Long-Range Planning

For administrators of vocational and technical education to effectively deal with the problems and issues of our times, they must have a thorough understanding of the complex, intricate and changing social and economic environment in which vocational education must operate if it is to be effective.

The Panel of Consultants on Vocational Education (headed by Ben Willis), produced a number of reports, including Education for a Changing World of Work (1963), which provided the local administrator with data useful in long-range program planning.

Grant Venn's report for the American Council on Education, Man, Education and Work (1964), helped to develop our national policy which is now being adopted as state and local policy in many areas of the United States.

The National Advisory Council on Vocational Education (headed by Martin Essex) in their report, Vocational Education - The Bridge Between Man and His Work (1968), made recommendations most of which had to do with Federal legislation and organization and administration on the Federal level. Many of these recommendations have already been implemented through the 1968 Amendments to the Vocational Education Act of 1963.

Dale Draper in his report for the National Association of Secondary School Principals, titled Educating for Work (1967), devoted a section to the administration of vocational education. The conclusions included several of special interest to administrators: (1) the public educational system has a basic obligation to aid the preparation of all youth for effectiveness in the world of work, (2) the development of vocational competence involves much more than what is generally called occupational, vocational or technical education, and (3) schools must build a greater range of resources and capabilities into their programs to provide instruction and services needed by the range of students now in school. The report favored the comprehensive high school and indicated that if as many students became involved in vocational education as studies indicate could profit from this kind of preparation the dynamics of secondary education would be different. "If, for example, 50 percent of the students in high school were in vocational education, the budget, space, and faculty requirements for vocational education would be somewhat more than half of the totals needed by the school. Schools with a large component of vocational education would be institutions considerably different from the conventional secondary school."

Numerous other studies have contributed to the formulation of national policy, but Hamlin called attention to the fact that major policy actions taken in 1917 and again in 1963 (46 years apart) were both preceded by reasonably adequate study; he also pointed out that policy-making needs continuous attention and that policy-development has had more attention on the national level than it has had on state and local levels.

Many studies have been done which provide manpower data useful in long-range planning; the annual Manpower Report of the President prepared by the U.S. Department of Labor, is an example. Perhaps the most significant work in this area is being done by the National Planning Association (Center for Priority Analysis) through a research project directed by Leonard Lecht and John Teeple titled, "Identifying Priority Areas for Planning in Vocational-Technical Education." Studies are being done of projected career openings in social welfare, education, health, transportation, urban development, space and research and development occupations with specific implications for priorities in vocational-technical education.

On the Role of the States

The role of the states in the administration of vocational and technical education has become much more prominent and the amount of research relevant to this area is just one indication of this fact. As new Federal programs are inaugurated, and increased Federa funds are made available for the preparation of youth and adults for the world of work, we can expect that the role of state departments in general, and vocational divisions in particular, will continue to expand. The role of the state departments must not only expand but must also respond constructively to the technical, social, political and economic forces of our society.

The research assesses these forces in relation to the role of the state departments of education with a view toward making this component of the Federal-state-local partnership a more effective unit.

Rice and Toth, working through the Center at Ohio State, and Swanson and others at the University of California at Berkeley have done some significant nation-wide studies of state administration. They determined that the primary emphasis was on compliance (checking and regulating) and the secondary consideration was change and leadership; these, they thought, should be reversed. They also discovered marked differences in the role perception of personnel in state divisions of vocational education as compared with the perceptions of others outside the department, particularly personnel from local school districts.

On Program Planning (State and Local)

While manpower data useful in program planning should be gathered on the Federal level, even these data must be (and generally are) analyzed and disseminated in a form which will make them available (and hopefully useful), to program planners on the state and local levels. In addition, many states have done their own studies of manpower needs and other conditions which are relevant to program planning. New York, Michigan, Missouri, Florida, and Oregon are among the states which have done some formal studies of manpower conditions and needs.

Somers (1968) found that the vocational educator's response to the dynamic changes in the labor market has been "sluggish and inadequate." However, he felt that economists and employment experts must share some of the blame because the labor market data provided for the use of educators has seldom been adequate either in quality or quantity; nor has it been provided in the form required by educational planners.

The Panel of Consultants in 1963 recognized the fact that the vocational education system was removed from the dynamics of the labor market; they emphasized closer correlation between occupational education and employment possibilities which resulted in the provision in the Vocational Education Act of 1963 which requires collaboration of vocational education and local employment agencies.

Some program planning can and should take place on the state level, but instructional programs must also be geared to local and area needs and conditions and, therefore, the major responsibility rests with local and area administrators. Hundreds and perhaps thousands of area studies have been made of manpower needs and conditions. There is a wide range of methods used in these studies and many of them had, as their primary purpose, the "involvement of laymen, with a view toward gaining their support for expanded vocational-technical programs. Nevertheless, many local and area studies have produced data essential in sound planning of vocational programs.

The research literature includes very few studies dealing with specific local programs. This should not be interpreted to mean that we are not experimenting with new and innovative programs; it may mean that such programs are being evaluated by other than objective measures or it may be that persons experimenting with new and innovative programs are too busy to write about them. In any event, there is a dearth of literature describing experimental programs which have been subjected to objective evaluation.

A number of studies having to do with procedures or techniques useful in program planning are worthy of mention. Several researchers developed models or procedures for gathering information as to need for programs in a particular local situation - Shibata, Cromer, Hendricks and Lockette did such studies but Lockette experimented with the "judgemental process" involving

personnel from the state department, state colleges and local teachers, administrators, and lay leaders in a process of personal involvement and interplay of personalities; he also used the Program Evaluation and Review Technique (PERT) to describe the process. McKee also used the PERT system in establishing a technical college in 100 days.

Oakford and Allen report a three-year experimental program to determine the desirability of modular scheduling for comprehensive and vocational schools and to investigate the impact of such scheduling. The results were mostly positive with one possible exception; disciplinary problems increased at first but later subsided.

On Organizing for Administration

The act of organizing (or reorganizing) the administrative structure of a school or school system is an important function of administration which is often neglected. Any organization should be examined critically from time to time and the structure realigned whenever the goals of the organization could be more effectively and efficiently achieved by so doing. Reorganization on the Federal level has occurred frequently during recent years but basic changes in administrative structure for vocational education on the state and local levels have come more slowly. One reason may be that we have little research information on which to base structural changes.

The role of the Federal government has shifted from primary emphasis on the gathering of statistics and the administration of the Federal acts to one of leadership. Incidentally, the concern about Federal control is considerably less than it was years ago; Cardozier found that the amount of control the U.S. Office of Education can command depends upon how much state and local administrators are willing to allow. The role of state departments of education is

also shifting from the performance of regulatory functions to that of exercising leadership. These and other changes in roles required changes in structure.

One of the most significant studies of the organization of vocational and technical education as it relates to a particular state was that done by Schaefer and Kaufman (1968) in Massachusetts. They recommended that the 30 regional vocational-technical schools currently being planned (including those now operating) become state operated Institutes for Educational Development. Four of these Institutes should be located in the large metropolitan areas and every boy and girl in the Commonwealth should be within 30 miles of an Institute. The report advocated that students remain under the control of their local high schools for all purposes except their specialized vocational and technical course work. The researchers saw these advantages in this arrangement: (1) cost of the Institutes is shared equally by all taxpayers, (2) opportunity for occupational education becomes equalized, (3) curricula can be developed through state-wide planning, (4) educational leadership and teacher competency can be centrally regulated, (5) a substantial program of adult (non-degree) offerings can be more precisely planned. The plan also recommended a revitalized Careers Development Curriculum for the great mid-group of students in neighborhood high schools who are held back by social-economic backgrounds or who lack interest or talent in purely academic or purely vocational pursuits. The Careers Development Curriculum would be non-graded, to prepare for a cluster of occupations and should be elected by students from grades 9 to 12. The specialized programs in the Institutes would be available only to 11th and 12th grade students, and it is anticipated that no more than ten percent of the secondary school students would participate in these programs.

Perhaps the most significant aspect of the plan recommended for Massachusetts was the organization within the State Department of Education. It was recommended that the Careers Development Curriculum be under the general supervision of the state's Associate Commissioner of Curriculum and Instruction and be administered by a separate Bureau of Careers Development, this bureau to be headed by an educational generalist. It was further recommended that the present Bureau of Vocational Education be reconstituted as a Division of Manpower, Research and Development to be administered jointly by the State Department of Education and the State Department of Labor. The Director of the Division of Manpower, Research and Development would report to the Commissioner of Education for operational and developmental activities and to the Commissioner of Labor for research activities. The Division of Manpower, Research and Development would have a legally designated advisory committee appointed by the Governor and representing industry, business, labor, education, the behavioral sciences, and the Federal government, and the Director of the Division would serve on the staffs of both the Commissioners of Education and Labor as assistant commissioner to each.

Quite a few other states have developed state-wide plans and the administrative structure to implement them. Colorado has developed a master plan for the coordinated development of community colleges and occupational education. The plan calls for the state to be divided into seven community college administrative areas and seven occupational planning programming areas and that these areas be established as the basis for area vocational school systems. The Minnesota Research Coordinating Unit has done a study for the State Board for Vocational Education; a geographical distribution of area vocational-technical schools to service the state was based upon population density and mobility, as well as present and projected student

enrollments. Ohio, Michigan, Virginia, Kentucky, Illinois, Hawaii and Pennsylvania are among the many states which have done studies dealing with a state structure for the purpose of providing more effective vocational programs for youth and/or adults.

The concept of providing specialized occupational education on an area basis is encouraged by Federal policy and Federal legislation and there has been much research activity dealing with the need for area schools and area programs. Several studies, one by Burns, investigated the factors governing the establishment and operation of area vocational-technical schools and programs. On the basis of data gathered from 42 state directors of vocational education and 278 local directors of area vocational-technical schools and programs in these 42 states, he concluded that $78 million of taxable wealth in the geographical area, with a minimum of 6,500 high school students would be sufficient to successfully establish and operate a vocational-technical school or program in Mississippi. He also concluded that no area program should be established until the support of roughly 75 percent of the industries in the area was assured, about 40 percent of the students expressed an interest in the training to be offered and approximately 75 percent of the voters approve the project. He also recommended that the geographic service area should fall within a radius of 48 miles for a rural community, 36 miles for a suburban community and 27 miles for a city.

Guditus attempted to develop a rationale for the area vocational (technical) school. He concluded that the area vocational school, as presently conceived, is adequate for meeting some current needs, but its functional role is transitional; it will serve the needs until occupational, vocational and technical education are provided by truly comprehensive secondary schools and truly comprehensive community colleges. He also concluded that there is no unified

plan for developing vocational-technical education in Pennsylvania and that very similar purposes are undertaken by various competing institutions.

Several researchers have examined the internal administrative structures of comprehensive community colleges. Whitney studied the roles and relationships of the chief vocational-technical education administrator in public two-year colleges in relation to the patterns of administrative structure of two-year colleges offering occupational curricula. Of the 255 chief vocational-technical education administrators who responded, six percent were first-level administrators (president or dean of the college), 45 percent were second-level, 44 percent were third-level and five percent were fourth-level administrators. Administrators were working under 137 different titles predominantly containing either the word "dean" or "director." Eight administrative organizational patterns were identified ranging from those in which the chief vocational-technical administrator and the president were one and the same, to those in which the chief vocational-technical administrator was a coordinator with only staff authority. The largest percentage of colleges were organized so that the chief vocational-technical administrator reported directly to the president and had parallel status with the dean or director of the academic program. Fielding did a similar study and concluded that the dean or director of vocational education in the public junior college should report at the first-level. Gates did a study which produced similar findings.

Heger did a study of certain properties of school organizations as they relate to change in vocational programs. He found that the more hierarchical the structure of an organization, the more likely is change; also, the more functional the dynamic interplay of sub-groups, the more likely is change. Kazanas studied the formal administrative structure of 76 larger comprehensive high schools in Michigan as it relates to vocational and technical education.

High schools are generally organized by departments, each of which has a subject-matter orientation; such schools are classified as "process-based." High schools which are organized on the basis of goals or purposes of education are classified as purpose-oriented or "purpose-based." The researcher hypothesized that the extent to which the formal administrative structure helps the vocational and technical education program in meeting its objectives is significantly higher in the purpose-based than in the process-based school organization. Although he found no schools which were totally organized on the basis of purpose, he found many whose vocational purposes were recognized in the structure for admininstration. There was a significant relationship between those schools which reflected this purpose orientation in their organization and the achievement of vocational objectives.

Mason studied the organization for administration of vocational education in Michigan high schools. He found that those schools whose vocational programs were thought to be more effective had delegated more authority for decision-making to the director of vocational education.

Shaffer and I studied 106 large high schools in Michigan to determine the principal's perceptions of the roles of persons charged with the responsibility for leadership in the development of occupational programs in high schools. We were interested in determining how high school principals would use an assistant principal who would be assigned the responsibility for developing programs for employment-bound youth. The areas of responsibility which principals would assign, ranked in order, were (1) pupil personnel functions, (2) school-community relations, (3) instructional program development, (4) business functions, and (5) teacher personnel functions.

The fact that I have spent so much time reporting on research which has to do with organization for administration reveals a bias. I feel that

the structure of the organizations in which we operate vocational-technical programs is much more important than we have assumed. I am especially concerned about the internal administrative structures of comprehensive high schools and comprehensive community colleges. Newly created schools or colleges tend to design structures which will facilitate the achievement of the organizations' objectives. But educational institutions which were created years ago for the purpose of preparing youth for college and have since become (in theory at least) multi-purpose institutions, need to examine and revise their administrative structures. John W. Gardner in an article titled "How to Prevent Organizational Day Rot" discussed the need for a fluid internal structure which is continuously adapted to the purposes of the organization. If we really want to make our college-preparatory-high-schools and college-transfer-community-colleges comprehensive we must help them design new structures which will enable them to become multi-purpose institutions.

On Staffing Vocational and Technical Programs

Several studies have been done which look to the military services as a source of teachers. Richland and Rosove explored the feasibility of developing a computerized system to match retired military personnel to job vacancies in vocational and technical education. Hensel investigated enlisted men separating from the military services as a source of teachers and found that those who had 13 or more years of education prior to military service were the group most interested in teaching. The percentage of men interested in teaching increased consistently as rank increased. He concluded that the military services are a good source of teachers, especially in the electrical and mechanical fields.

The relationship of occupational experience, teaching experience, college education and technical training to rated effectiveness of teachers was researched by Musgrove. Positive relationships were found between occupational experience and teacher effectiveness based on teachers' self-evaluations (but not on the basis of supervisor or student ratings) and between amount of teaching experience and teacher effectiveness based on supervisor ratings (but not on the basis of student ratings and teachers' self-evaluations). Negative relationships were found between the amount of college education and teacher effectiveness based on both student ratings and teacher self-ratings (but not on the basis of supervisor ratings). Messerschmidt examined practices used by community colleges in Michigan to recruit, hire and prepare part-time instructors in vocational-technical education. He found (1) that the primary source of part-time instructors was local business and industry, (2) that attempts to use retired industrial and military personnel were not successful and (3) that the supply and demand appeared to be growing at similar rates.

Staffing state administrative and supervisory positions was researched by Rice, who studied professional personnel policies, practices and requirements within state divisions of vocational education with a view toward upgrading such personnel and by Magisos, who examined the change orientation of state supervisors; Magisos found that the more dynamic supervisors had more formal education, more college degrees, more returns to college after entering professional education and a higher perception of their own salaries in relation to the salaries of others throughout the nation.

Staffing administrative positions on the local and intermediate district levels was researched by Law, Stanger, and Edmunds; they helped to define the roles and responsibilities of vocational administrators on these levels.

Two experimental programs for the training of leadership personnel in administration of vocational and technical education were reported by Law (to prepare administrators for the area centers in the State of New York) and by Wenrich and Hodges (to prepare local administrators for the State of Michigan). The latter program was evaluated by Wenrich and others who found that impressive gains had been made in the leadership behavior of persons completing the program.

The preparation of administrators for vocational and technical education through an advanced degree program was investigated by Schaefer. He described the "new breed" of vocational administrator as one who is knowledgeable about counseling and guidance, labor economics, social psychology and group dynamics, the sociology of work, industry and minority groups, labor-management relations, industrial organization, industrial training, facilities and concepts of vocational education.

Vocational and technical education on the Federal, state and local level is a part of the larger system of public education. The development of vocational education in any state or in any local school district is determined to a large extent by the attitudes, values, education and work experience of the general school administrators with whom the vocational education administrator must work. Probably the most significant research in this area has been done at the University of Nebraska. Krepel did a study in which he prepared a descriptive analysis of the relationship which exists between Nebraska administrators and vocational education. He recommended that since the attitudes of administrators toward vocational education tend to be lower than toward academic areas that training materials related to the values of vocational education be prepared and used in the preparation programs for administrators and that special attention be given small school administrators in order to raise their level of cognition as related to vocational and technical education.

Another study done at the University of Nebraska by Colgan was designed to develop an objective examination in order to measure the knowledge of superintendents and principals in the area of vocational education needs and programs. He discovered that instruction is available on a very limited basis in the area of vocational and technical education and that administrators want to know more about these matters.

Recognizing the fact that the general school administrator frequently has an inadequate background for effective leadership of vocational-technical programs, Sybouts developed a training program through the use of simulated materials (in-basket technique). He found these simulation materials especially useful in changing attitudes of general school administrators.

On Financing Vocational Education

Relatively little research has been done on financing vocational and technical education. Research in the nature of cost-benefit and cost-effectiveness analyses were not included in my Review because they are included in another review on the economics of vocational education.

The role of the Federal government in financing vocational education was studied by Penn who found that (1) the primary impetus behind initial Federal aid was a mandate by the American people for a more practical and useful educational system, (2) effective relationships exist between Federal, state and local agencies responsible for the administration of vocational programs, and (3) the states show a high degree of individuality in their spending patterns and trends relative to vocational education programs. Davie and Patterson also investigated inter-governmental fiscal relations as they pertain to vocational education. They concluded that significant changes in allotment procedures can be made which will better meet national education objectives and that no significant relationship existed between changes in

Federal expenditures and changes in state-local expenditures for vocational education.

It is generally recognized that the cost of most vocational and technical education programs is higher than the cost of most academic programs. One justification frequently used for special financial support for vocational education has been this differential in costs. Anderson did a study to find the relationship of the unit costs of special vocational and technical curricula in comprehensive junior colleges to the unit costs of liberal arts and transfer curricula. He found that the majority of the vocational and technical curricula cost more per student than the transfer curricula in the same institution. The average cost ratios found for eight types of vocational and technical curricula are as follows: applied arts, 1.76; engineering technologies, 1.95; business and office occupations, .95; health and medical occupations, 1.49; industrial technical occupations, 1.52; dietetics and home economics occupations, 1.21; and public service occupations, .96. This study included only junior colleges which had been in operation for a minimum of five years and, therefore, does not reflect the "start up" costs of initiating and developing vocational and technical programs.

On Evaluation of Vocational Education

Vocational and technical education is being evaluated constantly by two groups in particular - the product and the employer of the product - but a more formal type of evaluation is a function of administration. Many local administrators have used a variety of systematic procedures for the purpose of evaluating their vocational and technical programs. It was not within the purview of my Review to report on such local evaluative studies;

instead, researches having to do with techniques and procedures were reported, and a selected sample of national, regional and state evaluative studies were also reviewed.

Byram studied evaluation systems for local programs of vocational-technical education. His purpose was to make the maximum use of local personnel, local resources, consultant leadership and related professional assistants in the further development and trial of a system of evaluation. Byram and McKinney have produced a manual on evaluation of local vocational education programs for administrators, teachers and citizens, which is based upon Byram's earlier research.

Frequently used as a method of evaluating programs is to determine the extent to which those students who complete a vocational program are successful in finding employment. Harris (1967) developed a model for statewide information storage and retrieval system for reporting job placement data for persons trained in the California public schools.

Two evaluative studies of high school programs involving national samples have been completed. The first of these by Eninger concerned itself with the product of high school level vocational education programs in the United States. The investigator surveyed trade and industrial graduates selected from 50 vocational schools and 50 comprehensive high schools and then compared their careers with those of 3,500 general course graduates from the same comprehensive schools. It was shown that after two, six and eleven years out of school, the vocational graduates, when compared with general course graduates who did not go to college, had greater accumulated earnings, greater employment security, greater job satisfaction and comparable job mobility. Furthermore, the vocational course graduates found full-time jobs substantially sooner than the

general course graduates. A comparison of vocational and academic graduates without a college education revealed no difference in conversational interests, leisure-time activities and affiliation with community organizations. Fifteen percent of the vocational graduates went to college and 42 percent reported having had some type of formal post-high school education.

More recently Eninger has evaluated the process of high school level vocational education in the United States. He found that the relatedness of the first job to the occupation studied is the keystone criterion variable because those who enter occupations the same as (or highly related to) the occupation studied do better on the average than those who entered unrelated occupations. The most fruitful areas for school efforts to improve their percentage of graduates placed into the field for which trained are (1) improvement in school placement services and (2) improvement of the percentage of "recommendable" graduates by matching the capabilities of the course applicant with the requirements for course success and by transfer of students who cannot meet course requirements to a more suitable course or early remedial efforts.

Another large-scale study aimed at assessing vocational-secondary school programs and determining the extent to which they are meeting the needs of the students and the communities was conducted by Kaufman and others. The investigators concluded that (1) small communities (25,000-100,000) had the best overall vocational programs both in quality and in the proportion of students enrolled, (2) weaknesses found were failure to develop programs for those students who could not benefit by present offerings, poor guidance programs and insufficient use of advisory committees, (3) few advantages were found in the job experiences of graduates

of any one of the three curricula--vocational, general and academic, (4) the interviews of graduates from the two types of schools - comprehensive and vocational - did not support the claims frequently made; that is, that graduates of vocational schools are better prepared or more successful in their first jobs. The researches also found that both Negro and white vocational graduates thought they were better prepared for employment than academic and general curricula graduates. For example, Negro males who graduated from a vocational curriculum perceived that they were relatively "better off" than the Negro graduates of other curricula.

McCleary did a nation-wide study to determine how high schools can better prepare students for the vocational demands of a technological society. He concluded that in high school vocational programs (1) the range of opportunity and choices open to students is limited, particularly for low-ability students, (2) the number of students enrolled is unrealistically low, (3) systems developed to screen students for admission to courses are fragmentary in use and based on too few criteria, (4) opportunities for on-the-job work experience and employment in field of training after completion of courses generally do not comply with present day needs, (5) agreement and/or sustaining evidence is lacking to support any one mode of organization, (6) community agencies and lay individuals are used in a variety of ways and contribute to programs' success and (7) programs depend heavily upon special funds.

An in-depth study was conducted by Kaufman and Lewis in three selected cities to determine recommendations for improvement of vocational education. Some of the principal findings were: (1) most students entered the world of work without specialized occupational training, (2) enrollment in vocational programs was higher when students were taught in comprehensive

schools, (3) an imbalance existed between high school enrollments in vocational programs and local labor market composition, (4) vocational education in the smaller cities was altered so as to more closely match the needs of the local labor market, (6) vocational graduates had greater employment stability, received more rapid increases in earnings, and received higher average monthly earnings, (7) extra earnings of the vocational graduates justified the cost of their education, and (8) less than one-half of the male graduates obtained jobs that were directly related to their training. The researchers recommended that: (1) programs in broad general skills with general applications be developed, (2) programs be aimed at the large proportion of students who see little relevance in either vocational or academic curriculums, (3) vocational education bring meaning and interest to the learning experience, (4) opportunity be provided for employment exploration and familiarization as an integral part of the curriculum, and (5) vocational guidance be expanded.

On School-Community Relations

The need for a closer working relationship between the world of work and the schools is generally recognized. The school administrator, in order to operate an effective vocational-technical program, must have one foot firmly planted in the community and the other in the schools. From the time occupational education first became a part of the public school program, vocational administrators have looked toward industry for counsel and advice concerning the development and content of vocational offerings. All too frequently this relationship with business and industry has been limited to a rather ineffectual use of advisory committees.

The most extensive study of industry participation and involvement in vocational and technical education programs was done by Burt. It is impossible

to adequately review this extensive work here. The investigator found that there was general unanimity among educators and industry leaders regarding the desirability and mutual benefits to be derived through cooperative effort in the development and conduct of the vocational and technical education program offerings of local schools and school systems. Burt points out that while the literature about industry-education cooperation recommends the use of advisory committees, it is concerned almost entirely with the use of formally organized advisory committees to achieve the desired cooperative participation of industry; furthermore, there is only an occasional reference to the utilization of specially assigned school staff for industry-liaison purposes, and hardly any attention to the fact that cooperation may be effected through informal arrangements between industry and school representatives. He then lists and discusses the major services provided by industry for vocational and technical education programs. In the last section of the report, the investigator presents the organizational structures and instrumentalities utilized by both educators and industrialists in their efforts to achieve local industry-education cooperation.

The organization and effective use of advisory committees was also studied by King. King felt that education and industry must share the responsibility of training the work force vital to the nation's economy and that while advisory committees have been useful in meeting this responsibility on the state and national levels, there is a need for more extensive and effective use of such committees on the local level.

Carlson did a study of the functions and activities of lay advisory committees for selected junior college vocational programs. He concluded that committees should be encouraged to evaluate their services on the basis of their goals and that clear lines of communication between the college and lay committees should be maintained at all times.

A study was completed by Bessire to determine the extent to which the vocational training program in a community college in California had been responsive to the occupational training needs of its community and to the expressed vocational interests of its students. The investigator found that even though the college was concerned about satisfying the training demands of its community and the interests of its students, it had done so only to a limited degree. A principal recommendation was that additional administrative leadership be provided to insure a more systematic approach to curriculum development and to maintain a closer relationship with employers in the community. McGowan, in an effort to establish more meaningful relationships between business, industry, and the public schools, did a survey of nine major employers in California to gather data concerning entry level jobs for which it was difficult to find employees. He included in his report suggestions for improving vocational education through involvement of business, industry, and the schools. He recommended that there be set up clearing houses for vocational information and materials which might be used for both training and guidance purposes; and further, that there be established a vocational education council for each county consisting of representatives from business, industry and labor.

A Look Ahead

At this point you may feel, as I felt after scrutinizing over 200 individual research efforts in this area, that what research has to say about administration of vocational and technical education is disappointing. But we can be optimistic. The research which has been done during the six years covered by my Review is a great improvement over that done previously. Vocational educators are developing competence in research and we are learning

how to ask the right questions to be researched. We are using the competence of people in related disciplines, especially in the behavioral sciences. We are assembling, in a number of our larger institutions, clusters of people, on an interdisciplinary basis, who can tackle the tough and complex questions which need to be researched as opposed to the relatively simple problems generally used as topics for Ph. D. dissertation research.

If vocational education is to exert its full impact upon the social and economic needs of our nation and its people, it will be necessary for persons in policy-making and program-planning roles to have a better understanding of the functions of administration as they relate to vocational and technical education. This suggests the need for research which is based upon what we now know about organization and administration in general, but with specific applications to the problems of organizing and operating vocational and technical education programs. Furthermore, it suggests that the leadership in the administration of vocational-technical education needs to discover more effective ways of adapting programs and processes to the rapidly changing conditions and needs of our society.

A Report of

"REVIEW AND SYNTHESIS OF RESEARCH ON PLACEMENT AND FOLLOW-UP OF VOCATIONAL EDUCATION STUDENTS"[1]

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This is a review of research being done with the follow-up technique. It summarizes the needs for findings, and the future use of these studies.

[1]Presentation made at The 63rd Annual American Vocational Association Convention, Boston, Massachusetts, December 6, 1969.

A REPORT OF REVIEW AND SYNTHESIS OF RESEARCH
ON
PLACEMENT AND FOLLOW-UP OF VOCATIONAL EDUCATION STUDENTS

Why the sudden interest in follow-up studies? Why does ERIC ask for a review of recent follow-up studies? Why does the U. S. Office require an annual follow-up report of vocational graduates from each state? Why have economists, sociologists and others suddenly expressed a curiosity about the vocational student?

This interest is not simply curiosity. Nor is it simply to build a case for additional governmental appropriations. These may be two good reasons, but the interest comes from much deeper factors related to the educational policy of this country.

Some call it an educational revolution. Contrary to the common belief that the American people have always recognized education to be "the corner stone of Democracy," our founding fathers actually failed to include public education as a fundamental responsibility of government. Even Ben Franklin, for all of his perception about education, was essentially concerned with education of an elite. But today, the concept of "education for all, to the maximum of one's ability," is being accepted, as a fundamental concept inherent in a democratic society, and significantly, that educated people represent the <u>greatest</u> single resource of a country.

In accepting this belief and recognizing a variety of social problems, some of which have their roots in the educational system (the increasing gap between poverty and affluence may in part, be due to different educational achievement or opportunity), places education in a critical posture; education is not only expected to cease contributing to the social problem, but is expected to solve a variety of other problems. No longer is it sufficient to point to increasing percentages of high school age students completing high school. No longer can

we give a generalized relationship between level of education and income.

Questions which are now being raised stem from 1) a concern for the dollar return on the investment in education, 2) the importance of education to the individuals in our society, and 3) the importance of education in solving local, state, national and international problems.

The prominence of education in our society requires much more than a quantitative assessment. It requires deep, penetrating inspection of all phases of its purpose, operation and results. This calls for a massive evaluative effort with educators on the forefront of that effort. Unfortunately, we have not developed the basic tools for such an effort, but the tools are emerging; found in other social sciences, in scientific research, in demonstration and exploration. And the follow-up study is a potentially useful tool.

A parallel to educators use of the follow-up can be seen in business and industry with their product evaluation. The cost-benefit analysis, which is rooted in the economy utilizes the follow-up study as a part of a product-investment ratio, designed to measure profit in business and industry. But using these techniques in education require a different perspective since there is no agreed on "profit." The outcome of education can probably be measured in dollars, but this is only one desired outcome--and perhaps a relatively minor one. Leadership, production, service, happiness and health are probably all more important than dollars. But at the moment we can measure dollars, but we can't measure these other "profits" in a neat definitive way--but we are trying.

It is indeed interesting to note that as questions are raised and evaluations are sought relative to education, that vocational education is being challenged more than any other segment of the "educational establishment."

(This may be a misconception resulting from my own narrow perception) but it is not an illogical challenge. There are many reasons for this challenge; 1) the increasingly large federal investment in vocational education, 2) the apparent direct measurable relationship between the labor force and vocational education, 3) the apparent relationship between economics and vocational education (making it presumably, easier to study), 4) the perception that vocational education has the potential to help in a major way to solve some pressing social problems related to the economy and society--primarily though not exclusively poverty.

A logical starting point in evaluation of education is the "product" or student, and his or her subsequent experiences--information obtained in follow-up studies--a major tool of evaluation.

What is the present accessment of follow-up studies conducted to date? In his "Review and Synthesis of Research on the Placement and Follow-up of Vocational Education Students," J. Kenneth Little states:

> "Follow-up studies of graduates of vocational education programs, if carefully planned and executed, can provide an important base of information to educational planners and administrators. Where coupled with appropriate economic analysis this type of information can point the way to improved decision making by governments and institutions on questions of priority among types, levels and fields of education and training programs. There is considerable distance, however, between the present condition as revealed by the studies here reviewed and the achievement of the goals desired."*

Dr. Little catagorizes the types of follow-up studies as: 1) administrative reports--information gathered to describe the occupational status of graduates of specific educational programs; 2) comparative studies--studies designed to compare graduates of differing types of educational programs in the same school, or within samples of school in the same state, or within samples of schools

* Underline - authors

drawn from many states; 3) cost-benefit studies refine the analysis of occupational education, developing the types of information and research techniques to establish the effectiveness of vocational education.

The level of expertise and sophistication, according to Dr. Little, increases in the order named. He does not say, however, that sophistication and meaningful results are synonomous. But it is clear that simple quantitative or descriptive studies have limited usefulness for policy or decision making.

But in spite of the gap between practice and desire, there are certain useful pieces of information resulting from follow-up studies.

First of all, the list of studies reviewed by Dr. Little are not all inclusive. It does not, for example, report all the follow-up studies being done by state departments. It does not include large numbers of studies done in specific schools, many of which are unpublished. But 101 studies were reviewed and summarized.

There have been few follow-up studies which dealt with vocational education on a national basis. The Center for Studies in Vocational-Technical Education is presently completing a national follow-up study of vocational students at the high school, post-high school (non-college) and junior college level in six program areas (T & I, Ag, D.E., B.E., Technical, and Health). No reports of the findings of this study have been released as yet.

The U.S.O.E. has been gathering follow-up data since the Vocational Education Act of 1963. In 1966 they found 80% of those available for employment were in specific occupations for which trained or related experience, as follows: Ag 67%; Home Ec 76%; Distributive 78%, Trade and Industrial 80%, Office 81%, Technical 90%, Health 92%. Four percent were unemployed, 23% had continued full-time scholars; and 8% had entered the armed service. But this report does not separate graduates by level, or men from women.

A study completed by Eninger (The Process and Product of T & I Education) is one of the few studies dealing with a wide geographic area. He used 100 schools, each with three or more courses in Trade and Industrial courses and followed up graduates, (vocational, general, and academic) with mail questionnaires.

Kaufman studied 5,000 graduates of vocational, academic and general curricula from 28 schools in nine cities in Ohio, Pennsylvania, Maryland, and New Jersey. Employees and union officials were also interviewed.

Mallinson studied 340 non-college bound vocationally oriented from 11 communities in Illinois, Indiana, Michigan and Ohio and compared them to a matched group of college bound students.

Smaller regional (partial state) studies have been conducted by Kaufman in Eastern Pennsylvania, Young in Eastern Iowa, Olien and Donohue in selected Minnesota schools. Whinfield and Little have just completed a study of Wisconsin vocational school graduates. Other studies were found for Colorado, New Mexico, Missouri, Connecticut.

A large number of school system follow-up studies are reported in the literature and a number of studies of special curriculum on special groups of students were reported and identified.

What kinds of information are these studies reporting? There is a general consistancy to the type of information sought in most studies. These are:

1. What kinds of jobs do students take and how closely related are these jobs to the curriculum?
2. How satisfied are students with their vocational program?
3. How much money do vocational students earn?
4. How do vocational students get jobs?
5. How much unemployment exists for vocational graduates?
6. How stable are the employment experiences of vocational students?

7. How satisfied are students with their jobs?
8. What is the job mobility of vocational graduates?
    a. geographically
    b. occupationally
9. What further education do students experience?
10. Increase part-time education as get older.

This, by no means, is the only information gathered. Each study has unique goals and a wide variety of information is sought and obtained. For example, Little and Whinfield tried to measure the relationship between hobbies and curriculum choices. Other researchers have attempted to measure attitudes, motivation and a wide variety of other variables.

A quick summary of the findings related to these general questions are as follows:

1. Reports generally show vocational graduates have a high tendency to enter occupations for which they were trained, or enter highly related occupations. However, the figures fluctuate, and are open to question because of 1) varying definitions of "related" occupations; 2) the difficulty of interpreting these figures in qualitative terms. For example, how many graduates in "occupations for which trained" might have achieved better had they had been in another vocational program, or no vocational program at all?
2. Graduates tend to be satisfied with their vocational education, but not significantly more than other graduates are satisfied with their general education.

3. The measurement of income is a highly suspect measure, but there are indications that vocational graduates tend to earn more money, and advance in their jobs better than non-vocational (excluding college graduates). But other studies found this not to be true (Corazzini, Whinfield).
4. Friends and relatives are the most important influence in job getting. School placement has been reported as most important by as many as 25% of the graduates. At least half obtain jobs by their own devices--no agency involvement. (Kaufman). This varies a good deal. A generalization may be that where the number of graduates is small and in limited supply the placement record is high.
5. Vocational graduates generally show a lower unemployment record, and a higher job stability than non-vocational graduates from high school and post-high school programs.
6. Vocational students show a high job satisfaction, but it is not clear whether or not this is higher than for non-vocational graduates.
7. Vocational graduates are not as geographically mobile as are college-going youth. Studies report up to 90% of the vocational graduates staying in the community in which they went to high school. A generalization seems to be the greater amount of education the more mobility.
8. Vocational graduates are less likely to continue their formal education than non-vocational graduates. However, they are more likely to continue their education than non-vocational students who go directly to work from high school. Their involvement in part-time education increases with occupational experience.

This kind of information is being obtained for almost all program areas, as well as the broad field of vocational education. However, almost no studies were found in homemaking wage-earning occupations, limited numbers of studies were reported in technical education and in health occupations.

These studies are generally directed at the explicit goals of curricular-centered vocational education, the preparation of persons for employment. The general observation would seem to be that graduates of vocational programs do, to a large extent enter and tend to stay in the employment areas for which they were trained.

Manpower Development and Training Programs have been subjected to considerable research with the general conclusion that the program upgrades the work skills of the trainees; decrease the number unemployed and most placements are in satisfying jobs. There is considerable disagreement on the percentage of MDTA students employed and their persistance.

Correctional institutions vocational programs have only recently been directing research at the relationship between education, employment and recidivism. Besides curricular related studies, some studies have reported on sociological characteristics.

Kaufman et. al. discuss differences between black and white graduates, observing that "the black graduate does not receive the same level of compensation on the first job, either at inception or thereafter as does his white counterpart."

Early leavers have been studied frequently. At least one study (Combs and Cooley) showed that full-time employment rates, salary levels, occupational training after leaving school, for boys, were similar for graduates and non-graduates (non-graduates having been in the labor market longer). Another study

of post-high school early leavers (Whinfield) found no significant difference in income between graduates and non-graduates, but a significant difference in occupational prestige of the job and potential for increased incomes.

But the question is asked -- "granted, vocational education has a direct and positive relationship to employment, is it worth the added cost?"

A few cost benefit studies of some rather high level of sophistication indicate that (as Kaufman puts it) the added investment is "probably" worth it (quotes are author's). But this is a highly generalized statement. Peterson, setting up a formula for length of time for employee to recuperate the losses he experiences in unemployment during training, and the added cost of post-high school education shows a high degree of difference dependent on occupations. Hydrolic Power Technicians can recuperate their loss in as little as five years. Graduates of post-high school secretarial courses cannot, in a lifetime recover the lost income and increased costs.

Cost Benefit Studies also look at the differences in social and other behavioral patterns, a neglected part of other follow-up studies. The few studies dealing with these social and attitudinal characteristics do not show the vocational student to demonstrate any significantly different behavior than other students (H.S. and P.H.S.).

While it is useful to learn what happens to vocational students, and to compare their occupational achievements to other groups, there are several voids in our knowledge. We have done little to study the sociological and psychological characteristics of former vocational students and to relate these to vocational educational experience; to compare these characteristics to other groups of students, or to evaluate the vocational education relationship to these characteristics.

We have not explored the relative success of vocational graduates to non-vocational graduates in the same jobs.

Nor have we made a very strong effort to measure the quality of vocational education programs (are some experiences better than others? Are some actually detrimental?)

We are just beginning to realize the potential value of the follow-up study, to develop the techniques for valid responses to overcome some obstacles inherent in the process. Excellent models of evaluation are incorporating follow-up studies as important components of a total evaluation system. Follow-up studies are, as stated early in this paper, one tool for studying and improving vocational education. As it is refined as a technique it has the potential of becoming one of the most useful tools we can have for evaluation and improvement of vocational education.

In conclusion, a quote from Dr. Little's report states:

> "Despite the inadequacies and deficiencies of the follow-up studies, certain findings seem to constitute a refrain. The vocational-technical education programs are serving important parts of our population in ways that these people would not be helped without them. Those who move directly to jobs from such training have an advantage in earnings, not always great, but still an advantage over their untrained cohorts. Most persons like their jobs, and the vocationally trained persons are especially satisfied if they find jobs for which the specifically prepared. The great majority of vocationally trained high school graduates obtain employment in or near the communities in which they attended school. Graduates obtain their jobs primarily from their own efforts or by the help of friends or relatives; secondary schools, teachers and counsellors, are typically not credited with being greatly helpful to students moving to jobs rather than to colleges.
>
> "There is considerable variation in the occupational careers of graduates in the several fields of training. These variations are frequently associated with variations in the labor market. In general, graduates from the fields which emphasize post-high school training show a clear advantage over graduates of high school programs. In fact, the very completion of a diploma, certificate, or degree program seems to be the key factor. This fact points to the role of employment practices, with emphasis on paper credentials, as a strong element in determining occupational placement. Although the findings are contradictory, the preponderance of evidence is that vocational education programs are probably worth their cost. But this conclusion does not blanket in all vocational programs, in all places, or in all fields. The injunction is to find definitive answers to such effectiveness within more educational systems and programs.

"This review closes with a quotation from the report of the Advisory Council on Vocational Education, 1968:

> 'Effective occupational preparations is impossible if the school feels that its obligation ends when the student graduates. The school, therefore, must work with employers to build a bridge between school and work. Placing the student on a job and following up his successes and failures provides the best possible information to the school on its strengths and weaknesses.'

"If this review stimulates more and improved studies of the vocational education product it will have achieved a good purpose."

MANPOWER RESEARCH: ITS RELATION TO VOCATIONAL EDUCATION *

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I was particularly pleased to accept Dr. Jerome Moss' invitation to discuss the role of the Department of Labor's Manpower Administration in manpower research and to point out the relevance of this research to vocational education. This is really an opportune time to explain to vocational educators that much of the Department of Labor's manpower research program has important implications for you and that one of the main purposes of our research activities was and is to assist vocational education in carrying out its responsibilities as a manpower agency.

Before turning directly to the subject at hand, I should like to spend a moment or two on the history of the relationship between the Department of Labor and the vocational education system, which may clarify some of the current developments. At the time that the Panel of Consultants on Vocational Education was examining the vocational program of this country in 1962, the predecessor of the Manpower Administration had already been established. Those of us from the Department of Labor who worked with the Panel were asked to make presentations on the labor force and occupational changes of the 1960's which might assist the Panel members in their deliberations.

* Presented December 7, 1969 at Research Section Policy Meeting, American Vocational Association, Boston, Massachusetts

When we made our presentations, we strongly stressed in 1962 and 1963 that there must be a closer tie between vocational education and occupational changes. We suggested that this tie could occur through a closer relationship between the Department of Labor and the Department of Health, Education, and Welfare. Congress responded by introducing into the Vocational Act of 1963 language which called for a working relationship between the Department of Labor and HEW involving the exchange of information on labor force changes so that vocational educators could adjust their current and future course offerings to developments in the world of work.

The Vocational Education Amendments of 1968 still call for this closer tie and, in fact, contain language which strengthens the relationship between Labor and HEW. Although the millennium has not been reached, I, for one, feel that real progress is being made in getting these two Departments to work more closely together, at least in the exchange of information, which will help vocational educators to more easily change their programs so that the youngsters they train and educate will be well prepared for our modern economy.

I offer this piece of history to indicate that the Department of Labor has long recognized the importance of the vocational system in contributing to the supply of the Nation's labor force. There is no need to review with you the Department of Labor's early sponsored research which looked at the cost effectiveness of vocational education

and examined the employment experience of the products of the vocational education system. Let me put this aside by saying that our research findings indicated the obvious; namely that, on the whole, vocational education, as a personal and social investment, has been profitable both to the individual and to society. We learned that the graduates of vocational schools who had received thorough occupational training did do better in the labor market from the point of view of earnings as well as employment in the field in which they trained than graduates of regular high schools. Those of you who are interested in our complete manpower research program, may want to examine our annual publication, "Manpower Research Projects." In this report you will find a detailed listing by subject matter of our research activities.

I should like to spend the rest of the time alloted to me to discuss two on-going research projects directly related to the interests of vocational educators which are being sponsored by the Department of Labor. Our experience in carrying out these projects contains some important lessons for all of us concerned with the development of this country's manpower supply.

The first research project is being conducted in Michigan by theBattelle Memorial Institute of Columbus, Ohio. This project is jointly sponsored by HEW, the Department of Labor, the Michigan Employment Service, the vocational education system of Michigan and the Governor's Office. The purpose of this research project is to

determine whether the vocational education system of the State of Michigan and the system in three selected cities in Michigan are being responsive to labor force changes taking place in that State's economy.

In this project, the consortium of sponsors has asked Battelle Memorial Institute to wear two hats. The first hat is that of a straight researcher. In this phase of the study Battelle conducted a study of the future occupational needs in the State of Michigan and identified 10 occupations in short supply in which instruction was being offered in Michigan or could be offered.

The 10 occupations identified in three communities were:

1) Automobile engine mechanic, 2) Licensed practical nurse, 3) Dental assistant, 4) Clerk/typist-clerk/stenographer, 5) Bookkeeper, 6) Sales person, 7) Chef/cook, 8) Numerically controlled machine tool operator, 9) Construction carpenter, 10) Electrician.

Battelle has studied the job content in the 10 occupations, identified expected new job content, examined the current curriculum designed to produce skills for these occupations and, then, compared actual work performance with employer skill requirements and employers' needs with the curriculums.

This research project is still in process. I would like, however, to turn to phase II of the project which is expected to yield the most

significant results.

You will recall that we asked Battelle to wear two hats in this project. With hat No. 2 Battelle is being asked to act as a "change agent." We have said to Battelle we are interested in more than your just being a researcher--we want you to act on or do something about your findings. This second phase is now under way. Batelle is now concentrating on phase II in Detroit.

In phase I,Battelle notified the consortium that not a single vocational high school in the State of Michigan is offering a course for Licensed Practical Nurse to its regular high school students. This gap in training exists in the face of an intense shortage for LPN's in Detroit and many other Michigan communities.

In phase I,Battelle notified the consortium that training for construction electricians was being phased out in the only vocational high school offering this occupational training in Detroit. This was occurringin the face of a shortage which has been documented by employers, the Employment Service and even the trade union concerned with this craft.

In phase I,Battelle notified the consortium that 25 students in all of Detroit were being prepared as dental assistants. These students were being taught by one teacher whose equipment was located in two schools. The equipment consisted of an X-Ray machine that did not work and a dental chair that was not operative. The shortage of

dental assistants in Detroit was documented by employers/dentists and the Employment Service.

Now, to get back to hat No. 2 for Battelle. The consortium has charged Battelle with the responsibility as "change agent" to persuade the vocational education authorities in Detroit to react positively to its research findings. Let me make it clear that the vocational education authorities in Detroit have, to date, been most cooperative.

High school students were not being given LPN training because the State's occupational licensing regulations barred them from getting a license before they reached the age of 19. This age requirement was recently reduced. Battelle recognized that now that this major obstacle has been removed, the schools can move in to fill a major gap in occupational training. Negotiations are now under way between Battelle and the vocational education authorities to begin an LPN course. Furthermore, the vocational education people are now meeting with Battelle, the Employment Service and the concerned private organizations to start to move in the other two occupations.

Although the phase II exercise is not yet completed, we are hopeful that the "change agent" experience will have important implications elsewhere. Battelle has been asked to keep a careful record of this entire experience so that they can document the reasons for successes and failures. If this documenting activity is carried out well, this project may be extremely useful as a model for other States and communities to study.

What are we learning from this study?

First, let me refer to a statement by Dr. Rupert Evans, an astute observer of vocational education, who said at a conference on the transition from school to work at Princeton in 1968, "Too great specificity is not the major difficulty in vocational education content. Rather, the major difficulty is in its failure to cover significant areas of employment. The service occupations, unskilled and semi-skilled occupations, occupations employing large proportions of women, and white-collar sub-professional occupations are significantly under-represented." 1/

The Michigan study emphasizes that significant areas of employment are not being reached by vocational education. There are many reasons for this deficiency. First, vocational educators are not looking frequently and carefully enough at the world of work for which they are preparing their students. Careful, systematic, and regular review of demand and supply of labor are needed if vocational education is not to overlook new areas of employment opportunities. These same reviews are needed to reduce training or discontinue training for occupational areas which are declining in importance.

1/ The Transition from School to Work: A Report Based on the Princeton Manpower Symposium - May 10, 1968, p. 199.

Another lesson we are learning is that some vacuums appear to exist between institutions which supply trained labor and the institutions which employ this labor. We are beginning to learn that there are breaks in the linkage between training institutions and employers.

Vocational education must be its own permanent "change agent" so that it will continue to be a viable training institution. The institution which contributes the information upon which schools can act is the Employment Service. The vocational education system must build a better, stronger and permanent bridge between itself, the Employment Service and the employers it serves.

The Employment Service is required under the Vocational Education Acts of both 1963 and 1968 to supply vocational educators with occupational and labor force information which would enable them to adjust to changes in the economy. To date, Congress has not seen fit to fund this operation. In spite of the lack of funds, the Employment Service, in many States, has been able to supply vocational educators with some of the material needed to prepare their State plans. Until the information process becomes institutionalized, all concerned parties will have to work on an ad hoc basis.

Another important "change agent" device can be a permanent relationship between employers and the schools. One of our researchers in California who studied employer practices in the San Francisco Bay area advised us, "... many employers ... report relatively little

success in any attempts to influence the vocational education offerings of high schools ..." 2/

Vocational educators must involve more employers in their curriculum and job-content planning. If the students who are the products of the vocational schools are to be employable, then employers must be consulted and their opinions taken into account in developing vocational education offerings.

If we do not have this close relationship with the Employment Service and employers--what other alternative is open to us? How else can we guarantee that vocational education will be able to deliver a training program to the fullest extent of its potential?

The Departments of Labor and HEW cannot continue to support studies similar to the Detroit study in every town and hamlet in the country. The importance of the Detroit study is that it can be used as a model. A joint effort by the Employment Service and the vocational education system to examine the needs of employers in the local and nearby communities can be part of phase I in this effort to keep vocational education viable. The second part of phase I should consist of a comparison between curriculums and course offerings and the job content needs of employers.

2/ Gordon, Margaret S. and Margaret Thal-Larson, Employer Practices in a Changing Labor Market: Report of the San Francisco Bay Area Employer Policy Survey, Institute of Industrial Relations, University of California, Berkeley, 1969, p. 508.

The last step in phase II will be the most difficult one. This will consist of the action that should be taken after the soul-searching experience of comparing training with actual job content needs is completed. This will require professional integrity on the part of the educators who may have to face the fact that their educational offerings may not be in keeping with the needs of employers who employ their graduates.

Boards of education may well have to be asked to take action on dropping certain courses or laying out funds for newer and more expensive training facilities and equipment.

If this exercise is to succeed, it will require the joint effort and honest participation by employers, educators, administrators, the Employment Service and political leaders. If this kind of cooperation is not forthcoming, then we will find ourselves with a vocational education system that is not living up to its potential as a significant element in the training of our Nation's labor force.

Let me now turn to the second research project which should be of special interest to you. In this study, Oklahoma State University in Stillwater is developing an Occupational Training Information System known as OTIS. The system contains comprehensive information on both manpower supply and demand in Oklahoma. The central purpose of the research project is to assist state officials in Oklahoma in planning and developing a statewide occupational training information system as an integral part of a planned manpower development program. The data developed in this project will enable the vocational education

authorities to make decisions to facilitate changes in the State Plan for Vocational Education in Oklahoma.

The research is supported jointly by the Oklahoma State Department of Vocational and Technical Education, the Manpower Administration of the U. S. Department of Labor, the Oklahoma Industrial Development and Park Department, the Research Foundation, Oklahoma State University and the Ozarks Regional Commission. The Oklahoma Employment Security Commission is cooperating with the State Department of Vocational and Technical Education in collecting and analyzing the data.

The information developed in the OTIS project will, hopefully, tell vocational educators what program mix changes are necessary on a basis of immediate, intermediate, and long-term manpower needs. It is also hoped that information will be developed which will tell us how these program changes can be made.

As of 1969, about two-thirds of all enrollments in reimbursed occupational programs in Oklahoma are concentrated in agriculture and home economics. Only 2 percent of the enrollments is in the health field, 5 percent in the office occupations and 6 percent in technical training. Almost 50 percent of total expenditures in reimbursed occupational programs is being spent for agriculture and home economics.

Educators and others responsible for the future growth and development of Oklahoma are concerned about this program mix because of the heavy outmigration of their trained graduates to other states,

the heavy migration from rural areas to urban centers and the increasing demand by industry for skilled and qualified people.

The point that must be emphasized about the OTIS system is that it is an attempt to develop comprehensive demand and supply data from every available public and private source in the State. In addition, the data are related to continuing follow-up studies of vocational education graduates. A continuous and systematic matching of supply and demand is being established for specific labor market areas utilizing Dictionary of Occupational Title codes and Office of Education codes.

The OTIS system represents an unusual cooperative effort of vocational educators, the Employment Service, public and private employers, a university, private educational institutions and the highest political authority in the State. The emphasis of the entire project is on change. The educators of Oklahoma have taken to heart the language of the Vocational Education Acts of 1963 and 1968 and are determined to make their programs relevant to the needs of industry and to the varying needs of society. This responsiveness will result in a more meaningful vocational education program that will enable the State to reach its full potential.

In the OTIS study, a continuing, systematic collection of data will take place. The stimulation for change will come from the data and the interpretation of the data. The vocational education authorities are committed to act as change agents. They are trying to insure that there will be no break in the linkage between education and the world of work. The OTIS model can and should be used by other States.

In both the Michigan and the Oklahoma study, the objective has been to assist vocational educators in carrying out their responsibilities under the Vocational Education Act. In both studies the emphasis has been on the development of models which can have widespread application elsewhere. The Michigan study used an outside catalyst. The hope is that the model that has developed there will continue to have its own momentum.

The catalysts in Oklahoma consist of Oklahoma State University, the vocational education authorities and the Governor. Perhaps the home-grown catalyst may be more significant in the long run. Time will tell.

The Office of Education has at its command an effective change agent -- namely, the State Plans which are to be submitted each year. Judicious review of these State Plans by the Federal vocational authorities can make vocational education relevant in all States. No one is suggesting that this authority be used in any revolutionary way. A constant, moderate, evolutionary process, however, can bring about desired changes.

The Michigan and Oklahoma models will soon be available for all vocational educators. The availability of the models, combined with a commitment to relevance and change, should help achieve the highly desirable objectives of the Vocational Education Act.

Let me close with a quotation from the 1962 Report of the Panel of Consultants on Vocational Education, "But change is never easy, since it threatens the pattern of life and work of many. Most persons either consciously or unconsciously resent indications of the need for change. Probably the most common response is to ignore the facts which indicate the need for change and to continue traditional patterns of conduct. This is true of individuals; it is true of institutions." 3/

American vocational educators and the institution of vocational education play a strategic role in developing the Nation's labor supply. I am convinced that they will both respond to the challenge of change which faces them today.

3/ Education for A Changing World of Work, Report of the Panel of Consultants on Vocational Education, U. S. Department of Health, Education, and Welfare, Office of Education (Washington: U. S. Government Printing Office, 1963), p. 218.

PROJECT IMPROVE:
THE DEVELOPMENT OF A STATE-OPERATED EVALUATION SYSTEM[1]

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INTRODUCTION

The title of this paper is slightly misleading. The Minnesota Research Coordinating Unit is not developing a complete system for evaluating vocational programs in the State; it is developing only a subsystem.

Our perception of a complete evaluation system would provide means, first, for answering the macro-level essentially quantitative questions typically asked by State Boards of Vocational Education, Advisory Councils, legislators, and the United States Office of Education, such as: To what degree is the public vocational program satisfying the demand for occupational training in the State? To what extent is the public vocational education program serving the number and kinds of students that it should be serving? The subsystem we are developing makes no attempt to answer these questions.

The second kind of questions that should be answered by a complete program evaluation system are micro-level, qualitative and diagnostic in nature. How "good", how "successful", is the automechanic curriculum in school X? How efficiently is it operating? What can be done to improve its effectiveness with minimum increase in cost? These are the kinds of questions the Minnesota RCU effort is attempting to answer.

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 8, 1969.

Moreover, a complete evaluation system should be applicable to all kinds and levels of vocational instruction. Our subsystem, at least temporarily, is focused upon post-secondary level vocational instruction.

Thus, the project, in which we are cooperatively engaged with the Vocational Division of the Minnesota State Department of Education, may best be described as an attempt to design, develop and test a state-operated subsystem for the periodic evaluation of the efficiency of individual post-high school and adult vocational programs.[2] The subsystem will provide educational managers and program developers at the state and local levels with information useful in making investment decisions about, and in improving the quality of, specific vocational programs throughout the State. When completed, the subsystem should be readily integrated with a total management information system and be adaptable to all educational levels of vocational instruction.

The project is planned in three phases: (a) Phase I will design the overall subsystem and identify relevant variables; (b) Phase II will develop the instrumentation and the data collection and processing procedures; (c) Phase III will try-out and revise the subsystem. Phase I is now nearly complete.

SOME PREREQUISITES OF THE SUBSYSTEM

Before attempting to design the subsystem, certain issues in evaluation were examined and assumptions made about them which served to create the framework within which subsystem development could proceed.

It was decided,first, that the subsystem should employ the "products" of specific vocational programs— former student-learner behavior— as evaluative criteria. The State has already tried using experts to assess the quality of program "process" and found the usefulness of the results to be severely limited.

[2]Program is considered the set of educational experiences and related services provided by an agency and intended to culminate for each student-learner in new, continued or improved employment in a pre-specified occupation or group of occupations.

Second, diagnosis of instructional programs — the ability to determine how effectiveness can be improved — is an essential aspect of a subsystem directed toward assessing program quality.

Third, vocational program management decisions cannot be made without regard to costs. Therefore, the subsystem must yield information on efficiency as well as effectiveness.

Fourth, all evaluation requires comparison with some standard. At present we possess no realistic absolute standards for judging the qualitative effectiveness or the efficiency of a given vocational program. The comparative standard must, therefore, be provided by other vocational programs. Our evaluation will determine the relative effectiveness and efficiency of two or more "equivalent" programs.

Fifth, and finally, to make possible maximum efficiency, objectivity, and useful comparability, a subsystem designed to provide periodic program evaluation should be state-operated.

MAJOR QUESTIONS OR TASKS IN SUBSYSTEM DESIGN

In order to develop the overall design of the evaluation subsystem within the assumed prerequisites, consideration was given to five basic questions.

How should vocational programs be classified so that we can make logical, useful comparisons between them, as well as provide the basis for future generalization of results?

Since purposes dictate desired outcomes and, in turn, criterion measures, what is to be assumed about the role and purposes of post-secondary vocational education?

What are the educational and other factors that influence educational outcomes? That is, what is the educational production function?

What kind of cost function should be developed?

What decision criteria should be employed to determine the programs in which additional funds should be invested?

The remainder of this paper will treat briefly only the first <u>three</u> of these questions. In light of time restrictions, the questions of developing appropriate cost functions and economic decision criteria will be eliminated.

CLASSIFICATION OF PROGRAMS TO BE EVALUATED

Figure 1 depicts the categories developed for classifying the post-secondary vocational programs to be evaluated.

FIGURE 1

<u>Classification of Programs to be Evaluated</u>

Student Characteristics	Preparatory/ Retraining Programs				Updating/ Upgrading Programs			
	Occup. A	Occup. B	etc.	etc.	Occup. A	Occup. B	etc.	etc.
Socio-Econ. Disadvantaged								
Non-Socio-Econ. Disadvantaged								

The comparison of effectiveness and efficiency of vocational programs is meaningful only when the programs being compared are substitutable. For example, we must always provide some kind(s) of preparatory training and opportunities for updating will always be necessary. One purpose does not substitute for the other. It does no good to know that a certain preparatory program is more effective than some updating program if <u>both</u> types of programs are essential. Similarly, programs designed to prepare machinists are not competitive with (or substitutable for) programs designed to prepare bakers. There is no educationally useful purpose in comparing two such programs.

Further, vocational programs which enroll widely different student groups are difficult to compare fairly. Since we are now particularly concerned about the disadvantaged, Figure 1 also suggests that the student characteristic of socio-economic disadvantagedness be used to classify vocational programs. We can then determine empirically, through our evaluative efforts, whether or not disadvantaged students require different kinds of programs than other students for maximum effectiveness; if not, other categories based upon different student characteristics can be tried out.

Thus, vocational programs classified in a given cell will be compared with each other, while programs in different cells will not be compared.

Figure 2 magnifies Figure 1 and indicates some of the different kinds of vocational programs that fall within a given cell and which can therefore be legitimately compared with each other.

FIGURE 2

Kinds of Programs to be Compared with Each Other

Student Characteristics	Preparatory/Retraining Programs	
	Occupation A	Occupation B
Socio-Econ. Disadvantaged	Day trade; cooperative; evening; part-time; on-the-job (formal and informal); apprenticeship, etc.	

PURPOSES OF POST-SECONDARY LEVEL VOCATIONAL EDUCATION

The second major question in subsystem design dealt with the role and purposes of post-secondary level vocational programs. It is assumed that criterion measures, in terms of former student learner behaviors, will be based upon program purposes.

Figure 3 depicts our rationale for viewing vocational purposes and their interrelationships.

FIGURE 3

Rationale for Viewing Vocational Purposes

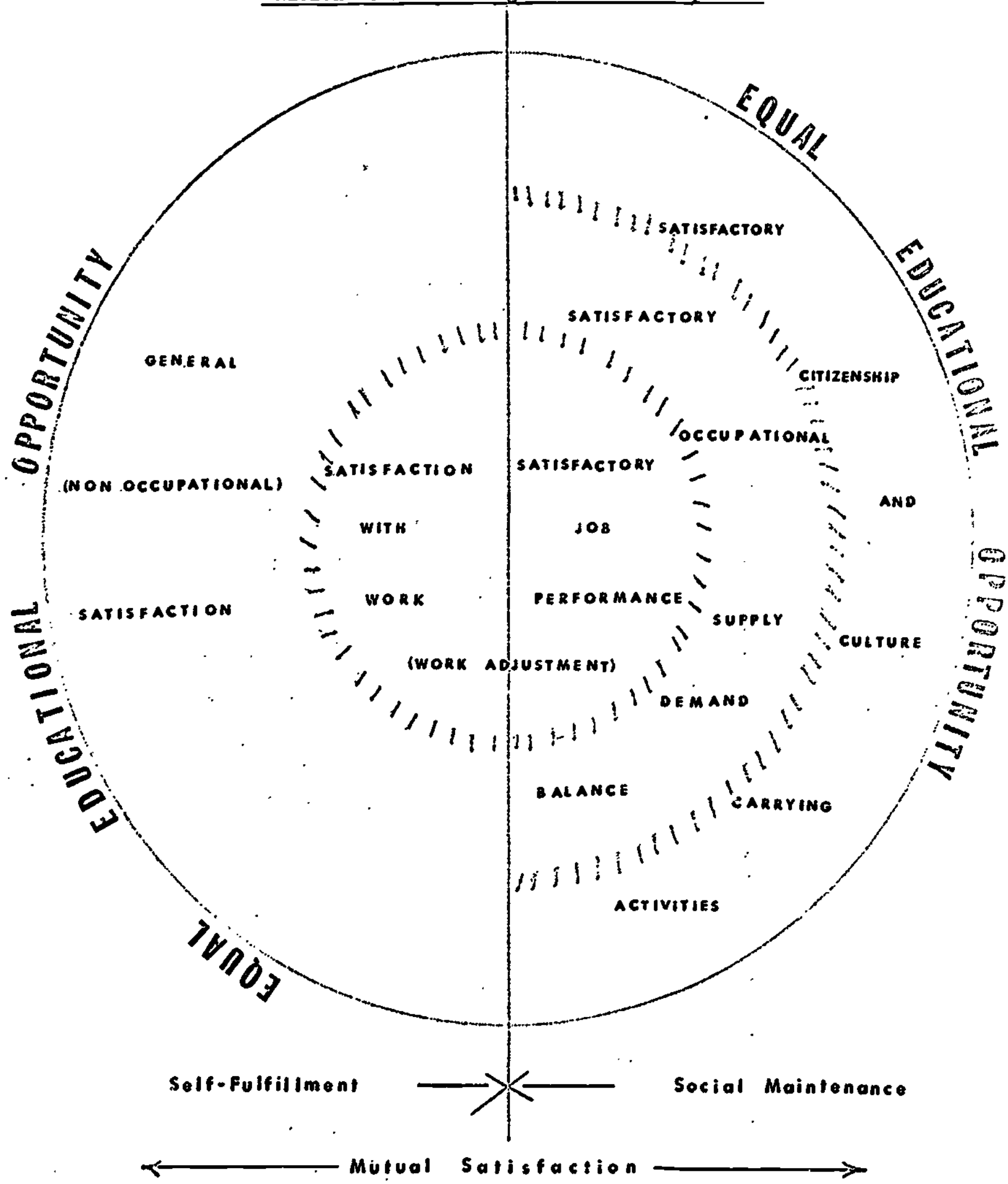


Figure 3 shows that the central concern of post-secondary level vocational education is to impact upon the individual in his work role. That is, the principal purpose of vocational education is to improve the work adjustment of the individual as measured both by worker satisfactoriness and satisfaction. Individual worker adjustment, however, should be accompanied by occupational supply-demand balances which are optimal under existing economic conditions if the public interest is also to be served. In addition, vocational education programs should have a concomitant positive impact upon both the general (non-occupational) satisfaction of the individual and his contribution to society through satisfactory citizenship and culture-carrying activities.

All of these product outcomes are circumscribed by the extent to which equal educational opportunity has been provided.

Thus, like all of education, vocational education has both individual self-fulfillment and social maintenance roles. Unlike the rest of education, it focuses upon the occupational-work aspects of the interaction between the individual and society.

PRODUCTION FUNCTION

The third major question to answer in developing the evaluation subsystem dealt with specifying relationships between qualitative educational outcomes (criterion measures) and the qualitative input variables which influence outcomes. This relationship, or production function, would not need to be investigated if the subsystem were merely to evaluate the gross output of two or more programs. But, in order to "adjust" outcomes to insure "fair" comparisons between substitutable programs, and to permit program diagnosis and subsequent improvement, these relationships must be known.

Figure 4 states the general form of the production function. It says, simply, that outcomes of the program are a function of (related to or hopefully caused by) (a) "program characteristics", which are defined as variables manipulable by program

operators and developers, and (b) "constraint factors", which are defined as variables not manipulable by educators. Subsequent subsections of this paper will elaborate upon these three elements of the general production function.

FIGURE 4

General Form of the Production Function

$$O = f\ [P,C]$$

O = Outcome measures of the program

P = Program characteristics (manipulable by program developers and operators)

C = Constraint factors (not manipulable by program developers and operators)

Outcome Measures

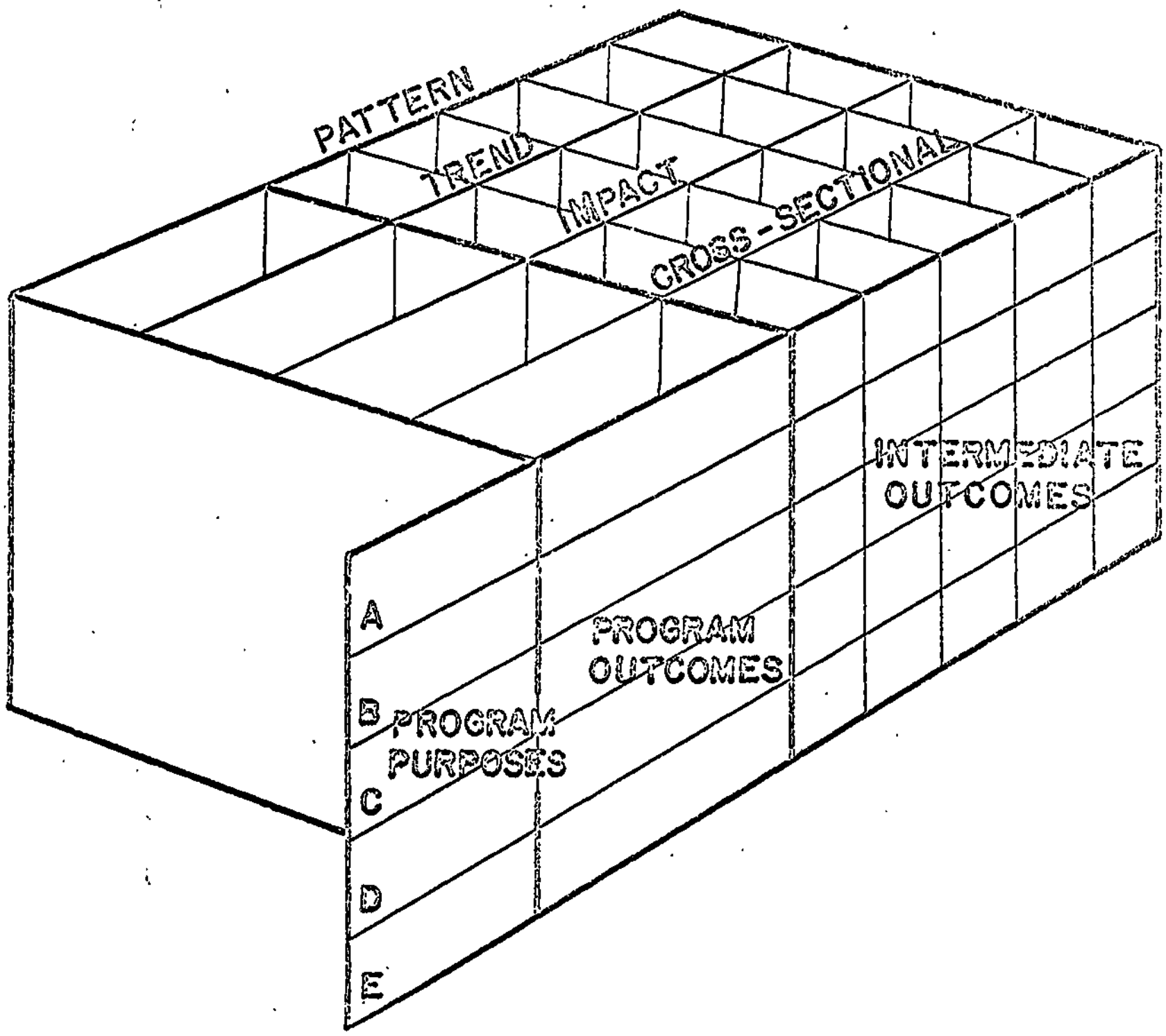
Outcome measures are indices of the degree to which program purposes have been attained; they are the criteria for evaluating and diagnosing program effectiveness. The subsystem being designed will employ a great many different outcome measures. Figure 5 presents some of the possibilities envisioned.

All outcome measures stem from program purposes. Some outcomes, called "program outcomes", are influenced by the interaction of all program characteristics (P) and constraint factors (C). Program outcomes are direct indices of program purposes and are appropriate criteria for diagnosis and for evaluating the effectiveness of the total vocational program — all its interacting parts. For example, a measure of job satisfaction would be one such program outcome.

On the other hand, outcomes which are influenced by only certain limited parts of the vocational program — not the total program — can also be logically derived from program purposes. Such outcomes, called "intermediate", are especially useful for, but limited to, diagnostic purposes because of their sensitivity to a particular

FIGURE 5

Matrix of Outcome Measures



part of the total program. Student desire to enter the pertinent occupation, measured at entrance to the training program, is such an intermediate outcome. It is sensitive to the guidance and selection portions of the vocational program, but does not at all reflect the impact of instruction during the program.

Outcomes can be measured at many different points in time. Intermediate outcomes will usually be measured while the student is in the program. Program outcomes will be measured at fifteen month intervals, up to four years, <u>after</u> students leave the

program. At the point-in-time at which they are measured, outcomes are called "cross-sectional". A comprehensive cross-sectional measure is being developed which provides a weighted combination of different product outcomes. "Impact" measures are cumulations or averages of cross-sectional measures over some period of time. "Trends" are changes in cross-sectional measures over time. "Patterns" are relationships between trends; we think of them as particularly helpful research measures for investigating career development theories.

Program Characteristics

As previously noted, program characteristics are variables which are manipulable by program developers and operators. Measures of program characteristics are intended to describe programs. They serve to differentiate among programs on those variables which presumably affect quality, and which are therefore related to program outcomes. Hopefully, program descriptions can be obtained with reasonable objectivity and reliability since the measures will not provide the basis for direct evaluation.

A hierarchical classification scheme of program variables is being developed to permit logical aggregation of data on specific characteristics. For example, Figure 6 illustrates the five major categories of program characteristics. Guidance and counseling services, selection practices, instructional program, auxiliary services, and placement services are the highest-level categories in the hierarchy. Taken together they describe the total educational experiences and related services provided by an agency and intended to culminate for each student-learner in new, continued or improved employment in a pre-specified occupation or group of occupations. That is what we mean by a vocational program.

FIGURE 6

Major Categories of Program Characteristics

(1) 0 = f [P,C]

(2) 0 = f [(G,S,In,A,Pl),C]

Program Characteristics (P) are:

G = Guidance and counseling services
S = Selection practices
In = Instructional program
A = Auxiliary services
Pl = Placement services

Figure 7 depicts a portion of the next lower level in the hierarchical classification of program characteristics. It shows that teacher characteristics, facilities, content, and methods of instruction are categories of variables which make up a part of the major category of "instructional program."

FIGURE 7

Further Expansion of Program Characteristics in the Production Function

(1) 0 = f [P,C]

(2) 0 = f [(G,S,(T,F,C...M),A,Pl),C]

Instructional Program (In) is:

T = Teacher characteristics
F = Facilities
C = Content
M = Methods of instruction
Etc.

Constraint Factors

The third element in the general form of the production function is constraint factors. These are variables which influence program outcomes, but which are not manipulable by program developers and operators.

Note Figure 8. There are two kinds of constraint factors. "Relevant" variables (while not themselves manipulable by educators) should be taken into account in program

development and operation. To illustrate, student characteristics and relative demand for workers in the occupation(s) for which the program attempts to train, both effect program outcomes; neither can be manipulated by educators, but both should influence program creation and operation.

FIGURE 8

Categories of Constraint Factors

(1) $0 = f\ [P,C]$

(2) $0 = f\ [P,(R,I)]$

Constraints (C) are:

R = Relevant variables (not manipulable by educators, but should be taken into account in program development and operation)
I = Intervening variables (not manipulable by educators, and not to be taken into acount in program development and operation)

"Intervening" variables influence outcomes, but need not be considered in program development and operation. If employers discriminate against some minority group, the practice should not preclude training members of that group. The practice should be taken into account, however, when comparing that program's outcome with the outcomes of some other program. General employment level and the availability of higher education opportunities are also examples of intervening variables.

ANALYSIS

When data on outcomes, program characteristics, and constraint factors become available for two or more programs, the production function can be treated as an equation susceptible to regressional analysis.

In a comparison of two programs, the analysis will reveal the extent to which membership in a program is related to the difference in the average performance of the two groups of former students on each outcome measure. This relationship can be determined both before and after performance is adjusted for the influence of

differences in such constraint factors as student characteristics and other variables which may be independent of program membership. The results of this type of analysis will produce reasonably "fair" evaluative comparisons between programs and will provide some clues for subjective program diagnosis and improvement.

When data becomes available for a large number of "substitutable" programs, regressional or centour analysis will then permit empirical tests of the extent to which any program or constraint variable, or combination of variables, contribute to the explanation of differences in average outcome measures. As one illustration, we could determine the relationship between teacher qualifications and the average job satisfactoriness of their former student-learners when all other program characteristics and constraint factors are held constant. In this manner, the subsystem will be able to make objective, empirical diagnoses for increasing program effectiveness.

It is recognized that the relationships revealed by the type of analyses envisioned are not necessarily causal. But given the logic of the production functions, the relationships found do provide a reasonable basis for assuming a degree of causality, especially when the predictive value of the independent variables in the production function proves to be high.

SUMMARY

In summary, the Minnesota Research Coordinating Unit is in the process of designing an evaluation subsystem which can be integrated with more complete management information systems, and which will yield evaluative and diagnostic information about the relative efficiency and effectiveness of individual program offerings.

To date, we have done little more than to conceptualize the problem, identify some of the modifying variables, and opertionally define a few of them. Our

progress is exceedingly slow because the task is complex and our resources limited. No deadlines have therefore been set for completion of subsequent stages of the project.

THREE ASPECTS OF EVALUATION METHODOLOGY*

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The purpose of this paper is to discuss the three facets of evaluation which could be used in vocational education. The evaluation could fall into three dimensions: (A) evaluation content, (B) Operational criteria, and (C) expected product (see figure 1). This model of evaluation is a form of $V = f(A_i, B_j, C_k)$

where V = evaluation of the project

A_i = the variable of content dimension for i = 1, 2, 3.

B_j = the variable of operational dimension for j = 1, 2, 3, 4, 5.

C_k = the variable of product dimension for k = 1, 2, 3, 4, 5.

f = the function relationship between independent variables (A_i, B_j, C_k) and the dependent variable V.

An explanation of the three dimensions is as follows:

A. CONTENT DIMENSION

1. Input Evaluation: In constructing an input evaluation, an attempt is made to determine the needs of environment and the problems underlying these needs, to determine the relevance of the project to the needs of the environment, and to determine how to utilize resources to meet the goals and objectives.

*presentation made at the 63rd Annual Convention of American Vocational Association in Boston, Mass. on December 8, 1969

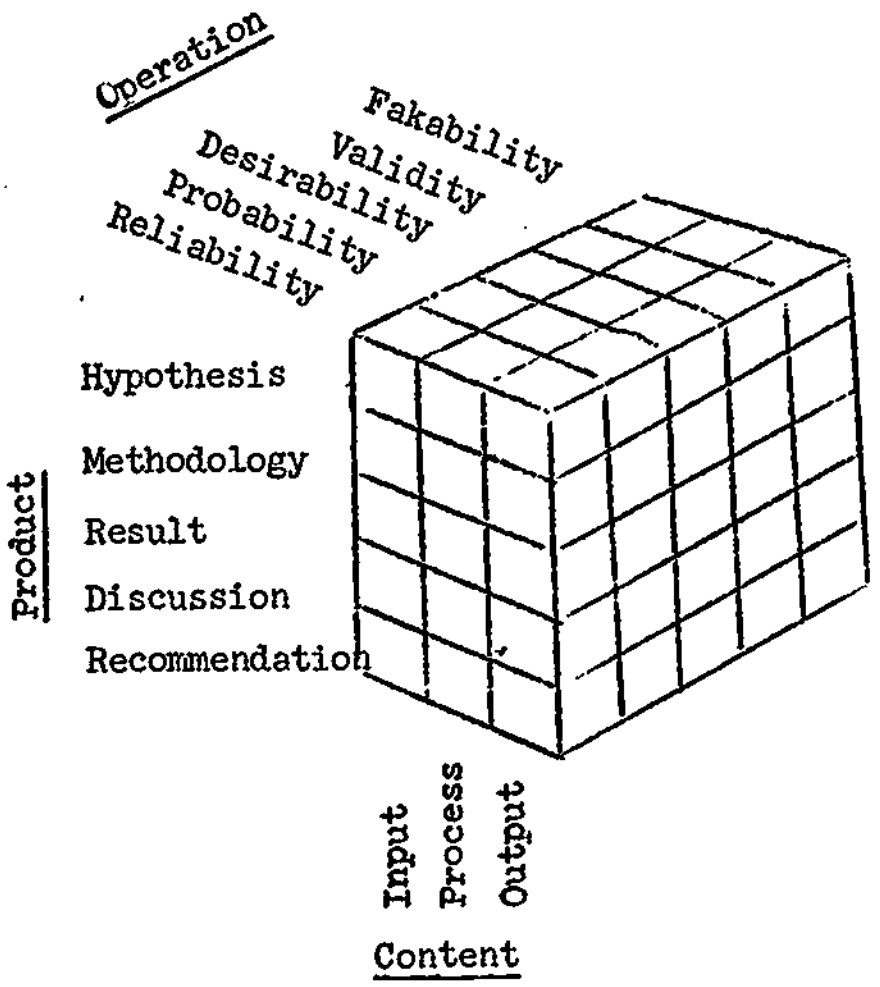

FIGURE I

Three Dimensions of Evaluation

2. Process Evaluation: The purpose of the process evaluation is to monitor the project to learn what is being done, and to provide information to the project manager and his staff so that they may improve the quality of the project while it is being conducted.

3. Output Evaluation: The output evaluation seeks to determine to what extent the stated objectives have been accomplished.

B. OPERATIONAL DIMENSION

The following are operational criteria of the evaluations:

1. Fakability: This stage of evaluation attempts to determine whether the provided information is truthful or correct and the activities of the program are really occurring.

2. Validity: This stage of evaluation intends to answer the question whether this program activity is suitable to the variable being considered.

3. Desirability: This stage of evaluation intends to discover the benefit of the program in terms of time, cost, manpower resources and other variables.

4. Probability: This stage of evaluation tries to determine whether the accomplishment of the program is feasible or not.

5. Reliability: This area of evaluation is used to determine whether the information is reproducible and the program activity is replicable. In other words, if we seek the same objectives in another situation under the same conditions, will we get the same results?

C. PRODUCT DIMENSION

1. Hypothesis: This section includes these steps: identify the terminal behavior, define the desired behavior, specify the criteria of acceptable performance and state the measurable hypothesis.

2. Methodology: This section includes the design of the research, the logic of relating empirical data to the theoretical propositions, the subjects, the sampling and control devices, the technique of measurement, and any apparatus used.

3. Results: The section on results includes the tests of statistical significance and the logic of inference and generalization from empirical observation.

4. Discussion: This section intends to point out the limitations of the results, note the correspondence of differences between the findings and widely accepted points of view, and the implications for theory and practice.

5. Recommendation: This section is intended to provide the recommendation resulting from the assessment upon which can be based the decision, terminate, continue, and/or modify the evaluated programs.

PROGRAM EVALUATION AND RESEARCH DESIGNS

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Presented at the American Vocational
Education Research Association Conference,
American Vocational Association
Boston, Massachusetts
Monday 8 December 1969

PROGRAM EVALUATION AND RESEARCH DESIGNS

We propose to examine and refute several arguments against the use of rigorous or Fisherian designs in educational evaluation. The conclusion of the arguments we will consider can be summarized in Albert Beaton's suggestion that we stop trying to"...make our educational experiments look like agricultural experiments..." We will consider Egon Guba's arguments as representative and will specifically address the following points. First, at the 1969 meetings of AERA, Guba contended that schools make a difference: we wonder what is the warrant for this empirical claim. Since schools make a difference and program evaluation fails to detect this difference, he continues that "the world of evaluation requires reshaping." Second, while recognizing that comparisons are necessary for evaluation, he wishes to dispense with experimental designs. Third, Guba contends that rigorous designs are incompatible with program change and improvement. Methodologically, we find these assertions to be false.

I.

Guba recognizes that the vast majority of research into educational programs, for instance the massive Colemen Report, and particularly research into compensatory programs, such as the U.S. Commission on Civil Rights inquiry into Racial Isolation in Public Schools, reports that the educational treatment has no significant effects on student achievement.

While these and other findings indicate that under different compensatory schemes "students will learn about the same," Guba argues "anyone who has spent any time at all in a school knows that is just not so".

When we ask the warrant of Guba's claim, we are asking two questions. (1) Have we reason to believe that an educational program can, under any circumstances, make a difference? (2) What is the relationship between a program which does make a difference and what obtains in the public schools?

Within very limited and controlled circumstances, for instance in lab schools, it is true that educational programs do make a difference. Are these the programs to which Guba refers? If so, these programs exist under the conditions of laboratory antisepsis rather than the "septic world of the classroom." Hence they don't provide evidence that compensatory educational programs (or any other massively funded programs) are making a difference.

It is mere prejudice to ignore the fact that a general hypothesis about the totality of social intervention is two directional, not one directional. In the absence of further data, we must conclude that an educational program can be harmful as easily as beneficial. Since there is no logical basis for supposing a change is beneficial, Guba's judgment of the state of educational outcomes is based on impressionistic data. But the use of impressionistic data is not without its hazards. Carpenters and janitors frequently spend time in schools, during

vacation months, making repairs and renovations of the physical plant. Is their attitude to be taken an authoritative? What is Guba's criterion?

When we examine the relationship between programs which make a difference (in a laboratory school, say) and what obtains in the schools, a general cause of the mass of research findings is readily apparent. Programs simply aren't installed in the public schools. A mass of data indicates that there is, in effect, no systematic component in the installation process. Installation activities would appear to be described by a random variable of zero mean. Process or treatment becomes a function of teachers' individual differences rather than conforming to a general plan. This means that while "innovative" approaches, in mean effect, will be no better than the status quo, the innovations will be no worse either.

What evidence is there for our claim that innovative programs are never installed? We will note only a few studies. In his study for the Center for Urban Education David Fox found no program installed in the much touted More Effective Schools in New York City, a fact also recognized by Dr. Wrightstone. Esther Kresh found no program installed in Pittsburgh's Team Teaching program. Both of these programs were massively funded, multimillion dollar programs. Nongradedness has apparently never been installed, according to McLoughlin's nationwide survey. This list could be greatly expanded.

We can thus hazard a conjecture that there are no treatments being applied, nothing more than what my colleague Lou Pingel calls "pseudotreatments." These are treaments existing on paper alone. Hence there should be no effects! In sum, Guba would appear in error: the lack of significant findings tells us about programmatic problems. It does not tell us that our research is in principle invalid.

II.

Guba suggested at the 1969 AERA that the "comparative question is exactly the one that must be asked if improvement is to occur." He proposes that one compares alternatives with the intent of choosing the most efficacious. As we examine the conditions for answering the comparative questions and for choosing the most efficacious alternative, we will be led inexorably to the Fisherian design.

If we turn to Fisher's Design of Experiments, we find that he examines the conditions of an experiment. After mentioning that matching of conditions across treatment levels in the experimental design is a possible candidate for minimizing errors, Fisher argues it is impossible to realize this condition in fact, since uncontrolled causes which could influence the experimental outcome are always strictly innumerable. A Fisherian would argue that supposed physical controls in the "classical" experiment are limiting cases of the general statistical controls. Although Fisher's statement was made over 30 years ago, a large number of researchers continue to use "matched

samples" frequently in conjunction with a highly questionable covariance analysis.

Since matching is a sufficient but not a necessary condition, control of errors in the design can and must be realized by other means. The cost of complete matching across treatment levels would be quite strictly infinite, and since an essential characteristic of any study is limited resources, Fisher proposes randomization as an alternative. This is a procedure by which the design is guaranteed against corruption by those disturbances which have not been eliminated. Thus there are two and only two sufficient conditions for control of sources of random variance; hence, one of the two is always necessary. Irrelevant variables are controlled in effect either by matching of conditions, which is to say eliminated in the field or else are controlled by randomization. Fisher emphasizes the sufficiency of the latter technique and then generalizes his argument on this point by stressing that variance in treatment subsequent to randomization presents no practical inconvenience. This point becomes very important later, when we discuss the compatibility of program improvement activities and rigorous design. Subsequent causes of differences, if under experimental control, are either predetermined, prior to randomization, or else are themselves randomized. We will turn to the first alternative in a moment. The second alternative is excluded from our discussion, as randomly distributed program improvement activities

by a program manager are not conducive to systematic pursuit of policy. This random activity is what we conjectured to be the case with program installation as currently practiced.

Guba has stated that the classical research mode, as exampled by the random sampling assumption, is not well met in the evaluation context. Notice that the frequent refusal of a school system to randomly assign students to treatment levels is a matter of policy, not at all of methodology. The preference of educational administrators for homogeneous grouping and intact groups to heterogeneous grouping can certainly be questioned as a practice, and can be a subject of investigation, but is of no methodological import per se.

We see that necessary conditions for making valid comparative judgments include the use of Fisherian designs. From Guba's insistence of comparative judgments, and plausible assumptions about the need for guarantees of validity, we can conclude that rigorous designs are required in evaluation studies.

III.

The next question we raise is whether sufficient conditions exist for using rigorous designs in conjunction with program change as a function of evaluative feedback. Guba asserted that "perhaps the most damaging assertion that may be made about the application of conventional experimental design to evaluation situations is that such application conflicts with the principle that evaluation should facilitate the continuous improvement of a program".

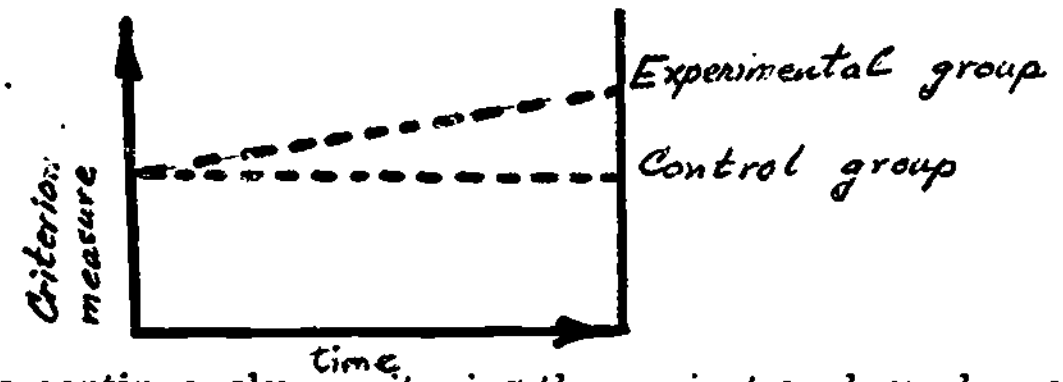
Guba thus argues that experimental design is incompatible with program improvement. Among the conditions of experimental design for Guba is the condition that "treatments cannot be altered if the data about differences between treatments are to be unequivocal". Invariance of treatment is sufficient on Guba's argument to preclude program change. This is also sufficient in Guba's terms to preclude evaluative feedback to decision makers, since on his argument "the practitioner needs to be able to refine and adjust his solution continuously... continuous changes must be made whenever the evidence indicates that original program objectives are being less than perfectly met". Feedback of research findings on discrepancies in the program would, by the principle of management by exception, be sufficient to precipitate program change. Indeed, on Guba's argument, feedback as "evidence" simpliciter, would in the absence of principles be sufficient for program change. He has stated that "project managers must use whatever evidence they can obtain" for program refinement. He concludes "an evaluation design that prevents such adjustments simply for the sake of providing unconfounded and internally valid performance estimates at the end of a development sequence is simply not tolerable".

This is Guba's perception of an incompatibility: if the dissemination of evaluation findings is proscribed to maintain the research design, then evaluation loses its value to the decision maker; alternatively, if

the design is abandoned, serious problems arise in the development of an alternative. We find, however, Guba's contentions on this point false.

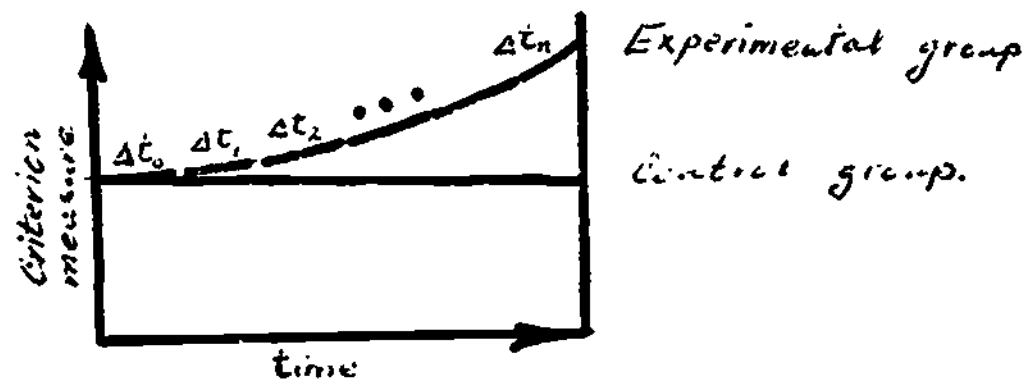
There are two reactions of the rational manager to evaluative feedback predicting the project outcome. On the one hand he can adjust the treatment to guarantee project stability. The other alternative is of more interest. The manager can respond to the feedback by improving the program.

Two points should be made. A general requirement of evaluation is that it provide for continual monitoring of the project. Thus as Julian Stanley has pointed out, the researcher is not constrained to "controlled one-shot experimentation."



Since he is continuously monitoring the project anyhow, he can conceive of the project as a series of little steps, hopefully all moving toward an optimum state of functioning. As Robert Chin has suggested, research in action contexts is as much research in program changes as in program effects.

When the program ceases to change, the researcher can conclude that if the manager is rational, he has judged his project to have arrived at that optimal state of functioning.



There is a theorem of higher mathematics which describes the situation. It is the fixed-point theorem. The theorem can be proved in this case. The existence a fixed-point is sufficient for the compatibility of research designs and evaluative feedback.

Chris Argyris has suggested that organizational theory might be appropriate to explain the social system established in the use of experimental designs. By viewing the action research situation as a transaction or game, the conditions are available for the compatibility of research and program change.

IV.

One final point remains. We have stipulated that the manager be rational. Guba has argues on the other hand at AERA in 1969 that it is likely that other models may have more utility for the evaluator than the conventional rational model. Parenthetically, I've done a lot of project evaluations in Washington, Pittsburgh and Philadelphia.

Managers simply don't use whatever evidence they can obtain as Guba argues. Again there is the matter of criteria. Program managers are quite selective about the evidence they act upon. Unfortunately, we don't know what their criteria for selecting that evidence are.

Our rationality stipulation amounts to a supposition that the program manager is consistent in his choices over time. Thus our argument doesn't hinge on any particular theory of rational behavior. And as Louis Rubin has emphasized "The key to effective dissemination, as well as to installation and... innovations, is to approach it rationally".

Recently, an incremental model of decision making has been forwarded by Richard Day. I discuss this in the most recent issue of The School Review. His model is explicitly based on the descriptive principles of the behavioral school, for instance the incrementalism of Braybrook and Lindbloom, or the discussion of action programs by Marris and Rein. Day shows analytically that for a relatively stable environment, the rules of thumb proposed by the behavioral school as descriptive of the real-world manager converge to the equimarginal principles of the synoptic rational model. At once, the manager who learns from his mistakes approximates to the economic man. Thus it appears that there is no real issue of incrementalism versus rational or optimizing behavior, as Guba supposes.

In conclusion, we might make the following point. The deficiencies in current American education do not appear to be in any way related to supposed methodological shortcoming of educational research. They seem related to a much more serious problem--the absence of a comprehensive theory of educational change. Such a theory, for instance, would provide prescriptions to solve the installation problem we noted above. A comprehensive theory cannot exist apart from research. But research methods can obviously exist apart from such a theory. Whether anyone would sensibly pursue such empiricism in the absence of theory is a good question. In sum, the problems are sociological, not methodological. The problems are more serious than Guba realizes, because it is easier to refine research methods than to generate a (presently non-existent) sociological theory.

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Prepared for Interstate Project for
Planning and Program Consolidation

by Gordon Welty

At the July 29, 1969 meeting of the Interstate Project in Salt Lake City, the question was raised whether it was possible to modify a program within the constraints of experimental design. Of crucial importance is the realization that research is a social activity. This does not make research less rigorous, only more complex. The following annotated bibliography addresses itself to this problem.

1. Bellman, Richard "Dynamic Programming: A Reluctant Theory" in New Methods of Thought and Procedure ed. F. Zwicky and A.G. Wilson (N.Y.: Springer Verlag, 1967) pp. 99-122. Bellman presents a non-technical discussion of the history and significance of the theory of dynamic programming. He is one of the theory's founders; it is a computer theory of multistage decision processes.

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differential" and the necessity of imbedding a process in a field of social action.

7. Mead, George Herbert Mind, Self, and Society (Chicago: U. Chicago Press, 1934) ed. C.W. Morris. This work, by the noted American pragmatist, recognizes throughout the need to treat research as a social process.

8. Welty, Gordon "Experimental Designs and Applied Research" California Journal of Educational Research (1969) pp. 40-44. This paper (appended) discusses the Guba-Stufflebeam contention that research designs are incompatible with program improvement. An indirect proof is sketched, which shows that the Guba-Stufflebeam position is false.

31 July 1969.

VT 010 431
Thyberg, Vera M., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 5-9, 1969).

American Vocational Association, Washington, D.C. Trade and Industrial Education Div.
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*TRADE AND INDUSTRIAL EDUCATION; *SPEECHES; *TEACHER EDUCATION; *CONFERENCES; CLUBS; SYNTHESIS; TEACHER IMPROVEMENTS; INSTITUTES (TRAINING PROGRAMS)
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This grouping of addresses given at the 63rd Annual Vocational Convention, Division of Trade and Industrial Education of the American Vocational Association includes; (1) "How V.I.C.A. Motivates Teachers and Students" by V.M. Thyberg, (2) "How Professional Improvement Institutes for Teachers are Improving Instruction" by A. McCarthy, (3) "New Opportunities for State Supervisors of Trade and Industrial Education to Serve Persons of All Ages in All Communities of the State" by F.E. Briley, (4) "Review and Synthesis of Research in Trade and Industrial Education" by C.J. Schaefer, (5) "The Teacher Institute; A Projection of Teacher Education for the '70's" by D.V. Brown, and (6) "Toward a New Sense of Social Responsibility" by F.E. Marsh, Jr. (GR)

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Speeches Presented At The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 5-9, 1969

Trade and Industrial Education Division

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HOW V.I.C.A. MOTIVATES TEACHERS AND STUDENTS[1]

Vera M. Thyberg

Dressmaking Teacher and V.I.C.A. Advisor
The Lewis A. Wilson Technological Center
3rd Supervisory District
Dix Hills, N. Y.

It is the purpose of this paper to discuss

1. Aim of Vocational Education
2. Need for developing leadership qualities
3. Lack of opportunities in Academic atmosphere
4. How V.I.C.A. fills gap
5. Role teachers play

[1]Presentation made at the A.V.A. Convention in Boston, Massachusetts, on December 6, 1969.

Distinguished Guests, Administrators and Teachers -

I would like to quote from the front cover of the V.I.C.A. Journal of October/November 1969.

"V.I.C.A. Youth are preparing to accept the challenges of a Technological era. An era of boundless opportunities for those unafraid to use their hands as well as their minds and desires to achieve competence in responsible and rewarding skilled careers."

This idea is not new --- for occupational teachers from the genesis of our profession laid claim to this goal. Within the limited framewodk of this narrow point of view we are right. But can I challenge you by saying that it wasn't until May 1965 that this goal in its broadest sense was attainable. Why! You ask: In May 1965 the Vocational Industrial Clubs of America was founded. With the establishment of this National Organization for our students we began to fill the serious void in our total educational plan. Occupational students, frequently considered "social outcasts" of their academic home school, and perhaps economically disadvantaged, are unable to compete for leadership positions. Student Governments, Hi Y's, Honor Societies, Theatre Groups and many typically academic clubs are out of their reach. We could enumerate many reasons for this but I think the most important is the shared time aspects of their educational day. Away from their home schools for half the day, they become a kind of half citizen, unable to attain the "popularity" necessary to be elected to leadership positions.

Yet isn't this an important aspect of their total education? Throughout our History, tradesmen have been in the forefront of our social and economic growth. They were leaders of men. Our students, with their soiled hands, will be and are far closer to the heart beat of America. They understand the yearnings and aspirations of their peers.

We must, therefore, provide the opportunity for leadership training, grounded in the fundamentals of democratic procedure. We must produce students able to weigh alternatives, able to speak out unhesitatingly for their convictions. Our students upon reaching adulthood, need not be just another member of the great "silent majority."

We can provide this opportunity for leadership training through the Vocational Industrial Clubs of America. Here, bound by mutual interests and concrete vocational goals, our students can experience the satisfaction of belonging to the group. They can cultivate leadership skills and know the thrill of being leaders and members of Society. Opportunities present themselves to assume responsibilities, be it a club officer or an active voting member. These are important experiences.

Since the establishment of a V.I.C.A. Chapter at Wilson Tech, I have watched students come out of obscurity and mature into seasoned teenage leaders. These same unpolished students developed to the extent that they became speakers at the dedication ceremonies of our new buildings, took part in

fashion shows, dances and club meetings. Frequently these functions were attended by School Superintendents, Administrators, Clergy, Politicians, Advisory Board members and Faculty. Pride in their achievements left few adult eyes dry.

In all my teaching career, I can point to no one single activity which contributed so substantially to the rounding out of our students. Four of these students have accompanied me to this Convention.

Talk with them before you leave. - - The time spent as an Advisor has been personally rewarding to me. I watched V.I.C.A. membership grow in numbers, in poise and dignity - watched them assume fiscal responsibilities, conduct membership drives and money campaigns and then conduct local contests in each trade. Local winners were then sent off to State competitions, the State Fair and finally I accompanied them to the 5th National V.I.C.A. Convention at Memphis, Tennessee.

I'm sold on V.I.C.A. The opportunity it provides for students to get a well rounded educational experience, of belonging to the group and participating in constructive extra-curricular activities, is something no occupational student should be deprived of.

Make V.I.C.A. a success in your school! Your interest and support is essential. The rewards for your students are incaculatable, and the personal satisfaction - - deep.

HOW PROFESSIONAL IMPROVEMENT INSTITUTES FOR TEACHERS ARE IMPROVING INSTRUCTION[1]

Anne McCarthy

Chairman
Cosmetology Department
Sarah J. Hale Vocational High School
Board of Education, City of New York

We who are involved in education, especially vocational education, have always focused our attention, and rightly so on "meeting the needs" of our students and the needs of industry for trained workers. In our efforts to meet these needs we constantly look back at the past, try to adjust our courses to the present and look to the future to seek out the new challenges that may be in the making. We are very cognizant of the fact that we must plan ahead in order to educator our students for the expanded job opportunities and competitive world economy they will face.

We are definitely succeeding in doing a good job in so far as anticipating student needs are concerned and we are slowly but surely answering the next big question which is, "What are the needs of the instructor?" "How should these needs, which directly affect the needs of today's students be realized?" Progressive vocational administrators have always been acutely aware of the obvious fact that despite the extent of the previous work experience of the instructor or how recent this experience has been, daily classroom teaching, by its very nature causes an instructor to slow down in the skills and routine procedures of the particular craft they teach. We know and realize that the rut created by school routines tends to dull the sensitivity of the teacher to industrial change and to produce

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 6, 1969.

a "competency gap" that is reflected in the subject matter and work skills being taught. We must further realize that the average instructor, who is teaching full time and in addition has various non-teaching duties that occupy a large portion of school and after school time, frequently does not even realize that the gap exists!

It has been proven that the only logical and successful way to "bridge the gap" is via the professional in-service institute which is designed to provide the intensive "re-education" teachers need to help them maintain professional competence. An excellent example of how competency training and up-grading of teachers can be achieved within a short span of time was demonstrated several years ago in New York State.

In the early part of 1967 the Department of State, Division of Licensing Services, announced that the State Board Performance Examination in Cosmetology and Hairdressing was being revised and would include specific new techniques which had become popular within the industry. Cosmetology instructors and administrators of schools teaching Cosmetology were suddenly brought to the realization that the present curriculum did not include essential instructional content and had lagged way behind the current demands of industry.

The needs of the teachers therefore determined the course of study content for the 1967 Summer Institute held at the State University College at Oswego, N.Y. A two week intensive workshop type of institute served to pinpoint the skills as well as the related information required by the teachers to adequately teach these new industrial skills. It provided them with methods of preparing curriculum materials and introduced new instructional reference material. Most important of all, the forty-two teachers who attended the Institute went home highly motivated and with a new found confidence in their own ability to make the necessary curriculum changes which would result in improvement of instruction.

Despite the fact that his particular Institute had what may be termed a built-in incentive, evaluation of subsequent institutes has shown that experienced teachers do feel the need for and welcome the opportunity to participate in in-service Summer Institutes. Proof of this desire on the part of teachers to acquire new skills and the instructional know-how they need for more effective teaching was made evident by the large number of applicants who applied for acceptance into the last two Annual Institutes.

A further indication of the value of the professional institute is that it provided relevent teacher education. An institute program, organized to include identified specific objectives must be designed to provide a variety of activities such as visits to industry, guest demonstrators. workshop experiences and instruction in new trade content in order to provide the teacher with current trade knowledge.

At the Institute that was conducted last year, for instance, a whole new area of employment possibilities, hitherto unknown to the teachers in attendance, was revealed. A field trip to a large firm which specializes in "beauty salon concessions" on a national and international level, made known the fact that employment of licensed operators has entered the realm of big business. To understand the significance of this, one must realize that at the local school level placement services usually center upon the employment of licensed cosmetology program students in local shops. New vistas were opened when the recent developments in this area were explained and elaborated upon by Mr. Kenneth, world renowned hair-stylist and Vice-President in charge of personnel, of the firm visited. To cite another example, an expert in the field of "hair weaving" demonstrated to the members of the Institute the techniques employed in this most recent and lucrative area of the cosmetic industry. While the members present did not actually "learn" from one demonstration the intricate skill involved,

they did gain sufficient knowledge to enable them to discuss the process and to inform their students how, when and where the details of learning the highly specialized techniques involved in this unique cosmetic service may be obtained.

This knowledge will in turn be incorporated either consciously or unconsciously into the teachers daily instruction, thus adding to the teachers professional and technical growth and culminating in improvement of instruction.

NEW OPPORTUNITIES FOR STATE SUPERVISORS OF TRADE AND INDUSTRIAL EDUCATION TO SERVE "PERSONS OF ALL AGES IN ALL COMMUNITIES OF THE STATE[1]

Dr. Frank E. Briley

Program Officer
Adult and Trade & Industrial Education
Division of Vocational and Technical Education
Bureau of Adult, Vocational and Library Programs
Office of Education, DHEW
Washington, D.C.

Your vice-president has given me a very difficult assignment. Several weeks ago, Charlie Bates requested me to "bring you up-to-date on the organization and activities of particular concern to State office personnel in trade and industrial education."

I am sure his topic was selected in good-faith and with the hope that much new and vital information would result. Well, I would like to think that what I have to tell you will be of great value, however, I am reminded of the story Governor Dewey Bartlett told recently during an address before the National Research Conference in Oklahoma City. I feel this story is appropriate because it will serve to explain what it's like to be a program officer in the Office of Education these days.

"One day, not too long-ago, two friends were walking across one of the many large ranches in the State of Oklahoma when they spotted a huge bull heading for them at a high rate of speed. One fellow climbed up a small tree while the other found a hole to jump into

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[1]A report of the remarks of Frank E. Briley, Program Officer, Adult and Trade and Industrial Education, Division of Vocational and Technical Education before the 63rd Annual Vocational Convention, Association of State Supervisors of Trade and Industrial Education, on December 6, 1969 in Boston, Massachusetts.

just as the hot breath of the bull passed over him. The man jumped out of the hole and then back in as the bull passed over him a second time. This well timed and exciting act took place several times. The man in the tree shouted, "You better stay in the hole - stay in the hole or you are going to get killed." Now, the guy,in the hole shouted, "Mind your own business there is a rattlesnake in the hole."

My friends, this is much like the situation in which we find ourselves in Washington these days as we endeavor to gear-up to provide the leadership needed for implementing the Vocational Education Amendments of 1968 in the face of the administrations hold-the-line on funding during the foreseeable future.

I am not here this morning to create images of despair or pessimism in your minds because this would not be "telling it like it is." There are a number of good reasons why vocational educators should be optismistic about the future and this applies especially to those of us who are associated with Trade and Industrial Education. Along with our expanding enrollments and increasing responsibilities there are many new opportunities for Trade and Industrial Educators to serve "persons of all ages in all communities of the State."

In historical perspective, the Vocational Education Amendments of 1968 provide the kind of flexibility in vocational education that many leaders in this field have advocated over the years. The struggle

by enlightened educators which began many years ago, even before the Smith-Hughes Act of 1917, and the seemingly unobtainable goals reached since the Act, have culminated in a very broad and a very basic vocational education act for these times. Our task now, whether we work at the National, State or local level, is to make this new legislation functional or meaningful in terms of improving the performance of all people in all communities who may benefit.

I wish to point out a very important fact about the present law. You are in very excellent company when you support the purposes of the present legislation, because your congressman believes in it. There was not a single vote in opposition to Vocational Education Amendments of 1968, (P.L. 90-576) when they came before the House and the Senate for final vote. Few pieces of legislation get this kind of total support.

I am sure all of you gathered here this morning are well aware of the various parts and sections of the Vocational Education Amendments of 1968; therefore, you are also aware that the words "Trade and Industrial Education" are not to be found among the thirty-five pages of the legislation - (P.L. 90-576) except where it is mentioned in reference to curriculum development in Part i. This apparent omission came as a shock to those of us who have traditionally expected our special occupational area to be presented in large print as it was in the legislation of earlier years.

Although the 1968 Amendments replace most of the existing legislation in the field of vocational education, trade and industrial education has not been left out. Perhaps if you have not done so, it would prove quite enlightening to take a long hard look and discover that, indeed, trade and industrial education is there--on almost every page.

For those of you who enjoy interesting exercises, I recommend that you read the Act and replace the words "vocational education" with "trade and industrial education." In fact, I urgently recommend such an exercise since it would provide you with a better understanding of your responsibilities and opportunities during the years ahead and boost your ego as well.

Many of you understand why I say this since, during the past few months, you have been involved in accessing the human and industrial needs in your respective States and preparing the State Plan for Vocational Education. Because of this effort, you are, perhaps more cognizant of the expanding emphasis on serving people and of methods for accomplishing this task through improved trade and industrial education programs.

Before we consider the new opportunities for service through improved trade and industrial education it would be useful to indicate the scope or the extent of the present services.

According to a recent report released by U.S. Education Commissioner,

James E. Allen, Jr., "more than 18, 000 schools in the United States provided vocational education courses to approximately 7.5 million youth and adults during the school year ending June 1968. This number is expected to increase to 9.2 million persons during the 1969-70 school year."

"The 1968 enrollments increased 7.6 percent over the previous year as the Nation invested more than one billion dollars of Federal, State, and local funds in vocational education. State and local governments provided about 78 percent of the total." The Commissioner took note of the steady increase in vocational-technical education enrollments since passage of the Vocational Education Act of 1963. He is also expecting a significant acceleration in enrollments when the 1968 Amendments are funded.

The level of funding for vocational education during 1968 was approximately $1.2 billion, some $186 million more than in 1967. State and local funds accounted for $927.7 million of the total.

Enrollments rose 8.9 percent for secondary vocational education and 18.4 percent at the post-secondary education level.

Of the 7.5 million youth and adults enrolled in vocational and technical education previously mentioned, 1.62 million of this number were enrolled in the 96 occupational categories comprising trade and industrial education.

The enrollment in trade and industrial education rose 9.2 percent in 1968 over the 1967 enrollments. This was 1.6 percent above the 7.6 percent rise for all vocational education. Thirty-nine States indicated increases in their trade and industrial education enrollments. It should also be pointed out here that in 1968, 21.6 percent of the total vocational education enrollments were in these programs.

During 1968 there were approximately 48,000 teachers serving the 1.62 million persons enrolled in trade and industrial education programs. This figure constitutes about 33 percent of the total number of all the vocational teachers reported. In order to serve the increasing enrollment, there is a need for more teachers at all levels.

At this point, I would like to bring you up-to-date on the areas of adult, apprenticeship, and persons with special needs served through trade and industrial education programs. During 1968 there were over one million adults enrolled in more than 90 broad trade and industrial occupations. Over 900,000 of these adults were receiving supplementary training while over 100,000 were in preparatory programs.

The apprenticeship enrollments reached over 141,000. Five States: Florida, Illinois, Michigan, New York, and Ohio each reported that more than 10,000 apprentices received related training. Apprentices were being served in 89 trades and in 43 States, the District of Columbia, and the Commonwealth of

Puerto Rico. The five trades of Carpentry, Electricity, Metal working, Machinist, and Plumbing and Pipefitting each had enrollments of over 8,000 apprentices.

The records indicate that much is being done to serve persons having special needs. Consistantly over the years, the trade and industrial education programs have provided unique occupational training for disadvantaged persons. Although we are far from our goal, the records indicate that more than 30,000 people in the Special Needs category were enrolled in trade and industrial education programs during the fiscal year 1968.

A glance at the statistics in trade and industrial education should provide us with a feeling of confidence as we look toward the future and chart our course of service to youth and adults. In developing future plans, we must keep in mind the needs of the people and emphasize the local level. This focus is the spirt of the new legislation, and therefore, a primary objective of the State Plan. We must begin by collecting information about the people in both rural and urban areas relative to their employment needs. The accurate accessment of this data at the local level and its incorporation into the State Plan for Vocational Education would provide the direction needed in all of the occupations we now include in the trade and industrial education category.

In order to be more effective at the State and local levels, some reorganization is taking place at the National level. Significant organizational changes which may be of interest to persons in trade and industrial education are being planned. In a news release dated

August 22, 1969, Dr. James E. Allen, Jr., Assistant Secretary for Education and U.S. Commissioner of Education, outlined "Some organizational changes that will soon be in effect within the Office of Education." In this release, the Commissioner stated, "The primary objective of the Office of Education is to increase the capabilities of State and local education agencies, colleges and universities for improving the quality of their programs and services to the children and youth of America. The changes in organization and executive responsibilities are designed to help the Office better achieve this objective."

"Of special importance, is the coordination provided under the new organization for the development of more effective leadership by the Office in research, planning, and evaluation. Under this arrangement it will be possible to focus the work of these units more sharply on the problems of American education. Special efforts will be made to encourage more effective linkages within the educational system among the processes of research, development, evaluation, demonstration, and dissemination as a means of accelerating the widespread application of improved methods and practices."

One of the ways to accomplish this activity, which would be of particular interest to State Supervisors of Trade and Industrial Education, is the organization of a (NEW) Bureau of Adult, Vocational, and Technical Education. When organized, " a new Deputy Commissioner for School Systems

will be responsible for coordination of Federal programs of assistance to local school system. He will provide general direction for administration of the Bureau of Elementary and Secondary Education, the Bureau of Education for the Handicapped, and a (NEW) Bureau of Adult and Vocational and Technical Education." I feel certain that this process of restructing will continue for sometime as we gear-up to solve the problems in education that face this Nation.

It is quite reasonable to believe that until more funds are provided for the purposes of vocational education not much can be done to increase the number of professionals serving in occupational areas at the Federal level. However, until a more complete reorganization takes place, supported with the necessary funds, leadership in trade and industrial education will continue on the basis of its present strength in the Headquarters and in the nine Regional Offices. Because of the personnel shortage, the present Federal office staff can devote only about half-time to Trade and Industrial Education since time must also be devoted to other important problems related to vocational education.

As a short-run measure, plans have been formulated to provide for the use of consultants in trade and industrial education as well as in other occupational areas; however, budgetary restrictions have made this difficult. Renewed efforts will be made during the next few months to get additional support at the Federal level for trade and industrial education through the use of consultants.

I wish to emphasize that the expansion and improvement of vocational education is of increasing concern to the leadership in the Office of Education. Because of this concern, much may be done to bring about a more equitable balance between the emphasis on people without letting up on the expanding needs for the occupational specialists which are required for future program development at all levels.

No matter what reorganizational patterns evolve at the Federal, State, and local levels the need for more skilled craftsmen and technicians will continue to exist. Therefore, one may find that regardless of his professional title, there will be greater opportunities for work with the leaders in industry, business, and unions, thus, meeting not only the needs of the people, but the needs of the industrial community as well.

My recent contacts with leaders in industry, business, and labor indicate that they are vitally interested in supporting vocational education. Industry today, more than in the past, needs skilled craftsmen and technicians along with well trained support personnel. Industrial leaders are asking vocational schools to supply better auto mechanics, brick masons, carpenters, plumbers, electricians, etc., in greater numbers. From my recent experiences, I feel confident that there has never been a period when vocational educators have had so many friends who seem willing and eager to cooperate.

It is my opinion that each of us here today have a new and challenging opportunity under the more flexible legislation to turn our attention to improving the attitudes and misconceptions which people have about vocational education. I would like to emphasize a statement from the First Annual Report of the National Advisory Council on Vocational Education:

> "The Violence that wracks our cities has its roots in unemployment and unequal opportunity. Those who have no jobs in an affluent community lash out in anger and frustration. Young men and women who cannot qualify for decent jobs distrust the society which reared them. Dissidents speak with the voice of rebellion; campus and inner-city revolt reaches into our schools. Our Nation seeths."

The Report goes on the State:

> "At the very heart of our problem is a National attitude that says vocational education is designed for somebody else's children. This attitude is shared by businessmen, labor leaders, administrators, teachers parents, and students. We are all guilty. We have promoted the idea that only good education is an education capped by four years of college. This idea, transmitted by our values, our aspirations and our silent support is snobbish, undemocratic and a revelation of why schools fail so many students."

I sometimes wonder how long it would take to change negative attitudes toward vocational education? It may be time well spent to begin in your own State, developing plans which would change the national attitude toward vocational education. The formulation of such plans would bring support from various sources.

Professor Lieberthal of the University of Illinois suggested some of these sources in an article in the AVA Journal a few months ago when he said:

> "The problem requires political solutions; that is, the ability of vocational educators to convince political decision-makers that anything less than vocational opportun. ' for all is less than enough for the State and Community."

Professor Lieberthal is urging us to communicate more effectively with our decision-makers. The provisions in the new law for the establishment of National, State, and Local Advisory Councils on Vocational Education, may provide the important tool needed not only for changing toward education for work in our society, but also for reaching the decision-makers. I suggest that you keep the members of the Advisory Council in your State informed about the many fine existing programs of trade and industrial education and the need for expansion.

When it comes to changing attitudes, we should begin at the local level with the vocational teacher. How well is he sold on vocational education? How professional is he? Does he communicate effectively with industry, business, and labor leaders? What is his image in day to day activities as a teacher and a member of a faculty? Last, but by no means least, does he, as a trade and industrial educator, involve himself in the VICA Youth Club activities?

Today, when so much attention is focussed on youth, we need to work more closely with our vocational youth organizations as a

part of the regular vocational programs to promote positive changes in attitudes in our schools and other segments of our communities.

If you are not promoting the Vocational Industrial Clubs of America, you are missing a new opportunity to add education to training in the vocational and technical skills and to help youth to help each other in developing character and leadership abilities. We must recognize the great potential this youth organization has for changing the attitudes not only of youth, but also those of parents, teachers, business leaders, industrialists, and labor leaders throughout the Nation. As we think of ways and means to involve youth in helping us to change attitudes, we should consider their desire to participate in the world of work.

There are new opportunities for trade and industrial educators to expand the existing highly successful industrial cooperative training programs. Part G of the Vocational Education Amendments of 1968 provides for additional funding and improved programs not available under Part B of the Act. It is reasonable to suggest that because of the liberal provisions under both parts, a larger enrollment and a higher quality ICT program can be developed . The cooperative vocational education programs, if well planned and organized, provide the "relevance" in vocational education that makes school meaningful for many of our youth. In my opinion, a good cooperative vocational education program that includes the concept of "learn while you earn" provides an effective technique for closing the "generation gap" for

it allows youth to communicate with the "real world" where honest work builds character.

Whether we are endeavoring to change attitudes, improve existing programs, or reach out in new directions we must have qualified people on which to depend. I do not remember a time when we have had a sufficient number of qualified staffs in trade and industrial education. In the State reports, there are continuous references to this problem of teacher deficit. Today, we have a new opportunity to alleviate this long-standing problem through the Education Professional Development Act. (Public Law 90-35)

As you may already know:

> "The purpose of this title is to improve the quality of teaching and to help meet critical shortages of adequately trained educational personnel by (1) developing information on the actual needs for educational personnel, both present and long range (2) providing a broad range of high quality training and retraining opportunities, responsive to changing manpower needs; (3) attracting a greater number of qualified persons into the teaching profession; (4) attracting persons who can stimulate creativity in the arts and other skills to undertake short-term or long-term assignments in education; and (5) helping to make educational personnel training programs more responsive to the needs of the schools and colleges."

I suggest that we make maximum use of this Act as we develop plans to serve all people in all communities through vocational education. Thus, the critical need for additional teachers and other specialized personnel so vital to all areas of trade and idnsutrial education may be gradually minimized.

Time will not permit me to suggest all of the opportunities we have to improve trade and industrial education under the existing broad legislation. Therefore, I have presented only a few with the hope that you will add others. It has not been my purpose today to look at our problems but rather, to focus on a few of the opportunities we now have to resolve many of the difficulties that have faced trade and industrial educators as well as all vocational educators for too many years.

In the days ahead I urge you to look diligently for new opportunities rather than for problems. I urge you to look to the future with confidence as we begin, (in 19 days) the exciting decade of the 70's. Remember, "today is the first day of the rest of your life" and I am, indeed, pleased with the opportunity to spend my time working with all of you.

REVIEW AND SYNTHESIS OF RESEARCH IN

TRADE AND INDUSTRIAL EDUCATION

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NAITTE Research Program
American Vocational Association
Boston, Massachusetts
Sunday, December 7, 1969

The second and final draft of our manuscript entitled, Review and Synthesis of Research in Trade and Industrial Education consisted of ninety-seven (97) double-spaced typewritten pages. Two-hundred and seventeen (217) sources are listed in the bibliography and reviewed in the manuscript. This second and final draft is the one that will be published by The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University, Columbus, Ohio.

Although two-hundred and seventeen (217) sources are indicated in the bibliography, I dare say that some three-hundred (300) to three-hundred and fifty (350) abstracts were presented to the authors for consideration in the review. Special thanks is due to Mr. Clifford Easton, NDEA Fellow in the Department of Vocational-Technical Education, for his assistance in reviewing the research studies and literature, and provided the abstracts.

The first generation review of this publication was written by Tuckman and Schaefer and contained research findings primarily for the years 1962-1966. The second generation review was primarily concerned with the findings and research conducted from August 1966 to April 1, 1969.

Many of the studies and research reports reviewed were conducted by people in this very room. It is not our intent in the limited time available to review studies and mention names of various researchers. We assume that you will want to obtain the full set of reviews published by the Center and review in depth the state of the art, so to speak. We will attempt to carry on a form of interplay, or dialogue, which may be useful for your consideration for further research efforts. We will cover the major topics as presented in the review.

SCHAEFER - Manpower Needs and Employment Opportunities

1. When one attempts to assess the research endeavor in the manpower needs area -- especially an educator, he is apt to get embroiled in the dilemma between the needs of the individual and that of employment opportunities. To this end, more will be said as our report progresses. Here, we are talking about employment opportunities.
2. To the vocational educator, it is a must that he know something about up-to-date manpower requirements. This is not saying he should be an unqualified expert. It is saying that he must have a

source of information as to jobs and job trends.

3. The literature argues hard and long for a system of manpower projections, the establishment of a data bank, and an improved method of collecting and disseminating job information. No adequate system has yet been found.

4. For the first time, it appears that a substantial amount of work is being done in obtaining employee characteristics (educational and demographic) on rather large samples (as brought about by MDTA and other such programs).

5. Youth still pose a special problem in regards to employment opportunities and according to the United States Department of Labor, there are still 27.5 million workers without a high school diploma.

6. Women, too, came into their fair share of the employment spotlight. The lack of recruitment of girls into T & I programs is a topic needing study.

7. But, when it is all said and done, the United States Department of Labor is looked to for the hard data and studies related to manpower and employment.

PAUTLER - <u>Curriculum Development</u>

1. The rapid increase in post-high school occupational

programs has created some articulation problems between them and secondary level programs. We are in need of studies that will lead to articulated curriculum development efforts involving the secondary and post-secondary institutions.

2. The research in past years reflects many different types of programs used to provide vocational-technical education. What now seems needed is some type of evaluation to determine which type of program is best. What are the short range and long range advantages to the student of each type of program. Evaluative studies to determine the success or failure of the various approaches seem to be lacking.

3. A study to determine curriculum accountability seems to be needed at this time. In my travels, it is seldom that I visit a school that has a curriculum coordinator on the staff. We could learn a great deal from our friends in the Association for Supervision and Curriculum Development regarding curriculum development and supervision.

4. The entire idea of performance or behavioral objectives seems worthy of added research in the

area of T & I education. What assistance can we offer the shop teacher who must, if research is to be valuable, apply the findings on the firing line?

SCHAEFER - Educational Programs

1. The myriad of occupational educational programs -- in-school, retraining, job corps, etc. -- has led to substantial confusion, fragmentation, and duplication of efforts. The research thus far leaves more unsaid than said.
2. Attaining program objectives and stated goals is still a game of chance and we appear a long way off from implementing and testing models such as advocated by Frank's (M.I.T.) Summer Study on Occupational and Vocational and Technical Education and Maley's cluster conceptional framework.
3. If educational programs are to be concocted -- an art which seems rather successfully practical and recorded in the literature by vocational practitioners, more has to be built into the process to attest to their success. The cost-benefit analysis appears to be called for at the conception of

new program ideas. The work of Kaufman, Corazzini, and others, has not hurt vocational education in this respect and must be replicated in more situations.

4. Finally, educational program development appears to be caught in the dilemma of student need orientation vs. manpower needs. That is to say, from whence we start -- the needs of the human being or the opportunities (realistic) that are available to manpower resources. As educators first, and manpower delivery experts second, we cannot let program studies become too one-sided either in quantity or quality.

PAUTLER - Instructional Materials and Devices

1. T & I education programs, because of the varied nature, should be one of the chief users of instructional materials and devices. Yet, many vocational-technical schools are sorely lacking such audio-visual hardware and software. What is the attitude of vocational school administrators toward such equipment? Is their attitude consistent with the availability of both software and hardware in

their schools? What is the teacher attitude toward audio-visual equipment? It makes little sense to push A-V in teacher education programs unless the equipment is available in the local schools.

2. More studies, with other media devices, should be conducted along the lines of the two-year assessment of micro-teaching conducted by the staff at the Center at Ohio State. A wide range of some ten (10) sub-studies were conducted as a part of the total research effort.

3. Research evidence is lacking to determine the relative effectiveness of the various instructional materials and media as related to T & I education. A number of research studies such as the micro-teaching assessment, should be conducted dealing with media suitable to T & I educational programs.

SCHAEFER - Learning Processes and Teaching Methods

1. A question can be raised whether we have learned all there is to about teaching methods and learning theory. In fact, I sometimes feel we aren't using half of what we already know, especially as

evidenced by college professors.

2. The literature indicates that studies dealing with T & I and learning processes and teaching methods are extremely limited. The work of Allen in terms of micro-teaching and flexible scheduling are well known.

3. Little has been done in the area of attitudinal change although an effort seems to have been made in ascertaining the value of directive vs. non-directive teaching. Tuckman and Brenner have led in these attempts.

PAUTLER - Student Personnel Services

1. The review of research dealing with Student Personnel Services uncovered many studies of value to T & I education programs. Many of the studies reported should prove to be of value to student personnel service staff in T & I education programs.

2. One item of major importance seems to be the fact that the type of work experiences industry-bound students are likely to have is not included in the counselor's background. However, research evidence seems to be lacking to indicate if such experiences

make one a more effective counselor of T & I students. Perhaps, research efforts should be expanded in this area of endeavor.

SCHAEFER - Facilities and Equipment

1. I would like to think we know a good deal about facilities and equipment since the need for vocational school buildings is high on our priority list.
2. If this is the case, one would not be surprised then, to find a good deal of literature on this aspect. And this seems to be the case. Besides the AVA Journal, School Shop and IAVE have all made a sincere attempt to disseminate floor plans, models, and equipment lists. What seems to be lacking is a comprehensive cataloging of all such available materials and ideas.
3. Far too little actual research or fact finding type studies have been conducted, however.

PAUTLER - Administration and Supervision

1. Evaluation of some of the leadership development programs seems essential at this time. Much has been written on leadership development but now

seems the appropriate time to evaluate some of the programs that prepare T & I administrators.

2. With the projected growth in enrollment in vocational education, a good, hard assessment of the essential characteristics of T & I administrators and supervisors seems essential. What common experiences both within and outside of the classroom are necessary?

3. What types of in-service programs should be conducted to assure a ready supply of supervisors and administrators at the local, state and national levels?

4. To what extent are internship and externship experiences available to T & I personnel? Of what value are such experiences?

SCHAEFER - Teacher Education

1. Teacher education is a topic close to my heart. The literature reports that forecasts of demand for T & I teachers shows considerable consistency. Is there a demand for teachers or do we delude ourselves in thinking that we can hire adequate and competent tradesmen right off the street?

2. What states have or are now making adequate projections and plans to have an ample supply of T & I teachers by 1975? What role should, or could, occupational competency examinations play in meeting: (a) teacher certification and (b) college credit? How do we keep T & I teachers up-to-date in a technological sense? Those are but some questions that haven't been studied nor answers found for over the many years.

SCHAEFER - <u>Evaluation</u>

1. The topic of evaluation is only now coming into focus. As vocational educators, we have been so busy doing and carrying out, that the end product and its value has only been treated in an off-handed manner.
2. The familiar follow-up study method just isn't enough to attest to program success. This is not to say it doesn't have a place in the evaluative process, but it has been definitely over-used without recognizing its real potential -- one of a longitudinal nature.
3. Cost-benefit studies have been mentioned earlier

and the case study certainly should play an increased role in the evaluative process. Regional accrediting and pilot projects have their place. The tying together of behavioral objectives with evaluation outcomes appears the most promising work for the future.

In closing, let me say for Al Pautler and myself, it has been exciting to follow through with the T & I research endeavor. But the hard, cold facts of the matter are that your job -- the researchers in our field -- is far from being done.

THE TEACHER INSTITUTE

A PROJECTION OF TEACHER EDUCATION FOR THE '70'S [1]

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This paper is addressed to the preparation and inservice training of technical and industrial teachers through a combination of industry and university facilities, equipment and personnel. The project at Oak Ridge, entitled Training and Technology (TAT), has two major program components:

A. Worker training of disadvantaged youth and adults in six vocational fields (T & I).

B. The Teacher Institute, designed for:

   1. Preparation of prospective technical and T & I teachers in a ladder of careers approach.

   2. Inservice training of technical and T & I teachers.

   3. Graduate leadership internship training.

This industry-university partnership, TAT, began in the summer of 1966 as a research implementation inservice Technical and Industrial Teacher Program, supported by the Bureau of Research of the U.S. Office of Education (BR 6-2329). The initial program, administered by Oak Ridge Associated Universities (ORAU) an official cooperative training arm for the Atomic Energy Commission, brought together the vital atomic age tools and equipment, expertise of the industrial technology and university teacher educators. Now the three years of cooperative effort on the part of the U.S. Office of Education (USOE), the U.S. Department of Labor, the Atomic Energy Commission (AEC), Union Carbide Corporation (UCC), and the University of Tennessee (U-T) demonstrate that the results of research activities actually can be put into practice in a viable manner to provide in vocational teacher training new dimensions in pre-service, inservice teacher and graduate leadership education programs. During the past academic year, the University of Tennessee negotiated a separate interagency agreement with the AEC and now administers the Teacher Institute independently of ORAU as shown in Figure 1. TAT, shown in the form of a scroll, is symbolic of the conceptual aspect of the program--Experimentation and Demonstration. Negative aspects of the experiment and evolving are rolled up as new aspects are unfurled.

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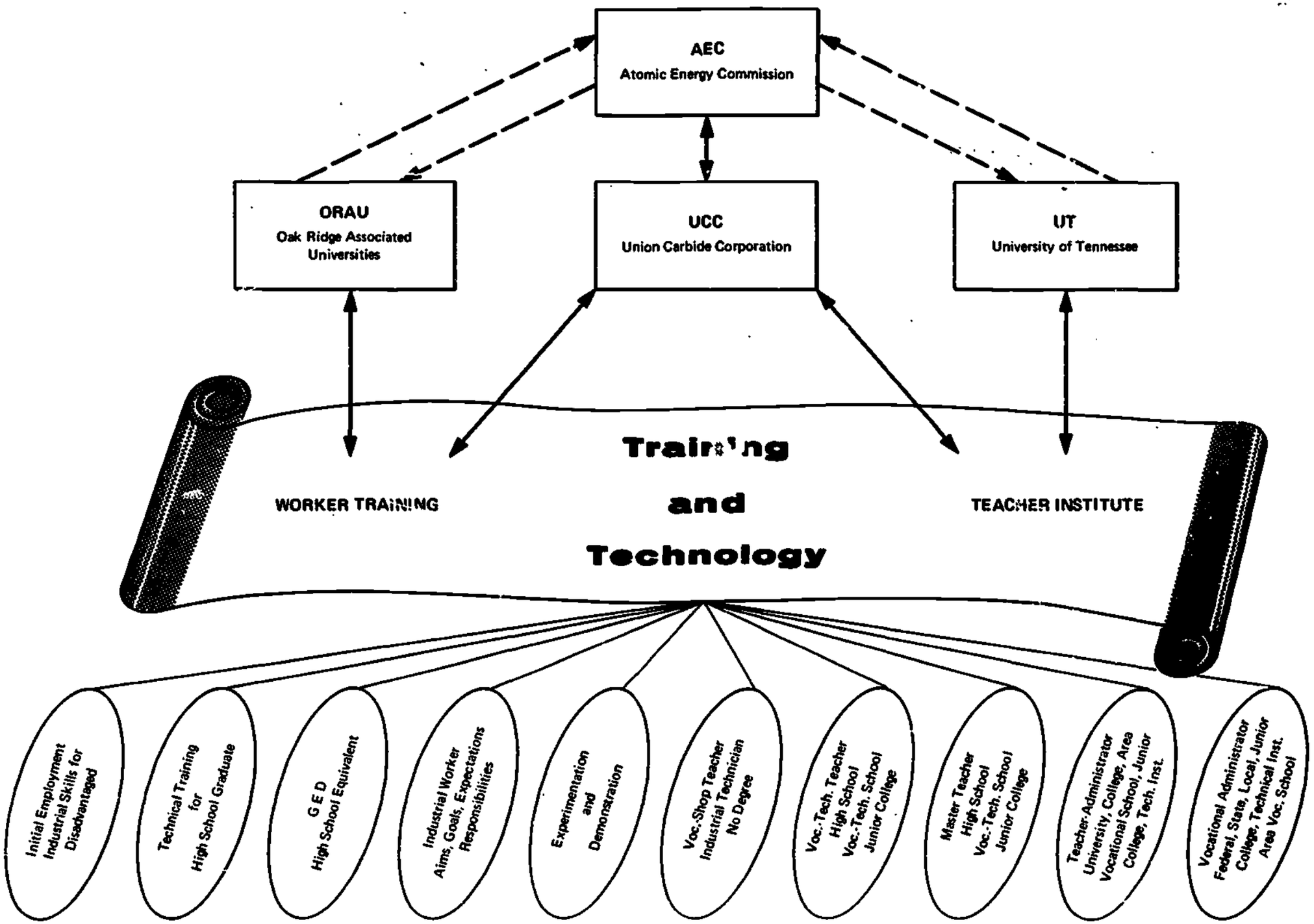
[1] Presentation made at the AVA Convention in Boston, Massachusetts on December 8, 1969.



TAT RELATIONSHIPS AND OBJECTIVES

A. THE WORKER TRAINING PROGRAM

During the first two years of TAT, the Worker Training Program recruits were systematically selected for maximum potential as technical employees. In reality, the cream of the crop from among the applicants were selected for training.

Beginning in June 1968, however, a new concept in recruitment and training evolved and thence the worker trainees have been recruited from among the Appalachian disadvantaged, i.e., with incomes below the poverty line, lacking suitable employment and one of the following criteria: under 22 or over 45 years, member of a minority group, school drop out, or handicapped.[1]

The TAT worker training personnel, consisting of 42% non white, 64% high school drop outs, 4% physically handicapped, etc., indicate the recognition of the Who involvement in vocational education. This paper mentions the worker training program because of the mingling and close association between the personnel in both programs. The sharing of identical machines, laboratory equipment, classrooms, etc., the rapport established among these individuals cannot and indeed should not, be ignored. Also, the manifold opportunities for an informal micro-teaching situation between prospective teachers and the worker trainees have been evident during the past year. These brief, unstructured teaching-learning experiences have become recognized as one of the prime exemplary functions of the teacher preparation. Without the Worker Training Program for the disadvantaged this micro-teaching function would not be feasible. The training of vocational-technical (voc.-tech.) teachers alternately and in direct combination with training about 180 disadvantaged workers in an industrial environment with industry instructors has created a stronger program for both. It is indeed an exemplary model in vocational-technical education today.

B. TECHNICAL AND INDUSTRIAL TEACHER PREPARATION

Teacher candidates for a voc.-tech. teacher training program may be, and indeed have been, recruited from various sources (see Figure 2) such as: Armed Forces, industry, other university departments, technical institutes and high schools. At the Teacher Institute, three years of operation have indicated the high probability of voc.-tech. teacher success of mature veterans and retirees from the U.S. Armed Forces who have one to three years of college credit and a strong vocational or technical experience background. In all fairness it should also be recognized that similar individuals with industrial experience have proved successful as teachers but such individuals are at present difficult to recruit because of 1) salary, level differences between

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[1] U.S. Department of Labor. Manpower Order #2-68, February 8, 1968.

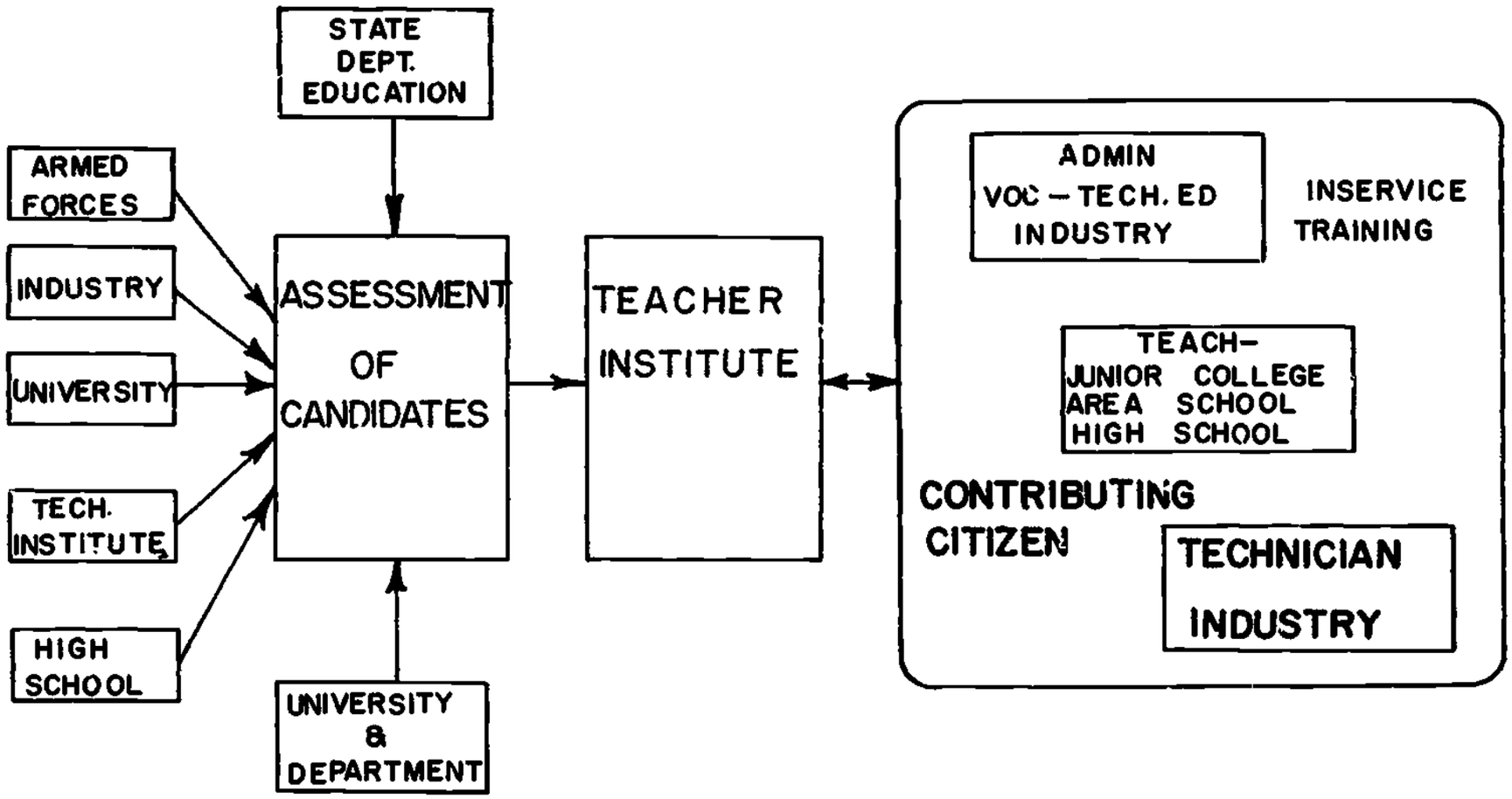

FIGURE-2

E ISOM

industry and education, 2) pension rights of industrial workers and 3) recruitment knowledge and procedures are not fully developed. Our present research program at the Teacher Institute is making extensive effort to develop recruitment procedures for industry employed prospective voc.-tech. teachers.

As an exemplary model in voc.-tech. education the initial research and demonstration design incorporated wide usage of State Department of Education, Industry and University personnel. One concept of this design involves the joint assessment of prospective teacher candidates before admittance to the Teacher Institute program (see Figure 2). This assessment is made with the realization that the candidates may exit into various fields of endeavor ranging from the industrial technician to an administrative position at college level.

Realities of teacher supply and preparation for vocational and technical teaching positions dictate that careful attention be paid to three major ingredients: personal, technical and professional. These are presented in graphic form in Figure 3, based upon a similar idea by O. Nelson.

Personal

The ultimate product of the Teacher Institute is to turn out voc.-tech. teachers to become competitively successful in a career position which is fruitfully rewarding to the individual. The selection and recruitment of prospective voc.-tech. teachers requires certain personal basic achievements such as maturity, ability to carry on pleasant inter-personal relations, some previous college training and a strong work experience. Work experience historically has been recognized as essential to the vocational-technical teacher as academic preparation is to the academic teacher. At the Teacher Institute, we believe that substantial skills and technological practice is tantamount with voc.-tech. teaching success. While many vocational teachers have been noted for their diversity from lecture-to-learn process, Rogers implies further emphasis in the inter-personal relations direction.

> The teacher . . . will be skilled in stimulating individual and group initiative in learning, skilled in facilitating discussions in depth of the meaning to the student of what is being learned, skilled in fostering creativity, skilled in providing the resources for learning.[2]

Inter-personal relations ability is believed by this writer to be a basic requirement for Teacher Institute recruits as is some previous successful college enrollment. It should be noted also that those candidates already with some completed college courses can better withstand the rigorous program.

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[2]Rogers, Carl R., What of Education in the Year 2000, Western Behavioral Science Institute, La Jolla, California. Interpersonal Relationships: U.S.A. 2000.

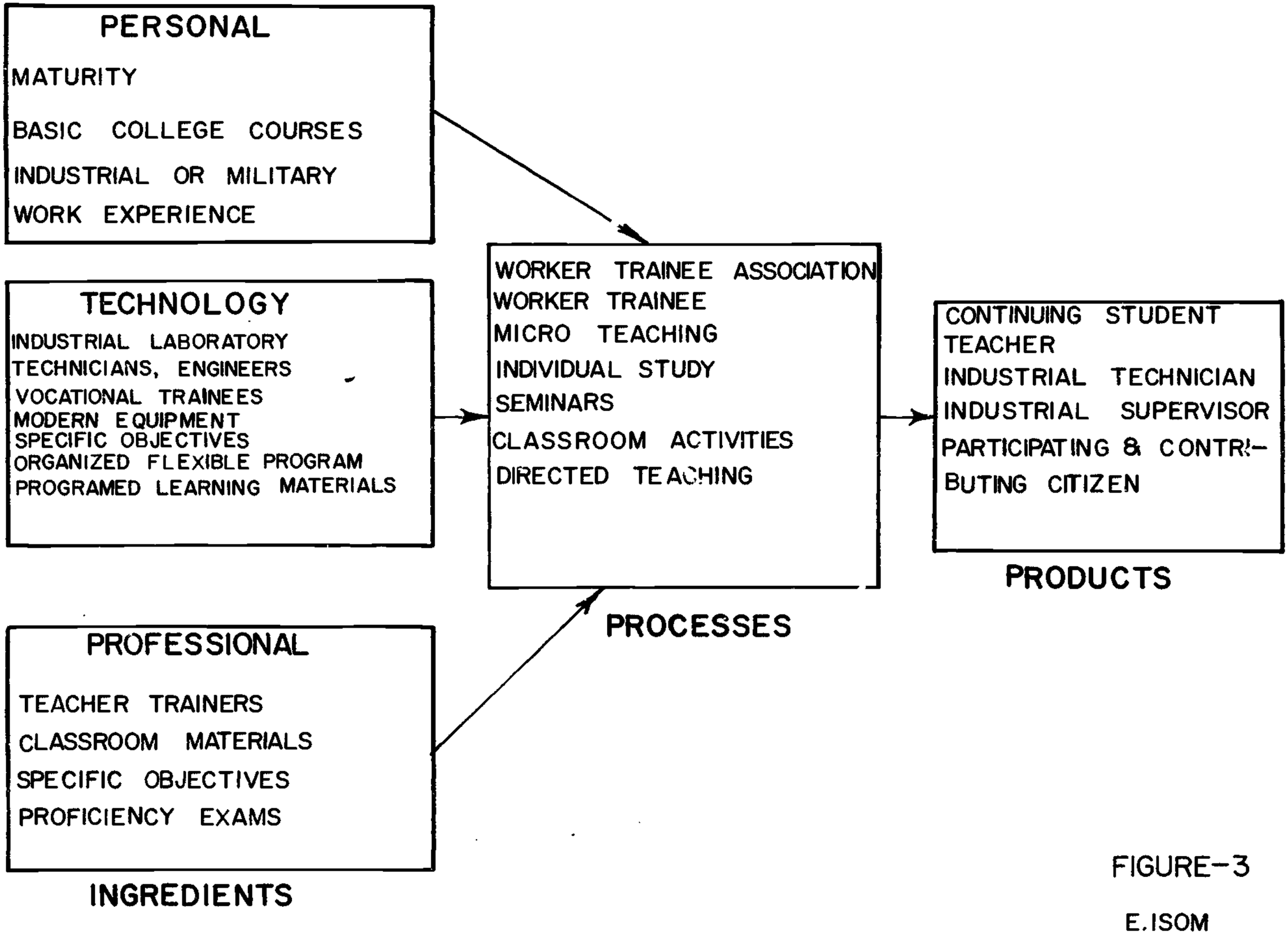

FIGURE-3

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Technology

The second exemplary ingredient (see Figure 3) in the Teacher Institute is industrial technology. The developments in technology over the past 25 years have made it imperative for voc.-tech. teachers to become exposed to the latest industrial machines, equipment, methods, and systems of technology. In a study reported in June 1969 of North Carolina employers by Fox, the following recommendations were made:

1. Vocational educators need to cooperate with industry in its training of skilled manpower.

2. Vocational education must provide more information to business and industry regarding their purposes and programs.[3]

The Teacher Institute has attempted precisely that, by combining the resources such as: industrial laboratories and equipment, the industrial instructor (engineers, technicians, journeyman), university and state department of education personnel. Whereas the regular T & I teacher program is offered at the University of Tennessee Campus at Knoxville, the Teacher Institute combines the resources of a major industry (The Union Carbide Corporation) with teacher training competencies of the University at the Atomic Energy Commission's Y-12 Plant at Oak Ridge. An estimated $7 to $8 million in machines and laboratory equipment are currently provided, under an inter-agency agreement between the AEC, the USOE and U-T. The equipment, laboratories and classrooms, housed in Building 9709, a 43,000 square foot area facility, see Figure 4, made available for the TAT program, include modern technology items such as: electrolytic machining, tape controlled single and tri axial mills and lathes, dye penetrant, ultrasonic and radiography testing, metal inert gas, tungsten inert gas and plasma welding. It may be noted that many of these and other items while not available presently in the average area vocational school or junior college may in the seventies be a necessary part of the everyday vocational program.

The technological know-how and expertise provided by the highly trained engineers, scientists, craftsmen and technicians, and the machinery and scientific equipment, is considered as a major contribution of industry to the Teacher Institute Program at Oak Ridge.

Professional

The third ingredient (Figure 3) deemed vital to the Teacher Institute, as a model program, is that of professional teacher training. Through the emerging development stage, five levels of vocational teaching activity have

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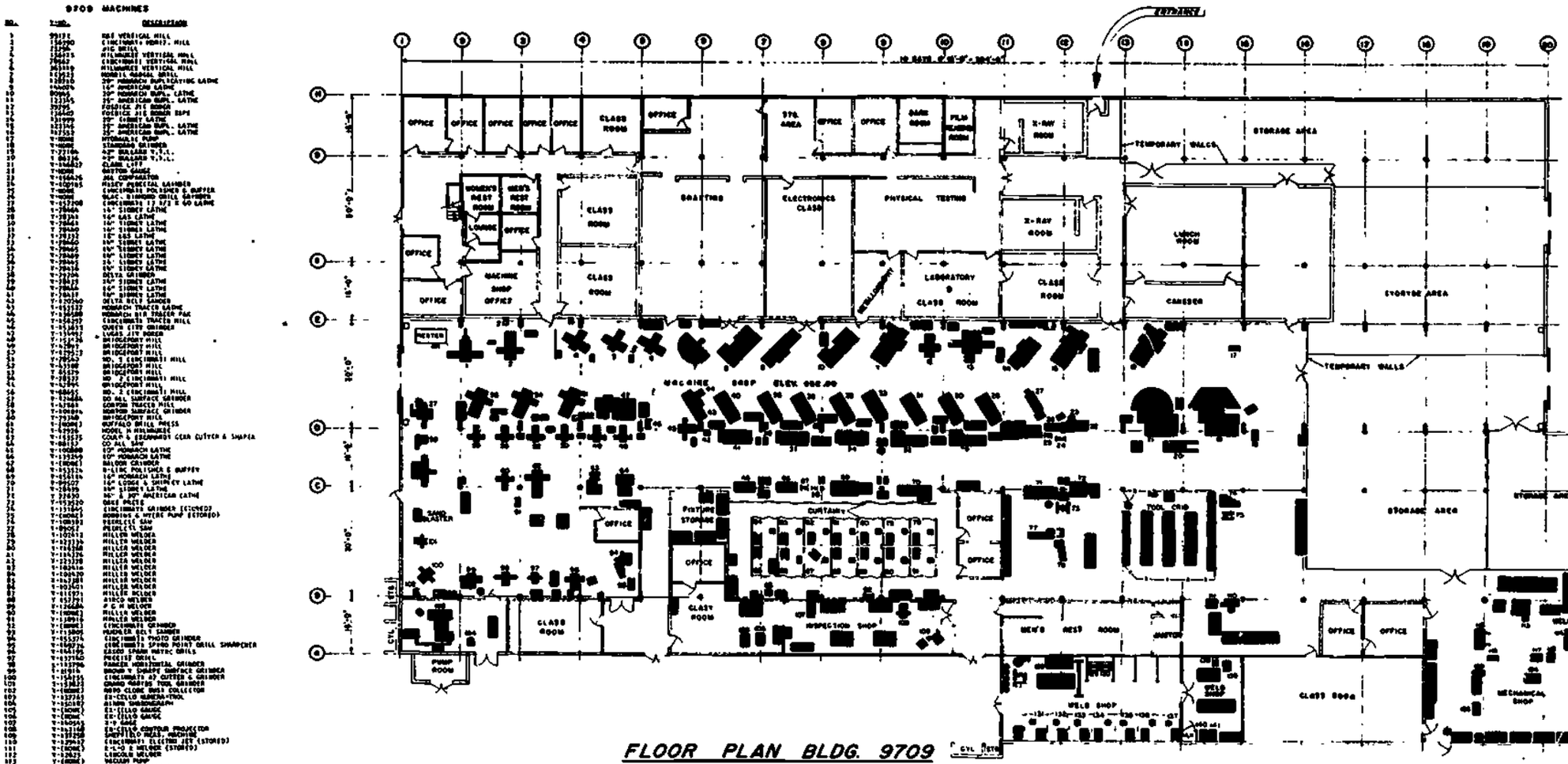
[3]Fox, Alan B. In The Open Door, Summer, 1969, Raleigh, North Carolina, p. 21.



FLOOR PLAN BLDG. 9709

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FIGUE 4

been targeted in this program. These five levels provide a career ladder approach to the full professionalization of the industrial and technical teacher (Figure 5). It may be noted that this framework (Figure 5) for vocational-technical teachers closely resembles the Temple City[4] Model mentioned by former Commissioner of Education, Harold Howe, II. The Teacher Institute Program allows candidates to exit at several levels in the career ladder to begin their teaching. During their future teaching careers they may, and are in fact encouraged to, return to school through inservice and extension training and increase their teaching skills to advance through the career ladder framework. An experienced journeyman, for example, may exit the Teacher Institute after one academic year of residence to become a certificated T & I instructor at high school level or some area vocational schools. On the other extreme, several military retirees have completed an M.S. degree in about two years at the Teacher Institute. Two have accepted positions as directors of vocational-technical programs at Tennessee Junior Colleges.

From such a diverse clientele, varying from minimum university admittance to graduate level and leadership internship study, the need for an organized yet flexible program is recognized. Sequences of nine courses in each of five technology areas (drafting, electronics, machining, metallurgy and welding) are offered to provide 27 undergraduate quarter hours of credit maximum plus a variety of special problems and thesis research in one technology. The recruit is placed within the sequence at his level of knowledge and working experience. Prospective voc.-tech. teachers are expected to complete both a major and a minor field and to be competent teachers in both areas. Two important factors facilitate the flexible program at the Teacher Institute: programed learning materials and the generous supply of machines and laboratory equipment. This combination allows the teacher candidate to enjoy almost a tutorial experience under the direction of the skilled industrial instructors. Each candidate proceeds at his own rate of learning. Candidates are allowed to register for two sequential courses in a given academic quarter; thus providing an opportunity for the very capable to complete courses faster. Work not completed by the end of the quarter is graded incomplete (I). All incompletes, of course, must be made up prior to graduation from the University.

It should be noted that at the Teacher Institute all courses (technical and professional) are organized around definitive and specific objectives as exemplified by Mager.[5] Emphasis is placed upon multimedia learning materials and each teacher candidate is encouraged to create learning aids in his technical specialty. Two recent graduate fellows, for example, designed, fabricated and evaluated an Electronic Computer Simulator for aiding in the training of electronics maintenance technicians. Another pair created a Transistor Performance Curve Demonstrator.

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[4] Howe, Harold II, The People Who Serve Education, in A Report of the Education Professions, USOE 1966, January 1969, p. 22.

[5] Mager, Robert, Preparing Instructional Objectives, Fearon Publications, Palo Alto, California, 1962.

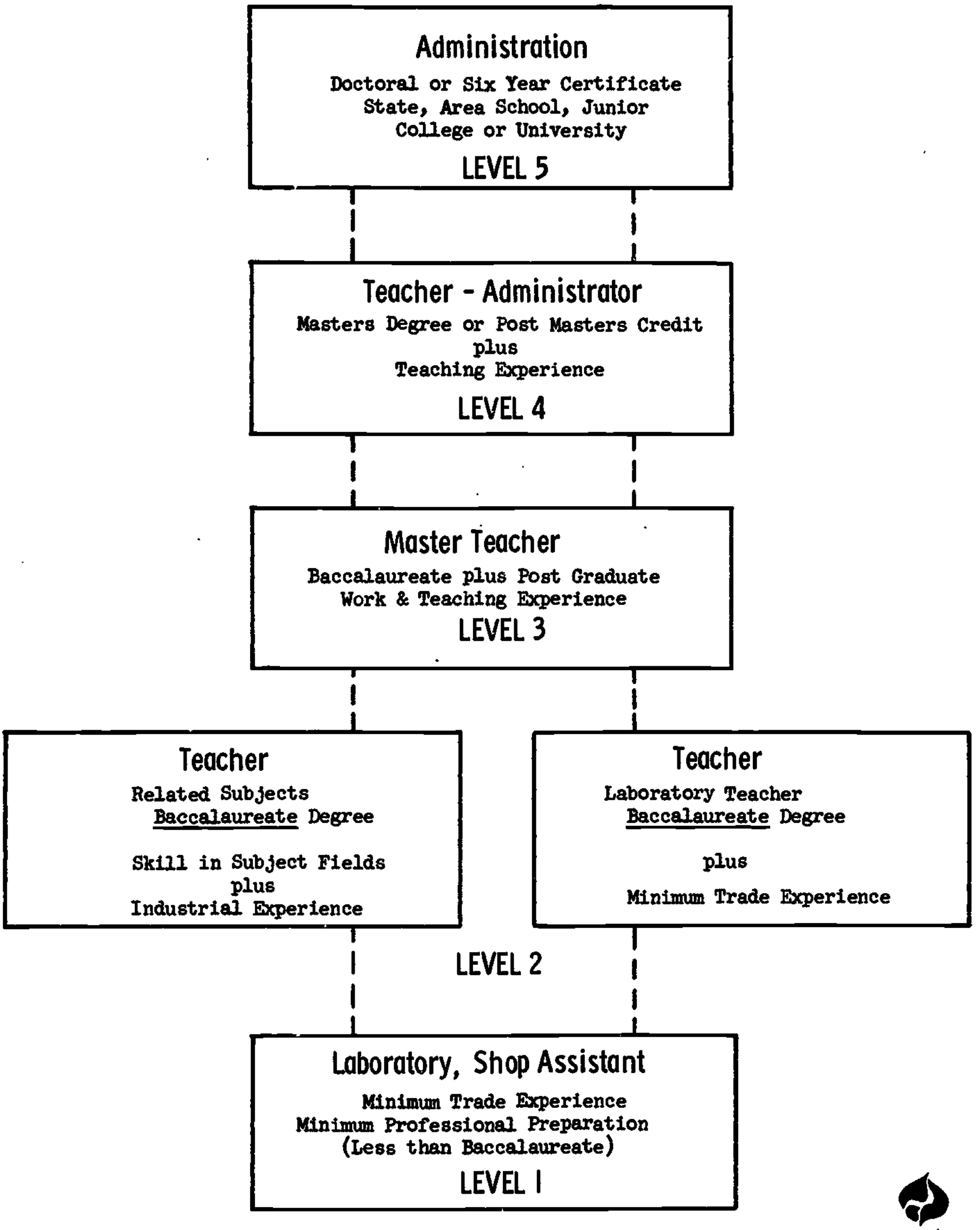

Figure 5

LADDER OF CAREERS IN VOCATIONAL EDUCATION

Don Brown
10/20/69

Another professional ingredient to be noted in Figure 3 is the Proficiency Exams. Established by my colleague, Professor Joe L. Reed, these exams provide the qualified person with an opportunity to receive up to 27 hours of U-T credit in vocational-technical areas such as: drafting, auto mechanics, electronics, metallurgy, nursing, carpentry, cosmetology, etc. A new tool in voc.-tech. education, the proficiency exams consist of three main parts: 1) paper and pencil test, 2) laboratory proficiency and 3) related information (science and math, etc.). The proficiency exam is an integral part of the overall university policy to recognize individual learning whether classroom or not. i.e. The U-T Catalogue states:

> In the Colleges of Liberal Arts, Engineering, Agriculture, Education, and Home Economics, a proficiency examination may be given to qualified students in any academic course offered in the University on the recommendation of the head of the department and the payment of a $10.00 fee.[6]

Processes

Referring again to Figure 3, like any common chemical equation with the proper ingredients (i.e. personal, technology, and professional), the proper processes (i.e. worker trainee association, micro-teaching, individual study, seminars, classroom activities and directed teaching), the proper catalyst (i.e. encouragement, enthusiasm, pleasant interpersonal relations and positive leadership) the voc.-tech. teacher should be an acceptable product. (i.e. a continuing student, teacher, industrial technician or supervisor and especially a participating and contributing citizen). The Teacher Institute, through an Education Professions Development Act (EPDA) Grant requested for the 1969-1973 period and funded through fiscal 1970 (June 30, 1970), attempts to provide the processes and catalyst necessary to improve the Vocational Technical Teacher in quality and in number and perform this task as a viable realistic exemplary model for the seventies.

IN-SERVICE TEACHER TRAINING

As related in the way of introduction, the Teacher Institute began in the summer of 1966 with 60 in-service vocational teachers recruited from the Southeastern States for a 10 week program. Encouraged by success, 100 teachers were recruited the following summer for a similar program. Based upon some incisive evaluation, the second year program was shortened to 8 weeks and the number of the traditional university professional courses were reduced. Further research indicated that substantial reduction in time was feasible and desirable for this in-service program.

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[6] The University of Tennessee Record, Knoxville, 1969-70, p. 29.

The present in-service program, funded under EPDA, provides for four groups of about 25 each in separate technology specialties and each held for a three week period at Oak Ridge during a different academic quarter (Fall, Winter, and Spring). The summer program involved actually 30 welding-metallurgy college, technical institute and high school teachers representing 20 states from Maine to Florida, to Nevada, Idaho and South Dakota. Each teacher was recommended to the Teacher Institute by both the local dean or director and the State Director. Each enrolled teacher had three weeks of intensive hands-on experience with the most modern welding, metallography and non-destructive testing technologies, plus a daily seminar on New Developments in Education and several field trips to research and development areas of the Atomic Energy Plant. One of the program highlights was the development of a technique to successfully record welding and metal puddle with a video tape recorder. (Sony).

The Electronics Group of 25 college, technical institute and high school teachers were enrolled November 3rd for a similar three weeks program. Rather than the more common radio and television electronics, the program emphasized industrial electronics, including the experimentation with the Teacher Institute's Computer Simulator and Performance Curve Demonstrator, mentioned earlier as being developed by the graduate fellows of the Teacher Institute. Daily seminars and field trips were scheduled for broadening the horizons of these teachers. The three weeks "hands-on" concept was evaluated by each of the participants in these in-service programs. Although many suggested more time would be desirable, none were certain that they could be released from teaching for a longer period than three weeks. Two additional in-service programs are planned for this academic year:

1. Machining for February 9 - 27th,

2. Drafting and Design for April 6 - 24th.

The research and demonstration concept of the Teacher Institute is making progress toward the goal for the seventies. It is understood that three other teacher training institutions have organized industry oriented in-service programs during the past year, Old Dominion College in Virginia, Murray State in Kentucky and the University of Georgia. Based upon the evaluation of the Teacher Institute, expansion of this type in-service training may be anticipated in the seventies.

TOWARD A NEW SENSE OF SOCIAL RESPONSIBILITY

Frank E. Marsh, Jr.

Dean of Education
Northeastern University

It is the purpose of this paper to discuss the need for a greater sense of social responsibility in the area of vocational and technical education. Concepts discussed are: (1) broadening the scope of programs; (2) broader dimensions in teacher preparation programs; (3) sensitizing the social conscience of vocational and technical educators.

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 9, 1969.

TOWARD A NEW SENSE OF SOCIAL RESPONSIBILITY

It is a pleasant task for a college dean to speak to a group of technical educators. First I must issue a disclaimer. I am not competent to discuss specific aspects of your profession. I am not thirty miles from home so I cannot qualify as an expert on that score. I would like to share with you some thoughts and concerns that in a sense relate to all educators. I hope that they are relevant in a particular way to you. I have entitled these remarks "Toward a New Sense of Social Responsibility."

Several days ago I had occasion, along with a number of other University officials, to meet with representative of the official poverty agency in Boston. These ABCD people confronted us with the preposition that universities were failing to relate their programs to the real needs of their community. They told us that our offerings were largely irrelevant to the true conditions under which our graduates were going to work. Several days prior to this encounter I had met with a number of Black people representing a community that has serious doubts about the education that we are providing for their children. Each of these groups made a similar charge against us. "You do not know how to perform effectively in our environment. We must teach you how. We do not intend to continue to teach you free of charge." They further told us that inasmuch as we at the University charge tuition for our services and our expertise, so they also will exact a price. The price in their minds should be in currency of our realm, namely, recognition of the viability of effective performance and the translation of that recognition into

academic credits. This, in their minds, is currency that people can utilize in our White academic world. Now this is a challenging demand. It is a demand that we cannot dismiss as ridiculous or without merit. There is a haunting element of integrity in this demand. In essence it attacks the roots of the academic establishment. It represents, perhaps, the final charge of the forces of pragmatism. No longer can we argue that the heritage of the past, which we defend and interpret, will establish the guidelines for the future. These angry and somewhat frustrated people no longer accept without question the assumptions that have guided our practices for so long. They are saying that the values we have espoused are no longer viable because they no longer work in the real world. The students that we prepare cannot function without major developments within the real-life urban setting. The curricula that we have been advocating are no longer relevant to the needs and aspirations of a large number of people. Now if we are completely candid and honest, we must admit that we have known this for some time. We have known it for a time that has been ample for us to make the necessary changes. We have had time to effect a blending of our values with new values that have been emerging from a rapidly changing social circumstance. Unfortunately, we have been painfully slow to adjust. Perhaps the time is now so late that we have missed the opportunity altogether. I have heard our Black citizens state with great conviction that they no longer intend to be victimized by an educational system that is unresponsive to their needs and hopes. They intend to take over the system or at least to create one of their own. Their demands have become more pronounced, more hostile, more threatening to our

establishments.

Now it is in this climate that I would like to discuss with you the way that vocational-technical education should view its social responsibility. These thoughts will not be particularly comforting to you. The challenges that face teacher educators are no more pleasing for me to hear.

The scope of the problem facing you is huge. You may bask in the thought that only 5 to 10 percent of American youth are vocationally talented. This may be true by some standards that you choose to utilize to identify this group. The simple fact of the matter is that about 70 percent of our youth will end up in the vocations and that the public schools have a responsibility to discover the interests of these people, guide them, and direct them into areas of training that will yield the normal satisfactions and fulfillments for them. We must do several significant things.

First, we must break down the barriers that exist between college preparatory programs and the so-called general and vocational programs. We are asking youth to make career decisions too early and with far too little knowledge and guidance. Many of the divisions that emerge from our grouping or our tracking systems are artificial and not necessary. Young people need to have as many doors as possible left open to them for as long as is possible.

The Soviet Union has a system of education that allows graduates of technical programs to advance to the universities and even to the doctoral level. In the United States the career pattern of too many young people is decided at the elementary grades then they are divided and grouped. It is further delineated through the junior and senior high schools. We must

re-examine this process. I am suggesting to you that we must reach down to the elementary school levels to help in the development of programs that will assist youth to become knowledgeable about vocations. I believe that you must do as much to stimulate interest in technical vocations as is done by the schools and parents to generate a desire in students to plan for college. Statistics indicate that for many young people, the kind of motivation that you should be offering is more realistic for them. If more students could be reached at that level and encouraged to develop their talents toward realistic goals, we would have a less tumultuous scene at the high school level. Making vocational and technical education more respectable should begin here.

Dr. Ralph Tyler states that our schools are still placing too much emphasis upon sorting youth rather than training, teaching, and guiding them. The examinations of this basic issue will shed light upon a number of other matters. For example, when should students in industrial and technical programs be separated into specialized schools, if ever? What is the responsibility of technical and vocational education in the general education of all students? I must say to you that your social responsibilities extend beyond the 5 to 10 percent of our youth that you or anyone else can identify as being vocationally talented.

And may I say in passing that I am both aware of and sympathetic with the problems that exist both in the public mind and in the expedient practice of assuming that vocational and technical programs whould become the academic dumping ground. Long ago we should have realized that programs in vocational and technical fields demand intelligence, creativity, skills, and

commitment. What I am suggesting is that you become less defensive and protective of your status. That you reach out and assume as a part of your challenge and responsibility, the development of programs and approaches that will extend your influence far beyond that small group of students are vocationally talented. No greater opportunity for service exists to you for your profession and in a larger sense for the natior

A second area that I wish to discuss involves the teachers who work in the area of industrial and technical education. For too long this has been viewed as the ghetto of American education. The teachers often are the most dedicated, most professional, the most effective, and they have been afforded only second class professional citizenship. This situation is irrational and can no longer be tolerated. I would hope that we had made enough progress to re-examine this matter and to rectify our sense of professional values. I suggest that this is a two-sided coin. Industrial-technical teachers must look critically at themselves. They must establish high professional standards for themselves. The knowledge and skill that surround your world of work is not enough. You must be literate, articulate, broadly educated so that you can help students to interpret the complicated world in which they must live. If you are going to do more than sort, you must also become knowledgeable about human growth and development, learning theories, group processes, curriculum designs, and methodologies. In short, you must increase the scope and the depth of your professional preparation to bring yourselves into the rapidly growing mainstream of educational theory and practice. Movement in this direction will do much to dispel the myth that

vocational-technical studies hold a lower rung on the hierarchy of academia. Because an area of study is different is no reason to assign it a lower priority. There are many forces at work today that could elevate your programs into the forefront of the academic picture. Some of these are: the fascination of our society with technology, the rapidly increasing salary levels of artisans and technicians, and the ever expanding world of science. These phenomena coupled with the general inability, or unwillingness, of the inhabitants of academia to become relevant and a part of today's world, affords you an excellent opportunity to increase your prestige. You must be worthy of this challenge by evaluating the breadth, depth, and quality of your performance. You must develop and keep current a viable theory to support your practice. Theory without practice is irrelevant, Practice without theory holds within itself the seeds of its own stagnation. I believe that in many states of our union today, far too little emphasis is placed on the preparation of technical and vocational teachers in the non-skilled areas. Not only must teachers of vocational and technical subjects be able to operate a computer or build a component for a space vehicle, they must also be prepared to organize learning materials, must understand human behavior and motivations, and they must actively participate in the process of shaping the non-technical aspects of the curriculum to better meet the needs of students. These are not responsibilities that can be met by narrowly prepared technicians. The time is long past, if it ever had any validity, where we can assume that six or eight years of service as an artisan is either necessary or that this experience should be the major component in the preparation of a technical teacher. The

objective is to have the teacher competent in the subject or skill area which he will be teaching. This can be achieved in several ways and should not be measured in terms of time spent at the skill. I sense that some progress has been made in this area, but greater change is a necessity and it must be implemented promptly.

The third area of challenge that I would like to discuss is broader in scope and more removed from your immediate concern. Nevertheless, I feel that it is of the utmost importance. Several articles have appeared in the press recently that indicate a rising wave of social and political conservatism among the blue collar workers. This Silent Majority, if it is a majority, or the Middle Class is composed, at least in part, of technical workers who have been most prosperous in this generation. Carpenters, plumbers, electronics technicians, and other skilled artisans have seen their incomes rise dramatically. A friend of mine, who operates an electrical contracting business, tells me that he is paying his skilled employees $15,000 a year. Plumbers can earn up to $19,000. Carpenters recently signed a union contract calling for $8.50 per hour. I rejoice that these skills are being recognised and that salaries are becoming more commensurate with true abilities. I might say in passing that these salaries place the artisans above the level of income paid to teachers and even professors in our universities. How many of you professionals are earning at this level? The point that I wish to make is that income represents power. It represents economic power as well as political power. I think that we must also accept the premise that the assumption of this power carries with it attendant duties and responsibilities. It is understandable that this new affluence has lead a new group of Americans

into a position of security. They now have more money invested in homes, cars, boats, and other material things that affluence makes possible. This group has not enjoyed these benefits very long and in many cases its members do not use them graciously. They tend to oppose social programs that will increase their tax burdens or will threaten their hard won status. They tend to take a hard almost callous view of the social ills that plague us as a nation. I need to enumerate but briefly these ills.

We still have millions of Americans without basic medical and dental care. Many of our people are improperly nourished if not hungry. Many of us are still denied adequate educational opportunities. We have become insensitive to the continued presence of war in our world. Violence and crime are accepted as almost commonplace. There is a rising tide of hostility toward Black Americans and other deprived groups that are seeking greater justice and equity. Perhaps the severity of the crisis in our times will be measured by the willingness of our Middle Class to absorb social change. Stated in other terms, whether we will have evolutionary change or continued revolutionary threats depends upon the degree to which we continue to be a compassionate people. Stated simply, we cannot exist as a free people without continuing, yes, even increasing our concerns for the well being of all of our people.

How does this relate to you as a group of educators? I feel that it must be a direct and serious concern to you as you prepare teachers. Your curricula must take on a broader social concern. The consciences of your students must be made more sensitive to the issues that I have been discussing.

The gap between the social scientists and the technical and industrial world must somehow be bridged. You must see to it that technical and vocational teachers are educated to make positive contributions to the solution of these problems. These teachers must in turn pass on this social concern to their students. The exploding world of technology affords you an excellent opportunity for added professionalism. Beyond this, it places upon you the awesome responsibility of making significant contributions toward the improvement in the quality of American life. Former President Lyndon Johnson commented several years ago that we had become the most productive, most affluent, and the best educated people in the history of mankind. He challenged us to devote the same ingenuity, energy, and creativity that we had demonstrated in achieving this high level of economic growth and development to improving the quality of our life as a people. I believe that technical and vocational education can make a significant contribution to this process.

VT 010 432
Tucker, Dwayne, And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association, (63rd, Boston, Massachusetts, December 6-8, 1969).

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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This group of documents is comprised of five speeches presented before the 1969 Convention of the American Vocational Association. The first speech by Dwayne Tucker reviewed the proceedings of the Third Adult Distributive Education Conference at Memphis, Tennessee which surveyed ways to implement legislation provisions relating to distributive education and to identify possible solutions for adult distributive education services. A second speech by Mary V. Marks discussed "New Directions for Distributive Education and What We Must Do." A presentation by Maurice E. Wilson was on "Cooperative Vocational Education Programs in Dade County Public Schools." Paul J. Hartman analyzed problems of recruitment and development of part-time instructors. The last speech by Laura, H.Murphy was concerned with an "Action Oriented Curriculum in Advertising." This report included suggestions for use of learning guides and discussion of a task-oriented curriculum. (8C)

VT 010 432

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Speeches Presented At The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 6-8, 1969

Distributive Education Division

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VT010432

RECRUITMENT AND DEVELOPMENT OF PART-TIME INSTRUCTORS[1]

Paul J. Hartman

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Arlington County Public Schools
Arlington, Virginia

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachuetts, on December 6, 1969.

Recruitment and Development of Part-time Instructors
War Memorial Auditorium - Room 201
December 6, 1969
by
Paul J. Hartman
Supervisor, Distributive Education
Arlington County Public Schools
Arlington, Virginia

The recruitment and development of part-time instructors is a "must" if the Distributive Education Program is to serve the many needs of business people engaged in distributive occupations.

The part-time instructor of adult groups in distributive education is an important member of the teaching staff. His specific purpose is to aid workers in distribution to improve their understandings and abilities in that occupational field. He brings to the program a wealth of successful occupational experience to share with others.

The "part-time" instructor is bought in as needed and not employed on an annual basis. Part-time instructors as a group are often referred to as the "call staff."

We must keep in mind, in the recruitment and development of part-time instructors, the following items: (1) What are the requirements of our part-time instructors?; (2) Where can part-time instructors be obtained?; (3) How do we go about finding them?; (4) What method do we use in the selection of them?; (5) Who does the training and what type of training is needed by part-time instructors?; and (6) The evaluation of his performance.

What are the Requirements of Part-time Instructors?

1. Occupation Experience -- He should have at least five years of successful experience in the distributive occupation to be taught or its equivalent in technical training and experience. <u>The experience should be recent and if possible varied.</u>

2. Technical Training -- Technical training is desirable but may not be required if he has been successful in the special aspects of the occupation which he is teaching.
3. Professional Training -- Teaching experience as a prerequisite should not be required. It is our responsibility to give individual or group in-service type training.
4. Social Acceptability -- The instructor must be socially acceptable; be in good standing in the community, having the respect of business leaders in his field; outgoing personality that will encourage class members to respond; must be emotionally mature and able to give and take on a friendly basis; and be a good communicater.

Where can Part-time Instructors be Obtained?

The first problem is to find prospective instructors qualified in the field in which they are to offer instruction; the second is selection. The first is the more difficult.

The following are sources where part-time instructors can be obtained:

1. Local retail, wholesale and service establishments.
2. Trade Associations (Board of Realtors; Hotel & Motel Assoc.; Retail Merchants Assoc.; Service Station Assoc.; Restaurant Assoc.; Chamber of Commerce; Hardware Assoc.; Travel Council; Automotive Trade Assoc., etc.
3. Local Distributive Education Advisory Committee.
4. Neighboring Communities.
5. Friends and acquaintances.
6. Civic Associations - Women's Clubs (Business and Professional Women's Clubs); Lions; Kiwanis; Optimist; Rotary, etc.
7. High School and college faculty members.
8. Former Distributive Education Coordinators.
9. Small Business Administration (SCORE - Senior Corps. of Retired Executives; ACE - Active Corps. Executives)
10. Teaching Agencies.

How do we go about finding part-time instructors?

1. Make a survey -- this can be done by the Distributive Education teacher-coordinator when making a community survey of potential student placements.
2. Publicize the need -- "want ad" - present enrolled students taking DE Adult classes - school bulletin boards, etc.
3. Call upon the Advisory Committee.
4. Offer a part-time instructor's workshop to uncover talent.
5. Discuss in conference meetings -- discuss with DE personnel when together in groups of the availability of instructors.
6. Follow-up leads -- some one recommends a person and you follow-up by making a telephone call or a personal visit - maybe will be required.
7. Build a directory of potential instructors.
8. Keep an up-to-date personnel file -- a personal data sheet for each instructor, classes taught, evaluation, etc.

Selection of Part-time Instructors.

Who has the responsibility of selecting part-time instructors? What precedure is used? Who should have the responsibility for selecting and employing part-time instructors?

1. The local DE supervisor or in some communities the high school coordinator is the logical person to select and train part-time instructors.
2. The selection must be based on a personal interview -- (a) get information, (b) give information, and (c) make a friend for DE.
3. The applicant must make the decision to be an instructor and not pressured, drafted or coerced into doing it.
4. Final approval must be made by the local school system and the State Department of Distributive Education.

Training of Part-time Instructors.

Who's responsibility is it for the training of part-time instructors? What type of training is needed by part-time instructors? We must keep in mind conditions under which they teach - unfamiliarity with teaching; short term of

employment (10, 20 or 30 hours); isolation from other instructors; class members unknown; lacking of teaching continuity; and a "non-captive audience".

A. There are two types of training needs:

(1) Initial training for those who will teach for the first time - it covers the must know's of teaching.

(2) Up-grading instruction for those with some teaching experience. This is concerned with presentation of new methods and ideas. It deals with the "should know's" and "helpful-to-know's".

B. Two kinds of training can be offered:

(1) Individual - training given before teaching and while on-the-job instructing. The advantage of this training is that it is given when most needed and tends to forestall possible failure.

(2) Group Training - this type of training permits pooling experience and tends to weld members into a professional group. It is less time-consuming than individual training, but harder to organize. It supplements, but cannot substitute for individual training.

C. Six rules to follow in training instructors.

(1) Avoid too technical terminology - use easy, familiar words.

(2) Adapt training content to time available. Be selective in what is taught and have it well organized.

(3) The training must be specific - why, what, how, when and where in teaching.

(4) Encourage learner participation - help instructor but make him do the work - in group training utilize various forms of class participation, such as role playing, buzz sessions, etc.

(5) Use of visual aids - use of blackboard, flip charts, posters, and hand-out materials, etc.

(6) Provide for further study - stimulate and encourage instructors to attend training conferences when offered in any community.

D. Group training of part-time instructors:

This can be done in the same way as teaching any Distributive Education class of five 2-hour sessions.

E. Evaluation of part-time instructors:

Who does the evlauating of part-time instructors? The instructor, the students, and DE personnel.

The success of any DE adult program is based on a continuous evaluation. Evaluation occurs from the first to the last words spoken. The purpose of an evaluation is to point out the strengths, as well as weaknesses.

The performance of any part-time instructor can be evaluated very easily on the basis of (1) maintaining of good class attendance; (2) amount and kind of class response; and (3) evidence of application.

Unless the instructor is able to stimulate the group members to think constructively about their problems all the efforts of the school administration, the local supervisor, and the coordinator will have come to naught.

Action Oriented Curriculum

in

ADVERTISING

Laura H. Murphy
Union High School
Route 4, Box 338
Clinton, N.C. 28328

INTRODUCTION

The objectives of the course in Advertising vary to some extent with the students enrolled. Some students will plan careers in the fields of advertising and commercial art; others will plan to go into some aspect of business, such as selling or buying in which an understanding of advertising will be valuable; others, whose career objectives may be undecided, take this course in order to explore a field in which they have expressed some interest. The primary objectives of the course are:

1. To aid students in acquiring skills which will help them secure and successfully hold jobs in their chosen field of work.

2. To develop some degree of competency in recognizing and producing various types of advertisements.

3. To develop an understanding of the place of advertising in our lives and economy.

4. To show the need for, and the presence of, high standards in advertising.

5. To encourage individual creativity.

6. To help students acquire a broader and more satisfying range of skills and knowledge in marketing.

This manual is task oriented; the emphasis is on the student rather than the teacher. A Learning Guide is provided with each unit to aid in planning student activities. The manual is written with the aim of aiding the teacher in shaping the course for particular student activities. Course content may be expanded, reduced or changed each year to suit the needs of a particular student or groups of students. Individual work, providing for the development of competency and creativity, is the core of the course. Obviously, this is a lab course in which most of the time will be spent in putting the principles learned into actual use. A textbook, such as Marketing, Sales Promotion, and Advertising, is useful but chiefly for outside reading assignments for the purpose of giving background information and developing a knowledge of basic facts and principles necessary for class activities.

Students should be encouraged to compete with themselves rather than with other class members; development of skills should be encouraged on different levels. A few students may display a higher degree of competency in a few weeks than others will attain at the end of the course, but opportunities must be presented to enable the student at each extreme to work with a feeling of achievement. An example of this might be in the development of color wheels; let those students just learning to use a paintbrush spend all their time working on a basic, twelve-color wheel, while those more adept and more ambitious expand the wheel to include more colors, as well as tints and shades, so that a hundred or more variations of color might be involved. At

times the inclusion of a specific area of study, such as typography and printing, may depend on the ability or readiness of the class to understand and utilize the concepts involved.

The teacher should take advantage of every opportunity to display students' work during the year. Students will do a much better job with their assignments if they expect to see them displayed.

The teacher should be alert throughout the year for opportunities to involve the class in on-the-scene learning activities. Projects encompassing several units can be used effectively at the end of a semester, either as a part of an exam or as the exam itself. This type of exam works best when it is timely, comprehensive (in that it involves a number of different skills,) and worthwhile. Keeping in touch with community activities will often provide many ideas. For example, development of an advertising program for some community event can offer a real challenge. (The local Chamber of Commerce is usually involved in activities needing promotion and would probably be delighted to have student help.) The assignment may include development of posters, displays, and newspaper, radio, television, and direct mail advertisements for the event. If a project such as this is used, the feeling of unity through the use of a central idea or theme should be encouraged.

SUGGESTIONS FOR USE OF LEARNING GUIDES

Decide which actions you believe will suit your course and your students. Duplicate all of whatever parts of the Learning Guide you have decided to use. Indicate to students which actions are required and which ones are optional. Some actions do not give sufficient information as written; this permits you to individualize and vary the material. Some actions were left purposely vague so that you may decide whether student work should be written or be given as an oral contribution to class, or both.

Optional actions may be assigned to the entire class or to individual students for such reasons as extra credit, work in special interest areas, or encouraging extra effort in those students who are unusually quick or capable. Learning Guides should be organized by units in students' notebooks along with completed work, when size allows. These will make an attractive record when completed. Encourage students showing promise in advertising to begin a portfolio of their work.

There are many suggested opportunities for student reports. Try to make sure that each student is on his feet to talk before the class several times during the year.

ADVERTISING AND ADVERTISING ART

Table of Contents

Unit		Estimated Time	Page
I.	Why Study Advertising	1 week	
II.	Overview of Advertising	5 weeks	
	Economic Background Past and Present Tools of Advertising		
III.	Psychology of Advertising	5 weeks	
	Reaching the Consumer Product Identification		
IV.	Market Segmentation	1 week	
V.	Media	8 weeks	
	Newspapers and Magazines Television and Radio Direct Mail, Outdoor, Transit, Other		
VI.	Advertising Art	16 weeks	
	A. Lettering	(3 weeks)	
	B. Color	(3 weeks)	
	C. Balance and Design	(4 weeks)	
	D. Perspective	(3 weeks)	
	E. Fashion Sketching	(3 weeks)	

Estimated time - 3 weeks

UNIT VI - ADVERTISING ART

B. Color

Objectives: To create awareness of importance of color
To show many uses of color
To develop skill in appropriate use of color

STUDENT ACTIONS	TEACHING SUGGESTIONS
	Begin unit with class discussion, reviewing importance of color. Include such things as comparsion of the same picture in black and white and in full color, evaluation of cost/popularity of color TV. Use item on effects of color of food at beginning of the chapter on color in Marketing, Sales Promotion, and Advertising, page 307. Do this dramatically or improvise an actual demonstration.
1. Review carefully Part I of Chapter 14 in Marketing, Sales Promotion, and Advertising. Find examples of advertisements which show color being used to achieve each of the purposes listed. Try to find both good and bad (ineffective) examples. Purposes of using color:	Assign Action No. 1. Involve class in discussion of the advertisements which they have found. Point out the wide range of effectiveness in achieving purpose. Be sure to have examples of your own to supplement areas in which few were found. (Don't forget to have some old magazines on hand; some students may not have access to them unless you provide them.)

STUDENT ACTIONS	TEACHING SUGGESTIONS
a. Provide psychological impact b. Gain attention c. Increase legibility d. Increase artistic value e. Bring out illustrative value f. Show consumer preference g. Create illusion 2. Using the advertisements which you have selected, decide which pictures you prefer, then see if you can determine <u>why</u> you like or dislike each one. Use your decisions in class discussion to develop rules for use of color. 3. Select a color and make a report on this color to the rest of the class. (See Learning Guide for details.)	Stimulate class to analyze why they like or dislike various examples of color. From this, develop a list (on chalkboard) similar to the one below. Prompt ideas when necessary. Having carefully selected examples will usually be enough to help students think of the principles involved. Include the following: a. Avoid distracting background color b. Avoid using too many colors c. Feature one color scheme d. Limit pure color to small areas e. Use seasonal color f. Avoid misrepresentation g. Be familiar with color and its uses Make sure that some fairly even distribution of color takes place. Many students will have no strong preference for a color to report on, so assign those colors not chosen to these students. Another method is to put the names of colors on slips of paper, put them all in a box, and have students draw the name of the color on which they will report.

STUDENT ACTIONS	TEACHING SUGGESTIONS
4. Review basic terms involved in color relationships, Part II of Chapter 14. Design and make your own color wheel using at least the twelve basic colors. You may expand this to include more colors or to utilize tints and shades of the colors.	Demonstrate relationships of primary, secondary, and intermediate colors visually. This may be done by such methods as mixing paint or food coloring or by using acetate color sheets on the overhead. Have a chart on the bulletin board or chalk-board for easy reference. Illustrate formation of tints, shades, and tones. Check for films on mixing color. Some of the really good ones in this area are listed under primary and elementary level groupings. Find, if possible, a boy who is handy in the shop and have him make the spinning color wheel described under optional actions. (This would probably be done in lieu of the regular color wheel assigned to the rest of class.)
5. Select one color and make a chart showing the tints, shades, and tones which can be created from it. (Use at least 14 values of the color from black to white.)	
6. Color abstract drawings which your teacher will give you, using	Review the formation of the basic color schemes. Emphasize the use of color

STUDENT ACTIONS	TEACHINGS SUGGESTIONS
color schemes which you think suit the design. Giving your finished work a name makes it even more fun. Make a design for each of the basic kinds of color schemes.	variations (tints, shades, and tones) to make color schemes more effective. Since many students are unaccustomed to using the paint brush, it might put them at ease in future actions to give out copies of modernistic drawings which they can use to experiment with color schemes and with the paint brush. An effective demonstration on complementary color will impress students. Take a sheet of bright red paper and hold it in front of a neutral surface (your projector screen is ideal) for a minute or two; have students stare at the sheet of paper. When you remove the paper, the students will see a residual image of green on the neutral surface. (It will work with other colors, but red is most dominant.) Make sure your supply of old magazines to cut is holding up well. The presence of a few home decorating magazines will be valuable here. Other actions which might involve color are listed in the unit on Balance and Design.

STUDENT ACTIONS	TEACHING SUGGESTIONS
7. Prepare three layouts for three different items of merchandise using colors appropriate for the merchandise. You may write actual copy or sketch in number and length of lines of copy. Be sure to use or show space for trade-mark or business signature. 8. Select and complete at least two optional actions.	Tempera (show card color) is a good, inexpensive, basic medium. If more materials are available, encourage students to vary art media with which they work. Possibilities might include chalk, pastels, oils, crayon, acrylics, water colors, etc.

Where the Action Is!

Advertising Learning Guide

So Your Thing is Advertising!

Advertising creates action. Have you got what it takes to create advertising, to prepare illustrations, to write advertising copy?

There are advertising jobs in business and industry, in advertising media such as newspapers, magazine, radio and television, and in advertising agencies. There are jobs in the advertising field for executives, salesmen, artists, writers, layout specialists and messengers, for college graduates and for high school graduates. The progress you make will depend entirely on your ability, persistence and on the educational preparation you secure.

Advertising is exciting. Advertising causes happenings--sales. But success takes hard work.

This course is like none you have ever had before. It puts the "U" in education. Your "teacher" will not teach or lecture to you. You will learn in an exciting way by using your "Learning Guide". How much you learn is up to you. You will develop skills and knowledge by taking each "Action" suggested in your Learning Guide and doing a thorough job on that.

Your teacher will be your advisor. If you really want to stay where the action is you will discover your own abilities and interests--and where they fit best into the advertising field.

LEARNING GUIDE

"WHERE THE ACTION IS"

UNIT VI - ADVERTISING ART

Part B - Color

ACTIONS

1. Study part I of Chapter 14 in Marketing, Sales Promotion, and Advertising. Find examples of advertisements which show color being used to achieve each of the purposes listed. Try to find both good and bad (ineffective) examples.

Purposes for using color

a. Provide psychological impact

b. Gain attention

c. Increase legibility

d. Increase artistic value

e. Bring out illustrative value

f. Show consumer preference

g. Create illusion

2. Using the advertisements which you have selected, decide which pictures you prefer, then see if you can determine why you like or dislike each one. Use your decisions in class discussion to develop rules for use of color.

3. Select a color. Find out all that you can about that color. Ask yourself if you have any personal feelings about that color (i.e. "gray seems gloomy"), ask other people for their opinions. From the information you have gathered, prepare a brief talk to the class on the color you selected. Do not forget to include such idiomatic expressions as "see red" or "blue Monday" in your analysis. Use illustrations whenever possible.

4. Design and make your own color wheel using at least the twelve basic colors. You may expand this to include more colors or to utilize tints and shades, if you desire.

5. Select one color and make a chart showing the tints, shades, and tones which can be created from it. (Use at least 14 values of the color from black to white.)

6. Color abstract drawings which your teacher will give you, using color schemes which you think suit the design. Giving your finished work a name makes it even more fun. Make a design for each of the basic kinds of color schemes. If you prefer, you may create your own designs.

7. Prepare three layouts for three different items of merchandise using colors appropriate for the merchandise. You may write actual copy or sketch in number and length of lines of copy. Be sure to use or show space for trademark or business signature.

8. Select and complete at least two optional actions.

OPTIONAL ACTIONS

1. Make a color wheel of plywood using the six primary and secondary colors in the proportions found in light. (A high school physics book will probably have a diagram of the proper ratios. If not, look in an encyclopedia.) Drill a hole in the exact center of circle and insert a very long screw which can then be used as the bit in a high speed electric drill. The rapidly spinning wheel will reflect all colors almost simultaneously and the result, if properly done, will be very close to white. CAUTION: Limit size of wheel to about six or eight inches in diameter and be very sure that the wheel is securely attached to drill before spinning.

2. Plan a room in your house, school, or a business. Decide on a color scheme and give the reasons for your choice. Use colored chips and fabric samples to make your project more professional; these are often free for the asking at paint and wallpaper stores and fabric shops.

3. Design and paint your own modernistic drawing. It's fun to have people guess what it is when you've finished (even if you did not intend for it to represent anything at all).

4. Write your name or a slogan, or make a poster in psychedelic lettering. Look in the magazines for examples and ideas. (Have you noticed how many triadic color schemes are used for psychedelic effects?)

5. Make a report to class on reproduction of full color advertisements. Show how four-color printing uses principles of color which you have learned.

6. Plan and execute a bulletin board on color.

7. Make a display which features one of the color schemes you have learned. Be sure to include a sign.

8. Make a collage using a color or color scheme as the theme. For an unusual effect, make your collage of colored tissue paper, overlapping colors as you work.

Suggestion to Teachers:

Do Your Own Thing

Write an "Action-Oriented" Unit

Here's How!

1. Decide upon unit with which you are going to work.

2. Determine the objectives which you are trying to achieve--in terms of knowledge, skills, and attitudes.

3. Make outline covering material which you want students to learn.

4. Develop a series of activities which will take the student through the desired learnings and activities. (Emphasis should be on what student does--not what teacher does.) Decide which activities are to be basic for all students and set up others which can be used to "tailor-make" the course to individual needs and differences. Analyze the activities you have selected and determine what role you as the teacher will have to play in each situation--always remembering to de-emphasize teacher-control and to emphasize "learning activities" by students.

5. Determine methods of evaluation you plan to use for the unit. Each student should be able to achieve success in something, and each should be challenged to do his best.

6. Collect the references and materials which will be needed for the unit. Much responsibility in this can and should be placed on the student.

TASK-ORIENTED CURRICULUM

Laura H. Murphy

Distributive Education Coordinator
Union High School
Clinton, N. C.

My title for this presentation is a "Task-Oriented Curriculum," but I prefer to think of this method of teaching as being "Action-Oriented." I think this sounds a little more exciting, and describes it more as I like to think of it.

All of us know that one of the most basic facts of teaching is that children learn by doing. All too frequently we do not plan for learning activities and resort to telling and lecturing our students. The course that I am going to emphasize today, Advertising Art, provides many excellent opportunities for student activity and creativity. About two years ago, Mr. T. Carl Brown, North Carolina State Supervisor of Distributive Education, and I began work on a course of study for this class which would put the emphasis on what the student does. This was the basis used in developing this action-oriented course designed to involve students in a creative, individualized, learning process. It would be difficult, if not impossible, to lecture by this guide.

The outline for this course on Advertising Art looks much as the outline for any other course. Our planning calls for beginning with units on "Why Study Advertising" and "An Overview of Advertising" which includes the economic background, the history, and a brief introduction to the basic tools of advertising; a number or skills can be profitably initiated at this stage and developed on a spiraling basis throughout the year. There are also units on "The Psychology of Advertising," "Market Segmentation," "Media" which emphasizes newspaper layout but provides opportunity for work in other areas, and "Advertising Art" which includes lettering, color, balance and design, perspective, and fashion sketching.

Even when we go to the teacher's guide, we find the traditional "T" form, but if we look more closely we find that the activities listed in the left hand column are for the students while the comments on the right are mostly suggestions to the teacher on how to help the students with their activities. This replaces the typical teacher-oriented information and activities usually found.

The heart of the course is the "The Learning Guide" which we chose to call "Where the Action Is." This is to reproduced and distributed along with any appropriate instructions to the student. This can and should be utilized in a way to provide for wide differences in students--their abilities, interests, and working speeds. The student learns by completing all of the required actions and as many of the optional ones as possible. The teacher should avoid lecturing as much as possible; demonstrations, particularly on an individual or small group basis, are much more effective. Students should have a choice of activities as often as possible. The use of texts and references should be encouraged to facilitate assignments rather than as an end in itself. Provision should be made to assure that there are some assignments which every student is capable of completing satisfactorily and some which will challenge even the best student. The finished products should be displayed as often as possible, not only in the classroom, but in other areas of the school.

The many resources of the business community should be utilized. For example, preparation of actual advertisements and displays for interested merchants might be arranged. One of my groups made the outdoor Christmas decorations for the town near which the school was located. The Chamber of Commerce put up the money and the students put out the work in planning, organizing, and making them. Last year our group had as its final assignment various types of advertisements and publicity for a nearby community fair. Much of their work was actually used by the town development committee. Students will usually do a much better job and be far more interested in what they are doing when they know that their work is going to be used.

One of the main objectives of this course is to develop creativity. Various types of "way-out" activity can start some original thinking--which is all too infrequent these days. One of my favorite assignments along this line is to take an ordinary object such as a brick or a tin can, give one to each student, and ask him to do something with it. The end products may be useful, ornamental, or simply original. This type project always results in interest and enthusiastic planning in order to come up with a totally new idea that will impress everyone.

My system for planning this type of course is very similar to those found in many books on educational methods--the key difference being in the fact that the emphasis is continually placed on what the student, rather than the teacher, if concerned with doing. Briefly stated, here are the steps you might follow:

1. Decide upon the unit with which you are going to work.
2. Determine the objectives which you are trying to achieve--in terms of knowledge, skills, and attitudes.
3. Make an outline covering material which you want students to learn.
4. Develop a series of activities which will take the student through the desired learnings and activities. (Emphasis should be on what the student does--not what the teacher does.) Decide which activities are to be basic for all students and set up others which can be used to "tailor-make" the course to individual needs and differences. Analyze the activities you have selected and determine what role you as the teacher will have to play in each situation--always remembering to de-emphasize teacher-control and to emphasize "learning activities" by the students.
5. Determine the methods of evaluation you plan to use for the unit. Each student should be able to achieve success in something, and each should be challenged to do his best.
6. Collect the references and materials which will be needed for the unit. Much responsibility in this can and should be placed on the student.

Using the subunit on color within the major unit on Advertising Art, I am going to try to show the development of a unit with appropriate examples of student work that might evolve. Within the unit there is provision for oral or written reports and guided class discussion which are indicated in the unit guide. Certain activities are required but with some leeway given as to the method of completion and a choice of any two of the optional activities.

Fundamentals on color and its uses are introduced early in the year in the unit "Overview of Advertising." This first taste is quite brief and basic and is designed primarily to provide a base of information which can be built upon throughout the year until the main unit on color is taken up. Pass out sheets which can be colored may be used to show relationships on the color wheel and to create various color schemes. These same passouts can be used to make overhead transparencies. Each student is then asked to find pictures showing the different color schemes in use; this assignment might be completed in the form of a poster or a small booklet. Since there are a good many terms to be learned, a test is probably in order. To break the monotony of the typical test, a crossword puzzle built around color terms might be used. As many visual helps as possible should be used during this stage--students are so much more impressed by what they see than by what they hear. Since a shortage of funds is so often a problem of teaching, it helps to have a variety of inexpensive teaching devices. Students can help in making overhead transparencies and posters. I like to dry mount any hard-to-find examples which I want to use a lot and to last for a long time. I keep a notebook on each major section, in which I keep the course itself, related information, transparencies, pictures, motivational activities, and sample quizzes.

I usually start the unit itself with a brief review of the earlier section and then have group reports and discussion on various colors, their psychological implications, and principles for their use. A primary assignment in this unit is a color wheel. My minimum standard for this is that the wheel should include

the twelve basic colors; this well done earns a "B;" from here on out, the students are on their own. Some students use only the twelve colors required, while others expand their color wheels to include more colors and tints and shades of the colors as well. Those who do not include tints and shades on their color wheels are asked to take one color and show the variations in the color as it goes from white to black.

The next assignment is designed mainly to make the students feel at home with the paint brush while teaching them to recognize and use the various color schemes. Since many of these students have had virtually no experience with a brush and at first are at a loss as to what to do, it might be a good idea to have a number of abstract designs duplicated for them to color at first. With a little confidence they are then ready to experiment with their own variations. Naming these creations always adds to the interest. Later assignments might be for other pictures, either realistic or impressionistic. Related assignments in this and other units might be for such things as posters, signs, or pictorial representations of some word or name. Other possible assignments using their newly acquired knowledge of color include such things as planning a room for home, school, or business or designing a collage. The final activity for this unit might well be the designing of an actual advertisement in color. This might take the form of package design, point of purchase display, or a color spread for magazine or newspaper.

Challenge students to explore and experiment an area in which they are interested, and you're almost sure to come up with students who are going to do, and through doing, learn.

New Directions for Distributive Education
What We Must Do

Currently there is wide interest in the history of distributive education. This recognition of a meaningful past is especially gratifying at a time when new directions for distributive education are being explored.

Our D.E. pioneers had diligence, initiative, vision, and belief that vocational education for the distributive occupations was to be a continuing process in the life of youth and adults. The distributive education program had no past when these leaders approached their task of developing high school, post secondary and adult instruction in marketing, merchandising and management. They were searching for the present.

Today we have additional dedicated leaders, new levels of leadership and the beginning of a maturity that sees the present as the pathway to the future. But what about the past? Do we just document it as a historical record? Or do we try to understand it, finding out why decisions were made and under what conditions? Do we also activate the past and use it as background for today's decision-making? The latter would appear to represent the soundest motivation towards compatibility rather than conflict with the past.

New Directions for Distributive Education - What We Must Do is

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A report of the remarks of Mary V. Marks, Program Officer, Distributive Education, Division of Vocational and Technical Education, U.S. Office of Education, to the D.E. Division of the American Vocational Association, Boston, Massachusetts, December 1969

the theme for these discussions. It is to be hoped that actions suggested may be received in a climate of two possible responses - "Why not?" - to represent progress through change; and "Why" - to represent the verity of past experiences.

What must we do? It is my view that there are four areas requiring our immediate attention. We must (1) examine our beliefs about distributive education, (2) identify with priorities in education and vocational education, (3) learn to compete, (4) think first about students.

Examine our Beliefs About D.E.

Until we rethink what we really believe about distributive education and our responsibilities to our profession, it will be most difficult for us to find a self-concept which will stand up under the pressures of our times.

We are passing through a period of crisis of leadership and trust in our world today. This spills over into all institutions creating polarization, role changes, new status symbols and self-seeking activities.

Unless we have the security of our own convictions, we will surely run the danger of conflict between our "kinship group" and the larger and "less personal society". Distributive education and vocational and technical education are far too important to the lives of our people and our nation to permit us the folly of self-deception and immature reactions.

What we must do? We must strengthen our professional organizations and encourage them to assume a greater responsibility for leadership. Regardless of our level in an administrative structure, new titles, new emphases, NASSDE, NADEIS, NADET, CDTE and the D.E. Division of AVA can

safeguard our educational capability and vocational purpose. These organizations together with our youth group, DECA, will serve as insurance policies, giving us personal identity and visibility through their programs of work.

We must present a positive image of distributive education, realizing that what each of us does and says will spread quickly to other districts, institutions and States. Every teacher-coordinator, every post secondary student, every cooperative training sponsor, every adult supervisor - everyone, no matter what his purpose in distributive education, influences the destiny of vocational and technical education. People <u>are</u> listening. The implications of our response to their interests are more than of the moment.

We must get our beliefs into the literature and into the hands and minds of thought leaders in education and marketing. We need articles in vocationally-oriented journals and newsletters, and we need bulletins and brochures to distribute. We need platforms for ourselves and for others to give their testimony about our products and the career opportunities we represent. Our Mission requires each of us to share beliefs about distributive education by means of a variety of media - audio, visual, written - to State and local decision-makers, to lay and professional associations, to trade and related interest groups. This we must do on behalf of the youth and adults vocational education serves.

Identify with Priorities in Education and Vocational Education

The second action area for our immediate attention is to identify distributive education with priorities in education and vocational education.

In his statement concerning goals for the U.S. Office of Education in the 1970's, James Allen, Jr., Assistant Secretary for Education and U.S. Commissioner of Education, set the framework for priorities. He indicated that we are being forced under pressure from many sources - political, economic, social and moral - to move, to take corrective action, or to face disaster. As a result activities of the Office of Education will be in accordance with the following three broad goals:

1. The development of a nationwide strategy for maintaining a continuing process of improvement and relevance in American education. (This highlights the need for research, materials development, demonstration, evaluation, dissemination)
2. The elimination of failures with respect to the education of the disadvantaged.
3. The provision of adequate human, material and financial resources and their more effective distribution in relation to educational need. (This focuses on the social and economic environments in which education is provided).

Priorities in vocational and technical education are implicit in the Vocational Education Amendments of 1968. The legislation gives

special attention to planning, eligibility for Federal dollars, set aside funding in the permanent program, and separate authorizations for selected developmental emphases.

1. State and local planning activities should draw on the expertise of many publics, agencies and organizations in the expectation that greater involvement will enrich and make more relevant programs and procedures in all aspects of vocational education.

2. Cities and neighborhoods with concentrated populations, communities with high youth unemployment and excessive dropout rates and economically distressed areas will receive special and favored consideration in the allocation of Federal funds.

3. At least forty percent of the expenditures authorized in the permanent vocational education program will be set aside for instructional purposes related to the needs of disadvantaged youth and adults - 15%; postsecondary students - 15%; and handicapped persons - 10%.

4. Special authorizations are earmarked for research and training in vocational education, exemplary programs and projects, consumer and homemaking education, cooperative vocational education programs, curriculum development, vocational education leadership and professional development, work-study programs, and residential vocational education.

Commissioner Allen's priorities for education and those mandated by the Congress comprise one hierarchical arrangement. An additional point to be made is that there are many levels of goal setting and

planning - for example, State, district and school; or vocational education, distributive education, adult D.E. Each within its framework of responsibility sets priorities. I would submit, however, that there must be consistency in the hierarchy of priorities if those at any level are to be achieved. Further, perceptions of success or failure will be determined to the degree that program outcomes are significant in the hierarchy of priorities.

What must we do in distributive education? We must evaluate our planning against established priorities, we must involve ourselves and our program with others participating in similar priorities. We must interpret the contributions our capabilities and achievements make in the whole process of goal setting, implementing and evaluating vocational and technical education.

Learn to Compete.

It seems ironic to label my third major point, "learn to compete". Yet competition which is of the essence of marketing and distribution has not had a like centrality in the development of distributive education's role in vocational and technical education.

We must learn to compete for the resources required to mount quality programs and services for all whose work and careers will be found in marketing and management. An adequate budget will include provisions for instructional staff, for space in educational facilities, for representative equipment, and for the materials of learning and teaching. We must compete for our own leadership personnel and for assignment to decision-making teams. And we must compete for the time to do the job, to have available the number of hours needed each

day to keep distributive education abreast of trends in education and marketing.

Back up data will be essential. Your opinion, my opinion or tradition does not speak with the authority of facts gathered and collated. What must we do? We must individually accept the role of "researcher", "disseminator", and "interpreter". We must concern ourselves with surveys, comparative investigations, descriptive studies, demonstration projects, and scientific research as a regular aspect of our professional responsibility. Back up data can be the only valid basis for competition within vocational education.

There are many areas needing systematic study and interpretation. Perhaps one of the most important is the analysis of the current status of and projections for employment in the distributive occupations. As educational planners we are aware that clusters of jobs within a product- or service-oriented business provides a meaningful framework for securing data about employment trends in marketing. However most surveys now being made to collect distributive manpower information are developed around separate occupational titles. We need to help our associates at all levels in the Training and Employment Service of the Manpower Division of the Department of Labor and other labor force analysts to adjust their survey instruments and techniques and give us data about jobs clustered at given levels of complexity with a a classification system similar to that used by the Census of Business of the U.S. Department of Commerce. We must involve our trade associations in this endeavor. We probably also should reorient our

own community surveys so that employment needs as well as cooperative training stations are projected.

Surely if we are to compete successfully we must have more information about distributive education in action. We must be able to point to outstanding programs and provide the details about what makes them unique, the characteristics of the students, the size of enrollments in relation to the capacity for enrolling students, the rate of retention in the program, special teaching techniques and learning materials. We must know the costs of providing instruction, how this compares to other subject areas; the relative amount of time devoted to group, individualized, project and cooperative instruction and the cost factors involved?

Finally if we are to compete we must identify the distributive education program more specifically with the types of businesses which provide employment. Recent conversations with students and businessmen make me conclude that we should look for possible deficiencies in program presentation. D.E. students when asked how they would increase interest in distributive education told me that most students thought the program was a way to get a job. They suggested that the program should be identified by types of businesses - grocery training, apparel merchandising, service station operation, department store retailing. One recommended that the school handbook of courses should list D.E. in this way. Some businessmen told me that they felt the program was good for the community and that they were glad to judge

contests and employ part-time D.E. students. They did not communicate to me, however, any real perception of the program as being specifically designed to prepare students for careers in their lines of business.

We might ask ourselves what our administrators, guidance counsellors, faculty associates and program planners think about the distributive instructional program if some of those directly involved with the program only understand part of the story. Half-truths make for poor competition.

Think First About Students

My fourth recommendation for action is to think first about students. This is not to say that students have not been the motivating force in the expansion and development of distributive education. It is to say, however, that what is best for students, all prospective students, is best for distributive education. Let us be sure then that the interests of the adult leaders in distributive education - teachers, supervisors, teacher educators, advisors and sponsors - are subordinated to the needs of students.

What must we do? In my opinion we must expand our concepts about the curriculum and instructional programming. We must move beyond the generalized D.E. course concept and recognize that distributive education is an umbrella designation for a variety of instructional programs, any one of which, but not all, is of interest to potential students. We need also to direct our attention away from retailing, which is a gross classification for the variety of stores on Main Street,

and away from mid-management which is a gross classification for duties performed in liaison with owners and proprietors of a variety of marketing establishments.

I believe students' needs dictate that a commodity system, not a diversified or functional system, should be adopted as the guide for sequencing learning experiences through distributive education. We must strengthen the visibility of the multi-options available to students preparing for initial employment or wishing to upgrade their current performance skills. These options are reflected in the distributive education taxonomy. (advertising services, apparel and accessories, automotive, finance and credit, floristry, food distribution, food services, general merchandise, hardware, building materials, farm and garden supplies and equipment, home furnishings, hotel and lodging, industrial marketing, insurance, international trade, personal services, petroleum, real estate, recreation and tourism, transportation)

We must also reach students earlier in their educational experiences in order to build their awareness of the opportunties and requirements in specific distributive industries. This certainly indicates the need to develop closer ties with and services to guidance and counselling personnel from elementary through post secondary and adult levels of education. It also indicates that career ladders need to be identified in such a way that career choices and initial job choices may be made by students with some confidence in the array of information available to them.

Thinking first about students will require us to specify for each instructional sequence the level of occupational expertise that may

be expected to be achieved. Programs of study must be so designed that a student knows for example that he is preparing for jobs at the threshhold level of responsibility in the hardware field if this is the case, or that the distributive curriculum in which he is enrolled leads to qualifications needed by management trainees for the hardware field.

Ideally, of course, students will be grouped together for the program in which they are enrolled. However, the important concept is not the way they are to be scheduled but that there is a learning direction recognized by the student and the teacher.

Advances in educational technology into such areas as programmed materials, computor-aided instruction, and closed circuit television; and the broadened perspectives for cooperative education and employer partnerships with the schools suggests the possibility of implementing several different instructional programs in the same physical environment without creating barriers to the motivation and learning patterns of students.

We can be sure, however, that we must give massive emphasis to curriculum and materials development and demonstration, and that students, employers and teachers must share with curriculum specialists and researchers the task of creating these teaching and learning tools.

"New Directions for Distributive Education - What We Must Do" has been the theme of this presentation. It is my conviction that distributive education does indeed have the opportunity to bring

new hope and meaning into the lives of students and adults seeking worthy and satisfying employment situations. We have good capability now; and it will be out of this capability that new directions for distributive education will be developed.

What must we do? I have cited four factors which I believe must be integrated into each individual's D.E. action program. (1) We must examine our beliefs about distributive education; (2) We must identify the program with priorities in education and vocational education. (3) We must learn to compete for resources - to present distributive education as a valid instructional opportunity in vocational and technical education. (4) We must think first about students in all our decision making about the curriculum and the structure of the program.

Not much lead time remains. In fact much is already taking place over which we have little or no control. However if we begin now to do more different things, we will learn to do more things differently. The pace of improvements and adjustments will accelerate, once a new start is made.

Why not commit ourselves right now to progress through change? Why not evaluate new directions in terms of the principles and procedures set forth by the pioneers in distributive education? Why not approach each suggestion, each problem that confronts us with the excited response, "Why not"?

Why not?

COOPERATIVE VOCATIONAL EDUCATION PROGRAMS IN DADE COUNTY PUBLIC SCHOOLS

Maurice E. Wilson

Supervisor of Cooperative Vocational
Education and Disadvantaged Programs
Miami, Florida

It is the purpose of this paper to show what the Dade County School System had done (1) relative to expanding the Cooperative Vocational Education Program; (2) developing and implementing a program for students with special needs "A Work Experience Program."

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 8, 1969.

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COOPERATIVE VOCATIONAL EDUCATION PROGRAMS

IN THE DADE COUNTY PUBLIC SCHOOLS

Maurice E. Wilson, Supervisor

Cooperative Vocational Education & Disadvantaged Programs

the division of

VOCATIONAL, TECHNICAL AND ADULT EDUCATION

Cooperative Vocational Education Programs

INTRODUCTION

It is the purpose of this paper to show what the Dade County School System has done (1) relative to expanding the Cooperative Vocational Education Program; (2) developing and implementing a program for students with special needs - "A Work Experience Program."

As a result of a recommendation made from business and industry, the school board authorized the superintendent to increase Cooperative Vocational Education opportunities for junior and senior high school youth. The recommendation was adopted and during the 1968-69 school year, the number of cooperative education programs was increased from 36 to 74 programs. The program was well received by the business community as well as school personnel, and as a result, for the school year 1969-70 an additional 51 programs were initiated extending cooperative vocational and work-experience programsto additional students.

There are now 126 Cooperative Vocational Education Programs currently in operation in the Miami, Florida, area; 77 of these programs are classified as programs for the disadvantaged. Training and or work experience is offered in any socially accepted occupational area. Cooperative Vocational Education is offered to students in junior and senior high school, grades seven through twelve. Opportunity is provided for students with varying levels of ability to select and enter into a comprehensive cooperative vocational education program. The following types of programs are being conducted in the Dade County School System:

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 8, 1969.

Cooperative Vocational Education Programs

Cooperative Agri-Business

Cooperative Business Education

Cooperative Custodial Service & Building Maintenance

Cooperative Distributive Education

Cooperative Health Occupations

Cooperative Industrial Education

Cooperative Service Station Sales & Service

Diversified Cooperative Training

Junior High Work Experience *

Senior High Work Experience *

* Programs for Disadvantaged Youth

Cooperative Agri-Business

This program is for students that have completed one year of vocational agriculture. Students receive on-the-job training through the cooperation of agriculture productive enterprises. Four hours daily of in-school instruction is correlated with on-the-job training activities.

Cooperative Business Education

A program for seniors only, designed to provide students with work experience and on-the-job training in office occupations as part of the regular high school program. The school day consists of four hours daily of in-school instruction and four hours daily on the job.

Cooperative Distributive Education

A one-year program for high school seniors, designed to provide on-the-job training in distributive areas such as: selling, sales promotion, buying and selling of goods and services, and related areas.

Cooperative Vocational Education Program

The school day consists of four hours daily of in-school instruction and four hours daily on the job.

Cooperative Health Occupations

The Cooperative Health Occupations Program is designed to provide students with the knowledge and skills necessary to function as a non-professional employee in the field of health services and to obtain work experience and on-the-job training as part of the regular high school program. The school day consists of four hours daily of in-school instruction and four hours daily on the job. Training opportunities are provided by hospitals, clinics, nursing homes, as well as other health related services.

Cooperative Industrial Education

Designed for the high school senior that has completed a minimum of one year training in the industrial education program. Students are provided an opportunity to receive on-the-job training through the cooperative efforts of business and industry. Flexible scheduling is utilized in placing the student, i.e., students may work eight hours daily for four days a week and attend school one day a week. This type of scheduling is utilized in order to meet the demands of cooperating business and industrial establishments.

Cooperative Custodial Service & Building Maintenance

Designed for the pupil who has not found a definite interest in the general education program. Four hours of in-school instruction includes skills, technical knowledge, safety practices and general information that are required for successful entry and advancement in the

field of custodial and minor building maintenance is correlated with four hours of on-the-job training with a cooperating training facility.

Diversified Cooperative Training

Students during their junior and senior year are provided the opportunity to receive on-the-job training in business and industrial establishments in a variety of occupations. The school day consists of four hours daily of in-school instruction and four hours daily on the job.

Junior and Senior High Work Experience Program

The Work Experience Program is designed to provide an opportunity for disadvantaged students to remain in school by combining suitable on-the-job work experiences coupled with four hours daily of in-school remedial and related academic instruction. This program provides opportunities for disadvantaged youth with varying levels of ability to explore careers in a variety of occupational areas.

Cooperative Service Station Sales & Service

Designed for pupils interested in a career in service station salesmanship and service. Four hours of classroom instruction is provided as a foundation course to prepare the student by providing technical knowledge, skills, safety practices, and general information that is required for successful entry and advancement in the field of service station work. Four hours of on-the-job training is provided by cooperating service station facilities.

WORK EXPERIENCE PROGRAM

The Work Experience Program is for students with special needs. Many students that have been classified as potential dropouts, over-age in grade, and not relating to the regular school program have been referred to this program. The program has provided an opportunity for disadvantaged students to remain in school by combining related and academic instruction with job related work experiences.

The four pilot programs met with great success, and as a result, administrators requested that this program be extended to meet the needs of disadvantaged youth in other junior and senior high schools, so for the school year 1968-69 an additional 42 programs were initiated. Outstanding teacher-coordinators were selected to work with this program, and because of their broad occupational experiences and background, the program was well on its way of reaching its desired goals.

The school year 1968-69 was the first year that the program really made an impact on the schools of Dade County. It was quickly recognized that in order for this program to justify its existence, it must prove its worth. After a series of discussions with district superintendents and school principals, we were encouraged to evaluate the effectiveness of the program by comparing work experience students' scholarship, conduct, effort grades and attendance with the grades the students had received prior to entering the program. The school administrators voiced a verbal approval of what they felt the program was accomplishing, but they expressed the feeling that we should document it. Through the cooperation of teacher-coordinators in the program, a student survey card was created to collect the needed data. Each of the 32 junior high and 14 senior high teacher-coordinators received a survey card for each student

enrolled in their program. Scholarship, conduct, effort grades and attendance, by six weeks grading periods were compared with corresponding six weeks periods the year prior to their admission into the program. After all cards were completed, they were gathered and tallied to see what changes had taken place with these potential dropouts. The results revealed that in scholarship, the average net improvement was .6%, conduct of the students improved .7%, effort was improved by .2%, and attendance improved by students attending school 3.5% more days that year, than the previous years. Even though the averages of the program showed improvement in all areas, let me hasten to say that in several instances quite the opposite was true. In several programs the scholarship, conduct, effort and attendance showed on the minus side. Needless to say, school principals were quick to ask why was the program in their school not as successful as a neighboring school. The survey instrument certainly served as a basis for determining program effectiveness in any given school.

All data gathered as a result of the survey was ultimately published in a First Annual Report on the Work Experience Programs for the Dade County Public Schools. Copies of the report were given to the superintendent, school board members, district superintendents and school principals. After principals had an opportunity to review how the program had improved in scholarship, conduct and effort grades of the students, they readily agreed that the work experience program was really effective for the following reasons:

1. The disadvantaged student found a program where he met success.
2. The teacher-coordinators were enrolling students in the program that were being rejected by other subject matter teachers
3. Students were provided an opportunity to work on the job while attending school.

As a result of general program success, requests were made to incorporate additional work experience programs for the 1969-70 school year. The superintendent acknowledged the fact that the program was meeting the needs of a segment of the school population that had not been met before and as a result, 31 additional programs were added. There are now 77 work experience programs serving disadvantaged youth in the metropolitan Dade County area.

It was necessary to publish a handbook so new teacher-coordinators, school principals and administrators could be made aware of all the aspects of the program. One of the foremost questions, was what type of scheduling does this program operate under and what is the system for granting course credit.

Typical Schedule for a Work Experience Program

Period	Subject	No. in Class
1	Work Experience General Related Study	20
2	Work Experience Remedial Instruction, i.e., Remedial Math	10
3	Work Experience Remedial Basic English	10
4	Small Group or Individual Study Sessions under Guidance of Coordinator	varies
5	Work Experience On-The-Job Training	20
6	Work Experience On-The-Job Training	20

The above schedule provides for four hours of in-school classroom instruction daily; the schedule may be varied, i.e., ten students during period two and three may be enrolled in a required course. Students having difficulty in a subject area such as math, may receive remedial

instruction or related math from the teacher coordinator. As stated in the Vocational Amendments of 1968, Vocational Education means vocational or technical training or retraining which is given in schools or classes (including field or laboratory work and remedial or related academic and technical instruction incident thereto ... and is conducted as part of a program designed to prepare individuals for gainful employment as semi-skilled or skilled workers .... Work Experience is such a program.

COURSE CREDITS FOR WORK EXPERIENCE PROGRAMS

During the small group or individual study period, course work is planned in cooperation with a certified math, English, social studies or science teacher. The work experience teacher-coordinator then provides the necessary laboratory work, remedial or related academic instruction necessary for preparing the individual for gainful employment.

Junior High School Work Experience (Group Instruction) (Boys or Girls)

Grades 7, 8, 9 — 1 Year — 1 Unit (Grade 9)

This phase of the instructional program provides the employability skills necessary for employment. Blocks of instruction include preparing for an employment interview, making out an application blank, employer-employee relations and other related topics that contribute to preparing the student for employment.

Junior High School Work Experience (Individual Instruction (Boys or Girls)

Grades 7, 8, 9 — 1 Year — 1, 2 or 3 Units (Grade 9)

Pupils may be scheduled up to a maximum of three periods per day. These periods may be utilized by providing individual instruction to the students; i.e., remedial assistance provided in mathematics, English, social studies, and science. Credit may be given in any of the above subjects.

Junior High School Work Experience (On-the-Job) (Boys or Girls)

Grades 7, 8, 9 — 1 Year — 1 Unit (Grade 9)

Work Experience - The student works on a job in a cooperating training facility, four hours daily in school and a minimum of four hours daily on the job.

Senior High School Work Experience (General Related) (Boys or Girls)

Grades 10, 11, 12 — 1 Year — 1 Unit

This phase of the instructional program provides the employability skills necessary for employment. Blocks of instruction include preparing for an employment interview, making out an application blank, employer-employee relations and other related topics that contribute to preparing the student for employment.

Senior High School Work Experience (Specific Related) (Boys or Girls)

Grades 10, 11, 12 — 1 Year — 1, 2 or 3 Units

Pupils may be scheduled up to a maximum of three periods per day. These periods may be utilized by providing individual instruction to the students; i.e., remedial assistance provided in mathematics, English, social studies, and science. Credit may be given in any of the above subjects.

COURSE CREDITS FOR WORK EXPERIENCE PROGRAMS

Senior High School Work Experience (On-the-Job) (Boys or Girls)

Grades 10, 11, 12 — 1 Year — 1 Unit

Work Experience - The student works on a job in a cooperating training facility, four hours daily in school and a minimum of four hours daily on the job.

The Work Experience Program has met a need in our county for the following reasons:

1. It has served as a vehicle for introducing employability skills.
2. The program has motivated students to stay in school.
3. Qualified students from the program have transferred to areas such as Distributive Education, Trade & Industrial Education, Agri-Business, as other vocational areas.

In summary, we are trying to implement the full intent of the Vocational Amendments of 1968, by providing programs to meet the needs of all youth.

DEC 1969

A R E V I E W

of the

THIRD ADULT DISTRIBUTIVE EDUCATION CONFERENCE HELD IN MEMPHIS TENNESSEE

and

IMPLICATIONS FOR CURRICULUM DEVELOPMENT IN ADULT PROGRAMS

Dwayne Tucker

Supervisor of Distributive Education

Memphis City Schools

Memphis, Tennessee

[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 6, 1969.

My part of this program has to do with a review of the "Third National Adult Distributive Education Conference" held in Memphis, Tennessee, last January, and as a result of this conference the affects, benefits, or suggestions on Curriculum Development for Adult Distributive Education.

The purpose for my being on the program is very simple. Bill Ruth called and said I was all he had left. Seriously, it provides an opportunity to review and share with you the suggestions made pertaining to the multitude of problems associated with adult distributive education for out-of-school youth and adults in metropolitan areas.

The conference was planned and coordinated by Dr. Carroll Coakley, University of Tennessee, and Mr. C. E. Pearson, Memphis State University, in cooperation with Miss Mary Marks, Program Officer for Distributive Education, and Mr. Earl M. Bowler, Senior Program Director for Vocational-Technical Programs, both of whom are with the US Office of Education.

The theme of the conference was "Setting Your Sights On The Seventies" and the two major purposes of the conference were:

1. Discuss ways to implement provisions of legislation relating to distributive education services for out-of-school youth and adults.
2. Identify possible solutions to provide adult distributive education services to individuals in the Metropolitan Area.

The conference structure provided for both formal presentations and task force group meetings. It was felt that there was a natural

pattern of concern that should be explored within, so the conference was organized around three areas of training needs:

1. Unemployment to Employment

2. Employment to Supervision

3. Moving to business ownership

Now with the program well planned the action began with the keynote address by the late Mr. Morgan Christian, Assistant Superintendent, Department of Instruction, Memphis City Schools, who extended a very appropriate challenge. He said, "We as educators have an obligation to provide the type of educational programs where these people can learn skills or up-date skills to become gainfully employed. As you meet here this week, may I challenge you to give thought to ways we can devise programs that give understanding to the abilities, capabilities, and aspirations of this group of people. I think,historically, Vocational Education has demonstrated the ability to adjust to changing needs and emergency situations. I have hopes that it will continue to do so."

I feel the success of any conference of this nature is dependent upon the quality of participation. The conference coordinators secured some excellent speakers whose talks were directly related to a phase of the total program. As one participant said. "they told it like it was and how it should be in a language that was meaningful."

Mr. Earl Bowler described the changes brought about as a result of the 1968 Vocational Education Amendments on our adult programs in D. E. We will need to keep these factors in sharp focus:

1. Needs of people we serve
2. Finances become a genuine consideration as we expand programs to meet the needs of these people
3. Curriculum modification will be needed
4. Programs must be structured to help even the least capable to adjust to society

He pointed out the urgency Congress feels in solving the ills of unemployable youth and adults and that the word in Washington was "all signals are go." (The signal light must be stuck on RED)

We need only to read the amendments to see this urgency portrayed in vivid detail. (Evidently the Appropriations Committee also should read it.)

As we set our sights on the seventies, we need to pay attention to the mood of our times. We are in the age of dissent. So said Miss Mary Marks in her talk on "The Job Ahead For Distributive Education". She further stated that we have a challenge to face up to our responsibilities in relation to the dissent around us. We have an opportunity to share in making the decisions that are going to bring unity, opportunity, and meaning to the lives of the people to whom we have committed our professional abilities. She emphasized the vital need to communicate what distributive education is in terms of the needs of others and how we must talk in terms meaningful to special audiences.

The main thrust of conference discussions was concerned with "Programs to Produce Salable Skills in Adults With Special Needs".

Mr. Roscoe Overton, Project Director for the Memphis Urban League on Job Training in Memphis stated, "This is easier said than done". In his talk on problems of Employment of The Disadvantaged in the Memphis area he emphasized the need for educators and businesses alike to become more aware of the problems facing the Negro job applicant and of the overall attitude of defeatism which exists among the unemployed.

Mr. Overton summarized by quoting James Lane Allen when he said, "Into your hands will be placed the exact results of your thoughts. You will receive that which you earn, no more, no less. Whatever your present environment you will fall, remain, or rise with your thoughts, your vision, your ideal".

Representing the business industry, Mrs. Betty Chandler, Director of Training for Goldsmith's Department Store said, "Instead of trying to place them in a stereotype program to fit everyone, we need training programs that will let them start where they are and with what they have progress from there. She further discussed a joint training program for the disadvantaged being conducted by her company and the Distributive Education Department of the Memphis City Schools.

Mrs. Chandler summarized by stating that there are no easy solutions. But if educators would let the business people know what they have to offer; and if the business people would let educators know their needs; then by cooperative efforts we can make giant strides toward a solution to this problem that will be beneficial to all concerned.

In a talk on "Identifying and Locating Learners" Mr. Clifford Stockton said, "Establishing a training program is a rather easy task; but, identifying, locating, selecting, and enrolling the learner is not easy." Mr. Stockton was a natural to discuss this topic. At the time we started the program with Goldsmiths he was an outstanding DE teacher-coordinator in one of our lower income school districts and he taught the first two classes at Goldsmiths. At the time of the Memphis Conference he had joined the Memphis Area Chamber of Commerce as Associate Director of the Human Resources Division and was working in this area. Mr. Stockton gave some key factors in securing these enrollees:

1. Determine the type people you want in a particular program
2. Determine where and how to locate them
3. Identify agencies or organizations that can assist you in recruiting
4. Secure a recruiter that can relate to a particular group of people.
5. Go into the area to recruit them

Once you have established a class, then what? Donnie Dutton who is Associate Professor of Adult Education at Memphis State University said, "Motivation is probably the most basic element. It is that element which causes a person to move toward a new goal. It is up to the educators to recognize the importance of motivation and to find out ways to bring motivating factors into the learning process." We are not talking about the theory of motivation, but rather to understand the adult learner, for it is through understanding that the educator will employ materials, methods, and techniques which will have a motivating effect on the adults.

In his talk on "Recruiting and Training Adult Instructors", Richard Almarode, who is Director of Teacher Training for Hotel-Motel Associations Educational Institute, pointed out that the selection of the adult instructors had not been given the same emphasis or attention as philosophy, program planning, organization and other aspects of adult programs. We were reminded that it is the instructor who has the final responsibility for the success of any adult program. He further pointed out that in adult distributive education programs we have historically been concerned with the development and improvement of occupational competencies of our participants. However, little or no attention has been given to the development of social skills. So, in selecting adult instructors we must continue to look for occupational competencies first, but give more attention than we have in the past to his social skills in motivating people.

The final presentation related to factors we should consider in planning and implementing adult distributive education programs, Donald Jaeschke, Associate Professor and Teacher Educator, University of South Florida, posed a question that may be hard for some of us to answer. In his talk on "Planning For The Individual To Be Served", he identified the problem as a three phase problem and related it to a triangle. One of the triangular problems is people, underprivileged people. Another of the triangular problems is the curriculum to be used, and the other component of the triangle is "us". You and me. What part do we play in this problem? Before you can do something you must first be someone. So I ask the question, who are you? I ask you as distributive education supervisors,

who are you, and what part in this problem do you play? How are you going to do it? How are you as distributive education leaders going to work? How are you going to bring distributive education to these people?

The second phase of the conference was devoted to group meetings. The group discussions were concerned with program planning, program promotion and personnel. The groups listened, discussed and sometimes argued, but as a result, set down a plan of action -- a guide, if you please, that if carried forth can be a start in solving our problem.

Time will not permit, and my talents limit my ability to do justice to all of the useful ideas and suggestions that came from these groups. However, I feel the following statements summarize the views expressed by the groups.

1. There was, I believe, unanimous agreement on the importance of an adequate adult distributive education program to serve the out-of-school youth and adult in the metropolitan areas of our nation. They also indicated such a program should extend the full continuum -- from basic employment to business ownership.
2. They basically agreed that there are many similarities in problems in all three of the areas of program, promotion, and personnel.
3. They further identified some problems that were peculiar to these areas and it is here that we need to focus our attention.

4. Everyone agreed that we are faced with very real problems in providing adequate programs in distributive education in the metropolitan areas. They further agreed that we must continue to offer our "regular programs" but if we don't respond to the "special needs area" some other agency will respond and will be given the opportunity to handle all our programs. I can state for a fact that we are competing with this problem in Memphis now.

Along with the many activities involved in implementing and conducting any new program of study is the curriculum. It is this aspect or phase of the total program development that I am to discuss next.

There are many key factors that should be considered, but again, time will not permit an in-depth discussion of the principles of curriculum development, so I will very briefly relate some suggestions that I believe, as a result of the conference and my subsequent experiences should be considered.

I feel that too often it is assumed that a patented curriculum for a particular course will be fine for any given society or community. Too often we assume that what is good for one side of the "tracks" is equally good for the other side.

Curriculum planners for adult education must start with basic educational discussions which lead to sound educational policies. The policies must take in account at least four determinants. They are the nature and needs of a society, the nature and needs of the

learner, the nature of the learning process, and the nature and role of the teacher. For example, in considering the nature and needs of a society we should give thought to:

1. Classification of Community
   a. Agrarian
   b. Industrial
   c. Business
2. Economic status of the society
   a. Poverty Community
   b. Community Affluence
3. Educational background
   a. Mostly dropout
   b. High school or college graduates
   c. Mixture of these
4. Home Environment
   a. Matriarchal
   b. Patricochal
   c. Neither of the above

In identifying the needs of the learner, we should give thought to such things as:

1. Psychological needs
   a. Need for love
   b. Compassion
   c. Security

2. Educational Needs

   a. Basic education

   b. Personal development

   c. Problem solving

   d. Providing skills

3. Other Needs

   a. Health needs

   b. Social needs

The nature of the learning process:

1. Method of implementation of instruction

   a. Use of facilities

   b. Group and individualized instruction

   c. Role playing, etc.

2. Source of material

   a. Curriculum specialist

   b. Various organization

3. Development of positive attitudes

   a. Values

   b. Social skills

4. Evaluation

   a. Program

   b. Individual

It is our philosophy, I feel, that the disadvantaged, or any student for that matter, is likely to progress in direct ratio to the kind and quality of instruction he receives. Therefore, we must be concerned about the roll

of the instructor. He must have a knowledge of the subject to be taught. He must have ability to organize, to teach. He must possess an ability to relate to the learner and to motivate. He must be understanding, creative, and flexible - yes, all of these qualities and many more must be possessed by the teacher. Probably the most important of all the above variables is the instructors ability to relate to the learner and ability to motivate, for it is through these two factors that causes the learner to want to know, to understand, to believe, to act, to want to gain a skill.

In short, the learning process should be problem centered. Learning should be experience centered and these experiences should be meaningful to the learner. Until a similar type of pre-planning takes place there is little or no need to concern ourselves with such things as subjects to be taught, course outlines, methods to be used, teachers guides, materials, etc.

I have attempted to give you a brief review of some of the ideas that were offered by the conference participants, as well as my own opinions. Mr. Ed Ferguson described my feeling precisely about the benefits of the conference in his evaluative summary. He said, "I feel that we have enjoyed a most profitable conference. But, it is not the here and now that is important. It is the ultimate use to which each of us makes of his experiences during this meeting that is important."

This dictates my final remarks. It isn't so much what we say or do here today about solving the educational problems for out-of-school youth and adults --- but instead, may I suggest that our future success will depend on our ability to provide the vehicle and the way to gainful employment for those underdeveloped people in our society.

VT 010 433
Bottoms, Gene, And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 8-10, 1969).

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Speeches presented at the vocational guidance section of the 63rd Annual Vocational Convention include "Rationale for Merging Elements from Guidance and Vocational Education into New Program Models," by Gene Bottoms, "Objectives, Structures and Implementation of Georgia's Program of Educational and Career Exploration," by Marion H. Scott, "Objectives Structure and Implementation of Georgia's Program for Dropouts and Potential Dropouts," by Kenneth R. Reynolds, "Vocational Guidance for In-Service Counselors," by John F. Hawkins, "Students Do Want Vocational Education," by David W. Winefordner, "Improving Counselor Effectiveness through Summer Vocational Guidance Seminars," by Richard E. Green, "Manpower Projections as a Growing Resource for Vocational Guidance," by Paul G. Larkin, and "Counselors' Responsibilities to the Non-College Bound," by S. Norman Feingold. (CH)

VT 010 433

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Speeches Presented At The

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Boston, Massachusetts

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RATIONALE FOR MERGING ELEMENTS FROM GUIDANCE AND VOCATIONAL EDUCATION INTO NEW PROGRAM MODELS [1]

The need for restructuring the school environment--its content and processes--can be derived from the "credibility gap" between the announced purposes and the actual outcomes of public education for many youth. Many in our society seriously question the commitment of educators to their redic. Some would question what we say our goals are in education; but many would question the strength of our commitment in making these goals real for all students. The major problem comes in making the goals of education real for one-third to one-half of our population. There are those in our society who feel that the educational system is so middle-class oriented that it cannot and will not respond to the educational needs of those in our society who without a proper education will be severely handicapped in becoming contributing members. Thus, to bring to reality those basic beliefs of enabling each individual to be and to become what he is capable of being, there is a necessity for a public education system that is totally committed to the education of all youth, and not just some youth. Such a primary commitment to the individual can be accomplished only when those who make up the educational community are willing to make secondary their commitment to a particular type of education, setting, discipline, subject matter content, methodology, process, role or specialization, and a primary commitment to providing an educational climate that maximizes the optimal development of each individual. To focus upon the educational needs of many youth who, at present, are being repelled by our system of education will require certain changes in the operational intent, nature, and structure of education.

It seems only natural that individuals from vocational education and guidance and counseling become catalysts for making educational opportunities available in such manner that the individual can develop his potentialities into realities. Vocational education has, in several forms over a long period of time, focused on assuring to the individual the chance to develop his uniqueness into the competencies necessary to perform in his work. Guidance and counseling has concerned itself with the way in which the individual uses his uniqueness. The educational conditions in existence will determine whether or not the individual's goals are realized.

To arrange a school climate that provides an equal opportunity for each student to learn with his own uniqueness will require a basic change in the posture of educators regarding the bases from which one operates in designing school experiences. Too often our posture has been one of devising programs and serving those who could benefit from the program as established. Such a strategy is still the mode rather than the exception even within vocational education as illustrated by one of Prosser's 16 Theorems, which is still often quoted, and I quote:

> Effective vocational education for any profession, calling, trade, occupation or job can only be given to a selective group of individuals who need it, want it, and are able to profit from it.

[1] Presented by Gene Bottoms at the 63rd Annual Vocational Convention of the American Vocational Association at Boston, Massachusetts on December 8, 1969.

(1) This statement places emphasis on the program and not on the student. The emphasis is on the student changing rather than on program modification. I would suggest as a reference point for program development the following statement.

> Effective education or vocational education or vocational education for any or all individuals involves the designing and executing of programs in such a manner that those who need it are able to profit from it and succeed at it.

(2) This statement places empahsis on designing programs from which students can profit. The emphasis is not on a single program, but on the designing of many programs which are executed in a variety of ways to serve all. No longer can the focus be on devising programs and services just for those who can benefit.

> It is believed that <u>one</u> way for rendering the educational experiences meaningful to more youth would be to <u>merge</u> or fuse <u>certain elements from guidance</u> and <u>counseling</u>, and <u>vocational education</u> into the broader school program.

(3) This represents the central <u>theme</u> for the three presentations this morning. My remarks will be addressed to the reasons for merging elements from guidance and vocational education into new program patterns. The two following presentations will present two examples of pilot programs which have attempted to fuse elements from guidance and vocational education into the broader school program. One of the pilot programs focuses on career exploration at the middle school level and the other on restructuring the total school program for potential dropouts at grades seven, eight, and nine.

<u>One possible change that might be considered to facilitate the career development of students would be to bring together in meaningful ways experiences in vocational education (the hands on experience) with the counseling skills and understanding possessed by the counselor</u>. Yet, both fields have too often failed to recognize the resources of the other and to recognize that a fusing of their resources would strengthen the outcomes obtained by each.

Too often those in the fields of vocational and practical arts have acted as though they assume that "participation along" in either simulated or direct work experience, or the "giving of information" would provide the student with a sufficient base for making vocational choices. It cannot be assumed that such experiences will automatically be internalized and brought to the conscious level in such a manner that they are maximized in helping the individual acquire a more adequate perception of himself in terms of the world of work. Too often the potential that such experiences have to enhance greater self-understanding in relationship to the world of work is lost because the individual is not provided assistance--counseling if you please--that enables him to personalize the meaning that such experiences have for him and for his future. Not only do youth need appropriate information and experiences, but attention must also be given to the individual's capacity to receive, process and use information in an insightful manner.

The fusing of counseling with such experiences would, in my opinion, result in students who possess greater understanding of concepts and vocabulary

regarding their abilities, values, opportunities, and options that are available to them. Thus, the individual's acquisition of tools with which he can think about himself in relation to education and occupational options should increase the individual's decision-making ability. However, it should be emphasized that many counselors have acted as though they assumed that through "incidental experience" the individual would acquire sufficient base of knowledge for arriving at a "reasoned choice," provided the individual was assisted in examining his previous experiences and possible future options in light of their appropriateness for him.

Beyond such "incidental experiences" in guidance we have relied primarily upon the printed materials contained in the occupational file and an occasional career day or day on the job. Thus, in some instances counseling sessions are "discourse in ignorance." The individual has neither the understanding of self in relation to broad work roles to draw upon, nor the understanding of concepts and vocabulary that he can draw upon as tools in thinking through his course of action. If youth, and in particular work-bound youth, are to relate to different work roles; to test expectations of self characteristics--interests, abilities, values; etc.--in particular work roles, to consider and differentiate future decision points and alternatives; they must be introduced to activities and approaches which go beyond the traditional vicarious stereotyped approaches of printed materials, audio-visual aids, etc.

These types of experiences have a place, but only as part of a comprehensive and systematic program. The school must not only provide an opportuni for the experssion of personal characteristics important to career development it must deliberately set out to develop them. The guidance function becomes one of managing these resources--community, school, curriculum, teacher, peer group, resource materials--so as to maxamize their potential in career development as opposed to one of being the sole dispenser.

Greater use must be made of simulated or direct work experiences and of work observations that allow the student to come into contact with ideal role models offered through vocational education as a means of facilitating students' career development. Career development theory emphasizes the importance of providing youngsters experiences which enable them to identify and try on suitable work roles. Such experiences provide a real situation against which the individual can test out his aptitudes, interests, and values, as opposed to assisting an individual understand himself solely from psychological tests.

Framers of the 1968 Vocational Education Amendments recognized that vocational education can provide the "base of experiences" that can serve to facilitate the career development of youth at different levels when the defir tion of vocational education was changed to include activities to promote educational and vocational decisions. Once the student has experienced a wor role, it will be much easier for him to analyze it in relation to the self. From this base of experience the student could more likely predict the suitability of jobs which offer similar satisfactions, and from this understanding he could identify the type of education needed to obtain a particular job.

To obtain maximum utilization of the potential that rests in these two fields may require that counselors obtain more of the training of vocational educators, and vocational educators obtain more of the training of counselor

Vocational guidance in some schools suffers because some school counselors possess interpresonal skills and lack firsthand knowledge of the world of work; and some vocational teachers with firsthand knowledge of the world of work often lack interpersonal skills. The missing dimension so often in vocational education is sophisticated guidance skills helpful in enabling students to personalize their work experiences. The current training of counselors, on the other hand, places too little stress on firsthand work experience. Before counselors prescribe work exploration for students, they themselves should seek to broaden their knowledge of the world of work. Unfortunately, either the student selection process or the "press" of the training program often produces counselor education students who tend to devalue the importance of work experience. One way around this dilemma might be a common core of training to be provided some counselors and vocational teachers. However, in one of the pilot programs that will be presented, an attempt is being made to train an individual that draws upon both the fields of vocational education and guidance and counseling in devising a program of career exploration at the junior high level.

Another possible change that might be considered to facilitate the career development of students as well as the acquisition of other skills and understanding would be to bring together the promising programs and practices of vocational education with the broader school curriculum and with the guidance program.

For many youth, particularly those who might be classified as disadvantaged or potential dropouts, a horizontal curriculum structure which has, as its core, concrete vocational experiences around which other school disciplines are organized, and carried out in a climate of commitment to help each individual to succeed might just be the means for changing education outcomes for these youth. Many generalizations can be made that render support to such a school structure.

First, most learning experiences in school are of an abstract nature. The learning style and background experiences for many students are such that they cannot achieve in the abstract learning experiences established by the school. Vocational experiences can serve as a vehicle for teaching basic academic skills to such youth. The National Advisory Council on Vocational Education (1968) recommends that vocational experiences serve as a core around which the academic education package might be structured. Such an approach would allow the school to take advantage of the natural motivation that exists on the part of many youth toward work and could serve as a vehicle for organizing the total school curriculum so that it has psychological meaning to the student.

Second, the existing counseling student ratio is such that these youth will not receive the type of continuous supportive counseling that will be necessary for them to be successful. For the most part, such youth school experiences have been marked by consistent failure, and many have acquired the belief that no one really cares what happens to them. Usually we expect them to fail. Such youth will need more than two fifteen-minute interviews a year with the counselor if the goals of guidance are to be achieved for them.

Such efforts will require an individual with counseling skills, who not only works with the individual, but also seeks to structure the school

environment in such a manner that the student can succeed. This will require a counselor whose role is seen by the school as being different from that of the traditional counselor.

Third, heretofore the basic solution which is most often mentioned for serving these students has been to put them in vocational education while the remainder of the school accepts little responsibility for them as in the modification of the content or teaching approach. It would be a mistake to assume that the solution to the problem for the disadvantaged could be solved by vocational education without modification in both the vocational program and other segments of the school program. To do so would probably serve to complica the inequalities already felt by the disadvantaged student.

The other pilot program to be presented is one that involves potential dropouts in which vocational education, other curriculum areas, and the guidance program have been fused together for the purpose of changing the educational outcomes for these students. Both of the pilot programs now to be described are in their beginning stages of development. Whether or not what we believe can happen will happen is still to be determined.

OBJECTIVES, STRUCTURE AND IMPLEMENTATION OF GEORGIA'S PROGRAM OF EDUCATIONAL AND CAREER EXPLORATION[1]

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Introduction

The need to provide meaningful educational experiences for all students is an obvious one indeed.

One attempt at providing such experiences for students is currently underway in Georgia; an attempt which, through its inherent makeup, has caused certain restructuring of some of our educational practices. An effort is being made to provide junior high aged youth with the means by which they can explore the various and numerous career options available to them. The world of work is far removed from the experiences of many young people today. Occupations that were usable and close at hand in years past are now remote and foreign to their experience. The average teenager today has difficulty in describing with adequate understanding and accuracy the work that his father does (Letson, 1969). Much has been accomplished in the area of career exploration in the past and there are numerous efforts presently underway which are designed to provide youngsters with relevant exploratory experiences. However, such examples of quality programs from the past and present appear as isolated cases rather than being universal.

In reviewing for the more impressive causes for poor program quality in this area, several factors, either singularly or collectively, come to light (Hoyt, 1969).

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[1]Speech presented at the American Vocational Association Convention, Boston, Massachusetts, December 8, 1969.

1. There have been no clear cut goals. No one seemed to know why such a course was being made a part of the school curriculum.
2. Teachers were not properly trained and prepared to teach the course. The traditional teacher preparation programs at the undergraduate or graduate level have not produced the properly trained person to teach this course.
3. Teachers have not been committed enough to the total program of career exploration to give the course its needed time and energies.
4. This course has, in most instances, been viewed by school people as a "second rate" curriculum offering. As a result, it has been the first to be canceled when time conflicts have occurred during the school day.
5. There has been a lack of suitable materials and experiences to use in the course. Such has usually been based upon those things that people vastly removed from the local setting think students should know.
6. The teaching methodology has not presented the material to the students in a meaningful form. The course has been taught like a "typical" class within the four-walls of the classroom.
7. The course has been taught with inappropriate goals in mind. Students have been expected and often forced to make a "choice" at the end of the course, while in most cases being unprepared to do so. The course has also been used as a means for "selling" vocational education programs being offered during future high school years. This has resulted in exploratory activities not being offered on an "across the board" basis for students of all ability levels and ambitions.

The career exploration approach now being implemented on a pilot basis in Georgia incorporates those ingredients considered essential for providing maximum student insights into occupational and career opportunities. It is my intent today to provide you with a look into the mechanics and operation of this program.

I would like to carry out my task by covering, in order--

--a description of purpose

--the approach (that we are attempting to follow)

--a resume of the implementation pattern

--descriptions of plans for program supervision and evaluation, and

--closing comments on the current status of the project.

We call this a Program of Educational and Career Exploration and we speak of it through its acronym, P.E.C.E. Through the P.E.C.E. program, we intend to provide to students in grades seven, eight, or nine those experiences and knowledges that will aid them in making appropriate educational and occupational choices in the future. It should be emphasized that this program is designed for <u>all</u> students regardless of their anticipated level of educational attainment. The underlying belief here is that every student, the "college bound" as well as the "non-college bound," should be concerned with career choices and should, therefore, be afforded the opportunity to engage in those kinds of experiences that would create the greatest amount of student "awareness" concerning such choices.

The two major ingredients of the P.E.C.E. program are as follows:

1. Allowing students to participate in concrete work activities within various occupational settings. In this manner, students are able to experience first hand many of the characteristics making up a particular work role.
2. Providing the student the opportunity and means by which to relate himself to the work experiences that he has had. Through the use of organized group guidance sessions incorporating six dimensions of career development, the student is better able to gain meaning from his recent work involvement.

Approach

Occupations have been separated, using a modification of Roe's two-dimensional classification system, into six major categories of interest (Roe, 1956). By applying these categories in a sequential manner we are able to follow a continuum of study from an orientation of working with "people" to one of working with "things." The six categories are as follows: (See Figure 1)

1. Service to Others
2. Business
3. Organization
4. Expressing Ideas
   (Science, General Culture, Art and Entertainment)
5. Outdoors
6. Technology
   a. Producing Things
   b. Fixing Things

Each of the six groups of occupations are likewise separated, for study purposes, into levels according to the amount of training required and the degree of responsibility assumed by the worker.

Realizing that no system of classifying occupations has yet been judged perfect, the system which I have outlined does provide a foundation around which the P.E.C.E. program can be developed.

Through this program, students are being provided the opportunity to try themselves out in at least one real or simulated work experience under each of the six occupational groups. Since the Technology group includes the two subgroups of Producing Things and Fixing Things, each student is able to involve himself in a minimum of seven real or simulated work experiences. In situations where time and employment resources are available, a student may very likely participate in two or more work roles under a given occupational group.

Figure 1

Group Level	Service To Others	Business	Organizational	Expressing Ideas	Outdoors	Technology: Producing Things	Technology: Fixing Things
1	Psychiatrist	Promotors	Industrial Tycoon	Research Scientist	Consulting Specialist	Consulting Engineer	Chief Engineer
2	Social Worker	Public Relations Man	Certified Public Accountant	Registered Nurse	Surveyor	Factory Manager	Engineer
3	Police Chief	Insurance Salesman	Accountant	Radio Announcer	Forest Ranger	Contractor	Draftsman
4	Practical Nurse	House Canvasser	Cashier	Law Clerk	Miner	Electrician	Appliance Serviceman
5	Waiter	Door-to-Door Sales	Typist	Stagehand	Farm Tenant	Truck Driver	Helper
6	Hospital Attendant	---	Messenger Boy	Non-Technical Helper	Lumberjack	Cement Mason	Laborer

In the past the tendency has been to concentrate on the use of vicarious experiences in the teaching of courses in career exploration. Little effort has been made to involve the student in concrete work situations directly related to a particular group or set of occupations being studied. The results have all to often been that of poor communication to the student and poor student understanding of the real "feelings" related to different occupational groups within our society.

Obviously, any attempt at removing students from the traditional classroom setting for any prolonged period of time cannot be successful without the support and cooperation of many people. To this point in the pilot year, such support and cooperation has been forthcoming from teachers, counselors, and administrators within the schools, and from employers in the local communities. In fact, according to reports on the implementation of the program, students have been able to spend approximately 50 percent of their program time in employment settings.

Based upon a 180 hour school year, or its quarter and semester equivalent, the amount of time being spent in work experiences is, indeed, a most encouraging sign.

After the student has "experienced" a certain work role in one of the seven occupational areas, organized group sessions are used to assist the student in examining that particular work role or job in terms of the six dimensions of career development. (Tennyson, 1968) These six dimensions along with the intent to be served by each, are as follows:

1. Self Characteristics--To provide students with experiences designed to assist them in evaluating their interests, abilities, values, needs, and other self characteristics as they relate to occupational roles. To assist them in recognizing the range of occupations that exist which would allow them to express themselves and live the type of life they desire.
2. Economic and Social Values of Work--To guide students in recognizing the economic and social value that different forms of work have in our society.
3. Psychological and Sociological Meaning of Work--To assist the student to gain an understanding of the psychological meaning of work as it relates to human experiences and to place emphasis on an understanding of the different presses that can be present within a given work setting.
4. Educational Avenues--To assist students to understand the intent, nature, and possible end results of the different educational pathways available and to guide them to recognize the relationship between school disciplines and the skills necessary for performing a job.

5. Other Related Work Roles--To help students in seeing the broad array of occupations available and in understanding some in greater detail. To allow them the chance to become aware of the opportunities and potential satisfactions of different work roles and to gain some understanding of the occupational structure.
6. Decision Making Process--To direct students to better understand the nature of the decision-making process, to assist them in recognizing the kinds of future decisions that must be made and to provide them with the knowledge of resources available to aid them in this process.

Organized group guidance sessions allow for the integrating of these various dimensions of career development around a core of concrete work experiences and will, as a result, provide the student the opportunity to relate himself to the many variables connected with career choice.

The use of vicarious materials and experiences, such as brochures, films, speakers, and even the overused plant tour, has not been totally ignored. Such experiences do play a part in the overall program; however, the role of the vicarious experience is a supplementary one and is, therefore, to be used appropriately and in a meaningful way rather than as a "time filler." In an attempt to provide samples of appropriate and meaningful vicarious experiences for the P.E.C.E. program, seven specially designed television programs are being developed to be shown over the statewide Educational Television Network. A separate thirty minute program has been designed to deal with each of the seven occupational groups being studied and to introduce various concepts concerned with work and with career development.

Implementation

A state advisory committee, comprised of individuals from the educational and industrial community, was convened to assist in the development of this pilot

project of career exploration programs. Twenty school systems from across the state were later invited to participate in the project. Representatives from each system were brought together in order to inform them of the thinking and purpose behind P.E.C.E. The original pilot systems were chosen with certain criteria in mind, perhaps one of the most important of which concerned the willingness of participating systems to continue the program at mostly local expense after and if the pilot year proved successful.

The local systems were advised that a local coordinator for such a program would have to be located and that this individual would be required to attend a nine week summer session at the University of Georgia for the purpose of preparing him or her to teach the course in career exploration. We are convinced that we must have a separate teacher or coordinator who has both the time and commitment to teach this course if it is to have a chance to succeed. Each of the pilot systems were later visited by Department of Education personnel in a further attempt to clarify the intents and purposes of the program.

Local superintendents and principals made a concerted effort to find the proper person to fill the local coordinator's position and did a remarkable job in locating persons who were interested and seemingly dedicated to the idea of teaching a course in educational and career exploration to youngsters in their school system. As the pre-summer school period came to an end, the first class meeting of the summer session at the University of Georgia found eighteen local coordinators present.

The summer school activities for the coordinators were all included in three graduate level counselor education based courses at the University of Georgia and involved members of the Counselor Education staff, Vocational Teacher Education staff, members of the State Department's Vocational Education Division Staff, graduate assistants at the University of Georgia and numerous guests from industry as well as education. The intent of the summer session was to provide

the coordinators with some basic knowledges and understandings that would be essential for implementing the P.E.C.E. program locally. A general description of the summer learning activities would include:

1. Participation in real work settings for the purpose of simulating those activities in which the coordinator's students would be involved during the pilot year;

2. Participation in group activities for the purpose of considering those experiences realized in the real work settings;

3. A study of the processes of group guidance;

4. A study of occupational structure and career development;

5. Participation in small group sensitivity sessions; and

6. Involvement in the production of a plan for instruction through the development of a coordinators guide for P.E.C.E.

Approximately midway through the summer school program a summer conference on P.E.C.E. was held. This two day conference was developed to include and involve the principal and one counselor from each participating school, along with the local coordinator, for the purpose of consolidating the thinkings and understandings of local people concerning the pilot project and to focus on the various implications that such a program might have in the local setting. This conference provided excellent insights and reinforcements to all involved in the pilot effort.

Program Supervision

Any new program or existing program requires the establishment of some procedures through which the individuals involved in the program can assess their activities and modify them accordingly. With this premise in mind, various means of program supervision are being used.

First, a full-time staff member in the Vocational Education Division of the State Department has been assigned to coordinate and supervise the project.

Second, the overall supervision of the P.E.C.E. program will include a bi-monthly visit to each pilot school.

Third,. monthly regional meetings are being held, after school hours, with local coordinators to allow them to work and confer in groups in the sharing of ideas, techniques, and solutions to problems.

Fourth, plans have been made for the coordinators to revise their Coordinator's Guide.

Fifth, each of the eighteen coordinators was required to be enrolled this year in a five-hour internship course to be offered during the year through the University of Georgia.

Sixth, a monthly report of program activities is being obtained from each local coordinator to determine whether or not he has been able to carry out his program as it was originally conceived.

Evaluation

The major question in evaluation of the P.E.C.E. program is not "Should we, or should we not continue the program?" Rather, the major question is, "How can the P.E.C.E. program be organized so that its major objectives can be accomplished?" The evaluation efforts are directed toward the development of an exploratory program at the junior high school level that can accomplish the desired results. The focus of our evaluation efforts are both on the process and the outcomes of the program.

Current Status

Much has been done over the past months toward providing junior high age youngsters with a meaningful program of educational and career exploration. An idea has been presented, has been accepted, sometimes with reservations, and has been acted upon. Much remains undone. Signs, as interpreted from school people, employers, and students and from others representing various segments

of our society, are very encouraging. The Georgia approach to career exploration is one which requiies a turn about in some of our old ideas. It is most encouraging to see so many people from all levels of the educational community willing to give this project their support and energies. It is refreshing to hear employers endorse the concepts of this program and to hear local P.E.C.E. Coordinators say that they have yet to be denied the cooperation and acceptance of any member of their employment community. It is likewise rewarding to hear a student currently enrolled in a local program remark that she has gained new insights into her plans for the future and that she now realizes the importance of proper planning and decision making.

Early signs are favorable but do not guarantee success for the program. For such early indicators to evolve into positive results will require the continued work and cooperation of those who have aided the program thus far, plus the added support of many who will learn of our efforts in the months ahead.

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OBJECTIVES STRUCTURE AND IMPLEMENTATION OF GEORGIA'S PROGRAM FOR DROPOUTS AND POTENTIAL DROPOUTS

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The Forsyth Plan was the name given to a pilot program that was initiated in Forsyth County, Georgia, during the school year 1967-68.

This is a work experience or coop program designed for underachieving or alienated youth, whose behavioral patterns indicate a high probability that they would not complete high school.

This group when compared to middle class youth have been characterized as:

...less trusting of others, especially those not part of their subculture;

...less confident of success in school activities outside their immediate setting;

...less capable of dealing with abstract concepts and ideas;

...less confident of a positive response from adults; and

...less likely to be motivated by standards and values as defined in the middle class community.

In the process of organizing this program we looked at these characteristics as well as the characteristics of our schools and attempted to build into the program some modifications that would more nearly meet the needs of this group.

Presentation made at the American Vocational Association Convention in Boston, Massachusetts, on December 8, 1969.

We then attempted to answer the question of what does this student need and how to build a program that would meet those needs. Some of the more pertinent needs that were defined are as follows:

1. Need for Success--We knew that we had to give this student some learning tasks that he could interpret as being worthwhile and at which he could succeed.
2. The student needed concrete experiences to which he could relate and learn needed academic skills.
3. These students needed an atmosphere where they could feel that someone was interested and genuinely cared about them.
4. They needed constructive peer group experiences.
5. They needed schools that were willing to take a new approach to meeting the needs of the non-college bound student.

These are persons with average potential and would not meet the qualifications for a Special Education class. This student could best be described by looking at his background, and the type of experiences he has had. Deprivation has been the rule, rather than the exception, and there is little wonder as to why he has difficulty in conceptualizing and dealing with abstracts. In reality the most outstanding thing he has to look forward to, is the day he can quit school.

It was decided that students for the program would be selected from grades 7, 8, and 9 who were two or more grade levels below the expected grade placement and who had a higher than average absentee rate. Students were to be selected by using data on attendance, grades, and a lack of interest. Data from the counselors office as well as the recommendations of teachers and administrators were used in the selection of students.

It was proposed that curriculum content normally required of this age group, be eleminated, and the academic subjects be taught in relation to laboratory experiences. It was proposed that the Home Economics lab, Agriculture and Industrial Arts labs constitute the core around which the basic subjects (Math, Science and Communication Skills) could be taught. Superintendents in school systems having a higher than average dropout rate were contacted and given a brief overview of the intent and structure of the program that went something like this:

> An Educational-Work Experience Coordinator would be chosen on a basis of their demonstrated ability and desire to work with students who were disinterested and were marking time until they could leave school. This was to be a certified teacher of counselor preferably with training in the behavioral sciences. The coordinator would be required to attend a special five week training session at the University of Georgia where they would gain some understanding of the characteristics, attributes, etc., of these students; and in addition, training in group dynamics and cooperative education.

The coordinators responsibilities would include:

First, to serve as a team leader in working with the teacher assigned to these students for the purpose of organizing meaningful classroom experiences for students. As mentioned earlier, for the boys, the industrial arts class or agriculture shop and work placement, form a core around which the math, science, and communications skill is related. For girls, the home economics course and work placement form a concrete core of experience around which the other school disciplines are related. Thus, the concrete experience of the vocational laboratory and work setting are used as a base vehicle for teaching necessary academic skills. The coordinator meets weekly with the team of teachers to insure synoptic goals.

Second, the coordinator places and supervises students in part-time work either within or outside the school.

The coordinator works with "appropriate personnel" in the work setting to insure that a positive work environment is established for such youth. Too often such youth are confronted with failure in the work setting. Thus, the coordinators responsibilities include the steps necessary to place students in a work environment in which they could succeed and would serve to build their self-respect and dignity. This necessitates arranging in-service training or supervisory personnel so that they might be more understanding of such youth. Also, provisions were made to have the students assigned to work with someone selected as an appropriate peer model. The coordinator's role includes structuring the work environment to insure that the students experience immediate and continued success, as well as praise and attention from their peers and supervisors. Students are rotated through a series of work stations as a means of orienting them to a wide variety of jobs.

Third, the coordinator would conduct daily group counseling sessions with the students. The group counseling sessions provide the students with immediate reinforcement of desired behaviors and further assist them to better understand themselves and the requirements of the work setting and to modify their behavior accordingly.

A variety of structured and unstructured activities formulate the content of the daily group guidance sessions. Certain situations encountered in the work setting might be re-enacted with the appropriate response being made to enable students to recognize how their responses often influence another's response to them. The coordinator also uses the group guidance sessions as a means of raising questions such as: (1) What attitudes are important to job success? (2) What does an employer expect from an employee and why? and (3) getting the student to ask, How well do I measure up in regard to these?

The use of work experiences as a basis for counseling makes counseling more effective because it establishes for the student a new reference group and a new setting against which they can check the appropriateness of their perceptions and behavior. Furthermore, such an approach, we believe, can provide a gradual socialization process for those youth who, because of their environmental deprivation, have not acquired a basic attitude toward work and an understanding of a work role.

The responsibilities of the coordinator then are two-fold. Through group guidance and individual encouragement and support with the student, he is attempting, through direct contact, to modify behavior so as to help the student acquire the adaptive skills necessary to succeed in both the school and work environment. In addition, and "of equal importance," the coordinator is working to structure the school and work environment so that they will provide positive learning experiences for students.

In initiating the program, with the superintendents, we met and asked that those teachers who would be teaching the basic subjects (math, science and communication skills) be selected early enough to assure they could attend a work shop at the University of Georgia where we would develop a curriculum guide that would relate the academic subjects to laboratory projects.

It is felt that this involvement by the teachers who would be working in the project, would more nearly assure a total commitment to the project. This cooperative effort of the entire team of teachers did more to promote solidarity and "Esprit De Corp" than any other single factor.

Additional training in the form of an Internship conducted through the University is being afforded this group as well as monthly In-Service meetings by the State Department of Education. These people will be required to enter the Masters Degree Program pulling from both the field of counseling and guidance and cooperative education.

Another program--similar to the Forsyth Program at the post-secondary level in our area vocational-technical schools--was designed for high school dropouts and the academically limited who could not pursue a regular program in the vocational-technical school. This is the LEEP Program or Learning Earning Education Program. This program was designed to fill a void at the post-secondary level. At present, the Georgia Area Technical schools have three dimensions: They are (1) Full time preparatory training for the highly skilled and technical jobs; (2) A part-time night program or extension type training to upgrade employed workers; and (3) specialized training programs for a particular industry. This program adds a fourth dimension. All the training just mentioned are designed for people who know where they want to go and for the most part, how to get there. The LEEP Program's target population is that group who has not had the exposure, contacts, and types of experiences needed to choose a vocation--nor have they had the exposure to an adequate role model which they could emulate and pattern their lives after.

The emphasis of this program is not confined to "how to do it" or manipulative skills but rather ith a problem solving approach--deciding what to do, when to do it and why. This student's orientation doesn't begin with an interpretation of their test scores and being told they should forget about taking a particular course. We are attempting to say to this students, during the initial period, lets find out together, as a group, what we need, and how we can go about getting there. The motto in this program is "Nobody Fails," and this idea is introduced on the first day and is used constantly thereafter. The group is quickly introduced to the idea that there is a place for every person in our society to be a contributing member and the important thing is not what any one of us do--but how well we apply ourselves to that job we have to do.

This program is comprised of three facets. (1) Basic Education (math, and communication skills); (2) Group Guidance activities such as job orientation

personal and social adjustment, etc.; and (3) General Vocational Training (the emphasis here is on developing occupational awareness--the expectations of management, conduct on the job, etc.) with enough competency that the person could gain employment at an entry level.

The program operates on a quarterly basis--students attend classes full time for eight weeks and are then placed on a full-time job or routed to full-time day training or they go to a full-time job and return to the night program.

The objectives of these programs are as follows:

To help students acquire:

--a more positive perception of themselves in both a work role and a school setting;

--the basic habits of industry;

--skills needed to pursue a higher level vocational skill;

--certain vocational skills such as familiarization with tools, materials and processes rather than specific job skills;

--a greater understanding of themselves in relation to different work roles; and last

--adaptive skills needed to cope with todays changing society.

We are presently collecting data of various kinds to assess both the process and the outcome of these programs. Feedbacks from employers and job supervisors as well as teachers in the schools have given favorable responses. They have indicated that these students are assuming a greater degree of responsibility for their own behavior and seemingly are developing more self-confidence as the program becomes more stabilized.

We do have concrete data on attendance and attendance has improved as much as 39 percent in one particular school. The majority of students verbalize a greater interest in school and hopefully this interest will increase as the program gains momentum.

VOCATIONAL GUIDANCE FOR IN-SERVICE COUNSELORS

A Description of an Institute Held

at

Rhode Island College

During the Summer of 1969

by

John F. Hawkins

Presented at the 63rd Annual
American Vocational Association Convention, December 9, 1969
Boston, Massachusetts

On Monday, August 4, 1969, the Vocational Guidance Institute began with an orientation session. Dr. Bruce Brown, the Institute Director, introduced the members of his staff. The staff consisted of three persons trained in the use of sensitivity grouping and two members who were to act as co-trainers. All staff members had a clinical or school guidance background.

The members of the institute numbered twenty-eight. The members came from varied backgrounds; among them were school teachers of all levels, guidance counselors, social workers, and administration. Few members of the institute and no members of the staff had any practical experience in placing people in employment positions.

The physical set up was informal discussion. The room was set up with a circle of chairs. The first task assigned to the group was to break into small groups and determine a "unique" method of introducing ourselves to the other members of the institute. Some members chose to perform modern dance expressions as an introduction. Others used more conventional methods.

The afternoon session began the sensitivity training. For this aspect of the institute, the members were divided into three groups. Each group met in a separate room and sat around talking. Eight sessions of this type took place, each session lasted three hours. The sensitivity groups were accompanied by an experienced trainer, who was to be, simply, a member of the group. No instructions were given for sensitivity training. There was no format or agenda; the members of the group merely sat as if waiting for a doctor's or dentist's appointment.

During sensitivity, the groups members would have long periods of silence broken by occasional conversations. The conversations seldom had direct bearing on vocational guidance. More often than not they would have to do with someone's feelings about this or that irrelevant situation. Every time reference was made to vocational guidance or vocational training, the person responsible was accused of being program-minded rather than people-minded.

Tuesday began with a presentation by Mr. Simonini of the Rhode Island State Department of Education. Mr. Simonini's duties involve the investigation of educational and employment opportunities for minority groups throughout the State of Rhode Island. He brought out the fact that there were several disadvantaged areas, and efforts are being made to improve employment opportunities in these areas.

Tuesday afternoon was spent in sensitivity groups.

Industrial visits were scheduled for Wednesday morning. For the purpose of the industrial visits, the institute members divided into two groups.

Group one visited the Speidel Corporation Training Center in Providence. This training center is situated in the heart of a black ghetto. Its main function is to recruit unemployed blacks from the ghetto, train and employ them. The training center consists of a modern air-conditioned building, machinery, and instructors--all provided by Speidel. The services of a trained psychologist are available to the recruits. Classes are taught in such areas as budgeting, banking, taxes, etc., as well as in the technical areas required in the factory work. At the time of our visit, Mr. Jack Warrick, the director of the training center, informed us that the center had been in operation for approximately a year and that a high percentage of the recruits had proven to be satisfactory.

Group two visited the Industrial National Bank in Providence and discussed employment of the disadvantaged with several managers. Industrial National has in effect a program to employ black people in its many offices throughout the state. The workings and the success of the program were discussed. No efforts are made in the program to specifically help the disadvantaged. In fact, it would seem that the program is quite selective in choosing very promising subjects.

Wednesday afternoon was spent in sensitivity training groups.

Thursday morning, Moe Adams, a leader of the black community discussed some of the inadequacies which are common among the black families in the ghettos.

Thursday afternoon was spent in sensitivity groups.

Friday morning was scheduled for industrial visits. Groups one and two took alternate trips to Speidel and Industrial National, as they had on Wednesday.

Friday afternoon was spent in preparation for the following week's activities. After the weekend, the members of the institute reconvened with a group of minority students who were to "tell it like it is." This confrontation and consultation was enlightening to some degree as to the pit-falls and obstructions which are met by minority students.

The morning meeting was followed by an afternoon of sensitivity training.

On Wednesday, Tom Sandham and Hugh Willoghby gave a presentation, followed by discussion, on "What's going on in the State Department of Education." Hugh concerned himself mainly with the area of vocational counseling, while Tom described some of the proposed programs and schools as well as existing facilities.

Wednesday afternoon was spent in project groups planning Thursday's program.

On Thursday morning the members of the institute met with three prominent school administrators for consultation and reactions to proposals. The minority group members from the previous meeting were present, and interaction among the three groups was vigorous.

Sensitivity training sessions took place Thursday afternoon and Friday morning.

A luncheon meeting was held Friday afternoon, at which time evaluation and wrap-up of the institute took place.

Reflections

The institute put most of the emphasis on the current black problem, pointing out instances in which black students were especially handicapped educationally and economically. It became quite clear that students from disadvantaged homes have definite handicaps which prevent them from succeeding in classes which are geared to middle-class backgrounds and values. Disadvantaged youth actually resent it when classes with middle-class goals and standards are imposed. Confrontation with the minority students was informative and rewarding.

The industrial visits illustrated two types of black employment programs. The program at Speidel Corporation is an excellent attempt to help disadvantaged youth. Its program is set up to do a specific job, and seems to be doing well.

The Industrial National Bank Program is more of a quota black program.

The institute seemed to lack direction in vocational guidance. The staff seemed to be well versed in theoretical and clinical counseling but rather weak in the area of vocational counseling. Vocational counseling is, in my opinion, placing people in satisfactory employment positions. The benefit of sensitivity training along these lines is highly questionable.

The staff consisted mainly of imported pundits who were not familiar with local practices or problems.

Summary of Institute

Introduction

The Institute's focus was upon the dual areas of personal and professional development of guidance counselors and the development of procedures to improve communication between guidance counselors and business, industry, minority groups, school administrators, and personnel of the State Department of Education.

Statement of Intent

The Institute program was developed so that maximum opportunity for a first hand, educational experience was to be achieved. Enrollees were to be selected according to specific academic criteria and on the basis of statements regarding personal and professional interest in the focus and commitment of the Institute.

The first hand educational experiences were to be achieved in the following ways, (a) sensitivity groups to provide the means by which personal learning and growth could take place, (b) consultant resources to provide each participant with an opportunity to receive the latest information concerning existing practices and attitudes of various minority groups, (c) visitations and shared reports regarding industry's role as minority group employers, (d) on-the-job experience at the side of employed minority group members.

Evaluation

Achievement of the above Institute goals were to be assessed in two areas, (a) improvement of counselor attitudes and degree of personal development, (b) effectiveness of the experience measured by extent of actual implementation of Institute principles.

STUDENTS DO WANT VOCATIONAL EDUCATION

Presented by David W. Winefordner, Assistant Director, Division of Guidance and Testing, Ohio Department of Education, at the 63rd Annual American Vocational Association Convention, Boston, Massachusetts, December 9, 1969

During February 1969, approximately 47,000 students in grades eight through twelve took part in the national standardization of the Ohio Vocational Interest Survey (OVIS) which will be released in January 1970 by Harcourt, Brace & World, Inc. OVIS is a new interest inventory designed to assist students in grades 8-12 with their educational and vocational planning.

OVIS combines an Interest Inventory and a Student Information Questionnaire both in a machine scorable booklet. The Interest Inventory consists of 280 job activity items. Students respond to each item in terms of the degree of their like or dislike for each activity as they consider it as something they would do as part of a full-time job. The Student Information Questionnaire gathers background information about the student's expressed vocational plans, subject area preferences, high school program plans, post-high school plans, and vocational course interests. In addition to these standard questions, the booklet provides space for up to eight questions which may have significance locally. The response to the questionnaire items provide the student and his counselor with useful information for interpreting the Interest Inventory scores. In addition, a summary report of the questionnaire furnishes data for curriculum planning and vocational guidance.

The standardization sample was selected from ten regions of the United States and included 43 school systems from the following states: Alabama, California, Colorado, Iowa, Massachusetts, North Carolina, Ohio, Oregon, Pennsylvania, and Texas.

The purpose of this paper is to present a summary of the responses given on the Student Information Questionnaire by 46,891 students taking part in the national standardization of OVIS. The questionnaire is reproduced on pages 2 - 5; summarized data obtained by grade and sex on pages 6 - 11; and highlights of the data on pages 12 - 13.

STUDENT INFORMATION QUESTIONNAIRE

Directions: In this section, you will be asked questions about your vocational interests and educational plans. Each question is important. Your answers will be used to help you understand your scores on the Interest Inventory. Read each question carefully and answer it as best you can. There are no right or wrong answers. Pick the ones that best describe you.

You are to mark only one answer for each question unless the directions tell you to mark more than one answer. Mark your answer to each question by darkening the oval for your choice in the Answer Block following the question. If you make a mistake, carefully erase your mark.

---

1 The 27 activities listed on pages 2 and 3 describe jobs that you might like to do for a living. Read the 27 activities and decide which one best describes the kind of work you would like to do.

Then look at the Answer Block at the bottom of page 3. In the blue row, darken the oval for your first choice under the number for the activity that you like best. For example, if your first choice were 16, *Clerical work*, you would darken the oval under number 16 in the First Choice row as shown in the sample Answer Block below.

Then decide which one of the 27 activities you like second best. In the white row of the Answer Block, darken the oval for your second choice under the number for the activity that you like second best. If your second choice were 5, *Entertaining people*, you would darken the oval under number 5 in the Second Choice row as shown below.

Be sure that you darken only one oval in the First Choice row and only one oval in the Second Choice row.

1. *Caring for people or animals in their day-to-day needs* such as working in a nursing home, nursery, hospital, pet store, zoo, or animal laboratory.
2. *Nursing and related technical work* such as registered nursing, X-ray technology, medical laboratory technology, or physical therapy.
3. *Medical work* as a doctor, surgeon, dentist, or veterinarian.
4. *Musical activities* such as singing, playing an instrument, or composing.
5. *Entertaining people* by dancing or performing in stunt shows, comedy acts, or plays.
6. *Artistic work* such as painting, sculpturing, flower arranging, photography, fashion designing, or interior decorating.
7. *Writing* novels, poetry, plays, or critical reviews for publication; or editing, translating, or writing speeches or technical reports.
8. *Communications work*, as in radio or TV announcing, journalism, news information reporting, or interviewing.
9. *Promotional activities*, as in publicity work, recruiting, or advertising.
10. *Legal work* as a judge or lawyer.
11. *Number work*, as in accounting, computer programming, finance, statistics, and mathematics.
12. *Inspecting*, as in sorting, measuring, and grading products; or checking equipment, meters, and public places.
13. *Appraisal and evaluation*, as in determining the efficiency of businesses and industrial plants, pricing real estate, and surveying land. Also includes chemical and other laboratory testing.

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14. ***Engineering and other technical work***, as in electronics, chemistry, physics, geology, architecture, or drafting.
15. ***Agriculture and related biological fields*** such as farming, forestry, landscaping, or plant and animal research.

16. ***Clerical work*** such as filing, typing, IBM key punching, stenography, or keeping records.

17. ***Manual work*** as a construction laborer, farm hand, firefighter, dishwasher, janitor, or furniture mover.
18. ***Machine work***, as in adjusting and operating machines used in the cutting or shaping of metal, cloth, etc. Includes driving tractor-trailer trucks and operating heavy equipment.
19. ***Craftsmanship*** as found in the building trades, printing, watch repairing, welding, or tool and die making.
20. ***Skilled operation, repair, or installation of precision equipment.*** Includes airplane pilot, railroad engineer, television technician, computer operator auto mechanic, or furnace, air conditioner, and appliance repairman.

21. ***Serving personal needs of people*** as a waiter, waitress, maid, doorman, messenger, laundry man, gas station attendant, train conductor, policeman, fashion model, or stewardess.
22. ***Providing skilled service for people*** as a restaurant or short order cook, beautician, barber, tailor, or dressmaker.

23. ***Training*** people in skills, games, crafts, flying, driving, machine operation, or other activities. Includes the training of dogs, horses, or other animals.
24. ***Teaching, counseling, and social work activities*** in schools, colleges, churches, clinics, or welfare agencies. Also includes instruction in art, music, dance, and athletics.

25. ***Waiting on customers*** in stores, banks, motels, offices, or at home helping telephone customers with business orders, reservations, and other information. Also includes tour guides, bus drivers, and ticket and toll collectors.
26. ***Selling and merchandising work*** as a department store buyer, factory sales representative, or wholesaler. Includes the selling of manufactured and commercial products, services, insurance, and real estate.

27. ***Managerial work*** as a shop foreman, supervisor, school administrator, police or fire chief, head librarian, executive, hotel manager, or union official. Includes owning or managing a small store or business.

	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27
First Choice	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○
Second Choice	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○

NAME _____

2 Look at the following groups of school subjects. Which group do you like best? Mark your first choice in the blue row of the Answer Block below. Which do you like second best? Mark your second choice in the white row of the Answer Block. Darken only one oval for your first choice and only one oval for your second choice.

1. Mathematics — such as arithmetic, algebra, geometry.
2. English — such as reading, speech, literature, composition.
3. Social Studies — such as geography, history, civics.
4. Sciences — such as earth science, biology, chemistry, physics.
5. Foreign Languages — such as Latin, French, Spanish.
6. Music — such as band, chorus, orchestra, music theory.
7. Art — such as drawing, painting, ceramics, crafts.

	1	2	3	4	5	6	7
First Choice	○	○	○	○	○	○	○
Second Choice	○	○	○	○	○	○	○

3 What high school program are you now taking or do you plan to take? Darken only one oval in the Answer Block below.

1. College Prep (Academic)
2. Business or Commercial
3. Vocational or Technical
4. General
5. Other

	1	2	3	4	5
High School Program	○	○	○	○	○

4 What type of education or training do you plan to take after leaving high school? Darken only one oval in the Answer Block below.

1. Vocational or technical school
2. Business school (non-college)
3. Nursing school (non-college)
4. Junior college or community college (two-year)
5. College or university (four-year)
6. Military training
7. Apprenticeship or other on-the-job training
8. No further training after leaving high school
9. Undecided

	1	2	3	4	5	6	7	8	9
Future Plans	○	○	○	○	○	○	○	○	○

5 If business or vocational programs were offered as part of your high school curriculum, would you take one of them? Darken only one oval in the Answer Block below.

1. I am already taking one.
2. Yes, I would take one.
3. No, I would not take one.

	1	2	3
Program Choice	○	○	○

Note: If you answered NO to question 5, do not answer question 6. Put your pencil down and wait until you are told to continue.

6 Look below at the business and vocational programs avaliable in many high schools. If you could take one of these programs, which one would you pick as your first choice? Mark your first choice in the Answer Block below. Which one would you pick as your second choice? Mark your second choice in the Answer Block below. Darken only one oval for your first choice and only one for your second choice.

1. General Agriculture
2. Forestry, Landscaping, or Horticulture
3. General Office Practices (Clerical)
4. Secretarial Practices (Stenography)
5. Business Data Processing
6. Bookkeeping
7. Distributive Education (Sales — retail, wholesale)
8. Food Preparation or Food Services
9. Practical Nursing and Child Care
10. Dental or Medical Assistant
11. General Home Economics
12. Auto Body Repair
13. Mechanics (Auto, Diesel, Farm)
14. Building Trades
15. Printing and Duplicating
16. Commercial Art
17. Cosmetology (Beauty Culture)
18. Drafting
19. Machine Shop
20. Sheet Metal, Welding, or Foundry
21. Electronics or Electricity
22. Appliance Repair
23. Tailoring and Dressmaking
24. Undecided

	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24
First Choice	○○○○○	○○○○○	○○○○○	○○○○○	○○○○
Second Choice	○○○○○	○○○○○	○○○○○	○○○○○	○○○○

7. Local Survey Information

	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15
A	○○○○○	○○○○○	○○○○○
B	○○○○○	○○○○○	○○○○○
C	○○○○○	○○○○○	○○○○○
D	○○○○○	○○○○○	○○○○○
E	○○○○○	○○○○○	○○○○○
F	○○○○○	○○○○○	○○○○○
G	○○○○○	○○○○○	○○○○○
H	○○○○○	○○○○○	○○○○○

NAME _____

OVIS SUMMARY REPORT — STUDENT INFORMATION QUESTIONNAIRE

OCCUPATIONAL PLANS

SEX: MALE

	Grade 8		Grade 9		Grade 10		Grade 11		Grade 12		TOTALS	
	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%
1. Manual Work	88	2	58	1	86	2	55	1	55	1	342	1
2. Machine Work	359	7	347	7	310	6	261	6	204	5	1481	6
3. Personal Service	95	2	106	2	79	2	59	1	61	2	400	2
4. Care People-Anim.	112	2	95	2	68	1	50	1	27	1	352	2
5. Clerical Work	17	0	20	0	24	1	16	0	19	1	96	0
6. Inspect-Testing	18	0	23	0	21	0	19	0	26	1	107	1
7. Crafts	899	17	865	16	796	16	701	16	611	16	3871	16
8. Customer Service	70	1	50	1	49	1	49	1	33	1	251	1
9. Nursing	26	1	29	1	29	1	27	1	34	1	145	1
10. Skilled Per. Serv.	26	1	38	1	40	1	17	0	16	0	137	1
11. Training	156	3	128	2	100	2	53	1	51	1	488	2
12. Literary	38	1	39	1	46	1	65	2	62	2	250	1
13. Numerical	92	2	135	3	153	3	164	4	164	4	708	3
14. Appraisal	18	0	26	1	18	0	26	1	27	1	115	1
15. Agriculture	366	7	447	9	376	8	377	9	255	7	1821	8
16. Applied Tech.	934	18	1020	19	883	18	843	20	782	20	4462	19
17. Promotion-Comm.	414	8	387	7	217	8	335	8	317	8	1858	8
18. Management	109	2	140	3	145	3	171	4	200	5	765	3
19. Artistic	165	3	173	3	140	3	139	3	120	3	737	3
20. Sales Represent.	57	1	61	1	54	1	60	1	90	2	322	1
21. Music	270	5	262	5	226	5	218	5	157	4	1133	5
22. Entertainment	108	2	73	1	66	1	45	1	48	1	340	1
23. Teach-Coun.-Soc. W.	283	5	277	5	327	7	340	8	325	8	1552	7
24. Medical	448	9	370	7	316	7	228	5	175	4	1537	7
OMITS	112	2	120	2	101	2	54	1	77	2	464	2
TOTALS	5279		5249		4858		4372		3936		23694	

OVIS SUMMARY REPORT — STUDENT INFORMATION QUESTIONNAIRE

OCCUPATIONAL PLANS — SEX: FEMALE

	Grade 8		Grade 9		Grade 10		Grade 11		Grade 12		TOTALS	
	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%
1. Manual Work	4	0	5	0	2	0	0	0	3	0	14	0
2. Machine Work	5	0	4	0	2	0	2	0	4	0	17	0
3. Personal Service	658	13	604	12	510	11	376	9	255	7	2403	10
4. Care People-Anim.	525	10	435	8	341	7	298	7	212	5	1811	8
5. Clerical Work	599	12	819	16	798	17	773	18	738	19	3727	16
6. Inspect-Testing	1	0	4	0	2	0	1	0	9	0	17	0
7. Crafts	12	0	9	0	9	0	7	0	5	0	42	0
8. Customer Service	180	4	145	3	120	3	122	3	113	3	680	3
9. Nursing	528	10	573	11	481	10	426	10	403	10	2411	10
10. Skilled Per. Serv.	234	5	273	3	231	5	240	6	230	6	1208	5
11. Training	142	3	115	2	76	2	70	2	46	1	449	2
12. Literary	75	2	93	2	91	2	75	2	72	2	406	2
13. Numerical	55	1	78	2	82	2	100	2	146	4	461	2
14. Appraisal	2	0	1	0	8	0	2	0	6	0	19	0
15. Agriculture	36	1	48	1	63	1	33	1	34	1	214	1
16. Applied Tech.	34	1	38	1	34	1	32	1	36	1	174	1
17. Promotion-Comm.	72	1	101	2	74	2	95	2	82	2	424	2
18. Management	19	0	11	0	20	0	17	0	19	1	86	0
19. Artistic	405	8	415	8	373	8	338	8	288	7	1819	8
20. Sales Represent.	22	0	32	1	32	1	53	1	73	2	212	1
21. Music	228	5	176	3	146	3	114	3	92	2	756	3
22. Entertainment	162	3	141	3	122	3	101	2	70	2	596	3
23. Teach-Coun.-Soc. W.	748	15	782	15	860	18	896	21	903	23	4189	18
24. Medical	254	5	199	4	153	3	112	3	74	2	792	3
OMITS	87	2	43	1	66	1	34	1	40	1	270	1
TOTALS	5087		5144		4696		4317		3953		23197	

OVIS SUMMARY REPORT

STUDENT INFORMATION QUESTIONNAIRE

SEX: MALE

BEST LIKED SUBJECTS

GRADE	8		9		10		11		12		Total	
	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%
1. Mathematics	1265	24	1411	27	1217	25	1035	24	926	24	5854	25
2. English	346	7	405	8	431	9	469	11	420	11	2071	9
3. Social Studies	398	17	841	16	973	20	983	23	977	25	4672	20
4. Science	1471	28	1416	27	1195	25	990	23	827	21	5899	25
5. Foreign Lang.	161	3	128	2	90	2	71	2	59	2	509	2
6. Music	335	6	330	6	313	6	291	7	256	7	1525	6
7. Art	737	14	673	13	553	11	470	11	418	11	2851	12
OMITS	66	1	45	1	86	2	63	1	53	1	313	1
TOTALS	5279		5249		4858		4372		3936		23694	

HIGH SCHOOL PROGRAM

GRADE	8		9		10		11		12		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
1. College Preparatory	1833	35	2196	42	2025	42	1934	44	1825	46	9813	41
2. Business-Commercial	538	10	451	9	361	7	336	8	302	8	1988	8
3. Vocational-Technical	1244	24	1015	19	850	18	785	18	659	17	4553	19
4. General	910	17	976	19	1158	24	993	23	921	23	4958	21
5. Other	726	14	581	11	435	9	306	7	216	6	2264	10
OMITS	28	1	30	1	29	1	18	0	13	0	118	1
TOTALS	5279		5249		4858		4372		3936		23694	

POST-HIGH SCHOOL PLANS

GRADE	8		9		10		11		12		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
1. Voc.-Tech. School	479	9	459	9	438	9	461	11	423	11	2260	10
2. Business School	140	3	128	2	110	2	96	2	78	2	552	2
3. Nursing School	6	0	9	0	5	0	5	0	4	0	30	0
4. Junior College	361	7	467	9	485	10	582	13	619	16	2514	11
5. College - University	2084	40	2026	39	1842	38	1762	40	1571	40	9285	39
6. Military	782	15	756	14	657	14	482	11	467	12	3144	13
7. Apprenticeship	248	5	249	5	227	5	232	5	218	6	1174	5
8. None	140	3	120	2	102	2	76	2	53	1	491	2
9. Undecided	1010	19	1014	19	953	20	650	15	476	12	4103	17
OMITS	29	1	21	0	38	1	26	1	27	1	141	1
TOTALS	5279		5249		4858		4372		3936		23694	

INTEREST IN VOCATIONAL PROGRAM

GRADE	8		9		10		11		12		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
1. Already Enrolled	127	2	716	14	865	18	1177	27	1119	28	4004	17
2. Interested	3724	71	3074	59	2545	52	1830	42	1590	40	12763	54
3. Not Interested	1397	27	1444	28	1415	29	1346	31	1210	31	6812	29
OMITS	31	1	33	1	33	1	19	0	17	0	115	1
TOTALS	5279		5249		4858		4372		3936		23694	

VIS SUMMARY REPORT — STUDENT INFORMATION QUESTIONNAIRE

SEX: FEMALE

BEST LIKED SUBJECTS

Grade	8		9		10		11		12		Total	
	First Choice Number	%	First Choice Number	%	First Choice Number	%	First Choice Number	%	First Choice Number	%	First Choice Number	%
1. Mathematics	845	17	962	19	741	16	673	16	671	17	3892	17
2. English	987	19	1280	25	1221	26	1239	29	1129	29	5856	25
3. Social Studies	638	13	569	11	596	13	542	13	534	14	2879	12
4. Science	596	12	599	12	615	13	431	10	414	11	2655	11
5. Foreign Lang.	420	8	431	8	321	7	302	7	255	7	1729	7
6. Music	597	12	491	10	478	10	466	11	394	10	2426	10
7. Art	946	19	779	15	656	14	62.	15	522	13	3530	15
OMITS	58	1	33	1	68	1	37	1	34	1	230	1
TOTALS	5087		5144		4696		4317		3953		23197	

HIGH SCHOOL PROGRAM

Grade	8		9		10		11		12		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
1. College Preparatory	1805	36	2086	40	1970	42	1681	39	1730	44	9272	40
2. Business-Commercial	1227	24	1298	25	1178	25	1211	28	983	25	5897	25
3. Vocational-Technical	415	8	402	8	262	6	299	7	306	8	1684	7
4. General	997	20	911	18	980	21	879	20	806	20	4573	20
5. Other	615	12	433	8	292	6	239	6	122	3	1701	7
OMITS	28	1	14	0	14	0	8	0	6	0	70	0
TOTALS	5087		5144		4696		4317		3953		23197	

POST-HIGH SCHOOL PLANS

Grade	8		9		10		11		12		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
1. Voc.-Tech. School	175	3	180	4	214	5	226	5	232	6	1027	4
2. Business School	519	10	608	12	565	12	499	12	318	8	2509	11
3. Nursing School	554	11	446	9	322	7	249	6	198	5	1769	8
4. Junior College	412	8	460	9	503	11	514	12	503	13	2392	10
5. College - University	1829	36	1781	34	1595	34	1424	33	1510	38	8139	35
6. Military	57	1	76	2	56	1	57	1	32	1	278	1
7. Apprenticeship	101	2	126	2	112	2	135	3	186	5	660	3
8. None	157	3	170	3	192	4	220	5	269	7	1008	4
9. Undecided	1255	25	1286	25	1112	24	972	23	692	18	5317	23
OMITS	28	1	51	1	25	1	21	1	13	0	138	1
TOTALS	5087		5144		4696		4317		3953		23197	

INTEREST IN VOCATIONAL PROGRAM

Grade	8		9		10		11		12		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
1. Already Enrolled	45	1	599	12	879	19	1361	32	1417	36	4301	19
2. Interested	3867	76	3387	65	2686	57	1911	44	1487	38	13338	57
3. Not Interested	1148	23	1146	22	1122	24	1032	24	1040	26	5488	24
OMITS	27	1	12	0	9	0	13	0	9	0	70	0
TOTALS	5087		5144		4696		4317		3953		23197	

VIS SUMMARY REPORT — STUDENT INFORMATION QUESTIONNAIRE

SEX MALE

VOCATIONAL PROGRAM CHOICE

GRADE	8		9		10		11		12		Total	
	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%
1. Gen. Agriculture	215	4	233	4	179	4	133	3	111	3	871	4
2. Horticulture, etc.	250	5	271	5	260	5	239	6	196	5	1216	5
3. Office Practices	76	1	92	2	77	2	47	1	43	1	335	1
4. Secretarial	16	0	6	0	5	0	5	0	4	0	36	0
5. Data Processing	135	3	183	4	173	4	237	5	292	7	1020	4
6. Bookkeeping	48	1	57	1	86	2	84	2	103	3	378	2
7. Distributive Ed.	62	1	67	1	104	2	146	3	123	3	502	2
8. Food Services, etc	50	1	33	1	35	1	30	1	23	1	171	1
9. Practical Nursing	10	0	9	0	9	0	9	0	3	1	40	0
10. Dental Asst., etc.	205	4	165	3	129	3	76	2	66	2	641	3
11. Home Economics	8	0	3	0	6	0	6	0	4	0	27	0
12. Auto Body Repair	404	8	352	7	310	6	199	5	148	4	1413	6
13. Mechanics	707	13	641	12	585	12	514	12	456	12	2903	12
14. Building Trades	106	2	140	3	116	2	116	3	88	2	566	2
15. Printing, etc.	30	1	26	1	24	1	38	1	36	1	154	1
16. Commerical Art	221	4	206	4	153	3	105	2	118	3	803	3
17. Cosmetology	9	0	8	0	12	0	7	0	10	0	46	0
18. Drafting	250	5	306	6	336	7	283	7	246	6	1421	6
19. Machine Shop	215	4	177	3	136	3	126	3	98	3	754	3
20. Sheet Metal, etc.	114	2	119	2	80	2	79	2	52	1	444	2
21. Electronics	549	10	566	11	449	9	391	9	370	9	2325	10
22. Appliance Repair	28	1	30	1	18	0	15	0	14	0	105	0
23. Tailoring, etc.	8	0	3	0	27	1	19	0	10	0	67	0
24. Undecided	254	5	192	4	174	4	159	4	128	3	907	4
OMITS	1309	25	1364	26	1373	28	1309	30	1194	30	6549	28
TOTALS	5279		5249		4858		4372		3936		23694	

OVIS SUMMARY REPORT

STUDENT INFORMATION QUESTIONNAIRE

SEX FEMALE

VOCATIONAL PROGRAM CHOICE

GRADE	8		9		10		11		12		Total	
	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%	FIRST CHOICE Number	%
1. Gen. Agriculture	35	1	33	1	24	1	21	1	14	0	127	1
2. Horticulture, etc	31	1	24	1	28	1	34	1	22	1	139	1
3. Office Practices	265	5	412	8	445	10	444	10	445	11	2011	9
4. Secretarial	882	17	902	17	772	16	546	13	438	11	3540	15
5. Data Processing	77	2	98	2	127	3	225	5	256	7	783	3
6. Bookkeeping	186	4	215	4	127	3	159	4	123	3	810	4
7. Distributive Ed.	36	1	47	1	58	1	130	3	99	3	370	2
8. Food Services, etc.	67	1	67	1	47	1	47	1	38	1	266	1
9. Practical Nursing	866	17	741	14	593	13	434	10	370	9	3004	13
10. Dental Asst., etc.	156	3	164	3	153	3	171	4	170	4	814	4
11. Home Economics	284	6	201	4	158	3	135	3	110	3	888	4
12. Auto Body Repair	6	0	8	0	9	0	6	0	5	0	34	0
13. Mechanics	4	0	9	0	6	0	6	0	3	0	28	0
14. Building Trades	1	0	1	0	1	0	1	0	1	0	5	0
15. Printing, etc.	9	0	7	0	11	0	4	0	6	0	37	0
16. Commerical Art	271	5	278	5	272	6	229	5	188	5	1238	5
17. Cosmetology	458	9	490	10	449	10	403	9	384	10	2184	9
18. Drafting	14	0	12	0	13	0	6	0	15	0	60	0
19. Machine Shop	6	0	2	0	1	0	0	0	1	0	10	0
20. Sheet Metal, etc.	1	0	1	0	0	0	0	0	0	0	2	0
21. Electronics	5	0	7	0	7	0	4	0	6	0	29	0
22. Appliance Repair	0	0	0	0	0	0	0	0	2	0	2	0
23. Tailoring, etc.	181	4	157	3	161	3	162	4	146	4	807	4
24. Undecided	174	3	147	3	118	3	115	3	70	2	624	3
OMITS	1309	25	1121	22	1116	24	1035	24	1041	26	5385	23
TOTALS	5087		5144		4696		4317		3953		23197	

The main points of interest from the Student Information Questionnaire Summary Data are listed below.

VOCATIONAL PLANS

1. The vocational plans of boys did not vary to any degree by grade level.

2. The vocational plans of girls did vary by grade level. There was an increase in interest from grades 8-12 for the following areas: Clerical (12-19%), Numerical (1-4%), and Teaching, Counseling, Social Work (15-23%).

   There was a decrease in expressed interests for the following areas: Personal Service (13-7%), Care of People or Animals (10-5%), Music (5-2%), and Medical (5-2%).

3. The areas of greatest expressed interest for boys were:
   a. Applied Technology (19%)
   b. Crafts (16%)
   c. Agriculture (8%)
   d. Promotion-Communication (8%)
   e. Teaching, Counseling, Social Work (7%)
   f. Medical (7%)
   g. Machine Work (6%)

4. The areas of greatest expressed interest for girls were:
   a. Teaching, Counseling, Social Work (18%)
   b. Clerical Work (16%)
   c. Personal Service (10%)
   d. Nursing & Related Technology (10%)
   e. Care of People or Animals (8%)
   f. Artistic (8%)
   g. Skilled Personal Service (5%)

BEST LIKED SUBJECTS

1. The best liked subjects for boys were: Math (25%) and Science (25%).

2. The best liked subjects for girls were: English (25%), Math (17%), and Art (15%).

HIGH SCHOOL PROGRAM

1. The high school program plans of boys and girls were very similar: College Preparatory - boys (41%), girls (40%); Business or Vocational - boys (27%), girls (32%); and General - boys (21%), girls (20%).

POST HIGH SCHOOL PLANS

1. There were 50% of the boys and 45% of the girls who expressed plans to attend a Jr. College, College, or University.

2. Only 12% of the boys and 15% of the girls indicated plans for post-high school business or vocational-technical education.

VOCATIONAL PROGRAM CHOICE

1. Boys expressed the most interest in the following vocational programs.
   a. Mechanics (12%)
   b. Electronics (10%)
   c. Drafting (6%)
   d. Auto Body Repair (6%)
   e. Horticulture (5%)
   f. General Agriculture (4%)
   g. Data Processing (4%)

2. Girls expressed the most interest in the following vocational programs.
   a. Secretarial (15%)
   b. Practical Nursing (13%)
   c. Office Practices (9%)
   d. Cosmetology (9%)
   e. Commercial Art (5%)
   f. Home Economics (4%)
   g. Bookkeeping (4%)
   h. Dental Assistant (4%)
   i. Tailoring-Dressmaking (4%)

Additional information about the Ohio Vocational Interest Survey may be obtained by contacting the publisher:

TEST DEPARTMENT
Harcourt, Brace & World, Inc.
757 Third Avenue
New York, New York 10017

IMPROVING COUNSELOR EFFECTIVENESS THROUGH SUMMER VOCATIONAL GUIDANCE SEMINARS [1]

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Dr. Weaver has given you the historical and procedural perspectives of the vocational guidance seminar. My task is to show how the structure of these seminars has constantly changed as the leadership made use of feedback information from participants, directors, and State Department of Education staff which indicated problems. This constant change was not for change's sake but it is quite apparent that systematic yearly modifications can be related back to recommendations made regarding the previous year's seminars.

In preparing for this presentation, I made detailed analysis of each yearly seminar report by comparing the curriculum with the recommendations sections of those reports. Rather than belabor those lengthy list of recommendations as they related to equally lengthy program elements allow me the latitude of generalizing and stipulating that the longer analysis is available upon request.

The first obvious change in the summer vocational guidance seminars resulting from feedback involved the curriculum moved from a highly structured framework to one which asked the seminar directors to indicate program purposes. This change in cirriculum also indicated a shift in the leadership philosophy from one of demanding program conformity, to allowing diversity of programs within limits. Those limits are prescribed in a "Curriculum Planning Guide" which includes:

1. Two weekly field trips (some take more)
2. Overview of vocational education
3. "The Vocational Student"
4. "The Vocational Teacher"
5. "The Vocational Counselor"
6. Community resources
7. Audio-Visual aid resources
8. Vocational Counseling: individual and group techniques
9. Co-curricular organizations related to vocational education
10. Presentation by practicing vocational guidance coordinator
11. Plan for visitations of local business and industries the following school year.
12. Vocational development theories.

The next modification has already been touched on by Dr. Weaver, but

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[1]Presentation; made at the 63rd Annual Vocational Convention in Boston Massachusetts on December 10, 1969

it is important to reiterate and expand on it at this time. A part of the measure of success of these seminars can be evidenced in the fact that enough counselors, who had attended at least one seminar, stated the need for more information in this field and indicated the willingness to attend another seminar, that five of these advanced type seminars were funded each year for the past two years. It should be noted that last year one of these advanced seminars was designed to fulfill the needs of counselors employed as vocational guidance coordinators. Once again, change in structure and nature grew from making use of the feedback from all persons involved with the seminars. This program is seen as one which is constantly changing to meet counselor needs and the needs of those who make the program operate.

It is also interesting to note that even the program evolvement to the "Curriculum Planning Guide" stage does not provide realistic limits as the program moves to meet the needs of a variety of populations. This observation would lead one to the conclusion that the idea of seminar directors outlining program purposes within the scope of the specific population to be served will ultimately be the only realistic limit we can envision, if future vocational guidance seminars are to evolve as they have in the past five years.

Another definite change in this program resulting from feedback, involved the physical setting of the seminars. Originally all seminars were conducted in university facilities and the focus was placed on conceptualization through traditional academic methods. Feedback indicated that there was need for seminars which were located in operating vocational schools. Through cooperative arrangements with university seminar directors, each year since 1967 has witnessed an increasing number of seminars conducted in vocational school facilities with vocational school staff members serving as resource people.

I personally feel that one of the most significant factors indicating success in these seminars is marked by the obvious shift of stated concerns or needs, from those in the beginning which centered on needed curriculum revision and physical facilities to those more recent concerns identifying new areas which need to be explored in future seminars. Let me list a few examples:

1. Educational leadership roles which counselors might be expected to assume in the future.
2. Needs and possibilities in curriculum modification
3. Need to develop new counselor procedures and techniques
4. Need for methods of evaluating guidance programs
5. Need to involve other educators in addition to counselors in future seminars
6. Need for standard evaluation instrument for all seminars.

Several of the past summer seminars appear to be working toward meeting these stated needs:

1. In one seminar, the counselor participants created the program purposes, and the program itself was evaluated at regular intervals using the program purposes as the basis for the evaluation and program modification. The purposes were two

fold--one, to provide a realistic evaluation of the program itself and two, to provide counselors with evaluation experiences which they could, in turn, apply to guidance program evaluation when they return to their home schools.

2. In another seminar, counselors were encouraged to develop plans for initiating changes in the present school year. A seminar staff member plans to follow up throughout the year to determine if any change did occur as a result of this program and if so, what was the nature of this change.

Another of these stated needs was set by the Division of Guidance and Testing's development of a standard seminar evaluation which was completed by all seminar participants. Copies of this instrument are available. The completed evaluations showed general satisfaction with the seminar experiences and that the seminars are meeting counselor expectations. It was found that the programs were well planned and conducted in an efficient manner. Many counselors volunteered comments such as, "A tremendous experience--hope to be able to return next year!"

I feel that the summer vocational guidance seminars are truly a means for increasing counselor effectiveness through concentrated effort to meet counselor needs as they state them through evaluation. There is no way we can test this or verify the feeling, it's one of those things which we find working, and working well, with many counselors returning for the second, third, and some even the fourth time. With the very small reimbursement to the counselor the incentive of money can quickly be eliminated as the reason for repeated attendance.

Another way of meeting counselor needs is in the arrangement whereby counselors can receive graduate credit for completion of the seminar. All credits and requirements are controlled by the university sponsoring the seminar, but graduate credit it a possibility with all participating universities.

The future of these seminars appears promising. The universities are already talking of innovations they would like to put into effect this coming summer. In one, there is talk of a seminar designed for teams of educators to effect curriculum changes. This seminar structure could possibly take the form of action planning sessions distributed throughout the year with the teams going back and attempting to implement those plans and incorporate evaluation into the total program. This is still merely at the talk level, but it should give some indication as to the direction future seminars might take.

I feel that these seminars tend to establish the guidance program in the school setting by providing a breadth and depth which has long been overlooked in counselor training in the past. The seminars provide a rationale for guidance and a means for planning a guidance program with a base of service through which counseling can become something real rather than something everybody talks about and few, if any, really know how to do.

REG:dp
December 5, 1969

MANPOWER PROJECTIONS AS A GROWING RESOURCE FOR VOCATIONAL GUIDANCE *

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* Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 9, 1969.

MANPOWER PROJECTIONS AS A GROWING RESOURCE FOR VOCATIONAL GUIDANCE

Paul G. Larkin

Why should vocational guidance and counseling professionals be interested in the manpower information system currently being developed for the purpose of planning occupational education programs? Isn't laissez-faire the best approach to vocational counseling in the market conditions of a free society? Isn't it enough that specific job prospects are adequately indicated on a national basis in such resource materials as the Occupational Outlook Handbook or Feingold and Swerdloff's recent publication, Occupations and Careers? What use are occupational projections anyway if they are generally recognized to be imprecise and to rest upon a set of qualifying assumptions? Furthermore, won't the free choice of the individual be compromised if vocational guidance and counseling personnel take the initiative in the dialogue that leads toward career choice? The general answer to these questions is that the vocational counselor of the 1970's may continue to serve his clients well without reference to the maturing state and local manpower information system, but it is likely that his service will be better if he utilizes relevant information that is as available for guidance and counseling purposes as it is for program planners and other decision-makers.

The decade of the 1960's has wrought some unalterable and irreversible changes in occupational outlook patterns. A shift has been taking place away from goods-producing opportunities and toward service-rendering opportunities. Shifts are taking place in the geography of opportunity, not only toward the sun belt from Florida to California, but also away from the center city. The population itself is changing

its center of gravity in the direction of youth, and this change will have profound implications for career opportunity in the years which lie ahead. Considerations like these forbid the laissez-faire approach to vocational counseling, if the individual faced with career decisions is to remain neither uninformed nor misinformed when he receives guidance and counseling support.

Organizational patterns affecting the workforce are also changing. Institutions are now purposing objectives in place of many of the objectives once agreed upon between employer and employee who met each other personally. To complicate matters, the objectives themselves are also new. Proportionately fewer people are needed to produce our food or our shirts. Proportionately more people are engaged in getting a man into outer space and back, or planning and implementing city services. Many career candidates are faced with practical choices among institutional employers, rather than a choice between an institutional and a non-institutional employer, or among prospective employers personally and individually known to them as they job-hunt.

Some critical apparatus from literary criticism may perhaps be appropriately applied to vocational counseling. Literary criticism for plays and novels permits distinguishing among romantic and realistic content as well as romantic and realistic manner. The musical comedy, for example, where boy meets girl and they promptly agree to marry illustrates romantic content, although details like a credible looking bus-stop might give the "realistic manner" appearance of a real-life bus-stop. Damn Yankees might be filmed in a realistic manner with real ball players, but the magic of the content is "romantic." Shakespeare's stories like Romeo and Juliet, on the other hand, might be romantic in manner but emotionally true-to-life in the interpersonal problems portrayed.

My point is that vocational guidance and counseling may also be realistic or romantic in content and manner, and there follow four paradigms of vocational counseling, depending on the structure of "information" and "heart" brought to the interaction by the professional. It is not my point here to discuss the competing merits of heart and mind in counseling. I wish only to suggest that new guidance and counseling methods are very nearly upon us, as we have shifted in the past decade from an orientation toward available entry-level jobs to a career orientation, and as manpower information by occupation with local relevance becomes more readily available, we are able to assay the longer-range career outlook for any given set of occupations that comprise a career. Realistic content of vocational guidance and counseling is in this sense daily becoming more available to us, but we are going to have to prepare ourselves and change some of our methods, our skills of appraising and disseminating information, if we are to take full advantage of this information explosion in occupational information.

A very modern illustration may be in order. Computer-assisted vocational counseling systems are being experimented with at a number of places throughout the country.* But the information-decision chain in these instances is only as strong as its weakest link. The weakest link in this case may be the information about occupational outlook that is being pumped into the program. Far-fetched career decision conclusions would be the result if the system outputs were to be believed. But they are not believed. Human users wisely correct false results, and it is a rare user who will believe the machine before he believes himself.

Although dated or static information is being used to program career equations in several instances of computerized counseling experiments, dynamic and self-updating systems of manpower information are increasingly available at the state and big-city level. Ten years ago the criticism could be made that manpower projections were imprecise. Growing maturity of the forecasting process (and of the forecasters as well) has marked the decade of the 1960's. Order of magnitude precision has been found to be reliably available, and this is enough precision for the decision-making which must be based on the projections of occupational outlook. The vocational program administrator, for example, may have to decide whether to have one, two, three, or four sessions of that electronics technician course offered. If there is a thirty student capacity per section offered, this means that information must be relevant to the future employment prospects of 30, 60, 90, or 120 enrollees. In real life, there is usually little fear that graduates will be unemployed, since employers are often faced with paying for the training one way or another if they don't hire already-trained personnel. For the student, order of magnitude precision might mean information that will indicate what the high volume job opportunities will be, such as practical nursing, to assure a kind of security of job opportunity, or what some of the fast growth occupations will be, to assure a kind of career advancement potential that some job-seekers will want.

The Vocational Education Amendments of 1968 recognize that five-year manpower projections are feasible by requiring them in the state and local program planning on which eligibility for federal funding is contingent. Annually updated projections with local relevance will be available from now on.

Does this mean that trainees are to be herded like sheep into programs designed to execute central planning decisions of the federal government? This is an unlikely state of affairs, and probably represents no real threat. If anything, the trend is toward the decentralization of program planning functions to state and local levels. But this may be a good point at which to underscore the way the free employment market works for the free individual in a free society. The freedom of the market, the individual, and the society is not unstructured, and is not to be understood as "freedom to do anything you want" in any anarchistic sense. It is true that there are some individuals, perhaps many, who don't have to worry about going to work for an employer. One counselor once spoke to me of the desirability of his client's feeling free to be an artist in a garret, working only part-time in a shoe store for the purpose of buying his oils. This is a romantic view, and hardly gibes with the guidance and counseling needs of the urban youth who is or soon will be married, with a responsibility to care for perhaps an infant or toddler and another on the way.

The question may be raised, aren't national projections enough. Sometimes they are. But because of the great variety that attends job and career opportunity in our regional areas, states, and localities, state and local specifications of occupational opportunities stand a good chance of being more immediately relevant to the training situation. The individual deserves to know if he is going to have to migrate to some other part of the country to realize a career ambition to which he is thinking of committing himself, and his aspirations can be as broad and as wide as the nation itself. Given adequate information, that choice can be up to him.

New manpower information resources for vocational guidance and counseling

What are the manpower information developments the counselor should be aware of as resources? What does he have to know about them, about how projections are made and what they mean, their assumptions and their shortcomings? How is the way that the counseling specialist uses manpower information different from the way the planner and the decision-maker utilize the same information? These are some of the key questions implied by the broad question of manpower information relevancy to vocational guidance and counseling process at the state and local level.

The counselob who is already able to use the Dictionary of Occupational Titles amd the Occupational Outlook Handbook to advantage will find that he now has new resources available in the form of a Bureau of Labor Statistics publication, Tomorrow's Manpower Needs, and the increasingly available manpower projection products of state and local employment services.

The manpower legislation of the sixties emphasized the need for an information system that would permit forecasting of likely occupational requirements for future years. The increasing availability of third generation computers and related software made better calculating procedures and cross-checks feasible. A result was an ability to project highly detailed forecasts of the occupational makeyp of a great number of industries, as represented by the occupation by industry tables published in the 1969 BLS study, Tomorrow's Manpower Needs, which describes occupations related to industries for 1975.

What underlies the BLS projections documented in Tomorrow's Manpower Needs is the likelihood that the occupational mix characterizing an industry will not change drastically in the decade or so with which the projections are concerned. The bulk of an industry's occupations are subject to trend influences which permit entirely acceptable order of magnitude appraisals of the future. Reasonable allowances can be made for technology and changing forms of organization.

Two steps are generally followed to establish growth of occupations within industry. First, total manpower requirements are projected for each detailed industry. For 1975, a 3 per cent unemployment rate was assumed, and historical data from reliable sources were used to allocate the nation's manpower according to industry. A number of independent approaches served to cross-check results. Secondly, trends in the occupational composition of detailed industries were analyzed, to establish the occupational mix of each industry. Knowing the total manpower numbers for each industry for a given year, 1975 is the example, and the way occupations are distributed within industries, permits a determination of occupational requirements for that future year.

Users of manpower projections should be fully aware of the assumptions behind the projections. The more the disparity between assumed and actual conditions, the more likely it is that actual employment will differ from what is projected. Projections assuming growing defense expenditures until 1975, for example, result in larger occupational requirements for defense industries than requirements which assume constant expenditures. The BLS projections for 1975 assume explicit details concerning the size, sex, and age composition of the labor force, based on the most recently available data prior to publication. The size of the Armed Forces for the mid-seventies is assumed to be consistent with peacetime conditions of the late 1950's or early 1960's. The 3 per cent unemployment rate was a major assumption. Other major assumptions were as follows:

1. No major event will substantially alter the rate and nature of the economy's growth.
2. Economic and social patterns or relationships will change at about the same rate as in the recent past.
3. Scientific and technological advance will continue at about the same rate.
4. Defense expenditures in constant dollars will increase during the decade preceding 1975 at about the same average rate as that which characterized the decade preceding 1965.

Employment Security Agencies

In keeping with the 1968 Vocational Amendments, the Manpower Administration of the Labor Department has been refining procedural short-cuts for making acceptable five-year manpower projections at the local level. The information system developed utilizes the data resources and technical expertise of state and local Employment Agencies. This system guarantees periodic availability of occupational information which is timely and relevant to program priority decisions. The projections may be used not only by educational administrators, but also by advisory councils, and by vocational guidance personnel. New projections are produced annually, and may apply to anyone of several geographic levels: the state as a whole, 150 major labor areas within states, and special areas requesting available information. Occupational opportunities are reported by vocational program code numbers in a format varying according to the projection technique options which are followed.

The Manpower Administration system system recommends three alternative techniques for the state or local employment service to use. The first is the "unfilled job openings" approach. This method reviews end-of-quarter job vacancies (which have been listed thirty days or more) to determine which occupations evidence stable, increasing, or decreasing employment demand. A second approach, the "closed job orders" technique, makes greater allowance for the ebb and flow of job offers and acceptances over the year. The total count of successful hires is compared with the count of job offers by occupation. This determines which job titles have been hard-to-fill, meaning

less than 60 per cent filled. A third recommended method might be called the "special study" approach. It relies upon the occupation-by-industry methodology discussed in the BLS publication, Tomorrow's Manpower Needs, employer surveys, a regular or special census, or other special studies. This third method requires the analyst to calculate replacement demand due to deaths, retirements, and the like, in addition to the volume of employment expansion in the one-year and five-year future.

Some rules of thumb are available which will help the vocational administrator to evaluate employment service projections in terms of the methods used. Since the unfilled job openings approach relies upon what we might call four "one-day snapshots" of the listings (taken at ninety day intervals over the year), there is more of an element of chance that the data might involve a fluke. The closed order approach over the period of a year examines the total volume of orders received and closed for 365 days, not four, and therefore may be presumed to yield a greater penetration of the market. Both the unfilled openings and the closed order approach depend upon the concept of shortage or "hard-to-fill" vacancies, although shortage is in each instance somewhat differently defined, and shortage must be looked upon as a construct in people's minds, however useful a construct, not a count of observables. The special study approach is potentially the most laborious and most reliable, and potentially the worst, depending on the data sources and the techniques used. Each special study must be evaluated on its own merits.

What the vocational counselor has to know about manpower projections

Occupational projections for a state or locality in the five-year future may be expressed in terms of total employment figures for some given future year. The vocational counselor or the vocational guidance program administrator who would wish to utilize manpower information will have to recognize that the total number of jobs for which an incumbent is needed is not the equivalent of the total number of individuals who will be filling these jobs. A job can have more than one incumbent in a given year, if, for example, the incumbent should retire or temporarily withdraw from the labor market. More jobs open to be filled therefore does not merely depend on the growth of the economy. Replacement of people who retire, die, or leave the workforce for other reasons (such as child-bearing and child-rearing for many women) is also an important factor in the number of positions there will be open for any given occupation. Yet in a number of instances a state or locality within the state may have available to it reports on the employment growth or decline for some projected year in terms of absolute number of jobs, not expected position openings. One Midwestern state and one Southwestern state reported occupational projections in this way in the 1969 submissions of state plans under the Vocational Education Amendments of 1968. Table 1 illustrates a metropolitan area report for a large city provided by a department of employment security in 1969. Projected employment is in terms of jobs, not job openings.

EMPLOYMENT IN BALTIMORE METROPOLITAN AREA 1/
RELATED TO VOCATIONAL EDUCATION

Related Course	Occupation	Current Employment 1969	Projected Employment 1970	Projected Employment 1974	Expected Change 1969-1970	Expected Change 1969-1974
	PROFESSIONAL, TECHNICAL, & KINDRED					
17.1300 Drafting	Draftsmen	3,400	3,500	3,900	100	500
07.0103 Dental Lab Technology	Technicians, Medical & Dental	2,900	3,100	3,700	200	800
17.0700 Commercial Art, Sign & Show Card	Workers in Arts, Entertainment	6,500	6,700	7,400	200	900
37.0000 Family Service	Social Welfare Workers	2,800	2,900	3,400	100	600
Business Education	CLERICAL & KINDRED					
14.0700 Stenography	Stenographers, Typists, Secretaries	37,800	39,000	43,900	1,200	6,100
14.0300 Office Practice	(Office Machine Operators	6,700	7,000	8,200	300	1,500
	(Other Clerical & Kindred	106,600	109,400	120,600	2,800	14,000
14.1000 Duplicating Services	(Duplicating Service Workers) 2/	(1,700)	(1,900)	(2,500)	(200)	(800)
04.0118 and 17.3700, Trans., Sales & Vending Machines	SALES WORKERS	55,800	57,900	66,100	2,100	10,300
04.0117 Distributive Education						
	CRAFTSMEN, FOREMEN, & KINDRED					
17.1001 Carpentry & Millwork	Carpenters	8,100	8,400	9,700	300	1,600
17.1099 Bricklay & Cement Finish.)	(Brickmasons & Tile Setters	1,900	2,000	2,500	100	600
17.1004 Brick Masonry)	(Cement, Concrete Finishers	600	600	800	-	200
17.1[illegible] Elec. Constr., Wiring, Repair	Electricians	4,300	4,400	5,000	100	700
17.0[illegible] Elec. Appliance Servicing	Electrical Appliance Repairmen	1,400	1,500	1,800	100	400
17.3[illegible] Painting.,Furn.Fin.& Paperhanging	Painters and Paperhangers	4,500	4,600	5,000	100	500
17.1007 Plumbing & Heating	Plumbers & Pipefitters	3,800	4,000	4,700	200	900
17.2302 Machine Shop	Machinists & Related Occupations	5,700	5,700	5,500	-	- 200
17.2305 Sheet Metal Workers	Sheet Metal Workers	1,800	1,900	2,100	100	300
17.1900 Printing	Printing Trades Craftsmen	3,400	3,400	3,500	-	100
17.0401 Air Frame & Power Plant Mech.	Airplane Mechanics & Repairman	1,800	1,800	2,000	-	200
17.0302 Automotive Mechanics	Motor Vehicle Mechanics	8,900	9,100	10,100	200	1,200
17.0600 Office Machine Repair	Office Machine Mechanics	800	900	1,100	100	300
17.1503 Radio & TV Servicing	Radio & TV Mechanics	1,400	1,400	1,500	-	100
17.2901 Commercial Baking	Bakers	1,000	1,000	1,000	-	-
17.3601 Cabinet & Furniture Construction	Cabinetmakers	800	800	800	-	-
17.3500 Upholstering	Upholsterers	700	700	800	-	100
	OPERATIVES & KINDRED					
17.2306 Welding	Welders & Flamecutters	5,200	5,400	6,100	200	900
17.2303 Machine Tool Operators	Machine Tool Operators, Class B	2,900	2,900	2,800	-	- 100
17.3399 Industrial Sewing	Sewers and Stitchers	8,000	8,100	8,500	100	500
17.1601 Dry Cleaning & Pressing and 17.1699 Valet Serv.	Laundry & Dry Cleaning Operators	4,300	4,300	4,200	-	- 100
	SERVICE WORKERS					
17.3700 Child Care	Private Household Workers	24,800	24,800	25,000	-	200
17.2399 Food Preparation & Service	Food Service Workers	23,500	24,500	28,300	1,000	4,800
17.1100 Custodial Services	Charwomen & Janitors	12,000	12,100	12,500	100	500
07.0205 Practical Nursing	Nurses, Practical	3,500	3,700	4,300	200	800
17.2601 Barbering	Barbers	600	600	600	-	-
17.3400 Shoe Repairing	Shoe Repairmen	200	200	200	-	-
17.2602 Cosmetology & 17.2699 Manicuring	Beauticians	3,900	4,100	5,000	200	1,100
17.3301 Dressmaking & 17.3302 Tailors	Dressmakers & Tailors (custom)	200	200	200	-	-
17.0301 Auto Body & Fender Repair	Auto Repair Shops (various trades) 3/	(2,100)	(2,100)	(2,300)	-	(200)
17.0102 & 17.0399 Auto Mech Inst.& Auto Serv, Stat.	Auto Service Station employees 3/	(5,900)	(6,100)	(6,900)	(200)	(1,000)
17.3700 Horticulture	FARMERS & FARM WORKERS	6,700	6,600	6,300	- 100	- 400

1/Includes Baltimore City and Anne Arundel, Baltimore, Carroll, Harford & Howard Counties. Omits self-employed, and unpaid family workers, except in the category of Farmers & Farm Workers. 2/ Included in the above clerical occupations. 3/ Overlap with motor vehicle mechanic.

Department of Employment Security, Research and Analysis Division, May 28, 1969

The vocational counselor who has a better insight into the meaning of manpower projections will welcome one of the recommended reporting formats of the Labor Department's Manpower Administration. This is the format presented as Figure 1, and is associated with the methodology found in Tomorrow's Manpower Needs. The user will be able to determine one and five year outlook for occupations in terms of expanded demand and replacement needs for the occupations reported. What might this mean for the counselor? Slow growth occupations such as printing craftsmen, involving a number of older workers in the field, involve future replacement needs that can be anticipated to exceed employment growth. One set of projections indicates that the current employment growth rate for printing craftsmen is less than 3 percent, for a growth of 8,000 in the 1965-1975 period. But replacement needs make job openings for printing craftsmen to reach as high as the 82,000 mark in the same period. Tomorrow's Manpower Needs lists attrition rate estimates for a number of occupations. To cite another example, computer programmers have constituted a fast-growth occupation in the 1960's. Yet there must be a saturation point for this growth, atleast until further technological breakthroughs occur in the field. This implies that the young programmers who got into this work in the past decade will not very likely be subject to much death or retirement in the very near future, i.e., replacement demand will not be so great for computer programmers as for carpenters, or certain of the other occupations illustrated in Chart 1.

...ical occupations. 2/ Excluding farmers & farm workers. 3/ Included in the above clerical ...
Department of Employment Security, Research and Analysis Division, May 28, 1969

FIGURE 1.

Bureau of Budget Approval No.

1. REPORT COVERS
☐ ENTIRE STATE
☐ AREA (Specify name & geographic coverage)

EMPLOYMENT OPPORTUNITIES RELATED TO VOCATIONAL EDUCATION PROGRAMS

LABOR DEMAND: OVERALL PROJECTIONS

2. VOCATIONAL EDUCATION OCCUPATIONAL AREA (Prepare separate sheet(s) for each area checked)
☐ A. Agriculture
☐ B. Distributive Education
☐ C. Health Occupations
☐ D. Home Economics
☐ E. Office Occupations
☐ F. Technical Education
☐ G. Trade and Industrial

3. STATE NAME

4. DATE OF REPORT

VOCATIONAL EDUCATION INSTRUCTIONAL PROGRAM AND DOT OCCUPATIONAL TITLES	CODES		CURRENT EMPLOYMENT	PROJECTED REQUIREMENTS						COMMENTS
				1 YEAR HENCE			5 YEARS HENCE			
	VOCATIONAL EDUCATION INSTRUCTIONAL PROGRAM	DOT		Net Expansion Needs	Replacement Needs	Total Needs	Net Expansion Needs	Replacement Needs	Total Needs	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

-18-

May 1959

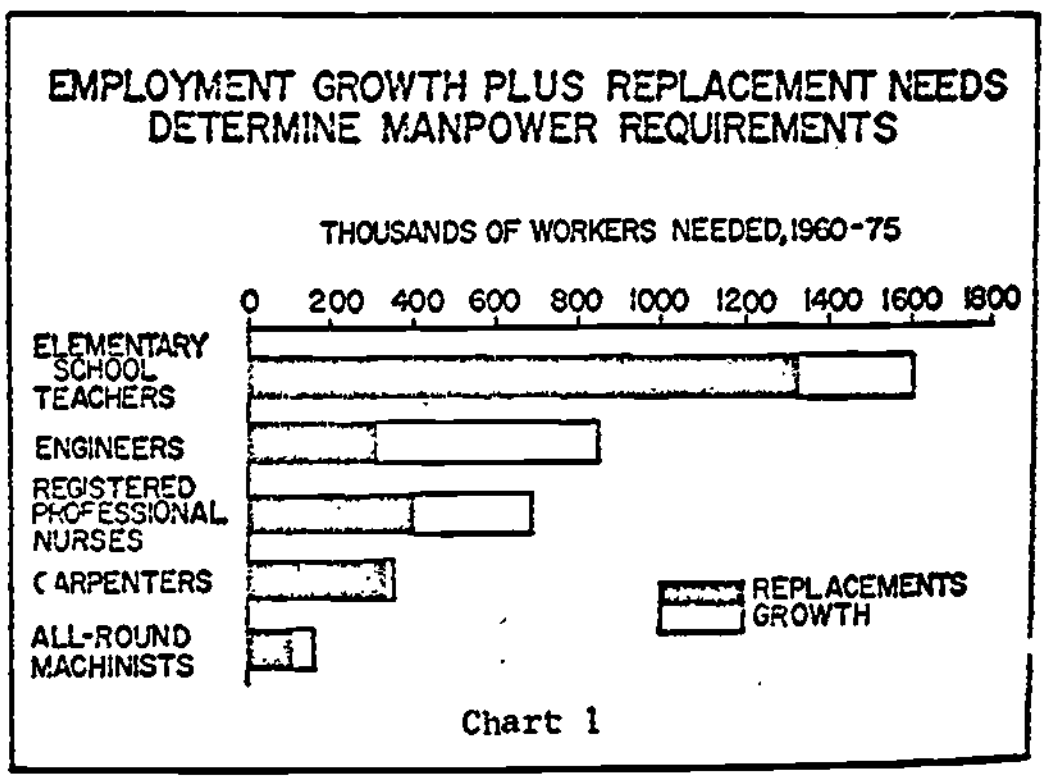

Chart 1

A difference in the way counselors and administrators might use projections

Many jobs are outside the scope of vocational education. Career opportunities which require the bachelor's degree at the entry level are an example. A few additional examples of work categories outside the scope of good vocational program objectives are jobs which require little or no training, jobs for which the compensations offered can be only marginally attractive as a basis for employment or career, and jobs using equipment so specialized that the employer can and must train on the job. In some instances, public programs could theoretically be established for certain types of highly desirable occupational training, but the expense of equipment or the costs of other necessary program resources make it either prohibitive or at least unwise to proceed. Training certain types of construction workers is an example, where this training would involve a massive investment in capital equipment. In some other instances, however, the situation prevails that if the public doesn't provide the training nobody else will. Examples are pre-professional teacher aides and social worker aides, and technicians skilled in various phases of air and water pollution control.

The vocational counselor will therefore have to be aware that there are other sources of training relevant to his guidance and counseling function that are relevant in a different way from that of the vocational program planner. The administrator or advisory group member may be able to say to himself, "We don't have to do it all," when it comes to training (See table 2 for a description of the various sources of training available outside the formal public system for 1950, 1960, and projected to 1975). The counselor, on the other hand, has to be aware of competing training resources for those whose choices he would wish to enlarge upon; and he will also have to acquaint himself with "what it takes" to use these resources to good advantage.

Table 2

Estimated Vocational Training Outside the Formal Educational System, 1950, 1965, and Projected 1975 (a)

(in millions of enrollments)

Training Institution	Enrollments in		
	1950	1965	1975
Professional & technical training	3.5	7.8	20.7
Company schools	6.0	7.2	19.9
On-the-job training	2.0	4.5	6.1
Correspondence schools	1.5	2.4	3.2
Armed forces	2.0	2.6	3.0
All others	0.3	0.5	0.9
Total	15.3	25.0	53.8

(a) Historical data and projections derived from, Cohen, Education, op. cit., p. 84.

Some implications of the future for vocational counselors by level of education

The employed civilian labor force will be growing at a rate in excess of one million workers per year in the next decade. Job openings, however, which include those new employment opportunities created by attrition in the labor force, will be three to four times as great. Of the more than three million new job openings to be filled each year, many will be filled by those transferring from other jobs, those upgraded by their employers, or by adults returning to the labor force after a period of absence. Many openings will nevertheless remain to be filled by entrants to the labor force who will receive training within the framework of the vocational-technical education. One Labor Department source, to cite a recent example, has pointed out that there is a current trend in technician training toward increasing college-level preparation in lieu of on-the-job training. Employers are said to prefer the graduates of post-secondary programs specifically designed to prepare students for technician jobs.

In spite of the increasing professionalization of the labor force, nearly three-forths of the annual job opportunities in the next decade will not require a four-year college degree. But about two-thirds of all positions which will be becoming available will require at least a high school education and some type of occupational training. Bookkeepers, office machine operators, policemen, and sales personnel are examples of job opportunity categories which will typically call for a minimum of the high school diploma. Occupational training for jobs like these will continue to be found in a great variety of forms, including on-the-job training, special job pre-training programs, and vocational school programs.

Of the nearly two million annual job openings projected for the decade ahead for which vocational-technical education is directly relevant, 70 per cent will occur in 21 major occupations (See Table 3). By 1975, one-third of these occupations, involving nearly half a million job openings annually, will employ persons whose median level of educational attainment will be more than 12.5 years. This implies a year or more of post-secondary occupational training for many new entrants to the job market. Technicians, nurses and real estate or insurance salesmen fall into this category. Sixteen of the 21 occupations listed, with a projected annual demand for over one million workers, will be characterized by a median level of educational attainment in excess of 12.0 years, and will probably in many instances entail a requirement on the part of the employer for some formal training beyond the high school diploma. The other occupations listed evidence educational attainment levels of 11.7 years or less, but trends indicate increasing expectations for new employees in these jobs to have completed high school.

Table 3

Annual Job Opportunities in the 1970's by Level of Median Educational Attainment

Occupational Category	Median Level of Educational Attainment 1975	Annual Job Openings 1966-1975 (in thousands)
Nurse, professional	13.5	73
Technician, medical & dental	13.2	21
Technicians, other	12.8	55
Sales, insurance, & real estate	12.8	26
Technicians, electrial & electronic	12.7	34
Secretaries & stenographers	12.6	249
Bookkeepers	12.5	87
Office machine operators	12.5	55
Policemen	12.5	29
Sales, other	12.4	70
Barbers & cosmetologists	12.2	48
Practical nurses	12.2	47
Electricians	12.2	35
Sales, retail	12.1	107
Mechanics, other	12.1	104
Attendants, hospital	12.1	99
Plumbers	11.7	28
Mechanics, automobile	11.3	50
Carpenters	10.9	70
Cooks	10.9	49
Excavating, Grading, & road machinery operators	10.6	33

These developments will have important implications for guidance program administrators: a. at the state and local level, and b. at the secondary and junior college level. The conclusion appears to be warranted that a greater mass-production of communications is necessary effectively to disseminate which the high-volume occupational opportunities are for the security-seeking job candidate, and which the fast-growth occupations are for those who would wish to maximize their individual career potential. Television and radio "commercials," for example, along the lines being used to combat cigarette smoking and drug-addiction, may be in order to achieve vocational guidance objectives at the state and big-city level. A different kind of vocational guidance and counseling program approach may be needed to meet the information needs specific to secondary schools and junior colleges respectively. Periodic handouts, monthly distributions of a "career information bulletin" covering within the school months the entire spectrum of the current year's manpower projection reports, to cite only one example, may be one way to get the information out in a digestible form.

In conclusion, a few words of evaluation of some of the good points and some of the bad points foreseeable in future guidance and counseling systems that use manpower projections are in order. If the information transmitted has any of the effect of commercial advertising, perhaps the extreme of the effectiveness that might be hoped for by the most ardent user of projections, the individual will find the range of his occupational choices more limited to certain "ballparks" where the jobs are, but more greatly enlarged within those ballparks, and also more greatly enlarged as opportunities are multiplied over time.

Continuing career growth can be built on the structure of the career edifice already assembled where risks were preferred risks, and there will be more room for simulated errors of occupational and career choice, rather than actual or real-life errors made by betting the days of one's life on choices that were never choices at all, since they were based on inadequate information or misinformation.

FEB 2 5 1970

COUNSELORS' RESPONSIBILITIES TO THE NON-COLLEGE BOUND

by

*S. Norman Feingold**

Introduction

We are living in a rapidly changing technological society. There never has been a period in world history during which change occurred at such an accelerated rate. Change appears to be the only constant. What is true today may not be so tomorrow. In times such as these, education and further training beyond high school are more important than ever before. Man can become obsolete more rapidly than a machine. Explorer I of 1958 is as outmoded as a Model T Ford.

The role of education is to create competent and responsible adults. One of the functions of counseling and guidance is to assist youth integrate their experiences and develop an understanding of their assets and limitations in relation to a changing world of work. In this way, young people can attain a meaningful role in the adult world and become a part of the mainstream of society.

It is recognized that there are non-college bound students from every strata of society. However, the number of disadvantaged who do not have college opportunities is disproportionate when compared with the rest of society. There are obviously thousands of occupations and careers that are forever closed to those with ability for higher education who, because of financial and cultural deprivation, do not dream dreams to achieve their potential. This significant aspect will not be covered in this paper.

Many non-college bound students find their way into the world of work a difficult one, especially since their training may not have been vocationally oriented. Other

*Dr. Feingold is National Director of the B'nai B'rith Vocational Service, Washington, D.C. This presentation was delivered at the 63rd Annual Meeting of the American Vocational Association, Sheraton Boston, Boston, Mass., December 10, 1969.

research reveals that a tremendous amount of job-changing takes place by non-college bound students in the years immediately after high school. There are also different problems when non-academically inclined students pursue academic subjects and their abilities, interests and personalities negate this thrust. Space does not permit discussion of this complex topic.

This paper will focus on those students who choose *not* to go to a college. What are the counselors' responsibilities to these students whose goals do not require a college education?

Existing Non-Guidance of Non-College Bound

Counseling, both in its research and publications, for far too many decades, has placed a major emphasis on behalf of those students who go on to college. Up to recent years, the non-college student was not likely to obtain as much counseling as his college bound peer. A report, "Characteristics of Non-College Vocationally Oriented School Leavers and Graduates, February, 1968," by George G. Mallinson, Dean, School of Graduate Studies, Western Michigan University, in a publication of the U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Research. Project no. 5-0142, contains findings which would indicate that high schools need to give more emphasis and attention to programs and counseling for the non-college bound student. Apparently little information is given to non-college bound students by high school guidance counselors. Most students interviewed indicated that they learned about vocational training possibilities from one of three sources: radio, advertisement in newspapers and pulp magazines and, finally, friends and relatives who had enrolled in some type of vocational training program.

Eighty percent of school dropouts never have had any job counseling. Fifty-six percent of high school graduates never have had any job counseling. There is no counseling in 13% of the nation's secondary schools. High school students are not receiving the vocational guidance they need, says the Federal Advisory Council on Vocational Education. The Council indicated that 90% of U.S. high schools provide college counseling, but only half offer vocational guidance.

Too often the attitude is that vocational education is designed for somebody else's children. The Federal Government invests approximately $14.00 in the nation's universities for every $1.00 it invests in the nation's vocational education programs. For many college youth, the dropout rate is exceedingly high. Approximately 50% of those who start college never finish. The increasing pressure toward college often starts in the elementary school for some students and, in a few instances, at the nursery school level. Counselors may be partially responsible for parental and other pressures that help foster the myth that everyone can or should go to college.

Some youth who enjoy working with their hands to a great extent have not felt the career stimulation, empathy and active interest of school counselors. Thus, their self-concept as a person of worth may suffer. Some counselors have not had the expertise to discuss at great length with these young people their plans that may include technical training, business schools, vocational residence schools, apprenticeship training, etc. Moreover, some counselors lack the knowledge needed to discuss with these young people more subjective matters such as expected life style of the blue-collar worker.

It seems to the speaker that the counselor needs to upgrade his knowledge of and feelings toward the non-college bound. For too many years, the educational thrusts and knowledge and research have concerned youth who go on to college. The college student has been studied and researched over and over again, while the non-college bound student is still somewhat of an unknown quantity.

There is a great interest in vocations that do not require four years of college. Last year more than 200,000 persons wrote to the U.S. Office of Education for a free booklet on technical careers.

New Era for Youth

This is a new era for the non-college bound particularly since vocational education has come of age.

For example, some of the fastest growing occupations in the U.S. such as practical nurses, pilots, office machine workers, electronic technicians, social welfare assistants, etc., do not require a four-year college degree. Counselors and economic planners appear now to realize that training workers for professional jobs while shortages of well-trained technicians exist, achieves neither the student's nor our nation's goals or purposes. Many of these new vocational programs are providing expanding opportunities in new technological fields, particularly as support personnel or as paraprofessionals. Nurses aides, lawyers aides, and psychiatric aides are just a few of the wide variety of aides that are now a growing part of the world of work.

The vocational education budget in 1967 was $4.3 billion while in 1959 the budget for vocational education was $.75 billion. This new emphasis on vocational education has not been limited to vocational educators but has noticeably touched the guidance profession itself. The Vocational Education Act of 1963 and the 1968 Amendments have furnished the undergirding for innovative educational programs throughout the United States. More and more young people who are not verbally oriented will be given an opportunity to become immersed in school courses that are meaningful. Too often the non-college bound has had a mixture of courses of an academic nature that has not met his needs or life style. This Vocational Act also is giving the non-college bound a new status and growing recognition in our society. More and more counselors now are taking as much pride in the post-high school educational achievements of vocational graduates as they do in the achievements of the college bound.

Help should be given to all students in order to meet their specialized interests and capacities. We need and have a work force of more than 76 million in more than 25,000 job titles. All jobs should have dignity, even though prestige and financial remuneration may vary considerably. People do hear different drummers. This fact can be maximized rather than minimized in the counseling process.

Education and training in the non-academic sphere are needed today, more than ever before. Research, study and administrative attention now are being devoted to non-college bound students. This is being reflected in courses, books, periodicals, motion pictures, filmstrips and a whole gamut of mass media. Nearly every issue of the "American Vocational Association Journal" features thrusts toward innovations and research programs. It would seem to this writer that all students should be allowed flexibility and mobility in vocational-technical programs, including the opportunity to select varying mixtures of academic and vocational-technical courses. Many students need a credit release from school for employment and career experience. They should be given the option to return for further education. Education and training must provide multiple choices for greater flexibility.

Areas of Counselors' Responsibilities

What, then, are the responsibilities of the counselors today to develop career and educational goals for non-college bound students? This group includes those with the academic and financial capability to attend college, but who prefer other career areas. This responsibility includes vocational and career planning for those who will terminate formal training at the 12th grade and/or at post-high school technical, business and vocational schools.

Here are a few directions in which counselors may move in order to fulfill their responsibilities to the non-college bound student. Time does not permit more than a brief perusal of pertinent topics.

1. Opportunities for Non-College Oriented Through Post-High School Education and Training

The non-college bound, particularly those who enter work immediately following high school graduation, should be aware of the rapidly changing world of work with its 25,000 types of jobs. For youth, work is a chance to discover "Who am I?" Too often the non-college goers are obliged to make job and career choices at an earlier age, with far less counseling than are the college bound. It should be pointed out that the vast majority of approximately

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problems in better focus.

3. Counselors and Teachers and Curriculum Modifications

Many young people have stressed that their school activities and subjects are not relevant to their needs. For some, rote memory and compliant behavior promote good grades and allow them to overcome the scholastic obstacle course with the least amount of trouble. For other youth, it is just no go. Counselors should make sense to youth in these changing times. Today one cannot promote the subject of Latin by saying, as we did yesterday, that the transfer of learning will help in the study of English. The writer has known dropouts whose dropping-out "made sense," when we consider the meaninglessness of what they were studying in the context of their lives. Courses must be more relevant. The difference can be and is being made by a new breed of young, aggressive and creative teachers and counselors who dare to try unfamiliar and innovative paths.

Most youth today, in all probability, will change their occupations approximately six times during their working lives. It would seem to the speaker that a long-range policy of teaching relatively specific simple skills to elementary and high school graduates is no longer adequate in this changing world of work. In spite of the fact that certain preliminary entry skills are required for the first job, workers ultimately must be trained for clusters of jobs. Sizeable numbers of our working population may switch from one job to another as technology gains even further momentum in the years ahead. Counselors can influence curriculum change in directions of developing flexible individuals with skills necessary for all work, such as cooperation, conscientiousness, reliability, etc. At the same time, counselors and teachers can recognize that the most important subject work of the classroom is the student.

4. Vocationally Oriented Work-Study and On-the-Job Training Opportunities

Generally speaking, it is important to recognize that non-college bound youth are often in many ways a different breed from those youths who go on to college. These differences seem evident not only in levels of aspirations, but also in the manner in which they perform in decision-making and problem-solving. College bound youth are more likely to be interested in theory, whereas non-college bound youth are much more in need of meaningful activities of the here and now, rather than theory and abstractions. The non-college bound student, in general, enjoys emphasis on the real and an opportunity to participate in tasks under actual conditions.

The counselor must be highly aware of constant changes in new training and selective job placement opportunities, at least locally. The non-college bound often profit from courses that are accompanied by well supervised part-time or full-time job experience. This can be accomplished as part of their total school experience. This may be meaningful part-time work concurrent with a subject course or full-time work experience after achieving a certain amount of subject matter information. Both work and study may be made more meaningful for the non-college bound with a more individualized mix related to abilities, interests and potential.

5. Industry-Education Cooperation for Non-College Bound

Professional associations such as the National Vocational Guidance Association have much closer working relations now than formerly with various industrial groups such as the National Association for Industry-Education Cooperation and the National Alliance for Business. The feedback from this cooperation is favorable. A proposed National Career Development Center in Washington, D.C., supported by industry, and regional career centers elsewhere also represent new critical thinking and long-range planning in this direction. At the same time, at the local and state level, active cooperation of local industrial leaders and school systems at various operating levels has lent a certain practicality to courses that offer expanding career opportunities for the non-college bound. It is up to each individual counselor to become aware of local job and training opportunities and job trends in his own community. He also can be an active participant in creating and maintaining a favorable climate for these programs. Counselors and

employers and personnel directors need to know one another better.

6. Group Guidance for the Non-College Bound

Counselors in all work settings are finding advantageous some use of group methods with the non-college bound. (These methods have been used for many years with the college bound for problems common to that group.) These steps now can be accelerated with the non-college bound. There can be discussion centered, for example, on non-college bound work and personal problems.

For the non-college bound, specifics of job seeking and job finding are essential. The whole area of job advancement and career development needs exploration in greater depth. Role playing and other active participation techniques can lead to behavioral changes. These activities are well suited to group guidance.

7. Placement

This author strongly believes that selective job placement and follow-up services for the non-college bound should be an integral part of each high school program. It is common policy for schools throughout the country to assume responsibility for college bound students by placing them in academic programs that consider their future needs. On the other hand, for too long, public secondary schools have for a wide variety of reasons avoided to a great extent the pressing responsibility for initial student job placement. It now appears that high schools must assume this responsibility for placing students in their first jobs. They must provide services to those students not going to college. The long-range effects of a student's first job experience may be worth further exploration, research, and study even though some question its influence. Based on the author's clinical judgment and longtime experience in placing students on their first jobs, the first full-time job may well be a crucial one for future advancement and adjustment on other jobs. Furthermore, by operating in the area of selective placement, schools will make a greater effort to prepare students for jobs that do exist. Schools will find out where their programs need strengthening. By communicating further with employers, schools can gain ideas for innovative training programs. Of course, this will require new arrangements with the United States Employment Service which currently has a cooperative school program in many communities.

8. Counselors Need to Know Community Resources

Studies have shown that one of the weaknesses of some counselors has been in the area of a working knowledge of community resources. While knowledge of community resources is exceedingly important in counseling all students, it is particularly important in relation to the non-college bound. Here available local resources may make a big difference in stimulating the non-college bound youth to reach for career achievement. More and more youth and adults are financially reimbursed while being trained on the job. The counselor should not only be knowledgeable of the changing community resources but through planned field visits, phone calls, contacts at professional meetings and the like, maintain a close working relationship with the U.S. Employment Service, social agencies, fraternal organizations, government, industries, unions, and so forth. In some areas of the country, counselors do a great deal with very little in regard to community and financial resources. At a 4-H career conference in West Virginia, for example, counselors from each community brought their telephone books. They discussed ways in which each community could utilize phone books (and other inexpensive aids) as a helpful guide to counseling and career development. The particular group mentioned not only involved itself creatively in selective job placement activities but in other important auxiliary guidance activities.

It also may be helpful for teachers and counselors of the non-college bound to receive sabbaticals, as is common at the college level for those persons whose teaching and research is primarily with those who attend college. The sabbatical year may not only raise the professional status of those who work with the non-college bound, but also allow them to recharge their batteries. It will help them gain wider perspectives of what is going on elsewhere, especially in the business and industrial world. Much research and

demonstration is relevant elsewhere and can be transferred with modification to their own work setting.

In Montgomery County, Maryland, an Employers Advisory Council meets with job applicants and counselors one afternoon a month. The Employers Advisory Council placement record is excellent.

It is established that more than 100,000 business and industry leaders throughout the U.S. are serving voluntarily in some 20,000 advisory committees established by secondary and post-secondary schools to assist in the development of vocational and Federal education programs.

Many adult advisors make themselves available to help youth through Kiwanis, Junior Chamber of Commerce, Lions, B'nai B'rith Vocational Service and other community organizations. Their role is to supplement and complement the work of the professionally trained guidance counselor. Some communities have compiled a human resources directory of adult advisors to serve the entire community. Their occupations, for example, range from able seaman to zoologist. Here again, however, the number of adult advisors is far greater in the professions, sales type of careers, etc., than in semi-skilled and skilled careers. School counselors must build and develop a stockpile of adult advisors in the areas of potential work of the non-college bound, as presently done with those of the college bound.

Counselors are acquainted with college admissions officers, college recruiters, and professors at various universities. These personnel visit high schools on a regular basis. It would seem only logical that counselors should see that similar visitations are made regularly from trade, business, technical and individual residential vocational schools. It also is suggested that more school field trips to industrial plants be made. Here youth can see people work at jobs that do not require a college education. Prior preparation and follow-up discussion should be as extensive as for the hundreds of field trips that are offered by schools and organizations to visit various colleges. The student then may reasonably perceive that his possible choice of a non-college career is important and relevant for him.

9. Using Blue Collar Workers at Career Days

In recent years, there has been a rebirth of well administered professional career days. Many of these conferences have even been recorded in sound, color and in moving pictures. A wider variety of careers also are covered in career conferences. Counselors in every work setting must expend more effort to employ blue-collar workers as panelists and speakers at career conferences. Also, there is the need to introduce models from the world of the disadvantaged who have 'made good' but whose roots are still firmly embedded from whence they came. Some of them may not be as articulate as those from the professional or sales fields. Nevertheless, they can yield a needed career message. New innovative techniques then may be attempted. Career conferences then can have meaning for certain youth who wish to pursue careers in trade and other blue-collar positions. They can be stimulated as much as the college bound with living models of successful people in the blue-collar world.

A recent article in the June 1969 issue of the *Vocational Guidance Quarterly* entitled "Children Explore Careerland through Vocational Role-Models" describes new methods and concepts for introducing the dynamic world of work in the elementary grades.

10. Changes Needed in Counselor Education Programs

Counselor education programs are in the midst of change. Counselors in their education and formal training must be given a great deal more research data and information about the blue-collar world and other careers for which a four-year college education is not required. They then may relate more readily to the life styles of non-college youth. This may well mean further changes in text, films, and other career material for the non-college bound. A brief perusal of the professional literature of counseling still shows far more information and research for those students who go on to college and professional careers. This is changing. Counselors who are at work in various school settings can help bring about this

accelerated change. We need to know more about youth whose life plans and life styles do not include college. These boys and girls are, moreover, the majority in every country in the world. Their motivation and achievements are essential to any nation's goals and manpower projects.

There also appears to be much more sensitivity training as an integral part of a number of counselor educator programs. The verbal interaction between client and counselor is being analyzed at Arkansas State University and the University of North Dakota. This research may be particularly helpful in aiding counselor trainees to upgrade their ability to engage in appropriate communication.

Many courses are being revised in counselor education programs. The range varies from a non-course oriented program to a core curriculum approach with counselees working in a wide variety of work settings.

There are other innovative programs, but space does not permit mentioning them at this time.

We can expect accelerated innovation and change in counselor education programs in the years ahead.

11. Keeping Up-to-Date Notebooks on Experiences of Non-College Bound

Many executives in industry, particularly in management, maintain a notebook of important ideas and techniques for future use. This is so whether it be for policy or problems related to management. Many counselors keep an up-to-date notebook containing information about colleges in order to help those that are college bound. The same implementation of a notebook may be kept up-to-date regarding educational and vocational experiences of non-college bound students. Counselor knowledge about the world of work for the college bound is significantly different from what is known for the non-college bound.

Knowledge about the many details and nuances concerning colleges, such as pressures on the college bound, is to a great extent lacking for those schools attended by non-college bound. They may attend technological schools, residential vocational schools, business institutes and other specialized schools. Counselors need to gather material about these institutions methodically just as they do for colleges and universities. This may well bring about a better "fit" for students and schools to their mutual benefit.

12. Counseling for Leisure and Job Satisfaction

It appears that the counselor is in a position of power, perhaps greater than he now realizes. If a counselor fails to be an agent of change, then what is he? If we have third-rate plumbers, our educational system also may have third-class philosophers. (Some plumbers earn about $20,000 a year in California.) In our society, we need people working at a wide variety of tasks. Some of these may not provide any inherent psychic satisfaction to the worker other than doing his task and doing it well and basically enabling him to support his family. The satisfaction derived from the work will not be intrinsic, i.e. ego-involving, the organizing force in his life. Rather, the satisfaction will be extrinsic. The rewards are likely to be associations with friends on the job, money earned, and doing a thorough job.

Many jobs are learned in a short period of time. These are routine in nature, often with less chance for advancement. Many of these tasks may be absorbed ultimately by the machine. This may well mean that the counselor for the non-college bound must accelerate his responsibilities in counseling young people as to leisure. At this point of time, thousands of individuals in the skilled trades and those who have not gone on to college have more time for leisure activities than ever before. This may well necessitate tests and counseling for avocations. The accreditation of volunteers is already well on the way. What role can the counselor play in preparing people for leisure?

13. Increasing Library Resources in Opportunities for Non-College Bound

With further funding, secondary schools and libraries have been able to expand their collections of books, pamphlets and films in the area of careers. In many cases, however. this writer has noted these vocational materials are not related to the fields

entered by many of the students. In numerous instances, librarians and counselors are now redirecting the thrust of many public and private libraries to recognize more realistic goals. They are far too skewed in the direction of the college educated. This also pertains to free career materials. Material is much more plentiful and sophisticated in the area of career opportunities requiring college training than it is in the blue-collar world and its life career styles. The trend, however, now appears significantly to be changing. We look forward now to seeing more libraries adjust their resources in line with their cognizance of the career and vocational opportunities available to the non-college bound.

14. Computer-Assisted Counseling Instruction

Computers and new hardware are part of the tools of the counselor. The National Vocational Guidance Assocation has established recently a new Committee on Computer-Assisted Vocational Guidance. These advances may be suited particularly to counseling the non-college bound. The choice and placement of the non-college bound in jobs, schools or training necessitate vast, accurate stores of information. The use of CAI by the counselor may result in greater counselee achievement and more psychic satisfaction for the non-college bound in school activities. More research and use of CAI with the non-college bound seem indicated.

Computers are playing an ever-increasing role in counseling and counselor education. This can be documented by Harvard University's Information System for Vocational Decisions carried on by Dr. David Tiedeman; Clark University's computer-generated bibliography of occupational information by Arthur Kroll; and Kansas City Teachers College's data conversion system. These are but a few of the new thrusts. Wisconsin State University and the University of Texas now are utilizing computer-aided instructional programs as part of their regular counselor education courses. Stanford University has developed a sequence of vocational problem-solving experiences, while Eastern Montana College has established an elementary guidance simulator.

There also has been a tremendous growth of audio tape and video tape libraries established at universities. A few of these universities are: DePaul, Oklahoma State, Purdue, University of Colorado, University of Illinois, University of New Hampshire, University of Utah, University of Wyoming. At the latter university, an extensive library of short counseling audio tapes also has been developed.

There appears to be a new innovative technology in counselor education. Creative approaches now are being made to prepare counselors for this changing technological system of ours.

15. New Careers and Hyphenated Occupations

With a new thrust from the Vocational Education Act of 1968, new careers are emerging in a wide variety of areas, particularly in the health fields. The new careers movement is an effort to train the poor to serve the poor and disadvantaged in the growing service fields; for example, social welfare, health services, corrections, counseling, teaching and police. These essential jobs include widened opportunities for educational and vocational advancement as well as personal growth and development. These new careers offer the disadvantaged and the non-college bound increased opportunities for educational training not only in school but on the job itself. The career ladders are mobile ones. The opportunities for advancing up the rungs of the career ladder are more plentiful today than ever before. In some instances, even the name of the job is critical. The Israeli army found it difficult to recruit army aides but were more successful when they classified the same job description as army technician.

New careers include the increased use of sub- or paraprofessionals in counseling in various work settings. In many instances, these personnel may be related more closely to the goals, aspirations and life styles of the non-college bound and disadvantaged. Their work as support personnel also allows the trained counselor to utilize his time for professional duties, rather than multitudinous, mundane tasks that might be performed better by less skilled personnel.

It is interesting to note that in many of these new programs, counseling is being stressed. Less emphasis

and/or reliance on psychological testing is evident. There is ample recognition of the importance of psychological testing as a tool but not as a cure-all. The new emphasis appears to be on understanding motivation and potential and less on IQ and present ability. The life style of the individual and potential for growth and development appear to be more important in the new thrusts of both teacher and counselor.

The increased interdisciplinary efforts in problem-solving have led to a growth of new emerging hyphenated occupations with accelerated career opportunities. Examples are bio-medical technicians, mathematical biologists, physical chemists and many others.

16. Increasing Occupational Information

Under the provisions of the Vocational Education Act of 1963 and its 1968 Amendments, greater stress has been placed on the development of occupational information and counseling at the elementary and high school levels. More courses in occupational information are now being offered in the junior and senior high schools of the U.S. A new McGraw-Hill publication, *Occupations and Careers,* emphasizes the wide variety of career possibilities for the disadvantaged as well as the non-college bound. Efforts are now made to promote attitude changes and allow school youth to view their choice of career as a developmental process.

Many new techniques have been initiated during the past few years that "tell it like it is." They bring meaning to the world of work to thousands of youth who are not interested in or motivated toward further schooling, training or college. Dr. Robert Hoppock of New York University has developed a group technique, for example, that can be used easily at the high school and college levels. Members of a group or class list all part-time or full-time jobs they held during the last five years. The group then selects those jobs held by members of the group that are most interesting to them. Then there is further discussion led by a group leader as to the individual's role and duties on this specific job, qualifications needed for entry, including other facets necessary to study an occupation in depth. When this technique is used with parents and children, youth often gain for the first time a realistic picture of what their parents do on the job. Far too often children lack the necessary knowledge of their parents' work experience. Each parent then can be instrumental as a resource for important educational and occupational information.

17. Home Study Schools

A survey by the speaker has shown that many school and college libraries contain college and university catalogues. They carry high priority. Next in importance are trade, technical, and business school bulletins. At the end of the list are catalogues of accredited home study schools. Too often they are completely absent.

One of the areas of continuing education which, in all probability, will be utilized to a far greater extent in the decades ahead, is that of education via home study courses. The 120+ accredited schools of the National Home Study Council located in Washington, D.C. have an impressive array of pertinent courses that can be extremely helpful and beneficial in career growth and development of high school and college students. Over three million youth and adults now are enrolled in home study schools. Many of these courses carry important educational and vocational implications including job and career advancement. Here are a few of the subjects offered by accredited home study schools that counselors should know about in greater depth to enable better professional service for their clients: accounting, air-conditioning, aircraft drafting, baking, biology, brokerage, real estate, hotel management, insurance, management, small business, motel operation, motor fleet operation, organ repair, personnel management administration, photography, pipe fitting, refrigeration, shorthand, technical writing, typing, wildlife management, and woodworking. Despite this array of available courses, the acceptance of home study schools in the United States does not compare with their use in various other countries, including developing ones. With visible strains taking place in many colleges today, home study courses and independent study may become necessary in order to fill a great gap that exists for many students who find it difficult

to continue their education through regular channels. Home study courses probably will play an even greater role than they presently do in the future development of meaningful hobbies and leisure learning activities. It has been predicted that the work week for millions of people will be shortened considerably in the years to come.

18. New Careers for Non-College Bound Women

The occupational status of women is changing. More and more women are slowly emerging toward full equality as individuals. Society now more readily recognizes and accepts the need to maximize the utilization of the skills of all its members, particularly women. Although there still remain ambiguities as to the role of women, they now are seeking successfully and participating in careers that were virtually impossible to enter a decade or two ago. This also has meant women entering certain trades and types of work that were formerly considered restricted to the male sex. This will be particularly helpful to many girls who find satisfaction in non-college bound activities. We can well use more female automobile mechanic technicians and a host of other jobs that still appear to be reserved for males. Perhaps it takes time for many of us who counsel to recognize that brains do not have sex.

Conclusion

It seems to me that with the Vocational Education Act of 1963 and the 1968 Amendments, greater opportunities exist for assisting young people who hear a different drummer and who can make a variety of worthwhile contributions in the world of work. In order to plan for and guide the individual, one should know the community. Counselors should familiarize themselves with various public agencies that can be of help, such as the U.S. Employment Service. They need to be acquainted with what is available from all government agencies that will assist in counseling and selectively placing individuals. More information is needed about local labor unions and avenues into any one specific labor union. More information should be available about the offerings of institutions, both high school and post-high school. This should include correspondence schools, trade schools, technical schools, and business schools. Counselors need information in depth about these schools as they have about colleges. A working knowledge of local business and industry with the help of the Chamber of Commerce, Better Business Bureau, and so forth, is necessary. Each Chamber usually has an active education committee. Using Career Conferences and introducing young people to the blue-collar world of work can prove beneficial. Involvement by parents and other community adults as role models and sources of information on careers, such as BBVS adult career advisors, can be initiated.

There are, of course, many other community resources that may and should be exploited such as Red Feather Agencies, private foundations and so forth. It seems to me that what we are discussing is a wider and more effective use of community resources and dissemination of needed information. The job that counselors, vocational educators and other related professionals do today will affect millions of youngsters in their search for a niche in the world of work. We must meet their needs more creatively and successfully than ever before in the past. Nearly one-quarter of the entire number of secondary school education graduates are vocational high school graduates. Of the percentage who enter high school and do not graduate, even greater concern by counselors for individual differences might make high school relevant enough for more students to complete their education. We have a job to do. We can view these new ways to meet, in depth, the needs of the vast majority of high school youth as an exciting and most worthwhile challenge.

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Rowe, Harold, And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 6-7, 1969).

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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969); AMERICAN VOCATIONAL ASSOCIATION HEALTH OCCUPATIONS EDUCATION DIVISION; INDIVIDUALLY PRESCRIBED INSTRUCTION

Three papers presented at the meeting of the Health Occupations Education Division are included in this group. "Report on the Center's Study of Problems of Health Occupations Education," by Harold Rowe described: (1) the national poll undertaken by the Center for Vocational and Technical Education, Ohio State University, to identify problems in the area of education for the health occupations as perceived by state departments of vocational education and voluntary organizations, and (2) the subsequent 2-day invitational seminar which considered the problems identified and made recommendations for their solutions. "Short-Term Teacher Education Programs for Health Occupations Instructional Personnel in Oregon," by Joan E. Stoddard discusses short-term teacher education programs planned for secondary school personnel, community college personnel, and all personnel involved in health occupations education. "Curriculum Crisis--Occupational Readiness, What Can Be Done to Meet the Need," by Edward Hochhauser discusses the need for individualized instruction, the values of audio-visual aids, the importance of breaking down barriers between subject areas and building integrated curriculums, the importance of occupational readiness courses at the elementary and secondary levels, and the necessity of continuing communication among all concerned with occupational education. (JK)

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Speeches Presented At The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

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Health Occupations Section, NRSD

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Short-Term Teacher Education Programs for Health Occupations Instructional Personnel in Oregon[1]

Joan E. Stoddard

Specialist, Health Occupations

Oregon Board of Education

It is the purpose of this paper to discuss short-term teacher education programs for health occupations personnel. The focus of the presentation will be in relation to (1) secondary school personnel, (2) community college personnel, and (3) all health occupations personnel.

If I may first share with you some background information which will be a combination of vocational health occupations program development activities and beliefs about personnel development, I think this will assist in understanding the direction we are moving in teacher education.

As with the development of health occupations in many states, the program administratively was based in the trade and industrial education section of the Oregon Board of Education. The major program activity was in the area of practical nurse education until the Vocational Education Act of 1963. At that time, state and local vocational education personnel began to look toward the development of other health occupations programs. In 1965 when I joined the

[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

staff of the Oregon Board of Education, there were 15 preparatory programs at the post-secondary level, 2 secondary programs, and 3 adult supplementary courses. The number of teachers in these programs numbered approximately 40. Today, vocationally approved programs number 13 secondary, 33 post-secondary, and 15 adult (Appendix A). The teacher statistics for this year are not yet complete, however, the total number is expected to exceed 150. Health occupations is also recognized as a major program area administratively and organizationally by State and local education agencies. To what factors is this growth attributed? Well, first and vitally important, there has been a partnership in the development of these programs between the educational and health communities. The partnership, I believe, is essential but must go beyond that of commitment and support for program development. On the part of all individuals and groups involved there should also be such ingredients as flexibility, creativeness, openness, a willingness to compromise some ideals traditionally held sacred so that positive movement can be made toward a common goal. Herein lies our promise for present and future development of health occupations programs--our human resources.

I look upon the establishment of programs as a developmental process. So it is with personnel development. I believe that while we strive to reach so called ideal standards for personnel which describe specific education and experience requirements, we have the reality of here and now in which to work. I recognize that we must have defined standards for instructional personnel

for a number of reasons, and I support this. However, it is in the interpretation and/or implementation of such standards that I think we oftentimes need to take a second look. Many of us have been placed in the position of telling administrators that in order to start a program the instructional personnel should or shall have certain academic degrees and specific kinds of experience. To me, this is like telling someone that he shall have arrived at a destination before he has begun the journey. Or to use a life example--can you imagine yourself saying to an 8 and one-half month pregnant woman that she must change a number of factors in the physical and social environment before she can deliver her unborn child? Perhaps some environmental factors need changing or adjusting but is this a realistic approach? I do not believe it is. I believe that one works with that mother and baby to achieve those changes deemed desirable or essential for the welfare of both individuals and of society. In other words I am saying that because many of us have had specific education in a health discipline and have dealt directly with the life and death process where there is little or no margin for error in performance or in judgment or decision-making, we use this frame of reference in our present roles. Perhaps many of us have not totally made the transition from that of being a professional health practitioner to that of being a health occupations educator. I believe that those of us having responsibility for implementing personnel or program standards need to take that second look--at ourselves as well as at others in relation to the defined standards.

I was recently questioned as to why we do not have a formalized pre-service teacher education program for health occupations personnel in Oregon. Again, I referred to the developmental process. In human development it is accepted

that one must learn to crawl before one walks. I believe it is the same in health occupations. We must have programs established before we can identify what type of teacher education program is really needed.

Last year the Oregon Board of Education mounted a major effort in the development of curriculum guides for the secondary level, grades 11 and 12. This activity was established as a high priority for fiscal year 1969 in terms of both human and material resources. The curriculum guides were to be developed on the basis of the cluster concept. It is the philosophy of Oregon Board of Education that vocational education at the secondary level be directed toward the preparation of students for entry employment and/or specialized education at the post-secondary level in one of a family or cluster of related occupations. Specific preparation for a single occupation is seen as the function of post-secondary education. The Oregon Board of Education further adopted career education as its number one priority for the 1969-71 biennium. I think from this you can understand how important this project was visualized.

As early as 1965 a tentative cluster guide for health occupations at the secondary level had been developed. However, because of local budget defeats and lack of manpower data the suggested curriculum was slow to be implemented. Last year with the assistance of a State-level advisory committee and current manpower data in hand, the old guide was completely revised. Recognizing that local educational agencies would need assistance in implementing the recommended curriculum, a two-week secondary health occupations curriculum workshop was planned for June 1969. The workshop was directed toward supervisory and instructional

personnel. Eight major objectives were defined for the workshop. On completion of the workshop, the participants will be better prepared to:

1. Accelerate health occupations curriculum development activities
2. Identify instructional elements in the health occupations cluster
3. Group elements into meaningful sequence, utilizing cluster concept
4. Develop and state group elements in behavioral objectives
5. Select appropriate learning opportunities (experiences) necessary for achievement of objectives
6. Identify appropriate instructional methods, materials, and resources
7. Identify legal factors to be considered in health occupations curriculum development and implementation
8. Identify and develop evaluation devices related to the objectives

The focus of the workshop was application in the participant's own work setting. The workshop design utilized large group presentations and small task groups. Due to the lateness of the decision to conduct the workshop, limited publicity, and prior commitments of possible participants, we had only seven participants enrolled. However, this was a desirable number for the type of workshop. We had a cross-section of instructional and supervisory personnel, in-state and out-of-state. While we considered the workshop to be successful based on student and instructor evaluations in relation to the stated objectives, we learned several important things. Generally, we found that the participants were not familiar with the process of occupational analysis as a basis for curriculum development and were not familiar with the cluster concept. We also noted that there was need to have some basic principles of group dynamics introduced

early in the workshop to facilitate the task group activities. As with many workshops, the schedule was very full and the topic of evaluation was slighted. The strengths we found related to the participant growth in being able to demonstrate understanding of the cluster curriculum and its implementation at the local level. More specifically, the participants demonstrated considerable growth in the use of behavioral objectives, selection and correlation of student learning opportunities, and in identifying appropriate contractual arrangements for the various types of student experience extending beyond the classroom.

Another secondary health occupations curriculum workshop is being planned for summer 1970 in cooperation with Oregon State University. Tentative plans are being developed for a two-week broad-based cluster curriculum workshop for administrative, supervisory, instructional, and guidance personnel. The anticipated enrollment for the interdisciplinary workshop is 200 participants. The common content relating to all cluster curriculums will be presented in large group sessions. Such content may include cluster definition, job analysis process, instructional analysis, community resources, and evaluation. Small task groups will be established for each cluster curriculum or special interest area. The small groups will work on specific tasks related to planning and implementing a cluster curriculum at the local level. Following the two-week cluster curriculum workshop we will be in session for an additional week and to continue work on the health occupations cluster curriculum. In this workshop there will be even greater flexibility for individual participation. Individuals may elect a two-week, three-week, or one-week workshop option. The one-week workshop may be subject to approval by the instructor to be assured

the individual can demonstrate understanding of the cluster curriculum concept. Individuals may receive up to five hours, tentatively established, of undergraduate or graduate credit for the three-week workshop. Enrollment on a reading and conference basis may be permitted for selected workshop options. The workshops will be open to both in-state and out-of-state participants. Now I would like to discuss some of the in-service education activities directed toward post-secondary health occupations personnel.

As you might anticipate, nursing programs and personnel outnumber all others. In 1966 we were involved in cooperative efforts with the Oregon State Board of Nursing for the planning, development, and implementation of a curriculum workshop series for practical nursing instructors. The project was conducted under a training grant awarded by the United States Public Health Service. The project consisted of four one-week workshops in 1967. The grant provided monies for instructional personnel and resources and stipends for the participants. Approximately 40 instructors were enrolled. The major focus of the project was the total curriculum process. As a result, most practical nursing curriculums have been revised in keeping with current educational practices.

Oregon's first Associate Degree Nursing Program was instituted in January 1967 at Portland Community College. As many of you know, the first one always seems to be the most difficult. The program director engaged in the usual activities during 1966, the planning year, and did an exceptional job. To further the dialogue between the educational and health communities relative to the purpose and philosophy of the Associate Degree Nursing program,

we sponsored a three-day workshop in April 1967 in cooperation with the Division of Continuing Education of the Oregon State System of Higher Education. The registration at the workshop was approximately 150. Dr. Mildred Montag, from Columbia University, was the key instructor for the three-day session. The entire workshop proceedings were taped and have since been utilized for local faculty in-service education and community education programs. Now I would like to share with you some information about activities which are directed toward all health occupations personnel as well as toward the involvement of other individuals and groups in health occupations programming.

In the spring of 1966 a two-day Health Occupations Conference was held at Salem Technical-Vocational Community College. The purpose of the conference was to explore areas for future program development. Attendance at the conference was approximately 60. An annual conference was proposed but due to higher program priorities, conferences were not held in 1967 or 1968.

Well, one might say the 1969 Spring Health Occupations Conference made a successful comeback. The two-day conference was held on the campus of Lane Community College in Eugene and attendance numbered approximately 130. Invitations were sent to all health occupations instructors, state health agencies and organizations, state and local advisory committees, clinical agencies, selected personnel from secondary schools and community colleges, the State System of Higher Education, the State Department of Employment, as well as others. A good cross-section of interests was represented among the participants and interesting dialogue was established.

The conference program was designed to be primarily informational and the speakers represented the educational, health, and political communities. To illustrate, the Governor's administrative assistant discussed the Governor's 70's Plan as related to health; the director of Comprehensive Health Planning discussed the activities of that program; the director of the Oregon Health Manpower Intelligence Facility described current activities and projects; the research director from the Bess Kaiser Hospital discussed health economics; the chairman of the Ways and Means Committee discussed the Oregon Legislature's priorities in relation to funding health programs. This was not the extent of speakers for the conference, but I believe you can recognize from the topics some of the issues which came to the foreground. Believe me, we had some healthy dialogue established among speakers and between individual speakers and the participants.

We are planning for the next Spring Health Occupations Conference to be held at Mt. Hood Community College in Gresham. Due to the inquiries I have already received regarding the next conference, I think we will need to plan for a registration of 300. While the program is tentative at this point in time, I am hopeful that the program design can move to the problem-solving and/or small task group approach. I think in our stage of personnel development in Oregon we are now at the point where active involvement and participation on the part of each individual as a health occupations educator is essential.

In conclusion, I would like to identify four, of many important considerations in personnel development, inherent to some degree in all of our short-term teacher education activities. First, that personnel need to understar the role of a health occupations educator. Second, that personnel need to recognize the importance of being able to function as an effective member of an interdisciplinary educational team. Third, that individuals well-qualified by education and experience are not assumed to understand the philosophy and objectives of programs or of educational agencies. Fourth, that continuing education is a lifelong process.

Well, in the developmental process we have now learned to crawl and to walk. With the short-term teacher education activities I have described and other program development activities in process, I think that we, in health occupations education in Oregon, are about to run.

Appendix A

HEALTH OCCUPATIONS EDUCATION PROGRAMS
IN
OREGON COMMUNITY COLLEGES
1969-70

	BLUE MOUNTAIN	CENTRAL OREGON	CLACKAMAS	CLATSOP	LANE	LINN-BENTON	MT. HOOD	PORTLAND	SALEM	SOUTHWESTERN	TREASURE VALLEY	UMPQUA
DENTAL ASSISTANT	X				X			X	X			
DENTAL HYGIENIST					X							
DENTAL TECHNICIAN								X				
INHALATION THERAPY TECH.					X		X				X	
LABORATORY ASSISTANT								X				
MEDICAL ASSISTANT					X				X			
MEDICAL RECORDS TECH.								X				
PRACTICAL NURSING	X	X	X		X		X	X	X	X	X	X
PHYSICAL THERAPY ASSISTANT							X					
OCCUPATIONAL THERAPY ASST.							X					
TECHNICAL NURSING					X			X	X			
ENVIRONMENTAL HEALTH (WATER SANITATION TECHNOLOGY)		X										
FUNERAL SERVICE EDUCATION							X					
NURSING ASSISTANT		X				X						
X-RAY TECHNOLOGY								X				

JS:bjc
11-25-69
150cps

HEALTH OCCUPATIONS EDUCATIONS

1969-70

*Adult Supplementary Courses

Pharmacology

Microbiology

Nursing Team Leadership

Ward Management

Anatomy and Physiology

Dental Anatomy

Dental Prosthetics

Dental X-Ray

Emergency Medical Care and Rescue

*Listing is not complete

11/25/69
JES:bjc
150 cps

COMMUNITY COLLEGES

CLACKAMAS COMMUNITY COLLEGE
270 Warner - Milne Rd
Oregon City, Oregon 97045

CLATSOP COMMUNITY COLLEGE
16th and Jerome
Astoria Oregon 97103

SOUTHWESTERN OREGON COMM. COLL.
Coos Bay
Oregon 97420

CENTRAL OREGON COMM. COLLEGE
College Way
Bend, Oregon 97701

UMPQUA COMMUNITY COLLEGE
P. O. Box 967
Roseburg, Oregon 97470

MT. HOOD COMMUNITY COLLEGE
26000 SE Stark
Gresham, Oregon 97030

BLUE MOUNTAIN COMMUNITY COLLEGE
2410 N Carden Avenue
Pendleton, Oregon 97801

LANE COMMUNITY COLLEGE
4000 E. 30th Avenue
Eugene, Oregon 97405

LINN-BENTON COMMUNITY COLLEGE
203 W. First Avenue
Albany, Oregon 97321

TREASURE VALLEY COMM. COLLEGE
650 College Blvd.
Ontario, Oregon 97914

SALEM TECH-VOC COMMUNITY COLL.
4389 Satter Drive NE
Salem, Oregon 97303

PORTLAND COMMUNITY COLLEGE
12000 SW 49th Avenue
Portland, Oregon 97219

JS:bjc
11-25-89
150

HEALTH OCCUPATIONS EDUCATION PROGRAMS
1969-70

Secondary Schools

Grants Pass High School 522 NE Olive Grants Pass, Oregon 97526	Health Occupations Cluster
Lebanon Union High School S. 5th St. Lebanon, Oregon 97355	Health Occupations Cluster
John Adams High School 5700 N.E. 39th Avenue Portland, Oregon 97211	Health Occupations Exploratory Experience Nurse Aide - Orderly Skills Program
Franklin High School 5405 SE Woodward Portland, Oregon 97206	Medical - Clerical Para-Medical Hospital Worker
Grant High School 2245 NE 36th Portland, Oregon 97212	Medical - Clerical
James Monroe High School 2508 NE Everett Portland, Oregon 97232	Para - Medical Hospital Worker
Jefferson High School 5210 North Kerby Portland, Oregon 97217	Medical Assistant Dental Assistant
Washington High School 531 SE 14th Portland, Oregon 97214	Medical - Clerical

Vocational Village 725 SE Powell Portland, Oregon 97202	Para-Medical Convalescent Care
Winston Churchill High School 1850 Bailey Hill Rd. Eugene, Oregon 97401	Health Careers

11-25-69
JES:bjc
150cps

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CURRICULUM CRISIS --
Occupational Readiness,
What Can Be Done To Meet The Need

Take a look at any group of youngsters entering school for the first time.

Can you tell which ones will graduate from high school and which ones will go on to college?

Of course you can't. Neither can the most eminent panel of medical doctors, psychologists and psychiatrists. Aside from obvious limiting mental and physical health impairments, no one can predict academic success. More often than not, by the time it becomes evident that a youngster is not making it with his studies, it's too late to do much about it.

The shocking facts are that

- 1 out of 3 of today's fifth graders will not graduate from high school.

- 25% of the boys and girls enrolled in high

school this past September will have dropped out before June arrives.

- 1,000,000 members of the high school graduating class of 1969 will enter the labor market without a marketable skill of any kind.

What's wrong? How have we let down these young men and women?

I believe we have academically failed them on three prime curriculum fronts.

First, we have failed to recognize individual differences. What turns one child on may leave another cold. A concept which may come easily to some students is difficult for others to master.

There is a growing conviction among progressive educators that we should abandon the dictum that all students must follow identical scholastic paths. These administrators contend that it makes

far greater sense to build enough flexibility into the curriculum so that it can satisfy the needs and intellectual capabilities of individual students rather than perpetuate a curriculum which forces all students to fit into a rigid scholastic mold.

Individually Prescribed Instruction programs have begun to apply this principle with great success. For example, Project Oak Leaf Schools in the greater Pittsburgh area utilize communi cations skills as a common learning denominator. While mathematics, science, social studies and the other usual elementary school disciplines are incorporated into each student's course of study, his program is personally tailored to take advantage of developed interests and demonstrated learning capacity.

Carrying this concept a bit further, I would suggest that serious consideration be given to homoginizing the curriculum from the earliest grades through high school -- of getting away from the compartmentalized teaching of the various disciplines in the formal fragmental pattern which

has characterized the educational process in our schools for more than 200 years.

> It makes little sense to me that subjects such as language arts, the sciences, mathematics, music and history are taught in isolation from one another, each in their own rigid time periods, when in reality they are all related to one another.

Herbert Kohl in a recent article in Grade Teacher magazine put it this way. "Thinking and creating in science, the arts, mathematics, are not that different. Scientist and artist alike try to understand aspects of reality, to conceive of important problems posed by life or the world and then to bring all their human facilities (intuitive as well as rational) to bear upon producing a solution or creating an explanation or embodying a thought or a feeling. They may focus their attention upon different aspects of reality but their ways of thinking are not radically different. There are mathematicians whose thoughts are essentially poetic and poets whose works are mathematical. There are degrees of intuition, rationality, caution, grandness or

meticulousness in all creative thinkers. The more schools separate areas of thought, the more they encourage young people not to think in any of them."

Breaking down the barriers between subject areas and building a curriculum with cohesive, related units of study is not as difficult as it may sound. What it does require is a rethinking and a restructuring of the learning process to avoid the fragmentation of knowledge and to encourage meaningful, related discovery across the broad spectrum of all subjects taught in grades K through 12.

Unfortunately, instructional methodology in most schools has failed to keep pace with the times. This is a second area where I believe we are shortchanging our students.

> Even the most articulate teacher and her chalkboard are Dullsville for most boys and girls whose non-school lives are led in the impressionistic worlds of TV, movies, Go-Go music, flashing lights, computers and space age journeys.

The learning process need not be old hat, indeed it can and should take advantage of audiovisuals and other modern communications mediums.

Pictured and auditorily reinforced information can produce an altogether understandable learning experience which is difficult to duplicate in any other fashion. In no other way can we so simply and so surely be transported through time and space -- to view and comprehend the who's, what's, where's and how's of events from the pages of history -- to travel to other lands or down the block and vicariously experience a slice of life the way others live it -- to via slow motion, speed action and radiographic phctography, animation and microphotography, examine the wonders of the world around us -- to look inside animate and inanimate objects to find out what makes them tick -- to broadly and dramatically share the knowledge and skills of experts in their field -- to give every student a better than front row seat in witnessing and having interaction with master teachers. Most importantly, in the applications I've cited -- and there are, of course, many others -- it is quite

simple to conveniently repeat audiovisual experiences either in whole or in part.

We've seen evidence of the potency of the audiovisual medium in Project Discovery, and in continuing projects modeled after it in which libraries of films, filmstrips and automatic threading projectors have been made as readily available to classroom teachers and students alike as books in a well-stacked library.

Lest you consider me overly enthusiastic about audiovisuals, let me hasten to point out that, in my opinion, the medium has many areas where improvements can and should be made.

There is, for example, a crying need for more effective cataloging of audiovisual materials, cross referenced to other media so that teachers and others concerned with the learning process can use the medium to optimum advantage.

I believe there should be greater involvement both

at the curriculum planning and grassroots teaching levels between hardware and software manufacturers so that end products are both more usable and better utilized in a wider variety of instructional situations.

There are a number of areas where it would appear that improvements could be engineered to enhance the value of the medium itself.

With three dimensional images and more life-like sound, exciting new elements of realism, believ-ability and understanding could be provided which are missing in present flat pictures and sound.

The ability to employ the manipulative teaching facilities of the overhead projector in motion picture projection for reinforcement and review purposes, would also be highly desirable.

The push button facility to project audiovisuals at ideal teaching moments would, I believe, stimulate both wider and better use of the medium.

Certainly, in this era, when serious thought is being given to colonizing the moon and Mars, such technological improvements are not beyond our grasp.

But, let's look at what can be accomplished in harnessing another remarkable learning aid -- the computer. For the purposes of our discussions, I would like to take the liberty of lumping all forms of computer-assisted instruction into the teaching machine category.

I do this not only because of limitations of time, but the principle upon which they all operate is similar -- all are, in essence, teaching machines of varying levels of sophistication designed to provide individual, self-paced, reinforced instruction.

Experiences with teaching machine devices have ranged from substantial success to dismal failure. In attempting to separate the successes from the failures, two factors have emerged as most significant.

Programming a teaching machine to achieve a desired result is an exacting science involving subject matter and media specialists, behavioral psychologists and test subjects. Thanks to the analysis capabilities of the computer itself, the process from inception and design through the finished, tested program can be somewhat shortened. However, the evolution of good teaching machine programs is a slow, painstaking process. By and large those programs which have been the most successful have been those which have incorporated the greatest variety of media, with interaction at structured steps with qualified teaching personnel.

A second factor which has curtailed the success of teaching machines has been the opposition and fear of teaching personnel that the device was being installed to replace them and would lessen their job opportunities. Involvement, then, of teaching personnel from the purchasing decision through the utilization stage of teaching machine type hardware would appear to be critical to its success.

Computer-assisted/teaching machine instruction is about at the same stage today as were language laboratories when they were first introduced. Although the equipment itself performed well, there was a scarcity of tapes to utilize, and many teachers were afraid of the threat of the electronic monster.

Today, language laboratories and such devices as Bell and Howell's Language Master, which have been designed as an extension of the language laboratory concept, are in wide use not only in teaching foreign languages, but in a wide vareity of skill development, speech correction and language arts areas.

Another modern instructional tool which I would call to your attention, is facsimile. With the use of facsimile and microfilm equipment, it is now possible to store in a small space and have rapid access to every page in every book in a library which is hundreds, even thousands of miles away. Making the system a bit more sophisticated, via TV dial access

you can project any page on a viewer, examine it and have a printed black and white copy delivered into your hands with push button simplicity.

While I believe that the wide-spread utilization of modern instructional mediums, the homoginizing of the curriculum and the broad-based adoption of the principles of Individually Prescribed Instruction can go a long way towards improving the quality of education in our schools and reduce the incidence of voluntary dropouts, there is a third problem area with which we must come to grips --

Unless we structure required occupational readiness courses into our elementary and secondary curriculum, millions of students will continue to terminate their formal education without acquiring the most rudimental skills necessary to earn a living.

You'll note that I have used the term

"occupational readiness" to indicate a broader range of practical job training courses than are normally considered vocational and technical education subjects. I refer to such subjects as shorthand, typing, bookkeeping, salesmanship, computer programming, data processing, and those concerned with the acquisition of such other technical and professional skills which are now being taught in many of our junior colleges.

If the basic purpose of our educational system is to equip students to become useful, productive citizens, I would also suggest to you the urgent need for continuing dialogues among ourselves:

- those of us who are professional educators charged with the responsibility for more effective instructional systems, techniques and methodology.

- those of us who are the school board members, architects and designers of our schools.

- organizations, like Bell and Howell, which are developers of equipment and materials designed to achieve educational objectives

AND,

- business and industry, the end users of the products of education, the graduates and non-graduates of our schools.

Only through such a dynamic uninhibited interchange of ideas and information do I believe we can most effectively blend our respective fortes to provide the kind of schools we seek today and must have tomorrow.

Edward Hochhauser, Jr.
Market Development Manager
Bell & Howell Company

Report on the Center's Study of Problems of Health Occupations Education [1]

According to the program sent to me in advance of this meeting, I am supposed to report on research findings of the problems of Health Occupations Education. My first reaction was: Was the inquiry into problems of Health Occupations Education, conducted last Spring by the Center for Vocational and Technical Education at Ohio State University, truly research? Was it truly a scientific inquiry? When we think of research in education we are apt to think of projects such as, which of two teaching methods is more effective or how new media can be used to improve education. Is it really research, that is, scientific research, when people speak out on what is wrong with the present state of Health Occupations Education and make recommendations as to what should be done about it?

My question caused me to think back to a one-time teacher of mine whose name was Dr. William Gruen and who was among other things a scientist, a philosopher and an authority on scientific inquiry. In one of his writings on the nature of scientific inquiry Dr. Gruen says:

"Scientific inquiry is not a technique which is limited to special provinces of knowledge, but one which can be used to approach any situation in which we are asked to make dependable judgements." But, he adds, if we are going to make dependable judgements in a scientific manner, they must be based upon supporting evidence that is observable to all persons. If we have sufficient, observable evidence, he says, then there will be a consensus of opinion in direction of the judgement.

Thus, according to Dr. Gruen, speaking out on the problems of Health Occupations Education and what should be done about them could be scientific inquiry - could be research. One criterion of its being scientific is the extent to which there was consensus about the problems and their solutions.

Whether or not our "findings" were research findings, we certainly did find out that there were a great many problems which were at least said to be facing Health Occupations Education and that they were very special problems. I certainly won't attempt here to enumerate all of the problems which were cited. Rather, I will try to explain why the Center at Ohio State was motivated to explore the problems, give an analysis of some of the problems and some of the recommendations for overcoming them.

First then, what motivated the Center's inquiry into problems facing Health Occupations Education? One motivation was a basic objective of the Center which is applicable to all types of vocational-technical education; namely, to take a good hard look at the direction of vocational-technical education and ask where is it going and where ought it to go. Stated in more formal terms, the objective reads:

"Reappraisal of the role and function of vocational and technical education in our democratic society."

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[1] Presented by Harold Rowe ath the 63rd Annual Vocational Convention of the American Vocational Association at Boston, Massachusetts on December 6, 1969.

The second motivating factor was not applicable to all types of vocational-technical education. Quite the contrary; it was the recognition of the unique nature of the problems of Health Occupations Education. To an extent, but only to a limited extent, can the Health Occupations Educator look to other types of vocational-technical education for problem solutions because in some ways his problems are unique. In the case of Health Occupations programs, government - especially state government, is apt to impose rules and restrictions as to what students may be taught and what the student may do after he finishes the program. Moreover, organizations other than trade unions seek to impose restrictions or exert pressures that affect Health Occupations Education. Who ever heard of a National League for better Automechanics?

The role of Health Occupations Education in our society is a concern of high priority because in our social value-system, health is of high priority, particularly the care of the sick. What should and should not be done to and for the ill and injured has in our society both moral and emotional overtones. We become annoyed when a plumber bungles his job, but we become morally outraged when a health worker bungles his. The moral and emotional overtones were often evident when the Center tried to survey the problems of Health Occupations Education.

So much for what motivated the Center to undertake the project. The next question is, how did we go about it? We did so in two steps. The first step consisted of a national poll of Health Occupations Education problems as they were perceived by Vocational Education Departments in each state and by a number of voluntary organizations which have expressed concerns about the training of health workers. The poll was conducted by means of an open-ended questionnaire.

The second step was a two-day seminar held at the Center the middle of last May. It was an invitational seminar to which seventeen outstanding leaders in areas of health and health education were invited. The leaders were chosen to represent wide variations as to where they came from geographically, the type and level of educational system or organizations in which they were involved, their background and position and as to the kind of leadership they exerted. It was the task of the seminar group to consider, and if necessary, add to the problems spelled out in the national poll and to come up with recommendations for solving the problems.

The results of both of these steps, both the national poll and the seminar, gave evidence of the unique and special nature of Health Occupations Education and its problems. Value judgements and social concerns were reflected not only in the recommendations, but also in how the problems were perceived.

The national poll resulted in approximately one hundred problems which were categorized under six general headings and, yet with few exceptions, nearly all of the problems could have been categorized as pertaining to some aspect of social or moral concern about the provision of health services. Moreover, what was perceived as a problem by one respondent was an implied solution to the problem as perceived by another. For instance, one of the six major category headings, the one with the greatest number of problem statements, was that of effective planning for Health Occupations Education. Some respondents saw the pressures exerted by professional organizations as a hampering influence upon effective planning while others felt that these same organizations were not involved sufficiently and early enough in the planning process.

The general problem area of second highest frequency dealt with the adjustment of Health Occupations Education within the established educational system. Almost any of the problems cited here bear witness to the unique features of Health Occupations programs as compared with other types of vocational-technical programs. One of the problems cited here illustrates a conflict of one social value of high priority; namely, health, with that of another high-priority value; namely, assisting the disadvantaged. This problem statement reads:

"If twenty-five percent of the funds must be allocated to Health Occupations Education of the disadvantaged, how can we do this and still maintain entrance requirements needed to insure safe and proper care?"

The third highest frequency problem area dealt directly with relationships between Health Occupations programs or Health Occupations educators and governmental and professional regulating bodies. According to some of the respondents, the mechanisms set up by these regulating bodies to promote optimum health services were themselves deterrents to the provision of needed health services.

It was then, the results of the first step, the national poll of problems, that served as a stimulus for reaction of the seminar participants in the second step.

If the seminar resulted in nothing else, it implemented the Center's objective of the "reappraisal of the role and function of Health Occupations Education in our society." There was a long, hard and critical look taken at the direction of Health Occupations Education at the present time. In fact, some of the participants saw the need for the reappraisal as the big problem. Other participants were critical of the amount of time spent on what they termed a "global scale," broad, reappraisal of the role and function of Health Occupations Education. Said one such critic, "Now, do you want us to solve the Viet Nam situation as well?"

The value judgements and social concerns which contribute to the unique nature of Health Occupations Education were even more apparent in the seminar than in the national question poll. The most pronounced reactions evoked in the seminar, reactions which revealed deep convictions and committments, dealt with the frame of reference from which all problems in health occupations should be approached. Some seminar participants were deeply convinced that getting at the basic reasons for the existence of the problems was a much more urgent matter than coming up with solutions to what the respondents to the national poll conceived to be "problems." One seminar participant said that most or all of the problem statements listed in the poll had been known and stated for years, had been repeatedly discussed and rehashed, but had never resulted in solutions that were anything more than "cliches." The reason for the dilemma was that of an atomistic, fragmentary and stop-gap approach to problem solution. From time to time throughout the seminar, discussions of specific problems reverted back to a discussion of how to approach the problems. I would like to share with you verbatim quotes of some of these points of view of the participants because they bear upon some of the social concerns, the deep convictions and value judgements about problems of Health Occupations Education and their solution, convictions and concerns which I believe illustrate the uniqueness of Health Occupations problems. The quotations illustrate also, the difficulty in reaching that communal consensus which, according to the philosopher of science, is so important in arriving at dependable judgements.

Said one participant:

"To solve any of the problems, we must look at the entire health services delivery system from the frame of reference of the needs of all those for whom the services are supplied."

Said another:

"To solve the problems we must plan both Health Occupations Education and health services as parts of the same system; presently we don't have any system, we plan in pieces."

Said another:

"The first step in problem solution is developing a rationale for the establishment of a systems analysis approach to health care services. The questions are: What needs to be done? Who should do it? Then and only then, how should we prepare them?" (~~Changing the Health Occupation students~~)

Said another:

"Before we educate one more health worker, we must say what needs to be done about the miserable waste of brains and resources in health services. With the present system, there is not a single Health Occupations curriculum which accomplishes the task of teaching to meet patients' needs."

And another:

"We can't solve any of the problems effectively without first arriving at a general statement of philosophy. Without it we cannot develop criteria to measure the problems and their solution."

A different perspective was suggested by another participant who said:

"So many people merely say 'something is wrong' with the health services and Health Occupations Education systems, but they don't suggest any workable solutions or suggestions for a better way of doing things. If this is the best that we can do now, lets find a way to communicate and work toward goals we can agree on. The answer is a mutually acceptable approach".

Still another and somewhat pessimistic view of the global approach to problem solution came from one participant who said:

"Recommendations from this seminar must pertain to what you educators are going to do in the area of education. If you decide that the fifty billion-dollar a year health industry should be reorganized, you are living in a dream world."

Well, recommendations were forthcoming and most of the recommendations did indeed pertain to educators and the area of education. Generally, the recommendations implied that before we take that long, hard look at Health Occupations Education and reach those dependable judgements, we need more supporting evidence and that the evidence should be made observable to all for reactions and consensus.

A number of recommendations were to the effect that we pay more attention as to what ought to be taught. We need to be much more certain of the skills and knowledge which are needed for training various types and levels of health workers than we presently are. Some of the specific recommendations were:

That we push job analysis techniques in a variety of health education centers throughout the nation.

That we examine and evaluate the existing health education curriculums in terms of their relevance to job performance and identify the commonalities among them.

That we look critically at the educational, registration and certification requirements of health occupations and determine to what degree are they necessary and to what degree do they achieve a better quality of health care. Here also was a recommendation for a critical look at present guidelines for student - instructor and student - patient ratios.

That we determine by research how much clinical experience is needed in various types of health occupations programs and to what degree of clinical experience can be supplemented by simulated laboratory experiences.

That we assess and give more consideration to the potential contributions of secondary schools in training for health occupations and to articulations of secondary school programs with other levels of Health Occupations Education.

Many of the recommendations were for ways of sharing the evidence which would be obtained. Repeatedly, the seminar participants cited exemplary solutions that already existed for some of the problems stated in the national problem poll, which evidently the respondents were unaware of. Most of these recommendations were aimed at the Center. For instance:

That the Center become a clearing house for ongoing health occupation projects.

That the Center disseminate a series of criques and evaluation of Health Occupations Education projects and curricula.

That the Center develop an effective communication system among health occupations educators.

Other recommendations dealt with developing programs and systems for recruitment of students into Health Occupations Educational programs and for preparing leaders in Health Occupations Education.

At best, the Center's inquiry into problems facing Health Occupations Education was a one-shot deal. I feel certain that Donald Harbet's report will be a much better example of a scientific inquiry. The AAJC's approach has been more systematic and more prolonged. However, the Center's venture into the field at least gave evidence to the fact that the problems facing Health Occupations Education are very special problems and that they are special primarily because in our society health itself is something special.

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Two addresses given at the 63rd Annual Vocational Convention Post Secondary Education Division of the American Vocational Association are in this report. They are: (1) "Curriculum--Salvage, Redirection, or Custody?" by L.W. Yoho, and (2) "The Vocational-Technical Education Curriculum in The Two-Year College: Salvage, Redirection, or Custody?" by G. Pass. (GR)

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CURRICULUM - SALVAGE, REDIRECTION OR CUSTODY?[1]

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 9, 1969.

AVA CONVENTION
POST SECONDARY DEPARTMENT GENERAL MEETING
Tuesday, December 9, 1969

TOPIC I: Curriculum - Salvage, Redirection or Custody?

PRESENTER: Lewis W. Yoho

SUB-TOPIC: Four Year Technology Curriculums

Further definition of the terms of the theme seems important for reducing variability of interpretations. It would be difficult to conceive of curriculum development that did not involve something of each of the elements of the theme but hopefully deliberate differentiation of the three elements may give better focus to the topic.

"Salvage" related to four-year curriculum development was assumed to refer to usable existing content, knowledge, skills, materials, facilities, and equipment which are already in use for other programs, particularly traditional programs parent to four-year technology curriculums (industrial education and engineering). Redirection was assumed to refer to considerable change or departure from existing programs and practices. "Custody" was assumed to refer to maintenance of the status quo or an uncompromising loyalty to previous commitments, curriculum objectives, and practices.

Curriculums seem to gravitate toward "Custody" status. It has been said that people who know how to do specialized work, do this work whether the system needs it or not! We build curriculums, plan courses, equip laboratories, develop syllabi, and prepare lesson plans: then custodial practices set in.

Curriculum construction courses and methods courses generally advocate synthesizing techniques for curriculum development from combinations of preceding curriculums. Research findings, new practices, and invention hopefully are introduced into the mix of "salvaged" elements to insure evolutionary development. Curriculum development practices synthesized from "salvaged elements" and practices which seek the "body-of-knowledge" universe or inventory readily invoke "custodial" practice and may now be challenged by alternatives more compatable with rapidly changing technology.

"Redirection" and new departure suggest revolutionary approaches and development but does not exclude the "salvage" practice. There is considerable evidence on the contemporary scene that "redirection" is the more appropriate guideline from the theme. Even though the focus is upon four-year technology programs the discussion would be just as appropriate for the parent programs.

An article in the November issue of IAVE Magazine presented the views of four prominent educators and administrators on the topic: "Developing New Curriculums in Technical Education." Recommendations reported by the interviews reveal practices and approaches that are generally advocated in curriculum

texts and courses. Categorizing the recommendations under our session theme seemingly would place them under "Salvage" and "Custody", although much argument could be made for inclusion of "redirection".

The report of the Advisory Council on Vocational Education* listed trends, objectives, and assumptions which seemed to call for "redirection". Among the items pointing toward "redirection" were the following:

> "(1) Greater individualization of instruction. (2) More comprehensive programs in which the disciplines are brought into interaction to maximize reinforcement and to highlight the relatedness of the disciplines. (4) Planning which accepts the fact that not all students learn in the same way, nor will they learn the same things under the same circumstances. (6) Programs which place greater responsibility upon the student for his own education and for making decisions. (9) Teachers are becoming managers of the learning environment rather than purveyors of information. (10) Systems are slowly beginning to reorganize to accommodate the learning process rather than the teaching function. (11) As education, like society, becomes more complex, the team strategy for planning becomes essential."

Two factors which seem to be forcing "redirection" in curriculum planning are the following: (1) changing curriculum theory and changing concepts of the nature of man; and (2) the explosion and continuous extrusion of new technology and knowledge.

Changing Curriculum Theory and Changing Concepts of the Nature of Man. Man has been regarded, unconsciously if not consciously, as an inheritor-type being. Teaching and learning methodologies were designed for such models of men and continue

*Advisory Council on Vocational Education, Vocational Education, The Bridge Between Man and His Work, General Report. Office of Education, U. S. Printing Office, 1968, 220 pp.

as the dominant practice. ("Custody" practice) The inheritor model is typified by the practice of placing the instructor before a class of students with the expectation that the students will accumulate the instructor's knowledge and experience. Extended further, this practice includes identification of the content body and the ordering of the content for coverage by the students.

There is now evidence that man is beginning to be regarded as a creator and that teaching and learning methodologies can be "redirected" to support the creator-type models of men. Typical practice would regard each human being as unique and would view him as an integral part of his selected environment. (industry) Growth and development of the individual are hypothesized to be in direct proportion to the variety and intensity of the individual's interaction with his selected environment and with his ability to effect changes in that environment. The environment must be growing and improving in response to the individual's creative involvement. The instructor is a designer, director, and coordinator of the environment for learning and is an educational broker for knowledge and experience; he demonstrates how to "learn and teach" and expects his students to also "learn and teach." Content in effect becomes the environment designed as an educational enterprise in technological competition with its economic enterprise counterpart. The student is thus brought to the "cutting edge" of change in his chosen technology. Teaching and learning methodologies can be "redirected" to a balance of inheritor-creator models in which the individual's potential for creating is derived or stimulated by his inheritance. (environment)

Asahel D. Woodruff* compared educational practice from the positions of the "To Teach" models and from the "To Learn" models. His comparison revealed the following:

> "Attention has been on what teachers do . . . . 'To Teach' has meant largely to dispense verbal information to listening students. The teacher has been the most active person; has given knowledge to students (or tried to); has directed all learning behaviors; has been the main source of both materials and instructions; and has graded learners on the basis of their ability to repeat what they have been told. The shift that is now occurring is antagonistic to every part of this model. . . .
>
> The 'To Learn' model is quite different . . . . The teacher must get off the learning stage, and the learner must come up front and center. The teacher must move into the wings and become a stage setter, a planner, a consultant, a trouble-shooter, a diagnostician and a prescriber, a very indirect and non-disruptive influence that sustains the learner's absorption of his tasks. The classroom must divest itself of its excessively verbalistic nature and become a realistic referential environment within which learners engage in real tasks in no significant sense different from those that make up their out-of-school life."

The learning environment must be designed as a dynamic system or educational enterprise which can be affected and changed by students and which in turn affect and change the students in a dialectic dynamic relationship. Our current status of technology instruction is not far removed from the concept of "giving knowledge to the student from the teacher".

*Woodruff, Asahel D., "New Concepts in Learning" in Proceeding of the AIAA 30th Annual Convention, pp. 22-27, American Industrial Arts Association, Washington, D.C., 1968, 339 pp.

Dwayne Huebner* described the need for "redirection" as follows:

> ". . . . man is a temporal being whose existence is not given by his occupation of space, but by his participation in an emerging universe. One form of man's response is his understanding of himself in the moment-of-vision as he projects his own possibility for being in terms of the having been. Man's world responds by withholding or giving, yielding or resisting, punishing or criticizing, and supporting or negating. This is the dialectic, leading to the continual creation and recreation of man-in-the-world.
>
> The responsibility of the curriculum person is to design and criticize specialized environments which embody the dialectical relationship valued in a given society . . . . These environments must encourage the moment-of-vision when the past and the future are the horizons of the individual's present so that his own potential for being is grasped."

Huebner certainly advocates a "redirection" for curriculums and offers a new dimension for thought by introducing the individual's "horizons of the past" and "horizons of the future." Both must be incorporated into the curriculum plan.

The Explosion and Continuous Extrusion of Technology and Knowledge. The volume of potential knowledge available for teaching and the volume of experiences which may be offered are overwhelming to curriculum planners who use traditional practices and procedures. E. A. Reitan, writing in the July 1966 issue of the Journal of General Education stated the problem as follows:

> "The major consequences of the knowledge explosion is that . . . . the amount of knowledge is simply too great for any kind of parameters to be established for students. Rather the problem of modern education is to bring the student to the cutting edge of his subject without having to redo past experience."

*Huebner, Dwayne, "Curriculum as Concern for Man's Temporality" Theory Into Practice: TIP, V6, No. 4, pp. 172-179, Ohio State University, October, 1967.

Joseph F. Kauffman* chairing the Committee on Student Life in Higher Education reported the following:

> "The committee also rejects the 'body of knowledge' tradition of curriculum building. This, in part, is a consequence of the remarkable growth and branching of knowledge, the proliferation of facts, fields, and modes of knowing that makes 'coverage of the body' a vain goal. Neither any presumed shape of the body of knowledge nor any current disciplinary categorization should be an indisputable curricular command for all students."

If we can simulate a landing on the moon (which we did) so realistically that it was not necessary to have the experienced instructors first, we can also simulate the industrial enterprise realistic enough for trainees to land in industrial and technical positions! We now have these alternative approaches available for careful study and testing. The curriculum must be "redirected" until it is compatable with the creator model of man.

*Kauffman, Joseph F., et al, "The Student in Higher Education" Report of The Committee on Students in Higher Education, The Hazen Foundation, New Haven, Connecticut, January 1968, 66 pp.

THE VOCATIONAL-TECHNICAL EDUCATION CURRICULUM IN THE TWO-YEAR COLLEGE: SALVAGE, REDIRECTION, OR CUSTODY[1]

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[1]PRESENTATION MADE AT THE 63RD ANNUAL VOCATIONAL CONVENTION IN BOSTON, MASSACHUSETTS ON DECEMBER 9, 1969.

AS CURRICULUM PLANNERS AND DEVELOPERS, AND AS INDIVIDUALS WHO ARE RESPONSIBLE FOR THE IMPLEMENTATION OF SECONDARY AND POST-SECONDARY INSTRUCTIONAL PROGRAMS, IT IS IMPERATIVE THAT WE BE COGNIZANT OF A NUMBER OF ISSUES WHICH CONFRONT US. I HESITATE TO MENTION SOME OF THESE ISSUES BECAUSE IT IS ALMOST REDUNDANT TO DO SO. NEVERTHELESS, IT IS MOST IMPORTANT THAT WE BASE OUR CURRICULUM ON CERTAIN FOUNDATIONS. BRIEFLY, LET US REVIEW SOME NEEDS OF WHICH WE ARE ALREADY AWARE:

1. THE NATIONAL ADVISORY COUNCIL ON VOCATIONAL EDUCATION TO THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE HAS ALLUDED TO THE FAILURE OF OUR SCHOOLS TO EDUCATE TO THE LEVEL OF ADEQUATE EMPLOYABILITY NEARLY 25% OF THE YOUNG MEN AND WOMEN WHO TURN 18 EACH YEAR.

2. THE NATIONAL ADVISORY COUNCIL ALSO REMINDED US THAT THE NUMBER OF STUDENTS REQUIRING A LIBERAL ARTS COLLEGE EDUCATION IS INCREASING FAR LESS RAPIDLY THAN THE NUMBER REQUIRING A TECHNICAL SKILL. IT HAS BEEN STATED THAT IN THE 1980'S, FEWER THAN 20% OF OUR JOB OPPORTUNITIES WILL REQUIRE A FOUR YEAR COLLEGE DEGREE.[1]

3. WE HAVE BEEN TOLD THAT ONLY 1 OF 5 HIGH SCHOOL GRADUATES OF TODAY WILL REMAIN IN COLLEGE TO RECEIVE A COLLEGE DEGREE. WE MIGHT ASK OURSELVES TWO BASIC QUESTIONS:

A. WHAT HAPPENS TO THE OTHER FOUR?

B. OF THE 20% WHO CONTINUE, HOW MANY ACTUALLY NEED

OR DESIRE THE TRADITIONAL LIBERAL ARTS, THEORETICAL TYPE BACCALAUREATE DEGREE?

MOREOVER, WE KNOW THAT ONLY ONE OF THREE JUNIOR COLLEGE GRADUATES ACTUALLY TRANSFER TO FOUR YEAR COLLEGES AND UNIVERSITIES.

4. NO ONE NEED REFRESH YOUR MEMORY ON THE VIOLENCE THAT RACKS OUR CITIES. PERHAPS, CURRENT VIOLENCE AND CURRENT UNREST HAVE DEEP ROOTS IN INADEQUATE EDUCATION WHICH LEADS TO UNEMPLOYMENT AND LIMITED OPPORTUNITIES. ANGER AND FRUSTRATION ARE BEING EXPRESSED AND DEMONSTRATED BY INDIVIDUALS WHO HAVE DEPARTED FROM OUR SCHOOLS WITHOUT THE SKILLS AND/OR ATTITUDES EMPLOYERS REQUIRE. RECENTLY, A FEATURE ARTICLE IN THE TAMPA TRIBUNE ON THE FLORIDA DEPARTMENT OF EDUCATION'S EDUCATIONAL PROGRAM POINTED OUT THAT 84% OF MORE THAN 6,600 PEOPLE CONFINED AT RAIFORD STATE PRISON DURING 1966-68 HAD NOT COMPLETED HIGH SCHOOL AND 40% HAD NOT EVEN REACHED THE NINTH GRADE.[2]

5. WE COULD CONTINUE WITH ILLUSTRATIONS AND EXAMPLES OF NEEDS WHICH HAVE BEEN FURNISHED BY SOCIOLOGISTS, PSYCHOLOGISTS, FELLOW EDUCATORS, THE UNITED STATES BUREAU OF LABOR, INSTITUTIONS IN OUR SOCIETY, AND OTHERS TOO NUMEROUS TO MENTION, BUT YOU GET THE POINT.

AS THE AFOREMENTIONED NEEDS ARE REVIEWED, WE REALIZE THAT WE ARE FACED WITH A MONUMENTAL TASK: THE EDUCATION OF YOUTH FOR WHAT IS REAL. LET US MAKE RELEVANCE OUR BY-WORD! I SUBMIT TO YOU THE IDEA THAT THE ACCOMPLISHMENT OF THIS TASK AND THE ACHIEVEMENT OF THESE GOALS WILL REQUIRE SALVAGING, REDIRECTING, AND SOME CUSTODY. THOSE

OF US IN JUNIOR COLLEGES MUST BE INCREASINGLY AWARE OF THE FOLLOWING FACTORS WHICH ARE DIRECTLY OR INDIRECTLY RELATED TO BUILDING AND MAINTAINING A CURRICULUM FOR OUR STUDENTS:

1. THE INSTRUCTIONAL PROGRAM IN OUR JUNIOR COLLEGES MUST BE SITUATED IN AN ORGANIZATIONAL AND FINANCIAL FRAMEWORK WHICH WILL ALLOW VOCATIONAL-TECHNICAL EDUCATION TO HAVE THE LEADERSHIP AND RECOGNITION IT SO RIGHTFULLY DESERVES. ASK YOURSELF: WHAT POSITION DOES THE DIRECTOR OR DEAN OF VOCATIONAL-TECHNICAL OR CAREER EDUCATION HOLD IN YOUR INSTITUTION? LOOK AT YOUR BUDGET FOR VOCATIONAL-TECHNICAL EDUCATION.

2. IN ACTUALITY, WE ARE SAYING THAT WE MUST PROJECT VOCATIONAL-TECHNICAL EDUCATION. WE HAVE AN IMAGE TO BUILD. THE IDEA AMONG PARENTS THAT VOCATIONAL-TECHNICAL EDUCATION IS FOR THE CHILDREN OF SOMEONE ELSE MUST BE DISPELLED. YOU AND I KNOW THAT VOCATIONAL-TECHNICAL EDUCATION IS WONDERFUL: NOW WE NEED TO TELL PARENTS, INDUSTRIAL LEADERS, STUDENTS, FELLOW CITIZENS, AND EDUCATORS.

3. WE MUST FACE THE CHALLENGE OF COMMUNICATING WITH SECONDARY SCHOOLS AND WITH SENIOR INSTITUTIONS. WE SHOULD INSIST, IF NOT DEMAND, THAT SENIOR INSTITUTIONS BUILD ON TO OUR TWO YEAR PROGRAMS WHEN FOUR YEAR DEGREES ARE NEEDED IN NURSING, LAW ENFORCEMENT, DATA PROCESSING, AND ENGINEERING TECHNOLOGIES.

4. WE SHOULD CONSTANTLY EVALUATE THE EFFECTIVENESS OF ADVISORY COMMITTEES.

5. THE IMPORTANCE OF SURVEYS SHOULD NOT BE OVER-

LOOKED. WE SHOULD TAKE THE TIME TO SURVEY THE NEEDS OF OUR COMMUNITY AND THE DESIRES OF THE STUDENTS IN THE COMMUNITY. CARRIGAN AT THE FLORIDA JUNIOR COLLEGE AT JACKSONVILLE PROVIDED OUR JUNIOR COLLEGE WITH VALUABLE INFORMATION IN A RECENT SURVEY OF STUDENTS IN DUVAL AND NASSAU COUNTIES. THIS SURVEY RECEIVED SOME 16,000 RESPONSES FROM TENTH, ELEVENTH, AND TWELTH GRADERS.[3] A MEASURE OF YOUR CURRICULUM IS THE AMOUNT OF INPUT YOU ARE RECEIVING.

6. WE CANNOT OVEREMPHASIZE THE IMPORTANCE OF CONTINUING TO STRIVE TO CONSTRUCT A COMPREHENSIVE CURRICULUM. WE FEEL THAT THE FOLLOWING EXAMPLE IS REPRESENTATIVE OF A COMPREHENSIVE JUNIOR COLLEGE CURRICULUM.

DEPARTMENT	CENTERS	INSTRUCTIONAL STAFF	CLASSES	CLASS ENROLL.
1. ADULT BASIC EDUCATION	41	109	117	1587
2. H. S. COMPLETION AND EQUIVALENCY	16	62	128	3364
3. CONTINUING EDUCATION	18	73	75	1241
4. COMMUNITY SERVICES	14	40	45	925
				7117
1. INDUSTRIAL EDUCATION	10	63	63	1116
2. HOME ECONOMICS EDUCATION	20	37	56	1067
3. HEALTH EDUCATION	1	4	4	120
4. VOCATIONAL BUSINESS EDUCATION	6	17	42	708
5. DISTRIBUTIVE EDUCATION	1	2	2	27
6. MDTA EDUCATION	1	17	17	364
				3492

DEPARTMENT	CENTERS	INSTRUCTIONAL STAFF	CLASSES	CLASS ENROLL
UNIVERSITY PARALLEL	3	141	300	6000

GRAND TOTAL 16,609[4]

WHEN YOU CONSIDER SALVAGING, REDIRECTING, OR CUSTODY, IT SEEMS-THAT THE DEGREE OF COMPREHENSIVENESS SHOULD BE FOREMOST IN YOUR THINKING AND EVALUATION.

7. THE DEGREE OF FLEXIBILITY IS A MEASURE WHICH SHOULD BE USED IN JUDGING THE VOCATIONAL-TECHNICAL CURRICULUM IN THE JUNIOR COLLEGE. TWO OF THE GREATEST CURRICULUM CHALLENGES IN THE JUNIOR COLLEGE ARE DIVERSITY AND BALANCE. WE MUST BE SENSITIVE TO REAL NEEDS AND PLANNING, WHICH TAXES OUR CREATIVITY AND IMAGINATION.

8. OF COURSE, IT IS RECOGNIZED THAT THE URGENT NEED IN OUR SOCIETY IS FOR MILLIONS OF WELL-INFORMED AND WELL-TRAINED CITIZENS. THE CHALLENGE OF BUILDING A GENERAL EDUCATION PROGRAM FOR ALL JUNIOR COLLEGE STUDENTS IS ONE OF THE MOST DIFFICULT PROBLEMS THAT CURRICULUM MAKERS FACE. NORMAN HARRIS HAS ALREADY TOLD US THAT THE DAY HAS LONG SINCE PASSED WHEN 5% OF AMERICANS DEALT WITH IDEAS AND THE OTHER 95% WORKED. MORE THAN ONE-HALF OF OUR PRESENT DAY LABOR FORCE WORKS AT JOBS WHOSE INTELLECTUAL CONTENT DEMANDS EDUCATION AND TRAINING WHICH CAN BEST BE OFFERED IN COLLEGES.[5]

9. IN SUMMARY, I WOULD REITERATE AND RE-EMPHASIZE SEVERAL POINTS WHICH SEEM TO BE ESSENTIAL INGREDIENTS IN

OUR JUNIOR COLLEGE TECHNICAL-VOCATIONAL CURRICULUM. I WOULD SUGGEST THAT YOU WEIGH THESE IN TERMS OF SALVAGING, REDIRECTING, OR GIVING CUSTODY TO THE CURRICULUM IN YOUR COLLEGE.

1. THE VOCATIONAL-TECHNICAL CURRICULUM MUST HAVE STATURE.
2. ORGANIZATION AND ADEQUATE FINANCE ARE ESSENTIAL.
3. ADMINISTRATORS AND TEACHERS MUST BE COMMITTED.
4. VOCATIONAL-TECHNICAL EDUCATION MUST BE PROJECTED AND PROMOTED.
5. THE CURRICULUM OF VOCATIONAL-TECHNICAL EDUCATION MUST RECEIVE CONTINUOUS INPUT FROM SOCIETY.
6. THE CURRICULUM MUST HAVE A FOUNDATION OF RESEARCH AND COMMUNITY SUPPORT.
7. THE DEGREE OF COMPREHENSIVENESS IS NOT TO BE OVER-LOOKED.
8. FLEXIBILITY IS A MUST.
9. GENERAL EDUCATION SHOULD BE EMPHASIZED.
10. RELEVANCE MUST BE OUR BY-WORD. TO APPLY THE TECHNIQUES AND METHODS OF YESTERYEAR TO THE CHALLENGES AND CHANGES OF TOMORROW WILL RENDER US AS ANTIQUATED AS A MODEL T FORD!

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THE WORK-STUDY PROGRAM IN PHILADELPHIA[1]

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FOR
BUSINESS EDUCATION
DISTRIBUTIVE EDUCATION
SCHOOL-WORK PROGRAMS

It is the purpose of this paper to describe experience in operating a work-study program under the Vocational Education Act of 1963 and to indicate the need for continuance of this program under the Vocational Amendments of 1968.

[1] Presentation made at the 63d annual convention of the American Vocational Association, Boston, Massachusetts on December 6, 1969.

DIVISION OF VOCATIONAL EDUCATION

THE WORK-STUDY PROGRAM IN PHILADELPHIA

The School District of Philadelphia has sponsored two federally funded Work-Study Programs. In January 1965 we had begun a study of the Work-Study Program as described in the Vocational Education Act of 1963. The Division of Vocational Education which has been operating a variety of work programs in the Philadelphia public schools for many years, developed several Work-Study proposals in anticipation of the availability of federal funds. There was however, considerable delay before actual funds on the state level were available.

Operation of our first Work-Study Program began on November 1, 1965 and terminated on June 20, 1966. At this time, the Division of Vocational Education was also operating a Work-Training Program entitled Neighborhood Youth Corps, under the Economic Opportunity Act of 1964. This program employed 2,000 youth, 16 to 20 years of age. While there was obvious overlapping in general purpose of the two programs, the distinguishing feature of the Work-Study Program was that it was designed to provide part-time employment only for youth who are full time students in a vocational program. This also provided opportunities for 15 year old students which the NYC Program did not do.

Responsibility for administration of the Work-Study Program was placed in a project director directly responsible to the Director of Vocational Education. The Philadelphia Program developed the following procedures:

PUBLICITY AND RECRUITMENT:

A brief digest of the guidelines of the program and suggestions for making it known to students in their schools was sent to high school administrators and guidance counselors. The latter were responsible for taking applications from students, determining eligibility and making recommendations re job assignments. Job assignments where possible were made so that work should relate to a student's educational program and should provide maximum utilization of vocational competencies and interests. Those schools located in designated poverty areas and which had a prevalence of students who were potential drop outs due to financial conditions were given priority in enrolling students in the program.

JOB DEVELOPMENT AND PLACEMENT:

A staff of eight work-coordinators was hired for the program to work with 600 youth. Work-coordinators had responsibility for development of worth-while job sites, job placement, visiting work-sites and providing enrollees in the program with individual and group guidance re job orientation, vocational guidance and personal adjustment. Job sites were located in and on school facilities.

Job classifications were building maintenance aides, clerical aides, cafeteria aides, health aides, child care aides, stock and inventory aides. Jobs were developed in consultation with the principal and his school staff.

DESCRIPTION OF JOB CLASSIFICATIONS:

Building Maintenance Aides were assigned to the building custodial engineer. Work performed consisted of sweeping, cleaning, waxing floors, washing woodwork, repair of classroom furniture, painting of storage rooms, scraping and patch painting rusted areas of iron fences on athletic fields, cutting grass, weeding and performing landscape activities which enhance the appearance of the school and community. In one high school, Ben Franklin High, a group of 15 Work-Study Aides sanded and shellacked over 500 student chairs.

Clerical Aides worked as swithchboard operators, filing clerks, typists, mimeograph and ditto machine operators and telephone receptionists. They were assigned to the head secretary in school offices and administrative offices.

Child Care Aides were assigned to Child Care Centers and Get Set Centers operated by the School District of Philadelphia. These centers served as excellent job sources because they were open until five in the afternoon and were located within school buildings. Child care aides assisted teachers with helping dress, feed and supervise younger children.

Cafeteria Aides were assigned to the dietician in school cafeterias. These aides assisted in cleaning utensils, checking and storing of food supplies received, serving food at the lunch counters and the preparation of salads and sandwiches.

Nurses Aides were assigned to the school nurse. A few months later, five community hospitals were added to the program as host agencies who provided us with excellent job experiences for one hundred youth. Each of these hospitals was within walking distance of a neighborhood high school enabling the student to get to his job within minutes after school dismissal. Some students worked Friday evening and Saturday. Nurses aides in the schools acted as receptionists, made beds, were responsible for the maintenance of the infirmary. In hospitals, they were assigned to the floor nurse. The community hospitals also utilized cafeteria aides who transported patient food trays to the various floors at meal times.

Stock and Inventory Aides were assigned to the stock clerk in the school. They maintained records of supplies received and distributed. They were responsible for completing teacher requests for supplies and proper distribution to classroom teachers. A group of twenty worked at the School District Warehouse performing the same duties.

SUPERVISION AND GUIDANCE:

The students in the Work-Study Program were under the direct supervision of the staff person who had made a request for an aide. This was usually the teacher, dietician, building custodian, school secretary, etc. An evaluation of the aide on the job was obtained every month from his work-station supervisor. This evaluation dealt with the following items: regularity of attendance, promptness in getting to work, personal appearance, initiative, ability to learn, quality of work, attitude toward job, cooperation with supervisors and fellow workers. Individual conferences were held by Work-Study Coordinators with Work-Study Aides to review these evaluations, noting strengths and weaknesses and suggesting ways of improving in those areas needing improvement.

In addition the Work-Study Coordinator reviewed each student's progress report (report card) and arranged for individual conferences with those students whose progress reports indicated the need for help. Referrals were often made to school resource people for supportive services - the school guidance counselor, the home and school visitor, the tutoring services in the school.

SCHEDULE OF WORK AND WAGES

Students worked a maximum of ten hours a week when school was in session. Rate of pay was $1.25 an hour. Students worked before and after school. Roster adjustments were not permitted and the students' regular educational program had to be maintained.

STATISTICS

During the operation of this program from November 1, 1965 to June 20, 1966 seven hundred and seventy-four youth participated in the program. Of this number four hundred and ten were girls and three hundred and sixty-four were boys. The job orders for girls for clerical tasks exceeded all our expectations and could not all be filled. A breakdown of the number of youth in each job classification indicated the following:

Building Maintenance	205
Clerical	217
Child Care	86
Nurses Aides	118
Stock and Inventory	59
Cafeteria	89
	774

In some categories such as clerical aides and cafeteria aides, job assignments included boys as well as girls. In two all-boys high schools most of the clerical aides were boys in attendance at these schools who were enrolled in the Business Education curriculum.

A total of 78 different work-sites provided work-stations for the youth employed. Enrollee earnings totaled $174,555.00. The total cost of the program was $220,400.00. This first program involved no cost to the School District of Philadelphia. The program was 100% reimbursable. This was achieved through the fine cooperation of Dr. Struck, our State Director of the Bureau of Vocational, Technical and Continuing Education. All budgetary items not allowed under the Vocational Education Act of 1963 Work-Study Program were funded by the Commonwealth of Pennsylvania through an ancillary pilot project. Under this ancillary pilot project the following budgetary items were funded: 25% of wages earned by the students, sponsor's cost of students' F.I.C.A. and Workmen's Compensation, total cost of staff wages and sponsor's cost of staff benefits, all other operating costs. Under this arrangement the School District agreed to keep operating and staff costs at a reasonable and appropriate level.

ACHIEVEMENTS

The program produced several noteworthy achievements. A survey questionnaire completed by students at the end of the program revealed that as a result of the program 187 students had corrected dental caries and 27 had obtained eyeglasses to correct vision. These physical defects were revealed as a result of the physical examination given to each Work-Study aide as required by state law in order to obtain their working certificate. Where a physical defect was found to exist, the student is given a working certificate but must have the defect corrected within thirty days or the work certificate is withdrawn. Thus to keep his job, physical defects had to be corrected. Many students reported that the work experience had resulted in providing them with new learning experiences and skills. Some of these experiences were operating office machines, how to operate a switchboard, recording telephone messages and cutting a mimeograph stencil. One girl wrote, "Even though I knew how to type well, I gained experience typing special requisitions which were complicated. I had never done this before." Seventeen students who had worked at community hospitals during the program were hired by the hospitals for summer employment. Reports from school personnel, teachers and guidance counselors, indicated that many students evidenced increased motivation towards school work.

Most students in their questionnaire indicated that their earnings had been used mainly to buy clothing, and to pay for school transportation and lunches.

In one community hospital, St. Lukes Childrens Hospital, the program had a direct effect on that agency's cafeteria workers. Cafeteria workers in the hospital were receiving $1.15 an hour. Their wage rate was raised to $1.25 an hour as soon as our Work-Study aides began working at the hospital. Mention must be made of the low rate of drop outs from the program. A total of 82 students were dropped from the program, which represents about 11%. Reasons for these drop outs were: Lack of progress or interest - 37, obtained other employment - 16, care of family - 10, illness - 7, pregnancy - 6, misconduct - 6. The program's holding power was evaluated as very good when one considers that 68% of the young workers indicated in their questionnaire that this was their first paid work experience.

OPERATING PROBLEMS

We had to face up to several problems that arose as the program developed. One was the role of the Work-Station Supervisor, the person to whom the student was assigned. We had provided Work-Station Supervisors with printed matter explaining the purpose and goals of the program, a list of suggestions as to how to proceed with the young workers and a description of the Work-Station Supervisor's responsibilities.

Problems with Work-Station Supervisors consisted mainly of their expecting too much of the Work-Study aide, or displaying paternalism and settling for too little. Other supervisors utilized aides for routine simple tasks and provided little opportunity for skill development. This was particularly true of assignments given to Building Maintenance Aides. We found that there was a constant need for our staff to visit work-sites and provide suggestions concerning meaningful tasks. Most Work-Station Supervisors were most cooperative. In a few instances we had to withdraw the student and reassign him elsewhere. It is our conviction that the Work-Station Supervisor is the cornerstone of the program.

Scheduling of work hours was a problem at first, particularly for those students enrolled in our three Technical High Schools. These schools do not dismiss classes until 3:15. This problem was resolved with the acquisition of work-sites in community hospitals, where students worked on Friday evenings and Saturdays.

Within a short time it became evident that we were understaffed. A staff of eight coordinators was not adequate to cope with the needs of 774 students and maintain a quality program. This represented a ratio of 90 - 95 students for each coordinator. We would have preferred a ratio of 40 - 45 students per coordinator. Our staffdid a heroic job despite this situation.

Another problem that became apparent was the difficulty in maintaining the requirement that a student may not earn more than $350.00 during an academic year. This requirement could not be maintained during the regular 10 month school year, and would necessitate an eight month program.

There were also repeated requests from Work-Station Supervisors to increase the maximum hours students were permitted to work each week from ten to fifteen. This request could not be granted due to the limitation of earnings for the academic year which had to be observed.

Our second experience with a Work-Study Program took place during the summer of 1968. The absence of a program in the interim between June 30, 1966 and June 24, 1968 occured because federal funds were not available for a Work-Study Program until the summer of 1968.

The Work-Study Program for the summer of 1968 embodied several new features, the result of what we had learned from our first experience. The summer program operated from June 24, 1968 through August 16, 1968 for 8 weeks. Students worked a maximum of 30 hours a week, the rate of pay was $1.25 an hour. All work-sites were at Get-Set Centers, operated by the School District of Philadelphia. This helped to reduce the number of work-sites. As a result we were able to arrange for an orientation session the first morning of the program with all Work-Station Supervisors.

Another new feature was that it was restricted almost entirely to students who were fifteen years old. These students were in the 9th grade in junior high school who had elected a vocational curriculum for the tenth grade in a comprehensive high school or technical school. This decision to restrict the program almost entirely to fifteen year old students was arrived at by the Superintendent for two reasons:

(1) An attempt to deal with the serious drop out problem which occurs mainly in tenth grade. It was our hope to continue these boys and girls in a Work-Study Program through the 10th grade.

(2) The fact that surveys released by the Federal Reserve Board and the U. S. Bureau of Employment Service clearly indicated that this age group would find it most difficult to obtain any employment opportunities in the Philadelphia area. A survey we conducted at the end of the program indicated that 86% of the students enrolled in the program stated this was their first paid work experience. Despite the inexperience of these young workers, Work-Station Supervisors reported satisfaction with the willingness to work and learn, and the quality and quantity of work performed.

Our staff attributed this to our orientation sessions at the beginning of the program with both students and Work-Station Supervisors. In addition, the students were given considerable supportive help by our staff.

A built-in feature of the summer program was a weekly group guidance session of one hour a week. This provided an opportunity for the young worker to discuss problems and concerns re his job situation, and to obtain valuable information concerning the world of work. At these sessions, the first pay check was thoroughly discussed, the meaning of take home pay, the various check deductions, the need for budgeting money earned, the qualities of a good worker, vocational opportunities available to the high school graduate. Almost a third of the students opened savings accounts and banked some money each pay day so that they would have some financial resource available for their tenth grade school year.

Since our first experience with this program had indicated that we were understaffed we operated this summer program with a staff of twelve work-coordinators servicing 522 youth in the program. Each staff member was responsible for a group of 40 - 45 students. This was found to be most effective.

Unlike the first program, this one was not 100% reimbursable. During the summer of 1968, 522 students earned $115,735.00. Seventy-five percent of the total wages earned by the students was reimbursed to the Philadelphia School District.

The total cost to the School District was:

Students' Earnings (25%)	$ 28,934.00
Employer's Cost of Students' Benefits	2,778.00
Staff Costs and Benefits	12,940.00
	$ 44,652.00

Total cost of the Program was $131,453.00 of which $86,801 was reimbursed to the School District.

We had looked forward to continuing with a Work-Study Program during the school year September 1968 through June 1969. However, no Federal funds were available for Work-Study Programs for that school year.

You are all familiar with the present situation regarding Work-Study Programs. On October 16, 1968 the 90th Congress passed the "Vocational Education Amendments of 1968". Under this act $35,000,000 was appropriated for each of the fiscal years ending June 30, 1969 and June 30, 1970. However, these appropriations were deleted from administration budget recommendations and no appropriations have as yet been made by Congress.

The Vocational Education Amendments of 1968 amended many provisions of the Vocational Education Act of 1963. However, for the most part the provisions pertaining to the Work-Study Program remained the same. There were two changes. The first change defined specifically that the limitation on student earnings to three hundred and fifty dollars was for any academic year. The second change increased the Federal reimbursement for student wages earned from 75% to 80%.

There have been developments recently that may offer some hope. On September 6, 1969, I received a communication from our State Department of Education urging me and my staff to telegraph our Senators immediately. House Bill H. R. 13111 had just passed authorizing appropriations of $10,000,000 for Work-Study Programs nationally. This bill was then referred to the Senate Appropriation Sub-Committee for final passage. It is still there and has not as yet been brought out of the Senate Committee on to the floor of the Senate for a vote. I am aware that the position of the A. V. A. is fully behind the passage of this bill, but support from each of you in this audience is needed to make continuance of the Work-Study Program a reality.

SCHOOL DISTRICT OF PHILADELPHIA
DIVISION OF VOCATIONAL EDUCATION

A BRIEF DIGEST AND GUIDELINES OF THE WORK-STUDY PROGRAM UNDER THE VOCATIONAL EDUCATION ACT OF 1963 (P. L. 88-210)-PART H AND THE "VOCATIONAL EDUCATION AMENDMENTS OF 1968"

Each Student in a Work-Study Program Must Be:
Enrolled or accepted for enrollment in an approved vocational education program designed to fit students for gainful employment as skilled or semi-skilled workers or technicians (but not in professional occupations or others requiring a baccalaureate or higher degree.)

In need of earnings from employment under the program to start or continue his vocational education.

At least 15 years old but less than 21 at the beginning of employment under the program.

In the opinion of school authorities, capable of maintaining good standing in school while employed.

Limitations on Hours and Compensation
A student may not work more than 15 hours a week while classes are in session.

The local educational agency cannot pay the student more than $45.00 a month or $350.00 an academic year.

There are special maximums of $60.00 a month and $500.00 an academic year for a student living beyond a "reasonable commuting distance" from his school.

These restrictions apply only during the normal academic year.

Considerations in Selecting Work Assignments
Responsible supervision should be available.

The work situation should be consistent with employment regulations affecting minors.

Work must not eliminate or replace any other employee.

Where possible, work should relate to a student's educational program and should provide maximum utilization of his vocational competencies and interests. However, this is not a work-training program, per se. Hence it is not essential to the program that work be in the occupation for which the student is training.

Work will typically be at the aide or assistant level.

Operating Arrangements:
In each state, the programs will be under the direction of a state board for vocational education.

Work will be performed pursuant to a written agreement between the local educational agency and the participating public agency or institution.

In all cases, the written agreement will state that the students working in a Federal establishment are not Federal employees for any purpose.

The local educational agency will ordinarily arrange for any work permits that may be required under local or state law.

Reimbursement and Costs to the Sponsor
Under the Vocational Education Amendments Act of 1968 the Federal reimbursement is raised to 80% from the previous 75% as stated in the Vocational Education Act of 1963, Section 13, part (3). The Sponsor will be reimbursed solely for 80% of the wages earned by students employed in the program. This means that the Sponsor must contribute in actual dollars 20% of the wages earned by students employed in the program. In addition, costs for staff wages, employer's share for students' F.I.C.A., all staff benefits and operating costs are paid for through local effort.

SCHOOL DISTRICT OF PHILADELPHIA
DIVISION OF VOCATIONAL EDUCATION
WORK-STUDY PROGRAM NOVEMBER 1965

A BRIEF DIGEST AND GUIDELINES OF THE WORK-STUDY PROGRAM

Source: Established by Congress under the Vocational Act of 1963 (Public Law 88-210). It is administered through the State Board of Education, Commonwealth of Pennsylvania.

Purpose: To provide financial aid through a paid work experience for youth enrolled in full time approved vocational programs, from low income families in order to enable them to stay in school and complete their vocational education program. To develop wholesome attitudes toward work, good work habits and strengthen skills that will increase the students' employability.

Referral Procedure: Any member of the school staff or community may recommend students for the program to the school counselor. The student may voluntarily apply himself to the school counselor.

Eligibility: Each student in a Work-Study Program must be:

1. Enrolled or accepted for enrollment in a Phila. Public School Vocational Education Program designed to fit students for gainful employment but not in professional occupations or others requiring a baccalaureate or higher degree.

2. At least 15 years old, but less than 21, at the beginning of employment under the program.

3. In need of earnings from employment under the program to start or continue his vocational education.

Verification of Family Income: All youth enrolled in the program must have their parents or guardians fill out an income questionnaire form to determine eligibility. A parent must come to school to certify that the income data stated on the income questionnaire form is correct. The interviewer should record on the form sufficient information obtained from the parent that would indicate that the income stated appears reasonably reliable.

Approved Vocational Programs:

1. Vocational Agriculture
2. Vocational Health Education (Includes Occupational Courses)
3. Vocational Business Education (Commercial A, B, C)
4. Trade and Industrial Education (Includes Occupational Courses)
5. Vocational Home Economics

Youth in the 9th grade who have selected a vocational program for the 10th grade are eligible.
Students in Industrial Arts are not eligible.

Hours of Work and Wages: Students will work a maximum of 10 hours a week. The rate of pay is $1.25 an hour.

Location of Work-Sites: ALL WORK-SITES will be in and on school facilities.

Supervision: The Work-Station Supervisor to whom a Work-Study aide is assigned must provide adequate supervision. No Work-Station Supervisor may directly fire an aide without prior consultation with the Work-Study Work Coordinator.

Distributed to administrators and guidance counselors in all high schools.

SCHOOL DISTRICT OF PHILADELPHIA
DIVISION OF VOCATIONAL EDUCATION
WORK-STUDY PROGRAM

June 24, 1968

TO: Work-Study Work Station Supervisors

RE: Work-Study Aides Assigned to You for Summer 1968 Employment

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For many of the youngsters you will supervise, this is their first paid work experience. Your guidance and interest can help develop in the young workers good work habits, a healthy attitude towards work and the self-confidence they need to hold a job in the future. The following suggestions may help you in your work with them.

I. Start Them Right

Take time to show them where all the facilities are - washroom, drinking fountains, what to do in case first aid is needed. If a Work-Study Aide is injured on the job, Form EH 51 - School District Record of Report of Accidents - should be filled out by you and signed. The Work Coordinator will collect this from you. All Work-Study Aides are covered by Workmen's Compensation.

Explain the work rules, where they sign in and sign out, lunch schedules, break times. Give the aide your name and telephone number on a card.

Set up a work schedule of the things that should be done daily. Explain the services that your department is responsible for and the importance of the work they are doing.

Stress safety measures in work. Give them clear orders about safe areas and practices. Explain what the guards on machinery are for and what dangers are involved in operating machines. Show them how to lift and carry. Demonstrate safe and proper use of tools and equipment. USE GOOD JUDGEMENT IN MAKING JOB ASSIGNMENTS SO THAT THE WORKER'S SAFETY IS YOUR FIRST CONCERN.

II. During the First Week of Work

Assign jobs that are less difficult until you get an opportunity to determine the ability and skills of the young worker.

Check work frequently and pleasantly. Show them how to do the work. Explain the reason for doing the work. Speak clearly and simply. You may need to explain some points over again. Taper off close supervision as the worker gains skill.

III. During the Remaining Weeks (After the First Week)

Rotate enrollees after jobs are learned, so that young people can gain broader experience. You may find that an enrollee, who is not performing well has been improperly assigned. The same enrollee may be an excellent worker if his assignment is changed.

Let enrollees know that you want them to make good. Give them credit for good work done. Watch for developing abilities and make job assignments to utilize this. Let the young worker know frequently how he is performing on the job.

IV. Cooperation with Work-Study Staff

A Work Coordinator will be assigned who will visit your work-site regularly. He will be available for any problems that may develop. It is important that you alert him to any problems as soon as they occur. He will collect Time Slips weekly and be responsible for issuing checks to Work-Study Aides. If you have to fire a young worker, discuss this with the work coordinator first. In addition, you may call this office regarding any problems you may have: KI 6-2057.

Distributed to all Work-Station Supervisors - June 1968

THE VOCATIONAL NEEDS OF WOMEN AND GIRLS - THEIR RELATIONSHIP TO PUBLIC LAW 90-576[1]

Chrystine Ramsey Shack
Director, Program Development
New Jersey Urban Schools Development Council

It is my intent to provoke dialogue on the impact brought to bear by Public Law 90-576 upon the vocational needs of women and girls.

Perhaps closer examination might indicate limited need for such specifically delineated consideration ---- i.e., what major differences exist between the vocational needs of women and girls as opposed to those same needs of men and boys?

Do they not each seek employable skills development, enhancement of skills which are limited in development, and overall extension of skills competency into broader and/or more highly technical areas?

Moreover, whatever differences are extant in male/female vocational needs, these are greatly minimized when we consider the specific population for whom Public Law 90-576 directs major attention.

Perhaps, then, one of our first concerns in discussing the vocational needs of women and girls is that of the Declaration of Purpose as set forth in Public Law 90-576.

That Declaration of Purpose attests to the lending of federal assistance in:

> the maintenance, extension and improvement of existing vocational education programs,
>
> the development of new vocational education programs, and,
>
> the provision of part-time employment for those youth who need the earnings from such employment to continue their vocational training on a full-time basis.

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 6, 1969.

The ultimate aim of Public Law 90-576 is that all persons of all ages, in all communities

those in high school,

those who have completed or discontinued their formal education and are preparing to enter the labor market,

those who have already entered the labor market but need to upgrade their skills or learn new ones,

those with special educational handicaps and,

those in post-secondary schools

will have ready access to vocational training or re-training.

Additionally, that training must, in accordance with the provisions of the Act, be of high quality, realistic in regards to actual and anticipated employment opportunities, and most importantly, suited to their needs, interests and abilities.

The objectives expressed in the previously cited sections of the Act suggest or rather mandate, that we employ broad and sweeping vision in the implementation of the law.

The law itself adds still another component, (Sec. 104(a)1) which when properly effectuated, imposes breadth of involvement - that component is the establishment and utilization of both national and state advisory councils on vocational education.

The constituency of these councils clearly delineates the inclusion of persons representative of the general public (at least one third of the total membership nationally) and further suggests that they may be parents or students representative or knowledgeable about the poor and disadvantaged.

A strikingly similar stipulation is made regarding state advisory councils.

You may have begun to silently question our reference to these councils.

Contemplating this query, permit me to say that education must honestly exhibit adherence to both the letter and intent of the Act if it in truth, will successfully meet the repeated challenge of Public Law 90-576.

I do not argue that this representation - this involvement is the ultimate panacea, but I do insist that it is a first and major step in our solution to the needs of a public about which we are severely limited in knowledge and almost totally lacking in dialogue and communication.

Educators, the bourgeois, the elitists can devise systematically legitimized estimates or guesses about the vocational needs of the persons whom we are charged or committed to serve, however, the very best assessment of these needs may well be taken from their own indications or from persons representative thereof, such as those who have been granted licensure to sit on the previously mentioned national and state advisory councils.

It follows then, that if we are to be in keeping with the conceptual framwork of Public Law 90-576, we must establish a functional interface with some very specific elements.

Namely, <u>people</u>, <u>programs</u> and <u>prescriptions</u>.

I have adopted the latter term prescriptions as a singular identification of interests, abilities and needs.

These elements are inter-dependent and in a discussion of one, we cannot abort concentrative attention to the others.

Who then, are the <u>people</u>?

In the frame of reference set forth by Public Law 90-576 as well as in our attention to work roles of women and girls, they are today's female high school students, post high school students, dropouts, the under-employed, the unemployed and those with special educational needs.

We would conclude that this is an extremely diverse group of people, but perhaps the last descriptive might be used to characterize all.

They are women and girls with special educational needs.

They are diverse, but at the same time, share marked commonalities.

These commonalities are accented when we discuss their vocational needs as related to the vocational amendments.

For, as we have previously implied and stated, Public Law 90-576 clearly defines those persons in concern.

Present day economic, social, educational and cultural forces further accent their likenesses.

It has been investigated and reported that the twenty seven plus million women in jobs or actively seeking them - do so, not so much as a matter of choice, but as a matter of compelling need.

The six plus million single working women, work, in the main, to support themselves.

Still another five plus million, widowed, separated, or divorced, work to provide for themselves and their families.

Of the married women who work and whose husbands are present, the income status of some 15 plus million families makes the need for employment urgent.

Whether they be youth, young adults or the more mature females; today's high school students, those who have completed or discontinued their high school education, either employed to unemployed; in most instances, the same economic, social, educational and cultural forces affect their lives.

We need only reflect briefly upon the vocational preparation levels of those leaving high schools and entering or seeking employment and the employability or unemployability levels of those already out of school to conclude that a positive relationship exists.

These, then, are the <u>people</u>.

Let us consider the second component - <u>programs</u>.

In the broader sense, we might define this component as attempts to make the unemployable, employable.

Other major thrusts might be rehabilitation, and the improvement of habits, attitudes and skills presumed to be necessary for employment. (Sec. 143-Part D)

In her investigation of women's patterns, Sylvia Lee reported that researchers cite at the fundamental weakness of vocational offerings for females, the paucity of options.

She contended that programs to prepare females for their roles in the world of work were admittedly limited and that girls at the high school level, and girls and women at post high school levels should have access to vocational and technical courses that primarily serve boys and men.

Moreover, they should have greater exposure to program opportunities which prepare for those employment areas which have high female participation.

What then are the implications of the Act, programmatically as it relates to women in the world of work?

Let us consider those occupations at which the 27 plus million women are presently employed.

According to the Department of Labor, approximately 32% are clerical workers such as stenographers, typists and secretaries.

16% are employed in occupations which may classify them as service workers.

15% are operatives, chiefly in factories.

Almost 14% are professional and technical workers and this includes 1.4 million teachers.

8% are private household workers.

7% are employed in sales.

4% hold managerial positions.

The remaining group, about 4%, includes farm workers, craftswomen, and non-farm workers.

A second consideration should be that of the forecast of anticipated employment needs for the 70s.

Estimates of population growth in the near future place the total at 209 million persons by 1970.

In order to produce the goods and services needed for a population of this size, the economy can reasonably expect to have 12.6 million more workers than in 1960 or, a projected labor force of 86 million persons.

Almost half of the additional workers predicted for the 1970s will be women resulting in a 25% increase for women workers as compared with a 14% increase for men.

Population growth is expected to provide sufficient numbers of persons to meet future labor requirements quantitatively, but the complex nature of many jobs will place new emphasis on the quality of the labor force.

The fact that some 32% of the current female working force is employed in the area of business and office occupations should hold particular significance for business educators.

That significance should impel us to begin immediately, the program planning, development, and implementation which is dictated. (Sec. 123 - State & Local Planning, and Part I - Curriculum Development)

It can be concluded that a large percentage of the population referenced in Public Law 90-576 will require an extraordinary type of education.

Specifically, they will need, as is provided in the Act, examplary programs to insure their development to functional capacity....i.e., many will require:

a. familiarization with work roles and occupations

b. intensive occupational guidance and counselling

c. accepting of general education attainment, and

d. the development of new vocational education curricula

(Sec. 143 - A-G) leading to new careers and occupations which necessitate less training than the highly skilled or professional occupations yet, at the same time, have built-in potential for advancement....(career ladder opportunities).

The third component is that of prescriptions.

I can envision large numbers of those who must be prepared vocationally being served through traditional approaches.

However, there is an even larger number of persons for whom the traditional prescription is decidedly inadequate.

Their abilities, interests and needs are unique and for them traditionalism must undergo important changes.

While these two groups of people might share many similarities, their differences are sufficiently pronounced to dictate that both training programs and jobs be restructured and redesigned.

They share a common interest

.....in gainful employment and economic self sufficiency,

.....in the instilling or restoring of self respect or self fulfillment,

.....in job procurement, retention and subsequent upward mobility

but differ markedly

.....in educational development,

.....in social, emotional and attitudinal development, and

.....in individual goals and objectives.

These differences do not imply the use of compensatory training techniques (for this, is most often, not only deplored, but it is rejected).

A timely example might be the devising of a so-called vocational education training program for disadvantaged male youth - its purposes, preparation for entry level employment;

Ultimate employment provided with firms such as:

- new or used car dealers, new or used tire dealers, car washes, etc., solely to clean, polish and move vehicles about, to change, repair or otherwise handle tires and to wash cars.

Abandon the idea, for the disadvantaged youth, the hard-core unemployed, or many other unemployed people, for that matter, will no longer buy this approach - they term it "another snow job".

Alternatively, it implies a step between total training and entry in an occupation.

It requires the utilization of:

(a) cooperative training between education, business and industry so that a training continuum is established and that visable training

(b) Preparation for lesser skill requirements and the concurrent remolding or shredding of jobs to fit these lesser patterns of development. (New Vocational Education Programs - Part C - 132)

(c) residential vocational education programs for certain youth to insure a multi-faceted approach to attitude, social and skills development (many such educational plans embrace only males ---- I have not researched the statistics on the numbers of girls versus boys needing vocational education training, but lacking this research, the fact remains, today's unprepared and unaspirated girls will be the mothers of tomorrow's children.) (Part E - Sec. 151)

Their functional preparation further implies:

(d) cooperative education programs that will provide a supportive bridge and allow for the development of both job competency and confidence, and yes, (Part G)

(e) work study programs which accent social development and simultaneously extend the major purposes of existing programs. (Part H)

We are those who will be most responsible for whatever changes will occur.

Public Law 90-576 provides only the impetus; we must provide the physical action and concerted action must take place, if vocational education is to fulfill its responsibility to women and girls.

COMPARISON AND SYNTHESIS[1]

Dorothy C. Grovom

Associate Professor of Business Education
University of North Dakota
Grand Forks, North Dakota

I, too, am glad to be here in Boston at the AVA Convention. Being in Boston reminds me of an incident my sister related after her visit to Boston a few years ago. The sight-seeing bus was parked on the street near a sign which read "Paul Revere lived here." A large truck came down the street; the driver had difficulty manuevering his vehicle through the parked cars. He stuck his head out of the window, looked squarely at the sign and said, "I wish he would move out of here." Boston is a city of traditions; our co-operative program, even though it can be traced back hundreds of years to the apprenticeship program, the program as we know it today is relatively new.

Mr. John Lee has told us that we must make sure that we have a true co-operative program. We must distinguish among terms, such as work permit (which means permission granted for underage people to do certain types of work and to work at certain hours), work experience or a job (meaning any kind of work which a person may do), work study (which is work performed by in-school people employed in some public agency or institution), and co-operative office education

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 7, 1969.

or co-operative work experience (where school and business work together to provide varied office experiences for in-school youth). The Vocational Education Amendments of 1968 further complicated our understanding of terms associated with co-operative office education by calling co-operative office education a co-operative work study program. The definition given is the definition commonly used for co-operative office education, "a program of vocational education for persons who, through a co-operative arrangement between the school and employers, receive instruction, including required academic courses and related vocational instruction by alternation of study in school with a job in any occupational field, but these two experiences must be planned and supervised by the school and employers so that each contributes to the student's education and to his employability."

To me, there are two main program categories--supervised work experience and simulated work experience. The term, supervised work experience, may be used in speaking about a co-operative arrangement between an employer and the school. It may be in a business establishment and if so, it will be called a co-operative program, possibly co-operative work experience, co-operative office education, co-operative work study, or co-operative vocational office education. At the University of North Dakota, we call our program co-operative business education. If the on-the-job experience is obtained in school offices such as the program at the Roxana High School which Mrs. Rose Ann Davis described to you, it will be called directed work experience. Her students spend six weeks of the last semester working in the school

offices of various departments; in the library; and in the principal's office. In some schools, students are placed in directed work experience positions at the beginning of the school year and work for the entire year. Mrs. Davis mentioned that they were going to do this next year. In other schools the students first participate in a simulation program, then a directed program, and finally a co-operative program. In still other schools,only the students who are not ready for co-operative experiences are placed on directed or simulation programs. Mr. John Lee sounded a note of warning when he said that care must be taken so that students on these programs do not "become teacher and school prepared rather than occupationally prepared." I would agree with Mr. Lee. Students will learn varied office tasks and the transition to an office job will be easier from a directed work experience program or a simulated program; however, to me, there is no experience comparable to that received in a business establishment. To some, there is no business like show business; to me, there is no supervised work experience like co-operative work experience because the business atmosphere or "feel" of business can only be experienced by working in a business firm. Of course, as Mr. Lee suggested, a good co-operative program must include a variety of job activities and the best way to assure this is to have a training agreement and a training plan. There must be related school instruction, and a teacher with released time to coordinate the program.

The other category is the simulation program--called by names, such as model office, simulated office, integrated practice, integrated

office and the block-time laboratory plan. These programs for many schools and communities are the only means available of providing work experience for their students. These programs are to be described to you later this afternoon.

At the University of North Dakota, co-operative business education is required of all of our students on both the Associate of Arts and the degree programs. We have a combination program--directed experience and co-operative. Our students work in our department, in offices on the Campus, and in business establishments in the City of Grand Forks. Incidentally, our degree students also take the specialized courses to qualify them to be teacher-coordinators.

The related class is one of the key elements in a successful co-operative program. Mr. Lee defined this class as "designated separate time in which all co-operative office students are enrolled so as to advance them above the training they have received in their prerequisite courses, to handle problems that have developed while at the training station and to present them with other career opportunities and possibilities for the ability they now possess." It is the course in which all students on any type of supervised or simulated work program must be enrolled. In some schools, this related class which is a senior course is also the secretarial practice class, the clerical office practice class, or a combination of the two; in others, it is a finishing course because in these schools the students have had a prerequisite course as juniors which has given them the basics of skill

development, machine knowledge, and office rudiments. This course, then, on the senior level becomes more of a problems course. The related class at Roxana is a secretarial practice class.

Both Mr. Lee and Mrs. Davis told you about the course content of the related class. You noticed I am sure some similarities and some differences. Both included work in human relations; communications; information about choosing and planning for a career (Mrs. Davis called hers a "Job Hunting Unit"). Since Mrs. Davis' class is a secretarial practice class, work on the office skills, such as machine instruction, was included. Mr. Lee menticned a review of office skills so I would presume the office machines skill had been taught on the junior level. Mr. Lee mentioned money management and Mrs. Davis money. One area of related class instruction mentioned by Mr. Lee was business management. This includes an explanation of the American Free Enterprise System, types of business organizations, and an understanding of the responsibilities of management. Mrs. Davis teaches her students about the placement and care of equipment and supplies.

In our program at the University, our students, in most instances, have either had or are currently enrolled in all of the basic fundamental courses in machines, shorthand, typewriting, and in executive secretarial procedures. For this reason, our course content has been divided into the following categories--getting a job, getting along on the job, getting a better job, dress and grooming, telephoning and

personal finances. Our students also have daily study guide sheets in which they study words similar in sound but different in meaning or words that are closely associated in meaning; correct methods of writing the parts of a letter--inside address; salutation; signatures (including signing for another, women's signatures); enclosures; mailing notations; zip codes; and spelling. They write letters commonly needed in an office and take the employment tests.

Mr. Lee, too, recommended "feedback into the related classroom instruction of the results of coordination visitations." He said this is "most effective when the coordination is done by the teacher who teaches the related class."

He mentioned specifically that provision must be made for both the general and specific areas of learning in the related class. As defined by him, general is that instruction which "is composed of learning common and essential to every student within the related classroom regardless of his career goal. 'Specific Related' instruction is composed of the instruction related to the career goal of an individual student or of a specific job cluster."

It is easy as a coordinator to neglect the specific related or individualized instruction necessary to help each person. This we must not do. We must include provision for individualized instruction when we set up the plan for our related class. One of the topics to be discussed later this afternoon is individualized instruction.

You will receive copies of some of the forms we use at the University of North Dakota. Each school situation is different and the forms used should be constructed for each school situation. These forms have been satisfactory for our use. The first one is the Information Sheet about each co-operative student. In many instances, the first day of class is the first opportunity the students and I have had to become acquainted. This personal data sheet is of tremendous help in job placement. Along with this personal data sheet, we use the next form--Class and Work Schedule, and the scholastic record of each student. These are obtained from University College or the College of Education depending upon the degree the student is seeking. You will notice that this form also includes the Student Declaration of Intent as required by the Vocational Education Amendments Act. The next form--Self Evaluation of work performed--also tells us if the student has been receiving varied work experience. Under the type of work performed, each square is for a different kind--typing straight copy, taking dictation, etc.

The Weekly Work Report is filled in completely by the student except for the evaluation and the employer's signature. A general evaluation for the week may be given. Some people feel that employers should not be asked to evaluate the student's work every day. These reports have worked well for us.

Either the Progress Report or the employer comments is used at the time visitations are made.

The End-of-Semester Evaluation Form is too long. We are revising this form. All of these reports are filed in the students' folders. It is sometimes necessary to consult these forms several years after the student has completed the course.

The final sheet is a layout of our model office. There are copies of our forms on the table for those of you who wish to have copies.

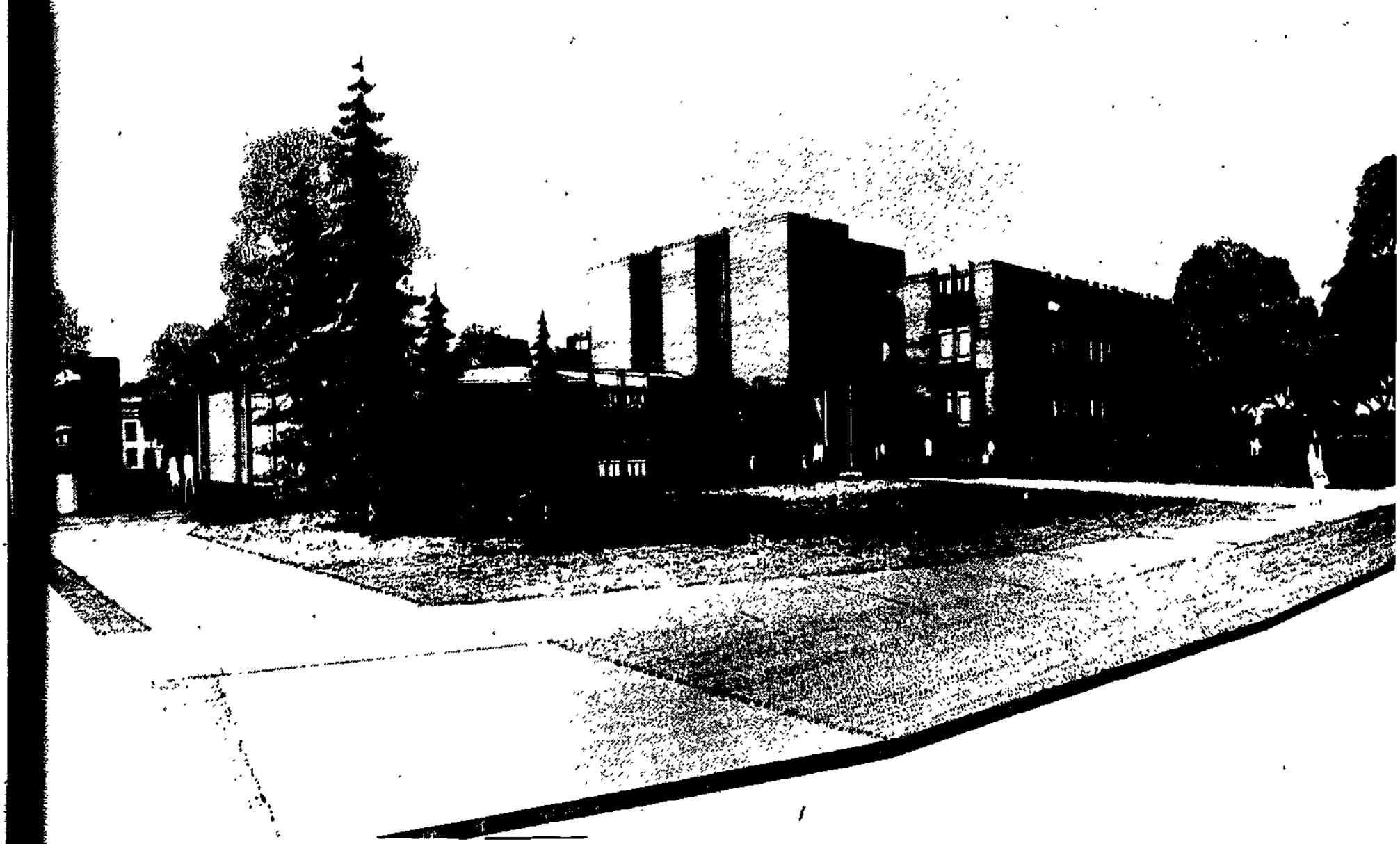
We have co-operative office education programs set up in many different ways. Some are makeshift programs. Of course, they work but do they work as well as the programs which are set up with standards depicting quality--varied work experience, qualified teacher-coordinators with released time, a related class providing for general and specific individualized instruction, realistic class materials, written training agreements and training plans, and an advisory committee.

COOPERATIVE BUSINESS EDUCATION

DEPARTMENT OF BUSINESS EDUCATION

UNIVERSITY OF NORTH DAKOTA

GRAND FORKS, NORTH DAKOTA



Department Personnel

Dr. John L. Rowe, Chairman
Dr. Roger J. Bloomquist
Mrs. Margaret L. Barr
Dr. Wilmer O. Maedke
Dr. John C. Peterson
Dr. Dorothy C. Grovom

type over (stencil) 30 per sheet done

typing done

Personal Data Sheet
Cooperative Business Education
Department of Business Education
University of North Dakota
Grand Forks, North Dakota

Semester _____

(Mr.)
(Mrs.)
Name (Miss) _____ Telephone _____

Local Address _____

Permanent or Home Address (if different from local address)

_____

Classification (Freshman, Sophomore, Junior, Senior, Graduate) _____

WORK EXPERIENCE:

Present occupation _____ years _____

Name and location of firm _____

Duties and responsibilities _____

_____

_____

Other positions held (List most recent first)

Name of firm	Location	Years	Nature of your duties

22 14 9 30

Type over (stencil) done

Personal Data Sheet, Business Education Department

High School attended (if not a graduate) Give name, location, and length of time attended.

Business courses completed in high school (Give location of high school and length of course in semesters.)

MISCELLANEOUS DATA:

Classes enrolled in this semester (Indicate time of meeting, periods and days of week, hours of credit to be earned, and building and room number.)

What is your purpose in enrolling for this course?

done

Personal Data Sheet, Business Education Department

EDUCATION:

Degree toward which you are working_____

Degrees held_____

Colleges attended (Name, location, approximate number of hours of credit earned--indicate semester or quarter)

_____

_____

_____

_____

Business courses in which college credit has been earned (Indicate name of college and semester or quarter hours).

_____

_____

_____

_____

_____

Business colleges attended (Name, location, approximate number of months or years--if graduate, state this).

_____

_____

Business courses in which business college credit has been earned (include business college and length of course in months or years).

_____

_____

_____

_____

High School from which graduated (Name, location)

_____

done

CLASS AND WORK SCHEDULE
Cooperative Business Education
Department of Business Education
UNIVERSITY OF NORTH DAKOTA
Grand Forks, North Dakota

Name of Student_____ Age____ Sex___ Year in School___

Address_____ Telephone_____

Major_____ Minor_____

Typing Courses Completed_____

Shorthand Courses Completed_____

Typewriting Speed_____ Shorthand Dictation Rate_____

I plan to train for and enter into the following vocational office field:

_____

Date_____ Signature of Student_____

_____

Class Period	Monday	Tuesday	Wednesday	Thursday	Friday
8 o'clock					
9 o'clock					
10 o'clock					
11 o'clock					
12 o'clock					
1 o'clock					
2 o'clock					
3 o'clock					
4 o'clock					

Total Class Hours Per Week_____ Total Work Hours Per Week_____
Name and Position of Employer_____ Telephone_____
Name of Business_____ Address of Business_____
Wages Per Hour_____ Wages Per Week_____

Do you want a part-time position? Yes__ No__
Do you wish to work the four required hours in the department? Yes___
No____

Comments: (use reverse side)

SELF-EVALUATION OF WORK PERFORMED

Cooperative Business Education

University of North Dakota
Grand Forks, North Dakota

Name_____ Semester_____

Type of work performed	Date Work performed	Employer	Self-Evaluation	Comments or Suggestions

done

WEEKLY WORK REPORT

Cooperative Business Education
University of North Dakota, Grand Forks

Name _____ Week Ending _____

Day	Worked From To	Total Hours	Kind of Work Performed	Evaluation of Work (Superior, Excellent Average, Poor, Not Acceptable
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

Total Hours _____

Hourly Wages _____ Weekly Wages _____

Student's Signature _____

Employer's Comments:

Employer's Signature _____

(Please return to Dr. Dorothy C. Grovom, Department of Business Education, University of North Dakota)

done

PROGRESS REPORT
Cooperative Business Education
University of North Dakota, Grand Forks

Name of Student _____ Place of Employment _____

Please check the listed items pertaining to the cooperative business education student working for you.

PERSONAL CHARACTERISTICS

	Needs Improvement	Satis-factory		Needs Improvement	Satis-factory
Personal Appearance			Adaptability		
Courtesy			Willingness to Work		
Tact			Other		
Loyalty					
Judgment					
Punctuality					
Cooperation					
Dependability					
Initiative					

WORK CHARACTERISTICS

	Needs Improvement	Satis-factory		Needs Improvement	Satis-factory
Typewriting			Proofreading		
Bookkeeping			Grammar		
Duplicating			Handwriting		
Spelling			Following Instructions		
Arithmetic			Speed of Work		
Telephone Techniques			Other		
Neatness of Work					
Transcription					
Filing					

Comments: _____

_____

_____

_____

_____

_____

Signature of Training Sponsor _____ Date _____

done

EMPLOYER COMMENTS

COOPERATIVE BUSINESS EDUCATION STUDENTS

University of North Dakota, Grand Forks

DIRECTIONS: Please comment on the three areas listed below. If the person being evaluated meets the expectations which you believe a good secretary should have, please indicate. A fair evaluation will aid in the counseling of the student.

A. Personal Appearance: Hair, Make up, Personal Hygene, Dress.

Comments: _____

_____

_____

_____

B. Personality Observations: Pleasant, Honest, Dependable, Courteous, Tactful.

Comments: _____

_____

_____

C. Work Habits: Organization, Judgment, Ability to follow directions, Punctuality, Cooperation, Neatness of work.

Comments: _____

_____

_____

_____

D. Other Comments: _____

_____

_____

_____

_____

done

End-of-Semester Evaluation
COOPERATIVE BUSINESS EDUCATION STUDENTS
DEPARTMENT OF BUSINESS EDUCATION
UNIVERSITY OF NORTH DAKOTA, GRAND FORKS

NAME_____ JOB PERFORMED_____

EMPLOYER_____

HOURS PER WEEK ON JOB_____ DATE ASSIGNED TO JOB_____

1.	Knowledge of present job	Good understanding of all details of 10 9 8 7	Average knowledge of job details 6 5 4 3	Hasn't full grasp of job details 2 1 0
2.	Knowledge of operations closely connected with present job	Knows most of the other operations in the unit 10 9 8 7	Knows a few operations other than his own 6 5 4 3	Knows only his own operation 2 1 0
3.	Industriousness	Conscientious on all assignments 10 9 8 7	Gives average attention to duties. Wastes very little time. 6 5 4 3	Requires very close supervision. Wastes time. 2 1 0
4.	Volume of work	Is one of the top people in turning out work 10 9 8 7	Does an average volume of work 6 5 4 3	Volume of work is under average 2 1 0
5.	Accuracy of work	Very seldom makes errors 10 9 8 7	Makes an average number of errors 6 5 4 3	Makes more than average number of errors 2 1 0
6.	Neatness of work	Very neat 10 9 8 7	Average neatness 6 5 4 3	Under average in neatness 2 1 0
7.	Ability to get along with others	Gets along extremely well with others 10 9 8 7	Has had Occasional difficulties with others 6 5 4 3	Has had many instances of difficulties with others 2 1 0
8.	Ability to instruct others	Does a good job instructing 10 9 8 7	Has never been asked to instruct 6 5 4 3	Has demonstrated a lack of ability to instruct 2 1 0
9.	Initiative	Has superior self-reliance and creative ability 10 9 8 7	Job does not permit appreciable amount of initiative 6 5 4 3	Has demonstrated need of frequent prodding and stimulating 2 1 0

Evaluation Form 2 NAME OF STUDENT _____

10.	Co-operation	Co-operates well 10 9 8 7	Infrequently demonstrates lack of co-operation 6 5 4 3	Fails to co-operate in many instances 2 1 0
11.	Tact; Ability to select best course of action in dealing with others without giving offense	Always handles every situation tactfully 10 9 8 7	Infrequently demonstrates lack of tact 6 5 4 3	Has shown definite lack of tact on many occasions 2 1 0
12.	Growth trend	Shows excellent possibility for advancement 10 9 8 7	Shows average ability to progress and develop. Will require some training to go further 6 5 4 3	Progress questionable. Has shown little possibility or desire to develop furthe 2 1 0
13.	Personal neatness	Very neat 10 9 8 7	Neat 6 5 4 3	Underaverage in neatness 2 1 0
14.	Appearance	Always well groomed, alert, erect posture, uses well-modulated voice--smiles. 10 9 8 7	Usually well groomed businesslike impression, sometimes slouches 6 5 4 3	Often neglects appearance--irritating tone of voice--posture poor 2 1 0
15.	Poise	Apparently entirely at ease 10 9 8 7	Shows no unusual lack of poise 6 5 4 3	Ill at ease--embarrassed 2 1 0
16.	Common sense or judgment	Excellent 10 9 8 7	Sound 6 5 4 3	Scatterbrained 2 1 0
17.	Punctuality	Always on time 10 9 8 7	Sometimes a few minutes late 6 5 4 3	Frequently late 2 1 0
18.	Organization of work material	Has all necessary material on hand before starting the job 10 9 8 7	Occasionally has to obtain material before completing job 6 5 4 3	Leaves work frequently to gather material for job 2 1 0
19.	Telephone Procedure	Always uses correct telephone procedure 10 9 8 7	Makes minor speaking and procedural errors 6 5 4 3	Makes frequent and crucial errors in procedure 2 1 0

done

Evaluation Form 3 NAME OF STUDENT_____

20.	Adaptability	Adjusts very quickly to any situation 10 9 8 7	Puzzled and upset at times in new situations 6 5 4 3	Has much trouble adjusting to any change in present situation 2 1 0
21.	Neatness of office work area	Work area is neat with no waste materials 10 9 8 7	Sometimes has a cluttered look 6 5 4 3	No definite organization of materials for orderly work 2 1 0
22.	Follow-up of completed work	Remembers to check with employer on finished product 10 9 8 7	Sometimes concerned about work completed 6 5 4 3	Has no interest in what or how work was received 2 1 0

General Evaluation (Please encircle the rating which is applicable to the person working for you.)

Superior Excellent Average Poor Failing

Comments:_____

_____

_____

_____

_____

_____

_____
Signature of Employer

This form was adapted from one used by the American National Bank and Trust Company, Chicago, Illinois.

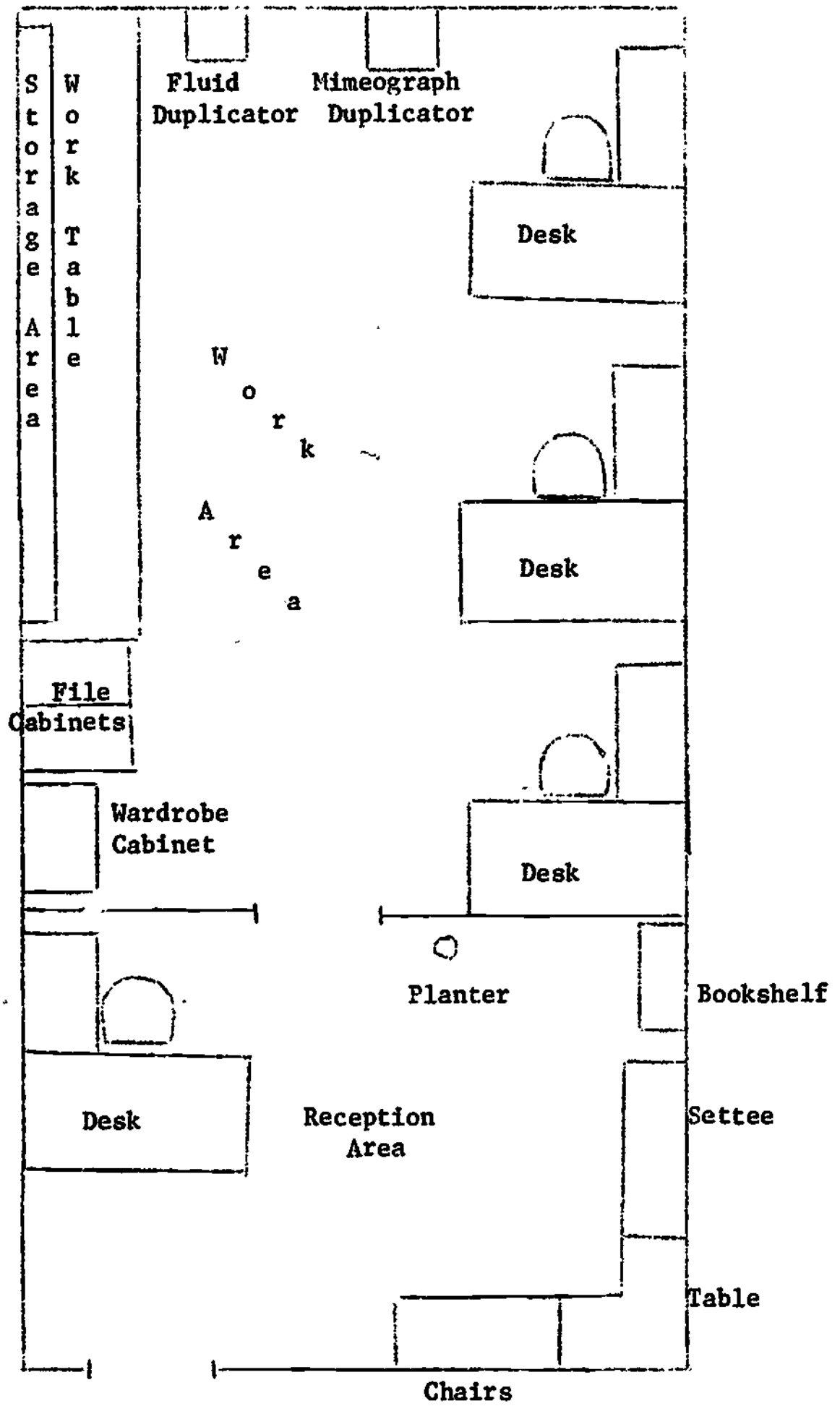
Please return to Dr. Dorothy C. Grover, Department of Business Education, University of North Dakota

done

Layout - Model Office

Cooperative Business Education

University of North Dakota, Grand Forks



AN OVERVIEW OF C.O.E.[1]

John D. Lee

Chief State Supervisor
Business and Office Education
Office of Superintendent of Public Instruction
Indianapolis, Indiana

Would you believe that a Cooperative Office Education Program is an innovative idea in many states? Some states believe it has been in existence for a great many years because of the confusion of referring to work programs as being the same as Cooperative Education Programs. It seems that no matter what is accomplished today in Office Education, it is again stated that is has been done before. Would it not be better to say some things are completely new and some have been done before but now we can do more. From the least to the finest, I use the following: work permit being the lowest, then work study, and then the true educational program--the Cooperative--the ultimate.

I have heard many people state that for years their students have been released from school to go to work. I have heard coordinators state that all their students had a job. To me this is a use of profanity on the part of a person and is not associated with a Cooperative Program; a work permit program yes--but not a true Cooperative training program and use such words as "word" and "job"? To me these words denote cheap labor, getting out of school and getting paid for it, rather than a true educationally coordinated program that is to advance the student above and beyond that which he possesses. In the past, and in some programs now, one usually selected a business because there was work

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

experience or a job there for a student and then breathed a sigh of relief when a student had been placed. In work programs the prospective employer was not willing or even asked to provide adequate supervision and rotation of experience for a given student, and was not willing to review the development of the training station with the teacher-coordinator because in the past, it was not demanded. In the cooperative, it is a must. In the past, or with work study programs, the local school did not have an advisory committee composed of representatives from the employing community. In a true Cooperative Program, one should find an employer-employee agreement in writing showing the ability of the student and the variety of activity the employer was to provide to advance the student, an in-school related instruction period, and the teacher being released from school to select a suitable training station, as well as to coordinate that training station.

The related period cannot consist of a course in typing, any course in which the student is enrolled, not during his lunch period or carnot be the time the student was designated to be in his home room. In any of these situations we cannot begin to justify this as being an educationally sound program, let alone a program of training for the student. A related period consists of a designated separate time in which all Cooperative Office students are enrolled so as to advance them above all training they have received in their prerequisite courses, to handle problems that developed while at the training station, and to present them with other career opportunities and possibilities for the ability they now possess.

The related period classroom instruction is considered to be divided into two separate areas--general and specific. "General Related" instruction is composed of learnings common and essential to every student within the related classroom regardless of his career goal. "Specific Related"

instruction is composed of the instruction related to the career goal of an individual student or of a specific job cluster. The General instruction would be, and I now present an outline for your consideration:

Orientation To The Cooperative Method

A. What is Cooperative Vocational Education

B. Types of Cooperative Vocational Education Programs

C. How the Cooperative Office Education Programs Operate

D. Duties and Responsibilities of the Student Learner

E. Student Learner Records and Reports

F. Advantages to the Student Learner

G. Rules and Regulations of the Vocational Cooperative Program

Orientation To Office Work

A. Employment Preparation Such as:

1. Personal Grooming and Hygiene

2. Obtaining a Social Security Card

3. Taking Employment Test and etc.

B. Employer-Employee Relations

1. What an Employee Can Expect From an Employer

a. Labor Laws

b. Labor Unions and etc.

C. What an Employer Can Expect From an Employee

1. Adherence to Company Rules and Regulations

2. Regular Attendance

3. Good Personal Appearance

4. Loyalty and etc.

D. Methods of Terminating Employment

Human Relations

A. Job Environment and its Importance

B. Understanding Yourself (Self-Analysis)

C. Understanding and Winning Respect of Co-Workers

D. Use of Positive Attitude and etc.

Personality and Personal Improvement

A. Desirable Traits and Habits

B. Self Evaluation

C. Physical Characteristics That Hurt Personality

How To Be A Better Employee

A. Avenues of Promotion

B. Planning for Advancement

C. Training and Education for Advancement

Communications

A. Business Vocabulary and Spelling

B. Telephone

1. Voice--Tone, Pitch, Inflection, Speed, Volume
2. Placing a Call
3. Receiving a Call
4. Screening and Call
5. Recording a Message
6. Types of Equipment--PBX, Call Director, Button Phone, Data Phone

C. Presentation of Oral Reports

D. Mail Handling

Money Management

A. Planning Use of Your Money

B. Savings and Investments

C. Types of Financial Institutions

D. Wise Use of Credit

E. Banking Services

F. How Much is a Job Worth?

Review of Office Skills

A. Filing

B. Mathematics

C. Business Machine Operation

D. Bookkeeping

E. Typing--Speed or Accuracy Development

F. Spelling

Business Management

A. The American Free Enterprise System

B. What is Free Enterprise

C. Types of Business Organizations

D. Understanding the Responsibilities of Management

E. Purpose and Goals of Management

F. Business Organization and Line of Authority

G. Understanding Personnal Problems of Management

Understanding Your Job

A. Student Learner Manual

B. Job Manual

Choosing and Planning a Career

A. Choosing an Occupation

B. Sources of Aid

C. Self Evaluation

D. Factors to Consider in Applying and Accepting a Position

E. Applying for a Position

F. Common Errors to Avoid in Writing Letters of Application

G. Personal Data Sheet

H. Samples of Letters of Application and Personal Data Sheets

I. Taking Employment Tests

The feedback into the related classroom instruction, from the results of coordination visitations is most effective when coordination is done by the teacher who has direct contact with the student trainee in the classroom at school. Coordination contacts must be planned in advance if one desires them to be fruitful. Programs of work require, in most cases, a work permit and consist of sacking groceries to pumping gas, to doing nothing more than being a file clerk without regards to ability possessed by the students. A true educational program consist of the setting up of step-by-step training plans, the review of such training plans, the arrangement for and the follow-up of student trainee interviews, cooperative evaluation of the student's progress while at the training station, and specific related classroom instruction and the gathering of realistic and current instructional materials which relate to the students training program. Basically then, on many occasions, students will be counseled and prepared as individuals during the related period rather than through group instruction.

There are various plans used in cooperative programs but not being equal in value or in success. To me, please remember, just selecting a training station for each student without coordinating the activities of that station and lacking a definite related period, is not a cooperative program.

In some states, one individual, where many schools are found in one city, may select the training stations with the related instruction and coordinating of the students, done by another teacher. Some have one individual involved with all training station activities and another person for the related instruction. This is not as desirable as the prior method mentioned. Some have teachers which travel from school to school in the same district, teaching a related period in, say as example, two schools, and then coordinating both groups that afternoon.

This does not allow you to have a true school of your own, for you to know your students, or them you, until they enroll. Otherwise you possess little knowledge concerning that which is best for them. Some coordinate both D.E. and C.O.E. with a separate related instruction period for each and extra coordination time to handle both.

One really starts leaving reality where there is one person for coordination of the stations, one for selection of stations, and one for related instruction. Still, the best, is where all is done by one.

In two of our major cities, employers must first make application to the local business advisory committee, composed of other employers, as the first step in requesting a COE student. These committees truly evaluate their facilities, equipment, but mainly the written training program they state they will provide to one of our students. Many times things must be changed prior to the approval of the committee.. It is not unusual for a company to be denied until equipment, supervision personnel, and etc. are improved, provided, or changed.

In a small community, as an example, they have very desirable stations for six students but twelve students can be enrolled. Six could be released in the morning, six in the afternoon to the same stations, with the related instruction for both, in the same related period, in the middle of the day. At both times the students are released, so is the teacher.

Some use offices within the school, as well as the community. Beware; your students do not become teacher and school oriented rather than occupationally prepared. Compare your stations: Your school's bookstore and refreshment stand to using an actual office. Is a bookstore educationally and occupationally truly sound?

No matter the program--teacher coordination time, training agreement, and related instruction will make C.O.E. as right as any program--<u>truly right</u>. Remove any one of these and the program is no longer educationally right.

We have two basic rules: 1. For determining coordination time, we refer to one $\frac{1}{2}$ hour, per week per student. You have 20 students, the teacher is to be released, during school hours, 10 hours a week for coordinating the students. 2. Earning is important. Wages must be paid, for if wages are paid by the employer, you can be assured the employer shall find very worthwhile activity for the student especiallly when required to be an entry-level wage.

What type of program should we offer these students if the students have declared, as a matter of written record, a career goal for a position of employment upon graduation within an office area? Can we allow an employer to have one of our students when all he does is state "I need a girl to work for me"? What type of a teacher do we have when he sends a student to such an employer and sits back with great ease and states, "all of my students are out working"? How can we ever expect to bridge the gap between the school and the world of work if it is not a cooperative Education agreement between the parent, the school, and the employer? Cooperative Office Education is not a program where the employer might agree or should agree to an organized program of occupational training. It is a program where the employer must agree. A written training program is as important as each student having a name. It is a "must" in order to identify that which is to be accomplished. It is a variety of activities within one department of within the entire company. It is training to build flexibility within the student for the ever-changing world of work. It is not a preparation to acquire employment just for today but for tomorrow. lt is not a program in which students merely receive wages. It is a program where they learn while earning with the emphasis on learning, not where you earn and learn with the emphasis on earning. It is not a program where related instruction comes only at a time when there is nothing else to do but it is a set part of the program as it is set that the teacher

shall be released at the same time the students are released. It is a program wherein a written training agreement is established before any student is placed within that training program. It is not a program for the gifter only. It is a program for those students that have a need for and can benefit by it.

It is a simple thing to know those that are enrolled within a Cooperative Program because usually those are the people that are more familiar with what this world is all about because they have become associated with reality. They have had opportunity to take the textbook and associate it through the Cooperative Program with actual experience. They quite probably will be the most successful graduates of that high school because they have not spent all of their years studying a textbook, without association with reality, but have had the opportunities to be involved in that which they are practicing and will have the opportunity to make adjustments before they graduate. But please, as professional people, never be caught using such profanity as "work" and "job", but talk of experience, realistic experience, valuable experience, experience that is found because it advances the student above and beyond that which he now possess. Talk about follow-up studies on each graduate and the placement of your graduating students through personal placement, working with advisory committees and the fact that you have related instruction to handle all problems that developed while at the training station: and to prepare them for their next day's activity within their training program.

Who is the educator? If we do not recognize our responsibility within Cooperative Education, the businessman will assume this responsibility on his own rather than with the association and the involvement of the school. There are so many things that cannot be accomplished within the classroom or through the textbook. So many pieces of equipment, costwise, are out of our realm of possibility but through the Cooperative Program, our

students can have the training on all forms of equipment. Yet each movement within our Cooperative Program must be evaluated according to priorities. Some things are so minor that they should be left to the businessman, but others are of major importance and should be experienced by the student while he is still within the high school.

In closing I leave you with these thoughts: If you disagree and do not believe in a Cooperative Program, it is a shame because you yourself were once involved in one. It was called "student teaching" and that philosophy still prevails. Why should a student have to wait until after graduation to become associated with that for which he is being taught and trained to do? Why can't this take place while the student is still within our jurisdiction and control? Yet, it is worthless unless it is an educationally sound and coordinated activity that is evaluated greater than any other course in law, typing and so forth that we have ever had before. If the program has been educationlly sound the girl or boy that has completed the Cooperative Office Education Program need not go on to hight education unless he or she desires to do so. They should be ready for immediate and gainful employment--not entry level but direct employment upon graduation from the high school program. Finally, having the opportunity to be a member of the business education department is not merely teaching students what they do not know, it is a painful, continuous, and difficult task to be accomplished by kindness, by watching, by perception, by praise, but above all, by example.

MULTI MEDIA INSTRUCTIONAL SYSTEMS APPROACH FOR TEACHING SHORTHAND AND TYPEWRITING[1]

Marianne Icenogle

Doctoral Student, Univ. of North Dakota

and with

Solon Springs School District

Solon Springs, Wisconsin

You well know educators are constantly attempting to find an instructional system whereby:

Students can achieve 100% of their own capabilities.

Students can master 100% of the behavioral objectives.

An instructional systems approach that will take care of the growing population of young people and adults demanding more and better education; and one that will insure regular and effective interaction between instructors and students.

Unique instructional programs have been devised whereby many students master 100% of the objectives. An example of such a program is the astronaut training school. Here 95% of the astronaut candidates will achieve 100% of the objectives.

In a research study completed two years ago at Mt. San Jacinto College in California, it was noted that three of the multi media

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[1]*Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 8, 1969.*

courses were producing on the average 85-80. This means that 85% of the students were mastering 80% of the objectives. Compare this with traditional instruction found in the typical junior college and high school consisting of the lecture-discussion type whereby student achievement in a class size of thirty-five is 75-75.

We feel that the multi media instructional systems approach is a step toward achievement of maximum learning.

Systems Approach Used in Business Education

Through use of multi media, I have been able to individualize the instruction in typewriting and shorthand at the junior college and secondary school levels. This systems approach has enabled the student to master the performance goals of each lesson before being introduced to the next one. It has allowed the student to progress at his own rate of learning. It makes it possible for three levels of shorthand or typewriting to be taught in the same class period. All levels of shorthand and typewriting can be taught every semester regardless of class enrollment. The drop-out rate, especially in shorthand, has been lessened considerably.

Simple and Economical

The hardware of this systems approach is composed of a tape-playback and a station equipped with a typewriter. Software includes textbook, tapes, and syllabi. The classroom looks like

the traditional one with the exception of the tape-playbacks at each station.

The instructor meets with the students at a specified time three days a week to give assistance and to check techniques on a one-to-one basis. Lessons, placed on a tape, are mastered with the minimum requirements set for a "C" grade. If these requirements cannot be attained in a particular lesson, that student may select another time to repeat sections difficult for him. Excerpts from one tape prepared for Intermediate Typewriting will now be heard.

This instructional systems approach makes it possible for the student to have immediate knowledge of results and allows him to practice and review subject matter according to his own needs at any given time.

Development of an Instructional Systems Approach

How can you initiate a multi media instructional systems approach in your school?

(1) First you must ask yourselves the question, "Do you want to develop some unique approaches to instruction?" This would have to be a decision of the Board of Education, administrators, and instructors in your school system.

(2) Speakers should be made available to discusss instructional innovations.

(3) Instructors should be given an opportunity to choose whether they would prefer their instruction for regular lecture-discussion method or by the new multi media instructional systems

approach.

(4) Regardless of the method used, all instructors should prepare behavioral objectives. These behavioral objectives will describe what the learner will be doing at the end of the instruction period, the conditions under which he will perform, and the criteria of successful performance by the student.

(5) The multi media can include film strips with coordinated audio tapes, mimeographed material, concept films, large group, small group, and individual instruction--only a few are mentioned here.

(6) If filmstrips are used, a photographer could be employed, equipment leased, and a procedure established to produce inexpensive film strips. At Mt. San Jacinto we had on the staff a full-time photographer for this purpose. In this slide you will see Mr. Waterman preparing a slide.

A sound technician can be employed with equipment leased, and he can set up the coordinated audio tapes. Our full-time technician was responsible for assisting in the selection of the music and timings for the typewriting tape you just heard. Our sound technician and his equipment are shown in this next slide.

If funds are not available for the photographer and sound technician; the instructor, during released time, can make his own tapes. The mimeographed material can be prepared by a student typist. If filmstrips are too expensive, the media can

include textbooks, tapes, and mimeographed material. The instructors can use the systems approach for an entire course or a few units, with audio tapes only, with mimeographed material, or any other media.

If the instructor does decide to initiate an instructional systems approach, he will <u>first</u> determine the performance goals or behavioral objectives the student will master in each lesson. Next he will find or design the materials for carrying out these. Textbooks are selected; and of the commercial tapes available, he will use those which meet his purposes. Other tapes will be prepared in a sound room under the direction of a technician or individually by him.

If he chooses to use filmstrips, he will prepare a story board which will provide ideas for the filmstrip frames. In this next slide you will see a story board that has been prepared by one of the instructors. The commercial artist will draw the illustrations from the instructor's rough sketches placed on the story board. Our commercial artist is shown here preparing a frame.

How long does it take from the time the objectives and script for a lesson are written until the master tape is duplicated for student use? At Mt. San Jacinto the time was two weeks for preparing the shorthand and typewriting tapes. It must be emphasized when filmstrips are included the period is longer.

Teaching can be approached in the same way that a scientist investigates a research problem. The problem can be clearly defined and materials and methods made available for finding its solution.

I would like to repeat what Margaret Mead has said about learning:

> *We are now at the point where we must educate people in what nobody knew yesterday, and prepare people in our schools for what no one knows yet, but what some people must know tomorrow. We must rid ourselves of the idea that anybody can ever finish his education.*

The task is arduous but not impossible.

MEETING THE CHALLENGE OF CHANGE IN OFFICE MACHINES INSTRUCTION

Mary M. Brady

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Instruction in the area of office machines poses three challenging questions to us as teachers:

1. On what machines should we give instruction?
2. What media or devices should we use to increase the effectiveness of this instruction?
3. How can we individualize instruction?

First, let us consider the problem of machine selection. In this session I will include primarily the area of adding and calculating machines due to time limitations.

When we begin to study current developments in this area we soon realize that they are startling and should rouse us out of our complacency. We are first confronted with the fact that the rotary calculator, our old stand-by, is now outmoded and, while still around, is being superseded by the electronic calculator. We can pass by the key-driven calculator for we have known for some time that, except for a few specific applications, it is no longer used extensively.

What is the nature of this electronic calculator which is stealing the market from the rotary and should we put it in our laboratories? The

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 8, 1969.

electronic may have either a visual display screen or a print out. From my observations I venture to say that more electronic visual display machines are now in use than are electronic printers but that in the future, and maybe not too distant future, this trend may reverse itself. As the electronic printer is perfected and the cost reduced, it will become more popular than the electronic display machine for it will provide not only speed and silent operation, but also a print out.

For practical purposes, let us compare the visual display electronic with the rotary calculator and the electronic printing calculator with the mechanical printing calculator.

Although some companies have discontinued the manufacture of rotaries completely and others manufacture only one or two models, these old rotaries are going to be around for a good many years to come. A company with 100-500 rotaries will not suddenly trade them in for electronic calculators; besides, they have no trade in value.

We have rotaries in our classrooms and businesses have them in their offices, so we can safely conclude that we can continue giving some instruction on rotaries for the next 5-10 years at least. Even manufacturers who are no longer making rotaries admit that as a teaching instrument, they are superior to the electronic which is so fast that the student never can see what is happening.

What should we do about electronics--we should have at least one or two visual display electronics in the classroom, either the Nixie-tube type (vacuum tubes), or the cathode-ray type.

Next let us consider the printing calcualtor, the electronic printing calculator and the mechanical printing calculator. In recent years, there has been a big increase in sales of the mechanical printing calculator. Eventually, however, the electronic with a print-out tape will likely replace the mechanical printing calculator. It will give increased speed and eliminate the offensive noise of the mechanical printer. One manufacturer making an electronic printer indicates that sales of the mechanical printer have already dropped 50%. However, there are relatively few electronic printers as yet on the market; some manufacturers say the machine is not yet perfected, and it is expensive, so we are safe with the mechanical printer for some time to come. Making predictions of any kind is a risk.

With the disappearance of the rotary calculator and the limited use of the full-keyboard adding machine (mostly in financial institutions) the emphasis is on the 10-key keyboard; the development of skill in touch operation of this keyboard is the safest ground.

In fact, development of accurate touch operation of a 10-key keyboard with some familiarity, and sometimes only an awareness, of the various types of machines on which this keyboard is found, is a safe pattern for us to follow today.

In this discussion, I have not included the programmable electronic calculator--nor do I recommend that it be included in an office machines laboratory.

Similar questions arise in the duplicating area. The large company may do all of its duplicating on the offset, but what about the small office where some of our students will work--the direct and stencil process

is still used there. So we need to teach all three procedures.

Copying machines have invaded the duplicating area. While their operation is so simple that little instruction is necessary, students should have an opportunity to become familiar with the various copying processes. They should have some idea about how to match the process with the type and quality of the copy and the number of copies desired. They should also be aware of the cost per copy as well as the initial purchase or rental cost of the copying machine.

In the dictating and transcribing area we must consider the media used: plastic or magnetic belts or tapes. In the area of data processing, shall we include card punch and other unit-record equipment--shall we go into IDP and teach the machines which produce a punched-paper or magnetic tapes? These are questions to which we should give serious consideration.

So what is the solution?

1. Give a broad acquaintanceship knowledge: emohasize types of machines, applications, costs, and trends, rather than skill development; make the students aware of the rapid changes.
2. Spend little time on machines whose operation can be learned in a few hours of time in the office.
3. Keep in mind the words of an office manager: to teach for a high degree of skill on office machines other than the typewriter is to teach for obsolescence.

Now for the second decision-making problem: From the variety of teaching aids available, what ones should be used for the teaching of office machines and can these aids be used effectively for individualized instruction.

We may choose from TV, videotapes, programmed materials, multi-channel equipment, film loops, slides, tape recorders, etc. Sometimes we may feel that to take advantage of all the media available, we should be either magicians or technicians. Yet we must admit that wise use of some of these new aids is of great assistance in conducting the three-ring circus of the rotation-plan laboratory. The student, with the aid of self-instructional media, is able to learn the basic machine operations individually, and then is ready to participate in further learning in a simulated office situation.

We office machine teachers have always been accused of wanting more and more machines and now we also want more and more teaching media. We are like the man who was asked whether he would rather have 12 children or a million dollars. He replied that he believed he would rather have 12 children for if he had the million dollars, he would still want more.

At Southern Illinois University, Edwardsville, we are developing self-instructional materials for the skill subjects: typewriting, shorthand, and office machines. We are experimenting with the various media to determine which are the most applicable to our needs. We find that self-instruction simplifies class scheduling, provides flexible schedules for the students, and motivates learning as the student is able to proceed at his own pace; however, we have found it necessary to maintain a close individual contact between the student and teacher. Some students adjust slowly to this unaccustomed freedom even at the university level.

Miss Karen Kistner of Penn Valley Junior College, Kansas City, Missouri, has developed tapes and slides for instruction on various machines.

She has found this method valuable for individualized instruction in the classroom or for a company's training program. She says that the tape-slide narrative is effective because it both tells and shows the student how to perform the task. Often in the classroom there is so much activity that the instructor does not have time to give adequate directions on certain phases such as changing the tape and ribbon, so these instructions may be placed on slides and tape along with instruction on the basic processes amd selected applications.

The taped presentation today will illustrate two methods of self-instruction: one, taped instructions accompanied by slides to introduce an electronic calculator. And second, a taped instruction without slides to introduce a printing mechanical calculator.

Some copies of the material which you will hear on the tapes are available in the front of the room. You may pick them up at the end of the session if you are interested.

(A copy of taped presentation attached.)

The tapes which you have heard and the slides which you have seen are illustrative of how materials may be developed for instructional use, either in a regularly scheduled laboratory or they may be used with flexible modular scheduling. In either case they make provisions for self instruction which always needs to be supplemented by individual assistance by the teacher.

Slide 1 -- Electronic Calculator

The first section of this tape, with slides, includes the introductory material and basic operations on an electronic calculator.

Slide 2 -- Electronic Calculator

The electronic calculator is unique and different from other adding and calculating machines because of its amazing speed in performing all calculations. It has no moving parts; and therefore, is completely silent. Instead of having rotary dials for the recording of answers, the electronic calculator has a cathode-ray tube with a visual screen. This screen has three registers referred to as the K, Q, and P registers.

Slide 3 -- Slide of Three Registers

The orange arrow points to the K register. This register displays keyboard entries, multiplicands, and divisors.

The brown arrow points to the Q register which displays quotients, square roots, and multipliers.

The yellow arrow points to the P register which displays products, sums, dividends, and remainders.

As you progress through this instructional tape, notice how the decimal automatically positions itself in the registers.

Slide 4 -- Slide of the Four Transfer Keys

The register transfer keys are used to move a figure from one register to another for use in further computation.

These four transfer keys are visible at the left of the calculator. You may move a number from the Q to the K register (orange arrow), Q to P register (yellow arrow), P to K register (brown arrow), and P to Q register (blue arrow).

Slide 5 -- Clear Keys

In normal operation, all entries and calculations automatically clear the receiving registers. A brown arrow points to the Reset Key. Where special clearance is needed, the Reset Key clears all three visual registers. A yellow arrow points to the Clear Key; this key clears only the Keyboard register. The orange arrow points to the Grand Total Key. This key clears all three visible registers, recalls P Memory to the P register, and clears the P memory.

Slide 6 -- Keyboard

Like a 10-key adding machine, the electronic calculator has a 10-digit keyboard which is operated by the touch method. The home row keys are the 4, 5, and 6 keys. The keyboard is used to index entries into the registers. All entries take place in the K register unless the P or Q register is preselected.

The (blue) arrow points to the decimal key. The decimal must be depressed after each whole number. The decimal key establishes the position of a decimal point in an entry.

The yellow arrow points to the positive sign key. This key is used to change the sign in any register from negative to positive.

The brown arrow points to the negative sign key. The negative key is used to change the sign in any register from positive to negative.

The red arrow points to the dual multiplication control. When moved away from you, it automatically indexes five zeros after pressing the decimal key. The dual multiplication control permits you to perform two separate calculations at the same time.

Slide 7 -- Addition and Subtraction Problem

Copy the problem you now see on the screen. This is a combination problem for addition and subtraction. Do the problem as you are directed on the tape. Then check to see if the numbers in the visual registers of your calculator check with those on the screen. If they do, your calculations are correct; if not, stop the tape and repeat the problem.

Slide 8 -- Visual Register, 8

Enter 8; press the decimal key; now press the add bar; the 8 shows in the K register and the P register.

Slide 9 -- Visual Register, 25.2 and 33.2

Enter 25.2 -- Be sure to press the decimal key after 25; then press the 2 key. Now press the add bar. The 25.2 now appears in the K register. 25.2 has been added to 8 and the sum 33.2 is in the P register.

Slide 10 -- Visual Registers, 451.81, 485.01

Enter 451.81. Press the add bar; 451.81 appears in the K register. 451.81 has been added to your previous sum 33.2. The new sum, 485.01, now appears in the P register.

Slide 11 -- Visual Registers, 451.81, 936.82

It is not necessary to re-enter 451.81 to add it again. Simply press the add bar. 451.81 is added again. The new sum in the P register is now 936.82.

Slide 12 -- Visual Registers, 952.30, -15.48

To subtract 952.30 from the sum of the additions, enter 952.30 and press the subtract bar. 952.30 is in the K register and the remainder is in the P register. The answer is a negative 15.48. Notice the minus sign at the left of the P register. Stop the tape and do the practice problems for addition and subtraction.

Slide 13 -- Multiplication Problem

Multiplication is a very easy operation on your calculator. Notice the speed of the calculator as you perform the multiplication. Copy the multiplication problem shown on the screen.

Slide 14 -- Visual Register, 2.4516

Enter 2.4516 and press the times bar. 2.4516 is entered in the K register and in the Q register.

Slide 15 -- Visual Register, 25.4, 2.4516, 62.27064

Enter 25.4, the multiplier and press the times equal key. 25.4 is in the K register. 2.4516 is in the Q register, and the product or answer is in the P register. Notice the decimal point was correctly positioned in your answer. Stop the tape and do the practice problems for multiplication.

Slide 16 -- Division Problem

When dividing on the electronic calculator, the calculator will carry the division to 12 places for accuracy. Copy the division problem.

Slide 17 -- Visual Register, 3.53

Enter 3.53, the dividend, and press the division key. 3.53 is in the P register.

Slide 18 -- Visual Register, 1.5, 2.3533333

Enter 1.5, the divisor, and press the divide equal key. The divisor 1.5 is entered in the K register. The quotient or answer is in the Q register. The remainder appears in the P register. Stop the tape and do the practice problems for division.

INTRODUCTION

This is an instructional tape on the use of a mechanical printing calculator. Each arithmetic process will be introduced along with the operating parts of the calculator. You should follow the instructions as given on this tape. If you do not clearly understand any instruction, repeat that section of the tape before proceeding to the next process. You will find a machine manual, lab instruction sheets, and a problem book at your work station. These are to be used along with the tape. If you have any questions, please make a note of them and consult your instructor or the lab assistant.

The printing calculator is used extensively as an all-purpose calculator. As well as performing addition and subtraction as easily as a 10-key adding machine, the printing calculator is capable of handling multiplication and division problems at rapid speeds.

TOUCH OPERATION

For maximum efficiency, the printing calculator should be operated by the touch method.

(If you have learned to operate a 10-key adding machine using the touch method, you may skip this section of the tape and proceed to the section on addition.)

To operate the printing calculator by touch, curl your fingers slightly as if your hand were grasping an apple. Now place the first three fingers of the right hand over the middle row of keys--the 4, 5, and 6 keys. These keys are more concave to the touch than the other keys on the keyboard. This is called the home row position.

By keeping the fingers over the middle row at all times, each finger has little movement to reach the upper or lower row of keys. The keys should be depressed with a short tapping stroke similar to that used on a manual typewriter. Without depressing the keys, do the following exercises.

Move the index finger upward from the 4-key to the 7-key; return the index finger to the 4-key; now move the index finger downward and touch the 1-key; return the index finger to the 4-key.

Move the middle finger upward from the 5-key to the 8-key; return the middle finger to the 5-key; now move the middle finger downward and touch the 2-key; return the middle finger to the 5-key.

Next move the ring finger upward from the 6-key to the 9-key; return the ring finger to the 6-key; move the ring finger downward and touch the 3-key; return the ring finger to the 6-key.

Now locate on your keyboard the cipher or zero key or keys. On some machines, you will find a single cipher below the 1-key, a double cipher below the 2-key, and a triple cipher below the 3-key. To depress these keys, reach from the home position as you did for the 1, 2, and 3 keys. On other models of the printing calculator, you will find the cipher key to the left of the keyboard, in which case it is depressed by the thumb. On still other machines the cipher key or bar is below the 9-digit keyboard and is also operated by the thumb.

Be sure to relax when operating your machine by touch. Do not tense your muscles. As soon as possible operate the keys without looking at the keyboard.

A touch operator seldom tires and is able to operate the machine with speed and accuracy.

You are now ready to begin the adding and listing of figures. Remember to use the touch method.

ADDING AND LISTING FIGURES

To enter a number on the keyboard, set the amount in the same order as you would write the number on paper. To set 456, depress the 4-key with your index finger, the 5-key with your middle finger, and the 6-key with the ring finger.

Set 456 on the keyboard.

Now locate on your machine the plus bar and depress it. The amount 456 will appear on the tape with a plus sign indicating addition.

Set 456 on the keyboard again; depress the plus bar. You have now entered two amounts into the register.

To take a total, depress the total key. The total will be printed on the tape in red with the T symbol. Do not make more than one depression of the total key.

Stop the tape and do the practice problems.

MULTIPLICATION

Multiplication on a printing calculator is extremely simple and completely automatic. To multiply 12 by 24 clear your machine and set 12 in the keyboard. Depress the X- or multiply-key which is at the left of the keyboard. Then set 24 in the keyboard and depress the black equals key above the X-key. The tape shows the result called the product, 288.

It makes no difference which factor of a multiplication problem is entered first. The results are the same. However, it is customary to enter the smaller number in digits first to reduce the number of machine revolutions. The factors are referred to as the multiplicand and the multiplier. To do the multiplication problems in the manual follow these steps:

*Clear your machine.

Let us assume you are multiplying 25 x 1.98.

*Set the multiplier (25) in the keyboard.

*Depress the X-key.

*Set the multiplicand (1.98) in the keyboard.

*Depress the =-key.

Enter the total (49.50) on your lab sheet.

Stop the tape and do the practice multiplication problems.

FLEXIBLE MODULAR SCHEDULING

Julian Demeo, Jr.
Principal

Wayland High School
Wayland, Massachusetts

The Wayland High School Flexible Modular Schedule

Before discussing Flexible Modular Scheduling at Wayland High School, I think it is important to tell you something about the history of Wayland High School. Wayland High School, as it now exists, was conceived during the mid'50's at the time when team teaching and the "Trump Plan" were the signs of the times. Wayland High School was designed and built around these two concepts.

It is a seven (7) building campus type high school organized around academic learning centers. In each center there is a staff room and in four of the centers there are reference centers which, in essence, are sub-libraries and centers for independent learning. Within these buildings, there are 3 large group spaces capable of accommodating 125, 150 and 275 pupils at a time, classrooms which accommodate 20-35 students and seminar rooms which accommodate up to 15 students.

Wayland High School is a comprehensive high school which presently houses 1200 students and 90 professional staff members. The pupil/teacher ratio is 15-1.

Now let me define what is meant by Flexible Modular Scheduling at Wayland High School. By flexible scheduling we mean that classes meet in varying sizes such as large, small and medium groups. The concept of modularity exists in two ways. Vertically, in that some classes are scheduled for double periods, some for a single period and some for half periods and horizontally, in a five day modular sequence which repeats itself such as a clock. The days have been labeled A, B, C, D and E so that, if there is any gap between days, B will always follow A, C follow B, etc. This preserves the continuity of instruction.

Over the years each department has evolved a sequencing pattern that lends itself best for the subject taught. For example - the English Department meets students in a one large, 3 medium, one small sequence, the Social Studies Department in a one large, two medium, one small, one independent sequence, the Language Department meets youngsters everyday, the Science Department meets youngsters in a large, medium, double laboratory, laboratory follow-up, medium sequence, etc., etc. Courses are scheduled to meet from once up to six times weekly with every combination in between. Teachers share students in both large and small groups. Teachers of the medium groups are responsible for grading and coordinating the grades of students.

Some departments are organized on a team basis or on subject matter, others are on grade level. For example - in Science there are sub-teams for Biology, Chemistry and Physics, in Social Studies and English, there are lower and upper teams responsible for curriculum, organization, planning and development in 9th and 10th gradesand 11th and 12th grades. Also used here is a concept of 'cluster' scheduling. By this is meant that clusters of students are scheduled in a given subject simultaneously such that the teachers in the team may re-group students at any time for large or medium group as the needs of the curriculum may suggest at a given moment of time.

With regard to the future, the possibilites of scheduling students in a center rather than in a subject is now being considered. This would enable the teaching teams to decide how students should be grouped and who should work with them.

FLEXIBLE MODULAR SCHEDULING[1]

Douglas W. Hawkins

Principal
St. Peter's Boys' High School
Gloucester, Mass. 01930

It is the purpose of this paper to discuss flexible modular scheduling as it is being implemented at St. Peter's Boys' High School. My presentation is divided into three sections: (1) the physical and curricular structure of St. Peter's; (2) the structure of the flexible modular schedule at St. Peter's; (3) the reasons for using the flexible modular schedule at St. Peter's.

1. The physical and curricular structure of St. Peter's

St. Peter's Boys' High School, part of the Central School System of the Archdiocese of Boston, is located off Route 128 in Gloucester, Massachusetts. At the present time, it serves some 480 boys from the North Shore area from Saugus to Rockport. It opened in September, 1965, and graduated its first class in June 1969. It was constructed as a college preparatory school with a capacity of 700-800. Besides 16 general classrooms, typing room, drafting room, science and language labs, music room, library, chapel, gymnasium, auditorium and cafeteria, it contains a large lecture room with 120 capacity and an audi o-visual room with 70 capacity. There are also several large corridor areas, one of which serves as a student lounge.

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[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 8, 1969.

There are 28 faculty members, including the Principal and two full-time Guidance Counsellors. The Assistant Principal and the Dean of Students spend part of their day in the classroom. The curriculum, while modern, is not particularly innovative. We do have some Advanced Placement Courses, a Cinema Course and a voluntary NJROTC program.

2. <u>The structure of the flexible modular schedule at St. Peter's</u>

The regular school day is from 8:20 to 2:30. After a 10-minute home-room period each morning, the day is broken down into 16 twenty-minute modules, with two minutes between each module. Class sessions vary in length from one-mod language labs to five-mod Cinema classes for showing full-length movies. Most of the class sessions run two mods (42 minutes).

Besides varying lengths of class sessions, varying class sizes are scheduled. There are large group lectures (up to 120 students), medium groups (25-30 students) and small discussion groups (12-15 students). Some courses incorporate all three of these group sizes within the week, while in other courses, students always meet in small groups. Some courses meet five times a week, while others meet only twice a week. Although a student's schedule varies each day of the week, each week is the same for the entire semester.

There are no study halls. During unstructured mods students are free to use most of the facilities, to work alone or with others, to consult teachers, to seek guidance, etc. The cafeteria is open for lunch from mod 9 to mod 12 (11:30-1:00) during which time each student has at least one unstructured mod.

Within a given course, some students are placed on independent study. For example, a group of Algebra I students who were being held back by the class are now working much of the time on their own. This is also true of some of our language students.

3. The reasons for using a flexible modular schedule at St. Peter's

We have changed to a flexible modular schedule in order to be able to adapt our course structures to the needs of each particular discipline rather than have the students and courses enslaved to the old lock-step schedule with fixed amounts of time and fixed numbers of students. In other words, we desired to adapt ourselves to the needs of the '60's and '70's. We also desired to work toward giving students their legitimate freedoms and corresponding responsibilities. Fundamental in our thinking has been the possibility of a greater individualization of instruction and of greater participation of students in their education. Although our curriculum has not changed much, our method of presentation has changed drastically. In many instances, lectures have given way to discussions, to independent study. We are becoming more and more convinced that learning does not come completely or even mostly from teachers and books. The student must think and must learn to share his thoughts.

I want to emphasize that the flexible modular schedule is only a means to an end. It is not the structure that really matters--that keeps changing from year to year. Now that we are in our second year under a modular

system, we are beginning to realize that the important thing is what it helps us to accomplish in terms of human values and human goals--especially in terms of knowledge and of love. It cannot be explained in a paper. It has to be lived. A school has to be willing to take the risk of jumping into such a departure from the traditional. I guarantee that it will be a wonderful human experience. It will mean confusion, insecurity, even headaches, at first, but the end result will be a greater educational experience for all concerned--teachers as well as students.

STATES '69

It is good to be here with you today and to have the opportunity of sharing with you some observations about vocational office education. In the few short years since 1959 when I started to attend these meetings there has been a great change in the number of persons attending and the number of activities which are engaging office educators.

It has been just ten years since I joined the staff of the Division of Vocational and Technical Education and was charged to develop, within the framework of Federal law and regulation, education for the office occupations to help meet the needs of this nation for office employees in the economic and defense activities of the country. This overriding charge has not changed within these ten years.

I can look back on my experiences overseas in Iran where I was Chief of Business Education and helped establish a program of secondary, teacher education, and collegiate business education training which still exists.

When I left the University of Idaho, where I had headed the Business Education and Secretarial Studies Departments, I looked to Iran as a challenge....a chance to see if what I believed to be true worked in another environment. Most of it did.

Most of what worked in Iran also works in the United States. I came back as a dedicated vocational educator for I had seen how the lack of

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Bruce I. Blackstone, Program Planning Officer, and Head, Office Occupations Education, Division of Vocational and Technical Education, U. S. Office of Education.

office workers could retard progress. I had also seen the contributions to society and to individuals which could be stimulated by occupational training.

Today I stand before you, again, to reaffirm my faith in our professional field, vocational education. Vocational education is our frame of reference and guiding discipline. The famous rules of Prosser lead us in educating individuals to enter and advance in occupations. Vocational education as a professional specialization stands in its own right with its terminology, mores, and procedures. Our major responsibility is to maintain, extend and improve existing programs of vocational education and to develop new programs of vocational education. A thorough knowledge of vocational education as a field of professional endeavor is essential to all who teach and administer office occupations education.

This year of 1969 has been a very good year! A far better year than most people realize. Preliminary statistics show that things have gone well in FY 1969. Final statistics for the previous FY of '68 show that office occupations education grew by about 10 percent, which outstripped the overall vocational education growth of 7 percent. This is the fourth year in a row that the rate of growth in office education has exceeded that of the total field of vocational education!

We have grown in enrollment in each of the taxonomy classifications. Incidentally, it seems significant to me that we can now talk about the USOE taxonomy and expect that listeners will understand what is involved in these USOE classifications of educational programs.

Let's briefly look at those areas where Office Occupations Education stands in first place among wage earning occupational education programs in FY 68.1/ It is largest in:

Total enrollment,	1,735,000
Secondary enrollment,	1,060,643
Postsecondary enrollment,	224,310
Adult enrollment,	442,963
Number of Special Needs Students in regular classes,	23,103
Number of full-time secondary school teachers,	14,731
Number of teacher education institutions,	140
Number of full-time teacher trainers,	304
Number of enrollees in preservice training,	9,177
Number of secondary school teachers placed,	2,547
State/Local matching per Federal dollar,	$4.66 to $1.00
Percentage of total vocational education enrollment,	23%
Number of States with enrollment increases,	47

About 61 percent of the office occupations education enrollment is at the secondary school level, 13 percent in the post secondary and 26 percent in the adult education programs. The order of popularity amoung secondary school occupational programs was:

1. General Clerical
2. Stenographic
3. Typing
4. Accounting and Computing
5. Business Data Processing

At the postsecondary level the order of enrollment in occupational programs was somewhat different:

1. Stenographic
2. Accounting and computing
3. General Clerical
4. Business Data Processing
5. Typing

1/ Provisional enrollment information, DVTE, June 1969.

In adult preparatory programs the rank order of enrollment was:

1. Stenographic
2. General Clerical
3. Typing
4. Accounting and Computing
5. Business Data Processing

Bigger and bigger, but are we better and better? In many ways YES. Cooperative education is expanding. Some States are experimenting with closed circuit television as an integral part of the instructional program. Simulation and block time are becoming common techniques. In fact, the basic concept of teaching "need to know" in realistic blocks of time has become an accepted procedure in many States. This was not true a short time ago. There are new instructional materials and methodologies surfacing in our field of vocational education.

Are we doing our job? Of course not! Until meaningful office occupations education is available to all persons in all communities, who want, need and can profit from this instruction, we have not met the charge of the Vocational Act of 1963, let alone the Vocational Amendments of 1968.

The Act of '63 and its companion Act of '68 set the framework for what may be done in office occupations education. There are specific requirements which must be met by all <u>vocational</u> education. A <u>vocational</u> education program must: 1) Be in schools or classes under public supervision. 2) Prepare of gainful employment. 3) Relate to the occupation for which training is being given.

There are many portions of education which contribute to vocational proficiency, but fall outside the parameters of vocational education. Any schools which are <u>not</u> under public supervision are excluded by law as are private-for-profit schools <u>not</u> under contract with the State Board of Vocational Education or a local education agency. Unless <u>all</u> of the

eligibility requirements are met, a program can not be considered vocational and an appropriate recipient of Federal funds. Failure to meet vocational education requirements for reimbursement does not place a program in a second class position, it merely indicates that here is an area of needed effort which cannot be supported by Federal funds.

Personal opinion expressed as fact by prophets of the past has suggested a possible domination of education through the use of Federal funds. These poor prophets fail to recognize that in office occupations education the Federal funds are a minor factor which may be used only as provided for by law and regulation, not be personal preference or desire!

The profession of vocational education extends an open hand to those who wish to participate. No one is forced to take the Federal veil. No one must participate! All who do participate are volunteers who have agreed to comply with the clearly established parameters of vocational education.

It is a fact that $4.66 of State and local funds back up each Federal dollar in office occupations education. Where is the domination here? One-hundred and forty teacher training institutions have volunteered to help that segement of vocational education, office occupations, to improve its teacher preparation. Three hundred and four full-time teacher educators are supported, again by the combination of local, State and Federal funds. Where is the Federal domination?

There has been a heartening growth in professional activities in vocational office education. Doctoral dissertations are beginning to appear, research is starting to bubble, leadership is beginning to develop. Here this week we have seen new responses to the demands of our professional field in the forming of new professional organizations for teacher educators

and classroom teachers in office education. Let there be no mistake that vocational education is our professional field and that the disciplines of vocational and technical education direct our activities. There are other disciplines and professional fields of interest, but a vocational office educator has signed up with the vocational team and is committed to helping youth and adults to get, hold and advance in office positions.

Two years ago I called for a year of dialog to help bridge the "understanding gap" which was the result of rapid expansion of office occupations education. It was hoped that meaningful discussion could be carried on with those who were expanding their efforts to include a new professional field. Many excellent educators have studied hard to understand the legal facts of life found in office occupations education. It is heartening to see many young educators devoting their efforts to exploring this new field and to observe their developing understanding of the complex process of working with elected and appointed officials.

To be very frank about it, I have been basically disappointed in the extent of dialog which has developed. It seems to me that there is a great deal of monolog being produced which was developed. It seems to me that there is a great deal of monolog being produced which ignores vocational education tenents and requirements. It would be very helpful to all of us in the vocational education profession if a two-way dialog could be produced. I hope that this will occur. For it to occur will require listening by all concerned and recognition of the fact that

there are some items which are not amenable to change by the parties involved in discussions. Federal law and regulation, State law and regulation, and local policies and procedures are governing and must be followed regardless of the personal inclinations of those concerned.

One of the great things about this nation is that it is a nation of law not of individual whims. I sincerely hope that the field of office occupations education never falls into the trap of personalizing the administration of vocational education programs. Our responsibility is to the student first and vocational education second. It is not to any individual, group or clique.

REACTION TO PAPER ON CHALLENGES AND GUIDELINES IN VOCATIONAL OFFICE TEACHER EDUCATION

By

Immanual H. Leschensky
Local Vocational Coordinator
Oconomowoc Public Schools
Oconomowoc, Wisconsin

Changes are taking place in Vocational Office Teacher Education and changes are occuring in the secondary schools in the State of Wisconsin. Secondary teachers have had to update themselves to keep abreast with Vocational Education and also to keep up to date with the many changes taking place in our technological society. Secondary teachers in our school and our state have met these challenges by taking additional course work at their own expense and time to meet the challenges of vocational education of our present day.

In 1965, only one member of our Vocational staff had ever had a course in the Philosophy of Vocational Education. At the present time, all of our vocational teachers have completed a course in Philosophy of Vocational Education. Our staff believes now more than ever before that a course in the Philosophy of Vocational Education is an absolute "must" for every teacher of business education, home economics, industrial arts, distributive education, agriculture and any other vocational courses which I have failed to mention. Why do we share this belief? We have experienced a change in our school from a highly academic educational institution to the belief that vocational education is part of our total educational program. Our teachers believe that vocational education is not a substitute for general education but is a component of the total educational program of those persons who have selected an occupation and who desire to prepare for it or progress in it. We also believe that both general education and vocational education have their useful functions, and that these functions are related.

Our teachers believe a course in the Philosophy or Issues of Vocational Education has paved the way for better communication between teachers and school administrators and the Board of Education. Our Vocational staff has seen to it that Vocational Education thinking has been incorporated into the total school's Philosophy of Education. This reads as follows: "The total educa-

tional program must provide the means of enabling the student to select and attain a vocational objective so that he may earn a living in a manner which will give him satisfaction and pleasure, and which will fulfill a need in his society." Then, it continues to read, "The program must make the student aware that he will have to continually expand and develop his knowledge in his vocational area in order to keep up with and adjust to the changes in a technological society. You see, I beleive that teachers believe a philosophy course in Vocational Education is an integral part of their vocational training and I have illustrated just a few instances in which this knowledge is applied in a practical way.

Experienced teachers and graduate students would enjoy taking another course in the philosophy of vocational education providing the course was not taught on a monologue basis. Even philosophers change their beliefs from time to time. Concepts and principles change from time to time. An advanced course in the philosophy of education would provide a real opportunity for a dialogue among teachers for interrelated problems of our present times.

Our teaching staff reaffirms your recommendation that every school administrator should be required to take a course in the philosophy of vocational education. Our teachers also recommend that our State Supervisors could be helpful to us by planning and developing In-service training sessions for school administrators. The importance of communicating with school administrators, especially in a comprehensive secondary high school cannot be underestimated. We still have a job to do and that is a continuous job of selling vocational education to many of our school administrators. The National Advisory Council on Vocational Education reports, that "at the very heart of our problem is a national attitude that says vocational education is designed for somebody else's children." This attitude is shared by business men, labor leaders, administrators, teachers, parents, and students. We are all guilty. We have promoted the idea that the only good education is an education capped by four years of college. This idea, transmitted by our values, our aspirations and our silent support, is snobbish, undemocratic, and a revelation of why schools fail so many students."

Teachers of business and office education do a great deal of guidance and counseling. This is not always the highest type of professional counseling as the average business teacher has had very little training in their undergraduate work in the area of vocational or occupational guidance and counseling. Business teachers would welcome additional course work in Guidance and counseling, and personnel courses, also related occupational guidance experience. Again, due

to our changing times, updated courses in vocational guidance, personnel management and vo - cational counseling should be available to the undergraduate teacher or counselor as well as the graduate teacher or counselor. Teacher training courses should emphasize the importance of open communication at all times between teachers and counselors until such time that all of us have been trained to be professional vocational counselors. We must keep our avenues of communication open, to close the door would be futile.

Yes, teacher preparation courses should give leadership and experience for planning with modular scheduling. Teacher - preparation courses should prepare teachers to be innovators and be willing to accept the idea and need for change in a changing society.

In vocational education, particularly one hears the importance of continuing education for the worker in industry. Teachers are well aware of the importance of continuing education in their field of work, yet their needs are not completely met. Courses pursued in graduate study are sometimes not sufficiently updated. The instructors' lack of close contact with industry is evident. He, like the high school office education teacher, probably has insuf - ficient time and opportunity to learn first hand from industry about current procedures and practices. The office education teacher - coordinator has greater opportunities than others to update this area of understanding.

Possibly, released time for office education teachers in the secondary schools and colleges to go into industrial offices in their community might be one solution to this gap. Community surveys of machines and workers' duties may have their place, but are not a substitute for first - hand observation of performance of jobs.

Your recommendation of 1,000 hours of occupational experience in the pre-service prepa- ration of an office occupations teacher is acceptable. However, for a student to work without pay is being questioned by some of our secondary office education teachers. All of our high school cooperative training programs in office education in the State of Wisconsin provide some form of monetary consideration in the performance of their duties. Needless to say, this has been an added incentive for students to work and has also satisfied a need for finan- cial assistance in many cases.

It is agreed that occupational experience is essential for both teacher education and sec- ondary teachers. Secondary teachers would also like to recommend that all teacher educa -

cators should also have had practical experince in teaching secondary high school students.

Secondary teachers are very much aware of the emphasis placed on the "disadvantaged" in the Vocational Act Amendments of 1968.

Courses undertaken in undergraduate and graduate levels are generally directed toward working with the average, middle-class student–not toward the disadvantaged (including the broad interpretation presently being considered), or the disinterested-in-learning, potential drop-out type of student. How does an office education teacher of middle-class background develop empathy for these groups of students?

Perhaps the opportunity to work with teachers who have worked successfully with such students in the way that nurses, doctors, and therapists serve internship, in a variety of situations might enable one to learn ways of motivating such students and understanding them and their problems, thus enabling teachers to motivate them toward reaching realistic goals.

Some challenges and guidelines have been presented to us today. Some of these guidelines may serve well for some of us and not for others. A continuous evaluation and re-evaluation of our current programs is necessary. Perhaps, we may find it difficult to find the time for implementation of these challenges. Perhaps the traditional four-year college term should be increased to five years for the undergraduate. I do not have the solution but we are here this morning to share our mutual problems which we cannot deny require future decisions.

BUSINESS DATA PROCESSING IN SECONDARY OR POST-SECONDARY CURRICULUM - SUCCESS OR FAILURE?[1]

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The purpose of this paper is to bring forth the importance of creating a realistic environment for the student and discusses several techniques for achieving it.

[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 9, 1969.

I would like to begin this discussion by asking the question, "Is secondary and post-secondary education in data processing successful?" To answer this we might ask a number of related questions. Why does a data processing manager hire a programmer who has a high school diploma and six months experience over a programmer who has no experience, but has just completed a two year post-graduate course in data processing? Why does a keypunch supervisor hire a girl with three months experience over a girl who has just completed a six month course in keypunching? Why would business rather train their own people than to accept them from a training program conducted on the secondary or post-secondary level?

There are probably many answers, but, I suspect that there are at least two very prominent possible answers. First, the exposure of many schools teaching data processing effectively, has not been brought to the attention of the industry in general, and therefore, simply is a failure to communicate the success of the programs. Or, secondly, there are too many managers who have been burned by graduates from such courses thus creating, in a sense, a failure on the part of the course.

For the purposes of this paper, I should like to reject the first answer because of the relative infancy of data processing courses on the secondary level, and also because I happen to be a manager that suffered from the second. As time goes on, and more and more courses are developed, the first answer will have greater significance for your group and consequently, will require your attention.

If my assumption is correct, why is this failure present? What is it that makes a company training program much More effective than a school program? What ingredient, for an effective course, is missing in the school presentation?

At the risk of oversimplification, the answer seems to be in the environmental quality of instruction, not the subject matter. For instance, no one will argue the fact that there are not enough qualified teachers, (i.e., teachers that possess actual work experience in a business data processing installation) or that there is not enough relevant equipment, (i.e., computer vs. tab equipment or no equipment). However, it does not seem to me that enough consideration has been paid to the environmental factor of business data processing. As an example, how many schools as an integral part of the course will establish a deadline for a systems or programming problem or a keypunch job and then either change the priority or add another assignment? How much pressure is really placed on the student of data processing? It is a rare installation that has no pressure or no deadlines to meet. And, the one single fault that managers complain about in graduates from secondary programs is that the student does not possess the ability to produce under varying degrees of pressure. This is the one area that a company training program can identify early in the data processing career; the ability to produce under pressure.

I was recently reading a study financed by the Department of Health, Education and Welfare and prepared by the Delta Pi Epsilon National Honorary Graduate Fraternity in Business Education

and one of the items that struck me, in the profile of a keypunch operator, was the fact that the thing that she most disliked about her job was having to do rush jobs. If the keypunch operator were trained to expect rush jobs, and if she were trained to handle rush jobs, she would not dislike having to do rush jobs, as much as she does now. I hardly think that we are in a position to do away with rush jobs in the data processing industry, but, I do think that, if one could build rush jobs in the curriculum, job satisfaction will increase, and worker productivity will also increase, and while you may never be able to make a rush job seem like a positive advantage, you can do much to reduce the negative attributes to the extent that student will at least accept it.

How does one build a business environment into a course in data processing? Again, at the risk of oversimplification, you can do it by making your data processing center a business. This can be done in a variety of ways, many of which I will leave to your imagination. However, here are two specific ways that I would like to discuss with you.

Recently, I was reading the New York Times and read where a group of schools in Pennsylvania had gotten a grant from the National Science Foundation to install a computer network that all ten colleges and school districts could use for educational purposes. What this did, in effect, was to give all ten of these colleges and school districts the ability to tap the computing power of a major computing system. Therein lies my first possible solution; make an application for an NSF grant for

the purchase of computer facilities. This brings modern, relevant, computer power to your school district, and gives the student the benefit of the latest computer technology to prepare him for the actualities of the professional business world.

The second solution contains all of the different elements of operation in the business world and thus creates the most direct way of offering the student every possible benefit of involvement. The solution is for a group of school districts and/or educational institutions to form a non-profit business institution whose goal would be to supply business services to education, government, and even the local business community. Services would be paid for by the user of the service and operating expenses would be deducted.

There is a good chance that after three years, the installation could be profitable and, if so, any money over and above operating income could be used for additional machine purchases. But, more importantly, it would: 1) Create the necessary environment for producing graduates who have a familiarity of the business world because the data center would be on a pay-as-you-go basis; 2) Create the environment for producing many business-oriented courses, such as: marketing, business economics, communications, etc; 3) Create good will between business community and data center because of its ability to work with and for the business community; 4) Create a services function for the data center, whose job it would be to seek out and propose solutions, using the computer, for various governmental problems, and; 5) Create the environment necessary to give the student the responsibility and pressure he will meet when he graduates.

What I'm suggesting really is to use the Barber College or Dentistry School approach to providing service. The charges for services are used to offset the cost of purchasing the equipment.

I don't know what legal problems would be encountered with this approach. This will depend, I suppose, on the different jurisdictions that you all come from. I also wonder if it is completely necessary that you think in terms of a non-profit organization. Additionally, it is not necessary that you think in terms of a grand plan in that the idea is also applicable to a small installation with only keypunches for equipment. If all else fails, then there is no reason why all of the previously mentioned conditions can't be simulated in the classroom or data center and run <u>as if</u> it were profit oriented. The only criterion should be to provide the student with the greatest possible advantage, as a result of his attending your school.

In closing, I would like to point out that our business is young, dynamic and inovative, so I would counsel you to think young, be dynamic and inovate.

SECONDARY SCHOOL VOCATIONAL PROGRAMS: KEY PUNCH, UNIT RECORD, AND COMPUTER PROGRAMMING[1]

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The title given to this section of the program is secondary school vocational programs. I am not qualified to speak about the plural of program unless what we have at Des Moines Technical High School can be called programs rather than a program I do know that in Iowa there is only one vocational data processing program outside of Des Moines and that one is a key punch program. If the purpose of vocational education is to meet the needs of a community then our concern need not be on the number of "x-type" programs there are in our state or nation, but with how well the "x-type" program meets the needs of the community. As an insurance and financial center the Des Moines Area has a large number of computer installations compared to the human population and as a result, there is a continual demand for trained people in data processing. I have been involved with data processing in the Des Moines schools since 1962, when our program began, and prior to that was a member of a committee that studied the feasability of a high school data processing vocational program.

Since my discussion will center on the data processing program at Des Moines Technical High School you might be interested in the organization of our school. Tech is one of six public senior high schools in Des Moines, and the only one with an extensive vocational program.

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[1]Presentation made at the Sixth Session of the Business Education Division at the 63rd Annual Vocational convention in Boston, Massachusetts on December 9, 1969

Students may enter Tech from any junior high school in the city. We do not have a specified attendance area as do the other high schools. Every student entering Tech chooses one of twenty-seven vocational areas. There are five business areas; Distributive, Clerical, Stenography, Accounting, and Computer Programming.

Prior to 1962, a committee of business teachers, appointed by Merle Wood, then Supervisor of Business Education, studied the possibility of teaching data processing in our secondary schools. The committee recommended that some type of data processing should be offered in high school and it was further recommended that whatever was offered should be offered at Tech. In the Spring of 1962 the Superintendent of Schools tabled the recommendation and when the school year was over in June of 1962 we assumed that there would be no data processing in Des Moines, at least for another year. During the summer, through the efforts of Merle Wood, John Bell, Director of Vocational Education, people from the Iowa Department of Public Instruction, and a committee from the Des Moines Chapter of the Data Processing Management Association (DPMA), it was decided to start a program with the help of NDEA funds that September. Three teachers, including myself, went into training four weeks before school was to start. We were experienced business teachers but knew little about data processing. Equipment was not even selected at this time. No curriculum was written and none was available for secondary schools as far as computer programming was concerned. The training area started with two inexperienced (and practically untrained) data processing teachers, a large room, and some chairs. We had no students until some were recruited after school started.

I will skip over three big problems for now--selecting hardware, building curricula, and selecting teachers. These were very large problems in 1962 and they still are. I will cover them later if time permits.

The philosophy of our data processing department in 1962--and now--is to provide as much training as possible in as many areas of data processing as possible to enable high school students to enter the job market with saleable skills upon graduation from high school.

We started three levels of training; key punch operation, unit record wiring and operation, and training in computer programming. We still have these same three areas although they have changed over the years.

Our key punch program is a one semester, one period per day course primarily for students in the clerical and stenographic areas. We presently have seven IBM 029 Card Punches and seven IBM Selectric Typewriter simulators. The unit record program was originally a three semester, one period per day program but because of technological changes it is now a one semester course offered primarily to students in the accounting area. The computer programming program was originally set up as a six semester, three periods per day program. It is now a five semester program. Note these changes and these are only changes in length and believe me these are not the only changes. I would like to emphasize that no change is made without consultation with our lay advisory committee made up of members of DPMA. Brief topic outlines of our courses are available for those who would like them.

I would like to spend the rest of my time talking about our Computer Programming Course. Our school district receives reimbursement

from federal and state funds because of this program. Our key punch and tab equipment courses are possible only because we use the equipment that was acquired for training programming students.

As mentioned previously our Computer Programming course--may I call it CP from now on--is a five semester course. Pre-requisite to entry into this program students must take a one semester, one period per day orientation course called "INTRODUCTION TO DATA PROCESSING." This was started in 1968 and has two main purposes; (1) to orientate sophomore students to data processing, and (2) to provide an elective in data processing to junior and seniors especially those interested in science and mathematics. After completing this introductory course satisfactorily and being recommended by the instructor, the second semester sophomore may enter CP. We felt it necessary to start an orientation course because we were losing too many students either because of lack of ability or lack of interest. Too many of these young people were having delusions of grandeur when they saw the tapes spinning and the lights flashing. To many it was quite a shock to find that programming is much more of a desk-type job than a button pushing job. With this course we hope to give them information about the true nature of programming and to give them some experience in flowcharting problem solutions and in converting these solutions to Fortran computer language. This course is offered at two other high schools and we hope to expand it next year to all public high schools in the city.

Our CP curriculum now includes training in the five programming languages dominant in our area, several semesters of accounting, two

semesters of systems and procedures, and several miscellaneous related courses. Through all these courses the student must learn to solve business problems with the help of a computer. During the final semester of his training the student is on co-op work one-half day or we provide experiences at school to simulate a job as well as we can.

To give you an idea of how rapidly things change for us; we now have three classes in training; what we call CP 1's, CP 2's and CP 6's and all three classes are in different curricula. The CP6's entered when we had a six semester program, the CP2's entered through the orientation course but their first programming experience was with a Burroughs 280 computer, and the CP 1's started this fall and their programming experience is all on the IBM 360.

I would like to return to the three problems that were mentioned briefly before--selecting teachers, building a curriculum and selecting equipment. The original teachers selected to teach computer programming in Des Moines were all trained as business teachers, and in addition the first three additions had the same background. Looking back now I believe we would have been better off to have selected some teachers from industry to give better balance. Our last addition--and we are looking for another one now--is from industry, and this is now a requirement of our State Vocational Department.

Building a curriculum is a most difficult task. We cannot copy post secondary programs at the high school level. We have developed our curriculum with the help of our advisory committee from DPMA. This is also true of equipment selection. We presently have a Burroughs 280 Computer, but because of the preponderance of IBM 360

Systems in our area we are presently teaching 360 languages to a large extent. We will have a 360 System within the next 13 months; not our own, but a shared system. In the interim we are on line to a 360--the King's Delivery Line--. They pick up student punched programs each afternoon and deliver results to us each morning.

In conclusion, I am not trying to sell high school vocational programs in Computer Programming to anyone. I do believe, however, that we have a good program in Des Moines and I hope it will continue. Results cannot be measured quickly for high school graduates. Many of our students say they are going to college and more than 50% do enroll. Most of them however, come from homes that give them no help, either financial or moral, and most of them drop out. For example, by June of 1965 we had had fifteen graduates who had completed the three year course. Fourteen of the fifteen said they were going to college and none have completed enough hours for a degree at this time. Of these fifteen graduates three are programmer-analysts, five are programmers, one is a computer operator, one is a key punch supervisor, one is a key punch operator, two are in unrelated office occupations, one was killed in Vietnam, and one hasn't been located yet. To give you one example of a success story, and I don't want to imply that this is typical, we are looking for a teacher from industry and I talked to one of these graduates about coming back to teach. I was shocked to find that this 22 year-old is making $13,000 a year. Our top teacher salary would be $12,800 so you know his answer.

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This group of addresses given at the 63rd Annual Vocational Convention, Technical Education Division of the American Vocational Association includes: (1) "Implications of Differentiated Staffing for Administration of Vocational-Technical Education Programs" by J.P. Arnold, (2) "Research in Technical Education" by D.S. Phillips and L.D. Briggs, (3) "Business Reacts to Distributive Education at the Post Secondary Level" by B.H. Shelton, and (4) "The Importance and Need for Training of Sub-Professionals in Health Occupations Education" by D.B. Hoover. (GR)

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Implications of Differentiated Staffing for Administration of Vocational-Technical Education Programs*

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A variety of activity and interest is currently focused on differentiated staffing as a means of effecting significant improvement in educational practice. The concept is politically and economically timely, broad in its implications for subsuming innovative practices and appears to have a face validity and comprehensiveness that other current staffing and teacher education patterns lack. It is the purpose of this paper to describe my concerns and conjecture on the implications of one particular kind of differentiated staffing for administrative practices and organization.

To accomplish the goal it is necessary to (1) define the particular brand and scope of differentiated staffing with which I am concerned, and (2) identify the potential problem areas which relate to its implementation.

The Center for Vocational and Technical Education, The Ohio State University is embarked on designing and piloting a differentiated staffing pattern for Vocational and Technical Education. The proposed OSU pattern and the preliminary research of the topic as accomplished by Center project staff is the basis for the implications derived for this paper.

Before describing the OSU effort in differentiated staffing, I must say that the concept of differentiated staffing is still largely just that. Several attempts to apply differentiated staffing in public school systems are under way, but none has enough experience to compare or evaluate the various approaches. The OSU effort, now in its early stages of research, will be

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a hierarchical arrangement of teaching and support positions initially differentiated on the basis of teaching tasks, personal traits, and experience patterns. Project reports will specify criteria for the hiring of differentiated staff and describe the operating relationships to be anticipated. The purposes of the plan are to provide maximum utilization of scarce (staff) resources and hence improve the effectiveness f instruction. The comments herein regarding administration are based on conjecture derived from the staff's experience to date. At a later date we anticipate being able to treat the topic with additional authority.

The OSU Project in Differentiated Staffing

The project staff has developed a tentative model which is being reseerched, then piloted, refined, and released for implementation in community colleges, technical institutes, area vocational schools, and other schools with vocational and technical programs. The initial work is concentrating on piloting a junior college or technical institute largely because of the relative lack of teacher certification constraints and the apparent receptivity and interest exhibited by post high school administrative staff.

Early stages of the research and piloting will involve essentially all teaching and administrative staff in several schools. Under differentiated staffing the best teachers can aspire to the improved status and salary of the master teacher rather than leave teaching for administration or non-educational employment. Effective differentiation of duties and responsibilities assumes individual assignments based on effective performance. Each teacher will no longer be trying to cover the complete range of activity between the teaching of theory and the performance of duties which are mainly clerical.

The project staff has developed a tentative hierarchical structure of teaching and support positions based on suggestions by Dwight Allen[1] and others. The present stages of research involve analysis and clustering of all generalizeable pedagogical and related tasks now being accomplished by aides, teachers, and lower level administrators. Research in process is expected to form a base for refinement of the five-level hierarchy as presently proposed. Positions in the hierarchy are delineated in the following summary of the duties at each level.

1. Master Teacher- This experienced teacher provides instructional and program leadership to other teachers in his occupational area or discipline. He may be a department head but should retain a significant teaching load, probably 40%, and will function also in student advisement. As a master teacher, some supervisory responsibilities over teachers of other levels will be necessary. He will teach, participate in program and curriculum design, and give direction to other teachers. His salary should approach that of his division director or dean.

2. Senior Teacher - This experienced teacher concentrates on teaching (90%-100% load), is a subject matter or occupational specialist, and is a highly effective teacher in nearly any teaching situation within his area. He cooperates with and assists the master teacher, qualifies for student teacher and internship supervision, and may supervise occupational specialists and other aides. His salary range should overlap the master teacher minimum and must be commensurate with his counterparts in non-differentiated teaching positions.

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[1]Allen, Dwight W. and Peter Wagschal, "Differentiated Staffing for Vocational-Technical Education," Second Annual National Vocational-Technical Teacher Education Seminar Proceedings, (October 21-24, 1968), The Center for Vocational and Technical Education, The Ohio State University, Columbus, January 1969.

3. Associate Teacher - New teachers, with and without degree prepa- would enter at this level. Student teachers and interns (who also will occupy this level), will be given teaching assignments which are less comprehensive and demanding than the full-time, newly hired associate teachers. A nine or ten month contract coordinated with a planned program of business or industrial experience is recommended. Initial salaries at this level must relate to teacher demand in the particular discipline or occupational area.

4. Occupational Specialist - This teaching technician or instructional aide is assigned to demonstration and laboratory supervision of students and other more routine tasks associated with actual teaching. Qualified college students, technical program graduates, and others from industry may all be appropriate for unique jobs in this level. Salaries at this level must be relatively open.

5. Clerical-Maintenance Aide - This slot may be filled by one individual for both functions or as separate positions for clerical and for maintenance. Clerical duties include taking attendance, recording grades, and other record keeping normally done by the teacher in non-differentiated situations. Maintenance assignments may include all routine and selected aspects of special maintenance and related activities. Associate and senior teachers would have primary responsibility for work assignments and supervision of the C-M Aides. These aides would normally have work assignments as support for several teachers and laboratories.

Anticipated Problems

Most of the problems of implementing and operating a differentiated staff are problems for solution by administrators. Primary problem areas have been

identified and are:

1. Evaluation: Teacher performance ratings as a basis for promotion in a differentiated staff are necessary. A systematic, cooperatively planned and operated scheme for evaluating teaching performance must be developed. Automatic or longevity-based promotion will function to reduce differentiated staffing to function as a single salary schedule.

2. Staff Involvement and Support: Administrative and teaching staff must have meaningful, cooperative involvement in development, implementation and operation of the plan.

3. Salary Policies: Salary costs, particularly in the initial years, may be higher than in non-differentiated situations.

4. Application to Small Programs: Part-time staff, often hired during initial and low enrollment years will need consideration in the differentiated structure. New programs seldom if ever will require and justify filling all five positions on the staff hierarchy in a given department or occupational area.

Implications for Administrators

Administrative problems in operating differentiated staffing are myriad, but by no means hopeless. Several changes in administrative practice and organizational structure are likely to occur. The following points are an attempt to describe differentiated staffing characteristics which signal such changes:

1. Establishing lines of responsibility for and administering the evaluation of teacher performance as a basis for promotion of teachers is likely to be a most critical administrative problem. Teacher performance evaluation will be more completely in the hands

of the teachers themselves under the proposed DS arrangement than under traditional staffing.

2. Teachers' organizations will have to be sold on the desirability of DS, especially for its compatability with individual professional and organizational goals. Any proposed plan must withstand thorough study by teachers' unions and other negotiating bodies.
3. Administrative and teaching staff must have continuous input and involvement with the DS plan starting at the time of its inception.
4. Effective organization and coordination of the DS plan will be a primary responsibility of the administration.
5. In-service training of instructional and support staff will become a greater concern of and will require commensurately increased administrative time and effort. Reorganizing existing staff into the DS pattern may be a major problem; in fact it may not be feasible to change assignments and responsibilities of certain teachers.
6. A systems approach to curriculum planning and evaluation would seem necessary under DS to properly utilize an increased provision for staff input into curriculum development.
7. Justifying the cost effectiveness of DS to state boards and local taxpayers may need considerable attention, especially for new and low enrollment programs.
8. Since the master teacher will probably be performing some administrative tasks, the roles of lower level administrators may need considerable adjustment.

9. Coordination and scheduling of students, faculty and facilities will be more complex under DS.

10. Traditional record keeping practices may need revision, especially in relation to student grading. There will be input from several teachers into course grades.

11. The present nearly complete autonomy of individual instructors over their classrooms and laboratories will be lessened due to increased flexibility in scheduling classes, teachers, and students.

Conclusions

In the planning conference and other ground work completed thus far, I believe we have identified the major problems for developing and piloting the plan. The impact on administrative practice and the resulting adjustment appear to be quite significant. Differentiating the teaching and support staff of a school may eventually dictate enough change in organizational structure to reduce the need for lower level administrative positions and make the higher level positions more completely focused on management activities than at present. It would appear reasonable to conclude that evaluation of teacher performance will become more completely the function of teachers rather than administrators. Teachers may not readily accept the responsibility which must accompany this shift in function.

DS shows unparalleled promise for improving the effectiveness and perhaps the efficiency of instruction by utilizing the strengths of teachers. The proposed hierarchical DS structure hopefully will operate to retain the excellent teachers, preventing their movement into administration or to business or industry. However, DS can fail miserably if the administrative practice and organizational structure cannot recognize and adapt to the needs of the system.

RESEARCH IN TECHNICAL EDUCATION*

This paper is based upon a "Review and Synthesis of Research in Technical Education" for the years of 1966-1968 prepared by Professor Lloyd Briggs and Donald Phillips for the Ohio State University's Center for Vocational and Technical Education. Dr. Milton Larson prepared a similar paper for the years prior to 1966.

In preparing the paper we chose to cite a number of publications which were not research reports. Our aim was to include materials that serve to identify problem areas in which research studies are needed. In making the review we attempted to secure materials from several sources; however, the primary source was the ERIC system. This system greatly simplified the task of identifying and securing materials for the review.

Let me hasten to point out that, while we sought information from several sources, we do not contend that the review is comprehensive. In fact, we limited the review to materials that relate rather specifically to technical education. By doing this it was hoped that we could present a concise picture of the status of research in this area. This means, however, that research from other disciplines, such as the behavioral sciences, is not treated in the paper.

To facilitate the review and synthesis, research studies were grouped according to the following outline: Philosophy, manpower needs, educational programs, curriculum, student personnel services, evaluation, administration and supervision, teacher education, learning processes and teaching methods, instructional materials and devices, facilities, and research. As always, we encountered problems in classifying the studies. Several studies contain information relative to more than one of the topics, and there is a considerable

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*This paper was prepared by Donald S. Phillips and Lloyd D. Briggs of the Technical Education Department, Oklahoma State University. Paper presented at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 6, 1969 to the Technical Education Division.

interrelationship among the categories.

Before treating each of the areas separately, let me point out that in making the review we viewed technical education as a level of education rather than as a type of education. This means that technical education programs are to prepare persons for employment in occupations between skilled workers and professionals. Using this definition, we reviewed studies from several areas. Now let us turn to a discussion of the several topical areas.

Philosophy: Technical education in the United States, born in private schools outside the educational mainstream, is becoming recognized as an important function of public education. Yet there are still many philosophical questions about its rightful role in the public education system.

Elizabeth M. Ray (1968) has reviewed the literature relative to the "Social and Philosophical Framework" for Vocational, Technical, and Practical Arts Education. In summarizing the review and looking to the future, Dr. Ray concludes that the future status of vocational education is contingent on two major considerations. First: "The field of vocational education must itself respond to the demand for a quality product." The second consideration relates to the observation that the framework for vocational education has tended to be and is presently more responsive to political and economic factors than to philosophical positions. In her words: "If there is validity to the argument that vocational education belongs in the mainstream of education, then the justifications are social, psychological, and cultural." It seems to me that this observation also applies to technical education.

While the role of research in the development of a philosophical framework can be debated, it seems that questions such as: What are the educational needs of a free industrial society? Who should be educated, to what extent, and by whom? What new skills and abilities are needed? are questions which should be explored.

Manpower Needs: A number of studies dealing with the identification of technical manpower needs at the local, state, and national level have been reported during the last decade. While studies of this type have proved useful for identifying trends and calling attention to educational needs, their value for planning educational programs has often been limited. One of the limitations of these studies relates to the well known problem of defining and identifying technical occupations. This problem affects the study results in at least two important ways: (1) accuracy of the demand data and (2) usefulness of the data for curriculum planning. Possibly the most serious limitation of manpower studies is the time element. In general, the time required for the educational system to respond to an identified need is quite long; therefore, for maximum usefulness, manpower demand projections must be made for a period of several years. This presents serious problems. As the forecast horizon or period of time to which the forecast applies is increased, the forecast accuracy is reduced, thus reducing the value of the information for educational planning and policy making.

In their review of the literature relative to manpower supply and demand, Kaufman and Brown (1968) caution: "a forecast can seldom be more than a very sophisticated and knowledgeable guess about the future, and so should be treated as an approximate guideline." Since it is extremely difficult to make accurate long-range projections of manpower demand, it would seem that considerable effort should be devoted to reducing the response time of the educational system.

Educational Programs: Most of the studies which were classified under this heading are surveys dealing with program offerings in various types of institutions or in some program area. The studies reviewed document the rapid growth of technical offerings during recent years.

The growth of offerings and plans for continued expansion of technical offerings by junior colleges was documented by Smith (1966). Data for this

study were collected from some 208 junior colleges.

Less-than-baccalaureate technical offerings at four-year colleges and universities were studied by Martin (1967). Information relative to program offerings was collected from 282 institutions from throughout the United States. These data reveal that 40 percent of the institutions offer less-than-baccalaureate level technical programs. One rather interesting finding was that institutions with enrollments of 10,000 or more tended to offer more technical programs than did institutions with enrollments of less than 10,000.

Student Personnel Services: In recent years considerable attention has been devoted to the development of theories relative to career development. In summary to a review of the literature in this area Tennyson (1968) expresses optimism concerning the beginning which has been made toward establishing or contradicting, by empirical means, the fundamental assumptions on which the theory of vocational development rests. The reviewer states that, while much of the contemporary work falls short in important respects, an impressive body of knowledge about vocational development and behavior has accumulated. A great deal, however, remains to be done in translating the theory into practice.

Studies dealing specifically with technical students tend to fall into three categories: guidance, student characteristics, and prediction. Most studies dealing with guidance of technical students indicate that very little effective work is being done in this area. One important reason seems to be the lack of information relative to educational opportunities.

The number of studies dealing with student characteristics is quite limited, and there is still much speculation about the kinds of individuals these students are. Unfortunately, much of the speculation deals less with what the students are than with what they ought to be. Although limited number, these studies tend to show that technical students have identifiable characteristics which should be considered when planning educational programs.

Two studies dealing with transfer students have found that students who originally enroll in baccalaureate or college transfer programs are not apt to transfer to technical programs at the same institution. Taylor and Hecker (1967) found that students who are not successful in the program they select upon initial enrollment tend to withdraw from college rather than change to another curriculum. This was true despite the extensive range of alternative programs and counseling facilities that were available to the students in the situation studied.

Several studies have been concerned with predicting success in technical programs. A number of factors, such as socioeconomic status, high school grades, and standardized test scores, have been found to correlate with success in technical programs. However, none of the studies reviewed produced results that promise to make significant contributions in counseling students.

Evaluation: Evaluation of educational programs, which has recently taken on added importance in technical education, is a very complex process. While few would argue with the need for and importance of evaluation, a great deal of debate can be generated about the methods and processes used in evaluation. Based on their review of the literature relative to program evaluation for the period of 1962-1968, Coster and Ihmen (1968) conclude that a start toward more rigorous evaluation has been made, but a great deal remains to be done.

Student success in obtaining employment and progressing in the world of work has been one of the primary evaluation techniques used in vocational and technical education. The use of follow-up studies as an evaluation technique was studied by Sharp and Krasnegor (1966) who recommend the follow-up study as an evaluation technique. These authors, however, call attention to the need for more explanatory studies. The most serious gap in follow-up information was found at the post-high school level for persons trained in technical institutes and junior colleges.

Development of guidelines and criteria for accrediting technical programs has become increasingly important as program enrollments have increased. Yet little research has been devoted to this area. Messersmith and Medsker (1969) conducted a study of accreditation by specialized agencies of vocational-technical curricula in post-secondary institutions. Like many other studies, this one raises a number of significant questions which should be investigated. An important consideration in program accreditation centers around the role of general education. While opinions regarding the value of general education abound, few research data are available. In view of the many assumptions regarding the value and importance of general education, it is somewhat surprising that few if any studies dealing with the development of meaningful general education experiences for technical students are reported in the literature.

Administration and Supervision: The rapid expansion of technical education offerings in a variety of institutional and organizational settings has increased the need to develop viable and efficient administrative organizations. After reviewing the literature relative to this topic, it seems that the most appropriate conclusion is that much remains to be done.

Studies dealing with articulation between post-secondary technical programs and four-year institutions show considerable diversity among institutions relative to acceptance of transfer credit from technical programs. These studies have done more to identify a significant problem than they have to pose solutions.

Curriculum: Planning and developing technical curricula involves considerations and problems that are not generally required in other areas of education. Because of this, curriculum development has been a major factor in the expansion of technical education offerings. To aid educational planners in developing quality programs, a number of curriculum guides have been published by the USOE,

the American Association of Junior Colleges, and several state departments. These guides have generally been developed by individuals who have been involved in planning and operating successful on-going technical programs.

A major task in building technical curricula is the identification of the knowledges and skills required for successful employment in the technical occupation. Several studies have been devoted to analyzing technical occupations. Schill and Arnold (1965) sought to determine the content most appropriate for preparing technicians in each of six technical occupations in the manufacturing area. The purpose of the project was to study the feasibility of minimizing extraneous and repetitious curriculum content by developing programs which are complementary rather than redundant.

Studies dealing with the development of technical curricula in the areas of business, health, agriculture, and police science are also reported in the literature.

Emerging technologies are the topic of considerable concern in today's rapidly changing society. Studies by Roney (1966) and the Technical Education Research Center (1967) have sought to document the need for technicians in the areas of electromechanical technology and bio-medical equipment technology. These studies also identified knowledge and skills that employers deem necessary for successful employment in these occupations.

Teacher Education: Growth in the numbers and kinds of technical programs and increased student enrollments have created demands for large numbers of technical teachers. Several studies have sought to document the need for technical teachers and other studies have been directed toward the problems of teacher supply and recruitment.

Since the teacher shortage has been well identified, it is somewhat surprising that so little research on teacher education is reported in the literature. Miller (1967) recognizing the need for research in this area, developed a model

to assist in the design and implementation of research in technical teacher education. Moss (1967) has also made a contribution to this area by his review of literature relative to teacher education in vocational and technical education. An important part of this work is the model for classifying studies that have been done, for showing interrelationships among them, for uncovering gaps in our knowledge, and thus for research planning.

Several institutes have been devoted to improving the competencies of technical teachers. Summaries from a number of these are reported in the literature.

Learning Processes and Teaching Methods: Few researchers in technical education have given attention to basic research studies in the areas of teaching and learning. The limited number of studies cited in this section were primarily concerned with the use of instructional devices of various kinds. Studies dealing with the selection and use of programmed instruction and multi-media approaches are reviewed. While much remains to be done, it is encouraging to see that a start is being made.

A project conducted at the Pennsylvania State University (Mitzel and Brandon, 1966) has dealt with the use of computer-aided instruction in technical education. This type of instruction utilizes prepared material administered under computer control. The objectives of the study are to compare CAI with other educational strategies, to prepare appropriate instructional materials, and to prepare teaching personnel for using the system. This type of instruction holds considerable potential for improvements in technical education; however, a great deal of research and development work remains to be done before the potential benefits can be realized.

Facilities: Adequate educational facilities are basic to good technical education. To be effective, most technical programs require more extensive and more specialized laboratories and general plant facilities than do other

types of educational programs. Consequently, a higher degree of organized planning is necessary for their development. Unfortunately, little definitive research has been conducted to establish criteria for effective facility planning.

Most of the reports relative to this topic are planning guides which present general guidelines for use in planning educational facilities. These guides should prove valuable to the many individuals who are currently involved in planning educational facilities.

Research: The panel of consultants on vocational education suggested that research in vocational and technical education falls far short of meeting current needs. Possibly the major reason for this criticism is that only in recent years has the potential value of research findings for solving operational problems been recognized. Prior to 1963, most research in technical education was conducted by graduate students and had little influence on program planning and operation. Even after the 1963 Act, research has had little impact on program development. Again, several reasons could be cited for this observation.

The 1968 Advisory Council on Vocational Education expressed concern about the nature and value of research. One of the most frequently heard criticisms of research has been the lack of tangible evidence of its impact upon educational programs. One reason for this lack of impact may relate to the traditional view of research which sees the research process as one of generating new knowledge and of revising generally accepted conclusions in light of new evidence. It may be that viewing research in its most generic sense, as a function--a function of program planning and development, will result in its having more effect upon program development. Under this view, research can assist in (1) setting goals, (2) developing procedures to reach those objectives, and (3) thoroughly testing products such as curriculum materials before they are disseminated for use in operational settings.

Another factor which has influenced research in technical education has been the shortage of trained researchers in this field. A number of conferences, institutes, and seminars have been devoted to improving research competencies, identifying research needs, and developing research strategies. Also, several studies dealing with the determination of research priorities are reported in the literature.

Summary: In summary, it is exciting to review the significant developments which have occurred in the field of technical education during the three-year period covered by this review. Enrollments have grown, new programs have been developed, and research activities have multiplied. Also, several institutions have expanded their technical education offerings, other institutions have begun to offer technical education programs, and the concept of technical education has broadened to encompass programs in areas other than engineering. Growth and expansion during this period may possibly have been greater than during any other three-year period. This growth has brought about an increased need for research and development in the field of technical education.

Practitioners looking to research for solutions to operational problems may be disappointed since the reported research offers relatively little to aid in the immediate solution of persistent problems. In general, much of the reported research suffers from deficiencies in design and methodology. Some researchers have forged ahead without giving proper attention to sound research design, resulting in findings that have only limited generalizability. In other cases, information for proper evaluation of findings within the framework of acceptable research design is not reported. In some instances, results are reported in such a manner that it is difficult for the reader to identify results or conclusions.

Several descriptive research studies are reported. These studies, in general, have limited value beyond the situation in which they were conducted.

In some studies the researcher was attempting to describe a rapidly changing scene. Consequently, it was difficult to draw conclusions or make recommendations.

Questionnaires and opinionnaires were used in a number of studies. Information relative to the development and validation of these instruments is often limited or not reported.

Development and demonstration projects hold considerable potential for producing information that has immediate application in operational situations. Results of such projects may provide information, materials, or techniques which will aid in improving the efficiency and effectiveness of educational programs. There are disappointingly few studies of this type reported in the literature.

A number of research studies have dealt with small segments of large problems and have tended to be terminal in nature. One of the major reasons for this is that research is often funded on a project basis for specific period of time. A few longitudinal and multi-phase studies (Mitzel and Brandon (1966), Hoyt (1968), and Kinsinger and Ratner (1966)) are reported. While the results to date do not warrant conclusions, these studies are dealing with important areas of concern and should produce significant knowledge.

While the amount of significant research in technical education is still quite limited, there are, however, many encouraging developments. Research provisions of the Vocational Education Act of 1963 have served as a stimulus to research activities in technical education. Several studies supported under the provisions of this Act are currently reported; however, it is possible that the full impact has not yet been realized. It is still too early to evaluate the effectiveness of recent efforts to expand and improve research in technical education. It is hoped, however, that the fruits of these efforts will make significant contributions to the important field of technical education.

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BUSINESS REACTS TO DISTRIBUTIVE EDUCATION AT THE POST SECONDARY LEVEL (1)

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It is the purpose of this paper to discuss some of the problems and possible solutions facing educators, businessmen and students in the field of Distributive Education and Vocational Education in general.

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(1) Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 6, 1969.

December 6, 1969

The subject "Business Reacts to Distributive Education at the Post Secondary Level" is not one over flowing with facts and figures or experience, however, I have never shied away from a challenge and I consider this subject of significant Importance to all interested in vocational education.

Today I want to take you down a hall of mirrors in order that we as educators and businessmen might take a clear close look at ourselves and try to determine if we are <u>fully</u> aware of the existing problems where vocational education is concerned.

The young people of today are living in the most affluent society in our country's history. They are constantly being exposed to new approaches in our economic, technical and political life. Their minds are more active resulting in physical reactions to situations surrounding them. I firmly believe that our young people are looking for a <u>goal</u> in life and I sometimes wonder if we are helping them achieve their desires.

Is the average educator of today the king or queen of the classroom with his words of wisdom the final solution to the problems of youth? Certainly we in vocational education do not and cannot share such a philosophy. It is our job to guide and recommend - but are we doing the <u>WHOLE</u> job as it should be done?

With the tools we have to work with we are trying to do the job expected of us yet 2 glaring weaknesses exist.

1. We are not preparing our youth in the early stages. We wait until the youngsters enter high school then we go to work. What is wrong with promoting vocational education in the elementary or middle schools? What is wrong with business and industry in conjunction with the local C of C, PTA or other interested groups publishing a booklet entitled "Your Future" In Connecticut or elsewhere. Offer a job description and the future which it holds.
2. The Guidance Counselor must become Vocational oriented as well

> as Liberal Arts oriented. He must adjust his sights to the ever changing economy and technical advances. He must recognize the tremendous advantages in vocational education for those students so oriented and not "sell" the student on a 4 year college career only to have him become an early drop-out.

Perhaps it is not too far fetched to require the Guidance Counselor to spend some of his summer vaction working in business or industry to get the "pulse beat" so to speak.

To place responsibility for this economy's inability to produce needed skills in sufficient quantities is to obviate the purpose of this convention. You're here to resolve problems, not relive them, and yet, a little soul searching does tend to focus on what many of us have come to view as a major stumbling block along the path to solution. It might be summed up in one word - communication. Is industry communicating its needs properly to those who are called upon to train tomorrow's labor force? Is, on the other hand, our education system seeking out an expression of need from industry? Who is looking in which mirror? Is government tuned in on both sides? In large part the answer is probably "not enough".

The full range of opportunities available at all educational levels should be brought to the student's attention. Perhaps vastly expanded work-study programs are even more necessary today than ever before, but that's not all.

Permit me to read from the First Annual Report of the National Advisory Council on Vocational Education (July 15, 1969.)

" The violence that wracks our cities has its roots in unemployment and unequal opportunity. Those who have no jobs in an affluent community lash out in anger and frustration. Young men and women who cannot qualify for decent jobs distrust the society which reared them. Dissidents speak with the voice of rebellion; campus and inner-city revolt reaches into our schools. Our nation seethes.

Racial unrest, violence and the unemployment of youth have their roots in inadequate education. Each year the ranks of the school drop-outs increase by three-quarters of a million young men and women. They enter the job market without the skills and attitudes employers require. They and the millions of others who are underemployed--among these the students who are graduates of our high schools but who are inadequately prepared for anything--are tragic evidence of the present inadequacy of our educational system.

The failure of our schools to educate to the level of adequate employability nearly 25 per cent of the young men and women who turn 18 each year is a waste of money, as well as human resources. The nation supports a galaxy of remedial programs, some of which have cost as much as $12,000 for every man or woman placed on a job. These who remain unemployed may cost us $4000 or more per year in welfare support for themselves and their children, who will repeat the dreary, costly cycle.

The costs, the blighted lives, the discontent, the violence, and the threat of revolution, are needless. Schools can prepare young people to realize their potential. Each city in the country succeeds every year with some of its students, in even the most depressed parts of the city. Why is success not universal? Why is the failure rate so high?

The reasons are attitude, program and money.

ATTITUDE

At the very heart of our problem is a national attitude that says vocational education is designed for somebody else's childre.. This attitude is shared by businessmen, labor leaders, administrators, teachers, parents, students. We are all guilty. We have promoted the idea that the only good education is an education capped by four years of college. This idea, transmitted by our values, our aspirations and our silent support, is snobbish, undemocratic, and a revelation of why schools fail so many students.

The attitude infects the federal government, which invests $14 in the nation's universities for every $1 it invests in the nation's vocational education programs. It infects state governments, which invest far more in universities and colleges than they do for support of skill training for those whose initial preparation for the world of work precedes high school graduation. It infects school districts, which concentrate on college preparatory and general programs in reckless disregard of the fact that for 60 per cent of our young people high school is still the only transition to the world of work. It infects students, who make inappropriate choices because they are victims of the national yearning for educational prestige.

The attitude must change. The number of jobs which the unskilled can fill is declining rapidly. The number requiring a liberal arts college education, while growing, is increasing far less rapidly than the number demanding a technical skill. In the 1980's it will still be true that fewer than 20 per cent of our job opportunities will require a four-year college degree. In America every child must be educated to his highest potential, and the height of the potential is not measured by the color of the collar. Plumbers, carpenters and electricians make more than many school superintendents and college presidents; only the arrogant will allow themselves to feel that one is more worthy than the other.

We recommend that the federal government immediately exercise its leadership and allocate more of its funds to cure our country of our national sin of intellectual snobbery.

PROGRAM

Within high schools the student should have multiple choices. A separate vocational school or a distinct vocational track should be exceptions, not rules, in a technical and changing society. Communication and computation skills become relevant in a context that relates them to an employment objective. All students must be allowed to move in to and out of vocational-technical programs and to select mixtures of vocational-technical and academic courses. Students should be released from school to acquire employment experience, and should then be taken back for further education. Students should be able to go to school the year around. It is inconceivable that we plan to continue to let our school plant lie idle three months of the year. Rural schools must give their students opportunities to train for urban jobs, since many of them are bound for the city.

Those who do not acquire a job skill before leaving the 12th grade must have access to a full range of post-high school programs to train them for employment at their highest potential. Vocational and technical programs should be readily available to most adults through adult high schools and community colleges. The rapidity with which Americans will change jobs in their lifetimes must be matched by the variety and accessibility of training programs through which new skills and subject matter can be learned at any age in every locality.

Changes in the elementary curriculm are also needed. Exploration of the world of work should begin early. Respect for work and pride of workmanship are essential in a trillion-dollar economy. Direct job-related instruction, starting in the upper elementary grades, should be made available for some pupils.

We recommend that substantial federal funds be allocated to support curriculum development, teacher training, and pilot programs in vocational education. No federal investment will bring a higher return. We challenge state and local governments to throw off old habits and take a hard, fresh look at what they are doing in vocational education. We urge the public to watch carefully, and to demand and support the innovations that work.

MONEY

For society, as a whole, educating youth for employment costs less than educating them for the college they will never reach and providing remedial training thereafter. In the budget of a particular school district, however, to prepare a student for a job costs more than to prepare him for college. Classes usually must be smaller, equipment and facilities are more expensive; a good job placement service is more costly than a good college enrollment service. The added cost of vocational education is a reason--or an excuse--explaining why most school districts have shirked the duty to provice it adequately.

We do not condone the misallocation by local districts of their resources. But we recognize the real pressures from teachers for salaries that at least keep pace with inflation and from taxpayers whose property tax rates have mounted rapidly. We believe that the reform of American schools the nation so desperately needs will not come about if the federal government continues to invest nearly $4 in remedial manpower programs for each $1 it invests in preventive vocational programs. If the federal government will substantially support the additional initial cost of educating youth for employment, we believe that the financial, personal and social cost of unemployment can be dramatically reduced.

The 1968 Vocational Amendments create a statutory framework under which substantial federal appropriations can be directed toward the prevention of further increases in the ranks of the unemployed and underemployed. Congress has given us the blueprint. Now we must furnish the materials with which to build the structure the American people expect and demand."

This report substantiates my personal views.

The solution to the problems of combining theoretical and practical education seems to depend on some form of cooperation between school business and industry. There are difficulties involved in co-operative training as there are in all other kinds of human relationship:

1. Businessmen are not always willing to cooperate
2. Some school administrators do not like the variation from the regular program, and
3. Parents sometimes object.

Yet the values are such that these difficulties should not be permitted to seriously affect the various programs. Without some form of cooperative program in which the student can combine work experience and study, distributive education would be much less effective in the secondary and post-secondary school program. Is the work-study program acceptable to educators? Apparently not - or we would not be concerned as we obviously are. Educators must get off their academic "high horse" and treat work-study not as a dirty phrase but as the practical means to an end. There is dignity in work.

I encourage all of you to seek a closer working relationship with your various trade and professional groups such as the American Bankers Association and State Banking Association, Chamber of Commerce, Sales and Marketing Executives etc. I believe the majority of these business oriented groups will work extremely hard for you but you must first do a sound selling job and continue to prod them. Therefore, it is your job

to tell us how we can better prepare your post-secondary students to be our future leaders in marketing, merchandising and management positions. The same formula applies to assistance for the technical student.

I would stress the need for individualized instruction in the students career objective. That is, banking, merchandising, selling wholesaling etc. All too often we are approached by a two year D.E. coordinator who simply asks "will you take one of my students?" As a businessman I do not see enough individualized training plans and job rotation taking place among the students. This is due to the fact that we are not enlightened as we should be to your particular training program which is 100% geared to vocational preperation.

As a businessman, I see the need for practical, on-the-job training to supplement the theoretical learning which takes place in too many of our junior and community colleges: Without job training, the class presentations have little carry-over to the job needs.

As a businessman, I do not see enough use of advisory committees to help you do a better job in preparing workers for the distribution phase of our economy. I know that organizing and operating an effective advisory committee takes a considerable amount of time but if you are to have an effective program you need to have a consultation of your business-colleagues. You will be surprised how many successful business people will help you if they are approached and sold on your programs.

I have been a strong supporter of the D.E.C.A. program for a number of years. I am disappointed that many post-secondary programs at our junior and community level do not have active programs connected with D.E.C.A. I would encourage all of you to participate in this youth activity which is one of the greatest notivating forces for young people in this country.

Maybe we need a whole new set of heroes. After all, isn't the mechanic who helped assemble the spacecraft for the moon landing as important as the astronaut: but he didn't dine with the President or parade down Broadway. Shouldn't the crane operator who helped build a bridge and the garage man who tuned the car share in the satisfaction of a doctor who was able to rush 10 miles to save a life. How well could any executive function without the aid of a competent secretary trained in the manual arts of typing and shorthand. Let's get vocational training and appreciation back into our schools and two year colleges in a magnitude consistant with the needs of society.

We must, I think, move closer to the day (or revert back to the day) when we put aside false notions that it is somehow demeaning for a man to work with his hands, that a white shirt and tie endow a man with superiority or that the most important passbook to success is a college diploma.

Now what I've said thus far may have been part of what you all have reasoned more articulately many times before. Or you might even disagree. In either case, it does suggest the need for more enlightened discussions and improved communications - - not only within our own mirrored hall, but between industry and education, labor and management, business and government - - a useful exchange of ideas. All too often we seek this communication, but the opportunity to assemble all parties seldom arises. If a broad convention such as this is useful, then it must assemble at more frequent intervals to resolve with expediency the problem at hand.

Because man is a complex animal, educators have not reasoned what we should do with him. Knowing that half those students entering college do not graduate or completely fail, we have not sought to determine whether what we are doing is right or wrong. It is simply "hoped" that the students will find themselves. Possibly we need to examine the aims of society. Is what you encourage students to "try" compatible with what we want them to "do".

WHAT ONE BUSINESS IS DOING

Appearing in the November 17, 1969 issue of United States News and World Report is a two page advertisement by I.T. and T (International Telephone and Telegraph Corporation) which features a picture of the "Class of 1970" with the by-line "Half of these kinds won't make it to college, but that doesn't mean they won't get good jobs."

Let me read the copy in the ad - it is indeed interesting:

Some kids are good in certain subjects, but have trouble with others. Some are simply more interested in cars, sports or dating than in getting good grades. When it comes time for college, they aren't ready.

Normally, that would limit their chances for the future. But now thousands of these young people are well on their way to good jobs. They are part of a fast growing training system designed to fill one of the major gaps. (note "major gaps") in United States education.

A NATIONWIDE SCHOOL SYSTEM

In the next 5 years industry will need 350,000 new technicians and draftsmen/designers, 138,000 new computor programmers and operators, 875,000 new secretaries and stenographers as well as countless others trained in special fields. Present vocational programs cannot fill this need.

So thousands of young people are developing the required skills in vocational schools, such as the coast - to - coast of over 30 schools operated by I.T. & T. Educational Services.

With a system of schools such as ours, specialized teaching techniques which are successful in one school can be made quickly available to the others. And our educational experience is made even more widely available through franchising. One of our affiliates, The Speedwriting Company, has franchised business schools in over 400 cities in 28 countries.

FROM ACCOUNTING TO TOOL AND DIE DESIGN

The courses taught cover a wide range: Accounting, Automotive, Mechanics, Avionics, Air Conditioning, Electronics, Fashion Merchandising, Secretarial Sciences, Broadcasting, Tool and Die Design - to name a few. If a student wishes to work part-time, the school will help him find a job.

While most of our graduates go to work for other companies, those who come with us have a chance to continue their education throughout their careers. Our employees are given every opportunity to improve their skills and rise within the company right up to the top, where we hold Worldwide Executive Seminars to help managers broaden their outlook and experience.

In addition, each year, we train 200,000 people from sixty countries in some technical field-more than any other United States company. This program was recently recognized with a citation for Significant Contributions to International Education by the Institute of International Education and the Readers Digest Foundation.

I.T.T. and YOU

Educational service is just one of many growing fields we have entered to help meet the changing needs of this changing world. Others include data processing, mutual fund management, transportation, display advertising, oceanography and air navigation.

In all these areas, our resources and strong management capability generate competition, which leads to more efficient use of manpower and material. That means a better, more promising life for you, the next high school graduating class and people everywhere.

International Telephone and Telegraph Corporation, 320 Park Avenue, New York, New York 10022.

International Telephone and Telegraph is to be congratulated as are many other organizations interested in the future of American youth.

In conclusion I want to thank you for the opportunity to speak before such a distinguished audience - I hope my words have been meaningful.

THE IMPORTANCE AND NEED FOR TRAINING OF SUB-PROFESSIONALS IN HEALTH OCCUPATIONS EDUCATION

IT IS VERY TIMELY AND APPROPRIATE THAT WE CONSIDER, TODAY, TRAINING NEEDS AND OPPORTUNITIES IN THE HEALTH FIELD.

ON ONE HAND, WE HAVE EDUCATIONAL, SOCIAL AND ECONOMIC PROBLEMS THAT VOCATIONAL EDUCATION IS IN A UNIQUE POSITION TO SOLVE. IT IS CERTAINLY NOT NECESSARY FOR ME TO CATALOGUE THEM FOR YOU: I WILL JUST BRIEFLY MENTION HIGHLIGHTS FROM THE FIRST ANNUAL REPORT OF THE NATIONAL ADVISORY COUNCIL ON VOCATIONAL EDUCATION.

THE COUNCIL NOTED THAT:

- SCHOOL DROP-OUTS INCREASE BY THREE-QUARTERS OF A MILLION YOUNG MEN AND WOMEN EACH YEAR. THEY ENTER THE JOB MARKET WITHOUT THE SKILLS AND ATTITUDES EMPLOYERS REQUIRE.

- OUR SCHOOLS FAIL TO EDUCATE TO THE LEVEL OF ADEQUATE EMPLOYABILITY NEARLY 25% OF THOSE WHO TURN 18 EACH YEAR-- A WASTE OF MONEY AS WELL AS HUMAN RESOURCES.

- EVEN BY 1980, FEWER THAN 20% OF OUR JOB OPPORTUNITIES WILL REQUIRE A 4-YEAR COLLEGE DEGREE.

Presented at the American Vocational Association Meeting
Boston, Massachusetts - December 6, 1969
by Mr. David B. Hoover
Chief, Manpower Resources Branch
Division of Allied Health Manpower

ON THE OTHER HAND, THE HEALTH INDUSTRY-- THE THIRD LARGEST IN THE NATION-- IS FACED WITH ACUTE SHORTAGES OF TRAINED MANPOWER. THE HEALTH INDUSTRY EMPLOYS ABOUT 4 MILLION PEOPLE, AND NEARLY 3½ MILLION OF THESE ARE "HEALTH WORKERS," WHO NEED SPECIALIZED TRAINING IN HEALTH FIELDS.

INCREASINGLY, OUR YOUNG PEOPLE TURN TO THE HEALTH FIELD TO FIND PRODUCTIVE AND SATISFYING CAREERS. IN FACT, ONE OUT OF EVERY 10 HIGH SCHOOL STUDENTS WILL BE A HEALTH WORKER AT SOMETIME DURING HIS LIFE. SOME WILL RECEIVE LENGTHY PROFESSIONAL EDUCATION, SOME WILL RECEIVE LITTLE OR NO PREPARATION. MANY WILL PLAN TO WORK IN THE FIELD ONLY A SHORT TIME. FOR A SUBSTANTIAL NUMBER WHO ARE SEEKING PERMANENT READING CAREERS, HOWEVER, THE HEALTH FIELDS WILL REPRESENT ONLY NEEDLESSLY LOST OPPORTUNITIES.

WHAT WE SEEM TO HAVE HERE IS NOT TWO DIFFERENT KINDS OF PROBLEMS, NOT TWO INDEPENDENT CONCERNS, BUT A PROBLEM AND A SOLUTION. AS USUAL, HOWEVER, REACHING THE SOLUTION REQUIRES THAT WE DO A LITTLE BETTER THAN WE ARE DOING NOW.

LET'S TAKE A CLOSER LOOK AT THOSE 3½ MILLION HEALTH WORKERS. ABOUT 1 MILLION REQUIRE A BACCALAUREATE OR HIGHER DEGREE. OF THE REMAINING 2½ MILLION, 1½ MILLION ARE IN THE NURSING FIELD.

SINCE TRAINING PROGRAMS FOR NURSES AND NURSING AUXILIARIES ARE WELL ESTABLISHED AT ALL LEVELS, I WON'T DWELL UPON THEM TODAY. IN PASSING, HOWEVER, WE SHOULD NOTE THAT THERE ARE MANY AVENUES STILL TO BE EXPLORED

TO MAKE NURSING TRAINING MORE EFFICIENT AND RELEVANT, WHILE AT THE SAME TIME MAKING IT MORE ACCESSIBLE TO PROSPECTIVE STUDENTS.

THIS LEAVES ONE MILLION HEALTH WORKERS REQUIRING LESS THAN A BACCALAUREATE DEGREE, AND REPRESENTING AN AMAZING NUMBER AND VARIETY OF OCCUPATIONS AND RELATED SPECIALTIES. WE CAN REFER TO THEM LOOSELY AS SUB-BACCALAUREATE ALLIED HEALTH MANPOWER," OR SEMI- AND SUB-PROFESSIONAL MANPOWER. THERE ARE THREE PRINCIPAL GROUPS-- DENTAL AUXILIARIES, ENVIRONMENTAL HEALTH WORKERS, AND HEALTH CARE WORKERS.

DENTAL AUXILIARIES COMPRISE A RELATIVELY SMALL GROUP-- ABOUT 140,000 DENTAL ASSISTANTS, HYGIENISTS, AND LABORATORY TECHNICIANS, INCLUDING THOSE HYGIENISTS (LESS THAN HALF) WHO ARE TRAINED AT THE BACCALAUREATE LEVEL. JOBS ARE ABUNDANT-- SO MUCH SO THAT, ALTHOUGH WE EXPECT THE NUMBER OF TRAINING PROGRAMS TO INCREASE FROM 260 TO OVER 400 BY 1975, THERE WILL BE AN INCREASING DEFICIT OF TRAINED DENTAL AUXILIARIES.

BOTH THE ENVIRONMENTAL AND HEALTH CARE AREAS ARE MORE NEBULOUS. BETWEEN THEM, THEY M AY CONTAIN OVER 250 OCCUPATIONAL TITLES OR SPECIALTY VARIATIONS OF SUB-BACCALAUREATE MANPOWER. THE FIGURE IS UNCERTAIN SINCE SPECIALIZED TRAINING PROGRAMS HAVE BEEN PROLIFERATING IN RECENT YEARS. SOME JOBS ARE UNUSUAL AND A LITTLE ARCANE-- "EXTRA-CORPOREAL CIRCULATION SPECIALIST" FOR EXAMPLE. ALL ARE AIMED, HOWEVER, AT FILLING EMPLOYER'S URGENT NEEDS. OVERALL, WE ESTIMATE A 20% SHORTAGE OF MANPOWER IN THESE FIELDS. EMPLOY-MENT PROSPECTS FOR WELL-TRAINED PERSONNEL CAN ONLY BE DESCRIBED AS EXCELLENT. WE FORESEE CONTINUOUS SHORTAGES OF TRAINED MANPOWER THROUGH 1980.

HOW, THEN, DO YOU AS VOCATIONAL EDUCATORS AND COUNSELORS ACT MOST EFFECTIVELY TO MEET THESE HEALTH MANPOWER DEFICITS? TO ANSWER THIS WE HAVE TO LOOK AT SOME OF THE SPECIAL PROBLEMS POSED BY HEALTH MANPOWER, AS WELL AS FINDING THE SPECIAL OPPORTUNITIES THAT EXIST.

ONE PROBLEM IS DETERMINING MANPOWER NEEDS

WHILE PREDICTIONS OF A CONTINUED SHORTAGE OF ALLIED HEALTH SUB-BACCALAUREATE MANPOWER ARE SOUND FOR THE NATION AS A WHOLE, IN ANY SINGLE COMMUNITY SOME NEEDS WILL BE MORE URGENT THAN OTHERS. DETAILED PLANS FOR THE TRAINING OF HEALTH MANPOWER NEED TO BE WORKED OUT AT THE COMMUNITY AND STATE LEVEL. UNFORTUNATELY, THE IMPORTANCE OF HEALTH MANPOWER PLANNING AT THESE LEVELS, AS AN INTEGRAL PART OF HEALTH PLANNING, IS ONLY JUST BEING RECOGNIZED. IN FEW STATES OR CITIES WILL YOU FIND A HEALTH MANPOWER PLANNER WITH THE INFORMATION YOU REQUIRE FOR COUNSELLING AND FOR THE ESTABLISHMENT OF NEW TRAINING PROGRAMS. THE SINGLE BEST SOURCE OF INFORMATION ON HEALTH MANPOWER PLANNING ACTIVITY IS THE LOCAL HOSPITAL ASSOCIATION. HOSPITALS, AS THE LARGEST EMPLOYERS IN THE HEALTH FIELD, ARE INEVITABLY DRAWN INTO HEALTH MANPOWER PLANNING.

THE HEALTH INDUSTRY, AND IN PARTICULAR THE MEDICAL CARE SEGMENT, HAS PERSONNEL REQUIREMENTS THAT ARE DIFFERENT FROM MOST OTHER INDUSTRIES. FOR ONE THING, IN MANY SITUATIONS THE "EMPLOYER" IS MORE OF A FISCAL INTERMEDIARY THAN ANYTHING ELSE, AND HEALTH WORKERS ARE, IN FINAL ANALYSIS, ACCOUNTABLE TO THE PATIENT (OR HIS SURVIVORS) FOR THE QUALITY OF THEIR WORK. THIS HAS BEEN MOST OBVIOUS FOR PHYSICIANS WORKING IN HOSPITALS; THE PRINCIPLE APPLIES TO ALLIED HEALTH MANPOWER AS WELL. THE TREND

TOWARD INCREASED PROFESSIONALISM IN ALLIED HEALTH OCCUPATIONS IS IN PART DUE TO THE NECESSITY OF EMPHASIZING THIS RELATIONSHIP WITH THE PATIENT; A RELATIONSHIP THAT IS OUTSIDE OF THE NORMAL EMPLOYER-EMPLOYEE EXCHANGE.

FOR ANOTHER THING, SITUATIONS ARISE IN THE HEALTH FIELD WHICH CALL FOR IMMEDIATE APPLICATION OF A HIGH ORDER OF JUDGMENT AND INTELLIGENCE-- A MUCH HIGHER ORDER THAN IS DEMANDED BY THE JOB MOST OF THE TIME. COPING WITH THE UNUSUAL AND UNEXPECTED IS A FEATURE OF MEDICAL CARE, AND EMPLOYERS CONSIDER THIS IN THE SELECTION AND TRAINING OF PERSONNEL. COMMONLY IN THE HEALTH FIELD YOU WILL FIND JOB QUALIFICATIONS THAT SEEM TO BE HIGHER THAN THE JOB DESCRIPTIONS SHOULD REQUIRE. MUCH OF THIS IN UNDOUBTEDLY REASONABLE AND PRUDENT, AND SHOULD BE TAKEN INTO ACCOUNT IN DESIGNING TRAINING PROGRAMS FOR HEALTH WORKERS.

FINALLY, SUB-PROFESSIONALS IN HEALTH HAVE NEVER BEEN RICHLY REWARDED IN MATERIAL WAYS. TRADITIONALLY, THE INDUSTRY HAS ATTRACTED THE SERVICE-ORIENTED WORKER WHO WOULD FOREGO SOME INCOME TO WORK IN THE FIELD. WHILE THE TREND IS NOW TOWARD MORE ADEQUATE COMPENSATION, THE SALARIED WORKER CANNOT EXPECT TO GET RICH QUICK, OR AT ALL. AN ECONOMIC BASE FOR SALARIES ON A PAR WITH THOSE IN OTHER INDUSTRIES HAS YET TO BE ESTABLISHED. THIS MUST BE RECOGNIZED IN RECRUITMENT AND SELECTION OF TRAINEES.

OUR ATTENTION HAS RECENTLY BEEN FOCUSED ON THE MANY GROUPS IN THE POPULATION WHICH HAVE NOT ENJOYED ADEQUATE HEALTH SERVICES. THIS PROBLEM IS ROOTED IN A LONG HISTORY OF INADEQUATE FINANCING OF MEDICAL CARE, COMPOUNDED

RECENTLY BY RISING COSTS AND SHORTAGES OF TRAINED MANPOWER. OUR DETERMINATION TO CORRECT THESE INEQUITIES IS REFLECTED IN INCREASING APPROPRIATIONS OF TAX DOLLARS TO PROVIDE MEDICAL CARE. AT THE SAME TIME, HOWEVER, HEALTH INSTITUTIONS ARE ASKED TO ASSUME, AND FIND THEY MUST ASSUME, MORE RESPONSIBILITY FOR THE TOTAL WELFARE OF PATIENTS. IN PROVIDING SERVICES TO THE DISADVANTAGED WE ARE EXPLORING MORE EFFECTIVE WAYS TO

- COMMUNICATE WITH THE PATIENT
- TREAT DISEASE
- ASSESS THE PATIENT'S TOTAL ENVIRONMENT TO IDENTIFY FACTORS THAT CAUSE ILL HEALTH OR INTERFERE WITH RECOVERY
- TAKE, OR HAVE THE PATIENT TAKE, STEPS TO IMPROVE HIS ENVIRONMENT

THIS SOUNDS RATHER ABSTRACT, BUT IN PRACTICE IT IS A FAIRLY STRAIGHTFORWARD MATTER OF LOOKING BEYOND A PATIENT'S IMMEDIATE COMPLAINT TO DISCOVER PROBLEMS THAT MAY BE RELATED, AND TO BRING TO BEAR WHATEVER RESOURCES ARE AVAILABLE (INCLUDING THE PATIENT'S OWN INTELLIGENCE AND MOTIVATION) TO SOLVE THEM.

THE KEY TO THIS PROCESS IS COMMUNICATION WITH THE PATIENT. THIS IS OFTEN TIME CONSUMING, SOMETIMES DIFFICULT, AND CALLS UPON KNOWLEDGE AND TECHNIQUES THAT HEALTH PROFESSIONALS OFTEN DO NOT HAVE. HENCE, WE ARE WITNESSING THE DEVELOPMENT OF A NEW CLASS OF HEALTH WORKER, WHOSE SPECIALTY IS COMMUNICATION WITH PATIENTS, ON THE ONE HAND, AND WITH HEALTH PROFESSIONALS ON THE OTHER.

TO BRIDGE THIS COMMUNICATIONS GAP WE FIND THAT THE MOST EFFECTIVE PERSON IS NOT A HEALTH PROFESSIONAL WHO ATTEMPTS TO LEARN THE MORES AND LANGUAGE OF THE PARTICULAR CULTURAL SUB-GROUPS INVOLVED. IT IS PREFERABLE INSTEAD TO RECRUIT FROM THE SUB-GROUP-- FROM AMONG THE PATIENTS THEMSELVES-- INDIVIDUALS WHO CAN SERVE AS HEALTH EDUCATORS AND INTERPRETERS. "INDIGENOUS WORKER" IS THE HANDY IF INELEGANT TERM USED TO IDENTIFY THESE PEOPLE. THE MUTUAL CONFIDENCE AND RESPECT THAT IS SO FOSTERED BETWEEN THE HEALTH FACILITY-- HOSPITAL, NEIGHBORHOOD HEALTH CENTER, OR WHATEVER-- AND ITS CLIENTELE IS FINALLY BEING RECOGNIZED AS AN ESSENTIAL COMPONENT OF A HEALTH SYSTEM.

FOR VOCATIONAL EDUCATION, THIS DEVELOPMENT OFFERS A NEW CHALLENGE. THE "INDIGENOUS WORKER" MUST DEVELOP NOT MERELY A SET OF SKILLS BUT A GENERAL UNDERSTANDING OF HEALTH-RELATED PROBLEMS AND SOLUTIONS. UPON THIS BASE MUST BE SUPER-IMPOSED, USUALLY BY ON-THE-JOB TRAINING AND EXPERIENCE, THE SPECIFIC KNOWLEDGE AND SKILL NECESSARY TO SERVE THE CLIENTELE-- KNOWLEDGE OF HOW TO REACH AND USE AVAILABLE FACILITIES AND SERVICES, SKILL IN INTERVIEWING PATIENTS, PROFICIENCY IN RELATING TO OTHER MEMBERS OF THE HEALTH TEAM, APPRECIATION OF WHAT THE INDIVIDUAL CAN DO HIMSELF TO OVERCOME ILLNESS AND DISABILITY AND TO MAINTAIN HEALTH.

THE "BASE" OF GENERAL UNDERSTANDING OF HEALTH CAN AND SHOULD BE CONTINUALLY OR PERIODICALLY ENLARGED, AS THE WORKER ASSUMES INCREASING RESPONSIBILITY FOR THE EFFECTIVE OPERATION OF THE HEALTH FACILITY. EDUCATION AND TRAINING FOR THE INDIGENOUS WORKER WILL BE A MATTER OF CONTINUOUS OFFERING OF NEW CHALLENGES AND OPPORTUNITIES AS THE INDIVIDUAL PROGRESSES. DEVISING WAYS

IN WHICH THIS MAY BE DONE IS A MAJOR TASK FOR VOCATIONAL EDUCATORS.

RECRUITMENT IS ONE KEY TO INCREASING THE NUMBER OF ALLIED HEALTH PERSONNEL AVAILABLE FOR EMPLOYEMENT. IMPORTANT SOURCES, IN ADDITION TO YOUNG PEOPLE AND THE DISADVANTAGED, OFTEN ARE OVERLOOKED WHEN RECRUITMENT PROGRAMS ARE PLANNED AND DEVELOPED. AMONG THEM ARE WOMEN WITH MINIMUM OR LIMITED FAMILY RESPONSIBILITIES WHO COULD WORK FULL OR PART TIME; RETIRED PERSONS, ESPECIALLY THOSE FROM THE ARMED SERVICES, AND THE HANDICAPPED.

WORK IN THE HEALTH FIELD FORTUNATELY HAS A NATURAL APPEAL FOR MANY INDIVIDUALS; RECRUITMENT SUCCESS, HOWEVER, REQUIRES MORE THAN THIS. COUNSELLING MUST BE BASED UPON ACCURATE INFORMATION ABOUT THE ALLIED HEALTH PROFESSIONS, INCLUDING THE QUALIFICATION REQUIREMENTS FOR EMPLOYMENT IN SPECIFIC OCCUPATIONS. IT REQUIRES INFORMED COUNSELLING SERVICES THROUGH WHICH POTENTIAL ALLIED HEALTH WORKERS ARE DIRECTED INTO EDUCATIONAL PROGRAMS APPROPRIATE TO THEIR INTERESTS AND ABILITIES.

THERE IS A PARTICULARLY SERIOUS LACK OF UNDERSTANDING AMONG SCHOOL COUNSELORS, AND OTHER EDUCATORS ABOUT MANY ALLIED HEALTH OCCUPATIONS; THE PREPARATION REQUIREMENTS, PLACES OF EMPLOYMENT, WORKING CONDITIONS, SALARIES, AND OTHER MATTERS RELATED TO EDUCATION, TRAINING, AND EMPLOYMENT.

TO ATTACK THIS PROBLEM, THE BUREAU OF HEALTH PROFESSIONS EDUCATION AND MANPOWER TRAINING HAS CONTRACTED WITH THE NATIONAL HEALTH COUNCIL FOR THE DEVELOPMENT AND IMPLEMENTATION OF A NATIONWIDE RECRUITMENT AND COUNSELLING PROGRAM FOR HEALTH CAREERS. THE FOCAL POINT OF THE PROGRAM WILL BE THE STATE AND METROPOLITAN HEALTH CAREERS COUNCILS. IT IS HOPED THAT THROUGH

ACTIVITIES STIMULATED BY THIS SUPPORT THAT THESE HEALTH CAREERS COUNCILS WILL BE ABLE TO PROVIDE MORE ASSISTANCE IN VOCATIONAL COUNSELLING AND IN RECRUITMENT PROGRAMS FOR HEALTH WORKERS.

BRINGING TOGETHER HEALTH MANPOWER PROBLEMS AND VOCATIONAL EDUCATION SOLUTIONS SHOULD BE A REWARDING TASK. THE HEALTH INDUSTRY IS, PERHAPS MORE THAN SOME OTHERS, APPRECIATIVE OF THE CONTRIBUTIONS AND POTENTIAL OF VOCATIONAL TRAINING. AFTER ALL, PHYSICIANS WERE ONCE TRAINED ON THE JOB, AND MOST OTHER HEALTH PROFESSIONS HAVE SIMILAR ORIGINS.

HOWEVER, NON-ACADEMIC VOCATIONAL TRAINING IS, IF NOT LOSING GROUND, AT LEAST FAILING TO MAKE ITS FULL CONTRIBUTION TO PRODUCING HEALTH WORKERS. CONSIDER THE PROLIFERATION OF JUNIOR COLLEGE ASSOCIATE DEGREE PROGRAMS FOR SUB-PROFESSIONALS IN HEALTH. IN PART THIS IS A REALISTIC RESPONSE TO A DEMAND FOR PEOPLE TRAINED AT THIS LEVEL. IN PART, HOWEVER, JUNIOR COLLEGES SEEM TO BE FILLING A VACUUM CREATED BY THE LACK OF APPROPRIATE NON-COLLEGIATE TRAINING OPPORTUNITIES. SOME ASSOCIATE DEGREE PROGRAMS SEEM, IN FACT, TO CONSIST OF A YEAR OR MORE OF VOCATIONALLY-UNRELATED LIBERAL ARTS EDUCATION TACKED ON TO THE FAMILIAR JOB TRAINING.

THERE IS NOTHING WRONG, OF COURSE, WITH OFFERING AN ACADEMIC EXPERIENCE IN CONJUNCTION WITH VOCATIONAL TRAINING. THE DENGER IS THAT FOR YET ANOTHER JOB, A DEGREE WILL SOON BECOME THE MINIMUM STANDARD OF PREPARATION, AND ANOTHER DOOR TO EMPLOYMENT AND ADVANCEMENT WILL BE SHUT TO THOSE WHO CANNOT, OR DO NOT WISH TO, ENTER COLLEGE. IMPORTANT GROUPS THAT SUFFER WHEN THIS HAPPENS ARE OLDER PERSONS IN THE LABOR MARKET, AND WORKERS IN LOWER LEVEL JOBS, WHO ARE THEN FORCED TO RETURN TO SCHOOL IN ORDER TO SECURE ADVANCEMENT.

JUST AS IMPORTANT, FROM THE PATIENT'S POINT OF VIEW, IS WHAT WILL HAPPEN TO THE COSTS OF MEDICAL CARE IF JOB QUALIFICATIONS ARE HIGHER THAN NECESSARY-- IF THEY ARE INCREASINGLY BASED, NOT ON DEMONSTRATED ABILITY TO DO THE WORK, BUT UPON ACADEMIC ACHIEVEMENT. QUALITY OF CARE WILL BECOME A SECONDARY CONCERN IF MEDICAL CARE IS PRICED BEYOND REACH.

THE ONLY LOGICAL CONCLUSION TO DRAW IS THAT ALL POSSIBLE AVENUES TO QUALIFICATION AND ADVANCEMENT FOR ALLIED ''EALTH MANPOWER MUST BE KEPT OPEN. THE KEY TO THIS IS PROFICIENCY TESTING-- THAT IS, A METHOD OF DEMONSTRATING THAT AN INDIVIDUAL HAS A REQUIRED DEGREE OF SKILL AND KNOWLEDGE, REGARDLESS OF HOW THAT SKILL AND KNOWLEDGE WERE OBTAINED. UNIVERSALLY RECOGNIZED AND ACCEPTED PROFICIENCY TESTS FOR ALLIED HEALTH OCCUPATIONS ARE ESSENTIAL IF VOCATIONAL EDUCATION IS TO CONTINUE TO MAKE ITS FULL CONTRIBUTION TO THIS FIELD.

IN SUMMARY, THE TRAINING OF ALLIED HEALTH MANPOWER PRESENTS VOCATIONAL EDUCATION WITH GREAT CHALLENGES AND OPPORTUNITIES. THE SPECIAL PROBLEMS OF TRAINING IN THE HEALTH FIELD, PARTICULARLY FOR PATIENT CARE, MUST BE REALIZED BY ALL CONCERNED. ONLY WITH CAREFULLY DESIGNED PROGRAMS AND PROCEDURES WILL THE NEEDS, ESPECIALLY THE NEEDS OF THE HEALTH WORKER WHO SEEKS ADDITIONAL TRAINING AND ADVANCEMENT, BE MET. INCREASINGLY, PROGRAMS MUST TRAIN UP TO A STANDARD THAT IS UNIVERSALLY RECOGNIZED AND, FOR MANY JOBS, THE EQUIVALENT OF COMPLETION OF AN ACADEMIC PROGRAM. AN AGGRESSIVE, COORDINATED ATTACK UPON THESE PROBLEMS, WITH VOCATIONAL EDUCATION INTERESTS TAKING THE LEAD, IS OVERDUE.

THE AMERICAN VOCATIONAL ASSOCIATION IS A MAJOR INFLUENCE IN DETERMINING THE DIRECTION OF VOCATIONAL EDUCATION. IT MUST CAREFULLY CONSIDER THE IMPACT OF THE RAPID GROWTH OF NUMBERS AND TYPES OF ALLIED HEALTH WORKERS, FOR THEY WILL COMPRISE A MAJOR PART OF PERSONS TRAINED IN OUR VOCATIONAL EDUCATION SYSTEMS.

VT 010 443
Childers, B.E., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 7, 1969).

American Vocational Association, Washington, D.C. Technical Education Div.
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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This grouping of addresses given at the 63rd Annual Vocational Convention, Technical Education Division of the American Vocational Association includes: (1) "A Plan for Development of Regional Standards for Occupational Education" by B.E. Childers, (2) "Curricula in Four-Year Engineering Technology Programs" by R.H. Creamer, and (3) "Four-Year Engineering Technology: Its Status and Need" by J.V. Ankeney. (GR)

VT 010 443

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Speeches Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 7, 1969

Technical Education Division

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT010443

A PLAN FOR DEVELOPMENT OF REGIONAL STANDARDS FOR OCCUPATIONAL EDUCATION[1]

B. E. Childers

Executive Secretary
Committee on Occupational Education
Southern Association of Colleges and Schools

In recent years there have been increased local, state and national efforts to provide programs of vocational-technical education for youth and adults who:

- are enrolled in secondary schools
- have completed or left the formal education programs and are planning to enter the labor market
- have entered the labor market but need to upgrade their skills or learn new ones
- have special educational handicaps
- are enrolled in post-secondary schools.

The ultimate goal of occupational education is to prepare persons for successful employment in a dynamic and constantly changing world of work.

This guiding purpose has special significance for educators who plan and conduct post-secondary occupational education programs designed to prepare out-of-school youth and adults for immediate employment and advancement in their chosen trade or technology.

Vocational educators are successful in goal achievement if the process of their organization results in a useful product, namely, persons who are considered to be successful on the job.

To be effective the programs must be realistic in light of data and other information concerning actual and projected labor market needs for well trained manpower and student interests, aspirations, abilities and needs.

A recent study conducted by the Southwide Research

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[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 7, 1969.

Coordinating Council on Occupational Education,[2] shows that Southern states have responded to the need for post-secondary-vocational programs by establishing 356 institutions committed to the preparation of youth and adults for employment in occupations that do not require a bachelor's degree. The 356 institutions enrolled approximately 175,000 students in full-time vocational-technical programs in 1966-67.

The study also shows that Southern states served by the Southern Association of Colleges and Schools had one-third of the total enrollment in full-time post-secondary occupational education programs in the Nation; yet, only one-fourth of the Nation's population reside in the eleven Southern states included in the study. Despite this impressive record, it is clear that young persons--numbered in the hundreds of thousands--are not adequately served, or not served at all by occupational education programs of quality.

Since completion of the study, numerous additional post-secondary vocational-technical institutions providing a multitude of courses have been established. The rapid growth of post-secondary occupational education in the South is tangible evidence of the intent to increase economic productivity, raise the gross product state by state, and augment per capita income through the development of a comprehensive system of occupational education programs that relate immediately to changing technological and employment conditions. It is imperative that vocational-technical programs produce persons who are employable and who can perform at satisfactory levels of competence in their occupations. Determination of job effectiveness is a vital and growing concern of vocational educators and others responsible for the quality of institutions and preparation programs.

Evaluation and Accreditation

Increased numbers of occupational education programs at the post-secondary level must be accompanied by increased emphasis on evaluation and accreditation. The Vocational Education Amendments of 1968 mandates independent evaluations of programs carried out under the several sections of the Act./ (Sect. 102(2) c; (b) (1)D. and Sect. 123 (a) 6 (A) /.

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[2] "The Role of the Southern Association of Colleges and Schools In Improving The Quality and Quantity of Progress of Occupational Education." A position paper prepared by Dr. John K. Coster, Director, Center for Occupational Education, North Carolina State University at Raleigh, North Carolina, 1968.

Adequate and accurate evaluation of the effectiveness of programs of vocational-technical education to provide a sufficient supply of skilled manpower who can perform effectively on the job is now being given highest national priority.

State Divisions of Vocational Education have been encouraged to begin efforts in evaluation and accreditation to assess the quality of programs being offered in the states. Attention is being given to this problem by all eleven states served by the Southern Association and all are in the process of developing systems for self-evaluation. Some states are instituting minimum standards for programs, and have progressed rapidly toward developing programs of approval and self-evaluation. In addition to State Department of Education evaluations, there is an urgent need to establish a program of accreditation for post-secondary vocational schools through voluntary independent regional accrediting agencies.

The American Vocational Association, through one of its standing committees, has pressed for the development of a system of accreditation of programs of vocational, and technical education. The Committee on Evaluation of the American Vocational Association has worked closely with the National Commission on Accrediting and the Division of Vocational and Technical Education of the U. S. Office of Education to foster the development of programs for accrediting institutions offering occupational education.

Positive action has been taken by the Southern Association of Colleges and Schools to improve the quality and quantity of programs of occupational education in the eleven states served by the Association. Evidence of this action includes:

--The Southwide Conference on Occupational Education, sponsored by the Southern Association in cooperation with the Southern Bell Telephone and Telegraph Company and The Southern Company at Atlanta on April 5-6, 1967. This Conference represented an initial step to establish the need and readiness as well as to marshall the resources of interested institutions, agencies and organizations.[3]

--An ad hoc Committee on Occupational Education was appointed to study and make recommendations to the Southern Association's Board of Trustees for improving the quality and availability of occupational education in the South. Special attention was given to extending the program of the Southern Association to involve and improve institutions offering post-secondary programs of occupational education which currently are not being accredited under existing Commissions of the Association.

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[3] The Southern Association published a Summary Report entitled "We Shall Not Rest," May, 1967. Available on request.

--Authorization by the Board of Trustees to establish a Committee on Occupational Education as a full-fledged partner with other Committees and Commissions of the Association in June, 1968.

--Authorization by the Board of Trustees to employ an Executive Secretary for the Committee and provision of preliminary funding up to $30,000.

--Initial work of the Committee to develop procedures, including criteria, for inviting qualified schools to affiliate with the Association for the purpose of self-improvement and developing standards for evaluation of occupational programs.

--Initial work of the Committee to create standards of quality to serve as criteria in evaluating the effectiveness of occupational programs of post-secondary education.

--Expansion of the Committee to include persons representing system-wide occupational education leadership positions, teacher-education at the University level, teaching at the local classroom level, and the world of work for women was authorized by the board in December, 1968.

--Authorization of the creation of a Business-Industry Advisory Council to evaluate, recommend, and submit ideas to the Committee on Occupational Education.

Activities noted above have been early steps taken by the Southern Association of Colleges and Schools to establish a system of standards-setting, evaluation, and affiliation to serve a wide spectrum of Southern education and to create a model which can demonstrate the feasibility of regional accrediting in vocational-technical education.

A significant start has been made to develop and put into operation an evaluation program for the improvement of post-secondary vocational-technical institutions and programs. However, the goal cannot be accomplished in isolation. It is seeking to utilize (1) the resources of the long-standing Commissions of the Southern Association, (2) the Southwide Research Coordinating Council for Occupational Education, (3) the Center for Occupational Education in Raleigh, North Carolina, and (4) special projects of the American Vocational Association and other allied activities.

The objectives designed to hasten the accomplishment of the ultimate goal to accredit occupational education schools are to:

- prepare and conduct a status study of current efforts and programs to improve and accredit post-secondary occupational education institutions;

- develop tentative standards and a manual for self-study to be field tested;

- field test standards in a variety of post-secondary institutions established to prepare persons to enter and progress in the world of work;

- produce a report incorporating pertinent findings and the proposed standards of the Committee on Occupational Education.

Following the development and adoption of standards and their diffusion throughout the Southern region, the model produced will be made available nationally to all interested institutions and agencies.

THE PROCEDURE

Procedural phases to carry out the plans include the following:

Phase I.

A Status Study of Current activities for accrediting post-secondary occupational educational institutions.

Development of a realistic program of post-secondary occupational school accreditation must be founded upon a thorough understanding of the "state of the art" in accreditation. It is necessary to pull together for review and analysis present activities in the areas of post-secondary vocational school evaluation and accreditation.

Specifically, this status study will provide data and other information concerning:

- on-going and completed evaluative studies of post-secondary vocational-technical school programs;

- major objectives and significant findings of the studies;

- models now being used and those suggested for use in evaluating post-secondary schools of occupational education;

- standards shown to be effective in evaluating post-secondary vocational-technical schools.

Results of the study will provide information for developing the course of action leading to post-secondary vocational-technical school accreditation. The Southern Association's Committee on Occupational Education and the Center for Occupational Education at North Carolina State University have jointly planned and are conducting this status study.

Phase II.

Develop standards to be used in self-studies leading to accreditation.

Development of standards for evaluating post-secondary vocational-technical schools requires the special talents of vocational educators and their colleagues in related fields. Programs designed to prepare individuals for effective life and work in a highly technical society cannot be static. The programs require constant revision in the light of new understandings in the areas of the psychology of learning, human growth and development, and especially in the areas of social and economic deprivation and physical disability.

It is necessary to review the developed standards with selected knowledgeable persons in a conference designed to solicit opinions and other reactions relative to improvement and refinement of the standards. This procedure is consistent with Southern Association policy governing the involvement of institutional representation in the setting of standards. The conference will provide an opportunity for affiliates to contribute significantly to the development of meaningful accreditation standards and procedures. The Center for Occupational Education and the Southern Association of Colleges and Schools will jointly plan and conduct such a conference to be held in the fall of 1969.

Phase III.

Field test accreditation standards in a variety of post-secondary institutions.

A sampling of schools will be selected to participate during the winter of 1970 in field tests designed to provide information useful in making inferences about the effectiveness of standards used. Revision of the standards will be made on the basis of information gathered.

Revised standards will be presented for review to affiliate members and to representatives of business and industry in conjunction with the Annual Meeting of the Association in December of 1969.

Phase IV.

To be of the greatest use, programs of evaluation must be widely diffused.

The Center for Occupational Education will produce a report of the study for the Committee on Occupational Education for review prior to publication.

After the report is published, the National Commission on Accrediting and the American Vocational Association will be invited to join the Center for Occupational Education and the Southern Association of Colleges and Schools in sponsoring a national conference on evaluation of occupational education.

CURRICULA IN FOUR-YEAR ENGINEERING TECHNOLOGY PROGRAMS

Robert H. Creamer

Director, Temple University Technical Institute

It is the purpose of this paper to discuss present curricula in existing four-year baccalaureate programs in technology and comment on outstanding features and limitations.

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[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

Four-year baccalaureate degree programs in technology are emerging in all parts of the country. These programs are offered in technical institutes, colleges and universities.

In glancing through catalogs from some 75 schools offering these programs, one finds variety in the administrative organization and in the fields that are offered.

In the colleges and universities, it is interesting to note that many programs are administered by the School or College of Technology which is a bona fide division of the institution. A few are under the jurisdiction of the School of Engineering, the School of Industries, or the School of Fine Arts. More than 25 come under the School of Education; most of these typical programs are entitled Industrial Technology and seem to be in schools that were formerly teacher's colleges, and serve as a complement to their industrial arts effort. In some instances, the so-called industrial technology is divided into two parts - one for those who wish to enter the teaching field of industrial arts and one for those who wish to enter industry directly.

In schools which offer programs in Engineering Technology, it is interesting to note that some provide two years of instruction beyond an associate degree while others structure their courses so that students enter as freshmen and progress in ladder-type fashion through a sequence of courses until graduation.

The Engineers' Council for Professional Development is presently evaluating and accrediting four-year baccalaureate programs in engineering technology and basing the accreditation on guidelines as specified in the "Objectives and Procedure for Accredited Curricula Leading to Degrees in Engineering Technology in the United States" as published by ECPD. This is the same criteria that has been used in evaluating the two-year programs in engineering technology. Their Engineering Technology Committee is studying the problem in depth as revealed in the "Report of the Engineering Technology Committee" which is published in the 36th Annual ECPD Report.

As in the two-year associate degree programs, many disciplines are available. Geographical location of the institution often reflects popularity of certain programs. Table I reveals the variety that can be found.

An examination of curricula shows that there is a fair amount of consistency in the number of semester hours (or quarter hours) required for graduation. This is undoubtedly due to experience in other bachelor degree programs.

In the percentage breakdown by subject categories, an accurate count is difficult due to the flexibility resulting from free and restricted electives. In the American Society for Engineering Education's publication entitled "Characteristics of Excellence in Engineering Technology Education", it is recommended that approximately 25% of the curriculum should be basic science courses; 25% should be in such non-technical areas as communications, humanistic-social studies, management, and others; and 50% should be in the area of the technical specialties.

Table II reveals some breakdowns for Mechanical Technology programs in various schools.

Table III shows some similar percentages for Construction Technology programs in typical institutions.

Table IV shows similar data for some Industrial Technology programs.

The objective of most 4-year technology programs is to train technologists. Such technologists fill the gap that exists between the professional engineer who is trained in regular engineering programs and the engineering technician who is usually trained at the associate degree level in community colleges and technical institutes. The existance of this gap in the engineering spectrum results from the direction that engineering has taken in the last few years. Since most engineering graduates have become research-oriented, the role of the application engineer has been filled by the engineering technologist who is trained at the baccalaureate level.

Thus, curricula must be technically strong, but, must include enough liberal arts subjects to provide a broad education so that graduates will perform well in society. Chart 1 shows the interrelationship between technology, traditional engineering, business, liberal arts, math and science.

Tables V, VI, and VII shows some typical curricula schemes from three different institutions. Table V illustrates the Construction Technology program from Montana State University. This particular program is based on 189 quarter hours of study. Flexibility is allowed through the inclusion of 25 quarter hours of electives.

Table VI portrays the Mechanical Engineering Technology curriculum at Purdue University. This is structured on the so-called "2 plus 2" plan. Thus, the third and fourth years of study are designed to accomodate transfer students who have completed the associate degree. Several other schools .ollow this plan. It is interesting to note the large number of English-related courses over the four year period. A total of 21 semester hours of credit are taken in this all-important area.

Table VII shows the proposed curriculum in Mechanical Engineering Technology for Temple University. The inclusion of 30 semester hours of free electives provides flexibility; some of these credits must be in the area of liberal studies to satisfy the minimum total requirement of 24.

Inclusion of free electives in technology curricula can provide several benefits. For the institution, they can aid the scheduling function. For the student who seeks employment immediately upon graduation, proper selection of electives can enhance his career objective. Then, for a student wishing to pursue graduate study, suitable electives can help establish a proper foundation for entrance into graduate school. For example, students aspiring for a teaching career can select education courses; those with business objectives can choose appropriate management studies. Proper counseling throughout a student's college career is a necessity.

Since the four-year baccalaureate program is a new concept in education, curricula will likely be in a state of change for many years. Experience with curricula development, specific criteria for accreditation, and feed-back from industry will certainly modify today's existing programs and strengthen curricula in the decades ahead.

CHART I

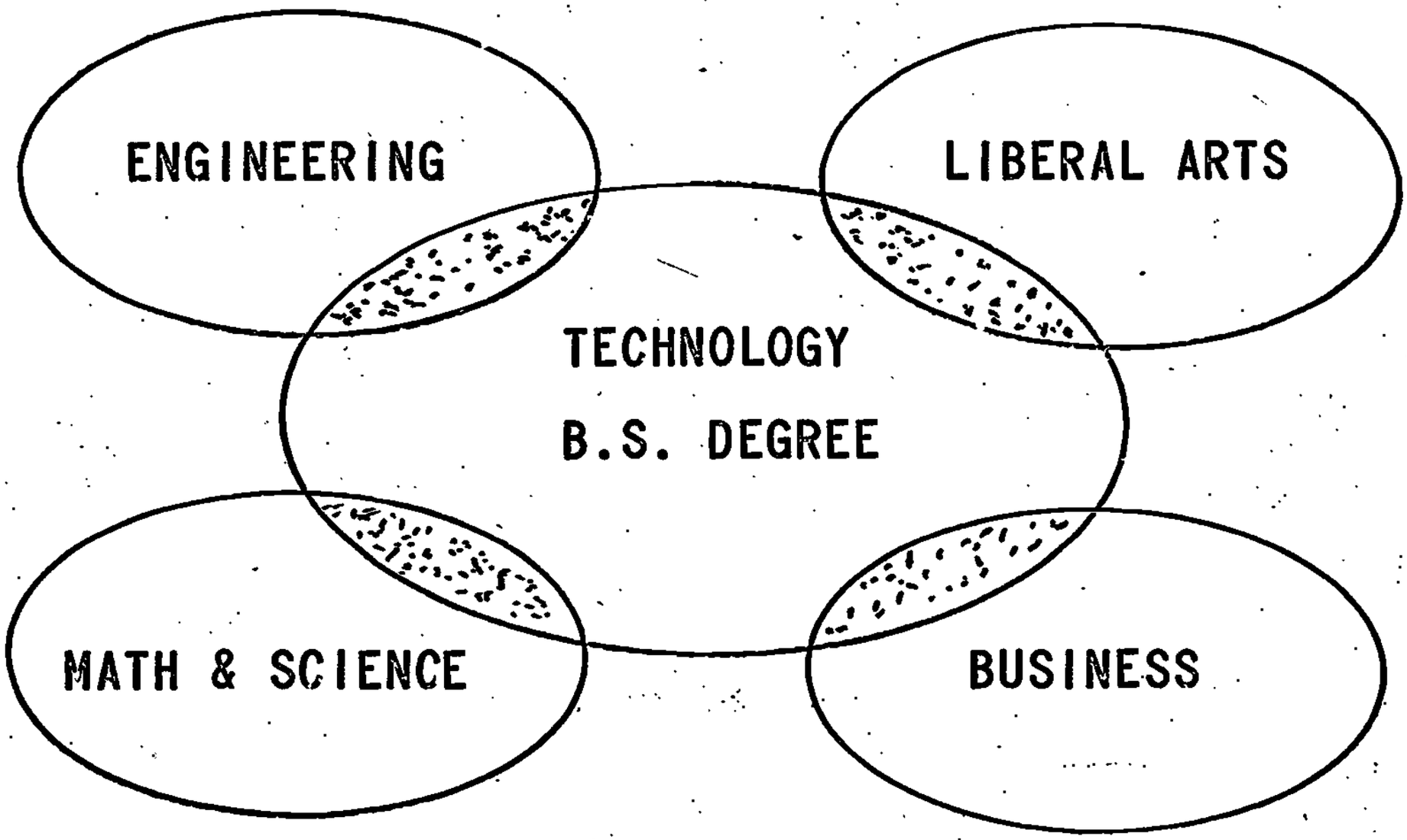
ENGINEERING
LIBERAL ARTS
TECHNOLOGY
B.S. DEGREE
MATH & SCIENCE
BUSINESS

Table I

ENGINEERING TECHNOLOGY PROGRAMS

: : : :

BUILDING CONSTRUCTION CONSTRUCTION

ELECTRICAL ELECTRICAL DESIGN ENGRG.

ELECTRONICS MECHANICAL-ELECTRICAL

MECHANICAL MECHANICAL ENGINEERING

CIVIL CIVIL ENGINEERING INSTRUMENTATION

SUPERVISION INDUSTRIAL MANAGEMENT

AIR CONDITIONING DESIGN MANUFACTURING

DRAFTING DRAFTING & DESIGN N-C

WATER RESOURCES AIRCRAFT MAINTENANCE

PRINTING PRINTING PRODUCTION PAPER

INDUSTRIAL ENGINEERING AEROSPACE

COMPUTER GRAPHIC ARTS WELDING

AUTOMOTIVE & DIESEL ENGINE POWER

INDUSTRIAL DESIGN INTERIOR DESIGN

MATERIALS MINERAL ENGRG. M & T DESIGN

TABLE II

MECHANICAL TECHNOLOGY

	CREDITS	PERCENT
MONTANA STATE UNIV.		
MATH & SCIENCE	38	19.8
HUMANITIES - GEN. ARTS	42	21.8
TECHNICAL	65	33.9
ELECTIVES	47	24.5
	192 Q.H.	
PURDUE UNIV. - 2 PLUS 2		
MATH & SCIENCE	29	21.0
HUMANITIES - GEN. ARTS	42	30.4
TECHNICAL	67	48.6
	138 S.H.	
UNIV. OF DAYTON		
MATH & SCIENCE	23½	18.6
HUMANITIES - GEN. ARTS	47	37.1
TECHNICAL	56	44.2
	126½ S.H.	
TEMPLE UNIV. - PROPOSED		
MATH & SCIENCE	20	16.5
HUMANITIES - GEN. ARTS	24	19.8
TECHNICAL	41	33.9
MANAGEMENT	6	5.0
ELECTIVES	30	24.8
	121 S.H.	

CONSTRUCTION TECHNOLOGY

	CREDITS	PERCENT
MONTANA STATE UNIV.		
MATH & SCIENCE	40	20.9
HUMANITIES - GEN. ARTS	62	32.3
TECHNICAL	65	33.8
ELECTIVES	25	13.0
	192 Q.H.	
PURDUE UNIV.- 2 PLUS 2		
MATH & SCIENCE	25	18.0
HUMANITIES - GEN. ARTS	40	28.8
TECHNICAL	64	46.0
ELECTIVES	10	7.2
	139 S.H.	
BRIGHAM YOUNG UNIV.		
MATH & SCIENCE	15	11.5
HUMANITIES - GEN. ARTS	65	50.0
TECHNICAL	50	38.5
	130 S.H.	
UNIV. OF FLORIDA		
MATH & SCIENCE	22	11.3
HUMANITIES - GEN. ARTS	36	18.6
TECHNICAL	98	50.5
ELECTIVES	38	19.6
	194 Q.H.	

Table IV

INDUSTRIAL TECHNOLOGY

	S.H.	PERCENT
WESTERN KENTUCKY UNIV.		
MATH & SCIENCE	21	16
HUMANITIES OR GEN. EDUCATION	49	38
TECHNICAL	51	39
ELECTIVES	9	7
SAN JOSE STATE COLLEGE		
MATH & SCIENCE	28	21
HUMANITIES OR GEN. EDUCATION	32	24
TECHNICAL	71	54
SOUTHEASTERN LOUISIANA UNIV.		
MATH & SCIENCE	18	14
HUMANITIES OR GEN. EDUCATION	43	32
TECHNICAL	57	43
ELECTIVES	15	11

130 - 133 SEMESTER HOURS

TABLE V

MONTANA STATE UNIV. - CONSTRUCTION

INTRO. GEN. & BIO. CHEM.	4	4		ARCH. CONSTRUCTION	3	3	3
INTRO. TO COMMUNICATION	4			SURVEYING	4		4
INTRO. TO LITT.			4	CONSTR. TECHNOLOGY		4	
ELEM. OF MATH.	5	5	5	INTRO. TO PROG.	1		
ENGRG. GRAPHICS	2		2	MIL. SCI. OR ELECT.	1	1	1
MIL. SCI. OR P.E.	1	1	1	COLLEGE PHYSICS	4	4	4
INTRO. TO SPEECH		4		HUMANITIES & SOC.	3	3	3
HUMANITIES & SOC. SCI.			3				
PRIN. OF ACCOUNTING	4			SALESMANSHIP			3
CONSTRUCTION MATLS.		4		BUSINESS CORRESP.		3	
HIGHWAY TECHNOLOGY			4	CONST. MNGT. TECH.		4	
THE AMERICAN ECONOMY	3			LABOR ORG. & CONTROL			3
MECHANICS	3			E.E. FUNDAMENTALS	4		
MECH. OF MATERIALS		3		TECHNICAL WRITING	3		
APP. FLUID MECHANICS			4	ENGRG. CONTRACTS			3
PHYSICAL GEOLOGY		4		PERSONNEL SUPERVN.	3		
ENGRG. ECONOMY			3	MATERIALS & PROC.	3		
MACHINING PROCESSES	2	2	2	THERMODYNAMICS		3	
ELECTIVES	5	4	4	HEATING & AIR. COND.		3	
				ELECTIVES	3	3	6

QUARTER HOURS

PURDUE UNIV. - MECHANICAL

APP. ENGRG. COMPUT.	1	PROD. DRAWING	2
MATLS. & PROCESSES	2	APP. STR. MATLS.	4
APP. STATICS	2	BASIC MACHINING	2
DRAFT. FUNDAMENTALS	3	TECH. REPORT WRIT.	3
ENGL. COMP.	3	INTRO. ANALYSIS	3
ELEM. MATH.	5	FUND. SPEECH COMM.	3
POWER SYSTEMS	3	HYD. & PNEU. SYST.	3
MACHINE ELEMENTS	4	INSTRUMENTATION	3
INTRO. ANALYSIS	3	HUMAN REL. IN IND.	3
GENERAL PHYSICS	4	GENERAL PHYSICS	4
TECHNICAL ELECTIVE	3	TECHNICAL ELECTIVE	3
		NON-TECH. ELECTIVE	3
COMPUTER UTILIZ.	3	ELECT. CIRCUITS	3
ELECT. CIRCUITS	3	ELECTRONICS	3
ELECTRONICS	2	E.E.T. LAB.	2
E.E.T. LAB.	2	APP. FLUID MECH.	3
DEVEL. READING	1	AMERICAN SOCIETY	3
PROD. COST. ANALYSIS	3	ELEM. STAT. METHODS	3
APP. THERMODYNAMICS	3		
COMP. PROG. FUND.	3	DIRECTED WRITING	2
PRIC. OF ECONOMICS	3	IND. SUPERVISION	3
BUS. WRITING	3	PRIN. OF LOGIC	3
PROD. MACHINING	3	INT. COMB. ENGINES	3
INSTRUMENTATION	3	PROJECT	3
SPEECH COMM.	3	DISCUSSION OF TECH. PROBLEMS	3

TEMPLE UNIVERSITY - MECHANICAL

GROUP I - MATHEMATICS		MIN. CREDITS - 12
ANAL. GEOM.& CALC.	9	
GROUP II - BASIC SCIENCES		MIN. CREDITS - 8
GENERAL PHYSICS	8	
GROUP III - LIBERAL STUDIES		MIN. CREDITS - 24
ENGLISH COMP	6	
HISTORY	6	
GROUP IV - TECHNOLOGY		MIN. CREDITS - 41
COMPUTER TECHNOLOGY	3	
ENGRG. GRAPHICS	3	
MATLS. & PROCESSES	3	
MECHANICS	3	
STRENGTH OF MATLS.	3	
QUALITY CONTROL	2	
KINEMATICS	3	
MACHINE DESIGN	3	
THERMODYNAMICS	3	
MACH. DES. & ANALYSIS	3	
AIR COND. & HEATING	3	
FLUID MECHANICS	3	
ENGRG. ECONOMY	3	
ENGRG. MATERIALS	3	
GROUP V - MANAGEMENT		MIN. CREDITS - 6
PRIN. OF ECONOMICS	6	
GROUP VI - HPER OR ROTC		MIN. CREDITS - 4
GROUP VII - FREE ELECTIVES		MAX. CREDITS - 30
		MIN. CREDITS -125

FOUR-YEAR ENGINEERING TECHNOLOGY: ITS STATUS AND NEED

Prepared By

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for

AMERICAN VOCATIONAL ASSOCIATION: TECHNICAL EDUCATION DIVISION, THE AMERICAN TECHNICAL EDUCATION ASSOCIATION, AND THE NATIONAL ASSOCIATION OF INDUSTRIAL TEACHER EDUCATORS

AMERICAN VOCATIONAL ASSOCIATION CONVENTION

Boston, Massachusetts
December 7, 1969

There has been a growing trend in this country, in the past five to six years, towards the development of four-year Bachelor of Science degree technology programs in higher education institutions. The reason for this is the identification of a gap in the management, science, engineering, craftsman team of business and industrial workers. With basic knowlege and scientific information doubling every seven to ten years, educators, industrialists, business and professional workers are becoming more and more concerned with various ways and means of filling this gap.

An article appearing in the November-December, 1969, issue of the Engineer indicates there will be (quote)"fewer engineers but more technicians in the next five years."(unquote) During the year ending June, 1969, there were 432 Bachelor of Technology degrees. These were awarded from schools that also had one or more Associate Degree curriculums approved by the Engineers Council for Professional Development. The two and four-year engineering technology programs have grown out of an engineering heritage and reflect the philosophy of the Engineers Council for Professional Development as indicated in their definition of Engineering Technology: (quote)"Engineering technology is that part of the technological field which requires the application of scientific and engineering knowlege and methods combined with technical skill in support of engineering activities."(unquote)

Graduates of two-year ECPD accredited programs are referred to as engineering technicians, and those completing the four-year degree would be referred to as engineering technologists. The continued development of these programs will be one of the answers to the technical manpower shortage.

Another development receiving increased attention is the expansion of the four-year degree in Industrial Technology.

In order to understand more fully the objective and philosophy of proponents in this field, the following definition is taken from the Kent State University catalog, 1969-71 (pp. 170-171).

> (quote)"Industrial Technology programs closely related to the fields of mechanical, industrial, and electrical engineering prepare the student for employment in scientific, supervisory and managerial capacities in industry. Each of the industrial technology program options has a liberal arts base combined with appropriate studies in natural science, technology, management and marketing.
> The Technologist assists in the design, illustration, fabrication, maintenance, operation and testing of the products, materials and equipment used in industry. He often conducts research in the development of industrial products and processes and works closely with engineering personnel."(unquote)

In view of the "core" curriculum approach utilized by most universities and colleges, it is very likely that more students would be available for industrial technology programs than those under the curriculum structure for engineering technologists.

Dr. Jesse Defore, in his doctoral disertation of June, 1966, indicated there were seventy-seven institutions offering Baccalaureate Engineering Technology Degree programs. However, under this classification, he has included degree programs of an industrial arts orientation; those operated under a school or department of education within a college or university, those operated under schools of business or a department of engineering and those operated under the framework of a division or department of technology.

During the past several months, I have conducted a survey of one hundred and one four-year institutions, both public and private. Twenty-eight of these colleges or universities indicated they were offering Baccalaureate degrees in engineering technology. In several instances, however, the degrees were awarded as Bachelor of Technology due to a desire not to confuse the degree identification with that of Engineering.

Further analysis of the above twenty-eight degree programs in engineering technology indicates that six have received accreditation by the Engineers Council of Professional Development. They are as follows:

Purdue University, Lafayette, Indiana
Lowell Technical Institute, Lowell, Massachusetts
University of Dayton, Dayton, Ohio
Oregon Technical Institute, Klamath Falls, Oregon
University of Houston, Houston, Texas
Brigham Young University, Provo, Utah

At present several other institutions have applied for accreditation. It is expected that this number will increase quite rapidly in the future, particularly in colleges which offer engineering programs, and those classified as technical institutes. Further consideration of the hundred and one schools surveyed reveals that fifty-one offered programs leading to the Baccalaureate Degree in Industrial Technology. Many of these schools also had programs in Industrial Arts Education, Industrial Education and Vocational-Technical Education.

Even though this presentation concerns itself with the Baccalaureate Degree, it is obvious that these programs are being influenced by the rapid expansion of two-year associate degrees awarded by community colleges, juniar calleges and technical institutes.

Many agencies have conducted studies of manpower needs for the period of time from 1965 to 1975. These studies indicate that the greatest growth lies within the professional and technical occupations. The Bureau of Labor Statistics has predicted that by 1975 manpower requirements in these areas will be two-fifths higher than those of 1965. The National Academy af Science reporting in its publication The Long-Range Demand for Scientific and Technical Personnel, 1961, indicates a deficit of 10.5 percent in its needs for engineering graduates in 1975. Current estimates range from one-to-ane to as high as six-to-one technicians needed for each engineer.

Because of the limited number of engineers available, more and more responsibilities are being added to the duties performed by technicians. Students completing four-year curriculums are finding more jobs available in the middle management areas. These jobs add a new dimension to the work force of our nation. Referring again to Dr. Jesse Defore's study, (quote)"there were 34,600 engineering technologists employed in 1966 and a projected need for 97,000 by 1975. These are in addition to an estimated need of 625,000 engineering technicians."(unquote)

In the December 8, 1969, issue of U. S. and News Report (p.92) the following item appeared:

> TECHNICIANS NEEDED. Young people with technical training are likely to find a number of jobs from which to choose. The National Industrial Conference Board reports that one out of three technicians' jobs are not filled, and that by 1975 there will be openings for 510,000 new engineers, 292,000 scientists and 560,000 technicians. A shortage of people trained in these fields is holding back progress in medical research, control of air and water pollution, the space program and urgan renewal.

In the May, 1968, issue of Occupational Outlook Quarterly, (p.6) the estimated employment of engineering and scientific technicians was 645,000 with annual openings to be 55,000. The following comments were also included in the above publication:

> (quote)"Very good opportunities. Demand strongest for graduates of post secondary training schools to fill more responsible jobs. Industrial expansion and complexity of products and manufacturing processes are increasing demand."(unquote)

The entire spring, 1969, issue of the same publication was devoted to the problem of "Urban Manpower." Included in the listing of job openings in the city government were architectural technicians, draftsmen, engineering aids and engineering technicians.

Another reason for the need for more four-year degree personnel in industrial and engineering technology is inferred in what is happening and what is expected to happen in undergraduate and graduate engineering education. As reported in the January, 1968, (p.336) issue of Engineering Education:

> (quote)"The Goals Committee recommends, therefore, that during the next decade, basic engineering education be extended to include at lease one year of graduate level education leading to the Masters degree."(unquote)

This, of itself, may not seem too significant but I am sure some of the students who would usually be expected to enroll in the engineering curriculum would take a "second look" at a four-year technology program.

During the late nineteen forties, and early fifties, the challenge of vocational, industrial, and engineering educators was to develop post-high school, community college, and technical institute programs of terminal nature. Education beyond the high school was both economically necessary and socially desirable. More recently, there has developed a concern that these programs shoudl not be "close-ended". Many graduates of so-called "terminal" programs, after a few years of work experience or service in the armed forces, will become so motivated that they want to continue their education. The financial assistance of the G.I. Bill and maturity gained through industrial or armed services experience will help him to see the need for further schooling.

For many years we have seen the tremendous expansion of masters, doctoral and even post-doctoral programs in our universities. The emphasis on these programs has left many four-year institutes with three and four-year "core" curriculums which are preparatory for the graduate level programs. Where does this leave the student who expects to complete the four-year program?

In a recent issue of the RCA magazine there appeared a cartoon showing a college graduate wearing cap and gown and holding his diploma. The caption under the cartoon read, "Educated but unskilled." Perhaps the largest gap in higher education will be those students lost between the community college and the four-year Baccalaureate degree. Certainly status, social concern and economic necessity will present an ever-mounting challenge to new approaches to solving this problem. If this challenge is not met by existing colleges and universities, there may be, in the future, a need for a new type of institution which will provide a more practical solution.

INSTITUTIONS OFFERING INDUSTRIAL AND/OR ENGINEERING TECHNOLOGY

PROGRAMS LEADING TO THE BACHELOR'S DEGREE

ALABAMA

X	I		Alabama A & M College	Normal
X	I		Tuskegee	Tuskegee

ARIZONA

X	I		Arizona State University	Tempe
X		*	Northern Arizona State University	Flagstoff
X			University of Arizona	Tuscon

ARKANSAS

			Arkansas A & M College	College Heights
			Arkonsas State Teachers College	Conway

CALIFORNIA

X	I		California State College	Long Beach
			Californio State College	Los Angeles
X	I	*	Californio State Polytechnic College	San Luis Obispo
X			Chico Stote College	Chico
X	I		Fresno Stote College	Fresno
			Loma Linda University	Riverside
			Long Beach State College	Long Beach
X			Pacific Union College	Angwin
X			San Diego State College	San Diego
X			San Froncisco State College	San Francisco
X	I		San Jose State College	San Jose
			State College of Los Angeles	Los Angeles

COLORADO

			Colorado Stote University	Fort Collins
X			Southern Colorodo Stote College	Pueblo

CONNECTICUT

			University of Bridgeport	Bridgeport

FLORIDA

X		*	Embry Riddle Aeronautical Institute	Daytona Beach
			Florido A & M University	Tallahossee
			Florido Southern College	Lakeland
X	I		University of West Florida	Pensacolo

GEORGIA

X	I	Georgia Southern College	Statesboro
X	*	Savannah State College	Savannah

HAWAII

		Church College of Hawaii	Laie, Oaha

IDAHO

		University of Idaho	Moscow

ILLINOIS

		Bradley University	Peoria
		Chicago State College	Chicago
X	I	Eastern Illinois University	Charleston
X	I	Illinois State University	Normal
X	I	Northern Illinois State University	DeKalb
X	*	Southern Illinois State University	Carbondale

INDIANA

		Ball State University		Muncie
		Indiana State University		Terre Haute
X	I A	Purdue University	*	Calumet
			*	Fort Wayne
			*	Indianapolis
			A *	Lafayette
		Valparaiso Technology Institute		Valparaiso

IOWA

X	*	Iowa State University	Ames
X	I	University of Northern Iowa	Cedar Falls

KANSAS

X	I	Kansas State College	Pittsburg
		Kansas State Teachers College	Emporia

KENTUCKY

X	I	Eastern Kentucky University	Richmond
X	I	Morehead State University	Morehead
X	I	Murray State College	Murray
		Western Kentucky University	Bowling Green

			LOUISIANA	
			Louisiana State University	Baton Rouge
X	I		Northwestern State College	Natchitoches
X	I		Southeastern Louisiana College	Hammond
X	I		Southern University and A & M College	Baton Rouge
X	I		University of Southwestern Louisiana	Lafayette
			MAINE	
			Gorham State College	Gorham
			MARYLAND	
			University of Maryland	College Park
			MASSACHUSETTS	
			Boston University	Boston
X	I		Northeastern University	Boston
X		A *	Lowell Technological Institute	Lowell
			MICHIGAN	
X	I		Central Michigan University	Mount Pleasant
X	I		Eastern Michigan University	Ypsilanti
			Northern Michigan University	Marquette
X		*	Western Michigan University	Kalamazoo
			MINNESOTA	
			Bemidji State College	Bemidji
			Mankato State College	Mankato
X	I		Moorehead State College	Moorehead
X			University of Minnesota	Duluth
X	I	*	St. Cloud State College	St. Cloud
			MISSISSIPPI	
			Alcorn A & M University	Lorman
			Mississippi State University	State College
			University of Southern Mississippi	Hattiesburg
			MISSOURI	
X	I		Central Missouri State College	Warrensburg
X			Lincoln University	Jefferson City
X			Southeast Missouri State College	Cape Girardeau
			Southwest Missouri State College	Springfield

			MONTANA	
X	I		Montana State University	Bozeman
X		*	Northern Montana University	Havre
			NEBRASKA	
X	I		Kearny State College	Kearny
			Municipal University of Omaha	Omaha
			University of Nebraska	Curtis
			University of Nebraska	Lincoln
X	I		University of Nebraska	Omaha
			NEW JERSEY	
X			Montclair State College	Upper Montclair
X			Trenton State College	Trenton
			NEW MEXICO	
X	I		Eastern New Mexico University	Portales
			Western New Mexico University	Silver City
			NEW YORK	
			New York Institute of Technology	Old Westbury
X	I		State University College	Buffalo
			NORTH CAROLINA	
X	I		East Carolina College	Greenville
X	I		North Carolina A & T State University	Greensboro
			North Carolina State University	Raleigh
			West Carolina Institute of Technology	Montgomery
X	I		Western Carolina University	Cullowhee
			OHIO	
X	I		Bowling Green State University	Bowling Green
			Central State University	Wilberforce
X	I		Kent State University	Kent
X	I		Ohio University	Athens
X	I		Miami University	Oxford
X		A *	University of Dayton (B.S. of Technology)	Dayton
X			Wilmington College	Wilmington

OKLAHOMA

X		Northwestern State College	Alva
		Northwestern State College	Tankawa
X		Oklahoma State University	Stillwater
X		University of Oklahoma	Norman

OREGON

X	*	Oregon State College	Corvallis
X	A *	Oregon Technical Institute	Klamath Falls

PENNSYLVANIA

X	*	Pennsylvania State University-Capitol Campus	Middletown
X		Pennsylvania State University	University Park
X		Temple University	Philadelphia
		Millersville State College	Millersville

SOUTH CAROLINA

X	*	South Carolina State College	Orangeburg

SOUTH DAKOTA

X	I	Northern State Teachers College	Aberdeen
		University of South Dakota	Vermillion

TENNESSEE

X		Austin Peay State College	Clarksville
X	I	East Tennessee University	Johnson City
X	*	Memphis State University	Memphis
X	I	Middle Tennessee State University	Murfreesboro
X	I	Tennessee Technological University	Cookeville

TEXAS

		East Texas State College	Commerce
X	I	LeTourneau College	Longview
		PrairieView A & M College	Prairie View
X		Southwest Texas State College	San Marcos
X	I	Texas A & M University	College Station
		Texas Southern University	Houston
		Texas Technological College	Lubbock
X	A *	University of Houston	Houston

			UTAH	
X	A	*	Brigham Young	Provo
X	I		Utah State University	Logan
X		*	Weber State College	Ogden
			VIRGINIA	
X			Virginia State College	Petersburg
			WASHINGTON	
X	I		Central Washington State College	Ellenburg
X			Eastern Washington State College	Cheney
X			Walla Walla College	College Park
X			Western Washington State College	Bellingham
			WASHINGTON, D. C.	
X		*	Capitol Institute of Technology	Washington, D. C.
			WEST VIRGINIA	
			Bluefield State College	Bluefield
X		*	Fairmont State College	Fairmont
			Marshall University	Huntington
X	I		West Virginia State College	Institute
			WISCONSIN	
X		*	Milwaukee School of Engineering	Milwaukee
X	I		Stout State University	Menomonie
X	I		Wisconsin State College and Institute of Technology	Stevens Point
X	I		Wisconsin State University	Platteville

* - INDICATES COLLEGE OR UNIVERSITY OFFERING BACCALAUREATE DEGREE IN ENGINEERING TECHNOLOGY.

A- INDICATES INSTITUTIONS HAVING ECPD ACCREDITED BACCALAUREATE DEGREES IN EITHER ENGINEERING TECHNOLOGY OR BACHELOR OF TECHNOLOGY.

I - INDICATES INSTITUTIONS OFFERING BACCALAUREATE DEGREE PROGRAMS IN INDUSTRIAL TECHNOLOGY.

X -INDICATES COLLEGES WHICH CATALOGS WERE RECEIVED AND EVALUATED.

12/3/69

RELATIONSHIP
OF
ENGINEERS AND TECHNICIANS IN INDUSTRY

	TECHNICIANS				ENGINEERS	
Job Classifications	1 Skilled Craftsman	2 Industrial Technician	3 Engineering Technician	4 Engineering Technologist	5 Engineer	6 Engineering Scientist
Education	4 years High School plus Apprenticeship	2 years Voc.-Tech. High School (13th & 14th yrs.)	2-3 yrs. College Level Program	4 years Engineering Technology Program	4 years Professional Engineering Program	4 years plus Graduate Work
Document	Diploma	Certificate	Associate Degree in Technology	Baccalaureate Degree in Technology	Baccalaureate Degree in Engineering Discipline	Master's Degree in Engineering
* **Skills**	20% Mental	50%	60%	70%	80%	90%

Current trends seem to indicate the following implications:

1. Status of workers 1 & 2 has remained fairly constant in the past decade.
2. Worker 3 has been forced to move towards worker 4 because of the advancements in science and technology, especially in space technology, electronics, computers, and in new techniques in construction.
3. Worker 5 will most likely be embodied by worker 6 within the next decade. (Goals study report, ASEE)

* NOTE: These are approximate percentages for the skills required to perform job duties.

Temple University Technical Institute 1968

Temple University Technical Institute 1968

VT 010 444

Bartel, Carl R., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 8, 9, 10, 1969).

American Vocational Association, Washington, D.C. Technical Education Div.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - Dec69 62p.

*VOCATIONAL EDUCATION; *TECHNICAL EDUCATION; *CONFERENCES; *SPEECHES; *TEACHER EDUCATION
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This group of addresses given at the 63rd Annual Vocational Convention, Technical Education Division of the American Vocational Association includes: (1) "A Projection of Teacher Education for the '70's" by C.R. Bartel, (2) "Technical Manpower--America's Critical Resources" by C.R. Bowen, (3) "Is Your Education Real Time?" by D.E. Irwin, and (4) "Stimulation Through Simulation" by R.A. Phillips. (GR)

VT 010 444

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Speeches Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 8, 9, 10, 1969

Technical Education Division

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT010444

A PROJECTION OF TEACHER EDUCATION FOR THE '70's

TECHNICAL EDUCATION

Presented to:

National Association of Industrial and Technical Teacher Educators
Second General Session, Monday, December 8, 1969
American Vocational Association Convention
Boston, Massachusetts

Presented by:

Carl R. Bartel, Professor
Industrial Technical Education
Division of Technology
Arizona State University
Tempe, Arizona, 85281

A PROJECTION OF TEACHER EDUCATION FOR THE '70's

TECHNICAL EDUCATION

The projection of what technical teacher education will be like in the next ten years is a more difficult undertaking today than it would have been ten years ago. I question whether such a projection with some validity is at all possible today. I believe it is especially difficult to make such a projection in the area of technical education, probably more so than in either of the other two fields in industrial education.

A relatively simple approach in attacking this assignment would be to sit in the teacher educator's ivory tower and begin to reflect and predict without concern for the outside world. Rather than do this, I chose to contact three individuals who are on the "firing line" in the field of technology. The positions held by these men include that of state supervisor of technical education, junior college dean of vocational technical education, and chairman of a four-year technology program. I requested each to respond to three specific questions concerning technical education and the preparation of technical teachers. One point on which we all agreed was that the technical education program, regardless of the discipline, is and should remain a post-secondary offering.

The first part of my presentation will be a summary of the responses made to the three questions. To these responses I have also injected some of my own ideas, so that the teacher educator group would be represented. The second part of my presentation will be suggested B.S. degree and M.S. degree programs designed for preparing technical teachers.

Technical Education and the Preparation of Technical Teachers

The following are the three specific questions concerning technical education and the preparation of technical teachers on which the first part of this presentation is based.

1. Considering the education spectrum, how much of this spectrum should technical education include?

2. As you see it, what is "right" and "wrong" in the preparation of technical teachers today?

3. In your opinion, what would be an ideal technical teacher education preparation program, and how broad in scope should it be? (i.e. engineering, health, business, etc.)

Question #1: Considering the education spectrum, how much of this spectrum should technical education include?

In general, the responders felt that an appropriate pre-technical program should be taken by all and begun during the early years of their schooling. This would mean that children at the kindergarten level and continuing through the elementary grades should become actively involved in learning about all occupational areas, especially the technical occupations. This does not mean traditional industrial arts courses, home economics courses, and business courses, all independent of each other. A "real" occupational orientation must be made available. To this, the proper amount of math and science must be available for those who will continue on to the technical programs.

At the senior high school level, both boys and girls would begin to take some of the vocational technical type courses in depth, a preparation for immediate employment at a low entry level, or preparation for two-year and four-year technology programs including teacher education.

The "true" technology program for technicians would not be initiated until the 13th and 14th year. It is at this level that students would determine the particular technical occupation for which they would begin serious preparation. In many cases, remedial courses would need to be available so that students would have the essential background (i.e. basic technology, math, and science) to enter into the various technology programs. The immediate goal might be the completion of a two-year technology program. However, the ultimate goal may very likely be a degree program.

It should be remembered that a student preparing himself to become a teacher of technology is actually preparing himself for a post-secondary collegiate level position. His preparation program must reflect this.

Question #2: As you see it, what is "right" and "wrong" in the preparation of technical teachers today?

What is "right" with the present technical teacher education program? Responders stated that there is a great desire by all concerned to continually improve and update their programs. Evidence indicates that the better technical teacher education programs have used the advisory technique and have maintained open lines of communication with appropriate groups, the "users". As the technical supervisor stated it, "As I see it, the 'right guys' in the business have analyzed successful programs, studied the needs of business, industry, and the educational institutions they are proposing to serve; and by the use of an innovative approach, utilizing new instructional techniques and methods, along with the development of a 'systems approach' based on behavioral objectives, have come up with new and relevant programs."

The better technical teacher education programs have a very close relationship with their respective four-year professional degree program colleagues who are in the business of preparing students for entry into industry, business, health, public service, and agriculture.

Now, a look at some of the things that are "wrong" with our present technical teacher education program. Probably the most common criticism is that the programs have been organized or developed around existing offerings and institutional structure. There is too much evidence of compromising with the establishment to the detriment of an effective technical teacher education program. In addition, a resistance to change has been a major hindering factor resulting in a loosely uncoordinated program.

As technical teacher education programs are viewed today, we find a traditional curriculum with a large number of courses considered irrelevant. Too often, such a program prepares one for guaranteed unemployment. It is apparent that many who have curriculum development responsibilities have not been acquainted with the existing and future training needs of technical teachers and, in most cases, refuse to communicate with individuals and groups who are cognizant of these needs.

Along with the problem of including too many "nice to know" and not enough "essential to know" courses in a preparatory program is the problem of lack of opportunity to become truly occupationally proficient. In most cases, this can only be done through the internship method. The time factor regarding the internship depends upon the particular technology within a specific discipline.

Question #3: In your opinion, what would be an ideal technical teacher education preparation program, and how broad in scope should it be? (i.e. engineering, health, business, etc.)

What should an ideal technical teacher education program include? First, it must be oriented to the technology and its closely related professional program. It must contain an appropriate balance between the various major components of the curriculum, with emphasis on application. This balance may not be the same for each specific technology within each discipline.

In the majority of cases, an ideal curriculum resembles the counterpart professional degree program of five to ten years ago with the addition of professional technical education. The "application of theory" is the key in the total program operation. A workable combination between theory and application must be present for each specific technology. The continuous use of advisory groups helps to maintain this workable combination.

A selected group of humanities, human relations, and communications courses must be a part of the preparation program. This is more and more evident as teachers, as well as technicians, are forced to become involved in many activities with others, calling for tact, finess, and diplomacy.

Courses directly related to the technology, to be taught along with courses dealing with the presentation of the specific technology, must be emphasized. Provisions must be made for the development of specific competencies in the newer multi-media and systems approach. The program should include content dealing with the purpose and function of the post-secondary institutions where technical preparation takes place.

The technical teacher education program should be broadly based and flexible so as to meet the crying need for keeping current. It must include provisions for easily obtaining pertinent occupational experiences on a continuous basis. Today

and in the future it is evident that the preparation of technical teachers means a B.S. degree is sufficient to obtain a position as a technical teacher in a junior or technical college, but an M.S. degree is required to hold that position and to advance.

Both degree programs need to be designed so as to include a basic minimum core of courses desireable and needed by all technical teachers whether they be preparing themselves for teaching technologies in the areas of engineering, health, business, public service, or agriculture. Beyond this core, specialization options need to be provided for each of the major occupational fields which would include on-campus laboratory classes and a considerable amount of actual experience with an appropriate employer.

The degree programs must be flexible in design to provide for geographic differences; flexible enough to provide adequately for the backgrounds of the applicants who desire entrance; flexible enough so that those completing have a variety of opportunities for employment; and so prepared that continued education is possible. Continuing education may be in a regular degree program or in the form of short, credit or non-credit courses designed to update the individual technical teacher.

Suggested B. S. and M. S. Degree Programs

B. S. Degree in Technical Teacher Education

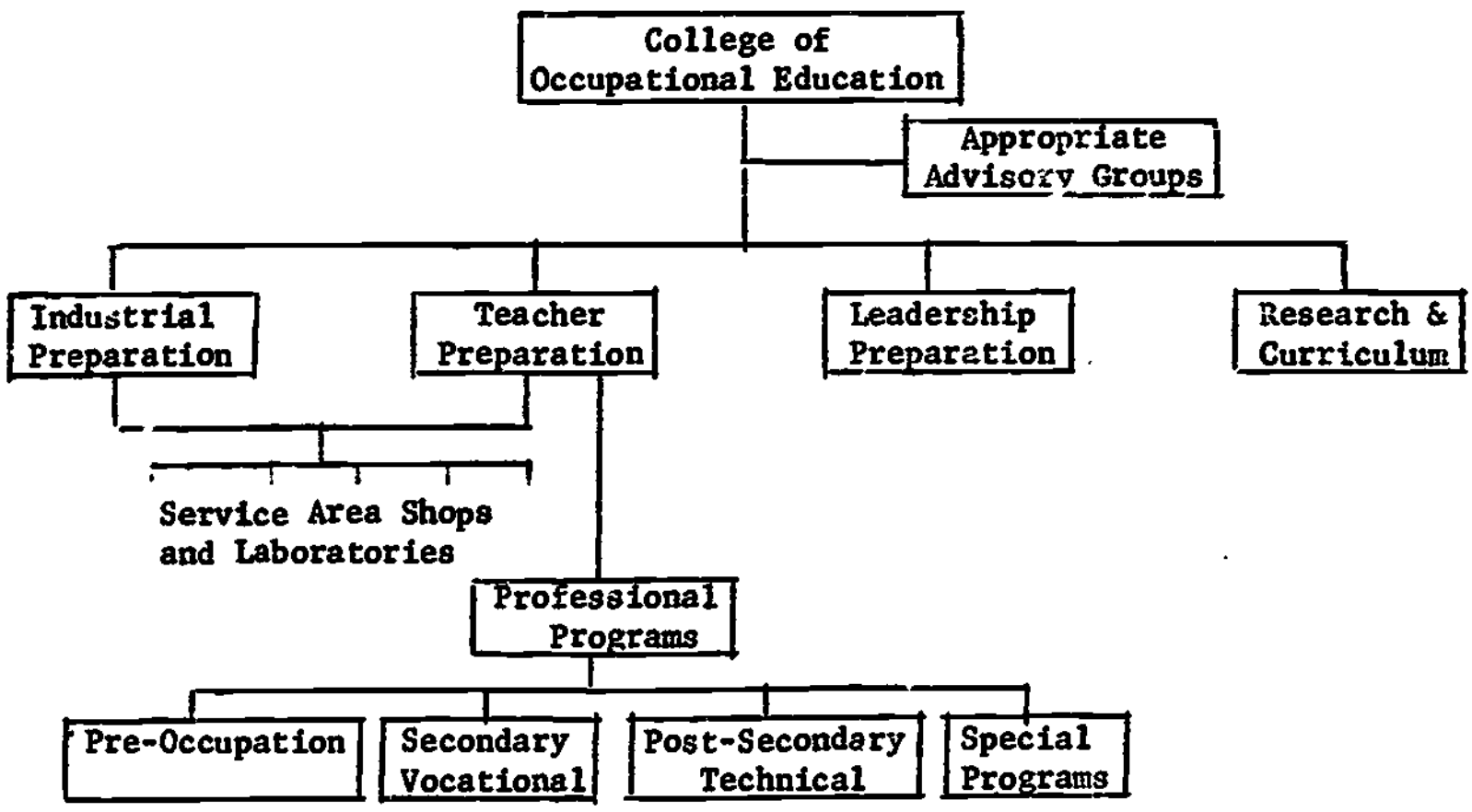
General Studies		24
English and Speech	9	
Humanities	6	
Social Sciences	9	
Mathematics and Laboratory Sciences		18
(Minimum two semesters each of high school mathematics and laboratory sciences required)		
Technology Specialization		48
(Course selection made on basis of occupational and education background and technology planning to teach)		
Occupational Internship		9
(Employment selected appropriate to technology)		
Professional Technical Education		18
Analysis & Course Development	3	
Instructional Media	3	
Psychology of Learning	3	
Teaching Internship	3	
Principles of Tech. Education	3	
Evaluation Techniques	3	
Elective		9
		126

M. S. Degree in Technical Teacher Education

Professional Technical Education		9
Technical Education	3	
Technical Curriculum Development	3	
Research	3	
Technology		15
(Courses selected on basis of individual background and teaching specialty)		
Elective		9
(Courses selected from Technology and/or Professional Technical Education group)		
		33

CONCLUDING COMMENTS

I look forward for the degree program, designed for the preparation of technical teachers, to be offered through a College of Occupational Education located on a university campus where the various professional degree programs are also available and have a close relationship to the technologies. One of the major purposes of this College would be the preparation of occupational, vocational, and technical teachers. Following is the suggested College structure:



The technical teacher preparation program will change in the 70's but not as radically or rapidly as some of us would desire. The program change will need to be in harmony with trends that are becoming more evident each year. Among these trends are the following:

1. The teacher will definitely be a curriculum specialist, a decision maker, an instructional manager, and not only a disseminator of knowledge.

2. The teacher preparation program will be planned jointly by technical educators, technical program directors, and industry, business, health agencies, and other employers of technicians where appropriate.

3. The technical teacher education program in many cases will be administered jointly by the university and the employing institution, and the employers of the technicians that the technical teacher will prepare.

4. The program will contain less and less formal - traditional classroom and laboratory instruction with an increase to almost a total instructional program developed and presented through micro-teaching techniques, cooperative technological work experience, independent study, simulation, computer assisted instruction, and observation.

5. A greater emphasis on the technology courses and less on the typical methods courses.

The technical teacher of tomorrow, in the 70's, will be one who has demonstrated his abilities, one who is dedicated to teaching first and to the technology second, and one who has the personal attributes of emphathy, warmth, and responsiveness.

Technical Manpower - America's Critical Resources

ATEA Program for
Technical Education
Boston, Massachusetts

December 8, 1969

By: Charles R. Bowen, Manager
Program Development
IBM Corporation
Old Orchard Road
Armonk, New York 10504

Education is America's largest organized enterprise. One out of four Americans is involved full time in education. Educational expenditures exceed sixty billion dollars a year. We take a particular pride in our system of higher education which is the largest in the world, both in terms of enrollment and expenditures. It is hardly an exaggeration to call education the national "religion" of our secular society. Give us a major national problem - and we tend to look to education to solve it for us, whether it be increased opportunity for minorities, greater economic equality, the Americanization of immigrants, or the race with Russia.

The very success of our educational system has tended to obscure a subtle change in the talent requirements of a society increasingly pervaded by science and technology. Professional and technical manpower as a percent of the U.S. labor force has tripled since the beginning of the century. However, by 1975 it is expected to increase by yet another 50% to a total of 18% of the labor force, according to the Bureau of Labor Statistics in the U.S. Department of Labor. What we may be seeing is the transformation of American society into one where the proponderence of its labor force is not merely white collar but, of necessity, professional

and technical. This may be a natural evolution in a society based on science and technology.

The U.S. has gone further in this direction than most Americans realize. The report of the Commission on Human Resources and Higher Education, set up by the National Academy of Sciences, to be published shortly, points out that despite the size of our system of higher education the U.S. is facing a crisis in the supply/demand relationship of certain types of technical and professional manpower which may grow increasingly serious in the years ahead.

One indicator of how far the U.S. may have moved in this direction are the statistics on job vacancies collected by the Bureau of Labor Statistics in 1965. Although professional and technical comprised only about 12% of all jobs at that time, they accounted for almost 21% of all job vacancies.

Partly because of the highly diverse nature of the U.S. system of education, there is almost no systematic analysis of the output of America's vast enterprise of education in terms of quality and quantity, from the point of view of the Nation's long-range needs, benefits, and optimum use of talent. Aware of this lack and of its serious consequences, American industry is today pressing for a more searching study of the processes

by which our advanced society provides for its manpower requirements and for remedial action to correct anticipated educational or manpower deficits.

I believe those of you in technical education will be the chief beneficiary of a concerted study of our Nation's overall manpower needs and what must be done to meet them. In other words the net outcome of such an overall look will be to benefit technician education more than any other single sector.

I believe one result of this new approach to U.S. manpower needs will be a doubling of enrollments in technical education in the next five to seven years. And I would like to share with you ideas on how industry and education can work together to prepare to respond effectively to the challenge of doubled enrollments. I can assure you your advice to me will be carried back to a group of industries extremely interested in helping you meet the great challenge and opportunity posed by a doubling of your enrollments. We are living through a major change in the U.S. labor force. This transition is more significant for you than almost any other sector of American education. While other technical and professional occupations increased about 50% during the 1950's, technician

occupations increased 100%. IF THE TREND OF THE PAST CONTINUES, the Bureau of Labor Statistics predicts a shortage of about 350,000 technicians in 1975 - approximately 34% below the net new demand between now and then. I consider the Bureau of Labor Statistics projections (which were published in BLS Bulletin 1512 in 1966) conservative. Unless the U.S. remedies this shortage of technicians our economic expansion may be seriously retarded. The shortage of such a critical manpower resource limits the capability of corporations to create new jobs, expand facilities and productivity, and apply advanced technological practices. According to Dr. W. G. Torpey, formerly Manpower Specialist in the Executive Office of the President of the United States, several vital national programs such as air and water polution control, urban renewal and the space program are being handicapped due to lack of technician manpower. Looking to the future, Dr. Torpey believes the demand curve for technicians is relatively independent of fluctuations in the business cycle and depends primarily on the continued growth of science and technology.

In 1963 the Nation could have used three times as many technician graduates as were available. For 1975 it is anticipated that the Nation could use more than twice as many technician graduates as BLS PREDICTS will be

Although I believe the projected need or demand figure is much too low, how does this compare with other projections of manpower supply and demand. According to the National Science Foundation, in 1975 there will be a supply of approximately 2,150,000 engineers and scientists versus the need for 2 1/2 million - or a national manpower deficit of 344,000 (~ 14%.)

In the medical area, according to Dr. Rashi Fein of the Brookings Institution, there will be a supply of 362,000 medical doctors versus a demand for 375,000 in 1975. This is a deficit of approximately 4%.

Against these two national manpower deficits of 14% and 4%, respectively, for scientists-engineers and doctors, there is a projected deficit of 34% for technicians. This is a cumulative deficit over the period between 1966-1975. If we take 1975 alone BLS anticipates a new supply of 57,000 technical institute graduates entering technical jobs against a need for 130,000. This is a deficit for that one year of approximately 56% between new supply and new demand. Clearly, the shortage of technicians is one of the most critical manpower shortages facing the U.S. In order to compensate for these severe shortages of qualified technicians, employers will be forced to make compromises.

Workers will be upgraded through industrial training; and jobs will be downgraded so that lesser skilled people can perform them. However, both retraining and downgrading are costly to employers of technicians at a time when wage and cost increases are items of major concern to everyone.

While we are talking about large numbers, let me ask a $64,000 question. How good are the BLS figures projecting supply and demand for technicians? Their statistics include only those technicians who support engineers and scientists either directly or indirectly. This definition excludes 80% of the technician needs of the computer and business machine industry - that is, the tens of thousands of technicians who service business machines and who do not directly or indirectly work with engineers or scientists. The computer industry's projected needs for 1966-1975 comprise about 20% of the total BLS projected need for the 10-year period.

Frankly, I think a more accurate definition of TECHNICIAN is that used by the National Science Foundation. Let me quote: "Technicians - all persons engaged in work requiring knowledge of physical, life, engineering, and mathematical sciences comparable to knowledge acquired through

technical institutes, junior college, or other formal post-high school training, or through equivalent on-the-job training or experience."

This is a broader and, for our needs, a more accurate definition of "technician." To my knowledge there are no available estimates of technician supply and demand based on this more comprehensive National Science Foundation definition.

Another reason to believe that the demand for technicians is understated is the so-called "supply effect." That is, since graduates are not available, industry does not seek them. Compromises are made with the supply-demand equation. People are upgraded through industrial training; jobs are redefined and restructured; projects including improvements and innovations are postponed or abandoned. In other words, lack of supply tends to cover up the actual need for technicians.

There is also the question about how well we utilize technical manpower. In the U.S. We use a far richer "mix" of scientists and engineers to technicians than in any other country. Perhaps it gives us a higher quality team. No one knows for sure. My own experience tells me it is not only expensive but results in dissatisfaction

The ratio of technicians to scientists and engineers in the U.S. was about .66 in 1963 and will be about .71 in 1975, according to BLS 1512. This is far below the ratio desired by industry. The American Society of Engineering Education survey of technical institute education in 1957 found that industry desired by 1967 to have a ratio of not two-thirds of a technician for each scientist and engineer but almost two technicians per scientist and engineer. If we were to achieve that ratio by 1975 we would need several million technicians, compared to a projected supply of 1,000,000.

How do other nations compare to the U.S. in their utilization of technicians? West Germany now has a ratio of about 1.5 technicians to each engineer and scientist. This includes the "meisters" who are highly trained in industry as well as the "technikers" who are trained in schools. If only the "technikers" are included, the ratio is about .875. A "techniker" is West Germany's equivalent to our two-year technical institute graduate. Using only technical institute graduates, the U.S. ratio would be only .35 in 1975 compared to Germany's present .875.

In other words, West Germany has more than double the U.S. ratio

a more cost-effective technical manpower mix than does the U.S.

Well, if we had the extra enrollments in technical education, could we accommodate them? In 1964 two-year technical institutes in the U.S. were only filled to about 60% of capacity, ACCORDING TO THE U.S. OFF. OF EDUC. With a capacity for 170,000, their enrollments totalled only 100,000. Federal-state expenditures are projected by 1975 toward a 400% increase in student capacity to 750,000. However, this expansion will not occur if enrollments only increase to the 266,000 projected for 1975 by BLS.

What, then, can we do to fill this gap between enrollments and capacity -- and, thereby, meet the Nation's critical need for trained technicians?

Perhaps a more basic question is why more students don't enroll in technical institutes? A student's preference for a technical education is often the result of a desire both for constructive achievement and to please others. But a survey conducted at the University of Syracuse indicated that the desire to please others often dominates the drive for achievement. For example, if a youngster has a choice of being either a good technician or a poor lawyer, too often his parents would rather have him be a poor lawyer - and that is what he becomes. The chief conclusion of a majority of student

surveys is that the parents play the major role in their children's choice of post-secondary education as well as later career decisions - much more of a role, for instance, than guidance counselors.

But American society, including parents, tends to look down on degrees below the Bachelor's level. There is far too little public or community prestige attached to technical programs and the Associate Degree.

The unrealistic emphasis on four years of college for everyone should be replaced by emphasis on the kind of education that is appropriate to each individual's needs, abilities, and achievements. The public must be educated about the rewarding career opportunities available to graduates of technical education and the very real importance and status of technician careers. This "public"includes parents, students, teachers, and guidance counselors. The best way to reach such a large population is through national advertising in magazines, television, radio and in newspapers.

Industry is already spending large sums on technician recruitment advertising. However, much broader advertising is needed if parents, students and the rest of the general public are to be convinced of the

advantages of technician careers.

TO MEET THIS NEED

A number of American firms, led by the computer industry, joined together under the auspices of the National Industrial Conference Board. NICB is a non-partisan, non-profit association of industrial firms dedicated to research and information sharing. The NICB prepared a proposal to the Advertising Council which each year conducts several hundred million dollars in public service advertising on themes such as, "Support Your Red Cross," "Avoid Forest Fires," and other advertising campaigns of a public-service nature. National media, such as magazines, newspapers, radio, TV, etc. donate free exposure in their pages and programs to Advertising Council campaigns.

The U.S. Office of Education joined in sponsoring the proposal which was accepted. This past summer, between 8 and 10 million dollars in free advertising was dedicated to the theme "How to Have a College Man's Career Without Four Years of College." The theme was based on research which indicates that the average technician earns more in his lifetime than the average college graduate in the U.S. Students, teachers, counselors, and parents were urged to write for a booklet which describes "25 Technical Careers You Can Learn in Two Years or Less."

Within two months over 300,000 copies of the booklet were requested, a much larger figure than anticipated. The campaign will continue at least through 1971, and will focus primarily on:

1. The rewarding "new" career opportunities available to the qualified technician.
2. The excitement and satisfaction of work in these new areas of science, technology, conservation, and service, and,
3. The sense of purpose resulting from being able to fill vital national needs in the social and technical fields.

I believe it is no exaggeration to anticipate a doubling of enrollments in technical education programs within the next 5 to 7 years as a result of this concerted campaign by the U.S. Office of Education, the National Industrial Conference Board and the Advertising Council.

However, this should only be part of a much broader program aimed at balancing manpower supply with anticipated demand. Such a program aimed at formulating National Manpower Policy is essential if this Nation is to meet the challenges of this new era of science and technology as successfully as we have met the challenges of former eras.

It is hardly fair to you, the educational community or to employers, both public and private, to continue to struggle from crisis to crisis in manpower, one day demanding from the educational community enormous supplies of scientists and engineers; the next year demanding tremendous supplies of those qualified to train the disadvantaged.

Such a policy of muddling through from crisis to crisis fails completely to take into account the lead time necessary to produce and train professional talent. The net result is to inflate out of all proportion the salaries of those who happen to be in demand at a particular time - including the salaries of those who can teach the skills in high demand. The other result, I would surmise, is to confuse thoroughly the educational community with these constant cries of alarm.

Instead our goal should be a consistant, continuing study of present and anticipated manpower needs in the U.S. Today industry is just starting down the road of realistic, long-range manpower planning. Persistent shortages of critical manpower are forcing us to take this approach. Our long-range manpower planning must consist of a great deal more than educated guesses as to how many Ph.D's

in engineering or science we will need in five or ten years. Industry must consistently inventory its existing skill needs as well as the skills it anticipates it will need in five or ten years. This may not be as difficult as it sounds since most large industries now have overall long-range plans. Long-range manpower planning is a natural adjunct to the long-range planning already going on in industry.

A number of foreign countries are presently attempting to piece together their long-range manpower requirements -- to put together a comprehensive overall outline of their Nation's long-range manpower needs. From these long-range manpower forecasts national policies are formulated -- that is, estimates of supply are compared to estimates of need. Where national manpower deficits are anticipated, national priorities are drawn up for Federal support of manpower development and education programs. I believe if our country could be this systematic in anticipating manpower supply and demand, that those of you, in technical education will be the chief beneficiary.

However, I think all of us would benefit if federal and state governments could formulate ~~fair and accurate National~~ CONSISTANT, OVERALL Manpower Policies and priorities for their support of education.

Such planning would also be ideal as a guide to industry in its support for education.

In IBM we have attempted to practice what we preach. Let me tell you the results of our program simply to give you an idea of how one company with large needs for technical manpower (in 1967 IBM hired approximately 6,000 technicians) went about analyzing its own future manpower needs and thereby formulated a system of priorities for support and interaction with educational institutions.

To begin our long-range manpower surveys, we set down initially not with the directors of personnel for our divisions. Instead we worked with the directors of training of the various divisions of IBM. Our training directors had a clear picture of the skills we needed in those we hire. We also worked with our long-range planners on the directions our manpower needs would take in the years ahead.

Our systematic evaluation of IBM's manpower needs convinced us that trained technicians were our single, most critical need. We also found that the education of the technicians we were hiring was based on industry hiring needs of a previous decade. Because of the greatly increased reliability of the electronic components in computer systems,

those who service and maintain our computers spend about 85% of their time on the electro-mechanical input/output devices to the computer rather than on the electronic Central Processing Unit. As a result, those whom we hired with a background in electronics had to be prepared by IBM on the mechanical side. Conversely those whom we hired in mechanical technology had to be further educated by IBM on the electronic side. The ideal solution clearly was a man EDUCATED in the cross discipline of electro-mechanics -- taught THRU computer applications rather than on communications equipment or heavy machines.

We discussed this with a number of technical institutes who are large sources of technician hires for our industry. Based on the schools' experience with a variety of computer and business machine manufacturers, they agreed with our evaluation of the need for this new type of cross-discipline -- and so formed a consortium to develop and test a new electro-mechanical curriculum with applications in business machines and computers. The formal name of the Consortium is: The Technical Education Consortium, Inc. It now consists of 17 members and 7 associate members (all of whom are technical institutes).

The Consortium is a non-profit, independent educational organization

DEDICATED
A designed to develop ING and test ING new curricula. A number of business machine and computer manufacturers have supported it financially, as well as with advice, teacher training, and equipment. The largest financial support - $100,000 - has come from the U.S. Office of Education.

In 1967 when the first class in Electro-mechanical Technology graduated, eleven of the graduates were available for hire (eight of them went on to four-year colleges). 39 corporations and organizations competed to hire the eleven available graduates. The list of 39 included America's largest and most prestigious corporations in fields such as aircraft, communications, process control, as well as computers and business machines.

The computer industry has increased its equipment support for the Electromechanical Curriculum and is currently making available complete computer systems (specially modified to serve as lab equipment) to those technical colleges which develop the most outstanding Electromechanical Curriculum proposals in the opinion of three independent judges selected for their leadership in technical education.

In the summer of 1969, 63 technical colleges offered Electromechanical

so that by 1972 a majority of technical colleges in the U.S. will be teaching the Electromechanical Curriculum.

For those of you interested in further details, let me suggest that you contact the Chairman of the Board of Directors of the Consortium, Mr. D. M. Fellows, Ward Technical Institute, 200 Bloomfield Avenue, West Hartford, Connecticut 06115.

I would also like to recommend to you the excellent study by Dr. Maurice Roney of Oklahoma State University which further confirms the need of employers for a broad Electromechanical Curriculum. The name of Dr. Roney's study is " Electromechanical Technology: A Field Study of Electromechanical Technician Occupations." It is available from: The ERIC Reproduction Service, maintained by the U.S. Office of Education.

IBM is also interested in a cross-discipline consisting of Electronics and Chemistry, or (even better) Electromechanics and Chemistry. However, this need is not nearly as great quantitatively as the need for graduates in Electromechanical Technology.

(need for courses in Problem-Solving,

Diagnostics, etc.)

Before closing I would like to share one other facet of our experience with you. I think it may be relevant due to the rapid growth in enrollments which I believe you can anticipate as a result of the Advertising Council program. IBM, in its own technical training, has experienced a rapid growth in students due to the rapid growth of the company. We tend to double in size every five years.

While enrollments in our training classes are rising steeply, so are the salaries that we were paying to our instructors who are drawn from our experienced technical and professional people.

To keep our cost per student hour from rising too fast, we have increasingly resorted to self-study techniques. We have a mature and motivated group of student who have responded positively to many, but not all, of our attempts to individualize the pace of their instruction through self-study. Initially, like many other FIRMS we went very heavily into the use of programmed instruction texts. Where PI texts are administered at the student's location, they have been fairly successful. However, programmed instruction requires competence in reading skills which a number of technically-apt students do not possess in great strength. Second, even

for the good reader, a lengthy programmed instruction text can grow very boring.

So we have also used video-taped lectures, closed circuit television, films and other audio-visual aids fitted to the needs of the material to be presented to give variety to our instructional process. For example, an audio-visual presentation with stop action on how to repair a typewriter is much more effective than simply reading about it, particularly if the student has a typewriter before him on which to practice. I am sure many of you have had similar experience with self-study techniques.

However, what I believe may be new about our efforts to keep educational costs down is our research on the use of [redacted] computer-based terminals to monitor or manage a student's progress through a variety of self-study materials. For example, under our new system the student receives an assignment from the computer terminal. Then the self-study is done somewhere other than at the computer terminal. The self-study may consist of a programmed text, regular text, watching a film or listening to an audio tape. Once

testing. We are also using the computer terminal for simulation, particularly to simulate computer maintenance PROBLEMS. IN ADDITION, like a number of others engaged in training, we have also used the computer terminal for straight tutorial work or CAI. However, to tie up one computer terminal fully for one student is quite costly, particularly where we must pay long-distance telephone line costs to terminals all over the country.

Rather than using the computer terminal for straight tutorial presentation of material, we believe it more cost-effective to use a terminal to orchestrate the medley of self-study devices available at the student's location. There is no question that our students still prefer the classroom with an instructor -- but that often is not the choice. We have classrooms with instructors at only 46 locations throughout the country. However, we have students at over 200 locations. Given the choice, most students prefer to stay at home with their families and take part of their training in their local office through computer-based instruction rather than leave their families and go off to a distant education center. Of course, his

travel and living which would otherwise have occurred away at the education center. More important for us, it also keeps our people happy because they dislike having to travel too much.

For you, with the tremendous increase in enrollments that lie ahead, I believe this type of computer managed instruction may be very cost-effective, particularly if a number of you were to join (in the fashion of the Technical Education Consortium) to develop and test common computer-based courses that each of you could share through your present computer or through telephone linkage of teaching terminals. Your primary cost saving would be the salaries of instructors you did not have to hire to teach new courses.

What's really happening here is that the computer is coming out of its shell. The use of computing power is being decentralized. Mechanical power went through a similar decentralization. In the early 19th century steam engines were enormous three and four story giants. Then someone had the idea of decentralizing this power by putting steam engines on wheels. Later someone even more ingenious decentralized the steam engines' power by sending it out as electrical current through wires into homes. There are now

dozens or even hundreds of electric motors in each of our homes. I believe the power of computing is about to go through a similar decentralization.

Computer terminals hooked through telephone lines or other means to a central computer ARE ALREADY IN OPERATION in over 25,000 business locations and offices. In 15 or 20 years computer terminals riding existing telephone connections may proliferate to a degree undreamed of today. And these terminals may have not only the audio capacity of the telephone but also the video capacity of that cathode ray tube which now dominates for better or worse most of our homes.

What I am saying is that most of us in this meeting will live to see computer terminals with audio and visual capacity in most homes and offices. What I suggest to you is that by taking the lead in this new area of learning technology, I believe you can solve your own teacher shortage problems more cost-effectively and also demonstrate real leadership in educational research and development-a leadership commenserate with the importance of your sector of education to the Nation's future manpower needs and economic growth.

GENERAL ELECTRIC COMPANY

ONE RIVER ROAD, SCHENECTADY, NEW YORK 12305 . . . TELEPHONE (518) 374-2211

EDUCATIONAL RELATIONS AND RECRUITING

(1) IS YOUR EDUCATION REAL TIME?

By

D. E. Irwin, Manager
Engineering Recruiting Development & Program Placement

I am very pleased to be a participant in the meetings of the American Vocational Association and the American Technical Education Association. The major share of my working life has been concerned with the education, training and utilization of technical personnel. I wish that time had permitted me to attend some of your deliberations in order to become more informed on the problems facing you and your plans for action. The most sensitive areas of education today are in the areas of high schools, vocational and post secondary programs.

Several years ago I attended meetings at Massachusetts Institute of Technology to plan a summer workshop on vocational education. These meetings were under the direction of Dr. Nathaniel Frank, who was on your program yesterday, and who is very informed in vocational education. My knowledge of your

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(1) Presentation made on December 9, 1969, before the American Technical Education Association and American Vocational Association in Boston, Massachusetts.

SPECIALIZED WORK IS QUITE LIMITED, AND I HAVE BEEN SERIOUSLY CONCERNED AS TO WHAT I COULD SAY TO BE OF REAL BENEFIT, PARTICULARLY AT A GENERAL MEETING. I CAME TO PEACE WITH MYSELF BY DECIDING TO DISCUSS WHAT I KNOW MOST ABOUT--THE SUPPLY, DEMAND AND UTILIZATION OF TECHNICAL MANPOWER.

THE HISTORY OF THIS SUBJECT IS FRAUGHT WITH INCONSISTENCIES AND LACKS HARD DATA WHICH ALLOWS US TO INDULGE IN INTERPRETATIONS TO SUPPORT OUR OWN OPINIONS AND BIASES. MY YEARS OF EXPERIENCE WITH THE ENGINEERING MANPOWER COMMISSION HAS PROVIDED CONSIDERABLE EXPOSURE TO MANY ASPECTS OF SUPPLY AND DEMAND, AND IT IS EVIDENT THE SUBJECT IS COMPLEX AND SIMPLE ANSWERS DO NOT EXIST.

ON THE SUBJECT OF A SHORTAGE OR NO SHORTAGE OF TECHNICAL MANPOWER HAS BEEN EXPENDED UNTOLD DOLLARS AND MAN HOURS IN STUDIES, SEMINARS AND DISCUSSIONS RESULTING IN NO CLEAR UNDERSTANDING. THE DISCUSSION GOES ON AND ON. IN EARLY 1968 THE ENGINEERING MANPOWER COMMISSION THOUGHT A NATIONAL SYMPOSIUM ON THIS SUBJECT WITH PROPER REPRESENTATION OF GOVERNMENT, EDUCATION AND INDUSTRY MIGHT ILLUMINATE THE MATTER FOR BETTER COMPREHENSION.

IN SUPPORT OF THIS IDEA A NATIONAL ADVERTISER, WHO HAD PERSONAL INTEREST AND CONCERN, SPENT OVER $15,000 BRINGING TO THE ATTENTION OF THE PUBLIC THE IMPLICATIONS OF A SEVERE

SHORTAGE OF TECHNICAL MANPOWER IN THE 1970'S. A TWO-PAGE ADVERTISEMENT WAS PLACED IN FORTUNE MAGAZINE, SATURDAY REVIEW AND OTHER MAGAZINES. THIS AD WAS HARD-HITTING, STATED FACTS, THE IMPLICATIONS OF THE FACTS, AND ANNOUNCED THAT THE ENGINEERING MANPOWER COMMISSION WAS ESTABLISHING A NATIONAL TASK FORCE TO PROVIDE REMEDIES. THE AD ASKED FOR ACTION BY THE READERS TO WRITE TO THE ENGINEERING MANPOWER COMMISSION. THOUSANDS OF REPRINTS WERE DISTRIBUTED TO EDITORS AND OTHER COMMUNICATORS ON PUBLIC OPINIONS.

WE SAT BACK TO AWAIT THE AVALANCHE OF REPLIES. WE RECEIVED ANSWERS FROM 24 INDUSTRY CONCERNS OR DIVISIONS OF SOME COMPANIES, EXPRESSING AN INTEREST TO BECOME INVOLVED. SOME OF THESE COMPANIES WERE QUITE SMALL. WE HAD 18 REPLIES FROM A MIXTURE OF SCHOOLS--SECONDARY, POST SECONDARY AND COLLEGE. FIFTEEN MAGAZINES AND NEWSPAPERS WERE IDENTIFIED WHO COMMENTED FAVORABLY IN THEIR OWN MEDIA. APPROXIMATELY 1200 REPRINTS WERE REQUESTED BY VARIOUS SOURCES, MOSTLY EDUCATIONAL. THE LACK OF SUBSTANTIAL SUPPORT OF THE POSITION TAKEN BY THE ADVERTISEMENT BY THE USERS OF TECHNICAL TALENT WAS DISCOURAGING BUT INFORMATIVE. IF THE USERS OF TECHNICAL PEOPLE DID NOT RESPOND, DID A PROBLEM EXIST?

AT THIS SAME PERIOD OF TIME THE NATIONAL SECURITY COUNCIL OF THE UNITED STATES GOVERNMENT, IN AGREEMENT WITH SEVERAL CABINET OFFICERS, ANNOUNCED THAT OCCUPATIONAL DEFERMENTS UNDER THE SELECTIVE SERVICE REGULATIONS WERE NOT REQUIRED EITHER FOR MILITARY NEEDS OR THE CIVILIAN ECONOMY. THIS ACTION CONTRASTED TO THE BUREAU OF LABOR STATISTICS ESTIMATES, OF CURRENT AND FUTURE TECHNICAL MANPOWER NEEDS, JOB VACANCY STATISTICS ISSUED BY THE UNITED STATES EMPLOYMENT SERVICE, MANPOWER SHORTAGES LISTED BY THE CIVIL SERVICE COMMISSION, AND THE NATIONAL SCIENCE FOUNDATION PROJECTIONS OF INCREASED REQUIREMENTS FOR PROFESSIONAL AND SKILLED PEOPLE IN PRACTICALLY ALL FIELDS OF SCIENCE AND TECHNOLOGY.

IN THE FACE OF THIS CONFUSING PICTURE, THE ENGINEERING MANPOWER COMMISSION BACKED OFF THE SPONSORSHIP OF A NATIONAL SYMPOSIUM. AND THIS IS ONE OF THE PERPLEXING PROBLEMS--WHAT IS THE TRUE DEMAND FOR TECHNICAL PERSONNEL? WE, IN INDUSTRY, FIND IT DIFFICULT TO MAKE SPECIFIC PROJECTIONS BECAUSE WE REACT TO CURRENT ENVIRONMENTAL FACTORS OVER WHICH WE HAVE NO OR EXTREMELY LIMITED CONTROL. SOME COMPANIES ENDEAVOR TO ESTABLISH LONG RANGE MANPOWER PLANS, BUT THESE ARE ALL SUBJECT

TO CHANGES IN THE MARKET, CHANGES IN GOVERNMENT POLICY, CHANGES IN INTERNATIONAL RELATIONS AMONG OTHERS.

SEVERAL YEARS AGO WHEN INTERVIEWING A COLLEGE SENIOR I ASKED HIM WHAT HIS LONG RANGE PLANS WERE. A DISCUSSION ON THIS QUESTION CAN FREQUENTLY PROVIDE INFORMATION ON LIFE EXPECTATIONS AND ASPIRATIONS. THIS YOUNG MAN LOOKED AT ME RATHER QUIZZICALLY AND SAID, "YOU MEAN NEXT YEAR?" AND THAT IS OUR PROBLEM. WHAT EVENTS WILL OCCUR NEXT YEAR, FIVE YEARS FROM NOW--TO AFFECT OUR NEED FOR SPECIALIZED MANPOWER?

LATER ON I WILL DISCUSS THE RESULTS OF A SURVEY MADE IN OUR COMPANY WHICH WILL THROW SOME LIGHT ON HOW INDUSTRY HAS REACTED OVER THE YEARS TO CHANGING CONDITIONS AND ITS AFFECT UPON TECHNICAL MANPOWER.

I WANT TO PURSUE A LITTLE FURTHER THE DIFFICULTIES IN PREDICTING MANPOWER REQUIREMENTS. AN ORGANIZATION CALLED THE NATIONAL PLANNING ASSOCIATION IS A REPUTABLE GROUP DEVOTED TO THE ALLOCATION OF RESOURCES TO MEET NATIONAL GOALS, AND RECENTLY PUBLISHED A BOOK ENTITLED, MANPOWER NEEDS FOR NATIONAL GOALS IN THE 1970'S, BY ONE OF ITS MEMBERS, DR. LEONARD LECHT. THIS BOOK IS SLOW READING, BUT I RECOMMEND IT FOR A FACTUAL DISCUSSION ON ALLOCATION OF RESOURCES.

THE REPORT STATES THAT IN ORDER FOR THE UNITED STATES TO ACHIEVE ITS NATIONAL GOALS IN THE NEXT TEN YEARS, TOTAL EMPLOYMENT OF 101 MILLION PEOPLE WOULD BE NEEDED BY 1975. THIS IS TEN MILLION MORE THAN IS ANTICIPATED TO BE IN THE CIVILIAN LABOR FORCE. THE GOALS ARE 16 IN NUMBER AND COVER SUBJECT AREAS AS TRANSPORTATION, SPACE, URBAN DEVELOPMENT, DEFENSE, MANUFACTURING, HEALTH, AREA DEVELOPMENT, AMONG OTHERS.

THESE GOALS WERE ESTABLISHED IN A STUDY UNDER THE AUSPICIES OF THE UNITED STATES DEPARTMENT OF LABOR. THE GOALS ARE ALL INCLUSIVE BUT REPRESENT REASONABLE EXPECTATIONS. THE MESSAGE IS THAT WE CAN NOT ACHIEVE EVERYTHING WE WANT. IT IS NECESSARY TO ESTABLISH PRIORITIES.

THE NATIONAL PLANNING ASSOCIATION STATES, "IMPLICIT IN THE STUDY IS THE RECOGNITION THAT MANPOWER BOTTLENECKS IN CRITICAL OCCUPATIONS CAN CONSTITUTE AS SERIOUS A BARRIER IN ACHIEVING GOALS AS INSUFFICIENT FUNDS."

FROM MY PERSONAL EXPERIENCE, THE LIMITATIONS OF AVAILABLE MANPOWER HAS NEVER BEEN TAKEN AS A SERIOUS DETERRENT TO A NEW PROJECT. OTHER ELEMENTS RECEIVE CONSIDERATION WITH THE

ASSUMPTION PEOPLE WILL BE AVAILABLE. THIS IS TRUE IN MANY OF OUR GOVERNMENT PROJECTS, INCLUDING NUCLEAR ENERGY AND SPACE. THE GOVERNMENT EXERTS EXTRAORDINARY INFLUENCE ON MANPOWER AND THE FUTURE DIRECTION OF THEIR PROGRAMS IN POST VIETNAM WILL AGAIN DEMONSTRATE THE MAGNITUDE OF THEIR POWER.

THE NATIONAL PLANNING ASSOCIATION SUGGESTION FOR MEANINGFUL PRIORITIES IS IMPORTANT FOR ORDERLY PLANNING AND ACHIEVEMENT, BUT THE ABILITY TO DO SO IS QUESTIONABLE. WHO WILL MAKE DECISIONS WHERE OUR RESOURCES SHALL BE SPENT--HOUSING, TRANSPORTATION, CLEAN AIR, HEALTH--IN THE FACE OF EXORBITANT DEMANDS FROM THE GROUPS PROMOTING EACH WORTHY PROJECT?

WE, IN INDUSTRY, ARE CONSTANTLY ASKED TO INFORM EDUCATORS ON WHAT WE NEED IN THE YEARS AHEAD TO HELP PLAN THEIR PROGRAMS. IT IS IMPOSSIBLE BECAUSE WE DO NOT KNOW WHAT THE PRIORITIES WILL BE. HOW COULD ANYONE FORESEE THE NEED FOR A TREMENDOUS NUMBER OF COMPUTER PROGRAMMERS SUFFICIENTLY IN ADVANCE TO HAVE THEM READY AT THE RIGHT TIME?

OUR INABILITY TO PREDICT MANPOWER TRENDS WITH ANY DEGREE OF CERTAINTY IS EXASPERATING, BUT AS ONE DIGS INTO THE SUBJECT, THIS INABILITY BECOMES MORE UNDERSTANDABLE. SOME OF THE

DIFFICULTIES ARE CAUSED BY SPECIALISTS WHO SPEAK FOR SOME PARTICULAR FIELD. I WOULD LIKE TO QUOTE FROM A TALK BY DAEL WOLFLE, AN OUTSTANDING AUTHORITY ON TECHNICAL MANPOWER, MADE AT A SEMINAR ON MANPOWER POLICY AND PROGRAM IN 1967. HE SAYS.

"STATISTICIANS CAN NOT DO THE JOB BY PLOTTING TRENDS; PSYCHOLOGISTS DO NOT KNOW ENOUGH ABOUT MOTIVATIONS TO EXPLAIN WHY PEOPLE MAKE THE EDUCATIONAL AND VOCATIONAL CHOICES THEY DO MAKE. AND THE METHODS OF THE ECONOMIST ARE NOT ADEQUATE TO DEAL WITH A MARKET SITUATION IN WHICH EACH UNIT OF THE COMMUNITY IN QUESTION IS A HUMAN BEING WITH A WILLFUL AND SOMETIMES FICKLE MIND OF HIS OWN.

"OUR SYSTEM OF GOVERNMENT IS NOT CONDUCIVE TO ACCURATE MANPOWER PREDICTIONS. OUR SOCIAL POLICIES AND OUR EDUCATIONAL SYSTEM ARE NOT SUCH AS WILL EVER MAKE THE PREDICTION OF MANPOWER TRENDS AS EASY, AS ACCURATE, OR AS USEFUL AS ARE SUCH FORECASTS UNDER SOME OTHER KINDS OF SOCIAL SYSTEMS. OUR SYSTEM HAS BEEN DEVELOPED TO <u>FACILITATE THE ACHIEVEMENT OF OTHER GOALS</u>.

"THE SOCIAL PHILOSOPHERS AND THE POLITICAL AND EDUCATIONAL LEADERS WHO SHAPED THE AMERICAN SYSTEM WOULD

NOT HAVE DESCRIBED THEIR OBJECTIVES IN TERMS OF A MANPOWER MARKET OR THE PREDICTION OF MANPOWER TRENDS--THE AMERICAN SYSTEM IS ONE THAT FACILITATES THE CONTINUOUS, FLEXIBLE AND RELATIVELY EASY ADJUSTMENT OF PROFESSIONAL MANPOWER SUPPLY AND DEMAND RATHER THAN ONE THAT FACILITATES THE PREDICTION OF TRENDS."

ANY WORTHWHILE MANPOWER PLANNING ACTIVITIES MUST INCLUDE A BODY OF PEOPLE REPRESENTING VARIOUS SEGMENTS OF OUR SOCIETY FOR AN INTEGRATION OF MANY POINTS OF VIEW. THIS NEED IS RECOGNIZED BY DAEL WOLFLE IN THE BEFORE MENTIONED SEMINAR ON MANPOWER. HE SAYS,

"... WE NEED A NEW INSTITUTION FOR THE CONTINUING ANALYSIS OF PROFESSIONAL AND SPECIALIZED MANPOWER PROBLEMS AND TRENDS. WE ALREADY HAVE A VARIETY OF DATA-GATHERING RESOURCES. WE HAVE A NUMBER OF PERSONS INTERESTED IN THE VARIOUS PROBLEMS INVOLVED. THE FIELD WOULD BENEFIT, I BELIEVE, IF WE ALSO HAD AN INSTITUTIONALIZED ARRANGEMENT FOR JOINT STUDY ON A FAIRLY LARGE SCALE. THE INSTITUTION I PROPOSE SHOULD BE FREE FROM THE ROUTINE OBLIGATION TO COLLECT AND ANALYZE SPECIAL PURPOSE STATISTICS FOR A PARTICULAR SET OF USERS."

THERE S A LITTLE BOOK ENTITLED, THE FIRST HUNDRED YEARS OF ENGINEERING EDUCATION IN THE UNTED STATES, BY DR. JAMES G. MCGIVERN. THE INFORMATION IN THIS DOCUMENT IS REVEALING AS IT SHOWS THAT ENGINEERING EDUCATION IN ITS EARLY STAGES WAS NOT INFLUENCED BY THE PRACTIONERS BUT BY THE EDUCATORS. AS THE PROFESSION DEVELOPED AND THE ENGINEERS ORGANIZED INTO THE VARIOUS FOUNDER SOCIETIES, THE LACK OF UNITY ON THEIR PART PREVENTED AGREEMENT ON TRENDS IN EDUCATION SO THE EDUCATORS TOOK OVER.

THIS IS STILL THE SITUATION TODAY. ENGINEERING EDUCATION HAS BEEN INFLUENCED BY SOCIAL AND POLITICAL TRENDS FAR MORE THAN THE EMPLOYERS OF ENGINEERS. TO BRIDGE THE GAP, BOTH EDUCATORS AND THE EMPLOYERS OF TECHNICAL PEOPLE FEEL STRONGLY THE NEED FOR BETTER AND EFFECTIVE COMMUNICATION, BUT REAL PROGRESS HAS NOT BEEN MADE.

THE DEVELOPMENT OF TECHNICIAN EDUCATION IS ANOTHER ILLUSTRATION OF HOW EDUCATORS INFLUENCE THE DIRECTION OF EDUCATION PROGRAMS AND NOT THE USERS OF THE PRODUCT.

"A NEED EXISTS IN OUR POST-SECONDARY SCHEME OF EDUCATION FOR A LARGE NUMBER OF TECHNICAL SCHOOLS, GIVING MORE INTENSIVE TRAINING THAN THAT PROVIDED BY THE ENGINEERING COLLEGES."

THIS IS A STATEMENT WITH WHICH I AM SURE MANY OF YOU WOULD AGREE. IT WAS MADE BY MESSRS. WICKENDEN AND SPOHR, TWO EDUCATORS, IN A WELL KNOWN REPORT ON TECHNICAL INSTITUTES IN 1929. WE ARE ALL FAMILIAR WITH THE VERY SLOW GROWTH OF TECHNICAL INSTITUTE ENROLLMENTS AND THE NUMBER OF DEGREES GRANTED. THE ENGINEERING MANPOWER COMMISSION BIANNUALLY SURVEYS THIS DATA, AND THERE HAS BEEN VERY LITTLE INCREASE IN THE NUMBER OF GRADUATES.

SURVEYS FOR DEMAND OF ALL TYPES OF TECHNICIANS MADE BY RESPONSIBLE AGENCIES INDICATE A STRONG DEMAND FOR TECHNICIANS. WHAT IS THE RELATION OF THIS DEMAND AND EDUCATION? WHY HASN'T TWO-YEAR TECHNICAL EDUCATION CAUGHT ON? IN 1959, A REPORT WAS PUBLISHED ENTITLED, "THE TECHNICAL INSTITUTE IN AMERICA," BY G. ROSS HENNINGER. THIS STUDY WAS A FOLLOW-UP ON THE EARLIER WORK BY WICKENDEN & SPOHR. FOLLOWING IS A SIGNIFICANT QUOTE FROM THIS STUDY,

> "WE FIND THAT EMPLOYERS ARE EAGER TO HIRE OUR GRADUATES AND PLACE THEM IN JOBS SUITED TO THEIR KNOWLEDGE AND ABILITY. OUR DIFFICULTY IS WITH THE PARENTS AND HIGH SCHOOL TEACHERS. THE LATTER HAVE A TENDENCY TO ADVISE ALMOST EVERYONE WITH AVERAGE ABILITY OR BETTER TO SEEK ADMISSION TO A UNIVERSITY."

IT IS INTERESTING THAT DESPITE INDUSTRY'S STATED DESIRES FOR TECHNICAL INSTITUTE GRADUATES, PRODUCTION WAS NOT AFFECTED BY THEIR UNAVAILABILITY. THE LACK OF PUBLIC ACCEPTANCE OF THIS TYPE OF EDUCATION IS ONE OF STATUS. THE AMERICAN SOCIAL STRUCTURE HAS A TENDENCY TO REGARD THE FOUR-YEAR COLLEGIATE DEGREE AS THE HALLMARK OF SOCIAL ESTABLISHMENT OR DISTINCTION.

I AM REMINDED OF A STORY IN WHICH A COLLEGE STUDENT MANY YEARS AGO WORKED HIS WAY THROUGH UNDERGRADUATE AND GRADUATE SCHOOL BY WASHING DISHES IN A CHINESE RESTAURANT. HE DID AN EXCELLENT JOB, AND WHEN IT CAME TIME FOR HIM TO LEAVE, THE OWNER PUT A SIGN IN HIS WINDOW STATING A VACANCY EXISTED FOR A DISHWASHER, AND HE WANTED TO BE SURE TO OBTAIN AN EXACT REPLACEMENT. PRINTED IN BIG TYPE WAS, "ONLY PHD'S NEED APPLY." THIS, OF COURSE, RELATES TO ONE OF OUR DIFFICULTIES--OVEREDUCATING PEOPLE FOR JOBS.

A FEW YEARS AGO TWO EDUCATORS FROM A LARGE MIDWESTERN UNIVERSITY VISITED OUR OFFICES TO DISCUSS AND EVALUATE A NEW TREND IN EDUCATION--THE FOUR-YEAR ENGINEERING TECHNOLOGY PROGRAM. THE CONCEPT WAS NEW TO US AT THE TIME, AND WE WERE

RATHER NEGATIVE TO THE APPROACH. OUR FIRST DESIRE WAS TO HAVE AVAILABLE MORE FOUR-YEAR NORMAL ENGINEERING STUDENTS AND MORE TWO-YEAR TECHNICIANS.

WHAT WAS INTERESTING IN OUR DISCUSSION WAS NOT, DID WE NEED GRADUATES OF A FOUR-YEAR ENGINEERING TECHNOLOGY PROGRAM, BUT COULD WE USE THEM? THERE APPEARED TO BE NO QUESTION THAT THE NEW CURRICULA WOULD BE DEVELOPED BECAUSE OF SOCIAL AND POLITICAL PRESSURES. APPARENTLY THE NEED FOR A FOUR-YEAR PROGRAM WAS SO STRONG TO MEET THE STATUS DEMANDS OF OUR SOCIAL STRUCTURE THAT MEANS WERE BEING EXAMINED FOR A SOLUTION.

THE PUBLIC WAS DEMANDING A FOUR-YEAR COLLEGE PROGRAM AS AN ESSENTIAL TO SOCIAL ACCEPTANCE. THE EDUCATIONAL INSTITUTIONS, PARTICULARLY THE STATE SUPPORTED COLLEGES AND UNIVERSITIES, WERE ADMITTING NUMBERS OF STUDENTS WHO WERE NOT SUFFICIENTLY READY OR MOTIVATED FOR A FOUR-YEAR INSTITUTION, CAUSING INCREASED ATTRITION RATIOS. THE FOUR-YEAR ENGINEERING TECHNOLOGY PROGRAMS, AMONG OTHER CONTRIBUTIONS THEY WOULD MAKE, PROVIDE AN OPPORTUNITY FOR

EDUCATIONAL AND SELF FULFILLMENT.

I WOULD LIKE TO PAUSE HERE FOR A MOMENT TO DWELL UPON THE EVOLUTION OF THIS CONCEPT.

INDUSTRY DID NOT ENTHUSIASTICALLY ENDORSE THESE NEW PROGRAMS FOR SEVERAL REASONS:

-- THE OFFERINGS SEEMED TO BE COMPETITIVE WITH EXISTING FOUR-YEAR PROGRAMS.

-- THEY LACKED THE PROFESSIONAL CONTENT OF THE NORMAL FOUR-YEAR PROGRAM.

-- INDUSTRY VIEWED THEIR MANPOWER REQUIREMENTS AS A GREATER SUPPLY OF TWO-YEAR TECHNICIANS AND FOUR-YEAR BS ENGINEERS.

THE EDUCATORS, OF COURSE, WERE MORE RESPONSIVE TO OTHER CONSIDERATIONS.

OUR VALUE SYSTEM HAS UNFORTUNATELY DETERMINED THAT THE ONLY GOOD EDUCATION IS ONE TOPPED WITH FOUR YEARS OF COLLEGE. VOCATIONAL EDUCATION IS DESIGNED FOR SOMEBODY ELSES' CHILDREN. WE ARE CAUSING OURSELVES UNTOLD PROBLEMS BECAUSE OF THIS ATTITUDE

A RECENT ARTICLE IN TRANS ACTION MAGAZINE, ENTITLED, "RICH MAN'S QUALIFICATIONS FOR POOR MAN'S JOBS," BY PROFESSOR IVOR BERG, DISCUSSES STUDIES WHICH SHOW THAT EMPLOYERS DEMAND TOO MUCH EDUCATION FOR THE JOBS THEY OFFER. THE TENDENCY TO HIRE OVER-QUALIFIED PEOPLE WOULD SEEM TO BE A PRODUCT OF OVERSUPPLY, BUT OTHER FACTORS ARE INVOLVED SUCH AS THE ACCEPTANCE OF BUILT-IN STANDARDS, THE WILLINGNESS OF SOME APPLICANTS TO ACCEPT POSITIONS BELOW THEIR CAPABILITIES FOR PERSONAL REASONS, AND THE USE OF SUCH JOBS FOR A STEPPING STONE TO HIGHER QUALIFIED WORK.

PROFESSOR BERG'S ARTICLE DOES DESTROY SOME MYTHS REGARDING EDUCATIONAL QUALIFICATIONS FOR JOBS. HE SAYS THAT BUSINESS MANAGERS, SUPPORTED BY GOVERNMENT LEADERS AND ACADEMICS INTERESTED IN EMPLOYMENT PROBLEMS, ASSERT THAT EACH INCREMENT OF EDUCATION --ESPECIALLY THOSE ASSOCIATED WITH A CERTIFICATE, DIPLOMA OR DEGREE--THE WORKER'S ATTITUDE IS BETTER, HIS TRAINABILITY IS GREATER, HIS CAPACITY FOR ADAPTATION IS MORE DEVELOPED AND HIS PROSPECTS FOR PROMOTION ARE ROSIER.

AT THE SAME TIME THOSE WORKERS WITH MORE MODEST EDUCATIONS, AND ESPECIALLY THOSE WHO DROP OUT OF SCHOOL, ARE HELD TO BE LESS INTELLIGENT, LESS ADAPTABLE, LESS SELF

DISCIPLINED, LESS PERSONABLE AND LESS ARTICULATE. PROFESSOR BERG SAYS THIS JUST ISN'T SO AND GIVES SEVERAL STUDIES PROVING HIS POINT. ONE WILL INTEREST YOU:

EXECUTIVES OF A LARGE, WELL-KNOWN, CHEMICAL COMPANY SAID THAT THE BEST TECHNICIANS IN THEIR RESEARCH LABORATORY WERE THOSE WITH THE HIGHEST EDUCATIONAL ACHIEVEMENT. THEREFORE, IN SCREENING JOB APPLICANTS, THEY GAVE GREATER WEIGHT TO A PERSON'S EDUCATIONAL BACKGROUND THAN TO HIS OTHER CHARACTERISTICS. YET, STATISTICAL ANALYSIS OF RELEVANT DATA REVEALED THAT THE RATE OF TURNOVER IN THE FIRM WAS POSITIVELY ASSOCIATED WITH THE EMPLOYEES' EDUCATIONAL ACHIEVEMENT. FURTHERMORE, LESS EDUCATED TECHNICIANS EARNED HIGHER PERFORMANCE EVALUATION THAN DID THEIR BETTER EDUCATED PEERS. ANOTHER STUDY SHOWED THAT ELEMENTARY AND SECONDARY SCHOOL TEACHERS WHO HAVE MASTER'S DEGREES ARE LESS LIKELY TO STAY ON THEIR JOBS THAN THOSE WITH BACHELORS' DEGREES.

HE CLOSES HIS ARTICLE SAYING HIS FINDINGS SUGGEST THE USE OF FORMAL EDUCATION AS A SOVERIGN SCREENING DEVICE FOR JOBS ADEQUATELY PERFORMED BY PEOPLE OF LOWER EDUCATIONAL ACHIEVEMENTS MAY RESULT IN SERIOUS COSTS, HIGH TURNOVER,

EMPLOYEE DISSATISFACTION AND POOR PERFORMANCE. WHILE IT MAY BE EASY TO QUARREL WITH SOME OF PROFESSOR BERG'S CONCLUSIONS, WE MUST ADMIT THAT THIS COUNTRY IS ON AN EDUCATIONAL BINGE WHICH MAY NOT NECESSARILY BE RELATED TO JOB QUALIFICATIONS. MANY OF YOUR DISCUSSIONS FOR THESE PAST FEW DAYS, UNDOUBTEDLY, ARE CONFRONTING THESE ISSUES.

A COLLEGE EDUCATION IS HIGHLY DESIRABLE FOR MANY YOUNG PEOPLE, BUT IT IS NO ASSURANCE FOR CAREER SUCCESS OR LIFE HAPPINESS BUT THIS GOES AGAINST THE GRAIN OF OUR SOCIAL VALUES. MAYBE ONE OF THE OUTCOMES OF OUR CAMPUS UNREST WILL PUT IN TRUER PERSPECTIVE THE RELEVANCY OF ALL PARTS OF OUR EDUCATIONAL SYSTEM, INCLUDING AN HONEST RESPECT AND ACCEPTANCE OF THE NEED FOR VOCATIONAL TRAINING.

I READ WITH INTEREST THE TEXT OF THE ANNUAL REPORT OF THE NATIONAL ADVISORY COUNCIL ON VOCATIONAL EDUCATION TO THE DEPARTMENT OF HEALTH, EDUCATION AND WELFARE. YOU ARE, OF COURSE, FAMILIAR WITH THIS REPORT, AND I WAS IMPRESSED BY TWO ITEMS:

-- THE ENORMOUS DIFFERENCE IN ALLOCATION OF FUNDS TO COLLEGES AND VOCATIONAL SCHOOLS-$5 BILLION VERSUS $266 MILLION. UNDOUBTEDLY, THE COLLEGE PORTION INCLUDES SUBSTANTIAL FUNDS FOR RESEARCH CONTRACTS, BUT THE DIFFERENCE IS IMPRESSIVE.

-- THE OTHER ITEM WAS THE STATEMENT, "ALL STUDENTS SHOULD BE ALLOWED TO MOVE INTO AND OUT OF VOCATIONAL-TECHNICAL PROGRAMS AND TO SELECT MIXTURES OF VOCATIONAL-TECHNICAL AND ACADEMIC COURSES. STUDENTS SHOULD BE RELEASED FROM SCHOOL TO ACQUIRE EMPLOYMENT EXPERIENCES, AND SHOULD BE TAKEN BACK FOR FURTHER EDUCATION."

I LIKE THE EXISTENCE OF THE OPPORTUNITY TO AFFORD ALL YOUNGSTERS THE EXPERIENCE OF VOCATIONAL TRAINING, AND THE SUGGESTION TO ENCOURAGE STUDENTS TO MOVE IN AND OUT OF THE EDUCATIONAL PROGRAM AT ALL LEVELS. THIS WOULD BE VERY HELPFUL IN THE DEVELOPMENT OF YOUNG PEOPLE AND AGAIN MAKE THEIR EDUCATION RELEVANT. THE RECOGNITION AND EXISTENCE OF A VAST NUMBER OF CONTINUING EDUCATION PROGRAMS FOR ADULTS SHOULD GIVE FURTHER SUPPORT TO THIS PRACTICE.

I WOULD NOW LIKE TO TURN TO THE SUBJECT OF THE NEED FOR TECHNICIANS. YOUR PROGRAM INDICATES THAT ON MONDAY, MR. CHARLES BOWEN MADE A PRESENTATION AT LUNCH. HE, I AM SURE, EMPHASIZED THE URGENT NEED FOR COMPETENT TECHNICIANS. THE NATIONAL INDUSTRIAL CONFERENCE BOARD HAS RECENTLY PUBLISHED A BOOKLET, ENTITLED, "THE TECHNICAL MANPOWER SHORTAGE: HOW ACUTE?" I SUGGEST YOU WRITE FOR IT FOR DETAILED INFORMATION. THE OVERALL

DEMAND IS SUCH THAT OUR EDUCATIONAL INSTITUTIONS SIMPLY CAN NOT MEET IT. THE NATIONAL INDUSTRIAL CONFERENCE BOARD STUDY STATES THAT INDUSTRY STILL MUST FILL 30 PERCENT OF ITS NEEDS BY UPGRADING. INDUSTRY, OF COURSE, WOULD PREFER TO COMPLETE ALL ITS REQUIREMENTS BY HIRING EDUCATED PERSONNEL INSTEAD OF USING ITS RESOURCES FOR PROVIDING ITS OWN TRAINING.

ANOTHER WAY TO EXPRESS THE GROWTH OF TWO-YEAR COLLEGES IS GIVEN BY THE NATIONAL PLANNING ASSOCIATION, WHICH SAYS THAT TO MEET THE DUAL OBJECTIVES OF SUPPLYING TECHNICAL EDUCATION AND LOW COST GENERAL EDUCATION, 400 MORE COMMUNITY COLLEGES WILL BE NEEDED BY MID 1970'S , AN INCREASE FROM 570 IN 1964 TO 970 IN 1975. THEREFORE, THE DEMAND IS INSATIABLE.

EARLY IN MY TALK I ALLUDED TO A SURVEY MADE IN MY COMPANY. THIS INFORMATION WAS OBTAINED TO DETERMINE CHANGES IN THE CONTENT OF ENGINEERING WORK THE PAST 15 YEARS AND TO OBTAIN ATTITUDES ON TODAY'S ENGINEERING EDUCATION AND TODAY'S GRADUATES. SOME OF THESE RESULTS WILL BE INTERESTING TO YOU.

THE RESPONDENTS WERE OVER A HUNDRED MANAGERS OF TECHNICAL PERSONNEL IN THE FUNCTIONS OF RESEARCH, DEVELOPMENT, DESIGN, MANUFACTURING AND TECHNICAL MARKETING. WHAT WE FOUND WAS SOME EXPLANATION TO THE DEARTH OF INDUSTRY'S RESPONSE TO THE

ADVERTISEMENT ASKING FOR SUPPORT OF A NATIONAL SYMPOSIUM ON THE TECHNICAL MANPOWER SHORTAGE BY THE ENGINEERING MANPOWER COMMISSION. WE FOUND IN OUR STUDY THAT ENGINEERS TODAY ARE FAR MORE PRODUCTIVE THAN THOSE OF A NUMBER OF YEARS AGO.

THE ADVENT OF THE COMPUTER, THE UTILIZATION OF MODERN TECHNIQUES AND TOOLS, AND THE EFFECTIVE USE OF TECHNICIANS ACCOUNTS FOR THE IMPROVEMENT. THE INCREASE OF PRODUCTIVITY IS A RESPONSE TO THE SHORTAGE OF THE NUMBER OF ENGINEERS AND, THEREFORE, THE SHORTAGE HAS NOT BEEN FELT TO THE DEGREE ASSUMED. I WOULD LIKE TO QUOTE VERBATIM SEVERAL STATEMENTS FROM THIS SURVEY:

"COMPUTERS HAVE MADE A TREMENDOUS DIFFERENCE IN THE WORK OF THE ENGINEER TODAY. WE EXPECT A MORE THEORETICAL APPROACH TO PROBLEMS OF DESIGN WORK WITH THE COMPUTER DOING THE MORE REPETITIVE AND TIME CONSUMING PORTIONS OF THE WORK."

"THE NEW GRADUATE HAS LESS TECHNICIAN TYPE OF TRAINING THAN HIS PREDECESSOR."

"IN THE CONSUMER BUSINESS THERE ARE FEWER ENGINEERS RESPONSIBLE FOR MORE PRODUCTS TODAY THAN THERE WERE 15 TO 20 YEARS AGO. THIS CHANGE LEADS ME TO BELIEVE THAT THE ENGINEER OF THE SEVENTIES WILL HAVE TO BE A TECHNICAL LEADER, COORDINATING A TEAM OF TECHNICAL SPECIALISTS."

"GREATER USE OF SUPPORTING PERSONNEL HAS ALSO AIDED THE ENGINEER'S PRODUCTIVITY. THE MAJOR CHANGE IN ENGINEERING WORK IS THAT ENGINEERS ARE IN GENERAL ASSIGNED TO A HIGHER LEVEL OF WORK MAINLY BECAUSE OF THE GREATER USE OF ENGINEERING ASSISTANTS AS WELL AS VARIOUS COMPUTATIONAL TOOLS."

"WE HAVE DEVELOPED FINE TECHNICIANS FOR SHOP FOLLOWING....."

"WE ATTEMPT TO SEPARATE ENGINEERING WORK FROM 'OTHER' SO THAT THE ENGINEER DOES A GREATER PORTION OF TRUE ENGINEERING WORK AND THE 'OTHER' IS CARRIED OUT BY AN ASSISTANT."

"THERE IS MORE SUPPORTING AID TO TODAY'S ENGINEER SO HE CAN CONCENTRATE ON THE MORE DIFFICULT PROBLEM SOLVING."

THE GENERAL TENOR OF THIS SURVEY WAS THAT TODAY'S ENGINEER IS MORE SOPHISTICATED, COMES HIGHER PRICED, AND MUST ASSUME RESPONSIBILITY QUICKLY WITH A MINIMUM OF A BREAKING-IN PERIOD.

THE REPLIES INDICATED A GREATER USE OF MS'S AND MBA'S.

WHY IS IT THAT NOW THE NEED FOR TECHNICIANS APPEARS TO BE CATCHING ON?

WAY BACK TO 1929, THE WICKENDEN REPORT SAW A NEED FOR TECHNICIANS TO SUPPORT ENGINEERS. NOW 30 YEARS LATER THE IDEA HAS A STRONG TOEHOLD AT LAST. PROGRESS WAS SLOW, FOR INDUSTRY WAS NOT MAKING AGGRESSIVE AND EMPHATIC DEMANDS ON EDUCATORS FOR TECHNICIANS. THE EDUCATORS WERE CARRYING THE TORCH. THE REASON, OF COURSE, IS THAT INDUSTRY COULD GET ALONG WITHOUT THE TRAINED TECHNICIANS. IN FACT, ONE OF THE FIVE LARGEST INDUSTRIAL CONCERNS STILL MAKES NO ATTEMPT TO UTILIZE THESE KINDS OF INDIVIDUALS.

CONTINUED BUSINESS GROWTH AND ECONOMIC PROSPERITY OVER THE PAST FEW YEARS HAS CAUSED SHORTAGES OF LABOR IN MANY OCCUPATIONS, SOME MORE CRITICAL EVEN THAN ENGINEERS AND TECHNICIANS. INDUSTRY UNDER ALL KINDS OF COST AND COMPETITIVE PRESSURES UTILIZED MANY WAYS TO PERFORM TECHNICAL WORK WITH

LESS PEOPLE. ELIMINATION OF JOBS, CONSOLIDATION OF WORK, CHANGES IN WORK PROCEDURES, AND THE USE OF COMPUTERS ALL CONTRIBUTED TO ACCOMPLISH THIS TASK. OUR SURVEY PROVED THIS.

HOWEVER, WITH EXPECTED CONTINUED BUSINESS GROWTH AND WITH A STEADY STATE SITUATION IN THE SUPPLY OF ENGINEERS AND A SUBSTANTIAL NUMBER OF THESE GOING INTO GRADUATE WORK, INDUSTRY NOW LOOKS EAGERLY TO THE FOUR-YEAR ENGINEERING TECHNOLOGY PROGRAM WHICH THEY FORMERLY SCORNED AND TO EXPANDED USE OF TWO-YEAR TECHNICIANS. AS THE FUTURE DEVELOPS ALL THESE TYPES OF PERSONNEL WILL BECOME FURTHER UPGRADED WHICH IS WHY IT IS SO IMPORTANT TO DEVELOP STRONG VOCATIONAL PROGRAMS UTILIZING EVERY YOUNG MAN AND WOMAN WHO IS ABLE TO CONTRIBUTE. AS WORK BECOMES UPGRADED, THESE INDIVIDUALS WILL TAKE OVER AND BECOME PART OF THE UPGRADING PROCESS.

ANOTHER STATISTIC WHICH MAY GIVE SOME COMFORT TO NON-DEGREE ENGINEERS IS THAT IN THE 1960 CENSUS 45.5 PERCENT OF THOSE INDIVIDUALS WHO REPORTED AS ENGINEERS DID NOT HAVE A COLLEGE DEGREE. WHO IS AN ENGINEER TODAY IS A MOOT QUESTION AND A CONTROVERSIAL ONE, BUT THE EVIDENCE CLEARLY INDICATES THE TECHNICIAN IS MOVING INTO THE RANKS OF THE ENGINEER AS THE ENGINEER UPGRADES HIS CONTRIBUTION.

THE TITLE OF THIS TALK IS, "IS YOUR EDUCATION REAL TIME?" AND IT IS ABOUT TIME I PAID ATTENTION TO IT. IT SEEMED DESIRABLE, HOWEVER, TO DISCUSS DIFFICULTIES IN MANPOWER PLANNING AND THE PAST RELATIONSHIPS AMONG EDUCATION, GOVERNMENT AND INDUSTRY TO COME TO A BETTER UNDERSTANDING OF TODAY.

HOW CAN YOU MAKE YOUR EDUCATION REAL TIME?

FIRST, IT IS NECESSARY TO DETERMINE WHAT SEGMENTS OF THE ECONOMY DO YOU PLAN TO SERVE AND AT WHAT LEVEL?

SECOND, WHAT SEGMENT OF THE POPULATION DO YOU PLAN TO SERVE?

THIRD, WHAT ARE THE RESOURCES AVAILABLE, SUCH AS FACILITIES, FACULTY, FINANCES, ETC?

AS THESE INPUTS ARE EVALUATED AND ADJUSTED, CHANGES IN DIRECTION MAY BE INDICATED.

THE UNIVERSITIES OF THE COUNTRY ARE FOLLOWING THESE SAME STEPS. MANY YEARS AGO THERE WAS A REASONABLE COMMONALTY TO COLLEGE ENGINEERING PROGRAMS DUE IN PART TO THE ACCREDITATION PROCEDURE BY THE ENGINEERS COUNCIL FOR PROFESSIONAL DEVELOPMENT. CHANGES OVER THE YEARS HAVE AFFECTED COLLEGE ENGINEERING PROGRAMS, AND THE OPTIONS AVAILABLE TO STUDENTS ARE MANY. WE HAVE LEARNED THAT JUST BECAUSE AN INDIVIDUAL

HAS A DEGREE IN MECHANICAL ENGINEERING DOESN'T MEAN HE IS A MECHANICAL ENGINEER. THE COURSE HE HAS PURSUED MAY MAKE HIM AN ELECTRO-MECHANICAL, A CHEMICAL MECHANICAL, A BIOMECHANICAL OR A MANAGEMENT ORIENTED INDIVIDUAL. IN RESPONSE TO THESE TRENDS, WE IDENTIFY CERTAIN INSTITUTIONS AS SOURCES FOR CERTAIN KINDS OF GRADUATES. THE DIFFERENCES ARE RELATED NOT ONLY TO THE COURSE CONTENT BUT ALSO ARE CONCERNED WITH THE ADMISSION POLICIES, THE CHARACTER OF THE FACULTY AND THE OBJECTIVES OF THE INSTITUTION.

THIS SITUATION EXISTS EVEN IN A MORE REFINED MANNER WITH TECHNICAL INSTITUTIONS AND COMMUNITY COLLEGES. HERE ALSO THERE ARE MANY OPTIONS FOR THE STUDENTS WITH DIPLOMA, CERTIFICATE AND DEGREE PROGRAMS.

INASMUCH AS GRADUATES FROM THESE INSTITUTIONS HAVE, BY AND LARGE, LIMITED GEOGRAPHIC SCOPE, IT IS IMPERATIVE THAT THE SCHOOLS PRODUCE GRADUATES TO MEET GENERALIZED LOCAL DEMANDS. INDUSTRY PREFERS TO EMPLOY LOCALLY AND IS RESPONSIVE TO INSTITUTIONS THAT UNDERSTAND THEIR REQUESTS.

IN 1959 I CHAIRED A COMMITTEE ON TECHNICAL INSTITUTE CURRICULA UNDER THE AUSPICIES OF THE PRESIDENT'S COMMITTEE ON

ON SCIENTISTS AND ENGINEERS. A SURVEY WAS MADE OF A NUMBER OF INDUSTRIES ASKING FOR INFORMATION ON TECHNICIANS. ONE QUESTION WAS:

> "WHAT HAS BEEN YOUR EXPERIENCE CONCERNING THE COMPLETENESS OR INCOMPLETENESS OF THE TRAINING GIVEN BY TECHNICAL INSTITUTES?"

OF THE REPLIES, 36 PERCENT THOUGHT THE EDUCATION WAS COMPLETE, BUT 46 PERCENT FELT IT WAS ONLY REASONABLY COMPLETE. SOME ANSWERS WERE:

> "THE TECHNICAL TRAINING OF VARIOUS INSTITUTES GIVES A GOOD BASIC APPROACH BUT SEEMS TO LAG CONSIDERABLY BEHIND THE TECHNICAL PROBLEMS WE FACE IN INDUSTRY."
>
> "COURSE PREPARATION HAS BEEN HAPHAZARD. INSTRUCTORS ARE NOT CAREFULLY CHOSEN. TENDENCY TOWARD QUANTITY INSTEAD OF QUALITY."
>
> "INCOMPLETE AS FAR AS WE ARE CONCERNED. THERE IS AN ATTEMPT TO GIVE TOO MUCH 'DEGREE ATTITUDE' IN FIELDS WHICH ARE PURELY NON-PROFESSIONAL."

YOUR OBJECTIVES MUST BE CLEAR--ARE YOU PREPARING YOUNG PEOPLE FOR COLLEGE, SPECIALIZED FIELDS, AN INDUSTRY OR WHAT? SOME INSTITUTIONS ARE FORTUNATE TO HAVE SUFFICIENT RESOURCES TO MEET A NUMBER OF DEMANDS.

INDUSTRY, BY AND LARGE, LIKES TO RECEIVE SUB-PROFESSIONAL PERSONNEL READY TO GO TO WORK WITH A MINIMUM OF TRAINING ON THEIR PART. I FEEL THAT THIS ATTITUDE WILL BE FURTHER ACCENTED WITH TIME. IF REQUIREMENTS ARE NOT ADEQUATELY MET, THEY MAY VERY WELL DECIDE TO SELECT AND TRAIN THEIR OWN WITH, IN SOME CASES, A SUBSIDY FROM THE GOVERNMENT. AN INTERESTING RECENT TREND IS FOR INDUSTRIES TO ACQUIRE EDUCATIONAL INSTITUTIONS. BELL & HOWELL AND INTERNATIONAL TELEPHONE & TELEGRAPH HAVE DONE SO. THIS IS COMPETITION FOR YOU, AND IT WOULD BE WORTHWHILE TO WATCH THE CURRICULA DEVELOPMENT AND TEACHING TECHNIQUES USED BY THESE PROPRIETARY ORGANIZATIONS.

IN ORDER TO MAKE YOUR EDUCATION 'REAL TIME', IT BEHOOVES YOU TO KNOW THE REAL NEED OF THE CUSTOMERS, WHOEVER THEY ARE.

VOCATIONAL AND POST SECONDARY EDUCATION HAVE ANOTHER OPPORTUNITY TO MAKE THEIR EDUCATION 'REAL TIME', THAT IS, IN THE CONTINUING EDUCATION AREA. IN OUR COMPANY A GREATER PERCENTAGE OF NON-DEGREE EMPLOYEES TAKE CONTINUING EDUCATION THAN GRADUATE DEGREE HOLDERS. CONTINUING EDUCATION PROVIDES EDUCATION DIRECTLY RELATED TO THE WORK INVOLVED. IT IS RELEVANT. THE NEED FOR IT IS CLEAR. ALTHOUGH MANY OF OUR MANAGERS FEEL THEY WILL REQUIRE MORE MS DEGREE PEOPLE, THEY

PREFER TO HIRE THEM AS BS GRADUATES AND ASSIST THE EMPLOYEE IN THE DEVELOPMENT OF THE GRADUATE PROGRAM IN RELATION TO THE WORK INVOLVED. THIS APPROACH IS TRUE ALSO OF THE SUBPROFESSIONAL AS IT MEETS THE EXPECTATIONS OF BOTH THE EMPLOYEE AND THE EMPLOYER AND LESSENS THE CRITICISM OF OVEREDUCATION.

LADIES AND GENTLEMEN, YOU HAVE BEEN VERY PATIENT AND I APOLOGIZE FOR BEING SOMEWHAT HISTORICAL. HOWEVER, I HOPE IT HAS SERVED AS A FRAMEWORK FOR UNDERSTANDING THE PRESENT CONDITIONS RELATING TO YOUR WORK. ON THE BASIS OF WHAT WE KNOW ABOUT THE EDUCATIONAL PROCESS, THERE HAS NEVER BEEN MORE URGENCY FOR PROGRESS IN YOUR AREA FOR MEANINGFUL EDUCATION WHICH IS RELEVANT AND MEETS THE EXPECTATIONS OF THE YOUNG AND THE POTENTIAL EMPLOYER.

DE IRWIN/M
12/1/69
PAPER TO BE PRESENTED IN BOSTON ON DEC. 9, 1969 BEFORE THE AMERICAN TECHNICAL EDUCATION ASSOCIATION.

STIMULATION THROUGH SIMULATION[1]

by Robert A. Phillips

Computer Science Center
Milwaukee Area Technical College

Thank you Ed and good morning. Cheers to you mid-westerners that have been here for a few days. Did you leave a doozy of a snowstorm behind. May Santa leave you all shiney new snow shovels.

You know, I think a blizzard does aptly describe some of our educational processes, at least from the students vantage point. Consider if you will the learner up to his knees in a cold hostile environment. This undefinable, undescribable feathery stuff coming at him from all sides, - everything shades of gray, - unable to see much beyond his labored plodding, - not really knowing where he is going. Committed because it's too late to turn around - his past footsteps already filled in with this swirling mass, and ever aware of what a mess to clean up when it is all over. For all but a fortunate minority who understand what the educational process is all about, it is a "snow job" plain and simple.

Yet we can't really apologize for it, we have a lion by the tail and must keep running. Nor can we pull the plug and start all over. We all know why that won't work. So here we sit - our society measurably blessed by, but unfortunately, at the mercy of technology. If there is any question in your mind, stand for a while at the service counter at your car dealer or local applicance store and that is just a start. We are paced by an irresistable inertia and an irrevokable trend. Simply no one in their right mind would want to give up the good things that technology has brought us. But how do we meet the holicost of technical proliferation?

So much for the problem that we recognize but let's not be guilty of staying in the blizzard. Let's spend more time on solutions, not problems. What sort of temporary answers has industry resorted to? The main technique seems to be the brain box where the partially trained in the field can plug in to the home office when the going gets rough. The omnibus computer center is a good example of this. Take the few well trained people that you have and locate them with one massive computer rather than attempting to support a few smaller systems. To be sure, there are other economic factors but the extension of this stop gap measure in the service industries results in the replacement of a complete carburetor or generator in your car if there is just a minor difficulty. It is cheaper that way is the answer. Might I suggest that a well trained diagnostician and maintenance man could be well paid and still beat the "throw away trend" price.

[1]This paper presented at the AVA Boston Convention, December, 1969, Technical Education Division and ATEA General Meeting.

Modularize you say? Well the ultimate in modular construction was done ten years ago. Every single part in your TV set could be removed and replaced. So the present methods are only "make do" because we lack trained personnel - stop gap at best. And what's the psychological impact upon the befuddled owner of common gadgets? It is not very satisfactory to tell people to faithfully use the results of modern technology and trust the few in the brain box to keep it all going.

The reaction is akin to the feeling you get when a legislator tells you that politics is too complicated so stay out and he will take care of everything. See what I mean? We have to reach some kind of balance. Reading, writing, and rithmetic have long been accepted standards for a literate society, but our population has become a technical society. Now what? Here encounter a myth that everyone has some aptitudes for the required academics but only a few have aptitude for technology. That is like gentlemen prefer blondes. If so, there would not be a brunette on the face of the earth in six weeks. Be he banker, butcher, baker, or candlestick maker, everyone needs some technical background just to be at home in his environment. Our classical training methods won't do. If they will do, they would have done already.

If your students are like the ones I see, there are a couple of generalizations in which we can indulge. The problems students come in two flavors -- the unders and the overs, the too littles and the too muches. The underachievers seem like a great stonewall - unresponsive probably because they are no where near being ready for your class. The other end having had some previous training or experience with the subject are chomping at the bit to go on impatient at waiting. But here is another point no matter how you slice the statistics in any distribution, these two groups represent half of the class; much too large a group to write off. In a conventional lecture classroom, any special effort toward one group is going to be at the expense of the others. So our very personal flesh and blood type teacher (shooting down the middle of the road as trained) shoots down 50% of the class. The top and bottom quartiles. This is sad, especially at the post high school level where students have come of their own volition and motivation. The chances are even the middle group could have gone farther with better techniques. It almost makes it sound like everybody loses. Here we are again, the big circle back to where we started. It's hard to get away from the old ideal 1 to 1 me and thee each on our respective end of the classic log. What has been the general response in areas where there haven't been enough hands, arms, legs, and heads to get the job done on assembly lines, etc? Automate - put people where they can do the most good, let machines do the routine operations. Most people aren't really happy doing that type of work anyway. I think in education, we've got a better word for it. Not automate, simulate. That's what a great percentage of education is about, especially in the vocations.

It is the great "Let's pretend" bringing the world into the classroom in model form and then experimenting with it in a harmless manner. The better the simulation, the better the learning. There is nothing more effective in motivating and stimulating the wanderer than satisfaction in learning.

My favorite for simulation is CAI-computer-assisted instruction. I'd like to show you some pictures of what is involved and compare it to current teacher classroom activities.

(The remainder of the speech was based around sixty 35mm slides showing hardware for and samples of CAI in various disciplines.)

VT 010 445
Reading, E.D., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 8-9, 1969).

American Vocational Association, Washington, D.C. Supervision and Administration Dept.
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*SPEECHES; *CONFERENCES; *VOCATIONAL EDUCATION; *DIFFERENTIATED STAFFS; INSTRUCTIONAL STAFF; ADVISORY COMMITTEES
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

Two speeches presented at the American Vocational Association Conference are grouped. The first, by Gene Bottoms, discusses the concept of differentiated staffing, defined as a plan for recruitment, preparation, induction, and continuous education of staff personnel, and examines the advantages, the potential for vocational education, and a model for a post-secondary vocational education school. In addition, potentials for other areas of vocational education, a bibliography, and model diagram are included. The second is an abstract and outline of a speech describing the history and formation of the Advisory Council for Technical Vocational Education in Texas. The state council was organized in 1967 with representatives from business and industry, educational institutions, and labor groups. In 1969 the Council was reorganized by legislature act to include 21 citizens from across the state. (BC)

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Speeches Presented At The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 8-9, 1969

Supervision and Administration Department

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VT010445

ABSTRACT & OUTLINE
PRESENTATION TO

AMERICAN VOCATIONAL ASSOCIATION
Boston, Massachusetts - December 8, 1969

TITLE: Some Observations from Texas on Advisory Council Planning

PRESENTED BY: E. D. Redding - Chairman, Advisory Council for Technical-Vocational Education in Texas

VISUAL AIDS

A. INTRODUCTION
A brief look at the State of Texas and vocational education

1. Map of Texas
2. Ranking of State relative to vocational education, income, etc.
3. Houston scene - industrial and urban
4. West Texas scene - rural

B. THE BEGINNINGS OF THE ADVISORY COUNCIL
Predecessor Advisory Committee

5. State Government chart

C. HISTORY OF THE PRESENT COUNCIL
Advisory Council - Federal sponsorship
Convened Spring 1969

Advisory Council - State and Federal sponsorship
Convened September 1969

6. First Sheet SB261
7. State of Purpose (Letterhead)

D. THE ASSIGNMENT BY THE TEXAS LEGISLATURE
Brief Summary

8. Itemized condensation of the charges to the Council

PLANNING FOR THE COUNCIL

I. Prepare Council to be an effective Organization

a. Inform Council on its task, its authority, and its relation to related elements of State Management Structure
b. Create task forces (committees) to get into details and studies
c. Create Staff
d. Get Council and Staff known and accepted
e. Become acquainted with institutions and their staffs

9. Repeat slide 5, State Govt. chart
10. Lines of Communication & Responsibility
11. List of Committees with Responsibilities
12. Staff Organization
13. Slides of Council Tour (35mm) - five or six shots

II. Approach to Action
- a. With respect to vocational-technical education, examine overall patterns of:
  - -State Management Structure
  - -Local Districts Management Structure
  - -Attitudes and Acceptance of technical-vocational education by industry, commerce and the community
- b. Alert State to first findings of overall patterns and their implications

14. Planning Schedule - ACTVET

15. Plans - Objectives of Governor's Conference, condensed

III. Meeting Council Responsibilities
- a. Assignment of studies to Council and Staff
- b. Interpretation of studies and data
- c. Recommendations to State Management Structure

16. Repeat slide 13, Planning Schedule ACTVET
17. Assignments to Committees

Note on Visual Aids: All visual aids are on 10"x 10" (nominal) transparencies for overhead projector with exception of item 13 which is 35mm slide.

ABSTRACT

The background of the present Advisory Council for Technical-Vocational Education in Texas is presented as an introduction to this look at the organization, ambitions, and procedures of this Council. A State advisory committee was established in 1967 to assist the State Board of Vocational Education on matters of vocational education. This committee included representation from business and industry, educational institutions, and labor groups. In March of 1969, a new advisory council was set up in keeping with Federal legislation.

The Texas Legislature, after a series of statewide investigations by its own members, focused attention in two fine reports on the need for considerably more concern for vocational training throughout the State, and in April of 1969, created the Advisory Council for Technical-Vocational Education in Texas by a legislative act. The federally-related Advisory Council, for all intents and purposes, was reappointed by the administrative machinery of the State to be the council defined by the State Legislature.

The process by which this Council is being formed into a hopefully-effective organization within the intent of the federal and state legislative directives is described in this presentation. As the present Council consists

of twenty-one citizens from across the State representing many backgrounds and interests, an orderly means of development of the Council was set up. The steps included internal organization of the Council, creation of a staff, informing Council on issues, providing Council with background information, and getting Council known to and accepted by the State. This Council has been in existence since March of 1969, has had a full staff since September, and is now at the point where it can begin to discharge its obligations and responsibilities.

The experience of this Council in its developmental phases might be of interest to those states who are in process of creating their own councils.

E. D. Redding, Chairman
Advisory Council for Technical-
Vocational Education in Texas

December 8, 1969

PROFESSIONAL RESOURCE DEVELOPMENT--MODERN MANAGEMENT APPROACHES TO DIFFERENTIATED STAFFING IN VOCATIONAL-TECHNICAL EDUCATION

Gene Bottoms
Associate State Director
Vocational Education
Georgia Department of Education

American Vocational Association
Boston, Massachusetts

December 6-10, 1969

TITLE: Professional Resource Development--Modern Management Approaches to Differentiated Staffing in Vocational-Technical Education

BY: Gene Bottoms, Associate State Director, Vocational Education, Georgia Department of Education

TO: American Vocational Association Convention
December 1969

I. Introduction

A much discussed area of concern in vocational and technical education revolves around staff and more explicitly the vocational teacher. The concerns regarding staff have many dimensions. They include:

A. The selection and recruitment of competent individuals who are or can become effective teachers;

B. The preparation of preservice and inservice teachers with both pedagogical and occupational competencies;

C. The retention of outstanding teachers;

D. The establishment of a climate conducive to continuous professional growth and innovation in seeking better ways to meet the educational needs of youth and adults;

E. The establishment of a reward system for the aggressive, alert and proven teacher;

F. The scheduling and assignment of staff so that optimum use can be made of their competencies and of other resources for the maximum number of youth and adults; and

G. The establishment of a more specific and purposeful relationship between teacher education courses and classroom teaching rather than leaving it to the teacher to transfer theory into operation.

These are but a few of the many concerns regarding staff and vocational education about which much more has been said than has been done; and after my paper is presented, this will still be the case.

It is my intent to examine the concept of differentiated staffing regarding the potential it might offer to particular staffing problems in vocational education. Please note, I said the potential it might offer. I have many questions, little knowledge, and a considerable amount of ignorance regarding differentiated staffing. I have not found, although it may exist, any appreciable evidence that the implementation of the differentiated staffing concept results in the achievement of the goals which, some believe, it will aid in accomplishing--including an improvement in the quality of education received by the individual. This does not mean that those of us in vocational education should wait until it has been proven workable or unworkable in other spheres of education. Rather, we should examine the concept regarding the possible merit it may or may not have for effectively dealing with some of the staff concerns we have in vocational education. This is precisely my intent in this paper. This I will do by examining four questions.

First, what is differentiated staffing?

Second, what are the express advantages of differentiated staffing?

Third, what potential does it have for particular concerns in vocational education?

Fourth, what might be some possible next steps in considering the potential that differentiated staffing has for vocational education?

You should recognize that those concerns to which I address myself are those that are, in my opinion, most pressing in my state. They may or may not be the same concerns you have in your respective settings.

II. Differentiated Staffing

Differentiated staffing can be defined as a plan for recruitment, preparation, induction, and continuous education of staff personnel for the schools that would bring a much broader range of manpower to education than is now available. The definition implies that under a differentiated staffing arrangement, education personnel would be selected, educated and employed in ways that would make optimum use of interests, abilities, commitment in maximizing educational opportunities for youth, and would affort to the teacher greater autonomy in determining his or her own professional development (Georgia's Commission on Teacher Education and Professional Standards, 1969).

The essence of the differentiated staffing concept can be summarized by the following statement: (Allen, 1969; Allen and Wagschal, 1968)

First, differentiated staffing patterns call for at least a three level structure within which both the levels of competencies and responsibilities are defined.

Second, the top salary range should be at least twice the bottom salary range.

Third, the concept provides an opportunity for outstanding individuals to have a large impact on many students either either directly or indirectly through working with other teachers.

Fourth, the model should provide avenues for professional growth and changing responsibilities, and at the same time make realistic use of those teachers who do not wish to assume the full responsibility of a Master Teacher position.

Fifth, staff assignments, promotions and movement to a dif. erent salary level are based on both performance and preparation; whereas, at present, movement to a higher salary level is based on length of service and preparation.

Sixth, teachers at all levels would have substantial teaching responsibilities.

III. Advantages of Differentiated Staffing

Those who have discussed the merits of differentiated staffing cite several advantages. Among the most common mentioned ones are: (Allen, 1969; Allen and Wagschal, 1968; Rand and English, 1968)

First, differentiated staffing would aid in attracting and retaining more outstanding persons in teaching. The career ladder created by differentiated staffing would broaden the range of opportunities beyond the present narrow choice of teaching and administration and provide teachers with more and better career opportunities, thus reducing the teacher drop-out problem. It would provide a challenge to many teachers to seek responsibilities and compensations in a direction that would leave them in contact with the student. Such a career ladder would enable the good teacher to earn as much money as administrators and be able to afford a career in classroom teaching. There would still be a place for the talented teacher who wants only limited professional responsibilities.

Second, differentiated staffing would help to improve the initial and continued preparation of teachers. It would provide a more effective link with colleges which educate teachers because both preservice and inservice education could be directed toward specific competencies at a particular level. Inservice teacher training could be an internal program aimed at solving problems at hand rather than problems perceived by someone twice removed from the school student population.

Third, differentiated staffing would contribute to the creation of a climate of continued growth on the part of teachers and one of continued involvement and activitiy to improve the quality of education provided youth. The career ladder would challenge young teachers to grow. The best teachers would have time to seek innovations from a multitude of resources and to work with teachers in their implementation. Thus, the differentiated staffing pattern would provide for continuous collaboration among teachers in seeking ways to improve the quality of the product that is produced.

Fourth, differentiated staffing provides a means for better utilization of teacher time and talent. It is argued that the present teacher structure fails to take into consideration the teacher's unique experiences or abilities, while differentiated staffing will allow for greater specializations of teacher talent according to the functional needs of an instructional program. In addition, it would provide teachers with assistance to improve their competencies.

Fifth, it is argued that differentiated staffing would result in an improved quality of education received by students. Greater opportunities would be provided for individualized instruction which would enhance the quality of education that would be provided those who might be classified as disadvantaged. In addition, differentiated staffing would allow educational decision making and problem solving to be brought back to the contact point between pupil and teacher where all education must ultimately find its meaning.

IV. Potential of Differentiated Staffing for Vocational Education

Rather than examining the potential of differentiated staffing for vocational education in broad generalization, I have chosen to do so in a more practical

way by taking a particular set of concerns that revolve around staff in an area vocational-technical school. Even though my focus is at the post-secondary level, there would be some possible application at other levels and in other settings.

A Differentiated Staffing Model of a Post-Secondary Vocational-Technical School

In my state, we have a problem in the initial recruitment and continued preparation and retaining of teachers in our post-secondary area vocational-technical schools. This problem is more acute in the areas of trade, technical and health occupations. The problem has several dimensions:

First, there exists only one level of teachers with salary increments being based on education and length of services. Thus, many teachers either strive for administrative positions or leave the field.

Second, there exists less than $1,000 difference between the starting salary of the beginning teacher with no teacher education preparation and one with a master's degree and only $1,300 difference at the top of the salary schedule. As a result, little incentive is offered to trade, technical and health teachers to seek education beyond the 20 hours of professional education courses that are required. In addition, many teachers enter the classroom for the first time without having had any teacher education and are left completely on their own to sink or swim. The efforts of a teacher education staff continues to be short term in focus, and their time is tied up with providing new teachers with the 20 hours needed to meet state certification.

Third, although each school has at least one full-time instruction coordinator, experience has shown that this individual has neither the training nor the time to perform professional development activities regarding the improvement of the instructional programs.

Fourth, in most instances teachers are assigned by occupational areas even though there exists common knowledge that cuts across two or more areas. Thus, the teacher who is most competent and appropriate to teach a particular piece of knowledge that is applicable to more than one occupational area is not utilized.

Fifth, although we now have a procedure through which trade, technical and health teachers can be "purposefully" prepared to a Bachelor's degree level for teaching positions in vocational and technical schools, its output up until the present time has been virtually nil.

Figure 1 and 2 show the elements of a possible differentiated staffing model for a post-secondary vocational-technical school. The model calls for four professional levels--teacher coordinator, senior teacher, instructor, and associate instructor. An array of individuals could make up the para-professional personnel.

The primary intent of this model would be to spread teaching expertise, professional competencies, and leadership qualities possessed by the best teachers to other staff members. The teacher coordinator would provide leadership in working with the senior teachers in planning and conducting activities for instructors and associate instructors of the following nature:

A. professional development including inservice education;

B. curriculum design and curriculum material development and evaluation;

C. utilization of latest teaching technologies, techniques, and innovations;

D. planning, organizing, and scheduling instructional time;

E. utilization of staff and teaching knowledge that pertains to two or more occupations;

F. evaluation--context, input, process, and product.

The teacher coordinator would be responsible for teaching one half time in an occupational area. The senior teacher would be responsible for teaching four-fifths time in an occupational area. Other instructors would have primary responsibilities for teaching full time in occupational areas. The para-professionals would perform a number of supporting activities including supplies, inventory and control, equipment adjustment and maintenance, security, safety, promotion of visual materials, inspection of work, preparation of laboratory instruction materials. Regardless of the level each teacher would have a teaching assignment primary in his occupational area; however, assignment would take into consideration the special competencies that one teacher might possess that would be relevant to two or more occupational areas. The teacher coordinator would also be responsible in working with other teacher coordinators and assigning staff across broad occupational areas.

No more than 25% of the teachers would be at the top two levels. Promotion from one level to the next would be based on performance and educational requirements, not solely on degree and length of time in services.

On the surface, at least it would seem, that his model would offer considerable potential for resolving some of the problems we have regarding staff. Such a model should certainly assist in attracting and holding vocational teachers in post-secondary area schools because it does provide the highly competent teacher an opportunity to achieve professional status and responsibility and salary according to his abilities. In addition, it offers means for the professional preparation, orientation, and induction of beginning teachers. The model would bring superior teaching talent to bear on the difficult problem of teaching the disadvantaged; individualizing instruction; curriculum design and revision; developing, retrieving, evaluating, and utilizing curriculum material; identifying and implementing teaching innovations and techniques. It would seem that it would be possible to purposefully prepare the teacher coordinator to handle much of the inservice work needed for new teachers under the direction and coordination of the teacher education staff. Also, the model could provide the professional staff a carefully prepared inservice and on-the-job education program which would include occupational competencies.

Thus, the other objective of this differentiated staffing model would be to find ways in which the outstanding teacher could influence the quality of education for more students through other teachers.

One approach for implementing this model would be to group specific vocational occupations in cluster areas such as metals, transportation, electrical occupations, service occupations, and business. This would be for the purpose

of carrying out the intent of the differentiated staffing. Each teacher's primary and major assignment still would be in his specific occupational area; students still would be enrolled accordingly. Such a grouping pattern would be appropriate for large area vocational-technical schools. In smaller schools it might be more appropriate to group the occupations by those dealing with things and by those dealing more with people. These only represent two possible ways in which it can be done. Lack of sufficient number of teachers in any specific occupation area will prevent the duplication of the pattern that has been used in general education.

Potentials for Other Areas of Concern in Vocational Education

Many of the comprehensive high schools where we have an appreciable number of vocational offerings have been plagued with a number of problems that a modified differentiated staffing pattern might help solve. These problems include but are not limited to the following:

1. Students settling for vocational education rather than selecting it;

2. Lack of commitment on the part of other teachers in the school to their responsibilities for preparing youth for work;

3. Failure of other curriculum areas to appropriately modify their curriculums for the vocational students;

4. Failure of other curriculum areas to utilize the concrete experiences offered in the vocational program to teach basic academic skills;

5. Curriculum patterns in most schools have been based on making the content sequential and logical rather than making it meaningful to youth;

6. Too many vocational students lack basic academic skills which are essential to acquiring vocational skills.

Figure 3 suggests a possible differentiated staffing model for comprehensive high schools that would have as its essential purpose the interlocking of academic and vocational curriculums to maximize their potential to the education of the individual. Such a model might contain three levels of staff: a teacher coordinator, teachers, and teacher aids. A teacher coordinator's responsibility would be to coordinate and to plan with a team of vocational and academic teachers, including counselors, ways for organizing the other subject matter disciplines around the concrete experiences that the student is having in the vocational program. The teacher coordinator would be especially trained for his position; he may or may not be a vocational educator. He would be responsible for teaching at least half time. It would seem that such a model would have considerable potential for serving disadvantaged and handicapped youth. Many question whether or not vocational education can do much for these youth without an equal commitment and modification in other aspects of the school program.

Another possible area in which differentiated staffing may offer some potential would be in creating inter-related occupational programs in small schools. This has been a much conversed topic since the 1963 Act. Maybe the differentiated staffing pattern would offer a vehicle for implementing this concept.

At this point, I'm not sure exactly how, but it would seem to me that the differentiated staffing pattern would offer potential in guidance in area vocational-technical schools. The act implies that we must actively seek out those individuals who can benefit from our training programs. And as we examine literature pertaining to the disadvantaged and handicapped, we find that they are going to need much personal coaching, considerable amount of follow-up, and counseling beyond the point that they leave school to help them maintain a job. The potential for different levels of professional staff in guidance seems to hold considerable promise.

V. Possible Next Steps In Considering Differentiated Staffing

In considering differentiated staffing in vocational education it is important to recognize some major questions that would have to be resolved. First, how would the implementation of the idea of differentiated staffing in vocational education affect the content and design of curriculum, the selection of staff, preparation of teachers, teacher certification, etc. Second, how would existing staff be moved into the program? It would seem that no teacher would receive less pay than he is presently receiving. Third, under a differentiated staffing pattern, how would teachers fit into the policy-making aspects of the school. Fourth, how might the criteria and the application of the criteria for determining the promotion of a teacher from one level to the other be developed and implemented. These are but a few of the questions that will need attention as one attempts to implement the differentiated staffing concept on a pilot basis.

It should be recognized that differentiated staffing may operate differently with different vocational areas. For instance, one of the models that I presented focused primarily on the potential that differentiated staffing held for the professional improvement of staff. It seems logical that in areas such as business education more attention might be given to staff utilization because in most instances we have a larger concentration of teachers in this particular area.

Any attempt at implementation of a differentiated staffing concept should provide for a high degree of staff participation in its development. They should be included in defining the different levels of responsibilities, and competencies that must go with these responsibilities, as well as criteria for judging whether or not an individual has the appropriate competencies for a given level.

VI. Summary

In summary, I am of the opinion that differentiated staffing offers sufficient potential to vocational education that steps should be taken by those concerned with staff utilization in vocational education to establish pilot programs to determine its merit.

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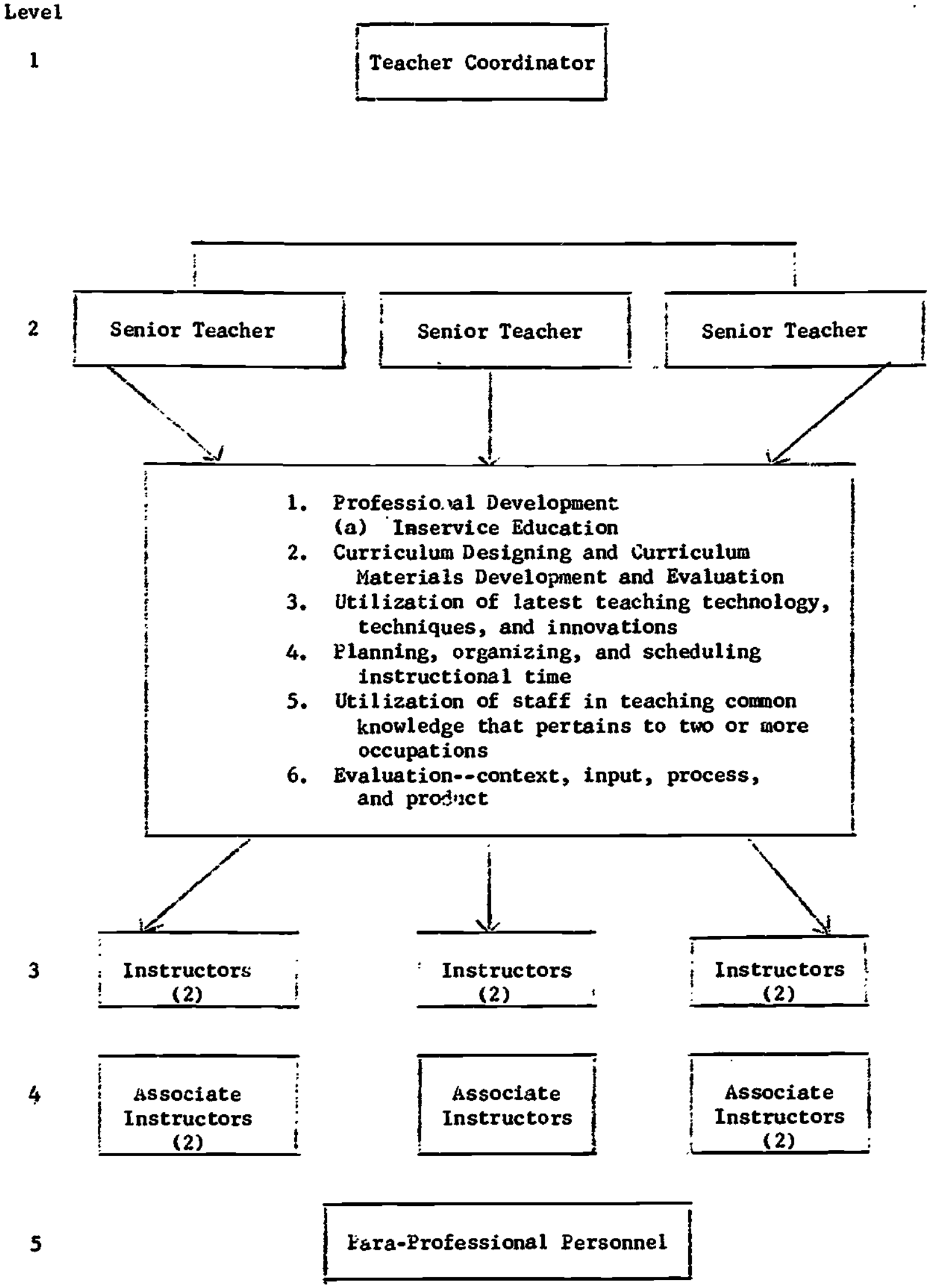
DIFFERENTIATED STAFFING
VOCATIONAL-TECHNICAL SCHOOL
(Model A)

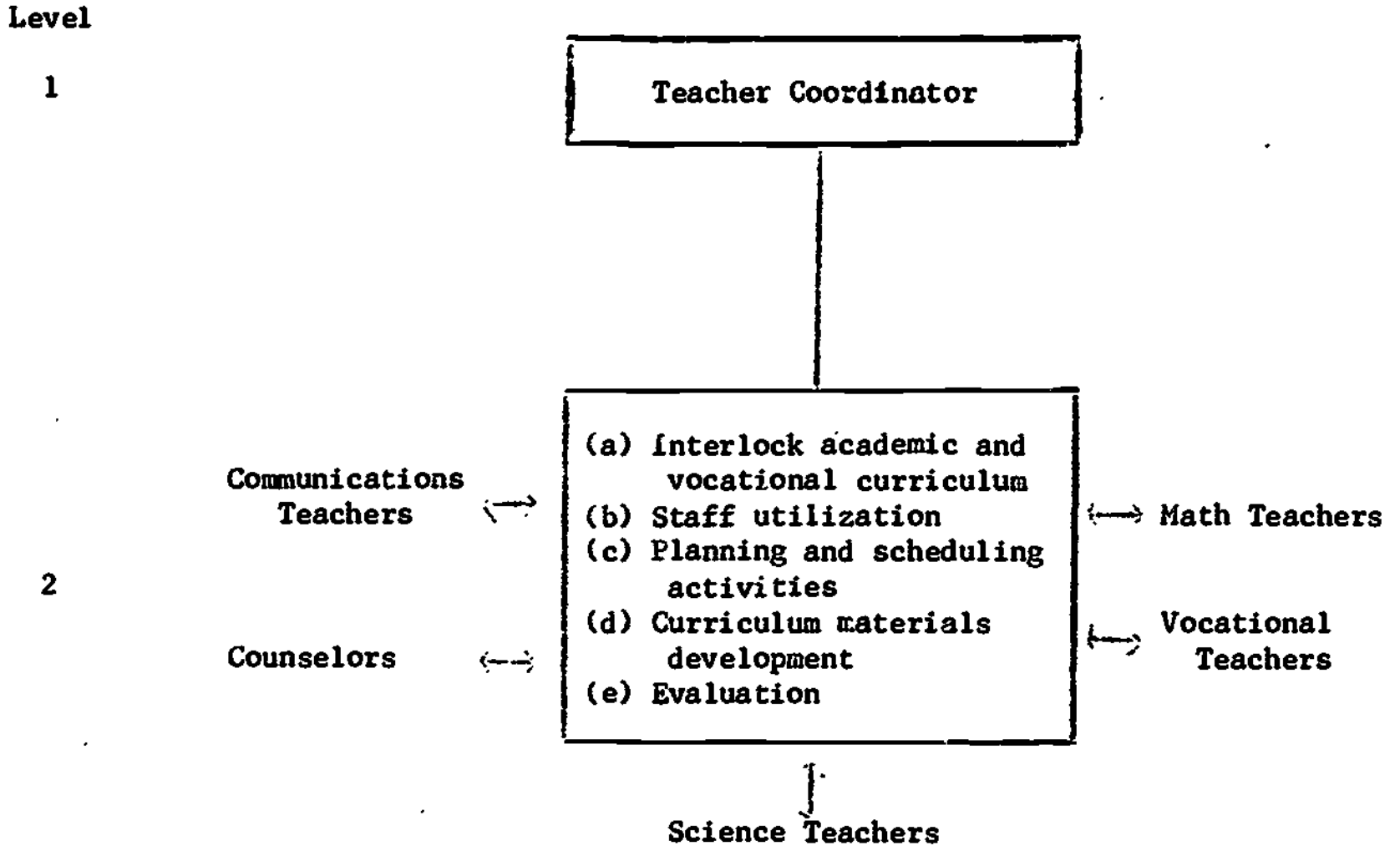


PROPOSED DIFFERENTIATED TEACHER STAFFING PATTERNS
COMPENSATION, REQUIREMENTS, AND RESPONSIBILITIES

Regardless of level, each would have a teaching assignment <u>primarily</u> in his occupational area.

NATURE OF RESPONSIBILITIES	LEVEL RENUMERATION AND REQUIREMENTS	PERCENTAGE BREAKDOWN
Leadership 1/2 Teaching	Teacher Coordinator M.S. or Six-Year Degree 12,000 - 14,000 (4 steps)	25%
Coordinate and Assist Instructor and Associate Instructor 4/5 Teaching	Senior Teacher B.S. or M.S. 10,000 - 12,000 (5 steps)	
Participants in Improvement Activities Full-Time Teaching	Instructor (B.S. or T.I., two years of college plus basic professional courses) 8,500 - 10,000 (5 steps)	75%
Participants in Improvement and Inservice Activities Full-Time Teachers	Associate Instructor (B.S. or T.I., tech, health occ. conp.) 7,000 - 8,500 (7 steps)	
Supporting Activities	Para-Professional	

DIFFERENTIATED STAFFING FOR THE PUSPOSE OF INTERLOCKING ACADEMIC AND VOCATIONAL CURRICULUM



VT 010 446
Baca, Sylvester A., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massacnusetts, December 8, 1969).

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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969); EDUCATION PROFESSIONS DEVELOPMENT ACT; EDPA

Speeches presented at the teacher education departmental meetings include "The Rural Poor and E.P.D.A.," by Sylvester A. Baca; "Predominantly Black Southern Colleges and the Education Professions Development Act," by Clyde W. Hall; and "A Model for Curriculum Planning," by William B. Logan. (CH)

VT 010 446

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Speeches Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 8, 1969

Teacher Education Departmental Meetings

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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THE RURAL POOR AND E.P.D.A.[1]

Sylvester A. Baca

[1]Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 8, 1969

In these days of growing cultural awareness, it gives me a great deal of pleasure to share with you some of the uniqueness of the tri-cultural land of the Southwest. This is the land of ancient Indian Pueblos, old Mexican villages, and newer communities of other ethnic groups, loosely referred to as Anglos. It is also an area of the Country where you are daily made aware of the rural poor and the disadvantaged.

Let me give you three examples of the rural poor in the Southwest: Lawrence Charlie, a fifteen year old Navajo, Lolita Torres, a twelve year old third generation Mexican-American, and John Markham, fifteen year old Anglo, are three young citizens of the rural poor population. These are not typical examples, but neither are they atypical.

Lawrence Charlie lives with his parents on a southwestern reservation, forty miles from the high school where he is a sophomore. He lives in a Hogan which is a one room hut made of logs, mud and grass. He has a difficult time preparing lessons because the hogan is always crowded after dark, and has only one kerosene lamp. His father is self-employed; he owns a herd of sheep. Lawrence often has to miss school to help with the herd or to help pick pinion nuts in the fall. The pinions supplement their income. He also misses school during inclement weather because the bus that takes him to the main highway does not run. He is often frustrated by the fact that if he goes along with the acculturation oriented program the school imposes on him, he is ostricized by his home and community: if he does not, he is doomed to a life of poverty.

Lolita Torres lives in a southwestern village with her father,

mother, and three brothers. In March she is taken out of school because her family pools resources with two other families to do farm work. They will travel in a remodled flatbed truck without the aid of a credit card all the way to Michigan using service station restrooms and camping in roadside rest areas. The entire Torres family will work at planting, thinning and hoeing beets. Between hoeings they will move up into the thumb of Michigan to pick cherries; then to Ohio to pick tomatoes and other garden crops. It will be late in September or early October before Lolita returns to school.

Jack Markham is a student in a rural southwestern School District; there are only sixty-seven (67) students in the high school. Efforts have been made to consolidate with a larger school district, however, this has been met with resistance. The only Vocational Education Course taught in the school is Vocational Agriculture. Even if other courses were offered, Jack would not be urged to take them. His parents are semi-literate farmers, and their aspiration for Jack is that he"make a good hand" at a fifteen ($15.00) dollar a day farm laborer's job, and that he has access to seasonal employment with the local school, cotton gin, mercantile, or grain elevator. Jack's ultimate goal is to some day acquire his own farm and be in business for himself.

Many efforts are being made to fight poverty and to relieve the lot of the educationally disadvantaged, yet somehow the disadvantage of the rural student is generally overlooked.

Today approximately 15 million children 18 years of age and under are enrolled in rural public schools. This included the major part of the 142, 000 Indian students, and vast numbers of the Black and Mexican-American students. These generally small schools are quite often

isolated from population centers and, contrary to popular myths, rural education is not diminishing. Even though we are aware of the many improvements that have been made by consolidation and other token efforts, there are still many small rural schools and they are usually inadequate because of their isolation from centers of social change and lack of comprehensiveness.

There is also a scarcity of good teachers for isolated schools. They usually have trouble attracting and holding competent teachers. Facilities, materials, and instructional equipment in small schools are generally viewed as being inadequate. Also, lack of activities, distance from institutions of higher education, and lack of adequate supervision are among other reasons why teachers do not prefer small school assignments.

Vocational-Technical education has received little attention. This is the area of the curriculum that is particularly deficient in small rural schools. There is A LACK OF equipment and facilities, little money, and limited community preparation of rural small school students continues to contribute to the swelling numbers of the marginally employed, the underemployed, and the unemployed.

Generally, the citizen of the rural area is employed in seasonal, marginal employment at menial tasks and often is forced to be a migrant worker on farms across the country. He may also do other seasonal work such as the railroad track or highway construction. The children in the rural community put in a long school day; often two or three hours on the bus plus six hours of classes. They often enroll late in the Fall and leave early in the Spring. They are subjected to a curriculum that is nothing more than a replica of

that existing in the urbanized college prep school. They are isolated by distance, rough terrain, culture, tradition and ties to the land. Inovative programs oriented to individualized instruction are urgently needed in the small school setting, however, they should be tested where they will be used.

The rural citizen is usually poor, but he has pride and most important of all an identity; he knows who he is, and this identity is based on a family name and locality where he lives. Many of these low income rural families have children that attend schools where the academic achievement of the pupil tends to be below the national average. Within the family itself, the father's roll is predominant. The church is the center of the rural community. However, when these families move into the urban area, they usually end up in the inner city, becoming displaced persons and religious controls then begin to break down. Lack of education or skills often prevent them from obtaining jobs, consequently they live in crowded conditions in sub-standard housing. It is difficult for these people to adjust to urban life.

It is hoped that the exemplary projects that will be developed in the problem areas identified by the Bureau of Educational Personnel Development will help to alleviate the painful shortage of qualified personnel at all levels in vocational education, and that it will open up opportunities to bring about a better integration of vocational and academic education. This will provide a means to bring about certain needed changes in schoop programs to give them relevance. It will provide the means for exemplary projects that will develop models

for the small rural school. Perhaps improvements are forthcoming in a mobile classroom that will provide individualized instruction while transporting students to and from school as part of the regular school day.

It is envisioned that when this seed has multiplied, we will have area vocational education integrated with relevant college preparatory education at all levels throughout the country. This system will offer a wide range of courses, supplied with up-to-date equipment, staffed with competent teachers that will have abailable an in-service program to help them keep up with current educational and technical changes.

For over 200 years we have been preparing teachers and writing curricula to deliberately eliminate sub-cultures and mold the members into the dominant culture. The Indians, Mexican-Americans, and other minority ethnic groups liked to bring their culture to school with them, but they were not allowed to do so.. They were stripped of their culture in the same fashion an interrogator in a prisoner of war camp strips a prisoner of his clothing.

In the last decade there has appeared on the scene another school of thought: And I am asking, could this be the way? That we do everything possible to support and nourish sub-cultures with an ultimate objective that there will eventually be a gestalt of all the cultures, and yet preserve the essence of each, so that the members of every sub-culture are developing their identity with the dominant culture without losing their own identity. In this vein, we then might say to member s of minority ethnic groups, "we like your culture, we like your family, please feel free to bring them to school with you."

EPDA has provisions to recruit, train and retrain personnel in Vocational and Technical Educatiom fields. This will certainly include teachers, counselors and administrators of all minority ethnic groups that can possibly better relate to these disadvantaged individuals. These provisions will also help them to become community leaders instead of complacent victims of a political structure. Instead of teachers trying to resolve their problems within the narrow confines of this structure they will work along legitimate channels to gradually change it to better ends.

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PREDOMINANTLY BLACK SOUTHERN COLLEGES AND THE EDUCATION PROFESSIONS DEVELOPMENT ACT

As you will note from the program, my presentation is entitled "The Developing Southern Colleges and the Education Professions Development Act." However, I shall confine my few remarks to the predominantly black southern colleges because I feel these institutions make up the largest group of developing institutions in this region, and by far, they are the ones in the greatest need of EPDA assistance.

The predominantly black institutions of higher education in the South are the outgrowth of the missionary efforts of the churches of America, land-grant legislation, the normal school approach to teacher education, and the junior college movement. By and large, these institutions have the longest history of admitting economically, socially, educationally and politically deprived students, and attempting to prepare them, during the short span of a college experience, to make laudable contributions to our American culture.

Although these institutions are regional in location, they are national in significance as far as higher education of blacks in this country is concerned. Today, approximately three out of every five black undergraduate students of this nation are enrolled in predominantly black institutions, and perhaps, four out of every five black adults who have received a college education are graduates of these schools. The majority of the black teachers in classrooms all over this nation pursued their teacher education programs at these institutions, and many of our past and contemporary black notables are products of these academic communities. In order to fully assess the national appeal and significance of these institutions, one must keep in

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Presented at the American Vocational Association Convention, Boston, Mass., December 8, 1969 by Clyde W. Hall, Chairman, Division of Technical Sciences, Savannah State College, Savannah, Georgia.

mind the fact that the majority of black population of this nation does not live in the region of these institutions.

The black colleges and universities comprise approximately 6 per cent of the American institutions of higher education and their enrollments approximately 3 per cent of all college students, but their expenditures for operational expenses and capital improvements are approximately 2 per cent and 1½ per cent of the nation's, respectively. Not only do these institutions receive a disproportionately small share of funds available for higher education, buy they admit the largest percentage of high risk students in terms of academic preparation and economic stability, and their teachers have the heaviest classroom teaching loads and co-curricular responsibilities. The dismal fact of the matter is, these institutions, in the main, lack the necessary political liaison to improve their status.

The question is, as far as this presentation is concerned, "What can the Education Professions Development Act do to improve the quality of personnel development in these black institutions?" I feel that the answer to this question is very positive because (1) EPDA is designed to help all types of educational agencies develop more effective ways to recruit, train, and utilize educational personnel, and (2) EPDA has as one of its highest general priorities the improvement of education for the disadvantaged.

It appears to me that the black institutions provide fertile ground for experimental programs under EPDA designed to find more effective ways of training and utilizing educational personnel for the classrooms of the disadvantaged. These institutions have a long teacher education heritage in this field, and they have on campus, large numbers of disadvantaged students, many of whom will become teachers of the disadvantaged in the future. It also appears to me that if highly effective teacher education program can be developed at these institutions for the teaching of their enrollees, there would be developed a cadre of persons who would have experienced first hand

what can and needs to be done to reach effectively the disadvantaged. I sincerely believe that a teacher who has had that type of an experience will be much more effective than one who does not have a disadvantaged background, and who has been casually exposed to the teaching of the disadvantaged in a summer workshop at an institution that neither has a disadvantaged population, nor has a genuine interest in disadvantaged students.

However, it must be recognized from the beginning that the problem of developing effective personnel development programs for the disadvantaged at black institutions deserves serious and sustained consideration and financial support. It would be foolish for me to say that the task of preparing educational personnel effectively for this group can be accomplished at these institutions by holding several $20,000 to $50,000 summer institutes. The problems of the black disadvantaged of our nation have many facets and have been with us for a long period of time; therefore, they will not be eradicated quickly and easily. But I do believe that some realistic inroads can be made into the solution of these problems, if substantial attention, time, and financial support are given to black institutions for the purpose of developing "live" experimental programs with (1) fluid curricular patterns of varying lengths accompanied by appropriate compensatory experiences, (2) individualized instructional techniques utilizing programmed learning materials based on individual student diagnosis, (3) differentiated staffing approaches involving part-time and full-time specialists from outside of these institutions, (4) dynamic cooperative industry-school training programs, and (5) personalized guidance services which face up to the real problems of the disadvantaged.

In order to develop and implement such programs under EPDA as I have mentioned, certain basic considerations and concessions must be made. To name but a few, I should like to suggest the following:

1. "Seed Money" and/or on-the-site assistance must be provided black institutions for the purpose of writing acceptable proposals. It must be remembered that these institutions are basically undergraduate teaching institutions and do not have the personnel nor the expertise for developing acceptable proposals in terms of their need for assistance. Because of this lack of "grantsmanship ability," these institutions have faired badly in obtaining Federal assistance for their programs in the past.
2. "Open lines" of communication must be developed between the black institutions and their State Departments of Education. These institutions must be included in the plans of their states for EPDA programs, especially those dealing with the disadvantaged. Currently, the bulk of the funds available under EPDA Part F is for programs sponsored by State Departments of Education; therefore, it is imperative that black institutions be made realistic partners of state plans.
3. Realistic consortia should be developed which would pair predominantly black institutions with predominantly large white institutions. The headquarters for these consortia should be located at the black institutions in order to cause the greatest change at the developing institutions. I believe, past experiences with the reverse order of this arrangement have not produced the desired results.
4. The selection of a black institution for a project under EPDA must be based on the potentialities of the school in terms of location, objectives, enrollment, etc. rather than on the basis of its present staff capabilities. I believe, once sufficient funds are made available, most of these institutions can employ the necessary manpower to do the job.

I know some may say that I am asking for preferential treatment for predominantly black institutions, but you must remember that these institutions have never shared equally in the available finances and have always had the most difficult tasks to accomplish. To do what I am asking, to me, is one way of correcting a long-standing deficit in financing higher education for black youth and does not appear to be an unreasonable request. I thank you for your attention.

A MODEL FOR CURRICULUM PLANNING
(as related to business education)

William B. Logan
President, Webber College
Babson Park, Florida

The ideas I want to share with you today are not bright, shiny new ones right off the assembly line. But there are times when previous ideas become revitalized, and take on new significance. This is one of those times and my remarks will deal with just such an idea.

To help set the scene for the introduction of this revitalized idea, I'd like to use that great American household fixture, the TV set. More particularly, some commercials that you have all probably seen and heard on the modern medium ... the Plymouth automobile commercials. Their campaign is based upon the preliminary theme, "Plymouth Makes It," and the advertising copy and visuals are concerned with identifying those things that "make it." For instance, marrying a rich Greek "makes it," wearing strikingly daring clothes "makes it," and according to Plymouth, driving one of their models "makes it."

Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts, December 9, 1969

Time will not permit us to identify all aspects of business education so we will zero in on a most important activity - CURRICULUM PLANNING. My address this afternoon will be directed toward telling you why I believe that using a behavioral objective approach for curriculum planning "makes it!"

In many ways, I'm here to sell you on an idea, and ideas are comprised of several complex, interrelated parts. Now, if I were a Plymouth dealer, I wouldn't ask you into my showroom to see a great display of various auto parts strewn all over the floor and walls. (INDICATE DIFFERENT PARTS OF THE STAGE) There's our new engine ...here's our new square steering wheel... there's the transmission over there. No, sir. I'd show you a sleek, highly polished ready-for-the-road automobile. So let me begin by verbally "showing" you what this idea "looks" like by using a mythical business education teacher as our showroom model.

This model teacher exudes confidence, and has a business-like appearance, and manifests success. He knows he's won the ball game. He is a leader or director of learning - and he knows it. He has identified and separated the basic processes for each of his courses into their component parts. For each course he has traced logically each step for learning these components. He tells his students exactly what their goals are; thus, he totally controls the selection of materials and equipment, and

can manage all of his resources efficiently. He has eliminated unnecessary and time-wasting functions. He can do this because since the basic process has been separated into key concepts, the direct route to the terminal outcome is clear. No time or energy will be wasted "traipsing down the primrose path."

Since the students know exactly what is expected of them, their energies can be totally directed toward the proper enabling objectives and ultimately toward the terminal outcome like a well-organized football team driving toward the goal line. They know where that goal line is, and they won't get lost in the undefined wilderness of uncertainty. The model teacher-leader can select the best materials and learning devices since he knows exactly how each device should be evaluated in terms of whether it will move pupils to a particular objective more effectively than some other device. This, ladies and gentlemen, is a verbal picture of the behavioral objective curriculum planning approach that "makes it!"

This picture is, of course, the in-service look at how using a behavioral objective curriculum planning approach is applied. An appropriate question now would be, "What about the students?" Experience has shown us that people do a much better job if they know what to do and what is expected of them. If our mythical model teacher has established his evaluative criterion correctly, the students will be able to join him in evaluating individual and class success.

Our students are the end products of our art, and educational institutions must measure their end products in much the same way that manufacturers measure their end products. Quality control measurements

test the products both during and after the manufacturing process. You and I are engaged in manufacturing an extremely valuable product - educated youth! We have learned, as the manufacturers have learned, of the perilous risks of placing inferior products in reputable markets. Our objectives must be crystal clear. Non-productive or time-wasting elements must be avoided so that our efforts on behalf of our students will be as productive as humanly possible.

And our product, an educated person, is a very expensive one that is daily increasing in cost. As a practical man, I must state that I believe that education should have utility. As in the automobile plant where each department and each production element must be productive in order to prove its worth to the overall enterprise, each educational department and every instructional element must prove useful. Perched right at the top of the priority list with regard to curriculum planning are two words - BE SPECIFIC. Let's take a quick look at how a lack of specificity applies in the classroom. A business education teacher identifies a terminal objective as "developing a proper business attitude." This objective is much too broad, and the teacher and her pupils will find, to their dismay, that the pathways leading to the achievement of this objective are quite numerous and are intertwined like a bucket of nervous worms. Examples of broad objectives:

1. Attitude toward accuracy
2. Attitude toward completing the job
3. Attitude toward office costs

As educators in today'e modern world, you must be concerned with developing peak efficiency, and you will have to use those systems that assure you and your students the maximum results. As an educator you are a member of the educational management team. You are called upon to be a systems analyst, and a leading systems analyst at that. What does a leading systems analyst do? He plans, programs, purveys, and probes. If that sounds like four "P's" you counted correctly. He PLANS, PROGRAMS, PURVEYS, and PROBES. You plan your instruction; you program by determining methods and media; you purvey inform a tion and ideas; and you probe and analyze the results. For example; in a distributive education class, the teacher

1. Plans to have students prepare a newspaper ad
2. He programs it in December so that it can be on a Christmas theme
3. He gives instructions on the elements of newspaper ads
4. He analyzes the results

We are fortunate, in our branch of the educational profession, to have a strong tradition to rely upon for the use of specific objectives. Vocational educators have an enviable record as innovative pioneers in course development and instruction. A review of the historical dimensions of education will provide conclusive support for this statement. Vocational subjects are goal-directed and practical. Their end results are measurable. Now, it seems, while we are upgrading our approaches to course development, members of other branches of the educational profession are adopting some of our original practices of earlier days.

Goal -directed instruction came into being in the land grant colleges and in the vocational programs in high schools in the areas of agriculture, home economics, trade and industrial, and distributive education.

And while a great deal has already been done, we all know that there is still a great deal of work before us. Much more can be done and should be done to improve the results that can be attained. In this complex, highly sophisticated society where major changes seem to be the rule rather than the exception, new methods by new industries are introduced and industry and business are more intricate and demanding than ever before in our history. We are indeed living in an age of specialists, and specialization has become an everyday affair.

Our cognizance of the emerging needs of our society must make us recognize the necessity for developing more systematic approaches to the educative process in order to adapt to our ever-changing needs.

At Webber College, we are conducting a pilot project funded by the National Panel of Consultants for Vocational Education Personnel Development. From the standpoint of the Panel of Consultants, the purpose of the Webber project is to assess the outcome of introducing a faculty to the concept of task analysis and stating instructional objectives in behavioral terms.

Consultants from Rutgers University presented to the Webber faculty

a model and began working in small groups to help them to begin the application of the concept in units of instruction. The faculty members agreed to work individually but have met in small groups each week to share frustrations. A group leader was identified in each group to gather written material generated by the faculty members for transmittal to the Rutgers Consultants. A progress schedule was developed to set dates for the accomplishment of the various steps toward the application of the model in units of instruction, such as: parts of speech in English; business plant layout and location in introduction to business; drafting a business letter in typing; implications of the Greek drama in humanities; and, merchandising staple stock items in retail buying.

It is much too early in the Webber project to make a final assessment even though we have passed a student testing period. However, the Consultants and the on-site observers are more than pleased with the results obtained to date.

As an introduction to a discussion of the job-centered, systematic approach to curriculum planning, I'd like to call upon the delightful humor of Robert F. Mager. He has written a poem that provides us with a mnemonics vehicle for remembering the three key questions in using the systematic approach.

There once was a teacher
Whose principal feature
Was hidden in quite an odd way.
    Students by millions
    Or, possibly, zillions
    Surrounded him all of the day.

When finally seen
By his scholarly dean
And asked how he managed the deed,
    He lifted three fingers
    And said, "All you swingers
    Need only to follow my lead.

        To rise from a zero
        To Big Campus Hero
        To answer these questions you'll strive.
            Where am I going?
            How shall I get there, and
            How will I know
                I've arrived?"

Magers three questions are:

    What am I to do?

    How shall I do it?

    How will I know I've done it?

Not to be outdone by the poetic prowess of Dr. Mager, I'd like to offer you a brief poem on the first teacher to use this supposedly modern approach:

There was once a very wise Greek
Who used three words to speak.
    All the kids said, "He's cool,
    Socrates is no fool."
But, the elders just called him a freak.

So, this wise ancient man
Just ignored the old ban
  And questioned traditional means.
    As he trod through the streets
    With no shoes on his feet.
  "Is it really," he asked, "as it seems?"

Then he opened a school
That had one basic rule;
  But the local yokels were damning.
    Well, what do you think
    Has caused the big stink?
  Why the scholar's curriculum planning!

He gave them all the smarts
Of science, language, and arts
  In simple, sensible terms.
    "Get hep, get yen,
    Greek gentlemen,
  You must define your terms."

The old scholar just smiled
With wry humor, not guile,
  He had a rare perspective.
    "Now, perhaps I should say,
    That in Athens this day,
  I have used a behavioral objective."

So it seems that we have always had objectives - good, poor, and mediocre. As teachers we list them copiously in curriculum guides, course outlines, papers to parents, and in a mountain of other places. Some of these objectives read like this:

1. To understand business math -
2. To grasp the significance of bookkeeping -
3. To fully appreciate the proper business attitude.

These are broad objectives that are open to too many interpretations. One great problem involved in using such broad terms is, "How do we determine whether or not we have succeeded in accomplishing the objective?"

Using a behavioral objective approach to curriculum planning offers a format for stating goals in terms of observable behavior. Such objectives provide direction to both the learning experience and the appraisal of the effectiveness of a specific experience - the evaluation.

But let us consider the complete model that I have designed that portrays all of the ingredients necessary for successfully adopting the behavioral objective approach to curriculum planning.

SYSTEMATIC APPROACH

The systematic approach involves analysis of the job to be done, determination of desired results, selection of proper tools, use of the tools in teaching, and a check on results. Let's apply this to the DIAGRAM in your hands.

BUSINESS	TASK ANAL.	BEHAVIORAL OBJECTIVES	SEQUENCE OBJECTIVES	INSTR. ANAL.

(1) BUSINESS. The systematic approach to the educative process in business education is to begin with "BUSINESS". Information about the tasks to be performed are found in business establishments. Business can also provide a continuous updating of those tasks.

(2) TASK ANALYSIS. Task analysis involves the listing of each job performed by each worker. Frank Lanham at Wayne State University has analyzed office tasks in determining performance goals for office workers. The study conducted by Dr. Lanham is NOBELS (New Office and Business Education Learning Systems.) The tasks thus defined become the basis for the establishment of behavioral objectives.

(3) BEHAVIORAL OBJECTIVES. There are two kinds of objectives: enabling and terminal. The enabling objective leads to the terminal objective. For example, a terminal objective in a typing course might be 30 words per minute. Some of the enabling objectives might be:

1. Knowing the location of the keys
2. Properly inserting paper in the typewriter
3. Twenty words in five minutes
4. Twenty-five words in five minutes

Educational objectives are statements of desired changes in the thoughts, actions, or feelings of students that a particular course or educational program should bring about.

A BROAD OBJECTIVE which has little direction is:

the development of an understanding of typewriting.

A SPECIFIC OBJECTIVE IS:

the ability to type 30 words per minute at a sustained speed for five minutes making only two errors.

To obtain specific statements of behavioral objectives from lists of tasks, as the teacher-manager, you must answer three questions:

1. What student behavior will I accept as evidence of attainment?
2. Under what conditions will the student be required to demonstrate this behavior?
3. What standards will I apply?

We must learn to be specific. As I told my students at Ohio State University, SPECIFICITY is needed.

OBJECTIVES ARE:

NOT:	to understand	BUT:	to write
NOT:	to really understand	BUT:	to recite
NOT:	to appreciate	BUT:	to identify
NOT:	to fully appreciate	BUT:	to differentiate
NOT:	to grasp the significance of	BUT:	to solve or to construct
NOT:	to enjoy or to believe	BUT:	to list or to compare

SPECIFICITY IN STATING BEHAVIORAL OBJECTIVES

Behavioral objectives are keys to planning. They set the tenor of the course, they are referred to at each stage in the development of the course. Also, and most important, behavioral objectives are keys to testing. The test should be apparent when the behavioral objective

is stated: thirty words per minute in five minutes with only two errors.

SEQUENCE

Sequence refers to the proper alignment of the behavioral objectives, moving from the simple to the complex.

1. What does the student have to know before performing the next step?

2. What follows that step? (Keys ⟶ Touch)

3. What activities can be learned concomitantly? (Sitting position and location of keys)

INSTRUCTIONAL

The teacher-leader now performs another management function. He must determine --

(1) What activities will provide the most effective learning experiences for objectives

(2) What technology can be applied? When? How applied?

Simulation games are a real mod.

EVALUATION:

Evaluation should be planned at the time the behavioral objectives are written. The criteria for evaluation is based on the behavioral objectives. If a student was "to solve: he must solve. If he was to compare, he must compare."An evaluation includes a report of (1) the work performed by every student and at what level of performance and under what conditions as well as (2) the attitudes of the student after he has performed satisfactorily.

ANALYSIS:

Analysis is feedback.

1. **What was right and what was wrong?**

2. **What questions had a high incidence of being wrong? Right? Does the data indicate causes?**

3. **What tasks were done least well? Medium well? Exceptionally well?**

   What tasks should be added?

4. **Do any objectives need modification or revision?**

5. **Are the objectives in proper sequence?**

6. **Could the activities be strengthened for improvement of results?**

   What changes in media are indicated?

7. **What parts of the course were most effective? Least effective?**

8. **Do the students have a good attitude toward the subject at the conclusion of the course?**

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Two speeches presented at the vocational instructional materials section of the 63rd Annual Convention are included. "Development of Curriculum Materials Fitting Behavioral Objectives," by Edward J. Morrison, addresses the instructional system, characteristics of behavioral objectives, and overview of curriculum development, analysis of objectives, and designing the learning program. "Looking Ahead in Instructional Materials Development," by Philip R. Teske, addresses specification of the desired end-product of the system, curriculum guides, courses of study, related instructor and student materials, training aids and devices, equipment subsystems, and student evaluation. (CH)

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Vocational Instructional Materials Section, NRSD

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DEVELOPMENT OF CURRICULUM MATERIALS FITTING BEHAVIORAL OBJECTIVES[1]

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I count it a special opportunity and pleasure to talk with you today. For one thing, like everyone else, I like to talk about subjects I consider important, especially those with which I have worked. However, there is a more important reason to value this opportunity; it is that this meeting provides a hearing by people who are in an unusually strategic position for affecting education significantly. This is not mere flattery. Some of you have heard me remark on other occasions that those who develop instructional materials play a crucially important role in education, and I want to make that point again now. Notice, please, that education, insofar as the schools provide it, is whatever actually goes on in the classroom. The education of Johnny Jones is what actually happens to him during the approximately 11,000 hours he spends in school classrooms.

Now, it is apparent that what happens to Johnny is affected very importantly by the activities in which he engages, by the materials with which he works, and by the guidance provided teachers for the conduct of activities and the use of materials. Instructional materials and guides are a primary means for establishing both the objectives and the conditions for learning. Change the materials with which the student actually works or the way in which materials are used and you have changed education. So, you who devise curriculum and instructional materials are, in a very real sense, dealing directly with the education of thousands of children, even though you may never enter a classroom.

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[1] Presented to the Vocational Instructional Materials Section, New and Related Services Division, during the meeting of the American Vocational Association, Boston, 5 December 1969.

The way you do your job, the methods and techniques you use, are not matters of indifference. On the contrary, your methods for developing curricula and instructional materials will determine, in large part, whether your effect on education is constructive, or, at best, nil. So, today, I would like to spend some time discussing matters of central methodological significance.

It has been necessary to limit the scope of the discussion drastically to only a part of the announced topic which could be construed to cover all of educational or instructional technology. But, we can examine briefly the notion of an instructional system and the characteristics of behavioral objectives to establish some concepts and principles, and go on to consider some aspects of methods for the analysis of objectives and the design of materials.

Instructional system

One matter on which widespread agreement seems easily reached is the fundamental purpose of curricula and instruction. Virtually everyone will agree that the purpose of instruction, even of education, is learning. Yet, though most people accept this statement easily, they often reject its implications which, apparently, are not so well known. Perhaps, then, we should examine the definition of learning more closely.

Learning is a change in an individual's capabilities which is inferred from differences in his performance from time to time. If he can perform some task today which he could not perform yesterday, we say he has learned. If we do not observe such a change in performance, we have no evidence that anything has been learned. This is true no matter what the nature of the learning may be. The learning of facts, concepts, principles, attitudes, values, beliefs, manual skills, even conditioned responses, all are inferred

from some demonstration by the learner that he has become capable of a performance he previously could not do.

Please notice that this definition of learning does not depreciate the importance of understanding, values, attitudes, appreciations or any other concept. What it does do is recognize the fact that all we can observe is the learner and his activity in a given situation, and that we must make inferences from those observations if we would conclude that he has learned or understands or holds certain values, beliefs or appreciations. Stated in another way, learning, understanding, values, attitudes and the like are labels we use to summarize our observations. If we observe that a person can do A, B, and C, for example, we may summarize by saying he understands something. We may also expect, based on this observation, that he could do E, F, and G. Without reference to observable events, however, "understanding" has no meaning. Similarly, if we observe changes in a student's performance from time to time, we summarize those observations by saying he has learned. Thus, if we believe the purpose of curricula and instruction is learning, then we must hold that their purpose is to produce changes in the capabilities of students to demonstrate new or improved performances.

Viewed in this way, learning is a very useful purpose of instruction. As soon as the capabilities to be acquired by students are specified, we have, an unambiguous target toward which to work and a means for assessing the success of our efforts. If, in addition, we can describe similarly the capabilities of entering students, we have an admirable specification of the instructional task: to transform students (with respect to what they can do) to the desired condition of graduates. The arrangements required to bring about these changes in the performance capabilities of students constitute the instructional system. These arrangements often are numerous, complex,

and detailed, but always they are organized to establish the conditions required for the student to learn efficiently. It is to the identification and establishment of these conditions that the development of curriculum materials properly is directed.

Characteristics of behavioral objectives

If the purpose of instruction is to be "learning," and by "learning" we mean the acquisition of capabilities for performance, then the objectives of instruction must be statements about the kinds of behavior we hope to facilitate. Such statements have several characteristics of considerable importance for those who would devise instructional programs.

Statement about students. Since learning is a change in the capabilities of students, objectives must be statements about students. Typically, the objective includes or implies a phrase like, "The learner can - - -." It does not make statements like, "To present - - -," or, "To review - - -," or, "To provide the student with - - -." Many teacher activities, teaching methods, materials, equipment, aids or class arrangements might be used in support of the student's learning and they help in describing the learner's activity, but none is a proper objective of learning because they do not define the outcome desired.

Statement about performance. Objectives must be statements about observable performance of students. Thus, objectives always include a verb denoting observable action. Statements like, "The learner identifies - - - (or describes or operates or lists)" are used for this purpose. Statements like, "The learner understands - - - (or knows or appreciates)," are not used because they do not denote directly observable actions.

Statement of conditions and criteria. So far, we have spoken of performance rather grossly, but it is apparent that an objective must define

the desired performance with some precision. In particular, it is important that the objective identify the significant conditions under which the student will be expected to perform and give the criteria by which success will be judged. If this is not done, then variations among interpreters of the objective could lead to the learning of different capabilities.

The statement of an objective normally includes a description of the class of stimuli to which the student must respond, a word or phrase denoting the objects used in responding, and a description of the class of correct responses. For example, "Given at least 2,000 IBM cards with alphanumeric data punched in all 80 columns, the student sorts the entire set, using the XYZ machine, into any order specified on 10 columns without procedural error." A simpler example might be, "Given a printed statement of the form ab + ac = a (b+c), containing numerals, the student states the name of the principle involved."

Perhaps, the most incisive requirement is that there should be agreement among all as to the proper test for demonstration of achievement by the student. If you should find yourself in the position of trying to devise curriculum materials and instructional programs to accomplish objectives written by someone else, you may find, as I have, that the best procedure is first to devise a test for demonstration of achievement of the objective. Then, have the objective writer check your test and together make any necessary revision of the test or the objective until you agree that both fairly describe the performance the writer intended. You may then go on with confidence to develop the learning program and materials to support the objective. This procedure is especially effective if objectives arrive in non-behavioral terms. In such a case, agreement on an achievement test will greatly clarify the previously ambiguous objective.

These three are the characteristics of behavioral objectives which are most often important for those who must use them to develop curriculum materials. That is, they are statements of successful student performance and specify both the conditions of performance and the criteria of success. Just in case you also are confronted with the task of preparing such objectives, you should know about two other characteristics.

Statement about "end-of-course" performance. Objectives of the type being described are statements about what the successful student can do at the conclusion of a particular learning regimen: a unit of study, a course, a practice session, or whatever. It is important to distinguish this performance from what the student might do while learning or what he might do some time after he has completed the "course." The objective describes the desired product of an educational effort. It does not describe how the student came to be that product, nor does it describe what you hope he will become at some time in the future.

Appropriate specificity. One problem which has plagued many who try to prepare behavioral objectives such as we have been discussing is how small or how large a chunk of behavior to include in an objective. Actually, the objective of an instructional effort can be any performance at all. There is nothing in the definition of learning or in the criteria we have discussed to limit the "size" of the objective on either end of the scale. On the "large" end we are constrained only by human capability and on the "small" end only by what is useful. However, as practical public educators who are concerned about the relevance of school learning for life and about the motivation of students, I suspect we should write most of our objectives near the level suggested by the notion of a task, that is, an accomplishment of intrinsic value, an outcome of behavior (Gagné, 1965; Smith, 1964; Tyler, 1964).

Curriculum development: overview

Our discussion so far has dwelt on the need for and characteristics of behavioral objectives, but has totally ignored several very important and difficult problems expecially about how to develop and select objectives. These problems are important for, as we all know, curriculum and materials needs seldom arrive stated as specific performance objectives. They are much more likely to arrive as requests for development of a course in subject X, or a unit on topic Y, or for revision of something. Nonetheless, our discussion from here on will assume that by some wave of a magic wand, or by some less dramatic but more painful means, we have in hand a set of well-formed objectives. Our problem now is to produce curriculum materials by use of which students will achieve the objectives efficiently.

It is only fair to admit at the outset that there is no procedure now available whereby one is led step-by-simple-step to the optimum curriculum package for an objective, but there are some working procedures and rules which are well worth your consideration and trial. It is with these working methods that we will be dealing henceforth.

The discussion which follows owes a substantial debt to three sources with which I hope you will become familiar. The first is Gagné's (1965) book, The conditions of learning, which presents an account of human learning, especially in school, and the conditions under which its several varieties occur, and does so in clear language based on the most excellent scholarship. The second is the book, Instructional media, by Briggs, Campeau, Gagné, and May (1967) which describes a procedure for the design of multi-media instruction and is rich in illustrative material. The third source is the series of reports from Project ABLE (Morrison, 1965; Morrison & Lecznar, 1966 (a), 1966 (b))in which the Quincy Public Schools and the American

Institutes for Research are developing a full curriculum for a new vocational-technical school using many of the principles, concepts and procedures discussed today.

We will divide the discussion into two parts. The first part will be concerned with the analysis of objectives for information essential to curriculum design and the second part will treat the problem of using that information to design curriculum packages.

Analysis of objectives

In order to design an effective package of curriculum materials, one which will maximize the probability that students will achieve the objective, we must develop two kinds of information by analyzing the objective. First, we must identify the capabilities which the student must bring to the task of learning the objective and any order or sequence in which these prerequisite capabilities must be learned. Thus, if it is necessary for the student to learn B, C, and D before it is possible for him to learn the objective A, we must identify this sequence requirement and identify B, C, and D. Second, for each thing to be learned with our curriculum materials, we must identify the essential conditions for its learning. These conditions vary, depending upon what kind of capability is to be learned and upon the conditions of performance, so we need first to identify these characteristics in order to specify the learning conditions to be established by our curriculum.

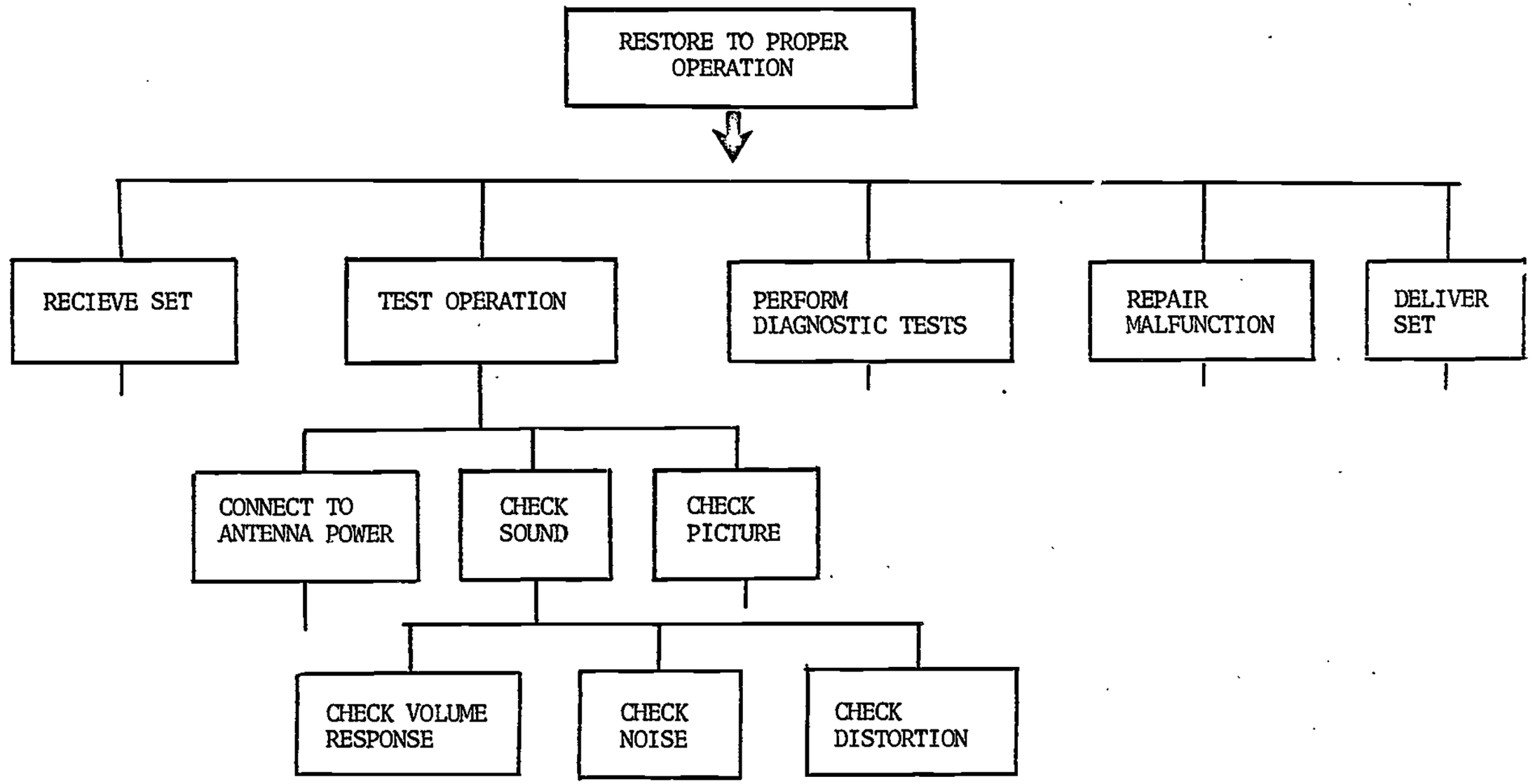
Let's examine each of these analytic tasks in some more detail.

Defining the learning structure. The objectives stated for a course, or for a sizeable learning unit, especially in vocational education, often are complex in the sense that they require the integration of several component capabilities. Thus, several previously learned capabilities are organized and applied in concert to accomplish a new kind of performance.

In some cases, the objective performance demonstrates the major component capabilities as observable steps or parts of the performance. For example, as shown in Figure 1, when properly specified conditions and criteria are added, an objective in a course for electronics technicians might be, "Restores malfunctioning television sets to proper operation." In order to demonstrate this objective, the student must do several things, including test the set's operation, perform a sequence of diagnostic tests, remove a part, install a new part, etc. Each of these is something of which the student must be capable before he can learn the objective which requires that he apply these capabilities in accordance with effective problem solving procedures and principles.

Some objectives, especially those in the cognitive domain, are not so easily analyzed into observable parts, but do, nonetheless, require integration of previously acquired capabilities. Computation and communication objectives are examples. Skilled performance often is not step-by-step, yet each demands prior learning and integration of concepts, principles, even response chains.

Regardless of the objective, the subordinate, prerequisite capabilities can be identified by the question, "What previously learned capabilities must be assumed if the student is to learn this (terminal) capability under a single set of learning conditions?" The answer to this question is a set of capabilities prerequisite to achievement of the terminal objective. Students must learn these things before they can learn the terminal performance. The terminal objective and its prerequisites provide the beginning of a learning structure. The same analytic procedure applied to the newly-defined objectives will yield another set of prerequisite capabilities and another level in the structure. The procedure can be repeated as each new set of prerequisites is identified until a level is reached at which all of the


RESTORE TO PROPER OPERATION
RECIEVE SET
TEST OPERATION
PERFORM DIAGNOSTIC TESTS
REPAIR MALFUNCTION
DELIVER SET
CONNECT TO ANTENNA POWER
CHECK SOUND
CHECK PICTURE
CHECK VOLUME RESPONSE
CHECK NOISE
CHECK DISTORTION

capabilities are within the repertoires of beginning students. At this point, a structure has been defined in which the sequential relations necessary for learning the terminal objective have been identified and this is the result we need. The basic requirement for an effective instructional sequence is that it preserve the order of learning tasks implied by this structure. Please note, however, that such structures specify only the sequential relations which must be maintained. They do not specify all sequences, so the curriculum developer and the teacher still have many options so long as they do not violate the essential sequences defined by the structure.

Identifying the learning conditions. Having identified all of the things which the student must learn (or have already in his repertoire) in order to learn the objective, our next step is to identify the conditions which must be established for efficient learning of each of the things in the structure. To do this, we first must identify the type of learning required in each instance since each type of learning requires its own set of conditions. Gagné (1965) identifies the following eight types.

Signal learning is learning to give an existing response, usually reflexive, to a stimulus which is not the natural or unconditioned stimulus. An example is blinking an eye when a buzzer sounds rather than when the eye is hit by a puff of air. Essential conditions for learning are the existence of a natural reflex, an adequate stimulus, and repeated, contiguous presentation of the new and unconditioned stimulus.

Stimulus-Response learning is learning to give a relatively precise, skilled response to a stimulus thus forming an integral connection which is instrumental in satisfying some motive. An example is learning to

pronounce an unfamiliar foreign word. Pure examples of learning a single stimulus-response connection are rare in adults. The essential learning conditions are that the terminating act or response is promptly reinforced, and that the stimulus situation is presented repeatedly to facilitate stimulus selection and response shaping.

Chaining is connecting a set of individual, motor, stimulus-response connections in a sequence. An example is unlocking a door with a key or fitting a bit into a chuck. The essential learning conditions are that the learner perform previously learned links in the proper order (progressive parts and prompting procedures used to assist learning), that responses are contiguous, that repetition (practice) is provided to get smoothing of performance, and that prompt reinforcement is given.

Verbal association is chaining of verbal connections. Examples are naming objects and memorizing a poem or a shop procedure. The essential learning conditions are that the connections to be chained, and the connections mediating between each verbal unit and the next, have been learned, that the verbal units are presented in proper sequence, that the learner actively makes the responses in sequence, that cues or prompts are given to guide the sequence of responses, and that correct performance is confirmed.

Multiple discrimination is making different responses to different members of a collection presented together. Examples are using one key from a set to open the garage door, using a second key to open the front, etc., or selecting proper bits from a set for several cutting jobs. The essential learning conditions are that all chains for members of the collection have been learned previously, that all stimuli of the collection first are presented one-by-one with prompting to reinstate the chain for each, that the procedure is repeated with presentation of two or more (and finally all) of the stimuli present to provide contrast practice, and that correct responses be confirmed.

Concept learning is learning to make a single response to a collection as a class which then extends beyond the particular members of the class originally present. An example is to respond to a set of keys as "lock openers," or to a set of bits as "borers," and to identify this function for unfamiliar objects when told they are keys or bits. The essential learning conditions are that the chains to stimuli representative of the class already have been learned, that specific stimulus objects are presented simultaneously, that instructions are used to reinstate all chains, that the learner identifies additional instances of the class using stimuli to which specific verbal chains have not been learned previously, and that correct responses are promptly reinforced.

Principles are chains of concepts or relations between concepts. Examples are such rules as F = ma, "the speed of boring depends on the pressure applied," and "birds fly south in the winter." Their learning requires that the concepts involved have been learned already, that the learner be informed what performance will be expected when learning is complete, that recall of the component concepts is evoked, that cues or prompts are provided for the principle as a whole, and that the student is asked to demonstrate a concrete example of the principle and to make a verbal statement of it. It also is important that recall of component concepts occur close in time to the cues and prompts and that demonstration of the principle be reinforced.

Problem solving is done by using previously learned principles, but also is learning of a higher-order principle. An example of problem solving is any troubleshooting task. The essential conditions for learning a higher-order principle are that the relevant, component principles already have been learned, that these principles are recalled at about the same time,

with prompting if necessary, and that instructions or other prompts are used to guide the learner's thinking.

You should notice several things about these eight types of learning. The most important thing to notice is that they form a learning sequence. That is, learning a:

1. higher-order principle requires learning conditions for a principle plus prerequisite learning of principles or concepts;
2. principle requires learning conditions for a principle plus prerequisite learning of concepts;
3. concept requires learning conditions for a concept plus prerequisite learning of multiple discriminations;
4. multiple discrimination requires learning conditions for multiple discrimination plus prerequisite learning of verbal or motor chains; and
5. chain requires learning conditions for a chain plus prerequisite learning of Ss$\longrightarrow$R connections.

Thus, as you identify the type of learning required for each item in your learning structure, you can check the sequences shown in the structure for errors. Also, you may ask of each item whether you have included the necessary kinds of prerequisite learning.

A second thing to notice is that each type, as required by the definition of learning, is inferred from some kind of observable behavior and that each requires the learner to do something observable in the process of learning.

Thirdly, you should notice that while signal and stimulus-response types of learning rarely occur in school instruction, all of the others are very common. Chaining is particularly important in those parts of

vocational education which involve substantial manipulation of objects; for example, machine operation, use of test equipment, vehicle operation.

Finally, you may have noticed that the eight types of learning can be grouped into four pairs. Thus, signal and S - R learning require learning one response to one stimulus. Chaining and verbal association require learning sequences of S - R connections. Multiple discrimination and concept learning require learning to respond to many stimuli. Principle learning and problem solving require learning of rules relating concepts and principles.

The analysis of objectives is a demanding, but extremely important, part of curriculum development. As you can see from this brief discussion, it requires more than casual examination of the learner's task and more than cursory knowledge about the psychology of learning. Some people have found it very useful to have a psychologist assist in this task, working with a subject-matter specialist.

Designing the learning program

Having identified what must be learned (objective and its prerequisites), the order in which learning must proceed (learning structure), and the conditions which must be established for learning each item in the structure, there remains the task of inventing a particular instructional package for the objective. This package is devised in accordance with an instructional strategy to produce a sequence of instructional events through appropriate media.

Instructional strategy. There are a variety of decisions to be made before specifying a particular instructional package. Starting with an objective and its supporting learning structure, a decision is needed concerning the need for instruction on each item in the structure. When

a structure is well-developed, it often is the case that most students can be expected to have some of the capabilities already learned, especially those at the bottom of the structure where the simpler and more general capabilities are located. Although care must be exercised in the process, some items may be excluded from curriculum development. Note, however, that such exclusions also require a decision about the kinds of students for which the curriculum will be designed. A statement of the capabilities assumed by the curriculum is an important piece of information for those who use it as well as for those who develop it.

A second choice to be made is the sequence for learning the items in the structure. Partly, this is determined by the sequence relations in the structure, but you will remember that only the essential sequences are defined. A statement defining the essential sequences, the sequence options, and any desirable sequences other than those which are essential should be prepared. Thus, without violating the requirements of the structure, an instructional sequence can sometimes group units requiring the same type of learning, add units or repeat them to permit accommodation of individual students' needs or interests, to provide periodic practice or reinstatement of things previously learned, or to enhance generalization and transfer. The person who uses the curriculum should know what sequence options are available. The curriculum developer also needs to know what optional packages to prepare.

Last among these decisions affecting the entire learning structure for a major objective is the identification of any real limitations on media choices and activities. If there really is an important limit on the cost of a package, to the availability of certain kinds of media (say video or shop equipment), to the kinds of activities which are possible in the schools

which the curriculum is intended, these should be identified and taken into account in development.

With respect to each unit in the structure, a preliminary decision is needed as to the mode of instruction for which the package is to be designed. Is it to be for self-instruction (individual study) or for group instruction, recitation class, lecture, homework? This decision may be altered later, but it is very important for decisions concerning media, especially. Finally, methods decisions are needed for some types of learning. Thus, for chaining, either the progressive parts or the prompting method is acceptable, but one must be selected.

Instructional events. With general strategy decisions made, detailed design of the instructional situation for each unit in the learning structure can begin. This should result in a list of the instructional events in sequence together with the media options for each. By "instructional event" we mean an environmental event performing a function necessary for learning. Thus, "inform learner about performance required," "stimulate recall," "confirm correct response," "present collection of items respresentative of class," are examples of instructional events. For each such event, the media entries specify the physical means for the event. Thus, "Teacher says . . .," "Teacher asks children to hold two dowels of different length side by side and say which is smaller," "Movie of several presses is shown," are examples of the kind of entries needed in the media column.

The experience and ingenuity of the educator-developer is most important here. There is no way to eliminate the need for creative and imaginative work in devising a series of instructional events and using media effectively. However, in addition to the essential learning conditions specified earlier for each type of learning, there are some principles to guide the work and it may be useful to identify them. Let us consider first the functions,

identified by Gagné (1965), which must be performed by something in each learning situation. These are the functions for which the developer must make some provision for all but the simplest learning types.

1. Presenting the stimulus.

No matter what is to be learned, a stimulus is required. Usually, the stimulus must appear outside the learner, but within the instructional situation. The design of the instructional unit must provide for presentation of a stimulus appropriate for the type of learning expected. Thus, for example, if a concept is to be learned, a suitable variety of objects or events representing the class must be displayed. Appropriate stimuli can be presented in many different ways through various media; the design task requires that at least one way be provided.

2. Directing attention and other activities.

The environment must direct the learner's attention to certain stimuli or to certain aspects of stimulus objects and events. It also may be necessary to direct the learner to perform other activities such as recalling, estimating, listing, comparing, etc., which are not themselves learning. Such actions simply create proper conditions for learning. Written or spoken instructions are common means for directing the learner to these activities, though other techniques sometimes are preferable.

3. Providing a model for terminal performance.

The learner must be informed as to the performance capability he is to acquire. This function of the instructional environment is an important factor in motivation. Knowledge of the goal enables the learner to direct his activities toward a specific objective, to monitor his progress and identify specific deficiencies, and to recognize his achievement of the goal. The appropriate model for an instructional unit is determined by the kind of learning required. Probably, the two most common ways to

provide a model are through verbal description and through demonstration of competent performance.

4. Furnishing external prompts.

In some instances, temporary cues may be needed to assist in learning. As learning progresses, these extra cues are dropped from the instructional situation. Such prompts take many forms, but always serve the function of facilitating the establishment of connections. The prompting cue for a sequence of responses or events might be a listing in sequence from top to bottom on a page. The cue for a concept might be provided by temporarily exaggerating or otherwise marking the defining attributes of examples of the class. Whatever prompts are needed, the design of the instructional situation must provide for them.

5. Guiding the direction of thinking.

When principles are being learned, and particularly when learning takes the form of problem solving, instructions may function to guide the direction of thinking. This kind of guidance is presumed to increase learning efficiency by reducing the occurrence of irrelevant hypotheses. It may be provided by verbal hints, suggestions, and questions, or even by visual and auditory conditions.

6. Inducing transfer of knowledge.

Education and learning usually are intended to accomplish more than simply to produce a specific performance. Normally, it is expected that the capabilities acquired will transfer to other situations and enable the learner to do things which were not directly learned, but which are similar to those that were learned. Instruction may be arranged to facilitate the transfer of concepts and principles to novel situations. By providing for practice or application of the capability in a variety of situations, the

base for the capability may be increased and the probability that it will transfer to novel situations also may be increased.

7. Assessing learning attainments.

The learner's environment also functions to assess the extent to which he has achieved the learning objective. Frequently, it is possible for the student to make an assessment, but for an objective demonstration of his learning achievement, it is necessary that he be placed in representative problem situations which require exercise of the learned capability. The important concern here is that the test situations accurately represent the stated learning objective.

8. Providing feedback.

The instructional situation must provide the learner with prompt information about the correctness of his responses during learning and in assessment of learning achievement. The effective means for providing this feedback are various in any situation, but the critical requirements for effectiveness are clarity and promptness.

These eight functions, together with the special conditions for each type of learning, are the external conditions which bring about the desired changes in a learner who has the prerequisite capabilities.

Media choices. The media through which the aforementioned functions are performed, instructional events are established, and stimulation to the learner is provided are of many varieties. These include the teacher, objects and devices of many kinds, printed material, pictures, movies, combinations and variations of these, and numerous other types. Since media characteristics, development and use is an area for which most of you have special competence, I will not presume to discuss media technology with you. But there are some observations which should be made in the context of the materials development procedure under discussion.

First, we must note that the major conclusion available from the large mass of media research to date is that no medium is best for all learning situations and each medium has an appropriate application. (Briggs et al., 1967). Oral communication by the teacher seems to be the best general-purpose medium of the lot for accomplishing the instructional functions cited earlier; it is seriously defective only in presenting the stimulus and objects, or facsimiles of them, are necessary for that function. But oral communication is better for some functions than others, and other media are better than oral communication for some functions. The point is that media choices must be made for each learning situation by careful examination of the instructional functions to be performed, and of such characteristics of the stimuli in the eventual performance environment as the sensory mode (visual, auditory, kinesthetic, tactual, gustatory), form (e.g. printed language, spoken word, real object), size, intensity, duration, and shape. Probably, several kinds of media will be needed in learning complex objectives, but it also is likely that media alternatives of apparently equal effectiveness will be available for many instructional events. The existence of some alternatives makes it possible to package curriculum in practical form.

Thus, when a sequence of instructional events has been listed for each unit in the structure for learning the objective, together with the media description for each event, it is important to inspect the resulting schedules collectively and make the final plan. This plan probably will require that some compromises be made in the selection of media for instruction so as to achieve the best over-all trade-off with respect to effective stimulus display, convenience in changing from one medium to another, and economy in terms of the size of the unit to which a given medium is applied.

Summary

Our discussion today has attempted to review some of the major considerations in developing curriculum materials to enhance students' achievement of behavioral objectives. We have omitted many important topics and reluctantly limited the rigor of the treatment accorded topics we did include so that some compromise could be reached between thoroughness and comprehensiveness.

We attempted to establish the idea that instruction has learning as its purpose, that learning is a change in the capabilities of the student inferred from changes in his performance, that learning takes place when there is interaction between the student and his environment, that particular conditions of the student and the environment and the events of their interaction are necessary for each of several kinds of learning, and that the task of the curriculum materials designer is to establish and manipulate the learner's environment so that efficient learning of each objective occurs.

If you can accept that much and act on it, then I can rest happy in the conviction that you will be using your strategic position to strengthen vocational education significantly for thousands of young people who need the best from us all.

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Looking Ahead In Instructional Materials Development

Dr. Philip R. Teske

Mr. Chairman and Instructional Materials Specialists, I am pleased to have this opportunity to meet with such a distinquished group of vocational educators, and to share with you some thoughts on current and future developments in the area of curricula and instructional materials.

Before proceeding to my assignment for today, I want to take this opportunity to invite each of you to visit our Division exhibit on the main floor of the War Memorial Auditorium. Several of the instructional materials and other activities I shall refer to in my presentation are on display in our exhibit.

I also want to take this opportunity to commend the group on the establishment of the Vocational Instructional Materials Section within the A.V.A. organization. Individuals involved in the preparation, production, field-testing and adoption of instructional materials need to become better acquainted and to excharge information leading to more relevant, quality, efficient vocational education. VIM should and will provide that opportunity.

I do not possess a crystal ball into which I can peer and predict with acceptable probability of success the future in the development of curricula and instructional materials, including training aids, devices and equipment. It is said history gives us clues to the future. Today, I want to share with you some of the U.S.O.E.-supported research and development activities recently completed or still underway which, as history, will perhaps provide clues to the future in instructional materials development.

Now then, when I think of instructional materials, I think of instructional systems - systems which, for purposes of our dicussion here, consists of four sub-systems: (1) the specification of the desired end-products of the total system; (2) the curriculum, courses of study, units of instruction, etc. and the companion instructor handbooks and student study materials; (3) the training aids, devices and equipment - the hardware and software- that are intended to increase the effectiveness and efficiency of the teaching-learning processes, and (4) the student evaluation/performance procedures and/or devices necessary to assess whether or not the specified end-product has, in fact, been produced.

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Specification of the Desired End-Product of the System. The current literature contains many references to behavioral objectives, performance objectives, desired student outcomes, instructional objectives, etc. The key point here is that we specify as precisely as possible the desired end-products of the system. These specifications should be spelled out so that we can assess whether or not the specifications have been met. This is the "quality-control" aspect of the system. The work of Popham, Tuckman, Morrison and Crawford illustrate some of the work underway in specifying end-products of the system. Dr. Bruce Tuckman at Rutgers is developing a schema for classifying educational objectives in vocational education toward the future development of a concept-oriented curriculum. Dr. James Popham at UCLA is developing a bank or pool of behavioral objectives, organized by discipline and grade level, from which schools and teachers may order sets of objectives for use in guiding their curriculum improvement efforts. Dr. Ed Morrison at the Ohio State Leadership Development Center is developing performance goals or objectives for a new Office and Business Education instructional system. Dr. Lucy Crawford, while at VPI, developed a set of performance objectives in the distributive education area.

The concern being given to the specification of the desired end-products is a major breakthrough in improving education. The Armed Forces have used such quality control specifications in their training programs for nearly twenty years. I personally am pleased to see this concept being applied in our civilian educational institutions.

Curriculum Guides, Courses of Study and Related Instructor and Student Materials.

Vocational educators, and instructional materials specialists in particular, are demonstrating exceptional leadership in developing viable curricula, instructor handbooks and student study materials. I wonder how many of you are really aware of the contributions you are making. Let me cite a few projects that are making a real impact on vocational education and on general education.

Drs. Lux and Ray at the Ohio State University are developing a two-year articulated program of study for industrial arts in the junior high school. At the present time the "construction" and "manufacturing" portions are undergoing field testing and evaluation.

Drs. Flug and Face at Stout State University are working on an "American Industries" curriculum designed to provide a transition between general and vocational education. The field testing and evaluation of the curriculum guides and materials developed in this project is nearing completion.

The experimental junior high school course in occupational opportunities and labor market processes developed by Drs. Bob Darcy and Phil Powell at the Ohio University, Athens has been a significant contribution to vocational education. Student study materials and teacher guides are available for the 75 unit, one semester course. During 1968-69, the course was adapted and offered fall and spring semester to over 4000 ninth grade students in 13 schools via the Arkansas ETV network. At the present time approximately 5000 students in 50 schools in 35 school systems in Arkansas are enrolled in the course via the ETV network. Schools in at least three other states are offering the course this year.

Dr. David McClay, Dr. Richard Stinson and others of the Pennsylvania State University Agricultural Education Department are developing an instructional program and materials in the vocational ornamental horticulture area. Approximately 1300 copies of the teacher's manuals and over 5000 copies of the student manuals in retail flower shop operations, turfgrass maintenance and establishment, landscape design, and landscape maintenance and establishment have already been distributed, including 80 copies of the Retail Flower Shop Operations student text ordered by a school in London, England.

Personnel of the five state departments of education and 14 local schools in the Western States Small Schools Project are well-along in the development of an integrated, career-development curriculum for use in small high schools in rural areas. The curriculum is being designed to be relevant for the student who remains in the area and the student who migrates out of the rural environment.

Ed Henderson, ÂÂÂÊ/ÝÂ ât the University of Georgia, tells me over 20,000 copies of the recently developed Small Gas Engines volumes have already been purchased by school systems across the Nation.

A great deal of effort is underway in developing curricula and instructional materials for use at the post-high school technician training level. Again, let me cite a few examples. The recently completed two-year electro-mechanical technology curriculum developed by the Ward Technical Institute is now in use in 15 junior colleges, community colleges and technical institutes.

The Portland Cement Association has completed the preliminary design of a two-year post-high school curriculum to train persons for technician-level openings in the cement and concrete industries. The curriculum and allied materials are now being field tested in 6 institutions across the Nation.

Mel Barlow and his staff at UCLA are making excellent progress in developing curricula and instructional materials in the Allied Health Occupations area.

Approximately 20,000 copies of the "Guide For Planning Health Occupations Programs" developed by the N. Health Council and AAJC have been distributed across the Nation. The "feedback" we are getting suggests this Program Planning Guide is most helpful to institutions planning and/or upgrading such programs.

U. S. Office of Education supported curriculum development efforts are underway in the Bio-Medical Equipment, Nuclear-Medical, Nuclear-Medical and other newer areas.

May I also note the Commercial Fisheries project underway at the University of Rhode Island to train captains, first mates and engineers for the commercial fishing fleet. Here is an "old occupations" area in which we are establishing and up-grading a formal training program at the technician level.

Training Aids, Devices and Equipment Subsystems

As I noted earlier, we must have the hardware and software which will increase the quality and efficiency of the teaching-learning processes.

Warren Gibbons and Paul Lahner at SUNY, Buffalo are working in the career development area. An expected end-product of this project is a computerized game and associated curriculum units on vocational decision-making by high school students. Other "gaming technique" activities are underway.

The General Programmed Teaching Corp., at Palo Alto, California has prepared a programmed course for group instruction of secondary teachers and administrators in the various techniques of instructional technology. The programmed workshop of 18-20 hours has student workbooks, film strips, audio-tapes, unit tests and a monitor's manual.

The Aerospace Education Foundation conducted an evaluation of three USAF instructional systems for use in civilian institutions. Materials from the standard USAF Aviation Mechanics, electronics technology, and medical technology training programs were tested in 5 schools in Utah. The preliminary data indicates more than 90% of these unmodified USAF materials are highly effective when used in civilian schools.

Drs. Brandon and Hitzel at the Pennsylvania State University are continuing their investigations on computer-assisted instruction in technical education. To date, 78 course segments in technical mathematics, communications skills and engineering science have been developed. More than 1000 slides are involved in these segments.

Swanson and Persons at the University of Minnesota are continuing their studies to refine and improve farm record keeping and analysis in which extensive use is made of the computer's capabilities. In recent correspondence, I was advised their system, still under test, has already being adopted in four other states.

At the U.S. Naval Academy, we are testing out individualized multi-media instructional models in the areas of leadership development, freshman economics and freshman science. The preliminary data suggests the three models are both effective and efficient.

Student Evaluation

Some work is being done in the development of standardized tests in vocational-technical education. I refer, for example, to the work of Dr. Thomas Baldwin at the University of Illinois who has developed achievement tests in 7 technical areas such as automotive mechanics, electrical repairs, Radio and TV repairs, etc.

From the above, I trust you realize a great deal of effort is underway in the development and improvement of instructional materials. I encourage you to pursue your work in this vital area of vocational education. Thank you for inviting me to appear on your program.

VT 010 448
Norton, Robert E., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 8-9, 1969).

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Speeches presented in the research and evaluation department of the 63rd Annual Vocational Convention include "Improving Vocational Education Evaluation," by Robert E. Norton. Norton addresses the role of evaluation in the decision making process, scope and objectives of vocational education and their relationship to evaluation, basic data requirements for effective evaluation, appropriate techniques for obtaining the data needed, procedures for organizing, interpreting, and disseminating evaluative information, and administrative procedures effective in implementing a viable evaluation program. "Summary of Research on the Economics of Vocational-Technical Education," by J. Robert Warmbrod, addresses the economics of education benefits and costs of vocational education, measuring the benefits of vocational education, determining the costs of vocational education, reports of research, and some conclusions. (CH)

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IMPROVING VOCATIONAL EDUCATION EVALUATION

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Both the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 provide for, and in fact, require that vocational education programs be evaluated. The Declaration of Purpose states in part that funds are authorized to ..."improve existing programs of vocational education ... and that persons of all ages ..."will have ready access to vocational training or retraining which is of high quality"...[13, 14]

Before existing programs can be "improved" and before access to programs of "high quality" can be insured, adequate systems and techniques of evaluation must be developed and put into operation. The use of quick and often highly subjective devices for appraising the quantity and quality of vocational programs will not suffice. Educators are recognizing the importance and complexity of the evaluation process but have not yet taken the necessary steps to fully develop and operationalize effective evaluation programs.

Stufflebeam appropriately summarized the status of evaluation about three years ago when he said, "This measurement of efficacy, or evaluation, is an infant on the educational scene. It lacks an established body of knowledge appropriate to education, sufficient personnel with the necessary competencies and experience, and the techniques and skills to satisfy the legal requirements or needs of the Congress and education."[16]

Last year in a paper on the evaluation of occupational education programs Moss listed three basic assumptions as justification for his paper:

Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 9, 1969.

"Program evaluation is essential to systematic improvement in educational efficiency and effectiveness; an intensification of evaluation activity is highly desirable; much of what little has been done to date in the name of program evaluation is of questionable usefulness."[11]

It is certainly true that most evaluative efforts have failed to provide the valid and reliable data needed to support sound educational decision-making. Reports often contain only impressionistic information and rely heavily on subjective determinations. Past evaluations have focused almost entirely on the educational process -- curricular organization, staff activities and qualifications, and physical facilities while ignoring program outcomes. Evaluations have too often been an after thought, partial and sporadic, rather than planned, thorough, and continuous.

One way in which the United States Office of Education has sought to improve the status of evaluation has been through the sponsorship of short-term training institutes. In addition to developing leadership competencies needed in evaluation, another purpose of these institutes has been to draw upon the talents of the consultants and participants in order to help develop improved strategies and procedures of evaluation.

When requested to present this paper, it was suggested the paper should reflect the highlights of the National Institute on Improving Vocational Education Evaluation which was held last August at the University of Arkansas. In keeping with that suggestion, a major part of this paper will be concerned with presenting viewpoints on which there appeared to be a general consensus of agreement among the participants. Attention will also be given to points and issues on which there seemed to be little agreement among either the consultants or the participants. Finally, some suggestions on how evaluation can be improved will be offered.

One of the major purposes of the institute was to involve the nearly 100 carefully selected participants in a thorough review and synthesis of the papers presented and the reference materials made available. This review and discussion of the various techniques and procedures available was intended to help each participant obtain additional knowledges and skills needed for improving vocational education evaluation. Secondly, however, and equally as important, the small groups were assigned the task of reaching a consensus, where possible, as to the best strategies and techniques of program evaluation available.

These efforts were summarized and presented in each group's final report. Their summaries were structured around the following areas of concern which are a reflection of the institute's primary objectives:

1. The role of evaluation in sound educational decision-making
2. The scope and objectives of vocational education and their relationship to evaluation
3. Basic data requirements for effective evaluation
4. Appropriate techniques for obtaining the data needed
5. Procedures for organizing, interpreting, and disseminating evaluative information and
6. Administrative procedures effective in developing and implementing a viable evaluation program.

While the institute presenters and participants contributed much to the content of this paper, and my appreciation is extended to them, at the same time it should be made clear that they bear no responsibility for the conclusions drawn in this report.

Evaluation has many meanings and connotations to most people, and vocational educators are no exception. Very commonly evaluation is used to refer to the assessment of individuals rather than programs. To avoid misunderstanding the author wishes to make it clear at the outset that in this

paper evaluation is used to refer only to program evaluation. It is also viewed as a process which seeks program improvement and modification rather than program condemnation.

Further clarification may be obtained by offering the following formal definition of program evaluation:

> Program evaluation is the continuous process of collecting valid and reliable data for the purpose of comparing program outcomes with program objectives. The process is conducted to provide useful information for making sound educational decisions. Educational decisions refer to making a choice among alternatives for action in response to educational needs and limited resources.

Recognizing that sound evaluation techniques have played a very minor role in the educational decision-making process heretofore, let us turn now to a consideration of what the role of evaluation in educational decision-making ought to be.

Role of Evaluation in the Decision-Making Process

There is strong agreement that sound decisions cannot be made without adequate evaluation. Perhaps of all the many and varied issues which can be raised concerning evaluation, the easiest one on which to get unanimous agreement is that evaluation constitutes an essential input to the decision-making process.

For too long subjective opinion, tradition, authority, and personal experiences have played a major role in most educational decision-making. It is also apparent at this time that a large part of the rather meager evaluation effort has been directed primarily at evaluating processes rather than the product. What <u>little</u> product evaluation has been done, and the emphasis here is certainly on little, has in most cases involved a mere

"head counting" procedure to determine the number of former students who are employed in an occupation directly related to the vocational program in which they had enrolled.

With few notable exceptions, cost-effectiveness as a method of evaluating vocational and technical education programs has been either over looked or given up quickly as being too difficult, and yet the fact remains, that every time an educational administrator decides to spend more on vocational education rather than general education, a type of cost-benefit decision, though highly subjective it may be, has been made.

The role of evaluation should be viewed as a continuous process of obtaining objective data essential to effective and efficient decision-making and program planning, and must not be viewed as an end product in and of itself. In order for an evaluation to be effective and accepted, it must concur with the obligation for making a thorough and valid assessment. In order to be efficient, the evaluation effort must be a coordinated and articulated effort which avoids unnecessary duplication and yet provides the factual evidence needed for decision-making at the local, state, and national level.

Another way to view the role of evaluation in decision-making is that it provides information which helps the program manager do a better job of allocating the limited resources available to him. He uses the information to help apply the resources so as to maximize the attainment of program objectives.

As the competition for funds becomes keener and the accountability for these funds more demanding, program evaluation, although admittedly a difficult and largely underdeveloped activity at this time, will be viewed, not as desirable or essential, but as an absolutely mandatory ingredient to the

decision-making process at every level. Continuation, expansion and redirection of vocational programs in the future will have to be justified by program managers on the basis of valid and objective data.

Congress has clearly indicated the role it wants evaluation to play. Vocational education is to develop an evaluation system that will ensure that state and federal funds are being spent in the most effective and efficient manner possible. The law requires the appointment of a National Advisory Council and State Advisory Councils whose major role will be to evaluate vocational education programs under their jurisdiction and to prepare annual reports of their findings and recommendations. The advisory councils are only two examples of the many direct and indirect references to the importance of evaluation, which are interspersed throughout the 1968 Amendments.

Scope and Objectives of Vocational Education and Their Relationship to Evaluation

The Vocational Education Amendments of 1968 also contain a congressional mandate for vocational education to redirect, expand, and broaden its scope and objectives. National objectives are stated in terms of target groups and target areas to be served and special priorities to be emphasized. The scope of the vocational education enterprise embraces a variety of programs, populations, and services. These programs and services are to be based on the needs, interests, and abilities of people as individuals, instead of merely providing for the training needs of certain occupational categories. The programs are to provide appropriate preparation for persons of all ages which will enable them to enter and make satisfactory advances in employment.

The relationship of program objectives to evaluation has already been suggested by our definition of program evaluation. Specifically, stated program objectives, which are really the anticipated or expected outcomes,

provide us with a basis for comparison with the product or actual outcomes.

Another point on which unanimous agreement is easy to obtain is on the general inadequacy of current program objectives. Objectives at the state and local level, if available at all, are usually rather general and vaguely stated. They usually avoid attending to the specifics of individual programs and are not stated in measurable terms. Under these conditions, programs and services are not easily subjected to either valid or objective assessment.

The importance of clearly specified objectives based on national, state, and local goals is widely accepted. Much work needs to be done in this area, however, as most educators are neither trained or experienced in writing measurable objectives. The writer personally experienced difficulty in getting vocational teachers who were participating in a try-out of the Michigan developed local evaluation system to prepare anything close to measurable objectives.[9] In-service training programs are going to be needed before most vocational teachers or state staff personnel will be capable of developing explicitly stated objectives.

The work of Starr and associates at the Ohio Center on the development of state level program objectives and goal statements is especially noteworthy.[15] They have developed and are now testing a set of quantitative statements for each of four broad program objectives. These statements are designed to permit objective measurement of the extent to which: (a) target populations are being served, (b) local schools assure program quality, (c) programs are accessible to needy students, and (d) state agencies use follow-up and other data in their planning. Once a state has assessed its starting position with relation to each goal and objective, it can set realistic targets for improvement and later evaluate their accomplishment objectively.

Work is also underway on the establishment of written behavioral objectives at the local level. Massachusetts, for example, is undertaking the

development of a file of behavioral objectives for each program and the development of a test file for each objective.[10] Some books on writing behavioral objectives have also been published in the last few years. If we are to compare program outcomes with program objectives as our definition of program evaluation calls for, then we must establish such objectives in a measurable format before we are really ready to evaluate.

Basic Data Requirements for Effective Evaluation

We are not ready to consider the basic data requirements for effective evaluation. Anyone who is faced with the task of evaluating a program or programs must eventually answer the question, "What types of data shall be collected?" This is an important question facing every evaluator and yet there seems to be little agreement on what is really needed.

Much of the disagreement centered around whether to emphasize evaluation of the program process or the program product or both. As mentioned earlier, the major emphasis in the past has certainly been on evaluating the process. There are inherent weaknesses involved in utilizing this approach as the major or the only method of evaluation. Moss points out "Program characteristics cannot be used as evaluative criteria, for, by so doing, we assume, rather than prove, that those characteristics are good... Almost none of our cherished "principles" of vocational education practice have been empirically validated."[11] It is generally agreed that having information on the educational process is desirable but that such information per se does not guarantee that the objectives of the program have been obtained.[2]

If we are willing to accept the definition of program evaluation set forth earlier -- that it is the continuous process of collecting valid and

reliable data for the purpose of comparing program outcomes with program objectives -- it would seem logical that the primary criteria by which instructional programs are to be evaluated must be the products or instructional outcomes. As Coster and Morgan recently put it, "The crux of the evaluative problem is the congruence between the actual outcomes of the program and the objectives of the program. The prime concern of the decision maker is the extent to which these two entities are in juxtaposition."[2] Thus, simply put, the basic data requirements for effective evaluation are those data which tell us how well our previously stated objectives are being attained.

Appropriate Techniques for Obtaining the Data Needed

Having suggested a guide for determining the type of data to be collected, let us now consider some of the most appropriate techniques for obtaining data on program outcomes. A wide variety of techniques were recommended by our institute participants. Two of the most promising techniques will be discussed here.

The most widely used and accepted technique is that of the mailed questionnaire or survey form. Although the follow-up questionnaire is being used and widely recommended, it presents problems when attempting to reach certain groups of people. A prime example of a problem situation is getting representative follow-up data on <u>former</u> students. Notice that the group we are concerned with in this case is not just program graduates, but also program dropouts.

Our personal experience in working with five rural schools all of whom conducted follow-up surveys, resulted in not a single dropout completing a follow-up form. If our evaluation effort is to be geared to providing us

with diagnostic information about the strengths and weaknesses of existing programs, so that we, for example, will be able to achieve zero rejects, then we must obtain feedback from all whom the programs are designed to serve and not just its successful graduates.

To obtain feedback from the non-respondent, although more costly, the interview technique on at least a sample basis will probably have to be employed. While the interview technique has its advantages, few if any schools would have the necessary resources for interviewing all former students of selected classes. Where the follow-up procedure is used, consideration should be given to using a combination of the two techniques.

In the Michigan Multi-State Project, Byram and others have developed a guide for constructing a follow-up instrument which appears very promising.[9] Basically, it calls for using identified program objectives as a frame of reference in developing and selecting follow-up questions which will obtain the information needed to help evaluate attainment of each objective.

Although follow-ups focus upon former students, they should not be the only means used for studying program outcomes. Assessment of program outcomes through experiments, employer feedback, attitude and achievement tests, advisory committees, use of consultants, and cost-effectiveness analysis should be considered. The final selection of approaches to be used will depend upon the specific purposes of the evaluation, available time and manpower, cost, and other factors.

For those planning to conduct process evaluations, a large number of instruments are available. To name a few, North Carolina, Pennsylvannia, and New York have all developed instruments containing evaluative criteria which can be used to subjectively judge the characteristics of various vocational programs. The National Study of Secondary School Evaluation has recently finished preparation of the fourth edition of Evaluative Criteria

which is widely used to evaluate local programs by the six regional accrediting associations.

Procedures for Organizing, Interpreting, and Disseminating Evaluative Information

Even though appropriate techniques are used and good evaluative data collected, unless it is organized into an attractive and meaningful format and style, and the report disseminated to the right persons, little useful purpose will result. The report may be organized by strengths and needs, by program objectives, or in some other manner that is logical for those who are making and using it. The key point to remember is that the collection of the best available data is of little value unless the reports provide concise and worthwhile insight into problem areas or reinforce the successful elements of operational programs.

Interpretation of the data into findings or recommendations is another crucial but essential task of evaluation. Whenever possible the data should be analyzed to show existing relationships between student characteristics, program processes, and program outcomes. The interpretation of data must be accurate and the resultant findings documented. Statistical data should be illustrated with charts and graphs and accompanied by a narrative.

Another important step remains, that of disseminating the report, or preferably reports, to all who were involved in the evaluation process and to all who are concerned about the program. The full report should generally be distributed to all of the decision makers and program planners. For wider distribution to other interested individuals and the general public, an abstracted or popularized version similar to the recent National Advisory Council Report is far more desirable and likely to be read. It is especially important to provide feedback to all personnel who assisted in supplying

the original data.

Administrative Procedures Effective in Implementing a Viable Evaluation Program

Each agency, whether local or state-wide in scope will need to develop its own administrative pattern of operation based on variables pertinent to the particular organization. However, several administrative procedures appear important in developing and implementing any effective evaluation program.

There must be consent and a strong commitment to the evaluation effort by the program administrators. This commitment must be reflected in several ways. Sufficient resources with which to do an effective job must be made available. Personnel must be assigned, allotted adequate time, and given the authority and responsibility to carry out the evaluation.

The administration should assist in developing and maintaining a cooperative and positive attitude on the part of everyone involved in the evaluation effort. Perhaps most important is giving the evaluation program status, so that it will be considered a regular and continuing aspect of the educational system. Implementing changes and improvements suggested by the evaluation is one effective way of giving the effort status.

To be effective, evaluation must insure the involvement of those who are to be affected by and responsible for implementing any changes that result from it.

Recapitulation

Before looking at some addititional suggestions for the improvement of evaluation, we now turn to brief recapitulation of some of the points of agreement and points of disagreement regarding evaluation.

There was wide agreement that the purpose of evaluation is to provide

objective data which will enable program leaders to make more rational administrative decisions, and that evaluation must be recognized as a prerequisite to sound program planning and program improvement. There was unanimous agreement on our present lack of sophistication in stating program objectives. These objectives, it was felt, must be specified in terms which will allow for the objective measurement of the degree of their attainment. There was also general agreement that programs at all levels--local, state, and national--need to be evaluated quantitatively and qualitatively in terms of the specific objectives set forth. A final point of agreement was found in the need for new and better "tools" of evaluation and for refinement of the ones presently available.

The primary point of <u>disagreement</u> revolved around whether the evaluation effort should be process oriented or product oriented. Most participants believed that product evaluation is of much greater importance at our present state of development than is process evaluation. Others were inclined toward seeking a more balanced approach, but appeared willing, in a trade-off between what is desirable and what is practical, to give priority to product evaluation. A few seemed to insist that process evaluations were better understood and accepted by educators, and that they therefore offered the more realistic approach at the present time.

Several participants were unable to agree on a definition of evaluation. This is perhaps a reflection of the controversy over whether the process or product approach is most desirable.

A final point of disagreement arose over whether local program evaluations ought to be locally directed and initiated, state directed, or state assisted. The viewpoint expressed on this matter was generally a reflection of the person's position of employment.

Suggestions for Improvement of Evaluation

In concluding, a few general suggestions for improving vocational education evaluations seem in order.

First, it is urgent that state departments and local school systems begin to plan carefully for the collection of data needed to evaluate existing programs and plan new ones. Even though some of the methods and procedures now available may later prove to be ineffective, an evaluation system should be established as soon as possible in every school and state in the nation. Valid and objective data on which to base program changes is needed by the decision makers, and it is needed now.

Secondly, it is equally urgent that persons at all levels seek to improve presently available evaluative techniques as well as to develop new and better ones. Some developmental work has been done and considerable is now underway, but much more research and testing is needed. One of the most promising techniques: cost-benefit analysis needs further development and testing. Cost-benefit analysis currently has great theoretical potential, but unfortunately lacks sufficient operational utility for widespread use.

Third, evaluation efforts need to be coordinated so as to avoid unnecessary duplication. For instance, are the state advisory councils, the state departments of education, and the local schools going to conduct separate follow-ups of the same former students? We would certainly hope not, for the students' sake. Unnecessary duplication of data gathering by the different agencies is both costly and inefficient. To avoid it, close coordination and communication among the agencies involved will be necessary.

Fourth, the implications of the 1968 ammendments for evaluation are many and complex; requiring that we learn and implement these procedures and techniques which will most efficiently aid the decision-making process

for the attainment of local, state, and national objectives. Can we realistically expect present or future vocational educators to become competent in evaluation without any training? There must be training in such areas as study design, development of objectives, development and use of appropriate instruments, and in organizing, interpreting, and disseminating the data collected. Teacher educators will have to prepare a new breed of vocational educator who has competencies in the area of evaluation. Institutes such as the ones held last August and other types of in-service training are also necessary to prepare personnel for the job to be done.

Fifth, and finally, the challenge is up to us! We must evaluate our own programs or others will do it for us. If vocational educators fail to supply data and information about their own programs using appropriate criteria and methodology, then they will have no recourse but to accept not only the data collected by others but also the value judgments reached by them.

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2. Coster, John K. and Robert L. Morgan, "The Role of Evaluation in the Decision-Making Process," Center for Occupational Education.

3. Kaufman, Jacob J., "Cost-Effectiveness Analysis as a Method for the Evaluation of Vocational and Technical Education," The Pennsylvania State University.

4. Moss, Jerome Jr., "State Assisted Evaluation of Local Programs-The Product," University of Minnesota.

5. Mullen, Robert A., "State Directed Evaluation of Local Programs-The Process," Department of Public Instruction, Raleigh, North Carolina.

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estimate that about one-fifth of the growth in total national income in the United States during the past three or four decades can be attributed to the increased education of the labor force (Denison, 1962; Schultz, 1963).

Benefits and Costs of Vocational Education

With these generalizations about the economic value of education, let us take a closer look at the economics of vocational education. As with many public social programs today, vocational-technical education is being subjected to rigorous economic analysis. This analysis necessitates that both costs and benefits of vocational education be identified, then quantified, and when possible, reduced to monetary terms. The assertion by some persons is that vocational education programs, particularly programs in the secondary schools, should be required to meet the test of economic efficiency, and that alternative methods for achieving the objectives of vocational education should be identified. The questions being raised pertain not only to the efficient use of resources allocated to vocational education but also to a consideration of alternative programs to which present and additional funds could be allocated for accomplishing the objectives set forth for vocational education.

Probably the most familiar approach or technique currently being used to measure the benefits and costs of vocational education is cost-benefit analysis. Cost-benefit analysis, first used to assess the costs and probable benefits of natural resource development projects, has as a main concern the optimum allocation of resources. Stated simply, it is an evaluative technique that relates the total value of benefits of

indices are accepted as a measure of effectiveness, . . . extra public funds should be distributed toward vocational-technical education in order to maximize private and public benefits" (Kraft, 1969).

As is often the case with research pertaining to education, research on the economics of vocational-technical education yields conflicting findings and conclusions. With these contrasting views about the economic benefits of vocational education as background, I shall attempt three tasks. Foremost is the task of summarizing research pertaining to the economics of vocational-technical education. That part of the paper will draw from and bring up-to-date the research reported in Review and Synthesis of Research on the Economics of Vocational-Technical Education (Warmbrod, 1968) published in 1968 by the ERIC Clearinghouse for vocational and technical education.

Prior to summarizing the research, however, I want to acquaint you with some of the problems and concepts involved in the study and analysis of the economics of vocational education. Since we must assess the findings and recommendations of research on the economics of vocational education which, up to now, has been conducted primarily by economists, I hope a consideration of some of the problems and issues involved will enable us to evaluate critically data and recommendations. Then, after summarizing the research, my third task is to draw what I consider to be some conclusions warranted by the research and writing on the economics of vocational education.

Economics of Education

Research on the economics of vocational education is one concern within the larger context of the economics of education in general. There are two basic questions underlying the research on the economics of investment in education. The first question is: How much more or how much less should we be investing in education? The second question, which has specific and direct implications for vocational education, is: How much more or how much less should we be investing in specific types of education? So questions such as the following are very relevant: Are expenditures for vocational education worthwhile? What returns can be expected from investment in vocational education? Would an increase or decrease in funds for a particular type of vocational education result in greater benefits?

The research of economists has consistently shown a favorable relationship between an individual's educational attainment and his prospects for employment and subsequent income. In other words, as the number of years of schooling completed increases so does a person's annual income and total lifetime income. Also, it is generally agreed that education yields rates of return on investment both from the point of view of society as a whole and for the individual that are at least as great as the financial returns to investment in corporate enterprise. Education produces a labor force that is more skilled, more adaptable to change, and more likely to develop imaginative ideas, techniques, and products that are critical to expansion, growth, and adaptation to change. So education by contributing to worker productivity, in turn, has positive effects on economic growth (Weisbrod, 1966). Economists

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a program to the total costs of the program. Its application to vocational education requires that benefits as well as costs be expressed in monetary terms. It will be evident shortly that this requirement creates some difficult if not insurmountable problems. All costs and benefits of the program occurring over time are converted to a present value through discounting so that the present value of net benefits can be divided by the present value of costs to yield a benefit-cost ratio. In general terms, then, the decision rule states that when the benefit-cost ratio exceeds one, the corresponding activity is economically superior to an alternative activity with a lower benefit-cost ratio. There are a number of conceptual and practical problems associated with the application of cost-benefit analysis to vocational education which are treated in detail in the reports of research cited later in the paper.

Given the conceptual and practical constraints for the application of cost-benefit analysis to educational programs, economists propose that a more appropriate technique for the objective evaluation of vocational education is cost-effectiveness analysis. In cost-effectiveness analysis, indices of benefits of educational programs are retained in their raw form. The output variables, or benefits, do not need to be economic in nature nor do they have to be expressed in monetary terms. Examples of this type of output variable are trainee's knowledge as measured on a written test, an employer's rating of the trainee, or some measure of the trainee's level of motivation. The outcome of cost-effectiveness analysis is a statement concerning the relationship that a particular program or activity has with the selected output

variables and with the cost of the activity. The statement describing the cost-effectiveness analysis could be in the form of a ratio but more often will take the form of a statement which specifies certain outcomes associated with the costs of the program.

Measuring the Benefits of Vocational Education

In treating education as a form of investment in human capital, economists differentiate between a consumption component and an investment component. By consumption is meant the immediate satisfaction or enjoyment that people obtain from schooling. On the other hand, investment is the use of resources not for consumption or immediate enjoyment but to increase future productivity. For example, it is argued that general education not only contributes to future productivity but makes life more enjoyable, hence general education is a mixture of consumption and investment. Some economists argue that vocational education, by definition, is undertaken to enhance future productivity and not for immediate satisfaction or enjoyment--or "not for fun" as one economist put it--therefore, expenditures for vocational education can be clearly classified as an investment (Rivlin, 1965).

This rationale, according to some economists, makes vocational education very amenable to economic analysis for the return on investment in vocational education is not difficult to measure. In this context, returns to investment in vocational education can be expressed in the form of higher wages to the individual than he would have earned without training. So when data are available on the earnings of similar persons with and without vocational education, the rate of return on investment in vocational education can be calculated. In other words,

the cost-benefit model is appropriate for assessing the economic value of vocational education for benefits as well as costs can be reduced to monetary terms.

But there are others, including vocational educators as well as economists, who argue that there are benefits to vocational education other than directly observable monetary benefits. The monetary value of some of these benefits can be estimated, but it is virtually impossible to place a monetary value on others. Some of these additional benefits include reduced unemployment, the holding in school of students who have little or no interest in academic subjects, reduced vandalism and juvenile delinquency, reduced welfare payments, increased motivation on the part of students for further schooling, and the like. Also not to be overlooked are those benefits of education to persons other than the recipient of the education--the recipient's immediate and future family, his neighbors, his employer and co-workers, and society in general. These benefits are termed external benefits of education (Weisbrod, 1964).

There are other precautions that should be observed when examining research on the economics of vocational education. A very crucial problem has to do with the use of control or comparison groups. The effects of an educational program on output variables cannot be estimated quantitatively and with a great deal of accuracy unless a control group is used in the design of the study. When graduates of vocational programs are compared with graduates of academic programs, it is rather obvious that these two groups of students may possess different socio-demographic characteristics and different values, motivations, and other characteristics that affect labor market performance. Particular notice

of this element should be taken when graduates of vocational programs are compared to graduates of academic and other nonvocational programs. This fact was overlooked or ignored in some of the early studies which compared vocational education graduate's performance in the labor market with the labor market performance of graduates of other secondary school programs. Researchers at UCLA point out that one of the limitations of the cost-benefit studies of vocational education is the comparison of different means--that is, the vocational curriculum versus the nonvocational curriculum--as alternative means to the same end (Reinhart and Blomgren, 1969).

Determining the Costs of Vocational Education

I do not intend to go into detail about the costs which should properly be considered in assessing the economic value of vocational education. It is important to realize, however, that costs to the individual and to the community include earnings foregone by students in addition to capital costs and current costs such as teachers' salaries, instructional materials, and the like. The matter is far from being simple or resolved, however, for there is not agreement among economists conceptually or operationally concerning what constitutes social costs when cost-benefit or cost-effectiveness analysis is applied to vocational education. Those who have made special studies of this matter (Dueker and Altman, 1967) report that available cost data do not readily lend themselves to coherent analysis and that cost data pertaining to vocational education are not kept in a way which make them accessible for rigorous analytic and evaluative purposes. In fact, the researchers to whom I refer concluded that data are not easily obtained for

realistic cost-effectiveness studies of vocational education. This conclusion makes clear another caution that should be observed in assessing cost-benefit and cost-effectivenss analyses of vocational education. That caution is that studies which rely on readily available data indicating cost or benefits, or both, have probably oversimplified the data system required by rigorous economic analysis.

Reports of Research

Now I wish to review briefly the findings of research pertaining to the economics of vocational education. Apparently the cost-benefit study published first was Corazzini's (1966) case study in Worcester, Massachusetts in which an attempt was made to assess the economic benefits of the school system's vocational schools when compared with the community's regular high schools. I quoted the gist of his conclusions earlier, namely, that alternative programs for on-the-job training should be considered.

At about the same time, Taussig (1968) undertook a cost-benefit study of vocational education in New York City. This study, as well as Corazzini's study, compared the labor market performance of vocational school graduates with academic high school graduates. Taussig's findings, quoted earlier also, suggested that returns to investment in vocational education were meager and that evidence in support of vocational education was sadly lacking.

Generally, the findings of these two case studies can be summarized with two statements. First, vocational education, when compared to other high school programs, is relatively expensive; and second, there are not significant differential wage rates in entry jobs for persons

with and without vocational education. There were other pertinent conclusions from these studies also. One conclusion of considerable significance was that there were statistical and conceptual problems in design and analysis and that there were major gaps in the data used (Fein, 1968). The researchers were aware of these conceptual and methodoligical problems, but since the studies were the first relating to the economics of vocational education, the conclusions about the economic value of vocational education received wider dissemination than did conclusions about the methodoligical and conceptual deficiencies of the research.

The report of the Airlie House conference held in April 1967 on new approaches to planning, programing, budgeting, and evaluation in vocational-technical education included the following summary statement about research on the economics of vocational education: "Most studies indicate that vocational education costs about twice as much as other secondary education . . . that the monetary benefits are similar for the major secondary education curricula. If . . . monetary benefits are accepted as a proper performance index, . . . educational resources are being badly allocated. Greater educational benefits in monetary terms could be gained by shifting resources away from vocational education in high schools to other types of education, perhaps toward academic programs or work-study programs using the capital facilities of employers" (Kotz, 1967).

In contrast, let us move to research which resulted in findings and conclusions which conflict rather sharply with the results just cited. The most extensive and widely known work on the economics of vocational education is the research directed by Professor Jacob J.

Kaufman, Institute for Research on Human Resources, The Pennsylvania State University (Kaufman, et. al., 1968; Hu, et. al., 1969). Professor Kaufman has written widely and spoken frequently on cost-benefit and cost-effectiveness analysis of vocational education (Kaufman, 1967a; 1967b; 1968; 1969).

One purpose of Kaufman's research was the comparison, through cost-effectiveness techniques, of vocational and nonvocational education in secondary schools. The labor market performance of graduates of vocational curricula was compared to the labor market performance of non-college attending graduates of nonvocational curricula, particularly the academic curriculum. An important feature of the design of the study was that the influence on labor market performance of socio-demographic variables such as sex, race, intelligence quotient, marital status, and socio-economic status was investigated through regression analysis. The findings indicate that over a six-year period following graduation, given both sets of graduates with the same socio-demographic backgrounds, vocational graduates earned $3,456 more than graduates of the nonvocational curriculum, specifically the academic curriculum. Also during the six-year period, vocational graduates were employed 4.3 months more than graduates of the nonvocational curriculum. Nonvocational-technical graduates earned less than vocational-technical graduates during the first year after graduation; but by the sixth year following graduation, the difference in earnings between curricula was slight. The conclusions of the study were quoted at the beginning of the paper, namely, that vocational-technical education is an economically worthwhile investment for individuals and for society and, the major con-

clusion, that additional public funds should be spent on the vocational-technical curricula rather than the nonvocational-technical curricula in senior high schools.

Also in the study, employment and earnings benefits of dropouts from both the vocational and the nonvocational curricula were measured from the time when they would have graduated. Over the six-year period, dropouts from the vocational curriculum were employed 11.6 months more than dropouts from the nonvocational curriculum. Interviews with employers also indicated that on-the-job training for employees from vocational-technical curricula was an average of 12 to 64 weeks shorter than for other employees and that vocational graduates received a higher wage rate while in training on the job.

Some nonmonetary and noneconomic benefits were also investigated. Citizenship and social participation, measured by voting behavior, and career satisfaction were the noneconomic benefits studied. Generally, the evidence indicated little difference in noneconomic benefits between vocational-technical and other curricula.

Kraft's (1969) recently reported pilot study of the cost-effectiveness analysis of two area vocational-technical schools in Florida, corroborate Kaufman's conclusions. Specifically Kraft concluded that an anslysis of the earnings profiles of area school graduates for the years 1965 through 1968 revealed, first, that the private rate of return on investment in vocational-technical education is astonishingly high; second, that public cost-utility ratios indicate a positive rate of return; third, that vocational-technical education in Florida has a positive rate of return exceeding returns to capital in the rest of the economy;

fourth, if monetary indices are accepted as a measure of effectiveness, extra public funds should be distributed toward vocational-technical education in order to maximize private and public benefits; and fifth, returns appear to be higher in specialized programs than in broad occupational programs.

Other studies support vocational education as a sound investment. A study of the costs and returns from investments in a two-year post-secondary technical education program in North Carolina revealed social and private rates of return varying from 17 per cent to 25 per cent depending on the procedures used for projecting future earnings of technical education graduates. Each technical education graduate in this study was paired with a high school graduate of similar academic ability and geographic background (Carroll and Ihnen, 1967). Investigators studying the costs and returns from investment in rural technical schools in Minnesota found that both private and social rates of return on investment in the technical education programs were above or about equal to rates of return from other forms of investment (Pejovich and Sullivan, 1966). A cost-benefit analysis of post-high school technical education in Oklahoma yielded similar results (Dupree, 1968).

Vocational educators at the University of Minnesota studying the returns to investment in education for farmers found that for each dollar invested by a farmer in a farm business management education program the farmer received a return of $4.20. When community benefits of the farm management education program were investigated, it was found that for each dollar invested in farm business management education the community could expect to receive $9.06 in increased business activity (Persons, Swanson, Kittleson, and Leske, 1968).

Closely related to research on the economics of vocational education in the public schools is a considerable body of research using cost-benefit and cost-effectiveness models to evaluate manpower training and retraining programs. Generally, the studies reveal benefits attributable to manpower training programs sufficiently large over costs to leave little doubt but that the training programs are a sound economic investment. When the social-psychological benefits accruing from an unemployed worker returning to the labor market are considered, the researchers note that there is little doubt but that benefits heavily outweigh the costs of retraining (Mangum, 1967; Somers, 1965).

Some Conclusions

What conclusions can be drawn from the research and writings on the economics of vocational education? I propose the following for your consideration.

Research on the economics of vocational education is necessary if adequate and complete data are to be available for decision-making concerning the allocation of resources to vocational education. Data yielded by cost-benefit and cost-effectiveness analysis will undoubtedly bear heavily on policy decisions about occupational education including the question of what agencies, public schools or otherwise, can conduct occupational education programs most efficiently. By "most efficiently" I do not mean "cheapest;" I mean efficiency in terms of the objectives set out to be accomplished.

Cost-benefit and cost-effectiveness studies of public school programs of vocational education which have been reported to date yield findings which question the economic value of vocational education on

the one hand and label it as a sound investment on the other. It should be noted that most of the studies were case or pilot studies of vocational education in a particular school system. This factor leads to some difficulties in generalizing the results of the findings of research. Nevertheless, the National Advisory Council on Vocational Education (1968) in their assessment of vocational education mandated by the Vocational Education Act of 1963 concluded in the report issued in 1968 that "Studies relating the costs of vocational education to the benefits derived have given it solid support. When controlled for differences in native ability, vocational students profit substantially as compared to others in both employment and earnings."

Although Corazzini's analysis of vocational education in Worcester, Massachusetts, and Taussig's study of vocational schools in New York City led to conclusions questioning the returns to investment in vocational education, all subsequent analyses have clearly labeled vocational education as a sound investment. If cost-benefit and cost-effectiveness studies of manpower training and retraining programs are considered also, the evidence strongly supports occupational education as a sound investment. From a research point of view there is little doubt but that those studies which find vocational education to be a sound investment are, in general, designed to avoid to a greater degree the conceptual and practical problems mentioned earlier that limit the validity of the findings.

The usefulness of cost-benefit analysis as an evaluative technique in vocational education is limited by the requirement that all benefits as well as costs be expressed in monetary terms. Vocational education

contributes to the nonmonetary and external benefits of education as does general education. An assessment of the benefits of vocational education should include outcomes other than monetary. Some benefits of vocational education, like the benefits of education in general, are virtually impossible to quantify, in monetary terms or otherwise. Considering the restrictions of cost-benefit analysis, cost-effectiveness analysis is the preferable model for evaluating the effectiveness of vocational education. We must not be overzealous, however, in applying cost-effectiveness analysis unrealistically. I cite as an example a proposal to apply cost-effectiveness to the assessment of the effectiveness of youth organizations in vocational education in which the investigator made no effort to distinguish between the influence of the vocational curriculum and the influence of youth organization activities on the subsequent performance of students (Hu, 1969).

I propose that vocational education, like general education, also has a consumption component, that is, individuals receive immediate enjoyment and satisfaction from vocational education just as they do from general education. Anyone who does not think that students enroll in vocational courses "for fun"--if I may use the economist's term referred to earlier--as well as to enhance future productivity has not had much contact with students enrolled in vocational courses in secondary schools, or for that matter, with students enrolled in English, mathematics, or history courses. If we take seriously the Advisory Council's admonition that vocational education "is also a teaching technique which may have even more to offer as method than as substance" (Advisory Council on Vocational Education, 1968), the consumption component--the immediate satisfaction or "for fun" component--may be just

as important as the investment component--the component contributing to future productivity.

And finally, vocational educators have a prominent role to play in designing and conducting studies pertaining to the evaluation of vocational education. The vocational educator should apply his expertness to the identification and measurement of benefits of vocational education, both monetary and nonmonetary, that are now overlooked or ignored. Vocational educators and economists can and should work together in designing cost-effectiveness studies of vocational education. Let us not overlook or forget that the chief concern of education, including vocational education, is the nurture and development of individuals. Then the chief concern in evaluating the effectiveness of vocational education is the assessment of change in behavior of individuals and not on measuring the monetary returns the investment yields. The following quote puts it well: "Vocational educators need to look at their teaching more in terms of what it does for the child, and less in terms of how well it meets someone's forecast of the community's industrial needs" (Meade and Feldman, 1966).

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Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 6, 1969).

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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This report includes two speeches presented before the American Vocational Association. One speech by Joseph T. Nerden concerned "Planning for the Evaluation of Vocational Education." He introduced several questions which should be used in evaluating a vocational education program. These were why, what, whom, and how should the evaluation be done? In addition he suggested 5 steps which should be followed by a state director of vocational education in measuring the achievements of a state program. The second presentation by B.E. Childers, was a status report on the development of an occupational education program by the Southern Association of Colleges and Schools. Mr. Childers made suggestions for the organization of such a program and described the functions of the executive group, business advisory group, and staff, and the financial institutional affiliation, and organizational structure. (BC)

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Speeches Presented At The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 6, 1969

National Association of State
Directors of Vocational Education

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VT010449

STATUS REPORT

B. E. Childers

Executive Secretary
Committee on Occupational Education
Southern Association of Colleges and Schools

Evidence abounds that the South, which is fast becoming industrialized, is on the threshold of a new era which can bring a surge in its economy and vastly improved work opportunities for all its citizens. To assure this advancement, the capability of business and industry to utilize increasingly sophisticated machinery and processes must be matched with up-to-date, effective, relevant programs which educate for the world of work. Vocational education is growing, improving, and gradually coming into its own after years of low status and struggle. The technological explosion has created unprecedented opportunities, problems, and challenges.

It is also clear that the American society is no longer content to tolerate the underdevelopment or undevelopment of the large segment of its population which is economically, socially, politically, and culturally disadvantaged. Education must be increasingly concerned with the optimal self-realization of every youth and adult. In this effort, occupational education has a strategic role to play and especially in the South.

Until 1967, the interest of the Southern Association of Colleges and Schools in occupational education had been modest and limited to institutions, accredited or seeking accreditation, such as high schools, junior colleges, and a few specialized institutions at the higher education level.

There is wide agreement at the state and national levels and among various organizations and concerned individuals that an urgent need exists to establish in a national context a program for the improvement, evaluation and accreditation of occupational education. Talks at the national level have involved the U.S. Office of Education, the National Commission on Accrediting, the American Vocational Association, the Federation of Regional Accrediting Commissions of Higher Education, and other agencies.

The Southern Association of Colleges and Schools should become

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[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 6, 1969.

more actively and directly engaged in the improvement and accreditation of occupational education because:

(1) In September 1966, the Executive Council of the Commission on Colleges requested that the Director of the Association convene a conference of appropriate individuals to study the question of recognition through accreditation of post-secondary, non-collegiate, non-profit vocational and trade education.

(2) In April, 1967, the Southwide Conference on Occupational Education, with representation from business, industry, and vocational education, asked the Southern Association to develop at the earliest feasible date a regional program to help strengthen the quality, availability, and status of public and private non-profit technical and vocational education, including evaluation and accreditation.

(3) The Southern Association desires to utilize its full resources to help improve the quality of life in the South, and

(4) The need for an adequate program of accreditation which utilizes the voluntary, institution-based regional accrediting agencies.

On June 19, 1967, the Board of Trustees of the Southern Association authorized its president to appoint a Committee on Occupational Education to utilize a report entitled "We Shall Not Rest..." of the April 5-6 Southwide Conference and to suggest a plan of development for the Association's involvement in occupational education.

The Committee on Occupational Education was appointed and met periodically during the fall of 1967, submitting a report to the Board of Trustees at the Annual Meeting of the Association in Dallas, Texas, in November. At that time the Trustees approved the report in principle and asked the Committee to make further study in line with the discussion of the subject by the Board.

This discussion revolved around the following:

(1) The role proposed for business and industry representatives on the policy making group.

(2) The number and preciseness of the description of the institutions proposed as being eligible for charter affiliation.

(3) The timetable for implementation of the report.

(4) Whether any immediate consideration should be given to the establishment of the Commission on Occupational Education.

(5) The size of the proposed executive group for the Committee on Occupational Education, and

(6) The need for a separate organization within the Association to accredit institutions of occupational education, or whether this might be done by two existing commissions, the Commission on Secondary Schools and/or the Commission on Colleges.

In submitting this revised report, the Committee on Occupational Education affirms that it has reviewed the matters of concern to the Board of Trustees and that the recommendations herein constitute the Committee's best judgment as to a feasible plan for involvement in occupational education for the Southern Association of colleges and Schools.

A comprehensive study of the status of occupational education in the Southern Association area was made at the request of the Association by the Southwide Research Council in Occupational Education in cooperation with the Center for Occupational Education at North Carolina State University at Raleigh.

The Council's report showed clearly the need for a developmental program and eventual accreditation of occupational education other than the programs currently being operated by the Commission on Colleges and the Commission on Secondary Schools.

All regional associations are being urged to begin a process of evaluation and accreditation of occupational education. If they fail to respond, other agencies can be expected to meet the need. The resolution of the Southwide Conference on Occupational Education, subsequent reaction to the report of that meeting, and expressions of interest on the part of educators involved in vocational-technical education warrant immediate consideration by the Southern Association.

The philosophical and procedural questions involved in standard-setting and accreditation of occupational education are currently being debated across the nation. Procedural problems and questions of jurisdiction will be knotty issues. Organizational plans, lengths of programs, and entrance requirements follow no common pattern in occupational education as they do in the other segments of education. These variations will make the development of standards extremely complex. However, several groups have begun serious work to develop standards of quality and their results can be utilized in due time.

The Committee views its primary function as recommending an initial structural organization to serve as the mechanism through which solutions to these problems might be sought. The beginning organizational structure may need to be changed as the process of improvement and accreditation of occupational education evolves.

An ultimate test of whether accreditation contributes significantly to the improvement of instruction in occupational education will be the quality and employability of graduates of accredited schools. Accreditation of technical-vocational education presents a rare opportunity for various segments of our economy to work closely with education. Therefore, it will be desirable at the outset to involve business and industry in an advisory role.

The development of an occupational education program by the Southern Association will present the Association with other unique opportunities. It can promote much-needed communication between occupational educators and those in traditional academic areas. It can be a mechanism which broadens the scope of vocational and technical education and which focuses systematic attention upon the needs, problems, and opportunities for development of a large proportion of the South's people in new knowledge and work skills. It can help individuals to utilize better their existing opportunities. It can assist in the articulation of the many educational efforts to equip children and youths for the world of work. It can sponsor or encourage relevant research, experimentation, and demonstrations. It can lend new dignity and prestige to the entire field of occupational education.

The following plan for use by the Association in occupational education was proposed for consideration by the Board of Trustees.

I. An Executive Group

It is recommended that the Association establish a Committee on Occupational Education whose membership and duties are described as follows:

A. Composition of the Committee

A policy group of ten members, to be called the Committee on Occupational Education, will be comprised as follows:

(1) Three directors of occupational education (or their equivalent) from appropriate state agencies in the Southern Association region. (Initial appointments to be made by the President of the Association with

successors to be nominated by the delegate assembly of affiliated occupational education schools and elected by the Board of Trustees.)

(2) Two representatives from specialized institutions or community colleges with programs of occupational education and accredited by the Commission on Colleges. (To be appointed by the President with advice by the Chairman of the Commission on Colleges.)

(3) Two representatives from comprehensive or vocational or technical high schools accredited by the Commission on Secondary Schools. (To be appointed by the President with advice by the Chairman of the Commission on Secondary Schools.)

(4) Two executive heads of technical-vocational schools not currently eligible for accreditation by existing Commissions. (Initial appointments to be made by the President of the Association with successors to be nominated by the delegate assembly of the affiliated occupational education schools and elected by the Board of Trustees.)

(5) Director of the Association, Ex Officio

Terms of service shall be for three years except that the initial group shall be appointed for staggered periods so that the terms of three members will expire each year.

Representatives of the Business-Industry Advisory Group will attend all meetings of the Committee on Occupational Education. (See page 13, item 1 under duties of the advisory group.)

B. Duties of the Committee

The duties of the Committee on Occupational Education shall be as follows:

(1) To serve for the Association as the general policy-making group in occupational education. Such policies would guide the activities of staff members employed to work in occupational education.

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*The delegate assembly referred to in this report shall be similar to the delegate assemblies of the commissions. There shall be one official voting representative from each affiliated institution of occupational education in the delegate assembly.

(2) To oversee the development of standards and accreditation procedures for institutions offering occupational education, such standards and procedures to be given final approval by a delegate assembly of affiliated schools of occupational education.

(3) To recommend to the Board of Trustees at the appropriate time approval of a program of evaluation and accreditation for institutions offering occupational education.

(4) To approve programs and agendas for meetings of a delegate assembly of affiliated schools of occupational education.

(5) To keep the Board of Trustees apprised of supporting projects and programs which the Association should undertake in occupational education.

(6) To work with the present Commissions in the evaluation of occupational education in institutions under their jurisdiction.

(7) To arrange for such committees or subcommittees as may be necessary for the orderly development of an occupational education program for the Association.

(8) To develop its own calendar of meetings and other procedures of operation to achieve the objectives of the Committee, providing these conform generally to other Association policies and procedures.

(9) To work with the Director of the Association in securing funds for programs and projects in occupational education.

II. Institutional Affiliation

One of the strengths of voluntary accreditation which has contributed to its success is that standards are determined, in the final analysis, by institutions comprising the membership at the affected level. This grass-roots level of participation will be essential among occupational educational institutions if voluntary accreditation is to be effective. The consent for accreditation, like government and the governed, comes from those being accredited. In the tradition of the Southern Association of Colleges and Schools, accreditation is and will continue to be a function of the membership to be accomplished by the duly authorized representatives of the member institutions.

A. Affiliation

Certain institutions will be eligible to participate formally in a program of charter affiliation with other institutions of occupational education under the aegis of the Southern Association of Colleges and Schools. Purposes of this affiliation will be the development of accreditation and other advancement programs in occupational education. An institution will be considered eligible for charter affiliation:

(1) If it is not currently eligible for accreditation by the Commission on Colleges or Commission on Secondary Schools, and

(2) If it is recommended for affiliation by the appropiate state agency concerned with occupational education,

(3) If it is a public or non-profit institution with a properly constituted governing or policy-making board, not to exclude area vocational schools operated by state departments of education, and

(4) If the institution agrees not to use its affiliation status in an unethical way, such as to imply publicly or privately that affiliation with the Southern Association indicates approval or accreditation of its programs.

The initial period for charter affiliation should begin not later than November of 1968, and should continue for one year to allow eligible institutions to study the matter and to receive the proper authorization for such action. As the program grows and develops, other types of institutional and, perhaps, program relationships of a formal nature with the Association may need to be explored.

B. Development of Standards

(1) The Committee on Occupational Education recognizes that a substantial portion of vocational-technical education is currently conducted by comprehensive high schools and by multipurpose junior and senior colleges. To establish standards for occupational education, representatives of these institutions should be involved as participants. To make this possible, these institutions will be invited, through designation by the existing Commission on Secondary Schools and the Commission on Colleges, to participate in the process of standard-setting and improvement of quality as well as in other program developments that are likely

to accrue from the efforts of the proposed new thrust of the Southern Association. Methods and procedures for participation of these institutions will be defined by the Committee on Occupational Education.

(2) Institutional representatives will be convened in a delegate assembly for the purpose of undertaking the development of standards and procedures for the recognition of institutions offering programs of occupational education.

C. Subsequent Developments

Following charter affiliation, these steps will be taken:

(1) Institutions wishing to affiliate after the initial eligibility period has closed will be permitted to do so if they meet the previously mentioned criteria, but such institutions will not have the distinction of being charter affiliates.

(2) As the development of the accreditation program warrants, and at such time as the judgment of the Board of Trustees indicates, the authority for the approval of standards and accreditation procedures will be assigned to the delegate assembly, composed of one representative from each accredited institution.

III. Business-Industry Advisory Group

In a very significant manner, the quality of occupational education can be tied directly to the abilities and the employability of students and graduates. It is incumbent upon any agency attempting to judge quality or establish criteria for evaluation of occupational education to have a close tie with prospective employers.

It is essential that the accreditation and other developmental programs in occupational education of the Southern Association seek and assure a meaningful involvement of representatives of business and industry.

The Committee on Occupational Education will, as one of its early tasks, establish a Business-Industry Advisory Committee for Occupational Education.

The duties of this advisory group shall be as follows:

(1) To designate at least three representatives to sit in an advisory capacity with the Committee on Occupational Education at all its sessions.

(2) To meet periodically to evaluate from the business-industrial viewpoint the programs and procedures of the Committee on Occupational Education and to make recommendations as the Advisory Group deems necessary.

(3) To submit ideas, recommendations or data to the Committee on Occupational Education for its consideration.

(4) To work with the Committee on Occupational Education in other ways determined to be mutally beneficial.

The members of the Advisory Committee shall be appointed by the President of the Association following counsel with the Chairman of the Committee on Occupational Education and the Director of the Association.

IV. Staff

It is recommended that the Board of Trustees authorize the employment of a qualified professional staff member and secretary, subject to the availability of funds. The employment of the professional staff member will be done in consultation with the Committee on Occupational Education.

V. Finances

Widespread interest in occupational education has been indicated by business and industry. Both view improved occupational education as a source of increased manpower and thus are favorably inclined to assist in its development.

Funding will be required initially from outside sources. Prompt and successful implementation of the foregoing proposals depends upon successful acquisition of the needed resources from outside the 1968-69 budget of the Association.

A plan to raise the necessary support from business and industry in the eleven-state Southern Association area is under development. The plan will involve business and industrial leaders in each state in raising the funds with a concomitant purpose of generating interest in the Association's efforts to improve occupational education.

In addition, the program should begin to pay part of its own way immediately. It is recommended that each institution pay an annual fee of $250 for affiliation. Additional charges will be made for accreditation once the program is initiated.

VI. Changes in Organizational Structure

As the program in occupational education matures and as educational change dictates, the Board of Trustees of the Southern Association will consider appropriate organizational changes within the Association for occupational education. The Board of Trustees will receive and consider recommendations in this regard at such time as the Committee on Occupational Education deems desirable.

NORTH CAROLINA STATE UNIVERSITY
DEPARTMENT OF INDUSTRIAL AND TECHNICAL EDUCATION
RALEIGH, NORTH CAROLINA

PLANNING FOR THE EVALUATION OF VOCATIONAL EDUCATION

Joseph T. Nerden
Professor

Presentation to the National Association of State Directors
of Vocational Education

American Vocational Association Convention
Boston, Massachusetts
December 6, 1969

PLANNING FOR THE EVALUATION OF VOCATIONAL EDUCATION

During the past decade there has been far more overt activity in the field of vocational education evaluation than would appear had occurred in the fifty or more years of organized vocational education prior to that time. Until ten years ago, no specific reference was made in legislation, either state or federal, to the need, mandate, requirement or demand for the evaluation of vocational education programs. However, with the current emphasis placed upon vocational education as the answer to all of the ills of the inner city, the ghetto, the disenfranchised and disenchanted youth and adults, (and others if there are any) writers of vocational legislation have made certain that: (a) the quantity and quality of vocational education programs must be measured frequently, annually, regularly and, (b) the results of these measuring activities be readily available for examination. All of this evaluative activity has its roots in a philosophy of education, particularly that part of it which bears upon the responsibilities of education to the society which provides it. (More about this later). However, I would be remiss if I did not point out at this time, that evaluation is not something entirely new to the field of vocational education, its teachers, supervisors and administrators. One has but to look through the many reports and documents of the United States Office of Education for all of the years that stretch back to the beginnings of vocational education in this nation to note that from the very first there have been developed and used devices, criteria, guidelines and all of the rest of the paraphernalia of evaluation. Moreover, evaluation has been a concern at national vocational meetings,

state meetings, regional meetings and on many other occasions. Measurement of the quantity and quality of vocational education offered in this nation has been a vital concern of all those concerned with vocational education, largely because of the nature of the process. Criteria and guidelines have varied from region to region, and even from school to school within a large city system, but the basic elements of measuring the successes and limitations of vocational education programs has formed an integrated wholeness in the activity from its very inception. I make these points now, because I believe it should be clearly understood that as educators we are not now embarking upon a brand new process identified in the Vocational Education Act of 1963, or even in the Vocational Education Amendments of 1968. Rather, we have been reminded and urged to make improvements and modifications in the measuring procedures that have been used until now, and to bring about certain bases (even similarities) for evaluation in states.

Philosophically, evaluation of vocational education programs is a matter of public concern, and has been so for over sixty years of organized vocational programming. During this time, the tax-paying public has supported vocational education and has provided tax dollars for the investment required in preparing individuals for the world of work. In the expenditure of dollars, the public has been concerned with benefits and value for its dollars, and has expected that vocational educators would match the dollar input with instructional efficiency. In a sense, the general public has insisted that a dollar of investment return a measurable product, useful in society and productive in its economy. Still further, and this point has been emphasized more of late than in the past, the public has pointed out its <u>entitlement to know</u> whether the objectives of vocational education programs

have been achieved. Included within this entitlement is the knowledge concerning strengths of the many programs, as well as their limitations. Still further, evaluations of vocational education programs are expected by the taxpayers to: (a) inventory the effective procedures for the maintenance of quality standards of vocational education, (b) the procedures recommended for the further improvement of vocational education, and (c) finally the priorities to be applied to the program operation in the future. As we all know, public tax-paying groups are often well seasoned with employer representation, each one of whom is concerned with his own needs for skilled workers; in so many cases these are the individuals who are so highly vocal in matters of vocational education quantity and quality control. In short, philosophically (and the Congress has pointed this out over and over again) the general public is not only entitled to know what the quality and quantity of vocational education is in the nation, but in the most recent congressional legislation has mandated its entitlement in prescription specifics.

With the phenomenal growth of vocational education in the nation, a rapid increase of activity in the field of accreditation could have been prophesied. Accreditation activity is evident everywhere in vocational education, along with the "grand scramble" to get aboard some kind of accrediting procedure. Students are concerned with the accreditation and popular standing of an institution; faculty and administration reflect these interests. Of even greater significance, employers are among those who express strong preferences for graduates of accredited curriculums or institutions; some (on occasion) have refused even an initial interview to graduates who complete programs of instruction from institutions that have

yet to acquire the accreditation label of quality, status and respectability. Evaluation of programs or curriculums of education is a functional part of the accreditation process, but does not necessarily have to result in accreditation. As we all know, vocational education has been evaluated for years, but in only rare circumstances has this evaluation resulted in accreditation. Now, with the concern evidenced by individuals, states, the United States Office of Education and its funding agencies, "voluntary" accreditation has become a virtual necessity. It is to be expected that evaluation of vocational education will continue to occupy much of our attention and time from hereon.

In evaluating programs within a state system of vocational education, there are many factors to be considered. One such factor is: Shall the vocational education that is to be evaluated be that which occurs on the secondary level, the post-secondary level, the adult level, the level that prepares disadvantaged individuals--or all of these levels? Each of the programs that serves individuals is a valid vocational program in its own right undoubtedly, and deserves to have its quantity and quality measured regularly, in order that steps may be taken to maintain and further improve each of the programs. Reduced to several basic questions, evaluation of vocational education must be concerned with:

1. Why do we evaluate?
2. What and whom should we evaluate?
3. How should we evaluate?
4. Who are the individuals who should be involved in the evaluation process?

I believe that it is clear to all of us the reasons why we should evaluate, in the light of the supporting philosophical bases underlying the evaluative procedures in connection with publicly supported vocational education mentioned earlier.

The second question concerning what and whom should we evaluate is important also, and deserves comment here. In general, evaluators of vocational education curriculums or programs need to be concerned with the procedures for the selection of students, the outcomes of the education, the teaching-learning situation involving all of the characteristics of the instructor and the learner, employer and community relationships, as well as facilities and equipment. There is also need to measure the quality and quantity of the supervision and administration, and the rationale for this should be clearly apparent (I trust). In the past, evaluation of vocational education generally centered on the instructor, but if the popular definition of supervision as "helping the teacher to teach" is accepted, then supervision is a functional part of instruction, and as such should be subject to similar rigorous evaluation. The same is true of administration, and guidelines and criteria which are used to measure administrative practices and behaviors must reflect the steps taken by the administrator to facilitate, maintain and further improve the quality and quantity of the instruction in the curriculums, programs and institutions.

In measuring the quality of the instructional program in the classroom, laboratory and/or shop, evaluative criteria and guidelines must include measures of teaching effectiveness, the extent of coordination between manipulative skills and mental skills, the relatedness of parts of the vocational program to each other, the availability of facilities and equipment, the

currency and relevancy of equipment and materials to modern employment practices, and (of course) the qualifications of the personnel who conduct the respective parts of the educational program. In the case of the classroom, laboratory and/or shop teachers, background of education, teaching experience, pre-service practical work experience, professional growth, philosophy held by each and other aspects should receive special attention.

Within and without the school, every phase of the program should receive attention. These should include the procedures that an institution takes to serve all of the people, the involvement of the institution (and its several curriculums) in active advisory activities, the placement and continuing employment records of curriculum "completers" and graduates of an institution, as well as evidences of short range and long range planning. My purpose here is not to identify all of the areas that would be subject to evaluation, but merely to mention some of the major ones and to discuss with you the steps that should be taken by the state directors of vocational education to facilitate evaluation of vocational education in the states. So, finally, we reach the consideration of, "How shall we tool up to evaluate vocational education"? Basic to this consideration is the question of whether evaluation should be of entire institutions, of programs of vocational education within an institution, or of individual curriculums. The discussion of this question has occupied many hours of discussion in regional, state and national meetings of educators. Obviously, detailed evaluations of individual curriculums can be extremely time consuming, (and often costly); yet, evaluation of a complete program of vocational

education (on the other hand) may tend to overlook some of the important and urgent facets of quality and quantity. Several educational agencies in the nation are currently dealing with this problem, and it would appear that the procedure most favored by these agencies is that of evaluation of the entire institution, usually followed by accreditation on the same basis. The National Commission on Accrediting, the American Vocational Association through its newly organized and funded study of accreditation procedures, the six Regional Accrediting Associations in the United States, and the Interim Council of the National Commission on Accrediting which is specifically concerned with occupational programs have either taken a strong stand in favor of (or tend toward) institutional evaluation as the most feasible procedure prior to accreditation. Be that as it may, we as vocational educators have the prerogative (I believe) to decide whether our purposes are best served by evaluation that is detailed to the extent that it carefully examines in depth every integral part of each vocational curriculum or by evaluation of all of the curriculums within an institution to a lesser depth.

At this point I would like (very briefly) to indicate to you my thoughts concerning five steps which each state director of vocational education might take to assure himself and the various publics of his state of the achievements, developments, limitations, maintenance of quality and future needs of vocational education.

Step 1. First, I believe that I would urge that each state director assemble, in the traditional vocational manner, a consulting committee concerned with all aspects of evaluating vocational education. The responsibility of this consulting committee

should not be confused with the responsibilities of the state advisory council on vocational education, mandated in the Vocational Education Amendments of 1968. The consulting committee which I recommend should be made up of a cross-section of individuals involved in vocational education, ranging all the way from occupational orientation (through instruction, supervision, and administration) to employment. It should include representation from all levels and types of vocational curriculums, and of course the necessary representation from the general public, students, graduates, employers, management and labor. Such a consulting committee should give careful consideration to (a) objectives and expected outcomes of evaluation, and (b) procedures to be used in the development of guidelines, the criteria, the methodology, and the personnel who should be involved in measuring the quality and quantity of vocational education. Obviously, anything as detailed, personal and critical as evaluation requires that <u>all who are affected by evaluation should be involved in the determination of the procedures and instruments to be utilized in the process</u>. As a principle of democracy in education, this is often overlooked in the evaluative procedure, and in some instances has been indicated to be the sole reason for lack of success.

Step 2. I mentioned earlier that employers, representatives of labor, and management should also be included in the evaluation consulting committee for a state. This is extremely important, since by definition vocational education is the preparation of

individuals for the world of work, and as such those who receive them into the world of work must be an important part in measuring the successes and limitations of the assessment process. I might mention here that the involvement of employers, management and labor is a characteristic which differentiates evaluation of vocational education from most other kinds of education. Care should be exercised by a state director at this particular point in order that he not be "sucked into" the unmanageable and unrealistic philosophy that "vocational education is part of the mainstream of education, and should be evaluated in precisely the same manner as all other education." As one who has taken part in hundreds of public school evaluations, I can bear witness to the fact that never have I seen representatives of the general public, employers, management or labor take an active part in the evaluative processes of public academic education. In this one major respect, vocational education is different to all other kinds of education, and unless this is clearly understood, there is little likelihood that the successes and limitations of vocational education curriculums, programs and institutions will be appropriately examined, evaluated and/or accredited.

Step 3. Once the consulting committee has made some tentative decisions concerning how best to proceed with the evaluation of vocational education, every effort should be made to move the functioning of the activity to the regional and local situations. Efforts must be made to involve all teachers, local supervisors and

local administrators in the evaluative process, and in the development tryout and subsequent modification of guidelines, criteria and procedures. This may only be done, (even more importantly must be done) on the local level. Again, the involvement of people in the procedures and assessment devices which shall be visited upon them is democracy in action, and in the case of vocational education evaluation could very well prove to be the focal point of the entire effort. In large states, many regional group meetings would have to be planned for, organized and conducted.

Step 4. Assuming that every individual involved in vocational education has an ample opportunity to participate in the development, preparation and/or modification of guidelines, criteria and methodology, the next major step is to assemble the collective judgments of the regions and areas of a state, and to synthesize the results such that they will represent consensus, eliminate duplication and inconsistencies. Throughout this statewide activity, domination or restrictive influence by state-employed supervisory and administrative staff should be avoided. Enough suspicion (much of which is unjustified) already surrounds these individuals; thus, sincere efforts should be made by state level supervisors and administrators to encourage and stimulate innovative local thinking, but never to dominate the decision-making process. Ultimately, the state consulting committee on evaluation, carefully selected to represent all segments of the education profession, labor, management, employers,

the general public, students in the schools and graduates of the schools, must make such decisions as appear to satisfy statewide needs. The state staff should provide the manpower for planning and organizing local and regional meetings, for getting the "leg work" done, and in general for "running interference" for the state consulting committee. By keeping its involvement strictly limited, the state staff may best assure itself of a successful venture.

Final Step 5. Time does not permit the further detailing of steps to be taken with regard to developing valid and reliable instruments and procedures for evaluating vocational education. Suffice it to say here that once developed, the guidelines, criteria and procedures should then be given adequate tryout, pilot runs, and frequent reviews with an eye to modification, redesign and improvement. Finally, if we as practitioners in the profession truly believe that vocational education is dynamic and ever-changing, then we must be cognizant of the urgency to insure that procedures, guidelines and criteria change with the profession. So, it would appear that the task will never be finished, and a successful statewide organization built to evaluate vocational education will forever after generate and evolve ever-changing procedures to facilitate the evaluative process. ~~And this~~ is as it should be!

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American Vocational Association, Washington, D.C.
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Pub Date - 8Dec69 5p.; A speech presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, Dec. 8, 1969).

*DEVELOPING NATIONS; *HISTORICAL REVIEWS; *TECHNICAL ASSISTANCE; FELLOWSHIPS; *SPEECHES; ECONOMIC DEVELOPMENT; EQUIPMENT; TRAINING
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63rd, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969; INTERNATIONAL LABOR ORGANIZATION; ILO)

The International Labor Organization (ILO) was established in 1919 by the League of Nations. Even after the League ceased to exist, the ILO continued because of its tripartite structure which included government, trade union, and employer representation. The services provided by the ILO were primarily in the form of technical assistance which included experts, fellowships, and equipment. Two types of programs were developed. One was traditional and resembled an American vocational education system, and the other program was innovative in nature and provided immediate employment by training people in employable skills. The program has grown rapidly. From 1950-68, a total of 4,092 experts were sent to various countries and 5,383 individuals from developing countries received training abroad. Over 8 million dollars was spent on equipment. In 1970, the need for the services of about 600 technical experts is anticipated and by 1975, 1,300 will be needed. (BC)

VT 010 450

ED039370

Speech Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 8, 1969

International Education Meeting

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VT010450

11. The growth of the ILO technical co-operation programme can be predicted with a reasonable degree of confidence. Although these are based on trends it is safe to assume that the 20 per cent growth during the last nine years will be at least maintained. Our estimates each year since 1966 have in fact, been exceeded. Based on these assumptions we expect our programme to require the following numbers of experts:

1970	1971	1972	1973	1974	1975
600	680	818	980	1,100	1,300

A slightly more recent estimate has suggested that the 1975 figure might be 1,500 with consequent upward revisions elsewhere but it is preferable in such estimates to be conservative.

12. I must, for a short while, dwell on the expert and where he or she fits into this programme. Many of you, as I do, dislike this term as none of us are experts in the entire field of training or even within one specific area, but efforts to use alternative titles have not resulted in a change. So, whether we like it or not, the term "expert" will probably be used for a long time to come. The first requirement of the expert is technical expertise but this is by no means the only one. An expert is seldom taxed to the limit of his technical ability but is frequently taxed to the maximum of his ability to work with people. Therefore the ability to work with people is probably the most important attribute. An expert will be in a country a short time, usually one to four years, but his counterpart must continue to work after the expert departs. To train the counterpart is therefore the most important job to be done. If you wish to "do good works" this is often insufficient grounds for becoming an expert. Such people frequently do better by generating interest in technical co-operation in their own countries. If you are prepared to accept new standards of living and new ways of doing things, you might be the type of material that makes technical co-operation experts. In any case, you will probably not know whether this is the type of challenge you would like until you try.

value of US$13,886,165 was delivered to the projects. Of these totals the vocational training components were:

experts	1,450	43.2 per cent
fellowships	3,401	56 per cent
equipment	US$8,632,228	62.2 per cent

It is obvious from these figures the importance that vocational training has played in the programme.

5. If you have interests in particular geographic areas, the following figures apply:

Area	Experts	Fellowships	Equipment
Africa	50.4 %	32.9 %	73.8 %
Americas	33.8 %	66 %	64.1 %
Asia	39.7 %	33.8 %	58.8 %
Europe	59.6 %	88.7 %	47.1 %
Middle East	40 %	43.7 %	72.1 %

These figures represent the ILO vocational training effort in the region as a percentage of the total ILO effort.

6. If we analyse where our expertise has come from we find that we have used experts from 81 different countries and up to 1968, 214 of the experts were nationals ofthe USA.

7. I think, as many of you here today are training and educational planners, you might like to know how a technical assistance, or as we prefer to call it, a technical co-operation project, is planned. It is certainly not, as some people think, a matter of chance. Most governments of developing countries are, in an effort to produce more dynamic economies, preparing development plans on a certain determined time base of say three to five years. These plans have traditionally dealt with money to be allocated to certain economic sectors; unfortunately, seldom have due allowances been made for the human resources needed to implement them.

8. Today, ILO helps governments to plan their manpower and training requirements and projects are prepared to meet the known or projected needs for skills. This is usually done by means of missions to the country by specialists of ILO who prepare, in collaboration with government officials and representatives of trade unions and employers' federations, an outline of the project. The ILO will then advise the government on possible ways of financing the project through international or other means. The international component of the project usually consists of expert services, fellowships and equipment. While international financing will take care of this aspect of the project, the government must also provide buildings, facilities, national training staff and items of equipment available in the country. Technical co-operation projects undertaken by the ILO are not gifts but a co-operative effort with commitments on both sides.

9. Once financing is assured, the ILO undertakes to provide services and it is at this point we start to look for the best expertise, irrespective of nationality. In fact, we like to have a mixed nationality team as this brings to bear the experiences from many countries on the problems in a particular country. The projects range over a very wide area of human endeavour and in the vocational training field projects are operating in 74 countries and cover such diverse fields as Railways, Electric Power, legal aspects of Apprenticeship, national plans for training, to give just a few examples.

10. The methods used may be broken into two major types - traditional such as is common perhaps in the American Vocational Education system, and innovative where, in view of the ILO's particular responsibilities for employment and its emphasis on the World Employment Programme, programmes are being encouraged on a step by step system where each step provides an employable skill. In other words, after each step, paid employment should be possible. One of the reasons I mention this today, is the cost of training. If I ask you to tell me what training costs I am sure you will not agree amongst yourselves. Nevertheless it can be safely assumed that the cost of training is known and in both the developed and the developing countries it is often "too much". On the other hand, the cost of not training may be much greater. It is believed that a step by step system of training can reduce training costs but it must also provide for continuing training opportunities so that a series of steps can be built to provide the training needed throughout life so that the "Peter principle" can be overcome.

11. The growth of the ILO technical co-operation programme can be predicted with a reasonable degree of confidence. Although these are based on trends it is safe to assume that the 20 per cent growth during the last nine years will be at least maintained. Our estimates each year since 1966 have in fact, been exceeded. Based on these assumptions we expect our programme to require the following numbers of experts:

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12. I must, for a short while, dwell on the expert and where he or she fits into this programme. Many of you, as I do, dislike this term as none of us are experts in the entire field of training or even within one specific area, but efforts to use alternative titles have not resulted in a change. So, whether we like it or not, the term "expert" will probably be used for a long time to come. The first requirement of the expert is technical expertise but this is by no means the only one. An expert is seldom taxed to the limit of his technical ability but is frequently taxed to the maximum of his ability to work with people. Therefore the ability to work with people is probably the most important attribute. An expert will be in a country a short time, usually one to four years, but his counterpart must continue to work after the expert departs. To train the counterpart is therefore the most important job to be done. If you wish to "do good works" this is often insufficient grounds for becoming an expert. Such people frequently do better by generating interest in technical co-operation in their own countries. If you are prepared to accept new standards of living and new ways of doing things, you might be the type of material that makes technical co-operation experts. In any case, you will probably not know whether this is the type of challenge you would like until you try.

VT 010 451
Prediger, Dale J.
Validation and Interpretation of Test Data Via Discrimination Analysis: Research Results with Vocational School Students.

American Vocational Association, Washington, D.C. Manpower Section
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 9Dec69 8p.; Summary of a paper presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Mass., Dec. 9, 1969).

*SPEECHES; *VOCATIONAL COUNSELING; *STUDENT CHARACTERISTICS; *PROFILE EVALUATION; *VOCATIONAL EDUCATION; VOCATIONAL INTERESTS; APTITUDE; EDUCATIONAL PLANNING; STATISTICAL ANALYSIS
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

The general objectives of the study were to develop, through the use of discriminant analysis procedures, validated information on the characteristics of vocational school students and to put this information into a form that can be used by counselors in helping students select an appropriate vocational program. Beginning in 1966, 10 aptitude and 10 interest measures were accumulated for each of the approximately 1,000 prospective vocational high school students. For purposes of analyses, students were grouped according to three variables: (1) sex, (2) vocational school success, and (3) satisfaction criteria. A series of discriminant analyses showed that interest measures appeared to be somewhat more powerful than the aptitude measures in differentiating among groups. Results of the analyses were used to generate indexes showing a prospective vocational student's similarity to successful and satisfied students in each of the eight vocational programs most appropriate to the student's sex. (AUTHOR/CH)

VT 010 451

ED039370

Speech Presented At The

62nd Annual Vocational Convention

Of The

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Boston, Massachusetts

December 9, 1969

Manpower Section, NRSD

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VT010451

VALIDATION AND INTERPRETATION OF TEST DATA VIA DISCRIMINANT ANALYSIS:

RESEARCH RESULTS WITH VOCATIONAL SCHOOL STUDENTS

Summary of a paper presented at the
1969 American Vocational Association National Convention

by Dale J. Prediger
University of Toledo

The general objectives of the study were to develop, through the use of discriminant analysis procedures, validated information on the characteristics of vocational school students and to put this information into a form that can be used by counselors in helping students select an appropriate vocational education program. Since early in 1966, ten aptitude and ten interest measures, most of which were obtained from the GATB and the Kuder-Vocational, have been accumulated for each of approximately 1000 prospective vocational high school students. For purposes of analysis, the 24 one- and two-year vocational programs into which these students later enrolled were organized into 12 groups; 4 enrolling primarily males, 4 enrolling primarily females, and 4 enrolling a substantial number of males and females. Both vocational school success and satisfaction criteria were used to identify students eligible for the twelve analysis groups.

Separate discriminant analyses were run on the eight male and mixed groups (N=589) and the eight female and mixed groups (N=664). These analyses showed that students in the various vocational program groups could be differentiated by interest and aptitude measures at a significance level far beyond a p of .01. The interest measures appeared to be somewhat more powerful than the aptitude measures in the combined male and mixed groups. The nature of the group differentiation and the variables making the largest contribution were also determined.

Results of the analyses were used to generate indices showing a prospective vocational school student's similarity to successful and satisfied students in each of the eight vocational programs most appropriate to the student's sex. Similarity Score Profiles, a novel graphic technique for reporting test results, were also developed. The reports are currently being field tested in fourteen feeder high schools. Two prototype packages of FORTRAN programs have been developed to facilitate the analysis and reporting procedures. Local norms and expectancy table data are also generated by the program packages.

E X A M P L E

STUDENT SIMILARITY REPORT FOR PENTA-COUNTY VOCATIONAL PROGRAMS

If you are thinking about entering Penta-County Vocational School you probably face a difficult decision--the choice of which vocational program you wish to enter. This report won't tell you what to do. However, it will provide some information that might help you make a decision. The information can be helpful only if you, with the help of your counselor, CONSIDER IT ALONG WITH ALL THE OTHER THINGS you know about yourself and Penta-County programs.

Your scores are based on the aptitude and interest tests you took in the Penta-County Vocational Test Battery. Each score gives a rough estimate of your similarity to successful students in one of the vocational program areas at Penta-County. The 24 programs at Penta have been grouped into 12 areas which are listed to the left and right of the box below. Notice that mostly boys enroll in areas A-D, in areas E-H a number of boys and girls enroll, and in areas I-L mostly girls enroll.

THE KEY POINT IS THIS: The higher your score for an area, the more similar you are to students in the vocational programs represented by that area. The highest score you can get is 100. The lowest score is zero. A zero score for area G would indicate that your test scores are quite different from those students who have "made it" in the commercial art, printing, or drafting programs at Penta. Please follow the steps below in order to prepare your report.

1. Paste the small, white label which has your name and eight scores on the large box shown below.
2. Rank your eight scores from highest to lowest. Give the highest score the rank of 1, etc. Enter the rank on the line below your scores.

Vocational Areas

A. Carpentry
B. Auto & Ag. Mechanics, Machine Trades
C. Radio & TV, Electronics
D. Auto Body, Welding
E. Vocational Horticulture
F. Distributive Education
G. Commercial Art, Printing, Drafting

381034 FRED CARTESIAN 09/10/69

STUDENT SIMILARITY SCORES FOR P-C VOC. PROGRAMS

AREA =	A	B	C	D	E	F	G	H	I	J	K	L
SCORES =	41	14	03	26	87	25	28	01	0	0	0	0
RANK =	2	6	7	4	1	5	3	8				
AREA =	A	B	C	D	E	F	G	H	I	J	K	L

FACTORS: 56, 36 CHART 1A PRE PC GPA 16

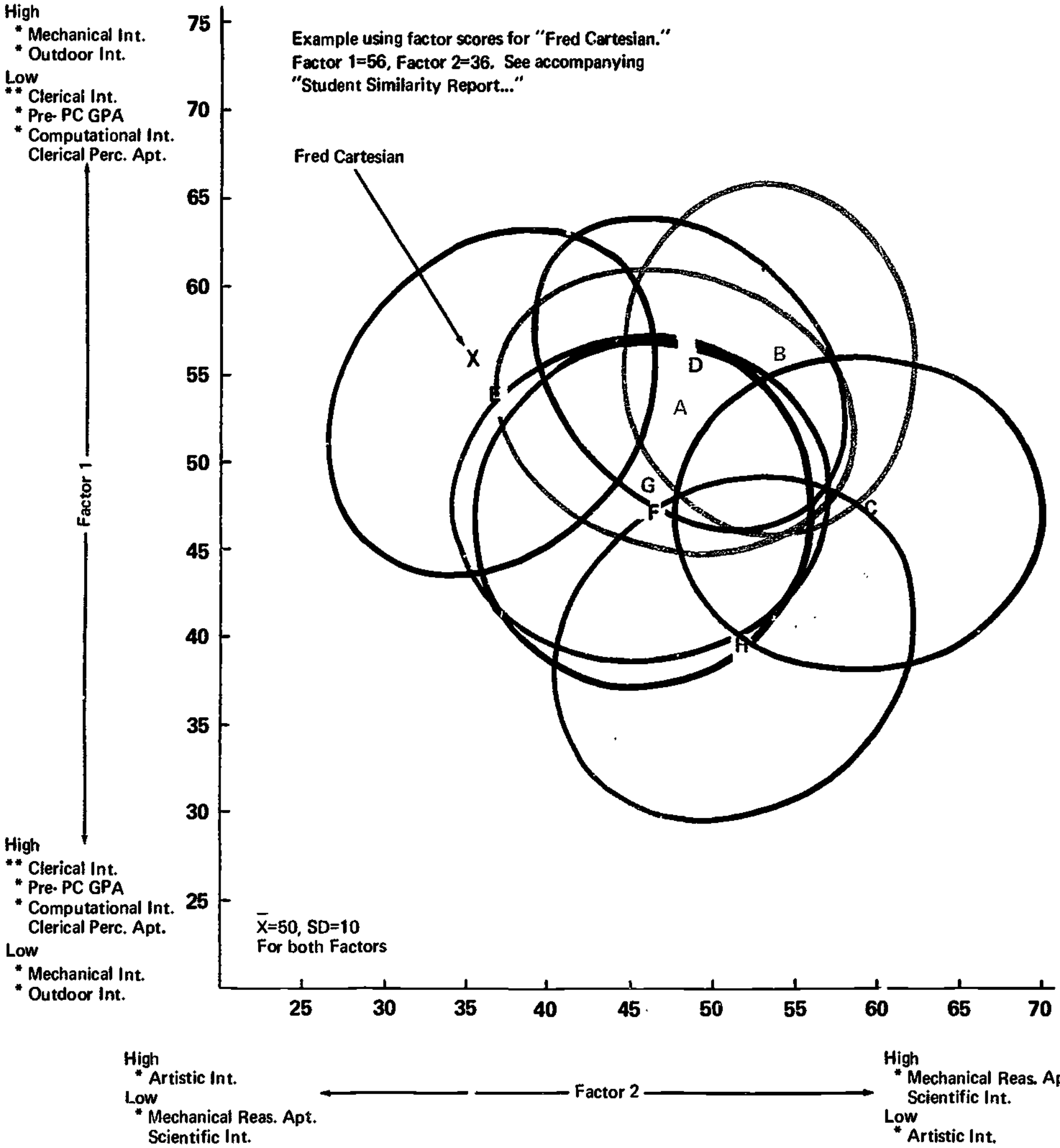
Vocational Areas (contd)

H. Data Processing, Account Clerk
I. Child Care Aide or Ass't., Community & Home Service, Dietary Aide
J. Cosmetology, Dental Assistant
K. Co-op Office Education, Office Machines
L. High Skill Steno

SO HOW DO YOU USE THIS KIND OF INFORMATION? As a start, take a look at how your scores rank. Put a check beside the name of the areas ranking 1st, 2nd, and 3rd. These are areas that you might want to give special attention. Next, look at the areas in which you rank low. These may not be as appropriate for you as some other areas. Your counselor will help you figure out why your scores may have come out the way they did.

In order to judge how successful you might be in a given program, you must also consider whether you have the course preparation, specific aptitudes, and personal desire that is needed. This report does not tell you that. However, it does provide useful information for you to consider, with the help of your counselor, before making a choice.

SIMILARITY SCORE PROFILES FOR PENTA-COUNTY VOCATIONAL AREAS
CHART IA: MALE AND MIXED GROUPS



The vocational areas represented by the letters on this chart are defined by the "Student Similarity Report for Penta-County Vocational Programs." About 50% of the factor scores of students falling in each of the indicated areas is enclosed by the ellipses. The aptitude and interest dimensions represented by the factors are labeled at the ends of the factor scales. This chart can be used to plot a student's factor scores in order to facilitate interpretation of the similarity scores given on the "Student Similarity Report..."

Correlation between variables and factors is indicated as follows:
*** = r > .69; ** = r of .60 – .69 * = r of .50 – .59; no * = r of .40 – .49

RF 21 1169 3C

Brief Notes on Interpretation of Similarity Score Reports

To facilitate this brief explanation, the test results of a fictitious student, Fred Cartesian, will be used. Assume that Fred is a sophomore who is thinking about attending the Penta-County Vocational High School. Fred's similarity scores are listed by computer on each of two labels, one of which we will assume has been pasted on the sample "Student Similarity Report. . ." shown on a previous page.

Fred's similarity scores indicate that he is most similar to successful and satisfied students enrolled in Vocational Horticulture (area E.) Approximately 87% of the students in this area scored further away from the group average than he did. Fred's second highest area was Carpentry (area A). His scores in three other areas, G, D, and F, are all about the same. The difference of three points between the scores for areas F and G certainly is of no practical importance. It would appear that Fred's most appropriate points of departure for exploration and discussion would be Horticulture and Carpentry. Fred's results show very little similarity to students in areas H and C. This does not mean he should dismiss these areas from consideration. As noted on the report form, however, they may not be as well-suited to his abilities and interests as the other areas.

At the bottom of the label, Fred's factor scores are listed along with the "Similarity Score Profile. . ." chart (IA) to which they apply. The factor scores have been plotted on the sample profile chart on the page following the "Student Similarity Report. . . ." Inspection of this chart shows that Fred's scores do place him quite close to the typical student in Vocational Horticulture (represented by the capital E on the chart). Fred also scores close to the ellipse enclosing 50% of the students in Carpentry. By noting the anchors of the Factor 1 dimension one can see that Fred probably has higher than usual scores in the mechanical and outdoor interest areas. At the same time, his score in the clerical and computational interest areas, his standing on clerical perception aptitude (Q on the GATB) and his pre-PC GPA may be somewhat lower than for Penta-County students in general. (Actually, an exceptional score in any of these areas could, by itself, have an important influence on his factor score.) On Factor 2, Fred scores well toward the artistic interest end of the dimension. This may also reflect a relatively low level of mechanical reasoning aptitude and/or scientific interest since students scoring high on these measures typically get much higher factor scores. Of course, one can go to Fred's test score reports and high school record to check out these possibilities.

Fred may wonder why his similarity scores were so low for the Data Processing area (area H). A look at the chart shows that these students are typified by relatively high clerical interests and pre-PC GPA (i.e., they typically score toward that end of Factor 1). At the same time they do not typically show the same level of artistic interest that Fred expressed. (See Factor 2.) A similar approach can be used with other students to gain some understanding of the reasons for high or low similarity scores. Whether-or-not the "Similarity Score Profiles" are shown to the student will have to be a matter for counselor judgment.

SINGLE ENTRY EXPERIENCE TABLES (9/69)

Part 2

Students in each of the groups listed below entered Penta-County in September of 1966, 1967, and 1968. The Penta-County vocational area grade point average (PC-GPA) is based on vocational course work (related and shop or lab) completed up to (a) time of graduation (Fall '66 and '67 entrants); (b) end of junior year (Fall '68 entrants); or (c) dropout. For each predictor category (row) in the table, the percent of students whose grades at Penta-County fell into each of the PC-GPA categories (columns) is shown.
A = 40, B = 30, C = 30, D = 10, and F = 00.

E. VOCATIONAL HORTICULTURE

Predictor: Pre-PC GPA, r=.55, N=41

		PC Vocat. GPA F-C 00-20	C-A 21-40	Freq.
PREDICTOR	19-40	14%	86%	14
	15-18	31%	69%	13
	00-14	93%	7%	14

F. DISTRIBUTIVE EDUCATION

Predictor: Pre-PC GPA, r=.38, N=79

		PC Vocat. GPA F-C 00-20	C-B 21-30	B-A 31-40	Freq.
PREDICTOR	20-40	36%	57%	7%	28
	15-19	67%	33%	0%	24
	00-14	70%	30%	0%	27

G. COMMERCIAL ART, PRINTING, DRAFTING

Predictor: Pre-PC GPA, r=.56, N=185

		PC Vocat. GPA F-C 00-20	C-B 21-30	B-A 31-40	Freq.
PREDICTOR	24-40	7%	57%	36%	44
	21-23	24%	57%	20%	46
	17-20	37%	54%	9%	46
	00-16	71%	27%	2%	49

H. DATA PROCESSING, ACCOUNT CLERK

Predictor: Pre-PC GPA, r=.52, N=113

		PC Vocat. GPA F-C 00-20	C-B 21-30	B-A 31-40	Freq.
PREDICTOR	27-40	20%	31%	49%	35
	21-26	18%	61%	21%	38
	00-20	50%	48%	3%	40

DOUBLE ENTRY EXPERIENCE TABLES (9/69)

Part 3

Students in each of the groups listed below entered Penta-County in September of 1966, 1967, and 1968. Table cells represent various combinations of scores on two predictors. The percent of those students falling in a given cell who obtained a Penta-County vocational area grade point average (PC-GPA) of 21 or better (20 = C) is shown for each cell. An asterisk is used to indicate fewer than 10 cases in a cell. The PC-GPA is based on vocational course work (related and shop or lab) completed up to (a) time of graduation (Fall '66 and '67 entrants); (b) end of junior year (Fall '68 entrants); or (c) dropout.

Data for column and row totals appear as follows: J/K with L% given underneath, where K = number of students with scores falling in the column (or row) indicated. J = the number of these students obtaining a GPA of 21 or better (20 = C). L% = (J/K) X 100.

A = 40, B = 30, C = 20, D = 10, and F = 00.

E. VOCATIONAL HORTICULTURE: N=41, R=.60

Predictors: Pre-PC GPA (verticle axis) and GATB-M

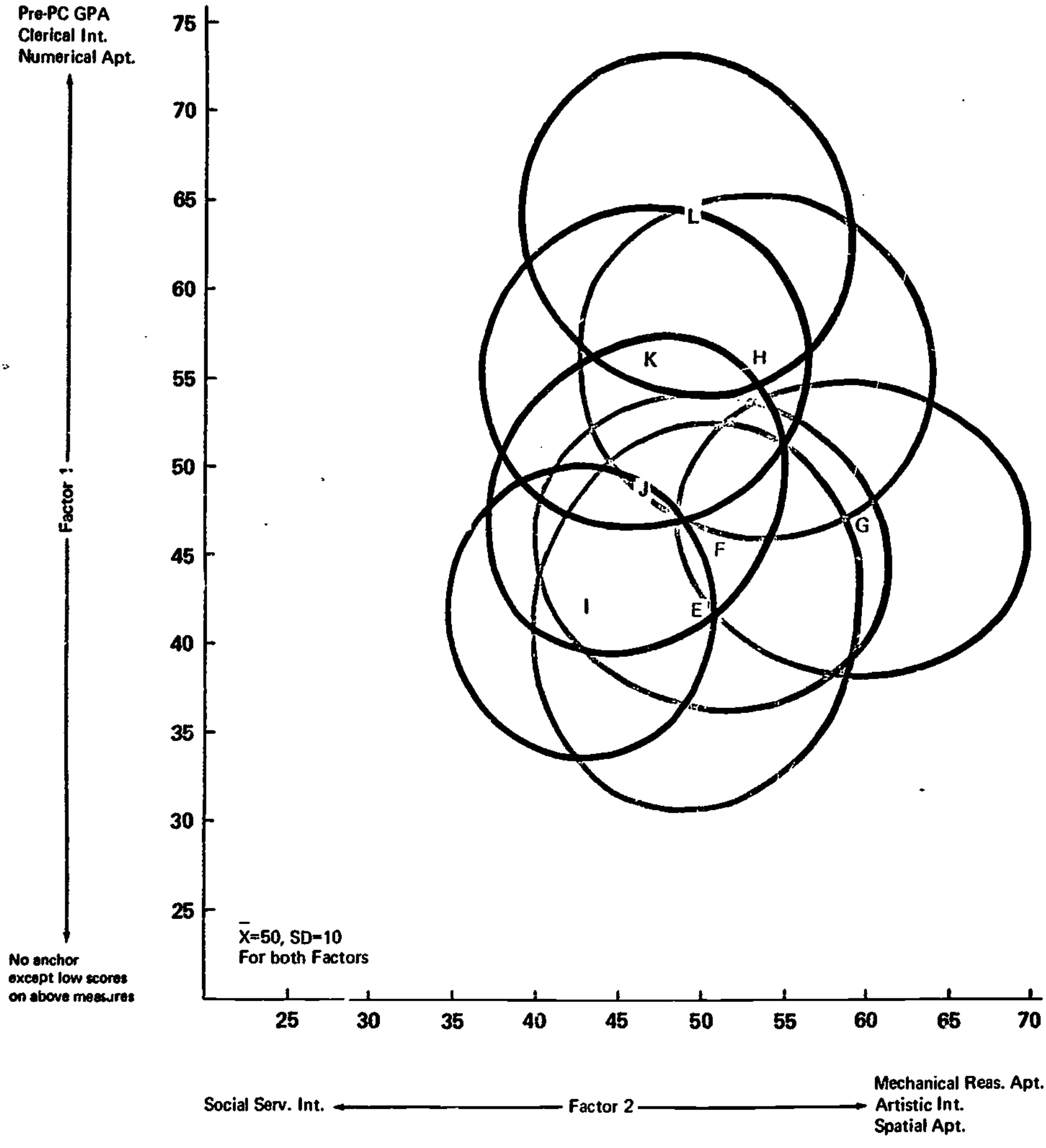
	GATB-M Standard Scores 30-76	77-170	Total
17-50	67%*	87%	17/21 81%
00-16	13%	60%*	5/20 25%
Total	6/21 29%	16/20 80%	

F. DISTRIBUTIVE EDUCATION: N=79, R=.45

Predictors: Pre-PC GPA (vertical axis) and GATB-Q

	GATB-Q Standard Scores 30-101	102-170	Total
20-40	67%	63%	18/28 64%
15-19	21%	50%	8/24 64%
00-14	20%	42%	8/27 30%
Total	14/41 34%	20/38 53%	

CENTOUR SCORE PROFILES FOR PENTA-COUNTY VOCATIONAL AREAS
CHART IB: FEMALE AND MIXED GROUPS



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VT 010 452
Bottoms, Gene
State Staff Requirements for Evaluation in Vocational-Technical Education.

American Vocational Association, Washington, D.C.
MF AVAILABLE IN VT-ERIC SET.
Pub Date - 9Dec69 10p.; Speech Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Mass., Dec. 9, 1969).

*EVALUATION; *STATE PROGRAMS; *VOCATIONAL EDUCATION; *SPEECHES
STAFF REQUIREMENTS; *ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

With the increased emphasis placed on education and the recognition that it holds the key to progress, education has increased in priority and there is a great deal of interest in how funds are being spent. In order to be most effective in directing, designing, analyzing, and evaluating vocational-technical education programs, the evaluator should have content knowledge of vocational education and should be located with the Vocational Education Division. These personnel may not be available and may have to be developed. In addition, sufficient resources for staff aid program operations will be required. If such a program is implemented, the state will be better able to offer its citizens equal opportunity for the best quality of education, insure equal results, and assure that the resources of the state are being used to their fullest. (BC)

VT 010 452

Speech Presented at The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 9, 1969

Local and State Board Member Meetings

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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VT 010 452

ED039370

STATE STAFF REQUIREMENTS FOR EVALUATION IN VOCATIONAL-TECHNICAL EDUCATION

Gene Bottoms
Associate State Director
Vocational Education
Georgia Department of Education

American Vocational Association
Boston, Massachusetts

December 6-10, 1969

VT010452

STATE STAFF REQUIREMENTS FOR EVALUATION IN VOCATIONAL-TECHNICAL EDUCATION

Gene Bottoms
Associate State Director
Vocational Education
Georgia Department of Education

American Vocational Association
Boston, Massachusetts

December 6-10, 1969

TITLE: State Staff Requirements for Evluation In Vocational-Technical Education

BY: Gene Bottoms, Associate State Director, Vocational Education,
Georgia Department of Education

TO: American Vocacional Association Convention

I. Introduction

It is important to understand that the major questions facing state level vocational education leadership, in regard to evaluation, is not whether we should or should not develop and conduct a systematic state level evaluation program. The 1968 Vocational Education Amendments resolved that question by mandating that periodic state level evaluation of vocational education must be carried out. Thus the major question is how do we carry out a periodic state level evaluation of vocational education, not just for the purpose of meeting the intent of the law, but rather to make the maximum contribution toward the creation of vocational program of excellence for all who need it.

Thus, the purpose of this paper is addressed toward the portion of the how question that pertains to state staff requirements for evaluation in vocational-technical education. Four questions will be examined considering this topic: First, what kinds of expertise will be required of a state staff for evaluation? Second, what might be the state staff organizational structure for evaluation? Third, what are the sources or means for obtaining personnel needed for evaluation? Fourth, what resources should be devoted to evaluation? In order to obtain a proper "set" for considering these questions it is important that we first consider some of the events that have led to the mandate for state level evaluation of vocational education and the role of evaluation within the state setting.

The concern for determining the effectiveness of vocational education in obtaining national, state, and local goals grows out of a national global concern regarding all education. The new emphasis on education has developed from a realization that education is no longer a cultural overhead expense but rather that education is a major factor, if not the major factor in the human and economic development of our society. Thus it becomes a capital investment. At least two major thrusts are emerging from this change in the importance of education, both of which help one to better understand the state level setting for evaluation of vocational programs.

First, the recognition that education is the key to progress, has resulted in education being moved up the nation's ladder of priorities as witnessed by additional expenditures of Federal funds for education since 1957. With the accompanying mounting support of education from all sectors of government--national, state and local, there has grown a heightened interest in whether funds have been spent for the purposes intended and in whether effective uses have been made of them.

Those with the responsibility for making laws and levying taxes want good facts to support new laws and more taxes for education. Vocational education is not exception. Therefore, in designing the 1968 Vocational Education Amendments, Congress and the National Advisory Council on Vocational Education

indicated dissatisfaction with the extent to which the intent of Congress as manifested in the 1963 Act had been implemented.[1,2] The main intent of the 1963 Act was two-fold:

(1) "vocational education must be redirected from training in seven selected occupational categories to preparing all groups of the community for their place in the world of work, regardless of occupation, and (2) vocational education must become responsive to the urgent needs of persons with special difficulties which prevent them from succeeding in a regular vocational program."[3] The Advisory Council went so far as to state that there was little indication that either one of the two main purposes had been attained.[4]

These events led Congress to build into the 1968 Vocational Education Amendments specific allocation of resources for particular intents such as programs for the disadvantaged and handicapped, and post-secondary vocational education, along with sufficient means to develop new programs of vocational education through the exemplary and research programs. In addition, the Amendments call for periodic evaluation to determine if funds are accomplishing the intended purposes.

The Amendments have resulted in the State Director of Vocational Education being made the chief program manager or decision maker in vocational education. His decision making and managerial aspects have greatly increased, and his responsibility for changing programs in accordance with national goals presents a difficult task. To meet the intent of the 1968 Amendments, the State Director must have access to highly qualified staff, the need for which was not recognized a decade ago.[5]

The second major thrust resulting from the increased importance of education is the emerging role of the State Department of Education for the overall leadership and coordination needed to develop and implement state-wide plans to obtain universality and excellence in education. Some are beginning to question the tradition of local control. For example, do local school systems have the right to be as bad as they want to be, or to offer appropriate education to only a portion of their students?

With the existing trend, it is only natural that the state be the focal point in evaluation activities.

If the State Director of Vocational Education is to be an effective decision maker and manager in the formulation of specific objectives for vocational education and in formulating operational plans for accomplishing these objectives, he must have sufficient feedback of information regarding outcomes. This feedback would be used to assess the effectiveness of the operational plans in light of the objectives so that appropriate modification might be made in either the plans or objectives. The decision maker then is concerned with the degree to which the objectives and outcomes are the same. Thus, the prime function of an evaluation program is to produce the information necessary to determine the extent to which these two entities are in accord. The evaluator's role becomes one of designing, directing, analyzing, interpreting and reporting the data necessary to identify the descrepancy between objectives or expected outcomes and actual outcomes in such a manner that decisions regarding changes in either objectives or in procedures for accomplishing the objectives might be made or researched in greater depth.[6]

II. Expertise Required For Performing Evaluation Role

The evaluation staff must possess sufficient content knowledge of vocational education before it can have accountability with other vocational educators at the state and local level. By content knowledge, is meant a kind of gut level understanding of the national, state and local structure of vocational education pertaining to goals, funding, and operations of vocational programs by levels, and by services. He should have an understanding of the concepts, methodology and practical appreciation of vocational education. The staff should have had in depth exposure to such topics as the relationship between supply and demand of qualified manpower in specified regional areas, as well as training in the techniques required to determine the advantages and disadvantages of alternative programs to achieve the objectives and goals of vocational education. Without such knowledge the evaluation staff would be hard pressed to perform adequately the functions of designing, directing, retreiving, analyzing, interpreting, reporting and disseminating evaluation information in such a manner that it would have maximum impact upon program improvement. This becomes obvious as we examine some of the know-how that the evaluation staff must possess in order to carry out the above mentioned functions.

The evaluation staff must possess the know-how to design the evaluation information system. This includes answering such simple questions as what data is needed? For what reason? From whom will it be obtained? From what proportion of the total population designated will the data be collected? How can it be obtained and in what form: When can it be obtained? How should the system be tested? How can we most effectively communicate with those from whom we must collect the data? How will the data be analyzed? These questions must all be answered within the context of the state level operations. The designing of the evaluation system will be essential to its eventual implementation and operation. One may have expert knowledge regarding evaluation but unless he has the "good judgment" to tread lightly and to seek the implementation of a minimum rather than a maximum system, the system may be doomed to failure. Requesting too much data, failure to use data, poorly constructed instruments, inadequate instructions, etc. will be major factors in the success or failure of the evaluation system.

The know-how to direct the implementation of the evaluation information system must be possessed by the evaluation staff. Internally, this will involve the ability to schedule the output of forms to local systems and the ability to process them properly upon their return. Externally, this will involve both written and personal communication with local school personnel about the intent of the evaluation effort and how to supply the information. But more important than this will be the function of selling local personnel, which will include showing them what is in it for them. State level evaluation will be threatening to local officials unless appropriate plans are made to prevent it.

The evaluation staff must possess expertise necessary to retrieve the information collected. Many states at present have much information, but it cannot be retrieved. Such a staff must possess knowledge of computer language and work closely with the computer programer to insure that information obtained can be stored and retrieved in the manner desired.

The evaluation staff must possess sufficient knowledge of descriptive and inferential statistics to make an analysis to determine the degree to which program outcomes match program objectives. As the evaluation staff makes analysis of data, it is important that they keep clearly in mind their particular

focus: They should be cognizant in both the planning of the evaluation system and in the analysis of the data of the following focal points and the impinging implications.

(a) Context evaluation--How does the assessment of individual and society needs (manpower needs, school dropouts, etc.) relate to those needs and problems that have been identified in vocational education?

(b) Input evaluation--How does the assessment of available resources technology and educational practices compare with those being used in coping with the specific problems ?

(c) Process evaluation--How well was the conceived operational phase actually performed?

(d) Product evaluation--To what extent did the proposed plan accomplish the intended results?

If the evaluation is to make a maximum contribution to the decision-making process the staff must possess the sound judgment that is necessary to interpret the meaning of the information in terms of possible future options. It is important that the interpretation focus be positive in nature and on program improvement and modification rather than on program condemnation.

The expertise of the evaluation staff must go beyond a written analysis and interpretation of the data. It must include the presentation of the information in such language and format, both orally and written, that it becomes immediately usable by decision makers, program planners and researchers at both the state and local level. Evaluation must be seen as a continuous process so that as feedback results in modification in decision, evaluation continues and assesses against the new decision points.

Personnel employed in evaluation should have training in program planning and budgeting, in decision theory and in a systems approach to education. They should recognize their role within a program planning and evaluation unit. This would include understanding the distinction between planning and evalution as parts of a management cycle. Planning is concerned with the future outlook of present decisions, whether the plan is short, intermediate, or long-range in nature. Evaluation is concerned with measuring the effectiveness of performance against the plan, usually after the fact, but including the anticipation of what extension of performance may be required to create a balance between actual performance and anticipated performance.

III. State Staff Organizational Struture For Evaluation

The evaluation staff should be assigned to the Division of Vocational Education, State Department of Education as one section within a program planning and development section. There are several reasons for locating the evaluation staff within the Division of Vocational Education as opposed to assigning it to the State Advisory Council, the University or the State Department Planning Unit. First, it is my belief that the evaluation of vocational education will produce more effective long-range results if it is carried out as part of a systematic planning and evaluation effort. In my opinion, this can best be performed within the context of the state vocational program staff rather than having evaluation farmed out to some outside agency. The evaluation effort must be continuous and

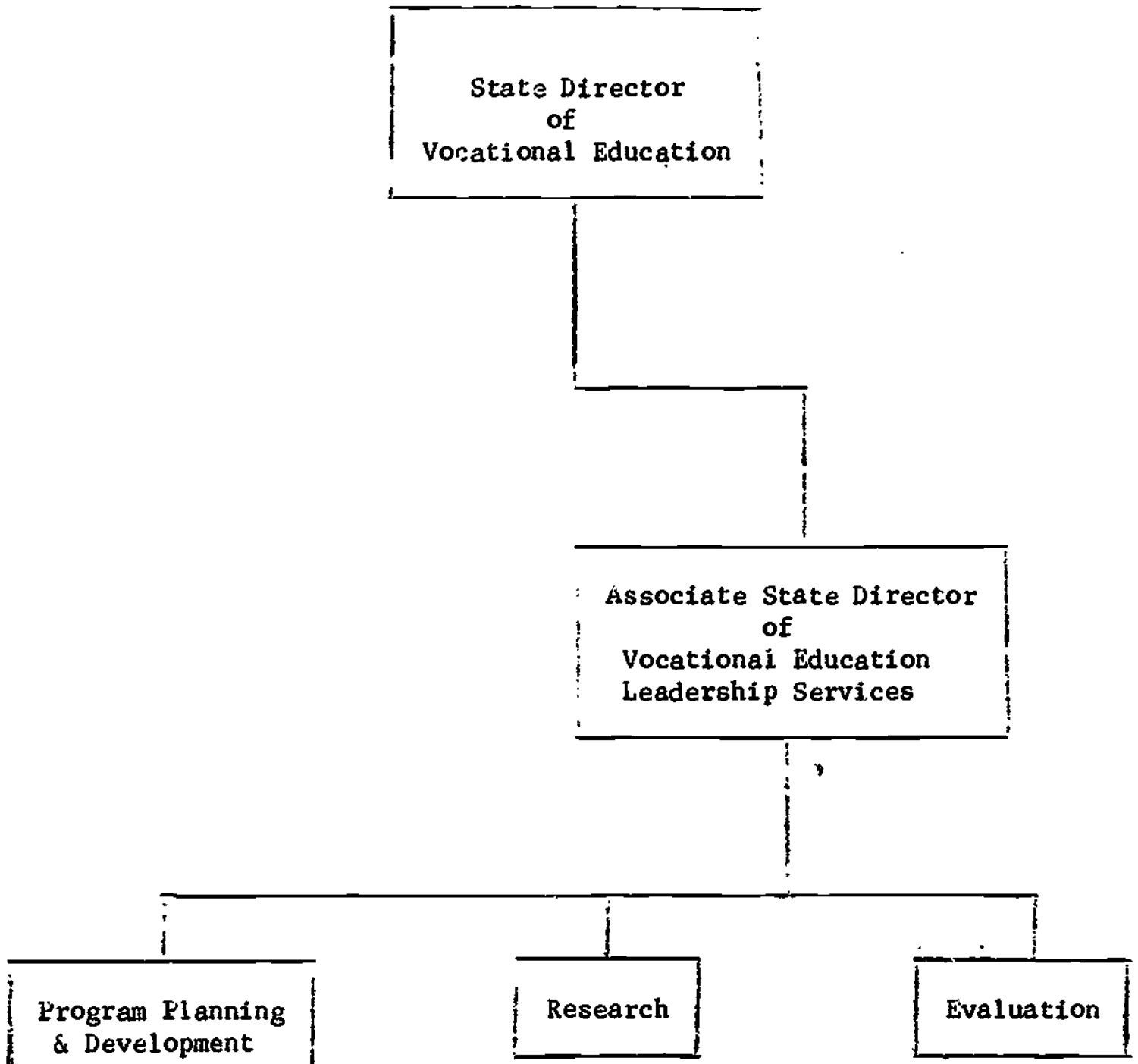
systematic and cannot be a one-shot approach if its full potential is to be realized. Such an arrangement would not prevent the State Advisory Council from obtaining additional data from other sources in making its annual report. Second, since the State Department of Education has the responsibility for administering the vocational program, it is only logical that it be responsible for program evaluation rather than the University. The University resources would be of considerable value in designing the evaluation information system. Third, the evaluation function for vocational education should not be assigned to a state department-wide evaluation effort but there should be coordination and articulation between the two. An evaluation is needed within the vocational division in order to obtain an in depth focus and perspective of the results of vocational education to locate the vocational education evaluation function in a state department-wide effort would so remove it from the mainstream of vocational education that its impact would be severly retarded. In addition, the scope of vocational education concern is often greater than other areas of education. These include: education at all levels including post-secondary and adult, both in-school and out-of-school youth and adults, manpower demands and outputs, working with other agencies and groups such as labor, business and industry. To submerge the vocational evaluation effort within a state department-wide effort would render its impact upon the vocational program minimal.

However, it is important to retain some essential independence between the program planners and developers and the evaluators of vocational programs. The two functions should be kept rather autonomous while being under the direct supervision of the State Director of Vocational Education or an Associate State Director of Vocational Education or an Associate State Director of Vocational Education. The following chart shows one possible way of assigning the evaluation staff.

IV. Source of Personnel For Evaluation

At present, few state departments of education could attrack personnel, if available, who possessed sufficient know-how to develop and make operational an information system for state level evaluation. In view of vocational education and prepare them to carry out the evaluation effort. This would necessitate the need for a national training program that would be continuous in nature for a period of time to train those individuals who have been assigned the responsibility for state level evaluation. Such a training program would be purposefully planned to provide those selected not only with the necessary evaluation skills, but with assistance in making them operational. Another option would be to take those individuals who already possess evaluation competencies and orient them to vocational education if they can be attracted into the State Department of Education.

The long-term option would be for the state vocational leadership personnel to initiate plans for inservice and preservice educational programs for state and local level vocational leadership personnel. This may necessitate acquisition of additional staff in the teacher education program since current staff may lack the experience and competencies needed to develop leadership personnel in vocational education with major emphasis on program planning, development and evaluation.


State Director
of
Vocational Education
Associate State Director
of
Vocational Education
Leadership Services
Program Planning
& Development
Research
Evaluation

V. Resources For Evaluation

It is essential that the evaluation be assigned to some individual, for "that which is everyone's responsibility turns out to be no one's responsibility." In addition, if everyone collects information, it is not in a sufficiently manageable form to use. This important activity cannot be left solely to the voluntary, sporadic efforts of undesignated members of the vocational community. Specialists must be assigned to the evaluation task. Therefore, sufficient funds should be made available in the beginning to employ at least one professional person to direct the evaluation effort along with one technician and one secretary. In addition, such a staff must have a sufficient operating budget. This is certainly not too much to ask to determine what results millions of dollars spent in programs are producing.

It is recommended that a gradual approach be taken in the development and implementation of a total information system for evaluation. The first step would be to decide on a conceptual model for the total system and then to develop the different sub-parts through pilot try-outs before extension is made state wide. As the total evaluation system is developed and implementated additional funds will be required for staff, operations, and for contracting for more in depth studies where interpretation of data indicates such need.

VI. Summary

In summary, the need for evaluation in education has grown out of a recongnition that education holds the key to progress. Thus with additional funds for education, the evaluator role becomes one of providing information that will assist the decision maker to obtain a maximum return on each dollar invested. To be most effective in carrying out his function of designing, directing, retrieving, analyzing, interpreting, reporting and disseminating, the evaluator must have content knowledge of vocational education and must be located within the Vocational Education Division. Such personnel may not be available and will most likely have to be developed. Sufficient resources for staff and program operations will be needed. The results of such effort should enhance the state's ability to perform its responsibility for (1) providing all of its citizens with equal opportunities for the highest possible quality of education; (2) further insuring that equal opportunities also mean equal results; and (3) assuring that the resources of the state are maximized in obtaining goals of highest priority.

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VT 010 453
Williams, Joyce Wolfgang, And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 6-9, 1969).

American Vocational Association, Washington, D.C. Home Economics Education Div.
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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

Three speeches concerning home economics education were delivered at the 1969 convention of the American Vocational Association. "Research People and/or Community Resources--An Approach to Working in the Classroom" by Adeline Garner Shell discusses how to select resource personnel and to develop an appropriate program for the classroom. "Economic Concepts of Pupils, Grades 1-12," by Joyce Williams reports on three research studies to identify the concepts children have about money, as a basis for planning a curriculum in consumer education. The speech by Dr. Polly Garrett discusses the task of "Accounting for Action via Vocational Home Economics Education in the '70's," and includes material on needs (problems), goals and objectives, alternatives, rationale and justification programs, and evaluation. A checklist for enrollments and completions in vocational education programs is included. (BC)

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Speeches Presented At The

63rd Annual Vocational Convention

Of The

American Vocational Association

Boston, Massachusetts

December 7-9, 1969

Home Economics Education Division

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ECONOMIC CONCEPTS OF PUPILS GRADES 1-12, a paper presented by Joyce Wolfgang Williams* at the Home Economics Division General Session, American Vocational Association, Boston, Massachusetts, December 7, 1969.

A Report of research conducted at The FloridaState University under the direction of Dr. Agnes F. Ridley, Associate Professor of Home Economics Education, 1968-1970.

It is a pleasure for me to have been invited to share with you this afternoon the findings of two doctoral dissertations and a Master's thesis which deal with the economic concepts of children enrolled in grades 1-12 and certain factors affecting cognition. In addition to my own study, which dealt with subjects in grades 1-6, this paper includes information from a Master's study conducted by Mrs. Tina Fletcher Slaughter and a doctoral dissertation currently in progress by Mrs. Rosalyn Murray Lester. All were conducted under the direction of Dr. Agnes F. Ridley, Associate Professor of Home Economics Education at The Florida State University.

The series of studies received impetus from the passage of the Vocational Education Amendments of 1968 which placed increased emphasis on the teaching of consumer education. Undoubtedly this legislation has given us all reason for specific thought and action in this broad area of economics. It is our hope that our research may provide a basis for further thought and action in this connection.

As you know, much has been said and numerous articles, pamphlets and books written about children and their money. General information and advice for parents and young spenders abound. But research in this area does not abound. Research regarding children and youth and economics has centered primarily on their money experiences and the money practices of families. Well known to

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many of you are Hoffer's study about children's spending, giving, earning, lending, borrowing and saving money; likewise, the classic work by Marshall and Magruder to investigate the relation of certain variables to children's knowledge and use of money. Children's involvement in the consumer role was more recently studied by McNeal, and others including Seibert and Madsen have investigated their economic knowledge to a limited degree. Several researchers have sought to determine the value of various curricula in teaching economics in school, and materials in this connection are now being developed by district and state departments of education, the Joint Council on Economic Education, the Council for Advancement of Secondary Education, and the Social Science Education Consortium. Economics education is moving into all grades in many school systems, often as part of the social studies curriculum and in some instances as a special unit with assistance from community agencies. As home economists we are being called on to take leadership roles in the total education of consumers, and it seems appropriate that we should be concerned with the beginnings of a child's cognition in this area and its development through the years of formal education.

Surely you have heard the child's definition of salt: "Salt is what potatoes don't taste good without." And perhaps you have enjoyed the little volume, What Is a Mother? in which children have answered this hypothetical question in humorously correct ways: "A Mother is a very dear person who has given up her life with her parents to be by herself with her husband. Also to raise a few children herself." A little boy answered thusly, "If I forget to tell my mother I need a shepherd costume tomorrow morning, she finds one in the night; that is a mother."

In our research we evoked some equally amusing responses, which I will share in part a bit later. We assessed concept cognition in terms of word perception and then attempted to relate cognition to certain sociological factors. According to Tinkler, the greatest difficulties in understanding social studies lie in knowing the specialized terms and accompanying concepts. He has said, "The fact that achievement in a content field is best reflected by vocabulary in that field emphasizes the desirability of teaching pertinent word meanings and clarifying concepts. Langer labels the development of vocabulary an inextricable part of concept development and the communication of ideas as dependent upon the ability to associate written and oral symbols with the ideas and objects they represent. He states that words are the vehicle by which learning is evidenced and applied in new situations; thus a word would be a symbol for a concept which would indicate the meaning given to a person, procedure or object. Vinacke studied concepts in terms of word perception. He states that words serve as evokers of concepts when a person reads or as responses to concepts when a person speaks.

Earlier educators writing of children's basic concepts, or lack of them, "If children to not yet have the basic concepts, we must wait until they mature and gain them before we teach the subjects involving the concepts." In today's moon-landing world, the concenr is almost exactly the reverse: we must run to keep our teaching ahead of the informally-acquired knowledge children possess. Allow me to cite an example of this latter challenge: In 1967 Penner studied the extent to which fourth graders were familiar at the beginning of the year with geographical concepts usually taught in fourth grade social studies. Concepts drawn from the fourth grade texts were presented in multiple-choice form

for identification by subjects. He found that fourth graders knew 47% of the concepts in typical social studies programs before they were taught them in school. Perhaps this says something to those of us who would structure relevant experiences in all areas of home economics for today's students, whether they be elementary or teen age.

A study by Ilg and Ames which had considerable influence on our research aims was one in which were recorded the arithmetic skills of children at the Gesell Institute. These researchers were able to form a gradient of typical development in this area of learning, describing concepts and abilities at each age five through nine years. With respect to the teaching of economic concepts, their placement by grade in curriculum materials seems to have been solely at the judgment of those designing the learnings. Blough is among those advocating curriculum development involving concepts and experiences on a sequential basis covering all grade levels. It is quite conceivable that this approach to curriculum planning would strengthen the subject matter content. Brady supported this approach, stating that the selection of concepts on a sequential basis was necessary in order to synthesize learning in this era when knowledge is increasing at such a rapid pace. Since concept formation is continuous and cumulative, such a sequential arrangement seems altogether logical.

So it was with the thought of sequential curriculum structuring that the following objectives for the three studies were defined:

> To identify certain economic concepts in the repertoire of children in grades 1-12
>
> To compare the repertoire with respect to certain variables, such as age, race, socio-economic status, rural-urban residence, experience with money, academic achievement, parents' educational level, and political party preference
>
> To establish a gradient of the concepts for these grades

The hypothesis under test was that there is no significant difference in children's knowledge of economic concepts with respect to the several variables. This transparency shows which variables were investigated by each researcher in the various grade levels.

We found some of our subjects very apt in explaining economic concepts. Consider the first grader who declared "To spend money is to give it away to buy something," or the second grader who defined tax as "what you give so your President can go places." Each of these children showed understanding of two important economic concepts. A third grade girl told me that commercials are short shows we have during long shows so we can go get something and get back before the show starts again. Another explained wasting money as"putting a nickle in a penny bubble gum machine! A fourth grade students showed amazing insight into the employer-employee relationship when he said, "An employee is a person who writes; an employer is someone who sits behind a desk and tells him what to write." A fifth grade subject defined savings as "money growing in a bank, and a sixth grade student declared "Production is when a chicken lays an egg." A seventh grader said""Scarcity is not hardly none," and an eighth grade subject defined depression as "poor times and no jobs."

Such succinct explanations of the concepts presented were not evoked from all the subjects, however, and herein lies as challenge as educators. Perhaps we should not consider briefly the procedure followed in the studies and finally the results and their implications.

In each investigation a pilot study was conducted at The Florida State University School, involving 8-10 subjects from each grade level under study. The purposes of these pilot studies were to establish the reliability of the inves-

tigator in judging responses and to measure the consistemcy of subjects' responses. The reliability of judgments was assessed by taping pilot interviews and subjecting them to monitoring by an indepedent judge. The percentages of agreement between the judge and each investigator exceeded 90%. The test-retest method was used to measure consistency of response, these percentages of agreement ranging from 85% to 95% with some variation by grade. The pilot studies involving students from grades 1-8 also served the purpose of arranging the concepts on the interview schedule according to the relative difficulty, based on adequate explanation of each concept by at least half of the respondents in each grade. Concepts presented to subjects in grades 9-12 were arranged at random.

For each of the three studies, a systematic, stratified random sample was drawn from the public school population of Leon County, Florida, in which is located the capital city, Tallahassee. A total of 50 subjects was selected to represent each of the twelve grades, and a reserve sample of ten children in each grade was drawn from which to call replacements when primary subjects were ill, had moved away or were for some other reason unable to participate in the research. A structured personal interview was conducted with each of the 600 subjects during which time data were collected concerning certain dependent variables under test and when an assessment was made of economic concept cognition.

Subjects were asked a series of questions, such as "What is a bank"? "What does it mean to buy something on credit"? What is a depression"? Responses to these questions were rated as adequate, partial, and inadequate, using the criteria followed in scoring the vocabulary section of the Wechsler Intelligence Scale for Children, and assigning numerical values of 2, 1, and 0, respectively. Use of these values made possible computation of a total performance score for each subject and yielded quantitative data which was considered at ordinal level in the statistical treatment.

For each study a list of economic concepts was drawn from the literature; from textbooks used in the grades under study; from curriculum guides in home economics, social studies, and business; and from other sources. The concepts included for presentation to students in grades 1-8 were arranged on the basis of the suggested vocabulary by grade level by Thorndike and Lorge in their listing of the 30,000 most used words in the English language and re-ordered slightly on the basis of the pilot study. Subjects in these grades were asked to respond to concepts until they failed to at least partially identify or explain five consecutive concepts, in accordance with the method used in the Stanford-Binet Intelligence Test. Elementary school subjects grade 3 and above began responding to concepts positioned two grades below their level; first and second graders began at the beginning of the schedule, as did junior high respondents. Each student in grades 9-12 responded to the entire listing of concepts, regardless of their performance in identifying the concepts.

The misconceptions voiced were myriad, and many were quite humorous. Among them were the following:

Poverty is people going around cheering.
A merchant is someone who comes from another land.
Teachers go on strike to catch up with their work.
A gift and a prize are the same except you don't wrap a gift.
To labor is to sleep.
A customer is someone who comes to your house to play.
Paying interest is liking something alot.
If you employ someone you don't like them so well.
Bankruptcy is when the bank doesn't have any more money.
Economics means learning to cook.
A proprietor is someone under the Governor who tells the people who to vote for.
Appraise means to say good things about someone.
Thrift is to do it in a hurry.
A monopoly is a big wind.
Free enterprise is giving something away free.
An auditor is someone who paints.
Equity is manners.
Inflation is like pollution; it kills something in the air.
Currency is how fast the wind is blowing.

Some mention should be made concerning data co llection relative to the several variables under study. Age, residence status, educational level of parents, and academic achievement were obtained by verbal questioning and review of school records. Political party preference was by verbal questioning. Sex and race were noted through observation. Mcney experience was assessed through use of a series of questions, such as "Do you receive an allowance"; "Do you earn money away from home"; "Do you receive an allowance";"Do you have a checking account"? A money experience score was computed for each subject, based on responses to questions, and these scores were arrayed and divided into high, medium and low designations. Money experience scores were treated as ordinal level data in the statistical analysis.

The socio-economic status of the family was determined from the father's occupation, using the Nam-Powers Index for classification purposes. This method is one used by the U.S. Bureau of the Census, developed by Dr. Charles B. Nam, former Chief of the Educational and Social Stratification Branch, Population Division, Bureau of the Census and currently professor and head of the Department of Sociology at The Florida State University. The values in the Nam-Powers Index have built into them educational level and income so that only the occupation is needed to determine social stratification. With the increasing difficulty encountered in obtaining personal information from which to judge socio-economic status, this index has great value. It is more up-to-date than that by McGuire White, which has long been used for such purposes. The index and information concerning its development and use appeared in the December, 1968 issue of Social Forces, should you care to investigate it more in detail.

The performance scores of subjects, based on the number and quality of responses,

were in each study arrayed and divided into three approximately equal groups, designated high, medium and low. These ratings were examined for variability by the aforementioned variables. Performance comparison was conducted within each grade level, and the .05 level of significance was the criterion for rejection of the null hypothesis. The gamma measure of association and test of significance for gamma were used to measure the strength or relationships and the probability of finding such relationships in the population at large. Gamma is a more versatile and more exactly interpretable measure of association than chi square in that it can be used with both dicotomized nominal data and ordinal data. It may be interpreted as the percent reduction of error one could expect when predicting the dependent variable from the independent ones. Gamma is computed from contingency tables, utilizing the cell values and may be used with any size table. The test of significance for gamma is computed using the marginal values. There are computer programs available for both operations, and even the long-hand method does not involve any sophisticated mathematical computations. In my portion of the research the statistics were computed by hand; the other two investigators employed the services of the data processing department.

Here you can see the results of the variable analyses. Those underlined were found to be significantly related to concept cognition in all grades in a particular study; those marked with astericks were found significant at only one or two grades:

grades 1-6: race and socio-economic status in all grades
residence status in grades 4 and 5
money experience in grade 5

grades 7-8: race, socio-economic status, money experience, father's educational level and academic achievement in both grades
age in grade 7

grades 9-12: race, socio-economic status, parents' educational level, academic achievement, and political party preference in all grades
age in grades 9 and 12
residence status in grade 9
money experience in grades 11 and 12

You will recall one of our purposes was to establish a gradient of the concepts for the various grade levels. You are now receiving a copy of the gradient so established. Each concept was positioned at the lowest grade level in which at least half of the respondents could explain the concept, following the method used in the formulation of vocabulary section of the Stanford-Binet Intelligence Scale. Of 115 concepts presented to elementary students, 69 were placed in the gradient. Others were presented as part of the interview schedule to older subjects. The instrument used with 7th and 8th graders included 61 concepts, 22 of which were placed in the gradient. Those designated with an asterick had been presented to elementary subjects. Subjects in grades 9-12 were presented 50 concepts, 31 of which were placed in the gradient. Again those which had been presented to subjects in lower grades are indicated with an aste rick.

The small number of words listed for 3rd grade could be due to the a group of particularly challenging words sppearing in a sequence in the third grade list. Children are also thought to experience a vocabulary plateau at the second and third grade level. We cannot account for the small number of words in the gradient at the 10th grade level.

You may feel some words in the gradient are known by children of your acquaintance at much younger ages than here suggested. But these studies were based on a cross-section of the population, which included many subjects who have not had the language development opportunities available to our children

A GRADIENT OF THE ECONOMIC CONCEPTS OF PUPILS GRADES 1-12, based on research conducted by Joyce Wolfgang Williams,Tina Fletcher Slaughter, and Rosalyn Murray Lester at the Florida State University under the direction of Dr. Agnes F. Ridley, Associate Professor of Home Economics Education.

First Grade				
money	gift	win	for sale	exchange
bank	property	sell	spend	price
store	work	shop	steal	borrow
job	trade	buy	pay	savings
Second Grade				
owner	clerk		lend	supply
prize	coin		mangger	cash
waste	payment		sale	bet
earn	commercial		bill	salesman
Third Grade				
bargain	customer	allowance		
Fourth Grade				
salary	credit	employment		
dealer	deposit	label		
rent	guarantee	shortage		
Fifth Grade				
product	expenxe	producer		counterfeit
Insurance	strike	loan		advertisement
employee	vault	employ		
Sixth Grade				
debt	bonus	manufacture		unemployment
labor	ransom	retirement		
charity	warehouse	employer		
Seventh Grade				
*treasury	*export	*partnership	*interest	toll
*scarcity	*teller	*production	*discount	income
refund	*profit	donation	bankruptcy	bail
Eighth Grade				
*bribe	investment	*budget		
bond	trademark			
pawn	*poverty			
Ninth Grade				
*estate	*mortgage	*competition		
*broker	*real estate	overdrawn		
*taxes	security			
Tenth Grade				
*currency	*pension			
Eleventh Grade				
*monopoly	*tariff	*liability		
*economy	*ration	*commission		
*consumer	*stock	purchasing power		
Twelfth Grade				
*dividend	retail	*proprietor	collateral	
*thrift	*appraise	*speculation	*depreciation	
*hoard	wages	consumption	installment buying	

Each concept was placed in the gradient at the lowest grade level at which at least half of the subjects evidenced understanding of the concept. (*) denotes concepts presented lower grades which were not placed in gradient due to lack of understanding.

or those of our friends. The gradient provides some measure by which children's economic vocabulary development can be assessed. It is not intended to be the final answer to what children should know, but it may serve as a basis for further research and perhaps the structuring of learning units for various grade levels.

In light of these studies, the following conclusions were drawn:

Children in grades one through twelve have in the repertoire a number of economic concepts which they can verbally define.

There are certain concepts in the repertoire of the majority of children at each grade level which are not in the repertoire of the majority of children at lower levels.

The knowledge of economic concepts varies significantly at each grade level with respect to socio-economic status and race and at some grade levels with respect to money experience, place of residence, educational level of parents, academic achievement, age, and political party preference.

Among the recommendations made in terms of our findings are the following:

Students' socio-economic status and race should be taken into consideration in curriculum planning and in presentation of subject matter.

Diagnostic pre-testing should be conducted to assess students' knowledge prior to teaching to avoid presentation of material too advanced or already known by the students.

Additional research should be conducted to determine the cognition of certain economic concepts of pre-schoolers (to be done at FSU in 1970).

Sources of erroneous concepts should be studied at all grade levels.

Replication of the studies in other regions of the United States should be done.

This has been a rapid account of a series of studies which have taken well over a year to design and implement. However, perhaps there are implications for those of us who would make consumer education and family economics a more vital part of our curriculum. The completed thesis and dissertations will be available through Inter-library Loan at The Florida State University if you

desire more detailed information as to procedure and findings.

It sometimes seems unfortunate that in research we are often primarily concerned with significant differences. Permit me in closing to point out some ways in which the subjects in these studies were significantly similar. For whereas there is little or nothing we can do to alter such factors as a child's current socio-economic status, place of residence, sex or race, we can and should capitalize on the opportunities which are ours to help all children to have comparable experience and knowledge. With few exceptions, the 600 children interviewed were interested. They were interested to know why they had been chosen to talk with one of us. They were interested in knowing that we were talking to boys and girls all over their county. They were interested to know how well they did in the task presented, and they were interested to know who else would know how well they did. They were significantly interested.

The subjects were eager. They were not all terribly astute in expressing their understanding of the concepts, but they tried diligently. Sometimes they lacked the necessary vocabulary to explain and would say, "Oh, you know what I mean." Many were reticent to admit they had never before heard of the word and often would ask that we tell them if they could not tell us. They were significantly eager.

They had all experiences money use, although varying a great deal in their total money experience. And what is more important, we can be sure that their future money use will increase significantly. They will all continue to be consumers, important components of our total economy- whether informed or ignorant, wise or foolish, thrifty or wasteful.

They were all children of men, citizens of our nation, the fabric from which we as educators are to fashion future Presidents and farmers, merchants and doctors, barbers and homemakers and nurses. They were all potential benefactors of the fruits of America's labors and makers of our joint destiny, the significant Americans of tomorrow.

Let us look beyond the significant differences to the significant similarities which may be ultimately more important to us all. In light of and in spite of research findings, let us renew our faith in our ownabilities to meet the challenge of education in the seventies. Let us recognize the abilities of students whom we teach or whose education we supervise and plan. Let us determine to give our all that their concept of Life will be positive, vibrant, happy, and ever-expanding.

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Resource People and/or Community Resources--
An Approach to Working in the Classroom

By

Adeline Garner Shell, Consultant
63rd Annual Vocational Convention
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Resource People and/or Community Resources - An approach to Working in the Classroom.

In order to explore the topic assigned, I would like to first share some ideas which cannot be overlooked in our ever-changing world - both private and professional.

As I talked with you in informal groups and as individuals, I was unhappy and sadly moved by the concern you expressed about who is doing the best job - the West, the North, The South, the Mid-West, the East, or the Northeast. I have news for you. We are in trouble - serious trouble - regardless of where we work and what kind of job we do.

At a time when change - real change - is taking place at social, economic, and educational levels, we are acting as an immature, insensitive group. You and I have a real opportunity to change the direction of the lives of every student we reach. We can be a more vital force in the society if we can set aside our personal and professional hang-ups and look at our students as people - not as "those" or "these" people - depending on our values and attitudes.

Your teaching, your students, your community should allow for the fullest development of every student. This growth should be in an atmosphere that allows for the individual to develop within the framework of his or her lifestyle. We must stop being so moralistic about Home Economics. Remember, life doesn't start and end with the way you think the table should be set! Give your students the human dignity they deserve. Work with them, allow them to develop, and watch them grow. Above all, allow students choices. Often, in Home Economics, we create a frustration because of the rigid standards we have set.

As professionals our working world has been primarily concerned with females. Our thinking has been "for girls, for women". We must change our thinking to girls and boys, men and women, and families. The world is changing at an accelerated rate. We, as progress, have not changed at an accelerated rate. In order to better service the child or young adult in our classrooms, we must be aware of the reality of the youth we service and teach. We must be flexible and sensitive enough as professionals to adjust, adapt, and/or change our methods and approaches to teaching. This is asking for almost the impossible. But - if Home Economics is to survive - note I didn't say grow - I said survive, we must take a good look at our profession and make the changes necessary to give our teaching relevance to everyday living - now living.

How can we make changes that have meaning? What must we know and do in order to survive?

(1) The Home Economist - the teacher of the young - must think of herself as a salesman who sells ideas. As a salesman she has to share ideas with students - both boys and girls. These ideas must also involve the adults in the lives of our students.

The first aim of the teacher is to motivate students to listen; then to think, react, evaluate, accept, modify and/or reject the ideas and concepts presented. Only when ideas and/or concepts presented become a part of the students' reality and lifestyle may we consider our teaching as effective and meaningful. This is good teaching and true education. Think of it this way - to memorize, remember, and answer questions on a test isn't true learning and education. True education comes only when the student takes action on the ideas or concepts presented.

(2) As Home Economics teachers we are faced with more slow learners in our classes than one would find in science, mathematics, or French classes. Often this reality is rejected or set aside by the teacher as well as the Home Economist in Business and people preparing materials for classroom use. But - since we are talking about the real world - you and I are not setting this factor aside. Knowing and accepting this - I would like to share some observations about the "real world" Home Economics classes.

A. Most students in Home Economics classes are poor-to-good readers. Many who read do not like to and do not want to read.

B. Many students in Home Economics classes are potential drop-outs.

C. Most students come from homes of blue-collar working class and poverty groups. Please note, I said Most - not all.

D. The majority of Home Economics students are not effectively reached with conceptual teaching techniques. The training and life experiences of the students are such that the student cannot successfully translate abstract concepts into everyday realities. We must help the student grow toward conceptual learning.

E. Most Home Economics students, like their mothers, feel they have little control over the world outside of the home. Because of this, teaching which relates to familiar things and experiences carries the greatest weight with her and/or him.

F. Generally speaking, Home Economics students do not probe into the unknown on their own. But - the student is extremely open to suggestions and eagerly accepts guidance that is presented in terms that fit in with her needs and her views of the world.

I could go on and on with observations; the point is - for our profession to survive, the content and techniques used in teaching must have greater relevance and meaning to the world of the family and the students we are reaching in the classroom. This is one area where most of us have failed. Sounds harsh, but think it over. Please take a second look.

(3) The training of Home Economists has been middle class oriented. The teachers, the texts, the laboratories, the Home Management House experiences, the level of language, resource people and resource materials would further support this observation. Often the practice teaching experiences are in classes and/or schools of middle class communities. So - the methods, content, attitude, and values with which the teacher approaches her students are middle class in nature. The Home Economics teacher is left to her own resources in adapting her training,personal experiences, and previous classroom experiences to the needs of her students. In addition, more often than not, she is faced with students of different ethnic backgrounds. Her insights to the values, attitudes and life styles may create seriousproblems and stress which interfere with being an effective teacher. Many teachers teach as they were taught because it is too painful and almost impossible to translate her values, education, work and personal experiences to meet the needs of the students. In addition, the teacher is trying to comply with the local and state curriculum which may, or may not, meet the needs of the students.

(4) Most teachers need more experience in effective communications. How often did you have teachers in education courses "explain" rather than demonstrate methods and techniques in teaching? We need more

"show" as well as "tell" in Home Economics.

(5) Professionalism. This is a good word but a dangerous one. I ask you to define professionalism for yourself. I would like to stress, you consider these thoughts part of the definition.

Constructive criticism. In the guise of good manners and politeness, we are helping put down our profession. When another teacher, a college professor, a guest speaker, audio-visual materials, etc. is incorrect, wrong, not meeting given needs, or objectives, start speaking up. In our field expressing criticism is often mistaken for bad manners. Because of this you often allow a bad situation to become worse. Unless teachers express their thoughts - good, bad, or otherwise - constructive change will never take place. Stop complaining to one another - speak up where and when it counts. Let me share an experience I had with the publisher of Co-ed. After attending many teacher meetings visiting with teachers in classrooms, talking with Home Economics supervisors, etc., I observed and reported that many teachers in large cities were not using Co-ed in the classroom because they felt the editorial content did not meet the needs of the inner city child. When this observation was made to the publisher his reply was "...teachers have not told us this...nor have we received mail on this subject." Many of you have said you aren't using Co-ed in the classroom becuase you didn't feel it met your classroom needs. At the same time you said you would like to use it. When asked if you had written the editor or publisher, the answer was - "no". What can you do in such cases? Speak up - in person, as an association, or write. In my case, I suggested to the publisher an inner-city edition. The teachers who felt the book was great as is would continue to receive

it as is. For those with inner-city students, four or eight pages could be added to meet the needs of the inner-city students. This is what I consider constructive evaluation. Define the problem, the needs and make a suggestion.

Many of you have said some materials from business do not meet your classroom needs. When I advise and talk with industry representatives, they tell me they do not hear this from you.

Many of you, in informal talks have expressed real displeasure with some of the "revised" texts in our field. You felt the "revisions" weren't worth the cost to the student and board of education. Have you sent these books back? Have you written the publishers? Have you notified your board?

As I visit classrooms, more and more teachers say many of the audio and visual aids do not have relevancy to the classroom curriculum and lifestyle of students. But - they also say they haven't written anyone about this matter. Again - speak up if you want to survive.

At the same time - be sure to speak up when a job is well done. This is also an important part of constructive criticism.

(6) Be sure to inform your college of what subjects and teachers were most helpful to you as a teacher, which weren't helpful, and where you feel training and subject matter could be improved and/or added to the curriculum.

(7) Take a good look at what Home Economics means to other teachers, students, parents, the community, taxpayers, politicians, and other professionals. Do you like the thoughts which they express? If not - act accordingly.

Again I would like to stress relevance and sensitivity. An example - recently I attended a workshop on "Working with Low Income Families". The head of the department of one of our New York City Colleges reported on a project her Home Ec. students were doing with low-income families. It was called "Live on Less".. After the meeting I said to her, "Shame on you! How can a family at poverty level live on less?" Maybe the program should have been "Get the Most for Your Money."

Above all, any program you are involved in should be right for your students. If your curriculum doesn't allow for this, discuss the matter with your supervisor and work toward constructive change. If, with time, positive action isn't taken, move along to your principal. Remember, change is coming. If you do not help make a change which has relevance to your students, some other department in your school will. We have seen this happen in the area of consumer education. In New York City the distributive education group developed the basic curriculum for consumer education. It could have been the Home Economics Department. One point - the Home Economics teacher still teaches consumer education, but the baisc direction for the total program came from forces outside our profession. We shall see more and more of this. It can be avoided. We must take leadership. We must become the innovators. We cannot live on the good done in the past.

All of us can be better teachers by making better selections of resource people and/or resource materials that enter the classroom. All resources should be evaluated in relationship to student need, the level of language, the atmosphere, the climate, and lifestyle of the student. The resources should add to the education experience of the

students and the teacher.

NEVER should a resource or resource person be used to kill time, provide busy work for students or free the teacher to get away from the students. A resource person is not a baby-sitting service. Many students will tell you a film or a speaker means "goof-off" time for the teacher. Many leaflets, magazines, and printed materials seem to constitute busy work, rather than contribute to the development of a concept, a unit of study, or an added dimension and different point of view.

When you use a resource person, make sure the contribution made is vital to the home economics program and the students' learning and growing experience. Remember, the resource person is contributing to your program and is helping to create the meaning and value of Home Economics to your students and the community. When possible, have the students help determine the resource person. Make sure the person knows how to communicate effectively with <u>your</u> students.

You should give the resource person the topic, or a range of topics, you want covered, what preparation and experiences the students have had or haven't had for the meeting, some background information on your class, and explain the role and need the resource person is to fill.

<u>Tips and Topics in Home Economics</u> from Texas Technological College (Vol. VII, No. 3, February 1967) suggests the invitation to a resource person include:

- "Nature and purpose(s) of meeting
- Time and place of meeting
- Assignment or freedom of choice of subject (If freedom of choice,

give some direction, or choices between two or more subjects.)

• Amount of time assigned to him.

• Other parts of the program which have relationship to his contribution.

• Expenses or fees to be paid, if any.

• Size and nature of group. Ages, special interests, background.

• Proposed plan for lodging and meals, if applicable.

• Role or position of the person issuing the invitation.

Follow-ups of invitation include:

• Letter of confirmation giving definite time, place, (and travel if involved).

• Memo giving details one week before the meeting.

While a guest:

• He is met and made welcome.

• He is introduced to group leaders and others on the program.

• He is introduced to the audience briefly but cordially.

• His check is ready (if fees are to be paid).

After he leaves, teacher and group leader(s):

• Write, thanking him.

• Send any clippings or pictures of the event."

Who should be used as a resource person? Any person who has a vital contribution to make to your group. Broaden your concept of the word resource. You know how to use the professional services of the utility company, pattern companies, home agents, demonstrators, etc. Just be sure the program presented provides a learning experience rather than just a sales pitch for an electric fry-pan or sewing machine. Where possible, have the guest incorporate student help (which is meaningful). Often the students can work with the guest to determine

the recipes used in a demonstration or the method of inserting a zipper. Make the program one of involvement.

Remember, students with special skills or information have great impact on their peers. Look to the recent graduates who are doing a good job in the outside world as a resource person. The graduates can "tell-it-like-it-is".

The local banker, insurance man, policeman, doctor, tailor, shoemaker, hairdresser, store manager, food packer, etc, knows more about his business than we do. When using these resource people, be sure different points of view are brought into the follow-up evaluation. It is important that the resource person be sent a report on the evaluation. He may learn a great deal from the experience.

TV and radio are excellent resources if properly used. In using TV and radio, each student experiences the same presentation, but the discussion and evaluation allow for differences in acceptance and use of the ideas presented.

Parents of students, when they are available, make excellent resource people. Many women can bring skills in home management, child care and family life which relate to the real world rather than "book learning". The show and tell aspect seems to have meaning to students. One also allows for individual differences in value and attitudes when parents are willing to participate.

Try to include resource people who have similar backgrounds to the students. Most of us, young or old, like to see and know of the contributions made by people like ourselves.

Use puppet shows, humor, a song, a cartoon, and mistakes made by "people-people" as resources.

And be sure to use government resources and speakers. Many of the community Consumer Departments have excellent speakers and literature available. Look to the legislators on bills which are directly related to consumer education, family life, taxation, etc.

Teach and use other community resources such as the health department, welfare department, voluntary agencies, private agencies, vocational services, employment services (private and public), etc.

Resource materials such as leaflets, posters, films, film strips, film loops, overhead projections, etc. are available by the car load. Many of them are free and many are for sale. All of them are expensive to produce. Either directly or indirectly, you are paying - the community is paying - the taxpayer is paying - or the student is paying.

Any time you hand out a piece of literature, buy books, use a film, show a sample of material to a student, you are making a judgment. For this reason, anything you use in class should be evaluated. If some parts are good, say so; if some parts are bad, say so. The materials you use are a reflection on your teaching, your department and your profession. For example, if you ask students to buy or use a magazine or leaflet which has errors in recipes, you are responsible. Know the materials you use. Buy or request them with the understanding they may be returned if not satisfactory. Become responsible for what you use.

When you receive material you find is unsatisfactory, write the president of the company. I hate to say this, but letters expressing displeasure seem to get lost. In your letter also remember to mention what is most needed in your classroom.

In addition to evaluating materials, use them only when they have meaning in relationship to what you are teaching. If materials are used too freely, they lose impact. Also, relate to students such materials are expensive and shouldn't be thrown into the basket. It is better to leave materials on the teacher's desk than to destroy them. Someone else may want to use them.

The materials you use in the classroom should build a bridge to the home. The secondary use of any material is important and difficult to evaluate. Good materials may bring a response from parents. This response is the bonus we look for in teaching. It is the frosting on the cake!

In closing, I hope I have been a good saleswoman. My aim has been to motivate you to listen; then to think, react, evaluate, accept, modify, and/or reject the ideas and concepts presented.

ACTION WITH ACCOUNTABILITY

POLLY GARRETT

Our purpose is to offer selected comments which might be both provocative and pertinent to that crucial task of Accounting for Action via Vocational Home Economics Education in the "70s".

As the accompanying material indicates we have made liberal use of many publications, particularly those from ERIC, HEW, OE and State Boards of Education in the several states. We acknowledge our indebtedness for their help as we attempted to suggest approaches to an evaluation system.

The guidelines used by the speaker for this "Collection of Comments" included such concepts as:

Effectiveness of effort (curriculum development, improvement of instruction, provision of service) must be measured against objectives and goals.

Evaluation with the inherent data gathering process(es) is planned and carried out cooperating with all concerned personnel (Federal, Regional, State, Local)

Objectives are expressed in terms of desirable changes and projections.

The procedure for identifying and examing objectives might be similar to the design being followed in the National Assessment of Educational Progress project, that is, each objective being

assessed is:

(1) considered important by scholars (authenticity) in relation to the Home Economics Education discipline).

(2) accepted as an educational task by the school (Vocational and Occupational Educational Emphasis) in that setting.

(3) considered desirable by thoughtful lay citizens (counsel based on relevant experiences of the users of our educational services)

Evaluation (products and processes) should provide relevant information to "the decision-makers" at various levels and indicate options.

Data gathering is an integral part of evaluation and includes collection, organization, analysis, and reporting of data pertinent to objectives and goals.

On the first page of our "collection of comments", we've identified some seven categories - (NEED (Problems); GOALS AND OBJECTIVES; DATA; ALTERNATIVES; DECISION; PROGRAM (What, Where, When, Who, Why, How); and EVALUATION. to be considered in developing a system for program planning indicating that Evaluation is a major category in such a system. These categories are not new to us, but they do offer us a suggested framework for our discussion.

One current approach being used within such a framework is called the Program Planning and Budgeting System. On Page 2 of the resource document we have tried to highlight the major elements of that system

Another approach is that of PERT - Program Evaluation and Review Technique. The advantages of the system are indicated. (Will you please correct your copy, the statement, 4th paragraph, which reads: "Weapon", should read "equipment" and space acquisitions.)

Still another approach to an Evaluation System is that outlined in the flow chart on Page 4 of your document. Please add that the specific material from which this chart was developed came from a paper by Guba and Clark, "An Examination of Potential Change Roles". Your speaker feels that the utilization of this model or general plan would require a number of supplemental detailed instruments and a continuing series of in-service workshops with appropriate personnel.

The system that we'll discuss in the remaining time allowed us is Planning, Programming and Budgeting and will try to adhere rather closely to the material from Pages 5 through 14.

A C T I O N F O R A C C O U N T A B I L I T Y

E V A L U A T I O N

R E P O R T I N G W I T H R E L E V A N C E

A S S E S S M E N T

DR. POLLY GARRETT, PROGRAM OFFICER
REGION VIII -- DENVER, COLORADO

WORK MATERIAL
DECEMBER 1969

NOT FOR GENERAL DISTRIBUTION
FOR DISCUSSION ONLY

WORK MATERIAL-EVALUATION IN VOCATIONAL EDUCATION
Polly Garrett, Program Officer, Region VIII,
Denver December 1969

INTER-REGIONAL CLINIC,
Regions VIII and IX
Kansas City, Missouri
March 14, 1968

I. Planning, Programming, Budgeting System

A. Planning

Systematic analysis of objectives and statements of goals.
Search for alternatives in setting and achieving goals.
Estimation of costs of benefits.
Roughing out major lines of action to be taken.

B. Programming and Budgeting

Detailed spelling out of actions in terms of:

Money. People. Equipment. Facilities. Legislative action(s).

Process of actually requesting, appropriating, and apportioning funds and utilizing resources (staff, etc.).

These activities go on continually as new data are obtained and new ideas generated and implemented.

II. Mission (Reflects Objectives and Goals)

A. Mission (Combines philosophic and pragmatic beliefs)

Definition: Describes the organization's (department's, agency's) reason for existence, the general services or functions it performs, and specifies the limits of its jurisdiction and authority. It remains more or less fixed unless changed by law, official action, or action taken by professional groups who represent the "group" as official spokesmen.

Example: The mission of the Division of Vocational and Technical Education of the Office of Education is:

1. To provide the leadership essential in effecting the appropriate role and direction of vocational and technical education in the broadest aspects of education and employment education, as suggested by such factors as: (1) technological advances; (2) occupational changes and related job opportunities; (s) rapid population growth; (4) socio-economic changes; (5) occupational training available.

2. To provide direction to achieve stated or implied objectives of vocational-technical education in accordance with federally-enacted laws, rules and regulations, and as otherwise directed by executive order(s).

3. To provide policy, plans, direction, technical advice, and assistance and evaluative services to effect balanced and coordinated programs of vocational and technical education attuned to the educational needs of the people in our society, the occupational requirements of the world of work, and the labor market.

B. Objective(s)

Definition: An objective is a long-term specified state of accomplishment toward which programs are directed. Areas of program direction, resource allocation, and

The major elements of PPBS are labeled "Program Structure," "Program Evaluation," and "Program Analysis."

Program Structure is a framework for organizing information about activities in terms of major objectives. It shows the magnitude of resources allocated to various objectives, the ways used to reach them, and the target groups affected.

By bringing together information on all our activities, we not only have a more accurate and meaningful picture of what we are doing but also we can visualize what would happen if something were changed.

Program Evaluation is an attempt to measure how well programs are accomplishing their objectives. Reporting systems have to conquer organizational and procedural differences. Programs are directed at people - at improving their lives in some way. In order to find out how well the programs work, we need to know what difference the services made in their lives, and how that changed the society. Did they find a job? How healthy are the families participating in health and home economics programs? What impact does education have on the literacy rate or the employment rate?

PPBS can help to get at these difficult but essential follow-through questions.

Program Analysis tries to throw light on the decision-making process by asking and answering a different set of questions: What are we trying to do? What are the various ways we could do it? What are the advantages and disadvantages of each alternative? The analysts draw on evaluation data to assess the effectiveness of existing programs. And they use other sources of information to make inferences as to what might happen if alternative courses of action were taken.

To some it seems cold to calculate costs when our concern is with people. We are not dealing with pieces of hardware but with human beings whose needs are obvious.

But we don't have the resources to meet every need of every individual. We probably never will. So we have to make choices.

PPBS does not guarantee that our choices will always be logical, or that decisions will always be made quietly and rationally, in full light of all the facts. PPBS may mean that fewer decisions will be made in the dark,

WORK MATERIAL-EVALUATION IN VOCATIONAL EDUCATION used resource publications from HEW, OE/BAVLP, ERIC, and Regional Conferences sponsored by Government agencies for personnel concerned with PERT, PPBS, Reporting and Evaluation. Polly Garrett, Program Officer, Region VIII.

WORK MATERIAL-EVALUATION IN VOCATIONAL EDUCATION
Polly Garrett, Program Officer, Region VIII,
Denver December 1969

PERT - Program Evaluation and Research Technique

"Management Breakthrough" for saving time and increasing effectiveness of program operation.

Recommended as a part of proposals submitted for the purpose of obtaining federal funds.

Characteristics applicable to education research and curriculum development projects.

PERT - Set of principles, methods and techniques for planning programs in relation to objectives, inter-relating and controlling variables of time and resources, scheduling events and activities and re-planning research of development programs. A uniform standard of communication provides all personnel with the same picture of progress, problems, and alternative remedies. PERT provides clear, concise reports for those staff members supervising programs to:

(1) Assess the plan of the program.
(2) Analyze and evaluate the status of completed work.
(3) Program the uncertainties of the objectives.
(4) Forecast or isolate potential problems.
(5) Arrive at reasonable decisions.
(6) Plan the best possible use of resources to achieve desired goals.

PERT saves time and money, including: Administrative, planning, analysis of production cycles, weapon and space acquisitions.

PERT is a statistical management control tool that assesses reasonableness of plans and schedules and the feasibility of accomplishing tasks in detail by deadline times. The objectives of PERT are to provide necessary information to enable better planning and control of time and cost in developmental and operational projects; therefore obtaining a valid network is meaningful to the person or persons who will actually execute the program.

In keeping with sound curriculum planning, the first step is to define the objectives. The system requires that the objectives be divided into subdivisions and then into tasks to be performed.

PERT is represented by an interdependency between two successful events. It is based on the assumption that an activity cannot be started until its preceding event has occurred, and that the event succeeding the activity cannot occur until all activities leading to the event are accomplished.

Benefits to the educator in using PERT for curriculum development and educational research include:

(1) A single portrayal of a complete system.
(2) A basis for a unified standard of communication among staff members.
(3) A procedure that enhances common understandings at all decision-making levels.
(4) Reports that allow for thorough assessment of the sequence of activities, schedules, and costs.
(5) Reports that assist in analyzing and evaluating the status of completed work.
(6) Reports that assist in forecasting or isolating potential problems and decision-making.
(7) Reports that assist in planning the best possible use of resources to achieve desired goals.
(8) A means whereby all tasks must be specifically defined.
(9) A means to determine where resources should be applied to best achieve the desired objectives.
(10) A means to assist in identifying those areas of potential delays or deterrents.

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Polly Garrett, Program Officer, Region VIII, Denver
December 1969

ADAPTATION OF A CLASSIFICATION SCHEMA OF PROCESSES RELATED TO AND NECESSARY FOR CHANGE IN EDUCATION (HOME ECONOMICS EDUCATION)

		DEVELOPMENT		DIFFUSION	ADOPTION			
	RESEARCH	Invention	Design	Dissemination	Demonstration	Trial	Installation	Institution-alization
OBJECTIVE	Plan_____	Formulate____	Construct____	Use_____	Demonstrate__	Provide__	Apply_____	Establish___
CRITERIA	Validity	Appropriate-ness Contribution	Generaliza-bility Performance	Impact	Credibility Convenience	Adaptability Feasibility	Effective-ness Efficiency	Continuity Support
THE CHANGE PROCESS	Postulates Basis for change	Produce the change	Engineers the change	Informs about the change.	Builds conviction about the change.	Tries out the change in the context of a particular situation	Operational-izes the change for use in a specific institution	Establishes a change as a part of an on-going program; converts it to a "non-innovation."

"Work Material-Evaluation in Vocational Education" used resource publications from HEW, OE/BAVLP, ERIC, and Regional Conferences sponsored by Government agencies for personnel concerned with PERT, PPBS, Reporting and Evaluation.

WORK MATERIAL-EVALUATION IN VOCATIONAL EDUCATION
Polly Garrett, Program Officer, Region VIII,
Denver December 1969

INTER-REGIONAL CLINIC,
Regions VIII and IX
Kansas City, Missouri
March 14, 1968

I. Planning, Programming, Budgeting System

A. Planning

Systematic analysis of objectives and statements of goals.
Search for alternatives in setting and achieving goals.
Estimation of costs of benefits.
Roughing out major lines of action to be taken.

B. Programming and Budgeting

Detailed spelling out of actions in terms of:

Money. People. Equipment. Facilities. Legislative action(s).

Process of actually requesting, appropriating, and apportioning funds and utilizing resources (staff, etc.).

These activities go on continually as new data are obtained and new ideas generated and implemented.

II. Mission (Reflects Objectives and Goals)

A. Mission (Combines philosophic and pragmatic beliefs)

Definition: Describes the organization's (department's, agency's) reason for existence, the general services or functions it performs, and specifies the limits of its jurisdiction and authority. It remains more or less fixed unless changed by law, official action, or action taken by professional groups who represent the "group" as official spokesmen.

Example: The mission of the Division of Vocational and Technical Education of the Office of Education is:

1. To provide the leadership essential in effecting the appropriate role and direction of vocational and technical education in the broadest aspects of education and employment education, as suggested by such factors as: (1) technological advances; (2) occupational changes and related job opportunities; (s) rapid population growth; (4) socio-economic changes; (5) occupational training available.

2. To provide direction to achieve stated or implied objectives of vocational-technical education in accordance with federally-enacted laws, rules and regulations, and as otherwise directed by executive order(s).

3. To provide policy, plans, direction, technical advice, and assistance and evaluative services to effect balanced and coordinated programs of vocational and technical education attuned to the educational needs of the people in our society, the occupational requirements of the world of work, and the labor market.

B. Objective(s)

Definition: An objective is a long-term specified state of accomplishment toward which programs are directed. Areas of program direction, resource allocation, and

effort -- "What is to be done." An objective does not fix a time for its achievement. It may be ambitious or idealistic but must be consistent with the Mission. In education an objective is usually stated in terms of completely overcoming an educational problem, or reducing it. An objective is not cast in terms of current availability of resources, but must consider these. Objectives will be those set up by agencies, organizations or institutions responsible for over-all comprehensive planning.

Example: Maintain, extend, and improve existing programs, and develop new programs of vocational education aimed at youth and adults as

1. Students at secondary level.
2. Students at post-secondary level.
3. Persons with special needs.

-- Improve the level of living of low-income families.

-- Expand training programs for occupations which utilize knowledge and skills in home economics.

C. Goal(s)

Definition: Expression of outcomes, expectations in measurable terms within a specified time span -- "What is to be accomplished."

Examples: Provide programs in consumer and homemaking education for adults in low-cost housing developments.

Increase the number of food service personnel prepared in post-secondary programs.

III. Information System for Program Planning and Development

Basic Data: Realistic program planning and development requires comprehensive data concerning the following:

Program objectives and goals.
Program status.
Program need.
Resource input.
Program output.
Costs.

1. Program objectives and goals:
These are the statements of outcomes and expectations in measurable terms within a specified time span -- "What is to be accomplished."

2. Program status:
Specifies and quantifies the existing situation. For example, the program status of consumer and homemaking education programs for adults in low-cost housing developments (depressed areas) might be expressed as follows:

a. Distribution and location of housing, such as:

Where located. Number. Number of families in each geographic area. Level of income of residents(average)., etc.

b. Composition and description of existing home economics programs in low-cost housing in economically-depressed areas, in terms of:

Nature of programs.
Number of teachers.
Teacher qualifications.
Number of families served.
Number of individuals served.
Characteristics of persons served.
Supportive services.
Distinguishing features of programs.

3. Program need:
Specifies and identifies the people to be served -- the target group and its size.

4. Resource input:
Expresses total resource allocation (facilities, equipment, materials, staff) earmarked for program objectives and specific goals.

5. Costs: Include outlays for the full range of current expenditures. Could include, for example, the following:
Current operating costs -- Personnel; material and supplies.

Current capital costs: Buildings and land; fixed equipment.

The development of adequate basic data is a prerequisite for meaningful long-time program planning and development. When this is done, there is the foundation for:

Linking program planning to financial planning.
Linking current program operations (program need, program status, program output, resource input, costs) to the long-term program plan; and current operations with future plans.
Linking actual program accomplishment with the program plan, i.e., meet or did not meet program objectives or goals as expressed in quantitative and descriptive reasons.

IV. Format for Program Planning and Development

Program Objective: To maintain, extend, and improve existing programs, and develop new programs of vocational-home economics aimed at adults with special needs.

To improve the quality of family living in low-cost-housing families.

Program Goal: To provide programs of consumer and homemaking education for adults in low-cost housing.

Program Needs: There are 50 public housing developments in the State, and adults in all of them can benefit from home and family living programs currently and over the next five years.

Program Status: None of these housing developments have programs for adults to help them solve their home and family life education problems:

1969	1970	1971	1972	1973
10	20	30	40	50

Cost: 10,000 to support a program in one center.

	1969	1970	1971	1972	1973
Resource Input Proposed:	$100,000	$200,000	$300,000	$400,000	$500,000
Program Output Expected:					
Number of families served:		--	--	---	--
Number of individuals served:		--	--	--	--

Contribution to the development of the material
by State home economics consultants, together with:

Dr. Berenice Mallory
Dr. Polly Garrett

WORK MATERIAL-EVALUATION IN VOCATIONAL EDUCATION used resource publications from HEW, OE/BAVLP, ERIC, and Regional Conferences sponsored by Government agencies for personnel concerned with PERT, PPBS, Reporting and Evaluation. Polly Garrett, Program Officer, Region VIII.

WORK MATERIAL - EVALUATION IN VOCATIONAL EDUCATION
Polly Garrett, Program Officer, Region VIII, Denver
December, 1969

HOME ECONOMICS EDUCATION

Program Objectives and Goals:

Adapted from a "System for State Evaluation of Vocational Education", The Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio - and Materials from the State Boards for Vocational Education in Kentucky and Colorado.

Objective: To provide comprehensive curricula and instruction for youth and adults based on needs of the individual, the family, the community and the society in which we live and work.

Goal: Modify, extend and/or expand the offerings in Home Economics Education.

ENROLLMENTS AND COMPLETIONS IN VOCATIONAL EDUCATION PROGRAMS

A._____ Total
A.1_____ Enrollment _____ Male
_____ Completion _____ Male

A.2_____ Enrollment _____ Female
_____ Completion _____ Female

B._____ Total
B.1.1_____ Enrollment _____ Male
Unduplicated
B.1.2_____ Completion _____ Male

B.2.1_____ Enrollment _____ Female
Unduplicated
B.2.2_____ Completion _____ Female

C._____ Below Grade 9

Secondary Grades 9-12
D.1.1_____ Enrollment
D.1.2_____ Completion

E._____ Total Community College - Post Secondary
E.1.1_____ Enrollment
E.1.2_____ Completion

F._____ Total Technical Institute and Others - Post Secondary
F.1.1_____ Enrollment
F.1.2_____ Completion

G._____ Total Preparatory

H._____ Total Adult Supplemental
H.1.1_____ Enrollment
H.1.2_____ Completion

I._____ Total Adult Apprentice
I.1.1_____ Enrollment
I.1.2_____ Completion

Instructional Program Title_____

This program was in operation last year (ongoing or continuing)._____

This is a new program starting this year._____

This program is in the process of becoming operational._____

1. Level of Training: (check only one)

1.1____Secondary (reg.in-school program 9-12)
1.2____Post-Secondary (available for full-time training)
1.3____Adult (available for part-time training)
1.4____Mixed levels (combination of the above) Specify
1.5____Elementary (K-6: regular school)

1.6____Middle schools (7-8)

2. Type of Program:

2.1____Regular vocational program

2.2____Special needs program

_____Exemplary

Check one or more items below to indicate persons served by this special program

2.3____Handicapped
2.3.1____Physical
2.3.2____Mentally retarded
2.3.3____Emotional
2.3.4____Other (specify)_____

2.4____Disadvantaged
2.4.1____Socio-Economic
2.4.2____Cultural
2.4.3____Educational
2.4.4____Other (specify)_____

3. Is prevocational instruction/orientation provided to students in this school?

_____Yes - Note type of program and type of enrollment

Type of Program
_____As a specific course
_____Integrated into other course work

Type of Enrollment
_____Elementary students only (grades 6 and below)
_____Middle school students (7-8)
_____Secondary students (grades 9 & above)
_____Both elementary and secondary students
_____Total Enrollment
_____Students receive prevocational instruction.
_____No prevocational instruction/orientation provided.

3a. Is this an MDTA training program in the Home Economics field of service?

3.1_____Yes
3.2_____No

4. This instructional program is designed to train persons living in a: (check one)

4.1_____Urban setting
4.2_____Rural setting
4.3_____Both urban and rural settings

5. Is this instructional program composed of a series of separate specialized courses?

5.1_____Yes
5.2_____No

6. How many courses must a student take to complete this instructional program?

_____Courses

7. List the individual vocational courses that compose this instructional program. If these courses are sequenced, list in order.

8. When is this instructional program offered?

_____Day only
_____Night only
_____Both day and night
_____Other - Comment _____

9. Does this instructional program operate at times other than during the regular school year (September - June)?

_____Yes
_____No
If Yes, which months:_____

10. What is the duration of time, by school years and months of instruction, required for a student to complete this instructional program?

_____No. of school years.
_____No. of actual months of instruction - or
_____No. of actual weeks of instruction - or
_____No. of actual days of instruction

OBJECTIVE: Encourage preparation for professional leadership.

GOALS: Provide instruction especially designed to prepare youth and or adults for the dual role of homemaker and wage earner.

11. How many clock hours of classroom instruction or training are required for a student to complete this instructional program?

_____clock hours.

12. How many times is the complete cycle of this instructional program offered during the year?

_____times

13. This instructional program was initiated in this school: (check one)

13.1 _____This year
13.2 _____Last year
13.3 _____Two years ago
13.4 _____More than two years ago

14. Does this instructional program provide students with out-of-school laboratory experience?

14.1 _____Yes (note type)_____
14.2 _____Observational experience
14.3 _____Cooperative work experience
14.4 _____Work-Study experience
14.5 _____No

15. If answer to Item 14 was yes, then how many employers are associated with this instructional program in providing cooperative work experience training stations - observational

15.1 _____Cooperative work experience
15.2 _____Employers
_____Observation of workers

16. Does this instructional program provide students with simulated work experiences in the classroom setting?

16.1 _____Yes
16.2 _____No

17. Are there specified course prerequisites for admission to this instructional program?

17.1 _____Yes
17.2 _____No

18. Are there grade level requirements for admission to this instructional program?

18.1 _____Yes (specify)_____
18.2 _____Grade Level
18.3 _____No

19. Are there age requirements for admission to this instructional program?

19.1 _____Yes (specify)_____
19.2 _____Years old
19.3 _____No

20. Are there specified student achievement levels required for admission to this instructional program?

20.1 _____Yes (note type_____
20.2 _____Special test
20.3 _____Grade point average
20.4 _____Other (Specify)_____
_____
20.5 _____No

21. Are there specified student achievement levels required to remain in this instructional program?

21.1 _____Yes (note type)_____
21.2 _____Competency test
21.3 _____Grade point average
21.4 _____Other (specify)_____
_____
21.5 _____No

22. Is specialized remedial instruction made available to vocational students in this program who have educational deficiencies?

22.1 _____Yes
22.2 _____No

23. Is additional specialized vocational instruction made available to vocational students in this program who have educational deficiencies?

23.1 _____Yes
23.2 _____No

24. Does this program have a structured placement service available to terminees?

Indicate the type(s) of structured placement services provided by the school which this program uses.

24.1 _____Yes

Indicate the type(s) of structured placement services provided by the school which this program uses.

24.2 _____Cooperative program between school and state employment service
24.3 _____Vocational teacher referral
24.4 _____Guidance counselors
24.5 _____Other (Specify)_____
_____
_____
24.6 _____No placement service available

...program which will contribute to employability of youth and adults.

GOALS: Update occupational competencies. Vocational Home Economics Teachers and significant others plan jointly Home Economics offerings in relation to vocational program objectives.

25. Indicate the total number of instructional program terminees who have utilized any of the placement services, listed in Item 24, for job placement during the past year.

25.1 _____ Males
25.2 _____ Females
25.3 _____ Total (mark 0000 if there is no placement service)

26. Check one or more items which best describe the source of the curriculum or instructional materials used in this instructional program.

26.1 _____ Original or adapted by local staff
26.2 _____ Std. state curriculum guide
26.3 _____ Std. state instructional mat
26.4 _____ Commercially prepared mat'ls
26.5 _____ Teacher Educa. Inst. materials
26.6 _____ Borrowed from similar program
26.7 _____ Developed by special agency or association (specify)_____
26.8 _____ No curriculum or instructional materials used

27. Indicate year in which last analysis of this instructional program was done to determine the current occupational competencies that need to be taught.

27.1 _____ This year
27.2 _____ Last year
27.3 _____ Two years ago
27.4 _____ More than two years ago
27.5 _____ Unknown

28. Indicate the year in which the next analysis of this instructional program will be done to update the occupational competencies that need to be taught.

28.1 _____ This year
28.2 _____ Next year
28.3 _____ Within the next two years
28.4 _____ More than two years from now
28.5 _____ Unknown

29. Based on this analysis of the instructional program have written student performance objectives been developed for this instructional program?

29.1 _____ Yes
29.2 _____ No

30. Do the vocational program and general education staffs jointly organize their curriculum offerings for students in this instructional program?

30.1 _____ Yes
30.2 _____ No

31. Indicate the year in which manpower data was last secured to determine the extent of potential employment opportunities available to program terminees.

31.1 _____ This year 31.2 ___ Last year
31.3 _____ Two years ago
31.4 _____ More than two years ago
31.5 _____ Unknown

32. Indicate when it is planned to next secure manpower information to revise estimates of potential employment opportunities for program terminees.

32.1 ___ This year
32.2 ___ Next year
32.3 ___ Within the next two years
32.4 ___ More than two years from now
32.5 ___ Unknown

33. Does this instructional program have an advisory committee?

33.1 ___ Yes - What is the composition of your advisory committee for this instructional program?
33.2 _____ Business-industry reps
33.3 _____ Labor union reps
33.4 _____ Parents and/or students
33.5 _____ School personnel
33.6 _____ Other (Specify_____
33.7 _____ There is no advisory committee

34. Does this instructional program actively use an advisory committee in evaluating and implementing certain phases of its operation?

34.1 _____ Yes
34.2 _____ No

35. Indicate the number of times this program's advisory committee met during this last year.

35.1 _____ Times (Mark 00 if such a group does not meet)

36. Is there an amortization schedule to cover all major equipment used in this instructional program?

36.1 _____ Yes
36.2 _____ No

37. _____ Total number completing program requirements
38. _____ Left prior to normal completion time with marketable skills
39. _____ Status unknown
40. _____ Entered Armed Forces
41. _____ Total number not available for placement
42. _____ Total continued full-time study
43. _____ Voc./Tech. Post Secondary
44. _____ Other Post Secondary
45. _____ Total number available for placement
46. _____ Total employed and/or available
47. _____ Employed full time in field trained or related
48. _____ Employed full time in other field
49. _____ Employed part time
50. _____ Unemployed
51. _____ Other reasons not in labor force._____

especially in economically depressed areas.

GOALS: Initiate and/or develop special services for persons with special needs. Improve home environments. Provide all students - youth and adults - with consumer education as part of the total instructional program. Plan for quality in all homemaking education programs.

52. Is consumer education offered or provided as a part of this instructional program?

52.1 _____ Yes (If yes, note how)

_____

52.2 _____ Integrated in regular courses outside Home Economics

52.3 _____ Integrated in regular course work of Home Economics

52.4 _____ Offered as a special course by others than Home Economics

52.5 _____ Offered as a special course by Home Economics

52.6 _____ No.

53. In implementing this instructional program have you involved any special federal or state programs?

53.1 _____ Yes (check type(s) of program and type(s) of involvement)

Types of Programs

53.2 _____ ESEA Title I

53.3 _____ ESEA Title III

53.4 _____ Office of Economic Opportunity

53.5 _____ State Vocational Board

53.6 _____ Other (Specify) _____

_____

Types of Involvement

53.7 _____ Provided funds

53.8 _____ Provided equipment

53.9 _____ Provided resource material and supplies

53.10 _____ Other (specify) _____

_____

53.11 _____ No involvement

54. In implementing this instructional program, have you involved any state or local level agencies?

54.1 _____ Yes (Check type(s) of program and type(s) of involvement

Type of Agency

54.2 _____ Vocational Rehabilitation

54.3 _____ State Department of Education (other than Vocational Div.)

54.4 _____ Welfare Department

54.5 _____ Department of Corrections

54.6 _____ An interest Group for Handicapped.

54.7 _____ Other (specify) _____

_____

_____

Type(s) of Involvement

54.8 _____ Provided funds

54.9 _____ Provided equipment

54.10 _____ Provided resource materials and supplies

54.11 _____ Other (specify) _____

_____

_____

54.12 _____ No involvement

55. Give the estimated average out-of-pocket costs to students in this instructional program.

55.1 _____ Transportation costs

55.2 _____ Instructional costs

55.3 _____ Total estimated cost (include items not covered above and estimate to nearest dollar)

56. List the percentage of disadvantaged persons among those enrolled in this instructional program

56.1 _____ % disadvantaged

57. List the percentage of handicapped persons among those enrolled in this instructional program.

57.1 _____ % handicapped

58. Indicate the number of vocational students identified upon admission as having educational deficiencies which would act as barriers to successful program completion or job placement.

58.1 _____ Students

59. Indicate the number of vocational students actually receiving some form of specialized instruction to correct these educational deficiencies.

59.1 _____ Students (unduplicated count) (Mark 0000 if no special instruction available

60. Indicate below your presently existing and anticipated administrative and ancillary services staff vacancies

60.1 _____ No existing vacancies

60.2 _____ No anticipated vacancies

Indicate presently existing positions

60.3 _____ Director _____

60.4 _____ Supervisor _____

60.5 _____ Coordinator _____

60.6 _____ Curriculum Specialist _____

60.7 _____ Aids _____

60.8 _____ Teachers _____

60.9 _____ Other _____

60.10 _____ Needed for position - (E) Existing Position - (A) Anticipated Position)

60.10.1 _____ Director

60.10.2 _____ Supervisor

60.10.3 _____ Coordinator

60.10.4 _____ Curriculum Specialist

60.10.5 _____ Aides

60.10.6 _____ Teachers

60.10.7 _____ Other

OBJECTIVE: Give consideration to social and cultural conditions of all persons especially in economically depressed areas.

GOALS: Initiate and/or develop special services for persons with special needs. Improve home environments. Provide all students - youth and adults - with consumer education as part of the total instructional program. Plan for quality in all homemaking education programs.

61. Programs Not Operational
Reason(s) each instructional program not in operation (More than one may be checked)

Program not planned to begin as of date this form completed. If this reason is checked, list the date (month-year) that this program is anticipated to begin.

61.1 _____ Lack of Funds
61.2 _____ Lack of Facilities
61.3 _____ Lack of Equipment
61.4 _____ Teachers not Available
61.5 _____ Other (Specify) _____

62. Type of Specialized and Remedial Instruction Provided to Students with Educational Deficiencies and number of students assisted (duplicated count possible)

Number Assisted

62.1 _____ Individual instruction only - communication skills, remedial reading, etc.
62.2 _____ Group instruction only - communication skills, remedial reading, etc.
62.3 _____ Students received both group and individual instruction - communication skills, remedial readings, etc.
62.4 _____ Group or individual instruction for those learning English as a second language.
62.5 _____ Additional specialized vocational training experiences.
62.6 _____ Other (specify) _____
62.7 _____ If this instructional program provides no specialized instruction, check ____

63. Total Instruction Program Enrollments:
a. In the section labeled VOCATIONAL PROGRAM ENROLLMENT, indicate by grade level and sex the number of students with the instructional program's vocational objectives. (unduplicated count)
b. Under ELECTIVE ENROLLMENT, indicate all other students by grade level and sex who are enrolled in this instructional program. (unduplicated count)

		VOCA.PROGRAM ENROLL.		ELEC.ENROLL.	
63.1	6th and above	(M)____	(F)____	(M)____	(F)____
63.2	7th	(M)____	(F)____	(M)____	(F)____
63.3	8th	(M)____	(F)____	(M)____	(F)____
63.4	Secondary 9th	(M)____	(F)____	(M)____	(F)____
63.5	Secondary 10th	(M)____	(F)____	(M)____	(F)____
63.6	Secondary 11th	(M)____	(F)____	(M)____	(F)____
63.7	Secondary 12th	(M)____	(F)____	(M)____	(F)____
63.8	Special Class or Ungraded	(M)____	(F)____	(M)____	(F)____
	Post Secondary - Community College				
63.9	1st Year	(M)____	(F)____	(M)____	(F)____
63.10	2nd Year	(M)____	(F)____	(M)____	(F)____
	Post Secondery - Technical - Other				
63.11	1st Year	(M)____	(F)____	(M)____	(F)____
63.12	2nd Year	(M)____	(F)____	(M)____	(F)____
64.	Adult	(M)____	(F)____	(M)____	(F)____
64.1	Preparatory	(M)____	(F)____	(M)____	(F)____
64.2	Supplemental - apprentice	(M)____	(F)____	(M)____	(F)____

WORK MATERIAL
Evaluation in Vocational Education. Used resource publications from HEW, OE, BAVLP, ERIC, and Regional Conferences sponsored by Government agencies for personnel concerned with PERT, PPBS, Reporting and Evaluation. Polly Garrett, Program Officer, Region VIII

VT 010 454
McDowell, Donald N., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 6-9, 1969).

American Vocational Association, Washington, D.C. Agricultural Education Div.
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*SPEECHES; *CONFERENCES; *AGRICULTURAL EDUCATION; *VOCATIONAL EDUCATION
*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

This abstract is a review of four speeches presented at the 63rd American Vocational Association Convention on agricultural education. Donald N. McDowell spoke on "What Now for Vo. Ag. and FFA." Donald M. Robinson and Ivan R. Yost presented a paper on "Educational Opportunities Available to Farms Through Young Adults Farm Education Programs." A third speech was a report by James Wall, Executive Secretary of the Convention. The last speech by Dr. Phillip Alampi, Secretary of Agriculture for the State of New Jersey, reviewed the tasks of today's vocational agriculture instructor, and discussed some of the activities of the State Departments of Agriculture regarding vocational agriculture education. (BC)

VT 010 454

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Speeches Presented at the

63rd Annual Vocational Convention

of the

American Vocational Association

Boston, Massachusetts

December 6-9, 1969

Agricultural Education Division

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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VT010454

"WHAT NOW FOR VO AG AND FFA"[1]

Donald N. McDowell
Executive Director
National FFA Foundation Sponsoring Committee[2]

Ladies and gentlemen - all fellow agriculturists from all over this great country of ours - I intend to visit informally with you for a few minutes. I shall talk from notes, but I have prepared a resume of my intended remarks in order that the records may show that I was here. I am both honored and excited with the opportunity to visit with you at this most important convention.

The title which I have given to these remarks is "What Now for Vo Ag and FFA". Let us all quickly grasp the slogan which is very, very true - "As goes food production, so goes a country". America's food, fiber, and agriculture combine to beoome our nation's greatest asset. Vocational agricultural education has and will continue to play a key and dramatic and dynamic role in the future of America. It is unfortunate that we are challenged from time to time, and yet I hope this afternoon to have each of us realize that rather than this being a handicap, it can become the greatest single opportunity before us. By being challenged each of us has the opportunity of bringing out the best within us. This is what is happening to vocational agriculture and to FFA and to rural America today. Are you and I willing to face up to these great challenges, meet them head on, and if we do, I am certain success and future dynamic experiences lie ahead.

Yes, I am your green hand servant. I have been in my present job something over seven months now, and I am still just getting started. What a thrill it is to be back in vocational agriculture and FFA. After 22 years of absence, participating in the role of state government and being rather deeply involved in national agricultural developments, it surely seems good to be back among those who gave me my start.

Vocational agriculture is now 52 years old. This dates back to the Smith-Hughes and all of the other developments on up through the amendments of 1968. You all are more familiar than I could take time to tell you. FFA itself is 41 years old, and what a glorious, stimulating, and exciting 42 years this has been. The FFA Foundation was established 25 years ago. The reason for establishing the Foundation was to provide a means whereby industry, business, and individuals could make contributions through a medium for motivating, stimulating, and producing opportunities for the best which lies in the vo ag students of America. The sponsors are those who provide these funds to the Foundation. They are your friends because they believe in what is being done in vocational agriculture. They know the importance of vocational agriculture and FFA to all of America. There are nearly 500 contributing sponsors this year. Each of them is doing it because they have a faith, born not of words but of deeds; they know and have confidence in what you, the vocational agriculture people, the supervisors of agricultural education in the states, and the teacher educators who are researching, teaching, and developing both the existing teachers as well as those who chose this as their life's work and are coming into the vocational agriculture career, are doing.

My job serving the Sponsoring Committee is essentially three-fold. First I am a liaison, a third party, if you please, between those who are already engaged in developing and planning the programs for FFA and vocational agriculture and those who are interested in providing incentives and awards. My second role is to organize and

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[1]General Address - Dec. 6, 1969 - Boston - AVA - Ag Dinner

[2]Office at Madison, Wisconsin, 53705, P. O. Box 5117

to coordinate fund raising activities. It is absolutely miraculous what has been done in the past 25 years. Are you folks really aware of the fact that all of the monies over these past years have been raised 100% on a voluntary basis by business and industry leaders assuming these roles at great costs, both in dollars and in time and talent of their staffs, to raise the money in order that vocational agriculture and FFA may have opportunities for going forward. My third responsibility is to represent the sponsors in the various activities which they pursue as well as to carry their wishes and ideas on to those of you who are in the real firing line of vocational agriculture and FFA.

Oh, there is so much I would like to cover. There is an exciting new look in all of vocational agriculture and FFA. Your curriculum opportunities and activities have thrilled me as I have had opportunity to listen and to understand. The new projects which are being developed, the new areas for advancing vocational agriculture, you have moved into new disciplines, into new career opportunity trainings. You have moved to the inner cities, and you have expanded and improved the role of vocational agriculture for those who are still interested in production agriculture as well as all related agricultural occupations.

I have intended to be very complimentary because certainly you deserve every commendation which I am able to give, but at this time I wish to go far beyond the past. I want to challenge you for the future. I will be generalizing a bit; I intend to put in a few barbs; I hope not in excess, but just to prod each of us into ever greater action.

We are in an era of change at the present time. There are new criteria and new evaluations for our work in the classroom, in the world of work, in community relations, and in life itself. We must face the facts. There are those who say that agriculture is fading. Our image is showing, it is very true. Who is to blame for the kind of image which we in all of agriculture face? I do not intend to place blame, but I do accept a certain amount of it myself. We, all of us in all of agriculture, have been so close, so involved. We have been so convinced, and rightly so, in the importance, advantages, and absolute indispensability of our discipline. To us it is second nature, but to the theorists and to the outsider it is a different situation. They are uninformed; they only know abundance; they have never gone hungry. We have not been diligent to insist upon their learning and knowing the full facts. This goes for our school administrators; it goes for the officials in our states, and it certainly for the officials in the United States Office of Education.

When we talk about education we in agriculture have sure got a job to do. Vocational agriculture, everyone concedes, is necessary and needed for the masses. It is needed also as general vocational education is needed for those in other areas of interest. As this field of general vocational education increased, and definitely it had to and it must continue to increase, there has been one serious flaw in this pattern, Too many people have tried to tear down vocational agriculture in order to build up vocational education. This was and is false, and in any success program never has there been a gain by tearing down and faulting another. Maybe some of these folks in general edudation and in general vocational education have not intended this procedure, but it has resulted. But here again we must face up to the fact that we have not beenn vocal, we have not been emphatic; we have been inactive to redirect the thinking of many of these people.

First of all, our own vo ag programs and curriculums, your programs, were slow to be redirected. Second, the understanding of those who make policy have not been kept abreast of the fact that these changes have been made. Here again I am generalizing, but we do have a job to do to get the story across. We have taken it too much for granted. I heard someone say just recently that we in agriculture must get off our apathetic seats and get going.

Let me approach some of our problems from another viewpoint. I just wonder how many of you listening to my voice today are really conscious of the fantastic job which is being done for you by your own organizations. I am speaking specifically of NVATA, NASAE, and AATEA. Are each of you members fully aware of all that is being done? In my brief seven months I have become only partially aware of all that they are doing. It is to me a genuine thrill to see the dedication and inspiration which these leaders of yours are putting into your respective organizations.

The great success story of our age is agriculture. The future of agriculture, agribusiness and agricultural industries is beyond comprehension. For a few moments let your imagination run wild. You cannot even then imagine what the future holds. We are in an era of computers. I would have each of you look up the definition of a nanonsecond and of a pico second. These definitions will give you the tremendous rate of speed of computers and it is beyond comprehension. We are in an era when infra red photography will be used for much of the agricultural industry. In other words, we may not be testing soils by chemicals as we have been doing and teaching for ever so many years. The U-2 high flying jets will have in input to agriculture. The use of heat unit surveys is almost a reality. Meat, milk, and eggs in an American animal agriculture system will continue. We, frankly, do recognize that the use of cereals going directly to food for man would be more efficient and in much of the world this will become necessary. But here in America we will enjoy our animal foods. There are new crops and chemicals coming into the picture which will take us far beyond anything we can dream of today. Breeding techniques, the opportunity for getting up to several thousand calves from a given sire and dam, are going to be realities. Feeds, additives, and stimulants are with us. Yes, we will be challenged for safety and for efficacy, but these will be made.

Let me not frighten you vo ag teachers in the room, but all of these things are in the immediate future of your vo ag teaching and agricultural occupation and careers which you will be motivating among the boys and girls who sit in your classrooms. This is your job and you are the last and only bastion for agricultural motivation in the secondary school systems of this country. The food crisis of the world is staggering. Tuesday of this past week I had an opportunity to participate in the American Feed Manufacturers Nutrition Council Symposium in Chicago. With technology and education teaming together we see tremendous advances, but at the same time we see a catastrophic situation if food and agriculture are not given prime importance in this nation and certainly in the rest of the world.

So this is your "world of work and professional advance". Yes, my friends, the future is fascinating and demanding. We have opportunities to change and a story to tell, but how sad the distasteful de-emphasis of agricultural education going on in Washington today. Your NVATA special committee with additional membership from NASAE and AATEA has worked hard and determinedly. They have teamed up with other organizations such as the National Association of State Departments of Agriculture and a host of other farm organizations and agribusiness groups, all determined to reverse the de-emphasis trend. Jim Durkee will be giving you a report, but as gloomy as his report will have to be at this moment, I feel confident that success is coming. There are rays of hope and light shining through.

I would challenge each of us here to recall that part of the FFA creed which goes as follows: "....for I know the joys and discomforts of agricultural life and hold an inborn fondness for those associations which, even in hours of discouragement, I cannot deny". Then of course we must keep the entire FFA creed in mind. It gives encouragement and faith in the future.

Oh yes, my friends, this program of vocational agriculture is full of action, activities, and motivation. Your program here in Boston this week is one of stimulation and excitement. Let each one of us go home inspired, not just by the talks and discussions which we have had, but dedicated to do a better job. My closing caution is, however, that we will get all steamed up here in this meeting, we will be all ready for action, but when each of us gets home our desk will be piled high, the school principal may have a backlog of activities, the substitute teacher who took our place got things off schedule, you will be behind in a lot of different things, you will have a lot of calls in the country and in the community which will demand your time. We will all have a tendency to put off our convention follow-ups which are so essential. We cannot afford the natural letdown. So as this convention is just opening and getting under way, I challenge each one of you and including myself to get on the stick right away next week, contact each of your fellow teachers and colleagues. It is your - our America's future.

Agriculture, agribusiness, agri-industries, and America -- there you have four As, and A is the starting point. We all need the products of your toil. From you, the agricultural division of this great American Vocational Association, we need the leadership, direction, counsel, guidance, and inspiration of every single person, man and woman, sitting in this meeting this week.

Congratulations, and may God give each one strength to go home and do a better job in order that the food, fiber, agriculture, and young men and women who pursue occupations and careers in this chosen field may really produce for the sake of all America and the world. Thank you.

ABSTRACT

Educational Opportunities Available to Farmers Through Young-Adult Farmer Education Programs[1]

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Garden Spot High School
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and

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President, Pennsylvania Young Farmers Association

The objective of this slide presentation is to explain how a Young-Adult Farmer Education Program provides continuing education through formal classroom and individual on-farm instruction. After a brief explanation of the educational structure available to adult farmers, we illustrate how this educational program has benefited one young farmer. The presentation explains how this instruction assists the farmer to analyze his milk production program to increase milking efficiency of his herd; to determine the most intensive use of his land for the greatest returns per acre; to improve business and management skills for operation of the farm business; and to develop leadership skills. The slides depict actual teaching sessions and the farming practices implemented as a result of that teaching. Units of instruction and instructional application illustrated include: (1) Dairy Nutrition Course, with a prerequisite that enrollees have a chemical analysis of all forages fed and a computerized feeding program based on this analysis, (2) a Land Use and Management Course with a prerequisite that all have a Soil Conservation Service Farm Conservation Plan, (3) a Basic Farm Welding Course leading to certification from the Lincoln Welding Company,

[1]Slide presentation made at the 63rd Annual Vocational Convention in Boston, Mass. on December 8, 1969.

(4) a Swine Records Analysis Program which provides each participant with an analysis of his production records compared to other operation of similar size, (5) and a Quality Milk Production Course involving use of DHIA records and a study of milking procedures and sanitation practices.

The presentation is concluded with evidence of growth of managerial abilities and leadership qualities developed through young-adult farmer education.

OUTLINE OF SLIDE PRESENTATION ON ADULT FARMER EDUCATION
PRESENTED TO THE AVA CONVENTION by DONALD M. ROBINSON AND IVAN R. YOST

I. Explanation of Adult Farmer Education

A. Need brought on by the increasing complexity of agriculture

B. This presentation is representative of many Young-Adult Farmer education in Pennsylvania and across the country.

C. Adult Farmer education is organized and presented in the following manner at the Garden Spot High School:

SLIDE #1 1. Formal classroom instruction on subjects chosen by YF's to meet current informational need. Meetings held weekly in winter, monthly in summer.

SLIDE #2 2. The instructor, rather than being an expert in all phases of production, is a coordinator, bringing expert resource personnel and farmers together in a meaningful, structured relationship.

SLIDE #3 3. Farm mechanics courses, such as welding, are offered. With many complex machines, mechanical skills are a necessity.

SLIDE #4 4. On-Farm instruction - individual instruction provides assistance in analyzing the farm operation and application of new techniques to meet specific problems.

This, in addition to the local and state Young Farmer Associations, provide the educational structure available for Adult Farmer Education.

II. How Adult Farmer Education Meets Specific needs of a Young Farmer

A. Background information on student

B. Specific needs to be met thru Adult Farmer Education Program

1. Analyze milk production program to increase milking efficiency of herd.

2. Determination of most intensive use of land for the greatest returns per acre for a dairy operation.

3. Development of improved business and management skills for operation of farm business.

4. Acquisition of leadership skills to better communicate needs and objectives of agriculture, the dairy industry, and the Young Farmer Program.

C. Analyzing Milk Production with a desire to increase milking efficiency of herd.

SLIDE #5 1. Feed analysis was starting point.

SLIDE #6 2. Use of Forage Testing Program at State University provides chemical analysis of DP, TDN, etc. After analysis of all forages fed, computerized supplemental gain feeding programs were returned.

SLIDE #7 3. Feed is then carefully measured out according to University specification and each cow is fed according to her individual capacity.

SLIDE #8 4. Feeding was only part of solution - A series of dairy breeding courses emphasized the selection of good breeding stock. Use of Artificial Insemination allows the use of the best bulk in the country.

SLIDE #9 5. Quality of milk is as important as quantity and often means the difference between profit and loss. Detecting diseases early helps insure high quality.

SLIDE #10 6. Making Farmer aware of sources of dirt and contamination encourages him to eliminate such sources. Clipping cows is one such method.

SLIDE #11 7. One aspect of the Quality Milk Production course offered Garden Spot Dairymen was some basic chemistry in selecting proper detergents and chemicals to keep stainless steel milking equipment clean enough for milk inspector.

SLIDE #12 8. Finally, the instructor utilizes the Veterinarian to impress the significance of vaccination, dehorning, care of young and replacement stock and general herd health practices.

Results of this coordinated program of classroom instruction in QMP and Dairy Feeding on-farm consultation, use of University services, community resourcemen, and careful management increased milk production 23% in alittle over one year.

D. Determination of most intensive Use of Land for the greatest return per acre.

SLIDE #13 1. A course in Land use and management was offered with a prerequisite that the farmer have a Farm Conservation Plan drawn up by the SCS.

SLIDE #14 2. Instruction in soil testing and interpretation of results and development of fertilization program was established.

SLIDE #15 3. SCS layed out the contours, terrances and waterways and plowing began on the new contours.

SLIDE #16 4. Results of this effort show fields, than normally washed and erroded, were now stabilized and production more than doubled.

SLIDE #17 5. A complete field record system and attractive farm map were developed.

SLIDE #18 6. Silage yields were carefully checked on different varieties and carefully recorded.

SLIDE #19 7. Corn grain yields were also checked and this field was entered in the local YF Corn Contest and the yield of 182 bushels per acre in the chapter. State average is 84 bushels per acre.

SLIDE #20 8. Safe moisture levels are important to prevent spoilage. Use of the schools portable moisture tester shows that this corn better not be stacked on the barn floor.

SLIDE #21 9. Keeping Farmers abreast of new developments is one of the instructors most important functions. Here a field trip has been arranged to witness new concepts in No-till corn planting.

SLIDE #22 10. Growing corn like this without plowing could save time and money.

SLIDE #23 11. It is explained that weed control and erosion control is excellent with a minimum of labor as one farmer shares his experience with the group.

Through incorporation of SCS plan, use of fertilizers according to soil test recommandation, use of newly developed techniques and larger equipment, production of all crops has more than doubled in the last three years and now three times as much land can be farmed with the same labor as before.

E. Development of Improved Business and Management Skills - With increased farm size, greater milk and crop production, larger herd and greater capital outlay, management skills become increasingly important.

SLIDE #24 1. Good management begins with good records. Good records need a good bookkeeper. On-farm instruction in record keeping and taxes is a popular course with farmers and their wives. Important management decisions are made using these records.

SLIDE #25 2. Some management decisions require additional cash and having a good set of records and budget estimates are needed to borrow from

the bank for . . . .

SLIDE #26 3. . . .new equipment like this $13,000 tractor and plow. Equipment like this is necessary to farm 375 Acres and still allow time to manage a large dairy herd.

SLIDE # 27 4. Knowing the storage capacity of bins and cribs allows a farm manager to determine more accurately the feed supply available and enable him to plan large feed purchases well in advance to get best price deals.

SLIDE #28 5. Hogs are a supplemental enterprise on this form. Through a Young Farmer Swine Record Analysis Course, a study of the efficiency of this operation is being made. The farmer plans to use the University computer again, this time to Linear Program his farming operation to determine if hogs are worth the time taken from the dairy operation.

SLIDE #29 6. With a large investment in farm equipment, the welding course depicted earlier comes in handy for quick on-the-farm repairs.

SLIDE #30 7. A good manager keeps all parts of his equipment in top shape so that valuable field time is not lost.

SLIDE #31 8. Young Farmer Organization Safety Campaigns encourage farmers to always check to be sure all shields are in place. Projects such as this homemade manure spreader are sometimes made in school shops during mechanics classes.

SLIDE #32 9. The student becomes a teacher to be sure the hired boy knows where the fire extinguisher is and how to use it.

F. In order to provide opportunities for leadership training development, the local and state Young Farmer Organization, provide the framework in which one can improve the necessary skills.

SLIDE #33 1. Leadership qualities are developed through committee participation, contests, banquets, and are sharpened through service as local officers.

SLIDE #34 2. The state YF organization has a lot to offer local farmers. Here the local advisor encourages membership.

SLIDE #35 3. For those wishing to expand their leadership influence on a higher level, the State YF organization provides opportunity to work with state agricultural leaders and recognize outstanding farmers across the state.

SLIDE #36 4. Development of leadership qualities brings farmers in contact with local business leaders. As a participant in the state plowing contest after winning the county contest, a local machinery dealer offers to haul his rig to the state contest.

SLIDE #37 5. State plowing contests brings YF's from all over the state together to match their skills.

SLIDE #38 6. Results of three years of local and state YF contests.

III. Conclusion:

With farming becoming a complex business and investment going into the hundreds of thousands of dollars, the role of adult agriculture education will take on greater importance if tommorrow's farmer is going to continue to provide food and fiber for an increasing population from a deminishing acerage.

REPORT OF THE NVATA EXECUTIVE SECRETARY
NATIONAL CONVENTION, DECEMBER 7, 1969
Boston, Massachusetts

President Smith, members of the NVATA Executive Committee, members of the NVATA and guests: I am pleased to have the opportunity to speak to you this afternoon at the twenty-first Annual Convention of your great organization. For many of you this is your first NVATA Convention. I recognize some as having attended a number of conventions. This happens to be the 19th consecutive NVATA Convention that I have attended and the 15th as a member of the Executive Committee or as your Executive Secretary. The last time I was in Boston, I was here at the convention as President of the Nebraska Association and that was just 17 years ago. I certainly had no idea at that time that my association with the organization would extend over such a long period of time. However, I have enjoyed every moment of it.

Before I say anything else, please allow me to express my sincere thanks and appreciation to the members of the Executive Committee, to the State Association Officers, to the State Supervisory and Teacher Education Staffs, the membership at large and to all others who have cooperated so well with the NVATA office during the past year.

Special Thanks must go to President Smith whose dedication and untiring efforts, in a rather trying year, have been an inspiration to all who have been associated with him in the work of NVATA. One only needs to review his travel record for the past year to learn that he has been a very busy young man. He has represented NVATA in an outstanding manner on many, many occasions and I have been told time and time again about the "good job" Bill Smith was doing and believe me such favorable reports makes the work of your National Office much easier and more satisfying. In addition to his duties as National President, Bill has been a full-time teacher of Vocational Agriculture and has been looking after 7 women... his wife and 6 lovely daughters. I am not sure, but I would suspect that Bill supported the move to bring girls into the FFA. Bill Smith-----stand up and be recognized for the wonderful leadership you have shown during the past year.

The Executive Secretary's report which appears in the Annual Report brochure shows some of the NVATA activities and accomplishments of the past year, lists meetings attended and covers some of the office activities. You have a copy of this report and may have already read it. If not, I would suggest that you do so because in the interest of saving time, it is not my intention to dwell at any length upon the contents of the report.

The past year has been both frustrating and challenging. I know that all of you are well aware of the fact that the NVATA's major effort has been its all-out attempt to correct certain developments in the USOE that are believed not to be in the best interests of Vocational Agricultural Education. Let me suggest to you that if you have never had a case of "frustration", just make a few trips to Washington and try to find out who is responsible for certain policies or rulings. I can assure you, that you will be told that policies are established by someone a little higher on the "ladder". If you are persistent enough, know the right people and have a stroke of luck you may finally get to the top of the "ladder" and think - "now I have it made". But, don't count on it for you may find that the person at the "top" claims little if any credit for establishing the policy about which you are concerned. You know---the so called "Vicious Circle." Anyway, such has been our experience in Washington the past year.

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I am not going to dwell at length on the activities of the NVATA-USOE Committee as you have already heard from Mr. McDowell and I am sure that you would agree with me that one could not find a better person to have on his "team". Don has opened many doors for NVATA. He is a tireless worker and an optimist through and through.

Jim Durkee will be giving you a complete report on the activities of the NVATA-USOE Committee in a few minutes. Jim has been the "spark plug" on the Committee and the NVATA certainly owes him a vote of thanks for his unselfish devotion of time and energy to the NVATA cause. Without his help much of the work would have gone undone as the ever expanding activities of your organization are more than your present staff can properly manage.

I would take time to say though that the activities of the NVATA-USOE Committee has caused an even greater awareness of the fact that NVATA, FFA and Vocational Agriculture has many friends and supporters. The Agriculturally oriented groups have been brought more closely together as a result of the Committee work. I believe it is quite an accomplishment when representatives of three major farm organizations can sit around the same table and agree upon a course of action and attach their names to a paper in support of it. And, this is what happened.

I believe that we would all have to agree that change is inevitable and that sometimes it is good and sometimes not. With the passing of time, one will be better able to evaluate the impact that certain changes had on Vocational Agriculture and the FFA. Let us not despair and think that all is lost because of certain changes that have taken place. Rather, let us take advantage of the changes and perhaps Vocational Agriculture and the FFA will emerge in an even stronger position.

True, for all practical purposes, Vocational Agriculture is no longer recognized as a separate entity by the U. S. Office of Education. Neither are the other Vocational Services. Actually, so far as Vocational Education is concerned, it could be said, that the USOE is merely a money dispensing agency.

You and I have both, for many years, heard the "cry" of too much power being concentrated in Washington and that "we don't need someone in Washington telling us what to do". Well, in the case of Vocational Education, Washington has agreed. Funds have been turned over to the States for each to spend as they see fit. Now it is up to you to see to it in your own State that Vocational Agriculture receives its rightful share.

I firmly believe that if your State Program is strong, and it will be if you have strong local programs and good leadership, that Vocational Agriculture and the FFA will grow and flourish. Your State Ag Teachers Association is going to be more necessary and important than ever before.

I don't mean to leave the impression that I go along with the changes that have been made. I can't follow a theory of generalization in Vocational Education when we are living in the most specialized era in the history of man. It just doesn't add up so far as I am concerned.

We may not need a large staff of experts on Vocational Agriculture in the Washington Office, but we do need someone to coordinate the program. Does an organizational structure in the USOE that has the National Advisor of the FFA and the National Executive Secretary of the FFA reporting to two separate heads make any sense to you? It doesn't to me.

There are those that have suggested that NVATA should attempt to secure "special legislation" for Vocational Agriculture. My personal opinion is that this should be considered only as a "last resort". First it is doubtful if Agriculture has enough representation in Congress to assure success for such a move and secondly it could restrict the growth of Vocational Agricultural Education rather than to enhance it. However, let me say that, if it is your desire and it is the considered opinion of the Executive Committee that such a move is desirable, I will exert every effort in behalf of such action.

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Some have been dis-satisfied with the legislative efforts of the AVA and lay much of the blame for certain legislation and ensuing developments in the USOE at their door.

I would have to come to the defense of AVA, at least to a certain degree. I know that they have supported desirable legislation and that they have attempted to keep the various Divisions identified within the USOE. Legislation is always a compromise and sometimes one has to give up something important in order to get something else. It is my feeling that sometimes concessions are made that are real important just to secure more money when it is possible that conditions would have been better with less money.

While the AVA recently created Departmental structure may have certain desirable effects, it has a tendency to divide the efforts of specific interest groups resulting in less time for agriculture, less time for teachers, less time for teacher educators and less time for supervisors. I am sure you will find this to be true before the conclusion of this convention.

While the AVA has made some effort to retain division identification in the USOE, they, at the same time, by organizing and emphazing "departments" weakened the "Divisions" which is the same thing the USOE has been doing.

If the AVA has failed in any one place, I would say it is in the area of communications. AVA has not been close enough to the membership. It has depended too much upon state directors of Vocational Education to do the work that should be done by the State Associations. I recognize, that sometimes this is the most expedient way to get things done and I am sure AVA is trying to correct this situation.

I definitely feel that while AVA has always recognized NVATA as a strong and effective organization they have made only infrequent efforts to make the best use of the organization and the talents of many of its leaders. The AVA staff has always been most cooperative and willing to provide any and all information available upon request. However, it would seem to me that, an organization - over 10,000 strong, affiliated with the AVA, and requiring its members to belong to AVA should not have to request information but rather should be provided information on a "first class" basis as quickly as information is available.

NOW, why have I made these remarks? I have made them because I believe a serious rift has been developing between AVA and NVATA and this is not good for Vocational Education. At least one ag teachers association voted the recommendation at their state conference this summer to make membership in AVA optional rather than a requirement for NVATA membership. I am confident that if NVATA did so that AVA would suffer a tremendous loss of ag membership.

NVATA may soon need to decide which way they want to go. Should NVATA continue to depend upon AVA to take the lead in legislative efforts for all of Vocational Education or should a separate legislative effort be made?

Can NVATA afford to have their own "legislative team" in Washington and continue to give financial support to AVA? Would it be desirable to have two separate Vocational Organizations in Washington devoting time to legislative efforts?

My personal feeling is that all in Vocational Education must work together and that we must continue to support the AVA. However, we must insist that in the future AVA keep all of their membership and especially the NVATA leadership better informed and that the AVA membership at large play a more active part in legislative policies of the organization.

It is my sincere hope that AVA will in the future work even more closely with the NVATA and that Agriculture can be represented on the AVA staff by someone with a background and interest in Agricultural Education.

You have an Outstanding Executive Committee and they have been elected to represent you and the 10,000 members back home. They are probably better informed

more---

on current developments and trends in Vocational Agricultural Education than you or most of the membership at large. You can be sure that they will give their considered thought to current as well as future problems and will render a judgement which in their opinion is best for NVATA.

The year ahead will again be one of change and uncertainty. The NVATA has never been in a better position to assume more leadership in Vocational Agricultural Education. A strong National Organization with the support of the affiliated associations, AATEA, NASSA and friends in business, industry and government can lead Vocational Agricultural Education through the present crisis and cause it to emerge stronger than ever before. Thank you!

Respectfully submitted,
JAMES WALL, EXECUTIVE SECRETARY
Box 4498
Lincoln, Nebraska 68504

Remarks by Dr. Phillip Alampi

Secretary of Agriculture, State of New Jersey

Before the National Association, Supervisors of

Agricultural Education

Statler-Hilton Hotel, Boston, Massachusetts, December 9, 1969

Exactly six years ago today the National Association of Vocational Agricultural Teachers met in Atlantic City, New Jersey. The Association very kindly let me say a few words about how agriculture was changing.

What I had to say then has pertinence today -- but with even more emphasis on the rapid changes that are taking place in agriculture everywhere.

Let's look at the farmer of the 1970's. I must confess that he is vastly different from the image we had in mind in my own early years of teaching as a vocational agricultural instructor. We pictured an able, intelligent, skillful husbandman of the soil whose primary goal was production. Today we find him wearing many hats. To succeed he must be not only the able husbandman, but also an efficient buyer, seller, taxpayer, consumer, technologist, manager, all-round worker, businessman and citizen -- to name but a few of the hats he wears. For the former goal of teaching ("how to do it") there has been substituted the much greater challenge of "what to do with it" in this much more highly competitive era.

Future Farmer instructors these days are dealing with sophisticated ideas and sophisticated young persons. If they think they are dealing with a "bunch of kids", either they are wrong or the bright young people are wrong for getting into their instruction groups.

Personally, I have the utmost respect for the young people of today. Even as a president of a regional school board where some of the students are from rural areas, I want to assure you that I do not assume to be an authority in the educational field. However, I have a keen interest in your problems.

The years I spent as a teacher were most rewarding. Somehow I feel that I have remained at least an associate member of your profession as I recall my activities in radio, television and as Secretary of Agriculture of New Jersey.

Even now, much of our program in the Department of Agriculture is conducted in cooperation with the College of Agriculture and Environmental Science of Rutgers University, with the Extension Service, the vocational agriculture instructors and other agencies. With that background, I am going to venture a few observations which may be pertinent.

Although we are all very much concerned about the educational programs in agriculture, I believe there remains the need for a good grounding in the basic sciences as well as in mathematics, English and other general subjects.

They should be retained, but perhaps upgraded. The present population shift to rural areas already is raising the standards of many schools which formerly suffered by comparison to those in urban areas. Farm leaders and organizations must assume more of the responsibility for such improvements in order to provide equal opportunities for rural students.

All curricula should be reviewed and appraised with a view to upgrading all courses. That means further revision in many schools wherever the "how to do it" approach of past years may survive.

Instructors must recognize the need for self-improvement and further study in order to be able to maintain higher standards in both methods and subject matter. Fortunately, such efforts are being recognized now with improved salary scales in many school districts.

The vocational agriculture instructor must recognize that there are many new factors involved in the success of a farm enterprise today. I would like to stress the importance of what might be called the "off-farm" factors and pressures which have become as important as the "on-farm" practices. I have in mind such problems as taxes, credit, zoning, planning, labor, schools, federal farm programs, health codes, water, soil conservation and the encroachment of industry, highways, airports, shopping centers and housing developments on our open space.

Most of these were unknown or of little concern to past generations of farmers. There are a few guideposts to follow as we consider these pressures and the first reaction of many farmers to resist them. So, I would urge that the instructors assume at least some of the responsibility in making them better understood by both their students and members of adult classes.

Many instructors may feel that these problems are beyond their jurisdiction. Perhaps they are, yet I believe they present an exceptional opportunity to render a valuable service to farmers and to their communities. They might be considered to be a worthwhile activity in the field of public relations as well as an effort to update and broaden the curriculum.

We feel this very strongly in my own State of New Jersey -- where we are attempting to bring every sector of the economy interested in agriculture to bear on a long-range program of public relations.

Further emphasis on marketing and the economics of the food industry are essential to a sound agriculture. The old prejudice against the middleman, the processor, the distributor, has blinded some farmers for too long. Even at the risk of being accused of disloyalty to the farmer, none of us can overlook any opportunity to promote among farmers

a better understanding of marketing. So I would urge much more attention to this subject -- another decisive "off-farm" factor.

Because of the complex intricacies of buying, marketing, legislation and other services, the average farmer cannot accomplish as much as he would like to as an individual and so must depend more and more on farm organizations. This presents another subject calling for greater recognition in the curriculum presented by vocational agriculture instructors. The function, organization and operation of farm associations and cooperatives, the responsibilities of leadership and membership and their services to the community as well as to their members, are not well understood nor appreciated by many farmers.

These are typical examples of subjects and situations which I believe are worthy of consideration if the vocational agriculture instructor is to fulfill his role in the classroom, on the farm and in his community. Of course, there are limitations as to what he can undertake and accomplish. Those possessing the same qualities of leadership which they seek to inspire in their students will find it worthwhile to enlist the aid of others, thus multiplying their own efforts.

Individuals or committees, consisting of competent and experienced men, can be enlisted to meet with classes and groups. Both students and adults respond readily to those who can speak in first person about their own experiences. There is no better source for expert guidance and counsel. They can contribute much that cannot be found in a textbook or manual.

I believe that such advisory groups should be used to assist guidance teachers in consultations with students concerning college education. Those considering agriculture or agribusiness as a career should be encouraged to fit themselves for entrance to a college of good standing. I believe they should plan not only to enroll in courses devoted to basic sciences and technology but also broaden their education with at least a few courses in social science, political science and business administration. Each year a knowledge of these latter subjects in becoming more and more essential to success in present-day agriculture. A few years ago I urged recognition of the fact that training in public speaking and writing is also desirable. That was certainly true then, just as it is now.

I based my comments on an assumption that instructors and students knew English as a basis of communication. Now I want to emphasize the importance of English as a subject. When someone says -- and I quote --"Like, man, I want to do my thing"-- he or

she is failing to communicate his or her very serious and well-intended viewpoint. English is spoken; communication does not exist.

Of course, I could look at some governmentese as well. The State-wide Committee to Study the Needs of Vocational Education in New Jersey, of which I was a member, five years ago said: "Vocational education in New Jersey today demands a rededication to the fact that training for work is an integral part of education. It involves the whole school program. It applies to girls as well as boys. It serves the slow learner, the handicapped learner, the reluctant learner and the potential drop-out. It requires buildings and facilities that promote the dignity of work and enhance the status of the blue collar worker. It invites sound vocational counselling and work experiences. It needs more teachers as outstanding as the present staff whose excellent work is based on deep dedication and high ideals..." And so it went on. As a signatory, I agreed, of course.

Yet I would now pick up one little double adjective and noun -- "blue collar worker." In my area about the only time I see young or older farmers wearing blue shirts is when they are going to appear on television or they are dressing a bit "mod." Vocational studies in high school do not preclude intelligence, college studies, or success in the business of

business, the business of the arts, the business of scholasticism, the business of government, the business of theology or the business of anything else you can think of.

A knowledge of the role of government has become an essential in most professions and businesses including those related to agriculture. The functions and scope of government regulations, responsibility to government and matters concerning income and property taxes affect every farm and agribusiness enterprise. These cannot be overlooked when preparing for a career in agriculture.

I deeply believe that the scope of agricultural education must be further broadened to include a better knowledge of the on-farm essentials and also reach out into the realm of the many important off-farm factors that confront modern farmers. Our schools and colleges must keep pace with the rapid changes occuring in our rural economy and in our entire economy.

Students deserve the best education available under the direction of well-qualified instructors who, in turn, are willing to prepare themselves even better through advanced studies and self-improvement. To accomplish these objectives means that we must raise our sights. More than ever, this is the age of education. Those with better-trained minds will forge ahead. We must not short-change our farm boys and girls.

I am confident that the instructors in vocational agriculture and those who supervise them will meet this challenge.

Now, let me review a few things that those of us in State Departments of Agriculture have been involved with concerning vocational agricultural education.

At the annual meeting of the National Association of State Departments of Agriculture in Idaho in October, 1968, a resolution I prepared was adopted. It read:

"We are concerned regarding the reorganization taking place in the Vocational-Technical Branch of the United States Office of Education, whereby agricultural education is suffering a further loss of identification and prestige, and the chief of agricultural services has become a program officer and has been allocated only part-time responsibilities for agricultural education. The agricultural staff has been relegated to regional offices and its personnel are no longer designated as program officers. The Office of the Executive Secretary of the Future Farmers is now a part-time operation.

"We are familiar with the program and the fifty years of service Vocational Agricultural Education has given to agriculture in this country. Many of us could not have pursued the careers we have, had it not been for the vocational agricultural education we experienced.

"Now, therefore, be it resolved, that the National Association of State Departments of Agriculture in its 50th annual meeting at Sun Valley, Idano, October 3, 1968, instructs its Board of Directors, through consultation with the appropriate agencies, agricultural organizations and others, to work toward a satisfactory solution, which would be in the interests of progressive agriculture and a strong, sound program of vocational agricultural education."

Some time later, on June 30 of this year, representatives of seven organizations developed a report on what they described as "aims, goals and objectives covering what is necessary and what needs to be done to bring about an equitable relationship between agricultural education, the Future Farmers of America and the Office of Education," and they labelled this "For Immediate Action:"

A. Re-establish the identity of Vocational Agriculture (Agricultural Education) in the U. S. Office of Education in the following ways:

    1. Include Agricultural Education on the O. E. organizational chart.

    2. Place the National FFA Advisor and the FFA Executive Secretary on the same Agricultural Education staff in the O. E. organization structure.

3. Have the two Agricultural Education staff men in the Washington office (who are also National FFA Advisor and FFA Executive Secretary) devote <u>full time</u> to Agricultural Education including the broad new vocational areas.

4. Expand the Agricultural Education staff in the Headquarters (Washington, D. C., office) by <u>at least</u> one full-time person in addition to the two full-time men mentioned above.

5. Expand the employment of regional personnel to work in Agricultural Education in the regional office for <u>all</u> States.

6. Establish specific, sound and practical working relationships between the regional staffs and the headquarters staff with free and uninhibited full communications (one sound team relationship).

B. Secure national recognition beyond question, that Vocational Agriculture and FFA are non-separable -- that FFA is an integral part of the teaching and instructional program.

C. Rescind the Office of Education policy statement of December 6, 1968, in order that the important role of youth organizations as a genuine part of education may be reestablished."

The report I have just read to you was developed just over five months ago by representatives of the National Association of State Departments of Agriculture, the National Vocational Agriculture Teachers' Association, the American Farm Bureau Federation, the National Farmers Union, the National Grange, the American Association of Teacher-Educators in Agriculture and the National Association of Supervisors of Agricultural Education.

The Office of Education was quite aware of this report, especially since a month later a representative group of us met with Dr. James Allen, U. S. Commissioner of Education. According to the notes on this meeting, I "emphasized the concern of the National Association of State Departments of Agriculture and the need for agricultural leadership and gave credit to vocational agriculture programs and the Future Farmers of America for many of the leaders in agriculture."

May I say -- not because I want to flatter you or myself -- that at all these meetings, at all these conferences, I have been a pretty pushy proponent of vocational agricultural education? In no way am I alone, for the National Association of State Departments of Agriculture -- meaning my current and past colleagues in many states, such as Don Wickham of New York, president of NASDA, and Don McDowell, former commissioner

of agriculture in Wisconsin and executive director of the National FFA Foundation -- is equally and vitally concerned.

Like some other heads of State Departments of Agriculture, I am extraordinarily proud of the fact that I earned an American Farmer Degree and that I have since been given the Honorary American Farmer Degree. It is a measure of pride to me that one or more of my staff members have also reached that high honor. New Jersey currently has a national vice president of the Future Farmers of America.

My state is the most highly-urbanized of them all. Perhaps it may seem odd to you that we would want to be in the forefront in pushing for vocational agricultural training. We believe in it. We trust it. We don't want to lose it. We pledge our help to retain and strengthen it.

Vocational agricultural schooling is vital to us -- and we won't forget that fact.

In conclusion, I assume we agree that the scope of agricultural education must be broadened to include a better knowledge of the <u>on-farm</u> essentials and also reach out into the realm of the many important <u>off-farm</u> factors that confront the modern farmer. Our discussion might be extended to include other suggestions but I believe those we have mentioned will illustrate the need for an early review and appraisal. Our schools and colleges must keep pace with the rapid changes occuring in our entire rural economy.

Students deserve the best education available under the direction of well-qualified instructors who, in turn, are willing to better prepare themselves through advance study and self-improvement. To accomolish these objectives means we must raise our sights. More than ever, this is the age of education. Those with the better trained minds will forge ahead. We must not short change rural youth who for many years have been handicapped with less than the best. I am confident that the instructors in vocational agriculture and those who supervise them will meet this challenge.

I thank you for your attention.

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Mitchell, Martin L., And Others
Speeches Presented at the Annual Vocational Convention of the American Vocational Association (63rd, Boston, Massachusetts, December 7, 8, 9, 10, 1969).

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Several speeches given in the agricultural division of the American Vocational Convention are grouped in this document. They include: (1) "Preparing Students for Jobs in the Outdoor Recreation Industry in New Hampshire" by Martin L. Mitchell, (2) "Training for Landscape, Nursery, and Greenhouse Jobs" by George E. Yetman, (3) "Spotlight on New England--A Coordinated Teacher Education Program" by Gerald R. Fuller, (4) "Forest Science and Harvesting in Maine" by Alton G. Bridges, (5) "Programs for Disadvantaged Students in Agricultural Education in Virginia" by C.B. Jeter, (6) "How Our Regional Vocational Agricultural Centers Are Working Out," by Llewellyn L. Turner, (7) "An Experimental Evaluation of Approaches to Preparing High School Students for Off-Farm Agricultural Occupations" by James T. Horner, (8) "Revising the Teacher Education Program to Meet Modern Needs" by Floyd G. McCormick, (9) "An Interstate Investigation of Employment Opportunities and Educational Requirements for Jobs in Outdoor Recreation" by Willima H. Annis and Richard Floyd, Jr., and two speeches on "Planning and Operating a Vocational Agriculture Program in a Regional Center" by Frank Roberts and Roger W. Lawrence. (BC)

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PREPARING STUDENTS FOR JOBS IN THE OUTDOOR RECREATION INDUSTRY IN NEW HAMPSHIRE[1]

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Recreation management, a program for preparing students to enter the outdoor recreation industry, is being offered in the White Mountain Regional High School in Whitefield, New Hampshire.

The Recreation Management program was designed specifically for a region in New Hampshire that lies in the heart of the mountain resort area. The major industries are recreation, forestry, and limited production agriculture.

Recreation Management offered in the new White Mountain Regional High School was met by immediate favorable student approval. The department added the second teacher during the first year of operation. The course is offered in grades 9 through 12 on a modular time basis to allow for independent study and permit greater flexibility for both the students and the instructors.

Placement of students in learning centers to gain practical work experience has proved to be very successful. Summer and winter outdoor recreation differs so the student needs experience in both phases of the industry.

A few production agriculture students enroll in the program hoping to gain some worthwhile experiences. To date independent study and individual instruction at the learning center where the work experience is obtained has been the answer for these students.

The work experience has been gained, for example, at resort hotels, motels,

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[1] Presented at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969.

golf courses, estates, ski slopes, parks, and with certain forest operations.

In summary, the Recreation Management program at White Mountain Regional High School has met with some problems:

1. The industry needs concerning its employees are not yet fully understood and accepted by the whole industry or by educators.

2. The industry as a whole has not as yet rewarded people for being trained prior to entering its occupations.

3. More cooperation between the industry as a whole and educators is necessary.

The strong points of this program are:

1. The program is popular with the students.

2. The industry generally has need for employees prepared for all levels of employment.

3. Many employers in the industry are aware of employee preparation needs and are willing to cooperate with schools.

4. Many people like to work in the recreation industry and they want to live in a mountain area--this program is designed to get these people prepared for being successful in both areas.

AN INTERSTATE INVESTIGATION OF EMPLOYMENT OPPORTUNITIES AND EDUCATIONAL REQUIREMENTS FOR JOBS IN OUTDOOR RECREATION[1]

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This regional study of outdoor recreation was conceived as consisting of three phases. Phase I was to determine the feasibility of studying the organized outdoor recreation complex and to develop such instruments as were necessary to meet the objectives of the study. This phase of the study was completed in September 1969 and is the text of this report. Phase II of the study is to collect and analyze data in the New England-New York area from which a suggested curricular based on the recreation complex's needs will be developed. Phase III will address itself to the development of a teacher-education program which will utilize on-the-job experience for teachers of recreation.

A search for publications in recreation revealed studies oriented toward the economic factors of the recreationalist--his numbers and involvement. No study indicating the labor needs or skills needed for job performance in outdoor recreation or its supportive enterprises was available to the study staff. Certainly the expansion of the outdoor recreation complex in recent years is evidence enough to require investigation into its employment needs, labor and supply.

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[1]Presentation made at the 63rd Annual Convention of the American Vocational Association in Boston, Massachusetts, December 9, 1969.

The study attempts to answer such questions as who are the people who seek jobs in the recreation complex? Why do they seek this type of work? What skills and training are required? Where do educational programs exist to assist in developing and maintaining a desirable employment pattern? The development of instruments which would gather data pertinent to these questions was the major thrust of Phase I.

This study concerned itself with all jobs in the recreation complex rather than only those related to agriculture. The multi-discipline approach was used to collect data due to the interrelationships of the recreation complex. As curricular are developed to satisfy the needs of this complex, the appropriate vocational service area can be utilized to provide the instruction. It was also felt that the complexity of the employment within the outdoor recreation complex required seasonal investigation to determine "cross over" between summer and winter recreation.

Objectives

The objectives of this study were:

1. To determine the employment needs and job opportunities in organized outdoor recreation.

2. To determine competencies needed for entry employment at different occupational levels.

3. To determine the levels and types of existing recreation educational programs.

4. To determine the length of seasonal employment and its relationship to other seasonal employment.

5. To develop an instrument which will gather data from all types of recreational enterprises.

Assumptions

The following assumptions were made and not tested in this study:

1. A rural New Hampshire economic area heavily involved in outdoor recreation was typical of rural economic areas involved in outdoor recreation in other parts of New England and New York.

2. The best method to develop categories for the instrument of obervation was to study the industry to determine departments and job titles.

3. Respondents involved in outdoor recreation in the area studied are typical of respondents in other states in the Northeast.

Method of Investigation

The dependence of outdoor recreation enterprises and the supportive enterprises on each other provided the basis for the decision to study an economic area rather than to sample only outdoor recreation operations. The Mount Washington Valley of New Hampshire was selected as the primary area with the Seacoast area of the State serving as a second economic region heavily involved in outdoor recreation. Together, they encompassed the majority of the different types of outdoor recreation facilities found in New England and New York State. Investigation of supportive enterprise was restricted to the Mount Washington Valley region because of time limitations.

All supportive enterprises identified on a road survey were listed by type of enterprise. A random sample was selected from each type of business. This stratified random sampling technique appeared to be most appropriate to insure cross sectional representation of the supportive enterprises. With the emphasis of the study being to develop an instrument while also drawing some conclusions on the data gathered, there were always two activities proceeding at once.

All data was collected by personal interview. The interviewing for winter recreation took place during January and February for the Mount Washington

Valley area. The interviewing for the supportive enterprises was also done at this time to conserve and concentrate efforts. As the instrument development was of major concern, periodic checks were made, utilizing hand tabulation techniques, to ascertain how the instrument could be altered to be more effective. As the instrument was further refined and categories were developed, machine tabulation became possible.

Data was collected from 59 employers in nine types of outdoor recreation enterprises. They include campgrounds, golf courses, ski areas, resort hotels. youth programs, amusement areas, marinas, party and excursion boats and public beaches.

Data from 50 employers in the supportive enterprises was also collected. These supportive enterprises were grouped as follows: eating and sleeping accomodations only, stores, sleeping accomodations only, eating facilities only, service stations, sporting goods stores.

As the data was ordinal, frequency distribution was used as the method of analyzing the data.

Limitations

The following limitations were placed on this investigation:

1. Only outdoor recreation enterprises available to the general public were to be studied.
2. Eating and sleeping accomodations, eating facilities only, sleeping accomodations only, service stations, sports shops, and stores were considered to comprise the supportive enterprises in the socio-economic area.
3. Data collection had to be coordinated with the seasonality of enterprises within the recreational complex.
4. The data collected was limited to two economic areas of New Hampshire.
5. The investigation was limited to only those outdoor recreation or supportive enterprises which were organized and offered employment.

Interstate Steering Committee

An Interstate Steering Committee composed of teacher educators and/or supervisors representing the seven states was appointed. The composition of the Committee changed during the course of the study due to retirement and position changes. The Committee was most helpful to the study staff in setting the general guidelines to follow in developing the study.

Findings

1. Summer recreational operations are varied, more numerous and tend to be smaller than winter operations.

2. All outdoor recreation enterprises hired full-time, part-time and seasonal employees in varing numbers. Of the enterprises studied, the resort hotels hired the largest number of employees with winter ski areas hiring the second largest number of employees.

3. The 50 supportive enterprises hired a total 953 employees in full-time, part-time and seasonal categories.

4. Employers rely on personal application or word of mouth to receive employees in both the summer and winter seasons. Employment security was used very little by employers as a source for obtaining employees.

5. With the exception of the public beaches and marinas all of the outdoor recreation enterprises expected to expand their facilities or services for their patrons.

6. Expected expansion within the recreation supportive enterprises was much less than in the outdoor recreation enterprises.

7. Sixty-three job titles were found within the outdoor recreation complex and supportive enterprises. Food, lodging, maintenance, sales, and management were found in the greatest frequency. Salary for entry level employees within the job titles ranged from $. 64 to $3.50 per hour.

8. Few people with formal education specifically for the job title within which they were working were found in the study area.

9. Only 30 percent of the employees in outdoor recreation had prior work experience in their job titles. There were slightly more than 20 percent of the employees in the supportive enterprises who had prior work experience in their job titles.

10. Personality traits displayed by employees were of concern to the employers. Courtesy, appearance and pride in work rated the highest concern among the employers.

11. Fifty schools in New England and New York offered courses in the agricultural occupations area of forestry, conservation, and recreation. These courses are predominately on the secondary level with very few on the post-secondary level. Only one course was reported for the handicapped. There were no courses reported for adults or the disadvantaged.

12. Employers in the recreation and supportive enterprises suggested a total of 13 different subject matter areas which would be of help to their employees if courses could be offered. Mechanics, culinary arts, and management accounted for most of their suggestions.

Conclusions

There are many job opportunities within outdoor recreation and its supportive enterprises, which are of concern to vocational education. The secondary and post-secondary education institutions must accept the responsibility for preparing individuals for entry level employment and the upgrading of people who wish to advance themselves within their employment. Courses must be planned for the secondary, post-secondary, and adult levels and be available to the disadvantaged and handicapped where applicable. Conclusions drawn from the results of this study are:

1. The outdoor recreation complex with the supportive enterprises is a dynamic industry offering full-time, part-time, and seasonal employment to large numbers of people. The employment opportunities in these enterprises will improve as expansion plans become realities.

2. Employment opportunities are greater and more varied during the summer season with greater opportunity for the unskilled worker to find employment.

3. Seasonal employment in the winter or summer season ends with that particular season. There is no general movement from summer recreation to winter recreation and vice versa.

4. The majority of job titles identified in this study were below the managerial level with on-the-job training being the only method available to train the new employees.

5. Personality traits were considered important to the success of the employee and thus the enterprise by employers. The ability to be courteous and present a good appearance to the patron was considered extremely important by the employers.

6. Schools in New England and New York are not meeting the needs of people who seek employment in recreation in the adult and post-secondary programs.

7. An instrument was developed which could adequately collect data on the outdoor recreation complex with its supportive enterprises. Job opportunities relative to the categories of full-time, part-time, or seasonal within specific job titles can be identified. Specific skills within the job title can be identified through the use of the Dictionary of Occupational Titles.

Recommendations

1. The final instrument developed in this study should be used in a study of recreation and its supportive enterprises in New England and New York to determine the job opportunities and employment needs of the recreation complex. This will allow a concerted effort to be made to meet the needs of this industry.

2. Further study of the secondary and post-secondary programs within New England and New York should be undertaken to identify areas of emphasis within the on-going programs in the forestry, conservation and recreation area.

3. The recreation complex with its supportive enterprises and educational institutions should open avenues of communication to develop programs on the secondary, post-secondary, and adult levels to teach entry level competencies and upgrade present employees.

4. Educational institutions utilizing the recreation complex and supportive enterprises should develop advisory councils to keep educational institutions aware of the changing needs of industry.

5. Cooperative work experience programs should be developed to allow students to receive on-the-job experience within the recreation and supportive enterprises.

6. Core programs for clusters of skills and/or job titles should be developed to make students aware of the opportunities in the outdoor recreational complex.

7. An open-ended program of adult education in recreation should be developed in which anyone can enroll, be tested, enter at his particular level, progress at his own speed, and to complete that portion of the program he needs for job competency.

REVISING THE TEACHER EDUCATION PROGRAM TO MEET MODERN NEEDS[1]

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Introduction

Increasing demands for a variety of agricultural educators place added responsibilities upon teacher educators. How effective are our teacher education programs in agriculture? What do we want graduates from our programs to be able to do? How well does our pre-service preparation program equip our graduates to meet the needs of the great industry we are serving? What do our majors think about their program? Each of us in teacher education in agriculture should be able to answer convincingly these questions to our students and colleagues.

To be successful, teacher education programs in agriculture need to be as dynamic as the economic sector it hopes to serve. It appears to me that the ultimate curricula designed to prepare modern-day agricultural educators must be based upon the competencies (professional and technical) these people will need to possess if they are to successfully and effectively plan, implement and evaluate high quality educational programs in the schools and communities where they will be teaching.

This is not anything new. But, maybe we have been somewhat negligent in identifying what these competencies should be. Certainly we have been lax in communicating to our undergraduate majors in agricultural education (a) what we are attempting to do with them; (b) how the total professional education facet of their pre-service program fits together and (c) what competencies they should possess if they are to make a successful entry into the teaching profession in agriculture and then progress and improve on the job.

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[1]Presentation made at the AVA Convention, Agricultural Education Division, Boston, Massachusetts, December 8, 1969.

Points of Concern:

In reviewing our undergraduate teacher education program at the University of Arizona, several points of concern were in evidence:

1. There was a lack of articulation between our course offerings resulting in deficiencies in our over-all pre-service program.
2. There was excessive duplication and overlapping of content among several courses offered in our department.
3. There were no well-defined measurable goals (behavioral objectives) identified, in writing, to serve as a guide for either the evaluation or revision of the undergraduate program.
4. There was no means available to assess the relevance of our pre-service preparation program other than on subjective judgment based upon teaching performance on the job.
5. The technical agriculture subject matter requirements were geared, in total, towards the preparation of "generalists" in agriculture.

Reluctantly, I discuss this topic today. Certainly I do not have the answers nor do I have access to the "crystal ball". However, I would like to share with you an approach that we have used in Arizona in an attempt to revise our teacher education program to meet modern needs. At the onset, I want to impress upon you that this is only "one approach" - not the only approach. We have no basis to determine whether it is sound. But it has provided direction for us.

Step 1. Identification of Essential Professional Competencies:

It appeared to us that the first step should be to identify what we felt our graduates should be able to do when they completed their pre-service preparation program. In the summer of 1967, considerable staff time was devoted to synthesize a comprehensive list of professional competencies that we felt were essential for beginning teachers of vocational agriculture to possess if they were to make a successful entry into the teaching profession. This list of competencies was reviewed and evaluated by the state supervisory staff in agriculture in Arizona and refined in the light of their suggestions.

The identification of professional competencies was one approach to determine those behaviors desired on the part of prospective teachers of agriculture in Arizona. At the same time, through the process of identifying the essential professional competencies, a basis was provided for the over-all revision of the undergraduate program in the Department of Agricultural Education at the University of Arizona.

Step 2. Program Revision in Professional Education:

Obviously, the next step would be to "dovetail" the essential competencies into the professional education courses taught in the department. In essence, the competencies were divided into specific undergraduate courses. Based upon the final synthesis of ninety-two (92) essential professional competencies, all courses in the professional education segment of the undergraduate curriculum for our majors were revised. An attempt was made to focus in on specific professional competencies to be stressed within each undergraduate course. Specific course objectives, course outlines and expectancies were developed in the light of the desired professional competencies sought in each course.

It was our intent to utilize this "competency approach" to eliminate unnecessary duplication and reduce overlapping of course content to the minimum by identifying, in writing, the behavioral objectives essential for beginning teachers to possess. This approach, likewise, served as a basis for more effective articulation of professional courses in the undergraduate program.

In addition, we now had a procedure to insure that specific attention was paid to each and every professional competency - in other words, we had a means for checking to be sure certain essential competencies were not left out of the undergraduate program.

In 1968-69, there was further refinement of the professional competencies and resultant revision of certain courses in the undergraduate program. Needless to say, further revision is necessary to insure that each professional competency is covered adequately and that duplication and overlapping of course content are reduced to the minimum.

Step 3. Establishment of Flexible Curricula Options in Technical Agriculture:

In order to meet the future manpower needs for a broadened instructional base in vocational education in agriculture, there is an increasing demand for a variety of agricultural educators possessing varying levels of technical subject matter specialization.

The broad range of technical competency needed by agricultural educators indicates that a single curriculum is not likely to fulfill all of the requirements. With the expanded educational responsibilities to be assumed by future educators in agriculture, singularity of preparation is likely to fill few demands well. Since agricultural educators should possess a high degree of expertise in agricultural subject matter, we felt that it was necessary to develop multi-track curricula in order to provide

greater flexibility for specialization in selected areas of technical agriculture.

The establishment of flexible curricula options in technical agriculture became the third step in the revision. In order to provide for more in-depth preparation in technical agriculture at the undergraduate level, we met with department heads in the College of Agriculture to formulate "specialization clusters" in the areas of agricultural mechanization, plant science, animal science and horticulture. Typical curricula for dual majors in agricultural education and (1) animal science; (2) horticulture; (3) agronomy and (4) agricultural mechanization have been developed and made functional in 1968-69. At the present time, over twenty-eight percent of our undergraduate majors are pursuing "dual majors".

Step 4. Evaluation of the Undergraduate Program

Although the major thrust of this undertaking was not intended to be a research study, the 4th phase of the project does involve research. In an attempt to assess graduates perception of the pre-service preparation program, a long-range research project was initiated in May, 1968.

Using the professional competencies as the basis, an evaluation instrument was designed. This instrument was administered to graduating seniors prior to their entry into the teaching profession; again after teaching six (6) months and finally, at the completion of their first year on the job. Another assessment will be made at the end of their second full year of teaching which will be in May, 1970. This procedure will be repeated with each graduating class.

Data collected have been utilized to formulate both individual student and "class" profiles. These profiles are providing an indication

of the graduates assessment of the adequacy of their professional preparation at the undergraduate level. Findings thus far indicate that:

1. Graduates apparently are satisfied with their pre-service preparation program since they have, in the aggregate, rated a large percent of the professional competencies at the "adequately prepared" to "very well prepared" level.
2. There has been consistence in the graduates perception of their preparedness to perform the professional competencies as assessed at the beginning, 6 month and 12 month periods. This consistence indicates that there is reliability in their assessment of the program.

In conclusion, we have been very well pleased with this approach to revision of the teacher education program in agriculture at the University of Arizona. We realize that this undertaking is not complete. The list of essential professional competencies must be subjected to continual revision. At this point in time, there are voids that need to be filled. For example, we need to focus in on techniques and procedures necessary to provide individual instruction in specialized programs where there are students enrolled with diversified occupational objectives. Nor is there any reference made to working with para-professionals.

It is apparent that there is a need to develop a comprehensive list(s) of behavioral objectives, on the national level, for the preparation of future agricultural educators if we are to meet the manpower needs for broadened instructional program in vocational education in agriculture. Once these lists are formulated, comprehensive packages of

learning materials could be developed to prepare the variety of agricultural educators who will be needed in the years ahead. In order to accomplish this task, the following steps might be utilized:

Step 1. Identify the essential professional competencies;

Step 2. Divide the competencies sought into "learning packages";

Step 3. Provide for specialization in technical agriculture;

Step 4. Evaluate the product.

PLANNING AND OPERATING A VOCATIONAL AGRICULTURE PROGRAM IN A REGIONAL CENTER.[1]

Frank Roberts

Chairman, Consulting Committee for the Middletown Regional Center for Vocational Agriculture, Middletown, Connecticut

It is the purpose of this paper todiscuss the development of the Middletown Regional Vocational Center in relation to: (1) development; (2) research; (3) needs; (4) vocational agriculture today.

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[1] Presentation made at the 63rd Annual Vocational Convention (Agricultural Education Division) in Boston, Massachusetts on December 10, 1969.

VOCATIONAL AGRICULTURE PROGRAM DEVELOPES

My interest in Vocatinnal Agricultural education began as a student of Middletown High School, class of 1923. One teacher was employed. Subject matter related mostly to dairying and poultry. Facilities were meager, lighting poor; and room was off to one side on top floor, referred to as the "silo" by its students.

Morale among students determined to enter the agricultural field was high. The principal and many of the teaching staff, in those days, didn't hold agriculture in very high esteem, and often discouraged students if possible, from taking the course. Sone students were assigned to our corse because they were judges as not too bright, which interfered with progress.

Way back here I was conscious that agriculture deserved better than this!

RESEARCH

Before the present Vo-Ag Centers were developed research disclosed that there was a feeling in the communities of the state, that existing programs were not geared to agricultural needs; that one half of the farmers in the state were fifty years of age or older, and one third sixty years old, and that too few youths were preparing themselves to meet replacement needs.

Agriculture in Connecticut is highly specialized. Sone specialities of minor importance are rapidly expanding. Agricultural activity is somewhat on a regional basis, and some of it was faced with a shortage of professional and semi-professional help.

In my own County there was a felling among certain educators that agriculture was dying and soon there would be no need for Vo-Ag Centers. In the state as a whole, and probably true in my own County, there is a decrease of farm owners or rather operators, but an increase in production.

Agriculture today is a 260 million dollar activity in our state!

WHAT WAS NEEDED

Research showed that if a Vocational Agricultural program was to be a success; it must be done on a regional basis, in order to acquire proper teaching staff, equipment and buildings, with the State paying cost of building and equipment. Each participating town would be represented on a regional consulting committee to help determine the town for location of program. Transportation and tuition of students to the approved school would be paid. Districts with their own high school would receive partial tuition grants for pupils sent to another center in another district.

To meet the needs these centers would need challenging, diversified programs geared to present day conditions, affording opportunity to youth to specialize in the area of his major interest while not overlooking allied industry and the tremendous opportunity in the educational field. It was found important that these programs be available to all youth interested in agriculture and that there exist educational opportunity for youth interested in agricultural service occupations.

Emphasis on farm mechanics was stressed!

VO-AG TODAY

Vocational Agricultural Centers in Connecticut are bringing a dignity to agriculture as never before. We have been judged by past facilities but perhaps a new day has dawned. It was Lewis Bromfield who said, "A farmer has to know more than the average doctor, lawyer or business man because these people for the most part specialize."

Regional Vocational Agricultural Centers centrally located in relation to agriculture, offer today a broad curriculum for the students exploration. When these programs are taught by a specialized staff, using specialized curriculum materials and teaching techniques, which permit grouping according to interest, the students and overall field of agriculture are being served in a superior way.

PLANNING AND OPERATING A VOCATIONAL AGRICULTURE PROGRAM IN A REGIONAL CENTER.[1]

Roger W. Lawrence

Head Teacher of Agriculture
Woodrow Wilson High School
Vocational Agricultural Department
Middletown, Connecticut

It is the purpose of this paper to relate some of the experiences and conclusions after twelve years of operation in this program.

[1] Presentation made at the 63rd Annual Vocational Convention (Agricultural Education Division) in Boston, Massachusetts on December 10, 1969.

The Regional Vocational Agricultural Center has operated as a department of the Woodrow Wilson High School in Middletown, Connecticut, since 1956.

Middletown is a city of 32,000 people, located on the west bank of the Connecticut River in central Connecticut. There are two High Schools in the city, and Wilson High has about eight hundred students. The regional concept requires that Middletown accept as tuition students those desiring to study Vocational Agriculture. The area which is covered involves about ten towns and takes in about a 40 mile radius.

The High School curriculum at Wilson is the usual offering of College Preparatory, Business, or General, and students taking the Vocational Agriculture program can major in any one of the three. Vocational Agriculture is offered as an elective for eight periods out of a 35 period week.

Experience has shown that about 60% of our students graduate from the General Curriculum, 30% from the College Curriculum and 10% from the Business Curriculum. A survey of our graduates indicated that just under 50% of the students had gone for further schooling after completion of high school. The bulk of these went on the the two year program at the University, but there was a great range as to types of schooling that was involved.

Curriculum development and changes have been continuous over the past twelve years. Our file indicates five different printings of our curriculum brochure. These changes were made because of experience and a changing agriculture. It causes one to wonder what we were thinking of when we set up our original curriculum back in 1956. But when you analyze what has happened, I for one, am content in the

belief that we were doing the best we knew how at that time.

If there is one thing we need to do in preparing for the seventies, I am sure, we must keep loose and flexible. As we constantly tell our students, "What we teach you for facts today may not be the facts for tomorrow." It has been our philosophy not to spend a great deal of money on text books in order that every student has a copy to work on a certain page on a particular day, but rather to invest in a variety of books, periodicals, etc. for our library in order that the student learns how to find the answers from a variety of sources; just as he will have to do when he gets in the field. This is not to say that we will give up on skill training and development; but that the two approaches must work hand in hand, and that we must make our students aware of and adaptable to change.

The roll of Vocational Agriculture has changed in our community because of urbanization, changing consumer demands, different student interest and for a variety of other reasons. Fewer of our students come from farm backgrounds and we cannot assume that they already are aware of things which formerly we took for granted. To insert the word silo into a presentation sent questioning hands into the air during a recent class session. We need to be on the alert as to what's going on and "Where its all at", for the students whom we are working with.

Experience indicates to us that the off farm jobs for students trained in Vocational Agriculture are available, and we have been able to set up good practical experience training programs for those interested in machinery, sales and repair, hardware stores, meat cutting, flower shops, milk plants and a variety of others. One problem has been to get students under sixteen involved in a practical experience program outside of the school. It seems practical to set up what we can in the

school setting, and not to concern ourselves if an outside program is not developed. I'm sure that a good hard look at this is needed for the seventies!

The image or the public real tions for Vocational Agriculture in our area does require working at constantly, as I am sure any educational program does. While the product turned out is the basis for evalu ation, we must go further and make known what it is that we can do.

Our Annual Open House Show put on in the spring by our students has been well received, and has done much to inform the public about what Vocational Agriculture can do. Each year a theme is selected and exhibits and displays are developed around this theme. Examples of themes used are, "Olde Tyme Middlesex County," "Agriculture Around the World," "Business and Agriculture" and "The History of Agriculture." Our most recent show was viewed by over eight thousand people. While this specific project is a dynamic public relations activity, there are other ways which we do work at this.

In summary it can be asid that the Middletown program has experienced change. It is well received in the community, and it looks forward to the seventies with expansion in mind; for additional staff and facility enlargement are currently being anticipated.

TRAINING FOR LANDSCAPE, NURSERY AND GREENHOUSE JOBS [1]

George E. Yetman

Head of Plant Science Department

Norfolk County Agricultural School

Walpole, Massachusetts

[1] Presentation made at the 63rd Annual Vocational Convention in Boston, Massachusetts on December 7, 1969

TRAINING FOR LANDSCAPE NURSERY AND GREENHOUSE JOBS

Most speakers from the ranks of general education, be they superintendents or State Commissioners of Education whom we invite to address vocational agricultural educators at our professional meetings, speak of national and world food shortages. We are usually congratulated on the job we are doing preparing young people to enter the work world of agricultural fiber and food production. It seems to me that vocational agricultural education is still primarily thought of as a program concerned with grass roots farming and production. While total farms in the U.S. declined about 3 million from 1945 to 1965, business identified with the production of Ornamental Horticultural crops increased by 5,000 during this same period. Undoubtedly there has been a further increase since 1965.

Career opportunities in this field are unlimited. The Secretary for the American Association of Nurserymen, Mr. Raymond Brush, has reported that there is a need for 20,000 additional employees for the nursery industry alone. The Horticultural Research Institute revealed a need for 1,000 more landscape architects and designers, 1100 more propagators, 3,000 more salesmen, and 3500 more supervisory personnel. In our school last May, I had over 80 job opportunities in my file for both summer and full-time jobs in Horticulture that I was unable to fill because all of our students had acceptable approved positions. More people should hear our story; from the State Commissioner of Education to every guidance counselor in our Junior and Senior high schools.

The latest information we have shows the Ornamental Horticulture industry in Massachusetts had a total yearly sales of products of about 35 million dollars. This is second only to the Dairy industry in sales, and the estimates for the Horticulture industry are only for sales of material produced in Massachusetts. It is the fastest growing agricultural industry in the state.

What are we doing here in Massachusetts to prepare students to enter the Ornamental Horticultural field? For many years, Ornamental Horticulture has been taught at the 3 county agricultural schools, and some of the high school departments. Specifically, at the Norfolk County Agricultural School in Walpole, Massachusetts, we offer major area choices of study to the student in the spring of his sophomore year, so that in the fall of his junior year he begins his ornamental Horticulture course of study. Along with his regular academic program, he will take courses in Turf Management, Basic Floral Design, Nursery Management, and Greenhouse Management. During his senior year he will study Landscape Design and a second course in Floriculture Greenhouse Management and Advanced Floral Design.

Occupational experience on the job is a most important part of our program. All students are required to complete an occupational experience program for the summers of the sophomore through the senior years; i.e., the senior student completes his work experience requirement for graduation by September 1 following the spring term. During the summers of the junior and senior years, we require the student to be employed in the area of Plant Science. Regular visitations are made by a teacher, and attendance on the job is kept just as if the student was in formal class work. We begin our occupational work experience program at the time of the April school vacation. This early release policy for Ornamental Horticulture students is one of the strongest

parts of our traning program. Industry leaders serve on our Advisory Committee and have convinced us of the value of work experience at this time of year. Students are involved in particular kinds of jobs during April - May and June that they cannot be involved in at other times of the year. The seasonal approach in Ornamental Horticulture training on the job is an important factor for students learning plant culture.

All students are required to enter into a memorandum of agreement, the form of which was approved by the Massachusetts Department of Education. This agreement must be signed by the employer, parent, student and instructor after all information concerning hours, wages and conditions of employment have been spelled out. All work experience programs must be approved by the Horticulture instructor before a memorandum of Agreement is issued to the student.

We have been challenged to spread the arms of occupational education in Horticulture to serve more people of the community. We are now, and have been for several years, offering courses in Horticulture in the adult evening program, but that's not new. Our newest effort to be of more service is to offer survey courses in 3 agricultural areas, one of them Horticulture, to a group of interested students from a nearby community. The students are bussed in by the community. One has already transferred into the regular day program, and the others are being offered the opportunity of examining career opportunities in agriculture by this one day a week exploration into Horticulture, Agricultural Mechanics and Animal Husbandry. We feel this program can be expanded to other communities. Towns within a 15-mile radius of our school can bus students to it within 30 minutes time. How better to recruit students who can really profit from our programs and excellent plant facilities for Horticultural education?

Why not permit a student from another community with an interest in flower arranging or landscape design to attend classes in these subject matter areas and receive credit for this elective in his own school? It might not be labeled vocational, but it could start some youngster to seek more training and perhaps begin a new career. It might be as justifiable as music or art as a cultural enrichment program, but that's another story.

George E. Yetman

Vocational, Technical and Extension Education Department
University of Vermont

Spotlight on New England--A Coordinated Teacher Education Program[1/]

Gerald R. Fuller, Chairman

The newly organized Department of Vocational, Technical and Extension Education, located in the College of Agriculture and Home Economics at the University of Vermont has a dual role. The department offers programs for teachers of vocational subjects at high school and post-high school levels, and programs for non-school personnel who will have responsibilities for educational and training programs in industry or government agencies. At this time, the department offers undergraduate and graduate programs in Agricultural Education, Industrial Education and Extension Education.

The activities of the department focus upon the development of a unified program for the preparation of teachers of occupationally oriented subjects. Among the overriding goals of the department are:

1. The development of a team approach to the teaching of vocational subjects in high schools.
2. The development of a team approach to pre-service and in-service education involving the University, State Department of Education, area vocational centers and industry.

The following initial steps have been taken to begin the development of a coordinated or unified program of teacher education:

1. A credit course bringing together first year teachers in all service areas has been initiated. One-half of each meeting is conducted as a combined group and focuses upon common problems and concerns. Teachers meet by special interest group for the remainder of the meeting.
2. One-fourth of the "introductory" course has been identified as common to all service areas and is taught to a combined group of prospective teachers of vocational subjects. The remainder of the course is taught by service area groups.
3. Teacher educators in Home Economics, Agriculture and Trade and Industrial Education team teach the course for first-year teachers and other courses at both the undergraduate and graduate level.
4. State Department of Education consultants serve as adjunct members of the department. They assist in teaching of selected courses and are designated as temporary staff members when they have full responsibility for a course.
5. A Technical Internship has been approved by the College. Industrial Education majors spend four summers and two full semesters in a directed, structured experience program in industry. Industry will provide 104 weeks of technical education and students will receive two

semesters of credit toward their degree. Credit can also be given for previous experience in business and industry. It is thought that this option may soon be made available to more than just Industrial Education majors.

The Vermont design for pre-service and in-service teacher education has its base a team approach to teacher preparation. Teacher educators having different vocational subject preparation, State Department of Education staff, private industry and local schools are working together to strengthen vocational education in Vermont. United we stand, divided we are in danger of falling.

FOREST SCIENCE AND HARVESTING IN MAINE

Alton G. Bridges

Consultant - Agriculture and Handicapped
Bureau of Vocational Education
State Department of Education
Augusta, Maine

The purpose of this program is to develop the competence and techniques needed at the high school level for Junior and Senior two-year sequence for occupational entry into selected service occupations connected with harvesting forest products and eventual advancement in these occupations.

The objectives are:

(a) to develop sound forestry practices in management of forest lands. (b) to develop the duties and responsibilities of successfully harvesting forest products. (c) to develop the abilities at the entry level of achievement in the safe operation, adjustment, servicing of special equipment used in harvesting forest products. (d) to understand the occupation represented by the employees of a comprehensive forest products producer, their duties and responsibilities. (e) to provide a variety of useful experiences for occupational entry into these areas and making a living.

At the present time in Maine, there are four schools, Lee Academy, Dexter, Dover-Foxcroft Academy, and Farmington offering forest science and harvesting on the occupational entry level to the eleventh and twelfth grades. All of these schools have a well-equipped shop and classroom facility, as well as a large school-owned forest area to be used in teaching harvesting techniques. Two of the departments own small crawler tractors and the others lease or rent this type of equipment. Many of the large paper companies have loaned heavy equipment to the schools in the off season so the students could learn to operate and service this type of equipment. The classes are three periods in length and are usually scheduled in the afternoon. At least 70-75% of the students' class time is spent in the forest wood lot developing occupational techniques. Three of the teachers are forestry graduates and have worked for large paper companies.

There has been a great deal of interest created the past two years in the state by these forest science harvesting programs. The paper companies have shown a lot of interest and cooperation in this type of program for training youth in forestry and related occupations. There have been inquiries from five additional school districts indicating interest in starting similar programs.

Presentation made at the 63rd annual Vocational Convention in Boston, Mass., December 7, 1969.

Programs for Disadvantaged Students in Agricultural Education in Virginia[1]

The purpose of this presentation is to discuss the four (4) major types of programs in Agricultural Education for the disadvantaged students in Virginia.

1. Agricultural Machinery Service Program for students who have experienced extreme economic deprivation. This program is designed for students in senior high school.

This program was initiated three years ago by the teachers of agriculture, and it has been most effective in helping 61 students to develop skills in operation, service, maintenance and repair of agricultural machinery as well as agricultural production. Students who complete the 2-year program are prepared for employment both on-farm and off-farm.

All students who are enrolled in the program participate in a supervised occupational experience program on a 12-months basis on a school farm which is equipped with the type of agricultural machinery used in the area. The use of a school farm to obtain supervised occupational experience through student enterprise ownership is the first of its kind to be conducted in Virginia. The farm is located about one mile from the school and boys are transported to and from the farm by a bus.

The occupational experience program consists of forestry and conservation, crop production and agricultural machinery maintenance. The students work on the farm before and after school, Saturdays and during summer months. They develop skills in agricultural machinery maintenance both on the farm and in the school's laboratory.

The students not only develop saleable skills in the areas of agricultural machinery service and agricultural production, but they also earn money from the sale of crops which are produced as a part of their supervised occupational experience program. Since the students enrolled in the program live on small rural lots and are members of families which are economically deprived, this program, which provides an opportunity for students to get a job from what is learned and at the same time to earn money, has a unique appeal and is a real incentive for them to study and work. Some students who have completed one year of the program and all students who have completed two years of the program have been able to obtain employment.

2. Agricultural Science and Mechanics for students who are educationally and intellectually disadvantaged. This program is designed for students in junior high school.

This program is conducted by two (2) teachers. A teacher of agriculture and a teacher of basic remedial education who work as a team toward the common objective of preparing students to effectively pursue a program of entry-level occupational competency and/or preparing students for entry-level occupational competency.

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[1] Presented by C.B. Jeter at the 63rd Annual Vocational Convention in Boston, Massachusetts, on December 8, 1969.

The outstanding features of this program are its flexibility and the extent to which the community was involved in its planning. All students will engage in an occupational experience program during the school day at such time as the teachers feel that they are ready for a work assignment.

3. General Agricultural Mechanics for students who are educationally and intellectually disadvantaged. This program is designed for both junior and senior high school students.

The important feature of this program is that it is a joint effort between special education and agricultural education. The personnel in special education provides the instruction in basic remedial education and the teachers of agriculture give emphasis to:

a. Employability skills or attitudes
b. Exploration of the various agricultural occupations
c. Identifying talents and aptitudes
d. Developing skills in several areas of agricultural mechanics.

The teachers provide the students with a great deal of individual instruction and guidance and this is one of the major factors which contribute to the success of the program.

4. General Agricultural Mechanics or any of the programs in agricultural education which is offered by the local school. This program is designed for students on the junior and senior high school level.

This program is conducted by the teachers of agriculture with little, if any, help from any other teachers.

The curriculum is divided into three major parts:

a. Development of personal traits
b. Development of employability skills or attitudes
c. Development of skills leading to occupational competency.

The major factors which contribute to the success of the programs are:

1. The curriculums are student-oriented rather than subject-matter oriented. This means that the instruction is centered around the students and their problems, needs, and learning difficulties rather than covering materials or meeting academic or achievement standards.

2. The students understand that the class activities are not a scramble for grades and attainment of academic standards, but an educational experience which will help them to become worthwhile and productive citizens.

3. Teachers provide individual instruction for students. This means [redacted]:

a. Teaching skills and understandings when they are needed and at the level of development of the student.

b. A student moves from one activity to another only when it is comfortable for him to do so.

c. The teacher seeks to protect the integrity and dignity of the students.

d. The teacher does not set himself up as a talking book, a judge, a disciplinarian or a dominator of classroom activity, but rather a creator and designer of patterns and conditions for learning.

HOW OUR REGIONAL VOCATIONAL AGRICULTURE CENTERS ARE WORKING OUT [1]

Llewellyn L. Turner

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State Department of Education
Hartford, Connecticut

The purpose of this paper is to show the changes that have taken place in Vocational Agriculture in Connecticut since the Regional Center concept for providing such programs was adopted.

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[1] Presentation made at the 63rd Annual Convention of American Vocational Association in Boston, Massachusetts on December 7, 1969.

HOW OUR REGIONAL VOCATIONAL AGRICULTURAL CENTERS ARE WORKING OUT

The year 1906 marked the beginning of vocational agriculture in Connecticut when a private institution added agriculture to its curriculum. The first public school agricultural program was organized in 1912 and was supported entirely by local funds. A plan was then adopted for the State to pay the salary of the teacher of agriculture, and the town to provide the facility, necessary equipment, and supplies. From 1917 through 1956 nearly all of the agricultural programs followed this plan. These programs served well for a beginning but were not completely satisfactory as they were serving only a local area. Inadequate facilities with little or no equipment were a stigma against the further development of this policy.

In 1954, a state-wide Vocational Agriculture Consulting Committee was formed at the request of the State Board of Education. The major function of this committee was to determine the status of vocational agriculture and based on their findings, to submit recommendations to the State Board of Education. After a thorough study this committee submitted a proposal to the State Board to establish Regional Vocational Agriculture Centers which would provide training in agriculture to anyone in the State who desired such training.

This "blue ribbon" committee worked hard and long to establish a basic design to up-date vocational agriculture in Connecticut. Following are some of their major findings and recommendations:

WHAT RESEARCH SHOWED:

1. Only 1/3 of the major farm towns in Connecticut had four or more vocational agricultural students, and though the number of farms had been decreasing agricultural production was on the rise.
2. There was a lack of status in schools in the State for agricultural education
3. Productivity per man-hour in agriculture was increasing rapidly.

4. There was an acute shortage of professional and semi-professional personnel in agricultural service occupations; and a trend toward larger farm units.
5. There was a feeling in the communities of the State that existing programs were not geared to agriculture's needs.
6. There was a rapid increase in mechanization of farms. College oriented youth interested in agriculture were discouraged from enrolling in agricultural programs.
7. Many youth interested in agriculture were not enrolling in such programs.
8. Facilities were poor and equipment limited.

WHAT WAS NEEDED:

1. Agricultural education opportunities for all interested rural non-farm and urban youth.
2. Diversified programs.
3. Improved opportunities for those in farming to increase their skills.
4. Educational opportunities for youth interested in agricultural service occupations.
5. More realistic programs with respect to present day conditions.
6. Greater emphasis on agricultural mechanics.
7. Planning related to local needs.
8. An agriculture curriculum appropriate to continuing education.
9. An opportunity for each youth to specialize in the area of his major interest.
10. Challenging programs.

WHAT WAS PROVIDED FOR:

A. FACILITIES

1. Central location with respect to agriculture.
2. Complete facilities including shop, laboratory, library, classroom, greenhouses, and land laboratory.

3. Facilities and equipment making it possible for selected introductory experiences in agriculture.
4. Facilities and equipment appropriate to modern agriculture and agricultural sciences.
5. Agricultural mechanics to meet present needs of the industry.
6. Consultation with local advisory committees to develop plans, select equipment, identify needs, develop courses of study.
7. An atmosphere conducive to learning.

B. PROGRAM

1. Supervised occupational experience programs in all phases of agriculture.
2. Broad curriculum for exploration.
3. Increased emphasis on farm business management.
4. Closer integration of total high school program for out-of-school youths and adults.
5. Special curriculum for those planning continuing education on the technical or professional level in the agricultural sciences.
6. Revision of curriculum through consultation with individuals competent in agriculture.
7. In-service training of staff.

HOW OUR REGIONAL VOCATIONAL AGRICULTURAL CENTERS ARE WORKING OUT

Now let us see what has happened since 1956 when the first regional Vo-Ag Center was opened in Middletown, Connecticut. At that time there were 18 locally-operated programs with 22 teachers of agriculture.

These programs served 528 all-day pupils and 174 adults who came from 36 of Connecticut's 169 towns. Now, some 12 years later there are 14 such Regional Centers, plus three single-teacher, locally-operated departments having an all-day enrollment

of 1190 pupils, plus an anticipated enrollment of nearly 400 adults coming from 122 of Connecticut's 169 towns. At the same time these 17 Vo-Ag departments have working agreements with 142 of the 169 towns in Connecticut. This means that 90% of Connecticut's Towns are being served by a Vo-Ag department.

We now have 45 full-time teachers on our staff and all of our regional centers are multiple-teacher departments with from two to four teachers employed. In some instances additional special instructors are employed on a part-time basis both on the all-day and adult levels to provide instruction in specialized areas and in each of two of our centers one of the teachers spends nearly full-time working with the adults.

The development of regional Vo-Ag Centers to meet the challenge of the ever-mounting services to both production agriculture and people's needs for recreation, conservation, and a host of other agricultural related services was envisioned in regionalization. Suburbia brought the need for many new programs in agriculture education. Regional centers provided for a high degree of flexibility in program planning and specialization.

Specialized programs are now in operation or being developed on both the all-day and adult levels in such areas as: Care, Operation, and Servicing of Home Grounds Maintenance Equipment; Greenhouse Management and Operation; Floral Design and Flower Arrangement; Nursery Management; Landscaping; Turf Management; Sales and Services of Agriculture Supplies and Products; with opportunities for specialization in Forestry and Wildlife. Studies are now in progress to determine the need for developing specialized programs in some of our heavily populated areas where the major emphasis would be in Ornamental Horticulture.

Specialization appears to have caught on in the Northeast. Based on a head count in the five-year period from 1963-1968 of the comparison of teachers as listed in the Agricultural Teachers Directory, there is a definite trend in the

movement from single-teacher to multiple-teacher departments. It shows that there was a 25% reduction in one-man departments with a 35% increase in the number of multiple-teacher departments.

The development of regional centers did not come easily. Many individuals, agencies, and organizations contributed much time and effort. The dynamic leadership of the State Department of Education provided the catalyst and support for change.

Dr. Walter Jacoby, Consultant, Agriculture Education at the time, and Dr. W. Howard Martin, Teacher Education, University of Connecticut, working in cooperation with the State Advisory Committee, will be long remembered for the vital roles they played in this movement.

Connecticut's regional centers, with excellent facilities, equipment, and a multi-staff, as part of the comprehensive high school, provide the structure to develop realistic programs in agricultural education which could not be supplied in any other way. Many have said that if the policy governing the plan for Vocational Agriculture in Connecticut had not been adopted and implemented by the State Board of Education back in 1956, Vocational Agriculture in all likelihood might have become nonexistent today.

However, there are still many problems, there is still much to be done. We still have many areas in the State not being served, we are doing an extremely inadequate job in serving disadvantaged and handicapped individuals, transportation of students to the operating center is still a serious problem and the need for teachers of agriculture in a multiple-teacher department to work together is a must.

The key to the success or failure of any of these programs lies largely in the teachers of agriculture who have been inspired to meet this need for change.

Prepared for presentation at AVA Convention Agricultural Education Division, as part of a Panel Entitled "Spotlight on the Northeast."

Llewellyn L. Turner
Boston, Mass.
December 7, 1969

LLT:pm

AN EXPERIMENTAL EVALUATION OF APPROACHES TO PREPARING HIGH SCHOOL STUDENTS FOR OFF-FARM AGRICULTURAL OCCUPATIONS

and

(PRINCIPLES VERSUS TRADITIONAL PROBLEMS APPROACH TO TEACHING VOCATIONAL AGRICULTURE)[1]

James T. Horner

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University of Nebraska, Lincoln

This paper presents the highlights of a recently completed two-phased, concurrently conducted experimental program as suggested by the title:

INTRODUCTION

For more than 45 years following the passage of the 1917 Smith-Hughes Act, vocational education in agriculture was conducted exclussively for production agriculture; that is, "present and prospective farmers." About the turn of the current decade follow-up studies and research on occupational opportunities, as well as legislative activities were suggesting that vocational agriculture should meet the needs of an already larger, and ever expanding group of off-farm agricultural employees.

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[1]Presentation made at the 63rd Annual American Vocational Association Convention, Boston, Mass., December 8, 1969.

Based largely upon the recommendations of the President's Panel of Consultants, Section 10 (b) of the Vocational Education Act of 1963 provided that any funds appropriated for agriculture, "may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects, whether or not such occupation involves work of the farm or of the farm home, and such education may be provided without directed or supervised work experience on the farm."

Thus, thrust upon vocational educators in agriculture was the broadened responsibility, in addition to preparation for production agriculture, to prepare for any occupation needing competencies in one or more the the areas of animal, plant or soil science, agricultural business management and marketing or agricultural mechanics.

If the broadened purpose and expanded clientele are to be served by programs of vocational education, then it is imperative that attention be given to determining the extent to which agricultural knowledge or skills are needed by workers in the labor force and how these can best be provided.

Many have said, without basis in fact, that, "Regular Vo-Ag is the best preparation program available." Few have argued that point because nothing else was available! Others have relied upon studies and pilot programs which merely compared the success of those with Vo-Ag, or even special preparation programs versus none. The conclusions???? Certainly recipients have "done as well as or better than those without." In other words, the programs didn't hurt them.

I submit that we can ill afford to base instructional programs

on what doesn't hurt students - - we must vigorously pursue positive programs which best prepare people for their life's work. This was our attempt.

SUMMARY

Many have felt that work experience and related instruction are essential aspects of vocational preparation. The problem of this study was to evaluate the effects of those factors on the preparation of high school students for entry into off-farm agricultural occupations. Also, the study compared the effectiveness of structuring agricultural subject matter around "principles" with the traditional approach.

The specific purposes were to determine:

1) If practical on-job experience is essential for entry into OFAO.

2) If courses in related instruction are essential for entry into OFAO.

3) If differences exist in achievement of students taught by principles versus problems approaches.

Twenty-four randomly selected Nebraska schools (excluding metropolitan schools) comprised the sample. Students in grades 10-12 constituted the subjects. Sixteen of the twenty-four schools offered vocational agriculture courses prior to this study. The remaining eight schools initiated a program of vocational agriculture instruction when the study began.

For Phase I the twenty-four schools were randomly arranged into four treatment groups, namely, related instruction, directed work experience, a combination group of related instruction and directed

work experience, and a control group. A 2 x 2 x 3 analysis of covariance with repeated measures on the third factor was the experimental design utilized. One factor was that of presence or absence of related instruction. The second factor was labeled directed work experience; and the third factor was the year of the project.

SCHEMA FOR

NEBRASKA AGRICULTURAL EDUCATION

PROJECT 001

PRINCIPLES PHASE

		New	Old	Old	Total
		A	B	C	
Off-Farm Agr Phase	R.I.	2	2	2	6
	W.E.	2	2	2	6
	R.I. + W.E.	2	2	2	6
	Control	2	2	2	6
	Total	8	8	8	24

The study tested changes in dependent variables (attitudes and achievement) against the null hypothesis by analysis of covariance. The three test instruments used to determine the most effective treatment in educating high school students were the "Test on General Information for Prospective Workers," the "Work Opinion Inventory," and the "Off-Farm Agriculture Occupations Opinion Inventory."

An analysis of these three measures revealed no statistical differences among various treatment combinations in regard to the most effective way of educating high school students for off-farm agricultural occupations. The only significant F value revealed that subjects with no exposure to the related instruction factor scored higher on the "Work Opinion Inventory" than did those with

related instruction. On all three measures, the combination group with work experience and related instruction was the lowest of the four groups; however, the differences were not statistically significant.

ANALYSIS
OFF-FARM AGRICULTURAL OCCUPATIONS
PHASE

TEST ON GENERAL INFORMATION

	Mean Score
R.I.	26.96
W.E.	25.36
R.I. + W.E.	24.08
Control	26.00
Mean	25.60

WORK OPINION INVENTORY

	Mean Score
R.I.	70.05
W.E.	72.42
R.I. + W.E.	68.54
Control	72.27
Mean	70.82

OFF-FARM OPINION INVENTORY

	Mean Score
R.I.	82.79
W.E.	85.94
R.I. + W.E.	82.32
Control	86.32
Mean	84.39

A follow-up job questionnaire revealed striking similarities between the OFAO and non-OFAO employees in types of employment, job satisfaction, salary and job stability.

ILLUSTRATIVE TABLE

COMPARISONS OF EMPLOYEES IN OFF-FARM AGRICULTURAL OCCUPATIONS WITH THOSE IN NON OFF-FARM AGRICULTURAL OCCUPATIONS

	OFAO Employees Mean Score	Non OFAO Employees Mean Score
Job Satisfaction (Initial)	46	47
After one year	49	47
Weekly Salary (Initial)	$67	$68
After one year	$86	$79

Follow-up observations revealed that after receiving instruction in any one of the four treatment groups, subjects were most frequently employed in a non off-farm agricultural occupation. Caution is suggested since considerable variation existed in the number of students in each treatment group.

NUMBER OF STUDENTS IN EACH TREATMENT GROUP IN THE OFF-FARM AGRICULTURAL OCCUPATIONS PHASE OF THE STUDY

Treatment Group	Number of Students	Percent of Total
Related Instruction	79	25.4
Work Experience	47	15.1
Combination (RI & WE)	34	10.9
Control	151	48.6
Total	311	100.0

Differences may have been due to the number of subjects in each treatment group. However, the following observations were considered meaningful: The follow-up study revealed that subjects in the combination

(work experience and related instruction) group were initially employed in off-farm agricultural occupations at a higher rate than any other group. A comparison of the number of subjects going to college and to the military showed that the control group had the highest percentages. The number of students listed as being unemployed or unknown was extremely small.

It should be noted that a number of teachers in the study felt that the combination treatment group of related instruction and work experience provided students with the most meaningful learning experiences. A majority of the teachers said they would implement the combination of work experience and related instruction at the close of the study.

For Phase II, the curriculum phase of this study, the twenty-four schools were divided into three equal groups: new schools with principles curriculum, old schools with principles curriculum, and old schools with traditional curriculum. The new schools had not previously offered vocational agriculture. The old schools with principles consisted of eight schools which had previously offered vocational agriculture; however, they changed the orientation of their courses from being problem-centered to being principle-centered. The old schools with a traditional curriculum served as the control group and the curriculum remained problem-oriented for the duration of the study. This phase was concerned with comparing two approaches to organizing and teaching agricultural subject matter. An experimental principles approach was compared with a traditional enterprise problem-solving approach.

The steps in teaching via the principles approach follow:

THE PRINCIPLES APPROACH

STEPS IN TEACHING

A. Discover the Underlying Principle

B. Reveal the Principle

C. Plan the Unit of Instruction

D. Provide the Factual Information

E. Solve the "Practical" Problems in Agriculture

The following three agricultural achievement tests were developed to compare the effectiveness of each approach; namely, "Test on the Principles of Plant and Animal Science," "Test on Mechanics," and "Test on Agricultural Management and Marketing Principles." The analysis indicated that the achievement of subjects in the principles approach was significantly greater two years out of three and no different the third year.

To assess the overall effectiveness of the curriculum phase of the study, a standardized agricultural achievement test was administered to the subjects who had been in one of the three treatment groups for all three years of the study. The overall analysis reinforced the findings that the subjects taught agricultural subject matter based on the principles approach achieved equal to or significantly greater than students taught in a traditional manner.

ANALYSIS

PRINCIPLES PHASE

TREATMENT	MEAN SCORE
"ANIMAL AND PLANT SCIENCE"	
A. New, Principles	41.12 *
B. Old, Principles	43.95 * *
C. Old, Traditional	36.11
Total Sample Mean	40.39
"MECHANICS"	
A. New, Principles	44.70 *
B. Old, Principles	45.42 *
C. Old, Traditional	39.85
Total Sample Mean	43.39
"MANAGEMENT AND MARKETING"	
A. New, Principles	45.34
B. Old, Principles	45.69
C. Old, Traditional	45.84
Total Sample Mean	45.61

* Significant

ANALYSIS

PRINCIPLES PHASE

TREATMENT		MEAN SCORE	
	FOUR-PART AGRICULTURAL ACHIEVEMENT TEST		
(A)	Part I	28.13	
	Part II	30.01	*
2	Part III	28.87	
	Part IV	26.55	*
	Total Sample Mean	28.39	
(B)	Part I	32.97	
	Part II	34.03	*
1	Part III	30.31	
	Part IV	28.99	*
	Total Sample Mean	31.58	
(C)	Part I	29.10	
	Part II	25.65	*
3	Part III	26.63	
	Part IV	21.08	*
	Total Sample Mean	25.62	

* Significant

NEBRASKA AGRICULTURAL EDUCATION

PROJECT 001

CONCLUSIONS

1. There was no one particular approach in teaching O.F.A.O. that was most effective
   -Combination of both R.I. and W.E. most satisfying to teachers.

2. Off-farm agricultural occupations courses have limited possibilities in small rural communities. A diversified occupations course provides opportunity for more students in small communities.

3. Additional teachers are needed if a school is to initiate an effective O.F.A.O. program.

4. With the proper preparation, high school students should be taught vocational agriculture based on the principles approach.

VT 010 456
Amberson, Max L., And Others
An Assessment of Administrative Problems in Teacher Education in Agriculture.

American Association of Teacher Educators in Agriculture, St. Paul, Minn.
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*ANNUAL AMERICAN VOCATIONAL ASSOCIATION CONVENTION (63RD, BOSTON, MASSACHUSETTS, DECEMBER 6-9, 1969)

To study the problems associated with the reimbursement of teacher education programs in agriculture with Federal and state vocational funds, a committee was appointed by The American Association of Teacher Educators in Agriculture. A survey instrument was developed, tested and mailed to head teacher educators at 77 institutions which offered programs in agricultural education. Three-fourths of the instructors returned the survey forms. University funding was the most frequently listed source of money for teacher education; second most frequent was the State and Federal Vocational Acts. From 1962-68 there was an increase of 43 percent in funds supplied by Federal and State agencies. The committee made several recommendations, one of which was that a committee be appointed to conduct a review of the policies and procedures of funding teacher education programs in agriculture. (BC)

VT 010 456

ED039370

AN ASSESSMENT OF ADMINISTRATIVE PROBLEMS IN TEACHER EDUCATION IN AGRICULTURE

A REPORT OF
THE AMERICAN ASSOCIATION OF TEACHER EDUCATORS IN AGRICULTURE
AN AFFILIATE OF THE AMERICAN VOCATIONAL ASSOCIATION

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
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VT010455

Presented at
THE AMERICAN VOCATIONAL ASSOCIATION CONVENTION
Boston, Massachusetts
December 6, 1969

Foreword

This study was conducted by the committee listed below, acting under the auspices of the American Association of Teacher Educators in Agriculture, an affiliate of the American Vocational Association.

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Introduction

During the 1968 AVA Convention in Dallas, Texas, the AATEA appointed a committee to study the problems associated with the reimbursement of teacher education programs in agriculture with Federal and state vocational funds. Although the committee was given no specific charge, it readily identified eight questions to be answered. These questions were:

1. What are the sources of funds for teacher education budgets in agriculture?
2. What changes have occurred during the past decade in the amount and rate of state and Federal vocational reimbursements?
3. Are teacher education institutions reimbursed on the basis of a contractual agreement?
4. Were representatives of the teacher education department active participants in the development of the state plan?
5. Is financial responsibility for teacher preparation in agriculture being shifted to the local institution?
6. Is there evidence to suggest that supervisory responsibility for teachers inservice may be shifted to teacher education institutions?
7. Is there evidence to suggest that teacher education programs (Agricultural Education, Business Education, etc.) at a single institution may be consolidated under a single administrative unit?
8. Is there evidence to suggest that all teacher education programs of the same type in a state, e.g. Agricultural Education, may be consolidated into a single unit by means of an administrative agreement?

Procedure

A survey instrument was developed, field-tested, and revised by the study committee early in 1969. In March it was mailed to head teacher educators at 77 institutions offering programs in Agricultural Education as listed in the 1968 AATEA Teacher Education Directory. Fifty-eight institutions (75%) completed and returned their survey forms.

Results of the Survey

Table 1 helps answer the first question posed by the committee, What are the sources of funds for teacher education budgets in agriculture? There were at least five different sources of money for each major budget item. The most frequently listed source was University Funds (Other than Vocational Education Acts). These funds were largely from state legislatures. The next most frequently listed source of funds was from Federal and State Vocational Acts. A higher percentage of respondents used University Funds (Other than Vocational Education Acts) as a source of revenue as compared with Federal and State Vocational Education Acts. This was true for each major budget item, without exception. It appears that local institutions are underwriting the largest share of the budgets for teacher education in agriculture in the nation.

The Agricultural Experiment Station and the Agricultural Extension Service were sources of income for at least a few teacher education institutions. Although 76 percent of the respondents noted that experiment station funds were not available to them, a few institutions did receive money from this source. This fact would suggest that other institutions with administrative

Table 1. Sources of Funds for Teacher Education in Agriculture Budgets in the United States Expressed as a Percentage of the Number of Institutions Responding and Reported by Major Budget Item

	Percent of Respondents Using Source of Funds				
Major Budget Item	University (Other than Vo. Ed. Acts)	Fed. or State Vo. Ed. Acts	Agr. Exp. Station	Agr. Ext. Service	Other
Faculty Salaries	91	86	10	5	9
Non-academic Salaries	79	53	2	2	12[a]
Graduate Asst. Stipends	52	33	9	3	17[a,b,c]
Travel Expenses	82	79	3	3	9
Supplies	86	59	2	2	10[a]
Printing	79	59	2	2	10[a]
Equipment	86	35	2	2	5[a]

[a]Instructional materials revolving fund
[b]Board of Regents stipends
[c]Private agricultural business

ties with the College of Agriculture may want to explore this source when looking for new revenue. The same is true with regard to Agricultural Extension Service funds.

Federal and state vocational funds were unavailable to seven percent of the respondents. Among those institutions to whom state and Federal vocational funds were available, 86 percent had approval to use the funds for Faculty Salaries, 79 percent for Travel Expenses, 59 percent for both Printing and Supplies, 53 percent for Non-academic Salaries, 33 percent for Equipment, and 33 percent for Graduate Student Stipends.

The second question explored by the committee was, What changes have occurred during the past decade in the amount and rate of state and Federal vocational reimbursements? Table 2 reports the mean dollar reimbursement paid by the state agency approving vocational funds for teacher education institutions in the United States by major budget item for the 1959-60, 1962-63, and 1967-68 fiscal years. Among those institutions which supplied these data, it was apparent that total budget dollars supplied from state and Federal vocational money increased only slightly between 1959-60 and 1962-63. A very sharp increase was noted between 1962-63 and 1967-68. Passage of the National Vocational Education Act of 1963 no doubt explains the latter increase.

A look at vocational funds available by major budget item in Table 2 shows that while there was a 43 percent increase between 1962-63 and 1967-68 in Total Budget dollars coming from state and Federal sources among the responding

Table 2. Mean Dollar Reimbursement Paid by the State Agency Approving Vocational Funds for Teacher Education Institutions in the United States by Major Budget Item for the 1959-60, 1962-63, and 1967-68 Fiscal Years

Major Budget Item	Mean Dollars Reimbursed by State & Federal Vocational Education Funds						Percent Increase in 1967-68 over 1962-63
	1959-60		1962-63		1967-68		
	N	Dollars	N	Dollars	N	Dollars	
Faculty Salaries	30	14,385.53	34	15,680.82	37	21,355.43	36
Grad. Asst. Stipends	4	1,998.00	6	1,989.33	9	6,625.44	233
Non-academic Salaries	17	3,763.94	17	4,085.71	22	4,466.18	9
Travel Expenses	19	1,561.79	22	1,672.55	26	2,394.69	43
Equipment	5	573.00	5	413.80	7	903.29	118
Supplies	13	645.85	16	758.38	19	1,207.58	59
Printing	5	508.20	5	479.20	9	728.78	52
Others (specify)	12	1,591.08	12	1,555.75	13	2,429.62	56
TOTAL BUDGET	30	20,041.50	34	21,015.97	37	30,132.78	43

institutions, there was a 233 percent increase in the availability of these monies for Graduate Student Stipends, a 118 percent increase for Equipment, and only a 9 percent increase for Non-academic Salaries. Other budget items were up from one-third to approximately three-fifths for the same period. It appears that state approving agencies feel that the local institution should provide a proportionately larger share of the money for Non-academic Salaries.

Table 3 helps answer the questions which many teacher educators frequently ask regarding which college or colleges with which they should administratively affiliate and where they should be physically located. If the availability of funds for Faculty Salaries and/or the Total Budgets are the desired outcomes, then the answer seems to be either the College of Education or both the College of Education and the College of Agriculture. The findings have apparently refuted the popular notion that administrative ties with the College of Agriculture are financially more rewarding.

Table 4 reports the average and range in percent of reimbursements paid by the state agency approving vocational funds for teacher education institutions offering agricultural education in the U. S. for the 1959-60, 1962-63, and 1967-68 fiscal years by major budget item. The average reimbursement for Total Budget decreased slightly between 1959-60 and 1962-63, and again between 1962-63 and 1967-68. Some institutions received as much as 63 percent of their Total Budget from State and Federal Vocational Funds in 1967-68. Others received as little as 23 percent. The trend in reimbursements for Faculty Salaries closely paralleled that for Total Budget for the same period.

Table 3. Average Dollars for Faculty Salaries and for Total Budget for Teacher Education in Agriculture Institutions in the U.S. by Administrative Affiliation and by Physical Location

Administrative Affiliation and Physical Location	Number	Average Dollars	
		Faculty Salaries	Total Budget
Administrative Affiliation			
Education	16	29,084	36,188
Agriculture	26	17,944	28,039
Both Ed. & Agr.	11	25,503	36,754
Physical Location			
Education	13	30,611	38,179
Agriculture	41	20,560	29,972

Table 4. Average and Range in Percent of Reimbursements Paid by the State Agency Approving Vocational Funds for Teacher Education Institutions in the U.S. by Major Budget Item for 1959-60, 1962-63, and 1967-68 Fiscal Years

	Reimbursed by Vocational Education Funds								
	1959-60			1962-63			1967-68		
		Percent			Percent			Percent	
Budget Item	N	Range	Average	N	Range	Average	N	Range	Average
Faculty Salaries	28	25-87	51	29	25-82	48	28	25-83	48
Grad. Asst. Stipends	7	25-100	54	10	25-100	56	10	25-100	57
Non-academic Salaries	15	50-100	60	17	50-100	62	17	25-100	57
Travel Expenses	18	25-100	61	20	25-100	62	20	25-100	60
Equipment	9	5-100	48	9	5-100	48	9	5-50	42
Supplies	11	10-100	51	13	10-100	54	11	10-100	51
Printing	9	25-100	47	10	25-100	53	11	25-75	46
Total Budget	18	25-85	49	19	25-67	46	20	23-63	43

The range in percent of reimbursement for major budget items in 1967-68 shows that some institutions were reimbursed as much as 100 percent for Graduate Assistant Stipends, Non-academic Salaries, Travel Expenses, and Supplies, and as little as 5 percent for Equipment. The lower range of reimbursement was most frequently 25 percent for major budget items in 1967-68. The fact that some institutions received 100 percent reimbursement for Non-academic Salaries is somewhat inconsistent with previous facts presented. Evidently a few state approving agencies still feel they have a major role to play in contributing to this budget item.

Figure 1 illustrates the gradual decline in percent reimbursement of the Total Budget during the 1959-1969 decade. It also illustrates the sharp increase in Federal and state vocational dollars between the 1962-63 and 1967-68 fiscal years. Figure 2 graphically portrays a similar picture for Faculty Salaries for the same period.

The third question proposed by the study committee was, Is there a contract or formal written agreement regarding reimbursement between your institution and the state agency approving the use of vocational funds? Seventy-four percent of the respondents answered "yes." Eighteen indicated an across-the-board 50-50 sharing policy. The funding formulae employed by the various state agencies and the local institutions were negotiated annually in many cases or specified by state plan in others. In a limited number of cases, state law prohibited funding from state funds. Sixty-seven percent of the respondents noted that there were procedures for funding new and occasional projects through the state agency responsible for approving vocational funds.

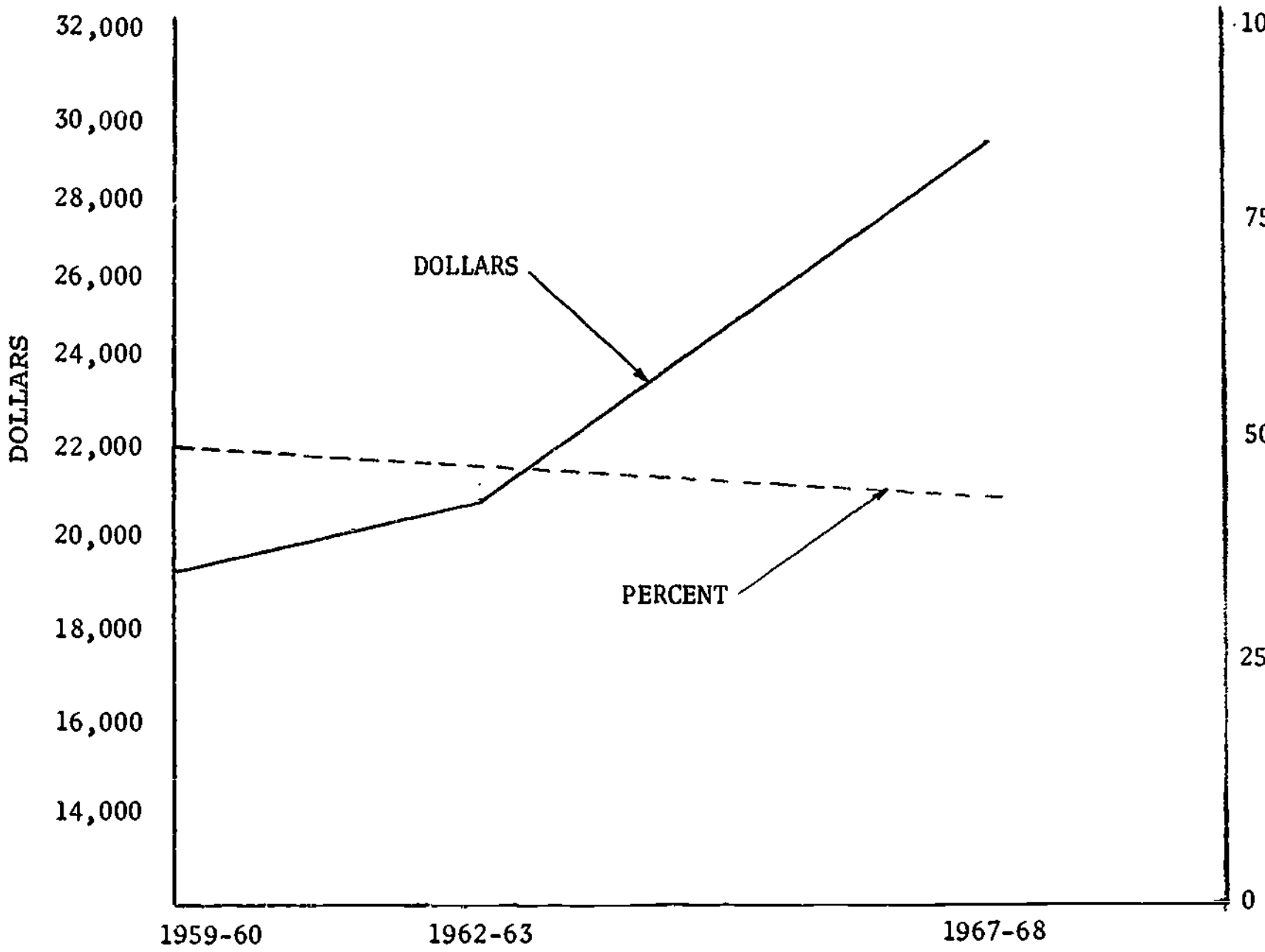

Figure 1. Mean Dollar and Percent Reimbursement of Total Teacher Education Budget Among 58 Institutions Offering Agricultural Education Programs in the U.S., Coming from the State Agency Approving the Use of State and Federal Vocational Funds

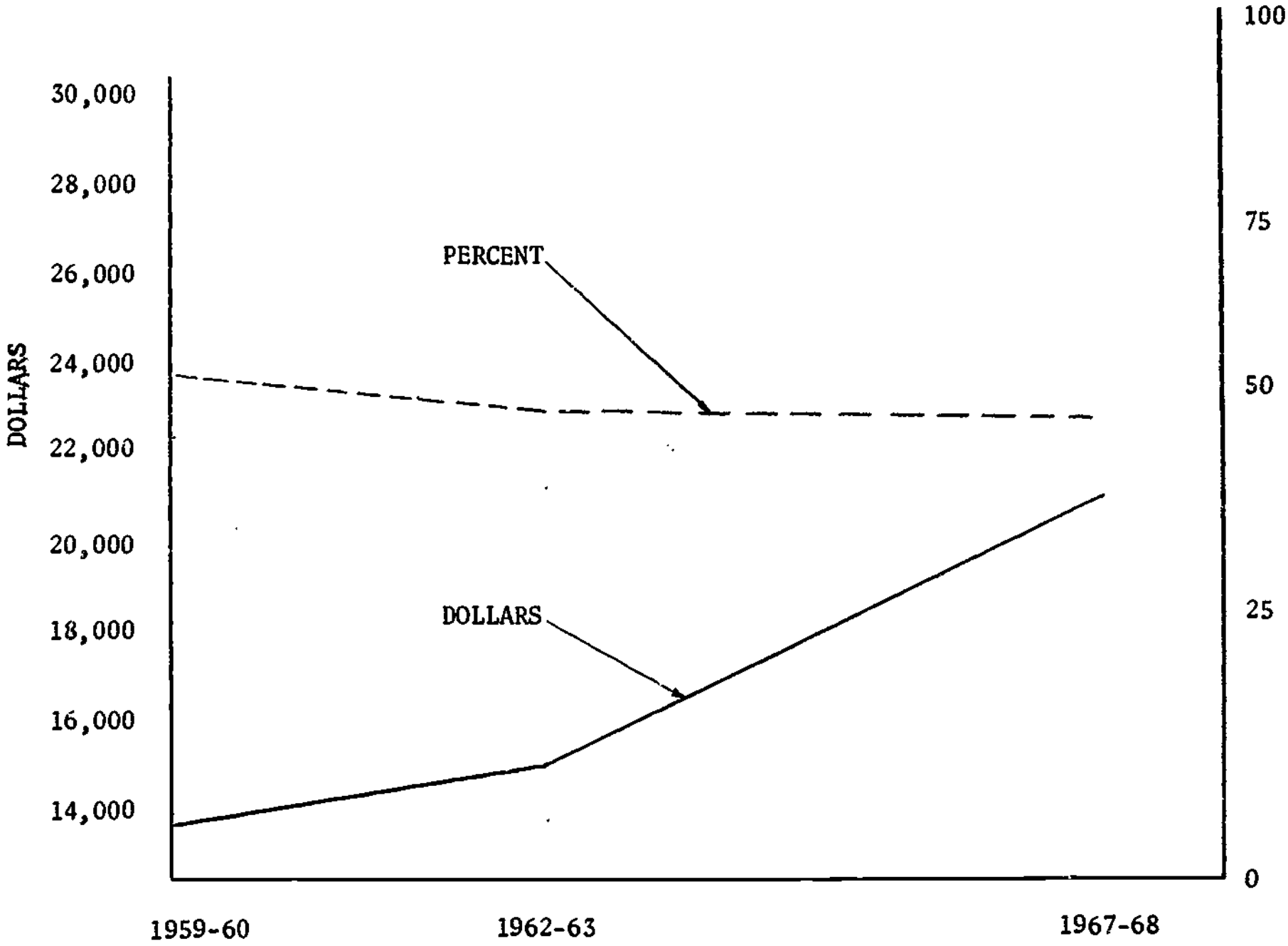

Figure 2. Mean Dollar and Percent Reimbursement of Faculty Salaries Among 58 Institutions Offering Agricultural Education Programs in the U.S., Coming from the State Agency Approving the Use of State and Federal Funds for the 1959-60, 1962-63, and 1967-68 Fiscal Years

PERCENT

The fourth question asked, Were representatives of the teacher education department active participants in the development of the state plan? Fifty-one percent of the respondents said that they had not been invited to help develop the state plan required by the 1968 Amendments (PL 90-576). Among this group, fifty-nine percent said they did not expect to receive a later invitation. Approximately one-fourth of the respondent institutions apparently did not make any inputs into their state plans. A very few noted that help was either not wanted or discouraged.

The fifth question asked, Is financial responsibility for teacher preparation in agriculture being shifted to the local institution? Seventy-three percent of the respondents said "No." Contrary to what some teacher educators expected the study committee to find, most teacher education institutions are apparently satisfied that the state agency for approving state and Federal funds is shouldering its share of the teacher education budget.

The sixth question investigated by the study committee was, Is there evidence to suggest that supervisory responsibility for teachers in service may be shifted to teacher education institutions? Ninety percent of the respondents said "No." However, the fact that 10 percent said "Yes" indicates that at least some attention has been given to shifting responsibility away from state departments of education. Apparently a few state directors of vocational education are questioning the validity of state policy whereby regulatory and supervisory functions are carried out by the same offices and, frequently, by the same people. If this is the case, these directors might be receptive to

proposals from teacher education institutions to assume more supervisory responsibility. Presently, however, the vast majority of teacher educators do not perceive supervision as one of their roles except for first-year teachers and for a limited amount of program evaluation.

The seventh question asked, Is there evidence to suggest that all teacher education programs (Agricultural Education, Business Education, etc.) at a single institution, may be consolidated under a single administrative unit? Fifty-six percent said "No." However, among the respondents who answered "Yes" were fifteen who noted that consolidation of this type had been completed at their institutions and thirteen who indicated that it was being considered. Two others said they had considered, but dropped, plans for consolidation.

The eighth and final question investigated by the committee was, Is there evidence to suggest that all teacher education programs of the same type in a state, e.g. Agricultural Education, may be consolidated into a single unit by means of an administrative agreement? Eighty-one percent said "No." Among those who answered "Yes" were a few who noted that an agreement of this type would "ease administrative problems" and "reduce competition for students."

The teacher educators were asked to outline their plans for "seeking additional financial support through Public Law 90-576." In response eleven indicated that they were preparing proposals for special projects. Nine stated that the present program was to be expanded. Several were seeking

additional funds to develop instructional materials or for graduate assistantships. Others wanted to "add research personnel", "expand adult education function", add teacher preparation for urban schools", and "fund intern programs."

Summary

To the extent that the sample is representative of the national opinion relative to problems associated with the reimbursement with vocational funds of teacher education programs in agriculture in the United States, the responses may be summarized as follows:

(1) University Funds (other than Vocational Education Acts) was the most frequently listed source of budget money for teacher education programs in agriculture. State and Federal Vocational Education Acts was the second most frequently listed source. Although 76 percent of the respondents received no Agricultural Experiment Station money, a few institutions did receive funds from this source as well as from the Agricultural Extension Service. Seven percent of the respondents received no state or Federal vocational money.

(2) There was a sharp increase (43%) in total budget dollars supplied from state and Federal funds between 1962-63 and 1967-68. Funds for Graduate Student Stipends increased 233 percent while Non-academic Salaries increased only 9 percent. Other budget items such as Faculty Salaries, Travel Expenses, Supplies, and Printing increased by approximately one-third to three-fifths for the same period.

(3) Programs in Agricultural Education which were administratively

affiliated with the College of Education or with both the College of Education and the College of Agriculture had higher average budgets for Faculty Salaries and for Total Budgets than those affiliated only with the College of Agriculture. Programs which were physically located in the College of Education also had higher mean budgets for Faculty Salaries and for Total Budget.

(4) Average percent reimbursement from state and Federal vocational funds for Total Budget decreased slightly between 1959-60 and 1962-63, and again between 1962-63 and 1967-68. Some institutions received as much as 63 percent of their Total Budget from vocational funds in 1967-68. Others received as little as 23 percent. The trend in reimbursements for Faculty Salaries closely paralleled that for Total Budget for the same period. The range in percent of reimbursement for major budget items in 1967-68 revealed that some institutions received 100 percent reimbursement for Graduate Assistant Stipends, Non-academic Salaries, Travel Expenses, and Supplies.

(5) Seventy-four percent of the respondents had contracts or formal written agreements with the state regarding vocational reimbursements. Eighteen institutions (31%) had across-the-board 50-50 sharing policies with the state agency approving the use of vocational funds.

(6) Fifty-one percent of the respondents said they had not been invited to help develop the state plan required by P. L. 90-576. Among this group, 59 percent said they did not expect to receive a later invitation.

(7) Seventy-three percent of the respondents said that there was no evidence to conclude that financial responsibility for teacher preparation was

being shifted to the local institution.

(8) Ninety percent of the respondents said there was no evidence to suggest that supervisory responsibility for teachers in service was being shifted to teacher education institutions.

(9) Fifty-six percent of the respondents said that there was no evidence to suggest that teacher education programs at their institutions may be consolidated under a single administrative unit. However, among those who said "Yes," fifteen noted that consolidation had been completed and thirteen reported that it was under consideration. Two other institutions had dropped plans for consolidation.

(10) Eighty-one percent of the respondents said there was no evidence to suggest that all teacher education programs of the same type (agricultural education) in the state would be consolidated into a single unit by means of an administrative agreement.

Recommendations

The steady decline in the rate of reimbursement of budgets in Agricultural Education with vocational funds, the wide range in rates of reimbursement for the same budget items, and the lack of financial support from colleges of agriculture in selected areas of the nation, as revealed by this study, have prompted the committee to make the following recommendations.

First, it is recommended that AATEA request the AVA Executive Committee to appoint a committee and to appropriate funds to conduct a review of the policies and procedures of funding teacher education programs in agriculture.

The committee should be composed of representatives of the following three groups: (1) state directors of vocational education, (2) deans of colleges of agriculture and colleges of education, and (3) teacher educators.

The committee's review should be made in light of the recommendations contained in the report of the Commission on Education in Agriculture and Natural Resources presented at the 1968 AVA Convention in Dallas, Texas. Furthermore, the review should be directed to the problem of finding more consistent and more acceptable policies and procedures for reimbursing teacher education programs with vocational funds. Similarly, the review should explore means by which experiment station, extension funds, and other general university monies may be made available for the solution of problems in Agricultural Education.

Second, it is recommended that AATEA continue to study the funding of teacher education programs in agriculture. This study has identified certain budgeting problems which clearly need the attention of all teacher educators. Hopefully, continuing studies of these and other financial problems will be in the interest of those who benefit from teacher education in agriculture.